

Polymorphic Systems Video Terminal Interface on the Bogner Systems IMSAI 8080

VTI at address F800

Disk Jockey 2D at address E000

Writing hex F8 to address F800 writes “x” to display

Writing hex F9 to address F801 writes “y” to display in next character block

Each address is a character block on the display

In DDT (from inside CP/M) do SF800 to Set data at address F800 to a value

Line address list:

Line 1 is F800-F83F

Line 2 is F840-F87F

Line 3 is F880-F8BF

Line 4 is F8C0-F8FF

Line 5 is F900-F93F

Line 6 is F940-F97F

Line 7 is F980-F9BF

Line 8 is F9C0-F9FF

Line 9 is FA00-FA3F

Line 10 is FA40-FA7F

Line 11 is FA80-FABF

Line 12 is FAC0-FAFF

Line 13 is FB00-FB3F

Line 14 is FB40-FB7F

Line 15 is FB80-FBBF

Line 16 is FBC0-FBFF

16x64 character blocks

Nothing in address space FC00 or above

ASCII Character set

Polymorphic Systems Video Terminal
Interface Character/Control HEX values

						8	9	A	B	C	D	E	F
b7 b6 b5 b4 b3 b2 b1 b0						0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
COLUMNS						0	1	2	3	4	5	6	7
ROWS						0	1	2	3	4	5	6	7
0	0	0	0	0	0	NUL	DLE	SP	0	@	P	'	p
1	0	0	0	1	1	SOH	DC1	!	1	A	Q	a	q
2	0	0	1	0	2	STX	DC2	"	2	B	R	b	r
3	0	0	1	1	3	ETX	DC3	#	3	C	S	c	s
4	0	1	0	0	4	EOT	DC4	\$	4	D	T	d	t
5	0	1	0	1	5	ENQ	NAK	%	5	E	U	e	u
6	0	1	1	0	6	ACK	SYN	&	6	F	V	f	v
7	0	1	1	1	7	BEL	ETB	'	7	G	W	g	w
8	1	0	0	0	8	BS	CAN	(	8	H	X	h	x
9	1	0	0	1	9	HT	EM	)	9	I	Y	i	y
A	1	0	1	0	10	LF	SUB	*	:	J	Z	j	z
B	1	0	1	1	11	VT	ESC	+	;	K	[	k	{
C	1	1	0	0	12	FF	FS	,	<	L	\	l	
D	1	1	0	1	13	CR	GS	-	=	M	§	m	}
E	1	1	1	0	14	SO	RS	.	>	N	~	n	~
F	1	1	1	1	15	SI	US	/	?	O	—	o	DEL

Hex values for Graphics Blocks on Poly VTl

Hexidecimal	Decimal	Graphic (White = bright, Black = dark)
0 00H	0	
1 01H	1	
2 02H	2	
3 03H	3	
4 04H	4	
5 05H	5	
6 06H	6	
7 07H	7	
8 08H	8	
9 09H	9	
10 0AH	10	
11 0BH	11	
12 0CH	12	
13 0DH	13	
14 0EH	14	
15 0FH	15	
16 10H	16	
17 11H	17	
18 12H	18	
19 13H	19	
20 14H	20	
21 15H	21	
22 16H	22	
23 17H	23	
24 18H	24	
25 19H	25	
26 1AH	26	
27 1BH	27	
28 1CH	28	
29 1DH	29	
30 1EH	30	
31 1FH	31	
32 20H	32	
33 21H	33	
34 22H	34	
35 23H	35	
36 24H	36	
37 25H	37	
38 26H	38	
39 27H	39	
40 28H	40	
41 29H	41	
42 2AH	42	
43 2BH	43	
44 2CH	44	
45 2DH	45	
46 2EH	46	
47 2FH	47	
48 30H	48	
49 31H	49	
50 32H	50	
51 33H	51	
52 34H	52	
53 35H	53	
54 36H	54	
55 37H	55	
56 38H	56	
57 39H	57	
58 3AH	58	
59 3BH	59	
60 3CH	60	
61 3DH	61	
62 3EH	62	
63 3FH	63	

There are 16 rows and 64 columns of characters on the display.

Each block is 3 rows x 2 columns.

Left column is high nibble, right column is low nibble.

Blocks in the column are numbered bottom up.

Images can be formed using a combination of the blocks.

Bits are numbered as such: 76543210

Bit numbering:

5 2

4 1

3 0

Bits 6 and 7 are always 0.

To write a character block to an address, you use two hex values to make one byte. Each address can hold one byte, and that corresponds to a character block in each address.

If a bit is on (1), the screen shows dark. If a bit is off, the screen is lit up. For example, hex 00 would be all 6 bits on in that character block.

Diagram of hex 00 (N for On, F for Off):

N N

N N

N N

Diagram of hex 15:

N F

F N

N F