

FRIEND USER'S GUIDE

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01.00.00 INTRODUCTION.

FREELANCE THE I/O ERRORS - NOT A DIAGNOSTIC

THE PURPOSE OF THIS MAP IS TO DESCRIBE TO THE USER HOW TO ASSEMBLE SPECIFIC I/O TEST ROUTINES THAT WILL MAKE AN ATTEMPT TO DUPLICATE THE FAILURE INDICATED BY THE CUSTOMER PROGRAM.

THESE DEVICE(S) ARE RECOGNIZED BY THE FRIEND SUPERVISOR

DEVICE	DEVICE TYPE
TTY	40
4979--DISPLAY	44
4978--DISPLAY	45
4964--DISKETTE	48
4966--DISKETTE	4A
4969--TAPE	58
4974--PRINTER (MATRIX)	64
4973--PRINTER (CHAIN)	68
4962--DISK	78
4963--DISK	7A
4982--SENSOR I/O (AI)	A8
4982--SENSOR I/O (AO)	A9
4982--SENSOR I/O (DI/PI)	B0
4982--SENSOR I/O (DO)	B4

02.00.00 FRIEND SUPERVISOR LOADING AND RUNNING

SEE MAP J015 SECTION 02.00.00 TO IPL THE SYSTEM TEST DISKETTE AND COME TO 'RDY ENTER' (HALT CODE 3400).

THE FOLLOWING ECP COMMAND(S) IS/ARE ACTIVE WHILE THE FRIEND SUPERVISOR IS IN STORAGE.

```

0      A NO REPLY TO A QUESTION
1      A YES REPLY TO A QUESTION
6      CONTINUE RUNNING AT THE NEXT SEQUENTIAL INSTRUCTION
7      STOP TEST
B      START PROGRAM
D      DUMP STORAGE
F      RESPOND TO PROGRAM

```

IF THE ALTERNATE CONSOLE IS BEING TESTED IT MAY BE NECESSARY TO PRESS THE STOP KEY ON THE PROGRAMMER(S) CONSOLE AND STORE THE HEXADEDECIMAL VALUE 8000 IN STORAGE LOCATION (HEXADEDECIMAL) 180E. PRESS THE START KEY TO STOP THE TEST.

NOW ENTER, BY THE ALTERNATE CONSOLE, 'B3420'. THIS WILL LOAD THE FRIEND SUPERVISOR AND START A SERIES OF MESSAGES TO PREPARE THE SPECIFIC TEST.

```

EXAMPLE:
RDY          THE RDY ENTER IS THE RESULT OF IPL
ENTER
B3420
F3420 LOADED
ST
IS A SPECIFIC STORAGE ADDRESS NEEDED FOR DATA?
ENTER

```

ANY MESSAGE ENDING WITH A QUESTION MARK, FOR EXAMPLE 'IS A SPECIFIC STORAGE ADDRESS NEEDED FOR DATA?' SHOULD BE ANSWERED WITH A YES OR NO DESCRIBED IN MAP 0015 SECTION 03.00.00.

THE MESSAGE 'IS A SPECIFIC STORAGE ADDRESS NEEDED FOR DATA?' IS NECESSARY IF A CYCLE STEAL OF DATA TO OR FROM A SPECIFIC STORAGE ADDRESS IS THE SUSPECTED PROBLEM.

IF THIS IS THE CASE THEN ANSWER YES AND ANSWER THE NEXT QUESTION.
WHAT IS THE ADDRESS
ENTER

REMEMBER THE END OF DATA ADDRESS WILL NOT BE CHECKED THEREFORE IF THE DATA FIELD IS BEYOND THE END OF STORAGE A PROGRAM CHECK MAY OCCUR.
EXTENDED STORAGE IS NOT SUPPORTED.
THE STORAGE PROTECT KEY WILL BE ZERO.

IF A SPECIFIC STORAGE ADDRESS IS NOT NECESSARY THEN ANSWER THE QUESTION NO AND THE FRIEND SUPERVISOR WILL USE ITS OWN SELECTED DATA AREA.

```

EXAMPLE:
0          THIS IS A NO (0) RESPONSE.
DEVICE ADDRESS DEVICE TYPE
ENTER
F0040

```

MINIMUM ERROR CHECKING IS PERFORMED ON INPUT THEREFORE THE MESSAGES MUST BE ANSWERED CORRECTLY. WHEN A WRONG ANSWER IS FOUND IT MAY START THE SEQUENCE OVER AGAIN OR END THE TEST.

EACH DEVICE TYPE WILL BE A ROUTINE LOADED BY THE FRIEND SUPERVISOR. WHEN THE ROUTINE HAS BEEN READ INTO STORAGE, CONTROL IS PASSED TO THE ROUTINE. EACH ROUTINE IS MADE FOR A SPECIFIC DEVICE TYPE THEREFORE SPECIFIC MESSAGES WILL BE DISPLAYED FOR THAT DEVICE.

THE FOLLOWING EXAMPLE IS FOR THE TTY SPECIFIED IN THE PRECEDING EXAMPLE.

```

EXAMPLE:
SELECT COMMAND(S) FOR DA 00
01 DEFAULT=WRITE DEFAULT PATTERN
02 PREPARE
03 READ ID
04 RESET
05 DELAY
06 LOOP START
07 LOOP END
08 READ
09 WRITE
0A ECHO
ENTER

```

THE USER MUST ENTER, FROM THE DISPLAYED LIST, THE CORRECT COMMAND (S) TO ASSEMBLE THE TEST. A DETAILED DESCRIPTION OF EACH GROUP OF MESSAGES WILL BE DESCRIBED IN

21SEP79 PN4414043

EC375482 PEC755448

MAP 0017-3

THE ROUTINE DESCRIPTION FOR EACH DEVICE TYPE.

```

EXAMPLE:
F020309

```

IN THE PRECEDING EXAMPLE THE COMMAND LIST IS : PREPARE , READ ID, AND WRITE.

WHEN ALL MESSAGES HAVE BEEN CORRECTLY ANSWERED THE ROUTINE WILL RETURN CONTROL TO THE FRIEND SUPERVISOR. NOW THE MAIN OPTION MENU FOR FRIEND SUPERVISOR WILL BE DISPLAYED.

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MAP 0017-4

02.01.00 FRIEND SUPERVISOR MAIN OPTION MENU

AN EXAMPLE OF THE MAIN OPTION MENU IS:

```

SELECT THE CORRECT OPTION(S)
01 START TEST
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
    
```

THE FOLLOWING IS A DESCRIPTION OF EACH OPTION FROM THE FRIEND SUPERVISOR OPTION MENU:

OPTION 01=START TEST, WILL START THE TEST. WHILE THE TEST IS RUNNING THE USER MAY STOP THE TESTING BY ENTERING AN ECP COMMAND OF 7. THE TEST WILL COME TO A NORMAL END AND RETURN CONTROL TO THE FRIEND SUPERVISOR. IF THE ALTERNATE CONSOLE IS BEING TESTED IT MAY BE NECESSARY TO PRESS THE STOP KEY ON THE PROGRAMMER(S) CONSOLE AND STORE THE HEXADECIMAL VALUE 8000 IN STORAGE LOCATION (HEXADECIMAL) 180E. PRESS THE START KEY TO COME TO THE NORMAL END.

OPTION 02=STOP AFTER EACH PASS, WILL INSERT A STOP INSTRUCTION IN THE INSTRUCTIONS. THE STOP INSTRUCTION WILL BE EXECUTED AFTER ONE PASS IS MADE THROUGH THE TEST. TO CONTINUE PRESS THE START KEY ON THE PROGRAMMER'S CONSOLE. THIS WILL PERMIT THE USER TO MAKE ONE PASS AND STOP OR CHANGE THE MODE SWITCH ON THE PROGRAMMER'S CONSOLE TO NORMAL THEN THE TEST WILL LOOP. TO STOP, CHANGE THE MODE SWITCH TO DIAGNOSTIC.

OPTION 03=ADD DEVICE TEST, WILL PERMIT THE USER TO ADD ANOTHER DEVICE TO THE PRESENT TEST.

OPTION 04XX=STOP DA, WILL PERMIT THE USER TO TEMPORARILY STOP TESTING THE DEVICE ADDRESS XX.

OPTION 05XX=RETURN DA XX TO TEST, WILL PERMIT THE USER TO RETURN TO TEST THE DEVICE ADDRESS XX STOPPED BY THE 04XX COMMAND.

OPTION 06XXYY=CHANGE DA XX TO YY, WILL PERMIT THE USER TO CHANGE THE ADDRESS OF A DEVICE UNDER TEST TO ANOTHER DEVICE OF THE SAME DEVICE TYPE. AN EXAMPLE: IF THERE ARE TWO TTY'S, ONE WITH DEVICE ADDRESS OF 00 UNDER TEST AND THE USER WOULD WANT TO SEE IF THE RESULT IS THE SAME ON A TTY WITH THE DEVICE ADDRESS OF 10, THEN THE USER WOULD ENTER F06001001. THIS WILL SELECT OPTION 06 AND CHANGE DEVICE UNDER TEST FROM XX=00 TO DEVICE YY=10 AND OPTION 01 WOULD START THE TEST.

OPTION 07XX KEEP ON THE DISKETTE THE TEST MADE, WILL PERMIT THE USER TO KEEP THIS TEST JUST MADE TO BE RUN AT A LATER TIME. THIS TEST NUMBER XX MUST BE 00-07. THE TEST NUMBERING MUST START AT 00 AND INCREASE BY 01

OPTION 08XX=LOAD YOUR TEST, WILL PERMIT THE USER TO SELECT A TEST THAT WAS MADE AND KEPT USING OPTION 07. THE USER MUST KEEP TRACK OF THE TEST(S) HE HAS MADE AND KEPT.

THE FOLLOWING TABLE IS AVAILABLE TO KEEP TRACK OF YOUR TEST(S).

TEST NUMBER	DATE MADE	DEVICE ADDRESSES INCLUDED IN EACH TEST 8 MAXIMUM							
00		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
01		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
02		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
03		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
04		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
05		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
06		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8
07		DEV1	DEV2	DEV3	DEV4	DEV5	DEV6	DEV7	DEV8

OPTION 09=STOP ON ERROR, WILL PERMIT THE USER TO STOP TESTING IMMEDIATELY, WHEN THE ERROR IS FOUND.

OPTION 0A=T/OFF STOP ON ERROR, WILL PERMIT THE USER TO TURN OFF THE STOP ON ERROR INDICATOR.

OPTION 0B=BYPASS ERROR PRINT, WILL PERMIT THE USER TO BYPASS THE PRINTING OF ERROR MESSAGES THEREFORE MAKING THE TEST LOOP (ON AN ERROR CONDITION) MUCH QUICKER.

OPTION 0C=T/OFF BYPASS ERROR PRINT, WILL PERMIT THE USER TO TURN OFF THE BYPASS ERROR PRINT INDICATOR.

OPTION 0D=PRINT PROGRAM, IDCB, DCB, THIS WILL PERMIT THE USER TO PRINT THE PROGRAM MADE FOR THE TEST, THE IDCB'S GENERATED, AND THE DCB'S GENERATED. THE PROGRAM PRINT OPTION WILL BE SIMILAR TO A PROGRAM PRINTOUT.
 UNDER THE 'ADDRESS' TITLE IS THE REAL STORAGE ADDRESS.
 UNDER THE 'OP' TITLE IS THE INSTRUCTION AT THAT STORAGE ADDRESS.
 UNDER THE 'OP1' TITLE IS THE FROM FIELD.
 UNDER THE 'OP2' TITLE IS THE TO FIELD.
 UNDER THE 'MACHINE CODE' TITLE IS THE MACHINE CODE FOR THAT INSTRUCTION.
 THE FOLLOWING IS AN EXAMPLE:

```
FOD          THIS IS THE COMMAND TO SELECT THE PRINT ROUTINE
SELECT AN OPTION
01 LIST PROGRAM
02 LIST IDCB TABLE
03 LIST DCB TABLE
ENTER
F01          THIS OPTION IS TO LIST THE PROGRAM
ADDRESS  OP   OP1  OP2  MACHINE CODE
3126    IO   30A2  680C  30A2
312A    BCC  0007  3132  6F04  3132
```

THE ABOVE WILL CONTINUE FOR ALL INSTRUCTIONS

TO LIST THE IDCB'S FOLLOW THIS EXAMPLE:

```
FOD          THIS IS THE COMMAND TO SELECT THE PRINT ROUTINE
SELECT AN OPTION
01 LIST PROGRAM
02 LIST IDCB TABLE
03 LIST DCB TABLE
ENTER
F02          THIS OPTION IS TO LIST THE IDCB'S
ADDRESS  IDCB TABLE
30A6    6001 0005
30AA    7001 3422
ENTER
```

TO LIST THE DCB'S FOLLOW THIS EXAMPLE:

```
FOD          THIS IS THE COMMAND TO SELECT THE PRINT ROUTINE
SELECT AN OPTION
01 LIST PROGRAM
02 LIST IDCB TABLE
03 LIST DCB TABLE
ENTER
F03          THIS OPTION IS TO LIST THE DCB'S
ADDRESS  DCB TABLE
3422 0081 4200 0001 0000 0000 0000 0084 35A2
3432 0007 0000 0000 0000 0000 0000 0000 0000
ENTER
```

OPTION 0E=TERMINATE PROGRAM, WILL PERMIT THE USER TO TERMINATE THE FRIEND SUPERVISOR TESTING AND RETURN TO SYSTEM TEST SUPERVISOR.
 IPL THE DISKETTE TO CONTINUE WITH SYSTEM TEST.

OPTION 0F=MENU PRINT CONTROL, WILL PERMIT THE USER TO T/OFF OR T/ON THIS MENU.

02.02.00 FRIEND SUPERVISOR HALT CODES

- 3407 ALTERNATE CONSOLE OFF
 A TEST FOR ALTERNATE CONSOLE HAS BEEN MADE AND THE TEST HAS JUST STARTED. THE PROGRAMMER'S CONSOLE MUST BE USED FOR INPUT
- 3408 ALTERNATE CONSOLE ON
 THE USER HAS INSERTED A SYSTEM TEST COMMAND OF 7 BY THE PROGRAMMER'S CONSOLE AND THE TESTING HAS TEMPORARILY TERMINATED. THE ALTERNATE CONSOLE IS AVAILABLE FOR USE.
- 3420 OPTION(S) FOR FRIEND SUPERVISOR
 ENTER THE NEEDED OPTION(S) FROM THE MAIN OPTION MENU
- 3421 OPTION(S) FOR THE PRINT ROUTINE
 ENTER A COMMAND TO PRINT THE TEST PROGRAM, THE IDCB'S, OR THE DCB'S
- 3422 TEST TOO LARGE
 THE KEEP OPTION WAS SELECTED BUT THE TEST WAS LARGER THAN THE AREA ON THE DISKETTE
- 3423 DATA ADDRESS LOW
 THE OPTION TO SELECT A STORAGE ADDRESS WAS USED BUT THE ADDRESS SELECTED WAS IN THE AREA USED BY THE SUPERVISOR
- 3424 DEVICE TO BE TESTED
 ENTER THE DEVICE ADDRESS AND DEVICE TYPE FOR THE DEVICE THAT IS TO BE TESTED.
- 3425 NOT VALID COMMAND
 THE USER HAS INSERTED A COMMAND THAT IS NOT RECOGNIZED
- 3426 NOT VALID DEVICE
 THE USER HAS REQUESTED A DEVICE TYPE THAT IS NOT RECOGNIZED
- 3427 SPECIFIC STORAGE ADDRESS
 FOR A CYCLE STEAL OPERATION IS A SPECIFIC STORAGE ADDRESS NEEDED?
- 3428 WHAT IS THE ADDRESS
 ENTER THE SPECIFIC STORAGE ADDRESS
- 3429 DO YOU WANT TO USE YOUR TEST
 DO YOU WANT TO USE A TEST KEPT ON THE DISKETTE (00-07)?
- 342A WHICH ONE
 ENTER THE TEST NUMBER YOU WANT TO USE (00-07)
- 342B DATA ADDRESS MORE THAN STORAGE
 THE STORAGE ADDRESS INSERTED IS MORE THAN THE STORAGE SIZE
- 342C WRONG TEST NUMBER
 THE TEST NUMBER INSERTED FOR THE USER TEST WAS NOT VALID.
- 342D CAN'T ADD DEVICE
 THE DEVICE TABLE IS FULL NO MORE DEVICES WILL BE ADDED
- 3480 LOOP ON MCK, PCK, POWER THERMAL WARNING
 A MACHINE CHECK, PROGRAM CHECK OR A POWER THERMAL WARNING HAS OCCURRED, DO YOU WANT TO LOOP THE TEST TO THE POINT OF FAILURE?
- 3481 LOST INTERRUPT
 A MESSAGE 'LOST INTERRUPT FROM DA 03' WILL BE DISPLAYED
- 3482 WRONG CONDITION CODE
 A MESSAGE 'EXPECTED CC 3 RECEIVED CC 2' WILL BE PRINTED
- 3483 NOT EXPECTED INTERRUPT
 A MESSAGE 'NOT EXPECTED INTERRUPT FROM DA 03' WILL BE PRINTED
- 3484 NOT CC 7
 WHILE TESTING A CONDITION CODE OTHER THAN 7 WAS REPORTED FROM AN OIO INSTRUCTION
- 3485 READ ID WARNING
 THE USER REQUESTED A DEVICE ADDRESS AND TYPE TO BE TESTED, WHEN THE ROUTINE FOR THAT DEVICE TYPE DID A READ ID AN ID OTHER THE ONE EXPECTED WAS RECEIVED.
- 3486 CYCLE STEAL INTERRUPT LOST
 AN ERROR CONDITION CODE WAS RECEIVED FROM A CYCLE STEAL DEVICE. A CYCLE STEAL STATUS COMMAND WAS SENT TO THAT DEVICE BUT THE INTERRUPT WAS NOT RECEIVED
- 3487 STOPPED ON AN ERROR
 AN ERROR CONDITION OCCURRED (SEE SECTION 03.00.00)

3490 STANDARD PATTERN
DOES THE USER WANT TO USE THE DEFAULT PATTERN INTERNAL TO THE DEVICE TYPE ROUTINE?

3491 INTERRUPT LEVEL
ENTER THE LEVEL THE DEVICE IS TO INTERRUPT ON.

3492 DELAY
ENTER THE LENGTH OF DELAY TO BE USED.

3493 DATA
ENTER THE DATA FOR THE TEST.

3494 BYTE COUNT
ENTER THE BYTE COUNT FOR THE TEST.

3495 LOOP NOT STARTED
THE USER HAS INSERTED A COMMAND TO 'LOOP END' BUT THE LOOP WAS NOT STARTED.

3496 LOOP COUNT
HOW MANY TIMES IS THE LOOP TO BE EXECUTED?

3497 I BIT
IS THE INTERRUPT BIT REQUIRED FOR THE PREPARE IDCB

3498 SEEK DIFFERENCE
HOW MANY CYLINDERS FOR THE SEEK?

3499 SEEK DIRECTION
IS THE SEEK POSITIVE?

349A FORMAT WORD
ENTER THE WORD TO BE USED TO FORMAT.

349B CYLINDER NUMBER
ENTER THE CYLINDER NUMBER.

349C SECTOR SIZE
ENTER THE SECTOR SIZE.

349D SECTOR NUMBER
ENTER THE SECTOR NUMBER.

349E HEAD NUMBER
ENTER THE HEAD TO BE USED.

349F FIXED HEAD
A MESSAGE 'IS THIS A FIXED HEAD?' WILL BE DISPLAYED

34A0 CHAINED DCB
IS THE DCB THE ROUTINE IS ASSEMBLING TO BE CHAINED TO ANOTHER DCB?

34A4 FORMS LENGTH AND OVERFLOW LINE
ENTER THE FORMS LENGTH AND THE LINE TO OVERFLOW (DCB WORD 2).

34A5 SKIP AND SPACE MODIFIER
ENTER THE SKIP AND OR SPACE MODIFIER.

34A6 FORMS CONTROL
IS FORMS CONTROL NEEDED FOR THIS TEST?

34A7 RETRY BIT (DCB CONTROL WORD BIT 15)
IS THE RETRY BIT NEEDED FOR THIS TEST?

34A8 DO YOU WANT TO USE THE DATA JUST READ
A WRITE FOLLOWING A READ WAS FOUND. DO YOU WANT TO USE THE DATA READ?

34A9 NUMBER OF DATA WORDS
ENTER THE NUMBER OF DATA WORDS THAT WILL BE ENTERED

34AA CHAINED DCB'S
WILL ANY DCB'S BE CHAINED FOR THIS DEVICE?

34AB COLUMN
WHICH COLUMN IS THE CHARACTER TO BE PRINTED (0001-0132)

34AC 8 LINES PER INCH
DO YOU WANT 8 LINES PER INCH (DEFAULT=6 LINES)

34AD ERASE AFTER BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34AE END OF FIELD BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34AF END OF LINE BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34B0 ERASE BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND.

34B1 POST CURSOR BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34B2 PRE CURSOR BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34B3 SHIFT UP?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34B4 SHIFT BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34B5 POST CURSOR ADDRESS
THIS ADDRESS IS FOR THE DCB FOR A DISPLAY COMMAND

34B6 PRE CURSOR ADDRESS
THIS ADDRESS IS FOR THE DCB FOR A DISPLAY COMMAND

34B7 UPPER (HI) LINE ADDRESS (0000-0023)
THE LINE NUMBER IS FOR THE DCB FOR A DISPLAY COMMAND

34B8 LOWER (LO) LINE ADDRESS (0000-0023)
THE LINE NUMBER IS FOR THE DCB FOR A DISPLAY COMMAND

34B9 PROTECT/NOT PROTECT BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34BA KEYBOARD LOCK OUT BIT
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34BB BLANK BIT?
THIS BIT IS FOR THE DCB FOR A DISPLAY COMMAND

34BC SHIFT COUNT
THE COUNT IS FOR THE DCB FOR A DISPLAY COMMAND

34BD HOW MANY SECTORS
THE NUMBER OF SECTORS REQUIRED FOR THE READ DCB

34BE SE BIT
IS THE SUPPRESS EXCEPTION BIT REQUIRED FOR THE DCB

34BF AS BIT
IS THE AUTOMATIC SEEK FUNCTION REQUIRED

34C0 FILL BYTE
ENTER THE FILL BYTE FOR THE DCB (00-FF)

34C1 VERIFY BYTE
ENTER THE VERIFY BYTE FOR THE DCB (00-FF)

34C2 WRITE LED'S
DO YOU WANT THE DATA TO BE WRITTEN IN THE CONSOLE LED'S?

34C3 NO DI/PI
THE DI/PI ROUTINE WAS SELECTED BUT DI/PI IS NOT AT THIS ADDRESS

34C4 VOLTAGE
WHAT IS THE VOLTAGE REQUIRED FOR THE SENSOR I/O COMMAND

34C5 WRONG RATE
SAMPLE RATE ENTERED WAS OTHER THAN 0001-0004

34C6 TIMED OUT
AN ARM DI EXTERNAL SYNC OR ARM PI COMMAND WAS SENT AND NO INTERRUPT HAS OCCURRED FOR 13 SECONDS

34C7 POSITIVE VOLTAGE
IS THE VOLTAGE POSITIVE FOR THE SENSOR I/O COMMAND?

40E8 OPTION(S) FOR THE TTY ROUTINE
ENTER THE OPTION(S) FOR THE TTY

44E8 OPTION(S) FOR THE 4979 ROUTINE
ENTER THE OPTION(S) FOR THE 4979

45E8 OPTION(S) FOR THE 4978 ROUTINE

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ENTER THE OPTION(S) FOR THE 4978

48E8 OPTION(S) FOR THE 4964 ROUTINE
ENTER THE OPTION(S) FOR THE 4964

4AE8 OPTION(S) FOR THE 4966 ROUTINE
ENTER THE OPTION(S) FOR THE 4966

4AE9 CONTROL AM
IS THE CONTROL AM BIT REQUIRED FOR THE DCB

4AEA MFM BIT
IS THE MFM BIT REQUIRED IN THE DCB

4AEB CONTROL MASK
ENTER THE CONTROL MASK (00-02)

4AEC COMPARE DATA
A READ COMMAND WAS FOLLOWED BY A READ VERIFY (DATA COMPARE)
IS THE DATA FROM THE READ COMMAND TO BE USED FOR THE
COMPARE DATA FOR THE READ VERIFY

4AED DISKETTE POSITION
ENTER THE DISKETTE POSITION FOR THE DCB (DECIMAL NUMBER 0000-0023)

58E8 OPTION(S) FOR THE 4969 ROUTINE
ENTER THE OPTION(S) FOR THE 4969

58E9 REPEAT COUNT
THE REPEAT COUNT IS USED ON SPACE RECORD OR SPACE FILE MARK, FORWARD AND
REVERSE, OPERATIONS AND SPECIFIES THE NUMBER OF RECORDS OR FILE MARKS, TO
SPACE. IT IS ALSO USED FOR REPEAT ERASE.

58EA 800 BPI NRZI
IF THE TAPE DRIVE IS AN 800 BPI (BIT PER INCH) NRZI (NON RETURN TO ZERO) THEN
ANSWER THE QUESTION YES (1) IF THE TAPE DRIVE IS A PE (PHASE ENCODED) THEN
ANSWER THE QUESTION NO (0).

58EB TEST READ MODE
IF TEST READ MODE IS REQUIRED THEN ANSWER THE QUESTION YES (1) IF TEST READ
MODE IS NOT REQUIRED ANSWER THE QUESTION NO (0).

58EC READ THRESHOLD LOW
IF THRESHOLD LOW IS REQUIRED THEN ANSWER THE QUESTION YES (1) IF THRESHOLD LOW
IS NOT REQUIRED ANSWER THE QUESTION NO (0).

58ED DATA COMPARE ERROR
A DATA COMPARE ERROR WAS FOUND USING OPTION 13 OF THE TAPE DRIVE MENU.

64E8 OPTION(S) FOR THE 4974 ROUTINE
ENTER THE OPTION(S) FOR THE 4974

68E8 OPTION(S) FOR THE 4973 ROUTINE
ENTER THE OPTION(S) FOR THE 4973

68E9 CHARACTER
WHICH CHARACTER IS TO BE PRINTED IN EACH COLUMN?

78E8 OPTION(S) FOR THE 4962 ROUTINE
ENTER THE OPTION(S) FOR THE 4962

7AE8 OPTION(S) FOR THE 4963 ROUTINE
ENTER THE OPTION(S) FOR THE 4963

7AE9 RECORD 1
ON DATA MOVES THERE ARE TWO RECORDS FOR EACH SECTOR (RECORD 1 AND RECORD 2),
IS THE RECORD YOU WANT RECORD 1?

7AEA NUMBER OF RECORDS
ENTER THE NUMBER OF RECORDS TO BE READ

7AEB FLAG BYTE
ENTER THE FLAG BYTE TO BE USED IN THE DCB

A8E8 OPTION(S) FOR THE 4982 AI ROUTINE
ENTER THE OPTION(S) FOR AI

A8E9 WHICH CHANNEL
ENTER THE CHANNEL TO BE USED BY THE SENSOR I/O COMMAND

A8EA NO MULTIPLEXER
A READ ID TO THE SPECIFIED ADDRESS INDICATES THERE IS NOT A MULTIPLEXER
CHANNEL AT THIS ADDRESS

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A8EB NO AI
A READ ID TO THE SPECIFIED ADDRESS INDICATES THERE IS NOT AN AI FEATURE AT
THIS ADDRESS

A8EC WRONG RANGE
THE WRONG VOLTAGE RANGE WAS ENTERED FOR SENSOR I/O

A8ED RANGE
ENTER THE VOLTAGE RANGE FOR SENSOR I/O COMMAND

A8EE ZERO CORRECTION
IS ZERO CORRECTION REQUIRED?

A8EF SAMPLE RATE
WHAT IS THE SAMPLE RATE FOR THE CONVERT AI COMMAND

A9E8 OPTION(S) FOR THE 4982-AO ROUTINE
ENTER THE OPTION(S) FOR AO

B0E8 OPTION(S) FOR THE 4982-DI/PI ROUTINE
ENTER THE OPTION(S) FOR DI/PI

B4E8 OPTION(S) FOR THE 4982-DO ROUTINE
ENTER THE OPTION(S) FOR DO

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EC375482 PEC755448
MAP 0017-12

03.00.00 FRIEND SUPERVISOR ERROR REPORTING

WHEN THE FRIEND SUPERVISOR HAS FOUND AN ERROR, WHILE TESTING, ALL TESTING WILL STOP WHILE THE ERROR IS REPORTED TO THE USER, BY THE ALTERNATE CONSOLE. WHEN THE ERROR REPORTING HAS COMPLETED, THE TESTING WILL CONTINUE WHERE IT LEFT OFF.

NO ERROR REPORTING AND AN IMMEDIATE STOP ON ERROR CAN BE STARTED BY SELECTING THEIR OPTION(S) FROM THE FRIEND SUPERVISOR MAIN OPTION MENU (SEE SECTION 02.01.00 THIS MAP).

WHEN STOP ON ERROR IS SELECTED AND AN ERROR OCCURS THE HALT CODE '3487' IS DISPLAYED IN THE CONSOLE LED'S. PRESS THE CONSOLE STOP KEY AND DISPLAY REGISTER 1. REGISTER 1 WILL CONTAIN A CODE (1-6) THAT INDICATES THE MESSAGE. THE FOLLOWING IS A DESCRIPTION OF EACH CODE. THE DESCRIPTION WILL INDICATE THE VALIDITY OF REGISTERS 0 AND 7 WHEN THE HALT CODE IS DISPLAYED

CODE 1:
REGISTER 0=CC RECEIVED REGISTER 7=ISB
EXPECTED CC 07 RECEIVED CC 02 ON START I/O TO DA 01

THE INTERRUPT ROUTINE EXECUTED AN OIO INSTRUCTION AND EXPECTED TO RECEIVED A CONDITION CODE OF 07 BUT RECEIVED A CONDITION CODE OF 02. THE DEVICE ADDRESS WAS 01

CODE 2:
REGISTER 0=CC RECEIVED REGISTER 7=ISB
EXPECTED CC 03 RECEIVED CC 02 FROM DA 01 IDCB=7001 3A6E

THE DEVICE UNDER TEST WAS EXPECTED TO PRESENT A CONDITION CODE OF 03 BUT RESPONDED WITH A CONDITION CODE OF 02. THE DEVICE ADDRESS WAS 01. THE IDCB WAS 7001 3A6E.

CODE 3:
REGISTER 0=CC RECEIVED REGISTER 7=ISB
NOT EXPECTED INTERRUPT FROM DA 01 CC=03

THE INTERRUPT ROUTINE RECEIVED A NOT EXPECTED INTERRUPT FROM DEVICE ADDRESS 01. THE RECEIVED CONDITION CODE WAS 03.

CODE 4:
REGISTER 0=CC RECEIVED REGISTER 7=ISB
EXPECTED CC 07 RECEIVED CC 02 ON START I/O TO DA 01

THE TESTING PROGRAM EXECUTED AN OIO INSTRUCTION AND EXPECTED TO RECEIVED A CONDITION CODE OF 07 BUT RECEIVED A CONDITION CODE OF 02. THE DEVICE ADDRESS WAS 01

CODE 5:
REGISTER 7=DEVICE ADDRESS
LOST INTERRUPT FROM DA 01

AN INTERRUPTING OIO INSTRUCTION WAS SENT TO DEVICE ADDRESS 01. NO INTERRUPT WAS RECEIVED BY A ALREADY DETERMINED TIME FOR THAT DEVICE.

CODE 6:
REGISTER 7=DEVICE ADDRESS
TIMED OUT DA 65

AN ARM DI EXTERNAL SYNC OR ARM PI COMMAND WAS SENT AND NO INTERRUPT HAS OCCURRED FOR 13 SECONDS

IF A MACHINE CHECK, PROGRAM CHECK OR A POWER THERMAL WARNING OCCURS A SERIES OF MESSAGES WILL BE PRINTED BY THE ECP. THE QUESTION WILL BE:
DO YOU WANT TO LOOP?

A NO (0) REPLY WILL CAUSE FRIEND TO END
A YES (1) REPLY WILL CAUSE A BRANCH TO THE START OF THE TEST

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04.00.00 FRIEND SUPERVISOR SAMPLE SESSION

IPL THE SYSTEM TEST DISKETTE PER SECTION 02.00.00 MAP 0015.

A SAMPLE SESSION FOLLOWS:

###----> NOT PART OF THE SESSION (COMMENT)

@@@----> THE NEXT LINE IS USER INPUT

```
RDY
ENTER
@@@      ###LOAD 3420,FRIEND SUPERVISOR
B3420
F3420 LOADED
ST
IS A SPECIFIC STORAGE ADDRESS NEEDED FOR DATA?
ENTER
@@@      *** NO RESPONSE
0
DEVICE ADDRESS DEVICE TYPE
ENTER
@@@      ### USE THE THE TTY
F0040
SELECT COMMAND(S) FOR DA 00
01 DEFAULT=WRITE DEFAULT PATTERN
02 PREPARE
03 READ ID
04 PREPARE
05 DELAY
06 LOOP START
07 LOOP END
08 READ
09 WRITE
0A ECHO
ENTER
@@@      ### ENTER A PREP,READ ID,WRITE
F020308
LEVEL TO INTERRUPT
ENTER
@@@      PREPARE TO LEVEL 2
F0002
IS THE 'I' BIT REQUIRED
ENTER
@@@      TURN ON THE 'I' BIT
1
SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@      ###SELECT PRINT PROGRAM
F0D
SELECT AN OPTION
01 LIST PROGRAM
02 LIST IDCB TABLE
03 LIST DCB TABLE
ENTER
@@@      ###SELECT THE LIST PROGRAM OPTION
F01
ADDRESS OP      OP1 *  OP2  MACHINE CODE
3100    NOP      5000
3102    NOP      5000
3104    IO        3080    680C    3080
3108    BCC      0007    3110    6F04    3110
310C    BAL      181C*  R7     6F13    181C
3110    MVWI     1C00    R3     4324    1C00
3114    MVWI     182F    R0     4024    182F
3118    TBT      0000    R0     4800
```

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```

311A JZ 3124 1004
311C SVC 0002 6002
311E JCT 3114 R3 BBFA
3120 BAL 1870* R7 6F13 1870
3124 IO 3084 680C 3084
3128 BCC 0007 3130 6F04 3130
312C BAL 181C* R7 6F13 181C

```

***AN * FOLLOWING A STORAGE ADDRESS IS ADDRESSING THAT IS NOT DIRECT.

```

SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@ ###SELECT PRINT PROGRAM
F0D
SELECT AN OPTION
01 LIST PROGRAM
02 LIST IDCB TABLE
03 LIST DCB TABLE
ENTER
@@@ ###SELECT THE IDCB TABLE
F02
ADDRESS IDCB'S
3080 6000 0005
3084 2000 0000
SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@ ###ADD A DEVICE TO THE TEST
F03
DEVICE ADDRESS DEVICE TYPE
ENTER
@@@ ### USE THE 4964 THIS TIME
F0248
WILL ANY DCB'S BE CHAINED?
ENTER
@@@ ### ASSUME WE WILL NOT
0 ###NOTE: ECP COMMAND FOR NO
SELECT COMMAND(S) FOR DA 02
01 DEFAULT=RECALIBRATE, SEEK, READ SECTOR ID
02 DEFAULT=RECALIBRATE, SEEK, READ SECTOR ID, WRITE SECTOR ID
03 PREPARE
04 READ ID
05 RESET
06 DELAY
07 LOOP START
08 LOOP END
09 READ DATA
0A WRITE DATA
0B READ SECTOR ID
0C WRITE SECTOR ID
0D SEEK
0E FORMAT TRACK
0F RECALIBRATE

```

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MAP 0017-15

```

10 READ VERIFY
ENTER
@@@ ###PREPARE, RECALIBRATE, SEEK, READ DATA, WRITE DATA, READ VERIFY
F030F0D090A10
LEVEL TO INTERRUPT
ENTER
@@@ PREPARE TO LEVEL 2
F0002
IS THE 'I' BIT REQUIRED
ENTER
@@@ TURN ON THE 'I' BIT
1
SEEK DIFFERENCE
ENTER
@@@ ### SEEK TO CYLINDER 64
F0064
FORWARD SEEK?
ENTER
@@@ ###YES, BECAUSE WE JUST RECALIBRATED
1 ###AGAIN AN ECP COMMAND FOR YES
HEAD
ENTER
@@@ ### USE HEAD 1
F0001
SECTOR SIZE
ENTER
@@@ ### USE A SECTOR SIZE OF 256
F0256
SECTOR SIZE
ENTER
@@@ ### USE SECTOR 1
F0001
BYTE COUNT
ENTER
@@@ ### USE A BYTE COUNT OF 256
F0256
DO YOU WANT TO WRITE THE DATA JUST READ?
ENTER
@@@ ###DO YOU WANT TO WRITE THE DATA JUST READ?
1 ###NOTE AN ECP COMMAND FOR YES
SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@ ###OPTION 4 STOP TESTING DEVICE ADDRESS 00
F0400
SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADDRESS DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@ ###OPTION 1 TO START THE TEST
F01
@@@ ###THE USER CAUSED AN INTERRUPT
ENTER
@@@ ###ENTER THE ECP COMMAND 7 TO STOP DEVICE TESTING
7

```

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```

SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@      ###OPTION 6 CHANGE DEVICE ADDRESS
F062202

SELECT THE CORRECT OPTION(S)
01 START
02 STOP AFTER EACH PASS (PRESS START KEY TO CONTINUE)
03 ADD DEVICE TO TEST
04XX STOP DA XX
05XX RETURN DA XX TO TEST
06XXYY CHANGE DA XX TO YY (SAME DEVICE TYPE)
07XX KEEP ON DISKETTE THE TEST MADE (XX MUST BE 00-07)
08XX LOAD YOUR TEST (XX MUST BE 00-07)
09 STOP ON ERROR
0A T/OFF STOP ON ERROR
0B BYPASS ERROR PRINT
0C T/OFF BYPASS ERROR PRINT
0D PRINT PROGRAM, IDCB, DCB
0E TERMINATE PROGRAM
0F MENU PRINT CONTROL
COMMAND(S)
ENTER
@@@      ###OPTION E TERMINATE FRIEND SUPERVISOR
FOE
PT
ENTER

```

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05.00.00 ROUTINE DESCRIPTION (TTY) DEVICE TYPE 40.

WHEN DEVICE TYPE 40 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 00

```

SELECT COMMAND(S) FOR DA 00
01 DEFAULT=WRITE DEFAULT PATTERN
02 PREPARE
03 READ DEVICE ID
04 RESET
05 DELAY
06 LOOP START
07 LOOP END
08 READ
09 WRITE
0A ECHO
ENTER

```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

```

READ ID EXPECTED 0010 ID WAS 0020 IS THIS O.K?
ENTER

```

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

```

LEVEL TO INTERRUPT
ENTER

```

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

```

IS THE 'I' BIT REQUIRED
ENTER

```

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

```

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

```

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

```

HOW MANY TIMES THROUGH THE LOOP
ENTER

```

A REPLY FROM 0001 TO 9999 IS EXPECTED

```

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER

```

A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

```

DATA IS
ENTER

```

NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 07 IS SELECTED AND OPTION 06 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 06 AND 07 WAS SELECTED THE MESSAGE WILL BE

```

LOOP STARTED AT 3268
LOOP ENDED AT 3288

```

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

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06.00.00 ROUTINE DESCRIPTION (4979) DEVICE TYPE 44.

WHEN DEVICE TYPE 44 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 04

```

SELECT COMMAND(S) FOR DA 04
01 DEFAULT= WRITE,SHIFT UP 1
02 DEPAULT=READ,WRITE
03 PREPARE
04 READ DEVICE ID
05 RESET
06 DELAY
07 LOOP START
08 LOOP END
09 READ
0A WRITE
ENTER

```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 0406 ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?
ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?

A REPLY OF NO (0) OR YES (1) IS EXPECTED

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

BYTE COUNT
ENTER

THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER

A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

DATA IS
ENTER

NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE

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```

LOOP STARTED AT 3268
LOOP ENDED AT 3288
WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

```

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MAP 0017-20

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07.00.00 ROUTINE DESCRIPTION (4964) DEVICE TYPE 48.

WHEN DEVICE TYPE 48 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 02

```
SELECT COMMAND(S) FOR DA 02
01 DEFAULT=RECALIBRATE, SEEK
02 DEFAULT=RECALIBRATE, SEEK, READ SECTOR ID
03 PREPARE
04 READ DEVICE ID
05 RESET
06 DELAY
07 LOOP START
08 LOOP END
09 READ DATA
0A WRITE DATA
0B READ SECTOR ID
0C SEEK
0D FORMAT TRACK
0E RECALIBRATE
0F READ VERIFY
**** CAUTION ****
SOME COMMAND(S) WHEN USED COULD DESTROY CUSTOMER DATA INTEGRITY
ENTER
```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME.

WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 0106 ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?
ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?

A REPLY OF NO (0) OR YES (1) IS EXPECTED

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP

ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

IF A SEEK COMMAND IS NECESSARY THIS MESSAGE IS DISPLAYED
SEEK DIFFERENCE

ENTER

ENTER THE NUMBER OF CYLINDERS TO SEEK (DECIMAL NUMBER)

FORWARD SEEK?

ENTER

A NO (0) REPLY WILL CAUSE A NEGATIVE SEEK
A YES (1) REPLY WILL CAUSE A POSITIVE SEEK

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```
CYLINDER NUMBER
ENTER
ENTER THE CYLINDER NUMBER (DECIMAL VALUE)

SECTOR SIZE
ENTER
ENTER THE CORRECT SECTOR SIZE (0128/0256/0512)

SECTOR NUMBER
ENTER
ENTER THE CORRECT SECTOR NUMBER (DECIMAL 0001-0015)

HEAD
ENTER
ENTER THE CORRECT HEAD NUMBER (0000 OR 0001)

FORMAT WORD
ENTER
ENTER THE WORD TO USE TO FORMAT THE TRACK

BYTE COUNT
ENTER
THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER
A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

HOW MANY WORDS OF DATA
ENTER
ENTER THE NUMBER OF WORDS OF DATA (DECIMAL NUMBER)

DATA IS
ENTER
NOW ENTER THE DATA TO BE WRITTEN
IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE
LOOP NOT STARTED, START OVER
IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE
LOOP STARTED AT 3268
LOOP ENDED AT 3288
WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND
SUPERVISOR
```

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08.00.00 ROUTINE DESCRIPTION (4974) DEVICE TYPE 64.

WHEN DEVICE TYPE 64 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 01

```

SELECT COMMAND(S) FOR DA 01
01 DEFAULT=PRINT A CHARACTER IN ONE COLUMN
02 PREPARE
03 READ DEVICE ID
04 RESET
05 DELAY
06 LOOP START
07 LOOP END
08 WRITE
ENTER

```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME.

WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 0206 ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?
ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?
A REPLY OF NO (0) OR YES (1) IS EXPECTED

8 LINES PER INCH?
A REPLY OF NO (0) OR YES (1) IS EXPECTED

ENSURE THE MICRO CODE TO SUPPORT 8 LINES MUST BE LOADED BEFORE SELECTING THIS OPTION

A COMMAND OF 01 WILL CAUSE THIS MESSAGE
WHICH COLUMN IS THE CHARACTER TO BE PRINTED
ENTER
ENTER THE COLUMN NUMBER (DECIMAL NUMBER 0001-0132)

WHICH CHARACTER
ENTER
ENTER A CHARACTER TO BE PRINTED

IS FORMS CONTROL NEEDED?
ENTER

ENTER A YES (1) OR NO (0)

FORMS LENGTH AND OVER FLOW LINE
ENTER
ENTER THE FORMS LENGTH IN BYTE 0 AND THE LINE TO OVERFLOW TO IN BYTE 1

SKIP MODIFIER OR SPACE MODIFIER
ENTER
ENTER THE SKIP MODIFIER IN BYTE 0 OR THE SPACE MODIFIER IN BYTE 1
THE FOLLOWING IS A SKIP OF 0 AND A SPACE OF 2 LINES
FOO2

IS THE RETRY BIT NEEDED?
ENTER

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ENTER A YES (1) OR A NO (0)
IF THE RETRY BIT IS ON IN THE DCB THE ATTACHMENT WILL ATTEMPT TO COMPLETE THE LAST I/O COMMAND.

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

BYTE COUNT
ENTER

THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER

A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

DATA IS
ENTER

NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 07 IS SELECTED AND OPTION 06 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 06 AND 07 WAS SELECTED THE MESSAGE WILL BE

LOOP STARTED AT 3268
LOOP ENDED AT 3288
WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

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MAP 0017-24

09.00.00 ROUTINE DESCRIPTION (4973) DEVICE TYPE 68.

WHEN DEVICE TYPE 68 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 05

SELECT COMMAND(S) FOR DA 05
 01 DEFAULT=PRINT A CHARACTER IN ONE COLUMN
 02 DEFAULT=PRINT ONE CHARACTER IN EVERY COLUMN
 03 PREPARE
 04 READ DEVICE ID
 05 RESET
 06 DELAY
 07 LOOP START
 08 LOOP END
 09 WRITE
 ENTER

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 0306 ID WAS 0020 IS THIS O.K?
 ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
 A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
 ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
 ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?
 ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
 A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?
 A REPLY OF NO (0) OR YES (1) IS EXPECTED

8 LINES PER INCH?
 A REPLY OF NO (0) OR YES (1) IS EXPECTED

A COMMAND OF 01 WILL CAUSE THIS MESSAGE
 WHICH COLUMN IS THE CHARACTER TO BE PRINTED
 ENTER

ENTER THE COLUMN NUMBER (DECIMAL NUMBER 0001-0132)

WHICH CHARACTER
 ENTER
 ENTER A CHARACTER TO BE PRINTED

IS FORMS CONTROL NEEDED?

ENTER
 ENTER A YES (1) OR NO (0)

FORMS LENGTH AND OVERFLOW LINE
 ENTER
 ENTER THE FORMS LENGTH IN BYTE 0 AND THE LINE TO OVERFLOW TO IN BYTE 1

SKIP MODIFIER OR SPACE MODIFIER
 ENTER
 ENTER THE SKIP MODIFIER IN BYTE 0 OR THE SPACE MODIFIER IN BYTE 1
 THE FOLLOWING IS A SKIP OF 0 AND A SPACE OF 2 LINES
 F0002

IS THE RETRY BIT NEEDED?
 ENTER
 ENTER A YES (1) OR A NO (0)
 IF THE RETRY BIT IS ON IN THE DCB THE ATTACHMENT WILL ATTEMPT TO COMPLETE THE LAST I/O COMMAND.

LENGTH OF DELAY, IN MILLISECOND(S)
 ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND
 HOW MANY TIMES THROUGH THE LOOP
 ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

BYTE COUNT
 ENTER

THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?

ENTER

A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
 A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

DATA IS
 ENTER

NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE
 LOOP STARTED AT 3268
 LOOP ENDED AT 3288

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

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10.00.00 ROUTINE DESCRIPTION (4962) DEVICE TYPE 78.

WHEN DEVICE TYPE 78 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 03

```

SELECT COMMAND(S) FOR DA 03
01 DEFAULT=RECALIBRATE, SEEK, READ SECTOR ID
02 DEFAULT=RECALIBRATE, SEEK, READ SECTOR ID, WRITE SECTOR ID
03 PREPARE
04 READ DEVICE ID
05 RESET
06 DELAY
07 LOOP START
08 LOOP END
09 READ DATA
0A WRITE DATA
0B READ SECTOR ID
0C WRITE SECTOR ID
0D READ SECTOR ID SKEW
0E WRITE SECTOR ID SKEW
0F SEEK
10 RECALIBRATE
11 READ VERIFY
**** CAUTION ****
SOME COMMAND(S) WHEN USED COULD DESTROY CUSTOMER DATA INTEGRITY
ENTER

```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 00AA ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?
ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?
A REPLY OF NO (0) OR YES (1) IS EXPECTED

IF A SEEK COMMAND IS NECESSARY THIS MESSAGE IS DISPLAYED
SEEK DIFFERENCE
ENTER

ENTER THE NUMBER OF CYLINDERS TO SEEK (DECIMAL NUMBER)

FORWARD SEEK?
ENTER

A NO (0) REPLY WILL CAUSE A NEGATIVE SEEK
A YES (1) REPLY WILL CAUSE A POSITIVE SEEK

CYLINDER NUMBER
ENTER
ENTER THE CYLINDER NUMBER (DECIMAL VALUE)

SECTOR NUMBER
ENTER
ENTER THE CORRECT SECTOR NUMBER (DECIMAL 0000-0059)

IS THIS A FIXED HEAD?
ENTER
A REPLY OF NO (0) OR YES (1)
IF IT IS A FIXED HEAD THEN THE HEAD VALUE IS 0000-0007

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```

HEAD
ENTER
ENTER THE CORRECT HEAD NUMBER(0000 OR 0001)
LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

```

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

BYTE COUNT
ENTER

THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER

A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

DATA IS
ENTER

NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE

```

LOOP STARTED AT 3268
LOOP ENDED AT 3288
WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

```

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11.00.00 ROUTINE DESCRIPTION (4982 AI) DEVICE TYPE A8.

WHEN DEVICE TYPE A8 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 61

```
SELECT COMMAND(S) FOR DA 61
01 PREPARE
02 READ DEVICE ID
03 RESET
04 DELAY
05 LOOP START
06 LOOP END
07 CONVERT AI
08 READ ANALOG DIGITAL CONVERTER
09 CONVERT DIAGNOSTIC ZERO
0A CONVERT DIAGNOSTIC VOLTAGE
ENTER
```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT ONE OR BOTH OF THE FOLLOWING QUESTION(S) WILL BE DISPLAYED.

```
NO AI FEATURE AT THE BASE ADDRESS IS THIS O.K?
ENTER
```

```
NO MULTIPLEXER AT THIS ADDRESS IS THIS O.K?
ENTER
```

A NO (0) REPLY TO EITHER QUESTION WILL TERMINATE THE ROUTINE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

```
LEVEL TO INTERRUPT
ENTER
```

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

```
IS THE 'I' BIT REQUIRED
ENTER
```

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

```
LENGTH OF DELAY, IN MILLISECOND(S)
ENTER
```

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

```
HOW MANY TIMES THROUGH THE LOOP
ENTER
```

A REPLY FROM 0001 TO 9999 IS EXPECTED

IF OPTION 06 IS SELECTED AND OPTION 05 WAS NOT THEN THE STATEMENT WILL BE

```
LOOP NOT STARTED, START OVER
```

IF OPTION 05 AND 06 WAS SELECTED THE MESSAGE WILL BE

```
LOOP STARTED AT 3268
LOOP ENDED AT 3288
```

```
WHICH CHANNEL
ENTER
```

A REPLY OF 0000-0007 IS EXPECTED FOR THE REED RELAY MULTIPLEXER
A REPLY OF 0000-0015 IS EXPECTED FOR THE SOLID TYPE MULTIPLEXER

```
WHAT IS THE SAMPLE RATE
ENTER
```

A REPLY OF 0001-0004 IS EXPECTED. THE SAMPLE RATE IS THE NUMBER OF TIMES PER SECOND THE CONVERT AI IS EXECUTED. THIS SAMPLE RATE IS VALID FOR THE REED RELAY MULTIPLEXER ONLY

```
IS ZERO CORRECTION REQUIRED?
ENTER
```

A REPLY OF YES (1) OR NO (0) IS EXPECTED. THIS IS VALID FOR THE SOLID TYPE

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MULTIPLEXER

```
WHAT IS THE RANGE
ENTER
```

RANGE	GAIN	INPUT LEVEL
0001	1	5V (SOLID TYPE) +5V TO -500MV (REED RELAY)
0002	10	500MV
0003	25	200MV
0004	50	100MV
0005	100	50MV
0006	250	20MV
0007	500	10MV

```
IF OPTION 08 IS SELECTED THE MESSAGE WILL BE
DO YOU WANT TO WRITE THE DATA TO THE CONSOLE LED'S?
ENTER
```

A YES (1) OR NO (0) IS EXPECTED
IF YES (1) IS SELECTED THE DATA IN THE CONSOLE LED'S WILL BE: LED 0 IS THE SIGN BIT (0 POSITIVE 1 NEGATIVE), LED'S 1-12 WILL BE A BINARY REPRESENTATION OF THE INPUT VOLTAGE, LED'S 13-15 WILL BE THE RANGE CODE

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

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MAP 0017-30

12.00.00 ROUTINE DESCRIPTION (4982-A0) DEVICE TYPE A9.

WHEN DEVICE TYPE A9 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 62

```

SELECT COMMAND(S) FOR DA 62
01 READ DEVICE ID
02 RESET
03 DELAY
04 LOOP START
05 LOOP END
06 WRITE AO POINT 0
07 WRITE AO POINT 1
**** CAUTION ****
DISCONNECT CUSTOMER INTERFACE
ENTER
    
```

*****CAUTION*****CAUTION*****CAUTION*****CAUTION*****CAUTION*****

WHEN OPTION 06 OR 07 IS SELECTED AND USED BY FRIEND THE SENSOR I/O SHOULD BE POWERED OFF AND THEN ON BEFORE THE CUSTOMER INTERFACE IS REINSTALLED

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

```

READ ID EXPECTED 8040 ID WAS 0020 IS THIS O.K?
ENTER
    
```

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

```

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER
    
```

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

```

HOW MANY TIMES THROUGH THE LOOP
ENTER
    
```

A REPLY FROM 0001 TO 9999 IS EXPECTED

IF OPTION 05 IS SELECTED AND OPTION 04 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 04 AND 05 WAS SELECTED THE MESSAGE WILL BE
LOOP STARTED AT 3268
LOOP ENDED AT 3288

WHEN OPTION 06 OR 07 IS SELECTED THE MESSAGES WILL BE

```

VOLTAGE RANGE +5V TO -5V
WHAT IS THE VOLTAGE
ENTER
    
```

```

F49902344      ### THIS IS THE MAXIMUM POSITIVE VOLTAGE
IS THE VOLTAGE POSITIVE?
ENTER
    
```

A YES (1) OR A NO (0) IS EXPECTED

2 WORDS OF DATA MUST BE ENTERED FOR THE VOLTAGES

```

EXAMPLE: FXXXXXXX = V.VVVVVVV VOLTS
THEREFORE: F50000000 = 5.0000000 VOLTS
AND           F00097656 = 0.0097656 VOLTS
    
```

```

*****
* AO BIT VALUES IN VOLTS
*****
*BIT* +10V TO -10V* +5V TO -5V * 0 TO -10V *
*-----*
* 1 * 5.000000 * 2.500000 * 5.000000 *
* 2 * 2.500000 * 1.250000 * 2.500000 *
* 3 * 1.250000 * .625000 * 1.250000 *
*-----*
* 4 * .625000 * .312500 * .312500 *
* 5 * .312500 * .156250 * .156250 *
* 6 * .156250 * .078125 * .078125 *
* 7 * .078125 * .039062 * .039062 *
*-----*
* 8 * .039062 * .019531 * .019531 *
* 9 * .019531 * .009765 * .009765 *
*****
* *SIGN BIT= '0' POSITIVE VOLTAGES
* *SIGN BIT= '1' FOR NEGATIVE VOLTAGES
*****
*****
* VOLTAGE * MAXIMUM * CENTER * MINIMUM *
* RANGE * VOLTAGE * VOLTAGE * VOLTAGE *
*****
* +5V * +4.9902344 * 0 * -5 *
* TO * * * *
* -5V * * * *
*****
* +10V * +9.9804688 * 0 * -10 *
* TO * * * *
* -10V * * * *
*****
* 0V * +9.9902344 * 5 * 0 *
* TO * * * *
* +10V * * * *
*****
    
```

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

13.00.00 ROUTINE DESCRIPTION (4982-DI/PI) DEVICE TYPE B0.

WHEN DEVICE TYPE B0 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 63

```

SELECT COMMAND(S) FOR DA 63
01 PREPARE
02 READ DEVICE ID
03 RESET
04 DELAY
05 LOOP START
06 LOOP END
07 ARM DI EXTERNAL SYNC
08 READ DI
09 ARM PI
0A READ PI
0B READ PI WITH RESET
0C READ STATUS
ENTER

```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

NO DI/PI FEATURE AT THIS ADDRESS IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

IF OPTION 06 IS SELECTED AND OPTION 05 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 05 AND 06 WAS SELECTED THE MESSAGE WILL BE

LOOP STARTED AT 3268
LOOP ENDED AT 3288

IF OPTION 08, 0A, 0B IS SELECTED THE FOLLOWING MESSAGE WILL BE DISPLAYED

DO YOU WANT TO WRITE THE DATA IN THE CONSOLE LED'S?
ENTER

A YES (1) OR NO (0) IS EXPECTED

IF YES (1) IS SELECTED THE CONSOLE LED'S WILL CONTAIN THE 16 BITS OF USER DATA INPUT

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

14.00.00 ROUTINE DESCRIPTION (4982-DO) DEVICE TYPE B4.

WHEN DEVICE TYPE B4 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 64

```

SELECT COMMAND(S) FOR DA 64
01 READ DEVICE ID
02 RESET
03 DELAY
04 LOOP START
05 LOOP END
06 WRITE DO
**** CAUTION ****
DISCONNECT CUSTOMER INTERFACE
ENTER

```

*****CAUTION*****CAUTION*****CAUTION*****CAUTION*****CAUTION*****

WHEN OPTION 06 IS SELECTED AND USED BY FRIEND THE SENSOR I/O SHOULD BE POWERED OFF AND THEN ON BEFORE THE CUSTOMER INTERFACE IS REINSTALLED

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 8018 ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

IF OPTION 05 IS SELECTED AND OPTION 04 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 04 AND 05 WAS SELECTED THE MESSAGE WILL BE

LOOP STARTED AT 3268
LOOP ENDED AT 3288

IF OPTION 06 IS SELECTED THE MESSAGE WILL BE

DATA IS
ENTER

ENTER THE DATA TO BE WRITTEN TO THE DO REGISTER. DATA IS EXPECTED TO BE 0000-FFFF

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

15.00.00 ROUTINE DESCRIPTION (4978) DEVICE TYPE 45.

WHEN DEVICE TYPE 45 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA 04

```
SELECT COMMAND(S) FOR DA 04
01 DEFAULT= WRITE,SHIFT UP 1
02 DEFAULT=READ,WRITE
03 PREPARE
04 READ DEVICE ID
05 RESET
06 DELAY
07 LOOP START
08 LOOP END
09 READ
0A WRITE
ENTER
```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME. WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 040E ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

WILL ANY DCB'S BE CHAINED?
ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?
A REPLY OF NO (0) OR YES (1) IS EXPECTED

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED
A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

BYTE COUNT
ENTER

THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER

A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

DATA IS
ENTER

NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE
LOOP STARTED AT 3268
LOOP ENDED AT 3288

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR

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16.00.00 ROUTINE DESCRIPTION (4966) DEVICE TYPE 4A.

WHEN DEVICE TYPE 4A IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST, THE ROUTINE FOR THIS DEVICE TYPE, TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA FO

```
SELECT COMMAND(S) FOR DA FO
01 PREPARE
02 READ DEVICE ID
03 RESET
04 DELAY
05 LOOP START
06 LOOP END
07 SEEK
08 RECALIBRATE HOME
09 RECALIBRATE HEAD
0A RECALIBRATE HEAD NOT LOADED DISKETTE
0B FORMAT TRACK
0C FORMAT TRACK (BAD TRACK)
0D VERIFY FORMAT TRACK
0E READ DATA
0F READ VERIFY (CRC CHECK)
10 READ VERIFY (DATA COMPARE)
11 READ SECTOR ID (MAP)
12 WRITE DATA (DATA AM)
13 WRITE DATA (READ VERIFY)
**** CAUTION ****
SOME COMMAND(S) WHEN USED COULD DESTROY CUSTOMER DATA INTEGRITY
ENTER
```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME.

WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 0126 ID WAS 0020 IS THIS O.K?
ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT
ENTER

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED
ENTER

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?
ENTER

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?
ENTER

A REPLY OF NO (0) OR YES (1) IS EXPECTED

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP
ENTER

A REPLY FROM 0001 TO 9999 IS EXPECTED

IS SUPPRESS EXCEPTION REQUIRED?
ENTER

A NO (0) OR A YES (1) IS EXPECTED

IS AUTOMATIC SEEK REQUIRED?
ENTER

A NO (0) OR A YES (1) IS EXPECTED

IS THE MFM BIT REQUIRED?
ENTER

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A NO (0) OR A YES (1) IS EXPECTED
 IS THIS A CONTROL AM?
 ENTER
 A NO (0) OR A YES (1) IS EXPECTED
 CONTROL AM MASK (00,01,02)
 ENTER
 ENTER THE CONTROL MASK FOR THE DCB
 SEEK DIFFERENCE
 ENTER
 ENTER THE NUMBER OF CYLINDERS TO SEEK (DECIMAL NUMBER)
 FORWARD SEEK?
 ENTER
 A NO (0) REPLY WILL CAUSE A NEGATIVE SEEK
 A YES (1) REPLY WILL CAUSE A POSITIVE SEEK
 CYLINDER NUMBER
 ENTER
 ENTER THE CYLINDER NUMBER (DECIMAL VALUE)
 SECTOR SIZE
 ENTER
 ENTER THE CORRECT SECTOR SIZE (0128/0256/0512)
 SECTOR NUMBER
 ENTER
 ENTER THE CORRECT SECTOR NUMBER (DECIMAL 0001-0015)
 HOW MANY SECTORS
 ENTER
 ENTER THE NUMBER OF SECTORS REQUIRED FOR THE COMMAND
 HEAD
 ENTER
 ENTER THE CORRECT HEAD NUMBER (0000 OR 0001)
 FORMAT WORD
 ENTER
 ENTER THE WORD TO USE TO FORMAT THE TRACK
 BYTE COUNT
 ENTER
 THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB
 DO YOU WANT TO USE THE STANDARD DATA PATTERN?
 ENTER
 A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
 A NO (0) REPLY WILL CAUSE THE NEXT QUESTION
 HOW MANY WORDS OF DATA
 ENTER
 ENTER THE NUMBER OF WORDS OF DATA (DECIMAL NUMBER)
 DO YOU WANT TO COMPARE THE DATA JUST READ?
 ENTER
 A READ COMMAND WAS FOLLOWED BY A READ VERIFY (DATA COMPARE) IS THE DATA FROM THE
 READ COMMAND TO BE USED FOR THE COMPARE
 DO YOU WANT TO WRITE THE DATA JUST READ?
 ENTER
 A READ COMMAND WAS FOLLOWED BY A WRITE COMMAND IS THE DATA FROM THE READ COMMAND
 TO BE USED FOR THE WRITE COMMAND
 DISKETTE POSITION NUMBER (DECIMAL NUMBER 0001-0023)
 ENTER
 ENTER THE DISKETTE POSITION TO BE USED IN THE DCB
 DATA IS
 ENTER
 NOW ENTER THE DATA TO BE WRITTEN
 FILL BYTE (00-FF)
 ENTER
 ENTER THE FILL BYTE TO BE USED IN A FORMAT COMMAND
 VERIFY BYTE (00-FF)
 ENTER
 ENTER THE VERIFY BYTE TO BE USED IN A VERIFY COMMAND
 IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE
 LOOP NOT STARTED, START OVER

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IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE
 LOOP STARTED AT 3268
 LOOP ENDED AT 3288
 WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND
 SUPERVISOR

17.00.00 ROUTINE DESCRIPTION (4963) DEVICE TYPE 7A.

WHEN DEVICE TYPE 7A IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA F0

```

SELECT COMMAND(S) FOR DA F0
01 PREPARE
02 READ DEVICE ID
03 RESET
04 DELAY
05 LOOP START
06 LOOP END
07 SEEK
08 RECALIBRATE
09 READ VERIFY
0A READ DATA--0B REPEAT
0C WRITE DATA--0D REPEAT
0E READ SECTOR ID--0F EXTENDED
10 WRITE SECTOR ID WITH READ VERIFY--11 EXTENDED
12 WRITE DATA WITH READ VERIFY--13 REPEAT
14 WRITE DATA SECURITY
15 SCAN EQUAL--16 SCAN LOW/EQUAL--17 SCAN HIGH/EQUAL
**** CAUTION ****
SOME COMMAND(S) WHEN USED COULD DESTROY CUSTOMER DATA INTEGRITY
ENTER

```

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME.

WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

```

READ ID EXPECTED 3X06 ID WAS 0020 IS THIS O.K?
ENTER

```

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

```

LEVEL TO INTERRUPT
ENTER

```

A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

```

IS THE 'I' BIT REQUIRED?
ENTER

```

IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

```

WILL ANY DCB'S BE CHAINED?
ENTER

```

A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

```

DO YOU WANT THE CHAIN BIT ON?
ENTER

```

A REPLY OF NO (0) OR YES (1) IS EXPECTED

```

LENGTH OF DELAY, IN MILLISECOND(S)
ENTER

```

A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

```

HOW MANY TIMES THROUGH THE LOOP
ENTER

```

A REPLY FROM 0001 TO 9999 IS EXPECTED

```

IS SUPPRESS EXCEPTION REQUIRED?
ENTER

```

A NO (0) OR A YES (1) IS EXPECTED

```

IS AUTOMATIC SEEK REQUIRED?
ENTER

```

A NO (0) OR A YES (1) IS EXPECTED

```

FLAG BYTE IS
ENTER

```

ENTER THE FLAG BYTE TO BE USED IN THE DCB

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MAP 0017-39

```

CYLINDER NUMBER
ENTER
ENTER THE CYLINDER NUMBER (DECIMAL VALUE)

HOW MANY SECTORS
ENTER
ENTER THE NUMBER OF SECTORS FOR THE DCB

SECTOR NUMBER
ENTER
ENTER THE CORRECT SECTOR (EVEN DECIMAL NUMBER 0000-0032)

HEAD
ENTER
ENTER THE CORRECT HEAD NUMBER IN DECIMAL

IS THIS A FIXED HEAD?
ENTER
A NO (0) OR A YES (1) IS EXPECTED

BYTE COUNT
ENTER
THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?
ENTER
A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

HOW MANY WORDS OF DATA
ENTER
ENTER THE NUMBER OF WORDS OF DATA (DECIMAL NUMBER)

DO YOU WANT TO WRITE THE DATA JUST READ?
ENTER
A READ COMMAND WAS FOLLOWED BY A WRITE COMMAND IS THE DATA FROM THE READ COMMAND
TO BE USED FOR THE WRITE COMMAND

HOW MANY RECORDS
ENTER
ENTER THE NUMBER OF RECORDS TO BE USED FOR THE DCB

IS THIS RECORD 1?
ENTER
EACH SECTOR HAS RECORD 1 AND RECORD 2 DO YOU NEED RECORD 1 FOR THE DCB?

DATA IS
ENTER
NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE
LOOP NOT STARTED, START OVER

IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE
LOOP STARTED AT 3268
LOOP ENDED AT 3288
WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND
SUPERVISOR

```

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MAP 0017-40

18.00.00 ROUTINE DESCRIPTION (4969) DEVICE TYPE 58.

WHEN DEVICE TYPE 58 IS SELECTED THE FRIEND SUPERVISOR WILL REQUEST THE ROUTINE FOR THIS DEVICE TYPE TO BE LOADED INTO STORAGE AT HEXADECIMAL LOCATION 1900. THE FOLLOWING MESSAGES WILL BE DISPLAYED FOR DA FO

SELECT COMMAND(S) FOR DA FO

01 PREPARE
 02 READ DEVICE ID
 03 RESET
 04 DELAY
 05 LOOP START
 06 LOOP END
 07 READ RECORD
 08 WRITE RECORD
 09 WRITE TAPE MARK
 0A ERASE
 0B SPACE RECORD FORWARD
 0C SPACE TAPE MARK FORWARD
 0D SPACE RECORD REVERSE
 0E SPACE TAPE MARK REVERSE
 0F REWIND
 10 OFFLINE
 11 REWIND OFFLINE
 12 DEFAULT WRITE
 13 DEFAULT READ COMPARE
 **** CAUTION ****
 SOME COMMAND(S) WHEN USED COULD DESTROY CUSTOMER DATA INTEGRITY
 ENTER

THE COMMAND(S) NECESSARY FOR THIS TEST MAY BE ENTERED AT THIS TIME.

WHEN THE COMMAND(S) HAVE BEEN ENTERED THIS ROUTINE WILL DO A READ ID TO THE DEVICE ADDRESS SPECIFIED. IF THE RESULT OF THE READ ID IS NOT EQUAL TO THE EXPECTED RESULT THE QUESTION WILL BE.

READ ID EXPECTED 3X06 ID WAS 0020 IS THIS O.K?
 ENTER

A NO (0) REPLY WILL CAUSE THE ROUTINE TO TERMINATE
 A YES (1) REPLY WILL PERMIT THE FOLLOWING MESSAGES

LEVEL TO INTERRUPT

ENTER
 A REPLY OF 0000,0001,0002 IS EXPECTED

IF A PREPARE COMMAND IS NOT NECESSARY FOR THE TEST THE DEVICE WILL BE PREPARED TO LEVEL 2

IS THE 'I' BIT REQUIRED

ENTER
 IF THE DEVICE UNDER TEST IS TO INTERRUPT THE 'I' BIT MUST BE SET ON IN THE PREPARE IDCB

WILL ANY DCB'S BE CHAINED?

ENTER
 A NO (0) REPLY WILL NOT PERMIT ANY MORE MESSAGES CONCERNING A CHAINED DCB.
 A YES (1) REPLY WILL CAUSE THE FOLLOWING MESSAGE FOR EACH DCB

DO YOU WANT THE CHAIN BIT ON?

ENTER
 A REPLY OF NO (0) OR YES (1) IS EXPECTED

LENGTH OF DELAY, IN MILLISECOND(S)

ENTER
 A REPLY FROM 0001 TO 9999 IS EXPECTED

A REPLY OF 0001 = 1 MILLISECOND

HOW MANY TIMES THROUGH THE LOOP

ENTER
 A REPLY FROM 0001 TO 9999 IS EXPECTED

IS SUPPRESS EXCEPTION REQUIRED?

ENTER
 A NO (0) OR A YES (1) IS EXPECTED

REPEAT COUNT

ENTER
 A REPLY FROM 0001 TO 0255 IS EXPECTED

IS THIS 800 BPI NRZI?

ENTER
 A NO (0) OR A YES (1) IS EXPECTED

IS TEST READ MODE REQUIRED?

ENTER
 A NO (0) OR A YES (1) IS EXPECTED

IS READ THRESHOLD LOW REQUIRED?

ENTER
 A NO (0) OR A YES (1) IS EXPECTED

BYTE COUNT

ENTER
 THIS IS THE BYTE COUNT IN DECIMAL FOR THE DCB

DO YOU WANT TO USE THE STANDARD DATA PATTERN?

ENTER
 A YES (1) REPLY WILL CAUSE THE DEFAULT PATTERN TO BE MOVED TO THE DATA AREA
 A NO (0) REPLY WILL CAUSE THE NEXT QUESTION

HOW MANY WORDS OF DATA

ENTER
 ENTER THE NUMBER OF WORDS OF DATA (DECIMAL NUMBER)

DO YOU WANT TO WRITE THE DATA JUST READ?

ENTER
 A READ COMMAND WAS FOLLOWED BY A WRITE COMMAND IS THE DATA FROM THE READ COMMAND TO BE USED FOR THE WRITE COMMAND
 A NO (0) OR A YES (1) IS EXPECTED

DATA IS

ENTER
 NOW ENTER THE DATA TO BE WRITTEN

IF OPTION 08 IS SELECTED AND OPTION 07 WAS NOT THEN THE STATEMENT WILL BE

LOOP NOT STARTED, START OVER

IF OPTION 07 AND 08 WAS SELECTED THE MESSAGE WILL BE
 LOOP STARTED AT 3268
 LOOP ENDED AT 3288

IF OPTION 12 IS SELECTED A 2016 BYTE RECORD WILL BE WRITTEN.

***** CAUTION *****
 THIS IS A STAND ALONE OPTION NO OTHER OPTION WILL BE SUPPORTED.

IF OPTION 13 IS SELECTED THE 2016 BYTE RECORD WRITTEN BY OPTION 12 WILL BE READ AND DATA COMPARED. IF THE DATA DOES NOT COMPARE THE MESSAGE WILL BE 'DATA COMPARE ERROR' (SEE HALT CODE 58ED SECTION 02.02.00 THIS MAP).

***** CAUTION *****
 THIS IS A STAND ALONE OPTION NO OTHER OPTION WILL BE SUPPORTED.

WHEN THE MESSAGE(S) HAS BEEN ANSWERED CONTROL WILL BE RETURNED TO THE FRIEND SUPERVISOR