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# OVERVIEW

#### STS COMMUNICATION

Standard STS devices contains one RS232 communication port .Maximum communication distance of the RS232 system is 15 meters but the communication speed effects the cable length. The selected RS232 baud rate on STS units is 2400 baud. This baud rate makes possible to use 50 meters communication cable.

Most commonly used communication system is ethernet protocol and TCP/IP.

Single serial port is enough for many systems but at some applications 2 serial port is required.

3 phase static swiches has options which bring solutions to these requirements .

This document describes the usage ,installation and setup of these optional devices.

# **OPTIONAL STS-NET ADAPTOR**

STS-NET adaptor converts RS232 signals to TCP/IP protocol ,the conversion is interactive so to control STS during data communication is possible.

Functions of the STS-NET adaptor

- Converts RS232 signal to ethernet signal
- Converts ethernet signal to RS232 signal
- Provides long distance communication
- Provides communication over internet
- Provides remote data monitoring and control

STS-NET adaptor is designed for internal usage in the STS cabinet ,the adaptor power is supplied from STS power supply.

Advantages of providing power from STS power supply

- STS unit has 2 spare power supplies
- These power supplies are energized from many power sources at the same time power interruption is not possible.
- Communication is always keep alive during power failures on any power sources.

## STS-NET adaptor block connection

The local and remote connection is showned in the figure below, at the same time 2 data communication is supplied. 2 connections are interactive at the same time , sending command to STS and getting data from STS is possible from 2 PC computers at the same time.



## Front view of the STS-NET adaptor



Each RS232 port has transmit and receive monitoring leds so during data flow communication can be checked from these leds.

### **MD-NET** installation kit contents

Lantronics device installer CD STS Manager installation CD 2 pairs power supply extension cables (red-brown and red-black) 1 CC05 cable for STS connection 2 mounting screws

# TCP-IP Connection diagram



STS serial port is connected to device port of the STS-NET adaptor with CC05 communication cable.

### The hardware of the device port and com1 port

Baud rate	2400
Data	8 bits
Stop bit	1
Parity	none
Handshaking	none

#### Pinout of the device port and com1 port

#### Com1 port pinout

For PC connection on com1 port CC05 cable must be used.

The PC side of CC05 cable has standard 9 pins RS232 type ,but the com1 port of duplexer has a special pin configuration. The following figure shows the pinout of com1 port.



#### Pinout of the device port

Device port of the STS-NET has standard 9 pins RS232 pinout. Pin 2-3 and 5 is used.

### Power supply connections of MD-NET adaptor



Before MD-NET installation ST232 board power supply connections

- Disconnect the power connectors of the ST232 board (CN1 and CN2)
- Connect the same cables to MD-NET adaptor CN1 and CN4 connectors and use new cable pair for CN1 and CN3 connectors to ST232 board After MD-NET installation power supply connections are modified as follows:



### STS-NET adaptor installation

STS-NET adaptor space is reserved on front back panel of the STS.



The adaptor place is closed with metal part, before installation this metal must be removed.

- a) Shutdown (power off) the STS unit for installation.
- b) Open front panel of the STS
- c) Cut metal holders to open place for STS-NET adaptor.



- d) Locate STS-NET adaptor through the hole
- e) Fix STS-NET with 2 screws
- f) Connect STS-NET power input to STS power supply
- g) Connect STS serial port to device RS232 port with CC05 cable



#### CC05 CABLE

- h) Turn on the STS unit (power on)
- i) Make local PC serial connection or remote PC Ethernet connection



j) Currently adaptor is ready to use , see software section for setup.

# Possible TCP-IP connections

a) Connecting STS-NET Ethernet port to network switch



b) Connecting STS-NET to any PC Ethernet port directly



Note : At direct PC connection the Ethernet connector pin configuration will be different refer to your network administrator.

c) Monitoring over internet



Note : Modem internet IP address must be static IP address for access from internet.

For modem router setup refer to you network administrator. *TCP-IP Network setup procedure* 

Before using TCP-IP adaptor some network setup required:

- Install the Lantronix software from the ML200 CD

- Launch installation (Start-Programs-Lantronix Device Installer)

This utility program will locate all networks attached to the STS-NET Ethernet port.

STS-NET TCP/IP Port factory settings: IP: 10.0.0.xxx Subnet Mask: 255.0.0.0 Gateway : 0.0.0.0

The initial screen shot is illustrated in Figure below. This program will automatically locate all STS-NET devices connected to the local network and will display a list of them.



When the program finds the STS-NET adaptor , double click DEVICE DETAIL and the details of the device will be displayed.

Select the STS-NET of choice and click ASSIGN IP to adapt the port to network settings.

an ener pence roots fielp					
- <b></b>					
Assign IP Upgrade					
Lantronix Devices - 1 device(s)	Device Details Web Configuration	on Telnet Configuration			
Yerel Ağ Bağlantısı (10.0.0.7)	The comparate				
XPort-03 - firmware v6 1 0.0	~				
	Property	Value			
	Name				
	Group				
	Comments	10.1			
	Device Family	XPort			
	Type	XPort-U3			
	Li andreasa Antoina	00 00 44 00 10 00			
	Firmulare Version	00-20-444-30-10-30 0 10			
	Extended Firmware Version	6100			
	Opline Status	Dalina			
	Telnet Enabled	The			
	Telnet Port	9999			
	Web Enabled	True			
	Web Port	80			
	Maximum Baud Rate Supported	921600			
	Firmware Upgradable	True			
	IP Address	10.0.0.101			
	Number of COB partitions suppo	6			
	Supports Dynamic IP	True			
	DHCP	True			
	BOOTP	True			
	RARP	False			
	Auto IP	True			
	Subnet Mask	255.0.0.0			
	Liateway	0.0.0			
	Number of Ports				
	Companya Canformatila Dina	40			
	Supports Configurable Fins	True			
	Supports AFS Data Strass	Fales			
	Supports 485	False			
	Supports 920K Baud Bate	True			
	Supports HTTP Server	True			
	Supports HTTP Setup	True			
	Supports 230K Baud Rate	True			
	Supports GPI0	True			



**Note:** If the new IP address is different from 10.0.0.xxx or if the subnet mask code is different from 255.0.0.0 the device connection may fail. In this case adapt the PC network settings to these values.

View Device Tools Help			
S. 8			
ssign IP Upgrade			
tronix Devices - 1 device(s)	Device Details VVeb Configuration	n Telnet Configuration	
Yerel Ag Baglantisi (10.0.0.7)			
APORt C1 00			
<ul> <li>See Storo 195</li> </ul>	Property	Value	
	Name		
	Group		
	Comments		
	Device Family	XPort	
	Type	XPort-U3	
	ID.	X5 00 00 46 00 10 00	
	Firmware Version	60204843318130 610	
	Extended Firmware Version	6100	
	Online Status	Online	
	Telnet Enabled	True	
	Telnet Port	9999	
	Web Enabled	True	
	Web Port	80	
	Maximum Baud Hate Supported	921600	
	ID Address	10.0.195	
	Number of COB partitions suppo	6	
	Supports Dynamic IP	False	
	Subnet Mask	255.0.0.0	
	Gateway	0.0.0	
	Number of Ports	1	
	TCP Keepalive	45	
	Supports Configurable Pins	Irue	
	Supports Email Friggers	True	
	Supports AES Data Stream	False	
	Supports 920K Baud Bate	The	
	Supports HTTP Server	True	
	Supports HTTP Setup	True	
	Supports 230K Baud Rate	True	
	Supports GPI0	True	
	1		

After adapting the IP address of the STS-NET Ethernet port, the newly assigned IP address will appear in the device installation window.



In order to configure the device it is necessary to connect to the port via Internet Protocol. Click on WEB CONFIGURATION in the installation program of the device.

Then click GO to visualise the WEB PAGE. Ignore username and password during the first access.

To configure the STS-NET serial port from the menu on the left, click SERIAL SETTING to visualise the SERIAL SETTING page. Set the Baud Rate at 2400. Click OK to update the settings.

Lantronix DeviceInstaller 4.1.0.9
File Edit View Device Tools Help
Search Assign IP Upgrade
E Su Lantonic Devices - 1 device(s) Device Details Web Configuration Teinet Configuration
Bigg Terel ng Dogardas (10.0.11)         →         XPort         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓         ✓
Firmware Version: V6.1.0.0 MAC Address: 00-20-4A-98-B9-EE
Serial Settings
Server Channel 1
Serial Tunnel Disable Serial Port
Hostilist Port-Settings
Serial Settings Protocol: RS232 - Flow Control: None -
Email Baud Rate: 2400 - Data Bits: 8 - Parity: None - Stop Bits: 1 -
Trigger 1
Trigger 3 Pack Control
Configurable Pins Enable Packing
Apply Settings Idle Gap Time: 12 msec 2
Apply factory Defaults Match 2 Byte Sequence: C Yes C No Send Frame Only: C Yes C No
Match Bytes: 0x <sup>00</sup> 0x <sup>00</sup> Send Trailing Bytes: ☞ None ☞ One ☞ Two (Hex)
Flush Mode
Flush Input Buffer Flush Output Buffer
With Active Connect: C Yes G No With Active Connect: C Yes G No
With Passive Connect: C Yes G No With Passive Connect: C Yes G No
At Time of Disconnect: C Yes C No At Time of Disconnect: C Yes C No
OK
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To configure the Ethernet port from the menu on the left, click CONNECTION to visualise the configuration page.

Connect Mode	Accept Incoming	YES
	Active Connect	None
	Connect Response	None
	Local port	10001
	Remote port	10001

Click OK to update the settings.

-	Lantronix DeviceInstaller 4.1.0.9		×
File Edit View Device Tools Help			
Search Assign IP Upgrade			
Lantronix Devices - 1 device(s)	Device Details Web Configuration Telnet Configuration		
	Address http://10.0.0.190:80	External Browser	11 <mark>X</mark> .
		Firmware Version: V6.1.0.0 MAC Addrew 90-29-4A-98-B9	
	企 Network	onnection Settings	
	Serial Tunnel Hostiist Channel 1 Frotocol Channel 1		
	Connection		
	Email Acceptincoming: Ves	Active Connection:	
	Trigger 1 Password Current		
	Trigger 3 Required:	(in Hex)	
	Configurable Pins Password:	Modem Mode: None	
	Apply Security Apply Factory Defaults	Pass Thru: C Yes @ No	
	Endpoint Configuration:		
	Local Port: 10001	o increment for active connect	
	Remote Port: 10001	Renote Host: 0.0.0	
	Common Options:		
	Telnet Mode: Disable - Co	onnect Response: None	
	Terminal Name:	Use Hostilist. Cyes (* No LED: Blink 🗾	
	Disconnect Mode		
	On Mdm_Ctrl_In Drop: C Yes @ No	Hard Disconnect: I Yes C No	
	Check EOT(Ctrl-D): C Yes @ No	Inactivity Timeout: 0 : 0 (mins : secs)	
		ок	¥
🍯 Ready			0

### STS Manager software TCP-IP setup

It is now possible to make the connection with the static switch via Ethernet. Launch the STS MANAGER program.

In the SETTINGS window register the various IP addresses of the STSs to monitor, verify that

Settings					_ 🗆
COMM port	COM1	•	n e-r	mail sending enable	
Station name					
	e-mail address			Name - Surname	
sender e-mail				_	
Receipent 1					
Receipent 2					
Receipent 3					
SMTP host					
Subject					
			User name		
🔲 Use Authenticita	ation		Password		
Use POP3 Autho	enticitation	POP3 host			
	IP address		TCP/IP p	oort	
Remote STS 1	10.0.0.190		10001		
Remote STS 2					
Remote STS 3					
9	Save	e-m	ail test	Cancel	

From the main window of the STS MANAGER program select the remote connection to the STS with IP address 10.0.0.190 and then click the CONNECT button to activate the connection.

ļ.	🚰 STS manager/Logout(Remote)						
F	ile Login Help						
j	Measur	es	User options	Control	Log event		
	Temperature SYNC angle Version	024 C 030 deg STA10-10	Connection Connect	Connect to Local STS on RS Connect to Remote STS on	232 10.0.0.190		
				0 1			

Check that the DATA OK message appears at the bottom of the window, confirming that the remote connection is active.

	/10	.0.0.190/10001
Data OK		