DataGeneral

TECHNICAL STATEMENT

TEXT LISTING

068-000064-03

PROGRAM

PLOTTER DIAGNOSTIC

TEXT TAPE

097-000064-03

ABSTRACT

THE INCREMENTAL PLOTTER TEST IS A MAINTENANCE ROUTINE DESIGNED TO TEST THE LOGIC AND OPERATION OF:

A.) CLACOMP MODEL 563
B.) CALCOMP MODEL 502
C.) CALCOMP MODEL 565
D.) HOUSTEN INSTRUMENT MODEL DP-1 INCREMENTAL PLOTTERS

```
 0001 .MAIN MACRO REV 03.00              09:50:40 10/20/77
01
02
03
04
05
06
07              ;*****************************************************************
08              ;
09              ; NAME: PLOT.TX                              PART NUMBER: 097-000064
10              ;
11              ;
12              ; DESCRIPTION: PLOTTER DIAGNOSTIC
13              ;
14              ;
15              ; REVISION HISTORY:
16              ;
17              ;       REV.            DATE
18              ;
19              ;       00              09/01/72
20              ;       01              06/14/74
21              ;       02              08/06/76
22              ;       03              10/21/77
23              ;
24              ;
25              ; COPYRIGHT (C) DATA GENERAL CORPORATION, 1972,1974,1976,1977
26              ; ALL RIGHTS RESERVED.
27              ;*****************************************************************
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!0002 .MAIN
01              ;               INCREMENTAL PLOTTER TEST
02
03              ;*******        AUTO-LOAD, AUTO RUN MODIFIED 1/31/72
04              ;********       MODIFIED FOR NOVA 2 6/5/74
05              ;*********      MODIFIED FOR 400,450 STEPS/SEC  9/20/77
06
07              ; 1.    ABSTRACT
08              ;               THE INCREMENTAL PLOTTER TEST IS A
09              ;               MAINTENANCE ROUTINE DESIGNED TO TEST
10              ;               THE LOGIC AND OPERATION OF:
11              ;                       A.) CALCOMP MODEL 563
12              ;                       B.) CALCOMP MODEL 502
13              ;                       C.) CALCOMP MODEL 565
14              ;                       D.) HOUSTEN INSTRUMENT MODEL DP-1
15              ;               INCREMENTAL PLOTTERS
16
17              ; 2.    MACHINE REQUIREMENTS
18              ; 2.1           ANY NOVA (EXCEPT MICRO)/ECLIPSE FAMILY PROCESSOR
19              ; 2.2           INCREMENTAL PLOTTER OPTION
20              ; 2.3           TELEPRINTER OR CRT DISPLAY
21              ; 2.4           RTC (OPTIONAL)
22
23              ; 3.    SWITCH SETTINGS
24              ; 3.1           STARTING ADDRESS FOR
25              ;               BOTH INTERFACE AND PLOTTER OPERATION
26              ;               TESTS DESCRIBED BELOW:
27              ;                       200
28              ; 3.2           INTERFACE LOGIC TEST STARTING ADDRESS
29              ;                       00003
30              ; 3.2.1         SWITCH 1(1)     =PROCEED FROM ERROR
31              ; 3.2.2         SWITCH 2(1)     =INHIBIT TTY OUTPUT
32              ; 3.2.3         SWITCH 3(1)     =PRINT FAILURE RATE
33              ;               SWITCH 5(1)     =OUTPUT TO LPT
34              ; 3.3           PLOTTER OPERATION TEST STARTING ADDRESS
35              ;                       00004
36              ; 3.3.1         SWITCH 7(1)     =PLOT NONOVERLAPPED GRAPHS
37
38              ; 4.    OPERATING PROCEDURE
39
40
41              ;NOTE:  WHEN IT IS DESIRED TO START THE PROGRAM AT A GIVEN
42              ;       ADDRESS AND ALSO HAVE A GIVEN CONFIGURATION OF DATA
43              ;       SWITCHES SET UPON STARTING,DO THE FOLLOWING:
44
45              ;       ENTER STARTING ADDRESS IN DATA SWITCHES,PRESS "EXAMINE",
46              ;       RESET ALL DATA SWITCHES EXCEPT THOSE DESIRED TO BE ON,
47              ;       PRESS "CONTINUE".
48              ; 4.1           LOAD THE PROGRAM USING THE BINARY LOADER
49              ;               OR DTOS (AUTO STARTS AT 200).
50              ; 4.2           POSITION PEN TO NORTHWEST CORNER
51              ;               OF SHEET.
52              ; 4.3           TO TEST BOTH THE INTERFACE
53              ;               LOGIC AND THE PLOTTER OPERATION
54              ;               SET THE DATA SWITCHES TO 200
55              ;               AND PRESS START.
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!0003 .MAIN
01              ; 4.4           TO TEST THE INTERFACE LOGIC,
02              ;               SET THE DATA SWITCHES TO 00003, PRESS START.
03              ;               THE PROGRAM WILL ASK IF THE PLOTTING
04              ;               SPEED IS 200,300,400,OR 450 INCREMENTS PER SECOND.
05              ;               THE PROGRAM WILL RUN UNTIL AN ERROR IS
06              ;               DETECTED OR IT IS MANUALLY STOPPED.
07              ; 4.5           TO TEST THE PLOTTER OPERATION, SET THE
08              ;               DATA SWITCHES TO 00004, PRESS START.
09              ;               THE PROGRAM WILL ASK HOW MANY STEPS
10              ;               THERE ARE ACROSS THE WIDTH OF THE PAPER.
11              ;               THE PROGRAM WILL PLOT A SQUARES WITHIN
12              ;               SQUARES PATTERN UNTIL MANUALLY STOPPED.
13              ;               SETTING SWITCH 7(1) WILL
14              ;               PLOT NONOVERLAPPING GRAPHS.
15              ;4.6            IF THE MESSAGE "TTO BAUD RATE?="
16              ;               APEARS, TYPE IN THE BAUD RATE OF THE CONSOLE
17              ;               OUTPUT DEVICE FOLLOWED BY A CARRIAGE RETURN
18
19              ; 5.     PROGRAM OUTPUT/ERROR DESCRIPTION
20              ; 5.1           IF AN ERROR IS DETECTED WHILE RUNNING
21              ;               THE LOGIC TEST, THE PROGRAM WILL HALT
22              ;               AT "ERR1+1."  THE USER CAN CHANGE DATA
23              ;               SWITCH SETTINGS IF DESIRED.
24              ; 5.1.1         IF SWITCH 1 IS SET(1), THE PROGRAM WILL
25              ;               PROCEDE TO THE NEXT TEST.
26              ;               IF SWITCH 1 IS RESET(0), THE PROGRAM WILL
27              ;               ENTER A LOOP FOR SCOPING THE TEST THAT
28              ;               FAILED.
29              ; 5.1.2         IF SWITCH 2 IS SET(1), NO PRINTOUT OF
30              ;               THE ERROR LOCATION WILL BE SENT TO THE TTY
31              ;               UPON CONTINUATION OF THE
32              ;               PROGRAM.  IF SWITCH 2 IS RESET(0), A PRINTOUT
33              ;               OF THE ERROR LOCATION WILL BE SENT TO THE TTY
34              ; 5.1.3         IF SWITCH 5 IS SET(1), PRINTOUTS WILL BE
35              ;               SENT TO THE LINE PRINTER.
36              ;
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!0004 .MAIN
01
02              ; 5.1.4         IF SWITCH 1 IS RESET (FOR LOOP SCOPING)
03              ;               AND SWITCH 3 IS SET(1), THE TEST FAILURE
04              ;               RATE WILL BE PRINTED ON THE TELEPRINTER
05              ;               IF SW(2)=0.
06              ; 5.1.5         TO PROCEDE FROM THE ERROR, PRESS
07              ;               CONTINUE.
08              ; 5.2           IF SWITCH 7 IS RESET(0) WHILE RUNNING
09              ;               THE PLOTTER OPERATIONAL TEST, OVER-
10              ;               LAPPED PATTERNS WILL BE DRAWN.
11              ;               IF SWITCH 7 IS SET(1), THE PATTERN
12              ;               WILL ALWAYS BE REPEATED USING A NEW PAGE
13              ;               OF THE PLOTTER PAPER.
14
15              ; 6.     PROGRAM DESCRIPTION/THEORY OF OPERATION
16              ; 6.1           LOGIC TEST DESCRIPTION
17              ; 6.1.1         "SETUP" IS EXECUTED VIA THE "INIT"
18              ;               COMMAND BEFORE EVERY TEST.  IT RESETS
19              ;               PROGRAMMED ERROR SWITCHES, PROVIDES
20              ;               LOOPING INFORMATION TO "LOOP", SETS UP
21              ;               THE ITERATION COUNT, AND ISSUES AN
22              ;               I/O RESET PULSE.
23              ; 6.1.2         "LOOP" IS EXECUTED AT THE TERMINATION OF
24              ;               EVERY TEST.  IF NO ERRORS OCCUR, "LOOP" MERELY
25              ;               REPEATS THE TEST 100 TIMES.  IF
26              ;               AN ERROR OCCURS, "LOOP" IS USED
27              ;               TO EXAMINE DATA SWITCHES 1 AND 3 TO
28              ;               DETERMINE THE COURSE OF ACTION TO TAKE.
29              ; 6.1.3         "ERR" IS EXECUTED VIA THE "ERROR" COMMAND
30              ;               WHENEVER AN ERROR IS DETECTED.  THIS
31              ;               ROUTINE WILL HALT.  UPON PRESSING CONTINUE, THE
32              ;               ROUTINE WILL SET INTERNAL ERROR
33              ;               SWITCHES AND PRINT THE ERROR LOCATION ON TTY
34              ;               (IF SWITCH 2 IS RESET) OR LPT(IF SW 5 IS SET).
35              ; 6.1.4         "TIME" IS USED TO RECORD THE
36              ;               TIME IT TAKES FOR THE INSTRUCTION
37              ;               FOLLOWING THE CALL TO SKIP.  "TIME"
38              ;               RETURNS TO CALL+2.  IF THE INSTRUCTION
39              ;               NEVER SKIPS, CARRY WILL BE SET UPON RETURN.
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01              ; 6.2           OPERATION TEST DESCRIPTION
02
03              ; THE CODE BEGINNING AT "STRT" WILL GRAPH
04              ; A SQUARES WITHIN SQUARES PATTERN ON THE INCREMENTAL
05              ; PLOTTER
06
07              ; THE TOTAL NUMBER OF SQUARES TO BE GRAPHED CAN BE ALTERED
08              ; BY CHANGING "NSQ"
09
10              ; COORDINATES OF POINTS ARE STORED IN PAGE 0.
11              ; COORDINATES CONSIST OF TWO WORD ENTRIES, THE FIRST BEING
12              ; "X" COORDINATE, THE SECOND BEING THE "Y" COORDINATE.
13              ; THE INITIAL SQUARE'S COORDINATES ARE:
14
15              ;       C2      -----------     C3
16              ;               +         +
17              ;               +         +
18              ;               +         +
19              ;               +         +
20              ;               +         +
21              ;       C1      -----------     C4
22
23              ; THE SQUARE IS DRAWN C2 TO C3, C3 TO C4, C4 TO C1,
24              ; C1 TO C2
25              ; NEW COORDINATES ARE THEN COMPUTED
26              ; C2 IS REPLACED BY (C2+C3)/2, C3 BY (C3+C4)/2, ETC.
27              ; UNTIL ALL SQUARES HAVE BEEN DRAWN
28
29              ; C5 IS THE CENTER COORDINATE
30              ; C6 IS THE NEW PAGE COORDINATE
31
32              ; SWITCH 3 SET WILL CAUSE NON-OVERLAPPED GRAPHS
33              ; SWITCH 3 RESET WILL CAUSE CONTINUOUS
34              ; PLOTS OVER THE PREVIOUS GRAPHS.
35
36              ; 7.    RESTRICTIONS/MISC
37              ;
38              ; EXECUTION TIME ABOUT 4 MINUTES
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