

For automatic scanning of devices

For automatic scanning of devices, this is not an issue. The unique serial string is already known by each device and therefore also if it contains unauthorized digits. The device itself works out a correct Modbus address, during boot-up, and will reply using the correct address.

5. Channel Monitor

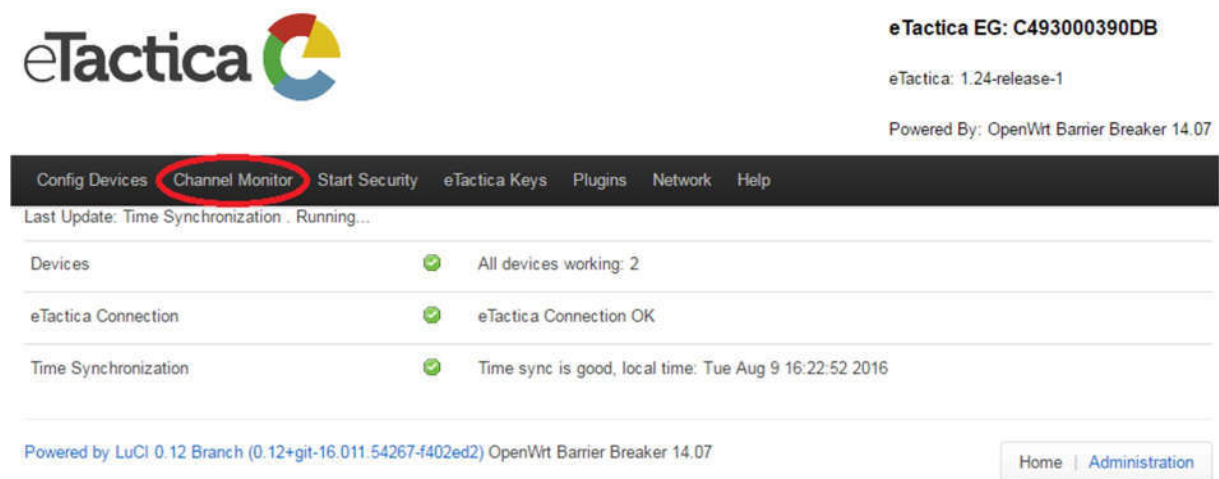
The Channel Monitor lists all connected devices and displays all measurements.

Step 1 - Connect to your Gateway

If you are not connected to your gateway device, please see chapter 2, [Connecting to Gateway](#).

Step 2 - Enter Channel Monitor page

On the home page of your administration web console, select Channel Monitor from the top menu.



The screenshot shows the eTactica administration web console. At the top left is the eTactica logo. To the right, it displays 'eTactica EG: C493000390DB', 'eTactica: 1.24-release-1', and 'Powered By: OpenWrt Barrier Breaker 14.07'. Below this is a dark navigation bar with the following menu items: 'Config Devices', 'Channel Monitor' (which is circled in red), 'Start Security', 'eTactica Keys', 'Plugins', 'Network', and 'Help'. Under the navigation bar, it says 'Last Update: Time Synchronization . Running...'. The main content area contains three rows of status information:


Devices	✓	All devices working: 2
eTactica Connection	✓	eTactica Connection OK
Time Synchronization	✓	Time sync is good, local time: Tue Aug 9 16:22:52 2016



At the bottom left, it says 'Powered by LuCI 0.12 Branch (0.12+git-16.011.54267-f402ed2) OpenWrt Barrier Breaker 14.07'. At the bottom right, there are two buttons: 'Home' and 'Administration'.

Here you can see a list of all connected devices, information about the type, serial number and firmware version. You can also see the latest readings.


[Config Devices](#)
[Channel Monitor](#)
[Start Security](#)
[eTactica Keys](#)
[Plugins](#)
[Network](#)
[Help](#)

Channel Monitor


Existing configuration loaded 

Fresh data  Overdue data 

Meter

Slave ID	Serial	Firmware	Vendor	Product	Code	Status	sec since last update
150 (0x96)	0004A3ED6796	3.14	eTactica	EM-200	0x4738	 OK	1.263
Phase 1	233.2 V	0.00 A	PF: 1.00	All Phases:	50.00 Hz	2780.78 kWh	255.42 kvarh
Phase 2	234.1 V	0.00 A	PF: 1.00				
Phase 3	232.7 V	0.00 A	PF: 1.00				

EB/ES

Slave ID	Serial	Firmware	Product	Code	Points	Status	sec since last update				
100 (0x64)	3ACE5C275564	3.14	EB-212	0x4248	12	 OK	0.039				
1 : 0.00	2 : 0.00	3 : 0.00	4 : 0.00	5 : 0.00	6 : 0.00	7 : 0.00	8 : 0.00	9 : 0.00	10 : 0.00	11 : 0.00	12 : 0.00

Generic devices


Slave ID	Serial	Firmware	Product	Status	sec since last update
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Step 2 - Go to the Device detail page

Click on the serial number of device of interest. Here you can see various information about that device, all measurements, both in numbers and also in small graph with up to 5 minutes of data (starting when the page is opened).




Status
System
Services
Network
Logout
RME

Device detail




Device Serial Number: 0004A3ED6796
Device Type: EM-200
Firmware Version: 3.14
Modbus Slave ID: Hex: 0x96 Decimal: 150
Cumulative kWh: 2780.88
Cumulative kVArh: 255.42
Frequency:  Last: 50.00

Charts
Data




Phase-1

	Min	Max	Overview (~5 min)	Latest
Volt	231.21	233.69		232.93
Ampere	2.32	2.36		2.34
Powerfactor	0.99	0.99		0.99

Phase-2

	Min	Max	Overview (~5 min)	Latest
Volt	232.07	234.71		233.79
Ampere	2.33	2.36		2.34
Powerfactor	0.99	0.99		0.99

Phase-3

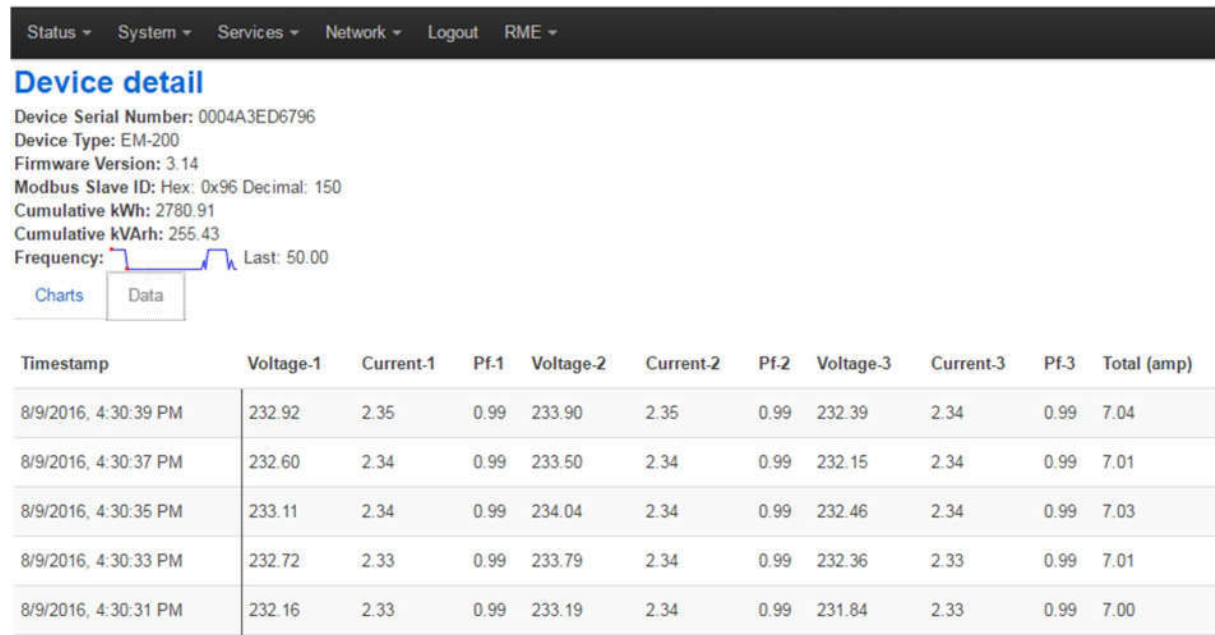
	Min	Max	Overview (~5 min)	Latest
Volt	230.56	233.31		232.40
Ampere	2.33	2.36		2.34
Powerfactor	0.99	0.99		0.99

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Home
Administration

Step 3 Go To the tabulated data page

Click on the [\[Data\]](#) button to see all measurements in tabulated form.



The newest measurements are added to the top of the list.

6. Device Plugins

Add/Remove Device Plugins

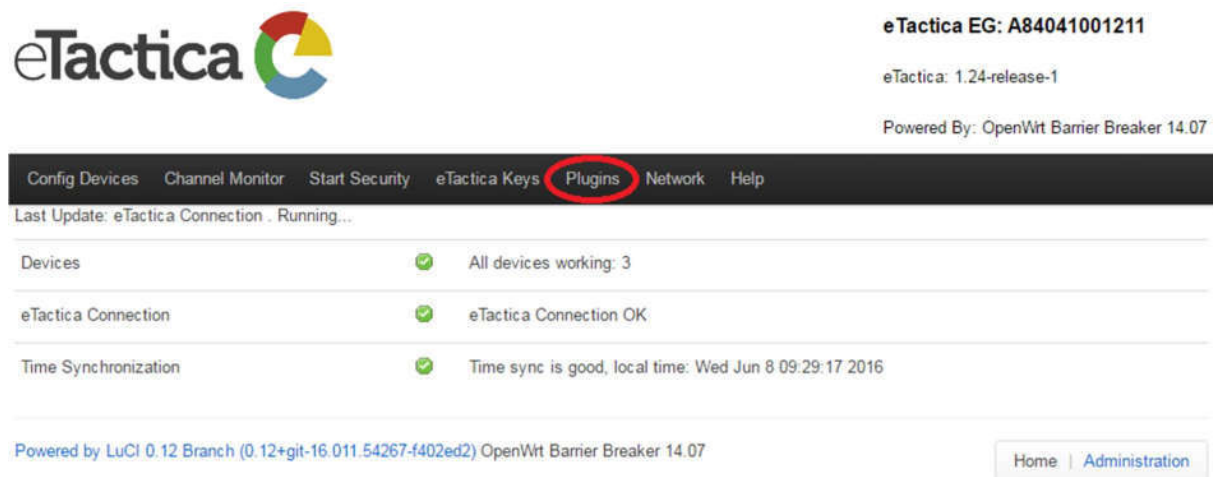
The eTactica gateway uses plugins to support all data collection devices, both 3rd party and our own eTactica devices. These plugin scripts tell the gateway how to access a particular device, and what values to read from that device. The administration console lists all the plugins, allows you to add new plugins to support new devices, create new plugins, edit plugins that are installed and delete plugins that might conflict.

Step 1 - Connect to your Gateway

You need to be successfully connected to your gateway device. If not, see chapter 2, [Connecting to Gateway](#).

Step 2 - Go to the plugins page

From the home page of the administration web console of your device, select [Plugins](#).



eTactica EG: A84041001211

eTactica: 1.24-release-1

Powered By: OpenWrt Barrier Breaker 14.07

Config Devices Channel Monitor Start Security eTactica Keys **Plugins** Network Help

Last Update: eTactica Connection . Running...

Devices	✓	All devices working: 3
eTactica Connection	✓	eTactica Connection OK
Time Synchronization	✓	Time sync is good, local time: Wed Jun 8 09:29:17 2016

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Home Administration

This will require you to login, using the root password you have configured earlier. If not, please see chapter 9, [Password Settings](#).

Step 3 - Add new plug-ins

On the Plugins configuration page, you can see the list of already installed plugins that the gateway is now able to use for a data collection device access.

To add more plugins to that list, press the [\[Choose File\]](#) button and select the script file from your computer to upload to your gateway.


Data Collection Plugins


Plugins are used to collect all data. These plugins are written in [Lua](#), and have access to a [range of APIs](#) to simplify reading from Modbus devices. An online editor allows you to view or edit existing plugins, and test new versions of them.


Disabled plugins are not presented as options for explicit configuration, and are excluded from automatic probing. Plugins that have been disabled from "Allow auto" will be available as explicit configuration options, but will not be used for any automatic probing. If a particular plugin is causing problems for your installation, such as falsely recognising a device, you can simply disable it.

User provided plugins are used first, then system provided plugins.

The latest versions of all plugins maintained by eTactica are available at <http://packages.etactica.com/plugins>

Upload new plugin: **Choose File** No file chosen 

Filter list: Include Disabled ☐ 

Allowed Auto 	Source	Family	Name	Actions
<input checked="" type="checkbox"/>	system	electricity	carlo-gavazzi-em21.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	water	dalian_taosonics.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	electricity	dent_powerscout3.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	electricity	etactica_eb-es.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	electricity	etactica_em.lua	Details Edit Disable

In the following example, we have selected a Janitza UMG-508 meter plugin and it will be added to the list of plugins.


Data Collection Plugins


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Upload new plugin: **Choose File** No file chosen 

Filter list: Include Disabled ☐ 

Allowed Auto 	Source	Family	Name	Actions
<input checked="" type="checkbox"/>	user	electricity	janitza_ump-508.lua	Details Edit Disable Delete
<input checked="" type="checkbox"/>	system	electricity	carlo-gavazzi-em21.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	water	dalian_taosonics.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	electricity	dent_powerscout3.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	electricity	etactica_eb-es.lua	Details Edit Disable
<input checked="" type="checkbox"/>	system	electricity	etactica_em.lua	Details Edit Disable

The latest versions of all plugins maintained by eTactica are available at <http://packages.etactica.com/plugins>

You can create your own plugin, either from scratch by pressing the *[Create new file]* button or by modifying an existing plugin by clicking *[Edit]* for the plugin you want to modify. Then you do the modifications you want and save the plugin under a new name. There is a link to further documentations on the plugin API on the plugin

Clicking the name of a plugin or ☐ will show you more information for that plugin. Disabled plugins are not presented as options for explicit configuration, and are excluded from automatic probing. Disabled plugins will disappear from the list unless the tick box ☐ is checked. Plugins that have been disabled from "Allowed auto" will be available as explicit configuration options, but will not be used for any automatic probing. If a particular plugin is causing problems for your installation, such as falsely recognizing a device, you can simply disable it.

7. Modbus Settings

The eTactica gateway, as a data collecting device, uses the Modbus/RTU protocol over an RS485 serial line to communicate with one or many connected measurement devices. Up to 32 devices can be connected at once.

Default configuration

By default, the eTactica gateway is configured to maintain a connection to eTactica servers, posting real time measurements from configured devices. All connected devices are listed up, using the administration web console on the gateway, where the user types in the Modbus address required to identify each connected device (For device configuration, see chapter 4, [Device Configuration](#)).

The gateway continuously makes Modbus/RTU requests to each device and forwards these readings to the eTactica server database.

The RS485 interface is by default configured with the following protocol settings, according to Modbus/RTU:

- 19200, baudrate
- 8, data bits
- Even, parity
- 1, stop bit

Furthermore, the eTactica gateway can also be used as a simple Modbus/TCP to Modbus/RTU bridge that is connected to a 3rd party management or data collecting software. All Modbus queries are then handled by the 3rd party software.

In the following, a step by step guide is provided for:

- Edit the serial protocol settings
- Configure the Modbus/TCP access

Edit RS485 serial settings

The user is able to change the default serial settings for the RS485 interface.

Step 1 - Connect to the Gateway

If you are not connected to your gateway device, please see chapter 2, [Connecting to Gateway](#).

Step 2 - Go to Administration page

From the home page of the administration web console of your device, click the [Administration](#) link.

[Config Devices](#)
[Channel Monitor](#)
[Start Security](#)
[eTactica Keys](#)
[Plugins](#)
[Network](#)
[Help](#)

Last Update: eTactica Connection . Running...


Devices	✓	All devices working: 3
eTactica Connection	✓	eTactica Connection OK
Time Synchronization	✓	Time sync is good, local time: Mon May 30 13:38:48 2016

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[Home](#)
[Administration](#)

This will require you to login, using the root password you have configured earlier. If not, please see chapter 9, [Password Settings](#).

Step 3 - Go to the Modbus TCP/RTU relay page
From the top menu, choose RME->Modbus TCP Relay.



eTactica EG: A84041001211
eTactica: 1.24-release-1
Powered By: OpenWrt Barrier Breaker 14.07

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[Services](#)
[Network](#)
[Logout](#)
[RME](#)
[AUTO REFRESH ON](#)

[Channel Monitor](#)
[Modbus Devices](#)
[General Alerts](#)
[Modbus TCP Relay](#)
[Plugins](#)
[Preset Networking](#)
[SNMP Support](#)

Status

System

Hostname	eg-00121
Model	Unknown
Firmware Version	OpenWrt 0.12 Branch (0.12+git-16.011.54267-f402ed2)

Step 4 - Change settings

You can now change the serial settings; baud rate, parity and stop bits.

Modbus TCP/RTU relay

This page configures the Modbus TCP/RTU relay application. In most circumstances there is nothing here that an end user should ever need to change. The only expected situations would be using this gateway, and this application, with custom modbus devices, which require different serial parameters. You can have as many sections here as you have serial ports. Please be careful with assigning port numbers and devices!

You should be **very** careful making changes here.

Configuration

Delete

REMAKE

TCP listen port	<input type="text" value="1502"/>
TCP listen host	<input type="text"/>
	<small>leave blank for default, 127.0.0.1 to restrict access</small>
Serial baud rate	<input type="text" value="19200"/>
	<small>Standards recommend 19200 by default</small>
Serial port device	<input type="text" value="/dev/ttyS0"/>
	<small>leave blank for platform default</small>
Parity	<input type="text" value="Even"/>
Stop bits	<input type="text" value="1"/>
	<small>Standards recommend 2 for no-parity, 1 for even or odd</small>

Step 5 - Save settings

When done, press the *[Save & Apply]* button to keep and apply the new settings.

Modbus/TCP

By default, the eTactica gateway is pre-configured to communicate with eTactica servers. However, the gateway also provides a Modbus/TCP to Modbus/RTU bridge interface on TCP port 1502. This allows the use of any third party Modbus software to query devices connected to the Modbus/RTU port of the gateway from a remote network.

Note

Using this Modbus/TCP relay at the same time as the default eTactica service, requires some caution. The serial network has only a limited bandwidth and each Modbus request must be handled in sequence. Trying to operate the relay of requests at a high rate, when you also have multiple devices configured for eTactica, may result in intermittent timeouts and communication failures.

- The minimum polling interval of the Modbus/TCP Master must be set to 500 msec or longer.

This is the timeout used on the serial side and if your TCP master waits for less than this time, you may timeout when the device is still sending a valid reply.

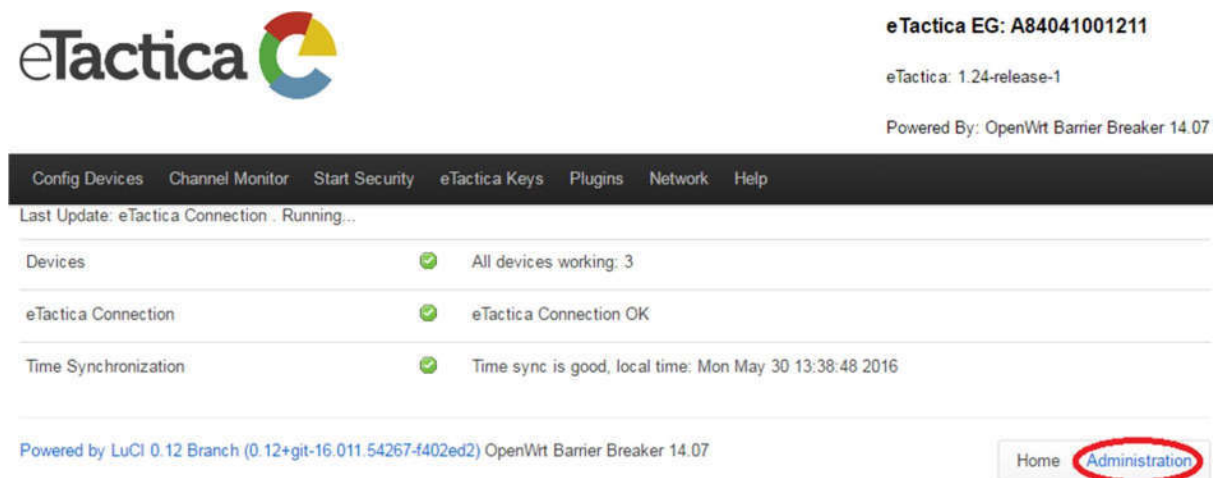
By default, this bridge/relay port listens on all interfaces. If you would like to disable remote access to this service, please change only the `listen_host` property in the configuration page, see below. Note that this bridge service is used internally, so it should not be completely disabled.

Step 1 - Connect to the Gateway

If you are not connected to your gateway device, please see chapter 2, [Connecting to Gateway](#).

Step 2 - Go to Administration page

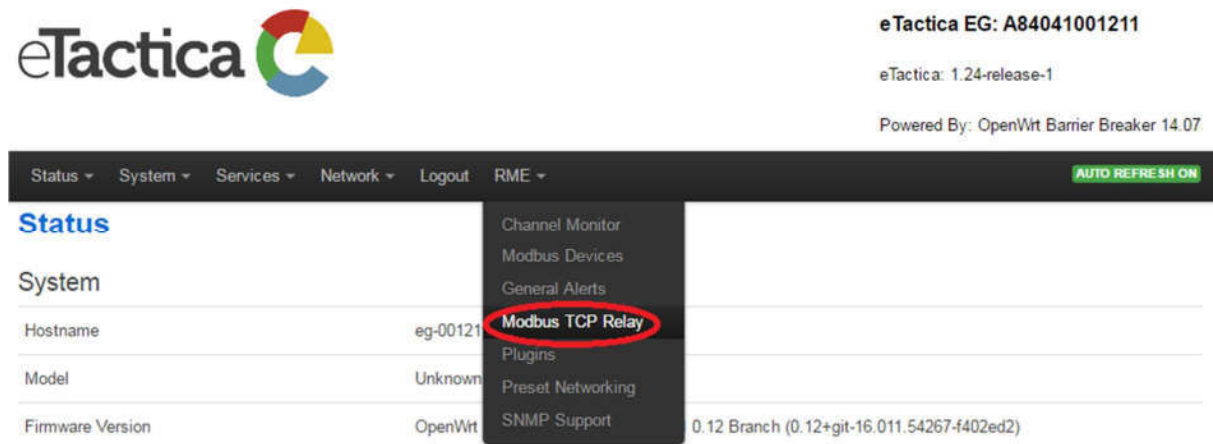
From the home page of the administration web console of your device, click the [Administration](#) link.



This will require you to login, using the root password you have configured earlier. If not, please see chapter 9, [Password Settings](#).

Step 3 - Go to the Modbus TCP/RTU relay page

From the top menu, choose [Network->Modbus TCP Relay](#).



Step 4 - Restrict access

By default, the *TCP listen host* field is blank. This means that the TCP access is open for everyone, via port 1502.

To restrict any access or disable Modbus/TCP for 3rd party devices, insert 127.0.0.1 to the *TCP listen host* field. This will only allow the localhost or the gateway itself, to use the internal TCP relay service.

Note

It is important to note that you can't restrict access to a single or several IP addresses on your network. Either Modbus/TCP is open to all devices on your network, or it is completely blocked. The only allowed IP address for this field is 127.0.0.1.

Modbus TCP/RTU relay

This page configures the Modbus TCP/RTU relay application. In most circumstances there is nothing here that an end user should ever need to change. The only expected situations would be using this gateway, and this application, with custom modbus devices, which require different serial parameters.

You can have as many sections here as you have serial ports. Please be careful with assigning port numbers and devices!

You should be **very** careful making changes here.

Configuration

Delete

REMAKE

TCP listen port	<input type="text" value="1502"/>
TCP listen host	<input type="text" value="127.0.0.1"/>
	<small>leave blank for default, 127.0.0.1 to restrict access</small>
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Serial port device	<input type="text" value="/dev/ttyS0"/>
	<small>leave blank for platform default</small>
Parity	<input type="text" value="Even"/>
Stop bits	<input type="text" value="1"/>
	<small>Standards recommend 2 for no-parity, 1 for even or odd</small>

Save & Apply

Save

Reset

Step 5 - Save settings

When done, press the *[Save & Apply]* button to keep and apply your settings.

8. Network Settings

In this chapter, you will find information related to the following network settings:

- Change to static IP address
- Enable/Disable WiFi interface
- Internet connection via WiFi (No Ethernet connection)
- Advanced WiFi parameters

Static IP address

In some installations, the network facilities require the use of statically configured networking. The eTactica gateway supports this, but it requires manual configuration.

Required Information

The following details are *required* from the network manager:

Required Information	Example Value
IP Address	10.0.42.141
Subnet Mask	255.255.255.0
Gateway	10.0.42.254
DNS Server	10.0.1.1

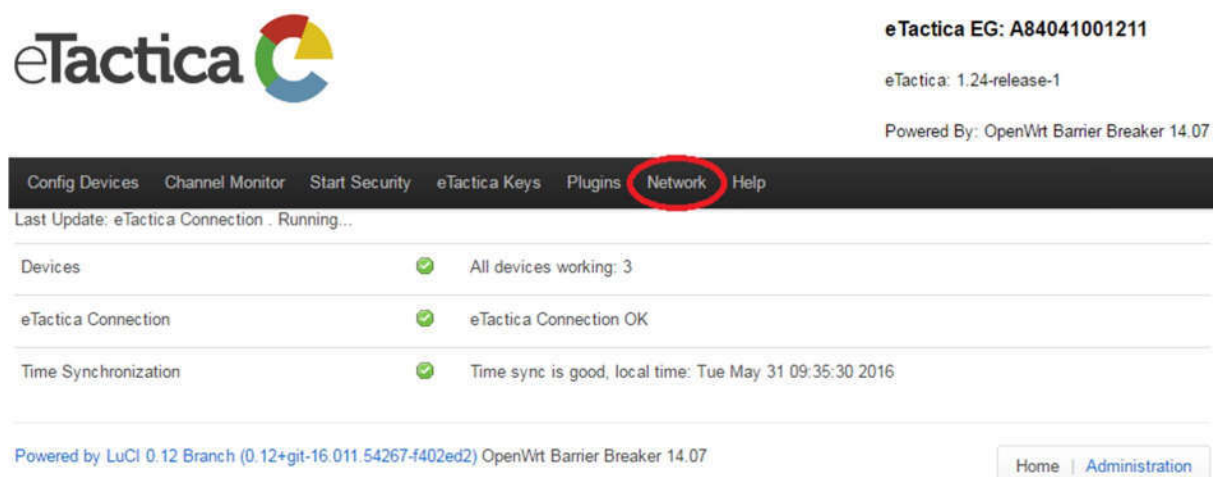
Step 1 - Connect to your Gateway

If you are not connected to your gateway device, please see chapter 2, [Connecting to Gateway](#).

Step 2 - Enter Networking configuration page

On the home page of your administration web console, select Network from the top menu.

Alternatively, to access network settings, you can use the [Administration] link and from there you select Network->Interface from the top menu.













This will require you to login, using the root password you have configured earlier. If not, please see chapter 9, [Password Settings](#).


Step 3 - Edit the network interface you wish to configure statically




Press the *[Edit]* button, for your interface. This could be either the WiFi or the Ethernet interface, but will generally be the Ethernet interface (LAN).

Interfaces

Interface Overview

Network	Status	Actions
LAN  eth0	Uptime: 3d 0h 56m 30s MAC-Address: A8:40:41:00:12:11 RX: 159.94 MB (1410204 Pkts.) TX: 432.36 MB (688184 Pkts.) IPv4: 192.168.1.118/24	 Connect  Stop  Edit  Delete
WI_CONF  Master "eTactica_EG_001211"	Uptime: 3d 0h 56m 20s MAC-Address: 00:00:00:00:00:00 RX: 5.85 MB (62289 Pkts.) TX: 10.53 MB (61955 Pkts.) IPv4: 192.168.49.1/24	 Connect  Stop  Edit  Delete

 Add new interface...

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Home | Administration