

DH11

MULTI-LINE PARITY
MD-11-DZDHG-B

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

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MADE IN USA

This microfiche card contains a grid of frames on the left side, with the rest of the card being a large, mostly blank area. The frames are arranged in approximately 15 rows and 5 columns. Each frame contains a small amount of data, which appears to be a mix of text and vertical bar patterns, possibly representing a specific data point or a small table. The data is too small to read clearly, but it seems to be organized in a structured manner. The right side of the card is a large, dark, mostly blank area, which is typical for microfiche cards where the data is concentrated in the left-hand frames.

E01

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DZDHGB.P11

| | | | | |
|-----|--------|--------|------|-----------------------------------|
| 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 |

| | | | | |
|-----|--------|--------|------|------------------------------------|
| 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 |

| | | | | |
|-----|--------|--------|------|-----------------------------------|
| 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 |

I01

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```
344 ;STANDARD INTERRUPT VECTORS
345
346
347 000024 . =24
348 000024 012354 PFAIL ;POWER FAIL HANDLER
349 000026 000340 340 ;SERVICE AT LEVEL 7
350 000030 010552 ERRORS ;ERROR HANDLER
351 000032 000340 340 ;SERVICE AT LEVEL 7
352 000034 010754 TRPSRV ;GENERAL HANDLER DISPATCH SERVICE
353 000036 000340 340 ;SERVICE AT LEVEL 7
354
355 000200 000167 000574 . =200 JMP START ;GO TO START OF PROGRAM
356
357
358
359 ;DEFINITIONS FOR TRAP SUBROUTINE CALLS
360 ;POINTERS TO SUBROUTINES CAN BE FOUND STARTING
361 ;AT LOCATION "TRPTAB"
362
363 104400 SCOPE=TRAP+Y ;SCOPE LOOP AND ITERATION HANDLER
364 104401 TYPE=TRAP+Y ;TELETYPE OUTPUT ROUTINE
365 104402 OCTASC=TRAP+Y ;OCTAL TO ASCII CONVERSION
366 104403 INSTR=TRAP+Y ;INPUT ASCII STRING
367 104404 INSTER=TRAP+Y ;STRING INPUT ERROR
368 104405 PARAM=TRAP+Y ;CONVERT STRING TO OCTAL, CHECK LIMITS
369 104406 SAVOSP=TRAP+Y ;SAVE R0-R5, PC
370 104407 RESO5=TRAP+Y ;RESTORE R0-R5
371 104410 SCOPE1=TRAP+Y ;CHECK FOR FREEZE ON CURRENT DATA
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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 013564          MOV #STACK,SP        ;SET UP PROCESSOR STACK
383 0010.2 012737 012354 000024 MOV #PFAIL,2#24      ;SET UP POWER FAIL TRAP
384 001020 005067 010656          CLR STFLG           ;CLEAR TEST START FLAG
385 001024 005067 010612          CLR PASCNT         ;CLEAR PASS COUNT
386 001030 005067 010610          CLR ERRCNT         ;CLEAR ERROR COUNT
387 001034 005067 010600          CLR ERRFLG        ;CLEAR ERROR FLAG
388 001040 005067 010574          CLR ERRFLG        ;CLEAR LAST ERROR PC
389 001044 104401 012520          TYPE ,MTITLE      ;TYPE TITLE MESSAGE
390 001050 005767 010624          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 012613          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 011630          DHRVEC        ;LOCATIONS TO BE FILLED
411 001136          003         ;NUMBER OF LOCATIONS
412 001137          004         ;LSB MASK
413 001140 104403          INSTR          ;INPUT ADDRESS OF DEVICE CSR
414 001142 012635          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 011606          DHSCR        ;LOCATIONS TO BE FILLED
419 001154          007         ;NUMBER OF LOCATIONS
420 001155          010         ;LSB MASK
421 001156 016767 010442 010442 MOV DHSSR,DHSLR   ;SET UP ADDRESS OF SILO
422 001164 005267 010436          INC DHSLR       ;STATUS REGISTER HIGH BYTE
423 001170 005767 010504          TST INIFLG     ;IF INITIALIZATION FLAG
424 001174 001002          BNE BEGIN     ;IS CLEARED
425 001176 005167 010476          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 012767 000340 176566 BEGIN: MOV    #340,PS          ;LOCK OUT INTERRUPTS
431 001210 012706 013564          MOV    #STACK,SP       ;SET UP PROCESSOR STACK
432 001214 032767 000002 176346 BIT    #SW01,$WR       ;IF SW01=1
433 001222 001410          BEQ    1$              ;GET PC FOR PROGRAM START
434 001224 104403          INSTR          ;GET PC
435 001226 013001          MTSTPC         ;MESSAGE "TEST PC"
436 001230 104405          FARAM          ;CONVERT STRING TO OCTAL
437 001232 000000          0
438 001234 017500          17500
439 001236 000207          RETURN
440 001240          001          .BYTE 1
441 001241          001          .BYTE 1
442 001242 000410          BR    2$
443 001244 012767 001274 010374 1$: MOV    #T1,RETURN      ;NORMAL START, TEST 1
444 001252 005767 010424          TST    STFLG         ;IF LOOPING, BYPASS TYPEOUT
445 001256 001004          BNE    3$
446 001260 005167 010416          COM    STFLG
447 001264 104401 012775          2$: TYPE MR
448 001270 000177 010352          3$: JMP    #RETURN      ;TYPE "R" TO INDICATE START
                                     ;START TESTING

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L01

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449
450 ;RECEIVER PARITY LOGIC TEST ON LINE 0.
451 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
452 ;WITH ODD PARITY SET,BREAK SET,HDX SET.
453 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
454 ;WITH EVEN PARITY AND THEREBY
455 ;CAUSE A PARITY ERROR AND OVERRUN
456 ;CHARACTER LENGTH: 8 BITS
457 ;LINE SPEED: 9600 BAUD
458
459 001274 012767 000340 176474 T1: MOV #340,PS ;DISABLE ALL INTERRUPTS
460 001302 012767 000010 010344 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
461 001310 012767 001434 010332 MOV #4$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
462 001316 012767 001364 010326 MOV #1$,FREEZ1 ;SET UP TO LOOP WITH DATA
463 001324 012777 004000 010254 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
464 001332 012703 000000 MOV #0,R3 ;SET UP LINE #
465 001336 012705 130000 MOV #0*400+130000,R5 ;SET EXPECTED LINE NUMBER
466 ;VALID DATA FLAG,
467 ;PARITY ERROR,DATA OVERRUN,
468 ;AND EXPECTED DATA
469 001342 012767 000377 010340 MOV #377,TDATA ;ACTUAL DATA TO BE TRANSMITTED
470 001350 012777 000000 010230 MOV #0,ADHSCR ;SELECT LINE 0
471 001356 012777 073563 010226 MOV #73563,ADHLPR ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
472 ;9600 BAUD SPEED FOR LINE 0
473 001364 012777 177777 010224 1$: MOV #-1,ADHBC ;TRANSMIT 1 CHARACTER
474 001372 012777 011710 010214 MOV #TDATA,ADHBA ;ADDRESS OF TRANSMITTED DATA
475 001400 012777 000001 010214 MOV #1,ADHBCR ;SET BREAK FOR LINE 0.
476 001406 012777 000001 010204 MOV #1,ADHBAR ;START TRANSMITTER
477 001414 105777 010166 2$: TSTB ADHSCR ;WAIT FOR CHARACTER TO BE RECEIVED
478 001420 100375 BPL 2$ ;
479 001422 017701 010162 MOV ADHNR,R1 ;GET RECEIVED CHARACTER
480 001426 020501 CMP R5,R1 ;COMPARE EXPECTED AND RECEIVED DATA
481 001430 001401 BEQ +4 ;
482 001432 104003 HLT 3 ;DATA ERROR
483 001434 104400 4$: SCOPE ;CHECK FOR ITERATIONS,LOOP
484
485 ;RECEIVER PARITY LOGIC TEST ON LINE 1.
486 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
487 ;WITH ODD PARITY SET,BREAK SET,HDX SET.
488 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
489 ;WITH EVEN PARITY AND THEREBY
490 ;CAUSE A PARITY ERROR AND OVERRUN
491 ;CHARACTER LENGTH: 8 BITS
492 ;LINE SPEED: 9600 BAUD
493
494 001436 012767 000340 176332 T2: MOV #340,PS ;DISABLE ALL INTERRUPTS
495 001444 012767 000010 010202 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
496 001452 012767 001576 010170 MOV #4$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
497 001460 012767 001526 010164 MOV #1$,FREEZ1 ;SET UP TO LOOP WITH DATA
498 001466 012777 004000 010112 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
499 001474 012703 000001 MOV #1,R3 ;SET UP LINE #
500 001500 012705 130400 MOV #1*400+130000,R5 ;SET EXPECTED LINE NUMBER
501 ;VALID DATA FLAG,
502 ;PARITY ERROR,DATA OVERRUN,
503 ;AND EXPECTED DATA
504 001504 012767 000377 010176 MOV #377,TDATA ;ACTUAL DATA TO BE TRANSMITTED

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NO1

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561                                     ;CHARACTER LENGTH: 8 BITS
562                                     ;LINE SPEED: 9600 BAUD
563
564 001742 012767 000340 176026 T4:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS
565 001750 012767 000010 007676      MOV    #10,ICOUNT           ;SET UP FOR 10 ITERATIONS
566 001756 012767 002102 007664      MOV    #4$,ESCAPE         ;SET UP TO ESCAPE TO NEXT TEST
567 001764 012767 002032 007660      MOV    #1$,FREEZ1        ;SET UP TO LOOP WITH DATA
568 001772 012777 004000 007606      MOV    #BIT11,ADHSCR     ;MASTER CLEAR INTERFACE
569 002000 012703 000003              MOV    #3,R3             ;SET UP LINE #
570 002004 012705 131400              MOV    #3*400+130000,R5 ;SET EXPECTED LINE NUMBER
571                                     ;VALID DATA FLAG,
572                                     ;PARITY ERROR,DATA OVERRUN,
573                                     ;AND EXPECTED DATA
574 002010 012767 000377 007672      MOV    #377,TDATA        ;ACTUAL DATA TO BE TRANSMITTED
575 002016 012777 000003 007562      MOV    #3,ADHSCR         ;SELECT LINE 3
576 002024 012777 073563 007560      MOV    #73563,ADHLPR     ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
577                                     ;9600 BAUD SPEED FOR LINE 3
578 002032 012777 177777 007556 1$:  MOV    #-1,ADHBC         ;TRANSMIT 1 CHARACTER
579 002040 012777 011710 007546      MOV    #TDATA,ADHBA      ;ADDRESS OF TRANSMITTED DATA
580 002046 012777 000010 007546      MOV    #10,ADHBCR        ;SET BREAK FOR LINE 3.
581 002054 012777 000010 007536      MOV    #10,ADHBAR        ;START TRANSMITTER
582 002062 105777 007520 2$:  TSTB  ADHSCR ;WAIT FOR CHARACTER TO BE RECEIVED
583 002066 100375              BPL   2$
584 002070 017701 007514      MOV.- ADHNR, R1          ;GET RECEIVED CHARACTER
585 002074 020501              CMP   R5,R1             ;COMPARE EXPECTED AND RECEIVED DATA
586 002076 001401              BEQ  +4
587 002100 104003              HLT  3                 ;DATA ERROR
588 002102 104400 4$:  SCOPE ;CHECK FOR ITERATIONS,LOOP
589
590                                     ;RECEIVER PARITY LOGIC TEST ON LINE 4.
591                                     ;TRANSMIT ONE CHARACTER TO THE RECEIVER
592                                     ;WITH ODD PARITY SET,BREAK SET,HDx SET.
593                                     ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
594                                     ;WITH EVEN PARITY AND THEREBY
595                                     ;CAUSE A PARITY ERROR AND OVERRUN
596                                     ;CHARACTER LENGTH: 8 BITS
597                                     ;LINE SPEED: 9600 BAUD
598
599 002104 012767 000340 175564 T5:  MOV    #340,PS                ;DISABLE ALL INTERRUPTS
600 002112 012767 000010 007534      MOV    #10,ICOUNT           ;SET UP FOR 10 ITERATIONS
601 002120 012767 002244 007522      MOV    #4$,ESCAPE         ;SET UP TO ESCAPE TO NEXT TEST
602 002126 012767 002174 007516      MOV    #1$,FREEZ1        ;SET UP TO LOOP WITH DATA
603 002134 012777 004000 007444      MOV    #BIT11,ADHSCR     ;MASTER CLEAR INTERFACE
604 002142 012703 000004              MOV    #4,R3             ;SET UP LINE #
605 002146 012705 132000              MOV    #4*400+130000,R5 ;SET EXPECTED LINE NUMBER
606                                     ;VALID DATA FLAG,
607                                     ;PARITY ERROR,DATA OVERRUN,
608                                     ;AND EXPECTED DATA
609 002152 012767 000377 007530      MOV    #377,TDATA        ;ACTUAL DATA TO BE TRANSMITTED
610 002160 012777 000004 007420      MOV    #4,ADHSCR         ;SELECT LINE 4
611 002166 012777 073563 007416      MOV    #73563,ADHLPR     ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
612                                     ;9600 BAUD SPEED FOR LINE 4
613 002174 012777 177777 007414 1$:  MOV    #-1,ADHBC         ;TRANSMIT 1 CHARACTER
614 002202 012777 011710 007404      MOV    #TDATA,ADHBA      ;ADDRESS OF TRANSMITTED DATA
615 002210 012777 000020 007404      MOV    #20,ADHBCR        ;SET BREAK FOR LINE 4.
616 002216 012777 000020 007374      MOV    #20,ADHBAR        ;START TRANSMITTER

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673 002440 012777 004000 007140      MOV      #BIT11,JDHSCR      ;MASTER CLEAR INTERFACE
674 002446 012703 000006      MOV      #6,R3           ;SET UP LINE #
675 002452 012705 133000      MOV      #6*400+130000,R5 ;SET EXPECTED LINE NUMBER
676                                     ;VALID DATA FLAG,
677                                     ;PARITY ERROR,DATA OVERRUN,
678                                     ;AND EXPECTED DATA
679 002456 012767 000377 007224      MOV      #377,TDATA      ;ACTUAL DATA TO BE TRANSMITTED
680 002464 012777 000006 007114      MOV      #6,JDHSCR       ;SELECT LINE 6
681 002472 012777 073563 007112      MOV      #73563,JDHLPR   ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
682                                     ;9600 BAUD SPEED FOR LINE 6
683 002500 012777 177777 007110 15:      MOV      #-1,JDHBC      ;TRANSMIT 1 CHARACTER
684 002506 012777 011710 007100      MOV      #TDATA,JDHBA    ;ADDRESS OF TRANSMITTED DATA
685 002514 012777 000100 007100      MOV      #100,JDHBCR     ;SET BREAK FOR LINE 6.
686 002522 012777 000100 007070      MOV      #100,JDHBAR     ;START TRANSMITTER
687 002530 105777 007052 25:      TSTB    JDHSCR          ;WAIT FOR CHARACTER TO BE RECEIVED
688 002534 100375                                     BPL      25
689 002536 017701 007046      MOV      #DHNRC,R1       ;GET RECEIVED CHARACTER
690 002542 020501                                     CMP      R5,R1          ;COMPARE EXPECTED AND RECEIVED DATA
691 002544 001401                                     BEQ      +4
692 002546 104003                                     HLT      3              ;DATA ERROR
693 002550 104400 45:      SCOPE    ;CHECK FOR ITERATIONS,LOOP
694
695 ;RECEIVER PARITY LOGIC TEST ON LINE 7.
696 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
697 ;WITH ODD PARITY SET,BREAK SET,HDx SET.
698 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
699 ;WITH EVEN PARITY AND THEREBY
700 ;CAUSE A PARITY ERROR AND OVERRUN
701 ;CHARACTER LENGTH: 8 BITS
702 ;LINE SPEED: 9600 BAUD
703
704 002552 012767 000340 175216 110:      MOV      #340,PS        ;DISABLE ALL INTERRUPTS
705 002560 012767 000010 007066      MOV      #10,ICOUNT     ;SET UP FOR 10 ITERATIONS
706 002566 012767 002712 007054      MOV      #45,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
707 002574 012767 002642 007050      MOV      #15,FREEZ1     ;SET UP TO LOOP WITH DATA
708 002602 012777 004000 006776      MOV      #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
709 002610 012703 000007      MOV      #7,R3          ;SET UP LINE #
710 002614 012705 133400      MOV      #7*400+130000,R5 ;SET EXPECTED LINE NUMBER
711                                     ;VALID DATA FLAG,
712                                     ;PARITY ERROR,DATA OVERRUN,
713                                     ;AND EXPECTED DATA
714 002620 012767 000377 007062      MOV      #377,TDATA     ;ACTUAL DATA TO BE TRANSMITTED
715 002626 012777 000007 006752      MOV      #7,JDHSCR      ;SELECT LINE 7
716 002634 012777 073563 006750      MOV      #73563,JDHLPR  ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
717                                     ;9600 BAUD SPEED FOR LINE 7
718 002642 012777 177777 006746 15:      MOV      #-1,JDHBC     ;TRANSMIT 1 CHARACTER
719 002650 012777 011710 006736      MOV      #TDATA,JDHBA   ;ADDRESS OF TRANSMITTED DATA
720 002656 012777 000200 006736      MOV      #200,JDHBCR    ;SET BREAK FOR LINE 7.
721 002664 012777 000200 006725      MOV      #200,JDHBAR    ;START TRANSMITTER
722 002672 105777 006710 25:      TSTB    JDHSCR          ;WAIT FOR CHARACTER TO BE RECEIVED
723 002676 100375                                     BPL      25
724 002700 017701 006704      MOV      #DHNRC,R1     ;GET RECEIVED CHARACTER
725 002704 020501                                     CMP      R5,R1          ;COMPARE EXPECTED AND RECEIVED DATA
726 002706 001401                                     BEQ      +4
727 002710 104003                                     HLT      3              ;DATA ERROR
728 002712 104400 45:      SCOPE    ;CHECK FOR ITERATIONS,LOOP

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739 002714 012767 000340 175054 T11: MOV #340,PS ;DISABLE ALL INTERRUPTS
740 002722 012767 000010 006724 MOV #10,I,COUNT ;SET UP FOR 10 ITERATIONS
741 002730 012767 003054 006712 MOV #45,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
742 002736 012767 003004 006706 MOV #15,FREEZ1 ;SET UP TO LOOP WITH DATA
743 002744 012777 004000 006634 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
744 002752 012703 000010 MOV #10,R3 ;SET UP LINE #
745 002756 012705 134000 MOV #10*400+130000,R5 ;SET EXPECTED LINE NUMBER
746 ;VALID DATA FLAG,
747 ;PARITY ERROR,DATA OVERRUN,
748 ;AND EXPECTED DATA
749 002762 012767 000377 006720 MOV #377,TDATA ;ACTUAL DATA TO BE TRANSMITTED
750 002770 012777 000010 006610 MOV #10,JDHSCR ;SELECT LINE 10
751 002776 012777 073563 006606 MOV #73563,JDHLPR ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
752 ;9600 BAUD SPEED FOR LINE 10
753 003004 012777 177777 006604 15: MOV #-1,JDHBC ;TRANSMIT 1 CHARACTER
754 003012 012777 011710 006574 MOV #TDATA,JDHBA ;ADDRESS OF TRANSMITTED DATA
755 003020 012777 000400 006574 MOV #400,JDHBCR ;SET BREAK FOR LINE 10.
756 003026 012777 000400 006564 MOV #400,JDHBAR ;START TRANSMITTER
757 003034 105777 006546 25: TSTB JDHSCR ;WAIT FOR CHARACTER TO BE RECEIVED
758 003040 100375 BPL 25 ;
759 003042 017701 006542 MOV #JDHNR,R1 ;GET RECEIVED CHARACTER
760 003046 020501 CMP R5,R1 ;COMPARE EXPECTED AND RECEIVED DATA
761 003050 001401 BEQ +4 ;
762 003052 104003 HLT 3 ;DATA ERROR
763 003054 104400 45: SCOPE ;CHECK FOR ITERATIONS,LOOP
764
765 ;RECEIVER PARITY LOGIC TEST ON LINE 11.
766 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
767 ;WITH ODD PARITY SET,BREAK SET,HDH SET.
768 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
769 ;WITH EVEN PARITY AND THEREBY
770 ;CAUSE A PARITY ERROR AND OVERRUN
771 ;CHARACTER LENGTH: 8 BITS
772 ;LINE SPEED: 9600 BAUD
773
774 003056 012767 000340 174712 T12: MOV #340,PS ;DISABLE ALL INTERRUPTS
775 003064 012767 000010 006562 MOV #10,I,COUNT ;SET UP FOR 10 ITERATIONS
776 003072 012767 003216 006550 MOV #45,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
777 003100 012767 003146 006544 MOV #15,FREEZ1 ;SET UP TO LOOP WITH DATA
778 003106 012777 004000 006472 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
779 003114 012703 000011 MOV #11,R3 ;SET UP LINE #
780 003120 012705 134400 MOV #11*400+130000,R5 ;SET EXPECTED LINE NUMBER
781 ;VALID DATA FLAG,
782 ;PARITY ERROR,DATA OVERRUN,
783 ;AND EXPECTED DATA
784 003124 012767 000377 006556 MOV #377,TDATA ;ACTUAL DATA TO BE TRANSMITTED

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F02

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841                                     ;CHARACTER LENGTH: 8 BITS
842                                     ;LINE SPEED: 9600 BAUD
843
844 003362 012767 000340 174406 T14: MOV #340,PS ;DISABLE ALL INTERRUPTS
845 003370 012767 000010 006256 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
846 003376 012767 003522 006244 MOV #45,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
847 003404 012767 003452 006240 MOV #15,FREEZ1 ;SET UP TO LOOP WITH DATA
848 003412 012777 004000 006166 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
849 003420 012703 000013 MOV #13,R3 ;SET UP LINE #
850 003424 012705 135400 MOV #13*400+130000,R5 ;SET EXPECTED LINE NUMBER
851                                     ;VALID DATA FLAG,
852                                     ;PARITY ERROR,DATA OVERRUN,
853                                     ;AND EXPECTED DATA
854 003430 012767 000377 006252 MOV #377,TDATA ;ACTUAL DATA TO BE TRANSMITTED
855 003436 012777 000013 006142 MOV #13,JDHSCR ;SELECT LINE 13
856 003444 012777 073563 006140 MOV #73563,JDHLPR ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
857                                     ;9600 BAUD SPEED FOR LINE 13
858 003452 012777 177777 006136 15: MOV #-1,JDHBC ;TRANSMIT 1 CHARACTER
859 003460 012777 011710 006126 MOV #TDATA,JDHBA ;ADDRESS OF TRANSMITTED DATA
860 003466 012777 004000 006126 MOV #4000,JDHBCR ;SET BREAK FOR LINE 13.
861 003474 012777 004000 006116 MOV #4000,JDHBAR ;START TRANSMITTER
862 003502 105777 006100 25: TSTB JDHSCR ;WAIT FOR CHARACTER TO BE RECEIVED
863 003506 100375 BPL 25 ;
864 003510 017701 006074 MOV JDHRC,R1 ;GET RECEIVED CHARACTER
865 003514 020501 CMP R5,R1 ;COMPARE EXPECTED AND RECEIVED DATA
866 003516 001401 BEQ +4 ;
867 003520 104003 HLT 3 ;DATA ERROR
868 003522 104400 45: SCOPE ;CHECK FOR ITERATIONS,LOOP
869
870 ;RECEIVER PARITY LOGIC TEST ON LINE 14.
871 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
872 ;WITH ODD PARITY SET,BREAK SET,HDX SET.
873 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
874 ;WITH EVEN PARITY AND THEREBY
875 ;CAUSE A PARITY ERROR AND OVERRUN
876 ;CHARACTER LENGTH: 8 BITS
877 ;LINE SPEED: 9600 BAUD
878
879 003524 012767 000340 174244 T15: MOV #340,PS ;DISABLE ALL INTERRUPTS
880 003532 012767 000010 006114 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
881 003540 012767 003664 006102 MOV #45,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
882 003546 012767 003614 006076 MOV #15,FREEZ1 ;SET UP TO LOOP WITH DATA
883 003554 012777 004000 006024 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
884 003562 012703 000014 MOV #14,R3 ;SET UP LINE #
885 003566 012705 136000 MOV #14*400+130000,R5 ;SET EXPECTED LINE NUMBER
886                                     ;VALID DATA FLAG,
887                                     ;PARITY ERROR,DATA OVERRUN,
888                                     ;AND EXPECTED DATA
889 003572 012767 000377 006110 MOV #377,TDATA ;ACTUAL DATA TO BE TRANSMITTED
890 003600 012777 000014 006000 MOV #14,JDHSCR ;SELECT LINE 14
891 003606 012777 073563 005776 MOV #73563,JDHLPR ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
892                                     ;9600 BAUD SPEED FOR LINE 14
893 003614 012777 177777 005774 15: MOV #-1,JDHBC ;TRANSMIT 1 CHARACTER
894 003622 012777 011710 005764 MOV #TDATA,JDHBA ;ADDRESS OF TRANSMITTED DATA
895 003630 012777 010000 005764 MOV #10000,JDHBCR ;SET BREAK FOR LINE 14.
896 003636 012777 010000 005754 MOV #10000,JDHBAR ;START TRANSMITTER
  
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G02

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897 003644 105777 005736      25:  TSTB   @DHSCR ;WAIT FOR CHARACTER TO BE RECEIVED
898 003650 100375                BPL     25
899 003652 017701 005732      MOV     @DHNR, R1 ;GET RECEIVED CHARACTER
900 003656 020501                CMP     R5, R1 ;COMPARE EXPECTED AND RECEIVED DATA
901 003660 001401                BEQ     +4
902 003662 104003                HLT     3 ;DATA ERROR
903 003664 104400      45:  SCOPE ;CHECK FOR ITERATIONS, LOOP
904
905 ;RECEIVER PARITY LOGIC TEST ON LINE 15.
906 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
907 ;WITH ODD PARITY SET, BREAK SET, HDX SET.
908 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
909 ;WITH EVEN PARITY AND THEREBY
910 ;CAUSE A PARITY ERROR AND OVERRUN
911 ;CHARACTER LENGTH: 8 BITS
912 ;LINE SPEED: 9600 BAUD
913
914 003666 012767 000340 174102 T16:  MOV     #340, PS ;DISABLE ALL INTERRUPTS
915 003674 012767 000010 005752      MOV     #10, ICOUNT ;SET UP FOR 10 ITERATIONS
916 003702 012767 004026 005740      MOV     #45, ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
917 003710 012767 003756 005734      MOV     #15, FREEZ1 ;SET UP TO LOOP WITH DATA
918 003716 012777 004000 005662      MOV     #BIT11, @DHSCR ;MASTER CLEAR INTERFACE
919 003724 012703 000015      MOV     #15, R3 ;SET UP LINE #
920 003730 012705 136400      MOV     #15*400+130000, R5 ;SET EXPECTED LINE NUMBER
921 ;VALID DATA FLAG,
922 ;PARITY ERROR, DATA OVERRUN,
923 ;AND EXPECTED DATA
924 003734 012767 000377 005746      MOV     #377, TDATA ;ACTUAL DATA TO BE TRANSMITTED
925 003742 012777 000015 005636      MOV     #15, @DHSCR ;SELECT LINE 15
926 003750 012777 073563 005634      MOV     #73563, @DHLPR ;SELECT 8 BITS/CHAR, ODD PARITY HDX,
927 ;9600 BAUD SPEED FOR LINE 15
928 003756 012777 177777 005632 15:  MOV     #-1, @DHBC ;TRANSMIT 1 CHARACTER
929 003764 012777 011710 005622      MOV     #TDATA, @DHBA ;ADDRESS OF TRANSMITTED DATA
930 003772 012777 020000 005622      MOV     #20000, @DHBCR ;SET BREAK FOR LINE 15.
931 004000 012777 020000 005612      MOV     #20000, @DHBAR ;START TRANSMITTER
932 004006 105777 005574      25:  TSTB   @DHSCR ;WAIT FOR CHARACTER TO BE RECEIVED
933 004012 100375                BPL     25
934 004014 017701 005570      MOV     @DHNR, R1 ;GET RECEIVED CHARACTER
935 004020 020501                CMP     R5, R1 ;COMPARE EXPECTED AND RECEIVED DATA
936 004022 001401                BEQ     +4
937 004024 104003                HLT     3 ;DATA ERROR
938 004026 104400      45:  SCOPE ;CHECK FOR ITERATIONS, LOOP
939
940 ;RECEIVER PARITY LOGIC TEST ON LINE 16.
941 ;TRANSMIT ONE CHARACTER TO THE RECEIVER
942 ;WITH ODD PARITY SET, BREAK SET, HDX SET.
943 ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
944 ;WITH EVEN PARITY AND THEREBY
945 ;CAUSE A PARITY ERROR AND OVERRUN
946 ;CHARACTER LENGTH: 8 BITS
947 ;LINE SPEED: 9600 BAUD
948
949 004030 012767 000340 173740 T17:  MOV     #340, PS ;DISABLE ALL INTERRUPTS
950 004036 012767 000010 005610      MOV     #10, ICOUNT ;SET UP FOR 10 ITERATIONS
951 004044 012767 004170 005576      MOV     #45, ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
952 004052 012767 004120 005572      MOV     #15, FREEZ1 ;SET UP TO LOOP WITH DATA

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H02

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953 004060 012777 004000 005520      MOV      #BIT11,ADHSCR      ;MASTER CLEAR INTERFACE
954 004066 012703 000016                MOV      #16,R3           ;SET UP LINE #
955 004072 012705 137000                MOV      #16*400+130000,R5 ;SET EXPECTED LINE NUMBER
956                                     ;VALID DATA FLAG,
957                                     ;PARITY ERROR,DATA OVERRUN,
958                                     ;AND EXPECTED DATA
959 004076 012767 000377 005604      MOV      #377,TDATA      ;ACTUAL DATA TO BE TRANSMITTED
960 004104 012777 000016 005474      MOV      #16,ADHSCR      ;SELECT LINE 16
961 004112 012777 073563 005472      MOV      #73563,ADHLPR   ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
962                                     ;9600 BAUD SPEED FOR LINE 16
963 004120 012777 177777 005470 1$:    MOV      #-1,ADHBC       ;TRANSMIT 1 CHARACTER
964 004126 012777 011710 005460      MOV      #TDATA,ADHBA    ;ADDRESS OF TRANSMITTED DATA
965 004134 012777 040000 005460      MOV      #40000,ADHBCR   ;SET BREAK FOR LINE 16.
966 004142 012777 040000 005450      MOV      #40000,ADHBAR   ;START TRANSMITTER
967 004150 105777 005432                TSTB    ADHSCR           ;WAIT FOR CHARACTER TO BE RECEIVED
968 004154 100375                        BPL     2$
969 004156 017701 005426                MOV      ADHNR,R1        ;GET RECEIVED CHARACTER
970 004162 020501                        CMP     R5,R1           ;COMPARE EXPECTED AND RECEIVED DATA
971 004164 001401                        BEQ     +4
972 004166 104003                        HLT     3               ;DATA ERROR
973 004170 104400 4$:                SCOPE   ;CHECK FOR ITERATIONS,LOOP
974
975                                     ;RECEIVER PARITY LOGIC TEST ON LINE 17.
976                                     ;TRANSMIT ONE CHARACTER TO THE RECEIVER
977                                     ;WITH ODD PARITY SET,BREAK SET,HDX SET.
978                                     ;THE RECEIVER WILL RECEIVE AN ALL 0'S CHARACTER
979                                     ;WITH EVEN PARITY AND THEREBY
980                                     ;CAUSE A PARITY ERROR AND OVERRUN
981                                     ;CHARACTER LENGTH: 8 BITS
982                                     ;LINE SPEED: 9600 BAUD
983
984 004172 012767 000340 173576 T20:   MOV      #340,PS         ;DISABLE ALL INTERRUPTS
985 004200 012767 000010 005446      MOV      #10,ICOUNT     ;SET UP FOR 10 ITERATIONS
986 004206 012767 004332 005434      MOV      #4$,ESCAPE     ;SET UP TO ESCAPE TO NEXT TEST
987 004214 012767 004262 005430      MOV      #1$,FREEZI     ;SET UP TO LOOP WITH DATA
988 004222 012777 004000 005356      MOV      #BIT11,ADHSCR   ;MASTER CLEAR INTERFACE
989 004230 012703 000017                MOV      #17,R3         ;SET UP LINE #
990 004234 012705 137400                MOV      #17*400+130000,R5 ;SET EXPECTED LINE NUMBER
991                                     ;VALID DATA FLAG,
992                                     ;PARITY ERROR,DATA OVERRUN,
993                                     ;AND EXPECTED DATA
994 004240 012767 000377 005442      MOV      #377,TDATA      ;ACTUAL DATA TO BE TRANSMITTED
995 004246 012777 000017 005332      MOV      #17,ADHSCR     ;SELECT LINE 17
996 004254 012777 073563 005330      MOV      #73563,ADHLPR  ;SELECT 8 BITS/CHAR,ODD PARITY HDX,
997                                     ;9600 BAUD SPEED FOR LINE 17
998 004262 012777 177777 005326 1$:    MOV      #-1,ADHBC       ;TRANSMIT 1 CHARACTER
999 004270 012777 011710 005316      MOV      #TDATA,ADHBA    ;ADDRESS OF TRANSMITTED DATA
1000 004276 012777 100000 005316      MOV      #100000,ADHBCR  ;SET BREAK FOR LINE 17.
1001 004304 012777 100000 005306      MOV      #100000,ADHBAR  ;START TRANSMITTER
1002 004312 105777 005270 2$:    TSTB    ADHSCR           ;WAIT FOR CHARACTER TO BE RECEIVED
1003 004316 100375                        BPL     2$
1004 004320 017701 005264                MOV      ADHNR,R1        ;GET RECEIVED CHARACTER
1005 004324 020501                        CMP     R5,R1           ;COMPARE EXPECTED AND RECEIVED DATA
1006 004326 001401                        BEQ     +4
1007 004330 104003                        HLT     3               ;DATA ERROR
1008 004332 104400 4$:                SCOPE   ;CHECK FOR ITERATIONS,LOOP

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:009
1010 ;MULTI-LINE PARITY DATA TEST
1011 ;TRANSMIT A BINARY COUNT WITH ODD PARITY
1012 ;PATTERN ON ALL LINES.
1013 ;SILO ALARM LEVEL SET TO 0
1014 ;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
1015 ;IN INTERRUPT MODE.
1016 ;TRANSMITTER INTERRUPT WILL BE DISABLED
1017 ;LINE SPEED: 2400 BAUD
1018 ;CHARACTER LENGTH: 8 + PARITY
1019
1020 004334 012767 000340 173434 T21: MOV #340,PS ;DISABLE ALL INTERRUPTS
1021 004342 012767 000010 005304 MOV #10,COUNT ;SET UP FOR 10 ITERATIONS
1022 004350 012767 004602 005272 MOV #11$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1023 004356 012777 004000 005222 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1024 004364 012700 000020 MOV #16.,R0 ;SET UP TO START 16. LINES
1025 004370 005001 CLR R1 ;COUNT AND BUS ADDRESS MEMORIES
1026 ;AND RECEIVED DATA STORAGE
1027 004372 012702 000200 MOV #200,R2 ;SET UP TO LOAD HIGH BYTE
1028 004376 012703 000001 MOV #1,R3 ;OF EXPECTED DATA
1029 004402 012777 011712 005204 1$: MOV #TBUF,JDHBA ;LOAD BUSS ADDRESS
1030 004410 012777 177400 005200 MOV #-400,JDHBC ;LOAD BYTE COUNT
1031 004416 012777 027363 005166 MOV #27363,JDHLPR ;SET LINE SPEED AND
1032 ;CHARACTER LENGTH 8 + ODD PARITY
1033 004424 105061 012312 CLPB RBUF(R1) ;CLEAR NEXT RECEIVED CHARACTER
1034 004430 110263 012312 MOVB R2,RBUF(R3) ;LOAD HIGH BYTE
1035 004434 005277 005146 INC JDHSCR ;ADVANCE TO NEXT LINE
1036 004440 005202 INC R2 ;UPDATE POINTER TO
1037 004442 062701 000002 ADD #2,R1 ;LOW AND HIGH BYTE OF
1038 004446 062703 000002 ADD #2,R3 ;NEXT EXPECTED CHARACTER
1039 004452 005300 DEC R0 ;CONTINUE IF ALL LINES
1040 004454 001352 BNE 1$ ;NOT SET UP
1041 004456 012777 004516 005144 MOV #6$,JDHRVEC ;SET UP POINTER FOR
1042 004464 012777 000240 005140 MOV #240,JDHLVL ;RECEIVER INTERRUPT
1043 004472 012777 000100 005106 MOV #100,JDHSCR ;ENABLE RECEIVER INTERRUPT
1044 004500 012777 177777 005112 MOV #-1,JDHBAR ;SET ALL BAR BITS
1045 004506 005067 173264 CLR PS ;ENABLE INTERRUPTS
1046 004512 000167 000076 JMP 12$ ;GO TO TRANSMITTER WAITING ROUTINE
1047
1048 ;RECEIVER INTERRUPT SERVICE ROUTINE
1049 ;CHECK FOR RECEIVER DONE AND NO ERRORS
1050 ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1051 ;VERIFY THAT RECEIVED DATA IS CORRECT
1052 ;CHECK FOR END OF PASS
1053
1054 004516 105777 005064 6$: TSTB JDHSCR ;IF CHARACTER AVAILABLE NOT SET, ERROR
1055 004522 100026 BPL 10$
1056 004524 032777 040000 005054 BIT #40000,JDHSCR ;IF SILO OVERRUN SET, ERROR
1057 004532 001401 BEQ .+4
1058 004534 104002 HLT 2 ;SILO OVERRUN, ERROR
1059 004536 017701 005016 7$: MOV JDHNR, R1 ;READ CHARACTER FROM SILO
1060 004542 010102 MOV R1,R2 ;EXTRACT LINE NUMBER
1061 004544 000302 SWFB R2
1062 004546 042702 177760 BIC #177760,R2
1063 004552 010203 MOV R2,R3 ;SAVE LINE NUMBER
1064 004554 000302 ASL R2 ;USE LINE NUMBER AS OFFSET

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| | | | | | | | | |
|------|--------|--------|--------|--------|-------|--------|-----------------------------|-------------------------------------|
| 1065 | 004556 | 026201 | 012312 | | | CMF | RBUF(R2),R1 | ;COMPARE EXPECTED AND RECEIVED DATA |
| 1066 | 004562 | 001403 | | | | BEG | .+10 | |
| 1067 | 004564 | 016205 | 012312 | | | MOV | RBUF(R2),R5 | ;GET EXPECTED DATA |
| 1068 | 004570 | 104003 | | | | HLT | 3 | ;DATA ERROR |
| 1069 | 004572 | 105262 | 012312 | | | INCB | RBUF(R2) | ;UPDATE EXPECTED CHARACTER |
| 1070 | 004576 | 000002 | | | | RTI | | ;CONTINUE |
| 1071 | 004600 | 104001 | | | 10\$: | HLT | 1 | ;CHARACTER AVAILABLE NOT SET, ERROR |
| 1072 | 004602 | 022626 | | | 11\$: | POP2SP | | ;RESTORE STACK |
| 1073 | 004604 | 012777 | 004030 | 004774 | | MOV | #BIT11,JDHSCR | ;MASTER CLEAR INTERFACE |
| 1074 | 004612 | 000411 | | | | BR | 13\$ | ;RESTART TEST |
| 1075 | | | | | | | | |
| 1076 | | | | | | | | |
| 1077 | | | | | | | | |
| 1078 | | | | | | | | |
| 1079 | | | | | | | | |
| 1080 | | | | | | | | |
| 1081 | | | | | | | | |
| 1082 | 004614 | 005777 | 005000 | | 12\$: | TST | JDHBAR | ;WAIT FOR ALL BAR BITS TO CLEAR |
| 1083 | 004620 | 001375 | | | | BNE | .-4 | |
| 1084 | 004622 | 105777 | 005300 | | | TSTB | JDHSLR | ;WAIT FOR SILO TO EMPTY |
| 1085 | 004626 | 001375 | | | | BNE | .-4 | |
| 1086 | 004630 | 012767 | 000340 | 173140 | | MOV | #340,PS ;PREVENT INTERRUPTS | |
| 1087 | 004636 | 104400 | | | 13\$: | SCOPE | | ;CHECK FOR ITERATIONS, LOOP |
| 1088 | | | | | | | | |
| 1089 | | | | | | | | |
| 1090 | | | | | | | | |
| 1091 | | | | | | | | |
| 1092 | | | | | | | | |
| 1093 | | | | | | | | |
| 1094 | | | | | | | | |
| 1095 | | | | | | | | |
| 1096 | | | | | | | | |
| 1097 | | | | | | | | |
| 1098 | | | | | | | | |
| 1099 | 004640 | 012767 | 000340 | 173130 | T22: | MOV | #340,PS | ;DISABLE ALL INTERRUPTS |
| 1100 | 004646 | 012767 | 000010 | 005000 | | MOV | #10,ICOUNT | ;SET UP FOR 10 ITERATIONS |
| 1101 | 004654 | 012767 | 005106 | 004756 | | MOV | #11\$,ESCAPE | ;SET UP TO ESCAPE TO NEXT TEST |
| 1102 | 004662 | 012777 | 004000 | 004716 | | MOV | #BIT11,JDHSCR | ;MASTER CLEAR INTERFACE |
| 1103 | 004670 | 012700 | 000020 | | | MOV | #16.,R0 | ;SET UP TO START 16. LINES |
| 1104 | 004674 | 005001 | | | | CLR | R1 | ;COUNT AND BUS ADDRESS MEMORIES |
| 1105 | | | | | | | | ;AND RECEIVED DATA STORAGE |
| 1106 | 004676 | 012702 | 000200 | | | MOV | #200,R2 | ;SET UP TO LOAD HIGH BYTE |
| 1107 | 004702 | 012703 | 000001 | | | MOV | #1,R3 | ;OF EXPECTED DATA |
| 1108 | 004706 | 012777 | 011712 | 004700 | 15: | MOV | #TBUF,JDHBA | ;LOAD BUSS ADDRESS |
| 1109 | 004714 | 012777 | 177400 | 004674 | | MOV | #-400,JDHBC | ;LOAD BYTE COUNT |
| 1110 | 004722 | 012777 | 027323 | 004662 | | MOV | #27323,JDHLPR | ;SET LINE SPEED AND |
| 1111 | | | | | | | | ;CHARACTER LENGTH 8 + EVEN PARITY |
| 1112 | 004730 | 105061 | 012312 | | | CLRB | RBUF(R1) | ;CLEAR NEXT RECEIVED CHARACTER |
| 1113 | 004734 | 110263 | 012312 | | | MOVB | R2,RBUF(R3) | ;LOAD HIGH BYTE |
| 1114 | 004740 | 005277 | 004642 | | | INC | JDHSCR | ;ADVANCE TO NEXT LINE |
| 1115 | 004744 | 005202 | | | | INC | R2 | ;UPDATE POINTER TO |
| 1116 | 004746 | 062701 | 000002 | | | ADD | #2,R1 | ;LOW AND HIGH BYTE OF |
| 1117 | 004752 | 062703 | 000002 | | | ADD | #2,R3 | ;NEXT EXPECTED CHARACTER |
| 1118 | 004756 | 005300 | | | | DEC | R0 | ;CONTINUE IF ALL LINES |
| 1119 | 004760 | 001352 | | | | BNE | 1\$ | ;NOT SET UP |
| 1120 | 004762 | 012777 | 005022 | 004640 | | MOV | #6\$,JDHVEC | ;SET UP POINTER FOR |

K02

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1121 004770 012777 000240 004634      MOV      #240, @DHRLVL      ;RECEIVER INTERRUPT
1122 004776 012777 000100 004602      MOV      #100, @DHSCR      ;ENABLE RECEIVER INTERRUPT
1123 005004 012777 177777 004606      MOV      #-1, @DHBAR      ;SET ALL BAR BITS
1124 005012 005067 172760      CLR      PS                ;ENABLE INTERRUPTS
1125 005016 000167 000076      JMP      12$              ;GO TO TRANSMITTER WAITING ROUTINE
1126
1127      ;RECEIVER INTERRUPT SERVICE ROUTINE
1128      ;CHECK FOR RECEIVER DONE AND NO ERRORS
1129      ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1130      ;VERIFY THAT RECEIVED DATA IS CORRECT
1131      ;CHECK FOR END OF PASS
1132
1133 005022 105777 004560      6$:  TSTB   @DHSCR            ;IF CHARACTER AVAILABLE NOT SET, ERROR
1134 005026 100026      BPL     10$
1135 005030 032777 040000 004550      BIT     #40000, @DHSCR    ;IF SILO OVERRUN SET, ERROR
1136 005036 001401      BEQ     .+4
1137 005040 104002      HLT     2                ;SILO OVERRUN, ERROR
1138 005042 017701 004542      7$:  MOV     @DHNR, R1       ;READ CHARACTER FROM SILO
1139 005046 010102      MOV     R1, R2          ;EXTRACT LINE NUMBER
1140 005050 000302      SWAB   R2
1141 005052 042702 177760      BIC     #177760, R2
1142 005056 010203      MOV     R2, R3          ;SAVE LINE NUMBER
1143 005060 006302      ASL     R2              ;USE LINE NUMBER AS OFFSET
1144 005062 026201 012312      CMP     RBUF(R2), R1    ;COMPARE EXPECTED AND RECEIVED DATA
1145 005066 001403      BEQ     .+10
1146 005070 016205 012312      MOV     RBUF(R2), R5    ;GET EXPECTED DATA
1147 005074 104003      HLT     3                ;DATA ERROR
1148 005076 105262 012312      INCB   RBUF(R2)        ;UPDATE EXPECTED CHARACTER
1149 005102 000002      RTI
1150 005104 104001      10$:  HLT     1                ;CONTINUE
1151 005106 022626      11$:  POP2SP ;CHARACTER AVAILABLE NOT SET, ERROR
1152 005110 012777 004000 004470      MOV     #BIT11, @DHSCR  ;RESTORE STACK
1153 005116 000411      BR     13$             ;MASTER CLEAR INTERFACE
1154
1155
1156      ;WAIT FOR ALL BAR BITS TO CLEAR
1157      ;WHEN ALL BAR BITS HAVE CLEARED,
1158      ;WAIT FOR SILO TO EMPTY
1159      ;WHEN SILO IS EMPTY, SCOPE ON TEST
1160
1161 005120 005777 004474      12$:  TST     @DHBAR          ;WAIT FOR ALL BAR BITS TO CLEAR
1162 005124 001375      BNE     .-4
1163 005126 105777 004474      TSTB   @DHSLR          ;WAIT FOR SILO TO EMPTY
1164 005132 001375      BNE     .-4
1165 005134 012767 000340 172634      MOV     #340, PS       ;PREVENT INTERRUPTS
1166 005142 104400      13$:  SCOPE                ;CHECK FOR ITERATIONS, LOOP
1167
1168      ;MULTI-LINE PARITY DATA TEST
1169      ;TRANSMIT A BINARY COUNT WITH ODD PARITY
1170      ;PATTERN ON ALL LINES.
1171      ;SILO ALARM LEVEL SET TO 0
1172      ;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
1173      ;IN INTERRUPT MODE.
1174      ;TRANSMITTER INTERRUPT WILL BE DISABLED
1175      ;LINE SPEED: 2400 BAUD
1176      ;CHARACTER LENGTH: 7 + PARITY

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1177
1178 005144 012767 000340 172624 T23: MOV #340,PS ;DISABLE ALL INTERRUPTS
1179 005152 012767 000010 004474 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
1180 005160 012767 005412 004462 MOV #11$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1181 005166 012777 004000 004412 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
1182 005174 012700 000020 MOV #16.,R0 ;SET UP TO START 16. LINES
1183 005200 005001 CLR R1 ;COUNT AND BUS ADDRESS MEMORIES
1184 ;AND RECEIVED DATA STORAGE
1185 005202 012702 000200 MOV #200,R2 ;SET UP TO LOAD HIGH BYTE
1186 005206 012703 000001 MOV #1,R3 ;OF EXPECTED DATA
1187 005212 012777 011712 004374 1$: MOV #TBUF,ADHBA ;LOAD BUSS ADDRESS
1188 005220 012777 177600 004370 MOV #-200,ADHBC ;LOAD BYTE COUNT
1189 005226 012777 027362 004356 MOV #27362,ADHLPR ;SET LINE SPEED AND
1190 ;CHARACTER LENGTH 7 + ODD PARITY
1191 005234 105061 012312 CLRB RBUF(R1) ;CLEAR NEXT RECEIVED CHARACTER
1192 005240 110263 012312 MOVB R2,RBUF(R3) ;LOAD HIGH BYTE
1193 005244 005277 004336 INC ADHSCR ;ADVANCE TO NEXT LINE
1194 005250 005202 INC R2 ;UPDATE POINTER TO
1195 005252 062701 000002 ADD #2,R1 ;LOW AND HIGH BYTE OF
1196 005256 062703 000002 ADD #2,R3 ;NEXT EXPECTED CHARACTER
1197 005262 005300 DEC R0 ;CONTINUE IF ALL LINES
1198 005264 001352 BNE 1$ ;NOT SET UP
1199 005266 012777 005326 004334 MOV #6$,ADHRVEC ;SET UP POINTER FOR
1200 005274 012777 000240 004330 MOV #240,ADHRLVL ;RECEIVER INTERRUPT
1201 005302 012777 000100 004276 MOV #100,ADHSCR ;ENABLE RECEIVER INTERRUPT
1202 005310 012777 177777 004302 MOV #-1,ADHBAR ;SET ALL BAR BITS
1203 005316 005067 172454 CLR PS ;ENABLE INTERRUPTS
1204 005322 000167 000076 JMP 12$ ;GO TO TRANSMITTER WAITING ROUTINE
1205
1206 ;RECEIVER INTERRUPT SERVICE ROUTINE
1207 ;CHECK FOR RECEIVER DONE AND NO ERRORS
1208 ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1209 ;VERIFY THAT RECEIVED DATA IS CORRECT
1210 ;CHECK FOR END OF PASS
1211
1212 005326 105777 004254 6$: TSTB ADHSCR ;IF CHARACTER AVAILABLE NOT SET, ERROR
1213 005332 100026 BPL 10$
1214 005334 032777 040000 004244 BIT #40000,ADHSCR ;IF SILO OVERRUN SET, ERROR
1215 005342 001401 BEQ .+4
1216 005344 104002 HLT 2 ;SILO OVERRUN, ERROR
1217 005346 017701 004236 7$: MOV ADHNR,R1 ;READ CHARACTER FROM SILO
1218 005352 010102 MOV R1,R2 ;EXTRACT LINE NUMBER
1219 005354 000302 SWAB R2
1220 005356 042702 177760 BIC #177760,R2
1221 005362 010203 MOV R2,R3 ;SAVE LINE NUMBER
1222 005364 006302 ASL R2 ;USE LINE NUMBER AS OFFSET
1223 005366 026201 012312 CMP RBUF(R2),R1 ;COMPARE EXPECTED AND RECEIVED DATA
1224 005372 001403 BEQ .+10
1225 005374 016205 012312 MOV RBUF(R2),R5 ;GET EXPECTED DATA
1226 005400 104003 HLT 3 ;DATA ERROR
1227 005402 105262 012312 INCB RBUF(R2) ;UPDATE EXPECTED CHARACTER
1228 005406 000002 RTI ;CONTINUE
1229 005410 104001 10$: HLT 1 ;CHARACTER AVAILABLE NOT SET, ERROR
1230 005412 022626 11$: POP2SP ;RESTORE STACK
1231 005414 012777 004000 004154 MOV #BIT11,ADHSCR ;MASTER CLEAR INTERFACE
1232 005422 000411 BR 13$ ;RESTART TEST

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M02

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1233
1234
1235 ;WAIT FOR ALL BAR BITS TO CLEAR
1236 ;WHEN ALL BAR BITS HAVE CLEARED,
1237 ;WAIT FOR SILO TO EMPTY
1238 ;WHEN SILO IS EMPTY, SCOPE ON TEST
1239
1240 005424 005777 004170 12$: TST 2DHBAR ;WAIT FOR ALL BAR BITS TO CLEAR
1241 005430 001375 BNE -4
1242 005432 105777 004170 TSTB 2DHSLR ;WAIT FOR SILO TO EMPTY
1243 005436 001375 BNE -4
1244 005440 012767 000340 172330 MOV #340,PS ;PREVENT INTERRUPTS
1245 005446 104400 13$: SCOPE ;CHECK FOR ITERATIONS, LOOP
1246
1247 ;MULTI-LINE PARITY DATA TEST
1248 ;TRANSMIT A BINARY COUNT WITH EVEN PARITY
1249 ;PATTERN ON ALL LINES.
1250 ;SILO ALARM LEVEL SET TO 0
1251 ;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
1252 ;IN INTERRUPT MODE.
1253 ;TRANSMITTER INTERRUPT WILL BE DISABLED
1254 ;LINE SPEED: 2400 BAUD
1255 ;CHARACTER LENGTH: 7 + PARITY
1256
1257 005450 012767 000340 172320 124: MOV #340,PS ;DISABLE ALL INTERRUPTS
1258 005456 012767 000010 004170 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
1259 005464 012767 005716 004156 MOV #11$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1260 005472 012777 004000 004106 MOV #BIT11,2DHSCR ;MASTER CLEAR INTERFACE
1261 005500 012700 000020 MOV #16.,R0 ;SET UP TO START 16. LINES
1262 005504 005001 CLR R1 ;COUNT AND BUS ADDRESS MEMORIES
1263 ;AND RECEIVED DATA STORAGE
1264 005506 012702 000200 MOV #200,R2 ;SET UP TO LOAD HIGH BYTE
1265 005512 012703 000001 MOV #1,R3 ;OF EXPECTED DATA
1266 005516 012777 011712 004070 13$: MOV #TBUF,2DHBA ;LOAD BUSS ADDRESS
1267 005524 012777 177600 004064 MOV #-200,2DHBC ;LOAD BYTE COUNT
1268 005532 012777 027322 004052 MOV #27322,2DHLPR ;SET LINE SPEED AND
1269 ;CHARACTER LENGTH 7 + EVEN PARITY
1270 005540 105061 012312 CLR R2 ;CLEAR NEXT RECEIVED CHARACTER
1271 005544 110263 012312 MOV R2,RBUF(R3) ;LOAD HIGH BYTE
1272 005550 005277 004032 INC 2DHSCR ;ADVANCE TO NEXT LINE
1273 005554 005202 INC R2 ;UPDATE POINTER TO
1274 005556 062701 000002 ADC #2,R1 ;LOW AND HIGH BYTE OF
1275 005562 062703 000002 ADD #2,R3 ;NEXT EXPECTED CHARACTER
1276 005566 005300 DEC R0 ;CONTINUE IF ALL LINES
1277 005570 001352 BNE 1$ ;NOT SET UP
1278 005572 012777 005632 004030 MOV #6$,2DHAVEC ;SET UP POINTER FOR
1279 005600 012777 000240 004024 MOV #240,2DHLVL ;RECEIVER INTERRUPT
1280 005606 012777 000100 003772 MOV #100,2DHSCR ;ENABLE RECEIVER INTERRUPT
1281 005614 012777 177777 003776 MOV #-1,2DHBAR ;SET ALL BAR BITS
1282 005622 005067 172150 CLR PS ;ENABLE INTERRUPTS
1283 005626 000167 000076 JMP 12$ ;G TO TRANSMITTER WAITING ROUTINE
1284
1285 ;RECEIVER INTERRUPT SERVICE ROUTINE
1286 ;CHECK FOR RECEIVER DONE AND NO ERRORS
1287 ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1288 ;VERIFY THAT RECEIVED DATA IS CORRECT

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1345 006022 012777 011712 003564 1S:  MOV    #TBUF,JDHBM      ;LOAD BUSS ADDRESS
1346 006030 012777 177700 003560      MOV    #-100,JDHBC     ;LOAD BYTE COUNT
1347 006036 012777 027361 003546      MOV    #27361,JDHLPR  ;SET LINE SPEED AND
                                ;CHARACTER LENGTH 6 + ODD PARITY
1348                                ;CLEAR NEXT RECEIVED CHARACTER
1349 006044 105061 012312      CLR    RBUF(R1)      ;LOAD HIGH BYTE
1350 006050 110263 012312      MOV    R2,RBUF(R3)  ;ADVANCE TO NEXT LINE
1351 006054 005277 003526      INC    JDHSCR       ;UPDATE POINTER TO
1352 006060 005202      INC    R2           ;LOW AND HIGH BYTE OF
1353 006062 062701 000002      ADD    #2,R1       ;NEXT EXPECTED CHARACTER
1354 006066 062703 000002      ADD    #2,R3       ;CONTINUE IF ALL LINES
1355 006072 005300      DEC    R3           ;NOT SET UP
1356 006074 001352      BNE    1S          ;SET UP POINTER FOR
1357 006076 012777 006136 003524      MOV    #6S,JDHVEC   ;RECEIVER INTERRUPT
1358 006104 012777 000240 003520      MOV    #240,JDHRLVL ;ENABLE RECEIVER INTERRUPT
1359 006112 012777 000100 003466      MOV    #100,JDHSCR  ;SET ALL BAR BITS
1360 006120 012777 177777 003472      MOV    #-1,JDHBAR   ;ENABLE INTERRUPTS
1361 006126 005167 171644      CLR    PS           ;GO TO TRANSMITTER WAITING ROUTINE
1362 006132 000167 000076      JMP    12S
1363
1364 ;RECEIVER INTERRUPT SERVICE ROUTINE
1365 ;CHECK FOR RECEIVER DONE AND NO ERRORS
1366 ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1367 ;VERIFY THAT RECEIVED DATA IS CORRECT
1368 ;CHECK FOR END OF PASS
1369
1370 006136 105777 003444      6S:  TST    JDHSCR       ;IF CHARACTER AVAILABLE NOT SET, ERROR
1371 006142 100026      BPL    10S
1372 006144 032777 040000 003434      BIT    #40000,JDHSCR ;IF SILO OVERRUN SET, ERROR
1373 006152 001401      BEQ    .+4
1374 006154 104002      HLT    2           ;SILO OVERRUN, ERROR
1375 006156 017701 003426      7S:  MOV    JDHNR,R1     ;READ CHARACTER FROM SILO
1376 006162 010102      MOV    R1,R2       ;EXTRACT LINE NUMBER
1377 006164 000302      SWAB   R2
1378 006166 042702 177760      BIC    #177760,R2
1379 006172 010203      MOV    R2,R3       ;SAVE LINE NUMBER
1380 006174 006302      ASL    R2           ;USE LINE NUMBER AS OFFSET
1381 006176 026201 012312      CMP    RBUF(R2),R1 ;COMPARE EXPECTED AND RECEIVED DATA
1382 006202 001403      BEQ    .+10
1383 006204 016205 012312      MOV    RBUF(R2),R5 ;GET EXPECTED DATA
1384 006210 104003      HLT    3           ;DATA ERROR
1385 006212 105262 012312      INCB   RBUF(R2)    ;UPDATE EXPECTED CHARACTER
1386 006216 000002      RTI
1387 006220 104001      10S: HLT    1          ;CHARACTER AVAILABLE NOT SET, ERROR
1388 006222 022626      11S: POP    2SP        ;RESTORE STACK
1389 006224 012777 004000 003354      MOV    #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1390 006232 000411      BR     13S        ;RESTART TEST
1391
1392
1393 ;WAIT FOR ALL BAR BITS TO CLEAR
1394 ;WHEN ALL BAR BITS HAVE CLEARED,
1395 ;WAIT FOR SILO TO EMPTY
1396 ;WHEN SILO IS EMPTY, SCOPE ON TEST
1397
1398 006234 005777 003360      12S: TST    JDHBAR       ;WAIT FOR ALL BAR BITS TO CLEAR
1399 006240 001375      BNE    .-4
1400 006242 105777 003360      TST    JDHSLR      ;WAIT FOR SILO TO EMPTY
  
```

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1401 006246 001375          BNE      -4
1402 006250 012767 000340 171520  MOV      #340,PS ;PREVENT INTERRUPTS
1403 006256 104400          13$:    SCOPE      ;CHECK FOR ITERATIONS, LOOP
1404
1405          ;MULTI-LINE PARITY DATA TEST
1406          ;TRANSMIT A BINARY COUNT WITH EVEN PARITY
1407          ;PATTERN ON ALL LINES.
1408          ;SILO ALARM LEVEL SET TO 0
1409          ;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
1410          ;IN INTERRUPT MODE.
1411          ;TRANSMITTER INTERRUPT WILL BE DISABLED
1412          ;LINE SPEED: 2400 BAUD
1413          ;CHARACTER LENGTH: 6 + PARITY
1414
1415 006260 012767 000340 171510  T26:    MOV      #340,PS          ;DISABLE ALL INTERRUPTS
1416 006266 012767 000010 003360  MOV      #10,COUNT      ;SET UP FOR 10 ITERATIONS
1417 006274 012767 006526 003346  MOV      #11$,ESCAPE    ;SET UP TO ESCAPE TO NEXT TEST
1418 006302 012777 004000 003276  MOV      #BIT11,JDHSCR  ;MASTER CLEAR INTERFACE
1419 006310 012700 000020  MOV      #16.,RC       ;SET UP TO START 16. LINES
1420 006314 005001          CLR      R1            ;COUNT AND BUS ADDRESS MEMORIES
1421          ;AND RECEIVED DATA STORAGE
1422 006316 012702 000200  MOV      #200,R2       ;SET UP TO LOAD HIGH BYTE
1423 006322 012703 000001  MOV      #1,R3         ;OF EXPECTED DATA
1424 006328 012777 011712 003260  T1$:    MOV      #TBUF,JDHBA  ;LOAD BUSS ADDRESS
1425 006334 012777 177700 003254  MOV      #-100,JDHBC   ;LOAD BYTE COUNT
1426 006342 012777 027321 003242  MOV      #27321,JDHLPR ;SET LINE SPEED AND
1427          ;CHARACTER LENGTH 6 + EVEN PARITY
1428 006350 105061 012312  CLRB    RBUF(R1)      ;CLEAR NEXT RECEIVED CHARACTER
1429 006354 110263 012312  MOVB   R2,RBUF(R3)   ;LOAD HIGH BYTE
1430 006360 005277 003222  INC     JDHSCR       ;ADVANCE TO NEXT LINE
1431 006364 005202          INC     R2          ;UPDATE POINTER TO
1432 006366 062701 000002  ADD     #2,R1        ;LOW AND HIGH BYTE OF
1433 006372 062703 000002  ADD     #2,R3        ;NEXT EXPECTED CHARACTER
1434 006376 005303          DEC     R0          ;CONTINUE IF ALL LINES
1435 006400 001352          BNE     1$          ;NOT SET UP
1436 006402 012777 006442 003220  MOV      #65,JDHRVEC  ;SET UP POINTER FOR
1437 006410 012777 000240 003214  MOV      #240,JDHLVL  ;RECEIVER INTERRUPT
1438 006416 012777 000100 003162  MOV      #100,JDHSCR  ;ENABLE RECEIVER INTERRUPT
1439 006424 012777 177777 003166  MOV      #-1,JDHBAR   ;SET ALL BAR BITS
1440 006432 005067 171340  CLR     PS           ;ENABLE INTERRUPTS
1441 006436 000167 000076  JMP     12$         ;GO TO TRANSMITTER WAITING ROUTINE
1442
1443          ;RECEIVER INTERRUPT SERVICE ROUTINE
1444          ;CHECK FOR RECEIVER DONE AND NO ERRORS
1445          ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1446          ;VERIFY THAT RECEIVED DATA IS CORRECT
1447          ;CHECK FOR END OF PASS
1448
1449 006442 105777 003140          6$:    TSTB    JDHSCR      ;IF CHARACTER AVAILABLE NOT SET, ERROR
1450 006446 100026          BPL     10$
1451 006450 032777 040000 003130  BIT     #40000,JDHSCR  ;IF SILO OVERRUN SET, ERROR
1452 006456 001401          BEQ     +4
1453 006460 104002          HLT
1454 006462 017701 003122          7$:    MOV      JDHNR, R1    ;SILO OVERRUN, ERROR
1455 006466 010102          MOV     R1,R2        ;READ CHARACTER FROM SILO
1456 006470 000302          SWAB   R2           ;EXTRACT LINE NUMBER

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1457 006472 042703 177760 B1C #177760,R2
1458 006476 010203 MOV R2,R3 ;SAVE LINE NUMBER
1459 006500 006302 ASL R2 ;USE LINE NUMBER AS OFFSET
1460 006502 026201 012312 CMF RBUF(R2),R1 ;COMPARE EXPECTED AND RECEIVED DATA
1461 006506 001403 BEQ .+10
1462 006510 016205 012312 MOV RBUF(R2),R5 ;GET EXPECTED DATA
1463 006514 104003 HLT 3 ;DATA ERROR
1464 006516 105262 012312 INCB RBUF(R2) ;UPDATE EXPECTED CHARACTER
1465 006522 000002 RTI ;CONTINUE
1466 006524 104001 HLT 1 ;CHARACTER AVAILABLE NOT SET, ERROR
1467 006526 022626 POP2SP ;RESTORE STACK
1468 006530 012777 004000 003050 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1469 006536 000411 BR 13$ ;RESTART TEST

;WAIT FOR ALL BAR BITS TO CLEAR
;WHEN ALL BAR BITS HAVE CLEARED,
;WAIT FOR SILO TO EMPTY
;WHEN SILO IS EMPTY, SCOPE ON TEST

1477 006540 005777 003054 12$: TST JDHBAR ;WAIT FOR ALL BAR BITS TO CLEAR
1478 006544 001375 BNE .-4
1479 006546 105777 003054 TSTB JDHSLR ;WAIT FOR SILO TO EMPTY
1480 006552 001375 BNE .-4
1481 006554 012767 000340 171214 MOV #340,PS ;PREVENT INTERRUPTS
1482 006562 104400 13$: SCOPE ;CHECK FOR ITERATIONS, LOOP

;MULTI-LINE PARITY DATA TEST
;TRANSMIT A BINARY COUNT WITH ODD PARITY
;PATTERN ON ALL LINES.
;SILO ALARM LEVEL SET TO 0
;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
;IN INTERRUPT MODE.
;TRANSMITTER INTERRUPT WILL BE DISABLED
;LINE SPEED: 2400 BAUD
;CHARACTER LENGTH: 5 + PARITY

1494 006564 012767 000340 171204 T27: MOV #340,PS ;DISABLE ALL INTERRUPTS
1495 006572 012767 000010 003054 MOV #10,ICOUNT ;SET UP FOR 10 ITERATIONS
1496 006600 012767 007032 003042 MOV #11$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1497 006606 012777 004000 002772 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1498 006614 012700 000020 MOV #16.,R0 ;SET UP TO START 16. LINES
1499 006620 005001 CLR R1 ;COUNT AND BUS ADDRESS MEMORIES
1500 ;AND RECEIVED DATA STORAGE
1501 006622 012702 000200 MOV #200,R2 ;SET UP TO LOAD HIGH BYTE
1502 006626 012703 000001 MOV #1,R3 ;OF EXPECTED DATA
1503 006632 012777 011712 002754 1$: MOV #TBUF,JDHBA ;LOAD BUSS ADDRESS
1504 006640 012777 177740 002750 MOV #-40,JDHBC ;LOAD BYTE COUNT
1505 006646 012777 027360 002736 MOV #27360,JDHLPR ;SET LINE SPEED AND
1506 ;CHARACTER LENGTH 5 + ODD PARITY
1507 006654 105061 012312 CLAB RBUF(R1) ;CLEAR NEXT RECEIVED CHARACTER
1508 006660 110263 012312 MOVB R2,RBUF(R3) ;LOAD HIGH BYTE
1509 006664 005277 002716 INC JDHSCR ;ADVANCE TO NEXT LINE
1510 006670 005202 INC R2 ;UPDATE POINTER TO
1511 006672 062701 000002 ADD #2,R1 ;LOW AND HIGH BYTE OF
1512 006676 062703 000002 ADD #2,R3 ;NEXT EXPECTED CHARACTER
  
```

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1513 006702 005300          DEC      RD          ;CONTINUE IF ALL LINES
1514 006704 001352          BNE      15          ;NOT SET UP
1515 006706 012777 006746 002714  MOV     #65,2DHVEC  ;SET UP POINTER FOR
1516 006714 012777 000240 002710  MOV     #240,2DHRLVL ;RECEIVER INTERRUPT
1517 006722 012777 000100 002656  MOV     #100,2DHSCR  ;ENABLE RECEIVER INTERRUPT
1518 006730 012777 177777 002662  MOV     #-1,2DHBAR  ;SET ALL BAR BITS
1519 006736 005067 171034          CLR     PS          ;ENABLE INTERRUPTS
1520 006742 000167 000076          JMP     125         ;GO TO TRANSMITTER WAITING ROUTINE

1521
1522          ;RECEIVER INTERRUPT SERVICE ROUTINE
1523          ;CHECK FOR RECEIVER DONE AND NO ERRORS
1524          ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1525          ;VERIFY THAT RECEIVED DATA IS CORRECT
1526          ;CHECK FOR END OF PASS
1527
1528 006746 105777 002634          5$:    TSTB   2DHSCR          ;IF CHARACTER AVAILABLE NOT SET, ERROR
1529 006752 100026          BPL     105
1530 006754 032777 040000 002624  BIT     #40000,2DHSCR ;IF SILO OVERRUN SET, ERROR
1531 006762 001401          BEQ     +4
1532 006764 104002          HLT     2          ;SILO OVERRUN, ERROR
1533 006766 017701 002616          7$:    MOV     2DHNRC,R1  ;READ CHARACTER FROM SILO
1534 006772 010102          MOV     R1,R2      ;EXTRACT LINE NUMBER
1535 006774 000302          SWAB   R2
1536 006776 042702 177760  BIC     #177760,R2
1537 007002 010203          MOV     R2,R3      ;SAVE LINE NUMBER
1538 007004 006302          ASL     R2          ;USE LINE NUMBER AS OFFSET
1539 007006 026201 012312  CMP     RBUF(R2),R1 ;COMPARE EXPECTED AND RECEIVED DATA
1540 007012 001403          BEQ     +10
1541 007014 016205 012312  MOV     RBUF(R2),R5 ;GET EXPECTED DATA
1542 007020 104003          HLT     3          ;DATA ERROR
1543 007022 105262 012312  INCB   RBUF(R2)    ;UPDATE EXPECTED CHARACTER
1544 007026 000002          RTI
1545 007030 104001          10$:   HLT     1          ;CHARACTER AVAILABLE NOT SET, ERROR
1546 007032 022626          11$:  POP2SP ;RESTORE STACK
1547 007034 012777 004000 002544  MOV     #BIT11,2DHSCR ;MASTER CLEAR INTERFACE
1548 007042 000411          BR      135        ;RESTART TEST
1549
1550
1551          ;WAIT FOR ALL BAR BITS TO CLEAR
1552          ;WHEN ALL BAR BITS HAVE CLEARED,
1553          ;WAIT FOR SILO TO EMPTY
1554          ;WHEN SILO IS EMPTY, SCOPE ON TEST
1555
1556 007044 005777 002550          12$:  TST     2DHBAR          ;WAIT FOR ALL BAR BITS TO CLEAR
1557 007050 001375          BNE     -4
1558 007052 105777 002550          TSTB   2DHSLR          ;WAIT FOR SILO TO EMPTY
1559 007056 001375          BNE     -4
1560 007060 012767 000340 170710  MOV     #340,PS ;PREVENT INTERRUPTS
1561 007066 104400          13$:  SCOPE          ;CHECK FOR ITERATIONS, LOOP
1562
1563          ;MULTI-LINE PARITY DATA TEST
1564          ;TRANSMIT A BINARY COUNT WITH EVEN PARITY
1565          ;PATTERN ON ALL LINES.
1566          ;SILO ALARM LEVEL SET TO 0
1567          ;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
1568          ;IN INTERRUPT MODE.

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F03

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1569                                     ; TRANSMITTER INTERRUPT WILL BE DISABLED
1570                                     ; LINE SPEED: 2400 BAUD
1571                                     ; CHARACTER LENGTH: 5 + PARITY
1572
1573 007070 012767 000340 170700 T30:  MOV    #340,PS          ; DISABLE ALL INTERRUPTS
1574 007076 012767 000010 002550      MOV    #10,COUNT      ; SET UP FOR 10 ITERATIONS
1575 007104 012767 007336 002536      MOV    #11$,ESCAPE    ; SET UP TO ESCAPE TO NEXT TEST
1576 007112 012777 004000 002466      MOV    #BIT11,JDHSCR  ; MASTER CLEAR INTERFACE
1577 007120 012700 000020              MOV    #16.,R0        ; SET UP TO START 16. LINES
1578 007124 005001                    CLR    R1              ; COUNT AND BUS ADDRESS MEMORIES
1579                                     ; AND RECEIVED DATA STORAGE
1580 007126 012702 000200              MOV    #200,R2        ; SET UP TO LOAD HIGH BYTE
1581 007132 012703 000001              MOV    #1,R3          ; OF EXPECTED DATA
1582 007136 012777 011712 002450 15:  MOV    #TBUF,JDHBA     ; LOAD BUSS ADDRESS
1583 007144 012777 177740 002444      MOV    #-40,JDHBC     ; LOAD BYTE COUNT
1584 007152 012777 027320 002432      MOV    #27320,JDHLPR  ; SET LINE SPEED AND
1585                                     ; CHARACTER LENGTH 5 + EVEN PARITY
1586 007160 105061 012312              CLRB   RBUF(R1)       ; CLEAR NEXT RECEIVED CHARACTER
1587 007164 110263 012312              MOV    R2,RBUF(R3)    ; LOAD HIGH BYTE
1588 007170 005277 002412              INC    JDHSCR         ; ADVANCE TO NEXT LINE
1589 007174 005202                    INC    R2              ; UPDATE POINTER TO
1590 007176 062701 000002              ADD    #2,R1          ; LOW AND HIGH BYTE OF
1591 007202 062703 000002              ADD    #2,R3          ; NEXT EXPECTED CHARACTER
1592 007206 005300                    DEC    R0              ; CONTINUE IF ALL LINES
1593 007210 001352                    BNE    15$            ; NOT SET UP
1594 007212 012777 007252 002410      MOV    #6$,JDHVEC     ; SET UP POINTER FOR
1595 007220 012777 000240 002404      MOV    #240,JDHRLVL   ; RECEIVER INTERRUPT
1596 007226 012777 000100 002352      MOV    #100,JDHSCR    ; ENABLE RECEIVER INTERRUPT
1597 007234 012777 177777 002356      MOV    #-1,JDHBR      ; SET ALL BAR BITS
1598 007242 005067 170530              CLR    PS              ; ENABLE INTERRUPTS
1599 007246 000167 000076              JMP    12$            ; GO TO TRANSMITTER WAITING ROUTINE
1600
1601                                     ; RECEIVER INTERRUPT SERVICE ROUTINE
1602                                     ; CHECK FOR RECEIVER DONE AND NO ERRORS
1603                                     ; CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1604                                     ; VERIFY THAT RECEIVED DATA IS CORRECT
1605                                     ; CHECK FOR END OF PASS
1606
1607 007252 105777 002330 65:          TSTB   JDHSCR          ; IF CHARACTER AVAILABLE NOT SET, ERROR
1608 007256 100026                    BPL    10$            ;
1609 007260 032777 040000 002320      BIT    #40000,JDHSCR  ; IF SILO OVERRUN SET, ERROR
1610 007266 001401                    BEQ    .+4            ;
1611 007270 104002                    HLT    2              ; SILO OVERRUN, ERROR
1612 007272 017701 002312 75:          MOV    JDHNR,R1       ; READ CHARACTER FROM SILO
1613 007276 010102                    MOV    R1,R2          ; EXTRACT LINE NUMBER
1614 007300 000302                    SWAB   R2              ;
1615 007302 042702 177760              BIC    #177760,R2     ;
1616 007306 010203                    MOV    R2,R3          ;
1617 007310 006302                    ASL    R2              ; SAVE LINE NUMBER
1618 007312 026201 012312              CMP    RBUF(R2),R1    ; USE LINE NUMBER AS OFFSET
1619 007316 001403                    BEQ    .+10           ; COMPARE EXPECTED AND RECEIVED DATA
1620 007320 016205 012312              MOV    RBUF(R2),R5    ; GET EXPECTED DATA
1621 007324 104003                    HLT    3              ; DATA ERROR
1622 007326 105262 012312              INCB   RBUF(R2)       ; UPDATE EXPECTED CHARACTER
1623 007332 000002                    RTI                    ; CONTINUE
1624 007334 104001 105:          HLT    1              ; CHARACTER AVAILABLE NOT SET, ERROR

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G03

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| | | | | | | | |
|------|--------|--------|--------|--------|--------|----------------|------------------------------------|
| 1625 | 007336 | 022626 | | 11: | POP2SP | | :RESTORE STACK |
| 1626 | 007340 | 012777 | 004000 | 002240 | MOV | #BIT11, @DHSCR | :MASTER CLEAR INTERFACE |
| 1627 | 007346 | 000411 | | | BR | 13\$ | :RESTART TEST |
| 1628 | | | | | | | |
| 1629 | | | | | | | |
| 1630 | | | | | | | |
| 1631 | | | | | | | :WAIT FOR ALL BAR BITS TO CLEAR |
| 1632 | | | | | | | :WHEN ALL BAR BITS HAVE CLEARED, |
| 1633 | | | | | | | :WAIT FOR SILO TO EMPTY |
| 1634 | | | | | | | :WHEN SILO IS EMPTY, SCOPE ON TEST |
| 1635 | 007350 | 005777 | 002244 | 12: | TST | @DHBAR | :WAIT FOR ALL BAR BITS TO CLEAR |
| 1636 | 007354 | 001375 | | | BNE | -4 | |
| 1637 | 007356 | 105777 | 002244 | | TSTB | @DHSLR | :WAIT FOR SILO TO EMPTY |
| 1638 | 007362 | 001375 | | | BNE | -4 | |
| 1639 | 007364 | 012767 | 000340 | 170404 | MOV | #340.PS | :PREVENT INTERRUPTS |
| 1640 | 007372 | 104400 | | 13: | SCOPE | | :CHECK FOR ITERATIONS, LOOP |

H03

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1641
1642 ;MULTI LINE DATA TEST
1643 ;SILO ALARM LEVEL SET TO 0
1644 ;RECEIVER WILL BE SERVICED ON A PER CHARACTER BASIS
1645 ;IN INTERRUPT MODE
1646 ;TRANSMITTER INTERRUPTS WILL BE DISABLED
1647 ;TRANSMIT A BINARY COUNT PATTERN ON ALL LINES
1648 ;LINE SPEED IS 4800 BAUD FOR ALL LINES
1649 ;CHARACTER LENGTH IS 8 BITS FOR ALL LINES
1650
1651 007374 012767 000340 170374 T31: MOV #340,PS ;DISABLE ALL INTERRUPTS
1652 007402 012767 000010 002244 MOV #10,I,COUNT ;SET UP FOR 10 ITERATIONS
1653 007410 012767 007642 002232 MOV #11$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1654 007416 012777 004000 002162 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1655 007424 012700 000020 MOV #20,R0 ;SET UP TO LOAD BYTE
1656 007430 005001 CLR R1 ;COUNT AND BUS ADDRESS MEMORIES
1657 ;AND RECEIVED DATA STORAGE
1658 007432 012702 000200 MOV #200,R2 ;SET UP TO LOAD HIGH BYTE
1659 007436 012703 000001 MOV #1,R3 ;OF EXPECTED DATA
1660 007442 012777 011712 002144 15: MOV #TBUF,JDHBA ;LOAD BUSS ADDRESS
1661 007450 012777 177400 002140 MOV #-400,JDHBC ;LOAD BYTE COUNT
1662 007456 012777 031403 002126 MOV #31403,JDHLPR ;SET LINE SPEED AND
1663 ;CHARACTER LENGTH
1664 007464 105061 012312 CLRB RBUF(R1) ;CLEAR NEXT RECEIVED CHARACTER ..
1665 007470 110263 012312 MOV R2,RBUF(R3) ;LOAD HIGH BYTE
1666 007474 005277 002106 INC JDHSCR ;ADVANCE TO NEXT LINE
1667 007500 005202 INC R2 ;UPDATE POINTER TO
1668 007502 062701 000002 ADD #2,R1 ;LOW AND HIGH BYTE OF
1669 007506 062703 000002 ADD #2,R3 ;NEXT EXPECTED CHARACTER
1670 007512 005300 DEC R0 ;CONTINUE IF ALL LINES
1671 007514 001352 BNE 1$ ;NOT SET UP
1672 007516 012777 007556 002104 MOV #6$,JDHRVEC ;SET UP POINTER FOR
1673 007524 012777 000240 002100 MOV #240,JDHRLVL ;RECEIVER INTERRUPT
1674 007532 012777 000100 002046 MOV #100,JDHSCR ;ENABLE INTERFACE
1675 007540 012777 177777 002052 MOV #-1,JDHBAR ;SET ALL BAR BITS
1676 007546 005067 170224 CLR PS ;ENABLE INTERRUPTS
1677 007552 000167 000076 JMP 12$ ;GO TO TRANSMITTER WAITING ROUTINE
1678
1679 ;RECEIVER INTERRUPT SERVICE ROUTINE
1680 ;CHECK FOR RECEIVER DONE AND NO ERRORS
1681 ;CHECK RECEIVED DATA FOR "VALID DATA" FLAG AND NO ERRORS
1682 ;VERIFY THAT RECEIVED DATA IS CORRECT
1683 ;CHECK FOR END OF PASS
1684
1685 007556 105777 002024 65: TSTB JDHSCR ;IF CHARACTER AVAILABLE NOT SET, ERROR
1686 007562 100026 BPL 10$
1687 007564 032777 040000 002014 BIT #40000,JDHSCR ;IF SILO OVERRUN SET, ERROR
1688 007572 001401 BEQ .+4
1689 007574 104002 HLT 2 ;SILO OVERRUN, ERROR
1690 007576 017701 002006 75: MOV JDHNR,R1 ;READ CHARACTER FORM SILO
1691 007602 010102 MOV R1,R2 ;EXTRACT LINE NUMBER
1692 007604 000302 SWAB R2
1693 007606 042702 177760 BIC #177760,R2
1694 007612 010203 MOV R2,R3 ;SAVE LINE NUMBER
1695 007614 006302 ASL R2 ;USE LINE NUMBER AS OFFSET
1696 007616 026201 012312 CMP RBUF(R2),R1 ;COMPARE EXPECTED AND RECEIVED DATA

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|------|--------|--------|--------|--------|--------|---------------|-------------------------------------|
| 1697 | 007622 | 001403 | | | BEO | .+10 | |
| 1698 | 007624 | 016205 | 012312 | | MOV | RBUF(R2),R5 | ;GET EXPECTED DATA |
| 1699 | 007630 | 104003 | | | HLT | 3 | ;DATA ERROR |
| 1700 | 007632 | 105262 | 012312 | | INCB | RBUF(R2) | ;UPDATE EXPECTED CHARACTER |
| 1701 | 007636 | 000002 | | | RTI | | ;CONTINUE |
| 1702 | 007640 | 104001 | | 10\$: | HLT | 1 | ;CHARACTER AVAILABLE NOT SET, ERROR |
| 1703 | 007642 | 022626 | | 11\$: | POP2SP | | ;RESTORE STACK |
| 1704 | 007644 | 012777 | 004000 | 001734 | MOV | #BIT11,@DHSCR | ;MASTER CLEAR INTEPFACE |
| 1705 | 007652 | 000406 | | | BR | 13\$ | ;RESTART TEST |
| 1706 | | | | | | | |
| 1707 | | | | | | | |
| 1708 | | | | | | | |
| 1709 | | | | | | | |
| 1710 | | | | | | | |
| 1711 | | | | | | | |
| 1712 | | | | | | | |
| 1713 | 007654 | 005777 | 001740 | 12\$: | TST | @DHBAR | ;WAIT FOR ALL BAR BITS TO CLEAR |
| 1714 | 007660 | 001375 | | | BNE | .-4 | |
| 1715 | 007662 | 105777 | 001740 | | TSTB | @DHSLR | ;WAIT FOR SILO TO EMPTY |
| 1716 | 007666 | 001375 | | | BNE | .-4 | |
| 1717 | 007670 | 104400 | | 13\$: | SCOPE | | ;CHECK FOR ITERATIONS, LOOP |

;WAIT FOR ALL BAR BITS TO CLEAR
 ;WHEN ALL BAR BITS HAVE CLEARED,
 ;WAIT FOR SILO TO EMPTY
 ;WHEN SILO IS EMPTY, SCOPE ON TEST

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1718
1719
1720
1721
1722
1723
1724
1725
1726
1727 007672 012767 000340 170076 T32: MOV #340,PS ;DISABLE ALL INTERRUPTS
1728 007700 012767 000012 001746 MOV #12,ICOUNT ;SET UP FOR 12 ITERATIONS
1729 007706 012767 010240 001734 MOV #8$,ESCAPE ;SET UP TO ESCAPE TO NEXT TEST
1730 007714 012777 004000 001664 MOV #BIT11,JDHSCR ;MASTER CLEAR INTERFACE
1731 007722 012700 000020 MOV #20,R0 ;SET UP TO LOAD BYTE
1732 007726 005001 CLR R1 ;COUNT AND BUS ADDRESS MEMORIES
1733 ;AND RECEIVED DATA STORAGE
1734 007730 012702 000200 MOV #200,R2 ;SET UP TO LOAD HIGH BYTE
1735 007734 012703 000001 MOV #1,R3 ;OF EXPECTED DATA
1736 007740 012777 011712 001646 1$: MOV #TBUF,JDHBA ;LOAD BUSS ADDRESS
1737 007746 012777 177400 001642 MOV #-400,JDHBC ;LOAD BYTE COUNT
1738 007754 012777 033503 001630 MOV #33503,JDHLPR ;SET LINE SPEED AND
1739 ;CHARACTER LENGTH
1740 007762 105061 012312 CLRB RBUF(R1) ;CLEAR NEXT RECEIVED CHARACTER
1741 007766 110263 012312 MOVB R2,RBUF(R3) ;LOAD HIGH BYTE
1742 007772 005277 001610 INC JDHSCR ;ADVANCE TO NEXT LINE
1743 007776 005202 INC R2 ;UPDATE POINTER TO
1744 010000 062701 000002 ADD #2,R1 ;LOW AND HIGH BYTE OF
1745 010004 062703 000002 ADD #2,R3 ;NEXT EXPECTED CHARACTER
1746 010010 005300 DEC R0 ;CONTINUE IF ALL LINES
1747 010012 001352 BNE 1$ ;NOT SET UP
1748 010014 012777 010104 001612 MOV #2$,JDHTVEC ;SET UP POINTER FOR
1749 010022 012777 000240 001606 MOV #240,JDHTLVL ;TRANSMITTER INTERRUPT
1750 010030 012777 010116 001572 MOV #6$,JDHRVEC ;SET UP POINTER FOR
1751 010036 012777 000240 001566 MOV #240,JDHRLVL ;RECEIVER INTERRUPT
1752 010044 012700 000012 MOV #12,R0 ;SET UP TO TRANSMIT
1753 010050 005067 001632 CLR ENDFLG ;10 (DEDIMAL) BLOCKS OF DATA
1754 ;ON EACH LINE
1755 010054 012777 000077 001542 MOV #77,JDHSSR
1756 010062 012777 030000 001516 MOV #30000,JDHSCR ;ENABLE INTERFACE
1757 010070 012777 177777 001522 MOV #-1,JDHBAR ;SET ALL BAR BITS
1758 010076 005067 167674 CLR PS ;ENABLE INTERRUPTS
1759 010102 000421 BR 7$ ;TRANSFER TO RECEIVER SERVICE
1760
1761 ;TRANSMITTER INTERRUPT SERVICE ROUTINE
1762 ;CHECK FOR TRANSMIT DONE AND NO ERRORS
1763
1764 010104 005777 001476 2$: TST JDHSCR ;IS TRANSMITTER DONE SET
1765 010110 100401 BMI .+4
1766 010112 104004 HLT 4 ;TRANSMIT DONE NOT SET, ERROR
1767 010114 000002 RTI ;RETURN
1768
1769 ;RECEIVER INTERRUPT SERVICE ROUTINE
1770
1771 010116 105777 001464 6$: TSTB JDHSCR ;IS CHARACTER AVAILABLE SET
1772 010122 100001 BPL .+4
1773 010124 104005 HLT 5 ;CHARACTER AVAILABLE SET, ERROR
    
```

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| | | | | | | | |
|------|--------|--------|--------|--------|-------------|--------------------|--|
| 1774 | 010126 | 032777 | 040000 | 001452 | BIT | #40000,JDHSCR | ;IS SILO OVERRUN SET |
| 1775 | 010134 | 001402 | | | BEQ | .+6 | |
| 1776 | 010136 | 104002 | | | HLT | 2 | ;SILO OVERRUN, ERROR |
| 1777 | 010140 | 000401 | | | BR | 3\$ | |
| 1778 | 010142 | 104000 | | | HLT | 0 | ;SPURIOUS INTERRUPT |
| 1779 | | | | | | | ;TEST WILL RESTART |
| 1780 | 010144 | 000002 | | | 3\$: RTI | | |
| 1781 | | | | | | | |
| 1782 | | | | | | | ;RECEIVER DATA CHECK |
| 1783 | | | | | | | ;GET A CHARACTER FROM THE SILO |
| 1784 | | | | | | | ;IF IT IS VALID DATA, CHECK IT |
| 1785 | | | | | | | ;OTHERWISE, TRY AGAIN |
| 1786 | | | | | | | |
| 1787 | 010146 | 017701 | 001436 | | 7\$: MOV | JDHNR, R1 | ;READ NEXT RECEIVED CHARACTER REGISTER |
| 1788 | 010152 | 005701 | | | TST | R1 | ;IF VALID DATA BIT NOT SET |
| 1789 | 010154 | 100374 | | | BPL | 7\$ | ;TRY AGAIN |
| 1790 | 010156 | 010102 | | | MOV | R1, R2 | ;EXTRACT LINE NUMBER |
| 1791 | 010160 | 000302 | | | SWAB | R2 | |
| 1792 | 010162 | 042702 | 177760 | | BIC | #177760, R2 | |
| 1793 | 010166 | 010203 | | | MOV | R2, R3 | |
| 1794 | 010170 | 006302 | | | ASL | R2 | ;DOUBLE LINE NUMBER FOR OFFSET |
| 1795 | 010172 | 126201 | 012312 | | CMPB | RBUF(R2), R1 | ;COMPARE RECEIVED AND EXPECTED RESULTS |
| 1796 | 010176 | 001403 | | | BEQ | .+10 | |
| 1797 | 010200 | 016205 | 012312 | | MOV | RBUF(R2), R5 | ;GET EXPECTED DATA |
| 1798 | 010204 | 104003 | | | HLT | 3 | ;DATA ERROR |
| 1799 | 010206 | 105262 | 012312 | | INCB | RBUF(R2) | ;UPDATE EXPECTED DATA |
| 1800 | 010212 | 001355 | | | BNE | 7\$ | ;CONTINUE IF NOT 0 |
| 1801 | 010214 | 005767 | 001466 | | TST | ENDFLG | ;IF ALL LINES HAVE FINISHED |
| 1802 | 010220 | 001007 | | | BNE | 8\$ | ;10 BLOCKS OF DATA, CLEAN UP |
| 1803 | 010222 | 005703 | | | TST | R3 | ;IF THE LINE IS 0 |
| 1804 | 010224 | 001014 | | | BNE | 9\$ | |
| 1805 | 010226 | 005300 | | | DEC | R0 | ;UPDATE BLOCK COUNT |
| 1806 | 010230 | 001012 | | | BNE | 9\$ | ;IF LINE 0 HAS TRANSMITTED 10 BLOCKS |
| 1807 | 010232 | 012767 | 000001 | 001446 | MOV | #1, ENDFLG | ;SET END FLAG |
| 1808 | 010240 | 005777 | 001354 | | 8\$: TST | JDHBAR | ;IF ALL LINES NOT DONE |
| 1809 | 010244 | 001340 | | | BNE | 7\$ | ;GET MORE CHARACTERS |
| 1810 | 010246 | 105777 | 001354 | | TSTB | JDHSLR | ;IF SILO IS NOT EMPTY |
| 1811 | 010252 | 001335 | | | BNE | 7\$ | ;GET REST OF DATA |
| 1812 | 010254 | 000417 | | | BR | 10\$ | ;WHEN EMPTY, SCOPE ON TEST |
| 1813 | 010256 | 042777 | 000017 | 001322 | 9\$: BIC | #17, JDHSCR | ;ADDRESS LINE THAT JUST FINISHED |
| 1814 | 010264 | 050377 | 001316 | | BIS | R3, JDHSCR | |
| 1815 | 010270 | 012777 | 011712 | 001316 | MOV | #TBUF, JDHBA | ;SET UP BUS ADDRESS AND BYTE COUNT |
| 1816 | 010276 | 012777 | 177400 | 001312 | MOV | #-400, JDHBC | ;FOR THAT LINE |
| 1817 | 010304 | 056277 | 010322 | 001306 | BIS | BARBIT(R2), JDHBAR | ;SET BAR BIT FOR THAT LINE |
| 1818 | 010312 | 000715 | | | BR | 7\$ | ;CONTINUE |
| 1819 | 010314 | 104400 | | | 10\$: SCOPE | | ;CHECK FOR ITERATIONS, LOOP |
| 1820 | 010316 | 000167 | 000040 | | JMP | EOP | ;GO TO END OF PASS ROUTINE |
| 1821 | 010322 | 000001 | | | BARBIT: | 1 | |
| 1822 | 010324 | 000002 | | | | 2 | |
| 1823 | 010326 | 000004 | | | | 4 | |
| 1824 | 010330 | 000010 | | | | 10 | |
| 1825 | 010332 | 000020 | | | | 20 | |
| 1826 | 010334 | 000040 | | | | 40 | |
| 1827 | 010336 | 000100 | | | | 100 | |
| 1828 | 010340 | 000200 | | | | 200 | |
| 1829 | 010342 | 000400 | | | | 400 | |

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| | | | |
|------|--------|--------|--------|
| 1830 | 010344 | 001000 | 1000 |
| 1831 | 010346 | 002000 | 2000 |
| 1832 | 010350 | 004000 | 4000 |
| 1833 | 010352 | 010000 | 10000 |
| 1834 | 010354 | 020000 | 20000 |
| 1835 | 010356 | 040000 | 40000 |
| 1836 | 010360 | 100000 | 100000 |

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1837
1838
1839           ;END OF PASS
1840           ;TYPE NAME OF TEST
1841           ;UPDATE PASS COUNT
1842           ;CHECK FOR EXIT TO ACT-
1843           ;RESTART TEST
1844
1845 010362 104401      EOP:   TYPE           ;TYPE NAME OF TEST
1846 010364 012765      MEPASS
1847 010366 005067 001312  CLR          LAST           ;CLEAR LAST ERROR PC
1848 010372 005067 001242  CLR          ERRFLG        ;CLEAR ERROR FLAG
1849 010376 005267 001240  INC          PASCNT        ;UPDATE PASS COUNT
1850 010402 016767 001234 167160 MOV          PASCNT,LIGHTS ;DISPLAY PASS COUNT
1851 010410 013701 000042  MOV          #42,R1        ;CHECK FOR ACT-11 OR DDP
1852 010414 001405      BEQ          RESTRT        ;IF NOT, CONTINUE TESTING
1853 010416 000005      RESET
1854 010420 004711      LOGICAL: JSR          PC,(R1)
1855 010422 000240      NOP
1856 010424 000240      NOP
1857 010426 000240      NOP
1858 010430 000167 170546  RESTRT: JMP          BEGIN
1859
1860           ;CHECK FOR LOOP ON CURRENT TEST
1861           ;CHECK FOR ITERATION SUPPRESSION
1862
1863 010434 032767 002000 167126 SCOPER: BIT          #SW10,SWR
1864 010442 001030      BNE          4$
1865 010444 032767 040000 167116 1$: BIT          #SW14,SWR
1866 010452 001021      BNE          3$
1867 010454 032767 004000 167106  BIT          #SW11,SWR
1868 010462 001006      BNE          2$
1869 010464 005267 001166  INC          LPCNT
1870 010470 026767 001162 001156  CMP          LPCNT,ICOUNT
1871 010476 001007      BNE          3$
1872 010500 005067 001152 2$: CLR          LPCNT
1873 010504 005067 001130  CLR          ERRFLG
1874 010510 011667 001132  MOV          (SP),RETURN
1875 010514 000002      RTI
1876 010516 016716 001124 3$: MOV          RETURN,(SP)
1877 010522 000002      RTI
1878 010524 005767 001110 4$: TST          ERRFLG
1879 010530 001745      BEQ          1$
1880 010532 000762      BR           2$
1881
1882           ;CHECK FOR FREEZE ON CURRENT DATA
1883
1884 010534 032767 001000 167026 SCOP1R: BIT          #SW09,SWR
1885 010542 001402      BEQ          1$
1886 010544 016716 001102  MOV          FREEZ1,(SP)
1887 010550 000002      RTI
1888
1889           ;ERROR HANDLER
1890
1891 010552 032767 020000 167010 ERRORS: BIT          #SW13,SWR
1892 010560 001051      BNE          HALTS

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| | | | | | | | | |
|------|--------|--------|--------|--------|---------|---------------------------------------|--------------|--------------------------------|
| 1893 | 010562 | 021667 | 001116 | | CMP | (SP),LAST | | |
| 1894 | 010566 | 001404 | | | BEQ | 1\$ | | |
| 1895 | 010570 | 011667 | 001110 | | MOV | (SP),LAST | | |
| 1896 | 010574 | 005067 | 001040 | | CLR | ERRFLG | | |
| 1897 | 010600 | 104406 | | 1\$: | SAVOSP | | | |
| 1898 | 010602 | 011605 | | | MOV | (SP),R5 | | |
| 1899 | 010604 | 162705 | 000002 | | SUB | #2,R5 | | |
| 1900 | 010610 | 011504 | | | MOV | (R5),R4 | | |
| 1901 | 010612 | 006304 | | | ASL | R4 | | |
| 1902 | 010614 | 006304 | | | ASL | R4 | | |
| 1903 | 010616 | 042704 | 177001 | | BIC | #177001,R4 | | |
| 1904 | 010622 | 062704 | 013074 | | ADD | #ERRTAB,R4 | | |
| 1905 | 010626 | 012467 | 000034 | | MOV | (R4)+,ERRMSG | | |
| 1906 | 010632 | 011467 | 000042 | | MOV | (R4),DATABP | | |
| 1907 | 010636 | 005767 | 000776 | | TST | ERRFLG | | |
| 1908 | 010642 | 001403 | | | BEQ | TYPMSG | | |
| 1909 | 010644 | 005767 | 000030 | | TST | DATABP | | |
| 1910 | 010650 | 001007 | | | BNE | TYPDAT | | |
| 1911 | 010652 | 104402 | | | TYPMSG: | OCTASC | | |
| 1912 | 010654 | 010746 | | | | ERTABO | | |
| 1913 | 010656 | 012767 | 000001 | 000754 | MOV | #1,ERRFLG | | |
| 1914 | 010664 | 104401 | | | | TYPE | | |
| 1915 | 010666 | 000000 | | | ERRMSG: | 0 | | |
| 1916 | 010670 | 005767 | 000004 | | TYPDAT: | TST | DATABP | |
| 1917 | 010674 | 001402 | | | | BEQ | RESREG | |
| 1918 | 010676 | 104402 | | | | OCTASC | | |
| 1919 | 010700 | 000000 | | | DATABP: | 0 | | |
| 1920 | 010702 | 104407 | | | RESREG: | RESOS | | |
| 1921 | 010704 | 005767 | 166660 | | HALTS: | TST | SWR | |
| 1922 | 010710 | 100005 | | | | BPL | EXITER | |
| 1923 | 010712 | 010046 | | | | PUSHRO | | |
| 1924 | 010714 | 016600 | 000002 | | | MOV | 2(SP),P0 | |
| 1925 | 010720 | 000000 | | | | HALT | | |
| 1926 | 010722 | 012600 | | | | POPPO | | |
| 1927 | 010724 | 005267 | 000714 | | EXITER: | INC | ERRCNT | |
| 1928 | 010730 | 032767 | 002000 | 166632 | | BIT | #SW10,SWR | |
| 1929 | 010736 | 001402 | | | | BEQ | 1\$ | |
| 1930 | 010740 | 016716 | 000704 | | | MOV | ESCAPE,(SP) | |
| 1931 | 010744 | 000002 | | | 1\$: | RTI | | |
| 1932 | 010746 | 000001 | | | ERTABO: | 1 | | |
| 1933 | 010750 | 006 | 002 | | | .BYTE | 6,2 | |
| 1934 | 010752 | 011676 | | | | SAVPC | | |
| 1935 | | | | | | ;TRAP DISPATCH SERVICE | | |
| 1936 | | | | | | ;ARGUMENT OF TRAP IS EXTRACTED | | |
| 1937 | | | | | | ;AND USED AS OFFSET TO OBTAIN POINTER | | |
| 1938 | | | | | | ;TO SELECTED SUBROUTINE | | |
| 1939 | | | | | | | | |
| 1940 | 010754 | 011646 | | | TRPSRV: | MOV | (SP),-(SP) | ;GET PC OF RETURN |
| 1941 | 010756 | 162716 | 000002 | | | SUB | #2,(SP) | ;=PC OF TRAP |
| 1942 | 010762 | 017616 | 000000 | | | MOV | 2(SP),(SP) | ;GET TRP |
| 1943 | 010766 | 006316 | | | TRPOK: | ASL | (SP) | ;MULTIPLY TRAP ARG BY 2 |
| 1944 | 010770 | 042716 | 177001 | | | BIC | #177001,(SP) | ;CLEAR UNWANTED BITS |
| 1945 | 010774 | 062716 | 013014 | | | ADD | #TRPTAB,(SP) | ;POINTER TO SUBROUTINE ADDRESS |
| 1946 | 011000 | 017616 | 000000 | | | MOV | 2(SP),(SP) | ;SUBROUTINE ADDRESS |
| 1947 | 011004 | 000136 | | | | JMP | 2(SP)+ | ;GO TO SUBROUTINE |
| 1948 | | | | | | | | |

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1949                                     ; TELETYPE OUTPUT ROUTINE
1950
1951 011006 017605 000000          TYPBR:  MOV      2(SP),R5
1952 011012 062716 000002          ADD      #2,(SP)
1953 011016 105777 000560          1S:    TSTB   2TPCSR
1954 011022 100375                BPL      1S
1955 011024 105715                TSTB   (R5)
1956 011026 001001                BNE     2S
1957 011030 000002                RTI
1958 011032 112577 000546          2S:    MOVB   (R5)+,2TPDBR
1959 011036 000767                BR      1S

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1960                                     ; ASCII STRING INPUT ROUTINE
1961
1962 011040 017667 000000 000006  INSTRG: MOV      2(SP),MSG
1963 011046 062716 000002          ADD      #2,(SP)
1964 011052 104401                INSTR1: TYPE
1965 011054 000000                MSG:    0
1966 011056 012704 013036          MOV      #INBUF,R4
1967 011062 012703 000007          MOV      #7,R3
1968 011066 105777 000504          1S:    TSTB   2TKCSR
1969 011072 100375                BPL      1S
1970 011074 117714 000500          MOVB   2TKDBR,(R4)
1971 011100 142714 000200          BICB   #200,(R4)
1972 011104 122427 000015          CMPB   (R4)+,#15
1973 011110 001413                BEQ     INSTR2
1974 011112 117777 000462 000464  2S:    MOVB   2TKDBR,2TPDBR
1975 011120 105777 000456          TSTB   2TPCSR
1976 011124 100375                BPL      2S
1977 011126 005303                DEC     R3
1978 011130 001356                BNE     1S
1979 011132 104401                INSTRE: TYPE
1980 011134 012671                MOVM
1981 011136 000745                BR      INSTR1
1982 011140 000002                INSTR2: RTI

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1983                                     ; CONVERT ASCII STRING TO OCTAL
1984
1985
1986
1987 011142 011605                PARAMS: MOV      (SP),R5
1988 011144 012567 000146          MOV      (R5)+,LOLIM
1989 011150 012567 000144          MOV      (R5)+,HILIM
1990 011154 012567 000142          MOV      (R5)+,DEVADR
1991 011160 112567 000140          MOVB   (R5)+,LOBITS
1992 011164 112567 000135          MOVB   (R5)+,ADRCNT
1993 011170 010516                MOV      R5,(SP)
1994 011172 005005                PARAM1: CLR     R5
1995 011174 012704 013036          MOV      #INBUF,R4
1996 011200 122714 000015          CMPB   #15,(R4)
1997 011204 001420                BEQ     PARERR
1998 011206 121427 000060          1S:    CMPB   (R4),#60
1999 011212 002415                BLT     PARERR
2000 011214 121427 000067          CMPB   (R4),#67
2001 011220 003012                BGT     PARERR
2002 011222 142714 000060          BICB   #60,(R4)
2003 011226 152405                BISB   (R4)+,R5
2004 011230 122714 000015          CMPB   #15,(R4)

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| | | | | | |
|------|--------|--------|--------|---------|--|
| 2005 | 011234 | 001406 | | BEO | LIMITS |
| 2006 | 011236 | 006305 | | ASL | R5 |
| 2007 | 011240 | 006305 | | ASL | R5 |
| 2008 | 011242 | 006305 | | ASL | R5 |
| 2009 | 011244 | 000760 | | BR | IS |
| 2010 | 011246 | 104404 | | PARERR: | INSTER |
| 2011 | 011250 | 000750 | | SR | PARAM1 |
| 2012 | | | | | |
| 2013 | | | | | :TEST TO SEE IF NUMBER IS WITHIN LIMITS |
| 2014 | | | | | |
| 2015 | 011252 | 020567 | 000042 | LIMITS: | CMP R5,HILIM |
| 2016 | 011256 | 101373 | | | SHI PARERR |
| 2017 | 011260 | 020567 | 000032 | | CMP R5,LOLIM |
| 2018 | 011264 | :03770 | | | BLO PARERR |
| 2019 | 011266 | 136705 | 000032 | | BITB LOBITS,R5 |
| 2020 | 011272 | 001365 | | | BNE PARERR |
| 2021 | | | | | |
| 2022 | | | | | :STORE NUMBER AT SPECIFIED ADDRESS |
| 2023 | | | | | |
| 2024 | 011274 | 016704 | 000022 | IS: | MOV DEVADR,R4 |
| 2025 | 011300 | 010524 | | | MOV R5,(R4)+ |
| 2026 | 011302 | 062705 | 000002 | | ADD #2,R5 |
| 2027 | 011306 | 105367 | 000013 | | DECB ADRCNT |
| 2028 | 011312 | 001372 | | | BNE IS |
| 2029 | 011314 | 000002 | | | RTI |
| 2030 | 011316 | 000000 | | LOLIM: | 0 |
| 2031 | 011320 | 000000 | | HILIM: | 0 |
| 2032 | 011322 | 000000 | | DEVADR: | 0 |
| 2033 | 011324 | 000000 | | LOBITS: | 0 |
| 2034 | | 011325 | | ADRCNT= | LOBITS+! |
| 2035 | | | | | |
| 2036 | | | | | :CONVERT OCTAL NUMBER TO ASCII AND OUTPUT TO TELEPRINTER |
| 2037 | | | | | |
| 2038 | 011326 | 104401 | | OCTASN: | TYPE |
| 2039 | 011330 | 012675 | | | MCRLF |
| 2040 | 011332 | 017601 | 000000 | | MOV 2(SP),R1 |
| 2041 | 011336 | 062716 | 000002 | | ADD #2,(SP) |
| 2042 | 011342 | 012167 | 000130 | | MOV (R1)+,WRDCNT |
| 2043 | 011346 | 112167 | 000126 | 15: | MOV (R1)+,CHRCNT |
| 2044 | 011352 | 112167 | 000123 | | MOV (R1)+,SPACNT |
| 2045 | 011356 | 013167 | 000120 | | MOV 2(R1)+,BINWRD |
| 2046 | 011362 | 016704 | 000114 | 25: | MOV BINWRD,R4 |
| 2047 | 011366 | 116705 | 000106 | | MOV CHRCNT,R5 |
| 2048 | 011372 | 0:2700 | 013050 | | MOV #TEMP,R0 |
| 2049 | 011376 | 010403 | | 35: | MOV R4,R3 |
| 2050 | 011400 | 042703 | 177770 | | BIC #177770,R3 |
| 2051 | 011404 | 062703 | 000260 | | ADD #260,R3 |
| 2052 | 011410 | 110320 | | | MOV R3,(R0)+ |
| 2053 | 011412 | 006204 | | | ASR R4 |
| 2054 | 011414 | 006204 | | | ASR R4 |
| 2055 | 011416 | 006204 | | | ASR R4 |
| 2056 | 011420 | 005305 | | | DEC R5 |
| 2057 | 011422 | 001365 | | | BNE 35 |
| 2058 | 011424 | 012703 | 013062 | | MOV #MDATA,R3 |
| 2059 | 011430 | 114023 | | 45: | MOV -(R0),(R3)+ |
| 2060 | 011432 | :05367 | 000042 | | DECB CHRCNT |

| | | | | | | | |
|------|--------|--------|--------|--------|---------|-----------------|--|
| 2061 | 011436 | 001374 | | | | BNE | 45 |
| 2062 | 011440 | 105767 | 000035 | | | TSTB | SPACNT |
| 2063 | 011444 | 001405 | | | | BEQ | 65 |
| 2064 | 011446 | 112723 | 000240 | | 55: | MOVB | #240,(R3)+ |
| 2065 | 011452 | 105367 | 000023 | | | DECB | SPACNT |
| 2066 | 011456 | 001373 | | | | BNE | 55 |
| 2067 | 011460 | 105013 | | | 65: | CLRB | (R3) |
| 2068 | 011462 | 104401 | | | | TYPE | |
| 2069 | 011464 | 013062 | | | | MDATA | |
| 2070 | 011466 | 065367 | 000004 | | | DEC | WRDCNT |
| 2071 | 011472 | 001325 | | | | BNE | 15 |
| 2072 | 011474 | 000002 | | | | RTI | |
| 2073 | 011476 | 000000 | | | | WRDCNT: | 0 |
| 2074 | 011500 | 000000 | | | | CHRCNT: | 0 |
| 2075 | | 011501 | | | | SPACNT=CHRCNT+1 | |
| 2076 | 011502 | 000000 | | | | BINWRD: | 0 |
| 2077 | | | | | | | |
| 2078 | | | | | | | :SAVE PC OF TEST THAT FAILED AND RO-R5 |
| 2079 | | | | | | | |
| 2080 | 011504 | 016667 | 000004 | 000164 | SV05P: | MOV | 4(SP),SAVPC |
| 2081 | | | | | | | |
| 2082 | | | | | | | :SAVE RO-R5 |
| 2083 | | | | | | | |
| 2084 | 011512 | 010567 | 000154 | | SV05: | MOV | R5,SAVR5 |
| 2085 | 011516 | 010467 | 000146 | | | MOV | R4,SAVR4 |
| 2086 | 011522 | 010367 | 000140 | | | MOV | R3,SAVR3 |
| 2087 | 011526 | 010267 | 000132 | | | MOV | R2,SAVR2 |
| 2088 | 011532 | 010167 | 000124 | | | MOV | R1,SAVR1 |
| 2089 | 011536 | 010067 | 000116 | | | MOV | RO,SAVRC |
| 2090 | 011542 | 000002 | | | | RTI | |
| 2091 | | | | | | | :RESTORE RO-R5 |
| 2092 | | | | | | | |
| 2093 | 011544 | 016700 | 000110 | | PS05: | MOV | SAVR0,R0 |
| 2094 | 011550 | 016701 | 000106 | | | MOV | SAVR1,R1 |
| 2095 | 011554 | 016702 | 000104 | | | MOV | SAVR2,R2 |
| 2096 | 011560 | 016703 | 000102 | | | MOV | SAVR3,R3 |
| 2097 | 011564 | 016704 | 000100 | | | MOV | SAVR4,R4 |
| 2098 | 011570 | 016705 | 000076 | | | MOV | SAVR5,R5 |
| 2099 | 011574 | 000002 | | | | RTI | |
| 2100 | | | | | | | :INDIRECT POINTERS |
| 2101 | | | | | | | |
| 2102 | 011576 | 177560 | | | TKCSR: | 177560 | |
| 2103 | 011600 | 177562 | | | TKDBR: | 177562 | |
| 2104 | 011602 | 177564 | | | TPCSR: | 177564 | |
| 2105 | 011604 | 177566 | | | TPDBR: | 177566 | |
| 2106 | 011606 | 000000 | | | DHSCR: | 0 | |
| 2107 | 011610 | 000000 | | | DHNRC: | 0 | |
| 2108 | 011612 | 000000 | | | DHLPR: | 0 | |
| 2109 | 011614 | 000000 | | | DHBA: | 0 | |
| 2110 | 011616 | 000000 | | | DHBC: | 0 | |
| 2111 | 011620 | 000000 | | | DHBAR: | 0 | |
| 2112 | 011622 | 000000 | | | CHBCR: | 0 | |
| 2113 | 011624 | 000000 | | | DHSSR: | 0 | |
| 2114 | 011626 | 000000 | | | DHSLR: | 0 | |
| 2115 | 011630 | 000000 | | | DHVEC: | 0 | |
| 2116 | 011632 | 000000 | | | CHRLVL: | 0 | |

| | | | | |
|------|--------|-----|-------|------|
| 2173 | 011751 | 037 | .BYTE | TDAT |
| 2174 | 011752 | 040 | .BYTE | TDAT |
| 2175 | 011753 | 041 | .BYTE | TDAT |
| 2176 | 011754 | 042 | .BYTE | TDAT |
| 2177 | 011755 | 043 | .BYTE | TDAT |
| 2178 | 011756 | 044 | .BYTE | TDAT |
| 2179 | 011757 | 045 | .BYTE | TDAT |
| 2180 | 011760 | 046 | .BYTE | TDAT |
| 2181 | 011761 | 047 | .BYTE | TDAT |
| 2182 | 011762 | 050 | .BYTE | TDAT |
| 2183 | 011763 | 051 | .BYTE | TDAT |
| 2184 | 011764 | 052 | .BYTE | TDAT |
| 2185 | 011765 | 053 | .BYTE | TDAT |
| 2186 | 011766 | 054 | .BYTE | TDAT |
| 2187 | 011767 | 055 | .BYTE | TDAT |
| 2188 | 011770 | 056 | .BYTE | TDAT |
| 2189 | 011771 | 057 | .BYTE | TDAT |
| 2190 | 011772 | 060 | .BYTE | TDAT |
| 2191 | 011773 | 061 | .BYTE | TDAT |
| 2192 | 011774 | 062 | .BYTE | TDAT |
| 2193 | 011775 | 063 | .BYTE | TDAT |
| 2194 | 011776 | 064 | .BYTE | TDAT |
| 2195 | 011777 | 065 | .BYTE | TDAT |
| 2196 | 012000 | 066 | .BYTE | TDAT |
| 2197 | 012001 | 067 | .BYTE | TDAT |
| 2198 | 012002 | 070 | .BYTE | TDAT |
| 2199 | 012003 | 071 | .BYTE | TDAT |
| 2200 | 012004 | 072 | .BYTE | TDAT |
| 2201 | 012005 | 073 | .BYTE | TDAT |
| 2202 | 012006 | 074 | .BYTE | TDAT |
| 2203 | 012007 | 075 | .BYTE | TDAT |
| 2204 | 012010 | 076 | .BYTE | TDAT |
| 2205 | 012011 | 077 | .BYTE | TDAT |
| 2206 | 012012 | 100 | .BYTE | TDAT |
| 2207 | 012013 | 101 | .BYTE | TDAT |
| 2208 | 012014 | 102 | .BYTE | TDAT |
| 2209 | 012015 | 103 | .BYTE | TDAT |
| 2210 | 012016 | 104 | .BYTE | TDAT |
| 2211 | 012017 | 105 | .BYTE | TDAT |
| 2212 | 012020 | 106 | .BYTE | TDAT |
| 2213 | 012021 | 107 | .BYTE | TDAT |
| 2214 | 012022 | 110 | .BYTE | TDAT |
| 2215 | 012023 | 111 | .BYTE | TDAT |
| 2216 | 012024 | 112 | .BYTE | TDAT |
| 2217 | 012025 | 113 | .BYTE | TDAT |
| 2218 | 012026 | 114 | .BYTE | TDAT |
| 2219 | 012027 | 115 | .BYTE | TDAT |
| 2220 | 012030 | 116 | .BYTE | TDAT |
| 2221 | 012031 | 117 | .BYTE | TDAT |
| 2222 | 012032 | 120 | .BYTE | TDAT |
| 2223 | 012033 | 121 | .BYTE | TDAT |
| 2224 | 012034 | 122 | .BYTE | TDAT |
| 2225 | 012035 | 123 | .BYTE | TDAT |
| 2226 | 012036 | 124 | .BYTE | TDAT |
| 2227 | 012037 | 125 | .BYTE | TDAT |
| 2228 | 012040 | 126 | .BYTE | TDAT |

| | | | | |
|------|--------|-----|-------|------|
| 2229 | 012041 | 127 | .BYTE | TDAT |
| 2230 | 012042 | 130 | .BYTE | TDAT |
| 2231 | 012043 | 131 | .BYTE | TDAT |
| 2232 | 012044 | 132 | .BYTE | TDAT |
| 2233 | 012045 | 133 | .BYTE | TDAT |
| 2234 | 012046 | 134 | .BYTE | TDAT |
| 2235 | 012047 | 135 | .BYTE | TDAT |
| 2236 | 012050 | 136 | .BYTE | TDAT |
| 2237 | 012051 | 137 | .BYTE | TDAT |
| 2238 | 012052 | 140 | .BYTE | TDAT |
| 2239 | 012053 | 141 | .BYTE | TDAT |
| 2240 | 012054 | 142 | .BYTE | TDAT |
| 2241 | 012055 | 143 | .BYTE | TDAT |
| 2242 | 012056 | 144 | .BYTE | TDAT |
| 2243 | 012057 | 145 | .BYTE | TDAT |
| 2244 | 012060 | 146 | .BYTE | TDAT |
| 2245 | 012061 | 147 | .BYTE | TDAT |
| 2246 | 012062 | 150 | .BYTE | TDAT |
| 2247 | 012063 | 151 | .BYTE | TDAT |
| 2248 | 012064 | 152 | .BYTE | TDAT |
| 2249 | 012065 | 153 | .BYTE | TDAT |
| 2250 | 012066 | 154 | .BYTE | TDAT |
| 2251 | 012067 | 155 | .BYTE | TDAT |
| 2252 | 012070 | 156 | .BYTE | TDAT |
| 2253 | 012071 | 157 | .BYTE | TDAT |
| 2254 | 012072 | 160 | .BYTE | TDAT |
| 2255 | 012073 | 161 | .BYTE | TDAT |
| 2256 | 012074 | 162 | .BYTE | TDAT |
| 2257 | 012075 | 163 | .BYTE | TDAT |
| 2258 | 012076 | 164 | .BYTE | TDAT |
| 2259 | 012077 | 165 | .BYTE | TDAT |
| 2260 | 012100 | 166 | .BYTE | TDAT |
| 2261 | 012101 | 167 | .BYTE | TDAT |
| 2262 | 012102 | 170 | .BYTE | TDAT |
| 2263 | 012103 | 171 | .BYTE | TDAT |
| 2264 | 012104 | 172 | .BYTE | TDAT |
| 2265 | 012105 | 173 | .BYTE | TDAT |
| 2266 | 012106 | 174 | .BYTE | TDAT |
| 2267 | 012107 | 175 | .BYTE | TDAT |
| 2268 | 012110 | 176 | .BYTE | TDAT |
| 2269 | 012111 | 177 | .BYTE | TDAT |
| 2270 | 012112 | 200 | .BYTE | TDAT |
| 2271 | 012113 | 201 | .BYTE | TDAT |
| 2272 | 012114 | 202 | .BYTE | TDAT |
| 2273 | 012115 | 203 | .BYTE | TDAT |
| 2274 | 012116 | 204 | .BYTE | TDAT |
| 2275 | 012117 | 205 | .BYTE | TDAT |
| 2276 | 012120 | 206 | .BYTE | TDAT |
| 2277 | 012121 | 207 | .BYTE | TDAT |
| 2278 | 012122 | 210 | .BYTE | TDAT |
| 2279 | 012123 | 211 | .BYTE | TDAT |
| 2280 | 012124 | 212 | .BYTE | TDAT |
| 2281 | 012125 | 213 | .BYTE | TDAT |
| 2282 | 012126 | 214 | .BYTE | TDAT |
| 2283 | 012127 | 215 | .BYTE | TDAT |
| 2284 | 012130 | 216 | .BYTE | TDAT |

| | | | | |
|------|--------|-----|-------|------|
| 2285 | 012131 | 217 | .BYTE | TDAT |
| 2286 | 012132 | 220 | .BYTE | TDAT |
| 2287 | 012133 | 221 | .BYTE | TDAT |
| 2288 | 012134 | 222 | .BYTE | TDAT |
| 2289 | 012135 | 223 | .BYTE | TDAT |
| 2290 | 012136 | 224 | .BYTE | TDAT |
| 2291 | 012137 | 225 | .BYTE | TDAT |
| 2292 | 012140 | 226 | .BYTE | TDAT |
| 2293 | 012141 | 227 | .BYTE | TDAT |
| 2294 | 012142 | 230 | .BYTE | TDAT |
| 2295 | 012143 | 231 | .BYTE | TDAT |
| 2296 | 012144 | 232 | .BYTE | TDAT |
| 2297 | 012145 | 233 | .BYTE | TDAT |
| 2298 | 012146 | 234 | .BYTE | TDAT |
| 2299 | 012147 | 235 | .BYTE | TDAT |
| 2300 | 012150 | 236 | .BYTE | TDAT |
| 2301 | 012151 | 237 | .BYTE | TDAT |
| 2302 | 012152 | 240 | .BYTE | TDAT |
| 2303 | 012153 | 241 | .BYTE | TDAT |
| 2304 | 012154 | 242 | .BYTE | TDAT |
| 2305 | 012155 | 243 | .BYTE | TDAT |
| 2306 | 012156 | 244 | .BYTE | TDAT |
| 2307 | 012157 | 245 | .BYTE | TDAT |
| 2308 | 012160 | 246 | .BYTE | TDAT |
| 2309 | 012161 | 247 | .BYTE | TDAT |
| 2310 | 012162 | 250 | .BYTE | TDAT |
| 2311 | 012163 | 251 | .BYTE | TDAT |
| 2312 | 012164 | 252 | .BYTE | TDAT |
| 2313 | 012165 | 253 | .BYTE | TDAT |
| 2314 | 012166 | 254 | .BYTE | TDAT |
| 2315 | 012167 | 255 | .BYTE | TDAT |
| 2316 | 012170 | 256 | .BYTE | TDAT |
| 2317 | 012171 | 257 | .BYTE | TDAT |
| 2318 | 012172 | 260 | .BYTE | TDAT |
| 2319 | 012173 | 261 | .BYTE | TDAT |
| 2320 | 012174 | 262 | .BYTE | TDAT |
| 2321 | 012175 | 263 | .BYTE | TDAT |
| 2322 | 012176 | 264 | .BYTE | TDAT |
| 2323 | 012177 | 265 | .BYTE | TDAT |
| 2324 | 012200 | 265 | .BYTE | TDAT |
| 2325 | 012201 | 267 | .BYTE | TDAT |
| 2326 | 012202 | 270 | .BYTE | TDAT |
| 2327 | 012203 | 271 | .BYTE | TDAT |
| 2328 | 012204 | 272 | .BYTE | TDAT |
| 2329 | 012205 | 273 | .BYTE | TDAT |
| 2330 | 012206 | 274 | .BYTE | TDAT |
| 2331 | 012207 | 275 | .BYTE | TDAT |
| 2332 | 012210 | 276 | .BYTE | TDAT |
| 2333 | 012211 | 277 | .BYTE | TDAT |
| 2334 | 012212 | 300 | .BYTE | TDAT |
| 2335 | 012213 | 301 | .BYTE | TDAT |
| 2336 | 012214 | 302 | .BYTE | TDAT |
| 2337 | 012215 | 303 | .BYTE | TDAT |
| 2338 | 012216 | 304 | .BYTE | TDAT |
| 2339 | 012217 | 305 | .BYTE | TDAT |
| 2340 | 012220 | 306 | .BYTE | TDAT |

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|------|--------|-----|-------|------|
| 2341 | 012221 | 307 | .BYTE | TDAT |
| 2342 | 012222 | 310 | .BYTE | TDAT |
| 2343 | 012223 | 311 | .BYTE | TDAT |
| 2344 | 012224 | 312 | .BYTE | TDAT |
| 2345 | 012225 | 313 | .BYTE | TDAT |
| 2346 | 012226 | 314 | .BYTE | TDAT |
| 2347 | 012227 | 315 | .BYTE | TDAT |
| 2348 | 012230 | 316 | .BYTE | TDAT |
| 2349 | 012231 | 317 | .BYTE | TDAT |
| 2350 | 012232 | 320 | .BYTE | TDAT |
| 2351 | 012233 | 321 | .BYTE | TDAT |
| 2352 | 012234 | 322 | .BYTE | TDAT |
| 2353 | 012235 | 323 | .BYTE | TDAT |
| 2354 | 012236 | 324 | .BYTE | TDAT |
| 2355 | 012237 | 325 | .BYTE | TDAT |
| 2356 | 012240 | 326 | .BYTE | TDAT |
| 2357 | 012241 | 327 | .BYTE | TDAT |
| 2358 | 012242 | 330 | .BYTE | TDAT |
| 2359 | 012243 | 331 | .BYTE | TDAT |
| 2360 | 012244 | 332 | .BYTE | TDAT |
| 2361 | 012245 | 333 | .BYTE | TDAT |
| 2362 | 012246 | 334 | .BYTE | TDAT |
| 2363 | 012247 | 335 | .BYTE | TDAT |
| 2364 | 012250 | 336 | .BYTE | TDAT |
| 2365 | 012251 | 337 | .BYTE | TDAT |
| 2366 | 012252 | 340 | .BYTE | TDAT |
| 2367 | 012253 | 341 | .BYTE | TDAT |
| 2368 | 012254 | 342 | .BYTE | TDAT |
| 2369 | 012255 | 343 | .BYTE | TDAT |
| 2370 | 012256 | 344 | .BYTE | TDAT |
| 2371 | 012257 | 345 | .BYTE | TDAT |
| 2372 | 012260 | 346 | .BYTE | TDAT |
| 2373 | 012261 | 347 | .BYTE | TDAT |
| 2374 | 012262 | 350 | .BYTE | TDAT |
| 2375 | 012263 | 351 | .BYTE | TDAT |
| 2376 | 012264 | 352 | .BYTE | TDAT |
| 2377 | 012265 | 353 | .BYTE | TDAT |
| 2378 | 012266 | 354 | .BYTE | TDAT |
| 2379 | 012267 | 355 | .BYTE | TDAT |
| 2380 | 012270 | 356 | .BYTE | TDAT |
| 2381 | 012271 | 357 | .BYTE | TDAT |
| 2382 | 012272 | 360 | .BYTE | TDAT |
| 2383 | 012273 | 361 | .BYTE | TDAT |
| 2384 | 012274 | 362 | .BYTE | TDAT |
| 2385 | 012275 | 363 | .BYTE | TDAT |
| 2386 | 012276 | 364 | .BYTE | TDAT |
| 2387 | 012277 | 365 | .BYTE | TDAT |
| 2388 | 012300 | 366 | .BYTE | TDAT |
| 2389 | 012301 | 367 | .BYTE | TDAT |
| 2390 | 012302 | 370 | .BYTE | TDAT |
| 2391 | 012303 | 371 | .BYTE | TDAT |
| 2392 | 012304 | 372 | .BYTE | TDAT |
| 2393 | 012305 | 373 | .BYTE | TDAT |
| 2394 | 012306 | 374 | .BYTE | TDAT |
| 2395 | 012307 | 375 | .BYTE | TDAT |
| 2396 | 012310 | 376 | .BYTE | TDAT |

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| | | | | | | |
|------|--------|--------|--------|--------|--|--|
| 2397 | 012311 | 377 | | | .BYTE TUAT | |
| 2398 | | | | | .EVEN | |
| 2399 | 012312 | 000000 | | | RBUF: 0 | |
| 2400 | | 012354 | | | . = .+40 | |
| 2401 | | | | | ;ENTER HERE ON POWER FAILURE | |
| 2402 | | | | | | |
| 2403 | | | | | | |
| 2404 | 012354 | 010046 | | | PFAIL: MOV R0, -(SP) | ;SAVE R0-R5 ON PROCESSOR STACK |
| 2405 | 012356 | 010146 | | | MOV R1, -(SP) | |
| 2406 | 012360 | 010246 | | | MOV R2, -(SP) | |
| 2407 | 012362 | 010346 | | | MOV R3, -(SP) | |
| 2408 | 012364 | 010446 | | | MOV R4, -(SP) | |
| 2409 | 012366 | 010546 | | | MOV R5, -(SP) | |
| 2410 | 012370 | 016746 | 165430 | | MOV 24, -(SP) | |
| 2411 | 012374 | 010667 | 177274 | | MOV SP, SAVSP | ;SAVE STACK POINTER |
| 2412 | 012400 | 012767 | 012412 | 165416 | MOV #RESTART, 24 | ;SET UP FOR POWER UP TRAP |
| 2413 | 012406 | 000000 | | | HALT | ;HALT ON POWER DOWN NORMAL |
| 2414 | 012410 | 000777 | | | BR . | |
| 2415 | | | | | | |
| 2416 | | | | | ;PROCESSOR WILL TRAP HERE WHEN POWER IS RESTORED | |
| 2417 | | | | | | |
| 2418 | 012412 | 016706 | 177256 | | RESTAR: MOV SAVSP, SP | ;RESTORE STACK POINTER |
| 2419 | 012416 | 012605 | | | MOV (SP)+, R5 | ;RESTORE R0-R5 |
| 2420 | 012420 | 012604 | | | MOV (SP)+, R4 | |
| 2421 | 012422 | 012603 | | | MOV (SP)+, R3 | |
| 2422 | 012424 | 012602 | | | MOV (SP)+, R2 | |
| 2423 | 012426 | 012601 | | | MOV (SP)+, R1 | |
| 2424 | 012430 | 012600 | | | MOV (SP)+, R0 | |
| 2425 | 012432 | 012767 | 012354 | 165364 | MOV #PFAIL, 24 | ;SET UP FOR POWER FAILURE |
| 2426 | 012440 | 012767 | 000340 | 165330 | MOV #340, PS | |
| 2427 | 012446 | 012706 | 013564 | | MOV #STACK, SP | |
| 2428 | 012452 | 005067 | 000372 | | CLR TEMP | |
| 2429 | 012456 | 005267 | 000366 | | INC TEMP | |
| 2430 | 012462 | 001375 | | | BNE .-4 | |
| 2431 | 012464 | 104402 | | | OCTASC | |
| 2432 | 012466 | 012510 | | | PFTAB | |
| 2433 | 012470 | 104401 | | | TYPE | |
| 2434 | 012472 | 012700 | | | MPFAIL | |
| 2435 | 012474 | 005067 | 177140 | | CLR ERRFLG | |
| 2436 | 012500 | 005067 | 177200 | | CLR LAST | |
| 2437 | 012504 | 000177 | 177136 | | JMP @RETURN | |
| 2438 | 012510 | 000001 | | | PFTAB: 1 | |
| 2439 | 012512 | 000006 | 000002 | | 6, 2 | |
| 2440 | 012516 | 000207 | | | RETURN | |
| 2441 | 012520 | 005015 | 042012 | 030510 | MTITLE: .ASCIZ | <15><12><12>/DH11 SINGLE LINE PARITY CHECK & MULTI-LINE DATA TEST /<15>< |
| 2442 | 012526 | 020061 | 044523 | 043516 | | |
| 2443 | 012534 | 042514 | 046040 | 047111 | | |
| 2444 | 012542 | 020105 | 040520 | 044522 | | |
| 2445 | 012550 | 054524 | 041440 | 042510 | | |
| 2446 | 012556 | 045503 | 023040 | 046440 | | |
| 2447 | 012564 | 046125 | 044524 | 046055 | | |
| 2448 | 012572 | 047111 | 020105 | 040504 | | |
| 2449 | 012600 | 040524 | 052040 | 051505 | | |
| 2450 | 012606 | 020124 | 005015 | 000 | | |
| 2451 | 012613 | 015 | 053012 | 041505 | MVECTO: .ASCIZ | <15><12>/VECTOR ADDRESS-/ |
| 2452 | 012620 | 047524 | 020122 | 042101 | | |

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| | | | | | |
|------|--------|--------|--------|--------|--|
| 2453 | 012626 | 051104 | 051505 | 026523 | |
| 2454 | 012634 | 000 | | | |
| 2455 | 012635 | 015 | 041412 | 047117 | MREGAD: .ASCIZ <15><12>/CONTROL REGISTER ADDRESS-/ |
| 2456 | 012642 | 051124 | 046117 | 051040 | |
| 2457 | 012650 | 043505 | 051511 | 042524 | |
| 2458 | 012656 | 020122 | 042101 | 051104 | |
| 2459 | 012664 | 051505 | 026523 | 000 | |
| 2460 | 012671 | 040 | 037440 | 000 | MQM: .ASCIZ / ?/ |
| 2461 | 012675 | 015 | 000012 | | MCRLF: .ASCIZ <15><12> |
| 2462 | 012700 | 020040 | 047520 | 042527 | MPFAIL: .ASCIZ / POWER FAILURE, PROGRAM RESTART AT TEST IN PROGRESS/ |
| 2463 | 012706 | 020122 | 040506 | 046111 | |
| 2464 | 012714 | 051125 | 026105 | 050040 | |
| 2465 | 012722 | 047522 | 051107 | 046501 | |
| 2466 | 012730 | 051040 | 051505 | 040524 | |
| 2467 | 012736 | 052122 | 040440 | 020124 | |
| 2468 | 012744 | 042524 | 052123 | 044440 | |
| 2469 | 012752 | 020116 | 051120 | 043517 | |
| 2470 | 012760 | 042522 | 051523 | 000 | |
| 2471 | 012765 | 015 | 042012 | 042132 | MEPASS: .ASCIZ <15><12>/DZDHG/ |
| 2472 | 012772 | 043510 | 000 | | |
| 2473 | 012775 | 015 | 051012 | 000 | MR: .ASCIZ <15><12>/R/ |
| 2474 | 013001 | 015 | 052012 | 051505 | MTSTPC: .ASCIZ <15><12>/TEST PC-/ |
| 2475 | 013006 | 020124 | 041520 | 000055 | |
| 2476 | | | | | .EVEN |
| 2477 | | | | | |
| 2478 | | | | | ;TABLE OF POINTERS FOR TRAP DECODING |
| 2479 | | | | | |
| 2480 | 013014 | 010434 | | | TRPTAB: SCOPER |
| 2481 | 013016 | 011006 | | | TYPER |
| 2482 | 013020 | 011326 | | | OCTASN |
| 2483 | 013022 | 011040 | | | INSTRG |
| 2484 | 013024 | 011132 | | | INSTRE |
| 2485 | 013026 | 011142 | | | PARAMS |
| 2486 | 013030 | 011504 | | | SVOSP |
| 2487 | 013032 | 011544 | | | RSOS |
| 2488 | 013034 | 010534 | | | SCOPIR |
| 2489 | | | | | |
| 2490 | | | | | ;BUFFERS FOR INPUT-OUTPUT |
| 2491 | | | | | |
| 2492 | 013036 | 000000 | | | INBUF: 0 |
| 2493 | | 013050 | | | .=.+10 |
| 2494 | 013050 | 000000 | | | TEMP: 0 |
| 2495 | | 013062 | | | .=.+10 |
| 2496 | 013062 | 000000 | | | MDATA: 0 |
| 2497 | | 013074 | | | .=.+10 |
| 2498 | | | | | |
| 2499 | | | | | ;TABLE OF POINTERS TO ERROR MESSAGES AND DATA |
| 2500 | | | | | |
| 2501 | 013074 | | | | ERRTAB: |
| 2502 | 013074 | 013124 | | | EM0 |
| 2503 | 013076 | 000000 | | | 0 |
| 2504 | 013100 | 013151 | | | EM1 |
| 2505 | 013102 | 000000 | | | 0 |
| 2506 | 013104 | 013205 | | | EM2 |
| 2507 | 013106 | 000000 | | | 0 |
| 2508 | 013110 | 013226 | | | EM3 |

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2509 013112 013346          DT1
2510 013114 013267          EM4
2511 013116 000000          0
2512 013120 013315          EMS
2513 013122 000000          0
2514 013124 047125 054105 042520 EM0: .ASCIZ /UNEXPECTED INTERRUPT/
2515 013132 052103 042105 044440
2516 013140 052116 051105 052522
2517 013146 052120 000
2518 013151 103 040510 040522 EM1: .ASCIZ /CHARACTER AVAILABLE NOT SET/
2519 013156 052103 051105 040440
2520 013164 040526 046111 041101
2521 013172 042514 047040 052117
2522 013200 051440 052105 000
2523 013205 123 046111 020117 EM2: .ASCIZ /SILO OVERRUN SET/
2524 013212 053117 051105 052522
2525 013220 020116 042523 000124
2526 013226 040504 040524 042440 EM3: .ASCII /DATA ERROR/
2527 013234 051122 051117
2528 013240 005015 054105 020120 .ASCIZ <15><12>/EXP REC LINE/
2529 013246 020040 020040 042522
2530 013254 020103 020040 020040
2531 013262 044514 042516 000
2532 013267 124 040522 051516 EM4: .ASCIZ /TRANSMIT DONE NOT SET/
2533 013274 044515 020124 047504
2534 013302 042516 047040 052117
2535 013310 051440 052105 000
2536 013315 103 040510 040522 EM5: .ASCIZ /CHARACTER AVAILABLE SET/
2537 013322 052103 051105 040440
2538 013330 040526 046111 041101
2539 013336 042514 051440 052105
2540 013344 000
2541 013346 .EVEN
2542
2543 ;DATA TABLES FOR ERRORS
2544
2545 013346 000003 DT1: 3
2546 013350 006 002 .BYTE 6,2
2547 013352 011672 .SAVR5
2548 013354 006 002 .BYTE 6,2
2549 013356 011662 .SAVR1
2550 013360 002 000 .BYTE 2,0
2551 013362 011666 .SAVR3
2552 013364 000000 ENDCOD: 0
2553 000001 .END

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 DZDHGB.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| ADRCNT= 011325 | 1992* | 2027* | 2034* | | | | | | | | | | | |
| BARBIT 010322 | 1817 | 1821* | | | | | | | | | | | | |
| BEGIN 001202 | 395 | 424 | 430* | 1858 | | | | | | | | | | |
| BINWRD 011502 | 2045* | 2046 | 2076* | | | | | | | | | | | |
| BITX = 000000 | 449* | 484* | 519* | 554* | 589* | 624* | 659* | 694* | 729* | 764* | 799* | 834* | 869* | |
| | 904* | 939* | 974* | 1009* | | | | | | | | | | |
| BIT00 = 000001 | 85* | | | | | | | | | | | | | |
| BIT01 = 000002 | 84* | | | | | | | | | | | | | |
| BIT02 = 000004 | 83* | | | | | | | | | | | | | |
| BIT03 = 000010 | 82* | | | | | | | | | | | | | |
| BIT04 = 000020 | 81* | | | | | | | | | | | | | |
| BIT05 = 000040 | 80* | | | | | | | | | | | | | |
| BIT06 = 000100 | 79* | | | | | | | | | | | | | |
| BIT07 = 000200 | 78* | | | | | | | | | | | | | |
| BIT08 = 000400 | 77* | | | | | | | | | | | | | |
| BIT09 = 001000 | 76* | | | | | | | | | | | | | |
| BIT10 = 002000 | 75* | | | | | | | | | | | | | |
| BIT11 = 004000 | 74* | 463 | 498 | 533 | 568 | 603 | 638 | 673 | 708 | 743 | 778 | 813 | 848 | |
| | 883 | 918 | 953 | 988 | 1023 | 1073 | 1102 | 1152 | 1181 | 1231 | 1260 | 1310 | 1339 | |
| | 1389 | 1418 | 1468 | 1497 | 1547 | 1576 | 1626 | 1654 | 1704 | 1730 | | | | |
| BIT12 = 010000 | 73* | | | | | | | | | | | | | |
| BIT13 = 020000 | 72* | | | | | | | | | | | | | |
| BIT14 = 040000 | 71* | | | | | | | | | | | | | |
| BIT15 = 100000 | 70* | | | | | | | | | | | | | |
| CHRCNT 011500 | 2043* | 2047 | 2060* | 2074* | 2075 | | | | | | | | | |
| DATABP 010700 | 1906* | 1909 | 1916 | 1919* | | | | | | | | | | |
| DEVADR 011322 | 1990* | 2024 | 2032* | | | | | | | | | | | |
| DHBA 011614 | 474* | 509* | 544* | 579* | 614* | 649* | 684* | 719* | 754* | 789* | 824* | 859* | 894* | |
| | 929* | 964* | 999* | 1029* | 1108* | 1187* | 1266* | 1345* | 1424* | 1503* | 1582* | 1660* | 1736* | |
| | 1815* | 2109* | | | | | | | | | | | | |
| DHBR 011620 | 476* | 511* | 546* | 581* | 616* | 651* | 686* | 721* | 756* | 791* | 826* | 861* | 896* | |
| | 931* | 966* | 1001* | 1044* | 1082 | 1123* | 1161 | 1202* | 1240 | 1281* | 1319 | 1360* | 1398 | |
| | 1439* | 1477 | 1518* | 1556 | 1597* | 1635 | 1675* | 1713 | 1757* | 1808 | 1817* | 2111* | | |
| DHBC 011616 | 473* | 508* | 543* | 578* | 613* | 649* | 683* | 718* | 753* | 788* | 823* | 858* | 893* | |
| | 928* | 963* | 998* | 1030* | 1109* | 1188* | 1267* | 1346* | 1425* | 1504* | 1583* | 1661* | 1737* | |
| | 1816* | 2110* | | | | | | | | | | | | |
| DHBR 011622 | 475* | 510* | 545* | 580* | 615* | 650* | 685* | 720* | 755* | 790* | 825* | 860* | 895* | |
| | 930* | 965* | 1000* | 2112* | | | | | | | | | | |
| DHLPR 011612 | 471* | 506* | 541* | 576* | 611* | 646* | 681* | 716* | 751* | 786* | 821* | 856* | 891* | |
| | 926* | 961* | 996* | 1031* | 1110* | 1189* | 1268* | 1347* | 1426* | 1505* | 1584* | 1662* | 1738* | |
| | 2108* | | | | | | | | | | | | | |
| DHNR 011610 | 479 | 514 | 549 | 584 | 619 | 654 | 689 | 724 | 759 | 794 | 829 | 864 | 899 | |
| | 934 | 969 | 1004 | 1059 | 1138 | 1217 | 1296 | 1375 | 1454 | 1533 | 1612 | 1690 | 1787 | |
| | 2107* | | | | | | | | | | | | | |
| DHRLVL 011632 | 1042* | 1121* | 1200* | 1279* | 1358* | 1437* | 1516* | 1595* | 1673* | 1751* | 2116* | | | |
| DHRYEC 011630 | 410 | 1041* | 1120* | 1199* | 1278* | 1357* | 1436* | 1515* | 1594* | 1672* | 1750* | 2115* | | |
| DHSCR 011606 | 418 | 463* | 470* | 477 | 498* | 505* | 512 | 533* | 540* | 547 | 568* | 575* | 582 | |
| | 603* | 610* | 617 | 638* | 645* | 652 | 673* | 680* | 687 | 708* | 715* | 722 | 743* | |
| | 750* | 757 | 778* | 785* | 792 | 813* | 820* | 827 | 848* | 855* | 862 | 883* | 890* | |
| | 897 | 918* | 925* | 932 | 953* | 960* | 967 | 988* | 995* | 1002 | 1023* | 1035* | 1043* | |
| | 1054 | 1056 | 1073* | 1102* | 1114* | 1122* | 1133 | 1135 | 1152* | 1181* | 1193* | 1201* | 1212 | |
| | 1214 | 1231* | 1260* | 1272* | 1280* | 1291 | 1293 | 1310* | 1339* | 1351* | 1359* | 1370 | 1372 | |
| | 1389* | 1418* | 1430* | 1438* | 1449 | 1451 | 1468* | 1497* | 1509* | 1517* | 1528 | 1530 | 1547* | |
| | 1576* | 1588* | 1596* | 1607 | 1609 | 1626* | 1654* | 1666* | 1674* | 1685 | 1687 | 1704* | 1730* | |
| | 1742* | 1756* | 1764 | 1771 | 1774 | 1813* | 1814* | 2106* | | | | | | |
| DHSLR 011626 | 421* | 422* | 1084 | 1163 | 1242 | 1321 | 1400 | 1479 | 1558 | 1637 | 1715 | 1810 | 2114* | |

| | | | | | | | | | | | | | | |
|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 779* | 814* | 849* | 884* | 919* | 954* | 989* | 1028* | 1034* | 1038* | 1063* | 1107* | 1113* |
| | | 1117* | 1142* | 1186* | 1192* | 1196* | 1221* | 1265* | 1271* | 1275* | 1300* | 1344* | 1350* | 1354* |
| | | 1379* | 1423* | 1429* | 1433* | 1458* | 1502* | 1508* | 1512* | 1537* | 1581* | 1587* | 1591* | 1616* |
| | | 1659* | 1665* | 1669* | 1694* | 1735* | 1741* | 1745* | 1793* | 1803* | 1814* | 1958* | 1978* | 2049* |
| | | 2050* | 2051* | 2052* | 2058* | 2059* | 2064* | 2067* | 2086* | 2096* | 2407* | 2421* | 1973* | 1995* |
| R4 | =:000004 | 47* | 1900* | 1901* | 1902* | 1903* | 1904* | 1905* | 1906* | 1967* | 1971* | 1972* | 2054* | 2055* |
| | | 1996 | 1998 | 2000 | 2002* | 2003 | 2004 | 2024* | 2025* | 2046* | 2049 | 2053* | 1973 | 1995* |
| | | 2085 | 2097* | 2408 | 2420* | | | | | | | | | |
| RS | =:000005 | 48* | 465* | 480 | 500* | 515 | 535* | 550 | 570* | 585 | 605* | 620 | 640* | 655 |
| | | 675* | 690 | 710* | 725 | 745* | 760 | 780* | 795 | 815* | 830 | 850* | 865 | 885* |
| | | 900 | 920* | 935 | 955* | 970 | 990* | 1005 | 1067* | 1146* | 1225* | 1304* | 1383* | 1462* |
| | | 1541* | 1620* | 1698* | 1797* | 1898* | 1899* | 1900 | 1951* | 1955 | 1958 | 1997* | 1988 | 1989 |
| | | 1990 | 1991 | 1992 | 1993 | 1994* | 2003* | 2006* | 2007* | 2008* | 2015 | 2017 | 2019 | 2025 |
| | | 2026* | 2047* | 2056* | 2084 | 2098* | 2409 | 2419* | | | | | | |
| SAVPC | 011676 | 1934 | 2080* | 2136* | | | | | | | | | | |
| SAVRO | 011660 | 2089* | 2093 | 2129* | | | | | | | | | | |
| SAVR1 | 011662 | 2088* | 2094 | 2130* | 2549 | | | | | | | | | |
| SAVR2 | 011664 | 2087* | 2095 | 2131* | | | | | | | | | | |
| SAVR3 | 011666 | 2086* | 2096 | 2132* | 2551 | | | | | | | | | |
| SAVR4 | 011670 | 2085* | 2097 | 2133* | | | | | | | | | | |
| SAVRS | 011672 | 2084* | 2098 | 2134* | 2547 | | | | | | | | | |
| SAVSP | 011674 | 2135* | 2411* | 2418 | | | | | | | | | | |
| SAVSP= | 104406 | 369* | 1897 | | | | | | | | | | | |
| SCOPE | = 104400 | 363* | 483 | 518 | 553 | 588 | 623 | 658 | 693 | 728 | 763 | 798 | 833 | 868 |
| | | 903 | 938 | 973 | 1008 | 1087 | 1166 | 1245 | 1324 | 1403 | 1482 | 1561 | 1640 | 1717 |
| | | 1819 | | | | | | | | | | | | |
| SCOPE1 | 010434 | 1863* | 2480 | | | | | | | | | | | |
| SCOPE1= | 104410 | 371* | | | | | | | | | | | | |
| SCOPE1R | 010534 | 1884* | 2488 | | | | | | | | | | | |
| SP | =:000006 | 49* | 382* | 431* | 1874 | 1876* | 1886* | 1893 | 1895 | 1898 | 1924 | 1930* | 1940* | 1941* |
| | | 1942* | 1943* | 1944* | 1945* | 1946* | 1947 | 1951 | 1952* | 1963 | 1954* | 1987 | 1993* | 2040 |
| | | 2041* | 2080 | 2404* | 2405* | 2406* | 2407* | 2408* | 2409* | 2410* | 2411 | 2418* | 2419 | 2420 |
| | | 2421 | 2422 | 2423 | 2424 | 2427* | | | | | | | | |
| | | 2044* | 2062 | 2065* | 2075* | | | | | | | | | |
| SPACNT= | 011501 | 57* | 382 | 431 | 2427 | | | | | | | | | |
| STACK | = 013564 | | | | | | | | | | | | | |
| START | 001000 | 355 | 381* | | | | | | | | | | | |
| STFLG | 011702 | 384* | 444 | 446* | 2138* | | | | | | | | | |
| SV05 | 011512 | 2084* | | | | | | | | | | | | |
| SV05P | 011504 | 2080* | 2486 | | | | | | | | | | | |
| SWR | = 177570 | 54* | 394 | 432 | 1863 | 1865 | 1867 | 1884 | 1891 | 1921 | 1928 | | | |
| SW00 | = 000001 | 37* | 394 | | | | | | | | | | | |
| SW01 | = 000002 | 36* | 432 | | | | | | | | | | | |
| SW02 | = 000004 | 35* | | | | | | | | | | | | |
| SW03 | = 000010 | 34* | | | | | | | | | | | | |
| SW04 | = 000020 | 33* | | | | | | | | | | | | |
| SW05 | = 000040 | 32* | | | | | | | | | | | | |
| SW06 | = 000100 | 31* | | | | | | | | | | | | |
| SW08 | = 000400 | 30* | | | | | | | | | | | | |
| SW09 | = 001000 | 29* | 1884 | | | | | | | | | | | |
| SW10 | = 002000 | 28* | 1863 | 1928 | | | | | | | | | | |
| SW11 | = 004000 | 27* | 1867 | | | | | | | | | | | |
| SW12 | = 010000 | 26* | | | | | | | | | | | | |
| SW13 | = 020000 | 25* | 1891 | | | | | | | | | | | |
| SW14 | = 040000 | 24* | 1865 | | | | | | | | | | | |
| SW15 | = 100000 | 23* | | | | | | | | | | | | |
| TBJF | 011712 | 1029 | 1108 | 1187 | 1266 | 1345 | 1424 | 1503 | 1582 | 1660 | 1736 | 1815 | 2142* | |

| | | | | | | | | | | | | | | |
|--------|----------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| T32 | 007672 | 1727* | | | | | | | | | | | | |
| T4 | 001742 | 564* | | | | | | | | | | | | |
| T5 | 002104 | 599* | | | | | | | | | | | | |
| T6 | 002246 | 634* | | | | | | | | | | | | |
| T7 | 002410 | 669* | | | | | | | | | | | | |
| VEC1 | 001060 | 391 | 394* | | | | | | | | | | | |
| VEC2 | 001070 | 393 | 396* | | | | | | | | | | | |
| WROCNT | 011476 | 2042* | 2070* | 2073* | | | | | | | | | | |
| X | = 000000 | 1* | | | | | | | | | | | | |
| XBIT | = 000001 | 449* | | | | | | | | | | | | |
| XLINE | = 000000 | 449* | | | | | | | | | | | | |
| XN | = 000033 | 1* | 459 | 463* | 494 | 498* | 529 | 533* | 564 | 568* | 599 | 603* | 634 | 638* |
| | | 669 | 673* | 704 | 709* | 739 | 743* | 774 | 778* | 809 | 813* | 844 | 848* | 879 |
| | | 883* | 914 | 918* | 949 | 953* | 984 | 988* | 1020 | 1023* | 1099 | 1102* | 1178 | 1181* |
| | | 1257 | 1260* | 1336 | 1339* | 1415 | 1418* | 1494 | 1497* | 1573 | 1576* | 1651 | 1654* | 1727 |
| | | 1730* | | | | | | | | | | | | |
| Y | = 000011 | 1* | 363 | 364* | 365* | 366* | 367* | 369* | 369* | 370* | 371* | 372* | | |
| | = 013366 | 87* | 88 | 90 | 92 | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 |
| | | 112 | 114 | 116 | 118 | 120 | 122 | 124 | 126 | 128 | 130 | 132 | 134 | 136 |
| | | 138 | 140 | 142 | 144 | 146 | 148 | 150 | 152 | 154 | 156 | 158 | 160 | 162 |
| | | 164 | 166 | 166 | 170 | 172 | 174 | 176 | 178 | 180 | 182 | 184 | 186 | 188 |
| | | 190 | 192 | 194 | 196 | 198 | 200 | 202 | 204 | 206 | 208 | 210 | 212 | 214 |
| | | 216 | 218 | 220 | 222 | 224 | 226 | 228 | 230 | 232 | 234 | 236 | 238 | 240 |
| | | 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 | 344 |
| | | 354* | 372* | 481 | 516 | 551 | 586 | 621 | 656 | 691 | 726 | 761 | 796 | 831 |
| | | 866 | 901 | 936 | 971 | 1006 | 1057 | 1066 | 1083 | 1085 | 1136 | 1145 | 1162 | 1164 |
| | | 1215 | 1224 | 1241 | 1243 | 1294 | 1303 | 1320 | 1322 | 1373 | 1382 | 1399 | 1401 | 1452 |
| | | 1461 | 1478 | 1480 | 1531 | 1540 | 1557 | 1559 | 1610 | 1619 | 1636 | 1638 | 1688 | 1697 |
| | | 1714 | 1716 | 1765 | 1772 | 1775 | 1796 | 2400* | 2414 | 2430 | 2493* | 2495* | 2497* | 2541* |

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 DZDMGB.P11 CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

| | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ADD | 401 | 402 | 1037 | 1038 | 1116 | 1117 | 1195 | 1196 | 1274 | 1275 | 1353 | 1354 | 1432 | 1433 | 1511 |
| | 1512 | 1590 | 1591 | 1668 | 1669 | 1744 | 1745 | 1904 | 1945 | 1952 | 1964 | 2026 | 2041 | 2051 | |
| ASL | 1064 | 1143 | 1222 | 1301 | 1380 | 1459 | 1538 | 1617 | 1695 | 1794 | 1901 | 1902 | 1943 | 2006 | 2007 |
| | 2008 | | | | | | | | | | | | | | |
| ASR | 2053 | 2054 | 2055 | | | | | | | | | | | | |
| BEQ | 395 | 433 | 481 | 516 | 551 | 586 | 621 | 656 | 691 | 726 | 761 | 796 | 831 | 866 | 901 |
| | 936 | 971 | 1006 | 1057 | 1066 | 1136 | 1145 | 1215 | 1224 | 1294 | 1303 | 1373 | 1382 | 1452 | 1461 |
| | 1531 | 1540 | 1610 | 1619 | 1688 | 1697 | 1775 | 1796 | 1852 | 1879 | 1885 | 1894 | 1908 | 1917 | 1929 |
| | 1974 | 1997 | 2005 | 2063 | | | | | | | | | | | |
| BGT | 2001 | | | | | | | | | | | | | | |
| BHI | 2016 | | | | | | | | | | | | | | |
| BIC | 1062 | 1141 | 1220 | 1299 | 1378 | 1457 | 1536 | 1615 | 1693 | 1792 | 1813 | 1903 | 1944 | 2050 | |
| BICB | 1972 | 2002 | | | | | | | | | | | | | |
| BIS | 1814 | 1817 | | | | | | | | | | | | | |
| BISB | 2003 | | | | | | | | | | | | | | |
| BIT | 394 | 432 | 1056 | 1135 | 1214 | 1293 | 1372 | 1451 | 1530 | 1609 | 1687 | 1774 | 1863 | 1865 | 1867 |
| | 1884 | 1891 | 1928 | | | | | | | | | | | | |
| BITB | 2019 | | | | | | | | | | | | | | |
| BLO | 2018 | | | | | | | | | | | | | | |
| BLT | 1999 | | | | | | | | | | | | | | |
| BMI | 1765 | | | | | | | | | | | | | | |
| BNE | 391 | 404 | 424 | 445 | 1040 | 1083 | 1085 | 1119 | 1162 | 1164 | 1198 | 1241 | 1243 | 1277 | 1320 |
| | 1322 | 1356 | 1399 | 1401 | 1435 | 1478 | 1480 | 1514 | 1557 | 1559 | 1593 | 1636 | 1638 | 1671 | 1714 |
| | 1716 | 1747 | 1800 | 1802 | 1804 | 1806 | 1809 | 1811 | 1864 | 1866 | 1868 | 1871 | 1892 | 1910 | 1956 |
| | 1979 | 2020 | 2028 | 2057 | 2061 | 2066 | 2071 | 2430 | | | | | | | |
| BPL | 478 | 513 | 548 | 583 | 618 | 653 | 688 | 723 | 758 | 793 | 828 | 863 | 898 | 933 | 968 |
| | 1003 | 1055 | 1134 | 1213 | 1292 | 1371 | 1450 | 1529 | 1608 | 1686 | 1772 | 1789 | 1922 | 1954 | 1970 |
| | 1977 | | | | | | | | | | | | | | |
| BF | 393 | 442 | 1074 | 1153 | 1232 | 1311 | 1390 | 1469 | 1548 | 1627 | 1705 | 1759 | 1777 | 1812 | 1818 |
| | 1680 | 1959 | 1982 | 2009 | 2011 | 2414 | | | | | | | | | |
| CLR | 384 | 385 | 386 | 387 | 388 | 400 | 1025 | 1045 | 1104 | 1124 | 1183 | 1203 | 1262 | 1282 | 1341 |
| | 1361 | 1420 | 1440 | 1499 | 1519 | 1578 | 1598 | 1656 | 1676 | 1732 | 1753 | 1758 | 1847 | 1848 | 1872 |
| | 1873 | 1896 | 1994 | 2428 | 2435 | 2436 | | | | | | | | | |
| CLRB | 1033 | 1112 | 1191 | 1270 | 1349 | 1428 | 1507 | 1585 | 1664 | 1740 | 2067 | | | | |
| CMP | 403 | 480 | 515 | 550 | 585 | 620 | 655 | 690 | 725 | 760 | 795 | 830 | 865 | 900 | 935 |
| | 970 | 1005 | 1065 | 1144 | 1223 | 1302 | 1381 | 1460 | 1539 | 1618 | 1696 | 1870 | 1893 | 2015 | 2017 |
| CMPB | 1795 | 1973 | 1996 | 1998 | 2000 | 2004 | | | | | | | | | |
| COM | 425 | 446 | | | | | | | | | | | | | |
| DEC | 1039 | 1118 | 1197 | 1276 | 1355 | 1434 | 1513 | 1592 | 1670 | 1746 | 1805 | 1978 | 2056 | 2070 | |
| DECB | 2027 | 2060 | 2065 | | | | | | | | | | | | |
| EMT | 67 | | | | | | | | | | | | | | |
| HALT | 89 | 91 | 93 | 95 | 97 | 99 | 101 | 103 | 105 | 107 | 109 | 111 | 113 | 115 | 117 |
| | 119 | 121 | 123 | 125 | 127 | 129 | 131 | 133 | 135 | 137 | 139 | 141 | 143 | 145 | 147 |
| | 149 | 151 | 153 | 155 | 157 | 159 | 161 | 163 | 165 | 167 | 169 | 171 | 173 | 175 | 177 |
| | 179 | 181 | 183 | 185 | 187 | 189 | 191 | 193 | 195 | 197 | 199 | 201 | 203 | 205 | 207 |
| | 209 | 211 | 213 | 215 | 217 | 219 | 221 | 223 | 225 | 227 | 229 | 231 | 233 | 235 | 237 |
| | 239 | 241 | 243 | 245 | 247 | 249 | 251 | 253 | 255 | 257 | 259 | 261 | 263 | 265 | 267 |
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| | 299 | 301 | 303 | 305 | 307 | 309 | 311 | 313 | 315 | 317 | 319 | 321 | 323 | 325 | 327 |
| | 329 | 331 | 333 | 335 | 337 | 339 | 341 | 343 | 1925 | 2413 | | | | | |
| INC | 422 | 1035 | 1036 | 1114 | 1115 | 1193 | 1194 | 1272 | 1273 | 1351 | 1352 | 1430 | 1431 | 1509 | 1510 |
| | 1588 | 1589 | 1666 | 1667 | 1742 | 1743 | 1849 | 1869 | 1927 | 2429 | | | | | |
| INCB | 1069 | 1148 | 1227 | 1306 | 1385 | 1464 | 1543 | 1622 | 1700 | 1799 | | | | | |
| JMP | 355 | 448 | 1046 | 1125 | 1204 | 1283 | 1362 | 1441 | 1520 | 1599 | 1677 | 1820 | 1858 | 1947 | 2437 |
| JSR | 1854 | | | | | | | | | | | | | | |
| MOV | 381 | 382 | 383 | 396 | 397 | 398 | 399 | 421 | 430 | 431 | 443 | 459 | 460 | 461 | 462 |

| | | | | | | | | | | | | | | | |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 463 | 464 | 465 | 469 | 470 | 471 | 473 | 474 | 475 | 476 | 479 | 494 | 495 | 496 | 497 |
| | 498 | 499 | 500 | 504 | 505 | 506 | 508 | 509 | 510 | 511 | 514 | 529 | 530 | 531 | 532 |
| | 533 | 534 | 535 | 539 | 540 | 541 | 543 | 544 | 545 | 546 | 549 | 564 | 565 | 566 | 567 |
| | 568 | 569 | 570 | 574 | 575 | 576 | 578 | 579 | 580 | 581 | 584 | 599 | 600 | 601 | 602 |
| | 603 | 604 | 605 | 609 | 610 | 611 | 613 | 614 | 615 | 616 | 619 | 634 | 635 | 636 | 637 |
| | 638 | 639 | 640 | 644 | 645 | 646 | 648 | 649 | 650 | 651 | 654 | 659 | 670 | 671 | 672 |
| | 673 | 674 | 675 | 679 | 680 | 681 | 683 | 684 | 685 | 686 | 689 | 704 | 705 | 706 | 707 |
| | 708 | 709 | 710 | 714 | 715 | 716 | 718 | 719 | 720 | 721 | 724 | 739 | 740 | 741 | 742 |
| | 743 | 744 | 745 | 749 | 750 | 751 | 753 | 754 | 755 | 756 | 759 | 774 | 775 | 776 | 777 |
| | 778 | 779 | 780 | 784 | 785 | 786 | 788 | 789 | 790 | 791 | 794 | 809 | 810 | 811 | 812 |
| | 813 | 814 | 815 | 819 | 820 | 821 | 823 | 824 | 825 | 826 | 829 | 844 | 845 | 846 | 847 |
| | 848 | 849 | 850 | 854 | 855 | 856 | 858 | 859 | 860 | 861 | 864 | 879 | 880 | 881 | 882 |
| | 883 | 884 | 885 | 889 | 890 | 891 | 893 | 894 | 895 | 896 | 899 | 914 | 915 | 916 | 917 |
| | 918 | 919 | 920 | 924 | 925 | 926 | 928 | 929 | 930 | 931 | 934 | 949 | 950 | 951 | 952 |
| | 953 | 954 | 955 | 959 | 960 | 961 | 963 | 964 | 965 | 966 | 969 | 984 | 985 | 986 | 987 |
| | 988 | 989 | 990 | 994 | 995 | 996 | 998 | 999 | 1000 | 1001 | 1004 | 1020 | 1021 | 1022 | 1023 |
| | 1024 | 1027 | 1028 | 1029 | 1030 | 1031 | 1041 | 1042 | 1043 | 1044 | 1059 | 1060 | 1063 | 1067 | 1073 |
| | 1086 | 1099 | 1100 | 1101 | 1102 | 1103 | 1106 | 1107 | 1108 | 1109 | 1110 | 1120 | 1121 | 1122 | 1123 |
| | 1138 | 1139 | 1142 | 1146 | 1152 | 1165 | 1178 | 1179 | 1180 | 1181 | 1182 | 1185 | 1186 | 1187 | 1188 |
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| | 1426 | 1436 | 1437 | 1438 | 1439 | 1454 | 1455 | 1458 | 1462 | 1468 | 1481 | 1494 | 1495 | 1496 | 1497 |
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| | 1662 | 1672 | 1673 | 1674 | 1675 | 1690 | 1691 | 1694 | 1698 | 1704 | 1727 | 1728 | 1729 | 1730 | 1731 |
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| | 1793 | 1797 | 1807 | 1815 | 1816 | 1850 | 1851 | 1874 | 1876 | 1886 | 1895 | 1898 | 1900 | 1905 | 1906 |
| | 1913 | 1924 | 1930 | 1940 | 1942 | 1946 | 1951 | 1963 | 1967 | 1968 | 1987 | 1988 | 1989 | 1990 | 1993 |
| | 1995 | 2024 | 2025 | 2040 | 2042 | 2045 | 2046 | 2048 | 2049 | 2058 | 2080 | 2084 | 2085 | 2086 | 2087 |
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| | 2043 | 2044 | 2047 | 2052 | 2059 | 2064 | | | | | | | | | |
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| | 1957 | 1983 | 2029 | 2072 | 2090 | 2099 | | | | | | | | | |
| SUB | 1899 | 1941 | | | | | | | | | | | | | |
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| TRAP | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | | | | | | |
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| .IIF | 380 | | | | | | | | | | | | | | |
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| 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | | | | | | |
| .PAGE | 39 | 86 | 344 | 372 | | | | | | | | | | |
| .REPT | 88 | 449 | 2143 | | | | | | | | | | | |
| .TITLE | 20 | | | | | | | | | | | | | |

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

*DZDHGB.SEQ+UTIL1.DZDHGB
RUN-TIME: 13 22 4 SECONDS
RUN-TIME RATIO: 166/40=4.1
CORE USED: 11K (21 PAGES)

