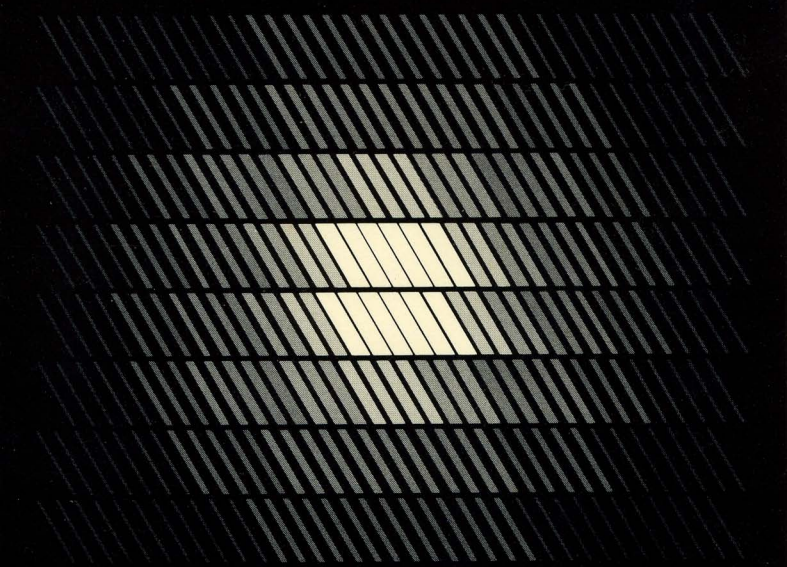
VideoBrain™ FamilyComputer Owner's Handbook

Communications Series

Timeshare CM01



CM01 Timeshare

Owner's Handbook

Communications Series

VideoBrain Computer Company
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Introduction

This program cartridge converts your VideoBrain into a timeshare terminal. Now you can "access" the data banks and computer power of a large timeshare system over telephone lines—to learn the Dow Jones index, for example. Timeshare can communicate with all computers that allow remote (telephone-linked) access.

Teamed with the VideoBrain Expander 1 and 2, Timeshare sends and receives data using the US ASCII code system.

This manual describes the installation, checkout and operating procedures for using your VideoBrain as a timeshare terminal. In addition, an introductory section provides a conceptual view of timesharing.

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Structure of a Timeshare System

The structure of a timeshare system contains these three major components (Figure 1):

- A host computer with its collection of software, peripherals and data to which a consumer may subscribe
- A home terminal that the consumer can use to "talk" to the host computer
- A network of telephone lines that connects the home terminal with the host computer.

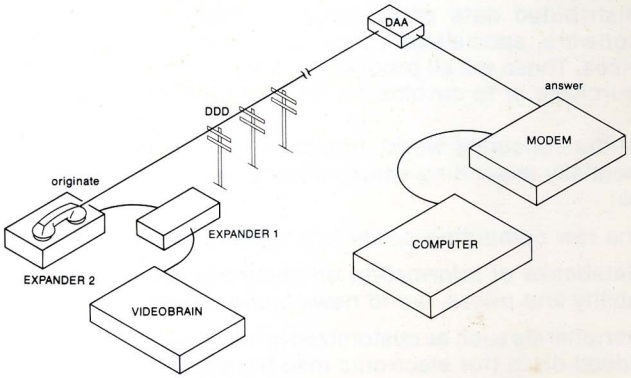


Figure 1

The customer at home selects the host computer by dialing its phone number. Large nationwide timeshare companies often provide a telephone network so that users can dial a local number, rather than a long distance number to access a remote computer.

Communication Using the ASCII Code Scheme

Your VideoBrain and the Host Computer use the ASCII code scheme for communications. The ASCII scheme converts each alphanumeric character into seven bits (a zero or one value) that uniquely identifies the character (see Table 1).

The communication sequence is as follows:

1. Characters that you type on the VideoBrain keyboard are translated into the appropriate ASCII representation. This sequence of seven bits is sent to the Expander 2 through Expander 1.
2. The Expander 2 converts the ones and zeroes into audio sounds of different pitches and sends these sounds over the telephone line.
3. The host computer demodulates the signal (audio to digital conversion) and interprets the character you sent.
4. Output from the host computer is converted to digital signals by the Expander 2.
5. VideoBrain interprets these digital codes and displays the appropriate alphanumeric character on your TV screen.

Section 2: Installation

Inserting the Cartridge

1. Make sure your VideoBrain computer is attached to your TV as described in the Owner's Manual. Check that power is on.
2. Push the cartridge carrier release button above the VideoBrain keyboard in order to swing the cartridge carrier door up.
3. With the label facing up, slide the cartridge all the way into the tracks suspended from the cartridge carrier door.
4. Gently push the cartridge door down into the computer until it locks.
5. Push the 

button. The title of the cartridge should appear on your TV for two seconds.
6. A blinking cursor should then appear in the upper left-hand side of the screen.

Connecting Expander 1 and Expander 2

Operation of the Timeshare cartridge requires the following VideoBrain accessories:

- EXPANDER 1—an input/output interface that allows the VideoBrain to communicate with a host of external devices, including a printer, two audio tape cassettes and an acoustic coupler/modem. Expander 1 can be connected with any data set or acoustic coupler with the standard EIA RS232-C connector.

- EXPANDER 2—a standard acoustic coupler for serial by bit or character communication using the telephone.

The Timeshare cartridge used with the expanders can communicate with a printer through a standard EIS RS232-C interface. With this optional equipment, you can produce a hard copy (printed copy) of all transmitted and reviewed data.

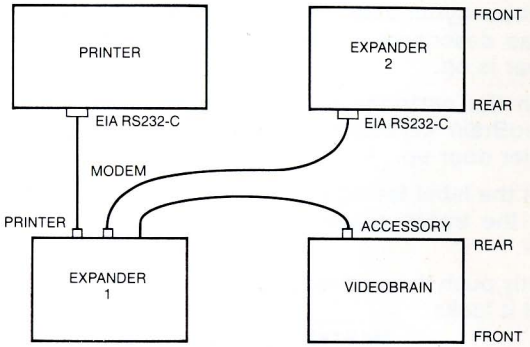


Figure 2

The connections for all Timeshare accessory equipment are shown above.

Now you're ready to connect your VideoBrain computer terminal to a timeshare host computer and begin to type information into the keyboard. (Log-on procedures vary from service to service. Check with your service for the correct log-on sequence.)

Section 3: Operating Procedures

The Keyboard

To transmit and receive the full set of ASCII codes, the VideoBrain keyboard has been transformed as shown in figures 3 through 6. The standard ASCII codes are in Table 1. Table 2 explains special functions on the keyboard.

Selecting Keys Using the

And

Keys.

To select a shifted key for entry (Figure 4), press the

key, followed by the desired key—*holding both down simultaneously.* (The

key does not lock; therefore you need to hold it down with every shifted key you enter.)

Similarly for a control key (Figure 5) press

followed by the desired key. For the control/shift key combination (Figure 6) press the

key, the

key, followed by the desired key, holding all three down simultaneously.

Sending The Input Line Using 

Key

After each line of input, key 

to send the line of input to the host computer.

Transmission of Data

The Timeshare cartridge generates all ASCII codes except for lower case letters, 

key characters 

, 

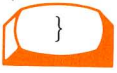
, 

, 

and the special characters 

, 

, 

, 

and 

.

Receiving Data

The Timeshare cartridge recognizes all ASCII codes. It performs the following special action:

1. automatically converts lower case letters to upper case characters for display
2. does not display the 

, 

, 

, 

and 

.

Screen Display

Timeshare displays up to 15 lines of 24 characters each on the TV screen. Lines with more than 24 characters are automatically split and carried on to the next physical line.

A blinking cursor indicates the position of the next input characters. When more than 15 lines appear on the screen, the screen automatically scrolls up and all lines move up the screen one line as the first line disappars.

The screen may be cleared by depressing 

and 

keys and then keying 

, simultaneously.

Full Duplex/Half Duplex

Most host computers operate in full duplex mode. This means that when you type something, your terminal sends the character to the host computer and the computer quickly "echoes" it back before it is displayed on your screen. Your VideoBrain Timeshare cartridge is set to full duplex operation (default).

If the host computer you are working with operates in half duplex mode, it will only send back its own output—it won't echo what you type. To see what you are typing, you'll need to select the half duplex mode by keying 

, 

, 

simultaneously.

Speed Selection

Some host computers allow a low and a high-speed transmission rate. The Timeshare cartridge has software-selectable options of 110 and 300 baud. The speed you select must correspond to the input data line rate of the host computer. The Timeshare cartridge normally communicates at the 300 baud rate (the default). You can select the low speed 110 baud rate by keying 

, 

and 

simultaneously.

Printer Interface Option

The Timeshare cartridge has been designed to accomodate a hard-copy printer. When the printer is connected and turned on, all keyboard entries and all host computer output will be sent to the printer as well.

The printer generates output at the same speed as the selected data transmission rate.

Print Control Characters

For debugging purposes, it is often useful to have ASCII characters that have no alphanumeric representation (e.g., control characters) displayed on the screen. The user can select this option by keying 

, 

and 

simultaneously. Until this option is turned off, all non-printable control characters are displayed using the inverse of the non-controlled character on the keyboard.

To turn off this option key 

, 

and 

simultaneously.

Figure 3. Unshifted Keys

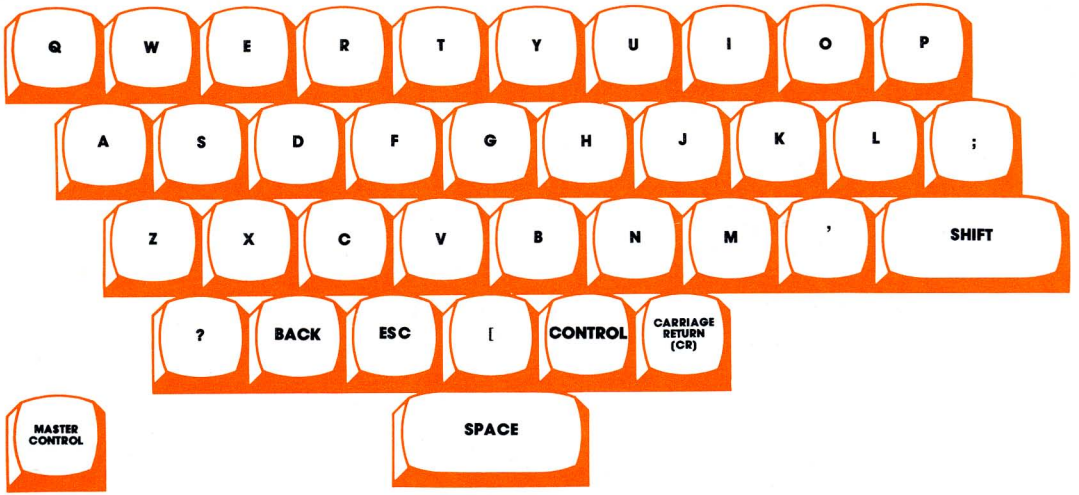


Figure 4. Shifted Keys
(Press SHIFT and desired key simultaneously)

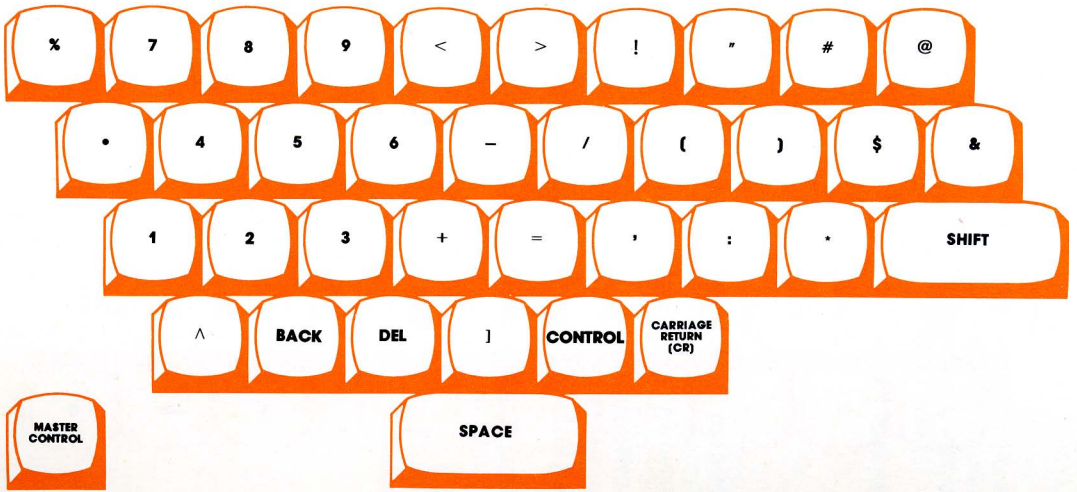


Figure 5. Control Keys
(Press CONTROL and desired key simultaneously)

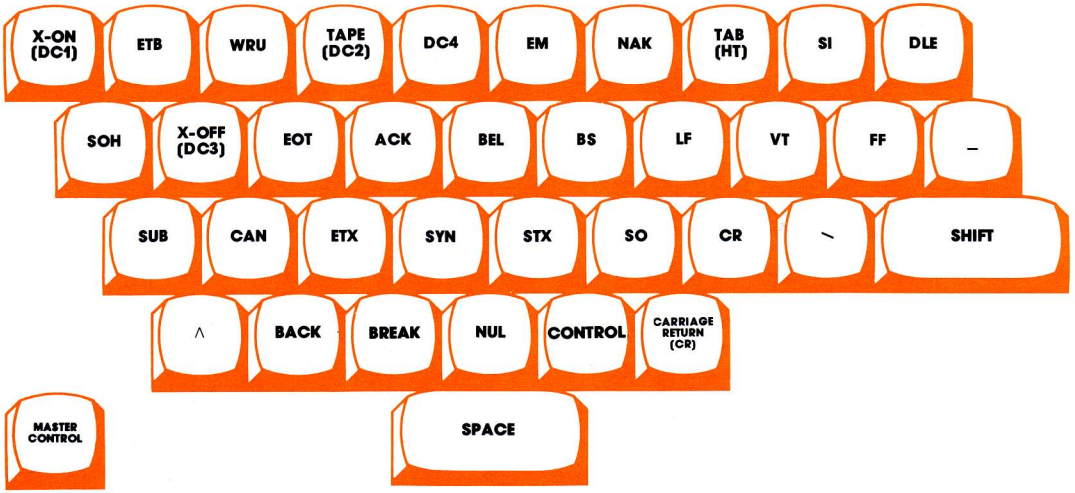


Figure 6. Control/Shifted Keys
(Press CONTROL, SHIFT and desired key simultaneously)

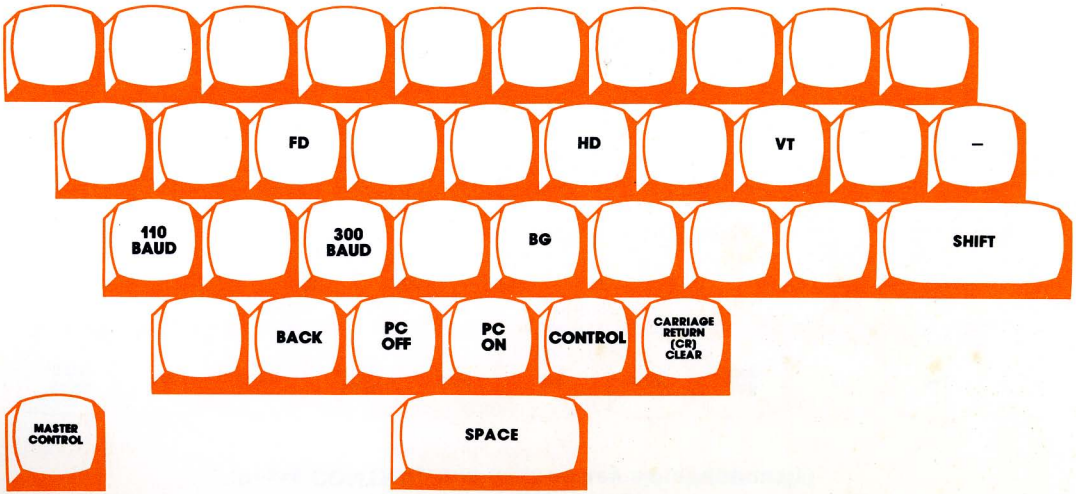


TABLE 1: STANDARD ASCII CODE SYSTEM AND CHARACTER SET

b_7				0	0	0	0	1	1	1	1
	b_6			0	0	1	1	0	0	1	1
		b_5		0	1	0	1	0	1	0	1
b_4	b_3	b_2	b_1								
0	0	0	0	NUL	DLE	SPACE	0	@	P	`	p
0	0	0	1	SOH	DC1	!	1	A	Q	a	q
0	0	1	0	STX	DC2	"	2	B	R	b	r
0	0	1	1	ETX	DC3	#	3	C	S	c	s
0	1	0	0	EOT	DC4	$	4	D	T	d	t
0	1	0	1	ENQ	NAK	%	5	E	U	e	u
0	1	1	0	ACK	SYN	&	6	F	V	f	v
0	1	1	1	BEL	ETB	'	7	G	W	g	w
1	0	0	0	BS	CAN	(	8	H	X	h	x
1	0	0	1	HT	EM	)	9	I	Y	i	y
1	0	1	0	LF	SUB	*	:	J	Z	j	z
1	0	1	1	VT	ESC	+	;	K	[	k	{
1	1	0	0	FF	FS	,	<	L	\	l	¦
1	1	0	1	CR	GS	-	=	M	]	m	}
1	1	1	0	SO	RS	.	>	N	^	n	~
1	1	1	1	SI	US	/	?	O	_	o	DEL

For full discussion of keyboard usage see Table 2, and Section 3, Operating Procedures

PRINTABLE CHARACTER CONTROL CHARACTERS

ASCII CONTROL CHARACTERS
(From USA Standards Institute Publication X3.4–1968)

ACK	acknowledge
BEL	bell
BS	backspace
CAN	cancel
CR	carriage return
DC1 = X-ON	device control 1
DC2 = TAPE	device control 2
DC3 = X-OFF	device control 3
DC4 = TAPE	device control 4 (stop)
DEL = RUB OUT	delete
DLE	data link escape
EM	end of medium
ENQ = WRU	enquiry
EOT	end of transmission
ESC	escape
ETB	end of transmission block
ETX	end of text
FF	form feed
FS	file separator
GS	group separator
HT	horizontal tabulation
LF	line feed
NAK	negative acknowledge
NUL	null
RS	record separator
SI	shift in
SO	shift out
SOH	start of heading
STX	start of text
SUB	substitute
SYN	synchronous idle
US	unit separator
VT	vertical tabulation

Table 2

Special Keyboard Functions

Special Key	Function
	pressed to type shifted characters shown in Figures 4 and 6.
	pressed to generate control character codes shown in Figures 5 and 6.
	pressed after every line of input to send the current line to the host computer.
 Figure 6	software selectable full duplex communication mode (default setting)
 Figure 6	software selectable half duplex communication mode
 Figure 6	software selectable 300 baud (i.e., 30 characters per second) transmission speed (default setting)

Figure 6

software selectable 110 baud (10 characters per second) transmission speed

Figure 5

interrupts the data transmission.

Figure 6

clears the TV screen

Figure 6

changes the background color on the TV screen

Figure 6

software-selectable printing of non-printable control characters

Figure 6

turns off printing of control characters (default)

moves the cursor backwards on the input line

Section 4: Troubleshooting

If terminal is not operating properly, perform the following checks:

1. Check all AC power connections and that the VideoBrain, Expanders 1 and 2 and printer power indicators are on.
2. Check that all peripherals are connected correctly (Figure 2), and that all connectors are firmly plugged in.
3. Check that the telephone handset is firmly seated in the Expander 2 acoustic cups with the cord to the rear.
4. Check the transmission speed setting, so that it matches that of the host computer (Figure 6).
5. If using printer, check the printer and make sure that the print paper roll is loaded properly.
6. Check that duplex is set correctly.

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Timeshare is just one of the many exciting VideoBrain cartridges brought to you by the VideoBrain Computer Company. We suggest you try all the VideoBrain Cartridges to help you around the home, educate your children and entertain the whole family.

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ED09	Historical Simulation—France in the Old Regime

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EN02	Pinball
EN03	Tennis
EN04	Checkers
EN05	Blackjack
EN06	Vice Versa™
EN10	Computer Life

*Uses Expander 1

Limited 90-Day Warranty on Cartridges:

For 90 days from the date of purchase, VideoBrain Computer Company will repair any defect in material or workmanship in this Cartridge free of charge.

To obtain warranty service, return the Cartridge postpaid, with sales receipt showing date of purchase, to the VideoBrain Service Center with address shown below.

Under no circumstances will VideoBrain Computer Company be liable for any special, incidental, or consequential damages resulting from use or possession of the VideoBrain or its accessories. However, some states do not allow the exclusion or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you.

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