

TEXT LISTING

068-000236-02

PROGRAM

ECLIPSE CP DIAGNOSTIC, PART 4

TEXT TAPE

097-000236-02

ABSTRACT

'ECLIPSED' CP DIAGNOSTIC PROGRAM IS USED TO CHECK OUT THE LOGIC OF OPERATIONS OF THE STACK MANIPULATION INSTRUCTIONS, STACK UNDERFLOW AND OVERFLOW PROTECTIONS, EXTENDED OPERATION FEATURE, EXECUTE INSTRUCTION, AND DATA MOVEMENT INSTRUCTIONS OF THE ECLIPSE PROCESSOR.

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? NAME: ECLIPSED.TX          PART NUMBER: 097-000236
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? DESCRIPTION: ECLIPSE CENTRAL PROCESSOR DIAGNOSTIC, PART 4
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? REVISION HISTORY:
?
?   REV.      DATE
?   ---      ---
?   00      08/02/74
?   01      12/20/74
?   02      08/06/76
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?ECLIPSED - CONTINUATION OF ECLIPSE
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?PART 4 OF CENTRAL PROCESSOR DIAGNOSTIC FOR
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PROGRAM NAME

ECLIPSED
GENERAL DESCRIPTION

2.1 'ECLIPSED' CP DIAGNOSTIC PROGRAM IS USED TO CHECK
OUT THE LOGIC OF OPERATIONS OF THE STACK
MANIPULATION INSTRUCTIONS, STACK UNDERFLOW AND
OVERFLOW PROTECTIONS, EXTENDED OPERATION FEATURE,
EXECUTE INSTRUCTION AND DATA MOVEMENT INSTRUCTIONS
OF THE ECLIPSE PROCESSOR.

2.2 THE INSTRUCTIONS TESTED ARE AS FOLLOWS:
PSH, PSHR, POP, POPJ, SAVE, PUPB, RIN, RSTR,
SYC, XOP, XCI, BAM AND BLM

THE OPCODE AND THE DESCRIPTION OF EACH INSTRUCTION
IS GIVEN BEFORE ITS TESTS.

2.3 LOCATIONS 200 TO 205 IN PAGE 0 ARE FIXED FOR ECLIPSE
CP TESTS.
LOCATION 203 KEEPS TRACK OF NUMBER OF PASSES RUN
THROUGH ECLIPSED PROGRAM. OF THE TEST RUNNING AT
PRESENT AND IS USEFUL FOR DEBUG WHEN LOOPING
OCCURS IN THE PROGRAM.
LOCATION 202 CONTAINS THE STARTING ADDRESS OF
ECLIPSED PROGRAM.
LOCATION 200 IS USED BY DTOS.
LOCATION 204 KEEPS TRACK OF INTERNAL PASS COUNT
WHICH IS FIXED BY LOCATION 205.

2.4 FIRST PASS THROUGH ECLIPSED TEST TAKES 10 SECONDS.
NEXT PASSES THROUGH ECLIPSED TEST TAKE HALF A MINUTE.

MACHINE REQUIREMENTS

3.1 ECLIPSE PROCESSOR
3.2 4K READ-WRITE MEMORY

4. SWITCH SETTINGS

4.1 STAND-ALONE STARTING ADDRESS = 200
4.2 MONITOR LOCATION 203 TO CHECK THE CURRENT PASS COUNT.

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74.3 IF PROGRAM WAS LOADED WITH 'CATS' OR 'KITTEEN' AND
A RESTART IS NECESSARY, START AS FOLLOWS:
STARTING ADDR=170 (FOR RESTART WITHOUT 'CAT')
STARTING ADDR=171 (FOR RESTART WITH 'CAT')

74.4 MONITOR LOCATION X6000 TO VERIFY 'CAT' OR 'KITTEEN'
OPERATION. NORMALLY THIS LOCATION CONTAINS A PATTERN
CHANGING FROM ZEROS TO ALL ONES TO AN INC/SWAP PATTERN.
X=THE HIGHEST NUMBERED MEMORY MODULE (1<=7)

OPERATING PROCEDURE/OPERATOR INPUT

75.1 LOAD THE PROGRAM VIA THE BINARY LOADER OR INSERT A
PRELOADED MEMORY MODULE.
SET SWITCHES TO 200.
PRESS START.
THE PROGRAM WILL RUN UNTIL MANUALLY STOPPED OR UNTIL
AN ERROR IS DETECTED.

76. PROGRAM OUTPUT/ERROR DESCRIPTION

76.1 FOR ANY MALFUNCTION DETECTED BY THE TEST, THE PROGRAM
WILL HALT. (PROGRAM COUNTER-1) IS THE ERROR HALT
LOCATION.

76.2 REFER TO THE LISTING FOR EXPLANATION OF THE ERROR.
TO LOOP ON ERROR, STORE 'JMP' TO BEGINNING OF TEST
THAT 'FAILED' IN THE ERROR HALT LOCATION AND START
PROGRAM AT THE BEGINNING OF THE TEST.

76.4 IF LOOPING OCCURS IN THE PROGRAM, STOP THE COMPUTER
AND CHECK LOCATION 201 TO FIND OUT THE TEST THAT
WAS RUNNING BEFORE THE LOOPING OCCURRED.

PROGRAM DESCRIPTION/THEORY OF OPERATION

77.1 EACH TEST IS COMPLETE IN ITSELF, SO THE PROGRAM CAN
BE STARTED FROM ANY TEST WITHOUT CAUSING ANY
INITIALIZATION ERRORS.

77.2 ECLIPSE IS A MICRO-PROGRAMMED COMPUTER.
EACH INSTRUCTION IS ACCOMPLISHED BY SET OF MICRO
CODE WORDS CONTAINED IN (512 X 56) WORD ROM.
THE TESTS ARE WRITTEN SO AS TO FOLLOW THE MICRO
CODE FLOW FOR THE INSTRUCTION AND IDENTIFY THE
ERROR CAUSE TO AN UNIQUE MICROCODE WORD AND
TO ITS INDIVIDUAL FIELDS WHENEVER POSSIBLE.
ADDITIONAL DIAGNOSTIC REFERRING TO THE LRD PRINTS
IS ALSO GIVEN.

77.3 THE OPERATOR SHOULD HAVE CAPABILITY OF READING
SIMPLE MICRCODES TO USE THIS PROGRAM TO ITS
UTMOST EFFICIENCY.

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**00000 TOTAL ERRORS, 00000 PASS 1 ERRORS

RESTRICTIONS/MISC

CERAIN INSTRUCTIONS LIKE BLM, XCT, BAM, ETC.,
DO ALLOW INTERRUPTS TO OCCUR DURING THEIR
EXECUTION. THIS FEATURE OF THOSE INSTRUCTIONS IS
NOT CHECKED IN THIS TEST.

.EOT