```
000001                          TITLE TCSC1,'REV B' TERMINAL TEST
000002                         * TERMINALS TEST
000003                         * PART NO.
000004                         * TCSW1       60135143-002
000005                         * TCSC1       60135130-002
000006                         *
000007                         * -----------
000008                         *    THIS T&V PROGRAM VERIFIES PROPER OPERATION OF LEVEL 6
000009                         *   TERMINALS THRU THE DUAL LINE COMMUNICATIONS PROCESSOR
000010                         *   (DLCP),AND ASYNCH OR  SYNCH CONTROL LINE ADAPTERS.
000011                         *
000012                         *    THE SUBSYSTEM ITEMS SUPPORTED BY THIS PROGRAM ARE:
000013                         *
000014                         *       DCM9301 COMM-PAC (2 ASYNC LINES )
000015                         *       DCM9302 COMM-PAC (1 ASYNC LINE )
000016                         *       DCM9303 COMM-PAC (2 SYNC LINES )
000017                         *       DCM9304 COMM-PAC (1 ASYNC + 1 SYNCH LINE)
000018                         *
000019                         * REVISION HISTORY
000020                         * -------- -------
000021                         *
000022                         *     A    JULY   1978    TCSC1             ORIGINAL RELEASE
000023                         *
000024                         *     THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN IS CONFIDENTIAL AND
000025                         *  PROPRIETARY TO AND THE EXCLUSIVE PROPERTY OF HONEYWELL INFORMATION SYSTEMS
000026                         *  INC.   IT  IS MADE AVAILABLE ONLY  TO  HONEYWELL AUTHORIZED RECIPIENTS FOR
000027                         *  THEIR USE SOLELY  IN  THE MAINTENANCE AND OPERATION OF HONEYWELL PRODUCTS.
000028                         *  THIS DOCUMENT AND INFORMATION MUST BE MAINTAINED  IN STRICTEST CONFIDENCE;
000029                         *  IT MUST NOT BE REPRODUCED IN  WHOLE OR IN PART;  AND IT SHALL NOT BE DIS-
000030                         *  CLOSED TO ANY OTHER PARTY WITHOUT THE PRIOR WRITTEN CONSENT OF HONEYWELL.
000031                         ************************************************************************
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000032                  / PROGRAM PREPARATION:
000033                  *  -------  -----------
000034                  *      THE ROOT SOURCE OF THIS PROGRAM  WAS PROCESSED BY THE HOST RESEDENT
000035                  *      ASSEMBER TO CREATE EITHER  OBJECT TEXT AND LISTING.
000036                  *          THE  OBJECT TEXT  WAS  FURTHER PROCESSED  BY  THE  HOST
000037                  *      RESIDENT LINKER USING THE APPROPRIATE CONSOLE ZV$LIB LIBRARY TO CREATE
000038                  *      A PUNCH SEGMENT CONTAINING AN EXECUTABLE MODULE.  THE ASSEMBLY LISTING
000039                  *      WAS AUGMENTED WITH CROSS REFERENCE DATA,  PLUS  THE LOAD MAP FROM  THE
000040                  *      LINKER TO CREATE A LIST SEGMENT.
000041                  *                  ROOT                        LINKED IMAGE
000042                  *      NAME        TCSW1                       TCSC1
000043                  *      DOCUMENT    60135143-002                60135130-002
000044                  *
000045                  *  DISTRIBUTION
000046                  *  ------------
000047                  *      THE ELEMENTARY ITEMS SUBMITTED TO THE T & V PROGRAM DISTRIBUTION CENTER
000048                  *      WERE THE EXECUTABLE LINKED IMAGES, ON DISKETTE, OF TCSC1 AND
000049                  *      MAGNETIC TAPE IMAGES OF THE AUGMENTED LISTINGS.
000050                  *
000051                  *      REPRODUCTIONS OF THE EXECUTABLE LINKED IMAGES MAY BE  AS DUPLICATE CARD
000052                  *      DECKS OR  AS A MEMBER OF A MULTIPLE MEMBER FILE.   IN THE MOST FREQUENT
000053                  *      CASE, IT WILL BE FOUND  AS  MEMBER "CO" WITHIN FILE
000054                  *      "PROGFILE" OF A DISKETTE VOLUME ENTITLED "DIAGS".
000055                  *
000056                  *      DISTRIBUTION OF THE LISTINGS,  WHICH SHOULD BE AVAILABLE IF ANY COMPLEX
000057                  *      MAINTENANCE OR REPAIR IS TO BE PERFORMED, IS NORMALLY AS A PRINTED COPY.
000058                  *
000059                  *  ROUTINE DEMONSTRATION
000060                  *  ------- -------------
000061                  *      THIS TEST EXERCISES NORMAL TTY FUNTIONALITY
000062                  *      FAIRLY COMPREHENSIVELY WITH MINIMAL OPERATOR EFFORT OR
000063                  *      TRAINING. HOWEVER, TO FULLY CHECK OUT DEVICES  WHICH HAVE MORE-INVOLVED
000064                  *      FUNTIONALITY THAN A TTY HAS, THE OPERATOR MUST KNOW THE
000065                  *      DIFFERENCES BETWEEN A TTY AND THE DEVICE TO BE TESTED. OPERATOR
000066                  *      MUST BE AWARE OF ALL THE TERMINAL'S FUNTIONALITY AND HOW TO ACCESS
000067                  *      IT IN ORDER TO TEST THE TERMINAL AS MUCH AS POSSIBLE.
000068                  *
000069                  *  STORAGE
000070                  *  -------
000071                  *      THIS PROGRAM REQUIRES 16 K  WORDS OF MAIN MEMORY.
000072                  *
000073                  *  OPERATION
000074                  *  ---------
000075                  *   1. LOAD AND START (OR RESTART) THE PROGRAM.  SEE T&V PRODUCT MANUAL, AW94.
000076                  *
000077                  *   2. SEE "CONSOLE SEARCH RULES", BELOW.
000078                  *
000079                  *   3. SEE "CONSOLE COMMUNICATIONS PARAMETERS", BELOW.
000080                  *
000081                  *   4. PRIOR TO PROGRAM EXECUTION, THE PROGRAM IDENTIFICATION WILL
000082                  *      BE DISPLAYED ON THE CONSOLE.  THE INITIAL START WILL ALSO DISPLAY:
000083                  *
000084                  *        THE ZV$LIB REVISION NUMBER
000085                  *        THE ADDRESS FORM (SAF )
000086                  *        I/O  EQUIPMENT DETECTED IN THE SYSTEM
000087                  *        MEMORY SIZE
000088                  *
000089                  *      THIS DISPLAY MUST BE VERIFIED BY THE OPERATOR.   THIS DISPLAY IS OMITTED
000090                  *      ON RESTARTS.
000091                  *
000092                  *   5. UPON PROGRAM INITIATION, DEFAULT PARAMETERS FOR THE TERMINAL ARE
000093                  *      PRESENTED ON THE CONSOLE. EXAMINE PARAMETERS AND CHANGE IF NECESSARY,
000094                  *      USING "PAR" COMMAND. SEE "RESPONSES TO NEXT?", BELOW.
000095                  *
000096                  *   6. TRANSFER/RETRIEVE DATA TO/FROM DLCP RAM BY USING THE "TRM"
000097                  *      COMMAND'S "LC" TEST. SEE "TRM COMMAND", BELOW.
000098                  *
000099                  *   7. LOOP A CANNED MESSAGE TO/FROM DLCP RAM BUY USING "TRM" COMMAND AND
000100                  *      "LA" TEST.SEE "TRM CMMAND" BELLOW.
000101                  *   8. TRANSMIT DATA TO THE TERMINAL USING "TRM" AND "TT". SEE "TRM COMMAND"
000102                  *      BELOW. CHECK FOR PROPER RECEPTION OF THE DATA BY THE TERMINAL.
000103                  *
000104                  *   9. RECEIVE A MESSAGE FROM THE TERMINAL. FIRST INITIATE "RT" TEST OF "TRM"
000105                  *      AND THEN ENTER DATA AT THE TERMINAL UNDER TEST. CHECK LEVEL 6 CONSOLE
000106                  *      FOR DISPLAY OF THE RECEIVED DATA. SEE "TRM COMMAND", BELOW.
000107                  *
000108                  *  10. SEE "RESPONSES TO NEXT ?:", BELOW, FOR THESE AND OTHER COMMANDS SUPPORTED
000109                  *      BY THIS PROGRAM AND WHICH CAN BE USED TO AID THE OPERATOR IN FULLY
000110                  *      TESTING THE TERMINAL. ALSO, SEE "SAMPLE CONSOLE OPERATION", BELOW,
000111                  *      FOR EXAMPLES.
000112                  *
000113                  *
000114                  *
```

```
000115                          /
000116                          *
000117                          * CONSOLE SEARCH RULES
000118                          * ------- ------ -----
000119                          *
000120                          *     IF DEFAULT SYSTEM CONSOLE IS ADEQUATE, THIS STEP CAN BE
000121                          *     IGNORED. THE DEFAULT SYSTEM CONSOLE IS THAT TERMINAL WHICH IS ATTACHED
000122                          *     TO THE LOWEST-NUMBERED MDC ADAPTER, OR, IF THERE IS NO APPROPRIATE DEVICE
000123                          *     ON THE MDC, TO THE HIGHEST-NUMBERED DLC ASYNCRHONOUS ADAPTER.
000124                          *
000125                          *     IF IT IS DESIRED TO SPECIFY A DIFFERENT TERMINAL AS THE SYSTEM CONSOLE,
000126                          *     LOCATION ZV$TTY MUST BE LOADED WITH THAT TERMINAL'S CHANNEL NUMBER AFTER
000127                          *     THE PROGRAM IS LOADED AND HALTED. THE ADDRESS OF ZV$TTY CAN BE FOUND
000128                          *     IN THE LINK MAP AT THE END OF THIS LISTING. CONSULT LEVEL 6 T&V MANUAL
000129                          *     FOR THIS PROCEDURE.
000130                          *
000131                          *
000132                          * CONSOLE COMMUNICATIONS PARAMETERS
000133                          * ------- -------------- ----------
000134                          *
000135                          *     IF SYSTEM CONSOLE IS ON THE MDC, THIS STEP CAN BE IGNORED.
000136                          *     ALL CONSOLE I/O IS EVEN PARITY.  IF CONSOLE IS ON DLC, IT MUST BE ASYNC.
000137                          *     IF THE CONSOLE CANNOT BE USED AT 1200 BAUD, CHANGE THE PROGRAM'S
000138                          *     DEFAULT BAUD RATE FOR CONSOLE DIALOGUES. TO DO THIS, LOAD AND HALT THE
000139                          *     PROGRAM BEFORE EXECUTION AND THEN ENTER A VALUE (RIGHT JUSTIFIED) FROM
000140                          *     THE FOLLOWING TABLE INTO LOCATION ZV$BUD. NOTE THAT THE NEW
000141                          *     SETTING REFLECTS BOTH THE NEW BAUD RATE AND THE IDENTIFIER OF THE ADAPTER
000142                          *     TO WHICH THE CONSOLE IS ATTACHED.
000143                          *
000144                          *                    *-------------------------------------*
000145                          *                    *                                     *
000146                          *                    *        BAUD  RATE  TABLE            *
000147                          *                    *                                     *
000148                          *                    *-------------------------------------*
000149                          *                     ACLA I.D.       (3118)(3110)        (3108)
000150                          *                     BAUD-RATE
000151                          *                        50              0                 1
000152                          *                        75              1                 2
000153                          *                       110              2                 3
000154                          *                       134              3                 4
000155                          *                       150              4                 5
000156                          *                       200              5                ---
000157                          *                       300              6                 6
000158                          *                       600              7                 7
000159                          *                       900             ---                8
000160                          *                      1050              8                ---
000161                          *                      1200 (DEFAULT)    9                 9
000162                          *                      1800              A (HEX)           A (HEX)
000163                          *                      2000              B (HEX)          ---
000164                          *                      2400              C (HEX)           B (HEX)
000165                          *                      3600             ---                C (HEX)
000166                          *                      4800              D (HEX)           D (HEX)
000167                          *                      7200             ---                E (HEX)
000168                          *                      9600              E (HEX)           F (HEX)
000169                          *                     19200              F (HEX)          ---
000170                          *
000171                          *     TO MAKE THIS CHANGE,  LOAD AND HALT THE PROGRAM BEFORE EX-
000172                          *     ECUTION.  INSERT CHANGE THEN EXECUTE. MEMORY LOCATION OF "ZV$BUD"
000173                          *     MAY BE FOUND IN MAP AT END OF LISTING.
000174                          *
000175                          *
```

```
000176                          /
000177                          *       RESPONSES TO "NEXT ?" ARE:
000178                          *       --------- -- ---------
000179                          *
000180                          *            TRM @TEST@,@CHAN@,@MESG@,@PASSES@,@ERROR REPORTING MODE@
000181                          *                (SEE 'TRM COMMAND', BELOW, FOR FIELD DEFINITIONS.)
000182                          *            MSG(SPACE) (DEFINE AN OPERATOR MESSAGE.
000183                          *                       TYPE IN MESSAGE UP TO 320 CHARACTERS (BYTES). CONSOLE
000184                          *                       PROVIDES AN AUTOMATIC CR/LF (NOT INCLUDED IN THE
000185                          *                       MESSAGE TO BE TRANSMITTED) BEFORE EVERY 80 BYTES.
000186                          *                       #-SIGN NULLIFIES MOST-RECENT INPUT BYTE.
000187                          *                       MESSAGE IS AUTOMATICALLY PREFACED WITH A LF/CR.
000188                          *                       CR TERMINATES OPERATOR INPUT.)
000189                          *
000190                          *                      TO INCLUDE VARIABLE LENGTH STRING OF ANY CHARACTER
000191                          *                      @ EXCEPT "@"@ USE FOLLOWING PROCEDURE.
000192                          *                      TYPE "CONTROL F"  WHICH WILL ASK FOR THE CHARACTER
000193                          *                      AND THE NUMBER OF CHARACTERS TO BE INCLUDED IN  THE
000194                          *                      MESSAGE.
000195                          *                      (SEE SAMPLE CONSOL OPERATION)
000196                          *                       TO TRANSMIT  "@" USE CANNED MESSAGE.  SEE 'MESG'
000197                          *                       UNDER 'TRM COMMAND', BELOW.)
000198                          *            MSG? (DISPLAYS OPERATOR INPUT MESSAGE)
000199                          *            TRM? (DISPLAYS LAST CMD LINE INPUT)
000200                          *            TRMX (DISPLAYS AND EXECUTES LAST CMD LINE INPUT)
000201                          *            FOR ASYNCHRONOUS TERMINAL:
000202                          *            PAR @TERM TYPE@,@BAUD RATE@,@CHAR SIZE@,@STOP BITS@,@PARITY@
000203                          *                (SEE 'CHANGING PARAMETERS', BELOW, FOR FIELD DEFINITIONS.)
000204                          *            FOR SYNCHRONOUS TERMINAL:
000205                          *            PAR @TERM TYPE@,@TERM ADDR@,@MODE@,@CLOCK@,@DISP/PRT@
000206                          *                (SEE 'CHANGING PARAMETERS',BELOW FOR FIELD DEFINATION.)
000207                          *                NOTE:OPERATOR MUST CHECK DLCP CLOCK MATCHES TERMINAL BAUD-
000208                          *                RATE WHEN L6 CLOCK IS USED.
000209                          *            PAR? (DISPLAYS CURRENT PARAMETERS)
000210                          *            MSH(SPACE) DEFINE AN OPERATOR MESSAGE IN HEX NOTATION.
000211                          *                TYPE IN MESSAGE OF UP TO 320 BYTES (160 WORDS),
000212                          *                WITH A COMMA OR PERIOD AFTER EVERY FOUR HEX DIGITS. CONSOLE
000213                          *                PROVIDES AN AUTOMATIC CR/LF (WHICH IS NOT INCLUDED  IN
000214                          *                THE MESSAGE TO BE TRANSMITTED) BEFORE EACH INPUT LINE OF
000215                          *                TEN WORDS. @-SIGN CANCELS MOST-RECENT INPUT HEX DIGIT.
000216                          *                MESSAGE IS AUTOMATICALLY PREFACED WITH A LF/CR.
000217                          *                CR TERMINATES OPERATOR INPUT.)
000218                          *            MSH? (DISPLAYS OPERATOR MESSAGE IN HEX)
000219                          *            RMH? (DISPLAYS RECEIVED MESSAGE IN HEX)
000220                          *
000221                          *              NOTE: 1. FOR TRM AND PAR RESPONSES, RESIDUAL
000222                          *                       INFORMATION, IF ANY, FOR TRAILING
000223                          *                       FIELDS WILL BE USED IF C/R IS INPUTTED
000224                          *                       WHERE A COMMA IS SHOWN.
000225                          *
000226                          *                    2. @-SIGN CANCELS MOST-PREVIOUSLY ENTERED
000227                          *                       KEYSTROKE (EXCEPT MSG INPUT- SEE MSG, ABOVE).
000228                          *
000229                          *                    3. DURING THE EXECUTION OF "TRM" COMMANDS, DEPRESSING
000230                          *                       THE BREAK KEY ON THE CONSOLE WILL CAUSE THE PROGRAM
```

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000231                          /
000232                          *       TRM COMMAND
000233                          *       --- -------
000234                          *               TEST:
000235                          *               -----
000236                          *                    EL = ESTABLISH LINE FOR MODEM
000237                          *                         SYSTEM SETS UP "DATA TERMINAL READY",NEEDED TO
000238                          *                         ESTABLISH TELEPHONE LINE.OPERATOR MUST EXECUTE
000239                          *                         THIS TEST PRIOR TO DIALING THE MODEM AND RUNNING
000240                          *                         THE OHTER TESTS.
000241                          *
000242                          *                    DS = READ DATA SET STATUS OF THE LINE AND PRINT IN HEX.
000243                          *
000244                          *                    LC = WRITE/READ A MESSAGE TO/FROM DLCP RAM CP AREA
000245                          *
000246                          *                    LA = LOOP A CANNED MESSAGE AT THE CLA(LINE ADAPTER).
000247                          *
000248                          *                    LX = LOOP A CANNED MESSAGE AT THE EXTERNAL  LOOP
000249                          *                         CONNECTER. THE LOOP CONNECTER MUST BE AS FOLLOW.
000250                          *                         PINS REFERENCED ARE ON THE OUTPUT CONNECTER OF
000251                          *                         THE CLA CABLE.
000252                          *
000253                          *                         PIN  SIGNAL     TIES TO   PIN  SIGNAL
000254                          *
000255                          *                         02   TX DATA              03   RECV DATA
000256                          *                         04   RTS                 08   CARR DET
000257                          *                         05   CTS                 08   CARR DET
000258                          *                         06   DSR                 20   DTR
000259                          *                         14   NU SYNC             15   TX CLK
000260                          *                         17   REC CLK             22   RING
000261                          *                         22   RING                23   SPEED SEL
000262                          *                         23   SPEED SEL           25   STBY
000263                          *
000264                          *                    FOR SYNCHRONOUS TERMINAL;
000265                          *                    PT = SYSTEM POLLS THE TERMINAL,TERMINAL RESPONDS WITH
000266                          *                         QUIESCENT MESSAGE IF IT DOESNOT HAVE ANY
000267                          *                         MESSAGE TO SENT.
000268                          *
000269                          *                    FOR ASYNCHRONOUS TERMINAL;
000270                          *                    TT = SYSTEM SENDS A MESSAGE TO THE TERMINAL. TO CHANGE
000271                          *                         THE OPERATOR'S MESSAGE, USE 'MSG ' OR 'MSH '
000272                          *                         COMMAND. OPERATOR MUST INSPECT TERMINAL DISPLAY
000273                          *                         TO VERIFY THAT TERMINAL REACTED PROPERLY TO THE
000274                          *                         MESSAGE.
000275                          *                    FOR SYNCHRONOUS TERMINAL;
000276                          *                    TT = SYSTEM SENDS A MESSAGE TO TERMINAL AND POLLS THE
000277                          *                         TERMINAL FOR IIS RESPONSE.OPERATOR MUST INSPECT
000278                          *                         TERMINAL DISPLAY AND USE "RMH?" COMMAND TO VERIFY
000279                          *                         THAT TERMINAL REACTED PROPERLY TO THE MESSAGE.
000280                          *
000281                          *                    FOR ASYNCHRONOUS TERMINAL;
000282                          *                    RT = OPERATOR IS TO KEY IN A MESSAGE (UP TO 640 BYTES)
000283                          *                         AT TERMINAL; CR ENDS INPUT; SYSTEM WILL
000284                          *                         CHECK RECEIVED MESSAGE FOR TRANSMISSION ERRORS.
000285                          *                         OPERATOR MUST CHECK CONSOLE FOR PROPER DATA. IF
000286                          *                         NECESSARY, USE "RMH?" COMMAND TO MAKE VISIBLE
000287                          *                         ANY ASCII CONTROL CODES.
000288                          *                    FOR SYNCHRONOUS TERMINAL;
000289                          *                    RT = OPERATOR IS TO KEY IN A MESSAGE (UP TO 640 BYTES)
000290                          *                         AT TERMINAL; TRANSMIT ENDS THE INPUT; SYSTEM
000291                          *                         WILL CHECK RECEIVED MESSAGE FOR TRANSMISSION
000292                          *                         ERRORS.OPERATOR MUST CHECK CONSOLE FOR PROPER
000293                          *                         DATA AND USE "RMH?" COMMAND TO MAKE VISIBLE
000294                          *                         ANY ASCII CONTROL CODES.
000295                          *
000296                          *
000297                          *                    LT = SYSTEM SENDS MESSAGE TO TERMINAL;
000298                          *                         OPERATOR IS TO ECHO THE
000299                          *                         MESSAGE VERBATIM AT THE TERMINAL AFTER 'INPUT' IS
000300                          *                         DISPLAYED AT THE TERMINAL AND DSR REMAINS ON;
000301                          *                         MESSAGE WILL BE COMPARED TO TRANSMITTED MESSAGE.
000302                          *                         USE "MSG " OR "MSH " COMMAND TO DEFINE MESSAGE.
000303                          *
000304                          *               CHAN: DLCP CHANNEL TO TEST (UP TO 4 HEX DIGITS)
000305                          *               ----
000306                          *
000307                          *               MESG
000308                          *               ----
000309                          *                    C = CANNED MESSAGE
000310                          *                        THE CANNED MESSAGE CONSISTS OF THE DATA WITHIN THE
000311                          *                        EXTREME QUOTES OF THE NEXT THREE LINES (A CR/LF
000312                          *                        PRECEDES EACH LINE):
000313                          *                        'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
000314                          *                        'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
000315                          *                         !"#$%&'()*+,-./0123456789:;<=>?@@\@]^@@@@@'
000316                          *                     CHARACTERS AFTER "]" (BLINK) CHARACTER WILL BLINK.
000317                          *
000318                          *                    O = OPERATOR MESSAGE SPECIFIED BY "MSG " OR "MSH "
000319                          *                        COMMANDS. SEE "RESPONSES TO NEXT :? ", ABOVE.
000320                          *                        THE DEFAULT OPERATOR MESSAGE IS 9 U* PAIRS.
000321                          *
```

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000322                                  /
000323                                  *
000324                                  *
000325                                  *
000326                                  *
000327                                  *
000328                                  *
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000330                                  *
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000332                                  *
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000404                                  *
000405                                  *
000406                                  *
000407                                  *
000408                                  *
```

PASSES: NUMBER OF TIMES TO EXECUTE TEST

IF ZERO IS ENTERED, TEST WILL LOOP FOREVER. USE
BREAK KEY TO INTERRUPT AND STOP TEST.
NOTE: RT,LT,AD AND LD WILL ONLY
EXECUTE ONCE.

ERROR REPORTING MODE:
----- --------- ----

C = REPORT EACH ERROR ON CONSOLE
FC = SUPPRESS ERRORS, SUMMARIZE ON CONSOLE

CHANGING PARAMETERS
-------- ----------

PRIOR TO THE EXECUTION OF ANY TEST, IT IS
NECESSARY TO CONFIGURE THE PROGRAM TO AGREE
WITH THE CONFIGURATION OF THE TERMINAL TO
BE TESTED.

THIS IS ACCOMPLISHED WITH THE COMMAND;

PAR

THIS MAY BE DONE WHENEVER "NEXT ?: " IS DISPLAYED ON THE SYSTEM CONSOLE.
TO USE, RESPOND TO "NEXT :? " WITH

FOR ASYNCHRONOUS TERMINAL;
PAR @TERMINAL TYPE@,@BAUD RATE@,@CHAR SIZE@,@STOP BITS@,@PARITY@

FOR SYNCHRONOUS TERMINAL
PAR @TERMINAL TYPE@,@TERM ADDR@,@MODE@,@CLOCK@,@DISP/PRT@

FOR ASYNCHRONOUS TERMINAL:		FOR SYNCHRONOUS TERMINAL:
TERMINAL TYPE=	TTY	TERMINAL TYPE= 7700
	TTYC	
	TTYR	
	7100	
	7200	
	PRU1	
	PRU2	
	PRU3	
	PRU5	
	TWU1	
	TWU2	
	TWU3	
	TWU5	
FOR ASYNCHRONOUS TERMINAL:		FOR SYNCHRONOUS TERMINAL:
BAUD RATE=	50	TERMINAL ADDRESS= 0 TO 31
	75	
	110	
	134	
	150	
	200	
	300	
	600	
	900	
	1050	
	1200	
	1800	
	2000	
	2400	
	3600	
	4800	
	7200	
	9600	
	19200	
FOR ASYNCHRONOUS TERMINAL:		FOR SYNCHRONOUS TERMINAL:
CHAR SIZE=	5	MODE= P (POLLED OPERATION)
	6	N (NON-POLLED OPERATION)
	7	
	8	
FOR ASYNCHRONOUS TERMINAL:		FOR SYNCHRONOUS TERMINAL:
STOP BITS=	1	CLOCK= L6 (DLCP CLOCK)
	2	T (TERMINAL CLOCK)
FOR ASYNCHRONOUS TERMINAL:		FOR SYNCHRONOUS TERMINAL:
PARITY=	E (EVEN)	DISP/PRT= D (DISPLAY)
	O (ODD)	P (PRINTER)
	N (NONE)	C (CASSETTE)

```
000409                          /
000410                          *       FOR EXAMPLE:
000411                          *
000412                          *       FOR ASYNCHRONOUS TERMINAL:
000413                          *       NEXT ?; PAR 7100,1200,8,1,E  (C/R)
000414                          *       NEXT ?;
000415                          *
000416                          *       FOR SYNCHRONOUS TERMINAL:
000417                          *       NEXT ?; PAR 7700,I,P,L6,D  (C/R)
000418                          *       NEXT ?;
000419                          *       THE CURRENT PARAMETERS MAY BE DISPLAYED WITH THE COMMAND:
000420                          *
000421                          *            PAR?
000422                          *
000423                          *       FOR EXAMPLE:
000424                          *
000425                          *        FOR ASYNCHRONOUS TERMINAL:              FOR SYNCHRONOUS TERMINAL:
000426                          *       NEXT ?; PAR?                           NEXT ?; PAR?
000427                          *       TERM TYPE:: 7100                       TERM TYPE:: 7700
000428                          *       BAUD RATE:: 1200                       TERM ADDR:: 1
000429                          *       CHAR SIZE:: 8                              MODE:: P
000430                          *       STOP BITS:: 1                            CLOCK:: L6
000431                          *          PARITY:: E                         DISP/PRT:: D
000432                          *
000433                          *       NEXT ?;                                NEXT ?:
000434                          *
```

```
000435                          /
000436                          *
000437                          *       SAMPLE CONSOLE OPERATION:
000438                          *       ------ ------- ---------
000439                          *
000440                          *       TERMINALS TEST TCSC1 REV A JULY  7 1978
000441                          *       ZV$LIB REV. 7.00
000442                          *
000443                          *       WDT
000444                          *       CHAN  DEVC  ID
000445                          *       0400  DSKT  2010
000446                          *       0480  DSKT  2010
000447                          *       0500  CDR   2008
000448                          *       0580  CONS  2019
000449                          *       FC00  ACLA  2118
000450                          *       FC80  ACLA  2118
000451                          *       FD00  ACLA  2118
000452                          *       FD80  ACLA  2118
000453                          *       FE00  ACLA  2118
000454                          *       FE80  ACLA  2118
000455                          *       FF00  ACLA  2118
000456                          *       FF80  ACLA  2118
000457                          *       MEMORY  LOW  189C
000458                          *       MEMORY HIGH  FFFF  64K
000459                          *
000460                          *       DEFAULT PARAMETERS:
000461                          *       TERM TYPE:: 7100
000462                          *       BAUD RATE:: 1200
000463                          *       CHAR SIZE::    8
000464                          *       STOP BITS::    1
000465                          *          PARITY::    E
000466                          *
000467                          *       NEXT ?: MSG(SPACE)
000468                          *       THIS IS A TEST MESSAGE!    (C/R)
000469                          *             (THIS IS AN EXAMPLE OF AN OPERATOR INPUT MESSAGE)
000470                          *
000471                          *       NEXT ?: MSG?
000472                          *       CR/LF
000473                          *       THIS IS A TEST MESSAGE!
000474                          *
000475                          *             (THE OPERATOR HAS DISPLAYED THE MESSAGE HE INPUT)
000476                          *
000477                          *        TYPE "CONTROL F"  IN MSG(SPACE) COMMAND.FOR EXAMPLE:
000478                          *
000479                          *       NEXT ?: MSG(SPACE)
000480                          *       XYZ(CONTROL F)
000481                          *       CHARACTER ?:#
000482                          *       NUMBER ?:5(C/R)
000483                          *       PQ#RQ(C/R)
000484                          *         (THIS IS AN EXAMPLE OF OPERATOR INPUT MESSEGE USING "CONTROL F " )
000485                          *
000486                          *       NEXT ?:MSG?
000487                          *       CR/LF
000488                          *       XYZ####PRQ
000489                          *         (OPERATOR HAS DISPLAYED THE MESSEGE HE INPUT)
000490                          *         @NOTE THE USAGE OF # SIGN AS AN ERASER AND A CHARACTER@
000491                          *       FOR ASYNCHRONOUS TERMINAL;
000492                          *       NEXT ?: PAR 7100,9600,7,2,N (C/R)
000493                          *
000494                          *             (THE OPERATOR HAS CHANGED THE PARAMETERS)
000495                          *
000496                          *       NEXT ?: PAR?
000497                          *       TERM TYPE:: 7100
000498                          *       BAUD RATE:: 9600
000499                          *       CHAR SIZE::    7
000500                          *       STOP BITS::    2
000501                          *          PARITY::    N
000502                          *
000503                          *             (THE OPERATOR HAS DISPLAYED THE PARAMETERS)
000504                          *
000505                          *       NEXT ?: TRM TT,FC00,0,1,C   (C/R)
000506                          *
000507                          *             (THIS BEGINS EXECUTION OF TEST TT)
000508                          *             (THE  CONSOLE RESPONDS WITH THE FOLLOWING:)
000509                          *
000510                          *       EXECUTING TT:  FC00,   0,    1,   C
000511                          *
000512                          *       TT: TEST COMP  CHAN FC00
000513                          *          1  PASSES   0  ERRORS
000514                          *
000515                          *        NOTE: FOR SYNCHRONOUS TERMINAL THE CONSOL RESPONDS WITH FOLLOWING:
000516                          *        EXECUTING TT:  FC00,   0,    1,   C
000517                          *
000518                          *       ACK RECEIVED
000519                          *
000520                          *       TT: TEST COMP, CHANNEL FC00
000521                          *             1 PASSES     0 ERRORS
000522                          *       NEXT ?: TRMX
000523                          *
000524                          *             (THE OPERATOR HAS RE-EXECUTED THE PREVIOUS TEST)
000525                          *             (THE CONSOLE RESPONDS WITH THE FOLLOWING:)
000526                          *
000527                          *         EXECUTING TT:   FC00,   0,    1,  C
000528                          *
000529                          *       TT: TEST COMP  CHAN FC00
000530                          *         1   PASSES   0   ERRORS
000531                          *
000532                          *       NEXT ?: TRM?
000533                          *
000534                          *             (THE OPERATOR WISHES TO LOOK AT THE LAST COMMAND LINE)
000535                          *             (THE CONSOLE RESPONDS WITH THE FOLLOWING:)
000536                          *
000537                          *       TT:  FC00,   0,     1,   C
000538                          *
000539                          *       NEXT ?: MSH(SPACE)
000540                          *            3132,3334,3536,494E,555,542E     (C/R)
000541                          *
000542                          *       (OPERATOR HAS INPUT HEX VALUES DIRECTLY INTO THE MESSAGE BUFFER)
000543                          *
000544                          *       NEXT ?: MSG?
000545                          *       CR/LF
000546                          *       123456INPUT.
000547                          *
```

```
000548                  *           (OPERATOR HAS DISPLAYED THE PREVIOUS MESSAGE INPUT.)
000549                  *
000550                  *       NEXT ?: MSH?
000551                  *       0D0A 3132 3334 3536 494E 5055 542E
000552                  *
000553                  *           (OPERATOR HAS DISPLAYED THE MESSAGE INPUT IN HEX.)
000554                  *           (NOTE LEADING CR/LF
000555                  *
000556                  *        NEXT ?: RMH?
000557                  *
000558                  *          1616 1616 1601 6006 2020 0203 1616 1616 0400
000559                  *
000560                  *          (OPERATOR HAS DISPLAYED SYNCHRONOUS TERMINAL RESPONSE (ACK) IN HEX
000561                  *          WHEN "TT" COMMAND EXECUTED.)
```

```
000562                          /
000563                          *
000564                          *
000565                          *       SUPPORTED MODEMS:
000566                          *       --------- ------
000567                          *
000568                          *
000569                          *              ASYNCHRONOUS
000570                          *                 103A  NO LOOPBACK CAPABILITY
000571                          *                 103E  NO LOOPBACK CAPABILITY
000572                          *                 103F  NO LOOPBACK CAPABILITY
000573                          *                 113A  NO LOOPBACK CAPABILITY
000574                          *                 113B  NO LOOPBACK CAPABILITY
000575                          *                 202C  NO LOOPBACK CAPABILITY
000576                          *                 202D  NO LOOPBACK CAPABILITY
000577                          *                 202S  NO LOOPBACK CAPABILITY
000578                          *                 202T  NO LOOPBACK CAPABILITY
000579                          *
000580                          *              SYNCHRONOUS
000581                          *                 201C  NO LOOPBACK CAPABILITY
000582                          *
000583                          *
000584                          *
000585                          *       SUPPORTED TERMINALS:
000586                          *       --------- ---------
000587                          *
000588                          *          TTY
000589                          *          VIP 7100/7105
000590                          *          VIP 7200/7205
000591                          *          VIP 7250/7255
000592                          *          7700/7700R
000593                          *          PRU1001 (SARA-300 BAUD)
000594                          *          PRU1002 (SARA-1200 BAUD)
000595                          *          PRU1003 (ROSY 24-110/200/300 BAUD)
000596                          *          PRU1005 (ROSY 26-1200 BAUD)
000597                          *          TWU1001
000598                          *          TWU1002
000599                          *          TWU1003
000600                          *          TWU1005
000601                          *
000602                          ********************************************************************************
```

```
000603                                  /
000604          0000                    ZERO    EQU     $
000605                                          XLOC    ZV$ARG,ZV$ABF,ZV$BKF
000606                                          XLOC    ZHPFR,ZHRTCI,ZHRTCL
000607                                          XLOC    ZHRTCC,ZHCOMM
000608  0100                                    ORG     ZERO+X'100'
000609                                  *
000610                                  START   CALL    ZV$RD,TITLE             DETERMINE RESOURCES,IDENTIFY PROGRAM
        0100  FBC0 0003
        0102  D380 0000       X
        0104  0F80
        0105  0DF7
000611          0105            STARTM  EQU     $-$AF
000612  0106  E3C0 13C5                        LNJ     $B6,STMT
000613  0108  9BC0 1557                        LAB     $B1,CRLF
000614  010A  9FC0 FFFA                        STB     $B1,STARTM
000615  010C  0F80 09D9         STARTB  B       <DPARM1                DISPLAY DEFAULT PARAMETERS
000616  010E  0F01 FFFF                        NOP     $
000617                                  *
000618  0110  8740 0D42         NEXT    CL      PCNT                   CLEAR THE PASS COUNTER
000619  0112  8740 1478                        CL      NOSTOP
000620  0114  8740 0D33                        CL      TEMP+1
000621  0116  8740 0D40                        CL      ERCT                   CLEAR THE ERROR COUNTER
000622  0118  8740 00A8                        CL      MSGFLG
000623  011A  9870 2C20                        LDR     $R1,=X'2C20'
000624  011C  9F40 165E                        STR     $R1,ECHOMS+7
000625  011E  9870 2020                        LDR     $R1,=X'2020'
000626  0120  9F40 165B                        STR     $R1,ECHOMS+8
000627  0122  9F40 165A                        STR     $R1,ECHOMS+9
000628  0124  9F40 1659                        STR     $R1,ECHOMS+10
000629  0126  9B80 0110                        LAB     $B1,<NEXT
000630  0128  9FC0 FFE4                        STB     $B1,STARTB+1           DISPLAY PARAMETERS ONCE
000631  012A  BB80 0E1E                        LAB     $B3,<NXT               LOAD MESSAGE ADDRESS
000632  012C  C3C0 15C7                        LNJ     $B4,TYPEQ              TYPE NEXT ?:
000633  012E  1C08                            LDV     $R1,=8                 RANGE FOR CMD
000634  012F  A3C0 0C8B                        LNJ     $B2,IASC               INPUT THE COMMAND
000635  0131  A840 0D15                        LDR     $R2,TEMP               GET THE CMD INPUT
000636  0133  A970 5050                        CMR     $R2,=A'PP'             GO TO PATCHER ROUTINE
000637  0135  0901 1810                        BE      ZVPTCH
000638  0137  A970 5452                        CMR     $R2,=A'TR'             IS IT A TR?
000639  0139  0969                            BNE     >NXA                   NO-TRY MS
000640  013A  A840 0D0D                        LDR     $R2,TEMP+1
000641  013C  A970 4D20                        CMR     $R2,=Z'4D20'           CHECK FOR M
000642  013E  0981 0039                        BNE     MCMDER                 INPUT ERROR - GO TYPE MESSAGE
000643  0140  0F81 0081                        B       NEXTA                  GO INPUT PARAMETERS
000644                                  *
000645  0142  A970 4D53         NXA     CMR     $R2,=A'MS'             TRY MS
000646  0144  0981 0054                        BNE     NPAR
000647  0146  A840 0D01                        LDR     $R2,TEMP+1             LOAD SECOND HALF OF CMD
000648  0148  A970 4720                        CMR     $R2,=A'G ' IS          IT A G?
000649  014A  0901 00AF                        BE      NEXTB                  YES-GO INPUT OPERATOR MESSAGE
000650  014C  A970 473F                        CMR     $R2,=Z'473F'           NO- TRY G?
000651  014E  AF40 0072                        STR     $R2,MSGFLG
000652  0150  0981 003E                        BNE     NXAA                   NEITHER-
000653  0152  8751                            CL      =$R1                   MSG?
000654  0153  9BC0 0D68                        LAB     $B1,OPMESG
000655                                  *
000656  0155  8753              NXA1    CL      =$R3
000657  0156  A811                            LDR     $R2,$B1.$R1
000658  0157  30C8                            OR      $R3,8
000659  0158  2D24                            CMV     $R2,=X'24'             $ IN MESSAGE
000660  0159  090D                            BE      >NXA4
000661  015A  2D5C                            CMV     $R2,=X'5C'             \ IN MESSAGE
000662  015B  090B                            BE      >NXA4
000663  015C  304B              NXA2    SOR     $R3,8
000664  015D  3D24                            CMV     $R3,=X'24'
000665  015E  090D                            BE      >NXA5
000666  015F  3D5C                            CMV     $R3,=X'5C'             \ IN MESSAGE
000667  0160  090B                            BE      >NXA5
000668  0161  9940 0D09         NXA3    CMR     $R1,OPMRNG             RANGE EXHAUSTED?
000669  0163  028D                            BGE     >NXA6
000670  0164  1781 FFF0                        BINC    $R1,NXA1
000671                                  *
000672  0166  D811              NXA4    LDR     $R5,$B1.$R1            BLIND LIBRARY TO EXISTENCE OF $
000673  0167  DA70 8000                        ADD     $R5,=Z'8000'           AND MDC TO \
000674  0169  DF11                            STR     $R5,$B1.$R1
000675  016A  0FF2                            B       >NXA2
000676                                  *
000677  016B  D811              NXA5    LDR     $R5,$B1.$R1            BLIND LIBRARY TO EXISTENCE OF $
000678  016C  DA70 0080                        ADD     $R5,=Z'0080'           AND MDC TO \
000679  016E  DF11                            STR     $R5,$B1.$R1
000680  016F  0FF2                            B       >NXA3
000681  0170  BB80 0EBB         NXA6    LAB     $B3,<OPMESP
000682  0172  9840 0CF8                        LDR     $R1,OPMRNG
000683  0174  93C0 14FD                        LNJ     $B1,CONPRT             PRINT BUFFER ON EVEN A TTY-R
000684  0176  0F81 FF99                        B       NEXT
000685                                  *
000686  0178  A970 4D3F         MCMDER  CMR     $R2,=Z'4D3F'           M?
000687  017A  098B                            BNE     >NCMDER
000688  017B  69C0 0CD5                        CMZ     PASSES
000689  017D  0980              T             BNE     >+$A
000690  017E  1C01                            LDV     $R1,=1
000691  017F  9F40 140B                        STR     $R1,NOSTOP
000692  0181  A3C0 15B1         $A      LNJ     $B2,ECHOA              TYPE LAST CMD LINE
000693  0183  0F81 FF7C                        B       START
000694  0185  A970 4D58         NCMDER  CMR     $R2,=Z'4D58'           X?
000695  0187  0901 0172                        BE      NEXTF
000696                                  *
000697  0189  BB80 01B9         CMDER   LAB     $B3,<INVCMD            LOAD MESSAGE ADDRESS
000698  018B  C3C0 1559                        LNJ     $B4,TYPEC              AND TYPE IT.
000699  018D  0F81 FF72                        B       START
000700                                  *
000701  018F  A970 4820         NXAA    CMR     $R2,=A'H '
000702  0191  0901 0104                        BE      IMSH
000703  0193  A970 483F                        CMR     $R2,=A'H?'
000704  0195  0901 0135                        BE      IMSD
000705  0197  0F81 FFF1                        B       CMDER
000706                                  *
000707  0199  A970 5041         NPAR    CMR     $R2,=A'PA'
000708  019B  0981 000D                        BNE     HEXDP
000709  019D  A840 0CAA                        LDR     $R2,TEMP+1
000710  019F  A970 5220                        CMR     $R2,=A'R '
000711  01A1  0901 08DF                        BE      IPAR                   GO INPUT PARAMETERS
```

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000712  01A3  A970 523F            CMR     $R2,=A'R?'
000713  01A5  0901 0842            BE      DPARM           GO DISPLAY PARAMETERS
000714  01A7  0F81 FFE1            B       CMDER
000715                        *
000716  01A9  A970 524D    HEXDP   CMR     $R2,=A'RM'      CKECK FOR REQUEST TO DUMP RCV BUFFER
000717  01AB  0981 FFDD            BNE     CMDER
000718  01AD  A840 0C9A            LDR     $R2,TEMP+1
000719  01AF  A970 483F            CMR     $R2,=A'H?'
000720  01B1  0981 FFD7            BNE     CMDER
000721                        *
000722                        *
000723                        *   DUMP RECEIVE BUFFER IN HEX          RMH?
000724                        *
000725  01B3  93C0 011D            LNJ     $B1,DMPHEX
000726  01B5  17D5                 DC      <RECD
000727  01B6  0E6F                 DC      <RCVRNG
000728  01B7  0F81 FF58            B       NEXT
000729  01B9  494E 5641 4C49 INVCMD TEXT   'INVALID COMMANDS'
        01BC  4420 434F 4D4D
              414E 4424
000730  01C1  0000          MSGFLG DC     0
000731                        *
```

```
000732                                  / 'TRM ' IS DECODED
000733                                  * PARAMETER INPUT
000734                                  *
000735  01C2  1C08                     NEXTA   LDV     $R1,=8          FIRST INPUT THE TEST
000736  01C3  A3C0 0BF7                        LNJ     $B2,1ASC        TEST
000737  01C5  ABC0 0C87                        LAB     $B2,TEST
000738  01C7  C3C0 001F                        LNJ     $B4,END
000739  01C9  1C06                            LDV     $R1,=6
000740  01CA  A3C0 0BFF                        LNJ     $B2,1HEX        CHANNEL
000741  01CC  ABC0 0C82                        LAB     $B2,CHAN
000742  01CE  C3C0 0018                        LNJ     $B4,END
000743  01D0  1C04                            LDV     $R1,=4
000744  01D1  A3C0 0BE9                        LNJ     $B2,1ASC        MESG TYPE(D OR C)
000745  01D3  ABC0 0C7C                        LAB     $B2,MESG
000746  01D5  C3C0 0011                        LNJ     $B4,END
000747  01D7  1C04                            LDV     $R1,=4
000748  01D8  A3C0 0BFC                        LNJ     $B2,1DEC        NUMBER OF PASSES
000749  01DA  ABC0 0C76                        LAB     $B2,PASSES
000750  01DC  C3C0 000A                        LNJ     $B4,END
000751  01DE  1C06                            LDV     $R1,=6
000752  01DF  A3C0 0BDB                        LNJ     $B2,1ASC        ERROR REPORT MODE
000753  01E1  ABC0 0C70                        LAB     $B2,ERCD
000754  01E3  C3C0 0003                        LNJ     $B4,END
000755  01E5  0F81 0114                        B       NEXTF           GO CHECK VALIDITY
000756                                  *
000757  01E7  A840 0C5F                 END     LDR     $R2,TEMP
000758  01E9  C840 0C5D                         LDR     $R4,TEMP
000759  01EB  C570 FF00                         AND     $R4,=Z'FF00'
000760  01ED  C970 2C20                         CMR     $R4,=A', '
000761  01EF  0907                             BE      >END1
000762  01F0  B800 0000         X               LDR     $R3,<ZV$ABF
000763  01F2  B970 0D00                         CMR     $R3,=X'0D00'
000764  01F4  0903                             BE      >END2
000765  01F5  AF02                             STR     $R2,$B2
000766  01F6  8384                     END1    JMP     $B4
000767  01F7  AF02                     END2    STR     $R2,$B2
000768  01F8  0F81 0101                         B       NEXTF
000769                                  *
```

```
000770                                  /
000771                                  *
000772                                  *   OPERATOR INPUTS MESSAGE HERE -          MSG
000773                                  *
000774                                  *
000775          01FA                    NEXTB  EQU    $
000776  01FA    C3C0 14D4                      LNJ    $B4,NEWLIN
000777  01FC    3C02                           LDV    $R3,=2                  2 INIT  BYTES = CR/LF
000778  01FD    9BC0 0CBD                      LAB    $B1,OPMESP              PTR  TO AUTO CR/LF
000779  01FF    8754                           CL     =$R4                    INIT CONSOLE  COL INDICATOR
000780                                  MSGINP CALL   ZV$IA,ZV$IAV,STAT,TEMP GET A BYTE
          0200  FBC0 0003
          0202  D380 0000      X
          0204  0F80
          0205  0E54
          0206  0E47
000781  0207    8AD4                           INC    =$R4                    UPDATE COLCNTR
000782  0208    4D50                           CMV    $R4,=80                 CHECK FOR END OF  CONSOLE LINE
000783  0209    0980              T            BNE    >+$A
000784  020A    8754                           CL     =$R4
000785  020B    C3C0 14C3                      LNJ    $B4,NEWLIN              PROVIDE CR/LFFOR CLEAN CONSOLE INPUT
000786  020D    5C01                    $A     LDV    $R5,=1                  # OF  CHAR  INPUT
000787  020E    A840 0000         P            LDR    $R2,ZV$ABF              GET  ACTUAL BYTE FOUND (INCLUDES DELIMITERS)
000788  0210    2048                           SOR    $R2,8                   RIGHT-ADJUST THE CHAR
000789  0211    2D23                           CMV    $R2,=A'#'               CHECK FOR ERASE CHAR
000790  0212    0980              T            BNE    >+$A
000791                                  *
000792                                  *                  ERASE  MOST  RECENT  INPUT CHAR, IF ANY,
000793                                  *                     BY ALLOWING NEXT INPUT TO OVERLAY IT
000794  0213    3D02                           CMV    $R3,=2                  AVOID ERASURE BEYOND BEGINNING OF BUFFER
000795  0214    096C                           BE     >MSGINP
000796  0215    88D3                           DEC    =$R3
000797  0216    0FEA                           B      >MSGINP                 GET NEXT CHAR
000798                                  *
000799  0217    2D0D                    $A     CMV    $R2,=X'0D'              CHECK FOR CR ENDING MSG INPUT
000800  0218    0928                           BE     >ENDMSG
000801  0219    2D06                           CMV    $R2,=X'06'              CTL-F:  ESCAPE CHAR TO  ALLOW MULTIPLES
000802  021A    099E                           BNE    >STOR1
000803                                  *                 FILL BUFFER WITH N CHAR OF X
000804  021B    BBC0 006E                      LAB    $B3,CHPRMT              PROMT USER FOR CHAR
000805  021D    C3C0 14C7                      LNJ    $B4,TYPEC
000806                                         CALL   ZV$IA,ZV$IAV,STAT,TEMP GET THA CHAR
          021F  FBC0 0003
          0221  D380 0000      X       •
          0223  0F80
          0224  0E54
          0225  0E47
000807  0226    A840 0000         P            LDR    $R2,ZV$ABF
000808  0228    2048                           SOR    $R2,8                   RIGHT-JUSTIFY IT
000809  0229    BBC0 0067                      LAB    $B3,REPPMT              PROMT USER FOR REPLICATION FACTOR
000810  022B    C3C0 14B9                      LNJ    $B4,TYPEC
000811                                         CALL   ZV$IH,ZV$ID,TEMP        GET REPLICATION FACTOR
          022D  FBC0 0003
          022F  D380 0000      X
          0231  0F80
          0232  0E47
000812  0233    C3C0 149B                      LNJ    $B4,NEWLIN
000813  0235    D840 0C11                      LDR    $R5,TEMP
000814  0237    8754                           CL     =$R4                    INIT CONSOLE COL IND
000815                                  *                        STORE CHAR(S)
000816  0238    A7FD                    STOR1  STH    $R2,$B1.+$R3            LOAD BUFF
000817  0239    B970 0142                      CMR    $R3,=322                END-OF-BUFF?
000818  023B    0905                           BE     >ENDMSG
000819  023C    88D5                           DEC    =$R5                    DECREMENT CHAR COUNT
000820  023D    5A7B                           BGZ    $R5,>STOR1
000821  023E    0F81 FFC1                      B      MSGINP                  GET MORE
000822                                  *
000823          0240                    ENDMSG EQU    $
000824                                  *
000825                                  *  "C/R L/F INPUT; C/R L/F" IS ADDED TO OP MESSEGE IN LT TEST
000826                                  * AND RRANGE IS USED COMPARE XMIT BUFFER
000827                                  * AGAINST RECD BUFFER
000828                                  *
000829                                  *
000830  0240    0F01 FFFF                      NOP    $
000831  0242    0F01 FFFF                      NOP    $
000832  0244    D853                           LDR    $R5,=$R3                SAVE EVEN BYTES RECD
000833  0245    3041                           SOR    $R3,1
000834  0246    5B81 000D                      BODD   $R5,ODD
000835  0248    8751                    EVENBR CL     =$R1
000836  0249    9F31                           STR    $R1,$B1.$R3
000837  024A    BF40 0C20               AUTOND STR    $R3,OPMRNG              RANGE IN WORDS
000838  024C    8AD3                           INC    =$R3
000839  024D    BF40 0039                      STR    $R3,OPRG
000840  024F    88D3                           DEC    =$R3
000841  0250    BB70 0002                      MUL    $R3,=2
000842  0252    0F81 000C                      B      IMF1
000843  0254    A831                    ODD    LDR    $R2,$B1.$R3
000844  0255    A570 FF00                      AND    $R2,=Z'FF00'
000845  0257    AF31                    ODD2   STR    $R2,$B1.$R3
000846  0258    8AD3                           INC    =$R3                    TO GET  THE RIGHT NO OF WORDS
000847  0259    BF40 0C11                      STR    $R3,OPMRNG              RANGE IN WORDS
000848  025B    BF40 002B                      STR    $R3,OPRG
000849  025D    3001                           SOL    $R3,1
000850  025E    88D3                           DEC    =$R3
000851  025F    BF40 0C0A               IMF1   STR    $R3,OPMRGB
000852  0261    BF40 02CC                      STR    $R3,LCEX1R              RANGE IN BYTES
000853  0263    BF40 02D2                      STR    $R3,LCEX2R
000854  0265    BF40 05A9                      STR    $R3,TTEXR
000855  0267    3EFE                           ADV    $R3,-2                  ADUJUST FOR C/R L/F BYTES
000856  0268    BF40 0C04                      STR    $R3,RRANGB              NEEDED FOR LT AND LT ERROR PRINT
000857  026A    C840 0C00                      LDR    $R4,OPMRNG
000858  026C    4EFF                           ADV    $R4,-1                  ADUJUST FOR CR/LF
000859  026D    CF40 0BFE                      STR    $R4,RRANGE              REAL RANGE IN WORDS
000860                                  *
000861  026F    B840 0017                      LDR    $R3,OPRG
000862  0271    9870 0D0A                      LDR    $R1,=X'0D0A'
000863  0273    9F7D                           STR    $R1,$B1.+$R3            INCLUDE C/R L/F IN MESSAGE
000864  0274    9870 494E                      LDR    $R1,=A'IN'              INCLUDE INPUT; IN MESSAGE
000865  0276    9F7D                           STR    $R1,$B1.+$R3
000866  0277    9870 5055                      LDR    $R1,=A'PU'
000867  0279    9F7D                           STR    $R1,$B1.+$R3
000868  027A    9870 543A                      LDR    $R1,=A'T:'
```

```
000869  027C  9F7D                        STR     $R1,$B1.+$R3
000870  027D  9870 0D0A                    LDR     $R1,=X'0D0A'
000871  027F  9F7D                        STR     $R1,$B1.+$R3        INCLDE C/R L/F IN MESSAGE
000872  0280  8751                        CL      =$R1
000873  0281  9F7D                        STR     $R1,$B1.+$R3
000874  0282  3001                        SOL     $R3,1
000875  0283  BF40 04E8                    STR     $R3,LTSRNG          CCB RANGE FOR XMIT BUFFER
000876  0285  0F81 FE8A                    B       NEXT
000877                              *
000878                              *
000879  0287  0000                  OPRG    DC      0
000880  0288  0000                  SAVE7   DC      0
000881  0289  0000                  WCTR    DC      0
000882  028A  4348 4152 4143        CHPRMT  TEXT    'CHARACTER ?:$'
        028D  5445 5220 3F3A
              2400
000883  0291  4E55 4D42 4552        REPPMT  TEXT    'NUMBER ?:$'
        0294  203F 3A24
```

```
000884                                  /
000885                                  *
000886                                  *   INPUT HEX VALUES IN OPMESG BUFFER -      MSH
000887                                  *
000888  0296  3C01                     IMSH    LDV     $R3,1               1 WORD ALREADY FOR CR-LF
000889  0297  4CFF                             LDV     $R4,-1
000890  0298  9BC0 0C22                         LAB     $B1,OPMESP
000891  029A  8740 0BAC                 IMSHA   CL      TEMP                INPUT BUFFER
000892  029C  4780                   T         BINC    $R4,>+$B            ALLOW CR AFTER TEN WORDS PER LINE
000893  029D  C3C0 1431                         LNJ     $B4,NEWLIN          AUTOMATIC CR/LF AFTER EVERY 10 WORD LINE
000894  029F  4CF6                             LDV     $R4,-10
000895                                  $B      CALL    ZV$IH,TEMP          DO SOME INPUT
        02A0  FBC0 0003
        02A2  D380 0000         X
        02A4  0F80
        02A5  0E47
000896  02A6  9800 0000         X               LDR     $R1,<ZV$ABF         LOAD LAST INPUT
000897  02A8  0F01 FFFF                         NOP     $                   PLACE FOR A PATCH
000898  02AA  9970 0D00                         CMR     $R1,=X'0D00'        IS IT A C/R?
000899  02AC  090D                             BE      >IMSHB              YES
000900  02AD  A840 0B99                         LDR     $R2,TEMP            LOAD WHAT WAS INPUT
000901  02AF  89C0 0B97                         CMZ     TEMP
000902  02B1  0900                   T         BE      >+$A                BRANCH IF NULL STRING ENTERED
000903  02B2  AF31                             STR     $R2,$B1.$R3         OTHERWISE, STORE ENTERED DATA
000904  02B3  8AD3                     $A      INC     =$R3
000905  02B4  B970 00A1                         CMR     $R3,=161            CHECK FOR END OF INPUT BUFF RANGE
000906  02B6  0901 FF93                         BE      AUTOND
000907  02B8  0FE2                             B       >IMSHA
000908                                  *
000909                                  *   HERE IF C/R DETECTED
000910                                  *
000911  02B9  A840 0B8D                 IMSHB   LDR     $R2,TEMP
000912  02BB  C800 0000         X               LDR     $R4,<ZV$ARG         NO. OF CHARS ON LAST INPUT
000913  02BD  4D02                             CMV     $R4,=2
000914  02BE  0909                             BE      >IMSHC              IT WAS ONE
000915  02BF  4D03                             CMV     $R4,=3
000916  02C0  0908                             BE      >IMSHD              IT WAS TWO
000917  02C1  4D04                             CMV     $R4,=4
000918  02C2  0980                   T         BNE     >+$A
000919  02C3  2004                             SOL     $R2,4               LEFT JUSTIFY 3 HEX DIGITS
000920  02C4  AF7D                     $A      STR     $R2,$B1.+$R3        STORE (EFFECTIVE) 2 BYTES
000921  02C5  0F81 FF82                         B       EVENBR              PROCESS EVEN NUM OF BYTES TO EXIT ROUTINE
000922  02C7  2004                     IMSHC   SOL     $R2,4               SHIFT 4 AND THEN...
000923  02C8  2008                     IMSHD   SOL     $R2,8               LEFT JUSTIFY ALL THE WAY
000924  02C9  0F81 FF8D                         B       ODD2                PROCESS ODD NUM OF BYTES
000925                                  *
```

```
000926                                  /   DISPLAY MESSAGE IN HEX -            MSH?
000927  02CB                            IMSD    RESV    0
000928  02CB  93C0 0005                        LNJ     $B1,DMPHEX
000929  02CD  0EBB                             DC      <OPMESP
000930  02CE  0E6B                             DC      <OPMRNG
000931  02CF  0F81 FE40                        B       NEXT
000932                                  ******** HEX DUMP ON CONSOLE
000933                                  *
000934                                  *
000935                                  *CALL PROCEDURE:
000936                                  *               LNJ $B1,DMPHEX
000937                                  *               DC <BUFFER-NAME
000938                                  *               DC <RANGE-IN-WORDS
000939                                  *
000940                                  *RESULT:  TEN WORDS (IN HEX) PER CONSOLE LINE
000941                                  *
000942                                  *
000943  02D1                            DMPHEX RESV    0
000944  02D1  ACF1                             LDB     $B2,+$B1                GET BUFFER ADDRESS
000945  02D2  AFC0 001E                        STB     $B2,IMSF                INIT PRINT CALL
000946  02D4  9809                             LDR     $R1,*$B1                GET RANGE
000947  02D5  1D00                             CMV     $R1,0                   TEST FOR EMPTY BUFFER
000948  02D6  0980                      T      BNE     >+$A
000949  02D7  B3C0 0DC8                        LNJ     $B3,ERRMB
000950  02D9  5245 4356 2042                   TEXT    'RECV BUFFER IS EMPTY$'
        02DC  5546 4645 5220
              4953 2045 4D50
              5459 2400
000951  02E4  ACF1                      $A     LDB     $B2,+$B1                DUMMY TO POP B1
000952  02E5  2C0A                             LDV     $R2,10
000953  02E6  1A93                     DMPLP  BLEZ    $R1,>DPEXIT             CHECK IF ANY (MORE) TO PRINT
000954  02E7  2D0A                     IMSE   CMV     $R2,10                  CHECK FOR NEED OF CR/LF
000955  02E8  0980                      1      BNE     >+$A                    CONTINUE DUMP ON SAME LINE
000956  02E9  C3C0 13E5                        LNJ     $B4,NEWLIN
000957  02EB  8752                             CL      =$R2                    START-UP COUNT TO TEN
000958                                  $A     CALL    ZV$TH,ZV$THZ,ZERO       PRINT (SPACE)(SPACE)XXXX
        02EC  FBC0 0003
        02EE  D380 0000          X
        02F0  0F80
        02F1  0000
000959          02F1                    IMSF    EQU     $-$AF
000960                                          IFEV    $AF,LG
000961  02F2  8A80 02F1                        INC     <IMSF
000962  02F4  0F80                      1      B       >+$A
000963  02F5  8A80 02F2                 LG     INC     <IMSF+1
000964  02F7  8AD2                      $A     INC     =$R2
000965  02F8  176E                             BDEC    $R1,>DMPLP
000966  02F9  8381                      DPEXIT JMP     $B1
```

```
000967                          / 'TRM ' FIELD CHECKING
000968  02FA  8740 1291        NEXTF   CL      INHRTC
000969  02FC  8740 0310                CL      LAFLG
000970  02FE  8740 046E                CL      RTSFLG
000971  0300  8740 046D                CL      TTFLG
000972  0302  8740 046C                CL      IDSFLG
000973  0304  8740 046C                CL      PTNFLG
000974  0306  8740 0469                CL      RTPFLG
000975  0308  9840 0B44                LDR     $R1,TEST        CHECK VALIDITY OF 'TEST FIELD OF TRM
000976  030A  9F40 0B4D                STR     $R1,ERA         STORE IN PRINTOUT LOCATION
000977  030C  9F40 161A                STR     $R1,PRTBF       TWICE
000978  030E  9F40 0B30                STR     $R1,TCOMP
000979  0310  9970 4C43        A       CMR     $R1,=X'4C43'    LC
000980  0312  0987                    BNE     >B1
000981  0313  9B80 051D                LAB     $B1,<LCEX
000982  0315  9FC0 0199                STB     $B1,EXEC+1
000983  0317  0F81 00CC                B       J1A
000984  0319  9970 4C4B        B1      CMR     $R1,=X'4C4B'    LK
000985  031B  098B                    BNE     >B
000986  031C  9B80 0557                LAB     $B1,<LKEX
000987  031E  9FC0 0190                STB     $B1,EXEC+1
000988  0320  9F40 02EC                STR     $R1,LAFLG
000989  0322  9F40 044C                STR     $R1,IDSFLG
000990  0324  0F81 00BF                B       J1A
000991                          *
000992  0326  9970 4C4C        B       CMR     $R1,=X'4C4C'    LL
000993  0328  0987                    BNE     >C
000994  0329  9B80 060E                LAB     $B1,<LLEX
000995  032B  9FC0 0183                STB     $B1,EXEC+1
000996  032D  0F81 00D1                B       INCHN
000997  032F  9970 4C41        C       CMR     $R1,=X'4C41'    LA
000998  0331  098F                    BNE     >D1
000999  0332  9F40 02DA                STR     $R1,LAFLG
001000  0334  9F40 043A                STR     $R1,IDSFLG      INHIBIT IDSS
001001  0336  9B80 058E                LAB     $B1,<LMEX
001002  0338  9FC0 0176                STB     $B1,EXEC+1
001003  033A  9870 4300                LDR     $R1,=X'4300'    FORCE CANNED MESSAGE
001004  033C  9F40 0B13                STR     $R1,MESG
001005  033E  0F81 00A5                B       J1A
001006  0340  9970 454C        D1      CMR     $R1,=X'454C'    EL  ***ETABLISH LINE
001007  0342  0989                    BNE     >D
001008  0343  9F40 042B                STR     $R1,IDSFLG      INHIBIT IDSS
001009  0345  9B80 04B0                LAB     $B1,<ELEX
001010  0347  9FC0 0167                STB     $B1,EXEC+1
001011  0349  0F81 0011                B       E1
001012  034B  9970 4C52        D       CMR     $R1,=X'4C52'    LR
001013  034D  0987                    BNE     >E
001014  034E  9B80 0643                LAB     $B1,<LREX
001015  0350  9FC0 015E                STB     $B1,EXEC+1
001016  0352  0F81 00AC                B       INCHN
001017  0354  9970 4C54        E       CMR     $R1,=X'4C54'    LT
001018  0356  098E                    BNE     >F
001019  0357  9B80 066A                LAB     $B1,<LTEX
001020  0359  9FC0 0155                STB     $B1,EXEC+1
001021  035B  1C01            E1      LDV     $R1,=1          FORCE TO ONE PASS
001022  035C  9F40 0AF4                STR     $R1,PASSES
001023  035E  9870 4F00                LDR     $R1,=X'4F00'
001024  0360  9F40 0AEF                STR     $R1,MESG
001025  0362  0F81 0081                B       J1A
001026  0364  9970 5454        F       CMR     $R1,=X'5454'    TT
001027  0366  0993                    BNE     >G1
001028  0367  1C01                    LDV     $R1,=1
001029  0368  9F40 0405                STR     $R1,TTFLG
001030  036A  9B80 07DB                LAB     $B1,<TTEX
001031  036C  9FC0 0142                STB     $B1,EXEC+1
001032  036E  1C00                    LDV     $R1,=X'0'
001033  036F  97C0 03C6                STH     $R1,PTLCTF
001034  0371  97C0 03C3                STH     $R1,PTLCTE
001035  0373  89C0 08DB                CMZ     NPLFLG
001036  0375  0981 0081                BNE     N1
001037  0377  0F81 006C                B       J1A
001038  0379  9970 4C58        G1      CMR     $R1,=X'4C58'    LX      ***LOOP EXTERNAL
001039  037B  0991                    BNE     >G
001040  037C  9F40 0290                STR     $R1,LAFLG
001041  037E  9B80 0565                LAB     $B1,<LXEX
001042  0380  9F80 04AF                STB     $B1,<EXEC+1
001043  0382  9870 4300                LDR     $R1,=X'4300'    FORCE CANNED MESG
001044  0384  9F40 0ACB                STR     $R1,MESG
001045  0386  9870 C21D                LDR     $R1,=Z'C21D'
001046  0388  9F40 0256                STR     $R1,LMLCT5
001047  038A  0F81 0059                B       J1A
001048  038C  9970 5254        G       CMR     $R1,=X'5254'    RT
001049  038E  099C                    BNE     >H
001050  038F  1C01                    LDV     $R1,=1          FORCE TO ONE PASS
001051  0390  9F40 0AC0                STR     $R1,PASSES
001052  0392  9870 4F00                LDR     $R1,=X'4F00'
001053  0394  9F40 0ABB                STR     $R1,MESG
001054  0396  1C01                    LDV     $R1,=X'1'
001055  0397  9F40 11F4                STR     $R1,INHRTC
001056  0399  97C0 039B                STH     $R1,PTLCTE
001057  039B  89C0 08B1                CMZ     SYNFLG
001058  039D  0900            T       BE      >+$A
001059  039E  9B80 06A9                LAB     $B1,<RTSYX
001060  03A0  9FC0 010E                STB     $B1,EXEC+1
001061  03A2  0F81 0041                B       J1A
001062  03A4  9B80 084B        $A      LAB     $B1,<RTEX
001063  03A6  9FC0 0108                STB     $B1,EXEC+1
001064  03A8  0F81 003B                B       J1A
001065  03AA  9970 5443        H       CMR     $R1,=X'5443'    TC
001066  03AC  098B                    BNE     >K
001067  03AD  9B80 0933                LAB     $B1,<TCEX
001068  03AF  9FC0 00FF                STB     $B1,EXEC+1
001069  03B1  9870 4F00                LDR     $R1,=X'4F00'    FORCE TO OPER SPECIFIED MESG
001070  03B3  9F40 0A9C                STR     $R1,MESG
001071  03B5  0F80 03FF                B       <INCHN
001072  03B7  9970 4453        K       CMR     $R1,=X'4453'    DS      ***READ STATUS
001073  03B9  0981 0009                BNE     L
001074  03BB  1C01                    LDV     $R1,=1
001075  03BC  9F40 0A94                STR     $R1,PASSES
001076  03BE  9B80 0503                LAB     $B1,<DSEX
001077  03C0  9FC0 00EE                STB     $B1,EXEC+1
001078  03C2  0FA2                    B       >J1A
001079  03C3  9970 5054        L       CMR     $R1,=X'5054'    PT
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001080  03C5  0981 0035              BNE   O
001081  03C7  9F40 03A6              STR   $R1,ITFLG          TO PRINT TERMINAL RESPONSE
001082  03C9  9B80 08C3              LAB   $B1,<PRTOUT        MODIFIED BY LT TEST
001083  03CB  9FC0 039A              STB   $B1,PRINT1+1
001084  03CD  9870 0000              LDR   $R1,=X'0'
001085  03CF  97C0 0366              STH   $R1,PTLCTF
001086  03D1  97C0 0363              STH   $R1,PTLCTE
001087  03D3  89C0 087B              CMZ   NPLFLG
001088  03D5  0981 001B              BNE   NPT
001089  03D7  1C20           P       LDV   $R1,=X'20'
001090  03D8  9F00 03E1              STR   $R1,<PA+1
001091  03DA  9B80 06EE              LAB   $B1,<PTEX
001092  03DC  9FC0 00D2              STB   $B1,EXEC+1
001093  03DE  9840 086D      M       LDR   $R1,POLADR
001094  03E0  9A70 0020      PA      ADD   $R1,=X'20'
001095  03E2  97C0 0350              STH   $R1,PTLCTA
001096  03E4  9840 0A6A      J1A     LDR   $R1,CHAN
001097  03E6  9570 FF80              AND   $R1,=Z'FF80'
001098  03E8  9F40 0A65              STR   $R1,BCHAN
001099  03EA  9A70 0040              ADD   $R1,=X'40'
001100  03EC  0F01 FFFF              NOP   $
001101  03EE  9F40 0A60              STR   $R1,CHAN
001102  03F0  0F8F                   B     >INCHN
001103                       *
001104                       *
001105                       * CHANNEL PROGRAM IS MODIFIED HERE FOR NON-POLLED TERMINAL TESTS
001106                       *
001107  03F1  9F40 037F      NPT     STR   $R1,PINFLG
001108  03F3  9BC0 02FA      N       LAB   $B1,PTEX
001109  03F5  9FC0 00B9              STB   $B1,EXEC+1
001110  03F7  1C60           N1      LDV   $R1,=X'60'
001111  03F8  9F00 03E1              STR   $R1,<PA+1
001112  03FA  0FE4                   B     >M
001113  03FB  BB80 1626      O       LAB   $B3,<EMA
001114  03FD  0F81 09E9              B     OOPS
001115                       *
001116                       *   TEST CHAN INPUT TO TRM
001117  03FF  9840 0A4F      INCHN   LDR   $R1,CHAN
001118  0401  9970 0400              CMR   $R1,=X'400'        CHECK LOWER LIMIT
001119  0403  0204                   BL    >INCHNA
001120  0404  9970 FFF0              CMR   $R1,=Z'FFF0'       CHECK UPPER LIMIT
001121  0406  0205                   BL    >INMESG
001122  0407  AB80 1629      INCHNA  LAB   $B2,<EMB           LOAD MESSAGE ADDRESS
001123  0409  0F81 09DD              B     OOPS
001124                       *
001125                       *   CHECK MESSAGE-SPECIFIER INPUT TO TRM
001126  040B  9840 0A44      INMESG  LDR   $R1,MESG           MESSAGE MUST BE
001127  040D  9570 FF00              AND   $R1,=Z'FF00'
001128  040F  9F40 0A40              STR   $R1,MESG
001129  0411  9970 4F00              CMR   $R1,=X'4F00'       O FOR OPERATOR MESSAGE
001130  0413  0908                   BE    >INPSSO            OR
001131  0414  9970 4300              CMR   $R1,=X'4300'       C FOR CANNED MESSAGE
001132  0416  092A                   BE    >INPSSC
001133  0417  AB80 162E              LAB   $B2,<EMC           OOPS-NEITHER
001134  0419  0F81 09CD              B     OOPS               GO TYPE ERROR MESSAGE
001135                       *
001136  041B  9B80 0EBB      INPSSO  LAB   $B1,<OPMESP        LOAD MESSAGE ADDRESS
001137  041D  9FC0 0120              STB   $B1,LCEXAM
001138  041F  9FC0 010D              STB   $B1,LCEX1+2
001139  0421  9FC0 03EC              STB   $B1,TTEXM
001140  0423  9FC0 1379              STB   $B1,EH1+1          PUT IN PRINTOUT LOCATION
001141  0425  9FC0 0326              STB   $B1,MSGBUF
001142  0427  9840 0A42              LDR   $R1,OPMRGB         RANGE IN BYTES
001143  0429  9F40 0104              STR   $R1,LCEX1R
001144  042B  9F40 010A              STR   $R1,LCEX2R
001145  042D  9F40 03E1              STR   $R1,TTEXR
001146  042F  0F01 FFFF              NOP   $
001147  0431  9F40 031B              STR   $R1,MSGRNG
001148  0433  9840 0A37              LDR   $R1,OPMRNG         RANGE IN WORDS
001149  0435  9F40 0120              STR   $R1,CRANG
001150  0437  9B80 0E6A              LAB   $B1,<OPMRGB
001151  0439  9FC0 135C              STB   $B1,EHAM1
001152  043B  9B80 0E6B              LAB   $B1,<OPMRNG
001153  043D  9FC0 1361              STB   $B1,EHAM2+1
001154  043F  0FA1                   B     >INPSS
001155                       *
001156  0440  9B80 0E74      INPSSC  LAB   $B1,<CANNED        DITTO
001157  0442  9FC0 135A              STB   $B1,EH1+1
001158  0444  9FC0 00F9              STB   $B1,LCEXAM
001159  0446  9FC0 00E6              STB   $B1,LCEX1+2
001160  0448  9FC0 03C5              STB   $B1,TTEXM
001161  044A  9FC0 0301              STB   $B1,MSGBUF
001162  044C  9870 0084              LDR   $R1,=X'84'
001163  044E  9F40 00DF              STR   $R1,LCEX1R
001164  0450  9F40 00E5              STR   $R1,LCEX2R
001165  0452  9F40 03BC              STR   $R1,TTEXR
001166  0454  9B80 080F              LAB   $B1,<TTEXR
001167  0456  9FC0 1348              STB   $B1,EHAM2+1
001168  0458  9FC0 133D              STB   $B1,EHAM1
001169  045A  9F40 02F2              STR   $R1,MSGRNG
001170  045C  9870 0042              LDR   $R1,=X'42'
001171  045E  9F40 00F7              STR   $R1,CRANG
001172                       *
001173  0460  9840 09F0      INPSS   LDR   $R1,PASSES
001174  0462  1A01 0004              BGZ   $R1,INERCD         GREATER THAN ZERO??
001175  0464  1C01                   LDV   $R1,=1
001176  0465  9F40 1125              STR   $R1,NOSTOP
001177                       *
001178                       *       DETERMINE WHAT TO DO WITH ERRORS
001179                       *
001180  0467  AB80 1631      INERCD  LAB   $B2,<EME
001181  0469  9840 09E8              LDR   $R1,ERCD
001182  046B  9570 4300              AND   $R1,=Z'4300'
001183  046D  9970 4300              CMR   $R1,=X'4300'       TEST FOR C
001184  046F  0980           T       BNE   >+$A
001185  0470  9F40 09E1              STR   $R1,ERCD
001186  0472  0F8C                   B     >SEHA
001187  0473  9840 09DE      $A      LDR   $R1,ERCD
001188  0475  9970 4E43              CMR   $R1,=X'4E43'       TEST FOR NC
001189  0477  0980           T       BNE   >+$B
001190  0478  0F8B                   B     >SEHC
001191  0479  9970 4643      $B      CMR   $R1,=X'4643'       TEST FOR FC
001192  047B  0981 096B              BNE   OOPS
```

```
001193  047D  0F8F                    B       >SEHD
001194                          *
001195                          *       LIST EACH ERROR ON CONSOLE
001196                          *
001197  047E  BB80 178C        SEHA    LAB     $B3,<EH2
001198  0480  BFC0 1304                STB     $B3,EH+1
001199  0482  0F92                    B       >BEGIN
001200                          *
001201                          *       SUPPRESS ERRORS
001202                          *
001203  0483  9870 0F80        SEHC    LDR     $R1,=Z'0F80'
001204  0485  9F40 12FE                STR     $R1,EH
001205  0487  BB80 1923                LAB     $B3,<EHB
001206  0489  BFC0 12FB                STB     $B3,EH+1
001207  048B  0F89                    B       >BEGIN
001208                          *
001209                          *       SUPPRESS, THEN SUM ON CONSOLE
001210                          *
001211  048C  9870 0F80        SEHD    LDR     $R1,=Z'0F80'
001212  048E  9F40 12F5                STR     $R1,EH
001213  0490  BB80 1925                LAB     $B3,<EHC
001214  0492  BFC0 12F2                STB     $B3,EH+1
001215                          *
001216  0494  93C0 109A        BEGIN   LNJ     $B1,CONTS               SET UP THE CONTROL WORDS
001217  0496  89C0 09BA                CMZ     PASSES
001218  0498  0980              T      BNE     >+$A
001219  0499  1C01                    LDV     $R1,=1
001220  049A  9F40 10F0                STR     $R1,NOSTOP
001221  049C  A3C0 129B        $A      LNJ     $B2,ECHOX
001222  049E  8740 09B7        BEGINM  CL      MESGT                   MESG=0 SAYS CANNED MESSAGE
001223  04A0  8740 09B2                CL      PCNT
001224  04A2  C3C0 0AC1                LNJ     $B4,CCBRST
001225  04A4  9870 0030                LDR     $R1,=X'30'
001226  04A6  93C0 08C3                LNJ     $B1,TMO
001227  04A8  0F01 FFFF                NOP     $
001228  04AA  9B80 04AE                LAB     $B1,<EXEC
001229  04AC  9FC0 049C                STB     $B1,COUNTR+1
001230  04AE  0F80 04AE        EXEC    B       <EXEC                   ADDR IS SET DURING DECODE OF TEST FIELD
```

```
001231                                      /******************
001232                                      *
001233                                      * SET UP LINE TO ESTABLISH CONNECTIN FOR MODEMS
001234                                      *
001235                                      ******************
001236  04B0  B3C0 08F7                     ELEX    LNJ     $B3,INID
001237  04B2  DF40 10D7                             STR     $R5,ACLA1D
001238  04B4  D970 3118                             CMR     $R5,=X'3118'
001239  04B6  0900                      T              BE      >+$A
001240  04B7  D3C0 01AA                             LNJ     $B5,IDCHK1
001241  04B9  C3C0 0B78                     $A      LNJ     $B4,GENITZ              GEN INITIALIZE
001242  04BB  9870 0200                             LDR     $R1,=X'200'
001243  04BD  93C0 08AC                             LNJ     $B1,TMO
001244  04BF  0F01 FFFF                             NOP     $
001245  04C1  E3C0 100A                             LNJ     $B6,STMT
001246  04C3  93C0 0F60                             LNJ     $B1,SDATA
001247  04C5  111B                                  DC      <TTA
001248  04C6  0020                                  DC      X'20'
001249  04C7  0400                                  DC      X'400'
001250  04C8  0000                                  DC      0
001251                                      *
001252  04C9  9840 04D5                             LDR     $R1,LCTBRB
001253  04CB  9F40 0351                             STR     $R1,TTLCTA
001254  04CD  9840 06D6                             LDR     $R1,LR6CFA
001255  04CF  9A70 0022                             ADD     $R1,=X'22'
001256  04D1  9F40 034C                             STR     $R1,TTLCTB
001257  04D3  9870 00C0                             LDR     $R1,=X'C0'
001258  04D5  97C0 0349                             STH     $R1,TTLCTC              LCT  20
001259  04D7  0F81 0334                             B       TTEM
001260                                      *
001261  04D9  BB80 04E8                     ELEX1   LAB     $B3,<INSMG
001262  04DB  C3C0 1209                             LNJ     $B4,TYPEC
001263                                      $B      CALL    ZV$BRK
        04DD  FBF0 0001
        04DF  D380 0000             X
001264  04E1  8980 0000             X               CMZ     <ZV$BKF
001265  04E3  097A                                  BE      >-$B
001266  04E4  C380 0F97                             LNJ     $B4,<IDSS
001267  04E6  0F80 0110                             B       <NEXT
001268                                      *
001269  04E8  504C 4541 5345                INSMG   TEXT    'PLEASE ESTABLISH LINE CONNECTION AND HIT "BREAK" KEY$'
        04EB  2045 5354 4142
              4C49 5348 204C
              494E 4520 434F
              4E4E 4543 5449
              4F4E 2041 4E44
              2048 4954 2022
              4252 4541 4B22
              204B 4559 2400
```

```
001270                                  /*******************
001271                                  *
001272                                  * READ DATA SET STATUS AND PRINT IN HEX
001273                                  *
001274                                  *******************
001275                                  *
001276  0503  0F80 0F97                 DSEX    B       <IDSS
001277  0505  D570 FF00                 STCK    AND     $R5,=Z'FF00'          STRIP 2ND BYTE
001278  0507  DF40 000A                         STR     $R5,DSS1
001279  0509  BB80 0513                         LAB     $B3,<STATUS
001280  050B  C3C0 11D9                         LNJ     $B4,TYPEC
001281  050D  C3C0 1204                         LNJ     $B4,HEXPRT
001282  050F  0512                              DC      <DSS1
001283                                  *
001284  0510  0F81 FBFF                         B       NEXT
001285  0512  0000                      DSS1    DC      0
001286  0513  4441 5441 2053           STATUS  TEXT    'DATA SET STATUS IS$'
        0516  4554 2053 5441
              5455 5320 4953
              2400
001287                                  *
```

```
001288                                  /*******************
001289                                  *
001290                                  *  LOOP A MESSAGE AT THE DLCP
001291                                  *
001292                                  *  NO ADAPTERS ARE NECESSARY FOR THIS TEST
001293                                  *
001294                                  *******************
001295  0510  B3C0 088A                 LCEX    LNJ     $B3,INID                GET THE ID
001296  0511F D570 FF00                         AND     $R5,=Z'FF00'
001297  0521  D970 3100                         CMR     $R5,=X'3100'            IS IT OK?
001298  0523  0901 0005                         BE      LCEX1A
001299  0525  E870 3100                         LDR     $R6,=X'3100'
001300  0527  0F81 0850                         B       IDERR
001301                                  *
001302  0529  E3C0 0FA2                 LCEX1A  LNJ     $B6,STMT
001303  052B  93C0 0EF8                 LCEX1   LNJ     $B1,SDATA
001304  052D  0E74                             DC      <CANNED                 MESSAGE ADDRESS
001305  052E  0000                     LCEX1R  RESV    1,0                     RANGE
001306  052F  0400                             DC      X'400'
001307  0530  0000                             DC      0
001308  0531  C3C0 11F8                         LNJ     $B4,CLRECD              CLEAR RECEIVE BUFFER
001309  0533  93C0 0F4B                         LNJ     $B1,RDATA
001310  0535  17D5                             DC      <RECD                   INPUT BUFFER
001311  0536  0000                     LCEX2R  RESV    1,0                     RANGE
001312  0537  0400                             DC      X'400'
001313  0538  0000                             DC      0
001314                                  *
001315                                          CALL    ZV$C,CANNED,RECD,XZERO,CRANG,ERRAY
        0539  FBC0 0003
        053B  D380 0000         X
        053D  0F80
        053E  0E74
        053F  17D5
        0540  1922
        0541  0556
        0542  0553
001316  053E                    LCEXAM  EQU     $-5*$AF
001317  0543  9840 0012                 LDR     $R1,CRANG               ALLOW DUMP OF WHOLE RECD BUFFER
001318  0545  9F40 0929                 STR     $R1,RCVRNG              IF CALLED FOR BY RMH?
001319  0547  9840 000B                 LDR     $R1,ERRAY
001320  0549  1901 03EC                 BEZ     $R1,COUNT
001321  054B  8AC0 090B                 INC     ERCT
001322  054D  9B80 0E33                 LAB     $B1,<EM4
001323  054F  9FC0 13F4                 STB     $B1,MWFB
001324  0551  0F81 1242                 B       EHA
001325                                  *
001326  0553  0000              ERRAY   RESV    3,0
001327  0556  0000              CRANG   RESV    1,0                     RANGE FOR COMPARISON PURPOSES
001328                                  *
```

```
001329                                  /*******************
001330                                  *
001331                                  * ECHOES THE RECEIVED MESSAGE AND PRINTS IT
001332                                  *
001333                                  *******************
001334                                  *
001335  0557  A3C0 05E0                 LKEX    LNJ     $B2,FUPN            FORCE NO PARITY
001336  0559  9870 E000                         LDR     $R1,=Z'E000'
001337  055B  9F40 0648                         STR     $R1,LR6CFA          FORCE 8 BIT,1 STOP BIT AND N PARITY
001338  055D  9870 0019                         LDR     $R1,=X'0019'        LCT 28 HAS CHAR FOR COMPARE
001339  055F  97C0 0349                         STH     $R1,RTLCTE
001340  0561  97C0 0348                         STH     $R1,RTLCTF          LK TEST FLAG
001341  0563  0F81 02E7                         B       RTEX
001342                                  *
```

```
001343                                  /*******************
001344                                  *
001345                                  * LOOP AT EXTERNAL
001346                                  *
001347                                  * EXTERNAL LOOP CONNECTER NECESSARY FOR THIS TEST
001348                                  *
001349                                  *******************
001350  0565  B3C0 0842                 LXEX    LNJ     $B3,INID
001351  0567  DF40 1022                         STR     $R5,ACLAID
001352  0569  DF40 0205                         STR     $R5,IDSFLG
001353  056B  0F01 FFFF                         NOP     $
001354  056D  D970 3118                         CMR     $R5,=X'3118'            ASYNC ID
001355  056F  0901 0012                         BE      LXASY
001356  0571  D970 3158                         CMR     $R5,=X'3158'            SYNC ID
001357  0573  0901 0014                         BE      LXSYN
001358  0575  B380 10A0                         LNJ     $B3,<ERRMB
001359  0577  4144 4550 5445                     TEXT    'ADEPTER ID INCORRECT$'
        057A  5220 4944 2049
              4E43 4F52 5245
              4354 2400
001360                                  *
001361  0582  9870 C314                 LXASY   LDR     $R1,=Z'C314'            SET XMIT,RECV ON FOR ASYNC LINE
001362  0584  9F40 0059                         STR     $R1,LMLCT4              LCT 20
001363  0586  0F81 0019                         B       LMAX
001364  0588  9870 CB14                 LXSYN   LDR     $R1,=Z'CB14'            SET DIRECT CONNECT,XMIT,RECV ON
001365  058A  9F40 0053                         STR     $R1,LMLCT4              LCT 20
001366  058C  0F81 0076                         B       LMSYX
```

```
001367                                      /
001368                                      ********************
001369                                      *
001370                                      *  LOOP A MESSAGE AT THE CLA
001371                                      *
001372                                      *  ADAPTERS MAY BE EITHER SYNC OR ASYNC.
001373                                      *
001374                                      ********************
001375  058E  9870 C714                     LMEX    LDR     $R1,=Z'C714'
001376  0590  9F40 004D                             STR     $R1,LMLCT4          IN CASE MMODIFIED BY LX TEST
001377  0592  9870 C61D                             LDR     $R1,=Z'C61D'
001378  0594  9F40 004A                             STR     $R1,LMLCT5
001379  0596  B3C0 0811                             LNJ     $B3,INID            INPUT THE ID
001380  0598  DF40 0FF1                             STR     $R5,ACLAID
001381  059A  D970 3158                             CMR     $R5,=X'3158'
001382  059C  0901 0066                             BE      LMSYX
001383  059E  D3C0 00BB                             LNJ     $B5,IDCHK
001384                                      *
001385  05A0  C3C0 03DB                     LMAX    LNJ     $B4,MBR
001386  05A2  9840 03FC                             LDR     $R1,LCTBRB
001387  05A4  9F40 0036                             STR     $R1,LMLCT1
001388  05A6  0F01 FFFF                             NOP     $
001389  05A8  8751                                 CL      =$R1
001390  05A9  97C0 0033                             STH     $R1,LMLCT3          CLEAR SYNC  FLAG
001391  05AB  9840 FF82                     LMAX1   LDR     $R1,LCEX1R
001392  05AD  9F40 001C                             STR     $R1,LMRNG
001393  05AF  9B80 05C3                             LAB     $B1,<LMAM
001394  05B1  9FC0 0397                             STB     $B1,COUNTR+1
001395  05B3  9840 05F0                             LDR     $R1,LR6CFA
001396  05B5  9A70 0022                             ADD     $R1,=X'22'
001397  05B7  9F40 0024                             STR     $R1,LMLCT2
001398  05B9  0F01 FFFF                             NOP     $
001399  05BB  E3C0 0F10                     LMEX1   LNJ     $B6,STMT
001400  05BD  93C0 0E66                             LNJ     $B1,SDATA
001401  05BF  10AD                                 DC      <LMAA
001402  05C0  00DC                                 DC      (AD11-LMAA)*2
001403  05C1  0200                                 DC      X'200'
001404  05C2  0000                                 DC      0
001405                                      *
001406  05C3  C3C0 1166                     LMAM    LNJ     $B4,CLRECD
001407  05C5  C3C0 099E                             LNJ     $B4,CCBRST
001408  05C7  C3C0 0F2B                             LNJ     $B4,MCCB
001409  05C9  0E74                          LMEXM   DC      <CANNED
001410  05CA  0000                          LMRNG   RESV    1,0
001411  05CB  0040                                  DC      X'40'               CONTROL WORD
001412                                      *
001413  05CC  0F01 FFFF                             NOP     $
001414  05CE  C3C0 0F12                             LNJ     $B4,MCCBR
001415  05D0  17D5                                  DC      <RECD
001416  05D1  0090                                  DC      X'90'               RANGE IN BYTES
001417  05D2  0040                                  DC      X'40'               CONTROL WORD
001418                                      *
001419  05D3  B3C0 0A83                             LNJ     $B3,SETLCT
001420  05D5  05D7                                  DC      <LMLCT
001421  05D6  0F8B                                  B       >LMEXB
001422                                      *
001423  05D7  0226                          LMLCT   DC      X'226'
001424  05D8  7627                                  DC      X'7627'
001425  05D9  0206                                  DC      X'206'
001426  05DA  0007                                  DC      X'7'
001427  05DB  0000                          LMLCT1  RESV    1,0                 BAUD RATE
001428  05DC  0000                          LMLCT2  RESV    1,0                 CONFIG.
001429  05DD  001C                          LMLCT3  DC      X'001C'             LCT 28 SYNC FLAG
001430  05DE  C714                          LMLCT4  DC      Z'C714'             LCT 20
001431  05DF  C61E                          LMLCT5  DC      Z'C61E'
001432  05E0  0000                                  DC      0
001433                                      *
001434  05E1  9840 086D                     LMEXB   LDR     $R1,CHAN
001435  05E3  0F01 FFFF                             NOP     $
001436  05E5  C3C0 0A88                             LNJ     $B4,CHCTR
001437  05E7  0F80                      T           B       >+$A
001438  05E8  4000                                  DC      Z'4000'
001439  05E9  E3C0 0ECF                     $A      LNJ     $B6,SRCV
001440  05EB  C3C0 0D91                             LNJ     $B4,TESTSR
001441  05ED  0F81 0245                             B       TTEXE
001442  05EF  7C04                          LMEND   LDV     $R7,=X'04'
001443  05F0  C3C0 02EC                             LNJ     $B4,CNTRCV
001444  05F2  88D5                                  DEC     =$R5                ADJUST COUNT FOR EOM
001445  05F3  D940 FF3A                             CMR     $R5,LCEX1R
001446  05F5  0981 00A5                             BNE     ERR
001447                                              CALL    ZV$C,CANNED,RECD,XZERO,CHANG,ERRAY
        05F7  FBC0 0003
        05F9  D380 0000             X
        05FB  0F80
        05FC  0E74
        05FD  17D5
        05FE  1922
        05FF  0556
        0600  0553
001448  0601  0F81 0095                      B       LTEXD2
001449                                      *
001450  0603  9870 1634                     LMSYX   LDR     $R1,=X'1634'        LCT 52 SYNC CHAR.
001451  0605  9F40 FFD5                             STR     $R1,LMLCT1
001452  0607  9870 0001                             LDR     $R1,=X'1'
001453  0609  97C0 FFD3                             STH     $R1,LMLCT3          LCT 28 SYNC FLAG
001454  060B  0F81 FF9F                             B       LMAX1
001455                                      *
001456  060D  0000                          LAFLG   DC      0
001457                                      *
```

```
001458                                  /
001459                                  ********************
001460                                  *
001461                                  *  LOOP A MESSAGE AT THE LOCAL MODEM
001462                                  *
001463                                  *  PROGRAM WILL CHECK FOR LOOP CAPABILITY AND IF SUPPORTED
001464                                  *
001465                                  ********************
001466  060E  B3C0 0799                 LLEX    LNJ     $B3,INID                INPUT THE ID
001467  0610  0F81 0014                         B       NOTIMP                  PRINT "NOT IMPLEMENTED" MESSAGE
001468  0612  D970 2100                         CMR     $R5,=X'2100'            SYNC WITH EXT CLOCK
001469  0614  0901 000D                         BE      LLEXA
001470  0616  D970 2101                         CMR     $R5,=X'2101'            SYNC WITH EXT CLOCK
001471  0618  0901 000A                         BE      LLEXB
001472  061A  D970 2102                         CMR     $R5,=X'2102'            ASYNC
001473  061C  0901 0007                         BE      LLEXC
001474  061E  E870 2100                         LDR     $R6,=X'2100'
001475  0620  0F81 0757                         B       IDERR
001476                                  *
001477                                  *  SYNC WITH EXT CLOCK
001478                                  *
001479  0622  0000                      LLEXA   HLT
001480                                  *
001481                                  *  SYNC WITH DIR CONNECT
001482                                  *
001483  0623  0000                      LLEXB   HLT
001484                                  *
001485                                  *  ASYNC
001486                                  *
001487  0624  0000                      LLEXC   HLT
001488                                  *
001489  0625  BB80 062B                 NOTIMP  LAB     $B3,<NOTAVL             PRINT "NOT AVAILABLE" MESSAGE
001490  0627  C3C0 10BD                         LNJ     $B4,TYPEC
001491  0629  0F81 FAE6                         B       NEXI
001492  062B  5468 6973 2063            NOTAVL  TEXT    'THIS COMMAND IS NOT AVAILABLE FOR THIS RELEASE.$'
        062E  6F6D 6D61 6E64
              2069 7320 6E6F
              7420 6176 6169
              6C61 626C 6520
              666F 7220 5468
              6973 2072 656C
              6561 7365 2E24
```

```
001493                                  /
001494                                  ********************
001495                                  *
001496                                  *  LOOP A MESSAGE AT THE REMOTE MODEM
001497                                  *
001498                                  *  PROGRAM WILL CHECK FOR LOOP CAPABILITY AND IF SUPPORTED
001499                                  *
001500                                  ********************
001501  0643  B3C0 0764                LREX    LNJ     $B3,INID            GET THE ID
001502  0645  0F81 FFDF                        B       NOTIMP              PRINT "NOT IMPLEMENTED" MESSAGE
001503  0647  D970 2100                        CMR     $R5,=X'2100'        SYNC WITH EXT CLOCK
001504  0649  0901 000D                        BE      LREXA
001505  064B  D970 2101                        CMR     $R5,=X'2101'        SYNC WITH DIR CONNECT
001506  064D  0901 000A                        BE      LREXB
001507  064F  D970 2102                        CMR     $R5,=X'2102'        ASYNC
001508  0651  0901 0007                        BE      LREXC
001509  0653  E870 2100                        LDR     $R6,=X'2100'
001510  0655  0F81 0722                        B       IDERR
001511                                  *
001512                                  *  SYNC WITH EXT CLOCK
001513                                  *
001514  0657  0000                      LREXA   HLT
001515                                  *
001516                                  *   SYNC WITH DIRECT CONNECT
001517                                  *
001518  0658  0000                      LREXB   HLT
001519                                  *
001520                                  *   ASYNC
001521                                  *
001522  0659  0000                      LREXC   HLT
001523                                  *
001524  065A  D970 3118                IDCHK   CMR     $R5,=X'3118'
001525  065C  0900                  T          BE      >+$A
001526  065D  E870 3118                        LDR     $R6,=X'3118'
001527  065F  0F81 0718                        B       IDERR
001528  0661  8385                    $A      JMP     $B5
001529  0662  9870 3158                IDCHK1  LDR     $R1,=X'3158'
001530  0664  D970 3158                        CMR     $R5,=X'3158'
001531  0666  0900                  T          BE      >+$A
001532  0667  0F81 0710                        B       IDERR
001533  0669  8385                    $A      JMP     $B5
```

```
001534                                  /
001535                                  ********************
001536                                  *
001537                                  *  TRANSMIT A MESSAGE TO A TERMINAL.
001538                                  *
001539                                  *  OPERATOR KEYS IN SAME MESSAGE AT TERMINAL
001540                                  *
001541                                  *  RECEIVED MESSAGE IS CHECKED AGAINST TRANSMITTED MESSAGE
001542                                  *
001543                                  ********************
001544  066A  B3C0 073D                LTEX    LNJ     $B3,INID                INPUT THE ID
001545  066C  DF40 0F1D                        STR     $R5,ACLAID
001546  066E  89C0 05DE                        CMZ     SYNFLG
001547  0670  0981 0038                        BNE     RTSYX
001548  0672  D3C0 FFE7                        LNJ     $B5,IDCHK
001549                                  *
001550                                  *
001551  0674  C3C0 0307                LTEXA   LNJ     $B4,MBR                 TRANSMIT BUFFER
001552  0676  9B80 0684                LTEXS   LAB     $B1,<LTEXB
001553  0678  9FC0 01D1                        STB     $B1,TTEXD+1
001554  067A  9B80 0EBB                        LAB     $B1,<OPMESP
001555  067C  9FC0 0191                        STB     $B1,TTEXM
001556  067E  9840 00ED                        LDR     $R1,LTSRNG
001557  0680  9F40 018E                        STR     $R1,TTEXR
001558  0682  0F81 0173                        B       TTEXAC
001559                                  *
001560                                  *  MESSAGE NOW ON TERMINAL. OPERATOR ECHOES MESSAGE
001561                                  *  AS HE SEES IT.
001562                                  *
001563          0684                    LTEXB   EQU     $
001564  0684  0F81 01EA                LTEXC   B       RTEXAA
001565                                  *
001566                                  *   OPERATOR HAS ECHOED THE MESSAGE
001567                                  *    COMPARE XMIT TO RECD
001568                                  *
001569  0686                            LTEXD   RESV    0
001570  0686  7C0D                              LDV     $R7,=X'0D'
001571  0687  C3C0 0255                LTEXD1  LNJ     $B4,CNTRCV              COUNT NUM OF RECEIVED BYTES
001572  0689  5E01                              ADV     $R5,1                   ADJUST RANGE COMPARE FOR XMITED CR-LF
001573  068A  D940 FEA3                        CMR     $R5,LCEXIR              CHECK RCV RANGE VS. XMIT RANGE
001574  068C  098F                              BNE     >ERR
001575                                          CALL    ZV$C,OPMESG,RECD,XZERO,RRANGE,ERRAY
          068D  FBC0 0003
          068F  D380 0000       X
          0691  0F80
          0692  0EBC
          0693  17D5
          0694  1922
          0695  0E6C
          0696  0553
001576  0697  9840 FEBB                LTEXD2  LDR     $R1,ERRAY
001577  0699  1901 029C                        BEZ     $R1,COUNT
001578  069B  8AC0 07BB                ERR     INC     ERCT
001579  069D  9B80 0E33                        LAB     $B1,<EM4
001580  069F  9FC0 12A4                        STB     $B1,MWFB
001581  06A1  B3C0 1294                        LNJ     $B3,SUEM                SET UP ERROR MESSAGE
001582  06A3  BB80 1927                        LAB     $B3,<PRTBF
001583  06A5  C3C0 103F                        LNJ     $B4,TYPEC
001584  06A7  0F81 10EC                        B       EHA                     TYPE ERROR AND EXIT
001585                                  *
```

```
001586                                  /
001587                                  ************************
001588                                  *
001589                                  *  RECEIVE A MESSAGE FROM SYNCHRONOUS TERMINAL
001590                                  *
001591                                  ************************
001592  06A9  B3C0 06FE                RTSYX   LNJ     $B3,INID
001593  06AB  DF40 0EDE                        STR     $R5,ACLAID
001594  06AD  D3C0 FFB4                        LNJ     $B5,IDCHK1
001595  06AF  E840 079D                        LDR     $R6,TEST
001596  06B1  E970 4C54                        CMR     $R6,=A'LT'
001597  06B3  0901 0025                        BE      LTSYX
001598  06B5  9B80 08C3                        LAB     $B1,<PRTOUT
001599  06B7  9FC0 00AE                        STB     $B1,PRINT1+1
001600  06B9  9B80 0EB7                        LAB     $B1,<GOMSG
001601  06BB  9FC0 0090                        STB     $B1,MSGBUF
001602  06BD  9870 000A                        LDR     $R1,=10
001603  06BF  9F40 008D                        STR     $R1,MSGRNG
001604  06C1  9F40 00AB                RTSYY   STR     $R1,RTSFLG
001605  06C3  89C0 058A                        CMZ     POLFLG
001606  06C5  0900              T             BE      >+$A
001607                                  *
001608                                  * FOR POLL OPERATION
001609                                  *
001610  06C6  9870 0001                        LDR     $R1,=1
001611  06C8  97C0 006D                        STH     $R1,PTLCTF
001612  06CA  9F40 00A5                        STR     $R1,RTPFLG              **TEMP MODEM**
001613  06CC  0F81 0035                        B       TTEXS2
001614                                  *
001615                                  * FOR NON-POLL OPERATION
001616                                  *
001617  06CE  9840 057D                $A      LDR     $R1,POLADR
001618  06D0  1E40                             ADV     $R1,=X'40'
001619  06D1  97C0 0061                        STH     $R1,PTLCTA
001620  06D3  9870 0000                        LDR     $R1,=0
001621  06D5  97C0 0060                        STH     $R1,PTLCTF
001622  06D7  0F81 0037                        B       PTEXS
```

```
001623                                  /
001624                                  **********************************************
001625                                  **********LT TEST FOR SYNCHRONOUS TERMINAL********
001626                                  *  TRANSMIT A MESSAGE TO TERMINAL
001627                                  *  OPERATOR KEYS IN SAME MESSAGE AT TERMINAL
001628                                  *  RECEIVED MESSAGE COMPARED AGAINST XMITTED MESSAGE
001629                                  *
001630                                  **********************************************
001631  06D9  9B80 0687                 LTSYX   LAB     $B1,<LTEXD1
001632  06DB  9FC0 008A                         STB     $B1,PRINT1+1
001633  06DD  9B80 0EBB                         LAB     $B1,<OPMESP
001634  06DF  9FC0 006C                         STB     $B1,MSGBUF
001635  06E1  9840 008A                         LDR     $R1,LTSRNG
001636  06E3  9F40 0069                         STR     $R1,MSGRNG
001637  06E5  1C01                              LDV     $R1,=X'1'
001638  06E6  9F40 0086                         STR     $R1,RTSFLG              TO NULL EOT IN CNTRCV
001639  06E8  97C0 004C                         STH     $R1,PILCTE              RT FLAG
001640  06EA  9F40 0EA1                         STR     $R1,INHRTC
001641  06EC  0F81 FFD4                         B       RTSYY
```

```
001642                                  /
001643                                  **********************
001644                                  *
001645                                  *  TRANSMIT A POLL/SELECT MESSAGE TO TERMINAL
001646                                  *
001647                                  **********************
001648  06EE  B3C0 06B9                PTEX    LNJ     $B3,INID
001649  06F0  DF40 0E99                        STR     $R5,ACLAID
001650  06F2  D3C0 FF6F                        LNJ     $B5,IDCHK1
001651  06F4  9BC0 002D                        LAB     $B1,PTEXSY
001652  06F6  9FC0 001E                        STB     $B1,PTEXSA+1
001653  06F8  0F81 0016                        B       PTEXS
001654                                  *
001655                                  * POLL/SELECT/TRANSMIT DATA SUBROUTINE
001656                                  *
001657        06FA                      TTEXS1  EQU     $
001658  06FA  9B80 0702                        LAB     $B1,<TTEXS2
001659  06FC  9FC0 0018                        STB     $B1,PTEXSA+1            **ADR MODIFICATION TEMP***
001660  06FE  9B80 08C3                        LAB     $B1,<PRTOUT
001661  0700  9FC0 0065                        STB     $B1,PRINT1+1
001662  0702  C380 0F64                TTEXS2  LNJ     $B4,<CCBRST
001663  0704  0F01 FFFF                        NOP     $
001664  0706  E840 0545                        LDR     $R6,POLADR
001665  0708  6E40                             ADV     $R6,=X'40'
001666  0709  E7C0 0029                        STH     $R6,PTLCTA
001667  070B  E670 0060                        XOR     $R6,=X'60'
001668  070D  E7C0 0026                        STH     $R6,PTLCTC
001669  070F  8F40 0062                PTEXS   SAVE    SAVE6,=Z'0008'          SAVE $B4
        0711  0008
001670  0712  C3C0 1017                        LNJ     $B4,CLRECD              CLEAR OUT INPUT BUFFER
001671  0714  9B80 0722                PTEXSA  LAB     $B1,<PTEXSY
001672  0716  9FC0 0232                        STB     $B1,COUNTR+1
001673  0718  E3C0 0DA0                        LNJ     $B6,SRCV
001674  071A  0F01 FFFF                        NOP     $
001675  071C  93C0 0D07                        LNJ     $B1,SDATA
001676  071E  1253                             DC      <RTS                    CPU ADDRESS
001677  071F  0250                             DC      (CCP2-RTS)*2            RANGE
001678  0720  0200                             DC      X'200'                  RAM ADDRESS
001679  0721  0000                             DC      0
001680  0722  E3C0 0D96                PTEXSY  LNJ     $B6,SRCV
001681  0724  C3C0 0DBC                        LNJ     $B4,MCCBR
001682  0726  17D5                             DC      <RECD                   ADDRESS
001683  0727  0296                             DC      662                     BUFFER RANGE IN BYTES
001684  0728  0040                             DC      X'40'                   CCB CONTROL
001685  0729  B3C0 092D                        LNJ     $B3,SETLCT
001686  072B  072E                             DC      <PTLCT
001687  072C  0F80 073E                        B       <POTD
001688  072E  0526                PTLCT   DC      X'526'                  LCT 38
001689  072F  0027                             DC      X'27'                   LCT39 CCP TRANS. PTRS
001690  0730  0206                             DC      X'206'                  LCT 6
001691  0731  0007                             DC      X'7'                    LCT 7 CCPRECV PTRS
001692  0732  601D                PTLCTB  DC      X'601D'                 LCT 29 DISPLAY ADDRESS
001693  0733  001C                PTLCTA  DC      X'001C'                 LCT 28 POL?SEL ADDR REPLACES '00'
001694  0734  203D                PTLCTC  DC      X'203D'                 LCT 61 POLLADDR FOR TT TEST
001695  0735  0018                PTLCTE  DC      X'0018'                 LCT 24 RT FLAG
001696  0736  001A                PTLCTF  DC      X'001A'                 RT POLLFLG
001697  0737  0105                        DC      X'0105'                 PAUSE DISABLE
001698  0738  0125                        DC      X'0125'                 PAUSE DISABLE
001699  0739  003A                        DC      X'003A'                 CLEAR LCT 58
001700  073A  3A37                        DC      Z'3A37'                 PUT ADDRESS(LCT 58) IN LCT 55 FOR INPUT LCT
001701  073B  003F                        DC      X'003F'                 LCT 63 MODEM FLG
001702  073C  0000                        DC      0
001703  073D  0000                        DC      0
001704  073E  89C0 0032                POTD    CMZ     PTNFLG
001705  0740  0981 0019                        BNE     PTEXD
001706  0742  E3C0 0D89                        LNJ     $B6,STMT
001707  0744  93C0 0CDF                        LNJ     $B1,SDATA
001708  0746  11AF                             DC      <TTS
001709  0747  0148                             DC      (RTS-TTS)*2
001710  0748  0500                             DC      X'500'
001711  0749  0000                             DC      0
001712  074A  C3C0 0DA8                DUMMY   LNJ     $B4,MCCB
001713  074C  0E74                MSGBUF  DC      <CANNED
001714  074D  0000                MSGRNG  DC      0
001715  074E  0040                             DC      X'40'                   OUTPUT CCB CONTROL
001716  074F  C3C0 0928                        LNJ     $B4,CHCT
001717  0751  0F80                     T      B       >+$A
001718  0752  4000                             DC      Z'4000'
001719  0753  C3C0 0C33                $A      LNJ     $B4,TESTS
001720  0755  0F01 FFFF                        NOP     $
001721  0757  89C0 0018                        CMZ     RTPFLG
001722  0759  0980                     T      BNE     >+$A
001723  075A  C3C0 0913                PTEXD   LNJ     $B4,CHCTR
001724  075C  0FFD                     T      B       >+$A
001725  075D  4000                             DC      X'4000'
001726  075E  E380 14B9                $A      LNJ     $B6,<SRCV
001727  0760  C380 137D                        LNJ     $B4,<TESTSR
001728  0762  C3C0 0834                PRINT   LNJ     $B4,IDSS                CHECK DATA SET STATUS
001729  0764  7C04                             LDV     $R7,=X'04'              EOT
001730  0765  0F80 08C3                PRINT1  B       <PRTOUT
001731  0767  8F80 0772                        RSTR    <SAVE6,=Z'0080'         $B4
        0769  0080
001732  076A  0F81 01CB                        B       COUNT
001733  076C  0020                LTSRNG  DC      32
001734  076D  0000                RTSFLG  DC      0
001735  076E  0000                TTFLG   DC      0
001736  076F  0000                IDSFLG  DC      0
001737  0770  0000                RTPFLG  DC      0
001738  0771  0000                PTNFLG  DC      0
001739  0772  0000                SAVE6   RESV    $AF,0
001740                                  *
001741  0773  C3C0 08A1                TERSP   LNJ     $B4,ILCT                GET LCT 58 WHICH HAS STA CHAR.
001742  0775  9B80 0785                        LAB     $B1,<RESP               GO TO THE RESPONSE TABLE
001743  0777  8753                             CL      =$R3
001744  0778  987D                $A      LDR     $R1,$B1,+$R3            GET RESPONSE
001745  0779  9955                             CMR     $R1,=$R5                COMPARE WITH RECD ONE
001746  077A  0900                     T      BE      >+$B
001747  077B  9970 0000                        CMR     $R1,=0
001748  077D  09FB                             BNE     >-$A
001749  077E  9B80 078D                $B      LAB     $B1,<MSGTB
001750  0780  BCB1                             LDB     $B3,$B1,$R3
001751  0781  C3C0 0F63                        LNJ     $B4,TYPEC               PRINT IT
001752  0783  0F81 01B2                        B       COUNT
```

```
001753
001754                                          *
001755  0785  0600                              * RESPONSE TABLE
001756  0786  1500                              RESP    DC      X'0600'         ACK
001757  0787  6D00                                      DC      X'1500'         NAK
001758  0788  6E00                                      DC      X'6D00'         NOT AVAILABLE
001759  0789  6F00                                      DC      X'6E00'         PAGE OVERFLOW
001760  078A  0400                                      DC      X'6F00'         BUSY
001761  078B  0000                                      DC      X'0400'         QUIESCENT
001762  078C  0000                                      DC      X'0'
001763                                                  DC      X'0'
001764                                          *
001765  078D  078D                              * MESSEGE TABLE
001766  078E  0795                              MSGTB   DC      <MSGTB
001767  078F  079C                                      DC      <ACK
001768  0790  07A3                                      DC      <NAK
001769  0791  07AF                                      DC      <NA
001770  0792  07BA                                      DC      <PGOF
001771  0793  07C2                                      DC      <BUSY
001772  0794  07D0                                      DC      <QST
001773                                                  DC      <NORESP
001774  0795  4143 4B20 5245                   *
        0798  4345 4956 4544                  ACK     TEXT    'ACK RECEIVED$'
              2400
001775  079C  4E41 4B20 5245                  NAK     TEXT    'NAK RECEIVED$'
        079F  4345 4956 4544
              2400
001776  07A3  4445 5649 4345                  NA      TEXT    'DEVICE IS NOT AVAILABLE$'
        07A6  2049 5320 4E4F
              5420 4156 4149
              4C41 424C 4524
001777  07AF  5041 4745 204F                  PGOF    TEXT    'PAGE OVERFLOW OCCURED$'
        07B2  5645 5246 4C4F
              5720 4F43 4355
              5245 4424
001778  07BA  4445 5649 4345                  BUSY    TEXT    'DEVICE IS BUSY$'
        07BD  2049 5320 4255
              5359 2400
001779  07C2  5155 4945 5343                  QST     TEXT    'QUIESCENT MESSAGE RECEIVED$'
        07C5  454E 5420 4D45
              5353 4147 4520
              5245 4345 4956
              4544 2400
001780  07D0  4E4F 2052 4553                  NORESP  TEXT    'NO RESPONSE RECEIVED$'
        07D3  504F 4E53 4520
              5245 4345 4956
              4544 2400
```

```
001781                                      /
001782                                      ********************
001783                                      *
001784                                      *  TRANSMIT A CHARACTER STRING TO A TERMINAL
001785                                      *
001786                                      *  PROGRAM WILL ASK FOR STRING TO TRANSMIT
001787                                      *
001788                                      ********************
001789  07DB  B3C0 05CC                     TTEX    LNJ     $B3,INID            INPUT THE ID
001790  07DD  DF40 0DAC                             STR     $R5,ACLAID
001791  07DF  89C0 046D                             CMZ     SYNFLG
001792  07E1  0900                    T            BE      >+$A
001793  07E2  D3C0 FE7F                             LNJ     $B5,IDCHK1
001794  07E4  0F81 FF15                             B       TTEXS1
001795  07E6  D3C0 FE73                     $A      LNJ     $B5,IDCHK
001796                                      *
001797  07E8  C3C0 0193                     TTEXA   LNJ     $B4,MBR
001798  07EA  9B80 0936                             LAB     $B1,<COUNT
001799  07EC  9FC0 005D                             STB     $B1,TTEXD+1
001800  07EE  9840 FD3F                             LDR     $R1,LCEX1R
001801  07F0  9F40 001E                             STR     $R1,TTEXR
001802  07F2  9B80 080C                             LAB     $B1,<TTEM
001803  07F4  9FC0 0154                             STB     $B1,COUNTR+1
001804                                      *
001805                                      *
001806        07F6                          TTEXAC  EQU     $
001807  07F6  9870 00C1                             LDR     $R1,=X'C1'
001808  07F8  97C0 0026                             STH     $R1,TTLCTC          LCT 20
001809                                      *
001810  07FA  9840 01A4                             LDR     $R1,LCTBRB          SET UP  THE BAUD RATE
001811  07FC  9F40 0020                             STR     $R1,TTLCTA
001812  07FE  9840 03A5                             LDR     $R1,LR6CFA
001813  0800  9A70 0022                             ADD     $R1,=X'22'
001814  0802  9F40 001B                             STR     $R1,TTLCTB
001815                                      *
001816  0804  E3C0 0CC7                     TTOD    LNJ     $B6,STMT
001817  0806  93C0 0C1D                             LNJ     $B1,SDATA
001818  0808  111B                                  DC      <TTA
001819  0809  0060                                  DC      (RTA-TTA)*2
001820  080A  0400                                  DC      X'400'
001821  080B  0000                                  DC      0
001822  080C  C3C0 0CE6                     TTEM    LNJ     $B4,MCCB
001823  080E  0E74                          TTEXM   DC      <CANNED
001824  080F  0000                          TTEXR   RESV    1,0
001825  0810  0040                                  DC      X'40'
001826  0811  B3C0 0845                             LNJ     $B3,SETLCT          SET UP THELCT
001827  0813  0815                                  DC      <TTLCT
001828  0814  0F8D                                  B       >TTEXB1
001829                                      *
001830  0815  0426                          TTLCT   DC      X'426'              RAM ADDRESS
001831  0816  0406                                  DC      X'406'
001832  0817  0125                                  DC      X'125'
001833  0818  0007                                  DC      X'7'
001834  0819  1E27                                  DC      X'1E27'             XMIT CCP POINTER(LOC TTA0)
001835  081A  0105                                  DC      X'105'
001836  081B  0009                                  DC      X'009'              LCT 9
001837  081C  000A                                  DC      X'00A'              LCT 10
001838  081D  0000                          TTLCTA  RESV    1,0                 BAUD RATE
001839  081E  0000                          TTLCTB  RESV    1,0                 CHAR,CONFIG.
001840  081F  C114                          TTLCTC  DC      Z'C114'             LCT 20 DATA SET CONTROL
001841  0820  0000                                  DC      0                   END OF TABLE
001842                                      *
001843                                      * TO LOAD LR4 WITH LINE SPEED BY RECEIVE CHANNEL
001844                                      *
001845                                      *
001846  0821  B840 062D                     TTEXB1  LDR     $R3,CHAN
001847  0823  0F01 FFFF                             NOP     $
001848  0825  C3C0 0848                             LNJ     $B4,CHCTR
001849  0827  0F82                                  B       >TTEXC
001850  0828  4000                                  DC      Z'4000'
001851  0829  9840 0623                     TTEXC   LDR     $R1,TEST
001852  082B  9970 454C                             CMR     $R1,=A'EL'
001853  082D  0901 FCAB                             BE      ELEX1
001854  082F  C3C0 0B57                             LNJ     $B4,TESTS
001855                                      *
001856  0831  C3C0 0765                             LNJ     $B4,IDSS            CHECK DATA SET STATUS
001857        0833                          TTEXE   EQU     $
001858  0833  9840 0101                             LDR     $R1,LFLAG
001859  0835  9570 4000                             AND     $R1,=X'4000'
001860  0837  1901 0005                             BEZ     $R1,LMCHK
001861  0839  BB80 0E39                             LAB     $B3,<EMS
001862  083B  C3C0 0EA9                             LNJ     $B4,TYPEC
001863                                      *
001864  083D  89C0 FDCF                     LMCHK   CMZ     LAFLG               CHECK IF TEST IS LA
001865  083F  0981 FDAF                             BNE     LMEND
001866                                      *****
001867                                      *
001868                                      * TIMEOUT TO ALLOW CR/LF TIME FOR PRINTER DEVICES SUCH AS SARA
001869                                      *
001870                                      *****
001871  0841  89C0 040E                     FLGCHK  CMZ     PTRFLG
001872  0843  0901 0005                             BE      TTEXD
001873  0845  9870 02F0                             LDR     $R1,=X'02F0'
001874  0847  93C0 0522                             LNJ     $B1,TMO
001875  0849  0F80 0936                     TTEXD   B       <COUNT
001876                                      *
001877                                      *
```

```
001878                                  /
001879                                  ********************
001880                                  *
001881                                  *  RECEIVE A CHARACTER STRING FROM A TERMINAL
001882                                  *
001883                                  *  CONSOLE WILL DISPLAY STRING RECEIVED
001884                                  *
001885                                  ********************
001886  084B  B3C0 055C                 RTEX    LNJ     $B3,INID                INPUT THE ID
001887  084D  DF40 0D3C                         STR     $R5,ACLAID
001888  084F  B3C0 FE0A                         LNJ     $B5,IDCHK
001889                                  *
001890  0851  9840 05FB                         LDR     $R1,TEST
001891  0853  9970 4C4B                         CMR     $R1,=A'LK'
001892  0855  0901 0019                         BE      RTEXAA
001893  0857  C3C0 0124                 RTEXA   LNJ     $B4,MBR
001894  0859  9B80 086F                         LAB     $B1,<RTEXAA
001895  085B  9FC0 FFEE                         STB     $B1,TTEXD+1
001896  085D  9B80 0EB7                         LAB     $B1,<GOMSG
001897  085F  9FC0 FFAE                         STB     $B1,TTEXM
001898  0861  9870 000A                         LDR     $R1,=10
001899  0863  9F40 FFAB                         STR     $R1,TTEXR
001900  0865  9870 000D                         LDR     $R1,=X'0D'
001901  0867  97C0 0041                         STH     $R1,RTLCTE              INCASE MODIFIED BY LK TEST
001902  0869  9870 0000                         LDR     $R1,=0
001903  086B  97C0 003E                         STH     $R1,RTLCTF              CL LK TEST FLAG
001904  086D  0F81 FF88                         B       TTEXAC
001905                                  *
001906  086F  0F01 FFFF                 RTEXAA  NOP     $
001907  0871  C3C0 06F2                         LNJ     $B4,CCBRST
001908  0873  0F01 FFFF                         NOP     $
001909  0875  E3C0 0C43                 SKIP    LNJ     $B6,SRCV
001910  0877  93C0 0BAC                         LNJ     $B1,SDATA
001911  0879  114B                             DC      <RTA
001912  087A  00C8                             DC      (TTS-RTA)*2
001913  087B  0200                             DC      X'200'
001914  087C  0000                             DC      0
001915                                  *
001916  087D  C3C0 0C63                         LNJ     $B4,MCCBR
001917  087F  17D5                             DC      <RECD
001918  0880  0282                      BUFFER RESV    1,642                   RANGE IS MODIFIED IF ASYNC TERMINAL
001919  0881  0040                             DC      X'40'
001920                                  *
001921                                  *
001922  0882  9840 011C                         LDR     $R1,LCTBRB
001923  0884  9F40 0020                         STR     $R1,RTLCTA
001924  0886  9840 031D                         LDR     $R1,LR6CFA
001925  0888  9A70 0022                         ADD     $R1,=X'22'
001926  088A  9F40 001B                         STR     $R1,RTLCTB
001927  088C  9840 0317                         LDR     $R1,LR6CFA
001928  088E  1E02                             ADV     $R1,=2
001929  088F  9F40 0017                         STR     $R1,RTLCTC
001930  0891  9840 010D                         LDR     $R1,LCTBRB
001931  0893  9570 FFDF                         AND     $R1,=Z'FFDF'
001932  0895  9F40 0012                         STR     $R1,RTLCTD
001933  0897  0F01 FFFF                         NOP     $
001934  0899  0F01 FFFF                         NOP     $
001935  089B  B3C0 07B1                         LNJ     $B3,LCTRCV
001936  089D  089F                             DC      <RTLCT
001937  089E  0F8E                             B       >RTEXB
001938                                  *
001939  089F  0226                      RTLCT   DC      X'226'
001940  08A0  0206                              DC      X'206'
001941  08A1  0125                              DC      X'125'
001942  08A2  0007                              DC      X'07'
001943  08A3  7F27                              DC      X'7F27'
001944  08A4  0105                              DC      X'105'
001945  08A5  0000                      RTLCTA  DC      0
001946  08A6  0000                      RTLCTB  DC      0
001947  08A7  0000                      RTLCTC  DC      0
001948  08A8  0000                      RTLCTD  DC      0
001949  08A9  0D1C                      RTLCTE  DC      X'0D1C'                 X'FF1C' FOR LX TEST
001950  08AA  001E                      RTLCTF  DC      X'001E'                 LCT 30 LK TEST FLAG
001951  08AB  0000                              DC      0
001952  08AC  B840 05A2                 RTEXB   LDR     $R3,CHAN
001953  08AE  0F01 FFFF                         NOP     $
001954  08B0  C3C0 07BD                         LNJ     $B4,CHCTR
001955  08B2  0F82                              B       >RTEXD
001956  08B3  4000                              DC      Z'4000'
001957  08B4  BF40 0CD7                 RTEXD   STR     $R3,INHRTC              DISABLE RTC
001958  08B6  C3C0 0AC6                         LNJ     $B4,TESTSR
001959  08B8  E840 0594                 RTEXE   LDR     $R6,TEST
001960  08BA  E970 4C54                         CMR     $R6,=A'LT'
001961  08BC  0901 FDC9                         BE      LTEXD
001962                                  *
001963                                  *
001964  08BE  7C0D                              LDV     $R7,=X'0D'              ALLOWS SEARCH FOR C/R
001965  08BF  E970 4C4B                         CMR     $R6,=A'LK'
001966  08C1  0982                              BNE     >PRTOUT
001967  08C2  7C04                              LDV     $R7,=X'04'
001968  08C3  C3C0 0019                 PRTOUT  LNJ     $B4,CNTRCV              COUNT RECEIVED BYTES
001969  08C5  89C0 FEA8                         CMZ     TTFLG
001970  08C7  0981 FEAB                         BNE     TERSP                   IF TT GET TER. RESPONSE
001971  08C9  A840 0587                         LDR     $R2,PASSES
001972  08CB  A970 0001                         CMR     $R2,=1
001973  08CD  0301 000D                         BG      RTEXC
001974  08CF  C3C0 0E4C                         LNJ     $B4,HEXASC              SET UP RECD PRINT LINE
001975  08D1  0E6E                              DC      <RCVRNB
001976  08D2  17CB                              DC      <INCNT
001977  08D3  BB80 17C8                         LAB     $B3,<IN
001978  08D5  C3C0 0E0F                         LNJ     $B4,TYPEC               "RECD: X CHARACTERS " TO CONSOLE
001979  08D7  BB80 17D5                         LAB     $B3,<RECD
001980  08D9  93C0 0D9A                         LNJ     $B1,CONPR1              PRINT RCVD DATA EVEN ON A TTY-R
001981  08DB  0F80 0936                 RTEXC   B       <COUNT
001982                                  *
001983                                  *
001984                                  * COUNT NUMBER OF BYTES IN RECEIVE BUFFER (UP TO FIRST '0D' BYTE)
001985                                  * SETS RANGE IN WORDS (R1 AND RCVRNG) AND BYTES (R5 AND RCVRNB)
001986                                  *
001987                                  *
001988  08DD  BB80 17D5                 CNTRCV  LAB     $B3,<RECD
001989  08DF  8751                              CL      =$R1                    WORD COUNTER
001990  08E0  8755                              CL      =$R5                    BYTE COUNTER
```

```
001991  08E1  9970 014C          DSPB    CMR     $R1,=332            TOTAL RANGE
001992  08E3  0901 004B                  BE      DSPH2
001993  08E5  A813                      LDR     $R2,$B3.$R1
001994  08E6  A570 FF00                  AND     $R2,=Z'FF00'
001995  08E8  7008                      SOL     $R7,8
001996  08E9  A957                      CMR     $R2,=$R7            CHECK FOR CR OR EOT IN LEFT HALF WORD
001997  08EA  0933                      BE      >DSPG
001998  08EB  8AD5                      INC     =$R5
001999  08EC  89C0 FD20                  CMZ     LAFLG
002000  08EE  0981 000B                  BNE     DSPC
002001  08F0  A970 2400                  CMR     $R2,=Z'2400'        CHECK FOR $ SIGN
002002  08F2  0900              T       BE      >+$A
002003  08F3  A970 5C00                  CMR     $R2,=Z'5C00'        CHECK FOR \ SIGN
002004  08F5  0985              $A      BNE     >DSPC
002005  08F6  A813                      LDR     $R2,$B3.$R1
002006  08F7  AA70 8000                  ADD     $R2,=Z'8000'        CONCEAL $ FROM LIBRARY PRINT ROUTINE
002007  08F9  AF13                      STR     $R2,$B3.$R1
002008                          *
002009  08FA  A813              DSPC    LDR     $R2,$B3.$R1
002010  08FB  A570 00FF                  AND     $R2,=X'FF'          CHECK FOR $ AND/OR CR IN RIGHT HALF
002011  08FD  89C0 FD0F                  CMZ     LAFLG
002012  08FF  0980              T       BNE     >+$C
002013  0900  A970 0024                  CMR     $R2,=X'24'
002014  0902  0914                      BE      >DSPE
002015  0903  A970 005C                  CMR     $R2,=X'5C'          CHECK  FOR \ SIGN
002016  0905  0911                      BE      >DSPE
002017  0906  7048              $C      SOR     $R7,8
002018  0907  A957                      CMR     $R2,=$R7
002019  0908  0992                      BNE     >DSPD
002020  0909  89C0 FD03                  CMZ     LAFLG
002021  090B  0980              T       BNE     >+$B
002022  090C  A970 000D                  CMR     $R2,=X'0D'
002023  090E  097D              T       BE      >+$B
002024  090F  89C0 FE5D                  CMZ     RTSFLG
002025  0911  0917                      BE      >DSPH
002026  0912  A813              $B      LDR     $R2,$B3.$R1
002027  0913  A570 FF00                  AND     $R2,=Z'FF00'        **TEMP**
002028  0915  0F80              T       B       >+$A
002029  0916  A813              DSPE    LDR     $R2,$B3.$R1
002030  0917  AA70 0080                  ADD     $R2,=X'80'          CONCEAL $ FROM LIBRARY AND \ FROM MDC
002031  0919  AF13                      STR     $R2,$B3.$R1
002032  091A  8AD1              DSPD    INC     =$R1
002033  091B  8AD5                      INC     =$R5
002034  091C  0FC5                      B       >DSPB               LOOK AT NEXT WORD
002035  091D  89C0 FCEF          DSPG    CMZ     LAFLG
002036  091F  0980              T       BNE     >+$B
002037  0920  A970 0D00                  CMR     $R2,=X'0D00'
002038  0922  097D              T       BE      >+$B
002039  0923  89C0 FE49                  CMZ     RTSFLG
002040  0925  0903                      BE      >DSPH
002041  0926  8752              $B      CL      =$R2                **TEMP**
002042  0927  AF13              $A      STR     $R2,$B3.$R1         **TEMP**
002043  0928  8AD1              DSPH    INC     =$R1
002044  0929  8AD5                      INC     =$R5                PRINT RECD DATA, 80 BYTES R5 PER LINE=$R5
002045  092A  0F40 0543          DSPH1   STR     $R5,RCVRNB          RECEIVE RANGE IN BYTES
002046  092C  9F40 0542                  STR     $R1,RCVRNG          SAVE RCV RANGE IN WORDS
002047  092E  8384                      JMP     $B4
002048                          *
002049                          * IF RANGE EXHAUST PUT 0 IN LAST WORD FOR CONPRT
002050  092F  8752              DSPH2   CL      =$R2
002051  0930  AF11                      STR     $R2,$B1.$R1
002052  0931  0F81 FFF8                  B       DSPH1
```

```
002053                          /
002054                          ********************
002055                          *
002056                          *  TRANSMIT OPERATOR SPECIFIED MESSAGE AND WAIT FOR
002057                          *
002058                          *  VIP CONTROLLER TO RESPOND. VERIFY TRANSMITTED
002059                          *
002060                          *  MESSAGE AGAINST RECEIVED MESSAGE
002061                          *
002062                          ********************
002063          0933            TCEX    EQU     $                       EXECUTE THE TEST
002064  0933    0F81 FCF1               B       NOTIMP                  PRINT "NOT IMPLEMENTED" MESSAGE
002065                          *
002066                          *
002067  0935    0000            LFLAG   RESV    1,0
002068                          *
```

```
002069                                          /
002070                                          *
002071  0936  8AC0 051C                 COUNT   INC     PCNT                    BUMP COUNTER
002072  0938  89C0 0C52                         CMZ     NOSTOP
002073  093A  098A                             BNE     >COUNTS
002074  093B  9840 0517                         LDR     $R1,PCNT
002075  093D  A840 0513                         LDR     $R2,PASSES
002076  093F  9952                             CMR     $R1,=$R2
002077  0940  0901 0013                         BE      COUNTA
002078  0942  1D01                             CMV     $R1,=1
002079  0943  0985                             BNE     >COUNTR
002080  0944  9840 050B                 COUNTS  LDR     $R1,MESG
002081  0946  9970 4300                         CMR     $R1,=X'4300'
002082  0948  0F80 04AE                 COUNTR  B       <EXEC
002083  094A  9840 0502                         LDR     $R1,TEST
002084  094C  9970 4C4D                         CMR     $R1,=X'4C4D'            LM?
002085  094E  0901 0460                         BE      REMLP
002086  0950  9970 4C52                         CMR     $R1,=X'4C52'            LR?
002087  0952  0901 045C                         BE      REMLP
002088        0954                      COUNTA  EQU     $
002089  0954  BB80 0E3F                 CONTA1  LAB     $B3,<TCOMP              HERE IF PASS CTR EXH
002090  0956  C3C0 0D8E                         LNJ     $B4,TYPEC
002091  0958  BB80 1629                         LAB     $B3,<EMB
002092  095A  C3C0 0D7B                         LNJ     $B4,TYPE
002093  095C  A3C0 0C98                         LNJ     $B2,PRBCHA
002094  095E  BB80 1660                 COUNTB  LAB     $B3,<CRLF
002095  0960  C3C0 0D75                         LNJ     $B4,TYPE
002096                                          CALL    ZV$TH.ZV$TD,PCNT
        0962  FBC0 0003
        0964  D380 0000         X
        0966  0F80
        0967  0E53
002097  0968  BB80 1639                         LAB     $B3,<PSS
002098  096A  C3C0 0D6B                         LNJ     $B4,TYPE
002099                                          CALL    ZV$TH.ZV$TD,ERCT
        096C  FBC0 0003
        096E  D380 0000         X
        0970  0F80
        0971  0E57
002100  0972  BB80 1662                         LAB     $B3,<ERS
002101  0974  C3C0 0D61                         LNJ     $B4,TYPE
002102  0976  BB80 1660                         LAB     $B3,<CRLF
002103  0978  C3C0 0D5D                         LNJ     $B4,TYPE
002104  097A  0F81 F795                         B       NEXT
002105                                  *
002106                                  *
002107                                  *       SUBROUTINES
002108                                  *
002109                                  *
002110                                  *
002111                                  *       MANIPULATION OF BAUD RATE FOR LCT TABLE
002112                                  *
002113  097C  8F40 0BCD                 MBR     SAVE    SAV1,=Z'FFFF'
        097E  FFFF
002114  097F  9840 0C0A                         LDR     $R1,ACLAID              LOAD ID FOUND
002115  0981  9970 3118                         CMR     $R1,=Z'3118'
002116  0983  0907                             BE      >MBRA
002117  0984  9970 3110                         CMR     $R1,=Z'3110'
002118  0986  0904                             BE      >MBRA
002119                                  *
002120                                  *       HERE IF OLD ADAPTER
002121                                  *
002122  0987  AB80 09C7                         LAB     $B2,<XROLD              LOAD TABLE ADDRESS
002123  0989  0F83                             B       >MBRB
002124                                  *
002125                                  *       HERE IF NEW ADAPTER
002126                                  *
002127  098A  AB80 09B4                 MBRA    LAB     $B2,<XRNEW
002128                                  *
002129  098C  B840 02DC                 MBRB    LDR     $R3,BDRATE              GET BAUD RATE
002130  098E  8751                             CL      =$R1                    INDEX REGISTER
002131  098F  9B80 09A0                         LAB     $B1,<XRALL              LOAD TABLE ADDRESS
002132  0991  A811                     MBRC    LDR     $R2,$B1.$R1             LOAD A BAUD RATE
002133  0992  A953                             CMR     $R2,=$R3                MATCH?
002134  0993  0903                             BE      >MBRD                   YES
002135  0994  17FD                             BINC    $R1,>MBRC               NO-GET ANOTHER
002136  0995  0000                             HLT
002137                                  *
002138  0996  C812                     MBRD    LDR     $R4,$B2.$R1             LOAD CORRECT VALUE
002139  0997  4008                             SOL     $R4,8
002140  0998  4E34                             ADV     $R4,=52
002141  0999  CF40 0005                         STR     $R4,LCTBRB
002142  099B  8FC0 0BAE                         RSTR    SAV1,=Z'FFFF'
        099D  FFFF
002143  099E  8384                             JMP     $B4                     RETURN TO CALLER
002144                                  *
002145  099F  0000                     LCTBRB  RESV    1,0                     LCT TABLE BAUD RATES FOR LR4
002146                                  *
002147                                  *
002148                                  *       XREF TABLE FOR BAUD RATE VS. BITS TO GO IN LR4
002149                                  *
002150  09A0  0032                     XRALL   DC      50
002151  09A1  004B                             DC      75
002152  09A2  006E                             DC      110
002153  09A3  0086                             DC      134
002154  09A4  0096                             DC      150
002155  09A5  00C8                             DC      200
002156  09A6  012C                             DC      300
002157  09A7  0258                             DC      600
002158  09A8  0384                             DC      900
002159  09A9  041A                             DC      1050
002160  09AA  04B0                             DC      1200
002161  09AB  0708                             DC      1800
002162  09AC  07D0                             DC      2000
002163  09AD  0960                             DC      2400
002164  09AE  0E10                             DC      3600
002165  09AF  12C0                             DC      4800
002166  09B0  1C20                             DC      7200
002167  09B1  2580                             DC      9600
002168  09B2  4B00                             DC      19200
002169  09B3  0000                             DC      0                       END OF TABLE
002170                                  *
002171                                  *       XREF TABLE FOR NEW ACLA
```

```
002172                                          *
002173  09B4  0000                             XRNEW  DC     0
002174  09B5  0001                                    DC     1
002175  09B6  0002                                    DC     2
002176  09B7  0003                                    DC     3
002177  09B8  0004                                    DC     4
002178  09B9  0005                                    DC     5
002179  09BA  0006                                    DC     6
002180  09BB  0007                                    DC     7
002181  09BC  FFFF                                    DC     Z'FFFF'
002182  09BD  0008                                    DC     8
002183  09BE  0009                                    DC     9
002184  09BF  000A                                    DC     10
002185  09C0  000B                                    DC     11
002186  09C1  000C                                    DC     12
002187  09C2  FFFF                                    DC     Z'FFFF'
002188  09C3  000D                                    DC     13
002189  09C4  FFFF                                    DC     Z'FFFF'
002190  09C5  000E                                    DC     14
002191  09C6  000F                                    DC     15
002192                                          *
002193                                          *      XREF TABLE FOR OLD ACLA
002194                                          *
002195  09C7  0001                             XROLD  DC     1
002196  09C8  0002                                    DC     2
002197  09C9  0003                                    DC     3
002198  09CA  0004                                    DC     4
002199  09CB  0005                                    DC     5
002200  09CC  FFFF                                    DC     Z'FFFF'
002201  09CD  0006                                    DC     6
002202  09CE  0007                                    DC     7
002203  09CF  0008                                    DC     8
002204  09D0  FFFF                                    DC     Z'FFFF'
002205  09D1  0009                                    DC     9
002206  09D2  000A                                    DC     10
002207  09D3  FFFF                                    DC     Z'FFFF'
002208  09D4  000B                                    DC     11
002209  09D5  000C                                    DC     12
002210  09D6  000D                                    DC     13
002211  09D7  000E                                    DC     14
002212  09D8  000F                                    DC     15
002213                                          *
002214                                          *
002215                                          *
002216                                          * DISPLAY CURRENT PARAMETERE3S
002217                                          *
002218  09D9  BB80 09DE                         DPARM1 LAB    $B3,<ONCE
002219  09DB  C3C0 0009                                LNJ    $B4,TYPEC
002220  09DD  0F8B                                     B      >DPARM
002221  09DE  4445 4641 554C                   ONCE   TEXT   'DEFAULT PARAMETERS:$'
        09E1  5420 5041 5241
              4D45 5445 5253
              3A24
002222  09E8  BB80 0C5D                         DPARM  LAB    $B3,<TMNTYP
002223  09EA  C3C0 0CFA                                LNJ    $B4,TYPEC
002224  09EC  BB80 0C59                                LAB    $B3,<TMNASC
002225  09EE  C3C0 0CE7                                LNJ    $B4,TYPE
002226  09F0  89C0 025C                                CMZ    SYNFLG
002227  09F2  0980                 T                   BNE    >+$A   .
002228  09F3  BB80 0C63                                LAB    $B3,<BDRTQ
002229  09F5  C3C0 0CEF                                LNJ    $B4,TYPEC
002230                                                 CALL   ZV$TH.ZV$TD,BDRATE
        09F7  FBC0 0003
        09F9  D380 0000             X
        09FB  0F80
        09FC  0C69
002231  09FD  BB80 0A45                                LAB    $B3,<CHASIZ
002232  09FF  C3C0 0CE5                                LNJ    $B4,TYPEC
002233                                                 CALL   ZV$TH.ZV$TD,CHSIZE
        0A01  FBC0 0003
        0A03  D380 0000             X
        0A05  0F80
        0A06  0A4B
002234  0A07  BB80 0A4C                                LAB    $B3,<STBITS
002235  0A09  C3C0 0CDB                                LNJ    $B4,TYPEC
002236                                                 CALL   ZV$TH.ZV$TD,SBITS
        0A0B  FBC0 0003
        0A0D  D380 0000             X
        0A0F  0F80
        0A10  0A52
002237  0A11  BB80 0A53                                LAB    $B3,<PRTY
002238  0A13  C3C0 0CD1                                LNJ    $B4,TYPEC
002239  0A15  BB80 0A59                                LAB    $B3,<APARIT
002240  0A17  C3C0 0CBE                                LNJ    $B4,TYPE
002241  0A19  C3C0 0CB5                                LNJ    $B4,NEWLIN
002242  0A1B  C3C0 FF60                                LNJ    $B4,MBR
002243  0A1D  0F81 F6F2                                B      NEXT
002244                                          *
002245  0A1F  BB80 0A5D                         $A     LAB    $B3,<ADDRS
002246  0A21  C3C0 0CC3                                LNJ    $B4,TYPEC
002247                                                 CALL   ZV$TH.ZV$TD,BDRATE
        0A23  FBC0 0003
        0A25  D380 0000             X
        0A27  0F80
        0A28  0C69
002248  0A29  BB80 0A63                                LAB    $B3,<MODE
002249  0A2B  C3C0 0CB9                                LNJ    $B4,TYPEC
002250  0A2D  BB80 0A69                                LAB    $B3,<MOD
002251  0A2F  C380 16D6                                LNJ    $B4,<TYPE
002252  0A31  BB80 0A6D                                LAB    $B3,<CLOCK
002253  0A33  C380 16E5                                LNJ    $B4,<TYPEC
002254  0A35  BB80 0A73                                LAB    $B3,<CLK
002255  0A37  C380 16D6                                LNJ    $B4,<TYPE
002256  0A39  BB80 0A77                                LAB    $B3,<DISP
002257  0A3B  C3C0 0CA9                                LNJ    $B4,TYPEC
002258  0A3D  BB80 0A7D                                LAB    $B3,<DPC
002259  0A3F  C3C0 0C96                                LNJ    $B4,TYPE
002260  0A41  C3C0 0C8D                                LNJ    $B4,NEWLIN
002261  0A43  0F81 F6CC                                B      NEXT
002262  0A45  4348 4152 2053                   CHASIZ TEXT   'CHAR SIZE:;$'
        0A48  495A 453A 3A24
002263  0A4B  0008                             CHSIZE RESV   1,8
002264  0A4C  5354 4F50 2042                   STBITS TEXT   'STOP BITS:;$'
```

```
        0A4F  4954 533A 3A24
002265  0A52  0001                SBITS  RESV   1,1
002266  0A53  2020 2050 4152      PRTY   TEXT   '  PARITY::$'
        0A56  4954 593A 3A24
002267  0A59  2020 2020 2045      APARIT TEXT   '     E$'
        0A5C  2400
002268  0A5D  5445 524D 2041      ADDRS  TEXT   'TERM ADDR::$'
        0A60  4444 523A 3A24
002269  0A63  2020 2020 204D      MODE   TEXT   '     MODE::$'
        0A66  4F44 453A 3A24
002270  0A69  2020 2020 2050      MOD    TEXT   '     P$'
        0A6C  2400
002271  0A6D  2020 2020 434C      CLOCK  TEXT   '    CLOCK::$'
        0A70  4F43 4B3A 3A24
002272  0A73  2020 2020 2054      CLK    TEXT   '     T$'
        0A76  2400
002273  0A77  2044 4953 502F      DISP   TEXT   ' DISP/PRT::$'
        0A7A  5052 543A 3A24
002274  0A7D  2020 2020 2044      DPC    TEXT   '     D$'
        0A80  2400
002275                            *
002276                            *
002277                            *
002278                            * PARAMETER INPUT
002279                            *
002280  0A81  1C0A                IPAR   LDV    $R1,=10              RANGE FOR INPUT
002281  0A82  A3C0 0338                  LNJ    $B2,IASC             INPUT TERMINAL TYPE
002282  0A84  9840 03C2                  LDR    $R1,TEMP             LOAD TYPE INPUT
002283  0A86  D840 03C1                  LDR    $R5,TEMP+1
002284  0A88  9F40 01D1                  STR    $R1,TMNASC+1
002285  0A8A  DF40 01D0                  STR    $R5,TMNASC+2
002286  0A8C  C3C0 004B                  LNJ    $B4,IPARG
002287                            *
002288  0A8E  1C0A                       LDV    $R1,=10              RANGE FOR INPUT
002289  0A8F  A3C0 0345                  LNJ    $B2,IDEC             INPUT BAUD RATE
002290  0A91  9840 03B5                  LDR    $R1,TEMP             LOAD BAUD RATE INPUT
002291  0A93  9F40 01D5                  STR    $R1,BDRATE           STORE IT FOR USE
002292  0A95  C3C0 0042                  LNJ    $B4,IPARG
002293                            *
002294  0A97  1C0A                       LDV    $R1,=10
002295  0A98  A3C0 0322                  LNJ    $B2,IASC             INPUT CHARACTER SIZE
002296  0A9A  A840 03AC                  LDR    $R2,TEMP             LOAD SIZE INPUT
002297  0A9C  AF40 FFAE                  STR    $R2,CHSIZE           SAVE IT
002298  0A9E  C3C0 0039                  LNJ    $B4,IPARG
002299                            *
002300  0AA0  1C0A                       LDV    $R1,=10
002301  0AA1  A3C0 0319                  LNJ    $B2,IASC             INPUT STOP BITS
002302  0AA3  A840 03A3                  LDR    $R2,TEMP
002303  0AA5  AF40 FFAC                  STR    $R2,SBITS            SAEV IT
002304  0AA7  C3C0 0030                  LNJ    $B4,IPARG
002305                            *
002306  0AA9  1C0A                       LDV    $R1,=10
002307  0AAA  A3C0 0310                  LNJ    $B2,IASC             INPUT PARITY
002308  0AAC  A840 039A                  LDR    $R2,TEMP
002309  0AAE  2048                       SUR    $R2,8
002310  0AAF  AA70 2000                  ADD    $R2,=X'2000'
002311  0AB1  AF40 FFA9                  STR    $R2,APARIT+2
002312                            *
002313                            * CHECK VALIDITY OF PARAMETERS INPUT
002314                            *
002315  0AB3  A3C0 00F1           IPARF  LNJ    $B2,INTM1            CHECK TERMINAL TYPE
002316  0AB5  C3C0 027D                  LNJ    $B4,CBR              CHECK BAUD RATE
002317                            *
002318  0AB7  9840 FF93                  LDR    $R1,CHSIZE
002319  0AB9  1048                       SUR    $R1,8
002320  0ABA  9570 000F                  AND    $R1,=X'0F'
002321  0ABC  9F00 0A4B                  STR    $R1,<CHSIZE
002322  0ABE  1D05                       CMV    $R1,=X'05'
002323  0ABF  091F                       BE     >IPARA
002324  0AC0  1D06                       CMV    $R1,=X'06'
002325  0AC1  091D                       BE     >IPARA
002326  0AC2  1D07                       CMV    $R1,=X'07'
002327  0AC3  091B                       BE     >IPARA
002328  0AC4  1D08                       CMV    $R1,=X'08'
002329  0AC5  0919                       BE     >IPARA
002330                            *
002331  0AC6  BB80 0ACC                  LAB    $B3,<ICR
002332  0AC8  C3C0 0C1C           IPARB  LNJ    $B4,TYPEC
002333  0ACA  0F81 F645                  B      NEXT
002334                            *
002335  0ACC  696C 6C65 6761      ICR    TEXT   'ILLEGAL CHARACTER SIZE$'
        0ACF  6C20 6368 6172
              6163 7465 7220
              7369 7A65 2400
002336                            *
002337  0AD8  9800 0000       X   IPARG  LDR    $R1,<ZV$ABF          TEST ACTUAL BYTE FOUND FOR
002338  0ADA  9970 0D00                  CMR    $R1,=X'0D00'         CR TO TERMINATE LINE ENTRY
002339  0ADC  0957                       BE     >IPARF               USE RESIDUAL FIELDS IF CR
002340  0ADD  8384                       JMP    $B4
002341                            *
002342  0ADE  9840 FF73           IPARA  LDR    $R1,SBITS
002343  0AE0  1048                       SUR    $R1,8
002344  0AE1  9570 0003                  AND    $R1,=X'03'
002345  0AE3  9F00 0A52                  STR    $R1,<SBITS
002346  0AE5  1D01                       CMV    $R1,=X'01'
002347  0AE6  092E                       BE     >IPARC
002348  0AE7  1D02                       CMV    $R1,=X'02'
002349  0AE8  092C                       BE     >IPARC
002350  0AE9  BB80 0AEC                  LAB    $B3,<ISB
002351  0AEB  0FDD                       B      >IPARB
002352  0AEC  696C 6C65 6761      ISB    TEXT   'ILLEGAL NUMBER OF STOP BITS$'
        0AEF  6C20 6E75 6D62
              6572 206F 6620
              7374 6F70 2062
              6974 7324
002353                            *
002354                            *
002355                            * THIS SOUBROUTINE CHANGES CONTENTS OF DATA SET CONTROL
002356                            * WORD IN LCT 20 IN SYNCHRONOUS CHANNEL PROGRAMM
002357                            * WHEN DLCP  CLOCK IS NOT USED
002358                            *
002359  0AFA  9870 C120           DTS    LDR    $R1,=Z'C120'
002360  0AFC  9F00 1371                  STR    $R1,<DTS6+1
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002361  0AFE  9870 C1BD            LDR   $R1,=Z'C1BD'
002362  0B00  9F00 1302            STR   $R1,<DTS5+1
002363  0B02  9870 82BD            LDR   $R1,=Z'82BD'
002364  0B04  9F00 123C            STR   $R1,<DTS4+1
002365  0B06  9870 C682            LDR   $R1,=Z'C682'
002366  0B08  9F00 125F            STR   $R1,<DTS3
002367  0B0A  9870 C301            LDR   $R1,=Z'C301'
002368  0B0C  9F00 122C            STR   $R1,<DTS2+1
002369  0B0E  9870 C6C1            LDR   $R1,=Z'C6C1'
002370  0B10  9F00 11B9            STR   $R1,<DTS1
002371  0B12  0F80 0CDD            B     <DP
002372  0B14  9840 FF46    IPARC   LDR   $R1,APARIT+2
002373  0B16  9570 00DF            AND   $R1,=X'DF'
002374  0B18  9970 0045            CMR   $R1,=X'45'          E FOR EVEN PAROITY
002375  0B1A  090A                  BE    >IPARD
002376  0B1B  9970 004F            CMR   $R1,=X'4F'          O FOR ODD
002377  0B1D  0907                  BE    >IPARD
002378  0B1E  9970 004E            CMR   $R1,=X'4E'          N FOR NO PARITY
002379  0B20  098C                  BNE   >IPARE
002380  0B21  A3C0 0016            LNJ   $B2,FUPN
002381  0B23  0F80                  B     >+$A
002382  0B24  A3C0 002F    IPARD   LNJ   $B2,FUP
002383  0B26  A3C0 0049    $A      LNJ   $B2,ACF
002384  0B28  C3C0 FE53            LNJ   $B4,MBR
002385  0B2A  0F81 F5E5            B     NEXI
002386  0B2C  BB80 0B30    IPARE   LAB   $B3,<ILP
002387  0B2E  0F81 FF99            B     IPARD
002388  0B30  696C 6C65 6761 ILP   TEXT  'ILLEGAL PARITY$'
        0B33  6C20 7061 7269
              7479 2400
002389                      *
002390                      *
002391                      *     THIS PUTS THE CORRECT PARITY IN THE CCP
002392                      *
002393  0B38  AFC0 001A     FUPN    STB   $B2,FUPP+1          SET UP THE RETURN
002394  0B3A  9870 40BD            LDR   $R1,=Z'40BD'
002395  0B3C  9F40 05FB            STR   $R1,TTA1+6
002396  0B3E  9F40 0600            STR   $R1,TTA1+13
002397  0B40  9F40 0641            STR   $R1,RTA2+1
002398  0B42  9870 40C6            LDR   $R1,=Z'40C6'
002399  0B44  9F40 05FD            STR   $R1,TTA1+16
002400  0B46  9870 3060            LDR   $R1,=Z'3060'
002401  0B48  9F40 0612            STR   $R1,RTA1+1
002402  0B4A  9870 3050            LDR   $R1,=Z'3050'
002403  0B4C  9F40 063F            STR   $R1,RTA3+1
002404  0B4E  9F00 1129            STR   $R1,<TTA+14
002405  0B50  9F00 112D            STR   $R1,<TTA+18
002406  0B52  0F80 0B52    FUPP    B     <FUPP
002407                      *
002408  0B54  AFC0 001A     FUP     STB   $B2,FUPE+1
002409  0B56  9870 50BD            LDR   $R1,=Z'50BD'
002410  0B58  9F40 05DF            STR   $R1,TTA1+6
002411  0B5A  9F40 05E4            STR   $R1,TTA1+13
002412  0B5C  9F40 0625            STR   $R1,RTA2+1
002413  0B5E  9870 50C6            LDR   $R1,=Z'50C6'
002414  0B60  9F40 05E1            STR   $R1,TTA1+16
002415  0B62  9870 70D7            LDR   $R1,=Z'70D7'
002416  0B64  9F40 05F6            STR   $R1,RTA1+1
002417  0B66  9870 3050            LDR   $R1,=Z'3050'
002418  0B68  9F40 0623            STR   $R1,RTA3+1
002419  0B6A  9F00 112C            STR   $R1,<TTA+17
002420  0B6C  9F00 1130            STR   $R1,<TTA+21
002421  0B6E  0F80 0B6E    FUPE    B     <FUPE
002422                      *
002423                      * ASYNC CONFIG FOR LR6
002424                      *
002425  0B70  9840 FEDA     ACF     LDR   $R1,CHSIZE
002426  0B72  9570 0003             AND   $R1,=X'3'
002427  0B74  1908                  BEZ   $R1,>CS8            CHAR SIZE 8
002428  0B75  1D01                  CMV   $R1,=1
002429  0B76  090B                  BE    >ACFA
002430  0B77  1D02                  CMV   $R1,=2
002431  0B78  0907                  BE    >CS6
002432                      *
002433  0B79  F870 8000             LDR   $R7,=Z'8000'        7 BIT CHAR
002434  0B7B  0F86                  B     >ACFA
002435  0B7C  F870 C000     CS8     LDR   $R7,=Z'C000'        8 BIT CHAR
002436  0B7E  0F83                  B     >ACFA
002437  0B7F  F870 4000     CS6     LDR   $R7,=Z'4000'        6 BIT CHAR
002438                      *
002439  0B81  9840 FED9     ACFA    LDR   $R1,APARIT+2
002440  0B83  9570 00DF             AND   $R1,=X'DF'
002441  0B85  9970 0045             CMR   $R1,=X'45'
002442  0B87  0908                  BE    >PE                 EVEN PARITY
002443  0B88  9970 004F             CMR   $R1,=X'4F'
002444  0B8A  0910                  BE    >SB                 ODD PARITY
002445  0B8B  9970 004E             CMR   $R1,=X'4E'
002446  0B8D  0906                  BE    >PN                 NO PARITY
002447  0B8E  0F89                  B     >PNC                DON'T CARE PARITY
002448  0B8F  9870 1000     PE      LDR   $R1,=X'1000'
002449  0B91  FA51                  ADD   $R7,=$R1
002450  0B92  0F88                  B     >SB
002451  0B93  9870 2000     PN      LDR   $R1,=X'2000'
002452  0B95  FA51                  ADD   $R7,=$R1
002453  0B96  0F84                  B     >SB
002454  0B97  9870 3000     PNC     LDR   $R1,=X'3000'
002455  0B99  FA51                  ADD   $R7,=$R1
002456                      *
002457  0B9A  9840 FEB7     SB      LDR   $R1,SBITS
002458  0B9C  1D01                  CMV   $R1,=1
002459  0B9D  0904                  BE    >SBD
002460  0B9E  9870 0800             LDR   $R1,=X'800'
002461  0BA0  FA51                  ADD   $R7,=$R1
002462  0BA1  FF40 0002     SBD     STR   $R7,LR6CFA
002463  0BA3  8382          ACFE    JMP   $B2
002464  0BA4  D000          LR6CFA  RESV  1,Z'D000'
002465                      *
002466                      *
002467                      *     INPUT TERMINAL TYPE, CHECK IF SUPPORTED
002468                      *
002469  0BA5  8740 00A7     INTM1   CL    SYNFLG
002470  0BA7  8740 00A6             CL    POLFLG
002471  0BA9  8740 00A5             CL    NPLFLG
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002472  0BAB  8740 00A4            CL    PTRFLG
002473  0BAD  AFC0 00A4            STB   $B2,INTMX+1
002474  0BAF  93C0 0035  INTMA1    LNJ   $B1,TERTYP
002475  0BB1  3731 3030  TAB1      DC    A'7100'
002476  0BB3  3732 3030            DC    A'7200'
002477  0BB5  5454 5943            DC    A'TTYC'
002478  0BB7  5454 5952            DC    A'TTYR'
002479  0BB9  5454 5920            DC    A'TTY '
002480  0BBB  5457 5531            DC    A'TWU1'
002481  0BBD  5457 5532            DC    A'TWU2'
002482  0BBF  5457 5533            DC    A'TWU3'
002483  0BC1  5457 5535            DC    A'TWU5'
002484  0BC3  3737 3630            DC    A'7760'
002485  0BC5  3737 3030            DC    A'7700'
002486  0BC7  3737 3635            DC    A'7765'
002487  0BC9  5052 5531            DC    A'PRU1'
002488  0BCB  5052 5532            DC    A'PRU2'
002489  0BCD  5052 5533            DC    A'PRU3'
002490  0BCF  5052 5535            DC    A'PRU5'
002491  0BD1  3738 3030            DC    A'7800'
002492        0BD3        ENDTB1  EQU   $
002493  0BD3  0044        SIZE    DC    (ENDTB1-TAB1)*2
002494  0BD4  0C31        BATAB   DC    <INTMC                  7100
002495  0BD5  0C31                DC    <INTMD
002496  0BD6  0C31                DC    <INTMD                  TTYC
002497  0BD7  0C31                DC    <INTMC                  TTYR
002498  0BD8  0C36                DC    <INTME                  TTY
002499  0BD9  0C0E                DC    <INTT1
002500  0BDA  0C17                DC    <INTT2
002501  0BDB  0C1A                DC    <INTT3
002502  0BDC  0C1E                DC    <INTT5
002503  0BDD  0C3B                DC    <INTMG
002504  0BDE  0C3B                DC    <INTMF
002505  0BDF  0C3B                DC    <INTMG
002506  0BE0  0C0E                DC    <INTP1
002507  0BE1  0C17                DC    <INTP2
002508  0BE2  0C1A                DC    <INTP3
002509  0BE3  0C1E                DC    <INTP5
002510  0BE4  0C2C                DC    <INTMH
002511  0BE5  1C00        TERTYP  LDV   $R1,0
002512  0BE6  2C01                LDV   $R2,1
002513  0BE7  C840 0072            LDR   $R4,TMNASC+1
002514  0BE9  D840 0071            LDR   $R5,TMNASC+2
002515  0BEB  C911        LOOP    CMR   $R4,$B1.$R1
002516  0BEC  0981 0009            BNE   NEXT1
002517  0BEE  D921                CMR   $R5,$B1.$R2
002518  0BEF  0981 0006            BNE   NEXT1
002519  0BF1  1052                SCR   $R1,2
002520  0BF2  1011                SCL   $R1,$AF
002521  0BF3  9B90 0BD4            LAB   $B1,<BATAB.$R1
002522  0BF5  8389                JMP   *$B1
002523  0BF6  2E02        NEXT1   ADV   $R2,2
002524  0BF7  1E02                ADV   $R1,2
002525  0BF8  9940 FFDA            CMR   $R1,SIZE
002526  0BFA  0381 FFF0            BLE   LOOP
002527  0BFC  B3C0 04A3            LNJ   $B3,ERRMB
002528  0BFE  0F80 0110            B     <NEXT
002529  0C00  5445 524D 494E       TEXT  'TERMINAL NAME IS NOT KNOWN$'
        0C03  414C 204E 414D
              4520 4953 204E
              4F54 204B 4E4F
              574E 2400
002530        0C0E        INTT1   EQU   $
002531  0C0E  9BC0 0013    INTP1   LAB   $B1,LBP1
002532  0C10  9FC0 0124    COMMON  STB   $B1,CBRT+1
002533  0C12  1C01                LDV   $R1,=1
002534  0C13  9F40 003C            STR   $R1,PTRFLG
002535  0C15  0F80 0C51            B     <INTMX
002536        0C17        INTT2   EQU   $
002537  0C17  9BC0 000C    INTP2   LAB   $B1,LBP2
002538  0C19  0FF7                B     >COMMON
002539        0C1A        INTT3   EQU   $
002540  0C1A  9BC0 000B    INTP3   LAB   $B1,LBP3
002541  0C1C  0F81 FFF3            B     COMMON
002542        0C1E        INTT5   EQU   $
002543  0C1E  9BC0 000B    INTP5   LAB   $B1,LBP5
002544  0C20  0F81 FFEF            B     COMMON
002545                    * HERE IF PRU1/TWU1
002546  0C22  012C        LBP1    DC    300                     SARA 300 BAUD
002547  0C23  0000                DC    0
002548                    * HERE IF PRU2/TWU2
002549  0C24  04B0        LBP2    DC    1200                    SARA 1200BAUD
002550  0C25  0000                DC    0
002551                    * HERE IF PRU3/TWU3
002552  0C26  006E        LBP3    DC    110                     ROSY 24 SPEED SELECTABLE
002553  0C27  00C8                DC    200
002554  0C28  012C                DC    300
002555  0C29  0000                DC    0
002556                    * HERE IF PRU5/TWU5
002557  0C2A  04B0        LBP5    DC    1200                    ROSY 26 FIXED SPEED
002558  0C2B  0000                DC    0
002559                    *
002560                    * HERE IF 7800
002561        0C2C        INTMH   EQU   $
002562  0C2C  9B80 0D5E            LAB   $B1,<LB7800
002563  0C2E  9FC0 0106            STB   $B1,CBRT+1
002564  0C30  0FA1                B     >INTMX
002565                    *
002566                    *    HERE IF TTYR
002567        0C31        INTMC   EQU   $
002568                    *    HERE IF TTYC
002569  0C31  9B80 0D4D    INTMD   LAB   $B1,<LBTTRC             SET UP POINTER TO LEGAL BAUD RATE
002570  0C33  9FC0 0101            STB   $B1,CBRT+1            TABLE FOR TTY-R'S AND TTY-C'S
002571  0C35  0F9C                B     >INTMX
002572                    *    HERE IF TTY
002573  0C36  9B80 0D58    INTME   LAB   $B1,<LBTTY
002574  0C38  9FC0 00FC            STB   $B1,CBRT+1
002575  0C3A  0F97                B     >INTMX
002576                    *    HERE IF 7760,7765
002577        0C3B        INTMG   EQU   $
002578                    *    HERE IF 7700
002579  0C3B  E600 0C69    INTMF   LDR   $R6,<BDRATE
002580  0C3D  EF40 000E            STR   $R6,POLADR
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002581  0C3F  E970 001F            CMR   $R6,=31
002582  0C41  0300 0C48            BG    <ADER
002583  0C43  6C01                 LDV   $R6,=1
002584  0C44  EF00 0C4D            STR   $R6,<SYNFLG
002585  0C46  0F81 0026            B     IPARSY
002586                        *
002587  0C48  BB80 0D01      ADER  LAB   $B3,<IADER
002588  0C4A  0F80 0AC8            B     <IPARB
002589                        *
002590                        *
002591  0C4C  0000            POLADR DC   0
002592  0C4D  0000            SYNFLG DC   0
002593  0C4E  0000            POLFLG DC   0
002594  0C4F  0000            NPLFLG DC   0
002595  0C50  0000            PTRFLG DC   0
002596                        *
002597  0C51  0F80 0C51      INTMX  B     <INTMX                RETURN TO CALLER
002598  0C53  C840 0006            LDR   $R4,TMNASC+1
002599  0C55  D840 0005            LDR   $R5,TMNASC+2
002600  0C57  0F81 FF57            B     INTMA1
002601                        *
002602  0C59  2020 3731 3030 TMNASC TEXT   '  7100$'
        0C5C  2400
002603  0C5D  5445 524D 2054 TMNTYP TEXT   'TERM TYPE::$'
        0C60  5950 453A 3A24
002604                        *
002605  0C63  4241 5544 2052 BDRTQ  TEXT   'BAUD RATE::$'
        0C66  4154 453A 3A24
002606  0C69  04B0           BDRATE RESV   1,1200                BAUD RATE
002607  0C6A  2020 3F3A 2400 QUES   TEXT   '  ?:$'
002608                        *
002609                        *CHECK VALIDITY OF PARMETER INPUT FOR SYNC TERMINALS
002610                        *
002611                        *
002612  0C6D  9800 0A4B      IPARSY LDR   $R1,<CHSIZE
002613  0C6F  1048                 SUR   $R1,8
002614  0C70  9A70 2000            ADD   $R1,=X'2000'
002615  0C72  9F00 0A6B            STR   $R1,<MOD+2
002616  0C74  9970 204E            CMR   $R1,=X'204E'          N NONPOL
002617  0C76  0900 0C7F            BE    <NONPOL
002618  0C78  9970 2050            CMR   $R1,=X'2050'          P POLL
002619  0C7A  0916                 BE    >POLL
002620  0C7B  BB80 0D19            LAB   $B3,<MODERR
002621  0C7D  0F80 0AC8            B     <IPARB
002622        0C7F                NONPOL EQU  $
002623  0C7F  9F00 0C4F            STR   $R1,<NPLFLG
002624  0C81  9870 1C01            LDR   $R1,=X'1C01'
002625  0C83  9F00 1202            STR   $R1,<SELCHK
002626  0C85  9870 0001            LDR   $R1,=X'01'
002627  0C87  9F00 1203            STR   $R1,<SELCHK+1
002628  0C89  9F00 1204            STR   $R1,<SELCHK+2
002629  0C8B  9F00 1205            STR   $R1,<SELCHK+3
002630  0C8D  9F00 1206            STR   $R1,<SELCHK+4
002631  0C8F  0F80           T     B     >+$A
002632        0C90                POLL  EQU   $
002633  0C90  9F00 0C4E            STR   $R1,<POLFLG
002634  0C92  9800 1202            LDR   $R1,<SELCHK
002635  0C94  9970 1C86            CMR   $R1,=Z'1C86'
002636  0C96  0979           T     BE    >+$A
002637  0C97  9870 1C86            LDR   $R1,=Z'1C86'
002638  0C99  9F00 1202            STR   $R1,<SELCHK
002639  0C9B  9870 6010            LDR   $R1,=Z'6010'
002640  0C9D  9F00 1203            STR   $R1,<SELCHK+1
002641  0C9F  9870 9741            LDR   $R1,=Z'9741'
002642  0CA1  9F00 1204            STR   $R1,<SELCHK+2
002643  0CA3  9870 9641            LDR   $R1,=Z'9641'
002644  0CA5  9F00 1205            STR   $R1,<SELCHK+3
002645  0CA7  9870 271B            LDR   $R1,=Z'271B'
002646  0CA9  9F00 1206            STR   $R1,<SELCHK+4
002647  0CAB  9840 FDA6      $A    LDR   $R1,SBITS
002648  0CAD  9F40 FDC7            STR   $R1,CLK+2
002649  0CAF  9970 4C36            CMR   $R1,=X'4C36'          L6
002650  0CB1  0900           T     BE    >+$B
002651  0CB2  1048                 SUR   $R1,8
002652  0CB3  9A70 2000            ADD   $R1,=X'2000'
002653  0CB5  9F40 FDBF            STR   $R1,CLK+2
002654  0CB7  9970 2054            CMR   $R1,=X'2054'          T
002655  0CB9  0900 0AFA            BE    <DTS
002656  0CBB  BB80 0D0E            LAB   $B3,<CLKERR
002657  0CBD  0F80 0AC8            B     <IPARB
002658  0CBF  9800 11B9      $B    LDR   $R1,<DTS1
002659  0CC1  9970 C6C9            CMR   $R1,=Z'C6C9'
002660  0CC3  0900 0CDD            BE    <DP
002661  0CC5  9870 C6C9            LDR   $R1,=Z'C6C9'
002662  0CC7  9F00 11B9            STR   $R1,<DTS1
002663  0CC9  9870 C920            LDR   $R1,=Z'C920'
002664  0CCB  9F00 1371            STR   $R1,<DTS6+1
002665  0CCD  9870 C9BD            LDR   $R1,=Z'C9BD'
002666  0CCF  9F00 1302            STR   $R1,<DTS5+1
002667  0CD1  9870 8ABD            LDR   $R1,=Z'8ABD'
002668  0CD3  9F00 123C            STR   $R1,<DTS4+1
002669  0CD5  9870 C68A            LDR   $R1,=Z'C68A'
002670  0CD7  9F00 125F            STR   $R1,<DTS3
002671  0CD9  9870 CB01            LDR   $R1,=Z'CB01'
002672  0CDB  9F00 122C            STR   $R1,<DTS2+1
002673  0CDD  9840 FD7D      DP    LDR   $R1,APARIT+2
002674  0CDF  9F40 FD9F            STR   $R1,DPC+2
002675  0CE1  9570 00DF            AND   $R1,=X'DF'
002676  0CE3  9970 0044            CMR   $R1,=X'44'            D FOR DISPLAY ADDRESS
002677  0CE5  0901 000D            BE    DISA
002678  0CE7  9970 0050            CMR   $R1,=X'50'            P FOR PRNT ADDRESS
002679  0CE9  0901 000D            BE    PRTA
002680  0CEB  9970 0043            CMR   $R1,=X'43'            C FOR CASSETTS
002681  0CED  0901 000D            BE    CSTA
002682  0CEF  BB80 0D25            LAB   $B3,<DERR
002683  0CF1  0F80 0AC8            B     <IPARB                PRINT ERROR
002684                        *
002685  0CF3  9870 601D      DISA  LDR   $R1,=Z'601D'
002686  0CF5  0F81 0007            B     ST
002687  0CF7  9870 681D      PRTA  LDR   $R1,=Z'681D'
002688  0CF9  0F81 0003            B     ST
002689  0CFB  9870 701D      CSTA  LDR   $R1,=Z'701D'
002690  0CFD  9F40 FA34      ST    STR   $R1,PTLCTB
```

```
002691  0CFF  0F81 F410              B       NEXT
002692  0D01  494C 4C45 4741  TADER  TEXT    'ILLEGAL TERMINAL ADDRESS$'
        0D04  4C20 5445 524D
              494E 414C 2041
              4444 5245 5353
              2400
002693  0D0E  696C 6C65 6761  CLKERR TEXT    'ILLEGAL TIMING SOURCE$'
        0D11  6C20 7469 6D69
              6E67 2073 6F75
              7263 6524
002694  0D19  696C 6C65 6761  MODERR TEXT    'ILLEGAL OPERATION MODE$'
        0D1C  6C20 6F70 6572
              6174 696F 6E20
              6D6F 6465 2400
002695  0D25  494C 4C45 4741  DERR   TEXT    'ILLEGAL DIS/PRT/CST ADDRESS$'
        0D28  4C20 4449 532F
              5052 542F 4353
              5420 4144 4452
              4553 5324
002696                        *
002697                        *
002698                        *
002699                        *       CHECK IF BAUD RATE LEGAL
002700                        *
002701  0D33  8751            CBR    CL      =$R1                    USE AS INDEX
002702  0D34  9B80 0D58       CBRT   LAB     $B1,<LBTTY              LOAD TABLE ADDRESS
002703  0D36  A840 FF32              LDR     $R2,BDRATE              BAUD RATE INPUT
002704  0D38  B85D            CBRA   LDR     $R3,$B1,+$R1            LOAD VALUE
002705  0D39  B952                   CMR     $R3,=$R2                OK??
002706  0D3A  0903                   BE      >CBRB
002707  0D3B  3903                   BEZ     $R3,>CBRC
002708  0D3C  0FFC                   B       >CBRA                   CHECK ANOTHER ONE
002709                        *
002710  0D3D  8384            CBRB   JMP     $B4
002711                        *
002712  0D3E  BB80 0D44       CBRC   LAB     $B3,<CBRD
002713  0D40  C3C0 09A4              LNJ     $B4,TYPEC
002714  0D42  0F81 F3CD              B       NEXT
002715                        *
002716  0D44  494C 4C45 4741  CBRD   TEXT    'ILLEGAL BAUD RATE$'
        0D47  4C20 4241 5544
              2052 4154 4524
002717                        *
002718                        *    LEGAL BAUD RATE TABLE FOR TTY-R AND TTY-C
002719                        *
002720  0D4D  004B            LBTTRC DC      75
002721  0D4E  006E                   DC      110
002722  0D4F  0096                   DC      150
002723  0D50  012C                   DC      300
002724  0D51  0258                   DC      600
002725  0D52  04B0                   DC      1200
002726  0D53  0708                   DC      1800
002727  0D54  0960                   DC      2400
002728  0D55  12C0                   DC      4800
002729  0D56  2580                   DC      9600
002730  0D57  0000                   DC      0                       ZERO IS END OF TABLE
002731                        *
002732                        *
002733                        *     LEGAL BAUD RATE TABLE FOR THE TTY
002734                        *
002735  0D58  006E            LBTTY  DC      110
002736  0D59  0000                   DC      0
002737                        *
002738                        *    LEGAL BAUD RATE TABLE FOR THE SARA
002739                        *
002740  0D5A  006E            LBSARA DC      110
002741  0D5B  012C                   DC      300
002742  0D5C  04B0                   DC      1200
002743  0D5D  0000                   DC      0
002744                        *
002745                        *  LEGAL BAUD RATE TABLE FOR 7800
002746                        *
002747  0D5E  006E            LB7800 DC      110
002748  0D5F  0096                   DC      150
002749  0D60  012C                   DC      300
002750  0D61  0258                   DC      600
002751  0D62  04B0                   DC      1200
002752  0D63  0708                   DC      1800
002753  0D64  0960                   DC      2400
002754  0D65  12C0                   DC      4800
002755  0D66  2580                   DC      9600
002756  0D67  4B00                   DC      19200
002757  0D68  0000                   DC      0
002758                        *
002759                        *     LEGAL BAUD RATE TABLE FOR THE 7700,7760
002760                        *
002761  0D69  0000            LB7760 DC      0
002762                        *
002763                        *
002764                        *
002765                        * DELAY ROUTINE (R1 HAS NO. OF MILLSEC DELAY WANTED)
002766                        *
002767  0D6A  8F40 07DF       TMO    SAVE    SAV1,=Z'FFFF'
        0D6C  FFFF
002768  0D6D  1702                   BDEC    $R1,>TMOA
002769  0D6E  0F86                   B       >TMOD
002770  0D6F  A870 00B2       TMOA   LDR     $R2,=178
002771  0D71  2702            TMOB   BDEC    $R2,>TMOC
002772  0D72  0FF8                   B       >TMO
002773  0D73  0FFE            TMOC   B       >TMOB
002774  0D74  8FC0 07D5       TMOD   RSTR    SAV1,=Z'FFFF'
        0D76  FFFF
002775  0D77  8381                   JMP     $B1
002776                        *
002777                        *       ID ERROR ROUTINE
002778                        *
002779  0D78  DF40 07E1       IDERR  STR     $R5,SAV2                ID FOUND IS HERE
002780  0D7A  EF40 07CF              STR     $R6,SAV1                THIS IS THE ID WANTED
002781  0D7C  BB80 0E58              LAB     $B3,<ERA                LOAD MESSAGE ADDRESS
002782  0D7E  C3C0 0966              LNJ     $B4,TYPEC               GO TYPE EROR MESSAGE
002783  0D80  BB80 0D94              LAB     $B3,<IDBAD              TYPE MESSAGE:
002784  0D82  C3C0 0953              LNJ     $B4,TYPE                ADAPTER ID INCORRECT
002785  0D84  BB80 0D9F              LAB     $B3,<EXP
```

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002786  0D86  C3C0 095E              LNJ   $B4,TYPEC
002787  0D88  C3C0 0989              LNJ   $B4,HEXPRT
002788  0D8A  154A                   DC    <SAV1
002789  0D8B  BB80 0DA4              LAB   $B3,<ACT
002790  0D8D  C3C0 0957              LNJ   $B4,TYPEC
002791  0D8F  C3C0 0982              LNJ   $B4,HEXPRT
002792  0D91  155A                   DC    <SAV2
002793  0D92  0F81 F37D              B     NEXT
002794                        *
002795  0D94  6164 6170 7465  IDBAD TEXT  'ADAPTER ID INCORRECT$'
        0D97  7220 6964 2069
              6E63 6F72 7265
              6374 2400
002796  0D9F  6578 7065 6374  EXP   TEXT  'EXPECTED:$'
        0DA2  6564 3A24
002797  0DA4  6163 7475 616C  ACT   TEXT  'ACTUAL;$'
        0DA7  3A24
002798                        *
002799                        *     INPUT ID
002800                        *
002801  0DA8  C840 00A6        INID  LDR   $R4,CHAN          LOAD CHANNEL BEING USED
002802  0DAA  4E26                    ADV   $R4,=X'26'       ADV INPUT ID FUNCTION CODE
002803  0DAB  8055             $A     IO    =$R5,=$R4        INPUT THE ID
        0DAC  0054
002804  0DAD  07FE                    BIOF  >-$A
002805  0DAE  8383                    JMP   $B3
002806                        *
002807                        *
002808                        *
002809                        *
002810  0DAF  BB80 0DB5        REMLP LAB   $B3,<REMLOP
002811  0DB1  C3C0 0933              LNJ   $B4,TYPEC
002812  0DB3  0F81 FBA0              B     COUNTA
002813  0DB5  7265 6D6F 7665  REMLOP TEXT  'REMOVE LOOP$'
        0DB8  206C 6F6F 7024
002814                        *
002815                        *     INPUT ASCII PARAMETERS
002816                        *
002817  0DBB  9F40 0099        IASC  STR   $R1,RNG
002818  0DBD  8740 0089              CL    TEMP
002819  0DBF  8740 0088              CL    TEMP+1
002820                               CALL  ZV$IA,STAT,TEMP,RNG
        0DC1  FBC0 0003
        0DC3  D380 0000        X
        0DC5  0F80
        0DC6  0E54
        0DC7  0E47
        0DC8  0E55
002821  0DC9  8382                    JMP   $B2
002822                        *
002823                        *     INPUT HEX PARAMETERS
002824                        *
002825  0DCA  9F40 008A        IHEX  STR   $R1,RNG
002826  0DCC  8740 007A              CL    TEMP
002827                               CALL  ZV$IH,TEMP
        0DCE  FBC0 0003
        0DD0  D380 0000        X
        0DD2  0F80
        0DD3  0E47
002828  0DD4  8382                    JMP   $B2
002829                        *
002830                        *     INPUT DECIMAL PARAMETERS
002831                        *
002832  0DD5  9F40 007F        IDEC  STR   $R1,RNG
002833  0DD7  8740 006F              CL    TEMP
002834                               CALL  ZV$IH,ZV$ID,TEMP
        0DD9  FBC0 0003
        0DDB  D380 0000        X
        0DDD  0F80
        0DDE  0E47
002835  0DDF  8382                    JMP   $B2
002836                        *
002837  0DE0  6C6F 6F70 2072  LPREM TEXT  'LOOP REMOVED$'
        0DE3  656D 6F76 6564
              2400
002838                        *
002839  0DE7  BB80 0DF0        OOPS  LAB   $B3,<INPERR       COMMAND LINE ERROR
002840  0DE9  C3C0 08FB              LNJ   $B4,TYPEC
002841  0DEB  BCD2                   LDB   $B3,=$B2
002842  0DEC  C3C0 08E9              LNJ   $B4,TYPE
002843  0DEE  0F81 F321              B     NEXT
002844                        *
002845  0DF0  494E 5055 5420  INPERR TEXT  'INPUT ERROR:$'
        0DF3  4552 524F 523A
              2400
002846                        *
002847  0DF7  5445 524D 494E  TITLE TEXT  'TERMINALS TEST
        0DFA  414C 5320 5445
              5354 2020
002851  0DFF  5443 5343 3120  SLAF  TEXT  'TCSC1 REV B '
        0E02  5245 5620 4220
002852  0E05  204A 554C 5920  LLAF  TEXT  ' JULY 14 1976$'
        0E08  3134 2031 3937
              3824
002853  0E0C  636F 7079 7269          TEXT  'COPYRIGHT 1978 BY HONEYWELL IS INC.$'
        0E0F  6768 7420 3139
              3738 2062 7920
              686F 6E65 7977
              656C 6C20 6973
              2069 6E63 2E24
002854  0E1E  4E45 5854 2400  NXT   TEXT  'NEXT$'
002855  0E21  6163 7220 6672  EM1   TEXT  'ACK FROM ACU'
        0E24  6F6D 2061 6375
002856  0E27  636F 7320 6E6F  EM2   TEXT  'COS NOT RECD'
        0E2A  7420 7265 6364
002857  0E2D  2020 2074 696D  EM3   TEXT  '   TIMEOUT  '
        0E30  656F 7574 2020
002858  0E33  2064 6174 6120  EM4   TEXT  ' DATA ERROR '
        0E36  6572 726F 7220
002859  0E39  7465 7374 2066  EM5   TEXT  'TEST FAILED '
        0E3C  6169 6C65 6420
002860  0E3F  7878 3A20 7465  TCOMP TEXT  'XX; TEST COMP.$'
        0E42  7374 2063 6F6D
```

```
                  702E 2400
002861                        *
002862  0E47 0000             TEMP    RESV    6,0                 GENERAL WORK LOCATION
002863  0E4D 0000             TEST    RESV    1,0                 TEST TOEXECUTE
002864  0E4E 0000             BCHAN   RESV    1,0                 BASIC CHANNEL(NO LINES)
002865  0E4F 0000             CHAN    RESV    1,0                 CHANNEL TO TEST
002866  0E50 0000             MESG    RESV    1,0                 CANNED?
002867  0E51 0000             PASSES  RESV    1,0                 HOW MANY PASSES?
002868  0E52 0000             ERCD    RESV    1,0                 ERROR REPORTING METHOD
002869  0E53 0000             PCNT    RESV    1,0                 PASS COUNTER
002870  0E54 0000             STAT    RESV    1,0                 STATUS INPUT FROM CONSOLE
002871  0E55 0000             RNG     RESV    1,0                 RANGE
002872  0E56 0000             MESGT   RESV    1,0                 0=CANNED;1=OPER INPUT MESSAGE
002873  0E57 0000             ERCT    RESV    1,0                 ERROR COUNTER
002874  0E58 7678 3A24         ERA     TEXT    'XX;$'
002875  0E5A 0000             DIALNO  RESV    16,0                PHONE NUMBER TO CALL
002876  0E6A 0014             OPMRGB  RESV    1,20                BYTE RANGE OF OPERATOR MESSAGE
002877  0E6B 000A             OPMRNG  RESV    1,10                RANGE FOR OPERATOR INPUT MESSAGE
002878  0E6C 0009             RRANGE  DC      9                   REAL RANGE IN WORDS
002879  0E6D 0012             RRANGB  DC      18.                 REAL RANGE IN BYTES
002880  0E6E 0000             RCVRNB  DC      0                   RECEIVE RANGE IN BYTES
002881  0E6F 0000             RCVRNG  DC      0                   RECEIVE RANGE IN WORDS
002882  0E70 6E75 6D62 6572   PHNO    TEXT    'NUMBER $'
        0E73 2024
002883                        *
002884  0E74 0D0A             CANNED  TEXT    Z'0D0A'
002885  0E75 5448 4520 5155           TEXT    'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
        0E78 4943 4B20 4252
             4F57 4E20 464F
             5820 4A55 4D50
             5320 204F 5645
             5220 4120 4C41
             5A59 2044 4F47
002886  0E8A 0D0A                 TEXT    Z'0D0A'
002887  0E8B 7468 6520 7175           TEXT    'THE QUICK BROWN FOX JUMPS  OVER A LAZY DOG'
        0E8E 6963 6B20 6272
             6F77 6E20 666F
             7820 6A75 6D70
             7320 206F 7665
             7220 6120 6C61
             7A79 2064 6F67
002888  0EA0 0D0A                 TEXT    Z'0D0A'
002889  0EA1 2122                 TEXT    '!"'
002890  0EA2 23A4                 TEXT    Z'23A4'             BLIND LIBRARY TO $ (24)
002891  0EA3 2526                 TEXT    '%&'
002892  0EA4 2728                 TEXT    Z'2728'             '( CHARACTERS
002893  0EA5 292A 2B2C 2D2E       TEXT    ')*+,-./0123456789:;<=>?@@\@]'
        0EA8 2F30 3132 3334
             3536 3738 393A
             3B3C 3D3E 3F40
             5B5C 5D5E
002894  0EB3 5F60                 TEXT    Z'5F60'             ASMBLER TREATS REVERSE GRAVE (60) LIKE $ (24)
002895  0EB4 7B7C 7D7E            TEXT    '@@@@'
002896  0EB6 0000                 DC      0                   NEEDED TO END PRINT TO CONSOLE
002897  0EB7 0D0A 494E 5055   GOMSG   TEXT    Z'0D0A','INPUT:'
        0EBA 543A
002898  0EBB 0D0A             OPMESP  TEXT    Z'0D0A'
002899  0EBC 552A             OPMESG  RESV    9,A'U*'             OPERATOR INPUT MESSAGE
002900  0EC5 0000                     DC      0
002901  0EC6 0D0A                     TEXT    Z'0D0A'             LC WITH DEFAULT OPMESG
002902  0EC7 494E 5055 543A           TEXT    A'INPUT:'
002903  0ECA 0D0A                     TEXT    Z'0D0A'
002904  0ECB 0000                     RESV    153,0               EXTRA WORD FOR POSSIBLE X00 TO END MESSAGE.
002905                        *
002906                        *
002907                        *
002908                        *
002909                        * GIVE  CHANNEL CCB LIST RESET
002910                        *
002911  0F64 8F00 155A         CCBRST  SAVE    <SAV2,=Z'0008'      B4
        0F66 0008
002912  0F67 C840 FEE7                 LDR     $R4,CHAN
002913  0F69 4E05                      ADV     $R4,=5
002914  0F6A 8070 0100                 IO      =Z'0100',=$R4       CCB  RESET
        0F6C 0054
002915  0F6D 0700                T     BIOT    >+$A
002916  0F6E B3C0 0131                 LNJ     $B3,ERRMB
002917  0F70 4348 414E 4E45           TEXT    'CHANNEL CCB RESET FAILED$'
        0F73 4C20 4343 4220
             5245 5345 5420
             4641 494C 4544
             2400
002918  0F7D C840 FED1         $A      LDR     $R4,CHAN
002919  0F7F C570 FFBF                 AND     $R4,=Z'FFBF'
002920  0F81 4E05                      ADV     $R4,5
002921  0F82 8070 0100                 IO      =Z'0100',=$R4       CCB RESET ON RECV CHCN.
        0F84 0054
002922  0F85 0701 00C3                 BIOT    11Z
002923  0F87 B3C0 0118                 LNJ     $B3,ERRMB
002924  0F89 5245 4356 2043           TEXT    'RECV CHAN CCB RESET FAILED$'
        0F8C 4841 4E20 4343
             4220 5245 5345
             5420 4641 494C
             4544 2400
002925                        *
002926                        * GET DATA SET STATUS
002927                        *
002928  0F97 8F40 05B2         IDSS    SAVE    SAV1,=Z'0008'       $B4
        0F99 0008
002929  0F9A C800 1548                 LDR     $R4,<CONT12         CONTROL WORD FOR INPUT DATA SET STATUS
002930  0F9C 8055                      IO      =$R5,=$R4
        0F9D 0054
002931  0F9E 0F01 FFFF                 NOP     $
002932  0FA0 0700                T     BIOT    >+$A
002933  0FA1 B380 10A0                 LNJ     $B3,<ERRMB
002934  0FA3 494E 5055 5420           TEXT    'INPUT DATA SET STATUS REJECTED$'
        0FA6 4441 5441 2053
             4554 2053 5441
             5455 5320 5245
             4A45 4354 4544
             2400
002935  0FB3 9840 FE99         $A      LDR     $R1,TEST
002936  0FB5 9970 4453                 CMR     $R1,=X'4453'        DS TEST
```

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002937  0FB7  0900 0505                    BE      <STCK
002938  0FB9  82D5                         LB      =$R5,=Z'8000'
        0FBA  8000
002939  0FBB  0500              T          BBT     >+$B
002940  0FBC  B380 10A0                    LNJ     $B3,<ERRMB
002941  0FBE  4441 5441 2053               TEXT    'DATA SET STATUS IS NOT GOOD, CHECK LINE CONNECTION AND DEVICES$'
        0FC1  4554 2053 5441
              5455 5320 4953
              204E 4F54 2047
              4F4F 442C 2043
              4845 434B 204C
              494E 4520 434F
              4E4E 4543 5449
              4F4E 2041 4E44
              2044 4556 4943
              4524
002942                                     *
002943  0FDD  82D5                   $B    LB      =$R5,=Z'0100'
        0FDE  0100
002944  0FDF  0580              T          BBF     >+$B
002945  0FE0  B380 10A0                    LNJ     $B3,<ERRMB
002946  0FE2  4652 414D 494E               TEXT    'FRAMING ERROR/XMIT UNDERRUN HAS OCCURED, CHECK LINE CONNECTION$'
        0FE5  4720 4552 524F
              522F 584D 4954
              2055 4E44 4552
              5255 4E20 4841
              5320 4F43 4355
              5245 442C 2043
              4845 434B 204C
              494E 4520 434F
              4E4E 4543 5449
              4F4E 2400
002947                                     *
002948  1002  82D5                   $B    LB      =$R5,=Z'0200'
        1003  0200
002949  1004  0580              T          BBF     >+$B
002950  1005  B380 10A0                    LNJ     $B3,<ERRMB
002951  1007  5245 4345 4956               TEXT    'RECEIVE OVERRUN HAS OCCURED$'
        100A  4520 4F56 4552
              5255 4E20 4841
              5320 4F43 4355
              5245 4424
002952                                     *
002953                                     *
002954                                     * GET LCT BYTE ADDRESS BY LCT 55 INTO $R5
002955                                     *
002956  1015  8F40 0534                    ILCT    SAVE    SAV1,=Z'0008'           $B4
        1017  0008
002957  1018  C800 1546                            LDR     $R4,<CONT10             CONTROL WORD FOR INPUT LCT
002958  101A  0F01 FFFF                            NOP     $
002959  101C  0F01 FFFF                            NOP     $
002960  101E  8055                                IO      =$R5,=$R4
        101F  0054
002961  1020  0764              T          BIOT    >+$B
002962  1021  B380 10A0                    LNJ     $B3,<ERRMB
002963  1023  494E 5055 5420               TEXT    'INPUT LCT IS REJECTED$'
        1026  4C43 5420 4953
              2052 454A 4543
              5445 4424
002964  102E  8FC0 051B                   $B    RSTR    SAV1,=Z'0008'
        1030  0008
002965  1031  8384                               JMP     $B4
002966                                     *
002967                                     * GIVE DLCP GENERAL INITIALIZE
002968                                     *
002969  1032  8F00 155A                    GENITZ  SAVE    <SAV2,=Z'0008'          B4
        1034  0008
002970  1035  C840 FE19                            LDR     $R4,CHAN
002971  1037  4E01                                ADV     $R4,=1
002972  1038  8070 8000                            IO      =Z'8000',=$R4           INITIALIZE
        103A  0054
002973  103B  070E                                BIOT    >ITZ
002974  103C  B3C0 0063                           LNJ     $B3,ERRMB
002975  103E  444C 4350 2047               TEXT    'DLCP GEN INIT FAILED$'
        1041  454E 2049 4E49
              5420 4641 494C
              4544 2400
002976                                     *
002977  1049  8F80 155A                    ITZ     RSTR    <SAV2,=Z'0008'
        104B  0008
002978  104C  8384                               JMP     $B4
002979                                     *
002980                                     * SET LCT TABLE
002981                                     *
002982  104D  8F40 050C                    LCTRCV  SAVE    SAV2,=Z'E8E0'
        104F  E8E0
002983  1050  C840 04F0                            LDR     $R4,CONT5
002984  1052  C570 FFBF                            AND     $R4,=Z'FFBF'
002985  1054  CF40 FDF2                            STR     $R4,TEMP
002986  1056  0F8A                                B       >LCT2
002987  1057  B840 FDF7                    SETLCT  LDR     $R3,CHAN
002988  1059  8F40 0500                            SAVE    SAV2,=Z'E8E0'
        105B  E8E0
002989  105C  C840 04E4                            LDR     $R4,CONT5
002990  105E  CF40 FDE8                            STR     $R4,TEMP
002991  1060  9CF3                     LCT2    LDB     $B1,+$B3
002992  1061  8751                             CL      =$R1
002993                                     *
002994  1062  A85D                     LCT4    LDR     $R2,$B1,+$R1
002995  1063  2985                             BNEZ    $R2,>LCT5
002996  1064  8FC0 04F5                        RSTR    SAV2,=Z'E8E0'
        1066  E8E0
002997  1067  8383                             JMP     $B3
002998                                     *
002999  1068  C840 FDDE                    LCT5    LDR     $R4,TEMP
003000  106A  8052                         LCT3    IO      =$R2,=$R4
        106B  0054
003001  106C  07FE                                BIOF    >LCT3
003002  106D  0FF5                                B       >LCT4
003003                                     *
003004                                     * OUTPUT CHANNEL CONTROL
003005                                     *
003006                                     *   LNJ  $B4,CHCT
```

```
003007                                  *    B  >$+2         RETURN
003008                                  *    DC   XX         XX = CHANNEL CONTROL
003009                                  *
003010  106E 8F40 04EB                  CHCTR  SAVE   SAV2,=Z'0C0D'
        1070 0C0D
003011  1071 C840 04D1                         LDR    $R4,CONT7
003012  1073 C570 FFBF                         AND    $R4,=Z'FFBF'
003013  1075 CF40 FDD1                         STR    $R4,TEMP
003014  1077 0F88                              B      >CHCTA
003015  1078 8F00 155A                  CHCT   SAVE   <SAV2,=Z'0C0D'       R4,R5,B5,B7,B4
        107A 0C0D
003016  107B C840 04C7                         LDR    $R4,CONT7
003017  107D CF40 FDC9                         STR    $R4,TEMP
003018  107F D874                      CHCTA  LDR    $R5,+$B4             DUMMY
003019  1080 D874                             LDR    $R5,+$B4             GET CONTROL WORD
003020  1081 C800 0E47                         LDR    $R4,<TEMP            FUN CODE FOR CCB CONTROL
003021  1083 8055                             IO     =$R5,=$R4            OUTPUT CCB CONTROL
        1084 0054
003022  1085 0717                             BIOT   >CHZ
003023  1086 B380 10A0                        LNJ    $B3,<ERRMB           ERROR IO WAS NAK'ED
003024  1088 444C 4350 204F                    TEXT   'DLCP OUTPUT CCB CONTROL IO WAS REJECTED$'
        108B 5554 5055 5420
             4343 4220 434F
             4E54 524F 4C20
             494F 2057 4153
             2052 454A 4543
             5445 4424
003025                                  *
003026  109C 8F80 155A                  CHZ    RSTR   <SAV2,=Z'0C0D'
        109E 0C0D
003027  109F 8384                              JMP    $B4
003028                                  *
003029                                  *
003030                                  *  TO CALL:
003031                                  *       LNJ $B3,ERRMB
003032                                  *       TEXT 'NON-RECOVERABLE-ERROR MESSAGE'
003033                                  *
003034  10A0                            ERRMB  RESV   0
003035  10A0 8F40 04D9                         SAVE   SAV5,=Z'FFFF'
        10A2 FFFF
003036  10A3 C3C0 0641                         LNJ    $B4,TYPEC            PRINT ERR MSG FOLLOWING LNJ-TO-ERRMB
003037  10A5 0F81 F06A                         B      NEXT
003038                                  *
```

```
003039                                  /
003040                                  *CHANNEL PROGRAM GOES HERE
003041                                  *
003042                                  *
003043                                  *       ORG     X'400'
003044          10A7                    ELC     EQU     $
003045                                  *       LOC     ELC1
003046          0400                    ELC1    EQU     X'0400'
003047                                  *       NOP
003048                                  *       NOP
003049  10A7    0101
003050                                  *       LD      =X'C0'          DATA TERMINAL READY ON
003053  10A8    C6C0
003054                                  *       OUT     2
003055  10A9    BD30
003056                                  *       NOP
003059  10AA    2801
003060                                  *       GNB
003061  10AB    BD31
003062                                  *       NOP
003063  10AC    2001
003064                                  *
003065                                  *
```

```
003066                          /********************
003067                          *
003068                          *  LOOP A MESSAGE AT LINE ADAPTER
003069                          *
003070                          *       ORG     X'0200'
003071          10AD            LMAA    EQU     $
003072                          *
003073                          *       LOC     HLP1
003074          0200            HLP1    EQU     X'0200'
003075                          *       LD      52              GET LINE SPEED 8ASYNC) OR SYNC CHAR (SYNC)
003076  10AD    D634
003079                          *       OUT     4
003080  10AE    BD30
003083                          *       RECV    0               DUMMY RECV
003084  10AF    30BD
003087  10B0    3060
003088                          *       LD      20              LINE CONTROL
003091  10B1    D614
003092                          *       OUT     2
003093  10B2    BD30
003096                          *       WAIT
003097  10B3    28BD
003098  10B4    3100
003099                          *       LD      28              SYNC FLG IF ZERO LINE IS ASYNC
003102  10B5    D61C
003103                          *       BZT     CKST
003104  10B6    5D27
003107                          *       LOC     TRNX
003108          0215            TRNX    EQU     X'0215'
003109                          *       RECV    0               1ST SYNC
003110  10B7    29BD
003113  10B8    3060
003114                          *       WAIT
003115  10B9    BD31
003116                          *       RECV    0               2ND SYNC
003117  10BA    00BD
003120  10BB    3060
003121                          *       C       52
003122                          *T6LCT      BYTE        1,X'96'         LDAA,D
003125  10BC    9634
003126  10BD    1097
003127                          *       BET     INSY
003128  10BE    4196
003129  10BF    4127
003132                          *       LD      20
003133  10C0    0ED6
003136                          *       AND     =X'FD'
003137  10C1    14C4
003140                          *       OUT     2
003141  10C2    FDBD
003144  10C3    3028
003145                          *       LD      20
003148  10C4    D614
003149                          *       OUT     2
003150  10C5    BD30
003153                          *       B       TRNX
003154  10C6    2820
003157                          *       LOC     INSY
003158          0235            INSY    EQU     X'0235'
003159                          *       WAIT
003160  10C7    E0BD
003161  10C8    3100
003162                          *       RECV    0               FINAL SYNC
003163  10C9    BD30
003166                          *       WAIT
003167  10CA    60BD
003168  10CB    3100
003169                          *       LOC     CKST
003170          023E            CKST    EQU     X'023E'
003171                          *       RECV    0               RECV FIRST CHAR.
003172  10CC    BD30
003175                          *       C       =X'0D'
003176  10CD    6086
003179  10CE    0D10
003180  10CF    9741
003181                          *       BET     GETC0           SEE IF START OF DATA OR SYNC.
003182  10D0    9641
003185  10D1    2708
003186                          *       WAIT
003187  10D2    BD31
003188                          *       B       CKST
003189  10D3    0020
003192                          *       LOC     GETC
003193          024F            GETC    EQU     X'024F'
003194                          *       RECV    0
003195  10D4    EFBD
003198  10D5    3060
003199                          *       LOC     GETC0
003200          0252            GETC0   EQU     X'0252'
003201                          *       ST      ,STRE
003202  10D6    BD30
003203                          *       C       =X'19'          PAD EOM
003204  10D7    C086
003207  10D8    1910
003208  10D9    9741
003209                          *       BET     HLP1A
003210  10DA    9641
003213  10DB    2709
003214                          *       BLCT    HLP1A
003215  10
003218  10DD    2705
003219                          *       LOC     GETC1
003220          0262            GETC1   EQU     X'0262'
003221                          *       WAIT
003222  10DE    BD31
003223                          *       B       GETC
003224  10DF    0020
003227                          *       LOC     HLP1A
003226          0267            HLP1A   EQU     X'0267'
003229                          *       LD      =X'C0'
003230  10E0    E8C6
003233                          *       OUT     2               TURN OFF RECE.
003234  10E1    C0BD
```

```
003237  10E2  3028
003238                    *       GNB
003239  10E3  BD31
003240                    *       LOC     NOP
003241          026F      NOP     EQU     X'026F'
003242                    *       WAIT
003243  10E4  20BD
003244  10E5  3100
003245                    *       NOP
003246                    *       B       NOP
003247  10E6  0120
003250                    *       NOP
003251  10E7  FA01
003252                    *
003253                    * CHANNEL PROGRAM FOR LOOP AT LINE ADAPT (XMIT)
003254                    *       LOC     LP1A
003255          0276      LP1A    EQU     X'0276'
003256                    *       LD      34                      LINE CONFIG.
003259  10E8  D622
003260                    *       OUT     6
003261  10E9  BD30
003264                    *       LD      =X'16'
003265  10EA  38C6
003268                    *       OUT     4
003269  10EB  16BD
003272  10EC  3030
003273                    *       WAIT
003274  10ED  BD31
003275                    *       LD      28                      SYNC FLAG
003276  10EE  00D6
003279                    *       BZT     LP1ABD
003280  10EF  1C5D
003283  10F0  2714
003284                    *       LD      =6
003287  10F1  C606
003288                    *       LOC     XMSY
003289          028A      XMSY    EQU     X'028A'
003290                    *       ST      63
003293  10F2  D73F
003294                    *       LD      52                      SYNC CHAR.
003297  10F3  D634
003298                    *       SEND    0
003299  10F4  BD30
003302                    *       LD      63
003303  10F5  40D6
003306                    *       DEC     DO                      SIX TIMES
003307  10F6  3F5A
003308                    *       BZT     LP1AA
003309  10F7  5D27
003312                    *       WAIT
003313  10F8  0FBD
003314  10F9  3100
003315                    *       B       XMSY
003318  10FA  20EE
003319                    *       LOC     LP1ABD
003320          029C      LP1ABD  EQU     X'029C'
003321                    *       LD      ,DMA                    XFER
003322  10FB  BD30
003323                    *       SEND    0
003324  10FC  A0BD
003327  10FD  3040
003328                    *       BLCT    LP1AB
003329  10FE  DE63
003332  10FF  2705
003333                    *       LOC     LP1AA
003334          02A6      LP1AA   EQU     X'02A6'
003335                    *       WAIT
003336  1100  BD31
003337                    *       B       LP1ABD
003338  1101  0020
003341                    *       LOC     LP1AB
003342          02AB      LP1AB   EQU     X'02AB'
003343                    *       WAIT
003344  1102  F1BD
003345  1103  3100
003346                    *       LD      =X'04'
003349  1104  C604
003350                    *       SEND    0
003351  1105  BD30
003354                    *       WAIT
003355  1106  40BD
003356  1107  3100
003357                    *       LD      =X'19'                  PAD 1 EOM
003360  1108  C619
003361                    *       SEND    0
003362  1109  BD30
003365                    *       WAIT
003366  110A  40BD
003367  110B  3100
003368                    *       SEND    0                       PAD 2
003369  110C  BD30
003372                    *       WAIT
003373  110D  40BD
003374  110E  3100
003375                    *       LD      =X'19'                  PAD 3
003378  110F  C619
003379                    *       SEND    0
003380  1110  BD30
003383                    *       LOC     LP1AC1
003384          02C9      LP1AC1  EQU     X'02C9'
003385                    *       NOP
003386  1111  4001
003387                    *       LD      30                      TURN OFF XMIT ,C2 FOR LX  C6 FOR LA TEST
003390  1112  D61E
003391                    *       OUT     2
003392  1113  BD30
003395                    *       WAIT
003396  1114  28BD
003397  1115  3100
003398                    *       GNB
003399  1116  BD31
003400                    *       LOC     NOP1
003401          02D5      NOP1    EQU     X'02D5'
```

```
003402                          *       WAIT
003403  1117  20BD
003404  1118  3100
003405                          *       NOP
003406                          *       B       NOP1
003407  1119  0120
003410                          *       NOP
003411  111A  FA01
003412                          *
003413        111B              AD11    EQU     $
```

```
003414                                  /
003415                                  *
003416                                  * CHANNEL PROGRAM TO WRITE DATA TO A TERMINAL
003417                                  *
003418                                  *       ORG     X'400'
003419          111B                    TTA     EQU     $
003420                                  *       LOC     TTAA
003421          0400                    TTAA    EQU     X'0400'
003422                                  *       LD      52                      BAUD RATE
003425  111B    D634
003426                                  *       OUT     4
003427  111C    BD30
003430                                  *       LD      34                      CHAR.CONFIGURATION
003431  111D    30D6
003434                                  *       OUT     6
003435  111E    22BD
003438  111F    3038
003439                                  *       LD      =X'0'
003442  1120    C600
003443                                  *       OUT     1
003444  1121    BD30
003447                                  *       OUT     1                       CLEAR OUT XMIT LR1
003448  1122    24BD
003451  1123    3024
003452                                  *       LD      20                      LCT 20 LINE CONTROL ,XMIT ON
003455  1124    D614
003456                                  *       OUT     2
003457  1125    BD30
003460                                  *       NOP
003461  1126    2601
003462                                  *       GNB
003463  1127    BD31
003464                                  *       WAIT
003465  1128    20BD
003466  1129    3100
003467                                  *       LOC     TTA0
003468          041E                    TTA0    EQU     X'041E'
003469                                  *       NOP
003470                                  *       NOP
003471  112A    0101
003472                                  *       NOP
003473                                  *       LD      =X'0D'                  CR
003474  112B    01C6
003477                                  *       SEND    2
003478  112C    00BD
003481  112D    3050
003482                                  *       WAIT
003483  112E    BD31
003484                                  *       LD      X'0A'                   L/F
003485  112F    00D6
003488                                  *       SEND    2
003489  1130    0ABD
003492  1131    3050
003493          1132                    TTA1    EQU     $
003494                                  *       WAIT
003495  1132    BD31
003496                                  *       NOP
003497  1133    0001
003498                                  *       NOP
003499                                  *       LOC     TTB
003500          0433                    TTB     EQU     X'0433'
003501                                  *       LD
003502  1134    01BD
003503  1135    30A0
003504                                  *       AND     =X'7F'                  STRIP EXTRA BIT IN $ SIGN
003507  1136    C47F
003508                                  *       SEND    2
003509  1137    BD30
003512                                  *       WAIT
003513  1138    50BD
003514  1139    3100
003515                                  *       BLCT    TTC
003516  113A    DE63
003519  113B    2702
003520                                  *       B       TTB
003523  113C    20EF
003524                                  *       LOC     TTC
003525          0444                    TTC     EQU     X'0444'
003526                                  *       LD      =X'7F'                  PAD
003529  113D    C67F
003530                                  *       SEND    2
003531  113E    BD30
003534                                  *       WAIT
003535  113F    50BD
003536  1140    3100
003537                                  *       SEND    2
003538  1141    BD30
003541                                  *       LD      =X'C0'
003542  1142    50C6
003545                                  *       OUT     2
003546  1143    C0BD
003549  1144    3028
003550                                  *       LD      X'30'
003553  1145    D630
003554                                  *       AND     =X'BF'
003557  1146    C4BF
003558                                  *       ST      X'30'
003561  1147    D730
003562                                  *       GNB
003563  1148    BD31
003564                                  *       WAIT
003565  1149    20BD
003566  114A    3100
```

```
003567                                  /
003568                                  *
003569                                  * CHANNEL PROGRAM TO RECEIVE DATA FROM A TERMINAL
003570                                  *
003571                                  *       ORG     X'200'
003572          114B                    RTA     EQU     $
003573                                  *       LOC     RTAA
003574          0200                    RTAA    EQU     X'0200'
003575                                  *       LD      20
003578  114B  D614
003579                                  *       OUT     4
003580  114C  BD30
003583                                  *       LD      2
003584  114D  30D6
003587                                  *       OUT     6
003588  114E  02BD
003591  114F  3038
003592                                  *       LD      30                      LK TEST FLAG
003595  1150  D61E
003596                                  *       BZF     LKAA
003597  1151  5D26
003600                                  *       IN      1                       CLEAR LR1
003601  1152  42BD
003604  1153  3004
003605                                  *       NOP
003606                                  *       LD      =X'C2'
003607  1154  01C6
003610                                  *       OUT     2
003611  1155  C2BD
003614  1156  3028
003615                                  *       WAIT
003616  1157  BD31
003617                                  *       LOC     RTB
003618          021B                    RTB     EQU     X'021B'
003619                                  *       WAIT
003620  1158  00BD
003621  1159  3100
003622          115A                    RTA1    EQU     $
003623                                  *       RECV    2
003624  115A  BD30
003627                                  *       ST      60
003628  115B  70D7
003631                                  *       AND     =X'7F'
003632  115C  3CC4
003635                                  *       ST
003636  115D  7FBD
003637  115E  30C0
003638                                  *       BLCT    REXHI
003639  115F  DE63
003642  1160  273E
003643                                  *       LD      =X'C1'
003646  1161  C6C1
003647                                  *       OUT     2
003648  1162  BD30
003651                                  *       LD      60
003652  1163  28B6
003655          1164                    LNK     EQU     $
003656                                  *       AND     =X'7F'
003657  1164  3CC4
003660                                  *       C       28                      0D FOR RT TEST  FF FOR LK TEST
003661                                  *TBLCT      BYTE        1,X'96'             LDAA,B
003662  1165  7F96
003665  1166  1C10
003666  1167  9741
003667                                  *       BEF     RTB
003668  1168  9641
003671  1169  26DD
003672                                  *       LD      28
003675  116A  D61C
003676                                  *       ST      60
003679  116B  D73C
003680                                  *       LD      =X'C1'
003683  116C  C6C1
003684                                  *       OUT     2
003685  116D  BD30
003688                                  *       NOP
003689  116E  2801
003690                                  *       GNB
003691  116F  BD31
003692                                  *       LOC     WT4
003693          024B                    WT4     EQU     X'024B'
003694                                  *       WAIT
003695  1170  20BD
003696  1171  3100
003697                                  *       NOP
003698                                  *       B       WT4
003699  1172  0120
003702                                  *
003703                                  *       LOC     LKAA
003704          0251                    LKAA    EQU     X'0251'
003705                                  *       LD      =X'C2'                  RECV ON
003706  1173  FAC6
003709                                  *       OUT     2
003710  1174  C2BD
003713  1175  3028
003714                                  *       LOC     LKA0
003715          0256                    LKA0    EQU     X'0256'
003716                                  *       WAIT
003717  1176  BD31
003718                                  *       RECV    0
003719  1177  00BD
003722  1178  3060
003723                                  *       C       =X'0D'
003726  1179  860D
003727  117A  1097
003728                                  *       BEF     LKA0
003729  117B  4196
003730  117C  4126
003733                                  *       ST      ,DMA                    XFER
003734  117D  F1BD
003735  117E  30C0
003736                                  *       B       RTB
003739  117F  20B1
```

```
003740                          *       LOC     REXHT
003741          026A            REXHT   EQU     X'026A'
003742                          *       LD      60
003745  1180   D63C
003746          1181            RTA2    EQU     $
003747                          *       SEND    2
003748  1181   BD30
003751                          *       WAIT
003752  1182   50BD
003753  1183   3100
003754                          *       LD      16
003757  1184   D610
003758                          *       OR      =X'02'                  SET RANGE EXHAUST FLAG
003761  1185   CA02
003762                          *       ST      16
003765  1186   D710
003766                          *       LD      =X'C0'
003769  1187   C6C0
003770                          *       OUT     2                       TURN OFF RECV,XMIT
003771  1188   BD30
003774                          *       B       EXT
003775  1189   2820
003776                          *       LOC     RTE
003779          027F            RTE     EQU     X'027F'
003780                          *       LD      60
003781  118A   1BD6
003784          118B            RTA3    EQU     $
003785                          *       SEND    2
003786  118B   3CBD
003789  118C   3050
003790                          *       WAIT
003791  118D   BD31
003792                          *       C       28
003793                          *T6LCT      BYTE        1,X'96'             LDAA,D
003794  118E   0096
003797  118F   1C10
003796  1190   9741
003799                          *       BEF     RTE1
003800  1191   9641
003803  1192   2619
003804                          *       LD      30                      LK TEST FLAG
003807  1193   D61E
003808                          *       BZF     EXT1
003809  1194   5D26
003812                          *       LD      =X'C0'
003813  1195   1FC6
003816                          *       OUT     2
003817  1196   C0BD
003820  1197   3028
003821                          *       LOC     EXT
003822          029A            EXT     EQU     X'029A'
003823                          *       GNB
003824  1198   BD31
003825                          *       LOC     WT2
003826          029D            WT2     EQU     X'029D'
003827                          *       WAIT
003828  1199   20BD
003829  119A   3100
003830                          *       NOP
003831                          *       B       WT2
003832  119B   0120
003835                          *       NOP
003836  119C   FA01
003837                          *       NOP
003838                          *       NOP
003839  119D   0101
003840                          *       NOP
003841                          *       NOP
003842  119E   0101
003843                          *       NOP
003844                          *       LOC     RTE1
003845          02A9            RTE1    EQU     X'02A9'
003846                          *       LD      =X'C2'
003847  119F   01C6
003850                          *       OUT     2
003851  11A0   C2BD
003854  11A1   3028
003855                          *       WAIT
003856  11A2   BD31
003857                          *       B       RTE
003858  11A3   0020
003861                          *       NOP
003862  11A4   CC01
003863                          *       LOC     EXT1
003864          02B4            EXT1    EQU     X'02B4'
003865                          *       OUT     1                       PAD2
003866  11A5   BD30
003869                          *       WAIT
003870  11A6   24BD
003871  11A7   3100
003872                          *       OUT     1                       PAD 3
003873  11A8   BD30
003876                          *       WAIT
003877  11A9   24BD
003876  11AA   3100
003879                          *       LD      =X'C0'
003882  11AB   C6C0
003883                          *       OUT     2
003884  11AC   BD30
003887                          *       B       EXT
003888  11AD   2820
003891                          *       NOP
003892  11AE   D301
003893                          *
```

```
003894                                  /
003895                                  *
003896                                  *
003897                                  *
003898                                  *CHANNEL PROGRAM FOR SYNCHRONOUS TERMINAL
003899                                  *
003900                                  *       ORG     X'500'
003901          11AF                    TTS     EQU     $
003902                                  *       NOP
003903                                  *       NOP
003904  11AF    0101
003905                                  *       NOP
003906                                  *       NOP
003907  11B0    0101
003908                                  *       NOP
003909                                  *       NOP
003910  11B1    0101
003911                                  *       NOP
003912                                  *       NOP
003913  11B2    0101
003914                                  *VPINIT
003915                                  *       LOC     VIPNIT
003916          0508                    VIPNIT EQU      X'0508'
003917                                  *       LD      =X'C6'          7 BIT ODD AND LRC
003920  11B3    C6C6
003921                                  *       ST      34              XMIT CONFIGURATION
003924  11B4    D722
003925                                  *       OUT     6               LR6
003926  11B5    BD30
003929                                  *       LD      =X'16'          SYNCH CHAR
003930  11B6    38C6
003933                                  *       OUT     4               LR4
003934  11B7    16BD
003937  11B8    3030
003938                                  *VPXTOP
003939          11B9                    DTS1    EQU     $
003940                                  *       LOC     VPXTOP
003941          0514                    VPXTOP EQU      X'0514'
003942                                  *       LD      =X'C9'          DATASET CONTROL DIRECT CONECT
003945  11B9    C6C9
003946                                  *       ST      20              STORE DATA SET CONTROL
003949  11BA    D714
003950                                  *       OUT     2               LR2 TURN ON TRANSMIT BIT
003951  11BB    BD30
003954                                  *VPXSEG
003955                                  *       LOC     VPXSEG
003956          051B                    VPXSEG EQU      X'051B'
003957                                  *       LD      =X'16'          SYNCH CHARACTER
003960  11BC    28C6
003961                                  *       OUT     1               SEND IT
003962  11BD    16BD
003965  11BE    3024
003966                                  *       IN      5
003967  11BF    BD30
003970                                  *       ST      31              LR5
003971  11C0    14D7
003974                                  *       LD      =X'16'
003975  11C1    1FC6
003978                                  *       WAIT
003979  11C2    16BD
003980  11C3    3100
003981                                  *       OUT     1               2ND SYNC
003982  11C4    BD30
003985                                  *       WAIT
003986  11C5    24BD
003987  11C6    3100
003988                                  *       OUT     1               3RD SYNCH
003989  11C7    BD30
003992                                  *       WAIT
003993  11C8    24BD
003994  11C9    3100
003995                                  *       OUT     1               4TH SYNCH
003996  11CA    BD30
003999                                  *       LD      =0
004000  11CB    24C6
004003                                  *       ST      35              CLEAR CRC STORAGE
004004  11CC    00D7
004007                                  *       WAIT
004008  11CD    23BD
004009  11CE    3100
004010                                  *       LD      =1              SOH
004013  11CF    C601
004014                                  *       SEND    2               SEND SOH WITH PARITY
004015  11D0    BD30
004018                                  *       WAIT
004019  11D1    50BD
004020  11D2    3100
004021                                  *       LD      28              ADDRESS
004024  11D3    D61C
004025                                  *       SEND    3               PARITY AND LRC
004026  11D4    BD30
004029                                  *       WAIT
004030  11D5    58BD
004031  11D6    3100
004032                                  *       LD      =X'0'           NUL (STATUS)
004035  11D7    C600
004036                                  *       SEND    3
004037  11D8    BD30
004040                                  *       WAIT
004041  11D9    58BD
004042  11DA    3100
004043                                  *       LD      =X'20'          FC1 (SPACE)
004046  11DB    C620
004047                                  *       SEND    3
004048  11
004051                                  *       WAIT
004052  11DD    58BD
004053  11DE    3100
004054                                  *       SEND    3               2ND SPACE (FC 2)
004055  11DF    BD30
004058                                  *       WAIT
004059  11E0    58BD
004060  11E1    3100
```

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004061                          *       LD      =X'02'          STX
004064  11E2  C602
004065                          *       SEND    3
004066  11E3  BD30
004069                          *       WAIT
004070  11E4  58BD
004071  11E5  3100
004072                          *       LD      28              ADDRESS
004075  11E6  D61C
004076                          *       AND     =X'60'          STRIP FIVE LSBS
004079  11E7  C460
004080                          *       ST      28
004083  11E8  D71C
004084                          *       C       =X'40'          SELECT ADDRESS
004087  11E9  8640
004088  11EA  1097
004089                          *       BET     SELECT          SELECT MESG
004090  11EB  4196
004091  11EC  4127
004094                          *       C       =X'20'
004095  11ED  3586
004098  11EE  2010
004099  11EF  9741
004100                          *       BET     EMFRAM          POL MSG
004101  11F0  9641
004104  11F1  270D
004105                          *SNDTX
004106                          *       LOC     SNDTX
004107          0586            SNDTX   EQU     X'0586'
004108                          *       LD      ,DMA            XFER
004109  11F2  BD30
004110                          *       SEND    3
004111  11F3  A0BD
004114  11F4  3058
004115                          *       WAIT
004116  11F5  BD31
004117                          *VPX2
004118                          *       LOC     VPX2
004119          058F            VPX2    EQU     X'058F'
004120                          *       BLCF    SNDTX           GET MORE
004121  11F6  00DE
004122  11F7  6326
004125                          *EMFRAM
004126                          *       LOC     EMFRAM
004127          0593            EMFRAM  EQU     X'0593'
004128                          *       LD      =X'03'          ETX
004129  11F8  F3C6
004132                          *       SEND    3
004133  11F9  03BD
004136  11FA  3058
004137                          *       WAIT
004138  11FB  BD31
004139                          *       LD      35
004140  11FC  00D6
004143                          *       AND     =X'7F'          STRIP PARITY
004144  11FD  23C4
004147                          *       SEND    2
004148  11FE  7FBD
004151  11FF  3050
004152                          *       WAIT
004153  1200  BD31
004154                          *       LD      28
004155  1201  00D6
004158          1202            SELCHK  EQU     $
004159                          *       C       =X'60'          THIS CODE MODIFIED TO NOP FOR NON POLL OP
004160  1202  1C86
004163  1203  6010
004164  1204  9741
004165                          *       BET     SELCT1          NOP FOR NON POLL OPERATION
004166  1205  9641
004169  1206  271B
004170                          *       B       VPXEOT
004173  1207  2020
004174                          *SELECT
004175                          *       LOC     SELECT
004176          05B2            SELECT  EQU     X'05B2'
004177                          *       LD      =X'03'          ETX
004180  1208  C603
004181                          *       SEND    3
004182  1209  BD30
004185                          *       WAIT
004186  120A  58BD
004187  120B  3100
004188                          *       LD      35              LRC CALCULATION
004191  120C  D623
004192                          *       AND     =X'7F'
004195  120D  C47F
004196                          *       SEND    2
004197  120E  BD30
004200                          *       WAIT
004201  120F  50BD
004202  1210  3100
004203                          *       LD      29              DEVICE ADDRESS
004206  1211  D61D
004207                          *       ST      28              SWAP FOR NEXT DECISION
004210  1212  D71C
004211                          *       JUMP    VPXSEG
004214  1213  3FFF                                    DC      LLS(X'3F',8)+LRS(VPXSEG-X'05CB',8)
004215                          *SELCT1
004216                          *       LOC     SELCT1
004217          05CB            SELCT1  EQU     X'05CB'
004218                          *       LD      61              POLL ADR FOR TT TEST
004219  1214  50D6
004222                          *       ST      28
004223  1215  3DD7
004226                          *       JUMP    VPXSEG
004227  1216  1C3F
004230  1217  FF49                      DC      VPXSEG-X'05D2'
004231                          *VPXEOT
004232                          *       LOC     VPXEOT
004233          05D2            VPXEOT  EQU     X'05D2'
004234                          *       LD      =X'16'          SYNCH CHAR.
004237  1218  C616
```

```
004238                          *       OUT     1               SEND IT - NO PARITY
004239  1219  BD30
004242                          *       WAIT
004243  121A  24BD
004244  121B  3100
004245                          *       OUT     1               2ND SYNCH
004246  121C  BD30
004249                          *       WAIT
004250  121D  24BD
004251  121E  3100
004252                          *       OUT     1               XMIT 3RD SYNCH
004253  121F  BD30
004256                          *       WAIT
004257  1220  24BD
004258  1221  3100
004259                          *       OUT     1               XMIT 4TH SYNCH
004260  1222  BD30
004263                          *       WAIT
004264  1223  24BD
004265  1224  3100
004266                          *       LD      =4              LOAD EOT CHAR.
004269  1225  C604
004270                          *       OUT     1               XMIT NO PARITY
004271  1226  BD30
004274                          *       WAIT
004275  1227  24BD
004276  1228  3100
004277                          *       LD      =X'7F'          LOAD PAD CHAR.
004280  1229  C67F
004281                          *       OUT     1               XMIT - NO PARITY
004282  122A  BD30
004285          122B            DTS2    EQU     $
004286                          *       LD      =X'CB'          DATA SET CONTROL BITS
004287  122B  24C6
004290                          *       NOP
004291  122C  CB01
004292                          *       NOP
004293                          *       NOP     **TEMP**        TURN ON RECEIVE EARLY
004294  122D  0101
004295                          *       WAIT
004296  122E  BD31
004297                          *       LD      =X'7F'          PAD CHAR
004298  122F  00C6
004301                          *       OUT     1               2ND PAD CHAR. REQUIRED BY TERMINAL
004302  1230  7FBD
004305  1231  3024
004306                          *       WAIT
004307  1232  BD31
004308                          *       OUT     1               THREE PADS REQUIRED TO FLUSH USART
004309  1233  00BD
004312  1234  3024
004313                          *       WAIT
004314  1235  BD31
004315                          *       LD      26              POLL RTI FLG
004316  1236  00D6
004319                          *       C       =X'0'
004320  1237  1A86
004323  1238  0010
004324  1239  9741
004325                          *       BZT     QUIT
004326  123A  5D27
004329                          *
004330          123B            DTS4    EQU     $
004331                          *       LD      =X'8A'          TURN OFF RTS,XMIT,AND TURN ON RECV
004332  123B  1BC6
004335                          *       OUT     2
004336  123C  8ABD
004339  123D  3028
004340                          *       ST      20
004343  123E  D714
004344                          *       WAIT
004345  123F  BD31
004348                          *       LD      27
004347  1240  00D6
004350                          *       C       =0
004351  1241  1B86
004354  1242  0010
004355  1243  9741
004356                          *       BZT     QUIT
004357  1244  5D27
004360                          *       LOC     POL
004361          062D            POL     EQU     X'062D'
004362                          *       LD      61              GET POLL ADDR
004363  1245  D7D6
004366                          *       ST      28
004367  1246  3DD7
004370                          *       JUMP    VPXSEG          GO POLL AGAIN
004371  1247  1C3F
004374  1248  FEE7                    DC      VPXSEG-X'0634'
004375                          *       LOC     QUIT
004376          0634            QUIT    EQU     X'0634'
004377                          *       LD      20              LCT 20
004380  1249  D614
004381                          *       AND     =X'FA'          KILL XMIT BIT
004384  124A  C4FA
004385                          *       ST      20              RESTORE INTO LCT 20
004388  124B  D714
004389                          *       OUT     2               LR2 - TO KILL XMIT BIT
004390  124C  BD30
004393                          *       NOP
004394  124D  2801
004395                          *       GNB
004396  124E  BD31
004397                          *       LOC     WT
004398          0641            WT      EQU     X'0641'
004399                          *       WAIT
004400  124F  20BD
004401  1250  3100
004402                          *       NOP
004403                          *       B       WT
004404  1251  0120
004407                          *
004408                          *
```

```
004409                                  /
004410                                  *
004411                                  *********
004412                                  *
004413                                  *
004414                                  *  RECEIVE CCP FOR SYNCHRONOUS TERMINAL
004415                                  *
004416                                  *
004417                                  **********
004418                                  * VIP RECEIVE INITIALIZATION
004419                                  *
004420                                  *************
004421                                  *       ORG     X'200'
004422  1252  FA00
004423        1253                      RTS     EQU     $
004424                                  *       NOP
004425                                  *       NOP
004426  1253  0101
004427                                  *       NOP
004428                                  *       NOP
004429  1254  0101
004430                                  *       NOP
004431                                  *       NOP
004432  1255  0101
004433                                  *       NOP
004434                                  *       NOP
004435  1256  0101
004436                                  *       NOP
004437                                  *       NOP
004438  1257  0101
004439                                  *       LOC     RECVIN
004440        020A                      RECVIN  EQU     X'020A'
004441                                  *       LD      =X'C6'          7 BIT,ODD,LRC
004444  1258  C6C6
004445                                  *       ST      2               LCT 2 RECV  CONFIGURATION
004446  1259  D702
004449                                  *       ST      34              XMIT CONFIG
004452  125A  D722
004453                                  *       OUT     6               LR6
004454  125B  BD30
004457                                  *       LD      =X'16'          SYNC CHAR.
004458  125C  38C6
004461                                  *       OUT     4               LR4
004462  125D  16BD
004465  125E  3030
004466        125F                      DTS3    EQU     $
004467                                  *       LD      =X'8A'          DTR, DIRECT CONNECT,RECV ON
004470  125F  C68A
004471                                  *       ST      20              LCT 20 DATA SET CONTROL
004474  1260  D714
004475                                  *       OUT     2
004476  1261  BD30
004479                                  *       NOP
004480  1262  2801
004481                                  *       LD      =4              COUNT TO RECEIVE 4 CHAR
004484  1263  C604
004485                                  *       ST      30              BETWEEN SOH AND STX
004488  1264  D71E
004489                                  *       ST      27              LCT 27 NON-ZERO FLG FOR RT POLL
004492  1265  D71B
004493                                  *       LD      24              LCT 24 RT FLAG
004496  1266  D618
004497                                  *       C       =X'1'
004500  1267  8601
004501  1268  1097
004502                                  *       BEF     VPRSFS
004503  1269  4196
004504  126A  4126
004507                                  *       JUMP    SFS1
004508  126B  033F
004511  126C  0133                              DC      SFS1-X'0234'
004512                                  *VPRSFS
004513                                  *       LOC     VPRSFS
004514        0234                      VPRSFS  EQU     X'0234'
004515                                  *       SFS     SEARCH          FOR SYNC
004516  126D  BD31
004517                                  *       WAIT
004518  126E  40BD
004519  126F  3100
004520                                  *       RECV    2               RECV PARITY BUT NO LRC
004521  1270  BD30
004524                                  *       WAIT
004525  1271  70BD
004526  1272  3100
004527                                  *       ST      *
004528  1273  BD30
004529                                  *       C       =X'16'
004530  1274  C086
004533  1275  1610
004534  1276  9741
004535                                  *       BEF     VPRSFS
004536  1277  9641
004539  1278  26E8
004540                                  *MORSYN
004541                                  *       LOC     MORSYN
004542        024C                      MORSYN  EQU     X'024C'
004543                                  *       BLCT    LASTCH
004544  1279  DE63
004547  127A  2767
004548                                  *       RECV    2
004549  127B  BD30
004552                                  *       WAIT
004553  127C  70BD
004554  127D  3100
004555                                  *       ST      *
004556  127E  BD30
004557                                  *       C       =X'04'          EOT
004558  127F  C086
004561  1280  0410
004562  1281  9741
004563                                  *       BEF     SOH             Q FRAME
004564  1282  9641
004567  1283  2605
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004568                          *       ST      58              FOR INPUT LCT
004571  1284  D73A
004572                          *       JUMP    VPRGNB
004575  1285  3F00                                      DC    LLS(X'3F',8)+LRS(VPRGNB-X'0267',8)
004576                          *       LOC     SOH
004577        0267              SOH     EQU     X'0267'
004578                          *       C       =X'01'          SOH
004579  1286  DA86
004582  1287  0110
004583  1288  9741
004584                          *       BEF     MORSYN
004585  1289  9641
004588  128A  26
004589                          *CLLRC
004590                          *       LOC     CLLRC
004591        0270              CLLRC   EQU     X'0270'
004592                          *       LD      =0
004595  128B  C600
004596                          *       ST      3               CLEAR LRC RESIDUE
004599  128C  D703
004600                          *NORMAL
004601                          *       LOC     NORMAL
004602        0274              NORMAL  EQU     X'0274'
004603                          *       RECV    3               PARITY AND LRC
004604  128D  BD30
004607                          *       WAIT
004608  128E  78BD
004609  128F  3100
004610                          *       AND     =X'7F'          STRIP PARITY
004613  1290  C47F
004614                          *       ST      ,
004615  1291  BD30
004616                          *       ST      57
004617  1292  C0D7
004620                          *       C       =X'04'          EOT
004621  1293  3986
004624  1294  0410
004625  1295  9741
004626                          *       BEF     STX             Q FRAME
004627  1296  9641
004630  1297  2605
004631                          *       ST      58              FOR INPUT LCT
004634  1298  D73A
004635                          *       JUMP    VPRGNB
004638  1299  3F00                                      DC    LLS(X'3F',8)+LRS(VPRGNB-X'028F',8)
004639                          *       LOC     STX
004640        028F              STX     EQU     X'028F'
004641                          *       C       =X'02'          STX
004642  129A  B286
004645  129B  0210
004646  129C  9741
004647                          *       BET     PRTERB          STX FOUND AT WRONG PLACE
004648  129D  9641
004651  129E  2717
004652                          *       C       =X'03'          ETX
004655  129F  8603
004656  12A0  1097
004657                          *       BET     PROTER          ETX FOUND PROTOCALL ERROR
004658  12A1  4196
004659  12A2  4127
004662                          *       C       =X'16'          SYNC AFTER SOH
004663  12A3  7986
004666  12A4  1610
004667  12A5  9741
004668                          *       BEF     STORIT
004669  12A6  9641
004672  12A7  260F
004673                          *       CCH     ,UNDO           CALC FOR SYNC
004674  12A8  BD31
004675                          *       B       STORIT
004676  12A9  6020
004679                          *       LOC     PRTERB
004680        02AF              PRTERB  EQU     X'02AF'
004681                          *       B       PROTER          SHORTER BRANCH FOR DLCP CODES
004682  12AA  0A20
004685                          *       LOC     STACHR
004686        02B1              STACHR  EQU     X'02B1'
004687                          *       LD      57              GET STA CHAR.
004688  12AB  69D6
004691                          *       ST      58              FOR INPUT LCT
004692  12AC  39D7
004695                          *       B       NORMAL
004696  12AD  3A20
004699                          *       LOC     LASTCH
004700        02B7              LASTCH  EQU     X'02B7'
004701                          *       B       GNB1
004702  12AE  BD20
004705                          *STORIT
004706                          *       LOC     STORIT
004707        02B9              STORIT  EQU     X'02B9'
004708                          *       LD      30              LCT 30 CONTAIN VALUE 4
004709  12AF  5FD6
004712                          *       DEC
004713  12B0  1E5A
004714                          *       ST      30
004717  12B1  D71E
004718                          *       C       =2
004721  12B2  8602
004722  12B3  1097
004723                          *       BET     STACHR
004724  12B4  4196
004725  12B5  4127
004728                          *       BZF     NORMAL
004729  12B6  EA5D
004732  12B7  26AA
004733                          *VPRNXT
004734                          *       LOC     VPRNXT
004735        02CA              VPRNXT  EQU     X'02CA'
004736                          *       RECV    3
004737  12B8  BD30
004740                          *       WAIT
004741  12B9  78BD
004742  12BA  3100
```

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004743                          *       AND     =X'7F'          STRIP PARITY
004746  12BB  C47F
004747                          *       ST      ,
004748  12BC  BD30
004749                          *       C       =X'02'          STX
004750  12BD  C086
004753  12BE  0210
004754  12BF  9741
004755                          *       BEF     PROTER          PROTOCALL ERROR
004756  12C0  9641
004759  12C1  263C
004760                          *       ST      23              STX FLAG
004763  12C2  D717
004764                          *MORCHR
004765                          *       LOC     MORCHR
004766          02E0            MORCHR EQU      X'02E0'
004767                          *       RECV    3
004768  12C3  BD30
004771                          *       WAIT
004772  12C4  76BD
004773  12C5  3100
004774                          *       AND     =X'7F'          STRIP PARITY
004777  12C6  C47F
004778                          *       ST      ,
004779  12C7  BD30
004780                          *       BLCT    RNGER
004781  12C8  C0DE
004782  12C9  6327
004785                          *               =X'03'          ETX
004786  12CA  1B66
004789  12CB  0310
004790  12CC  9741
004791                          *       BEF     MORCHR
004792  12CD  9641
004795  12CE  26E8
004796                          *       RECV    3               RECEIVE LRC
004797  12CF  BD30
004800                          *       WAIT    ,FOR            SYNCH
004801  12D0  76BD
004802  12D1  3100
004803                          *       AND     =X'7F'
004806  12D2  C47F
004807                          *       ST      ,
004808  12D3  BD30
004809                          *       LD      3               READ LRC RESIDUE
004810  12D4  C0D6
004813                          *       AND     =X'7F'          STRIP PARITY
004814  12D5  03C4
004817                          *       BZT     VPRXIT
004818  12D6  7F5D
004821  12D7  2718
004822                          *RNGER
004823                          *       LOC     RNGER
004824          030A            RNGER   EQU     X'030A'
004825                          *       LD      16
004828  12D8  D610
004829                          *       OR      =X'02'          SET RANGE EXHAUST FLG
004832  12D9  CA02
004833                          *       ST      16
004836  12DA  D710
004837                          *       B       GNB1
004840  12DB  2006
004841                          *BADLRC
004842                          *       LOC     BADLRC
004843          0312            BADLRC  EQU     X'0312'
004844                          *       LD      17              LCT 17
004847  12
004848                          *       OR      =X'40'          PARITY AND LRC ERROR
004851  12DD  CA40
004852                          *       ST      17
004855  12DE  D711
004856                          *       LOC     GNB1
004857          0318            GNB1    EQU     X'0318'
004858                          *       B       VPRGNB
004861  12DF  2027
004862                          *PROTER
004863                          *       LOC     PROTER
004864          031A            PROTER  EQU     X'031A'
004865                          *       LD      16              LCT16
004868  12E0  D610
004869                          *       OR      =X'04'          BAD PROTO CALL ERROR BIT
004872  12E1  CA04
004873                          *       ST      16
004876  12E2  D710
004877                          *       B       VPRGNB
004880  12E3  201F
004881                          *VPRXIT
004882                          *       LOC     VPRXIT
004883          0322            VPRXIT  EQU     X'0322'
004884                          *       RECV    2
004885  12E4  BD30
004888                          *       WAIT
004889  12E5  70BD
004890  12E6  3100
004891                          *       ST      ,
004892  12E7  BD30
004893                          *       BLCT    VPRGNB
004894  12E8  C0DE
004895  12E9  6327
004898                          *       C       =X'16'          SYNC
004899  12EA  1286
004902  12EB  1610
004903  12EC  9741
004904                          *       BET     VPRXIT
004905  12ED  9641
004908  12EE  27EA
004909                          *       C       =X'04'          EOT
004912  12EF  8604
004913  12F0  1097
004914                          *       BEF     VPRXIT
004915  12F1  4196
004916  12F2  4126
004919                          *VPRGNB
```

```
004920                          *       LOC     VPRGNB
004921          0341            VPRGNB  EQU     X'0341'
004922                          *       LD      =X'C0'
004923  12F3    E1C6
004926                          *       ST      20
004927  12F4    C0D7
004930                          *       OUT     2               KILL RECIVER
004931  12F5    14BD
004934  12F6    3028
004935                          *       ST      20
004938  12F7    D714
004939                          *       GNB
004940  12F8    BD31
004941                          *       LOC     WT3
004942          034D            WT3     EQU     X'034D'
004943                          *       WAIT
004944  12F9    20BD
004945  12FA    3100
004946                          *       NOP
004947                          *       B       WT3
004948  12FB    0120
004951                          *SFS2
004952                          *       LOC     SFS2
004953          0353            SFS2    EQU     X'0353'
004954                          *       LD      26              RT LT (POLL FLAG)
004955  12FC    FAD6
004958                          *       C       =0
004959  12FD    1A86
004962  12FE    0010
004963  12FF    9741
004964                          *       BZT     SFS1            IF NON POLL DON'T TURN  ON XMIT
004965  1300    5D27
004968          1301            DTS5    EQU     $
004969                          *       LD      =X'C9'          XMIT ON TURN OFF RECV
004970  1301    0AC6
004973                          *       OUT     2
004974  1302    C9BD
004977  1303    3028
004978                          *       ST      20
004981  1304    D714
004982                          *       WAIT
004983  1305    BD31
004984                          *SFS1
004985                          *       LOC     SFS1
004986          0367            SFS1    EQU     X'0367'
004987                          *       SFS
004988  1306    00BD
004989  1307    3140
004990                          *       WAIT
004991  1308    BD31
004992                          *       NOP
004993  1309    0001
004994                          *       NOP
004995                          *       RECV    2
004996  130A    01BD
004999  130B    3070
005000                          *       WAIT
005001  130C    BD31
005002                          *       C       =X'16'
005003  130D    0086
005006  130E    1610
005007  130F    9741
005008                          *       BEF     SFS1
005009  1310    9641
005012  1311    26E9
005013                          *MORSY1
005014                          *       LOC     MORSY1
005015          037E            MORSY1  EQU     X'037E'
005016                          *       RECV    2
005017  1312    BD30
005020                          *       WAIT
005021  1313    70BD
005022  1314    3100
005023                          *       C       =X'16'
005026  1315    8616
005027  1316    1097
005028                          *       BET     MORSY1
005029  1317    4196
005030  1318    4127
005033                          *       C       =X'04'          EOT
005034  1319    F186
005037  131A    0410
005038  131B    9741
005039                          *       BET     SFS2
005040  131C    9641
005043  131D    27BD
005044                          *       C       =X'01'          SOH
005047  131E    8601
005048  131F    1097
005049                          *       BEF     MORSY1
005050  1320    4196
005051  1321    4126
005054                          *       LD      =0
005055  1322    DFC6
005058                          *       ST      3
005059  1323    00D7
005062                          *       RECV    3               ADDR CHR.
005063  1324    03BD
005066  1325    3078
005067                          *       WAIT
005068  1326    BD31
005069                          *       AND     =X'7F'
005070  1327    00C4
005073                          *       C       =X'04'
005074  1328    7F86
005077  1329    0410
005078  132A    9741
005079                          *       BET     SFS2
005080  132B    9641
005083  132C    279F
005084                          *
005085                          *
005086                          *       RECV    3               STA CHAR.
```

```
005087  132D  BD30
005090                      *       WAIT
005091  132E  78BD
005092  132F  3100
005093                      *       AND     =X'7F'
005096  1330  C47F
005097                      *       C       =X'0'
005100  1331  8600
005101  1332  1097
005102                      *       BEF     SFS1
005103  1333  4196
005104  1334  4126
005107                      *       ST      27
005108  1335  A2D7
005111                      *       RECV    3                       FC1
005112  1336  1BBD
005115  1337  3078
005116                      *       WAIT
005117  1338  BD31
005118                      *       RECV    3                       FC2
005119  1339  00BB
005122  133A  3078
005123                      *       WAIT
005124  133B  BD31
005125                      *       RECV    3
005126  133C  00BB
005129  133D  3078
005130                      *       WAIT
005131  133E  BD31
005132                      *       AND     =X'7F'
005133  133F  00C4
005136                      *       C       =X'02'                  STX
005137  1340  7F86
005140  1341  0210
005141  1342  9741
005142                      *       BET     MORCH1
005143  1343  9641
005146  1344  2705
005147                      *       NOP
005148                      *       NOP
005149  1345  0101
005150                      *       JUMP    PROTER
005153  1346  3FFF                                          DC      LLS(X'3F',8)+LRS(PROTER-X'03E9',8)
005154                      *MORCH1
005155                      *       LOC     MORCH1
005156        03E9          MORCH1  EQU     X'03E9'
005157                      *       RECV    3
005160  1347  31BD
005161  1348  3078
005162                      *       WAIT
005163  1349  BD31
005164                      *       AND     =X'7F'
005165  134A  00C4
005168                      *       BLCT    RNGER1
005169  134B  7FDE
005170  134C  6327
005173                      *       C       =X'03'                  ETX
005174  134D  2086
005177  134E  0310
005178  134F  9741
005179                      *       BET     EOM
005180  1350  9641
005183  1351  2705
005184                      *       ST      ,
005185  1352  BD30
005186                      *       B       MORCH1
005187  1353  C020
005190                      *       LOC     EOM
005191        0403          EOM     EQU     X'0403'
005192                      *       RECV    3
005193  1354  E6BD
005196  1355  3078
005197                      *       WAIT
005198  1356  BD31
005199                      *       AND     =X'7F'
005200  1357  00C4
005203                      *       LD      3
005204  1358  7FD6
005207                      *       AND     =X'7F'
005208  1359  03C4
005211                      *       BZT     EXIT1
005214  135A  7F5D
005215  135B  270B
005216                      *       JUMP    BADLRC
005219  135C  3FFE                                          DC      LLS(X'3F',8)+LRS(BADLRC-X'0415',8)
005220                      *RNGER1
005221                      *       LOC     RNGER1
005222        0415          RNGER1  EQU     X'0415'
005223                      *       LD      16
005224  135D  FDD6
005227                      *       OR      =X'02'                  SET RANGE EXHAUST FLG
005228  135E  10CA
005231                      *       ST      16
005232  135F  02D7
005235                      *       B       EXIT
005236  1360  1020
005239                      *EXIT1
005240                      *       LOC     EXIT1
005241        041D          EXIT1   EQU     X'041D'
005242                      *       RECV    2
005243  1361  14BD
005246  1362  3070
005247                      *       WAIT
005248  1363  BD31
005249                      *       AND     =X'7F'
005250  1364  00C4
005253                      *       C       =X'04'
005254  1365  7F86
005257  1366  0410
005258  1367  9741
005259                      *       BEF     EXIT1
005260  1368  9641
005263  1369  26EF
```

```
005264                          *       ST      ,
005265  136A  BD30
005266                          *EXIT
005267                          *       LOC     EXIT
005268        0431              EXIT    EQU     X'0431'
005269                          *       LD      26
005270  136B  C0D6
005273                          *       C       =0              CHECK IF NON POLL RT,LT
005274  136C  1A86
005277  136D  0010
005278  136E  9741
005279                          *       BZT     EXIT2
005280  136F  5D27
005283        1370              DTS6    EQU     $
005284                          *       LD      =X'C9'
005285  1370  04C6
005288                          *       B       EXIT3
005289  1371  C920
005292                          *       LOC     EXIT2
005293        043F              EXIT2   EQU     X'043F'
005294                          *       LD      =X'C0'
005295  1372  02C6
005298                          *       LOC     EXIT3
005299        0441              EXIT3   EQU     X'0441'
005300                          *       ST      20              KILL RECV  XMITT IF NON POLL
005301  1373  C0D7
005304                          *       OUT     2               KILL RECV AND TURN ON XMIT
005305  1374  14BD
005308  1375  3028
005309                          *       GNB
005310  1376  BD31
005311                          *       LOC     WT1
005312        0449              WT1     EQU     X'0449'
005313                          *       WAIT
005314  1377  20BD
005315  1378  3100
005316                          *       NOP
005317                          *       B       WT1
005318  1379  0120
005321                          *       NOP
005322  137A  FA01
005323                          *
005324                          *
005325                          *
005326                          *
005327  137B  0F01 FFFF         CCP2    NOP     $               CHANNEL PROGRAMS ENDS HERE
```

```
005328                                  /
005329                                  *
005330                                  *
005331                                  *
005332                                  *
005333                                  *
005334                                  *
005335                                  *
005336                                  *
005337                                  *
005338                                  * WAIT FOR STATUS COMPLETE
005339                                  *   LNJ  $B4,<TESTS
005340                                  *   B    $+2     RETURN
005341                                  *   DC   XX      TIMEOUT IN 120TH'S SEC.
005342                                  *
005343                                  *
005344  137D 8F00 155A                  TESTSR SAVE   <SAV2,=Z'4909'
       137F 4909
005345  1380 C840 01C1                         LDR    $R4,CONT6
005346  1382 C570 FFBF                         AND    $R4,=Z'FFBF'
005347  1384 CF40 FAC2                         STR    $R4,TEMP
005348  1386 0F88                              B      >TESTSA
005349  1387 8F00 155A                  TESTS  SAVE   <SAV2,=Z'4909'       R1,4,7,B4,7
       1389 4909
005350  138A C840 01B7                         LDR    $R4,CONT6
005351  138C CF40 FABA                         STR    $R4,TEMP
005352  138E 8751                       TESTSA CL     =$R1
005353  138F 9F00 0000          X              STR    $R1,<ZHRTC1         ZERO OUT RTC RESET VALUE
005354  1391 1C01                              LDV    $R1,=1
005355  1392 9F00 0000          X              STR    $R1,<ZHRTCL         SET FOR RUPT LEVEL 1
005356  1394 9870 1700                         LDR    $R1,=X'1700'
005357  1396 9F00 0000          X              STR    $R1,<ZHRTCC         SET REAL TIME CLOCK
005358  1398 89C0 01F3                         CMZ    INHRTC
005359  139A 0980               I              BNE    >+$A
005360  139B 0004                              RTCN
005361  139C C380 1499                  $A     LNJ    $B4,<INXT           INPUT NEXT STATUS
005362  139E DF40 F596                  TESTZ  STR    $R5,LFLAG
005363  13A0 82D5                              LD     =$R5,=Z'1000'       TEST FOR STATUS COMPLETE
       13A1 1000
005364  13A2 0501 0032                         BBT    TEST21              BRANCH IF COMPLETE
005365  13A4 8980 0000          X              CMZ    <ZHRTCC             TEST RTC
005366  13A6 0928                              BE     >TESTZ0             TIMEOUT
005367                                         CALL   ZV$BRK
       13A7 FBF0 0001
       13A9 D380 0000           X
005368  13AB 8980 0000          X              CMZ    <ZV$BKF
005369  13AD 0981 005D                         BNE    BREAK
005370                                  *
005371  13AF 89C0 F3BF                         CMZ    IDSFLG              INHIBIT IDSFLAG
005372  13B1 0980               I              BNE    >+$A                DONOT CHECK DAT SET STATUS FOR LA,EL TEST
005373                                  *
005374  13B2 C3C0 FBE4                         LNJ    $B4,IDSS            CHECK DATA SET STATUS
005375  13B4 C800 0E47                  $A     LDR    $R4,<TEMP           FUNCTION CODE
005376  13B6 8055                              IO     =$R5,=$R4           INPUT STATUS
       13B7 0054
005377  13B8 0766                              BIOT   >TESTZ              BRANCH MEANS TRY AGAIN AFTER CHECKING DSS
005378  13B9 D380 10A0                         LNJ    $B3,<ERRMB          INPUT STATUS WAS NAK'ED
005379  13BB 444C 4350 2049             TEXT   'DLCP IO TO INPUT STATUS WAS REJECTED$'
       13BE 4F20 544F 2049
       4E50 5554 2053
       5441 5455 5320
       5741 5320 5245
       4A45 4354 4544
       2400
005380  13CE BB80 0E2D                  TESTZ0 LAB    $B3,<EM3
005381  13D0 BFC0 0573                  $A     STB    $B3,MWFB
005382  13D2 0005                              RTCF
005383  13D3 0F81 03AE                         B      EHAND
005384  13D5 DF40 F55F                  TESTZ1 STR    $R5,LFLAG
005385  13D7 82D5                              LD     =$R5,=X'0400'       DATA CHECK ERROR
       13D8 0400
005386  13D9 0580               T              BBF    >+$C
005387  13DA D3C0 FCC5                         LNJ    $B3,ERRMB
005388  13DC 5052 4F54 4F43             TEXT   'PROTOCALL ERROR$'
       13DF 414C 4C20 4552
       524F 5224
005389  13E4 0F80               T              B      >+$B
005390  13E5 82D5                      $C      LD     =$R5,=X'0040'
       13E6 0040
005391  13E7 0580               T              BBF    >+$D
005392  13E8 D380 10A0                         LNJ    $B3,<ERRMB
005393  13EA 4C52 4320 414E             TEXT   'LRC AND PARITY ERROR$'
       13ED 4420 5041 5249
       5459 2045 5252
       4F52 2400
005394  13F5 82D5                      $D      LD     =$R5,=X'0200'       RANGE CHECK
       13F6 0200
005395  13F7 05EL               T              BBF    >+$B
005396  13F8 D380 10A0                         LNJ    $B3,<ERRMB
005397  13FA 5245 4345 4956             TEXT   'RECEIVE RANGE EXHAUSTED$'
       13FD 4520 5241 4E47
       4520 4558 4841
       5553 5445 4424
005398  1406 8F80 155A                  $B     RSTR   <SAV2,=Z'4909'
       1408 4909
005399  1409 0005                              RTCF                       SHUT OFF RTC
005400  140A 8B84                              JMP    $B4                 EXIT
005401                                  *
005402  140B 9840 FA41                  BREAK  LDR    $R1,TEST
005403  140D 9970 454C                         CMR    $R1,=A'EL'
005404  140F 0977                              BE     >-$B
005405                                         CALL   ZV$T,BDET
       1410 FBC0 0003
       1412 D380 0000           X
       1414 0F80
       1415 1416
005406  1416 0F81 F547                         B      COUNTB
005407                                  *
005408  1418 636F 6E73 6F6C             BDET   TEXT   'CONSOLE BREAK DETECTED$'
       141B 6520 6272 6561
       6B20 6465 7465
       6374 6564 2400
005409                                  *
```

```
005410                                  * BLOCK WRITE DATA TO RAM
005411                                  *
005412                                  *       LNJ     $B1,<SDATA
005413                                  *       DC      DATA            LOCATION OF DATA
005414                                  *       DC      RANGE           NUMBER OF DATA BYTES
005415                                  *       DC      RAMAD           RAM ADDRESS
005416                                  *       DC      EVEN            0 = EVEN BYTE CPU ADDRESS
005417                                  *                                   BIT 15 = 1 FOR ODD BYTE START
005418                                  *                                   BIT 1 = 1 FOR NO DELAY BEFORE RETURNING
005419                                  *
005420                                  * R3 MUST CONTAIN THE CHANNEL NUMBER
005421                                  *
005422  1424  B840 FA2A                SDATA   LDR     $R3,CHAN
005423  1426  8F00 154A                        SAVE    <SAV1,=Z'FFBF'          SAVE ALL BUT B1
      1428  FFBF
005424  1429  DCF1                            LDB     $B5,+$B1                GET ADDRESS OF DATA
005425  142A  C871                            LDR     $R4,+$B1                GET RANGE
005426  142B  CF00 143A                        STR     $R4,<SPRG1              STORE RANGE
005427  142D  DF80 1439                        STB     $B5,<SPRG5
005428  142F  A871                            LDR     $R2,+$B1                GET RAM ADDRESS
005429  1430  AF00 143B                        STR     $R2,<SPRG2
005430  1432  9871                            LDR     $R1,+$B1                LOAD START BYTE INDEX
005431  1433  9570 7FFF                        AND     $R1,=X'7FFF'
005432  1435  0F01 FFFF                        NOP     $
005433  1437  C380 14F3                SPRG6   LNJ     $B4,<MCCB               FORM CCB
005434  1439       0000         X      SPRG5   DC      <ZHCOMM                 CPU ADDRESS
005435  143A  0000                     SPRG1   DC      0                       RANGE
005436  143B  0000                     SPRG2   DC      0                       RAM ADDRESS
005437  143C  0F01 FFFF                        NOP     $
005438  143E  C380 1078                SPRG2A  LNJ     $B4,<CHCT               GIVE CHANNEL CONTROL
005439  1440  0F82                            B       >SPRG3
005440  1441  0400                            DC      X'400'                  BLOCK WRITE
005441                                  *
005442                                  * PROGRAM ARRIVES HERE FROM SDATA OR RDATA
005443                                  *
005444        1442                      SPRG3   EQU     $
005445  1442  C380 1387                        LNJ     $B4,<TESTS              WAIT FOR STATUS COMPLETE, OR
005446  1444  82D5                      SPRG4   LB      =$R5,=X'1000'           GET STATUS COMPLETE BIT
      1445  1000
005447  1446  0F01 FFFF                        NOP     $
005448  1448  0500                 T          BBT     >+$B
005449  1449  B380 10A0                        LNJ     $B3,<ERRMB              STATUS COMPLETE NOT SET AFTER BLOCK WRITE
005450  144B  444C 4350 2053                  TEXT    'DLCP STATUS COMPLETE NOT SET AFTER BLOCK WRITE$'
      144D  5441 5455 5320
            434F 4D50 4C45
            5445 204E 4F54
            2053 4554 2041
            4654 4552 2042
            4C4F 434B 2057
            5249 5445 2400
005451  1463  82D5                      $B      LB      =$R5,=7
      1464  0007
005452  1465  0596                            BBF     >SPRG7
005453  1466  B380 10A0                        LNJ     $B3,<ERRMB              ERROR ; PARITY,MEMORY,OR RESOURCES
005454  1468  444C 4350 2050                  TEXT    'DLCP PARITY,MEMORY OR RESOURCES ERROR$'
      146A  4152 4954 592C
            4D45 4D4F 5259
            204F 5220 5245
            534F 5552 4345
            5320 4552 524F
            5224
005455  147B  8F80 154A                SPRG7   RSTR    <SAV1,=Z'FFBF'
      147D  FFBF
005456  147E  8381                            JMP     $B1
005457                                  ******
005458                                  *
005459                                  * BLOCK READ FROM RAM.- CHAN. NUMBER MUST BE IN R3.
005460                                  *
005461                                  *       LNJ     $B1,<RDATA
005462                                  *       DC      INBUFF          INPUT BUFFER ADDRESS
005463                                  *       DC      RANGE           NUMBER OF BYTES
005464                                  *       DC      RAMAD           RAM ADDRESS
005465                                  *       DC      EVEN            0 = EVEN BYTE CPU ADDRESS
005466                                  *                                   BIT 1 = 1 FOR ODD BYTE ADDRESS
005467                                  *                                   BIT 0 = 1 FOR NO DELAY AFTER STARTING
005468                                  *
005469  147F  8F00 154A                RDATA   SAVE    <SAV1,=Z'FFBF'          SAVE EVERYTHING BUT B1.
      1481  FFBF
005470  1482  DCF1                            LDB     $B5,+$B1                GET IN BUFF ADD
005471  1483  DF80 1490                        STB     $B5,<RDTA1
005472  1485  C871                            LDR     $R4,+$B1                GET RANGE IN BYTES
005473  1486  CF00 1491                        STR     $R4,<RDTA3
005474  1488  9871                            LDR     $R1,+$B1
005475  1489  9F00 1492                        STR     $R1,<RDTA2
005476  148B  9871                            LDR     $R1,+$B1                PICK UP EVEN, ODD FLAG
005477  148C  9570 7FFF                        AND     $R1,=X'7FFF'
005478  148E  C380 14F3                        LNJ     $B4,<MCCB               FORM CCB
005479  1490  1490                RDTA1   DC      <RDTA1                  CPU ADDRESS
005480  1491  0000                RDTA3   DC      0                       RANGE
005481  1492  0000                RDTA2   DC      0                       RAM ADDRESS
005482  1493  C380 1078                        LNJ     $B4,<CHCT               ISSUE CHANNEL CONTROL
005483  1495  0F82                            B       >RDTA4
005484  1496  0800                            DC      X'800'                  BLOCK READ
005485  1497  0F81 FFAA                RDTA4   B       SPRG3                   EXIT
005486                                  *
005487                                  *
005488                                  * INPUT NEXT STATUS TO R5
005489                                  *
005490  1499  8F40 00B0                INXT    SAVE    SAV1,=Z'0008'           B4
      149B  0008
005491  149C  C600 1540                        LDR     $R4,<CONT4              GET CONTROL WORD FOR INPUT NEXT STATUS
005492  149E  8055                            IO      =$R5,=$R4               GET NEXT STATUS
      149F  0054
005493  14A0  0700                 T          BIOT    >+$B
005494  14A1  B380 10A0                        LNJ     $B3,<ERRMB              INPUT NEXT STATUS WAS NAK'ED
005495  14A3  444C 4350 2049                  TEXT    'DLCP INPUT-NEXT-STATUS WAS REJECTED$'
      14A5  4E50 5554 2D4E
            4558 5420 5354
            4154 5553 2057
            4153 2052 454A
            4543 5445 4424
005496  14B5  8FC0 0094                $B      RSTR    SAV1,=Z'0008'
      14B7  0008
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005497  14B8  8384                        JMP     $B4
005498                              *
005499  14B9  AB80 106E             SRCV    LAB     $B2,<CHCTR
005500  14BB  AFC0 FF83                     STB     $B2,SPRG2A+1
005501  14BD  AB80 137D                     LAB     $B2,<TESTSR
005502  14BF  AFC0 FF83                     STB     $B2,SPRG3+1
005503  14C1  9840 007E                     LDR     $R1,CONT4
005504  14C3  9570 FFBF                     AND     $R1,=Z'FFBF'
005505  14C5  9F40 007A                     STR     $R1,CONT4
005506  14C7  AB80 14E1                     LAB     $B2,<MCCBR
005507  14C9  AFC0 FF6E                     STB     $B2,SPRG6+1
005508  14CB  8386                        JMP     $B6
005509                              *
005510  14CC  AB80 1078             STMT    LAB     $B2,<CHCT
005511  14CE  AFC0 FF70                     STB     $B2,SPRG2A+1
005512  14D0  AB80 14F3                     LAB     $B2,<MCCB
005513  14D2  AFC0 FF65                     STB     $B2,SPRG6+1
005514  14D4  AB80 1387                     LAB     $B2,<TESTS
005515  14D6  AFC0 FF6C                     STB     $B2,SPRG3+1
005516  14D8  9840 0067                     LDR     $R1,CONT4
005517  14DA  9570 FFBF                     AND     $R1,=Z'FFBF'
005518  14DC  9670 0040                     XOR     $R1,=X'40'
005519  14DE  9F40 0061                     STR     $R1,CONT4
005520  14E0  8386                        JMP     $B6
005521                              *
005522                              *
005523                              *
005524                              *       CCB FORMATION
005525                              *
005526                              *         $R3 - CONTAINS CHANNEL WANTED
005527                              *
005528                              *         LNJ     $B4,<MCCB
005529                              *         DC      CPU ADDRESS
005530                              *         DC      RANGE IN BYTES
005531                              *         DC      RAM ADDRESS NUMBER OR CHANNEL CONTROL WORD.
005532                              *
005533  14E1  8F00 155A             MCCBR   SAVE    <SAV2,=Z'FDF4'
      14E3  FDF4
005534  14E4  0F01 FFFF                     NOP     $
005535  14E6  C840 0056                     LDR     $R4,CONT1
005536  14E8  C570 FFBF                     AND     $R4,=Z'FFBF'
005537  14EA  CF40 F95C                     STR     $R4,TEMP
005538  14EC  C840 0052                     LDR     $R4,CONT3
005539  14EE  C570 FFBF                     AND     $R4,=Z'FFBF'
005540  14F0  CF40 F957                     STR     $R4,TEMP+1
005541  14F2  0F8C                        B       >MCCBA
005542  14F3  8F00 155A             MCCB    SAVE    <SAV2,=Z'FDF4'          SAVES $B1,$B3,$B2,$B5,$R7,$R5,$R4,R2,& $R1
      14F5  FDF4
005543  14F6  C840 0046                     LDR     $R4,CONT1
005544  14F8  CF40 F94E                     STR     $R4,TEMP
005545  14FA  C840 0044                     LDR     $R4,CONT3
005546  14FC  CF40 F94B                     STR     $R4,TEMP+1
005547  14FE  ACF4                  MCCBA   LDB     $B2,+$B4                LOAD $B2 WITH CPU ADDRESS
005548  14FF  0874                        LDR     $R5,+$B4                GET RANGE
005549  1500  A874                        LDR     $R2,+$B4                PUT RAM ADDRESS IN $R2
005550  1501  DED4                        SWB     $B5,=$B4                ALLOW $B4 TO BE USE IN SUBR. CALL
005551  1502  C800 0E47                   LDR     $R4,<TEMP               LOAD $R4 WITH I/O CONTROL WORD
005552  1504  8182                        IOLD    $B2,=$R4,=$R5           OUTPUT ADDRESS AND RANGE
      1505  0054
      1506  0055
005553  1507  0700                  T             BIOT    >+$A
005554  1508  B380 10A0                   LNJ     $B3,<ERRMB              ERROR, IOLD WAS NAK'ED
005555  150A  444C 4350 2049               TEXT    'DLCP IOLD NAK-ED$'
      150D  4F4C 4420 4E41
      4B2D 4544 2400
005556  1513  C800 0E48             $A      LDR     $R4,<TEMP+1             LOAD $R4 WITH I/O CONTROL WORD
005557  1515  8052                        IO      =$R2,=$R4               OUTPUT MLCC RAM ADDRESS
      1516  0054
005558  1517  0700                  T             BIOT    >+$B
005559  1518  B380 10A0                   LNJ     $B3,<ERRMB              ERROR, OUTPUT CONTROL WAS NAK'ED
005560  151A  444C 4350 204F               TEXT    'DLCP OUTPUT CONTROL WAS NAK-ED$'
      151D  5554 5055 5420
      434F 4E54 524F
      4C20 5741 5320
      4E41 4B2D 4544
      2400
005561  152A  CED5                  $B      SWB     $B4,=$B5                SWAP FOR SUBR. RETURN
005562  152B  8F80 155A                     RSTR    <SAV2,=Z'FDF4'          RESTORE REGS.
      152D  FDF4
005563  152E  8384                        JMP     $B4
005564                              ********************************************************************
005565                              *
005566                              *
005567                              *
005568                              *
005569                              * CONTROL WORDS FOR IO OPERATIONS
005570                              *
005571                              *
005572                              *       I/O CONTROL WORDS
005573                              *
005574  152F  C840 F91F             CONTS   LDR     $R4,CHAN
005575  1531  AB80 153D                     LAB     $B2,<CONT1              INSERT CHAN NBR INTO FUNC CODES
005576  1533  8751                        CL      =$R1
005577  1534  D812                  $A      LDR     $R5,$B2.$R1             GET A TABLE ENTRY
005578  1535  D570 003F                   AND     $R5,=X'003F'            WIPE OUT HISTORY OF PAST USAGE
005579  1537  D454                        OR      $R5,=$R4
005580  1538  DF5E                        STR     $R5,$B2.+$R1            STORE RESULT
005581  1539  D940 F915                   CMR     $R5,CHAN
005582  153B  09F9                        BNE     >-$A                    EXIT IF END OF TABLE
005583  153C  8381                        JMP     $B1
005584  153D  0009                  CONT1   DC      Z'0009'                 IOLD FUNCTION CODE
005585  153E  000C                  CONT2   DC      Z'000C'                 INPUT RANGE FUNCTION CODE
005586  153F  000F                  CONT3   DC      Z'000F'                 OUTPUT CCB CONTROL FUNCTION CODE
005587  1540  001A                  CONT4   DC      X'1A'                   INPUT NEXT STATUS FUNCTION CODE
005588  1541  000B                  CONT5   DC      Z'000B'                 OUTPUT BYTE INTO LCT FUNCTION CODE
005589  1542  0018                  CONT6   DC      Z'0018'                 INPUT STATUS FUNCTION CODE
005590  1543  0005                  CONT7   DC      X'5'                    OUTPUT CHANNEL CONTROL FUNTION CODE
005591  1544  0026                  CONT8   DC      X'26'                   INPUT ID FUNCTION CODE
005592  1545  0001                  CONT9   DC      Z'0001'                 OUTPUT MLCC CONTROL FUNTION CODE
005593  1546  001E                  CONT10  DC      X'1E'                   INPUT LCT STATUS
005594  1547  0003                  CONT11  DC      X'3'                    OUTPUT INTERRUPT CONTROL FUNCTION CODE
005595  1548  001C                  CONT12  DC      X'1C'                   INPUT DATA SET STATUS
005596  1549  0000                        DC      0                       TERMINATE TABLE
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005597  154A  0000                    SAV1    RESV    9+7*$AF,0
005598  155A  0000                    SAV2    RESV    9+7*$AF,0
005599  156A  0000                    SAV3    RESV    9+7*$AF,0
005600  157A  0000                    SAV5    RESV    9+7*$AF,0
005601  158A  2118                    ACLAID  RESV    1,X'2118'       ID STORAGE AREA
005602  158B  0000                    NOSTOP  RESV    1,0             "RUN FOREVER" FLAG
005603                                *
005604  158C  0000                    INHRTC  DC      0
005605                                *
005606                                *       REQUEST MODEM TYPE,CK IF SUPPORTED, CK FOR LOOPBACK CAPABILITY
005607  158D  BB80 161E               RMT     LAB     $B3,<RMODEM     LOAD MESSAGE ADDRESS
005608  158F  C3C0 0164               LNJ     $B4,TYPEQ       ASK FOR MODEM TYPE
005609  1591  8740 0092               CL      IMODEM          CLEAR PREVIOUS TYPE
005610  1593  8740 0091               CL      IMODEM+1
005611  1595  1C0A                    LDV     $R1,=X'A'       ALLOW 5 CHAR INPUT
005612  1596  9F40 F8BE               STR     $R1,RNG
005613                                CALL    ZV$1A,STAT,IMODEM,RNG
        1598  FBC0 0003
        159A  0380 0000         X
        159C  0F80
        159D  0E54
        159E  1624
        159F  0E55
005614  15A0  9840 0083               LDR     $R1,IMODEM      LOAD MODEM TYPE INPUT
005615  15A2  9970 3230               CMR     $R1,=X'3230'    20?
005616  15A4  090A                    BE      >RMTA
005617  15A5  9970 3130               CMR     $R1,=X'3130'    10?
005618  15A7  092E                    BE      >RMTB
005619  15A8  9970 3131               CMR     $R1,=X'3131'    11?
005620  15AA  0901 0036               BE      RMTC
005621  15AC  0F81 003C               B       RMTN
005622  15AE  9840 0076               RMTA    LDR     $R1,IMODEM+1
005623  15B0  9970 3253               CMR     $R1,=X'3253'    IS IT 2S?
005624  15B2  0901 003C               BE      NLOOP
005625  15B4  9970 3254               CMR     $R1,=X'3254'    IS IT 2T?
005626  15B6  0939                    BE      >NLOOP
005627  15B7  9970 3243               CMR     $R1,=X'3243'    2C?
005628  15B9  0936                    BE      >NLOOP
005629  15BA  9970 3244               CMR     $R1,=X'3244'    2D?
005630  15BC  0933                    BE      >NLOOP
005631  15BD  9970 380D               CMR     $R1,=X'380D'    8 ?
005632  15BF  0901 005C               BE      M208
005633  15C1  9970 3842               CMR     $R1,=X'3842'    8B?
005634  15C3  0901 0059               BE      M208B
005635  15C5  9970 330D               CMR     $R1,=X'330D'    3 ?
005636  15C7  0901 0053               BE      M203
005637  15C9  9970 3141               CMR     $R1,=X'3141'    1A?
005638  15CB  0901 0036               BE      M201A
005639  15CD  9970 3142               CMR     $R1,=X'3142'    1B?
005640  15CF  0901 0032               BE      M201A
005641  15D1  9970 3143               CMR     $R1,=X'3143'    1C?
005642  15D3  0901 002E               BE      M201A
005643  15D5  9840 004F               RMTB    LDR     $R1,IMODEM+1
005644  15D7  9970 3341               CMR     $R1,=X'3341'    3A?
005645  15D9  0916                    BE      >NLOOP
005646  15DA  9970 3345               CMR     $R1,=X'3345'    3E?
005647  15DC  0913                    BE      >NLOOP
005648  15DD  9970 3346               CMR     $R1,=X'3346'    3F?
005649  15DF  0910                    BE      >NLOOP
005650  15E0  0F89                    B       >RMTN
005651  15E1  9840 0043               RMTC    LDR     $R1,IMODEM+1
005652  15E3  9970 3341               CMR     $R1,=X'3341'    3A?
005653  15E5  090A                    BE      >NLOOP
005654  15E6  9970 3342               CMR     $R1,=X'3342'    3B?
005655  15E8  0907                    BE      >NLOOP
005656  15E9  BB80 163D               RMTN    LAB     $B3,<NONSUP     TYPE MESSAGE;
005657  15ED  C3C0 00F9               LNJ     $B4,TYPEC       UNSUPPORTED MODEM
005658  15EF  0F81 EB12               B       START
005659                                *
005660  15F1  BB80 1646               NLOOP   LAB     $B3,<NOLOOP     TYPE MESSAGE;
005661  15F3  C3C0 00F3               LNJ     $B4,TYPEC       NO LOOP CAPABILITY
005662  15F5  0F81 EB0C               B       START
005663                                *
005664                                *
005665                                *
005666  15F7  C3C0 011C               PRBCHA  LNJ     $B4,HEXPRT
005667  15F9  0E4E                    DC      <BCHAN
005668  15FA  8382                    JMP     $B2
005669                                *
005670  15FB  6C6F 6F70 2065          DONE    TEXT    'LOOP ESTABLISHED$'
        1600  7374 6162 6C69
              7368 6564 2400
005671  1602  9840 F84A               M201A   LDR     $R1,TEST
005672  1604  9970 4C52               CMR     $R1,=X'4C52'    REMOTE LOOP?
005673  1606  0902                    BE      >M201AA         NO LR FOR THIS MODEM
005674  1607  8386                    JMP     $B6             RETURN, ALL OK
005675  1608  BB80 160E               M201AA  LAB     $B3,<NREML
005676  160A  C3C0 00DA               LNJ     $B4,TYPEC
005677  160C  0F81 EAF3               B       START
005678                                *
005679  160E  6E6F 2072 656D          NREML   TEXT    'NO REMOTE LOOP CAPABILITY$'
        1611  6F74 6520 6C6F
              6F70 2063 6170
              6162 696C 6974
              7924
005680                                *
005681  161D  8386                    M203    JMP     $B6
005682                                *
005683  161C  8386                    M208    JMP     $B6
005684                                *
005685  161D  8386                    M208B   JMP     $B6
005686                                *
005687                                *
005688  161E  6D6F 6465 6D20          RMODEM  TEXT    'MODEM TYPE$'
        1621  7479 7065 2400
005689  1624  0000                    IMODEM  RESV    2,0
005690  1626  7465 7374 2400          EMA     TEXT    'TEST$'
005691  1629  2063 6861 6E6E          EMB     TEXT    ' CHANNEL$'
        162C  656C 2400
005692  162E  6D65 7367 2400          EMC     TEXT    'MESG$'
005693  1631  6572 726F 7220          EME     TEXT    'ERROR REPORTING$'
        1634  7265 706F 7274
              696E 6724
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005694  1639 2070 6173 7365        PSS     TEXT    ' PASSES$'
        163C 7324
005695  163D 756E 7375 7070        NONSUP  TEXT    'UNSUPPORTED MODEM$'
        1640 6F72 7465 6420
             6D6F 6465 6D24
005696  1646 6E6F 206C 6F6F        NOLOOP  TEXT    'NO LOOPBACK CAPABILITY$'
        1649 7062 6163 6B20
             6361 7061 6269
             6C69 7479 2400
005697  1654 6C6F 6F70 206C        ESTLPL  TEXT    'LOOP LOCAL MODEM CHAN$'
        1655 6F63 616C 206D
             6F64 656D 2043
             6861 6E24
005698  1650 4352 2F4C 4600        CRLFAS  TEXT    'CR/LF'
005699  1660 000A 2400             CRLF    TEXT    /'000A','$'
005700  1662 2065 7272 6F72        LRS     TEXT    ' ERRORS$'
        1665 7324
005701  1666 6C6F 6F70 2072        ESTLPR  TEXT    'LOOP REMOTE MODEM CHAN$'
        1669 656D 6F74 6520
             6D6F 6465 6D20
             4368 616E 2400
005702                             *
005703                             *  DISPLAY MESSAGE ON CONSOLE
005704                             *
005705          1672               CONPRT  EQU     $                       PROVIDE AUTO CR/LF AFTER EVERY
005706  1672 C3C0 005C                     LNJ     $B4,NEWLIN              PROVIDES CLEAN CONSOL OUTPUT
005707                             *                                          80 BYTES TO ACCOMODATE TTY-K.
005708                             *                                          $B3 POINTS TO BUFFER; $R1 HAS WORD COUNT
005709  1674 0F01 FFFF             CONPR1  NOP     $
005710  1676 A803                          LDR     $R2,$B3                 CHECK FOR BEGINNING CR/LF
005711  1677 A940 FFE8                     CMR     $R2,CRLF                CHECK FOR  CR/LF
005712  1679 0989                          BNE     >DSPST                  IF NOT CR/LF, START DISPLAY LOOP
005713  167A ACD3                          LDB     $B2,=$B3                TEMP SAVE
005714  167B BBC0 FFE1                     LAB     $B3,CRLFAS              PRINT ASCII CR/LF MESSAGE
005715  167D C3C0 0058                     LNJ     $B4,TYPE                INSTEAD OF INVISIBLE CR-LF
005716  167F BCD2                          LDB     $B3,=$B2                RESTORE B3
005717  1680 A873                          LDR     $R2,+$B3                POP $B3,NOW = 1 WORD BEYOND CR/LF
005718  1681 88D1                          DEC     =$R1                    ADJUST RANGE AND ALLOW 80 BYTES/LINE
005719  1682 9970 0028             DSPST   CMR     $R1,=40                 SEE IF RANGE IS MOER THAN 1 LINE
005720  1684 0301 0003                     BG      DSPS
005721  1686 0F81 0043                     B       DSPXIT
005722  1688 8755                  DSPS    CL      =$R5
005723  1689 89C0 EB37                     CMZ     MSGFLG
005724  168B 0981 000D                     BNE     DSPLP
005725  168D 89C0 EF7F                     CMZ     LAFLG
005726  168F 0980              T           BNE     >+$A
005727  1690 89C0 F5BC                     CMZ     SYNFLG
005728  1692 0907                          BE      >DSPLP
005729  1693 89C0 0126                     CMZ     SENTFG
005730  1695 0981 0003                     BNE     DSPLP
005731  1697 C3C0 0037             $A      LNJ     $B4,NEWLIN
005732  1699 C843 0028             DSPLP   LDR     $R4,$B3.40
005733  169B DF43 0028                     STR     $R5,$B3.40
005734  169D 89C0 EB23             DSPLP1  CMZ     MSGFLG
005735  169F 0980              T           BNE     >+$B
005736  16A0 89C0 0119                     CMZ     SENTFG
005737  16A2 0901 0004                     BE      >
005738  16A4 89C0 F5A8                     CMZ     SYNFLG
005739  16A6 09F9              I           BNE     >+$B
005740  16A7 89C0 EF65             S       CMZ     LAFLG
005741  16A9 0980              T           BNE     >+$A                    CANNED MESG HAS CR/LF
005742  16AA 89C0 F5A2                     CMZ     SYNFLG
005743  16AC 09FD              T           BNE     >+$A
005744  16AD C3C0 0021             $B      LNJ     $B4,NEWLIN              PROVIDE CR LF FOR ASSYNC
005745  16AF 0F01 FFFF                     NOP     $
005746  16B1 C3C0 0024             $A      LNJ     $B4,TYPE                SYNC HAS CR LF
005747  16B3 1ED8                          ADV     $R1,-40
005748  16B4 CF43 0028                     STR     $R4,$B3.40
005749  16B6 BBC3 0028                     LAB     $B3,$B3.40
005750  16B8 9970 0028                     CMR     $R1,=40                 CHECK RANGE LEFT
005751                             *  PUT ZERO IN 1ST WORD OF NEXT LINE IF RANGE LEFT IS LESS THAN 40
005752  16BA 0301 FFDE                     BG      DSPLP
005753  16BC 89C0 EB04                     CMZ     MSGFLG
005754  16BE 0981 000B                     BNE     DSPXIT
005755  16C0 89C0 00F9                     CMZ     SENTFG
005756  16C2 0900              T           BE      >+$A
005757  16C3 89C0 F589                     CMZ     SYNFLG
005758  16C5 0981 0004                     BNE     DSPXIT
005759  16C7 89C0 F585             $A      CMZ     SYNFLG
005760  16C9 0980              T           BNE     >+$A
005761  16CA C3C0 0004             DSPXIT  LNJ     $B4,NEWLIN
005762  16CC C3C0 0009             $A      LNJ     $B4,TYPE
005763  16CE 8381                          JMP     $B1
005764                             *
005765                             *
005766                             * POSITION CONSOLE AT NEW LINE
005767                             *
005768                             NEWLIN  CALL    /V$I,CRLF
        16CF FBC0 0003
        16D1 D380 0000       X
        16D3 0F80
        16D4 1660
005769  16D5 8384                          JMP     $B4
005770                             *
005771                             *
005772  16D6 8F00 156A             TYPE    SAVE    <SAV3,=/'FFFF'          SAVE EVERYTHING
        16D8 FFFF
005773  16D9 BFC0 0006                     STB     $B3,TYPEA               PUT ADDRESS IN PROPER PLACE
005774                                     CALL    /V$I,TYPEA              TYPE THE MESSAGE
        16DB FBC0 0003
        16DD D380 0000       X
        16DF 0F80
        16E0 16E0
005775          16E0               TYPEA   EQU     $-$AF
005776  16E1 8F80 156A                     RSTR    <SAV3,=/'FFFF'          RESTORE EVERYTHING
        16E3 FFFF
005777  16E4 8384                          JMP     $B4                     RETURN TO CALLER
005778                             *
005779                             *  DISPLAY MESSAGE ON CONSOLE (WITH PREFIXED CR AND LF)
005780                             *
005781  16E5 8F00 156A             TYPEC   SAVE    <SAV3,=/'FFFF'          SAVE EVERYTHING
        16E7 FFFF
005782  16E8 BFC0 0006                     STB     $B3,TYPC                PUT THE ADDRESS IN
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005783                                          CALL    ZV$I,ZV$TC,TYPEA        TYPE THE MESSAGE
        16EA  FBC0 0003
        16EC  D380 0000       X
        16EE  0F80
        16EF  16E0
005784          16EF            TYPC    EQU     $-$AF
005785  16F0  8F80 156A                  RSTR    <SAV3,=Z'FFFF'          RESTORE EVERYTHING
        16F2  FFFF
005786  16F3  8384                      JMP     $B4                     RETURN TO CALLER
005787                          *
005788                          *  DISPLAY MESSAGE ON CONSOLE WITH  " ?: "
005789                          *
005790  16F4  8F00 156A         TYPEQ   SAVE    <SAV3,=Z'FFFF'
        16F6  FFFF
005791  16F7  BFC0 0006                  STB     $B3,TYPQ
005792                                  CALL    ZV$I,ZV$QC,TYPEA
        16F9  FBC0 0003
        16FB  D380 0000       X
        16FD  0F80
        16FE  16E0
005793          16FE            TYPQ    EQU     $-$AF
005794  16FF  8F80 156A                  RSTR    <SAV3,=Z'FFFF'
        1701  FFFF
005795  1702  8384                      JMP     $B4
005796                          *
005797  1703  8F00 156A         TPYQ    SAVE    <SAV3,=Z'FFFF'
        1705  FFFF
005798  1706  BFC0 0006                  STB     $B3,TYQ
005799                                  CALL    ZV$I,ZV$G,TPYJ
        1708  FBC0 0003
        170A  D380 0000       X
        170C  0F80
        170D  1703
005800          170D            TYQ     EQU     $-$AF
005801  170E  8F80 156A                  RSTR    <SAV3,=Z'FFFF'
        1710  FFFF
005802  1711  8384                      JMP     $B4
005803                          *
005804                          *
005805                          *
005806                          *ROUTINE TO PRINT 1 HWORD IN HEX:
005807                          *TO USE:
005808                          *       LNJ $B4,HEXPRT
005809                          *       DC <ARGUMENT
005810                          *
005811                          *OUTPUT:          (SPACE)(SPACE)XXXX WITH LEADING 0'S SUPPRESSED
005812  1712                    HEXPRT  RESV    0
005813  1712  ECF4                      LDB     $B6,+$B4                GET ARGUMENT PTR
005814  1713  EFC0 0006                 STB     $B6,THARG               SET ARG FOR HEX PRINT
005815                                  CALL    ZV$TH,OUT               PRINT (SPACE)(SPACE)XXXX
        1715  FBC0 0003
        1717  D380 0000       X
        1719  0F80
        171A  17BB
005816          171A            THARG   EQU     $-$AF
005817  171B  8384                      JMP     $B4
005818                          *
005819                          *
005820                          *
005821                          *
005822                          *ROUTINE TO CONVERT 1 WORD TO HEX-ASCII AT ANOTHER LOCATION
005823                          *TO USE:
005824                          *       LNJ $B4,HEXASC
005825                          *       DC <SOURCE
005826                          *       DC <TARGET    (3-WORD AREA)
005827                          *
005828                          *OUTPUT: TARGET AREA IN ASCII: (SPACE)(SPACE)XXXX
005829                          *
005830  171C  ECF4              HEXASC  LDB     $B6,+$B4                GET SOURCE PTR
005831  171D  EFC0 0009                 STB     $B6,SOURCE              AND SET UP CALL
005832  171F  ECF4                      LDB     $B6,+$B4                GET TARGET PTR
005833  1720  EFC0 0007                 STB     $B6,TARGET              AND SET UP CALL
005834                                  CALL    ZV$HA,SOURCE,TARGET
        1722  FBC0 0003
        1724  D380 0000       X
        1726  0F80
        1727  1727
        1728  1726
005835          1727            SOURCE  EQU     $-2*$AF
005836          1728            TARGET  EQU     $-$AF
005837  1729  8384                      JMP     $B4
005838                          *
005839                          CLRECD  CALL    ZV$F,RECD,XZERO,D332 RECEIVE BUFFER = 332 0'S
        172A  FBC0 0003
        172C  D380 0000       X
        172E  0F80
        172F  17D5
        1730  1922
        1731  1921
005840  1732  8384                      JMP     $B4
005841                          *
005842                          *
005843                          *       ECHO THE COMMAND LINE INPUT
005844                          *
005845  1733  BB80 1660         ECHOA   LAB     $B3,<CRLF
005846  1735  C3C0 FFA0                LNJ     $B4,TYPE
005847  1737  0F85                      B       >ECHO
005848  1738  BB80 176E         ECHOX   LAB     $B3,<EXECUTE
005849  173A  C3C0 FFAA                LNJ     $B4,TYPEC
005850  173C  9840 F710         ECHO    LDR     $R1,TEST
005851  173E  9F40 0035                 STR     $R1,ECHOMS
005852  1740  C3C0 FFDB                LNJ     $B4,HEXASC              PUT CHAN NUMBER ON COLSOLE
005853  1742  0E4E                      DC      <BCHAN
005854  1743  1776                      DC      <ECHOMS+2
005855  1744  9840 F70B                 LDR     $R1,MESG
005856  1746  1048                      SUR     $R1,8
005857  1747  9A70 2000                 ADD     $R1,=X'2000'
005858  1749  9F40 0030                 STR     $R1,ECHOMS+6
005859                                  CALL    ZV$HD,PASSES,ECHOMS+8
        174B  FBC0 0003
        174D  D380 0000       X
        174F  0F80
        1750  0E51
```

```
                1751  177C
005660          1752  9840 F6FF                LDR     $R1,ERCD
005661          1754  9F40 002B                STR     $R1,ECHOMS+12
005662          1756  89C0 FE34                CMZ     NOSTOP
005663          1758  0911                     BE      >ECHOT
005664          1759  9870 2C46                LDR     $R1,=A',F'
005665          175B  9F40 001F                STR     $R1,ECHOMS+7
005666          175D  9870 4F52                LDR     $R1,=A'OR'
005667          175F  9F40 001C                STR     $R1,ECHOMS+8
005668          1761  9870 4556                LDR     $R1,=A'EV'
005669          1763  9F40 0019                STR     $R1,ECHOMS+9
005670          1765  9870 4552                LDR     $R1,=A'ER'
005671          1767  9F40 0016                STR     $R1,ECHOMS+10
005672          1769  BB80 1774          ECHOT LAB     $B3,<ECHOMS
005673          176B  C3C0 FF6A                LNJ     $B4,TYPE
005674          176D  8382                     JMP     $B2
005675          176E  4558 4543 5554     EXEUTE TEXT   'EXECUTING  $'
                1771  494E 4720 2024
005676          1774  7878 3A20 3334     ECHOMS TEXT   'XX: 345678, 99,      ,   $'
                1777  3536 3738 2C20
                      3939 2C20 2020
                      2020 2020 2C20
                      2020 2400
005677                                   *
005678                                   *       ERROR HANDLING ROUTINE
005679                                   *
005680          177A  8AC0 F6D4          EHAND   INC     ERCT                    BUMP ERROR COUNTER
005681          177C  0F80 177C          EH      B       <EH                     GO TO PROPER ROUTINE
005682          177E  0F01 FFFF                  NOP     $
005683          1780  0F01 FFFF                  NOP     $
005684          1782  0F01 FFFF                  NOP     $
005685                                   *
005686                                   *       FOLLOWS THE NORMAL MODE
005687                                   *
005688          1784  B3C0 01A9          EH2     LNJ     $B3,SUEM                SET UP THE ERROR MESSAGE
005689          1786  BB80 1927                  LAB     $B3,<PRTBF              LOAD MESSAGE ADDRESS
005690          1788  C3C0 FF54                LNJ     $B4,TYPEC               GO TYPE IT
005691          178A  0F80 0936                B       <COUNT
005692          178C  C3C0 FF87          EHA     LNJ     $B4,HEXASC              SET UP NUMBER OF BYTES SENT
005693          178E  0E6A               EHAM1   DC      <OPMRGB
005694          178F  17BE                       DC      <OUTCNT
005695          1790  BB80 17BB                  LAB     $B3,<OUT                TYPE MESSAGE:
005696          1792  C3C0 FF4A                LNJ     $B4,TYPEC               SENT XX (HEX) CHAR.:
005697          1794  BB80 0E74          EH1     LAB     $B3,<CANNED             LOAD MESSAGE ADDRESS
005698          1796  9800 0E6B          EHAM2   LDR     $R1,<OPMRNG
005699          1798  9F40 0019                STR     $R1,SENTFG
005700          179A  93C0 FECF                LNJ     $B1,CONPRT              TYPE IT
005701          179C  8740 0015                CL      SENTFG
005702          179E  C3C0 FF75                LNJ     $B4,HEXASC              SET UP NUMBER OF BYTES RECEIVED
005703          17A0  0E6E                     DC      <RCVRNB
005704          17A1  17CB                     DC      <INCNT
005705          17A2  BB80 17C8                LAB     $B3,<IN                 TYPE MESSAGE:
005706          17A4  C3C0 FF38                LNJ     $B4,TYPEC               RECD XX (HEX) CHAR.:
005707          17A6  BB80 17D5                LAB     $B3,<RECD               TYPE MESSAGE AS RECEIVED
005708          17A8  9840 F6BE                LDR     $R1,RCVRNG              GET RANGE IN WORDS
005709          17AA  93C0 FEC1                LNJ     $B1,CONPR1
005710          17AC  0F01 FFFF                NOP     $
005711          17AE  0F01 FFFF                NOP     $
005712          17B0  0F81 F17D                B       COUNT                   GO TALLY THE PASS
005713          17B2  0000               SENTFG DC      0
005714          17B4  7365 6E74 3A20     OUT     TEXT    'SENT: '
005715          17B8  0000               OUTCNT  RESV    3,0                     NUM OF BYTES SENT
005716          17BA  2028 6865 7829             TEXT    ' (HEX) CHAR.$'
                17BC  2063 6861 722E
                      2400
005717          17C0  7265 6364 3A20     IN      TEXT    'RECD: '
005718          17C2  0000               INCNT   RESV    3,0                     NUM OF BYTES RECEIVED
005719          17C4  2028 6865 7829             TEXT    ' (HEX) CHAR.$'
                17C6  2063 6861 722E
                      2400
005720          17C8  0000               RECD    RESV    332,0                   RECD BUFFER
005721          17CA  014C               D332    RESV    1,332
005722          17CB  0000               XZERO   RESV    1,0
005723                                   *
005724                                   *       SUPPRESS ERRORS
005725                                   *
005726          17CD  0F81 F012          EHB     B       COUNT
005727                                   *
005728                                   *       SUPPRESS,SUM ON CONSOLE
005729                                   *
005730          17CF  0F81 F010          EHC     B       COUNT
005731                                   *
005732                                   *
005733                                   *       SET UP ERROR MESSAGE FOR OUTPUT TO CONSOLE OR PRINTER
005734                                   *
005735          17D1  7878 3A20 2020     PRTBF   TEXT    'XX:              , CHAN345678$'
                17D4  2020 2020 2020
                      2020 2020 2C20
                      6368 616E 3334
                      3536 3738 2400
005736                                   *
005737          17E0  C3C0 FDE5          SUEM    LNJ     $B4,HEXASC              PUT CHAN NUMBER IN ERROR MESSAGE
005738          17E2  0E4E                       DC      <BCHAN
005739          17E3  1932                       DC      <PRTBF+11
005740                                           CALL    ZV$MW,MWRNGA,MWFB,MWTB
                17E4  FBC0 0003
                17E6  D380 0000                  X
                17E8  0F80
                17E9  1945
                17EA  1944
                17EB  1943
005741          17EC  8383                       JMP     $B3
005742                                   *
005743          17ED  1929               MWTB    DC      <PRTBF+2
005744          17EE  0E27               MWFB    DC      <EMZ
005745          17EF  0006               MWRNG   RESV    1,6
005746                1945               MWRNGA  EQU     MWRNG
005747                                   ZVPTCH  CALL    ZV$PCH
                17F0  FBF0 0001
                17F2  D380 0000                  X
005748                                   *
005749          17F4  0100                       END     TCSC1,START
0000  ERR COUNT
```

```
TITLE TCSC1,'REV B' TERMINBL TEST
  692   $A        689B    783B    790B    902B    918B    948B    955B    962B   1058B   1184B
                 1218B   1239B   1437B   1525B   1531B   1606B   1717B   1722B   1724B   1748B
                 1792B   2002B   2028B   2227B   2381B   2631B   2636B   2804B   2915B   2932B
                 5359B   5372B   5553B   5582B   5726B   5741B   5743B   5756B   5760B
  786   $A
  799   $A
  904   $A
  920   $A
  951   $A
  958   $A
  964   $A
 1062   $A
 1167   $A
 1221   $A
 1241   $A
 1439   $A
 1528   $A
 1533   $A
 1617   $A
 1719   $A
 1726   $A
 1744   $A
 1795   $A
 2004   $A
 2042   $A
 2245   $A
 2383   $A
 2647   $A
 2803   $A
 2918   $A
 2935   $A
 5361   $A
 5375   $A
 5381   $A
 5556   $A
 5577   $A
 5731   $A
 5746   $A
 5759   $A
 5762   $A
        $AF       611     959     960    1316    1739    2520    2848    2850    5597    5598
                 5599    5600    5775    5784    5793    5800    5816    5835    5836
  895   $B        892B   1189B   1265B   1746B   2021B   2023B   2036B   2038B   2650B   2939B
                 2944B   2949B   2961B   5389B   5395B   5404B   5448B   5493B   5558B   5735B
                 5739B
 1191   $B
 1263   $B
 1749   $B
 2026   $B
 2041   $B
 2658   $B
 2943   $B
 2948   $B
 2964   $B
 5398   $B
 5451   $B
 5496   $B
 5561   $B
 5744   $B
        $B1       613     614C    629     630C    654     657     672     674C    677     679C
                  683B    725B    778     816C    836C    843     845C    863C    865C    867C
                  869C    871C    873C    890     903C    920C    928B    944     946     951
                  966B    981     982C    986     987C    994     995C   1001    1002C   1009
                 1010C   1014    1015C   1019    1020C   1030    1031C   1041    1042C   1059
                 1060C   1062    1063C   1067    1068C   1076    1077C   1082    1083C   1091
                 1092C   1108    1109C   1136    1137C   1138C   1139C   1140C   1141C   1150
                 1151C   1152    1153C   1156    1157C   1158C   1159C   1160C   1161C   1166
                 1167C   1168C   1216B   1226B   1228    1229C   1243B   1246B   1303B   1309B
                 1322    1323C   1393    1394C   1400B   1552    1553C   1554    1555C   1579
                 1580C   1598    1599C   1600    1601C   1631    1632C   1633    1634C   1651
                 1652C   1658    1659C   1660    1661C   1671    1672C   1675B   1707B   1742
                 1744    1749    1750    1798    1799C   1802    1803C   1817B   1874B   1894
                 1895C   1896    1897C   1910B   1980B   2051C   2131    2132    2474B   2515
                 2517    2521    2522B   2531    2532C   2537    2540    2543    2562    2563C
                 2569    2570C   2573    2574C   2702    2704    2775B   2991    2994    5424
                 5425    5428    5430    5456B   5470    5472    5474    5476    5583B   5763B
                 5900B   5909B
        $B2       634B    692B    736B    737     740B    741     744B    745     748B    749
                  752B    753     765C    767C    944     945C    951    1122    1133    1180
                 1221B   1335B   2093B   2122    2127    2138    2281B   2289B   2295B   2301B
                 2307B   2315B   2380B   2382B   2383B   2393C   2408C   2463B   2473C   2821B
                 2828B   2835B   2841    5499    5500C   5501    5502C   5506    5507C   5510
                 5511C   5512    5513C   5514    5515C   5547    5552    5575    5577    5580C
                 5668B   5713    5716    5874B
        $B3       631     681     697     804     809     949B   1113    1197    1198C   1205
                 1206C   1213    1214C   1236B   1261    1279    1295B   1350B   1358B   1379B
                 1419B   1466B   1489    1501B   1544B   1581B   1582    1592B   1648B   1685B
                 1750    1789B   1826B   1861    1886B   1935B   1977    1979    1988    1993
                 2005    2007C   2009    2026    2029    2031C   2042C   2089    2091    2094
                 2097    2100    2102    2218    2222    2224    2228    2231    2234    2237
                 2239    2245    2248    2250    2252    2254    2256    2258    2331    2350
                 2386    2527B   2587    2620    2656    2682    2712    2781    2783    2785
                 2789    2805B   2810    2839    2841    2916B   2923B   2933B   2940B   2945B
                 2950B   2962B   2974B   2991    2997B   3023B   5378B   5380    5381C   5387B
                 5392B   5396B   5449B   5453B   5494B   5554B   5559B   5607    5656    5660
                 5675    5710    5713    5714    5716    5717    5732    5733C   5748C   5749
                 5749    5773C   5782C   5791C   5798C   5845    5848    5872    5888B   5889
                 5895    5897    5905    5907    5941B
        $B4       632B    698B    738B    742B    746B    750B    754B    766B    776B    785B
                  805B    810B    812B    893B    956B   1224B   1241B   1262B   1266B   1280B
                 1281B   1308B   1385B   1406B   1407B   1408B   1414B   1436B   1440B   1443B
                 1490B   1551B   1571B   1583B   1662B   1670B   1681B   1712B   1716B   1719B
                 1723B   1727B   1728B   1741B   1751B   1797B   1822B   1848B   1854B   1856B
                 1862B   1893B   1907B   1916B   1954B   1958B   1968B   1974B   1978B   2047B
                 2090B   2092B   2095B   2098B   2101B   2103B   2143B   2219B   2223B   2225B
                 2229B   2232B   2235B   2238B   2240B   2241B   2242B   2246B   2249B   2251B
                 2253B   2255B   2257B   2259B   2260B   2286B   2292B   2298B   2304B   2316B
                 2332B   2340B   2384B   2710B   2713B   2782B   2784B   2786B   2787B   2790B
                 2791B   2811B   2840B   2842B   2965B   2978B   3018    3019    3027B   3036B
                 5361B   5374B   5400B   5433B   5438B   5445B   5478B   5482B   5497B   5547
                 5548    5549    5550C   5561C   5563B   5608B   5657B   5661B   5666B   5676B
                 5706B   5715B   5731B   5744B   5746B   5761B   5762B   5769B   5777B   5786B
```

		5795B	5802B	5813	5817B	5830	5832	5837B	5840B	5846B	5849B
		5852B	5873B	5890B	5892B	5896B	5902B	5906B	5937B		
	$B5	1240B	1383B	1528B	1533B	1548B	1594B	1650B	1793B	1795B	1888B
		5424	5427C	5470	5471C	5550C	5561C				
	$B6	612B	1245B	1302B	1399B	1439B	1673B	1680B	1706B	1726B	1816B
		1909B	5508B	5520B	5674B	5681B	5683B	5685B	5813	5814C	5830
		5831C	5832	5833C							
2017	$C	2012B	5386B								
5390	$C										
5394	$D	5391B									
	$R1	623	624C	625	626C	627C	628C	633	653C	657	668
		670B	672	674C	677	679C	682	690	691C	735	739
		743	747	751	835C	836C	862	863C	864	865C	866
		867C	868	869C	870	871C	872C	873C	896	898	946
		947	953B	965B	975	976C	977C	978C	979	984	988C
		989C	992	997	999C	1000C	1003	1004C	1006	1008C	1012
		1017	1021	1022C	1023	1024C	1026	1028	1029C	1032	1033C
		1034C	1038	1040C	1043	1044C	1045	1046C	1048	1050	1051C
		1052	1053C	1054	1055C	1056C	1065	1069	1070C	1072	1074
		1075C	1079	1081C	1084	1085C	1086C	1089	1090C	1093	1094
		1095C	1096	1097	1098C	1099	1101C	1107C	1110	1111C	1117
		1118	1120	1126	1127	1128C	1129	1131	1142	1143C	1144C
		1145C	1147C	1148	1149C	1162	1163C	1164C	1165C	1169C	1170
		1171C	1173	1174B	1175	1176C	1181	1182	1183	1185C	1187
		1188	1191	1203	1204C	1211	1212C	1219	1220C	1225	1242
		1252	1253C	1254	1255	1256C	1257	1258C	1317	1318C	1319
		1320B	1336	1337C	1338	1339C	1340C	1361	1362C	1364	1365C
		1375	1376C	1377	1378C	1386	1387C	1389C	1390C	1391	1392C
		1395	1396	1397C	1434	1450	1451C	1452	1453C	1529	1556
		1557C	1576	1577B	1602	1603C	1604C	1610	1611C	1612C	1617
		1618	1619C	1620	1621C	1635	1636C	1637	1638C	1639C	1640C
		1744	1745	1747	1800	1801C	1807	1808C	1810	1811C	1812
		1813	1814C	1851	1852	1858	1859	1860B	1873	1890	1891
		1898	1899C	1900	1901C	1902	1903C	1922	1923C	1924	1925
		1926C	1927	1928	1929C	1930	1931	1932C	1989C	1991	1993
		2005	2007C	2009	2026	2029	2031C	2032C	2042C	2043C	2046C
		2051C	2074	2076	2078	2080	2081	2083	2084	2086	2114
		2115	2117	2130C	2132	2135B	2138	2280	2282	2284C	2288
		2290	2291C	2294	2300	2306	2318	2319	2320	2321C	2322
		2324	2326	2328	2337	2338	2342	2343	2344	2345C	2346
		2348	2359	2360C	2361	2362C	2363	2364C	2365	2366C	2367
		2368C	2369	2370C	2372	2373	2374	2376	2378	2394	2395C
		2396C	2397C	2398	2399C	2400	2401C	2402	2403C	2404C	2405C
		2409	2410C	2411C	2412C	2413	2414C	2415	2416C	2417	2418C
		2419C	2420C	2425	2426	2427B	2428	2430	2439	2440	2441
		2443	2445	2448	2449	2451	2452	2454	2455	2457	2458
		2460	2461	2511	2515	2519	2520	2521	2524	2525	2533
		2534C	2612	2613	2614	2615C	2616	2618	2623C	2624	2625C
		2626	2627C	2628C	2629C	2630C	2633C	2634	2635	2637	2638C
		2639	2640C	2641	2642C	2643	2644C	2645	2646C	2647	2648C
		2649	2651	2652	2653C	2654	2658	2659	2661	2662C	2663
		2664C	2665	2666C	2667	2668C	2669	2670C	2671	2672C	2673
		2674C	2675	2676	2678	2680	2685	2687	2689	2690C	2701C
		2704	2768B	2817C	2825C	2832C	2935	2936	2992C	2994	5352C
		5353C	5354	5355C	5356	5357C	5402	5403	5430	5431	5474
		5475C	5476	5477	5503	5504	5505C	5516	5517	5518	5519C
		5576C	5577	5580C	5611	5612C	5614	5615	5617	5619	5622
		5623	5625	5627	5629	5631	5633	5635	5637	5639	5641
		5643	5644	5646	5648	5651	5652	5654	5671	5672	5718C
		5719	5747	5750	5850	5851C	5855	5856	5857	5858C	5860
		5861C	5864	5865C	5866	5867C	5868	5869C	5870	5871C	5898
		5899C	5908								
	$R2	635	636	638	640	641	645	647	648	650	651C
		657	659	661	686	694	701	703	707	709	710
		712	716	718	719	757	765C	767C	787	788	789
		799	801	807	808	816C	843	844	845C	900	903C
		911	919	920C	922	923	952	954	957C	964C	1971
		1972	1993	1994	1996	2001	2003	2005	2006	2007C	2009
		2010	2013	2015	2018	2022	2026	2027	2029	2030	2031C
		2037	2041C	2042C	2050C	2051C	2075	2076	2132	2133	2296
		2297C	2302	2303C	2308	2309	2310	2311C	2512	2517	2523
		2703	2705	2770	2771B	2994	2995B	3000	5428	5429C	5549
		5557	5710	5711	5717						
	$R3	656C	658	663	664	666	762	763	777	794	796C
		816C	817	832	833	836C	837C	838C	839C	840C	841
		843	845C	846C	847C	848C	849	850C	851C	852C	853C
		854C	855	856C	861	863C	865C	867C	869C	871C	873C
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		2971	2972	2983	2984	2985C	2989	2990C	2999	3000	3011
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		5351C	5375	5376	5425	5426C	5472	5473C	5491	5492	5535
		5536	5537C	5538	5539	5540C	5543	5544C	5545	5546C	5551
		5552	5556	5557	5574	5579	5732	5748C			
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		1354	1356	1380C	1381	1444C	1445	1468	1470	1472	1503
		1505	1507	1524	1530	1545C	1572	1573	1593C	1649C	1745
		1790C	1887C	1990C	1998C	2033C	2044C	2045C	2283	2285C	2514
		2517	2599	2779C	2803	2930	2938	2943	2948	2960	3018
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2878  RRANGE    859C   1575
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3746  RTA2     2397C   2412C
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1957  RTEXD    1955B
1959  RTEXE
1939  RTLCT    1936
1945  RTLCTA   1923C
1946  RTLCTB   1926C
1947  RTLCTC   1929C
1948  RTLCTD   1932C
1949  RTLCTE   1339C   1901C
1950  RTLCTF   1340C   1903C
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4423  RTS      1676    1677    1709
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1604  RTSYY    1641B
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5598  SAV2     2779C   2792    2911C   2969C   2977    2982C   2988C   2996    3010C   3015C
                3026    5344C   5349C   5398    5533C   5542C   5562
5599  SAV3     5772C   5776    5781C   5785    5790C   5794    5797C   5801
5600  SAV5     3035C
1739  SAVE6    1669C   1731
 880  SAVE7
2457  SB       2444B   2450B   2453B
2462  SBD      2459B
2265  SBITS    2236    2303C   2342    2345C   2457    2647
5422  SDATA    1246B   1303B   1400B   1675B   1707B   1817B   1910B
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1203  SEHC     1190B
1211  SEHD     1193B
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                2646C
4217  SELCT1   4167    4168    4169
4176  SELECT   4092    4093    4095
5913  SENTFG   5729    5736    5755    5899C   5901C
2987  SETLCT   1419B   1685B   1826B
4986  SFS1     4509    4510    4511    4966    4967    4970    5010    5011    5012    5105
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4953  SFS2     5041    5042    5043    5081    5082    5083
2493  SIZE     2525
1909  SKIP
2851  SLAF     2848
4107  SNDTX    4123    4124    4129
4577  SOH      4565    4566    4567
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5435  SPRG1    5426C
5436  SPRG2    5429C
5438  SPRG2A   5500C   5511C
5444  SPRG3    5439B   5485B   5502C   5515C
5446  SPRG4
5434  SPRG5    5427C
5433  SPRG6    5507C   5513C
5455  SPRG7    5452B
5499  SRCV     1439B   1673B   1680B   1726B   1909B
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4686  STACHR   4726    4727    4729
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 615  STARTB    630C
 611  STARTM    614C
2870  STAT      780     806    2820    5613
1286  STATUS   1279
2264  STBITS   2234
1277  STCK     2937B
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4707  STORIT   4670    4671    4672    4677    4678    4682
4640  STX      4628    4629    4630
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2475 TAB1 2493
2692 TADER 2587
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5380 TEST20 5366B
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4514 VPRSFS 4505 4506 4508 4537 4538 4539
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3956 VPXSEG 4212 4213 4214 4219 4228 4229 4230 4372 4373 4374
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4942 WT3 4949 4950 4955
3693 WT4 3700 3701 3706
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2195 XROLD 2122
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ZHPFR 606
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5949 RECORDS
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   0 M FLAGS
 108 N FLAGS
6 CROSS REF VERSION L - 24 SEPT, 1976
RS LINKER VERSION 5.00 07/14/78  0823.9 EDT FRI
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 HIGH           222E
 CURRENT        222F
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  ZHPFR         0000
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  ZHRTC1        0014
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  ZHMERC        001F
  ZH1AFB        0020
  ZHTH29        0063
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  ZHTH21        006B
  ZHTH20        006C
  ZHTH19        006D
  ZHTH18        006E
  ZHTH17        006F
  ZHMEMP.       006F
  ZHTH16        0070
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 ZVS--6      1D43
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 ZVSULB      1DC0
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 ZVSNSR      1DC5
 ZVSSTR      1DC3
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 ZVSBRS      1DC7
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