```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X  X   X  XXX   XXXX
;   XXXXXXXXXXXXXXXXX           X X   XX XX  X   X  X
;   XXXX     XX    XXXX          X    X X X  X   X   XXX
;   XX XX    XX   XX XX         X X   X   X  X   X      X
;   XX  XX   XX  XX  XX         X   X  X   X   XXX   XXXX
;   XX   XX  XX XX   XX
;   XX    XXXXXX     XX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXXX            PROGRAMMER:     IMJ
;   XXXXXXXXXXXXXXXXXX            DATE:           820510
;   XX    XXXXXX     XX
;   XX   XX XX XX    XX
;   XX  XX   XX  XX  XX
;   XX XX    XX   XX XX
;   XXXX     XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;-----------------------------------------------------------------
;
;               ***********************************************
;               *
;               *  MODULE NAME: BUFFER QUEUE MONITOR
;               *
;               ***********************************************
;-----------------------------------------------------------------
;
        PAGE
```

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;-----------------------------------------------------------------------
;
;
;                NAME:            FUNCTION:                          PAGE
;
;                BQDEQ    ;DEQUEUE ELEMENT FROM QUEUE-HEAD             4
;                BQENQ    ;ENQUEUE ELEMENT TO QUEUE-HEAD               5
;                BQSEND   ;SAVE RETURN QUEUE AND ENQUEUE PACKET        6
;                BQRET    ;LOAD RETURN QUEUE AND ENQUEUE PACKET        6
;                BQMOV    ;MOVE ALL ELEMENTS                           7
;                BQGET    ;GET ELEMENT FROM QUEUE                      8
;
;                BQCRE    ;EVALUATE ONE BUFFER                         9
;                BQSET    ;RESET POINTERS INTO BUFFER-HEAD            10
;                BQLDBC   ;LOAD BYTE COUNT INTO BUFFER-HEAD           11
;                BQLDRQ   ;LOAD RETURN QUEUE INTO BUFFER-HEAD         11
;                BQRDRQ   ;READ RETURN QUEUE FROM BUFFER-HEAD         12
;                BQLDNA   ;LOAD NAME INTO BUFFER-HEAD                 12
;                BQRDNA   ;READ NAME FROM BUFFER-HEAD                 12
;                SETSTA   ;SET STATUS INTO BUFFER-HEAD                13
;                SRESTA   ;READ STATUS FROM BUFFER-HEAD               13
;
;                BQFIFI   ;FIND FIRST DATA                            14
;                BQFILA   ;FIND LAST DATA                             14
;                BQAJFI   ;ADJUST POINTER TO FIRST DATA               15
;                BQAJLA   ;ADJUST POINTER TO LAST DATA                16
;                BQADFI   ;LOAD ONE DATA BEFORE FIRST DATA            17
;                BQADLA   ;LOAD ONE DATA AFTER LAST DATA              18
;                BQLDTX   ;LOAD TEXT INTO DATA BUFFER                 19
;                BQADTX   ;ADD TEXT TO LAST DATA INTO BUFFER          19
;
;                BQPOTX   ;INSERT TEXT INTO BUFFER-HEAD               21
;
;***********************************************************************
        PAGE
```

```
;*****************************************************************
;CHANGE RECORD:
;-----------------------------------------------------------------
;    DATE        PROGRAMMER        DESCRIPTION
;-----------------------------------------------------------------
;   820818          OTC            BQADLA AND SCOTEX ARE MODIFIED IN THEIR
;                                  OVERFLOW-CHECK-PROCEDURES
;   820827          OTC            ROUTINES FOR ENQUEUE AND DEQUEUE BUFFERS
;                                  IN I/F-TABLES
;   820830          OTC            BQDEQ WILL NOT DESTROY HL-REG. IN CASE
;                                  OF EMPTY QUEUE
;   821101           LB            BQADFI WILL NOT DESTROY SP WHEN CALLED
;                                  WITH NO OFFSET LEFT
;   830119           LB            ERROR IN SCOTEX CORRECTED - HL WILL BY
;                                  EXIT WITH ALL TEXT INSERTED POINT AT
;                                  FIRST FREE ADDRESS IN BUFFER
;                                  (SCOTEX IS USED BY BQADTX AND BQLDTX)
;   830119           LB            BQM IS SPLIT UP INTO CPU I/F ROUTINES
;                                  (CPUIF) AND BQM
;   830913           LB            ERROR IN BQGET CORRECTED(MSB OF TEST ADDRESS
;                                  WAS NOT CHECKED
;*****************************************************************
        PAGE
```

```
                                        public  BQCRE
                                        public  BQFIFI,BQFILA,BQADFI,BQADLA,BQAJLA,BQAJFI
                                        public  BQLDTX,BQADTX,BQPOTX
                                        public  BQSET,BQLDBC,SETSTA,SRESTA
                                        public  BQLDRQ,BQRDRQ,BQLDNA,BQRDNA
                                        public  BQENQ,BQDEQ,BQMOV,BQGET
                                        public  BQSEND,BQRET
0000'                                   extrn   XERROR
                                        cseg

000E                            BHSIZE  EQU     14      ;BUFFER HEADSIZE
                                ;------ DEQUEUE ELEMENT ----------------------------------BQDEQ-------
                                                        ;DESCRIP:GET FIRST ELEMENT FROM SPECIFIED QUEUE
                                                        ;
                                                        ;ENTRY: HL - QUEUE-HEAD ADDRESS
                                                        ;
                                                        ;EXIT:  A - NO OF ELEMENTS IN QUEUE
                                                        ;       CARRY SET:      DE - ELEMENT ADDRESS
                                                        ;       CARRY RES:      DE - 0  (QUEUE EMPTY)
                                                        ;DESTROY: CARRY SET:    F,HL
                                                        ;         CARRY RES:    F
                                                        ;TIME:  30/133  T-CYCLES
                                                        ;
0000'   23                      BQDEQ:  INC     HL
0001'   7E                              LD      A,(HL)
0002'   5F                              LD      E,A
0003'   57                              LD      D,A
0004'   B7                              OR      A
0005'   28 11                           JR      Z,BQDEQ1        ;QUIT IF QUEUE EMPTY
0007'   3D                              DEC     A               ;DECREMENT NO OF ELEMENTS
0008'   77                              LD      (HL),A
0009'   23                              INC     HL
000A'   5E                              LD      E,(HL)          ;GET ADDRESS OF FIRST ELEMENT
000B'   23                              INC     HL              ;           TO REGISTER DE
000C'   56                              LD      D,(HL)
000D'   EB                              EX      DE,HL           ;MOVE SECOND ELEMENT TO NEW
000E'   1B                              DEC     DE              ;           FIRST ELEMENT IN QUEUE
000F'   ED A0                           LDI
0011'   ED A8                           LDD
0013'   03                              INC     BC
0014'   03                              INC     BC
0015'   EB                              EX      DE,HL
0016'   37                              SCF
0017'   C9                              RET

0018'   2B                      BQDEQ1: DEC     HL
0019'   B7                              OR      A
001A'   C9                              RET
                                        PAGE
```

```
                                ;------ ENQUEUE ELEMENT-----------------------------------BQENQ-------
                                                                ;
                                                                ;DESCRIP: INSERT ELEMENT AS LAST ELEMENT INTO
                                                                ;         THE SPECIFIED QUEUE.
                                                                ;
                                                                ;ENTRY:  DE - ELEMENT ADDRESS
                                                                ;        HL - QUEUE ADDRESS
                                                                ;
                                                                ;EXIT:   A - NO OF ELEMENTS IN QUEUE
                                                                ;        CARRY SET:       NO. OF ELEMENT INTO QUEUE > 1
                                                                ;        CARRY RESET      NO. OF ELEMENT INTO QUEUE = 1
                                                                ;
                                                                ;DESTROY: F,DE,HL
                                                                ;
                                                                ;TIME:   135/206  T-CYCLES
001B'   AF                      BQENQ:  XOR     A
001C'   12                              LD      (DE),A          ;CLEAR CHAIN
001D'   13                              INC     DE
001E'   12                              LD      (DE),A
001F'   1B                              DEC     DE
0020'   23                              INC     HL              ;INCREMENT NUMBER OF ELEMENT
0021'   7E                              LD      A,(HL)
0022'   34                              INC     (HL)
0023'   20 09                           JR      NZ,ENQ2         ;IF QUEUE OVERFLOW THEN
0025'   35                              DEC     (HL)
0026'   3E 20                           LD      A,20H
0028'   CD 0000*                        CALL    XERROR          ;  CALL ERROR ROUTINE
002B'   3E FF                           LD      A,0FFH
002D'   C9                              RET                     ;  QUIT
002E'                           ENQ2:                           ;ENDIF
002E'   A7                              AND     A
002F'   20 0A                           JR      NZ,ENQ1         ;IF NUMBER OF ELEMENT WAS = 0 THEN
0031'   7E                              LD      A,(HL)
0032'   23                              INC     HL
0033'   73                              LD      (HL),E          ;LOAD NEW ELEMENT ADDRESS
0034'   23                              INC     HL              ;          IN QUEUE AS FIRST ELEMENT
0035'   72                              LD      (HL),D          ;          AND LAST ELEMENT
0036'   23                              INC     HL
0037'   73                              LD      (HL),E
0038'   23                              INC     HL
0039'   72                              LD      (HL),D
003A'   C9                              RET
003B'   37                      ENQ1:   SCF                     ;ELSE
003C'   7E                              LD      A,(HL)
003D'   23                              INC     HL              ;  REMOVE NEW ELEMENT ADDRESS
003E'   23                              INC     HL              ;          TO OLD LAST ELEMENT DESCRIPTION
003F'   23                              INC     HL
0040'   C5                              PUSH    BC
0041'   4E                              LD      C,(HL)
0042'   23                              INC     HL
0043'   46                              LD      B,(HL)
0044'   72                              LD      (HL),D
0045'   2B                              DEC     HL              ;  MOVE NEW ELEMENT ADDRESS
0046'   73                              LD      (HL),E          ;          TO NEW LAST ELEMENT IN QUEUE
```

```
0047'  69                    LD      L,C
0048'  60                    LD      H,B
0049'  73                    LD      (HL),E
004A'  23                    INC     HL
004B'  72                    LD      (HL),D
004C'  C1                    POP     BC
004D'  C9                    RET                     ;ENDIF
                             PAGE
```

```
                                ;
                                ;------ SAVE RETURN QUEU ADDRESS ------------------------BQSEND---------
                                        ;DESCRIP: SAVE THE RETURN QUEU ADDRESS
                                        ;         ON TOP OF THE BUFFER-HEAD
                                        ;         AND ENQUEUE THE PACKET INTO THE
                                        ;         SPECIFIED QUEUE.
                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                        ;         HL - QUEUE ADDRESS
                                        ;         BC - RETURN QUEUE ADDRESS
                                        ;EXIT:   A - NO OF ELEMENTS IN QUEUE
                                        ;DESTROY: F
                                        ;TIME:   56+BQENQ  TCYCLES
004E'   EB                      BQSEND: EX      DE,HL
004F'   2B                              DEC     HL
0050'   70                              LD      (HL),B
0051'   2B                              DEC     HL
0052'   71                              LD      (HL),C          ;SAVE RETURN QUEUE ADDRESS
0053'   23                              INC     HL
0054'   23                              INC     HL
0055'   EB                              EX      DE,HL
0056'   C3 001B'                        JP      BQENQ           ;ENQUE THE PACKET
                                ;------ RETURN BUFFER  ------------------------------BQRET--------------
                                        ;DESCRIP: LOAD RETURN QUEUE ADDRESS FROM TOP OF
                                        ;         THE BUFFER-HEAD AND ENQUE THE PACKET.
                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                        ;EXIT:   A - NO OF ELEMENTS IN QUEUE
                                        ;DESTROY: F
                                        ;TIME:   48+BQENQ  TCYCLES
0059'   6B                      BQRET:  LD      L,E
005A'   62                              LD      H,D
005B'   2B                              DEC     HL
005C'   7E                              LD      A,(HL)
005D'   2B                              DEC     HL
005E'   6E                              LD      L,(HL)
005F'   67                              LD      H,A             ;LOAD RETURN QUEUE ADDRESS
0060'   C3 001B'                        JP      BQENQ           ;RETURN PACKET
                                        PAGE
```

```
                        ;----- MOVE ALL ELEMENTS ---------------------------------- BQMOV -----------
                                                ;DESCRIP: MOVE ALL ELEMENTS FROM QUEUE 'A' TO THE REAR
                                                ;         OF THE DESTINATION QUEUE 'B'.
                                                ;ENTRY:   HL - DESTINATION QUEUE 'B' ADDRESS
                                                ;         DE - QUEUE 'A' ADDRESS
                                                ;EXIT:    A - NO OF ELEMENTS IN DESTINATION QUEUE
                                                ;DESTROY: F,DE,HL
                                                ;TIME:    !

                        ;ABBREVIATIONS:  A-c :  No. of elements in 'A' queue
                        ;                B-c :  No. of elements in 'B' queue
                        ;                A-fp:  Pointer to first element in 'A' queue
                        ;                A-lp:  Pointer to last element in 'A' queue
                        ;                B-lp:  Pointer to last element in 'B' queue
                        ;                B-lbh: Link element in last element in 'B' queue


0063'   EB              BQMOV:  EX      DE,HL
0064'   23                      INC     HL
0065'   13                      INC     DE
0066'   7E                      LD      A,(HL)          ;0 Test if (A-c) = 0
0067'   FE 00                   CP      0               ;0 IF Yes THEN exit
0069'   C8                      RET     Z
006A'   C5                      PUSH    BC
006B'   1A                      LD      A,(DE)          ;0 Test if (B-c) = 0
006C'   FE 00                   CP      0
006E'   28 26                   JR      Z,COPY          ;0 IF no THEN
0070'   86                      ADD     A,(HL)
0071'   30 07                   JR      NC,M1FI         ;IF ELEMENT OVERFLOW THEN
0073'   3E 20                   LD      A,20H
0075'   CD 0000*                CALL    XERROR          ;  CALL ERROR
0078'   C1                      POP     BC
0079'   C9                      RET                     ;QUIT
007A'   12              M1FI:   LD      (DE),A          ;1 (B-c)=(A-c)+(B-c)
007B'   36 00                   LD      (HL),0          ;1 (A-c)=0
007D'   13                      INC     DE
007E'   13                      INC     DE              ;1 (B-lbh)=(A-fp)
007F'   13                      INC     DE
0080'   23                      INC     HL
0081'   EB                      EX      DE,HL
0082'   4E                      LD      C,(HL)
0083'   23                      INC     HL
0084'   46                      LD      B,(HL)
0085'   EB                      EX      DE,HL
0086'   F5                      PUSH    AF
0087'   7E                      LD      A,(HL)
0088'   02                      LD      (BC),A
0089'   23                      INC     HL
008A'   03                      INC     BC
008B'   7E                      LD      A,(HL)
008C'   02                      LD      (BC),A
008D'   23                      INC     HL              ;1 (B-lp)=(A-lp)
```

```
008E'   1B                          DEC     DE
008F'   ED A0                       LDI
0091'   ED A8                       LDD
0093'   F1                          POP     AF
0094'   C1                          POP     BC
0095'   C9                          RET                     ;1 Exit

                        ;                                    0 ELSE

0096'   E5              COPY:       PUSH    HL              ;1 Copy A to B
0097'   01 0005                     LD      BC,5
009A'   ED B0                       LDIR
009C'   E1                          POP     HL
009D'   7E                          LD      A,(HL)
009E'   36 00                       LD      (HL),0          ;1 (A-c)=0
00A0'   C1                          POP     BC
00A1'   C9                          RET                     ;1 Exit

                                                            ;0 ENDIF
                                    PAGE
```

```
                                ;----- GET ELEMENT ---------------------------------- BQGET -----------
                                                ;DESCRIP: REMOVE THE ELEMENT FROM THE QUEUE
                                                ;ENTRY:  DE - ELEMENT ADDRESS
                                                ;        HL - QUEUE ADDRESS
                                                ;EXIT:   A - NO OF ELEMENTS IN QUEUE
                                                ;        CY SET: DE - ELEMENT ADDRESS
                                                ;        CY RESET: DE - 0 (ELEMENT NOT FOUND)
                                                ;DESTROY: F,HL
                                                ;TIME:   !
00A2'   C5                      BQGET:  PUSH    BC
00A3'   23                              INC     HL
00A4'   E5                              PUSH    HL
00A5'   7E                              LD      A,(HL)
00A6'   B7                              OR      A
00A7'   28 22                           JR      Z,G1NOFO        ;QUIT IF QUEUE EMPTY
00A9'   4B                              LD      C,E
00AA'   42                              LD      B,D             ;SAVE ELEMENT ADDRESS
00AB'   23                              INC     HL
00AC'   5E                      G1LOOP: LD      E,(HL)
00AD'   23                              INC     HL
00AE'   56                              LD      D,(HL)          ;GET ELEMENT ADDRESS
00AF'   7B                              LD      A,E
00B0'   B2                              OR      D
00B1'   28 18                           JR      Z,G1NOFO        ;QUIT IF END OF QUEUE
00B3'   7B                              LD      A,E
00B4'   B9                              CP      C
00B5'   20 04                           JR      NZ,G1NEXT
00B7'   7A                              LD      A,D
00B8'   B8                              CP      B
00B9'   28 03                           JR      Z,G1FO
00BB'   EB                      G1NEXT: EX      DE,HL           ;NEXT
00BC'   18 EE                           JR      G1LOOP
00BE'   2B                      G1FO:   DEC     HL              ;FOUND:
00BF'   EB                              EX      DE,HL
00C0'   ED A0                           LDI
00C2'   ED A8                           LDD                     ;  MOVE LINK
00C4'   EB                              EX      DE,HL
00C5'   E1                              POP     HL
00C6'   35                              DEC     (HL)            ;  DECREMENT NO. OF ELEMENTS
00C7'   7E                              LD      A,(HL)
00C8'   C1                              POP     BC
00C9'   37                              SCF
00CA'   C9                              RET
00CB'   11 0000                 G1NOFO: LD      DE,0            ;NOT FOUND:
00CE'   E1                              POP     HL
00CF'   7E                              LD      A,(HL)
00D0'   C1                              POP     BC
00D1'   A7                              AND     A
00D2'   C9                              RET
                                        PAGE
```

```
                                ;------ CREATE BUFFER ----------------------------------------BQCRE----------
                                                ;DESCRIP: THE ROUTINE CREATE ONE DATA BUFFER
                                                ;         THE BUFFERS ARE ENQUEUED INTO THE SPECIFIED
                                                ;         QUEUE.
                                                ;         THE BUFFER-HEAD SIZE IS 14 BYTE
                                                ;ENTRY:   DE - MEMORY START ADDRESS
                                                ;         HL - QUEUE ADDRESS
                                                ;         BC - BUFFER SIZE
                                                ;         A  - OFFSET
                                                ;EXIT:    DE - FIRST UNUSED MEMORY ADDRESS
                                                ;         A - NO OF BUFFERS IN QUEUE
                                                ;DESTROY: F,BC,HL
                                                ;TIME:    391+BQRET TCYCLES
00D3'   EB                      BQCRE:  EX      DE,HL
00D4'   73                              LD      (HL),E
00D5'   23                              INC     HL
00D6'   72                              LD      (HL),D          ;LOAD QUEUE ADDRESS ON TOP OF HEAD
00D7'   23                              INC     HL
00D8'   E5                              PUSH    HL      ;BUH
00D9'   EB                              EX      DE,HL
00DA'   21 0009                         LD      HL,9
00DD'   19                              ADD     HL,DE
00DE'   70                              LD      (HL),B
00DF'   2B                              DEC     HL
00E0'   71                              LD      (HL),C          ;LOAD BUFFER SIZE
00E1'   2B                              DEC     HL
00E2'   36 00                           LD      (HL),0          ;CLEAR STATUS
00E4'   2B                              DEC     HL
00E5'   77                              LD      (HL),A          ;LOAD OFFSET
00E6'   2B                              DEC     HL
00E7'   E5                              PUSH    HL      ;BAP
00E8'   21 000C                         LD      HL,BHSIZE-2
00EB'   19                              ADD     HL,DE
00EC'   16 00                           LD      D,0
00EE'   5F                              LD      E,A
00EF'   19                              ADD     HL,DE           ;BUFFER ADDRES = BUFFER-HEAD ADDRESS + OFFSET
00F0'   EB                              EX      DE,HL
00F1'   E1                              POP     HL      ;BAP
00F2'   72                              LD      (HL),D
00F3'   2B                              DEC     HL
00F4'   73                              LD      (HL),E
00F5'   2B                              DEC     HL
00F6'   E5                              PUSH    HL      ;BCP
00F7'   5F                              LD      E,A
00F8'   16 00                           LD      D,0
00FA'   69                              LD      L,C
00FB'   60                              LD      H,B
00FC'   A7                              AND     A
00FD'   ED 52                           SBC     HL,DE           ;MAX BYTE COUNT = BUFFER SIZE - OFFSET
00FF'   EB                              EX      DE,HL
0100'   E1                              POP     HL      ;BCP
0101'   72                              LD      (HL),D
0102'   2B                              DEC     HL
0103'   73                              LD      (HL),E
```

```
0104'   D1                          POP     DE      ;BUH
0105'   21 000C                     LD      HL,BHSIZE-2
0108'   19                          ADD     HL,DE
0109'   09                          ADD     HL,BC           ;NEXT MEMORY ADDRESS = BUFFER-HEAD ADDRESS
                                                            ;                      +HEAD SIZE
                                                            ;                      +BUFFER SIZE
010A'   E5                          PUSH    HL      ;NMEM
010B'   F3                          DI
010C'   CD 0059'                    CALL    BQRET           ;ENQUEU PACKET
                            ;saa    EI
010F'   D1                          POP     DE      ;NMEM   ;RESTORE FIRST UNUSED MEMORY ADDR.
0110'   C9                          RET
                                    PAGE
```

```
                                ;------ SET BUFFER-HEAD TO IDLE -------------------------BQSET-------
                                                        ;DESCRIP: RESET POINTER AND COUNTERS
                                                        ;          INTO BUFFER-HEAD
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        A  - OFFSET
                                                        ;EXIT:   HL - FIRST DATA ADDRESS
                                                        ;        BC - MAX BYTE COUNT
                                                        ;DESTROY: F
                                                        ;TIME:   266  T-CYCLES
                                                        ;
0111'   D5                      BQSET:  PUSH    DE
0112'   21 0009                         LD      HL,9
0115'   19                              ADD     HL,DE
0116'   56                              LD      D,(HL)
0117'   2B                              DEC     HL
0118'   5E                              LD      E,(HL)          ;GET BUFFER SIZE
0119'   2B                              DEC     HL
011A'   36 00                           LD      (HL),0          ;CLEAR STATUS
011C'   2B                              DEC     HL
011D'   77                              LD      (HL),A          ;LOAD OFFSET
011E'   6F                              LD      L,A
011F'   26 00                           LD      H,0
0121'   EB                              EX      DE,HL
0122'   A7                              AND     A
0123'   ED 52                           SBC     HL,DE           ;MAX BYTE COUNT = BUFFER SIZE - OFFSET
0125'   4D                              LD      C,L
0126'   44                              LD      B,H
0127'   21 000C                         LD      HL,BHSIZE-2
012A'   19                              ADD     HL,DE           ;DATA POINTER = BUFFER-HEAD ADDRESS
                                                                ;               + OFFSET
                                                                ;               + BUFFER-HEAD SIZE

012B'   D1                              POP     DE
012C'   D5                              PUSH    DE
012D'   19                              ADD     HL,DE
012E'   EB                              EX      DE,HL
012F'   23                              INC     HL
0130'   23                              INC     HL
0131'   71                              LD      (HL),C
0132'   23                              INC     HL
0133'   70                              LD      (HL),B          ;LOAD MAX BYTE COUNT
0134'   23                              INC     HL
0135'   73                              LD      (HL),E
0136'   23                              INC     HL
0137'   72                              LD      (HL),D          ;LOAD DATA POINTER
0138'   EB                              EX      DE,HL
0139'   D1                              POP     DE
013A'   C9                              RET
                                        PAGE
```

```
                                ;------ SET BUFFER BYTE COUNT ---------------------------BQLDBC--------
                                                        ;
                                                        ;DESCRIP: SET BYTE COUNT INTO BUFFER-HEAD
                                                        ;
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        BC - BYTE COUNT
                                                        ;
                                                        ;EXIT:   HL - FIRST DATA ADDRESS
                                                        ;
                                                        ;DESTROY: NON
                                                        ;
                                                        ;TIME:   102  T-CYCLES
                                                        ;
013B'   F5                      BQLDBC: PUSH    AF
013C'   21 0002                         LD      HL,2
013F'   19                              ADD     HL,DE
0140'   71                              LD      (HL),C
0141'   23                              INC     HL
0142'   70                              LD      (HL),B          ;LOAD BYTE COUNT
0143'   23                              INC     HL
0144'   7E                              LD      A,(HL)
0145'   23                              INC     HL
0146'   66                              LD      H,(HL)          ;GET FIRST DATA ADDRESS
0147'   6F                              LD      L,A
0148'   F1                              POP     AF
0149'   C9                              RET
                                ;----- LOAD RETURN QUEUE ---------------------------------- BQLDRQ -----------
                                                        ;DESCRIP: LOAD RETURN QUEUE ON TOP OF BUFFER HEAD
                                                        ;ENTRY:  DE - BUFFER ADDRESS
                                                        ;        HL - RETURN QUEUE ADDRESS
                                                        ;EXIT:   NON
                                                        ;DESTROY: NON
                                                        ;TIME:   56 TCYCLES
014A'   EB                      BQLDRQ: EX      DE,HL
014B'   2B                              DEC     HL
014C'   72                              LD      (HL),D
014D'   2B                              DEC     HL
014E'   73                              LD      (HL),E
014F'   23                              INC     HL
0150'   23                              INC     HL
0151'   EB                              EX      DE,HL
0152'   C9                              RET
                                        PAGE
```

```
                                ;----- READ RETURN QUEUE ---------------------------------- BQRDRQ -----------
                                                ;DESCRIP: READ RETURN QUEUE FROM TOP OF BUFFER HEAD
                                                ;ENTRY:  DE - BUFFER ADDRESS
                                                ;EXIT:   HL - RETURN QUEUE ADDRESS
                                                ;DESTROY: NON
                                                ;TIME:   56 TCYCLES
0153'   EB                      BQRDRQ: EX      DE,HL
0154'   2B                              DEC     HL
0155'   56                              LD      D,(HL)
0156'   2B                              DEC     HL
0157'   5E                              LD      E,(HL)
0158'   23                              INC     HL
0159'   23                              INC     HL
015A'   EB                              EX      DE,HL
015B'   C9                              RET
                                ;----- LOAD NAME ---------------------------------- BQLDNA -----------
                                                ;DESCRIP: LOAD NAME INTO BUFFER-HEAD
                                                ;ENTRY:  DE - BUFFER ADDRESS
                                                ;        HL - NAME
                                                ;EXIT:   NON
                                                ;DESTROY: NON
                                                ;TIME:   82 TCYCLES
015C'   D5                      BQLDNA: PUSH    DE
015D'   DD E3                           EX      (SP),IX
015F'   DD 75 0A                        LD      (IX+0AH),L
0162'   DD 74 0B                        LD      (IX+0BH),H
0165'   DD E1                           POP     IX
0167'   C9                              RET
                                ;----- READ NAME ---------------------------------- BQRDNA -----------
                                                ;DESCRIP: READ NAME FROM  BUFFER-HEAD
                                                ;ENTRY:  DE - BUFFER ADDRESS
                                                ;EXIT:   HL - NAME
                                                ;DESTROY: NON
                                                ;TIME:   82
0168'   D5                      BQRDNA: PUSH    DE
0169'   DD E3                           EX      (SP),IX
016B'   DD 6E 0A                        LD      L,(IX+0AH)
016E'   DD 66 0B                        LD      H,(IX+0BH)
0171'   DD E1                           POP     IX
0173'   C9                              RET
                                        PAGE
```

```
                                ;------ LOAD STATUS INTO BUFFER-HEAD --------------------SETSTA-------
                                                        ;
                                                        ;DESCRIP: LOAD STATUS INTO BUFFER-HEAD
                                                        ;
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        A  - STATUS
                                                        ;
                                                        ;EXIT:   HL - STATUS POINTER
                                                        ;
                                                        ;DESTROY: F
                                                        ;
                                                        ;TIME:   38  T-CYCLES
                                                        ;
0174'   21 0007                 SETSTA: LD      HL,7
0177'   19                              ADD     HL,DE
0178'   77                              LD      (HL),A          ;LOAD STATUS
0179'   C9                              RET
                                ;
                                ;------ READ STATUS FROM BUFFER-HEAD --------------------SRESTA-------
                                                        ;
                                                        ;DESCRIP: READ STATUS FROM BUFFER-HEAD
                                                        ;
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;
                                                        ;EXIT:   HL - STATUS POINTER
                                                        ;        A  - STATUS
                                                        ;
                                                        ;DESTROY: F
                                                        ;
                                                        ;TIME:   38  T-CYCLES
                                                        ;
017A'   21 0007                 SRESTA: LD      HL,7
017D'   19                              ADD     HL,DE
017E'   7E                              LD      A,(HL)          ;READ STATUS
017F'   C9                              RET
                                ;
                                        PAGE
```

```
                        ;-------FIND FIRST DATA BYTE--------------------------------BQFIFI-------
                                                        ;DESCRIP: FIND FIRST DATA INTO DATA BUFFER
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;EXIT:   HL - FIRST DATA POINTER
                                                        ;        BC - BYTE COUNT
                                                        ;DESTROY: NON
                                                        ;TIME:   102  TCYCLES
0180'   F5              BQFIFI: PUSH    AF
0181'   21 0002                 LD      HL,2
0184'   19                      ADD     HL,DE
0185'   4E                      LD      C,(HL)
0186'   23                      INC     HL
0187'   46                      LD      B,(HL)          ;LOAD BYTE COUNT
0188'   23                      INC     HL
0189'   7E                      LD      A,(HL)
018A'   23                      INC     HL
018B'   66                      LD      H,(HL)          ;LOAD BUFFER ADDRESS
018C'   6F                      LD      L,A
018D'   F1                      POP     AF
018E'   C9                      RET
                        ;------FIND LAST DATA BYTE---------------------------------BQFILA-------
                                                        ;DESCRIP: FIND LAST DATA INTO DATA BUFFER
                                                        ;ENTRY:  DE - PACKET ADDRESS
                                                        ;EXIT:   HL - LAST DATA POINTER
                                                        ;        BC - BYTE COUNT
                                                        ;DESTROY: NON
                                                        ;TIME:   119 TCYCLES
018F'   F5              BQFILA: PUSH    AF
0190'   21 0002                 LD      HL,2
0193'   19                      ADD     HL,DE
0194'   4E                      LD      C,(HL)
0195'   23                      INC     HL
0196'   46                      LD      B,(HL)          ;LOAD BYTE COUNT
0197'   23                      INC     HL
0198'   7E                      LD      A,(HL)
0199'   23                      INC     HL
019A'   66                      LD      H,(HL)          ;LOAD FIRST DATA ADDRESS
019B'   6F                      LD      L,A
019C'   09                      ADD     HL,BC
019D'   2B                      DEC     HL              ;ADJUST TO LAST DATA ADDRESS
019E'   F1                      POP     AF
019F'   C9                      RET
                                PAGE
```

```
                                ;--------ADD NO. OF DATA BEFORE FIRST DATA ----------------BQAJFI----------
                                                        ;DECRIP: ADJUST POINTER AND COUNTERS INTO BUFFER-HEAD
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        BC - NO. OF DATA BYTES
                                                        ;EXIT:   HL - FIRST DATA ADDRESS
                                                        ;        BC - BYTE COUNT
                                                        ;        A  - OFFSET
                                                        ;DESTROY: F
                                                        ;TIME:   243 TCYCLES
01A0'   D5                      BQAJFI: PUSH    DE      ;BH
01A1'   21 0006                         LD      HL,6            ;GET OFFSET
01A4'   19                              ADD     HL,DE
01A5'   7E                              LD      A,(HL)
01A6'   91                              SUB     C
01A7'   77                              LD      (HL),A          ;ADJUST OFFSET
01A8'   2B                              DEC     HL
01A9'   56                              LD      D,(HL)
01AA'   2B                              DEC     HL
01AB'   5E                              LD      E,(HL)          ;GET FIRST DATA POINTER
01AC'   EB                              EX      DE,HL
01AD'   A7                              AND     A
01AE'   ED 42                           SBC     HL,BC           ;ADJUST FIRST DATA POINTER
01B0'   EB                              EX      DE,HL
01B1'   73                              LD      (HL),E
01B2'   23                              INC     HL
01B3'   72                              LD      (HL),D
01B4'   D5                              PUSH    DE
01B5'   2B                              DEC     HL
01B6'   2B                              DEC     HL
01B7'   56                              LD      D,(HL)
01B8'   2B                              DEC     HL
01B9'   5E                              LD      E,(HL)
01BA'   EB                              EX      DE,HL
01BB'   09                              ADD     HL,BC           ;ADJUST BYTE COUNT
01BC'   EB                              EX      DE,HL
01BD'   73                              LD      (HL),E
01BE'   23                              INC     HL
01BF'   72                              LD      (HL),D
01C0'   4B                              LD      C,E
01C1'   42                              LD      B,D
01C2'   E1                              POP     HL
01C3'   D1                              POP     DE
01C4'   C9                              RET
                                        PAGE
```

```
                                ;------- ADD NO. OF DATA TO LAST DATA -------------------------BQAJLA---------
                                                        ;DESCRIP: ADJUST BYTE COUNT INTO DATA BUFFER-HEAD
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        BC - NO. OF DATA BYTES
                                                        ;EXIT:   HL - LAST DATA POINTER
                                                        ;        BC - BYTE COUNT
                                                        ;DESTROY: NON
                                                        ;TIME:   183 TCYCLES
01C5'   F5                      BQAJLA: PUSH    AF
01C6'   21 0002                         LD      HL,2
01C9'   19                              ADD     HL,DE
01CA'   E5                              PUSH    HL
01CB'   7E                              LD      A,(HL)
01CC'   23                              INC     HL
01CD'   66                              LD      H,(HL)          ;GET CURRENT BYTE COUNT
01CE'   6F                              LD      L,A
01CF'   09                              ADD     HL,BC
01D0'   4D                              LD      C,L
01D1'   44                              LD      B,H
01D2'   E1                              POP     HL
01D3'   71                              LD      (HL),C
01D4'   23                              INC     HL
01D5'   70                              LD      (HL),B          ;INSERT NEW BYTE COUNT
01D6'   23                              INC     HL
01D7'   7E                              LD      A,(HL)
01D8'   23                              INC     HL
01D9'   66                              LD      H,(HL)          ;LOAD FIRST DATA ADDRESS
01DA'   6F                              LD      L,A
01DB'   09                              ADD     HL,BC
01DC'   2B                              DEC     HL              ;ADJUST POINTER TO LAST DATA
01DD'   F1                              POP     AF
01DE'   C9                              RET
                                        PAGE
```

```
                                ;------ LOAD SINGLE DATA BEFORE FIRST DATA --------------BQADFI-------
                                                        ;DESCRIP: LOAD SINGLE DATA BEFORE THE
                                                        ;         THE FIRST DATA INTO DATA BUFFER.
                                                        ;         POINTER AND COUNTERS ARE UPDATED.
                                                        ;ENTRY:   DE - BUFFER-HEAD ADDRESS
                                                        ;         A  - DATA
                                                        ;EXIT:    HL - DATA POINTER
                                                        ;         BC - BYTECOUNT
                                                        ;         CARRY SET:       DATA LOADED
                                                        ;                          A - OFFSET
                                                        ;         CARRY RESET:     DATA NOT LOADED
                                                        ;                          A - OFFH
                                                        ;                          BC - 0
                                                        ;DESTROY: F
                                                        ;
                                                        ;TIME:    186/263  T-CYCLES
01DF'   21 0002                 BQADFI: LD      HL,2
01E2'   19                              ADD     HL,DE
01E3'   4E                              LD      C,(HL)
01E4'   23                              INC     HL
01E5'   46                              LD      B,(HL)
01E6'   03                              INC     BC              ;INCREMENT BYTE COUNT
01E7'   C5                              PUSH    BC
01E8'   70                              LD      (HL),B
01E9'   2B                              DEC     HL
01EA'   71                              LD      (HL),C
01EB'   23                              INC     HL
01EC'   23                              INC     HL
01ED'   4E                              LD      C,(HL)
01EE'   23                              INC     HL
01EF'   46                              LD      B,(HL)
01F0'   0B                              DEC     BC              ;DECREMENT DATA POINTER
01F1'   70                              LD      (HL),B
01F2'   2B                              DEC     HL
01F3'   71                              LD      (HL),C
01F4'   23                              INC     HL
01F5'   23                              INC     HL
01F6'   35                              DEC     (HL)            ;DECREMENT OFFSET
01F7'   FA 0201'                        JP      M,SF1ELSE       ;IF OFFSET >= 0 THEN
01FA'   02                              LD      (BC),A          ;  LOAD DATA
01FB'   7E                              LD      A,(HL)          ;  GET OFFSET
01FC'   69                              LD      L,C
01FD'   60                              LD      H,B
01FE'   C1                              POP     BC
01FF'   37                              SCF                     ;  SET CARRY
0200'   C9                              RET                     ;ELSE
0201'   34                      SF1ELSE: INC    (HL)            ;  INCREMENT OFFSET
0202'   2B                              DEC     HL
0203'   03                              INC     BC              ;  INCREMENT DATA POINTER
0204'   70                              LD      (HL),B
0205'   2B                              DEC     HL
0206'   71                              LD      (HL),C
0207'   2B                              DEC     HL
0208'   0B                              DEC     BC              ;  DECREMENT BYTE COUNT
```

```
0209'  70                    LD      (HL),B
020A'  2B                    DEC     HL
020B'  71                    LD      (HL),C
020C'  23                    INC     HL
020D'  23                    INC     HL
020E'  7E                    LD      A,(HL)
020F'  23                    INC     HL
0210'  66                    LD      H,(HL)
0211'  6F                    LD      L,A
0212'  C1                    POP     BC
0213'  01 0000               LD      BC,0
0216'  A7                    AND     A               ;  RESET CARRY
0217'  3E FF                 LD      A,0FFH
0219'  C9                    RET                     ;ENDIF
                             PAGE
```

```
                                ;------ LOAD SINGLE DATA AFTER LAST DATA ---------------BQADLA-------
                                                        ;DESCRIP: LOAD SINGLE DATA AFTER THE
                                                        ;         THE LAST DATA INTO DATA BUFFER.
                                                        ;         POINTER AND COUNTERS ARE UPDATED.
                                                        ;ENTRY:   DE - BUFFER-HEAD ADDRESS
                                                        ;         A  - DATA
                                                        ;EXIT:    HL -  DATA POINTER
                                                        ;         CARRY SET:       DATA LOADED
                                                        ;                          BC - BYTE COUNT
                                                        ;         CARRY RESET:     DATA NOT LOADED
                                                        ;                          BC - ZERO
                                                        ;DESTROY: F
                                                        ;
                                                        ;TIME:    274/328  T-CYCLES
021A'   D5                      BQADLA: PUSH    DE
021B'   21 0002                         LD      HL,2
021E'   19                              ADD     HL,DE
021F'   4E                              LD      C,(HL)
0220'   00                      I
0221'   46                              LD      B,(HL)
0222'   03                              INC     BC              ;INCREMENT BYTE COUNT
0223'   C5                              PUSH    BC
0224'   70                              LD      (HL),B
0225'   2B                              DEC     HL
0226'   71                              LD      (HL),C
0227'   23                              INC     HL
0228'   23                              INC     HL
0229'   5E                              LD      E,(HL)
022A'   23                              INC     HL
022B'   56                              LD      D,(HL)          ;GET DATA POINTER
022C'   EB                              EX      DE,HL
022D'   2B                              DEC     HL
022E'   09                              ADD     HL,BC           ;LOAD ADDRESS = DATA POINTER + BYTE COUNT
022F'   D1                              POP     DE
0230'   C1                              POP     BC
0231'   C5                              PUSH    BC
0232'   D5                              PUSH    DE
0233'   EB                              EX      DE,HL
0234'   21 0008                         LD      HL,8
0237'   09                              ADD     HL,BC
0238'   4E                              LD      C,(HL)
0239'   23                              INC     HL
023A'   46                              LD      B,(HL)
023B'   23                              INC     HL
023C'   23                              INC     HL
023D'   09                              ADD     HL,BC           ;LAST BUFFER ADDRESS = BUFFER POINTER
                                                                ;                    + BUFFER HEAD SIZE
                                                                ;                    + BUFFERSIZE
023E'   A7                              AND     A
023F'   ED 52                           SBC     HL,DE
0241'   F2 0253'                        JP      P,IL1ELSE       ;IF BUFFER OVERFLOW THEN
0244'   C1                              POP     BC
0245'   D1                              POP     DE
0246'   21 0002                         LD      HL,2
```

```
0249'  19                          ADD     HL,DE
024A'  0B                          DEC     BC              ;  DECREMENT BYTE COUNT
024B'  71                          LD      (HL),C
024C'  23                          INC     HL
024D'  70                          LD      (HL),B
024E'  01 0000                     LD      BC,0
0251'  A7                          AND     A               ;  RESET CARRY
0252'  C9                          RET                     ;ELSE
0253'  EB                 IL1ELSE: EX      DE,HL
0254'  77                          LD      (HL),A          ;  LOAD DATA
0255'  C1                          POP     BC
0256'  D1                          POP     DE
0257'  37                          SCF                     ;  SET CARRY
0258'  C9                          RET                     ;ENDIF
                                   PAGE
```

```
                                ;------LOAD TEXT STRING ----------------------------------------BQLDTX-------
                                                        ;DESCRIP: LOAD TEST STRING INTO DATA BUFFER
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        HL - STRING ADDRESS
                                                        ;        BC - STRING LENGTH
                                                        ;EXIT:
                                                        ;        CARRY SET:       TEXT INSERTED
                                                        ;                    HL - POINTER TO FIRST FREE CHARAC-
                                                        ;                         TER IN BUFFER
                                                        ;        CARRY RESET:     BUFFER OVERRUN
                                                        ;                    HL - POINTER TO NEXT CHARACTER IN
                                                        ;                         STRING
                                                        ;                    BC - REMAINING CHARACTRERS
                                                        ;DESTROY: F
                                                        ;TIME:   72+SCOTEX TCYCLES
0259'   E5                      BQLDTX: PUSH    HL
025A'   21 0002                         LD      HL,2
025D'   19                              ADD     HL,DE
025E'   71                              LD      (HL),C
025F'   23                              INC     HL
0260'   70                              LD      (HL),B          ;LOAD BYTE COUNT
0261'   E1                              POP     HL
0262'   C3 0279'                        JP      SCOTEX          ;COPY TEXT TO DATA BUFFER
                                ;------ADD TEXT ROUTINE.----------------------------------------BQADTX---------
                                                        ;DESCRIP: ADD TEXT TO LAST DATA
                                                        ;        INTO DATA BUFFER
                                                        ;ENTRY:  DE - BUFFER-HEAD ADDRESS
                                                        ;        HL - STRING ADDRESS
                                                        ;        BC - STRING LENGTH
                                                        ;EXIT:
                                                        ;        CARRY SET:       TEXT INSERTED
                                                        ;                    HL - POINTER TO FIRST FREE CHARAC-
                                                        ;                         TER IN BUFFER
                                                        ;        CARRY RESET:     BUFFER OVERRUN
                                                        ;                    HL - POINTER TO NEXT CHARACTER IN
                                                        ;                         STRING
                                                        ;                    BC - REMAINING CHARACTRERS
                                                        ;DESTROY: F
                                                        ;TIME:   132+SCOTEX TCYCLES
0265'   D5                      BQADTX: PUSH    DE
0266'   E5                              PUSH    HL
0267'   21 0002                         LD      HL,2
026A'   19                              ADD     HL,DE
026B'   5E                              LD      E,(HL)
026C'   23                              INC     HL
026D'   56                              LD      D,(HL)          ;GET CURRENT BYTE COUNT
026E'   EB                              EX      DE,HL
026F'   09                              ADD     HL,BC           ;ADD STRING BYTE COUNT
0270'   EB                              EX      DE,HL
0271'   72                              LD      (HL),D
0272'   2B                              DEC     HL
0273'   73                              LD      (HL),E          ;LOAD BYTE COUNT
0274'   E1                              POP     HL
0275'   D1                              POP     DE
```

```
0276'   C3 0279'          JP      SCOTEX          ;COPY STRING TO DATA BUFFER
                          PAGE
```

```
                                ;------ COPY TEXT STRING INTO BUFFER ------------------------------SCOTEX-------
                                                        ;DESCRIP: COPY TEXT STRING INTO TOP
                                                        ;         OF THE DATA BUFFER
                                                        ;ENTRY:   DE - BUFFER-HEAD ADDRESS
                                                        ;         HL - STRING ADDRESS
                                                        ;         BC - STRING LENGTH
                                                        ;EXIT:    CARRY SET:       TEXT INSERTED
                                                        ;                          HL - POINTER TO FIRST FREE
                                                        ;                               CHARACTER IN BUFFER
                                                        ;         CARRY RESET:     BUFFER OVERRUN
                                                        ;                          HL - NEXT CHARACTER ADDRESS
                                                        ;                               IN STRING
                                                        ;                          BC - REMAINING CHARACTERS
                                                        ;DESTROY: F(,BC,HL)
                                                        ;TIME:    319/548+21*COPIED DATA  TCYCLES
0279'   D5                      SCOTEX: PUSH    DE
027A'   DD E3                           EX      (SP),IX
027C'   E5                              PUSH    HL      ;STA
027D'   C5                              PUSH    BC      ;STBC
027E'   21 0008                         LD      HL,8
0281'   19                              ADD     HL,DE
0282'   4E                              LD      C,(HL)
0283'   23                              INC     HL
0284'   46                              LD      B,(HL)          ;GET BUFFER SIZE
0285'   23                              INC     HL
0286'   23                              INC     HL
0287'   23                              INC     HL
0288'   09                              ADD     HL,BC           ;LAST BUFFER ADDRESS = BUFFER POINTER
                                                                ;                    + BUFFER HEAD SIZE
                                                                ;                    + BUFFERSIZE
0289'   EB                              EX      DE,HL
028A'   23                              INC     HL
028B'   23                              INC     HL
028C'   4E                              LD      C,(HL)
028D'   23                              INC     HL
028E'   46                              LD      B,(HL)          ;GET BYTE COUNT
028F'   23                              INC     HL
0290'   7E                              LD      A,(HL)
0291'   23                              INC     HL
0292'   66                              LD      H,(HL)          ;GET DATA POINTER
0293'   6F                              LD      L,A
0294'   09                              ADD     HL,BC           ;LAST DATA  ADDRESS = DATA POINTER + BYTE COUNT
0295'   EB                              EX      DE,HL
0296'   A7                              AND     A
0297'   ED 52                           SBC     HL,DE
0299'   F2 02C8'                        JP      P,CO1ELSE       ;IF BUFFER OVER FLOW THEN
029C'   E5                              PUSH    HL      ;-OVF
029D'   09                              ADD     HL,BC
029E'   DD 75 02                        LD      (IX+2),L
02A1'   DD 74 03                        LD      (IX+3),H        ;  BYTE COUNT = BYTE COUNT - OVERFLOW
02A4'   E1                              POP     HL      ;-OVF
02A5'   C1                              POP     BC      ;STBC
02A6'   E5                              PUSH    HL      ;-OVF
02A7'   09                              ADD     HL,BC
```

```
02A8'   4D                          LD      C,L
02A9'   44                          LD      B,H             ;  STRINGL. = STRINGL. - OVERFLOW
02AA'   E1                          POP     HL      ;-OVF
02AB'   E5                          PUSH    HL      ;-OVF
02AC'   19                          ADD     HL,DE           ;  LAST BUF. ADR. = LAST DATA ADR. - OVER FLOW
02AD'   A7                          AND     A
02AE'   ED 42                       SBC     HL,BC           ;  FIRST BUF. ADR. = LAST BUF. ADR. - BYTE COUNT
02B0'   EB                          EX      DE,HL
02B1'   E1                          POP     HL      ;-OVF
02B2'   E3                          EX      (SP),HL ;STA,-OVF
02B3'   79                          LD      A,C             ;  IF STRINGL. <> 0 THEN
02B4'   B0                          OR      B
02B5'   28 02                       JR      Z,CO11FI
02B7'   ED B0                       LDIR                    ;    COPY STRING TO DATA BUFFER
02B9'                   CO11FI:                             ;  ENDIF
02B9'   C1                          POP     BC      ;-OVF
02BA'   EB                          EX      DE,HL
02BB'   21 0000                     LD      HL,0
02BE'   A7                          AND     A
02BF'   ED 42                       SBC     HL,BC           ;  GET REMAINING NO OF DATA
02C1'   4D                          LD      C,L
02C2'   44                          LD      B,H
02C3'   EB                          EX      DE,HL
02C4'   A7                          AND     A               ;  RESET CARRY
02C5'   C3 02D7'                    JP      CO1FI
02C8'   C1              CO1ELSE:    POP     BC      ;STBC   ;ELSE
02C9'   EB                          EX      DE,HL
02CA'   A7                          AND     A
02CB'   ED 42                       SBC     HL,BC           ;  FIRST BUF. ADR. = LAST DATA ADR.
                                                            ;                    - STRING BYTE COUNT
02CD'   EB                          EX      DE,HL
02CE'   E1                          POP     HL
02CF'   79                          LD      A,C
02D0'   B0                          OR      B
02D1'   28 03                       JR      Z,CO11EL
02D3'   ED B0                       LDIR                    ;  COPY STRING TO BUFFER
02D5'   EB                          EX      DE,HL
02D6'   37              CO11EL:     SCF                     ;  SET CARRY
02D7'                   CO1FI:                              ;ENDIF
02D7'   DD E3                       EX      (SP),IX
02D9'   D1                          POP     DE              ;RESTORE BUFFER-HEAD ADDRESS
02DA'   C9                          RET                     ;RETURN
                                    PAGE
```

```
                                ;-------INSERT TEXT ----------------------------------------------BQPOTX--------
                                                        ;DESCRIP: INSERT TEXT STRING AS DATA BUFFER
                                                        ;         INTO BUFFER-HEAD.
                                                        ;         THE DATA BUFFER IS NOT USED.
                                                        ;ENTRY:   DE - BUFFER-HEAD ADDRESS
                                                        ;         HL - STRING ADDRESS
                                                        ;         BC - STRING LENGTH
                                                        ;EXIT:
                                                        ;DESTROY: NON
                                                        ;TIME:    97 TCYCLES
02DB'   EB                      BQPOTX: EX      DE,HL
02DC'   E5                              PUSH    HL
02DD'   23                              INC     HL
02DE'   23                              INC     HL
02DF'   71                              LD      (HL),C
02E0'   23                              INC     HL
02E1'   70                              LD      (HL),B          ;LOAD BYTE COUNT
02E2'   23                              INC     HL
02E3'   73                              LD      (HL),E
02E4'   23                              INC     HL
02E5'   72                              LD      (HL),D          ;LOAD STRING ADDRESS
02E6'   E1                              POP     HL
02E7'   EB                              EX      DE,HL
02E8'   C9                              RET
                                        END
```

Macros:

Symbols:

BHSIZE	000E	BQADFI	01DFI'	BQADLA	021AI'	BQADTX	0265I'
BQAJFI	01A0I'	BQAJLA	01C5I'	BQCRE	00D3I'	BQDEQ	0000I'
BQDEQ1	0018'	BQENQ	001BI'	BQFIFI	0180I'	BQFILA	018FI'
BQGET	00A2I'	BQLDBC	013BI'	BQLDNA	015CI'	BQLDRQ	014AI'
BQLDTX	0259I'	BQMOV	0063I'	BQPOTX	02DBI'	BQRDNA	0168I'
BQRDRQ	0153I'	BQRET	0059I'	BQSEND	004EI'	BQSET	0111I'
CO11EL	02D6'	CO11FI	02B9'	CO1ELS	02C8'	CO1FI	02D7'
COPY	0096'	ENQ1	003B'	ENQ2	002E'	G1FO	00BE'
G1LOOP	00AC'	G1NEXT	00BB'	G1NOFO	00CB'	IL1ELS	0253'
M1FI	007A'	SCOTEX	0279'	SETSTA	0174I'	SF1ELS	0201'
SRESTA	017AI'	XERROR	0076*				

No Fatal error(s)

```
title xproxi
subttl xnet ingoing protocol routine
page
```

```
;*****************************************************************
;
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX     XX     XXXX         X    XXX  X X X  XXXX     X
;   XX XX    XX    XX XX         X X        X  XX  X        X
;   XX  XX   XX   XX  XX         X   X       X   X  XXXXX    X
;   XX   XX  XX  XX   XX
;   XX    XX XX XX    XX
;   XX     XXXXXX     XX
;   XXXXXXXXXXXXXXXXXX         CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXXX         PROGRAMMER:     PEON
;   XX     XXXXXX     XX
;   XX    XX XX XX    XX       DATE:           830207
;   XX   XX  XX  XX   XX
;   XX XX    XX    XX XX
;   XXXX     XX     XXXX
;   XXXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ***********************************************
;               *
;               *  MODULE NAME: XPROXI
;               *
;               ***********************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   >INGOING PROTOCOL ROUTINE<
;               ACTIONS BASED ON STATE/EVENT-TABLES
;
;
;-----------------------------------------------------------------
C               INCLUDE B:DEVEQU.SRC

;***** public's ***********************************************

        public  INPRO
        public  BPINC,CCINC

;***** EXTERNALS ***********************************************

        extrn   BCNT,FEFIF,PRODEI
        extrn   SIGNAL
        extrn   XDEQIF,XENQIF,FPAQH
        extrn   ASTTDI,HOSTSIG
        extrn   SAD,FDSCR

;***** EQUALS **************************************************
```

```
000D                    STATUS  EQU     13
000C                    INCTL   EQU     12
0000                    OWNMAP  EQU     0

0005                    RXNBPL  EQU     5
0007                    RXNFAL  EQU     7
0009                    RXNREL  EQU     9

0001                    ILAYID  EQU     1

000B                    TVALTR  equ     11
000E                    BHSZ    equ     14
00FF                    ABRES   EQU     0FFH

                        ;*****************************************************************
                                PAGE
```

BOFUNO 7C03
BNRTID 7C07
BLKADR

```
                                ;-----------------------------------------------
                                ;          PROGRAM START
                                ;-----------------------------------------------
0000'                                   cseg

                                ; MAIN LINE


0000'   2A 0000*                INPRO:  LD      HL,(PRODEI)
0003'   3E 0E                           LD      A,STATUS+1
0005'   85                              ADD     A,L
0006'   6F                              LD      L,A
0007'   56                              LD      D,(HL)          ;INC.CTL. TO B
0008'   2D                              DEC     L
0009'   5E                              LD      E,(HL)          ;STATUS TO DE
000A'   2D                              DEC     L               ;HL = ADR. OF B12 IN PD.
000B'   46                              LD      B,(HL)

000C'   78                              LD      A,B
000D'   E6 C0                           AND     0C0H
000F'   07                              RLCA
0010'   07                              RLCA                    ;HUNT,PROC. IN A,BIT1,0
0011'   47                              LD      B,A
0012'   7A                              LD      A,D
0013'   E6 C3                           AND     0C3H
0015'   80                              ADD     A,B
0016'   FE 01                           CP      01H
0018'   C2 0049'                        JP      NZ,STAEV

001B'   79                              LD      A,C             ;C CONTAINS SEQ.NO.,BCNT
001C'   E6 1F                           AND     1FH
001E'   C8                              RET     Z               ;NO DATA IN FRAME

001F'   79                              LD      A,C
0020'   E6 E0                           AND     0E0H            ;A := SEQ. NO.
0022'   47                              LD      B,A

0023'   7B                              LD      A,E
0024'   E6 E0                           AND     0E0H            ;A := OWN SEQ. NO.

0026'   90                              SUB     B
0027'   20 20                           JR      NZ,STAEV        ;SEQ. ERROR

0029'   3E 20                           LD      A,20H
002B'   83                              ADD     A,E             ; SEQ.CNT. := SEQ.CNT. + 1
002C'   2C                              INC     L
002D'   77                              LD      (HL),A

002E'   7D                              LD      A,L
002F'   C6 F5                           ADD     A,-11
0031'   6F                              LD      L,A
0032'   CD 0000*                        CALL    FPAQH
```

```
0035'   2C                          INC     L
0036'   2C                          INC     L
0037'   5E                          LD      E,(HL)
0038'   2C                          INC     L
0039'   56                          LD      D,(HL)
003A'   67                          LD      H,A
003B'   2E 00                       LD      L,0
003D'   19                          ADD     HL,DE
003E'   EB                          EX      DE,HL           ;ADR. OF IE BUF IN DE

003F'   47                          LD      B,A
0040'   79                          LD      A,C
0041'   E6 1F                       AND     1FH             ;BCNT IN A

0043'   CD 0361'                    CALL    BUFTR           ; "BUFTR"

0046'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

0048'   C9                          RET

                            ;*******************************************************************
                                    PAGE
```

```
                                ;-----------------------------------------------------------
                                ; LOAD OF EVENT POINTER
                                ;-----------------------------------------------------------

0049'   46                      STAEV:  LD      B,(HL)          ;INCOMING CTRL. TO B REG.
                                                                ;COMPARE SEQ. NUMBERS
004A'   79                              LD      A,C
004B'   E6 1F                           AND     1FH             ;A := BCNT
004D'   32 0000*                        LD      (BCNT),A
0050'   79                              LD      A,C
0051'   E6 E0                           AND     0E0H
0053'   4F                              LD      C,A             ;C := REC. SEQ. NO.
0054'   7B                              LD      A,E
0055'   E6 E0                           AND     0E0H            ;A := OWN SEQ. NO.
0057'   91                              SUB     C

0058'   CB 98                           RES     3,B
005A'   28 02                           JR      Z,COMPH         ;REC. SEQ.CNT. = OWN SEQ.CNT.(ÜOK)
005C'   CB D8                           SET     3,B             ;SEQ. ERROR

005E'   78                      COMPH:  LD      A,B
005F'   E6 04                           AND     04H
0061'   4F                              LD      C,A             ; C := REC. PHASE
0062'   CB 9A                           RES     3,D
0064'   28 02                           JR      Z,CP            ;STORE REC. PHASE TEMPORARY
0066'   CB DA                           SET     3,D

0068'   7B                      CP:     LD      A,E
0069'   E6 10                           AND     10H             ;A := OWN PHASE
006B'   1F                              RRA
006C'   1F                              RRA
006D'   81                              ADD     A,C
006E'   CB 57                           BIT     2,A
0070'   CB 90                           RES     2,B             ;REC. PHASE = OWN PHASE
0072'   28 02                           JR      Z,STUS
0074'   CB D0                           SET     2,B             ;OWN PH. # REC PH. Ü Z=0

0076'   7A                      STUS:   LD      A,D
0077'   E6 C0                           AND     0C0H
0079'   1F                               RRA
007A'   1F                               RRA
007B'   4F                               LD      C,A             ;C := INCOMING STATUS,IN BIT5,4

007C'   78                              LD      A,B
007D'   E6 CF                           AND     0CFH            ;CLEAR OLD STATUS BIT
007F'   81                              ADD     A,C
0080'   47                              LD      B,A             ;B := UPDATED EVENT BYTE

                                ;*************************************************************
                                        PAGE
```

```
                                ;-----------------------------------------------
                                ; LOAD OF EVENT CODE AND JUMP TO CURRENT ACTION.
                                ;-----------------------------------------------

0081'   21 00DF'                        LD      HL,EVTAB
0084'   78                              LD      A,B
0085'   E6 3F                           AND     3FH
0087'   85                              ADD     A,L
0088'   6F                              LD      L,A
0089'   D2 008D'                        JP      NC,EVCO
008C'   24                              INC     H

008D'   7E                      EVCO:   LD      A,(HL)          ;EVENT CODE IN A

008E'   21 011F'                        LD      HL,ACTAB
0091'   4F                              LD      C,A
0092'   78                              LD      A,B
0093'   E6 C0                           AND     0C0H
0095'   07                              RLCA
0096'   07                              RLCA                    ;OLD STATE IN A BIT 1,0

0097'   81                              ADD     A,C
0098'   85                              ADD     A,L
0099'   6F                              LD      L,A
009A'   D2 009E'                        JP      NC,ACCO
009D'   24                              INC     H

009E'   7E                      ACCO:   LD      A,(HL)
009F'   4F                              LD      C,A             ;NEW STATE,ACTION CODE IN C

00A0'   2A 0000*                        LD      HL,(PRODEI)
00A3'   3E 0C                           LD      A,INCTL
00A5'   85                              ADD     A,L
00A6'   6F                              LD      L,A
00A7'   71                              LD      (HL),C          ;CHANGE OF STATE

                                ; JUMP TO CURRENT ACTION.

00A8'   79                              LD      A,C
00A9'   E6 3F                           AND     3FH             ;A,BIT 5-2 := ACTION CODE
00AB'   21 00B4'                        LD      HL,PRSTA
00AE'   85                              ADD     A,L
00AF'   6F                              LD      L,A
00B0'   30 01                           JR      NC,JPACT
00B2'   24                              INC     H               ;ADJUST FOR CARRY FROM L REG.
00B3'   E9                      JPACT:  JP      (HL)            ;JUMP TO CURRENT ACTION

00B4'   C9                      PRSTA:  RET                     ;ACT.0 ü RETURN, A = 0
00B5'   00                              NOP
00B6'   00                              NOP
00B7'   00                              NOP
00B8'   C3 014B'                        JP      ACT1
00BB'   00                              NOP
00BC'   C3 0164'                        JP      ACT2
```

```
00BF'   00                          NOP
00C0'   C3 0178'                    JP      ACT3
00C3'   00                          NOP
00C4'   C3 019F'                    JP      ACT4
00C7'   00                          NOP
00C8'   C3 01AC'                    JP      ACT5
00CB'   00                          NOP
00CC'   C3 0224'                    JP      ACT6
00CF'   00                          NOP
00D0'   C3 022B'                    JP      ACT7
00D3'   00                          NOP
00D4'   C3 025B'                    JP      ACT8
00D7'   00                          NOP
00D8'   C3 0274'                    JP      ACT9
00DB'   00                          NOP
00DC'   C3 0295'                    JP      ACT10
                        ;*********************************************************************
                                    PAGE
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```
00DF'   00                  EVTAB:  DEFB    00H
00E0'   00                          DEFB    00H
00E1'   00                          DEFB    00H
00E2'   00                          DEFB    00H
00E3'   00                          DEFB    00H
00E4'   00                          DEFB    00H
00E5'   00                          DEFB    00H
00E6'   00                          DEFB    00H
00E7'   04                  E1:     DEFB    04H
00E8'   04                          DEFB    04H
00E9'   04                          DEFB    04H
00EA'   04                          DEFB    04H
00EB'   04                          DEFB    04H
00EC'   04                          DEFB    04H
00ED'   04                          DEFB    04H
00EE'   04                          DEFB    04H
00EF'   20                  E2:     DEFB    20H
00F0'   08                          DEFB    08H
00F1'   18                          DEFB    18H
00F2'   10                          DEFB    10H
00F3'   20                          DEFB    20H
00F4'   0C                          DEFB    0CH
00F5'   1C                          DEFB    1CH
00F6'   14                          DEFB    14H
00F7'   20                  E3:     DEFB    20H
00F8'   08                          DEFB    08H
00F9'   1C                          DEFB    1CH
00FA'   10                          DEFB    10H
00FB'   20                          DEFB    20H
00FC'   0C                          DEFB    0CH
00FD'   1C                          DEFB    1CH
00FE'   14                          DEFB    14H
00FF'   28                  E4:     DEFB    28H
0100'   28                          DEFB    28H
0101'   28                          DEFB    28H
0102'   28                          DEFB    28H
0103'   28                          DEFB    28H
0104'   28                          DEFB    28H
0105'   28                          DEFB    28H
0106'   28                          DEFB    28H
0107'   28                  E5:     DEFB    28H
0108'   28                          DEFB    28H
0109'   28                          DEFB    28H
010A'   28                          DEFB    28H
010B'   28                          DEFB    28H
010C'   28                          DEFB    28H
010D'   28                          DEFB    28H
010E'   28                          DEFB    28H
010F'   24                  E6:     DEFB    24H
0110'   24                          DEFB    24H
0111'   24                          DEFB    24H
0112'   24                          DEFB    24H
0113'   24                          DEFB    24H
0114'   24                          DEFB    24H
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0115'   24                          DEFB    24H
0116'   24                          DEFB    24H
0117'   24                  E7:     DEFB    24H
0118'   24                          DEFB    24H
0119'   24                          DEFB    24H
011A'   24                          DEFB    24H
011B'   24                          DEFB    24H
011C'   24                          DEFB    24H
011D'   24                          DEFB    24H
011E'   24                          DEFB    24H

011F'   80                  ACTAB:  DEFB     80H
0120'   40                          DEFB    40H
0121'   80                          DEFB    80H
0122'   C0                          DEFB    0C0H
0123'   80                          DEFB    80H
0124'   C4                          DEFB    0C4H
0125'   80                          DEFB    80H
0126'   C0                          DEFB    0C0H
0127'   80                  A1:     DEFB     80H
0128'   68                          DEFB    68H
0129'   80                          DEFB    80H
012A'   5C                          DEFB    5CH
012B'   80                          DEFB    80H
012C'   D0                          DEFB    0D0H
012D'   80                          DEFB    80H
012E'   D8                          DEFB    0D8H
012F'   80                  A2:     DEFB     80H
0130'   D0                          DEFB    0D0H
0131'   80                          DEFB    80H
0132'   E0                          DEFB    0E0H
0133'   80                          DEFB    80H
0134'   C4                          DEFB    0C4H
0135'   80                          DEFB    80H
0136'   D8                          DEFB    0D8H
0137'   80                  A3:     DEFB     80H
0138'   D4                          DEFB    0D4H
0139'   80                          DEFB    80H
013A'   D0                          DEFB    0D0H
013B'   80                          DEFB    80H
013C'   C4                          DEFB    0C4H
013D'   80                          DEFB    80H
013E'   C0                          DEFB    0C0H
013F'   80                  A4:     DEFB     80H
0140'   CC                          DEFB    0CCH
0141'   80                          DEFB    80H
0142'   CC                          DEFB    0CCH
0143'   80                          DEFB    80H
0144'   E4                          DEFB    0E4H
0145'   80                          DEFB    80H
0146'   E4                          DEFB    0E4H
0147'   80                  A5:     DEFB     80H
0148'   40                          DEFB    40H,
0149'   80                          DEFB    80H
014A'   C0                          DEFB    0C0H
```

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;*****************************************************************************
        PAGE
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```
                                ;*********************************************
                                ;********** ACTIONS MP2-INCOMING ***************
                                ;*********************************************

                                ;---------------------------------------------
                                ; ACTION 1 : SEQ. ERROR
                                ;---------------------------------------------
014B'   2A 0000*                ACT1:   LD      HL,(PRODEI)
014E'   3E 0C                           LD      A,INCTL         ;INCTL = 12
0150'   85                              ADD     A,L
0151'   6F                              LD      L,A

0152'   3A 0000*                        LD      A,(BCNT)
0155'   E6 1F                           AND     1FH
0157'   20 02                           JR      NZ,DATA1        ;FRAME CONTAINS DATA

0159'   70                              LD      (HL),B
                                                                ;NO DATA IN FRAME
                                                                ;NEW STATE := OLD STATE U HUNT=0
015A'   C9                              RET

015B'   2C                      DATA1:  INC     L
015C'   2C                              INC     L
015D'   CD 02B4'                        CALL    NAK             ; "NAK"

0160'   CD 02D3'                        CALL    RESBF           ; "RESBF"

0163'   C9                              RET                     ;RETURN.

                                ;*********************************************************************
                                        PAGE
```

```
                                ;-----------------------------------------------
                                ; ACTION 2 : NO CONTROL, "NAK"
                                ;-----------------------------------------------

0164'   3A 0000*                ACT2:   LD      A,(BCNT)
0167'   E6 1F                           AND     1FH
0169'   C8                              RET     Z               ;NO DATA, RETURN

016A'   2A 0000*                DATA2:  LD      HL,(PRODEI)
016D'   3E 0E                           LD      A,14
016F'   85                              ADD     A,L
0170'   6F                              LD      L,A
0171'   CB 43                           BIT     0,E
0173'   C8                              RET     Z               ; IF INPUT PERMIT = 0 THEN RETURN

0174'   CD 02B4'                        CALL    NAK             ; "NAK"

0177'   C9                              RET
                                ;*****************************************************************
                                        PAGE
```

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                                ;-----------------------------------------
                                ; ACTION 3 : RESET
                                ;-----------------------------------------

0178'   2A 0000*        ACT3:   LD      HL,(PRODEI)
017B'   36 FF                   LD      (HL),0FFH       ;STOP TIMER

017D'   CD 02D3'        RES3:   CALL    RESBF           ; "RESBF"

0180'   CB 5A                   BIT     3,D             ;OWN PHASE := REC PHASE
0182'   CB E3                   SET     4,E
0184'   20 02                   JR      NZ,PHAS
0186'   CB A3                   RES     4,E

0188'   2A 0000*        PHAS:   LD      HL,(PRODEI)
018B'   3E 0D                   LD      A,STATUS
018D'   85                      ADD     A,L
018E'   6F                      LD      L,A

018F'   73                      LD      (HL),E          ; STORE OWN PHASE IN B13
0190'   2C                      INC     L               ;HL = ADR. OF B14

0191'   3A 0000*                LD      A,(BCNT)
0194'   E6 1F                   AND     1FH             ;SET Z FLAG
0196'   28 03                   JR      Z,ACK3

0198'   C3 025B'                JP      ACT8            ;GOTO ACTION 8 = SINGLE FRAME

019B'   CD 029D'        ACK3:   CALL    ACK             ;NO DATA, "ACK"

019E'   C9                      RET

                        ;*********************************************************************
                                PAGE
```

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                                ;-----------------------------------------------
                                ; ACTION 4 : UNEXSPECTED START OF PACKET
                                ;-----------------------------------------------

019F'   2A 0000*                ACT4:   LD      HL,(PRODEI)
01A2'   3E 0C                           LD      A,INCTL
01A4'   85                              ADD     A,L
01A5'   6F                              LD      L,A
01A6'   CB 43                           BIT     0,E
01A8'   C8                              RET     Z               ; IF INPUT PERMIT = 0 THEN RETURN

01A9'   C3 015B'                        JP      DATA1           ;PART OF ACTION1 ü
                                                                ;"NAK", "RESBF"

                                ;*****************************************************************
                                        PAGE
```

```
                                ;-----------------------------------------------
                                ; ACTION 5 : END OF PACKET
                                ;-----------------------------------------------

01AC'  2A 0000*                 ACT5:   LD      HL,(PRODEI)
01AF'  36 FF                            LD      (HL),0FFH       ;STOP RECEIVE TIMER

01B1'  3E 0E                    END5:   LD      A,14
01B3'  85                               ADD     A,L
01B4'  6F                               LD      L,A
01B5'  CB B2                            RES     6,D             ;STATUS := 1, STORED IN PD BY
01B7'  CB EA                            SET     5,D             ;                "ACK"
01B9'  CD 029D'                         CALL    ACK             ; "ACK"

01BC'  7D                               LD      A,L
01BD'  C6 F4                            ADD     A,-12
01BF'  6F                               LD      L,A
01C0'  CD 0000*                         CALL    FPAQH
01C3'  F5                               PUSH    AF
01C4'  E5                               PUSH    HL
01C5'  2C                               INC     L
01C6'  2C                               INC     L
01C7'  5E                               LD      E,(HL)
01C8'  2C                               INC     L               ;ADR. OF FIRST EMPTY LINK IN DE
01C9'  56                               LD      D,(HL)
01CA'  67                               LD      H,A
01CB'  2E 00                            LD      L,0
01CD'  19                               ADD     HL,DE
01CE'  EB                               EX      DE,HL

01CF'  47                               LD      B,A
01D0'  3A 0000*                         LD      A,(BCNT)

01D3'  CD 0361'                         CALL    BUFTR           ; "BUFTR"

01D6'  E1                               POP     HL
01D7'  38 47                            JR      C,AC5EX1        ; IF PACKET TOO BIG THEN RETURN

01D9'  F1                               POP     AF
01DA'  F5                       MOVBH:  PUSH    AF
01DB'  E5                               PUSH    HL
01DC'  CD 0000*                         CALL    XDEQIF          ;MOVE FULL BUFFER FROM EMPTY-
01DF'  E1                               POP     HL
01E0'  30 3E                            JR      NC,AC5EX1       ;QUEUE TO INC. PACKET QUEUE

01E2'  E5                               PUSH    HL
01E3'  0E 05                            LD      C,RXNBPL
01E5'  2A 0000*                         LD      HL,(ASTTDI)
01E8'  CD 03D5'                         CALL    BPINC

01EB'  EB                               EX      DE,HL           ;       (* HL=M_BH+2 *)
01EC'  23                               INC     HL
01ED'  23                               INC     HL              ;       (* HL=M_BH+4 *)
                                                                ;
```

```
01EE'   4E                          LD      C,(HL)
01EF'   23                          INC     HL              ;       (* HL=M_BH+5 *)
01F0'   46                          LD      B,(HL)          ;       (* BC=BYTECOUNT *)
                                                            ;
01F1'   23                          INC     HL
01F2'   5E                          LD      E,(HL)
01F3'   23                          INC     HL              ;       (* HL=M_BH+7 *)
01F4'   56                          LD      D,(HL)
01F5'   EB                          EX      DE,HL           ;       (* HL= M_BH.BUFFERADR *)
                                                            ;       (* DE=M_BH+7 *)
01F6'   A7                          AND     A               ;       RESET CARRY FLAG;
01F7'   ED 42                       SBC     HL,BC
                                                            ;
01F9'   EB                          EX      DE,HL           ;       (* DE=M_BH.BUFFERADR - M_BH.BYTECOUNT *)
                                                            ;       (* HL=M_BH+7 *)
01FA'   72                          LD      (HL),D
01FB'   2B                          DEC     HL              ;       (* HL=M_BH+6 *)
01FC'   73                          LD      (HL),E          ;       M_BH.BUFFERADR :=
                                                            ;          M_BH.BUFFERADR - BYTECOUNT;
01FD'   01 FFFC                     LD      BC,0FFFCH
0200'   09                          ADD     HL,BC           ;       (* HL=M_BH+2 *)
                                                            ;       SET CARRY FLAG
0201'   EB                          EX      DE,HL           ;       (* DE=M_BH+2 *)

0202'   E1                          POP     HL

0203'   7D                          LD      A,L
0204'   C6 10                       ADD     A,10H
0206'   6F                          LD      L,A
0207'   F1                          POP     AF
0208'   CD 0000*                    CALL    XENQIF

020B'   21 0000*                    LD      HL,HOSTSIG
020E'   CD 0000*                    CALL    SIGNAL
0211'   FB                          ei                      ;@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
0212'   FD 7E 01                   LD      A,(IY+ILAYID)
0215'   21 000D*                    LD      HL,SAD+2+TVALTR
0218'   CD 0000*                    CALL    FDSCR
021B'   36 FF                       LD      (HL),ABRES      ;RESET AUTOBYE-TIMER

021D'   3E 00               AC5EX:  LD      A,OWNMAP
                            ;       OUT     (MAP),A

021F'   C9                          RET

0220'   F1                  AC5EX1: POP     AF
0221'   C3 021D'                    JP      AC5EX

                            ;*******************************************************************
                                    PAGE
```

```
                        ;-----------------------------------------------
                        ; ACTION 6 : PHASE ERROR, START
                        ;-----------------------------------------------

0224'   AF              ACT6:   XOR     A
0225'   32 0000*                LD      (BCNT),A        ;REC. BCNT. := 0
0228'   C3 017D'                JP      RES3            ;RESET WITH NO DATA

                        ;*******************************************************************
                                PAGE
```

```
                                ;-----------------------------------------------
                                ;ACTION 7 : START OF PACKET
                                ;-----------------------------------------------

022B'   2A 0000*                ACT7:   LD      HL,(PRODEI)
022E'   2C                              INC     L
022F'   7E                              LD      A,(HL)
0230'   2D                              DEC     L
                                ;       LD      (HL),A          ;INIT. REC. TIMER

0231'   3E 1F                           LD      A,1FH
0233'   A3                              AND     E
0234'   C6 20                           ADD     A,20H
0236'   5F                              LD      E,A
0237'   3E 0D                           LD      A,13
0239'   85                              ADD     A,L
023A'   6F                              LD      L,A
023B'   73                              LD      (HL),E          ;OWN SEQ. NO := 1

023C'   CD 030E'                        CALL    NEWBF           ; "NEWBF"
023F'   C8                              RET     Z

0240'   7D                              LD      A,L             ;FROM "NEWBF" HL CONTAINS
0241'   C6 F6                           ADD     A,-10           ;ADR. OF B12 IN PD.
0243'   6F                              LD      L,A
0244'   CD 0000*                        CALL    FPAQH
0247'   2C                              INC     L
0248'   2C                              INC     L
0249'   5E                              LD      E,(HL)
024A'   2C                              INC     L               ;EMPTY LINK ADR. IN DE
024B'   56                              LD      D,(HL)
024C'   67                              LD      H,A
024D'   2E 00                           LD      L,0
024F'   19                              ADD     HL,DE
0250'   EB                              EX      DE,HL

0251'   47                              LD      B,A
0252'   3A 0000*                        LD      A,(BCNT)        ;BCNT IN A.

0255'   CD 0361'                        CALL    BUFTR           ; "BUFTR"

0258'   3E 00                           LD      A,OWNMAP
                                ;       OUT     (MAP),A

025A'   C9                              RET

                                ;*******************************************************************
                                        PAGE
```

```
                                ;-----------------------------------------------
                                ; ACTION 8 : SINGLE FRAME PACKET
                                ;-----------------------------------------------

025B'   CD 030E'                ACT8:   CALL    NEWBF           ; "NEWBF"
025E'   C8                              RET     Z               ; IF NO FREE BUFFER THEN RETURN

025F'   2A 0000*                        LD      HL,(PRODEI)
0262'   3A 0000*                        LD      A,(BCNT)
0265'   E6 1F                           AND     1FH             ; IF NO CTL.PACKET REC. THEN
0267'   FE 11                           CP      17
0269'   FA 01B1'                        JP      M,END5          ; GOTO ACTION 5 (NO STOP OF TIMER)

026C'   7D                              LD      A,L
026D'   C6 0E                           ADD     A,14
026F'   6F                              LD      L,A

0270'   CD 029D'                        CALL    ACK             ;       "ACK"

0273'   C9                              RET                     ;       RETURN
                                                                ; END

                                ;*****************************************************************
                                        PAGE
```

```
                                ;-----------------------------------------------
                                ; ACTION 9 : TIME OUT
                                ;-----------------------------------------------

0274'   2A 0000*                ACT9:   LD      HL,(PRODEI)
0277'   3E 02                           LD      A,2
0279'   85                              ADD     A,L
027A'   6F                              LD      L,A
027B'   CD 0000*                        CALL    FPAQH
027E'   57                              LD      D,A
027F'   2C                              INC     L
0280'   7E                              LD      A,(HL)
0281'   A7                              AND     A

0282'   3E 00                           LD      A,OWNMAP
                                ;       OUT     (MAP),A

0284'   C8                              RET     Z               ; IF NO BUFFER THEN RETURN

0285'   CD 02D3'                        CALL    RESBF           ; "RESBF"

0288'   2A 0000*                        LD      HL,(PRODEI)
028B'   3E 02                           LD      A,2
028D'   85                              ADD     A,L
028E'   6F                              LD      L,A
028F'   CD 0000*                        CALL    FPAQH

0292'   C3 01DA'                        JP      MOVBH           ; "MOVBH"

                                ;*******************************************************************
                                        PAGE
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```
0295'                          ACT10:
0295'   C5                             PUSH    BC
0296'   CD 02D3'                       CALL    RESBF           ;RESET BUFFER
0299'   C1                             POP     BC
029A'   C3 022B'                       JP      ACT7            ;GO TO START OF BUFFER
                                       PAGE
```

```
                                ;****************************************** ACK ************************
                                ;
                                ;       NAME:               ACK
                                ;       DESCRIPTION:        SETS CONTROL-BITS FOR AN ACKNOWLEDGEMENT
                                ;
                                ;       ENTRY:              REG.HL: ADD OF B14 IN PROTOCOL-DESCRIPTOR
                                ;                           REG.DE: B14,B13
                                ;
                                ;       EXIT:               REG.HL: ADD OF B14 IN PROTOVCOL-DESCRIPTOR
                                ;                           REG.DE: B14,B13
                                ;
                                ;       DESTROY:            REG.AF
                                ;
                                ;       EXECUTION TIME: !
                                ;*********************************************************************
029D'   CB 63                   ACK:    BIT     4,E
029F'   CB D3                           SET     2,E             ;PHASE := 1
02A1'   CB A3                           RES     4,E             ;OWN PHASE := 0

02A3'   20 04                           JR      NZ,ACKNO
02A5'   CB 93                           RES     2,E             ;PHASE := 0
02A7'   CB E3                           SET     4,E             ;OWN PHASE := 1

02A9'   CB CA                   ACKNO:  SET     1,D             ; SEND REQ. := 1
02AB'   7B                              LD      A,E             ; VALID BIT := 1
02AC'   F6 0B                           OR      0BH             ; ACK := 1
02AE'   5F                              LD      E,A             ; INPUT PERMIT := 1

02AF'   72                             LD       (HL),D
02B0'   2D                             DEC      L
02B1'   73                             LD       (HL),E
02B2'   2C                             INC      L                ;STORE STATUS IN PD, B14&B13

02B3'   C9                             RET

                                ;*********************************************************************
                                        PAGE
```

```
                        ;****************************************** NAK ************************
                        ;
                        ;       NAME:           NAK
                        ;       DESCRIPTION:    SET CONTROL-BITS FOR A NOT-ACKNOWLEDGEMENT
                        ;
                        ;       ENTRY:          REG.HL: ADD OF B14 IN PROTOCOL-DESCRIPTOR
                        ;                       REG.DE: B14,B13
                        ;
                        ;       EXIT:           REG.HL: ADD OF B14 IN PROTOVCOL-DESCRIPTOR
                        ;                       REG.DE: B14,B13
                        ;
                        ;       DESTROY:        REG.F
                        ;
                        ;       EXECUTION TIME: !
                        ;*********************************************************************
02B4'   CB 63           NAK:    BIT     4,E
02B6'   CB D3                   SET     2,E             ;PHASE := OWN PHASE
02B8'   20 02                   JR      NZ,NOTZE
02BA'   CB 93                   RES     2,E

02BC'   CB 8B           NOTZE:  RES     1,E             ;NAK
02BE'   CB CA                   SET     1,D             ;SEND REQUEST
02C0'   CB DB                   SET     3,E             ;VALID BIT := 1

02C2'   72                      LD      (HL),D
02C3'   2D                      DEC     L
02C4'   73                      LD      (HL),E
02C5'   2C                      INC     L               ;STORE STATUS IN PD, B14&B13

02C6'   E5                       PUSH   HL
02C7'   D5                       PUSH   DE
02C8'   2A 0000*                 LD     HL,(ASTTDI)
02CB'   1E 09                    LD     E,RXNREL
02CD'   CD 040E'                 CALL   CCINC
02D0'   D1                       POP    DE
02D1'   E1                       POP    HL

02D2'   C9                      RET
                        ;*********************************************************************
                                PAGE
```

```
                                ;***************************************** RESBF *********************
                                ;
                                ;       NAME:           RESBF
                                ;       DESCRIPTION:    RESETS BUFFERHEAD BY SETTING BYTECOUNT TO 0
                                ;                       AND BUFFER-ADD TO ITS INITIAL VALUE
                                ;
                                ;       ENTRY:
                                ;
                                ;
                                ;       EXIT:           FLAG Z: =1:     QUEUE WAS EMPTY
                                ;
                                ;       DESTROY:        REG.AF,BC,HL
                                ;
                                ;       EXECUTION TIME: !
                                ;*****************************************************************
02D3'   2A 0000*                RESBF:  LD      HL,(PRODEI)

02D6'   3E 02                           LD      A,2
02D8'   85                              ADD     A,L
02D9'   6F                              LD      L,A
02DA'   D5                              PUSH    DE
02DB'   CD 0000*                        CALL    FPAQH
02DE'   57                              LD      D,A
02DF'   2C                              INC     L
02E0'   7E                              LD      A,(HL)          ;NO. OF ELEMENTS IN EM. QUEUE IN A
02E1'   A7                              AND     A               ;SET FLAGS
02E2'   CA 030A'                        JP      Z,RESEX         ; RETURN IF NO ELEMENTS IN QUEUE

02E5'   7A                              LD      A,D
02E6'   2C                              INC     L
02E7'   5E                              LD      E,(HL)
02E8'   2C                              INC     L
02E9'   56                              LD      D,(HL)          ;BUFFERHEAD-ADDR. IN DE
02EA'   67                              LD      H,A
02EB'   2E 02                           LD      L,2
02ED'   19                              ADD     HL,DE           ;ADR OF BC + M.B.-OFFSET
02EE'   36 00                           LD      (HL),0
02F0'   23                              INC     HL
02F1'   36 00                           LD      (HL),0          ;RESET BC
02F3'   23                              INC     HL
02F4'   E5                              PUSH    HL
02F5'   23                              INC     HL
02F6'   23                              INC     HL              ;ADR OF OFFSET + M.B.-OFFSET
02F7'   4E                              LD      C,(HL)
02F8'   F5                              PUSH    AF
02F9'   3E 06                           LD      A,BHSZ-8
02FB'   81                              ADD     A,C
02FC'   4F                              LD      C,A
02FD'   06 00                           LD      B,0
02FF'   09                              ADD     HL,BC           ;D.P.-ADR +M.B.-OFFSET
0300'   F1                              POP     AF
0301'   47                              LD      B,A
```

```
0302'   7C                          LD      A,H
0303'   90                          SUB     B
0304'   67                          LD      H,A             ;D.P.-ADR
0305'   D1                          POP     DE              ;GET ADR. OF D.P. + M.B.-OFFSET
0306'   EB                          EX      DE,HL
0307'   73                          LD      (HL),E
0308'   23                          INC     HL
0309'   72                          LD      (HL),D

030A'   D1                  RESEX:  POP     DE

030B'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

030D'   C9                          RET

                            ;*******************************************************************
                                    PAGE
```

```
                        ;****************************************** NEWBF ***********************
                        ;
                        ;       NAME:           NEWBF
                        ;       DESCRIPTION:    EXAMINES THE NUMBER OF EMPTU BUFFERS IN QUEUE
                        ;
                        ;       ENTRY:          REG.C:  B12 IN PROTOCOL-DESCRIPTOR
                        ;                       REG.DE: B14,B13 IN PROTOCOL-DESCRIPTOR
                        ;
                        ;       EXIT:           REG.A:  NUMBER OF EMPTY BUFFERS
                        ;                       Z-FLAG=0:       QUEUE WAS NOT EMPTY
                        ;                       REG.HL: ADD OF B12 IN PROTOCOL-DESCRIPTOR
                        ;                       Z-FLAG=1:       QUEUE WAS EMPTY
                        ;                       REG.HL: ADD OF B14 IN PROTOCOL-DESCRIPTOR
                        ;
                        ;       DESTROY:        REG.B
                        ;
                        ;       EXECUTION TIME: !
                        ;*********************************************************************
030E'   D5              NEWBF:  PUSH    DE
030F'   2A 0000*                LD      HL,(PRODEI)
0312'   7D                      LD      A,L
0313'   C6 02                   ADD     A,2
0315'   6F                      LD      L,A
0316'   E5                      PUSH    HL
0317'   CD 0000*                CALL    FPAQH
031A'   F5                      PUSH    AF
031B'   2C                      INC     L
031C'   46                      LD      B,(HL)          ;NUMBER OF EMPTY BUFF. IN A

031D'   78                      LD      A,B
031E'   A7                      AND     A
031F'   C2 0347'                JP      NZ,NEWBFX       ;IF NO EMPTY BUFFERS THEN

0322'   F1                      POP     AF

0323'   3E 00                   LD      A,OWNMAP
                        ;       OUT     (MAP),A

0325'   2A 0000*                LD      HL,(ASTTDI)
0328'   1E 07                   LD      E,RXNFAL
032A'   CD 040E'                CALL    CCINC

032D'   E1                      POP     HL
032E'   7D                      LD      A,L
032F'   C6 0A                   ADD     A,10
0331'   6F                      LD      L,A
0332'   36 C0                   LD      (HL),0C0H       ;       STATE := 11 (HUNT,PROCEED)

0334'   7D                      LD      A,L
0335'   C6 F4                   ADD     A,-12
0337'   6F                      LD      L,A
0338'   36 FF                   LD      (HL),0FFH       ;       STOP RECEIVE TIMER
```

```
033A'   C6 0D                       ADD     A,13
033C'   6F                          LD      L,A
033D'   CB 86                       RES     0,(HL)          ;    INPUT PERMIT := 0

033F'   D1                          POP     DE
0340'   5E                          LD      E,(HL)
0341'   2C                          INC     L

0342'   CD 02B4'                    CALL     NAK            ;    "NAK"

0345'   AF                          XOR     A               ; END
0346'   C9                          RET                     ;ELSE

0347'   2C                  NEWBFX: INC     L
0348'   5E                          LD      E,(HL)
0349'   2C                          INC     L
034A'   56                          LD      D,(HL)          ;  GET BUFFER-ADDRESS

034B'   F1                          POP     AF
034C'   82                          ADD     A,D
034D'   57                          LD      D,A

034E'   13                          INC     DE
034F'   13                          INC     DE
0350'   EB                          EX      DE,HL
0351'   36 00                       LD      (HL),0
0353'   23                          INC     HL
0354'   36 00                       LD      (HL),0          ;  SET BYTECOUNT = 00

0356'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

0358'   E1                          POP     HL
0359'   7D                          LD      A,L
035A'   C6 0A                       ADD     A,10
035C'   6F                          LD      L,A

035D'   D1                          POP     DE

035E'   78                          LD      A,B
035F'   A7                          AND     A
0360'   C9                          RET                     ;ENDIF

                            ;*******************************************************************
                                    PAGE
```

```
                                ;***************************************** BUFTR **********************
                                ;
                                ;       NAME:               BUFTR
                                ;       DESCRIPTION:        TRANSFERS ONE FRAME FROM RINGBUFFERS TO EMPTY
                                ;                           BUFFER QUEUE
                                ;
                                ;       ENTRY:              REG.A:  FRAME BYTECOUNT
                                ;                           REG.DE: ADD OF FIRST EMPTY BUFFER IN QUEUE
                                ;                           REG.B:  OFFSET TO MULTIBUS-ADDR.
                                ;
                                ;       EXIT:               C-FLAG=0:       TRANSFER WAS OK
                                ;                           C-FLAG=1:       BUFFER-OVERRUN
                                ;
                                ;       DESTROY:            REG.AF,BC,DE,HL,SP
                                ;
                                ;       EXECUTION TIME: !
                                ;
                                ;*****************************************************************
0361'   A7                      BUFTR:  AND     A
0362'   C8                              RET     Z
0363'   C5                              PUSH    BC
0364'   13                              INC     DE
0365'   13                              INC     DE              ;DE=ADR. OF BCNT. IN B.H.
0366'   21 0006                         LD      HL,6
0369'   19                              ADD     HL,DE
036A'   4E                              LD      C,(HL)
036B'   23                              INC     HL
036C'   46                              LD      B,(HL)          ;BC=SIZE OF BUFFER

036D'   EB                              EX      DE,HL
036E'   50                              LD      D,B
036F'   59                              LD      E,C             ;DE=SIZE.

0370'   4E                              LD      C,(HL)
0371'   23                              INC     HL
0372'   46                              LD      B,(HL)          ;BC=BUFF.BCNT.

0373'   EB                              EX      DE,HL
0374'   A7                              AND     A
0375'   ED 42                           SBC     HL,BC           ;HL=SIZE - BCNT.

0377'   25                              DEC     H
0378'   67                              LD      H,A
0379'   F2 0385'                        JP      P,UPDA
037C'   7D                              LD      A,L
037D'   A7                              AND     A
037E'   FA 0385'                        JP      M,UPDA          ;TEST IF FREE SPACE > 127 (NEGATIV !)
0381'   BC                              CP      H               ; IF PACKET IS NOT TOO BIG THEN
0382'   FA 03A9'                       JP      M,EXCBTX
                                                                ; BEGIN
0385'   7C                      UPDA:   LD      A,H
0386'   6C                              LD      L,H
0387'   26 00                           LD      H,0
```

```
0389'   09                          ADD     HL,BC           ;       BUFF.BCNT. := BUFF.BCNT + REC.BCNT
038A'   EB                          EX      DE,HL
038B'   72                          LD      (HL),D
038C'   2B                          DEC     HL
038D'   73                          LD      (HL),E

038E'   23                          INC     HL
038F'   23                          INC     HL
0390'   5E                          LD      E,(HL)
0391'   23                          INC     HL
0392'   56                          LD      D,(HL)          ;DE=BUFF.ADR.
0393'   4F                          LD      C,A             ;C=REC.BCNT.
0394'   83                          ADD     A,E
0395'   D2 039B'                    JP      NC,NOTC
0398'   14                          INC     D
0399'   72                          LD      (HL),D
039A'   15                          DEC     D
039B'   2B                  NOTC:   DEC     HL
039C'   77                          LD      (HL),A          ;       BUFF.ADR. := BUFF.ADR. + REC.BCNT.

039D'   06 00                       LD      B,0
039F'   2A 0000*                    LD      HL,(FEFIF)

03A2'   F1                          POP     AF              ;GET OFFSET
03A3'   82                          ADD     A,D
03A4'   57                          LD      D,A

03A5'   ED B0                       LDIR                    ;TRANSFER DATA

03A7'   A7                          AND     A               ; RESET CARRY

03A8'   C9                          RET                     ;ENDIF

03A9'                       EXCBTX:
03A9'   F1                          POP     AF
03AA'   C3 03AD'                    JP      EXCBT

                            ;*******************************************************************
                                    PAGE
```

```
                        ;****************************************** EXCBT *********************
                        ;
                        ;       NAME:           EXCBT
                        ;       DESCRIPTION:    LOAD REGISTER WITH NECESSARY INFORMATION AND
                        ;                       CALL "RESBF" AND "NAK"
                        ;
                        ;       ENTRY:
                        ;
                        ;
                        ;       EXIT:
                        ;
                        ;       DESTROY:        REG.AF,BC,DE,HL
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*********************************************************************
03AD'   CD 02D3'        EXCBT:  CALL    RESBF
03B0'   2A 0000*                LD      HL,(PRODEI)
03B3'   36 FF                   LD      (HL),0FFH       ; STOP RECEIVE TIMER
03B5'   3E 0C                   LD      A,STATUS-1      ;STATUS = 13
03B7'   85                      ADD     A,L
03B8'   6F                      LD      L,A
03B9'   3E C0                   LD      A,0C0H
03BB'   77                      LD      (HL),A          ; STATE := HUNT, PROCEED
03BC'   2C                      INC     L
03BD'   5E                      LD      E,(HL)
03BE'   2C                      INC     L               ;STATUS IN DE
03BF'   56                      LD      D,(HL)
                                                        ;HL :=  ADR. OF B12 IN P.D.
03C0'   CD 02B4'                CALL    NAK
03C3'   CD 02D3'                CALL    RESBF           ; RESET BUFFER-HEAD
03C6'   2A 0000*                LD      HL,(PRODEI)
03C9'   7D                      LD      A,L
03CA'   C6 02                   ADD     A,2
03CC'   6F                      LD      L,A
03CD'   CD 0000*                CALL    FPAQH
03D0'   CD 01DA'                CALL    MOVBH           ; MOVE B.H. TO PACKET QUEUE
03D3'   37                      SCF                     ; SET CARRY-FLAG
03D4'   C9                      RET
                        ;*********************************************************************
                                PAGE
```

```
03D5'   06 00              BPINC:  LD      B,0
03D7'   09                         ADD     HL,BC
03D8'   34                         INC     (HL)
03D9'   C2 03EE'                   JP      NZ,BP1

03DC'   2B                         DEC     HL
03DD'   34                         INC     (HL)
03DE'   C2 03EF'                   JP      NZ,BP2

03E1'   2B                         DEC     HL
03E2'   34                         INC     (HL)
03E3'   C2 03F0'                   JP      NZ,BP3

03E6'   36 00                      LD      (HL),0
03E8'   23                         INC     HL
03E9'   36 00                      LD      (HL),0
03EB'   23                         INC     HL
03EC'   36 00                      LD      (HL),0
03EE'   2B                 BP1:    DEC     HL
03EF'   2B                 BP2:    DEC     HL
03F0'   2B                 BP3:    DEC     HL
03F1'   13                         INC     DE
03F2'   13                         INC     DE
03F3'   1A                         LD      A,(DE)
03F4'   86                         ADD     A,(HL)
03F5'   77                         LD      (HL),A
03F6'   D2 040B'                   JP      NC,BPEX

03F9'   2B                         DEC     HL
03FA'   34                         INC     (HL)
03FB'   C2 040B'                   JP      NZ,BPEX

03FE'   2B                         DEC     HL
03FF'   34                         INC     (HL)
0400'   C2 040B'                   JP      NZ,BPEX

0403'   36 00                      LD      (HL),0
0405'   23                         INC     HL
0406'   36 00                      LD      (HL),0
0408'   23                         INC     HL
0409'   36 00                      LD      (HL),0
040B'   1B                 BPEX:   DEC     DE
040C'   1B                         DEC     DE

040D'   C9                         RET

                           ;*****************************************************************
                                   PAGE
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```
040E'   16 00          CCINC:  LD      D,0
0410'   19                     ADD     HL,DE
0411'   34                     INC     (HL)
0412'   C0                     RET     NZ

0413'   2B                     DEC     HL
0414'   34                     INC     (HL)
0415'   C0                     RET     NZ

0416'   36 00                  LD      (HL),0
0418'   23                     INC     HL
0419'   36 00                  LD      (HL),0

041B'   C9                     RET

                       ;*****************************************************************

                               END
```

Macros:

Symbols:

A1	0127'	A2	012F'	A3	0137'	A4	013F'
A5	0147'	ABRES	00FF	AC5EX	021D'	AC5EX1	0220'
ACCO	009E'	ACK	029D'	ACK3	019B'	ACKNO	02A9'
ACT1	014B'	ACT10	0295'	ACT2	0164'	ACT3	0178'
ACT4	019F'	ACT5	01AC'	ACT6	0224'	ACT7	022B'
ACT8	025B'	ACT9	0274'	ACTAB	011F'	ASTTDI	0326*
BCNT	0263*	BHSZ	000E	BP1	03EE'	BP2	03EF'
BP3	03F0'	BPEX	040B'	BPINC	03D5I'	BUFTR	0361'
CCINC	040EI'	COMPH	005E'	CP	0068'	DATA1	015B'
DATA2	016A'	E1	00E7'	E2	00EF'	E3	00F7'
E4	00FF'	E5	0107'	E6	010F'	E7	0117'
END5	01B1'	EVCO	008D'	EVTAB	00DF'	EXCBT	03AD'
EXCBTX	03A9'	FDSCR	0219*	FEFIF	03A0*	FPAQH	03CE*
HOSTSI	020C*	ILAYID	0001	INCTL	000C	INPRO	0000I'
JPACT	00B3'	MOVBH	01DA'	NAK	02B4'	NEWBF	030E'
NEWBFX	0347'	NOTC	039B'	NOTZE	02BC'	OWNMAP	0000
PHAS	0188'	PRODEI	03C7*	PRSTA	00B4'	RES3	017D'
RESBF	02D3'	RESEX	030A'	RXNBPL	0005	RXNFAL	0007
RXNREL	0009	SAD	0216*	SIGNAL	020F*	STAEV	0049'
STATUS	000D	STUS	0076'	TVALTR	000B	UPDA	0385'
XDEQIF	01DD*	XENQIF	0209*				

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X          X
;   XXXX    XX    XXXX           X    XXX  X X X  XXXX      X
;   XX XX   XX   XX XX          X X         X  XX  X         X
;   XX  XX  XX  XX  XX         X   X        X   X  XXXXX     X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX           PROGRAMMER:      PEON
;   XXXXXXXXXXXXXXXXX           DATE:            830207
;   XX    XXXXXX    XX
;   XX   XX XX XX   XX
;   XX  XX  XX  XX  XX
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ******************************************
;               *
;               *  MODULE NAME: XPROXO
;               *
;               ******************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   >OUTGOING PROTOCOL ROUTINE<
;
;
;
;-----------------------------------------------------------------
        PAGE
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                        ;***** PUBLICS ***********************************************
                                PUBLIC  OUPRO,FPAQH

                        ;***** EXTERNALS *********************************************
                                extrn   XDEQIF,XENQIF,RELEASE
                                extrn   PRODEQ
                                extrn   B28,BCN,BCNTQ,OUTERR,CHAN,DIAGT,FLWTIM
                                extrn   NXFREQ,DATOUT
                                extrn   ANWDSC
                                extrn   ASTTDO,BPINC,CCINC
                                extrn   SAD,ABTIM,FDSCR

                        ;***** EQUALS ************************************************
001B                    OCTL    EQU     27              ;CONTROLBYTE FOR OUTGOING
000C                    RTRCNT  EQU     12              ;RETRANSMISSIONS-CNT. IN LSETUP-DESCRIPTOR
0001                    ILAYID  EQU     1
0002                    IDID    EQU     2
0005                    LAYID   EQU     5
0006                    DXIUID  EQU     6
0007                    RFRDAT  EQU     7
0005                    LFRDAT  EQU     5

0000                    OWNMAP  EQU     0
0000                    BUFOFF  EQU     0

000F                    TXNBPL  EQU     15
0011                    TXNFAL  EQU     17
0013                    TXNREL  EQU     19
0014                    TXNFE   EQU     20

0000                    FESW    EQU     0
0001                    DATY    EQU     1
0003                    PROBY   EQU     3
0004                    SEQBY   EQU     4
0005                    RINDA   EQU     5
0000                    EMPSW   EQU     00
0080                    FULSW   EQU     80H
000B                    TVALTR  EQU     11

                        ;*******************************************************************
                                PAGE
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```
                                ;.............................................
                                ;........... MAIN LINE ......................
                                ;.............................................
0000'                                   cseg

0000'   2A 0000*        OUPRO:  LD      HL,(PRODEO)
0003'   3E 1B                   LD      A,OCTL          ;OCTL = 27 IN LTUX
0005'   85                      ADD     A,L
0006'   6F                      LD      L,A
0007'   4E                      LD      C,(HL)          ;C = CONTROL BYTE = B27
0008'   2C                      INC     L
0009'   5E                      LD      E,(HL)          ;E = INT. ACC. BYTE = B28
000A'   2C                      INC     L
000B'   56                      LD      D,(HL)          ;D = STATUS BYTE
000C'   7A                      LD      A,D
000D'   E6 E0                   AND     0E0H
000F'   47                      LD      B,A             ;B := STATUS, BIT 5-7

0010'   7B                      LD      A,E
0011'   E6 03                   AND     03H             ;A := STATE, BIT 0-1
0013'   80                      ADD     A,B
0014'   47                      LD      B,A

0015'   79                      LD      A,C
0016'   E6 0C                   AND     0CH             ;A := PACK. START, PROC., BIT 3-2
0018'   80                      ADD     A,B             ;A := STATUS,PACK.ST.,PROC.,STATE

0019'   FE 05                   CP      05              ;IF A = 000, ,0,1,0,1
001B'   C2 0043'                JP      NZ,STAEV        ;THEN GOTO STATE EVENT PROGRAM

001E'   2D                      DEC     L
001F'   3E 20                   LD      A,20H
0021'   83                      ADD     A,E
0022'   5F                      LD      E,A
0023'   73                      LD      (HL),E          ; SEQ. := SEQ. + 1
0024'   2C                      INC     L

0025'   CD 03BE'                CALL    FRTIM           ; "FRTIM"

0028'   20 07                   JR      NZ,CONTI        ;IF NO EMPTY FRAMES THEN
002A'   CB FA                   SET     7,D             ;BEGIN STATUS := 6
002C'   CB F2                   SET     6,D
002E'   C3 0043'                JP      STAEV           ;END   GOTO STATE EVENT PROG.

0031'   7D              CONTI:  LD      A,L
0032'   C6 F2                   ADD     A,-14
0034'   6F                      LD      L,A
0035'   43                      LD      B,E

0036'   CD 053C'                CALL    FPAQH

0039'   58                      LD      E,B
003A'   CD 046C'                CALL    TRBCN           ; "TRBCN" MACRO
```

```
003D'   CD 04D6'                        CALL    BFTRA           ; "BFTRA"
0040'   3E 00                           LD      A,OWNMAP
                                ;       OUT     (MAP),A
0042'   C9                              RET                     ; RETURN
                                ;*******************************************************************
                                        PAGE
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                                ;.........................................
                                ;........... CLASSIFICATION OF EVENT .....
                                ;.........................................

0043'   79                      STAEV:  LD      A,C
0044'   CB 3F                           SRL     A
0046'   CB 3F                           SRL     A
0048'   CB 3F                           SRL     A
004A'   47                              LD      B,A             ;ACK/NAK,PERMIT,PACK.ST. BITS IN B
004B'   7B                              LD      A,E
004C'   E6 04                           AND     04H
004E'   CB 27                           SLA     A
0050'   80                              ADD     A,B
0051'   E6 0F                           AND     0FH
0053'   47                              LD      B,A             ;B := 0000,PH,AK,PERM,START
0054'   7A                              LD      A,D
0055'   E6 C0                           AND     0C0H
0057'   CB 3F                           SRL     A
0059'   CB 3F                           SRL     A
005B'   80                              ADD     A,B             ;A := EVENT CODE

005C'   21 00C9'                        LD      HL,EVTAB
005F'   85                              ADD     A,L
0060'   6F                              LD      L,A
0061'   30 01                           JR      NC,EVENT
0063'   24                              INC     H               ;ADJUST FOR CARRY FROM A+L
0064'   7E                      EVENT:  LD      A,(HL)
0065'   47                              LD      B,A             ;B := EVENT CLASS

                                ;*************************************************************
                                        PAGE
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                                ;..............................................
                                ;........... STORE NEXT STATE AND ................
                                ;........... JUMP TO CURR. ACTION ................
                                ;..............................................

0066'   79                              LD      A,C
0067'   E6 04                           AND     04H
0069'   80                              ADD     A,B
006A'   47                              LD      B,A             ;B := 00,EVENT,PROCEED,00
006B'   7B                              LD      A,E
006C'   E6 03                           AND     03H
006E'   80                              ADD     A,B             ;A := 00,EV,PROC,STATE

006F'   21 0109'                        LD      HL,ACTAB
0072'   85                              ADD     A,L
0073'   6F                              LD      L,A
0074'   30 01                           JR      NC,ACTA
0076'   24                              INC     H
0077'   7E                      ACTA:   LD      A,(HL)
0078'   47                              LD      B,A             ;B := 0,ACT.NO,PROC,STATE
0079'   CB 57                           BIT     2,A
007B'   CB 91                           RES     2,C
007D'   28 02                           JR      Z,PRC
007F'   CB D1                           SET     2,C
0081'   2A 0000*                PRC:    LD      HL,(PRODEO)
0084'   3E 1B                           LD      A,OCTL          ;A := 27
0086'   85                              ADD     A,L
0087'   6F                              LD      L,A
0088'   71                              LD      (HL),C          ; STORE NEW PROCEED VALUE

0089'   7B                              LD      A,E
008A'   E6 FC                           AND     0FCH
008C'   5F                              LD      E,A
008D'   78                              LD      A,B
008E'   E6 03                           AND     03H
0090'   83                              ADD     A,E
0091'   5F                              LD      E,A
0092'   2C                              INC     L
0093'   77                              LD      (HL),A          ; STORE NEW STATE

0094'   21 00A2'                        LD      HL,PRSTA
0097'   78                              LD      A,B
0098'   E6 78                           AND     78H
009A'   CB 3F                           SRL     A               ;A, BIT 2-5 = ACTION NO.
009C'   85                              ADD     A,L
009D'   6F                              LD      L,A
009E'   30 01                           JR      NC,JPACT
00A0'   24                              INC     H
00A1'   E9                      JPACT:  JP      (HL)

00A2'   C9                      PRSTA:  RET                     ;ACT.0 = RETURN, A=LSB(PRSTA)
00A3'   00                              NOP
00A4'   00                              NOP
00A5'   00                              NOP
```

```
00A6'   C3 0141'                JP      ACT1
00A9'   00                      NOP
00AA'   C3 01B7'                JP      ACT2
00AD'   00                      NOP
00AE'   C3 0208'                JP      ACT3
00B1'   00                      NOP
00B2'   C3 0233'                JP      ACT4
00B5'   00                      NOP
00B6'   C3 02EF'                JP      ACT5
00B9'   00                      NOP
00BA'   C3 0321'                JP      ACT6
00BD'   00                      NOP
00BE'   C3 0341'                JP      ACT7
00C1'   00                      NOP
00C2'   C3 035B'                JP      ACT8
00C5'   00                      NOP
00C6'   C3 0368'                JP      ACT9
                        ;*****************************************************************
                                PAGE
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                                ;..........................................
                                ;........... EVENT- AND ACTION-TABLE ............
                                ;..........................................

00C9'   00                      EVTAB:  DEFB    00H
00CA'   08                              DEFB    08H
00CB'   00                              DEFB    00H
00CC'   08                              DEFB    08H
00CD'   00                              DEFB    00H
00CE'   08                              DEFB    08H
00CF'   00                              DEFB    00H
00D0'   08                              DEFB    08H
00D1'   00                      E1:     DEFB    00H
00D2'   08                              DEFB    08H
00D3'   00                              DEFB    00H
00D4'   08                              DEFB    08H
00D5'   00                              DEFB    00H
00D6'   08                              DEFB    08H
00D7'   00                              DEFB    00H
00D8'   08                              DEFB    08H
00D9'   20                      E2:     DEFB    20H
00DA'   20                              DEFB    20H
00DB'   18                              DEFB    18H
00DC'   08                              DEFB    08H
00DD'   20                              DEFB    20H
00DE'   20                              DEFB    20H
00DF'   10                              DEFB    10H
00E0'   08                              DEFB    08H
00E1'   20                      E3:     DEFB    20H
00E2'   20                              DEFB    20H
00E3'   30                              DEFB    30H
00E4'   30                              DEFB    30H
00E5'   20                              DEFB    20H
00E6'   20                              DEFB    20H
00E7'   30                              DEFB    30H
00E8'   30                              DEFB    30H
00E9'   28                      E4:     DEFB    28H
00EA'   08                              DEFB    08H
00EB'   28                              DEFB    28H
00EC'   08                              DEFB    08H
00ED'   28                              DEFB    28H
00EE'   08                              DEFB    08H
00EF'   28                              DEFB    28H
00F0'   08                              DEFB    08H
00F1'   28                      E5:     DEFB    28H
00F2'   08                              DEFB    08H
00F3'   28                              DEFB    28H
00F4'   08                              DEFB    08H
00F5'   28                              DEFB    28H
00F6'   08                              DEFB    08H
00F7'   28                              DEFB    28H
00F8'   08                              DEFB    08H
00F9'   18                      E6:     DEFB    18H
00FA'   08                              DEFB    08H
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00FB'   18                          DEFB    18H
00FC'   08                          DEFB    08H
00FD'   18                          DEFB    18H
00FE'   08                          DEFB    08H
00FF'   18                          DEFB    18H
0100'   08                          DEFB    08H
0101'   18                  E7:     DEFB    18H
0102'   08                          DEFB    08H
0103'   18                          DEFB    18H
0104'   08                          DEFB    08H
0105'   18                          DEFB    18H
0106'   08                          DEFB    08H
0107'   18                          DEFB    18H
0108'   08                          DEFB    08H


0109'   10                  ACTAB:  DEFB    10H
010A'   10                          DEFB    10H
010B'   10                          DEFB    10H
010C'   10                          DEFB    10H
010D'   4C                          DEFB    4CH
010E'   15                          DEFB    15H
010F'   16                          DEFB    16H
0110'   17                          DEFB    17H
0111'   10                  A1:     DEFB    10H
0112'   10                          DEFB    10H
0113'   10                          DEFB    10H
0114'   10                          DEFB    10H
0115'   0C                          DEFB    0CH
0116'   0C                          DEFB    0CH
0117'   0C                          DEFB    0CH
0118'   0C                          DEFB    0CH
0119'   10                  A2:     DEFB    10H
011A'   10                          DEFB    10H
011B'   10                          DEFB    10H
011C'   10                          DEFB    10H
011D'   1D                          DEFB    1DH
011E'   25                          DEFB    25H
011F'   25                          DEFB    25H
0120'   25                          DEFB    25H
0121'   10                  A3:     DEFB    10H
0122'   10                          DEFB    10H
0123'   10                          DEFB    10H
0124'   10                          DEFB    10H
0125'   44                          DEFB    44H
0126'   35                          DEFB    35H
0127'   35                          DEFB    35H
0128'   35                          DEFB    35H
0129'   10                  A4:     DEFB    10H
012A'   10                          DEFB    10H
012B'   10                          DEFB    10H
012C'   10                          DEFB    10H
012D'   3C                          DEFB    3CH
012E'   3E                          DEFB    3EH
012F'   3E                          DEFB    3EH
```

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0130'   3F                          DEFB    3FH
0131'   10                  A5:     DEFB    10H
0132'   10                          DEFB    10H
0133'   10                          DEFB    10H
0134'   10                          DEFB    10H
0135'   28                          DEFB    28H
0136'   28                          DEFB    28H
0137'   28                          DEFB    28H
0138'   28                          DEFB    28H
0139'   10                  A6:     DEFB    10H
013A'   11                          DEFB    11H
013B'   12                          DEFB    12H
013C'   13                          DEFB    13H
013D'   14                          DEFB    14H
013E'   15                          DEFB    15H
013F'   16                          DEFB    16H
0140'   17                          DEFB    17H

                            ;*****************************************************************
                                    PAGE
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                                ;-----------------------------------------------
                                ; ACTIONS
                                ;-----------------------------------------------

                                ;...............................................
                                ; ACTION 1: RESET INCL./EXCL. DATA
                                ;...............................................

0141'   2A 0000*                ACT1:   LD      HL,(PRODEO)
0144'   7D                              LD      A,L
0145'   C6 1D                           ADD     A,29
0147'   6F                              LD      L,A

0148'   CD 0390'                        CALL    INITI           ; "INITI"

014B'   01 0000*                        LD      BC,BCNTO
014E'   3A 0000*                        LD      A,(CHAN)
0151'   81                              ADD     A,C
0152'   4F                              LD      C,A
0153'   AF                              XOR     A
0154'   02                              LD      (BC),A          ; INTERNAL BCNT. := 0
0155'   0C                              INC     C
0156'   02                              LD      (BC),A

0157'   2C                      RESET:  INC     L
0158'   2C                              INC     L

0159'   CD 053C'                        CALL    FPAQH

015C'   CD 042C'                        CALL    RESBF           ; "RESBF"

015F'   3E 00                           LD      A,OWNMAP
                                ;       OUT     (MAP),A

0161'   DA 01B7'                        JP      C,ACT2          ; IF NO BUFFER THEN GOTO ACTION 2

0164'   2A 0000*                        LD      HL,(PRODEO)
0167'   3E 1D                           LD      A,29
0169'   85                              ADD     A,L
016A'   6F                              LD      L,A

016B'   CD 03BE'                        CALL    FRTIM           ; "FRTIM"

016E'   20 09                           JR      NZ,XCONT                ; IF NO EMPTY FRAME THEN
0170'   7A                              LD      A,D             ; BEGIN
0171'   E6 1F                           AND     1FH
0173'   C6 80                           ADD     A,80H           ;       STATUS := 4
0175'   57                              LD      D,A             ;       GOTO ACTION 8
0176'   C3 035B'                        JP      ACT8            ; END

0179'   7D                      XCONT:  LD      A,L
017A'   C6 FC                           ADD     A,-4
```

```
017C'   6F                          LD      L,A             ;HL=ADR. OF B27
017D'   CB 9E                       RES     3,(HL)          ; PACKET START := 0
017F'   2C                          INC     L
0180'   46                          LD      B,(HL)

0181'   2C                          INC     L
0182'   E5                          PUSH    HL

0183'   7D                          LD      A,L
0184'   C6 F4                       ADD     A,-12
0186'   6F                          LD      L,A
0187'   CD 053C'                    CALL    FPAQH

018A'   58                          LD      E,B             ;E=B28
018B'   CD 046C'                    CALL    TRBCN           ; "TRBCN"

018E'   E1                          POP     HL              ;HL=ADR. OF B29
018F'   CB 4B                       BIT     1,E
0191'   CB 8B                       RES     1,E             ; STATE := 00 (RESET)
0193'   CB DE                       SET     3,(HL)          ; RESET PACKET BIT := 1

                                                            ; IF BCNT <= 16 THEN
0195'   CB E6                       SET     4,(HL)          ; END OF PACKET := 1
                                                            ; ELSE
                                                            ; BEGIN
0197'   C2 01AB'                    JP      NZ,INCL
019A'   CB A6                       RES     4,(HL)          ;       END OF PACK. := 0

019C'   01 0000*                    LD      BC,BCNTO
019F'   3A 0000*                    LD      A,(CHAN)
01A2'   81                          ADD     A,C
01A3'   4F                          LD      C,A
01A4'   AF                          XOR     A
01A5'   02                          LD      (BC),A          ;       INTERNAL BCNT. := 0
01A6'   0C                          INC     C
01A7'   02                          LD      (BC),A
                                                            ;       BCNT := 0
01A8'   32 0000*                    LD      (BCN),A
                                                            ; END
01AB'   2D                  INCL:   DEC     L
01AC'   CB 9B                       RES     3,E             ; VALID BIT := 0
01AE'   73                          LD      (HL),E          ;E := INT.ACC.BYTE = B28
01AF'   CB DB                       SET     3,E             ; VALID BIT := 1 (NOT STORED !)

01B1'   CD 04D6'                    CALL    BFTRA           ; "BFTRA"

01B4'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

01B6'   C9                          RET

                            ;*******************************************************************
                                    PAGE
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                                ;.............................................
                                ; ACTION 2: NO ACTION OR SEND CTL. BYTE
                                ;.............................................

01B7'   2A 0000*        ACT2:   LD      HL,(PRODEO)
01BA'   7D                      LD      A,L
01BB'   C6 0D                   ADD     A,13
01BD'   6F                      LD      L,A

01BE'   CB 46                   BIT     0,(HL)

01C0'   CA 01EA'                JP      Z,PERM          ;IF INPUT PERMIT = 0 THEN GOTO "PERM"

01C3'   2C              ISTA2:  INC     L
01C4'   7E                      LD      A,(HL)          ;A := INCOMING STATUS
01C5'   E6 02                   AND     2
01C7'   C8                      RET     Z               ; IF INC. SEND REQ. = 0 THEN
                                                        ;                 NO ACTION
01C8'   7D                      LD      A,L
01C9'   57                      LD      D,A             ;D := LSB(ADR. OF B14)
01CA'   C6 0E                   ADD     A,14
01CC'   6F                      LD      L,A
01CD'   5E                      LD      E,(HL)          ;E=B28
01CE'   2C                      INC     L

01CF'   CD 03BE'                CALL    FRTIM           ; "FRTIM"

01D2'   C8                      RET     Z               ; IF NO EMPTY FRAME THEN RETURN

01D3'   6A                      LD      L,D             ;HL=ADR. OF B14

01D4'   CD 040D'                CALL    CTLBY           ; "CTLBY"

01D7'   AF                      XOR     A               ; FILL SEQ.CNT.,BCNT.(=0) IN RINGBUFFER

01D8'   FD 77 04        DATA2:  LD      (IY+SEQBY),A
01DB'   FD 36 00 80             LD      (IY+FESW),FULSW ;MARK RINGBUFFER FULL
01DF'   F5                      PUSH    AF
01E0'   3A 0000*                LD      A,(NXFREO)
01E3'   C6 20                   ADD     A,32
01E5'   32 0000*                LD      (NXFREO),A
01E8'   F1                      POP     AF
01E9'   C9                      RET

01EA'   E5              PERM:   PUSH    HL
01EB'   7D                      LD      A,L             ; IF INPUT PERMIT = 0 THEN
01EC'   C6 F5                   ADD     A,-11           ; BEGIN
01EE'   6F                      LD      L,A             ;HL=ADR. OF B2 IN PD
01EF'   CD 053C'                CALL    FPAQH

01F2'   2C                      INC     L
01F3'   7E                      LD      A,(HL)
01F4'   A7                      AND     A
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```
01F5'   E1                          POP     HL              ;HL=ADR. B13

01F6'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

01F8'   CA 01C3'                    JP      Z,ISTA2         ;       IF NO FREE INPUT BUFFERS THEN
                                                            ;       GOTO "ISTA2"

01FB'   CB C6                       SET     0,(HL)          ;       INPUT PERMIT := 1
01FD'   CB 8E                       RES     1,(HL)          ;       SET  A "NAK" ANSWER
01FF'   CB DE                       SET     3,(HL)          ;       SET VALID BIT
0201'   2C                          INC     L
0202'   CB CE                       SET     1,(HL)          ;       INCOMING SEND REQUEST
0204'   2D                          DEC     L
0205'   C3 01C3'                    JP      ISTA2           ;       GOTO "ISTA2"
                                                            ; END

                            ;*******************************************************************
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                                ;.............................................
                                ; ACTION 3: ACK IN RESET STATE
                                ;.............................................
                                ;
0208'   2A 0000*                ACT3:   LD      HL,(PRODEO)
020B'   7D                              LD      A,L
020C'   C6 1C                           ADD     A,28
020E'   6F                              LD      L,A

020F'   CB 53                           BIT     2,E
0211'   CB D3                           SET     2,E             ; OWN PHASE := COMPL.(OWN PHASE)
0213'   28 02                           JR      Z,NUL3
0215'   CB 93                           RES     2,E
0217'   73                      NUL3:   LD      (HL),E          ;STORE B28
0218'   D6 0D                           SUB     13
021A'   6F                              LD      L,A             ;HL := ADR. OF B15

021B'   36 FF                           LD      (HL),0FFH       ; STOP SEND TIMER

021D'   3E 0E                           LD      A,14
021F'   85                              ADD     A,L
0220'   6F                              LD      L,A
0221'   CB 9A                           RES     3,D
0223'   CB 9E                           RES     3,(HL)          ; RESET PK. BIT := 0
0225'   CB A6                           RES     4,(HL)          ; END OF PK. := 0 (NOT IN D-REG.)

0227'   CB 62                           BIT     4,D             ; IF END OF PACK. = 0 THEN
0229'   CA 0294'                        JP      Z,AKMC          ; GOTO "AKMC" IN ACTION 4

022C'   CB A2                           RES     4,D
022E'   72                              LD      (HL),D          ; END OF PACK. := 0

022F'   3D                              DEC     A
0230'   C3 0243'                        JP      TIM4            ; GOTO ACTION 4

                                ;*******************************************************************
                                        PAGE
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                                ;.....................................
                                ; ACTION 4: ACK IN STATE 110 OR 111
                                ;.....................................

0233'   2A 0000*                ACT4:   LD      HL,(PRODEO)
0236'   7D                              LD      A,L
0237'   C6 1C                           ADD     A,28
0239'   6F                              LD      L,A

023A'   CB 53                           BIT     2,E
023C'   CB D3                           SET     2,E             ; OWN PHASE := COMPL.(OWN PHASE)
023E'   28 02                           JR      Z,NUL4
0240'   CB 93                           RES     2,E
0242'   73                      NUL4:   LD      (HL),E          ;STORE B28

0243'   D6 0D                   TIM4:   SUB     13
0245'   6F                              LD      L,A             ;HL=ADR. OF B15
0246'   36 FF                           LD      (HL),0FFH       ; STOP SEND TIMER
0248'   2C                              INC     L
0249'   2C                              INC     L

024A'   CD 053C'                        CALL    FPAQH

024D'   F5                      MOV4:   PUSH    AF
024E'   E5                              PUSH    HL              ;HL = ADR. OF OFQH

024F'   CD 042C'                        CALL    RESBF           ; RESET BUFFERADR.

0252'   DA 028F'                        JP      C,GACT2         ; IF NO BUFFER THEN GOTO ACTION 2

0255'   E1                              POP     HL
0256'   F1                              POP     AF
0257'   F5                              PUSH    AF
0258'   E5                              PUSH    HL
0259'   CD 0000*                        CALL    XDEQIF          ; MOVE TRANSMITTED BUFFER
                                                                ; FROM PACKET QUEUE TO
025C'   30 2C                           JR      NC,GNOPAC

025E'   0E 0F                           LD      C,TXNBPL
0260'   2A 0000*                        LD      HL,(ASTTDO)
0263'   CD 0000*                        CALL    BPINC
0266'   E1                              POP     HL

0267'   7D                              LD      A,L
0268'   C6 10                           ADD     A,10H
026A'   6F                              LD      L,A
026B'   F1                              POP     AF
026C'   CD 0000*                        CALL    XENQIF          ;(DE = ELEMENT ADR.)
                                                                ;(HL = QUEUEHEAD ADR.)
026F'   3A 0000*                        LD      A,(CHAN)
0272'   0F                              RRCA
0273'   21 000D*                        LD      HL,SAD+2+TVALTR
0276'   CD 0000*                        CALL    FDSCR
0279'   3A 0000*                        LD      A,(ABTIM)
```

```
027C'   77                          LD      (HL),A          ;START AUTOBYE-TIMER

027D'   2A 0000*                    LD      HL,(PRODEO)
0280'   7D                          LD      A,L
0281'   C6 1C                       ADD     A,28
0283'   6F                          LD      L,A
0284'   5E                          LD      E,(HL)
0285'   2C                          INC     L
0286'   56                          LD      D,(HL)
0287'   C3 0294'                    JP      AKMC

028A'   F1                  GNOPAC: POP     AF
028B'   E1                          POP     HL
028C'   C3 02A2'                    JP      NOPAC

028F'   F1                  GACT2:  POP     AF
0290'   E1                          POP     HL
0291'   C3 01B7'                    JP      ACT2

0294'   D5                  AKMC:   PUSH    DE
0295'   7D                          LD      A,L
0296'   C6 F4                       ADD     A,-12
0298'   6F                          LD      L,A
0299'   CD 053C'                    CALL    FPAQH

029C'   2C                          INC     L
029D'   7E                          LD      A,(HL)          ;HL := ADR. OF OFQH (NO. OF ELEM.)
029E'   D1                          POP     DE

029F'   A7                          AND     A
02A0'   20 08                       JR      NZ,NEWPA

02A2'                       NOPAC:                          ; IF OUTPUT QUEUE EMPTY THEN
                                                            ; BEGIN
02A2'   CD 0457'                    CALL    NOBUF           ;       "NOBUF" (PART OF "RESBF")
02A5'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

02A7'   C3 01B7'                    JP      ACT2            ;       GOTO ACTION 2
                                                            ; END
02AA'   2A 0000*             NEWPA: LD      HL,(PRODEO)
02AD'   7D                          LD      A,L
02AE'   C6 1D                       ADD     A,29            ;HL := ADR. OF B29
02B0'   6F                          LD      L,A

02B1'   CD 0390'                    CALL    INITI           ; "INITI"

02B4'   7D                          LD      A,L
02B5'   C6 0E                       ADD     A,14
02B7'   6F                          LD      L,A

02B8'   01 0000*             START: LD      BC,BCNTO
02BB'   3A 0000*                    LD      A,(CHAN)
02BE'   81                          ADD     A,C
02BF'   4F                          LD      C,A
02C0'   AF                          XOR     A
```

```
02C1'   02                          LD      (BC),A          ; INTERNAL BCNT. := 0
02C2'   0C                          INC     C
02C3'   02                          LD      (BC),A

02C4'   CD 03BE'                    CALL    FRTIM           ; "FRTIM"

02C7'   20 09                       JR      NZ,VALI4        ; IF NO EMPTY FIFO THEN
02C9'   7A                          LD      A,D             ; BEGIN
02CA'   E6 1F                       AND     1FH
02CC'   C6 80                       ADD     A,80H           ;       STATUS := 4
02CE'   57                          LD      D,A
02CF'   C3 0321'                    JP      ACT6            ;       GOTO ACTION 6
                                                            ; END
02D2'                       VALI4:

02D2'   43                  BCNT4:  LD      B,E
02D3'   7D                          LD      A,L
02D4'   C6 F2                       ADD     A,-14
02D6'   6F                          LD      L,A
02D7'   CD 053C'                    CALL    FPAQH

02DA'   58                          LD      E,B
02DB'   CD 046C'                    CALL    TRBCN           ; "TRBCN"

02DE'   CB DB                       SET     3,E             ; VALID BIT := 1 (NOT STORED)
02E0'   CB 4B                       BIT     1,E
02E2'   CA 02E9'                    JP      Z,MUFR4
02E5'   CB C6                       SET     0,(HL)          ; IF BCNT <= 16 THEN STATE := 11
02E7'   CB C3                       SET     0,E

02E9'   CD 04D6'            MUFR4:  CALL    BFTRA           ; "BFTRA"

02EC'   3E 00                       LD      A,OWNMAP
                            ;       OUT     (MAP),A

02EE'   C9                          RET

                            ;*******************************************************************
                                    PAGE
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                                ;.....................................................
                                ; ACTION 5: MORE THAN 3 TIMEOUTS OR NAKS, OR INPUT NOT PERMIT
                                ;.....................................................

02EF'   2A 0000*                ACT5:   LD      HL,(PRODEO)
02F2'   7D                              LD      A,L
02F3'   C6 0F                           ADD     A,15
02F5'   6F                              LD      L,A
02F6'   36 FF                           LD      (HL),0FFH       ; STOP SEND TIMER

02F8'   C6 0E                           ADD     A,14
02FA'   6F                              LD      L,A
02FB'   72                              LD      (HL),D          ;STORE B29

02FC'   2D                              DEC     L
02FD'   CB 8E                           RES     1,(HL)
02FF'   CB C6                           SET     0,(HL)          ; STATE := 01 (START OF PACKET)

0301'   3E F5                           LD      A,-11
0303'   85                              ADD     A,L
0304'   6F                              LD      L,A             ;HL=ADR. OF B17

0305'   CD 053C'                        CALL    FPAQH
0308'   2C                              INC     L

0309'   47                              LD      B,A
030A'   7E                              LD      A,(HL)
030B'   A7                              AND     A
030C'   CA 02A2'                        JP      Z,NOPAC         ; IF QUEUE IS EMPTY THEN GOTO "NOPAC"
                                                                ; ELSE
030F'   E5                              PUSH    HL
0310'   D5                              PUSH    DE
0311'   1E 14                           LD      E,TXNFE
0313'   16 00                           LD      D,0
0315'   2A 0000*                        LD      HL,(ASTTDO)
0318'   19                              ADD     HL,DE
0319'   34                              INC     (HL)
031A'   D1                              POP     DE
031B'   E1                              POP     HL

031C'   78                              LD      A,B
031D'   2D                              DEC     L
031E'   C3 024D'                        JP      MOV4            ; MOVE B.H. AND TRANSMIT NX BUFFER
                                                                ; HL:= ADR. OF OFQH

                                ;*********************************************************************
                                        PAGE
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                                ;.....................................
                                ; ACTION 6: NAK IN STATE 101/111
                                ;.....................................

0321'   2A 0000*                ACT6:   LD      HL,(PRODEO)
0324'   3E 1D                           LD      A,29
0326'   85                              ADD     A,L
0327'   6F                              LD      L,A

0328'   CD 03A3'                        CALL    NAKIN           ; "NAKIN"

032B'   2C                              INC     L
032C'   2C                              INC     L

032D'   CD 053C'                        CALL    FPAQH

0330'   CD 042C'                        CALL    RESBF           ; "RESBF"

0333'   D8                              RET     C

0334'   2A 0000*                        LD      HL,(PRODEO)
0337'   3E 1C                           LD      A,28
0339'   85                              ADD     A,L
033A'   6F                              LD      L,A
033B'   5E                              LD      E,(HL)
033C'   2C                              INC     L
033D'   56                              LD      D,(HL)          ;D := STATUS

033E'   C3 02B8'                        JP      START           ; GOTO START IN ACTION 4

                                ;*******************************************************************
                                        PAGE
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```
                                ;.............................................
                                ; ACTION 7: INPUT NOT PERMIT
                                ;.............................................

0341'   2A 0000*                ACT7:   LD      HL,(PRODEO)
0344'   3E 0F                           LD      A,15
0346'   85                              ADD     A,L
0347'   6F                              LD      L,A
0348'   3A 0000*                        LD      A,(FLWTIM)      ; INIT. SEND TIMER WITH
034B'   77                              LD      (HL),A          ; FLOW-CONTROL VALUE

034C'   E5                              PUSH    HL
034D'   D5                              PUSH    DE
034E'   1E 11                           LD      E,TXNFAL
0350'   2A 0000*                        LD      HL,(ASTTDO)
0353'   CD 0000*                        CALL    CCINC
0356'   D1                              POP     DE
0357'   E1                              POP     HL

0358'   C3 01B7'                        JP      ACT2            ; GOTO ACTION 2

                                ;*****************************************************************
                                        PAGE
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                                ;.............................................
                                ; ACTION 8: NAK IN RESET STATE
                                ;.............................................
                                ;
035B'   2A 0000*                ACT8:   LD      HL,(PRODEO)
035E'   3E 1D                           LD      A,29
0360'   85                              ADD     A,L
0361'   6F                              LD      L,A

0362'   CD 03A3'                        CALL    NAKIN           ; "NAKIN"

0365'   C3 0157'                        JP      RESET           ; GOTO RESET IN ACTION 1

                                ;*****************************************************************
                                        PAGE
```

```
                                ;.....................................................
                                ; ACTION 9: WAITING FOR DATA TO TRANSMIT, OR "ACK" ON RESET
                                ;.....................................................
                                ;
0368'   CB 5A                   ACT9:   BIT     3,D             ; IF WAITING FOR "ACK" ON RESET THEN GOTO ACT2
036A'   C2 01B7'                        JP      NZ,ACT2

036D'   2A 0000*                        LD      HL,(PRODEO)
0370'   7D                              LD      A,L
0371'   C6 11                           ADD     A,17
0373'   6F                              LD      L,A

0374'   D5                              PUSH    DE
0375'   CD 053C'                        CALL    FPAQH
0378'   23                              INC     HL

0379'   7E                              LD      A,(HL)
037A'   A7                              AND     A               ; IF NO. BUFFER IN QUEUE THEN GOTO ACTION 2
037B'   D1                              POP     DE

037C'   3E 00                           LD      A,OWNMAP
                                ;       OUT     (MAP),A

037E'   CA 01B7'                        JP      Z,ACT2
                                                                ; ELSE
0381'   2A 0000*                        LD      HL,(PRODEO)
0384'   3E 1C                           LD      A,28            ; BEGIN
0386'   85                              ADD     A,L
0387'   6F                              LD      L,A
0388'   CB C3                           SET     0,E
038A'   CB C6                           SET     0,(HL)          ;       STATE := 101 (START OF PACKET)

038C'   2C                              INC     L
038D'   C3 0294'                        JP      AKMC            ;       GOTO "AK" IN ACTION 4
                                                                ; END

                                        PAGE
```

```
                        ;****************************************** INITI *********************
                        ;
                        ;       NAME:               INITI
                        ;       DESCRIPTION:        SETS UP RTR.CNT. AND INITIALIZES SEQ.CNT
                        ;                           AND SEND TIMER
                        ;
                        ;       ENTRY:              REG.HL: ADD OF B29 IN PROTOCOL-DESCRIPTOR
                        ;                           REG.DE: B29,B28
                        ;
                        ;       EXIT:               REG.HL: ADD OF B15 IN PROTOCOL-DESCRIPTOR
                        ;                           REG.DE: B29,B28
                        ;
                        ;       DESTROY:            REG.A
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*****************************************************************
0390'   CB 8A           INITI:  RES     1,D
0392'   CB D2                   SET     2,D             ;RETR.CNT. := 2

0394'   7B                      LD      A,E
0395'   E6 1F                   AND     1FH             ;SEQ.CNT. := 0
0397'   5F                      LD      E,A

0398'   72                      LD      (HL),D
0399'   2D                      DEC     L
039A'   73                      LD      (HL),E          ;STORE PHASE AND SEQ.CNT.

039B'   7D                      LD      A,L
039C'   D6 0C                   SUB     12
039E'   6F                      LD      L,A
039F'   7E                      LD      A,(HL)
03A0'   2D                      DEC     L               ;INIT. SEND TIMER
03A1'   77                      LD      (HL),A

03A2'   C9                      RET

                        ;*****************************************************************
                                PAGE
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```
                        ;****************************************** NAKIN *********************
                        ;
                        ;       NAME:           NAKIN
                        ;       DESCRIPTION:    IF RTR.CNT. = 0 THEN
                        ;                         STATUS := TIMEOUT AND A JUMP TO ACTION 5 IS MADE.
                        ;                       ELSE
                        ;                         RTR.CNT. IS DECREMENTED AND
                        ;                         SEQ.CNT. AND SEND TIMER ARE INITIALIZED.
                        ;
                        ;       ENTRY:          REG.HL: ADD OF B29 IN PROTOCOL-DESCRIPTOR
                        ;                       REG.DE: B29,B28
                        ;
                        ;       EXIT:           REG.HL: ADD OF B15 IN PROTOCOL-DESCRIPTOR
                        ;                       REG.DE: B29,B28
                        ;
                        ;       DESTROY:        REG.AF
                        ;
                        ;       EXECUTION TIME: !
                        ;*********************************************************************

03A3'   7B              NAKIN:  LD      A,E
03A4'   E6 1F                   AND     1FH
03A6'   5F                      LD      E,A             ;SEQ.CNT. := 0

03A7'   72                      LD      (HL),D
03A8'   2D                      DEC     L
03A9'   73                      LD      (HL),E
03AA'   7D                      LD      A,L
03AB'   D6 0C                   SUB     12
03AD'   6F                      LD      L,A
03AE'   7E                      LD      A,(HL)
03AF'   2D                      DEC     L
03B0'   77                      LD      (HL),A          ;PRESET SEND TIMER

03B1'   E5                      PUSH    HL
03B2'   D5                      PUSH    DE
03B3'   2A 0000*                LD      HL,(ASTTDO)
03B6'   1E 13                   LD      E,TXNREL
03B8'   CD 0000*                CALL    CCINC
03BB'   D1                      POP     DE
03BC'   E1                      POP     HL

03BD'   C9                      RET

                        ;*********************************************************************
                                PAGE
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```
                                ;****************************************** FRTIM *********************
                                ;
                                ;       NAME:           FRTIM
                                ;       DESCRIPTION:    LOOKS FOR FRAME-TIMEOUT AND
                                ;                       STORES EVT. CR-ID IN RINGBUFFER
                                ;
                                ;       ENTRY:          REG.HL: ADD OF B29 IN PROTOCOL-DESCRIPTOR
                                ;
                                ;       EXIT:           REG.HL: ADD OF B31 IN PROTOCOL-DESCROPTOR
                                ;                       FLAG Z: = 1:    FRAME-TIMEOUT
                                ;                       FLAG Z: = 0:    CR-ID STORED IN RINGBUFFER
                                ;
                                ;       DESTROY:        REG.A,BC
                                ;
                                ;       EXECUTION TIME: !
                                ;*****************************************************************

03BE'   01 07FF                 FRTIM:  LD      BC,7FFH

03C1'   FD 2A 0000*             TIMFR:  LD      IY,(NXFREO)     ;IF RINGBUFFER NOT
03C5'   FD 7E 00                        LD      A,(IY)          ;EMPTY THEN
03C8'   A7                              AND     A
03C9'   CA 03E0'                        JP      Z,CRIDFR
                                                                ;       ON APP. 1.6 MSEC
03CC'   CD 0000*                        CALL    RELEASE
03CF'   FB                              ei                      ;
03D0'   0B                              DEC     BC              ;       DECREMENT TIMER
03D1'   CB 50                           BIT     2,B
03D3'   20 EC                           JR      NZ,TIMFR        ;       IF TIMER > 0 THEN GOTO TIMFR

03D5'   2C                              INC     L
03D6'   2C                              INC     L

03D7'   3A 0000*                        LD      A,(DIAGT)
03DA'   3C                              INC     A               ;         INCREMENT NO. OF FRAME-TIMEOUTS
03DB'   32 0000*                        LD      (DIAGT),A
03DE'   AF                              XOR     A
                                                                ; END
03DF'   C9                              RET

                                                                        ; ELSE
03E0'                           CRIDFR:
03E0'   E5                              PUSH    HL
03E1'   2A 0000*                        LD      HL,(ANWDSC)     ;     GET ADDR OF NETWORK-DESCRIPTOR
03E4'   CB 7E                           BIT     7,(HL)
03E6'   CA 0401'                        JP      Z,LNET1 ;     IF INT,NETW.-COMM. THEN

03E9'   23                      RNET1:  INC     HL
03EA'   7E                              LD      A,(HL)
03EB'   FD 77 02                        LD      (IY+IDID),A     ;       STORE NET-ID IN FRAME
03EE'   23                              INC     HL
03EF'   7E                              LD      A,(HL)
03F0'   CB F7                           SET     6,A
```

```
03F2'   FD 77 01                        LD      (IY+ILAYID),A   ;       STORE NAP-ID IN FRAME
03F5'   E1                              POP     HL
03F6'   2C                              INC     L
03F7'   7E                              LD      A,(HL)
03F8'   FD 77 05                        LD      (IY+LAYID),A    ;       STORE VC-ID IN FRAME
03FB'   2C                              INC     L
03FC'   7E                              LD      A,(HL)
03FD'   FD 77 06                        LD      (IY+DXIUID),A   ;       STORE XIU-ID IN FRAME
0400'   C9                              RET

0401'   E1                      LNET1:  POP     HL
0402'   2C                              INC     L
0403'   7E                              LD      A,(HL)          ;       STORE VC-ID IN FRAME
0404'   FD 77 01                        LD      (IY+ILAYID),A
0407'   2C                              INC     L
0408'   7E                              LD      A,(HL)
0409'   FD 77 02                        LD      (IY+IDID),A     ;       STORE XIU-ID IN FRAME

040C'   C9                              RET

                                ;*******************************************************************
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```
                        ;****************************************** CTLBY *********************
                        ;
                        ;       NAME:           CTLBY
                        ;       DESCRIPTION:    STORES CONTROLBYTE IN RINGBUFFER.
                        ;                       THIS BYTE MAY CONTAIN INFORMATION FROM BOTH
                        ;                       INPUTTER (INC. SEND REQ. = 1) AND
                        ;                       OUTPUTTER (OUTG. VALID = 1).
                        ;
                        ;       ENTRY:          REG.HL: ADD OF B14 IN PROTOCOL-DESCRIPTOR
                        ;                       REG.E:  B28
                        ;
                        ;       EXIT:           REG.HL: ADD OF B14 IN PROTOCOL-DESCRIPTOR
                        ;                       REG.A:  CONTROL BYTE
                        ;                       REG.E:  -----"------
                        ;
                        ;       DESTROY:
                        ;
                        ;       EXECUTION TIME: !
                        ;*********************************************************************
040D'   7B              CTLBY:  LD      A,E
040E'   E6 0F                   AND     0FH
0410'   5F                      LD      E,A
                                                        ;IF INC. SENDREQ. = 1 THEN
0411'   CB 4E                   BIT     1,(HL)          ;BEGIN
0413'   28 12                   JR      Z,NOREQ

0415'   CB 8E                   RES     1,(HL)          ;       INC. SEND REQ. := 0

0417'   2D                      DEC     L
0418'   7E                      LD      A,(HL)          ;       B13,BIT 3-0 := FIF3,BIT 7-4
0419'   2C                      INC     L
041A'   E6 0F                   AND     0FH             ;END
041C'   CB 27                   SLA     A
041E'   CB 27                   SLA     A
0420'   CB 27                   SLA     A
0422'   CB 27                   SLA     A
0424'   83                      ADD     A,E             ;B28,BIT 3-0 := FIF3,BIT 3-0
0425'   18 01                   JR      ECTLB

0427'   7B              NOREQ:  LD      A,E

0428'   FD 77 03        ECTLB:  LD      (IY+PROBY),A    ;STORE CONTROL IN RINGBUFFER

042B'   C9                      RET

                        ;*********************************************************************
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```
                                ;****************************************** RESBF *********************
                                ;
                                ;       NAME:           RESBF
                                ;       DESCRIPTION:    RESETS BUFFERADR. IN CURRENT BUFFERHEAD AND
                                ;                       RESETS INTERNAL BCNT. TO ZERO.
                                ;                       IF NO BUFFER AVAILABLE THEN
                                ;                         STATUS := 3 AND STATE := 100 (= WAITING FOR DATA).
                                ;                       ELSE
                                ;
                                ;       ENTRY:          REG.HL: ADD OF OFQH
                                ;                       REG.A:  OFFSET TO BUFFER-ADDRESSES
                                ;
                                ;       EXIT:           FLAG C: =1:     NO BUFFER AVAILABLE
                                ;
                                ;       DESTROY:        REG.AF,BC,DE,HL
                                ;
                                ;       EXECUTION TIME: !
                                ;*********************************************************************

042C'   47                      RESBF:  LD      B,A
042D'   2C                              INC     L
042E'   7E                              LD      A,(HL)
042F'   A7                              AND     A
0430'   28 25                           JR      Z,NOBUF

0432'   78                      CONRB:  LD      A,B
0433'   2C                              INC     L               ; IF QUEUE NOT EMPTY THEN
0434'   4E                              LD      C,(HL)          ; BEGIN
0435'   2C                              INC     L
0436'   46                              LD      B,(HL)
0437'   2E 04                           LD      L,4
0439'   67                              LD      H,A
043A'   09                              ADD     HL,BC           ; ADD OF DATA IN BUFFER+OFFSET
043B'   EB                              EX      DE,HL

043C'   21 0000*                        LD      HL,BCNTO
043F'   3A 0000*                        LD      A,(CHAN)
0442'   85                              ADD     A,L
0443'   6F                              LD      L,A
0444'   AF                              XOR     A
0445'   4E                              LD      C,(HL)
0446'   77                              LD      (HL),A          ;       RESET INTERNAL BCNT.
0447'   2C                              INC     L
0448'   46                              LD      B,(HL)          ;BC=OLD INTERNAL BCNT.
0449'   77                              LD      (HL),A
044A'   EB                              EX      DE,HL

044B'   5E                              LD      E,(HL)
044C'   23                              INC     HL
044D'   56                              LD      D,(HL)
044E'   EB                              EX      DE,HL
044F'   A7                              AND     A
0450'   ED 42                           SBC     HL,BC           ;       BUFF.ADR. := BUFF.ADR. - INT.BCNT.
```

```
0452'   EB                          EX      DE,HL
0453'   72                          LD      (HL),D
0454'   2B                          DEC     HL
0455'   73                          LD      (HL),E

0456'   C9                          RET                     ; END

0457'   2A 0000*            NOBUF:  LD      HL,(PRODEO)     ; ELSE
045A'   3E 0F                       LD      A,15            ; BEGIN
045C'   85                          ADD     A,L
045D'   6F                          LD      L,A             ;HL=ADR. OF B15
045E'   36 FF                       LD      (HL),0FFH       ;       STOP TRANSMIT TIMER
0460'   C6 0D                       ADD     A,13
0462'   6F                          LD      L,A             ;HL=ADR. OF B28

0463'   CB 86                       RES     0,(HL)
0465'   CB 8E                       RES     1,(HL)          ;       STATE := 100 (WAITING FOR DATA)
0467'   2C                          INC     L
0468'   36 60                       LD      (HL),60H        ;       WAIT. FOR DATA, STATUS = 3 (END OF Q.)
046A'   37                          SCF                     ;       SET CARRY

046B'   C9                          RET                     ; END

                            ;*******************************************************************
                                    PAGE
```

```
                        ;****************************************** TRBCN *********************
                        ;
                        ;       NAME:               TRBCN
                        ;       DESCRIPTION:        CALCULATES THE NUMBER OF BYTES TO BE TRANSMITTED
                        ;                           IN THE NEXT FRAME.
                        ;                           INTERNAL BYTECOUNT IS UPDATED.
                        ;                           IF NO. LESS THAN 17 THEN
                        ;                             THE STATE IS SET TO 10 (END OF PK.) AND
                        ;                             VALID BIT := 1 (NOT STORED IN P.D.).
                        ;                           ELSE
                        ;
                        ;       ENTRY:              REG.HL: ADD OF OFQH
                        ;                           REG.A:  OFFSET ON BUFFER-ADDRESSES
                        ;                           REG.E:  B28
                        ;
                        ;       EXIT:               (BCN):  NO. OF BYTES TO BE TRANSMITTED
                        ;                           REG.E:  B28
                        ;                           BCNT < 17:      BIT 1 SET IN B28
                        ;
                        ;       DESTROY:            REG.HL
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*****************************************************************

046C'   2C              TRBCN:  INC     L
046D'   2C                      INC     L
046E'   4E                      LD      C,(HL)
046F'   2C                      INC     L
0470'   46                      LD      B,(HL)
0471'   2E 02                   LD      L,2
0473'   67                      LD      H,A
0474'   09                      ADD     HL,BC           ;HL=ADR. OF BUFF.BCNT.

0475'   7B                      LD      A,E
0476'   32 0000*                LD      (B28),A         ;(B28)=B28 OF PD

0479'   5E                      LD      E,(HL)
047A'   23                      INC     HL
047B'   56                      LD      D,(HL)          ;DE=BUFF.BCNT.

047C'   21 0000*                LD      HL,BCNTO
047F'   3A 0000*                LD      A,(CHAN)
0482'   85                      ADD     A,L
0483'   6F                      LD      L,A
0484'   4E                      LD      C,(HL)
0485'   2C                      INC     L
0486'   46                      LD      B,(HL)          ;BC=INTERNAL BCNT.

0487'   EB                      EX      DE,HL
0488'   A7                      AND     A
0489'   ED 42                   SBC     HL,BC

048B'   E5                      PUSH    HL
```

```
048C'   2A 0000*                        LD      HL,(ANWDSC)
048F'   CB 7E                           BIT     7,(HL)
0491'   CA 0499'                        JP      Z,LNET2         ; IF INT,NETW.-COMM. THEN

0494'   3E 0E                   RNET2:  LD      A,14
0496'   C3 049B'                        JP      ALNET2          ; ELSE
0499'   3E 10                   LNET2:  LD      A,16
049B'   32 0000*                ALNET2: LD      (BCN),A
049E'   E1                              POP     HL
049F'   25                              DEC     H

04A0'   F2 04C4'                        JP      P,SEVFR

04A3'   CB 7D                           BIT     7,L
04A5'   C2 04C4'                        JP      NZ,SEVFR

04A8'   BD                              CP      L               ; IF FRAMEBCNT. < SPECIFIED NO. THEN
04A9'   FA 04C4'                        JP      M,SEVFR
04AC'   7D                              LD      A,L             ; BEGIN
04AD'   32 0000*                        LD      (BCN),A         ;       (BCN) := FR.BCNT.

04B0'   2A 0000*                        LD      HL,(PRODEO)
04B3'   3E 1C                           LD      A,28
04B5'   85                              ADD     A,L
04B6'   6F                              LD      L,A
04B7'   3A 0000*                        LD      A,(B28)
04BA'   CB CF                           SET     1,A
04BC'   CB 87                           RES     0,A             ;       STATE := 10 (END OF PACKET)
04BE'   77                              LD      (HL),A
04BF'   CB DF                           SET     3,A             ;       VALID BIT := 1 (NOT STORED)
04C1'   32 0000*                        LD      (B28),A         ; END

04C4'   EB                      SEVFR:  EX      DE,HL
04C5'   3A 0000*                        LD      A,(BCN)
04C8'   81                              ADD     A,C
04C9'   D2 04CE'                        JP      NC,UPDBC
04CC'   04                              INC     B
04CD'   70                              LD      (HL),B
04CE'   2D                      UPDBC:  DEC     L
04CF'   77                              LD      (HL),A          ; INT.BCNT. := INT.BCNT. + FR.BCNT.

04D0'   EB                              EX      DE,HL
04D1'   3A 0000*                        LD      A,(B28)
04D4'   5F                              LD      E,A

04D5'   C9                              RET

                                ;*******************************************************************
                                        PAGE
```

```
                        ;****************************************** BUFTR ********************
                        ;
                        ;       NAME:               BUFTR
                        ;       DESCRIPTION:        STORES PROTOCOL BYTE, SEQ,BCNT. AND DATABYTES
                        ;                           IN OUTGOING RINGBUFFER AND
                        ;                           SETS THE BUFFER FULL-SWITCH.
                        ;                           DATABUFFER-ADD IS UPDATED WITH FRAME-BYTECOUNT.
                        ;
                        ;       ENTRY:              REG.E:  B28
                        ;                           (BCNT): FRAME BCNT.
                        ;                           (PRODEO): ADD OF B0 IN PROTOCOL-DESCRIPTOR
                        ;
                        ;       EXIT:
                        ;
                        ;       DESTROY:            REG.AF,BC,DE,HL
                        ;
                        ;       EXECUTION TIME:
                        ;
                        ;*****************************************************************
04D6'   2A 0000*        BFTRA:  LD      HL,(PRODEO)
04D9'   3E 0E                   LD      A,14
04DB'   85                      ADD     A,L
04DC'   6F                      LD      L,A

04DD'   7B                      LD      A,E
04DE'   E6 E0                   AND     0E0H
04E0'   57                      LD      D,A
04E1'   3A 0000*                LD      A,(BCN)
04E4'   82                      ADD     A,D
04E5'   57                      LD      D,A             ;D=SEQ,BCNT.

04E6'   CD 040D'                CALL    CTLBY           ; "CTLBY"

04E9'   7A                      LD      A,D
04EA'   FD 77 04                LD      (IY+SEQBY),A    ; STORE SEQ,BCNT. IN FRAME

04ED'   E6 1F                   AND     1FH
04EF'   28 3E                   JR      Z,EBFTR         ; IF BCNT. = 0 THEN GOTO END OF ROUTINE

04F1'   2C                      INC     L
04F2'   2C                      INC     L
04F3'   2C                      INC     L
04F4'   F5                      PUSH    AF
04F5'   CD 053C'                CALL    FPAQH
04F8'   2C                      INC     L
04F9'   2C                      INC     L
04FA'   4E                      LD      C,(HL)
04FB'   2C                      INC     L
04FC'   46                      LD      B,(HL)

04FD'   67                      LD      H,A
04FE'   2E 04                   LD      L,4
0500'   09                      ADD     HL,BC
```

```
0501'   5E                          LD      E,(HL)
0502'   23                          INC     HL
0503'   56                          LD      D,(HL)          ;DE=DATA-AD IN BUFFER
0504'   EB                          EX      DE,HL
0505'   C1                          POP     BC
0506'   48                          LD      C,B
0507'   06 00                       LD      B,0
0509'   09                          ADD     HL,BC
050A'   EB                          EX      DE,HL
050B'   72                          LD      (HL),D
050C'   2B                          DEC     HL
050D'   73                          LD      (HL),E          ; BUFF.ADR. := BUFF.ADR. + BCNT.

050E'   EB                          EX      DE,HL
050F'   A7                          AND     A
0510'   ED 42                       SBC     HL,BC           ;READJUST BUFF.ADR.

0512'   F5                          PUSH    AF
0513'   E5                          PUSH    HL
0514'   2A 0000*                    LD      HL,(ANWDSC)
0517'   CB 7E                       BIT     7,(HL)
0519'   CA 0521'                    JP      Z,LNET3
051C'   3E 07               RNET3:  LD      A,RFRDAT
051E'   C3 0523'                    JP      ALNET3
0521'   3E 05               LNET3:  LD      A,LFRDAT
0523'   E1                  ALNET3: POP     HL
0524'   D1                          POP     DE
0525'   1E 00                       LD      E,0
0527'   19                          ADD     HL,DE

0528'   FD E5                       PUSH    IY
052A'   D1                          POP     DE
052B'   83                          ADD     A,E
052C'   5F                          LD      E,A

052D'   ED B0                       LDIR                    ; TRANSFER DATABYTES TO FIFO3

052F'   FD 36 00 80         EBFTR:  LD      (IY),FULSW      ;MARK RINGBUFFER FULL
0533'   3A 0000*                    LD      A,(NXFREO)
0536'   C6 20                       ADD     A,32            ;UPDATE POINTER TO NEXT FREE RINGBUFFER
0538'   32 0000*                    LD      (NXFREO),A

053B'   C9                          RET
                                    PAGE
```

```
                        ;*********************************************************************
053C'   7E              FPAQH:  LD      A,(HL)
                        ;       OUT     (MAP),A

053D'   2C                      INC     L
053E'   7E                      LD      A,(HL)

053F'   2C                      INC     L
0540'   5E                      LD      E,(HL)
0541'   2C                      INC     L
0542'   56                      LD      D,(HL)
0543'   EB                      EX      DE,HL

0544'   C9                      RET
                        ;*********************************************************************
                                END
```

Macros:

Symbols:

A1	0111'	A2	0119'	A3	0121'	A4	0129'
A5	0131'	A6	0139'	ABTIM	027A*	ACT1	0141'
ACT2	01B7'	ACT3	0208'	ACT4	0233'	ACT5	02EF'
ACT6	0321'	ACT7	0341'	ACT8	035B'	ACT9	0368'
ACTA	0077'	ACTAB	0109'	AKMC	0294'	ALNET2	049B'
ALNET3	0523'	ANWDSC	0515*	ASTTDO	03B4*	B28	04D2*
BCN	04E2*	BCNTO	047D*	BCNT4	02D2'	BFTRA	04D6'
BPINC	0264*	BUFOFF	0000	CCINC	03B9*	CHAN	0480*
CONRB	0432'	CONTI	0031'	CRIDFR	03E0'	CTLBY	040D'
DATA2	01D8'	DATOUT	0000*	DATY	0001	DIAGT	03DC*
DXIUID	0006	E1	00D1'	E2	00D9'	E3	00E1'
E4	00E9'	E5	00F1'	E6	00F9'	E7	0101'
EBFTR	052F'	ECTLB	0428'	EMPSW	0000	EVENT	0064'
EVTAB	00C9'	FDSCR	0277*	FESW	0000	FLWTIM	0349*
FPAQH	053CI'	FRTIM	03BE'	FULSW	0080	GACT2	028F'
GNOPAC	028A'	IDID	0002	ILAYID	0001	INCL	01AB'
INITI	0390'	ISTA2	01C3'	JPACT	00A1'	LAYID	0005
LFRDAT	0005	LNET1	0401'	LNET2	0499'	LNET3	0521'
MOV4	024D'	MUFR4	02E9'	NAKIN	03A3'	NEWPA	02AA'
NOBUF	0457'	NOPAC	02A2'	NOREQ	0427'	NUL3	0217'
NUL4	0242'	NXFREO	0539*	OCTL	001B	OUPRO	0000I'
OUTERR	0000*	OWNMAP	0000	PERM	01EA'	PRC	0081'
PROBY	0003	PRODEO	04D7*	PRSTA	00A2'	RELEAS	03CD*
RESBF	042C'	RESET	0157'	RFRDAT	0007	RINDA	0005
RNET1	03E9'	RNET2	0494'	RNET3	051C'	RTRCNT	000C
SAD	0274*	SEQBY	0004	SEVFR	04C4'	STAEV	0043'
START	02B8'	TIM4	0243'	TIMFR	03C1'	TRBCN	046C'
TVALTR	000B	TXNBPL	000F	TXNFAL	0011	TXNFE	0014
TXNREL	0013	UPDBC	04CE'	VALI4	02D2'	XCONT	0179'
XDEQIF	025A*	XENQIF	026D*				

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX    XX    XXXX           X    XXX  X X X  XXXX     X
;   XX XX   XX   XX XX          X X         X XX  X        X
;   XX  XX  XX  XX  XX         X   X        X  X  XXXXX    X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX
;   XXXXXXXXXXXXXXXXX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX
;   XX    XXXXXX    XX         PROGRAMMER:     PEON
;   XX   XX XX XX   XX
;   XX  XX  XX  XX  XX         DATE:           830207
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;-----------------------------------------------------------------
;
;               ***************************************************
;               *
;               *  MODULE NAME: XTIMACT
;               *
;               ***************************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   TIMER  1:       SESSION-ADM. TIMER
;               TIMER  2:       PASSWORD-TAB TIMER
;               TIMER  3:       AUTO-BYE     TIMER
;               TIMER  5:       LINK-ACCESS  TIMER
;               TIMER 16:       X-NET PROTOC TIMER
;
;-----------------------------------------------------------------
        PAGE
```

```
                        ;*****  INTERNALS ***************************************************
                                public  RTIM1,RTIM2,RTIM3,RTIM4,RTIM6,RTIM7,RTIM8
                                public  RTIM9,RTIMA,RTIMB,RTIMC,RTIMD,RTIME,RTIMF,RTIM10
                                public  AUTBTI,ABRES

                        ;***** EXTERNALS ***************************************************

                                extrn   TQSUB,BQDEQ,BQFIFI,BQLDBC
                                extrn   SAD,NSAD
                                extrn   TICH,MAXCH
                                extrn   AVTAB
                                extrn   SADEPH,TRTIOCH,NETID,DEVNO
                                extrn   GWATIM
                                extrn   QMUXO
                                extrn   CLRPWA
                                extrn   STSTIM,PASSW,PARSTA,BW
                                extrn   OGEDA,ODEDA,IGEDA
                                extrn   SWTYPE
                                extrn   NOAVCH,NOBCHL,NOBCHR,TOTLOG
                                extrn   LAVAL

                        ;***** EQUALS ******************************************************

0010                    NXD     EQU     16
0010                    BUSY    EQU     10H
1D4C                    AUTBTI  EQU     7500            ;1 MIN `AUTOBYE-TIMER`-INTERVAL
00E1                    PRREL   EQU     0E1H
000B                    BCNT3   EQU     0BH
0002                    TRMUX   EQU     2

001E                    STSTO   EQU     30              ;1 MIN. STATUS-TIMEOUT
0081                    STSMC   EQU     81H
0000                    STSVC   EQU     00
000A                    STSSZ   EQU     10
0001                    XNAID   EQU     01
0001                    XNANET  EQU     01

00FF                    ABRES   EQU     0FFH

000B                    TVALTR  EQU     11
FFFF                    TVAL1   EQU     -1
FFFE                    OSTATE  EQU     -2

                        ;*******************************************************************
                                PAGE
```

```
                                ;***************************************** RTIM1 ************************
                                ;
                                ;       NAME:               RTIM1
                                ;       DESCRIPTION:        DECREMENT TIMER-VALUE IN SESSION-ADMINISTRATION-
                                ;                           DESCRIPTOR IF THEIR OWN TIMER IS RUNNING
                                ;
                                ;       ENTRY:              !
                                ;
                                ;
                                ;       EXIT:               !
                                ;
                                ;       DESTROY:            REG.AF,BC,DE,HL
                                ;
                                ;       EXECUTION TIME:     !
                                ;
                                ;*********************************************************************
0000'                                   cseg

0000'   FB                      RTIM1:  EI
0001'   3E 01                           LD      A,1
0003'   32 0000*                        LD      (TICH),A
0006'   01 0000*                        LD      BC,NSAD
0009'   21 FFF1*                        LD      HL,SAD+TVAL1-14
000C'   3A 0000*                NTIM1:  LD      A,(TICH)        ;INCREMENT TIMER-NO.
000F'   3C                              INC     A
0010'   E5                              PUSH    HL
0011'   21 0000*                        LD      HL,MAXCH
0014'   BE                              CP      (HL)
0015'   E1                              POP     HL
0016'   CA 002C'                        JP      Z,RSTRT         ;IF 1 < TIMER-NO. < 14 THEN
0019'   32 0000*                        LD      (TICH),A
001C'   09                              ADD     HL,BC
001D'   7E                              LD      A,(HL)          ;  GET TIMER-VALUE
001E'   FE 00                           CP      0
0020'   CA 000C'                        JP      Z,NTIM1         ;  IF TIME-OUT REACHED THEN
0023'   FE FF                           CP      0FFH            ;    GET NEXT TIMER-VALUE
                                                                ;  ELSE
0025'   CA 000C'                        JP      Z,NTIM1         ;    IF TIMER RESET THEN
0028'   35                              DEC     (HL)            ;    ELSE
                                                                ;      DECREMENT TIMER-VALUE
0029'   C3 000C'                        JP      NTIM1           ;    ENDIF
                                                                ;    GET NEXT TIMER-VALUE
                                                                ;  ENDIF
002C'                           RSTRT:
002C'   11 0019                         LD      DE,25
002F'   21 0000'                        LD      HL,RTIM1
0032'   CD 0000*                        CALL    TQSUB           ;RESTART TIMER
0035'   FB                              EI
                                                                ;ENDIF
0036'   C9                              RET

                                ;*************************************************************************
                                        PAGE
```

```
                        ;*****************************************************************
0037'                   RTIM2:
0037'   CD 0000*                CALL    CLRPWA
003A'   C9                      RET                     ;CLEAR PASSWORD-TABLE

                        ;*****************************************************************
                                PAGE
```

```
                                ;*****************************************************************
003B'   FB                      RTIM3:  EI
003C'   3E 01                           LD      A,1
003E'   32 0000*                        LD      (TRTIOCH),A
0041'   21 FFF0*                        LD      HL,SAD+2+OSTATE-16
0044'   E5                              PUSH    HL

0045'   3A 0000*                NTIM13: LD      A,(TRTIOCH)
0048'   3C                              INC     A
0049'   21 0000*                        LD      HL,MAXCH
004C'   BE                              CP      (HL)
004D'   E1                              POP     HL
004E'   CA 00C7'                        JP      Z,RSTRT3        ;IF NOT ALL CHANNEL SERVICED THEN

0051'   32 0000*                        LD      (TRTIOCH),A
0054'   01 0010                         LD      BC,NXD
0057'   09                              ADD     HL,BC
0058'   E5                              PUSH    HL
0059'   3E 10                           LD      A,BUSY
005B'   BE                              CP      (HL)
005C'   C2 0045'                        JP      NZ,NTIM13       ;  IF CHANNEL OPEN THEN

005F'   01 000D                         LD      BC,TVALTR+2
0062'   09                              ADD     HL,BC
0063'   7E                              LD      A,(HL)
0064'   FE 00                           CP      00
0066'   C2 00BC'                        JP      NZ,NTIM23       ;    IF 10-MIN.-TIMEOUT THEN

0069'   E5                              PUSH    HL
006A'   21 0000*                        LD      HL,SADEPH
006D'   CD 0000*                        CALL    BQDEQ           ;       GET EMPTY BUFFER
0070'   E1                              POP HL
0071'   D2 00C6'                        JP      NC,RSTRT13
0074'   D5                              PUSH    DE
0075'   E5                              PUSH    HL
0076'   CD 0000*                        CALL    BQFIFI          ;       GET DATA-ADDR IN BUFFER
0079'   36 E1                           LD      (HL),PRREL      ;       STORE PRIMARY RELEASE REQUEST
                                                                ;         WITH GLOBAL PASSWORD
007B'   23                              INC     HL
007C'   36 00                           LD      (HL),00         ;       COMPLETION-CODE = 00
007E'   23                              INC     HL
007F'   E5                              PUSH    HL
0080'   3A 0000*                        LD      A,(NETID)
0083'   77                              LD      (HL),A
0084'   23                              INC     HL
0085'   3A 0000*                        LD      A,(DEVNO)
0088'   77                              LD      (HL),A
0089'   D1                              POP     DE
008A'   E5                              PUSH    HL
008B'   D5                              PUSH    DE
008C'   23                              INC     HL
008D'   3A 0000*                        LD      A,(TRTIOCH)
0090'   77                              LD      (HL),A
```

```
0091'  EB                          EX      DE,HL
0092'  E1                          POP     HL
0093'  13                          INC     DE
0094'  01 0003                     LD      BC,03
0097'  ED B0                       LDIR
0099'  E1                          POP     HL
009A'  36 00                       LD      (HL),00
009C'  E1                          POP     HL
009D'  01 0003                     LD      BC,03
00A0'  A7                          AND     A
00A1'  ED 42                       SBC     HL,BC
00A3'  ED B0                       LDIR
00A5'  D1                          POP     DE
00A6'  01 000B                     LD      BC,BCNT3
00A9'  CD 0000*                    CALL    BQLDBC
00AC'  3A 0000*                    LD      A,(NETID)
00AF'  47                          LD      B,A
00B0'  3A 0000*                    LD      A,(DEVNO)
00B3'  4F                          LD      C,A
00B4'  3E 00                       LD      A,0
00B6'  CD 0000*                    CALL    ODEDA

00B9'  C3 00C6'                    JP      RSTRT13         ;     ELSE
00BC'  3E FF                NTIM23: LD     A,ABRES
00BE'  BE                          CP      (HL)
00BF'  CA 0045'                    JP      Z,NTIM13

00C2'  35                          DEC     (HL)            ;       DECREMENT TIMER VALUE
00C3'  C3 0045'                    JP      NTIM13          ;     ENDIF
                                                           ;     GOTO NTIM13
                                                           ;   ELSE
                                                           ;     GOTO NTIM13
                                                           ;   ENDIF
00C6'  E1                   RSTRT13:POP    HL
00C7'  11 1D4C              RSTRT3: LD     DE,AUTBTI       ;ELSE
00CA'  21 003B'                     LD     HL,RTIM3
00CD'  CD 0000*                     CALL   TQSUB           ;  RESTART TIMER
00D0'  FB                           EI
00D1'  C9                           RET                    ;ENDIF

                            ;*****************************************************************
                                    PAGE
```

```
                        ;*****************************************************************
00D2'                   RTIM4:
00D2'   21 0000*                LD      HL,GWATIM
00D5'   36 00                   LD      (HL),00         ;STOP BROADCAST-TIMER

00D7'   C9                      RET

                        ;*****************************************************************
                                PAGE
```

```
                        ;
00D8'                   RTIM6:
00D8'                   RTIM7:
                        ;       LD      HL,STSTIM
                        ;       LD      A,0
                        ;       CP      (HL)
                        ;       JP      NZ,RTIM7X               ;IF STATUS-TIMEOUT THEN
                        ;
                        ;       LD      (HL),STSTO              ;  RESET TIMER
                        ;       LD      A,7
                        ;       CALL    OGEDA
                        ;       JP      NC,RTIM7X               ;  IF EMPTY BUFFER THEN
                        ;
                        ;       CALL    SFIFI
                        ;       LD      (HL),STSMC              ;    LOAD STATUS MESSAGE-CODE
                        ;       INC     HL
                        ;       LD      (HL),STSVC              ;    LOAD STATUS VC
                        ;       INC     HL
                        ;       LD      (HL),0
                        ;       LD      A,PASSW
                        ;       BIT     7,A
                        ;       JP      Z,RTIM71
                        ;
                        ;       SET     0,(HL)
                        ;RTIM71:        LD      A,(PARSTA)
                        ;       BIT     0,A
                        ;       JP      Z,RTIM72
                        ;
                        ;       SET     1,(HL)
                        ;RTIM72:        INC     HL
                        ;       LD      (HL),SWTYPE             ;    LOAD S/W-TYPE
                        ;       INC     HL
                        ;       LD      A,(BW)
                        ;       LD      (HL),A                  ;    LOAD DEDICATED BANDWIDTH
                        ;       INC     HL
                        ;       LD      A,(NOAVCH)
                        ;       LD      (HL),A                  ;    LOAD NO. OF AVAILABLE CHANNELS
                        ;       INC     HL
                        ;       LD      A,(NOBCHL)
                        ;       LD      (HL),A                  ;    LOAD NO. OF BUSY-LOCAL CHANNELS
                        ;       INC     HL
                        ;       LD      A,(NOBCHR)              ;    LOAD NO. OF BUSY-REMOTE CHANNELS
                        ;       LD      (HL),A
                        ;       INC     HL
                        ;       LD      BC,(TOTLOG)
                        ;       LD      (HL),C
                        ;       INC     HL
                        ;       LD      (HL),B                  ;    LOAD TOTAL NO. OF LOGIN'S
                        ;       LD      BC,STSSZ
                        ;       CALL    BQLDBC                  ;    SET BYTECOUNT IN BUFFER
                        ;       LD      C,XNAID
                        ;       LD      B,XNANET
                        ;       LD      A,7
                        ;       CALL    ODEDA                   ;    SEND STATUS-BUFFFER TO XNA
```

```
                        ;                                       ;  ELSE
                        ;                                       ;  ENDIF
                        ;                                       ;ELSE
                        ;                                       ;ENDIF
                        ;RTIM7X:        LD      HL,STSTIM
                        ;       DEC     (HL)                    ;DECREMENT STATUS-TIMER
                        ;       LD      BC,07
                        ;       JP      ESTABR                  ;RESTART TIMER
                        ;
                        ;;*****************************************************************
                        ;
00D8'                   RTIM8:
00D8'                   RTIM9:
00D8'                   RTIMA:
00D8'                   RTIMB:
00D8'                   RTIMC:
00D8'                   RTIMD:
00D8'                   RTIME:
00D8'                   RTIMF:
                                PAGE
```

```
                                ;*****************************************************************
00D8'                           RTIM10:
00D8'   3E 80                           LD      A,80H
00DA'   32 0000*                        LD      (LAVAL),A               ;SET TIME-OUT INDICATION
00DD'   11 0010                         LD      DE,16
00E0'   21 00D8'                        LD      HL,RTIM10
00E3'   CD 0000*                        CALL    TQSUB                   ;RESTART TIMER
00E6'   FB                              EI

00E7'   C9                              RET

                                ;*****************************************************************
                                        END
```

Macros:

Symbols:

ABRES	00FFI	AUTBTI	1D4CI	AVTAB	0000*	BCNT3	000B
BQDEQ	006E*	BQFIFI	0077*	BQLDBC	00AA*	BUSY	0010
BW	0000*	CLRPWA	0038*	DEVNO	00B1*	GWATIM	00D3*
IGEDA	0000*	LAVAL	00DB*	MAXCH	004A*	NETID	00AD*
NOAVCH	0000*	NOBCHL	0000*	NOBCHR	0000*	NSAD	0007*
NTIM1	000C'	NTIM13	0045'	NTIM23	00BC'	NXD	0010
ODEDA	00B7*	OGEDA	0000*	OSTATE	FFFE	PARSTA	0000*
PASSW	0000*	PRREL	00E1	QMUXO	0000*	RSTRT	002C'
RSTRT1	00C6'	RSTRT3	00C7'	RTIM1	0000I'	RTIM10	00D8I'
RTIM2	0037I'	RTIM3	003BI'	RTIM4	00D2I'	RTIM6	00D8I'
RTIM7	00D8I'	RTIM8	00D8I'	RTIM9	00D8I'	RTIMA	00D8I'
RTIMB	00D8I'	RTIMC	00D8I'	RTIMD	00D8I'	RTIME	00D8I'
RTIMF	00D8I'	SAD	0042*	SADEPH	006B*	STSMC	0081
STSSZ	000A	STSTIM	0000*	STSTO	001E	STSVC	0000
SWTYPE	0000*	TICH	001A*	TOTLOG	0000*	TQSUB	00E4*
TRMUX	0002	TRTIOC	008E*	TVAL1	FFFF	TVALTR	000B
XNAID	0001	XNANET	0001				

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXX           X X        XX  X  X      X
;   XXXX    XX    XXXX          X    XXX  X X X  XXXX   X
;   XX XX   XX   XX XX         X X         X  XX  X      X
;   XX  XX  XX  XX  XX        X   X        X   X  XXXXX  X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX
;   XXXXXXXXXXXXXXXXXX        CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXXX        PROGRAMMER:     PEON
;   XX    XXXXXX    XX        DATE:           830207
;   XX   XX XX XX   XX
;   XX  XX  XX  XX  XX
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ****************************************************
;               *
;               *  MODULE NAME: XDATAG
;               *
;               ****************************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   >DATAGRAM-PROTOCOL ON CHANNEL 0<
;               OUTGOING:
;                 GET DATAGRAM-BUFFERS FROM OUTGOING-FULL-DATAGRAM-QUEUES
;                 AND DELIVER DATA IN OUTGOING RINGBUFFERS
;               INGOING:
;                 GET DATAGRAM-FRAMES FROM INGOING-RINGBUFFERS AND DELIVER
;                 DATA IN INGOING-FULL-DATAGRAM-QUEUES
;-----------------------------------------------------------------
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M DGR

```
                        ;****** INTERNALS ***************************************************

                                public  ODTGSC
                                public  FMUXQH
                                public  INDAT

                        ;****** EXTERNALS ***************************************************

                                extrn   RELEASE
                                extrn   XENQIF,XDEQIF,BQFIFI,TQSUB,SETSTA
                                extrn   CMUXQH
                                extrn   MUXSCN,NETID,QMUX
                                extrn  NXFREO
                                extrn   FPAQH,DEVNO
                                extrn   BUFAO,GENQUE,NAPTAB,RTIM4,GWATIM
                                extrn   IGEDA,IDEDA

                        ;****** EQUALS ******************************************************

0001                    ILAYID  EQU     1
0002                    IDID    EQU     2
0003                    SXIUID  EQU     3
0004                    MUXBC   EQU     4
0005                    DLAYID  EQU     5
0006                    DXIUID  EQU     6
0007                    SNETID  EQU     7
0008                    FRDATA  EQU     8

000D                    MAXBC   EQU     13              ;MAXIMUMOF DATA IN DATAGRAM

0060                    NODDST  EQU     60H             ;NODAL DESTINATION
0040                    NLDATA  EQU     40H             ;INTERNET COMMUNICATION
0000                    LOCDTG  EQU     00H             ;LOCAL DATAGRAM
0000                    NULLS   EQU     00H
003F                    GWACBC  EQU     3FH             ;GATEWAY ACCESS BROADCAST
0000                    GWACT   EQU     00H
0000                    GWAMC   EQU     00H             ;GATEWAY ACCESS MESSAGE CODE
0080                    GWAANS  EQU     80H             ;GATEWAY ANSWER

0400                    BRCEP   EQU     400H
0002                    BRCBC   EQU     2
003C                    GWTIM   EQU     60              ;1/2 SEC WAIT ON GATEWAYACCESS-ANSWER
0080                    GWTIMO  EQU     80H             ;GATEWAY ACC. TIMER SWITCH

0008                    MAXMUX  EQU     8

0001                    XNAID   EQU     1
0001                    XNANET  EQU     1

0000                    FESW    EQU     0
0080                    FULSW   EQU     80H

                        ;*******************************************************************
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                                ;****************************************** ODTGSC ********************
                                ;
                                ;       NAME:               ODTGSC
                                ;       DESCRIPTION:        >OUTGOING DATAGRAM SCAN PROCESS<
                                ;                           POLLS EACH MUX-CHANNELS OUTGOING QUEUE FOR BUFFERS
                                ;                           AND TRANSFER DATAGRAM-DATA (IF ANY) TO RINGBUFFER.
                                ;                           POLLS ONE CHANNEL BETWEEN TWO SCHEDULEPOINTS.
                                ;
                                ;       DESTROY:            ALL REG.S
                                ;
                                ;       EXECUTION TIME: !
                                ;
                                ;*****************************************************************
0000'                                   cseg
0000'                           ODTGSC:
0000'   3E 04                           LD      A,4
0002'   CD 01F5'                        CALL    FMUXQH
0005'   11 0400*                        LD      DE,BUFA0+BRCEP
0008'   01 0712                         LD      BC,0712H
000B'   3E 00                           LD      A,0             ;GENERATE 7 BUFFERS IN I.E.QUEUE - MUX.4
000D'   CD 0000*                        CALL    GENQUE
0010'   3E 00                   INIT:   LD      A,0             ;INIT CURRENT MUX-CHANNEL TO BE SCANNED
0012'   32 0000*                DCONT:  LD      (MUXSCN),A
0015'   CD 0028'                        CALL    OUTDAT          ;CREATE EVT. DATAGRAM IN  OUTG. RINGBUFFER
0018'   CD 0000*                        CALL    RELEASE         ;SCHEDULE
001B'   FB                              ei                      ;
001C'   3A 0000*                        LD      A,(MUXSCN)
001F'   FE 08                           CP      MAXMUX
0021'   CA 0010'                        JP      Z,INIT          ;CALCULATE NEXT MUX-CH. TO BE SCANNED
0024'   3C                              INC     A
0025'   C3 0012'                        JP      DCONT

                                ;*****************************************************************
                                ;*****************************************************************
                                        PAGE
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```
                                ;****************************************** OUTDAT ********************
                                ;
                                ;       NAME:               OUTDAT
                                ;       DESCRIPTION:        >OUTGOING DATAGRAM<
                                ;                           DELIVER OUTGOING DATAGRAM TO RINGBUFFER,IF DATAGRAM
                                ;                           AND EMPTY RINGBUFFER IS AVAILABLE.
                                ;                           BUILD UP A CORRECT HEAD OF DATAGRAM-FRAME.
                                ;
                                ;       ENTRY:              REG.A:  NO. OF CURRENT MUX-CH.
                                ;
                                ;
                                ;       EXIT:
                                ;
                                ;       DESTROY:            REG. AF,BC,DE,HL
                                ;
                                ;       EXECUTION TIME: !
                                ;
                                ;*********************************************************************

0028'   FD 2A 0000*             OUTDAT: LD      IY,(NXFREQ)     - 0 ved start ? hvor initialisere denne ?
002C'   FD CB 00 7E                     BIT     7,(IY+FESW)
0030'   C0                              RET     NZ                      ;IF EMPTY RINGBUFFER AVAILABLE THEN

0031'   CD 01F5'                        CALL    FMUXQH
0034'   01 0020                         LD      BC,20H
0037'   09                              ADD     HL,BC                   ;  ADD OF CORRECT MUX-QUEUE-HEAD
0038'   CD 0000*                        CALL    XDEQIF                  ;  IF NO OUTG. BUFFER FROM MUX-QUEUE THEN
003B'   D0                              RET     NC                      ;    EXIT

003C'   D5                              PUSH    DE                      ;  ELSE
003D'   1B                              DEC     DE
003E'   1B                              DEC     DE
003F'   1A                              LD      A,(DE)                  ;    GET DEST. NET-ID
0040'   13                              INC     DE
0041'   21 0000*                        LD      HL,NETID
0044'   BE                              CP      (HL)
0045'   CA 012A'                        JP      Z,LOCNET                ;    IF DEST. NET-ID <> OWN NET-ID THEN
                                        PAGE
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0048'  D5                      REMNET: PUSH   DE                 ;      PUSH BUFFER-ADD. - 1
0049'  F5                              PUSH   AF                 ;      PUSH DEST NET-ID
004A'  FD 77 09                        LD     (IY+FRDATA+1),A    ;      STORE DEST NET-ID
004D'  87                              ADD    A,A
004E'  4F                              LD     C,A
004F'  FD 36 01 3F                     LD     (IY+ILAYID),GWACBC ;         STORE GATEWAY-ACCESS-BROADCAST
0053'  FD 36 02 00                     LD     (IY+IDID),GWACT    ;      STORE CATEGORY
0057'  3A 0000*                        LD     A,(DEVNO)
005A'  FD 77 03                        LD     (IY+SXIUID),A      ;      STORE SRC XIU-ID
005D'  FD 36 04 02                     LD     (IY+MUXBC),BRCBC   ;       STORE BYTECOUNT
0061'  3A 0000*                        LD     A,(NETID)
0064'  FD 77 07                        LD     (IY+SNETID),A      ;      STORE SRC NET-ID

0067'  FD 36 08 00                     LD     (IY+FRDATA),GWAMC;         STORE MESSAGE-CODE
006B'  FD 36 00 80                     LD     (IY+FESW),FULSW    ;      SEND GATEWAY-ACCESS-BROADCAST
006F'  3A 0000*                        LD     A,(NXFREO)
0072'  C6 20                           ADD    A,32               ;      UPDATE POINTER TO RINGBUFFER
0074'  32 0000*                        LD     (NXFREO),A

0077'  21 0000*                        LD     HL,NAPTAB
007A'  06 00                           LD     B,0
007C'  09                              ADD    HL,BC
007D'  36 80                           LD     (HL),80H           ;      CLEAR NODAL-ACCESS-POINT TABLE
007F'  23                              INC    HL
0080'  36 00                           LD     (HL),00

0082'  11 003C                         LD     DE,GWTIM
0085'  21 0000*                        LD     HL,RTIM4
0088'  CD 0000*                        CALL   TQSUB
008B'  3E 80                           LD     A,GWTIMO
008D'  32 0000*                        LD     (GWATIM),A         ;      START TIMER

0090'  CD 0000*                GWSCH:  CALL   RELEASE
0093'  FB                              ei                        ;
0094'  3E 04                   GWAA:   LD     A,4
0096'  CD 0000*                        CALL   IGEDA
0099'  D2 00C9'                        JP     NC,BCTIMO          ;      IF BUFFER THEN

009C'  D5                              PUSH   DE
009D'  E5                              PUSH   HL
009E'  CD 0000*                        CALL   BQFIFI
00A1'  3E 80                           LD     A,GWAANS
00A3'  BE                              CP     (HL)
00A4'  C2 00C5'                        JP     NZ,DLBUF3          ;        IF CORRECT GWAANS-MESSAGE-CODE THEN

00A7'  23                              INC    HL
00A8'  7E                              LD     A,(HL)             ;          GET NET-ID IN BUFFER
00A9'  87                              ADD    A,A
00AA'  4F                              LD     C,A
00AB'  06 00                           LD     B,0
00AD'  23                              INC    HL
00AE'  7E                              LD     A,(HL)             ;          GET COST-VALUE
00AF'  21 0000*                        LD     HL,NAPTAB
00B2'  09                              ADD    HL,BC
```

```
00B3'   4E                          LD      C,(HL)          ;       GET COST-VALUE IN NAPTAB
00B4'   B9                          CP      C
00B5'   F2 00C5'                    JP      P,DLBUF3        ;       IF NEW-COST < OLD-COST THEN

00B8'   77                          LD      (HL),A          ;         STORE NEW-COST IN NAPTAB
00B9'   23                          INC     HL
00BA'   C1                          POP     BC
00BB'   71                          LD      (HL),C          ;         STORE NEW NODAL-ACCESS-POINT
00BC'   D1                  DLBUF2: POP     DE              ;       ELSE
00BD'   3E 04                       LD      A,4             ;       ENDIF
00BF'   CD 0000*                    CALL    IDEDA           ;     ELSE
00C2'   C3 0094'                    JP      GWAA            ;     ENDIF
                                                            ;     DELIVER EMPTY BUFFER TO EMPTY-QUEUE
00C5'   C1                  DLBUF3: POP     BC
00C6'   C3 00BC'                    JP      DLBUF2
                                    PAGE
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00C9'   21 0000*          BCTIMO: LD      HL,GWATIM
00CC'   CB 7E                     BIT     7,(HL)
00CE'   C2 0090'                  JP      NZ,GWSCH          ;     IF TIMEOUT THEN

00D1'   FD 2A 0000*               LD      IY,(NXFREO)
00D5'   CB 7E                     BIT     7,(HL)
00D7'   C2 0090'                  JP      NZ,GWSCH          ;       IF OUTG.RINGBUFFER THEN

00DA'   3A 0000*                  LD      A,(MUXSCN)
00DD'   CD 01F5'                  CALL    FMUXQH
00E0'   F1                        POP     AF
00E1'   D1                        POP     DE
00E2'   FD 77 02                  LD      (IY+IDID),A       ;         STORE DEST.NET-ID
00E5'   87                        ADD     A,A
00E6'   4F                        LD      C,A
00E7'   06 00                     LD      B,0
00E9'   21 0000*                  LD      HL,NAPTAB
00EC'   09                        ADD     HL,BC
00ED'   23                        INC     HL
00EE'   3E 00                     LD      A,0
00F0'   B6                        OR      (HL)
00F1'   CA 0191'                  JP      Z,DLBUF1          ;         IF DEST.NET CAN BE REACHED THEN

00F4'   F6 40                     OR      NLDATA
00F6'   FD 77 01                  LD      (IY+ILAYID),A     ;           STORE DEST.NAP-ID

00F9'   1A                        LD      A,(DE)
00FA'   FE 80                     CP      80H
00FC'   F2 011F'                  JP      P,XEPREM
00FF'   FE 10                     CP      10H
0101'   F2 011F'                  JP      P,XEPREM
0104'   FE 01                     CP      XNAID
0106'   C2 0112'                  JP      NZ,XCPREM         ;           IF DEV EQUAL XCP THEN
0109'   1B                        DEC     DE
010A'   1A                        LD      A,(DE)
010B'   FE 01                     CP      XNANET
010D'   13                        INC     DE
010E'   1A                        LD      A,(DE)
010F'   CA 011F'                  JP      Z,XEPREM

0112'   F6 60             XCPREM: OR      NODDST
0114'   FD 77 05                  LD      (IY+DLAYID),A     ;             STORE NODAL-DEST-ID
0117'   FD 36 06 00               LD      (IY+DXIUID),NULLS       ;     SET CATEGORY
011B'   13                        INC     DE
011C'   C3 0160'                  JP      ALLNET
                                          ;           ELSE
011F'   FD 77 06          XEPREM: LD      (IY+DXIUID),A     ;           STORE DEST.XIU-ID
0122'   FD 36 05 00               LD      (IY+DLAYID),LOCDTG;           STORE LOC.-DATAGRAM-ID
0126'   13                        INC     DE
0127'   C3 0160'                  JP      ALLNET
                                          ;       ELSE
                                  PAGE
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                                                        ;     ELSE
012A'   1A                  LOCNET: LD      A,(DE)      ;       GET DEST XIU-ID
012B'   FE 80                       CP      80H
012D'   F2 0150'                    JP      P,XEPLOC
0130'   FE 10                       CP      10H
0132'   F2 0150'                    JP      P,XEPLOC    ;       IF DEV EQUAL XCP THEN
0135'   FE 01                       CP      XNAID
0137'   C2 0143'                    JP      NZ,XCPLOC
013A'   1B                          DEC     DE
013B'   1A                          LD      A,(DE)
013C'   FE 01                       CP      XNANET
013E'   13                          INC     DE
013F'   1A                          LD      A,(DE)
0140'   CA 0150'                    JP      Z,XEPLOC

0143'   F6 60               XCPLOC: OR      NODDST
0145'   FD 77 01                    LD      (IY+ILAYID),A   ;         STORE '6,NODE-DEST'H
0148'   FD 36 02 00                 LD      (IY+IDID),NULLS
014C'   13                          INC     DE
014D'   C3 0158'                    JP      LCNET1      ;       ELSE

0150'   FD 77 02            XEPLOC: LD      (IY+IDID),A     ;         STORE DEST XIU-ID
0153'   13                          INC     DE
0154'   FD 36 01 00                 LD      (IY+ILAYID),LOCDTG ;      STORE LOCAL DATAGRAM-ID
                                                        ;       ENDIF
0158'   FD 36 05 00         LCNET1: LD      (IY+DLAYID),NULLS  ;    STORE NULL-BYTE
015C'   FD 36 06 00                 LD      (IY+DXIUID),NULLS  ;    STORE NULL-BYTE
                                                        ;     ENDIF
0160'   CD 0000*            ALLNET: CALL    BQFIFI      ;     FIND FIRST DATA IN BUFFER
0163'   3A 0000*                    LD      A,(MUXSCN)
0166'   07                          RLCA
0167'   07                          RLCA
0168'   07                          RLCA
0169'   07                          RLCA
016A'   B1                          OR      C
016B'   FD 77 04                    LD      (IY+MUXBC),A    ;     LOAD MUX-NO. AND BYTECOUNT
016E'   FD E5                       PUSH    IY
0170'   E3                          EX      (SP),HL
0171'   11 0008                     LD      DE,FRDATA
0174'   19                          ADD     HL,DE       ;     FIND 'FIRST DATA' IN EMPTY FRAME
0175'   EB                          EX      DE,HL
0176'   E1                          POP     HL
0177'   ED B0                       LDIR                ;     TRANSFER

0179'   3A 0000*                    LD      A,(DEVNO)
017C'   FD 77 03                    LD      (IY+SXIUID),A   ;     STORE SRC. XIU-ID
017F'   3A 0000*                    LD      A,(NETID)
0182'   FD 77 07                    LD      (IY+SNETID),A   ;     STORE SRC. NET-ID

0185'   FD 36 00 80                 LD      (IY+FESW),FULSW ;     MARK RINGBUFFRE FULL
0189'   3A 0000*                    LD      A,(NXFREO)      ;     UPDATE POINTER TO
018C'   C6 20                       ADD     A,32        ;     NEXT EMPTY OUTGOING RINGBUFFER
018E'   32 0000*                    LD      (NXFREO),A
0191'   D1                  DLBUF1: POP     DE
```

```
0192'   2A 0000*                LD      HL,(CMUXQH)
0195'   01 0030                 LD      BC,30H
0198'   09                      ADD     HL,BC           ;    ADD OF OUTG. EMPTY QUEUE HEAD
0199'   AF                      XOR     A
019A'   CD 0000*                CALL    XENQIF          ;    DELIVER EMPTY BUFFER TO MUX-CH.
                                                        ;  ENDIF
                                                        ;ELSE
                                                        ;ENDIF
019D'   C9                      RET                     ;EXIT

                        ;*****************************************************************
                                PAGE
```

```
                                ;***************************************** INDAT *********************
                                ;
                                ;       NAME:               INDAT
                                ;       DESCRIPTION:        >INGOING DATAGRAM<
                                ;                           TRANSFER INGOING FRAME TO DATAGRAM-BUFFER,AND ENQUEUE
                                ;                           IT WITH SRC.-NIU IN HEAD IN INGOING-FULL DATAGRAM-
                                ;                           QUEUE FOR SPECIFIED MUX-NO.
                                ;                           IS CALLED BY INGOING SCAN PROCESS
                                ;
                                ;       ENTRY:              REG. IY: ADD OF FULL FRAME
                                ;
                                ;
                                ;       EXIT:
                                ;
                                ;       DESTROY:            REG. AF,BC,DE,DE,HL,IX
                                ;
                                ;       EXECUTION TIME: !
                                ;
                                ;*********************************************************************
019E'   FD 7E 04                INDAT:  LD      A,(IY+MUXBC)
01A1'   E6 0F                           AND     0FH
01A3'   C8                              RET     Z                       ;IF BYTECOUNT = 0 THEN
                                                                        ;  EXIT
01A4'   FE 0E                           CP      MAXBC+1
01A6'   D0                              RET     NC                      ;IF BYTECOUNT > 13 THEN
                                                                        ;  EXIT
01A7'   FD 7E 04                        LD      A,(IY+MUXBC)
01AA'   E6 F0                           AND     0F0H
01AC'   0F                              RRCA
01AD'   0F                              RRCA
01AE'   0F                              RRCA
01AF'   0F                              RRCA
01B0'   CD 01F5'                        CALL    FMUXQH                  ;FIND CURRENT MUX-QUEUE-HEAD-AREA
01B3'   CD 0000*                        CALL    XDEQIF
01B6'   D0                              RET     NC                      ;IF EMPTY BUFFER THEN

01B7'   D5                              PUSH    DE
01B8'   1B                              DEC     DE
01B9'   FD 7E 03                        LD      A,(IY+SXIUID)
01BC'   12                              LD      (DE),A                  ;  LOAD SRC.XIU IN EMPTY BUFFER
01BD'   1B                              DEC     DE
01BE'   FD 7E 07                        LD      A,(IY+SNETID)           ;  LOAD SRC NET IN EMPTY BUFFER
01C1'   12                              LD      (DE),A
01C2'   13                              INC     DE
01C3'   13                              INC     DE
01C4'   FD 7E 06                        LD      A,(IY+DXIUID)           ;  LOAD SRC NAP-ID IN STATUS
01C7'   CD 0000*                        CALL    SETSTA
01CA'   FD 7E 04                        LD      A,(IY+MUXBC)            ;  GET NO. OF BYTES
01CD'   E6 0F                           AND     0FH
01CF'   06 00                           LD      B,0
01D1'   4F                              LD      C,A
01D2'   21 0002                         LD      HL,2
01D5'   19                              ADD     HL,DE
```

```
01D6'   71                      LD      (HL),C          ;  AND STORE IT IN BUFFERHEAD
01D7'   23                      INC     HL
01D8'   70                      LD      (HL),B
01D9'   23                      INC     HL
01DA'   7E                      LD      A,(HL)
01DB'   23                      INC     HL
01DC'   66                      LD      H,(HL)
01DD'   6F                      LD      L,A             ;  GET POINTER TO DATA IN BUFFER
01DE'   EB                      EX      DE,HL           ;  DE:=DEST IN BUFFER
01DF'   FD E5                   PUSH    IY
01E1'   E1                      POP     HL
01E2'   7D                      LD      A,L
01E3'   C6 08                   ADD     A,FRDATA
01E5'   6F                      LD      L,A             ;  HL:=SRC IN FRAME
01E6'   ED B0                   LDIR
01E8'   D1                      POP     DE
01E9'   2A 0000*                LD      HL,(CMUXQH)
01EC'   01 0010                 LD      BC,10H
01EF'   09                      ADD     HL,BC           ;  ADD OF ING. FULL QUEUE HEAD
01F0'   AF                      XOR     A
01F1'   CD 0000*                CALL    XENQIF          ;  DELIVER FULL INGOING DATAGRAM
                                                        ;ELSE
                                                        ;ENDIF
01F4'   C9                      RET                     ;EXIT
                        ;*******************************************************************
                                PAGE
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```
                                ;****************************************** FMUXQH ********************
                                ;
                                ;       NAME:           FMUXQH
                                ;       DESCRIPTION:    FIND THE CORRECT QUEUE-HEAD-AREA FROM MUX.NO.
                                ;                       AND STORE IT IN 'SYSTEM-RAM'
                                ;
                                ;       ENTRY:          REG.A:  MUX.NO.
                                ;
                                ;       EXIT:           REG.A:  MUX.NO.
                                ;                       REG.HL: QUEUE-HEAD-AREA
                                ;
                                ;       DESTROY:
                                ;
                                ;       EXECUTION TIME: !
                                ;
                                ;*********************************************************************
01F5'   D5                      FMUXQH: PUSH    DE
01F6'   87                              ADD     A,A
01F7'   87                              ADD     A,A
01F8'   21 0000*                        LD      HL,QMUX         ;POINT TO START OF ENTIRE MUX-QUEUE-HEAD-AREA
01FB'   16 00                           LD      D,0
01FD'   5F                              LD      E,A
01FE'   19                              ADD     HL,DE
01FF'   CD 0000*                        CALL    FPAQH
0202'   22 0000*                        LD      (CMUXQH),HL
0205'   D1                              POP     DE

0206'   C9                              RET

                                ;*********************************************************************
                                        END
```

Macros:

Symbols:

ALLNET	0160'	BCTIMO	00C9'	BQFIFI	0161*	BRCBC	0002
BRCEP	0400	BUFAO	0006*	CMUXQH	0203*	DCONT	0012'
DEVNO	017A*	DLAYID	0005	DLBUF1	0191'	DLBUF2	00BC'
DLBUF3	00C5'	DXIUID	0006	FESW	0000	FMUXQH	01F5I'
FPAQH	0200*	FRDATA	0008	FULSW	0080	GENQUE	000E*
GWAA	0094'	GWAANS	0080	GWACBC	003F	GWACT	0000
GWAMC	0000	GWATIM	00CA*	GWSCH	0090'	GWTIM	003C
GWTIMO	0080	IDEDA	00C0*	IDID	0002	IGEDA	0097*
ILAYID	0001	INDAT	019EI'	INIT	0010'	LCNET1	0158'
LOCDTG	0000	LOCNET	012A'	MAXBC	000D	MAXMUX	0008
MUXBC	0004	MUXSCN	0164*	NAPTAB	00EA*	NETID	0180*
NLDATA	0040	NODDST	0060	NULLS	0000	NXFREQ	018F*
ODTGSC	0000I'	OUTDAT	0028'	QMUX	01F9*	RELEAS	0091*
REMNET	0048'	RTIM4	0086*	SETSTA	01C8*	SNETID	0007
SXIUID	0003	TQSUB	0089*	XCPLOC	0143'	XCPREM	0112'
XDEQIF	01B4*	XENQIF	01F2*	XEPLOC	0150'	XEPREM	011F'
XNAID	0001	XNANET	0001				

No Fatal error(s)

```
;***    LOCAL CONTROLLER / TIP : 831101

;***** INTERNALS ***************************************************************

        public  XRAMB,XRAME
        public  STACKA,STACKB,TIMFL,LAVAL
        public  NXFUL,MAILB,CHAN,BCNT
        public  PRODEI,PRODEO
        public  RAMP,STIO3,B28,BCN,BCNTO,OUTERR,FLWTIM
        public  PDO,SCANO,NXFRE,FEFIF
        public  SLL
        public  NXFREO,DEVNO,DATOUT,NXFULO,INXTA,OUTXTA
        public  TEMP,TICH,MAXCH,TRTIOCH,NMM
        public  QMUX0,QMUX1,QMUX2,QMUX3,QMUX4,QMUX5,QMUX6,QMUX7
        public  QMUX8,QMUX9,QMUXA,QMUXB,QMUXC,QMUXD,QMUXE,QMUXF
        public  CMUXQH,MUXSCN,DTGST
        public  CSAVC,CSABUF,CSAD,CSAPAR,SAD,SADMST
        public  SADEPH
        public  ANWDSC,NWDSC
        public  CSANAP,CSANET,NETID
        public  AVTAB
        public  GWATIM,NAPTAB
        public  STTDSC,STTST,STTEPH,ASTTDI,ASTTDO
        public  CPWNAP,CPWPAR,CPWBUF
        public  PWATAB,PASSW,PWEPH,PWST
        public  CSCNAP,CSCNET,CSCXIU,CSCVC
        public  MAXCH
        public  PARSTA,PARTAB
        public  STSTIM,BW,NOAVCH,NOBCHL,NOBCHR,TOTLOG,DIAGT
        public  VLNVL,BITS,BAUDR,MODE
        public  NOTRCH,NOPRCH,MAXBW,ABTIM
        public  NMM,MMSWCD,PRTIM,CLSADD
        public  PR1,PR2,PR3,PR4
        public  BUFAO,BUFAOE
        public  HOSTSIG,CLIM

;*******************************************************************************
        PAGE
```

```
                        ;*****************************************************************
                        ;                DATA-MEMORY PAGE 0
                        ;*****************************************************************
0000'                           dseg
                                ORG     0000H
0000"                   XRAMB:
0000"                   SCANO:  DEFS    2*35            ;IN/OUT-GOING SCANTABLE
0046"                   NXFRE:  DEFS    2               ;NEXT FREE FRAME-BUFFER ADDRESS
0048"                   NXFUL:  DEFS    2               ;NEXT FULL FRAME-BUFFER ADDRESS
004A"                   MAILB:  DEFS    2               ;REC TIMER MAILBOX
004C"                   FEFIF:  DEFS    2               ;I/F BETWEEN SCANROUTIN AND PROTOCOLROUTINE
004E"                   CHAN:   DEFS    1               ;POINTER TO SCANTABLE
004F"                   FLWTIM: DEFS    1               ;VALUE OF FLOW-CONTROL TIMER
0050"                   BCNT:   DEFS    1               ;I/F BETWEEN SCANROUTINE AND PROTOCOLROUTINE (INGOING)
0051"                   PRODEI: DEFS    2               ;ADD OF ACTUAL PROTOCOL-DESCRIPTOR (INGOING)
0053"                   PRODEO: DEFS    2               ;ADD OF ACTUAL PROTOCOL-DESCRIPTOR (OUTGOING)
0055"                   DIAGT:  DEFS    1
0056"                   STIO3:  DEFS    1               ;STATUS OF I/O PORT 3
0057"                   B28:    DEFS    1
0058"                   BCN:    DEFS    1
0059"                   OUTERR: DEFS    1
005A"                   BCNTO:  DEFS    2*34            ;TABLE FOR OUTG. 34 CHANNELS
009E"                   RAMP:   DEFS    2
00A0"                   TDIAG:  DEFS    8               ;DIAGNOSTIC TABLE
00A8"                   LAVAL:  DEFS    1               ;USED BY OUTGOING SCAN ROUTINE
00A9"                   TIMFL:  DEFS    1               ;CYCLIC TIMER FLAG
00AA"                   SLL:    DEFS    1               ;NO OF ELEMENTS IN SCHEDULE-LIST
00AB"                   SYSDIAG:DEFS    1
00AC"                   NXFREO: DEFS    2               ;ADDR. OF NEXT FREE EMPTY RINGBUFFER
00AE"                   NXFULO: DEFS    2               ;ADDR. OF NEXT FULL RINGBUFFER
00B0"                   DEVNO:  DEFS    1               ;OWN DEVICE NUMBER
00B1"                   NETID:  DEFS    1
00B2"                   BW:     DEFS    1
00B3"                   DATOUT: DEFS    2               ;VARIABLE FOR OUTG. TO EXCHANGE IY AND DE
00B5"                   INXTA:  DEFS    1               ;POINTER TO NEXT FULL INGOING XTA-BUFFER
00B6"                   OUTXTA: DEFS    1               ;POINTER TO NEXT FREE OUTGOING XTA-BUFFER
00B7"                   TEMP:   DEFS    2               ;TEMPORARY STORAGE OF ACTUAL SCAN-TABLE-ADD
00B9"                   CMUXQH: DEFS    2               ;ADD OF CURRENT MUX QUEUE-HEAD
00BB"                   MUXSCN: DEFS    2               ;CURRENT MUX-CH. SCANNED FOR OUTGOING DATAGRAM
00BD"                   CSABUF: DEFS    2               ;CURRENT BUFFER SERVICED IN SESSION-ADM.
00BF"                   CSAPAR: DEFS    2               ;CURRENT ADD OF PARAMETERS IN SESSION-ADM.
00C1"                   CSAD:   DEFS    2               ;CURRENT SESSION-ADMINISTRATION-DESCRIPTOR
00C3"                   CSAVC:  DEFS    1               ;CURRENT VIRTUAL CHANNEL SERV. IN SESS.-ADM.
00C4"                   CSANAP: DEFS    1
00C5"                   CSANET: DEFS    1
00C6"                   TICH:   DEFS    1
00C7"                   TRTIOCH:DEFS    1
00C8"                   ANWDSC: DEFS    2               ;ADDR ON NETWORK-DESCRIPTOR
00CA"                   AVTAB:  DEFS    1
00CB"                   GWATIM: DEFS    1               ;INDICATION OF BROADCAST-TIMER RUNNING
00CC"                   ASTTDI: DEFS    2
00CE"                   ASTTDO: DEFS    2
00D0"                   VSP:    DEFS    2
00D2"                   CPWNAP: DEFS    1
```

```
00D3"                    CPWPAR: DEFS    2
00D5"                    CPWBUF: DEFS    2
00D7"                    CSCNAP: DEFS    1
00D8"                    CSCNET: DEFS    1
00D9"                    CSCXIU: DEFS    1
00DA"                    CSCVC:  DEFS    1
00DB"                    PARSTA: DEFS    1
00DC"                    STSTIM: DEFS    1
00DD"                    NOAVCHL:DEFS    1
00DE"                    NOBCHL: DEFS    1
00DF"                    NOBCHR: DEFS    1
00E0"                    TOTLOG: DEFS    2
00E2"                    MAXCH:  DEFS    1
                                 PAGE
```

```
                        ;*****************************************************************
                        ;               DATA-MEMORY PAGE 1
                        ;*****************************************************************
                                ORG     0100H
0100"                   NWDSC:  DEFS    32*8            ;32 NETWORK-LAYER DESCRIPTORS
0200"                   CLIM:   DEFS    1
                        ;*****************************************************************
                                PAGE
```

```
                        ;*****************************************************************
                        ;                DATA-MEMORY PAGE  2 , 3 ,4 , 5 & 6
                        ;*****************************************************************
                                ORG     0200H

0200"                   PDO:
0200"                   PDAPP:
0200"                   PARTAB:
0200"                   VLNVL:  DEFS    1                       ;PARAMETER TABLE
0201"                   BITS:   DEFS    1
0202"                   BAUDR:  DEFS    1
0203"                   MODE:   DEFS    1
0204"                           DEFS    2
0206"                   NOTRCH: DEFS    1
0207"                   NOPRCH: DEFS    1
0208"                   MAXBW:  DEFS    1
0209"                   ABTIM:  DEFS    1
020A"                           DEFS    2
020C"                   NMM:    DEFS    1
020D"                   MMSWCD: DEFS    1
020E"                   PRTIM:  DEFS    1
020F"                   CLSADD: DEFS    1
0210"                   PR1:    DEFS    4
0214"                   PR2:    DEFS    4
0218"                   PR3:    DEFS    4
021C"                   PR4:    DEFS    4
0220"                           DEFS    32

0240"                           DEFS    32*32                   ;32 PROTOCOL-DESCRIPTORS;
                        ;*****************************************************************

0640"                   NAPTAB: DEFS    16
                                                                ;EMPTY POOLQUEUEHEAD
0650"                   SADEPH: DEFS    8                       ;SESS.-ADM. EMPTY POOL
0658"                   STTEPH: DEFS    8                       ;STATISTIC EMPTY POOL
0660"                   PWEPH:  DEFS    8                       ;PASSWORD EMPTY POOL
                        ;*****************************************************************

0668"                   PWATAB: DEFS    24
0680"                   PASSW:  DEFS    9
0689"                           DEFS    7
                        ;*****************************************************************

0690"                   HOSTSIG:        DEFS    8
                        ;*****************************************************************
                                PAGE
```

```
                        ;*****************************************************************
                        ;                DATA-MEMORY PAGE 7 & 8
                        ;*****************************************************************

                                ORG     0700H
0700"                   SAD:    DEFS    32*16           ;32 SESSION-ADMINISTRATION-DESCRIPTORS

                        ;*****************************************************************
                                PAGE
```

```
                ;*****************************************************************
                ;                DATA-MEMORY PAGE 9
                ;*****************************************************************

                        ORG     0900H

0900"           STACKA: DEFS    30H             ;STACK TO SCAN-OUT, 20 LEVELS
0930"           STACKB: DEFS    20H             ;STACK TO SCAN-IN, 14 LEVELS
0950"           DTGST:  DEFS    30H             ;STACK TO DATAGRAM-PROTOCOL
0980"           SADMST: DEFS    20H             ;SESSION-ADMINISTRATION-STACK
09A0"           STTST:  DEFS    20H             ;STATISTIC-STACK
09C0"           PWST:   DEFS    20H             ;PASSWORD-STACK

                ;*****************************************************************
                        PAGE
```

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                        ;*****************************************************************
                        ;       DATA-MEMORY PAGE 10 , 11 , 12 ,13
                        ;*****************************************************************

                                ORG     0A00H

0A00"                   QMUX0:  DEFS    40H             ;QUEUE-HEADS MUX-NO.  0
0A40"                   QMUX1:  DEFS    40H             ;                     1
0A80"                   QMUX2:  DEFS    40H             ;                     2
0AC0"                   QMUX3:  DEFS    40H             ;                     3
0B00"                   QMUX4:  DEFS    40H             ;                     4
0B40"                   QMUX5:  DEFS    40H             ;                     5
0B80"                   QMUX6:  DEFS    40H             ;                     6
0BC0"                   QMUX7:  DEFS    40H             ;                     7
0C00"                   QMUX8:  DEFS    40H             ;                     8
0C40"                   QMUX9:  DEFS    40H             ;                     9
0C80"                   QMUXA:  DEFS    40H             ;                    10
0CC0"                   QMUXB:  DEFS    40H
0D00"                   QMUXC:  DEFS    40H
0D40"                   QMUXD:  DEFS    40H
0D80"                   QMUXE:  DEFS    40H
0DC0"                   QMUXF:  DEFS    40H

                        ;*****************************************************************
                                PAGE
```

```
                        ;*****************************************************************
                        ;       DATA-MEMORY PAGE 14 , 15
                        ;*****************************************************************

                                ORG     0E00H
0E00"                   STTDSC: DEFS    32*24
                        ;*****************************************************************
1100"                   XRAME:
                                PAGE
```

```
                        ;*****************************************************************************
                        ;
                        ;       BUFFER-AREA FOR DATAGRAM SERVICE
                        ;
                        ;*****************************************************************************
 1100"                  BUFAO:
 1100"                          DEFS    1000H
 2100"                  BUFAOE:
                        ;*****************************************************************************
                                END
```

Macros:

Symbols:

ABTIM	0209I"	ANWDSC	00C8I"	ASTTDI	00CCI"	ASTTDO	00CEI"
AVTAB	00CAI"	B28	0057I"	BAUDR	0202I"	BCN	0058I"
BCNT	0050I"	BCNTO	005AI"	BITS	0201I"	BUFAO	1100I"
BUFAOE	2100I"	BW	00B2I"	CHAN	004EI"	CLIM	0200I"
CLSADD	020FI"	CMUXQH	00B9I"	CPWBUF	00D5I"	CPWNAP	00D2I"
CPWPAR	00D3I"	CSABUF	00BDI"	CSAD	00C1I"	CSANAP	00C4I"
CSANET	00C5I"	CSAPAR	00BFI"	CSAVC	00C3I"	CSCNAP	00D7I"
CSCNET	00D8I"	CSCVC	00DAI"	CSCXIU	00D9I"	DATOUT	00B3I"
DEVNO	00B0I"	DIAGT	0055I"	DTGST	0950I"	FEFIF	004CI"
FLWTIM	004FI"	GWATIM	00CBI"	HOSTSI	0690I"	INXTA	00B5I"
LAVAL	00A8I"	MAILB	004AI"	MAXBW	0208I"	MAXCH	00E2I"
MMSWCD	020DI"	MODE	0203I"	MUXSCN	00BBI"	NAPTAB	0640I"
NETID	00B1I"	NMM	020CI"	NOAVCH	00DDI"	NOBCHL	00DEI"
NOBCHR	00DFI"	NOPRCH	0207I"	NOTRCH	0206I"	NWDSC	0100I"
NXFRE	0046I"	NXFREO	00ACI"	NXFUL	0048I"	NXFULO	00AEI"
OUTERR	0059I"	OUTXTA	00B6I"	PARSTA	00DBI"	PARTAB	0200I"
PASSW	0680I"	PDO	0200I"	PDAPP	0200"	PR1	0210I"
PR2	0214I"	PR3	0218I"	PR4	021CI"	PRODEI	0051I"
PRODEO	0053I"	PRTIM	020EI"	PWATAB	0668I"	PWEPH	0660I"
PWST	09C0I"	QMUX0	0A00I"	QMUX1	0A40I"	QMUX2	0A80I"
QMUX3	0AC0I"	QMUX4	0B00I"	QMUX5	0B40I"	QMUX6	0B80I"
QMUX7	0BC0I"	QMUX8	0C00I"	QMUX9	0C40I"	QMUXA	0C80I"
QMUXB	0CC0I"	QMUXC	0D00I"	QMUXD	0D40I"	QMUXE	0D80I"
QMUXF	0DC0I"	RAMP	009EI"	SAD	0700I"	SADEPH	0650I"
SADMST	0980I"	SCANO	0000I"	SLL	00AAI"	STACKA	0900I"
STACKB	0930I"	STIO3	0056I"	STSTIM	00DCI"	STTDSC	0E00I"
STTEPH	0658I"	STTST	09A0I"	SYSDIA	00AB"	TDIAG	00A0"
TEMP	00B7I"	TICH	00C6I"	TIMFL	00A9I"	TOTLOG	00E0I"
TRTIOC	00C7I"	VLNVL	0200I"	VSP	00D0"	XRAMB	0000I"
XRAME	1100I"						

No Fatal error(s)

```
                                        title xbqtab
                                        subttl xnet buffer queue tabel

                                        extrn   QMUX0,QMUX1,QMUX2,QMUX3,QMUX4,QMUX5,QMUX6,QMUX7
                                        extrn   QMUX8,QMUX9,QMUXA,QMUXB,QMUXC,QMUXD,QMUXE,QMUXF
                                        extrn   PAQH
                                        extrn   SACMDQ

                                        public  PDTAB,QMUX,PARDTB
0000'                                   cseg
                                ;*****************************************************************

0000'   00                      PDTAB:  DEFB    00H             ;CH 1
0001'   00                              DEFB    00H
0002'   0000*                           DEFW    SACMDQ
0004'   00                              DEFB    00H             ;CH 2
0005'   00                              DEFB    00H
0006'   0000*                           DEFW    PAQH+00H
0008'   00                              DEFB    00H             ;CH 3
0009'   00                              DEFB    00H
000A'   0040*                           DEFW    PAQH+40H
000C'   00                              DEFB    00H             ;CH 4
000D'   00                              DEFB    00H
000E'   0080*                           DEFW    PAQH+80H
0010'   00                              DEFB    00H             ;CH 5
0011'   00                              DEFB    00H
0012'   00C0*                           DEFW    PAQH+0C0H
0014'   00                              DEFB    00H             ;CH 6
0015'   00                              DEFB    00H
0016'   0100*                           DEFW    PAQH+100H
0018'   00                              DEFB    00H             ;CH 7
0019'   00                              DEFB    00H
001A'   0140*                           DEFW    PAQH+140H
001C'   00                              DEFB    00H             ;CH 8
001D'   00                              DEFB    00H
001E'   0180*                           DEFW    PAQH+180H
0020'   00                              DEFB    00H             ;CH 9
0021'   00                              DEFB    00H
0022'   01C0*                           DEFW    PAQH+1C0H
0024'   00                              DEFB    00H             ;CH 10
0025'   00                              DEFB    00H
0026'   0200*                           DEFW    PAQH+200H
0028'   00                              DEFB    00H             ;CH 11
0029'   00                              DEFB    00H
002A'   0240*                           DEFW    PAQH+240H
002C'   00                              DEFB    00H             ;CH 12
002D'   00                              DEFB    00H
002E'   0280*                           DEFW    PAQH+280H
0030'   00                              DEFB    00H             ;CH 13
0031'   00                              DEFB    00H
0032'   02C0*                           DEFW    PAQH+2C0H
0034'   00                              DEFB    00H             ;CH 14
0035'   00                              DEFB    00H
0036'   0300*                           DEFW    PAQH+300H
0038'   00                              DEFB    00H             ;CH 15
0039'   00                              DEFB    00H
```

M

```
003A'   0340*                   DEFW    PAQH+340H
003C'   00                      DEFB    00H             ;CH 16
003D'   00                      DEFB    00H
003E'   0380*                   DEFW    PAQH+380H
0040'   00                      DEFB    00H             ;CH 17
0041'   00                      DEFB    00H
0042'   03C0*                   DEFW    PAQH+3C0H
0044'   00                      DEFB    00H             ;CH 18
0045'   00                      DEFB    00H
0046'   0400*                   DEFW    PAQH+400H
0048'   00                      DEFB    00H             ;CH 19
0049'   00                      DEFB    00H
004A'   0440*                   DEFW    PAQH+440H
004C'   00                      DEFB    00H             ;CH 20
004D'   00                      DEFB    00H
004E'   0480*                   DEFW    PAQH+480H
0050'   00                      DEFB    00H             ;CH 21
0051'   00                      DEFB    00H
0052'   04C0*                   DEFW    PAQH+4C0H
0054'   00                      DEFB    00H             ;CH 22
0055'   00                      DEFB    00H
0056'   0500*                   DEFW    PAQH+500H
0058'   00                      DEFB    00H             ;CH 23
0059'   00                      DEFB    00H
005A'   0540*                   DEFW    PAQH+540H
005C'   00                      DEFB    00H             ;CH 24
005D'   00                      DEFB    00H
005E'   0580*                   DEFW    PAQH+580H
0060'   00                      DEFB    00H             ;CH 25
0061'   00                      DEFB    00H
0062'   05C0*                   DEFW    PAQH+5C0H
0064'   00                      DEFB    00H             ;CH 26
0065'   00                      DEFB    00H
0066'   0600*                   DEFW    PAQH+600H
0068'   00                      DEFB    00H             ;CH 27
0069'   00                      DEFB    00H
006A'   0640*                   DEFW    PAQH+640H
006C'   00                      DEFB    00H             ;CH 28
006D'   00                      DEFB    00H
006E'   0680*                   DEFW    PAQH+680H
0070'   00                      DEFB    00H             ;CH 29
0071'   00                      DEFB    00H
0072'   06C0*                   DEFW    PAQH+6C0H
0074'   00                      DEFB    00H             ;CH 30
0075'   00                      DEFB    00H
0076'   0700*                   DEFW    PAQH+700H
0078'   00                      DEFB    00H             ;CH 31
0079'   00                      DEFB    00H
007A'   0740*                   DEFW    PAQH+740H
007C'   00                      DEFB    00H             ;CH 32
007D'   00                      DEFB    00H
007E'   0780*                   DEFW    PAQH+780H
0080'   00                      DEFB    00H             ;CH 33
0081'   00                      DEFB    00H
0082'   07C0*                   DEFW    PAQH+7C0H
```

```
                                ;*****************************************************************
0084'   00                      QMUX:   DEFB    00H
0085'   00                              DEFB    00H
0086'   0000*                           DEFW    QMUX0
0088'   00                              DEFB    00H
0089'   00                              DEFB    00H
008A'   0000*                           DEFW    QMUX1
008C'   00                              DEFB    00H
008D'   00                              DEFB    00H
008E'   0000*                           DEFW    QMUX2
0090'   00                              DEFB    00H
0091'   00                              DEFB    00H
0092'   0000*                           DEFW    QMUX3
0094'   00                              DEFB    00H
0095'   00                              DEFB    00H
0096'   0000*                           DEFW    QMUX4
0098'   00                              DEFB    00H
0099'   00                              DEFB    00H
009A'   0000*                           DEFW    QMUX5
009C'   00                              DEFB    00H
009D'   00                              DEFB    00H
009E'   0000*                           DEFW    QMUX6
00A0'   00                              DEFB    00H
00A1'   00                              DEFB    00H
00A2'   0000*                           DEFW    QMUX7
00A4'   00                              DEFB    00H
00A5'   00                              DEFB    00H
00A6'   0000*                           DEFW    QMUX8
00A8'   00                              DEFB    00H
00A9'   00                              DEFB    00H
00AA'   0000*                           DEFW    QMUX9
00AC'   00                              DEFB    00H
00AD'   00                              DEFB    00H
00AE'   0000*                           DEFW    QMUXA
00B0'   00                              DEFB    00H
00B1'   00                              DEFB    00H
00B2'   0000*                           DEFW    QMUXB
00B4'   00                              DEFB    00H
00B5'   00                              DEFB    00H
00B6'   0000*                           DEFW    QMUXC
00B8'   00                              DEFB    00H
00B9'   00                              DEFB    00H
00BA'   0000*                           DEFW    QMUXD
00BC'   00                              DEFB    00H
00BD'   00                              DEFB    00H
00BE'   0000*                           DEFW    QMUXE
00C0'   00                              DEFB    00H
00C1'   00                              DEFB    00H
00C2'   0000*                           DEFW    QMUXF
                                ;*****************************************************************
00C4'                           PARDTB:
00C4'   80                      VLNVL:  DEFB    80H
00C5'   00                      BITS:   DEFB    00
```

```
00C6'  00                  BAUDR:  DEFB   00
00C7'  00                  MODE:   DEFB   00
00C8'  00                          DEFB   00
00C9'  00                          DEFB   00
00CA'  20                  NOTRCH: DEFB   32          ;32 TERMINAL CHANNELS
00CB'  00                  NOPRCH: DEFB   00          ;0 PRINTER CHANNELS
00CC'  80                  MAXBW:  DEFB   80H         ;X-NET BANDWIDTH
00CD'  00                  ABTIM:  DEFB   00H         ;AUTO-BYE OFF
00CE'  00                          DEFB   00
00CF'  00                          DEFB   00
00D0'  00                  NMM:    DEFB   00
00D1'  00                  MMSWCD: DEFB   00          ;S/W CODE ID
00D2'  00                  PRTIM:  DEFB   00          ;PRINTER TIMER OFF
00D3'  00                  CLSTAD: DEFB   00H         ;CLUSTER ADDRES
00D4'  00                  PR1:    DEFB   00
00D5'  00                          DEFB   00H
00D6'  00                          DEFB   00H
00D7'  00                          DEFB   00H
00D8'  00                  PR2:    DEFB   0
00D9'  00                          DEFB   00H
00DA'  00                          DEFB   00H
00DB'  00                          DEFB   00H
00DC'  00                  PR3:    DEFB   0
00DD'  00                          DEFB   00H
00DE'  00                          DEFB   00H
00DF'  00                          DEFB   00H
00E0'  00                  PR4:    DEFB   0
00E1'  00                          DEFB   00H
00E2'  00                          DEFB   00H
00E3'  00                          DEFB   00H

                           ;*******************************************************************
                                   END
```

2 str.

Macros:

Symbols:

ABTIM	00CD'	BAUDR	00C6'	BITS	00C5'	CLSTAD	00D3'
MAXBW	00CC'	MMSWCD	00D1'	MODE	00C7'	NMM	00D0'
NOPRCH	00CB'	NOTRCH	00CA'	PAQH	0082*	PARDTB	00C4I'
PDTAB	0000I'	PR1	00D4'	PR2	00D8'	PR3	00DC'
PR4	00E0'	PRTIM	00D2'	QMUX	0084I'	QMUX0	0086*
QMUX1	008A*	QMUX2	008E*	QMUX3	0092*	QMUX4	0096*
QMUX5	009A*	QMUX6	009E*	QMUX7	00A2*	QMUX8	00A6*
QMUX9	00AA*	QMUXA	00AE*	QMUXB	00B2*	QMUXC	00B6*
QMUXD	00BA*	QMUXE	00BE*	QMUXF	00C2*	SACMDQ	0002*
VLNVL	00C4'						

No Fatal error(s)

```
        TITLE   password
        SUBTTL  PASSWORD PROTECTION
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX     XX     XXXX          X    XXX  X X X  XXXX     X
;   XX XX    XX    XX XX         X X        X  XX  X        X
;   XX  XX   XX   XX  XX        X   X       X   X  XXXXX    X
;   XX    XX XX XX    XX
;   XX     XXXXXX     XX        CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX            PROGRAMMER:     PEON
;   XXXXXXXXXXXXXXXXX            DATE:           821120
;   XX     XXXXXX     XX
;   XX    XX XX XX    XX
;   XX   XX  XX  XX   XX
;   XX XX    XX    XX XX
;   XXXX     XX     XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;                 ****************************************
;                 *
;                 *  MODULE NAME: PASSWORD
;                 *
;                 ****************************************
;-----------------------------------------------------------------
;
;DESCRIPTION:
;
;
;-----------------------------------------------------------------
        PAGE
```

MPW

```
                                ;***** INTERNALS ***************************************************
                                        public  PWREQ,PW
                                        public  CLRPWA
                                ;***** EXTERNALS ***************************************************
                                        extrn   RELEASE,BQENQ,BQDEQ,BQFIFI
                                        extrn   TQSUB
                                        extrn   IDEDA,IGEDA,ODEDA,OGEDA
                                        extrn   GENQUE,BUFAO
                                        extrn   CPWNAP,CPWBUF,CPWPAR
                                        extrn   PWEPH,PASSW,PWATAB
                                        extrn   CSAPAR,RTIM2
                                ;***** EQUATES *****************************************************
0001                            NOEL    EQU     01

0100                            PWEP    EQU     0100H
0008                            PWSIZE  EQU     08
0005                            PWOFFS  EQU     05
0018                            PWTBSZ  EQU     24
0003                            PRSZ    EQU     03

0000                            TABCLR  EQU     00

0008                            MPWERR  EQU     08H
0009                            IPWERR  EQU     09H
000A                            TPWERR  EQU     0AH

0081                            VALC    EQU     81H
0080                            VALNC   EQU     80H

003C                            TIMNPW  EQU     60              ;WAITING IN 1/2 SEC FOR ACCESS-REQUEST
                                                                ;ON PASSWORD

                                ;*******************************************************************
0000'                                   cseg

0000'   21 0000*                PW:     LD      HL,PWEPH
0003'   11 0100*                        LD      DE,BUFAO+PWEP
0006'   3E 00                           LD      A,0
0008'   01 0712                         LD      BC,0712H
000B'   CD 0000*                        CALL    GENQUE          ;GENERATE 7 BUFFERS IN EMPTY POOL

000E'   21 0000*                        LD      HL,PWEPH
0011'   CD 0000*                        CALL    BQDEQ
0014'   3E 01                           LD      A,1
0016'   CD 0000*                        CALL    IDEDA
0019'   21 0000*                        LD      HL,PWEPH
001C'   CD 0000*                        CALL    BQDEQ
```

```
001F'   3E 01                          LD      A,1
0021'   CD 0000*                       CALL    IDEDA           ;DELIVER 2 BUFFERS TO INGOING MUX.NO = 1

0024'   CD 0132'                       CALL    CLRPWA          ;CLEAR PASSWORD-ACCESS-TABLE

0027'   CD 0000*                PW1:   CALL    RELEASE
002A'   FB                             ei                      ;
002B'   3E 01                   FILLEP: LD     A,1
002D'   CD 0000*                       CALL    OGEDA
0030'   DA 0047'                       JP      C,EB            ;IF NO OUTG.EMPTY-BUFFER THEN

0033'   21 0001*                       LD      HL,PWEPH+NOEL
0036'   3E 00                          LD      A,0
0038'   BE                             CP      (HL)
0039'   CA 0027'                       JP      Z,PW1           ;  IF NO BUFFERS IN E.P. THEN
                                                               ;    SCHEDULE
003C'   3E 01                          LD      A,1             ;  ELSE
003E'   CD 0000*                       CALL    IGEDA
0041'   D2 0027'                       JP      NC,PW1          ;    IF ING.FULL-BUFFER THEN
                                                               ;      CONTINUE
0044'   C3 0050'                       JP      PW2             ;    ELSE
                                                               ;      SCHEDULE
                                                               ;  --ENDIF
0047'   21 0000*                EB:    LD      HL,PWEPH        ;ELSE
004A'   CD 0000*                       CALL    BQENQ           ;  ENQUEUE IT IN E.P.
004D'   C3 002B'                       JP      FILLEP          ;  GOTO 'FILL EMPTY POOL'

                                       PAGE
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```
0050'  7D                  PW2:    LD      A,L
0051'  32 0000*                    LD      (CPWNAP),A      ;STORE SRC.NAP.-ID
0054'  D5                          PUSH    DE
0055'  21 0000*                    LD      HL,PWEPH
0058'  CD 0000*                    CALL    BQDEQ
005B'  3E 01                       LD      A,1
005D'  CD 0000*                    CALL    IDEDA           ;DELIVER EMPTY BUFFER TO ING.EMPTY-QUEUE
0060'  D1                          POP     DE

0061'  ED 53 0000*                 LD      (CPWBUF),DE     ;STORE BUFFER-ADDR.
0065'  CD 0000*                    CALL    BQFIFI
0068'  22 0000*                    LD      (CPWPAR),HL     ;STORE PARAMETER-ADDR.
006B'  7E                          LD      A,(HL)
006C'  E6 3E                       AND     3EH
006E'  C2 0082'                    JP      NZ,MCERR        ;IF USEABLE MESSAGE-CODE THEN

0071'  7E                          LD      A,(HL)
0072'  CB 07                       RLC     A
0074'  CB 07                       RLC     A
0076'  CB 07                       RLC     A
0078'  CB 07                       RLC     A
007A'  4F                          LD      C,A
007B'  06 00                       LD      B,0
007D'  21 0088'                    LD      HL,ACTTAB
0080'  09                          ADD     HL,BC
0081'  E9                          JP      (HL)            ;  GOTO DO ACTION ON MESSAGE-CODE
                                                           ;ELSE
0082'  CD 0140'            MCERR:  CALL    ENQBUF          ;  DELIVER BUFFER TO E.P.
0085'  C3 0027'                    JP      PW1             ;  EXIT
                                                           ;ENDIF

0088'  C3 00A8'            ACTTAB: JP      ANACCN
008B'  00                          NOP
008C'  C3 00AB'                    JP      ANDICN
008F'  00                          NOP
0090'  C3 010D'                    JP      RQACCN
0093'  00                          NOP
0094'  C3 00CD'                    JP      RQDICN
0097'  00                          NOP
0098'  C3 00AE'                    JP      ANACDE
009B'  00                          NOP
009C'  C3 00B1'                    JP      ANDIDE
009F'  00                          NOP
00A0'  C3 00D8'                    JP      RQACDE
00A3'  00                          NOP
00A4'  C3 00B4'                    JP      RQDIDE
00A7'  00                          NOP

                                                           ;>ANSWER ACCESS CANCEL<
00A8'  C3 0082'            ANACCN: JP      MCERR

                                                           ;>ANSWER DISTRIBUATE CANCEL<
00AB'  C3 0082'            ANDICN: JP      MCERR
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```
                                                        ;>ANSWER ACCESS DEFINE<
00AE'   C3 0082'        ANACDE: JP      MCERR

                                                        ;>ANSWER DISTRIBUATE DEFINE<
00B1'   C3 0082'        ANDIDE: JP      MCERR

                                                        ;>REQUEST DISTRIBUATE DEFINE<
00B4'   21 0000*        RQDIDE: LD      HL,PASSW
00B7'   CB FE                   SET     7,(HL)          ;SET PASSWORD-INDICATION

00B9'   EB                      EX      DE,HL
00BA'   13                      INC     DE
00BB'   2A 0000*                LD      HL,(CPWPAR)
00BE'   01 0005                 LD      BC,PWOFFS
00C1'   09                      ADD     HL,BC
00C2'   01 0008                 LD      BC,PWSIZE
00C5'   ED B0                   LDIR                    ;STORE PASSWORD
00C7'   CD 0140'                CALL    ENQBUF          ;ENQUEUE BUFFER IN E.P.
00CA'   C3 0027'                JP      PW1             ;EXIT

                                                        ;>REQUEST DISTRIBUATE CANCEL<
00CD'   21 0000*        RQDICN: LD      HL,PASSW
00D0'   CB BE                   RES     7,(HL)          ;RESET PASSWORD-INDICATION
00D2'   CD 0140'                CALL    ENQBUF          ;ENQUEUE BUFFER IN E.P.
00D5'   C3 0027'                JP      PW1             ;EXIT

                                                        ;>REQUEST ACCESS DEFINE<
00D8'   0E 09           RQACDE: LD      C,9
00DA'   21 0000*                LD      HL,PWATAB
00DD'   CD 01BA'                CALL    FNVAL
00E0'   C2 0107'                JP      NZ,RADEX        ;IF EMPTY PLACE IN TABLE THEN

00E3'   E5                      PUSH    HL
00E4'   CD 011C'                CALL    PWCOMP
00E7'   E1                      POP     HL
00E8'   C2 00F0'                JP      NZ,PWNC         ;  IF PASSWORD IS CORRECT THEN

00EB'   3E 81           PWC:    LD      A,VALC          ;    INSERT 'VALID-CORRECT' IN PWATAB
00ED'   C3 00F2'                JP      PWCNC
                                                        ;  ELSE
00F0'   3E 80           PWNC:   LD      A,VALNC         ;    INSERT 'VALID-INCORRECT' IN PWATAB

00F2'   77              PWCNC:  LD      (HL),A          ;  ENDIF

00F3'   23                      INC     HL
00F4'   EB                      EX      DE,HL
00F5'   2A 0000*                LD      HL,(CPWPAR)
00F8'   23                      INC     HL
00F9'   23                      INC     HL
```

```
00FA'   ED A0                          LDI                          ;  STORE NET- AND XIU-ID IN PWATAB
00FC'   ED A0                          LDI

00FE'   11 003C                        LD      DE,TIMNPW
0101'   21 0000*                       LD      HL,RTIM2
0104'   CD 0000*                       CALL    TQSUB                ;  START 'CLEAR-PWATAB'-TIMER
                                                                    ;ELSE
                                                                    ;ENDIF
0107'   CD 0140'                RADEX: CALL    ENQBUF               ;DELIVER INPUT-BUFFER TO E.P.
010A'   C3 0027'                       JP      PW1                  ;EXIT


                                                                    ;>REQUEST ACCESS CANCEL<
010D'   CD 011C'                RQACCN: CALL   PWCOMP
0110'   C2 0116'                       JP      NZ,CNERR             ;IF REC.PW. CORRECT THEN

0113'   CD 0132'                       CALL    CLRPWA               ;  CLEAR PASSWORD-ACCESS-TABLE
                                                                    ;ELSE
                                                                    ;ENDIF
0116'   CD 0140'                CNERR: CALL    ENQBUF               ;EQUEUE BUFFER IN E.P.
0119'   C3 0027'                       JP      PW1                  ;EXIT

                                       PAGE
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```
                        ;*****************************************************************************
011C'   2A 0000*        PWCOMP: LD      HL,(CPWPAR)
011F'   01 0005                 LD      BC,PWOFFS
0122'   09                      ADD     HL,BC
0123'   11 0000*                LD      DE,PASSW
0126'   01 0008                 LD      BC,PWSIZE
0129'   13              PWCOM1: INC     DE
012A'   1A                      LD      A,(DE)
012B'   ED A1                   CPI
012D'   E0                      RET     PO              ;IF END OF TABLE IS REACHED THEN
                                                        ;  EXIT
                                                        ;ELSE
012E'   C0                      RET     NZ              ;  IF PASSWORD UNCORRECT THEN
                                                        ;    EXIT
                                                        ;  ELSE
012F'   C3 0129'                JP PWCOM1               ;    COMPARE NEXT CHARACTER IN PASSWORD
                                                        ;--ENDIF
                        ;*****************************************************************************
                                PAGE
```

```
                                ;*******************************************************************
0132'   21 0000*                CLRPWA: LD      HL,PWATAB
0135'   54                              LD      D,H
0136'   5D                              LD      E,L
0137'   13                              INC     DE
0138'   36 00                           LD      (HL),TABCLR
013A'   01 0017                         LD      BC,PWTBSZ-1
013D'   ED B0                           LDIR
013F'   C9                              RET
                                ;*******************************************************************
                                        PAGE
```

```
                                ;*****************************************************************
0140'   ED 5B 0000*             ENQBUF: LD      DE,(CPWBUF)
0144'   21 0000*                        LD      HL,PWEPH
0147'   CD 0000*                        CALL    BQENQ
014A'   C9                              RET

                                ;*****************************************************************
014B'   3A 0000*                PWREQ:  LD      A,(PASSW)
014E'   2F                              CPL
014F'   00                              NOP
0150'   CB 7F                           BIT     7,A
0152'   C0                              RET     NZ                      ;IF DEVICE IS PW-PROTECTED THEN

0153'   2A 0000*                        LD      HL,(CSAPAR)
0156'   CB 6E                           BIT     5,(HL)
0158'   C0                              RET     NZ                      ;  IF NO GLOBAL PASSWORD THEN

0159'   CB 76                           BIT     6,(HL)
015B'   CA 0163'                        JP      Z,SECPW                 ;    IF PR.REQ THEN

015E'   CB 66                           BIT     4,(HL)                  ;      CHECK THIS PW-INDICATION
0160'   C3 0165'                        JP      PWREQ1                  ;    ELSE
0163'   CB 5E                   SECPW:  BIT     3,(HL)                  ;      CHECK THAT PW-INDICATION
0165'   CA 01B7'                PWREQ1: JP      Z,MISPW1                ;    ENDIF
                                                                        ;    IF PW-INDICATION SET THEN

0168'   E5                              PUSH    HL
0169'   21 0000*                        LD      HL,PWATAB
016C'   0E 09                           LD      C,9
016E'   CD 01CB'                PWREQ0: CALL    FVAL
0171'   CA 01B3'                        JP      Z,TIMPW                 ;      IF VALID PR.SRC IN TABLE THEN

0174'   D1                              POP     DE
0175'   D5                              PUSH    DE
0176'   CD 01D6'                        CALL    FPR
0179'   CA 0180'                        JP      Z,PRFND                 ;        IF RIGHT PR.SRC NOT FOUND THEN

017C'   23                              INC     HL
017D'   C3 016E'                        JP      PWREQ0                  ;          GOTO FIND NEW PR.SRC.
                                                                        ;        ELSE
0180'   36 00                   PRFND:  LD      (HL),0
0182'   2B                              DEC     HL
0183'   36 00                           LD      (HL),0                  ;          DESTROY PR.SRC. IN TABLE
0185'   2B                              DEC     HL
0186'   CB 46                           BIT     0,(HL)
0188'   36 00                           LD      (HL),0

018A'   D1                              POP     DE
018B'   F5                              PUSH    AF
018C'   D5                              PUSH    DE
018D'   23                      PRREQ4: INC     HL
```

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018E'   23                          INC     HL
018F'   23                          INC     HL              ;       HL POINTS AT NEXT EVT.VALID INDIC.
0190'   CD 01CB'            PRREQ3: CALL    FVAL            ;       FIND NEXT VALID INDICATION
0193'   CA 01AD'                    JP      Z,PRREQ2        ;       IF VALID-BIT SET THEN

0196'   D1                          POP     DE
0197'   D5                          PUSH    DE
0198'   CD 01D6'                    CALL    FPR
019B'   CA 01A2'                    JP      Z,PRFND2        ;         IF WRONG PR.SRC. THEN

019E'   23                          INC     HL
019F'   C3 0190'                    JP      PRREQ3          ;           GOTO FIND EVT.NEW VALID-BYTE

01A2'   36 00               PRFND2: LD      (HL),0          ;         ELSE
01A4'   2B                          DEC     HL
01A5'   36 00                       LD      (HL),0          ;           CLEAR THAT PART OF TABLE
01A7'   2B                          DEC     HL
01A8'   36 00                       LD      (HL),0
01AA'   C3 018D'                    JP      PRREQ4          ;           FIND EVT.NEW VALID-BYTE
                                                            ;         ENDIF
                                                            ;       ELSE
01AD'   D1                  PRREQ2: POP     DE              ;       ENDIF
01AE'   F1                          POP     AF
01AF'   C0                          RET     NZ              ;       IF CORRECT PW RECEIVED THEN
                                                            ;         EXIT
01B0'   3E 09               ILLPW:  LD      A,IPWERR        ;       ELSE
01B2'   C9                          RET                     ;         EXIT WITH ILLEGAL-PW-ERROR
                                                            ;       ENDIF
                                                            ;     ENDIF
01B3'   D1                  TIMPW:  POP     DE
01B4'   3E 0A                       LD      A,TPWERR
01B6'   C9                          RET

01B7'   3E 08               MISPW1: LD      A,MPWERR        ;   ELSE
01B9'   C9                          RET                     ;     EXIT WITH MISSING-PW-ERROR
                            ;*******************************************************************
01BA'                       FNVAL:
01BA'   11 0003                     LD      DE,PRSZ
01BD'   0D                  FNVAL1: DEC     C
01BE'   CA 01C8'                    JP      Z,FNVALX        ;IF END OF TABLE NOT REACHED THEN

01C1'   CB 7E                       BIT     7,(HL)
01C3'   C8                          RET     Z               ;  IF 'NOT VALID' THEN
                                                            ;    EXIT
01C4'   19                          ADD     HL,DE           ;  ELSE
01C5'   C3 01BD'                    JP      FNVAL1          ;    SEARCH ON
                                                            ;  ENDIF
01C8'   F6 FF               FNVALX: OR      0FFH            ;ELSE
01CA'   C9                          RET                     ;  EXIT
                                                            ;ENDIF
                            ;*******************************************************************
01CB'                       FVAL:
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01CB'   11 0003                 LD      DE,PRSZ
01CE'   0D              FVAL1:  DEC     C
01CF'   C8                      RET     Z               ;IF END OF TABLE REACHED THEN
                                                        ;  EXIT
01D0'   CB 7E                   BIT     7,(HL)          ;ELSE
01D2'   C0                      RET     NZ              ;  IF VALID THEN
                                                        ;    EXIT
01D3'   19                      ADD     HL,DE           ;  ELSE
01D4'   18 F8                   JR      FVAL1           ;    SEARCH ON
                                                        ;  ENDIF
                                                        ;ENDIF

                        ;*******************************************************************

01D6'                   FPR:
01D6'   13                      INC     DE
01D7'   13                      INC     DE
01D8'   1A                      LD      A,(DE)          ;GET NET-ID IN PARAMETERS
01D9'   23                      INC     HL
01DA'   BE                      CP      (HL)
01DB'   C0                      RET     NZ              ;IF NOT EQUAL TO PWATAB'S NET-ID THEN
                                                        ;  EXIT
01DC'   13                      INC     DE              ;ELSE
01DD'   1A                      LD      A,(DE)          ;  GET XIU-ID IN PARAMETERS
01DE'   23                      INC     HL
01DF'   BE                      CP      (HL)            ;  COMPARE WITH PWATAB'S XIU-ID
01E0'   C9                      RET                     ;  EXIT
                                                        ;ENDIF

                        ;*******************************************************************

                                END
```

Macros:

Symbols:

ACTTAB	0088'	ANACCN	00A8'	ANACDE	00AE'	ANDICN	00AB'
ANDIDE	00B1'	BQDEQ	0059*	BQENQ	0148*	BQFIFI	0066*
BUFAO	0004*	CLRPWA	0132I'	CNERR	0116'	CPWBUF	0142*
CPWNAP	0052*	CPWPAR	011D*	CSAPAR	0154*	EB	0047'
ENQBUF	0140'	FILLEP	002B'	FNVAL	01BA'	FNVAL1	01BD'
FNVALX	01C8'	FPR	01D6'	FVAL	01CB'	FVAL1	01CE'
GENQUE	000C*	IDEDA	005E*	IGEDA	003F*	ILLPW	01B0'
IPWERR	0009	MCERR	0082'	MISPW1	01B7'	MPWERR	0008
NOEL	0001	ODEDA	0000*	OGEDA	002E*	PASSW	014C*
PRFND	0180'	PRFND2	01A2'	PRREQ2	01AD'	PRREQ3	0190'
PRREQ4	018D'	PRSZ	0003	PW	0000I'	PW1	0027'
PW2	0050'	PWATAB	016A*	PWC	00EB'	PWCNC	00F2'
PWCOM1	0129'	PWCOMP	011C'	PWEP	0100	PWEPH	0145*
PWNC	00F0'	PWOFFS	0005	PWREQ	014BI'	PWREQO	016E'
PWREQ1	0165'	PWSIZE	0008	PWTBSZ	0018	RADEX	0107'
RELEAS	0028*	RQACCN	010D'	RQACDE	00D8'	RQDICN	00CD'
RQDIDE	00B4'	RTIM2	0102*	SECPW	0163'	TABCLR	0000
TIMNPW	003C	TIMPW	01B3'	TPWERR	000A	TQSUB	0105*
VALC	0081	VALNC	0080				

No Fatal error(s)

```
                                        title   STATIS
                                        subttl  xnet statistic

                                ;***** INTERNALS ***********************************************

                                        public  STT

                                ;***** EXTERNALS ***********************************************

                                        extrn   STTEPH,BUFAO
                                        extrn   GENQUE,RELEASE,BQENQ,BQDEQ,BQFIFI
                                        extrn   IGEDA,IDEDA,OGEDA,ODEDA
                                        extrn   FSTTD,CSCNAP,CSCNET,CSCXIU,CSCVC

                                ;***** EQUATES *************************************************

0800                            STTEP   EQU     800H
0008                            STTMUX  EQU     8
0001                            NOEL    EQU     1

0007                            RESCNT  EQU     07H
0003                            RXTXSC  EQU     03H

0018                            STTSZ   EQU     24

0081                            RXSTT   EQU     81H
0082                            TXSTT   EQU     82H

000A                            RXSCSZ  EQU     10
000B                            TXSCSZ  EQU     11
000D                            SENDSZ  EQU     13

                                ;*******************************************************************
0000'                                   cseg

0000'   21 0000*                STT:    LD      HL,STTEPH
0003'   11 0800*                        LD      DE,BUFAO+STTEP
0006'   01 0712                         LD      BC,0712H
0009'   3E 00                           LD      A,0
000B'   CD 0000*                        CALL    GENQUE

000E'   21 0000*                        LD      HL,STTEPH
0011'   CD 0000*                        CALL    BQDEQ
0014'   3E 08                           LD      A,STTMUX
0016'   CD 0000*                        CALL    IDEDA
0019'   21 0000*                        LD      HL,STTEPH
001C'   CD 0000*                        CALL    BQDEQ
001F'   3E 08                           LD      A,STTMUX
0021'   CD 0000*                        CALL    IDEDA

0024'   CD 0000*                STATIS: CALL    RELEASE
0027'   FB                              ei                      ;
0028'   3E 08                   FILLEP: LD      A,STTMUX
002A'   CD 0000*                        CALL    OGEDA
```

M STT

```
002D'   D2 0039'                        JP      NC,NOEB

0030'   21 0000*                        LD      HL,STTEPH
0033'   CD 0000*                        CALL    BQENQ
0036'   C3 0028'                        JP      FILLEP

0039'   21 0001*                NOEB:   LD      HL,STTEPH+NOEL
003C'   7E                              LD      A,(HL)
003D'   FE 00                           CP      0
003F'   CA 0024'                        JP      Z,STATIS

0042'   3E 08                           LD      A,STTMUX
0044'   CD 0000*                        CALL    IGEDA
0047'   D2 0024'                        JP      NC,STATIS

004A'   7D                              LD      A,L
004B'   32 0000*                        LD      (CSCNAP),A
004E'   78                              LD      A,B
004F'   32 0000*                        LD      (CSCNET),A
0052'   79                              LD      A,C
0053'   32 0000*                        LD      (CSCXIU),A

0056'   D5                              PUSH    DE
0057'   21 0000*                        LD      HL,STTEPH
005A'   CD 0000*                        CALL    BQDEQ
005D'   3E 08                           LD      A,STTMUX
005F'   CD 0000*                        CALL    IDEDA
0062'   D1                              POP     DE

0063'   D5                              PUSH    DE
0064'   CD 0000*                        CALL    BQFIFI
0067'   7E                              LD      A,(HL)
0068'   FE 07                           CP      RESCNT
006A'   CA 007C'                        JP      Z,RESET

006D'   FE 03                           CP      RXTXSC
006F'   CA 008E'                        JP      Z,SNDCNT

0072'   D1                      EPENQ:  POP     DE
0073'   21 0000*                        LD      HL,STTEPH
0076'   CD 0000*                        CALL    BQENQ
0079'   C3 0024'                        JP      STATIS

                                ;*******************************************************************

007C'   23                      RESET:  INC     HL
007D'   7E                              LD      A,(HL)
007E'   CD 0000*                        CALL    FSTTD
0081'   36 00                           LD      (HL),0
0083'   54                              LD      D,H
0084'   5D                              LD      E,L
0085'   13                              INC     DE
0086'   01 0017                         LD      BC,STTSZ-1
0089'   ED B0                           LDIR
008B'   C3 0072'                        JP      EPENQ
```

```
                                ;*****************************************************************************
008E'   23                      SNDCNT: INC     HL
008F'   7E                              LD      A,(HL)
0090'   32 0000*                        LD      (CSCVC),A
0093'   CD 0000*                        CALL    FSTTD
0096'   E5                              PUSH    HL
0097'   21 0000*                        LD      HL,STTEPH
009A'   CD 0000*                        CALL    BQDEQ
009D'   E1                              POP     HL
009E'   D2 0072'                        JP      NC,EPENQ

00A1'   D5                              PUSH    DE
00A2'   E5                              PUSH    HL
00A3'   CD 0000*                        CALL    BQFIFI
00A6'   D1                              POP     DE
00A7'   EB                              EX      DE,HL

00A8'   3E 81                           LD      A,RXSTT
00AA'   12                              LD      (DE),A
00AB'   13                              INC     DE
00AC'   3A 0000*                        LD      A,(CSCVC)
00AF'   12                              LD      (DE),A
00B0'   13                              INC     DE
00B1'   01 000A                         LD      BC,RXSCSZ
00B4'   ED B0                           LDIR

00B6'   D1                              POP     DE
00B7'   E5                              PUSH    HL
00B8'   CD 00E1'                        CALL    SEND

00BB'   21 0000*                        LD      HL,STTEPH
00BE'   CD 0000*                        CALL    BQDEQ
00C1'   E1                              POP     HL
00C2'   D2 0072'                        JP      NC,EPENQ

00C5'   D5                              PUSH    DE
00C6'   E5                              PUSH    HL
00C7'   CD 0000*                        CALL    BQFIFI
00CA'   D1                              POP     DE
00CB'   EB                              EX      DE,HL

00CC'   3E 82                           LD      A,TXSTT
00CE'   12                              LD      (DE),A
00CF'   13                              INC     DE
00D0'   3A 0000*                        LD      A,(CSCVC)
00D3'   12                              LD      (DE),A
00D4'   13                              INC     DE
00D5'   01 000B                         LD      BC,TXSCSZ
00D8'   ED B0                           LDIR
00DA'   D1                              POP     DE
00DB'   CD 00E1'                        CALL    SEND
00DE'   C3 0072'                        JP      EPENQ
                                ;*****************************************************************************
```

```
00E1'   21 0002          SEND:   LD      HL,2
00E4'   19                       ADD     HL,DE
00E5'   36 0D                    LD      (HL),SENDSZ
00E7'   3A 0000*                 LD      A,(CSCNAP)
00EA'   6F                       LD      L,A
00EB'   3A 0000*                 LD      A,(CSCNET)
00EE'   47                       LD      B,A
00EF'   3A 0000*                 LD      A,(CSCXIU)
00F2'   4F                       LD      C,A
00F3'   3E 08                    LD      A,STTMUX
00F5'   CD 0000*                 CALL    ODEDA

00F8'   C9                       RET

                         ;*****************************************************************************

                                 END
```

xnet statistic

Macros:

Symbols:

BQDEQ	00BF*	BQENQ	0077*	BQFIFI	00C8*	BUFAO	0004*
CSCNAP	00E8*	CSCNET	00EC*	CSCVC	00D1*	CSCXIU	00F0*
EPENQ	0072'	FILLEP	0028'	FSTTD	0094*	GENQUE	000C*
IDEDA	0060*	IGEDA	0045*	NOEB	0039'	NOEL	0001
ODEDA	00F6*	OGEDA	002B*	RELEAS	0025*	RESCNT	0007
RESET	007C'	RXSCSZ	000A	RXSTT	0081	RXTXSC	0003
SEND	00E1'	SENDSZ	000D	SNDCNT	008E'	STATIS	0024'
STT	0000I'	STTEP	0800	STTEPH	00BC*	STTMUX	0008
STTSZ	0018	TXSCSZ	000B	TXSTT	0082		

No Fatal error(s)

```
;*****************************************************************
;
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X      X
;   XXXX    XX    XXXX           X    XXX  X X X  XXXX   X
;   XX XX   XX   XX XX          X X         X  XX  X      X
;   XX  XX  XX  XX  XX          X   X       X   X  XXXXX  X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX
;   XXXXXXXXXXXXXXXXX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX
;   XX    XXXXXX    XX         PROGRAMMER:     PEON
;   XX   XX XX XX   XX
;   XX  XX  XX  XX  XX         DATE:           830207
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ****************************************************
;               *
;               *  MODULE NAME: XCOMM
;               *
;               ****************************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   >COMMAND HANDLER<
;               CONTENTS:       STOP OUTPUTTER
;                               STOP INPUTTER
;                               CLOSE CHANNEL
;                               OPEN CHANNEL
;                               TEST SCANTABLE
;                               SET OUTGOING IN RESET STATE
;                               ADJUST RECEIVE TIMER
;                               ADJUST SEND TIMER
;                               START INPUTTER
;                               INPUT PERMIT
;                               INPUT NOT PERMIT
;                               START OUTPUTTER
;
;-----------------------------------------------------------------
        PAGE
```

```
;***** INTERNALS ***********************************************************
        public  COMMX,PRODS

;***** EXTERNALS ***********************************************************
        extrn   PDO,SCANO,PROTDS

;*****************************************************************************
        PAGE                                    ;
```

```
                                ;(*****************************************************************)
                                ;(*      DECODING OF COMMAND-CODE                                 *)
                                ;(*****************************************************************)
0000'                                   cseg
                                                                ;
                                                                ; BEGIN
0000'   FE 0C                   COMMX:  CP      0CH
0002'   38 03                           JR      C,NOERR         ;    IF COMMAND CODE > 11 THEN
                                                                ;    BEGIN
0004'   3E 80                           LD      A,80H           ;       REG. A, BIT 7 := 1
                                                                ;
0006'   C9                              RET                     ;    END
                                                                ;
0007'   87                      NOERR:  ADD     A,A             ;    ELSE BEGIN  (* COMMAND CODE NOT ERRORNEOUS*)
0008'   87                              ADD     A,A             ;       (* A=COMM.CODE*4 *)
                                                                ;
0009'   21 0012'                        LD      HL,JMPTAB       ;       (* HL=ADDRESS OF JUMPTABLE *)
000C'   85                              ADD     A,L
000D'   6F                              LD      L,A
000E'   30 01                           JR      NC,CHNCA
0010'   24                              INC     H               ;       (* HL=ADR. OF JUMPTABLE+COMM.CODE*4 *)
                                                                ;
0011'   E9                      CHNCA:  JP      (HL)            ;       CASE COMM.CODE OF
0012'   C3 0041'                JMPTAB: JP      CH0000
0015'   00                              NOP
0016'   C3 0049'                        JP      CH0001
0019'   00                              NOP
001A'   C3 0051'                        JP      CH0010
001D'   00                              NOP
001E'   C3 006D'                        JP      CH0011
0021'   00                              NOP
0022'   C3 0089'                        JP      CH0100
0025'   00                              NOP
0026'   C3 008A'                        JP      CH0101
0029'   00                              NOP
002A'   C3 0093'                        JP      CH0110
002D'   00                              NOP
002E'   C3 00A0'                        JP      CH0111
0031'   00                              NOP
0032'   C3 00AD'                        JP      CH1000
0035'   00                              NOP
0036'   C3 00BB'                        JP      CH1001
0039'   00                              NOP
003A'   C3 00C4'                        JP      CH1010
003D'   00                              NOP
003E'   C3 00CD'                        JP      CH1011

                                ;*****************************************************************
                                        PAGE
```

```
                        ;*****************************************************************************
                        ;
                        ;                COMMAND HANDLER, ACTIONS
                        ;
                        ;*****************************************************************************



                        ;(*****************************************************************************)
                        ;(*      STOP OUTPUTTER                                                       *)
                        ;(*****************************************************************************)
0041'   0E 1B           CH0000: LD      C,1BH           ;       0000:
0043'   CD 00DD'                CALL    PRODS           ;       BEGIN
                                                        ;          (* HL=PD(DATATYPE)+27 *)
0046'   AF                      XOR     A               ;
0047'   77                      LD      (HL),A          ;          REG. A := 0;
                                                        ;          RESET PK._START-BIT OF OUTPUTTER;
0048'   C9                      RET                     ;          RESET PROCEED-BIT OF OUTPUTTER
                                                        ;       END;
                        ;*****************************************************************************



                        ;(*****************************************************************************)
                        ;(*      STOP INPUTTER                                                        *)
                        ;(*****************************************************************************)
                                                        ;       0001:
0049'   0E 0C           CH0001: LD      C,0CH           ;       BEGIN
004B'   CD 00DD'                CALL    PRODS           ;          (* HL=PD(DATATYPE)+12 *)
                                                        ;          WITH RECEIVED_CONTROL_BYTE_TO_INPUTTER DO
                                                        ;          BEGIN
004E'   AF                      XOR     A               ;             REG. A := 0;
                                                        ;             RESET HUNT-BIT;
004F'   77                      LD      (HL),A          ;             RESET PROCEED-BIT
                                                        ;
                                                        ;          END
0050'   C9                      RET                     ;       END;
                        ;*****************************************************************************
                                PAGE
```

```
                                ;(*****************************************************************************)
                                ;(*      CLOSE CHANNEL                                                        *)
                                ;(*****************************************************************************)
                                                                ;           0010:
0051'                           CH0010:                         ;           BEGIN
0051'   21 0000*                        LD      HL,SCANO
0054'   7B                              LD      A,E
0055'   07                              RLCA
0056'   85                              ADD     A,L
0057'   6F                              LD      L,A             ;               (* HL=SCANTAB(DATATYPE) *)
                                                                ;
0058'   2C                              INC     L               ;               (* HL=SCANTAB(DATATYPE)+1 *)
0059'   36 00                           LD      (HL),0          ;               RESET SCANTABLE(DATATYPE) MSB;
                                                                ;
005B'   0E 0E                           LD      C,14
005D'   CD 00DD'                        CALL    PRODS           ;               (* HL=PD(DATATYPE)+14 *)
0060'   CB 8E                           RES     1,(HL)          ;               RESET INCOMING SEND REQUEST

0062'   3E 0D                           LD      A,13
0064'   85                              ADD     A,L
0065'   6F                              LD      L,A             ;               (* HL=PD(DATATYPE)+27 *)
0066'   CB BE                           RES     7,(HL)          ;               RESET VALID-BIT OF RECEIVED
                                                                ;                  CONTROL BYTE TO OUTPUTTER;
0068'   AF                              XOR     A               ;               REG. A := 0
0069'   2C                              INC     L
006A'   2C                              INC     L
006B'   77                              LD      (HL),A          ;               WAITING FOR DATA MODE
                                                                ;
006C'   C9                              RET                     ;               END;

                                ;*****************************************************************************
                                        PAGE
```

```
                                ;(*****************************************************************************)
                                ;(*      OPEN CHANNEL                                                         *)
                                ;(*****************************************************************************)
006D'   C5                      CH0011: PUSH    BC              ;               0011:
006E'   0E 1E                           LD      C,1EH                               (* SP:..., NEW CR-ID *)
0070'   CD 00DD'                        CALL    PRODS           ;                   (* HL=PD(DATATYPE)+30 *)
                                                                ;
0073'   C1                              POP     BC              ;                   (* SP:... *)
                                                                ;                   (* BC=NEW CR-ID *)
0074'   71                              LD      (HL),C
0075'   2C                              INC     L               ;                   (* HL=PD(DATATYPE)+31 *)
0076'   70                              LD      (HL),B          ;                  PD(DATATYPE).CR-ID := NEW CR-ID;
                                                                ;
0077'   E5                              PUSH    HL              ;                   (* SP:...,PD(DATATYPE)+31 *)
                                                                ;
0078'   21 0000*                        LD      HL,SCANO
007B'   7B                              LD      A,E
007C'   07                              RLCA
007D'   85                              ADD     A,L
007E'   6F                              LD      L,A             ;                   (* HL=SCANTAB(DATATYPE) *)
                                                                ;
007F'   C1                              POP     BC              ;                   (* SP:... *)
                                                                ;                   (* BC=PD(DATATYPE)+31 *)
0080'   3E E1                           LD      A,0E1H
0082'   81                              ADD     A,C
0083'   4F                              LD      C,A             ;                   (* BC=PD(DATATYPE) *)
                                                                ;
0084'   71                              LD      (HL),C
0085'   2C                              INC     L
0086'   70                              LD      (HL),B          ;                  SCANTABLE(DATATYPE) :=
                                                                ;                      ADRESS OF PD(DATATYPE);
0087'   AF                              XOR     A               ;                  REG. A := 0
                                                                ;
0088'   C9                              RET                     ;                  END;
                                                                ;
;*****************************************************************************
                                        PAGE
```

```
                        ;(*****************************************************************)
                        ;(*     TEST SCANTABLE                                            *)
                        ;(*****************************************************************)
                                                ;       0100:
0089'                   CH0100:
0089'   C9                      RET             ;       END;
                                                ;
                        ;*****************************************************************


                        ;(*****************************************************************)
                        ;(*     SET OUTGOING IN RESET STATE                               *)
                        ;(*****************************************************************)
                                                ;       0101:
008A'   0E 1B           CH0101: LD      C,1BH   ;       BEGIN
008C'   CD 00DD'                CALL    PRODS   ;          (* HL=PD(DATATYPE)+27 *)
                                                ;
008F'   36 0C                   LD      (HL),0CH ;         SET PK.-START AND PROCEED BITS;
0091'   AF                      XOR     A       ;          REG. A := 0;
                                                ;
0092'   C9                      RET             ;       END;
                                                ;
                        ;*****************************************************************
                                PAGE
```

```
                        ;(*****************************************************************)
                        ;(*     ADJUST RECEIVE TIMER                                      *)
                        ;(*****************************************************************)
                                                        ;           0110:
                                                        ;           BEGIN
0093'   C5              CH0110: PUSH    BC              ;              (* SP:...,NEW REC. TIMER *)
0094'   0E 00                   LD      C,0
0096'   CD 00DD'                CALL    PRODS           ;              (* HL=PD(DATATYPE) *)
                                                        ;
0099'   36 80                   LD      (HL),80H        ;                 STOP RECEIVE TIMER
                                                        ;
009B'   2C                      INC     L               ;              (* HL=PD(DATATYPE)+1 *)
                                                        ;
009C'   C1                      POP     BC              ;              (* SP:... *)
009D'   71                      LD      (HL),C          ;              PD(DATATYPE).REC_TIMER_INPUT :=
                                                        ;                 NEW-REC. TIMER;
009E'   AF                      XOR     A               ;              REG. A := 0
                                                        ;
009F'   C9                      RET                     ;           END;
                                                        ;
                        ;*****************************************************************


                        ;(*****************************************************************)
                        ;(*     ADJUST SEND TIMER                                         *)
                        ;(*****************************************************************)
                                                        ;           0111:
                                                        ;           BEGIN
00A0'   C5              CH0111: PUSH    BC              ;              (* SP:...,NEW SEND TIMER *)
00A1'   0E 0F                   LD      C,0FH
00A3'   CD 00DD'                CALL    PRODS           ;              (* HL=PD(DATATYPE)+15 *)
                                                        ;
00A6'   36 80                   LD      (HL),80H        ;                 STOP SEND TIMER
00A8'   2C                      INC     L               ;              (* HL=PD(DATATYPE)+16 *)
                                                        ;
00A9'   C1                      POP     BC              ;              (* SP:... *)
00AA'   71                      LD      (HL),C          ;              PD(DATATYPE).SEND_TIMER_PRESET :=
                                                        ;                 NEW SEND TIMER;
00AB'   AF                      XOR     A               ;              REG. A := 0
                                                        ;
00AC'   C9                      RET                     ;           END;
                                                        ;
                        ;*****************************************************************
                                PAGE
```

```
                                ;(*****************************************************************)
                                ;(*      START INPUTTER                                           *)
                                ;(*****************************************************************)
00AD'   0E 0C                   CH1000: LD      C,0CH           ;           1000:
00AF'   CD 00DD'                        CALL    PRODS           ;           BEGIN
                                                                ;              (* HL=PD(DATATYPE)+12 *)
                                                                ;              WITH RECEIVED_CONTROL_BYTE_TO_INPUTTER DO
                                                                ;              BEGIN
00B2'   3E C0                           LD      A,0C0H
00B4'   B6                              OR      (HL)            ;                 SET HUNT-BIT;
00B5'   77                              LD      (HL),A          ;                 SET PROCEED-BIT
00B6'   2C                              INC     L
00B7'   CB A6                           RES     4,(HL)          ;                 INPUT PHASE := 0
                                                                ;              END;
00B9'   AF                              XOR     A               ;           REG. A := 0
                                                                ;
00BA'   C9                              RET                     ;           END;
                                                                ;
                                ;*****************************************************************

                                ;(*****************************************************************)
                                ;(*      INPUT PERMIT                                             *)
                                ;(*****************************************************************)
                                                                ;           1001:
00BB'   0E 0D                   CH1001: LD      C,0DH           ;           BEGIN
00BD'   CD 00DD'                        CALL    PRODS           ;              (* HL=PD(DATATYPE)+13 *)
                                                                ;
00C0'   CB C6                           SET     0,(HL)          ;              SET INPUT_PERMIT-BIT;
                                                                ;
00C2'   AF                              XOR     A               ;              REG. A := 0
                                                                ;
00C3'   C9                              RET                     ;           END;
                                                                ;
                                ;*****************************************************************

                                ;(*****************************************************************)
                                ;(*      INPUT NOT PERMIT                                         *)
                                ;(*****************************************************************)
                                                                ;           1010:
00C4'   0E 0D                   CH1010: LD      C,0DH           ;           BEGIN
00C6'   CD 00DD'                        CALL    PRODS           ;              (* HL=PD(DATATYPE)+13 *)
                                                                ;
00C9'   CB 86                           RES     0,(HL)          ;              RESET INPUT_PERMIT-BIT;
                                                                ;
00CB'   AF                              XOR     A               ;           REG. A := 0
                                                                ;
00CC'   C9                              RET                     ;           END
                                                                ;
                                                                ;        END   (* CASE SENTENCE *)
                                                                ;     END  (* COMMAND WAS NOT ERRORNEOUS *)
                                                                ; END;   (* COMMAND HANDLER SUBROUTINE *)
                                                                ;
```

```
;*****************************************************************************
        PAGE
```

```
                                ;(*****************************************************************)
                                ;(*      START OUTPUTTER                                          *)
                                ;(*****************************************************************)
00CD'   0E 1B                   CH1011: LD      C,1BH           ;           1011:
00CF'   CD 00DD'                        CALL    PRODS           ;           BEGIN
                                                                ;              (* HL=PD(DATATYPE)+27 *)
00D2'   CB D6                           SET     2,(HL)          ;              SET PROCEED-BIT OF OUTPUTTER;
00D4'   2C                              INC     L
00D5'   36 00                           LD      (HL),00         ;              STATE := 00, PHASE := 0
00D7'   2C                              INC     L
00D8'   36 00                           LD      (HL),00         ;              WAITING FOR DATA MODE
00DA'   2D                              DEC     L

00DB'   AF                              XOR     A               ;              REG. A := 0;
                                                                ;
00DC'   C9                              RET                     ;           END;
                                                                ;
                                ;*****************************************************************
                                        PAGE
```

```
                        ;************************************** PRODS ********************
                        ;
                        ;       NAME:           PRODS
                        ;       DESCRIPTION:    CALCULATES ADD OF PROTOCOL-DESCRIPTOR(CH.NO.)+
                        ;                       OFFSET
                        ;
                        ;       ENTRY:          REG.E:  CHANNEL-NO.
                        ;                       REG.C:  OFFSET
                        ;
                        ;       EXIT:           REG.HL: ADD OF PROTOCOL-DESCRIPTOR + OFFSET
                        ;
                        ;       DESTROY:        REG.A,BC
                        ;
                        ;       EXECUTION TIME: !
                        ;*****************************************************************
00DD'   7B              PRODS:  LD      A,E
00DE'   51                      LD      D,C
00DF'   CD 0000*                CALL    PROTDS

00E2'   7A                      LD      A,D             ;       (* A=OFFSET *)
                                                        ;
00E3'   85                      ADD     A,L
00E4'   6F                      LD      L,A             ;       HL := PD(DATATYPE) + OFFSET
                                                        ;
00E5'   C9                      RET                     ; END;  (* RETURN FROM PRODS *)
                        ;*****************************************************************
                                END
```

Macros:

Symbols:

CH0000	0041′	CH0001	0049′	CH0010	0051′	CH0011	006D′
CH0100	0089′	CH0101	008A′	CH0110	0093′	CH0111	00A0′
CH1000	00AD′	CH1001	00BB′	CH1010	00C4′	CH1011	00CD′
CHNCA	0011′	COMMX	0000I′	JMPTAB	0012′	NOERR	0007′
PDO	0000*	PRODS	00DDI′	PROTDS	00E0*	SCANO	0079*

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X    XXX  XX  X  X      X
;   XXXX     XX     XXXX         X     XXX  X X X  XXXX     X
;   XX XX    XX    XX XX         X X        X  XX  X        X
;   XX  XX   XX   XX  XX        X   X       X   X  XXXXX    X
;   XX   XX  XX  XX   XX
;   XX    XX XX XX    XX
;   XX     XXXXXX     XX
;   XXXXXXXXXXXXXXXXXX         CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXXX         PROGRAMMER:     PEON
;   XX     XXXXXX     XX       DATE:           820830
;   XX    XX XX XX    XX
;   XX   XX  XX  XX   XX
;   XX XX    XX    XX XX
;   XXXX     XX     XXXX
;   XXXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ******************************************************
;               *
;               *  MODULE NAME: QUEMON
;               *
;               ******************************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:
;               NAME:           FUNCTION:                       PAGE
;
;               GENQUE  ;GENERATE A NO. OF BUFFERS
;               XENQIF  ;ENQUEUE BUFFER IN QUEUE AS MASTER
;               XDEQIF  ;DEQUEUE BUFFER FROM QUEUE AS SLAVE
;
;-----------------------------------------------------------------
        PAGE
```

```
;*****************************************************************
        PAGE
```

```
                        ;***** EXTERNALS ***********************************************
                                extrn   BQCRE
                                extrn   XERROR
                        ;***** INTERNALS ***********************************************
                                public  GENQUE
                                public  XDEQIF
                                public  XENQIF
                        ;*****************************************************************
0008                    MFLG    EQU     8
0006                    SLFLG   EQU     6
0000'                           cseg
                                PAGE
```

```
                                ;****************************************** GENQUE *********************
                                ;
                                ;       NAME:           GENQUE
                                ;       DESCRIPTION:    GENERATE A NO. OF BUFFERS AND ENQUEUE THEM IN
                                ;                       SPECIFIED QUEUE
                                ;
                                ;       ENTRY:          REG.A:  = 0  (OFFSET)
                                ;                       REG.B:  NO. OF BUFFERS
                                ;                       REG.C:  BUFFER-SIZE
                                ;                       REG.DE: START OF BUFFER-AREA
                                ;                       REG.HL: ADD OF QUEUE-HEAD
                                ;
                                ;       EXIT:           REG.DE: NEXT FREE RAM-LOCATION IN BUFFER-AREA
                                ;
                                ;       DESTROY:        REG.AF,BC,HL
                                ;
                                ;       EXECUTION TIME:
                                ;
                                ;*********************************************************************

0000'   F5                      GENQUE: PUSH    AF
0001'   3E 00                           LD      A,0
0003'   B8                              CP      B
0004'   CA 0016'                        JP      Z,GENEX
0007'   F1                              POP     AF
0008'   C5                      GEN1:   PUSH    BC
0009'   E5                              PUSH    HL
000A'   F5                              PUSH    AF
000B'   06 00                           LD      B,0
000D'   CD 0000*                        CALL    BQCRE
0010'   F1                              POP     AF
0011'   E1                              POP     HL
0012'   C1                              POP     BC
0013'   10 F3                           DJNZ    GEN1
0015'   F5                              PUSH    AF
0016'   F1                      GENEX:  POP     AF
0017'   C9                              RET

                                ;*********************************************************************
                                        PAGE
```

```
                        ;***** I/F-ENQUEUE ROUTINE ************************** XENQIF **********
                                        ;DESCRIPTION:   ENQUEUE BUFFER IN I/F-QUEUE
                                        ;ENTRY:         A  - OFFSET TO RAM ON MULTIBUS-ADDR.
                                        ;               HL - QUEUEADDRESS + OFFSET
                                        ;               DE - BUFFER ADDRESS + OFFSET
                                        ;OUTPUT:        BUFFER IN QUEUE
                                        ;DESTROY:       AF,BC,DE,HL
                                        ;TIME:
                                        ;PROGRAMMER:    PEON
                                        ;DATE           830228
                                        ;
0018'   01 0008         XENQIF: LD      BC,MFLG
001B'   09                      ADD     HL,BC           ;ADD THESE
001C'   36 01                   LD      (HL),1          ;SET 'MASTER-FLAG'
001E'   2B                      DEC     HL
001F'   2B                      DEC     HL
0020'   CB 46           ENQIF1: BIT     0,(HL)          ;WAIT UNTILL 'SLAVE-FLAG' = 0
0022'   20 FC                   JR      NZ,ENQIF1
0024'   E5                      PUSH    HL
0025'   01 FFFA                 LD      BC,-6
0028'   09                      ADD     HL,BC

                        ;*****************************************************************************
0029'   F5                      PUSH    AF
002A'   AF                      XOR     A
002B'   12                      LD      (DE),A          ;CLEAR CHAIN
002C'   13                      INC     DE
002D'   12                      LD      (DE),A
002E'   1B                      DEC     DE
002F'   23                      INC     HL              ;INCREMENT NUMBER OF ELEMENT
0030'   7E                      LD      A,(HL)
0031'   34                      INC     (HL)
0032'   20 0C                   JR      NZ,ENQ2         ;IF QUEUE OVERFLOW THEN
0034'   F1                      POP     AF
0035'   35                      DEC     (HL)
0036'   3E 20                   LD      A,20H
0038'   CD 0000*                CALL    XERROR          ;  CALL ERROR ROUTINE
003B'   3E FF                   LD      A,0FFH
003D'   C3 0067'                JP      ENQIF2          ;  QUIT
0040'                   ENQ2:                           ;ENDIF
0040'   7A                      LD      A,D
0041'   4B                      LD      C,E
0042'   D1                      POP     DE
0043'   D5                      PUSH    DE
0044'   92                      SUB     D
0045'   47                      LD      B,A
0046'   7E                      LD      A,(HL)
0047'   FE 01                   CP      01
0049'   20 0C                   JR      NZ,ENQ1         ;IF NUMBER OF ELEMENT WAS = 0 THEN

004B'   23                      INC     HL
004C'   71                      LD      (HL),C          ;LOAD NEW ELEMENT ADDRESS
004D'   23                      INC     HL              ;          IN QUEUE AS FIRST ELEMENT
```

```
004E'  70                          LD      (HL),B          ;          AND LAST ELEMENT
004F'  23                          INC     HL
0050'  71                          LD      (HL),C
0051'  23                          INC     HL
0052'  70                          LD      (HL),B
0053'  E1                          POP     HL              ;JUSTER STACK
0054'  C3 0067'                    JP      ENQIF2

0057'                      ENQ1:                           ;ELSE
0057'  23                          INC     HL              ;  REMOVE NEW ELEMENT ADDRESS
0058'  23                          INC     HL              ;          TO OLD LAST ELEMENT DESCRIPTION
0059'  23                          INC     HL
005A'  5E                          LD      E,(HL)
005B'  23                          INC     HL
005C'  56                          LD      D,(HL)
005D'  70                          LD      (HL),B
005E'  2B                          DEC     HL              ;  MOVE NEW ELEMENT ADDRESS
005F'  71                          LD      (HL),C          ;          TO NEW LAST ELEMENT IN QUEUE
0060'  F1                          POP     AF
0061'  82                          ADD     A,D
0062'  6B                          LD      L,E
0063'  67                          LD      H,A
0064'  71                          LD      (HL),C
0065'  23                          INC     HL
0066'  70                          LD      (HL),B
                                                           ;ENDIF
                           ;*****************************************************************************
0067'  E1                  ENQIF2: POP     HL
0068'  23                          INC     HL
0069'  23                          INC     HL
006A'  36 00                       LD      (HL),0          ;CLEAR 'MASTER-FLAG'
006C'  C9                          RET
                           ;*****************************************************************************
                                   PAGE
```

```
                                ;***** I/F-DEQUEUE ROUTINE ************************** XDEQIF ***************
                                                ;DESCRIPTION:   DEQUEUE BUFFER FROM I/F-QUEUE
                                                ;ENTRY:         A  - OFFSET TO RAM ON MULTIBUS-ADD
                                                ;               HL - QUEUEADDRESS + OFFSET
                                                ;OUTPUT:        CY = 0 : NO BUFFER AVAILABLE
                                                ;               CY = 1 : DE - BUFFERADDRESS + OFFSET
                                                ;DESTROY:       AF,BC,HL
                                                ;TIME:          243 T-CYCLES + SEM.WAITING
                                                ;PROGRAMMER:    OTC
                                                ;DATE           820827
                                                ;
006D'   DD E5                   XDEQIF: PUSH    IX
006F'   E5                              PUSH    HL
0070'   DD E1                           POP     IX
0072'   DD CB 06 C6             DEQIF1: SET     0,(IX+6)        ;SET 'SLAVE-FLAG'
0076'   DD CB 08 46                     BIT     0,(IX+8)        ;IF 'MASTER-FLAG' <> 0
007A'   28 0C                           JR      Z,DEQIF3
007C'   DD CB 06 86                     RES     0,(IX+6)        ;  CLEAR 'SLAVE-FLAG'
0080'   DD CB 08 46             DEQIF2: BIT     0,(IX+8)        ;  WAIT UNTIL 'MASTER-FLAG' = 0
0084'   20 FA                           JR      NZ,DEQIF2       ;  GOTO DEQIF1
0086'   18 EA                           JR      DEQIF1          ;ENDIF
0088'                           DEQIF3:

                                ;*****************************************************************************

0088'   F5                              PUSH    AF
0089'   23                              INC     HL
008A'   7E                              LD      A,(HL)
008B'   B7                              OR      A
008C'   28 16                           JR      Z,BQDEQ1        ;QUIT IF QUEUE EMPTY
008E'   3D                              DEC     A               ;DECREMENT NO OF ELEMENTS
008F'   77                              LD      (HL),A
0090'   23                              INC     HL
0091'   5E                              LD      E,(HL)          ;GET ADDRESS OF FIRST ELEMENT
0092'   23                              INC     HL              ;           TO REGISTER DE
0093'   56                              LD      D,(HL)
0094'   EB                              EX      DE,HL           ;MOVE SECOND ELEMENT TO NEW
0095'   1B                              DEC     DE              ;           FIRST ELEMENT IN QUEUE
0096'   F1                              POP     AF
0097'   84                              ADD     A,H
0098'   67                              LD      H,A
0099'   ED A0                           LDI
009B'   ED A8                           LDD
009D'   03                              INC     BC
009E'   03                              INC     BC
009F'   EB                              EX      DE,HL
00A0'   37                              SCF
00A1'   C3 00A5'                        JP      DEQIF4

00A4'   D1                      BQDEQ1: POP     DE

                                ;*****************************************************************************

00A5'   DD CB 06 86             DEQIF4: RES     0,(IX+6)        ;CLEAR 'SLAVE-FLAG'
```

```
00A9'   DD E1                    POP     IX
00AB'   C9                       RET

                        ;*****************************************************************
                                 END
```

Macros:

Symbols:

BQCRE	000E*	BQDEQ1	00A4'	DEQIF1	0072'	DEQIF2	0080'
DEQIF3	0088'	DEQIF4	00A5'	ENQ1	0057'	ENQ2	0040'
ENQIF1	0020'	ENQIF2	0067'	GEN1	0008'	GENEX	0016'
GENQUE	0000I'	MFLG	0008	SLFLG	0006	XDEQIF	006DI'
XENQIF	0018I'	XERROR	0039*				

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX    XX    XXXX           X    XXX  X X X  XXXX     X
;   XX XX   XX   XX XX          X X        X  XX  X        X
;   XX  XX  XX  XX  XX         X   X       X   X  XXXXX    X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX          PROGRAMMER:      JS
;   XX    XXXXXX    XX
;   XX   XX XX XX   XX         DATE:            820226
;   XX  XX  XX  XX  XX
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;                 ******************************************
;                 *
;                 *  MODULE NAME: XMA
;                 *
;                 ******************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:    OUTSUB  TRANSMIT 20-BYTE BUFFERS FROM MPMP TO XMA
;                INSUB   TRANSMIT 20-BYTE BUFFERS FROM XMA TO MPMP
;
;
;-----------------------------------------------------------------
        PAGE
```

```
                title XMA
                subttl  XMA-MPMP COMMUNICATION

        ;****** INTERNALS ***********************************************

                public  OUTSUB
                public  INSUB

        ;*****************************************************************
                PAGE
```

```
0000'                                   cseg

0000'   C9                      OUTSUB: RET
0001'   C9                      INSUB:  RET

                                        END
```

Macros:

Symbols:
INSUB 0001I' OUTSUB 0000I'

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX     XX     XXXX         X    XXX  X X X  XXXX     X
;   XX XX    XX    XX XX        X X        X  XX  X        X
;   XX  XX   XX   XX  XX       X   X       X   X  XXXXX    X
;   XX    XX XX XX    XX
;   XX     XXXXXX     XX
;   XXXXXXXXXXXXXXXXX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX
;   XX     XXXXXX     XX       PROGRAMMER:     PEON
;   XX    XX XX XX    XX
;   XX   XX  XX  XX   XX       DATE:           830207
;   XX XX    XX    XX XX
;   XXXX     XX     XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;-----------------------------------------------------------------
;                 ***************************************************
;                 *
;                 *  MODULE NAME: XSUSER
;                 *
;                 ***************************************************
;-----------------------------------------------------------------
;
;DESCRIPTION:    INTERFACE-ROUTINES FOR THE X-NET-PROTOCOL
;                                 AND THE DATAGRAM-PROTOCOL
;
;
;-----------------------------------------------------------------
        PAGE
```

```
;***** INTERNALS ***********************************************************

        public  IDEPA,IGEPA,ODEPA,OGEPA
        public  IDEDA,IGEDA,ODEDA,OGEDA
        public  PROTDS

;***** EXTERNALS ***********************************************************

        extrn   PDO,SETSTA,SRESTA
        extrn   BQDEQ,BQENQ,PAQH
        extrn   QMUX,CMUXQH,FMUXQH

;*****************************************************************************
        PAGE
```

```
0000'                                   cseg

0000'   D6 02                   FPQH:   SUB     2
0002'   07                              RLCA
0003'   07                              RLCA
0004'   26 00                           LD      H,0
0006'   6F                              LD      L,A
0007'   29                              ADD     HL,HL
0008'   29                              ADD     HL,HL
0009'   29                              ADD     HL,HL
000A'   29                              ADD     HL,HL
000B'   09                              ADD     HL,BC                   ;HL POINTS AT RIGHT QUEUE-HEAD
000C'   C9                              RET

                                ;*******************************************************************
                                        PAGE
```

```
                        ;****************************************** IDEPA *********************
                        ;
                        ;       NAME:               IDEPA
                        ;       DESCRIPTION:        ENQUEUES A BUFFER INTO INGOING EMPTY QUEUE
                        ;
                        ;       ENTRY:              REG.A:  CHANNEL NO.
                        ;                           REG.DE: ADD OF BUFFERHEAD
                        ;
                        ;       EXIT:               REG.DE: ADD OF BUFFERHEAD
                        ;
                        ;       DESTROY:            REG.AF,BC,HL
                        ;
                        ;       EXECUTION TIME: 95 USEC
                        ;
                        ;*********************************************************************
000D'   21 0002         IDEPA:  LD      HL,2
0010'   19                      ADD     HL,DE
0011'   36 00                   LD      (HL),0          ;RESET BYTECOUNT TO 0
0013'   23                      INC     HL
0014'   36 00                   LD      (HL),0

0016'   01 0000*                LD      BC,00H+PAQH
0019'   CD 0000'                CALL    FPQH
001C'   CD 0000*                CALL    BQENQ

001F'   C9                      RET

                        ;*********************************************************************
                                PAGE
```

```
                                ;****************************************** IGEPA **********************
                                ;
                                ;       NAME:           IGEPA
                                ;       DESCRIPTION:    DEQUEUES A BUFFER FROM INGOING PACKET QUEUE
                                ;
                                ;       ENTRY:          REG.A:  CHANNEL NO.
                                ;
                                ;
                                ;       EXIT:           CY=0:   QUEUE EMPTY
                                ;                       CY=1:   BUFFER IN QUEUE
                                ;                       REG.DE: ADD OF FULL BUFFER
                                ;
                                ;       DESTROY:        REG.AF,BC,DE,HL
                                ;
                                ;       EXECUTION TIME: 128 USEC
                                ;
                                ;*********************************************************************
0020'                           IGEPA:                          ; BEGIN
0020'   01 0010*                        LD      BC,10H+PAQH
0023'   CD 0000'                        CALL    FPQH
0026'   CD 0000*                        CALL    BQDEQ
0029'   C9                              RET

                                ;*********************************************************************
                                        PAGE
```

```
                        ;****************************************** ODEPA **********************
                        ;
                        ;       NAME:               ODEPA
                        ;       DESCRIPTION:        ENQUEUES A BUFFER INTO OUTGOING PACKET QUEUE
                        ;
                        ;       ENTRY:              REG.A:  CHANNEL NO.
                        ;                           REG.DE: ADD OF FULL BUFFER
                        ;
                        ;       EXIT:               REG.DE: ADD OF FULL BUFFER
                        ;
                        ;       DESTROY:            REG.AF,BC,HL
                        ;
                        ;       EXECUTION TIME:     95 USEC
                        ;
                        ;*********************************************************************
002A'   01 0020*        ODEPA:  LD      BC,20H+PAQH
002D'   CD 0000'                CALL    FPQH
0030'   CD 0000*                CALL    BQENQ           ;       ENQUEUE M_BH INTO PACKET-QUEUE

0033'   C9                      RET                     ; END;

                        ;*********************************************************************
                                PAGE
```

```
                        ;****************************************** OGEPA **********************
                        ;
                        ;       NAME:           OGEPA
                        ;       DESCRIPTION:    DEQUEUES A BUFFER FROM OUTGOING EMPTY QUEUE
                        ;
                        ;       ENTRY:          REG.A:  CHANNEL NO.
                        ;
                        ;
                        ;       EXIT:           CY=0:   EMPTY QUEUE
                        ;                       CY=1:   BUFFER IN QUEUE
                        ;                               REG.DE: ADD OF EMPTY BUFFER
                        ;
                        ;       DESTROY:        REG.AF,BC,DE,HL
                        ;
                        ;       EXECUTION TIME: 142 USEC
                        ;
                        ;*********************************************************************
0034'                   OGEPA:                          ; BEGIN
0034'   01 0030*                LD      BC,30H+PAQH
0037'   CD 0000'                CALL    FPQH
003A'   CD 0000*                CALL    BQDEQ           ;       DEQUEUE M_BH FROM OUTGOING EMPTY_QUEUE;
                                                        ;
003D'   C9                      RET                     ; END;
                        ;*********************************************************************
                                PAGE
```

```
                        ;****************************************** IDEDA **********************
                        ;
                        ;       NAME:               IDEDA
                        ;       DESCRIPTION:        DELIVER INGOING EMPTY DATAGRAM TO CORRECT MUX-
                        ;                           QUEUE SPECIFIED WITH MUX-CHANNEL-NO.
                        ;
                        ;       ENTRY:              REG.A:  MUX-NO.
                        ;                           REG.DE: ADD OF DATAGRAM
                        ;
                        ;       EXIT:               REG.A:  MUX-NO.
                        ;
                        ;       DESTROY:            REG.BC,DE,HL
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*********************************************************************
003E'   F5              IDEDA:  PUSH    AF
003F'   CD 0000*                CALL    FMUXQH          ;ADD OF CORRECT MUX-QUEUE-HEAD
0042'   CD 0000*                CALL    BQENQ           ;DELIVER EMPTY DATAGRAM
0045'   F1                      POP     AF

0046'   C9                      RET

                        ;*********************************************************************
                                PAGE
```

```
                        ;****************************************** IGEDA *********************
                        ;
                        ;       NAME:           IGEDA
                        ;       DESCRIPTION:    GET INGOING DATAGRAM FROM CORRECT MUX-QUEUE
                        ;                       SPECIFIED WITH MUX-CHANNEL-NO.
                        ;
                        ;       ENTRY:          REG.A:  MUX-NO.
                        ;
                        ;
                        ;       EXIT:           REG.A:  MUX-NO.
                        ;                       CY=1:
                        ;                       REG.B:  SOURCE-NET
                        ;                       REG.C:  SOURCE-NIU
                        ;                       REG.L:  SOURCE-NAP
                        ;                       REG.DE: ADD OF DATAGRAM
                        ;                       CY=0:
                        ;
                        ;       DESTROY:        REG.F,B,HL
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*********************************************************************

0047'   CD 0000*        IGEDA:  CALL    FMUXQH
004A'   01 0010                 LD      BC,10H
004D'   09                      ADD     HL,BC           ;ADD OF CORRECT MUX-QUEUE-HEAD
004E'   CD 0000*                CALL    BQDEQ
0051'   D0                      RET     NC              ;IF DATAGRAM THEN

0052'   EB                      EX      DE,HL
0053'   2B                      DEC     HL
0054'   4E                      LD      C,(HL)          ;  LOAD SRC-NIU IN REG.C
0055'   2B                      DEC     HL
0056'   46                      LD      B,(HL)          ;  LOAD SRC-NET IN REG.B
0057'   23                      INC     HL
0058'   23                      INC     HL
0059'   EB                      EX      DE,HL

005A'   CD 0000*                CALL    SRESTA
005D'   6F                      LD      L,A             ;  LOAD SRC-NAP IN REG.L
005E'   37                      SCF
                                                        ;ELSE
                                                        ;ENDIF
005F'   C9                      RET                     ;EXIT
                        ;*********************************************************************
                                PAGE
```

```
                        ;****************************************** ODEDA *********************
                        ;
                        ;       NAME:               ODEDA
                        ;       DESCRIPTION:        DELIVER OUTGOING DATAGRAM TO CORRECT MUX-QUEUE
                        ;                           SPECIFIED WITH MUX-CHANNEL-NO. AND STORE
                        ;                           DEST.-NIU IN HEAD
                        ;
                        ;       ENTRY:              REG.A:  MUX-NO.
                        ;                           REG.B:  DESTINATION-NET
                        ;                           REG.C:  DESTINATION-XIU
                        ;                           REG.L:  DESTINATION-NAP
                        ;                           REG.DE: ADD OF DATAGRAM
                        ;
                        ;
                        ;       EXIT:               REG.A:  MUX.NO
                        ;
                        ;       DESTROY:            REG.F,BC,DE,HL
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*****************************************************************
0060'   F5              ODEDA:  PUSH    AF
0061'   7D                      LD      A,L
0062'   CD 0000*                CALL    SETSTA          ;STORE DEST.-NAP IN HEAD
0065'   1B                      DEC     DE
0066'   79                      LD      A,C
0067'   12                      LD      (DE),A          ;STORE DEST.-NIU IN HEAD
0068'   1B                      DEC     DE
0069'   78                      LD      A,B
006A'   12                      LD      (DE),A          ;STORE DEST.-NET IN HEAD
006B'   13                      INC     DE
006C'   13                      INC     DE
006D'   F1                      POP     AF
006E'   CD 0000*                CALL    FMUXQH
0071'   01 0020                 LD      BC,20H
0074'   09                      ADD     HL,BC           ;ADD OF CORRECT MUX-QUEUE-HEAD
0075'   CD 0000*                CALL    BQENQ           ;DELIVER DATAGRAM

0078'   C9                      RET

                        ;*****************************************************************
                                PAGE
```

```
                        ;***************************************** OGEDA *********************
                        ;
                        ;       NAME:           OGEDA
                        ;       DESCRIPTION:    GET OUTGOING EMPTY DATAGRAM FROM CORRECT
                        ;                       MUX-QUEUE SPECIFIED WITH MUX-CHANNEL-NO.
                        ;
                        ;       ENTRY:          REG.A:  MUX-NO.
                        ;
                        ;
                        ;       EXIT:           REG.A:  MUX-NO.
                        ;                       CY=1:   EMPTY DATAGRAM AVAILABLE
                        ;                       REG.DE: ADD OF EMPTY DATAGRAM
                        ;                       CY=0:   NO EMPTY DATAGRAM
                        ;       DESTROY:        REG.F,B,C,H,L
                        ;
                        ;       EXECUTION TIME: !
                        ;*************************************************************************
0079'   CD 0000*        OGEDA:  CALL    FMUXQH
007C'   01 0030                 LD      BC,30H
007F'   09                      ADD     HL,BC           ;ADD OF CORRECT MUX-QUEUE-HEAD
0080'   CD 0000*                CALL    BQDEQ           ;GET EMPTY DATAGRAM IF ANY

0083'   C9                      RET

                        ;*************************************************************************
                                PAGE
```

```
                        ;****************************************** PROTDS ********************
                        ;
                        ;       NAME:               PROTDS
                        ;       DESCRIPTION:        MACRO,USED BY INTERFACE SUBROUTINES TO CALCULATE
                        ;                           START OF PROTOCOL DESCRIPTOR
                        ;
                        ;       ENTRY:              REG.A:  CHANNEL NO.
                        ;
                        ;
                        ;       EXIT:               REG.HL: ADD OF PD(CH.NO.)
                        ;
                        ;       DESTROY:            REG. AF,BC,HL
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*********************************************************************
0084'   87              PROTDS: ADD     A,A             ; BEGIN
0085'   87                      ADD     A,A
                                                        ;
0086'   26 00                   LD      H,0
0088'   6F                      LD      L,A
0089'   29                      ADD     HL,HL           ;       (* HL=DATATYPE*8 *)
008A'   29                      ADD     HL,HL           ;       (* HL=DATATYPE*16 *)
008B'   29                      ADD     HL,HL           ;       (* HL=DATATYPE*32 *)
                                                        ;
                                                        ;       BEGIN
008C'   01 0000*                LD      BC,PDO          ;          (* BC=PD(0) *)
008F'   09                      ADD     HL,BC           ;          HL := PD(DATATYPE)
                                                        ;       END
0090'   C9                      RET                     ; END;
                        ;*********************************************************************
                                END
```

Macros:

Symbols:

BQDEQ	0081*	BQENQ	0076*	CMUXQH	0000*	FMUXQH	007A*
FPQH	0000'	IDEDA	003EI'	IDEPA	000DI'	IGEDA	0047I'
IGEPA	0020I'	ODEDA	0060I'	ODEPA	002AI'	OGEDA	0079I'
OGEPA	0034I'	PAQH	0035*	PDO	008D*	PROTDS	0084I'
QMUX	0000*	SETSTA	0063*	SRESTA	005B*		

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX    XX    XXXX            X    XXX  X X X  XXXX     X
;   XX XX   XX   XX XX          X X         X  XX  X        X
;   XX  XX  XX  XX  XX         X   X        X   X  XXXXX    X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX           PROGRAMMER:      PEON
;   XXXXXXXXXXXXXXXXX           DATE:            830207
;   XX    XXXXXX    XX
;   XX   XX XX XX   XX
;   XX  XX  XX  XX  XX
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ******************************************
;               *
;               *  MODULE NAME: XSCANI
;               *
;               ******************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   >INGOING SCAN PROCESS<
;               POLLS THE RINGBUFFERS FOR FULL INGOING FRAMES
;               AND RUNS SPECIAL PROTOCOLS ON THEM
;
;-----------------------------------------------------------------
        PAGE
```

MSCI

```
                        ;***** INTERNALS ***********************************************

                                public  SCANIN
                                public  FESW,DATY,PROBY,SEQBY,RINDA,EMPSW,FULSW
                                public  FSTTD

                        ;***** EXTERNALS ***********************************************

                                extrn   RELEASE,INPRO,OUTSUB
                                extrn   NXFUL,INXTA,SCANO,MAILB,PRODEI,FEFIF
                                extrn   INDAT,NWDSC,FNWDSC
                                extrn   ASTTDI,STTDSC
                                extrn   NXFREQ,DEVNO,BW
                                extrn   NOAVCH,NOBCHL,MAXCH,SAD,MAXBW
                                extrn   TVALTR,FDSCR,ABTIM
                                extrn   s_semi,hostsig

                        ;***** EQUALS **************************************************

0000                    FESW    EQU     0
0001                    DATY    EQU     1
0003                    PROBY   EQU     3
0004                    SEQBY   EQU     4
0005                    RINDA   EQU     5
0000                    EMPSW   EQU     00
0080                    FULSW   EQU     80H

0005                    LFRDAT  EQU     5
0007                    RFRDAT  EQU     7
0001                    ILAYID  EQU     1
0000                    NWSTAT  EQU     0

0002                    CATEG   EQU     2
0003                    SXIUID  EQU     3
0004                    BRCBC   EQU     4
0008                    BRCMC   EQU     8

000A                    RQBW    EQU     10
000B                    RQXIUID EQU     11

006F                    NODEST  EQU     6FH
0000                    DIAGCAT EQU     0
0004                    DIAGRSP EQU     4
0007                    DIAGBC  EQU     7

0010                    NXD     EQU     16
0003                    IDLEBW  EQU     3
0000                    XEPIDLE EQU     0
0010                    BUSY    EQU     10H

                        ;*****************************************************************
                                PAGE
```

```
0000'                                   cseg

0000'                           SCANIN:
0000'   21 0000*                        ld      hl,hostsig ]            ;
0003'   CD 0000*                        call    s_semi     ]            ;
0006'   CD 0000*                LOOP:   CALL    RELEASE
0009'   FB                              EI

000A'   CD 0000*                BEGSC:  CALL    OUTSUB
000D'   FD 2A 0000*                     LD      IY,(NXFUL)

0011'   FD 7E 00                        LD      A,(IY+FESW)
0014'   FE 80                           CP      FULSW           ; IF RINGBUFFER FULL THEN
0016'   C2 00BB'                        JP      NZ,NOFRA
                                                                ; BEGIN
0019'   FD 7E 01                        LD      A,(IY+ILAYID)
001C'   FE 00                           CP      00H
001E'   C2 0027'                        JP      NZ,NODTG
0021'   CD 0000*                        CALL    INDAT
0024'   C3 00AC'                        JP      FUESW
0027'   FE 3F                   NODTG:  CP      3FH
0029'   C2 0032'                        JP      NZ,NOBRC
002C'   CD 00E5'                        CALL    INBRC
002F'   C3 00AC'                        JP      FUESW
0032'   21 0000*                NOBRC:  LD      HL,MAXCH
0035'   BE                              CP      (HL)
0036'   F2 00AC'                        JP      P,FUESW
0039'   CD 0133'                        CALL    FSTTD
003C'   22 0000*                        LD      (ASTTDI),HL     ;  STORE ADDRESS OF STATISTIC-DESCR.

003F'   FD 7E 01                        LD      A,(IY+ILAYID)
0042'   07                              RLCA
0043'   21 0000*                        LD      HL,SCANO
0046'   85                              ADD     A,L
0047'   6F                              LD      L,A

0048'   5E                              LD      E,(HL)
0049'   2C                              INC     L
004A'   56                              LD      D,(HL)
004B'   7A                              LD      A,D
004C'   A7                              AND     A               ;     IF P.D. ADR.(MSB) .NE. 0 THEN
004D'   28 5D                           JR      Z,FUESW
                                                                ;     BEGIN
004F'   ED 53 0000*                     LD      (PRODEI),DE
0053'   7B                              LD      A,E
0054'   C6 0E                           ADD     A,14
0056'   5F                              LD      E,A

0057'   1A                              LD      A,(DE)
0058'   E6 1F                           AND     1FH             ;         STATUS := 0
005A'   12                              LD      (DE),A

005B'   FD 46 03                        LD      B,(IY+PROBY)
005E'   CB 58                           BIT     3,B             ;         IF RETURN TO INC. VALID = 1
```

```
0060'   CA 0073'                        JP      Z,NOTIN         ;           THEN
0063'   C6 40                           ADD     A,40H           ;           BEGIN
0065'   12                              LD      (DE),A          ;              STATUS := 2

0066'   1D                              DEC     E
0067'   1D                              DEC     E
0068'   78                              LD      A,B
0069'   E6 0F                           AND     0FH
006B'   4F                              LD      C,A
006C'   1A                              LD      A,(DE)          ;              STORE CONTROL TO INPUTTER
006D'   E6 F0                           AND     0F0H            ;              IN P.D. B12, BIT 3-0
006F'   81                              ADD     A,C
0070'   12                              LD      (DE),A          ;        END
0071'   1C                              INC     E
0072'   1C                              INC     E

0073'   CB 78                   NOTIN:  BIT     7,B             ;        IF RET. TO OUTPUTTER VALID = 1
0075'   CA 0085'                        JP      Z,NOTOU         ;        THEN
0078'   78                              LD      A,B
0079'   E6 F0                           AND     0F0H            ;           STORE CONTROL TO OUTPUTTER
007B'   4F                              LD      C,A             ;           IN P.D. B27, BIT 7-4
007C'   7B                              LD      A,E
007D'   C6 0D                           ADD     A,13
007F'   5F                              LD      E,A
0080'   1A                              LD      A,(DE)
0081'   E6 0F                           AND     0FH
0083'   81                              ADD     A,C
0084'   12                              LD      (DE),A

0085'   FD 7E 01                NOTOU:  LD      A,(IY+ILAYID)
0088'   21 0000*                        LD      HL,NWDSC+NWSTAT
008B'   CD 0000*                        CALL    FNWDSC
008E'   CB 7E                           BIT     7,(HL)
0090'   CA 0099'                        JP      Z,LOCNET
0093'   11 0007                 REMNET: LD      DE,RFRDAT
0096'   C3 009C'                        JP      ALLNET
0099'   11 0005                 LOCNET: LD      DE,LFRDAT
009C'   FD 4E 04                ALLNET: LD      C,(IY+SEQBY)
009F'   FD E5                           PUSH    IY
00A1'   FD 19                           ADD     IY,DE
00A3'   FD 22 0000*                     LD      (FEFIF),IY      ;        STORE DATA-ADR. IN IY-REG. AND
                                                                ;        "FEFIF"
00A7'   FD E1                           POP     IY
00A9'   CD 0000*                        CALL    INPRO           ;        GOTO INCOMING PROTOCOL ROUTINE

00AC'   FD 36 00 00             FUESW:  LD      (IY+FESW),EMPSW ;    MARK RINGBUFFER EMPTY
00B0'   3A 0000*                        LD      A,(NXFUL)
00B3'   C6 20                           ADD     A,32
00B5'   32 0000*                        LD      (NXFUL),A       ;      UPDATE POINTER TO NEXT
                                                                ;      "FULL" RINGBUFFER
00B8'   C3 00E2'                        JP      ENDSC           ; END
                                                                ; ELSE

00BB'   3A 0001*                NOFRA:  LD      A,(MAILB+1)     ; BEGIN
00BE'   CB 7F                           BIT     7,A             ;      IF REC. TIMER MAILBOX SEM. SET
00C0'   28 20                           JR      Z,ENDSC         ;      THEN
```

```
00C2'   E6 7F                          AND     7FH                 ;       BEGIN
00C4'   57                             LD      D,A
00C5'   3A 0000*                       LD      A,(MAILB)
00C8'   5F                             LD      E,A
00C9'   B2                             OR      D                   ;       IF P.D. ADDRESS .NE. 0 THEN
00CA'   28 11                          JR      Z,RESMB
                                                                   ;       BEGIN
00CC'   ED 53 0000*                    LD      (PRODEI),DE         ;         STORE ADR. OF P.D. IN "PRODE"
00D0'   7B                             LD      A,E
00D1'   C6 0E                          ADD     A,14
00D3'   5F                             LD      E,A
00D4'   1A                             LD      A,(DE)
00D5'   E6 1F                          AND     1FH
00D7'   C6 C0                          ADD     A,0C0H
00D9'   12                             LD      (DE),A              ;         STATUS := 6, IN P.D. B14, BIT 7-5

00DA'   CD 0000*                       CALL    INPRO               ;         CALL INC. PROT. ROUTINE
                                                                   ;       END
00DD'   3E 00                  RESMB:  LD      A,0
00DF'   32 0001*                       LD      (MAILB+1),A         ;       RESET REC. TIM. MAILBOX SEM.

                                                                   ; END
00E2'   C3 0006'               ENDSC:  JP      LOOP                ; GOTO START OF PROGRAM


                               ;*******************************************************************
                                       PAGE
```

```
00E5'                          INBRC:
00E5'   CD 0142'                       CALL    UPCHCNT

00E8'   FD 7E 02                       LD      A,(IY+CATEG)
00EB'   FE 00                          CP      DIAGCAT
00ED'   C2 0132'                       JP      NZ,INBRCX

00F0'   2A 0000*                       LD      HL,(NXFREO)
00F3'   3E 00                          LD      A,EMPSW
00F5'   BE                             CP      (HL)
00F6'   C2 0132'                       JP      NZ,INBRCX

00F9'   E5                             PUSH    HL
00FA'   DD E1                          POP     IX
00FC'   DD 36 01 6F                    LD      (IX+ILAYID),NODEST
0100'   3A 0000*                       LD      A,(DEVNO)
0103'   DD 77 03                       LD      (IX+SXIUID),A
0106'   DD 77 0B                       LD      (IX+RQXIUID),A
0109'   DD 36 04 07                    LD      (IX+BRCBC),DIAGBC
010D'   DD 36 08 04                    LD      (IX+BRCMC),DIAGRSP
0111'   3A 0000*                       LD      A,(NOBCHL)
0114'   FE 00                          CP      XEPIDLE
0116'   C2 011E'                       JP      NZ,BRC1                 ;IF XEP IN IDLE STATE THEN

0119'   3E 03                          LD      A,IDLEBW                ;  REQUEST IDLE BANDWIDTH
011B'   C3 0121'                       JP      BRC2                    ;ELSE
011E'   3A 0000*               BRC1:   LD      A,(MAXBW)               ;  REQUEST MAX BANDWIDTH
0121'   32 0000*               BRC2:   LD      (BW),A                  ;ENDIF
0124'   DD 77 0A                       LD      (IX+RQBW),A
0127'   DD 36 00 80                    LD      (IX+FESW),FULSW
012B'   3E 20                          LD      A,32
012D'   85                             ADD     A,L
012E'   6F                             LD      L,A
012F'   22 0000*                       LD      (NXFREO),HL

0132'   C9                     INBRCX: RET

                               ;*****************************************************************************
                                       PAGE
```

```
0133'                          FSTTD:
0133'   D6 02                          SUB     2               ;FIND STATISTIC-DESCRIPTOR
0135'   87                             ADD     A,A
0136'   87                             ADD     A,A
0137'   87                             ADD     A,A
0138'   5F                             LD      E,A
0139'   16 00                          LD      D,0
013B'   21 0000*                       LD      HL,STTDSC
013E'   19                             ADD     HL,DE
013F'   19                             ADD     HL,DE
0140'   19                             ADD     HL,DE           ;OFFSET EQUAL 24*CH.NO.

0141'   C9                             RET

                               ;*******************************************************************
                                       PAGE
```

```
0142'                          UPCHCNT:
0142'   AF                              XOR     A
0143'   32 0000*                        LD      (NOAVCH),A
0146'   32 0000*                        LD      (NOBCHL),A
0149'   21 0000*                        LD      HL,MAXCH
014C'   46                              LD      B,(HL)
014D'   05                              DEC     B
014E'   21 0000*                        LD      HL,SAD
0151'   11 0010                         LD      DE,NXD
0154'   3E 10                           LD      A,BUSY
0156'   10 01                  CHCNT3:  DJNZ    CHCNT1
0158'   C9                              RET
0159'   BE                     CHCNT1:  CP      (HL)
015A'   E5                              PUSH    HL
015B'   C2 0164'                        JP      NZ,CHAV
015E'   21 0000*               CHBU:    LD      HL,NOBCHL
0161'   C3 0167'                        JP      CHCNT2
0164'   21 0000*               CHAV:    LD      HL,NOAVCH
0167'   34                     CHCNT2:  INC     (HL)
0168'   E1                              POP     HL
0169'   19                              ADD     HL,DE
016A'   C3 0156'                        JP      CHCNT3

                                        END
```

Macros:

Symbols:

ABTIM	0000*	ALLNET	009C'	ASTTDI	003D*	BEGSC	000A'
BRC1	011E'	BRC2	0121'	BRCBC	0004	BRCMC	0008
BUSY	0010	BW	0122*	CATEG	0002	CHAV	0164'
CHBU	015E'	CHCNT1	0159'	CHCNT2	0167'	CHCNT3	0156'
DATY	0001I	DEVNO	0101*	DIAGBC	0007	DIAGCA	0000
DIAGRS	0004	EMPSW	0000I	ENDSC	00E2'	FDSCR	0000*
FEFIF	00A5*	FESW	0000I	FNWDSC	008C*	FSTTD	0133I'
FUESW	00AC'	FULSW	0080I	HOSTSI	0001*	IDLEBW	0003
ILAYID	0001	INBRC	00E5'	INBRCX	0132'	INDAT	0022*
INPRO	00DB*	INXTA	0000*	LFRDAT	0005	LOCNET	0099'
LOOP	0006'	MAILB	00E0*	MAXBW	011F*	MAXCH	014A*
NOAVCH	0165*	NOBCHL	015F*	NOBRC	0032'	NODEST	006F
NODTG	0027'	NOFRA	00BB'	NOTIN	0073'	NOTOU	0085'
NWDSC	0089*	NWSTAT	0000	NXD	0010	NXFREQ	0130*
NXFUL	00B6*	OUTSUB	000B*	PROBY	0003I	PRODEI	00CE*
RELEAS	0007*	REMNET	0093'	RESMB	00DD'	RFRDAT	0007
RINDA	0005I	RQBW	000A	RQXIUI	000B	SAD	014F*
SCANO	0044*	SCANIN	0000I'	SEQBY	0004I	STTDSC	013C*
SXIUID	0003	S_SEMI	0004*	TVALTR	0000*	UPCHCN	0142'
XEPIDL	0000						

No Fatal error(s)

```
title   xscano
subttl  OUTGOING-SCAN
page
```

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX    XX    XXXX           X    XXX  X X X  XXXX     X
;   XX XX   XX   XX XX          X X         X  XX  X        X
;   XX  XX  XX  XX  XX         X   X        X   X  XXXXX    X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX          PROGRAMMER:     PEON
;   XX    XXXXXX    XX
;   XX   XX XX XX   XX         DATE:           830207
;   XX  XX  XX  XX  XX
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;               ****************************************************
;               *
;               *  MODULE NAME: XSCANO
;               *
;               ****************************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:   >OUTGOING SCAN PROCESS<
;               POLLS THE OUTGOING QUEUE ON OPEN CHANNELS AND
;               RUNS THE TDX-PROTOCOL ON FULL BUFFERS AND DIAGNOSTICS
;
;-----------------------------------------------------------------
        PAGE
```

M SCO

```
                        ;***** INTERNALS ***********************************************
                                public  SCANOU

                        ;***** EXTERNALS ***********************************************
                                extrn   RELEASE,INSUB,OUTSUB
                                extrn   NXFREO,DEVNO,OUTXTA
                                extrn   DATY,PROBY,SEQBY,RINDA,FESW,FULSW
                                extrn   CHAN,MAXCH,SCANO,PRODEO,LAVAL,TIMFL,MAILB,CLIM
                                extrn   OUPRO,ANWDSC,FNWDSC,NWDSC
                                extrn   ASTTDO,FSTTD
                                extrn   RTIM10,TQSUB
                                extrn   XDEQIF,XENQIF,FPAQH,PRODS

                        ;***** EQUATES *************************************************
0000                    NWSTAT  EQU     0
000A                    CLIMV   EQU     10

                        ;*****************************************************************
                                PAGE
```

```
0000'                                   cseg

0000'                           SCANOU:
0000'   11 0010                         LD      DE,16
0003'   21 0000*                        LD      HL,RTIM10
0006'   CD 0000*                        CALL    TQSUB           ;START 128 MSEC. TIMER

0009'   3A 0000*                INIT:   LD      A,(LAVAL)
000C'   FE 80                           CP      80H
000E'   C2 0018'                        JP      NZ,ADJFL        ;IF TIMEOUT THEN
0011'   3E 00                           LD      A,0             ; RESET 'INDICATION'-FLAG
0013'   32 0000*                        LD      (LAVAL),A
0016'   3E FF                           LD      A,0FFH          ; SET TIMER FLAG
                                                                ;ELSE
0018'   32 0000*                ADJFL:  LD      (TIMFL),A       ; RESET TIMER FLAG

001B'   3E 04                           LD      A,4
001D'   32 0000*                        LD      (CHAN),A        ; INIT. POINTER TO SCAN TABLE
0020'   CD 0000*                        CALL    RELEASE         ; SCHEDULE
0023'   FB                              ei                      ;
0024'   CD 0000*                CONT1:  CALL    INSUB

0027'   21 0000*                        LD      HL,SCANO
002A'   3A 0000*                        LD      A,(CHAN)
002D'   85                              ADD     A,L
002E'   6F                              LD      L,A
002F'   5E                              LD      E,(HL)
0030'   2C                              INC     L
0031'   56                              LD      D,(HL)

0032'   7A                              LD      A,D             ; IF MSB(P.D.ADR.) .NE. 0 THEN
0033'   A7                              AND     A
0034'   3A 0000*                        LD      A,(CHAN)
0037'   0F                              RRCA
0038'   CA 00C4'                        JP      Z,EMPOF
                                                                ; BEGIN
003B'   D5                              PUSH    DE
003C'   21 0000*                        LD      HL,NWDSC+NWSTAT
003F'   CD 0000*                        CALL    FNWDSC
0042'   22 0000*                        LD      (ANWDSC),HL     ;  STORE ADDR OF NETWORK-DESCRIPTOR

0045'   3A 0000*                        LD      A,(CHAN)
0048'   0F                              RRCA
0049'   CD 0000*                        CALL    FSTTD
004C'   22 0000*                        LD      (ASTTDO),HL     ;  STORE ADDR OF STATISTIC-DESCRIPTOR
004F'   D1                              POP     DE

0050'   ED 53 0000*                     LD      (PRODEO),DE
0054'   DD 2A 0000*                     LD      IX,(PRODEO)

0058'   7B                              LD      A,E
0059'   C6 1D                           ADD     A,29
005B'   5F                              LD      E,A
```

```
005C'   1A                          LD      A,(DE)
005D'   E6 1F                       AND     1FH
005F'   12                          LD      (DE),A          ;       STATUS := 0
0060'   47                          LD      B,A

0061'   3A 0000*            SENTI:  LD      A,(TIMFL)       ;       IF TIMER FLAG SET THEN
0064'   A7                          AND     A
0065'   28 2E                       JR      Z,OUCTL         ;       BEGIN

0067'   DD 7E 0F                    LD      A,(IX+15)
006A'   CB 7F                       BIT     7,A             ;         IF SEND TIMER NOT STOPPED THEN
006C'   20 27                       JR      NZ,OUCTL
006E'   A7                          AND     A               ;         BEGIN
006F'   20 0B                       JR      NZ,DECRE        ;             IF SEND TIMER = 0 THEN
                                                            ;             BEGIN
0071'   78                          LD      A,B
0072'   C6 C0                       ADD     A,0C0H          ;                 STATUS := 6
0074'   12                          LD      (DE),A
0075'   DD 36 0F FF                 LD      (IX+15),0FFH    ;                 STOP SEND TIMER
0079'   C3 00A3'                    JP      ROUT            ;                 GOTO ROUT
                                                            ;             END

007C'   3D                  DECRE:  DEC     A               ;             ELSE DECREMENT SEND TIMER
007D'   DD 77 0F                    LD      (IX+15),A
0080'   18 13                       JR      OUCTL
                                                            ;         END
                                                            ;       END

0082'   CD 0000*            OUCTL1: CALL    INSUB
0085'   CD 0000*                    CALL    OUTSUB

0088'   ED 5B 0000*                 LD      DE,(PRODEO)
008C'   7B                          LD      A,E
008D'   C6 1D                       ADD     A,29
008F'   5F                          LD      E,A

0090'   1A                          LD      A,(DE)
0091'   E6 1F                       AND     1FH
0093'   12                          LD      (DE),A          ;       STATUS := 0
0094'   47                          LD      B,A

0095'   DD CB 1B 7E         OUCTL:  BIT     7,(IX+27)
0099'   28 08                       JR      Z,ROUT          ;       IF RET. TO OUTPUT. VALID = 1 THEN
009B'   78                          LD      A,B
009C'   C6 40                       ADD     A,40H           ;       BEGIN
009E'   12                          LD      (DE),A          ;         STATUS := 2
009F'   DD CB 1B BE                 RES     7,(IX+27)       ;         VALID BIT := 0
                                                            ;       END
00A3'   CD 0000*            ROUT:   CALL    OUPRO           ;       GOTO OUTGOING PROTOCOL ROUTINE

00A6'   CD 0000*                    CALL    RELEASE         ;       CALL SCHEDULER
00A9'   FB                          ei                      ;
00AA'   3A 0000*                    LD      A,(CHAN)
00AD'   0F                          RRCA
00AE'   5F                          LD      E,A
```

```
00AF'   0E 11                          LD      C,17            ;
00B1'   CD 0000*                       CALL    PRODS
00B4'   CD 0000*                       CALL    FPAQH
00B7'   23                             INC     HL
00B8'   AF                             XOR     A
00B9'   BE                             CP      (HL)
00BA'   28 2B                          JR      Z,ENDSC
00BC'   21 0000*                       LD      HL,CLIM
00BF'   35                             DEC     (HL)
00C0'   28 25                          JR      Z,ENDSC
00C2'   18 BE                          JR      OUCTL1
                                                               ;ELSE
00C4'   5F                     EMPOF:  LD      E,A
00C5'   0E 11                          LD      C,17            ;
00C7'   CD 0000*                       CALL    PRODS
00CA'   CD 0000*                       CALL    FPAQH
00CD'   E5                     EMPOF1: PUSH    HL
00CE'   F5                             PUSH    AF
00CF'   CD 0000*                       CALL    XDEQIF
00D2'   D2 00E5'                       JP      NC,EMPOF2       ;  WHILE O.F. BUFFER THEN
00D5'   F1                             POP     AF
00D6'   E1                             POP     HL
00D7'   E5                             PUSH    HL
00D8'   F5                             PUSH    AF
00D9'   01 0010                        LD      BC,10H
00DC'   09                             ADD     HL,BC
00DD'   CD 0000*                       CALL    XENQIF          ;    DELIVER IT TO O.E QUEUE
00E0'   F1                             POP     AF
00E1'   E1                             POP     HL
00E2'   C3 00CD'                       JP      EMPOF1
00E5'   F1                     EMPOF2: POP     AF              ;  ENDWHILE
00E6'   E1                             POP     HL

00E7'   3E 0A                  ENDSC:  LD      A,CLIMV
00E9'   32 0000*                       LD      (CLIM),A
00EC'   3A 0000*                       LD      A,(MAXCH)
00EF'   3D                             DEC     A
00F0'   CB 27                          SLA     A
00F2'   47                             LD      B,A
00F3'   3A 0000*                       LD      A,(CHAN)        ;IF CHAN = MAXCH THEN
00F6'   B8                             CP      B
00F7'   CA 0009'                       JP      Z,INIT          ;  GOTO "INIT"
00FA'   C6 02                          ADD     A,2
00FC'   32 0000*                       LD      (CHAN),A        ;ELSE BEGIN INCREMENT CHAN
00FF'   C3 0024'                       JP      CONT1           ;  GOTO "CONT1"
                                                               ;ENDIF

                               ;*****************************************************************************

                                       END
```

Macros:

Symbols:

ADJFL	0018′	ANWDSC	0043*	ASTTDO	004D*	CHAN	00FD*
CLIM	00EA*	CLIMV	000A	CONT1	0024′	DATY	0000*
DECRE	007C′	DEVNO	0000*	EMPOF	00C4′	EMPOF1	00CD′
EMPOF2	00E5′	ENDSC	00E7′	FESW	0000*	FNWDSC	0040*
FPAQH	00CB*	FSTTD	004A*	FULSW	0000*	INIT	0009′
INSUB	0083*	LAVAL	0014*	MAILB	0000*	MAXCH	00ED*
NWDSC	003D*	NWSTAT	0000	NXFREO	0000*	OUCTL	0095′
OUCTL1	0082′	OUPRO	00A4*	OUTSUB	0086*	OUTXTA	0000*
PROBY	0000*	PRODEO	008A*	PRODS	00C8*	RELEAS	00A7*
RINDA	0000*	ROUT	00A3′	RTIM10	0004*	SCANO	0028*
SCANOU	0000I′	SENTI	0061′	SEQBY	0000*	TIMFL	0062*
TQSUB	0007*	XDEQIF	00D0*	XENQIF	00DE*		

No Fatal error(s)

```
;*****************************************************************
;
;   XXXXXXXXXXXXXXXXX          X   X       X   X  XXXXX  XXXXX
;   XXXXXXXXXXXXXXXXX           X X        XX  X  X        X
;   XXXX    XX    XXXX           X    XXX  X X X  XXXX     X
;   XX XX   XX   XX XX          X X         X  XX  X        X
;   XX  XX  XX  XX  XX         X   X        X   X  XXXXX    X
;   XX   XX XX XX   XX
;   XX    XXXXXX    XX
;   XXXXXXXXXXXXXXXXX          CHRISTIAN ROVSING A/S
;   XXXXXXXXXXXXXXXXX
;   XX    XXXXXX    XX         PROGRAMMER:     PEON
;   XX   XX XX XX   XX
;   XX  XX  XX  XX  XX         DATE:           830206
;   XX XX   XX   XX XX
;   XXXX    XX    XXXX
;   XXXXXXXXXXXXXXXXX
;   XXXXXXXXXXXXXXXXX
;
;
;-----------------------------------------------------------------
;
;                 ********************************************
;                 *
;                 *  MODULE NAME: XSES
;                 *
;                 ********************************************
;
;-----------------------------------------------------------------
;
;DESCRIPTION:     >PRIMARY DESTINATION<
;                 GET ACCESS/RELEASE REQ FROM PRIMARY REMOTE SOURCE.
;                 SEND A DITTO TO INDICATED SECONDARY DESTINATION.
;                 WAITS FOR SECONDARY ANSWER OR TIME-OUT AND THEN SEND A
;                 PRIMARY ANSWER WITH COMPLETION-CODE TO REM SOURCE.
;
;                 >SECONDARY DESTINATION<
;                 GET SECOND. ACCESS/RELEASE REQ FROM PRIMARY DESTINATION.
;                 EXECUTE MESSAGE THEN SEND A SECONDARY
;                 ANSWER WITH COMPLETION-CODE TO PRIMARY DESTINATION.
;
;-----------------------------------------------------------------
        PAGE
```

```
                        ;***** INTERNALS ***************************************************

                                public  SADM
                                public  COMP,FDSCR,SENDPR,SENDSC
                                public  TVALTR
                                public  TVAL1,OSTATE,NSAD,FNWDSC
                                public  CPID,FSPST

                        ;***** EXTERNALS ***************************************************

                                extrn   CSAVC,CSABUF,CSAPAR,SAD,SADMST
                                extrn   BQENQ,BQDEQ,BQFIFI,RELEASE
                                extrn   XDEQIF,XENQIF
                                extrn   FPAQH,PDTAB
                                extrn   IDEDA,IGEDA,ODEDA,OGEDA
                                extrn   SADEPH
                                extrn   BQLDTX,BQCRE,BQLDBC,GENQUE
                                extrn   MAXCH,NMM,NOTRCH,DEVNO
                                extrn   COMMX,PRODS
                                extrn   NXFREO
                                extrn   NETID,CSANAP,CSANET,NWDSC
                                extrn   BUFAO
                                extrn   RTIM1,RTIM3,TQSUB
                                extrn   PWREQ
                                extrn   PARTAB,ABTIM,AUTBTI
                                extrn   TOTLOG,SACMDQH

                        ;***** EQUALS ******************************************************

FFFE                    OSTATE  EQU     -2              ;OLD STATE
FFFF                    TVAL1   EQU     -1              ;TIMER-VALUE
0000                    MESCO   EQU     0               ;MESSAGE CODE
0001                    COMPCO  EQU     1               ;COMPLETION CODE
0002                    PRSRC   EQU     2               ;PRIMARY SOURCE ID
0005                    PRDST   EQU     5               ;PRIMARY DESTINATION ID
0008                    SCDST   EQU     8               ;SECONDARY DESTINATION ID
000B                    TVALTR  EQU     11              ;AUTOBYE-TIME
0000                    AVAIL   EQU     00              ;AVAILABLE-STATE
0010                    BUSY    EQU     10H             ;BUSY-STATE
0008                    REMID   EQU     8               ;REMOTE XIU-ID IN SAD
0010                    NSAD    EQU     16              ;NEXT SESSION-ADMINISTRATION-DESCRIPTOR
0014                    ACTTIM  EQU     20              ;TIME-OUT-LIMIT EQUAL 4 SEC
0032                    SWTIM   EQU     50              ;TIME-OTU-LIMIT EQUAL 10 SEC AT S/W-REQ
0003                    REQERR  EQU     03H             ;REQUEST-ERROR
0004                    RELERR  EQU     04H             ;RELEASE-ERROR
0090                    PRIERR  EQU     090H            ;'PRIMARY REQUEST AT ILLEGAL STATE'-ERROR
0080                    SCIERR  EQU     080H            ;'SECONDARY REQUEST AT ILLEGAL STATE'-ERROR
0091                    PRTERR  EQU     091H            ;PRIMARY TRANSIT-ERROR
0081                    SCTERR  EQU     081H            ;SECONDARY TRANSIT-ERROR
0092                    TIOERR  EQU     092H            ;TIMEOUT-ERROR
0522                    BNOSZ   EQU     0522H           ;NO. AND SIZE OF BUFFERS TO BE GENERATED
0001                    NOEL    EQU     1               ;ADD NO. OF ELEMENTS IN QUEUE
0000                    SADEP   EQU     0               ;OFFSET-ADD ON EMPTY POOL IN BUFFER-AREA
0080                    FULSW   EQU     80H
```

```
0000                    FESW     EQU     0                ;FULL/EMPTY-SWITCH

0001                    LNET     EQU     01H
0081                    RNET     EQU     81H

0003                    PSNAP    EQU     3
0002                    DNAP     EQU     2
0001                    NET      EQU     1
0000                    NWSTAT   EQU     0

0005                    XTA      EQU     5

0012                    SWTYPE   EQU     IBMCODE
0012                    IBMCODE  EQU     12H

0000                    SAAQE    EQU     00
0010                    SAAQF    EQU     10H
0020                    SARQQF   EQU     20H
0030                    SARQQE   EQU     30H

000B                    PRANSZ   EQU     0BH

                        ;*****************************************************************
                                 PAGE
```

```
0000'                                   cses

0000'                           SADM:
0000'   3A 0000*                        LD      A,(ABTIM)
0003'   A7                              AND     A
0004'   28 09                           JR      Z,SADM1

0006'   11 0000*                        LD      DE,AUTBTI
0009'   21 0000*                        LD      HL,RTIM3
000C'   CD 0000*                        CALL    TQSUB           ;START 2 SEC. AUTOBYE-TIMER

000F'   11 0019                 SADM1:  LD      DE,25
0012'   21 0000*                        LD      HL,RTIM1
0015'   CD 0000*                        CALL    TQSUB           ;START 200 MSEC. TIMER

0018'   21 0000*                        LD      HL,SADEPH
001B'   11 0000*                        LD      DE,BUFA0+SADEP
001E'   01 0712                         LD      BC,0712H
0021'   3E 00                           LD      A,0
0023'   CD 0000*                        CALL    GENQUE          ;EVALUATE 7 BUFFERS AND ENQUEUE THEM IN E.P.

0026'   21 0000*                        LD      HL,SADEPH
0029'   CD 0000*                        CALL    BQDEQ           ;DEQUEUE 2 BUFFERS FROM E.P.
002C'   3E 00                           LD      A,0
002E'   CD 0000*                        CALL    IDEDA           ;DELIVER THEM TO DATAGRAM-PROT.
0031'   21 0000*                        LD      HL,SADEPH       ;  WITH MUX.NO. = 0
0034'   CD 0000*                        CALL    BQDEQ           ;
0037'   3E 00                           LD      A,0
0039'   CD 0000*                        CALL    IDEDA

003C'   21 0001*                        LD      HL,SAD+2+TVAL1
003F'   3E FF                           LD      A,0FFH
0041'   CD 05EA'                        CALL    FILLD           ;RESET TIMERS IN DESCRIPTOR

0044'   CD 0000*                SESADM: CALL    RELEASE
0047'   FB                              ei                      ;
0048'   3E 02                   FILLEP: LD      A,2
004A'   CD 0000*                        CALL    OGEDA           ;  GET EMPTY BUF FROM OTUG.2 IF ANY
004D'   DA 0058'                        JP      C,EB            ;  IF BUFFER THEN GOTO EB

0050'   3E 00                   NEB:    LD      A,0
0052'   CD 0000*                        CALL    OGEDA           ;  GET EMPTY BUF FROM OUTG.0 IF ANY
0055'   D2 0061'                        JP      NC,NOEB         ;  IF BUFFER THEN

0058'   21 0000*                EB:     LD      HL,SADEPH
005B'   CD 0000*                        CALL    BQENQ           ;  DELIVER IT TO E.P.
005E'   C3 0048'                        JP      FILLEP          ;  GET NEXT EMPTY BUFFER IF ANY

0061'   21 0001*                NOEB:   LD      HL,SADEPH+NOEL
0064'   7E                              LD      A,(HL)          ;  GET NO. OF EMPTY BUFS IN E.P.
0065'   FE 00                           CP      0
0067'   CA 0044'                        JP      Z,SESADM        ;  IF NO. = 0 THEN
                                                                ;    GET MORE EMPTY BUFFERS
```

```
                                                        ;  ELSE
006A'   3E 01                          LD      A,1
006C'   32 0000*                       LD      (CSAVC),A
006F'   21 FFF1*                       LD      HL,SAD+TVAL1-14

0072'   3A 0000*                CONT1: LD      A,(CSAVC)
0075'   3C                             INC     A
0076'   32 0000*                       LD      (CSAVC),A       ;    INCREMENT CURRENT VIRTUAL CH. SERVICED
0079'   E5                             PUSH    HL
007A'   21 0000*                       LD      HL,MAXCH
007D'   BE                             CP      (HL)
007E'   E1                             POP     HL
007F'   CA 0094'                       JP      Z,CONT2         ;    IF NOT ALL CHANNEL SERVICED THEN

0082'   01 0010                        LD      BC,NSAD
0085'   09                             ADD     HL,BC
0086'   7E                             LD      A,(HL)          ;      GET TIMER-VALUE IN NEXT DESCRIPTOR
0087'   FE 00                          CP      0
0089'   C2 0072'                       JP      NZ,CONT1        ;      IF NO TIME-OUT THEN
                                                               ;        SERVICE NEXT CHANNEL
008C'   3E FF                   INP12: LD      A,0FFH          ;      ELSE
008E'   77                             LD      (HL),A          ;        SET TIMER-VALUE = FF
008F'   3E 08                          LD      A,8             ;        SET INPUT TO EVENT-VECTOR = 8
0091'   C3 02F8'                       JP      EVENT           ;        GOTO EVENT
                                                               ;      ENDIF
0094'   3E 00                   CONT2: LD      A,0
0096'   CD 0000*                       CALL    IGEDA           ;        GET DATAGRAM IF ANY
0099'   D2 00B3'                       JP      NC,CONT5        ;        IF NO DATAGRAM THEN
                                                               ;          GOTO BEGINNING OF MODULE
009C'   7D                             LD      A,L
009D'   32 0000*                       LD      (CSANAP),A
00A0'   78                             LD      A,B
00A1'   32 0000*                       LD      (CSANET),A
00A4'   D5                             PUSH    DE
00A5'   21 0000*                       LD      HL,SADEPH
00A8'   CD 0000*                       CALL    BQDEQ           ;          GET EMPTY BUF FROM E.P.
00AB'   3E 00                          LD      A,0
00AD'   CD 0000*                       CALL    IDEDA           ;          DELIVER BUF TO ING. EMPTY QUEUE
00B0'   D1                             POP     DE
00B1'   18 3E                          JR      CONT3
                                                               ;    --ELSE
00B3'                           CONT5:                         ;ELSE
00B3'   21 0000*                       LD      HL,SACMDQH      ;  FIND COMND QUEUE
00B6'   3E 00                          LD      A,0
00B8'   E5                             PUSH    HL
00B9'   F5                             PUSH    AF
00BA'   01 0020                        LD      BC,SARQQF
00BD'   09                             ADD     HL,BC
00BE'   CD 0000*                       CALL    XDEQIF          ;  IF COMND THEN
00C1'   30 29                          JR      NC,JSESADM

00C3'   ED 53 0000*                    LD      (CSABUF),DE
00C7'   CD 0000*                       CALL    BQFIFI          ;    GET START OF DATA AND LENGTH
00CA'   F1                             POP     AF
00CB'   F5                             PUSH    AF
00CC'   84                             ADD     A,H
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```
00CD'   67                          LD      H,A
00CE'   E5                          PUSH    HL
00CF'   C5                          PUSH    BC
00D0'   21 0000*                    LD      HL,SADEPH
00D3'   CD 0000*                    CALL    BQDEQ           ;     GET SAD-BUFFER
00D6'   C1                          POP     BC
00D7'   E1                          POP     HL
00D8'   CD 0000*                    CALL    BQLDTX          ;     TRANSFER DATA TO SAD-BUFFER
00DB'   F1                          POP     AF
00DC'   E1                          POP     HL
00DD'   D5                          PUSH    DE
00DE'   01 0030                     LD      BC,SARQQE
00E1'   09                          ADD     HL,BC
00E2'   ED 5B 0000*                 LD      DE,(CSABUF)
00E6'   CD 0000*                    CALL    XENQIF          ;     RETURN CMND-BUFFER
00E9'   D1                          POP     DE              ;     GOTO 'CONT3'
00EA'   18 05                       JR      CONT3           ;   ELSE
00EC'   F1                  JSESADM:POP     AF              ;   ENDIF
00ED'   E1                          POP     HL              ;ELSE
00EE'   C3 0044'                    JP      SESADM          ;SCHEDULE AND SEARCHING ON
                                                            ;ENDIF
                                    PAGE
```

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                                ;*****************************************************************
                                ;       INPUT TO SESSION ADMINISTRATION AVAILABLE
                                ;*****************************************************************

00F1'   ED 53 0000*     CONT3:  LD      (CSABUF),DE
00F5'   CD 0000*                CALL    BQFIFI
00F8'   22 0000*                LD      (CSAPAR),HL
00FB'   7E                      LD      A,(HL)          ;       GET MESSAGE-CODE
00FC'   E6 02                   AND     02H
00FE'   C2 04E4'                JP      NZ,ACT7         ;       IF USEABLE MESSAGE-CODE THEN

0101'   7E                      LD      A,(HL)          ;         GET MESSAGE-CODE
0102'   E6 C1                   AND     0C1H
0104'   CB 7E                   BIT     7,(HL)
0106'   CA 010C'                JP      Z,CONT4         ;         IF REQUEST THEN

0109'   23                      INC     HL              ;           SET CC = 00
010A'   36 00                   LD      (HL),0
010C'   CB 07           CONT4:  RLC     A               ;         ENDIF
010E'   CB 07                   RLC     A
0110'   CB 07                   RLC     A
0112'   CB 07                   RLC     A               ;         RELOCATE MESSAGE-CODE 4 TIMES
0114'   4F                      LD      C,A
0115'   06 00                   LD      B,0
0117'   21 011C'                LD      HL,CNTTAB
011A'   09                      ADD     HL,BC
011B'   E9                      JP      (HL)            ;         CONTROL OF INCOMING ANS/REQ AND
                                                        ;           CALCULATE CURRENT CHANNEL SERVICED


011C'   C3 013C'        CNTTAB: JP      CNT0
011F'   00                      NOP
0120'   C3 013F'                JP      CNT1
0123'   00                      NOP
0124'   C3 0142'                JP      CNT2
0127'   00                      NOP
0128'   C3 01C0'                JP      CNT3
012B'   00                      NOP
012C'   C3 020C'                JP      CNT4
012F'   00                      NOP
0130'   C3 022A'                JP      CNT5
0133'   00                      NOP
0134'   C3 022D'                JP      CNT6
0137'   00                      NOP
0138'   C3 0263'                JP      CNT7
013B'   00                      NOP
                                                        ;   ENDIF
                                                        ;ENDIF
                                PAGE
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013C'   C3 020C'          CNT0:   JP      CNT4            ;>SECONDARY ANSWER<


013F'   C3 04E4'          CNT1:   JP      ACT7            ;>PRIMARY ANSWER<
                                  PAGE
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                                                        ;>SECONDARY ACCESS REQUEST<
0142'  CD 0000*          CNT2:  CALL   PWREQ
0145'  CA 029E'                 JP     Z,PWERR

0148'  01 000A                  LD     BC,SCDST+2
014B'  2A 0000*                 LD     HL,(CSAPAR)
014E'  09                       ADD    HL,BC
014F'  7E                       LD     A,(HL)          ;GET SEC. DEST.VC
0150'  FE 00                    CP     0
0152'  C2 019F'                 JP     NZ,CVC2         ;IF EQUAL 0 THEN

0155'  E5                       PUSH   HL
0156'  16 10                    LD     D,BUSY
0158'  1E 02                    LD     E,2
015A'  21 0000*                 LD     HL,SAD+2+OSTATE
015D'  CD 0601'          CNT23: CALL   FSPST
0160'  C2 0189'                 JP     NZ,CNT21        ;  IF CHANNEL EQUAL BUSY THEN

0163'  E5                       PUSH   HL
0164'  D5                       PUSH   DE
0165'  01 0005                  LD     BC,PRDST
0168'  CD 0616'                 CALL   CPID
016B'  CA 0178'                 JP     Z,CNT22         ;    IF REMOTE NOT EQUAL PR.DEST.

016E'  D1                       POP    DE
016F'  1C                       INC    E
0170'  E1                       POP    HL
0171'  01 0010                  LD     BC,10H          ;      SEARCH AFTER NEW BUSY CHANNEL
0174'  09                       ADD    HL,BC
0175'  C3 015D'                 JP     CNT23           ;    ELSE

0178'  01 FFF4           CNT22: LD     BC,OSTATE-REMID-2
017B'  09                       ADD    HL,BC
017C'  36 00                    LD     (HL),AVAIL      ;      SET STATE AVAILABLE
017E'  D1                       POP    DE
017F'  E1                       POP    HL
0180'  E1                       POP    HL
0181'  7B                       LD     A,E
0182'  77                       LD     (HL),A          ;      STORE CH-ID IN PARAMETERS
0183'  32 0000*                 LD     (CSAVC),A       ;      EXIT
0186'  C3 02AF'                 JP     INPR            ;    ENDIF

0189'  16 00             CNT21: LD     D,AVAIL         ;  ELSE
018B'  1E 02                    LD     E,2
018D'  21 0000*                 LD     HL,SAD+2+OSTATE
0190'  CD 0601'                 CALL   FSPST
0193'  E1                       POP    HL
0194'  C2 0462'                 JP     NZ,ACT4         ;    IF CH EQUAL AVAILABLE NOT FOUND THEN
                                                       ;      SEND 'BUSY'-ANSWER
0197'  7B                       LD     A,E             ;    ELSE
0198'  77                       LD     (HL),A          ;      STORE CH.NO. IN PARAMETERS
0199'  32 0000*                 LD     (CSAVC),A
019C'  C3 02A7'                 JP     INPRTR          ;    ENDIF
                                                       ;  ENDIF
```

```
019F'   32 0000*            CVC2:   LD      (CSAVC),A           ;ELSE
01A2'   21 0000*                    LD      HL,SAD+2+OSTATE
01A5'   CD 04F4'                    CALL    FDSCR
01A8'   3E 10                       LD      A,BUSY
01AA'   BE                          CP      (HL)
01AB'   C2 02A7'                    JP      NZ,INPRTR           ;  IF CHANNEL BUSY THEN

01AE'   01 0005                     LD      BC,PRDST
01B1'   CD 0616'                    CALL    CPID
01B4'   C2 02A7'                    JP      NZ,INPRTR                   ;    IF REMOTE EQUAL PR.DEST THEN

01B7'   01 FFF4                     LD      BC,OSTATE-REMID-2
01BA'   09                          ADD     HL,BC
01BB'   36 00                       LD      (HL),AVAIL          ;       SET STATE AVAILABLE
01BD'   C3 02A7'                    JP      INPRTR              ;     ELSE
                                                                ;     ENDIF
                                                                ;   ELSE
                                                                ;   ENDIF
                                                                ;   EXIT
                                                                ;ENDIF
                                    PAGE
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```
01C0'                          CNT3:                        ;>PRIMARY ACCESS REQUEST<
01C0'   2A 0000*                        LD      HL,(CSAPAR)
01C3'   01 0007                         LD      BC,PRDST+2
01C6'   09                              ADD     HL,BC
01C7'   7E                              LD      A,(HL)
01C8'   32 0000*                        LD      (CSAVC),A
01CB'   21 0003*                        LD      HL,NWDSC+PSNAP
01CE'   CD 05F7'                        CALL    FNWDSC
01D1'   3A 0000*                        LD      A,(CSANAP)
01D4'   77                              LD      (HL),A

01D5'   CD 0000*                        CALL    PWREQ
01D8'   CA 029E'                        JP      Z,PWERR

01DB'   2A 0000*                        LD      HL,(CSAPAR)
01DE'   01 0005                         LD      BC,PRDST
01E1'   09                              ADD     HL,BC
01E2'   7E                              LD      A,(HL)           ;GET PR.DEST.NET
01E3'   01 0003                         LD      BC,SCDST-PRDST
01E6'   09                              ADD     HL,BC
01E7'   BE                              CP      (HL)
01E8'   C2 02ED'                        JP      NZ,VCERR         ;IF PR.DEST.NET EQUAL SEC.DEST.NET THEN

01EB'   3A 0000*                        LD      A,(CSAVC)
01EE'   21 0000*                        LD      HL,SAD+2+OSTATE
01F1'   CD 04F4'                        CALL    FDSCR
01F4'   3E 10                           LD      A,BUSY
01F6'   BE                              CP      (HL)
01F7'   C2 02AF'                        JP      NZ,INPR          ;   IF CHANNEL BUSY THEN
01FA'   01 0008                         LD      BC,SCDST
01FD'   CD 0616'                        CALL    CPID
0200'   C2 02AF'                        JP      NZ,INPR          ;     IF REMOTE ID EQUAL SEC.DEST THEN

0203'   01 FFF4                         LD      BC,OSTATE-REMID-2
0206'   09                              ADD     HL,BC
0207'   36 00                           LD      (HL),AVAIL       ;       SET STATE AVAILABLE
0209'   C3 02AF'                        JP      INPR             ;     ELSE
                                                                 ;     ENDIF
                                                                 ;   ELSE
                                                                 ;   ENDIF
                                                                 ;ELSE
                                                                 ;   SEND REQ-ERROR-ANSWER
                                                                 ;ENDIF
                                        PAGE
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                                                        ;>SECONDARY ANSWER<
020C'   2A 0000*          CNT4:   LD      HL,(CSAPAR)
020F'   01 0007                   LD      BC,PRDST+2
0212'   09                        ADD     HL,BC
0213'   7E                        LD      A,(HL)        ;GET PR.DEST.VC
0214'   32 0000*                  LD      (CSAVC),A
0217'   21 0002*                  LD      HL,SAD+2
021A'   CD 04F4'                  CALL    FDSCR         ;FIND CURRENT DESCRIPTOR
021D'   ED 5B 0000*               LD      DE,(CSAPAR)
0221'   CD 0588'                  CALL    COMP          ;COMPARE ANSWER WITH EXPECTED ANS
0224'   C2 04E4'                  JP      NZ,ACT7       ;IF NOT EQUAL THEN
                                                        ;   GOTO ACT7
0227'   C3 02AF'                  JP      INPR          ;ELSE  EXIT
                                                        ;ENDIF
                                  PAGE
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                                                        ;>PRIMARY ANSWER<
022A'   C3 04E4'            CNT5:   JP      ACT7


                                                        ;>SECONDARY RELEASE REQUEST<
022D'   2A 0000*            CNT6:   LD      HL,(CSAPAR)
0230'   01 0005                     LD      BC,PRDST
0233'   09                          ADD     HL,BC
0234'   5E                          LD      E,(HL)      ;GET PR DEST IN PARAM.
0235'   E5                          PUSH    HL
0236'   01 0005                     LD      BC,SCDST+2-PRDST
0239'   09                          ADD     HL,BC
023A'   7E                          LD      A,(HL)      ;GET SEC DEST VC IN PARAM.
023B'   32 0000*                    LD      (CSAVC),A
023E'   21 000A*                    LD      HL,SAD+2+REMID
0241'   CD 04F4'                    CALL    FDSCR
0244'   7E                          LD      A,(HL)      ;GET REM ID IN SAD
0245'   BB                          CP      E
0246'   D1                          POP     DE
0247'   C2 0258'                    JP      NZ,RERR67   ;IF PR DEST PAR = REM ID THEN
024A'   13                          INC     DE
024B'   23                          INC     HL
024C'   1A                          LD      A,(DE)
024D'   BE                          CP      (HL)
024E'   C2 0258'                    JP      NZ,RERR67
0251'   13                          INC     DE
0252'   23                          INC     HL
0253'   1A                          LD      A,(DE)
0254'   BE                          CP      (HL)
0255'   CA 02AF'                    JP      Z,INPR      ;   EXIT
                                                        ;ELSE
0258'   2A 0000*            RERR67: LD      HL,(CSAPAR) ;   SET RELEASE-ERROR
025B'   23                          INC     HL
025C'   3E 04                       LD      A,RELERR
025E'   B6                          OR      (HL)
025F'   77                          LD      (HL),A
0260'   C3 0462'                    JP      ACT4        ;   SEND ERROR-ANSWER
                                                        ;ENDIF
                                                        ;>PRIMARY RELEASE REQUEST<
0263'                       CNT7:
0263'   CD 0000*                    CALL    PWREQ
0266'   CA 029E'                    JP      Z,PWERR

0269'   2A 0000*                    LD      HL,(CSAPAR)
026C'   01 0008                     LD      BC,SCDST
026F'   09                          ADD     HL,BC
0270'   5E                          LD      E,(HL)      ;GET SEC DEST IN PARAM.
0271'   E5                          PUSH    HL
0272'   2B                          DEC     HL
0273'   7E                          LD      A,(HL)      ;GET PR DEST VC IN PARAM.
0274'   32 0000*                    LD      (CSAVC),A
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0277'   21 0003*                    LD      HL,NWDSC+PSNAP
027A'   CD 05F7'                    CALL    FNWDSC
027D'   3A 0000*                    LD      A,(CSANAP)
0280'   77                          LD      (HL),A          ;STORE PR.SRC.NAP

0281'   3A 0000*                    LD      A,(CSAVC)
0284'   21 000A*                    LD      HL,SAD+2+SCDST
0287'   CD 04F4'                    CALL    FDSCR
028A'   7E                          LD      A,(HL)          ;GET SEC DEST IN SAD
028B'   BB                          CP      E
028C'   D1                          POP     DE
028D'   C2 0258'                    JP      NZ,RERR67       ;IF SEC DEST PAR = SAD THEN
0290'   13                          INC     DE
0291'   23                          INC     HL
0292'   1A                          LD      A,(DE)
0293'   BE                          CP      (HL)
0294'   C2 0258'                    JP      NZ,RERR67
0297'   13                          INC     DE
0298'   23                          INC     HL
0299'   ED A0                       LDI                     ;  SET SEC DEST VC PAR EQUAL SAD
029B'   C3 02AF'                    JP      INPR            ;  EXIT
                                                            ;ENDIF

029E'                       PWERR:
029E'   2A 0000*                    LD      HL,(CSAPAR)
02A1'   23                          INC     HL
02A2'   B6                          OR      (HL)
02A3'   77                          LD      (HL),A
02A4'   C3 0462'                    JP      ACT4

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02A7'   3A 0000*          INPRTR: LD      A,(NOTRCH)
02AA'   C6 02                     ADD     A,2
02AC'   47                        LD      B,A
02AD'   18 04                     JR      INPRR
02AF'   21 0000*          INPR:   LD      HL,MAXCH
02B2'   46                        LD      B,(HL)
02B3'   3A 0000*          INPRR:  LD      A,(CSAVC)
02B6'   B8                        CP      B
02B7'   30 34                     JR      NC,VCERR
02B9'   FE 02                     CP      2
02BB'   DA 02ED'                  JP      C,VCERR         ;IF NO. OF VC < 2 OR > 13 THEN
                                                          ;  SEND ANSWER WITH REQ-ERROR
                                                          ;ELSE
02BE'   2A 0000*                  LD      HL,(CSAPAR)
02C1'   4E                        LD      C,(HL)          ;  GET MESSSAGE-CODE
02C2'   3E C1                     LD      A,0C1H
02C4'   A1                        AND     C
02C5'   4F                        LD      C,A
02C6'   06 00                     LD      B,0
02C8'   CB 01                     RLC     C
02CA'   CB 01                     RLC     C
02CC'   21 02E5'                  LD      HL,INTAB
02CF'   09                        ADD     HL,BC
02D0'   7E                        LD      A,(HL)          ;  GET INPUT TO EVENT-CALCULATION
02D1'   5F                        LD      E,A
02D2'   2A 0000*                  LD      HL,(CSAPAR)
02D5'   01 0001                   LD      BC,COMPCO
02D8'   09                        ADD     HL,BC
02D9'   7E                        LD      A,(HL)          ;  GET COMPLETION-CODE
02DA'   FE 00                     CP      0
02DC'   7B                        LD      A,E
02DD'   CA 02F8'                  JP      Z,EVENT         ;  IF  ERROR THEN

02E0'   C6 01                     ADD     A,1             ;    ADD ONE TO INPUT
02E2'   C3 02F8'                  JP      EVENT           ;  ELSE
                                                          ;  ENDIF
                                                          ;ENDIF

02E5'   04 09 02 00       INTAB:  DEFB    04,09,02,00,06,09,03,01
02E9'   06 09 03 01

02ED'   2A 0000*          VCERR:  LD      HL,(CSAPAR)
02F0'   23                        INC     HL
02F1'   7E                        LD      A,(HL)          ;GET COMPLETION-CODE
02F2'   F6 03                     OR      REQERR          ;SET REQ-ERROR
02F4'   77                        LD      (HL),A          ;STORE
02F5'   C3 0462'                  JP      ACT4            ;SEND ANSWER
                                  PAGE
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02F8'   F5                      EVENT:  PUSH    AF
02F9'   3A 0000*                        LD      A,(CSAVC)
02FC'   21 0002*                        LD      HL,SAD+2
02FF'   CD 04F4'                        CALL    FDSCR           ;FIND   SESS.ADM.-DESCRP.
0302'   E5                              PUSH    HL
0303'   DD E1                           POP     IX
0305'   DD 4E FE                        LD      C,(IX+OSTATE)   ;GET OLD STATE - 4MSB
0308'   F1                              POP     AF
0309'   81                              ADD     A,C             ;CALCULATE EVENT-VECTOR
030A'   21 0347'                        LD      HL,EVTAB
030D'   4F                              LD      C,A
030E'   06 00                           LD      B,0
0310'   09                              ADD     HL,BC
0311'   7E                              LD      A,(HL)          ;GET NEW STATE/ACTION
0312'   F5                              PUSH    AF
0313'   E6 F0                           AND     0F0H
0315'   DD 77 FE                        LD      (IX+OSTATE),A   ;STORE NEW STATE
0318'   F1                              POP     AF
0319'   E6 0F                           AND     0FH             ;CALCULATE ACTION NO.
031B'   21 0323'                        LD      HL,ACTAB
031E'   87                              ADD     A,A
031F'   87                              ADD     A,A
0320'   4F                              LD      C,A
0321'   09                              ADD     HL,BC
0322'   E9                              JP      (HL)

0323'   C3 0377'                ACTAB:  JP      ACT0
0326'   00                              NOP
0327'   C3 03AC'                        JP      ACT1
032A'   00                              NOP
032B'   C3 0409'                        JP      ACT2
032E'   00                              NOP
032F'   C3 0443'                        JP      ACT3
0332'   00                              NOP
0333'   C3 0462'                        JP      ACT4
0336'   00                              NOP
0337'   C3 0489'                        JP      ACT5
033A'   00                              NOP
033B'   C3 04B6'                        JP      ACT6
033E'   00                              NOP
033F'   C3 04E4'                        JP      ACT7
0342'   00                              NOP
0343'   C3 04F1'                        JP      ACT8
0346'   00                              NOP

0347'   20 04 11 04             EVTAB:  DEFB    20H,04H,11H,04H,07H,07H,07H,07H
034B'   07 07 07 07
034F'   08 07 07 07                     DEFB    08H,07H,07H,07H,07H,07H,07H,07H
0353'   07 07 07 07

0357'   14 20 14 01                     DEFB    14H,20H,14H,01H,17H,17H,17H,17H
035B'   17 17 17 17
035F'   18 17 17 17                     DEFB    18H,17H,17H,17H,17H,17H,17H,17H
0363'   17 17 17 17
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0367'   25 25 25 25          DEFB    25H,25H,25H,25H,12H,03H,03H,03H
036B'   12 03 03 03
036F'   06 27 27 27          DEFB    06H,27H,27H,27H,27H,27H,27H,27H
0373'   27 27 27 27
                             PAGE
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0377'   2A 0000*          ACTO:   LD      HL,(CSAPAR)      ;GET ADD ON PARAMETERS
037A'   CB 56                     BIT     2,(HL)
037C'   DD 36 FF 14               LD      (IX+TVAL1),ACTTIM       ;ACTIVATE TIMER
0380'   28 04                     JR      Z,ACTO1

0382'   DD 36 FF 32               LD      (IX+TVAL1),SWTIM
0386'   DD E5             ACTO1:  PUSH    IX               ;GET DESCRIPTOR
0388'   D1                        POP     DE
0389'   01 000B                   LD      BC,11
038C'   ED B0                     LDIR                     ;STORE PARAMETERS IN DESCRIPTOR
038E'   DD CB 00 BE               RES     7,(IX+MESCO)     ;SET ANSWER
0392'   DD CB 00 B6               RES     6,(IX+MESCO)     ;SET SECONDARY

0396'   ED 5B 0000*               LD      DE,(CSABUF)      ;  ADD OF BUFFER TO BE SEND
039A'   2A 0000*                  LD      HL,(CSAPAR)      ;  PARAMETER
039D'   CD 055E'                  CALL    SENDSC           ;SEND SEC. REQ

03A0'   3A 0000*                  LD      A,(CSAVC)
03A3'   5F                        LD      E,A

03A4'   3E 00                     LD      A,00
03A6'   CD 0000*                  CALL    COMMX            ;STOP   OUTPUTTER

03A9'   C3 0044'                  JP      SESADM           ;EXIT

                                  PAGE
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```
03AC'   3A 0000*          ACT1:   LD      A,(CSAVC)
03AF'   5F                        LD      E,A

03B0'   3E 01                     LD      A,01
03B2'   CD 0000*                  CALL    COMMX           ;STOP INPUTTER

03B5'   3E 00                     LD      A,00
03B7'   CD 0000*                  CALL    COMMX           ;STOP OUTPUTTER

03BA'   3E 02                     LD      A,02
03BC'   CD 0000*                  CALL    COMMX           ;CLOSE CHANNEL

03BF'   2A 0000*                  LD      HL,(CSAPAR)
03C2'   CB 46                     BIT     0,(HL)
03C4'   C2 03FA'                  JP      NZ,ACT1C        ;IF ACCESS REQUEST THEN

03C7'   00                        NOP
03C8'   EB                        EX      DE,HL
03C9'   21 000B                   LD      HL,11
03CC'   19                        ADD     HL,DE
03CD'   36 12                     LD      (HL),SWTYPE
03CF'   EB                        EX      DE,HL

03D0'   DD E5                     PUSH    IX
03D2'   D1                        POP     DE
03D3'   01 0005                   LD      BC,5
03D6'   ED B0                     LDIR
03D8'   01 0003                   LD      BC,3
03DB'   09                        ADD     HL,BC
03DC'   ED B0                     LDIR
03DE'   01 FFFA                   LD      BC,-6
03E1'   09                        ADD     HL,BC
03E2'   01 0003                   LD      BC,3
03E5'   ED B0                     LDIR                    ;  STORE PARAMETERS IN DESCRIPTOR

03E7'   01 0007                   LD      BC,PRDST+2
03EA'   CD 059C'                  CALL    OPENVC          ;  OPEN VIRTUAL CHANNEL

03ED'   21 0000*                  LD      HL,TOTLOG
03F0'   34                        INC     (HL)

03F1'   3A 0000*                  LD      A,(ABTIM)
03F4'   DD 77 0B                  LD      (IX+TVALTR),A   ;  RESET AUTOBYE-TIMER
03F7'   C3 03FA'                  JP      ACT1X           ;ELSE

03FA'                     ACT1C:                          ;ENDIF
03FA'   2A 0000*          ACT1X:  LD      HL,(CSAPAR)
03FD'   CB BE                     RES     7,(HL)
03FF'   ED 5B 0000*               LD      DE,(CSABUF)
0403'   CD 055E'                  CALL    SENDSC          ;SEND SEC. ANSWER
0406'   C3 0044'                  JP      SESADM          ;EXIT

                                  PAGE
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```
0409'                          ACT2:
0409'   DD 36 FF FF                    LD      (IX+TVAL1),0FFH ;RESET TIMER

040D'   2A 0000*                        LD      HL,(CSAPAR)
0410'   01 000A                         LD      BC,SCDST+2
0413'   09                              ADD     HL,BC
0414'   7E                              LD      A,(HL)          ;     GET SEC.DEST VC IN PARAM
0415'   DD 77 0A                        LD      (IX+SCDST+2),A          ;     STORE IT IN REMOTE VC

0418'   3A 0000*                        LD      A,(CSAVC)
041B'   5F                              LD      E,A

041C'   3E 01                           LD      A,01H
041E'   CD 0000*                        CALL    COMMX           ;STOP INPUTTER

0421'   3E 02                           LD      A,02H
0423'   CD 0000*                        CALL    COMMX           ;CLOSE  CHANNEL

0426'   2A 0000*                        LD      HL,(CSAPAR)
0429'   ED 5B 0000*                     LD      DE,(CSABUF)
042D'   CD 0502'                        CALL    SENDPR          ;SEND PR ANS WITH CC TO PR.SRC.

0430'   01 000A                         LD      BC,SCDST+2
0433'   CD 059C'                        CALL    OPENVC          ;OPEN CHANNEL

0436'   21 0000*                        LD      HL,TOTLOG
0439'   34                              INC     (HL)

043A'   3A 0000*                        LD      A,(ABTIM)
043D'   DD 77 0B                        LD      (IX+TVALTR),A   ;RESET AUTOBYE-TIMER

0440'   C3 0044'                        JP      SESADM          ;EXIT
                                        PAGE
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```
0443'   DD 36 FF FF          ACT3:   LD      (IX+TVAL1),0FFH ;RESET TIMER

0447'   3A 0000*                     LD      A,(CSAVC)
044A'   5F                           LD      E,A

044B'   3E 01                        LD      A,01H
044D'   CD 0000*                     CALL    COMMX           ;STOP INPUTTER

0450'   3E 02                        LD      A,02H
0452'   CD 0000*                     CALL    COMMX           ;CLOSE  CHANNEL

0455'   2A 0000*                     LD      HL,(CSAPAR)
0458'   ED 5B 0000*                  LD      DE,(CSABUF)
045C'   CD 0502'                     CALL    SENDPR          ;SEND PR ANS WITH CC TO PR.SRC.

045F'   C3 0044'                     JP      SESADM          ;EXIT

                                     PAGE
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```
0462'   2A 0000*          ACT4:   LD      HL,(CSAPAR)
0465'   CB BE                     RES     7,(HL)          ;SET ANSWER
0467'   CB 76                     BIT     6,(HL)
0469'   23                        INC     HL
046A'   7E                        LD      A,(HL)
046B'   ED 5B 0000*               LD      DE,(CSABUF)     ;  ADD OF BUFFER TO BE SEND
046F'   CA 047C'                  JP      Z,SACT4         ;IF PRIMARY THEN

0472'   F6 90                     OR      PRIERR
0474'   77                        LD      (HL),A          ;  SET PR.REQ-ERROR
0475'   2B                        DEC     HL
0476'   CD 0502'                  CALL    SENDPR          ;  SEND PR. ANS
0479'   C3 0044'                  JP      SESADM          ;  EXIT
                                                          ;ELSE
047C'   F6 80             SACT4:  OR      SCIERR
047E'   77                        LD      (HL),A          ;  SET SEC.REQ-ERROR
047F'   2B                        DEC     HL
0480'   01 0005                   LD      BC,PRDST
0483'   CD 055E'                  CALL    SENDSC          ;  SEND SEC. ANS
0486'   C3 0044'                  JP      SESADM          ;  EXIT
                                                          ;ENDIF

                                  PAGE
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```
0489'   3A 0000*          ACT5:   LD      A,(CSAVC)
048C'   5F                        LD      E,A

048D'   3E 02                     LD      A,02H
048F'   CD 0000*                  CALL    COMMX           ;CLOSE CHANNEL

0492'   2A 0000*                  LD      HL,(CSAPAR)
0495'   CB BE                     RES     7,(HL)          ;SET ANSWER
0497'   CB 76                     BIT     6,(HL)
0499'   23                        INC     HL
049A'   7E                        LD      A,(HL)
049B'   ED 5B 0000*               LD      DE,(CSABUF)     ;  ADD OF BUFFER TO BE SEND
049F'   CA 04AC'                  JP      Z,SACT5         ;IF PRIMARY THEN

04A2'   F6 91                     OR      PRTERR
04A4'   77                        LD      (HL),A          ;  SET PR.REQ-ERROR
04A5'   2B                        DEC     HL
04A6'   CD 0502'                  CALL    SENDPR          ;  SEND PR. ANS
04A9'   C3 0044'                  JP      SESADM          ;  EXIT
                                                          ;ELSE
04AC'   F6 81             SACT5:  OR      SCTERR
04AE'   77                        LD      (HL),A          ;  SET SEC.REQ-ERROR
04AF'   2B                        DEC     HL
04B0'   CD 055E'                  CALL    SENDSC          ;  SEND SEC. ANS
04B3'   C3 0044'                  JP      SESADM          ;  EXIT
                                                          ;ENDIF

                                  PAGE
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```
04B6'   21 0000*          ACT6:   LD      HL,SADEPH
04B9'   CD 0000*                  CALL    BQDEQ           ;GET EMPTY BUFFER
04BC'   62                        LD      H,D
04BD'   6B                        LD      L,E
04BE'   22 0000*                  LD      (CSABUF),HL
04C1'   DD 22 0000*               LD      (CSAPAR),IX     ;STORE ADD ON DESCR. IN PARAMETER-ADD
04C5'   2A 0000*                  LD      HL,(CSAPAR)
04C8'   DD CB 00 F6               SET     6,(IX+MESCO)
04CC'   3E 92                     LD      A,TIOERR
04CE'   DD 77 01                  LD      (IX+COMPCO),A           ;SET COMPLETION-CODE = TIME-OUT IN SAD
04D1'   01 000B                   LD      BC,11           ;DE = ADD ON EMPTY BUFFER
04D4'   CD 0000*                  CALL    BQLDTX          ;TRANSFER (*8)

04D7'   ED 5B 0000*               LD      DE,(CSABUF)     ;  ADD OF BUFFER TO BE SEND
04DB'   2A 0000*                  LD      HL,(CSAPAR)     ;  PARAMETER
04DE'   CD 0502'                  CALL    SENDPR          ;SEND PR. ANS ON TIMEOUT
04E1'   C3 0044'                  JP      SESADM          ;  EXIT
                                                          ;ENDIF
                                  PAGE
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```
04E4'   ED 5B 0000*        ACT7:   LD      DE,(CSABUF)     ;GET ADD OF BUFFER
04E8'   21 0000*                   LD      HL,SADEPH
04EB'   CD 0000*                   CALL    BQENQ           ;DELIVER FALSE BUFFER IN EMPTY POOL
04EE'   C3 0044'                   JP      SESADM          ;EXIT


04F1'   C3 0044'           ACT8:   JP      SESADM          ;EXIT
                                   PAGE
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```
                        ;****************************************** FDSCR ************************
                        ;
                        ;       NAME:               FDSCR
                        ;       DESCRIPTION:        FIND CURRENT SESSION-ADMINISTRATION-DESCRIPTOR
                        ;                           FROM SPECIFIED CHANNEL
                        ;
                        ;       ENTRY:              REG.A:  VIRTUAL CHANNEL NO.
                        ;                           REG.HL: START OF CURRENT DESCRIPTOR-AREA+OFFSET
                        ;
                        ;       EXIT:               REG.HL: ADD OF DESCRIPTOR INCREMENTED BY OFFSET
                        ;
                        ;       DESTROY:            REG.A,BC
                        ;
                        ;       EXECUTION TIME:     !
                        ;
                        ;*********************************************************************
04F4'   06 00           FDSCR:  LD      B,0
04F6'   C6 FE                   ADD     A,-2
04F8'   CB 27                   SLA     A
04FA'   CB 27                   SLA     A
04FC'   CB 27                   SLA     A
04FE'   4F                      LD      C,A
04FF'   09                      ADD     HL,BC
0500'   09                      ADD     HL,BC
0501'   C9                      RET

                        ;*********************************************************************
                                PAGE
```

```
                                ;****************************************** SENDPR *********************
                                ;
                                ;       NAME:           SENDPR
                                ;       DESCRIPTION:    SEND PRIMARY RELEASE/ACCESS OR CONNECT/DISCONNECT
                                ;
                                ;       ENTRY:          REG.A:  MUX.NO.
                                ;                       REG.DE: ADD OF BUFFER TO BE SEND
                                ;                       REG.HL: ADD OF RECEIVED PARAMETER
                                ;
                                ;       EXIT:
                                ;
                                ;       DESTROY:        REG.AF,BC,DE,HL
                                ;
                                ;       EXECUTION TIME: !
                                ;*********************************************************************
0502'   CB F6                   SENDPR: SET     6,(HL)          ;SET ANSWER
0504'   01 0002                         LD      BC,PRSRC
0507'   09                              ADD     HL,BC
0508'   46                              LD      B,(HL)
0509'   23                              INC     HL
050A'   4E                              LD      C,(HL)          ;GET PR.SRC NET AND XIU-ID
050B'   3A 0000*                        LD      A,(NETID)
050E'   B8                              CP      B
050F'   20 47                           JR      NZ,SPRREM       ;IF DEST. IS LOCAL THEN
0511'   3A 0000*                        LD      A,(DEVNO)
0514'   B9                              CP      C
0515'   20 41                           JR      NZ,SPRREM
0517'   21 0000*                SPRLOC: LD      HL,SACMDQH
051A'   3E 00                           LD      A,0
051C'   E5                              PUSH    HL
051D'   F5                              PUSH    AF
051E'   01 0000                         LD      BC,SAAQE
0521'   09                              ADD     HL,BC
0522'   CD 0000*                        CALL    XDEQIF          ;  GET EMPTY STATUS BUFFER
0525'   38 08                           JR      C,SPRL1
0527'   CD 0000*                        CALL    RELEASE
052A'   FB                              ei                      ;
052B'   F1                              POP     AF
052C'   E1                              POP     HL
052D'   18 E8                           JR      SPRLOC
052F'   01 000B                 SPRL1:  LD      BC,PRANSZ
0532'   CD 0000*                        CALL    BQLDBC
0535'   F1                              POP     AF
0536'   F5                              PUSH    AF
0537'   D5                              PUSH    DE
0538'   EB                              EX      DE,HL
0539'   82                              ADD     A,D
053A'   57                              LD      D,A
053B'   2A 0000*                        LD      HL,(CSAPAR)
053E'   01 000B                         LD      BC,PRANSZ
0541'   ED B0                           LDIR                    ;  TRANSFER DATA TO IT
```

```
0543'   D1                          POP     DE
0544'   F1                          POP     AF
0545'   E1                          POP     HL
0546'   01 0010                     LD      BC,SAAQF
0549'   09                          ADD     HL,BC
054A'   CD 0000*                    CALL    XENQIF          ;  DELIVER IT TO STATUS-QUEUE
054D'   ED 5B 0000*                 LD      DE,(CSABUF)
0551'   21 0000*                    LD      HL,SADEPH
0554'   CD 0000*                    CALL    BQENQ           ;  ENQUEUE EMPTY SAD-BUFFER
0557'   C9                          RET                     ;ELSE
                                                            ;
0558'   3E 02               SPRREM: LD      A,2
055A'   CD 0000*                    CALL    ODEDA           ;  SEND PR. ANS TO REMOTE SRC.
055D'   C9                          RET                     ;ENDIF
                                                            ;EXIT

                            ;*******************************************************************
                                    PAGE
```

```
                                ;****************************************** SENDSC ************************
                                ;
                                ;       NAME:               SENDSC
                                ;       DESCRIPTION:        SEND SECONDARY RELEASE/ACCESS OR CONNECT/DISCONNECT
                                ;                           REQUEST/ANSWER TO SECONDARY/PRIMARY DESTINATION
                                ;
                                ;       ENTRY:              REG.A:  MUX.NO.
                                ;                           REG.BC: PRIMARY/SECONDARY DESTINATION
                                ;                           REG.HL: ADD OF RECEIVED PARAMETERS
                                ;                           REG.DE: ADD OF BUFFER TO BE SEND
                                ;
                                ;       EXIT:               REG.A:  MUX-NO.
                                ;
                                ;       DESTROY:            REG.F,BC,DE,HL
                                ;
                                ;       EXECUTION TIME: !
                                ;
                                ;*********************************************************************
055E'   CB 76                   SENDSC: BIT     6,(HL)
0560'   CA 0577'                        JP      Z,SC0           ;IF PR. RECEIVED THEN

0563'   CB B6                           RES     6,(HL)          ;  SET SECONDARY
0565'   3A 0000*                        LD      A,(CSAVC)
0568'   E5                              PUSH    HL
0569'   21 0002*                        LD      HL,NWDSC+DNAP
056C'   CD 05F7'                        CALL    FNWDSC
056F'   7E                              LD      A,(HL)          ;  GET DEST. NAP-ID IN NETWORK DESCRIPTOR
0570'   E1                              POP     HL
0571'   01 0008                         LD      BC,SCDST
0574'   C3 057D'                        JP      SC1             ;ELSE
0577'   3A 0000*                SC0:    LD      A,(CSANAP)      ;  GET CURRENT DEST. NAP-ID
057A'   01 0005                         LD      BC,PRDST
057D'   09                      SC1:    ADD     HL,BC           ;ENDIF
057E'   46                              LD      B,(HL)
057F'   23                              INC     HL
0580'   4E                              LD      C,(HL)          ;GET DEST. OF SEC. REQ/ANS
0581'   6F                              LD      L,A             ;GET DEST. NAP
0582'   3E 00                           LD      A,0
0584'   CD 0000*                        CALL    ODEDA           ;SEND SEC. REQ/ANS TO REMOTE
0587'   C9                              RET                     ;EXIT

                                ;*********************************************************************
                                        PAGE
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```
                                ;****************************************** COMP *********************
                                ;
                                ;       NAME:               COMP
                                ;       DESCRIPTION:        COMPARE RECEIVED ANSWER WITH EXPECTED ANSWER
                                ;                           AND INDICATE IF ERROR
                                ;
                                ;       ENTRY:              REG.HL: ADD OF START OF EXPECTED ANSWER
                                ;                           REG.DE: ADD OF START OF RECEIVED ANSWER
                                ;
                                ;       EXIT:               Z=1:    NOT EQUAL
                                ;                           Z=0:    EQUAL
                                ;
                                ;       DESTROY:            REG.AF,BC,DE,HL
                                ;
                                ;       EXECUTION TIME:  !
                                ;
                                ;*********************************************************************
0588'   EB                      COMP:   EX      DE,HL
0589'   23                              INC     HL
058A'   13                              INC     DE
058B'   ED A8                           LDD                     ;STORE COMPLETION-CODE IN DESCRP.
058D'   01 000A                         LD      BC,10
0590'   1A                      COMP1:  LD      A,(DE)          ;GET 1 DATA IN DESCRIPTOR
0591'   ED A1                           CPI                     ;COMPARE IT WITH DATA IN BUFFER
0593'   C0                              RET     NZ              ;IF NOT EQUAL THEN
                                                                ;   RET
0594'   13                              INC     DE              ;ELSE
0595'   79                              LD      A,C             ;ENDIF
0596'   FE 00                           CP      0
0598'   C2 0590'                        JP      NZ,COMP1        ;IF NOT ALL DATA COMPARED THEN
                                                                ;   COMPARE NEXT DATA
059B'   C9                              RET                     ;ELSE EXIT
                                ;*********************************************************************
                                        PAGE
```

```
                        ;****************************************** OPENVC ********************
                        ;
                        ;       NAME:           OPENVC
                        ;       DESCRIPTION:    GET NIU-ID AND VC-ID IN RECEIVED PARAMETER AND
                        ;                       STORE THEM IN DESCRIPTOR.
                        ;                       OPEN CHANNEL
                        ;
                        ;       ENTRY:          REG.BC: OFFSET TO CORRECT VC-ID IN PARAMETERS
                        ;                       REG.DE: 00,VC-ID,0 H
                        ;
                        ;       EXIT:
                        ;
                        ;       DESTROY:        REG.A,BC,HL
                        ;
                        ;       EXECUTION TIME: !
                        ;*****************************************************************
059C'   C5              OPENVC: PUSH    BC

059D'   3A 0000*                LD      A,(CSAVC)
05A0'   5F                      LD      E,A

05A1'   3E 09                   LD      A,09
05A3'   CD 0000*                CALL    COMMX           ;INPUT  PERMIT

05A6'   3E 08                   LD      A,08
05A8'   CD 0000*                CALL    COMMX           ;START INPUTTER

05AB'   3E 0B                   LD      A,0BH
05AD'   CD 0000*                CALL    COMMX           ;START OUTPUTTER

05B0'   C1                      POP     BC
05B1'   2A 0000*                LD      HL,(CSAPAR)
05B4'   09                      ADD     HL,BC

05B5'   4E                      LD      C,(HL)
05B6'   2B                      DEC     HL
05B7'   46                      LD      B,(HL)          ;LOAD B WITH NIU-ID
05B8'   E5                      PUSH    HL
05B9'   3E 03                   LD      A,03
05BB'   CD 0000*                CALL    COMMX           ;OPEN CHANNEL

05BE'   E1                      POP     HL
05BF'   2B                      DEC     HL
05C0'   3A 0000*                LD      A,(NETID)
05C3'   BE                      CP      (HL)
05C4'   CA 05CC'                JP      Z,LOCNET        ;IF REMOTE-NET <> OWN NET THEN

05C7'   3E 81           REMNET: LD      A,RNET          ;  SET NETW-STATUS TO INT.NW.-COMM
05C9'   C3 05CE'                JP      ALLNET          ;ELSE
05CC'   3E 01           LOCNET: LD      A,LNET          ;  SET NETW-STATUS TO LOC.NW.-COMM
05CE'   F5              ALLNET: PUSH    AF
05CF'   3A 0000*                LD      A,(CSAVC)
```

```
05D2'   EB                      EX      DE,HL
05D3'   21 0000*                LD      HL,NWDSC+NWSTAT
05D6'   CD 05F7'                CALL    FNWDSC
05D9'   F1                      POP     AF
05DA'   77                      LD      (HL),A          ;STORE NEW STATUS
05DB'   01 0001                 LD      BC,NET-NWSTAT
05DE'   09                      ADD     HL,BC
05DF'   1A                      LD      A,(DE)
05E0'   77                      LD      (HL),A          ;STORE DEST. NET
05E1'   01 0001                 LD      BC,DNAP-NET
05E4'   09                      ADD     HL,BC
05E5'   3A 0000*                LD      A,(CSANAP)
05E8'   77                      LD      (HL),A          ;STORE DEST NAP

05E9'   C9                      RET
                                PAGE
```

```
                        ;****************************************** FILLD ************************
                        ;
                        ;       NAME:           FILLD
                        ;       DESCRIPTION:    FILL  PATTERN IN RAM WITH A PERIOD OF 10H
                        ;                       12 TIMES
                        ;
                        ;       ENTRY:          REG.HL: ADD OF FIRST RAM-LOCATION
                        ;                       REG.A:  PATTERN
                        ;
                        ;       EXIT:           REG.HL: ADD OF LAST LOCATION FILLED
                        ;
                        ;       DESTROY:        REG.F,BC,DE
                        ;
                        ;       EXECUTION TIME: !
                        ;
                        ;*********************************************************************

05EA'   06 20           FILLD:  LD      B,32
05EC'   11 0010                 LD      DE,10H
05EF'   C3 05F3'                JP      FILLD2
05F2'   19              FILLD1: ADD     HL,DE           ;INCREMENT ADD-POINTER WITH 16
05F3'   77              FILLD2: LD      (HL),A          ;STORE PATTERN THERE
05F4'   10 FC                   DJNZ    FILLD1          ;IF DONE 12 TIMES THEN
                                                        ;  EXIT
05F6'   C9                      RET                     ;ELSE
                                                        ;  GOTO FILLD1
                                                        ;EXIT

                        ;*********************************************************************

05F7'   D6 02           FNWDSC: SUB     2
05F9'   07                      RLCA
05FA'   07                      RLCA
05FB'   07                      RLCA
05FC'   06 00                   LD      B,0
05FE'   4F                      LD      C,A
05FF'   09                      ADD     HL,BC

0600'   C9                      RET

                        ;*********************************************************************
                                PAGE
```

```
0601'   01 0010          FSPST:  LD      BC,10H

0604'   7A               FSPST1: LD      A,D
0605'   BE                       CP      (HL)
0606'   C8                       RET     Z                   ;IF SPEC. STATEIS FOUND THEN
                                                             ;  EXIT
0607'   09                       ADD     HL,BC               ;ELSE
0608'   1C                       INC     E
0609'   7B                       LD      A,E
060A'   E5                       PUSH    HL
060B'   21 0000*                 LD      HL,MAXCH
060E'   BE                       CP      (HL)
060F'   E1                       POP     HL
0610'   DA 0604'                 JP      C,FSPST1            ;  IF ALL CHANNEL SEARCHED THEN
                                                             ;    EXIT
0613'   E6 FF                    AND     0FFH                ;  ELSE
0615'   C9                       RET                         ;    TRY NEXT CHANNEL
                                                             ;  ENDIF
                                                             ;ENDIF

                         ;*****************************************************************
                                 PAGE
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```
0616'  EB                    CPID:  EX      DE,HL
0617'  2A 0000*                     LD      HL,(CSAPAR)
061A'  09                           ADD     HL,BC
061B'  EB                           EX      DE,HL
061C'  01 000A                      LD      BC,REMID-OSTATE
061F'  09                           ADD     HL,BC

0620'  1A                           LD      A,(DE)
0621'  BE                           CP      (HL)
0622'  C0                           RET     NZ              ;  IF REMOTE NET-ID  EQUAL PR.DEST.NET-ID THEN

0623'  23                           INC     HL
0624'  13                           INC     DE
0625'  1A                           LD      A,(DE)
0626'  BE                           CP      (HL)
0627'  C0                           RET     NZ              ;    IF REMOTE-XIU EQUAL PR.DEST.-XIU THEN

0628'  23                           INC     HL
0629'  13                           INC     DE
062A'  1A                           LD      A,(DE)
062B'  BE                           CP      (HL)
062C'  C9                           RET                     ;      IF REMOTE-VC EQUAL PR.DEST.-VC THEN
                             ;*************************************************************************
                                    END
```

Macros:

Symbols:

ABTIM	043B*	ACTO	0377'	ACTO1	0386'	ACT1	03AC'
ACT1C	03FA'	ACT1X	03FA'	ACT2	0409'	ACT3	0443'
ACT4	0462'	ACT5	0489'	ACT6	04B6'	ACT7	04E4'
ACT8	04F1'	ACTAB	0323'	ACTTIM	0014	ALLNET	05CE'
AUTBTI	0007*	AVAIL	0000	BNQSZ	0522	BQCRE	0000*
BQDEQ	04BA*	BQENQ	0555*	BQFIFI	00F6*	BQLDBC	0533*
BQLDTX	04D5*	BUFAO	001C*	BUSY	0010	CNTO	013C'
CNT1	013F'	CNT2	0142'	CNT21	0189'	CNT22	0178'
CNT23	015D'	CNT3	01C0'	CNT4	020C'	CNT5	022A'
CNT6	022D'	CNT7	0263'	CNTTAB	011C'	COMMX	05BC*
COMP	0588I'	COMP1	0590'	COMPCO	0001	CONT1	0072'
CONT2	0094'	CONT3	00F1'	CONT4	010C'	CONT5	00B3'
CPID	0616I'	CSABUF	054F*	CSANAP	05E6*	CSANET	00A2*
CSAPAR	0618*	CSAVC	05D0*	CVC2	019F'	DEVNO	0512*
DNAP	0002	EB	0058'	EVENT	02F8'	EVTAB	0347'
FDSCR	04F4I'	FESW	0000	FILLD	05EA'	FILLD1	05F2'
FILLD2	05F3'	FILLEP	0048'	FNWDSC	05F7I'	FPAQH	0000*
FSPST	0601I'	FSPST1	0604'	FULSW	0080	GENQUE	0024*
IBMCOD	0012	IDEDA	00AE*	IGEDA	0097*	INP12	008C'
INPR	02AF'	INPRR	02B3'	INPRTR	02A7'	INTAB	02E5'
JSESAD	00EC'	LNET	0001	LOCNET	05CC'	MAXCH	060C*
MESCO	0000	NEB	0050'	NET	0001	NETID	05C1*
NMM	0000*	NOEB	0061'	NOEL	0001	NOTRCH	02A8*
NSAD	0010I	NWDSC	05D4*	NWSTAT	0000	NXFREQ	0000*
ODEDA	0585*	OGEDA	0053*	OPENVC	059C'	OSTATE	FFFEI
PARTAB	0000*	PDTAB	0000*	PRANSZ	000B	PRDST	0005
PRIERR	0090	PRODS	0000*	PRSRC	0002	PRTERR	0091
PSNAP	0003	PWERR	029E'	PWREQ	0264*	RELEAS	0528*
RELERR	0004	REMID	0008	REMNET	05C7'	REQERR	0003
RERR67	0258'	RNET	0081	RTIM1	0013*	RTIM3	000A*
SAAQE	0000	SAAQF	0010	SACMDQ	0518*	SACT4	047C'
SACT5	04AC'	SAD	02FD*	SADEP	0000	SADEPH	0552*
SADM	0000I'	SADM1	000F'	SADMST	0000*	SARQQE	0030
SARQQF	0020	SCO	0577'	SC1	057D'	SCDST	0008
SCIERR	0080	SCTERR	0081	SENDPR	0502I'	SENDSC	055EI'
SESADM	0044'	SPRL1	052F'	SPRLOC	0517'	SPRREM	0558'
SWTIM	0032	SWTYPE	0012	TIOERR	0092	TOTLOG	0437*
TQSUB	0016*	TVAL1	FFFFI	TVALTR	000BI	VCERR	02ED'
XDEQIF	0523*	XENQIF	054B*	XTA	0005		

No Fatal error(s)