IDENTIFICATION

PRODUCT CODE: MAINDEC-08-DHRKB-G-D

PRODUCT NAME: RK8E DRIVE CONTROL TEST

DATE RELEASED: APRIL 1976

MAINTAINER: DIAGNOSTIC ENGINEERING

AUTHOR: JOHN VROBEL

TABLE OF CONTENTS

1. ABSTRACT
2. REQUIREMENTS
2.1 HARDWARE
2.2 STORAGE
3. PRELIMINARY PROGRAMS
4. SWITCH REGISTER SETTINGS
5. OPERATOR AND/OR PROGRAM ACTION
5.1 STANDARD TEST PROCEDURE
5.2 RKØ5 DRIVE CARTRIDGE MOUNTING PROCEDURE
5.3 DRIVE CONTROL TEST
5.4 CHECK WRITE PROTECT (MANUAL)
5.5 CHECK WRITE PROTECT (PROGRAM CONTROL)
5.6 MANUAL FUNCTIONS (FOR TROUBLE SHOOTING ONLY)
5.7 CHANGE PROGRAM IOT CODES
5.8 SEEK FROM SWITCHES (FOR RKØ5 ALIGNMENT)
6. ERRORS
6.1 USEFUL ERROR INFORMATION
6.2 NON-RECOVERABLE ERROR HALTS
6.3 RECOVERABLE ERROR HALT
6.4 ERROR TYPEOUTS
6.5 SCOPE LOOPS
6.6 TYPICAL ERROR TYPEOUTS
7. RESTRICTIONS
8. TROUBLE SHOOTING INFORMATION
9. PROGRAM DESCRIPTION
10. CONSOLE PACKAGE ADDENDUM
11. APT-8 HOOKS
12. PROGRAM LISTING

1. ABSTRACT

THE RK8E DRIVE CONTROL TEST IS DESIGNED FOR THE PURPOSE OF CHECKOUT OF THE RK8E DISK CONTROL LOGIC REQUIRING THE USE OF THE DISK DRIVE(S).

IN GENERAL, THE TEST IS AN INSTRUCTION TEST TO VERIFY BASIC OPERATION OF THE SEEK ONLY, RESTORE, WRITE DATA, READ DATA, WRITE ALL, AND READ ALL FUNCTIONS WITH ALL DRIVES ON THE CONTROL. SIMPLE COMPLEMENT DATA PATTERNS OF 2525 ↔ 5252, 5252 ↔ 2525, AND 0000 ↔ 7777 ARE USED TO VERIFY ADDRESSING AND DATA TRANSFERS TO AND FROM EACH INDIVIDUAL DRIVE.

A MANUAL INTERVENTION TEST IS ALSO INCLUDED (SEE SECTION 5.7), TO ALLOW THE OPERATOR TO SELECT DATA PATTERNS AND COMMAND FUNCTIONS VIA THE SWITCH REGISTER.

CONSIDERING NO ERROR CONDITIONS, THE DRIVES THAT HAVE RUN THIS TEST ARE FORMATTED, IF THE PROGRAM WAS STOPPED AT END OF PROGRAM PASS COMPLETION BY SWR9=1.

2. REQUIREMENTS

2.1 HARDWARE

A. PDP-8/A, 8/E, 8/F, OR 8/M COMPUTER OR OTHER FAMILY OF 8 COMPATIBLE COMPUTER WITH NECESSARY DW8E BUS ADAPTER.

B. AT LEAST 4K OF READ/WRITE MEMORY. AT LEAST 8K OF MEMORY IS NEEDED FOR OPERATION OF THE CONSOLE PACKAGE.

C. ASR-33 TELETYPE OR EQUIVALENT

D. RK8E DISK CONTROL

E. RK05J OR RK05F DISK DRIVE(S)

F. UNFORMATTED OR FORMATTED 2200 BPI-1600 SECTOR PACK(S)

2.2 STORAGE

THE PROGRAM OCCUPIES OR UTILIZES LOCATIONS 0000 TO LOCATION 7577 OF FIELD 0 AND LOCATIONS 0 TO 1377 OF FIELD 1.

3. PRELIMINARY PROGRAMS

ALL BASIC AND EXTENDED MEMORY DIAGNOSTICS AND THE RK8E DISKLESS CONTROL TEST SHOULD BE RUN PRIOR TO THIS TEST.

4. SWITCH REGISTER SETTINGS

SWR0=1 SCOPE LOOP ON ERROR, AFTER AN ERROR HALT AT LOCATION "ERHLT9" RAISING THIS SWITCH AND PRESSING KEY CONTINUE WILL RESULT IN A SCOPE LOOP ON THE CURRENT FAILING TEST IF THE TEST CONTINUES TO FAIL. THE ERROR TYPEOUT AND THE ERROR HALT AT LOCATION "ERHLT9" WILL BE INHIBITED. THE TTY BELL WILL RING INDICATING AN ERROR IF SWR2=0.

SWR1=1 SCOPE LOOP ON CURRENT NON-FAILING TEST. RAISING THIS SWITCH CAUSES THE PROGRAM TO LOOP ON THE CURRENT TEST IF THE TEST IS WORKING CORRECTLY. MAY BE USED IN CONJUNCTION WITH SWR0=1 FOR INTERMITTENT PROBLEMS.

SWR2=1 INHIBIT BELL ON SCOPE LOOP. WHEN IN A SCOPE LOOP DUE TO SWR0=1, RAISING THIS SWITCH INHIBITS THE SCOPE LOOP ERROR BELL.

SWR4=1 STOP PROGRAM OR HALT SWITCH. RAISING THIS SWITCH WILL RESULT IN A PROGRAM STOP UPON COMPLETION OF THE NEXT NON-FAILING TEST. IF POSSIBLE, THIS SWITCH SHOULD ALWAYS BE USED TO STOP THE PROGRAM.

SWR5=1 INHIBIT THE RECOVERABLE ERROR HALT AFTER A RECOVERABLE ERROR TYPEOUT. AFTER AN ERROR HALT AT LOCATION "ERHLT9", RAISING THIS SWITCH AND PRESSING KEY CONTINUE WILL INHIBIT ALL FUTURE RECOVERABLE ERROR HALTS. IF SWR1=0 THE PROGRAM WILL PROCEDE TO NEXT TEST AFTER EACH ERROR TYPEOUT. IF SWR1=1 THE PROGRAM WILL PROCEDE BACK TO THE SAME OR CURRENT FAILING TEST.

SWR6=1 RECALIBRATE IN SCOPE LOOPS. RAISING THIS SWITCH WILL RESULT IN A DISK RECALIBRATION WHEN IN A SCOPE LOOP DUE TO SWR0=1, SWR1=1, OR WHEN SWR5=1.

SWR7=1 PROGRAM WAIT LOOP FOR DISK IN SCOPE LOOPS. RAISING THIS SWITCH WILL RESULT IN A PROGRAM WAIT LOOP FOR APROX. 500 MS WHEN IN A SCOPE LOOP DUE TO SWR0=1, SWR1=1, OR WHEN SWR5=1. IN SOME CASES, THIS MAY BE USEFUL FOR WAITING FOR THE DISK MOVEMENT TO COMPLETE IF CONTROL OR DRIVE ERRORS OCCUR, BEFORE REPEATING THE TEST AGAIN. IN SOME CASES, FAILURE TO WAIT, MAY CAUSE ADDITIONAL ERRORS.

SWR8=1 GET ALL REGISTERS AFTER THE RECOVERABLE ERROR HALT "ERHLT9". AFTER AN ERROR HALT AT LOCATION "ERHLT9", RAISING THIS SWITCH AND PRESSING KEY CONTINUE RESULTS IN AN ERROR TYPEOUT OF THE ACTUAL CONTENTS OF