

OPERATOR'S MANUAL

Smart Terminal

EASY-TO-USE
TELECOMMUNICATIONS
SOFTWARE



Supra Corporation

INTRODUCTION

Congratulations on your purchase of the SUPRA 300AT Modem, a state-of-the-art telecommunications package for your Atari Computer. The SUPRA 300AT incorporates a new single chip design for efficient and reliable modem performance. Our SMART TERMINAL^(tm) software is included with the SUPRA 300AT to make it a full featured telecommunications package that is the best available for the Atari.

The SUPRA 300AT is an autoanswer/autodial modem. The autoanswer function has the unique feature of answering the phone line without computer control which allows quicker modem response time. The modem plugs directly into your Atari and does not require any interface. The modem also connects directly into your phone line and has a jack for an optional telephone. LED status indicators on the SUPRA 300AT front panel indicate POWER, CARRIER DETECT, and OFF HOOK. And we have packaged all this in our attractive new STACKABLE^(tm) case that saves desk space when used with other STACKABLE^(tm) products.

The SMART TERMINAL^(tm) is very flexible, yet simple to use. It allows you to upload and download with X-MODEM protocol and then save your files to tape or disk and print them. You can also do direct disk file transfers which allow transferring files larger than your computer's available memory. The SMART TERMINAL also features all the options needed to communicate with most other systems including CompuServe, The Source, mainframes, and other personal computers. The user interface features menus, sub-menus, and explanatory prompts so you do not need to remember complex commands.



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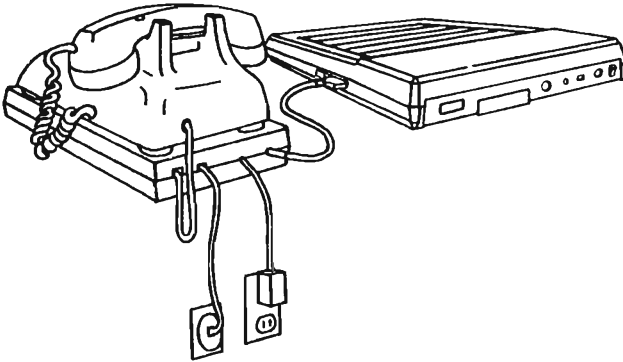
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INSTALLATION OF SUPRA 300AT

Connect the SUPRA 300AT data cable to joystick port #2 on your Atari Computer. Plug the included power supply into the power jack on the modem and into a 110V power outlet. Connect the modem to phone line with the included modular cord. Note that there are two phone jacks on the back of the modem and that you can plug the phone cord into either one. The remaining jack is for using an optional voice telephone in conjunction with your SUPRA 300AT. You can use this phone for normal voice communications when the modem is not in operation.

installation diagram



Turn on the power switch and the SUPRA 300AT is ready to use.

The SUPRA 300AT has three function lights on the front panel. These lights indicate various conditions of the modem.

- | | |
|----------------------------|---|
| PWR (Power) | — Indicates the modem is turned on. |
| OH (Off Hook) | — Shows the modem has answered the telephone line. This light will flicker as the modem pulse dials. |
| CD (Carrier Detect) | — This indicates that the SUPRA 300AT has successfully linked with another modem and that you are ready to communicate. |

LOADING THE SMART TERMINAL

Turn off your computer. Insert the Smart Terminal disk into the disk drive. Now turn on your computer and the Smart Terminal will boot. After it loads the menu should appear on the screen. If you have an XL unit, you need to hold down **OPTION** while turning on the computer to deactivate BASIC and increase the buffer size.

*NOTE: It is recommended that you make a backup copy of the Smart Terminal disk. If you wish, the DOS supplied with Smart Terminal may be replaced with one of your choice. Smart Terminal will support double density drives, if used with the proper DOS.

GETTING ONLINE

The best way to learn to use your modem and Smart Terminal software is to actually connect up with another computer. It would be best to try a local bulletin board or a friend with a modem so you don't run up a large long-distance phone bill while experimenting. The first step is to set the communications options from the Smart Terminal menu that you will need. Now you are ready to dial the modem.

AUTODIALING THE SUPRA 300AT

- 1) Turn the modem power switch to the ON position.
- 2) Select the menu option M) DIAL/ANSWER FUNCTIONS.
- 3) Add a phone number to autodial directory with
D)CHANGE NUMBER
- 4) Dial the number with option C) AUTODIAL NUMBER.

The modem will dial the phone number and you should be communicating with the other computer. You may need to hit **RETURN** once or twice to signal the host computer that you are connected. Experiment with as many of the features as you can, so you will be proficient using your Supra 300AT.

This is just an overview of the Supra 300AT Modem and the Smart Terminal. The next section of the manual will give you a good background of telecommunications and the last part of the manual is on actually using the Smart Terminal.

INTRODUCTION TO COMMUNICATIONS

Now that you have actually had some hands-on experience with using your modem and Smart Terminal, you may be interested in learning a little more about telecommunications in general. The more you know about telecommunications, the better use you will get out of Smart Terminal and your modem.

Communications Protocols

Your ability to use your computer to talk to other computers depends on a variety of protocols. Computers all talk different languages, have different hardware, and use different software. What makes it possible for these systems to "talk" to each other are the standard communications protocols and equipment.

The Ascii System

The basic thing necessary for communications between different computers is a standard system for representing data. Most computers store characters internally as binary digits ("bits") which are on or off. One character (byte) is composed of eight bits; giving the computer 256 different numeric combinations to represent characters. The ASCII (American Standard Code for Information Interchange) system assigns the first 128 codes to a unique character or control function. This ASCII code represents the same character on all ASCII computers.

The first 32 ASCII symbols are called control codes; they control standard screen display functions and other communication tasks. The remaining 96 symbols are the letters of the alphabet in upper and lower case, numbers, punctuation, and other standard keyboard symbols. The last 128 codes not covered by the ASCII system do not have a universal meaning. Some computers use them for graphics or extra character sets.

Digital Communications

We now need a standard way to transmit these ASCII codes to the remote computer. We start by sending the binary data out of the computer in electrical pulses. These electrical pulses are transformed by the modem into sound waves to use the phone lines. On the receiving end, the sound waves must be changed back into electrical pulses by the receiving modem and then received back into the computer in binary format.

We send each binary bit of the character one at a time in sequence. This is called serial transmission. The rate at which we send these binary data bits is called the baud rate, measured in binary digits per second (300 baud means 300 bits per second).

The data cannot be sent in a raw stream of data because the receiving computer could get its timing off and receive unintelligible data. To solve this problem, we send each character in a data frame that can be distinguished by the receiving computer. The data frame consists of four distinct parts. The first is the start bit. This single binary digit tells the receiving computer that a new data frame is coming. After the start bit comes the data "word". Each word is a group of seven or eight binary digits which represent a character or code. After the word comes the parity bit, if any. The parity bit is occasionally used to check the accuracy of the transmission. The last element of the data frame is the stop bit. Stop bits tell the receiving computer that the data frame is done, and that it can start looking for a new data frame.

Computers can communicate with each other in different ways. The most common are called full duplex and half duplex communications. Full duplex means that both systems can talk to each other at the same time. In full duplex, the receiving computer receives your data and then echoes it back to you. This is how you get your own screen display. Full duplex allows for error checking of transmissions because of the echoed data. This mode is sometimes known as "EchoPlex".

Half duplex means that the computers take turns talking. In half duplex the transmitted characters are not echoed back. Instead, your computer displays them as it sends them. Full duplex is far more common than half duplex. You can tell if you are in the wrong mode by two different display problems. One is when you type a character and two of them appear on the screen; this means that you should be in full duplex. If you type a character and nothing appears on the screen, you should change to half duplex.

Transferring Files

Most modem users are interested in transferring files or programs. Sending a file to a remote computer is known as "uploading" and receiving a file from a remote computer is known as "downloading". Smart Terminal supports both uploading and downloading and can use an error—correction protocol known as "XMODEM" to result in flawless transfers. XMODEM sends data in small "blocks" and then sends a "checksum" character. The checksum is the sum of the ASCII code of each character sent in the block. The receiving computer also checksums the block and compares its result to the checksum supplied with the block. If they are different, the block is transmitted again. Xmodem also knows automatically when the end of the file has been received and can end the file transfer and return to normal terminal mode.

These are the main elements of communications protocol. You can select your requirements from the Smart Terminal menu.

USING THE SMART TERMINAL

THE SMART TERMINAL SCREEN

The screen should appear like this when the Smart Terminal is loaded:

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SMART TERMINAL REV 6.1

- A) DISK FUNCTIONS
- B) MODEM -- DISK DIRECT
- C) COPY BUFFER TO DEVICE
- D) DELETE ALL BUFFERS
- E) CREATE NEW BUFFER
- F) FULL/HALF DUPLEX
- H) ASCII/ATASCII
- I) NO / XMODEM PROTOCOL
- J) 38/40/64 COLUMN
- K) MODEM - PRINTER DIRECT
- L) LOAD BUFFER FROM DEVICE
- M) DIAL/ANSWER FUNCTIONS
- P) NO/ODD/EVEN PARITY
- T) TERMINAL MODE
- V) VARIABLE BAUD RATE

xxxx BYTES USED xxxx BYTES LEFT
xxxx FREE BLOCKS x BUFFERS USED
CHOICE?

On options F,H,I,J and P the currently selected mode is highlighted in inverse characters. To select an option, simply type the character of the menu option you want. You can also type a [CONTROL C] to change the background color of the screen. This allows you to select your favorite screen color combination.

The SMART TERMINAL can store information that it receives and sends in your Atari's RAM memory. The area this information is stored in is called a buffer and the size of your buffer depends on the amount of RAM memory in your computer. You can tell how much buffer space you have used and how much is left from the BYTES USED and BYTES LEFT message on the screen.

One character takes one byte of storage; therefore, if you have 1000 BYTES LEFT you can store 1000 more characters in the buffer. See option E) CREATE NEW BUFFERS for more information on the SMART TERMINAL buffers. The XXX FREE BLOCKS tells how much buffer space remains in terms of equivalent disk blocks.

STATUS LINES

TR: ASCII	XM: OFF	DUP: FULL	ONLINE	BD: 300
SL: SNAP	OP: BRCV	BF: 1	PG: 1	

- TR: = Translation mode. ASCII OR ATARI
 XM: = X-Modem. Off or On
 DUP: = Duplex mode. Full or Half
 OFFLINE or ONLINE
 BD: = Current Baud rate setting.
 SL:SNAP = Pressing **SELECT** will take a "snapshot" of the screen and place it into the current buffer.
 OP: = Operation Indicator. Describes the function started by pressing **OPTION** .
 DSND sending direct from disk.
 DRCV saving direct to disk.
 BSND sending from buffer.
 BRCV saving to buffer.
 BF: = Buffer number in use.
 PG: = Phone directory page number (1, 2, or 3).
 D: = Name of File being saved or loaded

A) DISK FUNCTIONS

When this is selected the computer displays another function menu. These functions may be used by following the on-screen prompts. With this version of Smart Terminal, you can access up to 4 disk drives.

- A) DISK DIRECTORY
- B) FORMAT DISK
- C) RENAME FILE
- D) DELETE FILE
- E) LOCK FILE
- F) UNLOCK FILE
- G) EXIT

B) MODEM ↔ DISK DIRECT

This option allows you to transfer files directly between your disk drive and the modem without using a memory buffer. This is useful for transferring files larger than your computer's memory and for transferring many files in one terminal session.

When this is selected, the computer displays the following:

- 1) MODEM - DISK DIRECT
- 2) DISK - MODEM DIRECT

Option 1 allows the storing of incoming data directly to the disk. Option 2 allows you to directly send a disk file over the modem without using your RAM buffer. Both options will prompt you for FILENAME?. Enter D: *filename.ext* for the appropriate disk file to send or receive. The SMART TERMINAL now goes to TERMINAL MODE and **OPTION** will start your file transfer. If there is a disk error (wrong file name, disk full, etc.), the Smart Terminal will return to the main menu. Check your disk and try again. To abort a file transfer before it is finished, simply hit **OPTION** again. You can toggle **OPTION** again to restart a transfer. The background screen color will change to green when transferring file data and return to black when finished. Press the **START** key to return to the menu.

C) COPY BUFFER TO DEVICE

This option copies the contents of a memory buffer to a device. Legal devices are:

<u>Filename</u>	<u>Device</u>
C:(<i>SHORT</i>)	-CASSETTE
D: <i>filename</i>	-DISK
M:	-MODEM
S:	-SCREEN
P:	-PRINTER

The program will prompt for FILENAME?. Enter the filename of the device to which you want to copy. The SMART TERMINAL now asks you which buffer you wish to copy. Enter the buffer number you want to copy from (it automatically copies buffer # 1 if there is only one buffer created).

The copy will be performed immediately to all devices except the modem. If you specify M: to copy to the modem, the SMART TERMINAL will go into TERMINAL MODE and the copy (uploading) can be started by pressing **OPTION**. The screen color will change to green until the buffer is copied. If you want to abort the copy before it is finished, press the **OPTION** key again.

Specifying C:SHORT tells the computer to use short inter-record gaps (IRGs) when saving to the tape. Refer to Appendix A for examples of this option.

D) DELETE ALL BUFFERS

This option will delete the contents of all your buffers. The computer will ask you to verify that you really want to do this. Type Y to delete the buffers; any other key will return you to the menu without deleting the buffers. After deleting all buffers, the SMART TERMINAL will have one buffer with a length of 0 BYTES

E) CREATE NEW BUFFER

The SMART TERMINAL will automatically append saved data to the end of your last buffer. To separate programs or data in memory you should create a new buffer before saving the new data. When you want to recall that data, you will simply type the buffer number to which it was saved. You are allowed up to nine buffers; once you create a new buffer you cannot save data to an old buffer. All data that is saved to a buffer is appended to the end of the last buffer opened.

F) FULL/HALF DUPLEX

This option lets you select between full and half duplex. The duplex you need to use is determined by the computer with which you are communicating. In full duplex mode, each character you type is sent to the other computer, echoed back to your computer, and then displayed on the monitor. In half duplex mode, your computer sends and displays each character as you type. You can tell if you are in the wrong duplex mode if:

- You type a character and nothing appears on your screen.
- You type a character and two of the same characters are displayed.

You should be able to solve either of these by simply changing duplex modes.

H) ASCII/ATASCII

This option tells the SMART TERMINAL how to translate the characters it sends and receives. In ASCII mode, the SMART TERMINAL translates everything it sends from ATASCII (Atari ASCII) to standard ASCII and everything it receives from ASCII to ATASCII. You should be in this mode when communicating with any computer other than an Atari. The following codes are converted in this mode:

ASCII	ATASCII	FUNCTION
13	155	Carriage Return
12	125	Screen Clear
7	253	Bell
8	126	Backspace

Any other ASCII code that does not have a direct Atari translation will not be printed.

In ATASCII mode no translation takes place. This mode is useful when communicating with another Atari that isn't translating. The SMART TERMINAL will print any character that it receives in this mode.

I) NO/X-MODEM PROTOCOL

X-MODEM protocol allows error-free transmission of files. X-MODEM is the standard file protocol in the Atari world. You can also use it with many other computers and bulletin boards.

X-MODEM automatically corrects any transmission errors that occur because of a bad connection, random phone noise, etc. This is how it works: The computer that is sending the file sends a 128 byte (character) block of data. As it sends each character, it adds that character's value to a one byte checksum. After the computer has sent all 128 bytes, it sends the checksum value. The receiving computer also checksums the incoming data and then compares its value to what the other computer sent it. If both checksums are the same, the receiving computer sends a code saying the transmission was okay and to proceed.

If the checksums were not the same, the computer sends back a code telling the other computer to retransmit the last block. It will keep retransmitting the block until it gets one with no errors. The computer transmitting the file also sends a code to tell the receiving computer when the entire file has been transmitted.

To download (receive) a file using X-MODEM, you should select this option, create a new buffer if necessary, and then go to terminal mode. When the other computer is ready to send the file, hit **OPTION** . The file will automatically be sent. To upload (send) a file, you must choose the X-MODEM protocol and then choose C) COPY BUFFER TO DEVICE or B) MODEM -- DISK DIRECT. If you chose C) COPY BUFFER TO DEVICE you now should respond to the prompt with M: to copy to the modem. Tell it which buffer to send and the SMART TERMINAL goes directly into TERMINAL MODE. You can also use X-MODEM with the direct disk option. When the other computer is ready to send the file, press **OPTION** to start sending the file. X-MODEM will send the complete file and indicate when the transfer is finished. You can abort an upload or download by pressing **OPTION** again. If you abort a download, the SMART TERMINAL *will not save* any of the data it received.

NOTE: When transmitting a file in X-MODEM, the data being sent is *NOT* echoed to your screen. Slash marks will appear on your monitor to indicate each block that has been sent. You must be careful to have X-MODEM selected only when downloading X-MODEM files. If you try to save other text while in this mode, SMART TERMINAL will not save anything because the data was not transmitted using X-MODEM.

J) 38/40/64 COLUMN

This option changes the number of characters displayed in each row on the screen. The default setting is 38 columns because many televisions have overscan and do not display the full screen. If you have a monitor, or your television doesn't overscan, you should use the 40 or 64 column mode because many documents are formatted for this screen width.

K) MODEM -> PRINTER DIRECT

This option allows you to have a copy of all incoming data printed out at the same time as it is displayed on the screen. When you choose this option, the SMART TERMINAL goes immediately to TERMINAL MODE. To start printing incoming data, press the **OPTION** key. To stop printing, simply press **OPTION** again. You can toggle this option on and off as many times as you want, but if you return to the SMART TERMINAL MENU, you must reselect this option. *Please Note*: This option is canceled any time you return to the main SMART TERMINAL menu.

There are a few limitations when using this feature. First, your printer must have an average throughput of at least 30 characters per second to keep up with the modem. If it doesn't, an error will occur. Another limit is the inability to save incoming data to another device while it is being printed. If you want to save data, you must first save it to a device or buffer, and print it later. Do not have X-MODEM selected while using this option.

L) LOAD BUFFER FROM DEVICE

This option allows you to load information from a device into a memory buffer. When you choose this option, the SMART TERMINAL will ask you which device to load from. Legal devices are:

C:(SHORT)	-CASSETTE
D: <i>filename</i>	-DISK
E:	-SCREEN EDITOR

If you specify the filename C:SHORT the SMART TERMINAL will use short inter-record gaps (IRGs) when loading from the tape. Refer to Appendix A for more information on this option.

The editor built into the SMART TERMINAL is very limited but will allow you to prepare messages and text while off—line to send later. To use the editor type E: when prompted for filename. The screen will be cleared and you can start typing. You can type up to 3 lines of text (120 characters) into the editor's buffer at a time and you can edit this text using the normal Atari editing features. Before you type in more, you must press **RETURN** to save the text from the edit buffer to the SMART TERMINAL's buffers. Once you type **RETURN**, you *cannot* go back and edit what you typed. The SMART TERMINAL will print a line across the screen to remind you that you cannot edit those lines. The editor is now ready to accept more text. Pressing **START** and **BREAK** will return you to the SMART TERMINAL MENU. Be sure that you have entered the last line before you do this or it will not be saved to the buffer. This editor is very limited because of memory restraints. If you need to edit larger files, you can use any normal Atari text editor (Text Wizard, Bank Street Writer, AtariWriter, etc...).

M) DIAL/ANSWER FUNCTIONS

When you select this mode, the SMART TERMINAL will display another menu of functions and a list of telephone numbers (that you define).

The screen should look like this:

```
0)
1)
2)
3)
4)
5)
6)
7)
8)
9)
A) AUTOANSWER (OFF) OR (ON)
B) QUICK DIAL (OFF) OR (ON)
C) AUTODIAL NUMBER
D) CHANGE NUMBER
E) LOAD NUMBERS
F) SAVE NUMBERS
G) HANG UP PHONE
H) EXIT
```

CHOICE?

You may now choose options A—H by typing that character.

A) AUTOANSWER

It is important to note here that the Supra 300AT is a true autoanswer modem. When the modem is turned on, it will answer *all* incoming calls, even if the computer is turned off. The modem answers so fast that your telephone may not even ring before the modem has answered it. For this reason, you should always make sure that the modem is turned off when not in use. If you do not receive any telephone calls for an unusually long period of time, check your modem to be sure that it is turned off.

Typing A will toggle the autoanswer flag on and off. If the autoanswer flag is on when you go to TERMINAL MODE, the computer will wait for the phone to ring and then automatically answer it. You can select any of the upload/download functions and have them automatically executed when the phone rings. This is useful for sending and receiving files when you are not home or at night when telephone charges are lower.

To automatically send a file to someone calling, you should first set AUTOANSWER ON. Now you can load the file into one of your memory buffers and select C) COPY BUFFER to MODEM or you may select the direct disk option to send the file. Both of these options will put you directly into TERMINAL MODE. Press **OPTION** and the computer will say SAVE ON. This means that the SMART TERMINAL is now ready to accept calls. When a computer calls the Supra 300AT and sends any character, the SMART TERMINAL will begin sending the file. When another computer calls, the same file will automatically be sent again. You can return to the menu by pressing **START**. To automatically receive a file, you can choose the DIRECT DISK, DIRECT PRINTER, or buffer save options. Once you are in Terminal Mode press **OPTION**. The computer will print SAVE ON and is ready to accept calls. When a computer calls, the SMART TERMINAL will automatically answer and any data that is sent will be saved. The SMART TERMINAL can accept more than one call and will append that data to the end of previous calls. You exit this mode by pressing **START**.

B) QUICK DIAL

This mode allows your modem to shorten the delays used in pulse dialing the telephone number. It makes dialing much faster than normal pulse dialing. Some telephone systems *will not* accept fast pulse dialing.

C) AUTODIAL NUMBER

Once you have entered a number with D) CHANGE NUMBER, you use this function to actually dial it. Type 0 - 9 to dial the correct entry from the screen. The computer will dial the number and then wait for a carrier tone from the remote modem. Once a connection is made, the software will go into terminal mode.

If a connection is not made, the Smart Terminal will hang up the modem and redial the number until a connection is made. Each time the number is dialed, a / is displayed on the screen. You can exit auto-redial by pressing **START** between dialings.

D) CHANGE NUMBER

This option lets you change the telephone number entries that are on the screen. To change a number, select this option and when it asks for NUMBER?, type 0 to 9 for the entry to change. The computer will then ask for the new number. Now enter the phone number using the digits 0-9. You can use hyphens and parenthesis to make the number easier to read. Leave a blank space at the end of the number and then enter a descriptive name. When the entry is complete, type **RETURN** to place the number in the directory.

The following are examples of correct entries:

```
0 1(503)926-1980 SUPRA BBS
1 1-503-343-4352
2 123-4567 FRED'S HOUSE
```

E) LOAD NUMBERS

This option allows you to load your telephone numbers from disk. You must load files that were saved with the F) SAVE NUMBERS option.

When you select this option, the SMART TERMINAL will load the file D:PHONE1.DAT into your telephone number directory. If the listing you want isn't on the first page then press E . This will display page 2 of the directory. Select this option once more and page 3 will appear on your screen. To return to page 1, press E .

F) SAVE NUMBERS

You can store up to 30 numbers in 3 pages of 10 numbers each. To store information on the second and third page press E) LOAD NUMBERS and the phone number area of the screen will change to allow more entries. The Pg: status box at the bottom of the screen will read Pg:1, Pg:2, or Pg:3 for the current page.

G) HANG UP PHONE

This option tells the modem to hang up the phone.

H) EXIT

This option returns you to the SMART TERMINAL MENU.

This is the end of the DIAL/ANSWER FUNCTIONS section.

P) NO/ODD/EVEN PARITY

This option allows you to select the parity that the SMART TERMINAL uses when communicating with the other computer. The parity you need will depend on the computer you are talking to. Most computers require NO PARITY but if you get a message from the other computer saying PARITY ERROR you will need to change the parity.

T) TERMINAL MODE

TERMINAL MODE is used to actually communicate with the other computer. The SMART TERMINAL will print **TERMINAL MODE to show that you are in TERMINAL MODE and now any characters you type on the keyboard are sent to the modem. You can return to the SMART TERMINAL MENU by pressing **START** .

If you chose B) MODEM ↔ DISK DIRECT or C) COPY BUFFER TO MODEM, you can start those functions by pressing **OPTION** . If these options were not selected, pressing **OPTION** will start saving incoming data to your buffer. You stop saving data by pressing **OPTION** again. You can use the buffer save as many times as you want, but to keep programs and data separate within your buffer space, you should go back to the SMART TERMINAL MENU and create a new buffer.

When you are copying to or from a buffer, the screen border color will change to green. When the transfer is finished, the border will return to black. The screen border will change to red approximately 700 characters before buffer space is full. When your buffer space is completely full, the border color returns to black and the computer beeps once.

V) VARIABLE BAUD RATE

The Supra 300AT operates at a standard 300 baud, but can be changed to run from 100 baud to an upper limit around 450 baud. This is useful for communicating with services that run 110 baud or for faster communications with another Supra modem. You will likely start getting transmission errors at the higher baud rates.

APPENDIX A

ATARI FILE TYPES

The Atari computer recognizes three basic file types on cassette and disk. Games that you buy, programs you write, business software, systems software, etc., will all fit into one of the three categories. You need to be able to recognize these different types of files to upload and download software and use the other features of the SMART TERMINAL correctly.

BINARY FILES

The first file type is a binary (machine language) file. Most system software (DOS, disk duplicators, etc.), and a lot of games and applications software (word processors, compilers, etc.) are binary files and usually do not require a cartridge in your computer to use. Binary files on disk will usually load by themselves or you will load them using DOS option L) LOAD BINARY FILE. You do not need to do anything special to load or save disk binary files with the SMART TERMINAL because DOS handles them the same as other files. Binary files on tape will usually be loaded by pressing **START** while turning on the computer. When the computer beeps, type any key to begin loading and it will automatically run the program when it is loaded. When saving a binary file to cassette with the SMART TERMINAL, you need to be sure to specify C:SHORT for the file name. The SHORT tells the computer to use short inter-record gaps (IRGs). Short IRG tapes are distinguishable by the short delay between the beeps the computer makes when loading the file. Short IRGs are about 1/2 second in duration as opposed to about 5 seconds for long IRGs. You must be sure to specify C:SHORT when saving and loading binary cassette files. *Not all* tapes with short IRGs are binary files. See BASIC LOAD FILES for more information.

Basic Load Files

Basic load files are like binary files but they are BASIC programs. When you type a program into your computer using BASIC, the common commands such as PRINT, REM, FOR, NEXT, etc. are condensed into a one character "token" to save memory space. If you were to look at a BASIC program as it is stored internally, it would not make sense. BASIC takes care of this by converting the tokens back to normal words when you list your program to the screen. When you use the BASIC commands CSAVE and SAVE"D: *filename*", the program is saved out in token format. These BASIC load files usually load faster and are shorter than a comparable BASIC list file. You load the file back into BASIC by using the CLOAD and LOAD"D: *filename*" commands. Cassette load files are stored using short IRGs (see BINARY FILES) so you need to specify C:SHORT for the filename when saving and loading these files with the SMART TERMINAL. BASIC programs can also be saved in the LIST format.

LIST (TEXT) FILES

List files are files that contain information in text form. A list file is anything that is not a BINARY or BASIC LOAD file and could be word processor text, instructions you download from a bulletin board, a message to a friend, etc. A list file may also be a BASIC program saved with the LIST"C:" or LIST"D: *filename*" command. When you save a program with the LIST command, BASIC converts its internal tokens back to the original commands so the saved program looks the same as it does when you LIST it to the screen. You load a BASIC list file into the computer with the ENTER command; for cassette the command would be ENTER"C:" and for disk it would be ENTER"D: *filename*". List files on cassette must be saved using long IRGs (specified by only C:) because BASIC has to process each line as it is loaded.

List files are frequently used for downloading programs from bulletin boards because transmission errors are easy to find. Most bulletin boards will indicate when a file is not a BASIC LIST file, and binary files will usually have special instructions for loading and using. If you have problems downloading a particular file from a bulletin board you should consult the SYSOP (System Operator) for help.

APPENDIX B

EXAMPLES OF USING THE SMART TERMINAL

DOWNLOADING FROM AN ATARI

When communicating with another Atari, you should have the following options set: FULL DUPLEX, ATASCII, NO PARITY. You should also have XMODEM selected if the other computer can send files with the XMODEM protocol. Call the other computer and go to TERMINAL MODE . Go through the necessary steps to get the program ready to download. When the other computer is ready, press **OPTION** to start transferring the program. The Smart Terminal will display each block successfully downloaded. When the download is finished, the computer will display TRANSFER COMPLETE. The program is now your current buffer. To download another file you should return to the SMART TERMINAL MENU and create a NEW BUFFER and go through the same steps again.

Once you have finished and are logged off the BBS, you should save your buffers. Go to the SMART TERMINAL MENU and choose C) COPY BUFFER TO DEVICE and the device to which you want to save the file. To get a listing of the program and save it also, you could save to disk and then repeat the process to the printer.

Saving to a buffer is not the only way that you can download a file. You can also use the DIRECT DISK option to transfer files. To use this option chose B) MODEM -- DISK DIRECT. Now select 1) MODEM - DISK DIRECT and respond with the the disk filename to save the file to. The SMART TERMINAL automatically goes to TERMINAL MODE. Go through the steps to get the file ready to download as instructed. Now press **OPTION** to start the download as before. The file will be downloaded to the disk file you specified and the file will automatically be closed when the transfer is complete.

UPLOADING TO AN ATARI COMPUTER

You should basically follow the same steps as for a bulletin board. You may need to be in HALF DUPLEX ,though. Select either the buffer copy to the modem or B) MODEM --> DISK DIRECT to send the file. The Smart Terminal will begin sending the file when the other computer is ready and automatically signal the end of the transfer.

UPLOADING AND DOWNLOADING WITH THE SOURCE, COMPUSERVE, AND OTHER COMPUTERS

You should be in ASCII mode and set the necessary other options (you should be able to communicate with most computers with the default options set). When uploading and downloading to a non-Atari, you will probably be transferring text files and *not* programs. You will also not be able to use XMODEM with most other sources. Other than this, the basic steps are the same.

SERVICE

If your Supra 300AT does not work, check the following:

- Are all the cables connected correctly?
- Is the modem turned on?
- Is the modem connected to the phone line?

If your modem appears to be malfunctioning, you should immediately disconnect it from the phone lines until the source of the problem is discovered. Contact our service department for repair instructions. Do not return any equipment without a Return Materials Authorization. If you are having problems using the Supra 300AT or the Smart Terminal software, you should contact your local dealer or our technical support department for help.

Supra Service (503) 967-9075

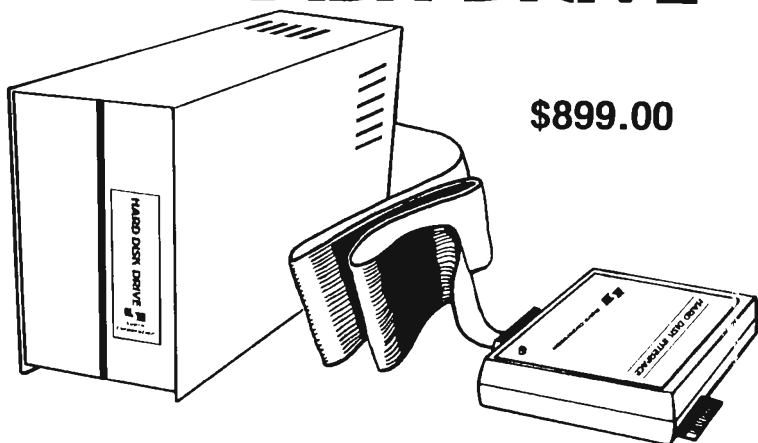
Supra Technical Support (503) 967-9081

WARRANTY

Supra Corporation warrants the Supra 300AT and included software to be free in defects in material and workmanship for a period of 90 days. If any parts or equipment become defective through normal usage within this period, Supra will fix or replace them without charge. Any product deemed to be defective through accident, misuse, or neglect will be repaired at current shop charges for materials and labor. Supra Corporation does not assume any liability for any consequential damages caused by the use of the Supra 300AT or included software.

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HARD DISK DRIVE



\$899.00

- WORKS ON ATARI 800XL & 130XE COMPUTERS
- 10 MB STORAGE
- CONNECTS TO PARALLEL BUSS
- HIGH-SPEED DATA TRANSFER

INCLUDES:

**10 MB HARD DISK
DISK CONTROLLER
ATARI INTERFACE
HARD DISK DOS
ATTRACTIVE CASE
CABLES & POWER SUPPLY**

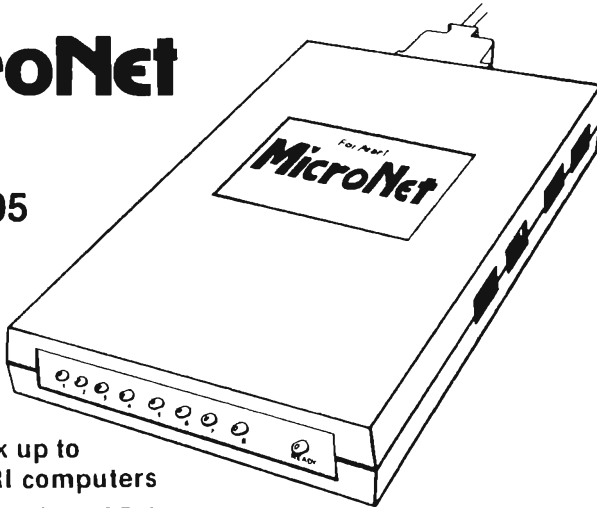
■ **READY TO USE**

The Supra Hard Disk is a 10MB hard disk system for Atari 800XL and 130XE* computers and connects to the computer's parallel buss, allowing high-speed data transfer rates of 8-10,000 bytes per second (approx. 10-15 times faster than normal Atari drives). The hard disk drive stores the equivalent of 100 single density Atari diskettes and can access any information within milliseconds. All of this adds up to an extremely efficient system for the serious Atari owner.

* SPECIAL NOTE - Atari 130XE owners must also purchase the Supra XE-XL Buss adapter. This adapter makes the XE parallel buss compatible to the XL Buss to allow use of the hard disk. Only \$15 when purchased with Supra Hard Disk.

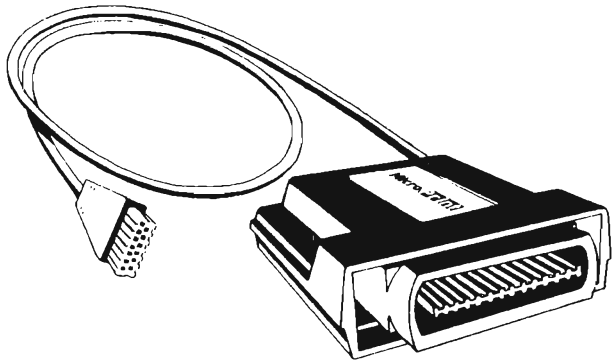
MicroNet

\$199.95



- Network up to 8 ATARI computers
- Allow sharing of Printers, Disk Drives and Modems
- Works with all ATARI eight-bit computers
- Comes with modified ATARI DOS 2.5 to support busy disk retry
- Provides enormous savings for schools, clubs, and computer labs
- Very useful for BBS operators

6' MicroNet Cable	\$14.95
10' MicroNet Cable	\$19.95
25' MicroNet Cable	\$24.95



MicroPrint

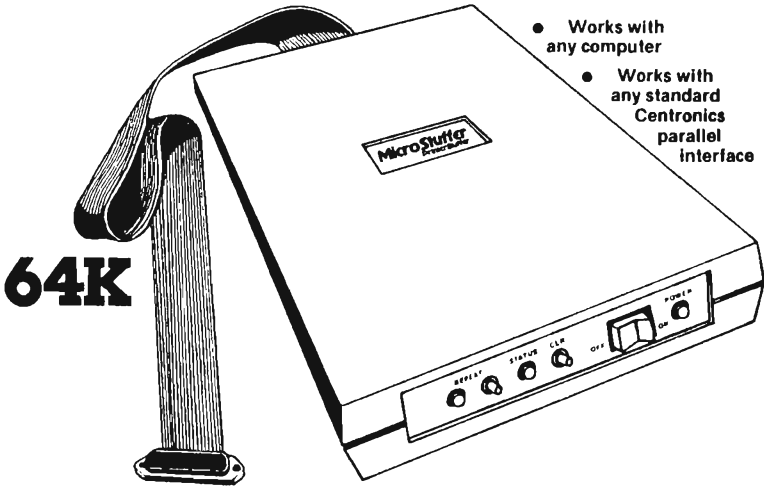
Parallel Printer Interface

- Replaces Atari 850 Interface Module
- Compatible with all software
- Works with Atari 400, 800, 600XL, and 800XL
- Connects to serial bus on computer
- 4-foot cable with Centronics plug (compatible with Epson, NEC, Prowriter, etc.)



- Replaces Atari 850 Interface Module
- Compatible with all software
- 5-foot cable with Centronics plug (compatible with Epson, NEC, Prowriter, etc.)
- 90 Day Warranty
- Connects to serial bus on computer
- Daisy chains with other Atari peripherals
- Works on **ALL** Atari Computers (except 1200XL)

MicroStufferTM PrinterBuffer



- Works with any computer
- Works with any standard Centronics parallel interface

- Reset button
- Multiple copy repeat function
- Auto diagnostics
- Self test
- Serial output (optional)

MicroPort™ -XL Parallel Buss Board-\$49.99

For Advanced
Experimenters

This unit is designed as an experimenter's PIA board for the Atari XL computers .

All vital parts are common chips that are socketed for easy replacement.

Powered by an external source that also gives a 5 volt lead for experiments.

Switch selectable to blocks \$D5, \$D6, and \$D7.

Provides 16 I/O lines and 4 handshake lines that can double as I/O's.

Based on the 6520/6821 PIA chip.

Will do interrupts.

Uses the parallel buss.

Over 10 sq. in. of drilled area for wire wrap prototypes.

Suggested uses include:

VCR-Video Disk Controller

BSR Home controller

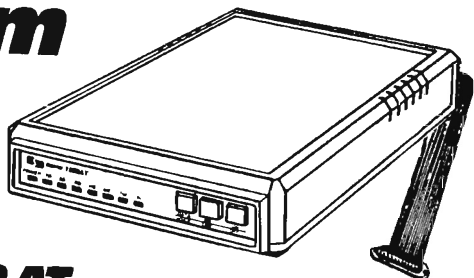
EPROM Programmer

Monitor and Control Home
Environment

Music Synthesizer Control

1200 Baud Modem

\$249.95



Supra 1200 AT

- WORKS ON ATARI 800, XL & XE COMPUTERS
- SMART TERMINAL SOFTWARE
- CONNECTS TO ATARI SIO PERIPHERAL PORT
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- AUTOANSWER/AUTODIAL
- INCLUDES CABLES & AC ADAPTER
- FREE COMPUERVE DEMOPAK
& DELPHI MEMBERSHIP



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