SEL PROGRAM LIBRARY

PROGRAM DESCRIPTION

 Catalog No. 300014A

IDENTIFICATION: Card Binary to BCD

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ACCEPTED: 6 June 1967

PURPOSE: To translate card binary input to IBM BCD code.

COMPUTER CONFIGURATION: SEL 810A with card reader

SUBROUTINES REQUIRED: None

STORAGE: 110 octal locations

TIMING: 23 cycles + approximately 200N - where N is number of locations to be translated.

USE: Calling sequence:

```
LAA     X
CALL    CDBCD
DAC     BUF+N, 1
DATA    -N
```

where BUF is address of first location of buffer.
N is number of locations to be translated.

METHOD: If X is zero, the 6 bit BCD code is stored in bits 10-15; if X = 0, they are stored in bits 0-5.

```
0001  00000 00000000 *
0002  00000 00000000 *     CATALØG NØ.          300014A
0003  00000 00000000 ************************************************************************
0004  00000 00000000 *   6 JUNE 1967
0005  00000 00000000 *
0006  00000 00000000 *     PRØGRAMMER           J. P. DIXØN
0007  00000 00000000 *
0008  00000 00000000 *   CALLING SEQUENCE
0009  00000 00000000 *     CALL CDBCD
0010  00000 00000000 *     DAC BUF+N,1
0011  00000 00000000 *     DATA -N
0012  00000 00000000 *
0013  00000 00000000 *   N IS NUMBER ØF WØRDS TØ BE TRANSLATED
0014  00000 00000000 *
0015  00000 00000000 *                THIS RØUTINE CØNVERTS BINARY CARD INPUT
0016  00000 00000000 *                TØ IBM/BCD FØR USE IN ASSEMBLER AND ØTHER
0017  00000 00000000 *                IBM/BCD CARD IMAGE ØRIENTED PRØGRAMS.
0018  00000 00000000 ************************************************************************
0019  00000 00000000 * IF A IS ZERØ ØN ENTRY STØRE IN BITS 10-15
0020  00000 00000000 *   IF A IS NØN ZERØ ØN ENTRY STØRE IN BITS 0-5
0021  00000 00000000       REL
0022  00000 50000000       NAME CDBCD,CRDC
0022  00000 00000000
0022  00000 00602002
0022  00000 00602040
0023  00000 00000000 CRDC ***  **             BINARY TØ BCD CARD CØNVERSIØN RØUTINE
0024  00001 02100110 STRT LBA  NØP
0025  00002 00000022       SAZ
0026  00003 02100107       LBA  LS10
0027  00004 04100070       STB  SWL
0028  00005 01300000       LAA* CRDC           DAC BUF+N,1
0029  00006 03100103       STA  BUF
0030  00007 14100000       IMS  CRDC
0031  00010 02300000       LBA* CRDC
0032  00011 04100105       STB  CLCT           CØLUMN CØUNTER
0033  00012 14100000       IMS  CRDC
0034  00013 00000003 AGN   CLA
0035  00014 03100104       STA  KØLM
0036  00015 01300103       LAA* BUF
```

```
0037  00016 00000022       SAZ                IS THIS A BLANK CØLUMN
0038  00017 11100022       BRU   *+3
0039  00020 01000020       LAA   ='20
0040  00021 11100067       BRU   STØR         STØRE BCD BLANK CØDE
0041  00022 15006000       CMA   ='6000       IS THIS A QUESTIØN MARK
0042  00023 11100026       BRU   *+3          NØ
0043  00024 00000003       CLA                YES
0044  00025 11100067       BRU   STØR         STØRE QUESTIØN MARK CØDE
0045  00026 15003000       CMA   ='3000       IS THIS AN EXCLAMATIØN MARK
0046  00027 11100031       BRU   *+2          NØ
0047  00030 11100077       BRU   EXPT         YES
0048  00031 15001000       CMA   ='1000       0 PUNCH
0049  00032 11100034       BRU   *+2          NØ
0050  00033 11100101       BRU   ZERØ         YES
0051  00034 00000416       LSL   4
0052  00035 00000023       SAN                12 PUNCH
0053  00036 11100041       BRU   *+3          NØ
0054  00037 02000060       LBA   ='60         YES
0055  00040 04100104       STB   KØLM         12 PUNCH CØDE
0056  00041 00000116       LSL   1
0057  00042 00000023       SAN                11 PUNCH
0058  00043 11100046       BRU   *+3          NØ
0059  00044 02000040       LBA   ='40         YES
0060  00045 04100104       STB   KØLM         11 PUNCH CØDE
0061  00046 00000116       LSL   1
0062  00047 00000023       SAN                0 PUNCH
0063  00050 11100053       BRU   *+3          NØ
0064  00051 02000020       LBA   ='20         YES
0065  00052 04100104       STB   KØLM         0 PUNCH CØDE
0066  00053 02077767       LBA   =-9
0067  00054 00000116 SHFT  LSL   1
0068  00055 04100106       STB   RCNT         RØW CØUNTER
0069  00056 00000023       SAN                PUNCH THIS CØLUMN
0070  00057 11100064       BRU   INCB         NØ
0071  00060 16000012       AMB   =10          CØMPUTE NØ. ØF PUNCH
0072  00061 16100104       AMB   KØLM
0073  00062 04100104       STB   KØLM         ASSEMBLE BCD CHARACTER
0074  00063 02100106       LBA   RCNT
0075  00064 00000026 INCB  IBS                ALL RØWS CHECKED
0076  00065 11100054       BRU   SHFT         CHECK NEXT RØW
```

```
0077  00066 01100104       LAA   KØLM
0078  00067 02100105 STØR  LBA   CLCT
0079  00070 00000033 SWL   NØP                 NØP ØR LSL Z10
0080  00071 03300103       STA*  BUF
0081  00072 00000026       IBS
0082  00073 11100075       BRU   **+2
0083  00074 11300000       BRU*  CRDC
0084  00075 04100105       STB   CLCT
0085  00076 11100013       BRU   AGN
0086  00077 01000052 EXPT  LAA   ='52           EXCLAMATIØN PT
0087  00100 11100067       BRU   STØR           STØRE CØDE
0088  00101 01000012 ZERØ  LAA   ='12           0 CØDE
0089  00102 11100067       BRU   STØR
0090  00103 00000001 BUF   BSS   1
0091  00104 00000000 KØLM  ***   **             BCD CHAR. ASSEMBLY BUFFER
0092  00105 00000000 CLCT  ***   **             CØLUMN CØUNTER
0093  00106 00000000 RCNT  ***   **             RØW CØUNTER
0094  00107 00001216 LS10  LSL   10
0095  00110 00000033 NØP   NØP
0096  00111 70400000       END
```

AGN	0034	0085						
BUF	0090	0029	0036	0080				
CLCT	0092	0032	0078	0084				
CRD	0023	0028	0030	0031	0033	0083		
EXPT	0086	0047						
INC	0075	0070						
KØLM	0091	0035	0055	0060	0065	0072	0073	0077
LS10	0094	0026						
NØP	0095	0024						
RCNT	0093	0068	0074					
SHFT	0067	0076						
STØR	0078	0040	0044	0087	0089			
STRT	0024							
SWL	0079	0027						
ZERØ	0088	0050						