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Title:

RC 36-00240.03  
LINE RELIABILITY (Synchron)  
OPERATING INSTRUCTION

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 **REGNECENTRALEN**  
AS

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Abstract:

The following pages present the first, general pages of the reliability program listing.

These pages form an operating guide to the program

**LOAD**

After autoloading of

**RC 3600 SYSTEM MAINTENANCE**

Tape/Disc, or while running RC 3600 MUS/DOMUS software (only for RC 3600 systems), this device reliability program can be loaded and executed the following way:

After contact with operative system = S  
(refer to previous chapters or the system operating guide) type:

LOAD TIME < 1 > < 2 > < 3 > < 4 > P240

**RETURN**

- 1: NSRO = RC 3680C Sync. Comm. Control
- NMR<ch> = RC 3681 Sync. Comm. Multiplexer
- 2: NSX0 = RC 3680C Sync. Comm. Control
- NMX<ch> = RC 3681 Sync. Comm. Multiplexer

EVENTUAL Log Device, - if not TTY:

- |                         |                    |
|-------------------------|--------------------|
| 3: LPT = Line Printer   | 4: Empty = ASCII   |
| CPT = Charaband Printer | TAB1 = ASCII       |
| SP = Serial Printer     | TAB2 = RC Standard |
|                         | TAB3 = PL 1        |
|                         | TAB4 = Hungarian   |
|                         | TAB5 = Cyrillic    |



0062  
0063 TITLE: LINE RELIABILITY TESTER. RC56-00240 PAGE 01  
0064  
0065 ABSTRACT: THIS PROGRAM TESTS TRANSMISSION LINES,  
0066 EITHER USING THE SCC702 OR THE SXX701  
0067 CONTROLLER, IN LOOPBACK MODE OR SOFTWARE ECHO.  
0068  
0069  
0070 SIZE: 18064 BYTES. MAX BUFFERSIZE = 2550 BYTES.  
0071  
0072 DATE: 1978.02.09  
0073  
0074 GENERAL INFORMATION:  
0075  
0076 THIS PROGRAM ACTS IN FOLLOWING WAY: AFTER ALL  
0077 PARAMETERS HAS BEEN ANSWERED AND A START COMMAND  
0078 HAS BEEN GIVEN, A BLOCK WILL BE SEND WITH SPECIFIED  
0079 SIZE AND RECEIVED AGAIN USING THE LOOP BACK FUNCTION.  
0080 IF ERROR OCCURS THE ERRORS WILL BE ACCUMULATED. IF ITS  
0081 TIME FOR MEANWHILE LOGGING IT WILL BE DONE. THE BLOCKS  
0082 WILL BE SEND JUST AS MANY TIMES AS THE RUNTIME HAVE  
0083 BEEN SPECIFIED.  
0084 NOTE:  
0085 IF PARAMETERS ARE ANSWERED WRONG THEN THE RELEVANT  
0086 QUESTION WILL BE DISPLAYED AGAIN.  
0087 PROGRAM RC 36 - 80045 MAY BE USED FOR SOFTWARE ECHO.  
0088  
0089  
0090 DRIVER FOR PROGRAM:  
0091  
0092 INTERPRETER, LSR0, LSR1, IF SCC702, TIME.  
0093 INTERPRETER, LXXCHN0, LXXCHN1, IF SXX701, TIME.  
0094 IF OTHER LOGDEVICES IS USED THEN  
0095 THEIR DRIVERS HAVE TO BE LOADED.  
0096  
0097  
0098 SPECIAL REQUIREMENTS:  
0099  
0100 CODEPROCEDURE P0001 (TIME) RC56: 43-GL182  
0101 CODEPROCEDURE P0023 (DELAY) RC56: 43-GL1400  
0102 CODEPROCEDURE P0035 (CHANGETABLE) RC56: 43-GL1519  
0103  
0104

0105  
0106  
0107  
0108 CALCULATIONS:  
0109  
0110       EFFECTIVE TIME:= TIME USED - (PROCESS OVERHEAD FOR DISPLAYS AND  
0111    CALCULATIONS).  
0112  
0113  
0114       WHEN USING COMMAND "STAT" EFFECTIVE BIT PR SECOND IS:  
0115  
0116       BPS:=(NUMBER OF GOOD BLOCKS \* BLOCKSIZE \* 8)/ EFFECTIVE TIME  
0117  
0118       WHEN USING COMMAND "DISP" EFFECTIVE BIT PR SECOND IS:  
0119  
0120       BPS:=(NUMBER OF GOOD BLOCKS SINCE LAST LOG \* BLOCKSIZE \* 8) / EFFEC-  
0121    TIVE TIME SINCE LAST LOG.  
0122  
0123  
0124       ERRORRATE:= ( FAILED BLOCK \* 100 ) / RECEIVED BLOCKS.  
0125  
0126       BIT RATE PR SECOND CALCULATED AS:  
0127  
0128               TIMER2:= BLOCKSIZE / (BIT RATE/8) + 1  
0129  
0130  
0131  
0132  
0133  
0134 RUNTIME PARAMETERS:  
0135  
0136  
0137       NOTE THAT NOT ALL RUNTIME PARAMETERS WILL BE DISPLAYED, ONLY  
0138       PARAMETERS MARKED WITH STARS. THE OTHERS WILL ALL HAVE DEFAULT  
0139       VALUES. TO CHANGE DEFAULT PARAMETERS LOOK AT PAGE 08.  
0140  
0141

0142  
 0143  
 0144 \*\*\*\*TYPE (SCC) IF TEST OF SCC202 ELSE (SMX) FOR THE SMX701  
 0145  
 0146 TO TELL WHICH CONTROLLER IS WANTED.  
 0147 IF SMX701 IS WANTED THEN OCCURS:  
 0148  
 0149 XMT CHANNEL NUMBER (0-31)  
 0150  
 0151 THE CHANNEL TO TRANSMIT FROM.  
 0152  
 0153 REC CHANNEL NUMBER (0-31)  
 0154  
 0155 THE CHANNEL TO RECEIVE IN.  
 0156  
 0157 NOTE: ITS ALLOWED TO USE THE SAME  
 0158 CHANNEL FOR INPUT AND OUTPUT.  
 0159  
 0160 \*\*\*\*BLOCK LENGTH TO BE TRANSMITTED (2-2350)  
 0161  
 0162 NUMBER OF CHARACTERS IN THE BLOCK ( EVEN )  
 0163 WHICH ARE GOING TO BE TRANSMITTED.  
 0164 SIZE:= 4 SYN + 2 HEAD + DATA + 2 CRC + PAD.  
 0165  
 0166 TYPE (PTR) FOR PTR INPUT ELSE (NO)  
 0167  
 0168 IF TEST INPUT IS FROM PAPER TAPE  
 0169 THEN (PTR), ELSE (NO) FOR AUTO-  
 0170 MATIC GENERATED CYCLIC CHARACTERS.  
 0171  
 0172 NOTE: IF PTR ERROR 31 OCCURS THEN  
 0173 IF CHARS READ > 0 THEN SIZE:= READ CHARACTERS.  
 0174  
 0175 \*\*\*\*BIT RATE PR SECOND NUMBER OF BIT PR SECOND (MODEM/HAND)  
 0176 LOOK AT CALCULATIONS.  
 0177  
 0178 SYNC CHARACTER (DECIMAL: 1-255)  
 0179  
 0180 THE SYNCHRONISATION CHARACTER FOR  
 0181 THE CONTROLLER. ( DEFAULT = 22 )  
 0182  
 0183 \*\*\*\*LOG: PR BAD BLOCK (+) PR MINUTES (-)  
 0184 AFTER 20 LOGS THE CYCLICAL BUFFER IS PRINTED.  
 0185  
 0186 IF ANSWER = + THEN OCCURS:  
 0187  
 0188 NUMBER OF BAD BLOCKS BEFORE LOG  
 0189  
 0190 ANSWER SHOULD BE BETWEEN (1-65000)  
 0191 MEANING EVERY TIME THE RECEIVER  
 0192 HAS GOT THE SPECIFIED NUMBER OF  
 0193 ERRORBLOCKS AN ERROR STATISTIC WILL  
 0194 BE STORED IN A CYCLICAL BUFFER. AFTER  
 0195 LOG ERRORCOUNTER IS 0.  
 0196  
 0197 IF ANSWER = - THEN OCCURS:  
 0198  
 0199 NUMBER OF MINUTES BETWEEN LOGS (1-59)  
 0200  
 0201 MEANING: EVERY TIME THE EFFECTIVE  
 0202 MINUTE IS A MULTIPLE OF WANTED  
 0203 LOG MINUTES THEN A STATISTIC WILL  
 0204 BE STORED IN A CYCLICAL BUFFER.  
 0205

0206  
0207 TYPE THE SECONDS TO WAIT FOR NEXT BLOCK  
0208  
0209 THE MAXIMUM OF TIME (TIMER1)  
0210 UNTIL THE FIRST BYTE OF BLOCK  
0211 ARRIVES.  
0212 DEFAULT IS 25 SECOND. MAX SECOND = 25.  
0213  
0214 TYPE THE SECONDS TO WAIT FOR WHOLE BLOCK  
0215  
0216 THE MAXIMUM OF TIME (TIMER2) OF  
0217 RECEPTION ALL BYTES IN ONE BLOCK.  
0218 DEFAULT DEPENDS ON BIT RATE. MAX SECONDS = 25.  
0219  
0220  
0221  
0222 \*\*\*\*LOG: NO LOG (1) BIT STAT (2) ALL (3)  
0223  
0224 IF ANSWER = 1 THEN NO LOG OF  
0225 ONE BAD BLOCK WILL BE DISPLAYED.  
0226  
0227 IF ANSWER = 2 THEN CHECK OF DIFF-  
0228 FERENT BYTES IN A BLOCK WILL BE  
0229 DONE AND A BIT STATISTIC OF DIFFERENT  
0230 BITS IN DIFFERENT BYTES WILL BE  
0231 DISPLAYED ON LOGDEVICE.  
0232  
0233 (USED TO CHECK LINE FOR LOOSING SPECIAL BITS)  
0234  
0235 IF ANSWER = 3 THEN A LOGGING OF ALL BAD  
0236 CHARACTERS WILL BE DONE. WITH ITS  
0237 BYTE NUMBER (COUNTING FROM ONE) WHAT IT  
0238 SHOULD BE AND WHAT IT WAS RECEIVED AS.  
0239 AT LAST THE BIT STATISTIC WILL OCCUR AS  
0240 IF ANSWER HAD BEEN 2.  
0241  
0242 \*\*\*\*OUTPUT LOGDEVICE, (TTY/LPT/CPT/SP)  
0243  
0244 THE DEVICE WHERE STATISTIC ARE GOING  
0245 TO BE LOGGED ON.  
0246 TTY = TELETYPE  
0247 LPT = LINEPRINTER  
0248 CPT = CHARACTER PRINTER  
0249 SP = CENTRONIX PRINTER.  
0250  
0251 \*\*\*\*TESTPERIOD, (HOURS, MINUTES)  
0252  
0253 EFFECTIVE TIME THE TEST SHOULD RUN.  
0254  
0255 \*\*\*\*STOP ON ERROR (YES) OR WAIT UNTIL STATISTIC (NO)  
0256  
0257 IF ANSWER = YES THEN TEST  
0258 WILL STOP ON THE FIRST OCCURED ERROR.  
0259  
0260 IF ANSWER = NO THEN TEST  
0261 WILL STOP WHEN RUNTIME HAS REACHED,  
0262 OR HARD ERROR ON LOG DEVICE.  
0263  
0264  
0265 \*\*\*\*TYPE (HELP) TO SEE COMMANDS / ELSE (NL)  
0266  
0267 IF WRITING HELP ALL POSSIBLE COMMANDS  
0268 WILL BE DISPLAYED. WITH THE MEANING  
0269 OF THE COMMANDS.  
0270



0271  
0272 OUTPUT MESSAGES:  
0273  
0274 EXECUTION STARTED HH.MM.SS  
0275  
0276 WRITTEN AS ACCEPT OF COMMAND START  
0277  
0278 EXECUTION STOPPED HH.MM.SS  
0279  
0280 WRITTEN AS ACCEPT OF COMMAND STOP OR TELEX  
0281  
0282 EXECUTION CONTINUED HH.MM.SS  
0283  
0284 WRITTEN AS ACCEPT OF COMMAND CONT  
0285  
0286 LOG DEVICE ERROR HNNNN  
0287  
0288 CONSULT THE RC3600 OPERATORS MANUAL  
0289  
0290 PTP ERROR HNNNN CONSULT THE RC3600 OPERATORS MANUAL  
0291  
0292  
0293  
0294 TESTSTATISTIC: USER INFORMATION TO SEE THE RESULT  
0295 ERROR STATISTIC: OF THE TEST.  
0296  
0297 TELEX: TEXT OPERATOR TEXT SEND FROM THE OTHER END.  
0298 THE TELEX FUNCTION MAY CAUSE TRANSMIS. ERRORS.  
0299

0300 DURING RPT FOLLOWING OUTPUT MESSAGES CAN OCCUR:

0304 \*\*\* HH.MM.SS LINE RELIABILITY TEST \*\*\*

0307 \*\*\* HH.MM.SS STATUS:

0309 BLOCKS: REC: xxxxxxxx FAILED: xxxxx ERRORRATE: xxx%
0310 TOTAL: REC: xxxxxxxx FAILED: xxxxx BPS: xxxxx

0312 BLOCKS REC MEANS NUMBER OF BLOCK RECEIVED SINCE LAST LOG.

0316 BLOCKS FAILED MEANS NUMBER OF BLOCKS WITH EITHER BLOCK CHECK ERROR OR TIMEOUT.

0320 ERRORRATE MEANS NUMBER OF ERRORBLOCKS IN PERCENT OF SEND BLOCKS SINCE LAST LOG.

0324 BLOCKS TOTAL MEANS NUMBER OF BLOCKS RECEIVED SINCE PROGRAM START.

0328 TOTAL FAILED MEANS NUMBER OF BLOCKS FAILED SINCE PROGRAM START.

0332 BPS MEANS THE EFFECTIVE BIT RATE SINCE LAST LOG OR SINCE START.

0336 \*\*\* HH.MM.SS LINE RELIABILITY TEST \*\*\*

0338 BLOCK CHECK ERROR

0340 NO. XMT REC
0341 xxxx xxx xxx

0343 ERROR BIT STATISTICS BIT(0-7)

0344 .BIT0 BIT1 BIT2 BITS BIT4 BITS5 BIT6 BIT7

0347 IN CASE OF HARDLOCK = 3
0348 THEN OCCURS EVERY TIME IF BLOCKCHECK ERROR
0349 THIS LOG.

0351 NO. MEANS DATA BYTE NUMBER WHICH WAS
0352 WRONG. (START COUNTING FROM ONE).

0354 XMT MEANS THE TRANSMITTED BYTE.

0356 REC MEANS THE RECEIVED BYTE.

0359 THE ERROR BIT STATISTIC
0360 IS AN ACCUMULATION OF ALL DIFFERENT
0361 BITS IN THE DIFFERENTS BYTES.

0363 IF ANSWER WAS 2 THEN ONLY
0364 BIT STATISTIC WILL OCCUR.

0365
0366
0367
0368

0370  
0369

0370  
0371 ROUTINE INPUT MESSAGES: PC56-00240 PAGE 07  
0372  
0373 START START EXECUTION. UNLESS LOG ERROR HAD  
0374 OCCURRED THEN IT MEANS REPEAT THE OPERATION.  
0375  
0376  
0377 CONT EXECUTION IS CONTINUED WITHOUT CHANGING STATUS.  
0378  
0379  
0380 STOP EXECUTION STOPS AND STATISTICS WILL BE  
0381 DISPLAYED AND PROGRAM IS SET NEUTRAL.  
0382  
0383 STAT WILL GIVE A DISPLAY OF CURRENT STATUS FROM  
0384 TEST START TO NOW.  
0385  
0386 DISP WILL GIVE A DISPLAY OF THE DIFFERENT STATUS  
0387 BETWEEN THE WANTED LOG DISPLAYS.  
0388  
0389  
0390 TELEX:<TEXT> EXECUTION STOPS, THE TEXT IS SEND,  
0391 AND THE PROGRAM CONTINUES.  
0392 THE TELEX FUNCTION MAY CAUSE TRANSMIS. ERRORS.  
0393  
0394  
0395 HELP WILL DISPLAY ALL COMMANDS AND THEIR MEANING.  
0396  
0397

0398  
 0399 TO MODIFY SINGLE PARAMETERS:  
 0400  
 0401 TESTDEVICE <NAME> (XMT) OR (REC) <CHANNEL NUMBER>  
 0402  
 0403 EXAMPLES: IF TESTDEVICE SXH701 CHANNEL 1  
 0404 IN TRANSMITTER IS WANTED TO BE CHANNEL 2 THEN  
 0405  
 0406 WRITE: TESTDEVICE SXH XMT 2  
 0407  
 0408 SAME WITH INPUT PROGRAM  
 0409  
 0410 WRITE: TESTDEVICE SXH REC 2  
 0411  
 0412 SIZE <COUNT> IF NEW BLOCK SIZE IS WANTED  
 0413 THE NEW TEST CHARACTER FROM  
 0414 PTR WILL BE READ AUTOMATICALLY  
 0415 ELSE THE AUTOMATIC CYCLIC CHARAC-  
 0416 TER WILL BE GENERATED IF NOT FROM  
 0417 PTR.  
 0418  
 0419 INPUT (PTR) OR (NO) IF CHANGING TESTINPUT DEVICE.  
 0420 NOTE THAT THE CHARACTER WILL BE  
 0421 READ AUTOMATICALLY IF INPUT  
 0422 FROM PTR WITH SIZE.  
 0423  
 0424 SYNCHAR <VALUE> INSERT A NEW SYNCHAR.  
 0425  
 0426 TESTTIME (+) OR (-) <VALUE>  
 0427 PLUS: FOR PR RAD BLOCK  
 0428 MINUS: FOR PR MINUTES  
 0429 THE TESTTIME FOR PR LOG.  
 0430  
 0431 RPS <VALUE> CHANGE THE BIT RATE.  
 0432  
 0433 THER1 <VALUE> NEW TIMER FOR WAIT FOR NEXT BLOCK.  
 0434  
 0435 THER2 <VALUE> NEW TIMER FOR WHOLE BLOCK.  
 0436  
 0437 RADBLOCK <VALUE> LOG PR RAD BLOCK.  
 0438 1 => NO LOG  
 0439 2 => BIT STAT  
 0440 3 => ALL  
 0441  
 0442 LOGDEVICE <DRIVERNAME>  
 0443  
 0444 TO CHANGE TO NEW LOGDEVICE.  
 0445  
 0446 RUNTIME <HH.MM.SS> CHANGE THE EFFECTIVE RUNTIME.  
 0447 NOTE THAT IF COMMAND START HAS  
 0448 BEEN GIVEN IT WILL BE THE NEW  
 0449 STOP TIME. IF COMMAND CONT HAS BEEN  
 0450 GIVEN THE PROGRAM WILL CONTINUE  
 0451 AS IF THIS HAS BEEN THE STOP TIME  
 0452 ALL THE TIME.  
 0453  
 0454 HOLD <ANSWER> IF ANSWER = YES THEN IT WILL STOP  
 0455 ON THE FIRST OCCURRED ERROR  
 0456 IF ANSWER = NO THEN IT WILL STOP  
 0457 ON RUNTIME OR HARD ERROR OF LOG  
 0458 DEVICE.  
 0459  
 0460 !

0461 !				
0462				
0463				
0464				
0465	VERSION	AUTHOR	DATE	CHANGE
0466				
0467 01	CAMS		77.01.16	MAKE TIME COUNTING MORE GENERAL COUNT THE EFFECTIVE HIT RATE FROM START AND BETWEEN LOGS. MAKE CYCLIC BUFFERING.
0468				
0469				
0470				
0471				
0472 02	CAMS		77.04.20	CORRECT ERROR RATE CALCULATION. CORRECT ERROR USING THE CYCLIC BUFFERING. IT ONLY OCCURRED IN ONE MINUT FOR EVERY HOUR IF THE ERROR RATE WAS ABOUT 100 %.
0473				
0474				
0475				
0476				
0477				
0478 03	HEJ		78.02.09	THE DRIVERS LSR, LSX, LMR, LMX ARE USED IN STEAD OF R40R/X... TELEX FUNCTION IS IMPLEMENTED.
0479				
0480				
0481				
0482				
0483				
0484 !				

