XITRON PORTABLE TERMINAL

OPERATORS MANUAL

For XPT and XPT II Rev. 1.0

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INTRODUCTION

The XPT (Xitron Portable Terminal) is designed to work very much like a typewriter. This manual will tell you everything you need to know to use this unit.

The XPT is a simple device to operate. The terminal is basically a typewriter that uses a video screen instead of paper and communicates with a host computer. Before using your XPT, read this manual to understand the terminal operation.
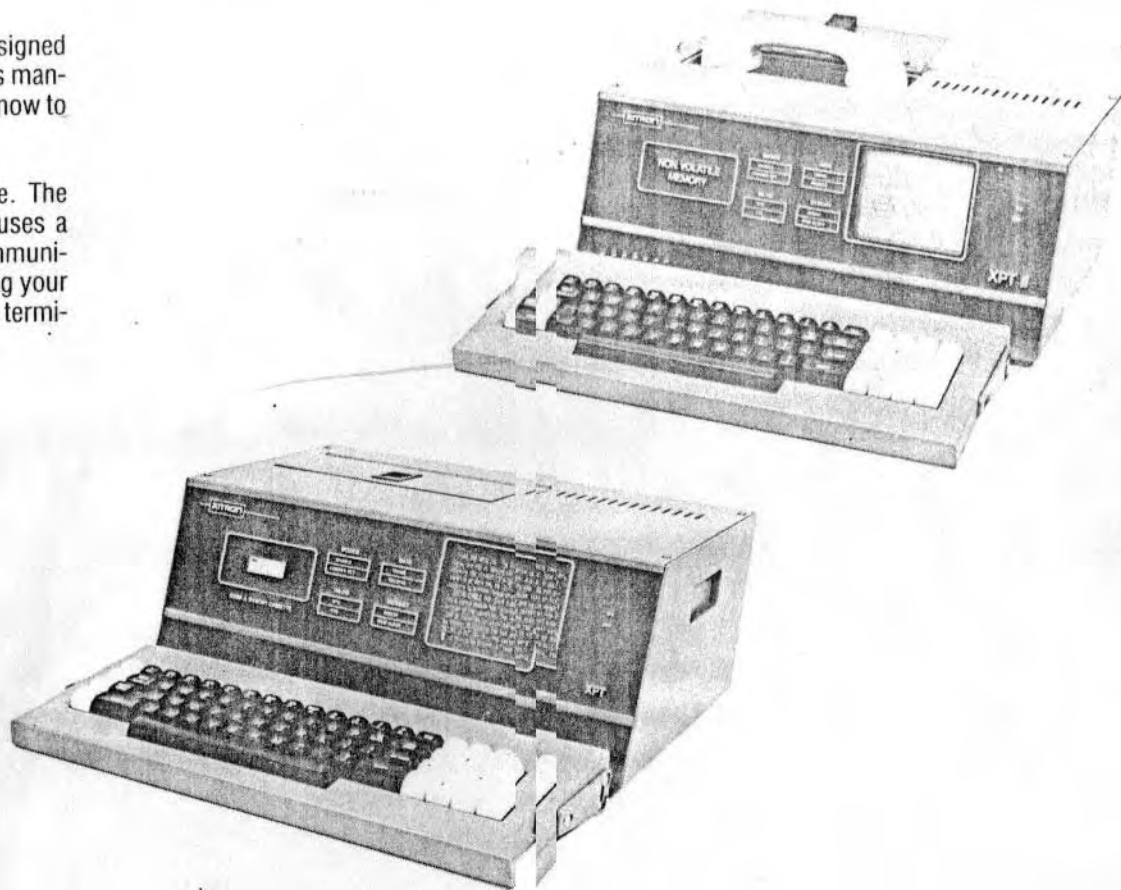
TERMINAL SET UP

To remove the XPT from its case, firmly grip the handles on either side of the unit and lift. The detachable keyboard slides out from underneath the terminal and can be adjusted to any desired position. There are brackets on both sides for added elevation.

The power cord is located in the compartment at the back of the terminal. After a power connection has been made (standard 3 wire grounded plug) the ON/OFF switch can be found on the front panel of the unit (If the XPT has been exposed to cold weather during transport allow the unit to come up to room temperature before applying power).

Turn the power switch to ON. After a warm-up period of about 10 seconds, the cursor should appear in the upper left hand corner of the screen. Adjust the brightness, if necessary, using the control knob located inside the modem compartment on top of the terminal. (To unlatch the compartment lid, insert your thumb and push away from you while lifting.) NOTE: The brightness control should not be left at high intensity for prolonged periods of time, as it may etch a pattern onto the screen. — The XPT is now ready for data entry —
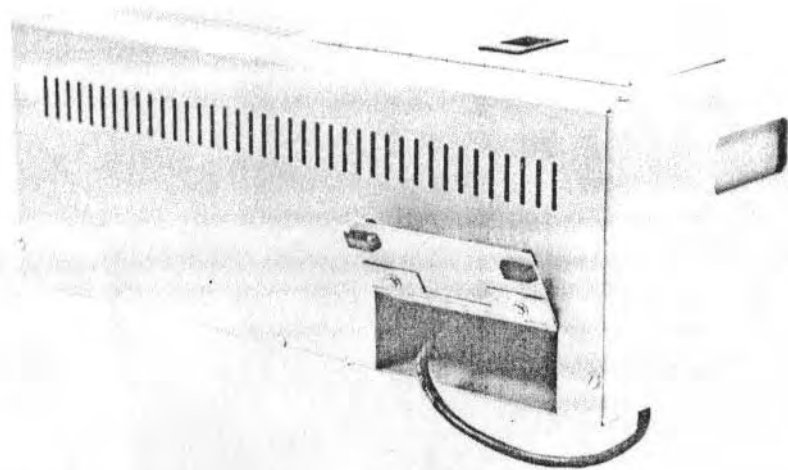
FUNCTION KEYS

BLOCK: Defines an area to be blocked by displaying an underlined s/o symbol at the beginning and end of the block.

BOLD: Generates the Upper Rail symbol ($\uparrow$) on the screen and causes all text following this symbol to be displayed with bold intensity.

CLOSE FILE: Operates in the directory mode only. After text is given a file name (up to six characters) depressing the close file key will store the file on the bubble cassette.

CTRL (Control): Used to expand the function of most keys on the keyboard.

CURSOR DIRECTION KEYS: ($\leftarrow \uparrow \rightarrow \downarrow$): Used to reposition the cursor in the direction indicated. The only way in which the cursor may be moved without altering existing text on the screen. If the cursor is situated on the top line of the display, depressing the ($\uparrow$) key will cause the text to be scrolled down, until reaching the beginning of the text in memory. Positioning the cursor on the bottom line of the display and depressing the ($\downarrow$) key, will cause the text to be scrolled up until reaching the end of text. SHIFTED— ($\leftarrow$) generates an underline at cursor position and moves cursor forward. SHIFTED— ($\rightarrow$) removes underline at cursor position and moves cursor backward.

DELETE: Causes the character located at cursor position to be deleted. The space created by the deletion is automatically filled in by the following text.

DELETE LINE: Deletes the entire line on which the cursor is located. The space created is closed up by following text.

DRCTY (Directory): Used to call the directory from the bubble cassette on XPT only. Also displays the character count of the screen text on XPT and XPT II. The directory mode is cancelled by pressing the HOME key.

END PARA: Used to enter a sequence of symbols which identify the end of a paragraph.

EM SPACE: Generates the ($\frown$) symbol. Used for fixed spacing, often as an indent for paragraphs.

EN SPACE: Generates the ($\cap$) symbol, also used for fixed spacing.

ETX (End of text): This key generates ETX character to be displayed and may be used to indicate to the computer end of text. The keys CTRL/ETX will output a fixed format at the end of the text. (Customer specified at time of sale.)

HOME: Moves the cursor to the beginning of the text in memory, the cursor will position itself in the upper left hand corner of the screen. Also cancels Directory Mode.

INS (Insert): Allows characters to be inserted to the left of the cursor position. All following characters, including the one at cursor position, will be moved to the right. To terminate the insert mode, press the insert key once more. (The INS indicator light on the front panel of the XPT will turn off). CTRL and INS keys will perform a block move (see Block Move).

NORMAL: Generates the Lower Rail symbol ($\downarrow$) on the screen and causes all text following the symbol to be displayed with normal intensity.

OPEN FILE: Operates in directory mode only. After typing in desired file name, the OPEN FILE key will display that files text on the screen.

QUAD CNTR (Center): Generates the symbol $\leftrightarrows$ on the screen.

QUAD LEFT: Generates the symbol $\leftarrow$ on the screen.

QUAD RIGHT: Generates the symbol $\rightarrow$ on the screen. (NOTE: All QUAD function keys are designed as specific commands for typesetter use only.)

RCV (Receive): Enables the XPT to receive data from an external input device. To cancel the receive mode, press the RCV key once more. (The RECEIVE indicator light on the front panel of the terminal will turn off.)

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RETURN: Generates the return symbol (⏎) code on the screen. This symbol automatically moves the cursor to the first character position of the next line.

SHIFT: Used to temporarily place the keyboard in the shifted state, in order to generate shifted character codes and symbols on the screen. The left hand SHIFT key is also used to remove the keyboard from Shift-Lock mode.

SHIFT LOCK: Locks the keyboard into the shifted state. To terminate the shift mode, press the left hand SHIFT key.

SRCH (Search): not implemented.

STX (Start of Text): Generates a STX character to be displayed and may be used by the host computer as a start of text. The keys CTRL and STX will output a fixed format Header at the beginning of the text. (Customer specified at time of sale.)

TAB: Control Unshifted; Sets up the horizontal tab, displaying the symbol h/t on the screen. **Control Shifted;** Sets up the vertical tab, displaying the symbol v/t on the screen. **Unshifted;** Moves the cursor to horizontal tabs. **Shifted;** Moves the cursor to vertical tabs.

XMIT (Transmit): Used to transmit data contained in memory, to an external output device. All data from the start of memory, to the first ETX (end of text symbol) will be transmitted.

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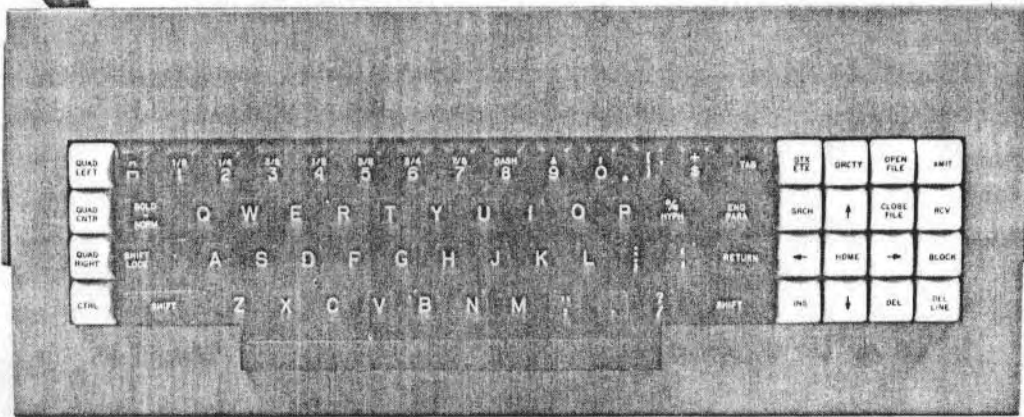
FEATURES

AUTOMATIC WORD WRAPPING — Eliminates the need for manually inputting end of line codes (return code). The XPT breaks the words such that if an entire word cannot fit on a line, it is automatically moved down to the next line.

BATTERY BACK-UP — Enables you to turn the XPT off at any time and still retain the text on the screen. A special battery prevents the text in the memory from being erased when the power is removed.

BEGINNING OF TEXT — Press the HOME key. This moves the text in memory such that the beginning of the text is displayed on the screen. The cursor is returned to the upper left hand corner of the screen.

BLOCK DELETE — Position the cursor at the beginning of the text to be deleted, press the BLOCK key. An underlined s/o symbol will appear. (The INSERT indicator will light, putting the terminal in the insert mode. After the deletion has been completed. press the INS key to cancel insert.) Place the cursor at the end of the text to be deleted and press the BLOCK key again. To remove the marked text from memory, press the CRTL and DEL keys simultaneously. Once this operation has been completed, the deleted text cannot be recovered.

BLOCK MOVE — Position the cursor at the beginning of the text to be moved, press the BLOCK key. Place the cursor at the end of the block to be moved and press the BLOCK key again. The underlined s/o symbol will appear at the beginning and end of text to be moved. Position the cursor at the point in which the text is to be relocated, and press CTRL and INS simultaneously.

CLEAR SCREEN MEMORY — Press the CTRL, SHIFT and X keys simultaneously. This erases all text from the screen and terminal memory.

CURSOR — The cursor is used to show the operator where they are in reference to the displayed text. The cursor also represents where text will be entered, deleted, or moved within the memory. To move the cursor without changing any text, press any one of the four cursor control keys on the keyboard. (The space bar moves the cursor, but puts a space character in the text field, altering existing text.)

DELETE CHARACTER — Place the cursor over the undesired character and press the DEL key. If more than one character needs to be deleted (i.e. an entire word) continue holding the delete key down. This will continue deleting characters directly to the right of the cursor, one at a time.

DELETE LINE — Place the cursor anywhere on the line to be deleted. Press the DEL LINE key. Holding this key down will result in the deletion of the following lines. This method can be used to delete paragraphs.

END OF TEXT — Press the CTRL, and HOME keys simultaneously. The cursor will move to the beginning of text, pause, and then move to the end of the text.

HIGHLIGHTING (BOLD/UPPER RAIL) — To highlight text, place the cursor at the beginning of text to be highlighted. In insert mode, press the SHIFT and BOLD/NORM keys. This will enter a (↑) symbol, all of the following text will be highlighted. To terminate a bold condition, press the BOLD/NORM key (unshifted). A (↓) symbol will be displayed. Any text following the symbol will be in normal video. (If a phototypesetter is used, the operator must use a symbol after each paragraph to continue bold text, as some will automatically return to normal type after a return code).

INSERTS — Press the INS key. The insert indicator will light on the front panel of the terminal, putting the XPT in the insert mode. Type in any additional information desired. To cancel the insert mode, press the INS key again. (Clearing the screen, CTRL SHIFT X, will also cancel the insert mode.)

MEMORY — Text Display (terminal) Memory — 12,000 characters. — Bubble Cassette Memory — 32,000 characters with maximum of 20 files. — Format Memory — Ten formats of up to 76 characters per format.

SCREEN SIZE — The 5 inch green display has 12 lines of text with up to 50 characters per line.

SCROLLING — There are two ways in which to scroll text on the XPT. One, press the CTRL key plus the desired direction cursor key; CTRL and the down cursor key will scroll the text forward. CTRL plus the up cursor key will scroll the text backward. The second way to scroll is to press the direction cursor key and continue holding it down. When the cursor reaches either the top or bottom of the screen, the key will repeat causing a new line of text to be displayed, automatically scrolling the text. The up cursor key will scroll backwards until reaching the start of the text. The down direction key will scroll the text forward to the end of text.

TABS — HORIZONTAL; To set a horizontal tab, place the cursor at the desired location and press the CTRL and TAB keys. The symbol h/t will be displayed. To move to the h/t, press the TAB key. **VERTICAL;** Place the cursor at the desired location and press the CTRL, SHIFT, and TAB keys simultaneously. A v/t symbol will be displayed on the screen. To tab to a v/t, press the SHIFT and TAB keys.

The tabs must be used in conjunction with spaces in order to make tabs at any point on the screen. The cursor will continue moving to designated symbols until reaching the end of the text. To retab thru the text, press the HOME key.

To delete a tab symbol, place the cursor over the undesired tab and press the DEL key.

UNDERLINING TEXT — Position the cursor at the start of the text to be underlined and press the CTRL and right cursor keys. To remove the underline, place the cursor at the end of the text and press the CTRL and left cursor keys.

The underline is used for special terminal functions such as defining commands in a format. It can also be transmitted if the terminal is in the 8 Bit ASCII mode of operation. The underline will come out as the eight Bit. (Normal ASCII is only seven Bits.)

INDICATORS

ENABLE — When the MODEM/RS-232 switch (inside the modem compartment) is positioned to MODEM, this indicator will light. It must be on to transmit or receive through the modem.

CARRIER DETECT — This indicator will light when a proper modem interconnect has been made. It indicates a successful connection to the base computer modem, and must be lit in order to transmit or receive text via the XPT.

RTS (Ready to Send) — Indicates that the XPT is ready to SEND text. It will be lit during the actual transmission of text.

CTS (Clear to Send) — Indicates that the unit to which text is being transmitted to, is ready to receive the text. It must be on to transmit text from the XPT. (The CTS indicator is normally on at all times.)

TRANS (Transmit) — Indicates that text is being transmitted from the XPT.

RECEIVE — Indicates that the XPT is in the Receive Mode. To enable the Receive Mode, press the RCV key. Pressing the key one more time will cancel the mode. This indicator must be lit to receive any text.

INSERT — This indicator will light when the XPT is put in the Insert Mode. This is done by pressing the INS key. To terminate the mode, press the INS key one more time.

MEMORY ALERT — This indicator will light when the text character count of the terminal memory exceeds 11,000 characters. It does not indicate that the text memory is full (memory full is 12,000 characters).
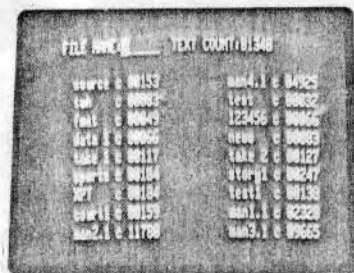
BUBBLE CASSETT

CARE AND HANDLING — The bubblassette is very rugged and has no moving ts, however, avoid touching the connect pins or dropping the cassette as data may lost. Do not expose the cassette to extrentemperatures of hot and cold.

RECORD ENABLE TAB — Each bub memory cassette has a record enable tab lced at the top middle section of the cassette. ie record enable tab is used on cassettes irhich permanent data is to be stored. By slig the tab down so the word RECORD is NOTview, the cassette will not allow text to bitored. A "read only" cassette will be indicd by the green light directly to the left of t cassette holder. Writing to, or trying to kil file on a "read only" cassette will display B-ROR 5.

INSERTING/REMOVING — Be su that the cassette is right side up (record ene tab up) before inserting. Gently slide the cette into the holder and press firmly, assuria proper connection. When removing, firn grip the cassette and pull. Do not attempi remove the bubble cassette at any point irhich it is transferring data, or all data may lost.

DIRECTORY — Press the DRCTY k The text on the screen will be replaced by a ing of all the files stored on the bubble catte. (The text that was on the screen is nov a background mode and may be returned)y press-

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ing the HOME key.) The character count of the screen memory is displayed on the top line of the screen to the right of TEXT COUNT. This allows the operator to check the memory storage at any point during the writing of a story. The character count of each of the stored files is also displayed, directly to the right of the file name. (The XPT II displays only character count when in directory mode.)

OPENING A FILE — Clear the screen memory (unless file merging is to be done). Press the DRCTY key. Type in the name of the file to be viewed. Press the OPEN FILE key. (The red light directly to the left of the bubble cassette holder will flash, indicating the transfer of text.) A copy of the file will be displayed on the screen. (The original recorded file remains on the cassette until killed via the KILL command.) To merge text, place the cursor at the position at which the merge is required. Put the terminal in the insert mode before going to the directory. (If the terminal is not in the insert mode, text will be overwritten by the new copy.) Type in desired file name and press OPEN FILE. The file being opened will be moved to the exact position of the cursor. Before merging any text, be sure the terminal has sufficient memory for the new data being entered.

CLOSING A FILE — HOME the cursor. Press the DRCTY key. (Text on the screen will disappear but is not erased from the terminal memory.) Type a file name of up to six alpha-numeric characters on the FILE NAME line. Press the CLOSE FILE key. The current story in the screen memory will now be stored on the bubble cassette under the assigned file name. When the file is recorded, the directory automatically updates with the file name. INSUFFICIENT MEMORY message will be displayed if the bubble cassette cannot store all the characters of the file being closed.

KILLING A FILE — Press the DRCTY key. Type in the name of the file to be deleted on the FILE NAME line. Press CTRL, SHIFT and K keys simultaneously. The directory will automatically update after the file has been erased from the cassette. Press HOME to return to the screen memory.

FORMATTING A BUBBLE CASSETTE — While in directory mode press CTRL, SHIFT, F keys simultaneously. The bubble cassette is automatically formatted for the input of data. NOTE: WHEN A BUBBLE CASSETTE IS FORMATTED ALL DATA ON THE CASSETTE IS LOST AND CAN NOT BE RECOVERED.
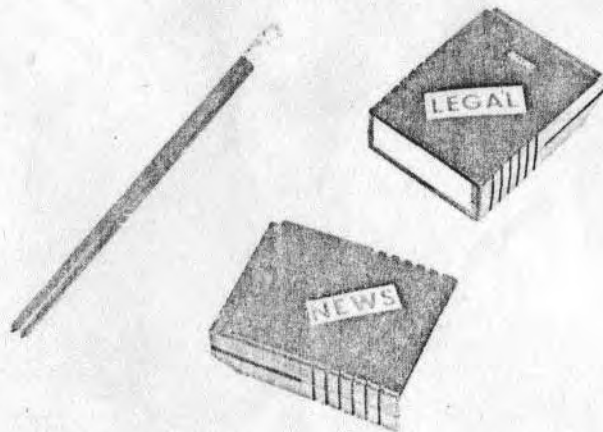
FORMATS

There are 10 programmable formats in the XPT. Each format may contain up to 76 characters and/or commands.

DISPLAYING FORMAT CONTENTS — Screen memory should be cleared before displaying format directory. (Displaying of the format directory will write over any text on the screen.) Press CTRL, SHIFT, and D keys simultaneously. This displays all 10 format contents. Format Directory is displayed in the Text Mode only.

LOADING FORMATS — Call the format directory to the screen. Insert desired format information between the underlined format number and the RETURN symbol at the end of the format. To store in local memory, place the cursor on the first line of the format and press CTRL, RETURN simultaneously.

CALLING FORMATS — Place the XPT in the Insert Mode (this insures that text will not be over struck.) Press the CTRL and format number, 0 thru 9, to be used. Any commands stored in a format will be executed (not displayed as text.)

LOADING FORMATS TO BUBBLE CASSETTE — This is done in the same manner as the storing of text. Formats 0 thru 9 are stored in one file on the bubble cassette, under any file name desired. Several "sets" of 10 formats may be stored for different applications.

r	Removes the underline of a character		c	Horizontal tab
←	Moves the cursor one space left		v	Vertical tab
e	Generates an underlined bell (Ǫ) code to indicate END TAKE		b	Block character
			m	Block move
h	Places the cursor at upper left corner of the screen and the beginning of text.		k	Block delete
			x	Erases (clears) memory and places cursor at "Home" position
t	Generates transmit command			
y	Places cursor at top line of screen		g	STX — Start of text
↓	Moves cursor down one line		i	Enables INSERT mode operation
n	Generate receive command		L/F	Used to represent a return. A normal return cannot be used within the format or it will terminate the format (CTRL. J)
l	Deletes a line			
u	Underlines a character			
→	Moves cursor right one space		q	Cursor to END of TEXT
p	END of PARAgraph		a	ASCII to TTS toggle
f	Generates Transmit from that line down		s	Stores a format
d	Deletes the character at the cursor		0-9	Calls another format
↑	Moves the cursor up one line			

LOADING FORMATS FROM BUBBLE CASSETTE — Formats are loaded from the bubble cassette in the same manner in which any text file would be opened. After the file has been opened and the formats displayed on the screen, place the cursor on the first line of each format and press CTRL and RETURN simultaneously to store in local memory.

EDITING AND ERASING FORMATS — Call the format to be edited to the screen. Make the changes desired. Place the cursor on the edited format and press CTRL and RETURN simultaneously. Anytime a format is changed, the old format is erased. To erase all formats, press CTRL, SHIFT, and R. (Control, SHIFT, X clears screen memory but does not clear stored formats.)

NOTES: When using l, d, (↑↓←→), or u, caution is needed to insure valid memory areas. If the command causes the cursor to move into an invalid area, all characters trailing will be voided.

At times, more than 76 characters may be needed in a format. Since formats may access each other, they may be strung together so that one can directly follow after another. This is done by having the last character in a format string, be the number of the next desired format to be called. i.e. If format Zero is to call format One, then the last character in that format string would be an underlined One (1).

TERMINAL COMMANDS WHICH CAN BE STORED AND EXECUTED FROM FORMATS: The table at the top of the page shows the character typed within a format and function performed when format is executed. (All stored commands must be underlined.)

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COMMUNICATIONS

MODEM OPERATION

The XPT has a built-in acoustic coupled Modem for the transmission and reception of text to and from the display memory. The maximum amount of text that can be transmitted or received is 12,000 characters. (The size of terminal memory.) The acoustic coupled modem operates at 300 Baud (30 characters per second) and is designed for use with most telephone hand sets.

Modems have two modes of operations, 1-originate, 2-answer. Since most host computer systems that will be used with the XPT are in the answer mode, the XPT is configured for originate mode when powered on. If the XPT is to communicate with a modem that is configured for originate mode, place the terminal in the answer mode by entering the command CTRL, SHIFT, A. To place the XPT back to the originate mode, Press CTRL, SHIFT, O.
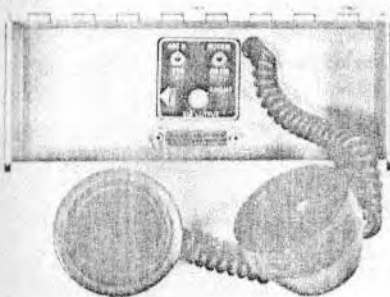
TRANSMITTING TEXT:

1.) Place the text to be transmitted in the display memory.
2.) Insure that the ASCII/TTS switch is to the desired data format.
3.) Place the MODEM/RS-232 switch to MODEM position. (ENABLE indicator will be lit.)
4.) Dial the receiving modem number.
5.) After the tone is heard, place the telephone headset in the acoustic coupler, (long cord end of phone to long cord end of coupler.) Make a good, sound tight connection.
6.) The CARRIER DET indicator will light, indicating a correct connection.
7.) Press the XMIT key to start the actual transmission of text. (The TRANS indicator will light.)
8.) Wait until the TRANS indicator is off (cursor should be at the end of text.)
9.) Remove the acoustic coupler and hang-up telephone.

INDICATOR CHECK: During the transmission of text from the XPT, the following indicators must be lit for proper operation; ENABLE, CARRIER DET, RTS, CTS, and TRANS.

To abort a transmission of text, press the HOME key. The TRANS indicator will go off and transmission will be stopped.

To start transmission in the middle of text, move the cursor to the starting point and press CTRL and XMIT keys.

RECEIVING TEXT:

1.) Clear screen for text input.
2.) Select ASCII/TTS switch to desired data format.
3.) Place the MODEM/RS-232 switch to MODEM position. (ENABLE indicator will light.)
4.) Dial transmitting Modem number.
5.) Place telephone headset in acoustic coupler, making a good, sound tight connection. (Long cord end of coupler to long cord end of telephone.)
6.) The CARRIER DET indicator will light, indicating a correct connection.
7.) Press the RCV key. (The RECEIVE indicator will light.)
8.) Wait for all the text to be received.
9.) Remove acoustic coupler and hang-up telephone.

INDICATOR CHECK: During the reception of text to the XPT, the following indicators must be lit for proper operation; ENABLE, CARRIER DET, CTS, and RECEIVE.

To abort the receiving of text, press the RCV key. The RECEIVE indicator will go off and the reception of text will be stopped.

RS-232 OPERATION

The RS-232 port is a general purpose serial port for direct connect modems or printer output. For proper cabling see table below;

Pin No.	Signal	Direction
1	Chassis GND	
2	XMIT Data	Output
3	RCV Data	Input
4	Request to Send	Output
5	Clear to Send	Input
6	Unused	
7	GND	
8	Carrier Det	Input
20	Data Terminal Ready	Output

The text may be transmitted or received at 120 characters per second (1200 Baud). Data format may be ASCII or TTS.

(handwritten notes:)

4 Cord Cable

Green = 7
Yellow = 4 to
Red = 5
Black = 2

2
3
4
5

Commodore
1526
Printer

TRANSMITTING TEXT (RS-232):

1.) Place text to be transmitted in the display memory.
2.) Position the ASCII/TTS switch to the desired data format. (Normally ASCII)
3.) Position the MODEM /RS-232 switch to RS-232
4.) Connect cable to output device.
5.) Press the XMIT key. (The TRANS indicator will light.)
6.) Wait until the TRANS indicator goes off, signaling the end of transmission.

INDICATOR CHECK: The following indicators must be lit during transmission for proper operation: CARRIER DET, RTS, CTS, and TRANS.

To abort a transmission of text, press the HOME key. The TRANS indicator will go off and transmission will be stopped.

To start a transmission in the middle of text, place the cursor at the starting point and press CTRL and XMIT keys.

RECEIVING TEXT (RS-232):

1.) Clear screen for text input.
2.) Position the ASCII/TTS switch to desired data format.
3.) Position the MODEM/RS-232 switch to RS-232
4.) Connect cable to the output device.
5.) Press the RCV key. (The RECEIVE indicator will light.)
6.) Wait for all text to be received. (The RECEIVE indicator will go off).

INDICATOR CHECK: The following indicators must be lit when receiving text for proper operation: CARRIER DET, CTS, and RECEIVE.

To abort the receiving of text, press the RCV key. The RECEIVE indicator will go off and transmission will be stopped.

CHARACTER KEYS

SHIFTED:

KEY	DISPLAY	HEX	DESCRIPTION
CTRL, SHIFT, 1	E/C	1B	ESCAPE
CTRL, SHIFT, 2	F/S	1C	File Seperator
CTRL, SHIFT, 3	∩	1D	Thin Space
CTRL, SHIFT, 4	DEL	7F	DELETE
CTRL, SHIFT, 8	T/I	1F	TF1

UNSHIFTED:

KEY	DISPLAY	HEX	DESCRIPTION
CTRL, BOLD/NORM	N/L	00	Null
CTRL, A	S/H	01	Start of Header
CTRL, B	S/X	02	Start of Text
CTRL, C	E/X	03	End of Text
CTRL, D	E/T	04	End of Trans
CTRL, E	E/Q	05	Enquiry
CTRL, F	A/K	06	Acknowledge
CTRL, G	Ö	07	Bell
CTRL, H	T/L	08	Tab Line Indicator
CTRL, I	H/T	09	Horizontal Tab
CTRL, J	L/F	0A	Line Feed
CTRL, K	V/T	0B	Vertical Tab
CTRL, L	F/F	0C	Form Feed
CTRL, M	⮐	0D	Carriage Return
CTRL, N	S/O	0E	Shift Out
CTRL, O	S/I	0F	Shift In
CTRL, P	D/L	10	Data Link Escape
CTRL, Q	D/1	11	Device Control 1
CTRL, R	D/2	12	Device Control 2
CTRL, S	D/3	13	Device Control 3
CTRL, T	D/4	14	Device Control 4
CTRL, U	N/K	15	Neg. Acknowledge.
CTRL, V	S/Y	16	Synchronous Idle
CTRL, W	E/B	17	End of Trans. Blk.
CTRL, X	C/N	18	Cancel
CTRL, Y	∩	19	Em Space
CTRL, Z	S/B	1A	Substitute

COMMAND KEYS

DESCRIPTION
Null
Start of Header
Start of Text
End of Text
End of Trans
Enquiry
Acknowledge
Bell
Tab Line Indicator
Horizontal Tab
Line Feed
Vertical Tab
Form Feed
Carriage Return
Shift Out
Shift In
Data Link Escape
Device Control 1
Device Control 2
Device Control 3
Device Control 4
Neg. Acknowledge.
Synchronous Idle
End of Trans. Blk.
Cancel
Em Space
Substitute

SHIFTED:

KEY	DESCRIPTION
CTRL, SHIFT, A	Enables the Modem to the ANSWER Mode of operation.
CTRL, SHIFT, B	Block Output Mode
CTRL, SHIFT, C	Character Output Mode
CTRL, SHIFT, D	Displays contents of all formats
CTRL, SHIFT, E	Character Mode Echo
CTRL, SHIFT, F	In the Directory Mode, this command will FORMAT a bubble cassette (CAUTION: All data is lost).
CTRL, SHIFT, G	TTS EOT (bell).
CTRL, SHIFT, I	Invisible mode. Prevents the display of control characters during receive.
CTRL, SHIFT, K	In the Directory Mode, this command will KILL the file that is typed on the File Name Line.
CTRL, SHIFT N	Normal Output (non printer mode)
CTRL, SHIFT, O	Enables the XPT Modem to the ORIGINATE Mode of operation. (This is the standard operation of the XPT.)
CTRL, SHIFT, P	Output in printer format, approximately 70 characters per line.
CTRL, SHIFT, R	Erases all formats
CTRL, SHIFT, S	Output Data 7 bits — Even Parity, 1 start, 1 stop. (TI Silent 700 Data Format)
CTRL, SHIFT, T	Output Data 8 bits — No Parity
CTRL, SHIFT, X	Clears the screen of all text and HOMES the cursor.
CTRL, SHIFT, TAB	Sets a Vertical Tab Position.

UNSHIFTED:

CTRL, 0	Calls Format 0
CTRL, 1	Calls Format 1
CTRL, 2	Calls Format 2
CTRL, 3	Calls Format 3
CTRL, 4	Calls Format 4
CTRL, 5	Calls Format 5
CTRL, 6	Calls Format 6
CTRL, 7	Calls Format 7
CTRL, 8	Calls Format 8
CTRL, 9	Calls Format 9
CTRL, INS	Inserts text at the point of the cursor after block definition.
CTRL, HOME	Moves cursor to end of text.
CTRL, DELET	Deletes text after block definition.
CTRL, TRANS	Starts transmission from the point of the cursor.
CTRL, TAB	Sets Horizontal Tab position.
CTRL, RETURN	Loads a format to screen memory.

ANPA ASCII CODE CHART

b7 →					0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
BITS	b4	b3	b2	b1	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	0	0	0	0	**0** NUL	TTS Space Band	SP	0	Lower Rail	P	Open Quote	p
	0	0	0	1	**1** SOH	DC1	!	1	A	Q	a	q
	0	0	1	0	**2** STX	DC2	Double Quotes	2	B	R	b	r
	0	0	1	1	**3** ETX	DC3	EN Leader	3	C	S	c	s
	0	1	0	0	**4** EOT	DC4	$	4	D	T	d	t
	0	1	0	1	**5** ENQ	NAK	%	5	E	U	e	u
	0	1	1	0	**6** ACK	SYN	&	6	F	V	f	v
	0	1	1	1	**7** BEL	ETB	APOSTROPHE/ CLOSE QUOTE	7	G	W	g	w
	1	0	0	0	**8** TLI	CAN	(	8	H	X	h	x
	1	0	0	1	**9** HT	EM Space	)	9	I	Y	i	y
	1	0	1	0	**A** LF	SUB	EM Leader	:	J	Z	j	z
	1	0	1	1	**B** VT	ESC	Plus	;	K	⅛	k	½
	1	1	0	0	**C** FF	CFS	Comma	QL Quad Left	L	¼	l	⅝
	1	1	0	1	**D** CR	Thin Space	Hyphen	QC Quad Center	M	⅜	m	¾
	1	1	1	0	**E** SO	EN Space	Period	QR Quad Right	N	Upper Rail	n	⅞
	1	1	1	1	**F** SI	TFI	/	?	O	— EM Dash	O	DEL

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XPT ASCII OUTPUT CODE CHART

MSB→ / LSB↓ (HEX)	000 / 0	001 / 1	010 / 2	011 / 3	100 / 4	101 / 5	110 / 6	111 / 7
0000 / 0	CTRL, BOLD NULL N_L	CTRL, P DLE D_L	SP	0	↓ NORM	P	' Open Quote	p
0001 / 1	CTRL, A SOH S_H	CTRL, Q DC1 D_1	!	1	A	Q	a	q
0010 / 2	CTRL, B STX S_X	CTRL, R DC2 D_2	" Double Quote	2	B	R	b	r
0011 / 3	CTRL, C ETX E_X	CTRL, S DC3 D_3	CTRL, . EN Leader	3	C	S	c	s
0100 / 4	CTRL, D EOT E_T	CTRL, T DC4 D_4	$	4	D	T	d	t
0101 / 5	CTRL, E ENQ E_Q	CTRL, U NAK N_K	%	5	E	U	e	u
0110 / 6	CTRL, F ACK A_K	CTRL, V SYN S_Y	&	6	F	V	f	v
0111 / 7	CTRL, G Bell	CTRL, W ETB E_B	' Close Quote	7	G	W	g	w
1000 / 8	CTRL, H TLI T_L	CTRL, X CAN C_N	(	8	H	X	h	x
1001 / 9	CTRL, I HT H_T	CTRL, Y EM	)	9	I	Y	i	y
1010 / A	CTRL, J LF L_F	CTRL, 2 SUB S_R	CTRL: EM Leader ..	:	J	Z	j	z
1011 / B	CTRL, K VT V_T	CTRL, SH, 1 ESC E_C	+	;	K	⅛	k	½
1100 / C	CTRL, L FF F_F	CTRL, SH, 2 FS F_S	Comma ,	← Quad Left	L	¼	l	⅝
1101 / D	CTRL, M CR	CTRL, SH, 3 GS	Hyphen −	Quad Center ⇄	M	⅜	m	¾
1110 / E	CTRL, N SO S_0	SH. RS	Period .	→ Quad Right	N	↑ BOLD	n	⅞
1111 / F	CTRL, O SI S_I	CTRL, SH, 8 US T_I	/	?	0	SH. 8 EM Dash	0	CTRL, SH, 4 DEL

XPT TTS OUTPUT CODE CHART

	MSB →	000	001	010	011	000	001	010	011
↓LSB		Ø	1	2	3	Ø	1	2	3
0000	0	Tape Feed T_F	Return ⤶	t	0	Tape Feed T_F	Return ⤶	T	0
0001	1	Thin Space ∩	Close Quote ,	5	9	Thin Space ∩	Open Quote ‘	⅝	&
0010	2	e	d	z	b	E	D	Z	B
0011	3	3	Hyphen –	)	Upper Rail ↑	⅜	@	(	Upper Rail ↑
0100	4	Elevate E_L	r	l	g	Elevate E_L	R	L	G
0101	5	Paper Feed P_F	4	V. Rule ‖	;	Paper Feed P_F	½	V. Rule ‖	:
0110	6	a	j	w·	Shift	A	J	W	Shift
0111	7	$	Bell ♁	2	Lower Rail ↓	!	Bell	¼	Lower Rail ↓
1000	8	Space	n	h	m	Space	N	H	M
1001	9	Add Thin ⋒	Comma ,	EM Leader ..	Period .	Add Thin ⋒	Comma ,	EM Leader ..	Period .
1010	A	S	f	y	x	S	F	Y	X
1011	B	EM Space ⌢	Quad Left ←	6	1	EM Space ⌢	Quad Left ←	¾	⅛
1100	C	i	c	p	v	I	C	P	V
1101	D	8	EN Space ∩	0	Quad Center ⇄	EM Dash —	EN Space ∩	?	Quad Center ⇄
1110	E	u	K	q	Unshift	U	K	Q	Unshift
1111	F	7	Quad Right →	EN Leader .	Rub Out ▨	⅞	Quad Right →	EN Leader .	Rub Out ▨

◄———— UNSHIFT ————► ◄———— SHIFT ————►

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ASCII CODE CHART

HEX				MSD	p=1	8	9	A	B	C	D	E	F
					p=0	0	1	2	3	4	5	6	7
				b8	p	p	p	p	p	p	p	p	p
	BITS			b7	0	0	0	0	0	1	1	1	1
				b6	0	0	0	1	1	0	0	1	1
LSD	b4	b3	b2	b1 b5	0	0	1	0	1	0	1	0	1
0	0	0	0	0	NUL	DLE	SP	0	@	P	`	p
1	0	0	0	1	SOH	DCI	!	1	A	Q	a	q
2	0	0	1	0	STX	DC2	"	2	B	R	b	r
3	0	0	1	1	ETX	DC3	#	3	C	S	c	s
4	0	1	0	0	EOT	DC4	$	4	D	T	d	t
5	0	1	0	1	ENQ	NAK	%	5	E	U	e	u
6	0	1	1	0	ACK	SYN	&	6	F	V	f	v
7	0	1	1	1	BEL	ETB	'	7	G	W	g	w
8	1	0	0	0	BS	CAN	(	8	H	X	h	x
9	1	0	0	1	HT	EM.	)	9	I	Y	i	y
A	1	0	1	0	LF	SUB	*	:	J	Z	j	z
B	1	0	1	1	VT	ESC	+	;	K	[	k	{
C	1	1	0	0	FF	FS	,	<	L	\	l	|
D	1	1	0	1	CR	GS	-	=	M	]	m	}
E	1	1	1	0	SO	RS	.	>	N	^	n	~
F	1	1	1	1	SI	US	/	?	O	___	o	DEL

CONTROL CHARACTERS

NUL	Null	DLE	Data Link Escape
SOH	Start of Heading	DC1	Device Control 1
STX	Start of Text	DC2	Device Control 2
ETX	End of Text	DC3	Device Control 3
EOT	End of Transmission	DC4	Device Control 4 (Stop)
ENQ	Enquiry	NAK	Negative Acknowledge
ACK	Acknowledge	SYN	Synchronous Idle
BEL	Bell (audible or attention signal)	ETB	End of Transmission Block
BS	Backspace	CAN	Cancel
HT	Horizontal Tabulation (punched card skip)	EM	End of Medium
		SUB	Substitute
LF	Line Feed	ESC	Escape
VT	Vertical Tabulation	FS	File Separator
FF	Form Feed	GS	Group Separator
CR	Carriage Return	RS	Record Separator
SO	Shift Out	US	Unit Separator
SI	Shift In	DEL	Delete