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			****									****		
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* THESE TESTS MUST USE THE BASIC DIAGNOSTIC LOADER: 03A3 OR 03AD
 ** TAPE CONTAINS THE P.T. LOADER
 *** SUPPLIED ONLY ON SYSTEMS WITH A SYNCHRONOUS COMMUNICATIONS ADAPTER
 **** USE RELOCATING LOADER 03AA, 03AB, OR 03AC
 ***** REFER TO P/N 2191283 (PID 03AA)

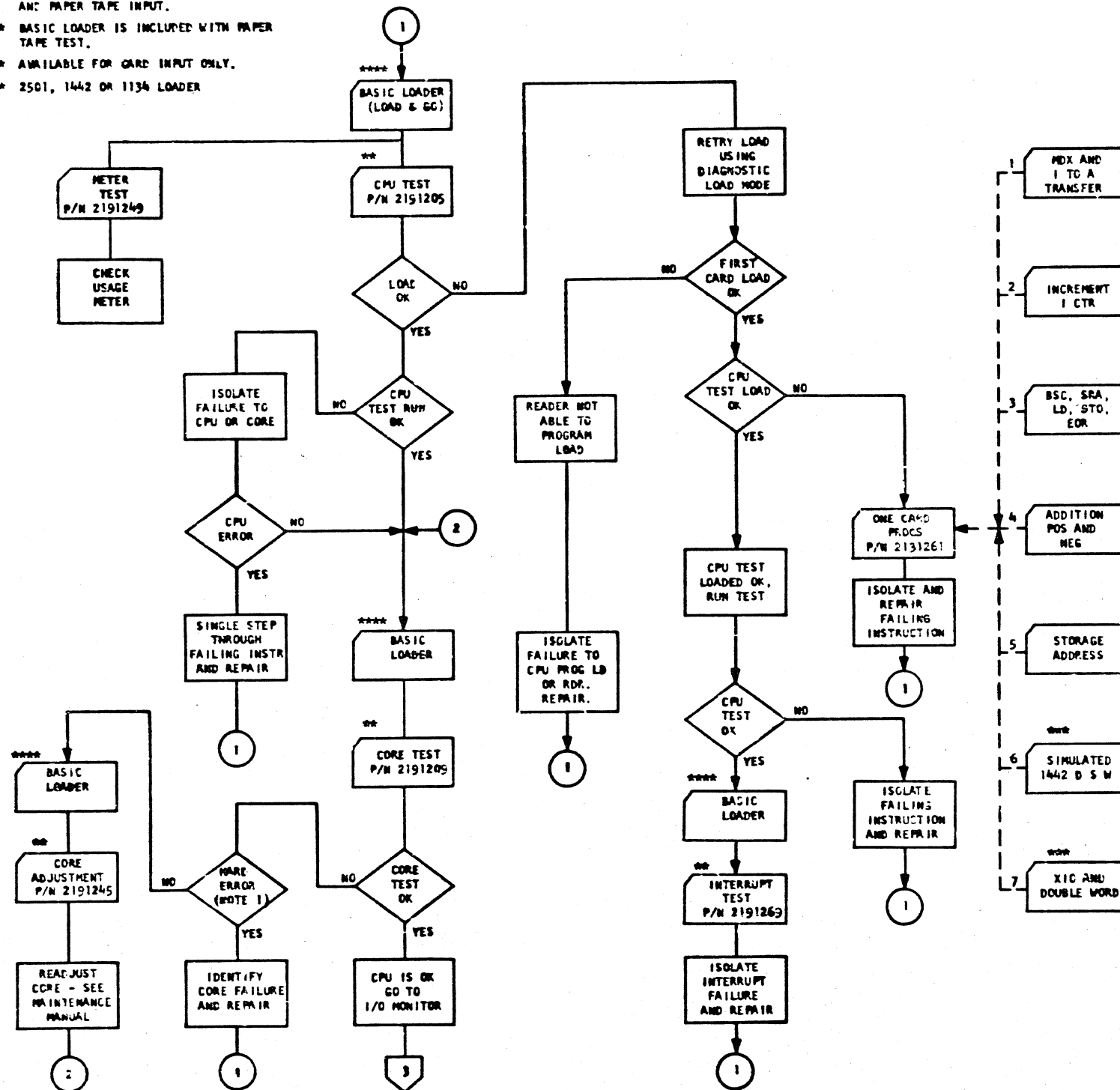
NOTES:

- ALL TESTS IN VOLUMES 3, 4, AND 5 RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR: 0300, EXCEPT PID 03AE AND PID 03AF.
- DOCUMENTATION IS PRESENT ONLY ON SYSTEMS WITH A 1231.

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15 JUL 69	571013			DATE	JUN 67	P/N	2191292
6 AUG 69	571053					TYPE	.131
				IBM		03A1-0A	

CPU TEST INDEX

- * THIS CHART IS APPLICABLE TO CARD AND PAPER TAPE INPUT.
- ** BASIC LOADER IS INCLUDED WITH PAPER TAPE TEST.
- *** AVAILABLE FOR CARD INPUT ONLY.
- **** 2501, 1442 OR 1130 LOADER



DATE APRIL 66
EC NO 4154908

SEP 66
4:5490C 419643

JAN 67
420317

CPU NORMAL OPERATION SUMMARY

BASIC LOADER

1. LOAD AND GO MODE: PROVIDES NORMAL LOAD FOR CPU, CORE, CORE ADJUSTMENT, INTERRUPT TESTS, AND METER TEST.
2. DIAGNOSTIC MODE: USED ONLY WHEN LOAD AND GO MODE IS INOPERABLE. SEE DESCRIPTION FOR DIAGNOSTIC OPERATING INSTRUCTIONS.

CPU TEST

1. SET ALL CONSOLE BIT SWITCHES OFF.
2. LOAD BASIC LOADER FOLLOWED BY CPU TEST DECK AND TWO BLANK CARDS.
3. PROG WILL LOAD AND STOP WITH B REG AT 3000 ADDR. 012D.
4. SET ALL BIT SWITCHES TO FFFF AND PRESS PROG START.
5. PROG WILL STOP WITH B REG AT 3001 ADDR. 02B4.
6. SET SWITCHES OFF PRESS START.
7. PROG WILL HALT WITH B REG AT 3002 ADDR. 02C5. SEE 3.2 FOR OPTIONS AND PRESS START.
8. PROG WILL RUN APPROX 2 MIN. THEN STOP AT END OF TEST WITH B REG AT 3003 ADDR 0F68.
9. ERRORS ARE INDICATED BY ERROR WAITS; SEE DESCRIPTION SECT. 3.5.

CORE TEST

1. SET ALL CONSOLE BIT SWITCHES TO ZERO.
2. LOAD BASIC LOADER FOLLOWED BY CORE TEST DECK AND TWO BLANK CARDS.
3. HI CORE WILL LOAD, RUN APPROX. 5 MIN. (FOR EACH BK), THEN LOAD THE 0-9 TEST.
4. 0-9 TEST WILL LOAD, RUN BRIEFLY, THEN LOAD THE LO CORE TEST.
5. LO CORE WILL LOAD, RUN APPROX. 2 MIN., THEN STOP AT END OF TEST WAIT 30FF, AT LOCATION 09CC.
6. ERRORS ARE INDICATED BY ERROR WAITS; SEE DESCRIPTION SECT. 3.5.

CORE ADJUSTMENT

1. USED ONLY WHEN A CORE VOLTAGE ADJUSTMENT IS NECESSARY. SEE DESCRIPTION.

ONE CARD PROGRAMS

1. USED ONLY WHEN PROGRAM LOAD IS FUNCTIONING, BUT THE BASIC DIAGNOSTIC LOADER IS UNABLE TO CORRECTLY LOAD THE CPU OR CORE TESTS. SEE DESCRIPTION FOR OPERATION.

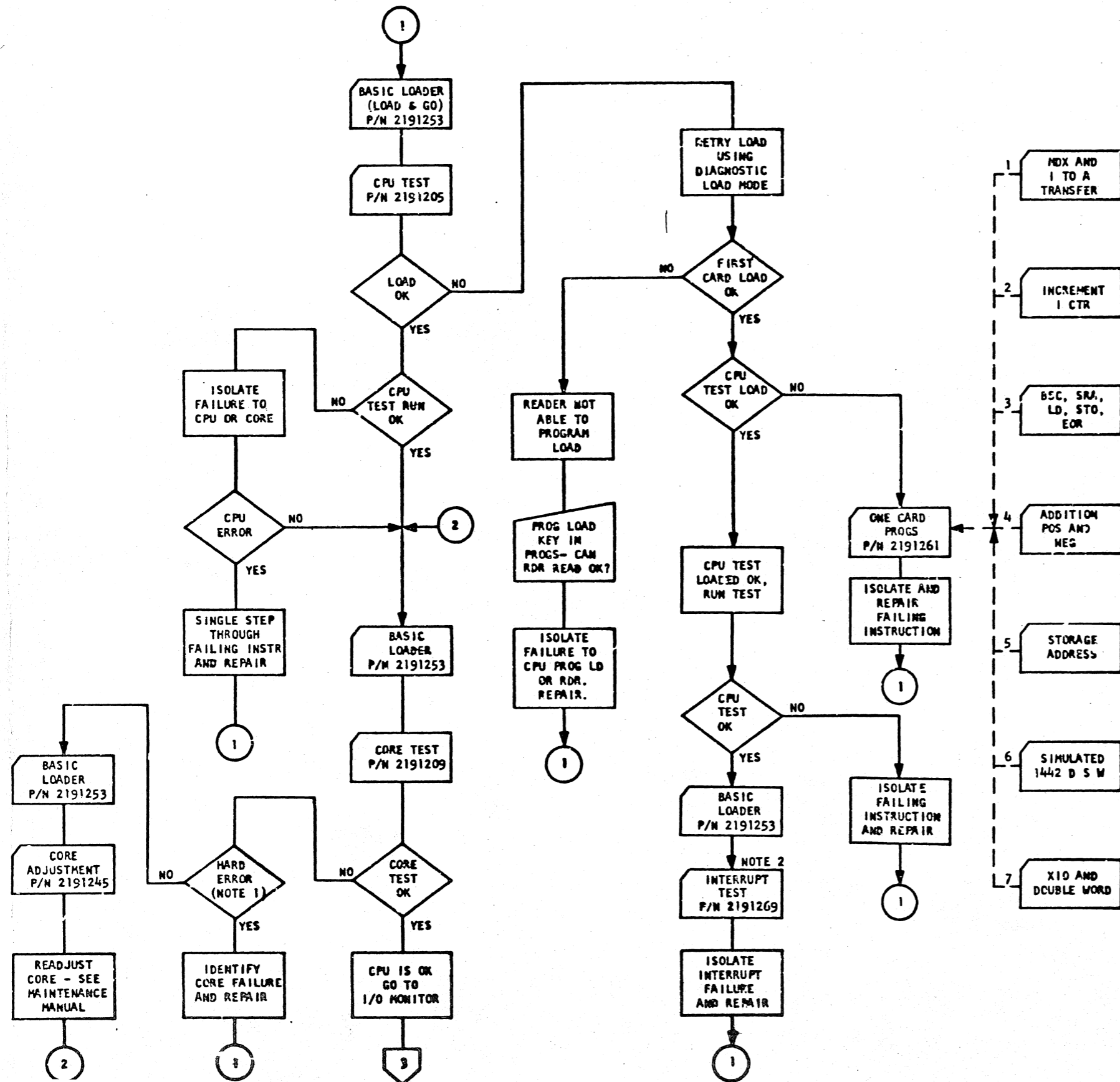
INTERRUPT TEST

1. USED ONLY TO AID IN DIAGNOSING BASIC LOADER FAILURES IN LOAD AND GO MODE. SEE DESCRIPTION FOR OPERATION.

NOTE 1: A HARD ERROR IS A REPEATABLE ERROR WHICH IS CAUSED BY A HARDWARE FAILURE. A SOFT ERROR IS AN INTERMITTENT ERROR WHICH MAY BE CAUSED BY EITHER AN INTERMITTENT HARDWARE FAILURE OR BY MARGINAL CORE VOLTAGE ADJUSTMENT. THE DISTINCTION BETWEEN THE TWO IS DIFFICULT AND MUST BE LEFT TO THE DISCRETION OF THE INDIVIDUAL CE.

2: PART NUMBER IS THE SAME FOR BOTH CARD DECK OR PAPER TAPE PROGRAM. WHEN ORDERING SPECIFY CARD OR TAPE.

3: CONTROL OPTION BIT SWITCH SETTINGS ARE FOUND IN THE PROGRAM DESCRIPTION.



BASIC LOADER

1. LOAD AND GO MODE: PROVIDES NORMAL LOAD FOR CPU, CORE, CORE ADJUSTMENT, INTERRUPT TESTS, AND METER TEST.
2. DIAGNOSTIC MODE: USED ONLY WHEN LOAD AND GO MODE IS INOPERABLE. SEE DESCRIPTION FOR DIAGNOSTIC OPERATING INSTRUCTIONS.

CPU TEST

1. SET ALL CONSOLE BIT SWITCHES ON. (FFF7).
2. LOAD BASIC LOADER FOLLOWED BY CPU TEST DECK AND TWO BLANK CARDS.
3. PROG WILL LOAD AND STOP AT WAIT 3000 AT LOCATION 02AD.
4. SET ALL BIT SWITCHES TO ZERO AND PRESS PROG START.
5. PROG WILL RUN APPROX 2 MIN, THEN STOP AT END OF TEST WAIT 30FF, AT LOCATION 0F5C.
6. ERRORS ARE INDICATED BY ERROR WAITS; SEE DESCRIPTION SECT 3.3.

CORE TEST

1. SET ALL CONSOLE BIT SWITCHES TO ZERO.
2. LOAD BASIC LOADER FOLLOWED BY CORE TEST DECK AND TWO BLANK CARDS.
3. HI CORE WILL LOAD, RUN APPROX 5 MIN, THEN LOAD THE 0-9 TEST.
4. 0-9 TEST WILL LOAD, RUN BRIEFLY, THEN LOAD THE LO CORE TEST.
5. LO CORE WILL LOAD, RUN APPROX 2 MIN, THEN STOP AT END OF TEST WAIT 30FF, AT LOCATION 09CC.
6. ERRORS ARE INDICATED BY ERROR WAITS; SEE DESCRIPTION SECT 3.5.

CORE ADJUSTMENT

1. USED ONLY WHEN SOFT (INTERMITTANT) ERRORS ON THE CORE TEST INDICATE THAT A CORE VOLTAGE ADJUSTMENT MAY BE NECESSARY. SEE DESCRIPTION.

ONE CARD PROGRAMS

1. USED ONLY WHEN PROGRAM LOAD IS FUNCTIONING, BUT THE BASIC DIAGNOSTIC LOADER IS UNABLE TO CORRECTLY LOAD THE CPU OR CORE TESTS. SEE DESCRIPTION FOR OPERATION.

INTERRUPT TEST

1. USED ONLY TO AID IN DIAGNOSING BASIC LOADER FAILURES IN LOAD AND GO MODE. SEE DESCRIPTION FOR OPERATION.

PROGRAM LOAD TESTS

1. MANUAL ENTRY TESTS USED ONLY WHEN SYSTEM IS UNABLE TO PROGRAM LOAD SINGLE CARDS. SEE DESCRIPTION FOR OPERATION.

NOTE 1: A HARD ERROR IS A REPEATABLE ERROR WHICH IS CAUSED BY A HARDWARE FAILURE. A SOFT ERROR IS AN INTERMITTANT ERROR WHICH MAY BE CAUSED BY EITHER AN INTERMITTANT HARDWARE FAILURE OR BY MARGINAL CORE VOLTAGE ADJUSTMENT. THE DISTINCTION BETWEEN THE TWO IS DIFFICULT AND MUST BE LEFT TO THE DISCRETION OF THE INDIVIDUAL CE.

2. TO BE RELEASED ON LATER EC.
3. PART NUMBER IS THE SAME FOR BOTH CARD DECK OR PAPER TAPE PROGRAM, WHEN ORDERING SPECIFY CARD OR TAPE.
4. CONTROL OPTION BIT SWITCHES

CPU	CORE	CONTROL OPTION
-	11	LOOP ON ADDRESS BEING TESTED.
12	12	BYPASS ERROR WAIT (CPU WILL ALSO LOOP ON ERROR).
13	13	LOOP ROUTINE NOW FINNING.
14	14	LOOP PROGRAM OR CORE TEST SECTION NOW RUNNING.
-	15	WAIT AT END OF CORE TEST SECTION NOW RUNNING.

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1. PURPOSE

THE PURPOSE OF THE 1130 CENTRAL PROCESS UNIT FUNCTION TEST IS TO LOCATE FAILING INSTRUCTIONS. EACH SEPARATE CPU INSTRUCTION IS TESTED AND CHECKED FOR COMPLIANCE WITH THE PRODUCT SPECIFICATIONS. FEATURES THAT ARE NOT UNIQUE TO AN OPERATION CODE (INDEXING, INDIRECT ADDRESSING, ETC.) ARE ALSO TESTED. I/O RELATED FEATURES (INTERRUPT, CYCLE STEAL, ETC.) ARE NOT TESTED.

```
*****
* PROGRAM RUNNING TIME *
* 2 USEC MACHINE - APPROXIMATELY 1 MINUTE *
* 4 USEC MACHINE - APPROXIMATELY 2 MINUTES *
*****
```

2. PREREQUISITES

2.1 PROGRAM PREREQUISITES

THE PROGRAM CAN BE OPERATED BY ITSELF BUT MUST BE LOADED BY THE 1130 BASIC DIAGNOSTIC LOADER.

2.2 EQUIPMENT PREREQUISITES

- A. 1130 PC HAVING 4096-WORD STORAGE.
- B. CARD READER OR PAPER TAPE READER.

3. USE PROCEDURE

3.1 PROGRAM LOADING

THE 1130 CPU FUNCTION TEST (03A1) IS LOADED BY THE 1130 BASIC LOADER. SEE THE 1130 BASIC LOADER DOCUMENTATION FOR THE DESCRIPTION OF THE LOADING PROCEDURE.

3.2 PROGRAM OPERATION

AFTER THE PROGRAM IS LOADED THE FOLLOWING NORMAL WAITS OCCUR,

LOCATION B REG SYMBOLIC	DESCRIPTION AND ACTION
3000 (X000)	START OF PROGRAM. SET ALL BIT SWITCHES ON. PRESS START.
3001 (X001)	TESTING OF BIT SWITCHES ON COMPLETE, TURN OFF, PRESS START.
3002 (X003)	TESTING OF BIT SWITCHES OFF COMPLETE SET IN OPTION, PRESS START.
3003 (X007)	PROGRAM COMPLETED. PUSH START TO RERUN PROGRAM. IF OTHER WAITS OCCUR, REFER TO SECTION 3.5 FOR ERROR ISOLATION.

ANY WAITS OTHER THAN THOSE ABOVE ARE ERROR WAITS.

WHEN AN ERROR WAIT IS OBTAINED,

1. SEE THE PROGRAM LISTING TO DETERMINE THE PROBLEM. ERROR WAITS ARE DOCUMENTED AT THE FRONT OF THE PROGRAM LISTING BY THE CONTENTS OF THE B REGISTER.
2. IF THE ERROR WAIT HAS B REGISTER LESS THAN 3069, THE OPERATOR CANNOT LOOP ON THAT ERROR. INSTEAD, THE OPERATOR SHOULD SINGLE INSTRUCTION STARTING AT THE BEGINNING OF THE FAILING ROUTINE TO DETERMINE THE EXACT FAILURE. (SECTION 3.5)
3. IF THE ERROR WAIT HAS B REGISTER GREATER THAN 3068, THE OPERATOR SHOULD, (SECTION 3.5)
 - A. LOOP INSTRUCTION BEING TESTED (BIT SW 8 ON)
OR IF A LARGER LOOP IS DESIRED
LOCK ON ERROR (BIT SW 12 ON)
OR
LOOP ON ROUTINE (BIT SW 10 ON)
 - B. SINGLE STEP TO LOCATE THE EXACT FAILURE.
 - C. IF NO ERROR OCCURS, BYPASS THE ERROR WAIT (BIT SW 14 ON) AND USE A SCOPE TO DETERMINE THE FAILURE.

TABLE 1

```
*****
* DATA ENTRY SWITCHES * DESCRIPTION *
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* . . . . . 1..... BYPASS ERROR WAIT (SEE NOTE) *
* . . . . . 1..... LOCK ON ERROR *
* . . . . . 1..... LOOP PROGRAM *
* . . . . . 1..... LOOP ON ROUTINE *
* . . . . . 1..... LOOP ON INSTRUCTION BEING TESTED *
* . . . . . 1..... BYPASS MPL/DIV TEST *
* NOTE- IF ERROR OCCURS, BITS 12 OR 8 MUST BE ON TO MAKE BIT 14 EFFECTIVE. *
*****
```

3.3 TERMINATION

NORMAL TERMINATION OCCURS WITH PROGRAM STOPPING AT WAIT WITH B REG = 3003.

CPU FUNCTION TEST

3.4 RESTART PROCEDURE

PRESS STOP, RESET, AND START BUTTONS.

3.5 ERROR WAITS

THERE ARE TWO TYPES OF ERROR CONDITIONS WHICH CAUSE ERROR WAITS.

1. ERRORS WHICH USE THE COMMON ERROR CONTROL ROUTINE (F000).
2. ERRORS WHICH OCCUR BEFORE SUFFICIENT PORTIONS OF THE HARDWARE HAVE BEEN CHECKED OUT TO ALLOW USE OF THE COMMON ERROR CONTROL ROUTINE.

ERRORS WHICH USE THE COMMON ERROR CONTROL ROUTINE HAVE B REG NUMBERS OF /3069 AND UP. WHEN A NUMBERED WAIT OCCURS, BITS 5-15 OF THE STORAGE (B REG = BXXX). WHEN A NUMBERED WAIT OCCURS, BITS 5-15 OF THE STORAGE BUFFER REGISTER GIVE THE ERROR IDENTIFICATION NUMBER. TO FIND THE FAILING ROUTINE, LOOK IN THE ERROR IDENTIFICATION TABLE (IN FRONT OF THE LISTING). THIS WILL GIVE YOU THE SYMBOLIC AND ACTUAL STARTING ADDRESS OF THE ROUTINE THAT FAILED.

ERRORS WHICH DO NOT USE THE COMMON ERROR CONTROL ROUTINE HAVE B REG NUMBERS FROM /3003 THRU /3068. THE INSTRUCTION REG WILL POINT DIRECTLY TO THE FAILING ROUTINE. TO FACILITATE FINDING THE START OF A TEST ROUTINE EACH TEST ROUTINE BEGINS WITH A LABEL HAVING AN A OR B AS ITS FIRST LETTER. IN THE LISTING EACH ROUTINE IS FURTHER BRACKETED BY A SOLID LINE OF ASTRISKS. TO FIND THE FAILING ROUTINE OF ERRORS WHICH DO NOT USE THE COMMON ERROR CONTROL START AT THE LOCATION SPECIFIED BY THE ERROR WAIT AND WORK UP THE LISTING (BACKWARDS) UNTIL THE FIRST SYMBOLIC LOCATION WHICH HAS A LABEL BEGINNING WITH A AND B. THIS IS THE START OF THE FAILING ROUTINE.

TWO WAYS OF LOCATING A FAILURE ARE AS FOLLOWS-

- A. DETERMINE WHAT FAILURE CAUSED THE ERROR WAIT. TO LOCATE THE FAILURE, IT IS RECOMMENDED THAT THE PROGRAM BE MANUALLY ENTERED AT THE START OF THE FAILING ROUTINE AND SINGLE INSTRUCTION, FOLLOWING THE LISTING TO DETERMINE THE EXACT FAILURE.
- B. USE AN OSCILLOSCOPE TO HELP LOCATE THE FAILURE. IF THE FAILURE IS IN THE COMMON-ERROR ROUTINE, SIMPLY TURN ON CONSOLE ENTRY SWITCH B AND DEPRESS START PUSHBUTTON TO LOOP ON THE INSTRUCTION BEING TESTED. IF THE FAILURE IS IN THE FIRST PART OF THE PROGRAM (BEFORE THE COMMON ERROR ROUTINE INSTRUCTIONS HAVE BEEN CHECKED OUT), A BRANCH (MDX) TO THE BEGINNING OF THE ROUTINE MAY BE MANUALLY INSERTED IN PLACE OF THE WAIT INSTRUCTION. THEN, THE ROUTINE MAY BE LOOPED.

4. PRINTOUTS (NONE)

5. COMMENTS

THE 1130 CPU FUNCTION TEST STARTS WITH VERY SIMPLE INSTRUCTIONS AND DETERMINES IF EACH INSTRUCTION PERFORMS TO SPECIFICATIONS. EACH SUCCESSIVE ROUTINE ATTEMPTS TO UTILIZE ONLY AN INSTRUCTION THAT HAS NOT BEEN PREVIOUSLY TESTED. THE PROGRAM OPTIONS PROVIDE A MEANS FOR CONTINUOUSLY LOOPING THE ENTIRE PROGRAM AND ALSO ALLOW FAILING ROUTINES TO BE LOOPED.

AN ATTEMPT IS MADE DURING THE EARLY STAGES OF THE PROGRAM TO DEVELOP THOSE INSTRUCTIONS WHICH ALLOW THE USAGE OF THE COMMON CONTROL (F00E AND F005) AND ERROR (F000) ROUTINES. AFTER THESE INSTRUCTIONS HAVE BEEN TESTED THE USER THEN HAS THE ABILITY TO REQUEST VARIOUS CONTROL OPTIONS BY MEANS OF THE DATA ENTRY SWITCHES.

5.1 OPERATING MODES

THE NORMAL MODE OF OPERATION IS WITH THE DATA ENTRY SWITCHES SET TO /0000. THIS CAUSES A SINGLE PASS THROUGH THE PROGRAM WITH AN ERROR WAIT OCCURRING IF AN ERROR IS DETECTED.

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CPU FUNCTION TEST

IF AN ERROR IS DETECTED AND THE COMMON ERROR WAIT OCCURS, THE USER SHOULD TURN ON THE "LOOP ON ROUTINE" (DATA ENTRY SWITCHES SET TO /0020) AND SINGLE INSTRUCTION THROUGH THE FAILING ROUTINE TO ISOLATE THE FAILING INSTRUCTION.

IF THE FAILING ROUTINE DOES NOT FAIL WHEN EXECUTED IN SINGLE INSTRUCTION MODE, THE USER CAN TURN ON THE "BYPASS ERROR WAIT" SWITCH AND THE "LOOP ROUTINE" SWITCH (DATA ENTRY SWITCHES SET TO /0022) AND PROCEED TO USE SCOPING TECHNIQUES TO ISOLATE THE FAILURE.

5.2 PROGRAM LABELS

LABELS OCCURRING IN THE PROGRAM LISTING CAN BE QUICKLY IDENTIFIED AS FOLLOWS-

- A. LABELS STARTING WITH A OR B INDICATE THE BEGINNING OF A TEST ROUTINE.
- B. LABELS STARTING WITH G, H, J, OR K INDICATE COMMUNICATION LABELS WITH A ROUTINE.
- C. LABELS STARTING WITH V OR X ARE RESERVED FOR WAITS.
- D. LABELS STARTING WITH N, R, OR S INDICATE A CONSTANT OR WORK AREA.
- E. LABELS STARTING WITH F, W, Z OR U ARE USED IN COMMON OR SPECIAL ROUTINES THAT ARE NOT A REGULAR TEST ROUTINE.

6. APPENDIX (NONE)

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
P-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3014 C C14C DC A100 LD
* OCOO N/A N/A N/A N/A 1ST LC
* OCOO N/A N/A N/A N/A 2ND LC
* A LOAD 0000 FOLLOWED BY LEAD 0000 DID NOT
* LEAVE ACCUM EQUAL TO OCOO
*
3015 O C14C DC A100 BSC,E
* OCOO N/A N/A N/A N/A N/A
* BSC FAILED TO SKIP
*
3016 C C154 DC A140 LD
* OCOO N/A N/A N/A N/A 1ST VALVE
* FFFF N/A N/A N/A N/A AFTER LC
* LEAD FFFF ON TCP OF OCOO DID NOT LEAVE ACC
* NEGATIVE
*
3017 C C154 DC A140 BSC,+
* FFFF N/A N/A N/A N/A N/A
*
3018 C C154 DC A140 BSC,E
* FFFF N/A N/A N/A N/A N/A
* BSC SKIPPED SHOULD NOT HAVE
*
3019 C C154 DC A140 ACCUM NOT EQUAL 7FFF
301A C C154 DC A140 ACCUM NOT EQUAL 3FFF
301B C C154 DC A140 ACCUM NOT EQUAL 1FFF
301C C C154 DC A140 ACCUM NOT EQUAL 0FFF
301D C C154 DC A140 ACCUM NOT EQUAL C7FF
301E C C154 DC A140 ACCUM NOT EQUAL 03FF
301F O C154 DC A140 ACCUM NOT EQUAL C1FF
3020 C C154 DC A140 ACCUM NOT EQUAL 00FF
3021 C C154 DC A140 ACCUM NOT EQUAL C07F
3022 O C154 DC A140 ACCUM NOT EQUAL 003F
3023 O C154 DC A140 ACCUM NOT EQUAL C01F
3024 C C154 DC A140 ACCUM NOT EQUAL C00F
3025 O C154 DC A140 ACCUM NOT EQUAL 0007
3026 C C154 DC A140 ACCUM NOT EQUAL C003
3027 C C154 DC A140 ACCUM NOT EQUAL 0001
3028 C C154 DC A140 ACCUM NOT EQUAL 0000
3029 C C154 DC A140 ACCUM NOT EQUAL 000C
* FFFF N/A N/A N/A N/A N/A LCAEC
* OCOO N/A N/A N/A N/A N/A AFTER SRA'S
* THE ABOVE WAITS OCCUR AS A RESULT OF A
* FAILURE ON A ROUTINE THAT LEADS FFFF ON
* OCOO AND CHECKS USING SRA 1 AND BSC E.
*
302A O C1A0 DC A180 ACCUM NOT EQUAL FFFF
302B O C1A0 DC A180 ACCUM NOT EQUAL FFFF
302C C C1A0 DC A180 ACCUM NOT EQUAL 7FFF
302E C C1A0 DC A180 ACCUM NOT EQUAL 3FFF
302E O C154 DC A140 ACCUM NOT EQUAL 1FFF
302F C C1A0 DC A180 ACCUM NOT EQUAL 0FFF
3030 C C1A0 DC A180 ACCUM NOT EQUAL C7FF
3031 O C1A0 DC A180 ACCUM NOT EQUAL 03FF

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
P-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3032 C C1AC DC A180 ACCUM NOT EQUAL C1FF
3033 O C1AC DC A180 ACCUM NOT EQUAL C0FF
3034 O C1A0 DC A180 ACCUM NOT EQUAL 007F
3035 C C1A0 DC A180 ACCUM NOT EQUAL C03F
3036 C C1A0 DC A180 ACCUM NOT EQUAL C01F
3037 O C1A0 DC A180 ACCUM NOT EQUAL 00CF
3038 C C1A0 DC A180 ACCUM NOT EQUAL 0007
3039 C C1AC DC A180 ACCUM NOT EQUAL 0003
303A C C1AC DC A180 ACCUM NOT EQUAL 0001
303B O C1A0 DC A180 ACCUM NOT EQUAL C0CC
303C C C1A0 DC A180 ACCUM NOT EQUAL C0CC
* FFFF N/A N/A N/A N/A N/A LCAEC
* OCOO N/A N/A N/A N/A N/A AFTER SRA'S
* THE ABOVE WAITS OCCUR AS A RESULT OF A
* FAILURE ON A ROUTINE THAT LEADS FFFF ON
* FFFF AND CHECKS USING SRA 1 AND BSC E.
*
303D C C1EB DC A100 LD C000 ON 0000
* OCOO N/A N/A N/A N/A N/A
* ACCUM NOT EQUAL C000
*
303E C C1EB DC A100 LD FFFF ON 0000
* OCOO N/A N/A N/A N/A N/A BEFORE LD
* FFFF N/A N/A N/A N/A N/A AFTER LC
* ACCUM NOT EQUAL FFFF
*
303F O C1F5 DC A100 LD
* OCOO N/A N/A N/A N/A N/A
* ACCUM NOT EQUAL C000
*
3040 C C1F5 DC A100 ECR
* OCOO N/A N/A N/A N/A N/A
* OCOO N/A N/A N/A N/A N/A
* WITH ACCUM EQUAL C000 AN ECR USING 0000 DIC
* NOT RESULT IN ACCUM EQUAL C000
*
3041 C C1F5 DC A100 ECR
* FFFF N/A N/A N/A N/A N/A LCAEC + ECR
* OCOO N/A N/A N/A N/A N/A SHOULD BE
* WITH ACCUM EQUAL FFFF AN ECR USING FFFF DIC
* NOT RESULT IN ACCUM EQUAL C000
*
3042 C C1F5 DC A100 ECR
3043 C C1F5 DC A100 ECR
* OCOO N/A N/A N/A N/A N/A BEFORE
* FFFF N/A N/A N/A N/A N/A S/E AFTER
* WITH ACCUM EQUAL C000 AN ECR USING FFFF DIC
* NOT RESULT IN ACCUM EQUAL FFFF
*
3044 C C1F5 DC A100 ECR
* FFFF N/A N/A N/A N/A N/A BEFORE ECR
* FFFF N/A N/A N/A N/A N/A S/E AFTER
* WITH ACCUM EQUAL FFFF AN ECR USING C000 DIC
* NOT RESULT IN ACCUM EQUAL FFFF
*

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DATE 02JAN66 01MAY66 15NOV66
EC NO. 41545C 415450C 419643

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG ROUTINE * A-REG Q-REG XR-1 XR-2 XR-3 STATUS
*****
3045 C C1F5 DC A1C0 SRA + ECR
* 7FFF N/A N/A N/A N/A N/A S/E AFTER SRA
* 0000 N/A N/A N/A N/A N/A S/E AFTER EDR
* WITH ACCM EQUAL 7FFF AN ECR USING 7FFF DIC NOT
* RESULT IN ACCM EQUAL TO 0000
* RESULT IN ACCM EQUAL TO 0000
*
3046 C C214 DC A1E0 LD LONG FCRP
* 0000 N/A N/A N/A N/A N/A S/E AFTER LD
* ACCUM NOT EQUAL 0000 INDICATING WRONG
* LOCATION WAS LOADED
*
3047 C C214 DC A1E0 LD LONG FCRP
* C, H1E0. N/A N/A N/A N/A N/A S/E AFTER LD
* 0000 N/A N/A N/A N/A N/A S/E AFTER EDR
* ACCUM NET EQUAL 0000 INDICATING WRONG LOCATION
* WAS LOADED
*
3048 C C220 DC A1F0 LC IND
3049 C C220 DC A1F0 LC IND
* 0000 N/A N/A N/A N/A N/A S/E FOR BSC
* ACCUM NOT EQUAL 0000 INDICATING WRONG
* LOCATION WAS LOADED
*
304A 0 C220 DC A200 BSC LONG FCRP
* UNCONDITIONAL BSC DID NOT BRANCH
*
304B 0 C220 DC A200 BSC LONG FCRP
* UNCONDITIONAL BSC SKIPPED-SHOULD BRANCH
*
304C C C220 DC A200 BSC, E LONG FCRP
304D 0 C220 DC A200
* FFFF N/A N/A N/A N/A N/A
* BSC FELL THRU OR SKIPPED-SHOULD BRANCH
* DID NOT SKIP OR SKIPPED - SHOULD BR.
*
304E C C220 DC A200 BSC,+ LONG FCRP
304F 0 C220 DC A200
* FFFF N/A N/A N/A N/A N/A S/E AT TEST
* DID NOT SKIP OR SKIPPED - SHOULD BR.
*
3050 C C220 DC A200 BSC,Z LONG FCRP
3051 C C220 DC A200
* FFFF N/A N/A N/A N/A N/A S/E AT TEST
* BSC DID NOT SKIP OR SKIPPED - SHOULD BR.
*
3052 C C220 DC A200 BSC,- LONG FCRP
* FFFF N/A N/A N/A N/A N/A S/E AT TEST
* BSC BRANCHED-SHOULD NOT
*
3053 C C220 DC A200 BSC,C LONG FCRP
3054 C C220 DC A200
* N/A N/A N/A N/A N/A C+C S/E AT TEST
* BSC DID NOT SKIP OR SKIPPED-SHOULD BRANCH
*

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG ROUTINE * A-REG Q-REG XR-1 XR-2 XR-3 STATUS
*****
3055 C C22D DC A200 BSC,C LONG FCRP
3056 0 C22D DC A200
* N/A N/A N/A N/A N/A C+C S/E AT TEST
* BSC DID NOT SKIP OR SKIPPED-SHOULD BRANCH
*
3057 C 022D DC A200 BSC,C LONG FCRP
* N/A N/A N/A N/A N/A C S/E AT TEST
* BSC FAILED TO TURN OFF OVERFLOW
*
305E C C22D DC A200 BSC,C LONG FCRP
* N/A N/A N/A N/A N/A OFF S/E AT TEST
* BSC BRANCHED-SHOULD NOT
*
3059 C C22D DC A200 BSC,C LONG FCRP
* N/A N/A N/A N/A N/A OFF S/E AT TEST
* BSC BRANCHED-SHOULD NOT
*
305A C C22D DC A200 BSC,+ LONG FORM
305B C C22D DC A200
* 0000 N/A N/A N/A N/A N/A
* BSC DID NOT SKIP OR SKIPPED-SHOULD BRANCH
*
305C C C22D DC A200 BSC,+ LONG FCRP
* FFFF N/A N/A N/A N/A N/A S/E AT TEST
* BSC BRANCHED-SHOULD NOT
*
305C C 022D DC A200 BSC,+ LONG FCRP
* 0001 N/A N/A N/A N/A N/A S/E AT TEST
* BSC BRANCHED SHOULD NOT
*
305E C 022D DC A200 BSC INDIRECT
305F C 022D DC A200
* BSC DID NOT SKIP OR SKIPPED-SHOULD BRANCH
*
3060 C 0270 DC A240 BSI
* UNCONDITIONAL BSI DID NOT BRANCH
*
3061 C 0270 DC A240 BSI
* UNCONDITIONAL BSI DID NOT STORE I CTR
* CORRECTLY
*
3062 C 0270 DC A240 BSI,+ LONG FCRP
3063 C 0270 DC A240
* 0000 N/A N/A N/A N/A N/A S/E AT TEST
* BSI DID NOT SKIP OR SKIPPED-SHOULD BRANCH
*
3064 C 0270 DC A240 BSI,+ LONG FORM
* BSI DID NOT STORE THE I CTR CORRECTLY
*
3065 C 0282 DC A900 STORE
* STORE INSTRUCTION FAILED

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3066 C C282 DC A900 XIC SENSE/PRCG SWS 3A104110
* FF00 N/A N/A N/A N/A N/A S/B AT TEST 3A104120
* ACCUM NOT EQUAL TO FF00-- SENSE/PRCG SWS 3A104130
* WERE INCORRECTLY SENSED 3A104140
* 3A104150
3067 C C282 DC A900 XIC DATA ENTRY SWS 3A104160
* FF00 N/A N/A N/A N/A N/A S/B AT TEST 3A104170
* ACCUM NOT EQUAL TO FFFF-- DATA ENTRY SWS 3A104180
* WERE INCORRECTLY READ 3A104190
* 3A104200
3068 C C282 DC A900 XIC SENSE/PRCG SWS 3A104210
* FF00 N/A N/A N/A N/A N/A S/B AT TEST 3A104220
* ACCUM NOT EQUAL TO FFFF-- DATA ENTRY SWS 3A104230
* WERE INCORRECTLY READ 3A104240
* 3A104250
3069 C C282 DC A900 XIC SENSE/PRCG SWS 3A104260
* FF00 N/A N/A N/A N/A N/A S/B AT TEST 3A104270
* ACCUM NOT EQUAL TO 0000-- SENSE/PRCG SWS 3A104280
* WERE INCORRECTLY SENSED 3A104290
* 3A104300
3070 C C282 DC A900 XIC N/A N/A N/A N/A N/A S/B AT TEST 3A104310
* 0000 N/A N/A N/A N/A N/A S/B AT TEST 3A104320
* ACCUM NOT EQUAL TO 0000--DATA ENTRY SWS 3A104330
* WERE INCORRECTLY READ 3A104340
* 3A104350
*****
* THE FOLLOWING ERRORS ARE HANDLED BY THE 3A104360
* COMMON ERROR CONTROL ROUTINE. THE ID NUMBER 3A104370
* SHOWN FOR EACH ERROR WILL APPEAR IN BITS 3A104380
* 5 THRU 15 OF THE WAIT INSTRUCTION. 3A104390
* 3A104400
*****
* 3A104410
* 3A104420
* 3A104430
* 3A104440
* 3A104450
* 3A104460
* 3A104470
*****
3071 C C2DE DC A280 SRA 16 3A104480
* FFFF N/A N/A N/A N/A N/A S/B AFTER LD 3A104490
* 0000 N/A N/A N/A N/A N/A S/B AFTER SRA 3A104500
* ACCUM NOT ZERO 3A104510
* 3A104520
3072 C C2E2 DC A281 SRA 15 3A104530
* 8000 N/A N/A N/A N/A N/A S/B AFTER LD 3A104540
* 0001 N/A N/A N/A N/A N/A S/B AFTER SRA 3A104550
* ACCUM NOT EQUAL 0001 3A104560
* 3A104570
3073 C C2ED DC A282 SRA 1 3A104580
* AAAA N/A N/A N/A N/A N/A S/B AFTER LD 3A104590
* 5555 N/A N/A N/A N/A N/A S/B AFTER SRA 3A104600
* ACCUM NOT EQUAL 5555 3A104610
* 3A104620
3074 C C2F8 DC A283 SRA 1 3A104630
* 5555 N/A N/A N/A N/A N/A S/B AFTER LD 3A104640
* 2AAA N/A N/A N/A N/A N/A S/B AFTER SRA 3A104650
* ACCUM NOT EQUAL 2AAA 3A104660
* 3A104670
3075 C C303 DC A284 SERIES CF SRAS-15 3A104680
* TCTAL SHIFTS 3A104690
* 8000 N/A N/A N/A N/A N/A S/B AFTER LD 3A104700
* 0001 N/A N/A N/A N/A N/A S/B AFTER SRA 3A104710
* ACCUM NOT EQUAL 0001 3A104720
* 3A104730
* 3A104740
* 3A104750
* 3A104760
* 3A104770
* 3A104780

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3076 C C318 DC A2CC ANC-MEMCRY=CC0C 3A104790
* 0000 N/A N/A N/A N/A N/A S/E AFTER LD 3A104800
* 0000 N/A N/A N/A N/A N/A AFTER AND 3A104810
* ACCUM NOT EQUAL 0000 3A104820
* 3A104830
3077 C C322 DC A2C4 ANC-MEMCRY=FFFF 3A104840
* 0000 N/A N/A N/A N/A N/A 3A104850
* 0000 N/A N/A N/A N/A N/A 3A104860
* ACCUM NOT EQUAL 0000 3A104870
* 3A104880
3078 C C32C DC A2C8 ANC-MEMCRY=0000 3A104890
* FFFF N/A N/A N/A N/A N/A 3A104900
* 0000 N/A N/A N/A N/A N/A 3A104910
* ACCUM NOT EQUAL 0000 3A104920
* 3A104930
3079 C C336 DC A2CC ANC-MEMCRY=FFFF 3A104940
* FFFF N/A N/A N/A N/A N/A 3A104950
* FFFF N/A N/A N/A N/A N/A 3A104960
* ACCUM NOT EQUAL FFFF 3A104970
* 3A104980
3080 C C344 DC A300 CR-MEMCRY = C0C0 3A104990
* 0000 N/A N/A N/A N/A N/A AFTER LD+CR 3A105000
* 0000 N/A N/A N/A N/A N/A AFTER ECR 3A105010
* ACCUM NOT EQUAL 0000 3A105020
* 3A105030
3081 C C34E DC A302 CR-MEMCRY=FFFF 3A105040
* 0000 N/A N/A N/A N/A N/A AFTER LD + OR 3A105050
* FFFF N/A N/A N/A N/A N/A AFTER ECR 3A105060
* ACCUM NOT EQUAL FFFF 3A105070
* 3A105080
3082 C C359 DC A304 CR-MEMCRY=FFFF 3A105090
* FFFF N/A N/A N/A N/A N/A AFTER LD+CR 3A105100
* FFFF N/A N/A N/A N/A N/A AFTER ECR 3A105110
* ACCUM NOT EQUAL FFFF 3A105120
* 3A105130
3083 C C367 DC A340 RTE 16 3A105140
* FFFF C0C0 N/A N/A N/A N/A BEFCRE RTE 3A105150
* 0000 FFFF N/A N/A N/A N/A AFTER RTE 3A105160
* ACCUM NOT EQUAL 0000 3A105170
* 3A105180
3084 C C367 DC A340 RTE 16 3A105190
* 0000 FFFF N/A N/A N/A N/A BEFCRE RTE 3A105200
* FFFF 0000 N/A N/A N/A N/A AFTER RTE 3A105210
* ACCUM NOT EQUAL FFFF 3A105220
* 3A105230
3085 C C38C DC A380 SRT 32 3A105240
* 8000 N/A N/A N/A N/A N/A BEFCRE SRT 3A105250
* FFFF FFFF N/A N/A N/A N/A AFTER SRT 3A105260
* ACCUM NOT EQUAL FFFF 3A105270
* 3A105280
* 3A105290
* 3A105300
* 3A105310
* 3A105320
* 3A105330
* 3A105340
* 3A105350
* 3A105360
* 3A105370
* 3A105380
* 3A105390
* 3A105400
* 3A105410
* 3A105420
* 3A105430
* 3A105440
* 3A105450
* 3A105460

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG RCUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3075 C C380
DC A380 SRT 32 + RTE 16
* 8C00 N/A N/A N/A N/A N/A BEFCRE SRT
* FFFF FFFF N/A N/A N/A N/A AFTER SRT+RTE
* ACCUM NOT EQUAL FFFF-INDICATING C REG FAILED
307A C C395
DC A384 SRT 32
* 4000 N/A N/A N/A N/A N/A AFTER LC
* 0C00 C0C0 N/A N/A N/A N/A AFTER SRT
* ACCUM NOT EQUAL 0C00
307B C C395
DC A384 SRT 32 + RTE 16
* 4000 N/A N/A N/A N/A N/A AFTER LC
* 0000 C0C0 N/A N/A N/A N/A AFTER SRT
* ACCUM NOT EQUAL 0C00-INDICATING C REG FAILED
307C C C3A8
DC A388 SRT 15
* 5555 N/A N/A N/A N/A N/A AFTER LC
* 0000 AAAA N/A N/A N/A N/A AFTER SRT
* ACCUM NOT EQUAL 0C00
307C C C3A8
DC A388 SRT 15 + RTE 16
* 5555 N/A N/A N/A N/A N/A AFTER LC
* 0000 AAAA N/A N/A N/A N/A AFTER SRT 15
* AAAA 0000 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL AAAA-INDICATING C REG FAILED
307E C C3BC
DC A38C SERIES CF SRTS-3C
*TOTAL SHIFTS
* 5555 N/A N/A N/A N/A N/A AFTER LC
* 0000 0001 N/A N/A N/A N/A AFTER SRT'S
* ACCUM NOT EQUAL 0C00
307F C C3BC
DC A38C SERIES CF SRTS-3C
*TOTAL SHIFTS +
*RTE 16
* 5555 N/A N/A N/A N/A N/A AFTER LC
* 0C00 0001 N/A N/A N/A N/A AFTER SRT'S
* 0C01 0000 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL 0C01-INDICATING C REG FAILED
308C C C3CC
DC A3C0 RTE 15
* 5555 AAAA N/A N/A N/A N/A AFTER LC'S
* 5554 AAAB N/A N/A N/A N/A AFTER RTE 15
* ACCUM NOT EQUAL 5554 - RTE 15 C TC A FAILED
3081 C C3CC
DC A3C0 RTE 15 + RTE 16
* 5555 AAAA N/A N/A N/A N/A AFTER LC'S
* 5554 AAAB N/A N/A N/A N/A AFTER RTE 15
* AAAB 5554 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL AAAB-INDICATING C REG FAILED
*****
3A105470
3A105480
3A105490
3A105500
3A105510
3A105520
3A105530
3A105540
3A105550
3A105560
3A105570
3A105580
3A105590
3A105600
3A105610
3A105620
3A105630
3A105640
3A105650
3A105660
3A105670
3A105680
3A105690
3A105700
3A105710
3A105720
3A105730
3A105740
3A105750
3A105760
3A105770
3A105780
3A105790
3A105800
3A105810
3A105820
3A105830
3A105840
3A105850
3A105860
3A105870
3A105880
3A105890
3A105900
3A105910
3A105920
3A105930
3A105940
3A105950
3A105960
3A105970
3A105980
3A105990
3A106000
3A106010
3A106020
3A106030
3A106040
3A106050
3A106060
3A106070
3A106080
3A106090
3A106100
3A106110
3A106120
3A106130
3A106140

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG RCUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3082 C C3F3
DC A3C4 SERIES CF RTE-31
*TOTAL SHIFTS
* 0000 80C0 N/A N/A N/A N/A AFTER LC
* 0001 0C0C N/A N/A N/A N/A AFTER RTE'S
* ACCUM NOT EQUAL 0C01
3083 C C3F3
DC A3C4 SERIES CF RTE-31
*TOTAL SHIFTS
*FCLLCWD BY RTE 16
* 0000 80C0 N/A N/A N/A N/A AFTER LC
* 0C01 C0C0 N/A N/A N/A N/A AFTER RTE'S
* 0C00 0001 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL 0C00-INDICATING C REG FAILED
3084 C C418
DC A400 SLA 16
* FFFF FFFF N/A N/A N/A N/A AFTER LC
* 0000 FFFF N/A N/A N/A N/A AFTER SLA
* ACCUM NOT EQUAL 0C00
3085 C C418
DC A400 SLA 16
* FFFF FFFF N/A N/A N/A N/A OFF AFTER LC
* 0C00 FFFF N/A N/A N/A N/A C AFTER SLA
* CARRY NOT SET
3086 C C418
DC A400 SLA 16 + RTE 16
* FFFF FFFF N/A N/A N/A N/A AFTER LC
* 0000 FFFF N/A N/A N/A N/A AFTER SLA
* FFFF 0000 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL FFFF-INDICATING C REG FAILED
3087 C C439
DC A408 SLA 16
* 0001 0000 N/A N/A N/A N/A AFTER LC
* 0000 C0C0 N/A N/A N/A N/A AFTER SLA
* ACCUM NOT EQUAL 0C00
3088 C C439
DC A408 SLA 16
* 0001 0000 N/A N/A N/A N/A C AFTER LC
* 0C00 C0C0 N/A N/A N/A N/A C AFTER SLA
* CARRY NOT SET
3089 C C439
DC A4C8 SLA 16 + RTE 16
* 0001 C0C0 N/A N/A N/A N/A AFTER LC
* 0000 0C0C N/A N/A N/A N/A AFTER SLA
* 0C00 C0C0 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL 0C00-INDICATING C REG FAILED
308A C C459
DC B400 SLA 1
* AAAA 0000 N/A N/A N/A N/A AFTER LC
* 5554 00C0 N/A N/A N/A N/A AFTER SLA
* ACCUM NOT EQUAL 5554
*****
3A106150
3A106160
3A106170
3A106180
3A106190
3A106200
3A106210
3A106220
3A106230
3A106240
3A106250
3A106260
3A106270
3A106280
3A106290
3A106300
3A106310
3A106320
3A106330
3A106340
3A106350
3A106360
3A106370
3A106380
3A106390
3A106400
3A106410
3A106420
3A106430
3A106440
3A106450
3A106460
3A106470
3A106480
3A106490
3A106500
3A106510
3A106520
3A106530
3A106540
3A106550
3A106560
3A106570
3A106580
3A106590
3A106600
3A106610
3A106620
3A106630
3A106640
3A106650
3A106660
3A106670
3A106680
3A106690
3A106700
3A106710
3A106720
3A106730
3A106740
3A106750
3A106760
3A106770
3A106780
3A106790
3A106800
3A106810
3A106820

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CPU FUNCTION TEST

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*****
ADDRESS *
OF *
B-REG ROUTINE * A-REG Q-REG XR-1 XR-2 XR-3 STATUS
*****
308E 0 C459 DC B400 SLA 1
* AAAA COCO N/A N/A N/A C
* 5554 OOCO N/A N/A N/A C
* CARRY NOT SET
*
308C 0 C455 DC B400 SLA 1 + RTE 16
* AAAA OOOO N/A N/A N/A N/A
* 5554 COCO N/A N/A N/A N/A
* OOOO 5554 N/A N/A N/A N/A AFTER RTE
* ACCUM NOT EQUAL OOCO-INDICATING Q REG FAILED
*
308D 0 C477 DC B406 SLA 1
* 5555 COCO N/A N/A N/A N/A AFTER LC
* AAAA COCO N/A N/A N/A N/A AFTER SLA
* ACCUM NOT EQUAL AAAA
*
308E 0 C477 DC B406 SLA 1
* 5555 COCO N/A N/A N/A C AFTER LC
* AAAA COCO N/A N/A N/A CFF AFTER SLA
* CARRY SET-SHOULD BE CLEAR
*
308F 0 C477 DC B406 SLA 1 + RTE 16
* 5555 COCO N/A N/A N/A N/A AFTER LC
* AAAA COCO N/A N/A N/A N/A AFTER SLA
* OOOO AAAA N/A N/A N/A N/A AFTER RTE
* ACCUM NOT EQUAL OOCO-INDICATING Q REG FAILED
*
309C 0 C496 DC B40A SERIES CF SLAS-16
* TCTAL SHIFTS
* OOOO COCO N/A N/A N/A N/A AFTER SLA 0
* OOOO OOOO N/A N/A N/A N/A AFTER SLA'S
* ACCUM NOT EQUAL OOCO
*
3091 0 C496 DC B40A SERIES CF SLAS-16
* TCTAL SHIFTS
* OOOO OOCO N/A N/A N/A C AFTER SLA 0
* OOOO OOCO N/A N/A N/A C AFTER SLA'S
* CARRY NOT SET
*
3092 0 C496 DC B40A SERIES CF SLAS-16
* TCTAL SHIFTS +
* RTE 16
* OOOO COCO N/A N/A N/A N/A AFTER SLA 0
* OOOO OOCO N/A N/A N/A N/A AFTER SLA'S
* OOCO OOCO N/A N/A N/A N/A AFTER RTE 16
* ACC NOT EQUAL OOCO-INDICATING C REG FAILED
*
3093 0 C4C3 DC A440 SLT 32
* OOOO OOOO N/A N/A N/A N/A AFTER LC
* OOOO OOCO N/A N/A N/A N/A AFTER SLT 32
* ACCUM NOT EQUAL OOCO
*
3A106830
3A106840
3A106850
3A106860
3A106870
3A106880
3A106890
3A106900
3A106910
3A106920
3A106930
3A106940
3A106950
3A106960
3A106970
3A106980
3A106990
3A107000
3A107010
3A107020
3A107030
3A107040
3A107050
3A107060
3A107070
3A107080
3A107090
3A107100
3A107110
3A107120
3A107130
3A107140
3A107150
3A107160
3A107170
3A107180
3A107190
3A107200
3A107210
3A107220
3A107230
3A107240
3A107250
3A107260
3A107270
3A107280
3A107290
3A107300
3A107310
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3A107380
3A107390
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3A107410
3A107420
3A107430
3A107440
3A107450
3A107460
3A107470
3A107480
3A107490
3A107500

```

CPU FUNCTION TEST

```

*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG Q-REG XR-1 XR-2 XR-3 STATUS
*****
3094 0 C4C3 DC A440 SLT 32
* OOOO COO1 N/A N/A N/A N/A AFTER LC
* OOOO COCO N/A N/A N/A C AFTER SLT 32
* CARRY NOT SET
*
3095 0 C4C3 DC A440 SLT 32 + RTE 16
* OOCO OOO1 N/A N/A N/A N/A AFTER LC
* OOCO OOCO N/A N/A N/A N/A AFTER SLT 32
* OOCO OOCO N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL OOCO-INDICATING Q REG FAILED
*
3096 0 C4EC DC A444 SLT 16
* OCOO FFFF N/A N/A N/A N/A AFTER LC
* FFFF OOCO N/A N/A N/A N/A AFTER SLT 16
* ACCUM NOT EQUAL FFFF
*
3097 0 C4EC DC A444 SLT 16
* OCOO FFFF N/A N/A N/A N/A AFTER LC
* FFFF OOCO N/A N/A N/A N/A OFF AFTER SLT 16
* CARRY ON SHOULD NOT BE
*
3098 0 C4EC DC A444 SLT 16 + RTE 16
* OOOO FFFF N/A N/A N/A N/A AFTER LC
* FFFF COOO N/A N/A N/A N/A AFTER SLT 16
* OOOO FFFF N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL OOCO-INDICATING Q REG FAILED
*
3099 0 C4FF DC A44A SLT 15
* OCOO 5555 N/A N/A N/A N/A AFTER LC
* 2AAA 8OCO N/A N/A N/A N/A AFTER SLT 15
* ACCUM NOT EQUAL 2AAA
*
309A 0 C4FF DC A44A SLT 15
* OCOO 5555 N/A N/A N/A N/A AFTER LC
* 2AAA 8OCO N/A N/A N/A N/A OFF AFTER SLT 15
* CARRY SET-SHOULD NOT BE
*
309B 0 C4FF DC A44A SLT 15 + RTE 16
* OOOO 5555 N/A N/A N/A N/A AFTER LC
* 2AAA 8OCO N/A N/A N/A N/A AFTER SLT 15
* 8COO 2AAA N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL 8OCO-INDICATING Q REG FAILED
*
309C 0 C51F DC B440 SERIES CF SLTS-32
* TCTAL SHIFTS
* OCOO OOOO N/A N/A N/A N/A AFTER LC
* OOOO OOCO N/A N/A N/A N/A AFTER SLT'S
* ACCUM NOT EQUAL OOCO
*
309D 0 C51F DC B440 SERIES CF SLTS-32
* TCTAL SHIFTS
* OOOO COO1 N/A N/A N/A N/A AFTER LC
* OOCO COCO N/A N/A N/A C AFTER SLT'S
* CARRY NOT ON
*
3A107510
3A107520
3A107530
3A107540
3A107550
3A107560
3A107570
3A107580
3A107590
3A107600
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3A107620
3A107630
3A107640
3A107650
3A107660
3A107670
3A107680
3A107690
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3A107710
3A107720
3A107730
3A107740
3A107750
3A107760
3A107770
3A107780
3A107790
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3A108090
3A108100
3A108110
3A108120
3A108130
3A108140
3A108150
3A108160
3A108170
3A108180

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CPU FUNCTION TEST

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*****
ADDRESS *
CF *
B-REG RCUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
309E C C51F DC B440 SERIES CF SLTS-32
          *TCTAL SHIFTS +
          *RTE 1c
          * 0000 C0C1 N/A N/A N/A N/A AFTER LD
          * 0000 C0CC N/A N/A N/A N/A AFTER SLT'S
          * 0000 C0G0 N/A N/A N/A N/A AFTER RTE 16
          * ACCUM NOT EQUAL 0000-INDICATING C REG FAILED
          *
          DC A4E0 STC
          * 0000 N/A N/A N/A N/A N/A
          * STORING 0000 INTO A STORAGE LOCATION
          * CONTAINING FFFF DID NOT RETURN 0000 WHEN
          * RELOADED IN THE ACCUM
          *
          DC A482 STC
          * FFFF N/A N/A N/A N/A N/A
          * STORING FFFF INTO A STORAGE LOCATION
          * CONTAINING 0000 DID NOT RETURN FFFF WHEN
          * RELOADED IN THE ACCUM
          *
          DC A4C0 STS
          * N/A N/A N/A N/A N/A ON AFTER LDS 3
          * N/A N/A N/A N/A N/A OFF AFTER LDS C
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * LDS C FAILED TO RESET CARRY AND CVERFLW CR
          * STS FAILED TO STORE INDICATORS.
          *
          DC A4C2 STS
          * N/A N/A N/A N/A N/A C+0 AFTER LDS
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * STS DID NOT CLEAR CARRY
          *
          DC A4C2 STS CK ACC
          * INITIALLY ACC HAS CORRE LOCATION OF
          * SYMBOLIC LABEL A4C2
          * ACC DISTROYED AFTER STS
          *
          DC A4C2 STS
          * N/A N/A N/A N/A N/A 0+0 AFTER LDS
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * STS DID NOT CLEAR CVERFLW
          *
          DC A4C2 STS
          * N/A N/A N/A N/A N/A BEFORE LD
          * 0003 N/A N/A N/A N/A AFTER LD
          * STS OF 0003 INTO A STORAGE LOCATION
          * CONTAINING 0000 DID NOT RETURN 0003 WHEN
          * RELOADED IN THE ACCUM
          *
          DC A4C8 STS
          * N/A N/A N/A N/A N/A C+0 AFTER LDS 3
          * N/A N/A N/A N/A N/A C AFTER LDS 2
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * UC02 N/A N/A N/A N/A OFF AFTER LD
          * STS FAILED TO STORE CR LDS 2 FAILED TO RESET
          * OVERFLW.

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3A108190
3A108200
3A108210
3A108220
3A108230
3A108240
3A108250
3A108260
3A108270
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3A108830
3A108840
3A108850
3A108860

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CPU FUNCTION TEST

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*****
ADDRESS *
GF *
B-REG RCUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30A7 C C556 DC A4C8 STS
          * N/A N/A N/A N/A N/A C+0 AFTER LDS 3
          * N/A N/A N/A N/A N/A C AFTER LDS
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * STS DID NOT CLEAR CARRY OF CVERFLW IF CVERFLW
          * HAD NOT BEEN RESET BY LDS 2
          *
          DC A4CC STS
          * N/A N/A N/A N/A N/A C+0 AFTER LDS 3
          * N/A N/A N/A N/A N/A C AFTER LDS 1
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * LDS 1 FAILED, IF ACCUMULATOR IS OTHER THAN /UCCL1
          *
          DC A4CC STS
          * N/A N/A N/A N/A N/A C+0 AFTER LDS 3
          * N/A N/A N/A N/A N/A C AFTER LDS 1
          * N/A N/A N/A N/A N/A OFF AFTER STS
          * STS FAILED TO RESET INDICATORS.
          *
          DC A5C0 BSC,C+EZC
          * 8C01 N/A N/A N/A N/A C+C
          * BSC SKIPPED-SHOULD NOT HAVE
          *
          DC A502 BSC,-CC+
          * 0C00 N/A N/A N/A N/A C+C
          * BSC SKIPPED-SHOULD NOT HAVE
          *
          DC A504 BSC,C-E
          * 8C00 N/A N/A N/A N/A C+C
          * BSC FAILED TO SKIP
          *
          DC A5C4 BSC,C
          * 8C00 N/A N/A N/A N/A C
          * BSC FAILED TO CLEAR CVERFLW
          *
          DC A5C8 BSC,C+Z
          * 0001 N/A N/A N/A N/A OFF
          * BSC FAILED TO SKIP
          *
          DC A50A BSC,+DCE LONG FORM
          * 8C01 N/A N/A N/A N/A C+C
          * BSC DID NOT BRANCH - SHOULD HAVE
          *
          DC A50A BSC,+DCE LONG FORM
          * 8C01 N/A N/A N/A N/A C+C
          * BSC SKIPPED-SHOULD BRANCH
          *
          DC A5C0 BSC,-Z LONG FORM
          * 0C04 N/A N/A N/A N/A C+C
          * BSC DID NOT BRANCH - SHOULD HAVE
          *
          DC A5CC BSC,-Z LONG FORM
          * UC04 N/A N/A N/A N/A C+C

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3A108870
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3A109510
3A109520
3A109530
3A109540

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CPU FUNCTION TEST

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*****
* BSC SKIPPED-SHOULD BRANCH
*****
ADDRESS
CF
E-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30B3 C C633      DC      A5CE      BSC,+ECCZ LCNG
*FCRM
* BCC1 N/A N/A N/A N/A C+C
* BSC BRANCHED-SHOULD NCT
*
30B4 C C633      DC      A50E      BSC,+ECCZ LCNG
*FCRM
* BCC1 N/A N/A N/A N/A C+C
* BSC SKIPPED-SHOULD NCT
*
30B5 C C647      DC      B500      BSC,+
* UCC1 N/A N/A N/A N/A C+C
* BSC ON PLUS CLEARED THE OVERFLOW F-F
*
30B6 C C647      DC      B5C0      BSC,+
* UCC1 N/A N/A N/A N/A N/A
* BSC FAILED TO SKIP
*
30B7 C C666      DC      A540      BSI,ECC+Z LCNG
*FCRM
* BCC1 N/A N/A N/A N/A C+C
* BSI DID NCT BRANCH - SFCULD HAVE
*
30B8 C C666      DC      A540      BSI,ECC+Z LCNG
*FCRM
* BCC1 N/A N/A N/A N/A C+C
* BSI SKIPPED-SHOULD BRANCH
*
30B9 C C666      DC      A540      BSI,ECC+Z LCNG
*FCRM
* BCC1 N/A N/A N/A N/A C+C AFTER LDC
* BCC1 N/A N/A N/A N/A C AFTER ESI
* BSI DID NCT CLEAR CVERFLOW
*
30BA C C667      DC      A544      BSI,Z- LCNG FCRP
* OOC2 N/A N/A N/A N/A N/A
* BSI DID NCT BRANCH - SFCULD HAVE
*
30BB C C687      DC      A544      BSI,Z- LCNG FCRP
* OOC2 N/A N/A N/A N/A N/A
* BSI SKIPPED-SHOULD BRANCH
*
30BC C C69C      DC      A546      BSI,Z LCNG FCRP
* OOOO N/A N/A N/A N/A N/A
* BSI BRANCHED-SHOULD NCT
*
30BD C C69C      DC      A546      BSI,Z LCNG FCRP
* UCCG N/A N/A N/A N/A N/A
* BSI SKIPPED-SHOULD NCT U
*****
3A109550
3A109560
3A109570
3A109580
3A109590
3A109600
3A109610
3A109620
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3A110200
3A110210
3A110220

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CPU FUNCTION TEST

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*****
ADDRESS
CF
E-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30BE C C6AF      DC      A548      BSI,- LCNG FCRP
* BCC1 N/A N/A N/A N/A N/A
* BSI SKIPPED-SHOULD NCT
*
30BF C C6AF      DC      A548      BSI,- LCNG FCRP
* BCC1 N/A N/A N/A N/A N/A
* BSI BRANCHED-SHOULD NCT
*
30CC C C6C1      DC      A54A      BSI,+ LCNG FCRP
* OOC2 N/A N/A N/A N/A N/A
* BSI SKIPPED-SHOULD NCT
*
30C1 C C6C1      DC      A54A      BSI,+ LCNG FCRP
* UCC2 N/A N/A N/A N/A N/A
* BSI BRANCHED-SHOULD NCT
*
30C2 C C6D3      DC      A54C      BSI,E LCNG FCRP
* UCC2 N/A N/A N/A N/A N/A
* BSI SKIPPED-SHOULD NCT
*
30C3 C C6D3      DC      A54C      BSI,E LCNG FCRP
* OOC2 N/A N/A N/A N/A N/A
* BSI BRANCHED-SHOULD NCT
*
30C4 C C6E5      DC      A54E      BSI,C LCNG FCRP
* N/A N/A N/A N/A N/A C
* BSI SKIPPED-SHOULD NCT
*
30C5 C C6E5      DC      A54E      BSI,C LCNG FCRP
* N/A N/A N/A N/A N/A C
* BSI BRANCHED SHOULD NCT
*
30C6 C C6F7      DC      A54F      BSI,C LCNG FCRP
* N/A N/A N/A N/A N/A C
* BSI SKIPPED-SHOULD NCT
*
30C7 C C6F7      DC      A54F      BSI,C LCNG FCRP
* N/A N/A N/A N/A N/A C
* BSI BRANCHED-SHOULD NCT
*
30C8 C C7CA      DC      A580      LDC
* OCOO OOCO N/A N/A N/A N/A
* ACCUM NOT EQUAL OCOO
*
30C9 C C7CA      DC      A580      LDC + RTE 16
* UGOO COCO N/A N/A N/A N/A AFTER LCD
* OOGO COCO N/A N/A N/A N/A AFTER RTE 16
* ACCUM NCT EQUAL OCOO-INDICATING C REG FAILED
*
30CA C C71C      DC      A584      LDC
* FFFF FFFF N/A N/A N/A N/A
*****
3A110230
3A110240
3A110250
3A110260
3A110270
3A110280
3A110290
3A110300
3A110310
3A110320
3A110330
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3A110900

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CPU FUNCTION TEST

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*****
* ACCUM NOT EQUAL FFFF
*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30CB C C71D DC A584 LDC + RTE 16
* FFFF FFFF N/A N/A N/A N/A AFTER LDC
* FFFF FFFF N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL FFFF-INDICATING C REG FAILED
*
30CC C C731 DC A588 LDC CDD ADDRESS
* 0000 0000 N/A N/A N/A N/A
* ACCUM NOT EQUAL 0000
*
30CE C C731 DC A588 LDC-CDD ADDRESS
* + RTE 16
* 0000 C000 N/A N/A N/A N/A AFTER LDC
* 0000 0000 N/A N/A N/A N/A AFTER RTE 16
* ACCUM NOT EQUAL 0000-INDICATING C REG FAILED
*
30CE C C743 DC A5C0 STC
* 0000 C0C0 N/A N/A N/A N/A
* USING STD-ACCUM NOT STORED IN LOCATION EA
*
30CF C C743 DC A5C0 STC
* 0000 00C0 N/A N/A N/A N/A
* USING STD-Q REG NOT STORED IN LOCATION EA+1
*
30DC C C757 DC A5C4 STC
* FFFF FFFF N/A N/A N/A N/A
* USING STD-ACCUM NOT STORED IN LOCATION EA
*
30D1 C C757 DC A5C4 STC
* FFFF FFFF N/A N/A N/A N/A
* USING STD-Q REG NOT STORED IN LOCATION EA+1
*
30D2 O C77C DC A5C8 STC CDD ADDRESS
* 00C0 C0C0 N/A N/A N/A N/A
* STD USING CDD ADDRESS-ACCUM NOT STORED IN EA
*
30D3 O C77C DC A5C8 STD-CDD ADDRESS
* 00C0 C0C0 N/A N/A N/A N/A
* STD USING CDD ADDRESS-ACCUM NOT STORED
* IN EA+1
*
30D4 C C755 DC A600 LDX 1
* N/A N/A N/A N/A N/A N/A
* TAG REG BIT 7 WILL NOT SET
*
30D5 C C79E EC A6C2 LDX 2
* N/A N/A N/A N/A N/A N/A
* TAG REG BIT 6 WILL NOT SET
*
30D6 C C7A7 DC A604 LDX 1
* N/A N/A C00C N/A N/A N/A
* INDEX REG 1 NOT EQUAL C00C

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3A110910
3A110920
3A110930
3A110940
3A110950
3A110960
3A110970
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3A111560
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3A111580

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CPU FUNCTION TEST

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*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30D7 C C7B3 DC A6C6 LDX 2
* N/A N/A N/A N/A N/A N/A
* INDEX REG 2 NOT EQUAL C000
*
30D8 C C7C0 DC A608 LDX 3
* N/A N/A N/A N/A C00C N/A
* INDEX REG 3 NOT EQUAL 000C
*
30D9 C C7C0 DC A6CA LDX 1
* N/A N/A FFFF N/A N/A N/A
* INDEX REG 1 NOT EQUAL FFFF
*
30DA C C7CA DC A60C LDX 2
* N/A N/A N/A FFFF N/A N/A
* INDEX REG 2 NOT EQUAL FFFF
*
30DB C C7E7 DC A60E LDX 3
* N/A N/A N/A N/A FFFF N/A
* INDEX REG 3 NOT EQUAL FFFF
*
30DC O C7F4 DC B6C0 LDX 1 LENG FCRP
* N/A N/A C001 N/A N/A N/A
* INDEX REG 1 NOT EQUAL 0001
*
30DE O C802 DC B6C2 LDX 3 INDIRECT
* N/A N/A N/A N/A FFFF N/A
* INDEX REG 3 NOT EQUAL FFFF
*
30DE C C816 DC A640 STX
* N/A N/A N/A N/A N/A N/A
* STX WITH NO TAG DID NOT STORE I-CTR CORRECT
*
30DF C C82D DC A642 STX 1
* N/A N/A 000C N/A N/A N/A
* INDEX REG 1 WAS NOT STORED BY STX
*
30E0 C C83A DC A644 STX 2
* N/A N/A N/A 0000 N/A N/A
* INDEX REG 2 NOT STORED BY STX
*
30E1 C C847 DC A646 STX 3
* N/A N/A N/A N/A C00C N/A
* INDEX REG 3 NOT STORED BY STX
*
30E2 C C854 DC A648 STX 1
* N/A N/A FFFF N/A N/A N/A
* INDEX REG 1 NOT STORED BY STX
*
30E3 C C862 DC A64A STX 2
* N/A N/A N/A FFFF N/A N/A

```

```

3A111590
3A111600
3A111610
3A111620
3A111630
3A111640
3A111650
3A111660
3A111670
3A111680
3A111690
3A111700
3A111710
3A111720
3A111730
3A111740
3A111750
3A111760
3A111770
3A111780
3A111790
3A111800
3A111810
3A111820
3A111830
3A111840
3A111850
3A111860
3A111870
3A111880
3A111890
3A111900
3A111910
3A111920
3A111930
3A111940
3A111950
3A111960
3A111970
3A111980
3A111990
3A12000
3A12010
3A12020
3A12030
3A12040
3A12050
3A12060
3A12070
3A12080
3A12090
3A12100
3A12110
3A12120
3A12130
3A12140
3A12150
3A12160
3A12170
3A12180
3A12190
3A12200
3A12210
3A12220
3A12230
3A12240
3A12250
3A12260

```

CPU FUNCTION TEST

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*****
* INDEX REG 2 NOT STORED BY STX
*****
ADDRESS
CF
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30E4 C C87C      DC      A64C      STX 3
* N/A N/A N/A N/A FFFF N/A
* INDEX REG 3 NOT STORED BY STX
*
30E5 C C8E2      DC      A680      ACC
* FFFF N/A N/A N/A N/A C AFTER LD+LDS
* FFFF N/A N/A N/A N/A C AFTER A
* ADD FFFF + 0000 TURNED ON CVERFLG
*
30E6 C C8E2      DC      A680      ADD
* FFFF N/A N/A N/A N/A N/A AFTER LD
* FFFF N/A N/A N/A N/A N/A AFTER A
* ADD FFFF + 0000 FAILED TO EQUAL FFFF
*
30E7 C C8F7      DC      A684      ACC
* FFFF N/A N/A N/A N/A OFF AFTER LD+LDS
* 0C0C N/A N/A N/A N/A C AFTER A
* ADD FFFF + 0C01 DID NOT TURN ON CARRY
*
30E8 C C8F7      DC      A684      ADD
* FFFF N/A N/A N/A N/A N/A AFTER LD+LDS
* 0000 N/A N/A N/A N/A N/A AFTER A
* ADD FFFF + 0001 DID NOT EQUAL 000C
*
30E9 C C90A      DC      A688      ACC
* FFFF N/A N/A N/A N/A OFF AFTER LD+LDS
* FFFF N/A N/A N/A N/A C AFTER A
* ADD FFFF + FFFF DID NOT TURN ON CARRY
*
30EA C C90A      DC      A688      ACC
* FFFF N/A N/A N/A N/A N/A AFTER LD+LDS
* FFFF N/A N/A N/A N/A N/A AFTER A
* ADD FFFF + FFFF DID NOT EQUAL FFFE
*
30EB C C91E      DC      A68C      ACC
* 4C00 N/A N/A N/A N/A OFF AFTER LD
* 8C00 N/A N/A N/A N/A C AFTER A
* ADD 4000 + 4000 DID NOT TURN ON CVERFLG
*
30EC C C91E      DC      A68C      ACC
* 4000 N/A N/A N/A N/A N/A
* ADD 40C0 + 40C0 DID NOT EQUAL 800C
*
30ED C C922      DC      B680      ACC
* 8C00 N/A N/A N/A N/A N/A AFTER LD
* 0C0C N/A N/A N/A N/A N/A AFTER A
* ADD 80C0 + 8000 NOT EQUAL C000
*
30EE C C922      DC      B680      ACC
* 8C00 N/A N/A N/A N/A OFF AFTER LD
* 0C0C N/A N/A N/A N/A C+C AFTER A

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CPU FUNCTION TEST

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*****
* ADD 8C00 + 8000 DID NOT TURN ON CVERFLG
*****
ADDRESS
CF
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30EF C C922      DC      B680      ACC
* 8000 N/A N/A N/A N/A OFF AFTER LD
* 0C0C N/A N/A N/A N/A C+C AFTER A
* ADD 8000 + 8000 DID NOT TURN ON CARRY
*
30FC C C95A      DC      A6C0      LDX 1
* N/A N/A FFF4 N/A N/A N/A
* INDEX REG 1 WAS NOT LOADED EQUAL FFF4
*
30F1 C C95A      DC      A6C0      LD 1
* N/A N/A FFF4 N/A N/A N/A
* A LOAD INSTR INDEXED BY INDEX REG 1
* LOADED THE WRONG LOCATION
*
30F2 C C972      DC      A6C2      LDX 2
* N/A N/A N/A 00C4 N/A N/A
* INDEX REG 2 NOT LOADED EQUAL 0004
*
30F3 C C972      DC      A6C2      LC 2
* N/A N/A N/A 00C4 N/A N/A
* A LOAD INSTR INDEXED BY INDEX REG 2
* LOADED THE WRONG LOCATION
*
30F4 C C98A      DC      A6C4      LDX 3
* N/A N/A N/A N/A C000 N/A
* INDEX REG 3 NOT LOADED EQUAL C000
*
30F5 C C98A      DC      A6C4      LC 3
* N/A N/A N/A N/A C00C N/A
* A LOAD INSTR INDEXED BY INDEX REG 3
* LOADED THE WRONG LOCATION
*
30F6 C C9A1      DC      A6C6      LDX 3
* N/A N/A N/A N/A 0001 N/A
* INDEX REG 3 NOT EQUAL C001
*
30F7 C C9A1      DC      A6C6      LC 3 LONG FORM
* N/A N/A N/A N/A C001 N/A
* A LONG FORM LOAD INDEXED BY INDEX REG 3
* LOADED THE WRONG LOCATION
*
30FE C C9B9      DC      A6C8      LDX 3
* N/A N/A N/A N/A FFFF N/A
* INDEX REG 3 NOT EQUAL FFFF
*
30F9 C C9B9      DC      A6C8      LC 3 INDIRECT
* N/A N/A N/A N/A FFFF N/A
* AN INDIRECT LOAD INDEXED BY INDEX REG 3
* LOADED THE WRONG LOCATION
*

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CPL FUNCTION TEST

```

*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
30FA C CA5E DC A7C0 SLE
* 0C00 N/A N/A N/A N/A N/A AFTER LC
* FFFF N/A N/A N/A N/A N/A AFTER S
* SLB C0C1 FROM C00C DID NOT EQUAL FFFF
*
30FE C CA5E DC A7C0 SLE
* 0C00 N/A N/A N/A N/A N/A OFF AFTER LC
* FFFF N/A N/A N/A N/A N/A 0 AFTER S
* SLB C0C1 FROM C00C DID NOT SET CARRY
*
30FC C CA55 DC A704 SLE
* 0000 N/A N/A N/A N/A N/A AFTER LD
* 0C01 N/A N/A N/A N/A N/A AFTER S
* SUB FFFF FROM C00C DID NOT EQUAL C0C1
*
30FD C CA55 DC A704 SLE
* 0C00 N/A N/A N/A N/A N/A OFF AFTER LC
* 0C01 N/A N/A N/A N/A N/A 0 AFTER S
* SUB FFFF FROM C00C DID NOT SET CARRY
*
30FE C CA6C DC A708 SLE
* 8000 N/A N/A N/A N/A N/A AFTER LC
* 7FFF N/A N/A N/A N/A N/A AFTER S
* SLB C0C1 FROM 800C DID NOT EQUAL 7FFF
*
30FF C CA6C DC A7C8 SLE
* 8000 N/A N/A N/A N/A N/A OFF AFTER LC
* 0001 N/A N/A N/A N/A N/A 0 AFTER CARRY
* AND OVERFLOW CONDITION HAS BEEN LOADED INTO
* ACCUMULATOR AS A NUMBER
* SUB C0C1 FROM 800C DID NOT TURN ON OVERFLOW
*
3100 C CA63 DC A70C SLE
* 0C00 N/A N/A N/A N/A N/A AFTER LC
* 8C00 N/A N/A N/A N/A N/A AFTER S
* SUB 8000 FROM C00C DID NOT EQUAL 8000
*
3101 C CA63 DC A70C SLE
* 0C00 N/A N/A N/A N/A N/A OFF AFTER LC
* 8C00 N/A N/A N/A N/A N/A C+C AFTER S
* SLB 8000 FROM C00C DID NOT TURN ON OVERFLOW
*
3102 C CA63 DC A7CC SLE
* 0000 N/A N/A N/A N/A N/A OFF AFTER LC
* 8C00 N/A N/A N/A N/A N/A C+C AFTER S
* SUB 8000 FROM C00C DID NOT TURN ON CARRY
*
3103 C CA6E DC A740 AC-C00C C00C
* FFFF FFFF N/A N/A N/A N/A AFTER LCD
* FFFF FFFF N/A N/A N/A N/A AFTER AC
* ACCUM NOT EQUAL FFFF
*
3A113630
3A113640
3A113650
3A113660
3A113670
3A113680
3A113690
3A113700
3A113710
3A113720
3A113730
3A113740
3A113750
3A113760
3A113770
3A113780
3A113790
3A113800
3A113810
3A113820
3A113830
3A113840
3A113850
3A113860
3A113870
3A113880
3A113890
3A113900
3A113910
3A113920
3A113930
3A113940
3A113950
3A113960
3A113970
3A113980
3A113990
3A114000
3A114010
3A114020
3A114030
3A114040
3A114050
3A114060
3A114070
3A114080
3A114090
3A114100
3A114110
3A114120
3A114130
3A114140
3A114150
3A114160
3A114170
3A114180
3A114190
3A114200
3A114210
3A114220
3A114230
3A114240
3A114250
3A114260
3A114270
3A114280
3A114290
3A114300

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CPL FUNCTION TEST

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*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3104 C CA6E DC A740 AC-C00C C00C
* FFFF FFFF N/A N/A N/A N/A AFTER LCD
* FFFF FFFF N/A N/A N/A N/A AFTER RTE
* Q REG NOT EQUAL FFFF
*
3105 C CA6E DC A740 AC-C00C C00C
* FFFF FFFF N/A N/A N/A N/A OFF AFTER LCD
* FFFF FFFF N/A N/A N/A N/A OFF AFTER RTE
* OVERFLOW SET SHOULD NOT BE
*
3106 C CA6E DC A740 AC-C000 C000
* FFFF FFFF N/A N/A N/A N/A OFF AFTER LCD
* FFFF FFFF N/A N/A N/A N/A OFF AFTER RTE
* CARRY SET-SHOULD NOT BE
*
3107 C CADD DC A746 AC-FFFF FFFF
* 0000 0001 N/A N/A N/A N/A AFTER LCD
* 0C00 C0C0 N/A N/A N/A N/A AFTER AC
* ACCUM NOT EQUAL C0C0
*
3108 C CADD DC A746 AC-FFFF FFFF
* 0000 C001 N/A N/A N/A N/A AFTER LCD
* 0000 C0C0 N/A N/A N/A N/A AFTER AC
* Q REG NOT EQUAL C0C0
*
3109 C CADD DC A746 AC-FFFF FFFF
* 0000 C001 N/A N/A N/A N/A OFF AFTER LCD
* 0000 C0C0 N/A N/A N/A N/A C AFTER AC
* OVERFLOW SET-SHOULD NOT BE
*
310A C CADD DC A746 AC-FFFF FFFF
* 0C00 C001 N/A N/A N/A N/A OFF AFTER LCD
* 0C00 C0C0 N/A N/A N/A N/A C AFTER AC
* CARRY NOT SET-SHOULD BE
*
310B C CB09 DC A74C AC-FFFF FFFF
* FFFF FFFF N/A N/A N/A N/A AFTER LCD
* FFFF FFFF N/A N/A N/A N/A AFTER AC
* ACCUM NOT EQUAL FFFF
*
310C C CB09 DC A74C AC-FFFF FFFF
* FFFF FFFF N/A N/A N/A N/A AFTER LCD
* FFFF FFFF N/A N/A N/A N/A AFTER AC
* Q REG NOT EQUAL FFFF
*
310D C CB09 DC A74C AC-FFFF FFFF
* FFFF FFFF N/A N/A N/A N/A OFF AFTER LCD
* FFFF FFFF N/A N/A N/A N/A C AFTER AC
* OVERFLOW CN-SHOULD NOT BE
*
3A114310
3A114320
3A114330
3A114340
3A114350
3A114360
3A114370
3A114380
3A114390
3A114400
3A114410
3A114420
3A114430
3A114440
3A114450
3A114460
3A114470
3A114480
3A114490
3A114500
3A114510
3A114520
3A114530
3A114540
3A114550
3A114560
3A114570
3A114580
3A114590
3A114600
3A114610
3A114620
3A114630
3A114640
3A114650
3A114660
3A114670
3A114680
3A114690
3A114700
3A114710
3A114720
3A114730
3A114740
3A114750
3A114760
3A114770
3A114780
3A114790
3A114800
3A114810
3A114820
3A114830
3A114840
3A114850
3A114860
3A114870
3A114880
3A114890
3A114900
3A114910
3A114920
3A114930
3A114940
3A114950
3A114960
3A114970
3A114980

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CPU FUNCTION TEST

```

*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
310E C CECS DC A74C AC-FFFF FFFF
* FFFF FFFF N/A N/A N/A CFF AFTER LCD
* FFFF FFFE N/A N/A N/A C AFTER AC
* CARRY NOT ON-SHOULD BE
*
310F C CE33 DC B742 AC-FFFF FFFF
* FFFF 7FFF N/A N/A N/A N/A AFTER LCD
* FFFF 7FFE N/A N/A N/A N/A AFTER AC
* ACCUM NOT EQUAL FFFF
*
3110 C CE33 DC B742 AC-FFFF FFFF
* FFFF 7FFF N/A N/A N/A N/A AFTER LCD
* FFFF 7FFE N/A N/A N/A N/A AFTER AC
* Q REG NOT EQUAL 7FFE
*
3111 C CE33 DC B742 AC-FFFF FFFF
* FFFF 7FFF N/A N/A N/A OFF AFTER LCD
* FFFF 7FFE N/A N/A N/A C AFTER AC
* OVERFLOW SET-SHOULD NOT BE
*
3112 C CE33 DC B742 AC-FFFF FFFF
* FFFF 7FFF N/A N/A N/A CFF AFTER LCD
* FFFF 7FFE N/A N/A N/A C AFTER AC
* CARRY NOT SET-SHOULD BE
*
3113 C CE5C DC B747 AC-C001 CDC LCC
* 0000 0001 N/A N/A N/A N/A AFTER LCD
* 0001 0002 N/A N/A N/A N/A AFTER AC
* ACCUM NOT EQUAL 0001
*
3114 C CE5D DC B747 AD-C001 CDC LCC
* 0000 0001 N/A N/A N/A N/A AFTER LCD
* 0001 0002 N/A N/A N/A N/A AFTER AC
* Q REG NOT EQUAL 0002
*
3115 C CB7F DC A780 SC-C00C 00C1
* 0000 C0C0 N/A N/A N/A N/A AFTER LCD
* FFFF FFFF N/A N/A N/A N/A AFTER SC
* ACCUM NOT EQUAL FFFF
*
3116 C CB7F DC A780 SC-CC00 00C1
* 0000 C0C0 N/A N/A N/A N/A AFTER LCD
* FFFF FFFF N/A N/A N/A N/A AFTER SC
* Q REG NOT EQUAL FFFF
*
3117 C CB7F DC A780 SC-CC0C 00C1
* 0000 C0C0 N/A N/A N/A CFF AFTER LCD
* FFFF FFFF N/A N/A N/A C AFTER SC
* OVERFLOW ON-SHOULD NOT BE
*
3A114990
3A115000
3A115010
3A115020
3A115030
3A115040
3A115050
3A115060
3A115070
3A115080
3A115090
3A115100
3A115110
3A115120
3A115130
3A115140
3A115150
3A115160
3A115170
3A115180
3A115190
3A115200
3A115210
3A115220
3A115230
3A115240
3A115250
3A115260
3A115270
3A115280
3A115290
3A115300
3A115310
3A115320
3A115330
3A115340
3A115350
3A115360
3A115370
3A115380
3A115390
3A115400
3A115410
3A115420
3A115430
3A115440
3A115450
3A115460
3A115470
3A115480
3A115490
3A115500
3A115510
3A115520
3A115530
3A115540
3A115550
3A115560
3A115570
3A115580
3A115590
3A115600
3A115610
3A115620
3A115630
3A115640
3A115650
3A115660

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CPU FUNCTION TEST

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*****
ADDRESS *
CF *
E-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
311E C CE7F DC A780 SC-C00C 00C1
* 0000 C0C0 N/A N/A N/A CFF AFTER LCD
* FFFF FFFF N/A N/A N/A C AFTER SC
* CARRY NOT ON-SHOULD BE
*
311S C CEAS DC A786 SC-FFFF FFFF
* 0000 C0C0 N/A N/A N/A N/A AFTER LCD
* 0000 C001 N/A N/A N/A N/A AFTER SC
* ACCUM NOT EQUAL TC 000C
*
311A C CEAS DC A786 SC-FFFF FFFF
* 0000 C0C0 N/A N/A N/A N/A AFTER LCD
* 0000 C0C1 N/A N/A N/A N/A AFTER SC
* Q REG NOT EQUAL 0001
*
311E C CBBE DC A78A SC-FFFF FFFF
* 0000 C000 N/A N/A N/A N/A AFTER LCD
* 0000 C001 N/A N/A N/A N/A AFTER SC
* ACCUM NOT EQUAL 0000
*
311C C CBBE DC A78A SC-FFFF FFFF
* 0000 C000 N/A N/A N/A N/A AFTER LCD
* 0000 C001 N/A N/A N/A N/A AFTER SC
* Q REG NOT EQUAL 0001
*
311D C CE02 DC A78E SC-FFFF CDC LOC
* 0000 C0C0 N/A N/A N/A N/A AFTER LCD
* 0000 0001 N/A N/A N/A N/A AFTER SC
* ACCUM NOT EQUAL 0000
*
311E C CBD2 DC A78E SD-FFFF 00C LCC
* 0000 0000 N/A N/A N/A N/A AFTER LCD
* 0000 C001 N/A N/A N/A N/A AFTER SC
* Q REG NOT EQUAL 0001
*
311F C CBF2 DC A7C0 MULT-2AAA
* 5555 N/A N/A N/A N/A N/A AFTER LD
* 0E38 9C72 N/A N/A N/A N/A AFTER M
* ACCUM NOT EQUAL 0E38
*
312C C CBF2 DC A7C0 MULT-2AAA
* 5555 N/A N/A N/A N/A N/A AFTER LD
* 0E38 9C72 N/A N/A N/A N/A AFTER M
* Q REG NOT EQUAL 9C72
*
3121 C C0C7 DC A7C4 MULT-FFFF
* FFFF N/A N/A N/A N/A N/A AFTER LD
* 0000 C0C1 N/A N/A N/A N/A AFTER M
* ACCUM NOT EQUAL 0000
*
3A115670
3A115680
3A115690
3A115700
3A115710
3A115720
3A115730
3A115740
3A115750
3A115760
3A115770
3A115780
3A115790
3A115800
3A115810
3A115820
3A115830
3A115840
3A115850
3A115860
3A115870
3A115880
3A115890
3A115900
3A115910
3A115920
3A115930
3A115940
3A115950
3A115960
3A115970
3A115980
3A115990
3A116000
3A116010
3A116020
3A116030
3A116040
3A116050
3A116060
3A116070
3A116080
3A116090
3A116100
3A116110
3A116120
3A116130
3A116140
3A116150
3A116160
3A116170
3A116180
3A116190
3A116200
3A116210
3A116220
3A116230
3A116240
3A116250
3A116260
3A116270
3A116280
3A116290
3A116300
3A116310
3A116320
3A116330
3A116340

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CPU FUNCTION TEST

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*****
ADDRESS *
CF *
E-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
3122 C CC7      DC      A7C4      MULT-FFFF      3A116350
* FFFF N/A N/A N/A N/A N/A AFTER LD      3A116360
* 0000 C0C1 N/A N/A N/A N/A AFTER M      3A116370
* Q REG NOT EQUAL 00C1                      3A116380
*                                           3A116390
*                                           3A116400
*                                           3A116410
*                                           3A116420
*                                           3A116430
*                                           3A116440
*                                           3A116450
*                                           3A116460
*                                           3A116470
3123 C CC1E     DC      A7C8      MULT-FFFF      3A116480
* 0000 N/A N/A N/A N/A N/A AFTER LD      3A116490
* 0000 C0C0 N/A N/A N/A N/A AFTER M      3A116500
* ACCUM NOT EQUAL 00C0                      3A116510
*                                           3A116520
*                                           3A116530
3124 C CC1B     DC      A7C8      MULT-FFFF      3A116540
* 0000 N/A N/A N/A N/A N/A AFTER LD      3A116550
* 0000 C0C0 N/A N/A N/A N/A AFTER M      3A116560
* Q REG NOT EQUAL 00C0                      3A116570
*                                           3A116580
*                                           3A116590
3125 C CC2E     DC      A7CC      MULT-0000      3A116600
* FFFF N/A N/A N/A N/A N/A AFTER LD      3A116610
* 0000 C0C0 N/A N/A N/A N/A AFTER M      3A116620
* ACCUM NOT EQUAL 00C0                      3A116630
*                                           3A116640
*                                           3A116650
3126 C CC2E     DC      A7CC      MULT-0000      3A116660
* FFFF N/A N/A N/A N/A N/A AFTER LD      3A116670
* 0000 C000 N/A N/A N/A N/A AFTER M      3A116680
* Q REG NOT EQUAL 00C0                      3A116690
*                                           3A116700
*                                           3A116710
3127 C CC49     DC      A800      DVC-8000      3A116720
* 4C0C 7FFF N/A N/A N/A N/A AFTER LCD      3A116730
* 8C0C 7FFF N/A N/A N/A N/A AFTER C      3A116740
* ACCUM NOT EQUAL 8C0C                      3A116750
*                                           3A116760
*                                           3A116770
3128 C CC49     DC      A8C0      DVC-8000      3A116780
* 4000 7FFF N/A N/A N/A N/A AFTER LCD      3A116790
* 8000 7FFF N/A N/A N/A N/A AFTER C      3A116800
* Q REG NOT EQUAL 7FFF                      3A116810
*                                           3A116820
*                                           3A116830
3129 C CC49     DC      A800      DVC-8000      3A116840
* 4000 7FFF N/A N/A N/A N/A AFTER LCD      3A116850
* 8000 7FFF N/A N/A N/A N/A AFTER C      3A116860
* OVERFLW CN-SHCULD NOT BE                 3A116870
*                                           3A116880
*                                           3A116890
312A C CC49     DC      A800      DVC-8000      3A116900
* 4C00 7FFF N/A N/A N/A CFF AFTER LCD      3A116910
* 8C00 7FFF N/A N/A N/A N/A AFTER C      3A116920
* CARRY CN-SHCULD NOT BE                   3A116930
*                                           3A116940
*                                           3A116950
312B C CC78     DC      A806      DVC-5555      3A116960
* 1C71 BBE3 N/A N/A N/A N/A AFTER LCD      3A116970
* 5555 2DAA N/A N/A N/A N/A AFTER C      3A116980
* ACCUM NOT EQUAL 5555                     3A116990
*                                           3A117000
*                                           3A117010
*                                           3A117020

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CPU FUNCTION TEST

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*****
ADDRESS *
CF *
E-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
312C C CC78     DC      A806      DVC-5555      3A117030
* 1C71 BBE3 N/A N/A N/A N/A AFTER LCD      3A117040
* 5555 2DAA N/A N/A N/A N/A AFTER C      3A117050
* Q REG NOT EQUAL 2EAA                      3A117060
*                                           3A117070
*                                           3A117080
*                                           3A117090
312D C- CC76    DC      A8C6      DVC-5555      3A117100
* 1C71 BBE3 N/A N/A N/A N/A CFF AFTER LCD      3A117110
* 5555 2DAA N/A N/A N/A N/A AFTER C      3A117120
* OVERFLW CN-SHCULD NOT BE                 3A117130
*                                           3A117140
*                                           3A117150
312E C CC78     DC      A8C6      DVC-5555      3A117160
* 1C71 BBE3 N/A N/A N/A N/A CFF AFTER LCD      3A117170
* 5555 2DAA N/A N/A N/A N/A AFTER C      3A117180
* CARRY CN-SHCULD NOT BE                   3A117190
*                                           3A117200
*                                           3A117210
312F C CCA3     DC      A8CC      DVC-0000      3A117220
* 0000 00C1 N/A N/A N/A N/A CFF AFTER LCD      3A117230
* N/A N/A N/A N/A N/A C AFTER C            3A117240
* OVERFLW NOT CN-SHCULD BE                 3A117250
*                                           3A117260
*                                           3A117270
3130 C CCAE     DC      A80E      DVC-0001      3A117280
* 4000 C0C0 N/A N/A N/A N/A CFF AFTER LCD      3A117290
* N/A N/A N/A N/A N/A C AFTER C            3A117300
* OVERFLW NOT CN-SHCULD BE                 3A117310
*                                           3A117320
*                                           3A117330
3131 C CC85     DC      B8C0      DVC-4000      3A117340
* A000 00C0 N/A N/A N/A N/A CFF AFTER LCD      3A117350
* N/A N/A N/A N/A N/A C AFTER C            3A117360
* OVERFLW NOT CN-SHCULD BE                 3A117370
*                                           3A117380
*                                           3A117390
3132 C CCC4     DC      B802      DVC-8000      3A117400
* C000 C0C0 N/A N/A N/A N/A CFF AFTER LCD      3A117410
* N/A N/A N/A N/A N/A C AFTER C            3A117420
* OVERFLW CFF--SHOULD BE CN                3A117430
*                                           3A117440
*                                           3A117450
3133 C CCCF     DC      B804      DVC-0001      3A117460
* 0000 FFFF N/A N/A N/A N/A CFF AFTER LCD      3A117470
* N/A N/A N/A N/A N/A C AFTER C            3A117480
* OVERFLW CFF--SHOULD BE CN                3A117490
*                                           3A117500
*                                           3A117510
3134 C CCDA     DC      B806      DVC-0001      3A117520
* FFFF 7FFF N/A N/A N/A N/A CFF AFTER LCD      3A117530
* N/A N/A N/A N/A N/A C AFTER C            3A117540
* OVERFLW CFF--SHOULD BE CN                3A117550
*                                           3A117560
*                                           3A117570
3135 C CD5C     DC      A840      PCX 1          3A117580
* N/A N/A N/A 000C N/A N/A N/A AFTER LCX      3A117590
* N/A N/A N/A FFFF N/A N/A N/A AFTER PCX 1  3A117600
* INDEX REG 1 NOT EQUAL FFFF WHEN PCIFIED  3A117610
* BY MINUS 1                                3A117620
*                                           3A117630
*                                           3A117640
*                                           3A117650
*                                           3A117660
*                                           3A117670
*                                           3A117680
*                                           3A117690
3136 C CD6A     DC      A842      PCX LONG FCMP  3A117700

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CPU FUNCTION TEST

CPU FUNCTION TEST

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***** * ADD +1 TO MEMORY FAILED 3A117710
***** * 3A117720
ADDRESS * 3A117730
CF * 3A117740
B-REG ROUTINE * A-REG Q-REG XR-1 XR-2 XR-3 STATUS 3A117750
***** * 3A117760
* 3A117770
* 3A117780
3137 C CC7F * DC A844 MDX 2 LONG FORM 3A117790
* N/A N/A N/A FFFF N/A N/A AFTER LDX 3A117800
* N/A N/A N/A FFFF N/A N/A AFTER MDX 2 3A117810
* INDEX REG 2 NOT EQUAL TO FFFF AFTER MDX +1 3A117820
* TC INDEX REG 2 3A117830
* 3A117840
* 3A117850
3138 C CC8E * DC A846 MDX 3 3A117860
* N/A N/A N/A N/A FFFF N/A AFTER LDX 3A117870
* N/A N/A N/A N/A C00C N/A AFTER MDX 2 3A117880
* MDX DID NOT CAUSE A SKIP WHEN INDEX REG 3 3A117890
* WENT TO C00C 3A117900
* 3A117910
* 3A117920
3139 C CC98 * DC A848 MDX 1 3A117930
* N/A N/A FFFF N/A N/A N/A AFTER LDX 3A117940
* N/A N/A 0003 N/A N/A N/A AFTER MDX 1 3A117950
* MDX DID NOT CAUSE A SKIP WHEN THE SIGN 3A117960
* CHANGED ON INDEX REG 1 3A117970
* 3A117980
* 3A117990
313A C CCA2 * DC A849 MDX 1 INDIRECT 3A118000
* N/A N/A FFFF N/A N/A N/A AFTER LDX 3A118010
* N/A N/A FFFF N/A N/A N/A AFTER LDX 11 3A118020
* INDIRECT MDX OF INDEX REG 1 BY +1 FAILED 3A118030
* 3A118040
* 3A118050
313B C CCB5 * DC A880 SLCA-XR 1 3A118060
* 0000 N/A 001C N/A N/A N/A AFTER LDX 3A118070
* 0000 N/A C00C N/A N/A N/A AFTER SLCA 3A118080
* ACCUM NOT EQUAL C00C 3A118090
* 3A118100
* 3A118110
313C C CCB5 * DC A880 SLCA-XR 1 3A118120
* 0000 N/A 001C N/A N/A N/A AFTER LDX 3A118130
* 0000 N/A 000C N/A N/A N/A AFTER SLAC 3A118140
* INDEX REG 1 NOT EQUAL C00C 3A118150
* 3A118160
* 3A118170
313D C CDFC * DC A884 SLCA-XR 1 3A118180
* 0001 N/A FFDC N/A N/A N/A AFTER LDX 3A118190
* 8000 N/A FFC1 N/A N/A N/A AFTER ASCL 3A118200
* ACCUM NOT EQUAL 8000 3A118210
* 3A118220
* 3A118230
313E C CCFC * DC A884 SLCA-XR 1 3A118240
* 0001 N/A FFDC N/A N/A N/A AFTER LDX 3A118250
* 8000 N/A FFC1 N/A N/A N/A AFTER LDX 3A118260
* INDEX REG 1 NOT EQUAL FFC1 3A118270
* 3A118280
* 3A118290
313F C CE24 * DC A888 SLCA-XR 1 3A118300
* 8000 N/A 001C N/A N/A N/A AFTER LDX 3A118310
* 8000 N/A 001C N/A N/A N/A AFTER SLCA 3A118320
* ACCUM NOT EQUAL 8000 3A118330
* 3A118340
* 3A118350
3140 C CE24 * DC A8E8 SLCA-XR 1 3A118360
* 8000 N/A 001C N/A N/A N/A AFTER LDX 3A118370
* 8000 N/A 001C N/A N/A N/A AFTER SLCA 3A118380

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***** * INDEX REG 1 NOT EQUAL C01C 3A118390
***** * 3A118400
ADDRESS * 3A118410
CF * 3A118420
B-REG ROUTINE * A-REG Q-REG XR-1 XR-2 XR-3 STATUS 3A118430
***** * 3A118440
* 3A118450
* 3A118460
3141 C CEF5 * DC A88C SLC-XR 1 3A118470
* 0000 0000 002C N/A N/A N/A AFTER LDX 3A118480
* 0000 0000 000C N/A N/A N/A AFTER SLC 3A118490
* ACCUM NOT EQUAL 0000 3A118500
* 3A118510
* 3A118520
3142 C CEF5 * DC A88C SLC-XR 1 3A118530
* 0000 0000 002C N/A N/A N/A AFTER LDX 3A118540
* 0000 0000 000C N/A N/A N/A AFTER SLC 3A118550
* REG NOT EQUAL 0000 3A118560
* 3A118570
* 3A118580
3143 C CEF5 * DC A88C SLC-XR 1 3A118590
* 0000 0000 002C N/A N/A N/A AFTER LDX 3A118600
* 0000 0000 000C N/A N/A N/A AFTER SLC 3A118610
* INDEX REG 1 NOT EQUAL 0000 3A118620
* 3A118630
* 3A11864C
3144 C CE7E * DC B8E2 SLC-XR 1 3A118650
* 0000 0002 FFDF N/A N/A N/A AFTER LDX 3A118660
* 8000 0000 FFC1 N/A N/A N/A AFTER SLC 3A118670
* ACCUM NOT EQUAL 8000 3A118680
* 3A118690
3145 C CE7E * DC B882 SLC-XR 1 3A118700
* 0000 0002 FFDF N/A N/A N/A AFTER LDX 3A118710
* 8000 0000 FFC1 N/A N/A N/A AFTER SLC 3A118720
* Q REG NOT EQUAL 0000 3A118730
* 3A118740
* 3A118750
* 3A118760
3146 C CE7E * DC B8E2 SLC-XR 1 3A118770
* 0000 0002 FFDF N/A N/A N/A AFTER LDX 3A118780
* 8000 0000 FFC1 N/A N/A N/A AFTER SLC 3A118790
* INDEX REG 1 NOT EQUAL FFC1 3A118800
* 3A118810
* 3A118820
3147 C CEAC * DC B884 SLC-XR 1 3A118830
* 0000 0002 001F N/A N/A N/A AFTER LDC+LDX 3A118840
* 8000 0000 0001 N/A N/A C AFTER SLC 3A118850
* A SLC TERMINATED BY A CNE BIT IN ACCUM BIT 3A118860
* ZERO DID NOT TURN ON CARRY 3A118870
* 3A118880
* 3A118890
3148 C CEAC * DC B8E4 SLC-XR 1 3A118900
* 0000 0002 001F N/A N/A N/A AFTER LDC+LDX 3A118910
* 8000 0000 0001 N/A N/A C AFTER SLC 3A118920
* ACCUM WAS NOT EQUAL TO 8000 3A118930
* 3A118940
* 3A118950
3149 C CEAC * DC B8E4 SLC-XR 1 3A118960
* 0000 0002 001F N/A N/A N/A AFTER LDC+LDX 3A118970
* 8000 0002 0001 N/A N/A C AFTER SLC 3A118980
* A SLC TERMINATED BY A CNE IN ACCUM BIT 3A118990
* ZERO DID NOT LEAVE XR 1 EQUAL 0001 3A119000
* 3A119010
* 3A119020
314A C CECO * DC B8E5 SLC-IX 1 3A119030
* 0000 0002 001C N/A N/A N/A AFTER LDC+LDX 3A119040
* 2000 0000 000C N/A N/A OFF AFTER SLC 3A119050
* A SLC TERMINATED BY XR 1 CCING TO ZERO LEFT 3A119060

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CPL FNCTION TEST

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*****
* THE CARRY FF SET
*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
*
*
314E C CECC * DC B8A0 CMP A GREATER M
* 4000 N/A N/A N/A N/A N/A
* A GREATER THAN M CMP FAILED
*
*
314C C CECC * DC B8A0 CMP A GREATER M
* 4000 N/A N/A N/A N/A N/A AFTER LC
* 4000 N/A N/A N/A N/A N/A AFTER CMP
* ACC DISTROYED AFTER CMP
*
*
314C C CEF7 * DC B8A1 CMP A LESS M
* 0000 N/A N/A N/A N/A N/A
* ACC LESS THAN M FAILS
*
*
314E C CF01 * DC B8A2 CMP A LESS M
* 0000 N/A N/A N/A N/A N/A
* ACC LESS THAN M FAILS
*
*
314F C CF0B * DC B8A3 CMP A LESS M
* 0000 N/A N/A N/A N/A N/A
* ACC LESS THAN M FAILS
*
*
3150 O OF15 * DC B8A4 CMP A LESS M
* 8000 N/A N/A N/A N/A N/A
* ACC LESS THAN M FAILS
*
*
3151 O CF1F * DC B8A5 CMP A EQ M
* 1000 N/A N/A N/A N/A N/A
* ACC EQ M FAILED
*
*
3152 O CF2A * DC B8C0 DCM AC GTR M, M+1
* 8000 C001 N/A N/A N/A N/A
* DCM AC GREATER THAN M, M+1 FAILED
*
*
3153 O CF2A * DC B8C0 DCM AC GTR M, M+1
* 8000 C001 N/A N/A N/A N/A
* ACC DISTROYED AFTER COM
*
*
3154 O CF2A * DC B8C0 DCM AC GTR M, M+1
* 8000 C001 N/A N/A N/A N/A
* Q REG DISTROYED AFTER COM
*
*
3155 O CF44 * DC B8C1 DCM AC LESS M, M+1
* 0000 8000 N/A N/A N/A N/A
* DCM FAILED WHEN A,C LESS THAN M, M+1
*
*
3156 O CF4C * DC B8C2 DCM AC EC M, M+1
* 0000 8000 N/A N/A N/A N/A
* DCM FAILED WHEN A,C EC M, M+1
*
*****
3A119070
3A119080
3A119090
3A119100
3A119110
3A119120
3A119130
3A119140
3A119150
3A119160
3A119170
3A119180
3A119190
3A119200
3A119210
3A119220
3A119230
3A119240
3A119250
3A119260
3A119270
3A119280
3A119290
3A119300
3A119310
3A119320
3A119330
3A119340
3A119350
3A119360
3A119370
3A119380
3A119390
3A119400
3A119410
3A119420
3A119430
3A119440
3A119450
3A119460
3A119470
3A119480
3A119490
3A119500
3A119510
3A119520
3A119530
3A119540
3A119550
3A119560
3A119570
3A119580
3A119590
3A119600
3A119610
3A119620
3A119630
3A119640
3A119650
3A119660
3A119670
3A119680
3A119690
3A119700
3A119710
3A119720
3A119730
3A119740

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CPU FNCTION TEST

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*****
ADDRESS *
CF *
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
*
*
3157 C CE85 * DC A660 LCX 1 -1
* N/A N/A C000 0000 C000 N/A AFTER LCX'S
* N/A N/A FFFF 0000 C000 N/A AFTER LCX 1
* INDEX 2 CHANGED
*
*
315E C CE85 * DC A660 LCX 1 -1
* N/A N/A C000 0000 C000 N/A AFTER LCX'S
* N/A N/A FFFF 0000 C000 N/A AFTER LCX 1
* INDEX 3 CHANGED
*
*
3159 C CE9D * DC A662 LCX 2 -1
* N/A N/A C000 0000 C000 N/A AFTER LCX'S
* N/A N/A C000 FFFF 0000 N/A AFTER LCX 2
* INDEX 1 CHANGED
*
*
315A C CE9D * DC A662 LCX 2 -1
* N/A N/A C000 0000 C000 N/A AFTER LCX'S
* N/A N/A C000 FFFF 0000 N/A AFTER LCX 2
* INDEX 3 CHANGED
*
*
315B C CE8E * DC A664 LCX 3 -1
* N/A N/A C000 0000 C000 N/A AFTER LCX'S
* N/A N/A C000 0000 FFFF N/A AFTER LCX 3
* INDEX 1 CHANGED
*
*
315C C CE85 * DC A664 LDX 3 -1
* N/A N/A C000 0000 C000 N/A AFTER LCX'S
* N/A N/A C000 0000 FFFF N/A AFTER LCX 3
* INDEX 2 CHANGED
*
*
315D C C9E2 * DC A6C0 INDEXED INST F=C
* INITIALLY XR 1 HAS CORE LOCATION CF
* SYMBOLIC LABEL N6C1
* AFTER THE TEST THE ACC SHOULD HAVE
* CORE LOCATION OF SYMBOLIC LABEL N6CC
* SHORT FORM INDEXED INST FAILED (X=1)
*
*
315E C C9EE * DC A6D2 INDEXED INST F=C
* INITIALLY XR 2 HAS CORE LOCATION CF
* SYMBOLIC LABEL N6C1
* AFTER THE TEST THE ACC SHOULD HAVE
* CORE LOCATION OF SYMBOLIC LABEL N6C2
* SHORT FORM INDEXED INST FAILED (X=2)
*
*
315F C C9FA * DC A6D3 INDEXED INST F=C
* INITIALLY XR 3 HAS CORE LOCATION CF
* SYMBOLIC LABEL N6C1
* AFTER THE TEST THE ACC SHOULD HAVE
* CORE LOCATION OF SYMBOLIC LABEL N6C1
* SHORT FORM INDEXED INST. FAILED (X=3)
*
*****
3A119750
3A119760
3A119770
3A119780
3A119790
3A119800
3A119810
3A119820
3A119830
3A119840
3A119850
3A119860
3A119870
3A119880
3A119890
3A119900
3A119910
3A119920
3A119930
3A119940
3A119950
3A119960
3A119970
3A119980
3A119990
3A120000
3A120010
3A120020
3A120030
3A120040
3A120050
3A120060
3A120070
3A120080
3A120090
3A120100
3A120110
3A120120
3A120130
3A120140
3A120150
3A120160
3A120170
3A120180
3A120190
3A120200
3A120210
3A120220
3A120230
3A120240
3A120250
3A120260
3A120270
3A120280
3A120290
3A120300
3A120310
3A120320
3A120330
3A120340
3A120350
3A120360
3A120370
3A120380
3A120390
3A120400
3A120410
3A120420

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CPL FUNCTION TEST

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*****
ADDRESS
OF
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
316C C CD5 DC A880 SLCA CK CARRY
* 0003 FFFF G00A N/A N/A C AFTER LED+LDS
* 0000 FFFF 0000 N/A N/A OFF AFTER STS
* CARRY CN SHOULD BE OFF
*
3161 C CCFC DC A884 SLCA CK CARRY
* 0003 C010 FFC0 N/A N/A CFF AFTER LED+LDS
* 8000 C010 FF01 N/A N/A C AFTER SLCA
* CARRY CFF, SHOULD BE CN
*
3162 C CE41 DC A889 NCA INDEXED SLCA
* 0001 N/A 0010 0010 C010 N/A AFTER LC
* 0002 N/A N/A N/A N/A AFTER SLCA
* SLCA T=0 FAILED
*
3163 C CA06 DC A6D5 INDEXED SLA
* 0001 N/A C002 N/A N/A N/A AFTER LE+LDS
* 0004 N/A N/A N/A N/A AFTER SLA
* INDEXED SLA FAILED
*
3164 C CA12 DC A6D6 INDEXED SRA
* 0004 N/A N/A 0002 N/A N/A AFTER LEX+LD
* 0001 N/A N/A N/A N/A AFTER SRA
* INDEXED SRA FAILED
*
3165 C CA1E DC A6F0 INDEXED BSC
* INITIALLY ACC HAS CORE LOCATION OF
* SYMBOLIC LABEL N6F1
* ACC DESTROYED AFTER INDEXED BSC
*
3166 C CA2F DC A6F1 INDIR, INDEX BSC
* N/A N/A C001 N/A N/A N/A AFTER LEX
* N/A N/A N/A N/A N/A AFTER ESC
* INDIRECT, INDEXED BSC FAILED
*
3167 C CE1E DC A640 STX CK ACC
* INITIALLY ACC HAS CORE LOCATION OF
* SYMBOLIC LABEL F640
* ACC DESTROYED AFTER STX
*
3168 C CA2 DC A849 MDX CK ACC
* INITIALLY ACC HAS CORE LOCATION OF
* SYMBOLIC LABEL F849
* ACC DESTROYED AFTER MDX
*
3169 C CECF DC A670 ACC DECODE
* 0001 N/A 0010 N/A N/A N/A
* 0000 N/A C000 N/A N/A N/A
* FALSE DECODE OF ACC BE ZERC
* * EACH BIT POSITION IS TESTED
*
3A120430
3A120440
3A120450
3A120460
3A120470
3A120480
3A120490
3A120500
3A120510
3A120520
3A120530
3A120540
3A120550
3A120560
3A120570
3A120580
3A120590
3A120600
3A120610
3A120620
3A120630
3A120640
3A120650
3A120660
3A120670
3A120680
3A120690
3A120700
3A120710
3A120720
3A120730
3A120740
3A120750
3A120760
3A120770
3A120780
3A120790
3A120800
3A120810
3A120820
3A120830
3A120840
3A120850
3A120860
3A120870
3A120880
3A120890
3A120900
3A120910
3A120920
3A120930
3A120940
3A120950
3A120960
3A120970
3A120980
3A120990
3A121000
3A121010
3A121020
3A121030
3A121040
3A121050
3A121060
3A121070
3A121080
3A121090
3A121100

```

CPL FUNCTION TEST

```

*****
ADDRESS
CF
B-REG ROUTINE * A-REG C-REG XR-1 XR-2 XR-3 STATUS
*****
316A C C00A DC B807 DVC OVFLC
* 6100 C0CC N/A N/A N/A CFF AFTER LCD
* N/A N/A N/A N/A N/A C AFTER C
* OVFLD NGT ON
*
316B C C015 DC B808 DVC OVFLC
* 80C0 C0C0 N/A N/A N/A CFF AFTER LCD
* N/A N/A N/A N/A N/A C AFTER C
* OVFLD NGT ON
*
316C C C020 DC B809 DVC NC OVFLC
* FFFF FFFF N/A N/A N/A CFF AFTER LCD
* N/A N/A N/A N/A N/A CFF AFTER C
* OVFLD CN, SHOULD BE OFF
*
316E C C02C DC B810 MPY-DIV ZERC REM
* ACC WRONG AFTER MPY-DIV TEST
*
316E C C02C DC B810 MPY-DIV ZERC REM
* Q REG WRONG AFTER MPY-DIV TEST
*
316F C C06A DC A842 MDX CK ACC
* INITIALLY ACC HAS CORE LOCATION OF
* SYMBOLIC LABEL N844
* ACC DESTROYED AFTER ACC TC MEMORY
*
317C C C002 DC A50A BSC CK ACC
* 8001 N/A N/A N/A N/A N/A AFTER LC
* 8C01 N/A N/A N/A N/A N/A AFTER ESC
* ACC DESTROYED AFTER BSC CONDITIONS MET
*
3171 C C0B6 DC A84A MDX MEM CK SKIP
* MEMORY LOC HAS ZERC
* MDX FAILED TC SKIP
*
3172 C C0C2 DC A85A MDX MEM CK NC SKP
* MEMORY LOC IS NON ZERO
* MDX SKIPPED, SHOULD NOT HAVE
*
3173 C CE51 DC A88A SW 15 NC INDEX
* 0000 FFFF 0010 0010 0010 AFTER LEX*S
* 7FFF N/A N/A N/A N/A AFTER SLC
* ACCUM NCT EC TO 7FFF
*
3174 C CF6F DC F000 IMPROPER CONTROL
* OPERATION SPECIFIED,
* BIT SW 14 CN WITHCUT
* BIT SW 8 OR 12 ON.
* CORRECT SW AND PUSH
* START TC CONTINUE
*
3A121110
3A121120
3A121130
3A121140
3A121150
3A121160
3A121170
3A121180
3A121190
3A121200
3A121210
3A121220
3A121230
3A121240
3A121250
3A121260
3A121270
3A121280
3A121290
3A121300
3A121310
3A121320
3A121330
3A121340
3A121350
3A121360
3A121370
3A121380
3A121390
3A121400
3A121410
3A121420
3A121430
3A121440
3A121450
3A121460
3A121470
3A121480
3A121490
3A121500
3A121510
3A121520
3A121530
3A121540
3A121550
3A121560
3A121570
3A121580
3A121590
3A121600
3A121610
3A121620
3A121630
3A121640
3A121650
3A121660
3A121670
3A121680
3A121690
3A121700
3A121710
3A121720
3A121730
3A121740
3A121750
3A121760
3A121770
3A121780

```

CPU FNCTION TEST

```

*****
ORG          3C0
NOP
*****

TEST MCX OPERATION
*****
CORE DATA CR *LA- OPER-
ADDR INSTRUCTION *BEL ATION FT GPERANCS + REMARKS IC+SEC= AT RIGHT
*****
C12C C 3CC0 X000 DC /3C00 SET SWITCHES TC RUN
C12E C 7CC1 AG8C MDX G080
C12F C 3CC4 DC /3004 ERR ID + ERR WAIT
MDX BY 1 FAILEC
C13C C 7CC2 G08C MDX G081
C131 C 3CC5 DC /3C05 ERR ID + ERR WAIT
MDX BY 2 FAILEC
C132 C 3CC6 * DC /3006 ERR ID + ERR WAIT
MDX BY 2 FAILEC
C133 C 7CC4 G081 MDX G082
C134 C 3CC7 DC /3007 ERR ID + ERR WAIT
MCX BY 4 FAILEC
C135 C 3CC8 * DC /3008 ERR ID + ERR WAIT
MDX BY 4 FAILEC
C136 C 3CC9 * DC /3C09 ERR ID + ERR WAIT
MDX BY 4 FAILEC
C137 C 3CCA * DC /3C0A ERR ID + ERR WAIT
MDX BY 4 FAILEC
C138 C 7CC2 G082 MDX GC84
C139 C 3CCB DC /3C0B ERR ID + ERR WAIT
MDX BY 2 FAILEC
EXIT TC NEXT ROUTINE
C13A C 7CC4 G083 MDX A0C0
C13B C 7CC6 G084 MDX G083
C13C C 3CC0 DC /3CC0 ERR ID + ERR WAIT
MDX BY -2 FAILEC
C13D C 3CCD * DC /3C0D ERR ID + ERR WAIT
MDX BY -2 FAILEC
C13E C 30CE * DC /300E ERR ID + ERR WAIT
MDX BY -2 FAILEC
*****
TEST CF BSC SKIP WHEN IT
SHOULD NOT
*****
A0C0 LDS 3 SET C AND CF ON
BSC C SK IF CARRY IS OFF
C141 C 7C02 MDX G0C1
C142 C 3CCF DC /3C0F ERR ID + ERR WAIT
BSC-CARRY FAILEC
*
N10C DC 0
C143 C CCCC G0C1 BSC 0
C144 C 4E01 G0C1 MDX 0
C145 C 7CC1 MDX G0C2
C146 C 3C10 DC /3010 ERR ID + ERR WAIT
BSC-OVERFLOW FAILEC
CK IF CF WAS RESET
ERR ID + ERR WAIT
*
G0C2 BSC 0
C147 C 4EC1 DC /3011 BSC-CVFLW SKPC-SF-CULC
*ACT HAVE
RESET CARRY TC OFF
C148 C 3C11 BSC C SK IF CARRY IS OFF
ERR ID + ERR WAIT
BSC-C DIC NOT SKIP
C149 C 2CC0 LDS 0
C14A C 4E02 BSC C
C14B C 3C12 DC /3012

```

```

3A121790
3A121800
3A121810
3A121820
3A121830
3A121840
3A121850
3A121860
3A121870
3A121880
3A121890
3A121900
3A121910
3A121920
3A121930
3A121940
3A121950
3A121960
3A121970
3A121980
3A121990
3A122000
3A122010
3A122020
3A122030
3A122040
3A122050
3A122060
3A122070
3A122080
3A122090
3A122100
3A122110
3A122120
3A122130
3A122140
3A122150
3A122160
3A122170
3A122180
3A122190
3A122200
3A122210
3A122220
3A122230
3A122240
3A122250
3A122260
3A122270
3A122280
3A122290
3A122300
3A122310
3A122320
3A122330
3A122340
3A122350
3A122360
3A122370
3A122380
3A122390
3A122400
3A122410
3A122420
3A122430
3A122440
3A122450
3A122460

```

CPU FNCTION TEST

```

*****
TEST CF ACC ABILITY TC FCLD
ALL ZERCS
*****
CORE DATA CR *LA- OPER-
ADDR INSTRUCTION *BEL ATION FT GPERANCS + REMARKS IC+SEC= AT RIGHT
*****
C14C C CCF6 A10C LD N1C0 LC /0000
C14C C 4E2C BSC Z SK IF ZERC
C14E C 3C13 DC /3013 ERR ID + ERR WAIT
LD ACC TO C FAILEC
C14F C CCF3 * LD N100 ACC=0,RELCAD TC C
C150 C 4E20 BSC Z SK IF ZERC
C151 C 3C14 DC /3014 ERR ID + ERR WAIT
LD ACC TO 0 FAILEC
C152 C 4EC4 * BSC E SK IF EVEN
C153 C 3C15 DC /3015 ERR ID + ERR WAIT
BSC CN EVEN FAILEC
*****
CONTAIN ALL CNES
*****
C154 C CC4A A140 LD N140 ACC.=0,RELCAD TC CNES
C155 C 4E10 BSC - SK IF MINUS
C156 C 3C16 DC /3016 ERR ID + ERR WAIT
LCAD ACC. FAILEC CR
*BSC CN NEG. FAILEC
C157 C 4EC8 * BSC +
C15E C 7CC1 MDX G140
C159 C 3C17 DC /3017 ERR ID + ERR WAIT
BSC CN + SKPC-
*SIGULC NOT HAVE
C15A C 4E04 G140 BSC E
C15B C 7CC1 MDX G141
C15C C 3C18 DC /3018 ERR ID + ERR WAIT
BSC CN E SKPC-
*SHOULD NOT HAVE
C15D C 1E01 G141 SRA 1
C15E C 4EC4 BSC E
C15F C 7001 MDX G142
C160 C 3C19 DC /3C19 ERR ID + ERR WAIT
ACC NOT = 7FFF
C161 C 1E01 G142 SRA 1
C162 C 4E04 BSC E
C163 C 7C01 MDX G143
C164 C 3C1A DC /301A ERR ID + ERR WAIT
ACC NOT = 3FFF
C165 C 1E01 G143 SRA 1
C166 C 4E04 BSC E
C167 C 7C01 MDX G144
C168 C 3C1B DC /301B ERR ID + ERR WAIT
ACC NOT = 1FFF
*
G144 SRA 1
C169 C 1E01 BSC E
C16A C 4E04 MDX G145
C16B C 7CC1 MDX G145
C16C C 0CC0 DC /301C ERR ID + ERR WAIT
ACC NOT = OFFF
*
G145 SRA 1
C16D C 1E01 BSC E
C16E C 4E04 MDX G146
C16F C 7C01 MDX G146
C170 C 3C1C DC /301D ERR ID + ERR WAIT
ACC NOT = C7FF
*
G146 SRA 1
C171 C 1801 BSC E
C172 C 4E04 BSC E
C173 C 7001 MDX G147
C174 C 3C1E DC /301E ERR ID + ERR WAIT
ACC NOT = C3FF
*
G147 SRA 1
C175 C 1E01 BSC E
C176 C 4E04 BSC E

```

CPU FLNCTION TEST

CPU FLNCTION TEST

C177 C 7001	MDX	G148	3A123150
C178 C 3C1F	DC	/301F	3A123160
			3A123170
			3A123180
C175 C 1E01	* G148 SRA	1	3A123190
C17A 0 4E04	BSC	E	3A123200
C17B C 7C01	MDX	G149	3A123210
C17C C 3C20	DC	/3020	3A123220
			3A123230
			3A123240
			3A123250
			3A123260
			3A123270
			3A123280
			3A123290
			3A123300
			3A123310
			3A123320
			3A123330
			3A123340
			3A123350
			3A123360
			3A123370
			3A123380
			3A123390
			3A123400
			3A123410
			3A123420
			3A123430
			3A123440
			3A123450
			3A123460
			3A123470
			3A123480
			3A123490
			3A123500
			3A123510
			3A123520
			3A123530
			3A123540
			3A123550
			3A123560
			3A123570
			3A123580
			3A123590
			3A123600
			3A123610
			3A123620
			3A123630
			3A123640
			3A123650
			3A123660
			3A123670
			3A123680
			3A123690
			3A123700
			3A123710
			3A123720
			3A123730
			3A123740
			3A123750
			3A123760
			3A123770
			3A123780
			3A123790
			3A123800
			3A123810
			3A123820

ERR ID + ERR WAIT
ACC NCT = 01FF

ERR ID + ERR WAIT
ACC NCT = COFF

ERR ID + ERR WAIT
ACC NCT = C07F

ERR ID + ERR WAIT
ACC NCT = C03F

ERR ID + ERR WAIT
ACC NCT = 001F

ERR ID + ERR WAIT
ACC NCT = C0CF

ERR ID + ERR WAIT
ACC NCT = C007

ERR ID + ERR WAIT
ACC NCT = C003

ERR ID + ERR WAIT
ACC NCT = 0001

ERR ID + ERR WAIT
ACC NCT = C000

ERR ID + ERR WAIT
ACC NCT = C000

EXIT TC NEXT RCLTIME

TEST LCING CF ONES ON CNES

C1A7 C 302B	DC	/302B	ERR ID + ERR WAIT	3A123830
			ACC NCT = FFFF	3A123840
			SHIFT RIGHT CNE	3A123850
			TEST ABILITY CF ACC TC SH-IFT	3A123860
				3A123870
				3A123880
				3A123890
				3A123900
				3A123910
				3A123920
				3A123930
				3A123940
				3A123950
				3A123960
				3A123970
				3A123980
				3A123990
				3A124000
				3A124010
				3A124020
				3A124030
				3A124040
				3A124050
				3A124060
				3A124070
				3A124080
				3A124090
				3A124100
				3A124110
				3A124120
				3A124130
				3A124140
				3A124150
				3A124160
				3A124170
				3A124180
				3A124190
				3A124200
				3A124210
				3A124220
				3A124230
				3A124240
				3A124250
				3A124260
				3A124270
				3A124280
				3A124290
				3A124300
				3A124310
				3A124320
				3A124330
				3A124340
				3A124350
				3A124360
				3A124370
				3A124380
				3A124390
				3A124400
				3A124410
				3A124420
				3A124430
				3A124440
				3A124450
				3A124460
				3A124470
				3A124480
				3A124490
				3A124500

ERR ID + ERR WAIT
ACC NCT = 7FFF

ERR ID + ERR WAIT
ACC NCT = 3FFF

ERR ID + ERR WAIT
ACC NCT = 1FFF

ERR ID + ERR WAIT
ACC NCT = 00FF

ERR ID + ERR WAIT
ACC NCT = 07FF

ERR ID + ERR WAIT
ACC NCT = C3FF

ERR ID + ERR WAIT
ACC NCT = C1FF

ERR ID + ERR WAIT
ACC NCT = G0FF

ERR ID + ERR WAIT
ACC NCT = C07F

ERR ID + ERR WAIT
ACC NCT = C03F

ERR ID + ERR WAIT
ACC NCT = C01F

ERR ID + ERR WAIT
ACC NCT = COOF

ERR ID + ERR WAIT
ACC NCT = C007

CPU FUNCTION TEST

```

G10C C 1801      G18D SRA 1      3A124510
G10C C 4604      BSC E      3A124520
G10E C 7001      MDX G18E 3A124530
G10F C 3039      DC /3C39 3A124540
              *      ERR ID + ERR WAIT 3A124550
              *      ACC NOT = 0003 3A124560
G10C C 1801      G18E SRA 1      3A124570
G10E C 4604      BSC E      3A124580
G10E C 7001      MDX G18F 3A124590
G10E C 303A      DC /3C3A 3A124600
              *      ERR ID + ERR WAIT 3A124610
              *      ACC NOT = 0001 3A124620
G10C C 1801      G18F SRA 1      3A124630
G10E C 4604      BSC E      3A124640
G10E C 303B      DC /303B 3A124650
              *      ERR ID + ERR WAIT 3A124660
              *      ACC NCT = 0000 3A124670
G10E C 4620      BSC Z      3A124680
G10E C 303C      DC /3C3C 3A124690
              *      ERR ID + ERR WAIT 3A124700
              *      ACC NCT = 0000 3A124710
G10E C 7001      MDX A100 3A124720
G10E C FFFF      NI8C DC /FFFF 3A124730
              *      EXIT TC NEXT RCUTINE 3A124740
              *      3A124750
              *      3A124760
              *      TEST AEILITY TO LOAD ZERCS 3A124770
              *      ON TOP OF ZERCS AND CNES CN 3A124780
              *      TCP CF ZERCS 3A124790

```

```

*****
CORE DATA CR *LA- OPER-
ADDR INSTRUCTION *BEL ATICN FT CPERANDS + REMARKS ID+SEC= AT RIGHT
*****
G10E C C007      A100 LD N100 LC /0000 3A124800
G10E C 462C      BSC Z      SK CN ZERO 3A124810
G10E C 303D      DC /303D 3A124820
              *      ERR ID + ERR WAIT 3A124830
              *      ACC NCT = ZERO 3A124840
G10E C C005      LD N101 LD /FFFF 3A124850
G10E C 462C      BSC +EZ 3A124860
G10E C 4610      BSC -      SK CN MINUS 3A124870
G10F C 303E      DC /303E 3A124880
              *      ERR ID + ERR WAIT 3A124890
              *      ACC NCT = FFFF 3A124900
G10F C 7002      MDX A100 3A124910
G10F C C00C      N100 DC /0000 3A124920
G10F C FFFF      N101 DC /FFFF 3A124930
              *      EXIT TC NEXT RCUTINE 3A124940
              *      3A124950
              *      3A124960

```

```

*****
TEST EOR OPERATION
*****
G10F C C01C      A100 LD N101 LC /0000 3A124960
G10F C 4620      ESC Z      SK CN ZERO 3A124970
G10F C 303F      CC /303F 3A124980
              *      ERR ID + ERR WAIT 3A124990
              *      ACC NCT = ZERO 3A125000
G10F C FC19      EOR N101 ZERC WITH /0000 3A125010
G10F C 462C      BSC Z      SK CN ZERO 3A125020
G10F C 3040      DC /3040 3A125030
              *      ERR ID + ERR WAIT 3A125040
              *      ECR CF 0 AND 0 FAILED 3A125050
              *      LC /FFFF 3A125060
G10F C CC15      LD N100 ZERC WITH /FFFF 3A125070
G10F C FC14      EOR N100 3A125080
G10F C 4620      BSC Z      3A125090
G10F C 3041      DC /3041 3A125100
              *      ERR ID + ERR WAIT 3A125110
              *      ECR CF 1 AND 1 FAILED 3A125120

```

```

G10F C F011      ECR N100 LC /FFFF 3A125130
G200 C 482C      BSC +EZ 3A125140
G201 C 4810      BSC -      3A125150
G202 C 3042      DC /3042 3A125160
              *      ERR ID + ERR WAIT 3A125170
              *      ECR CF 1 AND 0 FAILED 3A125180

```

CPU FUNCTION TEST

```

C207 C CC09      LD N100 3A125190
C208 C FC09      EOR N101 3A125200
C209 C 4E26      BSC +EZ 3A125210
C20A C 4810      BSC -      3A125220
C20B C 3044      DC /3044 3A125230
              *      ERR ID + ERR WAIT 3A125240
              *      ECR CF C AND 1 FAILED 3A125250
G20C C 1801      SRA 1      3A125260
G20L C F005      EOR N102 3A125270
G20E C 4620      BSC Z      3A125280
G20F C 3045      DC /3045 3A125290
              *      ERR ID + ERR WAIT 3A125300
              *      ECR OF 0 AND 1 FAILED 3A125310
              *      EXIT TC NEXT RCUTINE 3A125320
G210 C 7003      MDX A1E0 3A125330
G211 C FFFF      N10C DC /FFFF 3A125340
G212 C C00C      N101 DC /C000 3A125350
G213 C 7FFF      N102 DC /7FFF 3A125360
              *      3A125370
              *      TEST CF AEILITY TO SET 3A125380
              *      F BIT TO CNE 3A125390

```

```

*****
G214 00 C400C21F A1EC LD L N1E1 LD /0000 3A125400
G216 0 482C      BSC Z      SK CN ZERO 3A125410
G217 C 3046      DC /3046 3A125420
              *      ERR ID + ERR WAIT 3A125430
              *      WRCNG LCCATIGN LCACED 3A125440
              *      LD C(N1E0) 3A125450
G218 00 C400C21E LD L N1E0 3A125460
G21A C FC03      EOR N1E0 3A125470
G21B C 4820      BSC Z      SK CN ZERO 3A125480
G21C 0 3047      DC /3047 3A125490
              *      ERR ID + ERR WAIT 3A125500
              *      WRCNG LCCATIGN LCACED 3A125510
              *      EXIT TC NEXT RCUTINE 3A125520
G21E C 7002      MDX A1F0 3A125530
G21E C 021E      N1E0 DC N1E0 3A125540
G21F C 0000      N1E1 DC /0000 3A125550
              *      3A125560
              *      TEST CF INDIRECT ADDRESSING 3A125570

```

```

*****
G220 00 C480C22C A1FO LD I N1F2 LC /0000 3A125580
G222 0 462C      BSC Z      SK CN ZERO 3A125590
G223 C 3048      DC /3048 3A125600
              *      ERR ID + ERR WAIT 3A125610
              *      WRCNG LCCATIGN LCACED 3A125620
              *      LC C(N1F1) 3A125630
              *      ZERC WITH C(N1F1) 3A125640
G224 00 C480C22B LD I N1F1 3A125650
G226 C FC04      EOR N1F1 3A125660
G227 0 4620      BSC Z      3A125670
G228 C 3049      DC /3049 3A125680
              *      ERR ID + ERR WAIT 3A125690
              *      WRCNG LCCATIGN LCACED 3A125700
              *      EXIT TC NEXT RCUTINE 3A125710
G229 C 70C3      MDX A200 3A125720
G22A C 0000      N1F0 DC /0000 3A125730
G22E C 0228      N1F1 DC N1F1 3A125740
G22C C 022A      N1F2 DC N1F0 3A125750
              *      3A125760
              *      TEST CF BSC LONG FORM AND 3A125770
              *      INDIRECT OPERATION 3A125780

```

```

*****
CORE DATA CR *LA- OPER-
ADDR INSTRUCTION *BEL ATICN FT CPERANDS + REMARKS ID+SEC= AT RIGHT
*****
C22E 00 4C00G231 A20C BSC L G200 3A125790
C22F C 304A      DC /304A 3A125800
              *      ERR ID + ERR WAIT 3A125810
              *      BSC DID NCT BRANCH 3A125820
              *      3A125830
              *      ERR ID + ERR WAIT 3A125840
              *      ECR CF 1 AND 0 FAILED 3A125850
              *      BSC SKPC-SHOULD BRNCH 3A125860
G230 C 304B      DC /304B 3A125870
              *      3A125880
              *      3A125890
G231 C CC3A      G20C LD N200 3A125900
G232 00 4C04C23E BSC L G201,E 3A125910
G234 C 304C      DC /304C 3A125920
              *      BR IF NCT EVEN 3A125930
              *      ERR ID + ERR WAIT 3A125940
              *      BSC E DID NCT BRANCH 3A125950
              *      3A125960
              *      ERR ID + ERR WAIT 3A125970

```


CPU FUNCTION TEST

C236 00 4C08C23A	G201	BSC	L	G202,+	BSC SKPC-SHCULD ERNCH	3A125870
C236 0 304E		DC		/304E	BR IF NCT PLUS	3A125880
					ERR ID + ERR WAIT	3A125890
C235 C 304F		DC		/304F	BSC - CID NCT BRANCH	3A125900
					ERR ID + ERR WAIT	3A125910
					BSC SKPC-SHCULD ERNCH	3A125920
C23A 00 4C20C23E	G202	BSC	L	G203,+		3A125930
C23C 0 3050		DC		/3050	ERR ID + ERR WAIT	3A125940
					BSC Z CID NCT SKIP	3A125950
					ERR ID + ERR WAIT	3A125960
C23C C 3051		DC		/3051	BSC SKPC-SHCULD ERNCH	3A125970
					BR IF NCT MINUS	3A125980
C23E 00 4C10C241	G203	BSC	L	V154,-		3A125990
C240 C 7001		MDX		G204	ERR ID + ERR WAIT	3A126000
C241 C 3052		DC		/3052	BSC SKPC-SHCULD NCT	3A126010
					SET C AND CF ON	3A126020
C242 C 2003	G204	LDS		3	BR IF CARRY IS ON	3A126030
C243 00 4C02C247		BSC	L	G205,C	ERR ID + ERR WAIT	3A126040
C245 0 3053		DC		/3053	BSC C CID NCT BRANCH	3A126050
					ERR ID + ERR WAIT	3A126060
C246 0 3054		DC		/3054	BSC SKPC-SHCULD ERNCH	3A126070
					BR IF CF ON	3A126080
C247 00 4C01C248	G205	BSC	L	G208,C	ERR ID + ERR WAIT	3A126090
C249 C 3055		DC		/3055	BSC C CID NCT BRANCH	3A126100
					ERR ID + ERR WAIT	3A126110
C24A 0 3056		DC		/3056	BSC SKPC-SHCULD ERNCH	3A126120
					BR IF CF ON	3A126130
C24E 00 4C01024E	G208	BSC	L	V168,C		3A126140
C24C C 7001		MDX		G206	ERR ID + ERR WAIT	3A126150
C24E C 3057		DC		/3057	BSC BRNCD-SHCULD NCT	3A126160
						3A126170
C24F C 2000	G206	LDS		0	BR IF CARRY IS OFF	3A126180
C250 00 4C02C253		BSC	L	V170,C		3A126190
C252 C 7001		MDX		G207	ERR ID + ERR WAIT	3A126200
C253 C 3058		DC		/3058	BSC BRNCD-SHCULD NCT	3A126210
					BR IF CF ON	3A126220
C254 00 4C01C257	G207	BSC	L	V174,C		3A126230
C256 0 7001		MDX		G209	ERR ID + ERR WAIT	3A126240
C257 C 3059		DC		/3059	BSC BRNCD-SHCULD NCT	3A126250
						3A126260
C258 C 0014	G209	LD		N201	BR CN ZERO	3A126270
C259 00 4C18C25D		BSC	L	G20A,+	ERR ID + ERR WAIT	3A126280
C25B C 305A		DC		/305A	BSC +- CID NCT BRANCH	3A126290
					ERR ID + ERR WAIT	3A126300
C25C 0 305B		DC		/305B	BSC SKPC-SHCULD ERNCH	3A126310
						3A126320
C25D C 000E	G20A	LD		N200		3A126330
C25E 00 4C18C261		BSC	L	V180,+		3A126340
C260 C 7001		MDX		G20D	ERR ID + ERR WAIT	3A126350
C261 C 305C		DC		/305C	BSC BRNCHED-SHCULDNT	3A126360
						3A126370
C262 C 000B	G20D	LD		N202		3A126380
C263 00 4C18C26E		BSC	L	V184,+		3A126390
C265 C 7001		MDX		G20B	ERR ID + ERR WAIT	3A126400
C266 C 305D		DC		/305D	BSC BRNCHED-SHCULDNT	3A126410
						3A126420
C267 00 4CE0C26F	G20B	BSC	I	N203	ERR ID + ERR WAIT	3A126430
C269 C 305E		DC		/305E	INDIRECT BSC FAILED	3A126440
					ERR ID + ERR WAIT	3A126450
C26A C 305F		DC		/305F	INDIRECT BSC FAILED	3A126460
					EXIT TO NEXT ROUTINE	3A126470
C26B C 7004	G20C	MDX		A240		3A126480
C26C C FFFF		N200		/FFFF		3A126490
C26D C 0000		N201		/0000		3A126500
C26E C 0001		N202		/0001		3A126510
C26F C 02EB		N203		G20C		3A126520
					TEST SHORT AND LONG FROM	3A126530
					ESI	3A126540

CPU FUNCTION TEST

C270 C 4002	A240	BSI		N241	STCRE ADDRESS CF I REG	3A126550
C271 0 C271	N240	DC		N240	STCRE ADDRESS CF I REG	3A126560
C272 C 3060		DC		/3060	ERR ID + ERR WAIT	3A126570
					BSI SKPC-SHCULD ERNCH	3A126580
C273 C 0000	N241	DC		/0000	RETURN ADDR FOR MAIN PRG	3A126590
C274 C 00FE		LD		N241	LD RETURN ADDR	3A126600
C275 C FCFB		EOR		N240	ZERC IN RETURN ADDR	3A126610
C276 0 4820		BSC		Z		3A126620
C277 C 3061		DC		/3061	ERR ID + ERR WAIT	3A126630
					BSI NCT STCRE I REG	3A126640
C27E 00 4408C27D		BSI	L	N243,+	STCRE ADDR OF I REG	3A126650
C27A C 3062	V1AC	DC		/3062	ERR ID + ERR WAIT	3A126660
					BSI + CID NCT BRANCH	3A126670
C27B C 3063		DC		/3063	ERR ID + ERR WAIT	3A126680
					BSI SKPC-SHCULD ENCH	3A126690
C27C C 027A	N242	DC		V1AC		3A126700
C27E C 0000	N243	DC		/0000	RETURN ADDR FOR MAIN PRG	3A126710
C27F C 00FE		LD		N243		3A126720
C27G C FCFC		EOR		N242		3A126730
C280 C 4820		BSC		Z		3A126740
C281 0 3064		DC		/3064	ERR ID + ERR WAIT	3A126750
					BSI NCT STCRE I REG	3A126760
					TEST OF INSTR REQUIRED FOR	3A126770
					ERRCR CNTRCL	3A126780
						3A126790
						3A126800
						3A126810
						3A126820
						3A126830
						3A126840
						3A126850
						3A126860
						3A126870
C282 C 0048	A900	LD		F911	LD A NUMBER	3A126880
C283 C 0048		STC		F912		3A126890
C284 C 0048		LD		F913		3A126900
C285 C 0046		LD		F912		3A126910
C286 C FC44		EOR		F911		3A126920
C287 0 4820		BSC		Z		3A126930
C288 0 3065		DC		/3065	ERR ID + ERR WAIT	3A126940
					STCRE FAILED	3A126950
C289 C 0047		LD		F918	CK FIRST PASS SW (/0002)	3A126960
C28A C 4820		BSC		Z	IS SW ON	3A126970
C28B C 704C		MDX		A280	YES GO TO NEXT ROUTINE	3A126980
C28C C 0042		LD		F916	GET 0002	3A126990
C28D C 0043		STC		F918	STCRE /0002	3A127000
C28E C 1810		SRA		16	CLEAR ACC	3A127010
C28F 00 D400C001		STC	L	/0001	ZERC WITH /0001	3A127020
C291 C 61FF		LDA		-1	LD XR 1 WITH -1	3A127030
C292 00 C400C001		LD	L	/0001	ZERC IN 1800 -1 FOR 1130	3A127040
C294 C 4820		BSC		Z	ZERC FOR 1800	3A127050
C295 C 700F		MDX		G901	1130 CPU	3A127060
C296 C 003B		LD		F919	1800 P-C LD /0240	3A127070
C297 0 0031		STC		F903	STC /0240 THIS IS AREA,	3A127080
C298 00 D400CF6D		STC	L	N8C2	* FLNCTION AND MCCIFIER	3A127090
C299 00 D400CFD9		STC	L	F004	* FOR READING DATA ENTRY	3A127100
C29C 0 LC3A		STC		F007	* SWITCHES IN 1800	3A127110
C29D C 0836	G902	XIC		F922	SENSE SENSE/PRCG SWS	3A127120
C29E C EG37		AND		F923	IGNRE CE SWS. (/FF0C)	3A127130
C29F C FC36		ECR		F923	ZERC WITH /FF0C	3A127140
						3A127150
						3A127160
						3A127170
						3A127180
C2AC 00 4C18C2AC		BSC	L	G900,+	BRANCH CN ZERC	3A127190
C2A2 C FC33		EOR		F923		3A127200
C2A3 C 3066		DC		/3066	ERRCR ID + ERR WAIT	3A127210
					SENSE/PRCG SWS NCT	3A127220

CPU FUNCTION TEST

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*
C2A4 C 7CF8          * MDX      G902      * EQUAL TO /FFCO      3A127230
C2A5 O C02D          G901 LD      F920      REPEAT TEST          3A127240
C2A6 C D022          STC      F903      113C CPU LD /3A00   3A127250
C2A7 O0 C400CF6C     STC L   N8C2      STC /3A00 THIS IS   3A127260
C2A9 O0 C400CFD5     STC L   FC04      * AREA, FUNCTION +  3A127270
C2AB C D02B          STC      F907      * MODIFIER FOR REAC 3A127280
C2AC C C61B          G903 XIC     F902      * DATA ENTRY SWITC 3A127290
C2AD O CC22          LD      F917      TEST DATA ENTRY SWS 3A127300
C2AE C FC1F          EGR     F915      * FCR /FFFF          3A127310
C2AF O0 C418C2B4     BSC L   XG01,+    BRANCH CN ZERO      3A127320
C2B1 C FC1C          EGR     F915      ERR ID + ERR WAIT    3A127330
C2B2 C 3C67          DC      /3C67     DATA ENTRY SWS NOT 3A127340
*                   *                   EQUAL TC /FFFF      3A127350
*                   *                   SET SENSE/PRCG AND  3A127360
C2B3 C 7CF8          MDX      G900      DATA ENTRY SWS TC  3A127370
C2B4 C 3C01          X003 DC     /3C01   ZERCS AND PLSH START 3A127380
*                   *                   CK FCR 113C (3A00-1130) 3A127390
*                   *                   XFER IF 1130        3A127400
C2B5 C CC13          LD      F903      TEST SENSE/PRCG SWS 3A127410
C2B6 C FC1C          EOR     F920      IGNORE CE SWS. (/FFCO) 3A127420
C2B7 O0 C418C2BF     BSC L   G904,+    BRANCH IF CK        3A127430
C2B8 O L81A          G903 XIC     F922      TEST SENSE/PRCG SWS 3A127440
C2BA C EC1B          AND     F923      XFER IF 1130        3A127450
C2BE O0 C418C2BF     BSC L   G904,+    BRANCH IF CK        3A127460
C2BC C 3C6B          DC      /3068     ERR ID + ERR WAIT    3A127470
*                   *                   SENSE/PRCG SWS NOT  3A127480
*                   *                   * EQUAL TC /0000    3A127490
C2BE C 7CFA          MDX      G903      REPEAT TEST          3A127500
C2BF C C80B          G904 XIC     F902      TEST DATA ENTRY SWS 3A127510
C2C0 C C00F          LD      F917      * FCR /0000          3A127520
C2C1 O0 C418C2C5     BSC L   XG03,+    BRANCH CN ZERO      3A127530
C2C3 C 3C69          DC      /3069     ERR ID + ERR WAIT    3A127540
*                   *                   DATA ENTRY SWITCHES 3A127550
*                   *                   * NCT EC /0000      3A127560
C2C4 C 7CFA          MDX      G904      REPEAT TEST          3A127570
C2C5 C 3C02          X003 DC     /3002   SET BIT SWITCHES AS 3A127580
*                   *                   * DESIRED FCR RUN   3A127590
*                   *                   * AND PLSH START    3A127600
C2C6 C 7C11          MDX      A280      EXIT TC NEXT ROUTINE 3A127610
C2C8 O000          BSS     E          3A127620
C2C8 C C2D0          F902 DC     F917      3A127630
C2C9 C C240          F903 DC     /0240     EQUAL /3A00 IN 1130 3A127640
C2CA C C2CA          F904 DC     F904      3A127650
C2CB C C2CC          F911 DC     F912      3A127660
C2CC C C000          F912 DC     /0000     3A127670
C2CD C C000          F913 DC     /0000     3A127680
C2CE C FFFF          F915 DC     /FFFF      3A127690
C2CF C C002          F916 DC     /0C02     3A127700
C2D0 C C000          F917 DC     /0000     3A127710
C2D1 O C000          F918 DC     /0000     3A127720
C2D2 C C24C          F919 DC     /0240     180C READ BIT SWS CONSTANT 3A127730
C2D3 O 3A00          F920 DC     /3A00     113C READ BIT SWS CONSTANT 3A127740
C2D4 O 0000          F922 DC     0          SENSE SENSE/PRCG CEN 3A127750
C2D5 C C75C          DC      /0760     3A127760
C2D6 C FF00          F923 DC     /FF00     3A127770
C2D7 O 0240          F007 DC     /0240     EQUAL /3A00 IN 1130 3A127780
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CPU FUNCTION TEST

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*****
CORE DATA OR *LA- CPER- 3A127910
ADDR INSTRUCTION *BEL ATICK FT CPERANCS + REMARKS IC+SEC= AT RIGHT 3A127920
***** 3A127930
C2DE C CC35          A28C LD      N280      3A127940
C2D9 C 1E1C          SRA     16          3A127950
C2DA O0 C418C2DF     BSC L   G280,+    BRANCH CN ZERO      3A127960
C2DC O0 C400CF6F     BSI L   F000      SRA 16 FAILEC      3A127970
C2DE C 3C6A          DC      /306A     ERR ID              3A127980
C2DF O0 C400CFCA     G28C BSI L   FCC5      CK LCKK CN ERRCR   3A127990
O2E1 C 7CF6          MDX     A280      LOGP                3A128000
***** 3A128010
C2E2 C C030          A281 LD      N281      LD /8000            3A128020
C2E3 C 1E0F          SRA     15          NCM A=/0001        3A128030
C2E4 C FC2F          ECR     N282      ZERC WITH /0001    3A128040
C2E5 O0 C418C2EA     BSC L   G281,+    BRANCH CN ZERO      3A128050
C2E7 O0 C400CF6F     BSI L   F000      SRA 15 FAILEC      3A128060
C2E9 C 3C6B          DC      /306B     ERR ID              3A128070
C2EA O0 C400CFCA     G281 BSI L   FCC5      CK LCKK CN ERRCR   3A128080
O2EC C 70F5          MDX     A281      LCCP                3A128090
***** 3A128100
C2ED C C027          A282 LD      N283      LD /AAAA            3A128110
C2EE C 1E01          SRA     1          NCM A=/5555        3A128120
C2EF C FC2E          EOR     N284      ZERC WITH /5555    3A128130
C2FC O0 C418C2F5     BSC L   G282,+    BRANCH CN ZERO      3A128140
C2F2 O0 C400CF6F     BSI L   F000      SRA 1 FAILEC      3A128150
C2F4 C 3C6D          DC      /306C     ERR ID              3A128160
C2F5 O0 C400CFCA     G282 BSI L   FCC5      CK LCKK CN ERRCR   3A128170
O2F7 C 7CF5          MDX     A282      LOGP                3A128180
***** 3A128190
C2FE C CC1D          A283 LD      N284      LD /5555            3A128200
C2FF C 1E01          SRA     1          NCM A=/2AAA        3A128210
C300 O0 C400CF6F     BSI L   F000      SRA 1 FAILEC      3A128220
C302 C 7CF5          MDX     A283      LCCP                3A128230
C303 C C00F          A284 LD      N281      LD /8000            3A128240
C304 C 1E01          SRA     1          NOW A= /4000        3A128250
C305 C 1E02          SRA     2          A= /1000            3A128260
C306 O 1E04          SRA     4          A=/0100             3A128270
C307 C 1E0B          SRA     8          A = /0001           3A128280
C308 O F0CB          EOR     N282      ZERC WITH /0001    3A128290
C309 O0 C418C3CE     BSC L   G284,+    BRANCH CN ZERO      3A128300
C30B O0 C400CF6F     BSI L   F000      COME SRA FAILEC    3A128310
C30C O 306E          DC      /306E     ERR ID              3A128320
C30E O0 C400CFCA     G284 BSI L   FCC5      CK LCKK CN ERRCR   3A128330
O310 O 7CF2          MDX     A284      LCCP                3A128340
C311 C 7C06          MDX     A2C0      EXIT TC NEXT ROUTINE 3A128350
C312 C FFFF          N28C DC     /FFFF      3A128360
C313 C 8000          N281 DC     /8000      3A128370
C314 C 0001          N282 DC     /0001      3A128380
C315 C AAAA          N283 DC     /AAAA      3A128390
C316 C 5555          N284 DC     /5555      3A128400
C317 O 2AAA          N285 DC     /2AAA      3A128410
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CPU FUNCTION TEST

CPU FUNCTION TEST

C31A 00 4C18C31F	BSC L G2C0,+	BRANCH CN ZERO	3A128590
C31C 00 4400CF6F	BSI L F000	AND CF C AND FAILED	3A128600
C31E 0 306F	DC /306F	ERR ID	3A128610
C31F 00 4400CFCA	G2C0 BSI L FCC5	CK LCKK CN ERRCR	3A128620
C321 0 7CF6	MDX A2C0	LCCP	3A128630

C322 0 CC1F	A2C4 LD N2C0	LD /0000	3A128640
C323 0 EC1F	AND N2C2	LD /FFFF	3A128650
C324 00 4C18C329	BSC L G2C0,+	BRANCH CN ZERO	3A128660
C326 00 4400CF6F	BSI L FCC0	AND CF C AND 1 FAILED	3A128680
C32E 0 3070	DC /3070	ERR ID	3A128690
C329 00 4400CFCA	G2C4 BSI L FCC5	CK LCKK CN ERRCR	3A128700
C32B 0 7CF6	MDX A2C4	LCCP	3A128710

C32C 0 CC16	A2C8 LD N2C2	LD /FFFF	3A128720
C32D 0 EG14	AND N2C0	AND /0000	3A128730
C32E 00 4C18C333	BSC L G2C0,+	BRANCH CN ZERO	3A128740
C330 00 4400CF6F	BSI L FCC0	AND OF 1 AND 0 FAILED	3A128750
C332 0 3071	DC /3071	ERR ID	3A128760
C333 00 4400CFCA	G2C8 BSI L FCC5	CK LCKK CN ERRCR	3A128770
C335 0 7CF6	MDX A2C8	LCCP	3A128780

C336 0 CC0C	A2CC LD N2C2	LD /FFFF	3A128790
C337 0 EC0B	AND N2C2	AND /FFFF	3A128800
C338 0 FCCA	EOR N2C2	ZERC WITH /FFFF	3A128810
C339 00 4C18C33E	BSC L G2CC,+	BRANCH CN ZERO	3A128820
C33B 00 4400CF6F	BSI L FCC0	AND CF 1 AND 1 FAILED	3A128830
C33D 0 3072	DC /3072	ERR ID	3A128840
C33E 00 4400CFCA	G2CC BSI L FCC5	CK LCKK CN ERRCR	3A128850
C340 0 70F5	MDX A2CC	LCCP	3A128860
C341 0 7C02	MDX A300	EXIT TC NEXT ROUTINE	3A128870
C342 0 CC00	N2C0 DC /0000		3A128880
C343 0 FFFF	N2C2 DC /FFFF		3A128890

TEST CF CR FUNCTION

CORE DATA OR	*LA- OPER-		
ADDR INSTRUCTION	*BEL ATICN FT GPERANCS + REMARKS	IC+SEC= AT RIGHT	

C344 0 CC2C	A30C LD N300	LD /0000	3A128900
C345 0 E81F	OR N300	OR /0000	3A128910
C346 00 4C18C34B	BSC L G300,+	BRANCH CN ZERO	3A128920
C348 00 4400CF6F	BSI L FCC0	CR CF C AND 0 FAILED	3A128930
C34A 0 3073	DC /3073	ERR ID	3A128940
C34B 00 4400CFCA	G300 BSI L FCC5	CK LCKK CN ERRCR	3A128950
C34C 0 7CF6	MDX A300	LCCP	3A128960

C34E 0 CC16	A302 LD N300	LD /0000	3A128970
C34F 0 E816	OR N302	OR /FFFF	3A128980
C350 0 FC15	EOR N302	ZERC WITH /FFFF	3A128990
C351 00 4C18C35E	BSC L G302,+	BRANCH CN ZERO	3A129000
C353 00 4400CF6F	BSI L FCC0	CR CF 0 AND 1 FAILED	3A129010
C355 0 3074	DC /3074	ERR ID	3A129020
C356 00 4400CFCA	G302 BSI L FCC5	CHECK LCOP SWITCH	3A129030
C358 0 7CF5	MDX A302	LCCP	3A129040

C359 0 CC0C	A304 LD N302	LD /FFFF	3A129050
C35A 0 E80B	OR N302	OR /FFFF	3A129060
C35E 0 FCCA	ECR N302	ECR IN /FFFF	3A129070
C35C 00 4C18C361	BSC L G304,+	BRANCH CN ZERO	3A129080
C35E 00 4400CF6F	BSI L FCC0	CR CF 1 AND 1 FAILED	3A129090
C360 0 3075	DC /3075	ERR ID	3A129100
C361 00 4400CFCA	G304 BSI L FCC5	CK LCKK CN ERRCR	3A129110
C363 0 7CF5	MDX A304	LCCP	3A129120
C364 0 7C02	MDX A340	EXIT TC NEXT ROUTINE	3A129130
C365 0 CC00	N300 DC /0000		3A129140

C366 0 FFFF	N302 DC /FFFF		3A129270

TEST CF RTE 16 OPERATION			

CORE DATA OR	*LA- OPER-		
ADDR INSTRUCTION	*BEL ATICN FT GPERANCS + REMARKS	IC+SEC= AT RIGHT	

C367 0 CC16	A34C LD N340	LD /0000	3A129300
C368 0 18D0	RTE 16	PLACE /0000 IN C REG	3A129310
C369 0 CC15	LD N341	LD /FFFF	3A129320
C36A 0 18D0	RTE 16	NCW A=/0000 C=/FFFF	3A129330
C36B 00 4C18C37C	BSC L G340,+	BRANCH CN ZERO	3A129340
C36D 00 4400CF6F	BSI L FCC0	ALL 0 THRU C FAILED	3A129350
C36F 0 3076	DC /3076	ERR ID	3A129360
C370 00 4400CF9E	G340 BSI L FCC5	CK LCKK CN ERRCR	3A129370
C372 0 7CF4	MDX A340	LCCP	3A129380
C373 0 18D0	RTE 16	NCW A=/FFFF Q=/0000	3A129390
C374 0 FCCA	EOR N341	ZERC WITH /FFFF	3A129400
C375 00 4C18C37A	BSC L G342,+	BRANCH CN ZERO	3A129410
C377 00 4400CF6F	BSI L FCC0	ALL 1 THRU C FAILED	3A129420
C379 0 3077	DC /3077	ERR ID	3A129430
C37A 00 4400CFCA	G342 BSI L FCC5	CK LCKK CN ERRCR	3A129440
C37C 0 7CEA	MDX A340	LCCP	3A129450
C37D 0 70C2	MDX A380	EXIT TC NEXT ROUTINE	3A129460
C37E 0 CC00	N340 DC /0000		3A129470
C37F 0 FFFF	N341 DC /FFFF		3A129480

TEST CF SRT OPERATION

C380 0 CC55	A380 LD N380	LD /8000	3A129500
C381 0 18A0	SRT 32	NCW A=/FFFF C=/FFFF	3A129510
C382 0 FC54	EOR N381	ECR IN /FFFF	3A129520
C383 00 4C18C388	BSC L G380,+	BRANCH CN ZERO	3A129530
C385 00 4400CF6F	BSI L FCC0	SRT 32-A REG FAILED	3A129540
C387 0 3078	DC /3078	ERR ID	3A129550
C388 00 4400CF9E	G380 BSI L FCC5	CK LCKK CN ERRCR	3A129560
C38A 0 70F5	MDX A380	LCCP	3A129570
C38B 0 18D0	RTE 16	NCW A=/FFFF C=/0000	3A129580
C38C 0 FC4A	EOR N381	ECR IN /FFFF	3A129590
C38D 00 4C18C392	BSC L G382,+	BRANCH CN ZERO	3A129600
C38F 00 4400CF6F	BSI L FCC0	SRT 32-C REG FAILED	3A129610
C391 0 3075	DC /3075	ERR ID	3A129620
C392 00 4400CFCA	G382 BSI L FCC5	CK LCKK CN ERRCR	3A129630
C394 0 70EB	MDX A380	LCCP	3A129640

C395 0 CC42	A384 LD N382	LD /4000	3A129650
C396 0 18A0	SRT 32	NCW A=/0000 Q=/0000	3A129660
C397 00 4C18C39C	BSC L G384,+	BRANCH CN ZERO	3A129670
C399 00 4400CF6F	BSI L FCC0	SRT 32-A REG FAILED	3A129680
C39B 0 307A	DC /307A	ERR ID	3A129690
C39C 00 4400CFCA	G384 BSI L FCC5	CK LCKK CN ERRCR	3A129700
C39E 0 7CF6	MDX A384	LCCP	3A129710
C39F 0 18D0	RTE 16	NCW A=/0000 C=/0000	3A129720
C3A0 00 4C18C3A5	BSC L G386,+	BRANCH CN ZERO	3A129730
C3A2 00 4400CF6F	BSI L FCC0	SRT 32-C REG FAILED	3A129740
C3A4 0 307B	DC /307B	ERR ID	3A129750
C3A5 00 4400CFCA	G386 BSI L FCC5	CK LCKK CN ERRCR	3A129760
C3A7 0 70EB	MDX A384	LCCP	3A129770

C3A8 0 CC30	A388 LD N383	LD /5555	3A129780
C3A9 0 18EF	SRT 15	NCW A=/0000 C=/0000	3A129790
C3AA 00 4C18C3AF	BSC L G388,+	BRANCH CN ZERO	3A129800
C3AC 00 4400CF6F	BSI L FCC0	SRT 15-A REG FAILED	3A129810
C3AE 0 307C	DC /307C	ERR ID	3A129820
C3AF 00 4400CF9E	G388 BSI L FCC5	CK LCKK CN ERRCR	3A129830

CPU FUNCTION TEST

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C3B1 C 7CF6 MDX A388 LCCF 3A129950
C3B2 C 1EDC RTE 16 NCW A=/AAAA Q=/COCC 3A12996C
C3B3 C FC2E EOR N384 ZERC WITH /AAAA 3A129970
C3B4 00 4C18C3B9 BSC L G38A,+ BRANCH CN ZERC 3A129980
C3B6 00 4400CF6F BSI L FCC0 SRT 15-C REG FAILED 3A129990
C3B6 C 3C7D DC /307D ERR ID 3A13000C
C3B9 00 4400CFCA G38A BSI L FCC5 CK LCK CN ERRCR 3A130010
C3EE C 7CEC MDX A388 LCCF 3A130020
*****
CORE DATA DR *LA- LPER-
ADDR INSTRUCTION *BEL ATICN FT OPERANDS + REMARKS IC+SEC= AT RIGHT
*****
C3BC C CC1C A38C LD N3E3 LC /5555 3A130030
C3BC C 1E6C SRT 0 NCW A=/5555 C=/COCC 3A13004C
C3BE 0 1E82 SRT 2 NCW A=/1555 C=/4000 3A130050
C3BF C 1E84 SRT 4 /0155 /54CC 3A130060
C3CC C 1E86 SRT 6 /0005 /5550 3A130070
C3C1 C 1E8E SRT 8 /0000 /C555 3A13008C
C3C2 C 1E8A SRT 10 /0000 /00C1 3A13009C
C3C3 00 4C18C3C8 BSC L G38C,+ BRANCH CN ZERC 3A130100
C3C5 00 4400CF6F BSI L F000 SERIES SRT FAILED 3A130110
C3C7 C 307E DC /307E ERR ID 3A130120
C3CE 00 4400CF5E G38C BSI L FCC0 CK LCK CN ERRCR 3A13013C
C3CA C 7CF1 MDX A38C LCCF 3A130140
C3CB C 1E80 RTE 16 NCW A=/00C1 C=/00C0 3A130150
C3CC C FC0E EOR N385 ZERC WITH /0001 3A130160
C3CC 00 4C18C3D2 BSC L G38E,+ BRANCH CN ZERC 3A13017C
C3CF 00 4400CF6F BSI L F000 SERIES SRT FAILED 3A130180
C3D1 C 307F DC /307F ERR ID 3A130190
C3D2 00 4400CFCA G38E BSI L FCC5 CK LCK CN ERRCR 3A130200
C3D4 C 7CE7 MDX A38C LCCF 3A130210
C3D5 0 7C06 MDX A3C0 EXIT TC NEXT ROUTINE 3A130220
C3D6 C 8C00 N38C DC /8000 3A130230
C3D7 C FFFF N381 DC /FFFF 3A130240
C3D8 C 4C00 N382 DC /4000 3A130250
C3D9 C 5555 N383 DC /5555 3A130260
C3CA C AAAA N384 DC /AAAA 3A130270
C3CB C C001 N385 DC /C001 3A130280
*
* TEST CF RTE OPERATION
*
*****
C3DC C CC35 A3C0 LD N3C1 LC /AAAA 3A130290
C3DD C 1E60 RTE 16 NCW A=/00CC C=/AAAA 3A130300
C3DE 0 CC32 LD N3C0 NCW A=/5555 C=/AAAA 3A130310
C3DF C 1E6F RTE 15 NCW A=/5554 C=/AAAA 3A130320
C3EC C FC34 EOR N3C4 ZERC WITH /5554 3A130330
C3E1 00 4C18C3EE BSC L G3C0,+ BRANCH CN ZERC 3A130340
C3E3 00 4400CF6F BSI L F000 RTE 15-C TC A FAILED 3A130350
C3E5 C 3C80 DC /3080 ERR ID 3A130360
C3E6 00 4400CF5E G3C0 BSI L FCC0 CK LCK CN ERRCR 3A130370
C3EE C 7CF3 MDX A3C0 LCCF 3A130380
C3E9 C 1E50 RTE 16 NCW A=/AAAB C=/5554 3A130390
C3EA C FC2B EOR N3C5 ZERC WITH /AAAA 3A130400
C3EE 00 4C18C3FC BSC L G3C2,+ BRANCH CN ZERC 3A130410
C3ED 00 4400CF6F BSI L F000 RTE 15-A TC C FAILED 3A130420
C3EF C 3C81 DC /3081 ERR ID 3A130430
C3FC 00 4400CFCA G3C2 BSI L FCC5 CK LCK CN ERRCR 3A130440
C3F2 0 7CE9 MDX A3C0 LCCF 3A130450
*****
CORE DATA DR *LA- LPER-
ADDR INSTRUCTION *BEL ATICN FT OPERANDS + REMARKS IC+SEC= AT RIGHT
*****
C3F3 C CC2C A3C4 LD N3C3 LC /80CC 3A130460
C3F4 C 1E60 RTE 16 NCW A=/XXX.. C=/80CC 3A130470
C3F5 C CC1D LD N3C2 LC /0000 3A130480

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CPU FUNCTION TEST

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C3F6 C 18CC RTE 0 NCW A=/00CC C=/80CC 3A13063C
C3F7 C 1EC1 RTE 1 /00CC /40CC 3A13064C
C3F8 C 1E02 RTE 2 /00CC /10CC 3A13065C
C3F9 C 18C3 RTE 3 /00CC /02CC 3A130660
C3FA 0 18C4 RTE 4 /0000 /002C 3A13067C
C3FE C 1E05 RTE 5 /00C0 /0CC2 3A13068C
C3FC 0 1E06 RTE 6 /0400 /00CC 3A130690
C3FC C 1E0A RTE 1C /00C1 /00CC 3A130700
C3FE C FC18 EOR N3C6 ZERC WITH /00C1 3A130710
C3FF 00 4C18C4C4 BSC L G3C4,+ BRANCH CN ZERC 3A130720
C401 00 4400CF6F BSI L FCC0 SERIES RTE FAILED 3A130730
C403 C 3082 DC /3082 ERR ID 3A130740
C404 00 4400CF5E G3C4 BSI L FCC0 CK LCK CN ERRCR 3A130750
C406 C 7CEC MDX A3C4 LCCF 3A130760
C407 C 1E0C RTE 16 NCW A=/00CC C=/00C1 3A130770
C408 00 4C18C40D BSC L G3C6,+ BRANCH CN ZERC 3A130780
C40A 00 4400CF6F BSI L FCC0 SERIES RTE FAILED 3A130790
C40C C 3C83 DC /3083 ERR ID 3A13080C
C40E 00 4400CFCA G3C6 BSI L FCC5 CK LCK CN ERRCR 3A130810
C40F C 7CE3 MDX A3C4 LCCF 3A130820
C41C C 7C07 MDX A400 EXIT TC NEXT ROUTINE 3A130830
C411 C 5555 N3CC DC /5555 3A130840
C412 C AAAA N3C1 DC /AAAA 3A130850
C413 C C000 N3C2 DC /C000 3A13086C
C414 C 8C00 N3C3 DC /8C00 3A13087C
C415 C 5554 N3C4 DC /5554 3A130880
C416 0 AAAB N3C5 DC /AAAB 3A130890
C417 C C001 N3C6 DC /0001 3A130900
*
* TEST CF SLA OPERATION
*
*****
C41E 00 4C00C4BC A40C LD L N400 LD /FFFF 3A130910
C41A C 1E00 RTE 16 NCW A=/XXXX C=/FFFF 3A130920
C41B 00 4C00C4BC LD L N400 LD /FFFF 3A130930
C41C C 1010 SLA 16 NCW A=/C000 C=/FFFF 3A130940
C41E 00 4C02C423 BSC L G4C4,C BR CN CARRY 3A130950
C42C 00 4400CF6F BSI L FCC0 SLA 16-CARRY FAILED 3A130960
C422 0 3C85 DC /3085 ERR ID 3A130970
C422 00 4400CF5E G404 BSI L F00E CK LCK CN ERRCR 3A130980
C425 C 7CF2 MDX A400 LCCF 3A130990
C426 00 4C18C42B BSC L G400,+ BRANCH CN ZERC 3A131000
C428 00 4400CF6F BSI L FCC0 SLA 16-A REG FAILED 3A131010
C42A 0 3084 DC /3084 ERR ID 3A131020
C42B 00 4400CF5E G40C BSI L F00E CK LCK CN ERRCR 3A131030
C42C C 7CEA MDX A400 LCCF 3A131040
C42E 0 1E00 RTE 16 NCW A=/FFFF C=/00CC 3A131050
C42F 00 4C00C4BC EOR L N400 ZERC WITH /FFFF 3A131060
C431 00 4C18C43E BSC L G406,+ BRANCH CN ZERC 3A131070
C433 00 4400CF6F BSI L FCC0 SLA 16-AFFECTED C REG 3A131080
C435 C 3086 DC /3086 ERR ID 3A131090
C436 00 4400CFCA G406 BSI L F005 CK LCK CN ERRCR 3A131100
C43E C 7CDF MDX A400 LCCF 3A131110
*****
CORE DATA DR *LA- LPER-
ADDR INSTRUCTION *BEL ATICN FT OPERANDS + REMARKS IC+SEC= AT RIGHT
*****
C439 00 4C00C4C1 A40E LD L N405 LD /0000 3A131120
C43E C 1E00 RTE 16 NCW A=/XXXX C=/CCCC 3A131130
C43C 00 4C00C4C2 LD L N406 /FFFE /C000 3A131140
C43E C 1010 SLA 16 /C00C /COCC 3A131150
C43F 00 4C02C442 BSC L G4C7,C BR CN CARRY 3A131160
C441 C 7CC3 MDX G4CC 3A131170
C442 00 4400CF6F G407 BSI L FCC0 SLA 16- CARRY FAILED 3A131180
C444 C 3C88 DC /3088 ERR ID 3A131190
C445 00 4400CF5E G40C BSI L FCC0 CK LCK CN ERRCR 3A131200
C447 C 7CF1 MDX A408 LCCF 3A131210

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CPU FUNCTION TEST

C44E 00 4C18C44C BSC L G408,+ ERANCH CN ZERO 3A131310
044A 00 440CCF6F BSI L F0C0 SLA 16-A REG FAILED 3A131320
C44C C 3CE7 DC /3087 ERR ID 3A131330
C44C 00 4400CF5E G40E BSI L F0CE CK LCKK CN ERRCR 3A131340
C44F C 7CE9 MDX A408 LCCF 3A131350
C45C C 18DC RTE 16 NCH A=/00C0 C=/00CC 3A131360
C451 00 4C18C456 BSC L G4CE,+ ERANCH CN ZERO 3A131370
C453 00 440CCF6F BSI L F000 SLA 16-AFFECTED C REG 3A131380
C455 C 3CE5 DC /3089 ERR ID 3A131390
C456 00 4400CFCA G40E BSI L F005 CK LCKK CN ERRCR 3A131400
C45E 0 70E0 MDX A408 LCCF 3A131410

C455 C CC67 B40C LD N405 LC /0000 3A131420
C45A C 18D0 RTE 16 NCH A=/XXXX C=/00C0 3A131430
C45B C CC63 LD N403 LC /AAAA 3A131440
C45C 0 1001 SLA 1 NCH A=/5554 C=/00CC 3A131450
C45C 00 4C0204E2 BSC L H402,C BRANCH CN CARRY 3A131460
C45F 00 440CCF6F BSI L F000 SLA 1-CARRY FAILED 3A131470
C461 C 3C8B DC /3088 ERR ID 3A131480
C462 00 4400CF5E H402 BSI L F00E CK LCKK CN ERRCR 3A131490
C464 0 7CF4 MDX B400 LCCF 3A131500
C465 C FC5A EOR N404 ZERC WITH /5554 3A131510
C466 00 4C18C46B BSC L H400,+ ERANCH CN ZERO 3A131520
C46E 00 4400CF6F BSI L F0C0 SLA 1-A REG FAILED 3A131530
C46A C 308A DC /308A ERR ID 3A131540
C46E 00 4400CF5E H400 BSI L F0CE CK LCKK CN ERRCR 3A131550
C46C 0 7CEB MDX B400 LCCF 3A131560
C46E C 18D0 RTE 16 NCH A=/00C0 C=/5554 3A131570
C46F 00 4C18C474 BSC L H404,+ ERANCH CN ZERO 3A131580
C471 00 4400CF6F BSI L F000 SRA 1-AFFECTED C REG 3A131590
C473 C 3C8C DC /308C ERR ID 3A131600
C474 00 4400CFCA H404 BSI L F005 CK LCKK CN ERRCR 3A131610
C47E C 7CE2 MDX B400 LCCF 3A131620

C477 0 C049 B406 LD N405 LD /00C0 3A131630
C47E C 18DC RTE 16 NCH A=/XXXX C=/00C0 3A131640
C475 0 C044 LD N402 LC /5555 3A131650
C47A C 1001 SLA 1 NCH A=/AAAA C=/00CC 3A131660
C47E 00 4C02047E BSC L H407,C BR CN CARRY 3A131670
C47C C 7C03 MDX H405 3A131680
C47E 00 4400CF6F H407 BSI L F000 SLA 1-CARRY FAILED 3A131690
C48C C 308E DC /308E ERR ID 3A131700
C481 00 4400CF9E H405 BSI L F0CE CK LCKK CN ERRCR 3A131710
C483 C 70F3 MDX B406 LCCF 3A131720
C484 C FC3A EOR N403 ZERC WITH /AAAA 3A131730
C485 00 4C18C48A BSC L H406,+ ERANCH CN ZERO 3A131740
C487 00 4400CF6F BSI L F000 SLA 1-A REG FAILED 3A131750
C485 C 308D DC /308D ERR ID 3A131760
C48A 00 4400CF5E H406 BSI L F00E CK LCKK CN ERRCR 3A131770
C48C C 7CEA MDX B406 LCCF 3A131780
C48C C 18D0 RTE 16 NCH A=/00C0 C=/AAAA 3A131790
C48E 00 4C18C492 BSC L H408,+ ERANCH CN ZERO 3A131800
C490 00 4400CF6F BSI L F0C0 SLA 1-AFFECTED C REG 3A131810
C492 C 3C8F DC /308F ERR ID 3A131820
C493 00 4400CFCA H408 BSI L F005 CK LCKK CN ERRCR 3A131830
C495 0 7CE1 MDX B406 LCCF 3A131840

CORE DATA OR *LA- OPER- 3A131850
ADDR INSTRUCTION *BEL ATIGN FT OPERANDS + REMARKS IC+SEC= AT RIGHT 3A131860

C496 C C02A B40A LD N405 LC /0000 3A131870
C497 C 18D0 RTE 16 NCH A=/XXXX C=/00C0 3A131880
C49E C CC24 LD N401 LC /0001 3A131890
C495 C 61C1 LDX 1 1 3A131900
C49A 0 C204 LDX 2 4 3A131910
C49E C 6303 LDX 3 3 3A131920
C49C C 10G0 SLA 0 NCH A=/C001 C=/00CC 3A131930
3A131940
3A131950
3A131960
3A131970
3A131980

DATE 02JAN66 01MAY66 15NOV66
EC NO. 41545C 415450C 419643

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CPU FUNCTION TEST

C49C C 1100 SLA 1 0 /CO02 /COCC 3A131990
C49E C 1C02 SLA 2 /G008 /O0CC 3A132000
C49F 0 1200 SLA 2 0 /CO8C /COCC 3A132010
C4AC C 100C SLA 6 /200C /COCC 3A132020
04A1 0 1300 SLA 3 0 /CO0C /COCC 3A132030
04A2 00 4C02C4A7 BSC L H40D,C BRANCH CN CARRY 3A132040
C4A4 00 440CCF6F BSI L F0C0 CCME SLA-CARRY FAILED 3A132050
C4AE C 3091 DC /3091 ERR ID 3A132060
C4A7 00 4400CF5E H40C BSI L F0CE CK LCKK CN ERRCR 3A132070
C4A9 C 7CEC MDX B40A LCCF 3A132080
C4AA 00 4C18C4AF BSC L H4CA,+ ERANCH CN ZERC 3A132090
C4AC 00 4400CF6F BSI L F000 CCME SLA-A REG FAILED 3A132100
C4AE C 309C DC /309C ERR ID 3A132110
G4AF 00 4400CF5E H40A BSI L F00E CK LCKK CN ERRCR 3A132120
C4B1 0 7CE4 MDX B40A LCCF 3A132130
C4B2 C 18DC RTE 16 3A132140
C4B3 00 4C18C4BE BSC L H40E,+ BRANCH CN ZERC 3A132150
C4B5 00 4400CF6F BSI L F0C0 CCME SLA-AFFECTED C 3A132160
C4B7 C 3092 DC /3092 ERR ID 3A132170
G4BE 00 4400CFCA H40E BSI L F0C5 CK LCKK CN ERRCR 3A132180
G4BA C 7CEB MDX B40A LCCF 3A132190
G4BB 0 7CC7 MDX A440 EXIT TO NEXT ROUTINE 3A132200
C4BC C FFFF N40C DC /FFFF 3A132210
C4BE C 0001 N401 DC /0001 3A132220
C4EE C 5555 N402 DC /5555 3A132230
C4BF C AAAA N403 DC /AAAA 3A132240
04LC 0 5554 N404 DC /5554 3A132250
04C1 C CC00 N405 DC /0000 3A132260
C4C2 C FFFE N406 DC /FFFF 3A132270
*
* TEST CF SLT CPERATION
*

04C3 C C07E A440 LD N440 LD /0001 3A132310
04C4 C 18D0 RTE 16 NCH A=/XXXX C=C=/00C1 3A132320
G4C5 C CC7D LD N441 LD /00C0 3A132330
04C6 0 1CA0 SLT 32 /CO0C C=/00CC 3A132340
C4C7 00 4C0204CC BSC L G442,C BRANCH CN CARRY 3A132350
G4C9 00 4400CF6F BSI L F0C0 SLT 32-CARRY FAILED 3A132360
G4CB C 3C54 DC /3094 ERR ID 3A132370
04CC 00 4400CF5E G442 BSI L F00E CK LCKK CN ERRCR 3A132380
C4CE C 7CF4 MDX A440 LCCF 3A132390
C4CF 00 4C18C4D4 BSC L G44D,+ BRANCH CN ZERC 3A132400
C4D1 00 4400CF6F BSI L F0C0 SLT 32-A REG FAILED 3A132410
C4D3 C 3C93 DC /3093 ERR ID 3A132420
C4D4 00 4400CF5E G44C BSI L F0CE CK LCKK CN ERRCR 3A132430
04D6 0 7CEC MDX A440 LCCF 3A132440
C4D7 C 18D0 RTE 16 NCH A=/00C0 C=/00CC 3A132450
C4D8 00 4C18C4DD BSC L G443,+ BRANCH CN ZERC 3A132460
C4DA 00 4400CF6F BSI L F000 SLT 32-C REG FAILED 3A132470
C4DC C 3C95 DC /3095 ERR ID 3A132480
C4DC 00 4400CFCA G443 BSI L F0C5 CK LCKK CN ERRCR 3A132490
C4DF 0 7CE3 MDX A440 LCCF 3A132500

CORE DATA OR *LA- OPER- 3A132510
ADDR INSTRUCTION *BEL ATIGN FT OPERANDS + REMARKS IC+SEC= AT RIGHT 3A132520

C4E0 C C063 A444 LD N442 LD /FFFF 3A132530
C4E1 C 18DC RTE 16 NCH A=/XXXX C=/FFFF 3A132540
C4E2 C C06C LD N441 LD /00C0 3A132550
C4E3 C 1C90 SLT 16 NCH A=/FFFF C=/00C0 3A132560
C4E4 00 4C02C4E7 BSC L G446,C BR CN CARRY 3A132570
C4E6 C 7CC3 MDX G447 3A132580
C4E7 00 4400CF6F G446 BSI L F0C0 SLT 16-CARRY FAILED 3A132590
C4E9 C 3C97 DC /3097 ERR ID 3A132600
C4EA 00 4400CF5E G447 BSI L F0CE CK LCKK CN ERRCR 3A132610
C4EC C 70F3 MDX A444 LCCF 3A132620
3A132630
3A132640
3A132650
3A132660

DATE 02JAN66 01MAY66 15NOV66
EC NO. 41545C 415450C 419643

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CPU FUNCTION TEST

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C4EC C FC56          EDR      N442      ZERC WITH /FFFF      3A132670
C4EE 00 4C18C4F3    BSC L   G444,+--     BRANCH CN ZERO      3A132680
C4FC 00 4400CF6F    BSI L   FCC0      SLT 16-A REG FAILED 3A132690
C4F2 C 3096          DC       /3096      ERR ID                3A132700
C4F3 00 4400CF9E    G444 BSI L   F00E      CK LCKK CN ERRCR    3A132710
C4F5 C 70EA          MDX     A444      LCCP                  3A132720
C4F6 C 1800          RTE     16        NCH A=/0000 Q=/0000 3A132730
C4F7 00 4C18C4FC    BSC L   G448,+--     BRANCH CN ZERO      3A132740
C4F9 00 4400CF6F    BSI L   F000      SLT 16-C REG FAILED 3A132750
C4FB C 3098          DC       /3098      ERR ID                3A132760
C4FC 00 4400CFCA    G448 BSI L   F005      CK LCKK CN ERRCR    3A132770
C4FE C 7CE1          MDX     A444      LCCP                  3A132780
C4FF C C045          A44A LD     N443      LD /5555              3A132790
C500 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A132800
C501 C C041          LD      N441      /0000 /5555          3A132810
C502 C 1C8F          SLT     15        /2AAA /8000          3A132820
C503 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A132830
C505 C 7L03          MDX     G44D      /0000 /8000          3A132840
C506 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A132850
C507 C 309A          DC       /309A      ERR ID                3A132860
C508 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A132870
C509 C 70F3          MDX     A44A      LCCP                  3A132880
C50A C FC39          EDR     N444      ZERC WITH /2AAA      3A132890
C50B 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A132900
C50C 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A132910
C50D C 3099          DC       /3099      ERR ID                3A132920
C50E 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A132930
C50F C 7CEA          MDX     A44A      LCCP                  3A132940
C510 C 1800          RTE     16        NCH A=/8000 C=/0000 3A132950
C511 C FC30          EDR     N445      ZERC WITH /8000      3A132960
C512 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A132970
C513 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A132980
C514 C 309B          DC       /309B      ERR ID                3A132990
C515 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A133000
C516 C 7CE0          MDX     A44A      LCCP                  3A133010
C517 C C045          A44A LD     N443      LD /5555              3A133020
C518 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A133030
C519 C C041          LD      N441      /0000 /5555          3A133040
C520 C 1C8F          SLT     15        /2AAA /8000          3A133050
C521 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A133060
C522 C 7L03          MDX     G44D      /0000 /8000          3A133070
C523 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A133080
C524 C 309A          DC       /309A      ERR ID                3A133090
C525 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A133100
C526 C 70F3          MDX     A44A      LCCP                  3A133110
C527 C FC39          EDR     N444      ZERC WITH /2AAA      3A133120
C528 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A133130
C529 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A133140
C52A C 3099          DC       /3099      ERR ID                3A133150
C52B 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A133160
C52C C 7CEA          MDX     A44A      LCCP                  3A133170
C52D C 1800          RTE     16        NCH A=/8000 C=/0000 3A133180
C52E C FC30          EDR     N445      ZERC WITH /8000      3A133190
C52F 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A133200
C530 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A133210
C531 C 309B          DC       /309B      ERR ID                3A133220
C532 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A133230
C533 C 7CE0          MDX     A44A      LCCP                  3A133240
C534 C C045          A44A LD     N443      LD /5555              3A133250
C535 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A133260
C536 C C041          LD      N441      /0000 /5555          3A133270
C537 C 1C8F          SLT     15        /2AAA /8000          3A133280
C538 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A133290
C539 C 7L03          MDX     G44D      /0000 /8000          3A133300
C53A 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A133310
C53B C 309A          DC       /309A      ERR ID                3A133320
C53C 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A133330
C53D C 70F3          MDX     A44A      LCCP                  3A133340
C53E C FC39          EDR     N444      ZERC WITH /2AAA      3A133350
C53F 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A133360
C540 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A133370
C541 C 3099          DC       /3099      ERR ID                3A133380
C542 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A133390
C543 C 7CEA          MDX     A44A      LCCP                  3A133400
C544 C 1800          RTE     16        NCH A=/8000 C=/0000 3A133410
C545 C FC30          EDR     N445      ZERC WITH /8000      3A133420
C546 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A133430
C547 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A133440
C548 C 309B          DC       /309B      ERR ID                3A133450
C549 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A133460
C54A C 7CE0          MDX     A44A      LCCP                  3A133470
C54B C C045          A44A LD     N443      LD /5555              3A133480
C54C C 1800          RTE     16        NCH A=/XXXX C=/5555 3A133490
C54D C C041          LD      N441      /0000 /5555          3A133500
C54E C 1C8F          SLT     15        /2AAA /8000          3A133510
C54F 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A133520
C550 C 7L03          MDX     G44D      /0000 /8000          3A133530
C551 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A133540
C552 C 309A          DC       /309A      ERR ID                3A133550
C553 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A133560
C554 C 70F3          MDX     A44A      LCCP                  3A133570
C555 C FC39          EDR     N444      ZERC WITH /2AAA      3A133580
C556 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A133590
C557 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A133600
C558 C 3099          DC       /3099      ERR ID                3A133610
C559 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A133620
C55A C 7CEA          MDX     A44A      LCCP                  3A133630
C55B C 1800          RTE     16        NCH A=/8000 C=/0000 3A133640
C55C C FC30          EDR     N445      ZERC WITH /8000      3A133650
C55D 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A133660
C55E 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A133670
C55F C 309B          DC       /309B      ERR ID                3A133680
C560 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A133690
C561 C 7CE0          MDX     A44A      LCCP                  3A133700
C562 C C045          A44A LD     N443      LD /5555              3A133710
C563 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A133720
C564 C C041          LD      N441      /0000 /5555          3A133730
C565 C 1C8F          SLT     15        /2AAA /8000          3A133740
C566 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A133750
C567 C 7L03          MDX     G44D      /0000 /8000          3A133760
C568 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A133770
C569 C 309A          DC       /309A      ERR ID                3A133780
C56A 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A133790
C56B C 70F3          MDX     A44A      LCCP                  3A133800
C56C C FC39          EDR     N444      ZERC WITH /2AAA      3A133810
C56D 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A133820
C56E 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A133830
C56F C 3099          DC       /3099      ERR ID                3A133840
C570 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A133850
C571 C 7CEA          MDX     A44A      LCCP                  3A133860
C572 C 1800          RTE     16        NCH A=/8000 C=/0000 3A133870
C573 C FC30          EDR     N445      ZERC WITH /8000      3A133880
C574 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A133890
C575 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A133900
C576 C 309B          DC       /309B      ERR ID                3A133910
C577 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A133920
C578 C 7CE0          MDX     A44A      LCCP                  3A133930
C579 C C045          A44A LD     N443      LD /5555              3A133940
C57A C 1800          RTE     16        NCH A=/XXXX C=/5555 3A133950
C57B C C041          LD      N441      /0000 /5555          3A133960
C57C C 1C8F          SLT     15        /2AAA /8000          3A133970
C57D 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A133980
C57E C 7L03          MDX     G44D      /0000 /8000          3A133990
C57F 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A134000
C580 C 309A          DC       /309A      ERR ID                3A134010
C581 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A134020
C582 C 70F3          MDX     A44A      LCCP                  3A134030
C583 C FC39          EDR     N444      ZERC WITH /2AAA      3A134040
C584 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A134050
C585 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A134060
C586 C 3099          DC       /3099      ERR ID                3A134070
C587 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A134080
C588 C 7CEA          MDX     A44A      LCCP                  3A134090
C589 C 1800          RTE     16        NCH A=/8000 C=/0000 3A134100
C58A C FC30          EDR     N445      ZERC WITH /8000      3A134110
C58B 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A134120
C58C 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A134130
C58D C 309B          DC       /309B      ERR ID                3A134140
C58E 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A134150
C58F C 7CE0          MDX     A44A      LCCP                  3A134160
C590 C C045          A44A LD     N443      LD /5555              3A134170
C591 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A134180
C592 C C041          LD      N441      /0000 /5555          3A134190
C593 C 1C8F          SLT     15        /2AAA /8000          3A134200
C594 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A134210
C595 C 7L03          MDX     G44D      /0000 /8000          3A134220
C596 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A134230
C597 C 309A          DC       /309A      ERR ID                3A134240
C598 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A134250
C599 C 70F3          MDX     A44A      LCCP                  3A134260
C59A C FC39          EDR     N444      ZERC WITH /2AAA      3A134270
C59B 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A134280
C59C 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A134290
C59D C 3099          DC       /3099      ERR ID                3A134300
C59E 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A134310
C59F C 7CEA          MDX     A44A      LCCP                  3A134320
C600 C 1800          RTE     16        NCH A=/8000 C=/0000 3A134330
C601 C FC30          EDR     N445      ZERC WITH /8000      3A134340
C602 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A134350
C603 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A134360
C604 C 309B          DC       /309B      ERR ID                3A134370
C605 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A134380
C606 C 7CE0          MDX     A44A      LCCP                  3A134390
C607 C C045          A44A LD     N443      LD /5555              3A134400
C608 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A134410
C609 C C041          LD      N441      /0000 /5555          3A134420
C60A C 1C8F          SLT     15        /2AAA /8000          3A134430
C60B 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A134440
C60C C 7L03          MDX     G44D      /0000 /8000          3A134450
C60D 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A134460
C60E C 309A          DC       /309A      ERR ID                3A134470
C60F 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A134480
C610 C 70F3          MDX     A44A      LCCP                  3A134490
C611 C FC39          EDR     N444      ZERC WITH /2AAA      3A134500
C612 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A134510
C613 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A134520
C614 C 3099          DC       /3099      ERR ID                3A134530
C615 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A134540
C616 C 7CEA          MDX     A44A      LCCP                  3A134550
C617 C 1800          RTE     16        NCH A=/8000 C=/0000 3A134560
C618 C FC30          EDR     N445      ZERC WITH /8000      3A134570
C619 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A134580
C61A 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A134590
C61B C 309B          DC       /309B      ERR ID                3A134600
C61C 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A134610
C61D C 7CE0          MDX     A44A      LCCP                  3A134620
C61E C C045          A44A LD     N443      LD /5555              3A134630
C61F C 1800          RTE     16        NCH A=/XXXX C=/5555 3A134640
C620 C C041          LD      N441      /0000 /5555          3A134650
C621 C 1C8F          SLT     15        /2AAA /8000          3A134660
C622 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A134670
C623 C 7L03          MDX     G44D      /0000 /8000          3A134680
C624 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A134690
C625 C 309A          DC       /309A      ERR ID                3A134700
C626 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A134710
C627 C 70F3          MDX     A44A      LCCP                  3A134720
C628 C FC39          EDR     N444      ZERC WITH /2AAA      3A134730
C629 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A134740
C62A 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A134750
C62B C 3099          DC       /3099      ERR ID                3A134760
C62C 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A134770
C62D C 7CEA          MDX     A44A      LCCP                  3A134780
C62E C 1800          RTE     16        NCH A=/8000 C=/0000 3A134790
C62F C FC30          EDR     N445      ZERC WITH /8000      3A134800
C630 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A134810
C631 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A134820
C632 C 309B          DC       /309B      ERR ID                3A134830
C633 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A134840
C634 C 7CE0          MDX     A44A      LCCP                  3A134850
C635 C C045          A44A LD     N443      LD /5555              3A134860
C636 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A134870
C637 C C041          LD      N441      /0000 /5555          3A134880
C638 C 1C8F          SLT     15        /2AAA /8000          3A134890
C639 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A134900
C63A C 7L03          MDX     G44D      /0000 /8000          3A134910
C63B 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A134920
C63C C 309A          DC       /309A      ERR ID                3A134930
C63D 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A134940
C63E C 70F3          MDX     A44A      LCCP                  3A134950
C63F C FC39          EDR     N444      ZERC WITH /2AAA      3A134960
C640 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A134970
C641 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A134980
C642 C 3099          DC       /3099      ERR ID                3A134990
C643 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A135000
C644 C 7CEA          MDX     A44A      LCCP                  3A135010
C645 C 1800          RTE     16        NCH A=/8000 C=/0000 3A135020
C646 C FC30          EDR     N445      ZERC WITH /8000      3A135030
C647 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A135040
C648 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A135050
C649 C 309B          DC       /309B      ERR ID                3A135060
C64A 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A135070
C64B C 7CE0          MDX     A44A      LCCP                  3A135080
C64C C C045          A44A LD     N443      LD /5555              3A135090
C64D C 1800          RTE     16        NCH A=/XXXX C=/5555 3A135100
C64E C C041          LD      N441      /0000 /5555          3A135110
C64F C 1C8F          SLT     15        /2AAA /8000          3A135120
C650 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A135130
C651 C 7L03          MDX     G44D      /0000 /8000          3A135140
C652 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A135150
C653 C 309A          DC       /309A      ERR ID                3A135160
C654 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A135170
C655 C 70F3          MDX     A44A      LCCP                  3A135180
C656 C FC39          EDR     N444      ZERC WITH /2AAA      3A135190
C657 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A135200
C658 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A135210
C659 C 3099          DC       /3099      ERR ID                3A135220
C65A 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A135230
C65B C 7CEA          MDX     A44A      LCCP                  3A135240
C65C C 1800          RTE     16        NCH A=/8000 C=/0000 3A135250
C65D C FC30          EDR     N445      ZERC WITH /8000      3A135260
C65E 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A135270
C65F 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A135280
C660 C 309B          DC       /309B      ERR ID                3A135290
C661 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A135300
C662 C 7CE0          MDX     A44A      LCCP                  3A135310
C663 C C045          A44A LD     N443      LD /5555              3A135320
C664 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A135330
C665 C C041          LD      N441      /0000 /5555          3A135340
C666 C 1C8F          SLT     15        /2AAA /8000          3A135350
C667 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A135360
C668 C 7L03          MDX     G44D      /0000 /8000          3A135370
C669 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A135380
C66A C 309A          DC       /309A      ERR ID                3A135390
C66B 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A135400
C66C C 70F3          MDX     A44A      LCCP                  3A135410
C66D C FC39          EDR     N444      ZERC WITH /2AAA      3A135420
C66E 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A135430
C66F 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A135440
C670 C 3099          DC       /3099      ERR ID                3A135450
C671 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A135460
C672 C 7CEA          MDX     A44A      LCCP                  3A135470
C673 C 1800          RTE     16        NCH A=/8000 C=/0000 3A135480
C674 C FC30          EDR     N445      ZERC WITH /8000      3A135490
C675 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A135500
C676 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A135510
C677 C 309B          DC       /309B      ERR ID                3A135520
C678 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A135530
C679 C 7CE0          MDX     A44A      LCCP                  3A135540
C67A C C045          A44A LD     N443      LD /5555              3A135550
C67B C 1800          RTE     16        NCH A=/XXXX C=/5555 3A135560
C67C C C041          LD      N441      /0000 /5555          3A135570
C67D C 1C8F          SLT     15        /2AAA /8000          3A135580
C67E 00 4C02C50E    BSC L   G44C,C     BR CN CARRY          3A135590
C67F C 7L03          MDX     G44D      /0000 /8000          3A135600
C680 00 4400CF6F    G44C BSI L   FCC0      SLT 15-CARRY FAILED 3A135610
C681 C 309A          DC       /309A      ERR ID                3A135620
C682 00 4400CF9E    G44D BSI L   F00E      CK LCKK CN ERRCR    3A135630
C683 C 70F3          MDX     A44A      LCCP                  3A135640
C684 C FC39          EDR     N444      ZERC WITH /2AAA      3A135650
C685 00 4C18C512    BSC L   G44A,+--     BRANCH CN ZERO      3A135660
C686 00 4400CF6F    BSI L   FCC0      SLT 15-A REG FAILED 3A135670
C687 C 3099          DC       /3099      ERR ID                3A135680
C688 00 4400CF9E    G44A BSI L   F00E      CK LCKK CN ERRCR    3A135690
C689 C 7CEA          MDX     A44A      LCCP                  3A135700
C68A C 1800          RTE     16        NCH A=/8000 C=/0000 3A135710
C68B C FC30          EDR     N445      ZERC WITH /8000      3A135720
C68C 00 4C18C51C    BSC L   G44E,+--     BRANCH CN ZERO      3A135730
C68D 00 4400CF6F    BSI L   FCC0      SLT 15-C REG FAILED 3A135740
C68E C 309B          DC       /309B      ERR ID                3A135750
C68F 00 4400CFCA    G44E BSI L   F005      CK LCKK CN ERRCR    3A135760
C690 C 7CE0          MDX     A44A      LCCP                  3A135770
C691 C C045          A44A LD     N443      LD /5555              3A135780
C692 C 1800          RTE     16        NCH A=/XXXX C=/5555 3A135790
C693 C C041          LD      N441      /0000 /5555          3A135800
C694 C 1C8F          SLT     15        /2AAA /8000          3A135810
C695 00 4C02C50E    BSC L   G
```

CPU FUNCTION TEST

C585	00	4400CF9E	G4C4	BSI	L	FOGE	CK LCKK CN ERRCR	3A134030
058E	C	7CE5		MDX		A4C2	LCCF	3A134040
C58C	C	CC38		LD		N4C0		3A134050
C58D	C	FC3E		EOR		N4C1		3A134060
C58E	CO	4C18C593		BSC	L	G4C6,+	BRANCH CN ZERO	3A134070
C59C	CO	4400CF6F		BSI	L	F0C0	STS FAILED TC STCRE	3A134080
C592	C	30A5		DC		/3CA5	ERR ID	3A134090
C593	CO	4400CFCA	G4C6	BSI	L	F0C5	CK LCKK CN ERRCR	3A134100
C595	U	7CDB		MDX		A4C2	LCCF	3A134110

C596	C	2002	A4C8	LDS		2		3A134120
C597	C	2002		LDS		2	SET C ON CF CFF	3A134130
C598	C	282C		STS		N4C0	SET /0002 IN N4CC	3A134140
C599	C	262D		STS		N4C2	SET /0000 IN N4C2	3A134150
C59A	C	CC2A		LD		N4C0	LC /0002	3A134160
C59E	C	FC2C		EOR		N4C3	ZERC WITH /0002	3A134170
C59C	CO	4C18C5A1		BSC	L	G4C8,+	BRANCH CN ZERC	3A134180
C59E	CO	4400CF6F		BSI	L	F000	STS FAILED TC STORE	3A134190
C5AC	C	30A6		DC		/3GA6	ERR ID	3A134200
C5A1	CO	4400CF9E	G4C8	BSI	L	F0CE	CK LCKK CN ERRGR	3A134210
C5A3	C	7CF2		MDX		A4C8	LCCF	3A134220
C5A4	C	C022		LD		N4C2	LC /0002	3A134230
C5A5	CO	4C18C5AA		BSC	L	G4CA,+	BRANCH CN ZERC	3A134240
C5A7	CO	4400CF6F		BSI	L	F0C0	STS NOT CLEAR CARRY	3A134250
C5A9	C	30A7		DC		/3CA7	ERR ID	3A134260
C5AA	CO	4400CFCA	G4CA	BSI	L	F0C5	CK LCKK CN ERRCR	3A134270
C5AC	C	7CE9		MDX		A4C8	LCCF	3A134280

C5AD	C	2003	A4CC	LDS		3		3A134290
C5AE	C	2001		LDS		1	SET C-CFF OF - CN	3A134300
C5AF	C	2615		STS		N4C0	SET /0001 IN N4CC	3A134310
C580	C	281E		STS		N4C2	SET /0000 IN N4C2	3A134320
C5B1	C	C013		LD		N4C0	LC /0001	3A134330
C5B2	C	FC16		EOR		N4C4	ZERC WITH /0001	3A134340
C5B3	CO	4C18C5BE		BSC	L	G4CC,+	BRANCH CN ZERC	3A134350
C5B5	CO	4400CF6F		BSI	L	F000	STS FAILED TC STCRE	3A134360
C5B7	C	30A8		DC		/30A8	ERR ID	3A134370
C5B8	CO	4400CF9E	G4CC	BSI	L	FOCE	CK LCKK CN ERRCR	3A134380
C5BA	C	7CF2		MDX		A4CC	LCCF	3A134390
C5BE	C	C00B		LD		N4C2	LD STATUS STCRE	3A134400
C5BC	CO	4C18C5C1		BSC	L	G4CD,+	BRANCH CN ZERC	3A134410
C5BE	CO	4400CF6F		BSI	L	F000	STS NOT CLEAR CVERFL	3A134420
C5CC	C	3CA9		DC		/3CA9	ERR ID	3A134430
C5C1	CO	4400CFCA	G4CC	BSI	L	F005	CK LCKK CN ERRCR	3A134440
C5C3	C	7CE9		MDX		A4CC	LCCF	3A134450
C5C4	C	7C05		MDX		A5C0	EXIT TC NEXT ROUTINE	3A134460
C5C5	C	C003	N4CC	DC		/0003		3A134470
C5C6	C	C003	N4C1	DC		/0003		3A134480
C5C7	C	C000	N4C2	DC		/0000		3A134490
C5C8	C	C002	N4C3	DC		/0002		3A134500
C5C9	C	0001	N4C4	DC		/0001		3A134510

TEST OF BSC OPERATION								

CORE	DATA	OR	*LA-	OPER-				
ADDR	INSTRUCTION		*BEL	ATICK	FT	OPERANDS	+ REMARKS	IC+SEC= AT RIGHT

C5CA	C	2003	A500	LDS		3	SET C AND CF ON	3A134600
C5CB	CO	C400C65E		LD	L	N500	LC /8001	3A134610
C5CC	C	462F		BSC		G+EZC	SK IF CF CFF, PLUS, EVEN, * ZERC OR CARRY CFF.	3A134620

C5CE	C	7C03		MDX		G500		3A134630
C5CF	CO	4400CF6F		BSI	L	F0C0	BSC SKPC-SHCULD ACT	3A134640
C5D1	C	3CAA		DC		/3CAA	ERR ID	3A134650
C5D2	CO	4400CFCA	G500	BSI	L	F0C5	CK LCKK CN ERRCR	3A134660
C5D4	C	7CF5		MDX		A5C0	LCCF	3A134670

CPU FUNCTION TEST

C5D5	C	2003	A502	LDS		3	SET C + CF CN	3A134710
C5D6	CO	C400C65F		LD	L	N501	LC /0000	3A134720
C5D8	C	461B		BSC		-CC+	SK IF MINUS, CF CFF, CARRY *CFF OR PLUS	3A134730

C5D5	C	7C03		MDX		G502		3A134740
C5DA	CO	4400CF6F		BSI	L	F000	BSC SKPC-SHCULD ACT	3A134750
C5DC	C	30AB		DC		/3CAB	ERR ID	3A134760
C5DD	CO	4400CFCA	G502	BSI	L	F0C5	CK LCKK CN ERRCR	3A134770
C5DF	C	7CF5		MDX		A502	LCCF	3A134780

C5E0	C	2003	A504	LDS		3	SET C AND CF ON	3A134790
C5E1	C	CG7E		LD		N502	LC /8000	3A134800
C5E2	C	2805		STS		N507	SET /00C3 IN N507	3A134810
C5E3	C	4E15		BSC		C-E	SK IF CF CFF, MUNIS CR EVEN	3A134820
C5E4	C	7C01		MDX		G504		3A134830
C5E5	C	7C03		MDX		G505		3A134840
C5E6	CO	4400CF6F	G504	BSI	L	F0C0	BSC FAILED TO SKIP	3A134850
C5E8	C	30AC		DC		/30AC	ERR ID	3A134860
C5E9	CO	4400CF9E	G505	BSI	L	FOCE	CK LCKK CN ERRCR	3A134870
C5EB	C	7CF4		MDX		A504	LCCF	3A134880
C5EC	C	2000	N507	LDS		**		3A134890
C5ED	C	4E01		BSC		0	SKIP IF CVERFLW IS CFF	3A134900
C5EE	C	4B01		BSC		0		3A134910
C5EF	C	7C01		MDX		G506		3A134920
C5FC	C	7003		MDX		G507		3A134930
C5F1	CO	4400CF6F	G506	BSI	L	F0C0	BSC NOT CLEAR CVERFLW	3A134940
C5F3	C	3CAD		DC		/30AD	ERR ID	3A134950
C5F4	CO	4400CFCA	G507	BSI	L	F0C5	CK LCKK CN ERRCR	3A134960
C5F6	C	7CE9		MDX		A504	LCCF	3A134970

C5F7	C	2000	A50E	LDS		C	SET C AND CF CFF	3A134980
C5F8	C	C068		LD		N503	LC /0001	3A134990
C5F9	C	4E2A		BSC		C+2	SK IF CARRY CFF, PLUS * OR ZERO	3A135000

C5FA	C	7001		MDX		G508		3A135010
C5FB	C	7C03		MDX		H508		3A135020
C5FC	CO	4400CF6F	G508	BSI	L	F0C5	BSC FAILED TO SKIP	3A135030
C5FE	C	30AE		DC		/30AE	ERR ID	3A135040
C5FF	CO	4400CFCA	H508	BSI	L	F0C5	CK LCKK CN ERRCR	3A135050
C601	C	7CF5		MDX		A5C8	LCCF	3A135060

C602	C	2003	A50A	LDS		3	SET C AND CF ON	3A135070
C603	C	C05A		LD		N5C0	LD /8001	3A135080
C604	CO	4C0FC615		BSC	L	G50A,+CCE	BR CN ACT FLUS, CF CN, * CARRY CN CR ACT EVEN	3A135090

C606	C	7C01		MDX		H50A		3A135100
C607	C	7C07		MDX		J50A		3A135110
C608	CO	4400CF6F	H50A	BSI	L	F000	BSC FELL T-RL	3A135120
C60A	C	30AF		DC		/30AF	ERR ID	3A135130
C60E	CO	4400CF9E		BSI	L	F00E	CK LCKK CN ERRCR	3A135140
C60C	C	7CF4		MDX		A50A	LCCF	3A135150
C60E	C	7C06		MDX		G50A		3A135160
C60F	CO	4400CF6F	J50A	BSI	L	F0C0	BSC SKPC-SHCULD BRNCH	3A135170
C611	C	30B0		DC		/30B0	ERR ID	3A135180
C612	CO	4400CF9E		BSI	L	FOGE	CK LCKK CN ERRCR	3A135190
C614	C	7CED		MDX		A50A	LCCF	3A135200
C615	C	FC48	G50A	EOR		N5C0	ZERC WITH /8C01	3A135210
C616	C	4E2C		BSC		Z	SK CN ZERC	3A135220
C617	C	7C01		MDX		H50B		3A135230
C618	C	7C03		MDX		K50B		3A135240
C619	CO	4400CF6F	H50B	BSI	L	F000	ACC DESTROYED AFTER BSC	3A135250
C61E	C	3170		DC		/3170	ERR ID	3A135260
C61C	CO	4400CFCA	K50B	BSI	L	F005	CK LCKK CN ERRCR	3A135270
C61E	C	7C0C		MDX		A5C0	EXIT TC NEXT ROUTINE	3A135280

CORE	DATA	CR	*LA-	OPER-				

CPU FUNCTION TEST

ADDR	INSTRUCTION	*BEL	ATCN	FT	OPERANDS	+ REMARKS	ID+SEC=	AT RIGHT	3A135390
C61F	C 2003	A50C	LDS	3		SET C + CF ON			3A135400
C62C	C CC41		LD	N504		LD /0004			3A135410
C621	OO 4C30C625		BSC	L	G50C,-Z	BR NCT MINUS OR NCT ZERC			3A135420
C623	C 70C2		MDX	H50C					3A135430
C624	C 7CC8		MDX	J50C					3A135440
C625	C 7CCA	G50C	MDX	K50C					3A135450
0626	GC 4400CF6F	H50C	BSI	L	F000	BSC FELL THRU			3A135460
C62E	O 30B1		DC		/30B1	ERR ID			3A135470
C629	OO 4400CFCA		BSI	L	F005	CK LCKK CN ERRCR			3A135480
062E	O 7CF3		MDX	A50C		LCCF			3A135490
C62C	C 7CCc		MDX	A50E					3A135500
062D	GC 4400CF6F	J50C	BSI	L	F0C0	BSC SKPC-SHCULD BRNC			3A135510
C62F	C 30B2		DC		/30B2	ERR ID			3A135520
C63C	OO 4400CFCA	K50C	BSI	L	F005	CK LCKK CN ERRCR			3A135530
C632	C 7GEC		MDX	A50C		LCCF			3A135540
C633	C 2000	A50E	LDS	0		SET C AND CF OFF			3A135550

C634	C 2003		LDS	3		SET C AND CF ON			3A135560
C635	C CC28		LD	N500		LD /8001			3A135570
C636	CO 4C3FC63A		BSC	L	G50E,+EOLZ-	BR CN ACT PLUS, NCT EVEN, *OF, CARRY, NCT ZERC OR *NCT MINUS			3A135580

C63E	O 7G0B		MDX	H50E					3A135590
C639	O 7007		MDX	J50E					3A135600
C63A	CO 4400CF6F	G50E	BSI	L	F0C0	BSC BRNCH-EC-SHCULDNT			3A135610
C63C	C 30B3		DC		/30B3	ERR ID			3A135620
C63D	CO 4400CFCA		BSI	L	F0C5	CK LCKK CN ERRCR			3A135630
C63F	O 7CF3		MDX	A50E		LCCF			3A135640
C64C	C 7CCc		MDX	B500					3A135650
C641	OO 4400CF6F	J50E	BSI	L	F000	BSC SKPC-SHCULDNT			3A135660
C643	O 30B4		DC		/30B4	ERR ID			3A135670
C644	CO 4400CFCA	H50E	BSI	L	F005	CK LCKK CN ERRCR			3A135680
0646	O 7GEC		MDX	A50E		LCCF			3A135690

C647	C 2003	B50C	LDS	3		SET C AND CF ON			3A135700
C64E	O CC18		LD	N503		LD /0001			3A135710
C649	C 4808		BSC	+		SK CN PLUS			3A135720
C64A	C 7G0C		MDX	S501					3A135730
C64E	C 2E17		STS	N505		SET /0003 IN N505			3A135740
C64C	O CC16		LD	N505		LD /0003			3A135750
C64D	C FC1c		EDR	N506		ZERC WITH /0003			3A135760
C64E	OO 4C18C65A		BSC	L	S503,+	BRANCH CN ZERC			3A135770
C65C	OO 4400CF6F		BSI	L	F000	BSC + CLEAREC CVFLW			3A135780
C652	C 30B5		DC		/30B5	ERR ID			3A135790
C653	OO 4400CFCA		BSI	L	F005	CK LCKK CN ERRCR			3A135800
C655	C 7CF1		MDX	B500		LCCF			3A135810
0656	O 70CF		MDX	A540		EXIT TO NEXT ROUTINE			3A135820
C657	OO 4400CF6F	S501	BSI	L	F0C0	BSC FAILED TO SKP			3A135830
C659	O 30B6		DC		/30B6	ERR ID			3A135840
C65A	CO 4400CFCA	S503	BSI	L	F0C5	CK LCKK CN ERRCR			3A135850
C65C	C 7CEA		MDX	B500		LCCF			3A135860
C65D	C 7CC8		MDX	A540		EXIT TO NEXT ROUTINE			3A135870
C65E	C EC01	N50C	DC		/8001				3A135880
C65F	C CC00	N501	DC		/0000				3A135890
C66C	C 8C00	N502	DC		/8000				3A135900
C661	C 0001	N503	DC		/0001				3A135910
C662	C CC04	N504	DC		/0004				3A135920
C663	C CC0C	N505	DC		/*				3A135930
C664	C CC03	N506	DC		/0003				3A135940
C665	C CC02	N542	DC		/0002				3A135950

CORE DATA DR *LA- OPER-									

C66E	C CC0E	A54E	LD	N500					3A135960
C66C	OO 4410C6BA		BSI	L	G548,-	BR WHEN NCT MINUS			3A135970
C662	C 700B		MDX	H548					3A135980
C683	CO 4400CF6F		BSI	L	F0C0	BSI SKPC-CN COND TRUE			3A135990
C685	C 30BF		DC		/30BF	ERR ID			3A136000
C686	CO 4400CFCA		BSI	L	F0C5	CK LCKK CN ERRCR			3A136010

TEST OF BSI OPERATION									

C68E	C CC0E	A54E	LD	N500					3A136020
C68C	OO 4410C6BA		BSI	L	G548,-	BR WHEN NCT MINUS			3A136030
C682	C 700B		MDX	H548					3A136040
C683	CO 4400CF6F		BSI	L	F0C0	BSI SKPC-CN COND TRUE			3A136050
C685	C 30BF		DC		/30BF	ERR ID			3A136060
C686	CO 4400CFCA		BSI	L	F0C5	CK LCKK CN ERRCR			3A136070

CPU FUNCTION TEST

ADDR	INSTRUCTION	*BEL	ATCN	FT	OPERANDS	+ REMARKS	ID+SEC=	AT RIGHT	3A136070

C666	C 2003	A540	LDS	3		SET C AND CF ON			3A136080
C667	C CCFc		LD	N500		LD /8CC1			3A136090
C668	OO 442FC67A		BSI	L	G540,ECC+Z	BR CN NCT EVEN, CARRY, CF,			3A136100
C66A	O 7C01		MDX	H540		* NCT PLUS CR NCT ZERO			3A136110
C66B	O 7C07		MDX	J540					3A136120
C66C	OO 4400CF6F	H54C	BSI	L	F0C0	BSI FELL THRU			3A136130
C66E	O 30B7		DC		/30B7	ERR ID			3A136140
C66F	OO 4400CF5E		BSI	L	F00E	CK LCKK CN ERRCR			3A136150
C671	O 7CF4		MDX	A540		LCCF			3A136160
C672	O 7C14		MDX	A544		EXIT TO NEXT ROUTINE			3A136170
C673	OO 4400CF6F	J54C	BSI	L	F0C0	BSI SKPC-SHCULD BRNCH			3A136180
C675	O 30B8		DC		/30B8	ERR ID			3A136190
C676	CO 4400CF5E		BSI	L	F0CE	CK LCKK CN ERRCR			3A136200
C678	O 7CED		MDX	A540		LCCF			3A136210
C679	O 7C01		MDX	G540+1		SK TO WCRD AFTER G540			3A136220
C67A	C CC00	G54C	DC		/0000				3A136230
C67E	C 2EE7		STS	N505		STCRE /0002 IN N505			3A136240
C67C	O C0E6		LD	N505		LD /0002			3A136250
C67D	CO F40CC665		ECR	L	N542	ZERC WITH /0002			3A136260
C67F	OO 4C18C684		BSC	L	G544,+	BRANCH CN ZERC			3A136270
0681	OO 4400CF6F		BSI	L	F0C0	BSI NCT CLEAR OVERFLOW			3A136280
C683	C 30B9		DC		/30B9	ERR ID			3A136290
C684	OO 4400CFCA	G542	BSI	L	F005	CK LCKK CN ERROR			3A136300
C686	C 70DF		MDX	A540		LCCF			3A136310

C687	OO C400C665	A544	LD	L	N542	LC /0002			3A136320
C689	OO 4430C69B		BSI	L	G544,-	SK CN NCT ZERC CR			3A136330
C68B	O 7C01		MDX	H544		* NCT MINUS			3A136340
C68C	O 7C07		MDX	J544					3A136350
C68D	OO 4400CF6F	H544	BSI	L	F0C0	BSI CID NCT BRANCH			3A136360
C68F	O 30BA		DC		/30BA	ERR ID			3A136370
C69C	OO 4400CFCA		BSI	L	F0C5	CK LCKK CN ERRCR			3A136380
C692	C 7CF4		MDX	A544		LCCF			3A136390
C693	C 7CC8		MDX	A546		EXIT TO NEXT ROUTINE			3A136400
C694	OO 4400CF6F	J544	BSI	L	F0C0	BSI SKPC-SHCULD BRNC			3A136410
C696	C 30B8		DC		/30B8	ERR ID			3A136420
C697	CO 4400CFCA		BSI	L	F0C5	CK LCKK CN ERRCR			3A136430
C699	C 7GED		MDX	A544		LCCF			3A136440
C69A	C 7C01		MDX	A546		EXIT TO NEXT ROUTINE			3A136450
C69B	O CC00	G544	DC		/0000				3A136460

C69C	C CC02	A546	LD	L	N501				3A136470
C69D	OO 4420C6A1		BSI	L	G546,-	BR WHEN NOT ZERC			3A136480
C69F	C 700C		MDX	J546					3A136490
C6AC	C 70C8		MDX	H546					3A136500
C6A1	C CC00	G546	DC		/0000				3A136510
C6A2	OO 4400CF6F		BSI	L	F000	BSI BRNCHD-SHCULD NC			3A136520
C6A4	C 30BC		DC		/30BC	ERR ID			3A136530
C6A5	CO 4400CFCA		BSI	L	F005	CK LCKK CN ERRCR			3A136540
C6A7	C 70F4		MDX	A546		LCCF			3A136550
C6AE	C 7CC6		MDX	A548		EXIT TO NEXT ROUTINE			3A136560
C6A9	CO 44C0CF6F	H546	BSI	L	F0C0	BSI SKPC-SHCULD ACT			3A136570
C6A8	C 30BD		DC		/30BD	ERR ID			3A136580
C6AC	CO 4400CFCA	J546	BSI	L	F0C5	CK LCKK CN ERRCR			3A136590
C6AE	C 70ED		MDX	A546		LCCF			3A136600

CORE DATA DR *LA- OPER-									

C6AF	C CC0E	A54E	LD	N500					3A136610
C6BC	OO 4410C6BA		BSI	L	G548,-	BR WHEN NCT MINUS			3A136620
C6B2	C 700B		MDX	H548					3A136630
C6B3	CO 4400CF6F		BSI	L	F0C0	BSI SKPC-CN COND TRUE			3A136640
C6B5	C 30BF		DC		/30BF	ERR ID			3A136650
C6B6	CO 4400CFCA		BSI	L	F0C5	CK LCKK CN ERRCR			3A136660

CPU FUNCTION TEST

C6B8 0 7CF6	MDX	A548	LCCP	3A136750
C6B9 C 7CG7	MDX	A54A	EXIT TC NEXT ROUTINE	3A136760
C6BA C CGGC	G54B DC	/0000		3A136770
C6BB 00 4400CF6F	BSI L	F0C0	BSI BRANCH-SHOULD NCT	3A136780
C6BC C 30BF	DC	/30BF	ERR ID	3A136790
C6BE 00 4400CFCA	H54E BSI L	F0C5	CK LCKK CN ERRCR	3A136800
C6CG 0 7GEE	MDX	A548	LCCP	3A136810

C6C1 C CCA3	A54A LD	N542		3A136820
C6C2 00 4400CF6C	BSI L	G54A,+	BR WHEN NOT PLUS	3A136830
C6C4 C 7LCB	MDX	H54A		3A136840
C6C5 00 4400CF6F	BSI L	F0C0	BSI SKPC ON COND TRUE	3A136850
C6C7 C 30C0	DC	/30C0	ERR ID	3A136860
C6C8 00 4400CFCA	BSI L	F0C5	CK LCKK CN ERRCR	3A136870
C6CA C 7CF6	MDX	A54A	LCCP	3A136880
C6CB C 7CC7	MDX	A54C	LCCP	3A136890
C6CC 0 0000	G54A DC	/0C00	EXIT TC NEXT ROUTINE	3A136900
C6CD 00 4400CF6F	BSI L	F0C0	BSI BRANCH-SHOULD NCT	3A136910
C6CF C 30C1	DC	/30C1	ERR ID	3A136920
C6D0 00 4400CFCA	H54A BSI L	F0C5	CK LCKK CN ERRCR	3A136930
C6D2 C 7GEE	MDX	A54A	LCCP	3A136940

C6D3 0 CC91	A54C LD	N542		3A136950
C6D4 00 4400CF6E	BSI L	G54C,E	BR WHEN NOT EVEN	3A136960
C6D6 C 7CCB	MDX	H54C		3A136970
C6D7 00 4400CF6F	BSI L	F0C0	BSI SKPC ON COND TRUE	3A136980
C6D9 0 30C2	DC	/30C2	ERR ID	3A136990
C6DA 00 4400CFCA	BSI L	F0C5	CK LCKK CN ERRCR	3A137000
C6DC 0 7CF6	MDX	A54C	LCCP	3A137010
C6DD 0 7007	MDX	A54E	EXIT TC NEXT ROUTINE	3A137020
C6DE 0 0000	G54C DC	/0000		3A137030
C6DF 00 4400CF6F	BSI L	F0C0	BSI BRANCH-SHOULD NCT	3A137040
C6E1 0 30C3	DC	/30C3	ERR ID	3A137050
C6E2 00 4400CFCA	H54C BSI L	F0C5	CK LCKK CN ERRCR	3A137060
C6E4 C 7GEE	MDX	A54C	LCCP	3A137070

C6E5 0 2000	A54E LDS	0	SET C AND CF GFF	3A137080
C6E6 00 4400CF6C	BSI L	G54E,C	BR IF CARRY IS ON	3A137090
C6E8 0 700B	MDX	H54E		3A137100
C6E9 00 4400CF6F	BSI L	F0C0	BSI SKPC ON COND TRUE	3A137110
C6EB C 30C4	DC	/30C4	ERR ID	3A137120
C6EC 00 4400CFCA	BSI L	F0C5	CK LCKK CN ERRCR	3A137130
C6EE 0 7CF6	MDX	A54E	LCCP	3A137140
C6EF 0 7007	MDX	A54F	EXIT TC NEXT ROUTINE	3A137150
C6FC C 0000	G54E DC	/0000		3A137160
C6F1 00 4400CF6F	BSI L	F0C0	BSI BRANCH-SHOULD NCT	3A137170
C6F3 C 30C5	DC	/30C5	ERR ID	3A137180
C6F4 00 4400CFCA	H54E BSI L	F0C5	CK LCKK CN ERRCR	3A137190
C6F6 C 7GEE	MDX	A54E	LCCP	3A137200

C6F7 0 2000	A54F LDS	0	SET C AND CF GFF	3A137210
C6F8 00 4400CF6C	BSI L	G54F,C	BR IF CARRY IS ON	3A137220
C6FA C 700C	MDX	H54F		3A137230
C6FB 00 4400CF6F	BSI L	F0C0	BSI SKPC ON COND TRUE	3A137240
C6FD C 30C6	DC	/30C6	ERR ID	3A137250
C6FE C 30C6	DC	/30C6	ERR ID	3A137260
C6FF 00 4400CFCA	BSI L	F0C5	CK LCKK CN ERRCR	3A137270
C701 C 70F5	MDX	A54F	LCCP	3A137280
C702 C 7CC7	MDX	A580	EXIT TC NEXT ROUTINE	3A137290
C703 C 0C00	G54F DC	/0C00		3A137300
C704 00 4400CF6F	BSI L	F0C0	BSI BRANCH-SHOULD NCT	3A137310
C706 C 30C7	DC	/30C7	ERR ID	3A137320
C707 00 4400CFCA	H54F BSI L	F0C5	CK LCKK CN ERRCR	3A137330
C709 C 70ED	MDX	A54F	LCCP	3A137340

TEST OF LDC OPERATION				

CPU FUNCTION TEST

CORE DATA DR	*LA- OPER-			3A137430
AGDR INSTRUCTION	*BEL ATICK FT OPERANDS +	REMARKS	IC+SEC= AT RIGHT	3A137440

070A 00 CC0CC78E	A58C LDC	L N5C1	LDC A=/0000 C=/0000	3A137450
C70C 00 4C18C711	BSC	L G580,+	BRANCH CN ZERO	3A137460
070E 00 4400CF6F	BSI	L F000	LDC-A REG INCORRECT	3A137470
C71C C 30C8	DC	/30C8	ERR ID	3A137480
C711 00 4400CF6E	G580 BSI	L F0CE	CK LCKK CN ERRCR	3A137490
C713 C 7CF6	MDX	A580	LCCP	3A137500
C714 C 18DC	RTE	16		3A137510
C715 00 4C18C71A	BSC	L G582,+	BRANCH CN ZERO	3A137520
G717 00 4400CF6F	BSI	L F000	LDC-C REG INCORRECT	3A137530
C719 C 30C5	DC	/30C9	ERR ID	3A137540
C71A 00 4400CFCA	G562 BSI	L F0C5	CK LCKK CN ERRCR	3A137550
C71C C 7CED	MDX	A580	LCCP	3A137560

G71C 0 C872	A584 LDC	N5C3	LC A=/FFFF C=/FFFF	3A137570
C71E C FC72	EOR	N5C4	ZERC WITH /FFFF	3A137580
C71F 00 4C18C724	BSC	L G584,+	BRANCH CN ZERO	3A137590
0721 00 4400CF6F	BSI	L F000	LDC-A REG INCORRECT	3A137600
C723 C 3CCA	DC	/30CA	ERR ID	3A137610
C724 00 4400CF6E	G584 BSI	L F0CE	CK LCKK CN ERRCR	3A137620
C726 C 7CF6	MDX	A584	LCCP	3A137630
C727 C 18D0	RTE	16	NCW A=/FFFF C=/0000	3A137640
C728 C FC66	EOR	N5C4	ZERC WITH /FFFF	3A137650
C729 00 4C18C72E	BSC	L G586,+	BRANCH CN ZERO	3A137660
C72B 00 4400CF6F	BSI	L F0C0	LDC-C REG INCORRECT	3A137670
C72C C 3CCB	DC	/30CB	ERR ID	3A137680
072E 00 4400CFCA	G586 BSI	L F0C5	CK LCKK CN ERRCR	3A137690
C730 C 70EC	MDX	A584	LCCP	3A137700

G731 0 C85C	A58E LDC	N5C1	LC A=/0000 C=/0000	3A137710
C732 00 4C18C737	BSC	L G588,+	BRANCH CN ZERO	3A137720
C734 00 4400CF6F	BSI	L F000	LDC-CDD-A REG FAILED	3A137730
C736 C 3CCC	DC	/30CC	ERR ID	3A137740
C737 00 4400CF6E	G588 BSI	L F0CE	CK LCKK CN ERRCR	3A137750
C739 C 70F7	MDX	A588	LCCP	3A137760
C73A 0 18D0	RTE	16	NCW A=/FFFF C=/0000	3A137770
C73B 00 4C18C74C	BSC	L G58A,+	BRANCH CN ZERO	3A137780
073C 00 4400CF6F	BSI	L F000	LDC-CDD-Q REG FAILED	3A137790
C73F C 3CCD	DC	/30CD	ERR ID	3A137800
C740 00 4400CFCA	G58A BSI	L F0C5	CK LCKK CN ERROR	3A137810
C742 C 70EE	MDX	A588	LCCP	3A137820

TEST OF STD OPERATION				

CORE DATA DR	*LA- OPER-			3A137910
ADDR INSTRUCTION	*BEL ATICK FT OPERANDS +	REMARKS	IC+SEC= AT RIGHT	3A137920

C743 C C84A	A5CC LDD	N5C1	LC A=/0000 C=/0000	3A137930
C744 C C84D	STD	N5C5		3A137940
C745 C CC4C	LD	N5C5	LD A=/0000 C=/0000	3A137950
C746 00 4C18C74E	BSC	L G5C0,+	BRANCH CN ZERO	3A137960
C748 00 4400CF6F	BSI	L F000	STC-EA INCORRECT	3A137970
C74A C 30CF	DC	/30CF	ERR ID	3A137980
C74B 00 4400CF6E	G5CC BSI	L F0CE	CK LCKK CN ERRCR	3A137990
C74C C 7CF5	MDX	A5C0	LCCP	3A138000
C74E C CC44	LD	N5C6	LC /FFFF	3A138010
C74F 00 4C18C754	BSC	L G5C2,+	BRANCH CN ZERO	3A138020
C751 00 4400CF6F	BSI	L F000	STC-EA+1 INCORRECT	3A138030
C753 C 30CF	DC	/30CF	ERR ID	3A138040
C754 00 4400CFCA	G5C2 BSI	L F0C5	CK LCKK CN ERRCR	3A138050
C756 C 7CEC	MDX	A5C0	LCCP	3A138060

C757 C CC36	A5C4 LD	N5C1	LC /0000	3A138070

CPU FUNCTION TEST

C758 C 0039	STC	N5C5	STCRE /0000	3A138110
C759 C 0039	STC	N5C6	STCRE /0000	3A138120
C75A C 0835	LDC	N5C3	LC A=/FFFF G=/FFFF	3A138130
C75B C 2E36	STC	N5C5	STCRE /FFFF AND /FFFF	3A138140
C75C C 0035	LD	N5C5	LD /FFFF	3A138150
C75C C F032	EOR	N5C3	ZERC WITH /FFFF	3A138160
C75E 00 4C18C7E3	BSC L	G5C4,+	BRANCH CN ZERC	3A138170
C76C 00 4400CF6F	BSI L	F000	STC-EA INCCRRECT	3A138180
C762 C 30D3	DC	/30D0	ERR ID	3A138190
C763 00 4400CF5E	G5C4 BSI L	FCCE	CK LCKK CN ERRCR	3A138200
C765 C 70F1	MDX	A5C4	LCCF	3A138210
C766 C C02C	LD	N5C6	LD /1111	3A138220
C767 C F02E	EOR	N5C3		3A138230
C768 00 4C18C7E0	BSC L	G5C6,+	BRANCH CN ZERO	3A138240
C76A 00 4400CF6F	BSI L	F000	STC-EA+1 INCCRRECT	3A138250
C76C 0 30D1	DC	/30D1	ERR ID	3A138260
C76E 00 4400CFCA	G5C6 BSI L	F005	CK LCKK CN ERRCR	3A138270
C76F C 7CE7	MDX	A5C4	LCCF	3A138280

C77C 0 C01F	A5C8 LD	N5C3	LC /FFFF	3A138290
C771 C 0020	STC	N5C5	STCRE /FFFF	3A138300
C772 C 0020	STG	N5C6		3A138310
C773 C 0020	STC	N5C7		3A138320
C774 C 0819	LDD	N5C1	LD A=/C000 G=/C000	3A138330
C775 C 081D	STD	N5C6	STCRE IN N5C6 + N5C7	3A138340
C776 C 0017	LD	N5C1	LD /0000	3A138350
C777 C 001B	LD	N5C6	LD /0000	3A138360
C778 00 4C18C77D	BSC L	G5C8,+	BRANCH CN ZERO	3A138370
C77A 00 4400CF6F	BSI L	F000	STC-ODC-EA INCCRRECT	3A138380
C77C 0 30D2	DC	/30D2	ERR ID	3A138390
C77C 00 4400CF5E	G5C6 BSI L	F00E	CK LCKK CN ERRCR	3A138400
C77F C 70F0	MDX	A5C8	LCCF	3A138410
C78C 0 C013	LD	N5C7	LD /FFFF	3A138420
C781 C F00E	EGR	N5C3	ZERC WITH /FFFF	3A138430
C782 00 4C18C787	BSC L	G5CA,+	BRANCH CN ZERC	3A138440
C784 00 4400CF6F	BSI L	F000	STC-GDC-EA+1 LCADEC	3A138450
C78E C 30D3	DC	/30D3	ERR ID	3A138460
C787 00 4400CFCA	G5CA BSI L	F005	CK LCKK CN ERRCR	3A138470
C789 C 70E6	MDX	A5C8	LCCF	3A138480
C78A C C005	LD	N5C3	LD /FFFF	3A138490
C78B C 0007	STG	N5C6		3A138500
C78C C 0007	STC	N5C7		3A138510
C78D C 7007	MDX	A600	EXIT TO NEXT ROUTINE	3A138520
C78E 0000	BSS E			3A138530
C78E C 0000	N5C1 DC	/0000		3A138540
C78F C 0000	DC	/0000		3A138550
C79C C FFFF	N5C3 DC	/FFFF		3A138560
C791 C FFFF	N5C4 DC	/FFFF		3A138570
C792 C FFFF	N5C5 DC	/FFFF		3A138580
C793 C FFFF	N5C6 DC	/FFFF		3A138590
C794 C FFFF	N5C7 DC	/FFFF		3A138600
* TEST OF LDX OPERATION *				

CORE DATA CR	*LA- OPER-			
ADDR INSTRUCTION	*BEL ATICK FT OPERANDS + REMARKS	IC+SEC=	AT RIGHT	

C795 00 6500C798	A600 LDX L1	G6C0	LD XR 1 WITH ACCR CF G6C0	3A138610
C797 C 7003	MDX	H600		3A138620
C799 00 4400CF6F	G600 BSI L	F000	TAG REG BIT 7 FAILED	3A138630
C79A C 30D4	DC	/30D4	ERR ID	3A138640
C79B 00 4400CFCA	H60C BSI L	F005	CK LCKK CN ERRCR	3A138650
C79C C 7CF7	MDX	A600	LCCF	3A138660

C79E 00 6600C7A1	A602 LDX L2	G602	LD XR 2 WITH ACCR CF G602	3A138670
C7AC C 7003	MDX	H602		3A138680

CPU FUNCTION TEST

C7A1 00 4400CF6F	G602 BSI L	F000	TAG REG BIT 6 FAILED	3A138790
C7A3 C 30B5	DC	/30D5	ERR ID	3A138800
C7A4 00 4400CFCA	H602 BSI L	F005	CK LCKK CN ERRCR	3A138810
C7A6 C 7CF7	MDX	A602	LCCF	3A138820

07A7 0 6100	A604 LDX	1 0	LD DISP=0 TO XR 1	3A138830
C7A8 00 C500C812	LD	L1 N601	LD ACCR CF N601 + XR 1	3A138840
07AA 0 F067	EOR	N601	ZERC WITH ACCR CF N601	3A138850
C7AE 00 4C18C7BC	BSC L	G604,+	BRANCH CN ZERC	3A138860
C7AC 00 4400CF6F	BSI L	F000	IX 1 NCT LCADEC	3A138870
C7AF C 30D6	DC	/30D6	ERR ID	3A138880
C7B0 00 4400CFCA	G604 BSI L	F005	CK LCKK CN ERRCR	3A138890
C7B2 C 7CF4	MDX	A604	LCCF	3A138900

G7B3 0 6200	A606 LDX	2 0	LD DISP=0 TO XR 2	3A138910
C7B4 C C05F	LD	N6C3	LD /FFFF	3A138920
C7B5 00 C600C812	LD	L2 N601	LD ACCR CF N601 + XR 2	3A138930
07B7 C FC5A	EOR	N601	ZERC WITH ACCR CF N601	3A138940
C7B8 00 4C18C7BC	BSC L	G606,+	BRANCH CN ZERC	3A138950
C7BA 00 4400CF6F	BSI L	F000	XR 2 NCT LCADEC	3A138960
C7BC C 30C7	DC	/30C7	ERR ID	3A138970
C7BD 00 4400CFCA	G606 BSI L	F005	CK LCKK CN ERRCR	3A138980
C7BF C 7CF3	MDX	A606	LCCF	3A138990

C7C0 0 6300	A608 LDX	3 0	LD DISP=0 TO XR 3	3A139000
C7C1 C C052	LD	N603	LD /FFFF	3A139010
C7C2 00 C700C812	LD	L3 N601	LD ACCR CF N601 + XR 3	3A139020
C7C4 C FC4D	EOR	N6C1	ZERC WITH ACCR CF N601	3A139030
C7C5 00 4C18C7CA	BSC L	G608,+	BRANCH CN ZERC	3A139040
C7C7 00 4400CF6F	BSI L	F000	XR 3 NCT LCADEC	3A139050
C7C9 C 30D8	DC	/30D8	ERR ID	3A139060
C7CA 00 4400CFCA	G608 BSI L	F005	CK LCKK CN ERRCR	3A139070
C7CC C 7CF3	MDX	A608	LCCF	3A139080

C7CD C 61FF	A60A LDX	1 -1	LD XR 1 WITH -1	3A139090
C7CE C C045	LD	N603	LD /1111	3A139100
C7CF 00 C500C812	LD	L1 N601	LD ACCR CF N601 + XR 1	3A139110
C7D1 C F03F	EOR	N600	ZERC WITH ACCR CF N600	3A139120
C7D2 00 4C18C7C7	BSC L	G60A,+	BRANCH CN ZERC	3A139130
C7D4 00 4400CF6F	BSI L	F000	XR 1 NCT LCADEC	3A139140
C7D6 C 30D9	DC	/30D9	ERR ID	3A139150
C7D7 00 4400CFCA	G60A BSI L	F005	CK LCKK CN ERRCR	3A139160
C7D9 C 7CF3	MDX	A60A	LCCF	3A139170

C7DA 0 62FF	A60C LDX	2 -1	LD XR 2 WITH -1	3A139180
C7DB C C038	LD	N603	LD /FFFF	3A139190
C7DC 00 C6000812	LD	L2 N601	LD ACCR CF N601 + XR 2	3A139200
C7DE C F032	EOR	N600	ZERC WITH ACCR CF N600	3A139210
C7DF 00 4C18C7E4	BSC L	G60C,+	BRANCH CN ZERC	3A139220
C7E1 00 4400CF6F	BSI L	F000	XR 2 NCT LCADEC	3A139230
C7E3 C 30DA	DC	/30DA	ERR ID	3A139240
C7E4 00 4400CFCA	G60C BSI L	F005	CK LCKK CN ERRCR	3A139250
C7E6 C 7CF3	MDX	A60C	LCCF	3A139260

07E7 C 63FF	A60E LDX	3 -1	LD XR 3 WITH -1	3A139270
C7E8 C C02B	LD	N6C3	LD /FFFF	3A139280
C7E9 00 C700C812	LD	L3 N601	LD ACCR CF N601 + XR 3	3A139290
C7EB C FC25	EOR	N600	ZERC WITH ACCR CF N600	3A139300
C7EC 00 4C18C7F1	BSC L	G60E,+	BRANCH CN ZERC	3A139310
C7EE 00 4400CF6F	BSI L	F000	XR 3 NCT LCADEC	3A139320
C7FC C 30CB	DC	/30CB	ERR ID	3A139330
07F1 00 4400CFCA	G60E BSI L	F005	CK LCKK CN ERRCR	3A139340
C7F3 C 7CF3	MDX	A60E	LCCF	3A139350

C7F4 00 6500C001	B60C LDX	L1 1	LD XR 3 WITH +1	3A139360
C7F6 C C01D	LD	N6C3	LD /FFFF	3A139370
C7F7 00 C500C812	LD	L1 N601	LD ACCR CF N601 + XR 1	3A139380
C7F9 C FC19	EGR	N602	ZERC WITH ACCR CF N602	3A139390

CPU FUNCTION TEST

07FA 00 4C18C7FF	BSC L J600,+	BRANCH CN ZERC	3A139470
C7FC 00 4400CF6F	BSI L F000	LCMG FCRM LDX-FAILED	3A139480
C7FE C 300C	DC /300C	ERR ID	3A139490
C7FF 00 4400CF6A	J600 BSI L F005	CK LCKK CN ERRCP	3A139500
C801 C 7CF2	MDX B600	LCCF	3A139510

C802 00 6780C814	B602 LDX I3 N603	LD XR 3 WITH /FFFF	3A139520
C804 C CC10	LD N604	LD /0001	3A139530
C805 00 C70CC812	LD L3 N601	LD ACCR CF N601 + XR 3	3A139540
0807 C F009	EGR N600	ZERC WITH ACCR CF N600	3A139550
C808 00 4C18C80C	BSC L J602,+	BRANCH CN ZERC	3A139560
080A 00 4400CF6F	BSI L F000	INDIRECT LDX FAILED	3A139570
C80C C 300C	DC /300C	ERR ID	3A139580
C80D 00 4400CF6A	J602 BSI L F005	CK LCKK CN ERRCP	3A139590
C80F C 7CF2	MDX B602	LCCF	3A139600
C810 C 7C05	MDX A640	EXIT TO NEXT ROUTINE	3A139610
C811 C C811	N60C DC N600		3A139620
C812 C C812	N601 DC N601		3A139630
C813 C C813	N602 DC N602		3A139640
C814 C FFFF	N603 DC /FFFF		3A139650
C815 C UC01	N604 DC /0001		3A139660
*			3A139670
*			3A139680
*			3A139690
*			3A139700
*			3A139710
*			3A139720
*			3A139730

TEST OF STX OPERATION

CORE	DATA OK	*LA- CPER-	
ADDR	INSTRUCTION	*BEL ATION FT OPERANDS + REMARKS	IC+SEC= AT RIGHT

C816 C CC6D	A64C LD N644	LD /FFFF	3A139760
C817 C CC65	STC N640	SAVE	3A139770
C818 C CCFF	H64C LD H640	LD /COFF	3A139780
0819 0 6867	STX N640	STCRE INST REG AT N640	3A139790
C81A C FCFD	K64C EOR H640	CK THAT ACC WAS NOT	3A139800
*		* RESET BY STX	3A139810
C81E 00 4C18C823	BSC L G640,+	BRANCH CN ZERC	3A139820
C81D 00 4400CF6F	BSI L F000	ACC GONE AFTER STX	3A139830
C81F C 3167	DC /3167	ERR ID	3A139840
C820 00 4400CF9E	BSI L F00E	CK LCKK CN ERRCP	3A139850
C822 C 70F3	MDX A640		3A139860
C823 C CC5D	G640 LD N64C	CK THAT STX STCRE CCRECT	3A139870
C824 C FC5D	EOR N642		3A139880
C825 00 4C18C82A	BSC L G641,+	BRANCH CN ZERC	3A139890
C827 00 4400CF6F	BSI L F000	I CTR NOT STCREC	3A139900
C825 C 30DE	DC /30DE	ERR ID	3A139910
C82A 00 4400CF6A	G641 BSI L F005	CK LCKK CN ERRCP	3A139920
C82C C 7CE9	MDX A640	LCCF	3A139930

C82D C CC56	A642 LD N644	LD /FFFF	3A139940
C82E C CC52	STC N640	SAVE	3A139950
C82F C 6100	LDX 1 0	LD XR 1 WITH /CCCC	3A139960
C830 C 655C	STX 1 N640	STCRE C(XR 1) AT N640	3A139970
C831 C CC4F	LD N640	LD C(N640)	3A139980
C832 00 4C18C837	BSC L G642,+	BRANCH CN ZERC	3A139990
C834 00 4400CF6F	BSI L F000	XR 1 NOT STCREC	3A140000
C836 C 30DF	DC /30DF	ERR ID	3A140010
C837 00 4400CF6A	G642 BSI L F005	CK LCKK CN ERRCP	3A140020
C835 C 70F3	MDX A642	LCCF	3A140030

C83A C CC49	A644 LD N644	LD /FFFF	3A140040
C83B C DC45	STC N640	SAVE	3A140050
C83C C 620C	LDX 2 0	LD XR 2 WITH /CCCC	3A140060
083D 0 6A43	STX 2 N640	STCRE C(XR 2) AT N640	3A140070
C83E C CC42	LD N640	LD C(N640)	3A140080
C83F 00 4C18C844	BSC L G644,+	BRANCH CN ZERC	3A140090
C841 00 4400CF6F	BSI L F000	XR 2 NOT STCREC	3A140100
C843 C 30E0	DC /30E0	ERR ID	3A140110
C844 00 4400CF6A	G644 BSI L F005	CK LCKK CN ERRCP	3A140120
			3A140130
			3A140140

CPU FUNCTION TEST

C846 C 70F3	MDX A644	LCCF	3A140150

C847 C CC3C	A646 LD N644	LD /FFFF	3A140160
C84E C CC38	STC N640	SAVE	3A140170
C845 C 630C	LDX 3 0	LD XR 3 WITH /COCO	3A140180
C84A 0 6B36	STX 3 N640	STCRE C(XR 3) AT N640	3A140190
084B C CC35	LD N640	LD C(N640)	3A140200
084C 00 4C18C851	BSC L G646,+	BRANCH CN ZERC	3A140210
C84E 00 4400CF6F	BSI L F000	XR 3 NOT STCREC	3A140220
C850 C 30E1	DC /30E1	ERR ID	3A140230
0851 00 4400CF6A	G646 BSI L FCC5	CK LCKK CN ERRCP	3A140240
C853 C 7CF3	MDX A646	LCCF	3A140250

0854 C C02E	A648 LD N643	LD /0000	3A140260
G655 C LC2b	STC N640	SAVE	3A140270
C856 C 61FF	LDX 1 -1	LD XR 1 WITH /FFFF	3A140280
C857 C 6929	STX 1 N640	STCRE C(XR 1) AT N640	3A140290
C858 C CC28	LD N640	LD C(N640)	3A140300
C859 C F02A	EGR N644	ZERC WITH /FFFF	3A140310
C85A 00 4C18C85F	BSC L G648,+	BRANCH CN ZERC	3A140320
C85C 00 4400CF6F	BSI L F000	XR 1 NOT STCREC	3A140330
C85E C 30E2	DC /30E2	ERR ID	3A140340
C85F 00 4400CF6A	G648 BSI L FCC5	CK LCKK CN ERRCP	3A140350
C861 C 7CF2	MDX A648	LCCF	3A140360

C862 C CC20	A64A LD N643	LD /0000	3A140370
C863 C CC1D	STC N640	SAVE	3A140380
C864 C 62FF	LDX 2 -1	LD XR 2 WITH /FFFF	3A140390
C865 C 6A1B	STX 2 N640	STCRE C(XR 2) AT N640	3A140400
C866 C CC1A	LD N640	LD C(N640)	3A140410
C867 C FC1C	EOR N644	ZERC WITH /FFFF	3A140420
C868 00 4C18C86C	BSC L G64A,+	BRANCH CN ZERC	3A140430
C86A 00 4400CF6F	BSI L F000	XR 2 NOT STCREC	3A140440
C86C C 30E3	DC /30E3	ERR ID	3A140450
C86D 00 4400CF6A	G64A BSI L FCC5	CK LCKK CN ERRCP	3A140460
086F C 70F2	MDX A64A	LCCF	3A140470

0870 C CC12	A64C LD N643	LD /0000	3A140480
C871 C DC0F	STC N640	SAVE	3A140490
C872 C 63FF	LDX 3 -1	LD XR 3 WITH /FFFF	3A140500
C873 0 6B0D	STX 3 N640	STCRE C(XR 3) AT N640	3A140510
C874 C CC0C	LD N640	LD C(N640)	3A140520
C875 C F00E	EOR N644	ZERC WITH /FFFF	3A140530
C876 00 4C18C87E	BSC L G64L,+	BRANCH CN ZERC	3A140540
C878 00 4400CF6F	BSI L F000	XR 3 NOT STCREC	3A140550
C87A C 30E4	DC /30E4	ERR ID	3A140560
C87B 00 4400CF6A	G64C BSI L FCC5	CK LCKK CN ERRCP	3A140570
087C C 70F2	MDX A64C	LCCF	3A140580
C87E C CC04	LD N643	LD /CCCC	3A140590
C87F C C001	STC N640	RESTORE N64C TO /CCCC	3A140600
C880 C 7004	MDX A660	EXIT TO NEXT ROUTINE	3A140610
C881 C CC00	N64C DC /0000		3A140620
C882 0 081A	N642 DC N640		3A140630
C883 C CC00	N643 DC /0000		3A140640
C884 C FFFF	N644 DC /FFFF		3A140650

CORE	DATA GR	*LA- CPER-	
ADDR	INSTRUCTION	*BEL ATION FT OPERANDS + REMARKS	IC+SEC= AT RIGHT

C885 C 610C	A66C LDX 1 0	LD XR 1 WITH /CCCC	3A140710
C886 C 620C	LDX 2 0	LD XR 2 WITH /COCO	3A140720
C887 C 630C	LDX 3 0	LD XR 3 WITH /CCCC	3A140730
C888 C 61FF	LDX 1 -1	LD XR 1 WITH /FFFF	3A140740
C889 0 6A44	STX 2 N660	CK FOR INSTRUCTION CF	3A140750
C88A C C043	LD N660	OTHER INDEXES	3A140760
C88E 00 4C18C89C	BSC L G660,+	BRANCH CN ZERC	3A140770
C88D 00 4400CF6F	BSI L F000	XR 2 CHANGED	3A140780

CPU FUNCTION TEST

C934 C	8C21	A	N684	A /8000	3A142190	
C935 O	2823	STS	N688	STCRE C AND CF CCND	3A142200	
C936 O0	4C18C93B	BSC	L J680,+	BRANCH CN ZERC	3A142210	
C938 CO	4400CF6F	BSI	L F0C0	ACC 80C0+8C00 FAILED	3A142220	
C93A C	30ED	DC	/30ED	ERR ID	3A142230	
C93B O0	4400CF9E	J68C	BSI	L F0C0E	CK LCKK CN ERRCR	3A142240
C93C O	7GF4	MDX	B680	LCCF	3A142250	
C93E C	CC1A	LD	N6E8	LC C AND CF COND	3A142260	
C93F C	FC17	EOR	N686	ZERC WITH /0C03	3A142270	
C94C O0	4C18C94E	BSC	L J682,+	BRANCH CN ZERC	3A142280	
C942 CO	4C04C94B	BSC	L K682,E	BR CN NCT EVEN	3A142290	
C944 CO	4400CF6F	BSI	L F000	CARRY NCT CN	3A142300	
C946 C	3CEF	DC	/3CEF	ERR ID	3A142310	
C947 O0	4400CFCA	BSI	L F005	CK LCKK CN ERRCR	3A142320	
C945 C	7CE8	MDX	B680	LCCF	3A142330	
C94A O	7C0F	MDX	A6C0	EXIT TC NEXT RCUTINE	3A142340	
C94B O0	4400CF6F	K682	BSI	L F0C0	OVERFLCN NCT CN	3A142350
C94C C	3CEE	DC	/30EE	ERR ID	3A142360	
C94E O0	4400CFCA	J682	BSI	L F005	CK LCKK CN ERRCR	3A142370
C950 O	7GE1	MDX	B680	LCCF	3A142380	
C951 C	7G08	MDX	A6C0	EXIT TC NEXT RCUTINE	3A142390	
C952 O	FFFF	N68C	DC	/FFFF	3A142400	
C953 C	0G00	N681	DC	/0000	3A142410	
C954 C	LC01	N682	DC	/0C01	3A142420	
C955 C	4CC0	N683	DC	/4000	3A142430	
C956 C	8CG0	N684	DC	/8000	3A142440	
C957 C	0G03	N686	DC	/0003	3A142450	
C958 C	FFFE	N687	DC	/FFFE	3A142460	
C959 C	G000	N688	DC	/0000	3A142470	

STORAGE

INDEXING TEST

CORE	DATA GR	*LA-	CPER-		
ADDR	INSTRUCTION	*BEL	ATICH	FT OPERANDS + REMARKS	ID+SEC= AT RIGHT

C95A O	61FC	A6C0	LDX	1 -4	LD XR 1 WITH -4	3A142560	
C95B CO	C500C9D6	LD	L1	N6C4	LD C(N6C4+XR 1)	3A142570	
C95D O	FG74	EOR	N6C0		ZERC ACC IF CORRECT CP	3A142580	
C95E O0	4C20C96C	BSC	L	H6C0,2	BR IF NCT ZERC	3A142590	
C960 O	697A	STX	1	N6C9	STCRE C(XR 1) AT N6C9	3A142600	
C961 C	CC79	LD	N6C9		GET XR 1 VALUE	3A142610	
C962 C	FC79	EOR	N6CA		ZERC ACC IF CORRECT	3A142620	
C963 O0	4C18C96F	BSC	L	G6C0,+	BRANCH CN ZERC	3A142630	
C965 O0	4400CF6F	BSI	L	F000	XR 1 LCADEC WRNG	3A142640	
C967 C	30F0	DC	/30F0		ERR ID	3A142650	
C968 O0	4400CFCA	BSI	L	F0C5	CK LCKK CN ERRCR	3A142660	
C96A C	7CEF	MDX	A6C0		LCCF	3A142670	
C96B C	7CC6	MDX	A6C2		EXIT TC NEXT RCUTINE	3A142680	
C96C O0	4400CF6F	H6CC	BSI	L	F0C0	WRNG LCCATION	3A142690
C96E C	30F1	DC	/30F1		ERR ID	3A142700	
C96F CO	4400CFCA	G6CC	BSI	L	F0C5	CK LCKK CN ERRCR	3A142710
C971 O	70E8	MDX	A6C0		LCCF	3A142720	

C972 C	62C4	A6C2	LDX	2 4	LD XR 2 WITH +4	3A142740
C973 O0	C6CC9D6	LD	L2	N6C4	LD C(N6C4+XR 2)	3A142750
C975 C	FC64	EOR	N6C8		ZERC ACC IF CORRECT	3A142760
C976 CO	4C20C984	BSC	L	H6C2,2	BR IF NCT ZERC	3A142770
C978 O	6A62	STX	2	N6C9	STCRE XR 2 AT N6C9	3A142780
C975 C	CG61	LD	N6C9		GET XR 2 VALUE	3A142790
C97A C	FC62	EOR	N6C8		ZERC ACC IF CORRECT	3A142800
C97B O0	4C18C987	BSC	L	G6C2,+	BRANCH CN ZERC	3A142810
C97C CO	4400CF6F	BSI	L	F000	XR 2 LCADEC WRNG	3A142820
C97F C	3CF2	DC	/30F2		ERR ID	3A142830
C98C CO	4400CFCA	BSI	L	F0C5	CK LCKK CN ERRCR	3A142840
C982 C	7CEF	MDX	A6C2		LCCF	3A142850
C983 C	7CC6	MDX	A6C4		EXIT TC NEXT RCUTINE	3A142860

CPU FUNCTION TEST

C984 O0	4400CF6F	H6C2	BSI	L	F000	WRNG LCCATION	3A142870
C986 C	30F3	DC	/30F3			ERR ID	3A142880
C987 CO	4400CFCA	G6C2	BSI	L	F0C5	CK LCKK CN ERRCR	3A142890
C985 C	7CE8	MDX	A6C2			LCCF	3A142900

C98A O	6300	A6C4	LDX	3	0	SET XR 3 TC ZERC	3A142920
C98E O0	C70CC9D6	LD	L3	N6C4		LC C(N6C4+XR 3)	3A142930
C98C O	FC4E	EOR	N6C4			ZERC ACC IF CORRECT	3A142940
C98E O0	4C20C99B	BSC	L	H6C4,2		BR IF NCT ZERC	3A142950
C99C C	6B4A	STX	3	N6C9		STCRE XR 3 AT N6C9	3A142960
C991 C	CC49	LD	N6C9			LC /0000	3A142970
C992 CO	4C18C95E	BSC	L	G6C4,+		BRANCH CN ZERC	3A142980
C994 O0	4400CF6F	BSI	L	F0C0		XR 3 LCADEC WRNG	3A142990
C996 C	3CF4	DC	/3CF4			ERR ID	3A143000
C997 CO	4400CFCA	BSI	L	F005		CK LCKK CN ERRCR	3A143010
C995 C	7CFO	MDX	A6C4			LCCF	3A143020
C99A C	FC66	MDX	A6C6			EXIT TC NEXT RCUTINE	3A143030
O99B O0	4400CF6F	H6C4	BSI	L	F000	WRNG LCCATION	3A143040
C99C C	3CF5	DC	/30F5			ERR ID	3A143050
C99E CO	4400CFCA	G6C4	BSI	L	F005	CK LCKK CN ERRCR	3A143060
C9A0 C	7CE9	MDX	A6C4			LCCF	3A143070

C9A1 C	6301	A6C6	LDX	3	1	SET XR 3 TC +1	3A143090
C9A2 CO	C70CC9D6	LD	L3	N6C4		LC C(N6C4+XR 3)	3A143100
O9A4 C	F032	EOR	N6C5			ZERC FOR CORRECT OP	3A143110
C9A5 CO	4C20C9B3	BSC	L	H6C6,2		BR IF NCT ZERC	3A143120
C9A7 C	6B33	STX	3	N6C9		STCRE XR 3 AT N6C9	3A143130
C9A8 O	CC32	LD	N6C9			LC C(N6C9)	3A143140
C9A9 C	FC34	EOR	N6C0			ZERC ACC FOR CORRECT OP	3A143150
C9AA O0	4C18C9B6	BSC	L	G6C6,+		BRANCH CN ZERC	3A143160
C9AC O0	4400CF6F	BSI	L	F0C0		XR 3 LCADEC WRNG	3A143170
C9AE O	3CF6	DC	/3CF6			ERR ID	3A143180
C9AF CO	4400CFCA	BSI	L	F005		CK LCKK CN ERRCR	3A143190
C9B1 C	70EF	MDX	A6C6			LCCF	3A143200
C9B2 C	7CC6	MDX	A6C8			EXIT TC NEXT RCUTINE	3A143210
C9B3 CO	4400CF6F	H6C6	BSI	L	F0C0	WRNG LCCATION	3A143220
O9B5 C	3CF7	DC	/30F7			ERR ID	3A143230
C9B6 CO	4400CFCA	G6C6	BSI	L	F005	CK LCKK CN ERRCR	3A143240
C9B8 C	7CE8	MDX	A6C6			LCCF	3A143250

C9B9 O	63FF	A6C8	LDX	3	-1	SET XR 3 TC -1	3A143270
C9BA CO	C78CC9EC	LD	L3	N6C4		LC C(N6CF+XR 3)	3A143280
C9BC C	FC19	EOR	N6C4			ACC NGW ZERC	3A143290
O9BC O0	4C20C9CB	BSC	L	H6C8,2		BR IF NCT ZERC	3A143300
C9BF O	6B1B	STX	3	N6C9		STCRE XR 3 AT N6C9	3A143310
O9C0 O	CO1A	LD	N6C9			LC C(N6C9)	3A143320
O9C1 C	FC1E	EOR	N6CF			ZERC WITH /FFFF	3A143330
C9C2 O0	4C18C9CE	BSC	L	G6C8,+		BRANCH CN ZERC	3A143340
C9C4 CO	4400CF6F	BSI	L	F000		XR 3-LCADEC WRNG	3A143350
C9C6 C	3CF8	DC	/30F8			ERR ID	3A143360
O9C7 CO	4400CFCA	BSI	L	F005		CK LCKK CN ERRCR	3A143370
C9C5 C	7CEF	MDX	A6C8			LCCF	3A143380
C9CA C	7017	MDX	A6D0			EXIT TC NEXT RCUTINE	3A143390
C9CB CO	4400CF6F	H6C8	BSI	L	F0C0	WRNG LCCATION	3A143400
C9CC C	3CF9	DC	/30F9			ERR ID	3A143410
C9CE O0	4400CFCA	G6C8	BSI	L	F005	CK LCKK CN ERRCR	3A143420
O9D0 O	7GE8	MDX	A6C8			LCCF	3A143430
O9D1 C	7010	MDX	A6D0			EXIT TC NEXT RCUTINE	3A143440
C9D2 C	C9D2	N6CC	DC	N6C0			3A143450
C9D3 C	C9D3	N6C1	DC	N6C1			3A143460
C9D4 C	C9D4	N6C2	DC	N6C2			3A143470
C9D5 C	C9D5	N6C3	DC	N6C3			3A143480
C9D6 C	C9D6	N6C4	DC	N6C4			3A143490
C9D7 C	C9D7	N6C5	DC	N6C5			3A143500
C9D8 C	C9D8	N6C6	DC	N6C6			3A143510
C9D9 C	C9D9	N6C7	DC	N6C7			3A143520
C9DA C	C9DA	N6C8	DC	N6C8			3A143530
C9DE C	C000	N6C5	DC	/C000			3A143540

CPU FUNCTION TEST

C9DC 0 FFFC N6CA DC /FFFC 3A143550
C9DD C 0004 N6CB DC /0004 3A143560
C9DE C 0001 N6CD DC /0001 3A143570
C9DF C 00D6 DC N6C4 3A143580
C9EC 0 FFFF N6CF DC /FFFF 3A143590
C9E1 C 7CD7 MDX A6C8 LCCF 3A143600

CGRE DATA GR *LA- OPER- 3A143620
ADDR INSTRUCTION *BEL ATIGN FT CPERANC + REMARKS IC+SEC= AT RIGHT 3A143630

09E2 00 650CC9D3 A6D0 LDX L1 N6C1 LD XR 1 WITH ADDRESS 3A143640
* CF N6C1 3A143650
09E4 C C1FF LD 1 -1 SHCRT FORM INDEXING 3A143660
09E5 C FGEC EGR N6C0 ZERC IF CORRECT 3A143670
09E6 00 4C18C9EE BSC L H6D0,+ BRANCH CN ZERO 3A143680
09E7 00 4400CF6F BSI L F0C0 INDEXED LD INST. FAILED 3A143690
09E8 C 315D DC /315D ERR ID 3A143700
09E9 00 4400CFCA H6D0 BSI L F0C5 CK LCKK CN ERRCR 3A143710
09ED C 7CF4 MDX A6D0 LCCF 3A143720

09EE 00 6E00C9D3 A6D2 LDX L2 N6C1 LD XR 2 WITH ADDRESS 3A143730
* CF N6C1 3A143740
09FL C C201 LD 2 1 LD C(OF ADDRESS IN XR 1+1) 3A143750
09F0 C F0E2 EDR N6C2 ZERC IF CORRECT 3A143760
09F1 00 4C18C9F7 BSC L H6D2,+ BRANCH CN ZERO 3A143770
09F2 00 4400CF6F BSI L F000 INDEXED LD INST. FAILED 3A143780
09F3 C 315E DC /315E ERR ID 3A143790
09F4 00 4400CFCA H6D2 BSI L F0C5 CK LCKK CN ERRCR 3A143800
09F5 C 7CF4 MDX A6D2 LCCF 3A143810

09FA 00 6700C9D3 A6D3 LDX L3 N6C1 LD XR 3 WITH ADD OF N6C1 3A143820
09FB C C300 LD 3 0 LD C(OF ADD IN XR 3 + 0) 3A143830
09FC C F0D5 EDR N6C1 ZERC IF CORRECT 3A143840
09FD 00 4C18C9C2 BSC L H6D3,+ BRANCH CN ZERC 3A143850
09FE 00 4400CF6F BSI L F000 INDEXED LD INST. FAILED 3A143860
09FF C 315F DC /315F ERR ID 3A143870
09A0 00 4400CFCA H6D3 BSI L F0C5 CK LCKK CN ERRCR 3A143880
09A1 0 7CF4 MDX A6D3 LCCF 3A143890

CA06 0 61G2 A6D5 LDX 1 2 LD XR 1 WITH +2 3A143900
CA07 C CCD6 LD N6CD LD /0001 3A143910
CA08 0 1101 SLA 1 1 NCM A=/0004 3A143920
CA09 C FGD3 ECR N6CB NCM A=/000C 3A143930
CA0A 00 4C18C9CF BSC L H6D5,+ BRANCH CN ZERC 3A143940
CA0B 00 4400CF6F BSI L F0C0 INDEXED SLA FAILED 3A143950
CA0C C 3163 DC /3163 ERR ID 3A143960
CA0D 00 4400CFCA H6D5 BSI L F0C5 CK LCKK CN ERRCR 3A143970
CA0E C 7CF4 MDX A6D5 LCCF 3A143980

CA12 0 6202 A6D6 LDX 2 2 LD /00CC4 3A143990
CA13 C CCC5 LD N6CB NCM A=/0001 3A144000
CA14 C 1A01 SRA 2 1 ZERC ACC 3A144010
CA15 C FCC8 EDR N6CD ZERC WITH /0001 3A144020
CA16 00 4C18CA1B BSC L H6D6,+ BRANCH CN ZERC 3A144030
CA17 00 4400CF6F BSI L F0C0 INDEXED SRA FAILED 3A144040
CA18 C 3164 DC /3164 ERR ID 3A144050
CA19 00 4400CFCA H6D6 BSI L F0G5 CK LCKK CN ERRCR 3A144060
CA1C C 7CF4 MDX A6C6 LCCF 3A144070

***** TEST INDEXED ESC *****

CGRE DATA GR *LA- OPER- 3A144100
ADDR INSTRUCTION *BEL ATIGN FT CPERANC + REMARKS IC+SEC= AT RIGHT 3A144110

3A144200
3A144210
3A144220

CPU FUNCTION TEST

CA1E C 6301 A6FC LDX 3 1 LD XR 3 WITH +1 3A144230
CA1F C C00E LD N6F1 LC C(OF LABEL N6F1) 3A144240
CA20 00 4F060A23 BSC L3 N6F0 BR TC C(N6FC+XR 3) 3A144250
CA22 C 30CC WAIT INDEXED BSC FAILED 3A144260
CA23 C 3C0C N6FC WAIT INDEXED BSC FAILED 3A144270
0A24 0 FCC9 EDR N6F1 CK FOR DISTRCTED ACC 3A144280
CA25 00 4C18CA2A BSC L H6F0,+ BRANCH CN ZERO 3A144290
CA27 00 4400CF6F BSI L F0C0 ACC DISTRCTED 3A144300
CA29 0 3165 DC /3165 ERR ID 3A144310
CA2A 00 4400CFCA H6F0 BSI L F0C5 CK LCKK CN ERRCR 3A144320
CA2C C 7CF1 MDX A6F0 LCCF 3A144330
CA2D C 7C01 MDX A6F1 EXIT TC NEXT ROUTINE 3A144340
CA2E 0 0A2E N6F1 DC N6F1 3A144350

CA2F 0 62G1 A6F1 LDX 2 1 LD XR 2 WITH +1 3A144360
CA30 00 4E80CA33 BSC 12 N6F2 BR TC N6F2+1 INDIRECT 3A144370
CA32 C 7CC5 MDX H6F1 ESC FAILED 3A144380
CA33 C 7C04 N6F2 MDX H6F1 BSC FAILED 3A144390
CA34 C CA37 DC N6F3 3A144400
CA35 C 70Q2 MDX H6F1 BSC FAILED 3A144410
CA36 C 7CC1 MDX H6F1 BSC FAILED 3A144420
CA37 C 7CC3 N6F3 MDX H6F2 3A144430
CA38 00 4400CF6F H6F1 BSI L F0C0 BSC DIC NCT ERANCH 3A144440
CA3A C 3166 DC /3166 ERR ID 3A144450
CA3B 00 4400CFCA H6F2 BSI L F0C5 CK LCKK CN ERRCR 3A144460
CA3C C 7CF1 MDX A6F1 LCCF 3A144470

***** TEST CF SUBTRACT OPERATION *****

CA3E C 2CC0 A700 LDS 0 SET C AND CF OFF 3A144500
CA3F C CC66 LD N700 LD /00CC 3A144510
CA40 C 5C66 S N7C1 S /0001 A NCM /FFFF 3A144520
CA41 0 2E66 STS N702 STORE CARRY INC. TC N7C2 3A144530
CA42 C FC66 EDR N703 ZERO ACC IF CORRECT 3A144540
0A43 00 4C1ECA4E BSC L G7C0,+ BRANCH CN ZERC 3A144550
CA45 00 4400CF6F BSI L F0G0 COCC MINUS 0001 FAILED 3A144560
CA47 C 3CFA DC /30FA ERR ID 3A144570
CA48 00 4400CF9E G70C BSI L F00E CK LCKK CN ERRCR 3A144580
0A4A C 70F3 MDX A700 LCCF 3A144590
CA4E C CC5C LD N7C2 LD CARRY INDICATION 3A144600
CA4C C FC5D EDR N704 ZERC IF CORRECT 3A144610
CA4D 00 4C18CA52 BSC L G702,+ BRANCH CN ZERC 3A144620
CA4F 00 4400CF6F BSI L F000 CARRY ACT CN 3A144630
CA51 C 3CFB DC /30FB ERR ID 3A144640
CA52 00 4400CFCA G702 BSI L F005 CK LCKK CN ERRCR 3A144650
CA54 0 7CE9 MDX A700 LCCF 3A144660

CA55 0 2000 A704 LDS 0 SET C AND CF OFF+ 3A144670
CA56 C CC4F LD N7C0 LD /0000 3A144680
CA57 C 5C51 S N703 S /FFFF 3A144690
CA58 C 284F STS N702 STORE CARRY CN CONDITION 3A144700
CA59 C FC4D EDR N701 ZERC WITH /0001 3A144710
CA5A 00 4C1ECA5F BSC L G7C4,+ BRANCH CN ZERC 3A144720
CA5C 00 4400CF6F BSI L F0C0 COCC MINUS FFFF FAILED 3A144730
CA5E C 3CFC DC /30FC ERR ID 3A144740
CA5F 00 4400CF9E G704 BSI L F0GE CK LCKK CN ERRCR 3A144750
CA61 C 7CF3 MDX A704 LCCF 3A144760
CA62 C CC45 LD N702 LD CARRY CN CN FROM N702 3A144770
CA63 C FC46 EDR N704 ZERC ACC IF CORRECT 3A144780
CA64 00 4C1ECA65 BSC L G7C6,+ BRANCH CN ZERC 3A144790
CA66 00 4400CF6F BSI L F0C0 CARRY ACT SET 3A144800
CA68 C 3CFD DC /30FD ERR ID 3A144810
CA69 00 4400CFCA G706 BSI L F0C5 CK LCKK CN ERRCR 3A144820
CA6E C 7CE9 MDX A704 LCCF 3A144830

3A144840
3A144850
3A144860
3A144870
3A144880
3A144890
3A144900

CPU FUNCTION TEST

CORE DATA OR *LA- OPER- ADDR INSTRUCTION *BEL ATION FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A144910 3A144920 3A144930 3A144940 3A144950 3A144960 3A144970 3A144980 3A144990 3A145000 3A145010 3A145020 3A145030 3A145040 3A145050 3A145060 3A145070 3A145080 3A145090 3A145100 3A145110 3A145120 3A145130 3A145140 3A145150 3A145160 3A145170 3A145180 3A145190 3A145200 3A145210 3A145220 3A145230 3A145240 3A145250 3A145260 3A145270 3A145280 3A145290 3A145300 3A145310 3A145320 3A145330 3A145340 3A145350 3A145360 3A145370 3A145380 3A145390 3A145400 3A145410 3A145420 3A145430 3A145440 3A145450 3A145460 3A145470 3A145480 3A145490 3A145500 3A145510 3A145520 3A145530 3A145540 3A145550 3A145560 3A145570 3A145580

TEST OF ADD DOUBLE

CORE DATA OR *LA- OPER- ADDR INSTRUCTION *BEL ATION FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A145590 3A145600 3A145610 3A145620 3A145630 3A145640 3A145650 3A145660 3A145670 3A145680 3A145690 3A145700 3A145710 3A145720 3A145730 3A145740 3A145750 3A145760 3A145770 3A145780 3A145790 3A145800 3A145810 3A145820 3A145830 3A145840 3A145850 3A145860 3A145870 3A145880 3A145890 3A145900 3A145910 3A145920 3A145930 3A145940 3A145950 3A145960 3A145970 3A145980 3A145990 3A146000 3A146010 3A146020 3A146030 3A146040 3A146050 3A146060 3A146070 3A146080 3A146090 3A146100 3A146110 3A146120 3A146130 3A146140 3A146150 3A146160 3A146170 3A146180 3A146190 3A146200 3A146210 3A146220 3A146230 3A146240 3A146250 3A146260

DATE C2JAN66 01MAY66 15NOV66 EC NO. 415490 415490C 419643

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CPU FUNCTION TEST

OAB7 CO 4C18CABC BSC L G740,+ ERANCH CN ZERC 3A145590 CAB9 OO 4400CFEF BSI L F000 AC FFFF+0000 A FAILED 3A145600 CABE O 3103 DC /3103 ERR ID 3A145610 CABC CO 4400CF9E G740 BSI L F00E CK LCK ON ERRCR 3A145620 CABE C 7CEF MDX A740 LOCP 3A145630 CABF C 1ED0 RTE 16 3A145640 CACO CO F4C0CB74 EOR L N742 3A145650 CAC2 OO 4C18CAC7 BSC L G742,+ BR CN ZERO 3A145660 CAC4 CO 4400CFEF BSI L F000 AC FFFF+0000 C FAILED 3A145670 CAC6 C 3104 DC /3104 ERR ID 3A145680 CAC7 CO 4400CF9E G742 BSI L F00E CK LCK ON ERRCR 3A145690 OACS C 7CE4 MDX A740 LOCP 3A145700 CACA CO C4C0CB73 LD L N740 CCNCITCN CF C + CF 3A145710 CACC OO 4C18CADA BSC L G744,+ BRANCH CN ZERO 3A145720 CACE CO 4C04CAD7 BSC L H744,E BR IF NCT EVEN 3A145730 CACC CO 4400CF6F BSI L F000 CARRY CN 3A145740 CAC2 C 3105 DC /3105 ERR ID 3A145750 CAC3 CO 4400CFCA BSI L F005 CK LCK CN ERRCR 3A145760 OADS C 7CD8 MDX A740 LOCP 3A145770 CAC6 C 7C03 MDX G744 3A145780 CAC7 CO 4400CF6F H744 BSI L F000 CVFLC CN 3A145790 CACS O 3106 DC /3106 ERR ID 3A145800 CACA CO 4400CFCA G744 BSI L F005 CK LCK CN ERRCR 3A145810 CADC C 7C01 MDX A740 LOCP 3A145820 3A145830 3A145840 3A145850 3A145860 3A145870 3A145880 3A145890 3A145900 3A145910 3A145920 3A145930 3A145940 3A145950 3A145960 3A145970 3A145980 3A145990 3A146000 3A146010 3A146020 3A146030 3A146040 3A146050 3A146060 3A146070 3A146080 3A146090 3A146100 3A146110 3A146120 3A146130 3A146140

CORE DATA OR *LA- OPER- ADDR INSTRUCTION *BEL ATION FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A146150 3A146160 3A146170 3A146180 3A146190 3A146200 3A146210 3A146220 3A146230 3A146240 3A146250 3A146260

DATE C2JAN66 01MAY66 15NOV66 EC NO. 415490 415490C 419643

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CPU FUNCTION TEST

CB16 0 1ED0 RTE 16 INTERCHANGE A AND C 3A146270
CB17 C FG62 EOR N74A ZERC WITH /FFFF 3A146280
CB18 CO 4C18CB1D BSC L G74E,+ BRANCH CN ZERO 3A146290
CB1A CO 4400CF6F BSI L F000 AC FFFF+FFFF C FAILED 3A146300
CB1C C 310C DC /310C ERR ID 3A146310
CB1D CO 4400CF9E G74E BSI L F00E CK LCKC CN ERRCR 3A146320
OB1F C 7CE9 MDX A74C LCCP 3A146330
CB2C C CG52 LD N740 CCNDITION CF C AND CF 3A146340
CB21 C FG5C EOR N748 CHECK FCR CVERFLCH 3A146350
CB22 CO 4C180B3C BSC L J742,+ BRANCH CN ZERO 3A146360
CB24 CO 4CC4CB2D BSC L K740,E CHECK FCR CARRY 3A146370
CB26 CO 4400CF6F BSI L F000 CARRY NCT CN 3A146380
CB2E C 31CE DC /310E ERR ID 3A146390
CB29 00 4400CFCA BSI L F005 CK LCKC CN ERRCR 3A146400
CB2B C 7CDD MDX A74C LCCP 3A146410
CB2C C 7003 MDX J740 CVFLO CN 3A146420
CB2L CO 4400CF6F K740 BSI L F0C0 ERR ID 3A146430
CB2F C 31GD DC /310D ERR ID 3A146440
CB3C 00 4400CFCA J740 BSI L F0G5 CK LCKC CN ERRCR 3A146450
CB32 0 7CD6 MDX A74C LCCP 3A146460

CB33 0 20CC B742 LDS 0 SET C AND CF OFF 3A146470
CB34 C CB47 LDD N74C LD A=/FFFF C=/7FFF 3A146480
CB35 C 883E AD N742 A /FFFF /FFFF 3A146490
CB36 0 283C STS N740 STCRE CCNDITION CF C + OF 3A146500
CB37 C FC3C EOR N742 3A146510
CB38 00 4C180B3D BSC L J742,+ BRANCH CN ZERO 3A146520
CB3A 00 4400CF6F BSI L F000 AC FFFF+FFFF A FAILED 3A146530
CB3C C 310F DC /310F ERR ID 3A146540
CB3D CO 4400CF9E J742 BSI L F00E CK LCKC CN ERRCR 3A146550
CB3F C 7CF3 MDX B742 LCCP 3A146560
CB4C 0 18D0 RTE 16 INTERCHANGE A AND C 3A146570
CB41 C FC35 EOR N748 3A146580
CB42 CO 4C180B47 BSC L J744,+ BRANCH CN ZERO 3A146590
CB44 CO 4400CF6F BSI L F0C0 AC /7FFF+FFFF C /FAILED 3A146600
CB46 C 3110 DC /3110 ERR ID 3A146610
CB47 CO 4400CF9E J744 BSI L F0CE CK LCKC CN ERRCR 3A146620
CB49 C 7CE9 MDX B742 LCCP 3A146630
CB4A C CC28 LD N740 LD C AND CF CONDITCN 3A146640
CB4B C FC32 EOR N748 ZERC IF CARRY WAS CN 3A146650
CB4C 00 4C180B5A BSC L J746,+ BRANCH CN ZERO 3A146660
CB4E CO 4C040B57 BSC L K746,E CHECK FCR CARRY 3A146670
CB5C CO 4400CF6F BSI L F000 CARRY NCT CN 3A146680
CB52 C 3112 DC /3112 ERR ID 3A146690
CB53 CO 4400CFCA BSI L F0C5 CK LCKC CN ERROR 3A146700
CB55 C 7CDD MDX B742 LCCP 3A146710
CB56 C 7C03 MDX J746 3A146720
CB57 CO 4400CF6F K746 BSI L F0C0 CVFLC CN 3A146730
CB59 C 3111 DC /3111 ERR ID 3A146740
CB5A CO 4400CFCA J746 BSI L F0C5 CK LCKC CN ERRCR 3A146750
CB5C C 7C06 MDX B742 LCCP 3A146760

CORE DATA CR *LA- OPER- 3A146780
ADDR INSTRUCTION *BEL ATICN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A146790

CB5C C CB1A B747 LDC N746 LC A=/C000 C=/0001 3A146800
CB5E 0 EE1A AD N747 A /0001 /0001 3A146810
CB5F C FC19 EOR N747 ZERC ACC IF CORRECT CP 3A146820
CB6C CO 4C180B65 BSC L J748,+ BRANCH CN ZERO 3A146830
CB62 CO 4400CF6F BSI L F000 AC-CCC A REG FAILED 3A146840
CB64 C 3113 DC /3113 ERR ID 3A146850
CB65 CO 4400CF9E J748 BSI L F00E CK LCKC CN ERRCR 3A146860
CB67 C 7CF5 MDX B747 LCCP 3A146870
CB68 C 18D0 RTE 16 NCH A=/0002 C=/0000 3A146880
CB69 C FC14 EOR N748 ZERC ACC IF CORRECT CP 3A146890
CB6A 00 4C180B6F BSC L J74A,+ BRANCH CN ZERO 3A146900
CB6C CO 4400CF6F BSI L F0G0 AC-CCC C REG FAILED 3A146910

CPU FUNCTION TEST

CB6E C 3114 DC /3114 ERR ID 3A146950
CB6F CO 4400CFCA J74A BSI L F005 CK LCKC CN ERRCR 3A146960
CB71 0 70EB MDX B747 LCCP 3A146970
CB72 C 70CC MDX A780 EXIT TC NEXT ROUTINE 3A146980
CB73 C 0C00 N740 DC /0000 3A146990
CB74 C C0C0 BSS E 3A147000
CB74 0 FFFF N742 DC /FFFF 3A147010
CB75 0 FFFF DC /FFFF 3A147020
CB76 C 0000 N744 DC /0000 3A147030
CB77 0 0000 DC /0000 3A147040
CB7E C 0000 N746 DC /0000 3A147050
CB75 C 0C01 N747 DC /0001 3A147060
CB7A 0 FFFE N74A DC /FFFE 3A147070
CB7B C 7FFE N74B DC /7FFE 3A147080
CB7C C FFFF N74C DC /FFFF 3A147090
CB7C C 7FFF DC /7FFF 3A147100
CB7E C 0002 N74E DC /0002 3A147110
* 3A147120
* TEST SUB DCUBLE 3A147130
* 3A147140

CB7F C 2C00 A78C LDS 0 SET C AND CF OFF 3A147150
CB8C 0 CB67 LDD N782 LC A=/C000 C=/COCC 3A147160
CB81 0 9868 SD N784 S /0000 /0001 3A147170
CB82 0 2E64 STS N780 STCRE C AND CF CCNDITION 3A147180
CB83 0 FC68 EOR N786 ZERC WITH /FFFF 3A147190
CB84 00 4C180B85 BSC L G780,+ BRANCH CN ZERO 3A147200
CB86 CO 4400CF6F BSI L F000 SC C000-0000 ACC FAILED 3A147210
CB88 0 3115 DC /3115 ERR ID 3A147220
CB89 CO 4400CF9E G780 BSI L F0CE CK LCKC CN ERRCR 3A147230
CB8B C 7CF3 MDX A780 LCCP 3A147240
CB8C C 1ED0 RTE 16 NCH A=/FFFF C=/CC00 3A147250
CB8D 0 FC5E EOR N786 ZERC WITH /FFFF 3A147260
CB8E 00 4C180B93 BSC L G782,+ BR CN ZERO 3A147270
CB9C CO 4400CF6F BSI L F000 SC C000-0001 C FAILED 3A147280
CB92 C 3116 DC /3116 ERR ID 3A147290
CB93 CO 4400CF9E G782 BSI L F0CE CK LCKC CN ERRCR 3A147300
CB95 C 7CE9 MDX A780 LCCP 3A147310
CB96 C CC5C LD N780 LC C AND CF CCNDITCN 3A147320
CB97 C F056 EOR N788 ZERC IF CARRY WAS ON 3A147330
CB98 00 4C180BAE BSC L G784,+ BRANCH CN ZERO 3A147340
CB9A CO 4C04CBA3 BSC L H784,E CHECK FCR CARRY 3A147350
CB9C CO 4400CF6F BSI L F000 CARRY NCT CN 3A147360
CB9E C 3117 DC /3117 ERR ID 3A147370
CB9F CO 4400CFCA BSI L F005 CK LCKC CN ERRCR 3A147380
CBA1 C 7CDD MDX A780 LCCP 3A147390
CBA2 C 70C3 MDX G784 3A147400
CBA3 00 4400CF6F H784 BSI L F000 CVFLC CN 3A147410
CBA5 C 3118 DC /3118 ERR ID 3A147420
CBA6 00 4400CFCA G784 BSI L F0C5 CK LCKC CN ERRCR 3A147430
CBAE C 7C06 MDX A780 LCCP 3A147440

CORE DATA CR *LA- OPER- 3A147460
ADDR INSTRUCTION *BEL ATICN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A147470

CBA5 C 2C00 A786 LDS 0 SET C AND CF OFF 3A147480
CBA8 C CB3D LDD N782 LC A=/C000 C=/COCC 3A147490
CBAE 0 9840 SD N786 /FFFF /FFFF 3A147500
CBAC 00 4C180BB1 BSC L G786,+ BRANCH CN ZERO 3A147510
CBA2 00 4400CF6F BSI L F000 SC C000-FFFF A FAILED 3A147520
CBBC C 3115 DC /3115 ERR ID 3A147530
CB81 CO 4400CF9E G786 BSI L F00E CK LCKC CN ERRCR 3A147540
CB83 C 7CF5 MDX A786 LCCP 3A147550
CB84 C 18DC RTE 16 NCH A=/C001 C=/COCC 3A147560
CB85 C FC35 EOR N785 ZERC WITH /0001 3A147570
CB86 CO 4C180BBB BSC L G788,+ BRANCH CN ZERO 3A147580
CB88 00 4400CF6F BSI L F000 SC C000-FFFF C FAILED 3A147590

CPU FUNCTION TEST

CBBA 0 311A DC /311A ERR ID 3A147630
CBBE 0 4400CFCA G788 BSI L F005 CK LCKK CN ERRCR 3A147640
CBBC 0 7CEB MDX A786 LCCF 3A147650
...
CBF1 0 C00G DC /C000 3A148090

TEST OF MULTIPLY OPERATION

CGRE DATA DR *LA- CPER-
ADDR INSTRUCTION *BEL ATICK FT OPERANDS + REMARKS ID+SEC= AT RIGHT
...
CCC4 0 4400CFCA G7C2 BSI L FCC5 CK LCKK CN ERRCR 3A148300

CPU FUNCTION TEST

CC06 0 7CEB MDX A7C0 LCCF 3A148310
CC07 0 C03E A7C4 LD N7C4 LC /FFFF 3A148320
CC08 0 A03D M N7C4 M /FFFF 3A148330
...
CC46 0 C00G N7C6 DC /0000 3A148830

TEST OF DIVIDE OPERATION

CGRE DATA DR *LA- OPER-
ADDR INSTRUCTION *BEL ATICK FT OPERANDS + REMARKS ID+SEC= AT RIGHT
...
CC56 0 3127 DC /3127 ERR ID 3A148980

CPU FUNCTION TEST

CC57 CO 4400CF5E G800 BSI L F00E CK LCKK CN ERRCR 3A148990
CC59 C 70EF MDX A8C0 LCCF 3A149000
CC5A O 18D0 RTE 16 NCH A=/7FFF C=/0000 3A149010
CC5B CO F400CCF7 EOR L N811 ZERC WITH /7FFF 3A149020
CC5C CO 4C18CC62 BSC L G802,+ BRANCH CN ZERO 3A149030
CC5F CO 4400CF6F BSI L F0C0 CVC-C REG INCORRECT 3A149040
CC61 O 312E DC /3128 ERR ID 3A149050
CC62 CO 4400CF5E G802 BSI L F0CE CK LCKK CN ERRCR 3A149060
CC64 O 70E4 MDX A8C0 LCCF 3A149070
CC65 CO 4400CFE6 LD L N8C0 LC /0000 3A149080
CC67 CO 4C18CC75 BSC L G804,+ BRANCH CN ZERC 3A149090
CC69 CO 4C04CC72 BSC L H8C4,E BR CN NOT EVEN 3A149100
CC6E CO 4400CF6F BSI L F0C0 CARRY CN 3A149110
CC6D O 3129 DC /3129 ERR ID 3A149120
CC6E CO 4400CFCA BSI L FCC5 CK LCKK CN ERRCR 3A149130
CC7C O 70D8 MDX A8C0 LCCF 3A149140
CC71 C 7C06 MDX A8C6 EXIT TC NEXT ROUTINE 3A149150
CC72 CO 4400CF6F H804 BSI L F000 CVFLC CN 3A149160
CC74 C 312A DC /312A ERR ID 3A149170
CC75 CO 4400CFCA G804 BSI L FCC5 CK LCKK CN ERRCR 3A149180
CC77 O 7C01 MDX A8C0 LCCF 3A149190
***** 3A149200
CC76 O C871 A806 LDD N804 LC A=/1C71 Q=/BEE3 3A149210
CC79 CO AC00CF5 D L N813 C /5555 3A149220
CC7B C 286A STS N8C0 STCR C AND CF CONDITION 3A149230
CC7C OO F400CF5 EOR L N813 ZERO WITH /5555 3A149240
CC7E OO 4C18CC63 BSC L G8C6,+ BRANCH CN ZERO 3A149250
CC80 OO 4400CF6F BSI L F000 DVC-A REG INCORRECT 3A149260
CC82 O 312B DC /312B ERR ID 3A149270
CC83 CO 4400CF5E G806 BSI L F00E CK LCKK CN ERRCR 3A149280
CC85 C 7CF2 MDX A806 LCCF 3A149290
CC86 C 18D0 RTE 16 NCH A=/BEE3 C=/0000 3A149300
CC87 OO F400CFCA EOR L N816 ZERC WITH /2CAA 3A149310
CC89 OO 4C18CC8E BSC L G8C8,+ BRANCH CN ZERO 3A149320
CC8B OO 4400CF6F BSI L F0C0 DVC-C REG INCORRECT 3A149330
CC8C O 312C DC /312C ERR ID 3A149340
CC8E CO 4400CF5E G80E BSI L F0CE CK LCKK CN ERRCR 3A149350
CC9C O 7CE7 MDX A806 LCCF 3A149360
CC91 O CC54 LD N8C0 LC C AND CF CONDITION 3A149370
CC92 OO 4C18CCAC BSC L H8CA,+ BRANCH CN ZERO 3A149380
CC94 OO 4C04CC5C BSC L H8CA,E BR IF NOT EVEN 3A149390
CC96 CO 4400CF6F BSI L F000 CARRY CN 3A149400
CC98 O 312D DC /312D ERR ID 3A149410
CC99 CO 4400CFCA BSI L FCC5 CK LCKK CN ERRCR 3A149420
CC9E C 7C0C MDX A8C6 LCCF 3A149430
CC9C C 7C0E MDX A8CC EXIT TC NEXT ROUTINE 3A149440
CC9D CO 4400CF6F H80A BSI L F000 CVFLC CN 3A149450
CC9F O 312E DC /312E ERR ID 3A149460
CCAC CO 4400CFCA G80A BSI L FCC5 CK LCKK CN ERRCR 3A149470
OCA2 C 7C05 MDX A806 LCCF 3A149480
***** 3A149490
CORE DATA CR *LA- GPER- 3A149500
ADDR INSTRUCTION *BEL ATICN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A149510
***** 3A149520
CCA3 C 2000 A8CC LDS 0 SET C AND CF CFF 3A149530
CCA4 C C847 LDD N8C6 SET A=/0000 C=/00C1 3A149540
CCA5 C A84E D N80E D /0000 3A149550
CCA6 OO 4C01CCAB BSC L G8CC,C BRANCH CN CVERFLW 3A149560
CCA8 OO 4400CF6F BSI L F000 DVC BY C-OVRFLW CFF 3A149570
CCAA U 312F DC /312F ERR ID 3A149580
CCAB CO 4400CFCA G80C BSI L FCC5 CK LCKK CN ERRCR 3A149590
CCAC C 7CF5 MDX A8C0 LCCF 3A149600
***** 3A149610
CCAE O 2000 A80E LDS 0 SET C AND CF OFF 3A149620
CCAF O C83E LDC N808 LC A=/4000 C=/C000 3A149630
CCBC O A82C D N807 C /0001 3A149640
CCB1 CO 4C01CC8E BSC L G8CE,C BRANCH CN CVERFLW 3A149650
***** 3A149660

CPU FUNCTION TEST

CCB3 CO 4400CF6F BSI L F000 DVC-BY 1-CVRFLW CFF 3A149670
CCB5 O 3130 DC /3130 ERR ID 3A149680
CCB6 CO 4400CFCA G80E BSI L F0C5 CK LCKK CN ERRCR 3A149690
CCB8 C 7CF5 MDX A8CE LCCF 3A149700
***** 3A149710
CCB5 C 2C00 B80C LDS 0 SET C AND CF CFF 3A149720
CCBA C CE35 LDD N80A LC A=/A000 Q=/C0C0 3A149730
CCBE O AE32 D N8C8 C /4000 3A149740
CCBC CO 4C01CCC1 BSC L J8C0,C BRANCH CN CVERFLW 3A149750
CCBE CO 4400CF6F BSI L F000 CVC/4000-CVRFLW CFF 3A149760
CCCC O 3131 DC /3131 ERR ID 3A149770
CCC1 CO 4400CFCA J80C BSI L F0C5 CK LCKK CN ERRCR 3A149780
CCC3 C 7CF5 MDX B8C0 LCCF 3A149790
***** 3A149800
CCC4 O 2C00 B802 LDS 0 SET C AND CF OFF 3A149810
CCC5 C C82C LDC N80C LD A=/C000 C=/CCCC 3A149820
CCC6 O AE31 D N812 C /8000 3A149830
CCC7 CO 4C01CCC1 BSC L J8C2,C BR CN CF 3A149840
CCC8 CO 4400CF6F BSI L F000 CVC/8000-CVRFLW CFF 3A149850
CCC9 O 3132 DC /3132 ERR ID 3A149860
CCC0 CO 4400CFCA J802 BSI L FCC5 CHECK LCOP SWITCH 3A149870
CCCE O 70F5 MDX B802 LCCF 3A149880
***** 3A149890
CCCF O 2000 B804 LDS 0 SET C AND CF OFF 3A149900
CCCG C C823 LDD N80E LC A=/C000 C=/FFFF 3A149910
CCD1 C AE18 D N8C7 C /0001 3A149920
CCD2 OO 4CC1CCD7 BSC L J804,C BR CN CF 3A149930
CCD4 CO 4400CF6F BSI L F000 CVC/0001-CVRFLW CFF 3A149940
CCD6 O 3133 DC /3133 ERR ID 3A149950
CCD7 OO 4400CFCA J804 BSI L F005 CK LCKK CN ERRCR 3A149960
CCD9 O 70F5 MDX B804 LCCF 3A149970
***** 3A149980
CCDA O 2000 B806 LDS 0 SET C AND CF OFF 3A149990
CCDB O C81A LDC N810 LC A=/FFFF C=/7FFF 3A150000
CCDC C AE1C D N807 C /C0C1 3A150010
CCDE CO 4C01CCE2 BSC L J806,C BR CN CF 3A150020
CCDF CO 4400CF6F BSI L F0C0 CVC/0001-CVRFLW CFF 3A150030
CCE1 C 3134 DC /3134 ERR ID 3A150040
CCE2 CO 4400CFCA J806 BSI L FCC5 CK LCKK CN ERRCR 3A150050
CCE4 C 7CF5 MDX B8C6 LCCF 3A150060
CCE5 C 7C24 MDX 8807 EXIT TC NEXT ROUTINE 3A150070
CCE6 C CCCC N80C DC /C000 STGRAGE 3A150080
CCE8 0000 BSS E 3A150090
CCE9 C 4C00 N802 DC /4C00 3A150100
CCE9 C 7FFF DC /7FFF 3A150110
CCEA C 1C71 N804 DC /1C71 3A150120
CCEB C BBE3 DC /BBE3 3A150130
CCEC C C000 N80E DC /0000 3A150140
CCEE C C0C1 N807 DC /0001 3A150150
CCEE C 4000 N80E DC /4000 3A150160
CCEF C C000 DC /C000 3A150170
CCFC C A000 N80A DC /A000 3A150180
CCF1 C C000 DC /0000 3A150190
CCF2 C C000 N80C DC /C000 3A150200
CCF3 C C000 DC /0000 3A150210
CCF4 C C000 N80E DC /0000 3A150220
CCF5 C FFFF N80F DC /FFFF 3A150230
CCF6 C FFFF N81C DC /FFFF 3A150240
CCF7 C 7FFF N811 DC /7FFF 3A150250
CCFE C 8000 N812 DC /8000 3A150260
CCF9 O 5555 N813 DC /5555 3A150270
CCFA O 2CAA N816 DC /2CAA 3A150280
CCFB C C000 N817 DC /C000 3A150290
CCFC C 6100 N818 DC /6100 3A150300
CCFE C C000 DC /C000 3A150310
CCFE C 8000 N819 DC /8000 3A150320
CCFF C C000 DC /C000 3A150330
CDOC O C002 N82C DC /0002 3A150340

CPU FUNCTION TEST

CPU FUNCTION TEST

CD5C C 610C A84C LDX 1 0 LD XR 1 WITH ZERC 3A151710
CD5E C 71FF MDX 1 -1 SK IF SIGN CHANGES 3A151720
CD5F C 3C00 WAIT MCX FAILED TO SKIP 3A151730
CD5F C 650D STX 1 N840 STCRE C(XR 1) AT N840 3A151740
CD6C C C06C LD N840 LD VALUE CF XR 1 3A151750
CD61 C F06C ECK N841 ZERC ACC WITH /FFFF 3A151760
CD62 00 4C18CD67 BSC L G840,+ BRANCH CN ZERC 3A151770
CD64 00 4400CF6F BSI L F0C0 MCX XR 1 FAILED 3A151780
CD66 C 3135 DC /3135 ERR ID 3A151790
CD67 00 4400CFCA G84C BSI L F0C5 CK LCKK CN ERRCR 3A151800
CD65 C 7CF2 MDX A840 LCCF 3A151810

CD6A C C068 A842 LD N845 LD WITH ADCR OF 3A151820
* * LABEL N844 3A151830
* BR TO LABEL ADCR N842 +1 3A151840
CD6B 00 74C1C0CF MDX L N842,1 BR TO LABEL ADCR N842 +1 3A151850
CD6C C F065 ECK N845 3A151860
CD6E 00 4C18CD73 BSC L H842,+ BRANCH CN ZERC 3A151870
CD7C 00 4400GF6F BSI L F0C0 ACC DISTRUCYED AFTER MDX 3A151880
CD72 C 216F DC /316F ERR ID 3A151890
CD73 C C058 H842 LD N842 LC A=/3000 3A151900
CD74 C F05F EOR N846 ACC NOW /0001 3A151910
CD75 00 4C18CD7A BSC L G842,+ BRANCH ON ZERC 3A151920
CD77 00 4400CF6F BSI L F0C0 ADC TO MEM FAILED 3A151930
CD79 C 3136 DC /3136 ERR ID 3A151940
CD7A C C056 G842 LD N843 LC /3000 3A151950
CD7E C D053 STC N842 3A151960
CD7C 00 4400CFCA BSI L F0C5 CK LCKK CN ERRCR 3A151970
CD7E C 7CEB MDX A842 LCCF 3A151980

CORE DATA CR *LA- OPER- 3A152000
ADCR INSTRUCTION *REL ATION FT OPERANDS + REMARKS IC+SEC= AT RIGHT 3A152010

CD7F 00 6ECCFFFE A844 LDX L2 -2 LD XR 2 WITH -2 3A152040
CD81 00 76C0CC01 MDX L2 1 ACC ONE TO XR 2 3A152050
CD83 C 6A49 STX 2 N840 STCRE XR 2 3A152060
CD84 C C048 LD N840 LD WITH XR 2 VALUE 3A152070
CD85 C F048 EOR N841 ZERC ACC WITH /FFFF 3A152080
CD86 00 4C18CD88 BSC L G844,+ BRANCH CN ZERC 3A152090
CD88 00 4400CF6F BSI L F0C0 MCX LCNG XR 2 FAILED 3A152100
CD8A C 3137 DC /3137 ERR ID 3A152110
CD8B 00 4400CFCA G844 BSI L F0C5 CK LCKK CN ERRCR 3A152120
CD8D C 7CF1 MDX A844 LCCF 3A152130

CD8E C 63FF A846 LDX 3 -1 LD XR 3 WITH -1 3A152140
CD8F C 73C1 MDX 3 1 ACC ONE TO XR 3 3A152150
CD9C C 70C1 MDX G846 DIC NCT SK CN MCX 3A152160
CD91 C 70C3 MDX H846 3A152170
CD92 00 4400CF6F G846 BSI L F0C0 XR 3 NC SKIP AT C 3A152180
CD94 C 3138 DC /3138 ERR ID 3A152190
CD95 00 4400CFCA H846 BSI L F0C5 CK LCKK CN ERRCR 3A152200
CD97 C 7CF6 MDX A846 LCCF 3A152210

CD9E C 61FF A848 LDX 1 -1 LD XR 1 WITH -1 3A152220
CD95 C 7104 MDX 1 4 ACC 4 TC XR 1 3A152230
CD9A C 70C1 MDX G848 DIC NCT SK CN MCX 3A152240
CD9B C 70C3 MDX H848 3A152250
CD9C 00 4400CF6F G848 BSI L F0C0 SIGN CHANGE-NC SKIP 3A152260
CD9E C 3139 DC /3139 ERR ID 3A152270
CD9F 00 4400GFLA H848 BSI L F0C5 CK LCKK CN ERRCR 3A152280
CDA1 C 70F6 MDX A848 LCCF 3A152290

CDA2 00 65C0FFFE A849 LDX L1 -2 LD XR 1 WITH -2 3A152300
CDA4 C C0FF H849 LD N849 3A152310
CDA5 00 7580CCD3 MDX 11 N845 3A152320
CDA7 C 6525 STX 1 N840 STCRE C(XR 1) AT N840 3A152330
CDA6 C F0FB EOR H849 3A152340
CDA5 00 4C18CDAE BSC L K849,+ BRANCH CN ZERC 3A152350

CDAE 00 4400GF6F BSI L F0C0 ACC GONE AFTER MCX INDEXED 3A152390
CDAE C 3168 DC /3168 ERR ID 3A152400
CDAE C C01E K845 LD N840 LD VALLE CF XR 1 AFTER 3A152410
* * MCX CF 3A152420
* ZERC ACC WITH /FFFF 3A152430
CDAF C FC1E EOR N841 BRANCH CN ZERC 3A152440
CDB0 00 4C18CDB5 BSC L G849,+ INDIRRECT MCX FAILED 3A152450
CDB2 00 4400CF6F BSI L F0C0 ERR ID 3A152460
CDB4 C 313A DC /313A CK LCKK CN ERRCR 3A152470
CDB5 00 4400CFCA GR45 BSI L F0C5 LCCF 3A152480
CDB7 C 7CEA MDX A849 ***** 3A152490

CDB8 00 7400CDB8 A84A MDX L N84A,C TEST SKIP IF ZERC 3A152500
CCEA C 70D1 MDX G84A BYPASS IF CORRECT CP 3A152510
CDB2 C 70C3 MDX H84A 3A152520
CDBC 00 4400CF6F G84A BSI L F0C0 MCX L FAILED TO SKIP 3A152530
CDBE C 3171 DC /3171 ERR ID 3A152540
CDBF 00 4400CFCA H84A BSI L F0C5 CK LCKK CN ERRCR 3A152550
CDD1 C 7CF6 MDX A84A LCCF 3A152560

CDD2 00 7400CDD2 A85A MDX L N84A,C TEST NCM SKIP 3A152570
CDD4 C 70C3 MDX H85A 3A152580
CDD5 00 4400CF6F BSI L F0C0 MCX L SKIPED 3A152590
CDD7 C 3172 DC /3172 ERR ID 3A152600
CDD8 00 4400CFCA H85A BSI L F0C5 CK LCKK CN ERRCR 3A152610
CDDA C 70F7 MDX A85A LCCF 3A152620
CDDC C 70C9 MDX A880 EXIT TO NEXT ROUTINE 3A152630
CDDC C 0000 N84A DC 0 CONSTANT ZERC 3A152640

CORE DATA CR *LA- OPER- 3A152670
ADCR INSTRUCTION *REL ATION FT OPERANDS + REMARKS IC+SEC= AT RIGHT 3A152680

CDDC C C000 N84C DC /C000 STORAGE 3A152690
CDDC C FFFF N841 DC /FFFF 3A152700
CDDC C 3000 N842 WAIT ACC TO MEM FAILED 3A152710
CDD1 C 3000 N843 WAIT ACC TO MEM FAILED 3A152720
CDD2 C 0001 N844 DC /0001 ACC TO MEM FAILED 3A152730
CDD3 C CDD2 N845 DC N844 ACC TO MEM FAILED 3A152740
CDD4 C 3CC1 N846 DC /3001 3A152750
* * * * * 3A152760
* * * * * 3A152770
* * * * * 3A152780
* * * * * 3A152790
* * * * * 3A152800
* * * * * 3A152810
* * * * * 3A152820
* * * * * 3A152830
CDD5 C 610A A88C LDX 1 10 LD XR 1 WITH +10 3A152840
CDD6 00 C000CECE LDD L N882 LC A=/C00C C=/FFFF 3A152850
CDD8 C 2C02 LDS 2 SET C CN 3A152860
CDD9 C 1140 SLCA 1 0 NCM A=/0000 C=/FFFF 3A152870
CDDA 00 6E0CCECC STX L1 N8E0 STCRE C(XR 1) 3A152880
CDDC C 2812 STS G881 STCRE CARRY CONDITCN 3A152890
CDDC 00 4C18CDE2 BSC L G880,+ BRANCH CN ZERC 3A152900
CDDF 00 4400CF6F BSI L F000 ACC NCT=ZERC 3A152910
CDE1 C 3138 DC /3138 ERR ID 3A152920
CDE2 00 4400CF5E G88C BSI L F00E CK LCKK CN ERRCR 3A152930
CDE4 C 7CFC MDX A880 LCCF 3A152940
CDE5 00 C400CECC LD L N880 LC FREVICUS C(XR 1) 3A152950
CDE7 00 4C18CDE2 BSC L G882,+ BRANCH CN ZERC 3A152960
CDE9 00 4400CF6F BSI L F0C0 XR 1 NCT=ZERC 3A152970
CDEB C 313C DC /313C ERR ID 3A152980
CDEC 00 4400CF5E G882 BSI L F0GE CK LCKK CN ERRCR 3A152990
CDEE C 7CE6 MDX A880 LCCF 3A153000
CDEF C 2000 G881 LDS 0 SAVEC BY STS AECVE 3A153010
CDF0 C 4E02 BSC C SK IF CARRY CFF 3A153020
CDF1 C 7C04 MDX G883 CARRY CN 3A153030
CDF2 00 4400CFCA BSI L F0C5 CK LCKK CN ERRCR 3A153040
CDF4 C 7CE0 MDX A880 LCCF 3A153050
CDF5 C 7CC6 MDX A884 EXIT TO NEXT ROUTINE 3A153060
CDF6 00 4400CF6F G883 BSI L F000 CARRY CN (SHOULD NCT BE) 3A153060

CPU FUNCTION TEST

CDFB C 3160	DC /3160	ERR ID	3A15307C
CDFE 00 4400CFCA	BSI L FCC5	CK LCKK CN ERRCR	3A153080
CDFF C 7CD9	MDX A880	LCCF	3A153090

CDFC 00 6580CED3	A884 LDX I1 N887	LD XR 1 WITH /FFCC	3A15311C
CDFE 00 CCG0CEDC	LDD L N884	LD A=/COU1 C=/CC1C	3A153120
CE00 C 260C	LDS 0	SET C AND CF CFF	3A153130
CE01 C 114C	SLCA 1 0	ACC NCM /8C00	3A15314C
CE02 C 2818	STS G885	STCR C AND CF CCNDITION	3A153150
CE03 00 F400CED2	ECR L N886	ZERC WITH /8C0C	3A15316C
CE05 00 4C18CECA	BSC L G884,+	BRANCH CN ZERC	3A153170
CE07 00 4400CF6F	BSI L F000	ACC NCT=/8C0C	3A153180
CE09 C 313D	DC /313D	ERR ID	3A153190
CE0A 00 4400CF9E	G884 BSI L FCCE	CHECK LCOF SWITCH	3A153200
CE0C C 7CEB	MDX A884	LCCF	3A153210
CE0D 00 6000CECC	STX LI N880	STCR C(XR 1) AT N880	3A153220
CE0F 00 L400CECC	LD L N880	LD C(N88C)	3A153230
CE11 00 F400CEDA	ECR L N88E	ZERC WITH /FF01	3A15324C
CE13 00 4C18CE1E	BSC L G886,+	BRANCH CN ZERC	3A153250
CE15 00 4400CF6F	BSI L F000	XR-1 NCT FFO1	3A153260
CE17 C 313E	DC /313E	ERR ID	3A15327C
CE18 00 4400CF9E	G886 BSI L F00E	CK LCKK CN ERRCR	3A15328C
CE1A C 7CE1	MDX A884	LCCF	3A153290
CE1B C 200C	G885 LDS 0	SAVED BY STS AECVE	3A15330C
CE1C C 4E02	BSC C	SK IF CARRY CFF	3A153310
CE1D C 70C3	MDX G887		3A15332C
CE1E 00 4C00CF6F	BSC L F000	CARRY CFF (SPCLLD EE CN)	3A153330
CE20 C 3161	DC /3161	ERR ID	3A153340
CE21 00 4400CFCA	G887 BSI L FCC5	CK LCKK CN ERRCR	3A15335C
CE23 C 70D8	MDX A884	LCCF	3A153360

CE24 00 6580CED1	A88E LDX I1 N885	LD XR 1 WITH /CC1C	3A153380
CE26 00 CCG0CED2	LDC L N886	LD A=/80C0 C=/FFCC	3A153390
CE28 C 1140	SLCA 1 0	ACC NCM /8C0C	3A153410
CE29 00 F400CED2	EOR L N886	ZERC WITH /8C0C	3A153420
CE2B 00 4C18CE3C	BSC L G888,+	BRANCH CN ZERC	3A15343C
CE2D 00 4400CF6F	BSI L F000	ACC NCT=80C0	3A15344C
CE2F C 313F	DC /313F	ERR ID	3A15345C
CE30 00 4400CF9E	G888 BSI L F00E	CK LCKK CN ERRCR	3A15346C
CE32 C 70F1	MDX A888	LCCF	3A15347C
CE33 00 6000CECD	STX LI N880	STCR C(XR 1) IN N88C	3A153480
CE35 00 C400CECD	LD L N880	LD C(N880)	3A153490
CE37 00 F400CED1	EOR L N885	ZERC WITH /0C1C	3A153500
CE39 00 4C18CE3E	BSC L G88A,+	BRANCH CN ZERC	3A153510
CE3B 00 4400CF6F	BSI L F000	XR 1 NCT=0C10	3A153520
CE3D C 3140	DC /3140	ERR ID	3A15353C
CE3E 00 4400CFCA	G88A BSI L F005	CK LCKK CN ERRCR	3A153540
CE40 C 7CE3	MDX A888	LCCF	3A153550

CE41 C 611C	A889 LDX 1 16	LD XR 1 WITH /C010	3A15356C
CE42 C 621C	LDX 2 16	LD XR 2 WITH /C010	3A153570
CE43 C 631C	LDX 3 16	LD XR 3 WITH /C010	3A15358C
CE44 00 C400CEDC	LD L N884	LD A=/0001	3A153590
CE46 C 1041	SLCA 1	ACC NCM /0002	3A15360C
CE47 00 F400CED7	ECR L N88E	ZERC WITH /0C02	3A15361C
CE49 00 4C18CE4E	BSC L G889,+	BRANCH CN ZERC	3A15362C
CE4B 00 4400CF6F	BSI L F000	NCN INDEXED SLCA FAILED	3A15363C
CE4D C 3162	DC /3162	ERR ID	3A15364C
CE4E 00 4400CFCA	G889 BSI L F0C5	CK LCKK CN ERRCR	3A15365C
CE50 C 7CFC	MDX A889	LCCF	3A15366C

CE51 C 611C	A88A LDX 1 16	LD XR 1 WITH /CC1C	3A15367C
CE52 C 621C	LDX 2 16	LD XR 2 WITH /CC1C	3A15368C
CE53 C 631C	LDX 3 16	LD XR 3 WITH /C010	3A15369C

CPU FUNCTION TEST

CE54 00 CCG0CECE	LDC L N882	LD A=/C00C C=/FFFF	3A153750
CE56 C 10CF	SLC 15	NCM A=/7FFF C=/1CCC	3A153760
CE57 00 F400CEDB	EOR L N88F	ZERC WITH /7FFF	3A15377C
CE59 00 4C18CE5C	BSC L G886,+	NCN INDEXED SLC FAILED	3A153780
CE5B C 3173	DC /3173	ERR ID	3A153790
CE5C 00 4400CFCA	G88E BSI L FCC5	CK LCKK CN ERRCR	3A153800
CE5E C 70F2	MDX A88A	LCCF	3A153810

CE5F 00 6580CEDE	A88C LDX I1 N88C	LD XR 1 WITH /C020	3A153820
CE61 C CE72	LDD N888	LD A=/CC0C C=/CCCC	3A153830
CE62 C 11CC	SLC 1 0	ACC NCM A=/0C00 C=/CC0C	3A153840
CE63 00 4C18CE6E	BSC L G88C,+	BRANCH CN ZERC	3A153850
CE65 00 4400CF6F	BSI L F000	ACC NCT=00C0	3A153860
CE67 C 3141	DC /3141	ERR ID	3A153870
CE68 00 4400CF9E	G88C BSI L FOCE	CK LCKK CN ERRCR	3A153880
CE6A C 70F4	MDX A88C	LCCF	3A153890
CE6E C 1ED0	RTE 16	ACC NCM A=/C0CC C=/0CC0	3A153900
CE6C 00 4C18CE71	BSC L G88E,+	BRANCH CN ZERC	3A153910
CE6E 00 4400CF6F	BSI L F000	C NEG NCT=C000	3A153920
CE7C C 3142	DC /3142	ERR ID	3A153930
CE71 00 4400CF9E	G88E BSI L FCCE	CK LCKK CN ERRCR	3A153940
CE73 C 70E8	MDX A88C	LCCF	3A153950
CE74 C 655E	STX 1 N880	STCR C(XR 1) IN N880	3A153960
CE75 C C057	LD N880	LD C(N880)	3A153970
CE76 00 4C18CE7E	BSC L J880,+	BRANCH CN ZERC	3A153980
CE7E 00 4400CF6F	BSI L F000	XR 1 NCT=00C0	3A153990
CE7A C 3143	DC /3143	ERR ID	3A154000
CE7E 00 4400CFCA	J88C BSI L F005	CK LCKK CN ERRCR	3A15401C
CE7C C 70E1	MDX A88C	LCCF	3A15402C

CE7E 00 6580CED5	B882 LDX I1 N88D	LD XR 1 WITH /FFCF	3A154030
CE80 C C855	LDC N88A	LD A=/C00C C=/CC02	3A154040
CE81 C 11CC	SLC 1 0	NCM A=/E00C C=/CCCC	3A154050
CE82 C FC4F	EOR N886	ZERC WITH /8C0C	3A154060
CE83 00 4C18CE88	BSC L J882,+	BRANCH CN ZERC	3A154070
CE85 00 4400CF6F	BSI L F000	ACC NCT=/8C0C	3A154080
CE87 C 3144	DC /3144	ERR ID	3A154090
CE88 00 4400CF9E	J882 BSI L FOCE	CK LCKK CN ERRCR	3A154100
CE8A C 70F3	MDX B882	LCCF	3A154110
CE8B C 1ED0	RTE 16	NCM A=/00CC C=/8C0C	3A154120
CE8C 00 4C18CE91	BSC L J884,+	BRANCH CN ZERC	3A154130
CE8E 00 4400CF6F	BSI L F000	C NEG NCT=C000	3A154140
CE90 C 3145	DC /3145	ERR ID	3A154150
CE91 00 4400CF9E	J884 BSI L F00E	CK LCKK CN ERRCR	3A154160
CE93 C 70EA	MDX B882	LCCF	3A15417C
CE94 C 6538	STX 1 N880	STCR C(XR 1) AT N88C	3A154180
CE95 C C037	LD N880	LD C(N880)	3A154190
CE96 00 F400CEDA	EOR L N88E	ZERC WITH /FF01	3A154200
CE98 00 4C18CE9C	BSC L J886,+	BRANCH CN ZERC	3A15421C
CE9A 00 4400CF6F	BSI L F000	XR-1 NCT FFO1	3A15422C
CE9C C 3146	DC /3146	ERR ID	3A154230
CE9D 00 4400CFCA	J886 BSI L F005	CK LCKK CN ERRCR	3A154240
CE9F C 70DE	MDX B882	LCCF	3A154250

CEAC C C635	B884 LDD N88A	LD A=/C00C C=/C0C2	3A154260
CEA1 C 611F	LDX 1 31	LD XR 1 WITH /C01F	3A15427C
CEA2 C 11CC	SLC 1 0	NCM A=/E00C C=/CCCC	3A15428C
CEA3 C 4E02	BSC C	SK IF CARRY CFF	3A154290
CEA4 C 70C3	MDX J887	CARRY CN	3A15430C
CEA5 00 4400CF6F	BSI L F000	CARRY NCT CN	3A154310
CEA7 C 3147	DC /3147	ERR ID	3A154320
CEA8 00 4400CF9E	J887 BSI L FOCE	CK LCKK CN ERRCR	3A15433C
CEAA C 70F5	MDX B884	LCCF	3A154340

CPU FUNCTION TEST

CEAE G FC26 EDR N886 ZERC WITH /8000 3A154430
CEAC GU 4C180EB1 BSC L J888,+ BRANCH CN ZERC 3A154440
CEAE CG 4400CF6F BSI L F000 ACC NCT EQUAL ECCO 3A154450
CEBC C 314F DC /3148 ERR ID 3A154460
CEB1 GU 4400CF5E J888 BSI L F00E CK LCKK CN ERRCR 3A154470
CEB3 C 7CEC MDX B884 LCCF 3A154480
CEB4 GU 6000CECC STX LI N880 STCRE XR 1 WITH C(N880) 3A154490
CEB6 C C016 LD N880 LC C(N880) 3A154500
CEB7 C FC18 EDR N884 ZERC WITH /0001 3A154510
CEB8 GU 4C18CEBC BSC L J889,+ BRANCH CN ZERC 3A154520
CEBA GU 4400CF6F BSI L F000 XR 1 NCT EQUAL OCCO 3A154530
CEBC C 3149 DC /3149 ERR ID 3A154540
CEBC GU 4400CFCA J889 BSI L F005 CK LCKK CN ERRCR 3A154550
CEBF C 7CE0 MDX B884 LCCF 3A154560
3A154570
3A154580
3A154590
3A154600
3A154610
3A154620
3A154630
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3A154690
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3A155000
3A155010
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3A155040
3A155050
3A155060
3A155070
3A155080
3A155090
3A155100

J88A BSI L F000 CARRY IS CN

DC /314A ERR ID

J88B BSI L FCC5 CK LCKK CN ERRCR

MDX B885 LCCF

N88C DC /0000 EXIT TO NEXT ROUTINE

BSS E STORAGE

N882 DC /0000

DC /FFFF

N884 DC /0001

N885 DC /0010

N886 DC /8000

N887 DC /FFD0

N888 DC /0000

N88A DC /0000

N88B DC /0002

N88C DC /0020

N88D DC /FFDF

N88E DC /FF01

N88F DC /7FFF

CORE DATA CR *LA- OPER-
ADLR INSTRUCTION *BEL ATION FT OPERANDS + REMARKS ID+SEC= AT RIGHT
CECC C 181C B8AC SRA 16 CK FCR 1130 CR 18CC
CEDE GU 04CCCCG1 STC L /0001 STCRE /0000 AT ADDR /0001
CEDF C 61FF LDX 1 -1 LD XR 1 WITH /FFFF

CPU FUNCTION TEST

CEEC GU C4000001 LD L /0001 LC C(/0001) 3A155110
CEE2 GU 4C20CF62 BSC L W8C0,2 BRANCH IF 1130 3A155120
CEE4 C CC72 LD N8A2 LC C(N8A2) /4000 3A155130
CEE5 C 8C75 CMP N8A0 A GREATER THAN M 3A155140
CEE6 C 7C04 MDX J8A0 A GREATER THAN M 3A155150
CEE7 C 1000 SLA 0 A LESS THAN M 3A155160
CEE8 GU 4400CF6F BSI L F000 A GREATER THAN M FAILED 3A155170
CEEA C 314B DC /314B ERR ID 3A155180
CEEB GU 4400CF5E J8AC BSI L F00E CK LCKK CN ERRCR 3A155190
CEED C 7CEE MDX B8A0 LCCF 3A155200
CEEE C FC6E EDR N8A2 ZERC WITH /4000 3A155210
CEEF GU 4C18CEF7 BSC L B8A1,+ BRANCH CN ZERC 3A155220
CEF1 GU 4400CF6F BSI L F000 ACC CHANGED ERRCR 3A155230
CEF2 C 314C DC /314C ERR ID 3A155240
CEF4 GU 4400CFCA BSI L F005 CK LCKK CN ERRCR 3A155250
CEFE C 7CE5 MDX B8A0 LCCF 3A155260
3A155270
3A155280
3A155290
3A155300
3A155310
3A155320
3A155330
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3A155370
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3A155390
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3A155690
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3A155750
3A155760
3A155770
3A155780

EEA1 LD N8A0 NBAC =/0000

CMP N8A1 N8A1 =/1000

MDX J8A2 A LESS THAN M FAILED

MDX J8A1 A LESS THAN M

J8A2 BSI L F000 A LESS THAN M FAILED

DC /314D ERR ID

J8A1 BSI L F005 CK LCKK CN ERRCR

MDX B8A1 LCCF

B8A2 LD N8A0 NBAC =/0000

CMP N8A3 N8A3 =/2000

MDX J8A4 A LESS THAN M FAILED

MDX J8A3 A LESS THAN M

J8A4 BSI L F000 A LESS THAN M FAILED

DC /314E ERR ID

J8A3 BSI L FCC5 CK LCKK CN ERRCR

MDX B8A2 LCCF

B8A3 LD N8A0 NBAC =/0000

CMP N8A2 N8A2 =/4000

MDX J8A6 A LESS THAN M FAILED

MDX J8A5 A LESS THAN M

J8A6 BSI L F000 A LESS THAN M FAILED

DC /314F ERR ID

J8A7 BSI L FCC5 CK LCKK CN ERRCR

MDX B8A4 LCCF

B8A5 LD N8A1 LC /1000

CMP N8A1 CMP /1000

MDX J8AA A EQUAL M FAILED

MDX J8AA A EQUAL M FAILED

MDX J8A9 A=M

J8AA BSI L F000 A=M FAILED

DC /3151 ERR ID

J8A9 BSI L FCC5 CK LCKK CN ERRCR

MDX B8A5 LCCF

CORE DATA CR *LA- OPER-
EC NG. 41545C 415450C 419643
PRG ID C3A1-1
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CPU FUNCTION TEST

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ADDR- INSTRUCTION *BEL ATIGN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A155790
*****
CF2A C C831      B8CC LDC N8C6 LC A=/8000 C=/C001 3A155800
CF2B C BE2E      DCM N8C5 AC GREATER THAN M, M+1 3A15581C
CF2C C 7CC3      MDX J8C0          3A15582C
CF2D C 1C00      SLA 0          NC-CP 3A155830
CF2E C 4040      BSI F000      FAILED A,C NOT GREATER 3A155840
CF2F C 3152      DC /3152      ERR ID 3A155850
CF3C 00 4400CF5E J8CC BSI L F00E CK LCKK CN ERRCR 3A155860
CF32 C 7CF7      MDX B8C0      LCCF 3A155870
CF33 C FC28      EGR N8C6      ZERC WITH /8000 3A15588C
CF34 00 4C18CF3E J8C1 BSI L J8C1,+ BRANCH CN ZERO 3A15589C
CF36-C 4038      BSI F000      ACC CHANGED 3A155900
CF37 C 3153      DC /3153      ERR ID 3A155910
CF3E 00 4400CF9E J8C1 BSI L FCCE CK LCKK CN ERRCR 3A155920
CF3A C 7CEF      MDX B8C0      LCCF 3A15593C
CF3B C 18D0      RTE 16        NCW A=/C001 Q=/000C 3A15594C
CF3C C FC2C      EDR N8C6+1    ZERC WITH /0001 3A155950
CF3C 00 4C18CF41 J8C1 BSI L J8C2,+ BRANCH CN ZERO 3A155960
CF3F C 402F      BSI F000      C REG CHANGED 3A155970
CF40 C 3154      DC /3154      ERR ID 3A15598C
CF41 00 4400CFCA J8C2 BSI L F0C5 CK LCKK CN ERRCR 3A155990
CF43 C 7CE6      MDX B8C0      LCCF 3A156000
*****
CF44 C C819      B8C1 LDC N8C7 LD A=/C000 Q=/8000 3A156010
CF45 C B81A      DCM N8C8 A,C LESS THAN M, M+1 3A156020
CF46 C 7001      MDX J8C3 A,C GREATER THAN M,M+1 3A156030
CF47 C 7C02      MDX J8C4 A,C LESS THAN M,M+1 3A156040
CF48 C 4026      J8C3 BSI F0C0 FAILED A,C GREATER 3A156050
CF49 C 3155      DC /3155      ERR ID 3A156060
CF4A C 407F      J8C4 BSI F0C5 CK LCKK CN ERRCR 3A15607C
CF4B C 7CF8      MDX B8C1      LCCF 3A156080
*****
CF4C C C811      B8C2 LDD N8C7 LC A=/C000 C=/8000 3A156090
CF4D C B810      DCM N8C7 A,C EQUCL M,M+1 3A156100
CF4E C 7C02      MDX J8C5 A,C GREATER 3A156110
CF4F C 7G01      MDX J8C5 A,C LESS 3A156120
CF50 C 7C02      MDX J8C6 A,C = M,M+1 3A156130
CF51 C 4C1D      J8C5 BSI F000 A,C = M,M+1 FAILED 3A156140
CF52 C 3156      DC /3156      ERR ID 3A156150
CF53 C 4C76      J8C6 BSI F005 CK LCKK CN ERRCR 3A156160
CF54 C 7CF7      MDX B8C2      LCCF 3A156170
CF55 C 700C      MDX W8C0      EXIT TC NEXT ROUTINE 3A156180
CF56 C 1G00      N8A1 DC /1000          3A156190
CF57 C 4000      N8A2 DC /4000          3A156200
CF58 C 2000      N8A3 DC /2000          3A156210
CF5A C 0000      BSS E 0          3A156220
CF5B C 8C00      N8C5 DC /8000          3A156230
CF5C C 0000      N8A0 DC /0000          3A156240
CF5D C 8C00      N8C6 DC /8C00          3A15625C
CF5E C 0C01      DC /0001          3A156260
CF5F C 8C00      DC /8000          3A156270
CF60 C CC00      N8C7 DC /0000          3A156280
CF61 C CC01      N8C8 DC /0C00          3A156290
CF61 C 8C01      DC /8001          3A156300
*****

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*****
CORE DATA CR *LA- OPER- 3A156340
ADDR INSTRUCTION *BEL ATIGN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A156350
*****
OF62 C 0E05      W8CC XIC N8C1 READ SWITCHES 3A156360
CF63 C C00A      LD N8C3 LC SW BITS 3A156370
CF64 C 1804      SRA 4 PLACE SW 11 AT EIT 15 POS. 3A156380
CF65 C 4804      BSC E IS SWITCH 11 ON 3A156390
CF66 C 7C02      MDX W8C4 SWITCH 11 ON 3A156400
CF67 C C003      LD ZC20 SWITCH 11 IS OFF-WAIT 3A156410
OF68 C 3003      X007 DC /3003 PROGRAM FINISHED 3A156420

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CPU FUNCTION TEST

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CF65 C 4C00C154 W8C4 BSC L A140 3A15647C
CF6B C 0003      Z02C DC /0003 3A156480
CF6C C 0000      BSS E 3A15649C
CF6C C 0F6E      N8C1 DC N8C3 3A156500
CF6D C 0240      N8C2 DC /0240 EQUAL /3A00 IN 113C 3A156510
CF6E C 0000      N8C3 DC /0C00 3A156520
*****
*****
ERRCR CONTROL ROUTINE
*****
CF6F C 0000      F000 DC 0 REENTER ADDRESS 3A156530
CF70 C 2816      STS F00X SAVE STATUS 3A156540
CF71 C 0C63      STC U000 SAVE A REG 3A156550
CF72 C 18DC      RTE 16 3A156560
CF73 C 0C62      STC U001 SAVE C REG 3A156570
CF74 C C863      XIC F003 READ SWITCHES 3A156580
CF75 C C065      LD Z000 LD SW READINGS 3A156590
CF76 C 1807      SRA 7 PLACE SW 8 AT EIT PCS 15 3A156600
OF77 C 4804      BSC E CK LCKK CN INSTRUCTION 3A156610
CF78 C 7012      MDX F00A * BEING TESTED SW 3A156620
CF79 00 C48CCF6F LD I F0C0 GET WAIT ERRCR IC 3A156630
CF7B C C00C      STC F002 STORE ERRCR ID AT F0C2 3A15664C
OF7C C C0F2      LD F0C0 GET RETURN ADDR 3A15665C
CF7D C DC1F      STC U00B STORE AT UCCE 3A15666C
CF7E C 805B      A U006 ACC CNE 3A156670
CF7F C C0EF      SXC F0C0 STORE NEW RETURN ADDRESS 3A156680
CF80 C C05A      F00L LD Z000 CK BYPASS ERROR SW 3A156690
CF81 C 18C1      SRA 1 PLACE SW 14 AT EIT PCS 15 3A156700
OF82 C 4804      BSC E SKIF IF SW 14 OFF 3A156710
CF83 C 70C0      MDX F00F CK FOR 8 OR 12 CN ALSO 3A156720
CF84 C C051      LD U001 RESTORE REG AND WAIT 3A156730
CF85 C 18D0      RTE 16 PLACE IN C REG 3A156740
CF86 C C04E      LD UCC0 RESTORE A REG 3A156750
OF87 C 2000      F00X LDS 0 RESTORE C AND CF INC. 3A15676C
OF88 C 3000      F002 WAIT 0 ERRCR WAIT E REG 3A156770
*****
*****
CORE DATA GR *LA- OPER- 3A156780
ADDR INSTRUCTION *BEL ATIGN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A156790
*****
CF89 00 4C80CF6F F00B BSC I F000 * SFCWS ERROR IC 3A156800
*****
*****
LOOP ON INSTRUCTION BEING 3A156810
* TESTED 3A156820

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*****
CORE DATA GR *LA- OPER- 3A156900
ADDR INSTRUCTION *BEL ATIGN FT OPERANDS + REMARKS ID+SEC= AT RIGHT 3A156910
*****
CF8E C CCE3      F00A LD F000 GET RETURN ADDR AT F0C0 3A156920
CF8C C DC10      STC U00B STORE RETURN ADDRESS 3A156930
CF8D C 600D      A U003 ACC 3 3A156940
CF8E C CCE0      STC F000 UPDATE RETLKN ADDRESS 3A156950
CF8F 00 4C80GF6F BSC I F000 BR TC UPDATING ADDRESS 3A156960
*****
*****
CF91 C 1802      F00F SRA 2 PLACE SW 12 AT EIT PCS 15 3A156970
CF92 C 4804      BSC E SKIF IF SW 12 OFF 3A156980
CF93 C 7CF5      MDX F00E BR TC EXIT IF SW 12 CN 3A156990
CF94 C 1804      SRA 4 PLACE SW 8 AT EIT PCS 15 3A157000
CF95 C 4804      BSC E SKIF IF SW 8 OFF 3A157010
CF96 C 7CF2      MDX F00B BR TC EXIT IF SW 8 CN 3A157020
CF97 C C043      LD Z0C0 LC SWITCH READINGS 3A157030
CF98 C CC00      DC IMPROPER BIT SWs, 14 ON 3A157040
CF99 C C83E      XIC F0C3 *WITHOUT 8 OR 12 CN 3A157050
CF9A C 7CE5      MDX F00L 3A157060

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CPU FUNCTION TEST

CF9E C 0003	U003 DC	3	CENSTANT 3	3A157150
CF9C U FFFD	U00A DC	-3	CENSTANT -3	3A157160
CF9C C CC00	U00B DC	0	ERRCR ECCUREE CENTFCL	3A15717C
				3A15718C
				3A157190
				3A157200
				3A157210
				3A157220
				3A157230
				3A157240
				3A157250
				3A157260
CF9E C 0000	FOOE DC	0	CONTAINS RETURN ADDRESS	3A157270
CF9F G 261A	STS	FOOH	SAVE REGS C AND CF	3A157280
CFA0 G D036	STC	U0GX	ACCUMULATOR	3A157290
CFA1 C 18D0	RTE	16		3A157300
CFA2 C DC3A	STO	U0GX+1	ACC EXTENTION	3A157310
				3A157320
				3A157330
				3A157340
				3A157350
				3A157360
				3A15737C
CFA3 G C03A	LD	RST1	LD /60C4	3A157380
				3A157390
CFA4 C0 D4CC0CCC	STC L	/CG00	STC IN WORD ZERO	3A157400
				3A157410
CFA6 C C038	LD	RST2	LD /4CC0	3A157420
				3A157430
CFA7 C0 D4C0G0G4	STC L	/0C04	STC IN WORD FOUR	3A157440
				3A15745C
CFA9 G C036	LD	RST2+1	LD /012C	3A157460
				3A15747C
CFAA 00 D4C0C005	STC L	/0C05	STC IN WORD FIVE	3A157480
				3A157490
				3A157500
CFAC C 082B	XIC	FCC3	READ SWITCHES	3A157510
CFAD C C02D	LD	Z0C0	CK LCCP CN INST BEING	3A157520
CFAE C 1807	SRA	7	* TESTEC SW	3A157530
CFAF C 4804	BSC	E	SKIP IF EVEN	3A157540
CFB0 G 7C0A	MDX	FCC8	EXIT TC LCCP INST	3A157550
CFB1 C CCEB	LD	UCCB	CK IF ERROR HAS	3A157560
CFB2 C 4E2C	BSC	Z	* OCCURRED	3A157570
CFB3 C 70G9	MDX	FC09		3A157580
CFB4 C CCE9	FOOK LD	FOOE	GET RETURN ADDR	3A15759C
CFB5 C EC24	A	U0G6	ACC ONE	3A15760C
CFE6 C DGEE	STO	FCOE	STORE RETURN ADDRESS	3A15761C
CFB7 C C025	LD	U0GX+1	RESTORE REGS	3A15762C
CFB8 C 18D0	RTE	16		3A15763C
CFB9 G CC22	LD	U0GX		3A15764C
CFBA G 2000	FOOH LDS	0	SET C AND CF OFF	3A15765C
CFBE 0U 4C80CF9E	FOOE BSC I	FOCE	BR TC RETURN ADDRESS	3A15766C
CFBD C C01C	FOO9 LD	Z0C0	CHECK LOCK CN ERRCR SW	3A157670
CFBE C 1803	SRA	3	SHIFT BIT 12 TC FCS 15	3A15768C
CFBF C 4E04	BSC	E	SKIP IF OFF	3A15769C
CFCC G 7C03	MDX	FOOC	ERRCR SW (E 12) CN	3A157700
CFC1 C 1810	SRA	16	RESET ERROR OCCURRED	3A157710
CFC2 G CCDA	STC	U00B	* CONTROL	3A157720
CFC3 C 7CFO	MDX	FCCK	ER TC GET RETURN ADDRESS	3A157730
CFC4 C C0D9	FOOC LD	FOGE	GET ADDR	3A15774C
CFC5 C ECDE	A	U0GA	ACC MIALS THREE	3A157750
CFC6 C FCD6	EOR	U0GB	CCMPARE TC ERR CNTR	3A157760
			* ADDR	3A157770
CFC7 G 4E2C	BSC	Z	SKIP CN ZERC	3A157780
CFC8 C 7CEB	MDX	FOOK	BR TC GET RETURN ADDRESS	3A157790
CFC9 C 70F1	MDX	FOGB	EXIT	3A157800
				3A15781C
				3A157820

CPU FLNCTION TEST

						CK LCCP RT SW RT	3A157830
							3A157840
							3A157850
							3A157860
CORE DATA OR	*LA- OPER-						3A15787C
ADDR INSTRUCTION	*BEL ATIGN FT OPERANDS + REMARKS	IC+SEC=	AT RIGHT				3A157880
CFCA 0 0C00	FOO5 DC	0		WILL CONTAIN RETURN ADDR			3A157890
CFCB G C80C	XIC	FOC3		READ SW - PLACE IN LABEL			3A157900
				* ADDRESS 2000			3A157910
CFCC C CC0E	LD	Z0C0		CK LCCP RCLTINE SW			3A157920
CFCD G 1805	SRA	5		CHECK FOR BIT 11			3A157930
CFCE G 4804	BSC	E		NC SKIP FOR LCCP			3A157940
CFCF G 7C03	MDX	FOO6		LCCP RCLTINE SWITCH CN			3A157950
CFDG C C0F9	LD	FOO5		LD RETURN ADDRESS			3A157960
CFD1 C CCCC	STC	FOOE		SAVE FOR LOCK CN ERRCR RTN			3A157970
CFD2 C 7CCC	MDX	FCOE+1		BR TO SAVE REGISTERS			3A157980
CFD3 CU 4C80CFCA	FOO6 BSC I	FOC5		BR TC MAIN PROGRAM			3A15799C
				* RETURN ADDRESS			3A158000
CFD5 C CC0C	U0GC DC	/0000		A REG SAVED HERE			3A15801C
CFD6 G C600	U0G1 DC	/0000		C REG SAVED HERE			3A158020
CFDE 0 0G00	BSS E						3A158030
CFE8 G CFCB	FOO3 DC	Z0C0					3A158040
CFD9 G C240	FOO4 DC	/0240		EQUAL /3A00 IN 113C			3A158050
CFDA C CC01	U0G6 DC	/0001					3A15806C
CFDB G 0G00	Z000 DC	/0000		SW READING STORED HERE			3A158070
CFDC G C602	U0GX BSS	2		SAVED FOR A+C STORAGE			3A158080
CFDE U C6G4	RST1 LDX	/0004					3A158090
CFDF 00 4C0CC12E	RST2 BSC L	A080					3A158100
CFE2 012D	END	XGCO					3A158110

CPU FUNCTION TEST

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A0CC	C13F	30CF, 3019, 3011, 3012, C13A
A08C	C12E	3004, 3005, 3006, 3007, 30C8, 30C9, 300A, 30C8, 300C, 300D, 300E, CFDF
A1CC	C1EB	303D, 303E, C1E9
A1DC	C1F5	303F, 3040, 3041, 3042, 3043, 3044, 3045, 01F2
A1EC	0214	3046, 3047, C21C
A1FC	022C	3048, 3049, C21D
A1GC	C14C	3013, 3014, 3015
A14C	C154	3016, 3017, 3018, 3019, 301A, 3018, 301C, 301D, 301E, 301F, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 302E, CF69
A18C	01A0	302A, 302B, 302C, 302D, 302F, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 303A, 303B, 303C, 019E
A2CC	0336	3072, C340
A2C0	C31E	306F, C311, C321
A2C4	C322	3070, C328
A2C8	C32C	3071, C335
A200	G22D	304A, 304B, 304C, 304D, 304E, 304F, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 305A, 305B, 305C, 305D, 305E, 305F, C225
A24C	C270	3060, 3061, 3062, 3063, 3064, 026B
A28C	02D8	306A, C28B, C2C6, 02E1
A281	C2E2	306B, 02EC
A282	C2ED	306C, 02F7
A283	02F8	306D, 0302
A284	0303	306E, C310
A3CC	03DC	3080, 3081, C3D5, C3E8, 03F2
A3C4	03F3	3082, 3083, 0406, C40F
A30C	C344	3073, C341, C34D
A302	C34E	3074, C358
A304	0259	3075, C363
A34C	0367	3076, 3077, C364, 0372, 037C
A38C	038C	307E, 307F, C3CA, 03D4
A380	0380	3078, 3079, C37C, C38A, 0394
A384	0395	307A, 307B, C39E, 03A7
A388	03A8	307C, 307D, C3B1, 03BB
A4CC	05AD	30A8, 30A9, C58A, 05C3
A4CC	0565	30A1, C561, C57C
A4C2	0571	30A2, 30A3, 30A4, 30A5, 0571, 0574, C582, C58B, 0595
A4CE	0596	30A6, 30A7, C5A3, 05AC
A4CC	0418	3084, 3085, C386, C410, C425, C42D, C438
A408	0439	3087, 3088, C389, C447, C44F, C458
A44A	04FF	3099, 309A, C39B, 050B, 0514, 051E
A44C	04C3	3093, 3094, C395, C4BB, C4LE, C4DE, C4DF
A444	04E0	3096, 3097, C398, C4EC, 04F5, 04FE
A48C	054E	309F, C541, C553
A482	0554	30A0, C560
A5CC	0743	30CE, 30CF, C74C, 0756
A5C4	0757	30D0, 30D1, C765, 076F
A5C8	C770	30D2, 30D3, C77F, 0789
A5GA	0602	30AF, 30B0, 317C, C60C, 0614
A50C	C61F	30B1, 30B2, C61E, C62B, 0632
A5CE	C633	30B3, 30B4, C62C, 063F, 0646
A50C	C5CA	30AA, 05C4, C5D4
A502	C5D5	30AB, 05DF
A504	C5E0	30AC, 30AD, C5EB, 05F6
A50E	C5F7	30AE, C601
A54A	C6C1	30C0, 30C1, C6B9, C6CA, 06C2
A54C	C6D3	30C2, 30C3, C6CB, C6DC, 06E4
A54E	C6E5	30C4, 30C5, C6DD, C6EE, C6F6
A54F	C6F7	30C6, 30C7, C6EF, 0701, 0709
A54C	C666	3037, 30B8, 30B9, C656, C65D, C671, C67E, 0686
A544	C667	30BA, 30B8, C672, C692, 0659
A546	C69C	30BC, 30BD, C693, C69A, 06A7, 06AE
A54E	C6AF	30BE, 30BF, C6AE, C6B8, 06C0

CPU FUNCTION TEST

A58C	C70A	30C8, 30C9, C702, 0713, 071C
A584	071D	30CA, 30CB, C726, 0730
A58E	C731	30CC, 30CD, C735, 0742
A6CC	C95A	30F0, 30F1, C94A, C951, 056A, 0571
A6C2	C972	30F2, 30F3, C96B, C982, C989
A6C4	C98A	30F4, 30F5, C983, C999, 05A0
A6C6	C9A1	30F6, 30F7, C99A, C9B1, 05B8
A6CE	C9B9	30F8, 30F9, C982, C9C5, 05C0, 05E1
A6DC	C9E2	315D, C9CA, C9D1, 09ED
A6C2	C9EE	315E, C9F9
A6C2	C9FA	315F, CA05
A6D5	CA06	3163, CA11
A6DE	CA12	3164, CA1D
A6FC	CA1E	3165, CA2C
A6F1	0A2F	3166, CA2D, CA3D
A6GA	07CD	30D9, 07D9
A6GC	C7CA	30DA, 07E6
A6GE	C7E7	30DB, 07F3
A60C	C795	30D4, C78D, C79D
A602	C79E	30D5, C7A6
A604	C7A7	30D6, C7B2
A606	C7B3	30D7, C7B7
A60E	C7C0	30D8, 07CC
A64A	C862	30E3, 086F
A64C	C870	30E4, C87D
A64C	C816	30DE, 3167, C81C, 0822, 0E2C
A642	C82D	30DF, C839
A644	0E3A	30E0, C846
A646	C847	30E1, C853
A64E	C854	30E2, C861
A66C	C885	3157, 3158, C88C, C892, 0E5C
A662	C89D	3159, 315A, C8AA, 08B4
A664	C8B5	315B, 315C, C8C2, C8CC
A67C	C8CF	3169, C8CD, C8D8, 08DF
A68C	091E	30EB, C8EC, C928, C931
A68C	C8E2	30E5, 30E6, C8D9, C8ED, CEF6
A684	C8F7	30E7, 30E8, C901, C909
A68E	C9GA	30E9, 30EA, C914, C91D
A7CC	CC2E	3125, 3126, CC37, CC40
A7CC	0BF2	311F, 3120, C8E6, C8FC, 0CC6
A7C4	CC07	3121, 3122, CC1C, CC1A
A7CE	CC1B	3123, 3124, CC24, CC2D
A70C	CA63	3100, 3101, 3102, CA8F, 0AFD, 0AA4
A70C	CA3E	30FA, 30FB, CA4A, 0A54
A704	CA55	30FC, 30FD, CA61, CA6B
A70B	CA6C	30FE, 30FF, CA78, CA82
A74C	0E09	310B, 310C, 310D, 31CE, 0E15, 0E1F, C82B, 0B32
A74C	GAAE	3103, 3104, 3105, 31C6, CA5E, CAA5, CABE, 0AC9, 0AC5, 0ACC
A74E	CADD	3107, 3108, 3109, 31CA, 0AFB, 0AF4, C601, 0BC8
A78A	GB8E	311B, 311C, C8C7, 0BD1
A78E	C8D2	311D, 311E, C8DB, C8E5
A78C	C87F	3115, 3116, 3117, 3118, 0E72, 0E8B, C895, 0BA1, 0EAB
A78E	C8A9	3119, 311A, C8B3, C8BD
A80C	CCA3	312F, CC9C, CCAD
A80E	CCAE	3130, CCB8
A80C	CC49	3127, 3128, 3129, 312A, CC41, CC59, CC64, CC7C, CC77
A80E	CC78	312B, 312C, 312D, 312E, CC71, CC85, CC9C, CC9B, CCA2
A84A	CC86	3171, CDC1
A84C	CC5C	3135, CC33, CC65
A842	CC6A	3136, 316F, 0D7E
A844	CC7F	3137, C8D8
A84E	CC8E	3138, CD97
A846	CC98	3139, CDA1
A845	CCA2	313A, 3168, CDB7
A85A	CCC2	3172, CDCA
A88A	GE51	3173, CE5E
A88C	CE5F	3141, 3142, 3143, 0E6A, 0E73, 0E7C
A88C	CCD5	313B, 313C, 316C, CDCB, CCE4, CCEE, CCF4, CCFB

CPU FUNCTION TEST

A884	CDFC	313D,313E,3161,CDF5,OECC,OE1A,CE23
A888	OE24	313F,3140,CE32,OE40
A889	OE41	3162,CE50
A90C	C282	3065,3066,3067,3068,3C69
B40A	C456	3090,3091,3C92,04A9,04E1,04BA
B40C	C455	308A,308B,3C8C,0464,04ED,0476
B40E	C477	308D,308E,308F,0483,04EC,0495
E44C	C51F	3C9C,309D,3C9E,052F,0537,0540
E500	C647	3085,3086,C64C,0655,065C
E60C	C7F4	30DC,C801
E6C2	CEG2	3CDD,C80F
B66C	C932	3CE0,3CEE,3CEF,093D,0949,0950
B742	OE33	310F,3110,3111,3112,OE3F,0E49,0E55,0E5C
E747	CB5D	3113,3114,CB67,0B71
E8AC	CECC	3148,314C,CECC,CEED,0EF6
E8A1	CEF7	314D,CEEF,0F00
E8A2	CF01	314E,0F0A
E8A3	CF08	314F,CF14
E8A4	CF15	3150,CF1E
E8A5	CF1F	3151,CF29
E8CC	CF2A	3152,3153,3154,0F32,0F3A,0F43
B8C1	OF44	3155,CF4B
B8C2	CF4C	3156,CF54
E80C	CCB9	3131,CC33
B802	CCC4	3132,CCCE
B804	CCCF	3133,CCD9
B806	CCDA	3134,CCCE
B807	CCDA	316A,CCE5,CD14
E808	CD15	316B,CD1F
B809	CD20	316C,CD2B
B81C	CD2C	316D,316E,CD5B
B882	CE7E	3144,3145,3146,0E8A,0E93,0E9F
B884	CEA0	3147,3148,3149,0EAA,0EB3,0EBF
B885	CEC0	314A,CECB
F00A	CF8B	0F78
F00E	CF85	0F93,CF96
F00C	CF84	0FC0
F00E	CF9E	0370,C388,C3AF,C3C8,03E6,C404,C423,042E,C445,C44D, 0462,C46B,C481,C48A,04A7,04AF,C4CC,04C4,C4EA,04F3, 0509,0512,C52D,C535,0580,C589,C5A1,C58E,05E9,C6CB, 0612,066F,C676,C711,0724,C737,C74E,C763,077C,C820, 0890,CEA8,C8CC,C8DC,0EEB,08FF,0912,0926,C93E,CA48, CA5F,CA76,CABD,CABC,CAC7,CAE9,CAF2,0B13,0B1C,0B3D, 0B47,CB65,CB85,CB93,0EE1,CEC5,CBDS,0BFA,0C0E,0C22, 0C35,CC57,CC62,CC83,0C8E,CC43,CC4C,0CE2,0CEC,CECA, 0E18,CE30,0E68,CE71,CE88,CE91,CEA8,0EE1,0EEE,CF30, 0F38,CFB4,CFB6,CFE8,0FC4,0FD1,CFD2
F00F	CF91	0F83
F00G	CFD3	0FCF
F00H	CFBA	0F9F
F00K	CFB4	0FC3,0FC8
F00L	CF8C	0F9A
F00X	CF87	0F70
F000	CF6F	3174,C2DC,C2E7,02F2,02FD,0308,C31C,0326,0330,C33B, 0348,0353,C35E,C36D,C377,C385,C38F,0399,03A2,03AC, C3B6,C3C5,C3CF,C3E3,03EC,C4C1,C40A,042C,042E,C433, 0442,044A,C453,C45F,C46B,0471,C47E,0487,0490,C4A4, 04AC,C4B5,C4C9,04D1,04DA,04E7,C4FC,04F5,0506,C50F, C519,C52A,C532,C53B,C54E,C55B,C56E,0577,C57C,C586, C590,C59E,C5A7,C5B5,05BE,C5CF,C5DA,05E6,C5F1,C5FC, C608,C60F,0619,C626,062D,063A,C641,0650,0657,CE6C, 0673,C681,C68D,C694,06A2,CEA9,C6E3,C6EE,06CS,06CD, 06D7,C6DF,C6E9,06F1,06FB,07C4,C70E,0717,0721,C72B, 0734,C73D,C74E,C751,C760,C76A,C77A,C784,0798,C7A1, C7AD,C73A,C7C7,C7D4,07E1,C7EE,C7FC,C8CA,081C,CE27, 0E34,C841,C84E,085C,0E6A,C878,C88D,0897,0EAS,CEAF, 08bD,C8C7,CEDA,C8E8,CEF1,C8FC,C904,09CF,091E,C923, 092C,C938,C944,C94B,C965,C96C,C97D,0984,0994,C99B,

CPU FUNCTION TEST

F002	CF88	0F7B
F003	CFDE	0D2D,CF74,CF99,0FAC,0FCB
F004	CFD9	C29A,C2A9
F005	0FCA	02DF,C2EA,02F5,C30C,03CE,C31F,C329,0333,033E,C34B, 0356,C361,C37A,C392,C39C,03A5,C3B9,03C2,03F0,C40D, 0436,C456,C474,C493,04E8,C4DC,C4FC,051C,053E,C551, 055E,C56E,C593,C5AA,C5C1,C5D2,C5DC,C5F4,05FF,C61C, 0629,C630,063D,C644,0655,065A,C684,C690,0697,0EAS, 06AC,C6B6,C6BE,06C8,06C0,06CA,C6E2,06EC,06F4,CEFF, 0707,C71A,C72E,0740,C754,076D,C787,C79B,07A4,C7B0, 07BD,C7CA,C7D7,C7E4,C7F1,C7FF,C80C,082A,0E37,CE44, C851,C85F,CE6D,C87B,0E9A,CE82,C8CA,08C6,08F4,C907, C91B,C92F,C947,C94E,0958,C96F,C98C,0987,0997,C99E, C9AF,09B6,C9C7,C9CE,09EB,C9F7,CA03,0ACF,0A1E,CA2A, 0A3B,CA52,CA65,CA80,0A98,0AA2,CAD3,0ACA,0AFF,0E06, 0B29,CB30,CB53,CB5A,0E6F,CB9F,CBA6,0BEE,0ECF,0EE3, 0C04,0C18,CC2E,CC3E,CC6E,CC75,CC99,0CAC,0CAB,CCB6, UCC1,CCCC,CCD7,0CE2,0C12,CC1C,CC29,0C59,0C67,CC7C, 0D8b,CD95,CD9F,0DB5,0CBF,0CC8,CCF2,0CF9,0E21,0E3E, 0E4E,025C,CE7B,CE9D,0E8D,CEC9,CEFA,0EFE,0F08,0F12, 0F1C,CF27,CF41,CF4A,CF53,CFD0,CFD3
F007	02D7	029C,C2A8
F00E	CF88	0FB0,0FC9
F005	CF8C	0FB3
F902	02C8	02AC,02BF
F903	C2C9	0297,02A6,C2B5
F904	02CA	02CA
F911	02CB	0282,0286
F912	02CC	0283,0285,C2CB
F913	C2CD	0284
F915	C2CE	02AE,02B1
F916	C2CF	028C
F917	C2DC	02AD,C2C0,C2C8
F918	C2D1	0289,C28D
F919	02D2	0296
F920	02D3	02A5,C2B6
F922	C2D4	029D,0289
F923	C2D6	029E,C29F,C2A2,02BA
G0C1	0144	0141
G0C2	C147	0145
G06C	C130	012E
G081	0133	0130
G082	C138	C133
G083	C13A	0138
G084	C13B	C138
G14A	C181	C17F
G14B	C185	0183
G14C	C189	0187
G14E	C18D	0186
G14F	C191	C18F
G14G	C195	0193
G14I	C15A	C158
G14J	C15D	C15B
G14Z	0161	015F
G143	C165	0163

CPU FUNCTION TEST

G144	C169	0167
G145	C16D	0168
G146	C171	016F
G147	C175	0173
G148	C179	0177
G149	C17C	017B
G150	C199	0197
G18A	C10C	C1CE
G18B	C1D4	01D2
G18C	C1D8	01D6
G18C	C1DC	01DA
G18E	C1EC	01DE
G18F	C1E4	01E2
G181	C1AC	01AA
G182	C1BC	01AE
G183	C1B4	C1B2
G184	C1B8	01B6
G185	C1BC	01BA
G186	C1CC	01BE
G187	C1C4	01C2
G188	C1C8	01C6
G189	C1CC	01CA
G20C	C33E	0339
G200	C21F	031A
G204	C329	0324
G208	C333	032E
G20A	C25D	0259
G20B	C267	0265
G20C	C26B	026F
G20C	C262	0260
G20C	C231	022D
G201	C236	0232
G202	C23A	0236
G203	C23E	023A
G204	C242	0240
G205	C247	0243
G206	C24F	024D
G207	C254	0252
G208	C24B	0247
G209	C258	0256
G28C	C2DF	02DA
G281	C2EA	02E5
G282	C2F5	02F0
G283	C3CC	02FB
G284	C3CE	0309
G30C	C3E6	03E1
G302	C3FC	03EB
G304	C404	03FF
G306	C40C	0408
G30C	C34B	0346
G302	C356	0351
G304	C361	035C
G34C	C370	0368
G342	C37A	0375
G38A	C3B9	03B4
G38C	C3C6	03C3
G38E	C3D2	03CD
G38C	C388	0383
G382	C352	038D
G384	C35C	0397
G386	C3A5	03A0
G388	C3AF	03AA
G4CA	C5AA	05A5
G4CC	C58E	C5B3
G4CD	C5C1	05BC
G4CC	C56E	0569
G4C2	C58C	057C
G4C4	C589	0585

CPU FUNCTION TEST

G4C6	C593	058E
G4C8	C5A1	059C
G40C	C445	0441
G40E	C456	0451
G40G	C428	0426
G404	C423	041E
G406	C436	0431
G407	C442	043F
G408	C44D	0448
G44A	C512	C50D
G44C	C506	0503
G44C	C505	0505
G44E	C51C	0517
G44C	C4D4	04CF
G442	C4CC	04C7
G443	C4DD	04D8
G444	C4F3	04EE
G446	C4E7	04E4
G447	C4EA	04E6
G44E	C4FC	04F7
G48C	C551	054C
G482	C55E	0559
G5CA	C787	0782
G5CC	C74B	0746
G5C2	C754	074F
G5C4	C763	075E
G5C6	C76C	0768
G5C8	C77D	0778
G50A	C615	0604, 060E
G50C	C625	0621
G50E	C63A	0636
G50C	C5D2	05CE
G502	C5DD	05D9
G504	C5E6	05E4
G505	C5E9	05E5
G506	C5F1	05EF
G507	C5F4	05F0
G508	C5FC	05FA
G54A	C6CC	06C2
G54C	C6DE	06D4
G54E	C6FC	06E6
G54F	C703	06F8
G54C	C67A	0668, C679
G542	C684	067F
G544	C69B	0689
G546	C6A1	069D
G548	C6BA	06B0
G58A	C74C	073B
G58C	0711	070C
G582	C71A	0715
G584	C724	071F
G586	C72E	0729
G588	0737	0732
G6CC	C96F	0963
G6C2	C987	097B
G6C4	C59E	0992
G6C6	C986	C9AA
G6C8	C5CE	09C2
G6CA	C7C7	07D2
G60C	C7E4	07DF
G6CE	C7F1	07EC
G60C	C798	0795
G6C2	07A1	079E
G6C4	C78C	07AB
G606	C78C	07B8
G60E	C7CA	07C5
G64A	C66D	0868
G64C	C67B	0876

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G640	C823	C818
G641	C82A	C825
G642	C837	C832
G644	C844	C83F
G646	C851	C84C
G64E	C85F	C85A
G66C	C85C	C88B
G661	C85A	C895
G662	C8A8	C8A3
G663	C8B2	C8AD
G664	C8C0	C8BB
G665	C8CA	C8C5
G67C	C8DA	C8D1
G671	C8D1	C8D5
G672	C8D3	C8E0
G68A	C91B	C916
G68C	C926	C921
G68E	C92F	C92A
G68C	C8E8	C8E5
G6E2	C8F4	C8EF
G684	C8FF	C8FA
G68E	C9C7	C9C2
G68E	C912	C9C0
G7CA	CC2b	CC26
G7CC	CC35	CC30
G7CE	CC3E	CC39
G7CC	C8FA	C8F5
G7C2	CC04	C8FF
G7C4	CC0E	CC09
G7C6	CC18	CC13
G7C8	CC22	CC1D
G7CA	CA8C	CA7B
G7CC	CA8C	CA88
G7CE	CAA2	CA92
G7CC	CA46	CA43
G7C2	CA52	CA4D
G7C4	CA5F	CA5A
G7C6	CA69	CA64
G7C8	CA76	CA71
G74A	C806	CAF8, CB02
G74C	CB13	C80E
G74E	CB1D	CB18
G74C	CABC	CAB7
G742	CAC7	CAC2
G744	CACA	CACC, CAD6
G74E	CAE5	CAE4
G74E	CAF2	CAED
G78A	CFC5	C8C0
G78C	C8CF	C8CA
G78E	C8D9	C8D4
G78C	C8B9	C8B4
G782	C853	C88E
G784	C8A6	C898, C8A2
G78E	C8B1	C8AC
G78E	C8BB	C8B6
G80A	CCAC	CC92
G80C	CCAB	CCA6
G80E	CCB6	CCB1
G80C	CC57	CC52
G8C2	CC62	CC5D
G8C4	CC75	CC67
G8C6	CC83	CC7E
G808	CC8E	CC89
G84A	CC8C	CC8A
G840	CC67	CC62
G842	CC7A	CC75
G844	CC8B	CC86
G846	CC92	CC90

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CPU FUNCTION TEST

G848	CD9C	OD9A
G849	CCB5	OCB0
G88A	CE3E	OE39
G88E	CE5C	OE59
G88C	CE68	OE63
G88E	CE71	OE6C
G88C	CDE2	ODDD
G881	CDEF	ODDC
G882	CDEC	ODE7
G883	CDF6	ODF1
G884	CE0A	OE05
G885	CE1B	OE02
G886	CE18	OE13
G887	CE21	CE1D
G88E	CE3C	OE2B
G889	CE4E	OE49
G90C	C2AC	C2A0, C2B3
G901	C2A5	C295
G902	C29D	C2A4
G903	C2B9	C2BE
G904	C2BF	C2B7, C2BB, C2C4
H4C2	C57D	C57A
H4C3	C57A	C575
H4C4	C586	C583
H40A	C4AF	C4AA
H40C	C4A7	C4A2
H40E	C4BE	C4B3
H40C	C46B	C466
H402	C462	C45D
H404	C474	C46F
H405	C481	C47D
H406	C48A	C485
H407	C47E	C478
H408	C493	C48E
H44C	C535	C530
H443	C52D	C528
H444	C53E	C539
H50A	C606	C606
H50E	C619	C617
H50C	C626	C623
H50E	C644	C638
H50E	C5FF	C5FB
H54A	C6D0	C6C4
H54C	C6E2	C6D6
H54E	C6F4	C6E8
H54F	C7C7	C6FA
H54C	C66C	C66A
H544	C6ED	C68B
H54E	C6A5	C6A0
H548	C6BE	C6B2
H60C	C96C	C95E
H6C2	C584	C976
H6C4	C59b	C58E
H6C6	C5B3	C5A5
H6CE	C5CB	C58D
H6CC	C5EB	C5E6
F6C2	C5F7	C9F2
H6D3	CA03	C9FE
H6D5	CA0F	CA0A
H6C6	CA1B	CA16
H6FC	CA2A	CA25
H6F1	CA38	CA32, CA33, CA35, CA36
H6F2	CA3B	CA37
H60C	C79B	C797
H602	C7A4	C7A0
H64C	CE18	C818, C81A
H68C	CEEB	C8E7
H74A	CB03	CAFA

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CPU FLNCTION TEST

H744	CAD7	OACE
H78C	CBE3	OBDE
H784	OBAA3	OB9A
H80A	CCGD	OC94
F804	OC72	OC69
F84A	CCBF	ODBB
F842	CD73	OD6E
F846	CD95	OD91
F84E	CC9F	OD9B
F849	CDA4	CDA4, CDA8
F85A	CDCe	CDC4
J50A	O60F	O607
J50C	O62C	O624
J50E	O641	O639
J54C	O673	O66B
J544	O694	O68C
J546	O6AC	O69F
J60C	O7FF	O7FA
J6G2	CEOD	OB08
J68C	CS3B	CS36
J682	CS4E	O940
J70E	OAGF	OA96
J74A	CB6F	OB6A
J74C	CB30	OB22, CB2C
J742	CB3D	OB38
J744	CB47	OB42
J746	CB5A	OB4C, CB56
J748	CB65	OB60
J8AA	OF24	CF21, CF22
J8A0	CEEB	OEE6
J8A1	OEFE	OEFa
J8A2	GEFB	OEF9
J8A3	CFG8	OF04
J8A4	CFCS	OF03
J8A5	CF12	OF0E
J8A6	OF0F	OF0D
J8A7	OF1C	OF18
J8A8	CF19	OF17
J8A9	CF27	OF23
J8CC	OF30	OF2C
J8C1	CF3E	OF34
J8C2	CF41	OF3D
J8C3	OF48	OF46
J8C4	OF4A	OF47
J8C5	CF51	OF4E CF4F
J8C6	CF53	OF50
J80C	CCC1	OCBC
J802	CCCC	OCC7
J804	CCD7	CCD2
J806	CCE2	CCDD
J808	CC12	OD0D
J809	CC1C	OD18
J81C	CC29	OD25
J811	CC36	CD45, CD4E, CD55
J812	CD43	OD3E
J813	OD4C	OD47
J814	CC2D	OD58
J815	CC26	OD23
J816	CC4F	OD52
J88A	GEC6	OEC4
J88B	GEC9	CEC5
J88C	CE7B	OE76
J882	GE88	OE83
J884	CE91	OE8C
J8E6	CE9C	OE98
J8E7	CEA8	OEA4
J8E8	CEB1	OEAC
J8E9	CEBD	OEB8

CPU FLNCTION TEST

K50B	C61C	O618
K50C	C63C	O625
K64C	CE1A	O882
K682	CS4B	O942
K74C	CB2D	OB24
K74e	CE57	OB4E
K849	CDAE	ODA9
N1CC	C1F3	O1EB
N1C1	C1F4	O1EE
N1DC	C211	O1FB, O1FC, C1FF, O207
N1D1	C212	O1F5, C1F8, C208
N1D2	C213	O204, C20D
N1EC	C21E	O218, C21A, C21E
N1E1	C21F	O214
N1FO	C22A	O22C
N1F1	C22B	C224, C226, C228
N1F2	C22C	G220
N1CO	C143	O14C, C14F
N14C	O19F	O154
N18C	C1EA	O1A0, O1A4
N2CC	C342	O318, C319, C322, C32D
N2C2	C343	O323, C32C, C336, C337, O338
N20C	O26C	O231, C25D
N201	O26D	O258
N202	C26E	O262
N203	O26F	O267
N24C	C271	O271, C275
N241	C273	O270, O274
N242	C27C	O27F
N243	C27D	O278, C27E
N28C	O312	O2D8
N281	O313	O2E2, O303
N282	C314	O2E4, C308
N283	C315	O2ED
N284	C316	O2EF, O2F8
N285	C317	O2FA
N3CC	C411	O3DE
N3C1	C412	O3DC
N3C2	C413	O3F5
N3C3	C414	O3F3
N3C4	C415	O3E0
N3C5	C416	O3EA
N3C6	C417	O3FE
N30C	C365	O344, C345, C34E
N302	O366	O34F, O350, C359, O35A, O35B
N34C	C37E	O367
N341	C37F	O369, C374
N38C	C3D6	O360
N381	C3D7	O382, O38C
N382	O3D8	O395
N383	C3D9	O3A8, C38C
N3E4	C3DA	O383
N3E5	C3DB	O3CC
N4C0	C5C5	O567, O568, C573, C58C, O598, C59A, C5AF, O5E1
N4C1	C5C6	O58D
N4C2	O5C7	O599, C5A4, C58C, C58E
N4C3	C5C8	O598
N4C4	C509	O582
N40C	C42C	O418, C41B, C42F
N401	C48D	O498
N402	C48E	O479
N403	C48F	O45B, C484
N404	C4C0	O465
N405	C4C1	O439, O459, C477, C496
N406	C4C2	O43C
N44C	C542	O4C3, C51F
N441	C543	O4C5, C4E2, C501, C521
N442	C544	O4E0, C4ED

CPU FUNCTION TEST

N443	0545	04FF
N444	0546	050C
N445	0547	0516
N480	0562	C548,C556
N481	0563	054A,C554,C558
N482	0564	0549,C548,C555,C557
N5C1	078E	070A,C731,C743,C757,0774,0776
N5C3	079C	071D,C75A,C75C,C767,0770,0781,C78A
N5C4	0791	071E,C728
N5C5	0792	0744,C745,C758,075B,C75C,C771
N5C6	0793	074E,C759,C766,0772,0775,0777,C78B
N5C7	0794	0773,C780,C78C
N500	C65E	05C3,C603,C615,C635,0667,06AF
N501	C65F	05D6,C69C
N5G2	C66C	05E1
N503	C661	05F8,C648
N504	C662	G620
N505	0663	G64B,C64C,C67B,067C
N506	0664	064D
N5C7	05EC	05E2
N542	0665	067D,C687,06C1,06D3
N6CA	05DC	0962
N6CB	05DD	097A,CA09,CA13
N6CC	05DE	09A9,CA07,CA15
N6CF	09E0	C9BA,C9C1
N6CC	05D2	055D,C5D2,C5E5
N6C1	C5D3	C5D3,C9E2,C5EE,05FA,05FD
N6C2	C5D4	09D4,C9F1
N6C3	C5D5	09D5
N6C4	C5D6	095B,C973,C98B,098D,09A2,09EC,C5D6,09CF
N6C5	C9D7	09A4,C9D7
N6C6	C5D8	C9D8
N6C7	C5D9	09D9
N6C8	C5DA	0975,C9DA
N6C9	C5DB	0960,C961,C57E,C575,0550,C551,09A7,09A8,09BF,09C0
N6FC	CA23	CA20
N6F1	CA2E	CA1F,CA24,CA2E
N6F2	CA33	0A30
N6F3	CA37	0A34
N60C	0811	07D1,C7DE,C7EB,08C7,0E11
N601	0812	07A8,C7AA,C7B5,07B7,C7C2,C7C4,C7CF,07CC,07E9,C7F7, G805,C812
N602	0813	07F9,C813
N603	0814	07B4,C7C1,C7CE,C7DB,07E8,07F6,C802
N6C4	0815	0804
N64C	0831	C817,C819,C823,082E,C830,C831,C83E,C83C,083E,CE48, 084A,C84B,C855,C857,0E58,CE63,CE65,C866,0871,0873, 0874,CE7F
N642	0EE2	0824
N643	0823	0854,C862,C87C,087E
N644	0884	0816,C82D,C83A,C847,C859,C867,C875
N66C	G6CE	0889,C88A,C893,C894,CEA1,C8A2,C8AB,08AC,08B5,C8BA, 08C3,C8C4
N67C	CEE1	08D0
N68C	0552	08E3,C8EE,C8F8,090B,05CC
N681	C553	08E4
N682	0554	G8F9
N683	0555	091F,C920
N684	0556	C929,C933,C934
N686	0557	C93F
N687	0558	0915
N68E	C559	C955,C93E
N7CG	0C42	0BF2
N7C1	CC43	0BF3
N7C2	CC44	0BF4
N7C3	CC45	0BFE
N7C4	0C46	0C07,CC08,CC1C,0C2E
N7C5	CC47	GC12

CPU FUNCTION TEST

N7C6	CC48	0C1B,CC2F
N70C	CA46	0A3F,0A56,CA84
N701	CAA7	0A40,CA59,CA6E,CA7A,0A55
N702	GAA6	0A41,CA4B,CA58,CA62,0A6F,CA75,CA8E,CA90,0A54
N703	CAA9	0A42,CA57
N704	GAAA	GA4C,CA63,CAF7
N705	OAA8	0A6D,CA85,CAE7
N706	CAAC	0A91
N707	OAAD	0A70
N74A	CB7A	0B17
N74B	CB7B	0B41
N74C	CB7C	0B34
N74C	CB73	0AB3,CACA,CAE2,CAF5,UECC,0B20,CB36,0B4A
N742	0B74	OAAF,0AB5,CAC0,0AE0,0EOA,0E0B,CB0C,0B35,0B37
N744	CB76	0AB1
N746	CB78	0ADE,CB5D
N747	CB79	0B5E,CB5F
N74E	CB7E	0B21,C64B,CB65
N78A	0BFC	0B8E
N78C	0BEF	0BC9
N78C	CB7E	0B82,CB96
N782	CBE8	0B80,CBAA,CBD2
N784	CBEA	0B81
N785	CBEB	0B85,CBDD
N786	0BEC	0B83,CB8D,CB8B,CBBF
N787	0BED	0B83
N78E	CBEF	0B97
N8AC	CF5B	0EE5,0EF7,CF01,0F0B,0F16
N8A1	CF56	0EF8,CF1F,CF2C
N8A2	CF57	0EE4,CEEE,CF0C
N8A3	CF58	0F02
N8C1	CF6C	0F62
N8C2	CF6D	0298,02A7
N8C3	CF6E	0F63,CF6C
N8C5	CF5A	0F15,CF2B
N8C6	CF5C	0F2A,CF33,CF3C
N8C7	0F5E	0F44,CF4C,CF4E
N8C8	0F60	0F45
N80A	CCF0	0CBA
N80C	CCF2	0CC5
N80E	CCF4	0CA5,CCD0
N80F	CCF5	0D17
N80C	CCE6	0C4E,CC65,CC7B,CC91
N802	CCE8	0C4A
N804	0CEA	0C78
N806	CCEC	0CA4
N807	CCED	0CB0,CCD1,CCDC,0D50
N808	CCEE	0CAF,CBBB
N81C	CCF6	0CDB
N811	CCF7	0C5B
N812	CCF8	0C4C,CC50,CCC6
N813	CCF9	0C79,CC7C
N81E	CCFA	0C87
N817	CCFB	0DOC
N81E	CCFC	0CDB
N815	CCFE	0D16,CB34,CD54
N82C	CD00	0D22
N821	CD01	0D35,CD36,CD37,CD3B,CC3C,CC4F,CD51
N823	CC06	0D21
N824	CC08	CD39
N84A	CC0C	CDB8
N84C	CC0D	0C5F,CD60,CD83,CC84,CCA7,0CAE
N841	CC0E	0D61,CD85,CCAF
N842	CC0F	0D6B,CD73,CC7B
N843	CCD1	0D7A
N844	CCD2	0DC2,CDD3
N845	CCD3	0D6A,CD6D,CCA5
N846	0DD4	0D74

CPU FUNCTION TEST

N88A	QED6	QE80,GEA0,CEC1
N88B	QED7	QE47
N88C	QED8	QE5F
N88C	QED9	QE7E
N88E	QEDA	QE11,CE96
N88F	QEDB	QE57
N88G	QECD	ODDA,CDE5,CECD,CECF,OE33,OE35,CE74,OE75,OE94,CE55, OE34,CEB6
N882	CECE	ODD6,CE54
N884	QEDC	ODFE,OE44,OE87
N885	QED1	OE24,OE37
N886	QED2	OE03,CE26,CE29,CE82,OEAB
N887	QED3	ODFC
N88E	QED4	OE61
RST1	OFDE	OFA3
RST2	CFDF	QFA6,CFA9
S501	Q657	Q64A
S503	Q65A	Q64E
U00A	CF9C	QFC5
U00B	CF9D	QF7D,CF8C,CFB1,QFC2,QFC6
U00X	UFCC	QFA0,CFA2,CFB7,CFB5
U00C	CFD5	QF71,QF86
U001	CFD6	QF73,QF84
U003	CF9B	QF8D
U006	CFDA	QF7E,CFB5
V1AC	Q27A	Q27C
V154	Q241	Q23E
V16E	Q24E	Q24B
V170	Q253	Q250
V174	Q257	Q254
V180	Q261	Q25E
V184	Q266	Q263
W8C0	CF62	QEE2,QF55
W8C4	CF69	QF66
X00C	C12C	3000,QFE1
X001	Q2B4	3001,Q2AF
X003	Q2C5	3002,Q2C1
X007	QF68	3003
Z000	CFDB	QD2F,CF75,CF80,QF97,QFAD,QFBC,QFCC,QFC8
Z02C	CF6B	QF67

BASIC DIAGNOSTIC LOADER

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BASIC DIAGNOSTIC LOADER

1. PURPOSE

THE 1130 BASIC DIAGNOSTIC LOADER IS A SELF-CHECKING PROGRAM DESIGNED TO LOAD AND VERIFY LOADING OF DIAGNOSTIC-CARD OR PAPER TAPE PROGRAMS PUNCHED IN 8-8 FORMAT.

2. PREREQUISITES

2.1 PROGRAM PREREQUISITES

THE BASIC LOADER WILL ONLY LOAD PROGRAM DECKS WHICH ARE PUNCHED IN THE 8-8 FORMAT DESCRIBED IN SECTION 6.1.

2.2 EQUIPMENT PREREQUISITES

- A. 1131 CENTRAL PROCESSING UNIT (CPU).
- B. 1442 CARD READ/PUNCH, OR PAPER TAPE READER.

3. USE PROCEDURE

3.1 NORMAL LOADING PROCEDURE

A. AT 1442 CARD READ/PUNCH,

- 1. DEPRESS NPRO PUSHBUTTON TO CLEAR FEED.
- 2. PLACE BASIC LOADER DECK, FOLLOWED BY MAIN PROGRAM AND TWO BLANK CARDS IN HOPPER.
- 3. DEPRESS START PUSHBUTTON. READY INDICATOR SHOULD LIGHT.

B. AT PAPER TAPE READER

- 1. SET TAPE IN READER
- 2. MAKE READER READY

C. AT 1131 CPU,

- 1. PUSH RESET.
- 2. PUSH PROGRAM LOAD. MAIN PROGRAM SHOULD LOAD AND BEGIN EXECUTION.
- 3. IF PROGRAM FAILS TO LOAD OR HALTS AT A WAIT INSTRUCTION BELOW LOCATION 0120, REFER TO SECTION 3.2

3.2 DIAGNOSTIC LOADING PROCEDURE

- 1. SET INTERRUPT DELAY SWITCH (ON CE PANEL) TO ON POSITION.
- 2. RETRY LOADING PROCEDURE.

IF PROGRAM LOADS, RUN CPU AND INTERRUPT TESTS TO DIAGNOSE NORMAL LOADER FAILURE.

IF PROGRAM DOES NOT LOAD, REFER TO SECTION 3.3

3.3 DIAGNOSTIC GUIDE

NOTE

ALL REGISTER-CONTENT INDICATIONS IN FOLLOWING STEPS ARE EXPRESSED IN HEXADECIMAL NOTATION. ALL ADDRESSES APPLY TO BOTH PAPER TAPE AND CARD VERSIONS OF THE PROGRAM.

FAILURE DESCRIPTION SUGGESTED ACTION + POSSIBLE CAUSE OF FAILURE

- 1. NO CARD FEEDS REFER TO PROGRAM LOAD TESTS. POSSIBLE FAILURE OF EITHER PROGRAM-LOAD MODE OR READER.

THE FOLLOWING INFORMATION IS TO BE REPORTED ON THIS FORM:

1. Name of the trust or estate

2. Tax identification number

3. Date of termination

4. Name of the person to whom the property is distributed

5. Name of the person to whom the income is distributed

6. Name of the person to whom the principal is distributed

7. Name of the person to whom the trust corpus is distributed

8. Name of the person to whom the trust assets are distributed

9. Name of the person to whom the trust income is distributed

10. Name of the person to whom the trust principal is distributed

11. Name of the person to whom the trust corpus is distributed

12. Name of the person to whom the trust assets are distributed

13. Name of the person to whom the trust income is distributed

14. Name of the person to whom the trust principal is distributed

15. Name of the person to whom the trust corpus is distributed

16. Name of the person to whom the trust assets are distributed

17. Name of the person to whom the trust income is distributed

18. Name of the person to whom the trust principal is distributed

19. Name of the person to whom the trust corpus is distributed

20. Name of the person to whom the trust assets are distributed

21. Name of the person to whom the trust income is distributed

22. Name of the person to whom the trust principal is distributed

23. Name of the person to whom the trust corpus is distributed

24. Name of the person to whom the trust assets are distributed

THE FOLLOWING INFORMATION IS TO BE REPORTED ON THIS FORM:

1. Name of the trust or estate

2. Tax identification number

3. Date of termination

4. Name of the person to whom the property is distributed

5. Name of the person to whom the income is distributed

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7. Name of the person to whom the trust corpus is distributed

8. Name of the person to whom the trust assets are distributed

9. Name of the person to whom the trust income is distributed

10. Name of the person to whom the trust principal is distributed

11. Name of the person to whom the trust corpus is distributed

12. Name of the person to whom the trust assets are distributed

13. Name of the person to whom the trust income is distributed

14. Name of the person to whom the trust principal is distributed

15. Name of the person to whom the trust corpus is distributed

16. Name of the person to whom the trust assets are distributed

17. Name of the person to whom the trust income is distributed

18. Name of the person to whom the trust principal is distributed

19. Name of the person to whom the trust corpus is distributed

20. Name of the person to whom the trust assets are distributed

21. Name of the person to whom the trust income is distributed

22. Name of the person to whom the trust principal is distributed

23. Name of the person to whom the trust corpus is distributed

24. Name of the person to whom the trust assets are distributed

BASIC DIAGNOSTIC LOADER

- 2. FIRST CARD FEEDS BUT IS NOT READ CORRECTLY. REFER TO PROGRAM LOAD TESTS. POSSIBLE FAILURE OF READER.
- 3. FIRST CARD IS READ CORRECTLY BUT NOT ABLE TO LOAD REMAINDER OF LOADER. REFER TO ONE-CARD PROGRAMS. POSSIBLE FAILURE OF CPU INSTRUCTIONS USED TO BOOTSTRAP LOADER.
- 4. MAIN PROGRAM STARTS EXECUTING BEFORE ALL CARDS HAVE BEEN LOADED. CHECK THAT LAST CARD OF PROGRAM, WHICH IS PUNCHED WITH FF IN COLUMNS 79 AND 80, IS NOT OUT OF SEQUENCE. IF CARD IS IN SEQUENCE, A READING PROBLEM IS INDICATED.
- 5. ALL CARDS FEED BUT MAIN PROGRAM DID NOT EXECUTE. SEE IF LAST CARD WENT PAST THE READ STATION OF THE 1442. IF IT DID, RUN ONE-CARD DIAGNOSTIC PROGRAMS. CHECK THAT MAIN PROGRAM IS FOLLOWED BY TWO BLANK CARDS.

3.4 ERROR WAITS

SBR	LOCATION	MEANING
30F1	001E	PROGRAM STOPPED BECAUSE CHECKSUM FOR FIRST CARD WAS NOT CORRECT (0000). CHECK THAT LOCATIONS 0000 TO 001E WERE READ CORRECTLY BY COMPARING WITH LISTING. IF NOT LOADED CORRECTLY, REFER TO PROGRAM LOAD TESTS. IF LOCATIONS WERE LOADED CORRECTLY, RUN ONE-CARD PROGRAMS TO HELP ISOLATE PROBLEM.
30F2	002F	PROGRAM STOPPED BECAUSE OF DSW ERROR. THE ONLY VALID WORDS ARE 8003, 0003, AND 0800. DETERMINE CAUSE OF DSW ERROR AND CORRECT. RELOAD AFTER REPAIRING.
30F3	004F	PROGRAM STOPPED BECAUSE FIRST WORD OF CARD 2 FAILED TO BE LOADED IN LOCATION 004F AND THEREFORE, DID NOT REPLACE THE WAIT INSTRUCTION AT THAT LOCATION. EXAMINE CARD 2 AND TRY RELOADING. IF NO IMPROVEMENT, RUN ONE-CARD DIAGNOSTIC PROGRAMS.
30F4	0095	PROGRAM STOPPED BECAUSE OF DSW ERROR. THE ONLY VALID WORDS ARE 8003, 0003, AND 0800. DETERMINE CAUSE OF DSW ERROR AND CORRECT. RELOAD AFTER REPAIR.
30F5	00A5	WHILE LOADING THE MAIN PROGRAM, PROGRAM FOUND THAT WORD COUNT IN LOCATION 0034 EQUATED ZERO. PROBLEM MAY BE CAUSED BY A BLANK CARD IN DECK, OR READING FAILURE.
30F6	00B7	CHECKSUM ERROR. EITHER THE SUM OF LOCATIONS 0010 THRU 0036 DOES NOT EQUAL ZERO, OR AN ADD FAILURE HAS OCCURRED. COMPARE DATA IN LOCATIONS 0010 THRU 0036 WITH DATA IN CARD COLUMNS 1 THROUGH 78. IF CORRECT, RUN CARDS 2 THRU 5 OF ONE-CARD DIAGNOSTIC PROGRAMS TO HELP DETERMINE CAUSE OF FAILURE.
30F7	00DE	PROGRAM HAS FOUND THAT A WORD IN THE READ-IN AREA AND THE WORD AT LOCATION WHERE THE WORD READ IN WAS TRANSFERRED DO NOT AGREE. THE ADDRESSES OF THE WORDS FOUND NOT TO AGREE CAN BE FOUND AT LOCATIONS 00DA AND 00DC. THE PROBLEM MAY BE A DATA-TRANSFER ERROR OR AN EOR FAILURE. RUN ONE-CARD DIAGNOSTIC PROGRAMS TO DETERMINE CAUSE OF PROBLEM.

BASIC DIAGNOSTIC LOADER

- 4. PRINTOUTS (NONE)
- 5. COMMENTS

THE 1130 BASIC DIAGNOSTIC LOADER IS A SELF-CHECKING PROGRAM DESIGNED TO LOAD AND VERIFY LOADING OF CARD PROGRAMS PUNCHED IN 8-8 MODE. THE 8-8 MODE REFERS TO PROGRAM CARDS IN WHICH A CARD COLUMN CONTAINS A HALF WORD WHERE ONE FULL WORD CONSISTS OF SIXTEEN BITS. TWO CARD COLUMNS ARE REQUIRED FOR EACH WORD. THE LOADER DECK CONSISTS OF FIVE CARDS. THE FIRST CARD IS PUNCHED IN IPL-MODE FORMAT. CARDS TWO THROUGH FIVE ARE PUNCHED IN 8-8 MODE.

5.1 BASIC-LOADER FIRST-CARD FUNCTIONS

5.1.1 AFTER BEING LOADED IN IPL MODE, THE FIRST-CARD PROGRAM DEVELOPS A CHECKSUM TO DETERMINE IF IT WAS LOADED CORRECTLY. IF THE CHECKSUM IS NOT 0000, THE PROGRAM STOPS AT A WAIT WITH THE DEVELOPED CHECKSUM DISPLAYED BY THE ACCUMULATOR.

5.1.2 IF THE CHECKSUM IS CORRECT, THE FIRST-CARD PROGRAM PROCEEDS TO LOAD CARDS TWO THROUGH FIVE. TWO CARD COLUMNS WILL FORM ONE STORAGE WORD BECAUSE THESE CARDS ARE PUNCHED IN 8-8 MODE. THE DSW IS CHECKED, AND IF AN ERROR IS DETECTED, THE PROGRAM WILL STOP AT A WAIT WITH THE ERROR DSW DISPLAYED BY THE ACCUMULATOR. THE CONDITION CAUSING THE DSW ERROR MUST BE CORRECTED BEFORE ATTEMPTING TO RELOAD.

5.1.3 AFTER LOADING CARDS TWO THROUGH FIVE, THE PROGRAM BRANCHES TO BEGINNING OF PROGRAM JUST LOADED.

5.2 FUNCTIONS OF BASIC-LOADER CARDS TWO THROUGH FIVE

5.2.1 CARDS TWO THROUGH FIVE LOAD A MAIN-PROGRAM CARD INTO LOCATIONS 0010 TO 0036. THE DSW IS CHECKED AFTER READING A CARD COLUMN, AND IF AN ERROR OCCURRED, THE PROGRAM STOPS AT A WAIT WITH THE DSW ERROR DISPLAYED BY THE ACCUMULATOR.

5.2.2 CARDS TWO THROUGH FIVE ALSO DEVELOP CHECKSUM OF LOCATIONS 0010 THROUGH 0036. IF CHECKSUM IS OTHER THAN 0000, PROGRAM STOPS AT ERROR WAIT WITH CHECKSUM DISPLAYED BY ACCUMULATOR. A CORRECT CHECKSUM MEANS CARD WAS READ CORRECTLY.

5.2.3 THE WORD COUNT, (NUMBER OF WORDS ON THE CARD) IS TAKEN FROM LOCATION 0034. IF IT IS ZERO PROGRAM STOPS AT ERROR-WAIT.

5.2.4 THE NUMBER OF WORDS SPECIFIED IN LOCATION 0034 IS RELOCATED, STARTING AT THE ADDRESS THAT WAS SPECIFIED IN CARD COLUMNS 75 AND 76 AND THAT WAS READ INTO LOCATION 0035.

5.2.5 THE DATA READ AND THE DATA AT THE TRANSFERRED LOCATION ARE COMPARED WORD BY WORD TO VERIFY THAT THE RELOCATION HAS BEEN DONE CORRECTLY. AN UNEQUAL COMPARISON RESULTS IN THE PROGRAM STOPPING AT AN ENDV-WAIT INDICATING AN RELOCATION ERROR.

5.2.6 THE PROGRAM REPEATS THE STEPS DISCUSSED IN PARAGRAPHS 5.2.1 THROUGH 5.2.5 FOR EACH CARD OF THE MAIN PROGRAM DECK, EXCEPT FOR THE LAST CARD, WHICH MUST HAVE A LOCATION ADDRESS OF 0000. AFTER READING THE CARD AND DEVELOPING THE CHECKSUM, THE PROGRAM BRANCHES TO LOCATION 0010 AND STARTS EXECUTING THE MAIN LINE PROGRAM.

PROGRAM TO DETERMINE CAUSE OF MARRIAGE
FRUITS OR IN PATIENTS. THE ONE-WORD DIAGNOSTIC
TYPE AND GOOD. THE PROGRAM MAY BE A DATA-DRIVEN
WORD FOUND NOT IN WORDS CAN BE FOUND BY LOCATING
TRIGGERED BY KEY WORDS. THE ADDRESS OF THE
AND THE WORD A LOCATION WHERE THE WORD AGAIN IN WAS
PROGRAM HAS FOUND THAT A WORD IN THE PROGRAM AREA
SEARCH TO DETERMINE CAUSE OF MARRIAGE.

PROGRAM TO DETERMINE CAUSE OF MARRIAGE
FRUITS OR IN PATIENTS. THE ONE-WORD DIAGNOSTIC
TYPE AND GOOD. THE PROGRAM MAY BE A DATA-DRIVEN
WORD FOUND NOT IN WORDS CAN BE FOUND BY LOCATING
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AND THE WORD A LOCATION WHERE THE WORD AGAIN IN WAS
PROGRAM HAS FOUND THAT A WORD IN THE PROGRAM AREA
SEARCH TO DETERMINE CAUSE OF MARRIAGE.

BASIC DIAGNOSTIC LOADER

6. APPENDIX

6.1 PUNCHED CARD 8-8 FORMAT

THE ORGANIZATION OF THE PUNCHED CARD 8-8 FORMAT IS AS FOLLOWS.

- A. COLUMNS 1 THROUGH 72 CONTAIN HALF WORDS (8 BITS) PUNCHED INTO ROWS 12 THROUGH 5. WORD-BITS 0 THROUGH 7 ARE PUNCHED INTO EVEN NUMBERED COLUMNS. WORD-BITS 8 THROUGH 15 ARE PUNCHED INTO ODD NUMBERED COLUMNS.
- B. COLUMNS 73 AND 74 CONTAIN A WORD-COUNT OF THE TOTAL NUMBER OF DATA WORDS PUNCHED INTO THE CARD.
- C. COLUMNS 75 AND 76 CONTAIN THE LOCATION, IN CORE WHERE THE DATA ON THE CARD ARE TO BE LOADED.
- D. COLUMNS 77 AND 78 CONTAIN A CHECKSUM (TWO'S COMPLEMENT OF THE SUM OF ALL WORDS IN COLUMNS 1 THROUGH 76).
- F. COLUMNS 79 AND 80 CONTAIN THE CARD'S SEQUENCE NUMBER PUNCHED IN HOLLERITH/HEXADECIMAL FORMAT.



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BASIC DIAGNOSTIC LOADER
LIST FOR CARD ONE (IPL)

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028C          ABS          CLD00000
          DRG          /0000 CLD00010
          *----- 1130 LOADER CARD 1 ----- CLD00020
          * LOAD WITH PROGRAM LOAD BUTTON
          *
0000 0 C02C          START LD      RDIN+1  CORRECT I/O CONT. COMM. CLD00060
0001 0 1802          SRA      2          BY SHIFTING CLD00070
0002 0 D02A          STO      RDIN+1  CLD00080
0003 0 C023          LD      STRD     CORRECT I/O CONT. COMM. CLD00090
0004 0 1801          SRA      1          BY SHIFTING AND CLD00100
0005 0 D021          STO      STRD     STORE WORD CLD00110
0006 0 F038          EOR      STORE   SET UP STORE LONG INST CLD00120
0007 0 D037          STO      STORE   PUT BACK INTO CORE. CLD00130
0008 0 C022          LD      SENSE   CORRECT I/O CONT. COMM. CLD00140
0009 0 1803          SRA      3          CLD00150
000A 0 D020          STO      SENSE   CLD00160
000B 0 F01D          EOR      RESET   CLD00170
000C 0 D01C          STO      RESET   CLD00180
000D 0 1805          SRA      5          MAKE STORE LONG INST. CLD00190
000E 0 F031          EOR      STORE+1  CLD00200
000F 0 D030          STO      STORE+1  CLD00210
0010 0 C017          LD      INTAD   CLD00220
0011 0 D0F6          STO      /0008  CLD00230
0012 0 D0F9          STO      /000C  CLD00240
          *
0013 0 C016          STRT   LD      CHKSM   FORM CHECK SUM ,THIS CARD CLD00250
0014 0 8000          A      *          FROM 0015 THRU 004D CLD00260
0015 0 D014          STO      CHKSM   CLD00270
0016 0 C0FD          LD      STRT+1  *          CLD00280
0017 0 800E          A      K0001  MODIFY ADD INSTRUCTION CLD00290
0018 0 D0FB          STO      STRT+1  CLD00300
0019 0 F008          EOR      CON1   CHECK THAT LAST LOC.CHECKD CLD00310
001A 0 4820          BSC     Z          SKIP WHEN DONE CLD00320
001B 0 70F7          MDX     STRT   GO GET NEXT WORD CLD00330
001C 0 C00D          LD      CHKSM   GET SUM OF 0013 THRU 004F CLD00340
001D 0 4820          BSC     Z          -- SEE ACC IS 0000 IF SO GO CLD00350
001E 0 30F1          WAIT    -15   CHECK SUM ERROR CLD00360
001F 0 7010          ENDCK  MDX     SRTRD  START LOADING CLD00370
          *
0020 0 8823          INT    DC      /B823  CLD00380
0021 0 0806          XIO    DC      RESET-1  SENSE AND RESET DSW CLD00390
0022 0 48F8          DC     /48F8  B0SC +-Z CLD00400
0023 0 0803          K0803 DC     /0803  CLD00410
0024 0 700E          MDX    PACK   CLD00420
          *
0025 0 8039          CON1  A      X /0039  CLD00430
0026 0 0001          K0001 DC     /0001  START RD,USED AS CONSTANT CLD00440
0027 0 2808          STRD  DC     /2808  /1404 SET BY PROG. CLD00450
0028 0 0020          INTAD DC     INT   RESET DSW CONTROL COMMAND CLD00460
0029 0 0003          RESET DC     /0003  /1703 SET BY PROGRAM CLD00470
002A 0 3829          CHKSM DC     /3829  SENSE DSW CONTROL COMMAND CLD00480
002B 0 8800          SENSE DC     /8800  /1700 SET BY PROGRAM CLD00490
002C 0 0000          RDIN  DC     /0000  READ IN LOCATIONS 0+1 CLD00500
002D 0 4800          DC     /4800  /1200 SET BY PROGRAM CLD00510
          *
002E 0 F017          ERROR EOR    K0800  RESTORE ACC. TO DSW CLD00520
002F 0 30F2          WAIT  -14   **ERR. DSW IN ACC. CLD00530
          *
0030 0 08F5          SRTRD XIO    STRD-1  START READ CLD00540
0031 0 08F6          XIO    RESE?-1  RESET DSW CLD00550
0032 0 08F7          XIO    SENSE-1  SENSE DSW FOR CRP CLD00560
0033 0 F011          PACK  EOR    K8003  BITS 0 + 14 + 15 ONLY CLD00570
0034 0 4820          BSC     Z          SKIP IF BITS 0+14+15 ONLY CLD00580
0035 0 7011          MDX    CONT1  CONTINUE DSW ANALYSIS CLD00590
0036 0 08F5          XIO    RDIN   RD COL. ONE-HALF WORD CLD00600
0037 0 C0F4          LD     RDIN   CLD00610
0038 0 F0ED          EOR    K0001  SWITCH READ IN AREA, EVEN CLD00620
0039 0 D0F2          STO    RDIN   COLS. IN 0 ODD IN 1 CLD00630

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BASIC DIAGNOSTIC LOADER
LIST FOR CARD ONE (IPL)

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003A 0 4820          BSC     Z          SKIP BOTH HALVES IN CLD00700
003B 0 70F5          MDX     SRTRD+1  GET 2ND HALF WORD CLD00710
003C 0 C0C3          LD     START   GET LAST 8 BITS CLD00720
003D 0 1808          SRA     8          SHIFT IT CLD00730
003E 0 F0C2          EOR     START+1  GET FIRST 8 BITS CLD00740
003F 0 C004          STORE DC /C004  FIRST WORD OF STO L CLD00750
0040 0 00F7          DC     /00F7  2ND WORD OF STORE LONG CLD00760
          * STORE + STORE +1 CHANGED BY PROG9 TO STO L /004F CLD00770
0041 0 C0FE          LD     STORE+1  CLD00780
0042 0 80E3          A      K0001  MODIFY STORE ADDRESS CLD00790
0043 0 D0FC          STO    STORE+1  CLD00800
0044 0 70EC          MDX    SRTRD+1  CLD00810
          *
0045 0 8003          K8003 DC     /8003  CLD00820
0046 0 0800          K0800 DC     /0800  CLD00830
          *
0047 0 F003          CONT1 EOR    K8000  CHECK FOR BITS 14+15 ONLY CLD00840
0048 0 4820          BSC     Z          SKIP BUSY AND NOT READY CLD00850
0049 0 7002          MDX     CONT2  CLD00860
004A 0 70E7          MDX     SRTRD+2  CLD00870
004B 0 8000          K8000 DC     /8000  CLD00880
          *
004C 0 F0D6          CONT2 EOR    K0803  CHECK FOR BIT 4 ONLY CLD00890
004D 0 4820          BSC     Z          SKIP END OF CARD CLD00900
004E 0 70DF          MDX     ERROR   CLD00910
004F 0 30F3          WAIT    -13   **ERR IF PRGM STOPS AT WAIT CLD00920
          *
          * CARD 2 IS READ IN AT THIS LOCATION WITH THE CLD00930
          * CHECK FOR READ OF 4 CARDS. CLD00940
          END     START CLD00950
          CLD00960
          CLD00970
          CLD00980
          CLD00990
0050 0 0000

```


BASIC DIAGNOSTIC LOADER
LIST FOR CARD ONE (IPL)

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
CHKSM	002A	0013,0015,001C
CONT1	0047	0035
CONT2	004C	0049
CON1	0025	0019
ENDCK	001F	
ERROR	002E	004E
INT	0020	0028
INTAD	0028	0010
K0001	0026	0017,0038,0042
K0800	0046	002E
K0803	0023	004C
K8000	0048	0047
K8003	0045	0033
PACK	0033	0024
RDIN	002C	0000,0002,0036,0037,0039
RESET	0029	0008,000C,0021,0031
SENSE	0028	0008,000A,0032
SRTRD	0030	001F,003B,0044,004A
START	0000	003C,003E,0050
STORE	003F	0006,0007,000E,000F,0041,0043
STRD	0027	0003,0005,0030
STRT	0013	0016,0018,0018

BASIC DIAGNOSTIC LOADER
LIST FOR CARDS TWO THROUGH FIVE

ADDRESS	OPERATION	OPERAND	DESCRIPTION	ADDRESS
			ABS	CLD01000
			* CARDS 2,3,4,+5	CLD01010
			* THIS PROGRAM READS ONE CARD OF 8/8 FORMAT	CLD01020
			* INTO LOCS. 0000 THRU 0027.	CLD01030
			* THE CHECK SUM IS CHECKED. FOR SUM LOCS.	CLD01040
			* 0000THRU 0026 TO BE ZERO	CLD01050
			* THE NUMBER OF WORDS SPECIFIED IN LOC. 0024	CLD01060
			* ARE MOVED TO THE LOCATIONS BEGINNING AT THE	CLD01070
			* ADDRESS IN 0025. THE WORDS MOVED ARE CHECKED	CLD01080
			* AGAINST THE IMAGE IN 0000 AND FOLLOWING.	CLD01090
			* IF ALL CHECKS ARE OK THE NEXT CARD IS READ.	CLD01100
			* CARD 2 BEGINS HERE	CLD01110
			*	CLD01120
028C	ORG	/004F		CLD01130
004F 0 C020	LD	COUNT	COUNT CARDS READ	CLD01140
0050 0 8020	RSTRT A	K0001		CLD01150
0051 0 001E	STO	COUNT		CLD01160
0052 0 F01F	EOR	K0004	CHECK FOR 4 CARDS READ	CLD01170
0053 0 4820	BSC	Z	SKIP 4 CARDS READ	CLD01180
0054 0 7008	MDX	/0030	GO TO START READ	CLD01190
			*	CLD01200
0055 0 C071	LD	MDX	SET RESART BRANCH	CLD01210
0056 0 D0F9	STO	RSTRT		CLD01220
0057 0 C070	LD	MDX0		CLD01224
0058 0 D0A7	STO	/0000		CLD01230
			*	CLD01240
0059 0 C034	LOAD LD	CON1		CLD01250
005A 0 D01D	STO	STORE	RESTORE STORE INST.	CLD01260
005B 0 C022	LD	CON2		CLD01270
005C 0 D027	STO	RDIN	RESTORE RDIN LOC.	CLD01280
005D 0 C022	LD	INTAD		CLD01290
005E 0 D0A9	STO	/0008		CLD01300
005F 0 D0AC	STO	/000C		CLD01310
			*	CLD01320
0060 0 081D	SRTRD XIO	STRD-1	START READ	CLD01330
0061 0 081E	XIO	RESET-1	RESET DSW	CLD01340
0062 0 081F	XIO	SENSE-1	SENSE DSW	CLD01350
			*	CLD01360
0063 0 F027	PACK EOR	K8003	CHECK BITS 0, 14+15 ONLY	CLD01370
0064 0 4820	BSC	Z	SKIP IF COL. REQUEST	CLD01380
0065 0 7031	MDX	CONT1		CLD01390
0066 0 081D	XIO	RDIN	READ A COLUMN	CLD01400
0067 0 C01C	LD	RDIN	SET NEXT READ IN LOCATION	CLD01410
0068 0 F008	EOR	K0001		CLD01420
0069 0 D01A	STO	RDIN		CLD01430
006A 0 F013	EOR	CON2		CLD01440
006B 0 4820	BSC	Z	SKIP IF BOTH HALF WORDS IN	CLD01450
006C 0 70F4	MDX	SRTRD+1		CLD01460
006D 0 C018	LD	RDEVN	COMBINE HALF WORDS	CLD01470
006E 0 1808	SRA	8		CLD01480
006F 0 7007	MDX	/0C77		CLD01490
0070 0 0000	COUNT DC	/0000		CLD01500
0071 0 0001	K0001 DC	/0001		CLD01510
0072 0 0004	K0004 DC	/0004		CLD01520
			*	CLD01530
			* CARD 3 BEGINS HERE	CLD01540
			*	CLD01550
0073	ORG	/0077		CLD01560
0077 0 F00F	EOR	R00DD		CLD01570
0078 0 D097	STORE STO	/0010	STORE FULL WORD	CLD01580
0079 0 C0FE	LD	STORE	SET NEXT WORD LOCATION	CLD01590
007A 0 80F6	A	/0001		CLD01600
007B 0 D0FC	STO	STORE		CLD01610
007C 0 70E4	MDX	SRTRD+1		CLD01620
007D 0 7096	HOP MDX	/0014	START PROGRAM	CLD01630
007E 0 0086	CON2 DC	RDEVN	READ CARD CONTROL COMMAND	CLD01640
007F 0 1404	STRD DC	/1404		CLD01650
0080 0 008F	INTAD DC	INT	RESET DSW CONTROL COMMAND	CLD01660

BASIC DIAGNOSTIC LOADER
LIST FOR CARDS TWO THROUGH FIVE

```

0081 0 1703      RESET DC      /1703      CLD01680
0082 0 0000      CKSUM DC      /0000      SENSE DSW CONTROL COMMAND CLD01690
0083 0 1700      SENSE DC      /1700      CLD01700
0084 0 0086      RDIN DC      RDEVN      READ COL. CONTROL COMMAND CLD01710
0085 0 1200      DC          /1200      CLD01720
0086 0 0000      RDEVN DC      /0000      CLD01730
0087 0 0000      RDODD DC      /0000      CLD01740
0088 0 0034      K0034 DC      /0034      CLD01750
0089 0 0037      K0037 DC      /0037      CLD01760
008A 0 0800      K0800 DC      /0800      CLD01770
008B 0 8003      K8003 DC      /8003      CLD01780
008C 0 0010      K0010 DC      /0010      CLD01790
008D 0 8000      K8000 DC      /8000      CLD01800
008E 0 0097      CON1 STO X    /0010-STORE-1 CLD01805
*
008F 0 0000      INT DC        0          CLD01810
0090 0 08EF      XIO          PESET-1    SENSE AND RESET DSW      CLD01820
0091 0 4878      BOSC        +-Z      BR OUT OF INTERRUPT     CLD01830
0092 0 0803      K0803 DC      /0803      CLD01840
0093 0 70CF      MDX        PACK      CLD01850
*
0094 0 F0F5      ERROR EOR    K0800      RESTORE ACC TO DSW      CLD01860
0095 0 30F4      WAIT       -12      **ERR. DSW IN ACC.      CLD01870
0096 0 70C2      MDX        LOAD      PRESS START TO RETRY    CLD01880
0097 0 F0F5      CONT1 EOR    K8000      CHECK FOR BITS 14+15 ONLY CLD01890
0098 0 4820      BSC        Z          SKIP BUSY AND NOT READY CLD01900
0099 0 7005      MDX        CONT2     CLD01910
009A 0 70C7      MDX        SRTRD+2    CLD01920
*
* CARD 4 BEGINS HERE
*
0098          ORG          /009F
009F 0 F0F2      CONT2 EOR    K0803      CHECK FOR BIT 4 ONLY    CLD01930
00A0 0 4820      BSC        Z          SKIP END OF CARD        CLD01940
00A1 0 70F2      MDX        ERROR      CLD01950
*
*---CHECK FOR WORD COUNT OF ZERO-----
*
00A2 0 C091      LD          /0034      GET WORD COUNT          CLD01960
00A3 0 4820      BSC        Z          SKIP IF WORD COUNT ZERO CLD01970
00A4 0 7002      MDX        SUM1     CLD01980
00A5 0 30F5      WAIT       -11      **ERR. WORD COUNT IS ZERO CLD01990
00A6 0 70B2      MDX        LOAD      START CONTINUES LOADING CLD02000
*
*---FORM CHECK SUM OF CARD IMAGE LOCS. 00-26---
*
00A7 0 C0E4      SUM1 LD      K0010      SET ACC. TO /0010      CLD02010
00A8 0 D004      STO        CKL0D+1    CLD02020
00A9 0 1810      SRA        16        CLD02030
00AA 0 D0D7      STO        CKSUM      CLD02040
00AB 0 C0D6      LD         CKSUM      CLD02050
00AC 0 8400FFFF CKL0D A L /FFFF      FORM SUM OF LOCS. 10 THRU 36 CLD02060
00AE 0 D0D3      STO        CKSUM      CLD02070
00AF 0 C0FD      LD         CKL0D+1    MODIFY ADDRESS          CLD02080
00B0 0 80C0      A          K0001      CLD02090
00B1 0 D0FB      STO        CKL0D+1    CLD02100
00B2 0 F0D6      EOR        K0037      CHECK THAT ALL WORDS DONE CLD02110
00B3 0 4820      BSC        Z          SKIP ALL LOCS. ADDED    CLD02120
00B4 0 70F6      MDX        CKL0D-1    CLD02130
00B5 0 C0CC      LD         CKSUM      LOAD SUM 10 THRU 36     CLD02140
00B6 0 4820      BSC        Z          SKIP SUM IS CORRECT     CLD02150
00B7 0 30F6      WAIT       -10      **ERR. IN CHECK SUM     CLD02160
*
* MOVE CARD IMAGE TO THE LOCS. BEGINING AT
* THE ADDRESS GIVEN IN LOC. /0025.-----
*
00B8 0 C4000035 MOVE LD L /0035      GET ADDRESS FOR FIRST WORD CLD02170
00BA 0 4820      BSC        Z          SKIP ADDRESS IS 0000    CLD02180

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BASIC DIAGNOSTIC LOADER
LIST FOR CARDS TWO THROUGH FIVE

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008B 0 7001      MDX        STRE      CLD02350
008C 0 70C0      MDX        HOP       START PROGRAM VIA HOP    CLD02360
008D 0 D00C      STRE STO    PUT+1     SET FIRST WORD ADDRESS   CLD02370
008E 0 C0CD      LD         K0010      SET ACC. EQU. 0010      CLD02380
008F 0 D001      STO        GET+1     SET TO GET FIRST WORD AT 0 CLD02390
00C0 0 C400FFFF GET LD L /FFFF      GET PROG. WORD          CLD02400
00C2 0 70C6      MDX        PUT       CLD02410
*
* CARD 5 BEGINS HERE
*
00C3          ORG          /00C7
00C7 0 7008      MDX MDX X LOAD-RSTR-1 CLD02420
00C8 0 7013      MDXO MDX X /0013      CLD02430
00C9 0 D400FFFF PUT STO L /FFFF      PUT PROG. WORD          CLD02440
00CB 0 C0FE      LD         PUT+1     MODIFY PUT              CLD02450
00CC 0 80A4      A          K0001      CLD02460
00CD 0 D0FC      STO        PUT+1     CLD02470
00CE 0 C0F2      LD         GET+1     MODIFY GET              CLD02480
00CF 0 80A1      A          K0001      CLD02490
00D0 0 D0F0      STO        GET+1     CLD02500
00D1 0 F0B6      EOR        K0034      CHECK FOR ALL WORDS MOVED CLD02510
00D2 0 4820      BSC        Z          SKIP ALL WORDS MOVED    CLD02520
00D3 0 70EC      MDX        GET       CLD02530
00D4 0 C4000035 SUM2 LD L /0035      GET ADDRESS OF FIRST WORD CLD02540
00D6 0 D003      STO        CKMOV+1    PUT IT INTO ROUTINE     CLD02550
00D7 0 C0B4      LD         K0010      SET TO GET FIRST WORD OF CLD02560
00D8 0 D003      STO        COMP+1     IMAGE                   CLD02570
00D9 0 C400FFFF CKMOV LD L /FFFF      GET WORD MOVED          CLD02580
00DB 0 F400FFFF COMP EOR L /FFFF      COMPARE WITH CARD IMAGE CLD02590
00DD 0 4820      BSC        Z          SKIP WORD STORED OK     CLD02600
00DE 0 30F7      WAIT       -9      **ERR. WORD NOT STORED OK. CLD02610
00DF 0 C0FA      LD         CKMOV+1    MODIFY FOR NEXT WORD    CLD02620
00E0 0 8090      A          K0001      CLD02630
00E1 0 D0F8      STO        CKMOV+1    CLD02640
00E2 0 C0F9      LD         COMP+1     MODIFY FOR NEXT COMPARE CLD02650
00E3 0 80A0      A          K0001      CLD02660
00E4 0 D0F7      STO        COMP+1     CLD02670
00E5 0 F0A2      EOR        K0034      CHECK IF ALL DONE       CLD02680
00E6 0 4820      BSC        Z          SKIP ALL WORDS CHECKED CLD02690
00E7 0 70F1      MDX        CKMOV     CLD02700
00E8 0 70BD      MDX        SUM1-1     GO GET NEXT CARD        CLD02710
00EA 0 0059      END        LOAD      CLD02720

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BASIC DIAGNOSTIC LOADER
LIST FOR CARDS TWO THROUGH FIVE

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
CKLOD	00AC	00A8,00AF,00B1,00B4
CKMOV	00D9	00D6,00DF,00E1,00E7
CKSUM	0082	00AA,00AB,00AE,00B5
COMP	00DB	00DB,00E2,00E4
CONT1	0097	0065
CONT2	009F	0099
CON1	008E	0059
CON2	007E	005B,006A
COUNT	0070	004F,0051
ERROR	0094	00A1
GET	00C0	00BF,00CE,00D0,00D3
HOP	007D	00BC
INT	008F	0080
INTAD	0080	005D
K0001	0071	0050,0068,007A,00B0,00CC,00CF,00E0,00E3
K0004	0072	0052
K0010	008C	00A7,00BE,00D7
K0034	0088	00D1,00E5
K0037	0089	00B2
K0800	008A	0094
K0803	0092	009F
K8000	008D	0097
K8003	0088	0063
LOAD	0059	0096,00A6,00C7,00E9
MDX	00C7	0055
MDX0	00C2	0057
MOVE	0088	
PACK	0063	0093
PUT	00C9	00BD,00C2,00CB,00CD
RDEVN	0086	006D,007E,0084
RDIN	0084	005C,0066,0067,0069
RDDDD	0087	0077
RESET	0081	0061,0090
RSTRT	0050	0056,00C7
SENSE	0083	0062
SRTRD	0060	006C,007C,009A
STORE	0078	005A,0079,007B,008E
STRD	007F	0060
STRE	008D	008B
SUM1	00A7	00A4,00E8
SUM2	00D4	

BASIC DIAGNOSTIC LOADER
PAPER TAPE BASIC LOADER

029C	ABS ORG	/0000	TDL0000
0000 0 7011	* LOAD WITH PROGRAM LOAD BUTTON	STRT	TDL00010
0001 0 0000	DC		TDL00020
0002 0 0000	DC		TDL00030
0003 0 0000	DC		TDL00040
0004 0 0000	DC		TDL00050
0005 0 0000	DC		TDL00060
0006 0 0000	DC		TDL00070
0007 0 0000	DC		TDL00080
0008 0 0000	DC		TDL00090
0009 0 0000	DC		TDL00100
000A 0 0000	DC		TDL00110
000B 0 0000	DC		TDL00120
000C 0 003A	DC	INT	TDL00130
000D 0 0000	DC		TDL00140
000E 0 0000	DC		TDL00150
000F 0 0000	DC		TDL00160
0010 0 0000	DC		TDL00170
0011 0 0000	DC		TDL00180
			TDL00190
			TDL00200
0012 0 C00D	* STRT LD	CHKSM	TDL00210
0013 0 84000000	A	/0000	TDL00220
0015 0 D00A	STO	CHKSM	TDL00230
0016 0 C0FD	LD	STRT+2	TDL00240
0017 0 8064	A	K0001	TDL00250
0018 0 D0FB	STO	STRT+2	TDL00260
0019 0 F007	ENR	LAST	TDL00270
001A 0 4820	BSC	Z	TDL00280
001B 0 70F6	MDX	*TRT	TDL00290
001C 0 C003	LD	CHKSM	TDL00300
001D 0 4820	BSC	Z	TDL00310
001E 0 30F1	WAIT	-15	TDL00320
001F 0 7030	MDX	LOAD	TDL00330
0020 0 2D6E	CHKSM DC	/2D6E	TDL00340
0021 0 00E9	LAST DC	END	TDL00350
	*		TDL00360
			TDL00380
0022 0 FFFF	DC	/FFFF	TDL00400
0023 0 0000	DC		TDL00401
0024 0 0000	DC		TDL00402
0025 0 0000	DC		TDL00410
0026 0 0000	DC		TDL00420
0027 0 0000	DC		TDL00430
0028 0 0000	DC		TDL00440
0029 0 0000	DC		TDL00450
002A 0 0000	DC		TDL00460
002B 0 0000	DC		TDL00470
002C 0 0000	DC		TDL00480
002D 0 0000	DC		TDL00490
002E 0 0000	DC		TDL00500
002F 0 0000	DC		TDL00510
0030 0 0000	DC		TDL00520
0031 0 0000	DC		TDL00530
0032 0 0000	DC		TDL00540
0033 0 0000	DC		TDL00550
0034 0 0000	DC		TDL00560
0035 0 0000	DC		TDL00570
0036 0 0000	DC		TDL00580
0037 0 0000	DC		TDL00590
0038 0 0000	DC		TDL00600
0039 0 0000	DC		TDL00610
003A 0 0000	INT DC	0	TDL00620
003B 0 0842	XIO	RESET	TDL00630
003C 0 4878	BOSC	+Z	TDL00640
003D 0 0000	DC	0	TDL00650
003E 0 701F	MDX	PACK	TDL00660
003F 0 0000	DC		TDL00670

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1130 SYSTEM

PART NO. 2191252 PAGE 5

BASIC DIAGNOSTIC LOADER PAPER TAPE BASIC LOADER

0040 0 0000 DC TDLC0680
0041 0 0000 DC TDLC0690
0042 0 0000 DC TDLC0700
0043 0 009F CON1 STO X /0010-STORE-1 TDLC0710
0044 0 004E CON2 DC RDEVN TDLC0720
0045 0 0028 CON3 DC 40 TDLC0730
0046 0 7F00 DELET DC /7F00 TDLC0740
0047 0 7006 FIX MDX X Y-X-1 TDLC0750
0048 0 00ED REFIX LD X RDEVN-X-1 TDLC0760
0049 0 0000 WCNT DC 0 TDLC0770
004A 0 4C00 K4C00 DC /4C00 TDLC0780
004B 0 ECF0 KECF0 DC /ECF0 PUNCH BIT MASK TDLC0790
004C 0 0C00 K0C00 DC /0C00 TDLC0800
004D 0 4000 K4000 DC /4000 TDLC0810
004E 0 0000 RDEVN DC /0000 TDLC0820
004F 0 0000 R0000 DC /0000 TDLC0830
* TDLC0840
LOAD LD CON1 TDLC0850
0051 0 001E STO STORE RESTORE STORE INST. TDLC0860
0052 0 00F1 LD CON2 TDLC0870
0053 0 002E STO RDIN RESTORE RDIN LOC. TDLC0880
0054 0 00F0 LD CON3 TDLC0890
0055 0 00F3 STO WCNT TDLC0900
0056 0 00F1 LD REFIX TDLC0910
0057 0 0008 STO X TDLC0920
* TDLC0930
SRTRD XIO K0001 START READ TDLC0940
0058 0 0823 XIO SENSE SENSE DSW TDLC0950
0059 0 0826 XIO AND KECF0 MASK OUT PUNCH BITS TDLC0960
005A 0 E0F0 EOR K4000 TDLC0970
005B 0 F0F1 BSC Z SKIP IF COL. REQUEST TDLC0980
005C 0 4820 MDX CONT1 TDLC0990
005D 0 7039 * TDLC1000
PACK XIO RESET RESET DSW TDLC1010
005E 0 081F XIO RDIN READ A COLUMN TDLC1020
005F 0 0822 X LD RDEVN TDLC1030
0060 0 00ED S DELET TDLC1040
0061 0 90E4 BSC Z TDLC1050
0062 0 4820 MDX *+1 TDLC1060
0063 0 7001 MDX SRTRD TDLC1070
0064 0 70F3 LD FIX TDLC1080
0065 0 00E1 STO X TDLC1090
0066 0 00F9 Y LD RDIN SET NEXT READ IN LOCATION TDLC1100
0067 0 C01A EOR K0001 TDLC1110
0068 0 F013 STO RDIN TDLC1120
0069 0 0018 EOR CON2 TDLC1130
006A 0 F009 BSC Z SKIP IF BOTH HALF WORDS IN TDLC1140
006B 0 4820 MDX SRTRD TDLC1150
006C 0 70EB LD RDEVN COMBINE HALF WORDS TDLC1160
006D 0 C0E0 SRA 8 TDLC1170
006E 0 1908 EOR R0000 TDLC1180
006F 0 F0DF * TDLC1190
STORE STO /0010 STORE FULL WORD TDLC1200
0070 0 099F LD STORE SET NEXT WORD LOCATION TDLC1210
0071 0 00FE A K0001 TDLC1220
0072 0 8009 STO STORE TDLC1230
0073 0 00FC LD WCNT TDLC1240
0074 0 C0D4 S K0001 TDLC1250
0075 0 9006 STO WCNT TDLC1260
0076 0 00D2 BSC Z TDLC1270
0077 0 4820 MDX SRTRD TDLC1280
0078 0 70DF MDX DATA TDLC1290
0079 0 7028 HOP MDX /0014 START PROGRAM TDLC1300
007A 0 7099 * TDLC1310
CKSUM DC /0000 TDLC1320
007B 0 0000 K0001 DC /0001 READ CARD CONTROL COMMAND TDLC1330
007C 0 0001 DC /1C10 TDLC1340
007D 0 1C10 RESET DC /0000 RESTORE DSW CONTROL COMMAND TDLC1350
007E 0 0000

DIAGNOSTIC PROGRAM FOR THE 1130 SYSTEM

PART NO. 2191252 PAGE 5A

BASIC DIAGNOSTIC LOADER PAPER TAPE BASIC LOADER

007F 0 1F01 DC /1F01 TDLC1360
0080 0 0004 SENSE DC /0004 SENSE DSW CONTROL COMMAND TDLC1370
0081 0 1F00 DC /1F00 TDLC1380
0082 0 004E RDIN DC RDEVN READ COL. CONTROL COMMAND TDLC1390
0083 0 1A00 DC /1A00 TDLC1400
0084 0 0037 K0037 DC /0037 TDLC1410
0085 0 0034 K0034 DC /0034 TDLC1420
0086 0 0010 K0010 DC /0010 TDLC1430
0087 0 0000 DC TDLC1440
0088 0 0000 DC TDLC1450
0089 0 0000 DC TDLC1460
008A 0 0000 DC TDLC1470
008B 0 0000 DC TDLC1480
008C 0 0000 DC TDLC1490
008D 0 0000 DC TDLC1500
008E 0 0000 DC TDLC1510
008F 0 0000 DC TDLC1520
0090 0 0000 DC TDLC1530
0091 0 0000 DC TDLC1540
0092 0 0000 DC TDLC1550
0093 0 0000 DC TDLC1560
* ERROR EOR K0000 RESTORE ACC TO DSW TDLC1570
WAIT -12 **ERR. DSW IN ACC. TDLC1580
MDX SRTRD+1 PRESS START TO RETRY TDLC1590
* CONT1 EOR K4C00 CHK BITS 4 AND 5 ONLY TDLC1600
BSC Z SKIP BUSY AND NOT READY TDLC1610
MDX ERROR TDLC1620
SRTRD+1 TDLC1630
DC TDLC1640
0097 0 F082 DC TDLC1660
0098 0 4820 MDX TDLC1670
0099 0 70FA DC TDLC1680
009A 0 708E DC TDLC1690
009B 0 0000 DC TDLC1700
009C 0 0000 DC TDLC1710
009D 0 0000 DC TDLC1720
009E 0 0000 DC TDLC1730
009F 0 0000 DC TDLC1740
00A0 0 0000 DC TDLC1750
00A1 0 0000 * TDLC1760
*---CHECK FOR WORD COUNT OF ZERO--- TDLC1770
* DATA LD /0034 GET WORD COUNT TDLC1780
BSC Z SKIP IF WORD COUNT ZERO TDLC1790
MDX SUM1 TDLC1800
WAIT -11 **ERR. WORD COUNT IS ZERO TDLC1810
MDX LOAD START CONTINUES LOADING TDLC1820
*---FORM CHECK SUM OF CARD IMAGE LOCS.*10-36--- TDLC1830
* SUM1 LD K0010 SET ACC. TO /0010 TDLC1840
STO CKL0D+1 TDLC1850
00A7 0 CODE SRA 16 TDLC1860
00A8 0 D004 STO CKSUM TDLC1870
00A9 0 1810 LD CKSUM TDLC1880
00AA 0 D0D0 CKL0D A L /FFFF FORM SUM OF LOCS.10 THRU 36 TDLC1890
00AB 0 C0CF STO CKSUM TDLC1900
00AC 0 8400FFFF LD CKL0D+1 MODIFY ADDRESS TDLC1910
00AD 0 D0CC A K0001 TDLC1920
00AE 0 C0FD STO CKL0D+1 TDLC1930
00AF 0 80C8 EOR K0037 CHECK THAT ALL WORDS DONE TDLC1940
00B0 0 80C8 BSC Z SKIP ALL LOCS. ADDED TDLC1950
00B1 0 D0FB MDX CKL0D-1 TDLC1960
00B2 0 F0D1 LD CKSUM LOAD SUM 10 THRU 36 TDLC1970
00B3 0 4820 BSC Z SKIP SUM IS CORRECT TDLC1980
00B4 0 70F6 WAIT -10 **ERR. IN CHECK SUM TDLC1990
00B5 0 C0C5 * TDLC2000
00B6 0 4820 * MOVE CARD IMAGE TO THE LOCS. BEGINING AT TDLC2010
00B7 0 30F6 * THE ADDRESS GIVEN IN LOC. /0025. TDLC2020
* TDLC2030

BASIC DIAGNOSTIC LOADER
PAPER TAPE BASIC LOADER

0088 00 C4000035	MOVE	LD	L	/0035	GET ADDRESS FOR FIRST WORD	TDL02040
008A 0 4820		BSC	Z		SKIP ADDRESS IS 0000	TDL02050
008B 0 7001		MDX		STRE		TDL02060
J08C 0 708D		MDX		HOP	START PROGRAM VIA HOP	TDL02070
008D 0 D00C	STRE	STO		PUT+1	SET FIRST WORD ADDRESS	TDL02080
008E 0 C0C7		LD		K0010	SET ACC. EQU. 0010	TDL02090
008F 0 D001		STO		GET+1	SET TO GET FIRST WORD AT 0	TDL02100
C0C0 00 C400FFFF	GET	LD	L	/FFFF	GET PROG. WORD	TDL02110
00C2 0 7006		MDX		PUT		TDL02120
	*					TDL02130
00C3 0 0010		DC		/0010		TDL02140
00C4 0 0000		DC				TDL02150
00C5 0 0000		DC				TDL02160
00C6 0 0000		DC				TDL02170
00C7 0 0000		DC				TDL02171
00C8 0 0000		DC				TDL02172
	*					TDL02180
00C9 00 D400FFFF	PUT	STO	L	/FFFF	PUT PROG. WORD	TDL02190
00CB 0 C0FE		LD		PUT+1	MODIFY PUT	TDL02200
00CC 0 80AF		A		K0001		TDL02210
00CD 0 D0FC		STO		PUT+1		TDL02220
00CE 0 C0F2		LD		GET+1	MODIFY GET	TDL02230
00CF 0 80AC		A		K0001		TDL02240
00D0 0 D0F0		STO		GET+1		TDL02250
00D1 0 F0B3		EOR		K0034	CHECK FOR ALL WORDS MOVED	TDL02260
00D2 0 4820		BSC		Z	SKIP ALL WORDS MOVED	TDL02270
00D3 0 70EC		MDX		GET		TDL02280
00D4 00 C4000035	SUM2	LD	L	/0035	GET ADDRESS OF FIRST WORD	TDL02290
00D6 0 D003		STO		CKMOV+1	PUT IT INTO ROUTINE	TDL02300
00D7 0 C0AE		LD		K0010	SET TO GET FIRST WORD OF	TDL02310
00D8 0 D003		STO		COMP+1	IMAGE	TDL02320
00D9 00 C400FFFF	CKMOV	LD	L	/FFFF	GET WORD MOVED	TDL02330
00DB 00 F400FFFF	COMP	EOR	L	/FFFF	COMPARE WITH CARD IMAGE	TDL02340
00DD 0 4820		BSC		Z	SKIP WORD STORED OK	TDL02350
00DE 0 30F7	WAIT			-9	**ERR. WORD NOT STORED OK.	TDL02360
00DF 0 C0FA		LD		CKMOV+1	MODIFY FOR NEXT WORD	TDL02370
00E0 0 8098		A		K0001		TDL02380
00E1 0 D0F8		STO		CKMOV+1		TDL02390
00E2 0 C0F9		LD		COMP+1	MODIFY FOR NEXT COMPARE	TDL02400
00E3 0 8098		A		K0001		TDL02410
00E4 0 D0F7		STO		COMP+1		TDL02420
00E5 0 F09F		EOR		K0034	CHECK IF ALL DONE	TDL02430
00E6 0 4820		BSC		Z	SKIP ALL WORDS CHECKED	TDL02440
00E7 0 70F1		MDX		CKMOV		TDL02450
00E8 0 708D		MDX		SUM1-1	GO GET NEXT CARD	TDL02460
00E9 0 C000	END	BSS		0		TDL02470
00EA 0050		END		LOAD		TDL02480

BASIC DIAGNOSTIC LOADER
PAPER TAPE BASIC LOADER

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
CHKSM	0020	0012,0015,001C
CKL0D	00AC	00AB,00AF,00B1,00B4
CKMOV	00D9	00D6,00DF,00E1,00E7
CKSUM	0078	00AA,00AB,00AE,00B5
COMP	00DB	00D8,00E2,00E4
CONT1	0097	0050
CON1	0043	0050
CON2	0044	0052,006A
CON3	0045	0054
DATA	00A2	0079
DELET	0046	0061
END	00E9	0021
ERROR	0094	0099
FIX	0047	0065
GET	00C0	00BF,00CE,00DC,00D3
HOP	007A	008C
INT	003A	000C
KECFO	0048	005A
K0C00	004C	0094
K0001	007C	0017,0058,006A,0072,0075,00B0,00CC,00CF,00E0,00E3
K0010	0086	00A7,00BE,00D7
K0034	0085	00D1,00E5
K0037	0084	0082
K4C00	004A	0097
K4000	0040	005B
LAST	0021	0019
LOAD	0050	001F,00A6,00E9
MOVE	0088	
PACK	005E	003E
PUT	00C0	00BD,00C2,00CB,00CD
RDEVN	004E	0044,0048,0060,006D,0082
RDIN	0082	0053,005F,0067,0069
R00DD	004F	006F
REFIX	0049	0056
RESET	007E	0038,005E
SENSE	0090	0059
SRTRO	0058	0064,006C,0078,0096,009A
STORE	0070	0043,0051,0071,0073
STRE	0080	0088
STRT	0012	0000,0016,0018,001B
SUM1	00A7	00A4,00E8
SUM2	00D4	
WCNT	0049	0055,0074,0076
X	0060	0047,0048,0057,0066
Y	0067	0047

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1. PURPOSE

THE ONE-CARD PROGRAMS ARE SHORT TESTS USED TO HELP ISOLATE FAILING FUNCTIONS THAT KEEP THE BASIC DIAGNOSTIC LOADER FROM OPERATING CORRECTLY. THERE ARE SEVEN ONE-CARD PROGRAMS, SEQUENCE NUMBERED 01 THROUGH 07 IN HOLLERITH - HEXADECIMAL CODE IN COLUMNS 79 AND 80. EACH PROGRAM IS RUN INDIVIDUALLY AND IS LOADED INTO CORE STORAGE USING THE PROGRAM LOAD MODE. REFER TO PARAGRAPH 5., COMMENTS, FOR PURPOSE AND DESCRIPTION OF EACH ONE-CARD PROGRAM.

INCLUDED IN THE APPENDIX, PARAGRAPHS 6.1 AND 6.2, ARE MANUAL ENTRY TEST PROGRAMS WHICH ARE LOADED BY MEANS OF THE CONSOLE ENTRY SWITCHES. ONE PROGRAM IS A DATA PATH TEST, AND THE OTHER IS AN ADD TEST. THESE PROGRAMS PROVIDE ADDITIONAL AID IN ISOLATING MALFUNCTIONS.

2. PREREQUISITES

2.1 PROGRAM PREREQUISITES

NO ADDITIONAL PROGRAMS ARE REQUIRED.

2.2 EQUIPMENT PREREQUISITES

- A. 1131 CENTRAL PROCESSING UNIT (CPU).
- B. 1442 CARD READ/PUNCH OR PAPER TAPE.
- C. 2501 CARD READER (USE ONLY CARDS 1-6) 7=ERROR.

3. USE PROCEDURE

3.1 GENERAL INFORMATION

THE FASTEST WAY TO ISOLATE A FAILURE WITH THE ONE-CARD PROGRAMS IS TO STEP THROUGH EACH ONE-CARD PROGRAM LOOKING FOR ONE OF THE ERROR CONDITIONS POSSIBLE.

THE POSSIBLE ERROR CONDITIONS ARE,

- A. STOP AT ERROR WAIT.
- B. INCORRECT REGISTER READINGS AT A NORMAL WAIT.
- C. FAILURE TO STOP AT A NORMAL WAIT.

IF THE ABOVE ERROR CONDITIONS DO NOT OCCUR, IT WILL BE NECESSARY TO RELY ON WHATEVER ERROR CONDITIONS APPEAR.

NORMAL WAITS-300X. NORMAL WAITS HAVE AS THEIR LAST DIGIT THE NUMBER OF THE ONE-CARD PROGRAM WHERE THEY OCCUR. FOR EXAMPLE WAIT 3003 IDENTIFIES A NORMAL WAIT IN ONE-CARD PROGRAM 03. WHEN A PROGRAM HAS MORE THAN ONE NORMAL WAIT, REFERENCE TO THE INSTRUCTION ADDRESS REGISTER READING IS NECESSARY, TO CORRECTLY IDENTIFY THE WAIT.

ERROR WAITS - 30FX. THE LAST DIGIT OF AN ERROR WAIT IDENTIFIES THE ONE-CARD PROGRAM WHERE WAIT OCCURS. THE NEXT TO LAST DIGIT, F, IDENTIFIES THE WAIT AS BEING AN ERROR WAIT. WHEN MORE THAN ONE ERROR WAIT OCCURS IN A ONE-CARD PROGRAM, REFERENCE TO THE INSTRUCTION ADDRESS REGISTER IS NECESSARY TO CORRECTLY IDENTIFY THE ERROR WAIT.

WHEN AN ERROR INDICATION OCCURS, THE LISTING OF THE PROGRAM BEING EXECUTED MUST BE REFERENCED TO DETERMINE THE CAUSE OF THE ERROR. CORRECT LOADING SHOULD BE VERIFIED BY DISPLAYING CONTENTS OF LOCATIONS WHERE THE PROGRAM IS STORED. THE PROGRAM SHOULD THEN BE RUN IN SI MODE TO LOCATE POINT OF FAILURE.

3.2 OPERATING PROCEDURE

- A. PLACE ALL SEVEN ONE-CARD PROGRAMS, FOLLOWED BY DECK OF BLANK CARDS IN 1442 HOPPER AND PRESS START BUTTON.
- B. CLEAR CORE STORAGE TO 33FF AS FOLLOWS,
 - 1. SET MODE SWITCH TO RUN.
 - 2. SET CONSOLE ENTRY SWITCHES TO 33FF.
 - 3. TURN ON STORAGE LOAD SWITCH (ON CE PANEL).
 - 4. PRESS START.
 - 5. PRESS IMM STOP.
 - 6. TURN OFF STORAGE LOAD SWITCH (ON CE PANEL).
- C. PRESS IMM STOP KEY.
- D. PRESS RESET KEY.
- E. PRESS PROGRAM LOAD.

ONE-CARD 01 SHOULD LOAD AND PROGRAM SHOULD STOP AT NORMAL WAIT 3001 (IAR = 0002). FROM THIS POINT ON, PROCEED ACCORDING TO INSTRUCTIONS GIVEN FOR THE WAIT THE PROGRAM HAS STOPPED AT. SEE TABLE 1 FOR NORMAL WAITS, AND TABLE 2 FOR ERROR WAITS.

TABLE 1. NORMAL WAITS

NOTE. IN THIS TABLE SBR=STORAGE BUFFER REG, IAR=INSTRUCTION ADDRESS REG, AND ACC=ACCUMULATOR.

```

*****
*   WAITS   *
*****
* SBR * IAR *
*****
* 3001 * 0002 * ACCUMULATOR SHOULD READ F0F0. IF OK PRESS START.
*      *      * IF NOT F0F0 ERROR IS INDICATED. REPAIR IF CAUSE IS CLEAR.
*      *      * IF NOT, CONTINUING TEST MAY HELP
* 3001 * 0004 * ACCUMULATOR SHOULD READ 080F. IF OK PRESS START.
*      *      * IF NOT 080F ERROR IS INDICATED. REPAIR IF CAUSE IS CLEAR.
*      *      * IF NOT, CONTINUING TEST MAY HELP.
* 3001 * 004E * DEPRESS IMM STOP, RESET, AND PROGRAM LOAD BUTTONS TO LOAD CARD
*      *      * 02. FAILURE OF PROGRAM TO STOP AT THIS WAIT INDICATES FAILURE
*      *      * OF AN MDX OPERATION. STEPPING THROUGH PROGRAM IN SI MODE MAY
*      *      * HELP LOCATE FAILURE. IF CAUSE OF FAILURE IS CLEAR, REPAIR.
*      *      * IF THE FAILURE IS NOT CLEAR CONTINUING MAY HELP TO IDENTIFY
*      *      * THE FAILURE.
-----
* 3002 * 003F * ACCUMULATOR SHOULD READ 003E. IF OK LOAD CARD 03 BY PRESSING
*      *      * IMM STOP, RESET, AND PROGRAM LOAD BUTTONS. IF ADD. IS NOT
*      *      * 003E, AN ERROR HAS OCCURRED. STEP THROUGH PROGRAM IN SING INST
*      *      * MODE, CHECKING THAT IAR AND ACC DISPLAY THE SAME INFORMATION
*      *      * AND ARE INCREMENTED BY ONE AT EACH STEP.
-----
* 3003 * 0021 * ACC SHOULD READ 0001. IF OK PRESS START.
*      *      * IF ACC IS NOT 0001, AN ERROR HAS OCCURED. STEP THROUGH
*      *      * PROGRAM IN SI MODE, CHECKING THAT (1) ACC CONTAINS A ONE IN
*      *      * BIT 0, (2) EACH SRA 1 INSTRUCTION IS EXECUTED PROPERLY, AND (3)
*      *      * NO BSC Z CAUSES A SKIP UNLESS ACCUMULATOR EQUALS ZERO.
*****
    
```

TABLE 1. NORMAL WAITS (CONTINUED)

```

*****
*   WAITS   *
*****
* SBR * IAR *
*****
* 3003 * 0025 * ACC SHOULD READ 0000. IF CK PRESS START.
*      *      * IF ACC IS NOT 0000, ERROR HAS OCCURRED. SI THROUGH PROGRAM
*      *      * FROM LOCATION 0021. COMPARE RESULTS OF TEST WITH LISTING.
* 3003 * 0030 * ACC SHOULD READ 0F0F. IF CK PRESS START.
*      *      * IF ACC IS NOT 0F0F, ERROR HAS OCCURRED. SI THROUGH PROGRAM
*      *      * FROM LOCATION 0025. COMPARE RESULTS OF TEST WITH LISTING.
*      *      * CHECK FOR SINGLE-BIT OMISSION. TRY SWAPPING APPROPRIATE SLT
*      *      * CARDS. (SEE LISTING).
* 3003 * 0033 * ACC SHOULD READ FFFF. IF CK PRESS START.
*      *      * IF ACC IS NOT FFFF, ERROR HAS OCCURRED. SI THROUGH PROGRAM
*      *      * FROM LOCATION 002E. COMPARE RESULTS OF TEST WITH LISTING.
* 3003 * 003C * ACC SHOULD READ FFFF. IF CK LOAD CARD 04 BY PRESSING IMM STOP.
*      *      * RESET, AND PROGRAM LOAD BUTTONS
*      *      * IF ACC IS NOT FFFF, ERROR HAS OCCURRED. SI THROUGH PROGRAM
*      *      * FROM LOCATION 002E. CCM RE RESULTS OF TEST WITH LISTING.
-----
* 3004 * 001E * ACC SHOULD READ FFFF. IF CK PRESS START.
*      *      * IF ACC IS NOT FFFF, ERROR HAS OCCURRED. SI THROUGH PROGRAM.
*      *      * COMPARE RESULTS OF TEST WITH LISTING.
* 3004 * 0023 * ACC SHOULD READ 0000. IF CK PRESS START.
*      *      *
*      *      * *** NOTE ***
*      *      * IF NO ERRORS OCCUR, THIS PROGRAM SHOULD RUN CONTINUOUSLY UNTIL
*      *      * STOPPED. IF NO ERRORS OCCUR, LOAD CARD 05 BY PRESSING IMM STOP,
*      *      * RESET, AND PROGRAM LOAD BUTTONS.
*      *      *
*      *      * IF ACC IS NOT 0000, ERROR HAS OCCURRED. SI THROUGH PROGRAM
*      *      * FROM LOCATION 001E. REFER TO LISTING.
-----
* 3005 * 1000 * PRESS RESET THEN START TO CONTINUE.
*      *      * MOST LIKELY ERROR WILL BE FAILURE OF PROGRAM TO STOP AT THIS
*      *      * WAIT. REFER TO LISTING. REFER TO PARAGRAPH 5.2.5 OF THIS
*      *      * DOCUMENT FOR DESCRIPTION OF CARD 05 PROGRAM.
* 3005 * 004C * ACC SHOULD READ 0F0F. IF OK LOAD CARD 06 BY PRESSING IMM STOP,
*      *      * RESET, AND PROGRAM LOAD BUTTONS.
*      *      * IF ACC IS NOT 0F0F, IT INDICATES THAT THE NUMBER OF LOCATIONS
*      *      * TESTED IS INCORRECT, ERROR MAY BE CAUSED BY ADD FAILURE, WHICH
*      *      * SHOULD BE DETECTABLE BY CARD 04 PROGRAM. PRESS START TO
*      *      * RESTART PROGRAM.
*****
    
```

TABLE 1. NORMAL WAITS (CONTINUED)

```

*****
* WAITS *
*****
* SBR * IAR *
*****
* 3006 * 002E * A. SET CONSOLE ENTRY SWITCHES TO 0003 (BUSY, NOT READY SIMULATED
* * * DSW). PRESS START. PROGRAM SHOULD RETURN TO THIS WAIT. IF
* * * OK PRESS START TO REPEAT TEST OR GO TO STEP B.
* * *
* * * IF PROGRAM STOPS AT WAIT B=30F6, REFER TO TABLE 2 - ERROR
* * * WAITS, FOR APPROPRIATE ACTION.
* * *
* * * B. SET CONSOLE ENTRY SWITCHES TO 0800 (END OF CARD SIMULATED
* * * DSW). PRESS START. PROGRAM SHOULD RETURN TO THIS WAIT. IF
* * * OK PRESS START TO REPEAT TEST, OR GO TO STEP C.
* * *
* * * IF PROGRAM STOPS AT WAIT B=30F6, REFER TO TABLE 2 - ERROR
* * * WAITS, FOR APPROPRIATE ACTION.
* * *
* * * C. SET CONSOLE ENTRY SWITCHES TO 8003 (COL. REQUEST, BUSY, NOT
* * * READY SIMULATED DSW). PRESS START. PROGRAM SHOULD RETURN TO
* * * THIS WAIT. IF OK PRESS START TO REPEAT TEST, OR GO TO STEP
* * * D.
* * *
* * * IF PROGRAM STOPS AT WAIT B=30F6, REFER TO TABLE 2 - ERROR
* * * WAITS, FOR APPROPRIATE ACTION.
* * *
* * * D. SET CONSOLE ENTRY SWITCHES TO AN INVALID DSW SETTING (OTHER
* * * THAN 0003, 0800, OR 8003). PRESS START. PROGRAM SHOULD STOP
* * * AT ERROR WAIT B=30F6, INDICATING THAT THE PROGRAM CORRECTLY
* * * SENSES AN ERROR DSW. PRESS START TO RETURN TO WAIT B=3006
* * * (THIS WAIT) TO REPEAT TEST WITH SAME, OR DIFFERENT INVALID
* * * DSW.
* * *
* * * E. AFTER DETERMINING THAT CARD 06 PROGRAM REACTS CORRECTLY TO
* * * THE SIMULATED DSW'S, LOAD CARD 07 BY PRESSING IMM STOP,
* * * RESET, AND PROGRAM LOAD BUTTONS.
* * *
-----
* 3007 * 0007 * A. ACC AND ACC EXTENSION SHOULD READ FFFF. IF OK GO TO STEP B.
* * * IF NOT FFFF, LOAD DOUBLE OR ADD DOUBLE ERROR HAS OCCURRED.
* * * SI THROUGH PROGRAM. REFER TO LISTING.
* * *
* * * B. TURN ON INTERRUPT DELAY SWITCH ( ON CE PANEL ).
* * * C. PRESS START. BLANK CARDS SHOULD FEED CONTINUOUSLY THROUGH
* * * THE READ STATION OF THE 1442.
* * *
* * * *** NOTE ***
* * *
* * * THERE ARE NO OTHER WAITS IN CARD 07 PROGRAM IN ORDER TO
* * * PERMIT SCOPING OF X10 FUNCTIONS. CHANGE NO OP INSTRUCTION
* * * IN LOCATION 002C TO AN ERROR WAIT (30F7) TO CAUSE PROGRAM
* * *
* * * TO STOP ON ERROR DSW.
* * *
* * * D. PRESS STOP TO TERMINATE PROGRAM
* * *
* * * E. TURN OFF INTERRUPT DELAY SWITCH (ON CE PANEL).
* * *
*****

```

TABLE 2. ERROR WAITS

NOTE. IN THIS TABLE SBR=STORAGE BUFFER REG, IAR=INSTRUCTION ADDRESS REG, AND ACC=ACCUMULATOR.

```

*****
* WAITS *
*****
* SBR * IAR *
*****
* 30F1 * 0006 * STOPPING AT ANY ONE OF THIS WAITS INDICATES FAILURE OF MDX
* * * TO * OPERATION. SI THROUGH PROGRAM. IF FAILURE APPEARS AND ITS
* * * 004D * CAUSE IS CLEAR, REPAIR. IF CAUSE OF FAILURE IS NOT CLEAR,
* * * * RUNNING ADDITIONAL ONE-CARD PROGRAMS MAY HELP IDENTIFY THE
* * * * FAILURE.
* * *
-----
* 30F3 * 0024 * ACC NOT 0000 WHEN TESTED. SI THROUGH PROGRAM CHECKING THAT
* * * * (1) ACC CONTAINS A ONE IN BIT 0, (2) EACH SRA 1 INSTRUCTION
* * * * IS EXECUTED CORRECTLY, AND (3) A SKIP OCCURS WHEN ACC EQUALS
* * * * 0000.
* * *
* 30F3 * 0036 * ACC NOT 0000 WHEN TESTED. SI THROUGH PROGRAM FROM LOCATION
* * * * 002E. COMPARE RESULTS OF TEST WITH LISTING.
* * *
-----
* 30F4 * 0014 * LDX LONG FAILURE. SI THROUGH PROGRAM. COMPARE RESULTS WITH
* * * * LISTING.
* * *
* 30F4 * 002C * SUM OF SUMPL AND SUMMI IS NOT EQUAL TO 0000. IF THEIR SUM
* * * * SHOULD EQUAL 0000, DIAGNOSE AND CORRECT TROUBLE. IF THEIR SUM
* * * * SHOULD NOT BE 0000, RUU MANUAL-ENTRY ADD TEST (PARAGRAPH 6.2).
* * *
-----
* 30F5 * 001F * SUM OF LOCATIONS 0014 THROUGH 004F IS NOT 0000. ACC CONTAINS
* * * * OBTAINED SU. (1) RELOAD CARD 05, (2) RUN IN SI MODE THROUGH
* * * * LOCATION 0010, (3) DISPLAY REMAINDER OF PROGRAM, AND (4)
* * * * COMPARE RESULTS WITH LISTING.
* * *
* * * IF NO ERROR IS EVIDENT, SI THROUGH CHECKSUM LOOP (LOCATIONS
* * * * 0012 THROUGH 001A).
* * *
* * * IF NO ERROR IS EVIDENT, (1) RELOAD CARD 05, (2) SI THROUGH
* * * * LOCATION 0008, (3) INSERT WAIT OP IN LOCATION 0011, (4) SET
* * * * 70F6 IN LOCATION 001A, AND (5) RUN CHECKSUM LOOP USING SI MODE
* * * * FOR LOCATIONS 0011 AND 0013. VERIFY CHECKSUM ADDITION. REPAIR
* * * * ANY FAILURES DISCOVERED.
* * *
* 30F5 * 003B * A LOCATION DOES NOT CONTAIN ITS OWN ADDRESS PLUS ONE. PERFORM
* * * * FOLLOWING INSTRUCTION IN SI MODE. ADDRESS OF LOCATION IN ERROR
* * * * WILL BE IN ACC. DISPLAY ERROR LOCATION. IT SHOULD CONTAIN ITS
* * * * OWN ADDRESS PLUS ONE, AS A RESULT OF EXECUTING A BSI-1 AT THAT
* * * * LOCATION. DIAGNOSE AND CORRECT.
* * *
-----
* 30F6 * 002D * A. IF PROGRAM STOPS AT THIS WAIT FOLLOWING SETTING OF A VALID
* * * * SIMULATED DSW IN CONSOLE ENTRY SWITCHES (0003, 0800, 8003).
* * * * AN ERROR IN INTERPRETING THE DSW HAS OCCURRED. SI THROUGH
* * * * PROGRAM AND REFER TO LISTING, TO LOCATE CAUSE OF ERROR.
* * *
* * * B. IF PROGRAM STOPS AT THIS WAIT AFTER SETTING AN INVALID
* * * * IN THE CONSOLE ENTRY SWITCHES, THE PROGRAM OPERATED
* * * * CORRECTLY. PRESS START TO RETURN TO NORMAL WAIT B=3006.
* * *
*****

```

- 4. PRINTOUTS (NOT APPLICABLE)
- 5. COMMENTS

THE ONE-CARD DIAGNOSTIC PROGRAMS ARE DESIGNED TO HELP DIAGNOSE MALFUNCTIONS THAT OCCUR WHILE ATTEMPTING TO LOAD A PROGRAM WITH THE 1130 BASIC DIAGNOSTIC LOADER. THERE ARE SEVEN ONE-CARD PROGRAMS. EACH ONE-CARD PROGRAM TESTS A SPECIFIC FUNCTION OR GROUP OF FUNCTIONS. THE CARDS ARE NUMBERED FROM 01 THROUGH 07 IN HOLLERITH-HEXADECIMAL CODE IN COLUMNS 79 AND 80.

FUNCTIONS OF ONE-CARD DIAGNOSTIC PROGRAMS
THE SEVEN ONE-CARD PROGRAMS PERFORM THE FOLLOWING FUNCTIONS.

- A. CARD 01. TESTS MDX INSTRUCTION AND DATA TRANSFER FROM INSTRUCTION ADDRESS REGISTER TO ACCUMULATOR.
- B. CARD 02. EXECUTES A SIMPLE-ADDITION TEST AND TESTS INCREMENTING OF INSTRUCTION ADDRESS REGISTER.
- C. CARD 03. TESTS BSC Z, SRA 1, LD, STO, AND EOR INSTRUCTIONS AND DATA TRANSFER BETWEEN REGISTERS.
- D. CARD 04. TESTS LONG FORMAT OF LD, A, STO, LDX, EOR. TEST ADDITION OF POSITIVE AND NEGATIVE NUMBERS.
- E. CARD 05. TESTS ADDRESSING OF LOCATIONS 0050 THROUGH 00FE.
- F. CARD 06. DETERMINES WHETHER 1131 CPU CORRECTLY INTERPRETS SIMULATED DSW'S.
- G. CARD 07. TESTS LOAD DOUBLE AND ADD DOUBLE INSTRUCTIONS, AND SETS UP LOOPS TO ALLOW X10 FUNCTIONS TO BE CHECKED WITH AN OSCILLOSCOPE. X10 ROUTINES ARE DIAGNOSTIC LOADER BUT DO NOT STOP ON DSW ERROR.

5.2 DESCRIPTION OF ONE-CARD DIAGNOSTIC PROGRAMS

5.2.1. CARD-031 PROGRAM

THE CARD-01 PROGRAM LOADS ACCUMULATOR WITH F0F0 FROM LOCATION 0030 AND STOPS AT WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0002, STORAGE BUFFER INDICATING 3001, AND ACCUMULATOR INDICATING F0F0. FAILURE OF INDICATOR TO APPEAR AS DESCRIBED INDICATES A POSSIBLE READ-IN FAILURE DURING PROGRAM LOAD OR FAILURE OF THE LOAD-ACCUMULATOR INSTRUCTION. FOLLOWING DEPRESSION OF START PUSHBUTTON BY OPERATOR, PROGRAM LOADS ACCUMULATOR WITH 080F FROM LOCATION 0031 AND STOPS AT WAIT WITH INSTRUCTION ADDRESS INDICATING 0004, STORAGE BUFFER INDICATING 3001, AND ACCUMULATOR INDICATING 080F. AGAIN, FAILURE IF INDICATORS TO APPEAR AS DESCRIBED INDICATES POSSIBLE READ-IN FAILURE OR LOAD-ACCUMULATOR FAILURE. NEXT DEPRESSION OF START PUSHBUTTON, THE PROGRAM PERFORMS A SERIES OF MDX INSTRUCTIONS AND STOPS AT A WAIT WITH INSTRUCTION ADDRESS INDICATING 004E AND STORAGE BUFFER INDICATING 3001. IF PROGRAM STOPS AT ANY OTHER WAIT INSTRUCTION, AN MDX FAILURE IS INDICATED.

5.2.2 CARD-02 PROGRAM

THE CARD-02 PROGRAM TESTS ADD FUNCTION AND INCREMENTING OF STORAGE ADDRESS REGISTER. THE PROGRAM LOADS A CONSTANT OF 0001 IN ACCUMULATOR FROM LOCATION 003F AND CONTINUOUSLY ADDS THAT SAME CONSTANT UNTIL STOPPED BY WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 003E. THE ACCUMULATED TOTAL IS DISPLAYED BY ACCUMULATOR INDICATOR AND SHOULD BE 003E. ANY OTHER TOTAL INDICATES AN ADD-FUNCTION FAILURE OR INSTRUCTION ADDRESS REGISTER INCREMENT FAILURE

5.2.3 CARD-03 PROGRAM

- A. PART ONE TESTS THE SKIP-ON-ZERO OPERATION AND SHIFT-RIGHT-ONE OPERATION.
- B. PART TWO TESTS DATA TRANSFER BETWEEN REGISTERS AS FOLLOWS.
 - 1. DATA TRANSFER FROM STORAGE BUFFER REGISTER TO ARITHMETIC FACTOR REGISTER TO ACCUMULATOR REGISTER.
 - 2. DATA TRANSFER FROM ACCUMULATOR REGISTER TO ACCUMULATOR EXTENSION REGISTER AND BACK TO ACCUMULATOR REGISTER.
 - 3. DATA TRANSFER FROM ACCUMULATOR REGISTER TO STORAGE BUFFER REGISTER.
- C. PART THREE TESTS OPERATION EOR FUNCTION.

PART ONE

PROGRAM SETS A 1 IN ACCUMULATOR-BIT 0 AND THEN TRIES TO SKIP-ON-ZERO. AS THE ACCUMULATOR IS NOT ZERO, PROGRAM FALLS THROUGH AND SHIFTS RIGHT ONE POSITION. TESTING FOR ZERO AND SHIFTING RIGHT ONE IS CONTINUED UNTIL PROGRAM IS STOPPED BY WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0021. THE ACCUMULATOR SHOULD INDICATE 0001. ANY OTHER ACCUMULATOR INDICATION INDICATES FAILURE OF SRA 1 OR BSC Z.

AFTER DEPRESSION OF START PUSHBUTTON, PROGRAM PERFORMS A SHIFT-RIGHT-ONE OPERATION, AND SKIPS-ON-ZERO TO A WAIT 0025, STORAGE BUFFER INDICATING 3003. ACCUMULATOR SHOULD INDICATE 0000.

PART TWO

UPON DEPRESSING START PUSHBUTTON, PROGRAM PERFORMS A SERIES OF ALTERNATE LD AND STO INSTRUCTIONS AND STOPS ON A WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0030 AND STORAGE BUFFER INDICATING 3003. ACCUMULATOR INDICATION SHOULD BE 0F0F, OR DATA-TRANSFER FAILURE IS INDICATED. FAILURE MAY BE OCCURRING DURING A LD OR STO INSTRUCTION.

PART THREE

PROGRAM TAKES ACCUMULATOR CONTENTS OF OFOF LEFT AT END OF PART TWO AND PERFORMS EOR OPERATION WITH CONSTANT FOFO. THE FFFF RESULT IS STORED AT SYMBOLIC LOCATION KFFFF, AND PROGRAM STOPS ON WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0033. ACCUMULATOR INDICATOR SHOULD INDICATE FFFF, OR EOR FAILURE IS INDICATED.

AFTER DEPRESSING START PUSHBUTTON, PROGRAM PERFORMS EOR OF FFFF IN ACCUMULATOR WITH FFFF CONTAINED AT SYMBOLIC LOCATION KFFFF TO SET ACCUMULATOR TO 0000. A SKIP-ON-ZERO OPERATION IS THEN ATTEMPTED. IF EOR INSTRUCTION FAILS TO ZERO ACCUMULATOR, PROGRAM FALLS THROUGH TO AN ERROR WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0036, STORAGE BUFFER INDICATING 30F3. IF THE SKIP-ON-ZERO IS SUCCESSFULLY COMPLETED, THE PROGRAM PERFORMS EOR OF 0000 IN ACCUMULATOR AND 0000 AT SYMBOLIC LOCATION K0000. THE RESULTS OF EOR SHOULD BE 0000. PROGRAM TESTS THAT ACCUMULATOR IS 0000 BY ATTEMPTING SKIP-ON-ZERO. FAILURE TO SKIP STOPS PROGRAM AT WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0039, AND STORAGE BUFFER INDICATING 30F3. ACCUMULATOR INDICATOR SHOULD DISPLAY RESULT OF FAULTY EOR.

IF PROGRAM SKIPS, PROGRAM PERFORMS EOR OF 0000 IN ACC WITH CONSTANT FOFO IN SYMBOLIC LOCATION KFOFO. ACC CONTENTS BECOME FOFO. ANOTHER EOR IS PERFORMED WITH CONSTANT OFOF STORED IN HIGHEST STORAGE LOCATION. PROGRAM STOPS AT WAIT WITH IAR REG EQUAL 003C AND SBR REG EQUAL 3003. ACC SHOULD READ FFFF. ANY OTHER READING INDICATES EOR FAILURE.

5.2.4 CARD-04 PROGRAM

THE CARD-04 PROGRAM LONG FORMAT OF LD, A, STO, LDX, EOR. THEN THE CARD-04 PROGRAM LONG FORMAT OF LD, A, STO, LDX, EOR. THEN PART OF THE PROGRAM MAKES UP LONG FORM INSTRUCTIONS THEN PERFORMS AN LDX LONG OVER AN ERROR WAIT. THE ERROR WAIT WITH INSTRUCTION ADDRESS INDICATING 0014 AND THE STORAGE BUFFER INDICATING 30F4 SHOWS A FAILURE OF THE LDX LONG FORMAT.

LONG FORMAT FOR THE REMAINING TESTS ARE DONE WHEN THE PROGRAM MAKES UP CONSTANTS FFFF AND 0000. THESE CONSTANTS ARE DISPLAYED AT NORMAL WAITS. AT EACH OF THESE WAITS THE REGISTERS REFERENCED SHOULD BE CHECKED. IF THE REGISTERS ARE OK, START SHOULD BE PRESSED.

AFTER THE START IS PUSHED FOLLOWING THE SECOND NORMAL WAIT, THE ADD TEST IS STARTED. THE ADD TEST MUST BE STOPPED BY THE OPERATOR.

THE ADD LOOP PROGRAM ADDS A MINUS ONE (FFFF) TO SUMMI (SUM MINUS), ADDS A PLUS ONE (0001) TO SUMPL (SUM PLUS), AND ADDS SUMMI AND SUMPL. THE RESULTANT SUM, WHICH SHOULD BE 0000, IS USED TO CHECK FOR ERROR. IF THE SUM IS 0000, THE LOOP IS REPEATED, IF SUM IS NOT 0000, PROGRAM STOPS AT ERROR WAIT WITH IAR REG EQUAL 002C AND SBR REG EQUAL 30F4. ACC DISPLAYS ERROR SUM.

5.2.5 CARD-05 PROGRAM

TESTS ADDRESSING OF LOCATIONS 0050 THROUGH OFFE. AFTER INITIAL SETUP, PROGRAM LOADS A WAIT INSTRUCTION AT LOCATION OFFE AND LOADS A BRANCH TO SYMBOLIC LOCATION (CHECK) IN LOCATION 0000. THE PROGRAM FORMS A CHECKSUM OF LOCATIONS 0014 THROUGH 004F. IF CHECKSUM IS IN ERROR, PROGRAM STOPS AT WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 001F AND STORAGE BUFFER INDICATING 30F5. ACCUMULATOR INDICATOR DISPLAYS ERROR CHECKSUM.

IF CHECKSUM IS CORRECT PROGRAM LOADS A SERIES OF BSI -1 INSTRUCTIONS IN LOCATIONS 005C THROUGH OFFE AND BRANCHES TO LOCATION 0550 TO EXECUTE THE BSI -1 CHAIN, WHICH CAUSES EACH LOCATION FROM 0050 THROUGH OFFE TO CONTAIN ITS OWN ADDRESS PLUS ONE. THE PROGRAM THEN STOPS AT A WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 1000 AND STORAGE BUFFER INDICATING 3005. UPON DEPRESSION OF RESET AND START PUSHBUTTONS PROGRAM BRANCHES TO SYMBOLIC LOCATION (CHECK).

THE (CHECK) ROUTINE DETERMINES IF EACH LOCATION FROM 0050 THROUGH OFFE CONTAINS ITS OWN ADDRESS PLUS ONE, KEEPS COUNT OF LOCATIONS TESTED, AND STOPS AT WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 004C AND STORAGE BUFFER INDICATING 3005. ACCUMULATOR SHOULD INDICATE OFAF. IF THE CONTENTS OF A LOCATION ARE IN ERROR PROGRAM STOPS AT WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0038 AND STORAGE BUFFER INDICATING 30F5.

5.2.6 CARD-06 PROGRAM

THE CARD 06 PROGRAM CHECKS THE 1131 CPU FOR CORRECT RESPONSE TO A SIMULATED DSW. THE SIMULATED DSW IS SET IN THE CONSOLE ENTRY SWITCHES AND CAN BE A VALID OR INVALID DSW. PORTIONS OF THE CARD 06 PROGRAM DUPLICATE SECTIONS OF CARD 1 OF THE 1130 BASIC DIAGNOSTIC LOADER. THERE ARE THREE VALID DSW'S.

- A. 8003 BITS 0,14 AND 15 ON. COLUMN REQUESTS, BUSY, AND NOT READY.
- B. 0003 BITS 14 AND 15 ON. BUSY AND NOT READY.
- C. 0800 BIT 4 ON. END OF CARD (CP COMPLETE).

AFTER INITIAL SET UP, PROGRAM STOPS AT WAIT WITH IAR REG READING 002E AND SBR REG READING OF 3006, TO PERMIT OPERATOR TO ENTER A SIMULATED DSW IN THE CONSOLE ENTRY SWITCHES.

AFTER DEPRESSION OF START BUTTON, PROGRAM READS SETTING OF CONSOLE ENTRY SWITCHES INTO CORE AND THEN LOADS READING INTO ACC. IF THE READING IS 8003, THE PROGRAM REREADS THE SWITCHES AND STORES THE READING. PROGRAM BRANCHES BACK TO NORMAL WAIT 3006 TO PERMIT ENTRY OF DIFFERENT DSW IF DESIRED.

IF THE READING IS NOT 8003, PROGRAM CHECKS FOR READING OF 0003. IF TRUE, PROGRAM BRANCHES BACK TO NORMAL WAIT 3006 TO PERMIT ENTRY OF DIFFERENT DSW. IF 8003 READING IS NOT TRUE, PROGRAM READS CONSOLE SWITCHES AND CHECKS FOR ENTRY 0800. IF TRUE, PROGRAM ADDS 1 TO SUM WORD (WHICH CONTAINS NUMBER OF)800 CONDITIONS ENCOUNTERED 0. PROGRAM THEN BRANCHES TO NORMAL WAIT 3006 TO PERMIT ENTRY OF NEW DSW. IF 0800 CONDITION IS NOT TRUE, PROGRAM STOPS AT ERROR WAIT WITH IAR REG READING OF 002D. ACC DISPLAYS ERROR DSW. PRESSING START BRANCHES PROGRAM TO NORMAL WAIT 3006 TO PERMIT ENTRY OF NEW DSW. IF IT IS DESIRED TO LOOP PROGRAM ON A SINGLE DSW, THE NORMAL WAIT THAT PERMITS ENTRY OF DSW'S, MAY BE CHANGED TO A NO OP (7000).

5.2.7 CARD-07 PROGRAM

PART ONE OF CARD 07 PROGRAM TESTS LOAD DOUBLE AND ADD DOUBLE INSTRUCTIONS. AT THE END OF THE TEST, PROGRAM STOPS AT NORMAL WAIT 3007, WITH IAR READING OF 0006. THE ACCUMULATOR AND ACCUMULATOR EXTENSION SHOULD READ FFFF, OR AN ERROR IS INDICATED. PRIOR TO DEPRESSING THE START KEY TO CONTINUE TO PART TWO, OPERATOR MUST TURN ON THE INTERRUPT DELAY SWITCH ON THE CE PANEL.

PART TWO OF CARD 07 PROGRAM IS DESIGNED TO PERMIT SCOPING OF THE X10 FUNCTIONS, WHILE CONTINUOUSLY READING CARDS WITH THE 1442. THE READ-CARD ROUTINE IS A DUPLICATE OF READ-CARD ROUTING IN CARD 1 OF THE 1130 BASIC DIAGNOSTIC LOADER.

AFTER INITIAL SET UP, PROGRAM CAUSES CARD TO FEED, RESET DSW, AND SENSE DSW. IT THEN CHECKS DSW FOR A 8003 INDICATION. IF TRUE, PROGRAM READS CARD COLUMN INTO LOCATION 0000 OR 0001. ODD NUMBERED COLUMNS ARE READ INTO LOCATION 0001. EVEN NUMBERED CARD COLUMNS ARE READ INTO LOCATION 0000. PROGRAM THEN LOADS ACC FROM LOCATION JUST LOADED, AND BRANCHES BACK TO RESET AND SENSE DSW, AND CHECK FOR 8003 DSW AGAIN.

IF DSW IS NOT 8003, THE PROGRAM CHECKS FOR A 0003 DSW. IF TRUE, PROGRAM BRANCHES BACK TO SENSE DSW AND CHECK FOR 8003 DSW. PROGRAM WILL REMAIN IN THIS CLOSED LOOP UNTIL THE 8003 CONDITION IS TRUE OR THE 0003 CONDITION IS NOT TRUE. WHEN THE PROGRAM FINDS THE 0003 CONDITION NOT TRUE, IT SENSES AND RESETS THE DSW AND CHECKS FOR 0800 CONDITION. IF TRUE, PROGRAM BRANCHES TO START ANOTHER CARD FEEDING AND REPEATS THE ENTIRE PROCESS. IF 0003 IS NOT TRUE, PROGRAM WILL AGAIN BRANCH TO START ANOTHER CARD FEEDING. THE OPERATOR HAS AN OPTION TO STOP THE PROGRAM AT LOCATION 002C BY INSERTING A WAIT.

6. APPENDIX

6.1 DATA PATH TEST PROGRAM

THIS PROGRAM IS LOADED USING THE CONSOLE ENTRY SWITCHES AND TESTS THE ABILITY OF THE 1131 CPU TO TRANSFER ONES AND ZEROES BETWEEN THE FOLLOWING REGISTERS.

- A. FROM STORAGE BUFFER REGISTER TO ARITHMETIC FACTOR REGISTER TO ACCUMULATOR REGISTER TO STORAGE ADDRESS REGISTER TO INSTRUCTION ADDRESS REGISTER.
- B. FROM ACCUMULATOR REGISTER TO ACCUMULATOR EXTENSION REGISTER TO ACCUMULATOR REGISTER.
- C. FROM ACCUMULATOR REGISTER TO STORAGE BUFFER REGISTER.
- D. FROM INSTRUCTION ADDRESS REGISTER TO STORAGE BUFFER REGISTER.
- E. FROM INSTRUCTION ADDRESS REGISTER TO ACCUMULATOR REGISTER.

6.1.1 TEST PROCEDURE

- A. CLEAR STORAGE TO WAIT INSTRUCTION 33FF. SEE PARAGRAPH 3.3.6.
- B. ENTER THE FOLLOWING PROGRAM USING CONSOLE ENTRY SWITCHES.

NOTE

ALL NUMBERS SHOWN BELOW ARE IN HEXADECIMAL NOTATION.

LOCATION	CONTENT	MNEMONIC	COMMENTS
FFFA	0006	LD	LOAD ACCUMULATOR WITH CONTENTS OF LOCATION 0001.
FFFB	4480	BSI I	STORE CONTENTS OF I COUNTER (FFFF) AT ADDRESS STORED IN LOCATION FFFD. SET I COUNTER TO THAT ADDRESS AND ADD ONE TO I COUNTER.
FFFC	FFFD		ADDRESS POSITION OF BSI I INSTRUCTION.
FFFD	FFFD		THIS IS THE ACTUAL BRANCH ADDRESS FOR THE BSI I INSTRUCTION AND IS REPLACED BY THE BSI I.
FFFE	D002	STO	STORE CONTENTS OF ACCUMULATOR AT LOCATION 0001 (SHOULD NOT CHANGE).
FFFF	C0FC	LD	LOAD ACCUMULATOR WITH CONTENTS OF LOCATION FFFC.
0000	4480	BSI I	STORE CONTENTS OF I COUNTER (0002) AT ADDRESS STORED IN LOCATION 0002. SET I COUNTER TO THAT ADDRESS AND ADD ONE TO I COUNTER.
0001	0002		THIS IS ADDRESS POSITION OF BSI I INSTRUCTION.
0002	0002		THIS IS THE ACTUAL BRANCH ADDRESS FOR THE BSI I INSTRUCTION AND IS REPLACED BY THE BSI I INSTRUCTION.
0003	D0F8	STO	STORE CONTENTS OF ACCUMULATOR AT LOCATION FFFC (SHOULD NOT CHANGE).
0004	70F5	MDX	BRANCH TO LOCATION FFFA.

C. LOAD INSTRUCTION ADDRESS REGISTER WITH FFFA.

D. STEP THROUGH PROGRAM IN SI MODE, CHECKING THAT PROGRAM LOOPS PROPERLY. ANY DATA-PATH ERROR SHOULD RESULT IN THE IMPROPER BRANCHING OF A BSI I INSTRUCTION AND STOPPING AT A WAIT. THE LOCATION BEFORE THE WAIT SHOULD CONTAIN THE CONTENTS OF INSTRUCTION ADDRESS REGISTER WHEN THE BRANCH OCCURRED. LOGICAL RECONSTRUCTION OF THE ERROR SHOULD ISOLATE A DATA-TRANSFER ERROR AND SUGGEST THE CIRCUIT CARD CAUSING THE ERROR.

NOTE

A BRANCH OUTSIDE OF THE PROGRAM INTO A CORE LOCATION LOADED WITH 33FF INDICATES AN ERROR HAS OCCURRED. SUBTRACT TWO FROM INSTRUCTION ADDRESS INDICATOR READING AND DISPLAY LOCATION. THE CONTENT OF LOCATION DISPLAYED IS THE INSTRUCTION ADDRESS REGISTER SETTING WHEN THE ERRONEOUS BRANCH OCCURRED. IF THE BRANCH WAS CAUSED BY A BSI I INSTRUCTION FAILURE, THE LOCATION JUST CHECKED WILL HAVE A VALUE HIGHER BY ONE THAN THE ADDRESS OF THE SECOND WORD OF THE BSI I INSTRUCTION. IF THIS IS THE CASE, DISPLAY LOCATIONS WHERE PROGRAM IS STORED TO DETERMINE IF THE LOCATIONS HAVE CHANGED. THE ADDRESSES OF BSI I INSTRUCTIONS ARE STORED BY THE STO INSTRUCTIONS, AND THE LOCATIONS FFFD AND 0002 ARE STORED BY THE BSI I INSTRUCTIONS. STATIC OR INTERMITTENT DATA TRANSFER ERRORS SHOULD BE READILY DETECTED BY THIS MEANS AND BE EASY TO ISOLATE BECAUSE OF THE UNIQUE FAILURE INDICATIONS.

ERRORS IN THE DATA PATH PROGRAM SHOULD BE CAUSED BY SINGLE BIT FAILURES, OR BY HALF-WORD FAILURES. THUS, DROPPED OR ADDED BITS CAN BE REFERENCED DIRECTLY TO A CIRCUIT CARD. SWAP INDICATED CIRCUIT CARD TO SEE IF FAILURE CHANGES.

THE Q, U, A, AND E REGISTERS' CIRCUIT CARDS ARE LOCATED IN ROW 4 OF THE CARD GATE, AND ARE INTERCHANGEABLE.

THE I, B, AND M REGISTERS' CIRCUIT CARDS ARE LOCATED IN ROW 6 OF THE CARD GATE, AND ARE INTERCHANGEABLE.

FAILING BIT- 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
COLUMN----- B C D E H J K L

THE FOLLOWING CARDS CONTROL HALF-WORD TRANSFERS AND ARE INTERCHANGEABLE.

M4, M5, M7, L5, AND L6.

6.1.2 PROGRAM DESCRIPTION

THE LD INSTRUCTION AT LOCATION FFFA PERFORMS THE FUNCTION OF SETTING THE ACCUMULATOR TO 0002 SO THAT WHEN THE FOLLOWING BSI I INSTRUCTION IS PERFORMED, A COMPLEMENT BIT PATTERN (FFFD) WILL BE SENT THROUGH THE ACCUMULATOR, THUS TESTING THAT THE ACCUMULATOR IS RETURNED TO 0002 AT THE END OF THE BSI I INSTRUCTION. THIS TEST IS ACCOMPLISHED BY STORING THE CONTENTS OF THE ACCUMULATOR BACK INTO LOCATION 0001 AFTER THE BSI I INSTRUCTION. THE SAME PHILOSOPHY IS USED DURING THE BSI I INSTRUCTION AT LOCATION 0000 BY SETTING THE ACCUMULATOR TO FFFD WHILE 0002 IS SENT THROUGH IT DURING THE BSI I INSTRUCTION. A FAILURE OF EITHER BSI I INSTRUCTION THAT AFFECTS THE ACCUMULATOR WILL CAUSE THE FOLLOWING BSI I INSTRUCTION TO TAKE ITS ADDRESS FROM THE WRONG LOCATION. THIS LOCATION WILL PROBABLY BE ONE OF THE CORE LOCATIONS LOADED WITH 33FF, THUS CAUSING THE PROGRAM TO STOP.

6.2

ADD TEST PROGRAM

THIS PROGRAM HELPS LOCATE AN ADD FAILURE THAT CANNOT BE LOCATED WHEN RUNNING CARD 04 OF ONE-CARD PROGRAMS IN SI MODE, BECAUSE OF THE DYNAMIC NATURE OF THE PROBLEM. IF THE CONTENTS OF SUMPL AND SUMMI DO NOT ADD TO 0000, THERE HAS BEEN A FAILURE IN ADDING 0001 TO SUMPL, OR A FAILURE IN ADDING FFFF TO SUMMI. TO DETERMINE WHICH OF THE TWO SUMS IS IN ERROR, IT MUST BE ASSUMED THAT ONE OF THEM IS CORRECT IN ORDER TO ARRIVE AT THE VALUE OF THE OTHER PRIOR TO THE FAILURE, IN OTHER WORDS, TO DETERMINE VALUE OF SUMPL PRIOR TO FAILURE. IT MUST BE ASSUMED THAT PRESENT VALUE OF SUMMI IS CORRECT AND VICEVERSA. EXECUTE ADD TEST PROGRAM AS FOLLOWS,

- A. OBTAIN VALUE OF SUMPL PRIOR TO FAILURE BY DETERMINING TWO'S COMPLEMENT OF (SUMMI - FFFF).
- B. OBTAIN VALUE OF SUMMI PRIOR TO FAILURE BY DETERMINING TWO'S COMPLEMENT OF (SUMPL - 0001).
- C. LOAD FOLLOWING PROGRAM BY MEANS OF CONSOLE ENTRY SWITCHES.

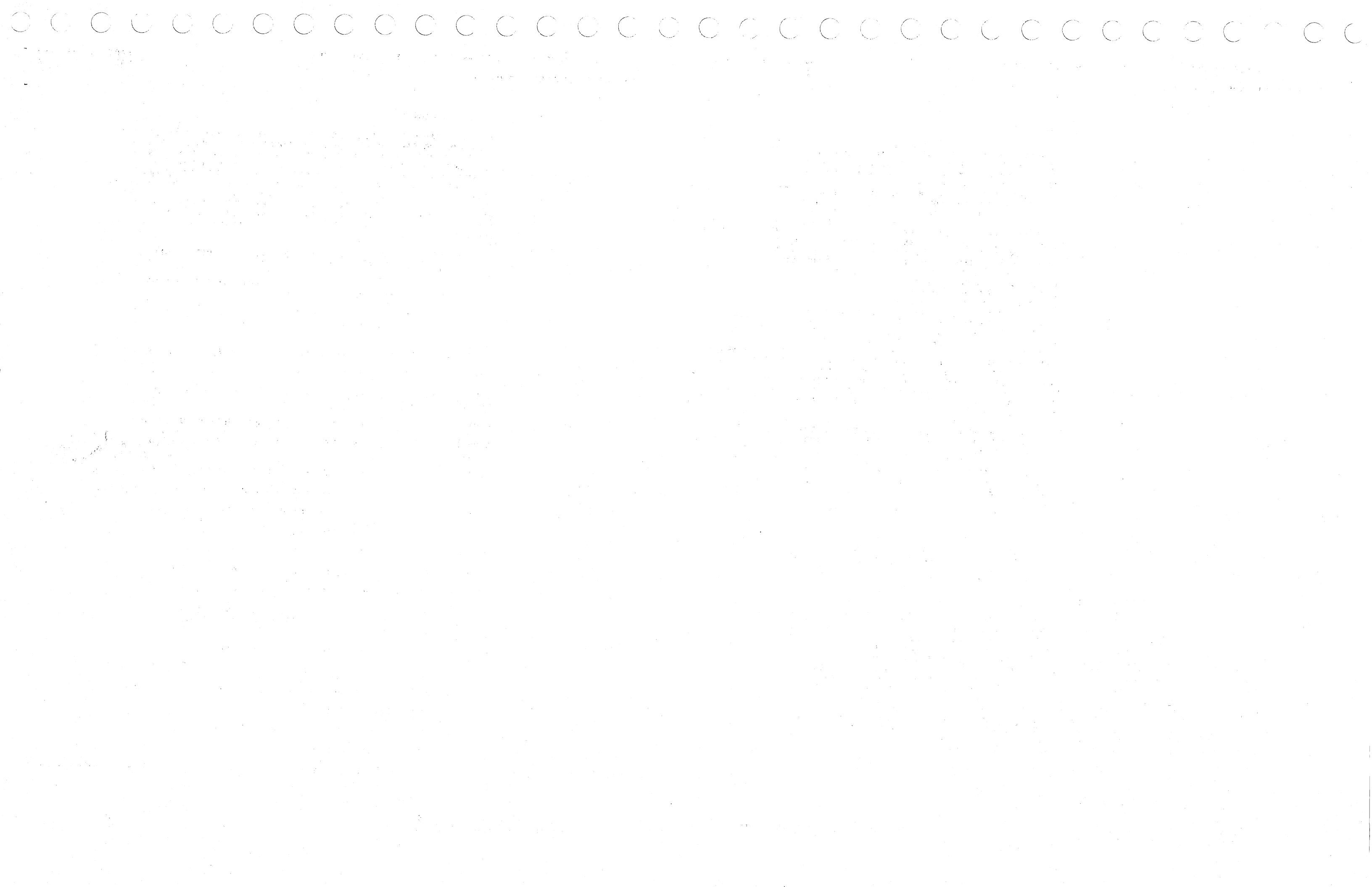
NOTE

ALL NUMBERS SHOWN BELOW ARE IN HEXADECIMAL NOTATION.

LOCATION	CONTENTS	MNEMONIC	COMMENTS
0000	VALUE OF SUMP PRIOR TO ERROR		WILL BE IN ACCUMULATOR WHEN ADD OCCURS.
0001	0001		WILL BE ADDED TO ACCUMULATOR DURING ADD.
0002	CORRECT SUM OF ADDITION		USED TO CHECK ADD OPERATION.
0003	00FC	LD	LOAD ACCUMULATION FROM LOCATION 0000.
0004	80FC	A	ADD CONTENTS OF LOCATION 0001 TO ACCUMULATOR.
0005	F0FC	EOR	EOR ACCUMULATOR WITH CORRECT ANSWER.
0006	4820	BSC Z	SKIP ON ZERO TO LOCATION 0008.
0007	3000	WAIT	WAIT ON ERROR HAS OCCURRED.
0008	6003	LDX	BRANCH TO LOCATION 0003.

- D. LOAD INSTRUCTION ADDRESS REGISTER WITH 0003.
- E. RUN PROGRAM IN RUN MODE. ANY ADD FAILURE WILL CAUSE PROGRAM TO STOP AT WAIT INSTRUCTION WITH INSTRUCTION ADDRESS INDICATING 0008.
- F. IF PROGRAM RUNS CONTINUOUSLY WITHOUT ERRORS.
 1. PRESS STOP PUSHBUTTON.
 2. LOAD LOCATION 0000 WITH VALUE OF SUMMI PRIOR TO ERROR.
 3. LOAD LOCATION 0001 WITH FFFF.
 4. LOAD LOCATION 0002 WITH CORRECT SUM OF SUMMI PLUS FFFF.
 5. RUN AGAIN IN RUN MODE.

----- LAST PAGE -----



ONE-CARD DIAGNOSTIC PROGRAMS
CARD 01

```

02RC      ABS
          ORG      0
          * TFST MDX AND I TO A TRANSFER
          *      TEST READ IN ON PROG. LOAD.
0000 0  C02F      LD      /0030
0001 0  3001      WAIT    /0001  --SEE ACC IS F0F0
0002 0  C02E      LD      /0031
0003 0  3001      WAIT    /0001  --SEE ACC IS 090F
0004 0  703F      MDX     /0044
0005 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0006 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0007 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0008 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0009 0  30F1      WAIT    -15  **ERR., RESET THEN SI
000A 0  30F1      WAIT    -15  **ERR., RESET THEN SI
000B 0  30F1      WAIT    -15  **ERR., RESET THEN SI
000C 0  30F1      WAIT    -15  **ERR., RESET THEN SI
000D 0  30F1      WAIT    -15  **ERR., RESET THEN SI
000E 0  30F1      WAIT    -15  **ERR., RESET THEN SI
000F 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0010 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0011 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0012 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0013 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0014 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0015 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0016 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0017 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0018 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0019 0  30F1      WAIT    -15  **ERR., RESET THEN SI
001A 0  30F1      WAIT    -15  **ERR., RESET THEN SI
001B 0  30F1      WAIT    -15  **ERR., RESET THEN SI
001C 0  30F1      WAIT    -15  **ERR., RESET THEN SI
001D 0  30F1      WAIT    -15  **ERR., RESET THEN SI
001E 0  30F1      WAIT    -15  **ERR., RESET THEN SI
001F 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0020 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0021 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0022 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0023 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0024 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0025 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0026 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0027 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0028 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0029 0  30F1      WAIT    -15  **ERR., RESET THEN SI
002A 0  30F1      WAIT    -15  **ERR., RESET THEN SI
002B 0  30F1      WAIT    -15  **ERR., RESET THEN SI
002C 0  30F1      WAIT    -15  **ERR., RESET THEN SI
002D 0  30F1      WAIT    -15  **ERR., RESET THEN SI
002E 0  30F1      WAIT    -15  **ERR., RESET THEN SI
002F 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0030 0  F0F0      DC      /F0F0
0031 0  090F      DC      /090F
0032 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0033 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0034 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0035 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0036 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0037 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0038 0  30F1      WAIT    -15  **ERR., RESET THEN SI
0039 0  30F1      WAIT    -15  **ERR., RESET THEN SI
003A 0  30F1      WAIT    -15  **ERR., RESET THEN SI
003B 0  30F1      WAIT    -15  **ERR., RESET THEN SI
003C 0  30F1      WAIT    -15  **ERR., RESET THEN SI
003D 0  30F1      WAIT    -15  **ERR., RESET THEN SI
003E 0  7000      MDX     *
003F 0  7000      MDX     /0040

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ONE-CARD DIAGNOSTIC PROGRAMS
CARD 01

```

0040 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000700
0041 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000710
0042 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000720
0043 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000730
0044 0  70F9      MDX     /003E 000740
0045 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000750
0046 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000760
0047 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000770
0048 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000780
0049 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000790
004A 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000800
004B 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000810
004C 0  30F1      WAIT    -15  **ERR., RESET THEN SI 000820
004D 0  3001      WAIT    /0001  --STOP HERE INDICATES UK 000830
004E 0  2000      DC      /2000  HEXIDECIMAL NUMBER 0 000840
004F 0  1000      DC      /1000  HEXIDECIMAL NUMBER 1 000850
0050 0  0000      END     0 000860

```


ONE-CARD DIAGNOSTIC PROGRAMS
CARD 01

CROSS REFERENCE LISTING

SYMBOL VALUE REFERENCES

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 02

02BC	ABS		000890
	ORG	/0000	000900
	* TEST ADD BY	ONE AND INCREMENT I COUNTER	000910
0000 0 C03E	LD	/003F	000920
0001 0 8030	A	/003F	000930
0002 0 803C	A	/003F	000940
0003 0 8038	A	/003F	000950
0004 0 803A	A	/003F	000960
0005 0 8039	A	/003F	000970
0006 0 8038	A	/003F	000980
0007 0 8037	A	/003F	000990
0008 0 8036	A	/003F	001000
0009 0 8035	A	/003F	001010
000A 0 8034	A	/003F	001020
000B 0 8033	A	/003F	001030
000C 0 8032	A	/003F	001040
000D 0 8031	A	/003F	001050
000E 0 8030	A	/003F	001060
000F 0 802F	A	/003F	001070
0010 0 802E	A	/003F	001080
0011 0 802D	A	/003F	001090
0012 0 802C	A	/003F	001100
0013 0 802B	A	/003F	001110
0014 0 802A	A	/003F	001120
0015 0 8029	A	/003F	001130
0016 0 8028	A	/003F	001140
0017 0 8027	A	/003F	001150
0018 0 8026	A	/003F	001160
0019 0 8025	A	/003F	001170
001A 0 8024	A	/003F	001180
001B 0 8023	A	/003F	001190
001C 0 8022	A	/003F	001200
001D 0 8021	A	/003F	001210
001E 0 8020	A	/003F	001220
001F 0 801F	A	/003F	001230
0020 0 801E	A	/003F	001240
0021 0 801D	A	/003F	001250
0022 0 801C	A	/003F	001260
0023 0 801B	A	/003F	001270
0024 0 801A	A	/003F	001280
0025 0 8019	A	/003F	001290
0026 0 8018	A	/003F	001300
0027 0 8017	A	/003F	001310
0028 0 8016	A	/003F	001320
0029 0 8015	A	/003F	001330
002A 0 8014	A	/003F	001340
002B 0 8013	A	/003F	001350
002C 0 8012	A	/003F	001360
002D 0 8011	A	/003F	001370
002E 0 8010	A	/003F	001380
002F 0 800F	A	/003F	001390
0030 0 800E	A	/003F	001400
0031 0 800D	A	/003F	001410
0032 0 800C	A	/003F	001420
0033 0 800B	A	/003F	001430
0034 0 800A	A	/003F	001440
0035 0 8009	A	/003F	001450
0036 0 8008	A	/003F	001460
0037 0 8007	A	/003F	001470
0038 0 8006	A	/003F	001480
0039 0 8005	A	/003F	001490
003A 0 8004	A	/003F	001500
003B 0 8003	A	/003F	001510
003C 0 8002	A	/003F	001520
003D 0 8001	A	/003F	001530
003E 0 3002	WAIT	/0002	001540
003F 0 0001	DC	/0001	001550
0040 0 F8FF	DC	/F8FF	001560

ADD /0001 TO ACC. AT EACH INST. FROM LOC. /0000 TO LOC. /003E. TOTAL AT WAIT AT /003E SHOULD BE /003E.
IF ANSWER WRONG
1. DISPLAY LOCS. /003F /0040 /0041 /0000.
2. LOAD OK. CHECK THE FOLLOWING CARDS BY SWAP + RE-RUN QUAD + IBM. OR SINGLE INSTRUCTION FROM 70000 + SEE WHEN ACC. NOT EQU. I COUNTER.

--SEE ACC. IS 003E CONSTANT ADDED AT 0-3D CONSTANT TO CHECK CRD READ

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THE MAINTENANCE OF THE PROGRAM FOR THE 1959 SYSTEM

CARD NO
ONE-CARD DIAGNOSTIC PROGRAM

1959
1959

PAGE 12
PART VII, 1959

THE MAINTENANCE OF THE PROGRAM FOR THE 1959 SYSTEM

CARD NO
ONE-CARD DIAGNOSTIC PROGRAM

1959
1959

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ONE-CARD DIAGNOSTIC PROGRAMS
CARD 03

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028C      ABS
          DRG /0000
* CHECK BSC Z, SRA 1, AND EDR.
* LOAD CARD AND RUN PROGRAM. PROGRAM SHOULD STOP
* AT WAITS FOLLOWED BY -- FOR SEEING THAT THE REGS.
* SHOWN ARE CORRECT, DIFFERENCES INDICATE ERRORS.
* WAITS FOLLOWED BY ** OCCUR ONLY ON ERRORS.
* THE FIRST TEST IS OF SRA 1 AND BSC Z.
* A ONE IS PLACED INTO THE BIT ZERO POSITION AND
* TESTED AT EACH TIME BY A BSC Z WHICH SHOULD NOT
* SKIP THE ACC. IS SHOWN AFTER EACH SRA 1.

0000 0  C03C      LD      K8000      8000
0001 0  4920      ESC      Z          SHOULD NOT SKIP
0002 0  1901      SRA      1          4000
0003 0  4920      BSC      Z          SHOULD NOT SKIP
0004 0  1801      SRA      1          2000
0005 0  4920      BSC      Z          SHOULD NOT SKIP
0006 0  1801      SRA      1          1000
0007 0  4920      BSC      Z          SHOULD NOT SKIP
0008 0  1801      SRA      1          0800
0009 0  4920      BSC      Z          SHOULD NOT SKIP
000A 0  1801      SRA      1          0400
000B 0  4920      BSC      Z          SHOULD NOT SKIP
000C 0  1801      SRA      1          0200
000D 0  4920      BSC      Z          SHOULD NOT SKIP
000E 0  1901      SRA      1          0100
000F 0  4920      BSC      Z          SHOULD NOT SKIP
0010 0  1801      SRA      1          0080
0011 0  4920      BSC      Z          SHOULD NOT SKIP
0012 0  1801      SRA      1          0040
0013 0  4920      BSC      Z          SHOULD NOT SKIP
0014 0  1801      SRA      1          0020
0015 0  4920      BSC      Z          SHOULD NOT SKIP
0016 0  1801      SRA      1          0010
0017 0  4920      BSC      Z          SHOULD NOT SKIP
0018 0  1801      SRA      1          0008
0019 0  4920      BSC      Z          SHOULD NOT SKIP
001A 0  1801      SRA      1          0004
001B 0  4920      BSC      Z          SHOULD NOT SKIP
001C 0  1801      SRA      1          0002
001D 0  4920      BSC      Z          SHOULD NOT SKIP
001E 0  1801      SRA      1          0001
001F 0  4920      BSC      Z          SHOULD NOT SKIP
0020 0  3003      WAIT     /0003      -- I EQU. 0021 A EQU. 0001
          *          ERROR, RESET THEN SI, SEE EACH INST.
          *          OK      PRESS START
0021 0  1901      SRA      1          0000
0022 0  4920      BSC      Z          SHOULD SKIP
0023 0  30F3      WAIT     -13         **ERR. A SHOULD BE ZERO
0024 0  3003      WAIT     /0003      --I EQU. 0025 A EQU. 0000
          *          ERROR, RESET THEN SI, SEE EACH INST.
          *          OK      PRESS START
*OK. SHOWS I CNTR. OK FROM 0000 TO /0025
*          BSC Z SKIPS ONLY WHEN ACC = 0000
*          SRA 1 OK FOR ONE BIT IN ANY POSITION
*BEGIN TEST OF TRANSFERS OF B-D-A-M-----
* AND A-U-A AND A-B
* THE CONTENTS OF ACC. IS SHOWN AFTER EACH CHANGE
0025 0  C018      LD      KFOFO      FOF0
0026 0  0008      STO     /FFFF
0027 0  C007      LD      /FFFF
0028 0  0007      STO     /0000
0029 0  C006      LD      /0000
002A 0  1804      SRA      4          OFOF
002B 0  0003      STO     /FFFF
002C 0  C002      LD      /FFFF
002D 0  0002      STO     /0000
002E 0  C001      LD      /0000

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002300

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ONE-CARD DIAGNOSTIC PROGRAMS
CARD 03

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002F 0  3003
0030 0  F00D
0031 0  000D
0032 0  3003
0033 0  F00B
0034 0  4920
0035 0  30F3
0036 0  F009
0037 0  4820
0038 0  30F3
0039 0  F004
003A 0  F0C4
003B 0  3003
003C 0  70F1
003D 0  8000
003E 0  F0F0
003F 0  FFFF
0040 0  0000
0041 0  000D
0042 0  2000
004F 0  0040
0050 0  0000

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          WAIT     /0003      --I EQU. 0030 A EQU. OFOF
          *          IF ERROR, LOAD I CTR. /0025, THEN SI AND
          *          *SEE THAT REGS. AS SHOWN FOR EACH INSTRUCTION.
          *          QUAD CARDS GATE A2 ROWS 4,5
          *          IBM CARDS GATE A2 ROWS 6,7
          * BIT POS. -- 0-1 2-3 4-5 6-7 8-9 10-11 12-13 14-15
          * CARD COL.-- C D E F G H J K
          *          IF OK , PRESS START-----
          * TEST EOR
          EOR      KFOFO      SET ACC TO FFFF
          STO      KFFFF      STORE IT
          WAIT     /0003      --I EQU. 0033 A EQU. FFFF
          EOR      KFFFF      CLEAR ACC TO 0000
          BSC      Z          SHOULD SKIP
          WAIT     -13         **ERR. ACC SHOULD BE 0000
          EOR      K0000      ACC SHOULD STAY 0000
          BSC      Z          SHOULD SKIP
          WAIT     -13         **ERR. ACC SHOULD BE 0000
          EOR      KFOFO      ACC SHOULD GO TO F0F0
          EOR      /FFFF      ACC SHOULD BE FFFF
          *          LOC. /FFFF SHOULD BE OFOF
          *          WAIT     /0003      --I EQU. 003C A EQU. FFFF
          *          IF ERROR PUT IN SI MODE AND START
          MDX      /002E
          *          OK ,TEST ON THIS CARD COMPLETE.
          * NO ERRORS ON THIS TEST SHOW ALL BITS TRANSFER
          * CORRECTLY FROM CORE-B-D-A-M AND A-U-A-D-B-CORE.
          * THAT EOR WORKS RIGHT. THAT BSC Z WORKS RIGHT.
          * THAT ACC. WILL SHIFT A ONE BIT RIGHT FROM ANY
          * POSITION. THAT LD, STO, EOR, BSC Z, SRA 1, WAIT
          * INSTRUCTIONS OK. I CNTR. STEPS FROM /0000 TO/003C
          K8000 DC /8000
          KFOFO DC /FOFO
          KFFFF DC /FFFF
          K0000 DC /0000
          BSS /D
          DC /2000 HEXIDECIMAL NUMBER 0
          DC /0040 HEXIDECIMAL NUMBER 3
          END 0

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LINE	DESCRIPTION	AMOUNT	DATE
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0100

THE CONTENTS OF THIS REPORT ARE UNCLASSIFIED

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ONE-CARD DIAGNOSTIC PROGRAMS
CARD 03

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
KFFFF	003F	0031,0033
KFOFO	003E	0025,0030,0039
K0000	0040	0036
K8000	003D	0000

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 04

ADDRESS	OPERAND	OPERATION	COMMENT	ADDRESS
028C		ORG	/0000	002720
0000 0	C013	LD	K4000	002728
0001 0	1804	SRA	4	002729
0002 0	D012	STO	K0400	002730
0003 0	F012	EOR	LD	002740
0004 0	D011	STO	LD	002750
0005 0	C00F	LD	K0400	002760
0006 0	F012	EOR	EOR	002770
0007 0	D011	STO	EOR	002780
0008 0	C00C	LD	K0400	002790
0009 0	F011	EOR	STO	002791
000A 0	D010	STO	STO	002792
000B 0	C009	LD	K0400	002793
000C 0	F011	EOR	A	002794
000D 0	D010	STO	A	002795
000E 0	C006	LD	K0400	002796
000F 0	F001	EOR	LDX	002797
0010 0	D000	STO	LDX	002798
0011 00	64000016	LDX LDX L	LC	002799
0013 0	30F4	WAIT	-12	002800
0014 0	4000	K4000 DC	/4000	002801
0015 0	0400	K0400 DC	/0400	002802
0016 00	C4000031	LD LD L	KFOFO	002803
0018 0	1804	SRA	4	002804
0019 00	F4000031	EOR EOR L	KFOFO	002805
001B 00	D400002F	STO STO L	KFFFF	002806
001D 0	3004	WAIT	/0004	002807
001E 00	84000030	A A L	K0001	002808
0020 0	0000	STO	SUMPL	002809
0021 0	000B	STO	SUMMI	002810
0022 0	3004	WAIT	/C004	002811
0023 0	C009	BEGIN LD	SUMMI	002812
0024 0	800A	A	KFFFF	002813
0025 0	D007	STO	SUMMI	002814
0026 0	C007	LD	SUMPL	002815
0027 0	8008	A	K0001	002816
0028 0	D005	STO	SUMPL	002817
0029 0	8003	A	SUMMI	002818
002A 0	4820	BSC	Z	002819
002B 0	30F4	WAIT	-12	002820
002C 0	70F6	MDX	BEGIN	002821
002D 0	0000	SUMMI DC	/0000	002822
002E 0	0000	SUMPL DC	/0000	002823
002F 0	0000	KFFFF DC	/0000	002824
0030 0	0001	K0001 DC	/0001	002825
0031 0	F0F0	KFOFO DC	/FOFO	002826
0032	001C	BSS	/1C	002827
004E 0	2000	DC	/2000	002828
004F 0	0020	DC	/0020	002829
0050	0000	END	0	002830

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 04

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A	001F	000C,000D
BEGIN	0023	002C
EDR	0019	0006,C007
KFFFF	002F	001B,0024
KFOFO	0031	0016,0019
KO001	0030	001E,0027
KO400	0015	0002,0005,0008,000B,000E
K4000	0014	0000
LD	0016	0003,0004,0011
LDX	0011	000F,0010
STO	001B	0009,000A
SUMMI	002D	0021,0023,0025,0029
SUPL	002E	0020,0026,0028

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 05

ADDRESS	OPERATION	OPERAND	COMMENT	ADDRESS
02BC	ABS	0		003100
	ORG	0		003110
			* TEST THAT LOCS. 0050 THRU FFF CAN BE ADDRESSED	003120
			* PROGRAM SHOULD STOP AT LOC. OFFF WITH B 300A	003130
			* PRESS RESET AND START. PROGRAM THEN SHOULD STOP	003140
			* AT LOC. 004A WITH B 300A AND ACC. OFAF WHICH	003150
			* IS THE NUMBER OF LOCATIONS TESTED. PROGRAM	003160
			* CAN BE RE-RUN BY PRESSING START.	003170
0000 0	LD	K1000	PROGRAM REPLACES THIS	003180
0001 0	SRA	2		003190
0002 0	EOR	STLN		003200
0003 0	STO	STWT	MAKE UP LONG INSTRUCTIONS	003210
0004 0	STO	STLN		003220
0005 0	LD	K1000		003230
0006 0	SRA	2		003240
0007 0	EOR	CHCK		003250
0008 0	STO	CHCK		003260
0009 0	LD	KF000		003270
000A 0	SRA	4		003280
000B 0	EOR	STWT+1		003290
000C 0	STO	STWT+1		003300
000D 0	LD	CON1		003310
000E 0	STO	MOD1	MODIFY LOCATION 0000	003320
000F 0	LD	KWAIT		003330
0010 00	STWT	STO L /00FF	PUT WAIT INTO /OFFF	003340
0012 0	LD	SUMC		003350
0013 0	MOD3	A MOD3+1	FORM CHECK SUM	003360
0014 0	STO	SUMC		003370
0015 0	LD	MOD3		003380
0016 0	A	K0001		003390
0017 0	STO	MOD3		003400
0018 0	EOR	CON3		003410
0019 0	BSC	Z		003420
001A 0	MDX	MOD3-1		003430
001B 0	LD	SUMC		003440
001C 0	BSC	Z	SHOULD SKIP	003450
001D 0	WAIT	-11	**ERR. SUM SHOULD BE 0000	003460
001E 0	MDX	RSTR		003470
001F 0	DC	/C0DC	USED TO MAKE CHECK SUM	003480
0020 0	DC	/00DC	USED TO MAKE CHECK SUM	003481
0021 0	DC	/0001		003490
0022 0	KBGIN	DC /5000		003500
0023 0	K1000	DC /1000		003510
0024 0	KF000	DC /F000		003520
0025 0	KBSI	BSI X -1		003530
0026 0	CON1	MDX X CHECK-MOD1-1		003540
0027 0	CON3	A X BGIN-MOD3		003550
0028 0	SUMC	DC /00FC		003560
0029 0	SUML	DC /2030		003570
002A 0	RSTR	LD KBGIN	LOAD ACC. TO 5000	003580
002B 0	SRA	8	SHIFT TO /0050	003590
002C 0	STO	STLN+1	RESTORE	003600
002D 0	STO	CHCK+1	RESTORE	003610
002E 0	SRA	16	ACC = /0000	003620
002F 0	STO	SUML	RESTORE	003630
0030 0	LD	KBSI	PUT BSI-1 INTO CORE	003640
0031 00	STLN	STO L /0050		003650
0033 0	LD	STLN+1		003660
0034 0	A	K0001	MODIFY STORE ADDRESS	003670
0035 0	STO	STLN+1		003680
0036 0	EOR	STWT+1		003690
0037 0	BSC	Z	SKIP WHEN LOC. OFFE STORED	003700
0038 0	MDX	STLN-1		003710
0039 0	MDX	/0050	RUN SERIFS OF BSI-1 STORED	003720
003A 0	WAIT	-11	**ERR. ADDRESS PLUS ONE	003730
			* DOES NOT EQUAL ADDRESS OF LOCATION TESTED.	003740
003B 0	CHECK	LD CHCK+1	LOAD THE ADDRESS BEING	003750
003C 0	A	K0001	TESTED AND ADD ONE.	003760

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 05

003D 00 F4000050	CHCK	EOR	L	/0050	COMPARE WITH CONTENTS.	003770
003F 0 4820		BSC		Z	SHOULD BE ZERO AND SKIP	003780
0040 0 70F9		MDX		CHECK-1	ERROR, STOP + SING. INST.	003790
0041 0 C0E7		LD		SUML		003800
0042 0 80DE		A		K0001	FORM SUM OF = LOCS. TESTED	003810
0043 0 D0E5		STO		SUML		003820
0044 0 C0F9		LD		CHCK+1	MODIFY TO TEST NEXT LOC.	003830
0045 0 80DB		A		K0001		003840
0046 0 D0F7		STO		CHCK+1		003850
0047 0 F0C9		EOR		STWT+1	CHECK IF ALL TESTED	003860
0048 0 4820		BSC		Z	SKIP, ALL LOCS. TESTED	003870
0049 0 70F1		MDX		CHCK-2	GO CHECK NEXT LOCATION	003880
004A 0 C0DE		LD		SUML	LOAD SUM OF NUMBER TESTED.	003890
004B 0 3005	KWAIT	WAIT		/0005	--ACC. EQU. OFAF IS NUMBER	003900
004C 0 70DD		MDX		RSTR	TESTFD.	003910
004D 0 D8FF		DC		/D8FF	USED TO MAKE CHECK SUM	003920
004E 0 2000		DC		/2000	HEXIDECIMAL NUMBER 0	003940
004F 0 0010	BGIN	DC		/0010	HEXIDECIMAL NUMBER 5	003950
0050 0000		END		0		003960

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 05

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
BGIN	004F	0027
CHCK	003D	0007,0008,002D,003B,0044,0046,0049
CHECK	0038	0026,0040
CDN1	0026	000D
CDN3	0027	0018
KBGIN	0022	002A
KBSI	0025	0030
KF000	0024	0009
KWAIT	0048	000F
K0001	0021	0016,0034,003C,0042,0045
K1000	0023	0000,0005
MOD1	0000	000E,0026
MOD3	0013	0013,0015,0017,001A,0027
RSTR	002A	001E,004C
STLN	0031	0002,0004,002C,0033,0035,0038
STWT	0010	0003,0008,000C,0036,0047
SUMC	0028	0012,0014,001B
SUML	0029	002F,0041,0043,004A

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ONE-CARD DIAGNOSTIC PROGRAMS
CARD 06

02BC ABS
 DRG 0
 * TEST CF LOADER CARD 1 FUNCTIONS
 * USING BIT SWITCHES FOR DSW + FOR COLUMN DATA
 * THIS PROG. IS IDENTICAL TO CARD 1 FROM 1D TO 4C
 * EXCEPT FOR XIO COMMANDS.
 0000 0 C024 START LD RDIN+1 SET UP I/O CONT. COMMANDS
 0001 0 1804 SRA 4
 0002 0 F024 EOR RDSW+1
 0003 0 0021 STO RDIN+1
 0004 0 0022 STO RDSW+1
 0005 0 C023 LD SENSE+1 MAKE UP STORE LONG
 0006 0 1801 SRA 1
 0007 0 F034 EOR STORE
 0008 0 0033 STO STORE
 0009 0 C014 LD CHKSM MAKE UP ADDR. FOR STO LONG
 000A 0 1808 SRA 8
 000B 0 F031 EOR STORE+1
 000C 0 0030 STO STORE+1
 000D 0 701F MDX SRTRD
 000E 0 0000 CC 0
 000F 0 0000 DC 0
 0010 0 0000 DC 0
 0011 0 0000 DC 0
 0012 0 0000 DC 0
 0013 0 0000 DC 0
 0014 0 0000 DC 0
 0015 0 0000 DC 0
 0016 0 0000 DC 0
 0017 0 0000 DC 0
 0018 0 0000 DC 0
 0019 0 0000 DC 0
 001A 0 0000 DC 0
 001B 0 0000 DC 0
 001C 0 0000 DC 0
 001D 0 700F ENDCK MDX SRTRD
 001E 0 8800 CHKSM DC /8800
 001F 0 0800 K0800 DC /0800
 0020 0 8003 K8003 DC /8003
 0021 0 8000 K9000 DC /8000
 0022 0 0001 K0001 DC /0001
 0023 0 0000 DC /0000
 0024 0 0000 RDIN DC /0000 RD SWS. INTO LOCS. 0 OR 1
 0025 0 A000 DC /A000 /3A00 SET BY PROGRAM
 0026 0 0028 RDSW DC SENSE RD SWS. INTO LOC. SENSE
 0027 0 3000 DC /3000 /3A00 SET BY PROGRAM
 0028 0 0004 SENSE DC /0004 SENSE DSW CONTROL COMMAND
 0029 0 2808 DC /2808
 002A 0 0000 COUNT DC /0000
 002B 0 F0F3 ERROR EOR K0800 RESTORE ACC. TO DSW
 002C 0 30F6 WAIT -10 **ERR. STOP DSW NOT RIGHT
 002D 0 3006 SRTRD WAIT /6 TO LOOP, REPLACE WAIT
 002E 0 03F7 XIO RDSW READ SWITCHES INTO SENSE
 002F 0 C0F8 LD SENSE LOAD BIT SWS. INTO ACC.
 0030 0 F0EF EOR K8003 CHECK BITS 0,14+15 ONLY
 0031 0 4820 BSC Z SKIP IF BITS 0,14+15 ONLY
 0032 0 700F MDX CONT1 CONTINUE DSW ANALYSIS
 0033 0 03F0 XIO RDIN READ BIT SWITCHES INTO 0,1
 0034 0 C0EF LD RDIN
 0035 0 F0EC EOR K0001 SWITCH READ IN AREA, EVEN
 0036 0 00ED STO RDIN TIMES IN 0 ODD IN 1
 0037 0 4820 BSC Z SKIP 2 WORDS READ
 0038 0 70F4 MDX SRTRD
 0039 0 C0C6 LD START GET FIRST WORD
 003A 0 1808 SRA 8 SHIFT IT
 003B 0 F0C5 EOR START+1 EOR WITH SECOND WORD
 003C 0 C004 STORE DC /C004 STORE LONG AT 4D
 003D 0 00F5 DC /00F5 SET UP BY PROG.

003990
 004000
 004010
 004020
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 004100
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 004120
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ONE-CARD DIAGNOSTIC PROGRAMS
CARD 06

003E 0 C0FE LD STORE+1
 003F 0 80E3 A K0001+1 DUMMY MODIFY OF STO L
 0040 0 00FC STO STORE+1
 0041 0 70EB MDX SRTRD
 0042 0 F0DE CONT1 EOR K8000 CHECK FOR BITS 14+15 ONLY
 0043 0 4820 BSC Z SKIP BUSY AND NOT READY
 0044 0 7001 MDX CONT2 SRTRD
 0045 0 70E7 MDX MDX
 0046 0 C0E1 CONT2 LD SENSE BIT SWS. LOADED TO ACC.
 0047 0 F0D7 EOR K0800 CHECK FOR BIT 4 ONLY
 0048 0 4820 BSC Z SKIP END OF CARD
 0049 0 70E1 MDX ERROR
 004A 0 C0DF LD COUNT COUNT PASSES
 004B 0 80D6 A K0001
 004C 0 70E0 MDX SRTRD
 004D 0 0000 DC 0
 004E 0 2000 DC /2000 HEXIDECIMAL NUMBER 0
 004F 0 0008 DC /0008 HEXIDECIMAL NUMBER 6
 0050 0000 END 0 004850

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 05

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
CHKSM	001F	0009
CONT1	0042	0032
CONT2	0046	0044
COUNT	002A	004A
ENDCK	001D	
ERROR	0028	0049
K0001	0022	0035,003F,004B
K0800	001F	002B,0047
K8000	0021	0042
K8003	0020	0030
RDIN	0024	0000,0003,0033,0034,0036
RDSW	0026	0002,0004,002E
SENSE	0028	0005,0026,002F,0046
SRTRD	002D	0000,001D,0038,0041,0045,004C
START	0000	0039,003B
STORE	003C	0007,0008,000B,000C,003E,0040

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 07

ADDRESS	OPERATION	OPERAND	DESCRIPTION	ADDRESS
028C	ABS			004880
	ORG	0		004890
	*	TEST DOUBLE PRECISION LOAD AND ADD AND		004891
	*	PROGRAM FOR SCOPE LOOPS ON READ CARD		004900
	*	XIO FUNCTIONS ARE IDENTICAL TO CARD1 BUT NO ST		004910
	*	ON ERROR.		004920
0000 0	LD	KFOFO	SET UP CONSTANT /OFOF	004921
0001 0	SRA	4		004922
0002 0	STO	KFOFO+1		004923
0003 0	STO	KFOFO+2		004924
0004 0	LDD	KFOFO	TEST LOAD DOUBLE	004925
0005 0	AD	KFOFO+2	TEST ADD DOUBLE	004926
0006 0	WAIT	/0007	--SEE ACC. FFFF Q FFFF IF	004927
	*		CONT. IF NOT RESET AND SI	004928
0007 0	START LD	RDIN+1	CORRECT I/O CONT. COMM.	004930
0008 0	SRA	2	SHIFT IT	004940
0009 0	STO	RDIN+1	STORE IT	004950
000A 0	LD	K0001+1	CORRECT I/O CONT. COMM.	004960
000B 0	SRA	1	SHIFT IT	004970
000C 0	STO	K0001+1	STORE IT	004980
000D 0	LD	SENSE+1	CORRECT I/O CONT. COMM.	004990
000E 0	SRA	3	SHIFT IT	005000
000F 0	STO	SENSE+1	STORE IT	005010
0010 0	FOR	RESET+1		005020
0011 0	STO	RESET+1		005030
0012 0	MDX	ENDCK		005040
0013 0	DC	0		005060
0014 0	DC	0		005070
0015 0	DC	0		005080
0016 0	DC	0		005090
0017 0	DC	0		005100
0018 0	KFOFO DC	/FOFO		005110
0019 0	DC	/OFOF		005120
001A 0	DC	/FOFO	PUT IN BY PROGRAM	005200
001B 0	DC	/FOFO		005210
001C 0	DC	0		005215
001D 0	ENDCK MDX	SRTRD		005220
001E 0	K0800 DC	/0800		005230
001F 0	K8003 DC	/8003		005240
0020 0	K8000 DC	/8000		005250
0021 0	DC	0		005260
0022 0	K0001 DC	/0001	START RD, USED AS CONSTAN	005270
0023 0	DC	/2808	/1404 SET BY PRDG.	005280
0024 0	RDIN DC	/0000	READ IN LOCATIONS 0 AND 1	005290
0025 0	DC	/4800	/1200 SET BY PRDG.	005300
0026 0	RESET DC	0	RESET DSW CONTROL COMMAND	005310
0027 0	DC	/0003	/1703 SET BY PRDG.	005320
0028 0	SENSE DC	/0004	SENSE DSW CONTROL COMMAND	005330
0029 0	DC	/8800	/1700 SET BY PRDG.	005340
002A 0	DC	0		005350
002B 0	ERROR EOR	K0800	RESTORE ACC. TO DSW	005360
002C 0	MDX	*	PUT WAIT HERE FOR ERR. ST	005370
002D 0	SRTRD XIO	K0001	START READ	005380
002E 0	XIO	RESET	RESET DSW	005390
002F 0	XIO	SENSE	SENSE DSW FOR CRP	005400
0030 0	EOR	K8003	CHECK BITS 0,14+15 ONLY	005410
0031 0	BSC	Z	SKIP IF BITS 0,14+15 ONLY	005420
0032 0	MDX	CONT1	RD COL.	005430
0033 0	XIO	RDIN		005440
0034 0	LD	RDIN		005450
0035 0	EOR	K0001		005460
0036 0	STO	RDIN		005470
0037 0	BSC	Z	SKIP, ODD COL. JUST READ	005480
0038 0	MDX	HOP		005490
0039 0	LD	/0001	LOAD ODD COL. JUST READ	005500
003A 0	MDX	JUMP		005510
003B 0	HOP LD	/0000	LOAD EVEN COL. JUST READ	005520
003C 0	MDX	JUMP		005530

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 07

003D 0 0000	DC	0	005540
003E 0 0000	DC	0	005550
003F 0 0000	DC	0	005560
0040 0 0000	DC	0	005570
0041 0 70EC	JUMP MDX	SRTRD+1	005580
0042 0 F000	CONT1 EDR	K8000	005590
0043 0 4670	BSC	Z	005600
0044 0 7001	MUX	CONT2	005610
0045 0 70E9	MDX	SRTRD+2	005620
0046 0 06DF	CONT2 XIO	RESET	005630
0047 0 F006	EDR	K0800	005640
0048 0 4020	BSC	Z	005650
0049 0 70E1	MDX	ERROR	005660
004A 0 7002	MDX	/004D	005670
004B 0 0000	DC	0	005680
004C 0 0000	DC	0	005690
004D 0 70CF	MDX	SRTRD	005700
004E 0 2000	DC	/2000	005710
004F 0 0004	DC	/0004	005720
0050 0000	END	0	005730

CHECK FOR BITS 14+15 ONLY
SKIP BUSY AND NOT READY

SENSE AND RESET DSW
CHECK FOR BIT 4 ONLY
SKIP END OF CARD

HEXIDECIMAL NUMBER 0
HEXIDECIMAL NUMBER 7

ONE-CARD DIAGNOSTIC PROGRAMS
CARD 07

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
CONT1	0042	0032
CONT2	0046	0044
ENDCK	001D	0012
ERROR	002B	0049
HOP	003B	0038
JUMP	0741	003A,003C
KFOF0	0018	0000,0002,0003,0004,0005
K0001	0022	000A,000C,002D,0035
K0800	001E	002B,C047
K8000	0020	0042
K8003	001F	0030
RDIN	0024	0007,0009,0033,0034,0036
RESET	0026	0010,0011,002E,0046
SENSE	0028	000D,000F,002F
SRTRD	002D	001D,0041,0045,004D
START	0007	



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6.1 PUNCHED-CARD 8-8 FORMAT	

1. PURPOSE

TO LOAD PROGRAM DECKS PUNCHED IN THE FORMAT SUCH AS THE CPU AND CORE TESTS. THE LOADER IS CONSTRUCTED TO USE A MINIMAL INSTRUCTION SET, AND PROVIDE SOME DIAGNOSTIC ABILITY.

2. PREREQUISITES

2.1 PROGRAM PREREQUISITES

THE BASIC LOADER WILL ONLY LOAD PROGRAM DECKS WHICH ARE PUNCHED IN THE 8-8 FORMAT DESCRIBED IN SECTION 6.1.

2.2 EQUIPMENT PREREQUISITES

- A. 1131 CENTRAL PROCESSING UNIT (CPU).
- B. 2501 CARD READER WITH IPL.

3. USE PROCEDURE

3.1 NORMAL LOADING PROCEDURE

A. AT 2501 CARD READER,

- 1. DEPRESS NPRO PUSHBUTTON TO CLEAR FEED.
- 2. PLACE BASIC LOADER DECK, FOLLOWED BY MAIN PROGRAM AND TWO BLANK CARDS IN HOPPER.
- 3. DEPRESS START PUSHBUTTON. READY INDICATOR SHOULD LIGHT.

B. AT 1131 CPU,

- 1. PUSH RESET.
- 2. PUSH PROGRAM LOAD. MAIN PROGRAM SHOULD LOAD AND BEGIN EXECUTION.
- 3. IF PROGRAM FAILS TO LOAD OR HALTS AT A WAIT INSTRUCTION BELOW LOCATION 012C, REFER TO SECTION 3.2

3.2 DIAGNOSTIC LOADING PROCEDURE

- 1. SET INTERRUPT DELAY SWITCH (ON CE PANEL) TO ON POSITION.
- 2. RETRY LOADING PROCEDURE.

IF PROGRAM LOADS, RUN CPU AND INTERRUPT TESTS TO DIAGNOSE NORMAL LOADER FAILURE.

IF PROGRAM DOES NOT LOAD, REFER TO SECTION 3.3

3.3 DIAGNOSTIC GUIDE

NOTE

ALL REGISTER-CONTENT INDICATIONS IN FOLLOWING STEPS ARE EXPRESSED IN HEXADECIMAL NOTATION.

FAILURE DESCRIPTION	SUGGESTED ACTION + POSSIBLE CAUSE OF FAILURE
1. NO CARD FEEDS	POSSIBLE FAILURE OF EITHER PROGRAM-LOAD MODE OR READER.
2. FIRST CARD FEEDS BUT IS NOT READ CORRECTLY.	POSSIBLE FAILURE OF READER.
3. FIRST CARD IS READ CORRECTLY BUT NOT ABLE TO LOAD REMAINDER OF LOADER.	POSSIBLE FAILURE OF CPU INSTRUCTIONS USED TO BOOTSTRAP LOADER.
4. MAIN PROGRAM STARTS EXECUTING BEFORE ALL CARDS HAVE BEEN LOADED.	CHECK THAT LAST CARD OF PROGRAM, WHICH IS PUNCHED WITH FF IN COLUMNS 79 AND 80, IS NOT OUT OF SEQUENCE. IF CARD IS IN SEQUENCE, A READING PROBLEM IS INDICATED.
5. ALL CARDS FEED BUT MAIN PROGRAM DID NOT EXECUTE.	SEE IF LAST CARD WENT PAST THE READ STATION OF THE 1442. IF IT DID, RUN ONE-CARD DIAGNOSTIC PROGRAMS. CHECK THAT MAIN PROGRAM IS FOLLOWED BY TWO BLANK CARDS.

3.4*** PROGRAM HALTS

HALT NO. (B REG)	DESCRIPTION	RESTART ACTION
30F1	CHECK SUM ERROR ON FIRST CARD OF LOADER. EITHER THE CARD READ IN WRONG, OR THE VARIOUS WORDS WHICH ARE STORED BY THE FIRST CARD WERE NOT PROPERLY GENERATED.	RELOAD
30F5	READER CHECK WHEN LOADING TEST PROGRAM	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS START.
30F7	CHECK SUM WHEN LOADING PROGRAM. CARD COLUMN 1-7B DID NOT HAVE ZERO CHECK SUM.	RELOAD OR PRESS START TO RETRY THE SAME CARD.
30F8	READER NOT READY BEFORE LOADING WAS COMPLETED.	MAKE READER READY, AND CHECK IF LAST CARD IS PROPER.
30FC	MOVE ERROR. MOVED DATA DID NOT COMPARE TO INPUT DATA.	NPRO THEN PLACE CARDS RUN OUT IN FRONT OF REMAINING DECK AND PRESS START.

4. PRINTOUTS (NONE)

5. COMMENTS

COMMENTS. THE 2501 BASIC LOADER IS DESIGNED TO SUCCESSFULLY LOAD THE 8-8 FORMAT TESTS SUCH AS CPU AND CORE TESTS. THE LOADER USES A MINIMUM AMOUNT OF CIRCUITS. IT WILL RUN WITH OR WITHOUT INTERRUPT, USES NO INDEX REGISTERS, AND WILL LOOP ON EASILY SCOPED LOOPS FOR SOME ERRORS. THE CARD IMAGE IS PRESERVED IN CORE UNTIL IT HAS BEEN CHECK SUMMED, AND MOVED TO ITS PROPER LOCATIONS. THE CARD MAY BE DISPLAYED AND COMPARED MANUALLY TO VERIFY PROPER READING. EACH OPERATION, IE. CARD READ, CHECKSUM, MOVE AND CHECK ARE SELF CONTAINED AND DO NOT OVERLAP, ALLOWING A FAILING OPERATION TO BE REPEATED.

5.1 BASIC-LOADER FIRST-CARD FUNCTIONS

5.1.1 AFTER BEING LOADED IN IPL MODE, THE FIRST-CARD PROGRAM DEVELOPS A CHECKSUM TO DETERMINE IF IT WAS LOADED CORRECTLY. IF THE CHECKSUM IS NOT 0000, THE PROGRAM STOPS AT A WAIT WITH THE DEVELOPED CHECKSUM DISPLAYED BY THE ACCUMULATOR.

5.1.2 IF THE CHECKSUM IS CORRECT, THE FIRST-CARD PROGRAM PROCEEDS TO LOAD CARDS TWO THROUGH FIVE. TWO CARD COLUMNS WILL FORM ONE STORAGE WORD BECAUSE THESE CARDS ARE PUNCHED IN 8-8 MODE. THE DSW IS CHECKED, AND IF AN ERROR IS DETECTED, THE PROGRAM WILL STOP AT A WAIT WITH THE ERROR DSW DISPLAYED BY THE ACCUMULATOR. THE CONDITION CAUSING THE DSW ERROR MUST BE CORRECTED BEFORE ATTEMPTING TO RELOAD.

5.1.3 AFTER LOADING CARDS TWO THROUGH FIVE, THE PROGRAM BRANCHES TO BEGINNING OF PROGRAM JUST LOADED.

5.2 FUNCTIONS OF BASIC-LOADER CARDS TWO THROUGH FIVE

5.2.1 CARDS TWO THROUGH FIVE LOAD A MAIN-PROGRAM CARD INTO LOCATIONS 0010 TO 0036. THE DSW IS CHECKED AFTER READING A CARD, AND IF AN ERROR OCCURRED, THE PROGRAM STOPS AT A WAIT WITH THE DSW ERROR DISPLAYED BY THE ACCUMULATOR.

5.2.2 CARDS TWO THROUGH FIVE ALSO DEVELOP CHECKSUM OF LOCATIONS 0010 THROUGH 0036. IF CHECKSUM IS OTHER THAN 0000, PROGRAM STOPS AT ERROR WAIT WITH CHECKSUM DISPLAYED BY ACCUMULATOR. A CORRECT CHECKSUM MEANS CARD WAS READ CORRECTLY.

5.2.3 THE WORD COUNT, (NUMBER OF WORDS ON THE CARD) IS TAKEN FROM LOCATION 0034. IF IT IS ZERO PROGRAM STOPS AT ERROR-WAIT.

5.2.4 THE NUMBER OF WORDS SPECIFIED IN LOCATION 0034 IS RELOCATED, STARTING AT THE ADDRESS THAT WAS SPECIFIED IN CARD COLUMNS 75 AND 76 AND THAT WAS READ INTO LOCATION 0035.

5.2.5 THE DATA READ AND THE DATA AT THE TRANSFERRED LOCATION ARE COMPARED WORD BY WORD TO VERIFY THAT THE RELOCATION HAS BEEN DONE CORRECTLY. AN UNEQUAL COMPARISON RESULTS IN THE PROGRAM STOPPING AT AN ENDV-WAIT INDICATING AN RELOCATION ERROR.

5.2.6 THE PROGRAM REPEATS THE STEPS DISCUSSED IN PARAGRAPHS 5.2.1 THROUGH 5.2.5 FOR EACH CARD OF THE MAIN PROGRAM DECK, EXCEPT FOR THE LAST CARD, WHICH MUST HAVE A LOCATION ADDRESS OF 0000. AFTER READING THE CARD AND DEVELOPING THE CHECKSUM, THE PROGRAM BRANCHES TO LOCATION 0010 AND STARTS EXECUTING THE MAIN LINE PROGRAM.

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6. APPENDIX

6.1 PUNCHED CARD 8-8 FORMAT

THE ORGANIZATION OF THE PUNCHED CARD 8-8 FORMAT IS AS FOLLOWS.

- A. COLUMNS 1 THROUGH 72 CONTAIN HALF WORDS (8 BITS) PUNCHED INTO ROWS 12 THROUGH 5. WORD-BITS 0 THROUGH 7 ARE PUNCHED INTO EVEN NUMBERED COLUMNS. WORD-BITS 8 THROUGH 15 ARE PUNCHED INTO ODD NUMBERED COLUMNS.
- B. COLUMNS 73 AND 74 CONTAIN A WORD-COUNT OF THE TOTAL NUMBER OF DATA WORDS PUNCHED INTO THE CARD.
- C. COLUMNS 75 AND 76 CONTAIN THE LOCATION, IN CORE WHERE THE DATA ON THE CARD ARE TO BE LOADED.
- D. COLUMNS 77 AND 78 CONTAIN A CHECKSUM (TWO'S COMPLEMENT OF THE SUM OF ALL WORDS IN COLUMNS 1 THROUGH 76).
- E. COLUMNS 79 AND 80 CONTAIN THE CARD'S SEQUENCE NUMBER PUNCHED IN HOLLERITH/HEXADECIMAL FORMAT.

-----T-----T-----T-----T-----T-----T-----

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```

02BC      ABS ORG 0
*-----*
*          BOOTSTRAP CARD =1
*-----*
*          LOADED BY IPL. THESE INSTRUCTIONS
*          BUILD LONG FORM INSTRUCTIONS
*          NECESSARY TO LOAD THE REST OF
*          THE LOADER.
*-----*
0000 0  C037  START LD  PACK+1  8800
0001 0  1801  SRA      1      4400
0002 0  F034  EOR      PACK  C400
0003 0  D033  STO      PACK  C400  LD  L
0004 0  F037  EOR      STO   D400
0005 0  D036  STO      STO   D400  STO L
0006 0  F033  EOR      EOR   F400
0007 0  D032  STO      EOR   F400  EOR L
0008 0  1804  SRA      4      0F40
0009 0  F021  EOR      K4001 4F41
000A 0  D022  STO      RESET 4F41  RESET IOCC
000B 0  7001  MDX      **+1  4F41
000C 0  0031  DC       INT
000D 0  1808  SRA      8      004F
000E 0  001B  STO      STRD  004F  START DR ADDR
000F 0  8020  A       ONE   0050
0010 0  D02A  STO      EOR+1 0050  1ST HALF WD ADDR
0011 0  D02B  STO      STO+1 0050  1ST STORE ADDR
0012 0  801D  A       ONE   0051
0013 0  D024  STO      PACK+1 0051  2ND HALF WD ADDR
0014 0  8017  A       LAST  0078
0015 0  D016  STO      LAST  0078  END STORE ADDR
0016 0  C014  LD       K4001 4001
0017 0  1806  SRA      6      0100
0018 0  F014  EOR      RESET 4E01
0019 0  D011  STO      STRD+1 4E01  START RD I/CC
001A 0  1808  SRA      8      004E
001B 0  D033  STO      WC    004E  WORD COUNT

*-----*
001C 0  C011  STRT  LD  CHKSM  FORM CHECK SUM, THIS CARD
001D 0  8006  A      **6   FROM 0024 THRU 004F
001E 0  D00F  STO      CHKSM
001F 0  C0FD  LD      STRT+1
0020 0  800F  A      ONE   MODIFY ADD INST
0021 0  D0FB  STO      STRT+1
0022 0  F00C  EOR      CON1  CHECK THAT LAST LOC CHKD
0023 0  4820  BSC     Z      SKIP IF FINISHED
0024 0  601C  LDX     STRT  GO GET NEXT WORD
0025 0  C008  LD      CHKSM GET SUM OF 0024 THRU 004F
0026 0  4820  BSC     Z      SKIP IF CHKSM ZERO
0027 0  30F1  WAIT    -15   CHECK SUM ERROR
0028 0  6033  ENDCK LDX  SRTRD  START LOADING

*-----*
0029 0  0800  K0800 DC  /0800
002A 0  0000  STRD  DC  0
002B 0  4001  K4001 DC  /4001
002C 0  0026  LAST  DC  /0026
002D 0  0000  RESET DC  **
002E 0  001B  CHKSM DC /011B
002F 0  8031  CON1  A   X  80-STRT-3
0030 0  0001  ONE   DC  /0001

*-----*
*          THESE INSTRUCTIONS LOAD THE REST
*          OF THE LOADER.
*-----*
0031 0  0000  INT   DC  0

```

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```

0032 0  6037  LDX     PACK
*-----*
0033 0  08F6  SKIRD  X10  STRD
0034 0  08F7  X10  RESET-1
0035 0  4804  BSC   E
0036 0  6034  LDX     SRTRD+1

*-----*
0037 0  8000  PACK  DC  /8000  LD  L  RDIN+1
0038 0  8800  DC    /8800
0039 0  1808  SRA    8
003A 0  2000  EOR    DC  /2000  EOR  L  RDIN
003B 0  0000  DC    0
003C 0  1800  STO    DC  /1000  STO  L  RDIN
003D 0  0000  DC    0
003E 0  C0F9  LD     PACK+1
003F 0  80F0  A     ONE
0040 0  C0FA  STO    EOR+1
0041 0  80EE  A     ONE
0042 0  D0F5  STO    PACK+1  PACK AND
0043 0  C0F9  LD     STO+1  STORE 8-8
0044 0  80EB  A     ONE  LOADER CARDS
0045 0  D0F7  STO    STO+1
0046 0  F0E5  EOR    LAST
0047 0  4820  BSC    Z
0048 0  6037  LDX    PACK
0049 0  7006  END1  MDX  CARD2
004A 0  004E  ORG   79
004F 0  004E  DC    78

*-----*
*          CARD 2 STARTS HERE
*-----*
0050 0  0000  RDIN  BSS  0
0050 0  C0FE  CARD2 LD  WC
0051 00  D400009D  STOWC STO L  WC+78
0053 0  C0D6  LD     STRD
0054 0  80FA  A     WC
0055 0  D0D4  STO    STRD
0056 0  C0F8  LD     STOWC+1
0057 0  80F7  A     WC
0058 0  D0F9  STO    STOWC+1
0059 0  C0F5  LD     WC
005A 0  1801  SRA    1
005B 0  80D0  A     LAST
005C 0  D0CF  STO    LAST
005D 0  C006  LD     COUNT
005E 0  80D1  A     ONE
005F 0  D004  STO    COUNT
0060 0  F004  EOR    K0004
0061 0  4820  BSC    Z
0062 0  70D0  MDX   SRTRD
0063 0  6078  LDX   SRTR2

*-----*
*          CONSTANTS AND BUCKETS
*-----*
0064 0  0000  COUNT DC  0
0065 0  0004  K0004 DC /0004

*-----*
0010  INPUT EQU /0010  CARD INPUT AREA
0058  INWC EQU INPUT+72 WORD COUNT IN CARD
0059  INWC1 EQU INWC+1
005A  INAD EQU INPUT+74  ADDRESS IN CARD
005B  INAD1 EQU INAD+1
0066 0  000F  STRD2 DC INPUT-1
0067 0  4E00  DC    /4E00

```

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```

0068 0 0000   CKSUM DC      0           3AD01360
0069 0 4F01   REST2 DC     /4F01         3AD01370
006A 0 0000   CDCNT DC     0           3AD01380
006B 0 000F   IPACK DC     INPUT-1      3AD01390
006C 0 0001   ONE2 DC      /0001         3AD01400
*
006D 0 0010   COL1 DC      /0010         INPUT AREA START
006E 0 0000   INCOL DC     *--          ADDR OF FIRST HALF WD
006F 0 0000   DC          *--          ADDR OF SECOND HALF WD
0070 0 0000   ADDR DC     *--          CURRENT CORE ADDR
0071 0 0000   WDCNT DC    *--          WORD COUNT
0072 0 005F   COL78 DC    INPUT+79     LAST CHECKSUM COL
0073 0 FFFF   NONE DC     -1           NEGATIVE ONE
0074 0 0002   TWO DC      /0002
0075 0 0086   INTE DC     /004E         INTERRUPT ENTRY
0076 0 004E   WC2 DC      /0003         WORD COUNT
0077 0 0003   K0003 DC
*
*
* THE REMAINING INSTRUCTIONS LOAD
* THE PROGRAM DECK.
*
*
SRTR2 LD      INTE          INTERRUPT VECTOR
      STG      12           INITIALIZE LOADER
      LD       COUNT-1     RETURN POINT
      STO      /0050
      LD       WC2
      STO      INPUT-1     WORD COUNT
*
*
* CARD READ SECTION
* READ PROGRAM CARDS INTO /0010 - /005F
*
*
SRTR3 XIO     REST2-1     SENSE DSM
      BSC     E           SKIP IF READY
      MDX     *+1
      MDX     *+2
      WAIT    -8         NOT READ?
      MDX     *-6         LOOP
*
      XIO     STRD2       INITIATE READ
      BOSC    +-2        UNCOND LEAVE INTERRUPT
      DC      *--        INTERRUPT ENTRY
INT4  XIO     REST2-1     SENSE RESET
      EOR     K0003      CHECK FOR CHANGES
      BOSC    +          SKIP IF ANY CHANGE
      MDX     *-4        LOOP TIL OP COMP
*
      XIO     REST2-1     SENSE DSM
      SLA     2           BR ON NO ERROR
      BSC     -          2501 READ ERROR
      MDX     CDDK       2501 READ ERROR
      WAIT    -11
      LDX     SRTR3      RETRY
*
*
* CHECKSUM SECTION
* ADD COLUMNS 1-78 AND CHECK FOR ZERO
*
*
CDDK  SLA     16
      STO     CKSUM      CLEAR CHECKSUM
      LD      COL1       SET UP
      STO     INCOL     INPUT AREA
      A      ONE2        ADDRESSES

```

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```

0096 0 D0DB   STO          INCOL+1      3AD02040
*
0097 00 C480006E CSLD LD I INCOL     LOAD FIRST HALF WD 3AD02050
0099 0 1808   SRA          8           SHIFT                3AD02060
009A 00 F480006F EOR I INCOL+1    COMBINE SECONCE HALF 3AD02070
009C 0 80CB   A           CKSUM      ADD TO CHECKSUM    3AD02080
009D 0 DOCA   STO          CKSUM      STORE RESULT        3AD02090
*
009E 0 COCF   LD          INCOL     *                3AD02100
009F 0 80D4   A           TWO        INCREMENT                3AD02110
00A0 0 D0CD   STO          INCOL     INPUT AREA                3AD02120
00A1 0 80CA   A           ONE2    ADDRESSES                3AD02130
00A2 0 D0CC   STO          INCOL+1 *                3AD02140
00A3 0 F0CE   EOR          COL78    CHECK FOR LAST COL  3AD02150
00A4 0 4820   BSC          Z         SKIP IF LAST COL   3AD02160
00A5 0 70F1   MDX         CSLD      CONTINUE                3AD02170
*
00A6 0 COC1   LD          CKSUM      CHECK FOR VALID CHECKSUM 3AD02180
00A7 0 4820   BSC          Z         SHIP IF OK                3AD02190
00A8 0 7001   MDX         *+1       3AD02200
00A9 0 7002   MDX         CSOK      BR TO MOVE ROUTINE  3AD02210
00AA 0 30F7   WAIT        -9       CHECKSUM ERROR      3AD02220
00AB 0 70E5   MDX         CDDK      RETRY CHECKSUM            3AD02230
*
*
* MOVE AND CHECK SECTION
* PACK EACH TWO COLUMNS INTO ONE WORD
* AND MOVE TO THE PROPER LOCATION.
* COMPARE WHAT WAS MOVED TO PACKED
* WORD.
*
*
00AC 0 COC0   CSOK LD          COL1     SET
00AD 0 D0C0   STO          INCOL     INPUT AREA
00AE 0 80B0   A           ONE2    ADDRESSES
00AF 0 D0BF   STO          INCOL+1
*
00B0 0 COA9   LD          INAD      SET
00B1 0 1808   SRA          8         CURRENT CORE
00B2 0 FOA8   EOR          INAD1    LOCATION
00B3 0 D0BC   STO          ADDR     FROM CARD
*
00B4 0 COA3   LD          INWC      SET NUMBER
00B5 0 1808   SRA          8         OF WORDS
00B6 0 FOA2   EOR          INWC1  TO BE MOVED
00B7 0 D0B9   STO          WDCNT
00B8 00 C480006E M'LD LD I INCOL     LOAD AND
00BA 0 1808   SRA          8         PACK
00BB 00 F480006F EOR I INCOL+1    THE WORD
00BD 00 D4800070 STO I ADDR      STO AT CURRENT ADDRESS
00BF 00 F4800070 EOR I ADDR      COMPARE TO ACC
00C1 0 4820   BSC          Z         SKIP IF MOVE OK
00C2 0 7001   MDX         *+1       ERROR
00C3 0 7002   MDX         MVOK
00C4 0 30FC   WAIT        -4       MOVE ERROR
00C5 0 70F2   MDX         MVLD    RETRY MOVE
*
00C6 0 COAA   MVOK LD          WDCNT  CHECK IF ALL WORDS
00C7 0 80AB   A           NONE     MOVED
00C8 0 D0A8   STO          WDCNT  DECREMENTED WORD COUNT
00C9 0 4820   BSC          Z         SKIP IF LAST WORD
00CA 0 7008   MDX         MVIN    BR TO INCR ADDR AND CONT
*
*
* END OF MOVE.
* CHECK FOR END CARD AND REINITIALIZE
* ADDR.
*

```

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00CB 0	COA4	*	LD	ADDR	CHECK FOR LAST CARD	3AD02720
00CC 0	1806		SRA	6	ADDR LESS THAN 40	3AD02730
00CD 0	4820		BSC	Z	SKIP IF LAST CARD	3AD02740
00CE 0	70AF		MDX	SRTR3	BR TO READ NEXT CARD	3AD02750
00CF 0	C093		LD	COUNT-1	INITIALIZE LOADER	3AD02760
00D0 00	D4000050		STO	L /0050	RETURN POINT	3AD02761
00D2 0	6004		LDX	/0004	BR TO BEGIN PROGRAM	3AD02762
						3AD02770
						3AD02780
00D3 0	C09A	* MYIN	LD	INCOL	INCREMENT	3AD02790
00D4 0	809F		A	TWO	INPUT AREA	3AD02800
00D5 0	D098		STO	INCOL	ADDRESSES	3AD02810
00D6 0	8095		A	ONE2		3AD02820
00D7 0	D097		STO	INCOL+1		3AD02830
						3AD02840
00D8 0	C097	*	LD	ADDR	INCREMENT	3AD02850
00D9 0	8092		A	ONE2	CURRENT	3AD02860
00DA 0	D095		STO	ADDR	STORE ADDRESS	3AD02870
00DB 0	70DC		MDX	MVLD	BR TO MOVE NEXT WORD	3AD02880
00DC	0000		END	0		3AD02890

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CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
ADDR	0070	00B3,00B0,00BF,00CB,00D8,00DA
CARD2	0050	0049
CDCNT	006A	
CDDK	0091	00BE,00AB
CHKSM	002E	001C,001E,0025
CKSUM	0068	0092,009C,009D,00A6
COL1	006D	0093,00AC
COL78	0072	00A3
CON1	002F	0022
COUNT	0064	005D,005F,007A,00CF
CSLD	0097	00A5
CSOK	00AC	00A9
ENDCK	0028	
END1	0049	
EDR	003A	0006,0007,0010,0040
INAD	005A	0066,00B0
INAD1	005B	00B2
INCOL	006E	0094,0096,0097,009A,009E,00A0,00A2,00AD,00AF,00B8, 00BB,00D3,00D5,00D7
INPUT	0010	0066,0066,0066,006B,0072,007D
INT	0031	000C
INTE	0075	0078
INT4	0086	0075
INWC	0058	0066,00B4
INWC1	0059	00B6
IPACK	006B	
K0003	0077	0088
K0004	0065	0060
K0800	0029	
K4001	002B	0009,0016
LAST	002C	0014,0015,0046,0051,005C
MVIN	00D3	00CA
MVLD	00B8	00C5,00DB
MVOK	00C6	00C3
NONE	0073	00C7
ONE	0030	000F,0012,0020,003F,0041,0044,005E
ONE2	006C	0095,00A1,00AE,00D6,00D9
PACK	0037	0000,0002,0003,0013,0032,003E,0042,0048
RDIN	0050	
RESET	002D	000A,0018,0034
REST2	0069	007E,0087,008B
SRTD	0033	0028,0036,0062
SRTR2	0078	0063
SRTR3	007E	0090,00CE
START	0000	
STO	003C	0004,0005,0011,0043,0045
STOWC	0051	0056,0058
STRD	002A	000E,0019,0033,0053,0055
STRD2	0066	00B4
STRT	001C	001F,0021,0024,002F
TWO	0074	009F,00D4
WC	004F	001B,0050,0051,0054,0057,0059
WC2	0076	007C
WDCNT	0071	00B7,00C6,00C8

