

DataGeneral

**TECHNICAL
STATEMENT**

TEXT LISTING

068-000167-01

PROGRAM

PHASE ENCODED TAPE UNIT
TIMING TEST

TEXT TAPE

097-000167-01

ABSTRACT

THE PHASE ENCODED TAPE UNIT TIMING TEST IS A MAINTENANCE PROGRAM DESIGNED TO TEST THE TAPE MOTION DELAYS IN THE TAPE CONTROL AND THE TAPE MOTION PRODUCED BY THE TRANSPORT MECHANICS. ANY TRANSPORT THAT IS READY AND WRITE ENABLED WILL BE TESTED.

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0001 .MAIN          MACRO REV 06.30          11:50:07 02/15/79
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? NAME: PETUT.TX          PART NUMBER: 097-000167
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? DESCRIPTION: PHASE ENCODED TAPE UNIT TIMING TEST
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? REVISION HISTORY:
?
?   REV.          DATE
?
?   00          05/03/74
?   01          08/06/76
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? PHASE ENCODED TAPE UNIT TIMING TEST
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? AUTO-RUN AUTO-LOAD MODIFIED 3/7/72
? MODIFIED FOR NOVA 2 07/09/73
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?1. ABSTRACT
? THE PHASE ENCODED TAPE UNIT TIMING TEST IS A
? MAINTENANCE PROGRAM DESIGNED TO TEST THE TAPE
? MOTION DELAYS IN THE TAPE CONTROL AND THE
? TAPE MOTION PRODUCED BY THE TRANSPORT
? MECHANICS. ANY TRANSPORT THAT IS READY AND
? WRITE ENABLED WILL BE TESTED.
?
?2. MACHINE REQUIREMENTS
?2.1 NOVA (EXCEPT MICRO)/ECLIPSE FAMILY PROCESSOR
?2.2 4K READ/WRITE MEMORY
?2.3 TERMINAL
?3. SWITCH SETTINGS
?3.1 STARTING ADDRESS=200
?3.2 SWITCH 2(1)=INHIBIT TTY OUTPUT
? SWITCH 5(1)=OUTPUT TO LPT
?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".
? LOAD THE PROGRAM VIA THE BINARY LOADER OR DTOS
? SET ON LINE AND WRITE ENABLE FOR ALL UNITS
? TO BE TESTED.
? SET SWITCHES TO 200 OR 000004 (THIS LOCATION)
? ADDS 40 TO THE PRESENT DEVICE CODE)
? PRESS START
? IF THE PROGRAM ASKS:
? TTY BAUD RATE ?=
? TYPE IN THE BAUD RATE OF THE CONSOLE
? TERMINAL FOLLOWED BY A CAR. RETURN
?4.5 THE PROGRAM WILL TYPE THE UNIT NUMBER,
? DENSITY, AND 7 OR 9 CHANNEL, FOR THE FIRST
? AVAILABLE UNIT. THE DELAY TIMES MEASURED
? WILL THEN BE TYPED. WHEN COMPLETE THE
? PROGRAM WILL SEARCH FOR THE NEXT AVAILABLE
? UNIT.
?4.6 THE TIMES THUS RECORDED SHOULD BE CHECKED
? AGAINST THE STANDARD FOR THE TYPE UNIT BEING
? TESTED. SAVE THE PRINTOUT TO PROVIDE A HISTORY
? FOR EACH TRANSPORT. OBSERVE CHANGES FROM THE
? TIMES PREVIOUSLY RECORDED.
?
?5. PROGRAM OUTPUT
?5.1 THE TIMES PRINTED REPRESENT THE RANGE
? (HIGHEST-LOWEST), LOWEST, AND HIGHEST TIMES
? RECORDED. FOR EACH PARAMETER MEASURED. THE

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0003 .MAIN

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TIMES PRINTED HAVE LIMITED PRECISION AND
HAVE SOME INACCURACYS (ADJUSTMENTS SHOULD
BE MADE WITH A SCOPE ONLY).
THE TIMES PRINTED REPRESENT THE FOLLOWING
PARAMETER MEASUREMENTS.

10004 .MAIN

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WRITE START DELAY= SEND CLOCK FROM
WRITE COMMAND TO ITS ZERO STATE.
WRITE STOP DELAY= SEND CLOCK DURING
WRITE SHUT DOWN PROCEDURE.
WRITE START DELAY FROM LOAD POINT=
SEND CLOCK FROM WRITE COMMAND TO ITS
ZERO STATE WHEN THE TAPE IS AT LOAD POINT.
WRITE EOF START DELAY= SEND CLOCK FROM
WRITE A FILE MARK COMMAND TO ITS
ZERO STATE.
WRITE EOF STOP DELAY= SEND CLOCK DURING
THE SHUT DOWN PROCEDURE FOR EOF.
READ/WRITE HEAD SEPERATION= SEND CLOCK
A ZERO AFTER THE START DELAY HAS ENDED
ON A WRITE END OF FILE COMMAND.
SETTLE DOWN DELAY= READY STATUS ZERO
AFTER SEND CLOCK STOP DELAY.
FWD READ START DELAY= SEND CLOCK FROM
SPACE FORWARD COMMAND TO ITS ZERO STATE.
RVS READ START DELAY=SEND CLOCK FROM
SPACE BACKWARD COMMAND TO ITS ZERO STATE.
FWD READ STOP DELAY= SEND CLOCK DURING
THE FORWARD READ SHUT DOWN PROCESS.
RVS READ STOP DELAY= SEND CLOCK DURING
THE BACKWARD READ SHUT DOWN PROCESS
READ START DELAY FROM LOAD POINT= SEND
CLOCK FROM A SPACE FORWARD COMMAND TO
ITS ZERO STATE, WHEN THE TAPE IS AT LOAD
POINT.
ERASE TIME= SEND CLOCK FROM A ERASE
COMMAND TO ITS ZERO STATE.
WRITE GAP AFTER FWD READ= THE TAPE IS
SPACED FORWARD, THEN COMMANDED TO WRITE
ANOTHER RECORD. THE INTER-RECORD GAP PRO-
DUCED IS MEASURED.
GAP TIME, MINIMUM DELAY= THE INTER-RECORD
GAPS PRODUCED BY WRITING RECORDS AT THE
MAXIMUM POSSIBLE RATE IS MEASURED.
GAP TIME, 1-100 MS DELAY= THE INTER-RECORD
GAPS PRODUCED BY WRITING RECORDS WITH A
VARIABLE DELAY BETWEEN WRITE COMMANDS.

10005 .MAIN

0006 .MAIN
**00000 TOTAL ERRORS, 00000 PASS 1 ERRORS

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01 ;5.2.18 FWD STOP-RVS START TIME= TAPE IS COMMANDED  
02 TO SPACE FORWARD OVER A RECORD. TAPE IS  
03 THEN COMMANDED TO SPACE BACKWARD WITH TIME  
04 RECORDED FROM THE BACKSPACE COMMAND TO THE  
05 END OF A TWO WORD RECORD. THE TIME IS A  
06 FUNCTION OF FORWARD READ STOP AND BACK START.  
07 FORWARD WRITE CREEP= TWO RECORDS ARE  
08 WRITTEN AND THE GAP TIME MEASURED. THE  
09 SECOND RECORD IS SPACED OVER BACKWARD  
10 THEN WRITTEN FORWARD. THE NEW GAP PRODUCED  
11 IS MEASURED. THE NEW GAP MINUS THE OLD GAP  
12 IS THE AMOUNT OF SPACE THE RECORD HAS MOVED.  
13 IN PROPER OPERATION THIS MUST MOVE THE  
14 RECORD DOWN TAPE.  
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PROGRAM DESCRIPTION

16. THE NUMBER OF ITERATIONS OF A SMALL ROUTINE DURING THE TIME REQUIRED TO TYPE A CHARACTER ON THE TELETYPE (TYPE 33-37) IS RECORDED. THIS IS TO DETERMINE THE SPEED OF THE PROCESSOR. THE TAPE UNIT TIMING ROUTINES COUNT ITERATIONS OF SIMILAR LOOPS UNTIL THE TESTED CONDITION IS FALSE. THE ITERATION COUNT MULTIPLIED BY THE LOOP TIME IS THE RECORDED TIME.

16.2 THE DECISION TO TEST A UNIT IS A FUNCTION OF READY AND WRITE ENABLE WHEN THE UNIT IS SELECTED.

16.3 THE PHASE ENCODED TAPE FORMAT REQUIRES A PREAMBLE CONSISTING OF FORTY 0 BYTES AND 1 SYNC BYTE IMMEDIATELY PRECEDING THE 1ST DATA BYTE. THE PREAMBLE TIME IS SET INTO THE PROGRAM AS A NORMALIZED CONSTANT (.568 MS) AND IS DEDUCTED FROM THE TEST DATA MEASUREMENTS EFFECTED. TESTS EFFECTED ARE READ/WRITE HEAD SEPARATION, WRITE GAP AFTER FORWARD READ, GAP TIME (MINIMUM DELAY), AND GAP TIME (1 TO 100 M.S. DELAY)

17. RESTRICTIONS/MISC

17.1 CLEAN THE TRANSPORT BEFORE TESTING.

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