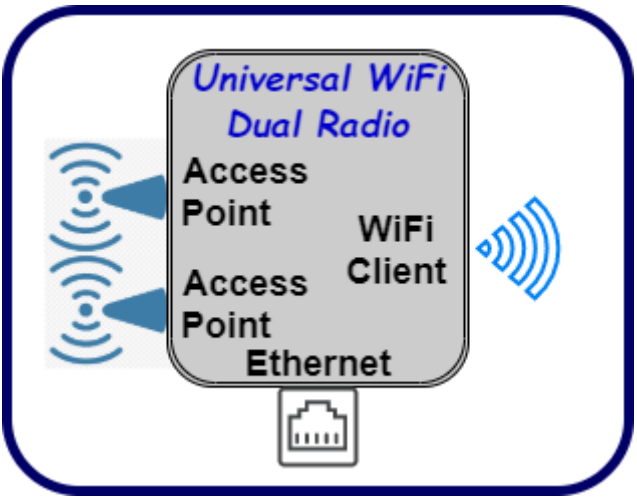
UBWH Australia

Quick Start Guide

Universal WiFi Dual Radio



Quick Start Guide
V210310

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1. Introduction

Universal WiFi–Dual Radio devices:

- are built on Ubiquiti[1] hardware;
- have a customised version of OpenWrt[2] software installed; and
- have 4 network interfaces.

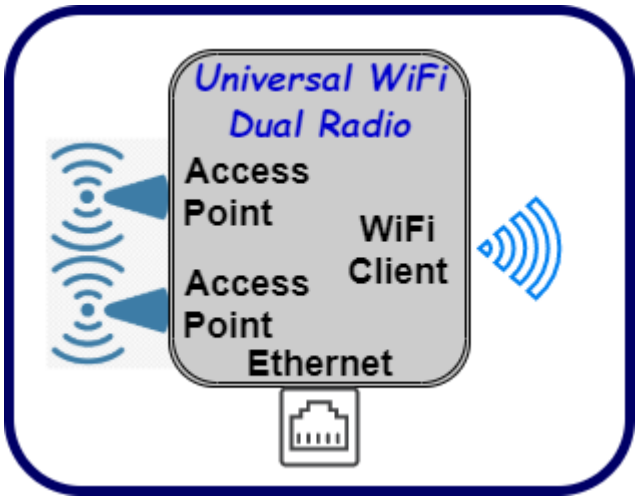
1.1 Network Interfaces

1. **WiFi Client Interface**: Can connect to an existing WiFi Access Point (AP).

Note: There are 2 radios, but only1 (one) Client can be active.

2. **WiFi Access Point (AP) Interfaces**: Allows connections from standard WiFi clients, such as laptops, mobile phones, tablets, …
   - 1 x 2.4 GHz AP
   - 1 x 5 GHz AP

3. **Ethernet Interface**: Allows cabled connections to (e.g.) desktop PCs.



[1] https://ui.com
[2] https://openwrt.org/

2. Specifications

2.1 Hardware

Download the respective Datasheet or Quick Start guide for the underlying hardware from https://www.ui.com/download/

For the **UNI-UAP-AC-LR** download the **UAP-AC-LR** documentation**.**

2.2 Software

For complete OpenWrt documentation, see
https://openwrt.org/docs/start

Parameter	Product UNI-UAP-AC-LR
WiFi Band(s)	2.4 GHz and 5 GHz
WiFi Standards	b/g/n/ac
WiFi Rates	450 Mbps (2.4 GHz) 867 Mbps (5 GHz)
Networking	IP V4 / Unicast
Default management IP	192.168.199.1
Default Username	root
Default Password	(not set/blank)
WiFi Range No Obstructions Typical through internal walls Recommended if streaming video	 100 m 30 m 15 m

3. Software Download

Universal WiFi firmware files can be downloaded from:

https://github.com/UBWH/Universal-WiFi/

4. System Requirements

To configure the ***Universal WiFi–Dual Radio*** device:

- A computer (PC, Mac, ..) with an Ethernet LAN interface, and a Web Browser: e.g. Mozilla Firefox, Google Chrome, Safari, Microsoft Edge, or Microsoft Internet Explorer.

5. Management Access

Access to the configuration web pages depends on whether the ***Universal WiFi–Dual Radio*** device is connected to the local WiFi network, or not.

Universal WiFi device wirelessly connected to local WiFi network	**No**	**Yes**
LED (Default setting) UNI-UAP-AC-LR	White	Blue
Can access configuration pages via Management IP address?	Ethernet: Yes WiFi: No	Ethernet: Yes [3] WiFi: Yes
Can access configuration pages via the IP address assigned by DHCP to the ***Universal WiFi–Dual Radio*** device?	No	Ethernet: Yes WiFi: Yes

[3] May require a PC reboot if ***Universal WiFi–Dual Radio*** device config recently modified.

6. Getting Started

The steps are:

1. Power up.
2. Reset to Factory Default
3. Login to the ***Universal WiFi–Dual Radio*** device.
4. Check the Management IP does not conflict with the local LAN
5. Configure the WiFi interfaces (Access Point and/or Client)
6. Revert Ethernet Interface

6.1 Power up

1. Connect AC power to supplied PoE adapter with supplied AC cable.
2. Connect an Ethernet cable between the PoE socket on the PoE adapter, and the Ethernet port on the ***Universal WiFi–Dual Radio*** device.
3. Connect an Ethernet cable between the LAN port on the PoE adapter, and the LAN/Ethernet port on your computer.

6.2 Reset to Factory Default

New units are delivered in Factory Default mode.

If you get locked-out of the ***Universal WiFi–Dual Radio*** device, or want to start configuration from a known state:

1. Power up the ***Universal WiFi–Dual Radio*** device.
2. Press and hold the Reset button for 10 seconds. The Reset button is normally next to the Ethernet port on the device.
3. Release the Reset button.
4. Wait about 2 minutes for the ***Universal WiFi–Dual Radio*** device to reboot.

6.3 Login to the Device

1. Set your computer's Ethernet port to a have a static IP address of 192.168.199.10[4]

2. Use your browser (e.g. Chrome, Firefox, Safari, …) to go to this URL: http://192.168.199.1

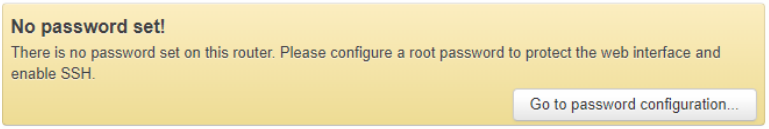
3. Login as follows:

   Username: `root`
   Password: *leave blank*

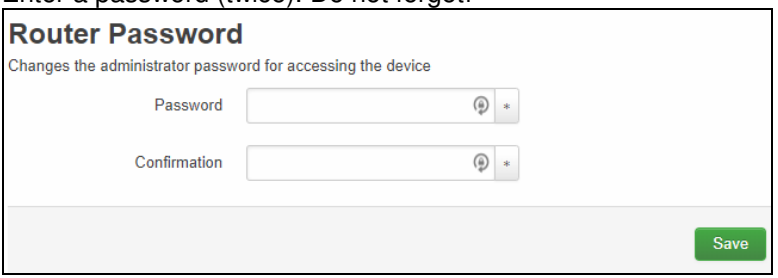
   Click

4. Click **Go to password configuration**

5. Enter a password (twice). Do not forget!

6. Click

[4] Windows: https://www.google.com/search?q=set+a+static+ip+windows
MacOS: https://www.google.com/search?q=set+a+static+ip+macos

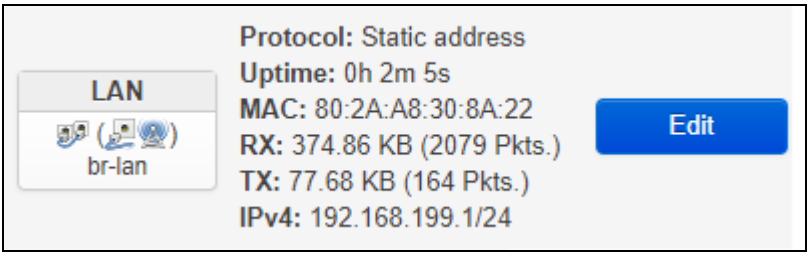
6.4 Check the Management IP does not conflict with Local LAN

It is important that the management IP address assigned to the ***Universal WiFi–Dual Radio*** device does not clash with the IP addresses used on the local LAN.

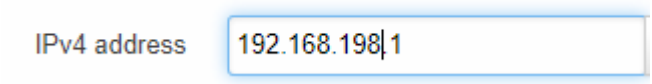
If your local LAN does ***NOT*** use addresses in the range 192.168.199.1 ~ 192.168.199.254, then skip to section 6.5.

It is not important what IP address is assigned for management of the ***Universal WiFi–Dual Radio*** device so long as it does not clash with the addresses on the local LAN. If your local LAN uses the subnet 192.168.199.0/24, then change the management IP address to 192.168.198.1 as below:

1. Choose menu option **Network → Interfaces**
2. Click the LAN edit button

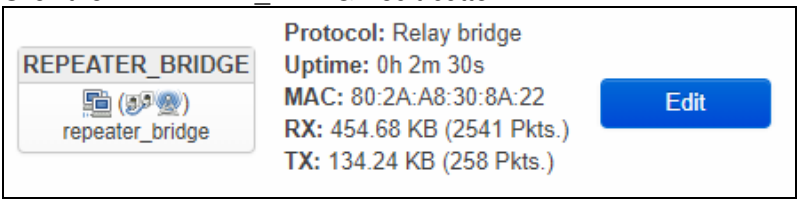


3. Change the IPv4 address to 192.168.198.1

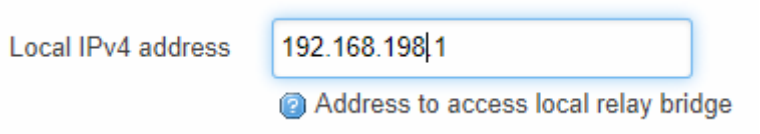


4. Click

5. Click the REPEATER_BRIDGE edit button



6. Change the Local IPv4 address to 192.168.198.1



7. Click

8. Change the static IP address of the Ethernet interface on your PC to 192.168.198.10

9. Use your browser to login to: http://192.168.198.1

6.5 Usage Scenarios

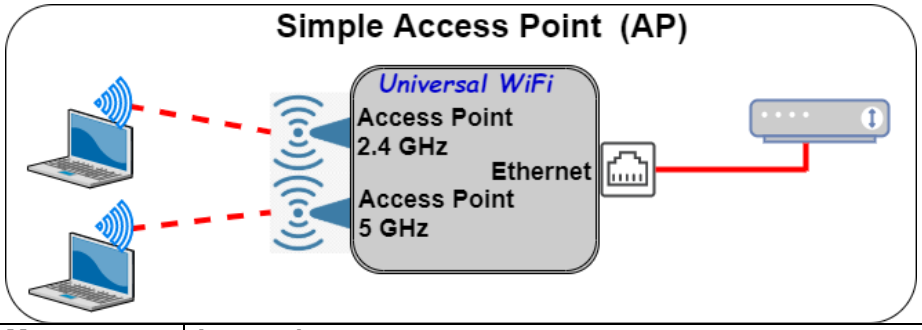
This section gives instructions on setup of the ***Universal WiFi–Dual Radio*** device for common usage scenarios.

The instructions that follow assume you are starting with a ***Universal WiFi–Dual Radio*** device in Factory Default state (see section 6.2).

In each case you must first login to the device; see

- Default Login/Password: section 2.2
- Management Access: section 5.
- Login to the Device: section 6.3

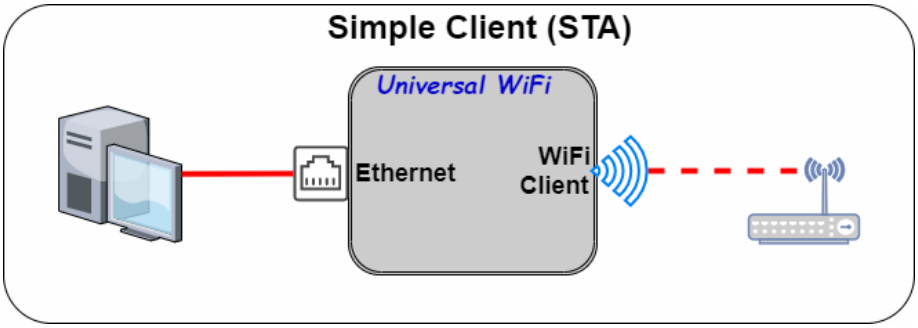
6.5.1. Simple Access Point



Management Page	Instructions
Network / Wireless	**Disable** these wireless interfaces: **SSID:** ChangeMe2 | **Mode:** Client **SSID:** ChangeMe5 | **Mode:** Client **Edit** this wireless interface: **SSID:** UBWH-AP2 | **Mode:** Master Change Interface Configuration / General Setup **ESSID** to the SSID (WiFi network name) you want. Change Interface Configuration / Wireless Security **Key** to the WiFi password you want. HINT: Click the [*] icon to see the password. Click Save **Repeat** the above for wireless interface with **SSID:** UBWH-AP5 | **Mode:** Master Click Save & Apply

Connect a wireless device (e.g. laptop or smart phone) to the ESSID set above, and confirm you can surf the Internet. **Note**: The 5 GHz AP can take up to 3 minutes to appear as it must do a DFS (radar) scan first.

6.5.2. Simple Client



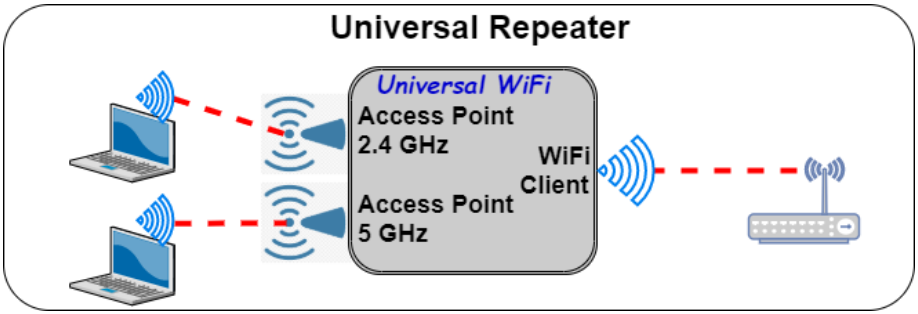
Management Page	Instructions
NOTE	**You can only have ONE WiFi Client active:** **Either the 2.4 or the 5 GHz client.**
Network / Wireless	**Disable** ALL wireless interfaces. **Enable** only ONE of these wireless interfaces: **SSID:** ChangeMe2 | **Mode:** Client, or **SSID:** ChangeMe5 | **Mode:** Client **Edit** the enabled wireless interface: Change Interface Configuration / General Setup **ESSID** to the SSID (WiFi network name) of the local WiFi network to which the ***Universal WiFi*** device should connect. Change Interface Configuration / Wireless Security **Key** to the WiFi password of the local WiFi network. HINT: Click the [*] icon to see the password. Click Save Save & Apply

Connect (using a LAN cable) to the Ethernet port:

- one computer, or
- a LAN switch, and multiple computers.

The computer(s) will connect to the main network.

6.5.3. Universal Repeater



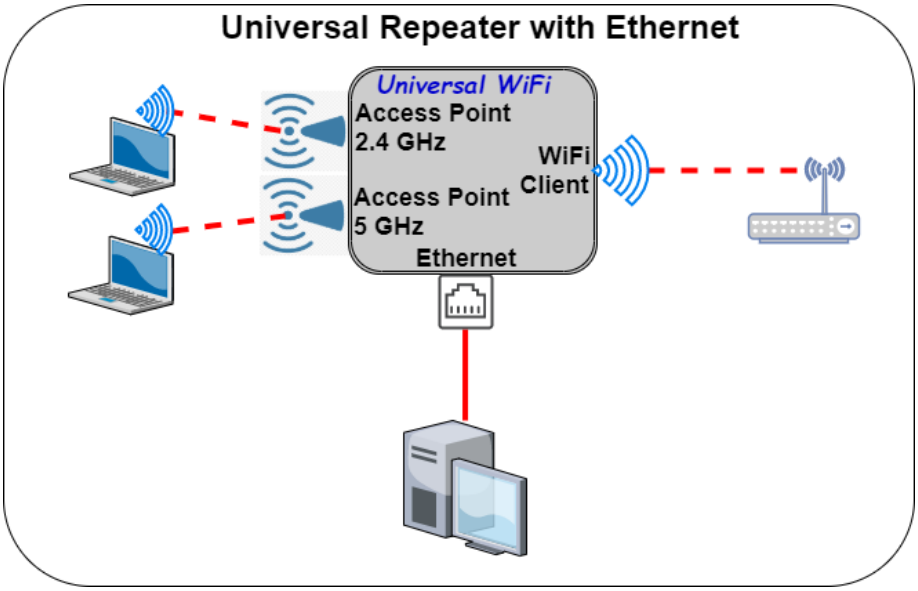
Management Page	Instructions
NOTE	**You can only have ONE WiFi Client active:** **Either the 2.4 or the 5 GHz client.**
Network / Wireless	**Disable** ALL wireless interfaces. **Enable** only ONE of these wireless interfaces: **SSID:** ChangeMe2 | **Mode:** Client, or **SSID:** ChangeMe5 | **Mode:** Client **Edit** the enabled wireless interface: Change Interface Configuration / General Setup **ESSID** to the SSID (WiFi network name) of the local WiFi network to which the ***Universal WiFi–Dual Radio*** *WiFi Client* should connect. Change Interface Configuration / Wireless Security **Key** to the WiFi password of the local WiFi network. HINT: Click the [*] icon to see the password. Click Save Continue on next page.

Network / Wireless	**Enable** both of these wireless interfaces: **SSID:** UBWH-AP2 | **Mode:** Master **SSID:** UBWH-AP5 | **Mode:** Master **Edit** this wireless interface **SSID:** UBWH-AP2 | **Mode:** Master Change Interface Configuration / General Setup **ESSID** to the SSID (WiFi network name) you want. This is the WiFi network name advertised by the ***Universal WiFi–Dual Radio*** Access Point (AP). HINT: This can be the same as (recommended), or different to, the local WiFi network name. Change Interface Configuration / Wireless Security **Key** to the WiFi password of the ***Universal WiFi–Dual Radio*** Access Point (AP). HINT: Click the [*] icon to see the password. HINT: If the ***Universal WiFi–Dual Radio*** Access Point (AP) ESSID is set to be the same as the local WiFi network name, then set the Key to be the same as the local WiFi password. Click Save **Repeat** for wireless interface: **SSID:** UBWH-AP5 | **Mode:** Master Click Save & Apply

NOTE:
A WiFi Access Point(s) will NOT start up if the WiFi Client on the same radio (2.4 or 5 GHz) is not connected to the local WiFi network.

If you can not find the Universal Repeater AP when scanning with your mobile device, recheck the WiFi Client settings.

6.5.4. Universal Repeater with Ethernet



Follow the instructions in section 6.5.3, Universal Repeater.

Connect (using a LAN cable) to the Ethernet port:

- one computer, or
- a LAN switch, and multiple computers.

The computer(s) will connect to the main network.

6.6 Revert Ethernet Interface

In step 6.3 you gave the Ethernet interface on your PC a static IP address. Set it back to the previous state (usually Automatic/DHCP).

Also, unplug the Ethernet cable from the PC.

7. Optional Steps

In this section, you will learn how to:

1. Change the LED settings
2. Save your current configuration

Please review the table in section 5 to make sure you can access the configuration pages.

To perform the steps below, you will need a PC or mobile phone connected to the local LAN, or Local WiFi, or wirelessly connected to the ***Universal WiFi*** device.

You should be able to login to the ***Universal WiFi*** device using one of these URLs:

- http://192.168.199.1 (or whatever management IP address you assigned in section 6.4.
- http://<ip-address-assigned-by-local-DHCP-server>. You will have to query your local DHCP server to find this.

7.1 Change the LED settings

This section explains how to edit the default LED behaviour.

7.1.1. UNI-UAP-AC-LR

The default behaviour for the LED is: Blue when the **UNI-UAP-AC-LR** is wirelessly connected to the local 2.4 GHz WiFi, otherwise White. As an exercise, you will change the behaviour to off.

1. Navigate to **System → LED Configuration**

Use the Edit buttons to change the default configuration to the new configuration shown.

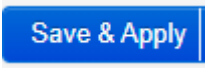
Name	LED Name	Default state	Trigger
WiFi Disconnect	ubnt:white:dome	On	default-on
WiFi Connect	ubnt:blue:dome	Off	phy1assoc

Figure 1 - Default LED Configuration

Name	LED Name	Default state	Trigger
WiFi Disconnect	ubnt:white:dome	Off	default-on
WiFi Connect	ubnt:blue:dome	Off	phy1assoc

Figure 2 New LED Configuration – LEDs OFF

2. Click

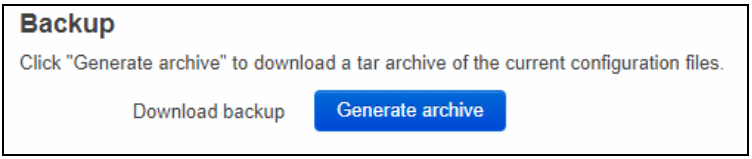


Note: Sometimes after changing LED settings, it is necessary to reboot the ***Universal WiFi*** device to see the changes. Use **System → Reboot**.

7.2 Save Current Configuration

1. Navigate to **System → Backup** / **Flash Firmware**

2. Click Generate archive



3. Save the file on your local computer.