

SEL PROGRAM LIBRARY

PROGRAM DESCRIPTION

Page 1 of 2

Catalog No. 300018A

IDENTIFICATION: 810A EBCDIC to ASCII conversion routine

AUTHOR: W. A. Speer

ACCEPTED: August 4, 1967

PURPOSE: To translate a buffer or data from EBCDIC to ASCII

COMPUTER
CONFIGURATION: SEL 810A

SUBROUTINES
REQUIRED: None

STORAGE: 124₈ locations

TIMING: 17 + 30 · N cycles - approx. where N=number of words in
buffer.

LOADING
PROCEDURE: The program which calls this subroutine and this subroutine
must be loaded with the 810A Standard Paper Tape Load/
Dump (Catalog No. 300001B)

USE: Calling Sequence:

CALL ETØA
DAC BUF Address of buffer
DATA N Word count

The EBCDIC character to be translated must be in bits 0-7 of the word. Bits 8-15 are ignored. The ASCII equivalent is returned in bits 8-15 and bits 0-7 are set to zero.

METHOD: If the most significant bit of the EBCDIC character is on (1) an indexed table look-up of alphabetic and numeric characters is performed using the 6 least significant bits of the character

If the most significant bit of the EBCDIC character is off

(0) bits X2, X3, X5, X6, X7 are used to perform an indexed table look-up of special characters. Bit X4 is dropped and the character is compressed.

1

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0001 00000 00000000 *****
0002 00000 00000000 *
0003 00000 00000000 *
0004 00000 00000000 *  B10A EBCDIC TO ASCII CONVERSION ROUTINE          CATALOG NO. 300018A
0005 00000 00000000 *
0006 00000 00000000 *  PROGRAMMER  W. A. SPEER
0007 00000 00000000 *
0008 00000 00000000 *  AUGUST 4, 1967
0009 00000 00000000 *
0010 00000 00000000 *  PURPOSE - TO TRANSLATE A BUFFER FROM EBCDIC TO FULL ASCII.
0011 00000 00000000 *  THE EBCDIC CHARACTER IS TO BE IN BITS 0-7, BITS 8-15 ARE
0012 00000 00000000 *  IGNORED UPON ENTRANCE TO THE SUBROUTINE. AN ASCII CHARACTER
0013 00000 00000000 *  IS RETURNED IN BITS 8-15 AND BITS 0-7 ARE SET TO ZERO.
0014 00000 00000000 *
0015 00000 00000000 *  CALLING SEQUENCE
0016 00000 00000000 *      CALL  ET0A
0017 00000 00000000 *      DAC   BUF      ADDRESS OF FIRST WORD OF BUF
0018 00000 00000000 *      DATA N        WORD COUNT
0019 00000 00000000 *
0020 00000 00000000 *****
0021 00000 00000000      REL
0022 00000 50000000      NAME ET0A,ET0A
0022 00000 00000000
0022 00000 01212017
0022 00000 00220040
0023 00000 00000000 ET0A *** **
0024 00001 01300000      LAA* ET0A      PICK UP ADDRESS OF BUF
0025 00002 14100000      IMS ET0A      INCREMENT TO WORD COUNT
0026 00003 03100043      STA ADDR      STORE ADDRESS OF FIRST WD OF BUF
0027 00004 01300000      LAA* ET0A      PICK UP WORD COUNT
0028 00005 14100000      IMS ET0A      INCREMENT FOR RETURN
0029 00006 00000002      NEG          NEGATE WORD COUNT
0030 00007 03100042      STA WDCY      STORE NEGATIVE WORD COUNT
0031 00010 01300043 LOOP LAA* ADDR      PICK UP DATA WORD
0032 00011 02000000      LBA #0        CLEAR B ACCUMULATOR
0033 00012 00000023      SAN          IS THE LEFTMOST BIT (A0) ON
0034 00013 11100020      BRU SPEC      NO - THEN THE WD IS A SPECIAL CHAR
0035 00014 00000216 ALPH LSL 2      YES - THEN ALPHABETIC OR NUMERIC CHAR
0036 00015 00000000 *      THE LEFTMOST TWO BITS ARE DROPPED

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0037	00015	00000000	*				BECAUSE FOR ALL ALPH/NUM CHARS
0038	00015	00000000	*				THEY ARE ONES
0039	00015	00000514		FRL	5		PUT THE NEXT 5 BITS IN B FOR INDEX
0040	00016	02500064		LBA	ALCH,1		PULL THE PROPER ENTRY FROM ALPH/NUM TABLE
0041	00017	11100025		BRU	ARND		GO TO ODD/EVEN ROUTINE
0042	00020	00000216	SPEC	LSL	2		THE LEFTMOST TWO BITS ARE DROPPED
0043	00021	00000000	*				BECAUSE FOR ALL SPECIAL CHARS
0044	00021	00000000	*				THEY ARE 01
0045	00021	00000214		FRL	2		PUT THE NEXT TWO UNIQUE BITS IN B
0046	00022	00000116		LSL	1		DROP THE NEXT BIT AS IT WILL BE A1
0047	00023	00000214		FRL	2		PUT THE NEXT TWO UNIQUE BITS IN B
0048	00024	02500044		LBA	SPCH,1		PULL THE PROPER ENTRY FROM SPEC CHAR TABLE
0049	00025	00000023	ARND	SAN			IS THE LAST BIT OF THE DATA WORD ON
0050	00026	11100033		BRU	EVEN		NO - GO TO THE EVEN ROUTINE
0051	00027	00000004	ODD	TBA			PUT THE TABLE ENTRY IN A ACCUM
0052	00030	02000377		LBA	= '000377		PICK UP MASK
0053	00031	00000027		ABA			WIPE OUT LEFTMOST BITS LEAVING
0054	00032	00000000	*				THE ASCII EQUIVALENT IN THE
0055	00032	00000000	*				RIGHTMOST 8 BITS OF THE ACCUM
0056	00032	11100035		BRU	SETR		GO TO THE STORE ROUTINE
0057	00033	00000004	EVEN	TBA			PUT THE TABLE ENTRY IN A ACCUM
0058	00034	00001015		RSL	8		SHIFT OFF THE RIGHTMOST 8 BITS
0059	00035	00000000	*				LEAVING THE ASCII EQUIVALENT
0060	00035	00000000	*				IN THE RIGHTMOST 8 BITS OF THE ACCUM
0061	00035	03300043	SETR	STA*	ADDR		STORE ASCII EQUIVALENT IN BUF
0062	00036	14100043		IMS	ADDR		INCREMENT TO NEXT WORD IN BUF
0063	00037	14100042		IMS	WDCT		INCREMENT NEG WD CT - IS IT ZERO
0064	00040	11100010		BRU	L00P		NO - GO BACK FOR ANOTHER WORD
0065	00041	11300000		BRU*	ET0A		YES - FINISHED - RETURN
0066	00042	00000000	WDCT	***	**		
0067	00043	00000000	ADDR	***	**		
0068	00044	00120000	SPCH	DATA	'120000		40-00 TO 240-0
0069	00045	00000256		DATA	'000256		4A-4B TO 0-256
0070	00046	00136250		DATA	'136250		4C-4D TO 274-250
0071	00047	00125736		DATA	'125736		4E-4F TO 253-336
0072	00050	00123000		DATA	'123000		58-59 TO 246-0
0073	00051	00120644		DATA	'120644		5A-5B TO 241-244
0074	00052	00125251		DATA	'125251		5C-5D TO 252-251
0075	00053	00135400		DATA	'135400		5E-5F TO 273-0
0076	00054	00126657		DATA	'126657		68-69 TO 255-257

0077	00055	00000254	DATA	'000254	6A-6B	TØ	0-254
0078	00056	00122400	DATA	'122400	6C-6D	TØ	245-0
0079	00057	00137277	DATA	'137277	6E-6F	TØ	276-277
0080	00060	00000000	DATA	'000000	78-79	TØ	0-0
0081	00061	00135243	DATA	'135243	7A-7B	TØ	272-243
0082	00062	00140247	DATA	'140247	7C-7D	TØ	300-247
0083	00063	00136642	DATA	'136642	7E-7F	TØ	275-242
0084	00064	00000301	ALCH DATA	'000301	C0-C1	TØ	0-301
0085	00065	00141303	DATA	'141303	C2-C3	TØ	302-303
0086	00066	00142305	DATA	'142305	C4-C5	TØ	304-305
0087	00067	00143307	DATA	'143307	C6-C7	TØ	306-307
0088	00070	00144311	DATA	'144311	C8-C9	TØ	310-311
0089	00071	00000000	DATA	'000000	CA-CB	TØ	0-0
0090	00072	00000000	DATA	'000000	CC-CD	TØ	0-0
0091	00073	00000000	DATA	'000000	CE-CF	TØ	0-0
0092	00074	00000312	DATA	'000312	00-01	TØ	0-312
0093	00075	00145714	DATA	'145714	D2-D3	TØ	313-314
0094	00076	00146716	DATA	'146716	D4-D5	TØ	315-316
0095	00077	00147720	DATA	'147720	D6-D7	TØ	317-320
0096	00100	00150722	DATA	'150722	D8-D9	TØ	321-322
0097	00101	00000000	DATA	'000000	DA-DB	TØ	0-0
0098	00102	00000000	DATA	'000000	DC-DD	TØ	0-0
0099	00103	00000000	DATA	'000000	DE-DF	TØ	0-0
0100	00104	00000000	DATA	'000000	ED-E1	TØ	0-0
0101	00105	00151724	DATA	'151724	E2-E3	TØ	323-324
0102	00106	00152726	DATA	'152726	E4-E5	TØ	325-326
0103	00107	00153730	DATA	'153730	E6-E7	TØ	327-330
0104	00110	00154732	DATA	'154732	E8-E9	TØ	331-332
0105	00111	00000000	DATA	'000000	EA-EB	TØ	0-0
0106	00112	00000000	DATA	'000000	EC-ED	TØ	0-0
0107	00113	00000000	DATA	'000000	EE-EF	TØ	0-0
0108	00114	00130261	DATA	'130261	FD-F1	TØ	260-261
0109	00115	00131263	DATA	'131263	F2-F3	TØ	262-263
0110	00116	00132265	DATA	'132265	F4-F5	TØ	264-265
0111	00117	00133267	DATA	'133267	F6-F7	TØ	266-267
0112	00120	00134271	DATA	'134271	F8-F9	TØ	270-271
0113	00121	00000000	DATA	'000000	FA-FB	TØ	0-0
0114	00122	00000000	DATA	'000000	FC-FD	TØ	0-0
0115	00123	00000000	DATA	'000000	FE-FF	TØ	0-0
0116	00124	70400000	END				