
Ann

Arbor

Controls

Summary

Sheet

ANN ARBOR

Ann Arbor Controls Summary

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Cursor Controls

CR	Carriage Return	CR
LF	Line Feed	LF
BS	Backspace	BS
CUU	Cursor Up P _n = # Lines	ESC [P _n A
CUD	Cursor Down P _n = # Lines	ESC [P _n B
CUF	Cursor Forward P _n = # Columns	ESC [P _n C
CUB	Cursor Backward P _n = # Columns	ESC [P _n D
HPR	Horizontal Position Relative P _n = # Columns	ESC [P _n a
VPR	Vertical Position Relative P _n = # Lines	ESC [P _n e
IND	Index	ESC D
RI	Reverse Index	ESC M
NEL	Next Line	ESC E
CNL	Cursor Next Line P _n = # Lines	ESC [P _n E
CPL	Cursor Preceding Line P _n = # Lines	ESC [P _n F
CHA	Cursor Horizontal Absolute P _n = Column #	ESC [P _n G
HPA	Horizontal Position Absolute P _n = Column #	ESC [P _n \
VPA	Vertical Position Absolute P _n = Line #	ESC [P _n d
CUP	Cursor Position P _{n1} = Line # P _{n2} = Column #	ESC [P _{n1} . P _{n2} H
HVP	Horiz & Vert Position P _{n1} = Line # P _{n2} = Column #	ESC [P _{n1} . P _{n2} f
CPR	Cursor Position Report P _{n1} = Line # P _{n2} = Column #	ESC [P _{n1} . P _{n2} R
zSC	Save Cursor Position	ESC 7
zRC	Restore Cursor Position	ESC 8

Tab Controls

HT	Horizontal Tabulation	HT
HTJ	Horizontal Tab with Justify	ESC I
CHT	Cursor Horizontal Tabulation P _n = # Tab stops	ESC [P _n I
CBT	Cursor Backward Tabulation P _n = # Tab stops	ESC [P _n z
HTS	Horizontal Tabulation Set	ESC H
TBC	Tabulation Clear 0 = Clear tab stop at cursor 2 = Clear all tab stops in line 3 = Clear all tab stops	ESC [Ps g
CTC	Cursor Tabulation Control 0 = Set tab stop at cursor 2 = Clear tab stop at cursor 4 = Clear all tab stops in line 5 = Clear all tab stops	ESC [Ps W

Erase Controls

ED	Erase in Display 0 = From cursor to end 1 = From start to cursor 2 = All of display	ESC [Ps J
EL	Erase in Line 0 = From cursor to end 1 = From start to cursor 2 = All of line	ESC [Ps K
EF	Erase in Field 0 = From cursor to end 1 = From start to cursor 2 = All of field	ESC [Ps N
EA	Erase in Area 0 = From cursor to end 1 = From start to cursor 2 = All of area	ESC [Ps O
ECH	Erase Character P _n = # Characters	ESC [P _n X

Edit Controls

ICH	Insert Character P _n = # Characters	ESC [P _n @
DCH	Delete Character P _n = # Characters	ESC [P _n P
SEE	Select Editing Extent 0 = Edit in page 1 = Edit in line 2 = Edit in field 3 = Edit in area	ESC [Ps Q
IL	Insert Line P _n = # Lines	ESC [P _n L
DL	Delete Line P _n = # Lines	ESC [P _n M
zPSH	Push Line P _n = # Lines	ESC [P _n s
zPOP	Pop Line P _n = # Lines	ESC [P _n t
zTI	Toggle IRM	ESC 6

Display Controls

zSDP	Set Display Parameters P _{n1} = Page size P _{n2} = Upper host area size P _{n3} = Lower host area size P _{n4} = Screen size	ESC [P _{n1} . P _{n2} . P _{n3} . P _{n4} p
SGR	Select Graphic Rendition 0 = Normal 5 = Blink 1 = Bold 7 = Reverse-Video 4 = Underscore 8 = Concealed	ESC [Ps . Ps m
zCGR	Change Graphic Rendition	ESC 9
SU	Scroll Up P _n = # Lines	ESC [P _n S
SD	Scroll Down P _n = # Lines	ESC [P _n T
zTFC	Toggle Fast Blink Cursor	ESC 5

Form-Filling Controls

DAQ	Define Area Qualification	ESC [> Ps . Ps o
	0 = Unprotected	7 = Set page tab stop
	1 = Protected/guarded	8 = Protected/unguarded
	3 = Numeric entry	18 = Concealed entry
	5 = Right justified entry	

SPA	Start of Protected Area	ESC V
EPA	End of Protected Area	ESC W
zGUA	Guard Unprotected Areas	ESC :

Send-Print Controls

SSA	Start of Selected Area	ESC F
ESA	End of Selected Area	ESC G
STS	Set Transmit State	ESC S
INT	Interrupt	ESC a

MC	Media Copy	ESC [Ps i
	0 = Print displayed page	
	4 = Turn off local copy	
	5 = Turn on local copy	

zSRC	Start Remote Copy	ESC [P _n v
	P _n = # Characters	

zSPF	Set Print Format	ESC [P _{n1} ..P _{n2} w
	P _{n1} = Printed lines	
	P _{n2} = Total lines	
	P _{n3} = Left margin	

zSTP	Set Transfer Pointer	ESC [P _{n1} ..P _{n2} u
	P _{n1} = Line #	
	P _{n2} = Column #	

zSTE	Set Transfer End	ESC [P _{n1} ..P _{n2} z
	P _{n1} = Line #	
	P _{n2} = Column #	

Mode Controls

SM	Set Mode	ESC [> Ps . Ps h
RM	Reset Mode	ESC [> Ps . Ps l

Communications Modes

zAXM	Auto Xon/Xoff Mode	B, 37
zHDM	Half-Duplex Mode	B, 40
zINM	Ignore NUL Mode	B, 54
SRM	Send-Receive Mode	B, 12

Keyboard Modes

zCLIM	Caps Lock Invert Mode	A, 53
zDBM	Destructive Backspace Mode	D, 30
zFIM	Function-Key Initialize Mode	A, 50
zFRM	Fast Repeat Mode	A, 47

KAM	Keyboard Action Mode	B, 2
zKCM	Key Click Mode	A, 26
zKPCM	Key Pad Control Mode	A, 27
zKRM	Key Repeat Mode	A, 28

zMBM	Margin Bell Mode	A, 25
zMKM	Meta Key Mode	B, 52
zRLM	Return Key CRLF Mode	A, 29

Display Modes

zACM	Alternate Cursor Mode	-, 51
zAPM	Auto Pause Mode	A, 38
zBKCM	Block Cursor Mode	A, 31
zBNCM	Blinking Cursor Mode	A, 32
zCNM	CR New-Line Mode	D, 55

zDDM	DEL-Character Display Mode	D, 35
zICM	Invisible Cursor Mode	D, 56
IRM	Insertion-Replacement Mode	-, 4
LNM	LF New-Line Mode	D, 20
zSPM	Scroll-Page Mode	D, 36

zSSM	Slow Scroll Mode	A, 39
zWFM	Wrap Forward Mode	D, 33
zWBM	Wrap Backward Mode	D, 34

Transfer Modes

zAKDM	Auto Keyboard Disable Mode	B, 46
zCSTM	Column Separator Transfer Mode	B, 43
FETM	Format Effector Transfer Mode	B, 14
zFSTM	Field Separator Transfer Mode	B, 44

zGAPM	Guarded Area Print Mode	C, 49
GATM	Guarded Area Transfer Mode	B, 1
zGRTM	Graphic Rendition Transfer Mode	B, 45
zLTM	Line Transfer Mode	B, 42

MATM	Multiple Area Transfer Mode	B, 15
SATM	Selected Area Transfer Mode	B, 17
zTPDM	Transfer Pointer Display Mode	A, 41
TTM	Transfer Termination Mode	B, 16

Form-Filling Modes

ERM	Erasur Mode	D, 6
zHAM	Hold in Area Mode	A, 48
TSM	Tabulation Stop Mode	D, 18

Diagnostic Modes

zMMM	Meta Monitor Mode	B, 57
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Miscellaneous Controls

BEL	Bell	BEL
DMI	Disable Manual Input	ESC \
EMI	Enable Manual Input	ESC b
ENQ	Enquiry	ENQ

REP	Repeat	ESC [P _n b
	P _n = # Times	
RIS	Reset to Initial State	ESC c
DCS	Device Control String	ESC P
ST	String Terminator	ESC \

DSR	Device Status Report	ESC [Ps n
	0 = Ready	
	2 = Busy	
	5 = Report status	
	6 = Report cursor position	

DA	Device Attributes	ESC [P _n c
	0 = Report device attributes	

Keyboard

RESET	SETUP	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	ERASE	EDIT	DELETE	INSERT	PRINT	SEND
-------	-------	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	-------	------	--------	--------	-------	------

ESC	! 1	@ 2	# 3	\$ 4	% 5	^ 6	& 7	* 8	(9	) 0	-	+ =	~	| \	BREAK
← TAB →	Q	W	E	R	T	Y	U	I	O	P	{	}	LINE FEED	BACK SPACE	
CTRL	CAPS LOCK	A	S	D	F	G	H	J	K	L	:	"	RETURN	DEL	
PAUSE	SHIFT	Z	X	C	V	B	N	M	<	>	?	/	SHIFT	MOVE UP	MOVE DOWN

T-CLR 7	↑ 8	T-SET 9
← 4	HOME 5	→ 6
SSA 1	↓ 2	ESA 3
.	0	ENTER

Note: Programmable keys shown shaded

Programmable Strings

ADDRESS CHARACTERS:

Sp	Header	(	BREAK	0	/ 0	8	/ 8	@	EDIT	H	PF1	P	PF9	X	/ PF5
!	Trailer	)	/ BREAK	1	/ 1	9	/ 9	A	DELETE	I	PF2	Q	PF10	Y	/ PF6
"	SEND (s)	*	PAUSE	2	/ 2	:	PERIOD	B	/ DELETE	J	PF3	R	PF11	Z	/ PF7
#	ENQ resp	+	RETURN	3	/ 3	;	TAB	C	INSERT	K	PF4	S	PF12	[	/ PF8
\$	DA resp	,	MOVE UP	4	/ 4	<	ENTER	D	/ INSERT	L	PF5	T	/ PF1	\	/ PF9
%	SEND (m)	-	/ MOVE UP	5	/ 5	=	/ TAB	E	PRINT	M	PF6	U	/ PF2	]	/ PF10
&	RESET	.	MOVE DN	6	/ 6	>	ERASE	F	/ PRINT	N	PF7	V	/ PF3	^	/ PF11
'	SETUP	/	/ MOVE DN	7	/ 7	?	/ ERASE	G	CTRL / 7	O	PF8	W	/ PF4	_	/ PF12

SPECIAL CHARACTERS: \ = New Address ! = Address Index ~ = CTRL Shift { } = Lowercase Shift x = Repeat y = Local z = Send only
p = Power-on String Address

Note: / = Shifted level

ASCII Character Set

Column Row	0	1	2	3	4	5	6	7
0	NUL	DLE	SP	0	@	P	\	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
10	LF	SUB	*	:	J	Z	j	z
11	VT	ESC	+	;	K	[	k	{
12	FF	FS	,	<	L	\	l	|
13	CR	GS	-	=	M	]	m	}
14	SO	RS	.	>	N	^	n	~
15	SI	US	/	?	0	_	o	DEL

Setup Exits

- S = Save
- M = Data Monitor Line
- T = Local Test
- X = Transparent Mode
- Y = Diagnostic (Long)
- Z = Diagnostic (Short)

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