
Title:

GENERAL INFORMATION FOR AUTOLOAD OF RC 3500 FROM AN
RC 8000 THROUGH AN FPA LINE

 **REGNECENTRALEN**

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Author:	Volker Raab

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This paper describes the Autoload of RC 3500 from an RC 8000 through an fpa line. This autoload function is an option to the RC 3500 Standard Autoload.

References:

- 1) RC 3500 Autoload option,
RCSL 52-AA072
- 2) General Information for RC 3500 STANDARD AUTOLOAD,
RCSL 52-AA319
- 3) General Information for FPA 100
RCSL 52-AA566

The autoloading from the RC 8000 is started by sending an autoloading pulse on the fpa line.

If autoloading of the RC 3500 is enabled the autoloading pulse will have the same effect as the autoloading button on the front panel of the RC 3500.

The autoloading program will be entered and executed as described in ref. 1. If the internal or external switches are set according to the fpa autoloading mode selected the fpa autoloading program will load one RC 8000 segment to the RC 3500 and enter and execute the loaded data expecting them to be a fpa bootloader.

Both the fpa autoloading and fpa bootload program load one RC 8000 segment at a time before they compute a checksum.

If the checksum is wrong the programs stop, otherwise the programs deliver an answer character asking the RC 8000 to transfer another segment of data.

Finally, the programs enter the autoloading data at address 256.

When autoloading from RC 8000 is wanted the data switches on the front panel of RC 3500 (in lock mode the internal switches) are set as follows:

DEV. TYPE

1 1 0 M x x

0

15

Interrupt

DEVICE NO

level for fpa

for fpa 100

100 receiver

receiver

Two dev. types are used:

1100xx for manual initiated autoloading

1101xx - automatic - -

Manual autoloading means autoloading initiated by an operator pressing the RC 3500 autoloading button before activating the RC 8000 autoloading program. Automatic autoloading means autoloading initiated by activation of the RC 8000 autoloading program only.

Automatic autoloading may require additional hardware in the RC 3500.

The RC 3500 STANDARD AUTOLOAD extended with FPA autoload is placed in PROMs with the labels ROM 806 - 809.

The following table shows the relation between the physical placing and the numbers of the PROMs:

PROM LABEL	Physical placing on POS 116 (RC 3262-1) in the RC 3500 CPU
ROM 806	FF 19
ROM 807	X 19
ROM 808	R 19
ROM 809	PP 19

LOADING A RC3500 FRONTEND FROM A RC8000 COMPUTER

THE RC3500 DEVICE CONTROLLER CAN BE LOADED FROM THE RC8000 COMPUTER USING THE NORMAL FPALINE CONNECTION BETWEEN THE RC3500 AND A RC8000.

THE PROCESS OF LOADING A RC3500 FROM A RC8000 COMPUTER IS NORMALLY CALLED BOOTLOADING OF THE RC3500 TO DISTINGUISH IT FROM OTHER FORMS OF LOADING A RC3500 NORMALLY CALLED AUTOLOADING

EXAMPLE:

THE FOLLOWING STRING OF RC8000 FILE PROCESSOR COMMANDS WILL
 A. ASSEMBLE A RC3500 PROGRAM TEXTFILE INTO A BINARY RC3500 PROGRAM
 B. PREPARE A BOOTLOAD FILE FOR THE RC3500
 C. LOAD THE RC3500 WITH THE RC3500 BOOTLOAD PROGRAM
 PROVIDED THE NECESSARY PROGRAMS ARE PRESENT OR ACCESSIBLE IN RC8000 COMPUTER

```
7 RC3500BIN=NEWSLAM RC3500TEXT
  RC3500BOOT=NEWPUNCH16 MODE.BOOT FPABOOTBIN RC3500BIN
  MAIN3500=AUTOLOAD RC3500BOOT
```

EXPLANATION:

9 RC3500BIN IS THE NAME OF A TEMPORARY FILE USED TO HOLD THE BINARY VERSION OF A RC3500 PROGRAM AS OUTPUT FROM THE RC3500 ASSEMBLER.

10 NEWSLAM IS THE NAME OF THE FILE CONTAINING THE RC3500 ASSEMBLER RUNNING ON A RC8000 COMPUTER.

11 THE RC8000 VERSION OF THE RC3500 ASSEMBLER IS A NORMAL RC8000 ALGOL PROGRAM, THE TEXTFILE IS USUALLY CALLED SLAMTEXT

12 RC3500TEXT IS THE NAME OF A FILE CONTAINING A RC3500 PROGRAM TEXT

13 RC3500BOOT IS THE NAME OF A TEMPORARY FILE CONTAINING A BOOTLOAD VERSION OF THE RC3500 PROGRAM

14 NEWPUNCH16 IS THE NAME OF A FILE CONTAINING A PROGRAM CAPABLE OF CONVERTING A BINARY VERSION OF A RC3500 PROGRAM INTO A LOADABLE VERSION

15 MODE.BOOT IS A PARAMETER TO THE NEWPUNCH16 PROGRAM INDICATING THAT A BOOTLOAD VERSION OF THE BINARY PROGRAM IS WANTED

16 FPABOOTBIN IS THE NAME OF A FILE CONTAINING AN RC3500 PROGRAM (EXECUTABLE AND BOOTLOADABLE) CAPABLE OF BOOTLOADING THE RC3500 WITH BOOTLOAD VERSIONS OF OTHER RC3500 PROGRAMS

17 MAIN3500 IS THE NAME OF THE RC8000 EXTERNAL PROCESS COMMUNICATING WITH THE RC3500

18 AUTOLOAD IS THE NAME OF A RC8000 PROGRAM CAPABLE OF LOADING ANOTHER COMPUTER REGARDED AS A FRONTEND COMPUTER BY THE RC8000

*FPAPHOMRIN=NEWSLAM LIST.YES PRINT.YES NAMES.YES FPAPHOMTEXT

```

1 0 000000
2 0 000000 JAUTOLOAD 5.11.74 KNEH=IVR 4 4 78
3 0 000000 H,A20,B50,C5 ;AUTOLOAD
4 0 000000 W=
5 0 000000 K=0
6 0 000000 H50=254 ;TEXTSTART
7 0 000000 C4=-512 ;ROM=LENGTH
8 0 000000 B1=96
8 0 000000 H,E10 ;INITIALIZE
9 0 000000 B2: LDR W1 I 0 ;
10 2 000002 E2: WCC W3 X3 0 ; STOP DEVICES
11 4 000004 LDR W1 I B4 ; STARTADDR. DEVICECODE
12 8 000010 RSW W2 I 0 ;
13 10 000012 LSR W2 5 ; W2:= LEVEL POS 11-15
14 12 000014 SUB W2 I X3 0 ; W3:= WCC X1 <DEVICENO>
15 14 000016 BSZ W2 I 31, E3 ; IF DEVICELEVEL
16 18 000022 LDR AW1 I 97 ; THEN
17 20 000024 E3: IST W1 0 X0 31 ; START DEVICELEVEL ELSE
18 22 000026 B3: LDI W3 I E3 ; STOP OTHER LEVELS;
19 24 000030 ADD W3 I 1 ; B3: START INITIALIZATION
20 26 000032 STI W3 I E3 ; W3:= IST W1 5 X0 <LEVEL>+1
21 28 000034 SUB W3 I 1<12+7<6 ; W3:= WCC X1 <DEVICENO>+1
22 32 000040 STI W3 I E2 ;
23 34 000042 B6=K+1
24 36 000044 LDR W0 I B2 ; CONTINUE
25 38 000046 E. ;
26 40 000050 B5: B50 ; TEXTSTART, BYTEADDR.
27 42 000052 B10: 0 ; CHECKSUM=CONTROLE
28 44 000054 ;*

```

```

29 40 000050 B,E10 ; STORE CHAR
29 40 000050 A10: LSR W1 8 ;
30 40 000050 A11: RSW W3 I 0 ;
31 42 000052 LSR W3 12 ; W3:= TYPE
32 44 000054 AND W1 I 127 ; REMOVE PARITYBIT
33 46 000056 E4: BEW W1 I 64, E0 ; SKIP TO START-CHAR
34 50 000062 E1: LDR W0 X3+B11 ; RETURN
35 56 000070 E2: BEW W1 I 127, E1 ; SKIP DELL.
36 60 000074 BLW W1 I 33, E1 ; SKIP CHAR=<32
37 66 000102 RSZ W1 I 1<4, E3 ;
38 70 000106 LSL W1 4 ; FIRST PART
39 74 000112 STB AW1 I B6 ; STORE FIRST PART
40 76 000114 LDR W2 I E2 ; AFTER START-CHAR
41 78 000116 STI W2 I E4 ; THEN GOTO E2
42 80 000120 LDR W0 X3+B11 ; RETURN
43 82 000122 E3: AND W1 I 15 ; LAST PART
44 86 000126 ADD W1 86 ;
45 88 000130 LDI W2 I B5 ; CURRENT BUTEADDR.
46 92 000134 STB W1 N X2 0 ; STORE BYTE
47 94 000136 BEW W2 B50, E5 ; LAST BYTE
48 96 000140 STI W2 I B5 ; STORE ADDR.
49 102 000146 ADD W1 B10 ; CHECKSUM
50 104 000150 STI W1 I B10 ;
51 108 000154 STR W1 X2+3 ; STORE CHECKSUM IN FIRST FREE + 3
52 110 000156 LDR W0 X3+B11 ; RETURN
53 112 000160 E5: LDR W1 X2+2 ; IF CHECKSUM O.K. THEN
54 116 000164 BEW W1 X2+0, B50+2 ; GOTO PROGRAM
55 118 000166 LDR AW0 I B9 ; CHECKSUM=ERROR
56 122 000172 E. ;
57 124 000174 R4: ;STARTADDR. OF DEVICECODE
58 124 000174 B0=K ;CURRENT PRO4 ADDRESS
59 124 000174 ;*
60 124 000174

```

```

61 124 000174
61 124 000174 R0=B0+K-B4,K=B4
62 124 000174
62 124 000174 B,E10 ; ASYNCRONE CHAR-MULTIPLEXER
63 124 000174 W.
64 124 000174
64 124 000174 A0=B0,A1=B0
65 124 000174 RSW W2 I 0 ;
66 126 000176 LSR W2 9 ;
67 128 000200 AND W2 I 15<1 ; W2:= MUX-ADDR.
68 130 000202 E5: LDR W1 I X2+13<5+3<11 ; CONTROLWORD
69 134 000206 WCC W1 X1 0 ; START DEVICE
70 136 000210 LDR W1 I -1 ;
71 138 000212 WCC W1 X1 0 ; START SCANNER
72 140 000214 RWC W2 X2 0 ; READ A BYTE
73 142 000216 SUB W1 I X2 1 ; IF-(WRITE-INTERRUPT OR
74 146 000222 RSZ W1 I 31, A10 ; UNKNOWN ADDR.) THEN STORE CHAR
75 150 000226 ADD W0 I E5-E4 ; ELSE GET NEXT
76 154 000232 E4:
77 154 000232 E.
78 154 000232

```

```

78 154 000232
78 154 000232 B0=B0+K-B4,K=B4
79 124 000174
79 124 000174 B. ;PTR AUTOLOAD
80 124 000174 W.
81 124 000174
81 124 000174 A3=B0
82 124 000174 RSC W3 X3 0 ;TAPE-READER
83 126 000176 WCC W3 0 ; START DEVICE
84 128 000200 RWC W3 X3 0 ; READ AND
85 130 000202 LDR W0 I A11 ; STORE A CHAR
86 132 000204 E.
87 132 000204

```

```

87 132 000204      HD=H0+K=B4,K=B4
87 132 000204
88 124 000174      B. E3
88 124 000174      ;FPA AUTOLOAD VR 4.4.78
89 124 000174      ;FPA AUTOLOAD USES TWO MODES: AUTOMATIC AND MANUAL.
90 124 000174      ;THE MODE IS DETERMINED BY THE SWITCHES AFTER INITIALIZATION.
91 124 000174      ;AUTOMATIC AUTOLOAD MEANS THAT THE AUTOLOAD IMPULSE COMES FROM
92 124 000174      ;THE SAME FPA THAT RECEIVES THE AUTOLOAD DATA.
93 124 000174      ;MANUAL AUTOLOAD MEANS THAT THE AUTOLOAD IMPULSE COMES FROM ANY
94 124 000174      ;OTHER SOURCE THAN THE FPA THAT RECEIVES THE AUTOLOAD DATA.
95 124 000174      W.
96 124 000174      C0=256
97 124 000174      A6=B0
98 124 000174      E0:
99 124 000174      RSC W2 X2 0      ; WAIT AUTOLOAD STATUS:
100 126 000176      RSW W2 I 0      ; W1=READSTATUS
101 128 000200      LSL W2 3      ; W2=READSWITCHES
102 130 000202      BLW W2 I 0      ; GET AUTOLOADMODE
103 134 000206      BSZ W1 I 1<3 ,E0 ; IF MANUAL MODE AND STATUS<>AUTOLOAD
104 138 000212      E1:
105 138 000212      LDR W2 I C0      ; THEN GOTO WAIT AUTOLOAD STATUS
106 142 000216      LDR W1 I X2 0      ; GET TEXTSTART ADDRESS
107 144 000220      WWC W2 X2 0      ; REPEAT
108 146 000222      LDR W1 I 2      ; WRITE ANSWERBYTE NEXT BLOCK
109 148 000224      WCC W0 X0 0      ;
110 150 000226      RSC W2 X2 0      ; WAIT INTERRUPT
111 152 000230      BSZ W1 I 1<6 ,E0 ; READ STATUS
112 158 000236      E2:
113 158 000236      LDR W1 I 3      ; UNTIL STATUS OK
114 160 000240      WCC W0 X0 0      ; WAIT STARTCHAR:
115 162 000242      RSC W2 X2 0      ; START READMODE
116 164 000244      RWC W2 X2 0      ; READ STATUS
117 166 000246      BEW W1 IN 251 ,E2 ; READ STARTCHAR AND COMPARE
118 172 000254      LDR W1 I 2      ;
119 174 000256      WCC W0 X0 0      ; REPEAT INTERRUPT
120 176 000260      LDR W3 I X2 0      ;
121 178 000262      LDR W1 I 0      ;
122 180 000264      RBB W1 X3 0      ; READBLOCK
123 182 000266      LDR W1 I 2      ;
124 184 000270      WCC W0 X0 0      ; REPEAT INTERRUPT
125 186 000272      RSC W2 X2 0      ; READ STATUS
126 188 000274      BEW W1 IN 1<4 ,E0 ; ON STATUS
127 194 000302      ; BEW W3 IN X2 766 ,E0 ; ON LENGTH
128 194 000302      SUB W3 I 16      ;
129 196 000304      E3:
130 196 000304      LDB W1 N X2 0      ; COMPUTE CHECKSUM
131 198 000306      XSR W1 X3 0      ;
132 200 000310      ADD W1 X3 0      ;
133 202 000312      STR W1 X3 0      ;
134 204 000314      BEW W2 IN X3 0 ,E3 ;
135 208 000320      BEW W1 I 0 ,C0 ;
136 212 000324      LDR W0 I      ; E0
137 216 000330      E.
138 216 000330

```

```

138 21A 000330
138 216 000330 B0=B0+K-B4,A=B4
139 124 000174
139 124 000174 B,E2
140 124 000174 C2=8,10000
141 124 000174
141 124 000174 A7=B0
142 124 000174 E1: LCE W1 I 0 ;AUTOLOAD FROM CDC
143 126 000176 RSC W3 X3 0 ;
144 128 000200 BOP W1 IN C2, E1 ; WAIT INTERRUPT
145 134 000206 LDR W0 I A11 ; STORE CHAR
146 136 000210 E.
147 136 000210
147 136 000210 ;*

```

```

148 136 000210
148 136 000210 B0=B0+K-B4
149 136 000210 J,R,(-C4-E1-B0)/2 ;
150 286 000436 K= -81
151 65440 177640
151 65440 177640 B1=K ;STARTADDRESSES:
152 65440 177640 ;C CCM *ML LLL LDD 000: SWITCHES
153 65440 177640 ;C: DEVICECODE, M: MODIFICATION
154 65440 177640 ;L: LEVELNUMBER, D: DEVICENUMBER
155 65440 177640
155 65440 177640 C4+A0 ;0 0X XXL LLL LDD 000: LAM MULTIPLEXER
156 65442 177642 C4+A1 ;0 1X XXL LLL LDD 000: LAM MULTIPLEXER
157 65444 177644 0
158 65446 177646 C4+A3 ;0 11X XXL LLL LDD 000: PAPER TAPE READER
159 65448 177650 0
160 65450 177652 C4+A6 ;1 100 XXL LLL LDD 000: FPA MANUAL AUTOLOAD
161 65452 177654 C4+A7 ;1 101 XXL LLL LDD 000: FPA AUTOMATIC AUTOLOAD
162 65454 177656 ;1 11X XXL LLL LDD 000: COI AUTOLOAD
163 65454 177656
164 65456 177660 ;RETURN ADDRESSES:
164 65456 177660 R11:
165 65456 177660 d4
166 65456 177660 84
167 65458 177662 0
168 65460 177664 0
169 65462 177666 84
170 65464 177670 0
171 65466 177672 0
172 65468 177674 0
173 65470 177676 84
174 65472 177700 ;*

```

```

175 65472 177700
175 65472 177700
175 65472 177700 ;MOVE1
176 65472 177700 R.E5 ; MOVE THE PROGRAM TO THE BOTTOM
177 65472 177700 E1: LDR W2 I C4 ; OF THE CORE AND INSERT DEVICENO
178 65476 177704 LDR W3 I 0 ;
179 65478 177706 E0: STI W2 INX3 0 ; RESET ALL CORE
180 65480 177710 BEW W3 IN 0, E0 ;
181 65484 177714 E2: LDR W1 N X2 0 ;
182 65486 177716 STI W1 INX3 0 ;
183 65488 177720 BEW W3 IN 84, E2 ; COPY FIRST PART
184 65494 177726 RSW W1 I 0 ;
185 65496 177730 LSR W1 12 ;
186 65498 177732 LDR W2 X1+H1 ; STARTADDR. OF DEVICECODE
187 65502 177736 E3: LDR W1 N X2 J ;
188 65504 177740 STI W1 INX3 0 ; MOVE DEVICECODE
189 65506 177742 LSR W1 12 ;
190 65508 177744 BEW W1 IN 24>1, E4 ; NOT I/O-ORDER
191 65514 177752 RSW W1 I 0 ;
192 65516 177754 AND W1 I 31 ; W1:= DEVICENO
193 65518 177756 ADD W1 X3-2 ;
194 65520 177760 STR W1 X3-2 ;
195 65522 177762 E4: BEW W3 I 850, B3 ; GOTO INITIALIZE
196 65528 177770 LDR W0 I E3 ; CONTINUE TO COPY
197 65530 177772 B7: LCE AWO I K ; ERRORSTOP
198 65530 177772 B9: LCE AWO I K ; ERRORSTOP
199 65532 177774 N.(-K)/2 E1 ; START
200 65534 177776 LDR AWO I
201 0 000000 E.
202 0 000000 E.

```

```

2      0 000000      1 BEGIN      AUTOLOAD
NAMES: A20 B50 C5
8      0 000000      2 BEGIN      INITIALIZE
NAMES: E10
9      0 000000      001000
10     2 000002      147640
11     4 000004      175100
11     6 000006      000174
12     8 000010      076000
13    10 000012      162045
14    12 000014      172711
15    14 000016      132037
15    16 000020      000024
16    18 000022      001172
17    20 000024      155137
18    22 000026      013024
19    24 000030      043001
20    26 000032      023024
21    28 000034      177111
21    30 000036      010700
22    32 000040      023002
24    34 000042      000000
25    36 000044      2      END      INITIALIZE
NAMES: E10
E 2      2      2
E 3      20     24
26    36 000044      000376
27    38 000046      000000
29    40 000050      2      BEGIN      STORE CHAR
NAMES: E10
30    40 000050      161050
31    42 000052      077000
32    44 000054      165054
33    46 000056      175112
33    48 000060      000177
34    50 000062      175121
34    52 000064      000100
34    54 000066      000116
35    56 000070      174600
35    58 000072      177660
36    60 000074      175121
36    62 000076      000177
36    64 000100      000070
37    66 000102      111041
37    68 000104      000070
38    70 000106      131020
38    72 000110      000126
39    74 000112      161064
40    76 000114      035043
41    78 000116      002074
42    80 000120      022062
43    82 000122      174600
43    84 000124      177660
44    86 000126      051017
45    88 000130      175010
45    90 000132      000043
46    92 000134      012044
47    94 000136      171447
48    96 000140      176021
48    98 000142      000376
48   100 000144      000164
49   102 000146      022044
50   104 000150      175010
50   106 000152      000046
51   108 000154      021046
52   110 000156      015403
53   112 000160      174600
53   114 000162      177660
54   116 000164      001576
55   118 000166      105400
55   120 000170      000400
56   122 000172      000172
57   124 000174      2      END      STORE CHAR
NAMES: E10
E 0      78     116
E 1      56     70
E 2      60     74
E 3      86     126
E 4      50     62
E 5     116     164
62   124 000174      2      BEGIN      ASYNCRONE CHAR-MULTIPLEXER
NAMES: E10
65   124 000174      076000
66   126 000176      162051
67   128 000200      052036
68   130 000202      175500
68   132 000204      014640
69   134 000206      144240
70   136 000210      001177
71   138 000212      144040
72   140 000214      142400
73   142 000216      175511
73   144 000220      000001
74   146 000222      131037
74   148 000224      000050
75   150 000226      174110
75   152 000230      177750
77   154 000232      2      END      ASYNCRONE CHAR-MULTIPLEXER
NAMES: E10

```

E	4	154	232		
E	5	130	202		
	79	124	000174	2	BEGIN PTR AUTOLOAD
NAMES:					
	82	124	000174	143640	
	83	126	000176	147040	
	84	128	000200	143600	
	85	130	000202	000052	
	86	132	000204	2	END PTR AUTOLOAD
NAMES:					
	88	124	000174	2	BEGIN FPA AUTOLOAD VR 4.4.78
NAMES: E3					
	99	124	000174	142440	
	100	126	000176	076000	
	101	128	000200	162063	
	102	130	000202	112000	
	102	132	000204	000212	
	103	134	000206	131010	
	103	136	000210	000174	
	105	138	000212	176100	
	105	140	000214	000400	
	106	142	000216	171500	
	107	144	000220	146400	
	108	146	000222	001002	
	109	148	000224	144040	
	110	150	000226	142440	
	111	152	000230	175126	
	111	154	000232	000100	
	111	156	000234	000174	
	113	158	000236	001003	
	114	160	000240	144040	
	115	162	000242	142440	
	116	164	000244	142400	
	117	166	000246	175161	
	117	168	000250	000373	
	117	170	000252	000236	
	118	172	000254	001002	
	119	174	000256	144040	
	120	176	000260	173500	
	121	178	000262	001000	
	122	180	000264	141700	
	123	182	000266	001002	
	124	184	000270	144040	
	125	186	000272	142440	
	126	188	000274	175161	
	126	190	000276	000020	
	126	192	000300	000174	
	128	194	000302	047020	
	130	196	000304	171446	
	131	198	000306	025600	
	132	200	000310	041600	
	133	202	000312	015600	
	134	204	000314	172761	
	134	206	000316	000304	
	135	208	000320	105000	
	135	210	000322	000400	
	136	212	000324	174100	
	136	214	000326	000174	
	137	216	000330	2	END FPA AUTOLOAD VR 4.4.78
NAMES: E3					
	0	124	174		
	1	138	212		
	2	158	236		
	3	196	304		
	139	124	000174	2	BEGIN
NAMES: E2					
	142	124	000174	065000	
	143	126	000176	143640	
	144	128	000200	175167	
	144	130	000202	010000	
	144	132	000204	000174	
	145	134	000206	000052	
	146	136	000210	2	END
NAMES: E2					
	1	124	174		
	149	136	000210	000000	
	149	138	000212	000000	
	149	140	000214	000000	
	149	142	000216	000000	
	149	144	000220	000000	
	149	146	000222	000000	
	149	148	000224	000000	
	149	150	000226	000000	
	149	152	000230	000000	
	149	154	000232	000000	
	149	156	000234	000000	
	149	158	000236	000000	
	149	160	000240	000000	
	149	162	000242	000000	
	149	164	000244	000000	
	149	166	000246	000000	
	149	168	000250	000000	
	149	170	000252	000000	
	149	172	000254	000000	
	149	174	000256	000000	
	149	176	000260	000000	
	149	178	000262	000000	
	149	180	000264	000000	
	149	182	000266	000000	
	149	184	000270	000000	
	149	186	000272	000000	
	149	188	000274	000000	

```

149 190 000270 000000
149 192 000300 000000
149 194 000302 000000
149 196 000304 000000
149 198 000306 000000
149 200 000310 000000
149 202 000312 000000
149 204 000314 000000
149 206 000316 000000
149 208 000320 000000
149 210 000322 000000
149 212 000324 000000
149 214 000326 000000
149 216 000330 000000
149 218 000332 000000
149 220 000334 000000
149 222 000336 000000
149 224 000340 000000
149 226 000342 000000
149 228 000344 000000
149 230 000346 000000
149 232 000350 000000
149 234 000352 000000
149 236 000354 000000
149 238 000356 000000
149 240 000360 000000
149 242 000362 000000
149 244 000364 000000
149 246 000366 000000
149 248 000370 000000
149 250 000372 000000
149 252 000374 000000
149 254 000376 000000
149 256 000400 000000
149 258 000402 000000
149 260 000404 000000
149 262 000406 000000
149 264 000410 000000
149 266 000412 000000
149 268 000414 000000
149 270 000416 000000
149 272 000420 000000
149 274 000422 000000
149 276 000424 000000
149 278 000426 000000
149 280 000430 000000
149 282 000432 000000
149 284 000434 000000
155 65440 177640 177174
156 65442 177642 177174
157 65444 177644 000000
158 65446 177646 177232
159 65448 177650 000000
160 65450 177652 000000
161 65452 177654 177242
163 65454 177656 177376
166 65456 177660 000174
167 65458 177662 000174
168 65460 177664 000000
169 65462 177666 000174
170 65464 177670 000000
171 65466 177672 000000
172 65468 177674 000000
173 65470 177676 000174
176 65472 177700 2 BEGIN MOVE THE PROGRAM TO THE BOTTO
NAMES: E5
177 65472 177700 176100
177 65474 177702 177000
178 65476 177704 003000
179 65478 177706 172744
180 65480 177710 173161
180 65482 177712 177706
181 65484 177714 171440
182 65486 177716 171744
183 65488 177720 177161
183 65490 177722 000174
183 65492 177724 177714
184 65494 177726 075000
185 65496 177730 161054
186 65498 177732 176230
186 65500 177734 177640
187 65502 177736 171440
188 65504 177740 171744
189 65506 177742 161054
190 65508 177744 175161
190 65510 177746 000014
190 65512 177750 177762
191 65514 177752 075000
192 65516 177754 051037
193 65518 177756 041776
194 65520 177760 015776
195 65522 177762 177121
195 65524 177764 000376
195 65526 177766 000026
196 65528 177770 000136
198 65530 177772 064172
199 65532 177774 064172
200 65534 177776 000100
201 0 000000 2 END MOVE THE PROGRAM TO THE BOTTO
NAMES: E5
E 0 -58 177706
E 1 -64 177700

```

