WITTRA UNIFIED GATEWAY
AND
MIOTY PLUG-IN

USER MANUAL

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USER MANUAL

This is the user manual for the Wittra Unified Gateway [FCC: 2AYHX00515] [IC:26847-00515] and the Mioty Plug-In [FCC: 2AYHX10000] [IC:26847-10000]

Set up your gateway

The gateway allows your IoT Solution to connect to the Wittra portal.

Open your gateway

Press the two metal clips on the bottom of the casing as shown in picture below.

To assemble the gateway casing once again, please note that the side parts are nonsymmetric and need to be mounted on the correct side.

Setup an Internet connection

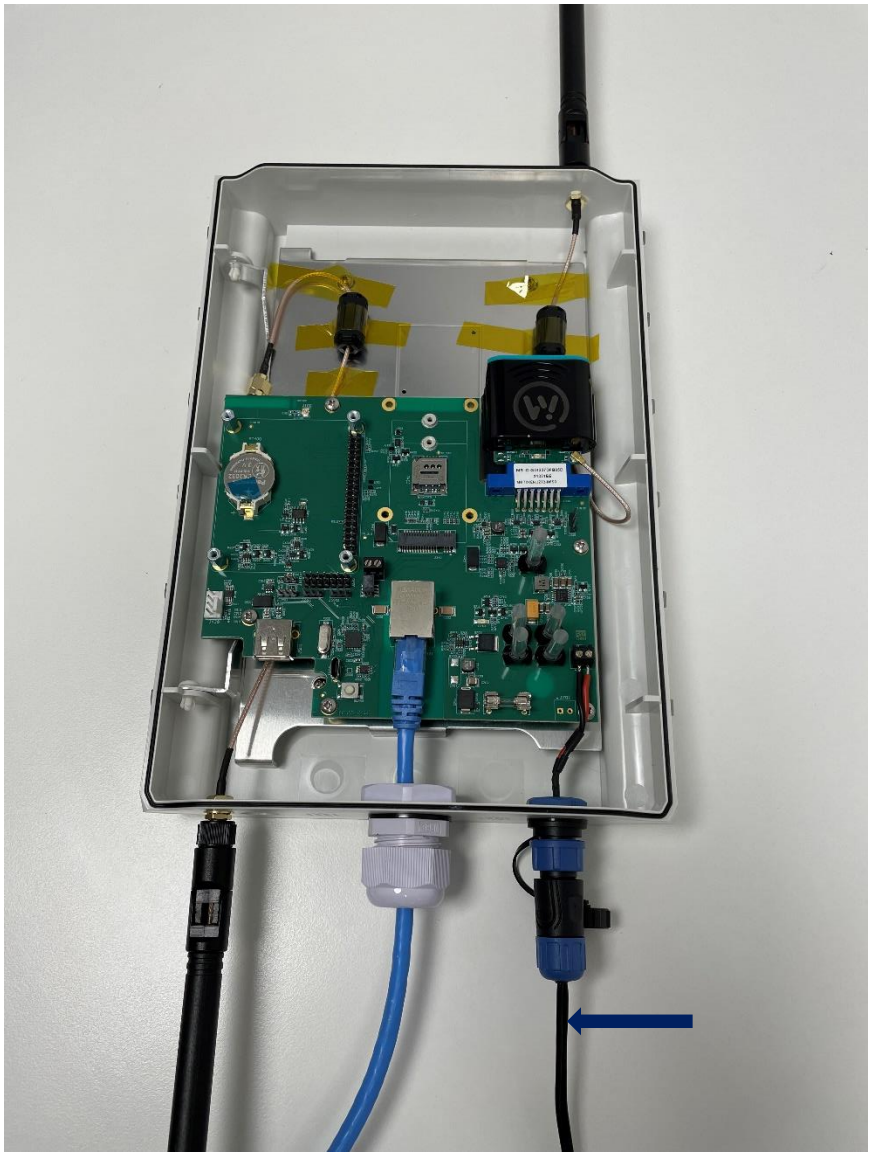
Plug in an Ethernet network cable in the Gateway according to the picture and connect the other end of the cable to your router or switch. When the cable is connected, continue with the Power the Wittra Gateway step.

NOTE: The Ethernet cable is not included in your IoT Solution.

If your network is using DHCP for dynamic configuration of network parameters, then attaching a cable is all you need to do.

Power the Wittra Gateway

1. Connect a 12V Power Supply according to the picture.



2. Wait 3 minutes for the Gateway to boot and start.

This Table depicts the Wittra Unified Gateway's two LED indicators:

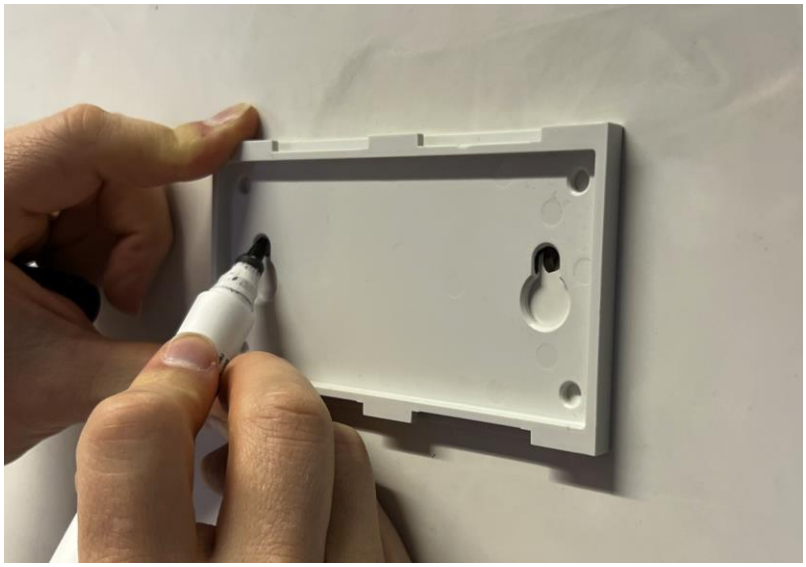
LED No.	LED Color	Blink pattern	Status
1	Red	Blinking at 4Hz (4 times per second)	The Border-router (internal 6LoWPAN component) is performing firmware update.
2	Blue	Blinking at 4Hz (4 times per second)	The Unified Gateway is performing firmware update.
3	Green	Steady on	The Unified Gateway is powered.
4	Yellow	Steady off	The Unified Gateway is not connected to any network. (There might be a link-local connection, but no IP address has been acquired)
4	Yellow	1 short blink and then 1 second off	The Unified Gateway has connected to the local network but has not yet verified that there is Internet access.
4	Yellow	Steady on	The Unified Gateway has connected to the network and was also successful in accessing the Internet.
5	Green	Steady on	The Unified Gateway is using Ethernet on 1Gbit or 100Mbit Link.
6	Yellow	Very fast blinking	The Unified Gateway has ongoing activity on the Ethernet.

After you have verified that the gateway is connected to your local network you can reseal the gateway by putting the cover back on.

Mount the Gateway on the wall

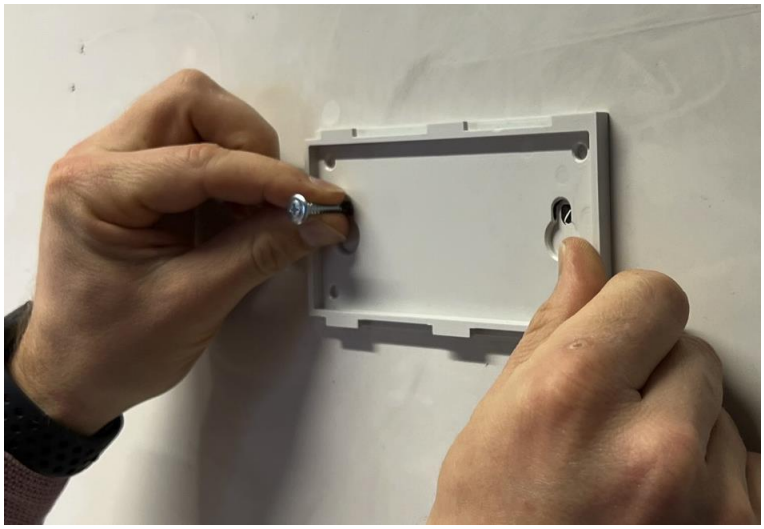
1. Detach the bracket located on the rear side of the gateway.

2. Utilize the detached bracket to mark the drilling points. This can be done by aligning either the keyhole or the four outer holes of the bracket with the desired drilling location. For this example, we will use the keyhole to mark the drilling points.



3. Once the drilling points have been marked, remove the bracket. Proceed to drill the marked points if necessary. Alternatively, a self-tapping screw can be used instead of drilling.

4. Reattach the bracket to its original position and secure it in place by tightening the screws. Be sure to tighten the screws just enough to hold the bracket firmly in place, but not too tight as to bend or deform the bracket.



5. Slide the gateway back into its original position, ensuring that it is properly aligned and securely in place.

Using the Wittra portal

You are now ready to register your IoT Solution in the Wittra portal. Go to the Wittra Portal and follow the instructions to finish setting up your IoT Solution.

You should perform the following steps in the portal:

1. Setup an organization.

2. Activate a subscription.

3. Setup a project.

4. Register the devices. You will need to enter your batch token to register your devices. The batch token is printed on a sticker inside your WITTRA™ IOT OUT OF THE BOX, it should be visible after removing your gateway from the box, see picture below.

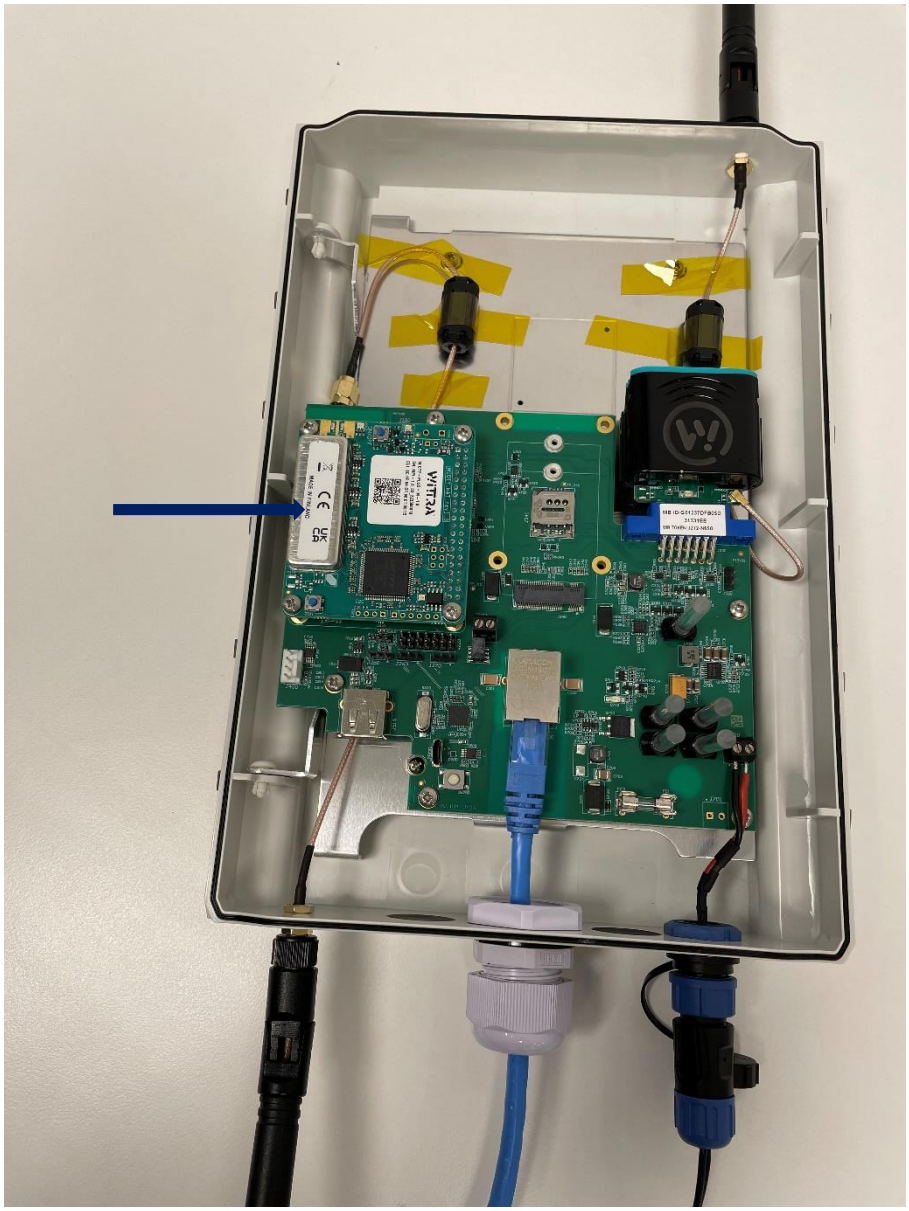
Mioty Plug-in

Mioty Plug-in is a radio module using Mioty Technology for Massive Internet of Things (IoT) which can be plugged into Wittra Unified Gateway

Mounting the Mioty Plugin on the Gateway

Mount the Mioty Plugin as indicated in the below picture on the Gateway

Fix the Mioty Plugin with four screws at the corners.



Safety instructions Mioty Plug-In

This chapter contains important information on the handling of the MIOTY HAT Front End. We strongly advise you to pay attention to this information BEFORE using the device to prevent the risk of injuries, damage or loss related to equipment malfunction. In order to maintain a proper state and to ensure correct measurement results please adhere to the following instructions:

Only use the unit in the specified operating conditions (see chapter technical specifications)

Only technical personnel from Wittra Networks AB (WN) may carry out any service.

- Do not connect equipment to reserved connectors
- Do not attempt to remove parts or dismantle the device
- There are no user-serviceable parts on the PCB. Any non-authorized repair attempt voids warranty
- If the unit is sent in for service, it is to be packed in the original package. WN accepts no liability for any damage to improperly packed units.

Be sure to use a supply voltage that matches the unit's requirements.

Ensure that the unit gets proper cooling by placing the unit with enough space for the air to flow freely. Do not situate easily flammable material near the unit.

Use correct operating levels at all times (lower than maximum input level specified) for each RF connector.

Only use the MIOTY HAT Front End Base Station Receiver in the specified operating conditions (Please contact Wittra Networks AB or get the latest information from docs.wittra.se).

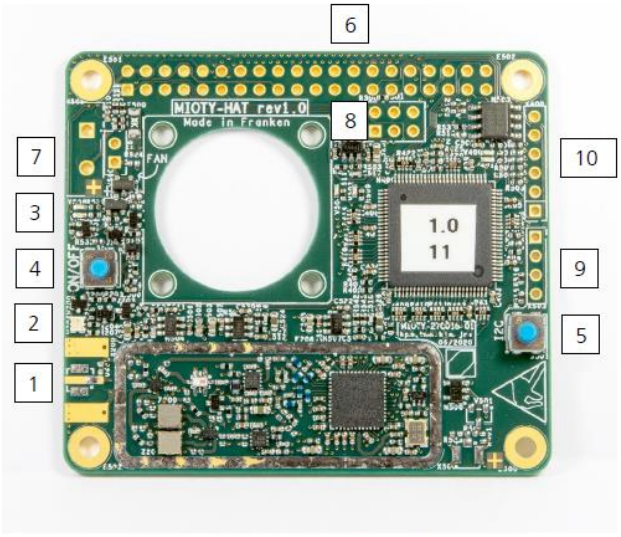


Figure 6.1: MIOTY HAT front end connectors

1. Combined Rx/Tx RF connector (RP-SMA)
2. Rx/Tx status LED (green in Rx operation, blue in Tx operation, red if power off or lock fail)
3. Gateway status LED (green in gateway operation)
4. Push button (Gateway turns On on default, can be turned Off with this button)
5. User push button

6. Raspberry PI compatible GPIO connector for data and power supply
7. Not used
8. Debug connector (reserved for future use)
9. I2C connector (reserved for future use)
10. FPGA JTAG connector (reserved for future use)

Environmental Specifications

- Temperature range: 0-55C
- Humidity: 20-80% non-condensing

Regulatory information:

Contains FCC ID: 2ABCB-RPICM4

Contains IC: 20953-RPICM4

This device contains a CR2032 lithium coin cell battery that is not rechargeable. Do not attempt to charge, disassemble, heat above 100°C or incinerate the battery. Replace with a Panasonic CR2032 or equivalent type recommended by the manufacturer. Dispose of used batteries according to local regulations. Improper use of this battery may cause fire, explosion, or leakage.

- Replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types).
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

This equipment complies with ISED RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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 or more 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.

The product complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The product should be installed and operated with a minimum distance of 8 in (20 cm) between the product and all persons' body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines. This equipment complies also with Industry Canada RSS-102 with respect to Canada's Health Code 6 for Exposure of Humans to RF Fields.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

This device may not cause interference.

This device must accept any interference, including interference that may cause undesired operation of the device.

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.

This radio transmitter [IC:26847-00515, Unified Gateway] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

This radio transmitter [FCC: 2AYHX00515] shall only be used with antenna types included in the list below. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

This radio transmitter [IC:26847-10000] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

This radio transmitter [FCC: 2AYHX10000] shall only be used with antenna types included in the list below. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

The modular transmitter [FCC: 2AYHX10000, IC 26847-10000, Mioty Plug-in] is only FCC authorized for the rule parts (i.e., FCC Part 15 Subpart C) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. Also, the final host product still requires Part 15 Subpart B compliance testing with the modular installed.

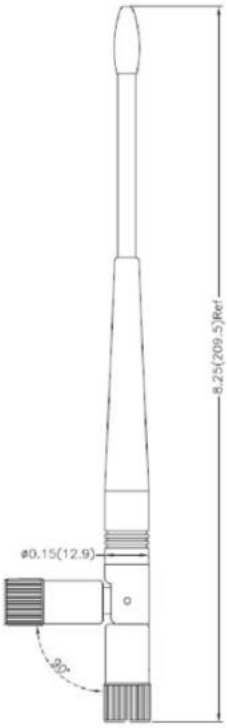
Antenna list

[0600-00024 915MHz Swivel Dipole Antenna, 2 dBi maximum antenna gain]
Details refer to information in datasheet cutout appended on page 18.

Laird
CONNECTIVITY

0600-00024

915 MHz Swivel Dipole Antenna
902-928 MHz



ELECTRICAL SPECIFICATIONS	
Operating Frequency (MHz)	902-928
VSWR	<2.0:1
Gain (dBi)	2.0
Radiation	Omnidirectional
Nominal Impedance (Ohms)	50
Polarization	Vertical
Wave	Half wave dipole
MECHANICAL SPECIFICATIONS	
Radome Material	Polyurethane (black)
Connector	SMA plug (male)
Operating Temperature – °C (°F)	-20 to +65 (-4 to +149)
Storage Temperature – °C (°F)	-30 to +75 (-22 to +167)