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PowerLink V5 Manual

Hardware Overview

1 Power Slider 3 position
2 Function pushbutton
3 Build in Light
4 Power Over Ethernet LAN Port
5 USB-C Charging system 2A
6 USB Power Out & AC 5Ghz
7 Power Orange Led
8 WiFi Red Led
9 Eth Blue Led
10 Reset Button
11 Test Battery 4 Red Led

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Quick Start

- Move the Slider Switch to WiFi or W+P (WiFi + PoE)
- Use a short CAT5 cable to go between the LAN port on the PowerLink V5 and the CPE.
- Connect to www.linktechs.net SSID
- IP address should come from CPE (if you are configured for DHCP on your wireless device), or you will need to statically configure it.
- Connect to your CPE using web/winbox or installation application.
- Blue Eth Led It is fixed if Ethernet Cable is 100 Ful Duplex, flashing if Half Duplex (Defective)

Normally there is no need to login to the PowerLink, unless you wish to do some kind of special configuration, things like change VLANs, SSIDs, security etc. Most of the time the unit will be completely pass-though, and transparent bridging. Most manufacture applications prefer this.

WiFi Speed (theoretical):

2.4 GHz Width 40Mhz = 86 Mbps

2.4 GHz Width 20Mhz = 43 Mbps

Optional USB AC Stick

AC 5Ghz Width 80Mhz = 292(100)Mbps

AC 5Ghz Width 40Mhz = 150(100)Mbps

AC 5Ghz Width 20Mhz = 72 Mbps

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PowerLink V5 Manual v1.0

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PowerLink V5 Manual v1.0

Features:

- Passive Power Over Ethernet Device, Ubiquiti, Mikrotik, Cambium, etc.
- WiFi 2.4 GHz - Optional 5GHz AC Module
- 7000mA/h for charging external devices.
- Short-circuit, Overload, Temperature protection.
- Ethernet Cable Test
- Automated preparation of CPE antenna. Via Linux script
- OpenWrt / Lede, HTML menu, working opkg repository
- VLAN support
- Iperf3 -s always active
- Samba 3, for files and memory sharing, USB flash memory.
- Works Perfectly with Several Manufacture Apps -- EasyUBNT, Tik-App, Ubntu, Cambium
- IEEE 802.3 (Pin 4 e 5 +24V, Pin 7 e 8 GND)
- For old Cambium CPE you have to create a LAN cable with reversed power pin.
- One-year warranty.
- USB Out (Charge / Optional AC 5Ghz)
- Wi-Fi
- PoE On
- Accessory:
    - Hard Case
    - USB Cable
    - LAN Cable
    - 5Ghz AC module (Optional)
- 140 grams
- 96 x 44 x 97 mm
- MT7620 chipset 2.4GHz
- Two PCB antennas.

Functions

Power Slider 3 position -> 1

- Off (PowerBank is working)
- WiFi
- WiFi + PoE

  You can tourn off wifi with double click on pushbutton

  You pay much attention, no LED is lit in this condition.

  Don't forget the poe on.

Function pushbutton -> 2

- One click – Turn on PowerBank / Test battery
- Fast Double click – Turn off PowerBank and/or WiFi
- Long click button – Turn on/off LED Light

Reset Button -> 10

The reset button is to either preform a firmware update or to factory Reset the unit. This is typically one of the major troubleshooting steps that

- Pressed during startup – firmware update
- Pressed for 30 seconds – factory reset.

Leds

The Power Orange Led 7, blynk if the router is powered on.

WiFi Red Led 8, blink when client are associated

Eth Blue Led 9, It is fixed if Ethernet Cable is 100 Ful Duplex, flashing if Half Duplex (Defective)

4 Red Led, Battery Indicator 11

This indicator tells you when the unit is charging, and when it is completed charging. It also will tell you battery level.

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Default Configuration

To Connect to the device and change options, you can connect via web browser via http://192.168.1.69 or SSH to the same IP address. The default

IP Address: 192.168.1.69
Username: root **password:** geva

To Automate the Preperation of CPEs

On the PowerLInk AT, through ssh connection:

/root/CpConf.sh	daemon for CPE configuration
/root/OnCpScript.sh	executed on the CPE for its configuration
/root/system.cfg	copied on the CPE for its configuration
/root/icons.sh	daemon that controls icon on TFT

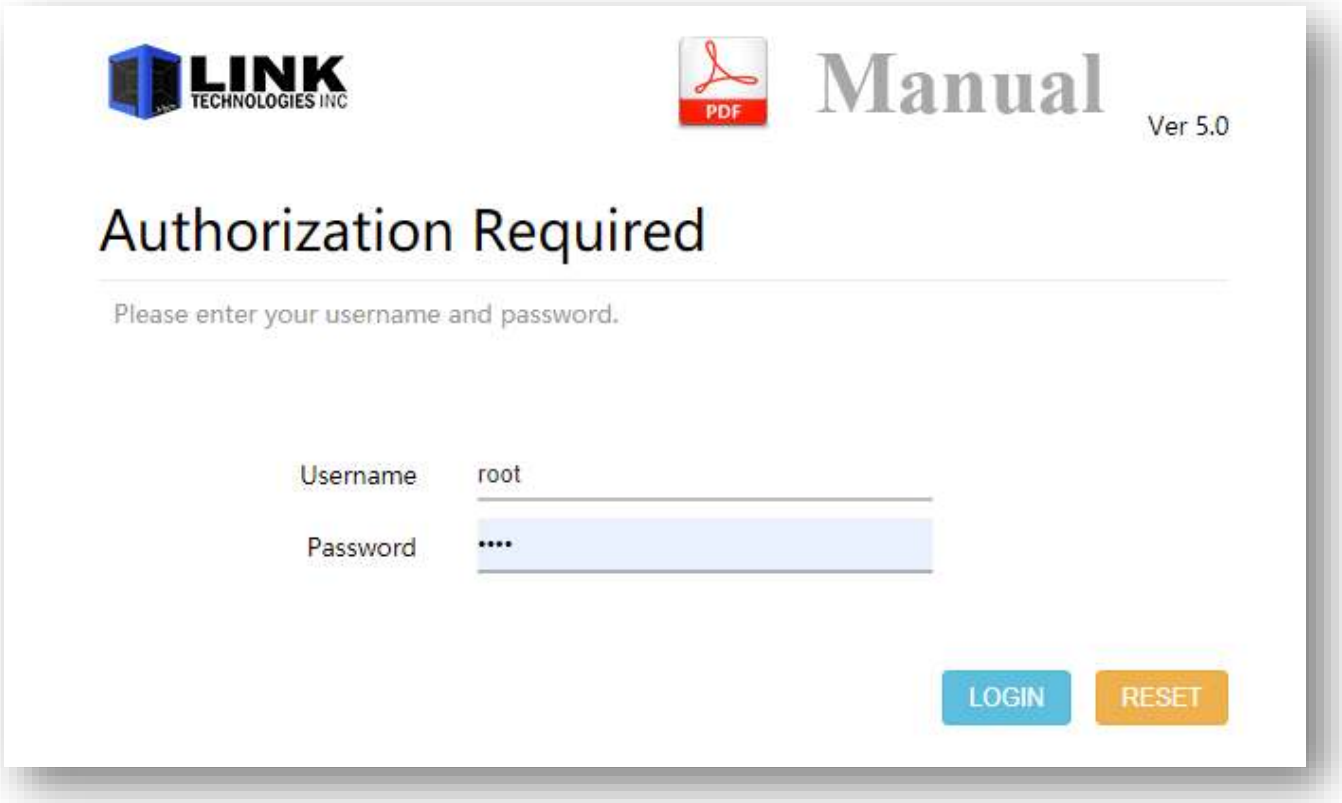
On HTML page of router -> System -> Startup -> Local Startup

iperf -s&
/root/icons.sh &
#/root/CpConf.sh &

1. Remove comment (#) on the last line, for enable auto CPE conf.
2. Customize OnCpScript.sh for your requirement.
3. Copy your CPE configuration file, system.cfg
4. Examples work on the Ubiquiti AirOs CPE

Web Interface

You can access the web interface by browsing to 192.168.1.69. The username is root and password is geva.



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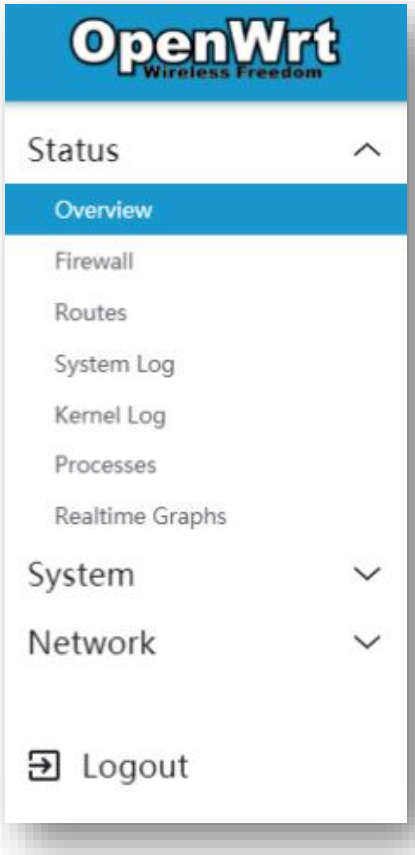
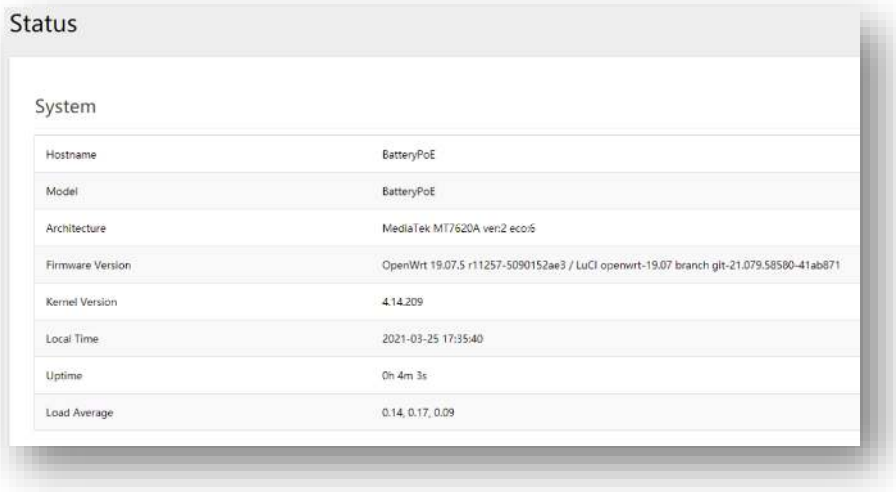
Status

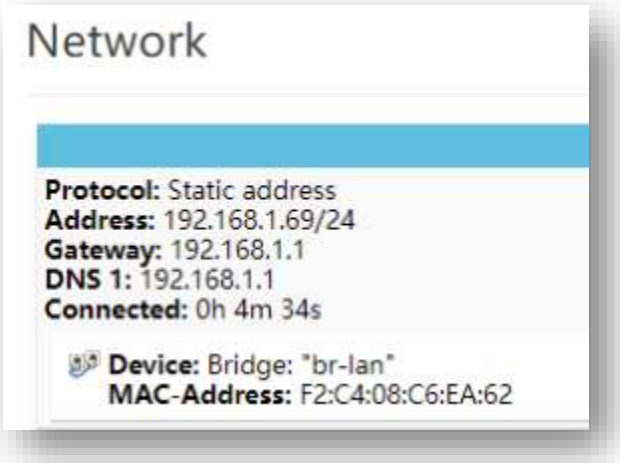
The tight menu gives you the status page. This includes, overview, Firewall, routes, logs, processes and graphing.



The Status page gives you Hardware, Firmware versions and uptime.



The network section tells you what is in-use and connected to the device.



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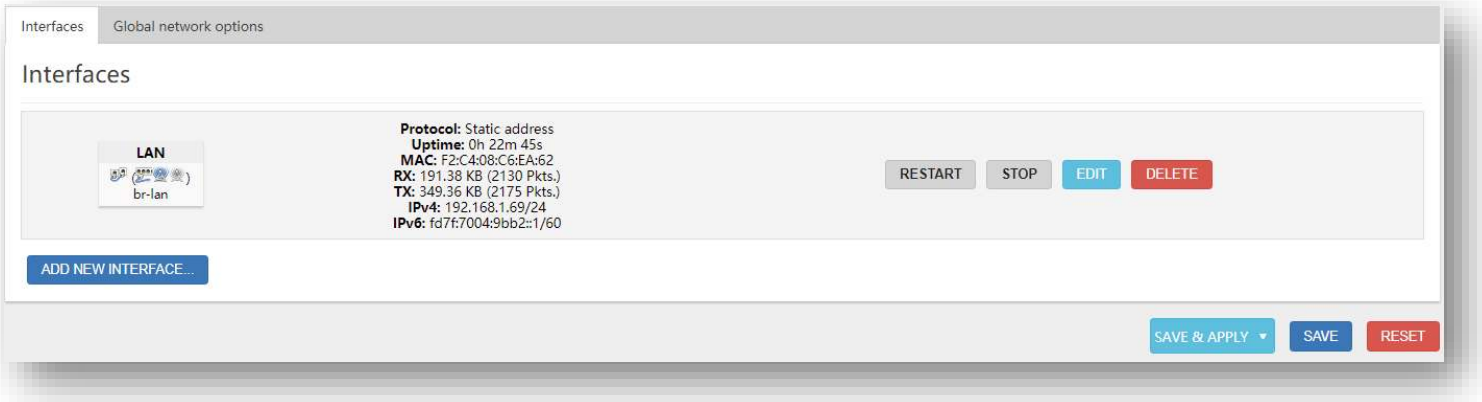
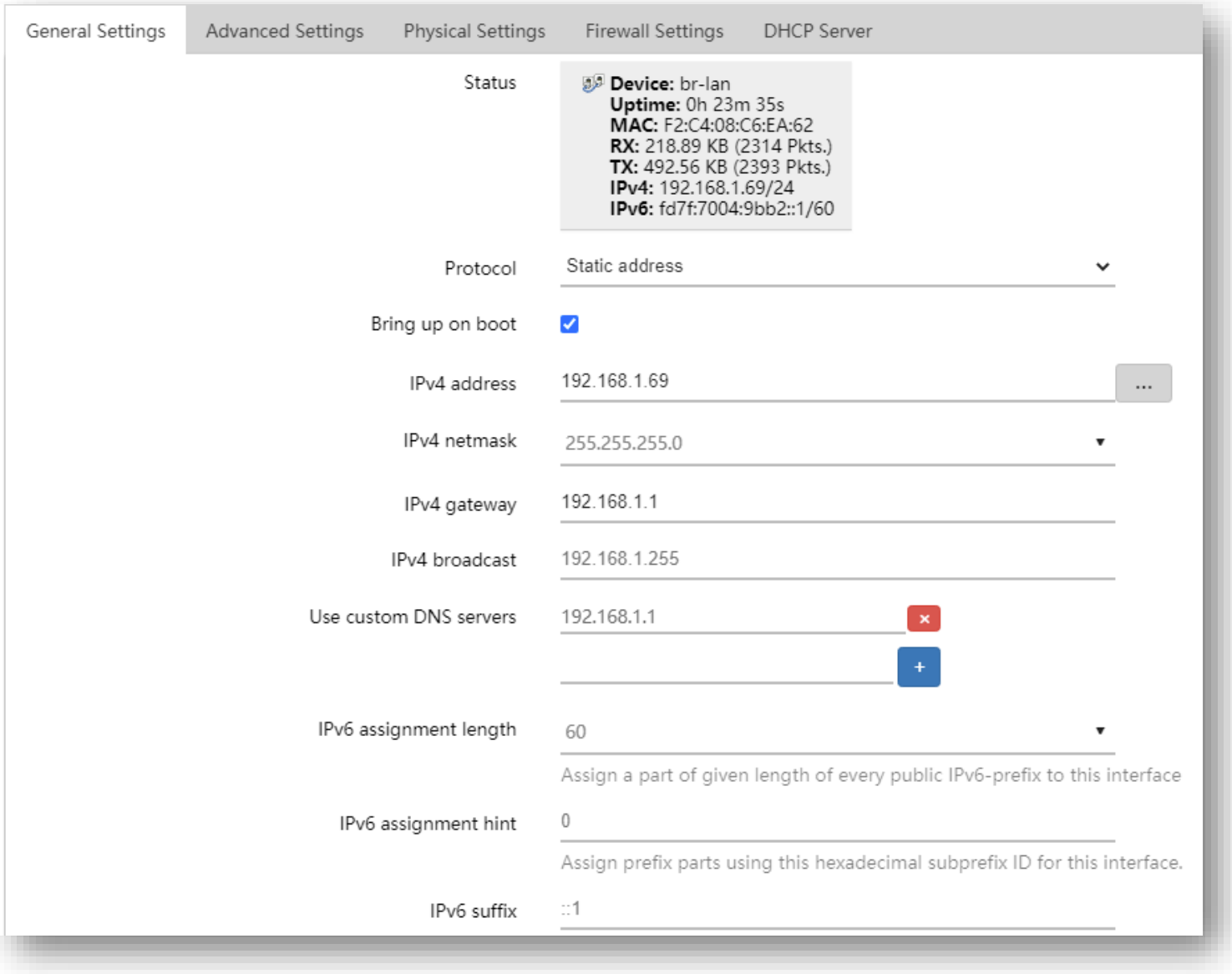
Interface / Bridge

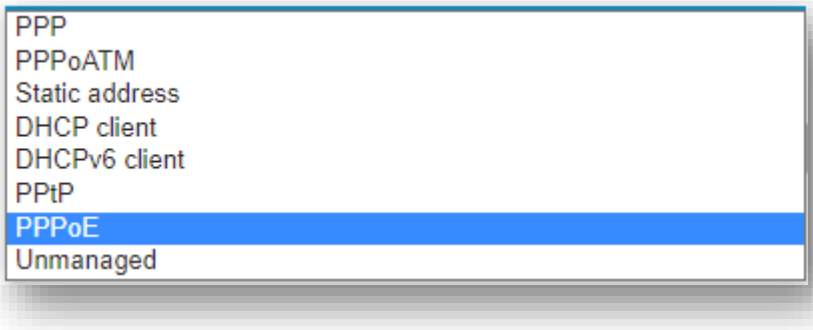
Under Network → Interfaces, you have the option to configure new interfaces and/or edit the existing. The default should be LAN, this is a br-lan bridge group.



By clicking edit, you can edit the LAN interface, this will bring up the following menu options:

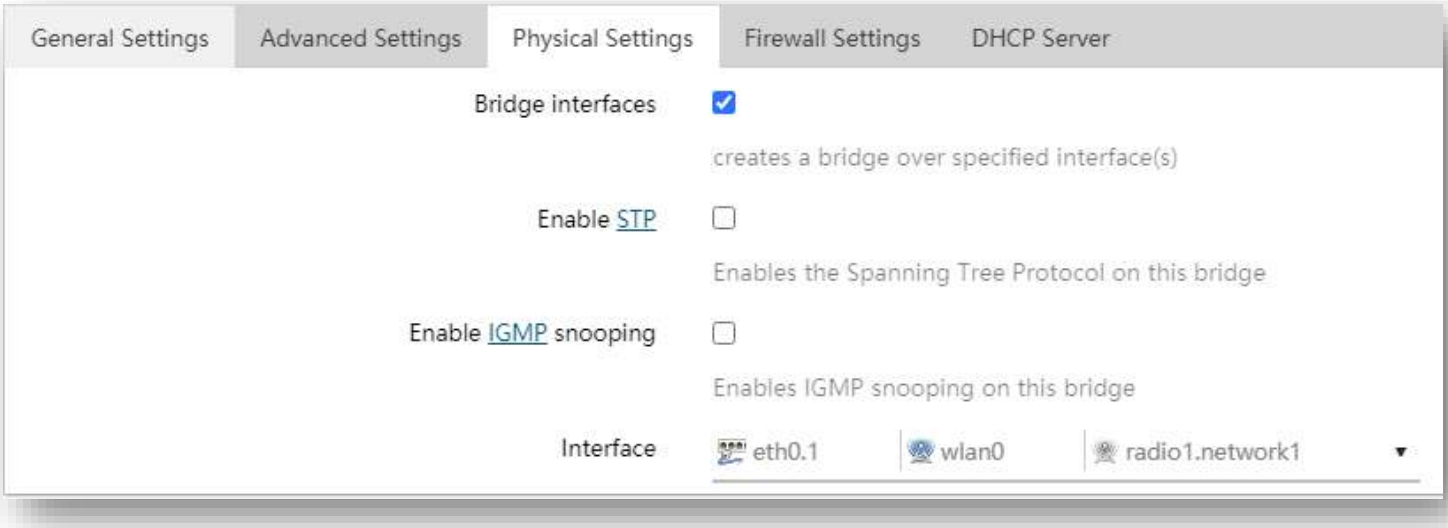


Here, you have options to select what protocol you wish, this could be used on the ethernet or any other interface. The default option is static address, where the br-lan is statically configured.



Other options include; PPP, DHCP Client, or PPPoE. I would always recommend that you bring up the default interface stactially as well as upon boot. NOTE, there is options here that can render the device not reachable, and then a factory reset would be the only option.

Under Physical Settings, you can tell that this interface is a bridge, enable STP and/or IGMP snooping, as well as select what interfaces you wish to bridge together. The image below is the default configuration.

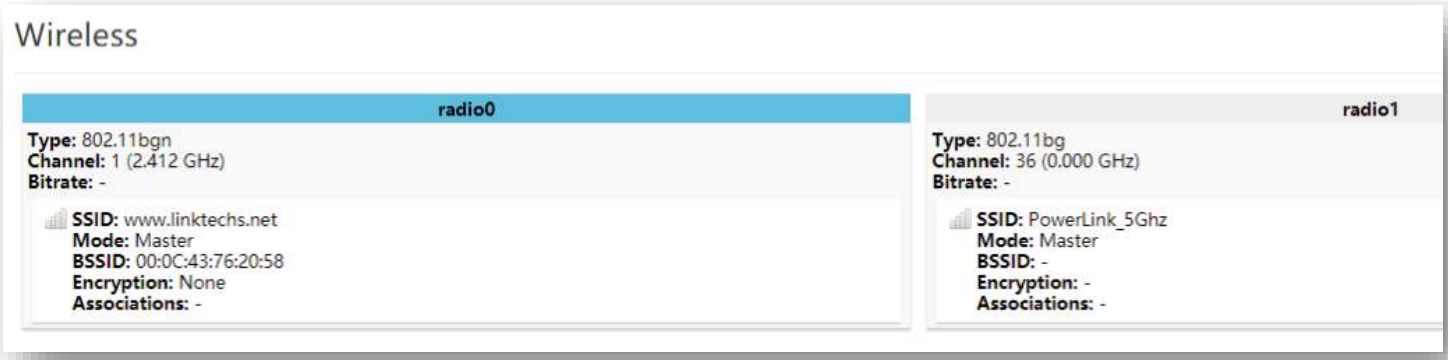


DHCP-Server

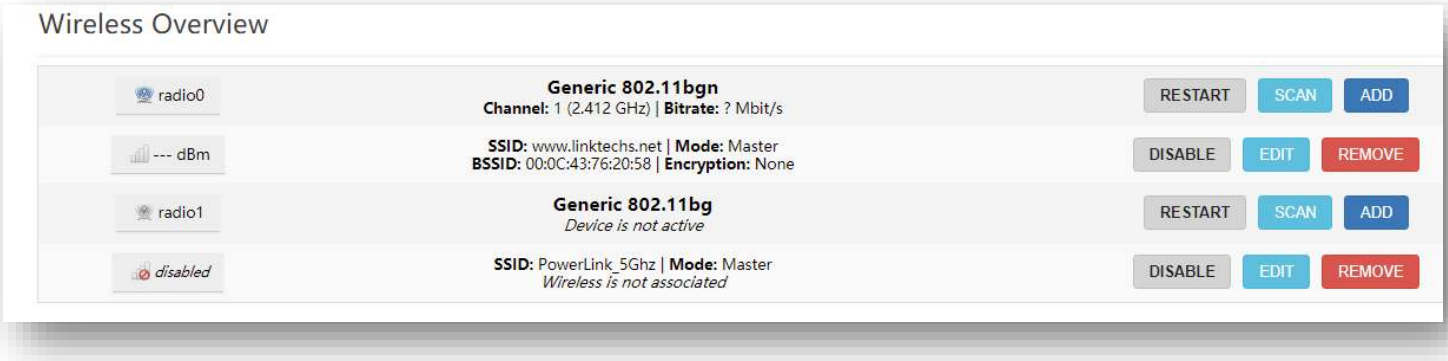
Under Network → Interfaces, hit edit your interface and then you can go to DHCP Server. Here your configure options for DHCP Server.

Wireless

This section under status, gives you the wireless access point, SSID and encryption as well as the channel of radios0, this is the 2.4 GHz radio built into the PowerLink AT2. The radio1 would be if you have added the 5 GHz module into the unit.

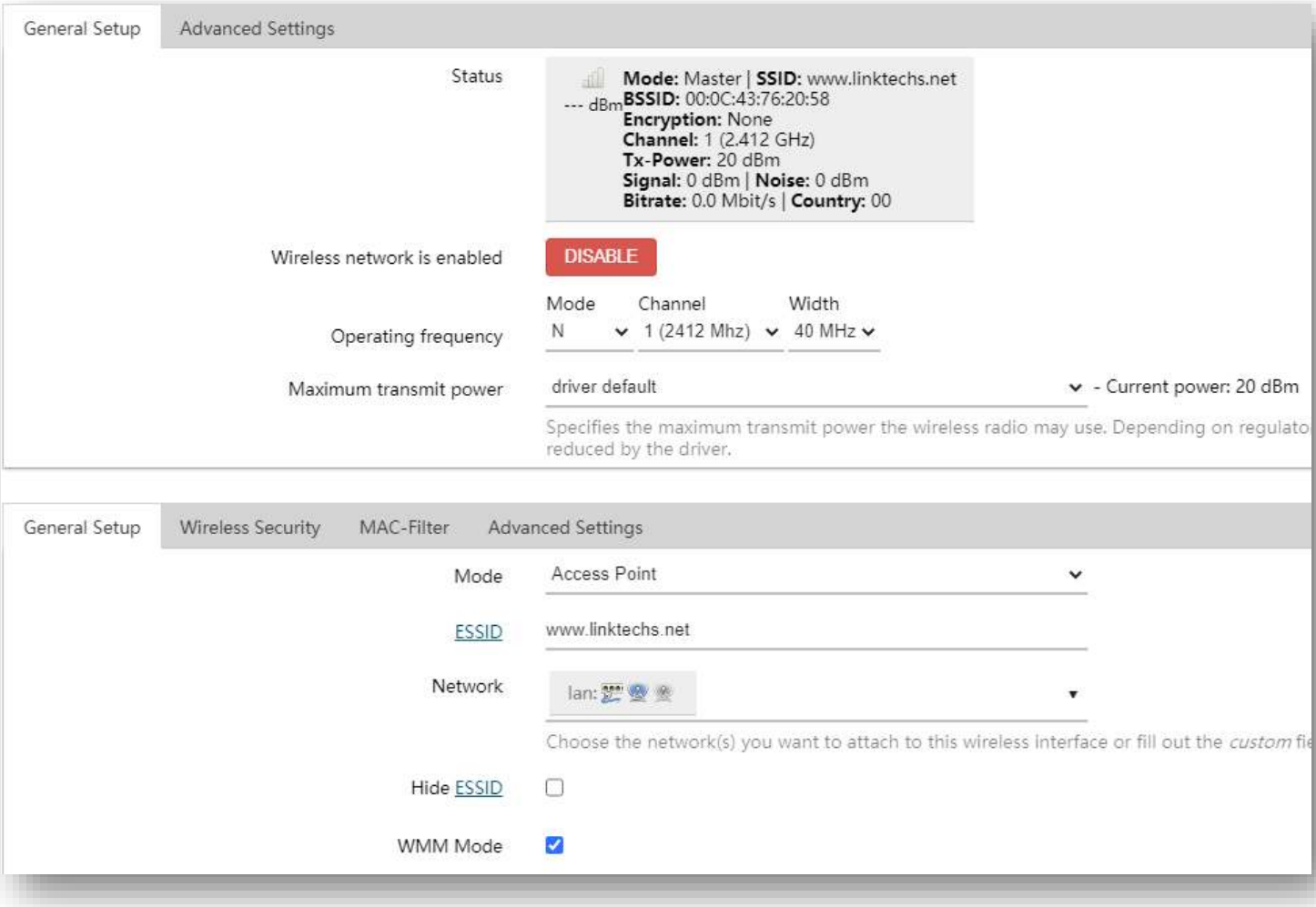


Under Network → Wireless, you can configure the wireless interfaces:



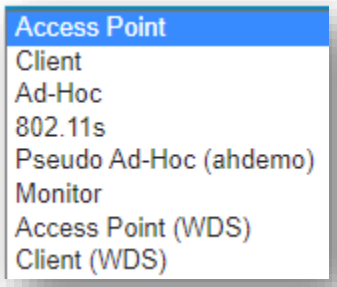
Once here you can click Edit to edit the WLAN you wish.

Here you have options to disable the radio interface, as well as set your network mode, channel, and width. You also have the option to select auto channel if you prefer.



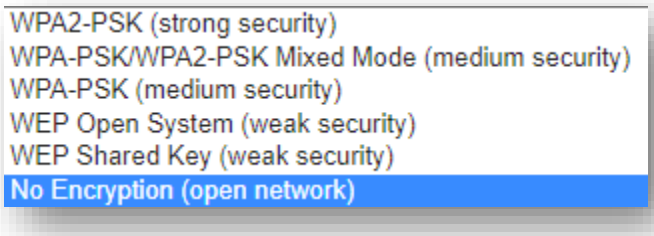
In advanced settings at the top, you can select your country you are operating in, therefor it will keep the power levels to the max your country supports. NOTE, if you have legacy 802.11b devices, you will need to check the box to allow 802.11b devices, else you can uncheck this. Please test to verify you are not using a legacy device.

Under General Setup, you have options for what mode you wish to operate in, Access Point being the most common. Other options include client, ad-hoc, Monitor, and various WDS modes.



Changing SSID

You will change your SSID by going to Network → Wireless → select edit on the radio you wish to modify, then it will be under General Setup. Here you have ESSID, this is your SSID that will appear, if you wish to hide it or change the network that this interface operates off of you can do it here.



Securing Wireless

Under Network → Wireless → Wireless Security, you have options to select what security mode you wish to operate in. WPA2-PSK is the recommended. You will enter your network key under KEY

Isolating Clients

If you wish, you can click advanced settings under your wireless interface and select the check box to isolate clients.

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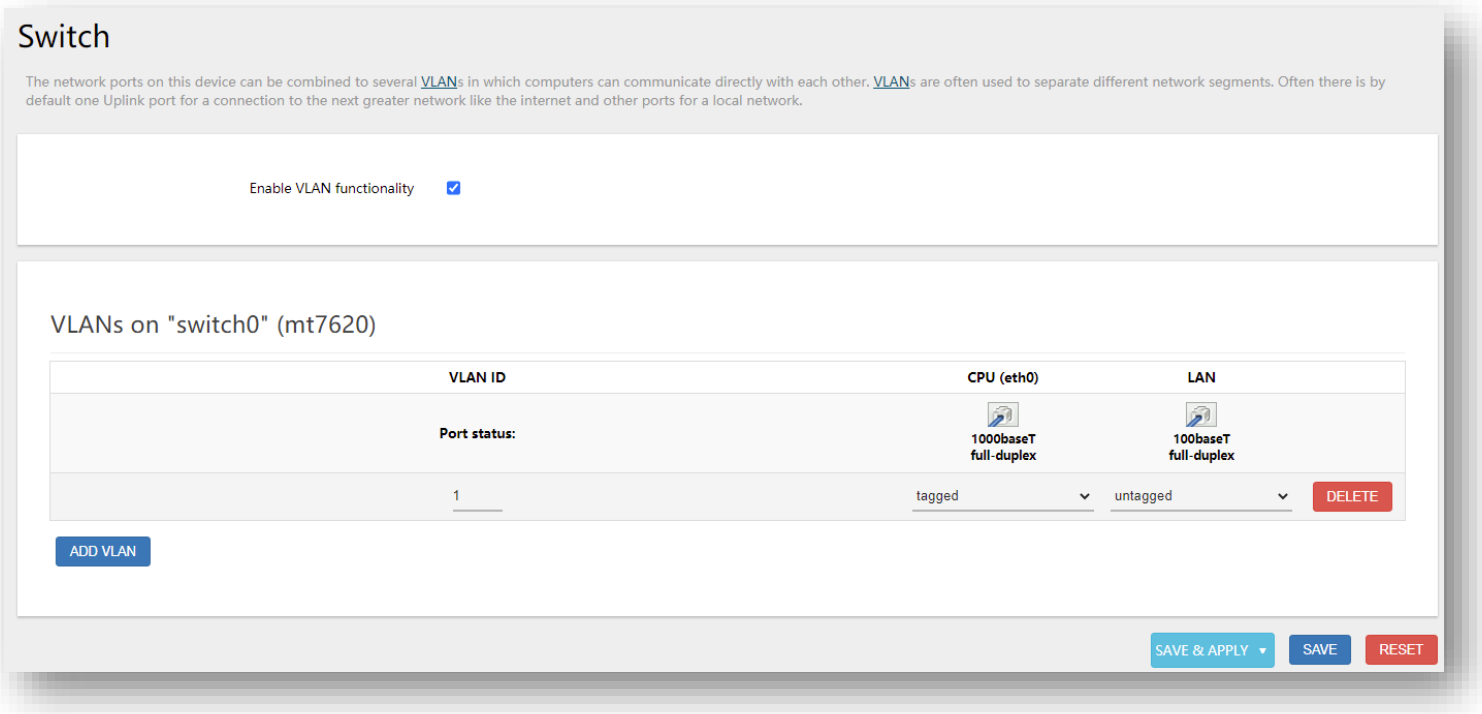
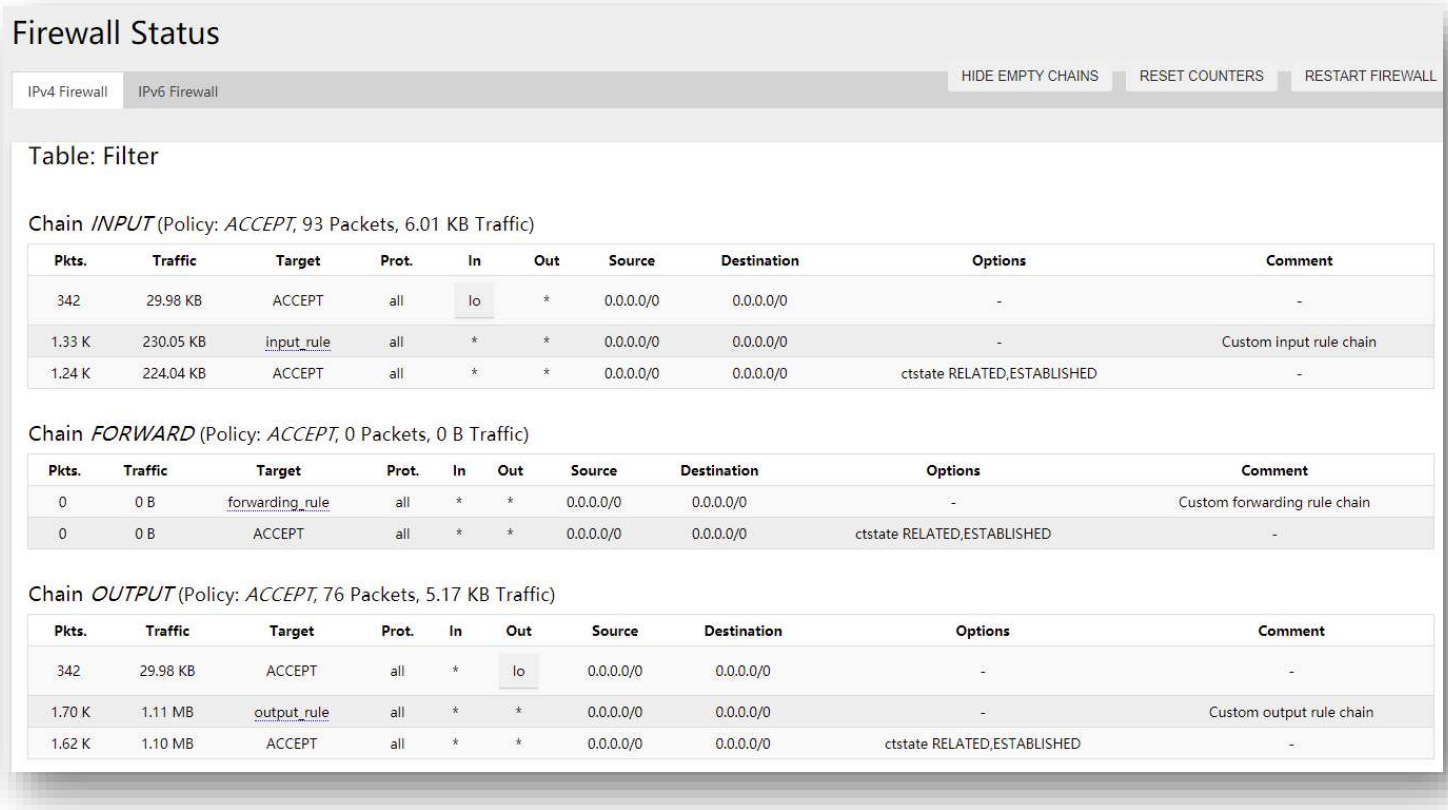
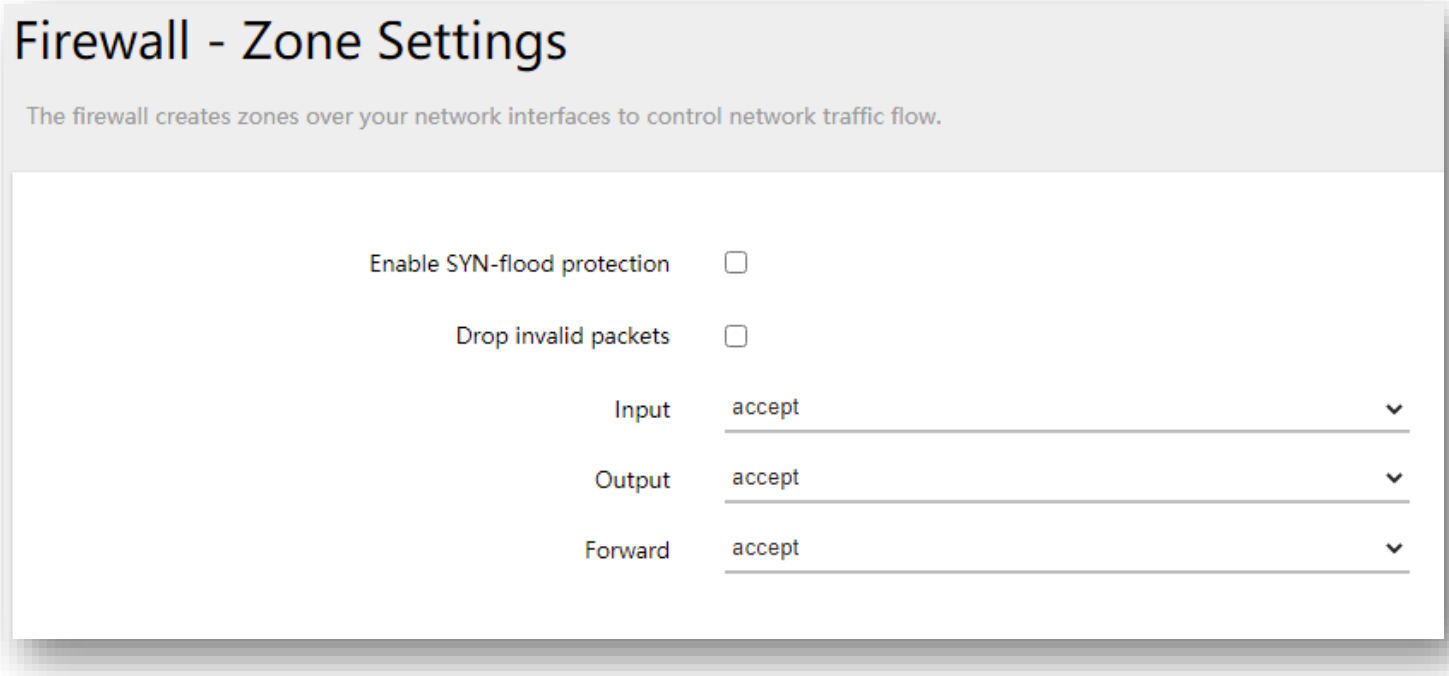
VLANs

Under the Network → Switch, you have the ability to add VLANs to your configuration. What VLAN ID and what tag or untagged port it should come from.



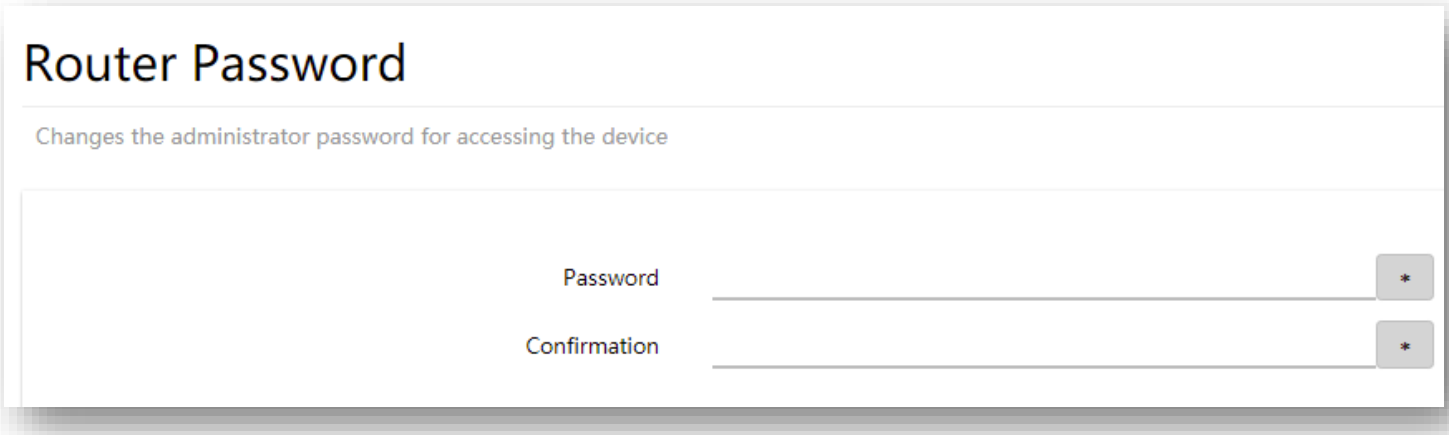
Firewall


Firewall Status
IPv4 Firewall
IPv6 Firewall
HIDE EMPTY CHAINS
RESET COUNTERS
RESTART FIREWALL
Table: Filter
Chain INPUT (Policy: ACCEPT, 93 Packets, 6.01 KB Traffic)
Pkts. Traffic Target Prot. In Out Source Destination Options Comment
342 29.98 KB ACCEPT all lo * 0.0.0.0/0 0.0.0.0/0 - -
1.33 K 230.05 KB input_rule all * * 0.0.0.0/0 0.0.0.0/0 - Custom input rule chain
1.24 K 224.04 KB ACCEPT all * * 0.0.0.0/0 0.0.0.0/0 ctstate RELATED,ESTABLISHED -
Chain FORWARD (Policy: ACCEPT, 0 Packets, 0 B Traffic)
Pkts. Traffic Target Prot. In Out Source Destination Options Comment
0 0 B forwarding_rule all * * 0.0.0.0/0 0.0.0.0/0 - Custom forwarding rule chain
0 0 B ACCEPT all * * 0.0.0.0/0 0.0.0.0/0 ctstate RELATED,ESTABLISHED -
Chain OUTPUT (Policy: ACCEPT, 76 Packets, 5.17 KB Traffic)
Pkts. Traffic Target Prot. In Out Source Destination Options Comment
342 29.98 KB ACCEPT all * lo 0.0.0.0/0 0.0.0.0/0 - -
1.70 K 1.11 MB output_rule all * * 0.0.0.0/0 0.0.0.0/0 - Custom output rule chain
1.62 K 1.10 MB ACCEPT all * * 0.0.0.0/0 0.0.0.0/0 ctstate RELATED,ESTABLISHED -



Change Password

To Change the PowerLink ATs default password, go to System → Administration. Here you can change the default password.



DHCP and DNS

Iperf3

Iperf3 is always running. You can run the following command:

iperf3 –c 192.168.1.69

On any Linux device, CPE, PC, etc.

This Ethernet Test:

```
root@PowerLinkAT:/# iperf3 -s
-----------------------------------------------------------
Server listening on 5201
-----------------------------------------------------------
Accepted connection from 192.168.1.30, port 50542
[  5] local 192.168.1.69 port 5201 connected to 192.168.1.30 port 50544
[ ID] Interval           Transfer     Bitrate
[  5]   0.00-1.02   sec  11.4 MBytes  93.5 Mbits/sec
[  5]   1.02-2.01   sec  11.1 MBytes  94.2 Mbits/sec
[  5]   2.01-3.01   sec  11.2 MBytes  94.1 Mbits/sec
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate
[  5]   0.00-9.02   sec   106 MBytes  99.1 Mbits/sec                  receiver

geva@PC: iperf3 -c 192.168.1.69
Connecting to host 192.168.1.69, port 5201
[  5] local 172.20.207.228 port 37390 connected to 192.168.1.69 port 5201
[ ID] Interval           Transfer     Bitrate         Retr  Cwnd
[  5]   0.00-1.00   sec  12.1 MBytes   101 Mbits/sec    0    225 KBytes
[  5]   1.00-2.00   sec  11.4 MBytes  95.6 Mbits/sec    0    236 KBytes
[  5]   2.00-3.00   sec  11.5 MBytes  96.1 Mbits/sec    0    236 KBytes
[  5]   3.00-4.00   sec  10.9 MBytes  91.7 Mbits/sec    0    236 KBytes
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bitrate         Retr
[  5]   0.00-9.48   sec   107 MBytes  95.1 Mbits/sec    0             sender
[  5]   0.00-9.48   sec  0.00 Bytes  0.00 bits/sec                  receiver
```

Samba3 and USB flash key

USB flash memory FAT32

mounted in /mnt/usbkey

Android and Linux shared as:

192.168.1.69/usbkey

Samba3 does not work with windows 10, but you can enable it. (Search in google)

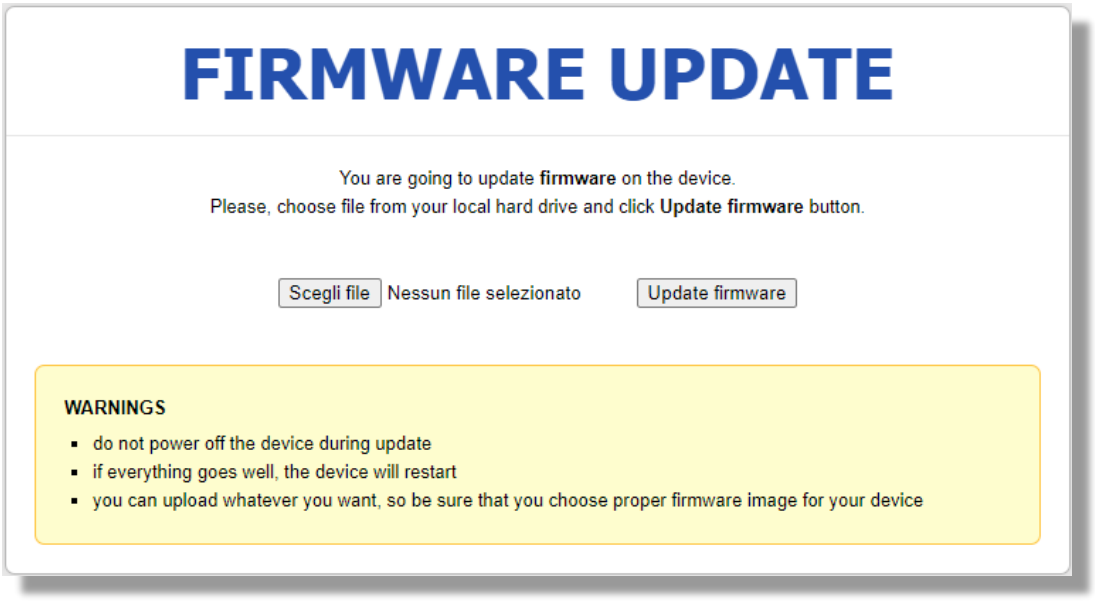
Repository:

If you set working gateway, repository work, and you can add the modules you need, for example to enable SAMA, GSM dongle, or other drives, the flash free is about 1Mb.

Upgrading Firmware

3 available solutions

1. USB → Under 4gig capacity, formatted FAT32, firmware "BatteryPoE_at2.bin"
    a. Plug in USB, , PowerOff, press Reset.
    b. Power-On PowerLink AT2
    c. During Startup the Firmware will be updated.
2. Use the Reset Button
    a. Press Reset Button
    b. Power-On PowerLink AT2
    c. When the Power LED blinks, you should be able to acess the Firmware Page of uBoot via web at address http://192.168.1.69/index.html
    d. Release reset once you access this page



3. On HTML page of the router
    a. system, backup, update.

Appendix:

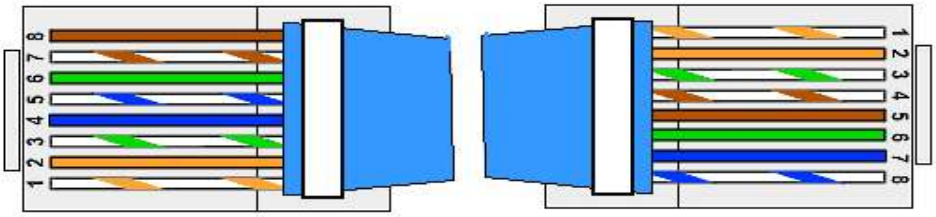
Cat5 Pinout

1 Data Pair 1
2 Data Pair 1
3 Data Pair 2
4 + VDC
5 + VDC
6 Data Pair 2
7 - VDC
8 - VDC

Cambium Cable

This cable Is for those cambium CPEs that require reversed power pins. It is available on www.linktechs.net

Below is a chart of the Cambium CPE Reversed Power Pin Out



V cable, for LAN speed test

This cable allows you to Power your CPE and plug a LAN cable into your device for Ethernet Speed testing, eliminating the need for the Wireless Access Point. This cable is available at www.linktechs.net

AC 5 Ghz adapter