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DPV-11 FUNC DIAG
CVDPVCO

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FICHE 01 OF 02

FEB 1985
digital
Made In USA



DPV11

DPV-11 FUNC DIAG
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FICHE 02 OF 02

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DPV-11 FUNC DIAG
CVDPVCO

TEST	UNIT	TEST	UNIT
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IDENTIFICATION

PRODUCT CODE: AC-S033C-MC
PRODUCT NAME: CVDPVCO DPV11 FUNC DIAG
PRODUCT DATE: OCTOBER 1980
MAINTAINER: DIAGNOSTIC ENGINEERING
AUTHOR: MIKE O'CONNOR

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DIGITAL	PDP	UNIBUS	MASSBUS
DEC	DECUS	DECTAPE	

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REVISION HISTORY:

REV	DATE	AUTHOR	REASON
---	----	-----	-----
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B	OCT. 80	MIKE OCONNOR	1. CHANGE CHARACTER LENGTH IN TEST 37 2. CHANGE TIMEOUT IN TEST 29 3. ENHANCEMENTS
C	29-JUL-84	NICK MCCAMY	INCREASED TIMING PARAMETERS TO ALLOW PROGRAM TO RUN ON A J-11 PROCESSOR (ORION).

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1.0 INTRODUCTION

THIS PROGRAM WILL BE IMPLEMENTED USING THE DIAGNOSTIC SUPERVISOR AND A STRUCTURED PROGRAMMING APPROACH. BECAUSE THE DESIGN WILL CONFORM TO THE SUPERVISOR (STANDALONE VERSION) THE PROGRAM WILL BE COMPATIBLE WITH ACT, APT, XXDP, AND SLIDE.

THROUGH DIALOGUE WITH THE OPERATOR, THE PROGRAM WILL ALLOW MODIFICATION OF DEVICE PARAMETERS, SUCH AS LSI-BUS ADDRESS, VECTOR ADDRESSES AND DEVICE PRIORITY. IN ADDITION, THE OPERATOR CAN SPECIFY PARTICULAR TESTS TO BE RUN AND A VARIETY OF LOOPING, RUNNING, AND REPORTING MODES.

DEVICE ERRORS WILL BE REPORTED AS THEY OCCUR. THE REPORT WILL INCLUDE A TEST NUMBER AND DESCRIPTION OF THE ERROR, GOOD AND BAD TEST DATA, AND APPLICABLE DEVICE REGISTER CONTENTS.

2.0 HARDWARE REQUIREMENTS

THE FOLLOWING HARDWARE IS REQUIRED TO RUN THE DPV11 FUNCTIONAL DIAGNOSTIC TESTS:

A LSI11 OR PDP11/03
16K MEMORY
CONSOLE TERMINAL
DPV11

3.0 PRELIMINARY PROGRAM REQUIREMENTS

IT IS ASSUMED THAT THE PROCESSOR IS IN PROPER WORKING CONDITION.

THE DEVICE ADDRESS AND THE INTERRUPT VECTOR MUST BE KNOWN BEFORE ANSWERING THE USER DIALOGUE. THE USER SHOULD ALSO KNOW WHETHER THE CPU IS A LSI11 (M7264), A LSI11/2 (M7270), OR A LSI11/23 (M8186). FINALLY THE USER MUST DECIDE THE TYPE OF TURNAROUND IN ORDER TO DETERMINE THE CONNECTOR (IF ANY) IS NECESSARY.

4.0 GENERAL PROGRAM CONSIDERATIONS

4.1 DIAGNOSTIC SUPERVISOR

THIS PROGRAM IS COMPATIBLE WITH THE STANDALONE DIAGNOSTIC SUPERVISOR, AND MUST BE LOADED TO BE CO-RESIDENT WITH THE SUPERVISOR, OR BE PREVIOUSLY COMBINED WITH THE SUPERVISOR AND LOADED AS A SINGLE FILE. IN EITHER CASE, THE COMBINED

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PROGRAM WILL NOT EXCEED 16K OF MEMORY.

4.2 EXECUTION TIME

EXECUTION TIME IS DEPENDENT ON THE PROCESSOR SPEED AND THE TYPE OF LOOPBACK
 THE FOLLOWING ARE THE TIMES TO COMPLETE THE 1ST PASS:

	RS423 (OR INTERNAL)	RS422
LSI11 (KD11-F M7264 MODULE):	10 SECONDS	30 SEC.
LSI11/2 (KD11-HA M7270 MODULE):	10 SECONDS	30 SEC.
LSI11/23(KDF11-AA M8186 MODULE):	7 SECONDS	5 SEC.

4.3 XXDP+

THIS PROGRAM MAY BE LOADED UNDER XXDP+, AND MAY BE RUN IN
 DUMP MODE OR CHAIN MODE.

4.4 ACT/SLIDE

THIS PROGRAM MAY BE LOADED UNDER ACT OR SLIDE AND MAY BE RUN
 IN DUMP MODE OR CHAIN MODE.

4.5 APT

THIS PROGRAM MAY BE LOADED BY THE APT SYSTEM (INCLUDING
 APT-RD) AND RUN IN PROGRAM MODE OR SCRIPT MODE.

4.6 MEMORY MANAGEMENT

THERE IS NO MEMORY MANAGEMENT USE IN THIS DIAGNOSTIC.

4.7 MEMORY PARITY OPTION

IF PARITY MEMORY IS INSTALLED, MEMORY PARITY TRAPS ARE
 DISABLED BY THE PROGRAM.

4.8 ERROR LOGGING

AT THE END OF EACH PASS ON ALL UNITS, THE PROGRAM PRINTS OUT
 THE CUMULATIVE TOTAL NUMBER OF ERRORS SINCE THE LAST START OR
 RESTART COMMAND.

5.0 PROGRAM LOAD MEDIA

THIS PROGRAM CAN BE LOADED FROM PAPER TAPE USING THE
 ABSOLUTE LOADER OR FROM ACT, SLIDE, OR APT SYSTEMS, OR FROM
 ANY MEDIA SUPPORTED BY XXDP+. WHEN USING THE PAPER TAPE
 ABSOLUTE LOADER, THE PROGRAM SHOULD BE LOADED FIRST,
 FOLLOWED BY THE DIAGNOSTIC SUPERVISOR. WHEN USING XXDP+, THE
 DIAGNOSTIC SUPERVISOR SHOULD BE LOADED FIRST, FOLLOWED BY
 THE DIAGNOSTIC PROGRAM.

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6.0 OPERATING INSTRUCTIONS
6.1 LOADING AND STARTING PROCEDURES

6.1.1 LOADING PROCEDURES

THIS PROGRAM MAY BE LOADED FROM PAPER TAPE USING THE ABSOLUTE LOADER. IT MAY ALSO BE LOADED FROM ANY XXDP+ LOAD MEDIA. WHEN LOADED UNDER XXDP+, THE DIAGNOSTIC SUPERVISOR WILL BE LOADED AUTOMATICALLY.

6.1.2 STARTING PROCEDURES

THE PROGRAM STARTS AT LOCATION 200. USE STANDARD DEC PROCEDURES TO START THE PROGRAM.

6.1.3 STEPS FOR QUICK AND SIMPLE EXECUTION

THE DIAGNOSTIC CAN BE EXECUTED STANDALONE UNDER XXDP+, WITHOUT READING THE REMAINDER OF THIS DOCUMENT, AS FOLLOWS:

- A) LOAD AND START DIAGNOSTIC USING RUN COMMAND
- B) RECEIVE DIAGNOSTIC SUPERVISOR IDENTIFICATION AND PROMPT (DRS-C>)
- C) ENTER STA<CR>
- D) ANSWER HARDWARE AND SOFTWARE QUESTIONS
- E) GET END OF PASS MESSAGES OR ERROR MESSAGES
- F) TO END EXECUTION, ENTER CONTROL/C

6.2 INITIAL DIALOGUE

AFTER THE PROGRAM AND THE SUPERVISOR ARE LOADED AND THE PROGRAM IS STARTED, THE FOLLOWING IDENTIFICATION IS TYPED :

DRS LOADED
DIAG. RUN-TIME SERVICES

DR>

THE OPERATOR THEN PROCEEDS BY TYPING ONE OR MORE OF THE COMMANDS DESCRIBED IN THE FOLLOWING SECTION 6.3. (FOR MORE DETAILED INFORMATION, REFER TO THE DIAGNOSTIC SUPERVISOR FUNCTIONAL SPECIFICATION).

6.3 PROGRAM OPTIONS

6.3.1 START COMMAND

STA(RT)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:

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<FLAG-LIST>/EOP:<INCR>

6.3.1.1 TESTS SWITCH (/TESTS:<TEST-LIST>)

<TEST-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (1:2 ETC.) OR RANGES OF DECIMAL NUMBERS (1-5:8-10 ETC.) THAT SPECIFY THE TESTS TO BE EXECUTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS RANGE FROM 1 TO THE LARGEST TEST NUMBER IN THE DIAGNOSTIC. THEY MAY BE SPECIFIED IN ANY ORDER. TESTS WILL BE EXECUTED IN NUMERICAL ORDER REGARDLESS OF THE ORDER OF SPECIFICATION. THE DEFAULT IS TO EXECUTE ALL TESTS. ON THIS AND ALL SWITCHES, THE ANGLE BRACKETS <> ARE PUNCTUATION USED IN THE DEFINITION ONLY, AND ARE NOT TO BE TYPED BY THE OPERATOR. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.2 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS A DECIMAL NUMBER INDICATING THE DESIRED NUMBER OF PASSES. A PASS IS DEFINED AS THE EXECUTION OF THE FULL DIAGNOSTIC (ALL SELECTED TESTS) AGAINST ALL UNITS SUBMITTED. THE DEFAULT IS NON-ENDING EXECUTION. IN THIS CASE EXIT FROM THE PROGRAM IS ACCOMPLISHED EITHER BY TYPING A CONTROL/C OR BY OCCURANCE OF AN ERROR WITH THE HALT ON ERROR FLAG BEING SET. THE EXIT IS A RETURN TO COMMAND MODE. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.3 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS A SEQUENCE OF ELEMENTS OF THE FORM <FLAG>, <FLAG=1>, OR <FLAG=0>, SEPARATED BY COLONS, WHERE <FLAG> HAS ONE OF THE FOLLOWING VALUES:

- HOE HALT ON ERROR, CAUSING COMMAND MODE TO BE ENTERED WHEN AN ERROR IS ENCOUNTERED
- LOE LOOP ON ERROR, CAUSING THE DIAGNOSTIC TO LOOP CONTINUOUSLY WITHIN THE SMALLEST DEFINED BLOCK OF CODING (SEGMENT, SUBTEST, OR TEST) CONTAINING THE ERROR
- IER INHIBIT ERROR REPORTING
- IBE INHIBIT BASIC ERROR REPORTS
- IXE INHIBIT EXTENDED ERROR REPORTS
- PRI DIRECT ALL MESSAGES TO A LINE PRINTER
- PNT PRINT NUMBER OF TEST BEING EXECUTED
- BOE BELL ON ERROR
- UAM RUN IN UNATTENDED MODE, BYPASSING MANUAL INTERVENTION TESTS
- ISR INHIBIT STATISTICAL REPORTS
- IDU INHIBIT DROPPING OF UNITS BY DIAGNOSTIC
- LOT LOOP ON TEST

THE FLAGS NAMED OR EQUATED TO 1 ARE SET, THOSE EQUATED TO 0 ARE CLEARED. A FLAG NOT SPECIFIED IS CLEARED. IF THE FLAGS

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SWITCH IS NOT GIVEN ALL FLAGS ARE CLEARED. SEE EXAMPLE AT
 END OF 6.3.1.5.

6.3.1.4 END OF PASS SWITCH (/EOP:<INCR>)

<INCR> IS A DECIMAL NUMBER INDICATING HOW OFTEN (IN TERMS OF
 PASSES) IT IS DESIRED THAT THE END OF PASS MESSAGE BE
 PRINTED. THE DEFAULT IS AT THE END OF EVERY PASS. SEE
 EXAMPLE AT END OF 6.3.1.5.

6.3.1.5 EFFECT OF START COMMAND

THE EFFECT OF THE START COMMAND IS TO INITIATE THE HARDWARE
 PARAMETER DIALOGUE, THE SOFTWARE PARAMETER DIALOGUE, AND
 THEN THE DIAGNOSTIC TESTS THEMSELVES.

THE HARDWARE PARAMETER DIALOGUE COMMENCES WITH THE QUESTION
 "# UNITS?" TO WHICH THE OPERATOR REPLIES WITH A DECIMAL
 NUMBER N FROM 1 TO 16. THE TERM "UNIT" REFERS TO THE DEVICE
 TO WHICH THIS SERIES OF DIAGNOSTICS IS DEDICATED. FOLLOWING
 THIS ARE THE QUESTIONS WHEREBY THE P-TABLES THEMSELVES WILL
 BE BUILT. EACH P-TABLE IS A CORE-RESIDENT TABLE CONTAINING
 ALL THE HARDWARE INFORMATION FOR ONE UNIT. THE OPERATOR
 MUST SUPPLY N (NUMBER OF UNITS) VALUES FOR EACH QUESTION.
 HE MAY DO THIS BY GIVING ONE ANSWER TO EACH QUESTION (IN
 WHICH CASE THE SERIES OF QUESTIONS WILL BE POSED N TIMES) OR
 BY GIVING N VALUES, SEPARATED BY COMMAS, TO EACH QUESTION
 (SERIES WILL BE POSED ONCE). EACH QUESTION IS FOLLOWED BY
 THE RESPONSE RADIX (D FOR DECIMAL, B FOR BINARY, O FOR
 OCTAL, L FOR YES/NO) IN PARENTHESES AND THE DEFAULT VALUE
 AFTER THE PARENTHESES.

FOLLOWING THE HARDWARE QUESTIONS ARE THE SOFTWARE QUESTIONS
 TO BUILD THE SOFTWARE TABLES, WHICH DEFINE THE MODE (QUICK
 VERIFY ETC.) THAT THE DIAGNOSTIC WILL EXECUTE IN.

WHEN THE QUESTION "# UNITS?" IS ANSWERED, MEMORY STORAGE IS
 ALLOCATED FOR THE P-TABLES, AND IF THERE IS NOT ENOUGH TO
 ACCOMMODATE THEM THE MESSAGE "TOO MANY UNITS" IS ISSUED. IN
 THIS CASE THE DIAGNOSTIC MUST BE EXECUTED MORE THAN ONCE TO
 TEST ALL UNITS.

EXAMPLE:

STA/TESTS:1:2-4:6:8-10/PASS:3/FLAGS:IER:HOE=1:UAM:LOE

THIS COMMAND WILL CAUSE THREE PASSES TO BE MADE, EACH PASS
 CONSISTING OF TESTS 1,2,3,4,6,8,9, AND 10 EXECUTED AGAINST
 ALL UNITS. THERE IS NO DIFFERENCE BETWEEN SAYING <FLAG> AND
 SAYING <FLAG=1>. THE NOTATION <FLAG=0> IS MEANINGFUL ONLY ON
 A COMMAND OTHER THAN START TO CLEAR A FLAG THAT WAS
 PREVIOUSLY SET. NOTE THAT ON ALL COMMANDS ONLY THE FIRST
 THREE LETTERS ARE SCANNED.

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6.3.2 RESTART COMMAND

RES(TART)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:
<FLAG-LIST>/UNITS:<UNIT-LIST>

6.3.2.1 TESTS, PASS, AND FLAGS SWITCHES

<TEST-LIST>, <PASS-CNT>, AND <FLAG-LIST> ARE AS IN THE START COMMAND.

6.3.2.2 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (0,1 ETC.) OR RANGES OF DECIMAL NUMBERS (0-5, 8-10 ETC.) THAT SPECIFY THE UNITS TO BE TESTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS MAY RANGE FROM 0 THRU N-1 (N IS THE NUMBER OF UNITS SPECIFIED IN THE PREVIOUS START COMMAND). THE NUMBER INDICATES THE POSITION OF THE P-TABLE AS THE DATA WAS ENTERED DURING THE HARDWARE DIALOGUE. THE UNITS WHICH ARE SELECTED MUST NOT HAVE BEEN DROPPED BY THE DROP COMMAND. SEE THE DISCUSSION OF ADD AND DROP COMMANDS BELOW. DEFAULT IS TO TEST ALL UNITS WHICH HAVE NOT BEEN DROPPED BY A DROP COMMAND.

6.3.2.3 EFFECT OF RESTART COMMAND

THE RESTART COMMAND DIFFERS FROM THE START COMMAND IN THAT THE P-TABLES FROM THE PREVIOUS START COMMAND (THERE MUST HAVE BEEN ONE) ARE USED, INSTEAD OF NEW ONES BEING BUILT. THE UNITS SWITCH GIVES THE ABILITY TO SELECT A SUBSET OF THESE. THE SOFTWARE DIALOGUE MAY OPTIONALLY BE REEXECUTED (OPERATOR WILL BE ASKED). THE COMMAND CAN BE USED AFTER COMMAND MODE HAS BEEN REENTERED IN ANY OF THE THREE NORMAL WAYS: A) THE REQUESTED NUMBER OF PASSES HAVE BEEN MADE B) AN ERROR WAS ENCOUNTERED WITH THE HALT ON ERROR FLAG SET C) A CONTROL/C WAS ENTERED BY THE OPERATOR.

6.3.3 CONTINUE COMMAND

CON(TINUE)/PASS:<PASS-CNT>/FLAGS:<FLAG-LIST>

6.3.3.1 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS SAME AS IN START COMMAND, BUT THE DEFAULT IS THE UNSATISFIED PASS-CNT FROM THE PREVIOUS START OR RESTART. IF NONE REMAINS, THE DEFAULT IS NON-ENDING EXECUTION.

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6.3.3.2 FLAG SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS SAME AS IN START COMMAND, BUT UNSPECIFIED
FLAGS RETAIN THEIR CURRENT VALUE.

6.3.3.3 EFFECT OF CONTINUE COMMAND

CONTINUE MUST FOLLOW A START OR RESTART, AND COMMAND MODE
MUST HAVE BEEN ENTERED DUE TO A HALT ON ERROR OR A
CONTROL/C. THE EFFECT OF THE COMMAND IS TO GO TO THE
BEGINNING OF THE TEST THAT WAS BEING EXECUTED WHEN THE HALT
OR CONTROL/C TOOK PLACE. SOFTWARE DIALOGUE MAY OPTIONALLY
BE REEXECUTED. HARDWARE PARAMETERS MAY NOT BE CHANGED.

6.3.4 PROCEED COMMAND

PRO(CEED)/FLAGS:<FLAG-LIST>

6.3.4.1 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS AS IN THE START COMMAND, BUT UNSPECIFIED
FLAGS RETAIN THEIR CURRENT VALUE.

6.3.4.2 EFFECT OF PROCEED COMMAND

PROCEED MUST FOLLOW A START, RESTART, OR CONTINUE. COMMAND
MODE MUST HAVE BEEN ENTERED VIA A HALT ON ERROR. THE EFFECT
OF THE COMMAND IS TO BEGIN EXECUTION AT THE LOCATION
FOLLOWING THE ERROR CALL. NEITHER HARDWARE NOR SOFTWARE
PARAMETERS MAY BE ALTERED.

6.3.5 ADD COMMAND

ADD/UNITS:<UNIT-LIST>

6.3.5.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.5.2 EFFECT OF ADD COMMAND

THE UNITS SPECIFIED ARE ADDED TO THE TEST SEQUENCE. EACH

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UNIT MUST HAVE A P-TABLE IN MEMORY DUE TO AN EARLIER
HARDWARE DIALOGUE. THIS COMMAND MUST BE FOLLOWED BY A
RESTART OR CONTINUE. THE UNITS SWITCH MUST BE SPECIFIED.
THE ADD COMMAND IS MEANINGFUL ONLY FOR UNITS THAT WERE
PREVIOUSLY DROPPED.

6.3.6 DROP COMMAND

DRO(P)/UNITS:<UNIT-LIST>

6.3.6.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.6.2 EFFECT OF DROP COMMAND

THE UNITS SPECIFIED WILL BE DROPPED FROM TESTING. THE UNITS
WILL BE RESELECTED ONLY BY THE EXECUTION OF AN ADD OR START
COMMAND. THE UNITS SWITCH MUST BE ENTERED. THIS COMMAND
MUST BE FOLLOWED BY A RESTART OR A CONTINUE COMMAND.

6.3.7 PRINT COMMAND

PRI(NT)

6.3.7.1 EFFECT OF PRINT COMMAND

THE TOTAL NUMBER OF ERRORS FOR EACH UNIT SINCE THE LAST
START OR RESTART COMMAND ARE PRINTED. THE ISR (INHIBIT
STATISTICAL REPORTING) FLAG IS CLEARED.

6.3.8 DISPLAY COMMAND

DIS(PLAY)/UNITS:<UNIT-LIST>

6.3.8.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.8.2 EFFECT OF DISPLAY COMMAND

THE HARDWARE P-TABLES FOR ALL UNITS UNDER TEST ARE PRINTED

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OUT IN THE FORMAT IN WHICH THEY WERE ENTERED. ANY UNITS THAT WERE DROPPED BY THE OPERATOR "DROP" COMMAND ARE SO DESIGNATED.

6.3.9 FLAGS COMMAND

FLA(GS)

6.3.9.1 EFFECT OF FLAGS COMMAND

THE CURRENT SETTINGS OF ALL FLAGS ARE PRINTED.

6.3.10 ZFLAGS COMMAND

ZFL(AGS)

6.3.10.1 EFFECT OF ZFLAGS COMMAND

ALL FLAGS ARE CLEARED.

6.3.11 CONTROL CHARACTERS

A CONTROL C (C) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES A RETURN TO COMMAND MODE.

A CONTROL Z (Z) ENTERED DURING ONE OF THE OPERATOR DIALOGUES- HARD CORE QUESTIONS (SEE 6.2), HARDWARE DIALOGUE (SEE 6.3.1.5), OR SOFTWARE DIALOGUE (SEE 6.3.1.5) CAUSES THE DEFAULTS TO BE TAKEN FOR THE REMAINDER OF THAT DIALOGUE.

A CONTROL O (O) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES ALL TELETYPE OUTPUT TO BE SURPRESSED FOR THE REMAINDER OF THE DIAGNOSTIC OR UNTIL ANOTHER O IS TYPED, WHICH RESTORES NORMAL TELETYPE OUTPUT.

6.3.12 HARDWARE PARAMETERS

THE FOLLOWING 4 QUESTIONS WILL BE ASKED ON A START COMMAND. THE VALUE LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN ON A CARRIAGE RETURN RESPONSE.

1. ADDRESS : (O) 160010?

THIS IS THE ADDRESS AT WHICH THE DPV CSR REGISTERS RESIDE ON THE LSI-BUS. THE ALLOWABLE RANGE IS 160000-177776

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(OCTAL), AND THE DEFAULT VALUE IS 160010.

2. VECTOR : (0) 300 ?

THIS IS THE ADDRESS OF THE INPUT INTERRUPT VECTOR FOR THIS DEVICE. THE ALLOWABLE RANGE IS 000-674 (OCTAL), AND THE DEFAULT VALUE IS 300.

3. LOOPBACK -

0 = INTERNAL, 1 = RS423, 2 = RS422
 3 = LOCAL MODEM LOOP, 4 = REMOTE MODEM LOOP (0) 1?

THIS IS THE USER SELECTED LOOPBACK. THE DEFAULT IS RS423. THE FOLLOWING SHOULD BE CONSIDERED:

- A. INTERNAL LOOPBACK RUNS THE DIAGNOSTIC THROUGH THE USYMT MAINTENANCE MODE LOOPBACK. THE DRIVERS WILL NOT BE TESTED. NO CONNECTOR IS REQUIRED.
- B. RS423 REQUIRES A M3260 ONBOARD CONNECTOR OR THE BC05C CABLE AND THE M3259 CONNECTOR. THIS TURNAROUND WILL PROVIDE A 2K CLOCK FOR DIAGNOSTICS. ALL TESTS SHOULD BE ABLE TO BE RUN ON ALL PROCESSORS.
- C. RS422 REQUIRES A MODIFIED M3260 ONBOARD CONNECTOR. THIS TURNAROUND WILL PROVIDE A 50K CLOCK FOR DIAGNOSTICS. THE TESTS RUN WILL DEPEND ON THE PROCESSOR.
 1. THE LSI11/23 SHOULD RUN ALL TESTS.
 2. THE LSI11/2 SHOULD RUN ALL TESTS EXCEPT TESTS 29-41.
 3. THE LSI11 WITHOUT PROCESSOR MEMORY REFRESH SHOULD RUN ALL TESTS EXCEPT TESTS 29-41.
 4. THE LSI11 WITH PROCESSOR MEMORY REFRESH SHOULD RUN ALL TESTS EXCEPT TESTS 29-43.
- D. LOOPBACK THROUGH THE MODEM SHOULD ONLY BE ATTEMPTED IF THE MODEM SUPPORTS THAT TYPE OF LOOPBACK.

6.3.13 SOFTWARE PARAMETERS

NO SOFTWARE PARAMETER QUESTIONS ARE ASKED BY TIS DIAGNOSTIC

6.3.14 EXTENDED DISCUSSION OF P-TABLE DIALOGUE

THE FULL CAPABILITY OF THE HARDWARE DIALOGUE IS REVEALED BY THE FOLLOWING DISCUSSION OF WHAT HAPPENS INTERNALLY.

AS SOON AS THE QUESTION "0 UNITS?" IS ANSWERED (WITH THE NUMBER N, SAY) SPACE IN CORE IS ALLOCATED FOR N P-TABLES. ALL OF THE P-TABLES ARE OF THE SAME FORMAT, AND THERE IS A ONE-TO ONE CORRESPONDENCE BETWEEN THE HARDWARE PARAMETER QUESTIONS AND THE SLOTS IN THE P-TABLE FORMAT.

ON THE FIRST TRIP THRU THE QUESTIONS, ALL OF THE SLOTS IN ALL OF THE P-TABLES ARE FILLED. IF THE OPERATOR TYPES IN LESS THAN N EXPLICIT VALUES IN RESPONSE TO A PARTICULAR QUESTION, THESE VALUES ARE PLACED IN THE P-TABLES (ONE VALUE GOING INTO THE PROPER SLOT OF EACH P-TABLE BEGINNING WITH

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THE FIRST P-TABLE) UNTIL THE STRING OF VALUES IS EXHAUSTED. THE LAST VALUE IN THE STRING BECOMES THE NEW DEFAULT AND IS USED TO FILL THAT SLOT IN THE REMAINING P-TABLES.

ON SUBSEQUENT TRIPS THRU THE QUESTIONS, THE SAME PROCESS IS CARRIED OUT, EXCEPT THAT THE EARLIEST P-TABLE NOT TO HAVE RECEIVED AN EXPLICIT VALUE IN ANY OF ITS SLOTS NOW ASSUMES THE ROLE THAT TABLE NUMBER ONE PLAYED IN THE FIRST TRIP.

THE SERIES OF QUESTIONS IS REISSUED UNTIL AT LEAST ONE QUESTION HAS RECEIVED N EXPLICIT VALUES FROM THE OPERATOR.

IN GIVING A STRING OF VALUES, COMMAS WITHOUT INTERVENING VALUES MAY BE USED TO INDICATE A REPETITION OF THE LAST NAMED VALUE.

A STRING OF VALUES MAY BE GIVEN AS A RANGE (6-10 FOR EXAMPLE). IF THE VALUES REPRESENT PURE NUMERICAL DATA, THIS SAMPLE RANGE TRANSLATES TO THE STRING 6,7,8,9,10 (AN INCREMENT OF 1). IF THE VALUES ARE ADDRESSES, THE SAMPLE RANGE TRANSLATES TO THE STRING 6,8,10 (AN INCREMENT OF 2).

NOW LET US SEE HOW WE COULD USE THESE CAPABILITIES TO CONSTRUCT A SET OF P-TABLES. ASSUME THAT WE HAVE 16 UNITS, AND THAT THERE ARE THREE HARDWARE PARAMETERS FOR EACH (THREE SLOTS IN THE P-TABLE, THREE HARDWARE QUESTIONS IN THE DIALOGUE). LET THE DESIRED VALUE FOR THE FIRST PARAMETER BE THE NUMBER 75 FOR ALL 16 TABLES. LET THE DESIRED VALUE FOR THE SECOND PARAMETER BE EQUAL TO THE UNIT NUMBER (0,1,2,...,15) EXCEPT FOR UNIT 12, WHICH SHOULD RECEIVE THE VALUE 11. LET THE DESIRED VALUE FOR THE THIRD PARAMETER BE THE NUMBER 76 FOR THE FIRST 7 UNITS AND THE NUMBER 77 FOR THE LAST 9 UNITS.

THE FOLLOWING DIALOGUE WOULD ACCOMPLISH THIS GOAL:

UNITS (D) ? 16
 UNIT 0
 <QUESTION 1> ? 75
 <QUESTION 2> ? 0-6
 <QUESTION 3> ? 76

UNIT 7
 <QUESTION 1> ?
 <QUESTION 2> ? 7-11,13-15
 <QUESTION 3> ? 77

THE FIRST TIME THE SERIES IS ASKED, SLOT ONE RECEIVES A 75 IN ALL 16 TABLES. SLOT TWO RECEIVES THE VALUES 0,1,2,...,6 IN TABLES 0 THRU 6 AND A CONSTANT 6 IN TABLES 7 THRU 15. SLOT THREE RECEIVES A CONSTANT 76 IN ALL 16 TABLES.

THE SECOND TIME THRU THE SERIES, TABLES 7 THRU THE END ARE GOING TO BE AFFECTED (NOTE THAT THIS PIECE OF INFORMATION IS PRINTED OUT FOR THE OPERATOR IN THE FORM "UNIT XX" AT THE BEGINNING OF EACH SERIES). QUESTION 1 IS RESPONDED TO

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BY A <CR>, SO SLOT ONE STAYS AT CONSTANT 75 IN TABLES 7
THRU 15, SINCE NO NEW EXPLICIT VALUES ARE TYPED IN. SLOT TWO
GETS THE VALUES 7,8,9,10,11 IN TABLES 7 THRU 11, AND
GETS AN 11 IN SLOT 12, AND GETS THE VALUES 13,14,15 IN
TABLES 13 THRU 15. SLOT THREE GETS THE VALUE 77 IN TABLES 7
THRU 15.

THE DIALOGUE IS TERMINATED WHEN THE SOFTWARE RECOGNIZES THAT
16 EXPLICIT VALUES HAVE BEEN GIVEN FOR AT LEAST ONE QUESTION
(NAMELY QUESTION 2).

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7.0 DEVICE INFORMATION TABLES

SEE THE GLOBAL EQUATES SECTION FOR DEFINITIONS OF REGISTERS IN THE DPV AND BIT DEFINITIONS WITHIN THOSE REGISTERS.

8.0 TEST DESCRIPTIONS

```
*****
;*          TEST 1 - DPV-11
;* VERIFY THAT ADDRESSING THE 4 LSI-BUS CSRS DOES NOT CAUSE A NON-
;* EXISTENT MEMORY TRAP.
;*
;* THE DPV IS AN COMMUNICATION DEVICE RESIDING ON A LSI-BUS.
;* COMMUNICATION BETWEEN THE MAIN CPU AND THE DPV IS ACCOMPLISHED
;* THROUGH A SET OF FOUR 16-BIT LSI-BUS CONTROL AND STATUS REGISTERS
;* (CSRS). THE FOUR REGISTERS ARE ASSIGNED ADDRESSES IN THE I/O PAGE
;* FLOATING ADDRESS SPACE: 76XXX0 - 76XXX6
;*
;* AN ERROR IN THIS TEST COULD MEAN THAT THE DEVICE IS INCORRECTLY
;* CONFIGURED, THAT THE ADDRESS IS WRONG OR THAT THE CRYSTAL CLOCK
;* ON THE DPV IS NOT WORKING. THE SHIFT REGISTER CLOCK IS NEEDED
;* FOR THE LS164 (E15) IN ORDER TO PROVIDE THE BUS REPLY (BRPLY/L ON
;* PIN AF2).
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;*          TEST 2 - DPV-11
;* DPV RESET
;* RESET THE DPV AND ENSURE THAT ALL REGISTERS ARE IN THEIR
;* PROPER INITIALIZATION STATE. THE RESET IS ASYNCHRONOUS TO ALL
;* DATA SET TIMING AND ANY DATA PORT ACCESSES. THE FOLLOWING
;* WILL BE CHECKED BY THE #RESET SUBROUTINE:
;*     1. ALL BITS IN THE DATA PORT REGISTERS ARE CLEARED.
;*     2. ALL OUTPUT INDICATORS ARE CLEARED.
;*     3. TRANSMIT BUFFER EMPTY (TBE) IS SET
;*
;* SUBTEST 1 - AFTER RESET, CHECK THAT MAINTENANCE MODE AND
;* TRANSMITTER CAN BE SET. ALSO CHECK THAT TRANSMITTER
;* BUFFER EMPTY (TBE) IS CLEARED WHEN TDSR IS ACCESSED
;* WITHOUT SETTING TRANSMITTER ENABLE.
;* SUBTEST 2 - ON THE FIRST PASS ONLY, CHECK THAT A BUS RESET. DOES
;* A DPV11 RESET.
;*
;* NOTE: DATA MODE, CTS, RR (RECEIVER READY) AND IC (INCOMING CALL)
;* ARE UNAFFECTED BY A RESET.
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;*****
;*          TEST 3 - DPV-11
;* WRITE/READ DATA PATTERNS
;* THIS TEST IS INTENDED TO TEST THE READ/WRITE BITS IN THE CSRS. THERE
;* IS NO INTENTION TO CHECK THE USYNR/T; IT IS DESIRED TO ONLY CHECK THE
;* READING AND WRITING OF THE CSRS. IN ALL THE SUBTESTS THE BITS ARE
;* CHECKED TOGETHER AND INDIVIDUALLY.
;* SUBTEST 1 - RXCSR (LOW BYTE CSR0)
;*          CHECK BITS 0-6
;* SUBTEST 2 - PCR (HIGH BYTE CSR4)
;*          CHECK BITS 0-7
;* SUBTEST 3 - TDSR (LOW BYTE OF CSR6) - TRANSMIT DATA BUFFER
;*          BITS 0-7
;* SUBTEST 4 - TDSR (HIGH BYTE OF CSR6) - TRANSMIT STATUS REGISTER.
;*          BITS 0-3
;* SUBTEST 5 - TDSR - CHECK BYTE OP SIGNAL FOR USYNRT
;*
;*****

;*****
;*          TEST 4 - DMR-11
;* TRANSMIT ENABLE/ TRANSMIT ACTIVE
;* AFTER A DEVICE RESET, SET TRANSMIT START OF MESSAGE (TSOM). ENSURE
;* THAT TRANSMIT ACTIVE (TXACT) IS SET.
;*
;* TXACT IS USED TO INDICATE THE CURRENT STATE OF THE TRANSMITTER
;* DATA PATH. THIS BIT WILL BE ASSERTED WHEN BOTH THE TRANSMITTER IS
;* ENABLED AND TSOM ARE INTERNALLY SYNCHRONIZED. TXACT WILL BE CLEARED
;* UPON RESET OR WHEN THE TRANSMITTER ENTERS THE IDLE STATE.
;*
;*****

;*****
;*          TEST 5 - DPV-11
;* TRANSMIT BUFFER EMPTY
;* VERIFY THAT TBE (TRANSMIT BUFFER EMPTY) IS ASSERTED WHENEVER
;* THE DEVICE IS RESET OR WHENEVER THE TDSR IS AVAILABLE FOR DATA.
;* TBE IS CLEARED AFTER WRITING TO THE TDSR.
;*
;*****

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;*          TEST 6 - DPV-11
;* TRANSMIT INTERRUPT
;* VERIFY THAT A TRANSMIT INTERRUPT IS RECEIVED WHEN TRANSMIT
;* BUFFER EMPTY (TBE) IS ASSERTED.
;*
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*****
;*          TEST 7 - DPV-11
;* RECEIVER ENABLE, RECEIVER ACTIVE AND RECEIVER DATA READY
;*          MODE: BCP, 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK
;* ENABLE THE RECEIVER. AFTER TRANSMITTING A CHARACTER WAIT FOR
;* RECEIVER DATA AVAILABLE AND CHECK THAT THE RECEIVER IS ACTIVE.
;* AFTER CLEARING RECEIVER ENABLE, ENSURE THAT THE RECEIVER IS INACTIVE.
;*
;* RECEIVER ENABLE - CONTROLS THE OPERATION OF THE RECEIVER DATA PATH (RDP)
;* RECEIVER ACTIVE - THIS OUTPUT IS ASSERTED WHEN THE RDP PRESENTS THE 1ST
;*                   DATA CHARACTER OF A MESSAGE TO THE USYRRT. IT REMAINS
;*                   ASSERTED UNTIL THE RDP ENTERS THE IDLE STATE..
;* RECEIVE DATA   - THIS OUTPUT IS SET WHEN THE RDP HAS ASSEMBLED A DATA
;*                   CHARACTER THAT IS READY TO BE PRESENTED.
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*****
;*          TEST 8 - DPV-11
;* RECEIVE DATA INTERRUPT
;*          MODE: BCP, 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK
;* ENABLE THE RECEIVER AND SET RECEIVER INTERRUPT. TRANSMIT DATA.
;* CHECK THAT THE RECEIVE INTERUPT WAS GENERATED. AFTER THE INTERUPT
;* WAS GENERATED DISABLE THE RECEIVER. CHECK THAT THE RECEIVER BECOMES
;* INACTIVE.
;*
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;*          TEST 9 - DPV-11
;* THERE ARE 3 SUBTESTS IN THIS TEST WHICH ARE INTENDED TO CHECK
;* RECEIVER STATUS.
;* SUBTEST 1 - REOM (RECEIVE END OF MESSAGE)
;*          THIS SUBTEST WILL TRANSMIT A DATA MESSAGE THAT IS
;*          ENDED WITH A TEOM (TRANSMIT END OF MESSAGE). A
;*          CHECK WILL BE MADE THAT THE RECEIVER GETS THE DATA
;*          AND THAT THE REOM IS RECEIVED WHEN RECEIVE
;*          STATUS IS AVAILABLE.
;*
;* SUBTEST 2 - RECEIVER OVERRUN
;*          THIS SUBTEST WILL TRANSMIT DATA CORRECTLY. THE
;*          RECEIVER AFTER BECOMING ACTIVE WILL NOT SERVICE
;*          THE RECEIVE BUFFER CORRECTLY. THIS SHOULD RESULT IN
;*          A RECEIVE OVERRUN. THIS SUBTEST WILL ENSURE THAT
;*          WHEN RECEIVE STATUS IS AVAILABLE, THE RECEIVER OVERRUN
;*          IS SET.
;*
;* SUBTEST 3 - RECEIVER ABORT
;*          THIS SUBTEST WILL TRANSMIT A DATA MESSAGE THAT IS ENDED
;*          WITH A TRANSMIT ABORT. THE SUBTEST WILL ENSURE THAT
;*          RECEIVE STATUS AVAILABLE IS RECEIVED AND THAT THE
;*          ABORT IS RECEIVED.
;*
*****

*****
;*          TEST 10 - DPV-11
;* THIS TEST WILL ENSURE THAT INTERRUPTS MAY BE GENERATED WHEN
;* RECEIVE STATUS IS AVAILABLE. EACH OF THE FOLLOWING SUBTESTS
;* WILL GENERATE THE STATUS AS FOLLOWS:
;* SUBTEST 1 - REOM
;* SUBTEST 2 - RECEIVER OVERRUN
;* SUBTEST 3 - RECEIVER ABORT
;*
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*****
;*          TEST 11 - DPV-11
;* RECEIVE AND TRANSMIT INTERRUPT
;* TRANSMIT AND RECEIVE DATA USING INTERRUPT ROUTINES. THIS TEST
;* WILL TRANSMIT 4 DATA CHARACTERS. AFTER ENSURING THAT A TRANSMIT
;* INTERRUPT WAS COMPLETED, THE TEST WILL CHECK TO MAKE SURE THAT AT
;* LEAST 1 RECEIVE INTERRUPT WAS GENERATED.
;*
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*****
;*          TEST 12 - DPV-11
;* MODEM STATUS
;* IF A PROPER TURNAROUND (H3259 OR H3260) IS ON, THIS TEST WILL
;* CHECK THAT THE FOLLOWING MODEM SIGNALS ARE TURNED AROUND
;* 1. RTS (REQUEST TO SEND)      TURNED AROUND TO CTS (CLEAR TO SEND)
;*                               & RR (RECEIVER READY)
;* 2. DTR (DATA TERMINAL READY) TURNED AROUND TO IC (INCOMING CALL OR RING)
;* 3. SF (SELECT FREQUENCY)     TURNED AROUND TO SQ (SIGNAL QUALITY)
;* 4. LL (LOCAL LOOPBACK)       TURNED AROUND TO DM (DATA MODE)
;*
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*****
;*          TEST 13 - DPV-11
;* MODEM STATUS INTERRUPT
;* IF A PROPER TURNAROUND (H3259 OR H3260) IS ON, THIS TEST WILL CHECK
;* THAT THE FOLLOWING SUBTESTS WORK CORRECTLY.
;* SUBTEST 1 - SET DTR (DATA TERMINAL READY), LOCAL LOOP (LL), RTS (REQUEST
;*              TO SEND) WITH ONLY RECEIVE INTERRUPT ENABLED. ENSURE THAT AN
;*              INTERRUPT IS NOT RECEIVED.
;* SUBTEST 2 - SET DTR, LL AND RTS WITH ONLY DATA SET INTERRUPT ENABLED.
;*              ENSURE THAT AN INTERRUPT IS NOT RECEIVED.
;* SUBTEST 3 - SET DTR, LL AND RTS WITHOUT ANY INTERRUPTS ENABLED. ENSURE
;*              THAT AN INTERRUPT IS NOT RECEIVED.
;* SUBTEST 4 - SET RTS WITH RECEIVE AND DATA SET INTERRUPT ENABLED. ENSURE
;*              THAT AN INTERRUPT IS RECEIVED.
;* SUBTEST 5 - SET DTR WITH RECEIVE AND DATA SET INTERRUPT ENABLED. ENSURE
;*              THAT AN INTERRUPT IS RECEIVED.
;* SUBTEST 6 - SET LL WITH RECEIVE AND DATA SET INTERRUPT ENABLED. ENSURE
;*              THAT AN INTERRUPT IS RECEIVED.
;*
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;* TEST 14 - DPV-11  
;* RECEIVE AND MODEM STATUS INTERRUPTS  
;* CHANGE THE MODEM STATUS WHILE HANDLING A RECEIVE INTERRUPT.  
;* ENSURE THAT THE MODEM STATUS INTERRUPT IS RECEIVED.  
;* SUBTEST 1 - CHANGE RTS DURING THE RECEIVE INTERRUPT. ENSURE THAT  
;* THE DATA SET INTERRUPT WAS RECEIVED.  
;* SUBTEST 2 - CHANGE DTR DURING THE RECEIVE INTERRUPT. ENSURE THAT  
;* THE DATA SET INTERRUPT WAS RECEIVED.  
;* SUBTEST 3 - CHANGE LL DURING THE RECEIVE INTERRUPT. ENSURE THAT  
;* THE DATA SET INTERRUPT WAS RECEIVED.  
;*  
*****
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*****  
;* TEST 15 - DPV-11  
;* SUBTEST 1 - SECONDARY ADDRESS  
;* SEGMENT 1 - SELECT SECONDARY ADDRESS AND SEND THE CORRECT  
;* ADDRESS. CHECK THE DATA IS PROPERLY RECEIVED.  
;* SEGMENT 2 - SELECT SECONDARY ADDRESS AND SEND A MESSAGE WITHOUT  
;* SENDING USING THE SECONDARY ADDRESS. CHECK THAT A  
;* TIME OUT IS RECEIVED.  
;*  
;* SUBTEST 2 - ALL PARTIES ADDRESSING  
;* SEGMENT 1 - SELECT ALL PARTIES AND SECONDARY ADDRESS. SEND A  
;* MESSAGE USING THE ALL PARTIES ADDRESS. ENSURE THAT  
;* THE MESSAGE IS CORRECTLY RECEIVED.  
;* SEGMENT 2 - SELECT ALL PARTIES AND SECONDARY ADDRESS. SEND A  
;* MESSAGE WITHOUT ALL PARTIES OR SECONDARY ADDRESS.  
;* CHECK THAT A TIME OUT IS RECEIVED.  
;* SEGMENT 3 - SELECT ALL PARTIES AND SECONDARY ADDRESS. SEND A  
;* MESSAGE WITH A SECONDARY ADDRESS. CHECK THAT A  
;* TIME OUT IS RECEIVED.  
;*  
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*****
;*          TEST 16 - DPV-11
;* ABORT TEST
;* SUBTEST 1 - ABORT WITH IDLE CLEAR. ABORT CHARACTERS TRANSMITTED WHEN
;*              THE ABORT BIT IS ASSERTED.
;*              SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1,
;*                              5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;* SUBTEST 2 - ABORT WITH IDLE SET. FLAGS TRANSMITTED WHEN THE ABORT BIT
;*              IS ASSERTED.
;*              SELECTED OPTIONS: BOP MODE, NO ERROR CHECKING, IDLE SET,
;*                              5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****
```

```
*****
;*          TEST 17 - DPV-11
;* EXTENDED CONTROL AND ADDRESSING TEST
;* CHECK THAT THE RECEIVER CAN RECOGNIZE EXTENDED ADDRESSING AND CONTROL
;* CHARACTERS.
;*          SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1,
;*                          3 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK,
;*                          EXTENDED CONTROL AND ADDRESSING SELECTED
;*
*****
```

```
*****
;*          TEST 18 - DPV-11
;* TRANSMIT GO AHEAD
;* TERMINATE A MESSAGE USING TRANSMIT GO AHEAD. CHECK THAT THE RECEIVE
;* ABORT BIT IS SET WHEN THE END OF MESSAGE IS RECEIVED.
;*          SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1, LOOP SET,
;*                          5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****
```

```
*****
;*          TEST 19 - DPV-11
;* ASSEMBLED BIT COUNT
;* TRANSMIT VARIOUS BIT LENGTHS WHILE RECEIVING AN 8 BIT CHARACTER.
;* ENSURE THAT THE ASSEMBLED BIT COUNT (ABC) IS CORRECT UPON THE END
;* OF MESSAGE.
;*          SELECTED OPTIONS: BOP MODE, NO ERROR CHECKING, VARIOUS BIT
;*                          LENGTH CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
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*****
;*          TEST 20 - DPV-11
;* SPECIAL SPACE SEQUENCE
;* START A MESSAGE USING A SPECIAL SPACE SEQUENCE. CHECK THAT THE
;* MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
;* NOTE: CERTAIN USYNRTS ONLY TRANSMIT A SPECIAL START SEQUENCE WHEN
;* TRANSMIT START AND END OF MESSAGE ARE SET BY A BYTE OPERATION.
;*
;*          SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1,
;*                            5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****

*****
;*          TEST 21 - DPV-11
;* SYNCH CHARACTER
;* CHECK THAT A SYNCH CHARACTER OF 271 CAN BE USED TO COMMENCE A MESSAGE.
;* VERIFY THAT THE MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
;*          SELECTED OPTIONS: BCP MODE, VRC-EVEN PARITY,
;*                            7 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****

*****
;*          TEST 22 - DPV-11
;* SYNCH FROM TRANSMIT DATA PATH
;* TRANSMIT A MESSAGE USING THE SYNCH FROM THE TRANSMIT DATA PATH.
;* VERIFY THAT THE MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
;*          SELECTED OPTIONS: BCP MODE, VRC-ODD PARITY, IDLE SET
;*                            5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****

*****
;*          TEST 23 - DPV-11
;* STRIP SYNCHS
;* SEND MORE THAN 2 SYNCHS WITH THE STRIP SYNCH BIT SET. CHECK THAT
;* THE MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
;*          SELECTED OPTIONS: BCP MODE, VRC-ODD PARITY, STRIP SYNCH SET
;*                            6 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
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*****
;*          TEST 24 - DPV-11
;* CRC-CCITT PRESET TO ONES.
;* CHECK TO ENSURE THAT THE ERROR CHECK BIT (BIT 15 OF RDSR) IS
;* SET WHEN AN ABORT IS RECEIVED. IN BOP MODE THIS BIT IS SET WHEN THE
;* CRC IS IN ERROR. THE ERROR CHECK BIT SHOULD BE ZERO WHEN REOM=1,
;* IF THE CRC WERE CORRECTLY RECEIVED. BY FORCING AN ABORT WE INTENTIONALLY
;* LOOK AT THE ERROR BIT WHEN IT SHOULD BE IN AN ERROR STATE.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1, LOOP SET,
;*                     4 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****
```

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*****
;*          TEST 25 - DPV-11
;* CRC-CCITT PRESET TO ZERO.
;* CHECK TO ENSURE THAT THE ERROR CHECK BIT (BIT 15 OF RDSR) IS
;* SET WHEN AN ABORT IS RECEIVED. IN BOP MODE THIS BIT IS SET WHEN THE
;* CRC IS IN ERROR. THE ERROR CHECK BIT SHOULD BE ZERO WHEN REOM=1,
;* IF THE CRC WERE CORRECTLY RECEIVED. BY FORCING AN ABORT WE INTENTIONALLY
;* LOOK AT THE ERROR BIT WHEN IT SHOULD BE IN AN ERROR STATE.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 0, LOOP SET,
;*                     8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
*****
```

```
*****
;*          TEST 26 - DPV-11
;* CRC-16 PRESET TO 0
;*
;* SUBTEST 1 - CRC-16 ERROR
;* CHECK TO ENSURE THAT THE ERROR CHECK BIT (BIT 15 OF RDSR) IS
;* CLEAR IF THE RECEIVER IS SHUTDOWN BEFORE THE CRC IS RECEIVED.
;* IN BCP MODE THIS BIT IS CLEAR WHEN THE CRC IS IN ERROR.
;* THE ERROR CHECK BIT SHOULD BE SET WHEN THE LAST CHARACTER IS RECEIVED.
;* IF THE CRC WERE GOOD.
;*   SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO 0, LOOP SET,
;*                     8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;* SUBTEST 2 - CRC-16 CHECK
;* CHECK THAT THE CORRECT CRC-16 IS RECEIVED FOR THE DATA MESSAGE.
;* THE CRC FOR THIS DATA MESSAGE WAS PREDETERMINED.
;*
*****
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:.....
:*          TEST 27 - DPV-11
:* VRC ODD PARITY ERROR
:* BY SELECTING DIFFERENT CHARACTER LENGTHS IN THE RECEIVER AND
:* TRANSMITTER, CAUSE A PARITY ERROR TO OCCUR.
:*   SELECTED OPTIONS: BCP MODE, VRC-ODD PARITY, XMIT=7 &
:*                   RCV=6 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
:.....

:.....
:*          TEST 28 - DPV-11
:* VRC EVEN PARITY ERROR
:* BY SELECTING DIFFERENT CHARACTER LENGTHS IN THE RECEIVER AND
:* TRANSMITTER, CAUSE A PARITY ERROR TO OCCUR.
:*   SELECTED OPTIONS: BCP MODE, VRC-EVEN PARITY, XMIT=5 &
:*                   RCV=4 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
:.....

:.....
:*          TEST 29 - DPV-11
:* DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE WITHOUT THE USE OF INTERRUPT
:* SERVICE ROUTINES. CHECK THAT THE DATA IS CORRECT.
:*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
:*                   8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
:.....

:.....
:*          TEST 30 - DPV-11
:* BOP DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
:* DATA IS CORRECTLY RECEIVED.
:*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZERO,
:*                   6 BIT CHARACTERS, USER SELECTED LOOPBACK.
:.....

:.....
:*          TEST 31 - DPV-11
:* BOP DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
:* DATA IS CORRECTLY RECEIVED.
:*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
:*                   5 BIT CHARACTERS, USER SELECTED LOOPBACK.
:.....

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;*****
;*          TEST 32 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZERO,
;*                     7 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*****

```

```

;*****
;*          TEST 33 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
;*                     8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*****

```

```

;*****
;*          TEST 34 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* NOTE: CERTAIN USYNRTS ONLY TRANSMIT A SPECIAL START SEQUENCE WHEN
;*       TRANSMIT START AND END OF MESSAGE ARE SET BY A BYTE OPERATION.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
;*                     6 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*****

```

```

;*****
;*          TEST 35 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZEROS,
;*                     7 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*****

```

```

;*****
;*          TEST 36 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*   SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZERO, LOOP SET,
;*                     8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*****

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:*****
:*          TEST 37 - DPV-11
:* BCP DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
:* DATA IS CORRECTLY RECEIVED.
:*          SELECTED OPTIONS: BCP MODE, VRC-ODD PARITY, IDLE BIT SET
:*                               6 BIT CHARACTERS, USER SELECTED LOOPBACK.
:*
:*****

:*****
:*          TEST 38 - DPV-11
:* BCP DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
:* DATA IS CORRECTLY RECEIVED.
:*          SELECTED OPTIONS: BCP MODE, VRC-EVEN PARITY,
:*                               5 BIT CHARACTERS, USER SELECTED LOOPBACK.
:*
:*****

:*****
:*          TEST 39 - DPV-11
:* BCP DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
:* DATA IS CORRECTLY RECEIVED.
:*          SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES, STRIP SYNCHS,
:*                               7 BIT CHARACTERS, USER SELECTED LOOPBACK.
:*
:*****

:*****
:*          TEST 40 - DPV-11
:* BCP DATA TEST
:* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
:* DATA IS CORRECTLY RECEIVED.
:*          SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES,
:*                               8 BIT CHARACTERS, USER SELECTED LOOPBACK.
:*
:*****

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*****
;*          TEST 41 - DPV-11
;* DDCMP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE USING THE
;* DDCMP MESSAGE FORMAT. CHECK THAT THE DATA IS CORRECTLY RECEIVED
;* AND THAT THE CRC CHARACTERS ARE RECEIVED IN THE PROPER DDCMP
;* ORDER.
;*          SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES, STRIP SYNCHS
;*                               8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
*****

*****
;*          TEST 42 - DPV-11
;* BCP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*          SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES,
;*                               5 OR 8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
*****

*****
;*          TEST 43 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*          SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
;*                               5 OR 8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
*****

```

9.0 ERROR INFORMATION

9.1 ERROR REPORTING

ERRORS ARE REPORTED BY THE PROGRAM AS THEY OCCUR (IF NOT INHIBITED). THE REPORT CONFORMS TO THE DIAGNOSTIC SUPERVISOR ERROR REPORT FORMAT, AND CONSISTS OF A DESCRIPTION OF THE ERROR, THE TEST NUMBER, SUBTEST NUMBER, PC OF THE ERROR CALL, DEVICE ADDRESS, AND BASIC AND EXTENDED ERROR INFORMATION.

THE FOLLOWING EXAMPLE PROVIDES A TYPICAL ERROR REPORT, WHICH DESCRIBES AN "TIME OUT" ERROR, AND PROVIDES THE PC OF THE ERROR CALL AND THE PC OF THE CALL TO THE SUBROUTINE REPORTING IT, THE FAILING REGISTER NAME, AND DEVICE REGISTER CONTENTS :

DPV DVC FTL ERR 00002 ON UNIT 00 TST 020 SUB 000 PC: 004756
TIME OUT - DURING INTERRUPT EXERCISE
ERROR IN SUBROUTINE CALLED AT PC: 031706
RXCSR: 000160

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CVDPVC.P11 16-AUG-84 14:18 PROGRAM DOCUMENT

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RDSR : 000000
TXCSR: 122432
TDSR : 001402

DPV EOP 1
1 CUMULATIVE ERRORS

8

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-2
 CVDPVC.P11 16-AUG-84 14:18 PROGRAM DOCUMENT

```

3609          002000          .-2000
3610
3611
3612
3613
3614          .MCALL SVC
3615 002000          SVC          ; INITIALIZE SUPERVISOR MACROS
3616
3617
3618 002000          BGNMOD
3619
3620
3621          000001          #LSTIN= 1          ; LIST INSTRUCTIONS
3622          000001          #LSTTAG= 1
3623          000001          SVCINS= 1          ; LIST INSTRUCTIONS, SHIFTED RIGHT
3624          000001          SVCTST= 1          ; LIST TEST TAGS, SHIFTED RIGHT
3625          000001          SVCSUB= 1          ; LIST SUBTEST TAGS, SHIFTED RIGHT
3626          000001          SVCGBL= 1          ; LIST GLOBAL TAGS, SHIFTED RIGHT
3627          000001          SVCTAG= 1          ; LIST OTHER TAGS, SHIFTED RIGHT
3628
3629          ; CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
3630          ; TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS. CHANGE THE
3631          ; SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS. YOU MAY
3632          ; CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
3633
3634 002000          POINTER BGNU
3635
3643
3644
3645

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(3) 002051 003
(5) 002052
(4) 002052 000000
(5) 002054 000000
(5) 002056
(4) 002056 000000
(5) 002060
(4) 002060 003674
(5) 002062
(4) 002062 000000
(5) 002064
(4) 002064 000000
(5) 002066
(4) 002066 000000
(5) 002070
(4) 002070 000000
(5) 002072
(4) 002072 017750
(5) 002074
(4) 002074 000000
(5) 002076
(4) 002076 003702
(5) 002100
(4) 002100 104035
(5) 002102
(4) 002102 000000
(5) 002104
(4) 002104 015372
(5) 002106
(4) 002106 016564
(5) 002110
(4) 002110 016500
(5) 002112
(4) 002112 015364
(5) 002114
(4) 002114 000000
(5) 002116
(4) 002116 000000
(5) 002120
(4) 002120 000000

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.EVEN

L\$EF:: .BYTE C\$EDIT
 .WORD 0
 .WORD 0
L\$SPC:: .WORD 0
L\$DEVP:: .WORD L\$DVTYP
L\$REPP:: .WORD 0
L\$EXP4:: .WORD 0
L\$EXP5:: .WORD 0
L\$AUT:: .WORD 0
L\$DUT:: .WORD L\$DU
L\$LUN:: .WORD 0
L\$DESP:: .WORD L\$DESC
L\$LOAD:: EMT E\$LOAD
L\$ETP:: .WORD 0
L\$ICP:: .WORD L\$INIT
L\$CCP:: .WORD L\$CLEAN
L\$ACP:: .WORD L\$AUTO
L\$PRT:: .WORD L\$PROT
L\$TEST:: .WORD 0
L\$DLY:: .WORD 0
L\$HIME:: .WORD 0

.SBTTL DISPATCH TABLE

:/ THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
:/ IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.

DISPATCH 43

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3683 002122
(4) 002122 000053
(3) 002124
(6) 002124 020030
(6) 002126 020434
(6) 002130 020660
(6) 002132 021410
(6) 002134 021752
(6) 002136 022204
(6) 002140 022362
(6) 002142 022614
(6) 002144 023112
(6) 002146 024120
(6) 002150 025234
(6) 002152 025500
(6) 002154 025770
(6) 002156 026700
(6) 002160 030004
(6) 002162 030714
(6) 002164 031240
(6) 002166 031412
(6) 002170 031622
(6) 002172 032072
(6) 002174 032240
(6) 002176 032424
(6) 002200 032610
(6) 002202 032774
(6) 002204 033164
(6) 002206 033352
(6) 002210 033770
(6) 002212 034160
(6) 002214 034350
(6) 002216 034746
(6) 002220 035122
(6) 002222 035304
(6) 002224 035474
(6) 002226 035646
(6) 002230 036022
(6) 002232 036204
(6) 002234 036366
(6) 002236 036570
(6) 002240 036772
(6) 002242 037174
(6) 002244 037352
(6) 002246 037624
(6) 002250 040034

.WORD 43
L#DISPATCH:;
.WORD T1
.WORD T2
.WORD T3
.WORD T4
.WORD T5
.WORD T6
.WORD T7
.WORD T8
.WORD T9
.WORD T10
.WORD T11
.WORD T12
.WORD T13
.WORD T14
.WORD T15
.WORD T16
.WORD T17
.WORD T18
.WORD T19
.WORD T20
.WORD T21
.WORD T22
.WORD T23
.WORD T24
.WORD T25
.WORD T26
.WORD T27
.WORD T28
.WORD T29
.WORD T30
.WORD T31
.WORD T32
.WORD T33
.WORD T34
.WORD T35
.WORD T36
.WORD T37
.WORD T38
.WORD T39
.WORD T40
.WORD T41
.WORD T42
.WORD T43

3684
3691

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-6
CVDPVC.P11 16-AUG-84 14:18 DEFAULT HARDWARE P-TABLE

.SBTTL DEFAULT HARDWARE P-TABLE

:/ THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES FOR
:/ THE TEST-DEVICE PARAMETERS.

3693
3694
3695
3696
3697
3698
3699
3700
(3)
(3)
(3)
3701
3702
3703
3704
3705
3706
3707
(3)
3708
3709
3710
3711
3712
3713
3714
3715
3716

002252 000003
002252
002254
002254
002254 160010
002256 000300
002260 000001
002262
002262

BGNHW DFPTBL

.WORD 160010
.WORD 300
.WORD 1

ENDHW

:DPV11 CSR UNIBUS ADDRESS
:DPV11 INTERRUPT VECTOR
:TURNAROUND (DEFAULT = RS423)

.WORD L10000-L\$HW/2
L\$HW::
DFPTBL::

L10000:

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-8
CVDPVC.P11 16-AUG-84 14:18 GLOBAL EQUATES SECTION

```

(1)      000100      PRI02== 100
(1)      000040      PRI01== 40
(1)      000000      PRI00== 0
(1)      ;
(1)      ;OPERATOR FLAG BITS
(1)      ;
(1)      000004      EVL==      4
(1)      000010      LOT==      10
(1)      000020      ADR==      20
(1)      000040      IDU==      40
(1)      000100      ISR==      100
(1)      000200      UAM==      200
(1)      000400      BOE==      400
(1)      001000      PNT==     1000
(1)      002000      PRI==     2000
(1)      004000      IXE==     4000
(1)      010000      IBE==    10000
(1)      020000      IER==    20000
(1)      040000      LOE==    40000
(1)      100000      HOE==   100000
3726      ;:*****
3727      ;:*****
3728      ;:*****
3729      ;SWITCH REGISTER OPTIONS
3730
3731      100000      SW15=    100000
3732      040000      SW14=    40000
3733      020000      SW13=    20000
3734      010000      SW12=    10000
3735      004000      SW11=    4000
3736      002000      SW10=    2000
3737      001000      SW09=    1000
3738      000400      SW08=    400
3739      000200      SW07=    200
3740      000100      SW06=    100
3741      000040      SW05=    40
3742      000020      SW04=    20
3743      000010      SW03=    10
3744      000004      SW02=    4
3745      000002      SW01=    2
3746      000001      SW00=    1
3747
3748      ;:*****
3749      ;:CSR AND STATUS WORD DEFINITIONS
3750
3751      ;:RXCSR - CSRO (EXTERNAL REGISTER) READ/WRITE BITS 0 - 6
3752
3753      000001      SF=      BIT0      ;SELECT FREQUENCY.
3754      000001      RL=      BIT0      ;REMOTE LOOPBACK - IF WIRE WRAPPED
3755      ;SELECTED.
3756      000002      DTR=      BIT1      ;DATA TERMINAL READY R/W
3757      000004      RTS=      BIT2      ;REQUEST TO SEND R/W
3758      000010      LL=      BIT3      ;LOCAL LOOPBACK
3759      000020      RXENA=    BIT4      ;RECEIVER ENALBLE R/W
3760      000040      DSITEN=    BIT5      ;DATA SET INTERRUPT ENABLE R/W
3761      000100      RXITEN=    BIT6      ;RECEIVER INTERRUPT ENABLE R/W

```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-9
 CVDPVC.P11 16-AUG-84 14:18 GLOBAL EQUATES SECTION

```

3762                                ;** BITS 7 - 15  READ ONLY **
3763      000200      RDATRY= BIT7      ;RECEIVE DATA READY  READ ONLY
3764      000400      SFR=      BIT8      ;SYNCH OR FLAG DETECT  READ ONLY
3765      001000      DM=      BIT9      ;DATA MODE  READ ONLY
3766      002000      RSTARY= BIT10     ;RECEIVER STATUS READY  READ ONLY
3767      004000      RXACT=  BIT11     ;RECEIVER ACTIVE  READ ONLY
3768      010000      RR=      BIT12     ;RECEIVER READY  READ ONLY
3769      020000      CTS=      BIT13     ;CLEAR TO SEND  READ ONLY
3770      040000      IC=      BIT14     ;INCOMING CALL  READ ONLY
3771      100000      DSCNG=  BIT15     ;DATA SET CHANGE  READ ONLY
3772
3773
3774      ;;PCSAR - CSR2  (INTERNAL USNYR/T REGISTERS 4 AND 5)  WRITE ONLY
3775
3776                                ;BITS 0-7 SYNCH CHARACTER OR SECONDARY STATION
3777                                ;ADDRESS.  LOWER BYTE OF THE PCSAR IS THE
3778                                ;SYNCH CHARACTER USED WITH IN BCP MODE  OR
3779                                ;THE SECONDARY ADDRESS USED IN BOP MODE.
3780
3781                                ;BITS 8-10 ERROR DETECTION SELECTION
3782      000000      CCITT1=  0          ;CRC CCITT INITIALIZED TO ONES
3783      000400      CCITT0=  BIT8      ;CRC CCITT INITIALIZED TO ZEROS
3784      001400      CRC16=  BIT8:BIT9   ;CRC 16
3785      002000      VRC0=      BIT10     ;VRC ODD PARITY
3786      002400      VRCE=      BIT8:BIT10 ;VRC EVEN PARITY
3787      003400      NOERR=  BIT8:BIT9:BIT10 ;ALL ERROR DETECTION INHIBITED.
3788      001000      NONE1=  BIT9      ;NOT USED
3789      003000      NONE2=  BIT9:BIT10 ;NOT USED
3790
3791      004000      IDLE=      BIT11     ;IDLE MODE SELECT
3792      010000      SECADR=  BIT12     ;SECONDARY ADDRESS SELECT
3793      020000      SSYNCH=  BIT13     ;STRIP SYNCH - BCP
3794      020000      LOOP=      BIT13     ;LOOP MODE - BOP
3795      040000      PROTO=  BIT14     ;PROTOCOL SELECT.
3796      100000      APA=      BIT15     ;ALL PARTIES ADDRESSED.
3797
3798
3799      ;;RDSR - CSR2  (INTERNAL USNYR/Y REGISTERS 0 AND 1)  READ ONLY
3800
3801                                ;BITS 0-7 RECEIVE DATA BUFFER
3802      000400      RSDM=      BIT8      ;RECEIVED START OF MESSAGE.
3803      001000      REOM=      BIT9      ;RECEIVED END OF MESSAGE.
3804      002000      RABORT=  BIT10     ;RECEIVER ABORT OR GO AHEAD
3805      004000      ROVER=  BIT11     ;RECEIVER OVERRUN.
3806                                ;BITS 12-14 ASSEMBLED BIT COUNT (ABC)
3807      000000      ALL=      0          ;ALL BITS VALID
3808      010000      ONE=      BIT12     ;ONE BIT VALID
3809      020000      TWO=      BIT13     ;TWO BITS VALID
3810      030000      THREE=  BIT12:BIT13 ;THREE BITS VALID
3811      040000      FOUR=      BIT14     ;FOUR BITS VALID
3812      050000      FIVE=      BIT12:BIT14 ;FIVE BITS VALID
3813      060000      SIX=      BIT13:BIT14 ;SIX BITS VALID
3814      070000      SEVEN=  BIT12:BIT13:BIT14 ;SEVEN BITS VALID
3815
3816      100000      ERR=      BIT15     ;ERROR CHECK
3817

```

```

3818
3819      ;;TXCSR - CSR4 (EXTERNAL LO BYTE - INTERNAL 7 HI BYTE) READ/WRITE
3820
3821      000001      RESET= BIT0      ;DEVICE RESET - WRITE ONLY
3822      000002      TXACT= BIT1      ;TRANSMITTER ACTIVE - READ ONLY
3823      000004      TBE= BIT2      ;TRANSMITTER BUFFER EMPTY - READ ONLY
3824      000010      MM= BIT3      ;MAINTENANCE MODE - R/W
3825      000020      TXENA= BIT4      ;TRANSMITTER ENABLE - R/W
3826      000040      SQ= BITS      ;SIGNAL QUALITY -READ ONLY
3827      000040      TM= BITS      ;TEST MODE - READ ONLY WIRE WRAPPED FOR
3828      ;TEST MODE
3829      000100      TXIE= BIT6      ;TRANSMIT INTERRUPT ENABLE - R/W
3830
3831      ;;PCR - HI BYTE CSR4 (INTERNAL USNYR/T REGISTER 7)
3832
3833      000010      EXCON= BIT3      ;EXTENDED CONTROL FIELD
3834      000020      EXADD= BIT4      ;EXTENDED ADDRESS FIELD.
3835
3836      ;;TDCSR - CSR6 (INTERNAL USNYR/T REGISTERS 7 AND 7) READ/WRITE
3837
3838      ;BITS 0-7 TRANSMITTER DATA
3839      000400      TSOH= BIT8      ;TRANSMIT START OF MESSAGE - R/W
3840      001000      TEOM= BIT9      ;TRANSMIT END OF MESSAGE - R/W
3841      002000      TXABO= BIT10      ;TRANSMIT ABORT - R/W
3842      004000      TGA= BIT11      ;TRANSMIT GO AHEAD - R/W
3843      ;BITS 12 - 14 RESERVED
3844      100000      TERR= BIT15      ;TRANSMIT DATA LATE ERROR. - READ ONLY
3845
3846
3847
3848      ;;.....
3849      ;;.....
3850      ; MISC. EQUATES
3851
3852      000226      SYN= 226      ;DDCMP SYNCH CHARACTER
3853      000207      RETURN= 207      ;RETURN FROM SUB. [= JSR PC]
3854      100000      BOP= BIT15      ;BIT SET IN MODE WHEN IN BOP MODE
3855      000015      CR= 15      ;ASCII CARRIAGE RETURN
3856      000012      LF= 12      ;ASCII LINE FEED
3857      000007      MFPT= 7      ;OPCODE FOR LSI 11/23 TO MOVE PROCESSOR TYPE
3858      ;TO R0 R0=3 MEANS LSI 11/23 - ILLEGAL INSTRUCTION
3859      ;ON AN LSI 11 OR LSI 11/2
3860      000332      CRCLO= 332      ;LOW BYTE OF CRC IN TEST 26.
3861      000266      CRCHI= 266      ;HIGH BYTE OF CRC IN TEST 26.
3862

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-11
 CVDPVC.P11 16-AUG-84 14:18 GLOBAL DATA SECTION

```

3864      .SBTTL GLOBAL DATA SECTION
3865
3866      ;////////////////////
3867      ;/      THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
3868      ;/      IN MORE THAN ONE TEST.
3869      ;////////////////////
3870
3871
3872
3873      ;*****
3874      ;DPV11 VECTOR AND REGISTER INDIRECT POINTERS
3875      RCVEC: .WORD 0      ;DPV11 RECEIVER INTERRUPT VECTOR
3876      XMTVEC: .WORD 0     ;DPV11 TRANSMITTER INT. VECTOR
3877      CSR0:  .WORD 0     ;POINTER TO DPV11 CSR0
3878      CSR2:  .WORD 0     ;POINTER TO DPV11 CSR2
3879      CSR4:  .WORD 0     ;POINTER TO DPV11 CSR4
3880      CSR6:  .WORD 0     ;POINTER TO DPV11 CSR6
3881      CSR1:  .WORD 0     ;POINTER TO HIGH BYTE OF CSR0
3882      CSR3:  .WORD 0     ;POINTER TO HIGH BYTE OF CSR2
3883      CSR5:  .WORD 0     ;POINTER TO HIGH BYTE OF CSR4
3884      CSR7:  .WORD 0     ;POINTER TO HIGH BYTE OF CSR6
3885
3886      RXCSR= CSR0      ;RECEIVER CSR (READ/WRITE)
3887      PCSAR= CSR2     ;PARAMETER CONTROL SYNCH/ADDRESS REG.
3888                        ;(WRITE ONLY)
3889      RDSR=  CSR2     ;RECEIVE DATA/STATUS REGISTER (READ ONLY)
3890      TXCSR= CSR4     ;TRANSMITTER CSR (READ/WRITE)
3891      TDSR=  CSR6     ;TRANSMIT DATA/STATUS REGISTER (READ ONLY)
3892      PCR=   CSR5     ;PCR = PARAMETER CONTROL REGISTER
3893
3894      ;:OTHER HARDWARE PARAMETERS
3895
3896      TURN: .WORD 0      ;TURN AROUND TYPE (0-7)
3897
3898      ;*****
3899      ;PROGRAM CONTROL PARAMETERS
3900
3901
3902
3903      FRSTIM: .WORD 0     ;FLAG=0 IF PROGRAM JUST LOADED
3904      FRSPAS: .WORD 0     ;FLAG=0 IF FIRST PASS AFTER LOAD
3905      STARES: .WORD 0     ;FLAG=0 IF 1ST TIME THRU AFTER STA OR RES
3906
3907
3908
3909      ;*****
3910      ;PROGRAM VARIABLES
3911
3912      ;* MISCELLANEOUS STORAGE
3913      ABORT: .WORD 0      ;FLAG TO ALLOW AN ABORT TO BE ISSUED.
3914      BITS:  .WORD 0      ;BITS TO BE SET IN THE CSR REGISTER
3915      COUNTER: .WORD 0    ;COUNTER FOR # OF CHARACTERS TO RCV. (RDATA2)
3916      CPU:    .WORD 0     ;PROCESSOR TYPE
3917                        ;(3 = LSI11/23, 0 = LSI 11 OR LSI 11/2)
3918      DATA:  .WORD 0     ;COUNTER FOR # OF DATA CHARATERS TRANSMITTED.
3919      ERROR:  .WORD 0     ;ERROR STORAGE

```

3920	002332	000000	EXERR:	.WORD	0	;FLAG THAT AN ERROR IS EXPECTED IN DATA
3921	002334	000000	FLAG:	.WORD	0	;SCRATCH WORD USED FOR MISC. FLAG IN SUB.
3922	002336	000000	HEADER:	.WORD	0	;FLAG USED TO MARK DDCMP HEADER.
3923	002340	000000	HIGH:	.WORD	0	;FLAG USED TO INDICATE HIGH SPEED ISR WHEN SET
3924	002342	000000	IPCR:	.WORD	0	;IMAGE OF PCR
3925	002344	000000	IPCSAR:	.WORD	0	;IMAGE OF PCSAR
3926	002346	000000	IRXCSR:	.WORD	0	;IMAGE OF RXCSR
3927	002350	000000	IRDSR:	.WORD	0	;IMAGE OF RDSR.
3928	002352	000000	LENGTH:	.WORD	0	;CHARACTER LENGTH.
3929	002354	000000	LOGDEV:	.WORD	0	;LOGICAL DEVICE NUMBER
3930	002356	000000	MAINT:	.WORD	0	;MAINTENANCE MODE LOOPBACK FLAG
3931	002360	000000	MCFLAG:	.WORD	0	;WORD USED IN TO TRACK MODEM CONTROL INT.
3932	002362	000000	MODE:	.WORD	0	;PROTOCOL TYPE
3933	002364	000000	NESTPC:	.WORD	0	;FLAG TO NOTIFY WHEN A SUBR IS NESTED
3934	002366	000000	NXMFLG:	.WORD	0	;WORD USED WHEN ADDRESS IS NXM.
3935	002370	000000	OVER:	.WORD	0	;FLAG TO ALLOW RECEIVE OVERRUN.
3936	002372	000000	PSTACK:	.WORD	0	;CONTAINS BASE LEVEL PROGRAM SP
3937	002374	000000	REG:	.WORD	0	;STORAGE OF A CSR ADDRESS
3938	002376	000000	RFLAG:	.WORD	0	;WORD USED IN RECEIVE ROUTINE.
3939	002400	000000	RSAVE:	.WORD	0	;TEMPORARY LOCATION TO SAVE RDSR ON INTERRUPT
3940	002402	000000	RXINI:	.WORD	0	;RECEIVER INITIALIZATION
3941	002404	000000	RXINIT:	.WORD	0	;RECEIVER INITIALIZATION WITH INT ENABLED.
3942	002406	000000	RXMINI:	.WORD	0	;RECEIVER INIT WITH MAINTENANCE LOOPBACK.
3943	002410	000000	SAVE:	.WORD	0	;SCRATCH WORD USED FOR MISC. STORAGE IN SUB.
3944	002412	000000	SAVTIM:	.WORD	0	;STORAGE TO SAVE TIMER VALUE
3945	002414	000000	START:	.WORD	0	;CONTER FOR # OF START CHARACTERS TO XMIT.
3946	002416	000000	SUBRPC:	.WORD	0	;PC OF SUBR CALL FOR ERROR REPORTS
3947	002420	000000	TEMP:	.WORD	0	;SCRATCH WORD USED FOR MISC. STORAGE IN SUB.
3948	002422	000000	TEND:	.WORD	0	;TRANSMIT END
3949	002424	000000	TFLAG:	.WORD	0	;WORD USED IN TRANSMIT INTERRUPT ROUTINE
3950	002426	000000	TIMED:	.WORD	0	;FLAG TO MARK TIME OUT IN \$DATA SUBROUTINE.
3951	002430	000000	TIMER:	.WORD	0	;TIMER VALUE
3952	002432	000000	TOGGLE:	.WORD	0	;FLAG TO ALLOW TOGGLE OF RTS IN TEST.
3953	002434	000000	TSTART:	.WORD	0	;TRANSMIT START
3954	002436	000000	TXINI:	.WORD	0	;TRANSMITTER INITIALIZATION
3955	002440	000000	TXINIT:	.WORD	0	;TRANSMITTER INITIALIZATION WITH INT ENABLED.
3956	002442	000000	TXMINI:	.WORD	0	;TRANSMITTER INIT WITH MAINTENANCE LOOPBACK

3957						
3958						
3959						
3960						
3961						
3962						
3963						
3964						
3965						
3966						
3967						
3968						
3969						
3970	002444	000012	MODEM:	.BLKW	10.	;BUFFER AREA FOR MODEM STATUS
3971						
3972						
3973						
3974						
3975						

.EVEN

```

; ;*****
; ;*****
; ;MODEM CONTROL
; ;*****
; ;*****
; ;BUFFER AREA

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-13
CVDPVC.P11 16-AUG-84 14:18 GLOBAL DATA SECTION

3976	002470	000000	XTYPE:	.WORD	0	; POINTER TO DATA TYPE TO LOAD INTO XMIT BUFFER
3977	002472	000000	XCOUNT:	.WORD	0	; # OF CHARACTERS TO TRANSMIT.
3978	002474	000000	ECOUNT:	.WORD	0	; # OF CHARACTERS FOR END OF MSG. IN BCP MODE.
3979	002476	000000	XMITD:	.WORD	0	; # OF CHARACTERS TRANSMITTED.
3980	002500	000000	RCOUNT:	.WORD	0	; # OF CHARACTERS RECEIVED.

```

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3982
3983
3984
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3986
3987
3988
3989
3990
3991
3992
3993
3994
3995
3996
3997
3998
3999
4000
4001
4002
4003
4004
4005
4006
4007
4008
4009
4010
4011
4012
4013
4014
4015
4016
4017
4018
4019
4020
4021
4022
4023

```

```

;*****
;          ** CCITT PSUEDO-RANDOM TEST PATTERN **
; THE FOLLOWING 32 WORDS TRANSLATE INTO A 512 BIT PATTERN
; THAT WAS GENERATED ACCORDING TO CCITT RECOMMENDATION V.52. THIS
; PATTERN WAS GENERATED BY A 9 BIT SHIFT REGISTER (INITIALIZED
; AS 1S) WHOSE 5TH AND 9TH BITS ARE XORED. THIS XOR RESULT IS SHIFTED
; INTO THE 1ST BIT OF THE REGISTER AS THE REGISTER IS SHIFTED RIGHT.
; THE 9TH BIT (OR BIT SHIFTED OUT) IS SHIFTED INTO THE BIT PATTERN.
; NOTE: CCITT RECOMMENDED 511 BITS, I'VE EXTENDED THIS BY 1 BIT TO END
; ON A WORD BOUNDARY.

```

```

$CCITT:
.WORD 177603,157427,031011
.WORD 047321,163715,105221
.WORD 143325,142304,040041
.WORD 014116,052606,172334
.WORD 105025,123754,111337
.WORD 111523,030030,145064
.WORD 137642,143531,063617
.WORD 135015,066730,026575
.WORD 052012,053627,070071
.WORD 151172,165044,031605
.WORD 166632,016741

```

```

;*****
; ALPHANUMERIC DATA

```

```

ALPHA: .ASCIZ /ABCDEFGHIJKLMNPOQRSTUVWXYZ0123456789/

```

```

ACOUNT= .-ALPHA          ; CHARACTER COUNT
        .EVEN

```

```

;*****
; DDCMP BUFFER

```

```

DDCMP: .BYTE 201          ; SOH (START OF HEADER)
        .BYTE 64,0        ; COUNT AND FLAGS (BITS 0 AND 1 FLAGS)
        .BYTE 0           ; RESPONSE NUMBER
        .BYTE 0           ; TRANSMIT NUMBER
        .BYTE 1           ; STATION ADDRESS

```

```

DDCMP1= .-DDCMP          ; 2 BYTES OF CRC16

```

```

DDMSG: .ASCII /DDCMP MESSAGE/

```

```

002650 201
002651 064 000
002653 000
002654 000
002655 001
000006
002656 042104 046503 020120
002664 042515 051523 043501
002672 105

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 18-14
CVDPVC.P11 16-AUG-84 14:18 GLOBAL DATA SECTION

;2 BYTES OF CRC16

4024
4025 000015
4026
4027 002674
4028
4029
4030
4031 002674 000400
4032
4033
4034
4035
4036 003274 000400
4037 000400
4038
4039
4040

DDCMP2= .-DDMSG

.EVEN

::*****

:: TRANSMIT BUFFER

XMTBUF: .BLKB 256.

::*****

:: RECEIVE BUFFER

RCVBUF: .BLKB 256.

;256. BYTE BUFFER

RSIZE= .-RCVBUF

.EVEN

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 19
CVDPVC.P11 16-AUG-84 14:18 GLOBAL TEXT SECTION

4043
4044
4045
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4048
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4053
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(4)
(3)
(2)
4056
4057
4058
4059
4060
(4)
(3)
(3)
(3)
(2)
4061
4062
4063
4064
4065
4066
4067
4074
4075
4076
4077
4078

.SBTTL GLOBAL TEXT SECTION

;# THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
;# MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
;# MORE THAN ONE TEST.

;* NAMES OF DEVICES SUPPORTED BY PROGRAM
;*****
DEV TYP <DPV11>

L#DVTYP::
.ASCIZ /DPV11/
.EVEN

;* TITLE OF PROGRAM
;*****
DESCRIPT <DIAGNOSTIC TESTS>

L#DESC::
.ASCIZ /DIAGNOSTIC TEST

.EVEN

;
; FORMAT STATEMENTS USED IN PRINT CALLS
;

003674
003674
003674 050104 030526 000061

003702
003702
003702 044504 043501 047516
003710 052123 041511 052040
003716 051505 051524 000
003724

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 19-1
CVDPVC.P11 16-AUG-84 14:18 GLOBAL SUBROUTINES

4080
4081
4082
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4085
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4093
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4099
4100
4101
4102
4103
4104
4105
4106
4107
4108
4109
4110
4111
4112
4113
4114
4115
4116
4117
4118
4119
4120
4121
4122
4123
4124
4125
4126
4127
4128
4129
4130
4131
4132
4133
4134
4135

```

.SBTTL GLOBAL SUBROUTINES
;////////////////////////////////////
; THE GLOBAL SUBROUTINES ARE CALLED BY MORE THAN ONE TEST
;////////////////////////////////////
;*****
;
;*****
;*****
; CALL MACRO - CALL ROUTINE = JSR PC, ROUTINE
; (NOTE: RETURN IS EQUATED TO A RTS PC)
;*****
; .MACRO CALL ROUTIN
; .IF B, ROUTIN
; .ERROR ROUTINE; ## MISSING ROUTINE-EXPANSION ABORT ##
; .MEXIT
; .ENDC
; JSR PC,ROUTIN
; .ENDM

;*****
; PUSH REGS MACRO
;
;*****
; .MACRO PUSH REGS
; .IRP X,<REGS>
; MOV X,-(SP) ;PUSH REG ON STACK.
; .ENDR
; .ENDM PUSH

;*****
; POP REGS MACRO
;
;*****
; .MACRO POP REGS
; .IRP X,<REGS>
; MOV (SP)+,X ;POP REG OFF STACK.
; .ENDR
; .ENDM POP

;*****
; WAIT MACRO
;
;*****
; .MACRO WAIT #BIT,ADDRESS
; .IF B, #BIT
; .ERROR ROUTINE; ## MISSING ROUTINE-EXAPNSION ABORT ##
; .MEXIT
; .ENDC

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.NLIST
.LIST ME
.LIST

;***** MACRO EXPANSION *****
.IF B, ADDRESS
.IF IDN $BIT, TBE
JSR PC,$WAIT ;CALL WAIT ROUTINE -
.WORD TBE ;WAIT FOR T9E TO BE SET
.WORD TXCSR ;IN TRANSMITTER CSR.

.IFF
JSR PC,$WAIT ;CALL WAIT ROUTINE -
.WORD $BIT ;WAIT FOR BIT TO BE SET
.WORD RXCSR ;IN RECEIVER CSR.

.ENDC
.IFF
JSR PC,$WAIT ;CALL WAIT ROUTINE -
.WORD $BIT ;WAIT FOR BIT TO BE SET
.WORD ADDRESS ;IN THE GIVEN ADDRESS.

.ENDC
;*****

.NLIST ME
.ENDM

;*****
; DELAY MACRO
;*****

.MACRO $DELAY $TIME
.IF B, $TIME
.ERROR ROUTINE; ## MISSING ROUTINE-EXAPNSION ABORT ##
.MEXIT
.ENDC

.NLIST
.LIST ME
.LIST

;***** MACRO EXPANSION *****
JSR PC,$DLAY ;CALL DELAY SUBROUTINE
.WORD $TIME ;NUMBER OF DELAY LOOPS
;*****

.NLIST ME
.ENDM

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4216 003724
4217 003724 011637 002416
4218 003730 162737 000004 002416
4219 003736 017637 000000 002320
4220 003744 062716 000002
4221 003750 017637 000000 002374
4222 003756 017737 176412 002374
4223 003764 062716 000002
4224 003770
4225 003776 005000
4226
4227 004000
4228 004000 017701 176370
4229 004004 033701 002320
4230 004010 001026
4231 004012
(3) 004012 104422
4232 004014 005300
4233 004016 001370
4234 004020 010102
4235 004022 053702 002320
4236 004026
(4) 004026 104455
(5) 004030 000000
(5) 004032 013462
(5) 004034 010214
4237 004036 032737 000004 002320
4238 004044 001410
4239 004046
(7) 004046 012746 004102
(6) 004052 012746 000001

```
*****  
*****  
SUBROUTINE $WAIT  
  
FUNCTION - TO WAIT FOR A BIT TO BE SET IN A GIVEN  
ADDRESS (USUALLY A DPV REGISTER).  
  
CALLING FORMAT: JSR PC,$WAIT  
                  .WORD ;BIT  
                  .WORD ;ADDRESS  
  
ENTRY CONDITIONS -  
  
EXIT CONDITIONS - EXIT WHEN BIT SET OR UPON TIME OUT.  
IF TIME OUT, PRINT TIME OUT ERROR.  
  
CALLED BY - TESTS 4,5,7  
  
REGISTERS DESTROYED - R0-R2 SAVED AND RESTORED
```

```
*****  
*****  
$WAIT:  
MOV (SP),SUBRPC ;SAVE THE PC THAT CALLED THE ROUTINE.  
SUB #4,SUBRPC ;CORRECT THE PC.  
MOV @SP,BITS ;SAVE THE BITS THAT WE ARE CHECKING.  
ADD #2,(SP) ;UPDATE THE ADDRESS ON THE STACK.  
MOV @SP,REG ;SAVE THE ADDRESS OF THE CSR POINTER  
MOV @REG,REG ;SAVE THE ACTUAL CSR ADDRESS.  
ADD #2,(SP) ;UPDATE THE ADDRESS ON THE STACK.  
PUSH <R2,R1,R0> ;PUSH REGS ON THE STACK  
CLR R0 ;USE R0 AS A LOOP TIMER.  
  
10$: MOV @REG,R1 ;SAVE THE CONTENTS OF THE CSR.  
BIT BITS,R1 ;IS THE BIT SET ?  
BNE 20$ ;BRANCH IF SET  
BREAK ;BREAK FOR SUPERVISOR. TRAP C$BRK  
  
DEC R0 ;DECREMENT TIMER  
BNE 10$ ;CONTINUE IF TIMER NOT EXPIRED.  
MOV R1,R2 ;SAVE EXPECTED RESULTS FOR ERROR MESSAGE.  
BIS BITS,R2 ;SET THE EXPECTED BITS.  
ERRDF 0,EMG1,ERRG12 ;PRINT TIME OUT ERROR. TRAP C$ERDF  
  
TRAP C$ERDF  
.WORD 0  
.WORD EMG1  
.WORD ERRG12  
  
BIT #TBE,BITS ;WERE WE WAITING FOR TBE?  
BEQ 20$ ;IF NOT, EXIT.  
PRINTB #FMS1 ;SUGGEST THAT THE XMIT CLOCK IS INOP.  
MOV #FMS1,-(SP)  
MOV #1,-(SP)
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004136 012777 000001 176126
004144 105777 176116
004150 001015
004152 005777 176112
004156 001012
004160 032777 000004 176104
004166 001406
004170 105777 176106
004174 001003
004176 005777 176072
004202 001413
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004204 011637 002416
004210 162737 000004 002416
004216
004216 104455
004220 000001
004222 013540
004224 007572
004226 005037 002416
004232
004232 017737 176030 002444
004240 042737 006760 002444
004246 032777 000040 176016
004254 001417
004256 052737 000040 002444

```
*****  
*****  
SUBROUTINE $RESET  
FUNCTION - TO PERFORM A MASTER RESET AND TO CHECK THAT  
THE DPV IS IN THE PROPER INIT STATE.  
CALLING FORMAT: JSR PC,$RESET  
ENTRY CONDITIONS -  
EXIT CONDITIONS - DEVICE IS RESET CORRECTLY OR AN ERROR IS REPORTED  
CALLED BY - TESTS 2-43  
REGISTERS NOT AFFECTED  
*****  
*****  
$RESET:  
MOV $RESET,$TXCSR ;RESET THE DPV.  
TSTB $RXCSR ;IS THE RECEIVE CSR = 0?  
BNE 10$ ;IF NOT ERROR.  
TST $RDSR ;IS THE RECEIVE STATUS AND DATA REG = 0?  
BNE 10$ ;IF NOT, ERROR.  
BIT #4,$TXCSR ;IS TBE SET?  
BEQ 10$ ;IF NOT, ERROR.  
TSTB $PCR ;IS THE PARAMETER CONTROL REG = 0?  
BNE 10$ ;IF NOT, ERROR.  
TST $TDSR ;IS THE XMIT STATUS AND DATA REG = 0?  
BEQ 20$ ;IF YES - RESET OK.  
10$:  
MOV (SP),SUBRPC ;FLAG WHERE THIS SUBR. WAS CALLED.  
SUB #4,SUBRPC ;ADJUST THE PC  
ERRDF 1,EMG3,ERRG11 ;PRINT ERROR MESSAGE  
TRAP C$ERDF  
.WORD 1  
.WORD EMG3  
.WORD ERRG11  
20$:  
CLR SUBRPC ;CLEAR THE FLAG  
MOV $RXCSR,MODEM ;SAVE THE MODEM STATUS.  
BIC #6760,MODEM ;CLEAR ALL BUT MODEM  
BIT #TM,$TXCSR ;IS TEST MODE SET?  
BEQ 30$ ;IF NOT OK  
BIS #TM,MODEM ;OTHERWISE SET TM IN MODEM  
;ALSO CHECK FOR -12V
```



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4303      ;:*****
4304      ;:*****
4305      :
4306      :           SUBROUTINE $BUFRS
4307      :
4308      :           FUNCTION - TO SET UP THE TRANSMIT BUFFER WITH A DATA
4309      :                       PATTERN AND TO CLEAR THE RECEIVE BUFFER
4310      :
4311      :           CALLING FORMAT:           JSR           PC,$BUFRS
4312      :
4313      :
4314      :           ENTRY CONDITIONS - IPCSAR  = IMAGE OF THE PCSAR (CSR 2 OF THE DPV)
4315      :                               IPCR   = IMAGE OF THE PCR (CSR 5 OF THE DPV)
4316      :                               XTYPE  = ADDRESS OF THE XMIT TYPE
4317      :                               XCOUNT = # OF CHARACTERS TO TRANSMIT
4318      :                               LENGTH  = CHARACTER LENGTH
4319      :                               MODE   = PROTOCOL TYPE (BCP OR BOP)
4320      :
4321      :
4322      :           EXIT CONDITIONS - ECOUNT  = # OF CHARACTERS TO TRANSMIT (MODIFIED
4323      :                               XCOUNT)
4324      :                               XMTBUF  = CONTAINS XMIT DATA TYPE PATTERN
4325      :                               RCVBUF  = RECEIVE BUFFER CLEARED
4326      :
4327      :           CALLED BY           - TESTS 15-40
4328      :
4329      :           REGISTERS R1-R4 DESTROYED
4330      :

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4331      ;:*****
4332      ;:*****

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4333      $BUFRS:
4334      004316      013701      002352      MOV          LENGTH,R1          ;GET THE CHARACTER LENGTH
4335      004322      013702      002470      MOV          XTYPE,R2          ;ADDRESS OF DATA TYPE
4336      004326      012703      002674      MOV          @XMTBUF,R3        ;ADDRESS OF TRANSMIT BUFFER.
4337      004332      013704      002472      MOV          XCOUNT,R4       ;CHARACTER COUNT.
4338      004336      005737      002362      TST         MODE              ;WHAT MODE?
4339      004342      001444          BEQ          10$              ;IF BCP, SKIP ADDRESS CHECK.
4340
4341      004344      032737      100000      002344      BIT          @APA,IPCSAR       ;IS APA DESIRED?
4342      004352      001403          BEQ          5$              ;IF NOT CHECK SECONDARY ADDRESS.
4343      004354      112723      000377          MOVB        @377,(R3)+        ;PUT APA IN THE XMIT BUFFER
4344      004360      000422          BR          7$
4345      004362          5$:
4346      004362      032737      010000      002344      BIT          @SECADR,IPCSAR    ;IS THE SECONDARY ADDRESS DESIRED?
4347      004370      001403          BEQ          6$              ;IF NOT - JUST LOAD DATA
4348      004372      113723      002344          MOVB        IPCSAR,(R3)+      ;PUT SECONDARY ADDRESS IN THE XMIT BUFFER.
4349      004376      000413          BR          7$
4350      004400          6$:
4351      004400      112223          MOVB        (R2)+,(R3)+      ;LOAD ADDRESS CHARACTER
4352      004402      032737      000020      002342      BIT          @EXADD,IPCR       ;IS EXTENDED ADDRESS REQUESTED?
4353      004410      001406          BEQ          7$              ;BR IF NOT
4354      004412      142763      000001      177777      BICB        @BIT0,-1(R3)      ;MAKE SURE THE LSB OF THE ADDRESS IS 0
4355      004420      112223          MOVB        (R2)+,(R3)+      ;GET THE EXTENDED ADDRESS BYTE.
4356      004422      005237      002472          INC         XCOUNT          ;COMPENSATE TRANSMIT COUNT.
4357      004426          7$:
4358      004426      112223          MOVB        (R2)+,(R3)+      ;LOAD CONTROL CHARACTER

```

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4359	004430	032737	000010	002342		BIT	#EXCON,IPCR	;IS EXTENDED CONTROL DESIRED?
4360	004436	001403				BEQ	#1	;BR IF NOT
4361	004440	112223				MOVB	(R2), (R3)	;LOAD EXTENDED CONTROL
4362	004442	005237	002472			INC	XCOUNT	;COMPENSATE TRANSMIT COUNT
4363	004446				8:			
4364	004446	062737	000002	002472		ADD	#2, XCOUNT	;COMPENSATE TRANSMIT COUNT
4365	004454				10:			
4366	004454	013737	002472	002474		MOV	XCOUNT, ECOUNT	;TRANSMIT COUNT IS THE END COUNT IN BCP MODE.
4367	004462				11:			
4368	004462	112213				MOVB	(R2), (R3)	;SAVE THE DATA IN THE TRANSMIT BUFFER
4369	004464	146123	004514			BICB	MASK(R1), (R3)	;CLEAR UNUSED BITS (DEPENDS ON CHAR LENGTH)
4370	004470	005304				DEC	R4	;DECREMENT COUNTER.
4371	004472	001373				BNE	11:	;LOOP UNTIL THE TRANSMIT BUFFER IS LOADED.
4372								
4373	004474	012701	003274			MOV	#RCVBUF, R1	;GET THE ADDRESS OF THE RECEIVE BUFFER
4374	004500	012702	000400			MOV	#RSIZE, R2	;GET THE LENGTH OF THE BUFFER.
4375	004504				20:			
4376	004504	105021				CLRB	(R1)	;CLEAR THE ENTIRE BUFFER
4377	004506	005302				DEC	R2	;DECREMENT THE COUNTER
4378	004510	001375				BNE	20:	;LOOP UNTIL THE ENTIRE RECEIVE BUFFER IS CLEAR
4379								
4380	004512	000207				RETURN		
4381								
4382	004514	000	376	374	MASK:	.BYTE	0, 376, 374, 370, 360, 340, 300, 200, 0	
	004517	370	360	340				
	004522	300	200	000				
4383	004526					.EVEN		
4384								

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SUBROUTINE %DATA

FUNCTION -

CALLING FORMAT: JSR PC,%DATA
JSR PC,%DATA1

ENTRY CONDITIONS - RCVBUF = CLEARED RECEIVE BUFFER
XMTBUF = XMIT BUFFER
MAINT = MAINTENANCE MODE FLAG
IF SET, MAINT. MODE DESIRED
RXMINI = RECEIVER INIT WITH MAINTENANCE MODE SET.
RXINIT = USER SELECTED RECEIVER INIT WORD.
TXMINI = XMIT INIT WORD WITH MAINTENANCE MODE SET.
TXINIT = USER SELECTED XMIT INIT WORD
TIMER = TIME OUT VALUE (DETERMINED IN INIT -
DEPENDENT ON PROCESSOR TYPE)
EXERR = FLAG FOR EXPECTED ERROR.
0 = NO ERROR EXPECTED.
NONO = ERROR EXPECTED.

EXIT CONDITIONS - IF A CORRECT DATA TRANSMISSION - CARRY CLEAR
IF ERROR IN TRANSMISSION - CARRY SET AND ERROR
FLAG SET. IF ERROR WAS NOT EXPECTED, A MESSAGE
WILL BE OUTPUT.

CALLED BY - %DATA - TESTS 15-28 & 30 - 40
%DATA1 - TESTS 41 -43

REGISTERS R1-R5 DESTROYED

.....
.....

%DATA:

CLR RFLAG ;CLEAR THE RECEIVE FLAG
CLR TFLAG ;CLEAR THE TRANSMIT FLAG
CLR MCFLAG ;CLEAR THE MODEM CONTROL FLAG
CLR ERROR ;ERROR CONDITION FLAG
CLR TIMEO ;CLEAR TIMEOUT FLAG
CLR XMITD ;CLEAR XMIT COUNTER.

MOV @RCVBUF,R1 ;RECEIVE BUFFER
MOV @XMTBUF,R2 ;TRANSMIT BUFFER
MOV XCOUNT,R3 ;TRANSMIT COUNTER
CLR RCOUNT ;CLEAR RECEIVE COUNTER.

TST HIGH ;SET UP THE VECTORS.
BEQ 51 ;IS THIS A HIGH SPEED TEST?
;BRANCH IF LOW SPEED

004526
004526 005037 002376
004532 005037 002424
004536 005037 002360
004542 005037 002330
004546 005037 002426
004552 005037 002476
004556 012701 003274
004562 012702 002674
004566 013703 002472
004572 005037 002500
004576 005737 002340
004602 001435


```

4442                                     ;SET VECTORS WITH THE HIGH SPEED ISRS
4443 004604 SETVEC XMTVEC, #XDATA2, #PRI04 ;HIGH SPEED BOP XMIT ISR.
(7) 004604 012746 000200 MOV #PRI04, -(SP)
(6) 004610 012746 017512 MOV #XDATA2, -(SP)
(5) 004614 013746 002264 MOV XMTVEC, -(SP)
(4) 004620 012746 000003 MOV #3, -(SP)
(3) 004624 104437 TRAP C$SVEC
(2) 004626 062706 000010 ADD #10, SP
4444 004632 SETVEC RCVEC, #RDATA2, #PRI04 ;HIGH SPEED RECV VECTOR
(7) 004632 012746 000200 MOV #PRI04, -(SP)
(6) 004636 012746 017164 MOV #RDATA2, -(SP)
(5) 004642 013746 002262 MOV RCVEC, -(SP)
(4) 004646 012746 000003 MOV #3, -(SP)
(3) 004652 104437 TRAP C$SVEC
(2) 004654 062706 000010 ADD #10, SP
4445 004660 042737 000040 002404 BIC #DSITEN, RXINIT ;IGNORE DATA SET INTERRUPTS IN HIGH SPEED.
4446 004666 013737 002472 002322 MOV XCOUNT, COUNTER ;SET UP COUNTER FOR INT SERVICE ROUTINE RDATA2
4447 004674 000426 BR 76
4448 004676 56:
4449 004676 SETVEC XMTVEC, #XDATA, #PRI04 ;XMIT VECTOR
(7) 004676 012746 000200 MOV #PRI04, -(SP)
(6) 004702 012746 017340 MOV #XDATA, -(SP)
(5) 004706 013746 002264 MOV XMTVEC, -(SP)
(4) 004712 012746 000003 MOV #3, -(SP)
(3) 004716 104437 TRAP C$SVEC
(2) 004720 062706 000010 ADD #10, SP
4450 004724 SETVEC RCVEC, #RDATA, #PRI04 ;RECV VECTOR
(7) 004724 012746 000200 MOV #PRI04, -(SP)
(6) 004730 012746 016732 MOV #RDATA, -(SP)
(5) 004734 013746 002262 MOV RCVEC, -(SP)
(4) 004740 012746 000003 MOV #3, -(SP)
(3) 004744 104437 TRAP C$SVEC
(2) 004746 062706 000010 ADD #10, SP
4451 004752 76:
4452 004752 SETPRI #PRI00 ;ENABLE INTERRUPTS
(3) 004752 012700 000000 MOV #PRI00, R0
(3) 004756 104441 TRAP C$SPRI
4453 004760 005737 002356 TST MAINT ;SET MAINTENANCE MODE?
4454 004764 001407 BEQ #DATA1 ;BR IF NOT
4455 004766 053777 002406 175272 BIS RXMINI, #RXCSR ;INIT RECEIVER WITH MAINTENANCE MODE
4456 004774 053777 002442 175270 BIS TXMINI, #TXCSR ;INIT TRANSMITTER WITH MAINT. MODE.
4457 005002 000411 BR #GO
4458
4459 005004 #DATA1:
4460 005004 053777 002404 175254 BIS RXINIT, #RXCSR ;ISSUE RECEIVER INIT (DETERMINED IN INIT CODE)
4461 005012 053777 002440 175252 BIS TXINIT, #TXCSR ;ISSUE XMIT INIT (DETERMINED IN INIT CODE)
4462 005020 052737 000040 002404 BIS #DSITEN, RXINIT ;RESET THE DATA SET INTERRUPT (MAY BE CLEARED
4463 ;IF THIS IS A HIGH SPEED TEST).
4464 005026 #GO:
4465 005026 011637 002416 MOV (SP), SUBRPC ;FLAG WHERE THIS SUBR. WAS CALLED.
4466 005032 162737 000004 002416 SUB #4, SUBRPC ;ADJUST THE PC
4467 005040 013704 002430 MOV TIMER, R4 ;SET UP TIMER
4468 005044 86:
4469 005044 012705 005000 MOV #5000, R5 ;INNER LOOP COUNTER
4470 005050 106:
4471 005050 005777 175220 TST #TDSR ;IS THERE A TRANSMITTER ERROR?

```


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```

4505 005214          25$:
4506 005214 000241    CLC          ;CLEAR CARRY - NO ERROR
4507 005216 005037 002416 CLR          ;CLEAR THE SUBR PC FLAG
4508 005222          30$:
4509 005222 052777 000001 175042 BIS #RESET,@TXCSH ;RESET THE DPV
4510 005230          CLRVEC XMTVEC ;RESTORE VECTORS
      (3) 005230 013700 002264
      (3) 005234 104436
4511 005236          CLRVEC RCVEC ;
      (3) 005236 013700 002262
      (3) 005242 104436
4512 005244 000207
4513
    
```

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MOV XMTVEC,RO
TRAP C#CVEC
MOV RCVEC,RO
TRAP C#CVEC
    
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005737 002340
005252 001046
005254 005737 002362
005260 001404
005262 005737 002350
005266 100410
005270 000421
005272 032737 002000 002344
005300 001015
005302 005737 002350
005306 100412
005310
005310 011637 002416
005314 162737 000004 002416
005322 104455
005324 000005
005326 015226
005330 006652
005332 000444
005334

```

*****
*****
SUBROUTINE #CHECK
FUNCTION - AFTER A DATA TRANSMISSION CHECK
          1. THE ERROR CHECK BIT 2. THAT THE XMIT AND RCV
          CHARACTER COUNTS ARE EQUAL 3. THAT THE XMIT AND
          RCV BUFFERS ARE IDENTICAL
CALLING FORMAT:      JSR      PC,#CHECK
                   JSR      PC,#CHK1
ENTRY CONDITIONS - IRDSR  = IMAGE OF THE LAST RECEIVED RDSR
                   XCOUNT = TRANSMIT CHARACTER COUNT.
                   RCOUNT = RECEIVER CHARACTER COUNT.
                   XMTBUF  = THE TRANSMIT BUFFER STARTING ADDRESS.
                   RCVBUF  = THE RECEIVE BUFFER STARTING ADDRESS.
                   MODE    = PROTOCOL MODE: 0 = BCP, NONO = BOP
EXIT CONDITIONS - IF ERROR DETECTED, A MESSAGE WILL BE OUTPUT.
CALLED BY      - #CHECK - TESTS 15, 17-23, 29-40
               - #CHK1  - TESTS 41-43
REGISTERS R1 - R3 DESTROYED
*****
*****
#CHECK:
.ENABL  LSB          ;ENABLE LOCAL SYMBOL BLOCK.
TST     HIGH        ;IS THIS A HIGH SPEED TEST (HIGH SPEED ISRS)
BNE     5#          ;IF YES SKIP CRC ERROR CHECK AND
TST     MODE        ;IS THIS BCP MODE?
BEQ     1#          ;BR IF YES
TST     IRDSR       ;IS THE ERROR BIT SET (BIT 15)
BMI     3#          ;IF YES - CRC ERROR.
BR      4#
1#:
BIT     #BIT10,IPCSAR ;WAS CRC16 USED? (ONLY TIME BIT 10 IS SET)
BNE     4#          ;IF NOT DON'T CHECK BIT.
TST     IRDSR       ;IS THE ERROR BIT SET (BIT 15)?
BMI     4#          ;IF YES - OK
3#:
MOV     (SP),SUBRPC  ;FLAG WHERE THIS SUBR. WAS CALLED.
SUB     #4,SUBRPC   ;ADJUST THE PC
ERRDF  5,EMG37,ERRG1 ;CRC ERROR
TRAP   C#ERDF
        .WORD  5
        .WORD  EMG37
        .WORD  ERRG1
4#:
BR      30#

```

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 CVDPVC.P11 16-AUG-84 14:18 GLOBAL SUBROUTINES

```

4567 005334 023737 002472 002500      CMP      XCOUNT,RCOUNT      ;ARE THE CHARACTER COUNTS THE SAME.
4568 005342 001412                      BEQ      5$                  ;IF YES - CONTINUE
4569 005344 011637 002416                      MOV      (SP),SUBRPC        ;FLAG WHERE THIS SUBR. WAS CALLED.
4570 005350 162737 000004 002416          SUB      #4,SUBRPC          ;ADJUST THE PC
4571 005356                      ERRDF   6,EMG25,ERRG14      ;CHARACTER COUNTS DIFFERENT
      (4) 005356 104455                      TRAP    C$ERDF
      (5) 005360 000006                      .WORD  6
      (5) 005362 014725                      .WORD  EMG25
      (5) 005364 010760                      .WORD  ERRG14
4572 005366 000426                      BR      30$
4573 005370                      5$:
4574 005370 012701 002674                      MOV      @XMTBUF,R1         ;GET THE ADDRESS OF THE XMIT BUFFER.
4575 005374 012702 003274                      MOV      @RCVBUF,R2        ;GET THE ADDRESS OF THE RECV BUFFER.
4576 005400 013703 002472                      MOV      XCOUNT,R3        ;GET THE CHARACTER COUNT
4577 005404                      $CHK1:
4578 005404 122122                      CMPB     (R1)+,(R2)+        ;ARE THE CHARACTERS THE SAME
4579 005406 001003                      BNE     20$                ;IF NOT, REPORT THE ERROR
4580 005410 005303                      DEC     R3                  ;DECREMENT THE COUNT.
4581 005412 001414                      BEQ     30$                ;LOOP UNTIL DONE
4582 005414 000773                      BR      $CHK1
4583 005416                      20$:
4584 005416 011637 002416                      MOV      (SP),SUBRPC        ;FLAG WHERE THIS SUBR. WAS CALLED.
4585 005422 162737 000004 002416          SUB      #4,SUBRPC          ;ADJUST THE PC
4586 005430 005301                      DEC     R1                  ;POINT TO DATA IN ERROR
4587 005432 005302                      DEC     R2                  ;POINT TO DATA IN ERROR.
4588 005434                      ERRDF   7,EMG26,ERRG3      ;CHARACTERS DON'T MATCH
      (4) 005434 104455                      TRAP    C$ERDF
      (5) 005436 000007                      .WORD  7
      (5) 005440 014753                      .WORD  EMG26
      (5) 005442 007014                      .WORD  ERRG3
4589 005444                      30$:
4590 005444 005037 002416                      CLR     SUBRPC              ;CLEAR THE SUBR PC FLAG
4591                      .DSABL  LSB                ;DISABLE LOCAL SYMBOL BLOCK.
4592 005450 000207                      RETURN
4593

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;*****
;*****
SUBROUTINE $MODEM
FUNCTION - TO PRINT OUT THE MODEM STATUS FROM A TEST
CALLING FORMAT: JSR PC,$MODEM
ENTRY CONDITIONS - ERROR = FLAG SET IF THERE WAS AN ERROR IN $DATA
                  MCFLAG = # OF MODEM CONTROL INTERRUPTS RECEIVED.
                  ALSO USED AS THE INDEX INTO THE MODEM
                  STATUS TABLE.
                  MODEM = ADDRESS OF MODEM STATUS TABLE
EXIT CONDITIONS - IF THERE IS AN ERROR OR MORE THAN 1 MODEM
                  CONTROL INTERRUPT, PRINT OUT MODEM STATUS.
                  OTHERWISE, UNEVENTFUL EXIT.
CALLED BY - TESTS 30-40
REGISTERS R1-R3 DESTROYED
;*****
;*****

```

```

$MODEM:
MOV (SP),SUBRPC ;FLAG WHERE THIS SUBR. WAS CALLED.
SUB #4,SUBRPC ;ADJUST THE PC
TST ERROR ;WAS THERE AN ERROR IN THE $DATA ROUTINE
BNE 1# ;IF YES PRINT OUT STATUS
CMP #1,MCFLAG ;WAS THERE MORE THAN 1 MODEM CONTROL INT?
BGE 35# ;IF NOT - SKIP PRINT OUT
ERRDF 8,EMG40,ERRG1 ;MULTIPLE INTERRUPTS RECEIVED
TRAP C$ERDF
.WORD 8
.WORD EMG40
.WORD ERRG1
PRINTB #FMODEM,MCFLAG ;PRINT THE NUMBER OF INTERRUPTS.
MOV MCFLAG,-(SP)
MOV #FMODEM,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C$PNTB
ADD #6,SP
CMP #9.,MCFLAG ;WERE MORE THAN NINE INTERRUPTS RECEIVED?
BGE 1# ;IF NOT, SKIP THE NEXT MESSAGE.
MOV #9.,MCFLAG ;ONLY PRINT OUT 9 INTERRUPTS
PRINTB #FMODE6 ;INFORM THE USER INTERRUPTS DISABLED.
MOV #FMODE6,-(SP)
MOV #1,-(SP)
MOV SP,R0
TRAP C$PNTB
ADD #4,SP
1#:

```

```

4636
4637 005574 012701 002444      MOV    #MODEM,R1      ;ADDRESS OF MODEM STATUS
4638 005600                      PRINTB #FMODE0
      (7) 005600 012746 006115      MOV    #FMODE0,-(SP)
      (6) 005604 012746 000001      MOV    #1,-(SP)
      (3) 005610 010600                      MOV    SP,R0
      (4) 005612 104414                      TRAP  C#PNTB
      (4) 005614 062706 000004      ADD    #4,SP
4639 005620                      PRINTB #FMODE1      ;PRINT INITIAL MODEM STATUS
      (7) 005620 012746 006144      MOV    #FMODE1,-(SP)
      (6) 005624 012746 000001      MOV    #1,-(SP)
      (3) 005630 010600                      MOV    SP,R0
      (4) 005632 104414                      TRAP  C#PNTB
      (4) 005634 062706 000004      ADD    #4,SP
4640 005640                      PRINTB #FMODE2
      (7) 005640 012746 006233      MOV    #FMODE2,-(SP)
      (6) 005644 012746 000001      MOV    #1,-(SP)
      (3) 005650 010600                      MOV    SP,R0
      (4) 005652 104414                      TRAP  C#PNTB
      (4) 005654 062706 000004      ADD    #4,SP
4641 005660 005002      CLR    R2      ;CLEAR COUNTER
4642 005662      5$:
4643 005662 012703 006420      MOV    #MMASK,R3
4644 005666 012704 000012      MOV    #10.,R4      ;# OF BITS TO CHECK IN THE MODEM STATUS
4645
4646 005672      10$:
4647 005672 032311      BIT    (R3)+,(R1)      ;CHECK THE BIT
4648 005674 001011      BNE   12$      ;IS IT SET?
4649 005676                      PRINTB #FMODE3      ;IF NOT, PRINT A 0
      (7) 005676 012746 006257      MOV    #FMODE3,-(SP)
      (6) 005702 012746 000001      MOV    #1,-(SP)
      (3) 005706 010600                      MOV    SP,R0
      (4) 005710 104414                      TRAP  C#PNTB
      (4) 005712 062706 000004      ADD    #4,SP
4650 005716 000410      BR    15$
4651 005720      12$:
4652 005720                      PRINTB #FMODE4      ;PRINT A 1
      (7) 005720 012746 006266      MOV    #FMODE4,-(SP)
      (6) 005724 012746 000001      MOV    #1,-(SP)
      (3) 005730 010600                      MOV    SP,R0
      (4) 005732 104414                      TRAP  C#PNTB
      (4) 005734 062706 000004      ADD    #4,SP
4653 005740      15$:
4654 005740 005304      DEC    R4      ;DECREMENT BIT COUNTER
4655 005742 001353      BNE   10$      ;LOOP UNTIL DONE.
4656
4657
4658 005744 005737 002360      TST    MCFLAG      ;IS THIS THE LAST STATUS
4659 005750 001416      BEQ   30$      ;IF YES, EXIT
4660 005752 005721      TST    (R1)+      ;INCREMENT MODEM STATUS POINTER.
4661 005754 005337 002360      DEC    MCFLAG      ;DECREMENT MC FLAG
4662 005760 005202      INC    R2      ;INCREMENT COUNTER.
4663
4664 005762                      PRINTB #FMODE5,R2      ;PRINT NEXT MODEM
      (8) 005762 010246      MOV    R2,-(SP)
      (7) 005764 012746 006275      MOV    #FMODE5,-(SP)
    
```


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CVDPVC.P11 16-AUG-84 14:18 GLOBAL SUBROUTINES

006362 044504 040523 046102
006370 042105 040440 052106
006376 051105 034440 041440
006404 040510 043516 051505
006412 025040 022452 000116

4679

4680

4681

006420 000001 000002 000004
006426 000010 000040 001000
006434 010000 020000 040000
006442 100000

.EVEN

.WORD

;MASKS OF EACH BIT
SF,DTR,RTS,LL,TH,DM,RR,CTS,IC,DSCNG

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006444 005737 002306
006450 001022
006452 022737 000001 002314
006460 001014
006462
006462 013746 002354
006466 013746 002114
006472 012746 011070
006476 012746 000003
006502 010600
006504 104415
006506 062706 000010
006512
006512 000261
006514 000401
006516
006516 000241
006520
006520 000207

```
*****  
*****  
SUBROUTINE $TURN  
FUNCTION - DETERMINE IF TURNAROUND IS AVAILABLE  
CALLING FORMAT: JSR PC,$TURN  
ENTRY CONDITIONS - TURN - 0 = TURNAROUND OFF  
STARES = START RESTART COUNT  
EXIT CONDITIONS - TURNAROUND ON - CARRY CLEAR (DO THE TEST)  
TURNAROUND OFF - CARRY SET (DON'T DO THE TEST)  
IF TURNAROUND OFF AND IF ON FIRST PASS, OUTPUT  
A MESSAGE TO THE USER.  
CALLED BY - TESTS 12 - 14  
REGISTERS NOT EFFECTED
```

```
*****  
*****  
$TURN:  
TST TURN ;IS THERE A TURNAROUND  
BNE 5$ ;IF YES - CLEAR CARRY TO DO THE TEST.  
CMP #1,STARES ;IS THIS THE FIRST PASS  
BNE 1$ ;IF NOT, DON'T OUTPUT MESSAGE JUST SET FLAG.  
PRINTX #FMGO,L$TEST,LOGDEV ;INFORM THE USER THAT TEST CAN'T BE RUN  
MOV LOGDEV,-(SP)  
MOV L$TEST,-(SP)  
MOV #FMGO,-(SP)  
MOV #3,-(SP)  
MOV SP,R0  
TRAP C$PNTX  
ADD #10,SP  
;WITHOUT THE TURNAROUND.  
1$: SEC ;FLAG NOT TO DO THE TEST.  
BR 10$ ;BR TO RETURN  
5$: CLC ;FLAG TO DO THE TEST.  
10$: RETURN
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SUBROUTINE \$SPEED

FUNCTION - DETERMINE IF THE TEST CAN BE RUN WITH
WITH THE SELECTED TURNAROUND AND/OR PROCESSOR.

CALLING FORMAT: JSR PC,\$SPEED

ENTRY CONDITIONS -
TURN = 1 - RS423
TURN = 2 - RS422
CPU = 0 - LSI 11 OR LSI 11/2
CPU = 3 - LSI 11/23

EXIT CONDITIONS -
OK TO RUN TEST - CARRY CLEAR
DON'T RUN TEST - CARRY SET
IF TEST CAN'T BE RUN, THE USER WILL BE
INFORMED ON THE FIRST PASS.

CALLED BY - \$SPEED CALLED BY TESTS 29 - 41

REGISTERS NOT EFFECTED


```

$SPEED:
TST CPU ;IS THIS A LSI 11/23?
BNE 5$ ;IF YES - CLEAR CARRY TO DO THE TEST.
CMP #2,TURN ;IS THIS RS422?
BNE 5$ ;IF NOT - CLEAR CARRY AND DO THE TEST.
CMP #1,STARES ;IS THIS THE FIRST PASS?
BNE 1$ ;IF NOT, DON'T OUTPUT MESSAGE JUST SET FLAG.
PRINTX #FMG27,L$TEST ;INFORM THE USER THAT THE TEST CAN'T BE RUN
MOV L$TEST,-(SP)
MOV #FMG27,-(SP)
MOV #2,-(SP)
MOV SP,RO
TRAP C$PNTX
ADD #6,SP

;WITH THIS CPU AND RS422.
1$: SEC ;FLAG NOT TO DO THE TEST.
BR 10$ ;BR TO RETURN.

5$: CLC ;FLAG TO DO THE TEST.

10$: RETURN

```

```

006522 005737 002324
006526 001024
006530 022737 000002 002306
006536 001020
006540 022737 000001 002314
006546 001012
006550 013746 002114
006554 012746 013011
006560 012746 000002
006564 010600
006566 104415
006570 062706 000006
006574 000261
006576 000401
006600 000241
006602 000207

```

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006604
006604 017600 000000
006610 062716 000002
006614
006614
006614 012727 000001
006620 000000
006622 013727 002116
006626 000000
006630 005367 177772
006634 001375
006636 005367 177756
006642 001367
006644 005300
006646 001362
006650 000207

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;*****
;*****
SUBROUTINE $DLAY
FUNCTION - TO SAVE PROGRAM SPACE BY USING ONLY 1
EXPANSION OF THE SUPERVISOR MACRO "DELAY"

CALLING FORMAT:      JSR      PC,$DLAY
                      .WORD   #

ENTRY CONDITIONS -   B(SP) = # OF DELAY LOOPS TO USE.

EXIT CONDITIONS -

CALLED BY           - TESTS  2, 5-9, 12, 13

REGISTER R0 RESTORED
;*****
;*****
$DLAY:
MOV      B(S),R0      ;GET THE # OF DELAY LOOPS
ADD     #2,(SP)       ;UPDATE THE PC
10$:    DELAY 1        ;1 DELAY LOOP

MOV      #1,(PC)+
        .WORD 0
MOV      L$DLY,(PC)+
        .WORD 0
DEC     -6(PC)
BNE    .-4
DEC     -22(PC)
BNE    .-20

DEC     R0
BNE    10$
        ;DECREMENT VARIABLE LOOP COUNTER
        ;LOOP UNTIL DONE
RETURN

```

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CVDVPC.P11 16-AUG-84 14:18 GLOBAL ERROR REPORT REPORT SECTION

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4818 006652
(3) 006652
4819 006652
(8) 006652 013746 002416
(7) 006656 012746 011260
(6) 006662 012746 000002
(3) 006666 010600
(4) 006670 104414
(4) 006672 062706 000006
4820 006676
(3) 006676
(3) 006676 104423
4821
4822
4823 006700
(3) 006700
4824 006700 005737 002416
4825 006704 001412
4826 006706
(8) 006706 013746 002416
(7) 006712 012746 011260
(6) 006716 012746 000002
(3) 006722 010600
(4) 006724 104414
(4) 006726 062706 000006
4827 006732
4828 006732
(9) 006732 017746 173332
(8) 006736 017746 173324
(7) 006742 012746 011166
(6) 006746 012746 000003
(3) 006752 010600
(4) 006754 104414
(4) 006756 062706 000010
4829 006762
(9) 006762 017746 173306
(8) 006766 017746 173300
(7) 006772 012746 011223
(6) 006776 012746 000003
(3) 007002 010600
(4) 007004 104414
(4) 007006 062706 000010
4830 007012
(3) 007012
(3) 007012 104423
4831
4832 007014
(3) 007014
4833 007014

.SBTTL GLOBAL ERROR REPORT REPORT SECTION
;/////////
; THE GLOBAL ERROR REPORT SECTION CONTAINS ERROR MESSAGES
; THAT ARE USED IN MORE THAN ONE TEST.
;/////////
.EVEN

BGNMSG ERRG1
PRINTB @FMG3,SUBRPC ;PC THAT SUBROUTINE WAS CALLED.
ERRG1::
MOV SUBRPC,-(SP)
MOV @FMG3,-(SP)
MOV @2,-(SP)
MOV SP,RO
TRAP C:PNTB
ADD @6,SP
ENDMSG
L10001:
TRAP C:MSG

BGNMSG ERRG2
TST SUBRPC ;IS THE ERROR IN A SUBROUTINE?
BEQ 104 ;IF NOT, DON'T PRINT SUBR. PC
PRINTB @FMG3,SUBRPC ;PC THAT SUBROUTINE WAS CALLED.
ERRG2::
MOV SUBRPC,-(SP)
MOV @FMG3,-(SP)
MOV @2,-(SP)
MOV SP,RO
TRAP C:PNTB
ADD @6,SP

104:
PRINTB @FMG1,BCSR0,BCSR2 ;PRINT CSR0 AND CSR2 CONTENTS.
MOV BCSR2,-(SP)
MOV BCSR0,-(SP)
MOV @FMG1,-(SP)
MOV @3,-(SP)
MOV SP,RO
TRAP C:PNTB
ADD @10,SP

PRINTB @FMG2,BCSR4,BCSR6 ;PRINT CSR4 AND CSR2 CONTENTS.
MOV BCSR6,-(SP)
MOV BCSR4,-(SP)
MOV @FMG2,-(SP)
MOV @3,-(SP)
MOV SP,RO
TRAP C:PNTB
ADD @10,SP

ENDMSG
L10002:
TRAP C:MSG

BGNMSG ERRG3
PRINTB @FMG3,SUBRPC ;PC THAT SUBROUTINE WAS CALLED.
ERRG3::

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(8)	007014	013746	002416			MOV	SUBRPC, -(SP)
(7)	007020	012746	011260			MOV	#FMG3, -(SP)
(6)	007024	012746	000002			MOV	#2, -(SP)
(3)	007030	010600				MOV	SP, R0
(4)	007032	104414				TRAP	C#PNTB
(4)	007034	062706	000006			ADD	#6, SP
4834	007040			PRINTB	#FMG8, <B, BR1>, <B, BR2>		
(9)	007040	005046				CLR	-(SP)
(9)	007042	151216				BISB	BR2, (SP)
(8)	007044	005046				CLR	-(SP)
(8)	007046	151116				BISB	BR1, (SP)
(7)	007050	012746	011457			MOV	#FMG8, -(SP)
(6)	007054	012746	000003			MOV	#3, -(SP)
(3)	007060	010600				MOV	SP, R0
(4)	007062	104414				TRAP	C#PNTB
(4)	007064	062706	000010			ADD	#10, SP
4835	007070			ENDMSG			
(3)	007070						
(3)	007070	104423				L10003:	TRAP C#MSG
4836							
4837							
4838	007072			BGNMSG	ERRG4		
(3)	007072					ERRG4::	
4839	007072			PRINTB	#FMG4	;PRINT HEADER	
(7)	007072	012746	011332			MOV	#FMG4, -(SP)
(6)	007076	012746	000001			MOV	#1, -(SP)
(3)	007102	010600				MOV	SP, R0
(4)	007104	104414				TRAP	C#PNTB
(4)	007106	062706	000004			ADD	#4, SP
4840	007112			PRINTB	#FMG7, CSRO, <B, BCSRO>	;PRINT THE LOW BYTE OF CSRO	
(9)	007112	005046				CLR	-(SP)
(9)	007114	157716	173146			BISB	BCSRO, (SP)
(8)	007120	013746	002266			MOV	CSRO, -(SP)
(7)	007124	012746	011413			MOV	#FMG7, -(SP)
(6)	007130	012746	000003			MOV	#3, -(SP)
(3)	007134	010600				MOV	SP, R0
(4)	007136	104414				TRAP	C#PNTB
(4)	007140	062706	000010			ADD	#10, SP
4841	007144			PRINTB	#FMG5, <B, R1>	;PRINT EXPECTED CONTENTS	
(8)	007144	005046				CLR	-(SP)
(8)	007146	150116				BISB	R1, (SP)
(7)	007150	012746	011377			MOV	#FMG5, -(SP)
(6)	007154	012746	000002			MOV	#2, -(SP)
(3)	007160	010600				MOV	SP, R0
(4)	007162	104414				TRAP	C#PNTB
(4)	007164	062706	000006			ADD	#6, SP
4842	007170			ENDMSG			
(3)	007170						
(3)	007170	104423				L10004:	TRAP C#MSG
4843							
4844							
4845	007172			BGNMSG	ERRG7		
(3)	007172					ERRG7::	
4846	007172			PRINTB	#FMG4	;PRINT HEADER	
(7)	007172	012746	011332			MOV	#FMG4, -(SP)
(6)	007176	012746	000001			MOV	#1, -(SP)

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 CVDPVC.P11 16-AUG-84 14:18 GLOBAL ERROR REPORT REPORT SECTION

(3)	007202	010600					MOV	SP,RO
(4)	007204	104414					TRAP	C#PNTB
(4)	007206	062706	000004				ADD	#4,SP
4847	007212			PRINTB	#FMG10,CSR4,<B,@CSR4>	;PRINT THE LOW BYTE OF	CSR4	
(9)	007212	005046					CLR	-(SP)
(9)	007214	157716	173052				BISB	@CSR4,(SP)
(8)	007220	013746	002272				MOV	CSR4,-(SP)
(7)	007224	012746	011574				MOV	#FMG10,-(SP)
(6)	007230	012746	000003				MOV	#3,-(SP)
(3)	007234	010600					MOV	SP,RO
(4)	007236	104414					TRAP	C#PNTB
(4)	007240	062706	000010				ADD	#10,SP
4848	007244			PRINTB	#FMG5,<B,R1>	;PRINT EXPECTED CONTENTS		
(8)	007244	005046					CLR	-(SP)
(8)	007246	150116					BISB	R1,(SP)
(7)	007250	012746	011377				MOV	#FMG5,-(SP)
(6)	007254	012746	000002				MOV	#2,-(SP)
(3)	007260	010600					MOV	SP,RO
(4)	007262	104414					TRAP	C#PNTB
(4)	007264	062706	000006				ADD	#6,SP
4849	007270			ENDMSG				
(3)	007270						L10005:	
(3)	007270	104423					TRAP	C#MSG
4850				BGNMSG	ERRG8			
4851	007272						ERRG8::	
(3)	007272							
4852	007272			PRINTB	#FMG4	;PRINT HEADER		
(7)	007272	012746	011332				MOV	#FMG4,-(SP)
(6)	007276	012746	000001				MOV	#1,-(SP)
(3)	007302	010600					MOV	SP,RO
(4)	007304	104414					TRAP	C#PNTB
(4)	007306	062706	000004				ADD	#4,SP
4853	007312			PRINTB	#FMG11,CSR5,<B,@PCR>	;PRINT THE HIGH BYTE OF	CSR4	
(9)	007312	005046					CLR	-(SP)
(9)	007314	157716	172762				BISB	@PCR,(SP)
(8)	007320	013746	002302				MOV	CSR5,-(SP)
(7)	007324	012746	011640				MOV	#FMG11,-(SP)
(6)	007330	012746	000003				MOV	#3,-(SP)
(3)	007334	010600					MOV	SP,RO
(4)	007336	104414					TRAP	C#PNTB
(4)	007340	062706	000010				ADD	#10,SP
4854	007344			PRINTB	#FMG5,<B,R1>	;PRINT EXPECTED CONTENTS		
(8)	007344	005046					CLR	-(SP)
(8)	007346	150116					BISB	R1,(SP)
(7)	007350	012746	011377				MOV	#FMG5,-(SP)
(6)	007354	012746	000002				MOV	#2,-(SP)
(3)	007360	010600					MOV	SP,RO
(4)	007362	104414					TRAP	C#PNTB
(4)	007364	062706	000006				ADD	#6,SP
4855	007370			ENDMSG				
(3)	007370						L10006:	
(3)	007370	104423					TRAP	C#MSG
4856				BGNMSG	ERRG9			
4857	007372						ERRG9::	
(3)	007372							
4858	007372			PRINTB	#FMG4	;PRINT HEADER		

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4870 007572          BGNMSG  ERRG11
(3) 007572
4871 007572 005737 002416          TST  SUBRPC          ;ERRG11::
4872 007576 001412          BEQ  5$              ;WAS THE RESET ERROR FOUND IN THE SUB
4873 007600          PRINTB #FMG23,SUBRPC ;IF NOT SKIP
(8) 007600 013746 002416          ;PRINT WHERE CALLED
(7) 007604 012746 012536          MOV  SUBRPC,-(SP)
(6) 007610 012746 000002          MOV  #FMG23,-(SP)
(3) 007614 010600          MOV  #2,-(SP)
(4) 007616 104414          MOV  SP,R0
(4) 007620 062706 000006          TRAP C#PNTB
4874 007624          ADD  #6,SP
4875 007624          5$: PRINTB #FMG4          ;PRINT HEADER
(7) 007624 012746 011332          MOV  #FMG4,-(SP)
(6) 007630 012746 000001          MOV  #1,-(SP)
(3) 007634 010600          MOV  SP,R0
(4) 007636 104414          TRAP C#PNTB
(4) 007640 062706 000004          ADD  #4,SP
4876 007644          PRINTB #FMG7,CSR0,<B,#CSR0> ;PRINT THE LOW BYTE OF CSR0
(9) 007644 005046          CLR  -(SP)
(9) 007646 157716 172414          BISB #CSR0,(SP)
(8) 007652 013746 002266          MOV  CSR0,-(SP)
(7) 007656 012746 011413          MOV  #FMG7,-(SP)
(6) 007662 012746 000003          MOV  #3,-(SP)
(3) 007666 010600          MOV  SP,R0
(4) 007670 104414          TRAP C#PNTB
(4) 007672 062706 000010          ADD  #10,SP
4877 007676          PRINTB #FMG5,#0          ;PRINT EXPECTED CONTENTS
(8) 007676 012746 000000          MOV  #0,-(SP)
(7) 007702 012746 011377          MOV  #FMG5,-(SP)
(6) 007706 012746 000002          MOV  #2,-(SP)
(3) 007712 010600          MOV  SP,R0
(4) 007714 104414          TRAP C#PNTB
(4) 007716 062706 000006          ADD  #6,SP
4878 007722          PRINTB #FMG10,CSR4,<B,#CSR4> ;PRINT THE LOW BYTE OF CSR4
(9) 007722 005046          CLR  -(SP)
(9) 007724 157716 172342          BISB #CSR4,(SP)
(8) 007730 013746 002272          MOV  CSR4,-(SP)
(7) 007734 012746 011574          MOV  #FMG10,-(SP)
(6) 007740 012746 000003          MOV  #3,-(SP)
(3) 007744 010600          MOV  SP,R0
(4) 007746 104414          TRAP C#PNTB
(4) 007750 062706 000010          ADD  #10,SP
4879 007754          PRINTB #FMG5,#TBE        ;PRINT EXPECTED CONTENTS
(8) 007754 012746 000004          MOV  #TBE,-(SP)
(7) 007760 012746 011377          MOV  #FMG5,-(SP)
(6) 007764 012746 000002          MOV  #2,-(SP)
(3) 007770 010600          MOV  SP,R0
(4) 007772 104414          TRAP C#PNTB
(4) 007774 062706 000006          ADD  #6,SP
4880 010000          PRINTB #FMG11,PCR,<B,#PCR> ;PRINT THE HIGH BYTE OF CSR4
(9) 010000 005046          CLR  -(SP)
(9) 010002 157716 172274          BISB #PCR,(SP)
(8) 010006 013746 002302          MOV  PCR,-(SP)
(7) 010012 012746 011640          MOV  #FMG11,-(SP)
(6) 010016 012746 000003          MOV  #3,-(SP)

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(3)	010022	010600				MOV	SP,RO
(4)	010024	104414				TRAP	C#PNTB
(4)	010026	062706	000010			ADD	#10,SP
4881	010032			PRINTB #FMG5,#0	;PRINT EXPECTED CONTENTS		
(8)	010032	012746	000000			MOV	#0,-(SP)
(7)	010036	012746	011377			MOV	#FMG5,-(SP)
(6)	010042	012746	000002			MOV	#2,-(SP)
(3)	010046	010600				MOV	SP,RO
(4)	010050	104414				TRAP	C#PNTB
(4)	010052	062706	000006			ADD	#6,SP
4882	010056			PRINTB #FMG12,CSR6,<B,#CSR6>	;PRINT THE LOW BYTE OF CSR6		
(9)	010056	005046				CLR	-(SP)
(9)	010060	157716	172210			BISB	#CSR6,(SP)
(8)	010064	013746	002274			MOV	CSR6,-(SP)
(7)	010070	012746	011704			MOV	#FMG12,-(SP)
(6)	010074	012746	000003			MOV	#3,-(SP)
(3)	010100	010600				MOV	SP,RO
(4)	010102	104414				TRAP	C#PNTB
(4)	010104	062706	000010			ADD	#10,SP
4883	010110			PRINTB #FMG5,#0	;PRINT EXPECTED CONTENTS		
(8)	010110	012746	000000			MOV	#0,-(SP)
(7)	010114	012746	011377			MOV	#FMG5,-(SP)
(6)	010120	012746	000002			MOV	#2,-(SP)
(3)	010124	010600				MOV	SP,RO
(4)	010126	104414				TRAP	C#PNTB
(4)	010130	062706	000006			ADD	#6,SP
4884	010134			PRINTB #FMG13,CSR7,<B,#CSR7>	;PRINT THE HIGH BYTE OF CSR6		
(9)	010134	005046				CLR	-(SP)
(9)	010136	157716	172142			BISB	#CSR7,(SP)
(8)	010142	013746	002304			MOV	CSR7,-(SP)
(7)	010146	012746	011750			MOV	#FMG13,-(SP)
(6)	010152	012746	000003			MOV	#3,-(SP)
(3)	010156	010600				MOV	SP,RO
(4)	010160	104414				TRAP	C#PNTB
(4)	010162	062706	000010			ADD	#10,SP
4885	010166			PRINTB #FMG5,#0	;PRINT EXPECTED CONTENTS		
(8)	010166	012746	000000			MOV	#0,-(SP)
(7)	010172	012746	011377			MOV	#FMG5,-(SP)
(6)	010176	012746	000002			MOV	#2,-(SP)
(3)	010202	010600				MOV	SP,RO
(4)	010204	104414				TRAP	C#PNTB
(4)	010206	062706	000006			ADD	#6,SP
4886	010212			ENDMSG			
(3)	010212						
(3)	010212	104423				L10011:	TRAP C#MSG
4887				BGNMSG ERRG12			
4888	010214						
(3)	010214					ERRG12::	
4889	010214			PRINTB #FMG3,SUBRPC	;PC THAT SUBROUTINE WAS CALLED.		
(8)	010214	013746	002416			MOV	SUBRPC,-(SP)
(7)	010220	012746	011260			MOV	#FMG3,-(SP)
(6)	010224	012746	000002			MOV	#2,-(SP)
(3)	010230	010600				MOV	SP,RO
(4)	010232	104414				TRAP	C#PNTB
(4)	010234	062706	000006			ADD	#6,SP
4890	010240			PRINTB #FMG14,REG,R1,R2	;PRINT TIME OUT ERROR		

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(10)	010240	010246							MOV	R2,-(SP)
(9)	010242	010146							MOV	R1,-(SP)
(8)	010244	013746	002374						MOV	REG,-(SP)
(7)	010250	012746	012014						MOV	#FMG14,-(SP)
(6)	010254	012746	000004						MOV	#4,-(SP)
(3)	010260	010600							MOV	SP,R0
(4)	010262	104414							TRAP	C#PNTB
(4)	010264	062706	000012						ADD	#12,SP
4891	010270				ENDMSG					
(3)	010270								L10012:	TRAP
(3)	010270	104423								C#MSG
4892										
4893	010272				BGNMSG	ERRG13				
(3)	010272								ERRG13::	
4894	010272	032777	000004	171766		BIT	#RTS,#RXCSR			;IS RTS SET
4895	010300	001413				BEQ	5#			
4896	010302	012701	030004			MOV	#RTS!CTS!RR,R1			;SET UP THE EXPECTED RESULTS
4897	010306					PRINTB	#FMG17			
(7)	010306	012746	012144						MOV	#FMG17,-(SP)
(6)	010312	012746	000001						MOV	#1,-(SP)
(3)	010316	010600							MOV	SP,R0
(4)	010320	104414							TRAP	C#PNTB
(4)	010322	062706	000004						ADD	#4,SP
4898	010326	000544				BR	20#			
4899	010330				5#:					
4900	010330	032777	000002	171730		BIT	#DTR,#RXCSR			;IS DTR SET?
4901	010336	001413				BEQ	10#			;BR IF NOT
4902	010340	012701	040002			MOV	#DTR!IC,R1			;SET UP THE EXPECTED RESULTS
4903	010344					PRINTB	#FMG18			
(7)	010344	012746	012221						MOV	#FMG18,-(SP)
(6)	010350	012746	000001						MOV	#1,-(SP)
(3)	010354	010600							MOV	SP,R0
(4)	010356	104414							TRAP	C#PNTB
(4)	010360	062706	000004						ADD	#4,SP
4904	010364	000525				BR	20#			
4905	010366				10#:					
4906	010366	032777	000010	171672		BIT	#LL,#RXCSR			;IS LOCAL LOOP SET
4907	010374	001433				BEQ	15#			
4908	010376	012701	001010			MOV	#LL!DM,R1			;SET UP THE EXPECTED RESULTS
4909	010402					PRINTB	#FMG19			
(7)	010402	012746	012270						MOV	#FMG19,-(SP)
(6)	010406	012746	000001						MOV	#1,-(SP)
(3)	010412	010600							MOV	SP,R0
(4)	010414	104414							TRAP	C#PNTB
(4)	010416	062706	000004						ADD	#4,SP
4910	010422					PRINTB	#FMG21			
(7)	010422	012746	012422						MOV	#FMG21,-(SP)
(6)	010426	012746	000001						MOV	#1,-(SP)
(3)	010432	010600							MOV	SP,R0
(4)	010434	104414							TRAP	C#PNTB
(4)	010436	062706	000004						ADD	#4,SP
4911	010442					PRINTB	#FMG29			
(7)	010442	012746	013221						MOV	#FMG29,-(SP)
(6)	010446	012746	000001						MOV	#1,-(SP)
(3)	010452	010600							MOV	SP,R0
(4)	010454	104414							TRAP	C#PNTB

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(4) 010456 062706 000004
4912 010462 000466 BR 20$
4913
4914 010464
4915 010464 032777 000001 171574 15$: BIT #SF,@RXCSR ;IS SEL FREQ SET?
4916 010472 001520 BEQ 25$ ;IF NONE OF THOSE BITS SET - ERROR
4917 010474 012701 000040 MOV #SQ,R1 ;SET UP THE EXPECTED RESULTS
4918 010500 PRINTB #FMG20
(7) 010500 012746 012335 MOV #FMG20,-(SP)
(6) 010504 012746 000001 MOV #1,-(SP)
(3) 010510 010600 MOV SP,R0
(4) 010512 104414 TRAP C#PNTB
(4) 010514 062706 000004 ADD #4,SP
4919 010520 PRINTB #FMG21
(7) 010520 012746 012422 MOV #FMG21,-(SP)
(6) 010524 012746 000001 MOV #1,-(SP)
(3) 010530 010600 MOV SP,R0
(4) 010532 104414 TRAP C#PNTB
(4) 010534 062706 000004 ADD #4,SP
4920 010540 PRINTB #FMG4 ;PRINT HEADER
(7) 010540 012746 011332 MOV #FMG4,-(SP)
(6) 010544 012746 000001 MOV #1,-(SP)
(3) 010550 010600 MOV SP,R0
(4) 010552 104414 TRAP C#PNTB
(4) 010554 062706 000004 ADD #4,SP
4921 010560 PRINTB #FMG10,CSR4,<B,@CSR4> ;PRINT THE LOW BYTE OF CSR4
(9) 010560 005046 CLR -(SP)
(9) 010562 157716 171504 BISB @CSR4,(SP)
(8) 010566 013746 002272 MOV CSR4,-(SP)
(7) 010572 012746 011574 MOV #FMG10,-(SP)
(6) 010576 012746 000003 MOV #3,-(SP)
(3) 010602 010600 MOV SP,R0
(4) 010604 104414 TRAP C#PNTB
(4) 010606 062706 000010 ADD #10,SP
4922 010612 PRINTB #FMG5,<B,R1> ;PRINT EXPECTED CONTENTS
(8) 010612 005046 CLR -(SP)
(8) 010614 150116 BISB R1,(SP)
(7) 010616 012746 011377 MOV #FMG5,-(SP)
(6) 010622 012746 000002 MOV #2,-(SP)
(3) 010626 010600 MOV SP,R0
(4) 010630 104414 TRAP C#PNTB
(4) 010632 062706 000006 ADD #6,SP
4923 010636 000447 BR 30$
4924
4925 010640 20$:
4926 010640 PRINTB #FMG4 ;PRINT HEADER
(7) 010640 012746 011332 MOV #FMG4,-(SP)
(6) 010644 012746 000001 MOV #1,-(SP)
(3) 010650 010600 MOV SP,R0
(4) 010652 104414 TRAP C#PNTB
(4) 010654 062706 000004 ADD #4,SP
4927 010660 PRINTB #FMG15,CSRO,@CSRO ;PRINT THE LOW BYTE OF CSRO
(9) 010660 017746 171402 MOV @CSRO,-(SP)
(8) 010664 013746 002266 MOV CSRO,-(SP)
(7) 010670 012746 012071 MOV #FMG15,-(SP)
(6) 010674 012746 000003 MOV #3,-(SP)
    
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(3)	010700	010600				MOV	SP,R0
(4)	010702	104414				TRAP	C#PNTB
(4)	010704	062706	000010			ADD	#10,SP
4928	010710			PRINTB	#FMG16,R1		;PRINT EXPECTED CONTENTS
(8)	010710	010146				MOV	R1,-(SP)
(7)	010712	012746	012133			MOV	#FMG16,-(SP)
(6)	010716	012746	000002			MOV	#2,-(SP)
(3)	010722	010600				MOV	SP,R0
(4)	010724	104414				TRAP	C#PNTB
(4)	010726	062706	000006			ADD	#6,SP
4929	010732	000411		BR	30\$		
4930	010734			25\$:			
4931	010734			PRINTB	#FMG22,R2		;PRINT BIT THAT ISN'T WRITTEN.
(8)	010734	010246				MOV	R2,-(SP)
(7)	010736	012746	012471			MOV	#FMG22,-(SP)
(6)	010742	012746	000002			MOV	#2,-(SP)
(3)	010746	010600				MOV	SP,R0
(4)	010750	104414				TRAP	C#PNTB
(4)	010752	062706	000006			ADD	#6,SP
4932	010756			30\$:			
4933	010756			ENDMSG			
(3)	010756						L10013:
(3)	010756	104423				TRAP	C#MSG
4934							
4935	010760			BGNMSG	ERRG14		
(3)	010760						ERRG14::
4936	010760	005737	002416	TST	SUBRPC		;IS THE ERROR IN A SUBROUTINE?
4937	010764	001412		BEQ	10\$;IF NOT, DON'T PRINT SUBR. PC
4938	010766			PRINTB	#FMG3,SUBRPC		;PC THAT SUBROUTINE WAS CALLED.
(8)	010766	013746	002416			MOV	SUBRPC,-(SP)
(7)	010772	012746	011260			MOV	#FMG3,-(SP)
(6)	010776	012746	000002			MOV	#2,-(SP)
(3)	011002	010600				MOV	SP,R0
(4)	011004	104414				TRAP	C#PNTB
(4)	011006	062706	000006			ADD	#6,SP
4939	011012			10\$:			
4940	011012			PRINTB	#FMG24,XMITD,RCOUNT		;PRINT CHARACTERS XMITTED AND RCVD.
(9)	011012	013746	002500			MOV	RCOUNT,-(SP)
(8)	011016	013746	002476			MOV	XMITD,-(SP)
(7)	011022	012746	012605			MOV	#FMG24,-(SP)
(6)	011026	012746	000003			MOV	#3,-(SP)
(3)	011032	010600				MOV	SP,R0
(4)	011034	104414				TRAP	C#PNTB
(4)	011036	062706	000010			ADD	#10,SP
4941	011042			ENDMSG			
(3)	011042						L10014:
(3)	011042	104423				TRAP	C#MSG
4942							
4943	011044			BGNMSG	ERRG15		
(3)	011044						ERRG15::
4944	011044			PRINTB	#FMG25,R2		;PRINT BIT THAT ISN'T CLEARED.
(8)	011044	010246				MOV	R2,-(SP)
(7)	011046	012746	012652			MOV	#FMG25,-(SP)
(6)	011052	012746	000002			MOV	#2,-(SP)
(3)	011056	010600				MOV	SP,R0
(4)	011060	104414				TRAP	C#PNTB

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(4)	011062	062706	000006				ADD	#6.SP
4945	011066				ENDMSG			
(3)	011066						L10015:	
(3)	011066	104423					TRAP	C#MSG
4946								
4947	011070	040445	047125	041101	FMG0:	.ASCIZ	/AUNABLE TO RUN TEST #D2#A ON UNIT #D2#A WITHOUT TURNAROUND#N/	
	011076	042514	052040	020117				
	011104	052522	020116	042524				
	011112	052123	022440	031104				
	011120	040445	047440	020116				
	011126	047125	052111	022440				
	011134	031104	040445	053440				
	011142	052111	047510	052125				
	011150	052040	051125	040516				
	011156	047522	047125	022504				
	011164	000116						
4948	011166	040445	054122	051503	FMG1:	.ASCIZ	/ARXCSR: #06#N#ARDSR : #06#N/	
	011174	035122	022440	033117				
	011202	047045	040445	042122				
	011210	051123	035040	022440				
	011216	033117	047045	000				
4949	011223	045	050101	051503	FMG2:	.ASCIZ	/APCSCR: #06#N#ATDSR : #06#N/	
	011230	051103	020072	047445				
	011236	022466	022516	052101				
	011244	051504	020122	020072				
	011252	047445	022466	000116				
4950	011260	040445	051105	047522	FMG3:	.ASCIZ	/AERROR IN SUBROUTINE CALLED AT PC: #06#N/	
	011266	020122	047111	051440				
	011274	041125	047522	052125				
	011302	047111	020105	040503				
	011310	046114	042105	040440				
	011316	020124	041520	020072				
	011324	047445	022466	000116				
4951	011332	051445	022471	034523	FMG4:	.ASCIZ	/S9#S9#S9#S3#AFFOUND: #S2#AEXPECTED: #N/	
	011340	051445	022471	031523				
	011346	040445	047506	047125				
	011354	035104	051445	022462				
	011362	042501	050130	041505				
	011370	042524	035104	047045				
	011376	000						
4952	011377	045	033523	047445	FMG5:	.ASCIZ	/S7#03#N/	
	011404	022463	000116					
4953	011410	047045	000		FMG6:	.ASCIZ	/N/	
4954	011413	045	051101	041530	FMG7:	.ASCIZ	/ARXCSR = #06#A (EXTERNAL): #03/	
	011420	051123	020040	020040				
	011426	020075	047445	022466				
	011434	020101	042450	052130				
	011442	051105	040516	024514				
	011450	020072	022440	031517				
	011456	000						
4955	011457	045	054101	044515	FMG8:	.ASCIZ	/AXMIT DATA: #03#A RCV DATA: #03#N/	
	011464	020124	040504	040524				
	011472	020072	047445	022463				
	011500	020101	041522	020126				
	011506	040504	040524	020072				
	011514	047445	022463	000116				

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4956	011522	047045	040445	025052	FMG9:	.ASCIZ	/#N#A** CHECK -V FROM THE CHARGE PUMP **#N/
	011530	041440	042510	045503			
	011536	026440	020126	051106			
	011544	046517	052040	042510			
	011552	041440	040510	043522			
	011560	020105	052520	050115			
	011566	025040	022452	000116			
4957	011574	040445	041520	041523	FMG10:	.ASCIZ	/#APCSCR = #06#A (EXTERNAL): #03/
	011602	020122	020040	036440			
	011610	022440	033117	040445			
	011616	024040	054105	042524			
	011624	047122	046101	035051			
	011632	020040	047445	000063			
4958	011640	040445	041520	020122	FMG11:	.ASCIZ	/#APCR = #06#A (USYNRT R7): #03/
	011646	020040	020040	036440			
	011654	022440	033117	040445			
	011662	024040	051525	047131			
	011670	052122	051040	024467			
	011676	020072	047445	000063			
4959	011704	040445	027124	042040	FMG12:	.ASCIZ	/#AT. DATA = #06#A (USYNRT R2): #03/
	011712	052101	020101	036440			
	011720	022440	033117	040445			
	011726	024040	051525	047131			
	011734	052122	051040	024462			
	011742	020072	047445	000063			
4960	011750	040445	027124	051440	FMG13:	.ASCIZ	/#AT. STATUS= #06#A (USYNRT R3): #03/
	011756	040524	052524	036523			
	011764	022440	033117	040445			
	011772	024040	051525	047131			
	012000	052122	051040	024463			
	012006	020072	047445	000063			
4961	012014	040445	047503	052116	FMG14:	.ASCIZ	/#ACONTENTS OF #06#A = #06#A EXPECTED #06#N/
	012022	047105	051524	047440			
	012030	020106	047445	022466			
	012036	020101	020075	047445			
	012044	022466	020101	020040			
	012052	054105	042520	052103			
	012060	042105	022440	033117			
	012066	047045	000				
4962	012071	045	051101	041530	FMG15:	.ASCIZ	/#ARXCSR = #06#A (EXTERNAL): #06/
	012076	051123	020040	036440			
	012104	022440	033117	040445			
	012112	024040	054105	042524			
	012120	047122	046101	035051			
	012126	022440	033117	000			
4963	012133	045	031523	047445	FMG16:	.ASCIZ	/#S3#06#N/
	012140	022466	000116				
4964	012144	040445	052122	020123	FMG17:	.ASCIZ	/#ARTS NOT TURNED AROUND TO CTS AND RR (CD)#N/
	012152	047516	020124	052524			
	012160	047122	042105	040440			
	012166	047522	047125	020104			
	012174	047524	041440	051524			
	012202	040440	042116	051040			
	012210	020122	041450	024504			
	012216	047045	000				
4965	012221	045	042101	051124	FMG18:	.ASCIZ	/#ADTR NOT TURNED AROUND TO IC (RING)#N/

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	012226	047040	052117	052040	
	012234	051125	042516	020104	
	012242	051101	052517	042116	
	012250	052040	020117	041511	
	012256	024040	044522	043516	
	012264	022451	000116		
4966	012270	040445	046114	047040	FMG19: .ASCIZ /%ALL NOT TURNED AROUND TO DM (DSR)%N/
	012276	052117	052040	051125	
	012304	042516	020104	051101	
	012312	052517	042116	052040	
	012320	020117	046504	024040	
	012326	051504	024522	047045	
	012334	000			
4967	012335	045	051101	020114	FMG20: .ASCIZ /%ARL NOT TURNED AROUND TO TEST MODE (SIG. QUALITY)%N/
	012342	047516	020124	052524	
	012350	047122	042105	040440	
	012356	047522	047125	020104	
	012364	047524	052040	051505	
	012372	020124	047515	042504	
	012400	024040	044523	027107	
	012406	050440	040525	044514	
	012414	054524	022451	000116	
4968	012422	040445	044103	041505	FMG21: .ASCIZ /%ACHECK THAT THE JUMPER IS INSTALLED%N/
	012430	020113	044124	052101	
	012436	052040	042510	045040	
	012444	046525	042520	020122	
	012452	051511	044440	051516	
	012460	040524	046114	042105	
	012466	047045	000		
4969	012471	045	041501	047101	FMG22: .ASCIZ /%ACAN'T WRITE BIT %06%A INTO RXCSR%N/
	012476	052047	053440	044522	
	012504	042524	041040	052111	
	012512	022440	033117	040445	
	012520	044440	052116	020117	
	012526	054122	051503	022522	
	012534	000116			
4970	012536	040445	042522	042523	FMG23: .ASCIZ /%ARESET SUBROUTINE CALLED AT PC: %06%N/
	012544	020124	052523	051102	
	012552	052517	044524	042516	
	012560	041440	046101	042514	
	012566	020104	052101	050040	
	012574	035103	022440	033117	
	012602	047045	000		
4971	012605	045	052101	040522	FMG24: .ASCIZ /%ATRANSMITTED: %02%A RECEIVED: %02%N/
	012612	051516	044515	052124	
	012620	042105	020072	042045	
	012626	022462	020101	042522	
	012634	042503	053111	042105	
	012642	020072	042045	022462	
	012650	000116			
4972	012652	040445	040503	023516	FMG25: .ASCIZ /%ACAN'T CLEAR BIT %06%A IN RXCSR%N/
	012660	020124	046103	040505	
	012666	020122	044502	020124	
	012674	047445	022466	020101	
	012702	047111	051040	041530	
	012710	051123	047045	000	

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4973	012715	045	047101	052117	FMG26: .ASCIZ /#NOTE: DATA SET INTERRUPT MAY BE DISABLED - CHECK JUMPER#N/
	012722	035105	042040	052101	
	012730	020101	042523	020124	
	012736	047111	042524	051122	
	012744	050125	020124	040515	
	012752	020131	042502	042040	
	012760	051511	041101	042514	
	012766	020104	020055	044103	
	012774	041505	020113	052512	
	013002	050115	051105	047045	
	013010	000			
4974	013011	045	052101	051505	FMG27: .ASCII /#ATEST #D2#A WILL ONLY RUN WITH RS422 ON A LSI-11/
	013016	020124	042045	022462	
	013024	020101	044527	046114	
	013032	047440	046116	020131	
	013040	052522	020116	044527	
	013046	044124	051040	032123	
	013054	031062	047440	020116	
	013062	020101	051514	026511	
	013070	030461			
4975	013072	057			.BYTE 57
4976	013073	062	022463	000116	.ASCIZ /23#N/
4977	013100	040445	043111	041440	FMG28: .ASCII /#AIF CPU IS A M7264 WITH MEMORY REFRESH ENABLED, A HIGH/
	013106	052520	044440	020123	
	013114	020101	033515	033062	
	013122	020064	044527	044124	
	013130	046440	046505	051117	
	013136	020131	042522	051106	
	013144	051505	020110	047105	
	013152	041101	042514	026104	
	013160	040440	044040	043511	
	013166	110			
4978	013167	045	020101	050123	.ASCIZ /#A SPEED TEST CAN'T RUN#N/
	013174	042505	020104	042524	
	013202	052123	041440	047101	
	013210	052047	051040	047125	
	013216	047045	000		
4979	013221	045	025101	020052	FMG29: .ASCIZ /#A** IF M8020 JUMPERED FOR RS422, THIS ERROR EXPECTED **#N/
	013226	043111	046440	030070	
	013234	030062	045040	046525	
	013242	042520	042522	020104	
	013250	047506	020122	051522	
	013256	031064	026062	052040	
	013264	044510	020123	051105	
	013272	047522	020122	054105	
	013300	042520	052103	042105	
	013306	025040	022452	000116	
4980	013314	040445	023052	041440	FMG30: .ASCIZ /#A** CHECK BYTE OP SIGNAL - STUCK LOW ?? **#N/
	013322	042510	045503	041040	
	013330	052131	020105	050117	
	013336	051440	043511	040516	
	013344	020114	020055	052123	
	013352	041525	020113	047514	
	013360	020127	037477	025040	
	013366	022452	000116		
4981					

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4982	013372	042522	042523	020124	EMG0:	.ASCIZ /RESET ERROR AFTER BUS RESET (DETECTED ONLY ON 1ST PASS)/
	013400	051105	047522	020122		
	013406	043101	042524	020122		
	013414	052502	020123	042522		
	013422	042523	020124	042050		
	013430	052105	041505	042524		
	013436	020104	047117	054514		
	013444	047440	020116	051461		
	013452	020124	040520	051523		
	013460	000051				
4983	013462	044524	042515	047440	EMG1:	.ASCIZ /TIME OUT/
	013470	052125	000			
4984	013473	124	046511	020105	EMG2:	.ASCIZ /TIME OUT - DURING INTERRUPT EXERCISE/
	013500	052517	020124	020055		
	013506	052504	044522	043516		
	013514	044440	052116	051105		
	013522	052522	052120	042440		
	013530	042530	041522	051511		
	013536	000105				
4985	013540	042522	042523	020124	EMG3:	.ASCIZ /RESET ERROR/
	013546	051105	047522	000122		
4986	013554	051503	020122	042522	EMG4:	.ASCIZ /CSR READ-WRITE ERROR/
	013562	042101	053455	044522		
	013570	042524	042440	051122		
	013576	051117	000			
4987	013601	125	054523	051116	EMG5:	.ASCIZ /USYNRT XMIT ACTIVE NOT SET/
	013606	020124	046530	052111		
	013614	040440	052103	053111		
	013622	020105	047516	020124		
	013630	042523	000124			
4988	013634	051525	047131	052122	EMG6:	.ASCIZ /USYNRT XMIT ACTIVE NOT CLEAR/
	013642	054040	044515	020124		
	013650	041501	044524	042526		
	013656	047040	052117	041440		
	013664	042514	051101	000		
4989	013671	124	042502	047040	EMG7:	.ASCIZ /TBE NOT CLEAR/
	013676	052117	041440	042514		
	013704	051101	000			
4990	013707	124	042502	047040	EMG8:	.ASCIZ /TBE NOT SET/
	013714	052117	051440	052105		
	013722	000				
4991	013723	130	044515	020124	EMG9:	.ASCIZ /XMIT INTERRUPT NOT RECEIVED/
	013730	047111	042524	051122		
	013736	050125	020124	047516		
	013744	020124	042522	042503		
	013752	053111	042105	000		
4992	013757	130	044515	020124	EMG10:	.ASCIZ /XMIT INTERRUPT RECEIVED WHEN NOT EXPECTED/
	013764	047111	042524	051122		
	013772	050125	020124	042522		
	014000	042503	053111	042105		
	014006	053440	042510	020116		
	014014	047516	020124	054105		
	014022	042520	052103	042105		
	014030	000				
4993	014031	122	041505	044505	EMG11:	.ASCIZ /RECEIVER NOT DEACTIVATED/
	014036	042526	020122	047516		

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	014044	020124	042504	041501	
	014052	044524	040526	042524	
	014060	000104			
4994	014062	042522	042503	053111	EMG12: .ASCIZ /RECEIVER NOT ACTIVE/
	014070	051105	047040	052117	
	014076	040440	052103	053111	
	014104	000105			
4995	014106	042522	042503	053111	EMG13: .ASCIZ /RECEIVER NOT INITIALIZED AFTER RECEIVER DISABLED/
	014114	051105	047040	052117	
	014122	044440	044516	044524	
	014130	046101	055111	042105	
	014136	040440	052106	051105	
	014144	051040	041505	044505	
	014152	042526	020122	044504	
	014160	040523	046102	042105	
	014166	000			
4996	014167	122	041505	044505	EMG14: .ASCIZ /RECEIVER ACTIVE BEFORE FIRST DATA CHARACTER/
	014174	042526	020122	041501	
	014202	044524	042526	041040	
	014210	043105	051117	020105	
	014216	044506	051522	020124	
	014224	040504	040524	041440	
	014232	040510	040522	052103	
	014240	051105	000		
4997	014243	122	053103	044440	EMG15: .ASCIZ /RCV INTERRUPT NOT RECEIVED/
	014250	052116	051105	052522	
	014256	052120	047040	052117	
	014264	051040	041505	044505	
	014272	042526	000104		
4998	014276	041522	020126	047111	EMG16: .ASCIZ /RCV INTERRUPT RECEIVED BEFORE EXPECTED/
	014304	042524	051122	050125	
	014312	020124	042522	042503	
	014320	053111	042105	041040	
	014326	043105	051117	020105	
	014334	054105	042520	052103	
	014342	042105	000		
4999	014345	122	053103	042440	EMG17: .ASCIZ /RCV END OF MESSAGE NOT RECEIVED/
	014352	042116	047440	020106	
	014360	042515	051523	043501	
	014366	020105	047516	020124	
	014374	042522	042503	053111	
	014402	042105	000		
5000	014405	122	053103	051440	EMG18: .ASCIZ /RCV STATUS NOT CLEARED/
	014412	040524	052524	020123	
	014420	047516	020124	046103	
	014426	040505	042522	000104	
5001	014434	041522	020126	053117	EMG19: .ASCIZ /RCV OVERRUN NOT RECEIVED/
	014442	051105	052522	020116	
	014450	047516	020124	042522	
	014456	042503	053111	042105	
	014464	000			
5002	014465	122	053103	040440	EMG20: .ASCIZ /RCV ABORT NOT RECEIVED/
	014472	047502	052122	047040	
	014500	052117	051040	041505	
	014506	044505	042526	000104	
5003	014514	041522	020126	052123	EMG21: .ASCIZ /RCV STATUS INTERRUPT NOT RECEIVED/

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	014522	052101	051525	044440	
	014530	052116	051105	052522	
	014536	052120	047040	052117	
	014544	051040	041505	044505	
5004	014552	042526	000104		
	014556	047515	042504	020115	EMG22: .ASCIZ /MODEM LOOPBACK ERROR/
	014564	047514	050117	040502	
	014572	045503	042440	051122	
	014600	051117	000		
5005	014603	115	042117	046505	EMG23: .ASCIZ /MODEM STATUS INTERRUPT RECEIVED WHEN DISABLED/
	014610	051440	040524	052524	
	014616	020123	047111	042524	
	014624	051122	050125	020124	
	014632	042522	042503	053111	
	014640	042105	053440	042510	
	014646	020116	044504	040523	
	014654	046102	042105	000	
5006	014661	115	042117	046505	EMG24: .ASCIZ /MODEM STATUS INTERRUPT NOT RECEIVED/
	014666	051440	040524	052524	
	014674	020123	047111	042524	
	014702	051122	050125	020124	
	014710	047516	020124	042522	
	014716	042503	053111	042105	
	014724	000			
5007	014725	103	040510	040522	EMG25: .ASCIZ /CHARACTER COUNT ERROR/
	014732	052103	051105	041440	
	014740	052517	052116	042440	
	014746	051122	051117	000	
5008	014753	104	052101	020101	EMG26: .ASCIZ /DATA ERROR/
	014760	051105	047522	000122	
5009	014766	046530	052111	052440	EMG30: .ASCIZ /XMIT UNDERRUN/
	014774	042116	051105	052522	
	015002	000116			
5010	015004	042522	042503	053111	EMG31: .ASCIZ /RECEIVER ERROR/
	015012	051105	042440	051122	
	015020	051117	000		
5011	015023	101	047502	052122	EMG32: .ASCIZ /ABORT NOT RECEIVED/
	015030	047040	052117	051040	
	015036	041505	044505	042526	
	015044	000104			
5012	015046	047507	040440	042510	EMG33: .ASCIZ /GO AHEAD NOT RECEIVED/
	015054	042101	047040	052117	
	015062	051040	041505	044505	
	015070	042526	000104		
5013	015074	041101	051117	020124	EMG34: .ASCIZ /ABORT RECEIVED WHEN NOT EXPECTED/
	015102	042522	042503	053111	
	015110	042105	053440	042510	
	015116	020116	047516	020124	
	015124	054105	042520	052103	
	015132	042105	000		
5014	015135	101	042104	042522	EMG35: .ASCIZ /ADDRESS INCORRECTLY RECOGNIZED/
	015142	051523	044440	041516	
	015150	051117	042522	052103	
	015156	054514	051040	041505	
	015164	043517	044516	042532	
	015172	000104			

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5015	015174	051501	042523	041115	EMG36: .ASCIZ /ASSEMBLED BIT COUNT ERROR/
	015202	042514	020104	044502	
	015210	020124	047503	047125	
	015216	020124	051105	047522	
	015224	000122			
5016	015226	051103	020103	051105	EMG37: .ASCIZ /CRC ERROR/
	015234	047522	000122		
5017	015240	051103	020103	051105	EMG38: .ASCIZ /CRC ERROR NOT DETECTED/
	015246	047522	020122	047516	
	015254	020124	042504	042524	
	015262	052103	042105	000	
5018	015267	120	051101	052111	EMG39: .ASCIZ /PARITY ERROR NOT DETECTED/
	015274	020131	051105	047522	
	015302	020122	047516	020124	
	015310	042504	042524	052103	
	015316	042105	000		
5019	015321	115	046125	044524	EMG40: .ASCIZ /MULTIPLE MODEM CONTROL INTERRUPTS/
	015326	046120	020105	047515	
	015334	042504	020115	047503	
	015342	052116	047522	020114	
	015350	047111	042524	051122	
	015356	050125	051524	000	
5020		015364			.EVEN
5021					

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22
CVDPVC.P11 16-AUG-84 14:18 LOAD DEVICE PROTECTION TABLE

.SBTTL LOAD DEVICE PROTECTION TABLE

;/;;;/;
;/ THIS TABLE IDENTIFIES THE LOAD DEVICE TO THE SUPERVISOR, SO THAT IT CAN BE
;/ PROTECTED FROM TESTING. IF DESIRED.
;/;;;/;

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(3)
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015364
015364

BGNPROT

L#PROT::

177777
177777
177777

.WORD -1
.WORD -1
.WORD -1

;DON'T CHECK CSR ADDRESS
;DON'T CHECK MASSBUS UNIT NUMBER
;DON'T CHECK DRIVE NUMBER

015372

ENDPROT

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-1
 CVDPVC.P11 16-AUG-84 14:18 INITIALIZE SECTION

```

5044 .SBTTL INITIALIZE SECTION
5045
5046 ;////////////////////////////////////////////////////////////////////
5047 ;/ THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
5048 ;/ AT THE BEGINNING OF THE TEST SEQUENCE ON THE NEXT UNIT.
5049 ;////////////////////////////////////////////////////////////////////
5050
5051 BGNINIT
5052
5053 L$INIT::
5054 SETPRI #PRI07 ;SET DIAGNOSTIC PRIORITY = 7
5055 (3) 015372 012700 000340 MOV #PRI07,RO
5056 (3) 015376 104441 TRAP C$SPRI
5057 MOV SP,PSTACK ;STORE BASE LEVEL PROGRAM STACK POINTER
5058 015400 010637 002372 CLR SUBRPC ;CLEAR STORAGE WORD FOR SUBROUTINE PC CALL
5059 015404 005037 002416 CLR ERROR ;CLEAR ERROR FLAGS
5060 015410 005037 002330 CLR FLAG ;CLEAR MISC. FLAGS
5061 015414 005037 002334 CLR RFLAG
5062 015420 005037 002376 CLR TFLAG
5063 015424 005037 002424 CLR NXMFLG
5064 015430 005037 002366 CLR ABORT
5065 015434 005037 002316 CLR TOGGLE
5066 015440 005037 002432 CLR OVER
5067 015444 005037 002370 CLR HIGH
5068 015450 005037 002340
5069 015454 005737 002310 TST FRSTIM ;IS THIS THE TIME THROUGH AFTER LOAD?
5070 015460 001005 BNE 1$ ;IF NOT - ERROR TRAP VECTOR ALREADY SAVED
5071 015462 012737 000001 002310 MOV #1,FRSTIM ;FLAG THAT WE'VE BEEN THRU THE 1ST TIME
5072 015470 005037 002312 CLR FRSPAS ;CLEAR COUNTER FOR # OF PASSES AFTER LOAD
5073 1$:
5074 CLRVEC #4 ;ENSURE VECTOR 4 IS IN NORMAL STATE.
5075 (3) 015474 012700 000004 MOV #4,RO
5076 (3) 015500 104436 TRAP C$CVEC
5077 READEF #EF.START ;IS THIS JUST STARTED?
5078 (3) 015502 012700 000040 MOV #EF.START,RO
5079 (3) 015506 104447 TRAP C$REFG
5080 BCOMPLETE STARST ;IF YES - BRANCH.
5081 (2) 015510 103416 BCS STARST
5082 READEF #EF.RESTART ;IS THIS A RESTART ?
5083 (3) 015512 012700 000037 MOV #EF.RESTART,RO
5084 (3) 015516 104447 TRAP C$REFG
5085 BCOMPLETE STARST ;IF YES - BRANCH.
5086 (2) 015520 103412 BCS STARST
5087 READEF #EF.NEW ;IS THIS A NEW PASS?
5088 (3) 015522 012700 000035 MOV #EF.NEW,RO
5089 (3) 015526 104447 TRAP C$REFG
5090 BCOMPLETE NEWST ;IF YES - BRANCH
5091 (2) 015530 103410 BCS NEWST
5092 READEF #EF.CONTINUE ;IS THIS A CONTINUATION?
5093 (3) 015532 012700 000036 MOV #EF.CONTINUE,RO
5094 (3) 015536 104447 TRAP C$REFG
5095 BNCOMPLETE GETPRM ;IF NOT - GET PARAMETERS
5096 (2) 015540 103013 BCC GETPRM
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-2
 CVDPVC.P11 16-AUG-84 14:18 INITIALIZE SECTION

```

5083 015542 000137 016310          JMP      END          ;OTHERWISE - DON'T INITIALIZE.
5084
5085 015546          STARST:
5086 015546 005037 002314          CLR      STARES      ;CLEAR THE FLAG TO SHOW START/RESTART.
5087
5088 015552          NEWST:
5089 015552 012737 177777 002354          MOV      #-1,LOGDEV  ;INITIALIZE LOGICAL UNIT NUMBER.
5090 015560 005237 002312          INC      FRSPAS      ;INCREMENT # OF PASSES AFTER LOAD.
5091 015564 005237 002314          INC      STARES      ;INCREMENT # OF PASSES SINCE START/RESTART.
5092 015570          GETPRM:
5093 015570 005237 002354          INC      LOGDEV      ;NEXT LOGICAL UNIT TO BE TESTED
5094 015574 023737 002354 002012          CMP      LOGDEV,L#UNIT ;IS THE MAXIMUM UNIT # EXCEEDED?
5095 015602 002363          BGE      NEWST       ;IF YES - DO A NEW START
5096 015604          GPHARD LOGDEV,R1      ;GET THE P-TABLE POINTER INTO R1
(3) 015604 013700 002354          MOV      LOGDEV,RO
(3) 015610 104442          TRAP    C#GPHRD
(3) 015612 010001          MOV      RO,R1
5097 015614          BNCOMPLETE GETPRM  ;IF NOT AVAILABLE, GET THE NEXT ONE
(2) 015614 103365          BCC      GETPRM
5098 015616 011100          MOV      (R1),RO      ;SAVE THE ADDRESS
5099 015620 032700 000007          BIT      #7,RO        ;DOES THIS DEVICE ADDRESS END IN NON-ZERO?
5100 015624 001414          BEQ      10#         ;IF NOT - OK (76XXX0)
5101 015626 042711 000007          BIC      #7,(R1)     ;MAKE IT 76XXX0
5102 015632          PRINTB #FINIT1,(R1),RO ;INFORM THE USER
(9) 015632 010046          MOV      RO,-(SP)
(8) 015634 011146          MOV      (R1),-(SP)
(7) 015636 012746 016312          MOV      #FINIT1,-(SP)
(6) 015642 012746 000003          MOV      #3,-(SP)
(3) 015646 010600          MOV      SP,RO
(4) 015650 104414          TRAP    C#PNTB
(4) 015652 062706 000010          ADD     #10,SP
5103 015656          10#:
5104 015656 011137 002266          MOV      (R1),CSR0    ;CSR ADDRESS 0 = RECEIVER CSR (RXCSR)
5105                                ; READ/WRITE
5106 015662 013737 002266 002276          MOV      CSR0,CSR1    ;SAVE HIGH BYTE ADDRESS
5107 015670 005237 002276          INC      CSR1
5108 015674 011137 002270          MOV      (R1),CSR2
5109 015700 062737 000002 002270          ADD     #2,CSR2      ;CSR ADDRESS 2 = RECEIVE DATA/STATUS (RDSR)
5110                                ; READ ONLY
5111                                ;CSR ADDRESS 2 = PARAMETER CONTROL/SYNCH ADDR
5112                                ; (PCSAR) - WRITE ONLY
5113                                ;SAVE HIGH BYTE ADDRESS
5113 015706 013737 002270 002300          MOV      CSR2,CSR3
5114 015714 005237 002300          INC      CSR3
5115 015720 011137 002272          MOV      (R1),CSR4
5116 015724 062737 000004 002272          ADD     #4,CSR4      ;CSR ADDRESS 4 = TRANSMITTER CSR (TXCSR)
5117                                ; READ/WRITE
5118                                ;CSR ADDRESS 5 = PARAMETER CONTROL REG (PCR)
5119 015732 013737 002272 002302          MOV      CSR4,CSR5    ; READ/WRITE
5120                                ; PCR IS HI BYTE OF TXCSR
5121 015740 005237 002302          INC      CSR5
5122 015744 012137 002274          MOV      (R1)+,CSR6
5123 015750 062737 000006 002274          ADD     #6,CSR6      ;CSR ADDRESS 6 = TRANSMIT DATA/STATUS (TDSR)
5124                                ; READ/WRITE
5125                                ;SAVE HIGH BYTE ADDRESS
5125 015756 013737 002274 002304          MOV      CSR6,CSR7
5126 015764 005237 002304          INC      CSR7
5127 015770 011100          MOV      (R1),RO      ;GET VECTOR

```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-3
 CVDPVC.P11 16-AUG-84 14:18 INITIALIZE SECTION

```

5128 015772 032700 000007          BIT    #7,R0          ;DOES THIS VECTOR END IN NON-ZERO?
5129 015776 001414                BEQ    11$           ;IF NOT - OK (XX0)
5130 016000 042711 000007          BIC    #7,(R1)       ;MAKE IT XX0
5131 016004                PRINTB #FINIT2,(R1),R0 ;INFORM THE USER
(9) 016004 010046                                MOV    R0,-(SP)
(8) 016006 011146                                MOV    (R1),-(SP)
(7) 016010 012746 016405                                MOV    #FINIT2,-(SP)
(6) 016014 012746 000003                                MOV    #3,-(SP)
(3) 016020 010600                                MOV    SP,R0
(4) 016022 104414                                TRAP   C$PNTB
(4) 016024 062706 000010                                ADD    #10,SP
5132 016030                11$:
5133 016030 011137 002262          MOV    (R1),RCVEC    ;RCV. VECTOR
5134 016034 012137 002264          MOV    (R1)+,XMTVEC  ;TRANSMIT VECTOR
5135 016040 062737 000004 002264          ADD    #4,XMTVEC    ;ADJUST XMIT VECTOR
5136
5137 016046 011137 002306          MOV    (R1),TURN     ;TURNAROUND.
5138 016052 012737 000020 002402          MOV    #RXENA,RXINI ;RECEIVER INIT WORD
5139 016060 012737 000020 002436          MOV    #TXENA,TXINI ;TRANSMITTER INIT WORD
5140 016066 005737 002306          TST    TURN         ;WHAT WAS THE TURNAROUND
5141 016072 001004                BNE    15$           ;IF ACTUAL TURNAROUND DON'T SET MAINT MODE
5142 016074 052737 000010 002436          BIS    #MM,TXINI    ;SET THE MAINT. MODE BIT.
5143 016102 000422                BR     20$
5144 016104                15$:
5145 016104 052737 000004 002402          BIS    #RTS,RXINI   ;SET RTS FOR TURNAROUND LOOP.
5146 016112 022737 000003 002306          CMP    #3,TURN     ;LOCAL LOOPBACK?
5147 016120 001004                BNE    17$           ;IF NOT SKIP.
5148 016122 052737 000012 002402          BIS    #LL!DTR,RXINI ;SET LOCAL LOOP AND DTR.
5149 016130 000407                BR     20$
5150 016132                17$:
5151 016132 022737 000004 002306          CMP    #4,TURN     ;REMOTE LOOPBACK?
5152 016140 001003                BNE    20$
5153 016142 052737 000003 002402          BIS    #DTR!RL,RXINI ;SET REMOTE LOOP AND DTR
5154 016150                20$:
5155 016150 013737 002402 002404          MOV    RXINI,RXINIT ;SAVE RECEIVER INIT WORD
5156 016156 052737 000140 002404          BIS    #RXITEN!DSITEN,RXINIT ;MAKE IT AN INTERRUPT INIT WORD
5157 016164 013737 002436 002440          MOV    TXINI,TXINIT ;SAVE TRANSMITTER INIT WORD
5158 016172 052737 000100 002440          BIS    #TXIE,TXINIT ;MAKE IT AN INTERRUPT INIT WORD
5159 016200 012737 000120 002406          MOV    #RXITEN!RXENA,RXMINI ;RCV INIT FOR MAINT. LOOP.
5160 016206 012737 000130 002442          MOV    #TXIE!TXENA!MM,TXMINI ;TRANS INIT WITH MAINT. LOOP.
5161
5162 016214                SETVEC #10,#ILLGL,#PRI07 ;SET UP ILLEGAL INSTRUCTION TRAP
(7) 016214 012746 000340                                MOV    #PRI07,-(SP)
(6) 016220 012746 017744                                MOV    #ILLGL,-(SP)
(5) 016224 012746 000010                                MOV    #10,-(SP)
(4) 016230 012746 000003                                MOV    #3,-(SP)
(3) 016234 104437                                TRAP   C$SVEC
(2) 016236 062706 000010                                ADD    #10,SP
5163 016242 000007          MFPT                ;MOVE PROCESSOR TYPE TO R0
5164
5165
5166
5167 016244 010037 002324          MOV    R0,CPU       ;FOR AN LSI 11/23 R0 = 3
5168 016250                CLRVEC #10          ;FOR OTHER LSI THIS WILL RESULT IN AN
;ILLEGAL INSTRUCTION (R0=0).
(3) 016250 012700 000010                                MOV    #10,R0
(3) 016254 104436                                TRAP   C$CVEC
    
```

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 CVDPVC.P11 16-AUG-84 14:18 INITIALIZE SECTION

```

5169 016256 005737 002324          TST      CPU          ;IS THE CPU A LSI11/23 ?
5170 016262 001004                   BNE      25$          ;BR IF YES
5171 016264 012737 000020 002430    MOV      #20,TIMER   ;SET THE TIMER FOR A LSI11 OR 11/2.
5172 016272 000403                   BR       30$
5173 016274                   25$:
5174 016274 012737 000050 002430    MOV      #50,TIMER   ;SET THE TIMER FOR A LSI-11/23.
5175 016302                   30$:
5176 016302 013737 002430 002412    MOV      TIMER,SAVTIM ;STORE THE TIMER VALUE.
5177 016310                   END:
5178 016310                   ENDINIT
(3) 016310
(3) 016310 104411
5179 016312 040445 025052 053440    FINIT1: .ASCIZ  /#A** WARNING - WILL ASSUME DPV ADDRESS #06#A (NOT #06#A)#N/
016320 051101 044516 043516
016326 026440 053440 046111
016334 020114 051501 052523
016342 042515 042040 053120
016350 040440 042104 042522
016356 051523 022440 033117
016364 040445 024040 047516
016372 020124 047445 022466
016400 024501 047045 000
5180 016405 045 025101 020052    FINIT2: .ASCIZ  /#A** WARNING - WILL ASSUME DPV VECTOR #03#A (NOT #03#A)#N/
016412 040527 047122 047111
016420 020107 020055 044527
016426 046114 040440 051523
016434 046525 020105 050104
016442 020126 042526 052103
016450 051117 020040 047445
016456 022463 020101 047050
016464 052117 022440 031517
016472 040445 022451 000116

5181 .EVEN
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```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-5
CVDPVC.P11 16-AUG-84 14:18

AUTO DROP UNIT SECTION

.SBTTL AUTO DROP UNIT SECTION

;/ THE AUTO DROP CODING DETERMINES WHETHER OR NOT THE DEVICE WHOSE P-TABLE
;/ WAS JUST OBTAINED IS READY FOR TESTING, AND IT IS DROPPED IF NOT READY.

BGNAUTO

L\$AUTO::

SETVEC #4,#NXM,#PRI07 ;SET UP NON -EXISTENT MEMORY TRAP VECTOR.
MOV #PRI07,-(SP)
MOV #NXM,-(SP)
MOV #4,-(SP)
MOV #3,-(SP)
TRAP C\$SVEC
ADD #10,SP
CLR NXMFLG ;CLEAR FLAG USED IN TEST
TST @CSRO ;REFERENCE MEMORY ADDRESS FOR THE DEVICE
;TO SEE IF IT EXISTS.

;;*****
; IF THE DEVICE DOESN'T EXIST THE RESULTANT TRAP TO VECTOR 04 WILL
; CAUSE THE DEVICE TO BE DROPPED (SEE INTERRUPT ROUTINE 'DROPO4').
; OTHERWISE THE MEMORY REFERENCE IS UNEVENTFUL AND THE DEVICE IS READY.
;;*****

TST NXMFLG ;WAS THERE A TRAP?
BEQ 10\$;BR IF NOT
DODU LOGDEV ;DROP THE DEVICE
MOV LOGDEV,R0
TRAP C\$DODU
DOCLN ;CLEAN UP CODE.
TRAP C\$DCLN
CLRVEC #4 ;RETURN VECTOR 04 TO NORMAL STATE
MOV #4,R0
TRAP C\$CVEC

10\$:

ENDAUTO

L10020:
TRAP C\$AUTO

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5195 016500
(3) 016500
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5197 016500
(7) 016500 012746 000340
(6) 016504 012746 017734
(5) 016510 012746 000004
(4) 016514 012746 000003
(3) 016520 104437
(2) 016522 062706 000010
5198 016526 005037 002366
5199 016532 005777 163530
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5207 016536 005737 002366
5208 016542 001407
5209 016544
(3) 016544 013700 002354
(3) 016550 104451
5210 016552
(3) 016552 104444
5211 016554
(3) 016554 012700 000004
(3) 016560 104436
5212 016562
5213
5214 016562
(3) 016562
(3) 016562 104461
5215
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5218
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CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-6
CVDPVC.P11 16-AUG-84 14:18 CLEANUP CODING SECTION

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5231
(3)
5232
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5235
5236
(3)
(3)
5237
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5239

.SBTTL CLEANUP CODING SECTION

:/ THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED AT THE
:/ END OF THE TEST SEQUENCE ON A PARTICULAR UNIT. THIS SECTION IS REQUIRED
:/ EVEN IF IT IS A NULL CLEANUP

BGNCLN

TST NXMFLG ;WAS THERE A NXM TRAP
BNE 10\$;IF YES, SKIP RESET
MOV @RESET,@TXCSR ;RESET THE DPV

L\$CLEAN::

10\$:
ENDCLN

L10021: TRAP C\$CLEAN

016564
016564 005737 002366
016570 001003
016572 012777 000001 163472
016600
016600
016600 104412

CVDVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-7
 CVDVPC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

.SBTTL GLOBAL INTERRUPT HANDLING ROUTINES

```

:////////////////////
:/ THE INTERRUPT HANDLING SECTION CONTAINS CODING REQUIRED TO USE
:/ THE 'SETVEC' MACRO. NOTE EVERY INTERRUPT ROUTINE SHOULD SAVE
:/ AND RESTORE R0.
:////////////////////
    
```

```

:*****
: RINT - INTERRUPT SERVICE ROUTINE
:
: FUNCTION - RECEIVE INTERRUPT ROUTINE THAT SETS FLAGS WHEN
:           A RECEIVE INTERRUPT CONDITON IS RECEIVED.
:
: ENTRY CONDITONS
:           TOGGLE = IF NON ZERO, XOR THE BITS IN TOGGLE
:                   INTO THE RXCSR
:
: EXIT CONDITIONS RFLAG = 1 SET - DATA RECEIVED
:                 = 2 SET - STATUS RECEIVED
:           IRXCSR= IMAGE OF RXCSR
:           RSAVE = IMAGE OF RDSR
:           MCFLAG= MODEM CONTROL INTERRUPT COUNT.
:
: USED IN TESTS: 8,10,11,13,14
:*****
    
```

```

BGNSRV RINT
RINT::
1$:
MOV @RXCSR,IRXCSR ;SAVE RXCSR
BPL 5$ ;BR IF NOT
INC MCFLAG ;INCREMENT MODEM CONTROL FLAG.
CMP #2,MCFLAG ;HAS THERE BEEN MORE THAN 2 INTERRUPTS?
BGE 5$ ;IF NOT, PROCEED.
BIC #DSITEN,@RXCSR ;DISABLE THE INTERRUPT.
5$:
BIT #RDATRY,IRXCSR ;IS DATA READY?
BEQ 10$ ;IF NOT - CHECK STATUS.
BIS #1,RFLAG ;FLAG FOR DATA
TST TOGGLE ;TOGGLE ?
BEQ 10$ ;IF NOT, SKIP TOGGLE
MOV TOGGLE,R2 ;GET THE TOGGLE VALUE
CLR TOGGLE ;ONLY TOGGLE ONCE.
XOR R2,@RXCSR ;TOGGLE RTS.
10$:
BIT #RSTARY,IRXCSR ;IS STATUS READY?
BEQ 20$ ;IF NOT - DON'T SET THE FLAG.
BIS #2,RFLAG ;SET THE FLAG
BR 25$
20$:
TST OVER ;CREATE AN OVERRUN?
BNE 1$ ;IF YES - DON'T READ THE DATA
;UNTIL THE STATUS FLAG IS SET.
    
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 5270 016602
 (3) 016602
 5271 016602
 5272 016602 017737 163460 002346
 5273 016610 100011
 5274 016612 005237 002360
 5275 016616 022737 000002 002360
 5276 016624 002003
 5277 016626 042777 000040 163432
 5278 016634
 5279 016634 032737 000200 002346
 5280 016642 001414
 5281 016644 052737 000001 002376
 5282 016652 005737 002432
 5283 016656 001406
 5284 016660 013702 002432
 5285 016664 005037 002432
 5286 016670 074277 163372
 5287 016674
 5288 016674 032737 002000 002346
 5289 016702 001404
 5290 016704 052737 000002 002376
 5291 016712 000403
 5292 016714
 5293 016714 005737 002370
 5294 016720 001330
 5295

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-8
CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```
5296 016722          251:
5297 016722 017737 163342 002400      MOV      BRDSR,RSAVE      ;SAVE RECEIVE DATA AND STATUS.
5298
5299 016730          ENDSRV
   (3) 016730
   (2) 016730 000002          L10022:
5300                                     RTI
```

```

5302 ;.....
5303 ; RDATA - INTERRUPT SERVICE ROUTINE
5304 ;
5305 ; FUNCTION - GENERAL PURPOSE RECEIVE INTERRUPT ROUTINE
5306 ;
5307 ; ENTRY CONDITIONS
5308 ; ECOUNT = # OF CHARACTERS TO BE RECEIVED.
5309 ; R1 = ADDRESS OF BUFFER FOR NEXT CHARACTER
5310 ;
5311 ; EXIT CONDITIONS
5312 ; IRXCSR = IMAGE OF RXCSR
5313 ; IRDSR = IMAGE OF RDSR
5314 ; RCOUNT = COUNT OF CHARACTERS RECEIVED
5315 ; MODE = PROTOCOL MODE ( 0 = BCP, NON 0 = BOP)
5316 ; MCFLAG = COUNT OF MODEM CONTROL INTERRUPTS RECEIVED
5317 ; MODEM = ADDRESS OF MODEM CONTROL INTERRUPT TABLE
5318 ; RFLAG = RECEIVE END FLAG ( 1 = NO ERROR, -1 = ERROR)
5319 ; R1 = INCREMENTED TO NEXT BYTE IN BUFFER.
5320 ;
5321 ; USED IN TESTS: 15-28 & 30-40 (CALLED IN SUBROUTINE %DATA), 41
5322 ;
5323 ;.....
5324 ;
5325 016732 BGNSRV RDATA
5326 (3) 016732 RDATA::
5327 016732 017737 163330 002346 MOV BRXCSR,IRXCSR ;SAVE THE RXCSR
5328 016740 100040 BPL 10% ;IS DATA SET CHANGE? IF NOT SET, BR.
5329
5330 016742 032737 000040 002346 BIT %DSITEN,IRXCSR ;WAS THE DATA SET CHANGE INT. ENABLED?
5331 016750 001434 BEQ 10% ;IF NOT - DON'T KEEP TRACK OF THE CHANGES.
5332 016752 005237 002360 INC MCFLAG ;INCR MODEM CONTROL FLAG.
5333 016756 022737 000011 002360 CMP %9.,MCFLAG ;WERE TOO MANY INTERRUPTS RECEIVED?
5334 016764 002004 BGE 1% ;IF NOT - PROCEED.
5335 016766 042777 000040 163272 BIC %DSITEN,BRXCSR ;CLEAR MODEM CONTROL INTERRUPT.
5336 016774 000422 BR 10%
5337 016776 1%:
5338 016776 PUSH <R5> ;SAVE R5
5339 017000 013705 002360 MOV MCFLAG,R5 ;USE THE INTERRUPT # AS A TABLE INDEX.
5340 017004 006305 ASL R5 ;CHANGE MODEM CONTROL TO ADDRESS OFFSET
5341 017006 013765 002346 002444 MOV IRXCSR,MODEM(R5) ;SAVE THE MODEM STATUS
5342 017014 042765 006760 002444 BIC %6760,MODEM(R5) ;SAVE ONLY THE MODEM STATUS.
5343 017022 032777 000040 163242 BIT %TM,%TXCSR ;WAS THE TEST MODE BIT SET?
5344 017030 001403 BEQ 5% ;BR IF NOT
5345 017032 052765 000040 002444 BIS %TM,MODEM(R5) ;SAVE TEST MODE STATUS.
5346 017040 5%:
5347 017040 POP <R5> ;RESTORE R5
5348
5349 017042 10%:
5350 017042 032737 002200 002346 BIT %RSTARY!RDATRY,IRXCSR ;IS THE DATA OR STATUS BIT SET
5351 017050 001444 BEQ 55%
5352 017052 017737 163212 002350 MOV BRDSR,IRDSR ;SAVE THE DATA AND STATUS REG.
5353 017060 032737 000200 002346 BIT %RDATRY,IRXCSR ;IS DATA SET?
5354 017066 001404 BEQ 20%
5355 017070 113721 002350 MOVB IRDSR,(R1) ;SAVE THE DATA.
5356 017074 005237 002500 INC RCOUNT ;INCREMENT BYTE COUNT
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-10
 CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5357 017100
5358 017100 032737 002000 002346 20#: BIT @RSTARY,IRXCSR ;IS STATUS SET?
5359 017106 001410 BEQ 50#
5360 017110 032737 106000 002350 BIT @ERR!ROVER!RABORT,IRDSR ;WAS THERE AN ERROR?
5361 017116 001413 BEQ 53# ;IF NOT - MUST BE END OF MESSAGE.
5362 017120 012737 177777 002376 MOV @-1,RFLAG ;OTHERWISE, SET ERROR FLAG.
5363 017126 000412 BR 54#
5364 017130
5365 017130 005737 002362 50#: TST MODE ;IS THIS BCP?
5366 017134 001012 BNE 55# ;IF NOT - EXIT
5367 017136 023737 002500 002474 CMP RCOUNT,ECOUNT ;HAVE WE RECEIVED ALL THE CHARACTERS
5368 017144 001006 BNE 55# ;IF NOT - EXIT
5369 017146
5370 017146 012737 000001 002376 53#: MOV @1,RFLAG ;SET FLAG
5371 017154
5372 017154 042777 000100 163104 54#: BIC @RXITEN,@RXCSR ;DISABLE INTERRUPT
5373 017162
5374
5375 017162 ENDSRV
(3) 017162 L10023:
(2) 017162 000002 RTI
5376
5377

```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-11
CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5379 :*****
5380 :   RDATA2 - INTERRUPT SERVICE ROUTINE
5381 :
5382 :   FUNCTION - HIGH SPEED RECEIVE INTERRUPT ROUTINE
5383 :
5384 :   ENTRY CONDITIONS
5385 :           COUNTER = # OF CHARACTERS BE RECEIVED
5386 :           R1       = ADDRESS OF BUFFER FOR NEXT CHARACTER
5387 :
5388 :   EXIT CONDITIONS
5389 :           RCOUNT = COUNT OF CHARACTERS RECEIVED
5390 :           RFLAG   = RECEIVE END FLAG ( 1 = NO ERROR, -1 = ERROR)
5391 :           R1       = INCREMENTED TO NEXT BYTE IN BUFFER.
5392 :
5393 :
5394 :   USED IN TESTS: 42 & 43
5395 :
5396 :*****

```

```

5397
5398 017164 BGNSRV RDATA2
   (3) 017164 RDATA2::
5399
5400 017164 105777 163076 TSTB BRXCSR ;IS THIS DATA?
5401 017170 100404 BMI 5#
5402 ;DATA OR STATUS?
5403 017172 012737 177777 002376 MOV # -1,RFLAG ;FLAG FOR ERROR
5404 017200 000410 BR 20#
5405
5406 017202 5#:
5407 017202 117721 163062 MOVB BRDSR,(R1)+ ;SAVE THE DATA.
5408 017206 005337 002322 DEC COUNTER ;DECREMENT COUNT
5409 017212 001006 BNE 30# ;BR IF NOT DONE.
5410 017214 012737 000001 002376 MOV #1,RFLAG ;SET FLAG
5411 017222 20#:
5412 017222 042777 000100 163036 BIC #RXITEN,BRXCSR ;DISABLE INTERRUPT
5413 017230 30#:
5414
5415 017230 ENDSRV
   (3) 017230
   (2) 017230 000002 L10024:
5416 RTI
5417

```

```

5419 :*****
5420 : XINT - INTERRUPT SERVICE ROUTINE
5421 :
5422 : FUNCTION - TRANSMIT INTERRUPT ROUTINE. SET A FLAG WHEN INTERRUPT
5423 : GENERATED. THIS ISR WILL TRANSMIT 4 DATA CHARACTERS AND
5424 : END A MESSAGE IN A SPECIFIED MANNER.
5425 :
5426 : ENTRY CONDITIONS
5427 : ABORT = FLAG, SET IF TERMINATE BY AN ABORT IS DESIRED.
5428 : START = # OF START CHARACTERS (FLAGS OR SYNCHS) TO
5429 : BE SENT.
5430 :
5431 : EXIT CONDITIONS
5432 : TFLAG = FLAG SET WHEN THIS INTERRUPT IS SERVICED
5433 : DATA = # OF DATA CHARACTERS TRANSMITTED
5434 :
5435 : USED IN TESTS: 6, 8-11, 14
5436 :
5437 :*****
    
```

```

5440 017232 BGNSRV XINT
(3) 017232 XINT::
5441 017232 012737 000001 002424 MOV #1,TFLAG ;SET THE TRANSMIT FLAG
5442 017240 005737 002414 TST START ;SEND START
5443 017244 001410 BEQ 5# ;IS THIS DATA OR A START
5444 017246 012777 000400 163020 MOV #TSON,@TDSR ;TRANSMIT A SYNCH/FLAG.
5445 017254 005337 002414 DEC START ;DECREMENT START COUNTER.
5446 017260 005037 002326 CLR DATA ;CLEAR DATA COUNTER
5447 017264 000424 BR 20#
5448 017266 5#:
5449 017266 022737 000004 002326 CMP #4,DATA ;HAVE WE SENT 4 DATA CHARACTERS
5450 017274 001013 BNE 10#
5451 017276 005737 002316 TST ABORT ;SEND AN ABORT?
5452 017302 001404 BEQ 7#
5453 017304 052777 002000 162762 BIS #TXABO,@TDSR ;SEND AN ABORT
5454 017312 000411 BR 20#
5455 017314 7#:
5456 017314 012777 001021 162752 MOV #TEOM!21,@TDSR ;SEND END OF MESSAGE
5457 017322 000405 BR 20#
5458 017324 10#:
5459 01732# 012777 000041 162742 MOV #41,@TDSR ;TRANSMIT DATA.
5460 017332 005237 002326 INC DATA ;INCREMENT DATA
5461 017336 20#:
5462 017336 ENDSRV
(3) 017336 L10025:
(2) 017336 000002 RTI
5463
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-13
 CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5465 :*****
5466 : XDATA - INTERRUPT SERVICE ROUTINE
5467 :
5468 : FUNCTION - GENERAL PURPOSE TRANSMIT INTERRUPT ROUTINE
5469 :
5470 : ENTRY CONDITIONS
5471 : START = # OF START CHARACTERS (FLAGS OR SYNCHS) TO
5472 : BE SENT.
5473 : TSTART= TRANSMIT START OF MESSAGE BIT/(OR BITS)
5474 : HEADER= # OF HEADER CHARACTERS (8 BIT CHARACTERS) TO
5475 : TRANSMIT BEFORE, SETTING THE SELECTED
5476 : CHARACTER LENGTH.
5477 : IPCR = IMAGE OF PCR, CHARACTER LENGTH TO SET AFTER
5478 : THE HEADER CHARACTERS ARE SENT.
5479 :
5480 : EXIT CONDITIONS
5481 : XMITD = # OF DATA CHARACTERS TRANSMITTED
5482 : RCOUNT= 0 (AFTER START OF MESSAGE TRANSMITTED)
5483 :
5484 :
5485 : USED IN TESTS: 15-28 & 30-40 (CALLED IN SUBROUTINE #DATA)
5486 :
5487 :
5488 :*****
5489 :
5490 017340 BGNSRV XDATA
5491 (3) 017340 XDATA::
5492 017340 005737 002414 TST START ;ANY STARTS LEFT TO SEND?
5493 017344 001426 BEQ 10# ;IF NOT, SKIP.
5494 017346 032737 000001 002434 BIT #BIT0,TSTART ;IS THIS SPECIAL START SEQUENCE.
5495 017354 001407 BEQ 2# ;IF NOT - SKIP.
5496 ;* NOTE: CERTAIN USYNRTS ONLY TRANSMIT
5497 ;* A SPECIAL START SEQUENCE WHEN
5498 ;* TRANSMIT START AND END OF MESSAGE
5499 ;* ARE SET BY A BYTE OPERATION.
5500 017356 113777 002434 162720 MOVB TSTART,BCSR7 ;SEND SPECIAL SEQUENCE START OF MESSAGE.
5501 017364 042737 000002 002434 BIC #BIT1,TSTART ;CLEAR END OF MESSAGE IN SPECIAL START
5502 017372 000403 BR 5#
5503 017374 2#:
5504 017374 013777 002434 162672 MOV TSTART,@TDSR ;SEND START OF MESSAGE.
5505 017402 5#:
5506 017402 005337 002414 DEC START ;DECREMENT COUNTER.
5507 017406 001040 BNE 20# ;IF NOT LAST START EXIT.
5508 017410 005037 002476 CLR XMITD ;CLEAR TRANSMIT COUNT.
5509 017414 005037 002500 CLR RCOUNT ;CLEAR RECEIVER COUNT.
5510 017420 000433 BR 20#
5511 017422 10#:
5512 017422 005737 002336 TST HEADER ;IS THIS A CONTROL CHARACTER?
5513 017426 001407 BEQ 15# ;IF DONE WITH CONTROL CHAR, SET LENGTH
5514 017430 100413 BMI 16# ;AFTERWARDS - BR TO TRANSMIT
5515 017432 042777 000400 162634 BIC #TSM,@TDSR ;CLEAR START OF MESSAGE.
5516 017440 005337 002336 DEC HEADER ;DECREMENT HEADER COUNT.
5517 017444 000405 BR 16# ;
5518 017446 15#:
5519 017446 005337 002336 DEC HEADER ;MAKE HEADER FLAG - NEGATIVE

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-14
 CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5520 017452 153777 002342 162622      BISB   IPCR,@PCR      ;SET CHARACTER LENGTH (BOP MODE)
5521 017460                      16$:
5522 017460 112277 162610      MOVB   (R2),@TDSR   ;TRANSMIT A CHARACTER.
5523 017464 005237 002476      INC    XMITD        ;INCR COUNT OF ACTUALLY SENT.
5524 017470 005303                      DEC    R3           ;DECREMENT COUNTER
5525 017472 001006      BNE    20$
5526 017474 053777 002422 162572      BIS    TEND,@TDSR   ;TRANSMIT END OF MESSAGE.
5527 017502 042777 000100 162562      BIC    @TXIE,@TXCSR ;DISABLE TRANSMITTER INTERRUPT.
5528 017510                      20$:
5529
5530                      ENDSRV
(3) 017510
(2) 017510 000002
5531
L10026: RTI

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-15
CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5533 ;*****
5534 ; XDATA2 - INTERRUPT SERVICE ROUTINE
5535 ;
5536 ; FUNCTION - HIGH SPEED TRANSMIT INTERRUPT ROUTINE FOR BOP MODE
5537 ;
5538 ; ENTRY CONDITIONS
5539 ; START = # OF START CHARACTERS (FLAGS OR SYNCHS) TO
5540 ; BE SENT.
5541 ;
5542 ; EXIT CONDITIONS
5543 ; XMITD = # OF DATA CHARACTERS TRANSMITTED
5544 ;
5545 ;
5546 ; USED IN TESTS: 31,38,42,43
5547 ;
5548 ;*****
5549 ;

```

```

5550 017512 BGNSRV XDATA2
(3) 017512 XDATA2::
5551 017512 005737 002414 TST START ;ANY STARTS LEFT TO SEND?
5552 017516 100414 BMI 20# ;IF NEGATIVE SEND DATA
5553 017520 001406 BEQ 10# ;IF NOT, SKIP.
5554 017522 052777 000400 162544 BIS #TSM,#TDSR ;SEND SYNCH (OR FLAG)
5555 017530 5#:
5556 017530 005337 002414 DEC START ;DECREMENT COUNTER.
5557 017534 000430 BR 30#
5558 017536 10#:
5559 017536 005337 002414 DEC START ;MAKE THE COUNTER NEGATIVE.
5560 017542 042777 000400 162524 BIC #TSM,#TDSR ;CLEAR START OF MESSAGE
5561 017550 20#:
5562 017550 022737 000002 002476 CMP #2,XMITD ;IS THIS THE 3RD CHARACTER.
5563 017556 001003 BNE 25# ;IF NOT SKIP
5564 017560 113777 002342 162514 MOVB IPCR,#PCR ;CHANGE THE CHARACTER LENGTH
5565 017566 25#:
5566 017566 112277 162502 MOVB (R2)+,#TDSR ;TRANSMIT A CHARACTER.
5567 017572 005237 002476 INC XMITD ;INCR COUNT OF ACTUALLY SENT.
5568 017576 005303 DEC R3 ;DECREMENT COUNTER
5569 017600 001006 BNE 30#
5570 017602 052777 001000 162464 BIS #TEOM,#TDSR ;TRANSMIT END OF MESSAGE.
5571 017610 042777 000100 162454 BIC #TXIE,#TXCSR ;DISABLE TRANSMITTER INTERRUPT.
5572 017616 30#:
5573
5574
5575 017616 ENDSRV
(3) 017616 L10027:
(2) 017616 000002 RTI
5576
5577
5578

```

CVDVPC0 DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-16
CVDVPC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5580 *****
5581 : XDDCMP - INTERRUPT SERVICE ROUTINE
5582 :
5583 : FUNCTION - DDCMP TRANSMIT INTERRUPT ROUTINE
5584 :
5585 : ENTRY CONDITIONS
5586 : START = # OF START CHARACTERS (FLAGS OR SYNCHS) TO
5587 : BE SENT.
5588 : HEADER= FLAG WHICH IS SET AFTER THE DDCMP HEADER HAS
5589 : BEEN TRANSMITTED
5590 : DDCMP2= # OF DATA CHARACTERS IN THE DDCMP DATA MESSAGE
5591 :
5592 : EXIT CONDITIONS
5593 : XMITD = # OF DATA CHARACTERS TRANSMITTED
5594 : RCOUNT= 0 (AFTER START OF MESSAGE TRANSMITTED)
5595 :
5596 :
5597 : USED IN TESTS: 41
5598 :
5599 *****

```

```

5600
5601 017620 BGNSRV XDDCMP
5602 (3) 017620 XDDCMP::
5603 017620 005737 002414 TST START ;ANY STARTS LEFT TO SEND?
5604 017624 001413 BEQ 10# ;IF NOT, SKIP.
5605 017626 012777 000400 162440 MOV #TSDM,@TDSR ;SEND START OF MESSAGE.
5606 017634 005337 002414 DEC START ;DECREMENT COUNTER.
5607 017640 001034 BNE 20# ;
5608 017642 005037 002476 CLR XMITD ;CLEAR TRANSMIT COUNT.
5609 017646 005037 002500 CLR RCOUNT ;CLEAR RECEIVER COUNT.
5610 017652 000427 BR 20#
5611 017654
5612 017654 042777 001400 162412 10#: BIC #TEOM!TSDM,@TDSR ;CLEAR START OR END OF MESSAGE.
5613 017662 112277 162406 MOVB (R2)+,@TDSR ;TRANSMIT A CHARACTER.
5614 017666 005237 002476 INC XMITD ;INCR COUNT OF ACTUALLY SENT.
5615 017672 005303 DEC R3 ;DECREMENT COUNTER
5616 017674 001016 BNE 20#
5617 017676 052777 001000 162370 BIS #TEOM,@TDSR ;TRANSMIT END OF MESSAGE.
5618 017704 005737 002336 TST HEADER ;IS THIS THE HEADER
5619 017710 001005 BNE 15# ;IF NOT, DISABLE THE TRANSMITTER
5620 017712 005237 002336 INC HEADER ;SET HEADER FLAG.
5621 017716 012703 000015 MOV #DDCMP2,R3 ;COUNTER FOR THE MESSAGE
5622 017722 000403 BR 20#
5623 017724
5624 017724 042777 000100 162340 15#: BIC #TXIE,@TXCSR ;DISABLE TRANSMITTER INTERRUPT.
5625 017732 20#:
5626
5627
5628 017732 ENDSRV
5629 (3) 017732 L10030:
(2) 017732 000002 RTI

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-17
CVDPVC.P11 16-AUG-84 14:18 GLOBAL INTERRUPT HANDLING ROUTINES

```

5631 ;*****
5632 ;      NXM - INTERRUPT SERVICE ROUTINE
5633 ;
5634 ;      FUNCTION - NXM INTERRUPT ROUTINE. THIS ROUTINE IS ASSIGNED
5635 ;                TO VECTOR 4 WHEN ADDRESSING THE DPV FOR THE FIRST
5636 ;                TIME. IF THIS INTERRUPT IS GENERATED THE DPV IS
5637 ;                INCORRECTLY ADDRESSED.
5638 ;
5639 ;      ENTRY CONDIONS
5640 ;
5641 ;      EXIT CONDITIONS
5642 ;                NXMFLG= FLAG SET WHEN THIS INTERRUPT IS SERVICED.
5643 ;
5644 ;      USED IN TESTS: AUTO DROP
5645 ;
5646 ;*****
5647
5648 017734 BGNSRV NXM
5649 (3) 017734 NXM::
5650 017734 012737 000001 002366 MOV #1,NXMFLG ;SET FLAG IF MEMORY IS NON-EXISTENT.
5651
5652 017742 ENDSRV
5653 (3) 017742 L10031:
5654 (2) 017742 000002 RTI
5655

```

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5657
5658
5659
5660
5661
5662
5663
5664
5665
5666
5667
5668
5669
5670
5671
5672
5673
5674
5675
5676
5677
5678
5679
5680
5681
5682

```
*****  
: ILLGL - INTERRUPT SERVICE ROUTINE  
:  
: FUNCTION - ILLEGAL INSTRUCTION TRAP TO VECTOR 10  
: THIS TRAP WILL OCCUR IF THE PROCESSOR IS AN  
: LSI 11 OR LSI 11/2. THIS TRAP IS USED TO  
: AUTO SIZE FOR PROCESSOR TYPE IN THE  
: INITIALIZATION SECTION.  
:  
: ENTRY CONDITIONS  
:  
: EXIT CONDITIONS RO = 0  
:  
: USED IN TESTS: INIT CODE  
:*****
```

017744
(3) 017744
017744 005000
017746
(3) 017746
(2) 017746 000002

```
BGNSRV ILLGL  
  
CLR RO  
  
ENDSRV  
  
ILLGL::  
  
L10032: RTI
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 22-19
CVDPVC.P11 16-AUG-84 14:18 DROP UNIT SECTION

.SBTTL DROP UNIT SECTION

;/;;;/;
;/ THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
;/ TO NO LONGER BE TESTED.
;/;;;/;

5684
5685
5686
5687
5688
5689
5690
5691
(3)
5692
5693
(3)
5694
(8)
(7)
(6)
(3)
(4)
(4)
5695
5696
(3)
(3)
5697
5698
5699
5700

017750
017750
017750 104433
017752 013746 002354
017756 012746 020000
017762 012746 000002
017766 010600
017770 104417
017772 062706 000006

017776
017776 104453

020000 047045 040445 047125
020006 052111 022440 031104
020014 040445 042040 047522
020022 050120 042105 000
020030

BGNDU

L#DU::

BRESET ;ISSUE LSI-BUS RESET TO CLEAN UP
PRINTF #FMDROP,LOGDEV TRAP C#RESET
MOV LOGDEV,-(SP)
MOV #FMDROP,-(SP)
MOV #2,-(SP)
MOV SP,RO
TRAP C#PNTF
ADD #6,SP

ENDDU

L10033: TRAP C#DU

FMDROP: .ASCIZ /#N#AUNIT #D2#A DROPPED/

.EVEN

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 23
 CVDPVC.P11 16-AUG-84 14:18 TEST 1 - CSR ADDRESSING

```

5703 .SBTTL          TEST 1 - CSR ADDRESSING
5704 :
5705 :*****
5706 :*          TEST 1 - DPV-11
5707 :* VERIFY THAT ADDRESSING THE 4 LSI-BUS CSRS DOES NOT CAUSE A NON-
5708 :* EXISTENT MEMORY TRAP.
5709 :*
5710 :* THE DPV IS AN COMMUNICATION DEVICE RESIDING ON A LSI-BUS.
5711 :* COMMUNICATION BETWEEN THE MAIN CPU AND THE DPV IS ACCOMPLISHED
5712 :* THROUGH A SET OF FOUR 16-BIT LSI-BUS CONTROL AND STATUS REGISTERS
5713 :* (CSRS). THE FOUR REGISTERS ARE ASSIGNED ADDRESSES IN THE I/O PAGE
5714 :* FLOATING ADDRESS SPACE: 76XXX0 - 76XXX6
5715 :*
5716 :* AN ERROR IN THIS TEST COULD MEAN THAT THE DEVICE IS INCORRECTLY
5717 :* CONFIGURED, THAT THE ADDRESS IS WRONG OR THAT THE CRYSTAL CLOCK
5718 :* ON THE DPV IS NOT WORKING. THE SHIFT REGISTER CLOCK IS NEEDED
5719 :* FOR THE LS164 (E15) IN ORDER TO PROVIDE THE BUS REPLY (BRPLY/L ON
5720 :* PIN AF2).
5721 :*****
5722 BGNTST
5723
5724          T1::
5725          SETVEC #4,#LOCATE,#PRI07 ;SET UP NON -EXISTENT MEMORY TRAP VECTOR.
5726          (7) 020030 012746 000340          MOV #PRI07,-(SP)
5727          (6) 020034 012746 020166          MOV #LOCATE,-(SP)
5728          (5) 020040 012746 000004          MOV #4,-(SP)
5729          (4) 020044 012746 000003          MOV #3,-(SP)
5730          (3) 020050 104437          TRAP C$SVEC
5731          (2) 020052 062706 000010          ADD #10,SP
5732          5725 020056 005037 002366          CLR NXMFLG ;FLAG USED IN THE TRAP ROUTINE.
5733          5726 020062 005001          CLR R1 ;USE REGISTER TO REMEMBER WHICH OF THE
5734          ;4 CSRS WE ARE ADDRESSING.
5735 :*****
5736 : IF ADDRESSING ANY ONE OF THE CSRS RESULTS IN A TRAP TO VECTOR 04, THE TRAP
5737 : WILL REPORT THE ERROR (SEE INTERRUPT ROUTINE 'LOCATE'). OTHERWISE THE
5738 : MEMORY REFERENCE IS UNEVENTFUL AND THE DEVICE IS READY FOR FURTHER TESTS
5739 :*****
5740          5735 020064 005777 162176          TST BCSR0 ;TEST THE CSR AT 76XXX0
5741          5736 020070 012701 000002          MOV #2,R1 ;SAVE THE OFFSET OF THE NEXT CSR
5742          5737 020074 005777 162170          TST BCSR2 ;TEST THE CSR AT 76XXX2
5743          5738 020100 012701 000004          MOV #4,R1 ;SAVE THE OFFSET OF THE NEXT CSR
5744          5739 020104 005777 162162          TST BCSR4 ;TEST THE CSR AT 76XXX4
5745          5740 020110 012701 000006          MOV #6,R1 ;SAVE THE OFFSET OF THE NEXT CSR
5746          5741 020114 005777 162154          TST BCSR6 ;TEST THE CSR AT 76XXX6
5747          5742 020120 005737 002366          TST NXMFLG ;WAS THERE A TRAP?
5748          5743 020124 001414          BEQ 10$ ;IF NOT - EXIT.
5749          5744 020126          PRINTX #FMT1 ;SUGGEST THE PROBLEM. (
5750          (7) 020126 012746 020350          MOV #FMT1,-(SP)
5751          (6) 020132 012746 000001          MOV #1,-(SP)
5752          (3) 020136 010600          MOV SP,R0
5753          (4) 020140 104415          TRAP C$PNTX
5754          (4) 020142 062706 000004          ADD #4,SP
5755          5745 020146          DODU LOGDEV ;DROP THE DEVICE
5756          (3) 020146 013700 002354          MOV LOGDEV,R0
    
```

CVDVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 23-1
 CVDVPC.P11 16-AUG-84 14:18 TEST 1 - CSR ADDRESSING

```

(3) 020152 104451
5746 020154 DOCLN ;CLEAN UP CODE - FORCE BACK TO INIT. TRAP C#DODU
(3) 020154 104444 ; TRAP C#DCLN
5747
5748
5749 020156 104: CLRVEC #4 ;RETURN VECTOR 04 TO NORMAL STATE
5750 020156 012700 000004 MOV #4,R0
(3) 020156 104436 ; TRAP C#CVEC
(3) 020162
5751
5752 020164 ENDTST
(3) 020164 L10034: TRAP C#ETST
(3) 020164 104401
5753
5754
5755 020166 BGNSRV LOCATE ;INTERRUPT SERVICE ROUTINE
(3) 020166 LOCATE::
5756 020166 005737 002366 TST NXMFLG ;HAVE WE HAD AT LEAST 1 PREVIOUS TRAP?
5757 020172 001006 BNE 104 ;IF YES, DON'T BOTHER DECLARING ANOTHER
5758 ;DEVICE FATAL ERROR
5759 020174 ERRDF 9,EMTO ;NON-EXISTENT DEVICE ERROR
(4) 020174 104455 TRAP C#ERDF
(5) 020176 000011 .WORD 9
(5) 020200 020240 .WORD EMTO
(5) 020202 000000 .WORD 0
5760 020204 005237 002366 INC NXMFLG ;SET THE FLAG
5761 020210 104: PRINTX #FMT0,R1,CSRO(R1) ;PRINT THE CSR THAT DOESN'T RESPOND.
5762 020210 MOV CSRO(R1),-(SP)
(9) 020210 016146 002266 MOV R1,-(SP)
(8) 020214 010146 MOV #FMT0,-(SP)
(7) 020216 012746 020276 MOV #3,-(SP)
(6) 020222 012746 000003 MOV SP,R0
(3) 020226 010600 TRAP C#PNTX
(4) 020230 104415 ADD #10,SP
(4) 020232 062706 000010
5763 020236 ENDSRV
(3) 020236 L10035: RTI
(2) 020236 000002
5764
5765 020240 051503 020122 042101 EMT0: .ASCIZ /CSR ADDRESSING ERROR - TRAP 4/
020246 051104 051505 044523
020254 043516 042440 051122
020262 051117 026440 052040
020270 040522 020120 000064
    
```

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CVDPVC.P11 16-AUG-84 14:18 TEST 1 - CSR ADDRESSING

5766 020276 051445 022463 041501 FMT0: .ASCIZ /#S3#ACSR#D1#A AT #06#A DOES NOT RESPOND#N/

020304 051123 042045 022461
020312 020101 052101 022440
020320 033117 040445 042040
020326 042517 020123 047516
020334 020124 042522 050123
020342 047117 022504 000116

5767 020350 040445 041450 047117 FMT1: .ASCIZ /#A(CONFIGURATION ERROR OR NO BUS REPLY SIGNAL)#N2/

020356 044506 052507 040522
020364 044524 047117 042440
020372 051122 051117 020040
020400 051117 020040 047516
020406 041040 051525 051040
020414 050105 054514 051440
020422 043511 040516 024514
020430 047045 000062

5768 .EVEN
5769
5770
5771

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CVDPVC.P11 16-AUG-84 14:18 TEST 2 - DPV RESET

(5)	020556	000012						.WORD	10
(5)	020560	013554						.WORD	EMG4
(5)	020562	007172						.WORD	ERRG7
5823	020564								
5824	020564								
(3)	020564								
(3)	020564	104403						L10037:	TRAP C\$ESUB
5825									
5826									
5827									
5828	020566								
(3)	020566								
(3)	020566	104402						T2.2:	TRAP C\$BSUB
5829	020570	022737	000001	002314	CMP	#1,STARES			
5830	020576	001026			BNE	30\$			
5831	020600				BRESET				
(3)	020600	104433							
5832	020602				\$DELAY	10			TRAP C\$RESET
(1)									
(1)									
(1)	020602	004737	006604		JSR	PC,\$DLAY			
(1)	020606	000010				.WORD 10			
(1)									
(1)									
5833	020610	005001			CLR	R1			
5834	020612	105777	161450		TSTB	\$RXCSR			
5835	020616	001012			BNE	20\$			
5836	020620	005777	161444		TST	\$RDSR			
5837	020624	001007			BNE	20\$			
5838	020626	022777	000004	161436	CMP	#4,\$TXCSR			
5839	020634	001003			BNE	20\$			
5840	020636	005777	161432		TST	\$TDSR			
5841	020642	001404			BEQ	30\$			
5842	020644								
5843	020644								
(4)	020644	104455							
(5)	020646	000013							
(5)	020650	013372							
(5)	020652	007572							
5844	020654								
5845	020654								
(3)	020654								
(3)	020654	104403							
5846									
5847	020656								
(3)	020656								
(3)	020656	104401							

20\$:
ENDSUB

BGNSUB

20\$:
ERRDF 11,EMGO,ERRG11

30\$:
ENDSUB

ENDTST

```

;IS THIS THE FIRST PASS?
;IF NOT - SKIP THIS TEST.
;BUS RESET.

;DELAY 1 MSEC.

;***** MACRO EXPANSION *****
;CALL DELAY SUBROUTINE
;NUMBER OF DELAY LOOPS
;*****

;EXPECT 0 IN ALL R/W REGISTERS
;IS THE RECEIVE CSR 0?
;BRANCH ON ERROR.
;EXPECT READ DATA/STATUS TO BE 0
;BR IF NOT
;EXPECT TBE TO BE SET.
;BR IF NOT
;EXPECT XMIT. DATA/STATUS TO BE 0.
;BRANCH IF OK.

```

L10037:

T2.2:

.WORD 10
.WORD EMG4
.WORD ERRG7

TRAP C\$ESUB

TRAP C\$BSUB

TRAP C\$RESET

TRAP C\$ERDF
.WORD 11
.WORD EMGO
.WORD ERRG11

L10040:

TRAP C\$ESUB

L10036:

TRAP C\$ETST

5850
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5890
5891
5892
5893
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5897
(4)
(5)
(5)

020660
020660
020660
020664 104410
020666 000520
020670
020670
020670 104402
020672 012701 000001
020676 012702 000007
020702
020702 150177 161360
020706 120177 161354
020712 001022
020714 006101
020716 105077 161344
020722 005302
020724 001366
020726 012701 000137
020732 110177 161330
020736 120177 161324
020742 001006
020744 005001
020746 105077 161314
020752 105777 161310
020756 001404
020760
020760 104455
020762 000014
020764 013554

```

.SBTTL          TEST 3 - CSR READ/WRITE
;*****
;*              TEST 3 - DPV-11
;* WRITE/READ DATA PATTERNS
;* THIS TEST IS INTENDED TO TEST THE READ/WRITE BITS IN THE CSRS. THERE
;* IS NO INTENTION TO CHECK THE USYMR/T; IT IS DESIRED TO ONLY CHECK THE
;* READING AND WRITING OF THE CSRS. IN ALL THE SUBTESTS THE BITS ARE
;* CHECKED TOGETHER AND INDIVIDUALLY.
;* SUBTEST 1 - RXCSR (LOW BYTE CSRO)
;*              CHECK BITS 0-6
;* SUBTEST 2 - PCR (HIGH BYTE CSR4)
;*              CHECK BITS 0-7
;* SUBTEST 3 - TDSR (LOW BYTE OF CSR6) - TRANSMIT DATA BUFFER
;*              BITS 0-7
;* SUBTEST 4 - TDSR (HIGH BYTE OF CSR6) - TRANSMIT STATUS REGISTER.
;*              BITS 0-3
;* SUBTEST 5 - TDSR - CHECK BYTE OP SIGNAL FOR USYMR
;*
;*****
BGNTST
;*****
;              T3::
CALL           #RESET          ;RESET THE DPV
ESCAPE        TST             ;IF ERROR, EXIT THE TEST
;              TRAP           C#ESCAPE
;              .WORD         L10041-.

BGNSUB
;              T3.1:
;              TRAP           C#BSUB
100:          MOV           #BIT0,R1      ;START ROTATE PATTERN
              MOV           #7,R2       ;COUNTER - WRITE INTO BITS 0-6.
              BISB          R1,#RXCSR   ;WRITE BIT.
              CMPB          R1,#RXCSR   ;IS THE BIT WRITTEN?
              BNE           200         ;IF NOT - REPORT IT.
              ROL           R1          ;ROTATE THE BIT PATTERN.
              CLRB          #RXCSR     ;CLEAR REGISTER
              DEC           R2
              BNE           100         ;CONTINUE UNTIL DONE.

              MOV           #137,R1     ;WRITE ALL BITS EXCEPT MODEM CONTROL INT.
;              ;MODEM CONTROL NOT WRITTEN BECAUSE WE DON'T
;              ;WANT TO ACTUALLY GENERATE AN INTERRUPT.
              MOVB          R1,#RXCSR   ;WRITE BITS.
              CMPB          R1,#RXCSR   ;IS THE PATTERN WRITTEN?
              BNE           200         ;IF NOT REPORT IT
              CLR           R1          ;REMEMBER DATA PATTERN
              CLRB          #RXCSR     ;CLEAR THOSE BITS.
              TSTB          #RXCSR     ;ARE THOSE BITS CLEARED?
              BEQ           300         ;IF YES, OK.

200:          ERRDF          12,EMG4,ERRG4
;              TRAP           C#ERDF
;              .WORD         12
;              .WORD         EMG4
    
```

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 CVDPVC.P11 16-AUG-84 14:18 TEST 3 - CSR READ/WRITE

(5)	020766	007072						.WORD	ERRG4
5898	020770			30:					
5899	020770	105077	161272		CLRB	@RXCSR	;CLEAR THE REGISTER		
5900									
5901	020774				ENDSUB				
(3)	020774							L10042:	
(3)	020774	104403						TRAP	C#ESUB
5902									
5903									
5904	020776				BGNSUB				
(3)	020776							T3.2:	
(3)	020776	104402						TRAP	C#BSUB
5905	021000	012701	000377		MOV	#377,R1	;WRITE DATA PATTERN		
5906	021004	110177	161272		MOVB	R1,@PCR	;WRITE THE PATTERN.		
5907	021010	120177	161266		CMPB	R1,@PCR	;IS THE PATTERN WRITTEN?		
5908	021014	001025			BNE	20:	;IF NOT REPORT IT		
5909	021016	005001			CLR	R1	;REMEMBER THE DATA PATTERN		
5910	021020	105077	161256		CLRB	@PCR	;CLEAR THOSE BITS		
5911	021024	105777	161252		TSTB	@PCR	;WERE THE BITS CLEARED?		
5912	021030	001017			BNE	20:	;IF NOT - REPORT IT		
5913	021032	012701	000001		MOV	@BIT0,R1	;START ROTATE PATTERN		
5914	021036	012702	000006		MOV	@6,R2	;ROTATE THE BIT 4 TIMES		
5915	021042			10:					
5916	021042	150177	161234		BISB	R1,@PCR	;WRITE PATTERN		
5917	021046	120177	161230		CMPB	R1,@PCR	;IS THE PATTERN WRITTEN?		
5918	021052	001006			BNE	20:	;IF NOT - REPORT IT.		
5919	021054	006101			ROL	R1	;ROTATE THE PATTERN		
5920	021056	105077	161220		CLRB	@PCR	;CLEAR THE PCR.		
5921	021062	005302			DEC	R2			
5922	021064	001366			BNE	10:	;CONTINUE UNTIL DONE.		
5923	021066	000404			BR	30:	;EXIT - WHEN DONE		
5924	021070			20:					
5925	021070				ERRDF	13,EMG4,ERRG8			
(4)	021070	104455						TRAP	C#ERDF
(5)	021072	000015						.WORD	13
(5)	021074	013554						.WORD	EMG4
(5)	021076	007272						.WORD	ERRG8
5926	021100			30:					
5927	021100	105077	161176		CLRB	@PCR	;CLEAR THE PCR		
5928									
5929	021104				ENDSUB				
(3)	021104							L10043:	
(3)	021104	104403						TRAP	C#ESUB
5930									
5931	021106				BGNSUB				
(3)	021106							T3.3:	
(3)	021106	104402						TRAP	C#BSUB
5932									
5933	021110	012701	000377		MOV	#377,R1	;WRITE DATA PATTERN		
5934	021114	110177	161154		MOVB	R1,@TDSR	;WRITE THE PATTERN.		
5935	021120	120177	161150		CMPB	R1,@TDSR	;IS THE PATTERN WRITTEN?		
5936	021124	001025			BNE	20:	;IF NOT REPORT IT		
5937	021126	005001			CLR	R1	;REMEMBER DATA PATTERN		
5938	021130	105077	161140		CLRB	@TDSR	;CLEAR THOSE BITS		
5939	021134	105777	161134		TSTB	@TDSR	;IS THE DATA CLEAR?		
5940	021140	001017			BNE	20:	;IF NOT - REPORT IT.		

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```

5941 021142 012701 000001      MOV      #BIT0,R1      ;START ROTATE PATTERN
5942 021146 012702 000006      MOV      #6,R2        ;ROTATE THE BIT 4 TIMES
5943 021152                    104:      BISB     R1,@TDSR      ;WRITE PATTERN
5944 021152 150177 161116      CMPB     R1,@TDSR      ;IS THE PATTERN WRITTEN?
5945 021156 120177 161112      BNE      204          ;IF NOT - REPORT IT.
5946 021162 001006                    CLR      @TDSR         ;CLEAR THE DATA.
5947 021164 105077 161104      ROL      R1           ;ROTATE THE PATTERN
5948 021170 006101                    DEC      R2
5949 021172 005302                    BNE      104          ;CONTINUE UNTIL DONE.
5950 021174 001366                    BR       304          ;EXIT - WHEN DONE
5951 021176 000404
5952 021200                    204:      EHRDF    14,EMG4,ERRG9
5953 021200
   (4) 021200 104455                    TRAP     C#ERDF
   (5) 021202 000016                    .WORD   14
   (5) 021204 013554                    .WORD   EMG4
   (5) 021206 007372                    .WORD   ERRG9
5954 021210                    304:      CLR      @TDSR         ;CLEAR THE TDSR
5955 021210 105077 161060
5956
5957
5958 021214                    ENDSUB
   (3) 021214                    L10044: TRAP     C#ESUB
   (3) 021214 104403
5959
5960 021216                    BGNSUB
   (3) 021216                    T3.4:   TRAP     C#BSUB
   (3) 021216 104402
5961 021220 012701 000017      MOV      #17,R1       ;WRITE DATA PATTERN
5962 021224 110177 161054      MOV      R1,@CSR7     ;WRITE THE PATTERN.
5963 021230 120177 161050      CMPB     R1,@CSR7     ;IS THE PATTERN WRITTEN?
5964 021234 001025                    BNE      204          ;IF NOT REPORT IT
5965 021236 005001                    CLR      R1           ;REMEMBER DATA PATTERN.
5966 021240 105077 161040      CLR      @CSR7        ;CLEAR THOSE BITS
5967 021244 105777 161034      TSTB     @CSR7        ;ARE THE STATUS BITS CLEAR?
5968 021250 001017                    BNE      204          ;IF NOT - REPORT IT.
5969 021252 012701 000001      MOV      #BIT0,R1     ;START ROTATE PATTERN
5970 021256 012702 000003      MOV      #3,R2        ;ROTATE THE BIT 4 TIMES
5971 021262                    104:      BISB     R1,@CSR7     ;WRITE PATTERN
5972 021262 150177 161016      CMPB     R1,@CSR7     ;IS THE PATTERN WRITTEN?
5973 021266 120177 161012      BNE      204          ;IF NOT - REPORT IT.
5974 021272 001006                    CLR      @CSR7        ;CLEAR STATUS BITS.
5975 021274 105077 161004      ROL      R1           ;ROTATE THE PATTERN
5976 021300 006101                    DEC      R2
5977 021302 005302                    BNE      104          ;CONTINUE UNTIL DONE.
5978 021304 001366                    BR       304          ;EXIT - WHEN DONE
5979 021306 000404
5980 021310                    204:      ERRDF    15,EMG4,ERRG10
5981 021310
   (4) 021310 104455                    TRAP     C#ERDF
   (5) 021312 000017                    .WORD   15
   (5) 021314 013554                    .WORD   EMG4
   (5) 021316 007472                    .WORD   ERRG10
5982 021320                    304:      CLR      @CSR7        ;CLEAR THE XMIT STATUS REG.
5983 021320 105077 160760
5984

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CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 24-3
 CVDPVC.P11 16-AUG-84 14:18 TEST 3 - CSR READ/WRITE

```

5985 021324          ENDSUB
      (3) 021324
      (3) 021324 104403          L10045: TRAP C#ESUB
5986
5987 021326          BGNSUB
      (3) 021326
      (3) 021326 104402          T3.5: TRAP C#BSUB
5988 021330 012777 007777 160736  MOV #7777,@TDSR ;WRITE TO TDSR
5989 021336 105077 160742  CLRB @CSR7 ;CLEAR ONLY THE HIGH BYTE.
5990 021342 105777 160726  TSTB @CSR6 ;SEE IF THE LOW BYTE WAS ALSO CLEARED
5991 021346 001016  BNE 10# ;IF NOT, BYTE OP IS OK.
5992 021350 012701 000377  MOV #377,R1 ;DATA FOR ERROR PRINT OUT.
5993 021354          ERRDF 16,EMG4,ERRG9 ;PRINT ERROR
      (4) 021354 104455          TRAP C#ERDF
      (5) 021356 000020          .WORD 16
      (5) 021360 013554          .WORD EMG4
      (5) 021362 007372          .WORD ERRG9
5994 021364          PRINTX #FMG30 ;ALSO WARN THAT BYTE OP MAY BE STUCK LOW.
      (7) 021364 012746 013314  MOV #FMG30,-(SP)
      (6) 021370 012746 000001  MOV #1,-(SP)
      (3) 021374 010600          MOV SP,R0
      (4) 021376 104415          TRAP C#PNTX
      (4) 021400 062706 000004  ADD #4,SP
5995 021404          10#:
5996
5997 021404          ENDSUB
      (3) 021404
      (3) 021404 104403          L10046: TRAP C#ESUB
5998
5999 021406          ENDTST
      (3) 021406
      (3) 021406 104401          L10041: TRAP C#ETST
6000
6001
6002

```

```

6005 .SBTTL TEST 4 - TRANSMIT ENABLE
6006
6007 ;*****
6008 ;* TEST 4 - DMR-11
6009 ;* TRANSMIT ENABLE/ TRANSMIT ACTIVE
6010 ;* AFTER A DEVICE RESET, SET TRANSMIT START OF MESSAGE (TSOM). ENSURE
6011 ;* THAT TRANSMIT ACTIVE (TXACT) IS SET.
6012 ;*
6013 ;* TXACT IS USED TO INDICATE THE CURRENT STATE OF THE TRANSMITTER
6014 ;* DATA PATH. THIS BIT WILL BE ASSERTED WHEN BOTH THE TRANSMITTER IS
6015 ;* ENABLED AND TSOM ARE INTERNALLY SYNCHRONIZED. TXACT WILL BE CLEARED
6016 ;* UPON RESET OR WHEN THE TRANSMITTER ENTERS THE IDLE STATE.
6017 ;*
6018 ;*****
6019 BGNTST
6020
6021 BGNSUB
6022
6023 T4::
6024 T4.1:
6025 TRAP C#BSUB
6026
6027 CALL #RESET ;RESET THE DPV
6028 ESCAPE TST ;IF ERROR, EXIT THE TEST
6029 TRAP C#ESCAPE
6030 .WORD L10047-.
6031
6032 TST TURN ;TURNAROUND?
6033 BNE S# ;BR IF EXTERNAL.
6034 BIS #MM,@TXCSR ;SET MAINTENANCE MODE.
6035
6036 S#:
6037 BIS #TXENA,@TXCSR ;ENABLE THE TRANSMITTER.
6038 BIS #TSOM,@TDSR ;TRANSMIT START OF MESSAGE.
6039 WAIT TBE ;WAIT FOR TBE TO BE SET.
6040
6041 ;***** MACRO EXPANSION *****
6042 JSR PC,#WAIT ;CALL WAIT ROUTINE -
6043 .WORD TBE ;WAIT FOR TBE TO BE SET
6044 .WORD TXCSR ;IN TRANSMITTER CSR.
6045 ;*****
6046
6047 ESCAPE TST ;IF ERROR, BRANCH TO END OF TEST.
6048 TRAP C#ESCAPE
6049 .WORD L10047-.
6050
6051 BIT #TXACT,@TXCSR ;IS THE TRANSMITTER ACTIVE?
6052 BNE 10# ;IF YES - OK.
6053 MOV @TXCSR,R1 ;SAVE THE TRANSMIT STATUS
6054 BIS #TXENA,R1 ;EXPECT TXENA TO BE SET.
6055 ERRDF 17,EMG5,ERRG7
6056 TRAP C#ERDF
6057 .WORD 17
6058 .WORD EMG5
6059 .WORD ERRG7
6060
6061 BR 20# ;SKIP THE REST OF THE SUBTEST.
6062
6063 10#:
6064 CLR @TDSR ;CLEAR TSOM
6065 BIC #TXENA,@TXCSR ;DISABLE THE TRANSMITTER
6066 WAIT TBE ;WAIT FOR TBE TO BE SET.

```

```

(1)
(1)
(1) 021532 004737 003724      JSR      PC,#WAIT      ;***** MACRO EXPANSION *****
(1) 021536 000004              .WORD    TBE          ;CALL WAIT ROUTINE -
(1) 021540 002272              .WORD    TXCSR        ;WAIT FOR TBE TO BE SET
(1)                               ;IN TRANSMITTER CSR.
(1)                               ;*****
(1)
6043 021542              ESCAPE  TST            ;IF ERROR, BRANCH TO END OF TEST.
(3) 021542 104410              TRAP    C$ESCAPE
(3) 021544 000204              .WORD    L10047-.
6044 021546 032777 000002 160516  BIT      #TXACT,@TXCSR ;IS THE TRANSMITTER INACTIVE?
6045 021554 001406              BEQ     20$           ;IF YES - OK.
6046 021556 012701 000004      MOV     #TBE,R1       ;EXPECT ONLY TBE TO BE SET.
6047 021562              ERRDF   18,EMG6,ERRG7
(4) 021562 104455              TRAP    C$ERDF
(5) 021564 000022              .WORD    18
(5) 021566 013634              .WORD    EMG6
(5) 021570 007172              .WORD    ERRG7
6048
6049 021572              20$:
6050 021572              ESCAPE  TST            ;IF ERROR, BRANCH TO END OF TEST
(3) 021572 104410              TRAP    C$ESCAPE
(3) 021574 000154              .WORD    L10047-.
6051
6052 021576              ENDSUB
(3) 021576              L10050:
(3) 021576 104403              TRAP    C$ESUB
6053
6054
6055 021600              BGNSUB
(3) 021600              T4.2:
(3) 021600 104402              TRAP    C$BSUB
6056 021602              CALL   #RESET
6057 021606              ESCAPE  TST            ;RESET THE DPV
(3) 021606 104410              TRAP    C$ESCAPE
(3) 021610 000140              .WORD    L10047-.
6058 021612 005737 002306      TST     TURN          ;TURNAROUND?
6059 021616 001003              BNE    5$             ;BR IF EXTERNAL.
6060 021620 052777 000010 160444  BIS     #MM,@TXCSR    ;SET MAINTENANCE MODE.
6061 021626              5$:
6062 021626 052777 000020 160436  BIS     #TXENA,@TXCSR ;ENABLE THE TRANSMITTER.
6063 021634 052777 000400 160432  BIS     #TSM,@TDSR   ;TRANSMIT START OF MESSAGE.
6064 021642              WAIT    TBE          ;WAIT FOR TBE TO BE SET.
(1)
(1)
(1) 021642 004737 003724      JSR      PC,#WAIT      ;***** MACRO EXPANSION *****
(1) 021646 000004              .WORD    TBE          ;CALL WAIT ROUTINE -
(1) 021650 002272              .WORD    TXCSR        ;WAIT FOR TBE TO BE SET
(1)                               ;IN TRANSMITTER CSR.
(1)                               ;*****
(1)
6065 021652              ESCAPE  TST            ;IF ERROR, BRANCH TO END OF TEST.
(3) 021652 104410              TRAP    C$ESCAPE
(3) 021654 000074              .WORD    L10047-.
6066 021656 032777 000002 160406  BIT     #TXACT,@TXCSR ;IS THE TRANSMITTER ACTIVE?
6067 021664 001010              BNE    10$           ;IF YES - OK.
6068 021666 017701 160400      MOV     @TXCSR,R1     ;SAVE THE TRANSMIT STATUS
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 25-3
 CVDPVC.P11 16-AUG-84 14:18 TEST 5 - TRANSMIT BUFFER EMPTY

```

6091 .SBTTL TEST 5 - TRANSMIT BUFFER EMPTY
6092
6093 ;*****
6094 ;* TEST 5 - DPV-11
6095 ;* TRANSMIT BUFFER EMPTY
6096 ;* VERIFY THAT TBE (TRANSMIT BUFFER EMPTY) IS ASSERTED WHENEVER
6097 ;* THE DEVICE IS RESET OR WHENEVER THE TDSR IS AVAILABLE FOR DATA.
6098 ;* TBE IS CLEARED AFTER WRITING TO THE TDSR.
6099 ;*
6100 ;*****
6101
6102 021752 BGNTST T5::
6103 (3) 021752
6104 021752 BGNSUB T5.1:
6105 (3) 021752 104402 TRAP C#BSUB
6106 021754 CALL #RESET ;RESET THE DPV
6107 (3) 021760 104410 ESCAPE TST ;IF ERROR, EXIT THE TEST
6108 (3) 021762 000220 TRAP C#ESCAPE
6109 021764 005077 160304 CLR #TDSR ;WRITE TO THE TDSR.
6110 (2) 021770 012727 000005 DELAY 5 ;DELAY 500 MICROSECONDS. THIS WILL
6111 (2) 021774 000000 MOV #5,(PC)+
6112 (2) 021776 013727 002116 .WORD 0
6113 (2) 022002 000000 MOV L#DLY,(PC)+
6114 (2) 022004 005367 177772 .WORD 0
6115 (2) 022010 001375 DEC -6(PC)
6116 (2) 022012 005367 177756 BNE -4
6117 (2) 022016 001367 DEC -22(PC)
6118 BNE -20
6119 ;US TO ENSURE THAT TBE IS NOT
6120 ;REASSERTED. BECAUSE THE TRANSMITTER
6121 ;IS IDLE, TBE SHOULD STAY LOW.
6122 ;IS TBE CLEARED?
6123 022020 032777 000004 160244 BIT #TBE,#TXCSR
6124 022026 001410 BEQ 10#
6125 022030 017701 160240 MOV #TDSR,R1
6126 022034 042701 000004 BIC #TBE,R1
6127 022040 ERDF 21,EMG7,ERRG7 ;PUT EXPECTED RESULT IN R1 FOR MSG.
6128 (4) 022040 104455 TRAP C#ERDF
6129 (5) 022042 000025 .WORD 21
6130 (5) 022044 013671 .WORD EMG7
6131 (5) 022046 007172 .WORD ERRG7
6132 022050 10#:
6133 (3) 022050 ENDSUB
6134 (3) 022050 104403 L10053:
6135 TRAP C#ESUB
6136 022052 BGNSUB T5.2:
6137 (3) 022052 104402 TRAP C#BSUB
6138 022054 CALL #RESET ;RESET THE DPV
6139 022060 (3) 022060 104410 ESCAPE TST ;IF ERROR, EXIT THE TEST
6140 (3) 022062 000120 TRAP C#ESCAPE
        .WORD L10052-.
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 25-4
 CVDPVC.P11 16-AUG-84 14:18 TEST 5 - TRANSMIT BUFFER EMPTY

```

6124 022064 005737 002306          TST      TURN          ;TURNAROUND?
6125 022070 001003                   BNE      1$           ;BR IF EXTERNAL.
6126 022072 052777 000010 160172 1$:     BIS      @MM,@TXCSR   ;SET MAINTENANCE MODE.
6127 022100
6128
6129 022100 052777 000020 160164 1$:     BIS      @TXENA,@TXCSR ;ENABLE THE TRANSMITTER.
6130 022106 012777 000400 160160 1$:     MOV      @TSOM,@TDSR  ;TRANSMIT START OF MESSAGE.
6131 022114                   WAIT     TBE          ;WAIT FOR TBE TO BE SET.
(1)
(1)
(1) 022114 004737 003724          JSR      PC,$WAIT     ;***** MACRO EXPANSION *****
(1) 022120 000004                   .WORD   TBE          ;CALL WAIT ROUTINE -
(1) 022122 002272                   .WORD   TXCSR        ;WAIT FOR TBE TO BE SET
(1)                                     ;IN TRANSMITTER CSR.
(1)                                     ;*****
6132 022124                   ESCAPE  TST          ;IF ERROR, BRANCH TO END OF TEST.
(3) 022124 104410                   TRAP    C$ESCAPE    ;
(3) 022126 000054                   .WORD   L10052-    ;
6133
6134 022130 012777 000014 160136 5$:     MOV      @14,@TDSR   ;TRANSMIT 1ST CHARACTER.
6135 022136                   WAIT     TBE          ;WAIT FOR TBE TO BE SET.
(1)
(1)
(1) 022136 004737 003724          JSR      PC,$WAIT     ;***** MACRO EXPANSION *****
(1) 022142 000004                   .WORD   TBE          ;CALL WAIT ROUTINE -
(1) 022144 002272                   .WORD   TXCSR        ;WAIT FOR TBE TO BE SET
(1)                                     ;IN TRANSMITTER CSR.
(1)                                     ;*****
6136 022146                   ESCAPE  TST          ;IF ERROR, BRANCH TO END OF TEST.
(3) 022146 104410                   TRAP    C$ESCAPE    ;
(3) 022150 000032                   .WORD   L10052-    ;
6137 022152 012701 002000 5$:     MOV      @2000,R1    ;SET UP COUNTER
6138 022156
6139 022156 005777 160112 5$:     TST      @TDSR      ;CHECK FOR TRANSMIT ERROR.
6140 022162 100406                   BMI     10$         ;WHEN SET OK.
6141 022164 005301                   DEC     R1          ;DECREMENT COUNTER.
6142 022166 001373                   BNE     5$         ;CONTINUE UNTIL COUNTER 0
6143 022170                   ERDF    22,EMG8,ERRG2
(4) 022170 104455                   TRAP    C$ERDF     ;
(5) 022172 000026                   .WORD   22         ;
(5) 022174 013707                   .WORD   EMG8       ;
(5) 022176 006700                   .WORD   ERRG2      ;
6144 022200 10$:
6145 022200                   ENDSUB
(3) 022200
(3) 022200 104403                   L10054: TRAP    C$ESUB
6146
6147
6148 022202                   ENDTST
(3) 022202
(3) 022202 104401                   L10052: TRAP    C$ETST
6149
6150
6151
    
```

CVDVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 25-5
CVDVPC.P11 16-AUG-84 14:18 TEST 6 - TRANSMIT INTERRUPT

```

6153 .SBTTL TEST 6 - TRANSMIT INTERRUPT
6154
6155 ;*****
6156 ;* TEST 6 - DPV-11
6157 ;* TRANSMIT INTERRUPT
6158 ;* VERIFY THAT A TRANSMIT INTERRUPT IS RECEIVED WHEN TRANSMIT
6159 ;* BUFFER EMPTY (TBE) IS ASSERTED.
6160 ;*
6161 ;*****
6162 022204 BGNTST
(3) 022204 T6::
6163
6164 022204 CALL #RESET ;RESET THE DPV
6165 022210 ESCAPE TST ;IF ERROR, EXIT THE TEST
(3) 022210 104410 TRAP C#ESCAPE
(3) 022212 000146 .WORD L10055-
6166 022214 005037 002424 CLR TFLAG ;CLEAR THE FLAG USED IN THE INTERRUPT ROUTINE.
6167
6168
6169 022220 SETVEC XMTVEC,#XINT,#PRI04
(7) 022220 012746 000200 MOV #PRI04,-(SP)
(6) 022224 012746 017232 MOV #XINT,-(SP)
(5) 022230 013746 002264 MOV XMTVEC,-(SP)
(4) 022234 012746 000003 MOV #3,-(SP)
(3) 022240 104437 TRAP C#SVEC
(2) 022242 062706 000010 ADD #10,SP
6170 022246 SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
(3) 022246 012700 000000 MOV #PRI00,R0
(3) 022252 104441 TRAP C#SPRI
6171 ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6172 ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6173 ;LEVEL 4-7.
6174 ;SET UP INTERRUPT VECTOR
6175
6176
6177 022254 052777 000120 160010 BIS #TXENA!TXIE,#TXCSR ;SET THE INTERRUPT ENABLE AND ENABLE
6178 ;THE TRANSMITTER.
6179 022262 005000 CLR R0 ;TIMER FOR LOOP
6180 022264 100:
6181 022264 005737 002424 TST TFLAG ;WAS THE INTERRUPT RECEIVED?
6182 022270 001006 BNE 200 ;IF YES - OK.
6183 022272 005300 DEC R0 ;DECREMENT TIMER.
6184 022274 001373 BNE 100 ;KEEP CHECKING UNTIL THE TIMER EXPIRES.
6185 022276 ERRDF 23,EMG9,ERRG2 ;ERROR MESSAGE XMIT NOT RECEIVED.
(4) 022276 104455 TRAP C#ERRDF
(5) 022300 000027 .WORD 23
(5) 022302 013723 .WORD EMG9
(5) 022304 006700 .WORD ERRG2
6186 022306 200:
6187 022306 005037 002424 CLR TFLAG ;CLEAR THE FLAG
6188 022312 012777 000001 157752 MOV #RESET,#TXCSR ;RESET THE DPV
6189 022320 #DELAY 1 ;WAIT FOR 100 MICROSECONDS.
(1)
(1) ;***** MACRO EXPANSION *****
(1) 022320 004737 006604 JSR PC,#DLAY ;CALL DELAY SUBROUTINE
(1) 022324 000001 .WORD 1 ;NUMBER OF DELAY LOOPS

```



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(1)
(1)
6190 022326 005737 002334      TST      FLAG      ;*****
6191 022332 001404              BEQ      30$      ;WAS AN INTERRUPT RECEIVED
6192 022334              ERDF     24,EMG10,ERRG2 ;IF NOT - OK. (RESET SHOULD CLEAR INT ENABLE)
(4) 022334 104455              ;ERROR MESSAGE - TRANSMIT INT RECEIVED
(5) 022336 000030              TRAP     C$ERDF
(5) 022340 013757              .WORD   24
(5) 022342 006700              .WORD   EMG10
6193 022344              .WORD   ERRG2
6194 022344              30$:
(3) 022344 012700 000340      SETPRI  #PRI07      ;SET PROCESSOR PRIORITY TO 7 (FOR
(3) 022350 104441              MOV     #PRI07,RO
6195              TRAP     C$SPRI
6196 022352              CLRVEC  XMTVEC     ;LSI 11/03 THIS WILL DISABLE INTERRUPTS)
(3) 022352 013700 002264      ;RESTORE THE XMIT INTERRUPT VECTOR
(3) 022356 104436              MOV     XMTVEC,RO
6197              TRAP     C$CVEC
6198 022360              ENDTST
(3) 022360              L10055:
(3) 022360 104401              TRAP     C$ETST
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6200
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022362
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022366 104410
022370 000222
022372 012777 040252 157670
022400 012777 000020 157660
022406 012777 000030 157656
022414 052777 000400 157652
022422
022422 004737 003724
022426 000004
022430 002272
022432
022432 104410
022434 000156
022436 032777 004200 157622
022444 001056
022446 052777 000400 157620
022454
022454 004737 003724
022460 000004
022462 002272
022464
022464 104410
022466 000124
022470 032777 004200 157570
022476 001041

```
.SBTTL TEST 7 - RECEIVER ENABLE
;*****
;* TEST 7 - DPV-11
;* RECEIVER ENABLE, RECEIVER ACTIVE AND RECEIVER DATA READY
;* MODE: BCP, 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK
;* ENABLE THE RECEIVER. AFTER TRANSMITTING A CHARACTER WAIT FOR
;* RECEIVER DATA AVAILABLE AND CHECK THAT THE RECEIVER IS ACTIVE.
;* AFTER CLEARING RECEIVER ENABLE, ENSURE THAT THE RECEIVER IS INACTIVE.
;*
;* RECEIVER ENABLE - CONTROLS THE OPERATION OF THE RECEIVER DATA PATH (RDP)
;* RECEIVER ACTIVE - THIS OUTPUT IS ASSERTED WHEN THE RDP PRESENTS THE 1ST
;* DATA CHARACTER OF A MESSAGE TO THE USYRT. IT REMAINS
;* ASSERTED UNTIL THE RDP ENTERS THE IDLE STATE..
;* RECEIVE DATA - THIS OUTPUT IS SET WHEN THE RDP HAS ASSEMBLED A DATA
;* CHARACTER THAT IS READY TO BE PRESENTED.
;*****
BGNTST
T7::
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, EXIT THE TEST
TRAP C#ESCAPE
;WORD L10056-.
MOV #40252, #PCSR ;SET BCP MODE AND SYNCH CHARACTER.
MOV #RXENA, #RXCSR ;ENABLE THE RECEIVER.
MOV #TXENA!MM, #TXCSR ;ENABLE THE TRANSMITTER
;SELECT THE MAINTENANCE LOOPBACK.
BIS #TSOM, #TDSR ;TRANSMIT START OF MESSAGE
WAIT TBE ;WAIT FOR TBE TO BE SET.
;***** MACRO EXPANSION *****
JSR PC, #WAIT ;CALL WAIT ROUTINE -
;WORD TBE ;WAIT FOR TBE TO BE SET
;WORD TXCSR ;IN TRANSMITTER CSR.
;*****
ESCAPE TST ;IF ERROR, BRANCH TO END OF TEST.
TRAP C#ESCAPE
;WORD L10056-.
BIT #RXACT!RDATRY, #RXCSR ;CHECK RECEIVER ACTIVE AND DATA READY.
BNE 20# ;IF SET, REPORT ERROR.
BIS #TSOM, #TDSR ;RETRANSMIT START OF MESSAGE.
WAIT TBE ;WAIT FOR TBE TO BE SET.
;***** MACRO EXPANSION *****
JSR PC, #WAIT ;CALL WAIT ROUTINE -
;WORD TBE ;WAIT FOR TBE TO BE SET
;WORD TXCSR ;IN TRANSMITTER CSR.
;*****
ESCAPE TST ;IF ERROR, BRANCH TO END OF TEST.
TRAP C#ESCAPE
;WORD L10056-.
BIT #RXACT!RDATRY, #RXCSR ;CHECK RECEIVER ACTIVE AND DATA READY.
BNE 20# ;IF SET, REPORT ERROR.
```


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 CVDPVC.P11 16-AUG-84 14:18 TEST 8 - RECEIVE DATA INTERRUPT

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6263 .SBTTL TEST 8 - RECEIVE DATA INTERRUPT
6264
6265 ;*****
6266 ;* TEST 8 - DPV-11
6267 ;* RECEIVE DATA INTERRUPT
6268 ;* MODE: BCP, 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK
6269 ;* ENABLE THE RECEIVER AND SET RECEIVER INTERRUPT. TRANSMIT DATA.
6270 ;* CHECK THAT THE RECEIVE INTERRUPT WAS GENERATED. AFTER THE INTERRUPT
6271 ;* WAS GENERATED DISABLE THE RECEIVER. CHECK THAT THE RECEIVER BECOMES
6272 ;* INACTIVE.
6273 ;*
6274 ;*****
6275 BGNTST
6276
6277
6278 CALL #RESET ;RESET THE DPV
6279 ESCAPE TST ;IF ERROR, EXIT THE TEST
6280 (3) 022614 104410 TRAP C#ESCAPE
6281 (3) 022620 000266 .WORD L10057-.
6282 022624 005037 002424 CLR TFLAG ;CLEAR FLAGS USED IN THE INTERRUPT ROUTINES.
6283 022630 005037 002376 CLR RFLAG ;
6284 022634 005037 002360 CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
6285 022640 012737 000002 002414 MOV #2,START ;SEND 2 START CHARACTERS.
6286
6287 SETVEC XMTVEC,#XINT,#PRI04
6288 (7) 022646 012746 000200 MOV #PRI04,-(SP)
6289 (6) 022652 012746 017232 MOV #XINT,-(SP)
6290 (5) 022656 013746 002264 MOV XMTVEC,-(SP)
6291 (4) 022662 012746 000003 MOV #3,-(SP)
6292 (3) 022666 104437 TRAP C#SVEC
6293 (2) 022670 062706 000010 ADD #10,SP
6294
6295 SETVEC RCVEC,#RINT,#PRI04
6296 (7) 022674 012746 000200 MOV #PRI04,-(SP)
6297 (6) 022700 012746 016602 MOV #RINT,-(SP)
6298 (5) 022704 013746 002262 MOV RCVEC,-(SP)
6299 (4) 022710 012746 000003 MOV #3,-(SP)
6300 (3) 022714 104437 TRAP C#SVEC
6301 (2) 022716 062706 000010 ADD #10,SP
6302
6303 SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
6304 (3) 022722 012700 000000 MOV #PRI00,R0
6305 (3) 022726 104441 TRAP C#SPRI
6306
6307 ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6308 ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6309 ;LEVEL 4-7.
6310 ;SET UP INTERRUPT VECTOR
6311
6312
6313 MOV #40252,#PCSR ;SET BCP MODE AND SYNCH CHARACTER.
6314 MOV #RXENA!RXITEN,#RXCSR ;ENABLE THE RECEIVER AND SET
6315 ;SET INTERRUPT ENABLE.
6316 MOV #TXIE!TXENA!MM,#TXCSR ;ENABLE THE XMITTER AND INT.
6317 ;SELECT THE MAINTENANCE LOOPBACK.
6318 CLR R3 ;CLEAR COUNTER
6319
6320 56: BIT #1,RFLAG ;WAS DATA RECEIVED
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-3
 CVDPVC.P11 16-AUG-84 14:18 TEST 8 - RECEIVE DATA INTERRUPT

```

6302 022762 001007      BNE      10$      ;IF YES - OK.
6303 022764 005303      DEC      R3       ;DECREMENT COUNTER.
6304 022766 001372      BNE      5$
6305
6306 022770              ERRDF      28,EMG15,ERRG2
(4) 022770 104455              TRAP      C$ERDF
(5) 022772 000034              .WORD    28
(5) 022774 014243              .WORD    EMG15
(5) 022776 006700              .WORD    ERRG2
6307 023000 000430
6308 023002
6309 023002 042777 000020 157256 10$: BIC      @RXENA,@RXCSR ;DISABLE THE RECEIVER
6310 023010 005037 002376      CLR      RFLAG   ;CLEAR THE FLAG.
6311 023014              $DELAY  5       ;DELAY TO ALLOW DISABLE.
(1)
(1)
(1) 023014 004737 006604      JSR      PC,$DLAY ;***** MACRO EXPANSION *****
(1) 023020 000005              .WORD    5       ;CALL DELAY SUBROUTINE
(1)
(1)
(1)
6312 023022 005737 002376      TST      RFLAG   ;WAS AN INTERRUPT RECEIVED?
6313 023026 001011      BNE      20$     ;IF YES - REPORT ERROR.
6314 023030 032777 004200 157230 BIT      @RXACT!RDATRY,@RXCSR ;CHECK RECEIVER ACTIVE AND DATA READY.
6315 023036 001411      BEQ      30$     ;IF CLEAR OK
6316 023040              ERRDF      29,EMG13,ERRG2
(4) 023040 104455              TRAP      C$ERDF
(5) 023042 000035              .WORD    29
(5) 023044 014106              .WORD    EMG13
(5) 023046 006700              .WORD    ERRG2
6317 023050 000404
6318 023052
6319 023052              ERRDF      30,EMG16,ERRG2
(4) 023052 104455              TRAP      C$ERDF
(5) 023054 000036              .WORD    30
(5) 023056 014276              .WORD    EMG16
(5) 023060 006700              .WORD    ERRG2
6320 023062
6321 023062
6322 023066              CALL      @RESET ;RESET THE DPV.
(3) 023066 012700 000340      SETPRI   @PRI07 ;SET THE PROCESSOR PRI TO 7
(3) 023072 104441              MOV      @PRI07,R0
6323              TRAP      C$SPRI
6324 023074              CLRVEC   RCVEC  ;(THIS WILL DISABLE INTERRUPTS)
(3) 023074 013700 002262      ;RESTORE THE RECV. VECTOR
(3) 023100 104436              MOV      RCVEC,R0
6325 023102              CLRVEC   XMTVEC ;RESTORE THE XMIT. VECTOR
(3) 023102 013700 002264      ;RESTORE THE XMIT. VECTOR
(3) 023106 104436              MOV      XMTVEC,R0
6326              TRAP      C$CVEC
6327 023110              ENDTST
(3) 023110
(3) 023110 104401              L10057: TRAP      C$ETST
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6330
    
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```
.SBTTL TEST 9 - RECEIVER STATUS
:*****
:* TEST 9 - DPV-11
:* THERE ARE 3 SUBTESTS IN THIS TEST WHICH ARE INTENDED TO CHECK
:* RECEIVER STATUS.
:* SUBTEST 1 - REOM (RECEIVE END OF MESSAGE)
:* THIS SUBTEST WILL TRANSMIT A DATA MESSAGE THAT IS
:* ENDED WITH A TEOM (TRANSMIT END OF MESSAGE). A
:* CHECK WILL BE MADE THAT THE RECEIVER GETS THE DATA
:* AND THAT THE REOM IS RECEIVED WHEN RECEIVE
:* STATUS IS AVAILABLE.
:*
:* SUBTEST 2 - RECEIVER OVERRUN
:* THIS SUBTEST WILL TRANSMIT DATA CORRECTLY. THE
:* RECEIVER AFTER BECOMING ACTIVE WILL NOT SERVICE
:* THE RECEIVE BUFFER CORRECTLY. THIS SHOULD RESULT IN
:* A RECEIVE OVERRUN. THIS SUBTEST WILL ENSURE THAT
:* WHEN RECEIVE STATUS IS AVAILABLE, THE RECEIVER OVERRUN
:* IS SET.
:*
:* SUBTEST 3 - RECEIVER ABORT
:* THIS SUBTEST WILL TRANSMIT A DATA MESSAGE THAT IS ENDED
:* WITH A TRANSMIT ABORT. THE SUBTEST WILL ENSURE THAT
:* RECEIVE STATUS AVAILABLE IS RECEIVED AND THAT THE
:* ABORT IS RECEIVED.
:*****
```

```
BGNTST
T9::
BGNSUB
T9.1:
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, EXIT THE TEST
TRAP C#BSUB
CLR TFLAG ;CLEAR TRANSMIT INTERRUPT FLAG.
MOV #1,START ;# OF START OF MESSAGES.
TRAP .WORD C#ESCAPE
L10060-.
SETVEC XMTVEC,#XINT,#PRI04
MOV #PRI04,-(SP)
MOV #XINT,-(SP)
MOV XMTVEC,-(SP)
MOV #3,-(SP)
TRAP C#SVEC
ADD #10,SP
SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
MOV #PRI00,RO
TRAP C#SPRI
;THIS WILL ENABLE INTERRUPTS. FOR 11/23
;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
;LEVEL 4-7.
;SET UP INTERRUPT VECTOR
```

023112
023112
104402
023114
023120 104410
023122 000774
023124 005037 002424
023130 012737 000001 002414
023136 012746 000200
023142 012746 017232
023146 013746 002264
023152 012746 000003
023156 104437
023160 062706 000010
023164
023164 012700 000000
023170 1C4441

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 CVDPVC.P11 16-AUG-84 14:18 TEST 9 - RECEIVER STATUS

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6375 023172 052777 000130 157072    BIS    #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND SELECT
6376                                     ;MAINTENANCE MODE LOOPBACK.
6377 023200 052777 000020 157060    BIS    #RXENA,#RXCSR ;ENABLE THE RECEIVER
6378
6379 023206 005003                                     CLR    R3 ;INITIALIZE THE COUNTER
6380 023210                                     5$:
6381 023210 032777 004000 157050    BIT    #RXACT,#RXCSR ;IS THE RECEIVER ACTIVE?
6382 023216 001007                                     BNE   10$ ;BR IF YES
6383 023220 005303                                     DEC    R3 ;DECREMENT THE COUNTER
6384 023222 001372                                     BNE   5$
6385 023224                                     ERRDF 31,EMG12,ERRG2
(4) 023224 104455                                     TRAP  C#ERDF
(5) 023226 000037                                     .WORD 31
(5) 023230 014062                                     .WORD EMG12
(5) 023232 006700                                     .WORD ERRG2
6386 023234 000444                                     BR     45$
6387 023236                                     10$:
6388 023236 005003                                     CLR    R3 ;INITIALIZE THE COUNTER.
6389 023240                                     12$:
6390 023240 032777 002200 157020    BIT    #RSTARY!RDATRY,#RXCSR ;IS DATA OR STATUS READY?
6391 023246 001407                                     BEQ   15$ ;BR IF NOT
6392 023250 017737 157014 002400    MOV    #RDSR,RSAVE ;SAVE THE CHARACTER
6393 023256 032737 001000 002400    BIT    #REOM,RSAVE ;WAS THE RECEIVE END OF MESSAGE RECEIVED?
6394 023264 001007                                     BNE   20$
6395 023266                                     15$:
6396 023266 005303                                     DEC    R3 ;DECREMENT THE COUNTER
6397 023270 001363                                     BNE   12$
6398 023272                                     ERRDF 32,EMG17,ERRG2
(4) 023272 104455                                     TRAP  C#ERDF
(5) 023274 000040                                     .WORD 32
(5) 023276 014345                                     .WORD EMG17
(5) 023300 006700                                     .WORD ERRG2
6399 023302 000421                                     BR     45$
6400 023304                                     20$:
6401 023304 032777 002000 156754    BIT    #RSTARY,#RXCSR ;IS THE STATUS DROPPED?
6402 023312 001405                                     BEQ   25$
6403 023314                                     ERRDF 33,EMG18,ERRG2
(4) 023314 104455                                     TRAP  C#ERDF
(5) 023316 000041                                     .WORD 33
(5) 023320 014405                                     .WORD EMG18
(5) 023322 006700                                     .WORD ERRG2
6404 023324 000410                                     BR     45$
6405 023326                                     25$:
6406 023326 032777 004000 156732    BIT    #RXACT,#RXCSR ;IS THE RECEIVER INACTIVE?
6407 023334 001404                                     BEQ   45$ ;BR IF YES
6408 023336                                     ERRDF 34,EMG11,ERRG2
(4) 023336 104455                                     TRAP  C#ERDF
(5) 023340 000042                                     .WORD 34
(5) 023342 014031                                     .WORD EMG11
(5) 023344 006700                                     .WORD ERRG2
6409
6410 023346                                     45$:
6411
6412 023346                                     ENDSUB
(3) 023346                                     L10061:
(3) 023346 104403                                     TRAP  C#ESUB

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-6
 CVDPVC.P11 16-AUG-84 14:18 TEST 9 - RECEIVER STATUS

```

6413
6414 023350          BGNSUB
   (3) 023350          T9.2:
   (3) 023350 104402          TRAP      C#BSUB
6415 023352          CALL      #RESET      ;RESET THE DPV
6416 023356          ESCAPE   TST          ;IF ERROR, EXIT THE TEST
   (3) 023356 104410          TRAP      C#ESCAPE
   (3) 023360 000536          .WORD    L10060-.
6417
6418 023362 005037 002424          CLR      TFLAG      ;CLEAR TRANSMIT INTERRUPT FLAG.
6419 023366 012737 000001 002414  MOV      #1,START    ;# OF START OF MESSAGES.
6420
6421 023374          SETVEC  XMTVEC,#XINT,#PRI04
   (7) 023374 012746 000200          MOV      #PRI04,-(SP)
   (6) 023400 012746 017232          MOV      #XINT,-(SP)
   (5) 023404 013746 002264          MOV      XMTVEC,-(SP)
   (4) 023410 012746 000003          MOV      #3,-(SP)
   (3) 023414 104437          TRAP      C#SVEC
   (2) 023416 062706 000010          ADD      #10,SP
6422 023422          SETPRI  #PRI00      ;SET PROCESSOR PRIORITY. FOR LSI 11/03
   (3) 023422 012700 000000          MOV      #PRI00,RO
   (3) 023426 104441          TRAP      C#SPRI
6423          ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6424          ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6425          ;LEVEL 4-7.
6426          ;SET UP INTERRUPT VECTOR
6427
6428 023430 052777 000130 156634  BIS      #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND SELECT
6429          ;MAINTENANCE MODE LOOPBACK.
6430 023436 052777 000020 156622  BIS      #RXENA,#RXCSR ;ENABLE THE RECEIVER
6431
6432 023444 005003          CLR      R3          ;INITIALIZE THE COUNTER
6433 023446          5$:
6434 023446 032777 004000 156612  BIT      #RXACT,#RXCSR ;IS THE RECEIVER ACTIVE?
6435 023454 001007          BNE     10$          ;BR IF YES
6436 023456 005303          DEC     R3          ;DECREMENT THE COUNTER
6437 023460 001372          BNE     5$
6438 023462          ERRDF  35,EMG12,ERRG2
   (4) 023462 104455          TRAP      C#ERDF
   (5) 023464 000043          .WORD    35
   (5) 023466 014062          .WORD    EMG12
   (5) 023470 006700          .WORD    ERRG2
6439 023472 000464          BR      55$
6440 023474          10$:
6441 023474 005003          CLR      R3          ;INITIALIZE THE COUNTER.
6442 023476          12$:
6443 023476 032777 002000 156562  BIT      #RSTARY,#RXCSR ;IS THE STATUS READY?
6444 023504 001007          BNE     20$
6445 023506 005303          DEC     R3          ;DECREMENT THE COUNTER
6446 023510 001372          BNE     12$
6447
6448 023512          ERRDF  36,EMG1,ERRG2 ;TIME OUT
   (4) 023512 104455          TRAP      C#ERDF
   (5) 023514 000044          .WORD    36
   (5) 023516 013462          .WORD    EMG1
   (5) 023520 006700          .WORD    ERRG2
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-7
 CVDPVC.P11 16-AUG-84 14:18 TEST 9 - RECEIVER STATUS

```

6449 023522 000450          BR      55$
6450
6451 023524          20$:
6452
6453 023524 032777 004000 156536  BIT    #ROVER, BRDSR  ;WAS THE RECEIVE OVERRUN RECEIVED?
6454 023532 001005          BNE    40$           ;IF YES OK.
6455 023534          ERRDF  37,EMG19,ERRG2
        (4) 023534 104455          TRAP   C$ERDF
        (5) 023536 000045          .WORD  37
        (5) 023540 014434          .WORD  EMG19
        (5) 023542 006700          .WORD  ERRG2
6456 023544 000437          BR      55$
6457 023546          40$:
6458
6459 023546 032777 002000 156512  BIT    #RSTARY, BRXCSR ;WAS THE STATUS CLEARED
6460 023554 001405          BEQ    42$           ;IF YES OK
6461 023556          ERRDF  38,EMG18,ERRG2
        (4) 023556 104455          TRAP   C$ERDF
        (5) 023560 000046          .WORD  38
        (5) 023562 014405          .WORD  EMG18
        (5) 023564 006700          .WORD  ERRG2
6462 023566 000426          BR      55$
6463 023570          42$:
6464 023570 032777 002000 156470  BIT    #RSTARY, BRXCSR ;IS THE STATUS READY?
6465 023576 001007          BNE    47$
6466 023600 005303          DEC    R3            ;DECREMENT THE COUNTER
6467 023602 001372          BNE    42$
6468
6469 023604          ERRDF  39,EMG1,ERRG2 ;TIME OUT
        (4) 023604 104455          TRAP   C$ERDF
        (5) 023606 000047          .WORD  39
        (5) 023610 013462          .WORD  EMG1
        (5) 023612 006700          .WORD  ERRG2
6470 023614 000413          BR      55$
6471
6472
6473 023616          47$:
6474 023616 042777 000020 156442  BIC    #RXENA, BRXCSR ;DISABLE THE RECEIVER.
6475
6476 023624 032777 002000 156434  BIT    #RSTARY, BRXCSR ;IS THE STATUS DROPPED?
6477 023632 001404          BEQ    55$
6478 023634          50$:
6479 023634          ERRDF  40,EMG18,ERRG2
        (4) 023634 104455          TRAP   C$ERDF
        (5) 023636 000050          .WORD  40
        (5) 023640 014405          .WORD  EMG18
        (5) 023642 006700          .WORD  ERRG2
6480 023644          55$:
6481
6482 023644          ENDSUB
        (3) 023644          L10062:
        (3) 023644 104403          TRAP   C$ESUB
6483
6484
6485
6486 023646          BGNSUB

```

```

(3) 023646
(3) 023646 104402
6487 023650
6488 023654
(3) 023654 104410
(3) 023656 000240
6489 023660 005037 002424
6490 023664 012737 000001 002414
6491 023672 012737 000001 002316
6492
6493 023700
(7) 023700 012746 000200
(6) 023704 012746 017232
(5) 023710 013746 002264
(4) 023714 012746 000003
(3) 023720 104437
(2) 023722 062706 000010
6494 023726
(3) 023726 012700 000000
(3) 023732 104441
6495
6496
6497
6498
6499
6500 023734 052777 000130 156330
6501
6502 023742 052777 000020 156316
6503
6504 023750 005003
6505 023752
6506 023752 032777 004000 156306
6507 023760 001007
6508 023762 005303
6509 023764 001372
6510 023766
(4) 023766 104455
(5) 023770 000051
(5) 023772 014062
(5) 023774 006700
6511 023776 000444
6512 024000
6513 024000 005003
6514 024002
6515 024002 032777 002000 156256
6516 024010 001016
6517 024012 032777 000200 156246
6518 024020 001403
6519 024022
(1)
(1)
(1) 024022 004737 006604
(1) 024026 000005
(1)
(1)
6520 024030
    
```

T9.3:

```

TRAP C#BSUB
TRAP C#ESCAPE
    .WORD L10060-.
MOV #PRI04,-(SP)
MOV #XINT,-(SP)
MOV XMTVEC,-(SP)
MOV #3,-(SP)
TRAP C#SVEC
ADD #10,SP
MOV #PRI00,RO
TRAP C#SPRI
    
```

5:

10:

12:

15:

```

CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, EXIT THE TEST
CLR TFLAG ;CLEAR TRANSMIT INTERRUPT FLAG.
MOV #1,START ;# OF START OF MESSAGES.
MOV #1,ABORT ;SEND AN ABORT
SETVEC XMTVEC,#XINT,#PRI04
SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
;THIS WILL ENABLE INTERRUPTS. FOR 11/23
;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
;LEVEL 4-7.
;SET UP INTERRUPT VECTOR
BIS #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND SELECT
;MAINTENANCE MODE LOOPBACK.
BIS #RXENA,#RXCSR ;ENABLE THE RECEIVER
CLR R3 ;INITIALIZE THE COUNTER
BIT #RXACT,#RXCSR ;IS THE RECEIVER ACTIVE?
BNE 10# ;BR IF YES
DEC R3 ;DECREMENT THE COUNTER
BNE 5#
ERRDF 41,EMG12,ERRG2
BR 45#
CLR R3 ;INITIALIZE THE COUNTER.
BIT #RSTARY,#RXCSR ;IS THE STATUS READY?
BNE 20#
BIT #RDATRY,#RXCSR
BEQ 15#
#DELAY 5 ;DELAY .5 MSEC.
JSR PC,#DLAY ;***** MACRO EXPANSION *****
;CALL DELAY SUBROUTINE
;NUMBER OF DELAY LOOPS
;*****
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-10
CVDPVC.P11 16-AUG-84 14:18 TEST 10 - RECEIVE STATUS INTERRUPT

```

6547 .SBTTL TEST 10 - RECEIVE STATUS INTERRUPT
6548
6549 ;*****
6550 ;* TEST 10 - DPV-11
6551 ;* THIS TEST WILL ENSURE THAT INTERRUPTS MAY BE GENERATED WHEN
6552 ;* RECEIVE STATUS IS AVAILABLE. EACH OF THE FOLLOWING SUBTESTS
6553 ;* WILL GENERATE THE STATUS AS FOLLOWS:
6554 ;* SUBTEST 1 - REOM
6555 ;* SUBTEST 2 - RECEIVER OVERRUN
6556 ;* SUBTEST 3 - RECEIVER ABORT
6557 ;*
6558 ;*****
6559 024120 BGNTST
(3) 024120 T10::
6560
6561
6562 024120 BGNSUB T10.1:
(3) 024120 104402 TRAP C#BSUB
6563 024122 CALL #RESET ;RESET THE DPV
6564 024126 ESCAPE TST ;IF ERROR, EXIT THE TEST TRAP C#ESCAPE
(3) 024126 104410 .WORD L10064-.
(3) 024130 001102
6565 024132 005037 002376 CLR RFLAG ;CLEAR RECEIVE INTERRUPT
6566 024136 005037 002424 CLR TFLAG ;CLEAR TRANSMIT INTERRUPT FLAG.
6567 024142 005037 002360 CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
6568 024146 012737 000001 002414 MOV #1,START ;# OF START OF MESSAGES.
6569
6570 024154 SETVEC XMTVEC,#XINT,#PRI04
(7) 024154 012746 000200 MOV #PRI04,-(SP)
(6) 024160 012746 017232 MOV #XINT,-(SP)
(5) 024164 013746 002264 MOV XMTVEC,-(SP)
(4) 024170 012746 000003 MOV #3,-(SP)
(3) 024174 104437 TRAP C#SVEC
(2) 024176 062706 000010 ADD #10,SP
6571 024202 SETVEC RCVEC,#RINT,#PRI04
(7) 024202 012746 000200 MOV #PRI04,-(SP)
(6) 024206 012746 016602 MOV #RINT,-(SP)
(5) 024212 013746 002262 MOV RCVEC,-(SP)
(4) 024216 012746 000003 MOV #3,-(SP)
(3) 024222 104437 TRAP C#SVEC
(2) 024224 062706 030010 ADD #10,SP
6572 024230 SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
(3) 024230 012700 000000 MOV #PRI00,R0
(3) 024234 104441 TRAP C#SPRI
6573 ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6574 ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6575 ;LEVEL 4-7.
6576 ;SET UP INTERRUPT VECTOR
6577
6578 024236 052777 000130 156026 BIS #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND SELECT
6579 ;MAINTENANCE MODE LOOPBACK.
6580 024244 052777 000120 156014 BIS #RXITEN!RXENA,#RXCSR ;ENABLE THE RECEIVER
6581
6582 024252 005003 CLR R3 ;INITIALIZE THE COUNTER
6583 024254 54:

```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-12
 CVDPVC.P11 16-AUG-84 14:18 TEST 10 - RECEIVE STATUS INTERRUPT

```

6616 024416          BGNSUB
(3) 024416          T10.2:
(3) 024416 104402          TRAP  C0BSUB
6617 024420          CALL  #RESET          ;RESET THE DPV
6618 024424          ESCAPE TST          ;IF ERROR, EXIT THE TEST
(3) 024424 104410          TRAP  C0ESCAPE
(3) 024426 000604          .WORD L10064-.
6619
6620 024430 005037 002376  CLR  RFLAG          ;CLEAR RECEIVE INTERRUPT
6621 024434 005037 002424  CLR  TFLAG          ;CLEAR TRANSMIT INTERRUPT FLAG.
6622 024440 005037 002360  CLR  MCFLAG        ;CLEAR MODEM CONTROL FLAG.
6623 024444 012737 000001 002414  MOV  #1,START      ;# OF START OF MESSAGES.
6624 024452 012737 000001 002370  MOV  #1,OVER       ;FLAG TO CREATE RECEIVE OVERRUN.
6625
6626 024460          SETVEC XMTVEC,#XINT,#PRI04
(7) 024460 012746 000200          MOV  #PRI04,-(SP)
(6) 024464 012746 017232          MOV  #XINT,-(SP)
(5) 024470 013746 002264          MOV  XMTVEC,-(SP)
(4) 024474 012746 000003          MOV  #3,-(SP)
(3) 024500 104437          TRAP  C0SVEC
(2) 024502 062706 000010          ADD  #10,SP
6627 024506          SETVEC RCVEC,#RINT,#PRI04
(7) 024506 012746 000200          MOV  #PRI04,-(SP)
(6) 024512 012746 016602          MOV  #RINT,-(SP)
(5) 024516 013746 002262          MOV  RCVEC,-(SP)
(4) 024522 012746 000003          MOV  #3,-(SP)
(3) 024526 104437          TRAP  C0SVEC
(2) 024530 062706 000010          ADD  #10,SP
6628 024534          SETPRI #PRI00          ;SET PROCESSOR PRIORITY. FOR LSI 11/03
(3) 024534 012700 000000          MOV  #PRI00,R0
(3) 024540 104441          TRAP  C0SPRI
6629          ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6630          ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6631          ;LEVEL 4-7.
6632          ;SET UP INTERRUPT VECTOR
6633
6634 024542 052777 000130 155522  BIS  #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND SELECT
6635          ;MAINTENANCE MODE LOOPBACK.
6636 024550 052777 000120 155510  BIS  #RXITEN!RXENA,#RXCSR ;ENABLE THE RECEIVER
6637
6638 024556 005003          CLR  R3            ;INITIALIZE THE COUNTER
6639 024560          50:
6640 024560 032777 004000 155500  BIT  #RXACT,#RXCSR ;IS THE RECEIVER ACTIVE?
6641 024566 001007          BNE  100          ;BR IF YES
6642 024570 005303          DEC  R3            ;DECREMENT THE COUNTER
6643 024572 001372          BNE  50
6644 024574          ERDF 49,EMG12,ERRG2
(4) 024574 104455          TRAP  C0ERDF
(5) 024576 000061          .WORD 49
(5) 024600 014062          .WORD EMG12
(5) 024602 006700          .WORD ERRG2
6645 024604 000434          BR   450
6646 024606          100:
6647 024606 005003          CLR  R3            ;INITIALIZE THE COUNTER.
6648 024610          120:
6649 024610 032737 000002 002376  BIT  #2,RFLAG      ;WAS STATUS RECEIVED?

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CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-14
CVDPVC.P11 16-AUG-84 14:18 TEST 10 - RECEIVE STATUS INTERRUPT

6682 024750 005037 002360 CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
6683 024754 012737 000001 002414 MOV #1,START ;# OF START OF MESSAGES.
6684 024762 012737 000001 002316 MOV #1,ABORT ;FLAG TO SEND ABORT
6685
6686 024770 SETVEC XMTVEC,#XINT,#PRI04
(7) 024770 012746 000200 MOV #PRI04,-(SP)
(6) 024774 012746 017232 MOV #XINT,-(SP)
(5) 025000 013746 002264 MOV XMTVEC,-(SP)
(4) 025004 012746 000003 MOV #3,-(SP)
(3) 025010 104437 TRAP C$SVEC
(2) 025012 062706 000010 ADD #10,SP
6687 025016 SETVEC RCVEC,#RINT,#PRI04
(7) 025016 012746 000200 MOV #PRI04,-(SP)
(6) 025022 012746 016602 MOV #RINT,-(SP)
(5) 025026 013746 002262 MOV RCVEC,-(SP)
(4) 025032 012746 000003 MOV #3,-(SP)
(3) 025036 104437 TRAP C$SVEC
(2) 025040 062706 000010 ADD #10,SP
6688 025044 SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
(3) 025044 012700 000000 MOV #PRI00,R0
(3) 025050 104441 TRAP C$SPRI
6689 ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6690 ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6691 ;LEVEL 4-7.
6692 ;SET UP INTERRUPT VECTOR
6693
6694 025052 052777 000130 155212 BIS #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND SELECT
6695 ;MAINTENANCE MODE LOOPBACK.
6696 025060 052777 000120 155200 BIS #RXITEN!RXENA,#RXCSR ;ENABLE THE RECEIVER
6697
6698 025066 005003 CLR R3 ;INITIALIZE THE COUNTER
6699 025070 54:
6700 025070 032777 004000 155170 BIT #RXACT,#RXCSR ;IS THE RECEIVER ACTIVE?
6701 025076 001007 BNE 104 ;BR IF YES
6702 025100 005303 DEC R3 ;DECREMENT THE COUNTER
6703 025102 001372 BNE 54
6704 025104 ERROF 53,EMG12,ERRG2
(4) 025104 104455 TRAP C$ERDF
(5) 025106 000065 .WORD 53
(5) 025110 014062 .WORD EMG12
(5) 025112 006700 .WORD ERRG2
6705 025114 000435 BR 454
6706 025116 104:
6707 025116 005003 CLR R3 ;INITIALIZE THE COUNTER.
6708 025120 124:
6709 025120 032737 000002 002376 BIT #2,RFLAG ;WAS STATUS RECEIVED?
6710 025126 001007 BNE 204
6711 025130 005303 DEC R3 ;DECREMENT THE COUNTER
6712 025132 001372 BNE 124
6713 025134 ERROF 54,EMG21,ERRG2
(4) 025134 104455 TRAP C$ERDF
(5) 025136 000066 .WORD 54
(5) 025140 014514 .WORD EMG21
(5) 025142 006700 .WORD ERRG2
6714 025144 000421 BR 454
6715

```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-16
 CVDPVC.P11 16-AUG-84 14:18 TEST 11 - RECEIVE AND TRANSMIT INTERRUPT

```

6745 .SBTTL TEST 11 - RECEIVE AND TRANSMIT INTERRUPT
6746
6747 ;*****
6748 ;* TEST 11 - DPV-11
6749 ;* RECEIVE AND TRANSMIT INTERRUPT
6750 ;* TRANSMIT AND RECEIVE DATA USING INTERRUPT ROUTINES. THIS TEST
6751 ;* WILL TRANSMIT 4 DATA CHARACTERS. AFTER ENSURING THAT A TRANSMIT
6752 ;* INTERRUPT WAS COMPLETED, THE TEST WILL CHECK TO MAKE SURE THAT AT
6753 ;* LEAST 1 RECEIVE INTERRUPT WAS GENERATED.
6754 ;*
6755 ;*****
6756 BGNTST
6757
6758 (3) 025234 T11::
6759 (3) 025234
6760 (3) 025240 104410 CALL $RESET ;RESET THE DPV
6761 (3) 025242 000234 ESCAPE TST ;IF ERROR, EXIT THE TEST
6762 025244 005037 002424 CLR TFLAG ;CLEAR THE FLAGS USED IN THE ISRS.
6763 025250 005037 002376 CLR RFLAG
6764 025254 005037 002360 CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
6765 (7) 025260 012746 000200 SETVEC RCVEC,#RINT,#PRI04
6766 (6) 025264 012746 016602 MOV #PRI04,-(SP)
6767 (5) 025270 013746 002262 MOV #RINT,-(SP)
6768 (4) 025274 012746 000003 MOV RCVEC,-(SP)
6769 (3) 025300 104437 TRAP #3,-(SP)
6770 (2) 025302 062706 000010 ADD C$SVEC
6771 025306 XMTVEC,#XINT,#PRI04 ADD #10,SP
6772 (7) 025306 012746 000200 MOV #PRI04,-(SP)
6773 (6) 025312 012746 017232 MOV #XINT,-(SP)
6774 (5) 025316 013746 002264 MOV XMTVEC,-(SP)
6775 (4) 025322 012746 000003 MOV #3,-(SP)
6776 (3) 025326 104437 TRAP C$SVEC
6777 (2) 025330 062706 000010 ADD #10,SP
6778 025334 SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
6779 (3) 025334 012700 000000 MOV #PRI00,R0
6780 (3) 025340 104441 TRAP C$SPRI
6781 ;THIS WILL ENABLE INTERRUPTS. FOR 11/23
6782 ;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
6783 ;LEVEL 4-7.
6784 ;SET UP INTERRUPT VECTOR
6785
6786 025342 012777 043652 154720 MOV #43652,#PCSR ;SET BCP MODE, NO ERROR AND SYNCH CHARACTER.
6787 025350 012737 000002 002414 MOV #2,START ;# OF STARTS TO SEND.
6788 025356 012777 000120 154702 MOV #RXITEN!RXENA,#RXCSR ;ENABLE THE RECEIVER AND SET
6789 ;SET INTERRUPT ENABLE.
6790 025364 012777 000130 154700 MOV #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND INT.
6791 ;SELECT THE MAINTENANCE LOOPBACK.
6792 025372 005001 CLR R1 ;LOOP COUNTER
6793 025374
6794 025374 022737 000004 002326 104: CMP #4,DATA ;ARE THE 4 DATA CHARACTERS RECEIVED?
6795 025402 001412 BEQ 204 ;IF YES - CHECK RECEIVE INTERRUPT.
6796 025404 005301 DEC R1 ;DECREMENT COUNTER
6797 025406 001372 BNE 104

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 26-17
 CVDPVC.P11 16-AUG-84 14:18 TEST 11 - RECEIVE AND TRANSMIT INTERRUPT

```

6784
6785 025410 005737 002424      TST      TFLAG      ;WERE ANY XMIT INTERRUPTS RECEIVED
6786 025414 001005      BNE      20$      ;IF YES, KEEP CHECKING
6787 025416      ERRDF    57,EMG9,ERRG2
      (4) 025416 104455      TRAP     C$ERDF
      (5) 025420 000071      .WORD   57
      (5) 025422 013723      .WORD   EMG9
      (5) 025424 006700      .WORD   ERRG2
6788 025426 000410      BR       30$
6789
6790 025430      20$:
6791 025430 032737 000001 002376      BIT      #1,RFLAG    ;WAS ANY DATA RECEIVED?
6792 025436 001004      BNE      30$      ;IF YES - OK.
6793 025440      ERRDF    58,EMG15,ERRG2
      (4) 025440 104455      TRAP     C$ERDF
      (5) 025442 000072      .WORD   58
      (5) 025444 014243      .WORD   EMG15
      (5) 025446 006700      .WORD   ERRG2
6794
6795 025450      30$:
6796 025450      CALL     #RESET
6797 025454      SETPRI  #PRI07    ;RESET THE DPV
      (3) 025454 012700 000340      MOV      @PRI07,R0  ;SET THE PROCESSOR PRI TO 7
      (3) 025460 104441      TRAP     C$SPRI
6798
6799 025462      CLRVEC  RCVEC    ;(THIS WILL DISABLE INTERRUPTS)
      (3) 025462 013700 002262      MOV      RCVEC,R0  ;RESTORE THE RECV. VECTOR
      (3) 025466 104436      TRAP     C$CVEC
6800 025470      CLRVEC  XMTVEC   ;RESTORE THE XMIT. VECTOR
      (3) 025470 013700 002264      MOV      XMTVEC,R0
      (3) 025474 104436      TRAP     C$CVEC
6801
6802
6803
6804 025476      ENDYST
      (3) 025476      L10070:
      (3) 025476 104401      TRAP     C$ETST
6805
6806
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27
CVDPVC.P11 16-AUG-84 14:18 TEST 12 - MODEM STATUS

.SBTTL TEST 12 - MODEM STATUS

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025500
(3) 025500
025500 103530
025504 103530
025506
025506
025512
(3) 025512 104410
(3) 025514 000252
025516 012702 000004
025522 010277 154540
025526
(1) 025526 004737 006604
(1) 025532 000001
025534 032777 020000 154524
025542 001445
025544 032777 010000 154514
025552 001441
025554 012702 000002
025560 010277 154502
025564
(1) 025564 004737 006604
(1) 025570 000001
025572 032777 040000 154466
025600 001426
025602 012702 000001
025606 010277 154454
025612
(1) 025612 004737 006604
(1) 025616 000001

```
*****  
;* TEST 12 - DPV-11  
;* MODEM STATUS  
;* IF A PROPER TURNAROUND (H3259 OR H3260) IS ON, THIS TEST WILL  
;* CHECK THAT THE FOLLOWING MODEM SIGNALS ARE TURNED AROUND  
;* 1. RTS (REQUEST TO SEND) TURNED AROUND TO CTS (CLEAR TO SEND)  
;* & RR (RECEIVER READY)  
;* 2. DTR (DATA TERMINAL READY) TURNED AROUND TO IC (INCOMING CALL OR RING)  
;* 3. SF (SELECT FREQUENCY) TURNED AROUND TO SQ (SIGNAL QUALITY)  
;* 4. LL (LOCAL LOOPBACK) TURNED AROUND TO DM (DATA MODE)  
;*****
```

```
BGNTST  
T12::  
CALL $TURN ;CHECK THE TURNAROUND.  
BCS 40$ ;SKIP TEST IF NO TURNAROUND.  
5$:  
CALL $RESET ;RESET THE DPV  
ESCAPE TST ;IF ERROR, EXIT THE TEST  
TRAP C$ESCAPE  
;WORD L10071-.  
MOV #RTS,R2 ;SAVE RTS IN REGISTER (FOR ERROR REPORT).  
MOV R2,$RXCSR ;SET RTS  
$DELAY 1 ;DELAY 100 MICROSECONDS  
;***** MACRO EXPANSION *****  
JSR PC,$DLAY ;CALL DELAY SUBROUTINE  
;WORD 1 ;NUMBER OF DELAY LOOPS  
;*****  
BIT #CTS,$RXCSR ;IS CTS ON?  
BEQ 10$ ;IF NOT - REPORT.  
BIT #RR,$RXCSR ;IS RR (CD) ON  
BEQ 10$ ;IF NOT - ERROR.  
MOV #DTR,R2 ;SAVE DTR IN REGISTER (FOR ERROR REPORT).  
MOV R2,$RXCSR ;SET DTR.  
$DELAY 1 ;DELAY 100 MICROSECONDS  
;***** MACRO EXPANSION *****  
JSR PC,$DLAY ;CALL DELAY SUBROUTINE  
;WORD 1 ;NUMBER OF DELAY LOOPS  
;*****  
BIT #IC,$RXCSR ;IS RING (IC) SET?  
BEQ 10$ ;IF NOT - ERROR.  
MOV #SF,R2 ;SAVE SF IN REGISTER (FOR ERROR REPORT).  
MOV R2,$RXCSR ;SET REMOTE LOOP/ SEC FREQ  
$DELAY 1 ;DELAY 100 MICROSECONDS  
;***** MACRO EXPANSION *****  
JSR PC,$DLAY ;CALL DELAY SUBROUTINE  
;WORD 1 ;NUMBER OF DELAY LOOPS  
;*****
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-1
 CVDPVC.P11 16-AUG-84 14:18 TEST 12 - MODEM STATUS

```

6844 025620 032777 000040 154444 BIT #SQ,SRXCSR ;IS SIGNAL QUALITY SET?
6845 025626 001413 BEQ 10# ;IF NOT - ERROR.
6846 025630 012702 000010 MOV #LL,R2 ;SAVE LL IN REGISTER (FOR ERRCR REPORT).
6847 025634 010277 154426 MOV R2,SRXCSR ;SET LOCAL LOOP
6848 025640 #DELAY 1 ;DELAY 100 MICROSECONDS
(1)
(1)
(1) 025640 004737 006604 JSR PC,#DLAY ;***** MACRO EXPANSION *****
(1) 025644 000001 .WORD 1 ;CALL DELAY SUBROUTINE
(1) ;NUMBER OF DELAY LOOPS
(1) ;*****
6849 025646 032777 001000 154412 BIT #DM,SRXCSR ;IS DATA MODE SET?
6850 025654 001004 BNE 20#
6851
6852 025656 10#: ERRDF 59,EMG22,ERRG13
6853 025656 (4) 025656 104455 TRAP C#ERRDF
(5) 025660 000073 .WORD 59
(5) 025662 014556 .WORD EMG22
(5) 025664 010272 .WORD ERRG13
6854
6855 025666 20#:
6856 ;CLEAR ALL THOSE BITS
6857 025666 042777 000017 154372 BIC #RTS!DTR!SF!LL,SRXCSR
6858 025674 #DELAY 1 ;DELAY 100 MICRO SECONDS
(1)
(1)
(1) 025674 004737 006604 JSR PC,#DLAY ;***** MACRO EXPANSION *****
(1) 025700 000001 .WORD 1 ;CALL DELAY SUBROUTINE
(1) ;NUMBER OF DELAY LOOPS
(1) ;*****
6859
6860 025702 012702 000004 MOV #RTS,R2 ;CHECK RTS.
6861 025706 030277 154354 BIT R2,SRXCSR ;IS IT SET?
6862 025712 001021 BNE 30# ;IF YES, ERROR.
6863 025714 012702 000002 MOV #DTR,R2 ;CHECK DTR.
6864 025720 030277 154342 BIT R2,SRXCSR ;IS IT SET?
6865 025724 001014 BNE 30# ;IF YES, ERROR.
6866 025726 012777 000001 154332 MOV #SF,SRXCSR ;CHECK SF.
6867 025734 030277 154326 BIT R2,SRXCSR ;IS IT SET?
6868 025740 001006 BNE 30# ;IF YES, ERROR.
6869 025742 012777 000010 154316 MOV #LL,SRXCSR ;CHECK LL
6870 025750 030277 154312 BIT R2,SRXCSR ;IS IT SET?
6871 025754 001404 BEQ 40# ;IF NOT, OK
6872 025756 30#:
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-2
CVDPVC.P11 16-AUG-84 14:18 TEST 12 - MODEM STATUS

6873 025756
(4) 025756 104455
(5) 025760 000074
(5) 025762 014556
(5) 025764 011044
6874 025766
6875 025766
(3) 025766
(3) 025766 104401
6876
6877
6878
6879

ERRDF 60,EMG22,ERRG15

404:
ENDTST

TRAP C#ERDF
.WORD 60
.WORD EMG22
.WORD ERRG15

L10071:

TRAP C#ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-3
CVDPVC.P11 16-AUG-84 14:18 TEST 13 - MODEM STATUS INTERRUPT

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.SBTTL TEST 13 - MODEM STATUS INTERRUPT
;*****
;* TEST 13 - DPV-11
;* MODEM STATUS INTERRUPT
;* IF A PROPER TURNAROUND (H3259 OR H3260) IS ON, THIS TEST WILL CHECK
;* THAT THE FOLLOWING SUBTESTS WORK CORRECTLY.
;* SUBTEST 1 - SET DTR (DATA TERMINAL READY), LOCAL LOOP (LL), RTS (REQUEST
;* TO SEND) WITH ONLY RECEIVE INTERRUPT ENABLED. ENSURE THAT AN
;* INTERRUPT IS NOT RECEIVED.
;* SUBTEST 2 - SET DTR, LL AND RTS WITH ONLY DATA SET INTERRUPT ENABLED.
;* ENSURE THAT AN INTERRUPT IS NOT RECEIVED.
;* SUBTEST 3 - SET DTR, LL AND RTS WITHOUT ANY INTERRUPTS ENABLED. ENSURE
;* THAT AN INTERRUPT IS NOT RECEIVED.
;* SUBTEST 4 - SET RTS WITH RECEIVE AND DATA SET INTERRUPT ENABLED. ENSURE
;* THAT AN INTERRUPT IS RECEIVED.
;* SUBTEST 5 - SET DTR WITH RECEIVE AND DATA SET INTERRUPT ENABLED. ENSURE
;* THAT AN INTERRUPT IS RECEIVED.
;* SUBTEST 6 - SET LL WITH RECEIVE AND DATA SET INTERRUPT ENABLED. ENSURE
;* THAT AN INTERRUPT IS RECEIVED.
;*

BGNTST
T13::
CALL \$TURN ;CHECK THE TURNAROUND.
BCC 1\$;PROCEED IF TURNAROUND.
EXIT TST
TRAP C\$EXIT
.WORD L10072-.
1\$:
SETVEC RCVEC, #RINT, #PRI04
MOV #PRI04, -(SP)
MOV #RINT, -(SP)
MOV RCVEC, -(SP)
MOV #3, -(SP)
TRAP C\$SVEC
ADD #10, SP
SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
MOV #PRI00, RO
TRAP C\$SPRI
;THIS WILL ENABLE INTERRUPTS. FOR 11/23
;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
;LEVEL 4-7.
;SET UP INTERRUPT VECTOR

BGNSUB
T13.1:
TRAP C\$BSUB
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, EXIT THE TEST
TRAP C\$ESCAPE
.WORD L10072-.
CLR RFLAG ;CLEAR THE FLAG USED IN THE ISR
CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-4
 CVDPVC.P11 16-AUG-84 14:18 TEST 13 - MODEM STATUS INTERRUPT

```

6922
6923                                     ;ENABLE RCV INT AND SET RTS, DTR AND L. LOOP
6924 026060 012777 000116 154200      MOV    #RXITEN!LL!DTR!RTS,#RXCSR
6925
6926 026066                               10$:
6927 026066                               $DELAY 10                               ;WAIT 1 MS
(1)
(1)
(1) 026066 004737 006604                JSR    PC,$DLAY                               ;***** MACRO EXPANSION *****
(1) 026072 000010                               .WORD 10                               ;CALL DELAY SUBROUTINE
(1)
(1)
6928 026074 005737 002360                TST    MCFLAG                               ;WAS AN MODEM CONTROL INTERRUPT RECEIVED?
6929 026100 001404                               BEQ    30$
6930 026102                               ERRDF 61,EMG23,ERRG2                       ;IF NOT OK.
(4) 026102 104455
(5) 026104 000075                               TRAP   C$ERDF
(5) 026106 014603                               .WORD 61
(5) 026110 006700                               .WORD  EMG23
6931
6932 026112                               30$:
6933
6934 026112                               ENDSUB
(3) 026112
(3) 026112 104403                               L10073: TRAP   C$ESUB
6935
6936
6937 026114                               BGNSUB
(3) 026114
(3) 026114 104402                               T13.2: TRAP   C$BSUB
6938 026116                               CALL  #RESET                               ;RESET THE DPV
6939 026122                               ESCAPE TST                               ;IF ERROR, EXIT THE TEST
(3) 026122 104410
(3) 026124 000552                               TRAP   C$ESCAPE
6940 026126 005037 002376                CLR    RFLAG                               ;CLEAR THE FLAG USED IN THE ISR
6941 026132 005037 002360                CLR    MCFLAG                              ;CLEAR MODEM CONTROL FLAG.
(3) 026124 000552                               .WORD L10072-.
6942
6943                                     ;ENABLE DS. INT, SET RTS, DTR AND LL
6944 026136 012777 000056 154122      MOV    #DSITEN!LL!RTS!DTR,#RXCSR
6945
6946 026144                               10$:
6947 026144                               $DELAY 10                               ;WAIT 1 MS
(1)
(1)
(1) 026144 004737 006604                JSR    PC,$DLAY                               ;***** MACRO EXPANSION *****
(1) 026150 000010                               .WORD 10                               ;CALL DELAY SUBROUTINE
(1)
(1)
6948 026152 005737 002360                TST    MCFLAG                               ;WAS AN MODEM CONTROL INTERRUPT RECEIVED?
6949 026156 001404                               BEQ    30$
6950 026160                               ERRDF 62,EMG23,ERRG2                       ;IF NOT OK.
(4) 026160 104455
(5) 026162 000076                               TRAP   C$ERDF
(5) 026164 014603                               .WORD 62
(5) 026166 006700                               .WORD  EMG23
6951
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-5
 CVDPVC.P11 16-AUG-84 14:18 TEST 13 - MODEM STATUS INTERRUPT

```

6952 026170          30$:
6953
6954 026170          ENDSUB
      (3) 026170
      (3) 026170 104403          L10074: TRAP C#ESUB
6955
6956
6957
6958 026172          BGNSUB
      (3) 026172
      (3) 026172 104402          T13.3: TRAP C#BSUB
6959 026174          CALL $RESET          ;RESET THE DPV
6960 026200          ESCAPE TST          ;IF ERROR, EXIT THE TEST
      (3) 026200 104410          TRAP C#ESCAPE
      (3) 026202 000474          .WORD L10072-.
6961 026204 005037 002376
6962 026210 005037 002360
6963
6964
6965 026214 012777 000016 154044
6966 026222          10$:
6967 026222          $DELAY 10          ;WAIT 1 MS
      (1)
      (1)
      (1) 026222 004737 006604          JSR PC,$DLAY          ;***** MACRO EXPANSION *****
      (1) 026226 000010          .WORD 10          ;CALL DELAY SUBROUTINE
      (1)
      (1)
6968 026230 005737 002360          TST MCFLAG          ;WAS AN INTERRUPT RECEIVED?
6969 026234 001404          BEQ 30$          ;IF NOT OK.
6970 026236          ERRDF 63,EMG23,ERRG2
      (4) 026236 104455          TRAP C#ERDF
      (5) 026240 000077          .WORD 63
      (5) 026242 014603          .WORD EMG23
      (5) 026244 006700          .WORD ERRG2
6971
6972 026246          30$:
6973
6974 026246          ENDSUB
      (3) 026246
      (3) 026246 104403          L10075: TRAP C#ESUB
6975
6976
6977 026250          BGNSUB
      (3) 026250
      (3) 026250 104402          T13.4: TRAP C#BSUB
6978 026252          CALL $RESET          ;RESET THE DPV
6979 026256          ESCAPE TST          ;IF ERROR, EXIT THE TEST
      (3) 026256 104410          TRAP C#ESCAPE
      (3) 026260 000416          .WORD L10072-.
6980 026262 005037 002376
6981 026266 005037 002360
6982
6983
6984 026272 012777 000144 153766
6985
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-7
 CVDPVC.P11 16-AUG-84 14:18 TEST 13 - MODEM STATUS INTERRUPT

```

(1)
(1)
7013 026426 005737 002360      TST      MCFLAG      ;*****
7014 026432 001015      BNE      20$          ;WAS AN INTERRUPT RECEIVED?
7015 026434      ERRDF    66,EMG24,ERRG2 ;IF YES - CHECK FOR MULTIPLE INTERRUPTS.
(4) 026434 104455      TRAP     C$ERRDF
(5) 026436 000102      .WORD   66
(5) 026440 014661      .WORD   EMG24
(5) 026442 006700      .WORD   ERRG2
7016 026444      PRINTB  #FMG26
(7) 026444 012746 012715      MOV     #FMG26,-(SP)
(6) 026450 012746 000001      MOV     #1,-(SP)
(3) 026454 010600      MOV     SP,R0
(4) 026456 104414      TRAP   C$PNTB
(4) 026460 062706 000004      ADD     #4,SP
7017 026464 000410      BR      30$
7018 026466
7019 026466 022737 000001 002360 20$:    CMP     #1,MCFLAG      ;WAS ONLY 1 RECEIVED?
7020 026474 001404      BEQ     30$          ;IF YES - OK
7021 026476      ERRDF    67,EMG40      ;REPORT MULTIPLE INTERRUPTS
(4) 026476 104455      TRAP     C$ERRDF
(5) 026500 000103      .WORD   67
(5) 026502 015321      .WORD   EMG40
(5) 026504 000000      .WORD   0
7022 026506      30$:
7023
7024 026506      ENDSUB
(3) 026506
(3) 026506 104403      L10077: TRAP   C$ESUB
7025
7026
7027 026510      BGNSUB
(3) 026510
(3) 026510 104402      T13.6: TRAP   C$BSUB
7028 026512      CALL    #RESET      ;RESET THE DPV
7029 026516      ESCAPE  TST          ;IF ERROR, EXIT THE TEST
(3) 026516 104410      TRAP     C$ESCAPE
(3) 026520 000156      .WORD   L10072-.
7030 026522 005037 002376      CLR     RFLAG
7031 026526 005037 002360      CLR     MCFLAG      ;CLEAR THE FLAG USED IN THE ISR
;CLEAR MODEM CONTROL FLAG.
7032
7033      ;ENABLE INTERRUPTS AND SET LL.
7034 026532 012777 000150 153526      MOV     #RXITEN!DSITEN!LL,#RXCSR
7035
7036 026540      10$:
7037 026540      $DELAY 10          ;WAIT 1 MS
(1)
(1)
(1) 026540 004737 006604      JSR     PC,$DLAY      ;***** MACRO EXPANSION *****
(1) 026544 000010      .WORD  10          ;CALL DELAY SUBROUTINE
;NUMBER OF DELAY LOOPS
;*****
(1)
(1) 026546 005737 002360      TST     MCFLAG      ;WAS AN INTERRUPT RECEIVED?
7039 026552 001025      BNE     20$          ;IF YES - CHECK FOR MULTIPLE INTERRUPTS.
7040 026554      ERRDF    68,EMG24,ERRG2
(4) 026554 104455      TRAP     C$ERRDF
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-9
 CVDPVC.P11 16-AUG-84 14:18

TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS

```

7066 .SBTTL TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS
7067
7068 ;*****
7069 ;* TEST 14 - DPV-11
7070 ;* RECEIVE AND MODEM STATUS INTERRUPTS
7071 ;* CHANGE THE MODEM STATUS WHILE HANDLING A RECEIVE INTERRUPT.
7072 ;* ENSURE THAT THE MODEM STATUS INTERRUPT IS RECEIVED.
7073 ;* SUBTEST 1 - CHANGE RTS DURING THE RECEIVE INTERRUPT. ENSURE THAT
7074 ;* THE DATA SET INTERRUPT WAS RECEIVED.
7075 ;* SUBTEST 2 - CHANGE DTR DURING THE RECEIVE INTERRUPT. ENSURE THAT
7076 ;* THE DATA SET INTERRUPT WAS RECEIVED.
7077 ;* SUBTEST 3 - CHANGE LL DURING THE RECEIVE INTERRUPT. ENSURE THAT
7078 ;* THE DATA SET INTERRUPT WAS RECEIVED.
7079 ;*
7080 ;*****
7081 BGNTST
7082 (3) 026700
7083 026700 CALL $TURN T14:: ;CHECK THE TURNAROUND.
7084 026704 103002 BCC 1$ ;PROCEED, IF TURNAROUND ON.
7085 026706 104432 EXIT TST ;IF NO TURNAROUND, EXIT.
7086 (3) 026706 104432 TRAP C$EXIT
7087 (3) 026710 001072 .WORD L10101-.
7088 026712
7089 (3) 026712
7090 (3) 026712 104402 T14.1: TRAP C$BSUB
7091 026714 CALL $RESET ;RESET THE DPV
7092 026720 ESCAPE TST ;IF ERROR, EXIT THE TEST
7093 (3) 026720 104410 TRAP C$ESCAPE
7094 (3) 026722 001060 .WORD L10101-.
7095 026724 005037 002424 CLR TFLAG ;CLEAR THE FLAGS USED IN THE ISRS.
7096 026730 005037 002376 CLR RFLAG
7097 026734 005037 002360 CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
7098 026740 012737 000004 002432 MOV $RTS,TOGGLE ;TOGGLE RTS
7099
7100 SETVEC RCVEC,$RINT,$PRI04
MOV $PRI04,-(SP)
MOV $RINT,-(SP)
MOV RCVEC,-(SP)
MOV $3,-(SP)
TRAP C$SVEC
ADD $10,SP
SETVEC XMTVEC,$XINT,$PRI04
MOV $PRI04,-(SP)
MOV $XINT,-(SP)
MOV XMTVEC,-(SP)
MOV $3,-(SP)
TRAP C$SVEC
ADD $10,SP
SETPRI $PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
MOV $PRI00,R0
TRAP C$SPRI
;THIS WILL ENABLE INTERRUPTS. FOR 11/23
;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
;LEVEL 4-7.
;SET UP INTERRUPT VECTOR
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-10
 CVDPVC.P11 16-AUG-84 14:18 TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS

```

7101
7102
7103 027030 012777 043652 153232      MOV    #43652,@PCSR      ;SET BCP MODE, NO ERROR AND SYNCH CHARACTER.
7104 027036 012737 000002 002414      MOV    #2,START        ;# OF START CHARACTERS.
7105 027044 012777 000160 153214      MOV    @RXITEN!DSITEN!RXENA,@RXCSR ;ENABLE THE RECEIVER AND INT.
7106 027052 012777 000130 153212      MOV    @TXIE!TXENA!MM,@TXCSR ;ENABLE THE TRANSMITTER AND INT.
7107                                     ;SELECT THE MAINTENANCE LOOPBACK.
7108 027060 005001                                     CLR    R1                ;LOOP COUNTER
7109 027062                                     10$:
7110 027062 005737 002360      TST    MCFLAG           ;WAS A MODEM CHANGE INTERRUPT RECEIVED?
7111 027066 001017      BNE    20$             ;IF YES, EXIT.
7112 027070 005301      DEC    R1              ;DECREMENT COUNTER
7113 027072 001373
7114
7115 027074      ERRDF  70,EMG24,ERRG2
(4) 027074 104455                                     TRAP   C$ERDF
(5) 027076 000106                                     .WORD 70
(5) 027100 014661                                     .WORD EMG24
(5) 027102 006700                                     .WORD ERRG2
7116
7117 027104      PRINTB #FMG26 ;NOTIFY THAT INTERRUPT MAY BE DISABLED BY
(7) 027104 012746 012715      MOV    #FMG26,-(SP)
(6) 027110 012746 000001      MOV    #1,-(SP)
(3) 027114 010600      MOV    SP,R0
(4) 027116 104414      TRAP   C$PNTB
(4) 027120 062706 000004      ADD    #4,SP
7118                                     ;REMOVING THE WIRE WRAP.
7119 027124 000410      BR     30$
7120 027126                                     20$:
7121 027126 022737 000001 002360      CMP    #1,MCFLAG       ;WAS ONLY 1 RECEIVED?
7122 027134 001404      BEQ   30$             ;IF YES - OK
7123 027136      ERRDF  71,EMG40      ;REPORT MULTIPLE INTERRUPTS
(4) 027136 104455                                     TRAP   C$ERDF
(5) 027140 000107                                     .WORD 71
(5) 027142 015321                                     .WORD EMG40
(5) 027144 000000                                     .WORD 0
7124 027146                                     30$:
7125 027146      CALL  #RESET
7126 027152      SETPRI #PRI07        ;RESET THE DPV
(3) 027152 012700 000340      MOV    #PRI07,R0      ;SET THE PROCESSOR PRI TO 7
(3) 027156 104441      TRAP   C$SPRI
7127                                     ;(THIS WILL DISABLE INTERRUPTS)
7128 027160      CLRVEC RCVEC        ;RESTORE THE RECV. VECTOR
(3) 027160 013700 002262      MOV    RCVEC,R0
(3) 027164 104436      TRAP   C$CVEC
7129 027166      CLRVEC XMTVEC      ;RESTORE THE XMIT. VECTOR
(3) 027166 013700 002264      MOV    XMTVEC,R0
(3) 027172 104436      TRAP   C$CVEC
7130 027174      ESCAPE TST          ;IF ERROR, ESCAPE
(3) 027174 104410      TRAP   C$ESCAPE
(3) 027176 000604      .WORD L10101-.
7131
7132 027200      ENDSUB
(3) 027200                                     L10102:
(3) 027200 104403      TRAP   C$ESUB
7133
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-11
 CVDPVC.P11 16-AUG-84 14:18 TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS

```

7134 027202          BGNSUB
(3) 027202          T14.2: TRAP C#BSUB
(3) 027202 104402
7135 027204          CALL $RESET ;RESET THE DPV
7136 027210          ESCAPE TST ;IF ERROR, EXIT THE TEST
(3) 027210 104410          TRAP C#ESCAPE
(3) 027212 000570          .WORD L10101-.
7137 027214 005037 002424          CLR TFLAG ;CLEAR THE FLAGS USED IN THE ISRS.
7138 027220 005037 002376          CLR RFLAG
7139 027224 005037 002360          CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
7140 027230 012737 000002 002432          MOV #DTR,TOGGLE ;TOGGLE DTR.
7141
7142 027236          SETVEC RCVEC,#RINT,#PRI04
(7) 027236 012746 000200          MOV #PRI04,-(SP)
(6) 027242 012746 016602          MOV #RINT,-(SP)
(5) 027246 013746 002262          MOV RCVEC,-(SP)
(4) 027252 012746 000003          MOV #3,-(SP)
(3) 027256 104437          TRAP C#SVEC
(2) 027260 062706 000010          ADD #10,SP
7143 027264          SETVEC XMTVEC,#XINT,#PRI04
(7) 027264 012746 000200          MOV #PRI04,-(SP)
(6) 027270 012746 017232          MOV #XINT,-(SP)
(5) 027274 013746 002264          MOV XMTVEC,-(SP)
(4) 027300 012746 000003          MOV #3,-(SP)
(3) 027304 104437          TRAP C#SVEC
(2) 027306 062706 000010          ADD #10,SP
7144 027312          SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
(3) 027312 012700 000000          MOV #PRI00,R0
(3) 027316 104441          TRAP C#SPRI
7145
7146
7147
7148
7149
7150
7151 027320 012777 043652 152742          MOV #43652,#PCSR ;SET BCP MODE, NO ERROR AND SYNCH CHARACTER.
7152 027326 012737 000002 002414          MOV #2,START ;# OF START CHARACTERS.
7153 027334 012777 000160 152724          MOV #RXITEN!DSITEN!RXENA,#RXCSR ;ENABLE THE RECEIVER AND INT.
7154 027342 012777 000130 152722          MOV #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND INT.
7155
7156 027350 005001          CLR R1 ;SELECT THE MAINTENANCE LOOPBACK.
7157 027352          104: ;LOOP COUNTER
7158 027352 005737 002360          TST MCFLAG ;WAS A MODEM CHANGE INTERRUPT RECEIVED?
7159 027356 001017          BNE 204 ;IF YES, EXIT.
7160 027360 005301          DEC R1 ;DECREMENT COUNTER
7161 027362 001373          BNE 104
7162
7163 027364          ERRDF 72,EMG24,ERRG2
(4) 027364 104455          TRAP C#ERDF
(5) 027366 000110          .WORD 72
(5) 027370 014661          .WORD EMG24
(5) 027372 006700          .WORD ERRG2
7164
7165 027374          PRINTB #FMG26 ;NOTIFY THAT INTERRUPT MAY BE DISABLED BY
(7) 027374 012746 012715          MOV #FMG26,-(SP)
(6) 027400 012746 000001          MOV #1,-(SP)

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-12
 CVDPVC.P11 16-AUG-84 14:18 TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS

(3)	027404	010600						MOV	SP,RO
(4)	027406	104414						TRAP	C#PNTB
(4)	027410	062706	000004					ADD	#4,SP
7166									
7167	027414	000410							
7168	027416								
7169	027416	022737	000001	002360	20#:	CMP	#1,MCFLAG		;WAS ONLY 1 RECEIVED?
7170	027424	001404				BEQ	30#		;IF YES - OK
7171	027426					ERRDF	73,EMG40		;REPORT MULTIPLE INTERRUPTS
(4)	027426	104455						TRAP	C#ERDF
(5)	027430	000111						.WORD	73
(5)	027432	015321						.WORD	EMG40
(5)	027434	000000						.WORD	0
7172	027436				30#:				
7173	027436					CALL	#RESET		;RESET THE DPV
7174	027442					SETPRI	#PRI07		;SET THE PROCESSOR PRI TO 7
(3)	027442	012700	000340					MOV	#PRI07,RO
(3)	027446	104441						TRAP	C#SPRI
7175									
7176	027450					CLRVEC	RCVEC		;(THIS WILL DISABLE INTERRUPTS)
(3)	027450	013700	002262						;RESTORE THE RECV. VECTOR
(3)	027454	104436						MOV	RCVEC,RO
7177	027456					CLRVEC	XMTVEC		;RESTORE THE XMIT. VECTOR
(3)	027456	013700	002264					MOV	XMTVEC,RO
(3)	027462	104436						TRAP	C#CVEC
7178	027464					ESCAPE	TST		;IF ERROR, ESCAPE
(3)	027464	104410						TRAP	C#ESCAPE
(3)	027466	000314						.WORD	L10101-.
7179									
7180	027470				ENDSUB				
(3)	027470								
(3)	027470	104403						L10103:	TRAP
7181									C#ESUB
7182	027472				BGNSUB				
(3)	027472								
(3)	027472	104402						T14.3:	TRAP
7183	027474					CALL	#RESET		;RESET THE DPV
7184	027500					ESCAPE	TST		;IF ERROR, EXIT THE TEST
(3)	027500	104410						TRAP	C#ESCAPE
(3)	027502	000300						.WORD	L10101-.
7185	027504	005037	002424			CLR	TFLAG		;CLEAR THE FLAGS USED IN THE ISRS.
7186	027510	005037	002376			CLR	RFLAG		
7187	027514	005037	002360			CLR	MCFLAG		;CLEAR MODEM CONTROL FLAG.
7188	027520	012737	000010	002432		MOV	#LL,TOGGLE		;TOGGLE LL
7189									
7190	027526					SETVEC	RCVEC,#RINT,#PRI04		
(7)	027526	012746	000200					MOV	#PRI04,-(SP)
(6)	027532	012746	016602					MOV	#RINT,-(SP)
(5)	027536	013746	002262					MOV	RCVEC,-(SP)
(4)	027542	012746	000003					MOV	#3,-(SP)
(3)	027546	104437						TRAP	C#SVEC
(2)	027550	062706	000010					ADD	#10,SP
7191	027554					SETVEC	XMTVEC,#XINT,#PRI04		
(7)	027554	012746	000200					MOV	#PRI04,-(SP)
(6)	027560	012746	017232					MOV	#XINT,-(SP)
(5)	027564	013746	002264					MOV	XMTVEC,-(SP)

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 CVDPVC.P11 16-AUG-84 14:18 TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS

```

(4) 027570 012746 000003
(3) 027574 104437
(2) 027576 062706 000010
7192 027602 SETPRI #PRI00 ;SET PROCESSOR PRIORITY. FOR LSI 11/03
(3) 027602 012700 000000 MOV #3,-(SP)
(3) 027606 104441 TRAP C#SVEC
;THIS WILL ENABLE INTERRUPTS. FOR 11/23
;THIS WILL ALLOW ACKNOWLEDGMENT OF INTERRUPTS
;LEVEL 4-7.
;SET UP INTERRUPT VECTOR
7193
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7198
7199 027610 012777 043652 152452 MOV #43652,#PCSR ;SET BCP MODE, NO ERROR AND SYNCH CHARACTER.
7200 027616 012737 000002 002414 MOV #2,START ;# OF START CHARACTERS.
7201 027624 012777 000160 152434 MOV #RXITEN!DSITEN!RXENA,#RXCSR ;ENABLE THE RECEIVER AND INT.
7202 027632 012777 000130 152432 MOV #TXIE!TXENA!MM,#TXCSR ;ENABLE THE TRANSMITTER AND INT.
7203 ;SELECT THE MAINTENANCE LOOPBACK.
7204 027640 005001 CLR R1 ;LOOP COUNTER
7205 027642 104: TST MCFLAG ;WAS A MODEM CHANGE INTERRUPT RECEIVED?
7206 027642 005737 002360 BNE 204 ;IF YES, EXIT.
7207 027646 001027 DEC R1 ;DECREMENT COUNTER
7208 027650 005301 BNE 104
7209 027652 001373
7210
7211 027654 ERRDF 74,EMG24,ERRG2
(4) 027654 104455 TRAP C#ERDF
(5) 027656 000112 .WORD 74
(5) 027660 014661 .WORD EMG24
(5) 027662 006700 .WORD ERRG2
7212
7213 027664 PRINTB #FMG26 ;NOTIFY THAT INTERRUPT MAY BE DISABLED BY
(7) 027664 012746 012715 MOV #FMG26,-(SP)
(8) 027670 012746 000001 MOV #1,-(SP)
(3) 027674 010600 MOV SP,RO
(4) 027676 104414 TRAP C#PNTB
(4) 027700 062706 000004 ADD #4,SP
7214 ;REMOVING THE WIRE WRAP.
7215 027704 PRINTB #FMG29
(7) 027704 012746 013221 MOV #FMG29,-(SP)
(6) 027710 012746 000001 MOV #1,-(SP)
(3) 027714 010600 MOV SP,RO
(4) 027716 104414 TRAP C#PNTB
(4) 027720 062706 000004 ADD #4,SP
7216 027724 000410 BR 304
7217 027726 204:
7218 027726 022737 000001 002360 CMP #1,MCFLAG ;WAS ONLY 1 RECEIVED?
7219 027734 001404 BEQ 304 ;IF YES - OK
7220 027736 ERRDF 75,EMG40 ;REPORT MULTIPLE INTERRUPTS
(4) 027736 104455 TRAP C#ERDF
(5) 027740 000113 .WORD 75
(5) 027742 015321 .WORD EMG40
(5) 027744 000000 .WORD 0
7221 027746 304:
7222 027746 CALL #RESET ;RESET THE DPV
7223 027752 SETPRI #PRI07 ;SET THE PROCESSOR PRI TO 7
(3) 027752 012700 000340 MOV #PRI07,RO

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 27-14
 CVDPVC.P11 16-AUG-84 14:18 TEST 14 - RECEIVE AND MODEM STATUS INTERRUPTS

(3)	027756	104441				TRAP	C\$SPRI
7224							
7225	027760			CLRVEC	RCVEC		
(3)	027760	013700	002262				
(3)	027764	104436				MOV	RCVEC,RO
7226	027766			CLRVEC	XMTVEC	TRAP	C\$CVEC
(3)	027766	013700	002264				
(3)	027772	104436				MOV	XMTVEC,RO
7227	027774			ESCAPE	TST	TRAP	C\$ESCAPE
(3)	027774	104410					
(3)	027776	000004				.WORD	L10101-
7228							
7229	030000			ENDSUB			
(3)	030000						
(3)	030000	104403				L10104:	TRAP
7230							
7231	030002			ENDTST			
(3)	030002						
(3)	030002	104401				L10101:	TRAP
7232							

;(THIS WILL DISABLE INTERRUPTS)
 ;RESTORE THE RECV. VECTOR

;RESTORE THE XMIT. VECTOR

;IF ERROR, ESCAPE

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7255
7256
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7258 030004
(3) 030004
7259
7260 030004
(3) 030004
(3) 030004 104402
7261 030006
(3) 030006 104404
7262 030010
7263 030014
(3) 030014 104410
(3) 030016 000674
7264 030020 012737 100000 002362
7265 030026 012737 000000 002344
7266 030034 052737 010120 002344
7267 030042 012737 000001 002414
7268 030050 012737 000002 002336
7269 030056 012737 000003 002352
7270 030064 012737 000400 002434
7271 030072 012737 001000 002422
7272 030100 012737 002502 002470
7273 030106 012737 000012 002472
7274
7275 030114 013777 002344 152146
7276 030122 112737 000143 002342
7277
7278
7279 030130
7280 030134 012737 000001 002356
7281 030142 005037 002332
7282 030146
7283 030152
(3) 030152 104410

```
.SBTTL TEST 15 - SECONDARY & ALL PARTIES ADDRESSING
;*****
;* TEST 15 - DPV-11
;* SUBTEST 1 - SECONDARY ADDRESS
;* SEGMENT 1 - SELECT SECONDARY ADDRESS AND SEND THE CORRECT
;* ADDRESS. CHECK THE DATA IS PROPERLY RECEIVED.
;* SEGMENT 2 - SELECT SECONDARY ADDRESS AND SEND A MESSAGE WITHOUT
;* SENDING USING THE SECONDARY ADDRESS. CHECK THAT A
;* TIME OUT IS RECEIVED.
;*
;* SUBTEST 2 - ALL PARTIES ADDRESSING
;* SEGMENT 1 - SELECT ALL PARTIES AND SECONDARY ADDRESS. SEND A
;* MESSAGE USING THE ALL PARTIES ADDRESS. ENSURE THAT
;* THE MESSAGE IS CORRECTLY RECEIVED.
;* SEGMENT 2 - SELECT ALL PARTIES AND SECONDARY ADDRESS. SEND A
;* MESSAGE WITHOUT ALL PARTIES OR SECONDARY ADDRESS.
;* CHECK THAT A TIME OUT IS RECEIVED.
;* SEGMENT 3 - SELECT ALL PARTIES AND SECONDARY ADDRESS. SEND A
;* MESSAGE WITH A SECONDARY ADDRESS. CHECK THAT A
;* TIME OUT IS RECEIVED.
;*
;*****
BGNTST
;*****
T15::
BGNSUB
T15.1:
TRAP C#BSUB
BGNSEG
TRAP C#BSEG
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C#ESCAPE
;*****
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
BIS #SECADR!120,IPCSAR ;SECONDARY ADDRESS
MOV #1,START ;SEND 1 FLAG
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV #3,LENGTH ;CHARACTER LENGTH OF 3 BITS.
MOV #TSM,TSTART ;START OF MESSAGE.
MOV #TEOM,TEND ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #10.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
MOV IPCSAR,#PCRSAR ;SET UP PARAMETERS AND ADDRESS
MOVB #143,IPCR ;SET UP CHARACTER LENGTH
;
CALL #BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
CALL #DATA
;
ESCAPE TST ;IF ERROR - EXIT
TRAP C#ESCAPE
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-1
 CVDPVC.P11 16-AUG-84 14:18 TEST 15 - SECONDARY & ALL PARTIES ADDRESSING

```

(3) 030154 000536 .WORD L10105-.
7284
7285 030156 CALL $CHECK ;CHECK THAT THE DATA WAS CORRECT.
7286 030162 ESCAPE TST ;IF ERROR - EXIT
(3) 030162 104410 TRAP C$ESCAPE
(3) 030164 000526 .WORD L10105-.
7287 030166 ENDSEG
(3) 030166 10000$: TRAP C$ESEG
(3) 030166 104405
7288
7289 030170 BGNSEG
(3) 030170 104404 TRAP C$BSEG
7290 030172 CALL $RESET ;RESET THE DPV
7291 030176 ESCAPE TST ;IF ERROR, BR TO THE END.
(3) 030176 104410 TRAP C$ESCAPE
(3) 030200 000512 .WORD L10105-.
7292 030202 012737 000001 002414 MOV #1,START ;SEND 1 FLAG
7293 030210 012737 000002 002336 MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
7294
7295 030216 013777 002344 152044 MOV IPCSAR,$PC$AR ;SET UP PARAMETERS AND ADDRESS
7296 030224 112737 000143 002342 MOV#B #143,IPCR ;SET UP CHARACTER LENGTH
7297
7298 030232 012737 000001 002430 MOV #1,TIMER ;CHANGE TIMEOUT VALUE
7299 030240 012737 000001 002332 MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN $DATA
7300 030246 105037 002674 CLR#B XMTBUF ;CLEAR SECONDARY ADDRESS FROM XMIT BUFFER.
7301 030252 CALL $DATA ;
7302 030256 013737 002412 002430 MOV SAVTIM,TIMER ;RESTORE THE TIMER
7303 030264 005737 002426 TST TIMEO ;DID THE RECEIVER TIME OUT?
7304 030270 001004 BNE 1$ ;IF YES - OK.
7305 030272 ERRDF 76,EMG35
(4) 030272 104455 TRAP C$ERDF
(5) 030274 000114 .WORD 76
(5) 030276 015135 .WORD EMG35
(5) 030300 000000 .WORD 0
7306 030302 1$:
7307 030302 ENDSEG
(3) 030302 10001$: TRAP C$ESEG
(3) 030302 104405
7308 030304 ENDSUB
(3) 030304 L10106: TRAP C$ESUB
(3) 030304 104403
7309
7310
7311 030306 BGNSUB
(3) 030306 T15.2: TRAP C$BSUB
(3) 030306 104402
7312 030310 BGNSEG
(3) 030310 104404 TRAP C$BSEG
7313 030312 CALL $RESET ;RESET THE DPV
7314 030316 ESCAPE TST ;IF ERROR, BR TO THE END.
(3) 030316 104410 TRAP C$ESCAPE
(3) 030320 000372 .WORD L10105-.
7315 030322 012737 100000 002362 MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
7316 030330 012737 000400 002344 MOV #CCITTO,IPCSAR ;SET CRC-CCITT PRESET TO ZERO
7317 030336 052737 110231 002344 BIS #APA!SECADR!231,IPCSAR ;ALL PARTIES ADDRESS AND
7318 ;SECONDARY ADDRESS

```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-2
 CVDPVC.P11 16-AUG-84 14:18 TEST 15 - SECONDARY & ALL PARTIES ADDRESSING

7319	030344	012737	000001	002414	MOV	#1,START	;SEND 1 FLAG		
7320	030352	012737	000002	002336	MOV	#2,HEADER	;SEND 2 HEADER CHARACTERS		
7321	030360	012737	000004	002352	MOV	#4,LENGTH	;CHARACTER LENGTH OF 5 BITS.		
7322	030366	012737	000400	002434	MOV	#TSM,TSTART	;START OF MESSAGE.		
7323	030374	012737	001000	002422	MOV	#TEOM,TEND	;END OF MESSAGE		
7324	030402	012737	002502	002470	MOV	##CCITT,XTYPE	;USE CCITT DATA PATTERN		
7325	030410	012737	000012	002472	MOV	#10.,XCOUNT	;# OF CHARACTERS TO TRANSMIT		
7326									
7327	030416	013777	002344	151644	MOV	IPCSAR,#PCSAR	;SET UP PARAMETERS AND ADDRESS		
7328	030424	112737	000204	002342	MOVB	#204,IPCR	;SET UP CHARACTER LENGTH		
7329									
7330									
7331	030432				CALL	#BUFRS	;SET UP TRANSMIT AND RECEIVE BUFFERS.		
7332	030436	012737	000001	002356	MOV	#1,MAINT	;FLAG TO USE MAINTENANCE MODE LOOPBACK.		
7333	030444	005037	002332		CLR	EXERR	;FLAG THAT NO ERRORS ARE EXPECTED IN #DATA		
7334	030450				CALL	#DATA			
7335	030454				ESCAPE	TST	;IF ERROR - EXIT		
(3)	030454	104410						TRAP	C#ESCAPE
(3)	030456	000234						.WORD	L10105-.
7336									
7337	030460				CALL	#CHECK	;CHECK THAT THE DATA WAS CORRECT.		
7338	030464				ESCAPE	TST	;IF ERROR - EXIT		
(3)	030464	104410						TRAP	C#ESCAPE
(3)	030466	000224						.WORD	L10105-.
7339	030470				ENDSEG				
(3)	030470							10000#:	
(3)	030470	104405						TRAP	C#ESEG
7340									
7341	030472				BGNSEG				
(3)	030472	104404						TRAP	C#BSEG
7342	030474				CALL	#RESET	;RESET THE DPV		
7343	030500				ESCAPE	TST	;IF ERROR, BR TO THE END.		
(3)	030500	104410						TRAP	C#ESCAPE
(3)	030502	000210						.WORD	L10105-.
7344	030504	012737	000001	002414	MOV	#1,START	;SEND 1 FLAG		
7345	030512	012737	000002	002336	MOV	#2,HEADER	;SEND 2 HEADER CHARACTERS		
7346									
7347	030520	013777	002344	151542	MOV	IPCSAR,#PCSAR	;SET UP PARAMETERS AND ADDRESS		
7348	030526	112737	000204	002342	MOVB	#204,IPCR	;SET UP CHARACTER LENGTH		
7349									
7350	030534	012737	000001	002430	MOV	#1,TIMER	;CHANGE TIME OUT VALUE		
7351	030542	012737	000001	002332	MOV	#1,EXERR	;FLAG THAT AN ERROR IS EXPECTED IN #DATA		
7352	030550	105037	002674		CLRB	XMTBUF	;CLEAR SECONDARY ADDRESS FROM XMIT BUFFER.		
7353	030554				CALL	#DATA			
7354	030560	013737	002412	002430	MOV	SAVTIM,TIMER	;RESTORE THE TIME OUT VALUE.		
7355	030566	005737	002426		TST	TIMEO	;DID THE RECEIVER TIME OUT?		
7356	030572	001006			BNE	#	;IF YES - OK.		
7357	030574				ERRDF	77,EMG35			
(4)	030574	104455						TRAP	C#ERDF
(5)	030576	000115						.WORD	77
(5)	030600	015135						.WORD	EMG35
(5)	030602	000000						.WORD	0
7358	030604				ESCAPE	TST			
(3)	030604	104410						TRAP	C#ESCAPE
(3)	030606	000104						.WORD	L10105-.
7359	030610								

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-3
 CVDPVC.P11 16-AUG-84 14:18 TEST 15 - SECONDARY & ALL PARTIES ADDRESSING

```

7360 030610          ENDSEG
(3) 030610          10001$: TRAP C#ESEG
(3) 030610 104405
7361
7362 030612          BGNSEG
(3) 030612 104404          TRAP C#BSEG
7363 030614          CALL #RESET ;RESET THE DPV
7364 030620          ESCAPE TST ;IF ERROR, BR TO THE END.
(3) 030620 104410          TRAP C#ESCAPE
(3) 030622 000070          .WORD L10105-.
7365 030624 012737 000001 002414 MOV #1,START ;SEND 1 FLAG
7366 030632 012737 000002 002336 MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
7367
7368 030640 013777 002344 151422 MOV IPCSAR,@PC SAR ;SET UP PARAMETERS AND ADDRESS
7369 030646 112737 000204 002342 MOVB #204,IPCR ;SET UP CHARACTER LENGTH
7370
7371 030654 112737 000231 002674 MOVB #231,XMTBUF ;CHANGE FIRST XMIT CHARACTER.
7372 030662 005037 002332 CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
7373 030666          CALL #DATA
7374 030672          ESCAPE TST ;IF ERROR - EXIT
(3) 030672 104410          TRAP C#ESCAPE
(3) 030674 000016          .WORD L10105-.
7375
7376 030676          CALL #CHECK ;CHECK THAT THE DATA WAS CORRECT.
7377 030702          ESCAPE TST ;IF ERROR - EXIT
(3) 030702 104410          TRAP C#ESCAPE
(3) 030704 000006          .WORD L10105-.
7378 030706          ENDSEG
(3) 030706          10002$: TRAP C#ESEG
(3) 030706 104405
7379 030710          ENDSUB
(3) 030710          L10107: TRAP C#ESUB
(3) 030710 104403
7380
7381
7382 030712          ENDTST
(3) 030712          L10105: TRAP C#ETST
(3) 030712 104401
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-4
CVDPVC.P11 16-AUG-84 14:18 TEST 16 - ABORT TEST

7384
7385
7386
7387
7388
7389
7390
7391
7392
7393
7394
7395
7396
7397
7398
7399

```
.SBTTL TEST 16 - ABORT TEST
;*****
;* TEST 16 - DPV-11
;* ABORT TEST
;* SUBTEST 1 - ABORT WITH IDLE CLEAR. ABORT CHARACTERS TRANSMITTED WHEN
;* THE ABORT BIT IS ASSERTED.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1,
;* 5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;* SUBTEST 2 - ABORT WITH IDLE SET. FLAGS TRANSMITTED WHEN THE ABORT BIT
;* IS ASSERTED.
;* SELECTED OPTIONS: BOP MODE, NO ERROR CHECKING, IDLE SET,
;* 5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*****
```

7400 030714
(3) 030714
7401 030714
(3) 030714
(3) 030714 104402
7402 030716
7403 030722
(3) 030722 104410
(3) 030724 000312
7404 030726 012737 100000 002362
7405 030734 012737 000000 002344
7406 030742 012737 000001 002414
7407 030750 012737 000002 002336
7408 030756 012737 000005 002352
7409 030764 012737 000400 002434
7410 030772 012737 002000 002422
7411 031000 012737 002502 002470
7412 031006 012737 000014 002472
7413
7414 031014 013777 002344 151246
7415 031022 112737 000245 002342
7416
7417
7418 031030
7419 031034 012737 000001 002356
7420 031042 012737 000001 002332
7421 031050
7422 031054 032737 002000 002350
7423 031062 001004
7424 031064
(4) 031064 104455
(5) 031066 000116
(5) 031070 015023
(5) 031072 000000
7425 031074
7426 031074
(3) 031074
(3) 031074 104403
7427
7428 031076

```
BGNTST
BGNSUB
T16::
T16.1: TRAP C#BSUB
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END. TRAP C#ESCAPE
;WORD L10110-.
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
MOV #1,START ;SEND 1 FLAG
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV #5,LENGTH ;CHARACTER LENGTH OF 5 BITS.
MOV #TSM,TSTART ;START OF MESSAGE.
MOV #TXABO,TENC ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #12,,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
MOV IPCSAR,#PCRSAR ;SET UP PARAMETERS AND ADDRESS
MOVB #245,IPCR ;SET UP CHARACTER LENGTH
;
CALL #BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN #DATA
CALL #DATA
BIT #RABORT,IRDSR ;WAS AN ABORT RECEIVED?
BNE 201 ;IF YES - OK.
ERRDF 78,EMG32 ;ABORT NOT RECEIVED.
TRAP C#ERDF
;WORD 78
;WORD EMG32
;WORD 0
201:
ENDSUB
L10111: TRAP C#ESUB
BGNSUB
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-5
 CVDPVC.P11 16-AUG-84 14:18 TEST 16 - ABORT TEST

```

(3) 031076
(3) 031076 104402
7429 031100
7430 031104
(3) 031104 104410
(3) 031106 000150
7431 031110 012737 001000 002344
7432 031116 052737 004000 002344
7433 031124 012737 000001 002414
7434 031132 012737 000002 002336
7435 031140 012737 002502 002470
7436 031146 012737 000014 002472
7437
7438 031154 013777 002344 151106
7439 031162 112737 000245 002342
7440
7441
7442 031170
7443 031174 012737 000001 002356
7444 031202 012737 000001 002332
7445 031210
7446 031214 032737 002000 002350
7447 031222 001404
7448 031224
(4) 031224 104455
(5) 031226 000117
(5) 031230 015046
(5) 031232 000000
7449 031234
7450 031234
(3) 031234
(3) 031234 104403
7451
7452 031236
(3) 031236
(3) 031236 104401
    
```

```

T16.2:
TRAP C#BSUB
;RESET THE DPV
;IF ERROR, BR TO THE END.
TRAP C#ESCAPE
.WORD L10110-.
MOV #NONE1,IPCSAR ;NO ERROR CHECKING.
BIS #IDLE,IPCSAR ;SET THE IDLE BIT.
MOV #1,START ;SEND 1 FLAG
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV #%CCITT,XYPE ;USE CCITT DATA PATTERN
MOV #12.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
MOV IPCSAR,BPCSAR ;SET UP PARAMETERS AND ADDRESS
MOVB #245,IPCR ;SET UP CHARACTER LENGTH
;
CALL #BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN #DATA
CALL #DATA ;
BIT #RABORT,IRDSR ;WAS AN ABORT RECEIVED?
BEQ 20# ;IF NOT - OK.
ERDF 79,EMG33 ;ABORT NOT RECEIVED.
    
```

```

20#:
ENDSUB
ENDTST
L10112:
TRAP C#ESUB
L10110:
TRAP C#ETST
    
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-6
CVDPVC.P11 16-AUG-84 14:18 TEST 17 - EXTENDED CONTROL AND ADDRESSING

.SBTTL TEST 17 - EXTENDED CONTROL AND ADDRESSING

```
*****
;* TEST 17 - DPV-11
;* EXTENDED CONTROL AND ADDRESSING TEST
;* CHECK THAT THE RECEIVER CAN RECOGNIZE EXTENDED ADDRESSING AND CONTROL
;* CHARACTERS.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1,
;* 3 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK,
;* EXTENDED CONTROL AND ADDRESSING SELECTED
*****
BGNTST
```

T17::

7454
7455
7456
7457
7458
7459
7460
7461
7462
7463
7464
7465
7466
7467
7468
7469
7470
7471
7472
7473
7474
7475
7476
7477
7478
7479
7480
7481
7482
7483
7484
7485
7486
7487
7488
7489
7490
7491
7492
7493
7494
7495
7496
7497
7498

031240
(3) 031240
031240
(3) 031244 104410
(3) 031246 000142
031250 012737 100000 002362
031256 012737 000000 002344
031264 012737 000001 002414
031272 012737 000004 002336
031300 012737 000003 002352
031306 012737 000400 002434
031314 012737 001000 002422
031322 012737 002502 002470
031330 012737 000100 002472
031336 013777 002344 150724
031344 112737 000173 002342
031352 112777 000030 150722
031360
031364 012737 000001 002356
031372 005037 002332
031376
031402 103402
031404
031410
031410
(3) 031410
(3) 031410 104401

```
CALL $RESET          ;RESET THE DPV
ESCAPE TST           ;IF ERROR, BR TO THE END.
                                TRAP C$ESCAPE
                                .WORD L10113-.
MOV $BOP,MODE        ;FLAG THAT WE ARE IN BOP MODE.
MOV $CCITT1,IPCSAR   ;SET CRC-CCITT PRESET TO ONE
MOV $1,START         ;SEND 1 FLAG
MOV $4,HEADER        ;SEND 2 HEADER CHARACTERS
MOV $3,LENGTH        ;CHARACTER LENGTH OF 3 BITS.
MOV $TSOM,TSTART     ;START OF MESSAGE.
MOV $TEOM,TEND       ;END OF MESSAGE
MOV $CCITT,XTYPE     ;USE CCITT DATA PATTERN
MOV $64.,XCOUNT      ;# OF CHARACTERS TO TRANSMIT
;
MOV IPCSAR,$PCSR     ;SET UP PARAMETERS AND ADDRESS
MOVB $173,IPCR       ;SET UP CHARACTER LENGTH AND EXTENDED
;ADDRESS AND CONTROL BITS.
MOVB $30,$PCR        ;SET THE EXTENDED ADDRESS AND CONTROL BITS.
;
CALL $BUFERS         ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV $1,MAINT         ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
CLR EXERR            ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
CALL $DATA           ;
BCS 20$             ;IF ERROR SKIP DATA CHECK.
;
CALL $CHECK          ;CHECK THAT THE DATA WAS CORRECT.
```

20\$:

ENDTST

L10113: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-7
CVDPVC.P11 16-AUG-84 14:18 TEST 18 - TRANSMIT GO AHEAD

7500
7501
7502
7503
7504
7505
7506
7507
7508
7509
7510
7511
(3)
7512
7513
7514
(3)
(3)
7515
7516
7517
7518
7519
7520
7521
7522
7523
7524
7525
7526
7527
7528
7529
7530
7531
7532
7533
7534
7535
7536
7537
(3)
(3)
7538
7539
7540
7541
7542
7543

031412
031412
031412
031416
031416 104410
031420 000200
031422 012737 100000 002362
031430 012737 000000 002344
031436 052737 020000 002344
031444 012737 000001 002414
031452 012737 000002 002336
031460 012737 000005 002352
031466 012737 000400 002434
031474 012737 005000 002422
031502 012737 002502 002470
031510 012737 000012 002472
031516 013777 002344 150544
031524 112737 000245 002342
031532
031536 012737 000001 002356
031544 012737 000001 002332
031552
031556 103420
031560
031564
031564 104410
031566 000032
031570 032737 001000 002350
031576 001404
031600 032737 002000 002350
031606 001004
031610

.SBTTL TEST 18 - TRANSMIT GO AHEAD
;*****
;* TEST 18 - DPV-11
;* TRANSMIT GO AHEAD
;* TERMINATE A MESSAGE USING TRANSMIT GO AHEAD. CHECK THAT THE RECEIVE
;* ABORT BIT IS SET WHEN THE END OF MESSAGE IS RECEIVED.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1, LOOP SET,
;* 5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;*****
BGNTST

T18::
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END. TRAP C\$ESCAPE
;WORD L10114-.
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
BIS #LOOP,IPCSAR ;SET LOOP MODE TO RECOGNIZE GO AHEAD
MOV #1,START ;SEND 1 FLAG
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV #5,LENGTH ;CHARACTER LENGTH OF 5 BITS.
MOV #TSM,TSTART ;START OF MESSAGE.
MOV #TGA!TEOM,TEND ;TRANSMIT GO AHEAD AT THE END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #10.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;SET UP PARAMETERS AND ADDRESS
MOVB IPCSAR,#PCRSAR ;SET UP CHARACTER LENGTH
;SET UP TRANSMIT AND RECEIVE BUFFERS.
CALL \$BUFRS ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
MOV #1,MAINT ;FLAG THAT AN ERROR IS EXPECTED IN \$DATA
MOV #1,EXERR ;IF ERROR SKIP DATA CHECK.
CALL \$DATA
BCS 20#
;CHECK THAT THE DATA WAS CORRECT.
CALL \$CHECK ;IF ERROR - EXIT TRAP C\$ESCAPE
ESCAPE TST ;WORD L10114-.
BIT #REOM,IRDSR ;WAS END OF MESSAGE RECEIVED?
BEQ 10# ;IF NOT ERROR
BIT #RABORT,IRDSR ;WAS AN GO AHEAD RECEIVED?
BNE 20# ;IF YES - OK.
10#:

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-8
CVDPVC.P11 16-AUG-84 14:18 TEST 18 - TRANSMIT GO AHEAD

7544 031610
(4) 031610 104455
(5) 031612 000120
(5) 031614 015046
(5) 031616 000000
7545 031620
7546
7547
7548 031620
(3) 031620
(3) 031620 104401
7549
7550

ERRDF 80,EMG33 ;GO AHEAD NOT RECEIVED

TRAP C#ERDF
.WORD 80
.WORD EMG33
.WORD 0

204:

ENDTST

L10114:

TRAP C#ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-9
 CVDPVC.P11 16-AUG-84 14:18 TEST 19 - ASSEMBLED BIT COUNT

7552
7553
7554
7555
7556
7557
7558
7559
7560
7561
7562
7563
7564
(3)
7565
7566
7567
7568
7569
7570
7571
7572
7573
7574
7575
7576
7577
7578
7579
(3)
(3)
7580
7581
7582
7583
7584
7585
7586
7587
7588
7589
7590
(3)
(3)
7591
7592
7593
7594
7595
7596
7597
(4)
(5)
(5)
(5)
7598

031622
031622
031622 012737 100000 002362
031630 012737 003400 002344
031636 012737 000007 002352
031644 012737 000400 002434
031652 012737 001000 002422
031660 012737 002502 002470
031666 012737 000001 002472
031674
031700 012737 000001 002352
031706
031712
(3) 031712 104410
(3) 031714 000132
031716 012737 000001 002414
031724 012737 000002 002336
031732 013777 002344 150330
031740 013701 002352
031744 116137 032050 002342
7585
7586
031752 012737 000001 002356
031760 012737 000001 002332
031766
031772
(3) 031772 104410
(3) 031774 000052
7591
7592
031776 013701 002352
032002 142737 000217 002351
032010 126137 032061 002351
032016 001405
032020
(4) 032020 104455
(5) 032022 000121
(5) 032024 015174
(5) 032026 000000
032030 000406

```
.SBTTL TEST 19 - ASSEMBLED BIT COUNT
;*****
;* TEST 19 - DPV-11
;* ASSEMBLED BIT COUNT
;* TRANSMIT VARIOUS BIT LENGTHS WHILE RECEIVING AN 8 BIT CHARACTER.
;* ENSURE THAT THE ASSEMBLED BIT COUNT (ABC) IS CORRECT UPON THE END
;* OF MESSAGE.
;* SELECTED OPTIONS: BOP MODE, NO ERROR CHECKING, VARIOUS BIT
;* LENGTH CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;*****
BGNTST
;*****
T19::
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV #NOERR,IPCSAR ;NO ERROR CHECKING
MOV #7,LENGTH ;CHARACTER LENGTH.
MOV #TSOM,TSTART ;START OF MESSAGE.
MOV #TEOM,TEND ;ABORT MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #1,XCOUNT ;# OF CHARACTERS TO TRANSMIT
CALL #BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,LENGTH ;CHANGE THE LENGTH
;
CALL $RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
;
;*****
TRAP C$ESCAPE
.WORD L10115-.
MOV #1,START ;SEND 1 FLAG
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV IPCSAR,#PCARSAR ;SET UP PARAMETERS AND ADDRESS
MOV LENGTH,R1 ;GET CHARACTER LENGTH
MOVB CHLEN(R1),IPCR ;SET UP CHARACTER LENGTH.
;
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN $DATA
CALL $DATA ;
ESCAPE TST ;IF ERROR - EXIT
;
;*****
TRAP C$ESCAPE
.WORD L10115-.
MOV LENGTH,R1 ;GET CHARACTER LENGTH
BICB #217,IRDSR+1 ;CLEAR ALL BUT ABC FROM LAST RDSR.
CMPB ABC(R1),IRDSR+1 ;IS THE ABC THE EXPECTED VALUE?
BEQ 10$
ERRDF 81,EMG36
;
;*****
TRAP C$ERRDF
.WORD 81
.WORD EMG36
.WORD 0
BR 20$
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-10
CVDPVC.P11 16-AUG-84 14:18 TEST 19 - ASSEMBLED BIT COUNT

7599 032032 104: INC LENGTH ;THE NEXT CHARACTER LENGTH
7600 032032 005237 002352 CMP #9.,LENGTH ;8 BITS?
7601 032036 022737 000011 002352 BNE 74 ;IF NOT - CONTINUE
7602 032044 001320

7603
7604 032046 204:
7605
7606

7607 032046 ENDTST
(3) 032046
(3) 032046 104401

L10115: TRAP C4ETST

7608
7609 032050 000 040 100 CHLEN: .BYTE 0,40,100,140,200,240,300,340,0
032053 140 200 240
032056 300 340 000

7610 032061 000 020 040 ABC: .BYTE 0,20,40,60,100,120,140,160,0
032064 060 100 120
032067 140 160 000

7611 .EVEN
7612

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-11
CVDPVC.P11 16-AUG-84 14:18 TEST 20 - SPECIAL SPACE SEQUENCING

7614
7615
7616
7617
7618
7619
7620
7621
7622
7623
7624
7625
7626
7627
7628 032072
(3) 032072
7629
7630 032072
7631 032076
(3) 032076 104410
(3) 032100 000136
7632 032102 012737 100000 002362
7633 032110 012737 000000 002344
7634 032116 012737 000002 002414
7635 032124 012737 000002 002336
7636 032132 012737 000005 002352
7637 032140 012737 000003 002434
7638 032146 012737 001000 002422
7639 032154 012737 002502 002470
7640 032162 012737 000100 002472
7641
7642 032170 013777 002344 150072
7643 032176 112737 000245 002342
7644
7645
7646 032204
7647 032210 012737 000001 002356
7648 032216 005037 002332
7649 032222
7650 032226
(3) 032226 104410
(3) 032230 000006
7651
7652 032232
7653 032236
7654
7655
7656 032236
(3) 032236
(3) 032236 104401
7657
7658
7659

.SBTTL TEST 20 - SPECIAL SPACE SEQUENCING

;* TEST 20 - DPV-11
;* SPECIAL SPACE SEQUENCE
;* START A MESSAGE USING A SPECIAL SPACE SEQUENCE. CHECK THAT THE
;* MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
;* NOTE: CERTAIN USYNRTS ONLY TRANSMIT A SPECIAL START SEQUENCE WHEN
;* TRANSMIT START AND END OF MESSAGE ARE SET BY A BYTE OPERATION.
;*
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1,
;* 5 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*

BGNTST

T20::

CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END. TRAP C#ESCAPE
;WORD L10116-.
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
MOV #2,START ;SEND 1 FLAG
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV #5,LENGTH ;CHARACTER LENGTH OF 5 BITS.
MOV #3,TSTART ;SET TSOH AND TEOM IN BYTE MODE.
MOV #TEOM,TEND ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
; SET UP PARAMETERS AND ADDRESS
MOV IPCSAR,#PCRSAR ;SET UP CHARACTER LENGTH
MOVB #245,IPCR
CALL #BUFERS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN #DATA
CALL #DATA
ESCAPE TST ;IF ERROR, ESCAPE TEST TRAP C#ESCAPE
;WORD L10116-.
CALL #CHECK ;CHECK THAT THE DATA WAS CORRECT.

20#:

ENDTST

L10116: TRAP C#ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-12
CVDPVC.P11 16-AUG-84 14:18 TEST 21 - SYNCH CHARACTER

7661 .SBTTL TEST 21 - SYNCH CHARACTER
7662
7663 ;*****
7664 ;* TEST 21 - DPV-11
7665 ;* SYNCH CHARACTER
7666 ;* CHECK THAT A SYNCH CHARACTER OF 271 CAN BE USED TO COMMENCE A MESSAGE.
7667 ;* VERIFY THAT THE MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
7668 ;* SELECTED OPTIONS: BCP MODE, VRC-EVEN PARITY,
7669 ;* 7 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
7670 ;*
7671 ;*****
7672 BGNTST
(3) 032240
7673
7674 032240
7675 032244
(3) 032244 104410
(3) 032246 000154
7676 032250 005037 002362
7677 032254 012737 002400 002344
7678 032262 112737 000271 002344
7679 032270 052737 040000 002344
7680 032276 012737 000002 002414
7681 032304 012737 000001 002336
7682 032312 012737 000007 002352
7683 032320 012737 000400 002434
7684 032326 012737 001000 002422
7685 032334 012737 002502 002470
7686 032342 012737 000017 002472
7687
7688
7689 032350 112737 000347 002342
7690 032356 013777 002344 147704
7691 032364 113777 002342 147710
7692
7693
7694 032372
7695 032376 012737 000001 002356
7696 032404 005037 002332
7697 032410
7698 032414 103402
7699
7700 032416
7701 032422
7702
7703
7704 032422
(3) 032422
(3) 032422 104401
7705
7706
7707

TEST 21 - SYNCH CHARACTER
;*****
;* TEST 21 - DPV-11
;* SYNCH CHARACTER
;* CHECK THAT A SYNCH CHARACTER OF 271 CAN BE USED TO COMMENCE A MESSAGE.
;* VERIFY THAT THE MESSAGE IS CORRECTLY TRANSMITTED AND RECEIVED.
;* SELECTED OPTIONS: BCP MODE, VRC-EVEN PARITY,
;* 7 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*****
BGNTST
T21::
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C\$ESCAPE
.WORD L10117-.
CLR MODE ;FLAG THAT WE ARE IN BCP MODE.
MOV #VRC,IPCSAR ;SET VRC EVEN
MOVB #271,IPCSAR ;SYNCH CHARACTER
BIS #PROTO,IPCSAR ;SET BCP PROTOCOL
MOV #2,START ;SEND 2 FLAGS
MOV #1,HEADER ;SEND 1 HEADER CHARACTER
MOV #7,LENGTH ;CHARACTER LENGTH OF 7 BITS.
MOV #TSOM,TSTART ;START OF MESSAGE.
MOV #TEOM,TEND ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #15.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
MOVB #347,IPCR ;CHARACTER LENGTH
MOV IPCSAR,#PCRSAR ;SET UP PARAMETERS AND ADDRESS
MOVB IPCR,#PCR ;SET UP CHARACTER LENGTH
;
CALL \$BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN \$DATA
CALL \$DATA
BCS 20\$;IF ERROR SKIP DATA CHECK.
;
CALL \$CHECK ;CHECK THAT THE DATA WAS CORRECT.
20\$:
ENDTST
L10117: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 28-15
 CVDPVC.P11 16-AUG-84 14:18 TEST 24 - CRC-CCITT PRESET TO ONES

```

7804 .SBTTL TEST 24 - CRC-CCITT PRESET TO ONES
7805
7806 ;*****
7807 ;* TEST 24 - DPV-11
7808 ;* CRC-CCITT PRESET TO ONES.
7809 ;* CHECK TO ENSURE THAT THE ERROR CHECK BIT (BIT 15 OF RDSR) IS
7810 ;* SET WHEN AN ABORT IS RECEIVED. IN BOP MODE THIS BIT IS SET WHEN THE
7811 ;* CRC IS IN ERROR. THE ERROR CHECK BIT SHOULD BE ZERO WHEN REOM=1.
7812 ;* IF THE CRC WERE CORRECTLY RECEIVED. BY FORCING AN ABORT WE INTENTIONALLY
7813 ;* LOOK AT THE ERROR BIT WHEN IT SHOULD BE IN AN ERROR STATE.
7814 ;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 1, LOOP SET,
7815 ;* 4 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
7816 ;*
7817 ;*****
7818 BGNTST
7819
7820 032774 CALL #RESET ;RESET THE DPV
7821 (3) 032774 ESCAPE TST ;IF ERROR, BR TO THE END.
7822 033000 104410 TRAP C#ESCAPE
7823 (3) 033002 000160 .WORD L10122-.
7824 033004 012737 100000 002362 MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
7825 033012 012737 000000 002344 MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
7826 033020 052737 020000 002344 BIS #LOOP,IPCSAR ;SET LOOP MODE TO RECOGNIZE GO AHEAD.
7827 033026 012737 000001 002414 MOV #1,START ;SEND 1 FLAG
7828 033034 012737 000002 002336 MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
7829 033042 012737 000004 002352 MOV #4,LENGTH ;CHARACTER LENGTH OF 5 BITS.
7830 033050 012737 000400 002434 MOV #TSM,TSTART ;START MESSAGE
7831 033056 012737 002000 002422 MOV #TXABO,TEND ;ABORT MESSAGE
7832 033064 012737 002502 002470 MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
7833 033072 012737 000100 002472 MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
7834 033100 013777 002344 147162 MOV IPCSAR,#PCRSAR ;SET UP PARAMETERS AND ADDRESS
7835 033106 112737 000204 002342 MOVB #204,IPCR ;SET UP CHARACTER LENGTH
7836
7837 033114 CALL #BUFERS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
7838 033120 012737 000001 002356 MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
7839 033126 012737 000001 002332 MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN $DATA
7840 033134 CALL #DATA
7841 033140 ESCAPE TST ;IF ERROR - EXIT TEST
7842 (3) 033140 104410 TRAP C#ESCAPE
7843 (3) 033142 000020 .WORD L10122-.
7844 033144 005737 002350 TST IRDSR ;IS THE ERR BIT SET
7845 033150 100404 BMI 20# ;IF YES - OK
7846 033152 ERDF 82,EMG38
7847 (4) 033152 104455 TRAP C#ERDF
7848 (5) 033154 000122 .WORD 82
7849 (5) 033156 015240 .WORD EMG38
7850 (5) 033160 000000 .WORD 0
7851 20# :
7852
7853 033162 ENDTST
7854 (3) 033162 L10122: TRAP C#ETST
7855 (3) 033162 104401
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7900
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29
CVDPVC.P11 16-AUG-84 14:18

TEST 25 - CRC-CCITT PRESET TO ZERO

.SBTTL TEST 25 - CRC-CCITT PRESET TO ZERO

7851
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7861
7862
7863
7864

```
*****  
;* TEST 25 - DPV-11  
;* CRC-CCITT PRESET TO ZERO.  
;* CHECK TO ENSURE THAT THE ERROR CHECK BIT (BIT 15 OF RDSR) IS  
;* SET WHEN AN ABORT IS RECEIVED. IN BOP MODE THIS BIT IS SET WHEN THE  
;* CRC IS IN ERROR. THE ERROR CHECK BIT SHOULD BE ZERO WHEN REOM=1,  
;* IF THE CRC WERE CORRECTLY RECEIVED. BY FORCING AN ABORT WE INTENTIONALLY  
;* LOOK AT THE ERROR BIT WHEN IT SHOULD BE IN AN ERROR STATE.  
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO 0, LOOP SET,  
;* 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.  
;*
```

7865 033164
(3) 033164

BGNTST

T25::

7866
7867

7868 033164
7869 033170

```
CALL #RESET ;RESET THE DPV  
ESCAPE TST ;IF ERROR, BR TO THE END.
```

TRAP C\$ESCAPE
.WORD L10123-.

(3) 033170 104410
(3) 033172 000156

7870 033174 012737 100000 002362

```
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
```

7871 033202 012737 000400 002344

```
MOV #CCITTO,IPCSAR ;SET CRC-CCITT PRESET TO ZERO
```

7872 033210 052737 020000 002344

```
BIS #LOOP,IPCSAR ;SET LOOP MODE TO RECOGNIZE GO AHEAD.
```

7873 033216 012737 000001 002414

```
MOV #1,START ;SEND 1 FLAG
```

7874 033224 012737 000002 002336

```
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
```

7875 033232 012737 000010 002352

```
MOV #8.,LENGTH ;CHARACTER LENGTH OF 8 BITS.
```

7876 033240 012737 000400 002434

```
MOV #TSOM,TSTART ;START MESSAGE
```

7877 033246 012737 002000 002422

```
MOV #TXABO,TEND ;ABORT MESSAGE
```

7878 033254 012737 002502 002470

```
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
```

7879 033262 012737 000100 002472

```
MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
```

7880
7881 033270 013777 002344 146772

```
MOV IPCSAR,#PCRSAR ;SET UP PARAMETERS AND ADDRESS
```

7882 033276 105037 002342

```
CLRB IPCR ;SET UP CHARACTER LENGTH
```

7883
7884

7885 033302

```
CALL #BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
```

7886 033306 012737 000001 002356

```
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
```

7887 033314 012737 000001 002332

```
MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN $DATA
```

7888 033322

```
CALL #DATA ;
```

7889 033326

```
ESCAPE TST ;IF ERROR - EXIT TEST
```

(3) 033326 104410

TRAP C\$ESCAPE
.WORD L10123-.

(3) 033330 000020

7890 033332 005737 002350

```
TST IRDSR ;IS THE ERR BIT SET
```

7891 033336 100404

```
BMI 20$ ;IF YES - OK
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-1
CVDPVC.P11 16-AUG-84 14:18 TEST 25 - CRC-CCITT PRESET TO ZERO

7892 033340
(4) 033340 104455
(5) 033342 000123
(5) 033344 015240
(5) 033346 000000
7893 033350
7894
7895
7896 033350
(3) 033350
(3) 033350 104401
7897

ERRDF 83,EMG38

TRAP C#ERDF
.WORD 83
.WORD EMG38
.WORD 0

201:

ENDTST

L10123:

TRAP C#ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-2
CVDPVC.P11 16-AUG-84 14:18 TEST 26 - CRC-16 PRESET TO 0

7899
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7901
7902
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7941
7942
7943
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033352
(3) 033352
033352 104402
033354
033360 104410
(3) 033362 000404
033364 005037 002362
033370 012737 001400 002344
033376 112737 000271 002344
033404 052737 040000 002344
033412 012737 000002 002414
033420 012737 000001 002336
033426 012737 000010 002352
033434 012737 000400 002434
033442 012737 001000 002422
033450 012737 002502 002470
033456 012737 000017 002472
033464 105037 002342
033470 013777 002344 146572
033476
033502 012737 000001 002356
033510 005037 002332
033514 005337 002474
033520
033524 104410
(3) 033526 000240
033530 005737 002350
033534 100004

.SBTTL TEST 26 - CRC-16 PRESET TO 0
;*****
;* TEST 26 - DPV-11
;* CRC-16 PRESET TO 0
;*
;* SUBTEST 1 - CRC-16 ERROR
;* CHECK TO ENSURE THAT THE ERROR CHECK BIT (BIT 15 OF RDSR) IS
;* CLEAR IF THE RECEIVER IS SHUTDOWN BEFORE THE CRC IS RECEIVED.
;* IN BCP MODE THIS BIT IS CLEAR WHEN THE CRC IS IN ERROR.
;* THE ERROR CHECK BIT SHOULD BE SET WHEN THE LAST CHARACTER IS RECEIVED,
;* IF THE CRC WERE GOOD.
;* SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO 0, LOOP SET,
;* 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;* SUBTEST 2 - CRC-16 CHECK
;* CHECK THAT THE CORRECT CRC-16 IS RECEIVED FOR THE DATA MESSAGE.
;* THE CRC FOR THIS DATA MESSAGE WAS PREDETERMINED.
;*
;*****
BGNTST

BGNSUB

T26::

T26.1:

CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C#BSUB
TRAP C#ESCAPE
.WORD L10124-.
CLR MODE ;FLAG THAT WE ARE IN BCP MODE.
MOV #CRC16,IPCSAR ;SET CRC 16
MOVB #271,IPCSAR ;SYNCH CHARACTER
BIS #PROTO,IPCSAR ;SET BCP PROTOCOL
MOV #2,START ;SEND 2 SYNCHS
MOV #1,HEADER ;SEND 1 HEADER CHARACTER
MOV #8.,LENGTH ;CHARACTER LENGTH OF 8 BITS.
MOV #TSM,TSTART ;START OF MESSAGE.
MOV #TEOM,TEND ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #15.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
; CHARACTER LENGTH.
CLRB IPCR ;SET UP PARAMETERS AND ADDRESS
MOV IPCSAR,#PCRSAR
CALL #BUFERS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN #DATA
DEC ECOUNT ;CHANGE THE END COUNT
CALL #DATA
ESCAPE TST ;IF ERROR - EXIT TEST
TRAP C#ESCAPE
.WORD L10124-.
TST IRDSR ;IS THE ERR BIT SET
BPL 208 ;IF YES - OK

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-3
 CVDPVC.P11 16-AUG-84 14:18 TEST 26 - CRC-16 PRESET TO 0

7948	033536				ERRDF	84,EMG38						
(4)	033536	104455								TRAP	C#ERDF	
(5)	033540	000124								.WORD	84	
(5)	033542	015240								.WORD	EMG38	
(5)	033544	000000								.WORD	0	
7949	033546				20:							
7950	033546				ENDSUB							
(3)	033546									L10125:		
(3)	033546	104403								TRAP	C#ESUB	
7951	033550				BGNSUB							
7952	033550									T26.2:		
(3)	033550	104402								TRAP	C#BSUB	
7953	033552				CALL	\$RESET						
7954	033556				ESCAPE	TST						
(3)	033556	104410										
(3)	033560	000206								TRAP	C#ESCAPE	
7955	033562	005037	002362		CLR	MODE						
7956	033566	012737	001400	002344	MOV	#CRC16,IPCSAR						
7957	033574	112737	000271	002344	MOVB	#271,IPCSAR						
7958	033602	052737	040000	002344	BIS	#PROTO,IPCSAR						
7959	033610	012737	000002	002414	MOV	#2,START						
7960	033616	012737	000001	002336	MOV	#1,HEADER						
7961	033624	012737	000010	002352	MOV	#8.,LENGTH						
7962	033632	012737	000400	002434	MOV	#TSJM,TSTART						
7963	033640	012737	001000	002422	MOV	#TEOM,TEND						
7964	033646	012737	002502	002470	MOV	#%CCITT,XTYPE						
7965	033654	012737	000017	002472	MOV	#15.,XCOUNT						
7966												
7967	033662	013777	002344	146400	MOV	IPCSAR,#PCRSAR						
7968	033670	105037	002342		CLRB	IPCR						
7969												
7970	033674				CALL	\$BUFERS						
7971												
7972	033700	012737	000001	002356	MOV	#1,MAINT						
7973	033706	005037	002332		CLR	EXERR						
7974												
7975	033712	062737	000002	002474	ADD	#2,ECOUNT						
7976												
7977	033720				CALL	\$DATA						
7978	033724				ESCAPE	TST						
(3)	033724	104410										
(3)	033726	000040										
7979	033730	012701	003274		MOV	#RCVBUF,R1						
7980	033734	063701	002472		ADD	XCOUNT,R1						
7981	033740	122127	000332		CMPB	(R1),#CRCLO						
7982	033744	001003			BNE	10:						
7983	033746	122127	000266		CMPB	(R1),#CRCHI						
7984	033752	001404			BEQ	20:						
7985	033754											
7986	033754				10:							
(4)	033754	104455			ERRDF	85,EMG37						
(5)	033756	000125										
(5)	033760	015226										
(5)	033762	000000										
7987	033764				20:							

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-4
CVDPVC.P11 16-AUG-84 14:18 TEST 26 - CRC-16 PRESET TO 0

7988 033764
(3) 033764
(3) 033764 104403
7989
7990 033766
(3) 033766
(3) 033766 104401
7991
7992
7993

ENDSUB

ENDTST

L10126: TRAP C#ESUB

L10124: TRAP C#ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-5
CVDPVC.P11 16-AUG-84 14:18 TEST 27 - VRC ODD PARITY ERROR

7995 .SBTTL TEST 27 - VRC ODD PARITY ERROR
7996
7997
7998 ;*****
7999 ;* TEST 27 - DPV-11
8000 ;* VRC ODD PARITY ERROR
8001 ;* BY SELECTING DIFFERENT CHARACTER LENGTHS IN THE RECEIVER AND
8002 ;* TRANSMITTER, CAUSE A PARITY ERROR TO OCCUR.
8003 ;* SELECTED OPTIONS: BCP MODE, VRC-ODD PARITY, XMIT=7 &
8004 ;* RCV=6 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
8005 ;*****
8006 033770 BGNTST
(3) 033770
8007
8008
8009 033770 CALL \$RESET ;RESET THE DPV
8010 033774 ESCAPE TST ;IF ERROR, BR TO THE END.
(3) 033774 104410 TRAP C\$ESCAPE
(3) 033776 000160 .WORD L10127-.
8011 034000 005037 002362 CLR MODE ;FLAG THAT WE ARE IN BCP MODE.
8012 034004 012737 002000 002344 MOV #VRCO,IPCSAR ;SET VRC ODD
8013 034012 112737 000271 002344 MOVB #271,IPCSAR ;SYNCH CHARACTER
8014 034020 052737 040000 002344 BIS #PROTO,IPCSAR ;SET BCP PROTOCOL
8015 034026 012737 000002 002414 MOV #2,START ;SEND 2 SYNCHS
8016 034034 012737 000002 002336 MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
8017 034042 012737 000010 002352 MOV #8.,LENGTH ;CHARACTER LENGTH OF 8 BITS.
8018 034050 012737 000400 002434 MOV #T\$OM,T\$START ;START OF MESSAGE.
8019 034056 012737 001000 002422 MOV #T\$EM,T\$END ;END OF MESSAGE
8020 034064 012737 002502 002470 MOV #C\$CITT,X\$TYPE ;USE CCITT DATA PATTERN
8021 034072 012737 000017 002472 MOV #15.,X\$COUNT ;# OF CHARACTERS TO TRANSMIT
8022
8023 034100 112737 000346 002342 MOVB #346,IPCR ;SET UP A XMIT CHARACTER = 7
8024 ;AND A RECEIVE CHARACTER = 6
8025 034106 013777 002344 146154 MOV IPC\$AR,@PC\$AR ;SET UP PARAMETERS AND ADDRESS
8026
8027
8028 034114 CALL \$B\$FRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
8029 034120 012737 000001 002356 MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
8030 034126 012737 000001 002332 MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN \$DATA
8031 034134 CALL \$DATA ;
8032 034140 005737 002350 TST IRDSR ;IS THE ERROR BIT SET (BIT 15)?
8033 034144 100404 BMI 20\$;IF SET OK
8034 034146
(4) 034146 104455 TRAP C\$ERDF
(5) 034150 000126 .WORD 86
(5) 034152 015267 .WORD EMG39
(5) 034154 000000 .WORD 0
8035 034156 20\$:
8036
8037
8038 034156 ENDTST
(3) 034156 L10127:
(3) 034156 104401 TRAP C\$ETST
8039
8040
8041

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-6
CVDPVC.P11 16-AUG-84 14:18 TEST 28 - VRC EVEN PARITY ERROR

8043
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8054 034160
(3) 034160
8055
8056
8057 034160
8058 034164
(3) 034164 104410
(3) 034166 000160
8059 034170 005037 002362
8060 034174 012737 002400 002344
8061 034202 112737 000271 002344
8062 034210 052737 040000 002344
8063 034216 012737 000002 002414
8064 034224 012737 000002 002336
8065 034232 012737 000010 002352
8066 034240 012737 000400 002434
8067 034246 012737 001000 002422
8068 034254 012737 002502 002470
8069 034262 012737 000017 002472
8070
8071 034270 112737 000244 002342
8072
8073 034276 013777 002344 145764
8074
8075
8076 034304
8077 034310 012737 000001 002356
8078 034316 012737 000001 002332
8079 034324
8080 034330 005737 002350
8081 034334 100404
8082 034336
(4) 034336 104455
(5) 034340 000127
(5) 034342 015267
(5) 034344 000000
8083 034346
8084
8085
8086 034346
(3) 034346
(3) 034346 104401
8087
8088
8089

```
.SBTTL TEST 28 - VRC EVEN PARITY ERROR
;*****
;* TEST 28 - DPV-11
;* VRC EVEN PARITY ERROR
;* BY SELECTING DIFFERENT CHARACTER LENGTHS IN THE RECEIVER AND
;* TRANSMITTER, CAUSE A PARITY ERROR TO OCCUR.
;* SELECTED OPTIONS: BCP MODE, VRC-EVEN PARITY, XMIT=5 &
;* RCV=4 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;*****
BGNTST
T28::
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C#ESCAPE
.WORD L10130-.
CLR MODE ;FLAG THAT WE ARE IN BCP MODE.
MOV #VRCE,IPCSAR ;SET VRC EVEN
MOVB #271,IPCSAR ;SYNCH CHARACTER
BIS #PROTO,IPCSAR ;SET BCP PROTOCOL
MOV #2,START ;SEND 2 SYNCHS
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS
MOV #8,LENGTH ;CHARACTER LENGTH OF 8 BITS.
MOV #TSOM,TSTART ;START OF MESSAGE.
MOV #TEOM,TEND ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #15,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
;SET UP A XMIT CHARACTER = 5
;AND A RECEIVE CHARACTER = 4
;SET UP PARAMETERS AND ADDRESS
MOV IPCSAR,#PC SAR
CALL #BUFERS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #1,MAINT ;FLAG TO USE MAINTENANCE MODE LOOPBACK.
MOV #1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN #DATA
CALL #DATA
TST IRDSR ;IS THE ERROR BIT SET (BIT 15)?
BMI 20# ;IF SET OK
ERRDF 87,EMG39
TRAP C#ERDF
.WORD 87
.WORD EMG39
.WORD 0
20#:
ENDTST
L10130:
TRAP C#ETST
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-7
CVDPVC.P11 16-AUG-84 14:18 TEST 29 - DATA TEST

8091
8092
8093
8094
8095
8096
8097
8098
8099
8100
8101
8102 034350
(3) 034350
8103 034350
8104 034354 103573
8105 034356
8106 034362
(3) 034362 104410
(3) 034364 000360
8107 034366 012737 100000 002362
8108 034374 005037 002344
8109 034400 012737 000000 002344
8110 034406 012737 000010 002352
8111 034414 012737 002602 002470
8112 034422 012737 000045 002472
8113
8114
8115
8116 034430
8117
8118 034434 012701 003274
8119 034440 012702 002674
8120 034444 013703 002472
8121 034450 005037 002500
8122 034454 013704 002430
8123
8124 034460 013777 002402 145600
8125 034466 013777 002436 145576
8126
8127 034474 012777 000400 145572
8128 034502
8129 034502 012705 002000
8130 034506
8131 034506 005777 145562
8132 034512 100005
8133 034514
(4) 034514 104455
(5) 034516 000130
(5) 034520 014766
(5) 034522 000000
8134 034524 000507
8135 034526
8136
8137
8138 034526 032777 000004 145536
8139 034534 001056

```
.SBTTL TEST 29 - DATA TEST
;*****
;* TEST 29 - DPV-11
;* DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE WITHOUT THE USE OF INTERRUPT
;* SERVICE ROUTINES. CHECK THAT THE DATA IS CORRECT.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
;* 8 BIT CHARACTERS, MAINTENANCE MODE LOOPBACK.
;*
;*****
BGNTST
;*****
; CAN THE CPU SUPPORT THE LOOPBACK?
; IF NOT, SKIP THE TEST.
; RESET THE DPV
; IF ERROR, BR TO THE END.
TRAP C#ESCAPE
.WORD L10131-.
T29::
CALL #SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS 50# ;IF NOT, SKIP THE TEST.
CALL #RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
; FLAG THAT MODE IS BOP.
; IMAGE OF PCSAR = 0.
; SET CRC-CCITT PRESET TO ONE
; CHARACTER LENGTH OF 8 BITS
; USE ALPHANUMERIC DATA PATTERN
; # OF CHARACTERS TO TRANSMIT
;
MOV #BOP,MODE ;FLAG THAT MODE IS BOP.
CLR IPCSAR ;IMAGE OF PCSAR = 0.
MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
MOV #8,LENGTH ;CHARACTER LENGTH OF 8 BITS
MOV #ALPHA,XTYPE ;USE ALPHANUMERIC DATA PATTERN
MOV #ACOUNT,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
CALL #BUFERS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
MOV #RCVBUF,R1 ;RECEIVE BUFFER
MOV #XMTBUF,R2 ;TRANSMIT BUFFER
MOV XCOUNT,R3 ;TRANSMIT COUNT
CLR RCOUNT ;CLEAR THE RECEIVE COUNTER.
MOV TIMER,R4 ;SET UP THE TIMER.
MOV RXINI,#RXCSR ;ENABLE THE RECEIVER
MOV TXINI,#TXCSR ;ENABLE THE RECEIVER
MOV #TSOM,#TDSR ;TRANSMIT START OF MESSAGE
9#:
MOV #2000,R5 ;INNER TIMER LOOP COUNTER.
10#:
TST #TDSR ;IS THERE A TRANSMIT ERROR?
BPL 12# ;IF NOT PROCEED.
ERRDF 88,EMG30 ;TRANSMIT UNDERRUN.
TRAP C#ERDF
.WORD 88
.WORD EMG30
.WORD 0
BR 50#
12#:
BIT #TBE,#TXCSR ;IS TRANSMIT BUFFER EMPTY?
BNE 20# ;IF YES - SEND A CHARACTER.
```


CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-9
CVDPVC.P11 16-AUG-84 14:18 TEST 29 - DATA TEST

8187 034740 CALL \$CHECK ;CHECK THAT THE DATA WAS CORRECT.

8188

8189

8190 034744

50\$:

8191

8192 034744

ENDTST

L10131:

(3) 034744

TRAP

(3) 034744 104401

C\$ETST

8193

8194

8195

8196

8197

8198

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-10
CVDPVC.P11 16-AUG-84 14:18 TEST 30 - BOP DATA TEST

8200
8201
8202
8203
8204
8205
8206
8207
8208
8209
8210
8211 034746
(3) 034746
8212 034746
8213 034752 103462
8214 034754
8215 034760
(3) 034760 104410
(3) 034762 000136
8216 034764 012737 100000 002362
8217 034772 012737 000400 002344
8218 035000 012737 000001 002414
8219 035006 012737 000002 002336
8220 035014 012737 000006 002352
8221 035022 012737 000400 002434
8222 035030 012737 001000 002422
8223 035036 012737 002502 002470
8224 035044 012737 000100 002472
8225
8226 035052 013777 002344 145210
8227 035060 112737 000306 002342
8228
8229
8230 035066
8231 035072 005037 002356
8232 035076 005037 002332
8233 035102
8234 035106 103402
8235
8236 035110
8237 035114
8238 035114
8239 035120
8240
8241 035120
(3) 035120
(3) 035120 104401
8242

```
.SBTTL TEST 30 - BOP DATA TEST
;*****
;* TEST 30 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZERO,
;* 6 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
;*****
BGNTST
;CAN THE CPU SUPPORT THE LOOPBACK?
;IF NOT, SKIP THE TEST.
;RESET THE DPV
;IF ERROR, BR TO THE END.
TRAP C$ESCAPE
.WORD L10132-.
T30::
;FLAG THAT WE ARE IN BOP MODE.
;SET CRC-CCITT PRESET TO ZERO
;SEND 1 FLAG
;SEND 2 HEADER CHARACTERS
;CHARACTER LENGTH OF 6 BITS.
;START OF MESSAGE.
;END OF MESSAGE
;USE CCITT DATA PATTERN
;# OF CHARACTERS TO TRANSMIT
;
;SET UP PARAMETERS AND ADDRESS
;SET UP CHARACTER LENGTH
;SET UP TRANSMIT AND RECEIVE BUFFERS.
;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
;
;IF ERROR SKIP DATA CHECK.
;CHECK THAT THE DATA WAS CORRECT.
;PRINT OUT MODEM CONTROL STATUS.
L10132:
TRAP C$ETST
ENDTST
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-11
CVDPVC.P11 16-AUG-84 14:18 TEST 31 - BOP DATA TEST

8244
8245
8246
8247
8248
8249
8250
8251
8252
8253
8254
8255 035122
(3) 035122
8256 035122 103465
8257 035126
8258 035130
8259 035134
(3) 035134 104410
(3) 035136 000144
8260 035140 012737 100000 002362
8261 035146 012737 000000 002344
8262 035154 012737 000001 002414
8263 035162 012737 000002 002336
8264 035170 012737 000005 002352
8265 035176 012737 000400 002434
8266 035204 012737 001000 002422
8267 035212 012737 002502 002470
8268 035220 012737 000100 002472
8269
8270 035226 013777 002344 145034
8271 035234 112737 000245 002342
8272
8273
8274 035242
8275 035246 005037 002356
8276 035252 005037 002332
8277 035256 012737 000001 002340
8278 035264
8279 035270 103402
8280
8281 035272
8282 035276
8283 035276 005037 002340
8284 035302
8285
8286 035302
(3) 035302
(3) 035302 104401
8287
8288

.SBTTL TEST 31 - BOP DATA TEST

```
*****  
;* TEST 31 - DPV-11  
;* BOP DATA TEST  
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE  
;* DATA IS CORRECTLY RECEIVED.  
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,  
;* 5 BIT CHARACTERS, USER SELECTED LOOPBACK.  
;*  
*****  
BGNTST
```

```
T31::  
CALL $SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?  
BCS 50$ ;IF NOT, SKIP THE TEST.  
CALL $RESET ;RESET THE DPV  
ESCAPE TST ;IF ERROR, BR TO THE END.  
  
TRAP C$ESCAPE  
.WORD L10133-.  
  
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.  
MOV #CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE  
MOV #1,START ;SEND 1 FLAG  
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS  
MOV #5,LENGTH ;CHARACTER LENGTH OF 5 BITS.  
MOV #TSOM,TSTART ;START OF MESSAGE.  
MOV #TEOM,TEND ;END OF MESSAGE  
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN  
MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT  
;  
MOV IPCSAR,@PC SAR ;SET UP PARAMETERS AND ADDRESS  
MOVB #245,IPCR ;SET UP CHARACTER LENGTH  
  
CALL $BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.  
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK  
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA  
MOV #1,HIGH ;FLAG TO USE HIGH SPEED INT. SERVICE ROUTINE.  
CALL $DATA  
BCS 20$ ;IF ERROR SKIP DATA CHECK.  
  
CALL $CHECK ;CHECK THAT THE DATA WAS CORRECT.  
20$:  
CLR HIGH ;CLEAR FLAG FOR HIGH SPEED ISRS.  
50$:
```

ENDTST

L10133: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-12
CVDPVC.P11 16-AUG-84 14:18 TEST 32 - BOP DATA TEST

.SBTTL TEST 32 - BOP DATA TEST

8290
8291
8292
8293
8294
8295
8296
8297
8298
8299
8300

```
*****  
;* TEST 32 - DPV-11  
;* BOP DATA TEST  
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE  
;* DATA IS CORRECTLY RECEIVED.  
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZERO,  
;* 7 BIT CHARACTERS, USER SELECTED LOOPBACK.  
;*****
```

8301 035304
(3) 035304
8302 035304
8303 035310 103470
8304 035312
8305 035316
(3) 035316 104410
(3) 035320 000152
8306 035322 012737 100000 002362
8307 035330 012737 000400 002344
8308 035336 052737 010000 002344
8309 035344 112737 000123 002344
8310 035352 012737 000001 002414
8311 035360 012737 000002 002336
8312 035366 012737 000007 002352
8313 035374 012737 000400 002434
8314 035402 012737 001000 002422
8315 035410 012737 002502 002470
8316 035416 012737 000100 002472
8317
8318 035424 013777 002344 144636
8319 035432 112737 000347 002342
8320
8321
8322 035440
8323 035444 005037 002356
8324 035450 005037 002332
8325 035454
8326 035460 103402
8327
8328 035462
8329 035466
8330 035466
8331 035472
8332
8333 035472
(3) 035472
(3) 035472 104401
8334
8335
8336

```
*****  
BGNTST  
CALL $SPEED ;CAN THE CPU SUPPORT THE LOOPBACK? T32::  
BCS 50$ ;IF NOT, SKIP THE TEST.  
CALL $RESET ;RESET THE DPV  
ESCAPE TST ;IF ERROR, BR TO THE END.  
TRAP C$ESCAPE  
.WORD L10134-.  
MOV #BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.  
MOV #CCITTO,IPCSAR ;SET CRC-CCITT PRESET TO ZERO  
BIS #SECADR,IPCSAR ;SET SECONDARY ADDRESS.  
MOVB #123,IPCSAR ;SECONDARY ADDRESS.  
MOV #1,START ;SEND 1 FLAG  
MOV #2,HEADER ;SEND 2 HEADER CHARACTERS  
MOV #7,LENGTH ;CHARACTER LENGTH OF 7 BITS.  
MOV #TSOM,TSTART ;START OF MESSAGE.  
MOV #TEOM,TEND ;END OF MESSAGE  
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN  
MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT  
;  
MOV IPCSAR,$PC SAR ;SET UP PARAMETERS AND ADDRESS  
MOVB #347,IPCR ;SET UP CHARACTER LENGTH  
;  
CALL $BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.  
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK  
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA  
CALL $DATA  
BCS 20$ ;IF ERROR SKIP DATA CHECK.  
CALL $CHECK ;CHECK THAT THE DATA WAS CORRECT.  
20$:  
CALL $MODEM ;PRINT OUT MODEM CONTROL STATUS.  
50$:  
ENDTST  
L10134:  
TRAP C$ETST
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 29-13
CVDPVC.P11 16-AUG-84 14:18 TEST 33 - BOP DATA TEST

8338
8339
8340
8341
8342
8343
8344
8345
8346
8347
8348
8349 035474
(3) 035474
8350 035474
8351 035500 103461
8352 035502
8353 035506
(3) 035506 104410
(3) 035510 000134
8354 035512 012737 100000 002362
8355 035520 012737 000000 002344
8356 035526 012737 000001 002414
8357 035534 012737 000002 002336
8358 035542 012737 000010 002352
8359 035550 012737 000400 002434
8360 035556 012737 001000 002422
8361 035564 012737 002502 002470
8362 035572 012737 000100 002472
8363
8364 035600 013777 002344 144462
8365 035606 105037 002342
8366
8367
8368 035612
8369 035616 005037 002356
8370 035622 005037 002332
8371 035626
8372 035632 103402
8373
8374 035634
8375 035640
8376 035640
8377 035644
8378
8379 035644
(3) 035644
(3) 035644 104401

.SBTTL TEST 33 - BOP DATA TEST

```
*****
;*          TEST 33 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*     SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
;*                       8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
*****
BGNTST
```

```

T33::
CALL    $SPEED          ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS     50$             ;IF NOT, SKIP THE TEST.
CALL    $RESET          ;RESET THE DPV
ESCAPE  TST             ;IF ERROR, BR TO THE END.
TRAP    C$ESCAPE
        .WORD           L10135-.

MOV     #BOP,MODE       ;FLAG THAT WE ARE IN BOP MODE.
MOV     #CCITT1,IPCSAR  ;SET CRC-CCITT PRESET TO ONE
MOV     #1,START        ;SEND 1 FLAG
MOV     #2,HEADER       ;SEND 2 HEADER CHARACTERS
MOV     #8.,LENGTH     ;CHARACTER LENGTH OF 8 BITS.
MOV     #TSOM,TSTART   ;START OF MESSAGE.
MOV     #TEOM,TEND     ;END OF MESSAGE
MOV     #CCITT,XTYPE   ;USE CCITT DATA PATTERN
MOV     #64.,XCOUNT    ;# OF CHARACTERS TO TRANSMIT
;
MOV     IPCSAR,#PC SAR ;SET UP PARAMETERS AND ADDRESS
CLRB   IPCR            ;SET UP CHARACTER LENGTH

CALL    $BUFERS        ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR     MAINT          ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
CLR     EXERR          ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
CALL    $DATA
BCS     20$            ;IF ERROR SKIP DATA CHECK.

CALL    $CHECK         ;CHECK THAT THE DATA WAS CORRECT.
20$:   CALL    $MODEM   ;PRINT OUT MODEM CONTROL STATUS.
50$:

ENDTST
L10135: TRAP    C$ETST
```


CVDVPCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30
CVDVPC.P11 16-AUG-84 14:18 TEST 34 - BOP DATA TEST

8382
8383
8384
8385
8386
8387
8388
8389
8390
8391
8392
8393
8394
8395
8396
8397
8398
8399
(3)
(3)
8400
8401
8402
8403
8404
8405
8406
8407
8408
8409
8410
8411
8412
8413
8414
8415
8416
8417
8418
8419
8420
8421
8422
8423
8424
(3)
(3)
8425

035646
(3) 035646
035646 103462
035652
035654
035660
(3) 035660 104410
(3) 035662 000136
035664 012737 100000 002362
035672 012737 000000 002344
035700 012737 000002 002414
035706 012737 000002 002336
035714 012737 000006 002352
035722 012737 000003 002434
035730 012737 001000 002422
035736 012737 002502 002470
035744 012737 000100 002472
035752 013777 002344 144310
035760 112737 000306 002342
035766
035772 005037 002356
035776 005037 002332
036002
036006 103402
036010
036014
036014
036020
036020
(3) 036020
(3) 036020 104401

.SBTTL TEST 34 - BOP DATA TEST
;*****
;* TEST 34 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* NOTE: CERTAIN USYNRTS ONLY TRANSMIT A SPECIAL START SEQUENCE WHEN
;* TRANSMIT START AND END OF MESSAGE ARE SET BY A BYTE OPERATION.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
;* 6 BIT CHARACTERS, USER SELECTED LJOBBACK.
;*****
BGNTST

T34::
CALL \$SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS 50\$;IF NOT, SKIP THE TEST.
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C\$ESCAPE
.WORD L10136-.
MOV \$BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV \$CCITT1,IPCSAR ;SET CRC-CCITT PRESET TO ONE
MOV \$2,START ;SEND 1 FLAG
MOV \$2,HEADER ;SEND 2 HEADER CHARACTERS
MOV \$6,LENGTH ;CHARACTER LENGTH OF 6 BITS.
MOV \$3,TSTART ;SET TSON AND TEOM IN BYTE MODE.
MOV \$TEOM,TEND ;END OF MESSAGE
MOV \$CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV \$64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;SET UP PARAMETERS AND ADDRESS
MOV IPCSAR,\$PCSR ;SET UP CHARACTER LENGTH
MOV \$306,IPCR
CALL \$BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN \$DATA
CALL \$DATA
BCS 20\$;IF ERROR SKIP DATA CHECK.
CALL \$CHECK ;CHECK THAT THE DATA WAS CORRECT.
20\$:
CALL \$MODEM ;PRINT OUT MODEM CONTROL STATUS.
50\$:
ENDTST
L10136:
TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-1
CVDPVC.P11 16-AUG-84 14:18 TEST 35 - BOP DATA TEST

8427
8428
8429
8430
8431
8432
8433
8434
8435
8436
8437
8438
(3)
8439
8440
8441
8442
(3)
(3)
8443
8444
8445
8446
8447
8448
8449
8450
8451
8452
8453
8454
8455
8456
8457
8458
8459
8460
8461
8462
8463
8464
8465
8466
8467
8468
8469
(3)
(3)
8470

036022
036022
036026 103465
036030
036034
036034 104410
036036 000144
036040 012737 100000 002362
036046 012737 000400 002344
036054 012737 100000 002344
036062 012737 000001 002414
036070 012737 000002 002336
036076 012737 000007 002352
036104 012737 000400 002434
036112 012737 001000 002422
036120 012737 002502 002470
036126 012737 000100 002472
036134 013777 002344 144126
036142 112737 000347 002342
036150
036154 005037 002356
036160 005037 002332
036164
036170 103402
036172
036176
036176
036202
036202
(3) 036202
(3) 036202 104401

.SBTTL TEST 35 - BOP DATA TEST
;*****
;* TEST 35 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZEROS,
;* 7 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
;*****
BGNTST

T35::
CALL \$SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS 50\$;IF NOT, SKIP THE TEST.
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C\$ESCAPE
.WORD L10137-.
MOV \$BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV \$CCITTO,IPCSAR ;SET CRC-CCITT PRESET TO ZERO
MOV \$APA,IPCSAR ;ALL PARTIES ADDRESS.
MOV \$1,START ;SEND 1 FLAG
MOV \$2,HEADER ;SEND 2 HEADER CHARACTERS
MOV \$7,LENGTH ;CHARACTER LENGTH OF 7 BITS.
MOV \$TSON,TSTART ;START OF MESSAGE
MOV \$TEOM,TEND ;END OF MESSAGE
MOV \$CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV \$64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
; SET UP PARAMETERS AND ADDRESS
MOV IPCSAR,\$PCRSAR ;SET UP CHARACTER LENGTH
MOVB \$347,IPCR
CALL \$BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN \$DATA
CALL \$DATA
BCS 20\$;IF ERROR SKIP DATA CHECK.
CALL \$CHECK ;CHECK THAT THE DATA WAS CORRECT.
20\$:
CALL \$MODEM ;PRINT OUT MODEM CONTROL STATUS.
50\$:
ENDTST
L10137: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-2
CVDPVC.P11 16-AUG-84 14:18 TEST 36 - BOP DATA TEST

8472
8473
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(3)
(3)
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8501
8502
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8511
8512
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8514
(3)
(3)
8515
8516

036204
036204
036210 103465
036212
036216
036216 104410
036220 000144
036222 012737 100000 002362
036230 012737 000400 002344
036236 052737 020000 002344
036244 012737 000001 002414
036252 012737 000002 002336
036260 012737 000010 002352
036266 012737 000400 002434
036274 012737 005000 002422
036302 012737 002502 002470
036310 012737 000100 002472
036316 013777 002344 143744
036324 105037 002342
036330
036334 005037 002356
036340 012737 000001 002332
036346
036352 103402
036354
036360
036360
036364
036364
036364 104401

.SBTTL TEST 36 - BOP DATA TEST
;*****
;* TEST 36 - DPV-11
;* BOP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ZERO, LOOP SET,
;* 8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*****
BGNTST

T36::
CALL \$SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS 50\$;IF NOT, SKIP THE TEST.
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C\$ESCAPE
.WORD L10140-.
MOV \$BOP,MODE ;FLAG THAT WE ARE IN BOP MODE.
MOV \$CCITTO,IPCSAR ;SET CRC-CCITT PRESET TO ZERO
BIS \$LOOP,IPCSAR ;SET LOOP MODE TO RECOGNIZE THE GO AHEAD.
MOV \$1,START ;SEND 1 FLAG
MOV \$2,HEADER ;SEND 2 HEADER CHARACTERS
MOV \$8.,LENGTH ;CHARACTER LENGTH OF 8 BITS.
MOV \$TSM,TSTART ;START OF MESSAGE
MOV \$TGA!TEOM,TEND ;TRANSMIT GO AHEAD AT END OF MESSAGE.
MOV \$CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV \$64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
; ;
MOV IPCSAR,\$PCRSAR ;SET UP PARAMETERS AND ADDRESS
CLRB IPCR ;SET UP CHARACTER LENGTH
; ;
CALL \$BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
MOV \$1,EXERR ;FLAG THAT AN ERROR IS EXPECTED IN \$DATA
CALL \$DATA ; ;
BCS 20\$;IF ERROR SKIP DATA CHECK.
; ;
CALL \$CHECK ;CHECK THAT THE DATA WAS CORRECT.
; ;
CALL \$MODEM ;PRINT OUT MODEM CONTROL STATUS.
; ;
ENDTST
L10140: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-3
CVDPVC.P11 16-AUG-84 14:18 TEST 37 - BCP DATA TEST

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8529 036366
(3) 036366
8530 036366
8531 036372 103475
8532 036374
8533 036400
(3) 036400 104410
(3) 036402 000164
8534 036404 005037 002362
8535 036410 012737 000024 002344
8536 036416 052737 002000 002344
8537 036424 052737 040000 002344
8538 036432 052737 004000 002344
8539 036440 012737 000002 002414
8540 036446 012737 000001 002336
8541 036454 012737 000006 002352
8542 036462 012737 000424 002434
8543 036470 012737 001000 002422
8544 036476 012737 002502 002470
8545 036504 012737 000100 002472
8546
8547 036512 112737 000306 002342
8548 036520 113777 002342 143554
8549 036526 013777 002344 143534
8550
8551
8552 036534
8553 036540 005037 002356
8554 036544 005037 002332
8555 036550
8556 036554 103402
8557
8558 036556
8559 036562
8560 036562
8561 036566
8562
8563 036566
(3) 036566
(3) 036566 104401
8564

.SBTTL TEST 37 - BCP DATA TEST

;* TEST 37 - DPV-11
;* BCP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* SELECTED OPTIONS: BCP MODE, VRC-ODD PARITY, IDLE BIT SET
;* 6 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*

BGNTST

T37::
CALL \$SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS 50\$;IF NOT, SKIP THE TEST.
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C\$ESCAPE
.WORD L10141-.
CLR MODE ;FLAG THAT WE ARE IN BCP MODE.
MOV #2^,IPCSAR ;LOAD SYNCH IN PCSAR (FOR RECEIVER ONLY)
BIS #VRC,IPCSAR ;SET ODD VRC
BIS #PROTO,IPCSAR ;SET BCP PROTOCOL
BIS #IDLE,IPCSAR ;TRANSMIT SYNCH FROM TDSR
MOV #2,START ;SEND 2 SYNCHS
MOV #1,HEADER ;SEND 1 HEADER CHARACTER
MOV #6,LENGTH ;CHARACTER LENGTH OF 6 BITS.
MOV #TSM!24,TSTART ;START OF MESSAGE AND SYNCH CHARACTER.
MOV #TEOM,TEND ;END OF MESSAGE
MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
;
MOVB #306,IPCR ;SET UP CHARACTER LENGTH
MOVB IPCR,\$PCR ;SET UP CHARACTER LENGTH
MOV IPCSAR,\$PCSAR ;SET UP PARAMETERS AND ADDRESS
;
CALL \$BUFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN \$DATA
CALL \$DATA
BCS 20\$;IF ERROR SKIP DATA CHECK.
;
CALL \$CHECK ;CHECK THAT THE DATA WAS CORRECT.
20\$:
CALL \$MODEM ;PRINT OUT MODEM CONTROL STATUS.
50\$:
ENDTST
L10141: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-5
 CVDPVC.P11 16-AUG-84 14:18 TEST 39 - BCP DATA TEST

.SBTTL TEST 39 - BCP DATA TEST

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8650
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8657
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8659
8660
8661

036772
(3) 036772
036772 103475
037000
037004 104410
(3) 037006 000164
037010 005037 002362
037014 012737 001400 002344
037022 052737 040000 002344
037030 052737 020000 002344
037036 112737 000217 002344
037044 012737 000005 002414
037052 012737 000001 002336
037060 012737 000007 002352
037066 012737 000400 002434
037074 012737 001000 002422
037102 012737 002502 002470
037110 012737 000100 002472
037116 112737 000347 002342
037124 113777 002342 143150
037132 013777 002344 143130
037140
037144 005037 002356
037150 005037 002332
037160 103402
037162
037166 204:
037166 504:
037172
(3) 037172
(3) 037172 104401
ENDTST

```

;*****
;*          TEST 39 - DPV-11
;* BCP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;*   SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES, STRIP SYNCHS,
;*                       7 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
;*****
BGNTST
    
```

```

                                T39::
CALL    $SPEED                ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS     504                    ;IF NOT, SKIP THE TEST.
CALL    $RESET                 ;RESET THE DPV
ESCAPE  TST                     ;IF ERROR, BR TO THE END.

                                TRAP    C$ESCAPE
                                .WORD   L10143-.

CLR     MODE                    ;FLAG THAT WE ARE IN BCP MODE.
MOV     @CRC16,IPCSAR           ;SET CRC 16
BIS     @PROTO,IPCSAR          ;SET BCP PROTOCOL
BIS     @SSYNCH,IPCSAR         ;STRIP SYNCH.
MOVB    @217,IPCSAR            ;SYNCH
MOV     @5,START               ;SEND 5 SYNCHS
MOV     @1,HEADER              ;SEND 1 HEADER CHARACTER
MOV     @7,LENGTH              ;CHARACTER LENGTH OF 7 BITS.
MOV     @TSOM,TSTART           ;START OF MESSAGE
MOV     @TEOM,TEND             ;END OF MESSAGE
MOV     @1CCITT,XTYPE          ;USE CCITT DATA PATTERN
MOV     @64.,XCOUNT            ;# OF CHARACTERS TO TRANSMIT
;
; CHARACTER LENGTH
MOVB    @347,IPCR              ;CHARACTER LENGTH
MOVB    IPCR,@PCR              ;SET UP CHARACTER LENGTH
MOV     IPCSAR,@PCSAR         ;SET UP PARAMETERS AND ADDRESS

CALL    $BUFERS                ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR     MAINT                   ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
CLR     EXERR                   ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
;
BCS     204                     ;IF ERROR SKIP DATA CHECK.

CALL    $CHECK                  ;CHECK THAT THE DATA WAS CORRECT.

CALL    $MODEM                  ;PRINT OUT MODEM CONTROL STATUS.
    
```

L10143: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-7
CVDPVC.P11 16-AUG-84 14:18 TEST 41 - DDCMP DATA TEST

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(3)
(3)
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8734
8735
8736
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8738
8739
8740
8741
8742
8743
8744
8745
8746
8747
8748
(7)
(6)
(5)
(4)
(3)
(2)
8749
(7)
(6)
(5)
(4)
(3)
(2)
8750
(3)

037352
037352
037352 103521
037360
037364 104410
037366 000234
037370 012737 000006 002414
037376 005037 002336
037402 012777 061626 142660
037410 012701 003274
037414 012703 000014
037420
037420 005021
037422 005303
037424 001375
037426 012701 003274
037432 012702 002650
037436 012703 000006
037442 005037 002376
037446 005037 002360
037452
037452 012746 000200
037456 012746 017620
037462 013746 002264
037466 012746 000003
037472 104437
037474 062706 000010
037500
037500 012746 000200
037504 012746 016732
037510 013746 002262
037514 012746 000003
037520 104437
037522 062706 000010
037526
037526 012700 000000

.SBTTL TEST 41 - DDCMP DATA TEST
;*****
;* TEST 41 - DPV-11
;* DDCMP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE USING THE
;* DDCMP MESSAGE FORMAT. CHECK THAT THE DATA IS CORRECTLY RECEIVED
;* AND THAT THE CRC CHARACTERS ARE RECEIVED IN THE PROPER DDCMP
;* ORDER.
;* SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES, STRIP SYNCHS
;* 8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
;*****
BGNTST

T41::
CALL \$SPEED ;CAN THE CPU SUPPORT THE LOOPBACK?
BCS 50\$;IF NOT, SKIP THE TEST.
CALL \$RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C\$ESCAPE
.WORD L10145-.
MOV #6,START ;SEND 6 SYNCHS
CLR HEADER ;CLEAR DDCMP HEADER FLAG
MOV #SSYNCH!PROTO!CRC16!SYN,#PC\$AR ;SET BCP PROTOCOL AND CRC16.
;STRIP SYNCH AND SYNCH CHAR.
MOV #RCVBUF,R1 ;RECEIVE BUFFER
MOV #14,R3 ;BUFFER COUNT
1\$:
CLR (R1)+ ;CLEAR THE BUFFER
DEC R3 ;DECREMENT COUNT
BNE 1\$;CONTINUE UNTIL DONE.
MOV #RCVBUF,R1 ;RECEIVE BUFFER.
MOV #DDCMP,R2 ;TRANSMIT BUFFER ADDRESS
MOV #DDCMP1,R3 ;TRANSMIT COUNT
CLR RFLAG ;CLEAR RECEIVE FLAG.
CLR MCFLAG ;CLEAR MODEM CONTROL FLAG.
SETVEC XMTVEC,#XDDCMP,#PRI04 ;TRANSMIT VECTOR
MOV #PRI04,-(SP)
MOV #XDDCMP,-(SP)
MOV XMTVEC,-(SP)
MOV #3,-(SP)
TRAP C\$SVEC
ADD #10,SP
SETVEC RCVEC,#RDATA,#PRI04 ;RECEIVE VECTOR.
MOV #PRI04,-(SP)
MOV #RDATA,-(SP)
MOV RCVEC,-(SP)
MOV #3,-(SP)
TRAP C\$SVEC
ADD #10,SP
SETPRI #PRI00 ;ENABLE INTERRUPTS
MOV #PRI00,R0

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-8
 CVDPVC.P11 16-AUG-84 14:18 TEST 41 - DDCMP DATA TEST

(3)	037532	104441					TRAP	C\$SPRI
8751								
8752	037534	005037	002332		CLR	EXERR		;NO ERROR EXPECTED.
8753	037540	012737	000027	002474	MOV	#DDCMP1,DDCMP2+4	ECOUNT	;DETERMINE END COUNT
8754	037546				CALL	\$DATA1		
8755	037552				ESCAPE	TST		;IF ERROR, BR TO END
(3)	037552	104410					TRAP	C\$ESCAPE
(3)	037554	000046					.WORD	L10145-
8756								
8757	037556	012701	003274		MOV	#RCVBUF,R1		;RECEIVE BUFFER.
8758	037562	012702	002650		MOV	#DDCMP,R2		;TRANSMIT BUFFER ADDRESS
8759	037566	012703	000006		MOV	#DDCMP1,R3		;TRANSMIT COUNT
8760								
8761	037572				CALL	\$CHK1		;CHECK THE DATA RECEIVED
8762	037576				ESCAPE	TST		;IF ERROR, BR TO END
(3)	037576	104410					TRAP	C\$ESCAPE
(3)	037600	000022					.WORD	L10145-
8763	037602	062701	000002		ADD	#2,R1		;INCREMENT THE RECEIVE BUFFER BY 2
8764								;IN ORDER TO COMPENSATE FOR CRC
8765	037606	012703	000015		MOV	#DDCMP2,R3		;MESSAGE COUNT
8766	037612				CALL	\$CHK1		;CHECK THE DATA RECEIVED
8767	037616				ESCAPE	TST		;IF ERROR, BR TO END
(3)	037616	104410					TRAP	C\$ESCAPE
(3)	037620	000002					.WORD	L10145-
8768	037622			504:				
8769								
8770								
8771	037622			ENDTST				
(3)	037622						L10145:	
(3)	037622	104401					TRAP	C\$ETST
8772								
8773								

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-9
CVDPVC.P11 16-AUG-84 14:18 TEST 42 - HIGH SPEED BCP DATA TEST

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(7)
(6)
(3)
(4)
(4)

037624
(3) 037624
037624
037630 104410
(3) 037632 000200
037634 012737 041413 002344
037642 012737 000002 002414
037650 005037 002362
037654 012737 002502 002470
037662 012737 000100 002472
037670 005737 002324
037674 001412
037676 012737 000005 002352
037704 112777 000245 142370
037712 112737 000245 002342
037720 000405
037722
037722 012737 000010 002352
037730 105037 002342
037734
037734 013777 002344 142326
037742
037746 005037 002356
037752 005037 002332
037756 012737 000001 002340
037764
037770 103014
037772 005737 002324
037776 001013
040000
040000 012746 013100
040004 012746 000001
040010 010600
040012 104415
040014 062706 000004

```
.SBTTL TEST 42 - HIGH SPEED BCP DATA TEST
;*****
;* TEST 42 - DPV-11
;* BCP DATA TEST
;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
;* DATA IS CORRECTLY RECEIVED.
;* SELECTED OPTIONS: BCP MODE, CRC-16 PRESET TO ONES,
;* 5 OR 8 BIT CHARACTERS, USER SELECTED LOOPBACK.
;*
;*****
BGNTST
;*****
T42::
CALL $RESET ;RESET THE DPV
ESCAPE TST ;IF ERROR, BR TO THE END.
TRAP C$ESCAPE
;*****
;SET CRC16 AND BCP PROTOCOL.
MOV #CRC16!PROTO!13,IPCSAR ;CRC16 AND BCP MODE.
MOV #2,START ;SEND 2 SYNCHS
;*****
CLR MODE ;FLAG THAT WE ARE IN BCP MODE.
MOV #1,CCITT,XTYPE ;USE CCITT DATA PATTERN
MOV #64,,XCOUNT ;# OF CHARACTERS TO TRANSMIT
TST CPU ;IS THIS A LSI 11/23?
BEQ 5$ ;BRANCH IF NOT.
MOV #5,,LENGTH ;CHARACTER LENGTH OF 5 BITS.
MOVB #245,$PCR ;SET UP CHARACTER LENGTH.
MOVB #245,IPCR ;REMEMBER CHARACTER LENGTH.
BR 7$
5$:
MOV #8,,LENGTH ;CHARACTER LENGTH OF 8 BITS.
CLRB IPCR ;SET UP CHARACTER LENGTH.
7$:
MOV IPCSAR,$PCRSAR ;SET UP PARAMETERS AND ADDRESS
CALL $BFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
MOV #1,HIGH ;FLAG THAT THIS IS A HIGH SPEED TEST.
CALL $DATA ;DO THE DATA TRANSFER.
BCC 10$ ;IF NO ERROR, PROCEED.
TST CPU ;WAS THIS A LSI 11/23?
BNE 20$ ;IF YES - SKIP THE PROMPT.
PRINTX #FMG28 ;PROMPT USER: IF THIS IS A LSI11 (M7264)
MOV #FMG28,-(SP)
MOV #1,-(SP)
MOV SP,RO
TRAP C$PNTX
ADD #4,SP
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-10
CVDPVC.P11 16-AUG-84 14:18 TEST 42 - HIGH SPEED BCP DATA TEST

8816
8817 040020 000402
8818 040022
8819 040022
8820 040026
8821 040026 005037 002340
8822 040032
(3) 040032
(3) 040032 104401
8823
8824
8825

BR 20\$
10\$: CALL \$CHECK
20\$: CLR HIGH
ENDTST

;WITH MEMORY REFRESH, CAN'T RUN.

;CHECK THAT THE DATA WAS CORRECT.

;CLEAR HIGH SPEED TEST FLAG.

L10146: TRAP C\$ETST

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-11
 CVDPVC.P11 16-AUG-84 14:18 TEST 43 - HIGH SPEED BOP DATA TEST

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8827 .SBTTL TEST 43 - HIGH SPEED BOP DATA TEST
8828
8829 ;*****
8830 ;* TEST 43 - DPV-11
8831 ;* BOP DATA TEST
8832 ;* TRANSMIT AND RECEIVE A COMPLETE DATA MESSAGE. CHECK THAT THE
8833 ;* DATA IS CORRECTLY RECEIVED.
8834 ;* SELECTED OPTIONS: BOP MODE, CRC-CCITT PRESET TO ONES,
8835 ;* 5 OR 8 BIT CHARACTERS, USER SELECTED LOOPBACK.
8836 ;*
8837 ;*****
8838 BGNTST
      T43::
8838 (3) 040034 CALL #RESET ;RESET THE DPV
8839 040034 ESCAPE TST ;IF ERROR, BR TO THE END.
8840 040040 (3) 040040 104410 TRAP C$ESCAPE
      .WORD L10147-.
      (3) 040042 000202
8841 040044 012737 000000 002344 MOV #CCITT1,IPCSAR ;SET CRC-CCITT
8842 040052 012737 000002 002414 MOV #2,START ;SEND 2 SYNCHS
8843
8844
8845 040060 012737 100000 002362 MOV #BOP,MODE ;FLAG THAT THIS A BOP MODE TEST.
8846
8847 040066 012737 000002 002414 MOV #2,START ;SEND 2 SYNCHS
8848 040074 012737 002502 002470 MOV #CCITT,XTYPE ;USE CCITT DATA PATTERN
8849 040102 012737 000100 002472 MOV #64.,XCOUNT ;# OF CHARACTERS TO TRANSMIT
8850 040110 005737 002324 TST CPU ;IS THIS A LSI 11/23?
8851 040114 001407 BEQ 5$ ;BRANCH IF NOT
8852 040116 012737 000005 002352 MOV #5.,LENGTH ;CHARACTER LENGTH OF 5 BITS.
8853 040124 112737 000245 002342 MOVB #245,IPCR ;SET UP CHARACTER LENGTH
8854 040132 000405 BR 7$
8855 040134 5$:
8856 040134 012737 000010 002352 MOV #8.,LENGTH ;CHARACTER LENGTH OF 7 BITS.
8857 040142 105037 002342 CLRB IPCR ;SET UP CHARACTER LENGTH.
8858 040146 7$:
8859 040146 013777 002344 142114 MOV IPCSAR,#PCRSAR ;SET UP PARAMETERS AND ADDRESS
8860 040154 CALL #BFRS ;SET UP TRANSMIT AND RECEIVE BUFFERS.
8861 040160 005037 002356 CLR MAINT ;CLEAR FLAG TO INDICATE NO MAINTENACE LOOPBACK
8862 040164 005037 002332 CLR EXERR ;FLAG THAT NO ERRORS ARE EXPECTED IN $DATA
8863 040170 012737 000001 002340 MOV #1,HIGH ;FLAG THAT THIS IS A HIGH SPEED TEST.
8864 040176 CALL #DATA ;DO THE DATA TRANSFER.
8865 040202 103014 BCC 10$ ;IF NO ERROR, PROCEED.
8866 040204 005737 002324 TST CPU ;WAS THIS A LSI 11/23?
8867 040210 001013 BNE 20$ ;IF YES - SKIP THE PROMPT.
8868 040212 PRINTX #FMG28 ;PROMPT USER: IF THIS IS A LSI11 (M7264)
      MOV #FMG28,-(SP)
      MOV #1,-(SP)
      MOV SP,R0
      TRAP C$PNTX
      ADD #4,SP
    
```

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-12
CVDPVC.P11 16-AUG-84 14:18 TEST 43 - HIGH SPEED BOP DATA TEST

8869
8870 040232 000402
8871 040234
8872 040234
8873 040240
8874 040240 005037 002340
8875 040244
(3) 040244
(3) 040244 104401
8876
8877
8878
8879
8880

BR 20\$
10\$: CALL \$CHECK
20\$: CLR HIGH
ENDTST

;WITH MEMORY REFRESH, CAN'T RUN.
;CHECK THAT THE DATA WAS CORRECT.
;CLEAR HIGH SPEED TEST FLAG.

L10147: TRAP C\$ETST

CVDVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-13
CVDVPC.P11 16-AUG-84 14:18 HARDWARE PARAMETER CODING SECTION

.SBTTL HARDWARE PARAMETER CODING SECTION

8882
8883
8884
8885
8886
8887
8888
8889
8890
8891
8892
8893

: THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS
: THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE
: MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
: INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES. THE
: MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
: WITH THE OPERATOR.

8894 040246
(3) 040246 007015
(3) 040250
8895
8896 040250
(4) 040250 000031
(4) 040252 040302
(4) 040254 160000
(4) 040256 177776
8897 040260
(4) 040260 001031
(4) 040262 040314
(4) 040264 000000
(4) 040266 000776
8898 040270
(4) 040270 002032
(4) 040272 040325
(4) 040274 000007
(4) 040276 000000
(4) 040300 000004

BGNHRD

.WORD L10150-L#HARD/2
L#HARD::

GPRMA P1,0,0,160000,177776,YES

.WORD T#CODE
.WORD P1
.WORD T#LOLIM
.WORD T#HILIM

GPRMA P2,2,0,0,776,YES

.WORD T#CODE
.WORD P2
.WORD T#LOLIM
.WORD T#HILIM

GPRMD P3,4,0,7,0,4,YES

.WORD T#CODE
.WORD P3
.WORD 7
.WORD T#LOLIM
.WORD T#HILIM

8899
8900

ENDHRD

.EVEN
L10150:

8901 040302
(2)
(3) 040302

8902
8903 040302 042101 051104 051505 P1: .ASCIZ /ADDRESS: /
040310 035123 000040
8904 040314 042526 052103 051117 P2: .ASCIZ /VECTOR: /
040322 020072 000
8905 040325 114 047517 041120 P3: .ASCII /LOOPBACK -/<CR><LF>
040332 041501 020113 006455
040340 012
8906 040341 040 030040 036440 .ASCII / 0 = INTERNAL, 1 = RS423, 2 = RS422/<CR><LF>
040346 044440 052116 051105
040354 040516 026114 030440
040362 036440 051040 032123
040370 031462 020054 020062
040376 020075 051522 031064
040404 006462 012

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-14
CVDPVC.P11 16-AUG-84 14:18 HARDWARE PARAMETER CODING SECTION

8907	040407	040	031440	036440	.ASCIZ / 3 = LOCAL MODEM LOOP, 4 = REMOTE MODEM LOOP/
	040414	046040	041517	046101	
	040422	046440	042117	046505	
	040430	046040	047517	026120	
	040436	032040	036440	051040	
	040444	046505	052117	020105	
	040452	047515	042504	020115	
	040460	047514	050117	000	
8908		040466			.EVEN
8909					
8910					
8911					

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 30-15
CVDPVC.P11 16-AUG-84 14:18 PATCH AREA

8913
8914
8915 040466
8916 040526 040526
8917 040526 000240
8918 040530 000240
8919 040532 000240
8920
8921
8922
8923 040534
8924
8925 040534
(2)
(4) 040534 000000
(4) 040536 000000
(3) 040540
8926 000001

.SBTTL PATCH AREA
;***** PATCH AREA *****
PATCH:
 . = .40
 NOP
 NOP
 NOP
;*****

ENDMOD

 LASTAD

L:LAST::
.END

 .EVEN
 .WORD 0
 .WORD 0

CVDPVCO DPV11 FUNC DIAG MOCY11 30A(1052) 16-AUG-84 14:19 PAGE 31-4
 CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

	8370*	8416*	8460*	8505*	8554*	8602*	8651*	8696*	8752*	8809*	8862*		
E\$END = 002100	3615#												
E\$LOAD= 000035	3615#	3657											
FINIT1 016312	5102	5179#											
FINIT2 016405	5131	5180#											
FIVE = 050000	3812#												
FLAG 002334	3921#	5058*	6190										
FMDROP 020000	5694	5699#											
FNG0 011070	4718	4947#											
FNG1 011166	4828	4948#											
FNG10 011574	4847	4878	4921	4957#									
FNG11 011640	4853	4880	4958#										
FNG12 011704	4859	4882	4959#										
FNG13 011750	4865	4884	4960#										
FNG14 012014	4890	4961#											
FNG15 012071	4927	4962#											
FNG16 012133	4928	4963#											
FNG17 012144	4897	4964#											
FNG18 012221	4903	4965#											
FNG19 012270	4909	4966#											
FNG2 011223	4829	4949#											
FNG20 012335	4918	4967#											
FNG21 012422	4910	4919	4968#										
FNG22 012471	4931	4969#											
FNG23 012536	4873	4970#											
FNG24 012605	4940	4971#											
FNG25 012652	4944	4972#											
FNG26 012715	4973#	6991	7016	7041	7117	7165	7213						
FNG27 013011	4765	4974#											
FNG28 013100	4977#	8815	8868										
FNG29 013221	4911	4979#	7042	7215									
FNG3 011260	4819	4826	4833	4889	4938	4950#							
FNG30 013314	4980#	5994											
FNG4 011332	4839	4846	4852	4858	4864	4875	4920	4926	4951#				
FNG5 011377	4841	4848	4854	4860	4866	4877	4879	4881	4883	4885	4922	4952#	
FNG6 011410	4667	4953#											
FNG7 011413	4840	4876	4954#										
FNG8 011457	4834	4955#											
FNG9 011522	4297	4956#											
FNODEM 006030	4630	4671#											
FNODE0 006115	4638	4672#											
FNODE1 006144	4639	4673#											
FNODE2 006233	4640	4674#											
FNODE3 006257	4649	4675#											
FNODE4 006266	4652	4676#											
FNODE5 006275	4664	4677#											
FNODE6 006325	4634	4678#											
FMS1 004102	4239	4246#											
FMT0 020276	5762	5766#											
FMT1 020350	5744	5767#											
FOUR = 040000	3811#												
FRSPAS 002312	3904#	5070*	5090*										
FRSTIM 002310	3903#	5067	5069*										
F\$AU = 000015	3615#												
F\$AUTO= 000020	3615#	5195	5214										
F\$BGN = 000040	3615#	3618	4818	4823	4832	4838	4845	4851	4857	4863	4870	4888	4893

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 31-5
CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

4935	4943	5031	5051	5195	5231	5270	5325	5398	5440	5490	5550	5601
5648	5675	5691	5722	5752	5755	5797	5798	5800	5824	5828	5845	5847
5870	5872	5874	5901	5904	5929	5931	5958	5960	5985	5987	5997	5999
6019	6021	6023	6031	6043	6050	6052	6055	6057	6065	6074	6081	6083
6086	6102	6104	6106	6118	6121	6123	6132	6136	6145	6148	6162	6165
6198	6222	6225	6232	6237	6242	6258	6275	6279	6327	6360	6362	6364
6412	6414	6416	6482	6486	6488	6539	6543	6559	6562	6564	6614	6616
6618	6672	6676	6678	6733	6736	6756	6759	6804	6823	6828	6875	6903
6906	6917	6919	6934	6937	6939	6954	6958	6960	6974	6977	6979	6999
7002	7004	7024	7027	7029	7050	7061	7081	7084	7086	7088	7130	7132
7134	7136	7178	7180	7182	7184	7227	7229	7231	7258	7260	7261	7263
7283	7286	7289	7291	7308	7311	7312	7314	7335	7338	7341	7343	7358
7362	7364	7374	7377	7379	7382	7400	7401	7403	7426	7428	7430	7450
7452	7466	7469	7496	7511	7514	7537	7548	7564	7579	7590	7607	7628
7631	7650	7656	7672	7675	7704	7720	7723	7752	7768	7771	7799	7818
7821	7841	7847	7865	7869	7889	7896	7919	7921	7923	7945	7950	7952
7954	7978	7988	7990	8006	8010	8038	8054	8058	8086	8102	8106	8192
8211	8215	8241	8255	8259	8286	8301	8305	8333	8349	8353	8379	8395
8399	8424	8438	8442	8469	8483	8487	8514	8529	8533	8563	8577	8581
8611	8626	8630	8660	8674	8678	8705	8724	8728	8755	8762	8767	8771
8786	8788	8822	8838	8840	8875	8894	8923					
3615#	5231	5236										
3615#	5691	5696										
3615#	3618	4820	4830	4835	4842	4849	4855	4861	4867	4886	4891	4933
4941	4945	5178	5214	5236	5299	5375	5415	5462	5530	5575	5628	5652
5679	5696	5722	5752	5763	5797	5798	5800	5824	5828	5845	5847	5870
5872	5874	5901	5904	5929	5931	5958	5960	5985	5987	5997	5999	6019
6021	6023	6031	6043	6050	6052	6055	6057	6065	6074	6081	6083	6086
6102	6104	6106	6118	6121	6123	6132	6136	6145	6148	6162	6165	6198
6222	6225	6232	6237	6242	6258	6275	6279	6327	6360	6362	6364	6412
6414	6416	6482	6486	6488	6539	6543	6559	6562	6564	6614	6616	6618
6672	6676	6678	6733	6736	6756	6759	6804	6823	6828	6875	6903	6906
6917	6919	6934	6937	6939	6954	6958	6960	6974	6977	6979	6999	7002
7004	7024	7027	7029	7050	7061	7081	7084	7086	7088	7130	7132	7134
7136	7178	7180	7182	7184	7227	7229	7231	7258	7260	7263	7283	7286
7287	7291	7307	7308	7311	7314	7335	7338	7339	7343	7358	7360	7364
7374	7377	7378	7379	7382	7400	7401	7403	7426	7428	7430	7450	7452
7466	7469	7496	7511	7514	7537	7548	7564	7579	7590	7607	7628	7631
7650	7656	7672	7675	7704	7720	7723	7752	7768	7771	7799	7818	7821
7841	7847	7865	7869	7889	7896	7919	7921	7923	7945	7950	7952	7954
7978	7988	7990	8006	8010	8038	8054	8058	8086	8102	8106	8192	8211
8215	8241	8255	8259	8286	8301	8305	8333	8349	8353	8379	8395	8399
8424	8438	8442	8469	8483	8487	8514	8529	8533	8563	8577	8581	8611
8626	8630	8660	8674	8678	8705	8724	8728	8755	8762	8767	8771	8786
8788	8822	8838	8840	8875	8901	8923						
3615#	8894	8901										
3615#	3700	3707										
3615#	5051	5178										
3615#	6906	7084										
3615#	3618	8923										
3615#	4818	4820	4823	4830	4832	4835	4838	4842	4845	4849	4851	4855
4857	4861	4863	4867	4870	4886	4888	4891	4893	4933	4935	4941	4943
4945												
3615#	5031	5037										
3615#												
3615#												

F\$CLEA= 000007
F\$DU = 000016
F\$END = 000041

F\$HARD= 000004
F\$HW = 000013
F\$INIT= 000006
F\$JMP = 000050
F\$MOD = 000000
F\$MSG = 000011

F\$PROT= 000021
F\$PMR = 000017
F\$RPT = 000012

CVDVPCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 31-6
CVDVPC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

F\$SEG = 000003	3615#	7261	7287	7289	7307	7312	7339	7341	7360	7362	7378		
F\$SOFT= 000005	3615#												
F\$SRV = 000010	3615#	5270	5299	5325	5375	5398	5415	5440	5462	5490	5530	5550	5575
	5601	5628	5648	5652	5675	5679	5755	5763					
F\$SUB = 000002	3615#	5798	5824	5828	5845	5874	5901	5904	5929	5931	5958	5960	5985
	5987	5997	6021	6052	6055	6083	6104	6118	6121	6145	6362	6412	6414
	6482	6486	6539	6562	6614	6616	6672	6676	6733	6917	6934	6937	6954
	6958	6974	6977	6999	7002	7024	7027	7050	7086	7132	7134	7180	7182
	7229	7260	7308	7311	7379	7401	7426	7428	7450	7921	7950	7952	7988
F\$SW = 000014	3615#												
F\$TEST= 000001	3615#	5722	5752	5797	5847	5870	5999	6019	6086	6102	6148	6162	6198
	6222	6258	6275	6327	6360	6543	6559	6736	6756	6804	6823	6875	6903
	7061	7081	7231	7258	7382	7400	7452	7466	7496	7511	7548	7564	7607
	7628	7656	7672	7704	7720	7752	7768	7799	7818	7847	7865	7896	7919
	7990	8006	8038	8054	8086	8102	8192	8211	8241	8255	8286	8301	8333
	8349	8379	8395	8424	8438	8469	8483	8514	8529	8563	8577	8611	8626
	8660	8674	8705	8724	8771	8786	8822	8838	8875				
GETPRM 015570	5082	5092#	5097										
G\$CNTD= 000200	3615#												
G\$DELM= 000372	3615#	4805	6108										
G\$DISP= 000003	3615#												
G\$EXCP= 000400	3615#												
G\$HILI= 000002	3615#												
G\$LOLI= 000001	3615#												
G\$NO = 000000	3615#												
G\$OFFS= 000400	3615#	8896	8897	8898									
G\$OFFSI= 000376	3615#	8896	8897	8898									
G\$PRMA= 000001	3615#	8896	8897										
G\$PRMD= 000002	3615#	8898											
G\$PRML= 000000	3615#												
G\$RADA= 000140	3615#												
G\$RADB= 000000	3615#												
G\$RADD= 000040	3615#												
G\$RADL= 000120	3615#												
G\$RADO= 000020	3615#	8896	8897	8898									
G\$XFER= 000004	3615#												
G\$YES = 000010	3615#	8896	8897	8898									
HEADER 002336	3922#	5512	5516*	5519*	5618	5620*	7268*	7293*	7320*	7345*	7366*	7407*	7434*
	7473*	7519*	7581*	7635*	7681*	7729*	7777*	7826*	7874*	7929*	7960*	8016*	8064*
	8219*	8263*	8311*	8357*	8403*	8447*	8492*	8540*	8587*	8637*	8683*	8730*	
HELP = 000000	3603#	3636	3659	3685	4068								
HIGH 002340	3923#	4440	4549	5065*	8277*	8283*	8600*	8608*	8810*	8821*	8863*	8874*	
HOE = 100000 G	3725#												
IBE = 010000 G	3725#												
IC = 040000	3770#	4681	4902	6839									
IDLE = 004000	3791#	7432	7727	8538									
IDU = 000040 G	3725#												
IER = 020000 G	3725#												
ILLGL 017744 G	5162	5675#											
IPCR 002342	3924#	4352	4359	5520	5564	7276*	7296*	7328*	7348*	7369*	7415*	7439*	7481*
	7527*	7584*	7643*	7689*	7691	7737*	7738	7784*	7785	7834*	7882*	7936*	7968*
	8023*	8071*	8227*	8271*	8319*	8365*	8411*	8455*	8500*	8547*	8548	8594*	8595
	8644*	8645	8690*	8800*	8804*	8853*	8857*						
IPCSAR 002344	3925#	4341	4346	4348	4557	7265*	7266*	7275	7295	7316*	7317*	7327	7347
	7368	7405*	7414	7431*	7432*	7438	7471*	7480	7516*	7517*	7526	7567*	7582
	7633*	7642	7677*	7678*	7679*	7690	7725*	7726*	7727*	7739	7773*	7774*	7775*

CVDVPCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 31-7
CVDVPC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

	7786	7823*	7824*	7833	7871*	7872*	7881	7925*	7926*	7927*	7937	7956*	7957*
	7958*	7967	8012*	8013*	8014*	8025	8060*	8061*	8062*	8073	8108*	8109*	8217*
	8226	8261*	8270	8307*	8308*	8309*	8318	8355*	8364	8401*	8410	8444*	8445*
	8454	8489*	8490*	8499	8535*	8536*	8537*	8538*	8549	8583*	8584*	8585*	8596
	8632*	8633*	8634*	8635*	8646	8680*	8681*	8691	8790*	8806	8841*	8859	
IRDSR 002350	3927*	4553	4559	5352*	5355	5360	7422	7446	7539	7541	7594*	7595	7842
	7890	7946	8032	8080	8155*	8158	8163	8165					
IRXCSR 002346	3926*	5272*	5279	5288	5327*	5330	5341	5350	5353	5358	8154*	8156	8161
ISR = 000100 G	3725*												
IXE = 004000 G	3725*												
I\$AU = 000041	3615*												
I\$AUTO= 000041	3615*	5195*	5214*										
I\$CLN = 000041	3615*	5231*	5236*										
I\$DU = 000041	3615*	5691*	5696*										
I\$HRD = 000041	8894*	8901*											
I\$INIT= 000041	3615*	5051*	5178*										
I\$MOD = 000041	3615*	3618*	8923*										
I\$MSG = 000041	3615*	4818*	4820*	4823*	4830*	4832*	4835*	4838*	4842*	4845*	4849*	4851*	4855*
	4857*	4861*	4863*	4867*	4870*	4886*	4888*	4891*	4893*	4933*	4935*	4941*	4943*
	4945*												
I\$PROT= 000040	3615*	5031*											
I\$PTAB= 000041	3615*												
I\$PWR = 000041	3615*												
I\$RPT = 000041	3615*												
I\$SEG = 000041	3615*	5722	5797	5798	5828	5870	5874	5904	5931	5960	5987	6019	6021
	6055	6102	6104	6121	6162	6222	6275	6360	6362	6414	6486	6559	6562
	6616	6676	6756	6823	6903	6917	6937	6958	6977	7002	7027	7081	7086
	7134	7182	7258	7260	7261*	7287*	7289*	7307*	7311	7312*	7339*	7341*	7360*
	7362*	7378*	7400	7401	7428	7466	7511	7564	7628	7672	7720	7768	7818
	7865	7919	7921	7952	8006	8054	8102	8211	8255	8301	8349	8395	8438
	8483	8529	8577	8626	8674	8724	8786	8838					
I\$SETU= 000041	3615*												
I\$SRV = 000041	3615*	5270*	5299*	5325*	5375*	5398*	5415*	5440*	5462*	5490*	5530*	5550*	5575*
	5601*	5628*	5648*	5652*	5675*	5679*	5755*	5763*					
I\$SUB = 000041	3615*	5722	5797	5798*	5824*	5828*	5845*	5870	5874*	5901*	5904*	5929*	5931*
	5958*	5960*	5985*	5987*	5997*	6019	6021*	6052*	6055*	6083*	6102	6104*	6118*
	6121*	6145*	6162	6222	6275	6360	6362*	6412*	6414*	6482*	6486*	6539*	6559
	6562*	6614*	6616*	6672*	6676*	6733*	6756	6823	6903	6917*	6934*	6937*	6954*
	6958*	6974*	6977*	6999*	7002*	7024*	7027*	7050*	7081	7086*	7132*	7134*	7180*
	7182*	7229*	7258	7260*	7308*	7311*	7379*	7400	7401*	7426*	7428*	7450*	7466
	7511	7564	7628	7672	7720	7768	7818	7865	7919	7921*	7950*	7952*	7988*
	8006	8054	8102	8211	8255	8301	8349	8395	8438	8483	8529	8577	8626
	8674	8724	8786	8838									
I\$TST = 000041	3615*	5722*	5752*	5797*	5798	5800	5828	5847*	5870*	5872	5874	5904	5931
	5960	5987	5999*	6019*	6021	6023	6031	6043	6050	6055	6057	6065	6074
	6081	6086*	6102*	6104	6106	6121	6123	6132	6136	6148*	6162*	6165	6198*
	6222*	6225	6232	6237	6242	6258*	6275*	6279	6327*	6360*	6362	6364	6414
	6416	6486	6488	6543*	6559*	6562	6564	6616	6618	6676	6678	6736*	6756*
	6759	6804*	6823*	6828	6875*	6903*	6906	6917	6919	6937	6939	6958	6960
	6977	6979	7002	7004	7027	7029	7061*	7081*	7084	7086	7088	7130	7134
	7136	7178	7182	7184	7227	7231*	7258*	7260	7263	7283	7286	7291	7311
	7314	7335	7338	7343	7358	7364	7374	7377	7382*	7400*	7401	7403	7428
	7430	7452*	7466*	7469	7496*	7511*	7514	7537	7548*	7564*	7579	7590	7607*
	7628*	7631	7650	7656*	7672*	7675	7704*	7720*	7723	7752*	7768*	7771	7799*
	7818*	7821	7841	7847*	7865*	7869	7889	7896*	7919*	7921	7923	7945	7952
	7954	7978	7990*	8006*	8010	8038*	8054*	8058	8086*	8102*	8106	8192*	8211*

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CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

MAINT	002356	3930*	4453	7280*	7332*	7419*	7443*	7487*	7531*	7587*	7647*	7695*	7743*	7790*
		7838*	7886*	7941*	7972*	8029*	8077*	8231*	8275*	8323*	8369*	8415*	8459*	8504*
		8553*	8601*	8650*	8695*	8808*	8861*							
MASK	004514	4369	4382*											
MCFLAG	002360	3931*	4430*	4627	4630	4631	4633*	4658	4661*	5274*	5275	5332*	5333	5339
		6282*	6567*	6622*	6682*	6762*	6921*	6928	6941*	6948	6962*	6968	6981*	6988
		6994	7006*	7013	7019	7031*	7038	7045	7091*	7110	7121	7139*	7158	7169
		7187*	7206	7218	8746*									
MFPT	= 000007	3857*	5163											
MM	= 000010	3824*	5142	5160	5814	6026	6060	6126	6228	6297	6375	6428	6500	6578
		6634	6694	6776	7106	7154	7202							
MMASK	006420	4643	4681*											
MODE	002362	3932*	4338	4551	5365	7264*	7315*	7404*	7470*	7515*	7566*	7632*	7676*	7724*
		7772*	7822*	7870*	7924*	7955*	8011*	8059*	8107*	8216*	8260*	8306*	8354*	8400*
		8443*	8488*	8534*	8582*	8631*	8679*	8793*	8845*					
MODEM	002444	3970*	4289*	4290*	4293*	4637	5341*	5342*	5345*					
NESTPC	002364	3933*												
NEWST	015552	5080	5088*	5095										
NOERR	= 003400	3787*	7567											
NONE1	= 001000	3788*	7431											
NONE2	= 003000	3789*												
NXM	017734 G	5197	5648*											
NXMFLG	002366	3934*	5061*	5198*	5207	5232	5650*	5725*	5742	5756	5760*			
ONE	= 010000	3808*												
OVER	002370	3935*	5064*	5293	6624*	6670*								
O#APTS	= 000000	3615*	3657											
O#AU	= 000000	3615*	3657											
O#BGNR	= 000000	3615*	3657											
O#BGNS	= 000000	3615*	3657											
O#DU	= 000001	3615*	3634*	3657										
O#ERRT	= 000000	3615*	3657											
O#GNSW	= 000000	3615*	3657											
O#POIN	= 000001	3615*	3634*	3657										
O#SETU	= 000000	3615*	3657	8925										
PATCH	040466	8915*												
PCR	= 002302	3892*	4279	4853	4880	5520*	5564*	5906*	5907	5910*	5911	5916*	5917	5920*
		5927*	7483*	7691*	7738*	7785*	8548*	8595*	8645*	8799*				
PCSAR	= 002270	3887*	6226*	6294*	6772*	7103*	7151*	7199*	7275*	7295*	7327*	7347*	7368*	7414*
		7438*	7480*	7526*	7582*	7642*	7690*	7739*	7786*	7833*	7881*	7937*	7967*	8025*
		8073*	8226*	8270*	8318*	8364*	8410*	8454*	8499*	8549*	8596*	8646*	8691*	8732*
		8806*	8859*											
PNT	= 001000 G	3725*												
PRI	= 002000 G	3725*												
PRI00	= 000000 G	3725*	4452	6170	6287	6369	6422	6494	6572	6628	6688	6765	6910	7096
		7144	7192	8750										
PRI01	= 000040 G	3725*												
PRI02	= 000100 G	3725*												
PRI03	= 000140 G	3725*												
PRI04	= 000200 G	3725*	4443	4444	4449	4450	6169	6285	6286	6368	6421	6493	6570	6571
		6626	6627	6686	6687	6763	6764	6909	7094	7095	7142	7143	7190	7191
		8748	8749											
PRI05	= 000240 G	3725*												
PRI06	= 000300 G	3725*												
PRI07	= 000340 G	3725*	5053	5162	5197	5724	6194	6322	6609	6666	6727	6797	7055	7126
		7174	7223											
PROTO	= 040000	3795*	7679	7726	7775	7927	7958	8014	8062	8537	8584	8633	8681	8732

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		8790												
PSTACK	002372	3936*	5054*											
P1	040302	8896	8903*											
P2	040314	8897	8904*											
P3	040325	8898	8905*											
RABORT=	002000	3804*	5360	6528	6717	7422	7446	7541	8163					
RCOUNT	002500	3980*	4438*	4567	4940	5356*	5367	5509*	5609*	8121*	8159*			
RCVBUF	003274	4036*	4037	4373	4435	4575	7979	8118	8734	8742	8757			
RCVEC	002262	3875*	4444	4450	4511	5133*	6286	6324	6571	6611	6627	6668	6687	6729
		6763	6799	6909	7057	7094	7128	7142	7176	7190	7225	8749		
RDATA	016732 G	4450	5325*	8749										
RDATA2	017164 G	4444	5398*											
RDATRY=	000200	3763*	5279	5350	5353	6233	6238	6241	6250	6314	6390	6517	8152	8156
RDSR =	002270	3889*	4275	5297	5352	5407	5836	6392	6453	6528	8155			
REG	002374	3937*	4221*	4222*	4228	4890								
REOM =	001000	3803*	6393	6601	7539	8165								
RESET =	000001	3821*	4272	4509	5234	6188								
RETURN=	000207	3853*												
RFLAG	002376	3938*	4428*	4473	4494	5059*	5281*	5290*	5362*	5370*	5403*	5410*	6281*	6301
		6310*	6312	6565*	6593	6620*	6649	6680*	6709	6761*	6791	6920*	6940*	6961*
		6980*	7005*	7030*	7090*	7138*	7186*	8745*						
RINT	016602 G	5270*	6286	6571	6627	6687	6763	6909	7094	7142	7190			
RL =	000001	3754*	5153											
ROVER =	004000	3805*	5360	6453	6658	8163								
RR =	010000	3768*	4681	4896	6834									
RSAVE	002400	3939*	5297*	6392*	6393	6601	6658	6717						
RSIZE =	000400	4037*	4374											
RSM =	000400	3802*												
RSTARY=	002000	3766*	5288	5350	5358	6390	6401	6443	6459	6464	6476	6515	6533	6605
		6662	6722	8152	8161									
RTS =	000004	3757*	4681	4894	4896	5145	6829	6857	6860	6924	6944	6965	6984	7092
RXACT =	004000	3767*	6233	6238	6243	6250	6314	6381	6406	6434	6506	6584	6640	6700
RXCSR =	002266	3886*	4273	4289	4455*	4460*	4894	4900	4906	4915	5272	5277*	5286*	5327
		5335*	5372*	5400	5412*	5834	5878*	5879	5882*	5889*	5890	5893*	5894	5899*
		6227*	6233	6238	6241	6243	6248*	6250	6295*	6309*	6314	6377*	6381	6390
		6401	6406	6430*	6434	6443	6459	6464	6474*	6476	6502*	6506	6515	6517
		6533	6580*	6584	6605	6636*	6640	6662	6696*	6700	6722	6774*	6830*	6832
		6834	6837*	6839	6842*	6847*	6849	6857*	6861	6864	6866*	6867	6869*	6870
		6924*	6944*	6965*	6984*	7009*	7034*	7105*	7153*	7201*	8124*	8152	8154	
RXENA =	000020	3759*	5138	5159	6227	6248	6295	6309	6377	6430	6474	6502	6580	6636
		6696	6774	7105	7153	7201								
RXINI	002402	3940*	5138*	5145*	5148*	5153*	5155	8124						
RXINIT	002404	3941*	4445*	4460	4462*	5155*	5156*							
RXITEN=	000100	3761*	5156	5159	5372	5412	6295	6580	6636	6696	6774	6924	6984	7009
		7034	7105	7153	7201									
RXMINI	002406	3942*	4455	5159*										
SAVE	002410	3943*												
SAVTIM	002412	3944*	5176*	7302	7354									
SECADR=	010000	3792*	4346	7266	7317	8308								
SEVEN =	070000	3814*												
SF =	000001	3753*	4681	4915	6841	6857	6866							
SFR =	000400	3764*												
SIX =	060000	3813*												
SQ =	000040	3826*	4917	6844										
SSYNCH=	020000	3793*	7774	8634	8732									
STARES	002314	3905*	4716	4763	5086*	5091*	5829							

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 CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

STARST 015546	5076	5078	5085*											
START 002414	3945*	5442	5445*	5492	5506*	5551	5556*	5559*	5603	5606*	6283*	6366*	6419*	
	6490*	6568*	6623*	6683*	6773*	7104*	7152*	7200*	7267*	7292*	7319*	7344*	7365*	
	7406*	7433*	7472*	7518*	7580*	7634*	7680*	7728*	7776*	7825*	7873*	7928*	7959*	
	8015*	8063*	8218*	8262*	8310*	8356*	8402*	8446*	8491*	8539*	8586*	8636*	8682*	
	8729*	8791*	8842*	8847*										
SUBRPC 002416	3946*	4217*	4218*	4242*	4284*	4285*	4287*	4465*	4466*	4501*	4507*	4562*	4563*	
	4569*	4570*	4584*	4585*	4590*	4623*	4624*	4819	4824	4826	4833	4871	4873	
	4889	4936	4938	5055*										
SVCGBL= 000000	3615*	3626*	3657	3683	3700	4055	4060	4818	4823	4832	4838	4845	4851	
	4857	4863	4870	4888	4893	4935	4943	5031	5051	5195	5231	5270	5325	
	5398	5440	5490	5550	5601	5648	5675	5691	5755	8894	8925*			
SVCINS= 000001	3615*	3623*	3657	3683	3700	4055	4060	4231	4236	4239	4286	4297	4443	
	4444	4449	4450	4452	4479	4487	4491	4498	4510	4511	4564	4571	4588	
	4629	4630	4634	4638	4639	4640	4649	4652	4664	4667	4718	4765	4805	
	4819	4820	4826	4828	4829	4830	4833	4834	4835	4839	4840	4841	4842	
	4846	4847	4848	4849	4852	4853	4854	4855	4858	4859	4860	4861	4864	
	4865	4866	4867	4873	4875	4876	4877	4878	4879	4880	4881	4882	4883	
	4884	4885	4886	4889	4890	4891	4897	4903	4909	4910	4911	4918	4919	
	4920	4921	4922	4926	4927	4928	4931	4933	4938	4940	4941	4944	4945	
	5053	5073	5075	5076	5077	5078	5079	5080	5081	5082	5096	5097	5102	
	5131	5162	5168	5178	5197	5209	5210	5211	5214	5236	5299	5375	5415	
	5462	5530	5575	5628	5652	5679	5693	5694	5696	5724	5744	5745	5746	
	5750	5752	5759	5762	5763	5798	5800	5822	5824	5828	5831	5843	5845	
	5847	5872	5874	5897	5901	5904	5925	5929	5931	5953	5958	5960	5981	
	5985	5987	5993	5994	5997	5999	6021	6023	6031	6036	6043	6047	6050	
	6052	6055	6057	6065	6070	6074	6078	6081	6083	6086	6104	6106	6108	
	6116	6118	6121	6123	6132	6136	6143	6145	6148	6165	6169	6170	6185	
	6192	6194	6196	6198	6225	6232	6237	6242	6245	6252	6255	6258	6279	
	6285	6286	6287	6306	6316	6319	6322	6324	6325	6327	6362	6364	6368	
	6369	6385	6398	6403	6408	6412	6414	6416	6421	6422	6438	6448	6455	
	6461	6469	6479	6482	6486	6488	6493	6494	6510	6523	6530	6536	6539	
	6543	6562	6564	6570	6571	6572	6588	6597	6603	6607	6609	6611	6612	
	6614	6616	6618	6626	6627	6628	6644	6653	6660	6664	6666	6668	6669	
	6672	6676	6678	6686	6687	6688	6704	6713	6719	6725	6727	6729	6733	
	6736	6759	6763	6764	6765	6787	6793	6797	6799	6800	6804	6828	6853	
	6873	6875	6906	6909	6910	6917	6919	6930	6934	6937	6939	6950	6954	
	6958	6960	6970	6974	6977	6979	6990	6991	6996	6999	7002	7004	7015	
	7016	7021	7024	7027	7029	7040	7041	7042	7047	7050	7055	7057	7058	
	7061	7084	7086	7088	7094	7095	7096	7115	7117	7123	7126	7128	7129	
	7130	7132	7134	7136	7142	7143	7144	7163	7165	7171	7174	7176	7177	
	7178	7180	7182	7184	7190	7191	7192	7211	7213	7215	7220	7223	7225	
	7226	7227	7229	7231	7260	7261	7263	7283	7286	7287	7289	7291	7305	
	7307	7308	7311	7312	7314	7335	7338	7339	7341	7343	7357	7358	7360	
	7362	7364	7374	7377	7378	7379	7382	7401	7403	7424	7426	7428	7430	
	7448	7450	7452	7469	7496	7514	7537	7544	7548	7579	7590	7597	7607	
	7631	7650	7656	7675	7704	7723	7752	7771	7799	7821	7841	7844	7847	
	7869	7889	7892	7896	7921	7923	7945	7948	7950	7952	7954	7978	7986	
	7988	7990	8010	8034	8038	8058	8082	8086	8106	8133	8143	8148	8169	
	8192	8215	8241	8259	8286	8305	8333	8353	8379	8399	8424	8442	8469	
	8487	8514	8533	8563	8581	8611	8630	8660	8678	8705	8728	8748	8749	
	8750	8755	8762	8767	8771	8788	8815	8822	8840	8868	8875	8894	8896	
	8897	8898	8901	8925										
SVCSUB= 000001	3615*	3625*	5798	5828	5874	5904	5931	5960	5987	6021	6055	6104	6121	
	6362	6414	6486	6562	6616	6676	6917	6937	6958	6977	7002	7027	7086	
	7134	7182	7260	7311	7401	7428	7921	7952						

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T\$LOLI= 000000
T\$LSYM= 010000

8896#	8897#	8898#											
3615#	3707	4820	4830	4835	4842	4849	4855	4861	4867	4886	4891	4933	
4941	4945	5178	5214	5236	5299	5375	5415	5462	5530	5575	5628	5652	
5679	5696	5752	5763	5824	5845	5847	5901	5929	5958	5985	5997	5999	
6052	6083	6086	6118	6145	6148	6198	6258	6327	6412	6482	6539	6543	
6614	6672	6733	6736	6804	6875	6934	6954	6974	6999	7024	7050	7061	
7132	7180	7229	7231	7308	7379	7382	7426	7450	7452	7496	7548	7607	
7656	7704	7752	7799	7847	7896	7950	7988	7990	8038	8086	8192	8241	
8286	8333	8379	8424	8469	8514	8563	8611	8660	8705	8771	8822	8875	
8901													

T\$LTNO= 000053
T\$NEST= 177777

8925#													
3615#	3618#	3700#	3707#	4818#	4820#	4823#	4830#	4832#	4835#	4838#	4842#	4845#	4849#
4849#	4851#	4855#	4857#	4861#	4863#	4867#	4870#	4877#	4870#	4886#	4888#	4891#	4893#
4935#	4941#	4943#	4945#	5031#	5037#	5051#	5178#	5195#	5214#	5231#	5236#	5270#	5299#
5299#	5325#	5375#	5398#	5415#	5440#	5462#	5490#	5530#	5550#	5575#	5601#	5628#	5648#
5648#	5652#	5675#	5679#	5691#	5696#	5722#	5752#	5755#	5763#	5797#	5847#	5870#	5999#
5828#	5845#	5847#	5870#	5874#	5901#	5904#	5929#	5931#	5958#	5960#	5985#	5987#	6019#
5997#	5999#	6019#	6021#	6052#	6055#	6083#	6086#	6102#	6104#	6118#	6121#	6145#	6198#
6148#	6162#	6198#	6222#	6258#	6275#	6327#	6360#	6362#	6412#	6414#	6482#	6486#	6539#
6539#	6543#	6559#	6562#	6614#	6616#	6672#	6676#	6733#	6736#	6756#	6804#	6823#	6875#
6875#	6903#	6917#	6934#	6937#	6954#	6958#	6974#	6977#	6999#	7002#	7024#	7027#	7050#
7050#	7061#	7081#	7086#	7132#	7134#	7180#	7182#	7229#	7231#	7258#	7260#	7261#	7287#
7287#	7289#	7307#	7308#	7311#	7312#	7339#	7341#	7360#	7362#	7378#	7379#	7382#	7400#
7400#	7401#	7426#	7428#	7450#	7452#	7466#	7496#	7511#	7548#	7564#	7607#	7628#	7656#
7656#	7672#	7704#	7720#	7752#	7768#	7799#	7818#	7847#	7865#	7896#	7919#	7921#	7950#
7950#	7952#	7988#	7990#	8006#	8038#	8054#	8086#	8102#	8192#	8211#	8241#	8255#	8286#
8286#	8301#	8333#	8349#	8379#	8395#	8424#	8438#	8469#	8483#	8514#	8529#	8563#	8577#
8577#	8611#	8626#	8660#	8674#	8705#	8724#	8771#	8786#	8822#	8838#	8875#	8894#	8901#
8901#	8923#												

T\$NS0 = 000000
T\$NS1 = 000004

3618#	8923												
3700#	3707	4818#	4820	4823#	4830	4832#	4835	4838#	4842	4845#	4849	4851#	4855
4855	4857#	4861	4863#	4867	4870#	4886	4888#	4891	4893#	4933	4935#	4941	4943#
4943#	4945	5031#	5037	5051#	5178	5195#	5214	5231#	5236	5270#	5299	5325#	5375
5375	5398#	5415	5440#	5462	5490#	5530	5550#	5575	5601#	5628	5648#	5652	5675#
5675#	5679	5691#	5696	5722#	5752	5755#	5763	5797#	5847	5870#	5999	6019#	6086
6086	6102#	6148	6162#	6198	6222#	6258	6275#	6327	6360#	6543	6559#	6736	6756#
6756#	6804	6823#	6875	6903#	7061	7081#	7231	7258#	7382	7400#	7452	7466#	7496
7496	7511#	7548	7564#	7607	7628#	7656	7672#	7704	7720#	7752	7768#	7799	7818#
7818#	7847	7865#	7896	7919#	7990	8006#	8038	8054#	8086	8102#	8192	8211#	8241
8241	8255#	8286	8301#	8333	8349#	8379	8395#	8424	8438#	8469	8483#	8514	8529#
8529#	8563	8577#	8611	8626#	8660	8674#	8705	8724#	8771	8786#	8822	8838#	8875
8875	8894#	8901											

T\$NS2 = 000002

5798#	5824	5828#	5845	5874#	5901	5904#	5929	5931#	5958	5960#	5985	5987#	6019#
5997	6021#	6052	6055#	6083	6104#	6118	6121#	6145	6362#	6412	6414#	6482	6486#
6486#	6539	6562#	6614	6616#	6672	6676#	6733	6917#	6934	6937#	6954	6958#	6974
6974	6977#	6999	7002#	7024	7027#	7050	7086#	7132	7134#	7180	7182#	7229	7260#
7260#	7308	7311#	7379	7401#	7426	7428#	7450	7921#	7950	7952#	7988		7261#
7261#	7287	7289#	7307	7312#	7339	7341#	7360	7362#	7378				

T\$NS3 = 000003
T\$PTNU= 000000
T\$SAVL= 177777
T\$SEGL= 177777
T\$SEKO= 010002
T\$SUBN= 000000

3615#													
3615#													
3615#	7261#	7287#	7289#	7307#	7312#	7339#	7341#	7360#	7362#	7378#			
7261#	7287	7289#	7307	7312#	7339	7341#	7360	7362#	7378				
3615#	5722#	5797#	5798#	5828#	5870#	5874#	5904#	5931#	5960#	5987#	6019#	6021#	6055#
6055#	6102#	6104#	6121#	6162#	6222#	6275#	6360#	6362#	6414#	6486#	6559#	6562#	6616#
6616#	6676#	6756#	6823#	6903#	6917#	6937#	6958#	6977#	7002#	7027#	7081#	7086#	7134#
7134#	7182#	7258#	7260#	7311#	7400#	7401#	7428#	7466#	7511#	7564#	7628#	7672#	

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CVDVPC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

	7720#	7768#	7818#	7865#	7919#	7921#	7952#	8006#	8054#	8102#	8211#	8255#	8301#
	8349#	8395#	8438#	8483#	8529#	8577#	8626#	8674#	8724#	8786#	8838#		
T\$TAGL= 177777	3615#												
T\$TAGN= 010151	3615#	3700#	4818#	4823#	4832#	4838#	4845#	4851#	4857#	4863#	4870#	4888#	4893#
	4935#	4943#	5031#	5051#	5195#	5231#	5270#	5325#	5398#	5440#	5490#	5550#	5601#
	5648#	5675#	5691#	5722#	5755#	5797#	5798#	5828#	5870#	5874#	5904#	5931#	5960#
	5987#	6019#	6021#	6055#	6102#	6104#	6121#	6162#	6222#	6275#	6360#	6362#	6414#
	6486#	6559#	6562#	6616#	6676#	6756#	6823#	6903#	6917#	6937#	6958#	6977#	7002#
	7027#	7081#	7086#	7134#	7182#	7258#	7260#	7311#	7400#	7401#	7428#	7466#	7511#
	7564#	7628#	7672#	7720#	7768#	7818#	7865#	7919#	7921#	7952#	8006#	8054#	8102#
	8211#	8255#	8301#	8349#	8395#	8438#	8483#	8529#	8577#	8626#	8674#	8724#	8786#
	8838#	8894#											
T\$TEMP= 000000	3683#	3707#	4820#	4830#	4835#	4842#	4849#	4855#	4861#	4867#	4886#	4891#	4933#
	4941#	4945#	5037#	5178#	5214#	5236#	5299#	5375#	5415#	5462#	5530#	5575#	5628#
	5652#	5679#	5696#	5752#	5763#	5800#	5824#	5845#	5847#	5872#	5901#	5929#	5958#
	5985#	5997#	5999#	6023#	6031#	6043#	6050#	6052#	6057#	6065#	6074#	6081#	6083#
	6086#	6106#	6118#	6123#	6132#	6136#	6145#	6148#	6165#	6198#	6225#	6232#	6237#
	6242#	6258#	6279#	6327#	6364#	6412#	6416#	6482#	6488#	6539#	6543#	6564#	6614#
	6618#	6672#	6678#	6733#	6736#	6759#	6804#	6828#	6875#	6906#	6919#	6934#	6939#
	6954#	6960#	6974#	6979#	6999#	7004#	7024#	7029#	7050#	7061#	7084#	7088#	7130#
	7132#	7136#	7178#	7180#	7184#	7227#	7229#	7231#	7263#	7283#	7286#	7287#	7291#
	7307#	7308#	7314#	7335#	7338#	7339#	7343#	7358#	7360#	7364#	7374#	7377#	7378#
	7379#	7382#	7403#	7426#	7430#	7450#	7452#	7469#	7496#	7514#	7537#	7548#	7579#
	7590#	7607#	7631#	7650#	7656#	7675#	7704#	7723#	7752#	7771#	7799#	7821#	7841#
	7847#	7869#	7889#	7896#	7923#	7945#	7950#	7954#	7978#	7988#	7990#	8010#	8038#
	8058#	8086#	8106#	8192#	8215#	8241#	8259#	8286#	8305#	8333#	8353#	8379#	8399#
	8424#	8442#	8469#	8487#	8514#	8533#	8563#	8581#	8611#	8630#	8660#	8678#	8705#
	8728#	8755#	8762#	8767#	8771#	8788#	8822#	8840#	8875#	8896#	8897#	8898#	8901#
	8923#												
T\$TEST= 000053	3615#	5722#	5797#	5798	5828	5870#	5874	5904	5931	5960	5987	6019#	6021
	6055	6102#	6104	6121	6162#	6222#	6275#	6360#	6362	6414	6486	6559#	6562
	6616	6676	6756#	6823#	6903#	6917	6937	6958	6977	7002	7027	7081#	7086
	7134	7182	7258#	7260	7311	7400#	7401	7428	7466#	7511#	7564#	7628#	7672#
	7720#	7768#	7818#	7865#	7919#	7921	7952	8006#	8054#	8102#	8211#	8255#	8301#
	8349#	8395#	8438#	8483#	8529#	8577#	8626#	8674#	8724#	8786#	8838#	8925	
T\$TSTM= 177777	3615#	4231	4236	4239	4286	4297	4443	4444	4449	4450	4452	4479	4487
	4491	4498	4510	4511	4564	4571	4588	4629	4630	4634	4638	4639	4640
	4649	4652	4664	4667	4718	4765	4819	4820	4826	4828	4829	4830	4833
	4834	4835	4839	4840	4841	4842	4846	4847	4848	4849	4852	4853	4854
	4855	4858	4859	4860	4861	4864	4865	4866	4867	4873	4875	4876	4877
	4878	4879	4880	4881	4882	4883	4884	4885	4886	4889	4890	4891	4897
	4903	4909	4910	4911	4918	4919	4920	4921	4922	4926	4927	4928	4931
	4933	4938	4940	4941	4944	4945	5053	5073	5075	5077	5079	5081	5096
	5102	5131	5162	5168	5178	5197	5209	5210	5211	5214	5236	5693	5694
	5696	5724	5744	5745	5746	5750	5752	5759	5762	5798	5800	5822	5824
	5828	5831	5843	5845	5847	5872	5874	5897	5901	5904	5925	5929	5931
	5953	5958	5960	5981	5985	5987	5993	5994	5997	5999	6021	6023	6031
	6036	6043	6047	6050	6052	6055	6057	6065	6070	6074	6078	6081	6083
	6086	6104	6106	6116	6118	6121	6123	6132	6136	6143	6145	6148	6165
	6169	6170	6185	6192	6194	6196	6198	6225	6232	6237	6242	6245	6252
	6255	6258	6279	6285	6286	6287	6306	6316	6319	6322	6324	6325	6327
	6362	6364	6368	6369	6385	6398	6403	6408	6412	6414	6416	6421	6422
	6438	6448	6455	6461	6469	6479	6482	6486	6488	6493	6494	6510	6523
	6530	6536	6539	6543	6562	6564	6570	6571	6572	6588	6597	6603	6607
	6609	6611	6612	6614	6616	6618	6626	6627	6628	6644	6653	6660	6664
	6666	6668	6669	6672	6676	6678	6686	6687	6688	6704	6713	6719	6725

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 CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

T10.2	024416	6616#	
T10.3	024726	6676#	
T11	025234 G	3683	6756#
T12	025500 G	3683	6823#
T13	025770 G	3683	6903#
T13.1	026036	6917#	
T13.2	026114	6937#	
T13.3	026172	6958#	
T13.4	026250	6977#	
T13.5	026370	7002#	
T13.6	026510	7027#	
T14	026700 G	3683	7081#
T14.1	026712	7086#	
T14.2	027202	7134#	
T14.3	027472	7182#	
T15	030004 G	3683	7258#
T15.1	030004	7260#	
T15.2	030306	7311#	
T16	030714 G	3683	7400#
T16.1	030714	7401#	
T16.2	031076	7428#	
T17	031240 G	3683	7466#
T18	031412 G	3683	7511#
T19	031622 G	3683	7564#
T2	020434 G	3683	5797#
T2.1	020434	5798#	
T2.2	020566	5828#	
T20	032072 G	3683	7628#
T21	032240 G	3683	7672#
T22	032424 G	3683	7720#
T23	032610 G	3683	7768#
T24	032774 G	3683	7818#
T25	033164 G	3683	7865#
T26	033352 G	3683	7919#
T26.1	033352	7921#	
T26.2	033550	7952#	
T27	033770 G	3683	8006#
T28	034160 G	3683	8054#
T29	034350 G	3683	8102#
T3	020660 G	3683	5870#
T3.1	020670	5874#	
T3.2	020776	5904#	
T3.3	021106	5931#	
T3.4	021216	5960#	
T3.5	021326	5987#	
T30	034746 G	3683	8211#
T31	035122 G	3683	8255#
T32	035304 G	3683	8301#
T33	035474 G	3683	8349#
T34	035646 G	3683	8395#
T35	036022 G	3683	8438#
T36	036204 G	3683	8483#
T37	036366 G	3683	8529#
T38	036570 G	3683	8577#
T39	036772 G	3683	8626#
T4	021410 G	3683	6019#

CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 31-21
 CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- USER SYMBOLS

\$LSTTA= 000001	3622#													
\$MODEM 005452	4622#	8238	8330	8376	8422	8466	8511	8560	8657	8702				
\$RESET 004136	4271#	5799	5871	6022	6056	6073	6105	6122	6164	6224	6278	6321	6363	
	6415	6487	6563	6617	6677	6758	6796	6827	6918	6938	6959	6978	7003	
	7028	7054	7087	7125	7135	7173	7183	7222	7262	7290	7313	7342	7363	
	7402	7429	7468	7513	7578	7630	7674	7722	7770	7820	7868	7922	7953	
	8009	8057	8105	8214	8258	8304	8352	8398	8441	8486	8532	8580	8629	
	8677	8727	8787	8839										
\$SPEED 006522	4758#	8103	8212	8256	8302	8350	8396	8439	8484	8530	8578	8627	8675	
	8725													
\$TURN 006444	4713#	6824	6904	7082										
\$WAIT 003724	4216#	6030	6042	6064	6131	6135	6231	6236	6241					
= 040540	3609#	3970#	4010	4011#	4021	4025	4027#	4031#	4036#	4037	4060#	4247#	4383#	
	4805	5020#	5700#	5800	5872	6023	6031	6043	6050	6057	6065	6074	6081	
	6106	6108	6123	6132	6136	6165	6225	6232	6237	6242	6279	6364	6416	
	6488	6564	6618	6678	6759	6828	6906	6919	6939	6960	6979	7004	7029	
	7084	7088	7130	7136	7178	7184	7227	7263	7283	7286	7291	7314	7335	
	7338	7343	7358	7364	7374	7377	7403	7430	7469	7514	7537	7579	7590	
	7631	7650	7675	7723	7771	7821	7841	7869	7889	7923	7945	7954	7978	
	8010	8058	8106	8215	8259	8305	8353	8399	8442	8487	8533	8581	8630	
	8678	8728	8755	8762	8767	8788	8840	8908#	8916#					

CVDVCO DP/11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 32-3
CVDVPC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- MACRO NAMES

M\$EXCP	2101#	3615#	8896#	8897#	8898#										
M\$EXIT	2014#	3615#	6906#	7084#											
M\$EXSE	2022#	3615#	6906#	7084#											
M\$EXTJ	2018#	3615#	6906#	7084#											
M\$GEN	2038#	3615#	3657#	3683#	3700#	3707#	4055#	4060#	4818#	4820#	4823#	4830#	4832#	4835#	4838#
	4842#	4845#	4849#	4851#	4855#	4857#	4861#	4863#	4867#	4870#	4886#	4888#	4891#	4893#	4933#
	4935#	4941#	4943#	4945#	5031#	5051#	5178#	5195#	5214#	5231#	5236#	5270#	5299#	5325#	5375#
	5398#	5415#	5440#	5462#	5490#	5530#	5550#	5575#	5601#	5628#	5648#	5652#	5675#	5679#	5691#
	5696#	5722#	5752#	5755#	5763#	5797#	5798#	5824#	5828#	5845#	5847#	5870#	5874#	5901#	5904#
	5929#	5931#	5958#	5960#	5985#	5987#	5997#	5999#	6019#	6021#	6052#	6055#	6083#	6086#	6102#
	6104#	6118#	6121#	6145#	6148#	6162#	6190#	6222#	6258#	6275#	6327#	6360#	6362#	6412#	6414#
	6482#	6486#	6539#	6543#	6559#	6562#	6614#	6616#	6672#	6676#	6733#	6736#	6756#	6804#	6823#
	6875#	6903#	6917#	6934#	6937#	6954#	6958#	6974#	6977#	6999#	7002#	7024#	7027#	7050#	7061#
	7081#	7086#	7132#	7134#	7180#	7182#	7229#	7231#	7258#	7260#	7287#	7307#	7308#	7311#	7339#
	7360#	7378#	7379#	7382#	7400#	7401#	7426#	7428#	7450#	7452#	7466#	7496#	7511#	7548#	7564#
	7607#	7628#	7656#	7672#	7704#	7720#	7752#	7768#	7799#	7818#	7847#	7865#	7896#	7919#	7921#
	7950#	7952#	7988#	7990#	8006#	8038#	8054#	8086#	8102#	8192#	8211#	8241#	8255#	8286#	8301#
	8333#	8349#	8379#	8395#	8424#	8438#	8469#	8483#	8514#	8529#	8563#	8577#	8611#	8626#	8660#
	8674#	8705#	8724#	8771#	8786#	8822#	8838#	8875#	8894#	8901#	8925#				
M\$GENB	1938#	3615#													
M\$GETS	2035#	3615#	3707#	4820#	4830#	4835#	4842#	4849#	4855#	4861#	4867#	4886#	4891#	4933#	4941#
	4945#	5037#	5178#	5214#	5236#	5299#	5375#	5415#	5462#	5530#	5575#	5628#	5652#	5679#	5696#
	5752#	5763#	5824#	5845#	5847#	5901#	5929#	5958#	5985#	5997#	5999#	6052#	6083#	6086#	6118#
	6145#	6148#	6198#	6258#	6327#	6412#	6482#	6539#	6543#	6614#	6672#	6733#	6736#	6804#	6875#
	6934#	6954#	6974#	6999#	7024#	7050#	7061#	7132#	7180#	7229#	7231#	7287#	7307#	7308#	7339#
	7360#	7378#	7379#	7382#	7426#	7450#	7452#	7496#	7548#	7607#	7656#	7704#	7752#	7799#	7847#
	7896#	7950#	7988#	7990#	8038#	8086#	8192#	8241#	8286#	8333#	8379#	8424#	8469#	8514#	8563#
	8611#	8660#	8705#	8771#	8822#	8875#	8901#	8925#							
M\$GETT	1877#	3615#	5800#	5872#	6023#	6031#	6043#	6050#	6057#	6065#	6074#	6081#	6106#	6123#	6132#
	6136#	6165#	6225#	6232#	6237#	6242#	6279#	6364#	6416#	6488#	6564#	6618#	6678#	6759#	6828#
	6906#	6919#	6939#	6960#	6979#	7004#	7029#	7084#	7088#	7130#	7136#	7178#	7184#	7227#	7263#
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CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- MACRO NAMES

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 CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- MACRO NAMES

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CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- MACRO NAMES

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M#RNRO	1962#	3615#	5096#												
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	8529#	8577#	8626#	8674#	8724#	8786#	8838#	8894#							
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	8875#														
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CVDPVCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 32-7
CVDPVC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- MACRO NAMES

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80380	80580	80820	80860	81060	81330	81430	81480	81690	81920	82150	82410	82590	82860	83050	
83330	83530	83790	83990	84240	84420	84690	84870	85140	85330	85630	85810	86110	86300	86600	
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88750															
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	58470	58720	58740	58970	59010	59040	59250	59290	59310	59530	59580	59600	59810	59850	59870
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	62520	62550	62580	62790	62850	62860	62870	63060	63160	63190	63220	63240	63250	63270	63620
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	71360	71420	71430	71440	71630	71650	71710	71740	71760	71770	71780	71800	71820	71840	71900
	71910	71920	72110	72130	72150	72200	72230	72250	72260	72270	72290	72310	72600	72610	72630

CVDVPCO DPV11 FUNC DIAG MACY11 30A(1052) 16-AUG-84 14:19 PAGE 32-8
CVDVPC.P11 16-AUG-84 14:18 CROSS REFERENCE TABLE -- MACRO NAMES

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	7428#	7430#	7448#	7450#	7452#	7469#	7496#	7514#	7537#	7544#	7548#	7579#	7590#	7597#	7607#
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	7892#	7896#	7921#	7923#	7945#	7948#	7950#	7952#	7954#	7978#	7986#	7988#	7990#	8010#	8034#
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	8333#	8353#	8379#	8399#	8424#	8442#	8469#	8487#	8514#	8533#	8563#	8581#	8611#	8630#	8660#
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	8875#														
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OPEN	1171#	3615#													
POINTE	1176#	3615#	3634												
POP	4119#	4241	5347												
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	4828	4829	4833	4834	4839	4840	4841	4846	4847	4848	4852	4853	4854	4858	4859
	4860	4864	4865	4866	4873	4875	4876	4877	4878	4879	4880	4881	4882	4883	4884
	4885	4889	4890	4897	4903	4909	4910	4911	4918	4919	4920	4921	4922	4926	4927
	4928	4931	4938	4940	4944	5102	5131	6991	7016	7041	7042	7117	7165	7213	7215
PRINTF	1279#	3615#	5694												
PRINTS	1319#	3615#													
PRINTX	1359#	3615#	4718	4765	5744	5762	5994	8815	8868						
PUSH	4109#	4224	5338												
READBU	1399#	3615#													
READEF	1403#	3615#	5075	5077	5079	5081									
RFLAGS	1408#	3615#													
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	6688	6727	6765	6797	6910	7055	7096	7126	7144	7174	7192	7223	8750		
SETVEC	1418#	3615#	4443	4444	4449	4450	5162	5197	5724	6169	6285	6286	6368	6421	6493
	6570	6571	6626	6627	6686	6687	6763	6764	6909	7094	7095	7142	7143	7190	7191
	8748	8749													
SLASH	1424#	3615#													
STARS	1438#	3615#													
SVC	1452#	3614#	3615												
WAIT	4131#	6030	6042	6064	6131	6135	6231	6236	6241						
XFER	1612#	3615#	6906#	7084#											
XFERF	1616#	3615#													
XFERT	1620#	3615#													
\$DELAY	4170#	5832	6189	6249	6311	6519	6831	6838	6843	6848	6858	6927	6947	6967	6987
	7012	7037													

. ABS. 040540 000

ERRORS DETECTED: 0

CVDVPC,CVDVPC/CRF=SVC34R.MLB,CVDVPC.P11

RUN-TIME: 43 53 5 SECONDS

RUN-TIME RATIO: 131/101=1.2

CORE USED: 20K (39 PAGES)