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000001                          TITLE TCSS1,'REV F' TERMINAL TEST (SAF)
000002                  *       TERMINALS TEST
000003                  *       PART NO.
000004                  * TCSX1      60133912-006
000005                  * TCSS1      60132370-006
000006                  * TCSL1      60133913-006
000007                  *
000008                  * -----------
000009                  *    THIS T&V PROGRAM VERIFIES PROPER OPERATION OF LEVEL 6
000010                  *   TERMINALS THRU THE MULTI LINE COMMUNICATIONS PROCESSOR
000011                  *   (MLCP), AND ASYNCHRONOUS AND SYNCHRONOUS CONTROL LINE ADAPTERS. ALSO
000012                  *   CHECKS PROPER OPERATION OF DUAL AUTO-CALL UNIT.
000013                  *
000014                  *    THE SUBSYSTEM ITEMS SUPPORTED BY THIS PROGRAM ARE:
000015                  *
000016                  *       DCM9101 COMM-PAC (2 ASYNC LINES UP TO 9.6KB)
000017                  *       DCM9102 COMM-PAC (1 ASYNC LINE UP TO 9.6KB)
000018                  *       DCM9103 COMM-PAC (2 SYNC LINES UP TO 10.8KB)
000019                  *       DCM9104 COMM-PAC (1 SYNC LINE UP TO 10.8KB)
000020                  *       DCM9109 COMM-PAC (1 SYNC LINE MIL188C COMPATIBLE)
000021                  *       DCM9110 DUAL AUTO-CALL UNIT
000022                  *       DCM9111 COMM-PAC (1 ASYNC CURRENT LOOP LINE)
000023                  *       DCM9114 COMM-PAC (2 ASYNC CURRENT LOOP LINE)
000024                  *       MLC9102 MLCP W/PAC'S FOR 8 SYNCHRONOUS LINES
000025                  *       MLC9101 MLCP W/PAC'S FOR 8 ASYNC LINES
000026                  *
000027                  * REVISION HISTORY
000028                  * -------- -------
000029                  *     A     NOV   1976     TCST1              ORIGINAL RELEASE
000030                  *     B     MAR   1977     TCSS1
000031                  *     C     JULY  1977     TCSS1-TCSL1        SAF AND LAF
000032                  *     D     OCT   1977     TCSS1-TCSL1        W/ MLCP LIBRARY
000033                  *     E     FEB   1978     TCSS1-TCSL1        INCLUDES 7700 SYNCHRONOUS TERMINALS
000034                  *     F     JUNE  1978     TCSS1-TCSL1        MODEM (SYNC/ASYN) SUPPORT,LA,LT TEST
000035                  *
000036                  *    THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN IS CONFIDENTIAL AND
000037                  *  PROPRIETARY TO AND THE EXCLUSIVE PROPERTY OF HONEYWELL INFORMATION SYSTEMS
000038                  *  INC.  IT IS MADE AVAILABLE ONLY TO HONEYWELL AUTHORIZED RECIPIENTS FOR
000039                  *  THEIR USE SOLELY IN THE MAINTENANCE AND OPERATION OF HONEYWELL PRODUCTS.
000040                  *  THIS DOCUMENT AND INFORMATION MUST BE MAINTAINED IN STRICTEST CONFIDENCE;
000041                  *  IT MUST NOT BE REPRODUCED IN WHOLE OR IN PART;  AND IT SHALL NOT BE DIS-
000042                  *  CLOSED TO ANY OTHER PARTY WITHOUT THE PRIOR WRITTEN CONSENT OF HONEYWELL.
000043                  ************************************************************************
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000044                  / PROGRAM PREPARATION:
000045                  * ------- -----------
000046                  *     THE ROOT SOURCE OF THIS PROGRAM, AFTER THE ADDITION OF THE APPROPRIATE
000047                  *     TITLE AND END STATEMENTS, WAS PROCESSED BY THE HOST RESIDENT ASSEMBLER
000048                  *     TO CREATE EITHER SHORT OR LONG ADDRESS FORM ( SAF OR LAF ) OBJECT TEXT
000049                  *     AND LISTING.  THE OBJECT TEXT WAS FURTHER PROCESSED BY THE HOST
000050                  *     RESIDENT LINKER USING THE APPROPRIATE CONSOLE ZV$LIB LIBRARY TO CREATE
000051                  *     A PUNCH SEGMENT CONTAINING AN EXECUTABLE MODULE.  THE ASSEMBLY LISTING
000052                  *     WAS AUGMENTED WITH CROSS REFERENCE DATA, PLUS THE LOAD MAP FROM THE
000053                  *     LINKER TO CREATE A LIST SEGMENT.
000054                  *             ROOT            SAF             LAF
000055                  *             ----            ---             ---
000056                  *     NAME    TCSX1           TCSS1           TCSL1
000057                  *     DOCUMENT 60133912-006   60132370-006    60133913-006
000058                  *
000059                  * DISTRIBUTION
000060                  * ------------
000061                  *     THE ELEMENTARY ITEMS SUBMITTED TO THE T & V PROGRAM DISTRIBUTION CENTER
000062                  *     WERE THE EXECUTABLE LINKED IMAGES, ON DISKETTE, OF TCSS1 AND TCSL1, AND
000063                  *     MAGNETIC TAPE IMAGES OF THE AUGMENTED LISTINGS.
000064                  *
000065                  *     REPRODUCTIONS OF THE EXECUTABLE LINKED IMAGES MAY BE AS DUPLICATE CARD
000066                  *     DECKS OR AS A MEMBER OF A MULTIPLE MEMBER FILE.  IN THE MOST FREQUENT
000067                  *     CASE, IT WILL BE FOUND AS MEMBER "SO" (SAF) OR "LO" (LAF) WITHIN FILE
000068                  *     "PROGFILE" OF A DISKETTE VOLUME ENTITLED "DIAGS".
000069                  *
000070                  *     DISTRIBUTION OF THE LISTINGS, WHICH SHOULD BE AVAILABLE IF ANY COMPLEX
000071                  *     MAINTENANCE OR REPAIR IS TO BE PERFORMED, IS NORMALLY AS A PRINTED COPY.
000072                  *
000073                  * ROUTINE DEMONSTRATION
000074                  * ------- -------------
000075                  *     THIS TEST EXERCISES NORMAL TTY FUNTIONALITY (AS WELL AS AUTO-DIAL
000076                  *     FUNCTIONALITY) FAIRLY COMPREHENSIVELY WITH MINIMAL OPERATOR EFFORT OR
000077                  *     TRAINING. HOWEVER, TO FULLY CHECK OUT DEVICES WHICH HAVE MORE-INVOLVED
000078                  *     FUNTIONALITY THAN A TTY HAS, THE OPERATOR MUST KNOW THE
000079                  *     DIFFERENCES BETWEEN A TTY AND THE DEVICE TO BE TESTED. OPERATOR
000080                  *     MUST BE AWARE OF ALL THE TERMINAL'S FUNTIONALITY AND HOW TO ACCESS
000081                  *     IT IN ORDER TO TEST THE TERMINAL AS MUCH AS POSSIBLE.
000082                  *
000083                  * STORAGE
000084                  * -------
000085                  *     THIS PROGRAM REQUIRES 16 K  WORDS OF MAIN MEMORY.
000086                  *
000087                  * OPERATION
000088                  * ---------
000089                  *  1. LOAD AND START (OR RESTART) THE PROGRAM.  SEE T&V PRODUCT MANUAL, AW94.
000090                  *
000091                  *  2. SEE "CONSOLE SEARCH RULES", BELOW.
000092                  *
000093                  *  3. SEE "CONSOLE COMMUNICATIONS PARAMETERS", BELOW.
000094                  *
000095                  *  4. PRIOR TO PROGRAM EXECUTION, THE PROGRAM IDENTIFICATION WILL
000096                  *     BE DISPLAYED ON THE CONSOLE.  THE INITIAL START WILL ALSO DISPLAY:
000097                  *
000098                  *       THE ZV$LIB REVISION NUMBER
000099                  *       THE ADDRESS FORM (SAF OR LAF)
000100                  *       I/O  EQUIPMENT DETECTED IN THE SYSTEM
000101                  *       MEMORY SIZE
000102                  *
000103                  *     THIS DISPLAY MUST BE VERIFIED BY THE OPERATOR.  THIS DISPLAY IS OMITTED
000104                  *     ON RESTARTS.
000105                  *
000106                  *  5. UPON PROGRAM INITIATION, DEFAULT PARAMETERS FOR THE TERMINAL ARE
000107                  *     PRESENTED ON THE CONSOLE. EXAMINE PARAMETERS AND CHANGE IF NECESSARY,
000108                  *     USING "PAR" COMMAND. SEE "RESPONSES TO NEXT?", BELOW.
000109                  *
000110                  *  6. TRANSFER/RETRIEVE DATA TO/FROM MLCP RAM BY USING THE "TRM"
000111                  *     COMMAND'S "LC" TEST. SEE "TRM COMMAND", BELOW.
000112                  *
000113                  *  7. LOOP A CANNED MESSAGE AT LINE ADAPTER BY USING "TRM" COMMAND AND
000114                  *     "LA" TEST. SEE "TRM COMMAND" BELLOW.
000115                  *
000116                  *  8. TRANSMIT DATA TO THE TERMINAL USING "TRM" AND "TT". SEE "TRM COMMAND"
000117                  *     BELOW. CHECK FOR PROPER RECEPTION OF THE DATA BY THE TERMINAL.
000118                  *
000119                  *  9. RECEIVE A MESSAGE FROM THE TERMINAL. FIRST INITIATE "R1" TEST OF "TRM"
000120                  *     AND THEN ENTER DATA AT THE TERMINAL UNDER TEST. CHECK LEVEL 6 CONSOLE
000121                  *     FOR DISPLAY OF THE RECEIVED DATA. SEE "TRM COMMAND", BELOW.
000122                  *
000123                  * 10. SEE "RESPONSES TO NEXT ?:", BELOW, FOR THESE AND OTHER COMMANDS SUPPORTED
000124                  *     BY THIS PROGRAM AND WHICH CAN BE USED TO AID THE OPERATOR IN FULLY
000125                  *     TESTING THE TERMINAL. ALSO, SEE "SAMPLE CONSOLE OPERATION", BELOW,
000126                  *     FOR EXAMPLES.
000127                  *
000128                  * 11. IF AN AUTO DIAL UNIT IS TO BE TESTED, EXECUTE TEST "AD". IN ADDITION,
000129                  *     IF A COMMUNICATIONS LOOPBACK DEVICE IS AVAILABLE, AND FURTHER FAULT
000130                  *     RESOLUTION IS DESIRED, EXECUTE TEST "LD".
000131                  *     SEE "TRM" COMMAND, TESTS "AD" AND "LD"" AND ASSOCIATED NOTE, BELOW.
000132                  *
000133                  *
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```
000134                          /
000135                          *
000136                          * CONSOLE SEARCH RULES
000137                          * ------- ------ -----
000138                          *
000139                          *     IF DEFAULT SYSTEM CONSOLE IS ADEQUATE, THIS STEP CAN BE
000140                          *     IGNORED. THE DEFAULT SYSTEM CONSOLE IS THAT TERMINAL WHICH IS ATTACHED
000141                          *     TO THE LOWEST-NUMBERED MLC ADAPTER, OR, IF THERE IS NO APPROPRIATE DEVICE
000142                          *     ON THE MLC, TO THE HIGHEST-NUMBERED MLC ASYNCHRONOUS ADAPTER.
000143                          *
000144                          *     IF IT IS DESIRED TO SPECIFY A DIFFERENT TERMINAL AS THE SYSTEM CONSOLE,
000145                          *     LOCATION ZV$TTY MUST BE LOADED WITH THAT TERMINAL'S CHANNEL NUMBER AFTER
000146                          *     THE PROGRAM IS LOADED AND HALTED. THE ADDRESS OF ZV$TTY CAN BE FOUND
000147                          *     IN THE LINK MAP AT THE END OF THIS LISTING. CONSULT LEVEL 6 T&V MANUAL
000148                          *     FOR THIS PROCEDURE.
000149                          *
000150                          *
000151                          * CONSOLE COMMUNICATIONS PARAMETERS
000152                          * ------- -------------- ----------
000153                          *
000154                          *     IF SYSTEM CONSOLE IS ON THE MDC, THIS STEP CAN BE IGNORED.
000155                          *     ALL CONSOLE I/O IS EVEN PARITY.  IF CONSOLE IS ON MLC, IT MUST BE ASYNC.
000156                          *     IF THE CONSOLE CANNOT BE USED AT 1200 BAUD, CHANGE THE PROGRAM'S
000157                          *     DEFAULT BAUD RATE FOR CONSOLE DIALOGUES. TO DO THIS, LOAD AND HALT THE
000158                          *     PROGRAM BEFORE EXECUTION AND THEN ENTER A VALUE (RIGHT JUSTIFIED) FROM
000159                          *     THE FOLLOWING TABLE INTO LOCATION ZV$BUD. NOTE THAT THE NEW
000160                          *     SETTING REFLECTS BOTH THE NEW BAUD RATE AND THE IDENTIFIER OF THE ADAPTER
000161                          *     TO WHICH THE CONSOLE IS ATTACHED.
000162                          *
000163                          *                    *-----------------------------------------*
000164                          *                    *                                         *
000165                          *                    *        BAUD  RATE  TABLE                *
000166                          *                    *                                         *
000167                          *                    *-----------------------------------------*
000168                          *                     ACLA I.D.       (2118)(2110)      (2108)
000169                          *                     BAUD-RATE
000170                          *                        50              0                 1
000171                          *                        75              1                 2
000172                          *                       110              2                 3
000173                          *                       134              3                 4
000174                          *                       150              4                 5
000175                          *                       200              5                ---
000176                          *                       300              6                 6
000177                          *                       600              7                 7
000178                          *                       900             ---                8
000179                          *                      1050              8                ---
000180                          *                      1200 (DEFAULT)    9                 9
000181                          *                      1800              A (HEX)           A (HEX)
000182                          *                      2000              B (HEX)          ---
000183                          *                      2400              C (HEX)           B (HEX)
000184                          *                      3600             ---                C (HEX)
000185                          *                      4800              D (HEX)           D (HEX)
000186                          *                      7200             ---                E (HEX)
000187                          *                      9600              E (HEX)           F (HEX)
000188                          *                     19200              F (HEX)          ---
000189                          *
000190                          *     TO MAKE THIS CHANGE,  LOAD AND HALT THE PROGRAM BEFORE EX-
000191                          *     ECUTION.  INSERT CHANGE THEN EXECUTE. MEMORY LOCATION OF "ZV$BUD"
000192                          *     MAY BE FOUND IN MAP AT END OF LISTING.
000193                          *
000194                          *
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000195                                  /
000196                                  *       RESPONSES TO "NEXT ?:" ARE:
000197                                  *       --------- -- ---------
000198                                  *
000199                                  *            TRM @TEST@,@CHAN@,@MESG@,@PASSES@,@ERROR REPORTING MODE@
000200                                  *                (SEE 'TRM COMMAND', BELOW, FOR FIELD DEFINITIONS.)
000201                                  *            MSG(SPACE)  (DEFINE AN OPERATOR MESSAGE.
000202                                  *                         TYPE IN MESSAGE UP TO 320 CHARACTERS (BYTES). CONSOLE
000203                                  *                         PROVIDES AN AUTOMATIC CR/LF (NOT INCLUDED IN THE
000204                                  *                         MESSAGE TO BE TRANSMITTED) BEFORE EVERY 80 BYTES.
000205                                  *                         #-SIGN NULLIFIES MOST-RECENT INPUT BYTE.
000206                                  *                         MESSAGE IS AUTOMATICALLY PREFACED WITH A LF/CR.
000207                                  *                         CR TERMINATES OPERATOR INPUT.)
000208                                  *
000209                                  *                        TO INCLUDE VARIABLE LENGTH STRING OF ANY CHARACTER
000210                                  *                        @ EXCEPT "@"@ USE FOLLOWING PROCEDURE.
000211                                  *                        TYPE "CONTROL F"  WHICH WILL ASK FOR THE CHARACTER
000212                                  *                        AND THE NUMBER OF CHARACTERS TO BE INCLUDED IN  THE
000213                                  *                        MESSAGE.
000214                                  *                        (SEE SAMPLE CONSOL OPERATION)
000215                                  *                         TO TRANSMIT  "@" USE CANNED MESSAGE.  SEE 'MESG'
000216                                  *                         UNDER 'TRM COMMAND', BELOW.)
000217                                  *            MSG? (DISPLAYS OPERATOR INPUT MESSAGE)
000218                                  *            TRM? (DISPLAYS LAST CMD LINE INPUT)
000219                                  *            TRMX (DISPLAYS AND EXECUTES LAST CMD LINE INPUT)
000220                                  *            FOR ASYNCHRONOUS TERMINAL:
000221                                  *            PAR @TERM TYPE@,@BAUD RATE@,@CHAR SIZE@,@STOP BITS@,@PARITY@
000222                                  *                (SEE 'CHANGING PARAMETERS', BELOW, FOR FIELD DEFINITIONS.)
000223                                  *            FOR SYNCHRONOUS TERMINAL:
000224                                  *            PAR @TERM TYPE@,@TERM ADDR@,@MODE@,@CLOCK@,@DISP/PRI@
000225                                  *                (SEE 'CHANGING PARAMETERS',BELOW FOR FIELD DEFINATION.)
000226                                  *                NOTE:OPERATOR MUST CHECK MLCP CLOCK MATCHES TERMINAL BAUD-
000227                                  *                RATE WHEN L6 CLOCK IS USED.
000228                                  *            PAR? (DISPLAYS CURRENT PARAMETERS)
000229                                  *            MSH(SPACE) DEFINE AN OPERATOR MESSAGE IN HEX NOTATION.
000230                                  *                TYPE IN MESSAGE OF UP TO 320 BYTES (160 WORDS),
000231                                  *                WITH A COMMA OR PERIOD AFTER EVERY FOUR HEX DIGITS. CONSOLE
000232                                  *                PROVIDES AN AUTOMATIC CR/LF (WHICH IS NOT INCLUDED  IN
000233                                  *                THE MESSAGE TO BE TRANSMITTED) BEFORE EACH INPUT LINE OF
000234                                  *                TEN WORDS. @-SIGN CANCELS MOST-RECENT INPUT HEX DIGIT.
000235                                  *                MESSAGE IS AUTOMATICALLY PREFACED WITH A LF/CR.
000236                                  *                CR TERMINATES OPERATOR INPUT.)
000237                                  *            MSH? (DISPLAYS OPERATOR MESSAGE IN HEX)
000238                                  *            RMH? (DISPLAYS RECEIVED MESSAGE IN HEX)
000239                                  *
000240                                  *              NOTE: 1. FOR TRM AND PAR RESPONSES, RESIDUAL
000241                                  *                       INFORMATION, IF ANY, FOR TRAILING
000242                                  *                       FIELDS WILL BE USED IF C/R IS INPUTTED
000243                                  *                       WHERE A COMMA IS SHOWN.
000244                                  *
000245                                  *                    2. @-SIGN CANCELS MOST-PREVIOUSLY ENTERED
000246                                  *                       KEYSTROKE (EXCEPT MSG INPUT- SEE MSG, ABOVE).
000247                                  *
000248                                  *                    3. DURING THE EXECUTION OF "TRM" COMMANDS, DEPRESSING
000249                                  *                       THE BREAK KEY ON THE CONSOLE WILL CAUSE THE PROGRAM
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000250                          /
000251                          *       TRM COMMAND
000252                          *       --- -------
000253                          *               TEST:
000254                          *               ----
000255                          *                    LC = WRITE/READ A MESSAGE TO/FROM MLCP RAM CP AREA
000256                          *
000257                          *                    LA = LOOP A CANNED MESSAGE AT THE CLA(LINE ADAPTER).
000258                          *
000259                          *                    FOR SYNCHRONOUS TERMINAL;
000260                          *                    PT = SYSTEM POLLS THE TERMINAL.TERMINAL RESPONDS WITH
000261                          *                         QUIESCENT MESSAGE IF IT DOESNOT HAVE ANY
000262                          *                         MESSAGE TO SENT.
000263                          *
000264                          *                    FOR ASYNCHRONOUS TERMINAL;
000265                          *                    TT = SYSTEM SENDS A MESSAGE TO THE TERMINAL. TO CHANGE
000266                          *                         THE OPERATOR'S MESSAGE, USE 'MSG ' OR 'MSH '
000267                          *                         COMMAND. OPERATOR MUST INSPECT TERMINAL DISPLAY
000268                          *                         TO VERIFY THAT TERMINAL REACTED PROPERLY TO THE
000269                          *                         MESSAGE.
000270                          *                    FOR SYNCHRONOUS TERMINAL;
000271                          *                    TT = SYSTEM SENDS A MESSAGE TO TERMINAL AND POLLS THE
000272                          *                         TERMINAL FOR ITS RESPONSE.OPERATOR MUST INSPECT
000273                          *                         TERMINAL DISPLAY AND USE "RMH?" COMMAND TO VERIFY
000274                          *                         THAT TERMINAL REACTED PROPERLY TO THE MESSAGE.
000275                          *
000276                          *                    FOR ASYNCHRONOUS TERMINAL;
000277                          *                    RT = OPERATOR IS TO KEY IN A MESSAGE (UP TO 640 BYTES)
000278                          *                         AT TERMINAL; CR ENDS INPUT; SYSTEM WILL
000279                          *                         CHECK RECEIVED MESSAGE FOR TRANSMISSION ERRORS.
000280                          *                         OPERATOR MUST CHECK CONSOLE FOR PROPER DATA. IF
000281                          *                         NECESSARY, USE "RMH?" COMMAND TO MAKE VISIBLE
000282                          *                         ANY ASCII CONTROL CODES.
000283                          *                    FOR SYNCHRONOUS TERMINAL;
000284                          *                    RT = OPERATOR IS TO KEY IN A MESSAGE (UP TO 640 BYTES)
000285                          *                         AT TERMINAL; TRANSMIT ENDS THE INPUT; SYSTEM
000286                          *                         WILL CHECK RECEIVED MESSAGE FOR TRANSMISSION
000287                          *                         ERRORS.OPERATOR MUST CHECK CONSOLE FOR PROPER
000288                          *                         DATA AND USE "RMH?" COMMAND TO MAKE VISIBLE
000289                          *                         ANY ASCII CONTROL CODES.
000290                          *
000291                          *
000292                          *                    LT = SYSTEM SENDS MESSAGE TO TERMINAL;
000293                          *                         OPERATOR IS TO ECHO THE
000294                          *                         MESSAGE VERBATIM AT THE TERMINAL AFTER 'INPUT' IS
000295                          *                         DISPLAYED AT THE TERMINAL AND DSR REMAINS ON;
000296                          *                         MESSAGE WILL BE COMPARED TO TRANSMITTED MESSAGE.
000297                          *                         USE "MSG " OR "MSH " COMMAND TO DEFINE MESSAGE.
000298                          *                    AD = RING A TELEPHONE THRU AUTO-CALL-UNIT (AUTO DIAL).
000299                          *                         (PROGRAM WILL ASK FOR NUMBER.
000300                          *                         UP TO 11 DIGITS MAY BE INPUT; END WITH A CR.
000301                          *                         CR ONLY WILL CAUSE PREVIOUS NUMBER TO BE USED.)
000302                          *                    LD = LOOP A NUMBER AT THE ACU
000303                          *                    NOTE: TEST LD REQUIRES A SPECIAL CONNECTOR FOR EXTERNAL
000304                          *                          WRAP AROUND TO CHECK THE DRIVERS AND RECEIVERS.
000305                          *                          THIS CONNECTOR MUST HAVE THE SIGNALS WIRED
000306                          *                          TOGETHER AT THE OUTPUT OF THE ACU ADAPTER
000307                          *                          BOARD (BD2DAC) OR AT THE OUTPUT OF THE EIA
000308                          *                          CONNECTOR PLUG TEMPORARILY REMOVED FROM THE
000309                          *                          BELL 801A-TYPE ACU, AS FOLLOWS:
000310                          *
000311                          *
000312                          *                            SIGNAL      BD2DAC        EIA
000313                          *                            NAMES     OUTPUT PINS  CABLE PINS
000314                          *                                      CKT A CKT B
000315                          *                            NB1-ACR     9-3   20-26      14-3
000316                          *                            NB2-(XXX)  10-7   19-22(COS) 15-13(DSS)
000317                          *                            NB4-DLO    11-13  18-16      16-22
000318                          *                            NB8-PND    12-5   17-24      17-5
000319                          *                            DPR-PWI     2-6   27-23       2-6 (SWITCH 'ON')
000320                          *                            CRQ-PWI     4-6   25-23       4-6 (SWITCH 'OFF')
000321                          *
000322                          *                          DEVICE MUST NOT BE ATTACHED WHEN THE TEST IS
000323                          *                          STARTED. AFTER TEST IS INVOKED, OPERATOR
000324                          *                          MUST FOLLOW INSTRUCTIONS GIVEN ON THE CONSOLE.
000325                          *
000326                          *
000327                          *               CHAN: MLCP CHANNEL TO TEST (UP TO 4 HEX DIGITS)
000328                          *               ----
000329                          *
000330                          *               MESG
000331                          *               ----
000332                          *                    C = CANNED MESSAGE
000333                          *                        THE CANNED MESSAGE CONSISTS OF THE DATA WITHIN THE
000334                          *                        EXTREME QUOTES OF THE NEXT THREE LINES (A CR/LF
000335                          *                        PRECEDES EACH LINE):
000336                          *                        'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
000337                          *                        'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
000338                          *                         !"#$%&'()*+,-./0123456789:;<=>?@@\@]^@@@@@'
000339                          *                     CHARACTERS AFTER "/" (BLINK) CHARACTER WILL BLINK.
000340                          *
000341                          *                    O = OPERATOR MESSAGE SPECIFIED BY "MSG " OR "MSH "
000342                          *                        COMMANDS. SEE "RESPONSES TO NEXT :? ", ABOVE.
000343                          *                        THE DEFAULT OPERATOR MESSAGE IS 9 O* PAIRS.
000344                          *
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```
000345                          /
000346                          *
000347                          *          PASSES: NUMBER OF TIMES TO EXECUTE TEST
000348                          *          ------
000349                          *                  IF ZERO IS ENTERED, TEST WILL LOOP FOREVER. USE
000350                          *                  BREAK KEY TO INTERRUPT AND STOP TEST.
000351                          *                  NOTE: RT,LT,AD AND LD WILL ONLY
000352                          *                        EXECUTE ONCE.
000353                          *
000354                          *          ERROR REPORTING MODE:
000355                          *          ----- --------- ----
000356                          *               C = REPORT EACH ERROR ON CONSOLE
000357                          *               FC = SUPPRESS ERRORS, SUMMARIZE ON CONSOLE
000358                          *
000359                          *     CHANGING PARAMETERS
000360                          *     -------- ----------
000361                          *
000362                          *     PRIOR TO THE EXECUTION OF ANY TEST, IT IS
000363                          *     NECESSARY TO CONFIGURE THE PROGRAM TO AGREE
000364                          *     WITH THE CONFIGURATION OF THE TERMINAL TO
000365                          *     BE TESTED.
000366                          *
000367                          *     THIS IS ACCOMPLISHED WITH THE COMMAND:
000368                          *
000369                          *          PAR
000370                          *
000371                          *     THIS MAY BE DONE WHENEVER "NEXT ?: " IS DISPLAYED ON THE SYSTEM CONSOLE.
000372                          *     TO USE, RESPOND TO "NEXT :? " WITH
000373                          *
000374                          *      FOR ASYNCHRONOUS TERMINAL;
000375                          *           PAR @TERMINAL TYPE@,@BAUD RATE@,@CHAR SIZE@,@STOP BITS@,@PARITY@
000376                          *
000377                          *      FOR SYNCHRONOUS TERMINAL
000378                          *           PAR @TERMINAL TYPE@,@TERM ADDR@,@MODE@,@CLOCK@,@DISP/PRT@
000379                          *
000380                          *
000381                          *          FOR ASYNCHRONOUS TERMINAL:          FOR SYNCHRONOUS TERMINAL:
000382                          *          TERMINAL TYPE=   TTY                TERMINAL TYPE=  7700
000383                          *                           TTYC
000384                          *                           TTYK
000385                          *                           7100
000386                          *                           7200
000387                          *                           PRU1
000388                          *                           PRU2
000389                          *                           PRU3
000390                          *                           PRU5
000391                          *                           TWU1
000392                          *                           TWU2
000393                          *                           TWU3
000394                          *                           TWU5
000395                          *
000396                          *          FOR ASYNCHRONOUS TERMINAL:          FOR SYNCHRONOUS TERMINAL:
000397                          *          BAUD RATE=       50                 TERMINAL ADDRESS= 0 TO 31
000398                          *                           75
000399                          *                           110
000400                          *                           134
000401                          *                           150
000402                          *                           200
000403                          *                           300
000404                          *                           600
000405                          *                           900
000406                          *                           1050
000407                          *                           1200
000408                          *                           1800
000409                          *                           2000
000410                          *                           2400
000411                          *                           3600
000412                          *                           4800
000413                          *                           7200
000414                          *                           9600
000415                          *                           19200
000416                          *
000417                          *          FOR ASYNCHRONOUS TERMINAL:          FOR SYNCHRONOUS TERMINAL:
000418                          *          CHAR SIZE=       5                  MODE=  P (POLLED OPERATION)
000419                          *                           6                         N (NON-POLLED OPERATION)
000420                          *                           7
000421                          *                           8
000422                          *
000423                          *          FOR ASYNCHRONOUS TERMINAL:          FOR SYNCHRONOUS TERMINAL:
000424                          *          STOP BITS=       1                  CLOCK= L6 (MLCP CLOCK)
000425                          *                           2                         T  (TERMINAL CLOCK)
000426                          *
000427                          *          FOR ASYNCHRONOUS TERMINAL:          FOR SYNCHRONOUS TERMINAL:
000428                          *          PARITY=          E    (EVEN)        DISP/PRT= D (DISPLAY)
000429                          *                           O    (ODD)                  P (PRINTER)
000430                          *                           N    (NONE)                 C (CASSETTE)
000431                          *
```

```
000432                          /
000433                          *       FOR EXAMPLE:
000434                          *
000435                          *       FOR ASYNCHRONOUS TERMINAL:
000436                          *       NEXT ?: PAR 7100,1200,8,1,E  (C/R)
000437                          *       NEXT ?:
000438                          *
000439                          *       FOR SYNCHRONOUS TERMINAL:
000440                          *       NEXT ?: PAR 7700,1,P,L6,D  (C/R)
000441                          *       NEXT ?:
000442                          *       THE CURRENT PARAMETERS MAY BE DISPLAYED WITH THE COMMAND:
000443                          *
000444                          *            PAR?
000445                          *
000446                          *       FOR EXAMPLE:
000447                          *
000448                          *        FOR ASYNCHRONOUS TERMINAL:              FOR SYNCHRONOUS TERMINAL:
000449                          *       NEXT ?: PAR?                           NEXT ?: PAR?
000450                          *       TERM TYPE:: 7100                       TERM TYPE:: 7700
000451                          *       BAUD RATE:: 1200                       TERM ADDR::    1
000452                          *       CHAR SIZE::    8                           MODE::    P
000453                          *       STOP BITS::    1                         CLOCK::   L6
000454                          *          PARITY::    E                      DISP/PRT::    D
000455                          *
000456                          *       NEXT ?:                                NEXT ?:
000457                          *
```

```
000458                          /
000459                          *
000460                          *       SAMPLE CONSOLE OPERATION:
000461                          *       ------ ------- ---------
000462                          *
000463                          *       TERMINALS TEST TCSX1 REV F JUNE 12 1978
000464                          *       ZV$LIB REV. 7.00
000465                          *
000466                          *       WDT
000467                          *       CHAN  DEVC  ID
000468                          *       0400  DSKT  2010
000469                          *       0480  DSKT  2010
000470                          *       0500  CDR   2008
000471                          *       0580  CONS  2019
000472                          *       FC00  ACLA  2118
000473                          *       FC80  ACLA  2118
000474                          *       FD00  ACLA  2118
000475                          *       FD80  ACLA  2118
000476                          *       FE00  ACLA  2118
000477                          *       FE80  ACLA  2118
000478                          *       FF00  ACLA  2118
000479                          *       FF80  ACLA  2118
000480                          *       MEMORY  LOW   1B9C
000481                          *       MEMORY HIGH   FFFF   64K
000482                          *
000483                          *       DEFAULT PARAMETERS:
000484                          *       TERM TYPE:: 7100
000485                          *       BAUD RATE:: 1200
000486                          *       CHAR SIZE::    8
000487                          *       STOP BITS::    1
000488                          *          PARITY::    E
000489                          *
000490                          *       NEXT ?: MSG(SPACE)
000491                          *       THIS IS A TEST MESSAGE!    (C/R)
000492                          *             (THIS IS AN EXAMPLE OF AN OPERATOR INPUT MESSAGE)
000493                          *
000494                          *       NEXT ?: MSG?
000495                          *       CR/LF
000496                          *       THIS IS A TEST MESSAGE!
000497                          *
000498                          *             (THE OPERATOR HAS DISPLAYED THE MESSAGE HE INPUT)
000499                          *
000500                          *        TYPE "CONTROL F"  IN MSG(SPACE) COMMAND.FOR EXAMPLE:
000501                          *
000502                          *       NEXT ?: MSG(SPACE)
000503                          *       XYZ(CONTROL F)
000504                          *       CHARACTER ?:#
000505                          *       NUMBER ?:5(C/R)
000506                          *       PQ#RQ(C/R)
000507                          *         (THIS IS AN EXAMPLE OF OPERATOR INPUT MESSEGE USING "CONTROL F " )
000508                          *
000509                          *       NEXT ?:MSG?
000510                          *       CR/LF
000511                          *       XYZ####PRQ
000512                          *         (OPERATOR HAS DISPLAYED THE MESSEGE HE INPUT)
000513                          *         @NOTE THE USAGE OF # SIGN AS AN ERASER AND A CHARACTER@
000514                          *       FOR ASYNCHRONOUS TERMINAL:
000515                          *       NEXT ?: PAR 7100,9600,7,2,N (C/R)
000516                          *
000517                          *             (THE OPERATOR HAS CHANGED THE PARAMETERS)
000518                          *
000519                          *       NEXT ?: PAR?
000520                          *       TERM TYPE:: 7100
000521                          *       BAUD RATE:: 9600
000522                          *       CHAR SIZE::    7
000523                          *       STOP BITS::    2
000524                          *          PARITY::    N
000525                          *
000526                          *             (THE OPERATOR HAS DISPLAYED THE PARAMETERS)
000527                          *
000528                          *       NEXT ?: TRM TT,FC00,0,1,C    (C/R)
000529                          *
000530                          *             (THIS BEGINS EXECUTION OF TEST TT)
000531                          *             (THE  CONSOLE RESPONDS WITH THE FOLLOWING;)
000532                          *
000533                          *       EXECUTING TT:  FC00,   0,    1,   C
000534                          *
000535                          *       TT: TEST COMP  CHAN FC00
000536                          *          1  PASSES   0  ERRORS
000537                          *
000538                          *        NOTE: FOR SYNCHRONOUS TERMINAL THE CONSOL RESPONDS WITH FOLLOWING:
000539                          *        EXECUTING TT:  FC00,   0,    1,   C
000540                          *
000541                          *        ACK RECEIVED
000542                          *
000543                          *       TT: TEST COMP. CHANNEL FC00
000544                          *             1 PASSES      0 ERRORS
000545                          *       NEXT ?: TRMX
000546                          *
000547                          *             (THE OPERATOR HAS RE-EXECUTED THE PREVIOUS TEST)
000548                          *             (THE CONSOLE RESPONDS WITH THE FOLLOWING:)
000549                          *
000550                          *         EXECUTING TT:   FC00,   0,    1,  C
000551                          *
000552                          *       TT: TEST COMP  CHAN FC00
000553                          *         1   PASSES   0   ERRORS
000554                          *
000555                          *       NEXT ?: TRM?
000556                          *
000557                          *             (THE OPERATOR WISHES TO LOOK AT THE LAST COMMAND LINE)
000558                          *             (THE CONSOLE RESPONDS WITH THE FOLLOWING:)
000559                          *
000560                          *       TT:  FC00,   0,    1,   C
000561                          *
000562                          *       NEXT ?: MSH(SPACE)
000563                          *                3132,3334,3536,494E,555,542E    (C/R)
000564                          *
000565                          *       (OPERATOR HAS INPUT HEX VALUES DIRECTLY INTO THE MESSAGE BUFFER)
000566                          *
000567                          *       NEXT ?: MSG?
000568                          *       CR/LF
000569                          *       123456INPUT.
000570                          *
```

```
000571                          *           (OPERATOR HAS DISPLAYED THE PREVIOUS MESSAGE INPUT.)
000572                          *
000573                          *       NEXT ?: MSM?
000574                          *       0D0A 3132 3334 3536 494E 5055 542E
000575                          *
000576                          *           (OPERATOR HAS DISPLAYED THE MESSAGE INPUT IN HEX.)
000577                          *           (NOTE LEADING CR/LF
000578                          *
000579                          *        NEXT ?: RMH?
000580                          *
000581                          *         1616 1616 1601 6006 2020 0203 1616 1616 0400
000582                          *
000583                          *         (OPERATOR HAS DISPLAYED SYNCHRONOUS TERMINAL RESPONSE (ACK) IN HEX
000584                          *         WHEN "II" COMMAND EXECUTED.)
```

```
000585                          /
000586                          *
000587                          *
000588                          *       SUPPORTED MODEMS:
000589                          *       ---------- ------
000590                          *
000591                          *
000592                          *               ASYNCHRONOUS
000593                          *                  103A  NO LOOPBACK CAPABILITY
000594                          *                  103E  NO LOOPBACK CAPABILITY
000595                          *                  103F  NO LOOPBACK CAPABILITY
000596                          *                  113A  NO LOOPBACK CAPABILITY
000597                          *                  113B  NO LOOPBACK CAPABILITY
000598                          *                  202C  NO LOOPBACK CAPABILITY
000599                          *                  202D  NO LOOPBACK CAPABILITY
000600                          *                  202S  NO LOOPBACK CAPABILITY
000601                          *                  202T  NO LOOPBACK CAPABILITY
000602                          *
000603                          *               SYNCHRONOUS
000604                          *                  201C  NO LOOPBACK CAPABILITY
000605                          *
000606                          *
000607                          *
000608                          *       SUPPORTED TERMINALS:
000609                          *       ---------- ----------
000610                          *
000611                          *          TTY
000612                          *          VIP 7100/7105
000613                          *          VIP 7200/7205
000614                          *          VIP 7250/7255
000615                          *          7700/7700R
000616                          *          PRU1001 (SARA-300 BAUD)
000617                          *          PRU1002 (SARA-1200 BAUD)
000618                          *          PRU1003 (ROSY 24-110/200/300 BAUD)
000619                          *          PRU1005 (ROSY 26-1200 BAUD)
000620                          *          TWU1001
000621                          *          TWU1002
000622                          *          TWU1003
000623                          *          TWU1005
000624                          *
000625                          ********************************************************************************
```

```
000626                          /
000627          0000            ZERO    EQU     $
000628                                  XLOC    ZV$ARG,ZV$ABF,ZV$BKF
000629                                  XLOC    ZHPFR,ZHRTC1,ZHRTCL
000630                                  XLOC    ZHRTCC,ZHCOMM
000631  0100                            ORG     ZERO+X'100'
000632                          *
000633                          START   CALL    ZV$RD,TITLE             DETERMINE RESOURCES,IDENTIFY PROGRAM
        0100  FBC0 0003
        0102  D380 0000      X
        0104  0F80
        0105  0F85
000634          0105            STARTM  EQU     $-$AF
000635  0106  E3C0 147F                LNJ     $B6,STM1
000636  0108  9BC0 16AA                LAB     $B1,CRLF
000637  010A  9FC0 FFFA                STB     $B1,STARTM
000638  010C  0F80 0AF4         STARTB  B       <DPARM1                 DISPLAY DEFAULT PARAMETERS
000639  010E  0F01 FFFF                NOP     $
000640                          *
000641  0110  8740 0ED0         NEXT    CL      PCNT                    CLEAR THE PASS COUNTER
000642  0112  8740 1532                CL      NOSTOP
000643  0114  8740 0EC1                CL      TEMP+1
000644  0116  8740 0EC6                CL      ERC1                    CLEAR THE ERROR COUNTER
000645  0118  9870 2C20                LDR     $R1,=X'2C20'
000646  011A  9F40 177B                STR     $R1,ECHOMS+7
000647  011C  9870 2020                LDR     $R1,=X'2020'
000648  011E  9F40 1778                STR     $R1,ECHOMS+8
000649  0120  9F40 1777                STR     $R1,ECHOMS+9
000650  0122  9F40 1776                STR     $R1,ECHOMS+10
000651  0124  9B80 0110                LAB     $B1,<NEXT
000652  0126  9FC0 FFE6                STB     $B1,STARTB+1            DISPLAY PARAMETERS ONCE
000653  0128  BB80 0FAC                LAB     $B3,<NX1                LOAD MESSAGE ADDRESS
000654  012A  C3C0 16E4                LNJ     $B4,TYPEQ               TYPE NEXT ?:
000655  012C  1C08                     LDV     $R1,=8                  RANGE FOR CMD
000656  012D  A3C0 0E1B                LNJ     $B2,1ASC                INPUT THE COMMAND
000657  012F  A840 0EA5                LDR     $R2,TEMP                GET THE CMD INPUT
000658  0131  A970 5050                CMR     $R2,=A'PP'              GO TO PATCHER ROUTINE
000659  0133  0901 1928                BE      ZVPTCH
000660  0135  A970 5452                CMR     $R2,=A'TR'              IS IT A TR?
000661  0137  0989                     BNE     >NXA                    NO-TRY MS
000662  0138  A840 0E9D                LDR     $R2,TEMP+1
000663  013A  A970 4D20                CMR     $R2,=Z'4D20'            CHECK FOR M
000664  013C  0981 0037                BNE     MCMDER                  INPUT ERROR - GO TYPE MESSAGE
000665  013E  0F81 007E                B       NEXTA                   GO INPUT PARAMETERS
000666                          *
000667  0140  A970 4D53         NXA     CMR     $R2,=A'MS'              TRY MS
000668  0142  0981 0052                BNE     NPAR
000669  0144  A840 0E91                LDR     $R2,TEMP+1              LOAD SECOND HALF OF CMD
000670  0146  A970 4720                CMR     $R2,=A'G ' IS           IT A G?
000671  0148  0901 00AC                BE      NEXTB                   YES-GO INPUT OPERATOR MESSAGE
000672  014A  A970 473F                CMR     $R2,=Z'473F'            NO- TRY G?
000673  014C  0981 003E                BNE     NXAA                    NEITHER-
000674  014E  8751                     CL      =$R1                    MSG?
000675  014F  9BC0 0EFA                LAB     $B1,OPMESG
000676                          *
000677  0151  8753         NXA1    CL      =$R3
000678  0152  A811                     LDR     $R2,$B1.$R1
000679  0153  30C8                     DDR     $R3,8
000680  0154  2D24                     CMV     $R2,=X'24'              $ IN MESSAGE
000681  0155  090D                     BE      >NXA4
000682  0156  2D5C                     CMV     $R2,=X'5C'              \ IN MESSAGE
000683  0157  090B                     BE      >NXA4
000684  0158  3048         NXA2    SDR     $R3,8
000685  0159  3D24                     CMV     $R3,=X'24'
000686  015A  090D                     BE      >NXA5
000687  015B  3D5C                     CMV     $R3,=X'5C'              \ IN MESSAGE
000688  015C  090B                     BE      >NXA5
000689  015D  9940 0E9B         NXA3    CMR     $R1,OPMRNG              RANGE EXHAUSTED?
000690  015F  028D                     BGE     >NXA6
000691  0160  1781 FFF0                BINC    $R1,NXA1
000692                          *
000693  0162  D811         NXA4    LDR     $R5,$B1.$R1             BLIND LIBRARY TO EXISTENCE OF $
000694  0163  DA70 8000                ADD     $R5,=Z'8000'            AND MDC TO \
000695  0165  DF11                     STR     $R5,$B1.$R1
000696  0166  0FF2                     B       >NXA2
000697                          *
000698  0167  D811         NXA5    LDR     $R5,$B1.$R1             BLIND LIBRARY TO EXISTENCE OF $
000699  0168  DA70 0080                ADD     $R5,=Z'0080'            AND MDC TO \
000700  016A  DF11                     STR     $R5,$B1.$R1
000701  016B  0FF2                     B       >NXA3
000702  016C  BB80 1049         NXA6    LAB     $B3,<OPMESP
000703  016E  9840 0E8A                LDR     $R1,OPMRNG
000704  0170  93C0 1654                LNJ     $B1,CONPRT              PRINT BUFFER ON EVEN A TTY-R
000705  0172  0F81 FF9D                B       NEXT
000706                          *
000707  0174  A970 4D3F         MCMDER  CMR     $R2,=Z'4D3F'            M?
000708  0176  098B                     BNE     >NCMDER
000709  0177  89C0 0E67                CMZ     PASSES
000710  0179  0980                     BNE     >+$A
000711  017A  1C01                     LDV     $R1,=1
000712  017B  9F40 14C9                STR     $R1,NOSTOP
000713  017D  A3C0 16D0         $A      LNJ     $B2,ECHOA               TYPE LAST CMD LINE
000714  017F  0F81 FF80                B       START
000715  0181  A970 4D58         NCMDER  CMR     $R2,=Z'4D58'            X?
000716  0183  0901 0171                BE      NEXTF
000717                          *
000718  0185  BB80 01B5         CMDER   LAB     $B3,<INVCMD             LOAD MESSAGE ADDRESS
000719  0187  C3C0 1678                LNJ     $B4,TYPEC               AND TYPE IT.
000720  0189  0F81 FF76                B       START
000721                          *
000722  018B  A970 4820         NXAA    CMR     $R2,=A'H '
000723  018D  0901 0103                BE      IMSH
000724  018F  A970 483F                CMR     $R2,=A'H?'
000725  0191  0901 0134                BE      IMSD
000726  0193  0F81 FFF1                B       CMDER
000727                          *
000728  0195  A970 5041         NPAR    CMR     $R2,=A'PA'
000729  0197  0981 000D                BNE     HEXDP
000730  0199  A840 0E3C                LDR     $R2,TEMP+1
000731  019B  A970 5220                CMR     $R2,=A'R '
000732  019D  0901 09FE                BE      IPAR                    GO INPUT PARAMETERS
000733  019F  A970 523F                CMR     $R2,=A'R?'
000734  01A1  0901 0961                BE      DPARM                   GO DISPLAY PARAMETERS
```

```
000735  01A3  0F81 FFE1            B       CMDER
000736                        *
000737  01A5  A970 524D            HEXDP   CMR     $R2,=A'RM'          CHECK FOR REQUEST TO DUMP RCV BUFFER
000738  01A7  0981 FFDD                    BNE     CMDER
000739  01A9  A840 0E2C                    LDR     $R2,TEMP+1
000740  01AB  A970 483F                    CMR     $R2,=A'H?'
000741  01AD  0981 FFD7                    BNE     CMDER
000742                        *
000743                        *
000744                        *   DUMP RECEIVE BUFFER IN HEX          RMH?
000745                        *
000746  01AF  93C0 011C                    LNJ     $B1,DMPHEX
000747  01B1  18EB                         DC      <RECD
000748  01B2  0FFD                         DC      <RCVRNG
000749  01B3  0F81 FF5C                    B       NEXT
000750  01B5  494E 5641 4C49      INVCMD TEXT    'INVALID COMMAND$'
        01B8  4420 434F 4D4D
              414E 4424
000751                        *
```

```
000752                                      / 'TRM ' IS DECODED
000753                                      * PARAMETER INPUT
000754                                      *
000755  01BD  1C08                 NEXTA    LDV     $R1,=8          FIRST INPUT THE TEST
000756  01BE  A3C0 0D8A                     LNJ     $B2,IASC        TEST
000757  01C0  ABC0 0E1A                     LAB     $B2,ITEST
000758  01C2  C3C0 001F                     LNJ     $B4,END
000759  01C4  1C06                         LDV     $R1,=6
000760  01C5  A3C0 0D92                     LNJ     $B2,IHEX        CHANNEL
000761  01C7  ABC0 0E15                     LAB     $B2,CHAN
000762  01C9  C3C0 0018                     LNJ     $B4,END
000763  01CB  1C04                         LDV     $R1,=4
000764  01CC  A3C0 0D7C                     LNJ     $B2,IASC        MESG TYPE(0 OR C)
000765  01CE  ABC0 0E0F                     LAB     $B2,MESG
000766  01D0  C3C0 0011                     LNJ     $B4,END
000767  01D2  1C04                         LDV     $R1,=4
000768  01D3  A3C0 0D8F                     LNJ     $B2,IDEC        NUMBER OF PASSES
000769  01D5  ABC0 0E09                     LAB     $B2,PASSES
000770  01D7  C3C0 000A                     LNJ     $B4,END
000771  01D9  1C06                         LDV     $R1,=6
000772  01DA  A3C0 0D6E                     LNJ     $B2,IASC        ERROR REPORT MODE
000773  01DC  ABC0 0E03                     LAB     $B2,ERCD
000774  01DE  C3C0 0003                     LNJ     $B4,END
000775  01E0  0F81 0114                     B       NEXIF           GO CHECK VALIDITY
000776                                      *
000777  01E2  A840 0DF2            END      LDR     $R2,TEMP
000778  01E4  C840 0DF0                     LDR     $R4,TEMP
000779  01E6  C570 FF00                     AND     $R4,=Z'FF00'
000780  01E8  C970 2C20                     CMR     $R4,=A' '
000781  01EA  0907                         BE      >END1
000782  01EB  B800 0000       X             LDR     $R3,<ZV$ABF
000783  01ED  B970 0D00                     CMR     $R3,=X'0D00'
000784  01EF  0903                         BE      >END2
000785  01F0  AF02                         STR     $R2,$B2
000786  01F1  8384                 END1     JMP     $B4
000787  01F2  AF02                 END2     STR     $R2,$B2
000788  01F3  0F81 0101                     B       NEXIF
000789                                      *
```

```
000790                                  /
000791                                  *
000792                                  *   OPERATOR INPUTS MESSAGE HERE -          MSG
000793                                  *
000794                                  *
000795          01F5                    NEXTB   EQU     $
000796  01F5    C3C0 15F4                       LNJ     $B4,NEWLIN
000797  01F7    3C02                            LDV     $R3,=2                  2 INIT BYTES = CR/LF
000798  01F8    9BC0 0E50                       LAB     $B1,OPMESP              PTR TO AUTO CR/LF
000799  01FA    8754                            CL      =$R4                    INIT CONSOLE COL INDICATOR
000800                                  MSGINP  CALL    ZV$IA,ZV$IAV,STAT,TEMP GET A BYTE
          01FB  FBC0 0003
          01FD  D380 0000       X
          01FF  0F80
          0200  0FE2
          0201  0FD5
000801  0202    8AD4                            INC     =$R4                    UPDATE COLCNTR
000802  0203    4D50                            CMV     $R4,=80                 CHECK FOR END OF  CONSOLE LINE
000803  0204    0980                T           BNE     >+$A
000804  0205    8754                            CL      =$R4
000805  0206    C3C0 15E3                       LNJ     $B4,NEWLIN              PROVIDE CR/LFFOR CLEAN CONSOLE INPUT
000806  0208    5C01                $A          LDV     $R5,=1                  # OF  CHAR  INPUT
000807  0209    A840 0000           P           LDR     $R2,ZV$ABF              GET  ACTUAL BYTE FOUND (INCLUDES DELIMITERS)
000808  020B    2048                            SOR     $R2,8                   RIGHT-ADJUST THE CHAR
000809  020C    2D23                            CMV     $R2,=A'#'               CHECK FOR ERASE CHAR
000810  020D    0980                T           BNE     >+$A
000811                                  *
000812                                  *                  ERASE  MOST  RECENT  INPUT CHAR, IF ANY,
000813                                  *                    BY ALLOWING NEXT INPUT TO OVERLAY IT
000814  020E    3D02                            CMV     $R3,=2                  AVOID ERASURE BEYOND BEGINNING OF BUFFER
000815  020F    096C                            BE      >MSGINP
000816  0210    88D3                            DEC     =$R3
000817  0211    0FEA                            B       >MSGINP                 GET NEXT CHAR
000818                                  *
000819  0212    2D0D                $A          CMV     $R2,=X'0D'              CHECK FOR CR ENDING MSG INPUT
000820  0213    0928                            BE      >ENDMSG
000821  0214    2D06                            CMV     $R2,=X'06'              CTL-F;  ESCAPE CHAR TO  ALLOW MULTIPLES
000822  0215    099E                            BNE     >STOR1
000823                                  *       FILL BUFFER WITH N CHAR OF X
000824  0216    BBC0 006E                       LAB     $B3,CHPRMT              PROMT USER FOR CHAR
000825  0218    C3C0 15E7                       LNJ     $B4,TYPEC
000826                                          CALL    ZV$IA,ZV$IAV,STAT,TEMP GET THA CHAR
          021A  FBC0 0003
          021C  D380 0000       X
          021E  0F80
          021F  0FE2
          0220  0FD5
000827  0221    A840 0000           P           LDR     $R2,ZV$ABF
000828  0223    2048                            SOR     $R2,8                   RIGHT-JUSTIFY IT
000829  0224    BBC0 0067                       LAB     $B3,REPPMT              PROMT USER FOR REPLICATION FACTOR
000830  0226    C3C0 15D9                       LNJ     $B4,TYPEC
000831                                          CALL    ZV$IH,ZV$ID,TEMP        GET REPLICATION FACTOR
          0228  FBC0 0003
          022A  D380 0000       X
          022C  0F80
          022D  0FD5
000832  022E    C3C0 15BB                       LNJ     $B4,NEWLIN
000833  0230    D840 0DA4                       LDR     $R5,TEMP
000834  0232    8754                            CL      =$R4                    INIT CONSOLE COL IND
000835                                  *                     STORE CHAR(S)
000836  0233    A7FD                STOR1       STH     $R2,$B1,+$R3            LOAD BUFF
000837  0234    B970 0142                       CMR     $R3,=322                END-OF-BUFF?
000838  0236    0905                            BE      >ENDMSG
000839  0237    88D5                            DEC     =$R5                    DECREMENT CHAR COUNT
000840  0238    5A7B                            BGZ     $R5,>STOR1
000841  0239    0F81 FFC1                       B       MSGINP                  GET MORE
000842                                  *
000843          023B                    ENDMSG  EQU     $
000844                                  *
000845                                  *  "C/R L/F INPUT; C/R L/F" IS ADDED TO OP MESSEGE IN LT TEST
000846                                  * AND RRANGE IS USED COMPARE XMIT BUFFER
000847                                  * AGAINST RECD BUFFER
000848                                  *
000849                                  *
000850  023B    0F01 FFFF                       NOP     $
000851  023D    0F01 FFFF                       NOP     $
000852  023F    D853                            LDR     $R5,=$R3                SAVE EVEN BYTES RECD
000853  0240    3041                            SOR     $R3,1
000854  0241    5BB1 000D                       BODD    $R5,ODD
000855  0243    8751                EVENBR      CL      =$R1
000856  0244    9F31                            STR     $R1,$B1,$R3
000857  0245    BF40 0DB3           AUTOND      STR     $R3,OPMRNG              RANGE IN WORDS
000858  0247    8AD3                            INC     =$R3
000859  0248    BF40 0039                       STR     $R3,OPRG
000860  024A    88D3                            DEC     =$R3
000861  024B    BB70 0002                       MUL     $R3,=2
000862  024D    0F81 000C                       B       IMF1
000863  024F    A831                ODD         LDR     $R2,$B1,$R3
000864  0250    A570 FF00                       AND     $R2,=Z'FF00'
000865  0252    AF31                ODD2        STR     $R2,$B1,$R3
000866  0253    8AD3                            INC     =$R3                    TO GET  THE RIGHT NO OF WORDS
000867  0254    BF40 0DA4                       STR     $R3,OPMRNG              RANGE IN WORDS
000868  0256    BF40 002B                       STR     $R3,OPRG
000869  0258    3001                            SUL     $R3,1
000870  0259    88D3                            DEC     =$R3
000871  025A    BF40 0D9D           IMF1        STR     $R3,OPMRGB
000872  025C    BF40 0280                       STR     $R3,LCEX1R              RANGE IN BYTES
000873  025E    BF40 0286                       STR     $R3,LCEX2R
000874  0260    BF40 0524                       STR     $R3,ITEXR
000875  0262    3EFE                            ADV     $R3,-2                  ADUJUST FOR C/R L/F BYTES
000876  0263    BF40 0D97                       STR     $R3,RRANGB              NEEDED FOR LT AND LT ERROR PRINT
000877  0265    C840 0D93                       LDR     $R4,OPMRNG
000878  0267    4EFF                            ADV     $R4,-1                  ADUJUST FOR CR/LF
000879  0268    CF40 0D91                       STR     $R4,RRANGE              REAL RANGE IN WORDS
000880                                  *
000881  026A    B840 0017                       LDR     $R3,OPRG
000882  026C    9870 0D0A                       LDR     $R1,=X'0D0A'
000883  026E    9F7D                            STR     $R1,$B1,+$R3            INCLUDE C/R L/F IN MESSAGE
000884  026F    9870 494E                       LDR     $R1,=A'IN'              INCLUDE INPUT: IN MESSAGE
000885  0271    9F7D                            STR     $R1,$B1,+$R3
000886  0272    9870 5055                       LDR     $R1,=A'PU'
000887  0274    9F7D                            STR     $R1,$B1,+$R3
000888  0275    9870 543A                       LDR     $R1,=A'T:'
```

```
000889  0277  9F7D                        STR     $R1,$B1,*+$R3
000890  0278  9870 0D0A                    LDR     $R1,=X'0D0A'
000891  027A  9F7D                        STR     $R1,$B1,*+$R3          INCLDE C/R L/F IN MESSAGE
000892  027B  8751                        CL      =$R1
000893  027C  9F7D                        STR     $R1,$B1,*+$R3
000894  027D  3001                        SOL     $R3,1
000895  027E  BF40 0468                    STR     $R3,LISRNG             CCB RANGE FOR XMIT BUFFER
000896  0280  0F81 FE8F                    B       NEXT
000897                              *
000898                              *
000899  0282  0000                  OPRG   DC      0
000900  0283  0000                  SAVE7  DC      0
000901  0284  0000                  WCTR   DC      0
000902  0285  4348 4152 4143        CHPRMT TEXT    'CHARACTER ?:$'
        0288  5445 5220 3F3A
              2400
000903  028C  4E55 4D42 4552        REPPMT TEXT    'NUMBER ?:$'
        028F  203F 3A24
```

```
000904                                  /
000905                                  *
000906                                  *   INPUT HEX VALUES IN OPMESG BUFFER -      MSH
000907                                  *
000908  0291  3C01                       IMSH   LDV    $R3,1                 1 WORD ALREADY FOR CR-LF
000909  0292  4CFF                              LDV    $R4,-1
000910  0293  9BC0  0DB5                        LAB    $B1,OPMESP
000911  0295  8740  0D3F                 IMSHA  CL     TEMP                  INPUT BUFFER
000912  0297  4780                    T         BINC   $R4,>+$B              ALLOW CR AFTER TEN WORDS PER LINE
000913  0298  C3C0  1551                        LNJ    $B4,NEWLIN            AUTOMATIC CR/LF AFTER EVERY 10 WORD LINE
000914  029A  4CF6                              LDV    $R4,-10
000915                                  $B     CALL   ZV$IH,TEMP            DO SOME INPUT
        029B  FBC0  0003
        029D  D380  0000          X
        029F  0F80
        02A0  0FD5
000916  02A1  9800  0000          X             LDR    $R1,<ZV$ABF           LOAD LAST INPUT
000917  02A3  0F01  FFFF                       NOP    $                     PLACE FOR A PATCH
000918  02A5  9970  0D00                       CMR    $R1,=X'0D00'          IS IT A C/R?
000919  02A7  090D                             BE     >IMSHB                YES
000920  02A8  A840  0D2C                       LDR    $R2,TEMP              LOAD WHAT WAS INPUT
000921  02AA  89C0  0D2A                       CMZ    TEMP
000922  02AC  0900                    I         BE     >+$A                  BRANCH IF NULL STRING ENTERED
000923  02AD  AF31                              STR    $R2,$B1.$R3           OTHERWISE, STORE ENTERED DATA
000924  02AE  8AD3                      $A      INC    =$R3
000925  02AF  B970  00A1                       CMR    $R3,=161              CHECK FOR END OF INPUT BUFF RANGE
000926  02B1  0901  FF93                       BE     AUTOND
000927  02B3  0FE2                             B      >IMSHA
000928                                  *
000929                                  *   HERE IF C/R DETECTED
000930                                  *
000931  02B4  A840  0D20                 IMSHB  LDR    $R2,TEMP
000932  02B6  C800  0000          X             LDR    $R4,<ZV$ARG           NO. OF CHARS ON LAST INPUT
000933  02B8  4D02                             CMV    $R4,=2
000934  02B9  0909                             BE     >IMSHC                IT WAS ONE
000935  02BA  4D03                             CMV    $R4,=3
000936  02BB  0908                             BE     >IMSHD                IT WAS TWO
000937  02BC  4D04                             CMV    $R4,=4
000938  02BD  0980                    T         BNE    >+$A
000939  02BE  2004                              SOL    $R2,4                 LEFT JUSTIFY 3 HEX DIGITS
000940  02BF  AF7D                      $A      STR    $R2,$B1.+$R3          STORE (EFFECTIVE) 2 BYTES
000941  02C0  0F81  FF82                        B      EVENBR                PROCESS EVEN NUM OF BYTES TO EXIT ROUTINE
000942  02C2  2004                      IMSHC  SOL    $R2,4                 SHIFT 4 AND THEN...
000943  02C3  2008                      IMSHD  SOL    $R2,8                 LEFT JUSTIFY ALL THE WAY
000944  02C4  0F81  FF8D                        B      ODD2                  PROCESS ODD NUM OF BYTES
000945                                  *
```

```
000946                                  /   DISPLAY MESSAGE IN HEX -            MSH?
000947  02C6                            1MSD    RESV    0
000948  02C6  93C0 0005                        LNJ     $B1,DMPHEX
000949  02C8  1049                             DC      <OPMESP
000950  02C9  0FF9                             DC      <OPMRNG
000951  02CA  0F81 FE45                        B       NEXT
000952                                  ******** HEX DUMP ON CONSOLE
000953                                  *
000954                                  *
000955                                  *CALL PROCEDURE:
000956                                  *               LNJ $B1,DMPHEX
000957                                  *               DC <BUFFER-NAME
000958                                  *               DC <RANGE-IN-WORDS
000959                                  *
000960                                  *RESULT:  TEN WORDS (IN HEX) PER CONSOLE LINE
000961                                  *
000962                                  *
000963  02CC                            DMPHEX  RESV    0
000964  02CC  ACF1                              LDB     $B2,+$B1                GET BUFFER ADDRESS
000965  02CD  AFC0 001E                         STB     $B2,1MSF                INIT PRINT CALL
000966  02CF  9809                              LDR     $R1,*$B1                GET RANGE
000967  02D0  1D00                              CMV     $R1,0                   TEST FOR EMPTY BUFFER
000968  02D1  0980                      T       BNE     >+$A
000969  02D2  B3C0 0F2B                         LNJ     $B3,ERRMB
000970  02D4  5245 4356 2042                    TEXT    'RECV BUFFER IS EMPTY$'
        02D7  5546 4645 5220
              4953 2045 4D50
              5459 2400
000971  02DF  ACF1                      $A      LDB     $B2,+$B1                DUMMY TO POP B1
000972  02E0  2C0A                              LDV     $R2,10
000973  02E1  1A93                      DMPLP   BLEZ    $R1,>DPEXIT             CHECK IF ANY (MORE) TO PRINT
000974  02E2  2D0A                      1MSE    CMV     $R2,10                  CHECK FOR NEED OF CR/LF
000975  02E3  0980                      T       BNE     >+$A                    CONTINUE DUMP ON SAME LINE
000976  02E4  C3C0 1505                         LNJ     $B4,NEWLIN
000977  02E6  8752                              CL      =$R2                    START-UP COUNT TO TEN
000978  02E7  FBC0 0003                 $A      CALL    ZV$TH,ZV$TH2,ZERO       PRINT (SPACE)(SPACE)XXXX
        02E9  D380 0000         X
        02EB  0F80
        02EC  0000
000979          02EC                    1MSF    EQU     $-$AF
000980                                          IFEV    $AF,LG
000981  02ED  8A80 02EC                         INC     <1MSF
000982  02EF  0F80                      T       B       >+$A
000983  02F0  8A80 02ED                 LG      INC     <1MSF+1
000984  02F2  8AD2                      $A      INC     =$R2
000985  02F3  176E                              BDEC    $R1,>DMPLP
000986  02F4  8381                      DPEXIT  JMP     $B1
```

```
000987                          /  'TRM ' FIELD CHECKING
000988  02F5  8740 1350         NEXTF   CL      INHRTC
000989  02F7  8740 0288                 CL      LAFLG
000990  02F9  8740 03EE                 CL      RTSFLG
000991  02FB  8740 03ED                 CL      TTFLG
000992  02FD  8740 03EC                 CL      PTNFLG
000993  02FF  8740 03EA                 CL      RTPFLG
000994  0301  9840 0CD9                 LDR     $R1,TEST        CHECK VALIDITY OF 'TEST FIELD OF TRM
000995  0303  9F40 0CE2                 STR     $R1,ERA         STORE IN PRINTOUT LOCATION
000996  0305  9F40 1737                 STR     $R1,PRTBF       TWICE
000997  0307  9F40 0CC5                 STR     $R1,TCOMP
000998  0309  9970 4156                 CMR     $R1,=X'4156'    AV
000999  030B  098A                      BNE     >A
001000  030C  9B80 04A8                 LAB     $B1,<AVEX
001001  030E  9FC0 0198                 STB     $B1,EXEC+1
001002  0310  1C01                      LDV     $R1,=1          FORCE TO ONE PASS
001003  0311  9F40 0CCD                 STR     $R1,PASSES
001004  0313  0F81 00E3                 B       INCHN
001005  0315  9970 4C43         A       CMR     $R1,=X'4C43'    LC
001006  0317  0987                      BNE     >B
001007  0318  9B80 04CC                 LAB     $B1,<LCEX
001008  031A  9FC0 018C                 STB     $B1,EXEC+1
001009  031C  0F81 00BA                 B       J1A
001010  031E  9970 4C4C         B       CMR     $R1,=X'4C4C'    LL
001011  0320  0987                      BNE     >C
001012  0321  9B80 0581                 LAB     $B1,<LLEX
001013  0323  9FC0 0183                 STB     $B1,EXEC+1
001014  0325  0F81 00D1                 B       INCHN
001015  0327  9970 4C41         C       CMR     $R1,=X'4C41'    LA
001016  0329  098D                      BNE     >D
001017  032A  9F40 0255                 STR     $R1,LAFLG
001018  032C  9B80 0506                 LAB     $B1,<LMEX
001019  032E  9FC0 0178                 STB     $B1,EXEC+1
001020  0330  9870 4300                 LDR     $R1,=X'4300'    FORCE CANNED MESSAGE
001021  0332  9F40 0CAB                 STR     $R1,MESG
001022  0334  0F81 00A2                 B       J1A
001023  0336  9970 4C52         D       CMR     $R1,=X'4C52'    LR
001024  0338  0987                      BNE     >E
001025  0339  9B80 05B6                 LAB     $B1,<LREX
001026  033B  9FC0 016B                 STB     $B1,EXEC+1
001027  033D  0F81 00B9                 B       INCHN
001028  033F  9970 4C54         E       CMR     $R1,=X'4C54'    LT
001029  0341  098E                      BNE     >F
001030  0342  9B80 05E8                 LAB     $B1,<LTEX
001031  0344  9FC0 0162                 STB     $B1,EXEC+1
001032  0346  1C01                      LDV     $R1,=1          FORCE TO ONE PASS
001033  0347  9F40 0C97                 STR     $R1,PASSES
001034  0349  9870 4F00                 LDR     $R1,=X'4F00'
001035  034B  9F40 0C92                 STR     $R1,MESG
001036  034D  0F81 0089                 B       J1A
001037  034F  9970 5454         F       CMR     $R1,=X'5454'    TT
001038  0351  0997                      BNE     >G
001039  0352  1C01                      LDV     $R1,=1
001040  0353  9F40 0395                 STR     $R1,TTFLG
001041  0355  9B80 0755                 LAB     $B1,<TTEX
001042  0357  9FC0 014F                 STB     $B1,EXEC+1
001043  0359  1C00                      LDV     $R1,=X'0'
001044  035A  97C0 0359                 STH     $R1,PTLCTF
001045  035C  97C0 0356                 STH     $R1,PTLCTE
001046  035E  9870 3C05                 LDR     $R1,=X'3C05'
001047  0360  9F40 037D                 STR     $R1,PRINT
001048  0362  89C0 0A15                 CMZ     NPLFLG
001049  0364  0981 008A                 BNE     N1
001050  0366  0F81 0070                 B       J1A
001051  0368  9970 5254         G       CMR     $R1,=X'5254'    RT
001052  036A  09A0                      BNE     >H
001053  036B  1C01                      LDV     $R1,=1          FORCE TO ONE PASS
001054  036C  9F40 0C72                 STR     $R1,PASSES
001055  036E  9870 4F00                 LDR     $R1,=X'4F00'
001056  0370  9F40 0C6D                 STR     $R1,MESG
001057  0372  1C01                      LDV     $R1,=X'1'
001058  0373  9F40 12D2                 STR     $R1,INHRTC
001059  0375  97C0 033D                 STH     $R1,PTLCTE
001060  0377  9870 3C00                 LDR     $R1,=X'3C00'
001061  0379  9F40 0364                 STR     $R1,PRINT
001062  037B  89C0 09FA                 CMZ     SYNFLG
001063  037D  0900              I       BE      >+$A
001064  037E  9B80 0627                 LAB     $B1,<RTSYX
001065  0380  9FC0 0126                 STB     $B1,EXEC+1
001066  0382  0F81 0054                 B       J1A
001067  0384  9B80 07B8         $A      LAB     $B1,<RTEX
001068  0386  9FC0 0120                 STB     $B1,EXEC+1
001069  0388  0F81 004E                 B       J1A
001070  038A  9970 5443         H       CMR     $R1,=X'5443'    TC
001071  038C  098B                      BNE     >I
001072  038D  9B80 088D                 LAB     $B1,<TCEX
001073  038F  9FC0 0117                 STB     $B1,EXEC+1
001074  0391  9870 4F00                 LDR     $R1,=X'4F00'    FORCE TO OPER SPECIFIED MESG
001075  0393  9F40 0C4A                 STR     $R1,MESG
001076  0395  0F80 03F7                 B       <INCHN
001077                          *
001078  0397  9970 4144         I       CMR     $R1,=X'4144'    AD
001079  0399  0989                      BNE     >J
001080  039A  9B80 088F                 LAB     $B1,<ADEX
001081  039C  9FC0 010A                 STB     $B1,EXEC+1
001082  039E  1C01                      LDV     $R1,=1
001083  039F  9F40 0C3F                 STR     $R1,PASSES
001084  03A1  0FB2                      B       >J1
001085  03A2  9970 4C44         J       CMR     $R1,=X'4C44'    LD
001086  03A4  0989                      BNE     >K
001087  03A5  1C01                      LDV     $R1,=1
001088  03A6  9F40 0C38                 STR     $R1,PASSES
001089  03A8  9B80 08C7                 LAB     $B1,<LDEX
001090  03AA  9FC0 00FC                 STB     $B1,EXEC+1
001091  03AC  0FA7                      B       >J1
001092  03AD  9970 5054         K       CMR     $R1,=X'5054'    PT
001093  03AF  0981 0043                 BNE     L
001094  03B1  9B80 0827                 LAB     $B1,<PRTOUT     MODIFIED BY LI TEST
001095  03B3  9FC0 032D                 STB     $B1,PRINT1+1
001096  03B5  9870 0000                 LDR     $R1,=X'0'
001097  03B7  97C0 02FC                 STH     $R1,PTLCTF
001098  03B9  97C0 02F9                 STH     $R1,PTLCTE
001099  03BB  9870 3C05                 LDR     $R1,=X'3C05'
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001100  03BD  9F40 0320            STR   $R1,PRINT
001101  03BF  9F40 0329            STR   $R1,TTFLG          **TEMP**
001102  03C1  89C0 09B6            CMZ   NPLFLG
001103  03C3  0981 0025            BNE   NPT
001104  03C5  1C20            P     LDV   $R1,=X'20'
001105  03C6  9F00 03CF            STR   $R1,<PA+1
001106  03C8  9B80 066C            LAB   $B1,<PTEX
001107  03CA  9FC0 00DC            STB   $B1,EXEC+1
001108  03CC  9840 09A8        M   LDR   $R1,POLADR
001109  03CE  9A70 0020        PA  ADD   $R1,=X'20'
001110  03D0  97C0 02E0            STM   $R1,PTLCTA
001111  03D2  0F85                B     >J1A
001112  03D3  BB80 0F31        J1  LAB   $B3,<PHNOS         LOAD MESSAGE ADDRESS
001113  03D5  BFC0 14E2            STB   $B3,EM1+1          STORE IT IN PRINTOUT LOCATION
001114  03D7  9840 0C05        J1A LDR   $R1,CHAN
001115  03D9  9570 FF80            AND   $R1,=Z'FF80'
001116  03DB  9F40 0C00            STR   $R1,BCHAN
001117  03DD  9A70 0040            ADD   $R1,=X'40'
001118  03DF  0F01 FFFF            NOP   $
001119  03E1  89C0 019E            CMZ   LAFLG              CHECK IF LA TEST
001120  03E3  0900              T   BE    >+$A
001121  03E4  9570 FF7F            AND   $R1,=Z'FF7F'       TEST RUNS ONLY ON LINE 0
001122  03E6  9F40 0BF6        $A  STR   $R1,CHAN
001123  03E8  0F8F                B     >INCHN
001124                        *
001125                        *
001126                        * CHANNEL PROGRAM IS MODIFIED HERE FOR NON-POLLED TERMINAL TESTS
001127                        *
001128  03E9  9F40 0301        NPT STR   $R1,PINFLG
001129  03EB  9BC0 0280        N   LAB   $B1,PTEX
001130  03ED  9FC0 00B9            STB   $B1,EXEC+1
001131  03EF  1C60            N1  LDV   $R1,=X'60'
001132  03F0  9F00 03CF            STR   $R1,<PA+1
001133  03F2  0FDA                B     >M
001134  03F3  BB80 1779        L   LAB   $B3,<EMA
001135  03F5  0F81 0B7F            B     OOPS
001136                        *
001137                        *   TEST CHAN INPUT TO TRM
001138  03F7  9840 0BE5        INCHN LDR   $R1,CHAN
001139  03F9  9970 0400            CMR   $R1,=X'400'        CHECK LOWER LIMIT
001140  03FB  0204                BL    >INCHNA
001141  03FC  9970 FFF0            CMR   $R1,=Z'FFF0'       CHECK UPPER LIMIT
001142  03FE  0205                BL    >INMESG
001143  03FF  AB80 177C        INCHNA LAB  $B2,<EMB         LOAD MESSAGE ADDRESS
001144  0401  0F81 0B73            B     OOPS
001145                        *
001146                        *   CHECK MESSAGE-SPECIFIER INPUT TO TRM
001147  0403  9840 0BDA        INMESG LDR  $R1,MESG         MESSAGE MUST BE
001148  0405  9570 FF00            AND   $R1,=Z'FF00'
001149  0407  9F40 0BD6            STR   $R1,MESG
001150  0409  9970 4F00            CMR   $R1,=X'4F00'       O FOR OPERATOR MESSAGE
001151  040B  0908                BE    >INPSSO            OR
001152  040C  9970 4300            CMR   $R1,=X'4300'       C FOR CANNED MESSAGE
001153  040E  092A                BE    >INPSSC
001154  040F  AB80 1781            LAB   $B2,<EMC           OOPS-NEITHER
001155  0411  0F81 0B63            B     OOPS               GO TYPE ERROR MESSAGE
001156                        *
001157  0413  9B80 1049        INPSSO LAB  $B1,<OPMESP      LOAD MESSAGE ADDRESS
001158  0415  9FC0 00D7            STB   $B1,LCEXAM
001159  0417  9FC0 00C4            STB   $B1,LCEX1+2
001160  0419  9FC0 036A            STB   $B1,TTEXM
001161  041B  9FC0 149C            STB   $B1,EM1+1          PUT IN PRINTOUT LOCATION
001162  041D  9FC0 02AC            STB   $B1,MSGBUF
001163  041F  9840 0BD8            LDR   $R1,OPMRGB         RANGE IN BYTES
001164  0421  9F40 00BB            STR   $R1,LCEX1R
001165  0423  9F40 00C1            STR   $R1,LCEX2R
001166  0425  9F40 035F            STR   $R1,TTEXR
001167  0427  0F01 FFFF            NOP   $
001168  0429  9F40 02A1            STR   $R1,MSGRNG
001169  042B  9840 0BCD            LDR   $R1,OPMRNG         RANGE IN WORDS
001170  042D  9F40 00D7            STR   $R1,CRANG
001171  042F  9B80 0FF8            LAB   $B1,<OPMRGB
001172  0431  9FC0 147F            STB   $B1,EHAM1
001173  0433  9B80 0FF9            LAB   $B1,<OPMRNG
001174  0435  9FC0 1484            STB   $B1,EHAM2+1
001175  0437  0FA1                B     >INPSS
001176                        *
001177  0438  9B80 1002        INPSSC LAB  $B1,<CANNED      DITTO
001178  043A  9FC0 147D            STB   $B1,EM1+1
001179  043C  9FC0 00B0            STB   $B1,LCEXAM
001180  043E  9FC0 009D            STB   $B1,LCEX1+2
001181  0440  9FC0 0343            STB   $B1,TTEXM
001182  0442  9FC0 0287            STB   $B1,MSGBUF
001183  0444  9870 0084            LDR   $R1,=X'84'
001184  0446  9F40 0096            STR   $R1,LCEX1R
001185  0448  9F40 009C            STR   $R1,LCEX2R
001186  044A  9F40 033A            STR   $R1,TTEXR
001187  044C  9B80 0785            LAB   $B1,<TTEXR
001188  044E  9FC0 146B            STB   $B1,EHAM2+1
001189  0450  9FC0 1460            STB   $B1,EHAM1
001190  0452  9F40 0278            STR   $R1,MSGRNG
001191  0454  9870 0042            LDR   $R1,=X'42'
001192  0456  9F40 00AE            STR   $R1,CRANG
001193                        *
001194  0458  9840 0B86        INPSS LDR   $R1,PASSES
001195  045A  1A01 0004            BGZ   $R1,INERCD         GREATER THAN ZERO??
001196  045C  1C01                LDV   $R1,=1
001197  045D  9F40 11E7            STR   $R1,NOSTOP
001198                        *
001199                        *       DETERMINE WHAT TO DO WITH ERRORS
001200                        *
001201  045F  AB80 1784        INERCD LAB  $B2,<EME
001202  0461  9840 0B7E            LDR   $R1,ERCD
001203  0463  9570 4300            AND   $R1,=Z'4300'
001204  0465  9970 4300            CMR   $R1,=X'4300'       TEST FOR C
001205  0467  0980              T   BNE   >+$A
001206  0468  9F40 0B77            STR   $R1,ERCD
001207  046A  0F8C                B     >SEMA
001208  046B  9840 0B74        $A  LDR   $R1,ERCD
001209  046D  9970 4E43            CMR   $R1,=X'4E43'       TEST FOR NC
001210  046F  0980              T   BNE   >+$B
001211  0470  0F8B                B     >SEMC
001212  0471  9970 4643        $B  CMR   $R1,=X'4643'       TEST FOR FC
```

```
001213  0473  0981 0B01                BNE    OOPS
001214  0475  0F8F                     B      >SEHD
001215                          *
001216                          *      LIST EACH ERROR ON CONSOLE
001217                          *
001218  0476  BB80 18A7          SEHA   LAB    $B3,<EH2
001219  0478  BFC0 1427                STB    $B3,EH+1
001220  047A  0F92                     B      >BEGIN
001221                          *
001222                          *      SUPPRESS ERRORS
001223                          *
001224  047B  9870 0F80          SEHC   LDR    $R1,=Z'0F80'
001225  047D  9F40 1421                STR    $R1,EH
001226  047F  BB80 1A39                LAB    $B3,<EHB
001227  0481  BFC0 141E                STB    $B3,EH+1
001228  0483  0F89                     B      >BEGIN
001229                          *
001230                          *      SUPPRESS, THEN SUM ON CONSOLE
001231                          *
001232  0484  9870 0F80          SEHD   LDR    $R1,=Z'0F80'
001233  0486  9F40 1418                STR    $R1,EH
001234  0488  BB80 1A3B                LAB    $B3,<EHC
001235  048A  BFC0 1415                STB    $B3,EH+1
001236                          *
001237  048C  93C0 115C          BEGIN  LNJ    $B1,CONTS              SET UP THE CONTROL WORDS
001238  048E  89C0 0B50                CMZ    PASSES
001239  0490  0980              T     BNE    >+$A
001240  0491  1C01                     LDV    $R1,=1
001241  0492  9F40 11B2                STR    $R1,NOSTOP
001242  0494  A3C0 13BE          $A     LNJ    $B2,ECHOX
001243  0496  8740 0B4D          BEGINM CL     MESGT                  MESG=0 SAYS CANNED MESSAGE
001244  0498  8740 0B48                CL     PCNT
001245  049A  C3C0 0CA5                LNJ    $B4,CCBRST
001246  049C  9870 0030                LDR    $R1,=X'30'
001247  049E  93C0 09E4                LNJ    $B1,TMO
001248  04A0  0F01 FFFF                NOP    $
001249  04A2  9B80 04A6                LAB    $B1,<EXEC
001250  04A4  9FC0 05B0                STB    $B1,COUNTR+1
001251  04A6  0F80 04A6          EXEC   B      <EXEC                  ADDR IS SET DURING DECODE OF TEST FIELD
```

```
001252                                  /*******************
001253                                  *
001254                                  *  THIS EXECUTES TEST LC,LL,LM,AND LT ONCE ONLY
001255                                  *
001256                                  *  IT IS CLOSE TO AN AUTOMATIC MODE FOR TEST
001257                                  *
001258                                  ********************
001259  04A8  A3C0 0023                 AVEX    LNJ     $B2,LCEX
001260  04AA  A3C0 00D6                         LNJ     $B2,LLEX
001261  04AC  E3C0 1202                         LNJ     $B6,ESLPL
001262  04AE  A3C0 0057                         LNJ     $B2,LMEX
001263  04B0  BB80 0F43                 AVEX1   LAB     $B3,<REMLOP
001264  04B2  C3C0 134D                         LNJ     $B4,TYPEC
001265  04B4  8740 0B20                         CL      TEMP
001266  04B6  BB80 0F6E                         LAB     $B3,<LPREM
001267  04B8  C3C0 1356                         LNJ     $B4,TYPEQ
001268                                          CALL    ZV$1A,STAT,TEMP
        04BA  FBC0 0003
        04BC  D380 0000         X
        04BE  0F80
        04BF  0FE2
        04C0  0FD5
001269  04C1  9840 0B13                         LDR     $R1,TEMP
001270  04C3  9970 5900                         CMR     $R1,=X'5900'
001271  04C5  0904                             BE      >AVEX2
001272  04C6  0FEA                             B       >AVEX1
001273  04C7  A3C0 0120                 AVEX2   LNJ     $B2,LTEX
001274  04C9  93C0 0578                         LNJ     $B1,COUNT
001275  04CB  0FDD                              B       >AVEX
001276                                  *
```

```
001277                                  /*******************
001278                                  *
001279                                  *  LOOP A MESSAGE AT THE MLCP
001280                                  *
001281                                  *  NO ADAPTERS ARE NECESSARY FOR THIS TEST
001282                                  *
001283                                  *******************
001284  04CC  B3C0 09F4                 LCEX    LNJ     $B3,INID                GET THE ID
001285  04CE  D570 FF00                         AND     $R5,=Z'FF00'
001286  04D0  D970 2100                         CMR     $R5,=X'2100'            IS IT OK?
001287  04D2  0901 0005                         BE      LCEX1A
001288  04D4  E870 2100                         LDR     $R6,=X'2100'
001289  04D6  0F81 09BA                         B       IDERR
001290                                  *
001291  04D8  E3C0 10AD                 LCEX1A  LNJ     $B6,STMT
001292  04DA  93C0 1003                 LCEX1   LNJ     $B1,SDATA
001293  04DC  1002                              DC      <CANNED                 MESSAGE ADDRESS
001294  04DD  0000                      LCEX1R  RESV    1,0                     RANGE
001295  04DE  0400                              DC      X'400'
001296  04DF  0000                              DC      0
001297  04E0  C3C0 1364                         LNJ     $B4,CLRECD              CLEAR RECEIVE BUFFER
001298  04E2  93C0 1056                         LNJ     $B1,RDATA
001299  04E4  18EB                              DC      <RECD                   INPUT BUFFER
001300  04E5  0000                      LCEX2R  RESV    1,0                     RANGE
001301  04E6  0400                              DC      X'400'
001302  04E7  0000                              DC      0
001303                                  *
001304                                          CALL    ZV$C,CANNED,RECD,XZERO,CRANG,ERRAY
        04E8  FBC0 0003
        04EA  D380 0000         X
        04EC  0F80
        04ED  1002
        04EE  18EB
        04EF  1A38
        04F0  0505
        04F1  0502
001305          04ED            LCEXAM  EQU     $-5*$AF
001306  04F2  9840 0012                  LDR     $R1,CRANG               ALLOW DUMP OF WHOLE RECD BUFFER
001307  04F4  9F40 0B08                  STR     $R1,RCVRNG              IF CALLED FOR BY RMH?
001308  04F6  9840 000B                  LDR     $R1,ERRAY
001309  04F8  1901 0549                  BEZ     $R1,COUNT
001310  04FA  8AC0 0AEA                  INC     ERCT
001311  04FC  9B80 0FC1                  LAB     $B1,<EM4
001312  04FE  9FC0 155B                  STB     $B1,MWFB
001313  0500  0F81 13AE                  B       EHA
001314                                  *
001315  0502  0000              ERRAY   RESV    3,0
001316  0505  0000              CRANG   RESV    1,0                     RANGE FOR COMPARISON PURPOSES
```

```
001317                                  /
001318                                  ********************
001319                                  *
001320                                  *  LOOP A MESSAGE AT THE CLA
001321                                  *
001322                                  *  ADAPTERS MAY BE EITHER SYNC OR ASYNC.
001323                                  *
001324                                  ********************
001325  0506  B3C0 09BA                  LMEX    LNJ     $B3,INID                INPUT THE ID
001326  0508  DF40 113B                          STR     $R5,ACLAID
001327  050A  D970 2158                          CMK     $R5,=X'2158'
001328  050C  0901 0069                          BE      LMSYX
001329  050E  D970 2160                          CMK     $R5,=X'2160'
001330  0510  0901 0065                          BE      LMSYX
001331  0512  B3C0 00BA                          LNJ     $B5,IDCHK
001332                                  *
001333  0514  C3C0 0582                  LMAX    LNJ     $B4,MBR
001334  0516  9840 05A3                          LDR     $R1,LCIBRB
001335  0518  9F40 0036                          STR     $R1,LMLCT1
001336  051A  0F01 FFFF                          NOP     $
001337  051C  8751                              CL      =$R1
001338  051D  97C0 0033                          STH     $R1,LMLCT3              CLEAR SYNC  FLAG
001339  051F  9840 FFBD                  LMAX1   LDR     $R1,LCEX1R
001340  0521  9F40 001C                          STR     $R1,LMRNG
001341  0523  9B80 0539                          LAB     $B1,<LMAM
001342  0525  9FC0 052F                          STB     $B1,COUNTR+1
001343  0527  9840 07A5                          LDR     $R1,LR6CHA
001344  0529  9A70 0022                          ADD     $R1,=X'22'
001345  052B  9F40 0024                          STR     $R1,LMLCT2
001346  052D  0F01 FFFF                          NOP     $
001347  052F  E3C0 1056                  LMEX1   LNJ     $B6,SIMT
001348  0531  93C0 0FAC                          LNJ     $B1,SDATA
001349  0533  1205                              DC      <LMAA
001350  0534  007A                              DC      (AD11-LMAA)*2
001351  0535  0200                              DC      X'200'
001352  0536  0000                              DC      0
001353                                  *
001354  0537  C3C0 130D                          LNJ     $B4,CLRECD
001355  0539  C3C0 0C06                  LMAM    LNJ     $B4,CCBRST
001356  053B  C3C0 1071                          LNJ     $B4,MCCB
001357  053D  1002                      LMEXM   DC      <CANNED
001358  053E  0000                      LMRNG   RESV    1,0
001359  053F  0040                              DC      X'40'                   CONTROL WORD
001360                                  *
001361  0540  0F01 FFFF                          NOP     $
001362  0542  C3C0 1058                          LNJ     $B4,MCCBR
001363  0544  18EB                              DC      <RECD
001364  0545  0090                              DC      X'90'                   RANGE IN BYTES
001365  0546  0040                              DC      X'40'                   CONTROL WORD
001366                                  *
001367  0547  B3C0 0C6D                          LNJ     $B3,SETLCT
001368  0549  054B                              DC      <LMLCT
001369  054A  0F8A                              B       >LMEXB
001370                                  *
001371  054B  0226                      LMLCT   DC      X'226'
001372  054C  3C27                              DC      X'3C27'
001373  054D  0206                              DC      X'206'
001374  054E  0007                              DC      X'7'
001375  054F  0000                      LMLCT1  RESV    1,0                     BAUD RATE
001376  0550  0000                      LMLCT2  RESV    1,0                     CONFIG.
001377  0551  001C                      LMLCT3  DC      X'001C'                 LCT 28 SYNC FLAG
001378  0552  C714                              DC      Z'C714'                 LCT 20
001379  0553  0000                              DC      0
001380                                  *
001381  0554  9840 0A88                  LMEXB   LDR     $R1,CHAN
001382  0556  0F01 FFFF                          NOP     $
001383  0558  C3C0 0C73                          LNJ     $B4,CHCTR
001384  055A  0F80              T               B       >+$A
001385  055B  4000                              DC      Z'4000'
001386  055C  E3C0 1016                  $A      LNJ     $B6,SRCV
001387  055E  C3C0 0EE2                          LNJ     $B4,TESTSR
001388  0560  0F81 023F                          B       TTEXE
001389  0562  7C04                      LMEND   LDV     $R7,=X'04'
001390  0563  C3C0 02D7                          LNJ     $B4,CNTRCV
001391  0565  88D5                              DEC     =$R5                    ADJUST COUNT FOR EOM
001392  0566  D940 FF76                          CMR     $R5,LCEX1R
001393  0568  0981 00B0                          BNE     ERR
001394                                          CALL    ZV$C,CANNED,RECD,XZERO,CRANG,ERRAY
        056A  FBC0 0003
        056C  D380 0000          X
        056E  0F80
        056F  1002
        0570  18EB
        0571  1A38
        0572  0505
        0573  0502
001395  0574  0F81 00A0                          B       TTEXD2
001396                                  *
001397  0576  9870 1634                  LMSYX   LDR     $R1,=X'1634'            LCT 52 SYNC CHAR.
001398  0578  9F40 FFD6                          STR     $R1,LMLCT1
001399  057A  9870 0001                          LDR     $R1,=X'1'
001400  057C  97C0 FFD4                          STH     $R1,LMLCT3              LCT 28 SYNC FLAG
001401  057E  0F81 FFA0                          B       LMAX1
001402                                  *
001403  0580  0000                      LAFLG   DC      0
001404                                  *
```

```
001405                                  /
001406                                  ********************
001407                                  *
001408                                  *  LOOP A MESSAGE AT THE LOCAL MODEM
001409                                  *
001410                                  *  PROGRAM WILL CHECK FOR LOOP CAPABILITY AND IF SUPPORTED
001411                                  *
001412                                  ********************
001413  0581  B3C0 093F                 LLEX    LNJ     $B3,INID            INPUT THE ID
001414  0583  0F81 0014                         B       NOTIMP              PRINT "NOT IMPLEMENTED" MESSAGE
001415  0585  D970 2100                         CMR     $R5,=X'2100'        SYNC WITH EXT CLOCK
001416  0587  0901 000D                         BE      LLEXA
001417  0589  D970 2101                         CMR     $R5,=X'2101'        SYNC WITH EXT CLOCK
001418  058B  0901 000A                         BE      LLEXB
001419  058D  D970 2102                         CMR     $R5,=X'2102'        ASYNC
001420  058F  0901 0007                         BE      LLEXC
001421  0591  E870 2100                         LDR     $R6,=X'2100'
001422  0593  0F81 08FD                         B       IDERR
001423                                  *
001424                                  *  SYNC WITH EXT CLOCK
001425                                  *
001426  0595  0000                      LLEXA   HLT
001427                                  *
001428                                  *  SYNC WITH DIR CONNECT
001429                                  *
001430  0596  0000                      LLEXB   HLT
001431                                  *
001432                                  *  ASYNC
001433                                  *
001434  0597  0000                      LLEXC   HLT
001435                                  *
001436  0598  BB80 059E                 NOTIMP  LAB     $B3,<NOTAVL         PRINT "NOT AVAILABLE" MESSAGE
001437  059A  C3C0 1265                         LNJ     $B4,TYPEC
001438  059C  0F81 FB73                         B       NEXT
001439  059E  5468 6973 2063            NOTAVL  TEXT    'THIS COMMAND IS NOT AVAILABLE FOR THIS RELEASE.$'
        05A1  6F6D 6D61 6E64
              2069 7320 6E6F
              7420 6176 6169
              6C61 626C 6520
              666F 7220 5468
              6973 2072 656C
              6561 7365 2E24
```

```
001440                                  /
001441                                  ********************
001442                                  *
001443                                  *  LOOP A MESSAGE AT THE REMOTE MODEM
001444                                  *
001445                                  *  PROGRAM WILL CHECK FOR LOOP CAPABILITY AND IF SUPPORTED
001446                                  *
001447                                  ********************
001448  05B6  B3C0 090A                 LREX    LNJ     $B3,INID            GET THE ID
001449  05B8  0F81 FFDF                         B       NOTIMP              PRINT "NOT IMPLEMENTED" MESSAGE
001450  05BA  D970 2100                         CMR     $R5,=X'2100'        SYNC WITH EXT CLOCK
001451  05BC  0901 000D                         BE      LREXA
001452  05BE  D970 2101                         CMR     $R5,=X'2101'        SYNC WITH DIR CONNECT
001453  05C0  0901 000A                         BE      LREXB
001454  05C2  D970 2102                         CMR     $R5,=X'2102'        ASYNC
001455  05C4  0901 0007                         BE      LREXC
001456  05C6  E870 2100                         LDR     $R6,=X'2100'
001457  05C8  0F81 08C8                         B       IDERR
001458                                  *
001459                                  *  SYNC WITH EXT CLOCK
001460                                  *
001461  05CA  0000                      LREXA   HLT
001462                                  *
001463                                  *    SYNC WITH DIRECT CONNECT
001464                                  *
001465  05CB  0000                      LREXB   HLT
001466                                  *
001467                                  *    ASYNC
001468                                  *
001469  05CC  0000                      LREXC   HLT
001470                                  *
001471  05CD  D970 2108                 IDCHK   CMR     $R5,=X'2108'
001472  05CF  0900                  T           BE      >+$A
001473  05D0  D970 2100                         CMR     $R5,=X'2100'        MIL188 ASYNC
001474  05D2  097D                  I           BE      >+$A
001475  05D3  D970 2110                         CMR     $R5,=X'2110'
001476  05D5  097D                  I           BE      >+$A
001477  05D6  D970 2118                         CMR     $R5,=X'2118'
001478  05D8  097D                  I           BE      >+$A
001479  05D9  E870 2108                         LDR     $R6,=X'2108'
001480  05DB  0F81 08B5                         B       IDERR
001481  05DD  8385                  $A          JMP     $B5
001482  05DE  9870 2158             IDCHK1      LDR     $R1,=X'2158'
001483  05E0  D970 2158                         CMR     $R5,=X'2158'
001484  05E2  0900                  T           BE      >+$A
001485  05E3  D970 2160                         CMR     $R5,=X'2160'
001486  05E5  0981 08AB                         BNE     IDERR
001487  05E7  8385                  $A          JMP     $B5
```

```
001488                                  /
001489                                  ********************
001490                                  *
001491                                  *  TRANSMIT A MESSAGE TO A TERMINAL.
001492                                  *
001493                                  *  OPERATOR KEYS IN SAME MESSAGE AT TERMINAL
001494                                  *
001495                                  *  RECEIVED MESSAGE IS CHECKED AGAINST TRANSMITTED MESSAGE
001496                                  *
001497                                  ********************
001498  05E8  B3C0 08D8                 LTEX    LNJ     $B3,INID                INPUT THE ID
001499  05EA  DF40 1059                         STR     $R5,ACLAID
001500  05EC  89C0 0789                         CMZ     SYNFLG
001501  05EE  0981 0038                         BNE     RTSYX
001502  05F0  D3C0 FFDC                         LNJ     $B5,IDCHK
001503                                  *
001504                                  *
001505  05F2  C3C0 04A4                 LTEXA   LNJ     $B4,MBR                 TRANSMIT BUFFER
001506  05F4  9B80 0602                 LTEXS   LAB     $B1,<LTEXB
001507  05F6  9FC0 01C0                         STB     $B1,TTEXD+1
001508  05F8  9B80 1049                         LAB     $B1,<OPMESP
001509  05FA  9FC0 0189                         STB     $B1,TTEXM
001510  05FC  9840 00EA                         LDR     $R1,LISRNG
001511  05FE  9F40 0186                         STR     $R1,TTEXR
001512  0600  0F81 0179                         B       TTEXAC
001513                                  *
001514                                  *  MESSAGE NOW ON TERMINAL. OPERATOR ECHOES MESSAGE
001515                                  *  AS HE SEES IT.
001516                                  *
001517          0602                    LTEXB   EQU     $
001518  0602  0F81 01CB                 LTEXC   B       RTEXAA
001519                                  *
001520                                  *    OPERATOR HAS ECHOED THE MESSAGE
001521                                  *     COMPARE XMIT TO RECD
001522                                  *
001523  0604                            LTEXD   RESV    0
001524  0604  7C0D                             LDV     $R7,=X'0D'
001525  0605  C3C0 0235                 LTEXD1  LNJ     $B4,CNTRCV              COUNT NUM OF RECEIVED BYTES
001526  0607  5E01                             ADV     $R5,1                   ADJUST RANGE COMPARE FOR XMITED CR-LF
001527  0608  D940 FED4                         CMR     $R5,LCEX1R              CHECK RCV RANGE VS. XMIT RANGE
001528  060A  098F                             BNE     >ERR
001529                                          CALL    ZV$C,OPMESG,RECD,XZERO,RRANGE,ERRAY
        060B  FBC0 0003
        060D  D380 0000         X
        060F  0F80
        0610  104A
        0611  18EB
        0612  1A38
        0613  0FFA
        0614  0502
001530  0615  9840 FEEC                 LTEXD2  LDR     $R1,ERRAY
001531  0617  1901 042A                         BEZ     $R1,COUNT
001532  0619  8AC0 09CB                 ERR     INC     ERCT
001533  061B  9B80 0FC1                         LAB     $B1,<EM4
001534  061D  9FC0 143C                         STB     $B1,MWFB
001535  061F  B3C0 142C                         LNJ     $B3,SUEM                SET UP ERROR MESSAGE
001536  0621  BB80 1A3D                         LAB     $B3,<PRTBF
001537  0623  C3C0 11DC                         LNJ     $B4,TYPEC
001538  0625  0F81 1289                         B       EHA                     TYPE ERROR AND EXIT
001539                                  *
```

```
001540                                  /
001541                                  ************************
001542                                  *
001543                                  *  RECEIVE A MESSAGE FROM SYNCHRONOUS TERMINAL
001544                                  *
001545                                  ************************
001546  0627  B3C0 0899                  RTSYX  LNJ     $B3,INID
001547  0629  DF40 101A                         STR     $R5,ACLAID
001548  062B  D3C0 FFB2                         LNJ     $B5,IDCHK1
001549  062D  E840 09AD                         LDR     $R6,TEST
001550  062F  E970 4C54                         CMR     $R6,=A'LT'
001551  0631  0901 0025                         BE      LTSYX
001552  0633  9B80 0827                         LAB     $B1,<PRTOUT
001553  0635  9FC0 00AB                         STB     $B1,PRINTI+1
001554  0637  9B80 1045                         LAB     $B1,<GOMSG
001555  0639  9FC0 0090                         STB     $B1,MSGBUF
001556  063B  9870 000A                         LDR     $R1,=10
001557  063D  9F40 008D                         STR     $R1,MSGRNG
001558  063F  9F40 00A8                 RTSYY   STR     $R1,RTSFLG
001559  0641  89C0 0735                         CMZ     POLFLG
001560  0643  0900                     I       BE      >+$A
001561                                  *
001562                                  * FOR POLL OPERATION
001563                                  *
001564  0644  9870 0001                         LDR     $R1,=1
001565  0646  97C0 006D                         STH     $R1,PTLCTF
001566  0648  9F40 00A1                         STR     $R1,RTPFLG              **TEMP MODEM**
001567  064A  0F81 0035                         B       TTEXS2
001568                                  *
001569                                  * FOR NON-POLL OPERATION
001570                                  *
001571  064C  9840 0728                 $A      LDR     $R1,POLADR
001572  064E  1E40                              ADV     $R1,=X'40'
001573  064F  97C0 0061                         STH     $R1,PTLCTA
001574  0651  9870 0000                         LDR     $R1,=0
001575  0653  97C0 0060                         STH     $R1,PTLCTF
001576  0655  0F81 0037                         B       PTEXS
```

```
001577                                  /
001578                                  **********************************************
001579                                  **********LT TEST FOR SYNCHRONOUS TERMINAL********
001580                                  *  TRANSMIT A MESSAGE TO TERMINAL
001581                                  *  OPERATOR KEYS IN SAME MESSAGE AT TERMINAL
001582                                  *  RECEIVED MESSAGE COMPARED AGAINST XMITTED MESSAGE
001583                                  *
001584                                  **********************************************
001585  0657  9B80 0605                 LTSYX   LAB     $B1,<LTEXD1
001586  0659  9FC0 0087                         STB     $B1,PRINT1+1
001587  065B  9B80 1049                         LAB     $B1,<OPMESP
001588  065D  9FC0 006C                         STB     $B1,MSGBUF
001589  065F  9840 0087                         LDR     $R1,LTSRNG
001590  0661  9F40 0069                         STR     $R1,MSGRNG
001591  0663  1C01                              LDV     $R1,=X'1'
001592  0664  9F40 0083                         STR     $R1,RTSFLG              TO NULL EOT IN CNTRCV
001593  0666  97C0 004C                         STH     $R1,PILCTE              RT FLAG
001594  0668  9F40 0FDD                         STR     $R1,INHRTC
001595  066A  0F81 FFD4                         B       RTSYY
```

```
001596                                  /
001597                                  **********************
001598                                  *
001599                                  *  TRANSMIT A POLL/SELECT MESSAGE TO TERMINAL
001600                                  *
001601                                  **********************
001602  066C  B3C0 0854                PTEX    LNJ     $B3,INID
001603  066E  DF40 0FD5                        STR     $R5,ACLAID
001604  0670  D3C0 FF6D                        LNJ     $B5,IDCHK1
001605  0672  9BC0 002D                        LAB     $B1,PTEXSY
001606  0674  9FC0 001E                        STB     $B1,PTEXSA+1
001607  0676  0F81 0016                        B       PTEXS
001608                                  *
001609                                  * POLL/SELECT/TRANSMIT DATA SUBROUTINE
001610                                  *
001611          0678                    TTEXS1  EQU     $
001612  0678  9B80 0680                        LAB     $B1,<TTEXS2
001613  067A  9FC0 0018                        STB     $B1,PTEXSA+1            **ADR MODIFICATION TEMP***
001614  067C  9B80 0827                        LAB     $B1,<PRTOUT
001615  067E  9FC0 0062                        STB     $B1,PRINT1+1
001616  0680  C380 1140                TTEXS2  LNJ     $B4,<CCBRST
001617  0682  0F01 FFFF                        NOP     $
001618  0684  E840 06F0                        LDR     $R6,POLADR
001619  0686  6E40                             ADV     $R6,=X'40'
001620  0687  E7C0 0029                        STH     $R6,PTLCTA
001621  0689  E670 0060                        XOR     $R6,=X'60'
001622  068B  E7C0 0026                        STH     $R6,PTLCTC
001623  068D  8F40 005E                PTEXS   SAVE    SAVE6,=Z'0008'          SAVE $B4
        068F  0008
001624  0690  C3C0 11B4                        LNJ     $B4,CLRECD              CLEAR OUT INPUT BUFFER
001625  0692  9B80 06A0                PTEXSA  LAB     $B1,<PTEXSY
001626  0694  9FC0 03C0                        STB     $B1,COUNTR+1
001627  0696  E3C0 0EDC                        LNJ     $B6,SRCV
001628  0698  0F01 FFFF                        NOP     $
001629  069A  93C0 0E43                        LNJ     $B1,SDATA
001630  069C  1394                             DC      <RTS                    CPU ADDRESS
001631  069D  0156                             DC      (CCP2-RTS)*2            RANGE
001632  069E  0200                             DC      X'200'                  RAM ADDRESS
001633  069F  0000                             DC      0
001634  06A0  E3C0 0ED2                PTEXSY  LNJ     $B6,SRCV
001635  06A2  C3C0 0EF8                        LNJ     $B4,MCCBR
001636  06A4  18EB                             DC      <RECD                   ADDRESS
001637  06A5  0296                             DC      662                     BUFFER RANGE IN BYTES
001638  06A6  0040                             DC      X'40'                   CCB CONTROL
001639  06A7  B3C0 0B0D                        LNJ     $B3,SETLCT
001640  06A9  06AC                             DC      <PTLCT
001641  06AA  0F80 06BC                        B       <POTD
001642  06AC  0426                     PTLCT   DC      X'426'                  LCT 38
001643  06AD  0027                             DC      X'27'                   LCT39 CCP TRANS. PTRS
001644  06AE  0206                             DC      X'206'                  LCT 6
001645  06AF  0007                             DC      X'7'                    LCT 7 CCPRECV PTRS
001646  06B0  601D                     PTLCTB  DC      X'601D'                 LCT 29 DISPLAY ADDRESS
001647  06B1  001C                     PTLCTA  DC      X'001C'                 LCT 28 POL?SEL ADDR REPLACES '00'
001648  06B2  203D                     PTLCTC  DC      X'203D'                 LCT 61 POLLADDR FOR TT TEST
001649  06B3  0018                     PTLCTE  DC      X'0018'                 LCT 24 RT FLAG
001650  06B4  001A                     PTLCTF  DC      X'001A'                 RT POLLFLG
001651  06B5  0105                             DC      X'0105'                 PAUSE DISABLE
001652  06B6  0125                             DC      X'0125'                 PAUSE DISABLE
001653  06B7  003A                             DC      X'003A'                 CLEAR LCT 58
001654  06B8  3A37                             DC      Z'3A37'                 PUT ADDRESS(LCT 58) IN LCT 55 FOR INPUT LCT
001655  06B9  003F                             DC      X'003F'                 LCT 63 MODEM FLG
001656  06BA  0000                             DC      0
001657  06BB  0000                             DC      0
001658  06BC  89C0 002E                POTD    CMZ     PTNFLG
001659  06BE  0981 0017                        BNE     PTEXD
001660  06C0  E3C0 0EC5                        LNJ     $B6,STMT
001661  06C2  93C0 0E1B                        LNJ     $B1,SDATA
001662  06C4  1335                             DC      <TTS
001663  06C5  00BE                             DC      (RTS-TTS)*2
001664  06C6  0400                             DC      X'400'
001665  06C7  0000                             DC      0
001666  06C8  C3C0 0EE4                DUMMY   LNJ     $B4,MCCB
001667  06CA  1002                     MSGBUF  DC      <CANNED
001668  06CB  0000                     MSGRNG  DC      0
001669  06CC  0040                             DC      X'40'                   OUTPUT CCB CONTROL
001670  06CD  C3C0 0B08                        LNJ     $B4,CHCT
001671  06CF  0F80              T              B       >+$A
001672  06D0  4000                             DC      Z'4000'
001673  06D1  C3C0 0D79                $A      LNJ     $B4,TESTS
001674  06D3  89C0 0016                        CMZ     RTPFLG
001675  06D5  0980              T              BNE     >+$A
001676  06D6  C3C0 0AF5                PTEXD   LNJ     $B4,CHCTR
001677  06D8  0FFD              T              B       >+$A
001678  06D9  4000                             DC      X'4000'
001679  06DA  E380 1573                $A      LNJ     $B6,<SRCV
001680  06DC  C380 1441                        LNJ     $B4,<TESTSR
001681  06DE  3C05                     PRINT   LDV     $R3,=5
001682  06DF  7C04                             LDV     $R7,=X'04'              EOT
001683  06E0  0F80 0827                PRINT1  B       <PRTOUT
001684  06E2  8F80 06EC                        RSTR    <SAVE6,=Z'0080'         $B4
        06E4  0080
001685  06E5  0F81 035C                        B       COUNT
001686  06E7  0020                     LTSRNG  DC      32
001687  06E8  0000                     RTSFLG  DC      0
001688  06E9  0000                     TTFLG   DC      0
001689  06EA  0000                     RTPFLG  DC      0
001690  06EB  0000                     PTNFLG  DC      0
001691  06EC  0000                     SAVE6   RESV    $AF,0
001692                                  *
001693  06ED  C3C0 0A85                TERSP   LNJ     $B4,ILCT                GET LCT 58 WHICH HAS STA CHAR.
001694  06EF  9B80 06FF                        LAB     $B1,<RESP               GO TO THE RESPONSE TABLE
001695  06F1  8753                             CL      =$R3
001696  06F2  987D                     $A      LDR     $R1,$B1.+$R3            GET RESPONSE
001697  06F3  9955                             CMR     $R1,=$R5                COMPARE WITH RECD ONE
001698  06F4  0900              T              BE      >+$B
001699  06F5  9970 0000                        CMR     $R1,=0
001700  06F7  09FB                             BNE     >-$A
001701  06F8  9B80 0707                $B      LAB     $B1,<MSGTB
001702  06FA  BCB1                             LDB     $B3,$B1.$R3
001703  06FB  C3C0 1104                        LNJ     $B4,TYPEC               PRINT IT
001704  06FD  0F81 0344                        B       COUNT
001705                                  *
001706                                  * RESPONSE TABLE
```

```
001707  06FF  0600                RESP    DC      X'0600'         ACK
001708  0700  1500                        DC      X'1500'         NAK
001709  0701  6D00                        DC      X'6D00'         NOT AVAILABLE
001710  0702  6E00                        DC      X'6E00'         PAGE OVERFLOW
001711  0703  6F00                        DC      X'6F00'         BUSY
001712  0704  0400                        DC      X'0400'         QUIESCENT
001713  0705  0000                        DC      X'0'
001714  0706  0000                        DC      X'0'
001715                            *
001716                            * MESSEGE TABLE
001717  0707  0707                MSGTB   DC      <MSGTB
001718  0708  070F                        DC      <ACK
001719  0709  0716                        DC      <NAK
001720  070A  071D                        DC      <NA
001721  070B  0729                        DC      <PGOF
001722  070C  0734                        DC      <BUSY
001723  070D  073C                        DC      <QST
001724  070E  074A                        DC      <NORESP
001725                            *
001726  070F  4143 4B20 5245      ACK     TEXT    'ACK RECEIVED$'
        0712  4345 4956 4544
              2400
001727  0716  4E41 4B20 5245      NAK     TEXT    'NAK RECEIVED$'
        0719  4345 4956 4544
              2400
001728  071D  4445 5649 4345      NA      TEXT    'DEVICE IS NOT AVAILABLE$'
        0720  2049 5320 4E4F
              5420 4156 4149
              4C41 424C 4524
001729  0729  5041 4745 204F      PGOF    TEXT    'PAGE OVERFLOW OCCURED$'
        072C  5645 5246 4C4F
              5720 4F43 4355
              5245 4424
001730  0734  4445 5649 4345      BUSY    TEXT    'DEVICE IS BUSY$'
        0737  2049 5320 4255
              5359 2400
001731  073C  5155 4945 5343      QST     TEXT    'QUIESCENT MESSAGE RECEIVED$'
        073F  454E 5420 4D45
              5353 4147 4520
              5245 4345 4956
              4544 2400
001732  074A  4E4F 2052 4553      NORESP  TEXT    'NO RESPONSE RECEIVED$'
        074D  504F 4E53 4520
              5245 4345 4956
              4544 2400
```

```
001733                                  /
001734                                  ********************
001735                                  *
001736                                  *  TRANSMIT A CHARACTER STRING TO A TERMINAL
001737                                  *
001738                                  *  PROGRAM WILL ASK FOR STRING TO TRANSMIT
001739                                  *
001740                                  ********************
001741  0755  B3C0 076B                  TTEX    LNJ     $B3,INID                INPUT THE ID
001742  0757  DF40 0EEC                          STR     $R5,ACLAID
001743  0759  89C0 061C                          CMZ     SYNFLG
001744  075B  0900              I               BE      >+$A
001745  075C  D3C0 FE81                          LNJ     $B5,IDCHK1
001746  075E  0F81 FF19                          B       TTEXS1
001747  0760  D3C0 FE6C                  $A      LNJ     $B5,IDCHK
001748                                  *
001749  0762  C3C0 0334                  TTEXA   LNJ     $B4,MBR
001750  0764  9B80 0A42                          LAB     $B1,<COUNT
001751  0766  9FC0 0050                          STB     $B1,TTEXD+1
001752  0768  9840 FD74                          LDR     $R1,LCEX1R
001753  076A  9F40 001A                          STR     $R1,TTEXR
001754  076C  9B80 0782                          LAB     $B1,<ITEM
001755  076E  9FC0 02E6                          STB     $B1,COUNTR+1
001756                                  *
001757                                  *
001758  0770  9840 0349                          LDR     $R1,LCTBRB              SET UP  THE BAUD RATE
001759  0772  9F40 0020                          STR     $R1,TTLCTA
001760  0774  9840 0558                          LDR     $R1,LR6CFA
001761  0776  9A70 0022                          ADD     $R1,=X'22'
001762  0778  9F40 001B                          STR     $R1,TTLCTB
001763                                  *
001764        077A                      TTEXAC  EQU     $
001765  077A  E3C0 0E0B                  TTOD    LNJ     $B6,STMT
001766  077C  93C0 0D61                          LNJ     $B1,SDATA
001767  077E  12E4                              DC      <TTA
001768  077F  0032                              DC      (RIA-TTA)*2
001769  0780  0400                              DC      X'400'
001770  0781  0000                              DC      0
001771  0782  C3C0 0E2A                  TTEM    LNJ     $B4,MCCB
001772  0784  1002                      TTEXM   DC      <CANNED
001773  0785  0000                      TTEXR   RESV    1,0
001774  0786  0040                              DC      X'40'
001775  0787  B3C0 0A2D                          LNJ     $B3,SETLCT              SET UP THELCT
001776  0789  078B                              DC      <TTLCT
001777  078A  0F8C                              B       >TTEXB1
001778                                  *
001779  078B  0426                      TTLCT   DC      X'426'                  RAM ADDRESS
001780  078C  0406                              DC      X'406'
001781  078D  0125                              DC      X'125'
001782  078E  0007                              DC      X'7'
001783  078F  0C27                              DC      X'0C27'                 XMIT CCP POINTER(LOC TTA0)
001784  0790  0105                              DC      X'105'
001785  0791  0009                              DC      X'009'                  LCT 9
001786  0792  000A                              DC      X'00A'                  LCT 10
001787  0793  0000                      TTLCTA  RESV    1,0                     BAUD RATE
001788  0794  0000                      TTLCTB  RESV    1,0                     CHAR.CONFIG.
001789  0795  0000                              DC      0                       END OF TABLE
001790                                  *
001791                                  * TO LOAD LR4 WITH LINE SPEED BY RECEIVE CHANNEL
001792                                  *
001793                                  *
001794  0796  B840 0846                  TTEXB1  LDR     $R3,CHAN
001795  0798  0F01 FFFF                          NOP     $
001796  079A  C3C0 0A31                          LNJ     $B4,CHCTR
001797  079C  0F82                              B       >TTEXC
001798  079D  4000                              DC      Z'4000'
001799  079E  C3C0 0CAC                  TTEXC   LNJ     $B4,TESTS
001800                                  *
001801        07A0                      TTEXE   EQU     $
001802  07A0  9840 028A                          LDR     $R1,LFLAG
001803  07A2  9570 4000                          AND     $R1,=X'4000'
001804  07A4  1901 0005                          BEZ     $R1,LMCHK
001805  07A6  BB80 0FC7                          LAB     $B3,<EM5
001806  07A8  C3C0 1057                          LNJ     $B4,TYPEC
001807                                  *
001808  07AA  89C0 FDD5                  LMCHK   CMZ     LAFLG                   CHECK IF TEST IS LA
001809  07AC  0981 FDB5                          BNE     LMEND
001810                                  *****
001811                                  *
001812                                  * TIMEOUT TO ALLOW CR/LF TIME FOR PRINTER DEVICES SUCH AS SARA
001813                                  *
001814                                  *****
001815  07AE  89C0 05CA                  FLGCHK  CMZ     PTRFLG
001816  07B0  0901 0005                          BE      TTEXD
001817  07B2  9870 02F0                          LDR     $R1,=X'02F0'
001818  07B4  93C0 06CE                          LNJ     $B1,IMO
001819  07B6  0F80 0A42                  TTEXD   B       <COUNT
001820                                  *
001821                                  *
```

```
001822                                  /
001823                                  ********************
001824                                  *
001825                                  *  RECEIVE A CHARACTER STRING FROM A TERMINAL
001826                                  *
001827                                  *  CONSOLE WILL DISPLAY STRING RECEIVED
001828                                  *
001829                                  ********************
001830  07B8  B3C0 0708                 RTEX    LNJ     $B3,INID            INPUT THE ID
001831  07BA  DF40 0E89                         STR     $R5,ACLAID
001832  07BC  B3C0 FE10                         LNJ     $B5,IDCHK
001833                                  *
001834  07BE  C3C0 02D8                 RTEXA   LNJ     $B4,MBR
001835  07C0  9B80 07CE                         LAB     $B1,<RTEXAA
001836  07C2  9FC0 FFF4                         STB     $B1,TTEXD+1
001837  07C4  9B80 1045                         LAB     $B1,<GOMSG
001838  07C6  9FC0 FFBD                         STB     $B1,TTEXM
001839  07C8  9870 000A                         LDR     $R1,=10
001840  07CA  9F40 FFBA                         STR     $R1,TTEXR
001841  07CC  0F81 FFAD                         B       TTEXAC
001842                                  *
001843  07CE  0F01 FFFF                 RTEXAA  NOP     $
001844  07D0  C3C0 096F                         LNJ     $B4,CCBRST
001845  07D2  0F01 FFFF                         NOP     $
001846  07D4  0F81 0009                         B       SKIP
001847  07D6  C3C0 106E                         LNJ     $B4,CLRECD          CLEAR OUT INPUT BUFFER
001848  07D8  C3C0 09B7                         LNJ     $B4,GENITZ
001849  07DA  9870 0030                         LDR     $R1,='30'
001850  07DC  93C0 06A6                         LNJ     $B1,IMO
001851  07DE  E3C0 0D94                 SKIP    LNJ     $B6,SRCV
001852  07E0  93C0 0CFD                         LNJ     $B1,SDATA
001853  07E2  12FD                              DC      <RTA
001854  07E3  005A                              DC      (TTO-RTA)*2
001855  07E4  0200                              DC      X'200'
001856  07E5  0000                              DC      0
001857                                  *
001858  07E6  C3C0 0DB4                         LNJ     $B4,MCCBR
001859  07E8  18EB                              DC      <RECD
001860  07E9  0282                      BUFFER  RESV    1,642               RANGE IS MODIFIED IF ASYNC TERMINAL
001861  07EA  0040                              DC      X'40'
001862                                  *
001863                                  *
001864  07EB  9840 02CE                         LDR     $R1,LCTBRB
001865  07ED  9F40 0020                         STR     $R1,RTLCTA
001866  07EF  9840 04DD                         LDR     $R1,LR6CFA
001867  07F1  9A70 0022                         ADD     $R1,='22'
001868  07F3  9F40 001B                         STR     $R1,RTLCTB
001869  07F5  9840 04D7                         LDR     $R1,LR6CFA
001870  07F7  1E02                              ADV     $R1,=2
001871  07F8  9F40 0017                         STR     $R1,RTLCTC
001872  07FA  9840 02BF                         LDR     $R1,LCTBRB
001873  07FC  9570 FFDF                         AND     $R1,='FFDF'
001874  07FE  9F40 0012                         STR     $R1,RTLCTD
001875  0800  0F01 FFFF                         NOP     $
001876  0802  0F01 FFFF                         NOP     $
001877  0804  B3C0 09A6                         LNJ     $B3,LCTRCV
001878  0806  0808                              DC      <RTLCT
001879  0807  0F8C                              B       >RTEXB
001880                                  *
001881  0808  0226                      RTLCT   DC      X'226'
001882  0809  0206                              DC      X'206'
001883  080A  0125                              DC      X'125'
001884  080B  0007                              DC      X'07'
001885  080C  3C27                              DC      X'3C27'
001886  080D  0105                              DC      X'105'
001887  080E  0000                      RTLCTA  DC      0
001888  080F  0000                      RTLCTB  DC      0
001889  0810  0000                      RTLCTC  DC      0
001890  0811  0000                      RTLCTD  DC      0
001891  0812  0000                              DC      0
001892  0813  B840 07C9                 RTEXB   LDR     $R3,CHAN
001893  0815  0F01 FFFF                         NOP     $
001894  0817  C3C0 09B4                         LNJ     $B4,CHCTR
001895  0819  0F82                              B       >RTEXD
001896  081A  4000                              DC      Z'4000'
001897  081B  BF40 0E2A                 RTEXD   STR     $R3,INHRTC          DISABLE RTC
001898  081D  C3C0 0C23                         LNJ     $B4,TESTSR
001899  081F  E840 07BB                 RTEXE   LDR     $R6,TEST
001900  0821  E970 4C54                         CMR     $R6,=A'LT'
001901  0823  0901 FDE0                         BE      LIEXD
001902                                  *
001903                                  *
001904  0825  8753                              CL      =$R3
001905  0826  7C0D                              LDV     $R7,=X'0D'          ALLOWS SEARCH FOR C/R
001906  0827  C3C0 0013                 PRTOUT  LNJ     $B4,CNTRCV          COUNT RECEIVED BYTES
001907  0829  89C0 FEBF                         CMZ     TTFLG
001908  082B  0981 FEC1                         BNE     TERSP               IF TT GET TER. RESPONSE
001909  082D  C3C0 1009                         LNJ     $B4,HEXASC          SET UP RECD PRINT LINE
001910  082F  0FFC                              DC      <RCVRNB
001911  0830  18E1                              DC      <INCNT
001912  0831  BB80 18DE                         LAB     $B3,<IN
001913  0833  C3C0 0FCC                         LNJ     $B4,TYPEC           "RECD: X CHARACTERS " TO CONSOLE
001914  0835  BBB0 18EB                         LAB     $B3,<RECD,$R3
001915  0837  93C0 0F8D                         LNJ     $B1,CONPRT          PRINT RCVD DATA EVEN ON A TTY-R
001916  0839  0F80 0A42                 RTEXC   B       <COUNT
001917                                  *
001918                                  *
001919                                  * COUNT NUMBER OF BYTES IN RECEIVE BUFFER (UP TO FIRST '0D' BYTE)
001920                                  * SETS RANGE IN WORDS (R1 AND RCVRNG) AND BYTES (R5 AND RCVRNB)
001921                                  *
001922                                  *
001923  083B  BB80 18EB                 CNTRCV  LAB     $B3,<RECD
001924  083D  8751                              CL      =$R1                WORD COUNTER
001925  083E  8755                              CL      =$R5                BYTE COUNTER
001926  083F  9970 014C                 DSPB    CMR     $R1,=332            TOTAL RANGE
001927  0841  0901 0046                         BE      DSPH1
001928  0843  A813                              LDR     $R2,$B3,$R1
001929  0844  A570 FF00                         AND     $R2,=Z'FF00'
001930  0846  7008                              SUL     $R7,8
001931  0847  A957                              CMR     $R2,=$R7            CHECK FOR CR OR EOT IN LEFT HALF WORD
001932  0848  0933                              BE      >DSPG
001933  0849  8AD5                              INC     =$R5
001934  084A  89C0 FD35                         CMZ     LAFLG
```

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001935  084C  0981 000B                    BNE   DSPC
001936  084E  A970 2400                    CMR   $R2,=Z'2400'        CHECK FOR $ SIGN
001937  0850  0900              T          BE    >+$A
001938  0851  A970 5C00                    CMR   $R2,=Z'5C00'        CHECK FOR \ SIGN
001939  0853  0985              $A         BNE   >DSPC
001940  0854  A813                         LDR   $R2,$B3.$R1
001941  0855  AA70 8000                    ADD   $R2,=Z'8000'        CONCEAL $ FROM LIBRARY PRINT ROUTINE
001942  0857  AF13                         STR   $R2,$B3.$R1
001943                          *
001944  0858  A813              DSPC       LDR   $R2,$B3.$R1
001945  0859  A570 00FF                    AND   $R2,=X'FF'          CHECK FOR $ AND/OR CR IN RIGHT HALF
001946  085B  89C0 FD24                    CMZ   LAFLG
001947  085D  0980              T          BNE   >+$C
001948  085E  A970 0024                    CMR   $R2,=X'24'
001949  0860  0914                         BE    >DSPE
001950  0861  A970 005C                    CMR   $R2,=X'5C'          CHECK  FOR \ SIGN
001951  0863  0911                         BE    >DSPE
001952  0864  7048              $C         SOR   $R7,8
001953  0865  A957                         CMR   $R2,=$R7
001954  0866  0992                         BNE   >DSPD
001955  0867  89C0 FD18                    CMZ   LAFLG
001956  0869  0980              T          BNE   >+$B
001957  086A  A970 000D                    CMR   $R2,=X'0D'
001958  086C  097D              T          BE    >+$B
001959  086D  89C0 FE7A                    CMZ   RTSFLG
001960  086F  0917                         BE    >DSPH
001961  0870  A813              $B         LDR   $R2,$B3.$R1
001962  0871  A570 FF00                    AND   $R2,=Z'FF00'        **TEMP**
001963  0873  0F80              T          B     >+$A
001964  0874  A813              DSPE       LDR   $R2,$B3.$R1
001965  0875  AA70 0080                    ADD   $R2,=X'80'          CONCEAL $ FROM LIBRARY AND \ FROM MDC
001966  0877  AF13                         STR   $R2,$B3.$R1
001967  0878  8AD1              DSPD       INC   =$R1
001968  0879  8AD5                         INC   =$R5
001969  087A  0FC5                         B     >DSPB               LOOK AT NEXT WORD
001970  087B  89C0 FD04          DSPG       CMZ   LAFLG
001971  087D  0980              T          BNE   >+$B
001972  087E  A970 0D00                    CMR   $R2,=X'0D00'
001973  0880  097D              T          BE    >+$B
001974  0881  89C0 FE66                    CMZ   RTSFLG
001975  0883  0903                         BE    >DSPH
001976  0884  8752              $B         CL    =$R2                **TEMP**
001977  0885  AF13              $A         STR   $R2,$B3.$R1         **TEMP**
001978  0886  8AD1              DSPH       INC   =$R1
001979  0887  8AD5                         INC   =$R5                PRINT RECD DATA, 80 BYTES R5 PER LINE=$R5
001980  0888  DF40 0773          DSPH1      STR   $R5,RCVRNB          RECEIVE RANGE IN BYTES
001981  088A  9F40 0772                    STR   $R1,RCVRNG          SAVE RCV RANGE IN WORDS
001982  088C  8384                         JMP   $B4
001983                          *
```

```
001984                                  /
001985                                  ********************
001986                                  *
001987                                  *  TRANSMIT OPERATOR SPECIFIED MESSAGE AND WAIT FOR
001988                                  *
001989                                  *  VIP CONTROLLER TO RESPOND. VERIFY TRANSMITTED
001990                                  *
001991                                  *  MESSAGE AGAINST RECEIVED MESSAGE
001992                                  *
001993                                  ********************
001994          088D                    TCEX    EQU     $                       EXECUTE THE TEST
001995  088D    0F81 FD0A               *       B       NOTIMP                  PRINT "NOT IMPLEMENTED" MESSAGE
001996                                  *
001997                                  *
```

```
001998                                  /*******************
001999                                  *  AUTO-DIAL TEST. THIS TEST WILL DIAL ANY TELEPHONE
002000                                  *  NUMBER. NO LOOP CAPABILITY
002001                                  *******************
002002  088F  E3C0 0650        ADEX    LNJ     $B6,ITNAA           GET A PHONE NUMBER
002003  0891  B3C0 062F                LNJ     $B3,INID            INPUT THE ID
002004  0893  D970 2120                CMR     $R5,=X'2120'        IS IT CORRECT?
002005  0895  0905                     BE      >ADEX1              YES
002006  0896  E870 2120                LDR     $R6,=X'2120'
002007  0898  0F81 05F8                B       IDERR               GO TYPE THE ERROR
002008                                  *
002009  089A  D3C0 0E75        ADEX1   LNJ     $B5,ACUP            IS THERE AN ACU ON THIS CHANNEL?
002010  089C  D3C0 0E1A                LNJ     $B5,DAA             DETERMINE ASSOCIATED ADAPTER
002011  089E  93C0 0C3F                LNJ     $B1,SDATA           SEND DATA
002012  08A0  1242                     DC      <AD11               ADDRESS OF CHANNEL PROGRAM
002013  08A1  0050                     DC      (LDCP-AD11)*2       RANGE
002014  08A2  0400                     DC      X'400'              RAM ADDRESS
002015  08A3  0000                     DC      0                   EVEN CPU ADDRESS
002016                                  *
002017  08A4  C3C0 0D08                LNJ     $B4,MCCB
002018  08A6  0FE8                     DC      <DIALNO
002019  08A7  0000        DIALRG  RESV    1,0                 RANGE FOR AUTO-DIAL
002020  08A8  0069                     DC      X'69'               CCB CONTROL WORD
002021  08A9  8754                     CL      =$R4
002022                                  *
002023  08AA  C840 0732                LDR     $R4,CHAN
002024  08AC  4E09                     ADV     $R4,=X'09'
002025  08AD  81C0 073A        $A      IOLD    DIALNO,=$R4,DIALRG
        08AF  0054
        08B0  0040 FFF6
002026  08B2  07FB                     BIOF    >-$A
002027  08B3  0F01 0009                NOP     ADEX2
002028  08B5  9870 00C8                LDR     $R1,=200
002029  08B7  93C0 05CB                LNJ     $B1,IMO
002030  08B9  B3C0 08FB                LNJ     $B3,SETLCT
002031  08BB  08BD                     DC      <ADEX2
002032  08BC  0F89                     B       >ADEX3
002033                                  *
002034  08BD  0426        ADEX2   DC      X'426'
002035  08BE  0406                     DC      X'406'
002036  08BF  0007                     DC      X'7'
002037  08C0  0027                     DC      X'27'
002038  08C1  0105                     DC      X'105'
002039  08C2  0125                     DC      X'125'
002040  08C3  0000                     DC      0
002041  08C4  0000                     DC      0
002042                                  *
002043  08C5  0F81 082A        ADEX3   B       GO                  **********
002044                                  *
002045                                  *
```

```
002046                                          /
002047                                          ********************
002048                                          *
002049                                          *  AUTO CALL UNIT ADAPTER TEST. AN ACU IS NOT NECESSARY
002050                                          *
002051                                          *  FOR THIS TEST. PHONE NUMBER LOOPS AT THE ACUA
002052                                          *
002053                                          ********************
002054  08C7  B3C0 05F9                         LDEX    LNJ     $B3,INID                GET THE ID
002055  08C9  D970 2120                                 CMR     $R5,=X'2120'            OK
002056  08CB  0905                                     BE      >LDEX1
002057  08CC  E870 2120                                 LDR     $R6,=X'2120'
002058  08CE  0F81 05C2                                 B       IDERR
002059                                          *
002060  08D0  D3C0 0DE6                         LDEX1   LNJ     $B5,DAA                 DETERMINE ASSOCIATED ADAPTER
002061  08D2  93C0 0C0B                                 LNJ     $B1,SDATA               SEND THE CHANNEL PROGRAM
002062  08D4  126A                                      DC      <LDCP                   CP ADDRESS
002063  08D5  0030                                      DC      (ADAA-LDCP)*2           RANGE
002064  08D6  0400                                      DC      X'400'                  RAM ADDRESS
002065  08D7  0000                                      DC      0                       EVEN CPU ADDRESS
002066                                          *
002067  08D8  C3C0 0CD4                                 LNJ     $B4,MCCB
002068  08DA  0FE8                                      DC      <DIALNO
002069  08DB  0000                              LDRNG   RESV    1,0                     RANGE
002070  08DC  0069                                      DC      X'69'                   CONTROL WORD
002071  08DD  8754                                      CL      =$R4
002072                                          *
002073  08DE  C840 06FE                                 LDR     $R4,CHAN
002074  08E0  4E09                                      ADV     $R4,=X'09'
002075  08E1  81C0 0706                         $A      IOLD    DIALNO,=$R4,DIALRG
        08E3  0054
        08E4  0040 FFC2
002076  08E6  07FB                                      BIOF    >-$A
002077  08E7  0F01 FFDF                                 NOP     LDEX                    PLACE FOR A PATCH
002078  08E9  9870 00C8                                 LDR     $R1,=200
002079  08EB  93C0 0597                                 LNJ     $B1,TMO
002080                                          *
002081  08ED  B3C0 08C7                                 LNJ     $B3,SETLCT
002082  08EF  08F1                                      DC      <LDEX2
002083  08F0  0F88                                      B       >LDEX3
002084                                          *
002085  08F1  0426                              LDEX2   DC      X'426'
002086  08F2  0406                                      DC      X'406'
002087  08F3  0007                                      DC      X'7'
002088  08F4  0027                                      DC      X'27'
002089  08F5  0105                                      DC      X'105'
002090  08F6  0125                                      DC      X'125'
002091  08F7  0000                                      DC      0
002092                                          *
002093                                          *
002094  08F8  C3C0 0CB4                         LDEX3   LNJ     $B4,MCCB
002095  08FA  18EB                                      DC      <RECD                   ADDRESS TO PUT DATA
002096  08FB  0000                              LDEX3R  RESV    1,0                     RANGE
002097  08FC  0069                                      DC      X'69'                   CONTROL WORD
002098  08FD  8754                                      CL      =$R4
002099                                          *
002100  08FE  C840 06DE                                 LDR     $R4,CHAN
002101  0900  C270 0040                                 SUB     $R4,=X'40'
002102  0902  4E09                                      ADV     $R4,=X'09'
002103  0903  81C0 0FE7                         $B      IOLD    RECD,=$R4,DIALRG
        0905  0054
        0906  0040 FFA0
002104  0908  07FB                                      BIOF    >-$B
002105  0909  0F01 FFBD                                 NOP     LDEX                    PLACE FOR A PATCH
002106                                          *
002107  090B  9870 00C8                                 LDR     $R1,=200
002108  090D  93C0 0575                                 LNJ     $B1,TMO
002109  090F  B840 06CD                                 LDR     $R3,CHAN
002110  0911  B270 0040                                 SUB     $R3,=X'40'
002111  0913  C3C0 08C2                                 LNJ     $B4,CHCT
002112  0915  0F82                                      B       >LDEX4
002113  0916  4000                                      DC      Z'4000'
002114  0917  C3C0 0B33                         LDEX4   LNJ     $B4,TESTS
002115  0919  0F01 0128                         LDEX5   NOP     COUNT
002116  091B  9840 010F                                 LDR     $R1,LFLAG
002117  091D  9570 4000                                 AND     $R1,=X'4000'
002118  091F  1901 000D                                 BEZ     $R1,LDEXA
002119  0921  BB80 0A37                                 LAB     $B3,<IWF
002120  0923  C3C0 0EDC                                 LNJ     $B4,TYPEC
002121  0925  C3C0 086A                                 LNJ     $B4,GENITZ
002122  0927  9870 00C8                                 LDR     $R1,=200
002123  0929  93C0 0559                                 LNJ     $B1,TMO
002124  092B  0F81 F7E4                                 B       NEXT
002125                                          *
002126                                          *
002127                                          *   EXTERNAL LOOP (USING PLUG) AT ACUA
002128                                          *
002129  092D  C3C0 0862                         LDEXA   LNJ     $B4,GENITZ
002130  092F  BB80 0939                                 LAB     $B3,<LDEXA2             TYPE MESG
002131  0931  C3C0 0ECE                                 LNJ     $B4,TYPEC               INSTALL PLUG
002132  0933  9870 F0F0                                 LDR     $R1,=Z'F0F0'
002133  0935  9F40 00F5                                 STR     $R1,LFLAG
002134  0937  0F81 0034                                 B       LDEXA1
002135  0939  696E 7374 616C           LDEXA2  TEXT    'INSTALL CONNECTOR WITH SWITCH ON(C/R)$'
        093C  6C20 636F 6E6E
              6563 746F 7220
              7769 7468 2073
              7769 7463 6820
              6F6E 2863 2F72
              2924
002136  094C  7075 7420 7377           LDEX2B  TEXT    'PUT SWITCH OFF(C/R)$'
        094F  6974 6368 206F
              6666 2863 2F72
              2924
002137  0956  7265 6D6F 7665           LDEXAY  TEXT    'REMOVE CABLE LOOP CONNECTOR (C/R WHEN DONE)$'
        0959  2063 6162 6C65
              206C 6F6F 7020
              636F 6E6E 6563
              746F 7220 2863
              2F72 2077 6865
              6E20 646F 6E65
              2924
002138  096C  1C02                             LDEXA1  LDV     $R1,=2
```

```
002139  096D  A3C0 05DB            LNJ   $B2,IASC
002140                        *
002141  096F  BB80 17B3            LAB   $B3,<CRLF          ACKNOWLEDGE THE C/R
002142  0971  C3C0 0E7F            LNJ   $B4,TYPE           WITH A CR/LF
002143  0973  93C0 0B6A            LNJ   $B1,SDATA          SEND THE CHANNEL PROGRAM
002144  0975  1284                DC    <LDEY              ADDRESS OF CP
002145  0976  008C                DC    (LDEZ-LDEY)*2      RANGE
002146  0977  0400                DC    X'400'             RAM ADDRESS
002147  0978  0000                DC    0                  EVEN CPU ADDRESS
002148                        *
002149  0979  C3C0 0C33            LNJ   $B4,MCCB
002150  097B  0FE8                DC    <DIALNO
002151  097C  0000          LDEXAR RESV 1,0                RANGE
002152  097D  0069                DC    X'69'
002153  097E  8754                CL    =$R4
002154                        *
002155  097F  C840 065D            LDR   $R4,CHAN
002156  0981  4E09                ADV   $R4,=X'09'
002157  0982  81C0 0665      $A    IOLD  DIALNO,=$R4,DIALRG
        0984  0054
        0985  0040 FF21
002158  0987  07FB                BIOF  >-$A
002159  0988  0F01 FFA4            NOP   LDEXA
002160  098A  9870 00C8            LDR   $R1,=200
002161  098C  93C0 04F6            LNJ   $B1,TMO
002162                        *
002163  098E  B3C0 0826            LNJ   $B3,SETLCT
002164  0990  08BD                DC    <ADEX2
002165  0991  B840 064B            LDR   $R3,CHAN
002166  0993  0F01 0098            NOP   EWF
002167  0995  0F01 0096            NOP   EWF
002168  0997  C3C0 0C15            LNJ   $B4,MCCB
002169  0999  0A2B                DC    <LFLAG
002170  099A  0001                DC    X'1'
002171  099B  0069                DC    X'69'
002172  099C  8751                CL    =$R1
002173  099D  1C01                LDV   $R1,=1
002174  099E  C840 063E            LDR   $R4,CHAN-
002175  09A0  C270 0040            SUB   $R4,=X'40'
002176  09A2  4E09                ADV   $R4,=X'09'
002177  09A3  81C0 0087      $B    IOLD  LFLAG,=$R4,=$R1
        09A5  0054
        09A6  0051
002178  09A7  07FC                BIOF  >-$B
002179  09A8  0F01 0099            NOP   COUNT
002180                        *
002181  09AA  B840 0632            LDR   $R3,CHAN
002182  09AC  B270 0040            SUB   $R3,=X'40'
002183  09AE  C3C0 0827            LNJ   $B4,CHCT
002184  09B0  0F82                B     >LDEX6
002185  09B1  4000                DC    Z'4000'
002186  09B2  C3C0 0A98      LDEX6 LNJ   $B4,TESTS
002187  09B4  0F01 008D      LDEX7 NOP   COUNT
002188                        *
002189  09B6  9840 0074            LDR   $R1,LFLAG
002190  09B8  9570 4000            AND   $R1,=X'4000'
002191  09BA  1901 0007            BEZ   $R1,LDEXCR
002192  09BC  BB80 0A2C            LAB   $B3,<EWF
002193  09BE  C3C0 0E41            LNJ   $B4,TYPEC
002194  09C0  0F81 F74F            B     NEXT
002195  09C2  C3C0 07CD      LDEXCR LNJ  $B4,GENITZ
002196  09C4  9870 00C8            LDR   $R1,=200
002197  09C6  93C0 04BC            LNJ   $B1,TMO
002198  09C8  BB80 094C            LAB   $B3,<LDEXZB
002199  09CA  C3C0 0E35            LNJ   $B4,TYPEC
002200  09CC  9870 F0F0            LDR   $R1,=Z'F0F0'
002201  09CE  9F40 005C            STR   $R1,LFLAG
002202  09D0  1C02                LDV   $R1,=2
002203  09D1  A3C0 0577            LNJ   $B2,IASC
002204  09D3  BB80 17B3            LAB   $B3,<CRLF
002205  09D5  C3C0 0E1B            LNJ   $B4,TYPE
002206  09D7  93C0 0B06            LNJ   $B1,SDATA
002207  09D9  12CA                DC    <LDEZ
002208  09DA  02EA                DC    (CCP2-LDEZ)*2
002209  09DB  0400                DC    X'400'
002210  09DC  0000                DC    0
002211  09DD  C3C0 0BCF            LNJ   $B4,MCCB
002212  09DF  0FE8                DC    <DIALNO
002213  09E0  0000          LDEXBR RESV 1,0
002214  09E1  0069                DC    X'69'
002215  09E2  8754                CL    =$R4
002216  09E3  C840 05F9            LDR   $R4,CHAN
002217  09E5  4E09                ADV   $R4,=X'09'
002218  09E6  81C0 0601      $E    IOLD  DIALNO,=$R4,DIALRG
        09E8  0054
        09E9  0040 FEBD
002219  09EB  07FB                BIOF  >-$E
002220  09EC  0F01 0055            NOP   COUNT
002221  09EE  9870 00C8            LDR   $R1,=200
002222  09F0  93C0 0492            LNJ   $B1,TMO
002223  09F2  B3C0 07C2            LNJ   $B3,SETLCT
002224  09F4  08BD                DC    <ADEX2
002225  09F5  B840 05E7            LDR   $R3,CHAN
002226  09F7  0F01 004A            NOP   COUNT
002227  09F9  0F01 0048            NOP   COUNT
002228  09FB  C3C0 0BB1            LNJ   $B4,MCCB
002229  09FD  0A2B                DC    <LFLAG
002230  09FE  0001                DC    X'1'
002231  09FF  0069                DC    X'69'
002232  0A00  1C01                LDV   $R1,=1
002233  0A01  C840 05DB            LDR   $R4,CHAN
002234  0A03  C270 0040            SUB   $R4,=X'40'
002235  0A05  4E09                ADV   $R4,=X'09'
002236  0A06  81C0 0024      $A    IOLD  LFLAG,=$R4,=$R1
        0A08  0054
        0A09  0051
002237  0A0A  07FC                BIOF  >-$A
002238  0A0B  0F01 0036            NOP   COUNT
002239  0A0D  B840 05CF            LDR   $R3,CHAN
002240  0A0F  B270 0040            SUB   $R3,=X'40'
002241  0A11  C3C0 07C4            LNJ   $B4,CHCT
002242  0A13  0F82                B     >LDEX8
002243  0A14  4000                DC    Z'4000'
```

```
002244  0A15  C3C0 0A35          LDEX8  LNJ    $B4,TESTS
002245  0A17  0F01 002A          LDEX9  NOP    COUNT
002246  0A19  9840 0011                 LDR    $R1,LFLAG
002247  0A1B  9570 4000                 AND    $R1,=X'4000'
002248  0A1D  1901 0024                 BEZ    $R1,COUNT
002249  0A1F  BB80 0A2C                 LAB    $B3,<EWF
002250  0A21  C3C0 0DDE                 LNJ    $B4,TYPEC
002251  0A23  C3C0 076C                 LNJ    $B4,GENITZ
002252  0A25  9870 00C8                 LDR    $R1,=200
002253  0A27  93C0 045B                 LNJ    $B1,TMO
002254  0A29  0F81 F6E6                 B      NEXT
002255                          *
002256  0A2B  0000              LFLAG  RESV   1,0
002257  0A2C  6578 7465 726E    EWF    TEXT   'EXTERNAL WRAP FAILED$'
        0A2F  616C 2077 7261
              7020 6661 696C
              6564 2400
002258  0A37  696E 7465 726E    IWF    TEXT   'INTERNAL WRAP FAILED$'
        0A3A  616C 2077 7261
              7020 6661 696C
              6564 2400
002259                          *
```

```
002260                                  /
002261                                  *
002262  0A42  8AC0 059E                COUNT  INC    PCNT                    BUMP COUNTER
002263  0A44  89C0 0C00                       CMZ    NOSTOP
002264  0A46  098A                            BNE    >COUNTS
002265  0A47  9840 0599                       LDR    $R1,PCNT
002266  0A49  A840 0595                       LDR    $R2,PASSES
002267  0A4B  9952                            CMR    $R1,=$R2
002268  0A4C  0901 0013                       BE     COUNTA
002269  0A4E  1D01                            CMV    $R1,=1
002270  0A4F  0965                            BNE    >COUNTR
002271  0A50  9840 058D                COUNTS LDR    $R1,MESG
002272  0A52  9970 4300                       CMR    $R1,=X'4300'
002273  0A54  0F60 04A6                COUNTR B      <EXEC
002274  0A56  9840 0584                       LDR    $R1,TEST
002275  0A58  9970 4C4D                       CMR    $R1,=X'4C4D'            LM?
002276  0A5A  0901 04E2                       BE     REMLP
002277  0A5C  9970 4C52                       CMR    $R1,=X'4C52'            LR?
002278  0A5E  0901 04DE                       BE     REMLP
002279  0A60  9840 057A                COUNTA LDR    $R1,TEST
002280  0A62  9970 4C44                       CMR    $R1,=A'LD'
002281  0A64  0901 0029                       BE     COUNTC
002282  0A66  BB80 0FCD                CONTA1 LAB    $B3,<TCOMP              HERE IF PASS CTR EXH
002283  0A68  C3C0 0D97                       LNJ    $B4,TYPEC
002284  0A6A  BB80 177C                       LAB    $B3,<EMB
002285  0A6C  C3C0 0D84                       LNJ    $B4,TYPE
002286  0A6E  A3C0 0CD9                       LNJ    $B2,PRBCHA
002287  0A70  BB80 17B3                COUNTB LAB    $B3,<CRLF
002288  0A72  C3C0 0D7E                       LNJ    $B4,TYPE
002289                                        CALL   ZV$IH.ZV$TD,PCNT
        0A74  FBC0 0003
        0A76  D380 0000         X
        0A78  0F80
        0A79  0FE1
002290  0A7A  BB80 178C                       LAB    $B3,<PSS
002291  0A7C  C3C0 0D74                       LNJ    $B4,TYPE
002292                                        CALL   ZV$IH.ZV$TD,ERCT
        0A7E  FBC0 0003
        0A80  D380 0000         X
        0A82  0F80
        0A83  0FE5
002293  0A84  BB80 17B5                       LAB    $B3,<ERS
002294  0A86  C3C0 0D6A                       LNJ    $B4,TYPE
002295  0A88  BB80 17B3                       LAB    $B3,<CRLF
002296  0A8A  C3C0 0D66                       LNJ    $B4,TYPE
002297  0A8C  0F81 F683                       B      NEXT
002298  0A8E  BB80 0956                COUNTC LAB    $B3,<LDEXAY
002299  0A90  C3C0 0D6F                       LNJ    $B4,TYPEC
002300  0A92  1C02                            LDV    $R1,=2
002301  0A93  A3C0 04B5                       LNJ    $B2,IASC
002302  0A95  0F81 FFD0                       B      CONTA1
002303                                  *
002304                                  *
002305                                  *       SUBROUTINES
002306                                  *
002307                                  *
002308                                  *
002309                                  *       MANIPULATION OF BAUD RATE FOR LCT TABLE
002310                                  *
002311  0A97  8F40 0B6C                MBR    SAVE   SAV1,=Z'FFFF'
        0A99  FFFF
002312  0A9A  9840 0BA9                       LDR    $R1,ACLA1D              LOAD ID FOUND
002313  0A9C  9970 2118                       CMR    $R1,=Z'2118'
002314  0A9E  0907                            BE     >MBRA
002315  0A9F  9970 2110                       CMR    $R1,=Z'2110'
002316  0AA1  0904                            BE     >MBRA
002317                                  *
002318                                  *     HERE IF OLD ADAPTER
002319                                  *
002320  0AA2  AB80 0AE2                       LAB    $B2,<XROLD              LOAD TABLE ADDRESS
002321  0AA4  0F83                            B      >MBRB
002322                                  *
002323                                  *     HERE IF NEW ADAPTER
002324                                  *
002325  0AA5  AB80 0ACF                MBRA   LAB    $B2,<XRNEW
002326                                  *
002327  0AA7  B840 02EA                MBRB   LDR    $R3,BDRATE              GET BAUD RATE
002328  0AA9  8751                            CL     =$R1                    INDEX REGISTER
002329  0AAA  9B80 0ABB                       LAB    $B1,<XRALL              LOAD TABLE ADDRESS
002330  0AAC  A811                     MBRC   LDR    $R2,$B1,$R1             LOAD A BAUD RATE
002331  0AAD  A953                            CMR    $R2,=$R3                MATCH?
002332  0AAE  0903                            BE     >MBRD                   YES
002333  0AAF  17FD                            BINC   $R1,>MBRC               NO-GET ANOTHER
002334  0AB0  0000                            HLT
002335                                  *
002336  0AB1  C812                     MBRD   LDR    $R4,$B2,$R1             LOAD CORRECT VALUE
002337  0AB2  4008                            SOL    $R4,8
002338  0AB3  4E34                            ADV    $R4,=52
002339  0AB4  CF40 0005                       STR    $R4,LCTBRB
002340  0AB6  8FC0 0B4D                       RSTR   SAV1,=Z'FFFF'
        0AB8  FFFF
002341  0AB9  8384                            JMP    $B4                     RETURN TO CALLER
002342                                  *
002343  0ABA  0000                     LCTBRB RESV   1,0                     LCT TABLE BAUD RATES FOR LR4
002344                                  *
002345                                  *
002346                                  *       XREF TABLE FOR BAUD RATE VS. BITS TO GO IN LR4
002347                                  *
002348  0ABB  0032                     XRALL  DC     50
002349  0ABC  004B                            DC     75
002350  0ABD  006E                            DC     110
002351  0ABE  0086                            DC     134
002352  0ABF  0096                            DC     150
002353  0AC0  00C8                            DC     200
002354  0AC1  012C                            DC     300
002355  0AC2  0258                            DC     600
002356  0AC3  0384                            DC     900
002357  0AC4  041A                            DC     1050
002358  0AC5  04B0                            DC     1200
002359  0AC6  0708                            DC     1800
002360  0AC7  07D0                            DC     2000
002361  0AC8  0960                            DC     2400
002362  0AC9  0E10                            DC     3600
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002363  0ACA  12C0                        DC      4800
002364  0ACB  1C20                        DC      7200
002365  0ACC  2580                        DC      9600
002366  0ACD  4B00                        DC      19200
002367  0ACE  0000                        DC      0                    END OF TABLE
002368                                *
002369                                *       XREF TABLE FOR NEW ACLA
002370                                *
002371  0ACF  0000                    XRNEW DC      0
002372  0AD0  0001                        DC      1
002373  0AD1  0002                        DC      2
002374  0AD2  0003                        DC      3
002375  0AD3  0004                        DC      4
002376  0AD4  0005                        DC      5
002377  0AD5  0006                        DC      6
002378  0AD6  0007                        DC      7
002379  0AD7  FFFF                        DC      Z'FFFF'
002380  0AD8  0008                        DC      8
002381  0AD9  0009                        DC      9
002382  0ADA  000A                        DC      10
002383  0ADB  000B                        DC      11
002384  0ADC  000C                        DC      12
002385  0ADD  FFFF                        DC      Z'FFFF'
002386  0ADE  000D                        DC      13
002387  0ADF  FFFF                        DC      Z'FFFF'
002388  0AE0  000E                        DC      14
002389  0AE1  000F                        DC      15
002390                                *
002391                                *       XREF TABLE FOR OLD ACLA
002392                                *
002393  0AE2  0001                    XROLD DC      1
002394  0AE3  0002                        DC      2
002395  0AE4  0003                        DC      3
002396  0AE5  0004                        DC      4
002397  0AE6  0005                        DC      5
002398  0AE7  FFFF                        DC      Z'FFFF'
002399  0AE8  0006                        DC      6
002400  0AE9  0007                        DC      7
002401  0AEA  0008                        DC      8
002402  0AEB  FFFF                        DC      Z'FFFF'
002403  0AEC  0009                        DC      9
002404  0AED  000A                        DC      10
002405  0AEE  FFFF                        DC      Z'FFFF'
002406  0AEF  000B                        DC      11
002407  0AF0  000C                        DC      12
002408  0AF1  000D                        DC      13
002409  0AF2  000E                        DC      14
002410  0AF3  000F                        DC      15
002411                                *
002412                                *
002413                                *
002414                                * DISPLAY CURRENT PARAMETERE3S
002415                                *
002416  0AF4  BB80 0AF9                DPARM1 LAB     $B3,<ONCE
002417  0AF6  C3C0 0D09                       LNJ     $B4,TYPEC
002418  0AF8  0F8B                            B       >DPARM
002419  0AF9  4445 4641 554C          ONCE   TEXT    'DEFAULT PARAMETERS:$'
        0AFC  5420 5041 5241
              4D45 5445 5253
              3A24
002420  0B03  BB80 0D86                DPARM  LAB     $B3,<IMNTYP
002421  0B05  C3C0 0CFA                       LNJ     $B4,TYPEC
002422  0B07  BB80 0D82                       LAB     $B3,<IMNASC
002423  0B09  C3C0 0CE7                       LNJ     $B4,TYPE
002424  0B0B  89C0 026A                       CMZ     SYNFLG
002425  0B0D  0980              T             BNE     >+$A
002426  0B0E  BB80 0D8C                       LAB     $B3,<BDRTQ
002427  0B10  C3C0 0CEF                       LNJ     $B4,TYPEC
002428                                        CALL    ZV$TH.ZV$TD,BDRATE
        0B12  FBC0 0003
        0B14  D380 0000         X
        0B16  0F80
        0B17  0D92
002429  0B18  BB80 0B60                       LAB     $B3,<CHASIZ
002430  0B1A  C3C0 0CE5                       LNJ     $B4,TYPEC
002431                                        CALL    ZV$TH.ZV$TD,CHSIZE
        0B1C  FBC0 0003
        0B1E  D380 0000         X
        0B20  0F80
        0B21  0B66
002432  0B22  BB80 0B67                       LAB     $B3,<STBITS
002433  0B24  C3C0 0CDB                       LNJ     $B4,TYPEC
002434                                        CALL    ZV$TH.ZV$TD,SBITS
        0B26  FBC0 0003
        0B28  D380 0000         X
        0B2A  0F80
        0B2B  0B6D
002435  0B2C  BB80 0B6E                       LAB     $B3,<PRTY
002436  0B2E  C3C0 0CD1                       LNJ     $B4,TYPEC
002437  0B30  BB80 0B74                       LAB     $B3,<APARIT
002438  0B32  C3C0 0CBE                       LNJ     $B4,TYPE
002439  0B34  C3C0 0CB5                       LNJ     $B4,NEWLIN
002440  0B36  C3C0 FF60                       LNJ     $B4,MBR
002441  0B38  0F81 F5D7                       B       NEXT
002442                                *
002443  0B3A  BB80 0B78                $A     LAB     $B3,<ADDRS
002444  0B3C  C3C0 0CC3                       LNJ     $B4,TYPEC
002445                                        CALL    ZV$TH.ZV$TD,BDRATE
        0B3E  FBC0 0003
        0B40  D380 0000         X
        0B42  0F80
        0B43  0D92
002446  0B44  BB80 0B7E                       LAB     $B3,<MODE
002447  0B46  C3C0 0CB9                       LNJ     $B4,TYPEC
002448  0B48  BB80 0B84                       LAB     $B3,<MOD
002449  0B4A  C380 17F1                       LNJ     $B4,<TYPE
002450  0B4C  BB80 0B88                       LAB     $B3,<CLOCK
002451  0B4E  C380 1800                       LNJ     $B4,<TYPEC
002452  0B50  BB80 0B8E                       LAB     $B3,<CLK
002453  0B52  C380 17F1                       LNJ     $B4,<TYPE
002454  0B54  BB80 0B92                       LAB     $B3,<DISP
002455  0B56  C3C0 0CA9                       LNJ     $B4,TYPEC
002456  0B58  BB80 0B98                       LAB     $B3,<DPC
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002457  0B5A  C3C0 0C96            LNJ   $B4,TYPE
002458  0B5C  C3C0 0C8D            LNJ   $B4,NEWLIN
002459  0B5E  0F81 F5B1            B     NEXT
002460  0B60  4348 4152 2053  CHASIZ TEXT  'CHAR SIZE::$'
        0B63  495A 453A 3A24
002461  0B66  0008            CHSIZE RESV  1,8
002462  0B67  5354 4F50 2042  STBITS TEXT  'STOP BITS::$'
        0B6A  4954 533A 3A24
002463  0B6D  0001            SBITS  RESV  1,1
002464  0B6E  2020 2050 4152  PRTY   TEXT  '   PARITY::$'
        0B71  4954 593A 3A24
002465  0B74  2020 2020 2045  APARIT TEXT  '     E$'
        0B77  2400
002466  0B78  5445 524D 2041  ADDRS  TEXT  'TERM ADDR::$'
        0B7B  4444 523A 3A24
002467  0B7E  2020 2020 204D  MODE   TEXT  '     MODE::$'
        0B81  4F44 453A 3A24
002468  0B84  2020 2020 2050  MOD    TEXT  '     P$'
        0B87  2400
002469  0B88  2020 2020 434C  CLOCK  TEXT  '    CLOCK::$'
        0B8B  4F43 4B3A 3A24
002470  0B8E  2020 2020 2054  CLK    TEXT  '     T$'
        0B91  2400
002471  0B92  2044 4953 503F  DISP   TEXT  ' DISP/PRT::$'
        0B95  5052 543A 3A24
002472  0B98  2020 2020 2044  DPC    TEXT  '     D$'
        0B9B  2400
002473                        *
002474                        *
002475                        *
002476                        * PARAMETER INPUT
002477                        *
002478  0B9C  1C0A            IPAR   LDV   $R1,=10              RANGE FOR INPUT
002479  0B9D  A3C0 03AB              LNJ   $B2,IASC              INPUT TERMINAL TYPE
002480  0B9F  9840 0435              LDR   $R1,TEMP              LOAD TYPE INPUT
002481  0BA1  D840 0434              LDR   $R5,TEMP+1
002482  0BA3  9F40 01DF              STR   $R1,TMNASC+1
002483  0BA5  DF40 01DE              STR   $R5,TMNASC+2
002484  0BA7  C3C0 004B              LNJ   $B4,IPARG
002485                        *
002486  0BA9  1C0A                   LDV   $R1,=10              RANGE FOR INPUT
002487  0BAA  A3C0 03B8              LNJ   $B2,IDEC             INPUT BAUD RATE
002488  0BAC  9840 0428              LDR   $R1,TEMP             LOAD BAUD RATE INPUT
002489  0BAE  9F40 01E3              STR   $R1,BDRATE           STORE IT FOR USE
002490  0BB0  C3C0 0042              LNJ   $B4,IPARG
002491                        *
002492  0BB2  1C0A                   LDV   $R1,=10
002493  0BB3  A3C0 0395              LNJ   $B2,IASC             INPUT CHARACTER SIZE
002494  0BB5  A840 041F              LDR   $R2,TEMP             LOAD SIZE INPUT
002495  0BB7  AF40 FFAE              STR   $R2,CHSIZE           SAVE IT
002496  0BB9  C3C0 0039              LNJ   $B4,IPARG
002497                        *
002498  0BBB  1C0A                   LDV   $R1,=10
002499  0BBC  A3C0 038C              LNJ   $B2,IASC             INPUT STOP BITS
002500  0BBE  A840 0416              LDR   $R2,TEMP
002501  0BC0  AF40 FFAC              STR   $R2,SBITS            SAEV IT
002502  0BC2  C3C0 0030              LNJ   $B4,IPARG
002503                        *
002504  0BC4  1C0A                   LDV   $R1,=10
002505  0BC5  A3C0 0383              LNJ   $B2,IASC             INPUT PARITY
002506  0BC7  A840 040D              LDR   $R2,TEMP
002507  0BC9  2048                   SDR   $R2,8
002508  0BCA  AA70 2000              ADD   $R2,=X'2000'
002509  0BCC  AF40 FFA9              STR   $R2,APARIT+2
002510                        *
002511                        * CHECK VALIDITY OF PARAMETERS INPUT
002512                        *
002513  0BCE  A3C0 00FF      IPARF   LNJ   $B2,INTM1            CHECK TERMINAL TYPE
002514  0BD0  C3C0 027B              LNJ   $B4,CBR              CHECK BAUD RATE
002515                        *
002516  0BD2  9840 FF93              LDR   $R1,CHSIZE
002517  0BD4  1048                   SDR   $R1,8
002518  0BD5  9570 000F              AND   $R1,=X'0F'
002519  0BD7  9F00 0B66              STR   $R1,<CHSIZE
002520  0BD9  1D05                   CMV   $R1,=X'05'
002521  0BDA  091F                   BE    >IPARA
002522  0BDB  1D06                   CMV   $R1,=X'06'
002523  0BDC  0919                   BE    >IPARA
002524  0BDD  1D07                   CMV   $R1,=X'07'
002525  0BDE  0915                   BE    >IPARA
002526  0BDF  1D08                   CMV   $R1,=X'08'
002527  0BE0  0919                   BE    >IPARA
002528                        *
002529  0BE1  BB80 0BE7              LAB   $B3,<ICR
002530  0BE3  C3C0 0C1C      IPARB   LNJ   $B4,TYPEC
002531  0BE5  0F81 F52A              B     NEXT
002532                        *
002533  0BE7  696C 6C65 6761  ICR    TEXT  'ILLEGAL CHARACTER SIZE$'
        0BEA  6C20 6368 6172
              6163 7465 7220
              7369 7A65 2400
002534                        *
002535  0BF3  9800 0000       X      IPARG  LDR   $R1,<ZV$ABF          TEST ACTUAL BYTE FOUND FOR
002536  0BF5  9970 0D00              CMR   $R1,=X'0D00'         CR TO TERMINATE LINE ENTRY
002537  0BF7  0957                   BE    >IPARF               USE RESIDUAL FIELDS IF CR
002538  0BF8  8364                   JMP   $B4
002539                        *
002540  0BF9  9840 FF73              IPARA  LDR   $R1,SBITS
002541  0BFB  1048                   SDR   $R1,8
002542  0BFC  9570 0003              AND   $R1,=X'03'
002543  0BFE  9F00 0B6D              STR   $R1,<SBITS
002544  0C00  1D01                   CMV   $R1,=X'01'
002545  0C01  0926                   BE    >IPARC
002546  0C02  1D02                   CMV   $R1,=X'02'
002547  0C03  0926                   BE    >IPARC
002548  0C04  BB80 0C07              LAB   $B3,<ISB
002549  0C06  0FDD                   B     >IPARB
002550  0C07  696C 6C65 6761  ISB    TEXT  'ILLEGAL NUMBER OF STOP BITS$'
        0C0A  6C20 6E75 6D62
              6572 206F 6620
              7374 6F70 2062
              6974 7324
002551                        *
```

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002552                                  *
002553                                  * THIS SOUBROUTINE CHANGES CONTENTS OF DATA SET CONTROL
002554                                  * WORD IN LCT 20 IN SYNCHRONOUS CHANNEL PROGRAMM
002555                                  * WHEN MLCP  CLOCK IS NOT USED
002556                                  *
002557  0C15  9870 90C1                DTS     LDR     $R1,=Z'90C1'
002558  0C17  9F00 133D                        STR     $R1,<DTS1
002559  0C19  9F00 13FD                        STR     $R1,<DTS5
002560  0C1B  9F00 1438                        STR     $R1,<DTS6
002561  0C1D  9870 90C3                        LDR     $R1,=Z'90C3'
002562  0C1F  9F00 137B                        STR     $R1,<DTS2
002563  0C21  9870 9082                        LDR     $R1,=Z'9082'
002564  0C23  9F00 1384                        STR     $R1,<DTS4
002565  0C25  9F00 139E                        STR     $R1,<DTS3
002566  0C27  0F80 0DF6                        B       <DP
002567  0C29  9840 FF4C                IPARC   LDR     $R1,APARIT+2
002568  0C2B  9570 00DF                        AND     $R1,=X'DF'
002569  0C2D  9970 0045                        CMR     $R1,=X'45'              E FOR EVEN PAROITY
002570  0C2F  090A                            BE      >IPARD
002571  0C30  9970 004F                        CMR     $R1,=X'4F'              O FOR ODD
002572  0C32  0907                            BE      >IPARD
002573  0C33  9970 004E                        CMR     $R1,=X'4E'              N FOR NO PARITY
002574  0C35  098C                            BNE     >IPARE
002575  0C36  A3C0 0016                        LNJ     $B2,FUPN
002576  0C38  0F80                     I      B       >+$A
002577  0C39  A3C0 0039                IPARD   LNJ     $B2,FUP
002578  0C3B  A3C0 005D                $A      LNJ     $B2,ACF
002579  0C3D  C3C0 FE59                        LNJ     $B4,MBR
002580  0C3F  0F81 F4D0                        B       NEXT
002581  0C41  BB80 0C45                IPARE   LAB     $B3,<ILP
002582  0C43  0F81 FF9F                        B       IPARB
002583  0C45  696C 6C65 6761            ILP     TEXT    'ILLEGAL PARITY$'
        0C48  6C20 7061 7269
              7479 2400
002584                                  *
002585                                  *
002586                                  *     THIS PUTS THE CORRECT PARITY IN THE CCP
002587                                  *
002588  0C4D  AFC0 0024                FUPN    STB     $B2,FUPP+1              SET UP THE RETURN
002589  0C4F  9870 6001                        LDR     $R1,=Z'6001'
002590  0C51  9F40 06A0                        STR     $R1,TTA1+3
002591  0C53  9F40 06A2                        STR     $R1,TTA1+7
002592  0C55  9870 6090                        LDR     $R1,=Z'6090'
002593  0C57  9F40 069F                        STR     $R1,TTA1+8
002594  0C59  9870 01A0                        LDR     $R1,=Z'01A0'
002595  0C5B  9F40 06A7                        STR     $R1,RTA1
002596  0C5D  9870 3C60                        LDR     $R1,=Z'3C60'
002597  0C5F  9F40 06B4                        STR     $R1,RTA2
002598  0C61  9870 6001                        LDR     $R1,=Z'6001'
002599  0C63  9F40 06B8                        STR     $R1,RTA3
002600  0C65  9870 0D60                        LDR     $R1,=X'0D60'
002601  0C67  9F00 132F                        STR     $R1,<TTO+5
002602  0C69  9F00 12EC                        STR     $R1,<TTA+8
002603  0C6B  9870 0A60                        LDR     $R1,=X'0A60'
002604  0C6D  9F00 1331                        STR     $R1,<TTO+7
002605  0C6F  9F00 12EE                        STR     $R1,<TTA+10
002606  0C71  0F80 0C71                FUPP    B       <FUPP
002607                                  *
002608  0C73  AFC0 0024                FUP     STB     $B2,FUPE+1
002609  0C75  9870 6201                        LDR     $R1,=Z'6201'
002610  0C77  9F40 067A                        STR     $R1,TTA1+3
002611  0C79  9F40 067C                        STR     $R1,TTA1+7
002612  0C7B  9870 6290                        LDR     $R1,=Z'6290'
002613  0C7D  9F40 0679                        STR     $R1,TTA1+8
002614  0C7F  9870 01A2                        LDR     $R1,=Z'01A2'
002615  0C81  9F40 0681                        STR     $R1,RTA1
002616  0C83  9870 3C62                        LDR     $R1,=Z'3C62'
002617  0C85  9F40 068E                        STR     $R1,RTA2
002618  0C87  9870 6201                        LDR     $R1,=Z'6201'
002619  0C89  9F40 0692                        STR     $R1,RTA3
002620  0C8B  9870 0D62                        LDR     $R1,=X'0D62'
002621  0C8D  9F00 132F                        STR     $R1,<TTO+5
002622  0C8F  9F00 12EC                        STR     $R1,<TTA+8
002623  0C91  9870 0A62                        LDR     $R1,=X'0A62'
002624  0C93  9F00 1331                        STR     $R1,<TTO+7
002625  0C95  9F00 12EE                        STR     $R1,<TTA+10
002626  0C97  0F80 0C97                FUPE    B       <FUPE
002627                                  *
002628                                  * ASYNC CONFIG FOR LR6
002629                                  *
002630  0C99  9840 FECC                ACF     LDR     $R1,CHSIZE
002631  0C9B  9570 0003                        AND     $R1,=X'3'
002632  0C9D  1908                            BEZ     $R1,>CS8                CHAR SIZE 8
002633  0C9E  1D01                            CMV     $R1,=1
002634  0C9F  090B                            BE      >ACFA
002635  0CA0  1D02                            CMV     $R1,=2
002636  0CA1  0907                            BE      >CS6
002637                                  *
002638  0CA2  F870 8000                        LDR     $R7,=Z'8000'            7 BIT CHAR
002639  0CA4  0F86                            B       >ACFA
002640  0CA5  F870 C000                CS8     LDR     $R7,=Z'C000'            8 BIT CHAR
002641  0CA7  0F83                            B       >ACFA
002642  0CA8  F870 4000                CS6     LDR     $R7,=Z'4000'            6 BIT CHAR
002643                                  *
002644  0CAA  9840 FECB                ACFA    LDR     $R1,APARIT+2
002645  0CAC  9570 00DF                        AND     $R1,=X'DF'
002646  0CAE  9970 0045                        CMR     $R1,=X'45'
002647  0CB0  0908                            BE      >PE                     EVEN PARITY
002648  0CB1  9970 004F                        CMR     $R1,=X'4F'
002649  0CB3  0910                            BE      >SB                     ODD PARITY
002650  0CB4  9970 004E                        CMR     $R1,=X'4E'
002651  0CB6  0906                            BE      >PN                     NO PARITY
002652  0CB7  0F89                            B       >PNC                    DON'T CARE PARITY
002653  0CB8  9870 1000                PE      LDR     $R1,=X'1000'
002654  0CBA  FA51                            ADD     $R7,=$R1
002655  0CBB  0F88                            B       >SB
002656  0CBC  9870 2000                PN      LDR     $R1,=X'2000'
002657  0CBE  FA51                            ADD     $R7,=$R1
002658  0CBF  0F84                            B       >SB
002659  0CC0  9870 3000                PNC     LDR     $R1,=X'3000'
002660  0CC2  FA51                            ADD     $R7,=$R1
002661                                  *
002662  0CC3  9840 FEA9                SB      LDR     $R1,SBITS
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002663  0CC5  1D01                    CMV     $R1,=1
002664  0CC6  0904                    BE      >SBD
002665  0CC7  9870 0800               LDR     $R1,=X'800'
002666  0CC9  FA51                    ADD     $R7,=$R1
002667  0CCA  FF40 0002        SBD     STR     $R7,LR6CFA
002668  0CCC  8382              ACFE    JMP     $B2
002669  0CCD  0000              LR6CFA  RESV    1,2'0000'
002670                          *
002671                          *
002672                          *       INPUT TERMINAL TYPE, CHECK IF SUPPORTED
002673                          *
002674  0CCE  8740 00A7          INTM1   CL      SYNFLG
002675  0CD0  8740 00A6                  CL      POLFLG
002676  0CD2  8740 00A5                  CL      NPLFLG
002677  0CD4  8740 00A4                  CL      PTRFLG
002678  0CD6  AFC0 00A4                  STB     $B2,INTMX+1
002679  0CD8  93C0 0035          INTMA1  LNJ     $B1,TERTYP
002680  0CDA  3731 3030          TAB1    DC      A'7100'
002681  0CDC  3732 3030                  DC      A'7200'
002682  0CDE  5454 5943                  DC      A'TTYC'
002683  0CE0  5454 5952                  DC      A'TTYR'
002684  0CE2  5454 5920                  DC      A'TTY '
002685  0CE4  5457 5531                  DC      A'TWU1'
002686  0CE6  5457 5532                  DC      A'TWU2'
002687  0CE8  5457 5533                  DC      A'TWU3'
002688  0CEA  5457 5535                  DC      A'TWU5'
002689  0CEC  3737 3630                  DC      A'7760'
002690  0CEE  3737 3030                  DC      A'7700'
002691  0CF0  3737 3635                  DC      A'7765'
002692  0CF2  5052 5531                  DC      A'PRU1'
002693  0CF4  5052 5532                  DC      A'PRU2'
002694  0CF6  5052 5533                  DC      A'PRU3'
002695  0CF8  5052 5535                  DC      A'PRU5'
002696  0CFA  3738 3030                  DC      A'7800'
002697        0CFC              ENDTB1  EQU     $
002698  0CFC  0044                SIZE    DC      (ENDTB1-TAB1)*2
002699  0CFD  0D5A                DATAB   DC      <INITMC                 7100
002700  0CFE  0D5A                        DC      <INITMD
002701  0CFF  0D5A                        DC      <INITMD                 TTYC
002702  0D00  0D5A                        DC      <INITMC                 TTYR
002703  0D01  0D5F                        DC      <INITME                 TTY
002704  0D02  0D37                        DC      <INITI1
002705  0D03  0D40                        DC      <INITI2
002706  0D04  0D43                        DC      <INITI3
002707  0D05  0D47                        DC      <INITI5
002708  0D06  0D64                        DC      <INITMG
002709  0D07  0D64                        DC      <INITMF
002710  0D08  0D64                        DC      <INITMG
002711  0D09  0D37                        DC      <INITP1
002712  0D0A  0D40                        DC      <INITP2
002713  0D0B  0D43                        DC      <INITP3
002714  0D0C  0D47                        DC      <INITP5
002715  0D0D  0D55                        DC      <INITMH
002716  0D0E  1C00                TERTYP  LDV     $R1,0
002717  0D0F  2C01                        LDV     $R2,1
002718  0D10  C840 0072                   LDR     $R4,TMNASC+1
002719  0D12  D840 0071                   LDR     $R5,TMNASC+2
002720  0D14  C911                LOOP    CMR     $R4,$B1,$R1
002721  0D15  0981 0009                   BNE     NEXT1
002722  0D17  D921                        CMR     $R5,$B1,$R2
002723  0D18  0981 0006                   BNE     NEXT1
002724  0D1A  1052                        SCR     $R1,2
002725  0D1B  1011                        SCL     $R1,$AF
002726  0D1C  9B90 0CFD                   LAB     $B1,<DATAB,$R1
002727  0D1E  8389                        JMP     *$B1
002728  0D1F  2E02                NEXT1   ADV     $R2,2
002729  0D20  1E02                        ADV     $R1,2
002730  0D21  9940 FFDA                   CMR     $R1,SIZE
002731  0D23  0381 FFF0                   BLE     LOOP
002732  0D25  B3C0 04D8                   LNJ     $B3,ERRMB
002733  0D27  0F80 0110                   B       <NEXT
002734  0D29  5445 524D 494E              TEXT    'TERMINAL NAME IS NOT KNOWN$'
        0D2C  414C 204E 414D
              4520 4953 204E
              4F54 204B 4E4F
              574E 2400
002735        0D37              INTI1   EQU     $
002736  0D37  9BC0 0013          INTP1   LAB     $B1,LBP1
002737  0D39  9FC0 0114          COMMON  STB     $B1,CBRT+1
002738  0D3B  1C01                        LDV     $R1,=1
002739  0D3C  9F40 003C                   STR     $R1,PTRFLG
002740  0D3E  0F80 0D7A                   B       <INITMX
002741        0D40              INTI2   EQU     $
002742  0D40  9BC0 000C          INTP2   LAB     $B1,LBP2
002743  0D42  0FF7                        B       >COMMON
002744        0D43              INTI3   EQU     $
002745  0D43  9BC0 000B          INTP3   LAB     $B1,LBP3
002746  0D45  0F81 FFF3                   B       COMMON
002747        0D47              INTI5   EQU     $
002748  0D47  9BC0 000B          INTP5   LAB     $B1,LBP5
002749  0D49  0F81 FFEF                   B       COMMON
002750                          * HERE IF PRU1/TWU1
002751  0D4B  012C                LBP1    DC      300                     SARA 300 BAUD
002752  0D4C  0000                        DC      0
002753                          * HERE IF PRU2/TWU2
002754  0D4D  04B0                LBP2    DC      1200                    SARA 1200BAUD
002755  0D4E  0000                        DC      0
002756                          * HERE IF PRU3/TWU3
002757  0D4F  006E                LBP3    DC      110                     ROSY 24 SPEED SELECTABLE
002758  0D50  00C8                        DC      200
002759  0D51  012C                        DC      300
002760  0D52  0000                        DC      0
002761                          * HERE IF PRU5/TWU5
002762  0D53  04B0                LBP5    DC      1200                    ROSY 26 FIXED SPEED
002763  0D54  0000                        DC      0
002764                          *
002765                          * HERE IF 7800
002766        0D55              INTMH   EQU     $
002767  0D55  9B80 0E77                   LAB     $B1,<LB7800
002768  0D57  9FC0 00F6                   STB     $B1,CBRT+1
002769  0D59  0FA1                        B       >INITMX
002770                          *
002771                          *   HERE IF TTYR
```

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002772          0D5A                    INTMC  EQU    $
002773                                  *    HERE IF TTYC
002774  0D5A  9B80 0E66                 INTMD  LAB    $B1,<LBITRC          SET UP POINTER TO LEGAL BAUD RATE
002775  0D5C  9FC0 00F1                        STB    $B1,CBRT+1           TABLE FOR TTY-R'S AND TTY-C'S
002776  0D5E  0F9C                             B      >INTMX
002777                                  *    HERE IF TTY
002778  0D5F  9B80 0E71                 INTME  LAB    $B1,<LBTTY
002779  0D61  9FC0 00EC                        STB    $B1,CBRT+1
002780  0D63  0F97                             B      >INTMX
002781                                  *    HERE IF 7760,7765
002782          0D64                    INTMG  EQU    $
002783                                  *    HERE IF 7700
002784  0D64  E800 0D92                 INTMF  LDR    $R6,<BDRATE
002785  0D66  EF40 000E                        STR    $R6,POLADR
002786  0D68  E970 001F                        CMR    $R6,=31
002787  0D6A  0300 0D71                        BG     <ADER
002788  0D6C  6C01                             LDV    $R6,=1
002789  0D6D  EF00 0D76                        STR    $R6,<SYNFLG
002790  0D6F  0F81 0026                        B      IPARSY
002791                                  *
002792  0D71  BB80 0E1A                 ADER   LAB    $B3,<TADER
002793  0D73  0F80 0BE3                        B      <IPARB
002794                                  *
002795                                  *
002796  0D75  0000                      POLADR DC     0
002797  0D76  0000                      SYNFLG DC     0
002798  0D77  0000                      POLFLG DC     0
002799  0D78  0000                      NPLFLG DC     0
002800  0D79  0000                      PTRFLG DC     0
002801                                  *
002802  0D7A  0F80 0D7A                 INTMX  B      <INTMX               RETURN TO CALLER
002803  0D7C  C840 0006                        LDR    $R4,TMNASC+1
002804  0D7E  D840 0005                        LDR    $R5,TMNASC+2
002805  0D80  0F81 FF57                        B      INTMA1
002806                                  *
002807  0D82  2020 3731 3030            TMNASC TEXT   '  7100$'
        0D85  2400
002808  0D86  5445 524D 2054            TMNTYP TEXT   'TERM TYPE::$'
        0D89  5950 453A 3A24
002809                                  *
002810  0D8C  4241 5544 2052            BDRTQ  TEXT   'BAUD RATE::$'
        0D8F  4154 453A 3A24
002811  0D92  04B0                      BDRATE RESV   1,1200               BAUD RATE
002812  0D93  2020 3F3A 2400            QUES   TEXT   '  ?:$'
002813                                  *
002814                                  *CHECK VALIDITY OF PARMETER INPUT FOR SYNC TERMINALS
002815                                  *
002816                                  *
002817  0D96  9800 0B66                 IPARSY LDR    $R1,<CHSIZE
002818  0D98  1048                             SOR    $R1,8
002819  0D99  9A70 2000                        ADD    $R1,=X'2000'
002820  0D9B  9F00 0B86                        STR    $R1,<MOD+2
002821  0D9D  9970 204E                        CMR    $R1,=X'204E'         N NONPOL
002822  0D9F  0900 0DA8                        BE     <NONPOL
002823  0DA1  9970 2050                        CMR    $R1,=X'2050'         P POLL
002824  0DA3  0914                             BE     >POLL
002825  0DA4  BB80 0E32                        LAB    $B3,<MODERR
002826  0DA6  0F80 0BE3                        B      <IPARB
002827          0DA8                    NONPOL EQU    $
002828  0DA8  9F00 0D78                        STR    $R1,<NPLFLG
002829  0DAA  9870 1C00                        LDR    $R1,=X'1C00'
002830  0DAC  9F00 1363                        STR    $R1,<SELCHK
002831  0DAE  9870 0000                        LDR    $R1,=0
002832  0DB0  9F00 1364                        STR    $R1,<SELCHK+1
002833  0DB2  9870 00E0                        LDR    $R1,=X'00E0'
002834  0DB4  9F00 1365                        STR    $R1,<SELCHK+2
002835  0DB6  0F80              T               B      >+$A
002836          0DB7                    POLL   EQU    $
002837  0DB7  9F00 0D77                        STR    $R1,<POLFLG
002838  0DB9  9800 1363                        LDR    $R1,<SELCHK
002839  0DBB  9970 1C92                        CMR    $R1,=X'1C92'
002840  0DBD  0979              T               BE     >+$A
002841  0DBE  9870 1C92                        LDR    $R1,=X'1C92'
002842  0DC0  9F00 1363                        STR    $R1,<SELCHK
002843  0DC2  9870 60E1                        LDR    $R1,=X'60E1'
002844  0DC4  9F00 1364                        STR    $R1,<SELCHK+1
002845  0DC6  9870 13E0                        LDR    $R1,=X'13E0'
002846  0DC8  9F00 1365                        STR    $R1,<SELCHK+2
002847  0DCA  9840 FDA2                 $A     LDR    $R1,SBITS
002848  0DCC  9F40 FDC3                        STR    $R1,CLK+2
002849  0DCE  9970 4C36                        CMR    $R1,=X'4C36'         L6
002850  0DD0  0900              I               BE     >+$B
002851  0DD1  1048                             SOR    $R1,8
002852  0DD2  9A70 2000                        ADD    $R1,=X'2000'
002853  0DD4  9F40 FDBB                        STR    $R1,CLK+2
002854  0DD6  9970 2054                        CMR    $R1,=X'2054'         T
002855  0DD8  0900 0C15                        BE     <DTS
002856  0DDA  BB80 0E27                        LAB    $B3,<CLKERR
002857  0DDC  0F80 0BE3                        B      <IPARB
002858  0DDE  9800 133D                 $B     LDR    $R1,<DTS1
002859  0DE0  9970 90C9                        CMR    $R1,=Z'90C9'
002860  0DE2  0900 0DF6                        BE     <DP
002861  0DE4  9870 90C9                        LDR    $R1,=Z'90C9'
002862  0DE6  9F00 133D                        STR    $R1,<DTS1
002863  0DE8  9F00 13FD                        STR    $R1,<DTS5
002864  0DEA  9F00 1438                        STR    $R1,<DTS6
002865  0DEC  9870 90CB                        LDR    $R1,=Z'90CB'
002866  0DEE  9F00 137B                        STR    $R1,<DTS2
002867  0DF0  9870 908A                        LDR    $R1,=Z'908A'
002868  0DF2  9F00 1384                        STR    $R1,<DTS4
002869  0DF4  9F00 139E                        STR    $R1,<DTS3
002870  0DF6  9840 FD7F                 DP     LDR    $R1,APARIT+2
002871  0DF8  9F40 FDA1                        STR    $R1,DPC+2
002872  0DFA  9570 00DF                        AND    $R1,=X'DF'
002873  0DFC  9970 0044                        CMR    $R1,=X'44'           D FOR DISPLAY ADDRESS
002874  0DFE  0901 000D                        BE     DISA
002875  0E00  9970 0050                        CMR    $R1,=X'50'           P FOR PRNT ADDRESS
002876  0E02  0901 000D                        BE     PRIA
002877  0E04  9970 0043                        CMR    $R1,=X'43'           C FOR CASSETTS
002878  0E06  0901 000D                        BE     CSTA
002879  0E08  BB80 0E3E                        LAB    $B3,<DERR
002880  0E0A  0F80 0BE3                        B      <IPARB               PRINT ERROR
002881                                  *
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002882  0E0C  9870 601D          DISA   LDR    $R1,=Z'601D'
002883  0E0E  0F81 0007                 B      ST
002884  0E10  9870 681D          PRTA   LDR    $R1,=Z'681D'
002885  0E12  0F81 0003                 B      ST
002886  0E14  9870 701D          CSTA   LDR    $R1,=Z'701D'
002887  0E16  9F40 F899          ST     STR    $R1,PILCTB
002888  0E18  0F81 F2F7                 B      NEXI
002889  0E1A  494C 4C45 4741     TADER  TEXT   'ILLEGAL TERMINAL ADDRESS$'
        0E1D  4C20 5445 524D
              494E 414C 2041
              4444 5245 5353
              2400
002890  0E27  696C 6C65 6761     CLKERR TEXT   'ILLEGAL TIMING SOURCE$'
        0E2A  6C20 7469 6D69
              6E67 2073 6F75
              7263 6524
002891  0E32  696C 6C65 6761     MODERR TEXT   'ILLEGAL OPERATION MODE$'
        0E35  6C20 6F70 6572
              6174 696F 6E20
              6D6F 6465 2400
002892  0E3E  494C 4C45 4741     DERR   TEXT   'ILLEGAL DIS/PRT/CST ADDRESS$'
        0E41  4C20 4449 532F
              5052 542F 4353
              5420 4144 4452
              4553 5324
002893                          *
002894                          *
002895                          *
002896                          *       CHECK IF BAUD RATE LEGAL
002897                          *
002898  0E4C  8751              CBR    CL     =$R1                    USE AS INDEX
002899  0E4D  9B80 0E71         CBRT   LAB    $B1,<LBTTY              LOAD TABLE ADDRESS
002900  0E4F  A840 FF42                LDR    $R2,BDRATE              BAUD RATE INPUT
002901  0E51  B85D              CBRA   LDR    $R3,$B1,+$R1            LOAD VALUE
002902  0E52  B952                    CMR    $R3,=$R2                OK??
002903  0E53  0903                    BE     >CBRB
002904  0E54  3903                    BEZ    $R3,>CBRC
002905  0E55  0FFC                    B      >CBRA                   CHECK ANOTHER ONE
002906                          *
002907  0E56  8384              CBRB   JMP    $B4
002908                          *
002909  0E57  BB80 0E5D         CBRC   LAB    $B3,<CBRD
002910  0E59  C3C0 09A6               LNJ    $B4,ITYPEC
002911  0E5B  0F81 F2B4                B      NEXI
002912                          *
002913  0E5D  494C 4C45 4741     CBRD   TEXT   'ILLEGAL BAUD RATE$'
        0E60  4C20 4241 5544
              2052 4154 4524
002914                          *
002915                          *    LEGAL BAUD RATE TABLE FOR TTY-R AND TTY-C
002916                          *
002917  0E66  004B              LBTTRC DC     75
002918  0E67  006E                     DC     110
002919  0E68  0096                     DC     150
002920  0E69  012C                     DC     300
002921  0E6A  0258                     DC     600
002922  0E6B  04B0                     DC     1200
002923  0E6C  0708                     DC     1800
002924  0E6D  0960                     DC     2400
002925  0E6E  12C0                     DC     4800
002926  0E6F  2580                     DC     9600
002927  0E70  0000                     DC     0                       ZERO IS END OF TABLE
002928                          *
002929                          *
002930                          *     LEGAL BAUD RATE TABLE FOR THE TTY
002931                          *
002932  0E71  006E              LBTTY  DC     110
002933  0E72  0000                     DC     0
002934                          *
002935                          *    LEGAL BAUD RATE TABLE FOR THE SARA
002936                          *
002937  0E73  006E              LBSARA DC     110
002938  0E74  012C                     DC     300
002939  0E75  04B0                     DC     1200
002940  0E76  0000                     DC     0
002941                          *
002942                          *  LEGAL BAUD RATE TABLE FOR 7800
002943                          *
002944  0E77  006E              LB7800 DC     110
002945  0E78  0096                     DC     150
002946  0E79  012C                     DC     300
002947  0E7A  0258                     DC     600
002948  0E7B  04B0                     DC     1200
002949  0E7C  0708                     DC     1800
002950  0E7D  0960                     DC     2400
002951  0E7E  12C0                     DC     4800
002952  0E7F  2580                     DC     9600
002953  0E80  4B00                     DC     19200
002954  0E81  0000                     DC     0
002955                          *
002956                          *     LEGAL BAUD RATE TABLE FOR THE 7700,7760
002957                          *
002958  0E82  0000              LB7760 DC     0
002959                          *
002960                          *
002961                          *
002962                          * DELAY ROUTINE (R1 HAS NO. OF MILLSEC DELAY WANTED)
002963                          *
002964  0E83  8F40 0780         TMO    SAVE   SAV1,=Z'FFFF'
        0E85  FFFF
002965  0E86  1702                     BDEC   $R1,>TMOA
002966  0E87  0F86                     B      >TMOD
002967  0E88  A870 00B2         TMOA   LDR    $R2,=178
002968  0E8A  2702              TMOB   BDEC   $R2,>TMOC
002969  0E8B  0FF8                     B      >TMO
002970  0E8C  0FFE              TMOC   B      >TMOB
002971  0E8D  8FC0 0776         TMOD   RSTR   SAV1,=Z'FFFF'
        0E8F  FFFF
002972  0E90  8381                     JMP    $B1
002973                          *
002974                          *       ID ERROR ROUTINE
002975                          *
002976  0E91  DF40 0782         IDERR  STR    $R5,SAV2                ID FOUND IS HERE
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002977  0E93  EF40 0770                    STR   $R6,SAV1          THIS IS THE ID WANTED
002978  0E95  BB80 0FE6                    LAB   $B3,<ERA          LOAD MESSAGE ADDRESS
002979  0E97  C3C0 0968                    LNJ   $B4,TYPEC         GO TYPE EROR MESSAGE
002980  0E99  BB80 0EAD                    LAB   $B3,<IDBAD        TYPE MESSAGE:
002981  0E9B  C3C0 0955                    LNJ   $B4,TYPE          ADAPTER ID INCORRECT
002982  0E9D  BB80 0EB8                    LAB   $B3,<EXP
002983  0E9F  C3C0 0960                    LNJ   $B4,TYPEC
002984  0EA1  C3C0 098B                    LNJ   $B4,HEXPRT
002985  0EA3  1604                        DC    <SAV1
002986  0EA4  BB80 0EBD                    LAB   $B3,<ACT
002987  0EA6  C3C0 0959                    LNJ   $B4,TYPEC
002988  0EA8  C3C0 0984                    LNJ   $B4,HEXPRT
002989  0EAA  1614                        DC    <SAV2
002990  0EAB  0F81 F264                    B     NEXT
002991                          *
002992  0EAD  6164 6170 7465    IDBAD TEXT  'ADAPTER ID INCORRECT$'
        0EB0  7220 6964 2069
              6E63 6F72 7265
              6374 2400
002993  0EB8  6578 7065 6374    EXP   TEXT  'EXPECTED:$'
        0EBB  6564 3A24
002994  0EBD  6163 7475 616C    ACT   TEXT  'ACTUAL:$'
        0EC0  3A24
002995                          *
002996                          *       INPUT ID
002997                          *
002998  0EC1  C840 011B          INID  LDR   $R4,CHAN          LOAD CHANNEL BEING USED
002999  0EC3  4E26                    ADV   $R4,=X'26'        ADV INPUT ID FUNCTION CODE
003000  0EC4  8055                $A   IO    =$R5,=$R4        INPUT THE ID
        0EC5  0054
003001  0EC6  07FE                    BIOF  >-$A
003002  0EC7  8383                    JMP   $B3
003003                          *
003004                          *       INPUT DATA SET STATUS
003005                          *
003006  0EC8  C840 0114          DSSTAT LDR  $R4,CHAN          LOAD CHANNEL
003007  0ECA  4E1C                    ADV   $R4,=X'1C'        ADV FUNCTION CODE
003008  0ECB  8055                    IO    =$R5,=$R4        INPUT DATA SET STATUS
        0ECC  0054
003009  0ECD  0700                T   BIOT  >+$B
003010  0ECE  B3C0 032F              LNJ   $B3,ERRMB
003011  0ED0  494E 5055 5420        TEXT  'INPUT DATA SET STATUS FAILED$'
        0ED3  4441 5441 2053
              4554 2053 5441
              5455 5320 4641
              494C 4544 2400
003012  0EDF  8383                $B  JMP   $B3
003013                          *
003014                          *
003015                          *       INPUT PHONE NUMBER
003016                          *
003017  0EE0  BB80 0FFE          ITNAA LAB   $B3,<PHNO         LOAD MESSAGE ADDRESS
003018  0EE2  C3C0 092C                LNJ   $B4,TYPEQ         TYPE MESSAGE ( ?;)
003019  0EE4  1C18                    LDV   $R1,=24           RANGE FOR CONSOLE INPUT
003020  0EE5  9F40 00FD                STR   $R1,RNG
003021                                CALL  ZV$IA,STAT,PHNOS,RNG INPUT THE PHONE NUMBER
        0EE7  FBC0 0003
        0EE9  D380 0000         X
        0EEB  0F80
        0EEC  0FE2
        0EED  0F31
        0EEE  0FE3
003022  0EEF  8751                    CL    =$R1
003023  0EF0  8752                    CL    =$R2
003024  0EF1  9BC0 00F6                LAB   $B1,DIALNO
003025  0EF3  ABC0 003D                LAB   $B2,PHNOS
003026  0EF5  B800 0000         X      LDR   $R3,<ZV$ARG       LOAD NUMBER OF CHARACTERS INPUT
003027  0EF7  3EFF                    ADV   $R3,-1            SUBTRACT THE CARRAGE RETURN
003028  0EF8  3926                    BEZ   $R3,>ITNDA        IF CR ONLY, USE OLD NUMBER
003029  0EF9  BF40 F9AD                STR   $R3,DIALRG        RANGE FOR AUTODIAL
003030  0EFB  BF40 F9DF                STR   $R3,LDRNG
003031  0EFD  BF40 F9FD                STR   $R3,LDEX3R
003032  0EFF  BF40 FA7C                STR   $R3,LDEXAR
003033  0F01  BF40 FADE                STR   $R3,LDEXBR
003034  0F03  C86E                ITNA  LDR   $R4,$B2,+$R2      LOAD NUMBER INPUT
003035  0F04  C570 0F0F                AND   $R4,=X'F0F'       CONVERT TO HEX
003036  0F06  CF5D                    STR   $R4,$B1,+$R1      STORE IT
003037  0F07  A953                    CMR   $R2,=$R3
003038  0F08  0280                T   BGE   >+$A
003039  0F09  0FFA                    B     >ITNA             DO ANOTHER NUMBER
003040  0F0A  9BC0 0026          $A    LAB   $B1,PHNOS
003041  0F0C  3B81 000A                BODD  $R3,ITNC
003042  0F0E  B370 0002                DIV   $R3,=2            CONVERT TO WORDS
003043  0F10  3E01                    ADV   $R3,=1
003044  0F11  A870 0D0A          ITNB1 LDR   $R2,=Z'0D0A'      ADD CR AND LF
003045  0F13  AF7D                    STR   $R2,$B1,+$R3      STORE IT
003046  0F14  8752                    CL    =$R2
003047  0F15  AF31                    STR   $R2,$B1,$R3
003048  0F16  0F90                    B     >ITND             GO PRINT IT
003049                          *
003050  0F17  3E01                ITNC  ADV   $R3,=1            MAKE IT EVEN
003051  0F18  B370 0002                DIV   $R3,=2            CONVERT TO WORDS
003052  0F1A  A831                    LDR   $R2,$B1,$R3
003053  0F1B  A570 FF00                AND   $R2,=Z'FF00'
003054  0F1D  2E20                    ADV   $R2,=X'20'        ADD A SPACE
003055  0F1E  AF7D                    STR   $R2,$B1,+$R3
003056  0F1F  0FF2                    B     >ITNB1
003057                          *
003058  0F20  9840 00C7          ITNDA LDR   $R1,DIALNO
003059  0F22  9A70 3030                ADD   $R1,=X'3030'
003060  0F24  9F40 000C                STR   $R1,PHNOS
003061  0F26  0F01 FFFF          ITND  NOP   ITND
003062  0F28  BB80 0FFE                LAB   $B3,<PHNO
003063  0F2A  C3C0 08D5                LNJ   $B4,TYPEC
003064  0F2C  BB80 0F31                LAB   $B3,<PHNOS
003065  0F2E  C3C0 08C2                LNJ   $B4,TYPE
003066  0F30  8386                    JMP   $B6
003067                          *
003068  0F31  0000              PHNOS RESV  12,0              PHONE NUMBER IN ASCII
003069                          *
003070                          *
003071                          *
003072  0F3D  BB80 0F43          REMLP LAB   $B3,<REMLOP
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003073  0F3F  C3C0 08C0              LNJ   $B4,TYPEC
003074  0F41  0F81 FB1E              B     COUNTA
003075  0F43  7265 6D6F 7665  REMLOP TEXT  'REMOVE LOOP$'
        0F46  206C 6F6F 7024
003076                        *
003077                        *     INPUT ASCII PARAMETERS
003078                        *
003079  0F49  9F40 0099        IASC  STR   $R1,RNG
003080  0F4B  8740 0089              CL    TEMP
003081  0F4D  8740 0088              CL    TEMP+1
003082                               CALL  ZV$IA,STAT,TEMP,RNG
        0F4F  FBC0 0003
        0F51  D380 0000        X
        0F53  0F80
        0F54  0FE2
        0F55  0FD5
        0F56  0FE3
003083  0F57  8382                   JMP   $B2
003084                        *
003085                        *     INPUT HEX PARAMETERS
003086                        *
003087  0F58  9F40 008A        IHEX  STR   $R1,RNG
003088  0F5A  8740 007A              CL    TEMP
003089                               CALL  ZV$IH,TEMP
        0F5C  FBC0 0003
        0F5E  D380 0000        X
        0F60  0F80
        0F61  0FD5
003090  0F62  8382                   JMP   $B2
003091                        *
003092                        *     INPUT DECIMAL PARAMETERS
003093                        *
003094  0F63  9F40 007F        IDEC  STR   $R1,RNG
003095  0F65  8740 006F              CL    TEMP
003096                               CALL  ZV$IH,ZV$ID,TEMP
        0F67  FBC0 0003
        0F69  D380 0000        X
        0F6B  0F80
        0F6C  0FD5
003097  0F6D  8382                   JMP   $B2
003098                        *
003099  0F6E  6C6F 6F70 2072  LPREM TEXT  'LOOP REMOVED$'
        0F71  656D 6F76 6564
              2400
003100                        *
003101  0F75  BB80 0F7E        OOPS  LAB   $B3,<INPERR          COMMAND LINE ERROR
003102  0F77  C3C0 0888              LNJ   $B4,TYPEC
003103  0F79  BCD2                   LDB   $B3,=$B2
003104  0F7A  C3C0 0876              LNJ   $B4,TYPE
003105  0F7C  0F81 F193              B     NEXT
003106                        *
003107  0F7E  494E 5055 5420  INPERR TEXT  'INPUT ERROR:$'
        0F81  4552 524F 523A
              2400
003108                        *
003109  0F85  5445 524D 494E  TITLE TEXT  'TERMINALS TEST  '
        0F88  414C 5320 5445
              5354 2020
003113  0F8D  5443 5353 3120  SLAF  TEXT  'TCSS1 REV F '
        0F90  5245 5620 4620
003114  0F93  204A 554E 4520  LLAF  TEXT  ' JUNE 12 1978$'
        0F96  3132 2031 3937
              3824
003115  0F9A  636F 7079 7269          TEXT  'COPYRIGHT 1978 BY HONEYWELL IS INC.$'
        0F9D  6768 7420 3139
              3738 2062 7920
              686F 6E65 7977
              656C 6C20 6973
              2069 6E63 2E24
003116  0FAC  4E45 5854 2400  NXT   TEXT  'NEXT$'
003117  0FAF  6163 7220 6672  EM1   TEXT  'ACK FROM ACU'
        0FB2  6F6D 2061 6375
003118  0FB5  636F 7320 6E6F  EM2   TEXT  'COS NOT RECD'
        0FB8  7420 7265 6364
003119  0FBB  2020 2074 696D  EM3   TEXT  '   TIMEOUT  '
        0FBE  656F 7574 2020
003120  0FC1  2064 6174 6120  EM4   TEXT  ' DATA ERROR '
        0FC4  6572 726F 7220
003121  0FC7  7465 7374 2066  EM5   TEXT  'TEST FAILED '
        0FCA  6169 6C65 6420
003122  0FCD  7878 3A20 7465  TCOMP TEXT  'XX: TEST COMP.$'
        0FD0  7374 2063 6F6D
              702E 2400
003123                        *
003124  0FD5  0000            TEMP  RESV  6,0                  GENERAL WORK LOCATION
003125  0FDB  0000            TEST  RESV  1,0                  TEST TOEXECUTE
003126  0FDC  0000            BCHAN RESV  1,0                  BASIC CHANNEL(NO LINES)
003127  0FDD  0000            CHAN  RESV  1,0                  CHANNEL TO TEST
003128  0FDE  0000            MESG  RESV  1,0                  CANNED?
003129  0FDF  0000            PASSES RESV 1,0                  HOW MANY PASSES?
003130  0FE0  0000            ERCD  RESV  1,0                  ERROR REPORTING METHOD
003131  0FE1  0000            PCNT  RESV  1,0                  PASS COUNTER
003132  0FE2  0000            STAT  RESV  1,0                  STATUS INPUT FROM CONSOLE
003133  0FE3  0000            RNG   RESV  1,0                  RANGE
003134  0FE4  0000            MESGT RESV  1,0                  0=CANNED;1=OPER INPUT MESSAGE
003135  0FE5  0000            ERCT  RESV  1,0                  ERROR COUNTER
003136  0FE6  7878 3A24       ERA   TEXT  'XX:$'
003137  0FE8  0000            DIALNO RESV 16,0                 PHONE NUMBER TO CALL
003138  0FF8  0014            OPMRGB RESV 1,20                 BYTE RANGE OF OPERATOR MESSAGE
003139  0FF9  000A            OPMRNG RESV 1,10                 RANGE FOR OPERATOR INPUT MESSAGE
003140  0FFA  0009            RRANGE DC   9                    REAL RANGE IN WORDS
003141  0FFB  0012            RRANGB DC   18                   REAL RANGE IN BYTES
003142  0FFC  0000            RCVRNB DC   0                    RECEIVE RANGE IN BYTES
003143  0FFD  0000            RCVRNG DC   0                    RECEIVE RANGE IN WORDS
003144  0FFE  6E75 6D62 6572  PHNO  TEXT  'NUMBER $'
        1001  2024
003145                        *
003146  1002  0D0A            CANNED TEXT Z'0D0A'
003147  1003  5448 4520 5155        TEXT  'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
        1006  4943 4B20 4252
              4F57 4E20 464F
              5820 4A55 4D50
              5320 4F56 5645
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                5220 4120 4C41
                5A59 2044 4F47
003146  1018   0D0A                    TEXT    Z'0D0A'
003149  1019   7468 6520 7175           TEXT    'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
        101C   6963 6B20 6272
               6F77 6E20 666F
               7820 6A75 6D70
               7320 206F 7665
               7220 6120 6C61
               7A79 2064 6F67
003150  102E   0D0A                    TEXT    Z'0D0A'
003151  102F   2122                    TEXT    '!"'
003152  1030   23A4                    TEXT    Z'23A4'             BLIND LIBRARY TO $ (24)
003153  1031   2526                    TEXT    '%&'
003154  1032   2728                    TEXT    Z'2728'             '( CHARACTERS
003155  1033   292A 2B2C 2D2E          TEXT    ')*+,-./0123456789:;<=>?@@\@]'
        1036   2F30 3132 3334
               3536 3738 393A
               3B3C 3D3E 3F40
               5B5C 5D5E
003156  1041   5F60                    TEXT    Z'5F60'             ASMBLER TREATS REVERSE GRAVE (60) LIKE $ (24)
003157  1042   7B7C 7D7E               TEXT    '@@@@'
003158  1044   0000                    DC      0                   NEEDED TO END PRINT TO CONSOLE
003159  1045   0D0A 494E 5055  GOMSG   TEXT    Z'0D0A','INPUT:'
        1048   543A
003160  1049   0D0A            OPMESP  TEXT    Z'0D0A'
003161  104A   552A            OPMESG  RESV    9,A'U*'             OPERATOR INPUT MESSAGE
003162  1053   0D0A                    TEXT    Z'0D0A'             LC WITH DEFAULT OPMESG
003163  1054   0000                    DC      0
003164  1055   494E 5055 543A          TEXT    A'INPUT:'
003165  1058   0D0A                    TEXT    Z'0D0A'
003166  1059   0000                    RESV    151,0               EXTRA WORD FOR POSSIBLE X00 TO END MESSAGE.
003167                         *
003168                         *
003169                         *
003170                         *
003171                         *       START I/O
003172                         *
003173  10F0   C3C0 00E5        GO      LNJ     $B4,CHCT
003174  10F2   0F82                    B       >GOD
003175  10F3   4000                    DC      Z'4000'             START I/O
003176  10F4   9870 4500        GOD     LDR     $R1,=Z'4500'
003177  10F6   93C0 FD8C                LNJ     $B1,IMO
003178  10F8   C380 144B                LNJ     $B4,<TESTS          WAIT FOR STATUS COMPLETE
003179  10FA   C800 15F8        GOE     LDR     $R4,<CONT2
003180  10FC   8055              $C      IO      =$R5,=$R4
        10FD   0054
003181  10FE   07FE                    BIOF    >-$C
003182  10FF   5981 003A                BNEZ    $R5,GOC
003183  1101   0F01 000D                NOP     GO1
003184  1103   0F01 000B                NOP     GO1
003185  1105   0F01 0009                NOP     GO1
003186  1107   0F01 0007                NOP     GO1
003187  1109   9840 FED1                LDR     $R1,TEST
003188  110B   9970 4C44                CMR     $R1,=A'LD'
003189  110D   0901 F934                BE      COUNT
003190  110F   C840 FECD        GO1     LDR     $R4,CHAN
003191  1111   4E1C                    ADV     $R4,=X'1C'
003192  1112   8055              $D      IO      =$R5,=$R4
        1113   0054
003193  1114   07FE                    BIOF    >-$D
003194  1115   D570 F000                AND     $R5,=Z'F000'
003195  1117   5801 F92A                BLZ     $R5,COUNT           COS PRESENT
003196  1119   5001                     SOL     $R5,1
003197  111A   5800                T    BLZ     $R5,>+$A            NO PWI
003198  111B   0F93                     B       >GOA
003199  111C   1001              $A     SOL     $R1,1
003200  111D   5801 F924                BLZ     $R5,COUNT           DLO PRESENT
003201  111F   5001                     SOL     $R5,1
003202  1120   5814                     BLZ     $R5,>GOB            ACK PRESENT
003203  1121   B3C0 00DC                LNJ     $B3,ERRMB
003204  1123   4441 5441 5345           TEXT    'DATASET STATUS NG$'
        1126   5420 5354 4154
               5553 204E 4724
003205  112C   0F81 EFE3                B       NEXT
003206                         *
003207  112E   9B80 0FB5        GOA     LAB     $B1,<EM2
003208  1130   9F80 1A5A                STB     $B1,<MWFB
003209  1132   0F81 076A                B       EHAND
003210                         *
003211  1134   9B80 0FAF        GOB     LAB     $B1,<EM1
003212  1136   9F80 1A5A                STB     $B1,<MWFB
003213  1138   0F81 0764                B       EHAND
003214                         *
003215  113A   9B80 0FC7        GOC     LAB     $B1,<EM3
003216  113C   9F80 1A5A                STB     $B1,<MWFB
003217  113E   0F81 075E                B       EHAND
003218                         * GIVE  CHANNEL CCB LIST RESET
003219                         *
003220  1140   8F00 1614        CCBRST  SAVE    <SAV2,=Z'0008'      B4
        1142   0008
003221  1143   C840 FE99                LDR     $R4,CHAN
003222  1145   4E05                     ADV     $R4,=5
003223  1146   8070 0100                IO      =Z'0100',=$R4       CCB  RESET
        1148   0054
003224  1149   0700                I    BIOT    >+$A
003225  114A   B3C0 00B3                LNJ     $B3,ERRMB
003226  114C   4348 414E 4E45           TEXT    'CHANNEL CCB RESET FAILED$'
        114F   4C20 4343 4220
               5245 5345 5420
               4641 494C 4544
               2400
003227  1159   C840 FE83        $A      LDR     $R4,CHAN
003228  115B   C570 FFBF                AND     $R4,=Z'FFBF'
003229  115D   4E05                     ADV     $R4,5
003230  115E   8070 0100                IO      =Z'0100',=$R4       CCB RESET ON RECV CHCN.
        1160   0054
003231  1161   0701 0045                BIOT    ITZ
003232  1163   B3C0 009A                LNJ     $B3,ERRMB
003233  1165   5245 4356 2043           TEXT    'RECV CHAN CCB RESET FAILED$'
        1168   4841 4E20 4343
               4220 5245 5345
               5420 4641 494C
```

```
                4544 2400
003234                                  *
003235                                  * GET LCT BYTE ADDRESS BY LCT 55 INTO $R5
003236                                  *
003237  1173  8F40 0490                ILCT    SAVE    SAV1,=Z'0008'           $B4
        1175  0008
003238  1176  C800 1600                        LDR     $R4,<CONT10             CONTROL WORD FOR INPUT LCT
003239  1178  0F01 FFFF                        NOP     $
003240  117A  0F01 FFFF                        NOP     $
003241  117C  8055                            IO      =$R5,=$R4
        117D  0054
003242  117E  0700              T             BIOT    >+$D
003243  117F  B380 11FE                        LNJ     $B3,<ERRMB
003244  1181  494E 5055 5420                   TEXT    'INPUT LCT IS REJECTED$'
        1184  4C43 5420 4953
              2052 454A 4543
              5445 4424
003245  118C  8FC0 0477                $B      RSTR    SAV1,=Z'0008'
        118E  0008
003246  118F  8384                            JMP     $B4
003247                                  *
003248                                  * GIVE MLCP GENERAL INITIALIZE
003249                                  *
003250  1190  8F00 1614                GENITZ  SAVE    <SAV2,=Z'0008'          B4
        1192  0008
003251  1193  C840 FE49                        LDR     $R4,CHAN
003252  1195  4E01                            ADV     $R4,=1
003253  1196  8070 8000                        IO      =Z'8000',=$R4           INITIALIZE
        1198  0054
003254  1199  070E                            BIOT    >ITZ
003255  119A  B3C0 0063                        LNJ     $B3,ERRMB
003256  119C  4D4C 4350 2047                   TEXT    'MLCP GEN INIT FAILED$'
        119F  454E 2049 4E49
              5420 4641 494C
              4544 2400
003257                                  *
003258  11A7  8F80 1614                ITZ     RSTR    <SAV2,=Z'0008'
        11A9  0008
003259  11AA  8384                            JMP     $B4
003260                                  *
003261                                  * SET LCT TABLE
003262                                  *
003263  11AB  8F40 0466                LCTRCV  SAVE    SAV2,=Z'E8E0'
        11AD  E8E0
003264  11AE  C840 044C                        LDR     $R4,CONT5
003265  11B0  C570 FFBF                        AND     $R4,=Z'FFBF'
003266  11B2  CF40 FE22                        STR     $R4,TEMP
003267  11B4  0F8A                            B       >LCT2
003268  11B5  B840 FE27                SETLCT  LDR     $R3,CHAN
003269  11B7  8F40 045C                        SAVE    SAV2,=Z'E8E0'
        11B9  E8E0
003270  11BA  C840 0440                        LDR     $R4,CONT5
003271  11BC  CF40 FE18                        STR     $R4,TEMP
003272  11BE  9CF3                    LCT2    LDB     $B1,+$B3
003273  11BF  8751                            CL      =$R1
003274                                  *
003275  11C0  A85D                      LCT4    LDR     $R2,$B1,+$R1
003276  11C1  2985                            BNEZ    $R2,>LCT5
003277  11C2  8FC0 0451                        RSTR    SAV2,=Z'E8E0'
        11C4  E8E0
003278  11C5  8383                            JMP     $B3
003279                                  *
003280  11C6  C840 FE0E                LCT5    LDR     $R4,TEMP
003281  11C8  8052                      LCT3    IO      =$R2,=$R4
        11C9  0054
003282  11CA  07FE                            BIOF    >LCT3
003283  11CB  0FF5                            B       >LCT4
003284                                  *
003285                                  * OUTPUT CHANNEL CONTROL
003286                                  *
003287                                  *   LNJ  $B4,CHCT
003288                                  *   B  >$+2             RETURN
003289                                  *   DC   XX             XX = CHANNEL CONTROL
003290                                  *
003291  11CC  8F40 0447                CHCTR   SAVE    SAV2,=Z'0C0D'
        11CE  0C0D
003292  11CF  C840 042D                        LDR     $R4,CONT7
003293  11D1  C570 FFBF                        AND     $R4,=Z'FFBF'
003294  11D3  CF40 FE01                        STR     $R4,TEMP
003295  11D5  0F88                            B       >CHCTA
003296  11D6  8F00 1614                CHCT    SAVE    <SAV2,=Z'0C0D'          R4,R5,B5,B7,B4
        11D8  0C0D
003297  11D9  C840 0423                        LDR     $R4,CONT7
003298  11DB  CF40 FDF9                        STR     $R4,TEMP
003299  11DD  D874                    CHCTA   LDR     $R5,+$B4                DUMMY
003300  11DE  D874                            LDR     $R5,+$B4                GET CONTROL WORD
003301  11DF  C800 0FD5                        LDR     $R4,<TEMP               FUN CODE FOR CCB CONTROL
003302  11E1  8055                            IO      =$R5,=$R4               OUTPUT CCB CONTROL
        11E2  0054
003303  11E3  0717                            BIOT    >CHZ
003304  11E4  B380 11FE                        LNJ     $B3,<ERRMB              ERROR IO WAS NAK'ED
003305  11E6  4D4C 4350 204F                   TEXT    'MLCP OUTPUT CCB CONTROL IO WAS REJECTED$'
        11E9  5554 5055 5420
              4343 4220 434F
              4E54 524F 4C20
              494F 2057 4153
              2052 454A 4543
              5445 4424
003306                                  *
003307  11FA  8F80 1614                CHZ     RSTR    <SAV2,=Z'0C0D'
        11FC  0C0D
003308  11FD  8384                            JMP     $B4
003309                                  *
003310                                  *
003311                                  *  TO CALL:
003312                                  *       LNJ $B3,ERRMB
003313                                  *       TEXT 'NON-RECOVERABLE-ERROR MESSAGE'
003314                                  *
003315  11FE                            ERRMB   RESV    0
003316  11FE  8F40 0435                        SAVE    SAV5,=Z'FFFF'
        1200  FFFF
003317  1201  C3C0 05FE                        LNJ     $B4,TYPEC               PRINT ERR MSG FOLLOWING LNJ-IO-ERRMB
003318  1203  0F81 EF0C                        B       NEXT
```

003319 *

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003320                          /
003321                          *CHANNEL PROGRAM GOES HERE
003322          1205            ADCP    EQU     $
003323                          *
003324                          *
003325                          *  LOOP A MESSAGE AT LINE ADAPTER
003326                          *
003327                          *       ORG     X'0200'
003328          1205            LMAA    EQU     $
003329                          *
003330                          *       LOC     HLP1
003331          0200            HLP1    EQU     X'0200'
003332                          *       LD      52              GET LINE SPEED 8ASYNC) OR SYNC CHAR (SYNC
003335  1205    5034
003336                          *       OUT     4
003339                          *       RECV    0               DUMMY RECV
003342  1206    34A0
003343                          *       LD      20              LINE CONTROL
003346  1207    5014
003347                          *       OUT     2
003350                          *       WAIT
003351  1208    3201
003352                          *       LD      28              SYNC FLG IF ZERO LINE IS ASYNC
003355  1209    501C
003356                          *       BZT     CKST
003359  120A    E215
003360                          *       LOC     TRNX
003361          020C            TRNX    EQU     X'020C'
003362                          *       RECV    0               1ST SYNC
003365                          *       WAIT
003366  120B    A001
003367                          *       RECV    0               2ND SYNC
003370                          *       C       52
003371  120C    A052
003374                          *       BET     INSY
003375  120D    34E1
003376                          *       LD      20
003379  120E    0B50
003382                          *       AND     =X'FD'
003383  120F    1493
003386                          *       OUT     2
003389  1210    FD32
003390                          *       LD      20
003393  1211    5014
003394                          *       OUT     2
003397                          *       B       TRNX
003398  1212    32E0
003401                          *       LOC     INSY
003402          021D            INSY    EQU     X'021D'
003403                          *       WAIT
003404  1213    F001
003405                          *       RECV    0               FINAL SYNC
003408                          *       WAIT
003409  1214    A001
003410                          *       LOC     CKST
003411          0220            CKST    EQU     X'0220'
003412                          *       RECV    0               RECV FIRST CHAR.
003415                          *       C       =X'0D'
003416  1215    A092
003419                          *       BET     GETC0           SEE IF START OF DATA OR SYNC.
003420  1216    0DE1
003423                          *       WAIT
003424  1217    0501
003425                          *       B       CKST
003428  1218    E0F9
003429                          *       LOC     GETC
003430          0228            GETC    EQU     X'0228'
003431                          *       RECV    0
003434                          *       LOC     GETC0
003435          0229            GETC0   EQU     X'0229'
003436                          *       ST      ,SIRE
003437  1219    A011
003438                          *       C       =X'FF'          PAD
003441  121A    92FF
003442                          *       BET     HLP1A
003445  121B    E106
003446                          *       BLCT    HLP1A
003449  121C    E304
003450                          *       LOC     GETC1
003451          0230            GETC1   EQU     X'0230'
003452                          *       WAIT
003453                          *       B       GETC
003454  121D    01E0
003457                          *       LOC     HLP1A
003458          0233            HLP1A   EQU     X'0233'
003459                          *       LD      =X'C0'
003460  121E    F690
003463                          *       OUT     2               TURN OFF RECE.
003466  121F    C032
003467                          *       GNB
003468                          *       LOC     NOP
003469          0237            NOP     EQU     X'0237'
003470                          *       WAIT
003471  1220    0201
003472                          *       NOP
003473                          *       B       NOP
003474  1221    00E0
003477                          *       NOP
003478  1222    FD00
003479                          *
003480                          * CHANNEL PROGRAM FOR LOOP AT LINE ADAPT (XMIT)
003481                          *       LOC     LP1A
003482          023C            LP1A    EQU     X'023C'
003483                          *       LD      34              LINE CONFIG.
003486  1223    5022
003487                          *       OUT     6
003490                          *       LD      =X'16'
003491  1224    3690
003494                          *       OUT     4
003497  1225    1634
003498                          *       WAIT
003499                          *       LD      28              SYNC FLAG
003500  1226    0150
```

```
003503                          *       BZT     LP1ABD
003504  1227  1CE2
003507                          *       LD      =6
003508  1228  1090
003511                          *       LOC     XMSY
003512        0249              XMSY    EQU     X'0249'
003513                          *       ST      63
003514  1229  0651
003517                          *       LD      52              SYNC CHAR.
003518  122A  3F50
003521                          *       SEND    0
003524  122B  3460
003525                          *       LD      63
003528  122C  503F
003529                          *       DEC     DO              SIX TIMES
003530                          *       BZT     LP1AA
003531  122D  05E2
003534                          *       WAIT
003535  122E  0801
003536                          *       B       XMSY
003539  122F  E0F4,255)
003540                          *       LOC     LP1ABD
003541        0256              LP1ABD  EQU     X'0256'
003542                          *       LD      ,DMA            XFER
003543                          *       SEND    0
003546  1230  1060
003547                          *       BLCT    LP1AB
003550  1231  E304
003551                          *       LOC     LP1AA
003552        025A              LP1AA   EQU     X'025A'
003553                          *       WAIT
003554                          *       B       LP1ABD
003555  1232  01E0
003558                          *       LOC     LP1AB
003559        025D              LP1AB   EQU     X'025D'
003560                          *       WAIT
003561  1233  FA01
003562                          *       LD      =X'04'
003565  1234  9004
003566                          *       SEND    0
003569                          *       WAIT
003570  1235  6001
003571                          *       LD      =X'FF'          PAD 1
003574  1236  90FF
003575                          *       SEND    0
003578                          *       WAIT
003579  1237  6001
003580                          *       SEND    0               PAD 2
003583                          *       LD      28
003584  1238  6050
003587                          *       BZT     LP1AC1
003588  1239  1CE2
003591                          *       WAIT
003592  123A  0501
003593                          *       LD      =X'FF'          PAD 3
003596  123B  90FF
003597                          *       SEND    0
003600                          *       LOC     LP1AC1
003601        026F              LP1AC1  EQU     X'026F'
003602                          *       NOP
003603  123C  6000
003604                          *       LD      =X'C6'          TURN OFF XMIT
003607  123D  90C6
003608                          *       OUT     2
003611                          *       WAIT
003612  123E  3201
003613                          *       GNB
003614                          *       LOC     NOP1
003615        0275              NOP1    EQU     X'0275'
003616                          *       WAIT
003617  123F  0201
003618                          *       NOP
003619                          *       B       NOP1
003620  1240  00E0
003623                          *       NOP
003624  1241  FD00
```

```
003625                                  /
003626                                  *
003627                                  * AUTO DIAL TEST
003628                                  *
003629          1242                    AD11    EQU     $
003630                                  *       ORG     X'400'
003631                                  *
003632                                  *
003633                                  *       LOC     AD1
003634          0400                    AD1     EQU     X'0400'
003635                                  *       NOP
003636                                  *       NOP
003637  1242    0000
003638                                  *       BS      AD5
003641  1243    F039
003642                                  *       LD      =X'48'
003645  1244    9048
003646                                  *       OUT     2
003649                                  *
003650                                  *       LOC     AD2
003651          0407                    AD2     EQU     X'0407'
003652                                  *       WAIT
003653  1245    3201
003654                                  *       LD
003655                                  *       SEND    0
003656  1246    1060
003659                                  *       LD      =X'68'
003662  1247    9068
003663                                  *       OUT     2
003666                                  *       WAIT
003667  1248    3201
003668                                  *       AND     =X'48'
003671  1249    9348
003672                                  *       OUT     2
003675                                  *       BS      AD5
003676  124A    32F0
003679                                  *       BLCT    AD3
003680  124B    2AE3
003683                                  *       B       AD2
003684  124C    03E0
003687                                  *
003688                                  *       LOC     AD3
003689          0417                    AD3     EQU     X'0417'
003690                                  *       GNB
003691  124D    F102
003692                                  *       WAIT
003693                                  *       LD      =X'40'
003694  124E    0190
003697                                  *       OUT     2
003700  124F    4032
003701                                  *
003702                                  *
003703                                  *       LOC     AD31
003704          041C                    AD31    EQU     X'041C'
003705                                  *       IN      5
003708                                  *       LD      5
003709  1250    2550
003712                                  *       AND     =X'50'
003713  1251    0593
003716                                  *       C       =X'50'
003717  1252    5092
003720                                  *       BET     AD33
003721  1253    50E1
003724                                  *       LD      5
003725  1254    1650
003728                                  *       AND     =X'C0'
003729  1255    0593
003732                                  *       C       =X'C0'
003733  1256    C092
003736                                  *       BET     AD32
003737  1257    C0E1
003740                                  *       B       AD31
003741  1258    03E0
003744                                  *
003745                                  *       LOC     AD32
003746          042F                    AD32    EQU     X'042F'
003747                                  *       IN      5
003750  1259    EE25
003751                                  *       LD      5
003754  125A    5005
003755                                  *       AND     =X'60'
003758  125B    9360
003759                                  *       C       =X'60'
003762  125C    9260
003763                                  *       BET     AD33
003766  125D    E103
003767                                  *       B       AD31
003770  125E    E0E3
003771                                  *
003772                                  *       LOC     AD33
003773          043A                    AD33    EQU     X'043A'
003774                                  *       GNB
003775                                  *       WAIT
003776  125F    0201
003777                                  *
003778                                  *       LOC     AD5
003779          043C                    AD5     EQU     X'043C'
003780                                  *       NOP
003781                                  *       NOP
003782  1260    0000
003783                                  *       NOP
003784                                  *       NOP
003785  1261    0000
003786                                  *       RET
003787                                  *       IN      5
003790  1262    0625
003791                                  *       LD      5
003794  1263    5005
003795                                  *       AND     =X'40'
003798  1264    9340
003799                                  *       C       =X'40'
003802  1265    9240
003803                                  *       BEF     AD1
```

```
003806  1266  F105
003807                        *       NOP
003808                        *       NOP
003809  1267  0000
003810                        *       NOP
003811                        *       RET
003812  1268  0006
003813                        *
003814                        *       LOC     ADT
003815        044E            ADT     EQU     X'044E'
003816                        *       GNB
003817                        *       WAIT
003818  1269  0201
```

```
003819                                  /
003820                                  *
003821                                  * LOOP A NUMBER AT THE ACUA
003822                                  *
003823                                  *       ORG     X'400'
003824          126A                    LDCP    EQU     $
003825                                  *       LOC     LDT1
003826          0400                    LDT1    EQU     X'0400'
003827                                  *       LD      =X'C'
003830  126A    900C
003831                                  *       OUT     2
003834                                  *       LD      =X'FF'
003835  126B    3290
003838                                  *       LOC     LDT2
003839          0405                    LDT2    EQU     X'0405'
003840                                  *       ST      60
003841  126C    FF51
003844                                  *       OUT     1
003847  126D    3C31
003848                                  *       LD      =X'2C'
003851  126E    902C
003852                                  *       OUT     2
003855                                  *       WAIT
003856  126F    3201
003857                                  *       LD      =X'5C'
003860  1270    905C
003861                                  *       OUT     2
003864                                  *       WAIT
003865  1271    3201
003866                                  *       RECV    0
003869                                  *       C       60
003870  1272    A052
003873                                  *       BEF     LDTF
003874  1273    3CF1
003877                                  *       LD      60
003878  1274    1250
003881                                  *       C       =X'F0'
003882  1275    3C92
003885                                  *       BET     LDTG
003886  1276    F0E1
003889                                  *       DEC
003890  1277    0405
003891                                  *       B       LDT2
003894  1278    E0E8
003895                                  *       LOC     LDTG
003896          041E                    LDTG    EQU     X'041E'
003897                                  *       LD      X'30'
003900  1279    5030
003901                                  *       AND     =X'BF'
003904  127A    93BF
003905                                  *       ST      X'30'
003908  127B    5130
003909                                  *       GNB
003910                                  *       WAIT
003911  127C    0201
003912                                  *       LOC     LDTF
003913          0426                    LDTF    EQU     X'0426'
003914                                  *       LD      X'30'
003917  127D    5030
003918                                  *       AND     =X'BF'
003921  127E    93BF
003922                                  *       XOR     =X'40'
003925  127F    9540
003926                                  *       ST      X'30'
003929  1280    5130
003930                                  *       GNB
003931                                  *       WAIT
003932  1281    0201
```

```
003933                          /
003934                          *
003935                          * DETERMINE ASSOCIATED CHANNEL FOR ACU
003936                          *
003937                          *       ORG     X'200'
003938          1282            ADAA    EQU     $
003939                          *       LOC     ADA1
003940          0200            ADA1    EQU     X'0200'
003941                          *       IN      7
003944                          *       ST
003945  1282    2711
003946                          *       GNB
003947                          *       WAIT
003948  1283    0201
003949                          *
003950                          *
```

```
003951                          /
003952                          *
003953                          * EXTERNAL LOOP AT THE ACUA
003954                          *
003955                          *       ORG     X'400'
003956          1284            LDEY    EQU     $
003957                          *       LOC     LDE1
003958          0400            LDE1    EQU     X'0400'
003959                          *       LD      =X'0F'
003962  1284  900F
003963                          *       OUT     1                       RESET NB1,2,4,8
003966                          *       LD      =0
003967  1285  3190
003970                          *       OUT     2                       RESET CRQ,DPR
003973  1286  0032
003974                          *       NOP
003975                          *       NOP
003976  1287  0000
003977                          *       NOP
003978                          *       NOP
003979  1288  0000
003980                          *       NOP
003981                          *       IN      5                       READ STATUS 1
003984  1289  0025
003985                          *       AND     =X'40'                  LOOK AT PWI ONLY
003988  128A  9340
003989                          *       C       =X'40'
003992  128B  9240
003993                          *       BEF     BET1                    ERROR SHOULD BE 0 (SMALLER DISP. FOR DLCP)
003996  128C  F104
003997                          *       JUMP    LDE2
004000  128D  E600                                            DC      LLS(X'E6',8)+LRS(LDE2-X'0414',8)
004001                          *       LOC     BET1
004002          0415            BET1    EQU     X'0415'
004003                          *       LD      =X'20'                  SET DPR
004004  128E  6D90
004007                          *       OUT     2
004010  128F  2032
004011                          *       NOP
004012                          *       NOP
004013  1290  0000
004014                          *       NOP
004015                          *       NOP
004016  1291  0000
004017                          *       NOP
004018                          *       IN      5                       READ STATUS 1
004021  1292  0025
004022                          *       AND     =X'40'                  LOOK AT PWI ONLY
004025  1293  9340
004026                          *       C       =X'40'
004029  1294  9240
004030                          *       BET     BEF1                    (DISPLACEMENT WITHIN 128 FOR DLCP)
004033  1295  E104
004034                          *       JUMP    LDE2
004037  1296  E600                                            DC      LLS(X'E6',8)+LRS(LDE2-X'0426',8)
004038                          *       LOC     BEF1
004039          0427            BEF1    EQU     X'0427'
004040                          *       IN      5
004043  1297  5B25
004044                          *       AND     =X'10'
004047  1298  9310
004048                          *       C       =X'10'
004051  1299  9210
004052                          *       BEF     BET2                    ERROR - ACR SHOULD BE 0
004055  129A  F104
004056                          *       JUMP    LDE2
004059  129B  E600                                            DC      LLS(X'E6',8)+LRS(LDE2-X'0430',8)
004060                          *       LOC     BET2
004061          0431            BET2    EQU     X'0431'
004062                          *       LD      =X'0E'                  SET NB1
004063  129C  5190
004066                          *       OUT     1
004069  129D  0E31
004070                          *       NOP
004071                          *       NOP
004072  129E  0000
004073                          *       NOP
004074                          *       NOP
004075  129F  0000
004076                          *       NOP
004077                          *       IN      5
004080  12A0  0025
004081                          *       AND     =X'10'                  LOOK AT ACR ONLY
004084  12A1  9310
004085                          *       C       =X'10'
004088  12A2  9210
004089                          *       BEF     LDE2                    ERROR - ACR SHOULD BE 1
004092  12A3  F142
004093                          *       IN      5
004096                          *       AND     =X'80'
004097  12A4  2593
004100                          *       C       =X'80'
004101  12A5  8092
004104                          *       BET     LDE2                    ERROR - COS SHOULD BE 0
004105  12A6  80E1
004108                          *       LD      =X'0D'
004109  12A7  3B90
004112                          *       OUT     1
004115  12A8  0D31
004116                          *       NOP
004117                          *       NOP
004118  12A9  0000
004119                          *       NOP
004120                          *       NOP
004121  12AA  0000
004122                          *       NOP
004123                          *       IN      5
004126  12AB  0025
004127                          *       AND     =X'A0'
004130  12AC  93A0
004131                          *       C       =X'80'
004134  12AD  9280
004135                          *       BEF     LDE2                    ERROR COS SHOULD BE 1,DLO 0
```

```
004138  12AE  F12C
004139                    *       LD      =X'0B'
004142  12AF  900B
004143                    *       OUT     1
004146                    *       NOP
004147  12B0  3100
004148                    *       NOP
004149                    *       NOP
004150  12B1  0000
004151                    *       NOP
004152                    *       NOP
004153  12B2  0000
004154                    *       IN      5
004157                    *       AND     =X'20'
004158  12B3  2593
004161                    *       C       =X'20'
004162  12B4  2092
004165                    *       BEF     LDE2            ERROR; DLO SHOULD BE 1
004166  12B5  20F1
004169                    *       LD      =X'07'
004170  12B6  1D90
004173                    *       OUT     1
004176  12B7  0731
004177                    *       LD      =X'08'
004180  12B8  9008
004181                    *       OUT     2
004184                    *       WAIT
004185  12B9  3201
004186                    *       LD      =X'68'
004189  12BA  9068
004190                    *       OUT     2
004193                    *       LD      =X'0F'
004194  12BB  3290
004197                    *       OUT     1
004200  12BC  0F31
004201                    *       WAIT
004202                    *       LD      =X'0F'
004203  12BD  0190
004206                    *       OUT     1
004209  12BE  0F31
004210                    *       LD      =X'0'
004213  12BF  9000
004214                    *       OUT     2
004217                    *       LD      X'30'
004218  12C0  3250
004221                    *       AND     =X'BF'
004222  12C1  3093
004225                    *       ST      X'30'
004226  12C2  BF51
004229                    *       GNB
004230  12C3  3002
004231                    *       WAIT
004232                    *
004233                    *       LOC     LDE2
004234          0481      LDE2    EQU     X'0481'
004235                    *       LD      X'30'
004236  12C4  0150
004239                    *       AND     =X'BF'
004240  12C5  3093
004243                    *       XOR     =X'40'
004244  12C6  BF95
004247                    *       ST      X'30'
004248  12C7  4051
004251                    *       GNB
004252  12C8  3002
004253                    *       WAIT
004254                    *       ORG     X'400'
004255  12C9  0100
004256          12CA      LDE2    EQU     $
004257                    *       LOC     LDE1
004258          0400      LDE1    EQU     X'0400'
004259                    *       LD      =X'0F'
004262  12CA  900F
004263                    *       OUT     1
004266                    *       LD      =0
004267  12CB  3190
004270                    *       OUT     2
004273  12CC  0032
004274                    *       NOP
004275                    *       NOP
004276  12CD  0000
004277                    *       NOP
004278                    *       NOP
004279  12CE  0000
004280                    *       NOP
004281                    *       IN      5
004284  12CF  0025
004285                    *       AND     =X'40'
004288  12D0  9340
004289                    *       C       =X'40'
004292  12D1  9240
004293                    *       BET     LDE2            ERROR-PWI SB 0
004296  12D2  E118
004297                    *       LD      =X'40'
004300  12D3  9040
004301                    *       OUT     2
004304                    *       NOP
004305  12D4  3200
004306                    *       NOP
004307                    *       NOP
004308  12D5  0000
004309                    *       NOP
004310                    *       NOP
004311  12D6  0000
004312                    *       IN      5
004315                    *       AND     =X'40'
004316  12D7  2593
004319                    *       C       =X'40'
004320  12D8  4092
004323                    *       BEF     LDE2            ERROR-PWI SB 1
004324  12D9  40F1
004327                    *       LD      X'30'
004328  12DA  0950
```

```
004331                              *       AND     =X'BF'
004332  12DB  3093
004335                              *       ST      X'30'
004336  12
004339                              *       GNB
004340  12DD  3002
004341                              *       WAIT
004342                              *
004343                              *       LOC     LD22
004344        0429                  LD22    EQU     X'0429'
004345                              *       LD      X'30'
004346  12DE  0150
004349                              *       AND     =X'BF'
004350  12DF  3093
004353                              *       XOR     =X'40'
004354  12E0  BF95
004357                              *       ST      X'30'
004358  12E1  4051
004361                              *       GNB
004362  12E2  3002
004363                              *       WAIT
```

```
004364                                /
004365                                *
004366                                * CHANNEL PROGRAM TO WRITE DATA TO A TERMINAL
004367                                *
004368                                *       ORG     X'400'
004369  12E3  0100
004370        12E4    TTA     EQU     $
004371                *       LOC     TTAA
004372        0400    TTAA    EQU     X'0400'
004373                *       LD      52              BAUD RATE
004376  12E4  5034
004377                *       OUT     4
004380                *       LD      34              CHAR.CONFIGURATION
004381  12E5  3450
004384                *       OUT     6
004387  12E6  2236
004388                *       LD      =X'C1'          XMIT ON
004391  12E7  90C1
004392                *       OUT     2
004395                *       NOP
004396  12E8  3200
004397                *       GNB
004398                *       WAIT
004399  12E9  0201
004400                *       LOC     TTA0
004401        040C    TTA0    EQU     X'040C'
004402                *       NOP
004403                *       NOP
004404  12EA  0000
004405                *       NOP
004406                *       LD      =X'0D'          CR
004407  12EB  0090
004410                *       SEND    2
004413  12EC  0D62
004414                *       WAIT
004415                *       LD      X'0A'           L/F
004416  12ED  0150
004419                *       SEND    2
004422  12EE  0A62
004423        12EF    TTA1    EQU     $
004424                *       WAIT
004425                *       NOP
004426  12EF  0100
004427                *       NOP
004428                *       LOC     TTB
004429        0419    TTB     EQU     X'0419'
004430                *       LD
004431  12F0  0010
004432                *       AND     =X'7F'          STRIP EXTRA BIT IN $ SIGN
004435  12F1  937F
004436                *       SEND    2
004439                *       WAIT
004440  12F2  6201
004441                *       BLCT    TTC
004444  12F3  E303
004445                *       B       TTB
004448  12F4  E0F8
004449                *       LOC     TTC
004450        0422    TTC     EQU     X'0422'
004451                *       LD      =X'7F'          PAD
004454  12F5  907F
004455                *       SEND    2
004456                *       WAIT
004459  12F6  6201
004460                *       SEND    2
004463                *       LD      =X'C0'
004464  12F7  6290
004467                *       OUT     2
004470  12F8  C032
004471                *       LD      X'30'
004474  12F9  5030
004475                *       AND     =X'BF'
004478  12FA  93BF
004479                *       ST      X'30'
004482  12FB  5130
004483                *       GNB
004484                *       WAIT
004485  12FC  0201
```

```
004486                                  /
004487                                  *
004488                                  * CHANNEL PROGRAM TO RECEIVE DATA FROM A TERMINAL
004489                                  *
004490                                  *       ORG     X'200'
004491          12FD                    RTA     EQU     $
004492                                  *       LOC     RTAA
004493          0200                    RTAA    EQU     X'0200'
004494                                  *       LD      20
004497  12FD    5014
004498                                  *       OUT     4
004501                                  *       LD      2
004502  12FE    3450
004505                                  *       OUT     6
004508  12FF    0236
004509                                  *       IN      1                       CLEAR LR1
004512                                  *       NOP
004513  1300    2100
004514                                  *       LD      =X'C2'
004517  1301    90C2
004516                                  *       OUT     2
004521                                  *       WAIT
004522  1302    3201
004523                                  *       LOC     RTB
004524          020C                    RTB     EQU     X'020C'
004525                                  *       WAIT
004526          1303                    RTA1    EQU     $
004527                                  *       RECV    2
004530  1303    01A2
004531                                  *       ST      60
004534  1304    513C
004535                                  *       AND     =X'7F'
004538  1305    937F
004539                                  *       ST
004540                                  *       BLCT    REXHT
004541  1306    11E3
004544                                  *       LD      =X'C1'
004545  1307    1990
004548                                  *       OUT     2
004551  1308    C132
004552                                  *       LD      60
004555  1309    503C
004556                                  *       AND     =X'7E'
004559  130A    937F
004560                                  *       C       =X'0D'
004563  130B    920D
004564                                  *       BEF     RTB
004567  130C    F1ED
004568                                  *       LD      =X'0D'
004571  130D    900D
004572                                  *       ST      60
004575  130E    513C
004576                                  *       LD      =X'C1'
004579  130F    90C1
004580                                  *       OUT     2
004583                                  *       NOP
004584  1310    3200
004585                                  *       GNB
004586                                  *       LOC     WT4
004587          0229                    WT4     EQU     X'0229'
004588                                  *       WAIT
004589  1311    0201
004590                                  *       NOP
004591                                  *       B       WT4
004592  1312    00E0
004595                                  *       LOC     REXHT
004596          022D                    REXHT   EQU     X'022D'
004597                                  *       LD      60
004598  1313    F050
004601          1314                    RTA2    EQU     $
004602                                  *       SEND    2
004605  1314    3C62
004606                                  *       WAIT
004607                                  *       LD      16
004608  1315    0150
004611                                  *       OR      =X'02'                  SET RANGE EXHAUST FLAG
004612  1316    1094
004615                                  *       ST      16
004616  1317    0251
004619                                  *       LD      =X'C0'
004620  1318    1090
004623                                  *       OUT     2                       TURN OFF RECV,XMIT
004626  1319    C032
004627                                  *       B       EXT
004630  131A    E00C
004631                                  *       LOC     RTE
004632          023C                    RTE     EQU     X'023C'
004633                                  *       LD      60
004636  131B    503C
004637          131C                    RTA3    EQU     $
004638                                  *       SEND    2
004641                                  *       WAIT
004642  131C    6201
004643                                  *       C       =X'0D'
004646  131D    920D
004647                                  *       BEF     RTE1
004650  131E    F10F
004651                                  *       LD      =X'C0'
004654  131F    90C0
004655                                  *       OUT     2
004658                                  *       LOC     EXT
004659          0247                    EXT     EQU     X'0247'
004660                                  *       GNB
004661  1320    3202
004662                                  *       LOC     WT2
004663          0248                    WT2     EQU     X'0248'
004664                                  *       WAIT
004665                                  *       NOP
004666  1321    0100
004667                                  *       B       WT2
004670  1322    E0FD
004671                                  *       NOP
004672                                  *       NOP
```

```
004673  1323  0000
004674                        *       NOP
004675                        *       NOP
004676  1324  0000
004677                        *       NOP
004678                        *       NOP
004679  1325  0000
004680                        *       LOC     RTE1
004681        0252            RTE1    EQU     X'0252'
004682                        *       LD      =X'C2'
004685  1326  90C2
004686                        *       OUT     2
004689                        *       WAIT
004690  1327  3201
004691                        *       B       RTE
004694  1328  E0E5
004695                        *       NOP
004696                        *       ORG     X'200'
004697  1329  0000
004698        132A            TTO     EQU     $
004699                        *       LOC     TTP
004700        0200            TTP     EQU     X'0200'
004701                        *       LD      52
004704  132A  5034
004705                        *       OUT     4
004708                        *       LD      34
004709  132B  3450
004712                        *       OUT     6
004715  132C  2236
004716                        *       LD      =1
004719  132D  9001
004720                        *       OUT     2
004723                        *       LD      =X'0D'
004724  132E  3290
004727                        *       SEND    2
004730  132F  0D62
004731                        *       WAIT
004732                        *       LD      =X'0A'
004733  1330  0190
004736                        *       SEND    2
004739  1331  0A62
004740                        *       WAIT
004741                        *       GNB
004742  1332  0102
004743                        *       WAIT
004744                        *       NOP
004745  1333  0100
004746                        *       NOP
004747                        *       NOP
004748  1334  0000
004749                        *
```

```
004750                          /
004751                          *
004752                          *
004753                          *
004754                          *CHANNEL PROGRAM FOR SYNCHRONOUS TERMINAL
004755                          *
004756                          *       ORG     X'400'
004757          1335            TTS     EQU     $
004758                          *       NOP
004759                          *       NOP
004760  1335    0000
004761                          *       NOP
004762                          *       NOP
004763  1336    0000
004764                          *       NOP
004765                          *       NOP
004766  1337    0000
004767                          *       NOP
004768                          *       NOP
004769  1338    0000
004770                          *VPINIT
004771                          *       LOC     VIPNIT
004772          0408            VIPNIT EQU      X'0408'
004773                          *       LD      =X'C6'          7 BIT ODD AND LRC
004776  1339    90C6
004777                          *       ST      34              XMIT CONFIGURATION
004780  133A    5122
004781                          *       OUT     6               LR6
004784                          *       LD      =X'16'          SYNCH CHAR
004785  133B    3690
004788                          *       OUT     4               LR4
004791  133C    1634
004792                          *VPXTOP
004793          133D            DTS1    EQU     $
004794                          *       LOC     VPXTOP
004795          0410            VPXTOP EQU      X'0410'
004796                          *       LD      =X'C9'          DATASET CONTROL DIRECT CONECT
004799  133D    90C9
004800                          *       ST      20              STORE DATA SET CONTROL
004803  133E    5114
004804                          *       OUT     2               LR2 TURN ON TRANSMIT BIT
004807                          *VPXSEG
004808                          *       LOC     VPXSEG
004809          0415            VPXSEG EQU      X'0415'
004810                          *       LD      =X'16'          SYNCH CHARACTER
004811  133F    3290
004814                          *       OUT     1               SEND IT
004817  1340    1631
004818                          *       IN      5
004821                          *       ST      31              LR5
004822  1341    2551
004825                          *       LD      =X'16'
004826  1342    1F90
004829                          *       WAIT
004830  1343    1601
004831                          *       OUT     1               2ND SYNC
004834                          *       WAIT
004835  1344    3101
004836                          *       OUT     1               3RD SYNCH
004839                          *       WAIT
004840  1345    3101
004841                          *       OUT     1               4TH SYNCH
004844                          *       LD      =0
004845  1346    3190
004848                          *       ST      35              CLEAR CRC STORAGE
004849  1347    0051
004852                          *       WAIT
004853  1348    2301
004854                          *       LD      =1              SOH
004857  1349    9001
004858                          *       SEND    2               SEND SOH WITH PARITY
004861                          *       WAIT
004862  134A    6201
004863                          *       LD      28              ADDRESS
004866  134B    501C
004867                          *       SEND    3               PARITY AND LRC
004870                          *       WAIT
004871  134C    6301
004872                          *       LD      =X'0'           NUL (STATUS)
004875  134D    9000
004876                          *       SEND    3
004879                          *       WAIT
004880  134E    6301
004881                          *       LD      =X'20'          FC1 (SPACE)
004884  134F    9020
004885                          *       SEND    3
004888                          *       WAIT
004889  1350    6301
004890                          *       SEND    3               2ND SPACE (FC 2)
004893                          *       WAIT
004894  1351    6301
004895                          *       LD      =X'02'          STX
004898  1352    9002
004899                          *       SEND    3
004902                          *       WAIT
004903  1353    6301
004904                          *       LD      28              ADDRESS
004907  1354    501C
004908                          *       AND     =X'60'          STRIP FIVE LSBS
004911  1355    9360
004912                          *       ST      28
004915  1356    511C
004916                          *       C       =X'40'          SELECT ADDRESS
004919  1357    9240
004920                          *       BET     SELECT          SELECT MESG
004923  1358    E11C
004924                          *       C       =X'20'
004927  1359    9220
004928                          *       BET     EMPRAM          POL MSG
004931  135A    E106
004932                          *SNDTX
004933                          *       LOC     SNDTX
004934          044C            SNDTX  EQU      X'044C'
```

```
004935                          *       LD      ,DMA            XFER
004936                          *       SEND    3
004939  135B  1063              *       WAIT
004940                          *VPX2
004941                          *       LOC     VPX2
004942                          VPX2    EQU     X'044F'
004943          044F            *       BLCF    SNDTX           GET MORE
004944
004945  135C  01F3              *EMFRAM
004948                          *       LOC     EMFRAM
004949                          EMFRAM  EQU     X'0451'
004950          0451            *       LD      =X'03'          ETX
004951
004952  135D  FC90              *       SEND    3
004955
004958  135E  0363              *       WAIT
004959                          *       LD      35
004960
004961  135F  0150              *       AND     =X'7F'          STRIP PARITY
004964
004965  1360  2393              *       SEND    2
004968
004971  1361  7F62              *       WAIT
004972                          *       LD      28
004973
004974  1362  0150              SELCHK  EQU     $
004977          1363            *       C       =X'60'          THIS CODE MODIFIED TO NOP FOR NON POLL OP
004978
004979  1363  1C92              *       BET     SELCT1          NOP FOR NON POLL OPERATION
004982
004983  1364  60E1              *       B       VPXEOT
004986
004987  1365  14E0              *SELECT
004990                          *       LOC     SELECT
004991
004992          0463            SELECT  EQU     X'0463'
004993                          *       LD      =X'03'          ETX
004994  1366  1990
004997
005000  1367  0363              *       SEND    3
005001
005002                          *       WAIT
005003  1368  0150              *       LD      35              LRC CALCULATION
005006
005007  1369  2393              *       AND     =X'7F'
005010
005013  136A  7F62              *       SEND    2
005014
005015                          *       WAIT
005016  136B  0150              *       LD      29              DEVICE ADDRESS
005019
005020  136C  1D51              *       ST      28              SWAP FOR NEXT DECISION
005023
005024  136D  1CE6              *       JUMP    VPXSEG
005027  136E  FFA2                      DC      VPXSEG-X'0473'
005028                          *SELCT1
005029                          *       LOC     SELCT1
005030          0474            SELCT1  EQU     X'0474'
005031                          *       LD      61              POLL ADR FOR TT TEST
005034  136F  503D
005035
005038  1370  511C              *       ST      28
005039
005042  1371  E6FF              *       JUMP    VPXSEG
005043                                          DC      LLS(X'E6',8)+LRS(VPXSEG-X'047A',8)
005044                          *VPXEOT
005045                          *       LOC     VPXEOT
005046          047B            VPXEOT  EQU     X'047B'
005047                          *       LD      =X'16'          SYNCH CHAR.
005050  1372  9B90
005053
005054  1373  1631              *       OUT     1               SEND IT - NO PARITY
005055                          *       WAIT
005058                          *       OUT     1               2ND SYNCH
005059  1374  0131
005060                          *       WAIT
005063                          *       OUT     1               XMIT 3RD SYNCH
005064  1375  0131
005065                          *       WAIT
005068                          *       OUT     1               XMIT 4TH SYNCH
005069  1376  0131
005070                          *       WAIT
005071                          *       LD      =4              LOAD EOT CHAR.
005074  1377  0190
005077                          *       OUT     1               XMIT NO PARITY
005078  1378  0431
005079                          *       WAIT
005080                          *       LD      =X'7F'          LOAD PAD CHAR.
005083  1379  0190
005086                          *       OUT     1               XMIT - NO PARITY
005087  137A  7F31
005088          137B            DTS2    EQU     $
005091                          *       LD      =X'CB'          DATA SET CONTROL BITS
005092  137B  90CB
005093                          *       NOP
005094                          *       NOP
005095  137C  0000              *       NOP     **TEMP**        TURN ON RECEIVE EARLY
005096                          *       WAIT
005097  137D  0001              *       LD      =X'7F'          PAD CHAR
005101                          *       OUT     1               2ND PAD CHAR. REQUIRED BY TERMINAL
005102  137E  907F
005105                          *       WAIT
005106                          *       OUT     1               THREE PADS REQUIRED TO FLUSH USART
005107  137F  3101
005110                          *       WAIT
005111                          *       LD      26              POLL RTI FLG
005112  1380  3101
005115                          *       C       =X'0'
005116  1381  501A
005119                          *       BZT     QUIT
005120  1382  9200
005123  1383  E214
```

```
005124                          *
005125          1384            DTS4    EQU     $
005126                          *       LD      =X'8A'          TURN OFF RTS,XMIT,AND TURN ON RECV
005129  1384    908A
005130                          *       OUT     2
005133                          *       SI      20
005134  1385    3251
005137                          *       WAIT
005138  1386    1401
005139                          *       LD      27
005142  1387    501B
005143                          *       C       =0
005146  1388    9200
005147                          *       BZT     QUIT
005150  1389    E208
005151                          *       LOC     POL
005152          04AA            POL     EQU     X'04AA'
005153                          *       LD      61              GET POLL ADDR
005156  138A    503D
005157                          *       ST      28
005160  138B    511C
005161                          *       JUMP    VPXSEG          GO POLL AGAIN
005164  138C    E6FF                                    DC      LLS(X'E6',8)+LRS(VPXSEG-X'04B0',8)
005165                          *       LOC     QUIT
005166          04B1            QUIT    EQU     X'04B1'
005167                          *       LD      20              LCT 20
005168  138D    6550
005171                          *       AND     =X'FA'          KILL XMIT BIT
005172  138E    1493
005175                          *       ST      20              RESTORE INTO LCT 20
005176  138F    FA51
005179                          *       OUT     2               LR2 - TO KILL XMIT BIT
005182  1390    1432
005183                          *       NOP
005184                          *       GNB
005185  1391    0002
005186                          *       LOC     WT
005187          04BA            WT      EQU     X'04BA'
005188                          *       WAIT
005189                          *       NOP
005190  1392    0100
005191                          *       B       WT
005194  1393    E0FD
005195                          *
005196                          *
```

```
005197                          /
005198                          *
005199                          *********
005200                          *
005201                          *
005202                          *  RECEIVE CCP FOR SYNCHRONOUS TERMINAL
005203                          *
005204                          *
005205                          **********
005206                          * VIP RECEIVE INITIALIZATION
005207                          *
005208                          *************
005209                          *       ORG     X'200'
005210          1394            RTS     EQU     $
005211                          *       NOP
005212                          *       NOP
005213  1394    0000
005214                          *       NOP
005215                          *       NOP
005216  1395    0000
005217                          *       NOP
005218                          *       NOP
005219  1396    0000
005220                          *       NOP
005221                          *       NOP
005222  1397    0000
005223                          *       NOP
005224                          *       NOP
005225  1398    0000
005226                          *       LOC     RECVIN
005227          020A            RECVIN  EQU     X'020A'
005228                          *       LD      =X'C6'                  7 BIT,ODD,LRC
005231  1399    90C6
005232                          *       ST      2                       LCT 2 RECV  CONFIGURATION
005235  139A    5102
005236                          *       ST      34                      XMIT CONFIG
005239  139B    5122
005240                          *       OUT     6                       LR6
005243                          *       LD      =X'16'                  SYNC CHAR.
005244  139C    3690
005247                          *       OUT     4                       LR4
005250  139D    1634
005251          139E            DTS3    EQU     $
005252                          *       LD      =X'8A'                  DTR, DIRECT CONNECT,RECV ON
005255  139E    908A
005256                          *       ST      20                      LCT 20 DATA SET CONTROL
005259  139F    5114
005260                          *       OUT     2
005263                          *       NOP
005264  13A0    3200
005265                          *       LD      =4                      COUNT TO RECEIVE 4 CHAR
005268  13A1    9004
005269                          *       ST      30                      BETWEEN SOH AND STX
005272  13A2    511E
005273                          *       ST      27                      LCT 27 NON-ZERO FLG FOR RT POLL
005276  13A3    511B
005277                          *       LD      24                      LCT 24 RT FLAG
005280  13A4    5018
005281                          *       C       =X'1'
005284  13A5    9201
005285                          *       BEF     VPRSFS
005288  13A6    F104
005289                          *       JUMP    SFS1
005292  13A7    E600                                    DC      LLS(X'E6',8)+LRS(SFS1-X'0228',8)
005293                          *VPRSFS
005294                          *       LOC     VPRSFS
005295          0229            VPRSFS  EQU     X'0229'
005296                          *       SFS     SEARCH                  FOR SYNC
005297  13A8    B003
005298                          *       WAIT
005299                          *       RECV    2                       RECV PARITY BUT NO LRC
005302  13A9    01A2
005303                          *       WAIT
005304                          *       ST      ,
005305  13AA    0111
005306                          *       C       =X'16'
005309  13AB    9216
005310                          *       BEF     VPRSFS
005313  13AC    F1F8
005314                          *MORSYN
005315                          *       LOC     MORSYN
005316          0232            MORSYN  EQU     X'0232'
005317                          *       BLCT    LASTCH
005320  13AD    E33A
005321                          *       RECV    2
005324                          *       WAIT
005325  13AE    A201
005326                          *       ST      ,
005327                          *       C       =X'04'                  EOT
005328  13AF    1192
005331                          *       BEF     SOH                     Q FRAME
005332  13B0    04F1
005335                          *       ST      58                      FOR INPUT LCT
005336  13B1    0651
005339                          *       JUMP    VPRGNB
005340  13B2    3AE6
005343  13B3    0081                    DC      VPRGNB-X'023F'
005344                          *       LOC     SOH
005345          0240            SOH     EQU     X'0240'
005346                          *       C       =X'01'                  SOH
005349  13B4    9201
005350                          *       BEF     MORSYN
005353  13B5    F1EF
005354                          *CLLRC
005355                          *       LOC     CLLRC
005356          0244            CLLRC   EQU     X'0244'
005357                          *       LD      =0
005360  13B6    9000
005361                          *       ST      3                       CLEAR LRC RESIDUE
005364  13B7    5103
005365                          *NORMAL
005366                          *       LOC     NORMAL
005367          0248            NORMAL  EQU     X'0248'
```

```
005368                          *       RECV    3               PARITY AND LRC
005371                          *       WAIT
005372  13B6  A301
005373                          *       AND     =X'7F'          STRIP PARITY
005376  13B9  937F
005377                          *       ST      ,
005378                          *       ST      57
005379  13BA  1151
005382                          *       C       =X'04'          EOT
005383  13BB  3992
005386                          *       BEF     STX             @ FRAME
005387  13BC  04F1
005390                          *       ST      58              FOR INPUT LCT
005391  13BD  0651
005394                          *       JUMP    VPRGNB
005395  13BE  3AE6
005398  13BF  0069                      DC      VPRGNB-X'0257'
005399                          *       LOC     STX
005400        0258              STX     EQU     X'0258'
005401                          *       C       =X'02'          STX
005404  13C0  9202
005405                          *       BET     PROTER          STX FOUND AT WRONG PLACE
005406  13C1  E150
005409                          *       C       =X'03'          ETX
005412  13C2  9203
005413                          *       BET     PROTER          ETX FOUND PROTOCALL ERROR
005416  13C3  E14C
005417                          *       C       =X'16'          SYNC AFTER SOH
005420  13C4  9216
005421                          *       BEF     STORII
005424  13C5  F10C
005425                          *       CCH     ,UNDO           CALC FOR SYNC
005426                          *       B       STORII
005427  13C6  04E0
005430                          *       LOC     STACHR
005431        0267              STACHR  EQU     X'0267'
005432                          *       LD      57              GET STA CHAR.
005433  13C7  0950
005436                          *       ST      58              FOR INPUT LCT
005437  13C8  3951
005440                          *       B       NORMAL
005441  13C9  3AE0
005444                          *       LOC     LASTCH
005445        026D              LASTCH  EQU     X'026D'
005446                          *       B       GNB1
005447  13CA
005450                          *STORIT
005451                          *       LOC     STORII
005452        026F              STORIT  EQU     X'026F'
005453                          *       LD      30              LCT 30 CONTAIN VALUE 4
005454  13CB  3B50
005457                          *       DEC
005458  13CC  1E05
005459                          *       ST      30
005462  13CD  511E
005463                          *       C       =2
005466  13CE  9202
005467                          *       BET     STACHR
005470  13CF  E1F0
005471                          *       BZF     NORMAL
005474  13D0  F2CF
005475                          *VPRNXT
005476                          *       LOC     VPRNXT
005477        027A              VPRNXT  EQU     X'027A'
005478                          *       RECV    3
005481                          *       WAIT
005482  13D1  A301
005483                          *       AND     =X'7F'          STRIP PARITY
005486  13D2  937F
005487                          *       ST      ,
005488                          *       C       =X'02'          STX
005489  13D3  1192
005492                          *       BEF     PROTER          PROTCALL ERROR
005493  13D4  02F1
005496                          *       ST      23              STX FLAG
005497  13D5  2951
005500                          *MORCHR
005501                          *       LOC     MORCHR
005502        0285              MORCHR  EQU     X'0285'
005503                          *       RECV    3
005506  13D6  17A3
005507                          *       WAIT
005508                          *       AND     =X'7F'          STRIP PARITY
005509  13D7  0193
005512                          *       ST      ,
005513  13D8  7F11
005514                          *       BLCT    RNGER
005517  13D9  E310
005518                          *       C       =X'03'          ETX
005521  13DA  9203
005522                          *       BEF     MORCHR
005525  13DB  F1F6
005526                          *       RECV    3               RECEIVE LRC
005529                          *       WAIT    ,FOR            SYNCH
005530  13
005531                          *       AND     =X'7F'
005534  13DD  937F
005535                          *       ST      ,
005536                          *       LD      3               READ LRC RESIDUE
005537  13DE  1150
005540                          *       AND     =X'7F'          STRIP PARITY
005541  13DF  0393
005544                          *       BZT     VPRXIT
005545  13E0  7FE2
005548                          *RNGER
005549                          *       LOC     RNGER
005550        029B              RNGER   EQU     X'029B'
005551                          *       LD      16
005552  13E1  1950
005555                          *       OR      =X'02'          SET RANGE EXHAUST FLG
005556  13E2  1094
005559                          *       ST      16
005560  13E3  0251
```

```
005563                          *       B       GNB1
005564  13E4  10E0
005567                          *BADLRC
005568                          *       LOC     BADLRC
005569          02A3            BADLRC  EQU     X'02A3'
005570                          *       LD      17              LCT 17
005571  13E5  0750
005574                          *       OR      =X'40'          PARITY AND LRC ERROR
005575  13E6  1194
005578                          *       ST      17
005579  13E7  4051
005582                          *       LOC     GNB1
005583          02A9            GNB1    EQU     X'02A9'
005584                          *       B       VPRGNB
005585  13E8  11E0
005588                          *PROTER
005589                          *       LOC     PROTER
005590          02AB            PROTER  EQU     X'02AB'
005591                          *       LD      16              LCT16
005592  13E9  1650
005595                          *       OR      =X'04'          BAD PROTO CALL ERROR BIT
005596  13EA  1094
005599                          *       ST      16
005600  13EB  0451
005603                          *       B       VPRGNB
005604  13EC  10E0
005607                          *VPRXIT
005608                          *       LOC     VPRXII
005609          02B3            VPRXIT  EQU     X'02B3'
005610                          *       RECV    2
005613  13ED  0EA2
005614                          *       WAIT
005615                          *       ST      ,
005616  13EE  0111
005617                          *       BLCT    VPRGNB
005620  13EF  E309
005621                          *       C       =X'16'          SYNC
005624  13F0  9216
005625                          *       BET     VPRXII
005628  13F1  E1F8
005629                          *       C       =X'04'          EOT
005632  13F2  9204
005633                          *       BEF     VPRXII
005636  13F3  F1F4
005637                          *VPRGNB
005638                          *       LOC     VPRGNB
005639          02C0            VPRGNB  EQU     X'02C0'
005640                          *       LD      =X'C0'
005643  13F4  90C0
005644                          *       ST      20
005647  13F5  5114
005648                          *       OUT     2               KILL RECIVER
005651                          *       ST      20
005652  13F6  3251
005655                          *       GNB
005656  13F7  1402
005657                          *       LOC     WT3
005658          02C8            WT3     EQU     X'02C8'
005659                          *       WAIT
005660                          *       NOP
005661  13F8  0100
005662                          *       B       WT3
005665  13F9  E0FD
005666                          *SFS2
005667                          *       LOC     SFS2
005668          02CC            SFS2    EQU     X'02CC'
005669                          *       LD      26              RT LT (POLL FLAG)
005672  13FA  501A
005673                          *       C       =0
005676  13FB  9200
005677                          *       BZT     SFS1            IF NON POLL DON'T TURN  ON XMIT
005680  13FC  E207
005681          13FD            DTS5    EQU     $
005682                          *       LD      =X'C9'          XMIT ON TURN OFF RECV
005685  13FD  90C9
005686                          *       OUT     2
005689                          *       ST      20
005690  13FE  3251
005693                          *       WAIT
005694  13FF  1401
005695                          *SFS1
005696                          *       LOC     SFS1
005697          02D8            SFS1    EQU     X'02D8'
005698                          *       SFS
005699                          *       WAIT
005700  1400  0301
005701                          *       NOP
005702                          *       NOP
005703  1401  0000
005704                          *       RECV    2
005707                          *       WAIT
005708  1402  A201
005709                          *       C       =X'16'
005712  1403  9216
005713                          *       BEF     SFS1
005716  1404  F1F7
005717                          *MORSY1
005718                          *       LOC     MORSY1
005719          02E2            MORSY1  EQU     X'02E2'
005720                          *       RECV    2
005723                          *       WAIT
005724  1405  A201
005725                          *       C       =X'16'
005728  1406  9216
005729                          *       BET     MORSY1
005732  1407  E1FB
005733                          *       C       =X'04'          EOT
005736  1408  9204
005737                          *       BET     SFS2
005740  1409  E1E1
005741                          *       C       =X'01'          SOH
005744  140A  9201
005745                          *       BEF     MORSY1
```

```
005748  140B  F1F3
005749                    *       LD      =0
005752  140C  9000
005753                    *       ST      3
005756  140D  5103
005757                    *       RECV    3                       ADDR CHR.
005760                    *       WAIT
005761  140E  A301
005762                    *       AND     =X'7F'
005765  140F  937F
005766                    *       C       =X'04'
005769  1410  9204
005770                    *       BET     SFS2
005773  1411  E1D1
005774                    *
005775                    *
005776                    *       RECV    3                       STA CHAR.
005779                    *       WAIT
005780  1412  A301
005781                    *       AND     =X'7F'
005784  1413  937F
005785                    *       C       =X'0'
005788  1414  9200
005789                    *       BEF     SFS1
005792  1415  F1D5
005793                    *       ST      27
005796  1416  511B
005797                    *       RECV    3                       FC1
005800                    *       WAIT
005801  1417  A301
005802                    *       RECV    3                       FC2
005805                    *       WAIT
005806  1418  A301
005807                    *       RECV    3
005810                    *       WAIT
005811  1419  A301
005812                    *       AND     =X'7F'
005815  141A  937F
005816                    *       C       =X'02'                  STX
005819  141B  9202
005820                    *       BET     MORCH1
005823  141C  E106
005824                    *       NOP
005825                    *       NOP
005826  141D  0000
005827                    *       JUMP    PROTER
005830  141E  E6FF                                      DC      LLS(X'E6',8)+LRS(PROTER-X'0316',8)
005831                    *MORCH1
005832                    *       LOC     MORCH1
005833        0317        MORCH1  EQU     X'0317'
005834                    *       RECV    3
005837  141F  95A3
005838                    *       WAIT
005839                    *       AND     =X'7F'
005840  1420  0193
005843                    *       BLCT    RNGER1
005844  1421  7FE3
005847                    *       C       =X'03'                  ETX
005848  1422  1592
005851                    *       BET     EOM
005852  1423  03E1
005855                    *       ST      ,
005856  1424  0411
005857                    *       B       MORCH1
005860  1425  E0F4
005861                    *       LOC     EOM
005862        0324        EOM     EQU     X'0324'
005863                    *       RECV    3
005866                    *       WAIT
005867  1426  A301
005868                    *       AND     =X'7F'
005871  1427  937F
005872                    *       LD      3
005875  1428  5003
005876                    *       AND     =X'7F'
005879  1429  937F
005880                    *       BZT     EXIT1
005883  142A  E20C
005884                    *       JUMP    BADLRC
005887  142B  E6FF                                      DC      LLS(X'E6',8)+LRS(BADLRC-X'0330',8)
005888                    *RNGER1
005889                    *       LOC     RNGER1
005890        0331        RNGER1  EQU     X'0331'
005891                    *       LD      16
005892  142C  7350
005895                    *       OR      =X'02'                  SET RANGE EXHAUST FLG
005896  142D  1094
005899                    *       ST      16
005900  142E  0251
005903                    *       B       EXIT
005904  142F  10E0
005907                    *EXIT1
005908                    *       LOC     EXIT1
005909        0339        EXIT1   EQU     X'0339'
005910                    *       RECV    2
005913  1430  0AA2
005914                    *       WAIT
005915                    *       AND     =X'7F'
005916  1431  0193
005919                    *       C       =X'04'
005920  1432  7F92
005923                    *       BEF     EXIT1
005924  1433  04F1
005927                    *       ST      ,
005928  1434  F911
005929                    *EXIT
005930                    *       LOC     EXIT
005931        0342        EXIT    EQU     X'0342'
005932                    *       LD      26
005935  1435  501A
005936                    *       C       =0                      CHECK IF NON POLL RT,LT
005939  1436  9200
005940                    *       BZT     EXIT2
```

```
005943  1437  E205
005944        1438              DTS6   EQU    $
005945                          *       LD     =X'C9'
005946  1438  90C9
005949                          *       B      EXIT3
005952  1439  E003
005953                          *       LOC    EXIT2
005954        034C              EXIT2  EQU    X'034C'
005955                          *       LD     =X'C0'
005958  143A  90C0
005959                          *       LOC    EXIT3
005960        034E              EXIT3  EQU    X'034E'
005961                          *       ST     20              KILL RECV  XMITT IF NON POLL
005964  143B  5114
005965                          *       OUT    2               KILL RECV AND TURN ON XMIT
005968                          *       GNB
005969  143C  3202
005970                          *       LOC    WT1
005971        0352              WT1    EQU    X'0352'
005972                          *       WAIT
005973                          *       NOP
005974  143D  0100
005975                          *       B      WT1
005978  143E  E0FD
005979                          *       NOP
005980                          *
005981                          *
005982                          *
005983                          *
005984  143F  0F01 FFFF         CCP2   NOP    $               CHANNEL PROGRAMS ENDS HERE
```

```
005985                                          /
005986                                          *
005987                                          *
005988                                          *
005989                                          *
005990                                          *
005991                                          *
005992                                          *
005993                                          *
005994                                          *
005995                                          * WAIT FOR STATUS COMPLETE
005996                                          *   LNJ  $B4,<TESTS
005997                                          *   B    $+2     RETURN
005998                                          *   DC   XX      TIMEOUT IN 120TH'S SEC.
005999                                          *
006000                                          *
006001  1441  8F00 1614                        TESTSR SAVE  <SAV2,=Z'4909'
        1443  4909
006002  1444  C840 01B7                              LDR   $R4,CONT6
006003  1446  C570 FFBF                              AND   $R4,=Z'FFBF'
006004  1448  CF40 FB8C                              STR   $R4,TEMP
006005  144A  0F88                                   B     >TESTSA
006006  144B  8F00 1614                        TESTS  SAVE  <SAV2,=Z'4909'        R1,4,7,B4,7
        144D  4909
006007  144E  C840 01AD                              LDR   $R4,CONT6
006008  1450  CF40 FB84                              STR   $R4,TEMP
006009  1452  8751                            TESTSA CL    =$R1
006010  1453  9F00 0000              X                STR   $R1,<ZHRTC1          ZERO OUT RTC RESET VALUE
006011  1455  1C01                                   LDV   $R1,=1
006012  1456  9F00 0000              X                STR   $R1,<ZHRTCL          SET FOR RUPT LEVEL 1
006013  1458  9870 1700                             LDR   $R1,=X'1700'
006014  145A  9F00 0000              X                STR   $R1,<ZHRTCC          SET REAL TIME CLOCK
006015  145C  89C0 01E9                             CMZ   INHRTC
006016  145E  0980                   I                BNE   >+$A
006017  145F  0004                                   RTCN
006018  1460  C380 1553                        $A     LNJ   $B4,<INXT            INPUT NEXT STATUS
006019  1462  DF40 F5C8                        TESTZ  STR   $R5,LFLAG
006020  1464  82D5                                   LB    =$R5,=Z'1000'        TEST FOR STATUS COMPLETE
        1465  1000
006021  1466  0501 002D                              BBT   TESTZ1               BRANCH IF COMPLETE
006022  1468  8980 0000              X                CMZ   <ZHRTCC              TEST RTC
006023  146A  0923                                   BE    >TESTZ0              TIMEOUT
006024                                              CALL  ZV$BRK
        146B  FBF0 0001
        146D  D380 0000              X
006025  146F  8980 0000              X                CMZ   <ZV$BKF
006026  1471  0981 0058                             BNE   BREAK
006027                                          *
006028  1473  C800 0FD5                              LDR   $R4,<TEMP            FUNCTION CODE
006029  1475  8055                                   IO    =$R5,=$R4            INPUT STATUS
        1476  0054
006030  1477  076B                                   BIOT  >TESTZ               BRANCH MEANS TRY AGAIN
006031  1478  B380 11FE                             LNJ   $B3,<ERRMB           INPUT STATUS WAS NAK'ED
006032  147A  4D4C 4350 2049                        TEXT  'MLCP IO TO INPUT STATUS WAS REJECTED$'
        147D  4F20 544F 2049
              4E50 5554 2053
              5441 5455 5320
              5741 5320 5245
              4A45 4354 4544
              2400
006033                                          *
006034  148D  BB80 0FBB                        TESTZ0 LAB   $B3,<EM3
006035  148F  BFC0 05CA                        $A     STB   $B3,MWFB
006036  1491  0005                                   RTCF
006037  1492  0F81 040A                              B     EHAND
006038  1494  DF40 F596                        TESTZ1 STR   $R5,LFLAG
006039  1496  82D5                                   LB    =$R5,=X'0400'        DATA CHECK ERROR
        1497  0400
006040  1498  0580                   T                BBF   >+$C
006041  1499  B3C0 FD64                              LNJ   $B3,ERRMB
006042  149B  5052 4F54 4F43                        TEXT  'PROTOCALL ERROR$'
        149E  414C 4C20 4552
              524F 5224
006043  14A3  0F80                   T                B     >+$B
006044  14A4  82D5                        $C       LB    =$R5,=X'0040'
        14A5  0040
006045  14A6  0580                   T                BBF   >+$D
006046  14A7  B380 11FE                             LNJ   $B3,<ERRMB
006047  14A9  4C52 4320 414E                        TEXT  'LRC AND PARITY ERROR$'
        14AC  4420 5041 5249
              5459 2045 5252
              4F52 2400
006048  14B4  82D5                        $D       LB    =$R5,=X'0200'        RANGE CHECK
        14B5  0200
006049  14B6  05ED                   T                BBF   >+$B
006050  14B7  B380 11FE                             LNJ   $B3,<ERRMB
006051  14B9  5245 4345 4956                        TEXT  'RECEIVE RANGE EXHAUSTED$'
        14BC  4520 5241 4E47
              4520 4558 4841
              5553 5445 4424
006052  14C5  8F80 1614                        $B       RSTR  <SAV2,=Z'4909'
        14C7  4909
006053  14C8  0005                                   RTCF                       SHUT OFF RTC
006054  14C9  8384                                   JMP   $B4                  EXIT
006055                                          *
006056                                          BREAK  CALL  ZV$1,BDET
        14CA  FBC0 0003
        14CC  D380 0000              X
        14CE  0F80
        14CF  14D2
006057  14D0  0F81 F59F                              B     COUNTB
006058                                          *
006059  14D2  636F 6E73 6F6C                    BDET   TEXT  'CONSOLE BREAK DETECTED$'
        14D5  6520 6272 6561
              6B20 6465 7465
              6374 6564 2400
006060                                          *
006061                                          * BLOCK WRITE DATA TO RAM
006062                                          *
006063                                          *       LNJ    $B1,<SDATA
006064                                          *       DC     DATA                LOCATION OF DATA
006065                                          *       DC     RANGE               NUMBER OF DATA BYTES
006066                                          *       DC     RAMAD               RAM ADDRESS
```

```
006067                                  *       DC      EVEN                    0 = EVEN BYTE CPU ADDRESS
006068                                  *                                           BIT 15 = 1 FOR ODD BYTE START
006069                                  *                                           BIT 1 = 1 FOR NO DELAY BEFORE RETURNING
006070                                  *
006071                                  * R3 MUST CONTAIN THE CHANNEL NUMBER
006072                                  *
006073  14DE  B840  FAFE                SDATA   LDR     $R3,CHAN
006074  14E0  8F00  1604                        SAVE    <SAV1,=Z'FFBF'          SAVE ALL BUT B1
      14E2  FFBF
006075  14E3  DCF1                              LDB     $B5,+$B1                GET ADDRESS OF DATA
006076  14E4  C871                              LDR     $R4,+$B1                GET RANGE
006077  14E5  CF00  14F4                        STR     $R4,<SPRG1              STORE RANGE
006078  14E7  DF80  14F3                        STB     $B5,<SPRG5
006079  14E9  A871                              LDR     $R2,+$B1                GET RAM ADDRESS
006080  14EA  AF00  14F5                        STR     $R2,<SPRG2
006081  14EC  9871                              LDR     $R1,+$B1                LOAD START BYTE INDEX
006082  14ED  9570  7FFF                        AND     $R1,=X'7FFF'
006083  14EF  0F01  FFFF                        NOP     $
006084  14F1  C380  15AD                SPRG6   LNJ     $B4,<MCCB               FORM CCB
006085  14F3        0000          X     SPRG5   DC      <ZHCOMM                 CPU ADDRESS
006086  14F4  0000                      SPRG1   DC      0                       RANGE
006087  14F5  0000                      SPRG2   DC      0                       RAM ADDRESS
006088  14F6  0F01  FFFF                        NOP     $
006089  14F8  C380  11D6                SPRG2A  LNJ     $B4,<CHCT               GIVE CHANNEL CONTROL
006090  14FA  0F82                              B       >SPRG3
006091  14FB  0400                              DC      X'400'                  BLOCK WRITE
006092                                  *
006093                                  * PROGRAM ARRIVES HERE FROM SDATA OR RDATA
006094                                  *
006095        14FC                      SPRG3   EQU     $
006096  14FC  C380  144B                        LNJ     $B4,<TESTS              WAIT FOR STATUS COMPLETE, OR
006097  14FE  82D5                      SPRG4   LB      =$R5,=X'1000'           GET STATUS COMPLETE BIT
      14FF  1000
006098  1500  0F01  FFFF                        NOP     $
006099  1502  0500                T             BBT     >+$B
006100  1503  B380  11FE                        LNJ     $B3,<ERRMB              STATUS COMPLETE NOT SET AFTER BLOCK WRITE
006101  1505  4D4C  4350  2053                  TEXT    'MLCP STATUS COMPLETE NOT SET AFTER BLOCK WRITE$'
      1508  5441  5455  5320
            434F  4D50  4C45
            5445  204E  4F54
            2053  4554  2041
            4654  4552  2042
            4C4F  434B  2057
            5249  5445  2400
006102  150D  82D5                $B      LB      =$R5,=7
      150E  0007
006103  150F  0596                        BBF     >SPRG7
006104  1510  B380  11FE                  LNJ     $B3,<ERRMB              ERROR ; PARITY,MEMORY,OR RESOURCES
006105  1512  4D4C  4350  2050            TEXT    'MLCP PARITY,MEMORY OR RESOURCES ERROR$'
      1515  4152  4954  592C
            4D45  4D4F  5259
            204F  5220  5245
            534F  5552  4345
            5320  4552  524F
            5224
006106  1535  8F80  1604                SPRG7   RSTR    <SAV1,=Z'FFBF'
      1537  FFBF
006107  1538  8381                              JMP     $B1
006108                                  ******
006109                                  *
006110                                  * BLOCK READ FROM RAM.- CHAN. NUMBER MUST BE IN R3.
006111                                  *
006112                                  *       LNJ     $B1,<RDATA
006113                                  *       DC      INBUFF                  INPUT BUFFER ADDRESS
006114                                  *       DC      RANGE                   NUMBER OF BYTES
006115                                  *       DC      RAMAD                   RAM ADDRESS
006116                                  *       DC      EVEN                    0 = EVEN BYTE CPU ADDRESS
006117                                  *                                           BIT 1 = 1 FOR ODD BYTE ADDRESS
006118                                  *                                           BIT 0 = 1 FOR NO DELAY AFTER STARTING
006119                                  *
006120  1539  8F00  1604                RDATA   SAVE    <SAV1,=Z'FFBF'          SAVE EVERYTHING BUT B1.
      153B  FFBF
006121  153C  DCF1                              LDB     $B5,+$B1                GET IN BUFF ADD
006122  153D  DF80  154A                        STB     $B5,<RDTA1
006123  153F  C871                              LDR     $R4,+$B1                GET RANGE IN BYTES
006124  1540  CF00  154B                        STR     $R4,<RDTA3
006125  1542  9871                              LDR     $R1,+$B1
006126  1543  9F00  154C                        STR     $R1,<RDTA2
006127  1545  9871                              LDR     $R1,+$B1                PICK UP EVEN, ODD FLAG
006128  1546  9570  7FFF                        AND     $R1,=X'7FFF'
006129  1548  C380  15AD                        LNJ     $B4,<MCCB               FORM CCB
006130  154A  154A                RDTA1   DC      <RDTA1                  CPU ADDRESS
006131  154B  0000                RDTA3   DC      0                       RANGE
006132  154C  0000                RDTA2   DC      0                       RAM ADDRESS
006133  154D  C380  11D6                  LNJ     $B4,<CHCT               ISSUE CHANNEL CONTROL
006134  154F  0F82                        B       >RDTA4
006135  1550  0800                        DC      X'800'                  BLOCK READ
006136  1551  0F81  FFAA          RDTA4   B       SPRG3                   EXIT
006137                                  *
006138                                  *
006139                                  * INPUT NEXT STATUS TO R5
006140                                  *
006141  1553  8F40  00B0                INXT    SAVE    SAV1,=Z'0008'           B4
      1555  0008
006142  1556  C800  15FA                        LDR     $R4,<CONT4              GET CONTROL WORD FOR INPUT NEXT STATUS
006143  1558  8055                              IO      =$R5,=$R4               GET NEXT STATUS
      1559  0054
006144  155A  0700                T             BIOT    >+$B
006145  155B  B380  11FE                        LNJ     $B3,<ERRMB              INPUT NEXT STATUS WAS NAK'ED
006146  155D  4D4C  4350  2049                  TEXT    'MLCP INPUT-NEXT-STATUS WAS REJECTED$'
      1560  4E50  5554  2D4E
            4558  542D  5354
            4154  5553  2057
            4153  2052  454A
            4543  5445  4424
006147  156F  8FC0  0094                $B      RSTR    SAV1,=Z'0008'
      1571  0008
006148  1572  8384                              JMP     $B4
006149                                  *
006150  1573  AB80  11CC                SRCV    LAB     $B2,<CHCTR
006151  1575  AFC0  FF83                        STB     $B2,SPRG2A+1
006152  1577  AB80  1441                        LAB     $B2,<IESTSR
006153  1579  AFC0  FF83                        STB     $B2,SPRG3+1
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006154  157B  9840 007E                    LDR     $R1,CONT4
006155  157D  9570 FFBF                    AND     $R1,=Z'FFBF'
006156  157F  9F40 007A                    STR     $R1,CONT4
006157  1581  AB80 159B                    LAB     $B2,<MCCBR
006158  1583  AFC0 FF6E                    STB     $B2,SPRG6+1
006159  1585  8386                        JMP     $B6
006160                              *
006161  1586  AB80 11D6              STMT  LAB     $B2,<CHCT
006162  1588  AFC0 FF70                    STB     $B2,SPRG2A+1
006163  158A  AB80 15AD                    LAB     $B2,<MCCB
006164  158C  AFC0 FF65                    STB     $B2,SPRG6+1
006165  158E  AB80 144B                    LAB     $B2,<TESTS
006166  1590  AFC0 FF6C                    STB     $B2,SPRG3+1
006167  1592  9840 0067                    LDR     $R1,CONT4
006168  1594  9570 FFBF                    AND     $R1,=Z'FFBF'
006169  1596  9670 0040                    XOR     $R1,=X'40'
006170  1598  9F40 0061                    STR     $R1,CONT4
006171  159A  8386                        JMP     $B6
006172                              *
006173                              *
006174                              *
006175                              *       CCB FORMATION
006176                              *
006177                              *       $R3 - CONTAINS CHANNEL WANTED
006178                              *
006179                              *         LNJ     $B4,<MCCB
006180                              *         DC      CPU ADDRESS
006181                              *         DC      RANGE IN BYTES
006182                              *         DC      RAM ADDRESS NUMBER OR CHANNEL CONTROL WORD.
006183                              *
006184  159B  8F00 1614              MCCBR SAVE    <SAV2,=Z'FDF4'
      159D  FDF4
006185  159E  0F01 FFFF                    NOP     $
006186  15A0  C840 0056                    LDR     $R4,CONT1
006187  15A2  C570 FFBF                    AND     $R4,=Z'FFBF'
006188  15A4  CF40 FA30                    STR     $R4,TEMP
006189  15A6  C840 0052                    LDR     $R4,CONT3
006190  15A8  C570 FFBF                    AND     $R4,=Z'FFBF'
006191  15AA  CF40 FA2B                    STR     $R4,TEMP+1
006192  15AC  0F8C                        B       >MCCBA
006193  15AD  8F00 1614              MCCB  SAVE    <SAV2,=Z'FDF4'          SAVES $B1,$B3,$B2,$B5,$R7,$R5,$R4,R2,& $R1
      15AF  FDF4
006194  15B0  C840 0046                    LDR     $R4,CONT1
006195  15B2  CF40 FA22                    STR     $R4,TEMP
006196  15B4  C840 0044                    LDR     $R4,CONT3
006197  15B6  CF40 FA1F                    STR     $R4,TEMP+1
006198  15B8  ACF4                  MCCBA LDB     $B2,+$B4                LOAD $B2 WITH CPU ADDRESS
006199  15B9  D874                        LDR     $R5,+$B4                GET RANGE
006200  15BA  A874                        LDR     $R2,+$B4                PUT RAM ADDRESS IN $R2
006201  15BB  DED4                        SWB     $B5,=$B4                ALLOW $B4 TO BE USE IN SUBR. CALL
006202  15BC  C800 0FD5                    LDR     $R4,<TEMP               LOAD $R4 WITH I/O CONTROL WORD
006203  15BE  8182                        IOLD    $B2,=$R4,=$R5           OUTPUT ADDRESS AND RANGE
      15BF  0054
      15C0  0055
006204  15C1  0700              T         BIOT    >+$A
006205  15C2  B380 11FE                    LNJ     $B3,<ERRMB              ERROR, IOLD WAS NAK'ED
006206  15C4  4D4C 4350 2049              TEXT    'MLCP IOLD NAK-ED$'
      15C7  4F4C 4420 4E41
      15CA  4B2D 4544 2400
006207  15CD  C800 0FD6                  $A    LDR     $R4,<TEMP+1             LOAD $R4 WITH I/O CONTROL WORD
006208  15CF  8052                        IO      =$R2,=$R4               OUTPUT MLCC RAM ADDRESS
      15D0  0054
006209  15D1  0700              T         BIOT    >+$B
006210  15D2  B380 11FE                    LNJ     $B3,<ERRMB              ERROR, OUTPUT CONTROL WAS NAK'ED
006211  15D4  4D4C 4350 204F              TEXT    'MLCP OUTPUT CONTROL WAS NAK-ED$'
      15D7  5554 5055 5420
      434F 4E54 524F
      4C20 5741 5320
      4E41 4B2D 4544
      2400
006212  15E4  CED5                  $B    SWB     $B4,=$B5                SWAP FOR SUBR. RETURN
006213  15E5  8F80 1614                    RSTR    <SAV2,=Z'FDF4'          RESTORE REGS.
      15E7  FDF4
006214  15E8  8384                        JMP     $B4
006215                              ********************************************************************
006216                              *
006217                              *
006218                              *
006219                              *
006220                              * CONTROL WORDS FOR IO OPERATIONS
006221                              *
006222                              *
006223                              *       I/O CONTROL WORDS
006224                              *
006225  15E9  C840 F9F3              CONTS LDR     $R4,CHAN
006226  15EB  AB80 15F7                    LAB     $B2,<CONT1              INSERT CHAN NBR INTO FUNC CODES
006227  15ED  8751                        CL      =$R1
006228  15EE  D812                  $A    LDR     $R5,$B2,$R1             GET A TABLE ENTRY
006229  15EF  D570 003F                    AND     $R5,=X'003F'            WIPE OUT HISTORY OF PAST USAGE
006230  15F1  D454                        OR      $R5,=$R4
006231  15F2  DF5E                        STR     $R5,$B2,+$R1            STORE RESULT
006232  15F3  D940 F9E9                    CMR     $R5,CHAN
006233  15F5  09F9                        BNE     >-$A                    EXIT IF END OF TABLE
006234  15F6  8381                        JMP     $B1
006235  15F7  0009                  CONT1 DC      Z'0009'                 IOLD FUNCTION CODE
006236  15F8  000C                  CONT2 DC      Z'000C'                 INPUT RANGE FUNCTION CODE
006237  15F9  000F                  CONT3 DC      Z'000F'                 OUTPUT CCB CONTROL FUNCTION CODE
006238  15FA  001A                  CONT4 DC      X'1A'                   INPUT NEXT STATUS FUNCTION CODE
006239  15FB  000B                  CONT5 DC      Z'000B'                 OUTPUT BYTE INTO LCT FUNCTION CODE
006240  15FC  0018                  CONT6 DC      Z'0018'                 INPUT STATUS FUNCTION CODE
006241  15FD  0005                  CONT7 DC      X'5'                    OUTPUT CHANNEL CONTROL FUNTION CODE
006242  15FE  0026                  CONT8 DC      X'26'                   INPUT ID FUNCTION CODE
006243  15FF  0001                  CONT9 DC      Z'0001'                 OUTPUT MLCC CONTROL FUNTION CODE
006244  1600  001E                  CONT10 DC     X'1E'                   INPUT LCT STATUS
006245  1601  0003                  CONT11 DC     X'3'                    OUTPUT INTERRUPT CONTROL FUNCTION CODE
006246  1602  001C                  CONT12 DC     X'1C'                   INPUT DATA SET STATUS
006247  1603  0000                        DC      0                       TERMINATE TABLE
006248  1604  0000                  SAV1  RESV    9+7*$AF,0
006249  1614  0000                  SAV2  RESV    9+7*$AF,0
006250  1624  0000                  SAV3  RESV    9+7*$AF,0
006251  1634  0000                  SAV5  RESV    9+7*$AF,0
006252  1644  2118                  ACLAID RESV   1,X'2118'               ID STORAGE AREA
006253  1645  0000                  NOSTOP RESV   1,0                     "RUN FOREVER" FLAG
```

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006254                                  *
006255  1646  0000                      INHRTC DC     0
006256                                  *
006257                                  *       REQUEST MODEM TYPE,CK IF SUPPORTED, CK FOR LOOPBACK CAPABILITY
006258  1647  BB80 1771                 RMT     LAB     $B3,<RMODEM             LOAD MESSAGE ADDRESS
006259  1649  C3C0 01C5                         LNJ     $B4,TYPEQ               ASK FOR MODEM TYPE
006260  164B  8740 012B                         CL      IMODEM                  CLEAR PREVIOUS TYPE
006261  164D  8740 012A                         CL      IMODEM+1
006262  164F  1C0A                              LDV     $R1,=X'A'               ALLOW 5 CHAR INPUT
006263  1650  9F40 F992                         STK     $R1,RNG
006264                                          CALL    ZV$IA,STAT,IMODEM,RNG
        1652  FBC0 0003
        1654  D380 0000          X
        1656  0F80
        1657  0FE2
        1658  1777
        1659  0FE3
006265  165A  9840 011C                         LDR     $R1,IMODEM              LOAD MODEM TYPE INPUT
006266  165C  9970 3230                         CMR     $R1,=X'3230'            20?
006267  165E  090A                              BE      >RMTA
006268  165F  9970 3130                         CMR     $R1,=X'3130'            10?
006269  1661  092E                              BE      >RMTB
006270  1662  9970 3131                         CMR     $R1,=X'3131'            11?
006271  1664  0901 0036                         BE      RMTC
006272  1666  0F81 003C                         B       RMTN
006273  1668  9840 010F                 RMTA    LDR     $R1,IMODEM+1
006274  166A  9970 3253                         CMR     $R1,=X'3253'            IS IT 2S?
006275  166C  0901 003C                         BE      NLOOP
006276  166E  9970 3254                         CMR     $R1,=X'3254'            IS IT 2T?
006277  1670  0939                              BE      >NLOOP
006278  1671  9970 3243                         CMR     $R1,=X'3243'            2C?
006279  1673  0936                              BE      >NLOOP
006280  1674  9970 3244                         CMR     $R1,=X'3244'            2D?
006281  1676  0933                              BE      >NLOOP
006282  1677  9970 380D                         CMR     $R1,=X'380D'            8 ?
006283  1679  0901 00F5                         BE      M208
006284  167B  9970 3842                         CMR     $R1,=X'3842'            8B?
006285  167D  0901 00F2                         BE      M208B
006286  167F  9970 330D                         CMR     $R1,=X'330D'            3 ?
006287  1681  0901 00EC                         BE      M203
006288  1683  9970 3141                         CMR     $R1,=X'3141'            1A?
006289  1685  0901 00CF                         BE      M201A
006290  1687  9970 3142                         CMR     $R1,=X'3142'            1B?
006291  1689  0901 00CB                         BE      M201A
006292  168B  9970 3143                         CMR     $R1,=X'3143'            1C?
006293  168D  0901 00C7                         BE      M201A
006294  168F  9840 00E8                 RMTB    LDR     $R1,IMODEM+1
006295  1691  9970 3341                         CMR     $R1,=X'3341'            3A?
006296  1693  0916                              BE      >NLOOP
006297  1694  9970 3345                         CMR     $R1,=X'3345'            3E?
006298  1696  0913                              BE      >NLOOP
006299  1697  9970 3346                         CMR     $R1,=X'3346'            3F?
006300  1699  0910                              BE      >NLOOP
006301  169A  0F69                              B       >RMTN
006302  169B  9840 00DC                 RMTC    LDR     $R1,IMODEM+1
006303  169D  9970 3341                         CMR     $R1,=X'3341'            3A?
006304  169F  090A                              BE      >NLOOP
006305  16A0  9970 3342                         CMR     $R1,=X'3342'            3B?
006306  16A2  0907                              BE      >NLOOP
006307  16A3  BB80 1790                 RMTN    LAB     $B3,<NONSUP             TYPE MESSAGE:
006308  16A5  C3C0 015A                         LNJ     $B4,TYPEC               UNSUPPORTED MODEM
006309  16A7  0F81 EA58                         B       START
006310                                  *
006311  16A9  BB80 1799                 NLOOP   LAB     $B3,<NOLOOP             TYPE MESSAGE:
006312  16AB  C3C0 0154                         LNJ     $B4,TYPEC               NO LOOP CAPABILITY
006313  16AD  0F81 EA52                         B       START
006314                                  *
006315  16AF  BB80 17A5                 ESLPL   LAB     $B3,<ESTLPL
006316  16B1  C3C0 014E                         LNJ     $B4,TYPEC               LOOP LOCAL MODEM
006317  16B3  A3C0 0094                         LNJ     $B2,PRBCHA              WAIT UNTIL DONE
006318  16B5  0F81 007D                         B       ALDONE
006319                                  *
006320                                  * DETERMINE ASSOCIATED ADAPTER
006321                                  *
006322  16B7  8F00 1634                 DAA     SAVE    <SAV5,=Z'FFFF'          SAVE EVERYTHING
        16B9  FFFF
006323  16BA  93C0 FE23                         LNJ     $B1,SDATA
006324  16BC  1282                              DC      <ADAA
006325  16BD  0004                              DC      (LDEY-ADAA)*2           RANGE
006326  16BE  0200                              DC      X'200'
006327  16BF  0000                              DC      0
006328                                  *
006329  16C0  C3C0 FEEC                         LNJ     $B4,MCCB
006330  16C2  18EB                              DC      <RECD
006331  16C3  0001                              DC      X'1'                    RANGE
006332  16C4  0069                              DC      X'69'                   CONTROL WORD
006333                                  *
006334  16C5  1C01                              LDV     $R1,=1
006335  16C6  C840 F916                         LDR     $R4,CHAN
006336  16C8  C270 0040                         SUB     $R4,=X'40'
006337  16CA  4E09                              ADV     $R4,=X'09'
006338  16CB  81C0 021F                         IOLD    RECD,=$R4,=$R1
        16CD  0054
        16CE  0051
006339  16CF  07FC                              BIOF    >$-4
006340  16D0  0F01 FBB1                         NOP     ADAA
006341                                  *
006342  16D2  B3C0 FAE2                         LNJ     $B3,SETLCT
006343  16D4  16D6                              DC      <DAA1
006344  16D5  0F88                              B       >DAA2
006345  16D6  0226                      DAA1    DC      X'0226'
006346  16D7  0027                              DC      X'0027'
006347  16D8  0226                              DC      X'0226'
006348  16D9  0027                              DC      X'0027'
006349  16DA  0105                              DC      X'0105'
006350  16DB  0125                              DC      X'0125'
006351  16DC  0000                              DC      0
006352                                  *
006353  16DD  B840 F8FF                 DAA2    LDR     $R3,CHAN
006354  16DF  B270 0040                         SUB     $R3,=X'40'
006355  16E1  C3C0 FAF4                         LNJ     $B4,CHCT
006356  16E3  0F80                      T       B       >+$A
006357  16E4  4000                              DC      Z'4000'
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006358  16E5  9870 0100          $A      LDR     $R1,=X'100'
006359  16E7  93C0 F79B                  LNJ     $B1,TMO
006360  16E9  C3C0 FD61                  LNJ     $B4,TESTS           WAIT FOR STATUS COMPLETE
006361  16EB  0F01 FFF1          $B      NOP     DAA2
006362                          *
006363  16ED  9840 01FD                  LDR     $R1,RECD
006364  16EF  104C                      SOR     $R1,12
006365  16F0  9F40 F8E4                  STR     $R1,TEMP
006366  16F2  BB80 16FD                  LAB     $B3,<EMG
006367  16F4  C3C0 010B                  LNJ     $B4,TYPEC
006368  16F6  C3C0 0136                  LNJ     $B4,HEXPRT
006369  16F8  0FD5                      DC      <TEMP
006370  16F9  8F80 1634                  RSTR    <SAV5,Z'FFFF'
        16FB  FFFF
006371  16FC  8385                      JMP     $B5
006372                          *
006373  16FD  4348 414E 4E45    EMG     TEXT    'CHANNEL ASSOCIATED WITH ACU ADAPTER;$'
        1700  4C20 4153 534F
              4349 4154 4544
              2057 4954 4820
              4143 5520 4144
              4150 5445 523A
              2400
006374                          *
006375                          *  IS THERE AN ACU PRESENT WITH POWER ON?
006376                          *
006377  1710  C840 F8CC          ACUP    LDR     $R4,CHAN
006378  1712  4E1C                      ADV     $R4,=X'1C'
006379  1713  8055              $C      IO      =$R5,=$R4
        1714  0054
006380  1715  07FE                      BIOF    >-$C
006381  1716  D570 F000                 AND     $R5,=Z'F000'
006382  1718  5001                      SOL     $R5,1
006383  1719  5807                      BLZ     $R5,>ACUP1
006384  171A  BB80 1721                  LAB     $B3,<NOACU
006385  171C  C3C0 00E3                  LNJ     $B4,TYPEC
006386  171E  0F81 E9F1                  B       NEXT
006387  1720  8385              ACUP1   JMP     $B5
006388                          *
006389  1721  6E6F 2061 6375    NOACU   TEXT    'NO ACU FOR THIS CHANNEL$'
        1724  2066 6F72 2074
              6869 7320 6368
              616E 6E65 6C24
006390  1720  BB80 17B9          ESLPR   LAB     $B3,<ESTLPR         TYPE MESSAGE:
006391  172F  C3C0 00D0                  LNJ     $B4,TYPEC           LOOP REMOTE MODEM
006392  1731  A3C0 0016                  LNJ     $B2,PRBCHA          PRINT BCHAN
006393                          *
006394  1733  BB80 174C          ALDONE  LAB     $B3,<DONE
006395  1735  C3C0 00D9                  LNJ     $B4,TYPEQ
006396  1737  8740 F89D                  CL      TEMP
006397                                  CALL    ZV$1A,STAT,TEMP+3
        1739  FBC0 0003
        173B  D380 0000       X
        173D  0F80
        173E  0FE2
        173F  0FD8
006398  1740  9840 F897                  LDR     $R1,TEMP+3
006399  1742  9570 FF00                  AND     $R1,=Z'FF00'
006400  1744  9970 5900                  CMR     $R1,=X'5900'        YES?
006401  1746  09ED                      BNE     >ALDONE
006402  1747  8386                      JMP     $B6
006403                          *
006404  1748  C3C0 00E4          PRBCHA  LNJ     $B4,HEXPRT
006405  174A  0FDC                      DC      <BCHAN
006406  174B  8382                      JMP     $B2
006407                          *
006408  174C  6C6F 6F70 2065    DONE    TEXT    'LOOP ESTABLISHED$'
        174F  7374 6162 6C69
              7368 6564 2400
006409  1755  9840 F885          M201A   LDR     $R1,TEST
006410  1757  9970 4C52                  CMR     $R1,=X'4C52'        REMOTE LOOP?
006411  1759  0902                      BE      >M201AA             NO LR FOR THIS MODEM
006412  175A  8386                      JMP     $B6                 RETURN, ALL OK
006413  175B  BB80 1761          M201AA  LAB     $B3,<NREML
006414  175D  C3C0 00A2                  LNJ     $B4,TYPEC
006415  175F  0F81 E9A0                  B       START
006416                          *
006417  1761  6E6F 2072 656D    NREML   TEXT    'NO REMOTE LOOP CAPABILITY$'
        1764  6F74 6520 6C6F
              6F70 2063 6170
              6162 696C 6974
              7924
006418                          *
006419  176E  8386              M203    JMP     $B6
006420                          *
006421  176F  8386              M208    JMP     $B6
006422                          *
006423  1770  8386              M208B   JMP     $B6
006424                          *
006425                          *
006426  1771  6D6F 6465 6D20    RMODEM  TEXT    'MODEM TYPE$'
        1774  7479 7065 2400
006427  1777  0000              IMODEM  RESV    2,0
006428  1779  7465 7374 2400    EMA     TEXT    'TEST$'
006429  177C  2063 6861 6E6E    EMB     TEXT    ' CHANNEL$'
        177F  656C 2400
006430  1781  6D65 7367 2400    EMC     TEXT    'MESG$'
006431  1784  6572 726F 7220    EME     TEXT    'ERROR REPORTING$'
        1787  7265 706F 7274
              696E 6724
006432  178C  2070 6173 7365    PSS     TEXT    ' PASSES$'
        178F  7324
006433  1790  756E 7375 7070    NONSUP  TEXT    'UNSUPPORTED MODEMS$'
        1793  6F72 7465 6420
              6D6F 6465 6D24
006434  1799  6E6F 206C 6F6F    NOLOOP  TEXT    'NO LOOPBACK CAPABILITY$'
        179C  7062 6163 6B20
              6361 7061 6269
              6C69 7479 2400
006435  17A5  6C6F 6F70 206C    ESTLPL  TEXT    'LOOP LOCAL MODEM CHAN$'
        17A8  6F63 616C 206D
              6F64 656D 2063
              6861 6E24
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006436  17B0  4352 2F4C 4600        CRLFAS TEXT   'CR/LF'
006437  17B3  0D0A 2400             CRLF   TEXT   Z'0D0A','$'
006438  17B5  2065 7272 6F72        ERS    TEXT   ' ERRORS$'
        17B8  7324
006439  17B9  6C6F 6F70 2072        ESTLPR TEXT   'LOOP REMOTE MODEM CHAN$'
        17BC  656D 6F74 6520
              6D6F 6465 6D20
              6368 616E 2400
006440                             *
006441                             *  DISPLAY MESSAGE ON CONSOLE
006442                             *
006443        17C5                 CONPRT EQU    $                 PROVIDE AUTO CR/LF AFTER EVERY
006444  17C5  C3C0 0024                   LNJ    $B4,NEWLIN        PROVIDES CLEAN CONSOL OUTPUT
006445                             *                                   80 BYTES TO ACCOMODATE TTY-R,
006446                             *                                   $B3 POINTS TO BUFFER; $R1 HAS WORD COUNT
006447  17C7  A803                        LDR    $R2,$B3           CHECK FOR BEGINNING CR/LF
006448  17C8  A940 FFEA                   CMR    $R2,CRLF          CHECK FOR  CR/LF
006449  17CA  0989                        BNE    >DSPST            IF NOT CR/LF, START DISPLAY LOOP
006450  17CB  ACD3                        LDB    $B2,=$B3          TEMP SAVE
006451  17CC  BBC0 FFE3                   LAB    $B3,CRLFAS        PRINT ASCII CR/LF MESSAGE
006452  17CE  C3C0 0031                   LNJ    $B4,TYPEC         INSTEAD OF INVISIBLE CR-LF
006453  17D0  BCD2                        LDB    $B3,=$B2          RESTORE B3
006454  17D1  A873                        LDR    $R2,+$B3          POP $B3,NOW = 1 WORD BEYOND CR/LF
006455  17D2  88D1                        DEC    =$R1              ADJUST RANGE AND ALLOW 80 BYTES/LINE
006456  17D3  8755                 DSPST  CL     =$R5
006457  17D4  C843 0028            DSPLP  LDR    $R4,$B3.40
006458  17D6  DF43 0028                   STR    $R5,$B3.40
006459  17D8  89C0 EDA7                   CMZ    LAFLG
006460  17DA  0980                  T     BNE    >+$A              CANNED MESG HAS CR/LF
006461  17DB  89C0 F59A                   CMZ    SYNFLG
006462  17DD  09FD                  I     BNE    >+$A
006463  17DE  C3C0 000B                   LNJ    $B4,NEWLIN        PROVIDE CR LF FOR ASSYNC
006464  17E0  C3C0 0010            $A     LNJ    $B4,TYPE          SYNC HAS CR LF
006465  17E2  1ED8                        ADV    $R1,-40
006466  17E3  1A86                        BLEZ   $R1,>DSPXIT
006467  17E4  CF43 0028                   STR    $R4,$B3.40
006468  17E6  BBC3 0028                   LAB    $B3,$B3.40
006469  17E8  0FEC                        B      >DSPLP
006470  17E9  8381                 DSPXIT JMP    $B1
006471                             *
006472                             *
006473                             * POSITION CONSOLE AT NEW LINE
006474                             *
006475                             NEWLIN CALL   ZV$T,CRLF
        17EA  FBC0 0003
        17EC  D380 0000      X
        17EE  0F80
        17EF  17B3
006476  17F0  8384                        JMP    $B4
006477                             *
006478                             *
006479  17F1  8F00 1624            TYPE   SAVE   <SAV3,=Z'FFFF'    SAVE EVERYTHING
        17F3  FFFF
006480  17F4  BFC0 0006                   STB    $B3,TYPEA         PUT ADDRESS IN PROPER PLACE
006481                                     CALL   ZV$I,TYPEA        TYPE THE MESSAGE
        17F6  FBC0 0003
        17F8  D380 0000      X
        17FA  0F80
        17FB  17FB
006482        17FB                 TYPEA  EQU    $-$AF
006483  17FC  8F80 1624                   RSTR   <SAV3,=Z'FFFF'    RESTORE EVERYTHING
        17FE  FFFF
006484  17FF  8384                        JMP    $B4               RETURN TO CALLER
006485                             *
006486                             *  DISPLAY MESSAGE ON CONSOLE (WITH PREFIXED CR AND LF)
006487                             *
006488  1800  8F00 1624            TYPEC  SAVE   <SAV3,=Z'FFFF'    SAVE EVERYTHING
        1802  FFFF
006489  1803  BFC0 0006                   STB    $B3,TYPC          PUT THE ADDRESS IN
006490                                     CALL   ZV$I,ZV$TC,TYPEA  TYPE THE MESSAGE
        1805  FBC0 0003
        1807  D380 0000      X
        1809  0F80
        180A  17FB
006491        180A                 TYPC   EQU    $-$AF
006492  180B  8F80 1624                   RSTR   <SAV3,=Z'FFFF'    RESTORE EVERYTHING
        180D  FFFF
006493  180E  8384                        JMP    $B4               RETURN TO CALLER
006494                             *
006495                             *  DISPLAY MESSAGE ON CONSOLE WITH  " ?: "
006496                             *
006497  180F  8F00 1624            TYPEQ  SAVE   <SAV3,=Z'FFFF'
        1811  FFFF
006498  1812  BFC0 0006                   STB    $B3,TYPQ
006499                                     CALL   ZV$I,ZV$QC,TYPEA
        1814  FBC0 0003
        1816  D380 0000      X
        1818  0F80
        1819  17FB
006500        1819                 TYPQ   EQU    $-$AF
006501  181A  8F80 1624                   RSTR   <SAV3,=Z'FFFF'
        181C  FFFF
006502  181D  8384                        JMP    $B4
006503                             *
006504  181E  8F00 1624            TPYQ   SAVE   <SAV3,=Z'FFFF'
        1820  FFFF
006505  1821  BFC0 0006                   STB    $B3,TYQ
006506                                     CALL   ZV$I,ZV$Q,TPYQ
        1823  FBC0 0003
        1825  D380 0000      X
        1827  0F80
        1828  181E
006507        1828                 TYQ    EQU    $-$AF
006508  1829  8F80 1624                   RSTR   <SAV3,=Z'FFFF'
        182B  FFFF
006509  182C  8384                        JMP    $B4
006510                             *
006511                             *
006512                             *
006513                             *ROUTINE TO PRINT 1 HWORD IN HEX:
006514                             *TO USE:
006515                             *         LNJ $B4,HEXPRT
006516                             *         DC <ARGUMENT
```

```
006517                                  *
006518                                  *OUTPUT:        (SPACE)(SPACE)XXXX WITH LEADING 0'S SUPPRESSED
006519  182D                            HEXPRT RESV    0
006520  182D  ECF4                             LDB     $B6,+$B4                GET ARGUMENT PTR
006521  182E  EFC0 0006                        STB     $B6,THARG               SET ARG FOR HEX PRINT
006522                                         CALL    ZV$IH,OUT               PRINT (SPACE)(SPACE)XXXX
        1830  FBC0 0003
        1832  D380 0000       X
        1834  0F80
        1835  18D1
006523          1835                    THARG  EQU     $-$AF
006524  1836  8384                             JMP     $B4
006525                                  *
006526                                  *
006527                                  *
006528                                  *
006529                                  *ROUTINE TO CONVERT 1 WORD TO HEX-ASCII AT ANOTHER LOCATION
006530                                  *TO USE:
006531                                  *       LNJ $B4,HEXASC
006532                                  *       DC <SOURCE
006533                                  *       DC <TARGET    (3-WORD AREA)
006534                                  *
006535                                  *OUTPUT: TARGET AREA IN ASCII: (SPACE)(SPACE)XXXX
006536                                  *
006537  1837  ECF4                      HEXASC LDB     $B6,+$B4                GET SOURCE PTR
006538  1838  EFC0 0009                        STB     $B6,SOURCE              AND SET UP CALL
006539  183A  ECF4                             LDB     $B6,+$B4                GET TARGET PTR
006540  183B  EFC0 0007                        STB     $B6,TARGET              AND SET UP CALL
006541                                         CALL    ZV$HA,SOURCE,TARGET
        183D  FBC0 0003
        183F  D380 0000       X
        1841  0F80
        1842  1842
        1843  1843
006542          1842                    SOURCE EQU     $-2*$AF
006543          1843                    TARGET EQU     $-$AF
006544  1844  8384                             JMP     $B4
006545                                  *
006546                                  CLRECD CALL    ZV$F,RECD,XZERO,D332 RECEIVE BUFFER = 332 0'S
        1845  FBC0 0003
        1847  D380 0000       X
        1849  0F80
        184A  18EB
        184B  1A38
        184C  1A37
006547  184D  8384                             JMP     $B4
006548                                  *
006549                                  *
006550                                  *       ECHO THE COMMAND LINE INPUT
006551                                  *
006552  184E  BB80 17B3                 ECHOA  LAB     $B3,<CRLF
006553  1850  C3C0 FFA0                        LNJ     $B4,TYPE
006554  1852  0F85                             B       >ECHO
006555  1853  BB80 1889                 ECHOX  LAB     $B3,<EXEUTE
006556  1855  C3C0 FFAA                        LNJ     $B4,TYPEC
006557  1857  9840 F783                 ECHO   LDR     $R1,TEST
006558  1859  9F40 0035                        STR     $R1,ECHOMS
006559  185B  C3C0 FFDB                        LNJ     $B4,HEXASC              PUT CHAN NUMBER ON COLSOLE
006560  185D  0FDC                             DC      <BCHAN
006561  185E  1891                             DC      <ECHOMS+2
006562  185F  9840 F77E                        LDR     $R1,MESG
006563  1861  1048                             SUR     $R1,8
006564  1862  9A70 2000                        ADD     $R1,=X'2000'
006565  1864  9F40 0030                        STR     $R1,ECHOMS+6
006566                                         CALL    ZV$HD,PASSES,ECHOMS+8
        1866  FBC0 0003
        1868  D380 0000       X
        186A  0F80
        186B  0FDF
        186C  1897
006567  186D  9840 F772                        LDR     $R1,ERCD
006568  186F  9F40 002B                        STR     $R1,ECHOMS+12
006569  1871  89C0 FDD3                        CMZ     NOSTOP
006570  1873  0911                             BE      >ECHOT
006571  1874  9870 2C46                        LDR     $R1,=A',F'
006572  1876  9F40 001F                        STR     $R1,ECHOMS+7
006573  1878  9870 4F52                        LDR     $R1,=A'OR'
006574  187A  9F40 001C                        STR     $R1,ECHOMS+8
006575  187C  9870 4556                        LDR     $R1,=A'EV'
006576  187E  9F40 0019                        STR     $R1,ECHOMS+9
006577  1880  9870 4552                        LDR     $R1,=A'ER'
006578  1882  9F40 0016                        STR     $R1,ECHOMS+10
006579  1884  BB80 188F                 ECHOT  LAB     $B3,<ECHOMS
006580  1886  C3C0 FF6A                        LNJ     $B4,TYPE
006581  1888  8382                             JMP     $B2
006582  1889  4558 4543 5554           EXEUTE TEXT    'EXECUTING  $'
        188C  494E 4720 2024
006583  188F  7878 3A20 3334           ECHOMS TEXT    'XX; 345678, 99,        ,   $'
        1892  3536 3738 2C20
              3939 2C20 2020
              2020 2020 2C20
              2020 2400
006584                                  *
006585                                  *       ERROR HANDLING ROUTINE
006586                                  *
006587  189D  8AC0 F747                 EHAND  INC     ERCT                    BUMP ERROR COUNTER
006588  189F  0F80 189F                 EH     B       <EH                     GO TO PROPER ROUTINE
006589  18A1  0F01 FFFF                        NOP     $
006590  18A3  0F01 FFFF                        NOP     $
006591  18A5  0F01 FFFF                        NOP     $
006592                                  *
006593                                  *       FOLLOWS THE NORMAL MODE
006594                                  *
006595  18A7  B3C0 01A4                 EH2    LNJ     $B3,SUEM                SET UP THE ERROR MESSAGE
006596  18A9  BB80 1A3D                        LAB     $B3,<PRTBF              LOAD MESSAGE ADDRESS
006597  18AB  C3C0 FF54                        LNJ     $B4,TYPEC               GO TYPE IT
006598  18AD  0F80 0A42                        B       <COUNT
006599  18AF  C3C0 FF87                 EHA    LNJ     $B4,HEXASC              SET UP NUMBER OF BYTES SENT
006600  18B1  0FF8                     EHAM1  DC      <OPMRGB
006601  18B2  18D4                             DC      <OUTCNT
006602  18B3  BB80 18D1                        LAB     $B3,<OUT                TYPE MESSAGE:
006603  18B5  C3C0 FF4A                        LNJ     $B4,TYPEC               SENT XX (HEX) CHAR.:
006604  18B7  BB80 1002                 EH1    LAB     $B3,<CANNED             LOAD MESSAGE ADDRESS
```

```
006605  18B9  9800 0FF9          EHAM2  LDR   $R1,<OPMRNG
006606  18BB  93C0 FF09                 LNJ   $B1,CONPRT          TYPE IT
006607  18BD  C3C0 FF79                 LNJ   $B4,HEXASC          SET UP NUMBER OF BYTES RECEIVED
006608  18BF  0FFC                      DC    <RCVRNB
006609  18C0  18E1                      DC    <INCNT
006610  18C1  BB80 18DE                 LAB   $B3,<IN             TYPE MESSAGE:
006611  18C3  C3C0 FF3C                 LNJ   $B4,TYPEC           RECD XX (HEX) CHAR.;
006612  18C5  BB80 18EB                 LAB   $B3,<RECD           TYPE MESSAGE AS RECEIVED
006613  18C7  9840 F735                 LDR   $R1,RCVRNG          GET RANGE IN WORDS
006614  18C9  93C0 FEFB                 LNJ   $B1,CONPRT
006615  18CB  BB60 17B3                 LAB   $B3,<CRLF           LOAD MESSAGE ADDRESS
006616  18CD  C3C0 FF23                 LNJ   $B4,TYPE            GO TYPE IT
006617  18CF  0F81 F172                 B     COUNT               GO TALLY THE PASS
006618  18D1  7365 6E74 3A20    OUT    TEXT  'SENT: '
006619  18D4  0000              OUTCNT RESV  3,0                 NUM OF BYTES SENT
006620  18D7  2028 6865 7829           TEXT  ' (HEX) CHAR.$'
        18DA  2063 6861 722E
              2400
006621  18DE  7265 6364 3A20    IN     TEXT  'RECD: '
006622  18E1  0000              INCNT  RESV  3,0                 NUM OF BYTES RECEIVED
006623  18E4  2028 6865 7829           TEXT  ' (HEX) CHAR.$'
        18E7  2063 6861 722E
              2400
006624  18EB  0000              RECD   RESV  332,0               RECD BUFFER
006625  1A37  014C              D332   RESV  1,332
006626  1A38  0000              XZERO  RESV  1,0
006627                          *
006628                          *      SUPPRESS ERRORS
006629                          *
006630  1A39  0F81 F008         EHB    B     COUNT
006631                          *
006632                          *      SUPPRESS,SUM ON CONSOLE
006633                          *
006634  1A3B  0F81 F006         EHC    B     COUNT
006635                          *
006636                          *
006637                          *      SET UP ERROR MESSAGE FOR OUTPUT TO CONSOLE OR PRINTER
006638                          *
006639  1A3D  7878 3A20 2020    PRTBF  TEXT  'XX;              , CHAN3456789$'
        1A40  2020 2020 2020
              2020 2020 2C20
              6368 616E 3334
              3536 3738 2400
006640                          *
006641  1A4C  C3C0 FDEA         SUEM   LNJ   $B4,HEXASC          PUT CHAN NUMBER IN ERROR MESSAGE
006642  1A4E  0FDC                     DC    <BCHAN
006643  1A4F  1A48                     DC    <PRTBF+11
006644                                 CALL  ZV$MW,MWRNGA,MWFB,MWTB
        1A50  FBC0 0003
        1A52  D380 0000          X
        1A54  0F80
        1A55  1A5B
        1A56  1A5A
        1A57  1A59
006645  1A58  8383                     JMP   $B3
006646                          *
006647  1A59  1A3F              MWTB   DC    <PRTBF+2
006648  1A5A  0FB5              MWFB   DC    <EM2
006649  1A5B  0006              MWRNG  RESV  1,6
006650        1A5B              MWRNGA EQU   MWRNG
006651                          ZVPTCH CALL  ZV$PCH
        1A5C  FBF0 0001
        1A5E  D380 0000          X
006652                          *
006653  1A60  0100                     END   TCSS1,START
```

0000 ERR COUNT

TITLE TCSS1,'REV F' TERMINAL TEST (SAF)

```
  713  $A      710B    803B    810B    922B    938B    968B    975B    982B   1063B   1120B
              1205B   1239B   1384B   1472B   1474B   1476B   1478B   1484B   1560B   1671B
              1675B   1677B   1700B   1744B   1937B   1963B   2026B   2076B   2158B   2237B
              2425B   2576B   2835B   2840B   3001B   3038B   3197B   3224B   6016B   6204B
              6233B   6356B   6460B   6462B

  806  $A
  819  $A
  924  $A
  940  $A
  971  $A
  978  $A
  984  $A
 1067  $A
 1122  $A
 1208  $A
 1242  $A
 1386  $A
 1481  $A
 1487  $A
 1571  $A
 1673  $A
 1679  $A
 1696  $A
 1747  $A
 1939  $A
 1977  $A
 2025  $A
 2075  $A
 2157  $A
 2236  $A
 2443  $A
 2578  $A
 2847  $A
 3000  $A
 3040  $A
 3199  $A
 3227  $A
 6018  $A
 6035  $A
 6207  $A
 6228  $A
 6358  $A
 6464  $A
       $AF      634     979     980    1305    1691    2725    3110    3112    6248    6249
              6250    6251    6482    6491    6500    6507    6523    6542    6543
  915  $B      912B   1210B   1698B   1956B   1958B   1971B   1973B   2104B   2178B   2850B
```

```
                3009B   3242B   6043B   6049B   6099B   6144B   6209B
1212  $B
1701  $B
1961  $B
1976  $B
2103  $B
2177  $B
2658  $B
3012  $B
3245  $B
6052  $B
6102  $B
6147  $B
6212  $B
6361  $B
      $B1        636     637C    651     652C    675     678     693     695C    698     700C
                7048    7468    798     836C    856C    863     865C    883C    885C    887C
                889C    891C    893C    910     923C    940C    948B    964     966     971
                986B    1000    1001C   1007    1008C   1012    1013C   1018    1019C   1025
               1026C   1030    1031C   1041    1042C   1064    1065C   1067    1068C   1072
               1073C   1080    1081C   1089    1090C   1094    1095C   1106    1107C   1129
               1130C   1157    1158C   1159C   1160C   1161C   1162C   1171    1172C   1173
               1174C   1177    1178C   1179C   1180C   1181C   1182C   1187    1188C   1189C
               1237B   1247B   1249    1250C   1274B   1292B   1298B   1311    1312C   1341
               1342C   1348B   1506    1507C   1508    1509C   1533    1534C   1552    1553C
               1554    1555C   1585    1586C   1587    1588C   1605    1606C   1612    1613C
               1614    1615C   1625    1626C   1629B   1661B   1694    1696    1701    1702
               1750    1751C   1754    1755C   1766B   1818B   1835    1836C   1837    1838C
               1850B   1852B   1915B   2011B   2029B   2061B   2079B   2108B   2123B   2143B
               2161B   2197B   2206B   2222B   2253B   2329    2330    2679B   2720    2722
               2726    2727B   2736    2737C   2742    2745    2748    2767    2768C   2774
               2775C   2778    2779C   2899    2901    2972B   3024    3036C   3040    3045C
               3047C   3052    3055C   3177B   3207    3208C   3211    3212C   3215    3216C
               3272    3275    6075    6076    6079    6081    6107B   6121    6123    6125
               6127    6234B   6323B   6359B   6470B   6606B   6614B
      $B2       656B    713B    756B    757     760B    761     764B    765     768B    769
                772B    773     785C    787C    964     965C    971     1143    1154    1201
               1242B   1259B   1260B   1262B   1273B   2139B   2203B   2286B   2301B   2320
               2325    2336    2479B   2487B   2493B   2499B   2505B   2513B   2575B   2577B
               2578B   2588C   2608C   2668B   2678C   3025    3034    3083B   3090B   3097B
               3103    6150    6151C   6152    6153C   6157    6158C   6161    6162C   6163
               6164C   6165    6166C   6196    6203    6226    6228    6231C   6317B   6392B
               6406B   6450    6453    6581B
      $B3       653     702     718     824     829     969B    1112    1113C   1134    1218
               1219C   1226    1227C   1234    1235C   1263    1266    1284B   1325B   1367B
               1413B   1436    1448B   1498B   1535B   1536    1546B   1602B   1639B   1702
               1741B   1775B   1805    1830B   1877B   1912    1914    1923    1928    1940
               1942C   1944    1961    1964    1966C   1977C   2003B   2030B   2054B   2081B
               2119    2130    2141    2163B   2192    2198    2204    2223B   2249    2282
               2284    2287    2290    2293    2295    2298    2416    2420    2422    2426
               2429    2432    2435    2437    2443    2446    2448    2450    2452    2454
               2456    2529    2548    2581    2732B   2792    2825    2856    2879    2909
               2978    2980    2982    2986    3002B   3010B   3012B   3017    3062    3064
               3072    3101    3103    3203B   3225B   3232B   3243B   3255B   3272    3278B
               3304B   6031B   6034    6035C   6041B   6046B   6050B   6100B   6104B   6145B
               6205B   6210B   6258    6307    6311    6315    6342B   6366    6384    6390
               6394    6413    6447    6450    6451    6453    6454    6457    6458C   6467C
               6468    6468    6480C   6489C   6498C   6505C   6552    6555    6579    6595B
               6596    6602    6604    6610    6612    6615    6645B
      $B4       654B    719B    758B    762B    766B    770B    774B    786B    796B    805B
                825B    830B    832B    913B    976B   1245B   1264B   1267B   1297B   1333B
               1354B   1355B   1356B   1362B   1383B   1387B   1390B   1437B   1505B   1525B
               1537B   1616B   1624B   1635B   1666B   1670B   1673B   1676B   1680B   1693B
               1703B   1749B   1771B   1796B   1799B   1806B   1834B   1844B   1847B   1848B
               1858B   1894B   1898B   1906B   1909B   1913B   1982B   2017B   2067B   2094B
               2111B   2114B   2120B   2121B   2129B   2131B   2142B   2149B   2168B   2183B
               2186B   2193B   2195B   2199B   2205B   2211B   2228B   2241B   2244B   2250B
               2251B   2283B   2285B   2288B   2291B   2294B   2296B   2299B   2341B   2417B
               2421B   2423B   2427B   2430B   2433B   2436B   2438B   2439B   2440B   2444B
               2447B   2449B   2451B   2453B   2455B   2457B   2458B   2484B   2490B   2496B
               2502B   2514B   2530B   2538B   2579B   2907B   2910B   2979B   2981B   2983B
               2984B   2987B   2988B   3018B   3063B   3065B   3073B   3102B   3104B   3173B
               3178B   3246B   3259B   3299    3300    3308B   3317B   6018B   6054B   6084B
               6089B   6096B   6129B   6133B   6148B   6198    6199    6200    6201C   6212C
               6214B   6259B   6308B   6312B   6316B   6329B   6355B   6360B   6367B   6368B
               6385B   6391B   6395B   6404B   6414B   6444B   6452B   6463B   6464B   6476B
               6484B   6493B   6502B   6509B   6520    6524B   6537    6539    6544B   6547B
               6553B   6556B   6559B   6580B   6597B   6599B   6603B   6607B   6611B   6616B
               6641B
      $B5       1331B   1481B   1487B   1502B   1548B   1604B   1745B   1747B   1832B   2009B
               2010B   2060B   6075    6078C   6121    6122C   6201C   6212C   6371B   6387B
      $B6       635B    1261B   1291B   1347B   1386B   1627B   1634B   1660B   1679B   1765B
               1851B   2002B   3066B   6159B   6171B   6402B   6412B   6419B   6421B   6423B
               6520    6521C   6537    6538C   6539    6540C
1952  $C       1947B   3181B   6040B   6380B
3180  $C
6044  $C
6379  $C
3192  $D       3193B   6045B
6048  $D
2218  $E       2219B
      $R1        645     646C    647     648C    649C    650C    655     674C    678     689
                691B    693     695C    698     700C    703     711     712C    755     759
                763     767     771     855C    856C    882     883C    884     885C    886
                887C    888     889C    890     891C    892C    893C    916     918     966
                967     973B    985B    994     995C    996C    997C    998     1002    1003C
               1005    1010    1015    1017C   1020    1021C   1023    1028    1032    1033C
               1034    1035C   1037    1039    1040C   1043    1044C   1045C   1046    1047C
               1051    1053    1054C   1055    1056C   1057    1058C   1059C   1060    1061C
               1070    1074    1075C   1078    1082    1083C   1085    1087    1088C   1092
               1096    1097C   1098C   1099    1100C   1101C   1104    1105C   1108    1109
               1110C   1114    1115    1116C   1117    1121    1122C   1128C   1131    1132C
               1138    1139    1141    1147    1148    1149C   1150    1152    1163    1164C
               1165C   1166C   1168C   1169    1170C   1183    1184C   1185C   1186C   1190C
               1191    1192C   1194    1195B   1196    1197C   1202    1203    1204    1206C
               1208    1209    1212    1224    1225C   1232    1233C   1240    1241C   1246
               1269    1270    1306    1307C   1308    1309B   1334    1335C   1337C   1338C
               1339    1340C   1343    1344    1345C   1381    1397    1398C   1399    1400C
               1482    1510    1511C   1530    1531B   1556    1557C   1558C   1564    1565C
               1566C   1571    1572    1573C   1574    1575C   1589    1590C   1591    1592C
               1593C   1594C   1696    1697    1699    1752    1753C   1758    1759C   1760
               1761    1762C   1802    1803    1804B   1817    1839    1840C   1849    1864
               1865C   1866    1867    1868C   1869    1870    1871C   1872    1873    1874C
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                2252    2265    2267    2269    2271    2272    2274    2275    2277    2279
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                2480    2482C   2486    2488    2489C   2492    2498    2504    2516    2517
                2516    2519C   2520    2522    2524    2526    2535    2536    2540    2541
                2542    2543C   2544    2546    2557    2558C   2559C   2560C   2561    2562C
                2563    2564C   2565C   2567    2568    2569    2571    2573    2589    2590C
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                2601C   2602C   2603    2604C   2605C   2609    2610C   2611C   2612    2613C
                2614    2615C   2616    2617C   2618    2619C   2620    2621C   2622C   2623
                2624C   2625C   2630    2631    2632B   2633    2635    2644    2645    2646
                2648    2650    2653    2654    2656    2657    2659    2660    2662    2663
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                2831    2832C   2833    2834C   2837C   2838    2839    2841    2842C   2843
                2844C   2845    2846C   2847    2848C   2849    2851    2852    2853C   2854
                2858    2859    2861    2862C   2863C   2864C   2865    2866C   2867    2868C
                2869C   2870    2871C   2872    2873    2875    2877    2882    2884    2886
                2887C   2898C   2901    2965B   3019    3020C   3022C   3036C   3058    3059
                3060C   3079C   3087C   3094C   3176    3187    3188    3199    3273C   3275
                6009C   6010C   6011    6012C   6013    6014C   6081    6082    6125    6126C
                6127    6128    6154    6155    6156C   6167    6168    6169    6170C   6227C
                6228    6231C   6262    6263C   6265    6266    6268    6270    6273    6274
                6276    6278    6280    6282    6284    6286    6288    6290    6292    6294
                6295    6297    6299    6302    6303    6305    6334    6338    6358    6363
                6364    6365C   6398    6399    6400    6409    6410    6455C   6465    6466B
                6557    6558C   6562    6563    6564    6565C   6567    6568C   6571    6572C
                6573    6574C   6575    6576C   6577    6578C   6605    6613
        $R2      657     658     660     662     663     667     669     670     672     678
                 680     682     707     715     722     724     728     730     731     733
                 737     739     740     777     785C    787C    807     808     809     819
                 821     827     828     836C    863     864     865C    920     923C    931
                 939     940C    942     943     972     974     977C    984C    1928    1929
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                1953    1957    1961    1962    1964    1965    1966C   1972    1976C   1977C
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                2508    2509C   2717    2722    2728    2900    2902    2967    2968B   3023C
                3034    3037    3044    3045C   3046C   3047C   3052    3053    3054    3055C
                3275    3276B   3281    6079    6080C   6200    6208    6447    6448    6454
        $R3      677C    679     684     685     687     782     783     797     814     816C
                 836C    837     852     853     856C    857C    858C    859C    860C    861
                 863     865C    866C    867C    868C    869     870C    871C    872C    873C
                 874C    875     876C    881     883C    885C    887C    889C    891C    893C
                 894     895C    908     923C    924C    925     940C    1681    1695C   1696
                1702    1794    1892    1897C   1904C   1914    2109    2110    2165    2181
                2182    2225    2239    2240    2327    2331    2901    2902    2904B   3026
                3027    3028B   3029C   3030C   3031C   3032C   3033C   3037    3041B   3042
                3043    3045C   3047C   3050    3051    3052    3055C   3268    6073    6353
                6354
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                 879C    909     912B    914     932     933     935     937     2021C   2023
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                2103    2153C   2155    2156    2157    2174    2175    2176    2177    2215C
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                2339C   2718    2720    2803    2998    2999    3000    3006    3007    3008
                3034    3035    3036C   3179    3180    3190    3191    3192    3221    3222
                3223    3227    3228    3229    3230    3238    3241    3251    3252    3253
                3264    3265    3266C   3270    3271C   3280    3281    3292    3293    3294C
                3297    3298C   3301    3302    6002    6003    6004C   6007    6008C   6028
                6029    6076    6077C   6123    6124C   6142    6143    6186    6187    6188C
                6189    6190    6191C   6194    6195C   6196    6197C   6202    6203    6207
                6208    6225    6230    6335    6336    6337    6338    6377    6378    6379
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                1485    1499C   1526    1527    1547C   1603C   1697    1742C   1831C   1925C
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                6458C
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                2977C
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2630    ACF     2578B
2644    ACFA    2634B   2639B   2641B
2668    ACFE
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3629    AD11    1350    2012    2013
3651    AD2     3685    3686    3691
3689    AD3     3681    3682    3684
3704    AD31    3742    3743    3750    3768    3769    3770
3746    AD32    3738    3739    3741
3773    AD33    3722    3723    3725    3764    3765    3766
3940    ADA1
3938    ADAA    2063    6324    6325    6340
3322    ADCP
2466    ADDRS   2443
2792    ADER    2787B
2002    ADEX    1080
2009    ADEX1   2005B
2034    ADEX2   2027    2031    2164    2224
2043    ADEX3   2032B
3779    ADS     3639    3640    3641    3677    3678    3680
3815    ADT     3804    3805    3806
6394    ALDONE  6318B   6401B
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1263    AVEX1   1272B
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3126  BCHAN    1116C   6405    6560    6642
6059  BDET     6056
2811  BDRATE   2327    2428    2445    2489C   2784    2900
2810  BDRTW    2426
4039  BEF1     4031    4032    4033
1237  BEGIN    1220B   1228B
1243  BEGINM
4002  BET1     3994    3995    3996
4061  BET2     4053    4054    4055
6056  BREAK    6026B
1860  BUFFER
1730  BUSY     1722
1015  C        1011B
3146  CANNED   1177    1293    1304    1357    1394    1667    1772    6604
2898  CBR      2514B
2901  CBRA     2905B
2907  CBRB     2903B
2909  CBRC     2904B
2913  CBRD     2909
2899  CBRT     2737C   2768C   2775C   2779C
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2460  CHAS1Z   2429
3296  CHCT     1670B   2111B   2183B   2241B   3173B   6089B   6133B   6161    6355B
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3291  CHCTR    1383B   1676B   1796B   1894B   6150
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2461  CHSIZE   2431    2495C   2516    2519C   2630    2817
3307  CHZ      3303B
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2470  CLK      2452    2848C   2853C
2890  CLKERR   2856
5356  CLLRC
2469  CLOCK    2450
6546  CLRECV   1297B   1354B   1624B   1847B
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6244  CONT10   3238
6245  CONT11
6246  CONT12
6236  CONT2    3179
6237  CONT3    6189    6196
6238  CONT4    6142    6154    6156C   6167    6170C
6239  CONT5    3264    3270
6240  CONT6    6002    6007
6241  CONT7    3292    3297
6242  CONT8
6243  CONT9
2282  CONTA1   2302B
6225  CONTS    1237B
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2298  COUNTC   2281B
2273  COUNTR   1250C   1342C   1626C   1755C   2270B
2271  COUNTS   2264B
1316  CRANG    1170C   1192C   1304    1306    1394
6437  CRLF      636    2141    2204    2287    2295    6448    6475    6552    6615
6436  CRLFAS   6451
2642  CS6      2636B
2640  CS8      2632B
2886  CSTA     2878B
1023  D        1016B
6625  D332     6546
6322  DAA      2010B   2060B
6345  DAA1     6343
6353  DAA2     6344B   6361
2892  DERR     2879
3137  DIALNG   2018    2025    2068    2075    2150    2157    2212    2218    3024    3058
2019  DIALRG   2025    2075    2103    2157    2218    3029C
2882  DISA     2874B
2471  DISP     2454
 963  DMPHEX    746B    948B
 973  DMPLP     985B
6408  DONE     6394
2870  DP       2566B   2860B
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2416  DPARM1    638B
2472  DPC      2456    2871C
 986  DPEXIT    973B
1926  DSPB     1969B
1944  DSPC     1935B   1939B
1967  DSPD     1954B
1964  DSPE     1949B   1951B
1970  DSPG     1932B
1978  DSPH     1960B   1975B
1980  DSPH1    1927B
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6456  DSPST    6449B
6470  DSPXIT   6466B
3006  DSSTAT
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5087  DTS2     2562C   2866C
5251  DTS3     2565C   2869C
5125  DTS4     2564C   2868C
5681  DTS5     2559C   2863C
5944  DTS6     2560C   2864C
1666  DUMMY
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6579  ECHOT     6570B
6555  ECHOX     1242B
6588  EH        1219C   1225C   1227C   1233C   1235C   6588B
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6595  EH2       1218
6599  EHA       1313B   1538B
6600  EHAM1     1172C   1189C
6605  EHAM2     1174C   1188C
6587  EHAND     3209B   3213B   3217B   6037B
6630  EHB       1226
6634  EHC       1234
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3118  EM2       3207    6648
3119  EM3       6034
3120  EM4       1311    1533
3121  EM5       1805    3215
6428  EMA       1134
6429  EMB       1143    2284
6430  EMC       1154
6431  EME       1201
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6373  EMG       6366
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 767  END2       784B
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3136  ERA        995C   2978
3130  ERCD       773    1202    1206C   1208    6567
3135  ERCT       644C   1310C   1532C   2292    6587C
1532  ERR       1393B   1528B
1315  ERRAY     1304    1308    1394    1529    1530
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6438  ERS       2293
6315  ESLPL     1261B
6390  ESLPR
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6439  ESTLPR    6390
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5931  EXIT      5905    5906    5913
5909  EXIT1     5881    5882    5883    5925    5926    5928
5954  EXIT2     5941    5942    5943
5960  EXIT3     5950    5951    5952
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3173  GO        2043B
3190  GO1       3183    3184    3185    3186
3207  GOA       3198B
3211  GOB       3202B
3215  GOC       3182B
3176  GOD       3174B
3179  GOE
3159  GOMSG     1554    1837
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6519  HEXPRT    2984B   2988B   6368B   6404B
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3458  HLP1A     3443    3444    3445    3447    3448    3449
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3237  ILCT      1693B
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 979  IMSF       965C    981C    983C
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 911  IMSHA      927B
 931  IMSHB      919B
 942  IMSHC      934B
 943  IMSHD      936B
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2782  INTMG     2708     2710
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2742  INTP2     2712
2745  INTP3     2713
2748  INTP5     2714
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2747  INTT5     2707
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2577  IPARD     2570B    2572B
2581  IPARE     2574B
2513  IPARF     2537B
2535  IPARG     2484B    2490B    2496B    2502B
2817  IPARSY    2790B
2550  ISB       2548
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3017  ITNAA     2002B
3044  ITNB1     3056B
3050  ITNC      3041B
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3058  ITNDA     3028B
3258  IT2       3231B    3254B
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1112  J1        1084B    1091B
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1134  L         1093B
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2944  LB7800    2767
2751  LBP1      2736
2754  LBP2      2742
2757  LBP3      2745
2762  LBP5      2748
2937  LBSAKA
2917  LBT1KC    2774
2932  LBTTY     2778     2899
1284  LCEX      1007     1259B
1292  LCEX1     1159C    1180C
1291  LCEX1A    1287B
1294  LCEX1R     872C    1164C    1184C    1339     1392     1527     1752
1300  LCEX2R     873C    1165C    1185C
1305  LCEXAM    1158C    1179C
3272  LCT2      3267B
3281  LCT3      3282B
3275  LCT4      3283B
3280  LCT5      3276B
2343  LCTBKB    1334     1758     1864     1872     2339C
3263  LCTKCV    1877B
3824  LDCP      2013     2062     2063
3958  LDE1
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                4059     4063     4090     4091     4092     4106     4107     4109     4136     4137
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2085  LDEX2     2082
2094  LDEX3     2083B
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2115  LDEX5
2186  LDEX6     2184B
2187  LDEX7
2244  LDEX8     2242B
2245  LDEX9
2129  LDEXA     2118B    2159
2138  LDEXA1    2134B
2151  LDEXAR    3032C
2137  LDEXAY    2298
2135  LDEXAZ    2130
2213  LDEXBR    3033C
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2136  LDEXZB    2198
3956  LDEY      2144     2145     6325
4256  LDEZ      2145     2207     2208
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3826  LDT1
3839  LDT2      3892     3893     3894
3913  LDTF      3875     3876     3878
3896  LDTG      3887     3888     3890
4258  LDZ1
4344  LDZ2      4294     4295     4296     4325     4326     4328
2256  LFLAG     1802     2116     2133C    2169     2177     2189     2201C    2229     2236     2246
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3114  LLAF      3112
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1430  LLEXB     1418B
1434  LLEXC     1420B
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1355  LMAM      1341
1333  LMAX
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1808  LMCHK     1804B
1389  LMEND     1809B
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1347  LMEX1
1381  LMEXB     1369B
1357  LMEXM
1371  LMLCT     1368
1375  LMLCT1    1335C    1398C
1376  LMLCT2    1345C
1377  LMLCT3    1338C    1400C
1358  LMRNG     1340C
1397  LMSYX     1328B    1330B
2720  LOOP      2731B
3482  LP1A
3552  LP1AA     3532     3533     3535
3559  LP1AB     3548     3549     3550
3541  LP1ABD    3505     3506     3508     3556     3557     3561
3601  LP1AC1    3589     3590     3592
3099  LPREM     1266
2669  LR6CFA    1343     1760     1866     1869     2667C
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1461  LREXA     1451B
1465  LREXB     1453B
1469  LREXC     1455B
1498  LTEX      1030     1273B
1505  LTEXA
1517  LTEXB     1506
1518  LTEXC
1523  LTEXD     1901B
1525  LTEXD1    1585
1530  LTEXD2    1395B
1506  LTEXS
1686  LTSRNG     895C    1510     1589
1585  LTSYX     1551B
1108  M         1133B
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6413  M201AA    6411B
6419  M203      6287B
6421  M208      6283B
6423  M208B     6285B
2311  MBR       1333B    1505B    1749B    1834B    2440B    2579B
2325  MBRA      2314B    2316B
2327  MBRB      2321B
2330  MBRC      2333B
2336  MBRD      2332B
6193  MCCB      1356B    1666B    1771B    2017B    2067B    2094B    2149B    2168B    2211B    2228B
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6198  MCCBA     6192B
6184  MCCBR     1362B    1635B    1858B    6157
 707  MCMDER     664B
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3134  MESGT     1243C
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2467  MODE      2446
2891  MODERR    2825
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5502  MORCHR    5523     5524     5525
5719  MORSY1    5730     5731     5732     5746     5747     5748
5316  MORSYN    5351     5352     5353
1667  MSGBUF    1162C    1182C    1555C    1588C
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6650  MWRNGA    6644
6647  MWTB      6644
1129  N
1131  N1        1049B
1728  NA        1720
1727  NAK       1719
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                3318B    6386B
2728  NEXT1     2721B    2723B
 755  NEXTA      665B
 795  NEXTB      671B
 988  NEXTF      716B     775B     788B
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6434  NOLOOP    6311
2827  NONPOL    2822B
6433  NONSUP    6307
3469  NOP       3475     3476     3478
3615  NOP1      3621     3622     3624
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1436  NOTIMP    1414B    1449B    1995B
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1128  NPT       1103B
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 698  NXA5       686B     688B
 702  NXA6       690B
 722  NXAA       673B
3116  NX1        653
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 865  ODD2       944B
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6619  UUICNT   6601
1104  P
1109  PA       1105C   1132C
3129  PASSES    709     769    1003C   1033C   1054C   1083C   1088C   1194    1238    2266
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3131  PCNT      641C   1244C   2262C   2265    2289
2653  PE       2647B
1729  PGUF     1721
3144  PHNU     3017    3062
3068  PHNUS    1112    3021    3025    3040    3060C   3064
2656  PN       2651B
2659  PNC      2652B
5152  POL
2796  POLADR   1108    1571    1618    2785C
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1625  PTEXSA   1606C   1613C
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6120  RDATA    1298B
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6132  RDTA2    6126C
6131  RDTA3    6124C
6136  RDTA4    6134B
6624  RECD      747    1299    1304    1363    1394    1529    1636    1859    1914    1923
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5227  RECVIN
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6294  RMTB     6269B
6302  RMTC     6271B
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3141  RRANGB    876C
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4632  RTE      4692    4693    4694
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1834  RTEXA
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1892  RTEXB    1879B
1916  RTEXC
1897  RTEXD    1895B
1899  RTEXE
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1887  RTLCTA   1865C
1888  RTLCTB   1868C
1889  RTLCTC   1871C
1890  RTLCTD   1874C
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6251  SAV5     3316C   6322C   6370
1691  SAVE6    1623C   1684
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2662  SB       2649B   2655B   2658B
2667  SBD      2664B
2463  SBITS    2434    2501C   2540    2543C   2662    2847
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 2371  XRNEW    2325
 2393  XROLD    2320
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RS LINKER VERSION 5.00 06/12/78  0953.6 EDT MON
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  ZHRTCI        0014
  ZHRTCC        0015
  ZHRTCL        0016
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  ZHMERC        001F
  ZHIAFB        0020
  ZHTH29        0063
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