9C02A

CARD READER TIMING AND RELIABILITY TEST

A. Unit Tested - Card Reader 500 CPM

1. Purpose of Test

   A. Initially determine the speed of the card reader per cycle and subsequently test all phases of timing to determine maximum time between various operations.

   B. To determine reliability of the card reader while reaching for maximumn time between various operations.

   C. To determine reliability of the card reader by causing the card reader to intermittently latch up.

2. Method of Test

   A. Keys 1-6 are used to increment timing, between various operations.

   B. With keys 1-6 up, the card reader reads each record with normal programming delays.

   C. With sense switch 5 down, the card reader is intermittently latched up between records. Correct location 723 compare every word on the test card.

B. Machine Units and Storage Area

1. Units required

   MF, CF, DSU, Printer, CR Model 500

2. Storage Locations

   00030-02433 - Card Reader Program
   05500-06476 - Modification Program
   06500-07712 - Error Print Program

C. Program Control

1. Deck

000	9LD01 Low End Loader
001 - 059	9C01
060 - 083	Modification Program
084 - 112	9DEPR Diagnostic Print Subroutine
113	Transfer Card TRA 00030
114 - 413	300 Test Cards
414 - 415	Two Blank Cards

2. Sense Switch Control

3 Up	Print on error or maximum timing
3 Down	Halt on error or maximum timing
5 Up	Normal programming delay between 12 right and 9 left
5 Down	Variable delays between 12 right and select causing intermittent latch-up
6 Up	Load next diagnostic after testing all card readers on line.
6 Down	Repeat test after testing all card readers on line

3. Sense Lights

1 On	Error indicated between word read from card and word in storage
2 On	Indicates test has determined speed of the card reader
3 On	Indicates maximum time has been reached between 11 right and 12 left rows.

4. *Note* Keys must be depressed one at a time

1 Up	No effect
1 Down	Increement time between select and reset load channel
2 Up	No effect
2 Down	Increment time between words
3 Up	No effect
3 Down	Increment time between rows
4 Up	No effect
4 Down	Increment time between records
5 Up	No effect
5 Down	Increment time between 12 right time and EOR time

6 Up	No effect
6 Down	Increment time between 12 right time and select

5. Indicators

An indicator 1 through 6 on indicates a corresponding key has been depresses to determine the maximum timing of an operations. Indicator 7 on indicates the test has determined the speed of the card reader per cycle.

D. Normal Stops

01146	No printer on line and maximum timing has been reached for all operations except the time between 12 right time and EOR.
01147	No printer on line and maximum timing has been reached between 12 right time and EOR
05517	Enter control word in keys to indicate testing the card reader and the number of channels on line. At this stop, test cards are to be reloaded in the card reader if more then on pass is desired.

E. Error Stop

06545	Word read from card and word in storage did not compare correctly.

F. Print-Outs

1. Program identification is printed out initially if a printer is on line on channel A.

2. After 300 records have been read by the card reader, pass compete is printed out if a printer is on line on channel A.

3. Test cards are punched to indicate which word failed in a comparision error. The decimal sum of every 2 octal digits equals the word. The zero row is indicated by the decimal sum of 10.

   Examples 9 Row 9L 727272727272 9R 27272727272
   0 Row 0L 737373737373 0R 37373737373

4. See the page following the constant-delay time tables for examples of all printouts.

G. Comments

1. See page 1 of the listing for instructions on how to enter keys for testing of card readers on a single or multiple channels.

2. To determine the maximum timings between various operations with no printer on line on channel A, display XRB or location 02254 and consult the constant-delay time table for the timing comparable to the value in XRB or location 02254. *Note* If sense light 3 is on when determining the time btween rows, add six octally to the value in XRB or location 02254 and constult the constant-delay time table for timing between rows. Sense light 3 is turned on only if maximum timing between rows occurs between 11 row right an 12 row left.

3. See 9C01A program for flow chart.

4. Six words on a test card are compared: 9L, 7L, 5L, 3L, 1L, 11L. A complete card cannot be compared if keys 1-6 are down.

5. In order to compare the complete card, change the decrement of location 723 from 4 to 1.

CONSTANT-DELAY TIME TABLES

CARD READER CYCLE

XRB - Loc 02254	Millisec	XRB-Loc 02254	Millisec
2607	110	3453	120
2661	111	3525	121
2733	112	3577	122
3005	113	3651	123
3057	114	3723	124
3131	115	3775	125
3203	116	4047	126
3255	117	4121	127
3327	118	4173	128
3401	119	4245	129

SELECT-RCH KEY 1 DOWN

XRB-Loc 02254	Millisec	XRB-Loc 02254	Millisec	XRB-Loc 02254	Millisec
2334	30.0	3522	45.0	4710	60.1
2406	31.0	3574	46.0	4762	61.2
2460	32.0	3646	47.0	5034	62.2
2532	33.0	3720	48.1	5106	63.2
2604	34.0	3772	49.1	5160	64.2
2656	35.0	4044	50.1	5232	65.2
2730	36.0	4116	51.1	5304	66.2
3002	37.0	4170	52.1	5356	67.2
3054	38.0	4242	53.1	5430	68.2
3126	39.0	4314	54.1	5502	69.2
3200	40.0	4366	55.1	5554	70.2
3252	41.0	4440	56.1	5626	71.3
3324	42.0	4512	57.1	5700	72.3
3375	43.0	4564	58.1	5752	73.3
3450	44.0	4636	59.1	6024	74.3

LEFT WORD - RIGHT WORD KEY 2 DOWN

XRB - Loc 02254	USec	XRB-Loc 02254	USec
10	300	15	420
11	324	16	444
12	348	17	468
13	372	20	492
14	396	21	526

BETWEEN ROWS KEYS 3 DOWN

XRB - Loc 02254	Millisec	XRB-Loc 02254	Millisec
242	4.0	324	5.1
247	4.1	331	5.3
254	4.2	336	5.4
261	4.3	343	5.5
266	4.4	350	5.6
273	4.6	355	5.7
300	4.7	362	5.8
305	4.8	367	5.9
312	4.9	374	6.1
317	5.0		

* 11 Right - 12 Left Sense ligth 3 on add 6 octally to value in XRB or loc 02254 and see above table.

BETWEEN RECORDS KEY 4 DOWN

XRB - Loc 02254	Millisec	XRB - Loc 02254	Millisec
52	42	520	49
124	43	572	50
176	44	644	51
250	45	716	52
322	46	770	53
446	48	1042	54

BETWEEN 12 RIGHT-EOR KEY 5 DOWN

XRB - Loc 02254	Millisec	XRB - Loc 02254	Millisec
10	2.5	77	3.8
15	2.6	104	3.9
22	2.7	111	4.0
27	2.8	116	4.1
34	2.9	123	4.3
41	3.1	130	4.4
46	3.2	135	4.5
53	3.3	142	4.6
60	3.4	147	4.7
65	3.5	154	4.9
72	3.7	161	5.0

BETWEEN 12 RIGHT-SELECT KEY 6 DOWN

XRB - Loc 02254	Millisec	XRB - Loc 02254	Millisec
213	10	373	18
231	11	411	19
247	12	427	20
265	13	445	21
303	14	463	22
321	15	501	23
337	16	517	24
355	17	525	25

SAMPLE PRINTOUT

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Now performing diagnostic   9C02

Speed of this card reader   119 MS per cycle

Maximun time between sel
and reset LD channel         42.0 MS
Card reader disconnecting
at EOR time 224 on index

Maximum time between words
9L and  9R                   400 USEC

Maximum time between rows
9R and  8L                     5.1 MS

Maximum time between records   49.0 MS
Time measured between
EOR and 9 left time

Maximum time between 12R
time and EOR time              4.7 MS

Maximum time between 12 right
and select                     15.0 MS

Test loc 00710, opn rcda  ,error loc 00720, 0 loc 002000000110, sw 000001
Mse 1000, comp error, word generated 101 111 101 111 101 111 101 111 101 111
xec 00453, word 00030,    word read  101 111 101 111 101 111 101 111 101 110
Inds 000000700001, keys 000000700001


Pass complete for card reader on channel A 9C02

Pass complete for card reader on channel C 9C02

Pass complete for card reader on channel E 9C02
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9C02A

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                00030         ORG 24

                                  PROGRAM IDENTIFICATION

00030  0760 00 0 00163         SWT 3
00031  0020 00 0 01534         TRA PI7

*ADJUST CARD READER TEST FOR CHANNELS A,C OR E

00032  0074 00 4 05514  MP     TSX IOC,4      TO ENTER CONTROL
                                              WORDS IN KEYS

*WITH A PROGRAM STOP AT LOCATION 05517, ENTER INTO KEYS INFORMATION
*DESIGNATING THE NUMBER OF BUFFERS ON LINE THAT HAVE CARD
*READERS TO BE CHECKED.IF A PASS HAS BEEN MADE ON THE CARD READERS.
*RELOAD CARDS 114-413 AND READY READERS.

*      CHANNEL A ON LINE KEYS 20 AND 35

*TO TEST CARD READERS ON CHANNELS OTHER THEN A, THERE IS AN ADDITIONAL
*PROGRAM STOP FOR EACH CHANNEL.PUSH START AFTER EACH STOP.

*      CHANNEL C ON LINE KEYS 19 AND 35
*      CHANNEL E ON LINE KEYS 18 AND 35
*      CHANNELS A AND C ON LINE KEYS 19,20 AND 35
*      CHANNELS A AND E ON LINE KEYS 18,20, AND 35
*      CHANNELS C AND E ON LINE KEYS 18,19 AND 35
*      CHANNELS A,C AND E ON LINE KEYS 18,19,20 AND 35

00033  0441 00 0 05500         LDI CTRL1      CONTROL WORD FOR CHAN A
00034  0056 00  100001         RNT 1,1        IS CHANNEL A ON LINE
00035  0020 00 0 00037         TRA *+2        NO
00036  0020 00 0 00043         TRA *+5        YES
00037  0074 00 4 05512  TCTX   TSX CTX,4      NO-ADJUST ADR FOR CHAN C,E
00040  0011 62 0 00060         HTR CRS,0,FILE     1ST AND LAST ADDRESS
                                              TO BE ADJUSTED

00041  0500 00 0 05503         CLA IOCT       L NO OF BUFFERS
00042  0100 00 0 01202         TZE SEN6       ALL CARD READERS
                                              HAVE BEEN CHECKED

00043  0500 00 0 02372         CLA K1
00044  0601 00 0 00000         STO 0

                                  CARD READER TEST

00045  0500 00 0 02370         CLA K+3        L +454
00046  0601 00 0 02255         STO SX+1
00047  0400 00 0 02363         ADD KK+10      L +1
00050  0601 00 0 06557         STO RECNO      SET RECORD NUMBER CONSTANT

00051  0500 00 0 02365         CLA K          L +30
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00052  0400 00 0 02363         ADD KK+10       L +1
00053  0601 00 0 06556         STO WDNO        SET WORD NUMBER CONSTANT

*CHECK SPEED OF CARD READER

00054  0500 00 0 02350         CLA K0+19
00055  0601 00 0 02234         STO RDRDY

00056  0760 00 0 00005         IOT             TURN OFF I/O CHECK LIGHT
00057  0020 00 0 00060         TRA *+1

00060  0762 00 0 01321  CRS    RCDA            SELECT CARD READER

00061  0540 00 0 02257         RCHA CW         9 L CONTROL WORD TO BUFFER
00062  0544 00 0 02260         LCHA CW+1       9 L CONTROL WORD EXECUTED

*MOVE CARD READER TO EOR WITHOUT TRANSIMITTING WORDS TO STORAGE
*AT EOR TIME BRING IN 9 LEFT COTNROL WORD TO BUFFER

00063  0074 00 4 01155         TSX REDUC,4     TO REDUCE RECORD COUNT

00064  0774 00 2 00002         AXT 2,2         L 2 IN XRB
00065  0774 00 1 03052         AXT  1578,1     L 3052 IN XRA
00066  2 00001 1 00066         TIX *,1,1       TOTAL DELAY
00067  2 00001 2 00065         TIX  *-2,2,1    OF 76 MS

00070  0534 00 3 02234         LXA RDRDY,3     L DELAY CONSTANT TO XR
00071  2 00001 1 00071         TIX *,1,1       DELAY

00072  0544 00 0 02260         LCHA CW+1       9 R CONTROL WORD TO BUFFER
                                               EXECUTE 9 LEFT WORD

00073  0760 00 0 00005         IOT             IS I/O CHECK LIGHT ON
00074  0074 00 4 01137         TSX LINE-3,4    YES
00075  0020 00 0 00103         TRA CRS1        NO

00076  0500 00 0 02334         CLA K0+7        L +224414
00077  0601 00 0 02252         STO P+4

00100  0441 00 0 01502         LDI PI+4        TURN ON INDICATOR 7

00101  0074 00 4 01150         TSX SAVE,4      TO SAVE XRB ROUTINE
00102  0020 00 0 01300         TRA PR1         TO TIMING PRINT ROUTINE

00103  0074 00 4 01155  CRS1   TSX REDUC,4     TO REDUCE RECORD COUNT



00104  0500 00 0 02234         CLA RDRDY       ADD
00105  0400 00 0 02332         ADD K0+5        1 MS
00106  0601 00 0 02234         STO RDRDY       TO DELAY
00107  0020 00 0 00062         TRA CRS+2

00110  0074 00 4 01155         TSX REDUC,4     TO REDUCE RECORD COUNT

00111  0500 00 0 02325  TIME   CLA K0          SET
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00112  0601 00 0 02235         STO SELDY

00113  0500 00 0 02326         CLA K0+1        UP
00114  0601 00 0 02236         STO WORDY

00115  0500 00 0 02330         CLA K0+3        ALL
00116  0601 00 0 02240         STO ROWD1

00117  0500 00 0 02327         CLA K0+2        THE
00120  0601 00 0 02237         STO ROWDY

00121  0500 00 0 02364         CLA KK+11       INITIAL
00122  0601 00 0 02241         STO CONDY

00123  0502 00 0 02355         CLS KK+4        TIMING
00124  0601 00 0 02242         STO EORDY       (2242)----FIX

00125  0500 00 0 02330         CLA K0+3        UNITS
00126  0601 00 0 02243         STO KONDY

00127  0500 00 0 02365         CLA K           INITERMITTENT
00130  0402 00 0 02363         SUB KK+10       LATCH UP
00131  0601 00 0 02245         STO NUM         CONSTANT

00132  0760 00 0 00140         SLF             SENSE LIGHTS OFF

00133  0441 00 0 02364         LDI KK+11       ALL INDICATORS OFF

00134  0760 00 0 00005         IOT             TURN OFF I/O CHECK LIGHT
00135  0020 00 0 00136         TRA *+1

00136  0074 00 4 00730         TSX CLEAR,4     CLEAR CARD IMAGE AREA

*CHECK TIMING BETWEEN SELECT AND RESET LOAD CHANNEL

00137  0762 00 0 01321  CR     RCDA            SELECT CARD READER

00140 -0320 00 0 00000         ANA             36 USEC DELAY
00141  0534 00 3 02235         LXA SELDY,3     L DELAY CONSTANT TO XR
00142  2 00001 1 00142         TIX *,1,1       DELAY 28 MS

00143  0540 00 0 02261         RCHA CW1        9 L CONTROL WORD TO BUFFER

00144  0544 00 0 02262         LCHA CW1+1      9 R CONTROL WORD TO BUFFER
                                               FOR SYNCHRONOUS OPERATION

00145  0760 00 0 00005         IOT             IS I/O CHECK LIGHT ON
00146  0074 00 4 01142         TSX LINE,4      YES
00147  0020 00 0 00154         TRA CR1         NO

00150  0500 00 0 02340         CLA K0+11       L +140
00151  0601 00 0 02252         STO P+4         STORE TIMING VALUE

00152  0074 00 4 01150         TSX SAVE,4      TO SAVE XRB ROUTINE
00153  0020 00 0 01300         TRA PR1         TO TIMING PRINT ROUTINE
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*CHECK TIMING BETWEEN 9 LEFT AND 9 RIGHT

00154  0534 00 3 02236  CR1    LXA WORDY,3    L DELAY CONSTANT TO XR
00155  2 00001 1 00155         TIX *,1,1      DELAY 300 USEC

00156  0544 00 0 02263         LCHA CW1+2     8 L CONTROL WORD TO BUFFER

00157  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ONE
00160  0074 00 4 01142         TSX LINE,4     YES
00161  0020 00 0 00172         TRA CR2        NO

                                    SAVE CARD LOCATIONS TESTING

00162  0600 00 0 02246         STZ P
00163  0600 00 0 02250         STZ P+2
00164  0500 00 0 02351         CLA KK         L -11
00165  0601 00 0 02247         STO P+1
00166  0601 00 0 02251         STO P+3

00167  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00170  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00171  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 9 RIGHT AND 8 LEFT

00172  0534 00 3 02237  CR2    LXA ROWDY,3    L DELAY CONSTANT TO XR
00173  2 00001 1 00173         TIX *,1,1      DELAY 4 MS

00174  0544 00 0 02264         LCHA CW1+3     8 R CONTROL WORD TO BUFFER

00175  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00176  0074 00 4 01142         TSX LINE,4     YES
00177  0020 00 0 00211         TRA CR3        NO

                                    SAVE CARD LOCATIONS TESTING

00200  0600 00 0 02246         STZ P
00201  0600 00 0 02250         STZ P+2
00202  0500 00 0 02351         CLA KK         L -11
00203  0601 00 0 02247         STO P+1
00204  0402 00 0 02361         SUB KK+8       L -1
00205  0601 00 0 02251         STO P+3        STORE A -10

00206  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00207  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00210  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 8 LEFT AND 8 RIGHT

00211  0534 00 3 02236  CR3    LXA WORDY,3    L DELAY CONSTANT TO XR
00212  2 00001 1 00212         TIX *,1,1      DELAY 300 USEC

00213  0544 00 0 02265         LCHA CW1+4     7 L CONTROL WORD TO BUFFER


00214  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
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00215  0074 00 4 01142         TSX LINE,4     YES
00216  0020 00 0 00227         TRA CR4        NO

                                   SAVE CARD LOCATIONS TESTING

00217  0600 00 0 02246         STZ P
00220  0600 00 0 02250         STZ P+2
00221  0500 00 0 02352         CLA KK+1       L -10
00222  0601 00 0 02247         STO P+1
00223  0601 00 0 02251         STO P+3

00224  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00225  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00226  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 8 RIGHT AND 7 LEFT

00227  0534 00 3 02237  CR4    LXA ROWDY,3    L DELAY CONSTANT TO XR
00230  2 00001 1 00230         TIX *,1,1      DELAY 4 MS

00231  0544 00 0 02266         LCHA CW1+5     7 R CONTROL WORD TO BUFFER

00232  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00233  0074 00 4 01142         TSX LINE,4     YES
00234  0020 00 0 00246         TRA CR5        NO

                                   SAVE CARD LOCATIONS TESTING

00235  0600 00 0 02246         STZ P
00236  0600 00 0 02250         STZ P+2
00237  0500 00 0 02352         CLA KK+1       L -10
00240  0601 00 0 02247         STO P+1
00241  0402 00 0 02361         SUB KK+8       L -1
00242  0601 00 0 02251         STO P+3        STORE A -7

00243  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00244  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00245  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 7 LEFT AND 7 RIGHT

00246  0534 00 3 02236  CR5    LXA WORDY,3    L DELAY CONSTANT TO XR
00247  2 00001 1 00247         TIX *,1,1      DELAY 300 USEC

00250  0544 00 0 02267         LCHA CW1+6     6 L CONTROL WORD TO BUFFER

00251  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00252  0074 00 4 01142         TSX LINE,4     YES
00253  0020 00 0 00264         TRA CR6        NO

                                   SAVE CARD LOCATIONS TESTING

00254  0600 00 0 02246         STZ P
00255  0600 00 0 02250         STZ P+2
00256  0500 00 0 02353         CLA KK+2       L -7
00257  0601 00 0 02247         STO P+1
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00260  0601 00 0 02251         STO P+3

00261  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00262  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00263  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 7 RIGHT AND 6 LEFT

00264  0534 00 3 02237  CR6    LXA ROWDY,3    L DELAY CONSTANT TO XR
00265  2 00001 1 00265         TIX *,1,1      DELAY 4 MS

00266  0544 00 0 02270         LCHA CW1+7     6 R CONTROL WORD TO BUFFER

00267  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00270  0074 00 4 01142         TSX LINE,4     YES
00271  0020 00 0 00303         TRA CR7        NO

                                    SAVE CARD LOCATIONS TESTING

00272  0600 00 0 02246         STZ P
00273  0600 00 0 02250         STZ P+2
00274  0500 00 0 02353         CLA KK+2       L -7
00275  0601 00 0 02247         STO P+1
00276  0402 00 0 02361         SUB KK+8       L -1
00277  0601 00 0 02251         STO P+3        STORE A -6

00300  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00301  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00302  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 6 LEFT AND 6 RIGHT

00303  0534 00 3 02236  CR7    LXA WORDY,3    L DELAY CONSTANT TO XR
00304  2 00001 1 00304         TIX *,1,1      DELAY 300 USEC

00305  0544 00 0 02271         LCHA CW1+8     5 L CONTROL WORD TO BUFFER

00306  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00307  0074 00 4 01142         TSX LINE,4     YES
00310  0020 00 0 00321         TRA CR8        NO

                                    SAVE CARD LOCATIONS TESTING

00311  0600 00 0 02246         STZ P
00312  0600 00 0 02250         STZ P+2
00313  0500 00 0 02354         CLA KK+3       L -6
00314  0601 00 0 02247         STO P+1
00315  0601 00 0 02251         STO P+3

00316  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00317  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00320  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 6 RIGHT AND 5 LEFT

00321  0534 00 3 02237  CR8    LXA ROWDY,3    L DELAY CONSTANT TO XR
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00322  2 00001 1 00322         TIX *,1,1      DELAY 4 MS

00323  0544 00 0 02272         LCHA CW1+9     5 R CONTROL WORD TO BUFFER

00324  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00325  0074 00 4 01142         TSX LINE,4     YES
00326  0020 00 0 00340         TRA CR9        NO

                                    SAVE CARD LOCATIONS TESTING

00327  0600 00 0 02246         STZ P
00330  0600 00 0 02250         STZ P+2
00331  0500 00 0 02354         CLA KK+3       L -6
00332  0601 00 0 02247         STO P+1
00333  0402 00 0 02361         SUB KK+8       L -1
00334  0601 00 0 02251         STO P+3        STORE A -5

00335  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00336  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00337  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 5 LEFT AND 5 RIGHT

00340  0534 00 3 02236  CR9    LXA WORDY,3    L DELAY CONSTANT TO XR
00341  2 00001 1 00341         TIX *,1,1      DELAY 300 USEC

00342  0544 00 0 02273         LCHA CW1+10    4 L CONTROL WORD TO BUFFER

00343  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00344  0074 00 4 01142         TSX LINE,4     YES
00345  0020 00 0 00356         TRA CR10       NO

                                    SAVE CARD LOCATIONS TESTING

00346  0600 00 0 02246         STZ P
00347  0600 00 0 02250         STZ P+2
00350  0500 00 0 02355         CLA KK+4       L -5
00351  0601 00 0 02247         STO P+1
00352  0601 00 0 02251         STO P+3

00353  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00354  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00355  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 5 RIGHT AND 4 LEFT

00356  0534 00 3 02237  CR10   LXA ROWDY,3    L DELAY CONSTANT TO XR
00357  2 00001 1 00357         TIX *,1,1      DELAY 4 MS

00360  0544 00 0 02274         LCHA CW1+11    5 R CONTROL WORD TO BUFFER

00361  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00362  0074 00 4 01142         TSX LINE,4     YES
00363  0020 00 0 00375         TRA CR11       NO

                                    SAVE CARD LOCATIONS TESTING
```

```
00364  0600 00 0 02246         STZ P
00365  0600 00 0 02250         STZ P+2
00366  0500 00 0 02355         CLA KK+4       L -5
00367  0601 00 0 02247         STO P+1
00370  0402 00 0 02361         SUB KK+8       L -1
00371  0601 00 0 02251         STO P+3        STORE A -4

00372  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00373  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00374  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 4 LEFT AND 4 RIGHT

00375  0534 00 3 02236  CR11   LXA WORDY,3    L DELAY CONSTANT TO XR
00376  2 00001 1 00376         TIX *,1,1      DELAY 300 USEC

00377  0544 00 0 02275         LCHA CW1+12    3 L CONTROL WORD TO BUFFER

00400  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00401  0074 00 4 01142         TSX LINE,4     YES
00402  0020 00 0 00413         TRA CR12       NO

                                    SAVE CARD LOCATIONS TESTING

00403  0600 00 0 02246         STZ P
00404  0600 00 0 02250         STZ P+2
00405  0500 00 0 02356         CLA KK+5       L -4
00406  0601 00 0 02247         STO P+1
00407  0601 00 0 02251         STO P+3

00410  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00411  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00412  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 4 RIGHT AND 3 LEFT

00413  0534 00 3 02237  CR12   LXA ROWDY,3    L DELAY CONSTANT TO XR
00414  2 00001 1 00414         TIX *,1,1      DELAY 4 MS

00415  0544 00 0 02276         LCHA CW1+13    3 R CONTROL WORD TO BUFFER

00416  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00417  0074 00 4 01142         TSX LINE,4     YES
00420  0020 00 0 00432         TRA CR13       NO

                                    SAVE CARD LOCATIONS TESTING

00421  0600 00 0 02246         STZ P
00422  0600 00 0 02250         STZ P+2
00423  0500 00 0 02356         CLA KK+5       L -4
00424  0601 00 0 02247         STO P+1
00425  0402 00 0 02361         SUB KK+8       L -1
00426  0601 00 0 02251         STO P+3        STORE A -3

00427  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
```

```
00430  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00431  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 3 LEFT AND 3 RIGHT

00432  0534 00 3 02236  CR13   LXA WORDY,3    L DELAY CONSTANT TO XR
00433  2 00001 1 00433         TIX *,1,1      DELAY 300 USEC

00434  0544 00 0 02277         LCHA CW1+14    2 L CONTROL WORD TO BUFFER (2277)

00435  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00436  0074 00 4 01142         TSX LINE,4     YES
00437  0020 00 0 00450         TRA CR14       NO

                                    SAVE CARD LOCATIONS TESTING

00440  0600 00 0 02246         STZ P
00441  0600 00 0 02250         STZ P+2
00442  0500 00 0 02357         CLA KK+6       L -3
00443  0601 00 0 02247         STO P+1
00444  0601 00 0 02251         STO P+3

00445  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00446  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00447  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 3 RIGHT AND 2 LEFT

00450  0534 00 3 02237  CR14   LXA ROWDY,3    L DELAY CONSTANT TO XR
00451  2 00001 1 00451         TIX *,1,1      DELAY 4 MS

00452  0544 00 0 02300         LCHA CW1+15    3 R CONTROL WORD TO BUFFER

00453  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00454  0074 00 4 01142         TSX LINE,4     YES
00455  0020 00 0 00467         TRA CR15       NO

                                    SAVE CARD LOCATIONS TESTING

00456  0600 00 0 02246         STZ P
00457  0600 00 0 02250         STZ P+2
00460  0500 00 0 02357         CLA KK+6       L -3
00461  0601 00 0 02247         STO P+1
00462  0402 00 0 02361         SUB KK+8       L -1
00463  0601 00 0 02251         STO P+3        STORE A -2

00464  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00465  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00466  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 2 LEFT AND 2 RIGHT

00467  0534 00 3 02236  CR15   LXA WORDY,3    L DELAY CONSTANT TO XR
00470  2 00001 1 00470         TIX *,1,1      DELAY 4 MS

00471  0544 00 0 02301         LCHA CW1+16    1 L CONTROL WORD TO BUFFER
```

```
00472  0760 00 0 00005         IOT             IS I/O CHECK LIGHT ON
00473  0074 00 4 01142         TSX LINE,4      YES
00474  0020 00 0 00505         TRA CR16        NO

                                    SAVE CARD LOCATIONS TESTING

00475  0600 00 0 02246         STZ P
00476  0600 00 0 02250         STZ P+2
00477  0500 00 0 02360         CLA KK+7        L -2
00500  0601 00 0 02247         STO P+1
00501  0601 00 0 02251         STO P+3

00502  0074 00 4 01152         TSX VALUE,4     TO TIMING VALUE ROUTINE
00503  0074 00 4 01150         TSX SAVE,4      TO SAVE XRB ROUTINE
00504  0020 00 0 01244         TRA PR          TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 2 RIGHT AND 1 LEFT

00505  0534 00 3 02237  CR16   LXA ROWDY,3     L DELAY CONSTANT TO XR
00506  2 00001 1 00506         TIX *,1,1       DELAY 300 USEC

00507  0544 00 0 02302         LCHA CW1+17     1 R CONTROL WORD TO BUFFER

00510  0760 00 0 00005         IOT             IS I/O CHECK LIGHT ON
00511  0074 00 4 01142         TSX LINE,4      YES
00512  0020 00 0 00524         TRA CR17        NO

                                    SAVE CARD LOCATIONS TESTING

00513  0600 00 0 02246         STZ P
00514  0600 00 0 02250         STZ P+2
00515  0500 00 0 02360         CLA KK+7        L -2
00516  0601 00 0 02247         STO P+1
00517  0402 00 0 02361         SUB KK+8        L -1
00520  0601 00 0 02251         STO P+3         STORE A -1

00521  0074 00 4 01152         TSX VALUE,4     TO TIMING VALUE ROUTINE
00522  0074 00 4 01150         TSX SAVE,4      TO SAVE XRB ROUTINE
00523  0020 00 0 01244         TRA PR          TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 1 LEFT AND 1 RIGHT

00524  0534 00 3 02236  CR17   LXA WORDY,3     L DELAY CONSTANT TO XR
00525  2 00001 1 00525         TIX *,1,1       DELAY 300 USEC

00526  0544 00 0 02303         LCHA CW1+18     0 L CONTROL WORD TO BUFFER

00527  0760 00 0 00005         IOT             IS I/O CHECK LIGHT ON
00530  0074 00 4 01142         TSX LINE,4      YES
00531  0020 00 0 00542         TRA CR18        NO

                                    SAVE CARD LOCATIONS TESTING

00532  0600 00 0 02246         STZ P
00533  0600 00 0 02250         STZ P+2
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00534  0500 00 0 02361         CLA KK+8       L -1
00535  0601 00 0 02247         STO P+1
00536  0601 00 0 02251         STO P+3

00537  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00540  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00541  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 1 RIGHT AND 0 LEFT

00542  0534 00 3 02237  CR18   LXA ROWDY,3    L DELAY CONSTANT TO XR
00543  2 00001 1 00543         TIX *,1,1      DELAY 4 MS

00544  0544 00 0 02304         LCHA CW1+19    0 R CONTROL WORD TO BUFFER

00545  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00546  0074 00 4 01142         TSX LINE,4     YES
00547  0020 00 0 00561         TRA CR19       NO

                                    SAVE CARD LOCATIONS TESTING

00550  0600 00 0 02246         STZ P
00551  0600 00 0 02250         STZ P+2
00552  0500 00 0 02361         CLA KK+8       L -1
00553  0601 00 0 02247         STO P+1
00554  0402 00 0 02361         SUB KK+8       L -1
00555  0601 00 0 02251         STO P+3        STORE A -0

00556  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00557  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00560  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 0 LEFT AND 0 RIGHT

00561  0534 00 3 02236  CR19   LXA WORDY,3    L DELAY CONSTANT TO XR
00562  2 00001 1 00562         TIX *,1,1      DELAY 300 USEC

00563  0544 00 0 02305         LCHA CW1+20    11L CONTROL WORD TO BUFFER

00564  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00565  0074 00 4 01142         TSX LINE,4     YES
00566  0020 00 0 00577         TRA CR20       NO

                                    SAVE CARD LOCATIONS TESTING

00567  0600 00 0 02246         STZ P
00570  0600 00 0 02250         STZ P+2
00571  0500 00 0 02362         CLA KK+9       L -0
00572  0601 00 0 02247         STO P+1
00573  0601 00 0 02251         STO P+3

00574  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00575  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00576  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 0 RIGHT AND 11 LEFT
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00577  0534 00 3 02237  CR20   LXA ROWDY,3    L DELAY CONSTANT TO XR
00600  2 00001 1 00600         TIX *,1,1      DELAY 4 MS

00601  0544 00 0 02306         LCHA CW1+21    11R CONTROL WORD TO BUFFER

00602  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00603  0074 00 4 01142         TSX LINE,4     YES
00604  0020 00 0 00616         TRA CR21       NO

                                    SAVE CARD LOCATIONS TESTING

00605  0600 00 0 02246         STZ P
00606  0500 00 0 02362         CLA KK+9       L -0
00607  0601 00 0 02247         STO P+1
00610  0500 00 0 02361         CLA KK+8       L -1
00611  0601 00 0 02250         STO P+2
00612  0601 00 0 02251         STO P+3

00613  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00614  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00615  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 11 LEFT AND 12 RIGHT

00616  0534 00 3 02236  CR21   LXA WORDY,3    L DELAY CONSTANT TO XR
00617  2 00001 1 00617         TIX *,1,1      DELAY 300 USEC

00620  0544 00 0 02307         LCHA CW1+22    12L CONTROL WORD TO BUFFER

00621  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00622  0074 00 4 01142         TSX LINE,4     YES
00623  0020 00 0 00634         TRA CR22       NO

                                    SAVE CARD LOCATIONS TESTING

00624  0500 00 0 02361         CLA KK+8       L -1
00625  0601 00 0 02246         STO P
00626  0601 00 0 02247         STO P+1
00627  0601 00 0 02250         STO P+2
00630  0601 00 0 02251         STO P+3

00631  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00632  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00633  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 11 RIGHT AND 12 LEFT

00634  0760 00 0 00004  CR22   ENK            KEYS TO MQ
00635  0131 00 0 00000         XCA            MQ TO ACCUMULATOR
00636  0044 00 0 00000         PAI            ACCUMULATOR TO INDICATORS
00637 -0056 00  100000         LNT 100000     CHECK TIME BETWEEN WORDS
00640  0020 00 0 00650         TRA CR22A      NO
00641  0020 00 0 00642         TRA *+1        YES

00642  0534 00 3 02240         LXA ROWD1,3    L DELAY CONSTANT TO XR
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00643  2 00001 1 00643         TIX *,1,1      DELAY 4 MS

00644  0544 00 0 02310         LCHA CW1+23    12R CONTROL WORD TO BUFFER
                                              WITH S AND 2 TRIGGER ON

00645  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00646  0020 00 0 00654         TRA CR22A+4    YES
00647  0020 00 0 00670         TRA CR23       NO

00650  0534 00 3 02240  CR22A  LXA ROWD1,3    L DELAY CONSTANT TO XR
00651  2 00001 1 00651         TIX *,1,1      DELAY 4MS

00652  0544 00 0 02311         LCHA CW1+24    12R CONTROL WORD TO BUFFER
                                              WITH 1 AND 2 TRIGGER ON

00653  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00654  0074 00 4 01141         TSX LINE-1,4   YES
00655  0020 00 0 00710         TRA CR24       NO

                                    SAVE CARD LOCATIONS TESTING

00656  0500 00 0 02361         CLA KK+8       L -1
00657  0601 00 0 02246         STO P
00660  0601 00 0 02247         STO P+1
00661  0601 00 0 02250         STO P+2
00662  0400 00 0 02361         ADD KK+8       L -1
00663  0601 00 0 02251         STO P+3        STORE A -2

00664  0500 00 0 02341         CLA K0+12      L +374
00665  0601 00 0 02252         STO P+4

00666  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00667  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

*CHECK TIMING BETWEEN 12 LEFT AND 12 RIGHT

00670  0534 00 3 02236  CR23   LXA WORDY,3    L DELAY CONSTANT TO XR
00671  2 00001 1 00671         TIX *,1,1      DELAY 300 USEC

00672  0544 00 0 02261         LCHA CW1       WITH S AND 2 TRIGGERS ON 9
                                              LEFT CONTROL WORD TO BUFFER
                                              PREVENTING DISCONNECT OF CR

00673  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
00674  0074 00 4 01142         TSX LINE,4     YES
00675  0020 00 0 00710         TRA CR24       NO

                                    SAVE CARD LOCATIONS TESTING

00676  0500 00 0 02361         CLA KK+8       L -1
00677  0601 00 0 02246         STO P
00700  0601 00 0 02250         STO P+2
00701  0400 00 0 02361         ADD KK+8       L -1
00702  0601 00 0 02247         STO P+1        STORE A -2
00703  0601 00 0 02251         STO P+3
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00704  0074 00 4 01152         TSX VALUE,4    TO TIMING VALUE ROUTINE
00705  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
00706  0020 00 0 01244         TRA PR         TO TIMING PRINT ROUTINE

00707  512324216060            BCD 1RCDA      CHECK INFORMATION
                                               READ FROM CARD
00710  0534 00 1 02365  CR24   LXA K,1        L 30 IN XRA
00711  0534 00 2 02255         LXA SX+1,2     RECORD NUMBER TO XRB
00712  0500 00 1 02204         CLA CI+24,1    WORD READ FROM CARD
00713  0560 00 1 02234         LDQ CBI+24,1   WORD IN STORAGE
00714  0340 00 1 02234         CAS CBI+24,1
00715  0020 00 0 00717         TRA *+2        ERROR
00716  0020 00 0 00723         TRA *+5        OK
00717  0760 00 0 00141         SLN 1          TURN ON SENSE LIGHT 1
00720  0074 00 4 06502         TSX ERROR-2,4  TO ERROR ROUTINE
00721  0761 00 0 00710         NOP CR24

00722  0020 00 0 00000         TRA 0          IF ERROR, SELECT CARD READER

00723  2 00004 1 00712         TIX CR24+2,1,4 CHECK EVERY FOURTH WORD
00724 -2 00001 2 01162         TNX FILE,2,1   REDUCE RECORD COUNT UNTIL
                                               LAST CARD HAS BEEN READ

00725  0634 00 2 02255         SXA SX+1,2     SAVE RECORD COUNT

00726  0074 00 4 00730         TSX CLEAR,4    CLEAR CARD IMAGE AREA
00727  0020 00 0 00734         TRA CLEAR+4

00730  0534 00 1 02365  CLEAR  LXA K,1        L 30 IN XRA
00731  0600 00 1 02204         STZ CI+24,1    CLEAR CARD
00732  2 00001 1 00731         TIX *-1,1,1    IMAGE AREA
00733  0020 00 4 00001         TRA 1,4

*INCREMENT DELAY CONSTANTS TO INCREASE DELAYS


00734 -0056 00  200000         LNT 200000     INCREASE DELAY BETWEEN
                                               SELECT AND RESET LD CHAN

00735  0020 00 0 00744         TRA CR25       NO
00736  0500 00 0 02235         CLA SELDY      ADD
00737  0400 00 0 02332         ADD K0+5       ABOUT
00740  0601 00 0 02235         STO SELDY      1 MS

*DELAY ABOUT 10 MS AFTER 12 RIGHT TIME NO LAOD CHANNEL WAITING
*DISCONNECT AND RESELECT THE CARD READER

00741  0774 00 1 00520         AXT 336,1      L 520 IN XRA
00742  2 00001 1 00742         TIX *,1,1      DELAY
00743  0020 00 0 00137         TRA CR

00744 -0056 00  100000  CR25   LNT 100000     INCREASE DELAY
                                               BETWEEN WORDS

00745  0020 00 0 00756         TRA CR26       NO
00746  0500 00 0 02236         CLA WORDY      ADD
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00747  0400 00 0 02363         ADD KK+10       24
00750  0601 00 0 02236         STO WORDY       USEC
00751 -0320 00 0 00000         ANA             36 USEC DELAY
00752  0774 00 1 03157         AXT 1647,1      L 3157 IN XRA
00753  2 00001 1 00753         TIX *,1,1       DELAY 42 MS

00754  0544 00 0 02262         LCHA CW1+1      9 R NEXT RECORD TO BUFFER

00755  0020 00 0 00147         TRA CR+8        READ NEXT RECORD

00756 -0056 00  040000  CR26   LNT 40000       INCREASE DELAY
                                                BETWEEN ROWS

00757  0020 00 0 00777         TRA CR27        NO
00760  0500 00 0 02237         CLA ROWDY       ADD
00761  0402 00 0 02355         SUB KK+4
00762  0601 00 0 02237         STO ROWDY       ABOUT
00763  0500 00 0 02240         CLA ROWD1
00764  0402 00 0 02355         SUB KK+4        1/10 MS
00765  0601 00 0 02240         STO ROWD1
00766 -0320 00 0 00000         ANA             36 USEC DELAY
00767  0774 00 1 00014         AXT 12,1        L 14 IN XRA
00770  2 00001 1 00770         TIX *,1,1       DELAY 2.5 MS FROM 12 R TIME

*AT EOR TIME-224 ON INDEX, LOAD CHANNEL INSTR FOR 9L OF NEXT RECORD

00771  0544 00 0 02261         LCHA CW1        9L CONTROL WORD TO BUFFER

00772 -0320 00 0 00000         ANA             36 USEC DELAY
00773  0774 00 1 03322         AXT 1746,1      L 3322 IN XRA
00774  2 00001 1 00774         TIX *,1,1       DELAY 42 MS

00775  0544 00 0 02262         LCHA CW1+1      9 R NEXT RECORD TO BUFFER

00776  0020 00 0 00147         TRA CR+8        READ NEXT RECORD

*CHECK TIMING BETWEEN RECORDS FROM EOR TIME TO 9L TIME

00777 -0056 00  020000  CR27   LNT 20000       INCREASE DELAY
                                                BETWEEN RECORDS

01000  0020 00 0 01025         TRA CR28        NO
01001 -0320 00 0 00000         ANA             36 USEC DELAY
01002  0774 00 1 00017         AXT 15,1        L 17 IN XRA
01003  2 00001 1 01003         TIX  *,1,1      DELAY 2.5 MS FROM 12 R TIME

*AT EOR TIME-224 ON INDEX. LOAD CHANNEL INSTR FOR 9L OF NEXT RECORD

01004  0544 00 0 02261         LCHA CW1        9L CONTROL WORD TO BUFFER

*COMMENCE WITH 42 MS DELAY THRU LOAD CHANNEL INSTRUCTION

01005  0500 00 0 02241         CLA CONDY       ADD
01006  0400 00 0 02332         ADD K0+5        ABOUT
01007  0601 00 0 02241         STO CONDY       1 MS
01010  0774 00 1 03244         AXT 1700,1      L 3244 IN XRA
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01011  2 00001 1 01011         TIX *,1,1      DELAY
01012 -0320 00 0 00000         ANA            36 USEC DELAY
01013  0534 00 3 02241         LXA CONDY,3    L DELAY CONSTANT TO XR
01014  2 00001 1 01014         TIX *,1,1      DELAY

01015  0544 00 0 02262         LCHA CW1+1     9 R NEXT RECORD TO BUFFER


01016  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
01017  0074 00 4 01142         TSX LINE,4     YES
01020  0020 00 0 00154         TRA CR1

01021  0500 00 0 02337         CLA K0+10      L +120040
01022  0601 00 0 02252         STO P+4

01023  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
01024  0020 00 0 01300         TRA PR1

*CHECK TIMING BETWEEN 12 RIGHT AND END OF RECORD

01025 -0056 00  010000  CR28   LNT 10000      INCREASE DELAY BETWEEN
                                              12 RIGHT AND END OF RECORD

01026  0020 00 0 01052         TRA CR29       NO
01027  0500 00 0 02242         CLA EORDY      ADD
01030  0402 00 0 02355         SUB KK+4       ABOUT
01031  0601 00 0 02242         STO EORDY      1/10 MS
01032 -0320 00 0 00000         ANA            36 USEC DELAY
01033  0534 00 3 02242         LXA EORDY,3    L DELAY CONSTANT TO XR
01034  2 00001 1 01034         TIX  *,1,1     DELAY 2.5 MS FROM 12 R TIME

01035  0544 00 0 02261         LCHA CW1       9L CONTROL WORD TO BUFFER

01036  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
01037  0074 00 4 01142         TSX LINE,4     YES
01040  0020 00 0 01045         TRA CR28A      NO

01041  0500 00 0 02333         CLA K0+6       L +5230
01042  0601 00 0 02252         STO P+4

01043  0074 00 4 01150         TSX SAVE,4     TO SAVE XRB ROUTINE
01044  0020 00 0 01300         TRA PR1        TO TIMING PRINT ROUTINE

01045  0774 00 1 03320  CR28A  AXT 1744,1     L 3320 IN XRA
01046  2 00001 1 01046         TIX  *,1,1     DELAY 42 MS
01047 -0320 00 0 00000         ANA            36 USEC DELAY

01050  0544 00 0 02262         LCHA CW1+1     9R CONTROL WORD TO BUFFER

01051  0020 00 0 00147         TRA CR+8

*CHECK TIMING BETWEEN 12 RIGHT TIME AND SELECT

01052 -0056 00  004000  CR29   LNT 4000       INCREASE DELAY BETWEEN
                                              12 RIGHT AND SELECT
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```
01053  0020 00 0 01112         TRA CR30       NO

01054  0762 00 0 01321         RCDA           SELECT CARD READER

01055  0540 00 0 02321         RCHA CW9       9 LEFT THRU 12 RIGHT
                                              CONTROL WORDS

01056  0060 00 0 01056         TCOA *         READ ENTIRE CARD

01057  0074 00 4 01155         TSX REDUC,4    TO REDUCE RECORD COUNT

01060  0774 00 1 01377         AXT 767,1      L 1377 IN XRA
01061  1 00001 1 01062         TXI *+1,1,1    XRA NOW 1400
01062  0534 00 2 02243         LXA KONDY,2    L DELAY CONSTANT TO XRB
01063  1 00016 2 01064         TXI *+1,2,14   ADD 1 MS DELAY
01064  0634 00 2 02243         SXA KONDY,2    SAVE CONSTANT

01065  2 00001 2 01071  CR29B  TIX *+4,2,1      CHECK INCREASED
01066 -3 00000 2 01072         TXL *+4,2,0      TIMING DELAY
                                                BETWEEN 12 RIGHT
01067  0762 00 0 01321         RCDA             AND SELECT WHILE
                                                KEEPING TIMING
01070  1 77777 2 01072         TXI *+2,2,32767 DELAY BETWEEN 12
01071  0761 00 0 00000         NOP            RIGHT AND 9 LEFT
01072  2 00001 1 01065         TIX CR29B,1,1    CONSTANT

01073  0540 00 0 02322         RCHA CW10      9 LEFT THRU 12 RIGHT
                                              CONTROL WORDS

01074  0060 00 0 01074         TCOA *         READ ENTIRE CARD

01075  0534 00 2 02243         LXA KONDY,2    L DELAY VALUE IN XRB

01076  0760 00 0 00005         IOT            IS I/O CHECK LIGHT ON
01077  0020 00 0 00710         TRA CR24       YES
01100  0074 00 4 01142         TSX LINE,4     NO
01101  0761 00 0 00000         NOP

*CONVERT 6 CYCLE DELAY CONSTANT TO 2 CYCLE

01102  0560 00 0 02243         LDQ KONDY      6 CYCLE CONSTANT
01103  0200 00 0 02357         MPY KK+6       L -3
01104  0131 00 0 00000         XCA            PRODUCT TO ACCUMULATOR
01105  0760 00 0 00002         CHS
01106  0601 00 0 02254         STO SX         SAVE CONVERTED CONSTANT

01107  0500 00 0 02343         CLA K0+14      L +60
01110  0601 00 0 02252         STO P+4

01111  0020 00 0 01300         TRA PR1        TO TIMING PRINT ROUTINE

*TEST SENSE SWITCH 5 TO CHECK CARD READER RELIABILITY
*READING WITH NORMAL DELAYS OR WITH VARIABLE DELAYS
*CAUSING CARD READER TO INTERMITTENTLY LATCH UP

01112  0760 00 0 00165  CR30   SWT 5          TEST SENSE SWITCH 5
```

```
01113  0020 00 0 01126         TRA *+11       NORMAL DELAY
01114  0500 00 0 02245         CLA NUM
01115  0400 00 0 02363         ADD KK+10      L +1
01116  0601 00 0 02245         STO NUM        SAVE
01117  0621 00 0 01120         STA *+1
01120  0500 00 0 00000         CLA
01121  0734 00 1 00000         PAX 0,1        ADDRESS TO XRA
01122  2 00001 1 01122         TIX *,1,1      DELAY
01123  0774 00 1 00630         AXT 408,1      L 630
01124  2 00001 1 01124         TIX *,1,1      DELAY
01125  0020 00 0 00137         TRA CR         TO SELECT CARD READER

01126  0774 00 1 00006         AXT 6,1        L 6 XRA
01127  2 00001 1 01127         TIX  *,1,1     DELAY 2.5 MIS FROM 12 R TIME
01130 -0320 00 0 00000         ANA            36 USE DELAY

*AT EOR TIME-224 ON INDEX, LOAD CHANNEL INSTR FOR 9L OF NEXT RECORD

01131  0544 00 0 02261         LCHA CW1       9L CONTROL WORD TO BUFFER

01132 -0320 00 0 00000         ANA            36 USEC DELAY
01133  0774 00 1 03322         AXT 1746,1     L 3322 IN XRA
01134  2 00001 1 01134         TIX  *,1,1     DELAY 42 MS

01135  0544 00 0 02262         LCHA CW1+1     9R CONTROL WORD TO BUFFER

01136  0020 00 0 00147         TRA CR+8

*CHECK FOR PRINTER ON LINE

01137  0760 00 0 00142         SLN 2          TURN ON SENSE LIGHT 2
01140  0020 00 0 01142         TRA LINE
01141  0760 00 0 00143         SLN 3          TURN ON SENSE LIGHT 3
01142  0760 00 0 00163  LINE   SWT 3          TEST SENSE SWITCH 3
01143  0020 00 4 00002         TRA 2,4        YES-PRINT
01144  0074 00 4 01150         TSX SAVE,4
01145 -0056 00  010000         LNT 10000      INDICATOR POSITION 5 ON
01146  0000 00 0 00110         HTR TIME-1
01147  0000 00 0 00111         HTR TIME

01150  0634 00 2 02254  SAVE   SXA SX,2       SAVE XRB
01151  0020 00 4 00001         TRA 1,4

01152  0500 00 0 02342  VALUE  CLA K0+13      L +154
01153  0601 00 0 02252         STO P+4        SAVE TIMING VALUE
01154  0020 00 4 00001         TRA 1,4

01155  0534 00 2 02255  REDUC  LXA SX+1,2     L RECORD COUNT TO XRB
01156 -2 00001 2 01162         TNX FILE,2,1   REDUCE RECORD COUNT UNTIL
                                              LAST CARD HAS BEEN READ
01157  0634 00 2 02255         SXA SX+1,2     SAVE RECORD COUNT
01160  0020 00 4 00001         TRA 1,4

01161  632526216060            BCD 1TEFA      CHECK FOR FALSE EOF

01162  0030 00 0 01164  FILE   TEFA *+2       NEVER AN EOF HERE
```

```
                                                    SHOULD NOT TRANSFER
01163  0020 00 0 01166          TRA *+3             OK-NO TRANSFER
01164  0074 00 4 06502          TSX ERROR-2,4
01165 -3 00000 4 01162          TXL FILE,4

01166  0760 00 0 00163          SWT 3               IS PRINTER ON LINE
01167  0074 00 4 01213          TSX PASS,4          YES-PRINT PASS COMPLETE
01170  0500 00 0 05503          CLA IOCT            L NO OF BUFFERS
01171  0402 00 0 02363          SUB KK+10           L +1
01172  0601 00 0 05503          STO IOCT            ALL CARD READERS
                                                    HAVE BEEN CHECKED
01173  0100 00 0 01175          TZE *+2             YES
01174  0020 00 0 00037          TRA TCTX            NO-GO CHECK OTHERS

01175  0500 00 0 02431          CLA IOCTL           L CONTROL WORD
01176  0601 00 0 05500          STO CTRL1           FOR CHANNEL A
01177  0600 00 0 05501          STZ CTRL2           AND CLEAR CONTROL
01200  0600 00 0 05502          STZ CTRL3           WORDS FOR CHANNEL C,E
01201  0020 00 0 00037          TRA TCTX            ADJUST TEST FOR CHAN A

01202  0760 00 0 00166  SEN6    SWT 6               TEST SENSE SWITCH 6
01203  0020 00 0 01207          TRA *+4             TO LOAD NEXT PROGRAM

*BYPASS CARD READER SPEED TEST AFTER FIRST PASS

01204  0500 00 0 02433          CLA IOCTL+2         L TRA TIME
01205  0601 00 0 00047          STO TCTX+8
01206  0020 00 0 00032          TRA MP              REPEAT TEST

*RUN OUT CARDS IN READER AND RELOAD CARDS      TEST AND BLANK CARDS
*IN HOPPER AND READY CARD READER.SET KEYS AS PER INSTRUCTIONS
*AFTER LOCATION 00032 AND PUSH START.

01207  0762 00 0 01321          RCDA                LOAD
01210  0540 00 0 02256          RCHA CWA            THE
01211  0544 00 0 00000          LCHA 0              NEXT
01212  0020 00 0 00001          TRA 1               PROGRAM

01213  0441 00 0 00137  PASS    LDI CR              SELECT INSTR TO IND
01214  0056 00  012311          RNT 5321,0          TESTING ON CHANNEL E
01215  0020 00 0 01217          TRA *+2             NO
01216  0020 00 0 01230          TRA FIX             YES
01217  0056 00  006371          RNT 3321,0          TESTING ON CHANNEL C
01220  0020 00 0 01222          TRA *+2             NO
01221  0020 00 0 01236          TRA FIX1            YES

*ADJUST PASS COMPLETE PRINT IMAGE FOR CHANNEL A

01222 -0500 00 0 02432          CAL IOCTL+1         L 777777074000
01223  0320 00 0 02141          ANS IMAG8+13        ADJUST 3R ROW
01224  0320 00 0 02135          ANS IMAG8+9         ADJUST 5R ROW
01225 -0500 00 0 02425          CAL BIT+7           L 000000200000
01226 -0602 00 0 02145          ORS IMAG8+17        ADJUST 1R ROW
01227  0020 00 0 01540          TRA PI8

*ADJUST PASS COMPLETE PRINT IMAGE FOR CHANNEL E
```

```
01230 -0500 00 0 02432  FIX    CAL IOCTL+1    L 777777074000
01231  0320 00 0 02141         ANS IMAG8+13   ADJUST 3R ROW
01232  0320 00 0 02145         ANS IMAG8+17   ADJUST 5R ROW
01233 -0500 00 0 02425         CAL BIT+7      L 000000200000
01234 -0602 00 0 02135         ORS IMAG8+9    ADJUST 5R ROW
01235  0020 00 0 01540         TRA PI8

*ADJUST PASS COMPLETE PRINT IMAGE FOR CHANNEL E

01236 -0500 00 0 02432  FIX1   CAL IOCTL+1    L 777777074000
01237  0320 00 0 02135         ANS IMAG8+9    ADJUST 5R ROW
01240  0320 00 0 02145         ANS IMAG8+17   ADJUST 1R ROW
01241 -0500 00 0 02425         CAL BIT+7      L 000000200000
01242 -0602 00 0 02141         ORS IMAG8+13   ADJUST 3R ROW
01243  0020 00 0 01540         TRA PI8

*ADJUST CARD LOCATION INSERTION ROUTINE

01244  0500 00 0 02373  PR     CLA K1+1       L HTR P
01245  0621 00 0 01266         STA PRA1+1

01246 -0056 00  100000         LNT 100000     INDICATOR POSITION 2 ON
01247  0020 00 0 01255         TRA *+6        NO
01250  0500 00 0 02375         CLA K1+3       L ORS IMAG1+19,4
01251  0601 00 0 01273         STO PRA1+6     INSTR FOR INDICATOR 2 ON
01252 -0500 00 0 02402         CAL K1+8       L ANS IMAG1+21,1
01253  0601 00 0 01263         STO PRA+2      INSTR FOR INDICATOR 2 ON
01254  0020 00 0 01261         TRA PRA

01255  0500 00 0 02376         CLA K1+4       L ORS IMAG2+19,4
01256  0601 00 0 01273         STO PRA1+6     INSTR FOR INDICATOR 3 ON
01257  0500 00 0 02403         CLA K1+9       L ANS IMAG2+21,1
01260  0601 00 0 01263         STO PRA+2      INSTR FOR INDICATOR 3 ON

*MASK CARD IN CORRECT IMAGE

01261  0534 00 1 02366  PRA    LXA K+1,1      L 24 IN XRA
01262 -0500 00 0 02426         CAL MASK       L 477177777777
01263 +000000000000            OCT            MASK CARD LOCATIONS
01264  2 00002 1 01263         TIX *-1,1,2    IN PRINT IMAGE

*INSERT CARD LOCATIONS IN PRINT IMAGE

01265  0534 00 1 02356  PRA1   LXA KK+5,1     L 4 IN XRA
01266  0500 00 0 00000         CLA            L STORED VALUE
01267  0120 00 0 01274         TPL PRA2       SKIP LOCATION INSERTION
01270  0767 00 0 00001         ALS 1          DOUBLE VALUE
01271  0734 00 4 00000         PAX 0,4        PUT ACCUMULATOR IN XRC
01272  0500 00 1 02422         CLA BIT+4,1    L LOCATION BIT
01273 +000000000000            OCT            INSERT PRINT IMAGE
01274  0500 00 0 01266  PRA2   CLA PRA1+1     L CLA INSTR
01275  0400 00 0 02363         ADD KK+10      L +1
01276  0621 00 0 01266         STA PRA1+1     STORE NEXT ADDRESS
01277  2 00001 1 01266         TIX PRA1+1,1,1
```

```
                                    CONVERT XRB VALUE TO USEC IN OCTAL

01300  0560 00 0 02254  PR1    LDQ SX          L SAVED XRB IN MQ
01301  0200 00 0 02365         MPY K           MPY BY OCT 30,EQU USEC
01302  0131 00 0 00000         XCA             PUT PRODUCT IN ACC
01303  0400 00 0 02252         ADD P+4
01304  0601 00 0 02253         STO P+5         TOTAL USEC

01305 -0056 00  100000         LNT 100000      INDICATOR POSITION 2 ON
01306  0020 00 0 01310         TRA *+2         NO
01307  0020 00 0 01334         TRA PR2A

                                    CONVERT USEC TO MILLISEC

01310 -0056 00  002000         LNT 2000        INDICATOR POSITION 7 ON
01311  0020 00 0 01313         TRA *+2         NO
01312  0020 00 0 01316         TRA *+4         YES

01313  0500 00 0 02345         CLA K0+16       L HTR K0+9
01314  0621 00 0 01322         STA PR1A
01315  0020 00 0 01320         TRA *+3

01316  0500 00 0 02411         CLA K1+15       L HTR K+4
01317  0621 00 0 01322         STA PR1A

01320  0560 00 0 02253         LDQ P+5         PUT USEC IN MQ
01321  0500 00 0 02364         CLA KK+11       CLEAR ACCUMULATOR

*DIV BY DEC 100 EQU MS AND TENTHS-DIV BY DEC 1000 EQU MS

01322  0221 00 0 00000  PR1A   DVP
01323 -0600 00 0 02253         STQ P+5

*TEST INDICATORS FOR CORRECT PRINT IMAGE

01324 -0056 00  200000  PR2    LNT 200000      INDICATOR POSITON 1 ON
01325  0020 00 0 01342         TRA PR2B        NO
01326  0500 00 0 02401         CLA K1+7        L ANS IMAG+21,1
01327  0601 00 0 01423         STO PR4A+1      INSTR FOR INDICATOR 1 ON
01330  0500 00 0 02374         CLA K1+2        L ORS IMAG+19,4
01331  0601 00 0 01464         STO PR6         INSTR FOR INDICATOR 1 ON
01332  0534 00 2 02354         LXA KK+3,2      L 6 IN XRB
01333  0020 00 0 01411         TRA PR4

01334  0500 00 0 02402  PR2A   CLA K1+8        L ANS IMAG1+21,1
01335  0601 00 0 01423         STO PR4A+1      INSTR FOR INDICATOR 2 ON
01336  0500 00 0 02375         CLA K1+3        L ORS IMAG1+19,4
01337  0601 00 0 01464         STO PR6         INSTR FOR INDICATOR 2 ON
01340  0534 00 2 02355         LXA KK+4,2      L 5 IN XRB
01341  0020 00 0 01411         TRA PR4

01342 -0056 00  040000  PR2B   LNT 40000       INDICATOR POSITION 3 ON
01343  0020 00 0 01352         TRA PR2C        NO
01344  0500 00 0 02403         CLA K1+9        L ANS IMAG2+21,1
01345  0601 00 0 01423         STO PR4A+1      INSTR FOR INDICATOR 3 ON
01346  0500 00 0 02376         CLA K1+4        L ORS IMAG2+19,4
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01347  0601 00 0 01464         STO PR6        INSTR FOR INDICATOR 3 ON
01350  0534 00 2 02356         LXA KK+5,2     L 4 IN XRB
01351  0020 00 0 01411         TRA PR4

01352 -0056 00  020000  PR2C    LNT 20000      INDICATOR POSITION 4 ON
01353  0020 00 0 01362         TRA PR2D       NO
01354  0500 00 0 02404         CLA K1+10      L ANS IMAG3+21,1
01355  0601 00 0 01423         STO PR4A+1     INSTR FOR INDICATOR 4 ON
01356  0500 00 0 02377         CLA K1+5       L ORS IMAG3+19,4
01357  0601 00 0 01464         STO PR6        INSTR FOR INDICATOR 4 ON
01360  0534 00 2 02357         LXA KK+6,2     L 3 IN XRB
01361  0020 00 0 01411         TRA PR4

01362 -0056 00  010000  PR2D    LNT 10000      INDICATOR POSITION 5 ON
01363  0020 00 0 01372         TRA PR2E       NO
01364  0500 00 0 02405         CLA K1+11      L ANS IMAG4+21,1
01365  0601 00 0 01423         STO PR4A+1     INSTR FOR INDICATOR 5 ON
01366  0500 00 0 02400         CLA K1+6       L ORS IMAG4+19,4
01367  0601 00 0 01464         STO PR6        INSTR FOR INDICATOR 5 ON
01370  0534 00 2 02360         LXA KK+7,2     L 2 IN XRB
01371  0020 00 0 01411         TRA PR4

01372 -0056 00  004000  PR2E    LNT 4000       INDICATOR POSITION 6 ON
01373  0020 00 0 01402         TRA PR2G       NO
01374  0500 00 0 02412         CLA K1+16      L ANS IMAG5+21,1
01375  0601 00 0 01423         STO PR4A+1     INSTR FOR INDICATOR 6 ON
01376  0500 00 0 02413         CLA K1+17      L ORS IMAG5+19,4
01377  0601 00 0 01464         STO PR6        INSTR FOR INDICATOR 6 ON
01400  0534 00 2 02361         LXA KK+8,2     L 1 IN XRB
01401  0020 00 0 01411         TRA PR4

01402 -0056 00  002000  PR2G    LNT 2000       INDICATOR POSITION 7 ON
01403  0020 00 0 00000         TRA 0          NO
01404  0500 00 0 02414         CLA K1+18      L ANS IMAG6+21,1
01405  0601 00 0 01423         STO PR4A+1     INSTR FOR INDICATOR 7 ON
01406  0500 00 0 02415         CLA K1+19      L ORS IMAG6+19,4
01407  0601 00 0 01464         STO PR6        INSTR FOR INDICATOR 7 ON
01410  0534 00 2 02362         LXA KK+9,2     L 0 IN XRB

01411  0534 00 1 02366  PR4     LXA K+1,1      L 24 IN XRA
01412 -0056 00  100000         LNT 100000     INDICATOR POSITION 2 ON
01413  0020 00 0 01415         TRA *+2        NO
01414  0020 00 0 01422         TRA PR4A       YES
01415 -0056 00  002000         LNT 2000       INDICATOR POSITION 7 ON
01416  0020 00 0 01420         TRA *+2        NO
01417  0020 00 0 01422         TRA PR4A       YES
01420 -0500 00 0 02427         CAL MASK+1     MASK
01421  0020 00 0 01423         TRA *+2        TIMING
01422 -0500 00 0 02430  PR4A    CAL MASK+2     SECTION
01423 +000000000000            OCT            OF
01424  2 00002 1 01423         TIX *-1,1,2    IMAGE

*CONVERT TIMING TO DECIMAL AND INSERT
*IN THE CORRECT PRINT IMAGE

01425 -0056 00  100000         LNT 100000     INDICATOR POSITION 2 ON
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01426  0020 00 0 01430         TRA *+2         NO
01427  0020 00 0 01443         TRA PR4B        YES
01430 -0056 00  002000         LNT 2000        INDICATOR POSITION 7 ON
01431  0020 00 0 01433         TRA *+2         NO
01432  0020 00 0 01443         TRA PR4B        YES
01433  0500 00 0 02406         CLA K1+12       L HTR KK+5
01434  0621 00 0 01452         STA PR5
01435  0500 00 0 02410         CLA K1+14       L HTR K+2
01436  0621 00 0 01453         STA PR5+1
01437  0621 00 0 01457         STA PR5+5
01440  0500 00 0 02347         CLA K0+18       L CLA BIT+8,1
01441  0601 00 0 01463         STO PR6-1
01442  0020 00 0 01452         TRA PR5

01443  0500 00 0 02407  PR4B   CLA K1+13       L HTR KK+6
01444  0621 00 0 01452         STA PR5
01445  0500 00 0 02411         CLA K1+15       L HTR K+4
01446  0621 00 0 01453         STA PR5+1
01447  0621 00 0 01457         STA PR5+5
01450  0500 00 0 02346         CLA K0+17       L CLA BIT+7,1
01451  0601 00 0 01463         STO PR6-1

01452  0534 00 1 00000  PR5    LXA 0,1         L 4 OR 3 IN XRA
01453  0500 00 0 00000         CLA             L 10 TO 4TH OR 3RD
01454  0402 00 0 02363         SUB KK+10       L +1
01455  0131 00 0 00000         XCA             10 TO POWER MINUS 1 TO MQ
01456  0500 00 0 02253         CLA P+5         TIME IN OCTAL
01457  0221 00 0 00000         DVP             DIV BY 10 TO 4TH OR 3RD
01460  0200 00 0 02335         MPY K0+8        MPY BY 10 DECIMAL
01461  0767 00 0 00001         ALS 1           DOUBLE THE VALUE
01462  0734 00 4 00000         PAX 0,4         PUT ACC IN XRC
01463 +000000000000            OCT             L BIT
01464 +000000000000     PR6    OCT             BIT TO PRINT IMAGE
01465  2 00001 1 01460         TIX PR5+6,1,1

01466  0020 00 2 01475         TRA TT+6,2      TO TRANSFER TABLE

01467  0020 00 0 01476  TT     TRA PI          TIME BETWEEN SEL-RCHA
01470  0020 00 0 01503         TRA PI1         TIME BETWEEN WORDS
01471  0020 00 0 01507         TRA PI2         TIME BETWEEN ROWS
01472  0020 00 0 01513         TRA PI3         TIME BETWEEN RECORDS
01473  0020 00 0 01520         TRA PI4         TIME BETWEEN 12R-EOR
01474  0020 00 0 01524         TRA PI5         TIME BETWEEN 12 R-SELECT
01475  0020 00 0 01530         TRA PI6         CARD READER SPEED

                                   PRINT ROUTINES

01476  0766 00 0 01361  PI     WPRA
01477  0760 00 0 01363         SPRA 3
01500  0766 00 0 01361         WPRA
01501  0540 00 0 02312         RCHA CW2
01502  0020 00 0 00000         TRA 0

01503  0766 00 0 01361  PI1    WPRA
01504  0760 00 0 01363         SPRA 3
01505  0540 00 0 02313         RCHA CW3
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01506  0020 00 0 00000         TRA 0

01507  0766 00 0 01361  PI2    WPRA
01510  0760 00 0 01363         SPRA 3
01511  0540 00 0 02314         RCHA CW4
01512  0020 00 0 00000         TRA 0

01513  0766 00 0 01361  PI3    WPRA
01514  0760 00 0 01363         SPRA 3
01515  0766 00 0 01361         WPRA
01516  0540 00 0 02315         RCHA CW5
01517  0020 00 0 00000         TRA 0

01520  0766 00 0 01361  PI4    WPRA
01521  0760 00 0 01363         SPRA 3
01522  0540 00 0 02316         RCHA CW6
01523  0020 00 0 00111         TRA TIME

01524  0766 00 0 01361  PI5    WPRA
01525  0760 00 0 01363         SPRA 3
01526  0540 00 0 02317         RCHA CW7
01527  0020 00 0 00000         TRA 0

01530  0766 00 0 01361  PI6    WPRA
01531  0760 00 0 01363         SPRA 3
01532  0540 00 0 02320         RCHA CW8
01533  0020 00 0 00000         TRA 0

01534  0766 00 0 01361  PI7    WPRA
01535  0760 00 0 01363         SPRA 3
01536  0540 00 0 02323         RCHA CW11
01537  0020 00 0 00032         TRA MP

01540  0766 00 0 01361  PI8    WPRA           SELECT PRINTER TO PRINT
01541  0760 00 0 01363         SPRA 3
01542  0540 00 0 02324         RCHA CW12      PASS COMPLETE
01543  0020 00 4 00001         TRA 1,4

                                    PRINT IMAGES

01544 +010100000020     IMAG   OCT 10100000020      9 L
01545 +000000000000            OCT 0                9 R
01546 +000000000000            OCT 0                8 L
01547 +010000400000            OCT 10000400000      8 R
01550 +020000000000            OCT 20000000000      7 L
01551 +000000000000            OCT 0                7 R
01552 +000000400000            OCT 400000           6 L
01553 +000000000000            OCT 0                6 R
01554 +000022344212            OCT 22344212         5 L
01555 +003400000000            OCT 3400000000       5 R
01556 +107040000100            OCT 107040000100     4 L
01557 +100000040000            OCT 100000040000     4 R
01560 +000201002001            OCT 201002001        3 L
01561 +220200400000            OCT 220200400000     3 R
01562 +000004010004            OCT 4010004          2 L
01563 +000000020000            OCT 20000            2 R
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01564 +040000000400           OCT 40000000400     1 L
01565 +004000000000           OCT 4000000000      1 R
01566 +022201410005           OCT 22201410005     0 L
01567 +000007220000           OCT 7220000         0 R
01570 +105040042220           OCT 105040042220    11L
01571 +203200040000           OCT 203200040000    11R
01572 +050126304512           OCT 50126304512     12L
01573 +134400400000           OCT 134400400000    12R
01574 +022044004004           OCT 22044004004     9 L
01575 -000100000000           OCT 400100000000    9 R
01576 +000000000000           OCT 0               8 L
01577 +000000000000           OCT 0               8 R
01600 +000000001000           OCT 1000            7 L
01601 +000004000000           OCT 4000000         7 R
01602 +000000400010           OCT 400010          6 L
01603 +001000000000           OCT 1000000000      6 R
01604 +001100342020           OCT 1100342020      5 L
01605 +100450000000           OCT 100450000000    5 R
01606 +010210000000           OCT 10210000000     4 L
01607 +204020000000           OCT 204020000000    4 R
01610 +100001030101           OCT 100001030101    3 L
01611 +000000000000           OCT 0               3 R
01612 +000002000000           OCT 2000000         2 L
01613 +030000000000           OCT 30000000000     2 R
01614 +040400000200           OCT 40400000200     1 L
01615 +000000000000           OCT 0               1 R
01616 +000002010101           OCT 2010101         0 L
01617 +000004000000           OCT 4000000         0 R
01620 +022040702014           OCT 22040702014     11L
01621 +201440000000           OCT 201440000000    11R
01622 +151715065220           OCT 151715065220    12L
01623 -100130000000           OCT 500130000000    12R

01624 +000020200004     IMAG1 OCT 20200004        9 L
01625 +000100000000           OCT 100000000       9 R
01626 +000000000000           OCT 0               8 L
01627 +000000000000           OCT 0               8 R
01630 +000040000000           OCT 40000000        7 L
01631 +000000000000           OCT 0               7 R
01632 +000000001030           OCT 1030            6 L
01633 +000000000000           OCT 0               6 R
01634 +000000044700           OCT 44700           5 L
01635 +004000040000           OCT 4000040000      5 R
01636 +000216100002           OCT 216100002       4 L
01637 +002000200000           OCT 2000200000      4 R
01640 +000000402000           OCT 402000          3 L
01641 +040000020000           OCT 40000020000     3 R
01642 +000000010001           OCT 10001           2 L
01643 +000000100000           OCT 100000          2 R
01644 +000100000000           OCT 100000000       1 L
01645 +010000000000           OCT 10000000000     1 R
01646 +000044403021           OCT 44403021        0 L
01647 +000007300000           OCT 7300000         0 R
01650 +000212100114           OCT 212100114       11L
01651 +044100000000           OCT 44100000000     11R
01652 +000120254602           OCT 120254602       12L
```

```
01653 +012000060000           OCT 12000060000     12R

01654 +000010100010     IMAG2 OCT 10100010        9 L
01655 +040000000000           OCT 40000000000     9 R
01656 +000000000000           OCT 0               8 L
01657 +000000400000           OCT 400000          8 R
01660 +000020000000           OCT 20000000        7 L
01661 +000000000000           OCT 0               7 R
01662 +000000000406           OCT 406             6 L
01663 +000000000000           OCT 0               6 R
01664 +000000022340           OCT 22340           5 L
01665 +004000000000           OCT 4000000000      5 R
01666 +000107040000           OCT 107040000       4 L
01667 +002000040000           OCT 2000040000      4 R
01670 +000000201000           OCT 201000          3 L
01671 +000100400000           OCT 100400000       3 R
01672 +000000004001           OCT 4001            2 L
01673 +000000020000           OCT 20000           2 R
01674 +000040000000           OCT 40000000        1 L
01675 +010000000000           OCT 10000000000     1 R
01676 +000022201403           OCT 22201403        0 L
01677 +000007220000           OCT 7220000         0 R
01700 +000105040054           OCT 105040054       11L
01701 +044100040000           OCT 44100040000     11R
01702 +000050126300           OCT 50126300        12L
01703 +012000400000           OCT 12000400000     12R

01704 +000000202000     IMAG3 OCT 202000          9 L
01705 +210000000000           OCT 210000000000    9 R
01706 +000000000000           OCT 0               8 L
01707 +000000400000           OCT 400000          8 R
01710 +000000400000           OCT 400000          7 L
01711 +000000000000           OCT 0               7 R
01712 +000000000010           OCT 10              6 L
01713 +020000000000           OCT 20000000000     6 R
01714 +000000000447           OCT 447             5 L
01715 +100000000000           OCT 100000000000    5 R
01716 +000002161000           OCT 2161000         4 L
01717 +004000040000           OCT 4000040000      4 R
01720 +000000004020           OCT 4020            3 L
01721 +040000400000           OCT 40000400000     3 R
01722 +000000000100           OCT 100             2 L
01723 +002000020000           OCT 2000020000      2 R
01724 +000001000000           OCT 1000000         1 L
01725 +000000000000           OCT 0               1 R
01726 +000000444030           OCT 444030          0 L
01727 +002007220000           OCT 2007220000      0 R
01730 +000002121001           OCT 2121001         11L
01731 +230000040000           OCT 230000040000    11R
01732 +000001202546           OCT 1202546         12L
01733 +144000400000           OCT 144000400000    12R
01734 +000002002000           OCT 2002000         9 L
01735 +040401000000           OCT 40401000000     9 R
01736 +000000000000           OCT 0               8 L
01737 +000000000000           OCT 0               8 R
01740 +000000000000           OCT 0               7 L
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01741 +000000000000           OCT 0               7 R
01742 +000000000010           OCT 10              6 L
01743 +100020000000           OCT 100020000000    6 R
01744 +000000441047           OCT 441047          5 L
01745 +204040200000           OCT 204040200000    5 R
01746 +000001104400           OCT 1104400         4 L
01747 +002000400000           OCT 2000400000      4 R
01750 +000004000020           OCT 4000020         3 L
01751 +000112000000           OCT 112000000       3 R
01752 +000000010100           OCT 10100           2 L
01753 +000000000000           OCT 0               2 R
01754 +000000020000           OCT 20000           1 L
01755 +010000000000           OCT 10000000000     1 R
01756 +000004014030           OCT 4014030         0 L
01757 +000012000000           OCT 12000000        0 R
01760 +000001102001           OCT 1102001        11L
01761 +144100400000           OCT 144100400000   11R
01762 +000002461546           OCT 2461546        12L
01763 +212061200000           OCT 212061200000   12R

01764 +000202000044    IMAG4  OCT 202000044       9 L
01765 +002200000000           OCT 2200000000      9 R
01766 +000000000000           OCT 0               8 L
01767 +000000400000           OCT 400000          8 R
01770 +000400000000           OCT 400000000       7 L
01771 +000000000000           OCT 0               7 R
01772 +000000010000           OCT 10000           6 L
01773 +004000000000           OCT 4000000000      6 R
01774 +000000447001           OCT 447001          5 L
01775 +110040000000           OCT 110040000000    5 R
01776 +002161000002           OCT 2161000002      4 L
01777 +040100040000           OCT 40100040000     4 R
02000 +000004020010           OCT 4020010         3 L
02001 +000400400000           OCT 400400000       3 R
02002 +000000100100           OCT 100100          2 L
02003 +000000020000           OCT 20000           2 R
02004 +001000000200           OCT 1000000200      1 L
02005 +200000000000           OCT 200000000000    1 R
02006 +000444030010           OCT 444030010       0 L
02007 +000407220000           OCT 407220000       0 R
02010 +002121001042           OCT 2121001042     11L
02011 +106100040000           OCT 106100040000   11R
02012 +001202546005           OCT 1202546005     12L
02013 +250240400000           OCT 250240400000   12R

02014 +000202000030    IMAG5  OCT 202000030       9 L
02015 +000000000000           OCT 0               9 R
02016 +000000000002           OCT 2               8 L
02017 +000000400000           OCT 400000          8 R
02020 +000400000004           OCT 400000004       7 L
02021 +000000000000           OCT 0               7 R
02022 +000000010000           OCT 10000           6 L
02023 +000000000000           OCT 0               6 R
02024 +000000447000           OCT 447000          5 L
02025 +105000000000           OCT 105000000000    5 R
02026 +002161000000           OCT 2161000000      4 L
```

```
02027 +040000040000           OCT 40000040000      4 R
02030 +000004020001           OCT 4020001          3 L
02031 +002600400000           OCT 2600400000       3 R
02032 +000000100100           OCT 100100           2 L
02033 +010000020000           OCT 10000020000      2 R
02034 +001000000200           OCT 1000000200       1 L
02035 +200000000000           OCT 200000000000     1 R
02036 +000444030001           OCT 444030001        0 L
02037 +010207220000           OCT 10207220000      0 R
02040 +002121001020           OCT 2121001020       11L
02041 +102000040000           OCT 102000040000     11R
02042 +001202546016           OCT 1202546016       12L
02043 +245400400000           OCT 245400400000     12R

02044 +000000000002    IMAG6  OCT 2                9 L
02045 +044100004000           OCT 44100004000      9 R
02046 +000000000004           OCT 4                8 L
02047 +000000000400           OCT 400              8 R
02050 +000000004000           OCT 4000             7 L
02051 +000000020000           OCT 20000            7 R
02052 +000000000140           OCT 140              6 L
02053 +000000000000           OCT 0                6 R
02054 +000000003000           OCT 3000             5 L
02055 +002200010040           OCT 2200010040       5 R
02056 +000000000400           OCT 400              4 L
02057 +020400200000           OCT 20400200000      4 R
02060 +000000000010           OCT 10               3 L
02061 +200000001300           OCT 200000001300     3 R
02062 +000000010001           OCT 10001            2 L
02063 +000000100000           OCT 100000           2 R
02064 +000000000000           OCT 0                1 L
02065 +101000000000           OCT 101000000000     1 R
02066 +000000010011           OCT 10011            0 L
02067 +000007100400           OCT 7100400          0 R
02070 +000000004100           OCT 4100             11L
02071 +044100224100           OCT 44100224100      11R
02072 +000000003446           OCT 3446             12L
02073 +323600011240           OCT 323600011240     12R

02074 +000000000224    IMAG7  OCT 224              9 L
02075 +100440000000           OCT 100440000000     9 R
02076 +000000000000           OCT 0                8 L
02077 +000000000000           OCT 0                8 R
02100 +000000001001           OCT 1001             7 L
02101 +020000000000           OCT 20000000000      7 R
02102 +000000014140           OCT 14140            6 L
02103 +004010000000           OCT 4010000000       6 R
02104 +000000020402           OCT 20402            5 L
02105 +010000000000           OCT 10000000000      5 R
02106 +000000000010           OCT 10               4 L
02107 +200000000000           OCT 200000000000     4 R
02110 +000000000000           OCT 0                3 L
02111 +001220000000           OCT 1220000000       3 R
02112 +000000000000           OCT 0                2 L
02113 +002004000000           OCT 2004000000       2 R
02114 +000000000000           OCT 0                1 L
```

```
02115 +040000000000            OCT 40000000000      1 R
02116 +000000004000            OCT 4000             0 L
02117 +003000000000            OCT 3000000000       0 R
02120 +000000031272            OCT 31272            11L
02121 +014010000000            OCT 14010000000      11R
02122 +000000000505            OCT 505              12L
02123 +360620000000            OCT 360620000000     12R

02124 +000000000042     IMAG8  OCT 42               9 L
02125 +204000040000            OCT 204000040000     9 R
02126 +000000000000            OCT 0                8 L
02127 +000040000000            OCT 40000000         8 R
02130 +000010020000            OCT 10020000         7 L
02131 +000000000000            OCT 0                7 R
02132 +000000100300            OCT 100300           6 L
02133 +001000000000            OCT 1000000000       6 R
02134 +000000005000            OCT 5000             5 L
02135 +110416000000            OCT 110416000000     5 R
02136 +000000040001            OCT 40001            4 L
02137 +020000000000            OCT 20000000000      4 R
02140 +000000212010            OCT 212010           3 L
02141 +000101020000            OCT 101020000        3 R
02142 +000003000000            OCT 3000000          2 L
02143 +000000004000            OCT 4000             2 R
02144 +000004000004            OCT 4000004          1 L
02145 +040020000000            OCT 40020000000      1 R
02146 +000003002000            OCT 3002000          0 L
02147 +000000010000            OCT 10000            0 R
02150 +000010170142            OCT 10170142         11L
02151 +205415000000            OCT 205415000000     11R
02152 +000004205215            OCT 4205215          12L
02153 +170162220000            OCT 170162220000     12R

                                   CARD IMAGE

02154 +000000000000     CI     OCT 0,0,0,0,0,0,0,0,0,0,0,0
02155 +000000000000
02156 +000000000000
02157 +000000000000
02160 +000000000000
02161 +000000000000
02162 +000000000000
02163 +000000000000
02164 +000000000000
02165 +000000000000
02166 +000000000000
02167 +000000000000
02170 +000000000000            OCT 0,0,0,0,0,0,0,0,0,0,0,0
02171 +000000000000
02172 +000000000000
02173 +000000000000
02174 +000000000000
02175 +000000000000
02176 +000000000000
02177 +000000000000
02200 +000000000000
```

```
02201 +000000000000
02202 +000000000000
02203 +000000000000

                                    STORAGE IMAGE

02204 -327272727272     CBI    OCT 727272727272       9 L
02205 +272727272727            OCT 272727272727       9 R
02206 -317171717171            OCT 717171717171       8 L
02207 +171717171717            OCT 171717171717       8 R
02210 -307070707070            OCT 707070707070       7 L
02211 +070707070707            OCT 070707070707       7 R
02212 -024242424242            OCT 424242424242       6 L
02213 +242424242424            OCT 242424242424       6 R
02214 -105050505050            OCT 505050505050       5 L
02215 +050505050505            OCT 050505050505       5 R
02216 +313131313131            OCT 313131313131       4 L
02217 +131313131313            OCT 131313131313       4 R
02220 +212121212121            OCT 212121212121       3 L
02221 +121212121212            OCT 121212121212       3 R
02222 +202020202020            OCT 202020202020       2 L
02223 +020202020202            OCT 020202020202       2 R
02224 +101010101010            OCT 101010101010       1 L
02225 +010101010101            OCT 010101010101       1 R
02226 -337373737373            OCT 737373737373       0 L
02227 +373737373737            OCT 373737373737       0 R
02230 -347474747474            OCT 747474747474      11L
02231 -074747474747            OCT 474747474747      11R
02232 -357575757575            OCT 757575757575      12L
02233 -175757575757            OCT 575757575757      12R

                                    TEMPORARY STORAGE

02234 +000000000000     RDRDY  OCT 0
02235 +000000000000     SELDY  OCT 0
02236 +000000000000     WORDY  OCT 0
02237 +000000000000     ROWDY  OCT 0
02240 +000000000000     ROWD1  OCT 0
02241 +000000000000     CONDY  OCT 0
02242 +000000000000     EORDY  OCT 0
02243 +000000000000     KONDY  OCT 0
02244 +000000000000     MODL0  OCT 0
02245 +000000000000     NUM    OCT 0

02246 +000000000000     P      OCT 0
02247 +000000000000            OCT 0
02250 +000000000000            OCT 0
02251 +000000000000            OCT 0
02252 +000000000000            OCT 0
02253 +000000000000            OCT 0

02254 +000000000000     SX     OCT 0
02255 +000000000000            OCT 0

                                    CONTROL WORDS
```

```
02256 -1 00003 0 00000  CWA    IOCT 0,0,3     S AND 2 TRIGGERS ON

02257 -1 00001 0 02154  CW     IOCT CI,0,1    S AND 2 TRIGGERS ON
02260  2 00000 0 00000         IORP 0,0,0     1 TRIGGER ON

02261 -1 00001 0 02154  CW1    IOCT CI,0,1    S AND 2 TRIGGERS ON  9 L
02262 -1 00001 0 02155         IOCT CI+1,0,1                       9 R
02263 -1 00001 0 02156         IOCT CI+2,0,1                       8 L
02264 -1 00001 0 02157         IOCT CI+3,0,1                       8 R
02265 -1 00001 0 02160         IOCT CI+4,0,1                       7 L
02266 -1 00001 0 02161         IOCT CI+5,0,1                       7 R
02267 -1 00001 0 02162         IOCT CI+6,0,1                       6 L
02270 -1 00001 0 02163         IOCT CI+7,0,1                       6 R
02271 -1 00001 0 02164         IOCT CI+8,0,1                       5 L
02272 -1 00001 0 02165         IOCT CI+9,0,1                       5 R
02273 -1 00001 0 02166         IOCT CI+10,0,1                      4 L
02274 -1 00001 0 02167         IOCT CI+11,0,1                      4 R
02275 -1 00001 0 02170         IOCT CI+12,0,1                      3 L
02276 -1 00001 0 02171         IOCT CI+13,0,1                      3 R
02277 -1 00001 0 02172         IOCT CI+14,0,1                      2 L
02300 -1 00001 0 02173         IOCT CI+15,0,1                      2 R
02301 -1 00001 0 02174         IOCT CI+16,0,1                      1 L
02302 -1 00001 0 02175         IOCT CI+17,0,1                      1 R
02303 -1 00001 0 02176         IOCT CI+18,0,1                      0 L
02304 -1 00001 0 02177         IOCT CI+19,0,1                      0 R
02305 -1 00001 0 02200         IOCT CI+20,0,1                      11L
02306 -1 00001 0 02201         IOCT CI+21,0,1                      11R
02307 -1 00001 0 02202         IOCT CI+22,0,1                      12L
02310 -1 00001 0 02203         IOCT CI+23,0,1                      12R
02311  3 00001 0 02203         IORT CI+23,0,1  1 AND 2 TRIGGERS ON 12R

02312  0000 60 0 01544  CW2    IOCD IMAG,0,48 ALL TRIGGERS OFF
02313  0000 30 0 01624  CW3    IOCD IMAG1,0,24
02314  0000 30 0 01654  CW4    IOCD IMAG2,0,24
02315  0000 60 0 01704  CW5    IOCD IMAG3,0,48
02316  0000 30 0 01764  CW6    IOCD IMAG4,0,24
02317  0000 30 0 02014  CW7    IOCD IMAG5,0,24
02320  0000 30 0 02044  CW8    IOCD IMAG6,0,24
02321 -1 00030 0 02154  CW9    IOCT CI,0,24   S AND 2 TRIGGERS ON
02322  0000 30 0 02154  CW10   IOCD CI,0,24   ALL TRIGGERS ON
02323  0000 30 0 02074  CW11   IOCD IMAG7,0,24
02324  0000 30 0 02124  CW12   IOCD IMAG8,0,24


                                   CONSTANTS

02325 +000000002334     K0     OCT    2334
02326 +000000000010            OCT 10
02327 +000000000242            OCT    242
02330 +000000000234            OCT    234
02331 +000000000175            OCT    175
02332 +000000000052            OCT 52
02333 +000000005230            OCT    5230
02334 +000000224414            OCT    224414
02335 +000000000012            OCT 12
02336 +000000000144            OCT 144
```

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02337 +000000120040           OCT    120040
02340 +000000000140           OCT 140
02341 +000000000374           OCT 374
02342 +000000000154           OCT 154
02343 +000000000060           OCT 60
02344 +000000000016           OCT 16
02345  0000 00 0 02336        HTR K0+9
02346  0500 00 1 02425        CLA BIT+7,1
02347  0500 00 1 02426        CLA BIT+8,1
02350 +000000002607           OCT 2607

02351 -000000000011     KK    OCT -11
02352 -000000000010           OCT -10
02353 -000000000007           OCT -7
02354 -000000000006           OCT -6
02355 -000000000005           OCT -5
02356 -000000000004           OCT -4
02357 -000000000003           OCT -3
02360 -000000000002           OCT -2
02361 -000000000001           OCT -1
02362 -000000000000           OCT -0
02363 +000000000001           OCT 1
02364 +000000000000           OCT 0

02365 +000000000030     K     OCT 30
02366 +000000000024           OCT 24
02367 +000000023420           OCT 23420
02370 +000000000454           OCT 454
02371 +000000001750           OCT 1750

02372  0020 00 0 00110  K1     TRA TIME-1
02373  0000 00 0 02246        HTR P
02374 -0602 00 4 01567        ORS IMAG+19,4
02375 -0602 00 4 01647        ORS IMAG1+19,4
02376 -0602 00 4 01677        ORS IMAG2+19,4
02377 -0602 00 4 01727        ORS IMAG3+19,4
02400 -0602 00 4 02007        ORS IMAG4+19,4
02401  0320 00 1 01571        ANS IMAG+21,1
02402  0320 00 1 01651        ANS IMAG1+21,1
02403  0320 00 1 01701        ANS IMAG2+21,1
02404  0320 00 1 01731        ANS IMAG3+21,1
02405  0320 00 1 02011        ANS IMAG4+21,1
02406  0000 00 0 02356        HTR KK+5
02407  0000 00 0 02357        HTR KK+6
02410  0000 00 0 02367        HTR K+2
02411  0000 00 0 02371        HTR K+4
02412  0320 00 1 02041        ANS IMAG5+21,1
02413 -0602 00 4 02037        ORS IMAG5+19,4
02414  0320 00 1 02071        ANS IMAG6+21,1
02415 -0602 00 4 02067        ORS IMAG6+19,4

02416 +200000000000     BIT   OCT 200000000000
02417 +100000000000           OCT 100000000000
02420 +000400000000           OCT 000400000000
02421 +000200000000           OCT 000200000000
02422 +000004000000           OCT 000004000000
```

```
02423 +000002000000            OCT 000002000000
02424 +000001000000            OCT 000001000000
02425 +000000200000            OCT 000000200000

02426 -077177777777     MASK   OCT 477177777777
02427 -377770477777            OCT 777770477777
02430 -377770777777            OCT 777770777777

02431 +000000100001     IOCTL  OCT 000000100001 CONTROL WORD FOR CHAN A
02432 -377777074000            OCT 777777074000
02433  0020 00 0 00111         TRA TIME

                05500  CTRL1  EQU 2880
                05501  CTRL2  EQU 2881
                05502  CTRL3  EQU 2882
                05503  IOCT   EQU 2883
                05512  CTX    EQU 2890
                05514  IOC    EQU 2892
                06504  ERROR  EQU 3396
                06556  WDNO   EQU 3438
                06557  RECNO  EQU 3439

                00000          END
```

EOF*