

# How to use the serial gateway function

The Barix Instreamer, the Barix Exstreamer (all types), the Barix Annuncicom and also the IPAM you can use also as serial gateway. Serial gateway means you can connect two serial devices (i.e. Modem to PC) with Barix products over the network together. Also you could connect from a PC (i.e. with telnet) to this serial gateway port on the Barix devices.

This function is implemented in all Barix standard firmwares as also in many ABCL firmwares.

### How to set up:

There are only few parameters which you have to configure in the web configuration on the Barix devices. Following is a configuration example for the Instreamer firmware together with the Streaming Client firmware (on the Exstreamer).

On the Instreamer configure in the Advanced Settings under:

IO & Serial Local port = 0 Destination IP address = IP of the Exstreamer site (e.g. 192.168.0.63) Destination Port = 5000

On the Exstreamer Streaming Client configure in the Advanced Settings under:

Serial and Control: use Serial for = **serial gateway** serial gateway Port = **5000** serial gateway IP = 0.0.0.0 (because the Instreamer is establishing the bi-directional connection)

Beside that check the serial parameters are matching with the serial parameters of the connected serial equipment!

## Serial wiring

The Barix devices have a DTE interface (same as a PC), that means when you connect to a PC then you have to use the serial crosscable or a serial nullmodem cable. On the receiver end (Exstreamer in your case) which connects often to the RDS encoder you can use the same cable as you have used before to connect directly to the PC.

## How to test the serial gateway

There is a very easy way to test your serial gateway is up and running. On the homepage of the Instreamer you have a button "Active Connections", there you see all open BRTP and TCP connections. The serial gateway is using TCP, so it must be listed there, like following:

<u>TCP connections</u> 192.168.0.23:src port 80 :dst port 49163 192.168.0.23:src port 80 :dst port 49162 **192.168.0.63:src port 54442 :dst port 5000** 

There you can see the open socket from the example from previous page

#### How to setup serial gateway on the Annuncicom firmware

In general, the Annuncicom firmware can also run on a Barix Exstreamer or an Instreamer, it is default on the most Annuncicom devices.

The serial gateway you can do between the two RS232 ports, and/or the RS485 ports (if available on hardware !) or even from RS232 to RS485 or reverse.

The configuration is very simple, one site you leave with default settings (only the "Local port" configured, no "Destination IP" and no "Destination port" !!) and on the other site (which should start the connection) you configure the destination IP address (IP address of the remote Annuncicom) and destination port number (remote "Local port") - as shown on the screenshot below:

B BARIX Annuncicom IC	Status × +	B BARIX Annuncicom IC Status × +	
$\leftarrow \   \rightarrow \   G$	O 👌 192.168.2.15/index.html	← → ♂ ⊘ 🖄 192.168.2.23/index.html	☆
HOME CONFIGURATION	STATUS DEFAULTS UPDATE REBOOT	HOME CONFIGURATION STATUS DEFAULTS UPDATE REBOOT	Annuncicom 100 MAC: 00:08:1
ANNUNCICOM		ANNUNCICOM	
Basic Settings   Advanced Settings   Network   Audio   Streaming   I/O   Serial   Control & SNMP   Security   Table Settings   Apply   Cancel	SERIAL SETTINGS Serial 1 Baud rate 9600 v Data bits 8 v Parity no v Stop bits 1 v Handshake none v Local port 12303 Destination IP 192 . 168 . 2 . 23 Destination port 12303	Basic Settings   SERIAL SETTINGS     Advanced Settings   Serial 1     Audio   Baud rate   9600 v     Streaming   Data bits   8 v     I/O   Parity   no v     Secial   Stop bits   1 v     Control & SIMP   Hondbacke   none v     Table Settings   Local port   12303     Apply Cancel   Destination IP   0   0	SERIAL SETTINGS These settings adjust the serial i gateway properties. Build rate Select the serial transmission sp "fr5200" Baud) Default "960" Data bits Solect "7" or "8" data bits. Default: "8" Parity Select "90", "even" or "odd" pari Default: "70" Stop bits
	Serial 2 Baud rate 9600 V Data bits 8 V Parity 0 V Stop bits 1 V Handshake R5485 direction control V Local port 12304 Destination IP 0 .0 .0 .0 Destination port 0	Serial 2 Baud rate 9600 V Data bits 8 V Parity no V Stop bits 1 V Handshake R5485 direction control V Local port 12304 Destination IP 0 .0 .0 .0 Destination port 0	Stop bits Select "f" or "2" stop bits. Default: "f" Handshake Select the type of handshake. Note: on ports supporting only F should be set to "RS486 directine RTS5021R542."Software flow c "S52021R5426" direction contro R5425."R5485 direction contro R5455."R5485 direction contro R5456."R5485 direction contro R5456."R5455 direction contro R5456."R5455 direction contro R5456."R5455 direction contro R5456."R5455 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R545555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R5456."R54555 direction contro R54565."R54555 direction contro R54565."R54555 direction contro R54565."R54555 direction contro R545555555 direction contro R545555555555 direction contro R5455555555555555555555555555555555555

When connection is established, then it can be used bi-directional.

## How works the serial gateway on Barix products:

The serial TCP connection is completely transparent when the TCP session is opened. When the serial device is sending data to the Barix device, then this data are buffered until there is an interruption for at least 12 milliseconds in the serial data stream or the maximum frame size of 1200 byte (1400 byte in versions before Firmware vb1.17) is reached. Then the data will be filled in a network frame and sent to the remote site.

The receive buffer for over network to the serial gateway port incoming data is 2048 byte. If the network stream interrupts due to network problem then it will happen after a while that the Barix device is changing temporary into the serial command mode and answers the serial incoming data with an acknowledge or an error message. This will happen until the TCP connection is automatically reconnected again.

The opened serial gateway is bi-directional and allows data exchange in both directions.

## **Redirector software**

Redirector software is a software which creates virtual serial ports on the PC, and in the back of the serial application the redirector transfers the data over the network.

There are some known Redirector softwares which also work with Barix products:

- the Redirector software version 3.1.0.4 from the Lantronix homepage (<u>www.Lantronix.com</u>)
- SerialIP (Windows) or TTYredirector (Linux) from Tactical Software

#### Application example:

There is a device which has only a serial RS232 port. The control software for this device allows only serial communication. It allows only selecting COM ports installed on the PC. Unfortunately you cannot use the serial device close to the PC, because you have to use it few miles away from the PC, close to the Barix Annuncicom.

That's a typical application for serial Redirector software. Such software creates a virtual COM port (e.g. COM5) on the PC. This new virtual COM5 the application can use for the communication. In the back of the application the redirector reroutes all serial data traffic for this serial port over network to the Annuncicom.

How to Install and how to use the Lantronix Redirector:

To install the software you will need Administrator permission on the PC. You have only to execute the EXE setup file and to follow the displayed steps. After installation you should reboot the PC. When the PC is rebooted start the Lantronix Redirector Configuration and click on "Com Setup" to select/add the virtual COM port. Then assign IP socket of the Barix device to the new COM port by using the button "Add IP". As next open the "Port Settings" and mark/enable the "RAW Mode" and click "OK". Now reboot the PC again. You can use now your Application for the serial device and select there the new virtual COM port for communication. The help button will provide more help if necessary.

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This software works with all Barix devices, also with the Barix Barionet!

E Lantronix Red	edirector Configuration	
Advanced Com Setup	Port Configuration Redirect COM5 To: 192.168.10.179:10001	Move <u>U</u> p Move Do <u>w</u> n
☑ Silent Mode	Port Settings X	Add I <u>P</u>
	Port Settings	<u>R</u> emove
Status: Idle	Disconnect Help   Timeout: 1   s: 0K     Cancel	
Device Name	Serial Port Name IP Address TCP Port MAC Address De	evice Type

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