Starlink Modular Printer Sharing System

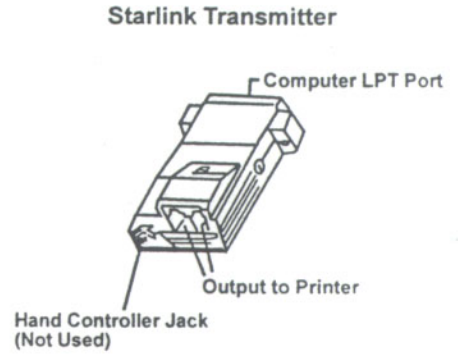
Introduction

Congratulations on a wise investment and thank you for purchasing this product. The Starlink is one of the most versatile printer sharing adapters in the world. It can be used as a *Line Extender,* a *Modular Printer Sharer,* or both. Up to 64 computers can easily share 8 printers using flat RJ11 cable. All 8 printers can print simultaneously with a data transfer rate of up to 22k / second, so speed is not compromised. Printer selection can be accomplished by using DOS or Windows software or an optional workstation hand controller (model # ST100), allowing Starlink to adapt to the way you want to work. A maximum network length of 1300 ft. and flexible linkage using Star, Bus or Tree topologies, enables Starlink to fit even the most complex workgroup arrangements.

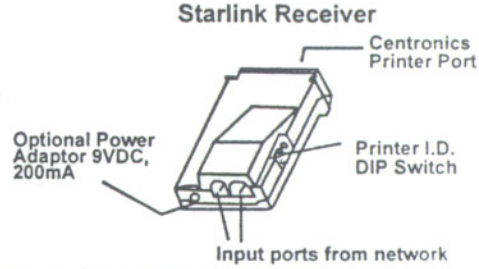
Using Starlink as a Line Extender

Installation:

1) Shut off power to the computer and printer.
2) Make sure that all the DIP switches on the receiver are in the ON position.
3) Plug the Starlink transmitter into the parallel port on the computer and the receiver into the parallel port on the printer.
4) Plug one end of the supplied cable into one of the transmitter output jacks and the other end into one of the receiver input jacks.
5) Turn on the computer and printer.



Notes:
1) Do not unplug the cable while Starlink is printing.
2) If a longer cable is required, please contact your dealer for custom lengths.
3) If the cable is longer than 500 feet, or your work environment is near an electric motor, a power adapter may be required.



Troubleshooting:

Problem:	**Solution:**
Printer fails to print.	Make sure printer is turned on.
	Make sure the Starlink adapters are plugged in securely.
	Make sure the DIP switches on the receiver are all set to the ON position.
	Make sure the cable is a Genuine Startech Cable.
	If you are using Windows, try using LPT1.DOS in the printer connect screen.

If problems persist, please contact your dealer.

Using Starlink for Printer Sharing

Installation:

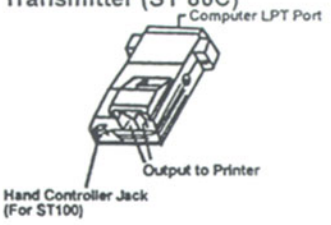
1) Shut off power to all computers and printers.
2) Set the printer identification DIP switches on the receivers according to Table# 1. Starting from #1, the numbers must be assigned in sequence until all of the receivers have their own unique identification number.
3) Plug the transmitters into the parallel ports on the computers and the receivers into the parallel ports on the printers. NOTE: A power adapter is required if more than 24 computers are on the network.
4) Interconnect the Starlink transmitters and receivers using the supplied cables so that all computers and printers are "daisy chained" together to form a printer sharing network.
5) If more than one printer is in the network, a method of printer selection will have to be installed. There are four methods of printer selection: DOS software, Windows software, the ST100 hand controller, or using control codes in batch files.
6) Bi-directional printer software can not be used or must be disabled.

NOTE: The software does not have to be installed unless two or more printers are on the Starlink network.

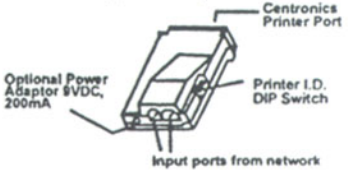
DOS Software Installation:
- Insert the Starlink software diskette into the appropriate drive.
- Type "C:" <ENTER>, "CD\" <ENTER>, "MD STARLINK" <ENTER>, "COPY <floppy drive letter>:\248*.* C:\STARLINK" <ENTER>

Windows Software Installation:
- Insert the Starlink software diskette into the appropriate drive.
- From Windows, run the setup.exe file from the diskette.

Transmitter (ST 80C)



Receiver (ST 80P)



Hand Controller

Table# 1: Printer I.D. Settings

1	2	3	4	Printer #
On	On	On	N/A	P1
Off	On	On	N/A	P2
On	Off	On	N/A	P3
Off	Off	On	N/A	P4
On	On	Off	N/A	P5
Off	On	Off	N/A	P6
On	Off	Off	N/A	P7
Off	Off	Off	N/A	P8

Hand Controller Installation:

- Set the desired timeout and formfeed using the control preferences DIP switch according to Table# 2.
- Plug the controller into the jack on the back of the Starlink transmitter.

Using the DOS Software:

The DOS TSR program can be loaded manually or as a part of the AUTOEXEC.BAT file. To manually load the TSR, type "CD \STARLINK", then type "248 <LPT#>". For example, to activate the software to control a transmitter on LPT2, you would type 248 2. On 386 and above systems, the TSR can be loaded into high memory by using the "LH" command. For example, LH 248 2 would do the same as above, only the TSR now resides in high memory, out of the way of your applications. To load the TSR automatically every time the computer is rebooted, use the EDIT command to insert the following line at the end of your AUTOEXEC.BAT file: "C:\STARLINK\248 1" or "LH C:\STARLINK\248 1" to activate the TSR on LPT1.

To select a printer or change printing options, a combination of keys called HOT KEYS must be pressed. The active keys recognized by the TSR program are the ALT and LEFT SHIFT keys. The third key that must be pressed to complete the selection changes depending upon the function desired. The hot key combinations are listed on Table# 3. For example, to select printer 3 on a Starlink network, you would press ALT, LEFT SHIFT, and the "3" key simultaneously. The letters "P3" would then appear in the top left hand corner of the screen to confirm selection. Please note that the characters will only show up on a text mode screen. If the HOT KEYS conflict with an application, pressing the CTRL key along with the previous combination should

Using the Windows Software:

The Windows Starlink software is very easy to use. Simply open the 248 program group created by the installation program, and double click on the AS-248 icon. A list of eight printer selections will appear beside check boxes, along with timeout and formfeed options. To select a printer, simply mark an "X" in the box directly in front of the printer you wish to send the print job to. If more than one box is selected, the Starlink will print to the first non busy printer of the group selected. For ease of identification, the printer names can be edited by clicking on them and typing in a new name. Timeout and formfeed are also adjustable to user preference. The "SEND PARA" button sends a new configuration to the Starlink network after a change has been made in the configuration.

DIP SW. No				Table# 2 : ST 100 Functions		
1	2	3	4	Timeout	Formfeed	Power
Off	Off			5 second		
On	Off			10 second		
Off	On			25 second		
On	On			60 second		
		Off			Disable	
		On			Enable	
			Off			Off
			On			On

Table#3: HOT KEY Functions		
Function	Hot key	Display
Autolink to first idle printer	Alt L_shift,A	PA
Link to specified printer	Alt L_shift,1..8	P1...P8
Set timeout to 5,10,25,or 60sec	Alt L_shift F1..F4	05,10,25, 60
Enable Formfeed	Alt L_shift, E	FE
Disable Formfeed	Alt L_shift, D	FD
Display Help	Alt L_shift, H	Help Screen

Table #4 : Starlink Programming Codes				
Control Character	Hex #	Link to Printer	Form Feed	Timeout
1	31	P1		
2	32	P2		
3	33	P3		
4	34	P4		
5	35	P5		
6	36	P6		
7	37	P7		
8	38	P8		
0 or 9	30 or 39	P1 - P8 Auto		
:	3A		Disabled	
;	3B		Enabled	
<	3C			5 Sec
=	3D			10 Sec
>	3E			25 Sec
?	3F			60 Sec

Using the Hand Controller:

To select a printer using the ST100, simply rotate the dial on the hand controller to the I.D. number of the corresponding printer. To select the first non busy printer on the network, set the dial to the "A" position. Changes are only effective before and after a print job is sent, so rotating the dial while printing will have no effect on the current job. The ST100 indicates the network status to the user by the flashing pattern of the status LED. The following is a list of patterns with descriptions.

No ST80P has an I.D. number of 1 - A quick flash of light every two seconds
The selected printer does not exist - Two quick flashes of light every two seconds
The selected printer is not ready - The LED is on for on second then off for one second repetitively
The selected printer is ready - The LED is on continuously
The selected printer is printing - The LED flashes off quickly every two seconds

Batch file Programming the Starlink:

The Starlink, being as versatile as it is, can be easily programmed or sent commands without using the TSR software or hand controller. The Starlink gets its commands in the form of an ASCII code statement. It recognizes commands through the use of the following command format: **&+&C{control character}{ENTER}** The control character is an ASCII code that changes the mode of the Starlink according to Table# 4. An application of these codes would be to have a particular computer default to a different printer on bootup, or with a different timeout. The following procedure is an example.

1) Create a file that contains the control codes for the options you wish to set.
2) Save the file as Starset.bat
3) Add the following line to the end of your AUTOEXEC.BAT file: COPY STARSET.BAT LPT1

An example of the Starset.bat file would be:

&+&C> (This line sets Starlink to a 25 second timeout)
&+&C3 (This line sets the Starlink to print to the ST80P with the ID code of 3)

Please note that each workstation has to be set individually, and that each line in the Starset.bat must end with a carriage return/linefeed (ENTER).

Troubleshooting

Problem:	Solution:
Printer fails to print.	Make sure the printer is turned on. Make sure the Starlink adaptors and cables are plugged in securely. Set Lexmark/IBM printer parallel port to slow mode. Make sure all printers have consecutively different numbers. If you are using Windows, try using the LPT1DOS port from the main printer setup. Press reset button on the bottom of the ST80P and try again.
Data error.	Make sure all cables are plugged in securely. Make sure that all printers have consecutively different numbers. Make sure that all cables are Genuine StarTech Cables.