

Wearable Configuration

The Wearable (and OEM) model variants have additional configuration options compared to the other form factors. This is mainly due to the extra functionality and interfaces such as a built-in Wi-Fi radio.

WiFi Radio (Wearable/OEM only)

Fig. 1 shows the Wireless Configuration page for the Wearable/OEM models. Radio 0 (above) refers to the WiFi radio and Radio 1 (below) refers to the Mesh Rider radio.

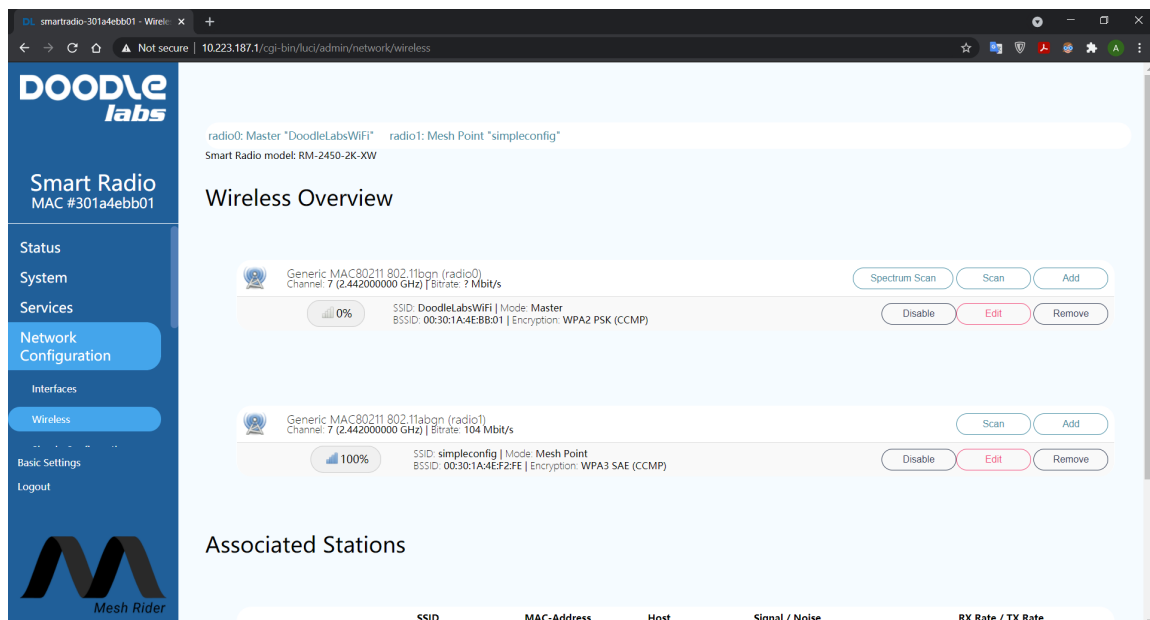


Fig. 1 Wireless Configuration Page

Info

For C-Band radios, the Mesh Rider radio is Radio 1, and the Wi-Fi radio is Radio 0.

AP Mode

The WiFi radio is set up as an AP by default and is bridged to the Mesh. You can adjust the default configuration directly from the [Simple Configuration](#) menu, or by navigating to `network configuration -> wireless` in the `Advanced Settings` menu. By default, the built-in Wi-Fi radio starts up an Access Point with SSID `DoodleLabsWiFi-<last 6 hex digits of MAC>` and password `DoodleSmartRadio`.

Client Mode

The WiFi radio can also be configured to connect to a hotspot and in this case, it will do the following

1. Start a DHCP server on the Mesh Rider network.
2. Enable DHCP client mode on the WiFi radio and join the hotspot's network.
3. Perform network address translation (NAT) between the Mesh Rider network and the hotspot's network.

Note that because NAT is used between the hotspot's network and the Mesh Rider network, the IP address range in the Mesh Rider network is not accessible (by default) from the hotspot's network. This means that while Mesh Rider devices will be able to access nodes on the hotspot network such as the internet, devices in the hotspot network will not be able to talk to applications in the Mesh Rider network unless port forwarding is enabled for those specific applications. This is similar to how an office WiFi network works. In order to configure the WiFi radio as a client device, click the **Scan** button next to Radio 0. The radio will scan for available networks and create a list like the one shown in Fig. 8. Click the button Hotspot assistant next to the network you wish to join and follow the on-screen instructions.

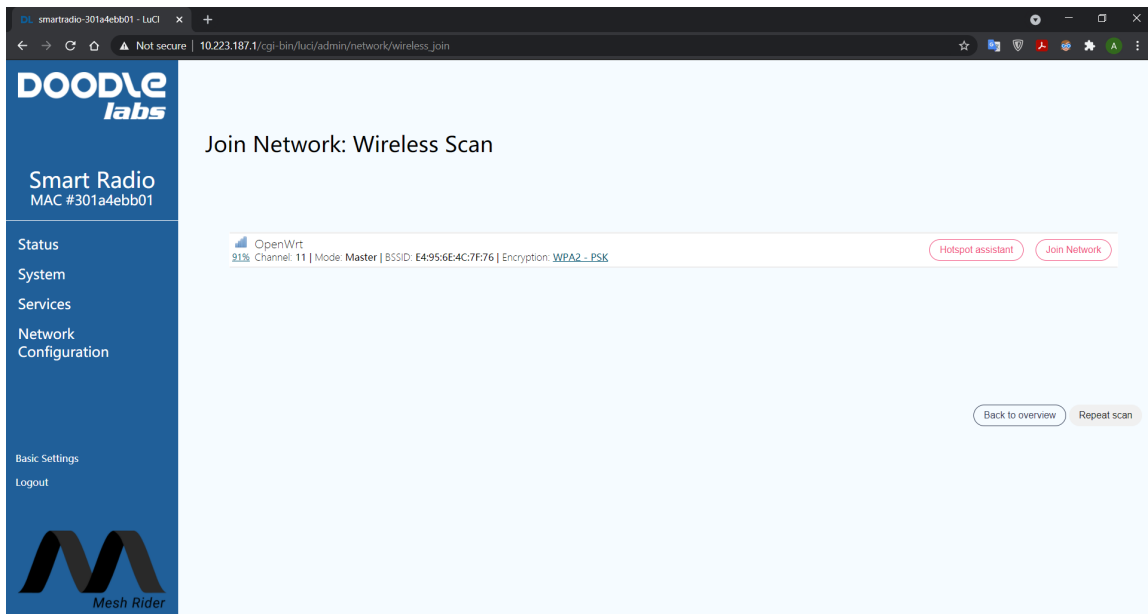


Fig. 2 Scanning for available WiFi networks

Additional Wearable Configuration and Information

Turbo Mode

By default, the Wearable Mesh Rider radio is in Turbo mode. When Turbo mode is disabled, the radio attempts to save power by applying a throughput cap (6 Mbps default),

and switching to a SISO antenna configuration. Turbo mode can be toggled using the [Turbo mode button](#), or through the GUI or CLI.

Automatic Standby

The Wearable Radio can also go into automatic standby, but this is disabled by default. When enabled, the radio will go into standby mode to save power when the network is idle. In addition, the Wi-Fi radio can automatically be disabled when the Mesh Rider radio is not associated. Standby mode can also be reached through the [power button](#).

GUI

The Wearable Mesh Rider Radio has an additional configuration page at [System -> Wearable Mesh Rider Radio](#). This menu is only visible when the [Advanced Settings](#) are enabled. The Wearable Mesh Rider Radio includes GPS, battery voltage and temperature sensors which are reported on this configuration page. The user may choose to enable standby mode, or the temperature control fan, or switch to external GPS and Mesh Rider antennas.

The screenshot displays the 'Wearable Mesh Rider Radio' configuration page. On the left is a blue sidebar with the 'DOODLE LABS' logo and navigation links: Mesh Rider Radio (MAC #00301a402973), Status, System (selected), Administration, Software, Startup, Basic Settings, and Logout. The main content area is titled 'Wearable Mesh Rider Radio' and includes an 'AUTO REFRESH ON' button. It is divided into two sections: 'Status' and 'Configuration'. The 'Status' section shows 'Battery voltage (Volts) 9.11' and 'Temperature (Celsius) 51'. The 'Configuration' section contains several settings: 'Turbo Mode' is set to 'Enabled' with a sub-note: 'Enable the Turbo mode to have higher throughput. In this mode, power consumption is higher with both TX antennas enabled'; 'Auto Power Saving' is 'Disabled' with a sub-note: 'Automatically go to power saving mode when network activity is low.'; 'Idle duration (Minutes)' is '2' with a sub-note: 'Idle period before automatically go into power saving mode.'; 'WiFi Down Feature' is 'Disabled' with a sub-note: 'If enabled, WiFi will be turned off when mesh network is not associated.'; and 'Throughput cap' is '6' with a sub-note: 'Throughput cap in Mbps applied when Turbo mode is disabled. Zero means no cap.' At the bottom right are three buttons: 'SAVE & APPLY', 'SAVE', and 'RESET'.

Fig. 3 Wearable Mesh Rider Radio Configuration

CLI

You can [SSH](#) into the radio to get to it's command prompt. The temperature and voltage can be accessed from the file `/tmp/run/pancake.txt`, which is in a json format.

```
root@smartradio:/tmp/run# cat pancake.txt
{ "Temperature": "33", "VIN VOLTAGE": "185" }
```

The voltage is a direct ADC reading, and the corrected value is found dividing the result by 20.2. In the example above, the battery voltage is $185/20.2 = 9.16$ V. The temperature is in degrees celcius.

You can make Wearable-specific configuration changes using the wearable UCI file.

```
root@smartradio:/usr/lib/lua/luci# uci show wearable
wearable.main=wearable
wearable.main.gps_enable='1'
wearable.main.gps_antenna='1'
wearable.main.mesh_rider_antennas='1'
wearable.main.auto_temp_ctrl='1'
wearable.main.power_button='1'
wearable.main.auto_standby='0'
wearable.main.wakeup_duration='2'
wearable.main.sleep_duration='10'
wearable.main.wifi_down_enable='0'
wearable.main.turbo_mode='1'
wearable.main.throughput_cap='6'
```

Note that `auto_temp_ctrl` only enables the temperature sensor at this time.
`mesh_rider_antennas` should not be modified.