Dear customer,
this is a short description to give you some basic informations about the GSM modem you purchased.

Informations to the AT commands you will find on the CD as a PDF file. As well informations can be downloaded from our website www.coniugo.com. Those documents can be read and printed with the Adobe Acrobat Reader.

Introduction / Declaration of Conformity

Thank you for buying the ConiuGo GSM/GPRS-modem. This product was produced according to the latest technology. It is a device suited for data transmission in GSM networks

The manufacturer is:
ConiuGo® GmbH
Berliner Strasse 4A
16540 Hohen Neuendorf

This product is labelled with the CE-mark according to following standards:

EU-guidelines 73/23/EWG of February 19th 1973, EU-guidelines 89/336/EWG of May 3rd 1989 (EMV-guideline) changed by EU-guidelines 91/263/EWG, 92/31/EWG, 93/68/EWG, EU-guidelines 89/392/EWG of June 14th 1989 changed by EU-guidelines 91/368/EWG, 93/44/EWG, 93/68/EWG

EN 61000-6-4/01 German basic standard for RF-emission for industrial application, EN 61000-6–2/05 German basic standard for RF-immission for industrial application

This product is manufactured according to the quality standard DIN EN ISO 9001.

This product includes a GSM transceiver unit from a third-party manufacturer. It is CE-certified by it's own manufacturer.

To ensure a safe operation of the modem, please read this manual carefully before taking it into operation

Hohen Neuendorf, August 2015

Table of contents

1. Limited Warranty / Limitation of Liability 4
2. Use as agreed 5
3. Safety notes 6
4. Description of the modem 7
5. Installation of the modem 7
6. Electrical installation 7
7. Insert the SIM- card 8
9. Attention when changing the Configuration 17
10. Reset of webinterface into the state of delivery 18
11. Setup of a modem- connection 22
12. Examples for basic AT- commands 22
13. Troubleshooting 23

1. Limited Warranty / Limitation of Liability

ConiuGo GmbH warrants its product to be free from defects in materials and workmanship under normal use and service for a period of two years from the date of delivery, if no other agreement was made. The warranty is limited to the repair or replacement, at ConiuGo`s sole option. The costs of parts and labour are covered in case of a repair. Costs for mounting and de-mounting, as well as for return transport to ConiuGo GmbH are not covered.

This limited warranty will apply only to ConiuGo GmbH products that exhibit normal use and service and will not cover any damages resulting from any misuse, modification, disassembly or alteration. Proof of purchase must accompany the product returned for consideration under this warranty.

Any use of the modem is carried out at your own risk. In no event shall ConiuGo be liable for incidental or consequential damages, including, without limitation, loss to property other than the ConiuGo GmbH product, loss of the use of the ConiuGo GmbH product or other property, or other economic loss.

Damages resulting from neglect of this manual are not covered by the warranty. ConiuGo GmbH is not liable for any consequential damage.

ConiuGo is not liable for damages to property or personal injuries resulting from improper use or neglect of the safety warnings. Such events are not covered by the warranty.

2. Use as agreed

The modem is designed for use in Germany and the European Community. According to the rules of CE-conformity, it is not allowed to distribute this device without a manual in the national language. The manual has to be authorised by the manufacturer. Any distributor has to make sure that the user of the device is capable to understand the manual as regards the content and the language.

The modem has to be installed and put into operation by competent technicians.

The modem is designed according to the valid GSM standards. At the use of this modem all safety precautions necessary for GSM devices have to be taken into account. It is not allowed to switch on the modem in airplanes or hospitals. Please check carefully any possible influences the modem may have on other technical and electronic devices.

The modem has to be installed and put into function by technical experts. All notes and information of this manual have to be read carefully and followed strictly. In case of doubt don't put the device into function but consult the manufacturer or your authorised distribution agent.

GSM devices are able to ignite explodable or inflammable gases by electromagnetic radiation. The use of the modem in an environment with a potential for these conditions must be definitely excluded.

Because of the RF-radiation of a GSM device the modem has to be used with a suitable GSM antenna for the RF band of 900 MHz (or 1800 MHz depending of the type of the chosen GSM network). The antenna cable has to be free from any damages.

Safety hints have to be regarded!

3. Safety notes

The modem corresponds to broadly valid GSM standards. At the use of a GSM transceiver for the mobile communication, certain safety precautions have to be made.

GSM products can ignite explosive or inflammable gases.

The use of the modem in an environment with a potential for these conditions must be definitely excluded.

The system must be switched off in airplanes or hospitals.

The system must be switched off in cars or vehicles, because an irritation of car electronics be RF radiation is possible.

Before connecting the product, possible interference of the modem on your existing technical equipment has to be inquired.

The manufacturer provides a product for integration in a technical assembly. The product is tested carefully according to the CE-certification to meet the standards mentioned in the Declaration of Conformity. Nevertheless, the electromagnetic behaviour of the modem is depending on the conditions of mounting and environment.

The electromagnetic behaviour of the modem depends on the environmental not controlled by the manufacturer. Any liability for eventual electronic misbehaviour is excluded.

Because of the RF-radiation of the GSM unit the modem has to be used with a suitable GSM antenna for the RF band, depending on the type of the chosen GSM network). The antenna cable has to be free from any damages.

4. Description of the modem

The modem is a GSM modem for data-, fax- and SMS- transfer in GSM networks. From the moment the modem is booked into the provider's network the device behaves like a standard modem or a fax modem. The configuration of the system is carried out via the V.24 serial port resp. the USB-connection. For programming the standard AT-commands according to ETSI-standards (ETSI 07.07 or ETSI 07.05) are used.

The modem is dedicated to applications several GSM networks and depends on the core module that is indicated on the product label (Dualband: 900/1800 MHz, Quadband: 850/900/1800/1900 MHz, UMTS: with 2100 MHz).

5. Installation of the modem

The modem must be installed only in dry places. The allowed range of temperature is –30 to +60 °C. The common regulations for electrical installations have to be regarded.

The modem is allowed to be run according to the following conditions:

- Ambient temperature: –30 to +60 °C
- Indoor use only, max. 70% RH
- SIM-card with appropriate service subscription (e.g. for data transmission: subscription for data transmission).
- For GSM/GPRS the **recommended / preset baudrate** is: 8N1 / 57.600
- For UMTS the **recommended / preset baudrate** is 8N1 / 115.200
- For LTE the **recommended / preset baudrate** is 8N1 / 115.200

6. Electrical installation

Power supply

This information is given by the product label.

Connection

LAN / Ethernet- Port, 2 LED as indication for the communication with the network.

Antenna

Preferably used is the **SMA- Coaxial connector**. In dedicated cases the modems can be delivered with FME- or MMCX- connectors as well.

7. Insert the SIM- card

Make sure that you have a SIM-card activated for all required services (e.g. CSD data call with a separate calling ID)

Place the Modem-unit as shown and insert the SIM-card into the SIM-card reader. Note that the contacts of the SIM card have to be placed upside. Do not touch the connectors of the SIM card with your fingers. It can lead to contact problems or damage from static discharges.

When using the modem with **industrial housing**, please insert the SIM- card as shown below:

When using the **housing for 32 mm DIN- rail** the SIM- card- connector is positioned on the right side of the device. This kind of housing provides two LED on the front side in order to indicate the **power supply** and the **Function**, that is indicated. The LED can be configurated user-defined by AT- commands. Please have a look at the manual of AT- commands, where this function is described. (AT#GPIO for the Status LED).

8. Configuration of the LAN- Port

When delivered the LAN- modem is pre-configurated and the LAN- port is addressable with the following IP- setting:

IP-address:	192.168.1.100
Subnet- mask:	255.255.255.0
Port:	10001

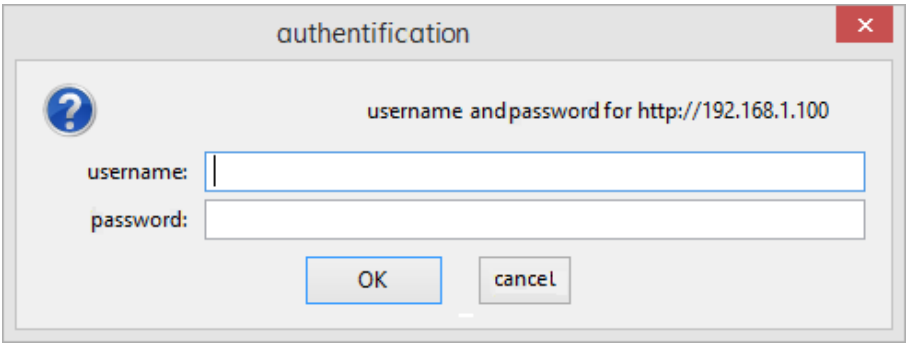
All network- an functional- settings are accessible to be changed according to the needs of a user-case:

Two ways for changes are possible:

1.) Configuration by using a webinterface

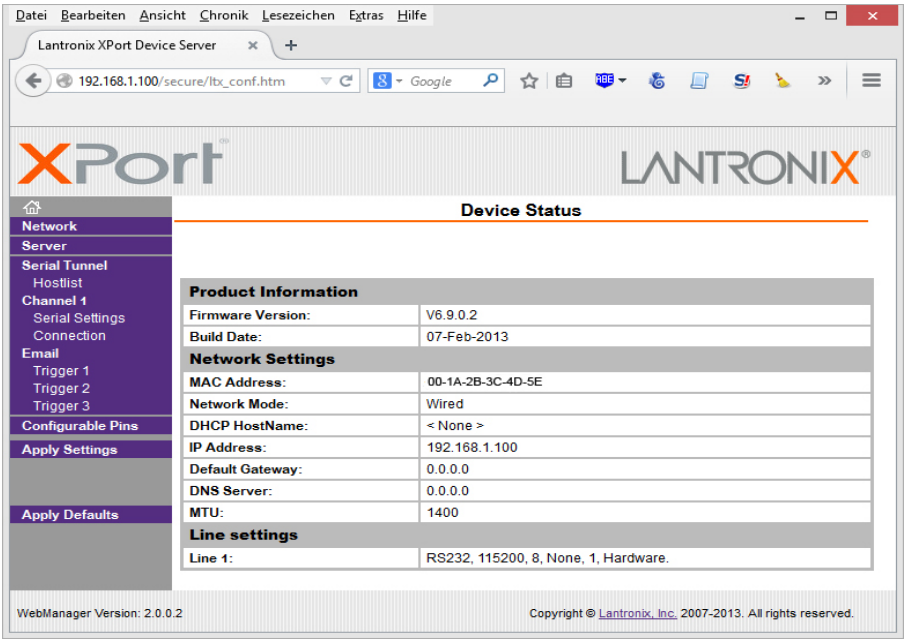
Please use the IP- address of the device in your browser (e.g. the IP- address 192.168.1.100)

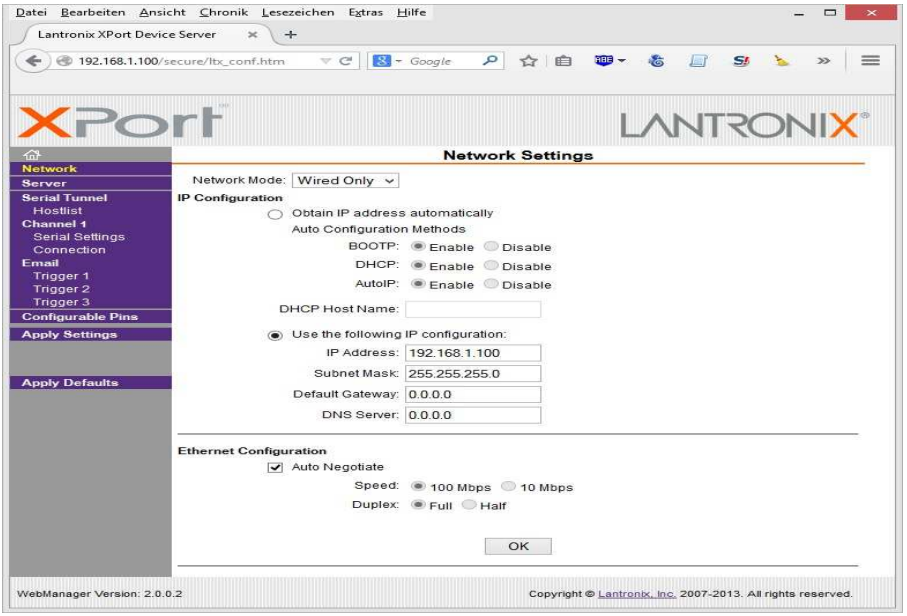
http://192.168.1.100

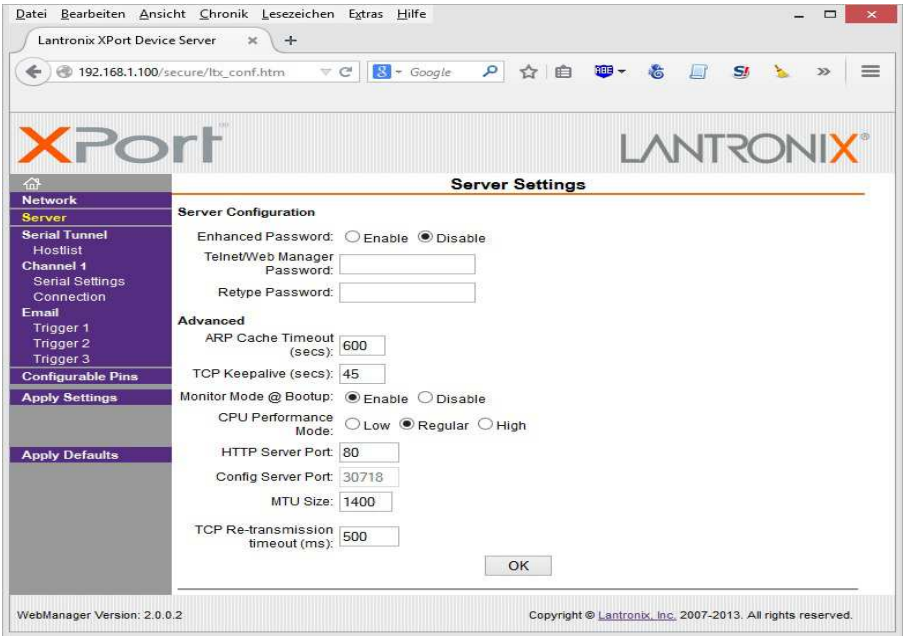


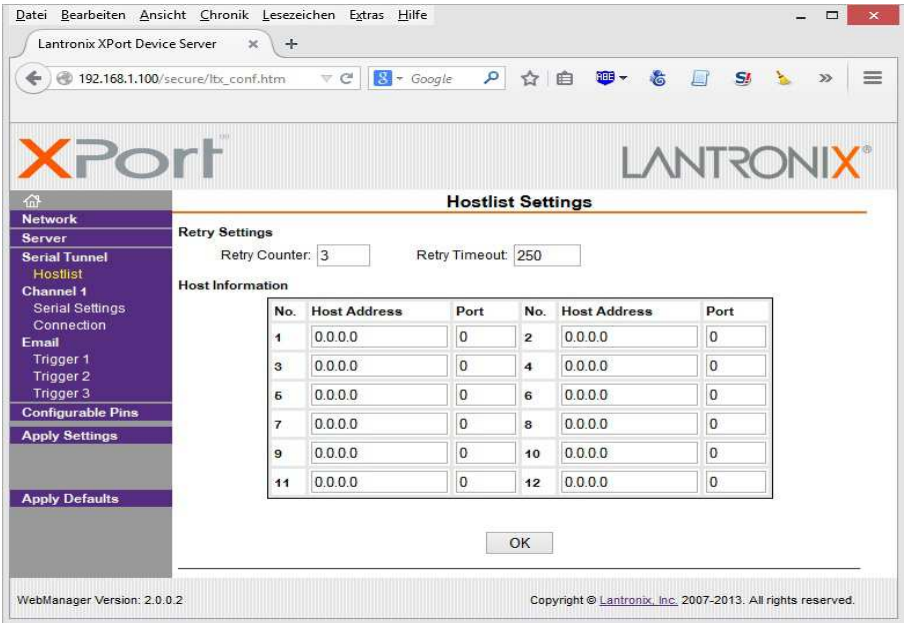
No user name and password are necessary. Please directly press „OK“

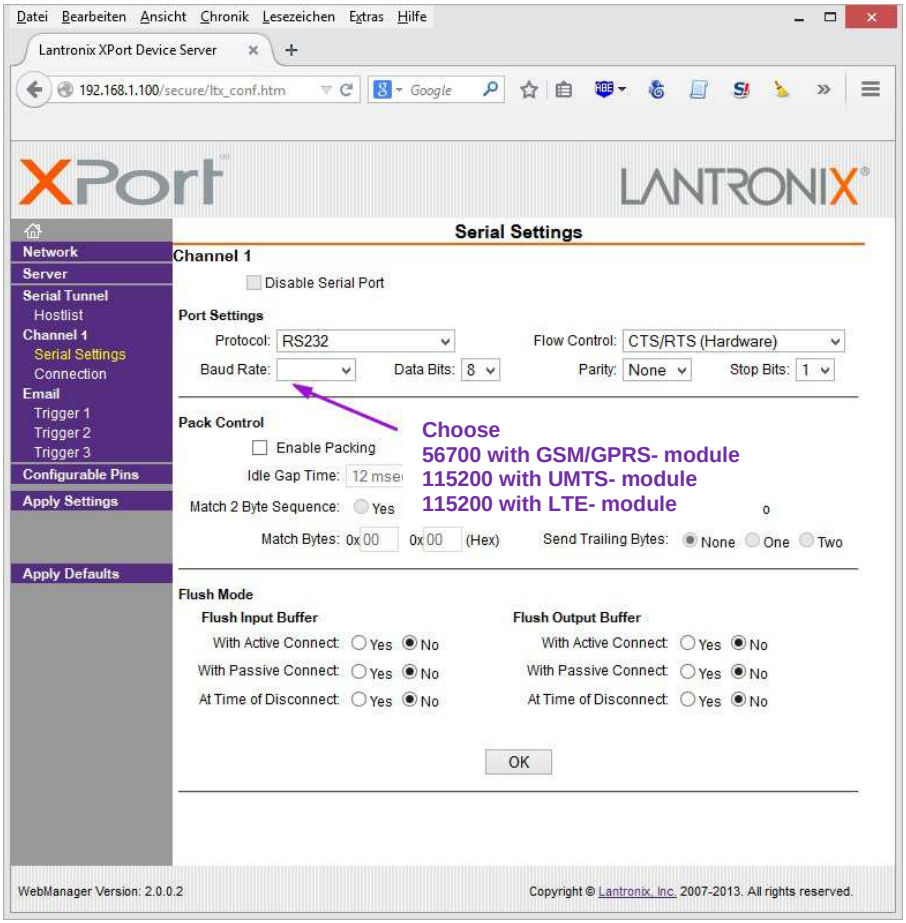
When delivered the LAN- modem is pre-configured as follows:

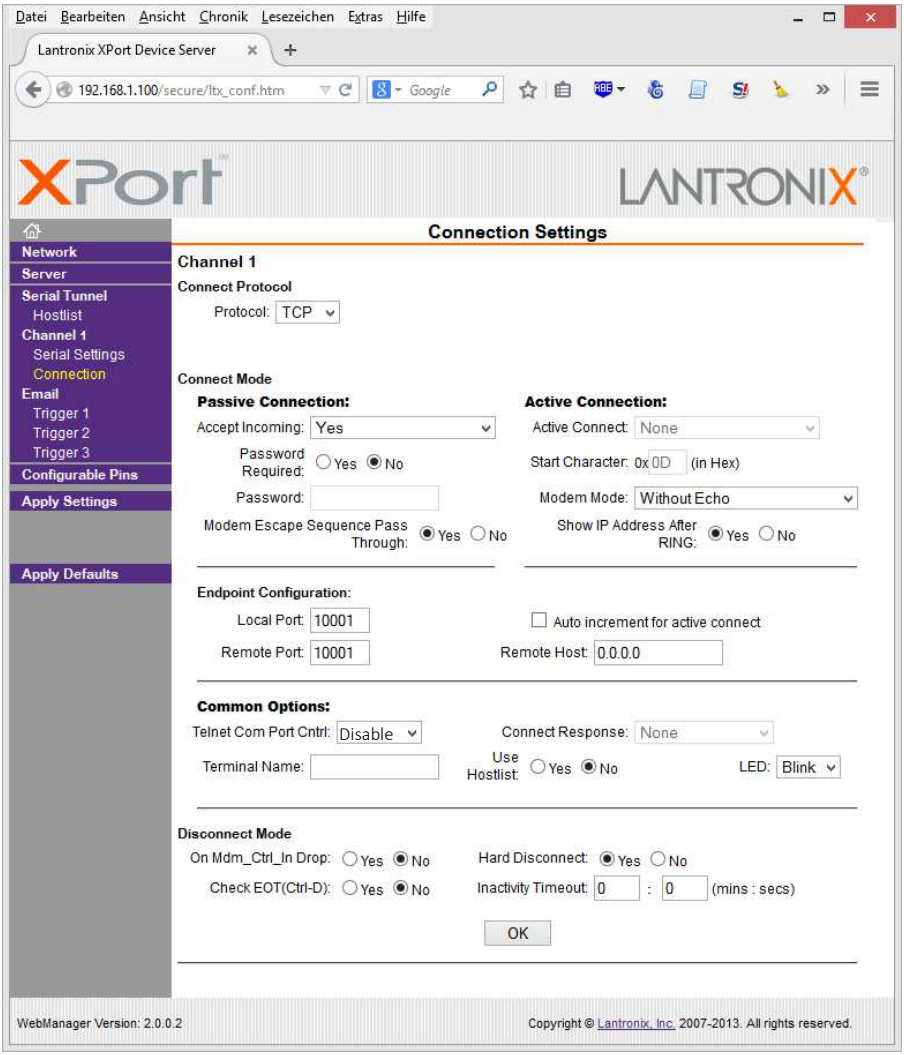

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
XPort
LANTRONIX
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Device Status
Product Information
Firmware Version: V6.9.0.2
Build Date: 07-Feb-2013
Network Settings
MAC Address: 00-1A-2B-3C-4D-5E
Network Mode: Wired
DHCP HostName: < None >
IP Address: 192.168.1.100
Default Gateway: 0.0.0.0
DNS Server: 0.0.0.0
MTU: 1400
Line settings
Line 1: RS232, 115200, 8, None, 1, Hardware.
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.

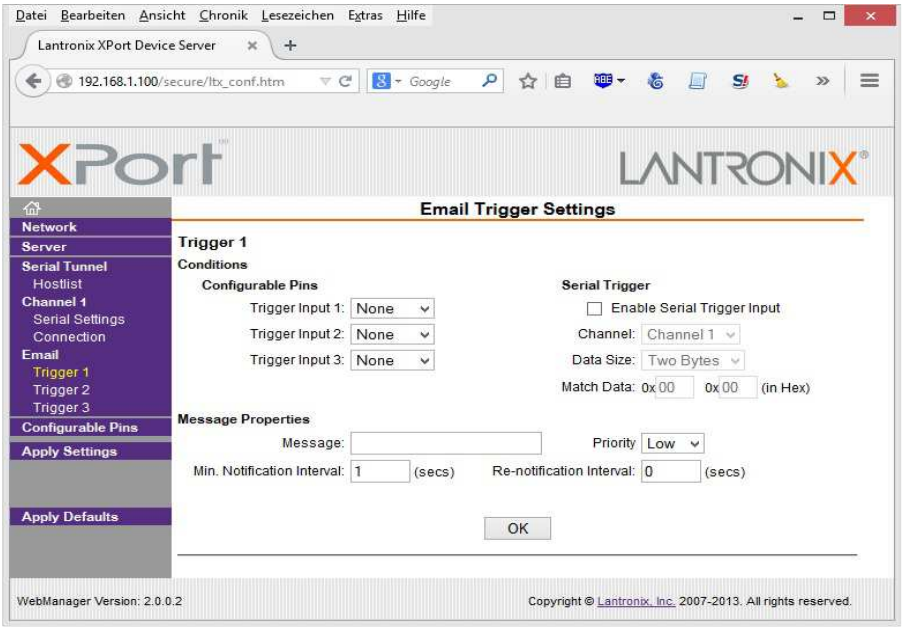

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
XPort
LANTRONIX
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Network Settings
Network Mode: Wired Only
IP Configuration
Obtain IP address automatically
Auto Configuration Methods
BOOTP: Enable Disable
DHCP: Enable Disable
AutoIP: Enable Disable
DHCP Host Name:
Use the following IP configuration:
IP Address: 192.168.1.100
Subnet Mask: 255.255.255.0
Default Gateway: 0.0.0.0
DNS Server: 0.0.0.0
Ethernet Configuration
Auto Negotiate
Speed: 100 Mbps 10 Mbps
Duplex: Full Half
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.

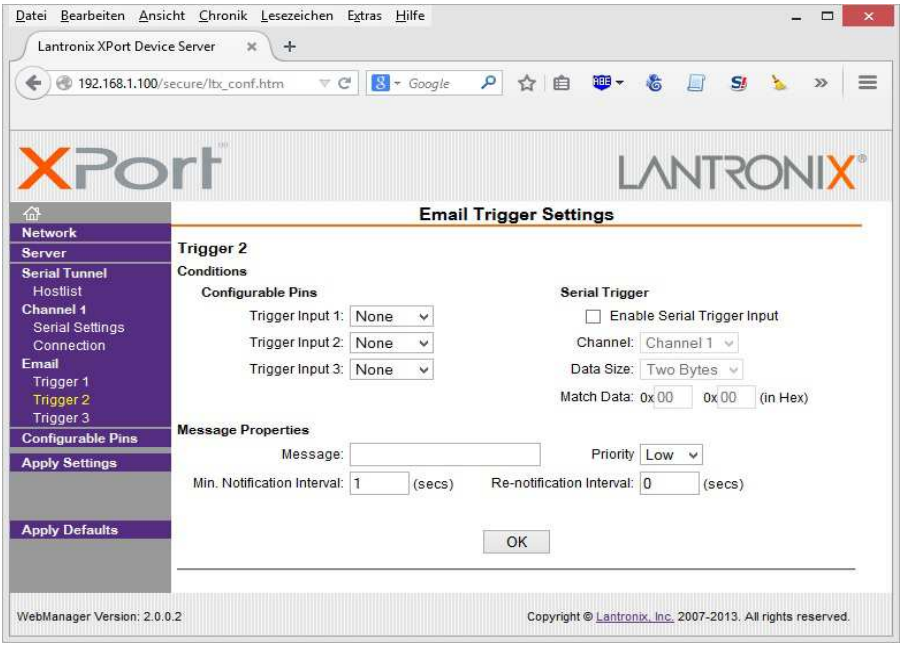

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
Google
XPort
LANTRONIX
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Server Settings
Server Configuration
Enhanced Password: Enable Disable
Telnet/Web Manager Password:
Retype Password:
Advanced
ARP Cache Timeout (secs): 600
TCP Keepalive (secs): 45
Monitor Mode @ Bootup: Enable Disable
CPU Performance Mode: Low Regular High
HTTP Server Port: 80
Config Server Port: 30718
MTU Size: 1400
TCP Re-transmission timeout (ms): 500
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.

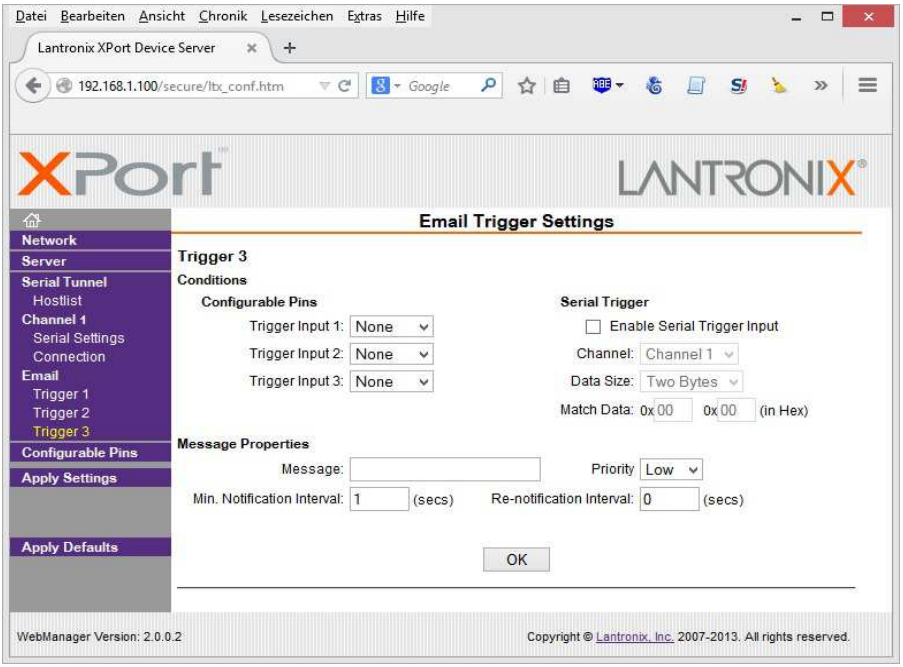

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
Google
XPort
LANTRONIX
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Hostlist Settings
Retry Settings
Retry Counter: 3
Retry Timeout: 250
Host Information
No. Host Address Port No. Host Address Port
1 0.0.0.0 0 2 0.0.0.0 0
3 0.0.0.0 0 4 0.0.0.0 0
5 0.0.0.0 0 6 0.0.0.0 0
7 0.0.0.0 0 8 0.0.0.0 0
9 0.0.0.0 0 10 0.0.0.0 0
11 0.0.0.0 0 12 0.0.0.0 0
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.

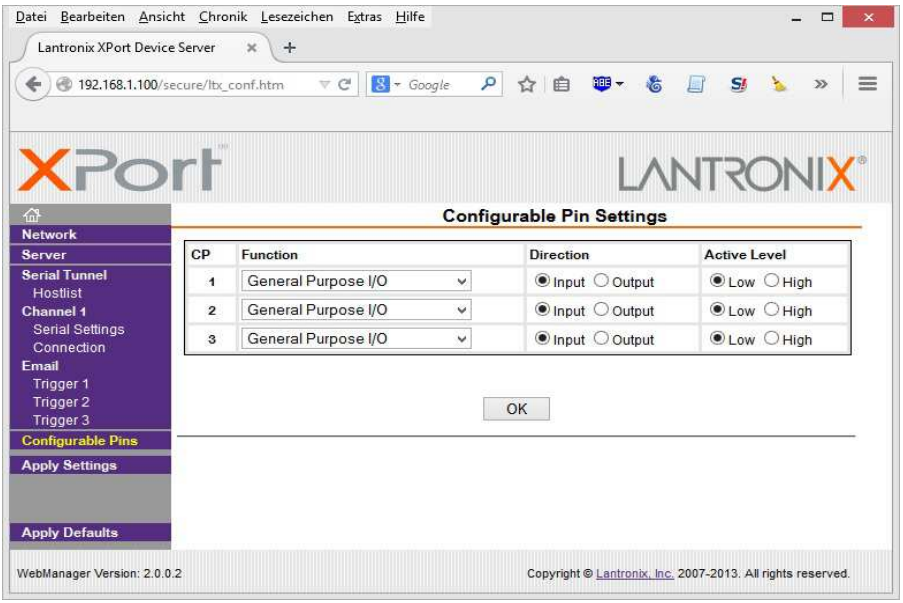

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
XPort
LANTRONIX
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Serial Settings
Channel 1
Disable Serial Port
Port Settings
Protocol: RS232
Flow Control: CTS/RTS (Hardware)
Baud Rate:
Data Bits: 8
Parity: None
Stop Bits: 1
Pack Control
Enable Packing
Idle Gap Time: 12 mse
Match 2 Byte Sequence: Yes
Match Bytes: 0x 00 0x 00 (Hex)
Send Trailing Bytes: None One Two
Choose
56700 with GSM/GPRS- module
115200 with UMTS- module
115200 with LTE- module
Flush Mode
Flush Input Buffer
With Active Connect: Yes No
With Passive Connect: Yes No
At Time of Disconnect: Yes No
Flush Output Buffer
With Active Connect: Yes No
With Passive Connect: Yes No
At Time of Disconnect: Yes No
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.


Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
Google
XPort
LANTRONIX
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Connection Settings
Channel 1
Connect Protocol
Protocol: TCP
Connect Mode
Passive Connection:
Accept Incoming: Yes
Password Required: Yes No
Password:
Modem Escape Sequence Pass Through: Yes No
Active Connection:
Active Connect: None
Start Character: 0x 0D (in Hex)
Modem Mode: Without Echo
Show IP Address After RING: Yes No
Endpoint Configuration:
Local Port: 10001
Auto increment for active connect
Remote Port: 10001
Remote Host: 0.0.0.0
Common Options:
Telnet Com Port Cntrl: Disable
Connect Response: None
Terminal Name:
Use Hostlist: Yes No
LED: Blink
Disconnect Mode
On Mdm_Ctrl_In Drop: Yes No
Hard Disconnect: Yes No
Check EOT(Ctrl-D): Yes No
Inactivity Timeout: 0 : 0 (mins : secs)
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.


Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
Google
XPort
LANTRONIX
Email Trigger Settings
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Trigger 1
Conditions
Configurable Pins
Trigger Input 1: None
Trigger Input 2: None
Trigger Input 3: None
Serial Trigger
Enable Serial Trigger Input
Channel: Channel 1
Data Size: Two Bytes
Match Data: 0x00 0x00 (in Hex)
Message Properties
Message:
Priority Low
Min. Notification Interval: 1 (secs)
Re-notification Interval: 0 (secs)
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.


Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
Google
XPort
LANTRONIX
Email Trigger Settings
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Trigger 2
Conditions
Configurable Pins
Trigger Input 1: None
Trigger Input 2: None
Trigger Input 3: None
Serial Trigger
Enable Serial Trigger Input
Channel: Channel 1
Data Size: Two Bytes
Match Data: 0x00 0x00 (in Hex)
Message Properties
Message:
Priority Low
Min. Notification Interval: 1 (secs)
Re-notification Interval: 0 (secs)
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.


Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
XPort
LANTRONIX
Email Trigger Settings
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
Trigger 3
Conditions
Configurable Pins
Trigger Input 1: None
Trigger Input 2: None
Trigger Input 3: None
Serial Trigger
Enable Serial Trigger Input
Channel: Channel 1
Data Size: Two Bytes
Match Data: 0x00 0x00 (in Hex)
Message Properties
Message:
Priority Low
Min. Notification Interval: 1 (secs)
Re-notification Interval: 0 (secs)
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.


Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
Lantronix XPort Device Server
192.168.1.100/secure/ltx_conf.htm
XPort
LANTRONIX
Configurable Pin Settings
Network
Server
Serial Tunnel
Hostlist
Channel 1
Serial Settings
Connection
Email
Trigger 1
Trigger 2
Trigger 3
Configurable Pins
Apply Settings
Apply Defaults
CP Function Direction Active Level
1 General Purpose I/O Input Output Low High
2 General Purpose I/O Input Output Low High
3 General Purpose I/O Input Output Low High
OK
WebManager Version: 2.0.0.2
Copyright © Lantronix, Inc. 2007-2013. All rights reserved.

2. Configuration by using Telnet

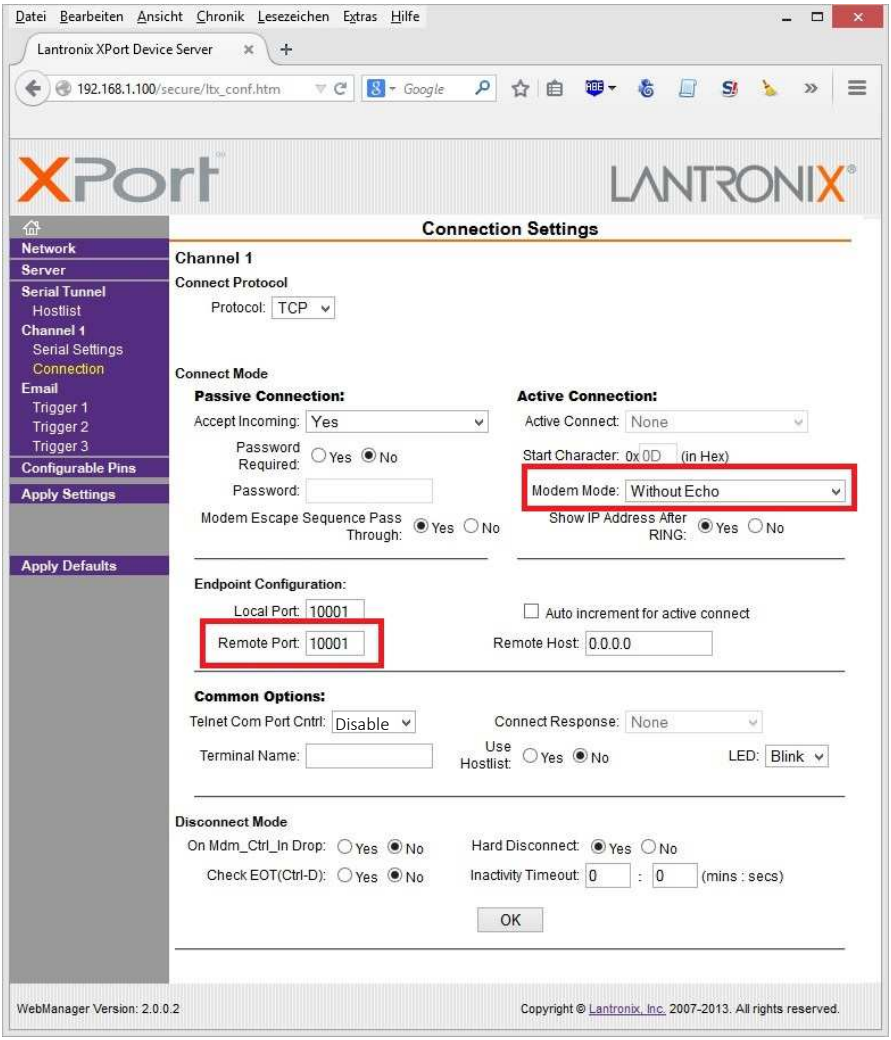
Connect by Telnet with port 9999. Telnet is a software- tool of your operation system. (e.g. Windows XP, Windows 7 and Windows 8)

telnet 192.168.1.100 9999

Additional hints for the configuration of the LAN- port are described in the Document (PDF): **Xport- User- Guide**

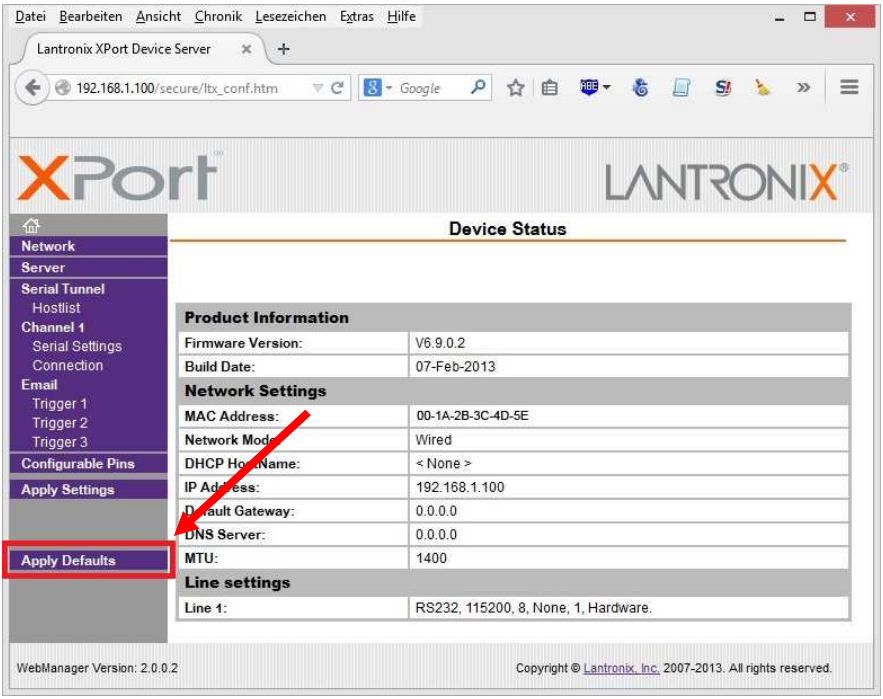
9. Attention when changing the Configuration

Changes in configuration should be done very carefully. Please test such changes always „step-by-step“. The documentation of all changes is highly recommended in order to keep the ability of access to the webinterface. The settings that are marked below NEVER should be changed during configuration!



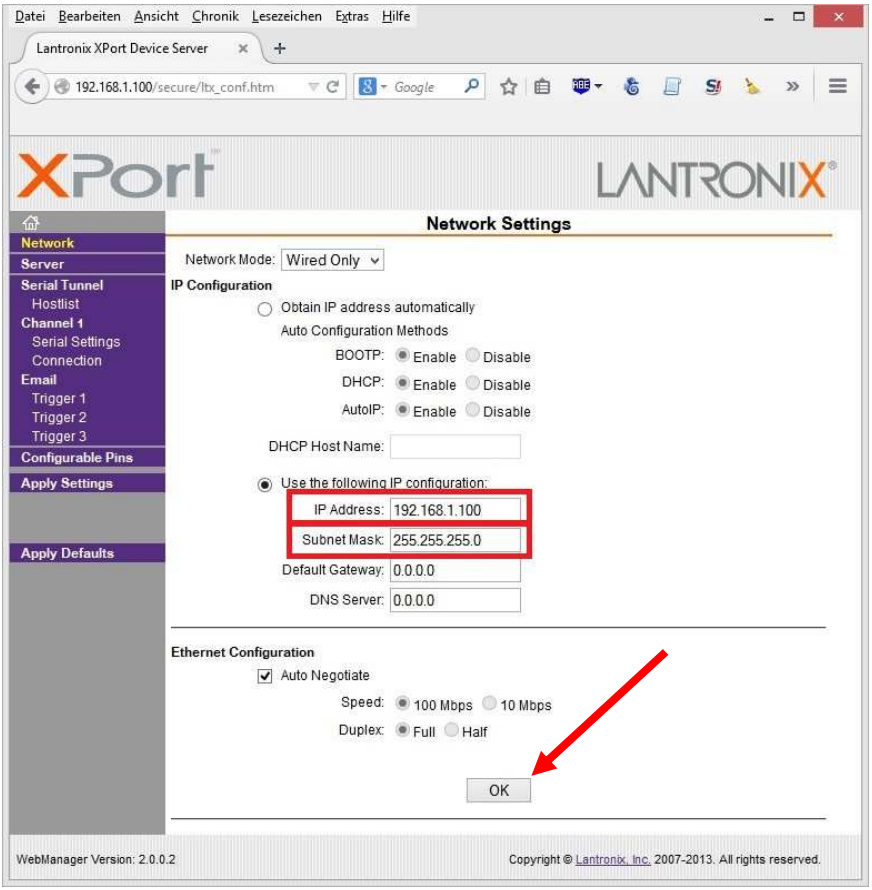
10. Reset of webinterface into the state of delivery

After applying a lot of changes it might be useful toi reset the webinterface into the state of delivery. However, the button „Apply Defaults“ is resetting the webserver into the state of delivery by the supplier LANTRONIX.

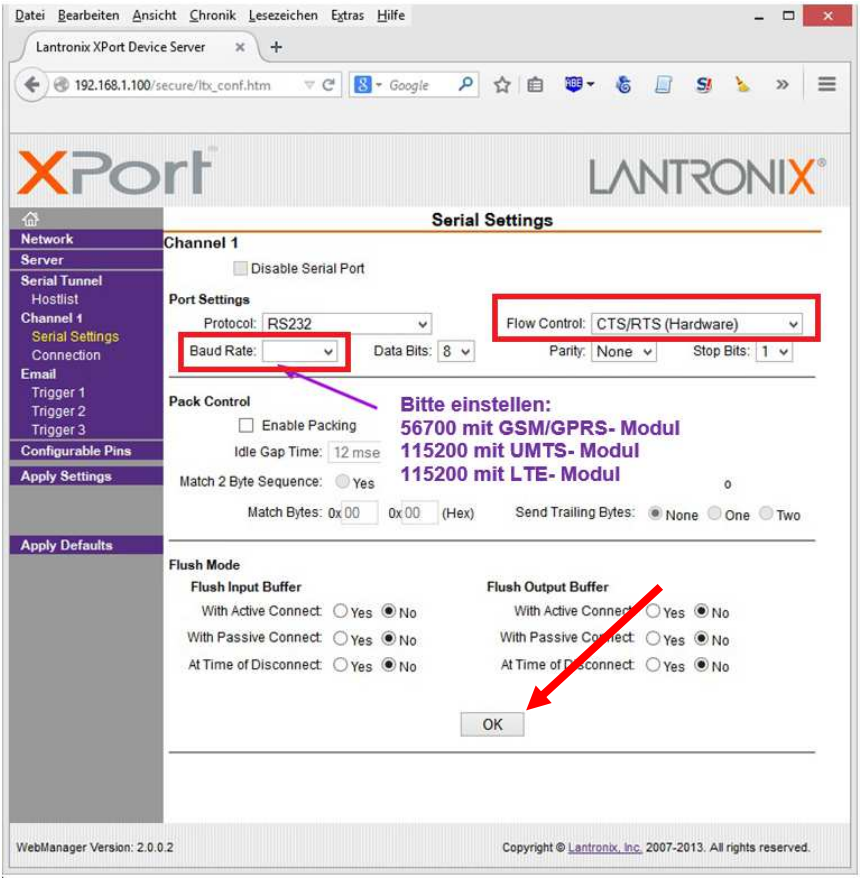


To reset the delivery state of the ConiuGo as the producer of this modem it is necessary to apply a few additional settings by manual. This is necessary to establish a perfect communication to the internal GSM modem module.

At first set the default values of the IP- connection and pre-mark those settings by pressing the OK- buttons!

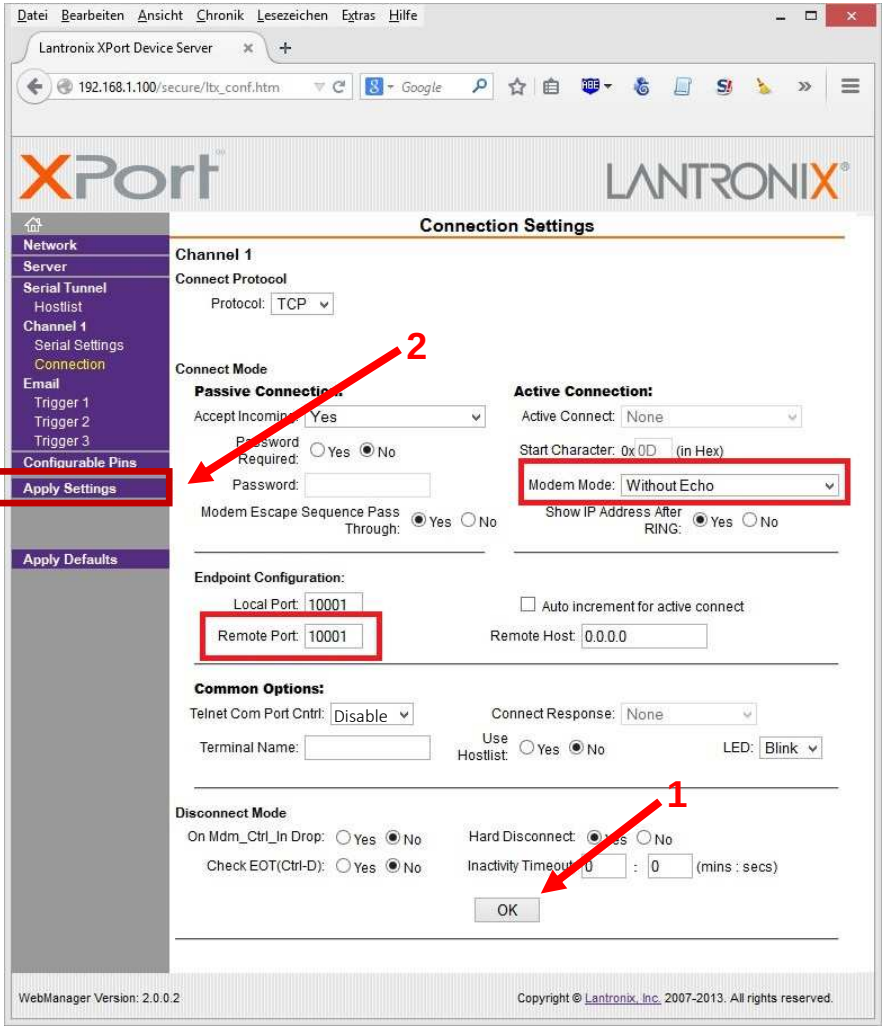


Next step ist he correct setting oft he serial port. Please again press the OK- button in order to pre- mark your choice.



Finally choose correctly the connection Settings. Please press the OK- button first but „Apply Settings“ in the next step in order to apply the whole set of parameterst o the webinterface.

The webserver will now re-start with ist new settings.



If your browser does show the previous settings of the LAN-TRONIX webserver the reason is that your browser is showing content from its cache. Refresh the browser content or close & re-open the browser in order to show the actual situation of the webinterface.

11. Setup of a modem- connection

Start Telnet in order to access the modem by IP (IP-address and Port). E.g. the default settings when the modem is delivered (192.168.1.100 10001):

telnet 192.168.1.100 10001

After a successful setup of the telnet- connection the use of the modem is possible using AT-commands. Which AT-commands are available and how those can be used is described in the **AT-command manual** (PDF on product- CD).

Following a few basic AT- commands are described (PIN-entering, Check network status, signal quality, Sending of a SMS). The modem is able to perform several additional functions (sending e-mail, FTP, encryption, etc.) that are described described in the **AT-command Manual** (PDF on product- CD).

12. Examples for basic AT- commands

PIN-number
Check by “AT+CPIN?” if a PIN-number has been already entered, or enter the PIN-number by using “AT+CPIN="xxxx“”. The PIN has to be typed in with quotation marks!

Signal quality
Check the signal quality by “AT+CSQ”. With this command the physical signal quality is tested. It should be higher than 10, otherwise a data transmission can be unstable despite of a successfully booked in modem.

Status question
By “AT+CREG?” the registration status is shown by the device.

Name of provider network
By “AT+COPS?” the provider name is querried and shown by the device.

Check of the dial-in- function
Check the dial-in- function as follows: ATDT followed by a phone number. With the command ATH or AT+CHUP you can close a call.

Sending of an SMS
Call of the SMS- service of the provider: AT+CSCA="+49xxxxxxxxx" (Example for Germany).

The SMS is to be transmitted by PDU- or Text- mode to the modem. Please use the AT- commands that are described in the AT-command manual (PDF on product-CD)

13. Troubleshooting

The service technicians of the producer strive to give you support as best as possible, if a LAN modem is not working according to the customers needs. However, it is not possible to evaluate individual or unusual configurations and situations at the operation site from the distance. Therefore, it is not possible to decide between a possible malfunction of the modem and faults that are caused by the conditions of the LAN environment at the operation site.

We kindly ask you **first of all to test a LAN- modem with the standard configuration and in connection with a PC** (please have a look into the manual). Is it necessary to modify the configuration this shoeld be done very careful. It is recommended to contact the service ofthe producer before.

A connection to the LAN- Interface cannot be established right from the start

Possible reason: No Crossover- LAN- Cable is used.

Remedy: A Crossover- LAN- cable has to be used.

A connection to the LAN- Interface was possible in the initial phase, but this capability was lost. Even with the LANTRONIX device installer a connection is no longer possible

Possible reason: A network-connection had been entered (IP-address, subnet- mask, etc.), that is not accessible.

Important note: Changes in the network connection and of the password have to be noticed very carefully. If those informations become unknown it will be impossible to establish a con nection to the webserver.

Remedy: Enter correct network access data. Search fort he modem in the network and if indicated as „unreachable“ a indivi dual configuration oft he PC's LAN- port is necessary.

A connection by LAN- network still is possible. However, the GSM- modem does not accept any at-command

Possible reason: The parameter of the serial port, e.g. the baudrate, had been changed.

Remedy: Enter the com- port parameter as written in the manual.

The modem is working instable (e.g. periodic abort of the connection)

Possible reason: The power supply is not suited (e.g. not enough wattage stress phases)

or

The connection to the GSN- network is instable.

Remedy: Use a suited power supply, use a better antenna or choo- se a better suited position for your antenna.

The webinterface oft he LANTRONIX- webservers does not accept changes in the configuration settings

Possible reason: Changes of the settings had been marked by the „OK“ button, however had not been flashed into the memory of the device by choosing „Apply settings“.

or

Changes of the settings had been made correctly and are operative („OK“ and final „Apply settings“) However, the browser is showing the previous settings because of loading the website from its cache and not from the webserver (LANTRONIX).

Remedy: Mark every changes in settings by pressing „OK“. Finaly flash the whole set of parameters by pressing the „Apply settings“ button. Please keep in mind that it is important to list all changes in order to keep the ability of access to the LANTRONIX webserver!

or

Update the website in the browser (load newly and avoid to show the content of the cache).

The virtual com- port is showing strange and disturbing characters in company with a correct modem- communikation (at… ok)

Possible reason: Those characters are sent from the Telnet diagnostics port.

Remedy: Switch off the Telnet- diagnostics (set from „enable“ to „disable“).

In case of problems please consult our homepage where you will find a lot of documents and whitepapers that will give you support. If you need additional information please send an e-mail to: support@coniugo.com

Please give informations regarding the following issues:

- **Where and when buyed?**
- **Which problem do you have?**
- **What was done before?**
- **Which application do you use the modem for?**