

## IBM 1401/1440/1460/1410/7010 Character Code Chart in BCD Order

PRINTS AS	ASCII	IBM DEFINED CHARACTER	OP CODE	CARD CODE	BCD CODE	PRINTS AS	ASCII	IBM DEFINED CHARACTER	OP CODE	CARD CODE	BCD CODE
	BLANK	BLANK			C	-	-	-		11	B
1	1	1	R	1	1	J	J	J	B¶	11-1	CB1
2	2	2	W	2	2	K	K	K	SS	11-2	CB2
3	3	3	WR	3	C21	L	L	L	LCA	11-3	B21
4	4	4	P	4	4	M	M	M	MCW	11-4	CB4
5	5	5	RP	5	C41	N	N	N	NOP	11-5	B41
6	6	6	WP	6	C42	O	O	O		11-6	B42
7	7	7	WRP	7	421	P	P	P	MCM*	11-7	CB421
8	8	8	SRF*	8	8	Q	Q	Q	SAR‡	11-8	CB8
9	9	9	SPF*	9	C81	R	R	R	¶	11-9	B81
0	0	0		0	C82	-	!	! (Minus Zero)	ZS	11-0	B82
#=	##=	#=	MA†	3-8	821	\$	\$	\$		11-3-8	CB821
@'	@@'	@'	M*	4-8	C84	*	*	*		11-4-8	B84
	:	:		5-8	841		]	)		11-5-8	CB841
	>	>		6-8	842		;	;		11-6-8	CB842
	{	√		7-8	C8421		-	Δ (Mode Change)		11-7-8	B8421
±	^	¢ (¢ on 1410)		2-8¶	A	&+	&&+	&+		12	CBA
/	/	/	CS	0-1	CA1	A	A	A	A	12-1	BA1
S	S	S	S	0-2	CA2	B	B	B	B	12-2	BA2
T	T	T	T§¶	0-3	A21	C	C	C	C	12-3	CBA21
U	U	U	CU	0-4	CA4	D	D	D	MN	12-4	BA4
V	V	V	BBWZ	0-5	A41	E	E	E	MCE	12-5	CBA41
W	W	W	BBE*	0-6	A42	F	F	F	CC	12-6	CBA42
X	X	X	*¶	0-7	CA421	G	G	G	S?R¶	12-7	BA421
Y	Y	Y	MZ	0-8	CA8	H	H	H	SBR‡	12-8	BA8
Z	Z	Z	MCS	0-9	A81	I	I	I		12-9	CBA81
±	'	± Record Mark		0-2-8	A82	&+	?	? (Plus Zero)	ZA	12-0	CBA82
,	,	,	SW	0-3-8	CA821	.	.	.	H	12-3-8	BA821
% (	%%	% (	D*	0-4-8	A84	□)	)	□)	CW	12-4-8	CBA84
	=~~	= Word separator		0-5-8	CA841	[	(	(		12-5-8	BA841
	\	' Apostrophe		0-6-8	CA842	<	<	<		12-6-8	BA842
	+""	" Tape Segment		0-7-8	A8421	" }	"} }	≡ Group Mark		12-7-8	CBA8421

Where two characters are shown for printing, the first is printed by the A chain, and the second by the H chain.

Where three characters are shown for ASCII, they are traditional SimH encoding, Pierce's primary encoding, and Pierce's alternative encoding.

The IBM defined character encoding is from Figure 267 on page 170 of A24-1403, Reference Manual: IBM 1401 Data Processing System.

† If more than 4k memory on 1401, ‡ Store address register feature, \* Other special feature, §1460, ¶1410, ¶ 1440. D, T and X have different meanings in 1401, 1460 and 1410. 1410 does not interpret #, H, P, Q, Y or 1-9. G, J and R are 1410 only. M and L on 1410 are only for I/O. 1440 does not interpret 1-9. P, #, % and @ are standard on 1460. % and @ are standard on 1410. 7010 and 1410 are compatible.

¶ Without no-charge RPQ 898148, the A-bit coding must be program generated in the 1401 (it cannot be read from a card; it punches as zero). It is used in conjunction with the parity track to indicate a blank position on tape written using even parity.

The Word Separator (CA841) is used on tape to indicate that the next character has a word mark.

## IBM 1401/1440/1460/1410/7010 Character Code Chart in Collating Sequence

PRINTS AS	ASCII	IBM DEFINED CHARACTER	OP CODE	CARD CODE	BCD CODE	PRINTS AS	ASCII	IBM DEFINED CHARACTER	OP CODE	CARD CODE	BCD CODE
.	BLANK	BLANK			C	G	G	G	S?R¶	12-7	BA421
□)	)	□)	H	12-3-8	BA821	H	H	H	SBR‡	12-8	BA8
	[	(	CW	12-4-8	CBA84	I	I	I		12-9	CBA81
	<	<		12-5-8	BA841	-	!	! (Minus Zero)	ZS	11-0	B82
	" } }	≠ Group Mark		12-6-8	BA842	J	J	J	B¶	11-1	CB1
&+	&&+	&+		12-7-8	CBA8421	K	K	K	SS	11-2	CB2
\$	\$	\$		12	CBA	L	L	L	LCA	11-3	B21
*	*	*		11-3-8	CB821	M	M	M	MCW	11-4	CB4
	]	)		11-4-8	B84	N	N	N	NOP	11-5	B41
	;	;		11-5-8	CB841	O	O	O		11-6	B42
	-	△ (Mode Change)		11-6-8	CB842	P	P	P	MCM*	11-7	CB421
-	-	-		11-7-8	B8421	Q	Q	Q	SAR‡	11-8	CB8
/	/	/	CS	11	B	R	R	R	¶	11-9	B81
,	,	,	SW	0-1	CA1	≠	'	≠ Record Mark		0-2-8	A82
% (	%% (	% (	D*	0-3-8	CA821	S	S	S	S	0-2	CA2
	=~	= Word separator		0-4-8	A84	T	T	T	T§¶	0-3	A21
	\	' Apostrophe		0-5-8	CA841	U	U	U	CU	0-4	CA4
	+'''	" Tape Segment		0-6-8	CA842	V	V	V	BWZ	0-5	A41
≠	^	¢ (¢ on 1410)		0-7-8	A8421	W	W	W	BBE*	0-6	A42
##=	##=	#=	MA†	2-8¶b	A	X	X	X	*¶	0-7	CA421
@'	@@'	@'	M*	3-8	821	Y	Y	Y	MZ	0-8	CA8
	:	:		4-8	C84	Z	Z	Z	MCS	0-9	A81
	>	>		5-8	841	0	0	0			C82
	{ { {	√		6-8	842	1	1	1	R	1	1
&+	? { {	? (Plus Zero)	ZA	7-8	C8421	2	2	2	W	2	2
A	A	A	A	12-0	CBA82	3	3	3	WR	3	C21
B	B	B	B	12-1	BA1	4	4	4	P	4	4
C	C	C	C	12-2	BA2	5	5	5	RP	5	C41
D	D	D	C	12-3	CBA21	6	6	6	WP	6	C42
E	D	D	MN	12-4	BA4	7	7	7	WRP	7	421
E	E	E	MCE	12-5	CBA41	8	8	8	SRF*	8	8
F	F	F	CC	12-6	CBA42	9	9	9	SPF*	9	C81

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