

V.3229/V.3229L
Manual

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E
Abbreviations and Acronyms

rms	Root-Mean-Square	UART	Universal Asynchronous Receiver / Transmitter
RMT LB	Remote Loopback	USOC	Universal Service Ordering Code
RNG	Ringback Detection		
RO	Receive Only		
ROM	Read Only Memory		
RT	Remote Terminal		
RTS, RS	Request to Send		
RX	Receive		
		V	
		V.	
		V.24	CCITT Code Designation
S	Reference Designator		List of definitions for interchange circuits between data terminal equipment and data circuit-terminating equipment (and provisional amendments, May 1977)
S or S/T	Serial (or Satellite) Communications Controller	Vac	Volts Alternating Current
SCC	Send Data	VAC	Value Added Carrier
SD	Synchronous Data Link Control (IBM)	VAL	Valid
SDLC	Signal Ground	Vdc	Volts Direct Current
SGND, SG	Signal Hook		
SH	Switch Hook		
SIM SW CR	Simulated Switched Carrier	W	
SINR	Signal / Noise Ratio	WATS	Wide Area Telecommunications Access Method (AT&T)
SPD	Service Profile Identifier		
SQD	Signal Quality Detector		
SQM	Signal Quality Monitor		
SS	Systems Status	X	
STX	Start of Text	X.	CCITT Recommendation Designation
SYN	Synchronization Character	XMIT	Transmit
		XOFF	Transmitter Off
T	Reference Designator	XON	Transmitter On
TA	Terminal Adapter	XTC	External Transmitt Clock
TC	Transmit Clock		
TD	Transmit Data		
TE	Terminal Equipment		
TBI	Terminal Endpoint Identifier		
TELCO	Telephone Company		
TELSSET	Telephone Set		
TM	Test Mode		
TP	Test Pattern		
TR	Terminal Ready		
TST	Test		
TTD	Temporary Text Delay		
TTL	Transistor-to-Transistor Logic		
TX	Transmit		
U	Reference Designator		

Appendix F
ASCII and EBCDIC Character Table

GENERAL

Hexadecimal equivalents of binary and decimal numbers are illustrated in the following chart:

Binary	Decimal	Hexadecimal
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	8
1001	9	9
1010	10	A
1011	11	B
1100	12	C
1101	13	D
1110	14	E
1111	15	F

Hexadecimal Examples:

0101	1011	= 5B hex
1001	1101	= 9D hex
1110	0010	= E2 hex

The following table lists the ASCII decimal, hexadecimal, equivalent character values, and EBCDIC characters. The table only goes as high as available keyboard symbols. Control keys are shown in the right column of the first table.

ASCII Symbol	Decimal	HEX	EBCDIC	Control Key
(NUL)	0	00	NU (null)	⓪
(SOH)	1	01	SH (start of header)	A
(STX)	2	02	SX (start of text)	B
(ETX)	3	03	EX (end of text)	C
(EOT)	4	04	PF	D
(ENO)	5	05	HT (horizontal tab)	E
(ACK)	6	06	LC (lower case)	F
(BEL)	7	07	delete	G
(BS)	8	08	--	H
(HT)	9	09	--	I
(LF)	10	0A	(SMM)	J
(VT)	11	0B	VT (vertical tab)	K
(FF)	12	0C	FF (form feed)	L
(CR)	13	0D	CR (carriage return)	M
(SO)	14	0E	SO (shift out)	N
(SI)	15	0F	SI (shift in)	O
(DLE)	16	10	DL (data link escape)	P
(DC1)	17	11	D1 (device control 1)	Q
(DC2)	18	12	D2 (device control 2)	R
(DC3)	19	13	D3 (device control 3)	S
(DC4)	20	14	RE (restore)	T
(NAK)	21	15	NL (new line)	U
(SYN)	22	16	BS (back space)	V
(ETB)	23	17	IL (light)	W
(CAN)	24	18	CN (cancel)	X
(EM)	25	29	EM (end of message)	Y
(SUB)	26	1A	CC	Z
(ESC)	27	1B	C1 (CU1)	[
(FS)	28	1C	FS (form separator)	\
(GS)	29	1D	GS (group separator)]
(RS)	30	1E	RS (record separator)	^
(US)	31	1F	US (unit separator)	DEL
(SP)	32	20	DS	_
	33	21	SS (SOS)	~
.	34	22	--	--
#	35	23	--	--

ASCII Symbol	Decimal	HEX	EBCDIC
\$	36	24	CP (bypass)
%	37	25	LF (line feed)
&	38	26	EB (end of block)
'	39	27	EC (escape)
(40	28	--
)	41	29	--
*	42	2A	SM
+	43	2B	C2 (CU2)
,	44	2C	--
-	45	2D	EQ (enquiry)
.	46	2E	AK (acknowledgment)
/	47	2F	BL (bell)
0	48	30	--
1	49	31	--
2	50	32	SY (sync)
3	51	33	--
4	52	34	PN
5	53	35	--
6	54	36	UC (uppercase)
7	55	37	ET (end of transmission)
8	56	38	--
9	57	39	--
:	58	3A	--
;	59	3B	C3 (CU3)
<	60	3C	D4 (device control 4)
=	61	3D	NK (no acknowledgment)
>	62	3E	--
?	63	3F	SB (substitute)
⓪	64	40	space
A	65	41	--
B	66	42	--
C	67	43	--
D	68	44	--
E	69	45	--
F	70	46	--
G	71	47	--
H	72	48	--

ASCII Symbol	Decimal	HEX	EBCDIC
!	73	49	-
"	74	4A	¢ (cent)
#	75	4B	· (period)
\$	76	4C	< (less than)
%	77	4D	((open parenthesis)
&	78	4E	+ (plus)
'	79	4F	-
(80	50	& (ampersand)
)	81	51	-
*	82	52	-
+	83	53	-
,	84	54	-
-	85	55	(leading pad)
.	86	56	-
/	87	57	-
0	88	58	-
1	89	59	-
2	90	5A	! (exclamation)
3	91	5B	\$ (dollar sign)
4	92	5C	* (asterisk)
5	93	5D) (close parenthesis)
6	94	5E	: (semicolon)
7	95	5F	^ (caret or -)
8	96	60	-
9	97	61	/ (ACK1)
0	98	62	-
1	99	63	-
2	100	64	-
3	101	65	-
4	102	66	-
5	103	67	-
6	104	68	-
7	105	69	-
8	106	6A	
9	107	6B	.
0	108	6C	%
1	109	6D	-

ASCII Symbol	Decimal	HEX	EBCDIC
!	110	6E	>
"	111	6F	? ' 1
#	112	70	ACK0
\$	113	71	-
%	114	72	-
&	115	73	-
'	116	74	-
(117	75	-
)	118	76	-
*	119	77	-
+	120	78	-
,	121	79	' (single quote)
-	122	7A	: (colon)
.	123	7B	# (pound)
/	124	7C	@ (at)
0	125	7D	' (apostrophe)
1	126	7E	= (equal)
2	127	7F	* (double quote)
3	128	80	-
4	129	81	a
5	130	82	b
6	131	83	c
7	132	84	d
8	133	85	e
9	134	86	f
0	135	87	g
1	136	88	h
2	137	89	i
3	138	8A	-
4	139	8B	-
5	140	8C	s (less than or equal)
6	141	8D	(
7	142	8E	+
8	143	8F	-
9	144	90	-
0	145	91	

Decimal	HEX	EBCDIC
147	93	l
148	94	m
149	95	n
150	96	o
151	97	p
152	98	q
153	99	r
154	9A	s
155	9B	t
156	9C	u
157	9D	v
158	9E	w
159	9F	x
160	A0	y
161	A1	z
162	A2	AA
163	A3	AB
164	A4	AC
165	A5	AD
166	A6	AE
167	A7	AF
168	A8	⋮ (greater than or equal)
169	A9	•
170	AA	
171	AB	
172	AC	
173	AD	
174	AE	
175	AF	
176	B0	S0 (SM0)
177	B1	S1 (SM1)
178	B2	S2 (SM2)
179	B3	S3 (SM3)
180	B4	S4 (SM4)
181	B5	S5 (SM5)
182	B6	S6 (SM6)

Decimal	HEX	EBCDIC
183	B7	S7 (SM7)
184	B8	S8 (SM8)
185	B9	S9 (SM9)
186	BA	
187	BB	
188	BC	
189	BD] (close bracket)
190	BE	≠ (not equal)
191	BF	-
192	C0	{ (open brace)
193	C1	A
194	C2	B
195	C3	C
196	C4	D
197	C5	E
198	C6	F
199	C7	G
200	C8	H
201	C9	I
202	CA	-
203	CB	-
204	CC	(unprintable character)
205	CD	-
206	CE	(unprintable character)
207	CF	} (close bracket)
208	D0	J
209	D1	K
210	D2	L
211	D3	M
212	D4	N
213	D5	O
214	D6	P
215	D7	Q
216	D8	R
217	D9	-
218	DA	-

Decimal	HEX	EBCDIC
219	DB	-
220	DC	-
221	DD	-
222	DE	-
223	DF	-
224	E0	\ (back slash)
225	E1	-
226	E2	S
227	E3	T
228	E4	U
229	E5	V
230	E6	W
231	E7	X
232	E8	Y
233	E9	Z
234	EA	-
235	EB	-
236	EC	(unprintable character)
237	ED	-
238	EE	-
239	EF	-
240	F0	0
241	F1	1
242	F2	2
243	F3	3
244	F4	4
245	F5	5
246	F6	6
247	F7	7
248	F8	8
249	F9	9
250	FA	1
251	FB	-
252	FC	-
253	FD	-
254	FE	-
255	FF	(trailing pad)

Service and Return Procedures

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The following sections apply to U.S. customers only. Non-U.S. customers with questions or concerns regarding return procedures should contact their Motorola Information Systems Group subsidiary or distributor.

Equipment Return Procedures

If you have questions about equipment return procedures, call the Logistics Administration Group at (508) 261-4495 for advice and assistance. If you require either on-site service or unit-exchange service, call the Customer Support Center at (800)-544-0062.

Expiration of Lease

To return equipment upon expiration of a lease agreement, contact your Motorola Information Systems Group Sales Office for return authorization and instructions. A list of these offices follows. When you contact the sales office, you will be asked to provide the following information:

- Product name and description
- Serial number
- Customer order number
- Reason for return

Factory Repair

To return equipment for factory repair, call the Logistics Administration Group at (508) 261-4495, for return authorization and instructions. When you call, you will be given a Return Material Authorization (RMA) control number. Mark this number clearly on the shipping container for ease of identification and faster service. The RMA control number provides a convenient tracking reference for both parties. Please have the following information available for each piece of equipment you return:

- Product name and description
- Serial number
- Failure symptoms

Packaging Guidelines for Equipment Return

Data communications equipment or parts that are to be returned to Motorola Information Systems Group for any reason must be properly packaged to prevent damage in shipment and handling.

If the original packing material and shipping container are available, reuse these items to return equipment. If these items are not available, it is your responsibility to package the contents in a manner that protects the equipment from damage during normal shipping and handling. Responsibility for damage to equipment during transit must be resolved between you and the carrier. The Logistics Administration group can provide you with specific packaging instructions upon request.

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