

DataGeneral

**TECHNICAL
STATEMENT**

TEXT LISTING

068-000154-14

PROGRAM

REAL TIME CLOCK TEST

TEXT TAPE

097-000154-14

ABSTRACT

THE REAL TIME CLOCK TEST IS A MAINTENANCE PROGRAM DESIGNED TO TEST THE REAL TIME CLOCK LOGIC. IF THE PROGRAM IS USED WITHOUT A TTY, THE CRYSTAL FREQUENCY IS NOT CHECKED FOR ACCURACY. THE PROGRAM IS DESIGNED FOR EITHER 50 OR 60 HERTZ LINE INTERRUPTS.

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0001 .MAIN      AOS ASSEMBLER REV 02.04      07:43:17 05/18/79
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08 NAME: RTCST.TX      PART NUMBER: 097-000154
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12 DESCRIPTION: REAL TIME CLOCK TEST
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16 REVISION HISTORY:
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18 REV.      DATE
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20 00      04/07/70
21 01      09/15/70
22 02      07/08/71
23 03      08/31/72
24 04      05/23/73
25 05      02/15/74
26 06      06/07/74
27 07      10/25/74
28 NONE
29 NONE
30 NONE
31 10      06/11/76
32 11      04/22/77
33 12      08/18/78
34 13      12/20/78
35 14      07/06/79
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: 0.0 REVISION HISTORY
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: REV 13 WAS CREATED TO
: INTEGRATE THIS PROGRAM WITH
: THE NOVA 4 SYSTEM. DUE TO THE
: SPEED OF THE NOVA 4 SEVERAL
: TESTS NOW USE INSTRUCTION TIME
: AVERAGING OVER 8 TIMING LOOPS.
:
: ABSTRACT REAL TIME CLOCK TEST
:
: 1. THE REAL TIME CLOCK TEST IS A MAINTENANCE
: PROGRAM DESIGNED TO TEST THE REAL TIME
: CLOCK LOGIC. IF THE PROGRAM IS USED WITH-
: OUT A TELETYPE THE CRYSTAL FREQUENCY IS
: NOT CHECKED FOR ACCURACY. THE PROGRAM IS
: DESIGNED FOR EITHER 50 OR 60 HERTZ LINE
: INTERRUPTS.
:
: MACHINE REQUIREMENTS
: 2. ANY NOVA/ECLIPSE PROCESSOR
: 2.1 REAL TIME CLOCK OPTION
: 2.2 TELETYPE... DESIRABLE BUT NOT ESSENTIAL
: 2.3
:
: S?MPD 3
:
: SWITCH SETTINGS
:
: 3. LOCATION "SWREG" IS USED TO SELECT THE PROGRAM OPTIONS
: (NOT SYSTEM CONFIGURATION). WHILE RUNNING UNDER DTOS,
: THIS LOCATION WILL BE LOADED BY THE MONITOR.
: HOWEVER UNDER STAND ALONE AND PROGRAM LOAD MODES THIS
: LOCATION WILL BE SET ACCORDING TO THE ANSWERS SUPPLIED
: BY THE OPERATOR. IN ANY CASE THE OPTIONS CAN BE CHANGED
: OR VERIFIED BY USING ONE OF THE COMMANDS GIVEN IN SEC.
: 3.2
:
: SWITCH OPTIONS
: 3.1 DIFFERENT BITS AND THEIR INTERPRETATION AT LOCATION
: "SWREG" IS AS FOLLOWS:
:
: BIT OCTAL BINARY INERPRETATION
: VALUE VALUE
:
: 1 40000 1 LOOP ON ERROR
: SKIP LOOPING ON ERROR
:
: 2 20000 1 PRINT TO CONSOLE
: ABORT PRINT OUT TO CONSOLE
:
: 3 10000 1 DO NOT PRINT % FAILURE
: PRINT % FAILURE
:
: 4 04000 1 ALLOW END OF PASS PRINT OUT
: SUPPRESS END OF PASS PRINT OUT

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: LICENSED MATERIAL=PROPERTY OF DATA GENERAL CORPORATION.
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IF DESIRED, IF SWITCHES 0 AND 1 ARE ZERU
PRESSING CONTINUE WILL CAUSE A PRINTOUT
OF THE ERROR LOCATION. THE ROUTINE WILL
ENTER A LOOP SUITABLE FOR SCOPING.
WHEN THE PROGRAM IS IN A SCOPE LOOP SETTING
SWITCH 3(1) WILL CAUSE THE FAILURE RATE TO
BE PRINTED. SETTING SWITCH 1(1) WILL CAUSE
THE PROGRAM TO PROCEED TO THE NEXT TEST.

PROGRAM DESCRIPTION/THEORY OF OPERATION
"SETUP" THIS ROUTINE IS EXECUTED PRIOR TO THE
TEST PORTION OF EVERY TEST ROUTINE. IT
PROVIDES AN ADDRESS FOR THE LOOP ROUTINE
TO ITERATE TO. IT RESETS PROGRAMMED ERROR
SWITCHES, THE ITERATION COUNT, AND ISSUES A
I/O RESET PULSE.
"LOOP" THIS ROUTINE IS EXECUTED AT THE END OF
EVERY TEST. WHEN NO ERRORS HAVE OCCURRED IT IS
USED ONLY TO ITERATE THE TEST 100 TIMES.
WHEN A ERROR HAS OCCURRED IT IS USED TO INTERRO-
GATE CONSOLE SWITCHS 0 AND 2. THE ROUTINE
ISSUES A I/O RESET PULSE PRIOR TO RETURNING
TO THE TEST.

5 02000 0 DO NOT PRINT ON THE LINE PRINTER
04 01000 0 DO NOT HALT ON ERROR
07 00400 0 DO NOT PRINT SUMMARY AND/OR
08 00200 1 PRINT SUMMARY AND/OR
09 00200 1 PRINT ONLY THE FIRST ERROR
10 00200 1 PRINT EVERY ERROR

3.2 SWITCH COMMANDS
14 ONCE THE PROGRAM STARTS EXECUTING THE STATE OF ANY OF
15 THE BITS CAN BE CHANGED BY HITTING KEYS 1-9, A-F. THE
16 PROGRAM WILL CONTINUE RUNNING AFTER UPDATING THE OPTIONS.
17 EACH KEY WILL COMPLEMENT THE STATE OF THE BIT AFFILIAT-
18 ED WITH IT, THUS BIT 4 CAN BE ALTERED BY HITTING KEY 4.
19 SETTING OF ANY BIT OF LOCATION "SWREG" WILL SET BIT 0.
20 (DEFAULT MODE IS DEFINED AS ALL BITS OF SWREG SET TO 0)
21 THE PROGRAM CAN BE LOCKED INTO SWITCH MODIFICATION MODE
22 BY TYPING A 0, IN WHICH CASE MORE THAN ONE BIT CAN BE
23 CHANGED BEFORE CONTROL IS ALLOWED TO RETURN TO THE
24 MAIN PROGRAM.

3.2.1 OTHER COMMANDS
27 "CR" A "RETURN" CAN BE TYPED TO CONTINUE THE PROGRAM
28 AFTER ITS LOCKED IN A SWITCH MODIFICATION MODE
29
30 "D" THIS COMMAND GIVEN AT ANY TIME WILL RESET "SWREG"
31 TO DEFAULT MODE AND RESTART THE PROGRAM.
32
33 "R" THIS COMMAND GIVEN AT ANY TIME WILL RESTART THE
34 PROGRAM, SWITCHES ARE LEFT WITH THE VALUES THEY
35 HAD BEFORE THE COMMAND WAS ISSUED.
36
37 "O" THIS COMMAND GIVEN AT ANY TIME WILL CAUSE THE
38 PROGRAM CONTROL TO GO TO ODI (NOTE: THIS IS AN
39 OPTIONAL COMMAND AND IS AVAILBLE ONLY IF
40 OOTPK IS PRESENT)
41
42 "M" THIS COMMAND GIVEN AT ANY TIME WILL PRINT THE
43 CURRENT OPERATING MODES.

OPERATING PROCEDURE
44 LOAD THE PROGRAM VIA THE BINARY LOADER
45 SET SWITCHES TO 000002 OR 200
46 PRESS START
47 THE PROGRAM WILL RUN UNTILL MANUALLY STOPPED
48 OR AN ERROR IS DETECTED.

5. PROGRAM OUTPUT/ERROR DESCRIPTION
57 IF A MALFUNCTION IS DETECTED THE PROGRAM
58 WILL HALT AT LOCATION "ERR1+1". THE OPERATOR
59 MAY CHANGE SWITCH SETTINGS AT THIS TIME
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10005 .MAIN

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:"EHALT" THIS ROUTINE IS EXECUTED WHENEVER
A ERROR HAS BEEN DETECTED. THE ROUTINE WILL
HALT, SET PROGRAMMED ERROR SWITCHES, AND
PRINT THE ERROR LOCATION.
:"TIME" THIS ROUTINE WILL RECORD THE TIME
IT TAKES THE INSTRUCTION FOLLOWING THE CALL
TO SKIP. THE RETURN IS TO CALL+2. IF THE
INSTRUCTION FOLLOWING THE CALL NEVER SKIPS
THE ROUTINE WILL RETURN WITH THE CARRY FLAG SET.

RESTRICTIONS/MISC
:"7.
:"7.1
:"7.2

.EOT

0006 .MAIN

**00000 TOTAL ERRORS, 00000 FIRST PASS ERRORS

0007 .MAIN

SPWPD 007037 MC 2/27