

TEXT LISTING

068-001112-01

PROGRAM

DUAL MODE MAG TAPE DRIVE
RELIABILITY

TEXT TAPE

097-001112-01

ABSTRACT

THIS PROGRAM IS DESIGNED TO VERIFY THE RELIABILITY OF THE DUAL MODE MAGNETIC TAPE DRIVE AND CONTROLLER. THE PROGRAM RUNS THROUGH A SERIES OF COMMANDS WHICH TEST: TAPE MOVEMENT, DATA TRANSFER AND INTEGRITY, AS WELL AS, SPECIAL FEATURES OF THE CONTROLLER. THE PROGRAM IS ALSO SET UP TO RUN WITH "CATS" IN THE BACKGROUND (IF CAT HAS BEEN LOADED). CATS IS STARTED AFTER THE PROGRAM HAS MADE ONE COMPLETE PASS.

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MACRO REV 06.30

10:39:16 12/20/78

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NAME: DMMTR.TX PART NUMBER: 097-001112
DESCRIPTION: DUAL MODE TAPE RELIABILITY
REVISION HISTORY:
REV. DATE
00 03/31/78
01 12/29/78
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; DUAL MODE TAPE RELIABILITY PROGRAM
;
;1. ABSTRACT
; THE DUAL MODE TAPE RELIABILITY IS A MAINTENANCE
; PROGRAM INTENDED FOR RIGOROUS TESTING
; OF A SYSTEM THAT HAS SUCCESSFULLY RUN
; THE DIAGNOSTIC TEST.
;
;2. MACHINE REQUIREMENTS
; NOVA (EXCEPT MICRO)/ECLIPSE PROCESSOR
; 8K READ/WRITE CORE MEMORY
; TELETYPE
;
;3. SWITCH SETTINGS
;
; 3.1 STARTING ADDRESSES
; 200 RELIABILITY TEST
; 201 CHANGE DEVICE CODE
; 500 RELIABILITY TEST
; 501 INTERCHANGE TEST (RD&WT)
; 502 INTERCHANGE TEST (RD ONLY)
; 505 TEST LOOP BUILDER
;
; 3.2 TO CHANGE DEVICE CODE
; LOAD 201 IN SWITCHES AND START.
; PROGRAM WILL PRINT OUT PRESENT DEVICE
; CODE AND THEN WAIT FOR NEW DEVICE CODE.
; A CARRIAGE RETURN PRESERVES PRESENT DEVICE
; CODE, AND TYPING NEW CODE WITH CARRIAGE
; RETURN CHANGES CODE TO THAT SPECIFIED.
; PROGRAM WILL PRINT MESSAGE VERIFYING THAT
; THE DEVICE CODE HAS BEEN SET TO THE NEW
; VALUE. TO RESTART THE PROGRAM AND ENTER
; THE RELIABILITY TEST, HIT ANY KEY.
;
; 3.3 CONTROL
; SW2=INHIBIT ALL SUMMARIES AND PRINTOUTS
; SW5=OUTPUT TO LPT
; SW9=INHIBIT ERASE HARD WRITE ERRORS
; SW10=PRINT HARD ERRORS ONLY
; SW11=INHIBIT PRINT SUMMARIES AT EOT
; SW12=INHIBIT PRINT WRITE PARITY ERRORS
; SW13=INHIBIT PRINT READ PARITY ERRORS
; SW14=INHIBIT PRINT DATA COMPARE ERRORS
; SW15=DISABLE AUTO RETRY MODE
;
;4. OPERATING PROCEDURE
;
;NOTE: WHEN IT IS DESIRED TO START THE PROGRAM AT A GIVEN
; ADDRESS AND ALSO HAVE A GIVEN CONFIGURATION OF DATA
; SWITCHES SET UPON STARTING, DO THE FOLLOWING:
;
; ENTER STARTING ADDRESS IN DATA SWITCHES. PRESS "EXAMINE",
; RESET ALL DATA SWITCHES EXCEPT THOSE DESIRED TO BE ON,
; PRESS "CONTINUE".
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; LOAD PROGRAM USING THE BINARY LOADER OR DTOS

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4.1 RELIABILITY TEST
SET WRITE ENABLE FOR ALL UNITS TO
BE TESTED. START. ERRORS WILL BE
REPORTED ON THE TELETYPE. AS EACH UNIT
ENCOUNTERS IT'S EOT SENSOR, A LOG OF ALL
IT'S ACCUMULATED ERRORS IS PRINTED.

4.2 INTERCHANGE TEST (RD&WT)
MOUNT TAPES ON ALL UNITS TO BE TESTED
AND SET THEM IN WRITE PERMIT.
MANUALLY REWIND ALL UNITS AND THEN START.
WHEN ASKED BY PROG. REMOVE TAPES AND
MOUNT ON UNIT TO THE RIGHT. ERRORS
ARE REPORTED ON THE TELETYPE. EACH UNIT'S
ACCUMULATED ERRORS IS PRINTED AFTER EACH
PASS.

4.3 INTERCHANGE TEST (READ ONLY)
MOUNT TAPES WRITTEN USING THE MODE
DESCRIBED ABOVE IN PAR. 4.2 ONTO ALL
UNITS TO BE TESTED. MANUALLY REWIND
ALL UNITS AND START. WHEN ASKED
BY PROG. REMOVE TAPES AND MOUNT ON THE
UNIT TO THE RIGHT. ERRORS ARE REPORTED
ON THE TELETYPE. EACH UNIT'S ACCUMULATED
ERRORS IS PRINTED AFTER EACH PASS.

4.4 TEST LOOP BUILDER
SET THE WRITE ENABLE FOR THE UNIT TO BE
TESTED. START. PROGRAM WILL RESPOND
WITH "UNIT". TYPE IN THE UNIT #
PROGRAM WILL RESPOND WITH "TAPE MODE", TYPE
THE DESIRED MODE (NRZ OR PE). TYPE A CARRIAGE
RETURN TO PRESERVE PRESENT TAPE MODE. PROGRAM
WILL RESPOND WITH "WC". TYPE IN WORD COUNT (2 -
3777 IN OCTAL DEPENDING ON AVAILABLE MEMORY
SIZE). THE PROGRAM WILL RESPOND WITH "DATA",
TYPE IN ONE OF THE DATA MESSAGES LISTED
BELOW. TYPE CARRIAGE RETURN AFTER EACH
INPUT RESPONSE TO "UNIT", "TAPE MODE", "WC"
AND DATA INQUIRIES.

RANDOM = RANDOM DATA
ALL ONES = 17777 DATA PATTERN
ALL ZEROS = 00000 DATA PATTERN
ALTERNATE ONES = 12522 DATA PATTERN
ALTERNATE ZEROS = 52525 DATA PATTERN
SELECTED N...N = OPERATOR SELECTED DATA,
WHERE N...N IS ANY OCTAL NUMMER.

NOTE: ALL DATA ENTRY REPLIES MAYBE ABBREVIATED
TO THE FIRST THREE(3) CHARACTERS FOR
EACH WORD AS FOLLOWS;

RANDOM = RAN
ALL ZEROS = ALL ZER
ALTERNATE ONES = ALT ONE
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IN THE "SELECTED" PATTERN MODE UP TO 8 WORDS
MAY BE TYPED IN WITH EACH WORD SEPARATED BY
A SPACE OR COMMA. TYPE A CARRIAGE RETURN TO
TERMINATE DATA INPUT. IF DATA IS LOADED
AND THE PROGRAM IS RESTARTED A CARRIAGE
RETURN MAY BE TYPED IN RESPONSE TO "DATA",
CAUSING THE PROGRAM TO USE DATA TYPED IN
THE PREVIOUS COMMAND STRING. **NOTE***
THE "SELECTED" DATA MODE REQUIRES A MINIMUM
OF 2 WORDS INPUT.

COMMANDS *****
READ N
REWIND
SPACE FORWARD N
SPACE BACKWARD N
WRITE N
WRITE EOF
ERASE
READ EOF
LOOP
*
WHERE N = NUMBER OF RECORDS OR SPACES,
AND LOOP = REPEAT COMMAND STRING. *
= LOOP BACK TO * POINT IN COMMAND STRING
AND REPEAT COMMANDS TO END OF STRING.

NOTE: ALL COMMAND STRING ENTRIES MAYBE
ABBREVIATED TO THE FIRST THREE(3)
CHARACTERS OF EACH COMMAND WORD
AS FOLLOWS;
REWIND = REW
SPACE FORWARD = SPA FOR
WRITE EOF = WRI EOF

SAMPLE COMMAND STRING*****
REWIND,WRITE 10,REWIND,READ 10,
SPACE BACKWARD 10,LOOP

THIS ROUTINE WILL REWIND, WRITE 8 RECORDS, REWIND,
AND THEN READ 8, AND BACKSPACE 8,
CONTINUALLY. TYPE A SPACE CHAR ON THE
TTY TO PRINT STATUS.

SPACES OR A COMMA MAY BE USED AS AN ARGUMENT
DELIMITER. COMMAND STRING IS TERMINATED BY
TYPING CARRIAGE RETURN. IF A COMMAND STRING
REQUIRES TWO LINES, TYPE LINEFEED TO ADVANCE
TO NEXT LINE.

TYPING "CARRIAGE RETURN" IN RESPONSE TO "UNIT"
WILL CAUSE THE PREVIOUS COMMAND STRING TO
BE EXECUTED AGAIN.
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5.3 INTERCHANGE TEST (READ ONLY)
THIS IS THE SAME AS THE PREVIOUSLY
DISCUSSED TEST IN PAR. 5.2, EXCEPT
THAT STEPS A THRU C ARE BYPASSED

5.4 TEST LOOP BUILDER
THIS PROGRAM IS INTENDED FOR USE BY
THE TECHNICIAN AS A DEBUGGING AID.
IF A CERTAIN SEQUENCE OF EVENTS IS
NEEDED TO SHOW UP A PARTICULAR PROBLEM
THAT SEQUENCE CAN BE TYPED IN AS A COMMAND
STRING WHICH WILL THEN BE PERFORMED.
THE SAME BASIC TAPE SUBROUTINES USED
IN THE RELIABILITY TEST ARE USED HERE,
LINKED TOGETHER BY THE COMMAND STRING
INTERPRETER.

5.5 GENERAL
THE HEART OF THE PROGRAM IS COMPOSED
OF SEVERAL TAPE HANDLING SUBROUTINES.
ERROR CHECKING IN THESE SUBR. IS DESCRIBED
BELOW.

READ SUBROUTINE

1. GIVE C PULSE
2. IF DATA LATE, REWIND, ILLEGAL OR PARITY
STATUS, PRINT MESSAGE AND EXIT
3. READ AND WAIT IN SKPBZ LOOP
MESSAGE AND EXIT
4. IF DATA LATE, REWIND OR ILLEGAL, PRINT
MESSAGE AND EXIT
5. IF PARITY PRINT MESSAGE FIRST TIME ONLY
AND RETRY UP TO 8 TIMES.
6. IF EOT SET SOFTWARE FLAG.
7. EXIT

CHECK SUBROUTINE

1. CHECK DATA IN INPUT BUFFER AGAINST DATA
THAT WAS WRITTEN, PRINT MAXIMUM OF 3
DIFFERENCES IN EACH RECORD.

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WRITE SUBROUTINE

1. GIVE CLEAR PULSE
2. IF DATA LATE, WRITE LOCK, ILLEGAL, OR
PARITY, PRINT MESSAGE AND EXIT
3. WRITE AND WAIT FOR INTERRUPT (RUN TIMER)
4. IF NO INTERRUPT PRINT MESSAGE AND EXIT
IF INTERRUPT, CHECK DISABLE FLAG AND PRINT
MESSAGE IF IT FAILS
6. IF PARITY ERR PRINT MESSAGE ONCE AND RETRY
UP TO 8 TIMES. IF NO-GO ERASE TAPE
AND TRY AGAIN.
7. IF EOT SET SOFTWARE FLAG
8. EXIT

SPACE SUBROUTINE

1. LOAD WC AND SPACE WAITING IN SKPBZ LOOP
2. IF ADDRESS REG. COUNTS DO NOT AGREE
WITH #REC SPECIFIED, PRINT MESSAGE.
3. IF DATA LATE, REWIND, ILLEGAL, OR
PARITY PRINT MESSAGE.
4. EXIT

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**00000 TOTAL ERRORS, 00000 PASS 1 ERRORS