User Guide

STE-Gateway-XB

XBee Ethernet Gateway

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- 10BaseT, Ethernet port
- Real Time Clock used with Network Time Protocol
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- Reverse Polarity Protection
- Free X-Portal Windows Application

Overview

The STE-Gateway-XB is a true, drop-in wireless network solution. Unlike other products that require you to program in Python or some other scripting language. The STE-Gateway-XB requires no programming. This allows for a wireless network to be setup quickly.

STE-Gateway-XB Specifications

The following table outlines the specifications for the STE-Gateway-XB.

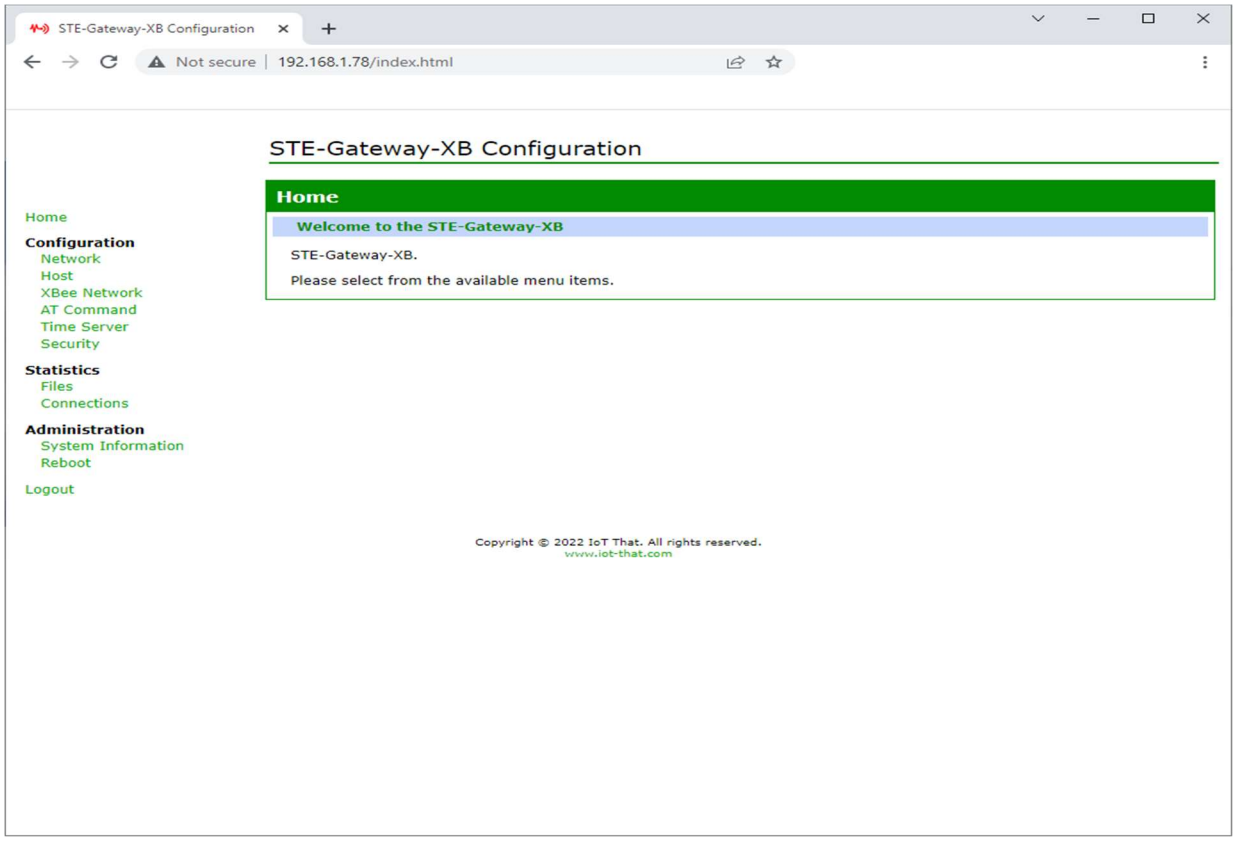
STE-Gateway-XB Specifications	
Dimensions (HWD):	1.61 x 4.272 x 3.275 (29.50 mm x 108.50 mm x 83.20 mm), depth does not include antenna
Weight:	0.568 lbs. (258g)
Power Supply:	USB Micro B Port Wall Charger 1A/5V 1000mAh Lithium-Ion Polymer Battery Backup
Output power:	Region/country specific
Frequency:	IEEE 802.15.4
Operating channels:	11 - 26
Modulation technique:	DSS
Management:	Built-in browser-based management with Username / Password authentication
IP configuration:	Static IP or DHCP client (default is static, 192.168.1.140)

STE-Gateway-XB Specifications (Cont.)	
Antenna Mount:	A reverse SMA connection that supports a 2.4GHz antenna.
Front Components:	• **PWR** - A green LED Power ON is indicated with a solid light; Power OFF is indicated with no light. • **ACT** - An orange LED blinks to indicate both sending and receiving information via Ethernet. • **LNK** – A green LED is solid when an Ethernet link is established. • **RSSI** – An orange LED blinks indicating wireless data is received. • **ASSO** – A red LED blinks once a second when coordinator is started (LT=0). A red LED blink every 100ms during a Node Identify.
Reset Button:	Press and hold for approximately 5 seconds to return the STE-Gateway-XB to factory default settings.
Back Components:	• **CHRG** – A solid red LED to indicates charging. • **DONE** – A solid green LED is solid battery is charged.
Ethernet port:	**10BaseT modular (RJ-45) connector** - used to connect the STE-Gateway-XB to your LAN and/or to connect your third-party device to the LAN when the STE-Gateway-XB is used as a gateway.
USB Serial port:	**Micro-B receptacle** – used to connect to the STE-Gateway-XB via a USB cable to a terminal program such as Hyper Terminal. Default Settings are 11520 8-N-1.
Operating/Storage Environments:	Operating Temperature: -30°C (-22°F) to 70°C (158°F) • Relative Humidity: 5% to 85% non-condensing; intended for indoor use only

Getting Started

1. Connect a DC power adaptor into the rear power jack.
2. Insert one end of the CAT5 Ethernet cable into the rear RJ-45 jack and connect the other end of the same cable to a router.
3. Confirm the STE-Gateway-XB is receiving power by checking the PWR LED.
4. Confirm Ethernet link is established by checking the LNK LED.
5. Using a PC connected to your system, navigate to the STE-Gateway-XB Browser-based Configuration Manager in your preferred browser application.

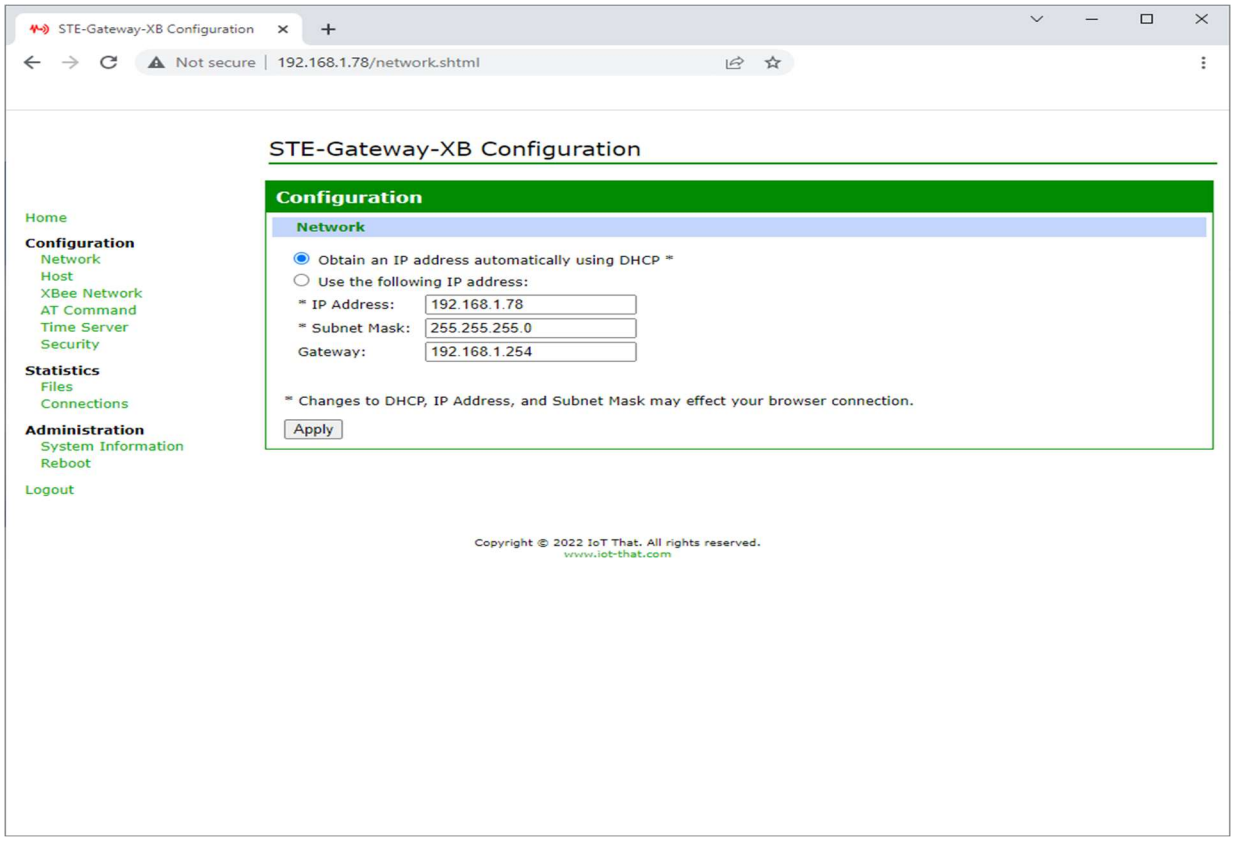
Home



Configuration

Network

The *Network* page is used to set IP addresses. The IP address can be either a static or dynamic assignment.



Network	
IP address	• **Dynamic:** IP address and subnet mask are requested from the DHCP server. • **Static:** User provides IP address information.
IP Address	The IP address of the unit.
Subnet Mask	The IP subnet mask of the unit.
Gateway	The gateway used for IP routing.

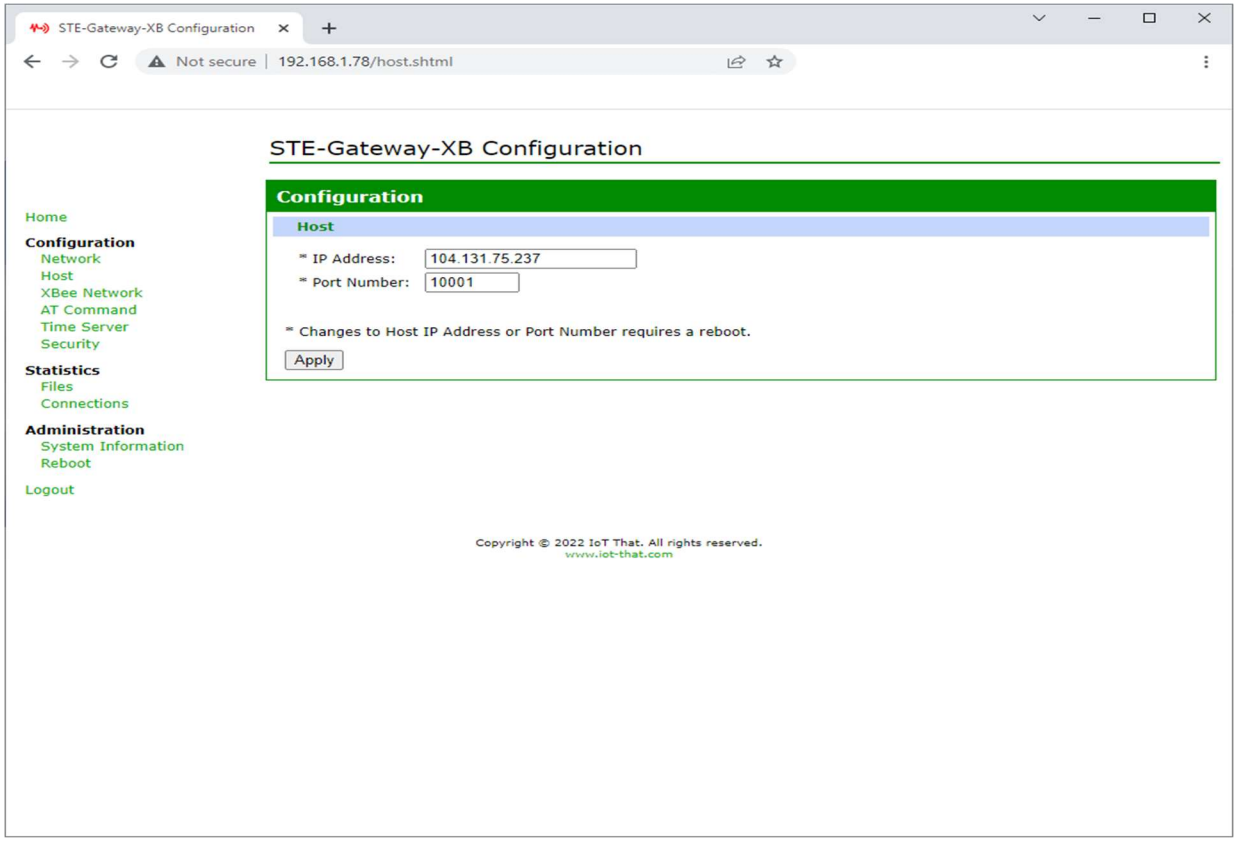
Network Settings

1. In the menu of the Browser-based Configuration Manager, select *Network* under the section *Configuration*.
2. Click the radio button for either *Dynamic* or *Static*. If you selected *Dynamic,* the DHCP server automatically provides the IP address.
3. If configured for *Static*, type the IP address in the field provided.
4. If necessary, type the subnet mask and gateway in the fields provided.
5. Click **Apply**.
6. If using a static IP change the IP Address in the browser's URL to the new IP Address.

NOTE: *The default IP is Dynamic, Static IP is 192.168.1.140, default Subnet Mask is 255.255.255.0, and the default Gateway is 192.168.1.1*

Host

The *Host* page is used to set IP address and Port of the UDP End Point.



Host	
IP Address	The IP address which UDP packets will be set to.
Port	The Port of the End Point UDP packets will be sent.

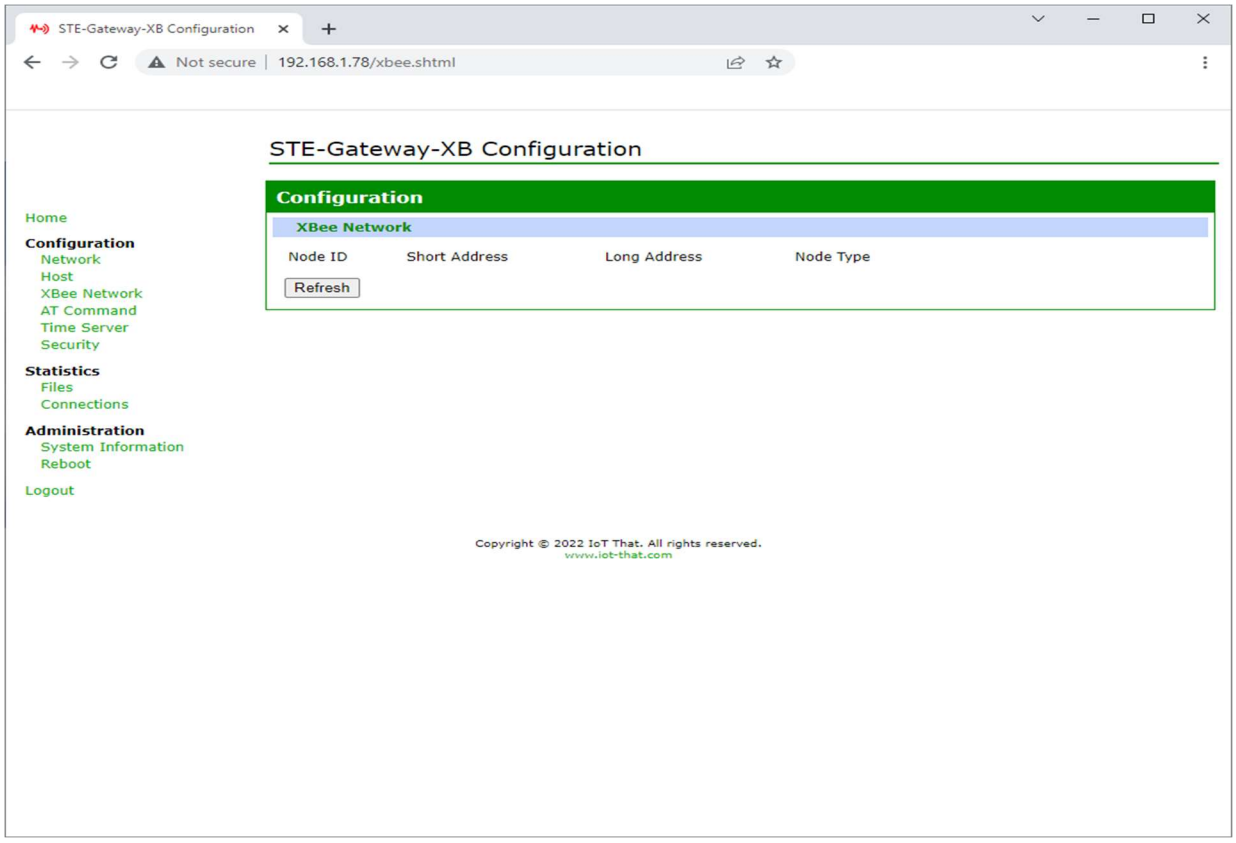
Host Settings

1. In the menu of the STE-Gateway-XB Browser-based Configuration Manager, select *Host* under the section *Configuration*.
2. Type the IP address in the field provided.
3. Type the Port number in the field provided.
4. Click **Apply**.
5. Reboot.

NOTE: *The default Host IP Address 108.161.128.34 and the default Port Number is 10001.*

XBee Network

The XB*ee Network* page is used to show any devices that are joined to the STE-Gateway-XB Coordinator.



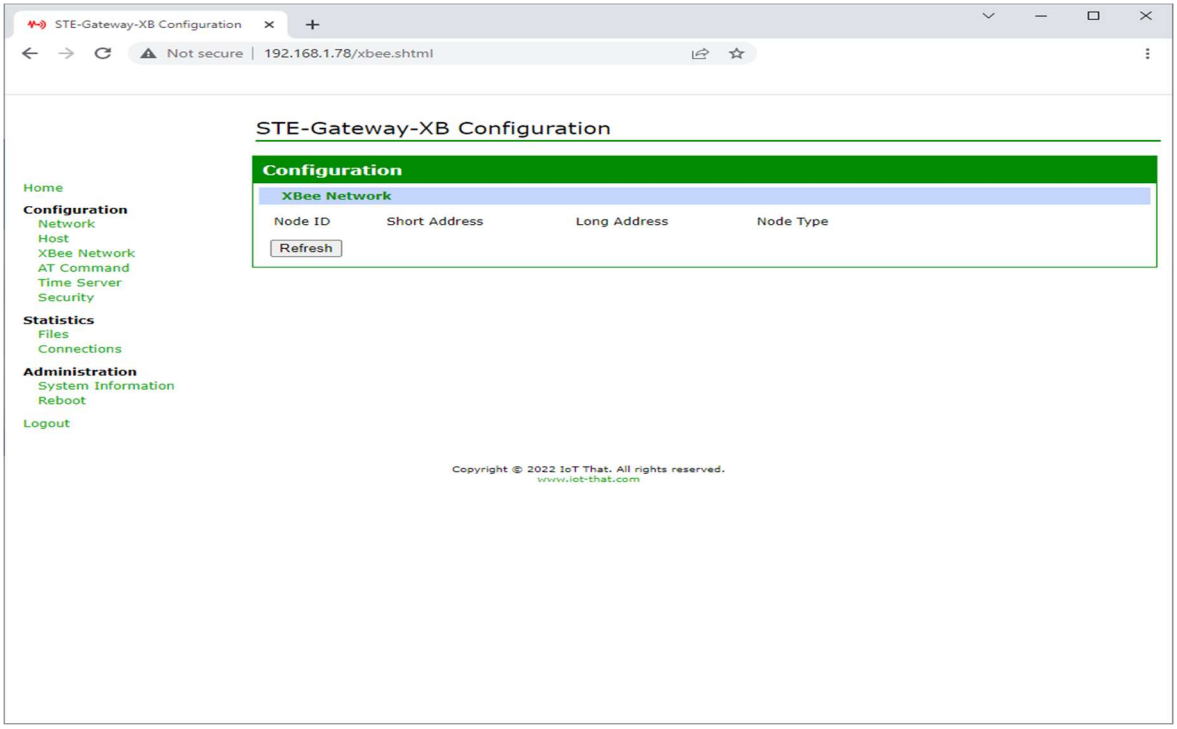
XBee Network

1. In the menu of the STE-Gateway-XB Browser-based Configuration Manager, select XB*ee Network* under the section *Configuration*.
2. Click **Refresh**.
3. Wait for all XBee Devices joined to the coordinator to respond.
4. Click the **XBee Network** link; this will display update the node list.

NOTE: *It is not recommend having more than 40 devices or more devices joined to the coordinator.*

AT Command

The *AT Command* page is used to set or get AT Command parameter of the STE-Gateway-XB local radio or any remote XBee devices joined to the network.



AT Command	
Long Address	The Long Address of the device the AT command is being sent.
Short Address	The Short Address of the device the AT command is being sent.
Command	The AT Command for the targeted device.
Parameter	The AT Command parameter or value.

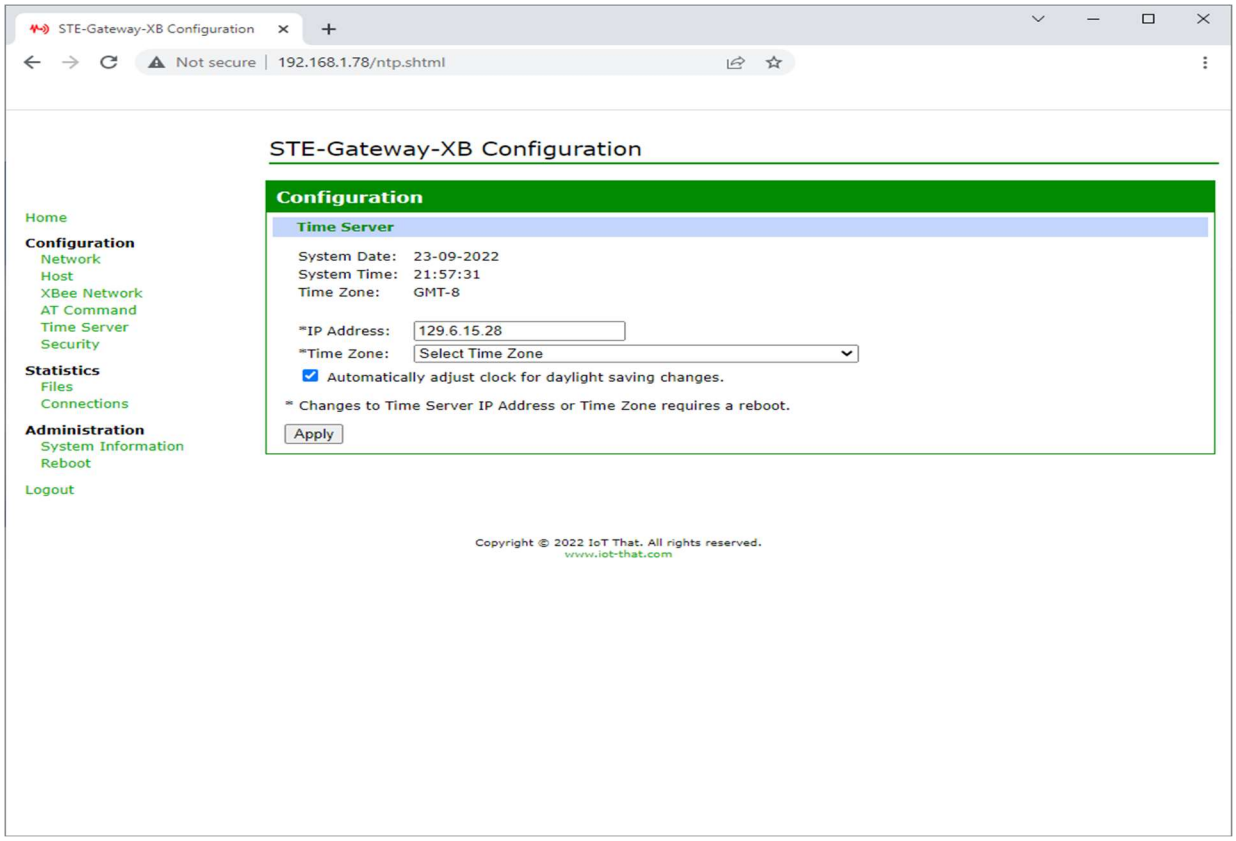
AT Command Settings

1. In the menu of the STE-Gateway-XB Browser-based Configuration Manager, select *AT Command* under the section *Configuration*.
2. If the AT Command is intended for the STE-Gateway-XB Local radio skip step 3 and 4.
3. Type the Long Address of the XBee Device the AT Command is intended for.
4. Type the Short Address of the XBee Device the AT Command is intended for.
5. Type the 2-character AT Command.
6. Type the Parameter, leave blank to get the parameter.
7. Click **Apply**.

NOTE: *Returned command parameters are displayed beside the Response label.*

Time Server

The *Time Server* page is used to set the IP Address of the Network Time Server.



Time Server	
IP Address	The IP Address of any time server.
Time Zone	The Local Time Zone.
Daylight Savings	Enables daylight savings.

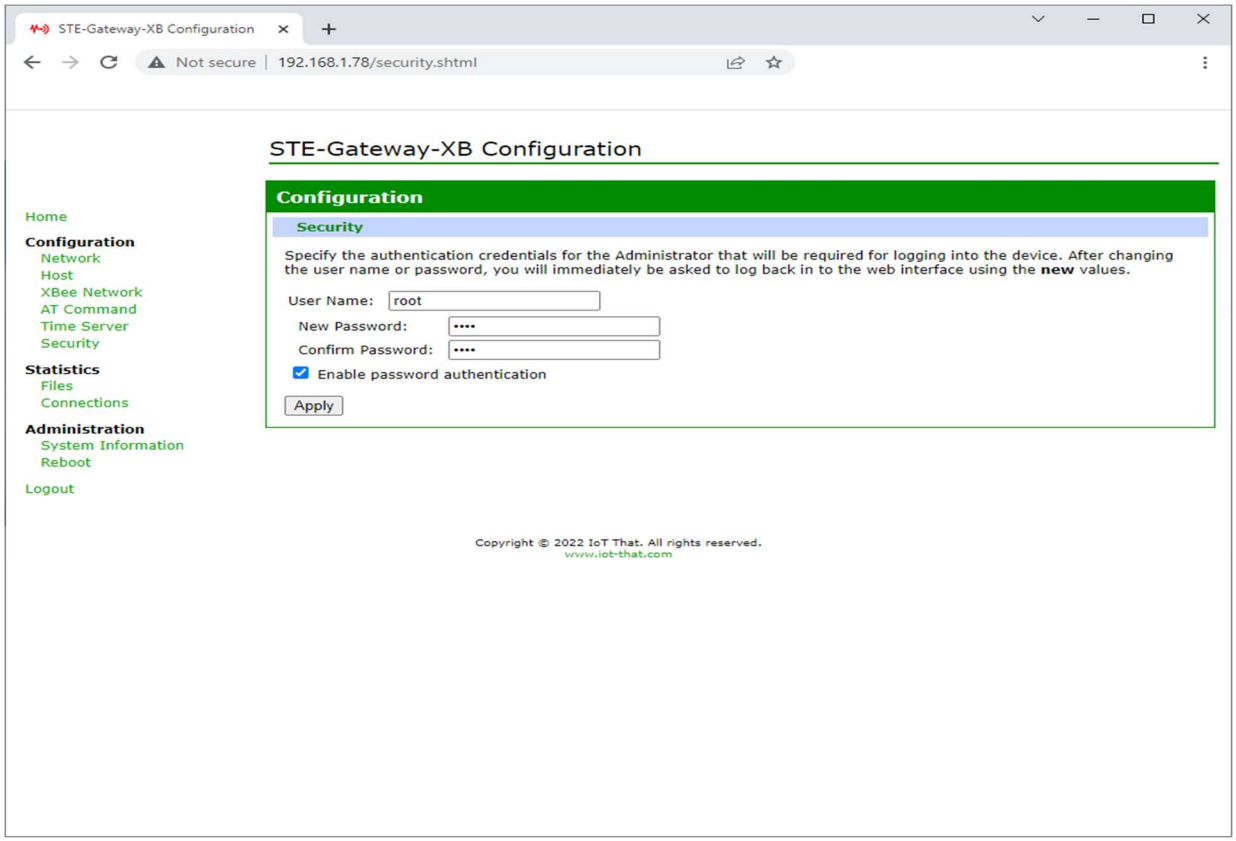
Time Server Settings

1. In the menu of the STE-Gateway-XB Browser-based Configuration Manager, select *Time Server* under the section *Configuration*.
2. Type the IP Address of a Timer Server.
3. Select a Time Zone.
4. Click **Apply** then reboot.

NOTE: *The default Time Server IP Address is 206.186.255.227and the default Time Zone is (GMT -8) Pacific Time (US & Canada)*

Security

The *Security* page is used to enable authentication and change the username and password.



Security	
Username	Text field for new username.
New Password	Text field for new password.
Confirm Password	Text field to confirm new password.
Enable Password	Enables password authentication.

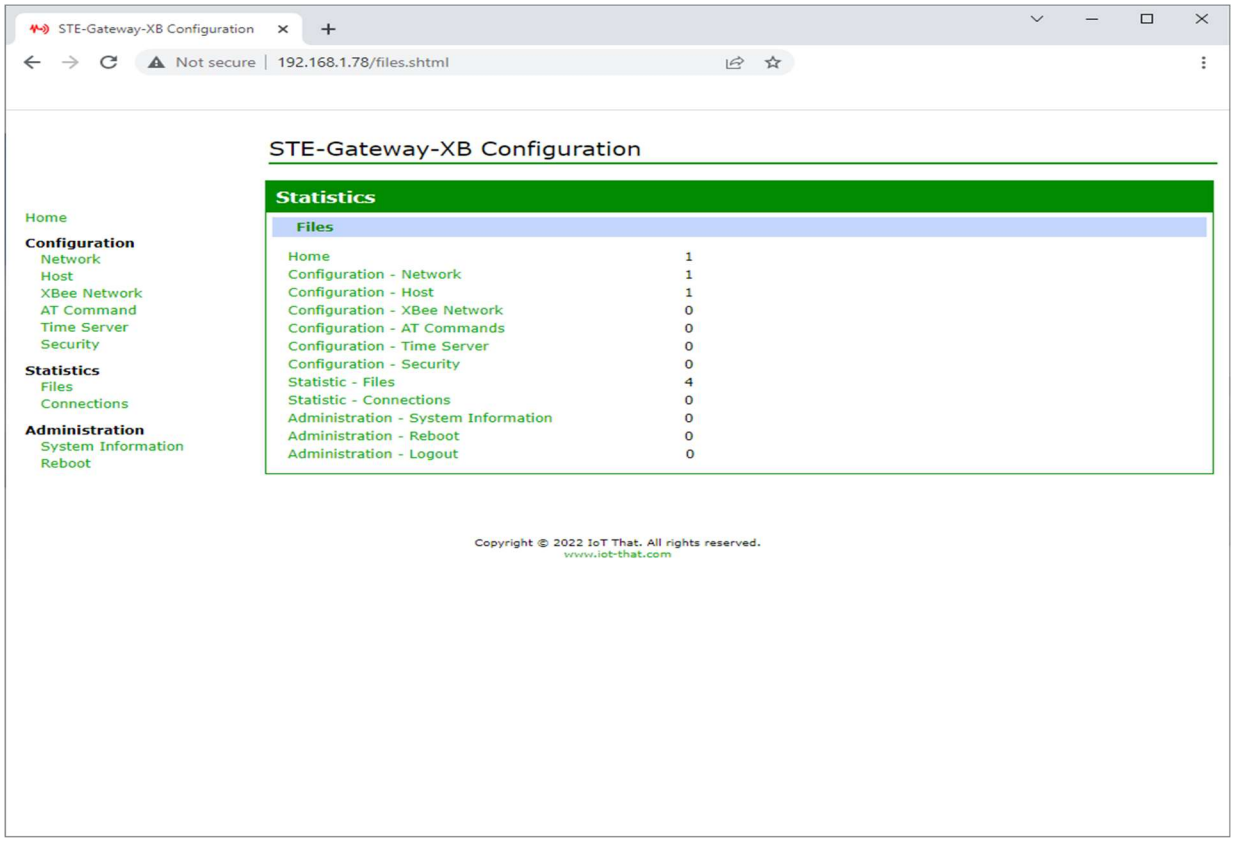
Setting a new username and password

1. In the menu the STE-Gateway-XB Browser-based Configuration Manager, select *Security* under the section *Configuration*.
2. In the text field next to *New Username*, type the new name.
3. In the text field next to *New Password*, type the new password.
4. Confirm the password in the field *Re-type Password*.
5. Click **Apply**.

NOTE: *The default username and password are "**root**" and "**root**", respectively; changing the password as soon as possible is highly recommended.*

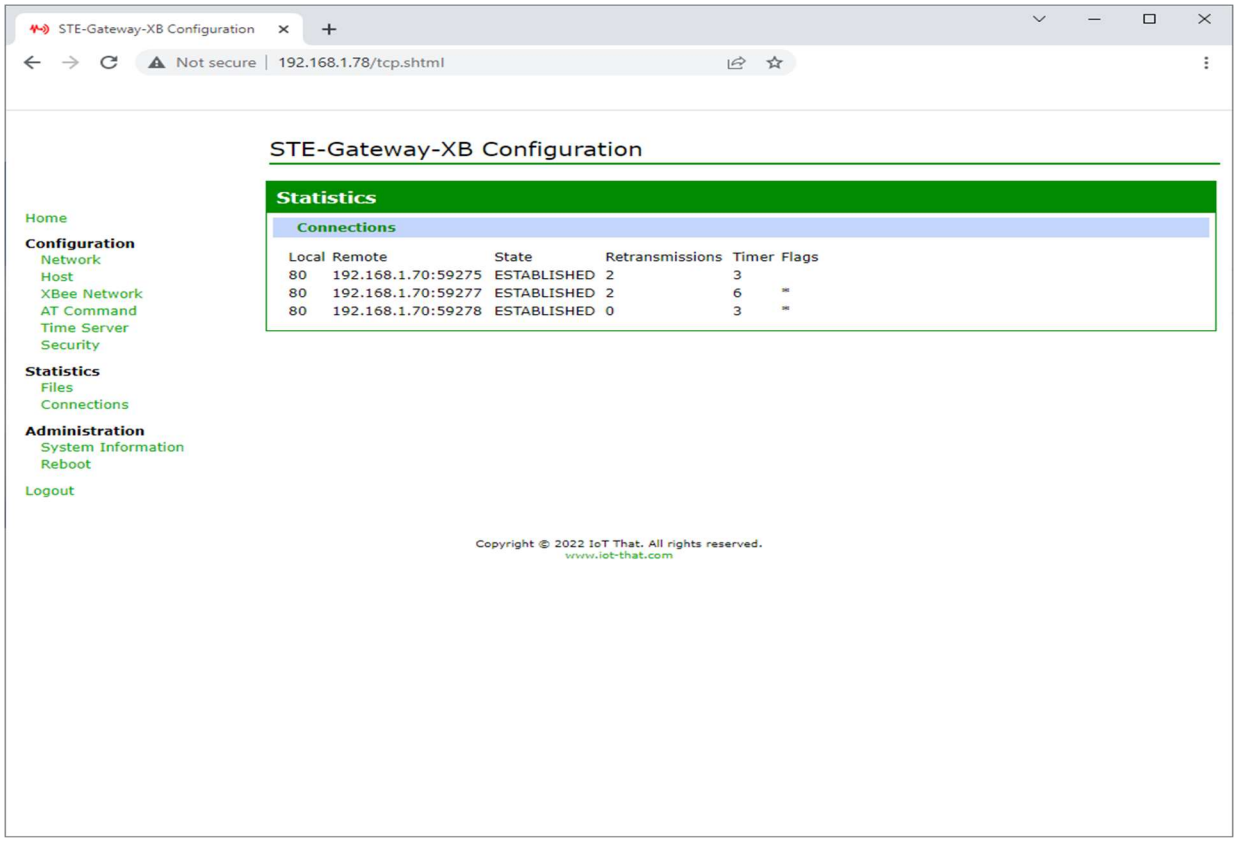
Files

The *Files* page is used to show STE-Gateway-XB file statistics.



Connections

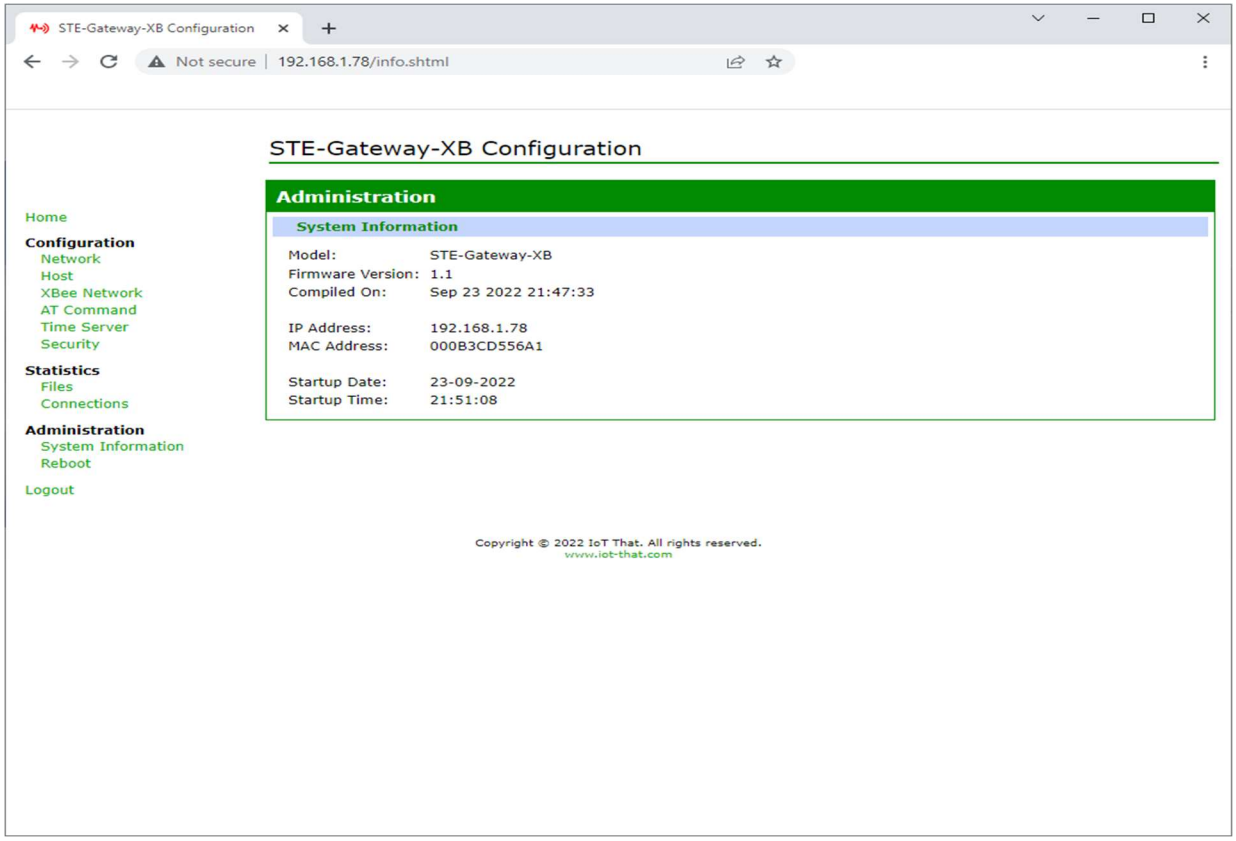
The *Connection* page is used to show any active TCP/IP connections, Local shows the current port number and State shows the current connection state.



Administration

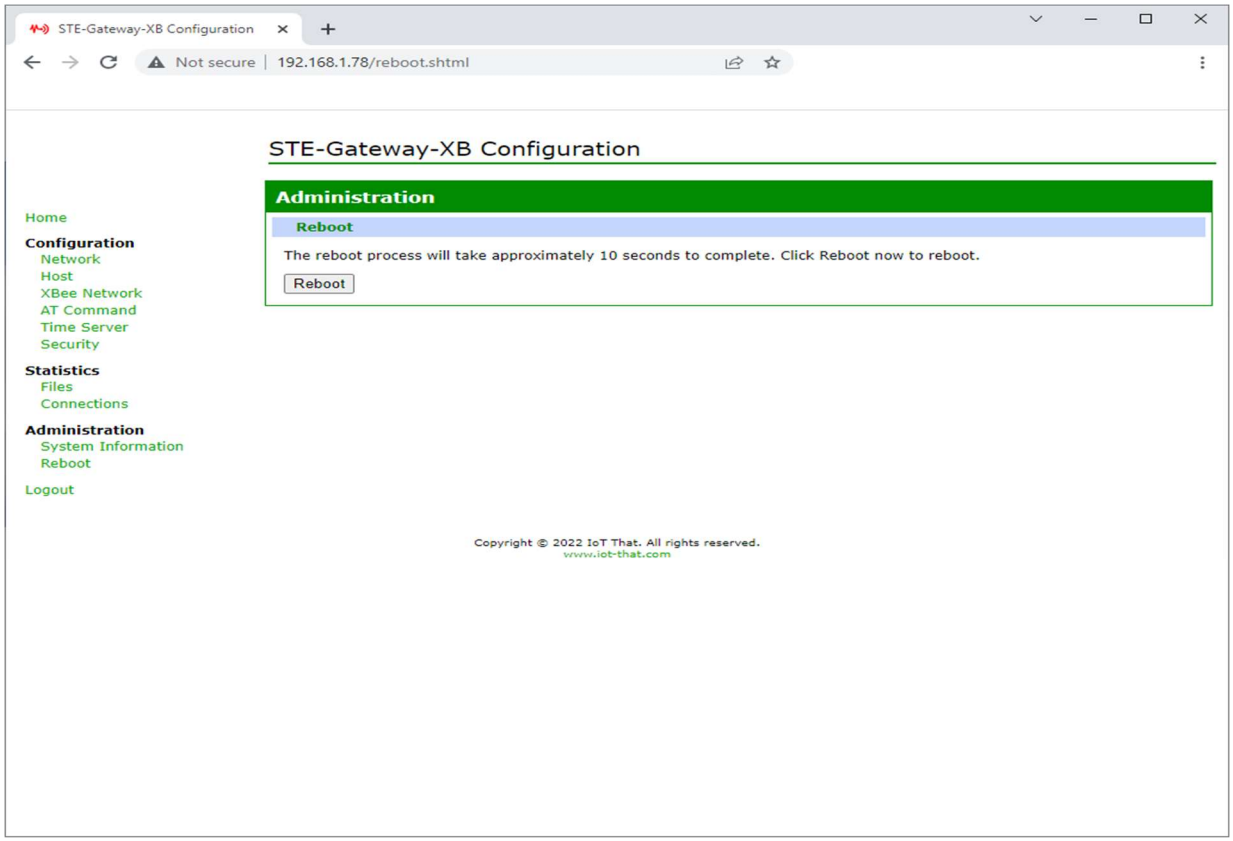
System Information

The *System Information* page is used to the model, Firmware Version, Compile Date, IP Address, MAC Address, Startup Date and Startup Time.



Reboot

The *Reboot* page is used to remotely reboot the STE-Gateway-XB.



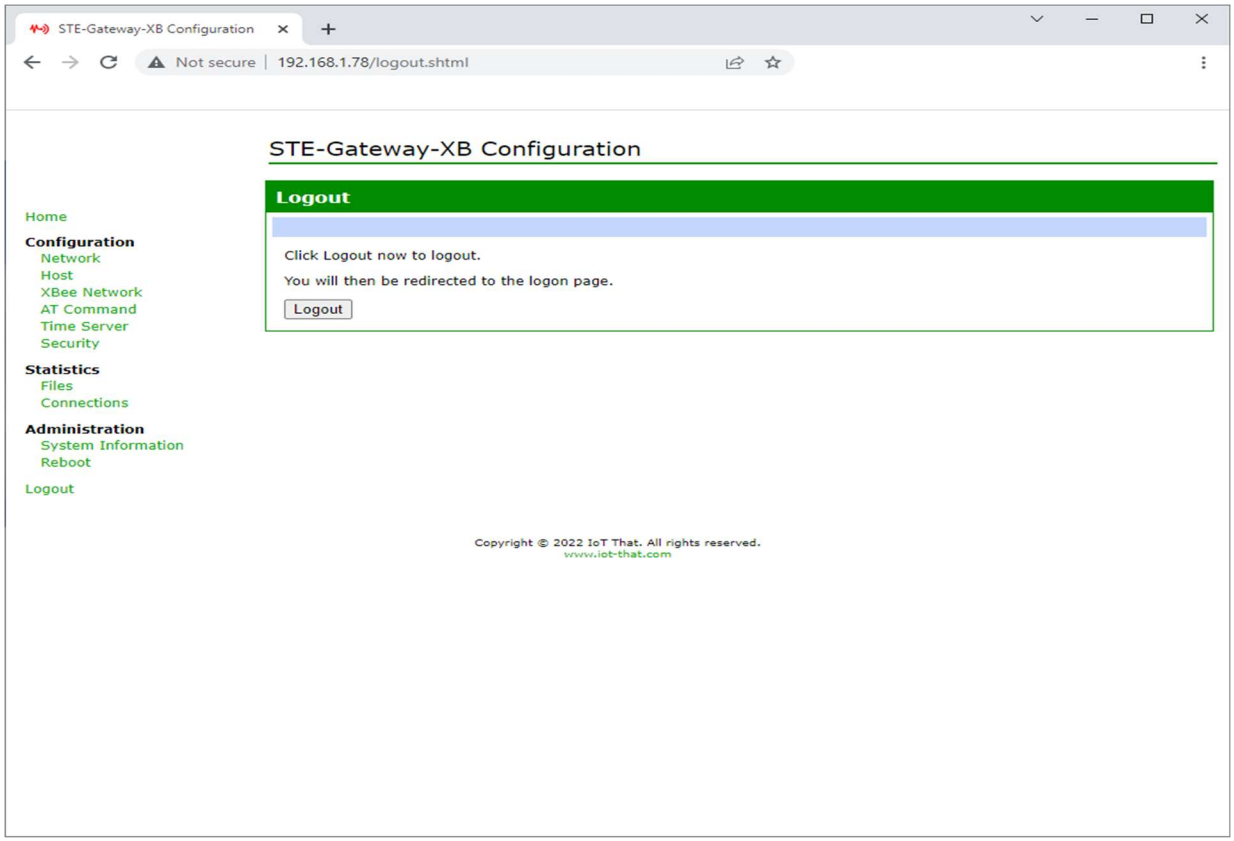
Rebooting the STE-Gateway-XB

1. In the menu of the STE-Gateway-XB Browser-based Configuration Manager, select *Reboot* under the section *Administration*.
2. Click **Reboot**.

NOTE: *The reboot process will take approximately 10 seconds.*

Logout

The *Logout* page is when authentication is enabled and to logout of the STE-Gateway-XB.



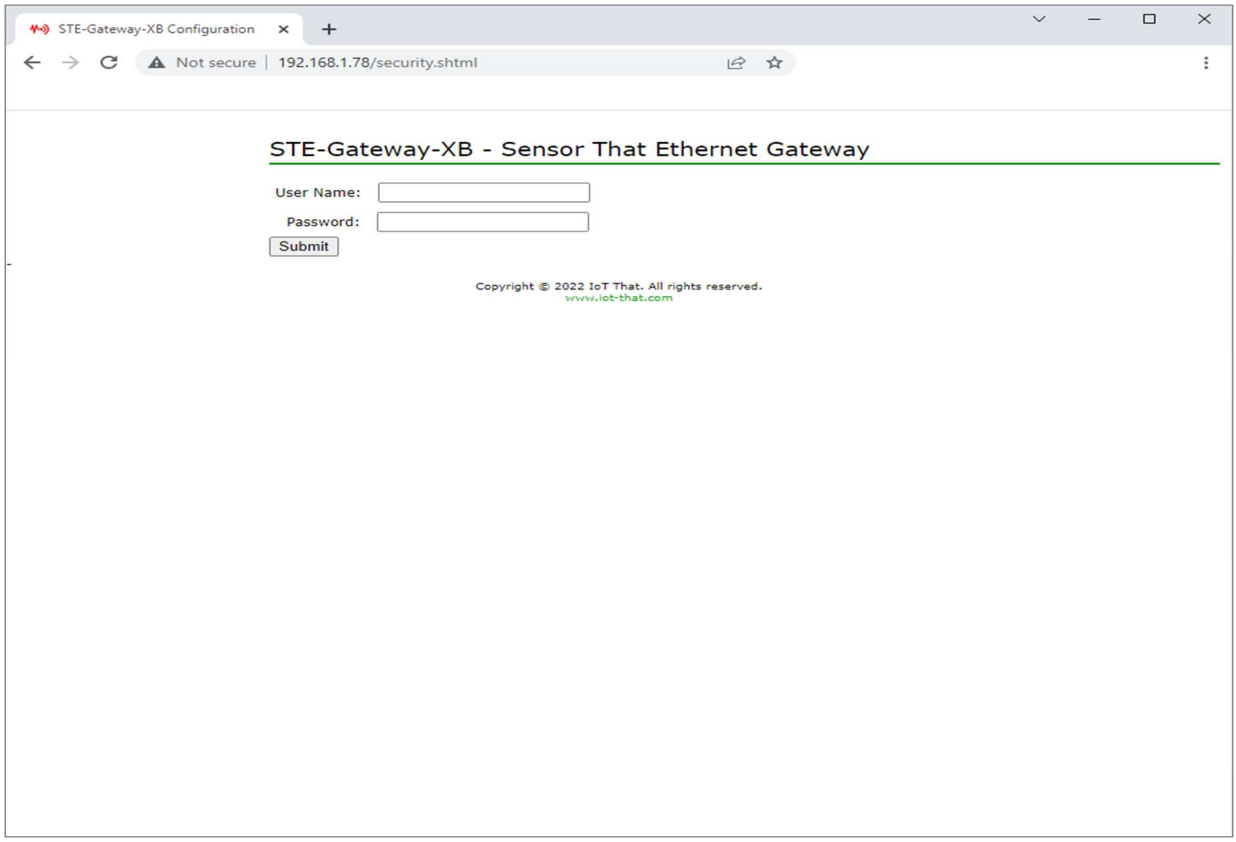
Logging Out

1. In the menu of the STE-Gateway-XB Browser-based Configuration Manager, select *Logout* under the section *Administration*.
1. Click **Logout**.

NOTE: *Upon logging out the Browser will be redirected to the Login page.*

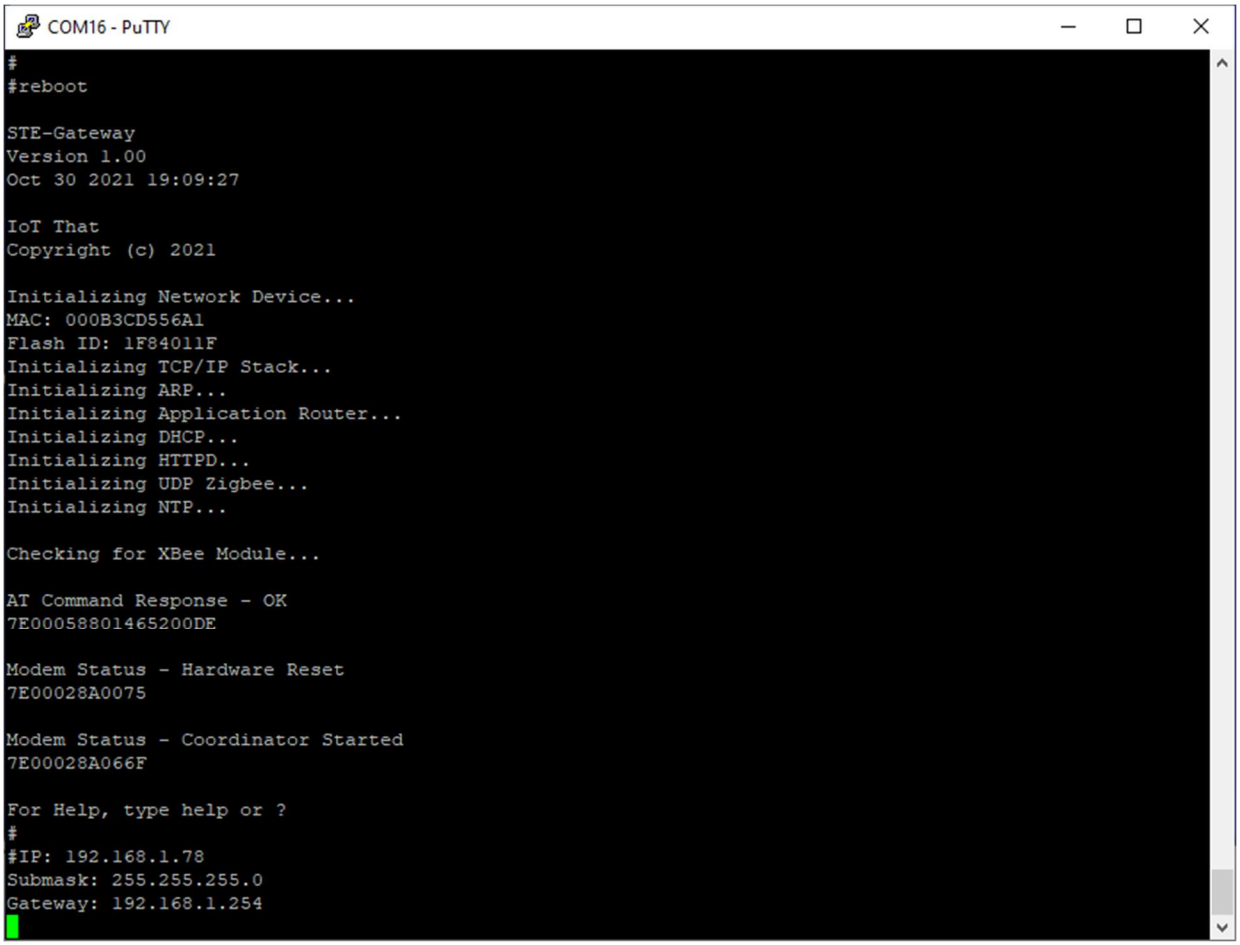
Login

The *Login* page will appear when not login and password authentication is enabled. Upon logging out the browser is redirected to the login page.



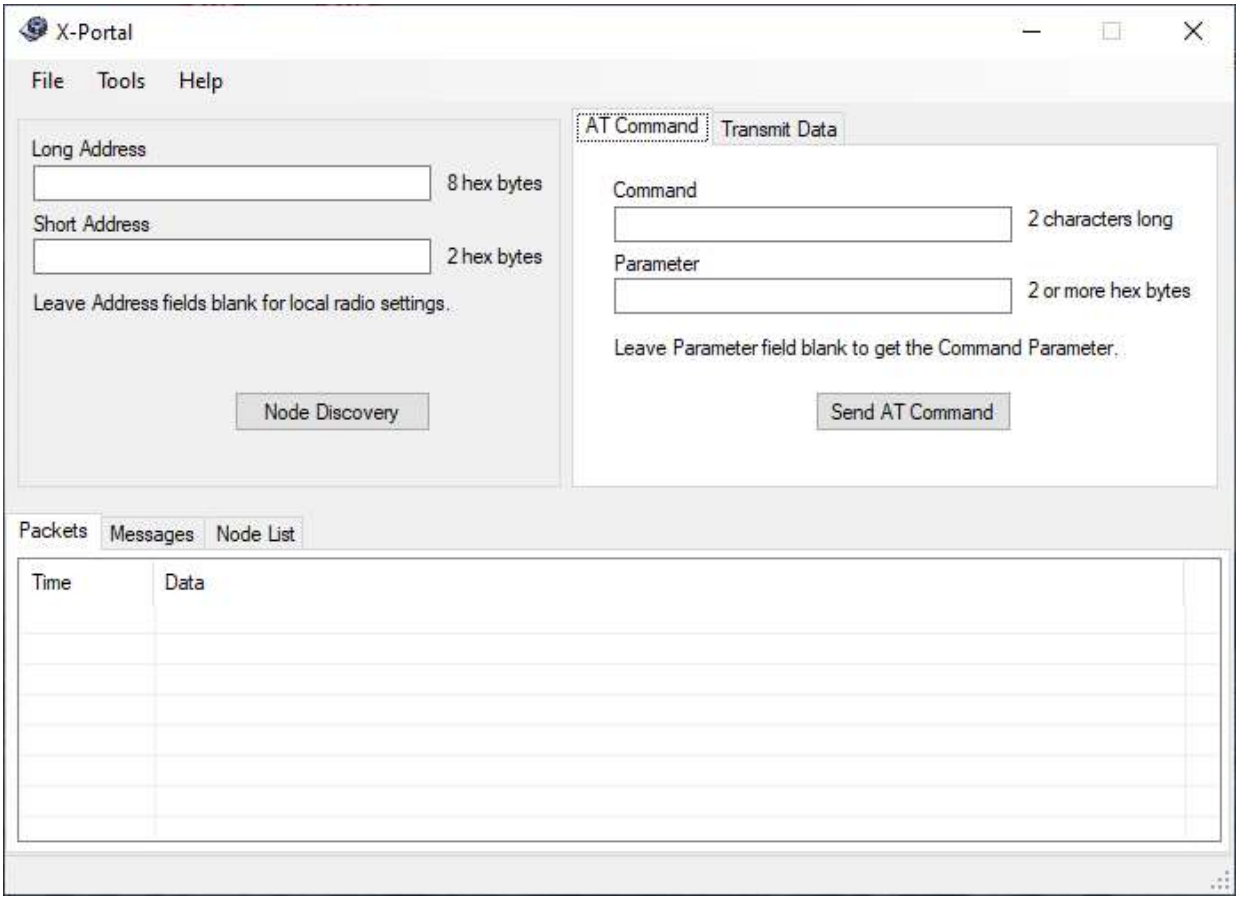
USB Serial Interface

To use the USB Serial Interface a driver install is needed for the FT232R USB UART IC. The driver is available for download for free from FTDI website (www.ftdichip.com).Various 3rd party drivers are also available for other operating systems - see FTDI website (www.ftdichip.com) for details. For driver installation, please refer to the application note AN232B-10. The STE-Gateway-XB uses the following settings, 11520 8-N-1.



X-Portal Software

The source code is written in both VB.Net and C# and provides a launch point for designing a wireless network. It also provides a UDP end point to demonstrate the STE-Gateway-XB. The source code is provided for free, and the end user can append or modify it as needed.



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