USER'S GUIDE
to
TERMINAL 3000

3000

TIMEX

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TERMINAL 3000

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I - WHAT'S IN A TERMINAL ?

The TIMEX TERMINAL 3000 has been designed for exclusive use with the FDD 3000 when operating under CP/M. Please note that you will not be able to use the terminal when operating under T.O.S.

You will not need the "MONITOR EMULATOR PROGRAM", supplied in your distribution disk, since this software is already built in the terminal.

All that the terminal does is read the keyboard, send the character to the F.D.D. 3000 where CP/M interperts it and then echoes it back to the terminal that prints it on the screen or, if it is a control character, the terminal acts upon it. Example of control characters are LF (line feed) that causes cursor to move onto a new line or an ESCape sequence that positions the cursor on the screen. A detailed description of all these characters will be given later on.
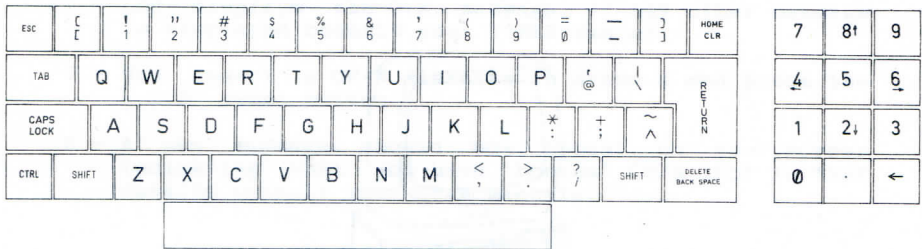
IMPORTANT NOTE:

The TIMEX 3000 terminal has compatible escape sequences with Digital's VT-52 terminal so when you purchase CP/M software packages you should make sure that the software is installed for the VT-52 terminal or that it has an install program so that you adapt the package yourself.

II - HOW TO CONNECT YOUR TERMINAL TO THE FDD 3000

WARNING :

Do not plug or unplug your terminal if your F.D.D. 3000 is switched on.

The TIMEX terminal 3000 has no cables other than the connection cable from the F.D.D. 3000. The terminal 3000 is powered through the 'curly' connection cable, therefore **YOU MUST SWITCH OFF YOUR F.D.D 3000 BEFORE PLUGGING/UNPLUGGING YOUR TERMINAL.**

Do not attempt to connect the TIMEX TERMINAL to any other system other than the F.D.D. 3000 as you may cause permanent damage to the terminal or to the other system.

The terminal does not have a video output socket. The video signal is carried through the connecting cable to the back of the F.D.D. 3000. Use this socket to plug in the cable from your monitor.

You will not be able to use a T.V. with the TIMEX 3000 TERMINAL.

To power up your system you must start with everything switched off, refer to the figures below and proceed as follows:
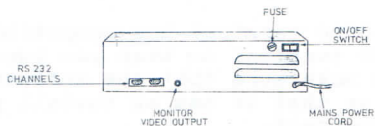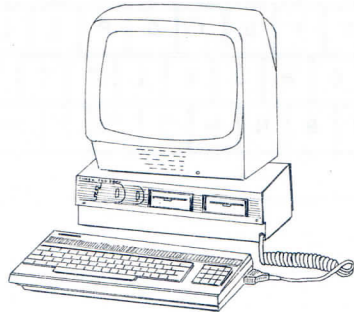
1 – Take the plastic protectors out of both drives and do not insert any diskettes at this point.

2 – Plug the end of the 'curly' cable, coming from the front right hand side of the FDD, into the side of the TERMINAL (Note that the connector will only fit in one position).

3 – Connect the cable from your monitor into the socket labelled 'MONITOR' at the rear of the F.D.D. 3000.

4 – If you own a printer then connect it to the RS 232 input labelled

5 – Switch on the F.D.D. 3000 with no diskettes inserted in the drives.

6 – The monitor should now display the following message:

<p align="center">TIMEX TERMINAL 3000 Version XX.X</p>

<p align="center">Date of release</p>

<p align="center">TEST RAM, ROM OK</p>

The version and the date of release may vary.
At power up the terminal auto tests its RAM and ROM and displays the O.K. message. If any other message is displayed consult your TIMEX dealer.

7 – Now insert a CP/M diskette in drive A and press the F.D.D. reset button.

8 – A new message should now appear on your screen indicating that you have 'booted' CP/M. For further details consult your CP/M manuals.

III - THE KEYBOARD

The TIMEX 3000 TERMINAL is very easy to operate. If you can operate a typewriter you should be able to use this keyboard.

There are some keys and key combinations that are, perharps, not obvious to a first time user.

CTRL   - This is the Control key, abreviated to '^' throughout this manual. On its own it has no effect, but when pressed in combination with another key it sends a control character.

TAB   - This sends a tab code (09) to the printer.

ESC   - This key transmits a code that usually has a special meaning to the system. It tells CP/M to process the next keys pressed as a command.

SHIFT - On its own has no effect but when pressed with another key it enables the uppercase functions. If a key has no uppercase function the shift key is disregarded.

RETURN- Transmits a carriage return character (CR).

BELL   - This character is achieved by holding down the control key while simultaneously pressing the 'G' key (i.e. ^G). When echoed back to the terminal produces a 'beep'.

CAPS
LOCK   - This key functions as a toggle switch. When enabled, LED on, all alphabetic characters are transmitted as uppercase. All numeric and special symbol characters remain in lowercase.

DELETE
BACKSPACE - When unshifted this key transmits a backspace code that deletes the previous character from the buffer and from the screen. When shifted the key transmits a delete character to CP/M that erases the previous character from the buffer and echoes it back to the screen.

HOME
CLR   - When unshifted this key sends an escape sequence (ESC J), see the section of this manual on escape control sequences. When shifted transmits an ESC H escape sequence.

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The group of keys on the right hand side of your terminal, form a numeric keypad that make the entry of numerals easier on certain applications . These keys have the same effect as the numeric entries on the main keyboard.

THE ARROWED KEYS

If you keep the CTRL key down and simultaneously hit the numeric arrowed keys you will transmit an escape sequence according to the following table:

CTRL + 8 - Cursor Up or ESC A

CTRL + 2 - Cursor Down or ESC B

CTRL + 6 - Cursor Righr or ESC C

CTRL + 4 - Cursor Left or ESC D

The the single arrow key is the same as the RETURN key on the main keyboard.

IV - ESCAPE CONTROL SEQUENCES

Below is a list of valid escape sequences followed by a description of how each is interperted by the terminal.

Cursor Up - ESC A

Move the active position upward one position without, altering the horizontal position. If an attempt is made to move the cursor above the top margin, the cursor stops at the top margin.

Cursor Down - ESC B

Move the active position down one position without altering the horizontal position. If an attempt is made to move the cursor below the bottom margin, the cursor stops at the bottom margin.

Cursor Right - ESC C

Move the active position to the right. If an attempt is made to move the cursor to the right of the right margin, the cursor stops at the right margin.

Cursor Left - ESC D

Move the active position one position to the left. If an attempt is made to move the cursor to the left of the left margin, the cursor stops at the left margin.

Enter Graphics Mode - ESC F

Causes the special graphic set to be used.

Exit Graphics Mode - ESC G

This sequence causes the standard ASCII character set to be used.

Cursor to Home - ESC H

Move cursor to home position (Top left hand corner).

Reverse line feed - ESC I

Move the active position upward one position without altering the column position. If the active position is at the top margin, a scroll down is performed.

Erase to End of Screen - ESC J

Erase all characters from the active position to the end of the screen. The active position is not changed.

Erase to the End of Line - ESC K

Erase all characters from active position to end of the current line. The active position is not changed.

Inverse Video Mode On - ESC L

Puts the terminal in the inverse video mode. All ASCII will be printed in inverse video. If the terminal is already in the inverse video mode the sequence has no effect.

Inverse Video Mode Off - ESC M

Reverts the terminal back to the normal video mode. If the terminal is already in its normal video mode the sequence has no effect.

Portuguese Characters Mode - ESC N

The ASCII character following this escape sequence is interperted according to the following character set:

KEY	CHARACTER	ASCII CODE
a	á	61H
b	ã	62H
c	ç	63H
d	ê	64H
e	é	65H
f	ó	66H
g	õ	67H
h	à	68H
i	í	69H
j	â	6AH
o	ô	6FH
u	ú	75H

After printing the one character the normal ASCII character set is reselected.

Direct Cursor Address - ESC Y line column

Move the cursor to the specified line and column. The line and column numbers are sent as ASCII codes whose value are the number plus 037_8 (1FH); e.g. 048_8 (20H) refers to the first line or column, 050_8 (40H) refers to the eigth line or column, etc.

Identify - ESC Z

This sequence causes the terminal to send its identifier escape sequence to the host computer. This sequence is:

ESC /Z.

APPENDIX A

THE 7 - BIT ASCII CHARACTER SET

Table of ASCII Control Characters

HEX CODE	CHAR.	NAME OF CHARACTER	KEYS TO PRESS
00	NUL	Null	^ @
01	SOH	Start of Heading	^ A
02	STX	Start of text	^ B
03	ETX	End of text	^ C
04	EOT	End of Transmisssion	^ D
05	ENQ	Enquiry	^ E
06	ACK .	Acknoledgement	^ F
07	BEL	Bell	^ G
08	BS	Backspace	^ H
09	HT	Horizontal Tab	^ I
0A	LF	Line Feed	^ J
0B	VT	Vertical Tab	^ K
0C	FF	Form Feed	^ L
0D	CR	Carriage Return	^ M
0E	SO	Shift Out	^ N
0F	SI	Shift In	^ O
10	DLE	Data Link Escape	^ P
11	DC1	Device Control 1	^ Q
12	DC2	Device Control 2	^ R
13	DC3	Device Control 3	^ S
14	DC4	Device Control 4	^ T
15	NAK	Negative Acknoledgement	^ U
16	SYN	Synchronization Character	^ V
17	ETB	End of Transmission Block	^ W
18	CAN	Cancel	^ X
19	EM	End of Medium	^ Y
1A	SUB	Substitute	^ Z
1B	ESC	Escape	^ [
1C	FS	Field Separator	^ /
1D	GS	Group Separator	^]
1E	RS	Record Separator	^ ^(arrow)
1F	US	Unit Separator	^ _(underscore)

Printable ASCII Table

HEX CODE	CHAR	HEX CODE	CHAR	HEX CODE	CHAR
20	SP(Space)	40	@	60	`
21	!	41	A	61	a
22	"	42	B	62	b
23	#	43	C	63	c
24	$	44	D	64	d
25	%	45	E	65	e
26	&	46	F	66	f
27	'	47	G	67	g
28	(	48	H	68	h
29	)	49	I	69	i
2A	*	4A	J	6A	j
2B	+	4B	K	6B	k
2C	,	4C	L	6C	l
2D	–	4D	M	6D	m
2E	.	4E	N	6E	n
2F	/	4F	O	6F	o
30	0	50	P	70	p
31	1	51	Q	71	q
32	2	52	R	72	r
33	3	53	S	73	s
34	4	54	T	74	t
35	5	55	U	75	u
36	6	56	V	76	v
37	7	57	W	77	w
38	8	58	X	78	x
39	9	59	Y	79	y
3A	:	5A	Z	7A	z
3B	;	5B	[	7B	{
3C	<	5C	\	7C		
3D	=	5D	]	7D	}
3E	>	5E	^	7E	~
3F	?	5F	_	7F	RUBOUT

The Graphic Character Set

HEX CODE	CHAR	DESCRIPTION	KEY
5F		Blank	—
60	♦	Diamond	
61	▒	Checkerboard	a
62	Hᴛ	Horizontal Tab	b
63	Fғ	Form Feed	c
64	Cʀ	Carriage Return	d
65	Lғ	Line Feed	e
66	°	Degree Symbol	f
67	±	Plus/Minus	g
68	Nʟ	New Line	h
69	Vᴛ	Vertical Tab	i
6A	⌐	Lower Right Corner	j
6B	¬	Upper Right Corner	k
6C	⌐	Upper Left Corner	l
6D	∟	Lower left corner	m
6E	+	Crossing Lines	n
6F	—	Horiz. Line Scan 1	o
70	—	Horiz. Line Scan 3	p
71	—	Horiz. Line Scan 5	q
72	—	Horiz. Line Scan 7	r
73	—	Horiz. Line Scan 9	s
74	⊢	Left "T"	t
75	⊣	Right "T"	u
76	⊥	Bottom "T"	v
77	⊤	Top "T"	w
78	│	Vertival Bar	x
79	≤	Less than or = to	y
7A	≥	Greater than or= to	z
7B	π	Pi	{
7C	≠	Not equal to	¦
7D	£	UK Pound sign	}
7E	•	Centered Dot	~

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