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PERSISTENT SYSTEMS
MPU5
Personal
Transport
System

PERSISTENT SYSTEMS MPU5 Personal Transport System User Manual

Contents

PERSISTENT SYSTEMS

PERSISTENT SYSTEMS MPU5 Personal Transport System

Product Information

Specifications:

- **Model:** Personal Transport 5 (PT5)
- **Firmware Compatibility:** MPU5 Firmware version 19.7.X or higher
- **Supported Networks:** 5G Sub-6GHz and 4G Networks
- **SIM Card Compatibility:** ATT NANO Sim
- **Connector:** 22-Pin Connector
- **Thumbscrew Tightening:** 4 in-lbs. for IP66-compliant connection

Product Usage Instructions

Inserting SIM Card:

1. Use the SIM card tool to open the tray on the PT5.
2. Insert or replace the NANO SIM card into the tray.
3. Push the SIM tray back into the slot ensuring it is flush with the PT5 chassis.

Connecting the PT5 to the MPU5 (Direct Connection):

1. Align the PT5 with the side connector on the MPU5.
2. Tighten the thumbscrew to 4 in-lbs for a secure connection.
3. The PT5 can be attached to any side connector on the MPU5.

Connecting the PT5 to the MPU5 (Cable Connection):

1. Align the PT5 with the cable connector.
2. Tighten the thumbscrew to 4 in-lbs for a secure connection.
3. Align the cable's 22-Pin connector with the side connector on the MPU5.
4. The cable can connect to any side connector on the MPU5.

Software Configuration:

Note: The MPU5 will retain configuration settings even if the PT5 is disconnected and will use them when reconnected.
Configuration settings can be adjusted without needing to connect the PT5.

FAQ

Do I need to upgrade MPU5 firmware before connecting PT5?
Yes, ensure that your MPU5 is upgraded to firmware version 19.7.X or higher before connecting PT5.

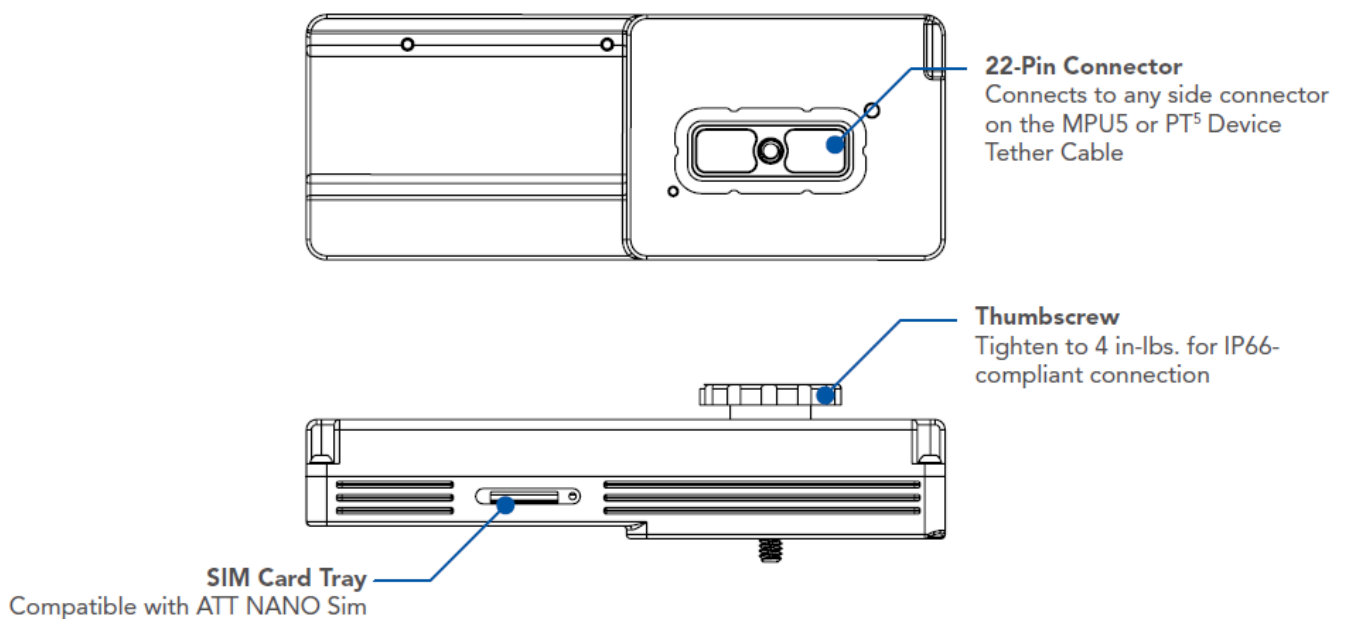**Can the PT5 be connected via cable to any side connector on MPU5?**
Yes, the PT5 cable can connect to any side connector on the MPU5 for convenience.

BEFORE CONNECTING PT5,UPGRADE MPU5 TO FIRMWARE VERSION 19.7.X OR HIGHER

PT5 Device Features

22-Pin Connector
Connects to any side connector on the MPU5 or PT^5 Device Tether Cable

Thumbscrew
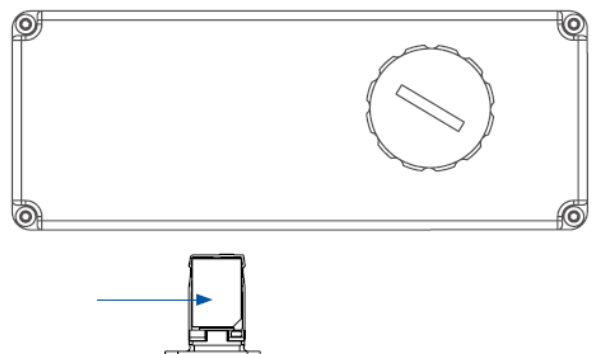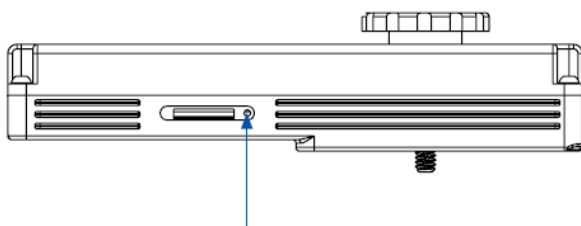Tighten to 4 in-lbs. for IP66-compliant connection

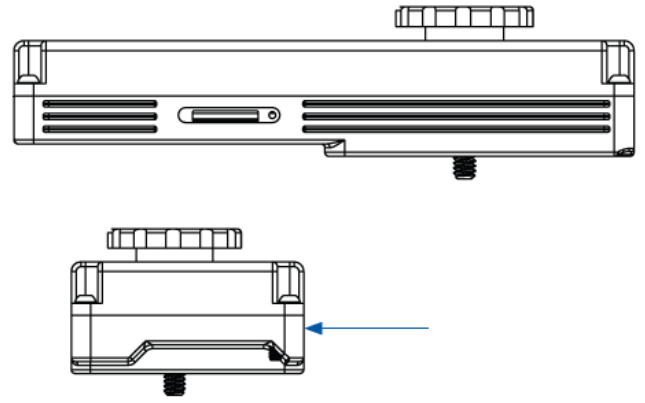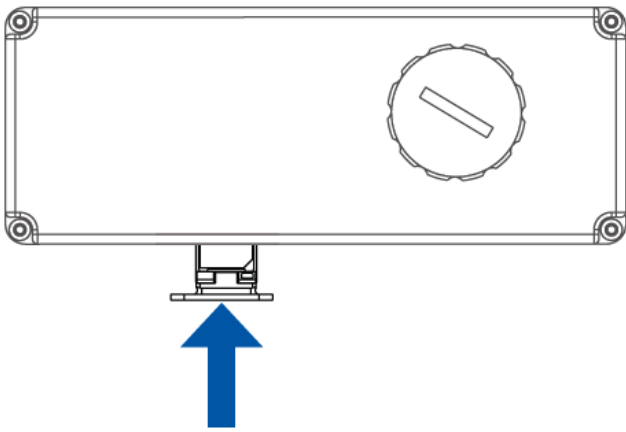**SIM Card Tray**
Compatible with ATT NANO Sim

Inserting SIM Card

The PT5 supports 5G Sub-6GHz and 4G Networks via NANO SIM.

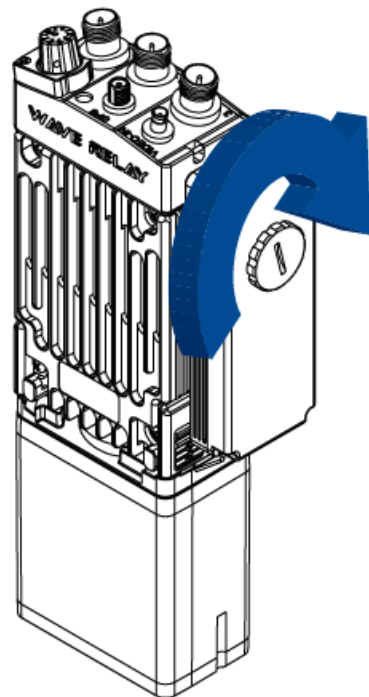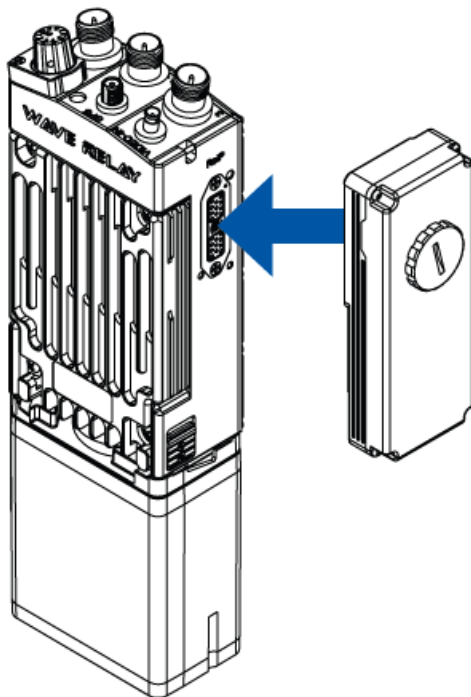1. Use SIM card tool to open tray
2. Insert or replace SIM card

3. Push SIM tray into slot
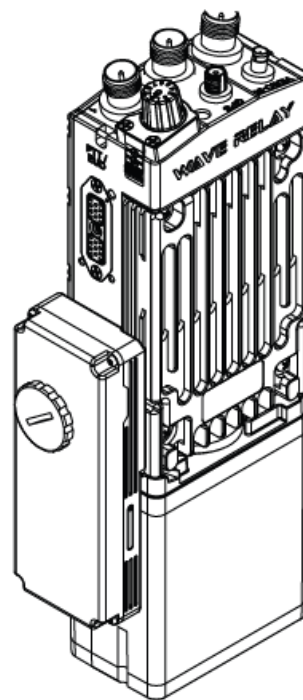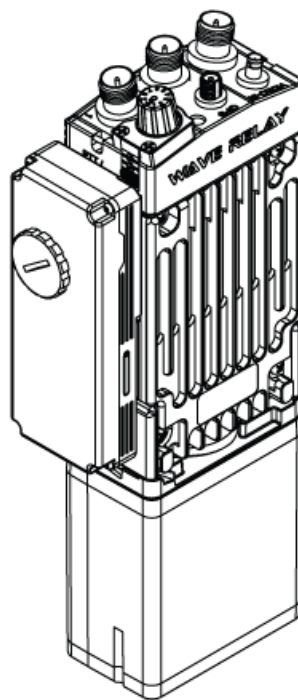4. Ensure SIM tray is flush with PT5 chassis

Connecting the PT5

Connecting the PT5 to the MPU5 (Direct Connection)

1. Align the PT5 with the Side 2 Connector
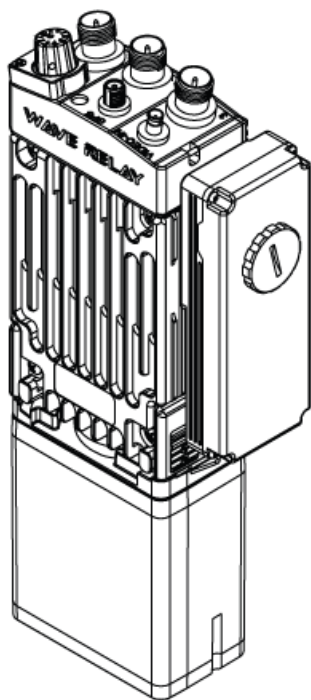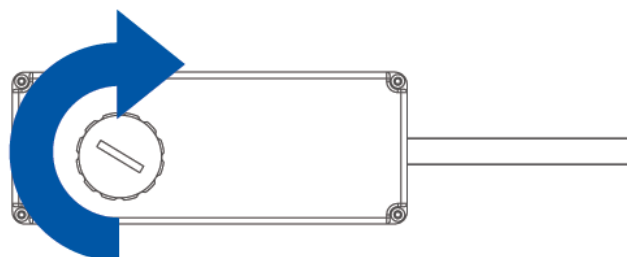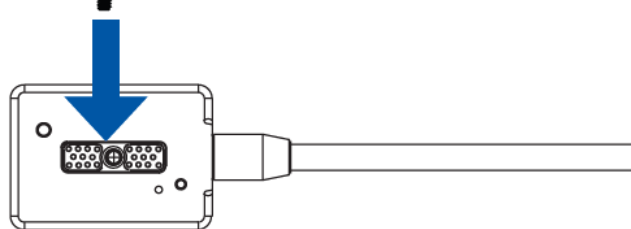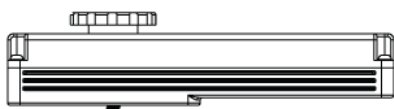2. Tighten the thumbscrew to 4 in-lbs.

3. The PT5 can be attached to any side connector

Connecting the PT5 to the MPU5 (Cable Connection)

1. Align the PT5 with the cable connector
2. Tighten the thumbscrew to 4 in-lbs.

3. Align the cable 22-Pin connector with the 4 MPU5 side connector.

   Note: The PT5 cable can connect to any side connector.
4. Tighten the thumbscrew to 4 in-lbs.
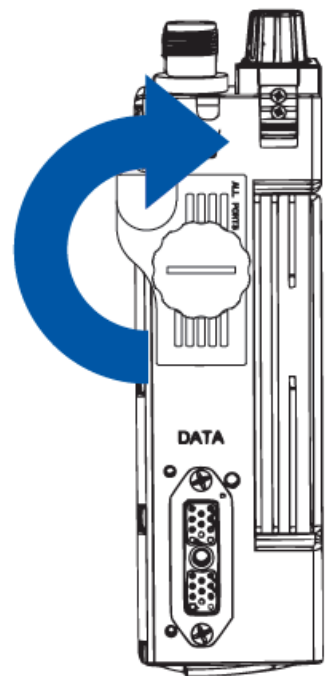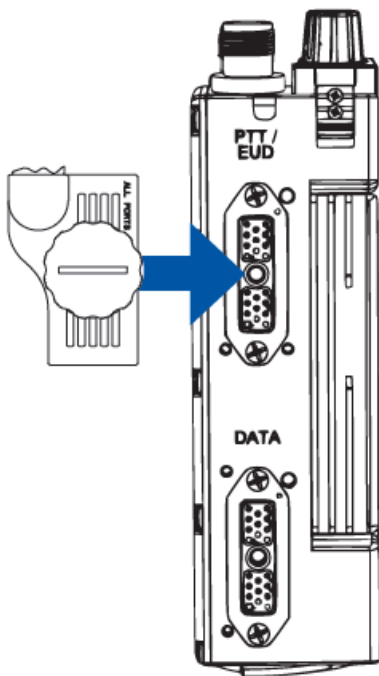
Software Configuration

Note: The MPU5 will remember these settings if you remove the PT5 and will use the same settings when the PT5 is reconnected.
The PT5 will use these settings no matter which side connector it is attached to The PT5 DOES NOT have to be connected to configure these settings.

PT5 Status page will display a red warning if a PT5 is not attached.
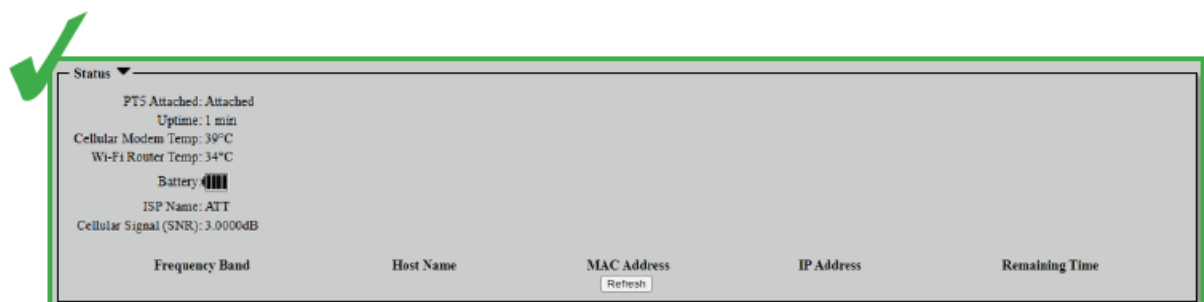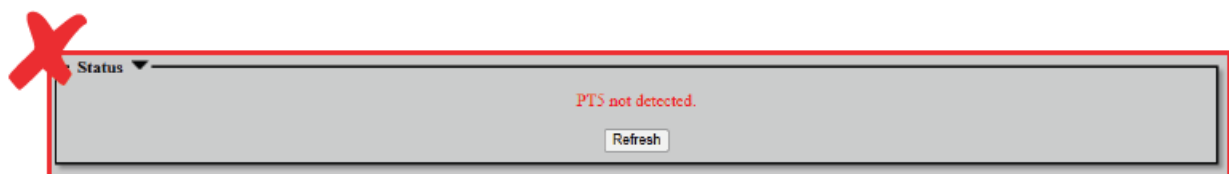
DHCP Configuration

WARNING!: DHCP is required for Wi-Fi Mode. DHCP is not required for Cellular Mode.

1. Click Node Configuration > PT5

Node Configuration ➡️ 📶 PT5   Personal Transport 5 Configuration.

2. If DHCP is not enabled on the node, it must be enabled. DHCP Server status will display in red if DHCP Server is disabled.

3. Set DHCP Server to Enabled.

4. Ensure Default Gateway matches the local node's Gateway.

   See 03EN221 DHCP Quick Start Guide for more information on configuring DHCP Server.

5. Click Save & Reconfigure Unit

Note: The PT5 does NOT serve IP addresses – the MPU5 is the DHCP server and will serve IP addresses.

Note: It takes 2 minutes for the PT5 to boot & SSIDs to be broadcast.

Cellular Mode Configuration

Note: a SIM card MUST be installed to use cellular mode.
Cellular can be used only for Cloud Relay (no dirty Internet) and is controlled on the Cloud Relay Configuration.

1. Click Cloud Relay. This will open the Cloud Relay configuration.
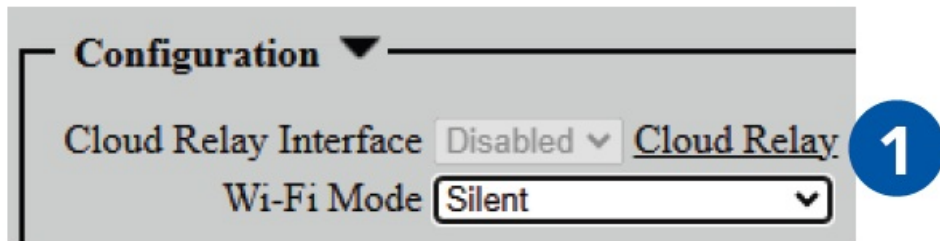
2. Set Cloud Relay Interface to PT5 (Cellular) Device. For additional information on configuring Cloud Relay, see 03EN215 Cloud Relay Manual.

3. Click Save & Reconfigure.
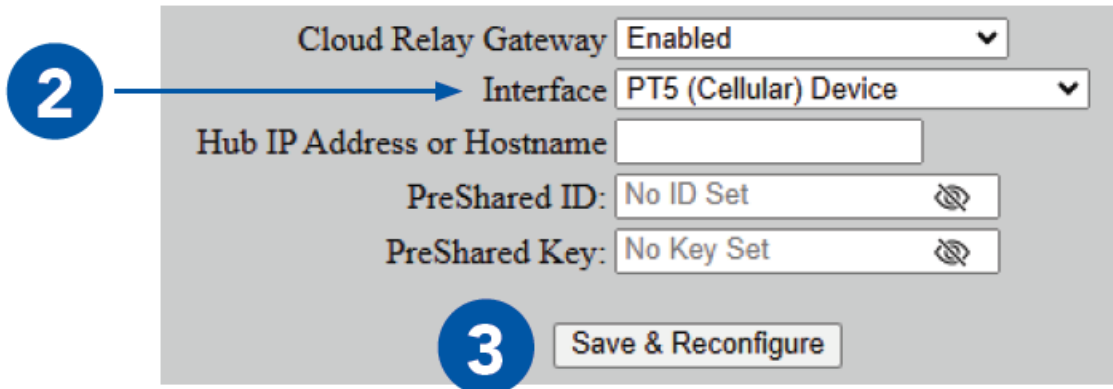
Cellular Mode Status

1. Status is displayed at the top of the PT5 Configuration
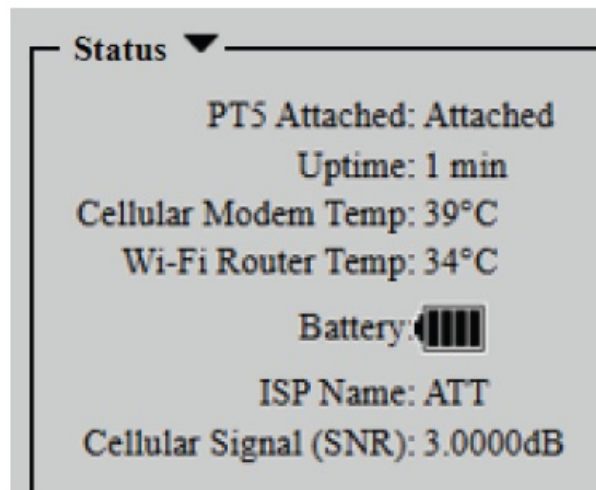
This box displays the status for the PT5 itself as well as cellular connectivity status.

1. **Uptime:** PT5 uptime
2. **Cellular Modem Temp:** Temperature of the PT5 Cellular Modem
3. **Wi-Fi Router Temp:** Temperature of the PT5 Wi-Fi Router
4. **Battery:** PT5 internal battery level
5. **ISP Name:** Name of cellular network currently being accessed
6. **Cellular Signal (SNR):** Signal strength of cellular network
7. **Refresh:** Reload status box

2. Status is displayed in the WMI Header:

Cellular Disabled	Cellular Enabled, 5G Connected	Cellular Enabled, LTE Connected	Cellular Enabled, No Connection
93% Uptime: 1m	5G 93% Uptime: 1m	LTE 93% Uptime: 1m	88% Uptime: 51m
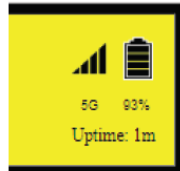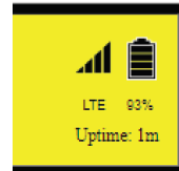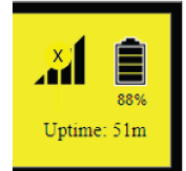
Wi-Fi Configuration

Note: The PT5 can operate in two different bands that can be configured independently.

Note: It takes 2 minutes for the PT5 to boot & SSIDs to be broadcast.

1. Set Wi-Fi Mode to:
   - 2.4 + 5 GHz: Connect devices to the MPU5 via Wi-Fi in the 2.4 GHz and 5 GHz bands.
   - 2.4 GHz: Connect devices to the MPU5 via Wi-Fi in the 2.4 GHz band only.
   - 5 GHz: Connect devices to the MPU5 via Wi-Fi in the 5 GHz band only.
   - Silent: PT5 is powered; Wi-Fi capabilities are disabled.

Cloud Relay Interface PT5 (Cellular) Device ▼ Cloud Relay
1 Wi-Fi Mode 2.4 GHz + 5 GHz ▼

2. The MPU5 will generate a random SSID the first time you connect a PT5. Click Randomize SSIDs to generate new random SSIDs. You may also type a custom SSID, if desired.
3. Set SSID Broadcast:

   Disabled (default): SSID will not appear in devices' Wi-Fi network browser; users will have to manually enter Wi-Fi SSID to connect.
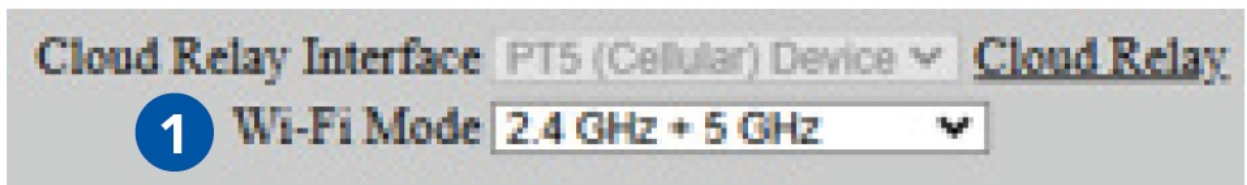
   Enabled: SSID will appear in devices' Wi-Fi network browser; users can connect by selecting it.

   Note: When SSID Broadcast is set to disabled, refer to your device's manual for information on how to connect to hidden networks.
4. Set a custom Password, if desired. Users will need this password to connect to the Wi-Fi network. Check the Randomize box to generate a randomized password. Click Copy to copy the password to your clipboard.

	Wi-Fi 2.4 GHz	Wi-Fi 5 GHz	
2 SSID:	GrottoFairwood2.4	GrottoFairwood5	Randomize SSIDs
3 SSID Broadcast:	Enabled ▼	Enabled ▼	
4 Password:	password ☐ (Randomize) Copy	password ☐ (Randomize) Copy	

5. Click Save & Reconfigure

DHCP Server Configuration ▶
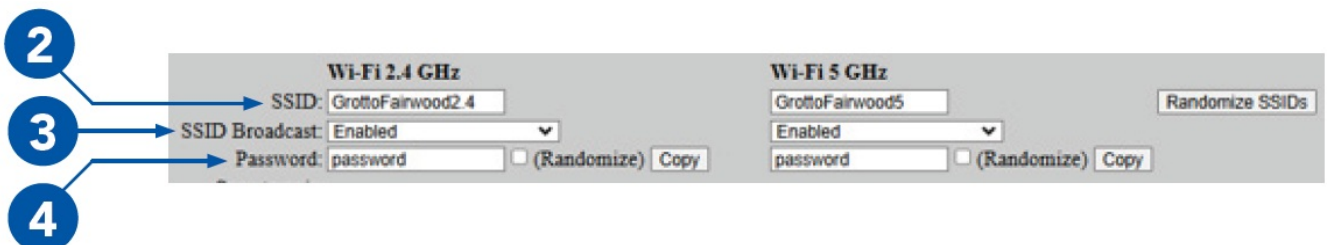
5 Save & Reconfigure
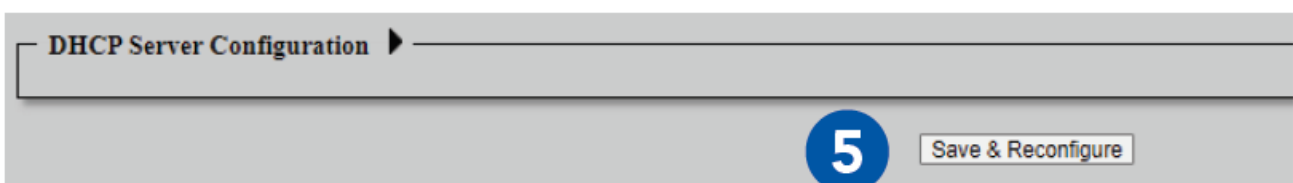
6. The WMI will generate QR codes – scan the QR code with your EUD camera to connect your device to the Wi-

Fi network.

Advanced Wi-Fi Configuration

1. Set Wi-Fi Security Algorithm to WPA2 or WPA3. WPA3 offers stronger encryption but older client devices may have limited compatibility.
2. By default, the PT5 will use a random MAC address for each Wi-Fi access point on boot and/or each time the PT5 is configured.. To disable random MAC address generation and always use the same MAC address, uncheck the Factory Default box.

3. Adjust Channel Select for each Wi-Fi band.

   Numbers – Frequency: Instruct the PT5 to use a specific Wi-Fi Channel/Frequency

   Auto: PT5 will pick the best channel/frequency on boot
4. Adjust Channel Width for each Wi-Fi band.

   Note: Larger Channel Width offers higher throughput but shorter range.
5. Adjust Tx Power for each Wi-Fi band. Higher transmit power offers more range but may increase detectability.

   Note: If PT5 Mode is set to 2.4 + 5 GHz and Tx Power is changed while the PT5 is attached,the PT5 must be detached and re-attached before the Tx Power setting change takes effect.
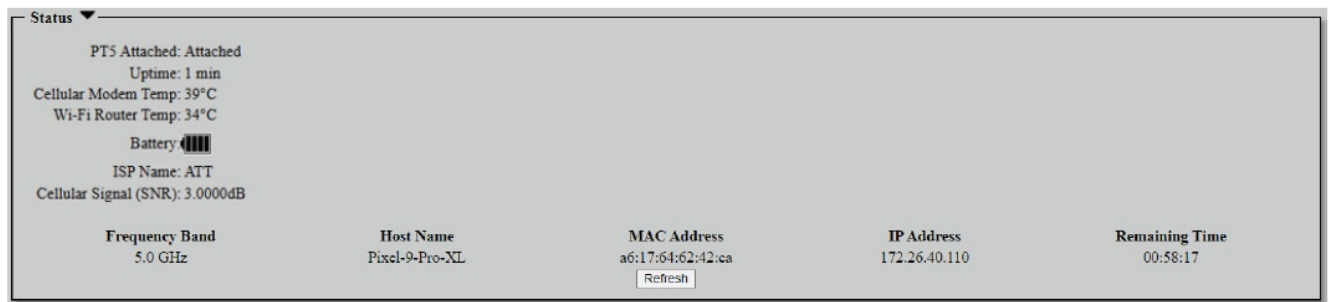

6. Click Save & Reconfigure

Wi-Fi Status

1. Status is displayed at the top of the PT5 Configuration

This box displays the status for the PT5 itself as well as devices connected via PT5 Wi-Fi.

- Uptime: PT5 uptime

- Cellular Modem Temp: Temperature of the PT5 Cellular Modem

- Wi-Fi Router Temp: Temperature of the PT5 Wi-Fi Router

- Battery: PT5 internal battery level

- Frequency Band: Displays the Frequency band on which the device is communicating

- Host Name: Displays name of the connected device

- MAC Address: Displays MAC address of the connected device

- IP Address: Displays IP Address assigned to the device via DHCP

- Remaining Time: Displays time until assigned IP Address expires.

- Refresh: Reload status box

2. Status is displayed in the WMI Header:

PT5 Network Status

1. Click Network Status > PT5 Status
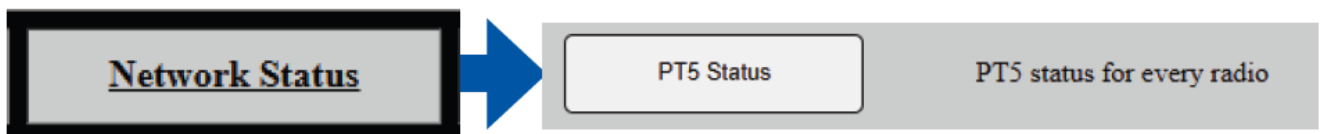
2. The page will display which nodes have PT5s attached.
3. Page will display configured PT5 settings for all nodes regardless of whether a PT5 is attached.

Name		IP		PTS Attached		PTS Mode		Cloud Relay Interface		Wi-Fi Security		Wi-Fi SSID 2.4 GHz		Wi-Fi Password 2.4 GHz		Wi-Fi SSID 5 GHz		Wi-Fi Password 5 GHz		Wi-Fi SSID Broadcast 2.4 GHz	Wi-Fi SSID Broadcast 5 GHz
NelsonWPAN-WRS59S3		172.26.40.38		Yes		2.4 GHz + 5 GHz		PTS		WPA2-PSK		GrottoFairwood2.4		password		GrottoFairwood5		password		Yes	Yes

Clicking **password** will display the QR code used to connect.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example – use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement
This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the

Federal Communications Commission of the U.S. Government.
The exposure standard for wireless devices employing a unit of measurement is known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of **www.fcc.gov/oet/ea/fccid** after searching on FCC ID: 2AG3J-WRPT50001

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Documents / Resources

PERSISTENT SYSTEMS MPU5 Personal Transport System [pdf] User Manual
MPU5, MPU5 Personal Transport System, Personal Transport System, Transport System, System

References

- **FC** **FCC ID Search | Federal Communications Commission**
- 🌀 **Persistent Systems: Wave Relay®, Mobile Ad-Hoc Networking Solution MANET, Wireless Secure Scalable Communication**
- **User Manual**