TELETRONICS INTERNATIONAL INC.

Focusing On Your Needs

Teletronics EZPlatform® Plus

AP/Hotspot/Repeater

User Manual

2014.5

Version 1.0.0.5

Table of Contents

1. Product Overview

1.1 Overview

Teletronics' EZPlatform® Plus AP/Hotspot/Repeater is designed for high-power access point, hotspot and repeater applications. A powerful end-to-end system for a wireless Internet network can be built by integrating the EZPlatform® Plus with Teletronics TT® subscriber units and other radios. The simplicity of use of the EZPlatform® Plus allows operators to quickly bring service to their customers, and with its two serial ports two Ethernet and 2 USB ports the unit can easily incorporate GPS, GPRS, RFID, VoIP, 3G/4G network, surveillance cameras, field meters, motion sensors and data networks for multiple industrial and commercial applications. The EZPlatform® Plus is available in single or dual radio configuration, support 2.4 GHz or 5.8 GHz Combanation radio cards at 2T2R/2T3R/4T4R wireless network.

1.2 Features and Benefits

Point-to-Point & Point-to-Multi Point Support

Point-to-Point and Point-to-Multi Point communication between different buildings enables you to bridge wireless clients that are kilometers apart while unifying the networks.

Virtual AP (Multiple SSID)

Virtual AP implements mSSID (Multi-SSID) This allows a single wireless card to be set up with multiple virtual AP connections with different SSIDs or BSSID (Basic Service Set Identifier) and security modes.

Highly Secured Wireless Network

The access point supports the highest available wireless security standard: IEEE802.11i compliant. The access point also supports IEEE 802.1x for secure and centralized user-based authentication. Wireless clients are thus required to authenticate through highly

secure methods like EAP-TTLS and EAP-PEAP, in order to obtain access to the network.

EzManager™ Utility

The exclusive EzManager utility allows users to access the user-friendly Web configuration interface of the access point without having to change the TCP/IP setup of the workstation.

Telnet

Telnet allows a computer to remotely connect to the access point CLI (Command Line Interface) for control and monitoring.

SSH

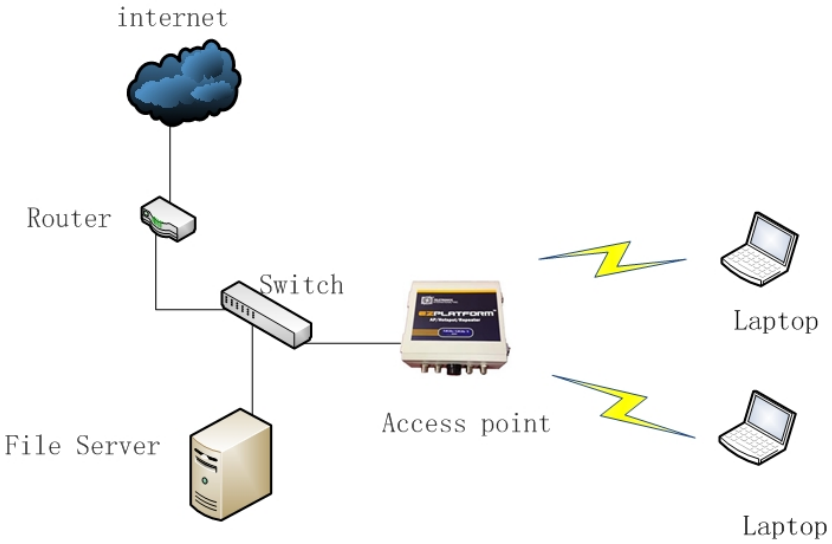
SSH (Secure Shell Host) establishes a secure host connection to the access point CLI for control and monitoring.

1.3 Operation Modes and Connection Examples

1.3.1 Access Point and Access Point WDS Mode

The Access Point Mode is the default mode of the device. It enables the bridging of wireless clients to wired network infrastructure and enables transparent access and communication with each other.

The illustration below shows a typical resources sharing application example using this device. The wireless users are able to access the file server connected to the switch, through the access point in Access Point Mode.



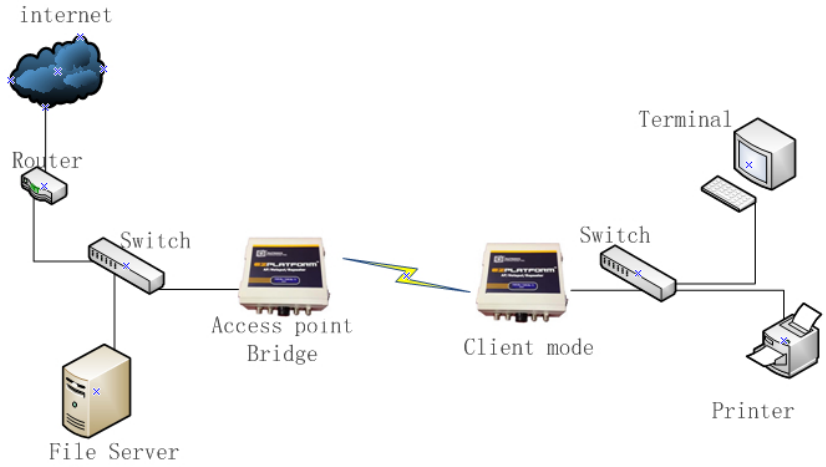
1.3.2 Access Point WDS Mode

This is mode is generally use for point-to-point or point-to-multi-point connection. It is mainly use with Station WDS to build the point and multi-point connections.

1.3.3 Station Mode

In Station mode the device acts as a wireless client. When connected to an access point, it creates a network link between the Ethernet network connected at this client device, and the wireless Ethernet network connected at the access point.

In this example the workgroup PCs on the ethernet network connected to the Station device can access the printer across the wireless connection to the access point where the printer is connected.



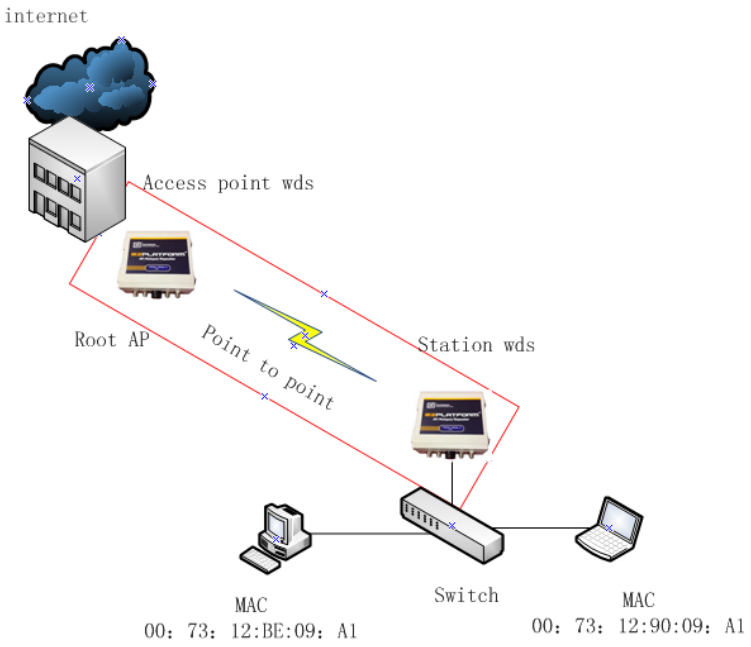
1.3.4 Station WDS Mode

Station WDS mode is similar to Station mode. The difference is Station WDS must connect to access point configured to Access Point WDS (or RootAP) mode.

Station WDS is mainly use for point-to–point connection between 2 buildings or locations as far as several kilometer away.

Point-to-Point	Point-to-MultiPoint
An access point setup as Access Point WDS (or RootAP) and other as Station WDS (Transparent Client).	An access point setup as Access Point WDS (or RootAP) and several other devices as Station WDS (or Transparent Client).

This mode is generally used for outdoor connections over long distances, or for indoor connections between local networks.



1.4 Specifications

Hardware Specifications

Ethernet	IEEE 802.3af 100BASE-T/1G BASE-TX with autonegotiation
Networking	Bridging mode, NAT gateway, static routing. DHCP client, DHCP server. VLAN, IEEE 802.1Q, SSID-based tagging. PPPoE, DDNS, STP, QoS, IPv6
Wireless	802.11a/b/g /n (2.4/5.8 GHz), turbo mode. Four SSIDs per interface, AP/Station mode, WDS. WEP, WPA, WPA2 encryption. Adjustable RF TX power and data rate. Hotspot: RADIUS authentication
Management	HTTP/HTTPS web configuration interface, TELNET. SNMPv2, remote syslog, local event log. Bandwidth control with upload/download rates. Configuration backup and restore, web-based firmware upgrade. Serial port rescue console, EZManager support
Security	IP address, MAC address and SSID filtering Firewall, 802.1X
Operating System	Linux, 2.6.x kernel

Hardware Specifications

CPU	Atheros AR7161 network processor, 800 MHz
Memory	64 MB DDR SDRAM (max 128MB optional)
NOR Flash	8 MB (max 16MB optional)
Ethernet	2 X 10/100/1000 T (with Auto MDI / MDIX)
Serial	TTL RS-232 port
Wireless interface	Two Mini PCI slots
LED indicators	7 LEDs Power, WLAN1, LAN1, 4 RF strength
Power	PoE (24-48 V DC Jack), 802.11 af PoE (48V-56V)
Power consumption	4 W
Dimensions	8 x 7.5 x 2.5 in
Weight	7 lb
Temperature	-20 °C to +70 °C, non-condensing
Enclosure	NEMA 4, ruggedized and weatherproof
Mounting	Wall mount, pole mount

2. Hardware Setup and Status LEDs

2.1 Hardware Setup

Figure 4 shows how to connect the EZPlatform® Plus

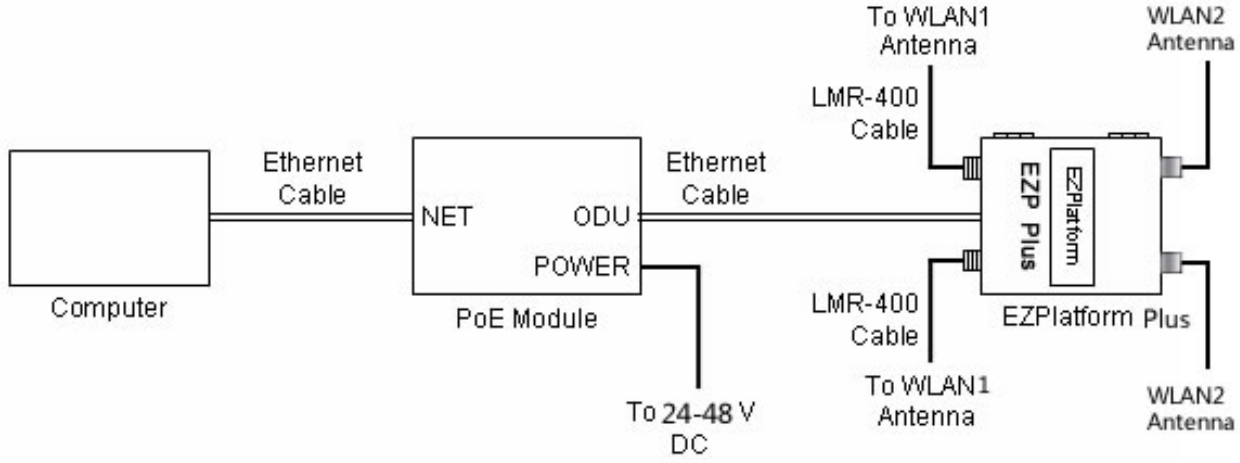


Figure 4. Network and power connections

The purpose of this setup is to connect the EZPlatform® so that it can be configured with a computer via the web interface of the EZPlatform® The power over Ethernet (PoE) module

allows you to send/receive data and power the EZPlatform® with a single cable. When connecting the antennas, care must be taken so that the antennas are properly mounted to avoid mutual interference, especially if both wireless interfaces will be operated in the same 802.11 mode.

WLAN1 and WLAN2 are the fixed designations for the two wireless interfaces.

WLAN1 is wired to the antenna port that is closer to the hinges of the NEMA 4 enclosure;

WLAN2 is wired to the antenna port farther from the hinges of the enclosure.

Setup Requirements

- ✓ CAT5/5e Networking Cable.
- ✓ At least one computer installed with a web browser and a wired or wireless network interface adapter.
- ✓ All network nodes installed with TCP/IP and properly configured IP address parameters.

2.2 Status LEDs

The behavior of the LEDs mounted on the enclosure is explained in the following table.

LED	Position	Status	Interpretation
Power	Left	Solid on	Power on
		Off	Power off
Ethernet	Center	On	Ethernet link
		Off	No Ethernet connection
WLAN1	Center	Solid on	Associated to an AP (in SU mode) Solid on (in AP mode)
		Off	Radio card not detected / wireless off
WLAN2	Center	Solid on	Associated to an AP (in SU mode) Solid on (in AP mode)

3. EZManager

To help you administer your network easily and effectively, Teletronics offers free network administration software called EZManager, which is compatible with virtually all Teletronics

radios, including the TT™ series, the TTX™ series, the SLAB™ series, the EZBridge™ series and the EZPlatform® series. A copy of EZManager can be downloaded from Teletronics' website, http://www.teletronics.com/Firmware.html

EZManager does not require installation: you can just uncompress the download file and execute the file called 'EZManager.exe'.

The main interface of EZManager is shown in Figure 26.

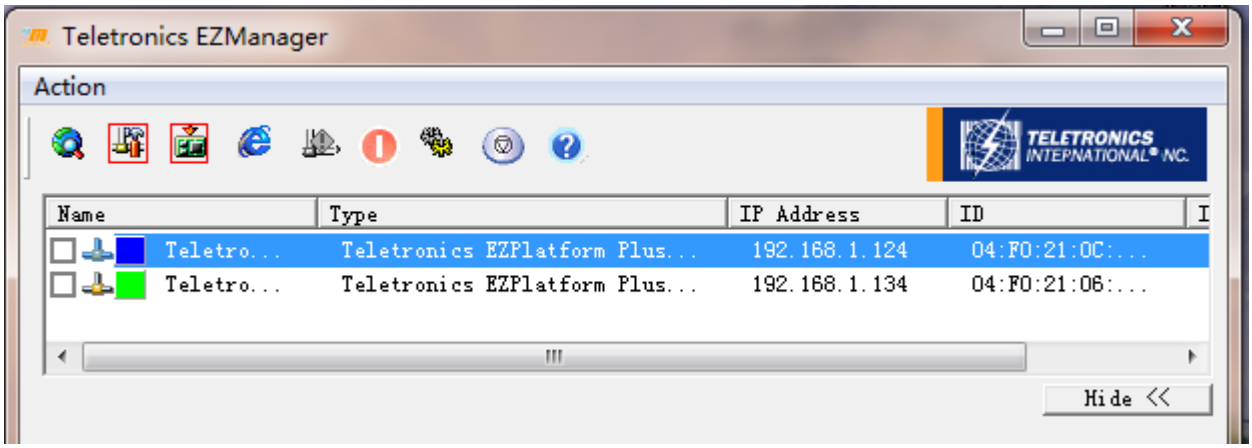


Figure 26.

The functions of some of the buttons in EZManager are explained below, as well as how they can be used with the EZPlatform®.

Icon	Function
	Scans the network for Teletronics devices and shows their IP address and MAC address.
	Allows you to change the IP address, subnet mask and default gateway of the EZPlatform® Plus
	Loads firmware to the EZPlatform® Plus
	Opens the web interface of the EZPlatform® Plus. The computer needs to be in the same subnet as the EZPlatform® Plus
	Reboots the EZPlatform® Plus
	Application Settings
	Resets all settings of the EZPlatform® Plus to factory default

Note: Click the Settings button, and display the Configurations dialoge, please enter theadmin’s password . After that , you can set parameter in EZManger.

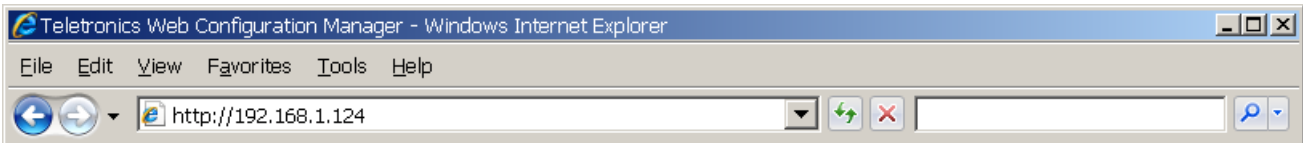
4. Web Interface Configuration

The EZPlatform® can be conveniently configured using its web interface. The web interface provides intuitive navigation and options for you to easily configure the unit. Figure 2 shows a sample page of the web interface.

4.1 Login Information

After properly connecting and powering the unit, wait for the unit to finish the boot-up process.

On the computer connected to the EZPlatform® via Ethernet, open a browser and point it to the IP address of the EZPlatform® (192.168.1.124 by default), as shown in Figure 3.



To log in to the web interface, enter the user name and password in the prompt that appears, as shown in Figure 4.

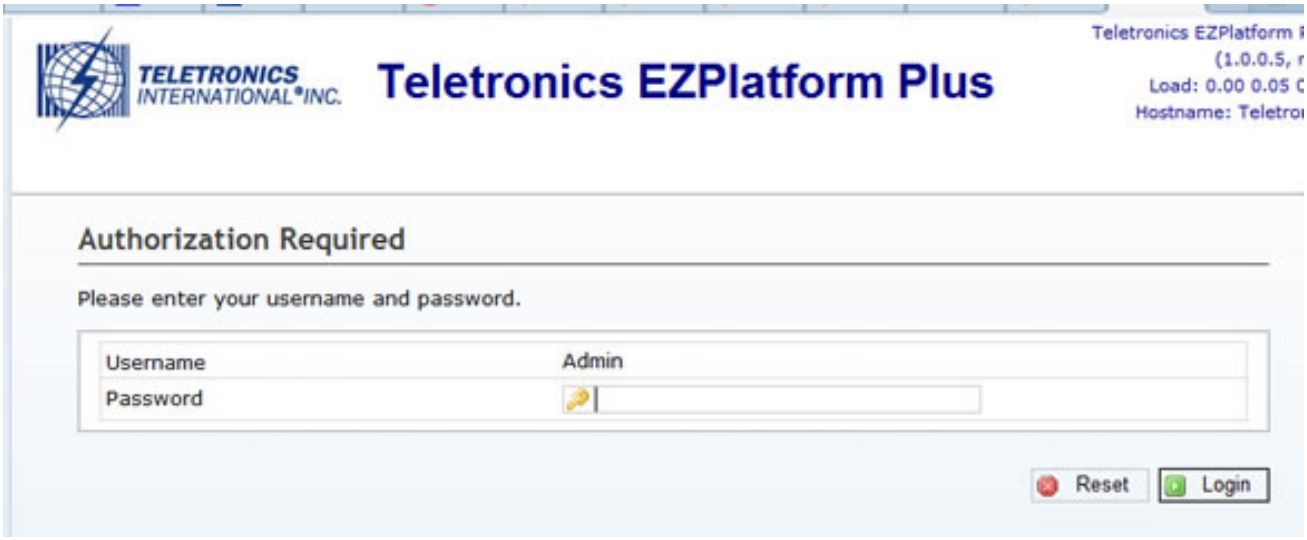


Figure 4. User name and password

The default user name is "admin" and the default password is "password". The password can be changed once you have logged in. After logging in, you will see the page shown in Figure 5.

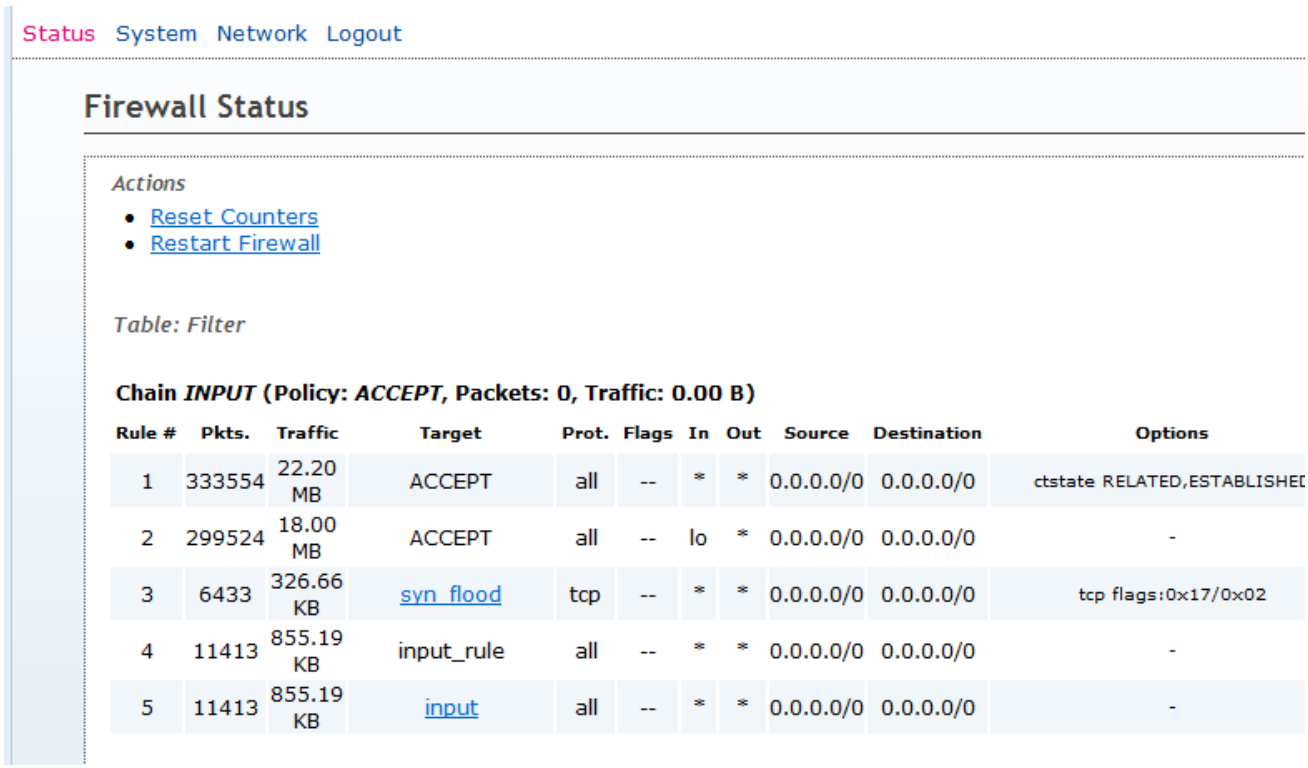
Username: **admin**
Password: **password**

4.2 Status

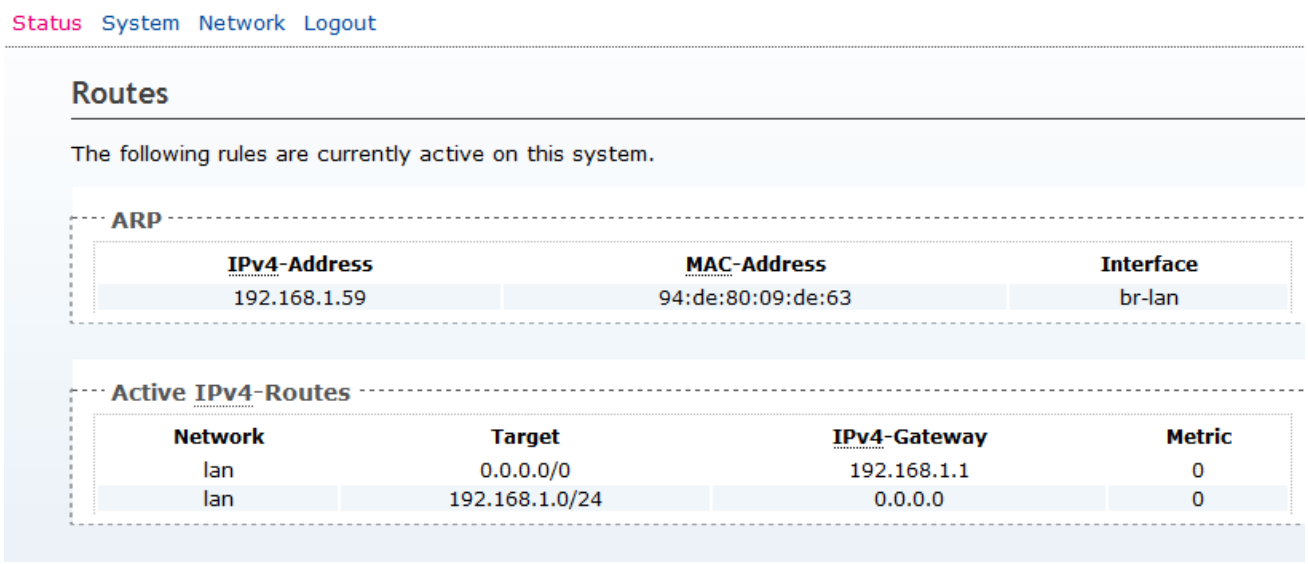
4.2.1 Overview Status

The web interface is the home page and thus is the page displayed when you log in. This page displays a summary of the current configuration and status of the EZPlatform® Plus, as shown in Figure 5.

4.2.2 Firewall Status

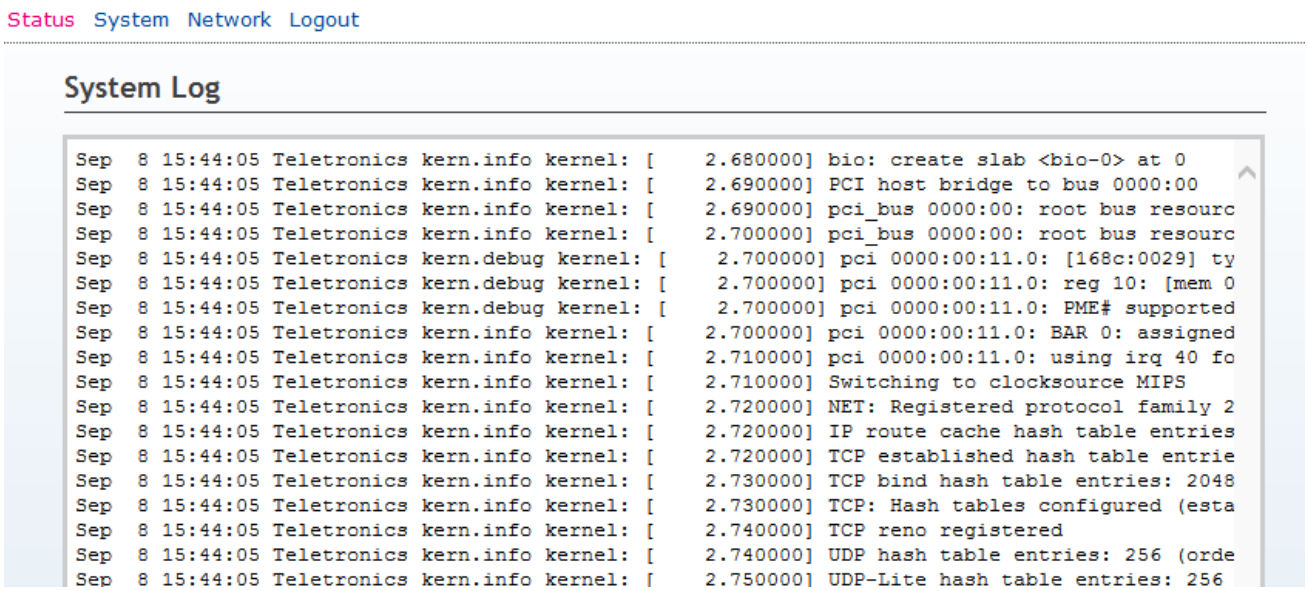


5.2.3 Routes list



This page shows the Route list and ARP list.

4.2.4 System Log



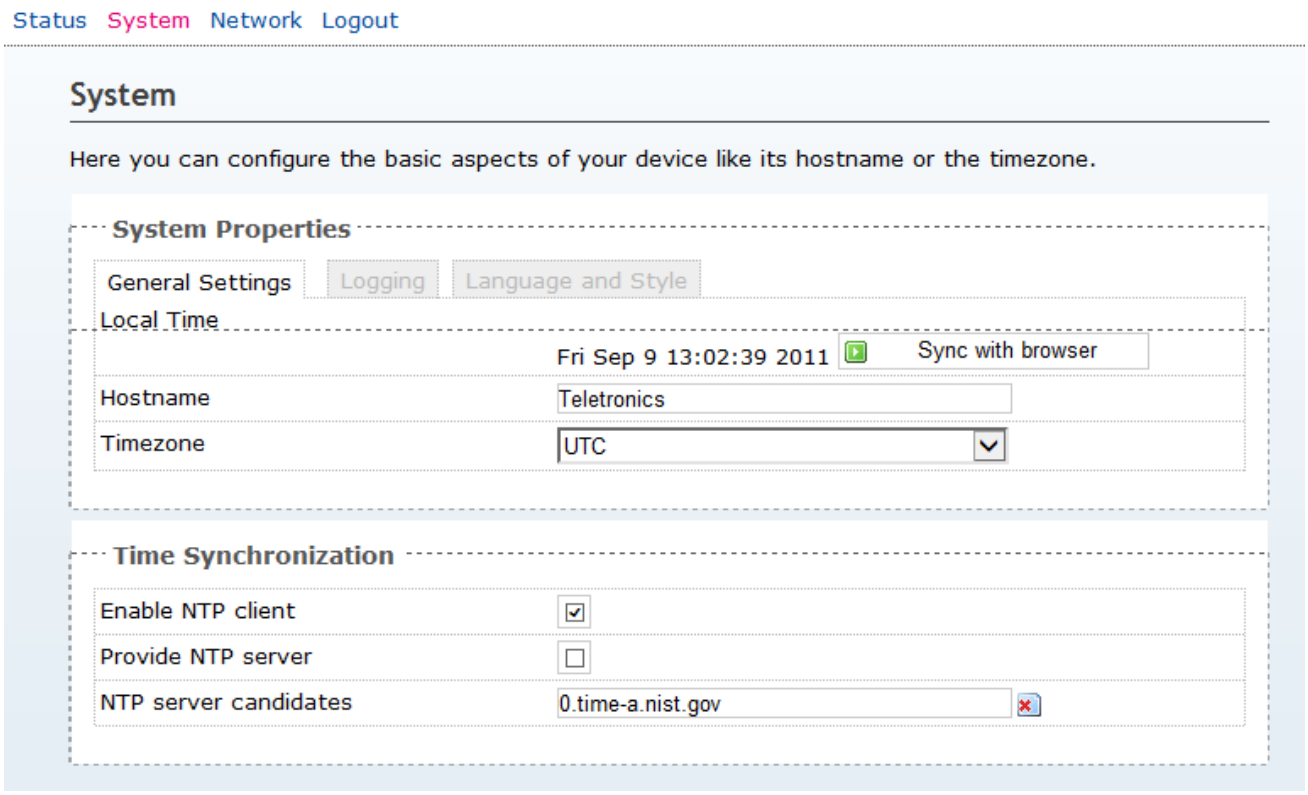
This page shows you important events that have been logged by the EZPlatform® Plus . Events are displayed chronologically, with the most recent ones displayed at the bottom of the list.

Display the Equipment type, Firmware, Hostname etcs.

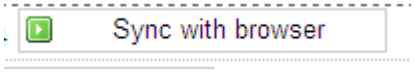
4.3 System

4.3.1 System

4.3.1.1 General Settings

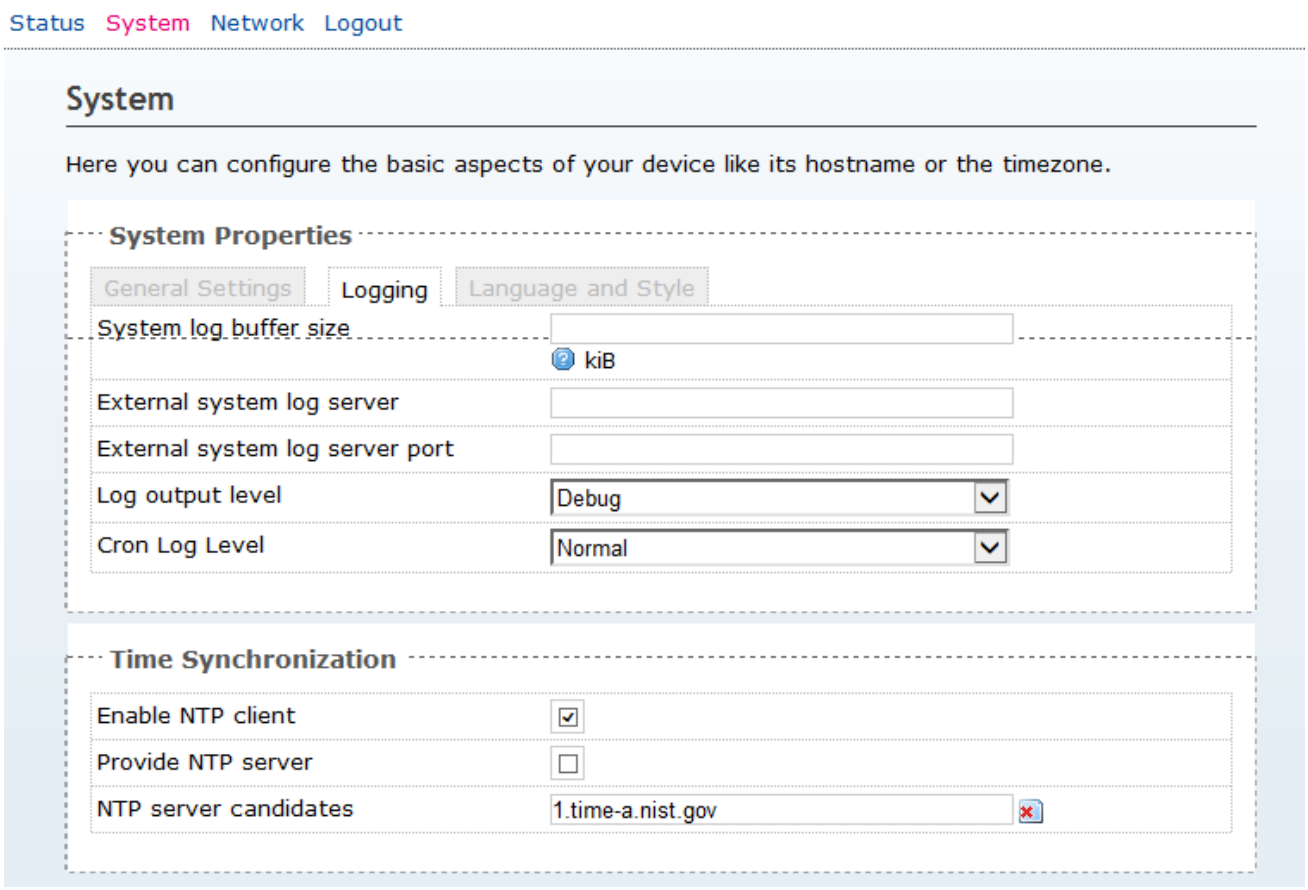


In this page , you can change the Timezone , Local Time, Hostname,and the NTP server.

Click the button 

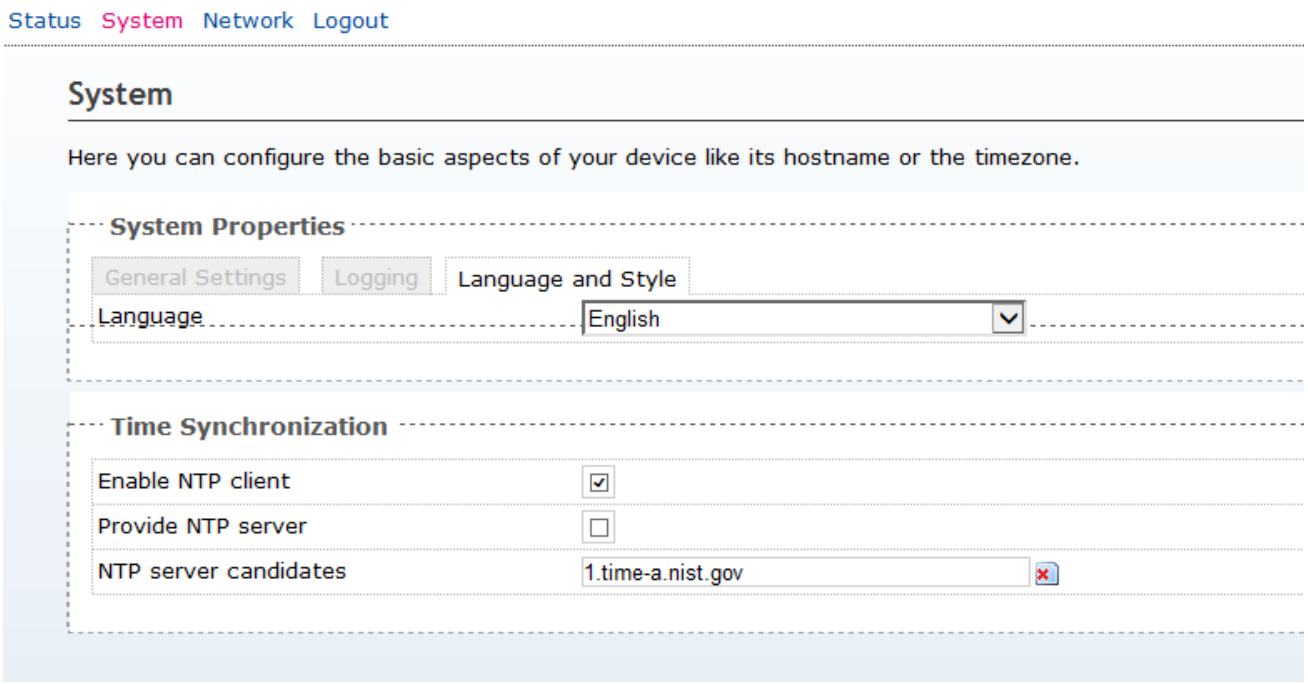
, the time of EZPlatform will **synchronize** to your PC.

4.3.1.2 System



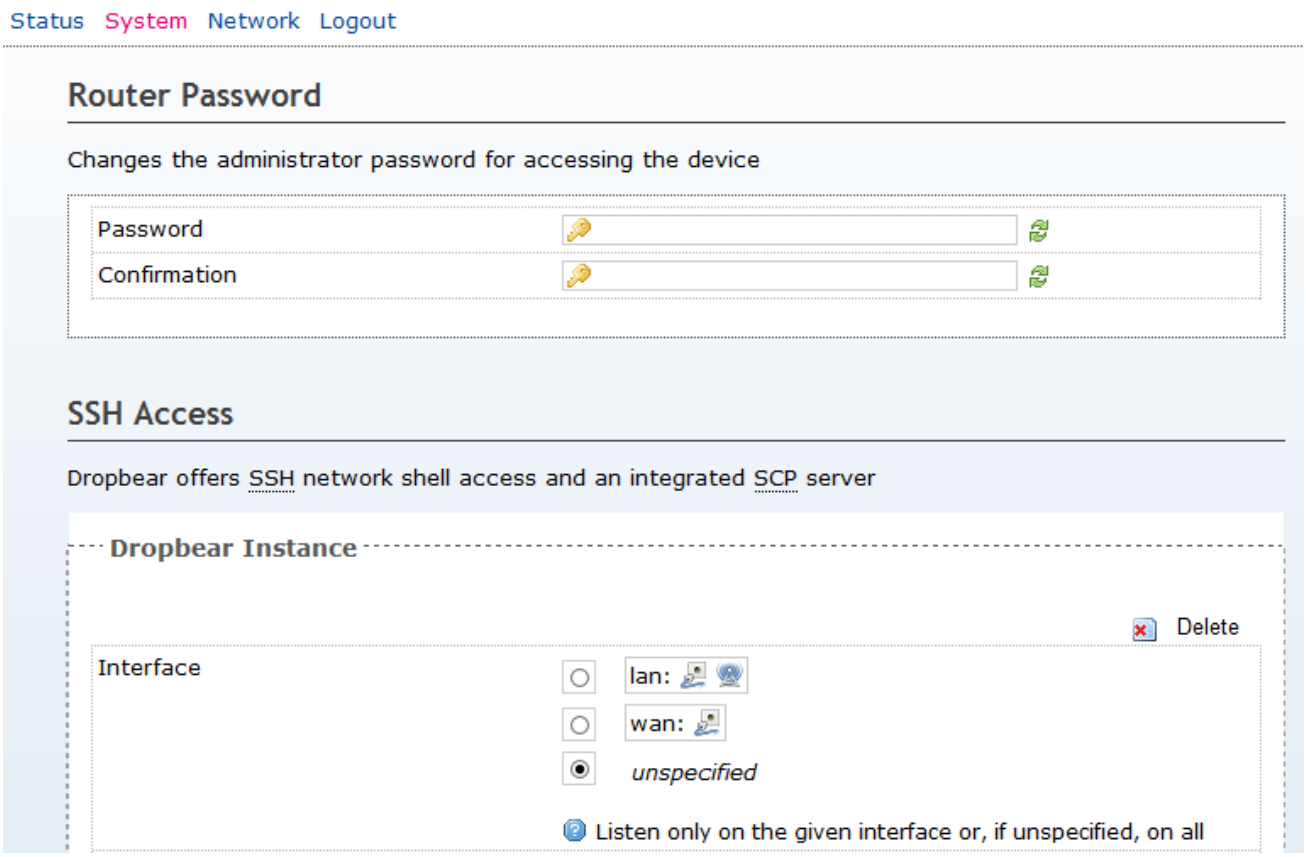
In this Page , you can config the logbuffer size, log server etcs.

Language and Style Page



Languages: Select the Chinese/English

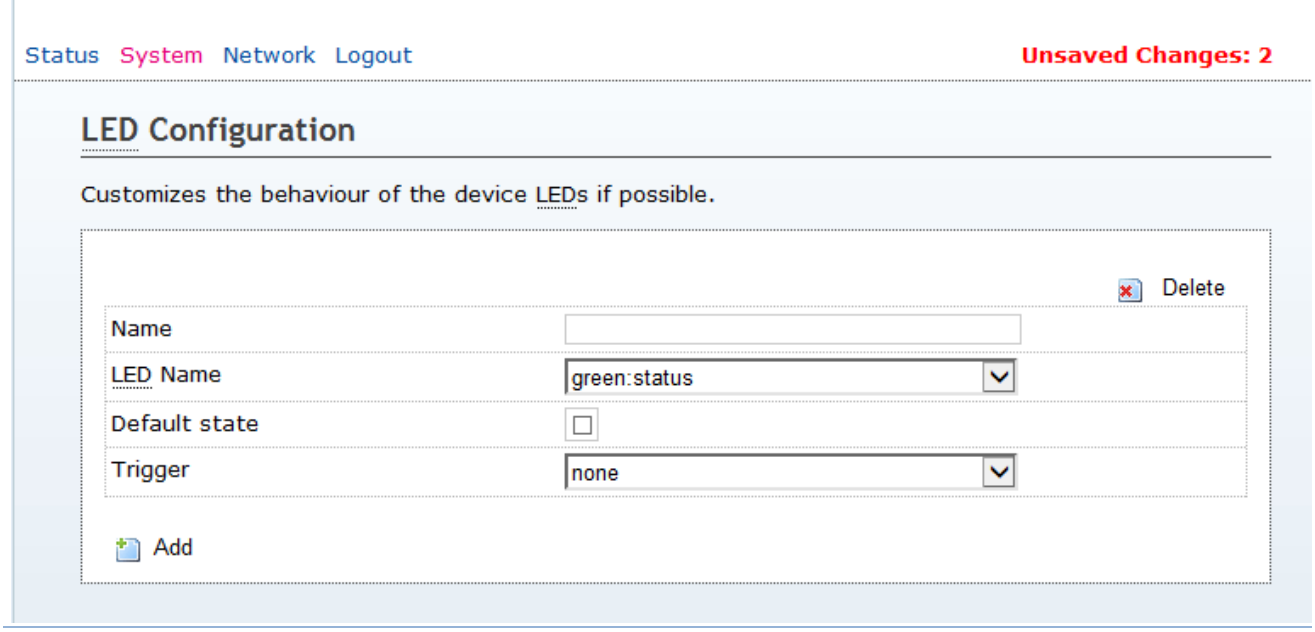
4.3.2 Administration



Router Password
Password: enter the new password that you wish to use.
Confirmation: enter once again the new password that you wish to use

SSH Access
Interface: The interface that SSH listen for connection.
Port: Specifies the listening port.
SSH-Keys: public SSHs input area.

4.3.3 LED Configuration



LED Configuration

Name: Define the name of LED.

4.3.4 Backup/ Flash firmware

The Backup and Flash Firmware page is shown in Figure 21.

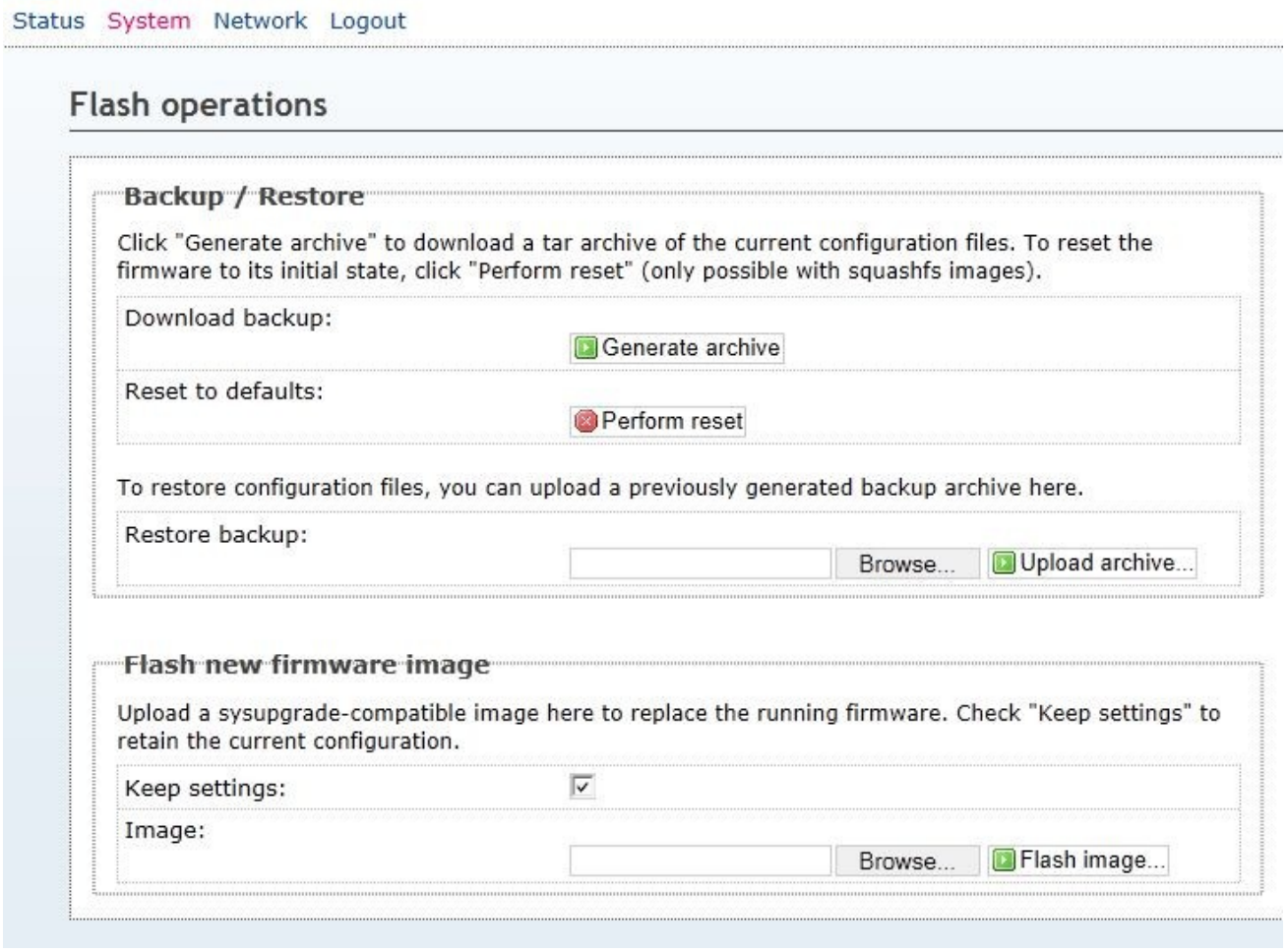


Figure 21. Backup and Flash Firmware Page

Backup / Restore

Generate archive: click on this link to download the current configuration of the EZPlatform® Plus to your computer so that you can restore it later if needed.

Perform reset: click on this button to restore all the settings of the EZPlatform® Plus to factory default, including the IP address.

Browse: click on this button to browse your local computer and choose the configuration file which contains the settings that you wish to restore.

Upload archive: after selecting the archive file, click on the 'Upload archive' to Restore the configuration saved before.

Firmware Upgrade

Browse: click on this button to browse your local computer and choose the firmware binary file
you wish to load to the EZPlatform® Plus.

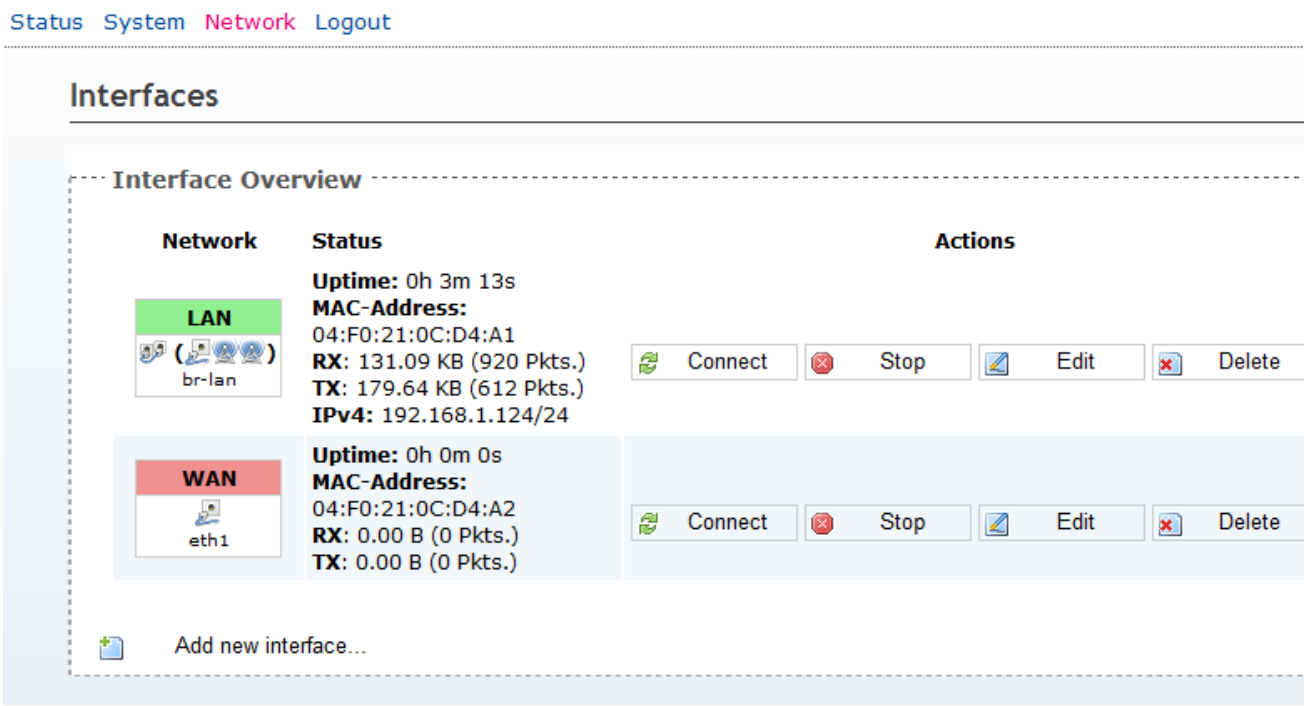
Flash image: after selecting the binary file, click on the 'Flash image' to Upgrade firmware.

4.3.5 Reboot

Perform reboot: clicking on this button reboots the EZPlatform® Plus.

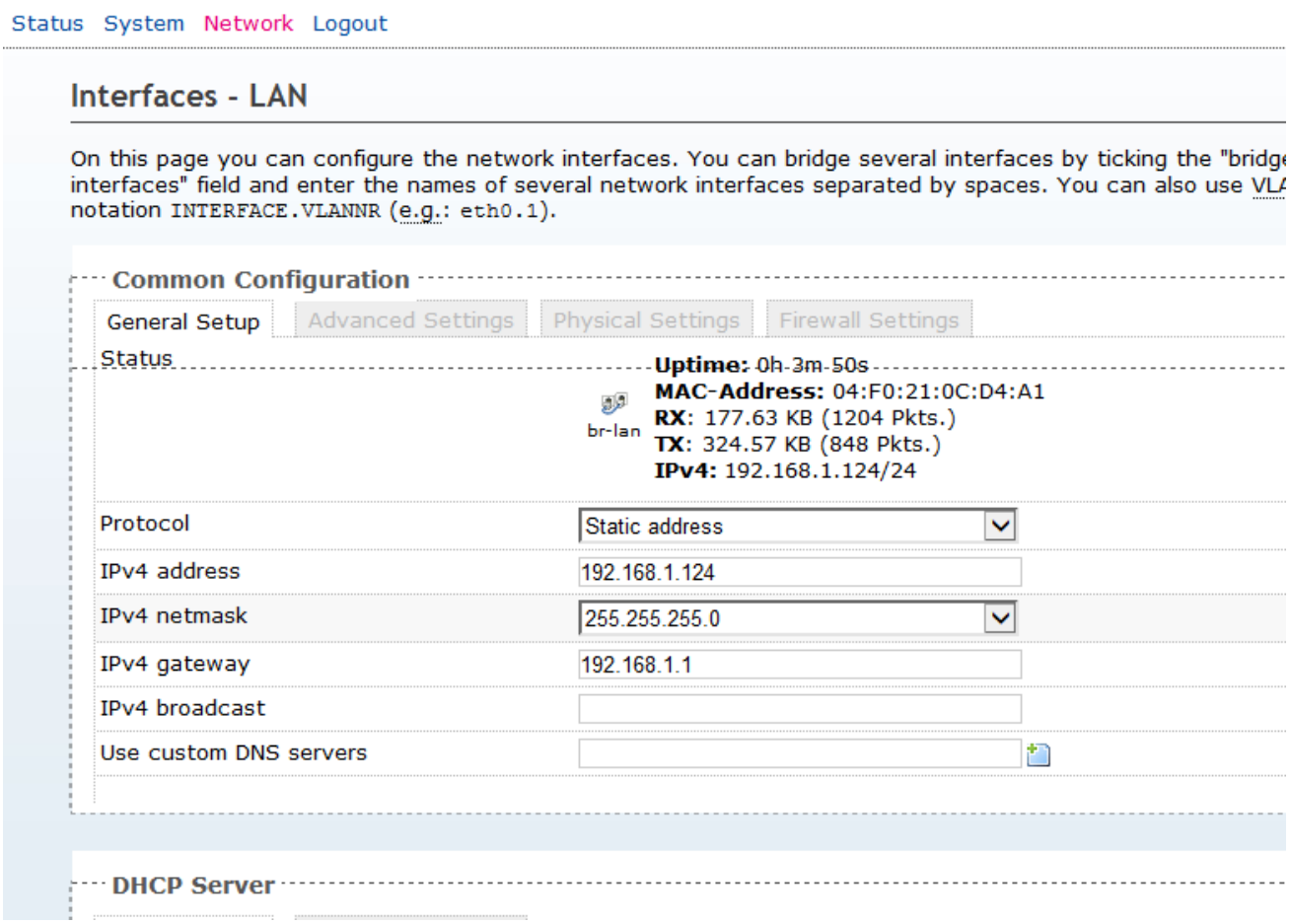
4.5 Network

4.5.1 Interface

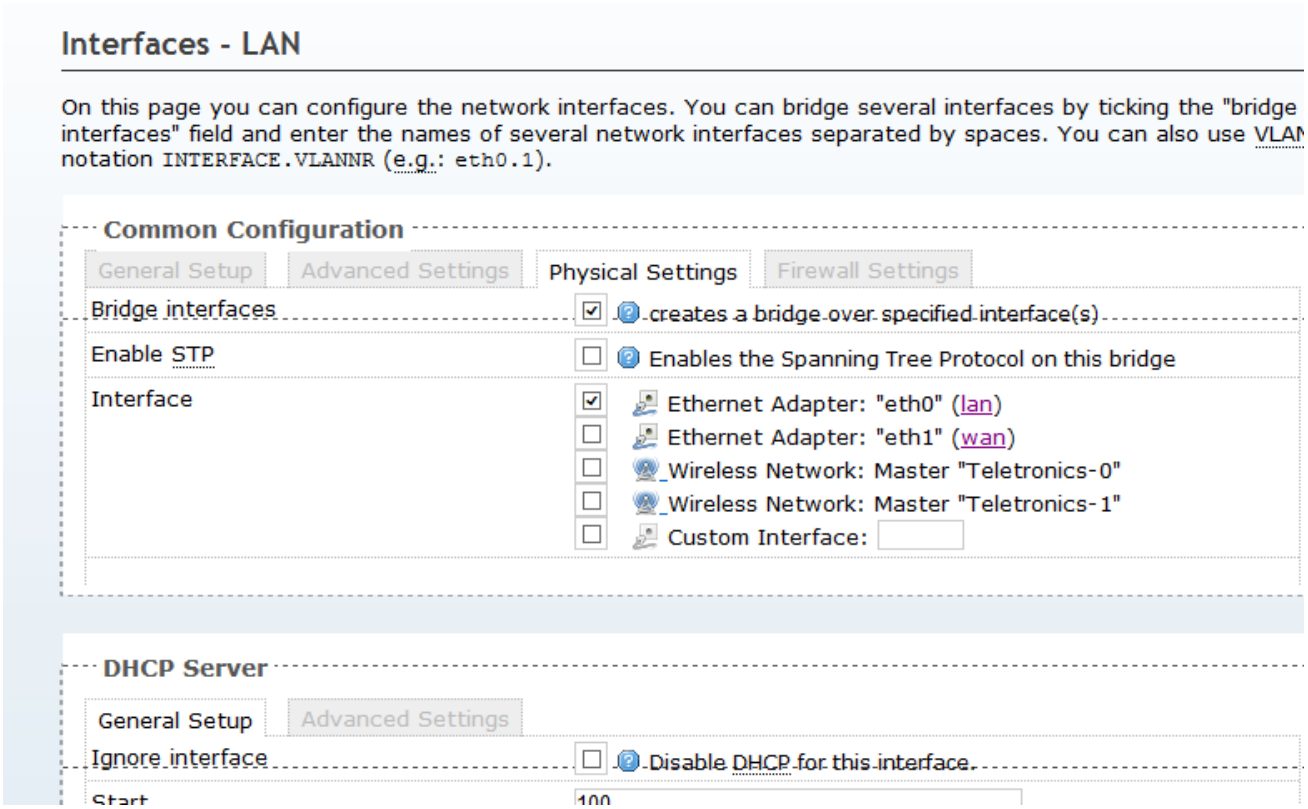


Interfaces - LAN

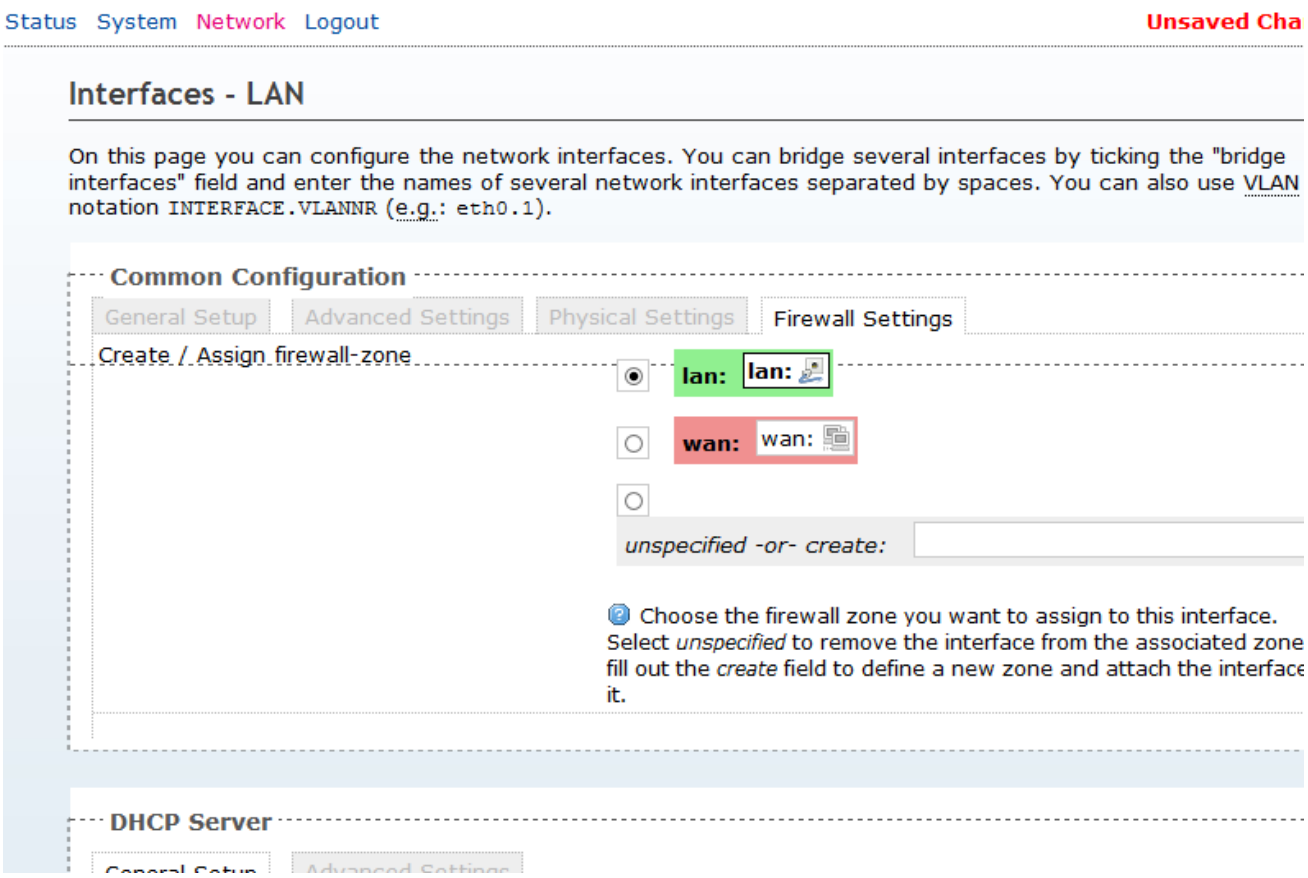
User can add/delete/edit/stop/connect LAN or WAN.



LAN Interface can use pope, static IP, DHCP Client, L2TP, PPP etc. Switch the DHCP On/Off.

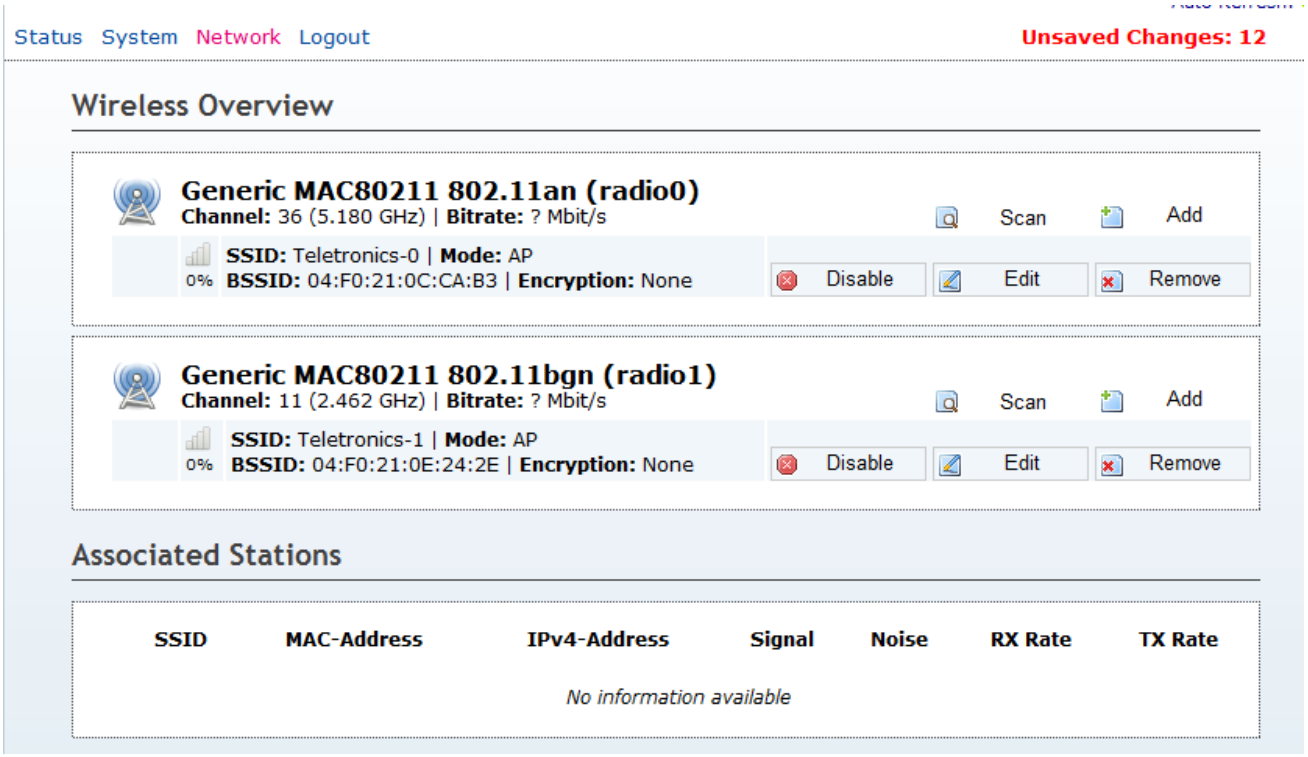


User can Enable/disable STP service and Interfaces.



Firewall configure, User can select the ZONE of Firewall and create new one.

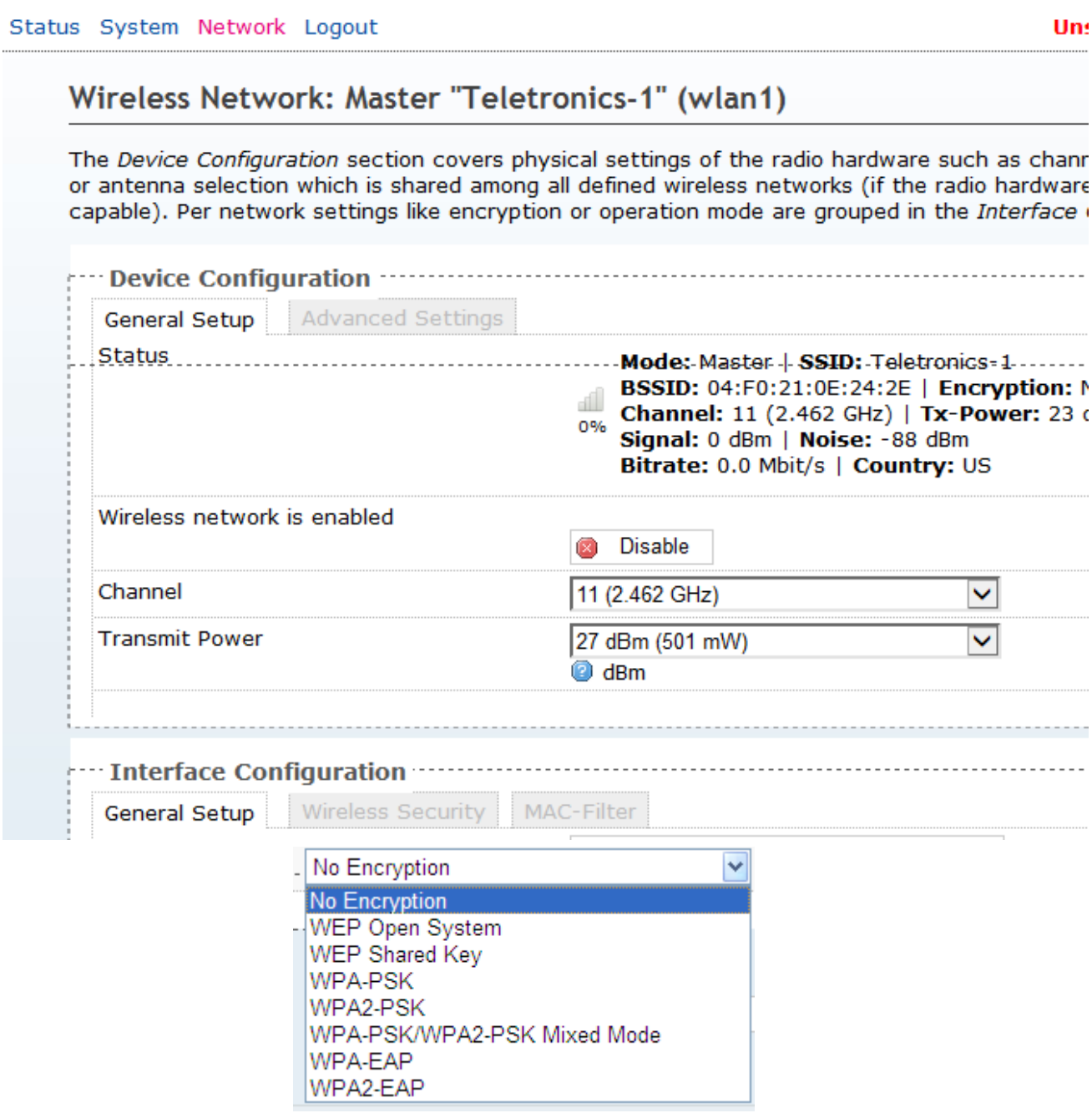
5.2 WiFi Configure

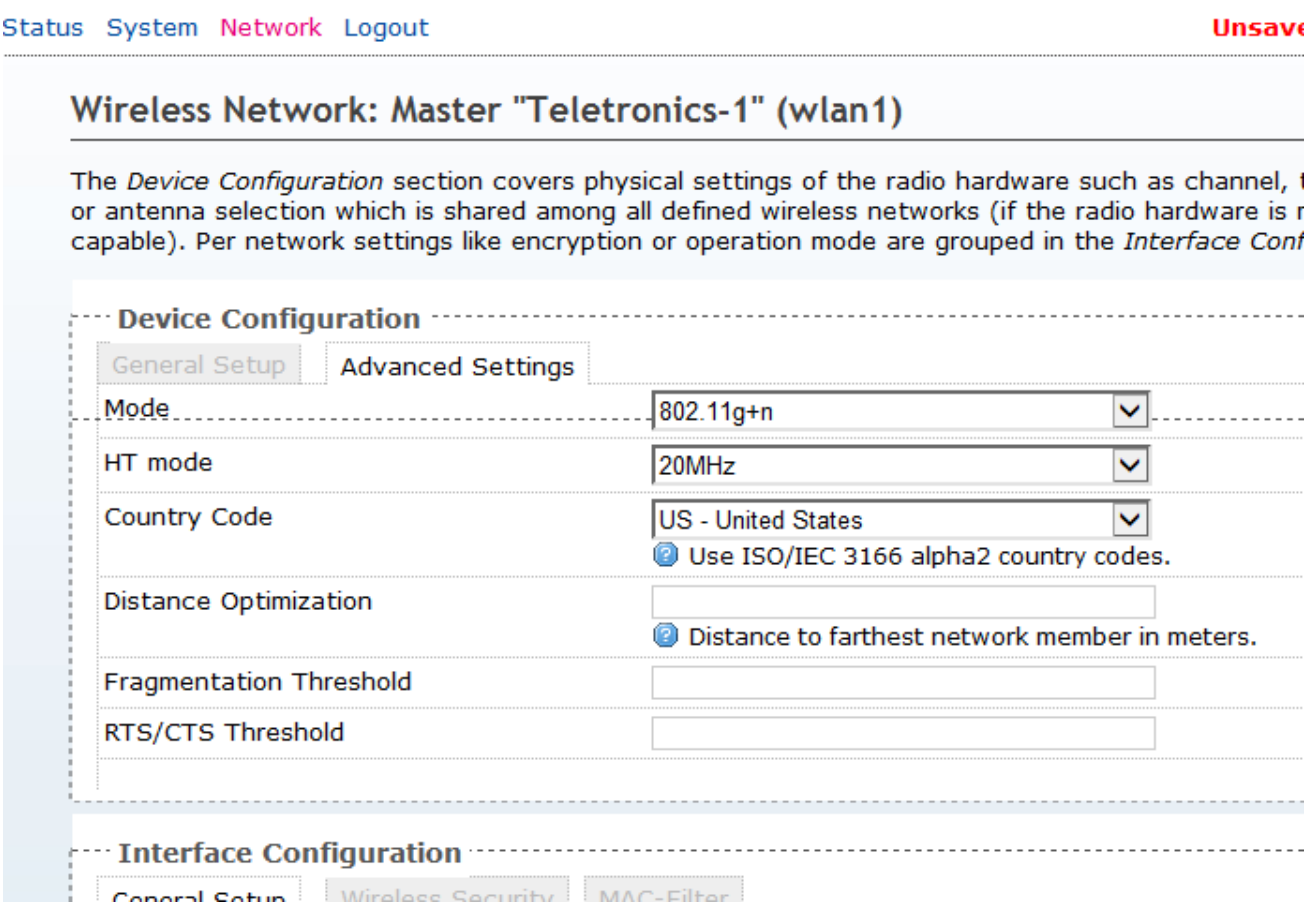


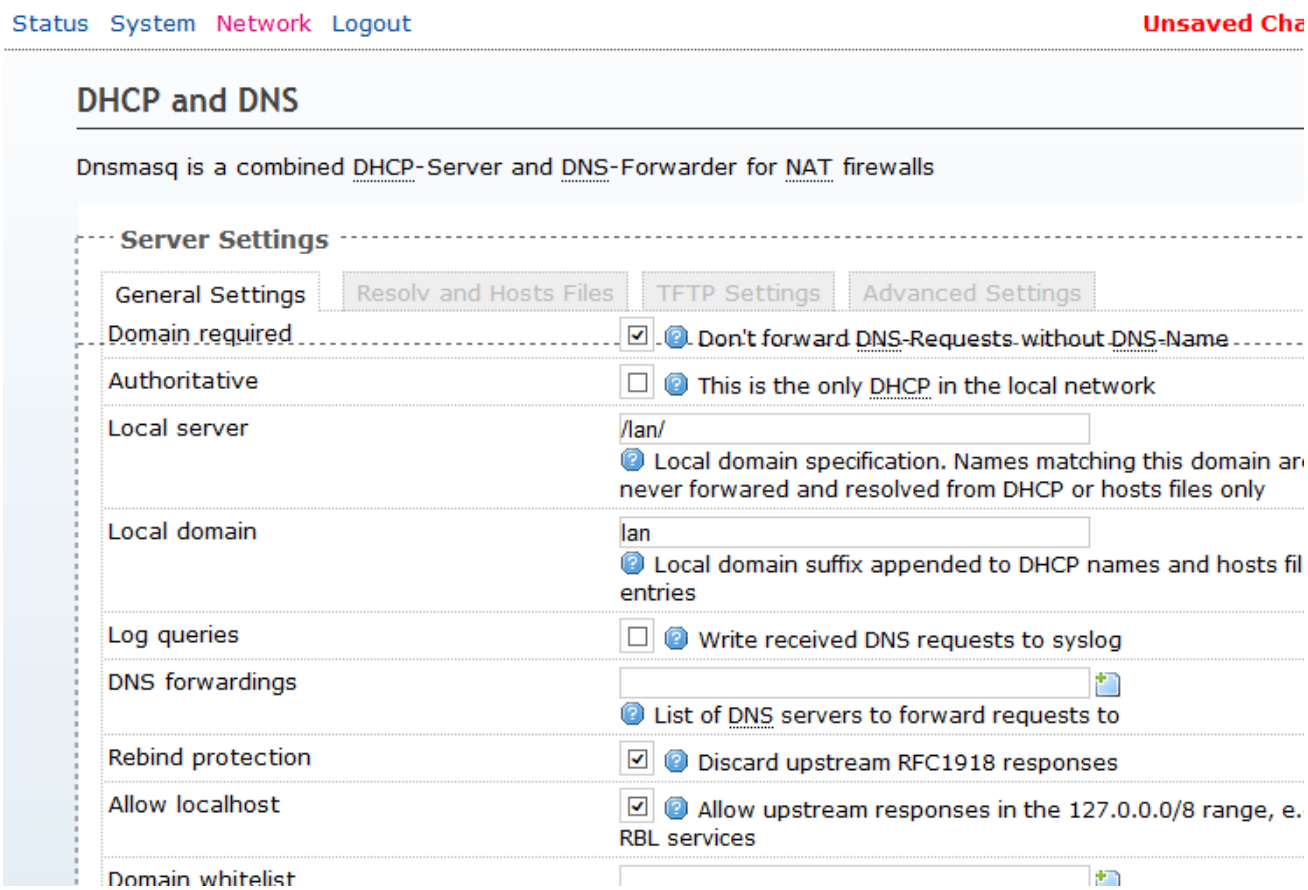
User can add/delete/start/off the Radio , and Edit the Radio, and Create Vitual Wireless SSID etc.

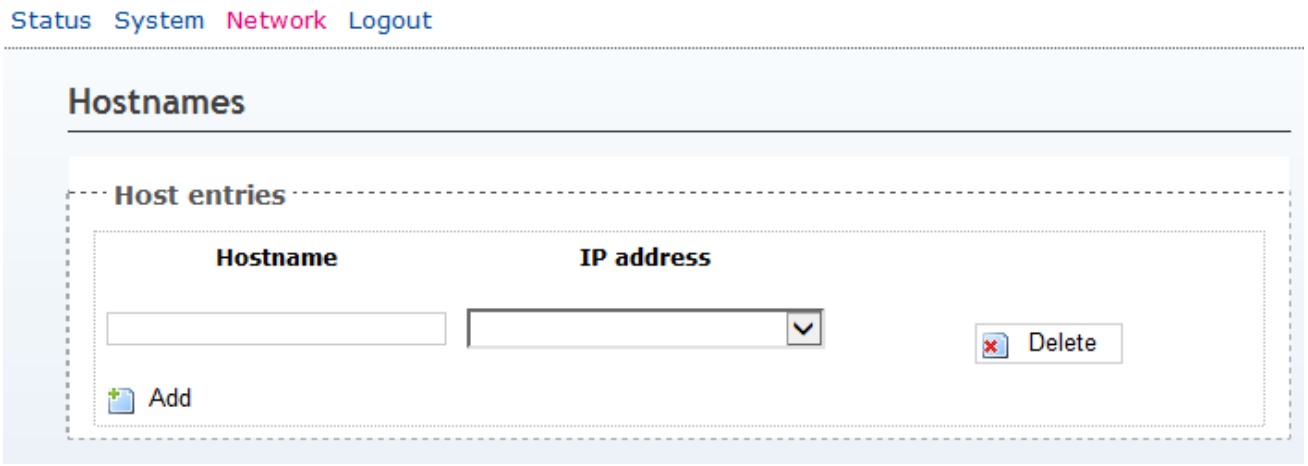
When click the Scan button , the device will display the Wireless SSID.

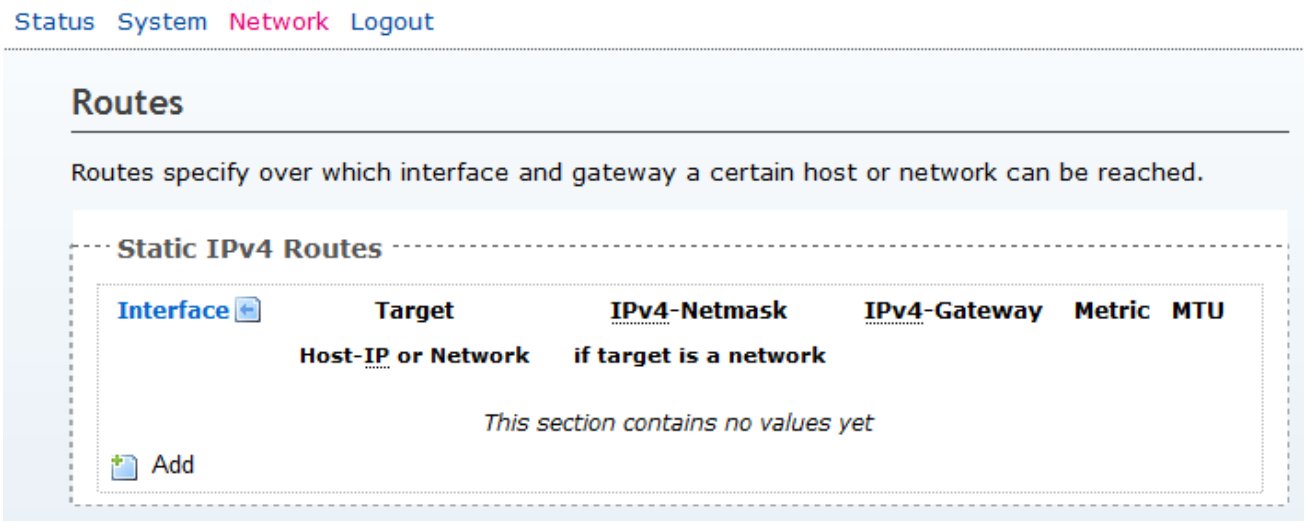
User can Click the “Join Network” button , to join the wireless network.

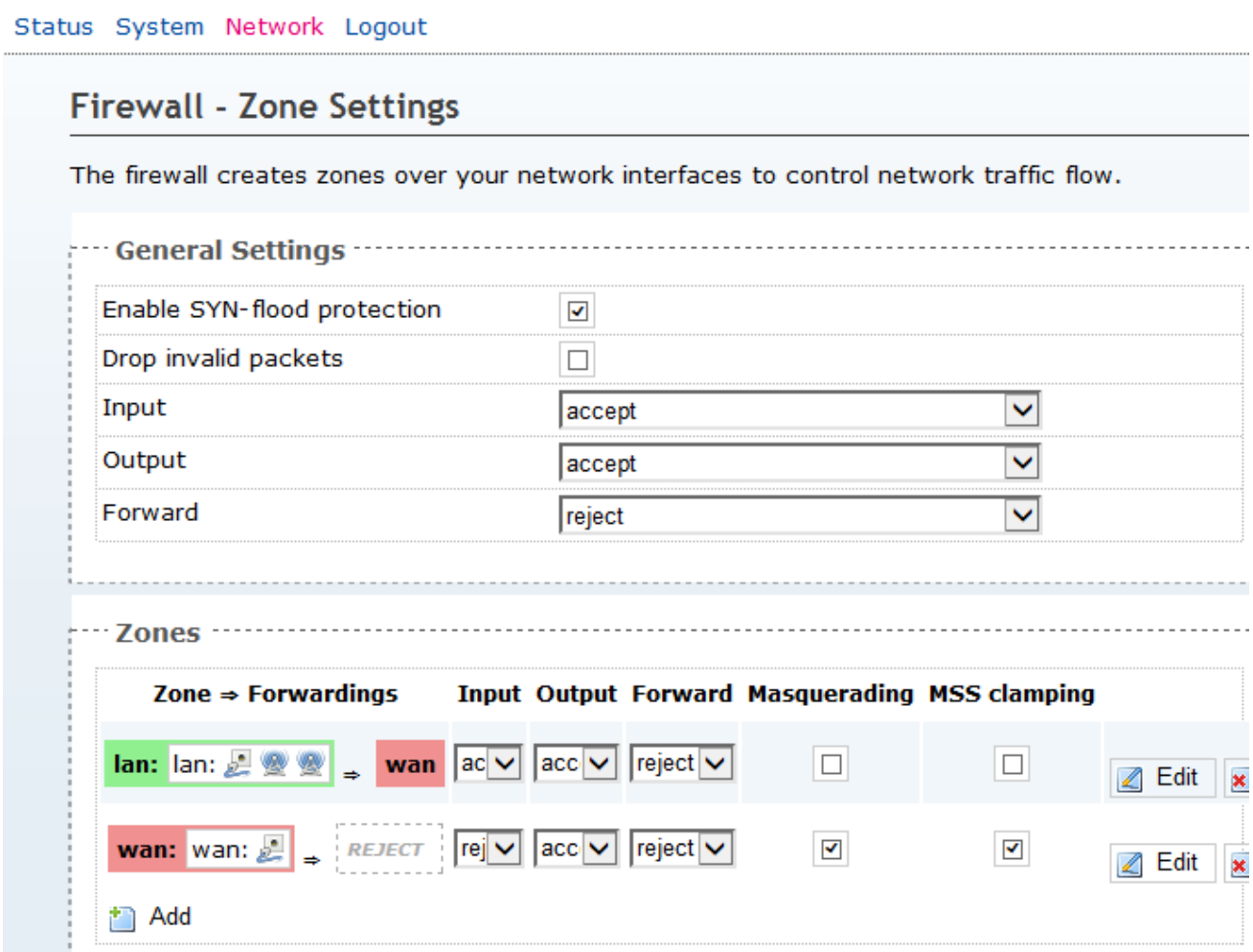

Status System Network Logout
Wireless Network: Master "Teletronics-1" (wlan1)
The Device Configuration section covers physical settings of the radio hardware such as chann
or antenna selection which is shared among all defined wireless networks (if the radio hardware
capable). Per network settings like encryption or operation mode are grouped in the Interface
Device Configuration
General Setup
Advanced Settings
Status
Mode: Master | SSID: Teletronics-1
BSSID: 04:F0:21:0E:24:2E | Encryption:
Channel: 11 (2.462 GHz) | Tx-Power: 23
Signal: 0 dBm | Noise: -88 dBm
Bitrate: 0.0 Mbit/s | Country: US
0%
Wireless network is enabled
Disable
Channel
11 (2.462 GHz)
Transmit Power
27 dBm (501 mW)
dBm
Interface Configuration
General Setup
Wireless Security
MAC-Filter
No Encryption
No Encryption
WEP Open System
WEP Shared Key
WPA-PSK
WPA2-PSK
WPA-PSK/WPA2-PSK Mixed Mode
WPA-EAP
WPA2-EAP


Status System Network Logout
Unsave
Wireless Network: Master "Teletronics-1" (wlan1)
The Device Configuration section covers physical settings of the radio hardware such as channel,
or antenna selection which is shared among all defined wireless networks (if the radio hardware is
capable). Per network settings like encryption or operation mode are grouped in the Interface Conf
Device Configuration
General Setup
Advanced Settings
Mode
802.11g+n
HT mode
20MHz
Country Code
US - United States
Use ISO/IEC 3166 alpha2 country codes.
Distance Optimization
Distance to farthest network member in meters.
Fragmentation Threshold
RTS/CTS Threshold
Interface Configuration


Status System Network Logout
Unsaved Cha
DHCP and DNS
Dnsmasq is a combined DHCP-Server and DNS-Forwarder for NAT firewalls
Server Settings
General Settings
Resolv and Hosts Files
TFTP Settings
Advanced Settings
Domain required
Don't forward DNS-Requests without DNS-Name
Authoritative
This is the only DHCP in the local network
Local server
/lan/
Local domain specification. Names matching this domain ar
never forwared and resolved from DHCP or hosts files only
Local domain
lan
Local domain suffix appended to DHCP names and hosts fil
entries
Log queries
Write received DNS requests to syslog
DNS forwardings
List of DNS servers to forward requests to
Rebind protection
Discard upstream RFC1918 responses
Allow localhost
Allow upstream responses in the 127.0.0.0/8 range, e.
RBL services
Domain whitelist


Status System Network Logout
Hostnames
Host entries
Hostname
IP address
Delete
Add





5. Frequently Asked Questions

1). What is the default IP address, user name and password of the EZPlatform® Plus?

- IP address: **192.168.1.124**
- User name: **admin**
- Password: **password**

2). How do I know if the EZPlatform® Plus has finished booting up?

Normaly the EZPlatform® Plus takes about 30 seconds to bootup.

You can ping 192.168.1.124 in Console to confirm the connection of the EZPlatform® Plus.

3). **I forgot the IP address of the EZPlatform®.**

You can recover the IP address of the EZPlatform® Plus using EZManager Tools.

EZManager: connect the EZPlatform® Plus to a computer running EZManager and scan the network. EZManager will detect the EZPlatform® Plus and display its IP address.

4). I forgot the password of the EZPlatform®, or cannot access the web interface.

To access the EZPlatform® again, you will need to reset all settings to factory default.

EZManager: connect the EZPlatform® Plus to a computer running EZManager and scan the network. EZManager will detect the EZPlatform® Plus. Click on the 'Set settings to factory default' icon.

PCB Reset Button: press the RESET button for about 5 seconds and release off. EZPlatform® Plus will 'Reboot' as Default settings.

5). I am having trouble establishing a wireless link.

If the access point or the subscriber unit does not appear in the Wireless Status page, follow these steps:

- Test the radios at a close distance (e.g.: on the same tabletop) without amplifiers.
- Verify that you are using the correct network configuration at both ends of the link (AP, AP with WDS, SU or ad hoc).
- Make sure the WLAN interface you are using and the other end of the link are using the same SSID.
- Check that the antennas are precisely aligned.
- Verify all connections and that all cables and connectors are tightly coupled.
- Reset the radios at both ends to factory default and configure both radios again.

6). I was able to establish a wireless link, but I cannot pass any traffic.

If you see correct wireless association in the Wireless Status page, but are unable to ping the remote site or pass any other traffic, follow these steps:

- Make sure the WLAN interface you are using and the other end of the link are on the same subnet.
- Disable encryption at both ends.
- Reboot both radios.

7). I can pass traffic but the throughput is very low or I am losing packets.

Follow these steps:

- Revise your RF calculations to make sure the equipment you are using can produce a reliable connection for the current link distance.
- Check that the antennas are precisely aligned.
- Check that you are not causing self-interference or receiving interference from your RF environment.
- Verify that the radios at both ends have enough vertical clearance to keep the

Fresnel zone unobstructed.

8). I have other questions or comments about the EZPlatform®. How can I contact technical support?

You can contact us by:

- Online Helpdesk: http://teletronics.com/Supportform.html
- Email: support@teletronics.com
- Telephone: 1-301-309-8500
- Fax: 1-301-309-8851
- Postal mail:

  Teletronics International
  2 Choke Cherry Rd
  Rockville, MD 20850
  USA