

# DH11

AUTO ECHO LOGIC  
MD-11-DZDHH-B

EP-DZDHH-B-DL-A  
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FICHE 1 OF 1

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The microfiche card displays a grid of frames on the left side, containing various data points and patterns. The frames are arranged in approximately 15 rows and 6 columns. Each frame contains a different set of data, including what appears to be a grid of numbers or characters, possibly representing a data table or a series of test results. The data is too small to be legible, but the overall structure suggests a systematic collection of information. The right side of the card is mostly blank, with some faint, illegible markings.



000000  
000001  
000002  
000003  
000004  
000005  
000006  
000007  
  
177570  
177570  
177776  
015460  
  
005746  
005726  
010046  
012600  
024646  
022626  
  
100000  
040000  
020000  
010000  
004000  
002000  
001000  
000400  
000200  
000100  
000040  
000020  
000010  
000004  
000002  
000001

;REGISTER DEFINITIONS

000000	R0=%0	: GENERAL REGISTER
000001	R1=%1	: GENERAL REGISTER
000002	R2=%2	: GENERAL REGISTER
000003	R3=%3	: GENERAL REGISTER
000004	R4=%4	: GENERAL REGISTER
000005	R5=%5	: GENERAL REGISTER
000006	SP=%6	: PROCESSOR STACK POINTER
000007	PC=%7	: PROGRAM COUNTER

;LOCATION EQUIVALENCIES

177570	SWR=177570	: CONSOLE SWITCH REGISTER
177570	LIGHTS=177570	: PDP-11/45 DISPLAY REGISTER
177776	PS=177776	: PROCESSOR STATUS WORD
015460	STACK=ENDCOD+200	: START OF PROCESSOR STACK

;INSTRUCTION DEFINITIONS

005746	PUSH1SP=5746	: DECREMENT PROCESSOR STACK 1 WORD
005726	POP1SP=5726	: INCREMENT PROCESSOR STACK 1 WORD
010046	PUSHR0=10046	: SAVE R0 ON STACK
012600	POP0=12600	: RESTORE R0 FROM STACK
024646	PUSH2SP=24646	: DECREMENT STACK TWICE
022626	POP2SP=22626	: INCREMENT STACK TWICE
	.EQUIV EMT,HLT	: BASIC DEFINITION OF ERROR CALL

100000	BIT15=100000
040000	BIT14=40000
020000	BIT13=20000
010000	BIT12=10000
004000	BIT11=4000
002000	BIT10=2000
001000	BIT09=1000
000400	BIT08=400
000200	BIT07=200
000100	BIT06=100
000040	BIT05=40
000020	BIT04=20
000010	BIT03=10
000004	BIT02=4
000002	BIT01=2
000001	BIT00=1

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96      ;TRAPCATCHER FOR ILLEGAL INTERRUPTS
97      .=0
98      000000 000000      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
99      000002 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
100     000004 000006      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
101     000006 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
102     000010 000012      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
103     000012 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
104     000014 000016      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
105     000016 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
106     000020 000022      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
107     000022 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
108     000024 000026      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
109     000026 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
110     000030 000032      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
111     000032 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
112     000034 000036      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
113     000036 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
114     000040 000042      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
115     000042 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
116     000044 000046      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
117     000046 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
118     000050 000052      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
119     000052 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
120     000054 000056      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
121     000056 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
122     000060 000062      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
123     000062 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
124     000064 000066      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
125     000066 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
126     000070 000072      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
127     000072 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
128     000074 000076      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
129     000076 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
130     000100 000102      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
131     000102 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
132     000104 000106      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
133     000106 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
134     000110 000112      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
135     000112 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
136     000114 000116      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
137     000116 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
138     000120 000122      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
139     000122 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
140     000124 000126      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
141     000126 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
142     000130 000132      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
143     000132 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
144     000134 000136      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
145     000136 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
146     000140 000142      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
147     000142 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
148     000144 000146      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
149     000146 000000      HALT      ;EXAMINE STACK TO FIND CAUSE
150     000150 000152      .+2      ;UNEXPECTED TRAP TO THIS LOCATION
151     000152 000000      HALT      ;EXAMINE STACK TO FIND CAUSE

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E01

142	000154	000156	.+2	:UNEXPECTED TRAP TO THIS LOCATION
143	000156	000000	HALT	:EXAMINE STACK TO FIND CAUSE
144	000160	000162	.+2	:UNEXPECTED TRAP TO THIS LOCATION
145	000162	000000	HALT	:EXAMINE STACK TO FIND CAUSE
146	000164	000166	.+2	:UNEXPECTED TRAP TO THIS LOCATION
147	000166	000000	HALT	:EXAMINE STACK TO FIND CAUSE
148	000170	000172	.+2	:UNEXPECTED TRAP TO THIS LOCATION
149	000172	000000	HALT	:EXAMINE STACK TO FIND CAUSE
150	000174	000176	.+2	:UNEXPECTED TRAP TO THIS LOCATION
151	000176	000000	HALT	:EXAMINE STACK TO FIND CAUSE
152	000200	000202	.+2	:UNEXPECTED TRAP TO THIS LOCATION
153	000202	000000	HALT	:EXAMINE STACK TO FIND CAUSE
154	000204	000206	.+2	:UNEXPECTED TRAP TO THIS LOCATION
155	000206	000000	HALT	:EXAMINE STACK TO FIND CAUSE
156	000210	000212	.+2	:UNEXPECTED TRAP TO THIS LOCATION
157	000212	000000	HALT	:EXAMINE STACK TO FIND CAUSE
158	000214	000216	.+2	:UNEXPECTED TRAP TO THIS LOCATION
159	000216	000000	HALT	:EXAMINE STACK TO FIND CAUSE
160	000220	000222	.+2	:UNEXPECTED TRAP TO THIS LOCATION
161	000222	000000	HALT	:EXAMINE STACK TO FIND CAUSE
162	000224	000226	.+2	:UNEXPECTED TRAP TO THIS LOCATION
163	000226	000000	HALT	:EXAMINE STACK TO FIND CAUSE
164	000230	000232	.+2	:UNEXPECTED TRAP TO THIS LOCATION
165	000232	000000	HALT	:EXAMINE STACK TO FIND CAUSE
166	000234	000236	.+2	:UNEXPECTED TRAP TO THIS LOCATION
167	000236	000000	HALT	:EXAMINE STACK TO FIND CAUSE
168	000240	000242	.+2	:UNEXPECTED TRAP TO THIS LOCATION
169	000242	000000	HALT	:EXAMINE STACK TO FIND CAUSE
170	000244	000246	.+2	:UNEXPECTED TRAP TO THIS LOCATION
171	000246	000000	HALT	:EXAMINE STACK TO FIND CAUSE
172	000250	000252	.+2	:UNEXPECTED TRAP TO THIS LOCATION
173	000252	000000	HALT	:EXAMINE STACK TO FIND CAUSE
174	000254	000256	.+2	:UNEXPECTED TRAP TO THIS LOCATION
175	000256	000000	HALT	:EXAMINE STACK TO FIND CAUSE
176	000260	000262	.+2	:UNEXPECTED TRAP TO THIS LOCATION
177	000262	000000	HALT	:EXAMINE STACK TO FIND CAUSE
178	000264	000266	.+2	:UNEXPECTED TRAP TO THIS LOCATION
179	000266	000000	HALT	:EXAMINE STACK TO FIND CAUSE
180	000270	000272	.+2	:UNEXPECTED TRAP TO THIS LOCATION
181	000272	000000	HALT	:EXAMINE STACK TO FIND CAUSE
182	000274	000276	.+2	:UNEXPECTED TRAP TO THIS LOCATION
183	000276	000000	HALT	:EXAMINE STACK TO FIND CAUSE
184	000300	000302	.+2	:UNEXPECTED TRAP TO THIS LOCATION
185	000302	000000	HALT	:EXAMINE STACK TO FIND CAUSE
186	000304	000306	.+2	:UNEXPECTED TRAP TO THIS LOCATION
187	000306	000000	HALT	:EXAMINE STACK TO FIND CAUSE
188	000310	000312	.+2	:UNEXPECTED TRAP TO THIS LOCATION
189	000312	000000	HALT	:EXAMINE STACK TO FIND CAUSE
190	000314	000316	.+2	:UNEXPECTED TRAP TO THIS LOCATION
191	000316	000000	HALT	:EXAMINE STACK TO FIND CAUSE
192	000320	000322	.+2	:UNEXPECTED TRAP TO THIS LOCATION
193	000322	000000	HALT	:EXAMINE STACK TO FIND CAUSE
194	000324	000326	.+2	:UNEXPECTED TRAP TO THIS LOCATION
195	000326	000000	HALT	:EXAMINE STACK TO FIND CAUSE
196	000330	000332	.+2	:UNEXPECTED TRAP TO THIS LOCATION
197	000332	000000	HALT	:EXAMINE STACK TO FIND CAUSE

# F01

198	000334	000336	.+2	:UNEXPECTED TRAP TO THIS LOCATION
199	000336	000000	HALT	:EXAMINE STACK TO FIND CAUSE
200	000340	000342	.+2	:UNEXPECTED TRAP TO THIS LOCATION
201	000342	000000	HALT	:EXAMINE STACK TO FIND CAUSE
202	000344	000346	.+2	:UNEXPECTED TRAP TO THIS LOCATION
203	000346	000000	HALT	:EXAMINE STACK TO FIND CAUSE
204	000350	000352	.+2	:UNEXPECTED TRAP TO THIS LOCATION
205	000352	000000	HALT	:EXAMINE STACK TO FIND CAUSE
206	000354	000356	.+2	:UNEXPECTED TRAP TO THIS LOCATION
207	000356	000000	HALT	:EXAMINE STACK TO FIND CAUSE
208	000360	000362	.+2	:UNEXPECTED TRAP TO THIS LOCATION
209	000362	000000	HALT	:EXAMINE STACK TO FIND CAUSE
210	000364	000366	.+2	:UNEXPECTED TRAP TO THIS LOCATION
211	000366	000000	HALT	:EXAMINE STACK TO FIND CAUSE
212	000370	000372	.+2	:UNEXPECTED TRAP TO THIS LOCATION
213	000372	000000	HALT	:EXAMINE STACK TO FIND CAUSE
214	000374	000376	.+2	:UNEXPECTED TRAP TO THIS LOCATION
215	000376	000000	HALT	:EXAMINE STACK TO FIND CAUSE
216	000400	000402	.+2	:UNEXPECTED TRAP TO THIS LOCATION
217	000402	000000	HALT	:EXAMINE STACK TO FIND CAUSE
218	000404	000406	.+2	:UNEXPECTED TRAP TO THIS LOCATION
219	000406	000000	HALT	:EXAMINE STACK TO FIND CAUSE
220	000410	000412	.+2	:UNEXPECTED TRAP TO THIS LOCATION
221	000412	000000	HALT	:EXAMINE STACK TO FIND CAUSE
222	000414	000416	.+2	:UNEXPECTED TRAP TO THIS LOCATION
223	000416	000000	HALT	:EXAMINE STACK TO FIND CAUSE
224	000420	000422	.+2	:UNEXPECTED TRAP TO THIS LOCATION
225	000422	000000	HALT	:EXAMINE STACK TO FIND CAUSE
226	000424	000426	.+2	:UNEXPECTED TRAP TO THIS LOCATION
227	000426	000000	HALT	:EXAMINE STACK TO FIND CAUSE
228	000430	000432	.+2	:UNEXPECTED TRAP TO THIS LOCATION
229	000432	000000	HALT	:EXAMINE STACK TO FIND CAUSE
230	000434	000436	.+2	:UNEXPECTED TRAP TO THIS LOCATION
231	000436	000000	HALT	:EXAMINE STACK TO FIND CAUSE
232	000440	000442	.+2	:UNEXPECTED TRAP TO THIS LOCATION
233	000442	000000	HALT	:EXAMINE STACK TO FIND CAUSE
234	000444	000446	.+2	:UNEXPECTED TRAP TO THIS LOCATION
235	000446	000000	HALT	:EXAMINE STACK TO FIND CAUSE
236	000450	000452	.+2	:UNEXPECTED TRAP TO THIS LOCATION
237	000452	000000	HALT	:EXAMINE STACK TO FIND CAUSE
238	000454	000456	.+2	:UNEXPECTED TRAP TO THIS LOCATION
239	000456	000000	HALT	:EXAMINE STACK TO FIND CAUSE
240	000460	000462	.+2	:UNEXPECTED TRAP TO THIS LOCATION
241	000462	000000	HALT	:EXAMINE STACK TO FIND CAUSE
242	000464	000466	.+2	:UNEXPECTED TRAP TO THIS LOCATION
243	000466	000000	HALT	:EXAMINE STACK TO FIND CAUSE
244	000470	000472	.+2	:UNEXPECTED TRAP TO THIS LOCATION
245	000472	000000	HALT	:EXAMINE STACK TO FIND CAUSE
246	000474	000476	.+2	:UNEXPECTED TRAP TO THIS LOCATION
247	000476	000000	HALT	:EXAMINE STACK TO FIND CAUSE
248	000500	000502	.+2	:UNEXPECTED TRAP TO THIS LOCATION
249	000502	000000	HALT	:EXAMINE STACK TO FIND CAUSE
250	000504	000506	.+2	:UNEXPECTED TRAP TO THIS LOCATION
251	000506	000000	HALT	:EXAMINE STACK TO FIND CAUSE
252	000510	000512	.+2	:UNEXPECTED TRAP TO THIS LOCATION
253	000512	000000	HALT	:EXAMINE STACK TO FIND CAUSE

254	000514	000516	.+2	:UNEXPECTED TRAP TO THIS LOCATION
255	000516	000000	HALT	:EXAMINE STACK TO FIND CAUSE
256	000520	000522	.+2	:UNEXPECTED TRAP TO THIS LOCATION
257	000522	000000	HALT	:EXAMINE STACK TO FIND CAUSE
258	000524	000526	.+2	:UNEXPECTED TRAP TO THIS LOCATION
259	000526	000000	HALT	:EXAMINE STACK TO FIND CAUSE
260	000530	000532	.+2	:UNEXPECTED TRAP TO THIS LOCATION
261	000532	000000	HALT	:EXAMINE STACK TO FIND CAUSE
262	000534	000536	.+2	:UNEXPECTED TRAP TO THIS LOCATION
263	000536	000000	HALT	:EXAMINE STACK TO FIND CAUSE
264	000540	000542	.+2	:UNEXPECTED TRAP TO THIS LOCATION
265	000542	000000	HALT	:EXAMINE STACK TO FIND CAUSE
266	000544	000546	.+2	:UNEXPECTED TRAP TO THIS LOCATION
267	000546	000000	HALT	:EXAMINE STACK TO FIND CAUSE
268	000550	000552	.+2	:UNEXPECTED TRAP TO THIS LOCATION
269	000552	000000	HALT	:EXAMINE STACK TO FIND CAUSE
270	000554	000556	.+2	:UNEXPECTED TRAP TO THIS LOCATION
271	000556	000000	HALT	:EXAMINE STACK TO FIND CAUSE
272	000560	000562	.+2	:UNEXPECTED TRAP TO THIS LOCATION
273	000562	000000	HALT	:EXAMINE STACK TO FIND CAUSE
274	000564	000566	.+2	:UNEXPECTED TRAP TO THIS LOCATION
275	000566	000000	HALT	:EXAMINE STACK TO FIND CAUSE
276	000570	000572	.+2	:UNEXPECTED TRAP TO THIS LOCATION
277	000572	000000	HALT	:EXAMINE STACK TO FIND CAUSE
278	000574	000576	.+2	:UNEXPECTED TRAP TO THIS LOCATION
279	000576	000000	HALT	:EXAMINE STACK TO FIND CAUSE
280	000600	000602	.+2	:UNEXPECTED TRAP TO THIS LOCATION
281	000602	000000	HALT	:EXAMINE STACK TO FIND CAUSE
282	000604	000606	.+2	:UNEXPECTED TRAP TO THIS LOCATION
283	000606	000000	HALT	:EXAMINE STACK TO FIND CAUSE
284	000610	000612	.+2	:UNEXPECTED TRAP TO THIS LOCATION
285	000612	000000	HALT	:EXAMINE STACK TO FIND CAUSE
286	000614	000616	.+2	:UNEXPECTED TRAP TO THIS LOCATION
287	000616	000000	HALT	:EXAMINE STACK TO FIND CAUSE
288	000620	000622	.+2	:UNEXPECTED TRAP TO THIS LOCATION
289	000622	000000	HALT	:EXAMINE STACK TO FIND CAUSE
290	000624	000626	.+2	:UNEXPECTED TRAP TO THIS LOCATION
291	000626	000000	HALT	:EXAMINE STACK TO FIND CAUSE
292	000630	000632	.+2	:UNEXPECTED TRAP TO THIS LOCATION
293	000632	000000	HALT	:EXAMINE STACK TO FIND CAUSE
294	000634	000636	.+2	:UNEXPECTED TRAP TO THIS LOCATION
295	000636	000000	HALT	:EXAMINE STACK TO FIND CAUSE
296	000640	000642	.+2	:UNEXPECTED TRAP TO THIS LOCATION
297	000642	000000	HALT	:EXAMINE STACK TO FIND CAUSE
298	000644	000646	.+2	:UNEXPECTED TRAP TO THIS LOCATION
299	000646	000000	HALT	:EXAMINE STACK TO FIND CAUSE
300	000650	000652	.+2	:UNEXPECTED TRAP TO THIS LOCATION
301	000652	000000	HALT	:EXAMINE STACK TO FIND CAUSE
302	000654	000656	.+2	:UNEXPECTED TRAP TO THIS LOCATION
303	000656	000000	HALT	:EXAMINE STACK TO FIND CAUSE
304	000660	000662	.+2	:UNEXPECTED TRAP TO THIS LOCATION
305	000662	000000	HALT	:EXAMINE STACK TO FIND CAUSE
306	000664	000666	.+2	:UNEXPECTED TRAP TO THIS LOCATION
307	000666	000000	HALT	:EXAMINE STACK TO FIND CAUSE
308	000670	000672	.+2	:UNEXPECTED TRAP TO THIS LOCATION
309	000672	000000	HALT	:EXAMINE STACK TO FIND CAUSE

# H01

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310	000674	000676	.+2	:UNEXPECTED TRAP TO THIS LOCATION
311	000676	000000	HALT	:EXAMINE STACK TO FIND CAUSE
312	000700	000702	.+2	:UNEXPECTED TRAP TO THIS LOCATION
313	000702	000000	HALT	:EXAMINE STACK TO FIND CAUSE
314	000704	000706	.+2	:UNEXPECTED TRAP TO THIS LOCATION
315	000706	000000	HALT	:EXAMINE STACK TO FIND CAUSE
316	000710	000712	.+2	:UNEXPECTED TRAP TO THIS LOCATION
317	000712	000000	HALT	:EXAMINE STACK TO FIND CAUSE
318	000714	000716	.+2	:UNEXPECTED TRAP TO THIS LOCATION
319	000716	000000	HALT	:EXAMINE STACK TO FIND CAUSE
320	000720	000722	.+2	:UNEXPECTED TRAP TO THIS LOCATION
321	000722	000000	HALT	:EXAMINE STACK TO FIND CAUSE
322	000724	000726	.+2	:UNEXPECTED TRAP TO THIS LOCATION
323	000726	000000	HALT	:EXAMINE STACK TO FIND CAUSE
324	000730	000732	.+2	:UNEXPECTED TRAP TO THIS LOCATION
325	000732	000000	HALT	:EXAMINE STACK TO FIND CAUSE
326	000734	000736	.+2	:UNEXPECTED TRAP TO THIS LOCATION
327	000736	000000	HALT	:EXAMINE STACK TO FIND CAUSE
328	000740	000742	.+2	:UNEXPECTED TRAP TO THIS LOCATION
329	000742	000000	HALT	:EXAMINE STACK TO FIND CAUSE
330	000744	000746	.+2	:UNEXPECTED TRAP TO THIS LOCATION
331	000746	000000	HALT	:EXAMINE STACK TO FIND CAUSE
332	000750	000752	.+2	:UNEXPECTED TRAP TO THIS LOCATION
333	000752	000000	HALT	:EXAMINE STACK TO FIND CAUSE
334	000754	000756	.+2	:UNEXPECTED TRAP TO THIS LOCATION
335	000756	000000	HALT	:EXAMINE STACK TO FIND CAUSE
336	000760	000762	.+2	:UNEXPECTED TRAP TO THIS LOCATION
337	000762	000000	HALT	:EXAMINE STACK TO FIND CAUSE
338	000764	000766	.+2	:UNEXPECTED TRAP TO THIS LOCATION
339	000766	000000	HALT	:EXAMINE STACK TO FIND CAUSE
340	000770	000772	.+2	:UNEXPECTED TRAP TO THIS LOCATION
341	000772	000000	HALT	:EXAMINE STACK TO FIND CAUSE
342	000774	000776	.+2	:UNEXPECTED TRAP TO THIS LOCATION
343	000776	000000	HALT	:EXAMINE STACK TO FIND CAUSE





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372          001000          . =1000
373
374          ;PROGRAM INITIALIZATION
375          ;LOCK OUT INTERRUPTS
376          ;SET UP PROCESSOR STACK
377          ;SET UP POWER FAIL VECTOR
378          ;CLEAR PROGRAM FLAGS AND COUNTS
379          ;TYPE TITLE MESSAGE
380
381 001000 012767 000340 176770 START: MOV #340,PS          ;LOCK OUT INTERRUPTS
382 001006 012706 015460          MOV #STACK,SP        ;SET UP PROCESSOR STACK
383 001012 012737 014352 000024 MOV #PFAIL,2#24      ;SET UP POWER FAIL TRAP
384 001020 005067 012452          CLR STFLG           ;CLEAR TEST START FLAG
385 001024 005067 012406          CLR PASCNT         ;CLEAR PASS COUNT
386 001030 005067 012404          CLR ERRCNT         ;CLEAR ERROR COUNT
387 001034 005067 012374          CLR ERRFLG        ;CLEAR ERROR FLAG
388 001040 005067 012370          CLR ERRFLG        ;CLEAR LAST ERROR PC
389 001044 104401 014516          TYPE ,MTITLE      ;TYPE TITLE MESSAGE
390 001050 005767 012420          TST INIFLG        ;CHECK INITIALIZATION FLAG
391 001054 001001          BNE VEC1          ;IF NOT 0, CHECK SWITCHES
392                                     ;FOR REINITIALIZATION
393 001056 000404          BR VEC2
394 001060 032767 000001 176502 VEC1: BIT #SW00,SWR        ;IF SW00=1, GET NEW VECTOR
395 001066 001445          BEQ BEGIN          ;AND CSR
396 001070 012701 000300          VEC2: MOV #300,R1
397 001074 012702 000302          MOV #302,R2
398 001100 012703 000004          MOV #4,R3
399 001104 010211          IS: MOV R2,(R1)      ;RESTORE TRAPCATCHER
400 001106 005012          CLR (R2)          ;IN FLOATING VECTOR AREA
401 001110 060301          ADD R3,R1
402 001112 060302          ADD R3,R2
403 001114 020127 001000          CMP R1,#1000
404 001120 001371          BNE IS
405 001122 104403          INSTR           ;INPUT ADDRESS OF DEVICE VECTOR
406 001124 014550          MVECTOR         ;MESSAGE "VECTOR ADDRESS--"
407 001126 104405          PARAM          ;CONVERT STRING TO OCTAL
408 001130 000300          300            ;LOW LIMIT
409 001132 000770          770            ;HIGH LIMIT
410 001134 013424          DHRVEC         ;LOCATIONS TO BE FILLED
411 001136 003          .BYTE 3         ;NUMBER OF LOCATIONS
412 001137 004          .BYTE 4         ;LSB MASK
413 001140 104403          INSTR           ;INPUT ADDRESS OF DEVICE CSR
414 001142 014572          MREGAD         ;MESSAGE "CONTROL REGISTER ADDRESS--"
415 001144 104405          PARAM          ;CONVERT STRING TO OCTAL
416 001146 000000          0              ;LOW LIMIT
417 001150 177776          177776        ;HIGH LIMIT
418 001152 013402          DHSCR         ;LOCATIONS TO BE FILLED
419 001154 007          .BYTE 7         ;NUMBER OF LOCATIONS
420 001155 010          .BYTE 10        ;LSB MASK
421 001156 016767 012236 012236 MOV DHSSR,DHSLR  ;SET UP ADDRESS OF SILO
422 001164 005267 012232          INC DHSLR       ;STATUS REGISTER HIGH BYTE
423 001170 005767 012300          TST INIFLG      ;IF INITIALIZATION FLAG
424 001174 001002          BNE BEGIN       ;IS CLEARED
425 001176 005167 012272          COM INIFLG      ;SET IT
426
427          ;PROGRAM START
  
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# K01

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428                                     :CHECK FOR PROGRAM START AT SELECTED ADDRESS
429
430 001202 0.2767 000340 176566 BEGIN: MOV      #340,PS          ;LOCK OUT INTERRUPTS
431 001210 0.2706 015460          MOV      #STACK,SP       ;SET UP PROCESSOR STACK
432 001214 032767 000002 176346 BIT      #SW0!,SWR       ;IF SW01=1
433 001222 001410          BEQ      1$              ;GET PC FOR PROGRAM START
434 001224 104403          INSTR                     ;GET PC
435 001226 014736          MTSTPC                    ;MESSAGE "TEST PC"
436 001230 104405          PARAM                     ;CONVERT STRING TO OCTAL
437 001232 000000          0
438 001234 017500          17500
439 001236 000207          RETURN
440 001240          00!          .BYTE 1
441 001241          001          .BYTE 1
442 001242 000410          BR      2$
443 001244 012767 001274 012170 1$: MOV      #T1,RETURN      ;NORMAL START, TEST 1
444 001252 005767 012220          TST      STFLG          ;IF LOOPING, BYPASS TYPEOUT
445 001256 001004          BNE     3$
446 001260 005167 012212          COM      STFLG
447 001264 104401 014732          2$: TYPE MR          ;TYPE "R" TO INDICATE START
448 001270 000177 012146          3$: JMP      0RETURN      ;START TESTING
  
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L01

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449

# MO1

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457
458 001274 012767 000340 176474 T1:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
459 001302 012767 000100 012140      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
460 001310 012767 001450 012126      MOV    #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
461 001316 012777 004000 012056      MOV    #BIT11,ADHSCR    ;MASTER CLEAR INTERFACE
462 001324 004767 011712      1$:  JSR    PC,CLRALL       ;CLEAR ALL BYTE COUNT AN
463                                     ;BUS ADDRESS REGISTERS
464 001330 012777 000000 012044      MOV    #0,ADHSCR       ;SELECT LINE 0
465 001336 012777 177777 012046      MOV    #-1,ADHBC       ;SET BYTE COUNT TO 1
466 001344 012777 014152 012036      MOV    #TWRD0,ADHBA    ;SET UP ADDRESS OF CHARACTER TO BE TP #SMITTED
467 001352 012700 000100      MOV    #100,R0         ;SET UP TO RECEIVE 64 CHARACTERS
468 001356 005001      CLR    R1              ;COUNT OF CHARACTERS RECEIVED
469 001360 012777 133503 012020      MOV    #133503,ADHLPR  ;SET UP SPEED FOR 9600 BAUD
470                                     ;8 BITS PER CHARACTER,
471                                     ;AUTO ECHO ENABLED ON LINE 0
472 001366 012777 000001 012020      MOV    #1,ADHBAR       ;SET BAR BIT FOR LINE 0
473 001374 105777 012002      2$:  TSTB  ADHSCR          ;WAIT FOR CHARACTER TO
474 001400 100375      BPL    2$              ;BE RECEIVED
475 001402 005201      INC    R1              ;UPDATE RECEIVED CHARACTER COUNT
476 001404 017704 011774      MOV    ADHNR,R4        ;READ CHARACTER
477 001410 020467 012536      CMP    R4,TWRD0        ;IS CHARACTER CORRECT
478 001414 001406      BEQ    3$              ;
479 001416 016705 012530      MOV    TWRD0,R5        ;(R5)=EXPECTED CHARACTER
480 001422 005077 011760      CLR    ADHLPR         ;SHUT OFF AUTO ECHO
481 001426 104000      HLT    0               ;CHARACTER ECHOED INCORRECTLY
482 001430 000407      BR     4$              ;RESTART TEST
483 001432 005300      3$:  DEC    R0              ;IF 64 CHARACTERS HAVE NOT
484 001434 003357      BGT    2$              ;BEEN RECEIVED, CONTINUE
485 001436 100404      BMI    4$              ;
486 001440 042777 100000 011740      BIC    #100000,ADHLPR ;SHUT OFF AUTO-ECHO
487 001446 000752      BR     2$              ;GET 1 MORE CHARACTER
488 001450 104400      4$:  SCOPE                ;CHECK FOR ITERATIONS, LOOP
489
490
491
492
493
494
495
496
497 001452 012767 000340 176316 T2:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
498 001460 012767 000100 011762      MOV    #100,ICOUNT      ;SET UP FOR 100 ITERATIONS
499 001466 012767 001626 011750      MOV    #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
500 001474 012777 004000 011700      MOV    #BIT11,ADHSCR    ;MASTER CLEAR INTERFACE
501 001502 004767 011534      1$:  JSR    PC,CLRALL       ;CLEAR ALL BYTE COUNT AN
502                                     ;BUS ADDRESS REGISTERS
503 001506 012777 000001 011666      MOV    #1,ADHSCR       ;SELECT LINE 1
504 001514 012777 177777 011670      MOV    #-1,ADHBC       ;SET BYTE COUNT TO 1
505 001522 012777 014154 011660      MOV    #TWRD1,ADHBA    ;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED

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506 001530 012700 000100      MOV      #100,R0      ;SET UP TO RECEIVE 64 CHARACTERS
507 001534 005001      CLR      R1          ;COUNT OF CHARACTERS RECEIVED
508 001536 012777 133503 011642  MOV      #133503,2DHLP  ;SET UP SPEED FOR 9600 BAUD
509                                     ;8 BITS PER CHARACTER,
510                                     ;AUTO ECHO ENABLED ON LINE 1
511 001544 012777 000002 011642  MOV      #2,2DHBAR    ;SET BAR BIT FOR LINE 1
512 001552 105777 011524 2$:    TSTB    2DHSCR       ;WAIT FOR CHARACTER TO
513 001556 100375                                     ;BE RECEIVED
514 001560 005201      INC      R1          ;UPDATE RECEIVED CHARACTER COUNT
515 001562 017704 011616      MOV      2DHNRC,R4   ;READ CHARACTER
516 001566 020467 012362      CMP      R4,TWRD1    ;IS CHARACTER CORRECT
517 001572 001406      BEQ     3$          ;(R5)=EXPECTED CHARACTER
518 001574 016705 012354      MOV      TWRD1,R5   ;SHUT OFF AUTO ECHO
519 001600 005077 011602      CLR     2DHLP      ;CHARACTER ECHOED INCORRECTLY
520 001604 104000      HLT     0          ;RESTART TEST
521 001606 000407      BR      4$         ;IF 64 CHARACTERS HAVE NOT
522 001610 005300 3$:    DEC     R0         ;BEEN RECEIVED, CONTINUE
523 001612 003357      BGT     2$
524 001614 100404      BMI     4$
525 001616 042777 100000 011562  BIC     #100000,2DHLP ;SHUT OFF AUTO-ECHO
526 001624 000752      BR      2$         ;GET 1 MORE CHARACTER
527 001626 104400 4$:    SCOPE          ;CHECK FOR ITERATIONS, LOOP
528
529                                     ;ENABLE AUTO ECHO ON LINE 2
530                                     ;TRANSMIT ONE CHARACTER ON LINE 2
531                                     ;AT 9600 BAUD, 8 BITS.
532                                     ;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
533                                     ;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
534                                     ;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
535
536 001630 012767 000340 176140  T3:    MOV      #340,PS    ;DISABLE ALL INTERRUPTS
537 001636 012767 000100 011604  MOV      #100,ICOUNT ;SET UP FOR 100 ITERATIONS
538 001644 012767 002004 011572  MOV      #4$,ESCAPE  ;SET UP TO ESCAPE TO NEXT TEST
539 001652 012777 004000 011522  MOV      #BIT11,2DHSCR ;MASTER CLEAR INTERFACE
540 001660 004767 011356 1$:    JSR     PC,CLRALL   ;CLEAR ALL BYTE COUNT AN
541                                     ;BUS ADDRESS REGISTERS
542 001664 012777 000002 011510  MOV      #2,2DHSCR   ;SELECT LINE 2
543 001672 012777 177777 011512  MOV      #-1,2DHBC   ;SET BYTE COUNT TO 1
544 001700 012777 014156 011502  MOV      #TWRD2,2DHBA ;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
545 001706 012700 000100      MOV      #100,R0    ;SET UP TO RECEIVE 64 CHARACTERS
546 001712 005001      CLR     R1          ;COUNT OF CHARACTERS RECEIVED
547 001714 012777 133503 011464  MOV      #133503,2DHLP ;SET UP SPEED FOR 9600 BAUD
548                                     ;8 BITS PER CHARACTER,
549                                     ;AUTO ECHO ENABLED ON LINE 2
550 001722 012777 000004 011464  MOV      #4,2DHBAR   ;SET BAR BIT FOR LINE 2
551 001730 105777 011446 2$:    TSTB    2DHSCR       ;WAIT FOR CHARACTER TO
552 001734 100375                                     ;BE RECEIVED
553 001736 005201      INC     R1          ;UPDATE RECEIVED CHARACTER COUNT
554 001740 017704 011440      MOV     2DHNRC,R4   ;READ CHARACTER
555 001744 020467 012206      CMP     R4,TWRD2    ;IS CHARACTER CORRECT
556 001750 001406      BEQ    3$          ;(R5)=EXPECTED CHARACTER
557 001752 016705 012200      MOV     TWRD2,R5   ;SHUT OFF AUTO ECHO
558 001756 005077 011424      CLR    2DHLP      ;CHARACTER ECHOED INCORRECTLY
559 001762 104000      HLT    0          ;RESTART TEST
560 001764 000407      BR     4$         ;IF 64 CHARACTERS HAVE NOT
561 001766 005300 3$:    DEC     R0

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562 001770 003357          BGT      25          ;SEEN RECEIVED, CONTINUE
563 001772 100404          BMI      45
564 001774 042777 100000 011404  BIC      #100000,2DHLPR ;SHUT OFF AUTO-ECHO
565 002002 000752          BR       25          ;GET 1 MORE CHARACTER
566 002004 104400          45:     SCOPE       ;CHECK FOR ITERATIONS, LOOP
567
568          ;ENABLE AUTO ECHO ON LINE 3
569          ;TRANSMIT ONE CHARACTER ON LINE 3
570          ;AT 9600 BAUD, 8 BITS.
571          ;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
572          ;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
573          ;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
574
575 002006 012767 000340 175762 74:     MOV      #340,PS          ;DISABLE ALL INTERRUPTS
576 002014 012767 000100 011426          MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
577 002022 012767 002162 011414          MOV      #45,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
578 002030 012777 004000 011344          MOV      #BIT11,2DHSCR  ;MASTER CLEAR INTERFACE
579 002036 004767 011200          15:     JSR      PC,CLRALL      ;CLEAR ALL BYTE COUNT AN
580                                     ;BUS ADDRESS REGISTERS
581 002042 012777 000003 011332          MOV      #3,2DHSCR      ;SELECT LINE 3
582 002050 012777 177777 011334          MOV      #-1,2DHBC      ;SET BYTE COUNT TO 1
583 002056 012777 014160 011324          MOV      #TWRD3,2DHBA   ;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
584 002064 012700 000100          MOV      #100,R0        ;SET UP TO RECEIVE 64 CHARACTERS
585 002070 005001          CLR      R1            ;COUNT OF CHARACTERS RECEIVED
586 002072 012777 133503 011306          MOV      #133503,2DHLPR ;SET UP SPEED FOR 9600 BAUD
587                                     ;8 BITS PER CHARACTER,
588                                     ;AUTO ECHO ENABLED ON LINE 3
589 002100 012777 000010 011306          MOV      #10,2DHBAR     ;SET BAR BIT FOR LINE 3
590 002106 105777 011270          25:     TSTB     2DHSCR        ;WAIT FOR CHARACTER TO
591 002112 100375          BPL      25          ;BE RECEIVED
592 002114 005201          INC      R1            ;UPDATE RECEIVED CHARACTER COUNT
593 002116 017704 011262          MOV      2DHNRC,R4      ;READ CHARACTER
594 002122 020467 012032          CMP      R4,TWRD3       ;IS CHARACTER CORRECT
595 002126 001406          BEQ      35
596 002130 016705 012024          MOV      TWRD3,R5       ;(R5)=EXPECTED CHARACTER
597 002134 005077 011246          CLR      2DHLPR        ;SHUT OFF AUTO ECHO
598 002140 104000          HLT      0            ;CHARACTER ECHOED INCORRECTLY
599 002142 000407          BR       45          ;RESTART TEST
600 002144 005300          35:     DEC      R0            ;IF 64 CHARACTERS HAVE NOT
601 002146 003357          BGT      25          ;BEEN RECEIVED, CONTINUE
602 002150 100404          BMI      45
603 002152 042777 100000 011226  BIC      #100000,2DHLPR ;SHUT OFF AUTO-ECHO
604 002160 000752          BR       25          ;GET 1 MORE CHARACTER
605 002162 104400          45:     SCOPE       ;CHECK FOR ITERATIONS, LOOP
606
607          ;ENABLE AUTO ECHO ON LINE 4
608          ;TRANSMIT ONE CHARACTER ON LINE 4
609          ;AT 9600 BAUD, 8 BITS.
610          ;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
611          ;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
612          ;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
613
614 002164 012767 000340 175604 75:     MOV      #340,PS          ;DISABLE ALL INTERRUPTS
615 002172 012767 000100 011250          MOV      #100,ICOUNT     ;SET UP FOR 100 ITERATIONS
616 002200 012767 002340 011236          MOV      #45,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
617 002206 012777 004000 011166          MOV      #BIT11,2DHSCR  ;MASTER CLEAR INTERFACE
  
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618	002214	004767	011022		15:	JSR	PC, CLRALL		: CLEAR ALL BYTE COUNT AN
619									: BUS ADDRESS REGISTERS
620	002220	012777	000004	011154		MOV	#4, 2DHSCR		: SELECT LINE 4
621	002226	012777	177777	011156		MOV	#-1, 2DHBC		: SET BYTE COUNT TO 1
622	002234	012777	014162	011146		MOV	#TWRD4, 2DHBA		: SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
623	002242	012700	000100			MOV	#100, R0		: SET UP TO RECEIVE 64 CHARACTERS
624	002246	005001				CLR	R1		: COUNT OF CHARACTERS RECEIVED
625	002250	012777	133503	011130		MOV	#133503, 2DHLPR		: SET UP SPEED FOR 9600 BAUD
626									: 8 BITS PER CHARACTER,
627									: AUTO ECHO ENABLED ON LINE 4
628	002256	012777	000020	011130		MOV	#20, 2DHBAR		: SET BAR BIT FOR LINE 4
629	002264	105777	011112		25:	TSTB	2DHSCR		: WAIT FOR CHARACTER TO
630	002270	100375				SPL	25		: BE RECEIVED
631	002272	005201				INC	R1		: UPDATE RECEIVED CHARACTER COUNT
632	002274	017704	011104			MOV	2DHNRC, R4		: READ CHARACTER
633	002300	020467	011656			CMP	R4, TWRD4		: IS CHARACTER CORRECT
634	002304	001406				BEQ	35		
635	002306	016705	011650			MOV	TWRD4, R5		: (R5)=EXPECTED CHARACTER
636	002312	005077	011070			CLR	2DHLPR		: SHUT OFF AUTO ECHO
637	002316	104000				HLT	0		: CHARACTER ECHOED INCORRECTLY
638	002320	000407				BR	45		: RESTART TEST
639	002322	005300			35:	DEC	R0		: IF 64 CHARACTERS HAVE NOT
640	002324	003357				BGT	25		: BEEN RECEIVED, CONTINUE
641	002326	100404				BMI	45		
642	002330	042777	100000	011050		BIC	#100000, 2DHLPR		: SHUT OFF AUTO-ECHO
643	002333	000752				BR	25		: GET 1 MORE CHARACTER
644	002340	104400			45:	SCOPE			: CHECK FOR ITERATIONS, LOOP
645									
646									: ENABLE AUTO ECHO ON LINE 5
647									: TRANSMIT ONE CHARACTER ON LINE 5
648									: AT 9600 BAUD, 8 BITS.
649									: RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
650									: AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
651									: EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
652									
653	002342	012767	000340	175426	T6:	MOV	#340, P5		: DISABLE ALL INTERRUPTS
654	002350	012767	000100	011072		MOV	#100, ICOUNT		: SET UP FOR 100 ITERATIONS
655	002356	012767	002516	011050		MOV	#45, ESCAPE		: SET UP TO ESCAPE TO NEXT TEST
656	002364	012777	004000	011010		MOV	#BIT11, 2DHSCR		: MASTER CLEAR INTERFACE
657	002372	004767	010644		15:	JSR	PC, CLRALL		: CLEAR ALL BYTE COUNT AN
658									: BUS ADDRESS REGISTERS
659	002376	012777	000005	010776		MOV	#5, 2DHSCR		: SELECT LINE 5
660	002404	012777	177777	011000		MOV	#-1, 2DHBC		: SET BYTE COUNT TO 1
661	002412	012777	014164	010770		MOV	#TWRD5, 2DHBA		: SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
662	002420	012700	000100			MOV	#100, R0		: SET UP TO RECEIVE 64 CHARACTERS
663	002424	005001				CLR	R1		: COUNT OF CHARACTERS RECEIVED
664	002426	012777	133503	010752		MOV	#133503, 2DHLPR		: SET UP SPEED FOR 9600 BAUD
665									: 8 BITS PER CHARACTER,
666									: AUTO ECHO ENABLED ON LINE 5
667	002434	012777	000040	010752		MOV	#40, 2DHBAR		: SET BAR BIT FOR LINE 5
668	002442	105777	010734		25:	TSTB	2DHSCR		: WAIT FOR CHARACTER TO
669	002446	100375				BPL	25		: BE RECEIVED
670	002450	005201				INC	R1		: UPDATE RECEIVED CHARACTER COUNT
671	002452	017704	010726			MOV	2DHNRC, R4		: READ CHARACTER
672	002456	020467	011502			CMP	R4, TWRD5		: IS CHARACTER CORRECT
673	002462	001406				BEQ	35		



674	002464	016705	011474			MOV	TWRD5,R5		;(R5)=EXPECTED CHARACTER
675	002470	005077	010712			CLR	2DHLP		;SHUT OFF AUTO ECHO
676	002474	104000				HLT	0		;CHARACTER ECHOED INCORRECTLY
677	002476	000407				BR	45		;RESTART TEST
678	002500	005300			35:	DEC	R0		;IF 64 CHARACTERS HAVE NOT
679	002502	003357				BGT	25		;BEEN RECEIVED, CONTINUE
680	002504	100404				BMI	45		
681	002506	042777	100000	010672		BIC	#100000,2DHLP		;SHUT OFF AUTO-ECHO
682	002514	000752				BR	25		;GET 1 MORE CHARACTER
683	002516	104400			45:	SCOPE			;CHECK FOR ITERATIONS, LOOP
684									
685									;ENABLE AUTO ECHO ON LINE 6
686									;TRANSMIT ONE CHARACTER ON LINE 6
687									;AT 9600 BAUD, 8 BITS.
688									;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
689									;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
690									;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
691									
692	002520	012767	000340	175250	17:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
693	002526	012767	000100	010714		MOV	#100,ICOUNT		;SET UP FOR 100 ITERATIONS
694	002534	012767	002674	010702		MOV	#45,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
695	002542	012777	004000	010632		MOV	#BIT11,2DHSCR		;MASTER CLEAR INTERFACE
696	002550	004767	010466		13:	JSR	PC,CLRALL		;CLEAR ALL BYTE COUNT AND
697									;BUS ADDRESS REGISTERS
698	002554	012777	000006	010620		MOV	#6,2DHSCR		;SELECT LINE 6
699	002562	012777	177777	010622		MOV	#-1,2DHBC		;SET BYTE COUNT TO 1
700	002570	012777	014166	010612		MOV	#TWRD6,2DHBA		;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
701	002576	012700	000100			MOV	#100,R0		;SET UP TO RECEIVE 64 CHARACTERS
702	002602	005001				CLR	R1		;COUNT OF CHARACTERS RECEIVED
703	002604	012777	133503	010574		MOV	#133503,2DHLP		;SET UP SPEED FOR 9600 BAUD
704									;8 BITS PER CHARACTER,
705									;AUTO ECHO ENABLED ON LINE 6
706	002612	012777	000100	010574		MOV	#100,2DHBAR		;SET BAR BIT FOR LINE 6
707	002620	05777	010556		25:	TSTB	2DHSCR		;WAIT FOR CHARACTER TO
708	002624	00375				BPL	25		;BE RECEIVED
709	002626	005201				INC	R1		;UPDATE RECEIVED CHARACTER COUNT
710	002630	017704	010550			MOV	2DHNRC,R4		;READ CHARACTER
711	002634	020467	011326			CMP	R4,TWRD6		;IS CHARACTER CORRECT
712	002640	001406				BEQ	35		
713	002642	016705	011320			MOV	TWRD6,R5		;(R5)=EXPECTED CHARACTER
714	002646	005077	010534			CLR	2DHLP		;SHUT OFF AUTO ECHO
715	002652	104000				HLT	0		;CHARACTER ECHOED INCORRECTLY
716	002654	000407				BR	45		;RESTART TEST
717	002656	005300			35:	DEC	R0		;IF 64 CHARACTERS HAVE NOT
718	002660	003357				BGT	25		;BEEN RECEIVED, CONTINUE
719	002662	100404				BMI	45		
720	002664	042777	100000	010514		BIC	#100000,2DHLP		;SHUT OFF AUTO-ECHO
721	002672	000752				BR	25		;GET 1 MORE CHARACTER
722	002674	104400			45:	SCOPE			;CHECK FOR ITERATIONS, LOOP
723									
724									;ENABLE AUTO ECHO ON LINE 7
725									;TRANSMIT ONE CHARACTER ON LINE 7
726									;AT 9600 BAUD, 8 BITS.
727									;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
728									;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
729									;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.

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730
731 002676 012767 000340 175072 T10: MOV #340,PS ;DISABLE ALL INTERRUPTS
732 002704 012767 000100 010536 MOV #100,ICOUNT ;SET UP FOR 100 ITERATIONS
733 002712 012767 003052 010524 MOV #4$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
734 002720 012777 004000 010454 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
735 002726 004767 010310 13: JSR PC,CLRALL ;CLEAR ALL BYTE COUNT AN
736 ;BUS ADDRESS REGISTERS
737 002732 012777 000007 010442 MOV #7,ADHSCR ;SELECT LINE 7
738 002740 012777 177777 010444 MOV #-1,ADHBC ;SET BYTE COUNT TO 1
739 002746 012777 014170 010434 MOV #TWRD7,ADHBA ;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
740 002754 012700 000100 MOV #100,R0 ;SET UP TO RECEIVE 64 CHARACTERS
741 002760 005001 CLR R1 ;COUNT OF CHARACTERS RECEIVED
742 002762 012777 133503 010416 MOV #133503,ADHLPR ;SET UP SPEED FOR 9600 BAUD
743 ;8 BITS PER CHARACTER,
744 ;AUTO ECHO ENABLED ON LINE 7
745 002770 012777 000200 010416 MOV #200,ADHBAR ;SET BAR BIT FOR LINE 7
746 002776 105777 010400 2$: TSTB ADHSCR ;WAIT FOR CHARACTER TO
747 003002 100375 BPL 2$ ;BE RECEIVED
748 003004 005201 INC R1 ;UPDATE RECEIVED CHARACTER COUNT
749 003006 017704 010372 MOV ADHNR, R4 ;READ CHARACTER
750 003012 020467 011152 CMP R4, TWRD7 ;IS CHARACTER CORRECT
751 003016 001406 BEQ 3$
752 003020 016705 011144 MOV TWRD7, R5 ;(R5)=EXPECTED CHARACTER
753 003024 005077 010356 CLR ADHLPR ;SHUT OFF AUTO ECHO
754 003030 104000 HLT 0 ;CHARACTER ECHOED INCORRECTLY
755 003032 000407 BR 4$ ;RESTART TEST
756 003037 005300 3$: DEC R0 ;IF 64 CHARACTERS HAVE NOT
757 003038 003357 BGT 2$ ;BEEN RECEIVED, CONTINUE
758 003039 100404 BMI 4$
759 003039 042777 100000 010336 BIC #100000,ADHLPR ;SHUT OFF AUTO-ECHO
760 003050 000752 BR 2$ ;GET 1 MORE CHARACTER
761 003052 104400 4$: SCOPE ;CHECK FOR ITERATIONS, LOOP
762
763 ;ENABLE AUTO ECHO ON LINE 10
764 ;TRANSMIT ONE CHARACTER ON LINE 10
765 ;AT 9600 BAUD, 8 BITS.
766 ;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
767 ;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
768 ;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
769
770 003054 012767 000340 174714 T11: MOV #340,PS ;DISABLE ALL INTERRUPTS
771 003062 012767 000100 010360 MOV #100,ICOUNT ;SET UP FOR 100 ITERATIONS
772 003070 012767 003230 010346 MOV #4$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
773 003075 012777 004000 010276 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
774 003104 004767 010132 1$: JSR PC,CLRALL ;CLEAR ALL BYTE COUNT AN
775 ;BUS ADDRESS REGISTERS
776 003110 012777 000010 010264 MOV #10,ADHSCR ;SELECT LINE 10
777 003116 012777 177777 010266 MOV #-1,ADHBC ;SET BYTE COUNT TO 1
778 003124 012777 014172 010256 MOV #TWRD10,ADHBA ;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
779 003132 012700 000100 MOV #100,R0 ;SET UP TO RECEIVE 64 CHARACTERS
780 003136 005001 CLR R1 ;COUNT OF CHARACTERS RECEIVED
781 003140 012777 133503 010240 MOV #133503,ADHLPR ;SET UP SPEED FOR 9600 BAUD
782 ;8 BITS PER CHARACTER,
783 ;AUTO ECHO ENABLED ON LINE 10
784 003146 012777 000400 010240 MOV #400,ADHBAR ;SET BAR BIT FOR LINE 10
785 003154 105777 010222 2$: TSTB ADHSCR ;WAIT FOR CHARACTER TO

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785	003160	100375					BPL	2\$	;BE RECEIVED
787	003162	005201					INC	R1	;UPDATE RECEIVED CHARACTER COUNT
788	003164	017704	010214				MOV	2DHNR, R4	;READ CHARACTER
789	003170	020467	010776				CMP	R4, TWRD10	;IS CHARACTER CORRECT
790	003174	001406					BEQ	3\$	
791	003176	016705	010770				MOV	TWRD10, R5	; (R5)=EXPECTED CHARACTER
792	003202	005077	010200				CLR	2DHLP	;SHUT OFF AUTO ECHO
793	003206	104000					HLT	0	;CHARACTER ECHOED INCORRECTLY
794	003210	000407					BR	4\$	;RESTART TEST
795	003212	005300			3\$:		DEC	R0	;IF 64 CHARACTERS HAVE NOT
796	003214	003357					BGT	2\$	;BEEN RECEIVED, CONTINUE
797	003216	100404					SMI	4\$	
798	003220	042777	100000	010160			BIC	#100000, 2DHLP	;SHUT OFF AUTO-ECHO
799	003226	000752					BR	2\$	;GET 1 MORE CHARACTER
800	003230	104400			4\$:		SCOPE		;CHECK FOR ITERATIONS, LOOP
801									
802									;ENABLE AUTO ECHO ON LINE 11
803									;TRANSMIT ONE CHARACTER ON LINE 11
804									;AT 9600 BAUD, 8 BITS.
805									;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
806									;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
807									;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
808									
809	003232	012767	000340	174536	T12:		MOV	#340, PS	;DISABLE ALL INTERRUPTS
810	003240	012767	000100	010202			MOV	#100, ICOUNT	;SET UP FOR 100 ITERATIONS
811	003246	012767	003406	010170			MOV	#4\$, ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
812	003254	012777	004000	010120			MOV	#BIT11, 2DHSCR	;MASTER CLEAR INTERFACE
813	003262	004767	007754		1\$:		JSR	PC, CLRALL	;CLEAR ALL BYTE COUNT AN
814									;BUS ADDRESS REGISTERS
815	003266	012777	000011	010106			MOV	#11, 2DHSCR	;SELECT LINE 11
816	003274	012777	177777	010110			MOV	#-1, 2DHBC	;SET BYTE COUNT TO 1
817	003302	012777	014174	010100			MOV	#TWRD11, 2DHBA	;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
818	003310	012700	000100				MOV	#100, R0	;SET UP TO RECEIVE 64 CHARACTERS
819	003314	005001					CLR	R1	;COUNT OF CHARACTERS RECEIVED
820	003316	012777	133503	010062			MOV	#133503, 2DHLP	;SET UP SPEED FOR 9600 BAUD
821									;8 BITS PER CHARACTER,
822									;AUTO ECHO ENABLED ON LINE 11
823	003324	012777	001000	010062			MOV	#1000, 2DHBAR	;SET BAR BIT FOR LINE 11
824	003332	105777	010044		2\$:		TSTB	2DHSCR	;WAIT FOR CHARACTER TO
825	003336	100375					BPL	2\$	;BE RECEIVED
826	003340	005201					INC	R1	;UPDATE RECEIVED CHARACTER COUNT
827	003342	017704	010036				MOV	2DHNR, R4	;READ CHARACTER
828	003346	020467	010622				CMP	R4, TWRD11	;IS CHARACTER CORRECT
829	003352	001406					BEQ	3\$	
830	003354	016705	010614				MOV	TWRD11, R5	; (R5)=EXPECTED CHARACTER
831	003360	005077	010022				CLR	2DHLP	;SHUT OFF AUTO ECHO
832	003364	104000					HLT	0	;CHARACTER ECHOED INCORRECTLY
833	003366	000407					BR	4\$	;RESTART TEST
834	003370	005300			3\$:		DEC	R0	;IF 64 CHARACTERS HAVE NOT
835	003372	003357					BGT	2\$	;BEEN RECEIVED, CONTINUE
836	003374	100404					BMI	4\$	
837	003376	042777	100000	010002			BIC	#100000, 2DHLP	;SHUT OFF AUTO-ECHO
838	003404	000752					BR	2\$	;GET 1 MORE CHARACTER
839	003406	104400			4\$:		SCOPE		;CHECK FOR ITERATIONS, LOOP
840									
841									;ENABLE AUTO ECHO ON LINE 12

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842                                     ; TRANSMIT ONE CHARACTER ON LINE 12
843                                     ; AT 9600 BAUD, 8 BITS.
844                                     ; RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
845                                     ; AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
846                                     ; EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
847
848 003410 012767 000340 174360 T13: MOV #340,PS ; DISABLE ALL INTERRUPTS
849 003416 012767 000100 010024 MOV #100,ICOUNT ; SET UP FOR 100 ITERATIONS
850 003424 012767 003564 010012 MOV #4$,ESCAPE ; SET UP TO ESCAPE TO NEXT TEST
851 003432 012777 004000 007742 MOV #BIT11,JDHSCR ; MASTER CLEAR INTERFACE
852 003440 004767 007576 1$: JSR PC,CLRALL ; CLEAR ALL BYTE COUNT AN
853 ; BUS ADDRESS REGISTERS
854 003444 012777 000012 007730 MOV #12,JDHSCR ; SELECT LINE 12
855 003452 012777 177777 007732 MOV #-1,JDHBC ; SET BYTE COUNT TO 1
856 003460 012777 014176 007722 MOV #TWRD12,JDHBA ; SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
857 003466 012700 000100 MOV #100,R0 ; SET UP TO RECEIVE 64 CHARACTERS
858 003472 005001 CLR R1 ; COUNT OF CHARACTERS RECEIVED
859 003474 012777 133503 007704 MOV #133503,JDHLPR ; SET UP SPEED FOR 9600 BAUD
860 ; 8 BITS PER CHARACTER,
861 ; AUTO ECHO ENABLED ON LINE 12
862 003502 012777 002000 007704 MOV #2000,JDHBAR ; SET BAR BIT FOR LINE 12
863 003510 105777 007666 2$: TSTB JDHSCR ; WAIT FOR CHARACTER TO
864 003514 100375 BPL 2$ ; BE RECEIVED
865 003516 005201 INC R1 ; UPDATE RECEIVED CHARACTER COUNT
866 003520 017704 007660 MOV JDHNR,R4 ; READ CHARACTER
867 003524 020467 010446 CMP R4,TWRD12 ; IS CHARACTER CORRECT
868 003530 001406 BEQ 3$
869 003532 016705 010440 MOV TWRD12,R5 ; (R5)=EXPECTED CHARACTER
870 003536 005077 007644 CLR JDHLPR ; SHUT OFF AUTO ECHO
871 003542 104000 HLT 0 ; CHARACTER ECHOED INCORRECTLY
872 003544 000407 BR 4$ ; RESTART TEST
873 003546 005300 3$: DEC RC ; IF 64 CHARACTERS HAVE NOT
874 003550 003357 BGT 2$ ; BEEN RECEIVED, CONTINUE
875 003552 100404 BMI 4$
876 003554 042777 100000 007624 BIC #100000,JDHLPR ; SHUT OFF AUTO-ECHO
877 003562 000752 BR 2$ ; GET 1 MORE CHARACTER
878 003564 104400 4$: SCOPE ; CHECK FOR ITERATIONS, LOOP
879
880 ; ENABLE AUTO ECHO ON LINE 13
881 ; TRANSMIT ONE CHARACTER ON LINE 13
882 ; AT 9600 BAUD, 8 BITS.
883 ; RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
884 ; AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
885 ; EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
886
887 003566 012767 000340 174202 T14: MOV #340,PS ; DISABLE ALL INTERRUPTS
888 003574 012767 000100 007646 MOV #100,ICOUNT ; SET UP FOR 100 ITERATIONS
889 003602 012767 003742 007634 MOV #4$,ESCAPE ; SET UP TO ESCAPE TO NEXT TEST
890 003610 012777 004000 007564 MOV #BIT11,JDHSCR ; MASTER CLEAR INTERFACE
891 003616 004767 007420 1$: JSR PC,CLRALL ; CLEAR ALL BYTE COUNT AN
892 ; BUS ADDRESS REGISTERS
893 003622 012777 000013 007552 MOV #13,JDHSCR ; SELECT LINE 13
894 003630 012777 177777 007554 MOV #-1,JDHBC ; SET BYTE COUNT TO 1
895 003636 012777 014200 007544 MOV #TWRD13,JDHBA ; SET UP ADDRESS OF CHARACTER TO BE TRA' SMITTED
896 003644 012700 000100 MOV #100,R0 ; SET UP TO RECEIVE 64 CHARACTERS
897 003650 005001 CLR R1 ; COUNT OF CHARACTERS RECEIVED

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898	003652	012777	133503	007526		MOV	#133503, @DHLPR	; SET UP SPEED FOR 9600 BAUD
899								; 8 BITS PER CHARACTER,
900								; AUTO ECHO ENABLED ON LINE 13
901	003660	012777	004000	007526		MOV	#4000, @DHBAR	; SET BAR BIT FOR LINE 13
902	003666	105777	007510		2\$:	TSTB	@DHSCR	; WAIT FOR CHARACTER TO
903	003672	100375				BPL	2\$	; BE RECEIVED
904	003674	005201				INC	R1	; UPDATE RECEIVED CHARACTER COUNT
905	003676	017704	007502			MOV	@DHNRC, R4	; READ CHARACTER
906	003702	020467	010272			CMP	R4, TWRD13	; IS CHARACTER CORRECT
907	003706	001406				BEQ	3\$	
908	003710	016705	010264			MOV	TWRD13, R5	; (R5)=EXPECTED CHARACTER
909	003714	005077	007466			CLR	@DHLPR	; SHUT OFF AUTO ECHO
910	003720	104000				HLT	0	; CHARACTER ECHOED INCORRECTLY
911	003722	000407				BR	4\$	; RESTART TEST
912	003724	005300			3\$:	DEC	R0	; IF 64 CHARACTERS HAVE NOT
913	003726	003357				BGT	2\$	; BEEN RECEIVED, CONTINUE
914	003730	100404				BMI	4\$	
915	003732	042777	100000	007446		BIC	#100000, @DHLPR	; SHUT OFF AUTO-ECHO
916	003740	000752				BR	2\$	; GET 1 MORE CHARACTER
917	003742	104400			4\$:	SCOPE		; CHECK FOR ITERATIONS, LOOP
918								
919								; ENABLE AUTO ECHO ON LINE 14
920								; TRANSMIT ONE CHARACTER ON LINE 14
921								; AT 9600 BAUD, 8 BITS.
922								; RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
923								; AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
924								; EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
925								
926	003744	012767	000340	174024	T15:	MOV	#340, PS	; DISABLE ALL INTERRUPTS
927	003752	012767	000100	007470		MOV	#100, ICOUNT	; SET UP FOR 100 ITERATIONS
928	003760	012767	004120	007456		MOV	#4\$, ESCAPE	; SET UP TO ESCAPE TO NEXT TEST
929	003766	012777	004000	007406		MOV	#BIT11, @DHSCR	; MASTER CLEAR INTERFACE
930	003774	004767	007242		1\$:	JSR	PC, CLRALL	; CLEAR ALL BYTE COUNT AN
931								; BUS ADDRESS REGISTERS
932	004000	012777	000014	007374		MOV	#14, @DHSCR	; SELECT LINE 14
933	004006	012777	177777	007376		MOV	#-1, @DHBC	; SET BYTE COUNT TO 1
934	004014	012777	014202	007366		MOV	#TWRD14, @DHBA	; SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
935	004022	012700	000100			MOV	#100, R0	; SET UP TO RECEIVE 64 CHARACTERS
936	004026	005001				CLR	R1	; COUNT OF CHARACTERS RECEIVED
937	004030	012777	133503	007350		MOV	#133503, @DHLPR	; SET UP SPEED FOR 9600 BAUD
938								; 8 BITS PER CHARACTER,
939								; AUTO ECHO ENABLED ON LINE 14
940	004036	012777	010000	007350		MOV	#10000, @DHBAR	; SET BAR BIT FOR LINE 14
941	004044	105777	007332		2\$:	TSTB	@DHSCR	; WAIT FOR CHARACTER TO
942	004050	100375				BPL	2\$	; BE RECEIVED
943	004052	005201				INC	R1	; UPDATE RECEIVED CHARACTER COUNT
944	004054	017704	007324			MOV	@DHNRC, R4	; READ CHARACTER
945	004060	020467	010116			CMP	R4, TWRD14	; IS CHARACTER CORRECT
946	004064	001406				BEQ	3\$	
947	004066	016705	010110			MOV	TWRD14, R5	; (R5)=EXPECTED CHARACTER
948	004072	005077	007310			CLR	@DHLPR	; SHUT OFF AUTO ECHO
949	004076	104000				HLT	0	; CHARACTER ECHOED INCORRECTLY
950	004100	000407				BR	4\$	; RESTART TEST
951	004102	005300			3\$:	DEC	R0	; IF 64 CHARACTERS HAVE NOT
952	004104	003357				BGT	2\$	; BEEN RECEIVED, CONTINUE
953	004106	100404				BMI	4\$	

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954 004110 042777 100000 007270      BIC      #100000,2DHLP      ;SHUT OFF AUTO-ECHO
955 004116 000752                      BR        25                ;GET 1 MORE CHARACTER
956 004120 104400                      4$:      SCOPE              ;CHECK FOR ITERATIONS, LOOP
957
958                      ;ENABLE AUTO ECHO ON LINE 15
959                      ;TRANSMIT ONE CHARACTER ON LINE 15
960                      ;AT 9600 BAUD, 8 BITS.
961                      ;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
962                      ;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
963                      ;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
964
965 004122 012767 000340 173646 T16:  MOV      #340,PS            ;DISABLE ALL INTERRUPTS
966 004130 012767 000100 007312      MOV      #100,ICOUNT       ;SET UP FOR 100 ITERATIONS
967 004136 012767 004276 007300      MOV      #4$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
968 004144 012777 004000 007230      MOV      #BIT11,2DHSCR    ;MASTER CLEAR INTERFACE
969 004152 004767 007064                      1$:      JSR        PC,CLRALL   ;CLEAR ALL BYTE COUNT AN
970                      ;BUS ADDRESS REGISTERS
971 004156 012777 000015 007216      MOV      #15,2DHSCR       ;SELECT LINE 15
972 004164 012777 177777 007220      MOV      #-1,2DHBC        ;SET BYTE COUNT TO 1
973 004172 012777 014204 007210      MOV      #TWRD15,2DHBA    ;SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
974 004200 012700 000100                      MOV      #100,RO         ;SET UP TO RECEIVE 64 CHARACTERS
975 004204 005001                      CLR      R1                ;COUNT OF CHARACTERS RECEIVED
976 004206 012777 133503 007172      MOV      #133503,2DHLP    ;SET UP SPEED FOR 9600 BAUD
977                      ;8 BITS PER CHARACTER,
978                      ;AUTO ECHO ENABLED ON LINE 15
979 004214 012777 020000 007172      MOV      #20000,2DHBAR    ;SET BAR BIT FOR LINE 15
980 004222 105777 007154                      2$:      TSTB      2DHSCR       ;WAIT FOR CHARACTER TO
981 004226 100375                      BPL      25                ;BE RECEIVED
982 004230 005201                      INC      R1                ;UPDATE RECEIVED CHARACTER COUNT
983 004232 017704 007146                      MOV      2DHNRC,R4        ;READ CHARACTER
984 004236 020467 007742                      CMP      R4,TWRD15        ;IS CHARACTER CORRECT
985 004242 001406                      BEQ      3$                ;
986 004244 016705 007734                      MOV      TWRD15,R5        ;(R5)=EXPECTED CHARACTER
987 004250 005077 007132                      CLR      2DHLP           ;SHUT OFF AUTO ECHO
988 004254 104000                      HLT      0                ;CHARACTER ECHOED INCORRECTLY
989 004256 000407                      BR        4$                ;RESTART TEST
990 004260 005300                      3$:      DEC      RO            ;IF 64 CHARACTERS HAVE NOT
991 004262 003357                      BGT      25                ;BEEN RECEIVED, CONTINUE
992 004264 100404                      BMI      4$                ;
993 004266 042777 100000 007112      BIC      #100000,2DHLP    ;SHUT OFF AUT -ECHO
994 004274 000752                      BR        25                ;GET 1 MORE CHARACTER
995 004276 104400                      4$:      SCOPE              ;CHECK FOR ITERATIONS, LOOP
996
997                      ;ENABLE AUTO ECHO ON LINE 16
998                      ;TRANSMIT ONE CHARACTER ON LINE 16
999                      ;AT 9600 BAUD, 8 BITS.
1000                      ;RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
1001                      ;AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
1002                      ;EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
1003
1004 004300 012767 000340 173470 T17:  MOV      #340,PS            ;DISABLE ALL INTERRUPTS
1005 004306 012767 000100 007134      MOV      #100,ICOUNT       ;SET UP FOR 100 ITERATIONS
1006 004314 012767 004454 007122      MOV      #4$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
1007 004322 012777 004000 007052      MOV      #BIT11,2DHSCR    ;MASTER CLEAR INTERFACE
1008 004330 004767 006706                      1$:      JSR        PC,CLRALL   ;CLEAR ALL BYTE COUNT AN
1009                      ;BUS ADDRESS REGISTERS

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1010	004334	012777	000016	007040		MOV	#16, @DHSCR	; SELECT LINE 16
1011	004342	012777	177777	007042		MOV	#-1, @DHBC	; SET BYTE COUNT TO 1
1012	004350	012777	014206	007032		MOV	#TWRD16, @DHBA	; SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
1013	004356	012700	000100			MOV	#100, R0	; SET UP TO RECEIVE 64 CHARACTERS
1014	004362	005001				CLR	R1	; COUNT OF CHARACTERS RECEIVED
1015	004364	012777	133503	007014		MOV	#133503, @DHLPR	; SET UP SPEED FOR 5500 BAUD
1016								; 8 BITS PER CHARACTER,
1017								; AUTO ECHO ENABLED ON LINE 16
1018	004372	012777	040000	007014		MOV	#40000, @DHBAR	; SET BAR BIT FOR LINE 16
1019	004400	105777	006776		2\$:	TSTB	@DHSCR	; WAIT FOR CHARACTER TO
1020	004404	100375				BPL	2\$	; BE RECEIVED
1021	004406	005201				INC	R1	; UPDATE RECEIVED CHARACTER COUNT
1022	004410	017704	006770			MOV	@DHNR, R4	; READ CHARACTER
1023	004414	020467	007566			CMP	R4, TWRD16	; IS CHARACTER CORRECT
1024	004420	001406				BEQ	3\$	
1025	004422	016705	007560			MOV	TWRD16, R5	; (R5)=EXPECTED CHARACTER
1026	004426	005077	006754			CLR	@DHLPR	; SHUT OFF AUTO ECHO
1027	004432	104000				HLT	0	; CHARACTER ECHOED INCORRECTLY
1028	004434	000407				BR	4\$	; RESTART TEST
1029	004436	005300			3\$:	DEC	R0	; IF 64 CHARACTERS HAVE NOT
1030	004440	003357				BGT	2\$	; BEEN RECEIVED, CONTINUE
1031	004442	100404				BMI	4\$	
1032	004444	042777	100000	006734		BIC	#100000, @DHLPR	; SHUT OFF AUTO-ECHO
1033	004452	000752				BR	2\$	; GET 1 MORE CHARACTER
1034	004454	104400			4\$:	SCOPE		; CHECK FOR ITERATIONS, LOOP
1035								
1036								; ENABLE AUTO ECHO ON LINE 17
1037								; TRANSMIT ONE CHARACTER ON LINE 17
1038								; AT 9600 BAUD, 8 BITS.
1039								; RECEIVE AND VERIFY CHARACTERS UNTIL 64 HAVE BEEN RECEIVED.
1040								; AFTER 64 CHARACTERS HAVE BEEN RECEIVED, DISABLE AUTO ECHO.
1041								; EXACTLY ONE MORE CHARACTER SHOULD BE RECEIVED.
1042								
1043	004456	012767	000340	173312	T20:	MOV	#340, PS	; DISABLE ALL INTERRUPTS
1044	004464	012767	000100	006756		MOV	#100, ICOUNT	; SET UP FOR 100 ITERATIONS
1045	004472	012767	004632	006744		MOV	#4\$, ESCAPE	; SET UP TO ESCAPE TO NEXT TEST
1046	004500	012777	004000	006674		MOV	#BIT11, @DHSCR	; MASTER CLEAR INTERFACE
1047	004506	004767	006530		1\$:	JSR	PC, CLRALL	; CLEAR ALL BYTE COUNT AN
1048								; BUS ADDRESS REGISTERS
1049	004512	012777	000017	006662		MOV	#17, @DHSCR	; SELECT LINE 17
1050	004520	012777	177777	006664		MOV	#-1, @DHBC	; SET BYTE COUNT TO 1
1051	004526	012777	014210	006654		MOV	#TWRD17, @DHBA	; SET UP ADDRESS OF CHARACTER TO BE TRANSMITTED
1052	004534	012700	000100			MOV	#100, R0	; SET UP TO RECEIVE 64 CHARACTERS
1053	004540	005001				CLR	R1	; COUNT OF CHARACTERS RECEIVED
1054	004542	012777	133503	006636		MOV	#133503, @DHLPR	; SET UP SPEED FOR 9600 BAUD
1055								; 8 BITS PER CHARACTER,
1056								; AUTO ECHO ENABLED ON LINE 17
1057	004550	012777	100000	006636		MOV	#100000, @DHBAR	; SET BAR BIT FOR LINE 17
1058	004556	105777	006620		2\$:	TSTB	@DHSCR	; WAIT FOR CHARACTER TO
1059	004562	100375				BPL	2\$	; BE RECEIVED
1060	004564	005201				INC	R1	; UPDATE RECEIVED CHARACTER COUNT
1061	004566	017704	006612			MOV	@DHNR, R4	; READ CHARACTER
1062	004572	020467	007412			CMP	R4, TWRD17	; IS CHARACTER CORRECT
1063	004576	001406				BEQ	3\$	
1064	004600	016705	007404			MOV	TWRD17, R5	; (R5)=EXPECTED CHARACTER
1065	004604	005077	006576			CLR	@DHLPR	; SHUT OFF AUTO ECHO

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1066	004610	104000				HLT	0		; CHARACTER ECHOED INCORRECTLY
1067	004612	000407				BR	4\$		; RESTART TEST
1068	004614	005300			3\$:	DEC	R0		; IF 64 CHARACTERS HAVE NOT
1069	004616	003357				BGT	2\$		; BEEN RECEIVED, CONTINUE
1070	004620	100404				BMI	4\$		
1071	004622	042777	100000	006556		BIC	#100000, @DHLPR		; SHUT OFF AUTO-ECHG
1072	004630	000752				BR	2\$		; GET 1 MORE CHARACTER
1073	004632	104400			4\$:	SCOPE			; CHECK FOR ITERATIONS, LOOP
1074									
1075									; TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 0
1076									; TRANSMIT 1 CHARACTER ON LINE 0 WITH AUTO ECHO ENABLED
1077									; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1078									; CHARACTER LENGTH IS 8 BITS
1079									; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1080									
1081	004634	012767	000340	173134	T21:	MOV	#340, PS		; DISABLE ALL INTERRUPTS
1082	004642	012767	000010	006600		MOV	#10, ICOUNT		; SET UP FOR 10 ITERATIONS
1083	004650	012767	005070	006566		MOV	#55, ESCAPE		; SET UP TO ESCAPE TO NEXT TEST
1084	004656	012777	004000	006516		MOV	#BIT11, @DHSCR		; MASTER CLEAR INTERFACE
1085	004664	004767	006400			JSR	PC, SETALL		; SET UP ALL LINES TO TRANSMIT
1086									; 400 (OCTAL) CHARACTERS
1087	004670	012777	000000	006504		MOV	#0, @DHSCR		; SELECT LINE 0 FOR TESTING
1088	004676	012777	014152	006504		MOV	#TWRD0, @DHBA		; CHARACTER TO BE TRANSMITTED
1089									; ON LINE 0 IN AUTO ECHO MODE
1090	004704	012777	177777	006500		MOV	#-1, @DHBC		; TRANSMIT ONLY 1 CHARACTER ON LINE 0
1091	004712	012777	133503	006466		MOV	#133503, @DHLPR		; SET AUTO ECHO FOR LINE 0
1092	004720	042767	000001	006556		BIC	#1, LINACT		; CLEAR LINE ACTIVE BIT
1093	004726	012777	177777	006460		MOV	#-1, @DHBAR		; SET BAR BITS FOR ALL LINES
1094	004734	005000				CLR	R0		; KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1095	004736	017704	006442		1\$:	MOV	@DHNRC, R4		; GET A CHARACTER FROM SILO
1096	004742	100375				BPL	1\$		; IF NOT VALID DATA, TRY AGAIN
1097	004744	010403				MOV	R4, R3		; EXTRACT LINE NUMBER FORM CHARACTER
1098	004746	000303				SWAB	R3		
1099	004750	042703	177760			BIC	#177760, R3		; CLEAR STATUS BITS
1100	004754	010302				MOV	R3, R2		
1101	004756	006302				ASL	R2		
1102	004760	020327	000000			CMP	R3, #0		; IF LINE NUMBER IS 0
1103	004764	001432				BEQ	4\$		; CHECK FOR CORRECT ECHOED CHARACTER
1104	004766	026204	014110			CMP	RBUF(R2), R4		; IF NOT LINE 0, CHECK DATA
1105	004772	001404				BEQ	2\$		
1106	004774	016205	014110			MOV	RBUF(R2), R5		; (R5)=EXPECTED NON ECHOED DATA
1107	005000	104001				HLT	1		; NON ECHOED DATA ERROR
1108	005002	000423				BR	4\$		
1109	005004	105262	014110		2\$:	INCB	RBUF(R2)		; UPDATE EXPECTED RECEIVED DATA
1110	005010	001352				BNE	1\$		; CONTINUE IF NOT DONE
1111	005012	046267	014312	006464		BIC	LINBIT(R2), LINACT		; CLEAR ACTIVE BIT
1112	005020	005767	006460		3\$:	TST	LINACT		; IF ALL LINES ARE DONE
1113	005024	001344				BNE	1\$		; EXIT
1114	005026	012777	000000	006346		MOV	#0, @DHSCR		; SELECT LINE 0
1115	005034	042777	100000	006344		BIC	#100000, @DHLPR		; CLEAR AUTO ECHO FOR LINE 0
1116	005042	105777	006354			TSTB	@DHSLR		; GET REST OF CHARACTERS
1117	005046	001333				BNE	1\$		; AND CHECK
1118	005050	000407				BR	5\$		
1119	005052	005200			4\$:	INC	R0		; UPDATE ECHOED CHARACTER COUNT
1120	005054	020467	007072			CMP	R4, TWRD0		; CHECK ECHOED DATA
1121	005060	001757				BEQ	3\$		



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1122 005062 016705 007064      MOV      TWRD0,R5      ;(R5)=EXPECTED ECHOED DATA
1123 005066 104002      HLT      2            ;ECHOED DATA ERROR
1124 005070 104400      5$:      SCOPE        ;CHECK FOR ITERATIONS, LOOP
1125
1126      ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 1
1127      ;TRANSMIT 1 CHARACTER ON LINE 1 WITH AUTO ECHO ENABLED
1128      ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1129      ;CHARACTER LENGTH IS 8 BITS
1130      ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1131
1132 005072 012767 000340 172676 T22:    MOV      #340,P5      ;DISABLE ALL INTERRUPTS
1133 005100 012767 000010 006342    MOV      #10,ICOUNT   ;SET UP FOR 10 ITERATIONS
1134 005106 012767 005326 006330    MOV      #5$,ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1135 005114 012777 004000 006260    MOV      #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1136 005122 004767 006142      JSR      PC,SETALL    ;SET UP ALL LINES TO TRANSMIT
1137      ;400 (OCTAL) CHARACTERS
1138 005126 012777 000001 006246    MOV      #1,JDHSCR    ;SELECT LINE 1 FOR TESTING
1139 005134 012777 014154 006246    MOV      #TWRD1,JDHBA ;CHARACTER TO BE TRANSMITTED
1140      ;ON LINE 1 IN AUTO ECHO MODE
1141 005142 012777 177777 006242    MOV      #-1,JDHBC    ;TRANSMIT ONLY 1 CHARACTER ON LINE 1
1142 005150 012777 133503 006230    MOV      #133503,JDHLPR ;SET AUTO ECHO FOR LINE 1
1143 005156 042767 000002 006320    BIC      #2,LINACT    ;CLEAR LINE ACTIVE BIT
1144 005164 012777 177777 006222    MOV      #-1,JDHBAR   ;SET BAR BITS FOR ALL LINES
1145 005172 005000      CLR      R0          ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1146 005174 017704 006204      1$:      MOV      JDHNR0,R4   ;GET A CHARACTER FROM SILO
1147 005200 100375      BPL      1$         ;IF NOT VALID DATA, TRY AGAIN
1148 005202 010403      MOV      R4,R3      ;EXTRACT LINE NUMBER FORM CHARACTER
1149 005204 000303      SWAB     R3
1150 005206 042703 177760      BIC      #177760,R3  ;CLEAR STATUS BITS
1151 005212 010302      MOV      R3,R2
1152 005214 006302      ASL      R2
1153 005216 020327 000001      CMP      R3,#1      ;IF LINE NUMBER IS 1
1154 005222 001432      BEQ      4$         ;CHECK FOR CORRECT ECHOED CHARACTER
1155 005224 026204 014110      CMP      RBUF(R2),R4 ;IF NOT LINE 1, CHECK DATA
1156 005230 001404      BEQ      2$
1157 005232 016205 014110      MOV      RBUF(R2),R5 ;(R5)=EXPECTED NON ECHOED DATA
1158 005236 104001      HLT      1          ;NON ECHOED DATA ERROR
1159 005240 000423      BR       4$
1160 005242 105262 014110      2$:      INCB     RBUF(R2)   ;UPDATE EXPECTED RECEIVED DATA
1161 005246 001352      BNE      1$         ;CONTINUE IF NOT DONE
1162 005250 046267 014312 006226    BIC      LINBIT(R2),LINACT ;CLEAR ACTIVE BIT
1163 005256 005767 006222      3$:      TST      LINACT     ;IF ALL LINES ARE DONE
1164 005262 001344      BNE      1$         ;EXIT
1165 005264 012777 000001 006110    MOV      #1,JDHSCR   ;SELECT LINE 1
1166 005272 042777 100000 006106    BIC      #100000,JDHLPR ;CLEAR AUTO ECHO FOR LINE 1
1167 005300 105777 006116      TSTB    JDHSLR      ;GET REST OF CHARACTERS
1168 005304 001333      BNE      1$         ;AND CHECK
1169 005306 000407      BR       5$
1170 005310 005200      4$:      INC      R0          ;UPDATE ECHOED CHARACTER COUNT
1171 005312 020467 006636      CMP      R4,TWRD1   ;CHECK ECHOED DATA
1172 005316 001757      BEQ      3$
1173 005320 016705 006630      MOV      TWRD1,R5   ;(R5)=EXPECTED ECHOED DATA
1174 005324 104002      HLT      2          ;ECHOED DATA ERROR
1175 005326 104400      5$:      SCOPE        ;CHECK FOR ITERATIONS, LOOP
1176
1177      ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 2

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# M02

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1178 ; TRANSMIT 1 CHARACTER ON LINE 2 WITH AUTO ECHO ENABLED
1179 ; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1180 ; CHARACTER LENGTH IS 8 BITS
1181 ; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1182
1183 005330 012767 000340 172440 T23: MOV #340,PS ;DISABLE ALL INTERRUPTS
1184 005336 012767 000010 006104 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
1185 005344 012767 005564 006072 MOV #5$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1186 005352 012777 004009 006022 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
1187 005360 004767 005704 JSR PC,SETALL ;SET UP ALL LINES TO TRANSMIT
1188 ; 400 (OCTAL) CHARACTERS
1189 005364 012777 000002 006010 MOV #2,ADHSCR ;SELECT LINE 2 FOR TESTING
1190 005372 012777 014156 006010 MOV #TWRD2,ADHBA ;CHARACTER TO BE TRANSMITTED
1191 ; ON LINE 2 IN AUTO ECHO MODE
1192 005400 012777 177777 006004 MOV #-1,ADHBC ;TRANSMIT ONLY 1 CHARACTER ON LINE 2
1193 005406 012777 133503 005772 MOV #133503,ADHLPR ;SET AUTO ECHO FOR LINE 2
1194 005414 042767 000004 006062 BIC #4,LINACT ;CLEAR LINE ACTIVE BIT
1195 005422 012777 177777 005764 MOV #-1,ADHBAR ;SET BAR BITS FOR ALL LINES
1196 005430 005000 CLR RO ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1197 005432 017704 005746 1$: MOV ADHNR, R4 ;GET A CHARACTER FROM SILO
1198 005436 100375 BPL 1$ ;IF NOT VALID DATA, TRY AGAIN
1199 005440 010403 MOV R4, R3 ;EXTRACT LINE NUMBER FORM CHARACTER
1200 005442 000303 SWAB R3
1201 005444 042703 177760 BIC #177760, R3 ;CLEAR STATUS BITS
1202 005450 010302 MOV R3, R2
1203 005452 006302 ASL R2
1204 005454 020327 000002 CMP R3, #2 ;IF LINE NUMBER IS 2
1205 005460 001432 BEQ 4$ ;CHECK FOR CORRECT ECHOED CHARACTER
1206 005462 026204 014110 CMP RBUF(R2), R4 ;IF NOT LINE 2, CHECK DATA
1207 005466 001404 BEQ 2$
1208 005470 016205 014110 MOV RBUF(R2), R5 ;(R5)=EXPECTED NON ECHOED DATA
1209 005474 104001 HLT 1 ;NON ECHOED DATA ERROR
1210 005476 000423 BR 4$
1211 005500 105262 014110 2$: INCB RBUF(R2) ;UPDATE EXPECTED RECEIVED DATA
1212 005504 001352 BNE 1$ ;CONTINUE IF NOT DONE
1213 005506 046267 014312 005770 BIC LINBIT(R2), LINACT ;CLEAR ACTIVE BIT
1214 005514 005767 005764 3$: TST LINACT ;IF ALL LINES ARE DONE
1215 005520 001344 BNE 1$ ;EXIT
1216 005522 012777 000002 005652 MOV #2,ADHSCR ;SELECT LINE 2
1217 005530 042777 100000 005650 BIC #100000,ADHLPR ;CLEAR AUTO ECHO FOR LINE 2
1218 005536 105777 005660 TSTB ADHSLR ;GET REST OF CHARACTERS
1219 005542 001333 BNE 1$ ;AND CHECK
1220 005544 000407 BR 5$
1221 005546 005200 4$: INC RO ;UPDATE ECHOED CHARACTER COUNT
1222 005550 020467 006402 CMP R4, TWRD2 ;CHECK ECHOED DATA
1223 005554 001757 BEQ 3$
1224 005556 016705 006374 MOV TWRD2, R5 ;(R5)=EXPECTED ECHOED DATA
1225 005562 104002 HLT 2 ;ECHOED DATA ERROR
1226 005564 104400 5$: SCOPE ;CHECK FOR ITERATIONS, LOOP
1227
1228 ; TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 3
1229 ; TRANSMIT 1 CHARACTER ON LINE 3 WITH AUTO ECHO ENABLED
1230 ; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1231 ; CHARACTER LENGTH IS 8 BITS
1232 ; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1233

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1234 005566 012767 000340 172202 T24:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
1235 005574 012767 000010 005646      MOV    #10,I'COUNT      ;SET UP FOR 10 ITERATIONS
1236 005602 012767 006022 005634      MOV    #5$,ESCAPE        ;SET UP TO ESCAPE TO NEXT TEST
1237 005610 012777 004000 005564      MOV    #BIT11,ADHSCR     ;MASTER CLEAR INTERFACE
1238 005616 004767 005446      JSR    PC,SETALL        ;SET UP ALL LINES TO TRANSMIT
1239                                     ;400 (OCTAL) CHARACTERS
1240 005622 012777 000003 005552      MOV    #3,ADHSCR        ;SELECT LINE 3 FOR TESTING
1241 005630 012777 014160 005552      MOV    #TWRD3,ADHBA     ;CHARACTER TO BE TRANSMITTED
1242                                     ;ON LINE 3 IN AUTO ECHO MODE
1243 005636 012777 177777 005546      MOV    #-1,ADHBC        ;TRANSMIT ONLY 1 CHARACTER ON LINE 3
1244 005644 012777 133503 005534      MOV    #133503,ADHLPR   ;SET AUTO ECHO FOR LINE 3
1245 005652 042767 000010 005624      BIC    #10,LINACT       ;CLEAR LINE ACTIVE BIT
1246 005660 012777 177777 005526      MOV    #-1,ADHBAR       ;SET BAR BITS FOR ALL LINES
1247 005666 005000                CLR    R0               ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1248 005670 017704 005510      1$:  MOV    ADHNR0,R4        ;GET A CHARACTER FROM SILO
1249 005674 100375                BPL    1$               ;IF NOT VALID DATA, TRY AGAIN
1250 005676 010403                MOV    R4,R3           ;EXTRACT LINE NUMBER FORM CHARACTER
1251 005700 000303                SWAB   R3
1252 005702 042703 177760      BIC    #177760,R3       ;CLEAR STATUS BITS
1253 005706 010302                MOV    R3,R2
1254 005710 006302                ASL    R2
1255 005712 020327 000003      CMP    R3,#3           ;IF LINE NUMBER IS 3
1256 005716 001432                BEQ    4$               ;CHECK FOR CORRECT ECHOED CHARACTER
1257 005720 026204 014110      CMP    RBUF(R2),R4     ;IF NOT LINE 3. CHECK DATA
1258 005724 001404                BEQ    2$
1259 005726 016205 014110      MOV    RBUF(R2),R5     ;(R5)=EXPECTED NON ECHOED DATA
1260 005732 104001                HLT    1               ;NON ECHOED DATA ERROR
1261 005734 000423                BR     4$
1262 005736 105262 014110      2$:  INCB  RBUF(R2)       ;UPDATE EXPECTED RECEIVED DATA
1263 005742 001352                BNE    1$               ;CONTINUE IF NOT DONE
1264 005744 046267 014312 005532      BIC    LINBIT(R2),LINACT ;CLEAR ACTIVE BIT
1265 005752 005767 005526      3$:  TST   LINACT          ;IF ALL LINES ARE DONE
1266 005756 001344                BNE    1$               ;EXIT
1267 005760 012777 000003 005414      MOV    #3,ADHSCR       ;SELECT LINE 3
1268 005766 042777 100000 005412      BIC    #100000,ADHLPR  ;CLEAR AUTO ECHO FOR LINE 3
1269 005774 105777 005422      TSTB  ADHSLR          ;GET REST OF CHARACTERS
1270 006000 001333                BNE    1$               ;AND CHECK
1271 006002 000407                BR     5$
1272 006004 005200                4$:  INC   R0             ;UPDATE ECHOED CHARACTER COUNT
1273 006006 020467 006146      CMP    R4,TWRD3        ;CHECK ECHOED DATA
1274 006012 001757                BEQ    3$
1275 006014 016705 006140      MOV    TWRD3,R5       ;(R5)=EXPECTED ECHOED DATA
1276 006020 104002                HLT    2               ;ECHOED DATA ERROR
1277 006022 104400                5$:  SCOPE                ;CHECK FOR ITERATIONS, LOOP
1278
1279                                     ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 4
1280                                     ;TRANSMIT 1 CHARACTER ON LINE 4 WITH AUTO ECHO ENABLED
1281                                     ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1282                                     ;CHARACTER LENGTH IS 8 BITS
1283                                     ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1284
1285 006024 012767 000340 171744 T25:  MOV    #340,PS           ;DISABLE ALL INTERRUPTS
1286 006032 012767 000010 005410      MOV    #10,I'COUNT      ;SET UP FOR 10 ITERATIONS
1287 006040 012767 006260 005376      MOV    #5$,ESCAPE        ;SET UP TO ESCAPE TO NEXT TEST
1288 006046 012777 004000 005326      MOV    #BIT11,ADHSCR     ;MASTER CLEAR INTERFACE
1289 006054 004767 005210      JSR    PC,SETALL        ;SET UP ALL LINES TO TRANSMIT

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# B03

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1290
1291 006060 012777 000004 005314 MOV #4,JDHSCR ;400 (OCTAL) CHARACTERS
1292 006066 012777 014162 005314 MOV #TWRD4,JDHBA ;SELECT LINE 4 FOR TESTING
1293
1294 006074 012777 177777 005310 MOV #-1,JDHBC ;ON LINE 4 IN AUTO ECHO MODE
1295 006102 012777 133503 005276 MOV #133503,JDHLPR ;TRANSMIT ONLY 1 CHARACTER ON LINE 4
1296 006110 042767 000020 005366 BIC #20,LINACT ;SET AUTO ECHO FOR LINE 4
1297 006116 012777 177777 005270 MOV #-1,JDHBAR ;CLEAR LINE ACTIVE BIT
1298 006124 005000 CLR R0 ;SET BAR BITS FOR ALL LINES
1299 006126 017704 005252 18: MOV JDHNR, R4 ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1300 006132 100375 BPL 15 ;GET A CHARACTER FROM SILO
1301 006134 010403 MOV R4, R3 ;IF NOT VALID DATA, TRY AGAIN
1302 006136 000303 SWAB R3 ;EXTRACT LINE NUMBER FROM CHARACTER
1303 006140 042703 177760 BIC #177760, R3 ;CLEAR STATUS BITS
1304 006144 010302 MOV R3, R2
1305 006146 006302 ASL R2
1306 006150 020327 000004 CMP R3, #4 ;IF LINE NUMBER IS 4
1307 006154 001432 BEQ 45 ;CHECK FOR CORRECT ECHOED CHARACTER
1308 006156 026204 014110 CMP RBUF(R2), R4 ;IF NOT LINE 4, CHECK DATA
1309 006162 001404 BEQ 25
1310 006164 016205 014110 MOV RBUF(R2), R5 ;(R5)=EXPECTED NON ECHOED DATA
1311 006170 104001 HLT 1 ;NON ECHOED DATA ERROR
1312 006172 000423 BR 45
1313 006174 105262 014110 25: INCB RBUF(R2) ;UPDATE EXPECTED RECEIVED DATA
1314 006200 001352 BNE 15 ;CONTINUE IF NOT DONE
1315 006202 046267 014312 005274 BIC LINBIT(R2), LINACT ;CLEAR ACTIVE BIT
1316 006210 005767 005270 35: TST LINACT ;IF ALL LINES ARE DONE
1317 006214 001344 BNE 15 ;EXIT
1318 006216 012777 000004 005156 MOV #4,JDHSCR ;SELECT LINE 4
1319 006224 042777 100000 005154 BIC #100000,JDHLPR ;CLEAR AUTO ECHO FOR LINE 4
1320 006232 105777 005164 TSTB JDHSLR ;GET REST OF CHARACTERS
1321 006236 001333 BNE 15 ;AND CHECK
1322 006240 000407 BR 55
1323 006242 005200 45: INC R0 ;UPDATE ECHOED CHARACTER COUNT
1324 006244 020467 005712 CMP R4, TWRD4 ;CHECK ECHOED DATA
1325 006250 001757 BEQ 35
1326 006252 016705 005704 MOV TWRD4, R5 ;(R5)=EXPECTED ECHOED DATA
1327 006256 104002 HLT 2 ;ECHOED DATA ERROR
1328 006260 104403 55: SCOPE ;CHECK FOR ITERATIONS, LOOP
1329
1330 ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 5
1331 ;TRANSMIT 1 CHARACTER ON LINE 5 WITH AUTO ECHO ENABLED
1332 ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1333 ;CHARACTER LENGTH IS 8 BITS
1334 ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1335
1336 006262 012767 000340 171506 T26: MOV #340, PS ;DISABLE ALL INTERRUPTS
1337 006270 012767 000010 005152 MOV #10, ICOUNT ;SET UP FOR 10 ITERATIONS
1338 006276 012767 006516 005140 MOV #55, ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1339 006304 012777 004000 005070 MOV #BIT11, JDHSCR ;MASTER CLEAR INTERFACE
1340 006312 004767 004752 JSR PC, SETALL ;SET UP ALL LINES TO TRANSMIT
1341 ;400 (OCTAL) CHARACTERS
1342 006316 012777 000005 005056 MOV #5, JDHSCR ;SELECT LINE 5 FOR TESTING
1343 006324 012777 014164 005056 MOV #TWRD5, JDHBA ;CHARACTER TO BE TRANSMITTED
1344 ;ON LINE 5 IN AUTO ECHO MODE
1345 006332 012777 177777 005052 MOV #-1, JDHBC ;TRANSMIT ONLY 1 CHARACTER ON LINE 5

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1346 006340 012777 133503 005040      MOV      #133503, @DHLPR      ;SET AUTO ECHO FOR LINE 5
1347 006346 042767 000040 005130      BIC      #40, LINACT      ;CLEAR LINE ACTIVE BIT
1348 006354 012777 177777 005032      MOV      #-1, @DHBAR      ;SET BAR BITS FOR ALL LINES
1349 006362 005000      CLR      R0      ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1350 006364 017704 005014      15:     MOV      @DHNRC, R4      ;GET A CHARACTER FROM SILO
1351 006370 100375      BPL      15      ;IF NOT VALID DATA, TRY AGAIN
1352 006372 010403      MOV      R4, R3      ;EXTRACT LINE NUMBER FORM CHARACTER
1353 006374 000303      SWAB     R3
1354 006376 042703 177760      BIC      #177760, R3      ;CLEAR STATUS BITS
1355 006402 010302      MOV      R3, R2
1356 006404 006302      ASL      R2
1357 006406 020327 000005      CMP      R3, #5      ;IF LINE NUMBER IS 5
1358 006412 001432      BEQ      45      ;CHECK FOR CORRECT ECHOED CHARACTER
1359 006414 026204 014110      CMP      RBUF(R2), R4      ;IF NOT LINE 5, CHECK DATA
1360 006420 001404      BEQ      25
1361 006422 016205 014110      MOV      RBUF(R2), R5      ;(R5)=EXPECTED NON ECHOED DATA
1362 006426 104001      HLT      1      ;NON ECHOED DATA ERROR
1363 006430 000423      BR       45
1364 006432 105262 014110      25:     INCB     RBUF(R2)      ;UPDATE EXPECTED RECEIVED DATA
1365 006436 001352      BNE      15      ;CONTINUE IF NOT DONE
1366 006440 046267 014312 005036      BIC      LINBIT(R2), LINACT      ;CLEAR ACTIVE BIT
1367 006446 005767 005032      35:     TST      LINACT      ;IF ALL LINES ARE DONE
1368 006452 001344      BNE      15      ;EXIT
1369 006454 012777 000005 004720      MOV      #5, @DHSCR      ;SELECT LINE 5
1370 006462 042777 100000 004716      BIC      #100000, @DHLPR      ;CLEAR AUTO ECHO FOR LINE 5
1371 006470 105777 004726      TSTB     @DHSLR
1372 006474 001333      BNE      15      ;GET REST OF CHARACTERS
1373 006476 000407      BR       55      ;AND CHECK
1374 006500 005200      45:     INC      R0      ;UPDATE ECHOED CHARACTER COUNT
1375 006502 020467 005456      CMP      R4, TWRD5      ;CHECK ECHOED DATA
1376 006506 001757      BEQ      35
1377 006510 016705 005450      MOV      TWRD5, R5      ;(R5)=EXPECTED ECHOED DATA
1378 006514 104002      HLT      2      ;ECHOED DATA ERROR
1379 006516 104400      55:     SCOPE      ;CHECK FOR ITERATIONS, LOOP
1380
1381      ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 6
1382      ;TRANSMIT 1 CHARACTER ON LINE 6 WITH AUTO ECHO ENABLED
1383      ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1384      ;CHARACTER LENGTH IS 8 BITS
1385      ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1386
1387 006520 012767 000340 171250      T27:    MOV      #340, PS      ;DISABLE ALL INTERRUPTS
1388 006526 012767 000010 004714      MOV      #10, ICOUNT      ;SET UP FOR 10 ITERATIONS
1389 006534 012767 006754 004702      MOV      #55, ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
1390 006542 012777 004000 004632      MOV      #BIT11, @DHSCR      ;MASTER CLEAR INTERFACE
1391 006550 004767 004514      JSR      PC, SETALL      ;SET UP ALL LINES TO TRANSMIT
1392      ;400 (OCTAL) CHARACTERS
1393 006554 012777 000006 004620      MOV      #6, @DHSCR      ;SELECT LINE 6 FOR TESTING
1394 006562 012777 014166 004620      MOV      #TWRD6, @DHBA      ;CHARACTER TO BE TRANSMITTED
1395      ;ON LINE 6 IN AUTO ECHO MODE
1396 006570 012777 177777 004614      MOV      #-1, @DHBC      ;TRANSMIT ONLY 1 CHARACTER ON LINE 6
1397 006576 012777 133503 004602      MOV      #133503, @DHLPR      ;SET AUTO ECHO FOR LINE 6
1398 006604 042767 000100 004672      BIC      #100, LINACT      ;CLEAR LINE ACTIVE BIT
1399 006612 012777 177777 004574      MOV      #-1, @DHBAR      ;SET BAR BITS FOR ALL LINES
1400 006620 005000      CLR      R0      ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1401 006622 017704 004556      15:     MOV      @DHNRC, R4      ;GET A CHARACTER FROM SILO

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1402	006626	100375			BPL	1\$		; IF NOT VALID DATA, TRY AGAIN
1403	006630	010403			MOV	R4,R3		; EXTRACT LINE NUMBER FORM CHARACTER
1404	006632	000303			SWAB	R3		
1405	006634	042703	177760		BIC	#177760,R3		; CLEAR STATUS BITS
1406	006640	010302			MOV	R3,R2		
1407	006642	006302			ASL	R2		
1408	006644	020327	000006		CMP	R3,#6		; IF LINE NUMBER IS 6
1409	006650	001432			BEQ	4\$		; CHECK FOR CORRECT ECHOED CHARACTER
1410	006652	026204	014110		CMP	RBUF(R2),R4		; IF NOT LINE 6, CHECK DATA
1411	006656	001404			BEQ	2\$		
1412	006660	016205	014110		MOV	RBUF(R2),R5		; (R5)=EXPECTED NON ECHOED DATA
1413	006664	104001			HLT	1		; NON ECHOED DATA ERROR
1414	006666	000423			SR	4\$		
1415	006670	105262	014110	2\$:	INCB	RBUF(R2)		; UPDATE EXPECTED RECEIVED DATA
1416	006674	001352			BNE	1\$		; CONTINUE IF NOT DONE
1417	006676	046267	014312	004600	BIC	LINBIT(R2),LINACT		; CLEAR ACTIVE BIT
1418	006704	005767	004574	3\$:	TST	LINACT		; IF ALL LINES ARE DONE
1419	006710	001344			BNE	1\$		; EXIT
1420	006712	012777	000006	004462	MOV	#6,JDHSCR		; SELECT LINE 6
1421	006720	042777	100000	004460	BIC	#100000,JDHLPR		; CLEAR AUTO ECHO FOR LINE 6
1422	006726	105777	004470		TSTB	JDHSLR		; GET REST OF CHARACTERS
1423	006732	001333			BNE	1\$		; AND CHECK
1424	006734	000407			BR	5\$		
1425	006736	005200		4\$:	INC	R0		; UPDATE ECHOED CHARACTER COUNT
1426	006740	020467	005222		CMP	R4,TWRD6		; CHECK ECHOED DATA
1427	006744	001757			BEQ	3\$		
1428	006746	016705	005214		MOV	TWRD6,R5		; (R5)=EXPECTED ECHOED DATA
1429	006752	104002			HLT	2		; ECHOED DATA ERROR
1430	006754	104400		5\$:	SCOPE			; CHECK FOR ITERATIONS, LOOP
1431								
1432								; TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 7
1433								; TRANSMIT 1 CHARACTER ON LINE 7 WITH AUTO ECHO ENABLED
1434								; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1435								; CHARACTER LENGTH IS 8 BITS
1436								; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1437								
1438	006756	012767	000340	171012	T30:	MOV	#340,PS	; DISABLE ALL INTERRUPTS
1439	006764	012767	000010	004456	MOV	#10,ICOUNT		; SET UP FOR 10 ITERATIONS
1440	006772	012767	007212	004444	MOV	#55,ESCAPE		; SET UP TO ESCAPE TO NEXT TEST
1441	007000	012777	004000	004374	MOV	#BIT11,JDHSCR		; MASTER CLEAR INTERFACE
1442	007006	004767	004256		JSR	PC,SETALL		; SET UP ALL LINES TO TRANSMIT
1443								; 400 (OCTAL) CHARACTERS
1444	007012	012777	000007	004362	MOV	#7,JDHSCR		; SELECT LINE 7 FOR TESTING
1445	007020	012777	014170	004362	MOV	#TWRD7,JDHBA		; CHARACTER TO BE TRANSMITTED
1446								; ON LINE 7 IN AUTO ECHO MODE
1447	007026	012777	177777	004356	MOV	#-1,JDHBC		; TRANSMIT ONLY 1 CHARACTER ON LINE 7
1448	007034	012777	133503	004344	MOV	#133503,JDHLPR		; SET AUTO ECHO FOR LINE 7
1449	007042	042767	000200	004434	BIC	#200,LINACT		; CLEAR LINE ACTIVE BIT
1450	007050	012777	177777	004336	MOV	#-1,JDHBAR		; SET BAR BITS FOR ALL LINES
1451	007056	005000			CLR	R0		; KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1452	007060	017704	004320		1\$:	MOV	JDHNR, R4	; GET A CHARACTER FROM SILO
1453	007064	100375			BPL	1\$		; IF NOT VALID DATA, TRY AGAIN
1454	007066	010403			MOV	R4,R3		; EXTRACT LINE NUMBER FORM CHARACTER
1455	007070	000303			SWAB	R3		
1456	007072	042703	177760		BIC	#177760,R3		; CLEAR STATUS BITS
1457	007076	010302			MOV	R3,R2		

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1458	007100	006302			ASL	R2		
1459	007102	020327	000007		CMP	R3,#7	; IF LINE NUMBER IS 7	
1460	007106	001432			BEQ	4\$	; CHECK FOR CORRECT ECHOED CHARACTER	
1461	007110	026204	014110		CMP	RBUF(R2),R4	; IF NOT LINE 7, CHECK DATA	
1462	007114	001404			BEQ	2\$		
1463	007116	016205	014110		MOV	RBUF(R2),R5	; (R5)=EXPECTED NON ECHOED DATA	
1464	007122	104001			HLT	1	; NON ECHOED DATA ERROR	
1465	007124	000423			BR	4\$		
1466	007126	105262	014110	2\$:	INCB	RBUF(R2)	; UPDATE EXPECTED RECEIVED DATA	
1467	007132	051352			BNE	1\$	; CONTINUE IF NOT DONE	
1468	007134	046267	014312	004342	BIC	LINBIT(R2),LINACT	; CLEAR ACTIVE BIT	
1469	007142	005767	004336	3\$:	TST	LINACT	; IF ALL LINES ARE DONE	
1470	007146	001344			BNE	1\$	; EXIT	
1471	007150	012777	000007	004224	MOV	#7,JDHSCR	; SELECT LINE 7	
1472	007156	042777	100000	004222	BIC	#100000,JDHLPR	; CLEAR AUTO ECHO FOR LINE 7	
1473	007164	105777	004232		TSTB	JDHSLR	; GET REST OF CHARACTERS	
1474	007170	001333			BNE	1\$	; AND CHECK	
1475	007172	000407			BR	5\$		
1476	007174	005200		4\$:	INC	R0	; UPDATE ECHOED CHARACTER COUNT	
1477	007176	020467	004766		CMP	R4,TWRD7	; CHECK ECHOED DATA	
1478	007202	001757			BEQ	3\$		
1479	007204	016705	004760		MOV	TWRD7,R5	; (R5)=EXPECTED ECHOED DATA	
1480	007210	104002			HLT	2	; ECHOED DATA ERROR	
1481	007212	104400		5\$:	SCOPE		; CHECK FOR ITERATIONS, LOOP	
1482								
1483							; TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 10	
1484							; TRANSMIT 1 CHARACTER ON LINE 10 WITH AUTO ECHO ENABLED	
1485							; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD	
1486							; CHARACTER LENGTH IS 8 BITS	
1487							; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES	
1488								
1489	007214	012767	000340	170554	T31:	MOV	#340,PS	; DISABLE ALL INTERRUPTS
1490	007222	012767	000010	004220		MOV	#10,ICOUNT	; SET UP FOR 10 ITERATIONS
1491	007230	012767	007450	004206		MOV	#55,ESCAPE	; SET UP TO ESCAPE TO NEXT TEST
1492	007236	012777	004000	004136		MOV	#BIT11,JDHSCR	; MASTER CLEAR INTERFACE
1493	007244	004767	004020			JSR	PC,SETALL	; SET UP ALL LINES TO TRANSMIT
1494								; 400 (OCTAL) CHARACTERS
1495	007250	012777	000010	004124		MOV	#10,JDHSCR	; SELECT LINE 10 FOR TESTING
1496	007256	012777	014172	004124		MOV	#TWRD10,JDHBA	; CHARACTER TO BE TRANSMITTED
1497								; ON LINE 10 IN AUTO ECHO MODE
1498	007264	012777	177777	004120		MOV	#-1,JDHBC	; TRANSMIT ONLY 1 CHARACTER ON LINE 10
1499	007272	012777	133503	004106		MOV	#133503,JDHLPR	; SET AUTO ECHO FOR LINE 10
1500	007300	042767	000400	004176		BIC	#400,LINACT	; CLEAR LINE ACTIVE BIT
1501	007306	012777	177777	004100		MOV	#-1,JDHBA	; SET BAR BITS FOR ALL LINES
1502	007314	005000				CLR	R0	; KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1503	007316	017704	004062	1\$:		MOV	JDHNR, R4	; GET A CHARACTER FROM SILO
1504	007322	100375				BPL	1\$	; IF NOT VALID DATA, TRY AGAIN
1505	007324	010403				MOV	R4,R3	; EXTRACT LINE NUMBER FORM CHARACTER
1506	007326	000303				SWAB	R3	
1507	007330	042703	177760			BIC	#177760,R3	; CLEAR STATUS BITS
1508	007334	010302				MOV	R3,R2	
1509	007336	006302				ASL	R2	
1510	007340	020327	000010			CMP	R3,#10	; IF LINE NUMBER IS 10
1511	007344	001432				BEQ	4\$	; CHECK FOR CORRECT ECHOED CHARACTER
1512	007346	026204	014110			CMP	RBUF(R2),R4	; IF NOT LINE 10, CHECK DATA
1513	007352	001404				BEQ	2\$	

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1514	007354	016205	014110			MOV	RBUF(R2),R5	;(R5)=EXPECTED NON ECHOED DATA
1515	007360	104001				HLT	1	;NON ECHOED DATA ERROR
1516	007362	000423				BR	4\$	
1517	007364	105262	014110		2\$:	INCB	RBUF(R2)	;UPDATE EXPECTED RECEIVED DATA
1518	007370	001352				BNE	1\$	;CONTINUE IF NOT DONE
1519	007372	046267	014312	004104		BIC	LINBIT(R2),LINACT	;CLEAR ACTIVE BIT
1520	007400	005767	004100		3\$:	TST	LINACT	;IF ALL LINES ARE DONE
1521	007404	001344				BNE	1\$	;EXIT
1522	007406	012777	000010	003766		MOV	#10,JDHSCR	;SELECT LINE 10
1523	007414	042777	100000	003764		BIC	#100000,JDHLPR	;CLEAR AUTO ECHO FOR LINE 10
1524	007422	105777	003774			TSTB	JDHSLR	;GET REST OF CHARACTERS
1525	007426	001333				BNE	1\$	;AND CHECK
1526	007430	000407				BR	5\$	
1527	007432	005200			4\$:	INC	R0	;UPDATE ECHOED CHARACTER COUNT
1528	007434	020467	004532			CMP	R4,TWRD10	;CHECK ECHOED DATA
1529	007440	001757				BEQ	3\$	
1530	007442	016705	004524			MOV	TWRD10,R5	; (R5)=EXPECTED ECHOED DATA
1531	007446	104002				HLT	2	;ECHOED DATA ERROR
1532	007450	104400			5\$:	SCOPE		;CHECK FOR ITERATIONS, LOOP
1533								
1534								;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 11
1535								;TRANSMIT 1 CHARACTER ON LINE 11 WITH AUTO ECHO ENABLED
1536								;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1537								;CHARACTER LENGTH IS 8 BITS
1538								;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1539								
1540	007452	012767	000340	170316	T32:	MOV	#340,PS	;DISABLE ALL INTERRUPTS
1541	007460	012767	000010	003762		MOV	#10,ICOUNT	;SET UP FOR 10 ITERATIONS
1542	007466	012767	007706	003750		MOV	#5\$,ESCAPE	;SET UP TO ESCAPE TO NEXT TEST
1543	007474	012777	004000	003700		MOV	#BIT11,JDHSCR	;MASTER CLEAR INTERFACE
1544	007502	004767	003562			JSR	PC,SETALL	;SET UP ALL LINES TO TRANSMIT
1545								;400 (OCTAL) CHARACTERS
1546	007506	012777	000011	003666		MOV	#1,JDHSCR	;SELECT LINE 11 FOR TESTING
1547	007514	012777	014174	003666		MOV	#TWRD11,JDHBA	;CHARACTER TO BE TRANSMITTED
1548								;ON LINE 11 IN AUTO ECHO MODE
1549	007522	012777	177777	003662		MOV	#-1,JDHBC	;TRANSMIT ONLY 1 CHARACTER ON LINE 11
1550	007530	012777	133503	003650		MOV	#133503,JDHLPR	;SET AUTO ECHO FOR LINE 11
1551	007536	042767	001000	003740		BIC	#1000,LINACT	;CLEAR LINE ACTIVE BIT
1552	007544	012777	177777	003642		MOV	#-1,JDHBR	;SET BAR BITS FOR ALL LINES
1553	007552	005000				CLR	R0	;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1554	007554	017704	003624		1\$:	MOV	JDHNRC,R4	;GET A CHARACTER FROM SILC
1555	007560	100375				BPL	1\$	;IF NOT VALID DATA, TRY AGAIN
1556	007562	010403				MOV	R4,R3	;EXTRACT LINE NUMBER FORM CHARACTER
1557	007564	000303				SWAB	R3	
1558	007566	042703	177760			BIC	#177760,R3	;CLEAR STATUS BITS
1559	007572	010302				MOV	R3,R2	
1560	007574	006302				ASL	R2	
1561	007576	020327	000011			CMP	R3,#11	;IF LINE NUMBER IS 11
1562	007602	001432				BEQ	4\$	;CHECK FOR CORRECT ECHOED CHARACTER
1563	007604	026204	014110			CMP	RBUF(R2),R4	;IF NOT LINE 11, CHECK DATA
1564	007610	001404				BEQ	2\$	
1565	007612	016205	014110			MOV	RBUF(R2),R5	; (R5)=EXPECTED NON ECHOED DATA
1566	007616	104001				HLT	1	;NON ECHOED DATA ERROR
1567	007620	000423				BR	4\$	
1568	007622	105262	014110		2\$:	INCB	RBUF(R2)	;UPDATE EXPECTED RECEIVED DATA
1569	007626	001352				BNE	1\$	;CONTINUE IF NOT DONE



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1570 007630 046267 014312 003646          BIC      LINBIT(R2),LINACT      ;CLEAR ACTIVE BIT
1571 007636 005767 003642          3$:    TST      LINACT          ;IF ALL LINES ARE DONE
1572 007642 001344                      BNE      1$                    ;EXIT
1573 007644 012777 000011 003530          MOV      #11,ADHSCR           ;SELECT LINE 11
1574 007652 042777 100000 003526          BIC      #100000,ADHLPR       ;CLEAR AUTO ECHO FOR LINE 11
1575 007660 105777 003536          TSTB    ADHSLR                ;GET REST OF CHARACTERS
1576 007664 001333                      BNE      1$                    ;AND CHECK
1577 007666 000407                      BR       5$                    ;
1578 007670 005200          4$:    INC      R0              ;UPDATE ECHOED CHARACTER COUNT
1579 007672 020467 004276          CMP      R4,TWRD11           ;CHECK ECHOED DATA
1580 007676 001757                      BEQ      3$                    ;
1581 007700 016705 004270          MOV      TWRD11,R5           ;(R5)=EXPECTED ECHOED DATA
1582 007704 104002                      HLT     2                      ;ECHOED DATA ERROR
1583 007706 104400          5$:    SCOPE                    ;CHECK FOR ITERATIONS, LOOP
1584
1585          ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 12
1586          ;TRANSMIT 1 CHARACTER ON LINE 12 WITH AUTO ECHO ENABLED
1587          ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1588          ;CHARACTER LENGTH IS 8 BITS
1589          ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1590
1591 007710 012767 000340 170060 73$:    MOV      #340,PS              ;DISABLE ALL INTERRUPTS
1592 007716 012767 000010 003524          MOV      #10,ICOUNT          ;SET UP FOR 10 ITERATIONS
1593 007724 012767 010144 003512          MOV      #5$,ESCAPE         ;SET UP TO ESCAPE TO NEXT TEST
1594 007732 012777 004000 003442          MOV      #BIT11,ADHSCR       ;MASTER CLEAR INTERFACE
1595 007740 004767 003324          JSR      PC,SETALL           ;SET UP ALL LINES TO TRANSMIT
1596          ;400 (OCTAL) CHARACTERS
1597 007744 012777 000012 003430          MOV      #12,ADHSCR          ;SELECT LINE 12 FOR TESTING
1598 007752 012777 014176 003430          MOV      #TWRD12,ADHBA      ;CHARACTER TO BE TRANSMITTED
1599          ;ON LINE 12 IN AUTO ECHO MODE
1600 007760 012777 177777 003424          MOV      #-1,ADHBC           ;TRANSMIT ONLY 1 CHARACTER ON LINE 12
1601 007766 012777 133503 003412          MOV      #133503,ADHLPR     ;SET AUTO ECHO FOR LINE 12
1602 007774 042767 002000 003502          BIC      #2000,LINACT        ;CLEAR LINE ACTIVE BIT
1603 010002 012777 177777 003404          MOV      #-1,ADHBAR         ;SET BAR BITS FOR ALL LINES
1604 010010 005000                      CLR      R0                  ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1605 010012 017704 003366          1$:    MOV      ADHNR0,R4         ;GET A CHARACTER FROM SILO
1606 010016 100375                      BPL     1$                    ;IF NOT VALID DATA, TRY AGAIN
1607 010020 010403                      MOV      R4,R3              ;EXTRACT LINE NUMBER FORM CHARACTER
1608 010022 000303                      SWAB    R3                  ;
1609 010024 042703 177760          BIC      #177760,R3          ;CLEAR STATUS BITS
1610 010030 010302                      MOV      R3,R2              ;
1611 010032 006302                      ASL     R2                  ;
1612 010034 020327 000012          CMP      R3,#12              ;IF LINE NUMBER IS 12
1613 010040 001432                      BEQ     4$                    ;CHECK FOR CORRECT ECHOED CHARACTER
1614 010042 026204 014110          CMP      RBUF(R2),R4         ;IF NOT LINE 12, CHECK DATA
1615 010046 001404                      BEQ     2$                    ;
1616 010050 016205 014110          MOV      RBUF(R2),R5        ;(R5)=EXPECTED NON ECHOED DATA
1617 010054 104001                      HLT     1                      ;NON ECHOED DATA ERROR
1618 010056 000423                      BR      4$                    ;
1619 010060 105262 014110          2$:    INCB    RBUF(R2)         ;UPDATE EXPECTED RECEIVED DATA
1620 010064 001352                      BNE     1$                    ;CONTINUE IF NOT DONE
1621 010066 046267 014312 003410          BIC      LINBIT(R2),LINACT   ;CLEAR ACTIVE BIT
1622 010074 005767 003404          3$:    TST      LINACT          ;IF ALL LINES ARE DONE
1623 010100 001344                      BNE     1$                    ;EXIT
1624 010102 012777 000012 003272          MOV      #12,ADHSCR         ;SELECT LINE 12
1625 010110 042777 100000 003270          BIC      #100000,ADHLPR     ;CLEAR AUTO ECHO FOR LINE 12

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1626	010116	105777	003300			TSTB	JDHSLR		;GET REST OF CHARACTERS
1627	010122	001333				BNE	1\$		;AND CHECK
1628	010124	000407				BR	5\$		
1629	010126	005200			4\$:	INC	R0		;UPDATE ECHOED CHARACTER COUNT
1630	010130	020467	0C4042			CMP	R4,TWRD12		;CHECK ECHOED DATA
1631	010134	001757				BEQ	3\$		
1632	010136	016705	004034			MOV	TWRD12,R5		; (R5)=EXPECTED ECHOED DATA
1633	010142	104002				HLT	2		;ECHOED DATA ERROR
1634	010144	104400			5\$:	SCOPE			;CHECK FOR ITERATIONS, LOOP
1635									
1636									;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 13
1637									;TRANSMIT 1 CHARACTER ON LINE 13 WITH AUTO ECHO ENABLED
1638									;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1639									;CHARACTER LENGTH IS 8 BITS
1640									;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1641									
1642	010146	012767	000340	167622	T34:	MOV	#340,PS		;DISABLE ALL INTERRUPTS
1643	010154	012767	000010	003266		MOV	#10,ICOUNT		;SET UP FOR 10 ITERATIONS
1644	010162	012767	010402	003254		MOV	#5\$,ESCAPE		;SET UP TO ESCAPE TO NEXT TEST
1645	010170	012777	004000	003204		MOV	#BIT11,JDHSCR		;MASTER CLEAR INTERFACE
1646	010176	004767	003066			JSR	PC,SETALL		;SET UP ALL LINES TO TRANSMIT
1647									;400 (OCTAL) CHARACTERS
1648	010202	012777	000013	003172		MOV	#13,JDHSCR		;SELECT LINE 13 FOR TESTING
1649	010210	012777	014200	003172		MOV	#TWRD13,JDHBA		;CHARACTER TO BE TRANSMITTED
1650									;ON LINE 13 IN AUTO ECHO MODE
1651	010216	012777	177777	003166		MOV	#-1,JDHBC		;TRANSMIT ONLY 1 CHARACTER ON LINE 13
1652	010224	012777	133503	003154		MOV	#133503,JDHLPR		;SET AUTO ECHO FOR LINE 13
1653	010232	042767	004000	003244		BIC	#4000,LINACT		;CLEAR LINE ACTIVE BIT
1654	010240	012777	177777	003146		MOV	#-1,JDHBR		;SET BAR BITS FOR ALL LINES
1655	010246	005000				CLR	R0		;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1656	010250	017704	003130		1\$:	MOV	JDHNRC,R4		;GET A CHARACTER FROM SILO
1657	010254	100375				BPL	1\$		;IF NOT VALID DATA, TRY AGAIN
1658	010256	010403				MOV	R4,R3		;EXTRACT LINE NUMBER FORM CHARACTER
1659	010260	000303				SWAB	R3		
1660	010262	042703	177760			BIC	#177760,R3		;CLEAR STATUS BITS
1661	010266	010302				MOV	R3,R2		
1662	010270	006302				ASL	R2		
1663	010272	020327	000013			CMP	R3,#13		;IF LINE NUMBER IS 13
1664	010276	001432				BEQ	4\$		;CHECK FOR CORRECT ECHOED CHARACTER
1665	010300	026204	014110			CMP	RBUF(R2),R4		;IF NOT LINE 13, CHECK DATA
1666	010304	001404				BEQ	2\$		
1667	010306	016205	014110			MOV	RBUF(R2),R5		; (R5)=EXPECTED NON ECHOED DATA
1668	010312	104001				HLT	1		;NON ECHOED DATA ERROR
1669	010314	000423				BR	4\$		
1670	010316	105262	014110		2\$:	INC3	RBUF(R2)		;UPDATE EXPECTED RECEIVED DATA
1671	010322	001352				BNE	1\$		;CONTINUE IF NOT DONE
1672	010324	046267	014312	003152		BIC	LINBIT(R2),LINACT		;CLEAR ACTIVE BIT
1673	010332	005767	003146		3\$:	TST	LINACT		;IF ALL LINES ARE DONE
1674	010336	001344				BNE	1\$		;EXIT
1675	010340	012777	000013	003034		MOV	#13,JDHSCR		;SELECT LINE 13
1676	010346	042777	100000	003032		BIC	#100000,JDHLPR		;CLEAR AUTO ECHO FOR LINE 13
1677	010354	105777	003042			TSTB	JDHSLR		;GET REST OF CHARACTERS
1678	010360	001333				BNE	1\$		;AND CHECK
1679	010362	000407				BR	5\$		
1680	010364	005200			4\$:	INC	R0		;UPDATE ECHOED CHARACTER COUNT
1681	010366	020467	003606			CMP	R4,TWRD13		;CHECK ECHOED DATA

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1682 010372 001757          BEQ      3$
1683 010374 016705 003600    MOV      TWRD13,R5          ;(R5)=EXPECTED ECHOED DATA
1684 010400 104002          HLT      2                  ;ECHOED DATA ERROR
1685 010402 104400          5$:     SCOPE              ;CHECK FOR ITERATIONS, LOOP
1686
1687                          ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 14
1688                          ;TRANSMIT 1 CHARACTER ON LINE 14 WITH AUTO ECHO ENABLED
1689                          ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1690                          ;CHARACTER LENGTH IS 8 BITS
1691                          ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1692
1693 010404 012767 000340 167364 T3$:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1694 010412 012767 000010 003030    MOV      #10,ICOUNT       ;SET UP FOR 10 ITERATIONS
1695 010420 012767 010640 003016    MOV      #5$,ESCAPE       ;SET UP TO ESCAPE TO NEXT TEST
1696 010426 012777 004000 002746    MOV      #BIT11,JDHSCR     ;MASTER CLEAR INTERFACE
1697 010434 004767 002630          JSR      PC,SETALL        ;SET UP ALL LINES TO TRANSMIT
1698                          ;400 (OCTAL) CHARACTERS
1699 010440 012777 000014 002734    MOV      #14,JDHSCR       ;SELECT LINE 14 FOR TESTING
1700 010446 012777 014202 002734    MOV      #TWRD14,JDHBA    ;CHARACTER TO BE TRANSMITTED
1701                          ;ON LINE 14 IN AUTO ECHO MODE
1702 010454 012777 177777 002730    MOV      #-1,JDHBC        ;TRANSMIT ONLY 1 CHARACTER ON LINE 14
1703 010462 012777 133503 002716    MOV      #133503,JDHLPR   ;SET AUTO ECHO FOR LINE 14
1704 010470 042767 010000 003006    BIC      #10000,LINACT    ;CLEAR LINE ACTIVE BIT
1705 010476 012777 177777 002710    MOV      #-1,JDHBAR       ;SET BAR BITS FOR ALL LINES
1706 010504 005000          CLR      R0               ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1707 010506 017704 002672          1$:     MOV      JDHNR, R4    ;GET A CHARACTER FROM SILO
1708 010512 100375          BPL      1$               ;IF NOT VALID DATA, TRY AGAIN
1709 010514 010403          MOV      R4,R3           ;EXTRACT LINE NUMBER FORM CHARACTER
1710 010516 000303          SWAB     R3
1711 010520 042703 177760          BIC      #177760,R3      ;CLEAR STATUS BITS
1712 010524 010302          MOV      R3,R2
1713 010526 006302          ASL      R2
1714 010530 020327 000014          CMP      R3,#14          ;IF LINE NUMBER IS 14
1715 010534 001432          BEQ      4$               ;CHECK FOR CORRECT ECHOED CHARACTER
1716 010536 026204 014110          CMP      RBUF(R2),R4     ;IF NOT LINE 14, CHECK DATA
1717 010542 001404          BEQ      2$
1718 010544 016205 014110          MOV      RBUF(R2),R5     ;(R5)=EXPECTED NON ECHOED DATA
1719 010550 104001          HLT      1                ;NON ECHOED DATA ERROR
1720 010552 000423          BR       4$
1721 010554 105262 014110          2$:     INCB     RBUF(R2)    ;UPDATE EXPECTED RECEIVED DATA
1722 010560 001352          BNE      1$               ;CONTINUE IF NOT DONE
1723 010562 046267 014312 002714    BIC      LINBIT(R2),LINACT ;CLEAR ACTIVE BIT
1724 010570 005767 002710          3$:     TST      LINACT      ;IF ALL LINES ARE DONE
1725 010574 001344          BNE      1$               ;EXIT
1726 010576 012777 000014 002576    MOV      #14,JDHSCR       ;SELECT LINE 14
1727 010604 042777 100000 002574    BIC      #100000,JDHLPR   ;CLEAR AUTO ECHO FOR LINE 14
1728 010612 105777 002604          TSTB    JDHSLR          ;GET REST OF CHARACTERS
1729 010616 001333          BNE      1$               ;AND CHECK
1730 010620 000407          BR       5$
1731 010622 005200          4$:     INC      R0           ;UPDATE ECHOED CHARACTER COUNT
1732 010624 020467 003352          CMP      R4,TWRD14       ;CHECK ECHOED DATA
1733 010630 001757          BEQ      3$
1734 010632 016705 003344          MOV      TWRD14,R5      ;(R5)=EXPECTED ECHOED DATA
1735 010636 104002          HLT      2                ;ECHOED DATA ERROR
1736 010640 104400          5$:     SCOPE              ;CHECK FOR ITERATIONS, LOOP
1737

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# J03

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1738                                     ; TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 15
1739                                     ; TRANSMIT 1 CHARACTER ON LINE 15 WITH AUTO ECHO ENABLED
1740                                     ; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1741                                     ; CHARACTER LENGTH IS 8 BITS
1742                                     ; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1743
1744 010642 012767 000340 167126 T36: MOV #340,PS ; DISABLE ALL INTERRUPTS
1745 010650 012767 000010 002572 MOV #10,I,COUNT ; SET UP FOR 10 ITERATIONS
1746 010656 012767 011076 002560 MOV #55,ESCAPE ; SET UP TO ESCAPE TO NEXT TEST
1747 010664 012777 004000 002510 MOV #BIT11,JDHSCR ; MASTER CLEAR INTERFACE
1748 010672 004767 002372 JSR PC,SETALL ; SET UP ALL LINES TO TRANSMIT
1749                                     ; 400 (OCTAL) CHARACTERS
1750 010676 012777 000015 002476 MOV #15,JDHSCR ; SELECT LINE 15 FOR TESTING
1751 010704 012777 014204 002476 MOV #TWRD15,JDHBA ; CHARACTER TO BE TRANSMITTED
1752                                     ; ON LINE 15 IN AUTO ECHO MODE
1753 010712 012777 177777 002472 MOV #-1,JDHBC ; TRANSMIT ONLY 1 CHARACTER ON LINE 15
1754 010720 012777 133503 002460 MOV #133503,JDHLPR ; SET AUTO ECHO FOR LINE 15
1755 010726 042767 020000 002550 BIC #20000,LINACT ; CLEAR LINE ACTIVE BIT
1756 010734 012777 177777 002452 MOV #-1,JDHBA ; SET BAR BITS FOR ALL LINES
1757 010742 005000 CLR R0 ; KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1758 010744 017704 002434 1$: MOV JDHNR,R4 ; GET A CHARACTER FROM SILO
1759 010750 100375 BPL 1$ ; IF NOT VALID DATA, TRY AGAIN
1760 010752 010403 MOV R4,R3 ; EXTRACT LINE NUMBER FORM CHARACTER
1761 010754 000303 SWAB R3
1762 010756 042703 177760 BIC #177760,R3 ; CLEAR STATUS BITS
1763 010762 010302 MOV R3,R2
1764 010764 006302 ASL R2
1765 010766 020327 000015 CMP R3,#15 ; IF LINE NUMBER IS 15
1766 010772 001432 BEQ 4$ ; CHECK FOR CORRECT ECHOED CHARACTER
1767 010774 026204 014110 CMP RBUF(R2),R4 ; IF NOT LINE 15, CHECK DATA
1768 011000 001404 BEQ 2$
1769 011002 016205 014110 MOV RBUF(R2),R5 ; (R5)=EXPECTED NON ECHOED DATA
1770 011006 104001 HLT 1 ; NON ECHOED DATA ERROR
1771 011010 000423 BR 4$
1772 011012 105262 014110 2$: INCB RBUF(R2) ; UPDATE EXPECTED RECEIVED DATA
1773 011016 001352 BNE 1$ ; CONTINUE IF NOT DONE
1774 011020 042267 014312 002456 BIC LINBIT(R2),LINACT ; CLEAR ACTIVE BIT
1775 011026 005767 002452 3$: TST LINACT ; IF ALL LINES ARE DONE
1776 011032 001344 BNE 1$ ; EXIT
1777 011034 012777 000015 002340 MOV #15,JDHSCR ; SELECT LINE 15
1778 011042 042777 100000 002336 BIC #100000,JDHLPR ; CLEAR AUTO ECHO FOR LINE 15
1779 011050 105777 002346 TSTB JDHSLR ; GET REST OF CHARACTERS
1780 011054 001333 BNE 1$ ; AND CHECK
1781 011056 000407 BR 5$
1782 011060 005200 4$: INC R0 ; UPDATE ECHOED CHARACTER COUNT
1783 011062 020467 003116 CMP R4,TWRD15 ; CHECK ECHOED DATA
1784 011066 001757 BEQ 3$
1785 011070 016705 003110 MOV TWRD15,R5 ; (R5)=EXPECTED ECHOED DATA
1786 011074 104002 HLT 2 ; ECHOED DATA ERPOP
1787 011076 104400 5$: SCOPE ; CHECK FOR ITERATIONS, LOOP
1788
1789                                     ; TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 16
1790                                     ; TRANSMIT 1 CHARACTER ON LINE 16 WITH AUTO ECHO ENABLED
1791                                     ; TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1792                                     ; CHARACTER LENGTH IS 8 BITS
1793                                     ; VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES

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## K03

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1794
1795 011100 012767 000340 166670 T37: MOV #340,PS ;DISABLE ALL INTERRUPTS
1796 011106 012767 000010 002334 MOV #10,I'COUNT ;SET UP FOR 10 ITERATIONS
1797 011114 012767 011334 002322 MOV #55,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1798 011122 012777 004000 002252 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1799 011130 004767 002134 JSR PC,SETALL ;SET UP ALL LINES TO TRANSMIT
1800 ;400 (OCTAL) CHARACTERS
1801 011134 012777 000016 002240 MOV #16,JDHSCR ;SELECT LINE 16 FOR TESTING
1802 011142 012777 014206 002240 MOV #TWRD16,JDHBA ;CHARACTER TO BE TRANSMITTED
1803 ;ON LINE 16 IN AUTO ECHO MODE
1804 011150 012777 177777 002234 MOV #-1,JDHBC ;TRANSMIT ONLY 1 CHARACTER ON LINE 16
1805 011156 012777 133503 002222 MOV #133503,JDHLPR ;SET AUTO ECHO FOR LINE 16
1806 011164 042767 040000 002312 BIC #40000,LINACT ;CLEAR LINE ACTIVE BIT
1807 011172 012777 177777 002214 MOV #-1,JDHBAR ;SET BAR BITS FOR ALL LINES
1808 011200 005000 CLR R0 ;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1809 011202 017704 002176 1$: MOV JDHNR, R4 ;GET A CHARACTER FROM SILO
1810 011206 100375 BPL 1$ ;IF NOT VALID DATA, TRY AGAIN
1811 011210 010403 MOV R4, R3 ;EXTRACT LINE NUMBER FORM CHARACTER
1812 011212 000303 SWAB R3
1813 011214 042703 177760 BIC #177760, R3 ;CLEAR STATUS BITS
1814 011220 010302 MOV R3, R2
1815 011222 006302 ASL R2
1816 011224 020327 000016 CMP R3, #16 ;IF LINE NUMBER IS 16
1817 011230 001432 BEQ 4$ ;CHECK FOR CORRECT ECHOED CHARACTER
1818 011232 026204 014110 CMP RBUF(R2), R4 ;IF NOT LINE 16, CHECK DATA
1819 011236 001404 BEQ 2$
1820 011240 016205 014110 MOV RBUF(R2), R5 ;(R5)=EXPECTED NON ECHOED DATA
1821 011244 104001 HLT 1 ;NON ECHOED DATA ERROR
1822 011246 000423 BR 4$
1823 011250 105262 014110 2$: INCB RBUF(R2) ;UPDATE EXPECTED RECEIVED DATA
1824 011254 001352 BNE 1$ ;CONTINUE IF NOT DONE
1825 011256 046267 014312 002220 BIC LINBIT(R2), LINACT ;CLEAR ACTIVE BIT
1826 011264 005767 002214 3$: TST LINACT ;IF ALL LINES ARE DONE
1827 011270 001344 BNE 1$ ;EXIT
1828 011272 012777 000016 002102 MOV #16, JDHSCR ;SELECT LINE 16
1829 011300 042777 100000 002100 BIC #100000, JDHLPR ;CLEAR AUTO ECHO FOR LINE 16
1830 011306 105777 002110 TSTB JDHSLR ;GET REST OF CHARACTERS
1831 011312 001333 BNE 1$ ;AND CHECK
1832 011314 000407 BR 5$
1833 011316 005200 4$: INC R0 ;UPDATE ECHOED CHARACTER COUNT
1834 011320 020467 002662 CMP R4, TWRD16 ;CHECK ECHOED DATA
1835 011324 001757 BEQ 3$
1836 011326 016705 002654 MOV TWRD16, R5 ;(R5)=EXPECTED ECHOED DATA
1837 011332 104002 HLT 2 ;ECHOED DATA ERROR
1838 011334 104400 5$: SCOPE ;CHECK FOR ITERATIONS, LOOP
1839
1840 ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES EXCEPT LINE 17
1841 ;TRANSMIT 1 CHARACTER ON LINE 17 WITH AUTO ECHO ENABLED
1842 ;TRANSMISSION SPEED FOR ALL LINES IS 9600 BAUD
1843 ;CHARACTER LENGTH IS 8 BITS
1844 ;VERIFY THAT CORRECT DATA IS RECEIVED ON ALL LINES
1845
1846 011336 012767 000340 166432 T40: MOV #340,PS ;DISABLE ALL INTERRUPTS
1847 011344 012767 000010 002076 MOV #10,I'COUNT ;SET UP FOR 10 ITERATIONS
1848 011352 012767 011572 002064 MOV #55,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1849 011360 012777 004000 002014 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE

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1850	011366	004767	001676		JSR	PC.SETALL		;SET UP ALL LINES TO TRANSMIT
1851								;400 (OCTAL) CHARACTERS
1852	011372	012777	000017	002002	MOV	#17,ADHSCR		;SELECT LINE 17 FOR TESTING
1853	011400	012777	014210	002002	MOV	#TWRD17,ADHBA		;CHARACTER TO BE TRANSMITTED
1854								;ON LINE 17 IN AUTO ECHO MODE
1855	011406	012777	177777	001776	MOV	#-1,ADHBC		;TRANSMIT ONLY 1 CHARACTER ON LINE 17
1856	011414	012777	133503	001764	MOV	#133503,ADHLPR		;SET AUTO ECHO FOR LINE 17
1857	011422	042767	100000	002054	BIC	#100000,LINACT		;CLEAR LINE ACTIVE BIT
1858	011430	012777	177777	001756	MOV	#-1,ADHBA		;SET BAR BITS FOR ALL LINES
1859	011436	005000			CLR	R0		;KEEP COUNT OF NUMBER OF RECEIVED CHARACTERS
1860	011440	017704	001740		1\$:	MOV	ADHNR, R4	;GET A CHARACTER FROM SILO
1861	011444	100375				BPL	1\$	;IF NOT VALID DATA, TRY AGAIN
1862	011446	010403				MOV	R4, R3	;EXTRACT LINE NUMBER FROM CHARACTER
1863	011450	000303				SWAB	R3	
1864	011452	042703	177760			BIC	#177760, R3	;CLEAR STATUS BITS
1865	011456	010302				MOV	R3, R2	
1866	011460	006302				ASL	R2	
1867	011462	020327	000017			CMP	R3, #17	;IF LINE NUMBER IS 17
1868	011466	001432				BEQ	4\$	;CHECK FOR CORRECT ECHOED CHARACTER
1869	011470	026204	014110			CMP	RBUF(R2), R4	;IF NOT LINE 17, CHECK DATA
1870	011474	001404				BEQ	2\$	
1871	011476	016205	014110			MOV	RBUF(R2), R5	; (R5)=EXPECTED NON ECHOED DATA
1872	011502	104001				HLT	1	;NON ECHOED DATA ERROR
1873	011504	000423				BR	4\$	
1874	011506	105262	014110		2\$:	INCB	RBUF(R2)	;UPDATE EXPECTED RECEIVED DATA
1875	011512	001352				BNE	1\$	;CONTINUE IF NOT DONE
1876	011514	046267	014312	001762		BIC	LINBIT(R2), LINACT	;CLEAR ACTIVE BIT
1877	011522	005767	001756		3\$:	TST	LINACT	;IF ALL LINES ARE DONE
1878	011526	001344				BNE	1\$	;EXIT
1879	011530	012777	000017	001644		MOV	#17,ADHSCR	;SELECT LINE 17
1880	011536	042777	100000	001642		BIC	#100000,ADHLPR	;CLEAR AUTO ECHO FOR LINE 17
1881	011544	105777	001652			TSTB	ADHSLR	;GET REST OF CHARACTERS
1882	011550	001333				BNE	1\$	;AND CHECK
1883	011552	000407				BR	5\$	
1884	011554	005200			4\$:	INC	R0	;UPDATE ECHOED CHARACTER COUNT
1885	011556	020467	002426			CMP	R4, TWRD17	;CHECK ECHOED DATA
1886	011562	001757				BEQ	3\$	
1887	011564	016705	002420			MOV	TWRD17, R5	; (R5)=EXPECTED ECHOED DATA
1888	011570	104002				HLT	2	;ECHOED DATA ERROR
1889	011572	104400			5\$:	SCOPE		;CHECK FOR ITERATIONS, LOOP

# M03

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1890							: TRANSMIT 1 CHARACTER ON EACH LINE WITH AUTO ECHO ENABLED	
1891							: RECEIVE 64 CHARACTERS ON EACH LINE	
1892								
1893								
1894	011574	012767	000340	166174	T41:	MOV	#340, PS	: DISABLE ALL INTERRUPTS
1895	011602	012767	000100	001640		MOV	#100, ICOUNT	: SET IJ FOR 100 ITERATIONS
1896	011610	012767	012024	001626		MOV	#55, ESCAPE	: SET UP TO ESCAPE TO NEXT TEST
1897	011616	012777	004000	001556		MOV	#BIT11, ADHSCR	: MASTTF CLEAR INTERFACE
1898	011624	012700	000020			MOV	#20, R0	: SET PARAMETERS FOR 16 LINES
1899	011630	012701	014152			MOV	#TWRD0, R1	: CHARACTER TO BE TRANSMITTED
1900	011634	012702	014212			MOV	#RCNT0, R2	: RECEIVED CHARACTER COUNT
1901	011640	012703	014252			MOV	#RDCT0, R3	: EXPECTED NUMBER OF CHARACTERS
1902	011644	010177	001540		15:	MOV	R1, ADHBA	: LOAD BUS ADDRESS
1903	011650	012777	177777	001534		MOV	#-1, ADHBC	: LOAD BYTE COUNT
1904	011656	012777	131403	001522		MOV	#131403, ADHLPR	: SET AUTO ECHO
1905	011664	005022				CLR	(R2)+	: CLEAR RECEIVED CHARACTER COUNT
1906	011666	012723	000100			MOV	#100, (R3)+	: =NUMBER OF CHARACTERS TO BE RECEIVED
1907	011672	062701	000002			ADD	#2, R1	: ADVANCE POINTER
1908	011676	005300				DEC	R0	: CONTINUE IF NOT DONE
1909	011700	001361				BNE	15	
1910	011702	012767	177777	001576		MOV	#-1, AEACTION	: INDICATE AUTO ECHO ACTIVE
1911								: FOR ALL LINES
1912	011710	012777	177777	001476		MOV	#-1, ADHBAR	: SET BAR BITS FOR ALL LINES
1913	011716	105777	001460		25:	TSTB	ADHSCR	: WAIT FOR A CHARACTER
1914	011722	100375				BPL	25	
1915	011724	017704	001454			MOV	ADHNRC, R4	: GET CHARACTER
1916	011730	010403				MOV	R4, R3	
1917	011732	000303				SWAB	R3	
1918	011734	042703	177760			BIC	#177760, R3	: EXTRACT LINE NUMBER
1919	011740	010302				MOV	R3, R2	
1920	011742	006302				ASL	R2	
1921	011744	005262	014212			INC	RCNT0, R2	: UPDATE RECEIVED COUNT FOR LINE
1922	011750	020462	014152			CMP	R4, TWRD0(R2)	: CHECK EXPECTED AND RECEIVED DATA
1923	011754	001404				BEG	35	
1924	011756	016275	014152			MOV	TWRD0(R2), R5	: (R5)=EXPECTED ECHOED DATA
1925	011762	104002				HLT	-2	: AUTO ECHO ERROR
1926	011764	000477				BR	55	
1927	011766	005362	014252		35:	DEC	RDCT0(R2)	: UPDATE RECEIVED EXPECTED COUNT
1928	011772	003351				BGT	25	: CONTINUE IF NOT 0
1929	011774	100413				BMI	55	: EXIT IOF NEGATIVE
1930	011776	010377	001400			MOV	R3, ADHSCR	: SELECT LINE THAT FINISHED
1931	012002	042777	100000	001376		BIC	#100000, ADHLPR	: CLEAR AUTO ECHO
1932	012010	046267	014312	001470		BIC	LINBIT(R2), AEACTION	: CLEAR AUTO ECHO ACTIVE
1933	012016	005767	001464			TST	AEACTION	: ALL LINES DONE
1934	012022	001335				BNE	25	: IF NOT, CONTINUE
1935	012024	104400			55:	SCOPE		: CHECK FOR ITERATIONS, LOOP

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1936
1937
1938 ;END OF PASS
1939 ;TYPE NAME OF TEST
1940 ;UPDATE PASS COUNT
1941 ;CHECK FOR EXIT TO ACT-11
1942 ;RESTART TEST
1943
1944 012026 104401 ECP: TYPE ;TYPE NAME OF TEST
1945 012030 014722 MEPASS
1946 012032 005067 001442 CLR LAST ;CLEAR LAST ERROR PC
1947 012036 005067 001372 CLR ERRFLG ;CLEAR ERROR FLAG
1948 012042 005267 001370 INC PASCNT ;UPDATE PASS COUNT
1949 012046 016767 001364 165514 MOV PASCNT,LIGHTS ;DISPLAY PASS COUNT
1950 012054 013701 000042 MOV @#42,R1 ;CHECK FOR ACT-11 OR DDP
1951 012060 001405 BEQ RESTART ;IF NOT, CONTINUE TESTING
1952 012062 000005 RESET
1953 012064 004711 LOGICAL: JSR PC,(R1)
1954 012066 000240 NOP
1955 012070 000240 NOP
1956 012072 000240 NOP
1957 012074 000167 167102 RESTART: JMP BEGIN
1958
1959 ;CHECK FOR LOOP ON CURRENT TEST
1960 ;CHECK FOR ITERATION SLPPRESSION
1961
1962 012100 032767 002000 165462 SCOPER: BIT #SW10,SWR
1963 012106 031030 BNE 4$
1964 012110 032767 040000 165452 1$: BIT #SW14,SWR
1965 012116 001021 BNE 3$
1966 012120 032767 004000 165442 BIT #SW11,SWR
1967 012126 001006 BNE 2$
1968 012130 005267 001316 INC LPCNT
1969 012134 026767 001312 001306 CMP LPCNT,ICOUNT
1970 012142 001007 BNE 3$
1971 012144 005067 001302 2$: CLR LPCNT
1972 012150 005067 001260 CLR ERRFLG
1973 012154 011667 001262 MOV (SP),RETURN
1974 012160 000002 RTI
1975 012162 016716 001254 3$: MOV RETURN,(SP)
1976 012166 000002 RTI
1977 012170 005767 001240 4$: TST ERRFLG
1978 012174 001745 BEQ 1$
1979 012176 000762 BR 2$
1980
1981 ;CHECK FOR FREEZE ON CURRENT DATA
1982
1983 012200 032767 001000 165362 SCOP1R: BIT #SW09,SWR
1984 012206 001402 BEQ 1$
1985 012210 016716 001232 MOV FREEZ1,(SP)
1986 012214 000002 1$: RTI

```



```

: ERROR HANDLER
199901 012216 032767 020000 165244 ERRORS: BIT #SW13,SWR
199902 012224 001051 HALTS
199903 012226 021667 001246 CMP (SP),LAST
199904 012232 001404 BEQ IS
199905 012234 011667 001240 MOV (SP),LAST
199906 012240 005067 001170 CLR ERRFLG
199907 012244 104406 IS: SAVOSP
199908 012246 011605 MOV (SP),R5
199909 012250 162705 000002 SUB #2,R5
199910 012254 011504 MOV (R5),R4
200001 012256 006304 ASL R4
200002 012260 006304 ASL R4
200003 012262 042704 177001 BIC #177001,R4
200004 012266 062704 015032 ADD #ERRTAB,R4
200005 012272 012467 000034 MOV (R4)+,ERRMSG
200006 012276 011467 000042 MOV (R4),DATABP
200007 012302 005767 001126 TST ERRFLG
200008 012306 001403 BEQ TYPMSG
200009 012310 005767 000030 TST DATABP
200010 012314 001007 BNE TYPDAT
200011 012316 104402 TYPMSG: OCTASC
200012 012320 012412 ERTABO
200013 012322 012767 000001 001104 MOV #1,ERRFLG
200014 012330 104401 TYPE
200015 012332 000000 ERRMSG: 0
200016 012334 005767 000004 TYPDAT: TST DATABP
200017 012340 001402 BEQ RESREG
200018 012342 104402 OCTASC
200019 012344 000000 DATABP: 0
200020 012346 104407 RESREG: RESOS
200021 012350 005767 165214 HALTS: TST SWR
200022 012354 100005 BPL EXITER
200023 012356 010046 PUSHRO
200024 012360 016600 000002 MOV 2(SP),R0
200025 012364 000000 HALT
200026 012366 012600 POPRO
200027 012370 005267 001044 EXITER: INC ERRCNT
200028 012374 032767 002000 165166 BIT #SW10,SWR
200029 012402 001402 BEQ IS
200030 012404 016716 001034 MOV ESCAPE,(SP)
200031 012410 000002 IS: RTI
200032 012412 000001 ERTABO: 1
200033 012414 006 002 .BYTE 6,2
200034 012416 013472 SAVPC

```

```

2034 ; TRAP DISPATCH SERVICE
2035 ; ARGUMENT OF TRAP IS EXTRACTED
2036 ; AND USED AS OFFSET TO OBTAIN POINTER
2037 ; TO SELECTED SUBROUTINE
2038
2039 012420 011646 TRFSRV: MOV (SP), -(SP) ; GET PC OF RETURN
2040 012422 162716 000002 SUB #2, (SP) ; =PC OF TRAP
2041 012426 017616 000000 MOV 2(SP), (SP) ; GET TRP
2042 012432 006316 TRFOK: ASL (SP) ; MULTIPLY TRAP ARG BY 2
2043 012434 042716 177001 BIC #177001, (SP) ; CLEAR UNWANTED BITS
2044 012440 062716 014752 ADD #TRPTAB, (SP) ; POINTER TO SUBROUTINE ADDRESS
2045 012444 017616 000000 MOV 2(SP), (SP) ; SUBROUTINE ADDRESS
2046 012450 000136 JMP 2(SP)+ ; GO TO SUBROUTINE
2047
2048 ; SAVE PC OF TEST THAT FAILED AND R0-R5
2049
2050 012452 016667 000004 001012 SVOSP: MOV 4(SP), SAVPC
2051
2052 ; SAVE R0-R5
2053
2054 012460 010567 001002 SVCS: MOV R5, SAVR5
2055 012464 010467 000774 MOV R4, SAVR4
2056 012470 010367 000766 MOV R3, SAVR3
2057 012474 010267 000760 MOV R2, SAVR2
2058 012500 010167 000752 MOV R1, SAVR1
2059 012504 010067 000744 MOV R0, SAVR0
2060 012510 000002 RTI
2061 ; RESTORE R0-R5
2062
2063 012512 016700 000736 RSCS: MOV SAVR0, R0
2064 012516 016701 000734 MOV SAVR1, R1
2065 012522 016702 000732 MOV SAVR2, R2
2066 012526 016703 000730 MOV SAVR3, R3
2067 012532 016704 000726 MOV SAVR4, R4
2068 012536 016705 000724 MOV SAVR5, R5
2069 012542 000002 RTI

```

```

2070
2071
2072
2073
2074 012544 017605 000000
2075 012550 062716 000002
2076 012554 105777 000616
2077 012560 100375
2078 012562 105715
2079 012564 001001
2080 012566 000002
2081 012570 112577 000604
2082 012574 000767
;TELETYPE OUTPUT ROUTINE
TYPGR: MOV @ (SP), R5
ADD #2, (SP)
1S: TSTB @TPCSR
BPL 1S
TSTB (R5)
BNE 2S
RTI
2S: MOVB (R5)+, @TPDBR
BR 1S
;ASCII STRING INPUT ROUTINE
2085 012576 017667 000000 000006 INSTRG: MOV @ (SP), MSG
2086 012604 062716 000002 ADD #2, (SP)
2087 012610 104401 INSTR1: TYPE
2088 012612 000000 MSG: 0
2089 012614 012704 014774 MOV #INBUF, R4
2090 012620 012703 000007 MOV #7, R3
2091 012624 105777 000542 1S: TSTB @TKCSR
2092 012630 100375 BPL 1S
2093 012632 117714 000536 MOVB @TKDBR, (R4)
2094 012636 142714 000200 BICB #200, (R4)
2095 012642 122427 000015 CMPB (R4)+, #15
2096 012646 001413 BEQ INSTR2
2097 012650 117777 000520 000522 MOVB @TKDBR, @TPDBR
2098 012656 105777 000514 2S: TSTB @TPCSR
2099 012662 100375 BPL 2S
2100 012664 005303 DEC R3
2101 012666 001356 BNE 1S
2102 012670 104401 INSTRE: TYPE
2103 012672 014626 MOV
2104 012674 000745 BR INSTR1
2105 012676 000002 INSTR2: RTI

```

2106			
2107			
2108			
2109	012700	011605	
2110	012702	012567	000146
2111	012706	012567	000144
2112	012712	012567	000142
2113	012716	112567	000140
2114	012722	112567	000135
2115	012726	010516	
2116	012730	005005	
2117	012732	012704	014774
2118	012736	122714	000015
2119	012742	001420	
2120	012744	121427	000060
2121	012750	002415	
2122	012752	121427	000067
2123	012756	003012	
2124	012760	142714	000060
2125	012764	152405	
2126	012766	122714	000015
2127	012772	001406	
2128	012774	006305	
2129	012776	006305	
2130	013000	006305	
2131	013002	000760	
2132	013004	104404	
2133	013006	000750	
2134			
2135			
2136			
2137	013010	020567	000042
2138	013014	101373	
2139	013016	020567	000032
2140	013022	103770	
2141	013024	136705	000032
2142	013030	001365	
2143			
2144			
2145			
2146	013032	016704	000022
2147	013036	010524	
2148	013040	062705	000002
2149	013044	105367	000013
2150	013050	001372	
2151	013052	000002	
2152	013054	000000	
2153	013056	000000	
2154	013060	000000	
2155	013062	000000	
2156		013063	

;CONVERT ASCII STRING TO OCTAL

```

PARAMS: MOV (SP),R5
        MOV (R5)+,LOLIM
        MOV (R5)+,HILIM
        MOV (R5)+,DEVADR
        MOV (R5)+,LOBITS
        MOV (R5)+,ADRCNT
        MOV R5,(SP)
PARAM1: CLR R5
        MOV #INBUF,R4
        CMPB #15,(R4)
        BEQ PARERR
IS:     CMPB (R4),#50
        BLT PARERR
        CMPB (R4),#67
        BGT PARERR
        BICB #60,(R4)
        BISB (R4)+,R5
        CMPB #15,(R4)
        BEQ LIMITS
        ASL R5
        ASL R5
        ASL R5
        BR 1$
PARERR: INSTER
        BR PARAM1
  
```

;TEST TO SEE IF NUMBER IS WITHIN LIMITS

```

LIMITS: CMP R5,HILIM
        BHI PARERR
        CMP R5,LOLIM
        BLO PARERR
        BITB LOBITS,R5
        BNE PARERR
  
```

;STORE NUMBER AT SPECIFIED ADDRESS

```

IS:     MOV DEVADR,R4
        MOV R5,(R4)+
        ADD #2,R5
        DECB ADRCNT
        BNE 1$
        RTI
  
```

```

LOLIM: 0
HILIM: 0
DEVADR: 0
LOBITS: 0
ADRCNT=LOBITS+1
  
```

```

2157
2158
2159
2160 013064 104401
2161 013066 014632
2162 013070 017601 000000
2163 013074 062716 000002
2164 013100 012167 000130
2165 013104 112167 000126
2166 013110 112167 000123
2167 013114 013167 000120
2168 013120 016704 000114
2169 013124 116705 000106
2170 013130 012700 015006
2171 013134 010403
2172 013136 042703 177770
2173 013142 062703 000260
2174 013146 110320
2175 013150 006204
2176 013152 006204
2177 013154 006204
2178 013156 005305
2179 013160 001365
2180 013162 012703 015020
2181 013166 114023
2182 013170 105367 000042
2183 013174 001374
2184 013176 105767 000035
2185 013202 001405
2186 013204 112723 000240
2187 013210 105367 000023
2188 013214 001373
2189 013216 105013
2190 013220 104401
2191 013222 015020
2192 013224 005367 000004
2193 013230 001325
2194 013232 000002
2195 013234 000000
2196 013236 000000
2197 013237
2198 013240 000000

```

;CONVERT OCTAL NUMBER TO ASCII AND OUTPUT TO TELEPRINTER

```

OCTASN: TYPE
MCRLF
MOV @ (SP), R1
ADD #2, (SP)
MOV (R1)+, WRDCNT
1$: MOVB (R1)+, CHRCNT
MOVB (R1)+, SPACNT
MOV @ (R1)+, BINWRD
2$: MOV BINWRD, R4
MOVB CHRCNT, R5
MOV #TEMP, R0
3$: MOV R4, R3
BIC #177770, R3
ADD #260, R3
MOVB R3, (R0)+
ASR R4
ASR R4
ASR R4
DEC R5
BNE 3$
MOV #MDATA, R3
4$: MOVB -(R0), (R3)+
DECB CHRCNT
BNE 4$
TSTB SPACNT
BEQ 6$
5$: MOVB #240, (R3)+
DECB SPACNT
BNE 5$
6$: CLRB (R3)
TYPE
MDATA
DEC WRDCNT
BNE 1$
RTI
WRDCNT: 0
CHRCNT: 0
SPACNT=CHRCNT+1
BINWRD: 0

```

```

2199
2200 ;CLEAR ALL BYTE COUNT AND BUS ADDRESS REGISTERS
2201
2202 013242 012700 000020 CLRALL: MOV #20,R0 ;SET UP TO CLEAR IE
2203 013246 005077 000136 1$: CLR @DHBA ;CLEAR BUS ADDRESS
2204 013252 005077 000134 CLR @DHBC ;CLEAR BYTE COUNT
2205 013256 005277 000120 INC @DHSCR ;ADVANCE LINE NUMBER
2206 013262 005300 DEC R0 ;CONTINUE IF NOT DONE
2207 013264 001370 BNE 1$
2208 013266 000207 RTS PC ;RETURN TO CALLING ROUTINE
2209
2210 ;SET BYTE COUNT FOR ALL LINES TO 400
2211 ;SET BUS ADDRESS FOR ALL LINES TO TBUF
2212 ;CLEAR EXPECTED CHARACTER BUFFERS
2213 ;SET LINE ACTIVE BITS FOR ALL LINES
2214
2215 013270 012700 000020 SETALL: MOV #20,R0 ;SET UP TO LOAD 16
2216 ;BYTE COUNT AND BUS ADDRESS
2217 ;MEMORY LOCATIONS
2218 013274 005001 CLR R1 ;SET UP TO GENERATE EXPECTED
2219 ;RECEIVED CHARACTER BUFFER
2220 013276 012702 000200 MOV #200,R2 ;WILL BE HIGH BYTE
2221 ;OF EXPECTED RECEIVED CHARACTER
2222 013302 012703 000001 MOV #1,R3 ;OFFSET FOR HIGH BYTE
2223 013306 012777 013510 000074 1$: MOV #TBUF,@DHBA ;LOAD BUS ADDRESS
2224 013314 012777 177400 000070 MOV #-400,@DHBC ;LOAD BYTE COUNT
2225 013322 012777 031403 000056 MOV #31403,@DHLPR ;SET LINE SPEED TO 4800 BAUD
2226 013330 105061 014110 CLRB RBUF(R1)
2227 ;RECEIVED CHARACTER
2228 013334 110263 014110 MOVB R2,RBUF(R3) ;LOAD HIGH BYTE
2229 013340 005277 000036 INC @DHSCR ;ADVANCE LINE NUMBER TO NEXT LINE
2230 013344 005202 INC R2 ;UPDATE POINTERS
2231 013346 062701 000002 ADD #2,R1
2232 013352 062703 000002 ADD #2,R3
2233 013356 005300 DEC R0 ;CONTINUE IF NOT DONE
2234 013360 001352 BNE 1$
2235 013362 012767 177777 000114 MOV #-1,LINACT ;SET ACTIVE FLAGS FOR ALL LINES
2236 013370 000207 RTS PC ;RETURN TO CALLING ROUTINE

```

2237 ;INDIRECT POINTERS

2238				
2239	013372	177560	TKCSR:	177560
2240	013374	177562	TKDBR:	177562
2241	013376	177564	TPCSR:	177564
2242	013400	177566	TPDBR:	177566
2243	013402	000000	DHSCR:	0
2244	013404	000000	DHNRC:	0
2245	013406	000000	DHLPR:	0
2246	013410	000000	DHBA:	0
2247	013412	000000	DHBC:	0
2248	013414	000000	DHBAR:	0
2249	013416	000000	DHBCR:	0
2250	013420	000000	DHSSR:	0
2251	013422	000000	DHSLR:	0
2252	013424	000000	DHRVEC:	0
2253	013426	000000	DHRLVL:	0
2254	013430	000000	DHTVEC:	0
2255	013432	000000	DHTLVL:	0

;PROGRAM VARIABLES

2256				
2257				
2258	013434	000000	ERRFLG:	0 ;ERROR FLAG
2259	013436	000000	PASCNT:	0 ;PASS COUNT
2260	013440	000000	ERRCNT:	0 ;ERROR COUNT
2261	013442	000000	RETURN:	0 ;SCOPE RETURN ADDRESS FOR TEST LOOPING
2262	013444	000000	ESCAPE:	0 ;ADDRESS FOR ERROR ESCAPE
2263	013446	000000	FREEZ1:	0 ;DATA LOOPING RETURN ADDRESS
2264	013450	000000	ICOUNT:	0 ;ITERATION COUNT FOR TEST IN PROGRESS
2265	013452	000000	LPCNT:	0 ;NUMBER OF ITERATIONS THIS TEST
2266	013454	000000	SAVR0:	0 ;R0 SAVE AREA
2267	013456	000000	SAVR1:	0 ;R1 SAVE AREA
2268	013460	000000	SAVR2:	0 ;R2 SAVE AREA
2269	013462	000000	SAVR3:	0 ;R3 SAVE AREA
2270	013464	000000	SAVR4:	0 ;R4 SAVE AREA
2271	013466	000000	SAVR5:	0 ;R5 SAVE AREA
2272	013470	000000	SAVSP:	0 ;STACK POINTER SAVE AREA
2273	013472	000000	SAVPC:	0 ;CALLING ROUTINE SAVE AREA
2274	013474	000000	INIFLG:	0 ;PROGRAM INITIALIZATION FLAG
2275	013476	000000	STFLG:	0 ;PROGRAM START FLAG
2276	013500	000000	LAST:	0 ;LAST ERROR PC
2277	013502	000000	ENDFLG:	0
2278	013504	000000	LINACT:	0
2279	013506	000000	AREACT:	0

2280	013510	000	TBUF:	.BYTE	0
2281	013511	001	.BYTE	TDAT	
2282	013512	002	.BYTE	TDAT	
2283	013513	003	.BYTE	TDAT	
2284	013514	004	.BYTE	TDAT	
2285	013515	005	.BYTE	TDAT	
2286	013516	006	.BYTE	TDAT	
2287	013517	007	.BYTE	TDAT	
2288	013520	010	.BYTE	TDAT	
2289	013521	011	.BYTE	TDAT	
2290	013522	012	.BYTE	TDAT	
2291	013523	013	.BYTE	TDAT	
2292	013524	014	.BYTE	TDAT	
2293	013525	015	.BYTE	TDAT	
2294	013526	016	.BYTE	TDAT	
2295	013527	017	.BYTE	TDAT	
2296	013530	020	.BYTE	TDAT	
2297	013531	021	.BYTE	TDAT	
2298	013532	022	.BYTE	TDAT	
2299	013533	023	.BYTE	TDAT	
2300	013534	024	.BYTE	TDAT	
2301	013535	025	.BYTE	TDAT	
2302	013536	026	.BYTE	TDAT	
2303	013537	027	.BYTE	TDAT	
2304	013540	030	.BYTE	TDAT	
2305	013541	031	.BYTE	TDAT	
2306	013542	032	.BYTE	TDAT	
2307	013543	033	.BYTE	TDAT	
2308	013544	034	.BYTE	TDAT	
2309	013545	035	.BYTE	TDAT	
2310	013546	036	.BYTE	TDAT	
2311	013547	037	.BYTE	TDAT	
2312	013550	040	.BYTE	TDAT	
2313	013551	041	.BYTE	TDAT	
2314	013552	042	.BYTE	TDAT	
2315	013553	043	.BYTE	TDAT	
2316	013554	044	.BYTE	TDAT	
2317	013555	045	.BYTE	TDAT	
2318	013556	046	.BYTE	TDAT	
2319	013557	047	.BYTE	TDAT	
2320	013560	050	.BYTE	TDAT	
2321	013561	051	.BYTE	TDAT	
2322	013562	052	.BYTE	TDAT	
2323	013563	053	.BYTE	TDAT	
2324	013564	054	.BYTE	TDAT	
2325	013565	055	.BYTE	TDAT	
2326	013566	056	.BYTE	TDAT	
2327	013567	057	.BYTE	TDAT	
2328	013570	060	.BYTE	TDAT	
2329	013571	061	.BYTE	TDAT	
2330	013572	062	.BYTE	TDAT	
2331	013573	063	.BYTE	TDAT	
2332	013574	064	.BYTE	TDAT	
2333	013575	065	.BYTE	TDAT	
2334	013576	066	.BYTE	TDAT	
2335	013577	067	.BYTE	TDAT	



2336	013600	070	.BYTE	TDAT
2337	013601	071	.BYTE	TDAT
2338	013602	072	.BYTE	TDAT
2339	013603	073	.BYTE	TDAT
2340	013604	074	.BYTE	TDAT
2341	013605	075	.BYTE	TDAT
2342	013606	076	.BYTE	TDAT
2343	013607	077	.BYTE	TDAT
2344	013610	100	.BYTE	TDAT
2345	013611	101	.BYTE	TDAT
2346	013612	102	.BYTE	TDAT
2347	013613	103	.BYTE	TDAT
2348	013614	104	.BYTE	TDAT
2349	013615	105	.BYTE	TDAT
2350	013616	106	.BYTE	TDAT
2351	013617	107	.BYTE	TDAT
2352	013620	110	.BYTE	TDAT
2353	013621	111	.BYTE	TDAT
2354	013622	112	.BYTE	TDAT
2355	013623	113	.BYTE	TDAT
2356	013624	114	.BYTE	TDAT
2357	013625	115	.BYTE	TDAT
2358	013626	116	.BYTE	TDAT
2359	013627	117	.BYTE	TDAT
2360	013630	120	.BYTE	TDAT
2361	013631	121	.BYTE	TDAT
2362	013632	122	.BYTE	TDAT
2363	013633	123	.BYTE	TDAT
2364	013634	124	.BYTE	TDAT
2365	013635	125	.BYTE	TDAT
2366	013636	126	.BYTE	TDAT
2367	013637	127	.BYTE	TDAT
2368	013640	130	.BYTE	TDAT
2369	013641	131	.BYTE	TDAT
2370	013642	132	.BYTE	TDAT
2371	013643	133	.BYTE	TDAT
2372	013644	134	.BYTE	TDAT
2373	013645	135	.BYTE	TDAT
2374	013646	136	.BYTE	TDAT
2375	013647	137	.BYTE	TDAT
2376	013650	140	.BYTE	TDAT
2377	013651	141	.BYTE	TDAT
2378	013652	142	.BYTE	TDAT
2379	013653	143	.BYTE	TDAT
2380	013654	144	.BYTE	TDAT
2381	013655	145	.BYTE	TDAT
2382	013656	146	.BYTE	TDAT
2383	013657	147	.BYTE	TDAT
2384	013660	150	.BYTE	TDAT
2385	013661	151	.BYTE	TDAT
2386	013662	152	.BYTE	TDAT
2387	013663	153	.BYTE	TDAT
2388	013664	154	.BYTE	TDAT
2389	013665	155	.BYTE	TDAT
2390	013666	156	.BYTE	TDAT
2391	013667	157	.BYTE	TDAT

2392	013670	160	.BYTE	TDAT
2393	013671	161	.BYTE	TDAT
2394	013672	162	.BYTE	TDAT
2395	013673	163	.BYTE	TDAT
2396	013674	164	.BYTE	TDAT
2397	013675	165	.BYTE	TDAT
2398	013676	166	.BYTE	TDAT
2399	013677	167	.BYTE	TDAT
2400	013700	170	.BYTE	TDAT
2401	013701	171	.BYTE	TDAT
2402	013702	172	.BYTE	TDAT
2403	013703	173	.BYTE	TDAT
2404	013704	174	.BYTE	TDAT
2405	013705	175	.BYTE	TDAT
2406	013706	176	.BYTE	TDAT
2407	013707	177	.BYTE	TDAT
2408	013710	200	.BYTE	TDAT
2409	013711	201	.BYTE	TDAT
2410	013712	202	.BYTE	TDAT
2411	013713	203	.BYTE	TDAT
2412	013714	204	.BYTE	TDAT
2413	013715	205	.BYTE	TDAT
2414	013716	206	.BYTE	TDAT
2415	013717	207	.BYTE	TDAT
2416	013720	210	.BYTE	TDAT
2417	013721	211	.BYTE	TDAT
2418	013722	212	.BYTE	TDAT
2419	013723	213	.BYTE	TDAT
2420	013724	214	.BYTE	TDAT
2421	013725	215	.BYTE	TDAT
2422	013726	216	.BYTE	TDAT
2423	013727	217	.BYTE	TDAT
2424	013730	220	.BYTE	TDAT
2425	013731	221	.BYTE	TDAT
2426	013732	222	.BYTE	TDAT
2427	013733	223	.BYTE	TDAT
2428	013734	224	.BYTE	TDAT
2429	013735	225	.BYTE	TDAT
2430	013736	226	.BYTE	TDAT
2431	013737	227	.BYTE	TDAT
2432	013740	230	.BYTE	TDAT
2433	013741	231	.BYTE	TDAT
2434	013742	232	.BYTE	TDAT
2435	013743	233	.BYTE	TDAT
2436	013744	234	.BYTE	TDAT
2437	013745	235	.BYTE	TDAT
2438	013746	236	.BYTE	TDAT
2439	013747	237	.BYTE	TDAT
2440	013750	240	.BYTE	TDAT
2441	013751	241	.BYTE	TDAT
2442	013752	242	.BYTE	TDAT
2443	013753	243	.BYTE	TDAT
2444	013754	244	.BYTE	TDAT
2445	013755	245	.BYTE	TDAT
2446	013756	246	.BYTE	TDAT
2447	013757	247	.BYTE	TDAT

2448	013760	250	.BYTE	TUAT
2449	013761	251	.BYTE	TDAT
2450	013762	252	.BYTE	TDAT
2451	013763	253	.BYTE	TDAT
2452	013764	254	.BYTE	TDAT
2453	013765	255	.BYTE	TDAT
2454	013766	256	.BYTE	TDAT
2455	013767	257	.BYTE	TDAT
2456	013770	260	.BYTE	TDAT
2457	013771	261	.BYTE	TDAT
2458	013772	262	.BYTE	TDAT
2459	013773	263	.BYTE	TDAT
2460	013774	264	.BYTE	TDAT
2461	013775	265	.BYTE	TDAT
2462	013776	266	.BYTE	TDAT
2463	013777	267	.BYTE	TDAT
2464	014000	270	.BYTE	TDAT
2465	014001	271	.BYTE	TDAT
2466	014002	272	.BYTE	TDAT
2467	014003	273	.BYTE	TDAT
2468	014004	274	.BYTE	TDAT
2469	014005	275	.BYTE	TDAT
2470	014006	276	.BYTE	TDAT
2471	014007	277	.BYTE	TDAT
2472	014010	300	.BYTE	TDAT
2473	014011	301	.BYTE	TDAT
2474	014012	302	.BYTE	TDAT
2475	014013	303	.BYTE	TDAT
2476	014014	304	.BYTE	TDAT
2477	014015	305	.BYTE	TDAT
2478	014016	306	.BYTE	TDAT
2479	014017	307	.BYTE	TDAT
2480	014020	310	.BYTE	TDAT
2481	014021	311	.BYTE	TDAT
2482	014022	312	.BYTE	TDAT
2483	014023	313	.BYTE	TDAT
2484	014024	314	.BYTE	TDAT
2485	014025	315	.BYTE	TDAT
2486	014026	316	.BYTE	TDAT
2487	014027	317	.BYTE	TDAT
2488	014030	320	.BYTE	TDAT
2489	014031	321	.BYTE	TDAT
2490	014032	322	.BYTE	TDAT
2491	014033	323	.BYTE	TDAT
2492	014034	324	.BYTE	TDAT
2493	014035	325	.BYTE	TDAT
2494	014036	326	.BYTE	TDAT
2495	014037	327	.BYTE	TDAT
2496	014040	330	.BYTE	TDAT
2497	014041	331	.BYTE	TDAT
2498	014042	332	.BYTE	TDAT
2499	014043	333	.BYTE	TDAT
2500	014044	334	.BYTE	TDAT
2501	014045	335	.BYTE	TDAT
2502	014046	336	.BYTE	TDAT
2503	014047	337	.BYTE	TDAT

2504	014050	340	.BYTE	TDAT
2505	014051	341	.BYTE	TDAT
2506	014052	342	.BYTE	TDAT
2507	014053	343	.BYTE	TDAT
2508	014054	344	.BYTE	TDAT
2509	014055	345	.BYTE	TDAT
2510	014056	346	.BYTE	TDAT
2511	014057	347	.BYTE	TDAT
2512	014060	350	.BYTE	TDAT
2513	014061	351	.BYTE	TDAT
2514	014062	352	.BYTE	TDAT
2515	014063	353	.BYTE	TDAT
2516	014064	354	.BYTE	TDAT
2517	014065	355	.BYTE	TDAT
2518	014066	356	.BYTE	TDAT
2519	014067	357	.BYTE	TDAT
2520	014070	360	.BYTE	TDAT
2521	014071	361	.BYTE	TDAT
2522	014072	362	.BYTE	TDAT
2523	014073	363	.BYTE	TDAT
2524	014074	364	.BYTE	TDAT
2525	014075	365	.BYTE	TDAT
2526	014076	366	.BYTE	TDAT
2527	014077	367	.BYTE	TDAT
2528	014100	370	.BYTE	TDAT
2529	014101	371	.BYTE	TDAT
2530	014102	372	.BYTE	TDAT
2531	014103	373	.BYTE	TDAT
2532	014104	374	.BYTE	TDAT
2533	014105	375	.BYTE	TDAT
2534	014106	376	.BYTE	TDAT
2535	014107	377	.BYTE	TDAT
2536			.EVEN	
2537	014110	000000	RBUF:	0
2538		014152	. = .+40	

2539 014152 100377  
 2540 014154 100777  
 2541 014156 101377  
 2542 014160 101777  
 2543 014162 102377  
 2544 014164 102777  
 2545 014166 103377  
 2546 014170 103777  
 2547 014172 104377  
 2548 014174 104777  
 2549 014176 105377  
 2550 014200 105777  
 2551 014202 106377  
 2552 014204 106777  
 2553 014206 107377  
 2554 014210 107777  
 2555 014212 000000  
 2556 014214 000000  
 2557 014216 000000  
 2558 014220 000000  
 2559 014222 000000  
 2560 014224 000000  
 2561 014226 000000  
 2562 014230 000000  
 2563 014232 000000  
 2564 014234 000000  
 2565 014236 000000  
 2566 014240 000000  
 2567 014242 000000  
 2568 014244 000000  
 2569 014246 000000  
 2570 014250 000000  
 2571 014252 000000  
 2572 014254 000000  
 2573 014256 000000  
 2574 014260 000000  
 2575 014262 000000  
 2576 014264 000000  
 2577 014266 000000  
 2578 014270 000000  
 2579 014272 000000  
 2580 014274 000000  
 2581 014276 000000  
 2582 014300 000000  
 2583 014302 000000  
 2584 014304 000000  
 2585 014306 000000  
 2586 014310 000000  
 2587 014312 000001  
 2588 014314 000002  
 2589 014316 000004  
 2590 014320 000010  
 2591 014322 000020  
 2592 014324 000040  
 2593 014326 000100  
 2594 014330 000200

TWRD0: 100377  
 TWRD1: 100777  
 TWRD2: 101377  
 TWRD3: 101777  
 TWRD4: 102377  
 TWRD5: 102777  
 TWRD6: 103377  
 TWRD7: 103777  
 TWRD10: 104377  
 TWRD11: 104777  
 TWRD12: 105377  
 TWRD13: 105777  
 TWRD14: 106377  
 TWRD15: 106777  
 TWRD16: 107377  
 TWRD17: 107777  
 RCNT0: 0  
 RCNT1: 0  
 RCNT2: 0  
 RCNT3: 0  
 RCNT4: 0  
 RCNT5: 0  
 RCNT6: 0  
 RCNT7: 0  
 RCNT10: 0  
 RCNT11: 0  
 RCNT12: 0  
 RCNT13: 0  
 RCNT14: 0  
 RCNT15: 0  
 RCNT16: 0  
 RCNT17: 0  
 RDCT0: 0  
 RDCT1: 0  
 RDCT2: 0  
 RDCT3: 0  
 RDCT4: 0  
 RDCT5: 0  
 RDCT6: 0  
 RDCT7: 0  
 RDCT10: 0  
 RDCT11: 0  
 RDCT12: 0  
 RDCT13: 0  
 RDCT14: 0  
 RDCT15: 0  
 RDCT16: 0  
 RDCT17: 0  
 LINBIT: 1  
 2  
 4  
 10  
 20  
 40  
 100  
 200



```

;ENTER HERE ON POWER FAILURE
2603
2604
2605
2606 014352 010046 PFAIL: MOV R0,-(SP) ;SAVE R0-R5 ON PROCESSOR STACK
2607 014354 010146 MOV R1,-(SP)
2608 014356 010246 MOV R2,-(SP)
2609 014360 010346 MOV R3,-(SP)
2610 014362 010446 MOV R4,-(SP)
2611 014364 010546 MOV R5,-(SP)
2612 014366 016746 163432 MOV 24,-(SP)
2613 014372 010667 177072 MOV SP,SAVSP ;SAVE STACK POINTER
2614 014376 012767 014410 163420 MOV #RESTART,24 ;SET UP FOR POWER UP TRAP
2615 014404 000000 HALT ;HALT ON POWER DOWN NORMAL
2616 014406 000777 BR .
;PROCESSOR WILL TRAP HERE WHEN POWER IS RESTORED
2618
2619
2620 014410 016706 177054 RESTAR: MOV SAVSP,SP ;RESTORE STACK POINTER
2621 014414 012605 MOV (SP)+,R5 ;RESTORE R0-R5
2622 014416 012604 MOV (SP)+,R4
2623 014420 012603 MOV (SP)+,R3
2624 014422 012602 MOV (SP)+,R2
2625 014424 012601 MOV (SP)+,R1
2626 014426 012600 MOV (SP)+,R0
2627 014430 012767 014352 163366 MOV #PFAIL,24 ;SET UP FOR POWER FAILURE
2628 014436 012767 000340 163332 MOV #340,P5
2629 014444 012706 015460 MOV #STACK,SP
2630 014450 005067 000332 CLR TEMP
2631 014454 005267 000326 INC TEMP
2632 014460 001375 BNE .-4
2633 014462 104402 OCTASC
2634 014464 014506 PFTAB
2635 014466 104401 TYPE
2636 014470 014635 MPFAIL
2637 014472 005067 176736 CLR ERRFLG
2638 014476 005067 176776 CLR LAST
2639 014502 000177 176734 JMP #RETURN
2640 014506 000001 PFTAB: 1
2641 014510 000006 000002 6,2
2642 014514 000207 RETURN
    
```

C20418.P11

2643 014516 005015 042012 030510  
 2644 014524 020061 052501 047524  
 2645 014532 042440 044103 020117  
 2646 014540 042524 052123 006440  
 2647 014546 000012  
 2648 014550 005015 042526 052103  
 2649 014556 051117 040440 042104  
 2650 014564 042522 051523 000055  
 2651 014572 005015 047503 052116  
 2652 014600 047522 020114 042522  
 2653 014606 044507 052123 051105  
 2654 014614 040440 042104 042522  
 2655 014622 051523 000055  
 2656 014626 020040 000077  
 2657 014632 005015 000  
 2658 014635 040 050040 053517  
 2659 014642 051105 043040 044501  
 2660 014650 052514 042522 020054  
 2661 014656 051120 043517 040522  
 2662 014664 020115 042522 052123  
 2663 014672 051101 020124 052101  
 2664 014700 052040 051505 020124  
 2665 014706 047111 050040 047522  
 2666 014714 051107 051505 000123  
 2667 014722 005015 055104 044104  
 2668 014730 000110  
 2669 014732 005015 000122  
 2670 014736 005015 042524 052123  
 2671 014744 050040 026503 000  
 2672 014752  
 2673  
 2674  
 2675  
 2676 014752 012100  
 2677 014754 012544  
 2678 014756 013064  
 2679 014760 012576  
 2680 014762 012670  
 2681 014764 012700  
 2682 014766 012452  
 2683 014770 012512  
 2684 014772 012200  
 2685  
 2686  
 2687  
 2688 014774 000000  
 2689 015006  
 2690 015006 000000  
 2691 015020  
 2692 015020 000000  
 2693 015032  
 2694  
 2695  
 2696  
 2697 015032  
 2698 015032 015046

MTITLE: .ASCIZ <15><12><12>/DH11 AUTO ECHO TEST /<15><12>

MVECTOR: .ASCIZ <15><12>/VECTOR ADDRESS-/

MREGAD: .ASCIZ <15><12>/CONTROL REGISTER ADDRESS-/

MM: .ASCIZ / ?/

MCRLF: .ASCIZ <15><12>

MPFAIL: .ASCIZ / POWER FAILURE. PROGRAM RESTART AT TEST IN PROGRESS/

MEPASS: .ASCIZ <15><12>/DZDHH/

MR: .ASCIZ <15><12>/R/

MTSTPC: .ASCIZ <15><12>/TEST FC-/

.EVEN

;TABLE OF POINTERS FOR TRAP DECODING

TRPTAB: SCOPER  
 TYPER  
 OCTASN  
 INSTRG  
 INSTRE  
 PARAMS  
 SVOSP  
 RSOS  
 SCOP1R

;BUFFERS FOR INPUT-OUTPUT

INBUF: 0  
 .=. +10  
 TEMP: 0  
 .=. +10  
 MDATA: 0  
 .=. +10

;TABLE OF POINTERS TO ERROR MESSAGES AND DATA

ERRTAB: EMI



# E05

020HH MACY11 27.732) 29-SEP-75 15:23 PAGE 198  
020HH.P11

2699	015034	015230				DT1
2700	015036	015103				EM2
2701	015040	015242				DT2
2702	015042	015157				EM3
2703	015044	015242				DT2
2704	015046	052501	047524	042440	EM1: .ASCIZ /AUTO ECHO ERROR/'15'<'12'/EXP REC/	
2705	015054	044103	020117	051105		
2706	015062	047522	006522	042412		
2707	015070	050130	020040	020040		
2708	015076	051040	041505	000		
2709	015103	116	047117	042440	EM2: .ASCIZ /NON ECHOED DATA ERROR/'15'<'12'/EXP REC LINE/	
2710	015110	044103	042517	020104		
2711	015116	040504	040524	042440		
2712	015124	051122	051117	005015		
2713	015132	054105	020120	020040		
2714	015140	020040	042522	020103		
2715	015146	020040	020040	044514		
2716	015154	042516	000			
2717	015157	105	044103	042517	EM3: .ASCIZ /ECHOED DATA ERROR/'15'<'12'/EXP REC LINE/	
2718	015164	020104	040504	040524		
2719	015172	042440	051122	051117		
2720	015200	005015	054105	020120		
2721	015206	020040	020040	042522		
2722	015214	020103	020040	020040		
2723	015222	044514	042516	000		
2724		015230			.EVEN	
2725	015230	000002			DT1: 2	
2726	015232	006	002		.BYTE 6,2	
2727	015234	013466			SAVR5	
2728	015236	006	000		.BYTE 6,0	
2729	015240	013464			SAVR4	
2730	015242	000003			DT2: 3	
2731	015244	006	002		.BYTE 6,2	
2732	015246	013466			SAVR5	
2733	015250	006	002		.BYTE 6,2	
2734	015252	013464			SAVR4	
2735	015254	002	002		.BYTE 2,2	
2736	015256	013462			SAVR3	
2737	015260	000000			ENDCOD: 0	
2738		000001			.END	







RCNT13	014240	2566#												
RCNT14	014242	2567#												
RCNT15	014244	2568#												
RCNT16	014246	2569#												
RCNT17	014250	2570#												
RCNT2	014216	2557#												
RCNT3	014220	2558#												
RCNT4	014222	2559#												
RCNT5	014224	2560#												
RCNT6	014226	2561#												
RCNT7	014230	2562#												
RDCT0	014252	1901	1927*	2571#										
RDCT1	014254	2572#												
RDCT10	014272	2579#												
RDCT11	014274	2580#												
RDCT12	014276	2581#												
RDCT13	014300	2582#												
RDCT14	014302	2583#												
RDCT15	014304	2584#												
RDCT16	014306	2585#												
RDCT17	014310	2586#												
RDCT2	014256	2573#												
RDCT3	014260	2574#												
RDCT4	014262	2575#												
RDCT5	014264	2576#												
RDCT6	014266	2577#												
RDCT7	014270	2578#												
RESREG	012346	2016	2019#											
RESTAR	014410	2614	2620#											
RESTRT	012074	1951	1957#											
RESOS =	104407	370#	2019											
RETURN	013442	443#	448	1973*	1975	2261#	2639							
RSOS	012512	2063#	2683											
RO	=%000000	43#	467*	483*	506*	522*	545*	561*	584*	600*	623*	639*	662*	678*
		701*	717*	740*	756*	779*	795*	818*	834*	857*	873*	896*	912*	935*
		951*	974*	990*	1013*	1029*	1052*	1068*	1094*	1119*	1145*	1170*	1196*	1221*
		1247*	1272*	1298*	1323*	1349*	1374*	1400*	1425*	1451*	1476*	1502*	1527*	1553*
		1578*	1604*	1629*	1655*	1680*	1706*	1731*	1757*	1782*	1808*	1833*	1859*	1884*
		1898*	1908*	2023*	2059	2063*	2170*	2174*	2181	2202*	2206*	2215*	2233*	2606
		2626*												
R1	=%000001	44#	396*	399*	401*	403	468*	475*	507*	514*	546*	553*	585*	592*
		624*	631*	663*	670*	702*	709*	741*	748*	780*	787*	819*	826*	858*
		865*	897*	904*	936*	943*	975*	982*	1014*	1021*	1053*	1060*	1899*	1902
		1907*	1950*	1953	2058	2064*	2162*	2164	2165	2166	2167	2218*	2226*	2231*
		2607	2625*											
R2	=%000002	45#	397*	399	400*	402*	1100*	1101*	1104	1106	1109*	1111	1151*	1152*
		1155	1157	1160*	1162	1202*	1203*	1206	1208	1211*	1213	1253*	1254*	1257
		1259	1262*	1264	1304*	1305*	1308	1310	1313*	1315	1355*	1356*	1359	1361
		1364*	1366	1406*	1407*	1410	1412	1415*	1417	1457*	1458*	1461	1463	1466*
		1468	1508*	1509*	1512	1514	1517*	1519	1559*	1560*	1563	1565	1568*	1570
		1610*	1611*	1614	1616	1619*	1621	1661*	1662*	1665	1667	1670*	1672	1712*
		1713*	1716	1718	1721*	1723	1763*	1764*	1767	1769	1772*	1774	1814*	1815*
		1818	1820	1823*	1825	1865*	1866*	1869	1871	1874*	1876	1900*	1905*	1919*
		1920*	1921*	1922	1924	1927*	1932	2057	2065*	2220*	2228	2230*	2608	2624*
R3	=%000003	46#	398*	401	402	1097*	1098*	1099*	1100	1102	1148*	1149*	1150*	1151
		1153	1199*	1200*	1201*	1202	1204	1250*	1251*	1252*	1253	1255	1301*	1302*









# M05

DZDHH MACY11 27(732) 29-SEP-76 15:23 PAGE 207  
DZDHHB.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

242	244	246	248	250	252	254	256	258	260	262	264	266
268	270	272	274	276	278	280	282	284	286	288	290	292
294	296	298	300	302	304	306	308	310	312	314	316	318
320	322	324	326	328	330	332	334	336	338	340	342	347*
354*	372*	2538*	2616	2632	2672*	2689*	2691*	2692*	2724*			





FT	91	93	95	97	99	101	103	105	107	109	111	113	115	117
FT	121	123	125	127	129	131	133	135	137	139	141	143	145	147
FT	151	153	155	157	159	161	163	165	167	169	171	173	175	177
FT	181	183	185	187	189	191	193	195	197	199	201	203	205	207
FT	211	213	215	217	219	221	223	225	227	229	231	233	235	237
FT	241	243	245	247	249	251	253	255	257	259	261	263	265	267
FT	271	273	275	277	279	281	283	285	287	289	291	293	295	297
FT	301	303	305	307	309	311	313	315	317	319	321	323	325	327
FT	331	333	335	337	339	341	343	2024	2615	826	865	904	943	982
FT	475	514	553	592	631	670	709	748	787	826	865	904	943	982
FT	1060	1119	1170	1221	1272	1323	1374	1425	1476	1527	1578	1629	1680	1731
FT	1833	1884	1921	1948	1968	2026	2205	2229	2230	2631	1670	1721	1772	1823
FT	1160	1211	1262	1313	1364	1415	1466	1517	1568	1619	1670	1721	1772	1823
FT	448	1957	2046	2639	618	657	696	735	774	813	852	891	930	969
FT	501	540	579	618	657	696	735	774	813	852	891	930	969	1008
FT	1085	1136	1187	1238	1289	1340	1391	1442	1493	1544	1595	1646	1697	1748
FT	1850	1953	2046	2639	618	657	696	735	774	813	852	891	930	969
FT	382	383	396	397	398	399	421	430	431	443	458	459	460	461
FT	465	466	467	465	472	476	479	497	498	499	500	503	504	505
FT	508	511	515	518	536	537	538	539	542	543	544	545	547	550
FT	557	575	576	577	578	581	582	583	584	586	589	593	596	614
FT	616	617	620	621	622	623	625	628	632	635	653	654	655	656
FT	660	661	662	664	667	671	674	692	693	694	695	698	699	700
FT	703	706	710	713	731	732	733	734	737	738	739	740	742	745
FT	752	770	771	772	773	776	777	778	779	781	784	788	791	809
FT	811	812	815	816	817	818	820	823	827	830	848	849	850	851
FT	855	856	857	859	862	866	869	887	888	889	890	893	894	895
FT	898	901	905	908	926	927	928	929	932	933	934	935	937	940
FT	947	965	966	967	968	971	972	973	974	976	979	983	986	1004
FT	1006	1007	1010	1011	1012	1013	1015	1018	1022	1025	1043	1044	1045	1046
FT	1050	1051	1052	1054	1057	1061	1064	1081	1082	1083	1084	1087	1088	1090
FT	1093	1095	1097	1100	1106	1114	1122	1132	1133	1134	1135	1138	1139	1141
FT	1144	1146	1148	1151	1157	1165	1173	1183	1184	1185	1186	1189	1190	1192
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F06

DZDHH MACY11 27.732) 29-SEP-76 15:23 PAGE 215  
DZDHHB.P11 CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

CORE USED: 11K (21 PAGES)