infiniDome
Solutions

Aura

Integration Manual





2026

V1.0.3

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Introduction

Welcome to the infiniDome **Aura** Installation and Integration Guide!

Thank you for choosing the infiniDome Aura, an advanced solution engineered to provide robust protection against GNSS jamming, ensuring uninterrupted navigation and operation even in the most challenging environments. This guide is designed to help you understand the features of Aura, prepare for installation, and integrate it seamlessly into your system.

infiniDome Aura offers exceptional protection against GNSS jamming, ensuring continuity of autonomous navigation and operation under jamming conditions. This compact, lightweight, and affordable device can be retrofitted easily onto a wide range of platforms, regardless of the receiver brand. It is designed to be installed inline between the GNSS antennas and the receiver, providing continuous jamming protection.

Safety and Compliance

General Cautions

- Aura should be mounted on a flat surface (up to 70°C/158°F) or to cooling fins for constant air flow
- Secure Aura using the mounting holes provided.
- To prevent damage to any cable assemblies used in this installation, ensure the cables are not bent, deformed, or snagged to cause damage to the internal wiring or the connector ends.
- **Caution**: Hot Surfaces (Up to 70°C/158°F). Avoid touching the device while it's operating as some surfaces may become hot. Allow time for cooling before handling.

Electrical Safety

- During installation ensure there is NO power applied to the module.
- If you use Aura with a connector, please add a ferrite core for noise filtering.
- The length of the power cable should not exceed 3 meters.
- Please make sure that the GNSS receiver is powered off.

Power Requirements for vessel Installation

When installed on a ship, the unit must be powered by an external source providing 6-32Vdc and a maximum of 20W. This external power source must be safety approved according to EN/UL 62368-1 standards, with a rated voltage of 6-32Vdc and a power limit of 100W (LPS).

External Lightning Protection

Please note that our unit does not include built-in lightning protection. Ensure you have external lightning protection measures in place for proper safety and device protection. The surge protector device must be safety approved and installed by a certified person. Also, please be aware that the CE certification is valid for vessel use only when external lightning protection is utilized.

Compliance Certifications

Aura meets all the required standards for:

- FCC Compliance
- RoHS Compliance
- CE Compliance

Technical Specifications

Physical

Version	Weight	Size
OEM	375g	107.5 x 91.5 x 55 mm
	13.2 oz	4.25 × 3.60 × 2.15 in
Enclosed	500 g	107.5 x 95.7 x 55.8 mm
	17.64 oz	4.23 × 3.77 × 2.20 in

LED Indication

Constant Red	System Error
Flashing Red	System Initialization
Flashing Green	System Operating (no jamming detected)
Flashing Orange and Green	System Operating (jamming detected)

RF Interfaces

Antennas	50Ω | 2.7-12 VDC | Active antenna Gain 26-32dB
RF connectors	SMA 50Ω *OEM also available with MMCX, weighing 25 grams less.

Performance

Protected Signal	L1/E1 + L2 L1/E1 + G1
Latency	~100ns
Compression Point	P1dB -25dBm
Insertion Loss	6dB

Power Requirements

Operating voltage	6 - 32 VDC
Power Consumption	Nominal 9W | Peak 16W

EPS Product Wiring

Main Power Positive (+)	Red	Pin 5
Main Power Negative (-)	Black	Pin 9
Dry contact (+) jamming indication	Purple	Pin 4
Dry contact (-) jamming indication	Green	Pin 2
UART RX	Gray	Pin 7
UART TX	Yellow	Pin 8
UART GND	Blue	Pin 6
Shield Ground Wire	Green/Yellow	S

*UART for diagnostics | No built-in GNSS receiver

Environmental

Operating Temperature Range	-40°C to 71°C
Waterproof Rating	IP65 *Enclosed version

Safety & Compliance

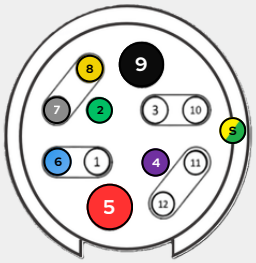
RoHS Compliant

FCC Compliant

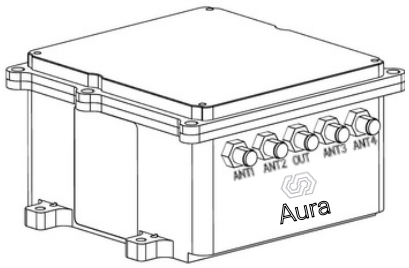
CE Compliant

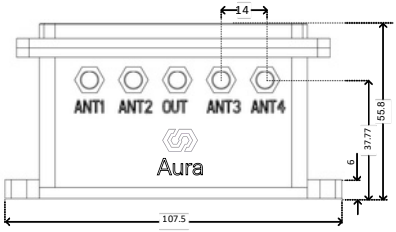
Optional Connector

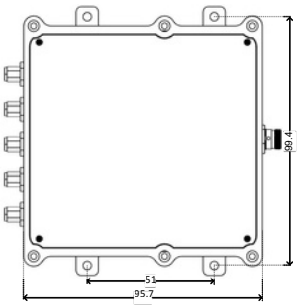
MR11WS06 0210 BK1 E1AP 1



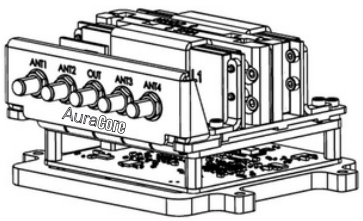
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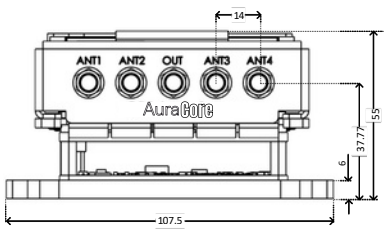


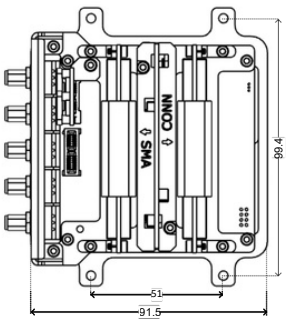




OEM







Interfaces

RF Interface Specifications

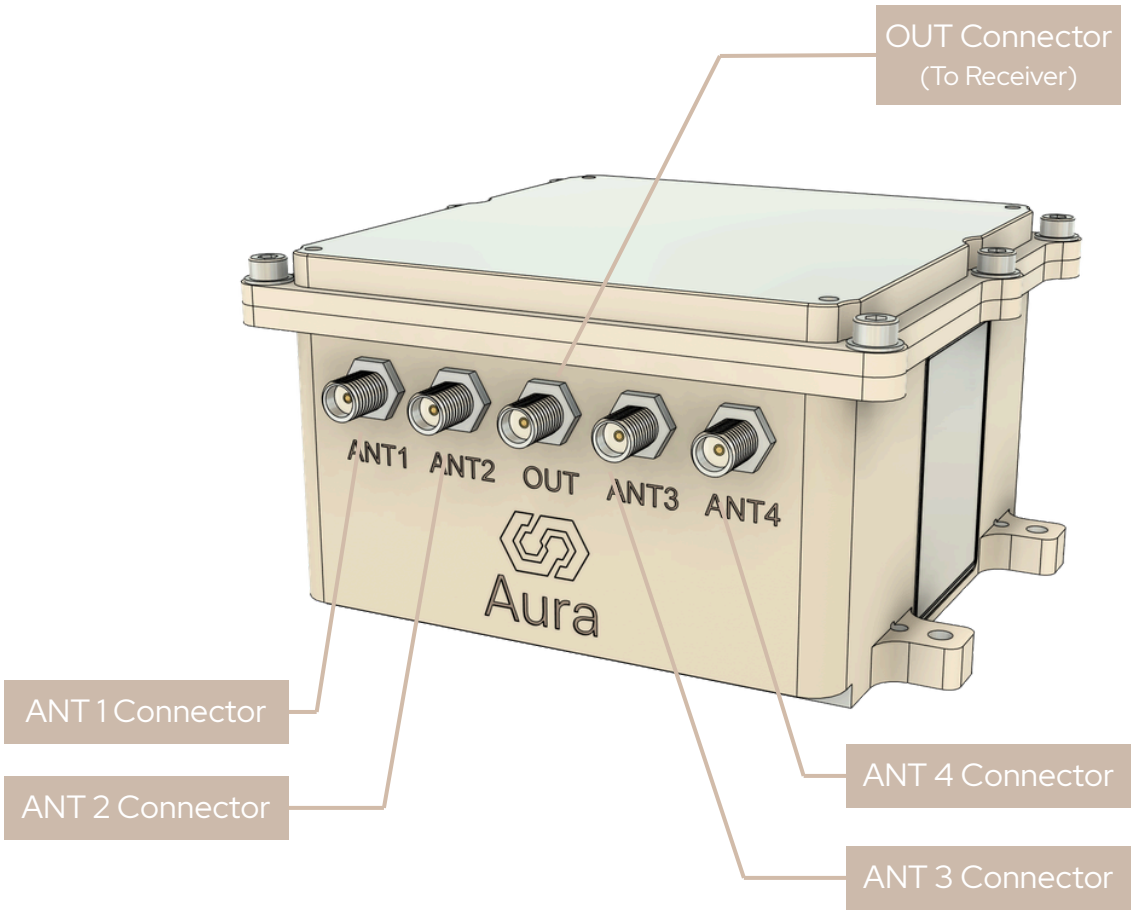
Antenna Connectors (ANT1, ANT2, ANT3, ANT4):
Connects Aura and GNSS Antennas input:

- **Type:** 50Ω *SMA Female
- **Voltage:** 2.7V to 12V DC
- **Supported Antenna Gain:** 26dB to 32dB

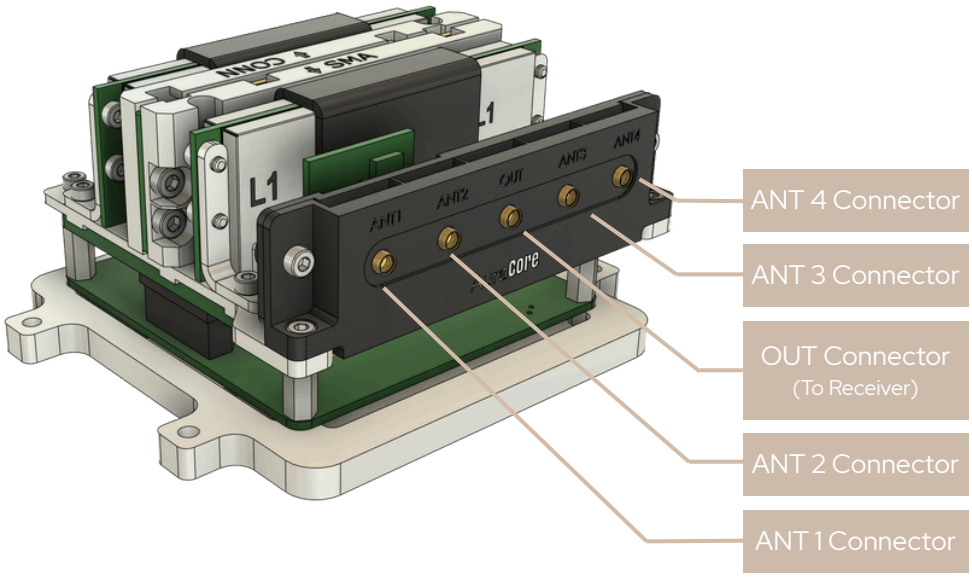
RF OUT - Receiver Connector (out):
Connect the GNSS receiver via a high quality 50Ω RF cable to the Aura RF OUT port. Connector types vary by model:

- **Aura Enclosed:** Features standard SMA Female connectors.
- **Aura OEM:** Equipped with MMCX Female connectors by default, with an SMA Female option available upon order request.

Aura Enclosed
SMA Connector

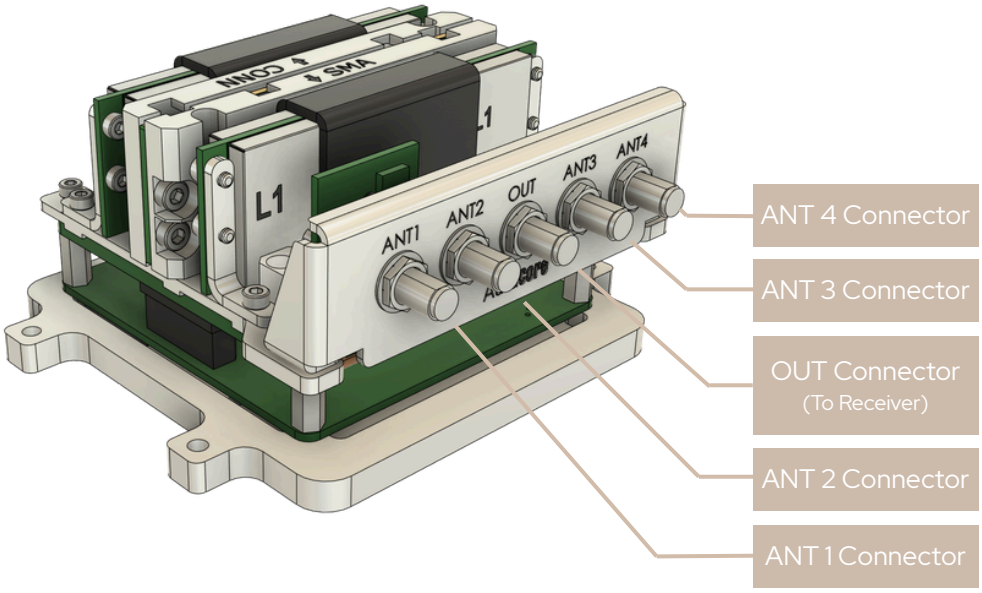


Aura OEM
MMCX Connector (default)



OEM version can also be ordered with 50Ω MMCX female connectors.

Aura OEM
SMA Connector (optional)



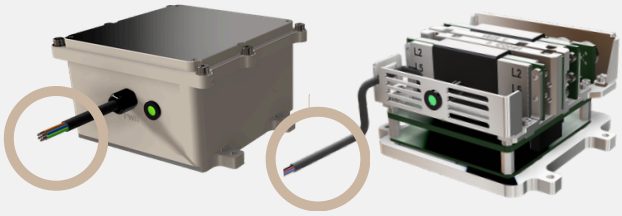
Electrical Interface

The Aura has a wiring harness located at the rear. Using these wires, you can supply power to the Aura, receive status messages, and even connect your own device to receive jamming indications using the dry contacts wires.

***Note**: Aura does not contain a built-in GNSS receiver*



Harness options
There are two configurations for how the harness connects to the Aura enclosed version: • Option 1: **External Cable** • Option 2: **Fischer Connector**

External Cable	Fischer Connector
	
Default option for enclosed and OEM versions	*Fischer Connector option avilable for Aura enclosed version only*

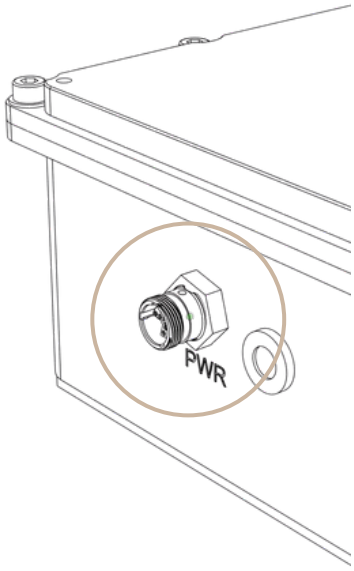
Wiring Pinout

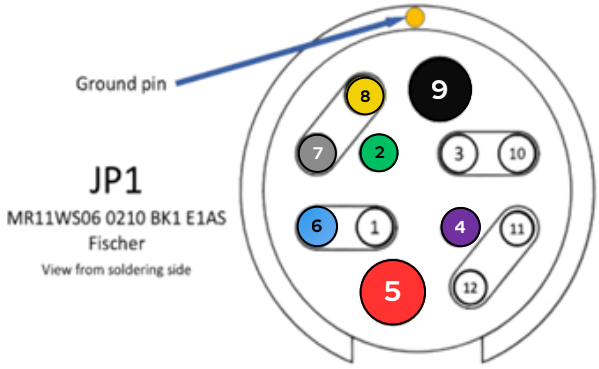
Function	Description	AWG	COLOR
Main Power (6-32vdc)	Positive (+)	22AWG	RED
	Negative (-)	22AWG	BLACK
Dry contact	Jamming indication (+)	26AWG	PURPLE
	Jamming indication (-)	26AWG	GREEN
UART communication	UART RX	26AWG	GRAY
	UART TX	26AWG	YELLOW
	UART GND	26AWG	BLUE
Shield Pigtail	Shield	22AWG	GREEN + YELLOW

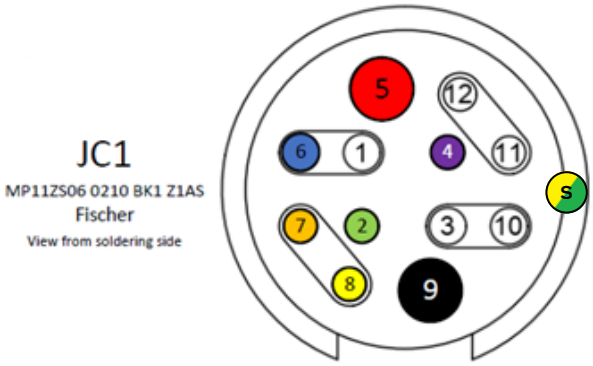
Fischer Connector Pinout

Fischer Connector Pinout

PIN num	Function
Pin 5	Main Power positive 6-32vdc (+)
Pin 9	Main Power negative (-)
Pin 4	Dry contact (+)
Pin 2	Dry contact (-)
Pin 7	UART RX
Pin 8	UART TX
Pin 6	UART GND
S	Shield







mating connector - MP11ZS06 0210 BK1 Z1AS

Please note: If you use Aura with a connector, you need to add **FERRITE** for noise filtering.

- The Aura with a connector requires a ferrite for noise filtering.
- **DO NOT** tighten the Fischer connector using any tools. Please secure the Fischer connector in place manually **by hand only**.

Installation Guide

Pre-Installation Checklist

Before beginning the installation, ensure you have the following equipment and tools:

- 1 x Aura unit
- 4 x identical active antennas (26dB to 32dB gain, 2.7V~12V DC, 50Ω)
- SMA coax cables (High quality, Low attenuation, identical length up to 10mm tolerance)
- GNSS receiver
- RF adaptors to SMA (if needed)
- 6 to 32 VDC power source
- Mounting screws (8/32 bolts or M3 screws for OEM version – not included).
- Drill and appropriate drill bits
- SMA torque spanner set to 0.6Nm for Aura with SMA connectors.
- Multimeter for verifying power supply voltage

Unpacking and Inspecting Equipment

- Unpack the Equipment: Carefully remove the Aura and all accessories from the packaging.

Inspect for Damage:

- Visually inspect all items for any signs of damage.
- Verify that the SMA or MMCX connectors are not damaged, and the threads are complete.
- Ensure the external cable or connector is intact.
- Check that the Aura unit has no dents or deformities.

Choosing the Installation Location:

- Select a flat metal surface that does not heat above 70°C/158°F for mounting the Aura.
- Ensure the location provides sufficient airflow and cooling.
- The installation location should allow for the GNSS antennas to be installed such that the cable lengths are equal. The optimal situation is to have the cables as short as possible (see Antenna Installation section).

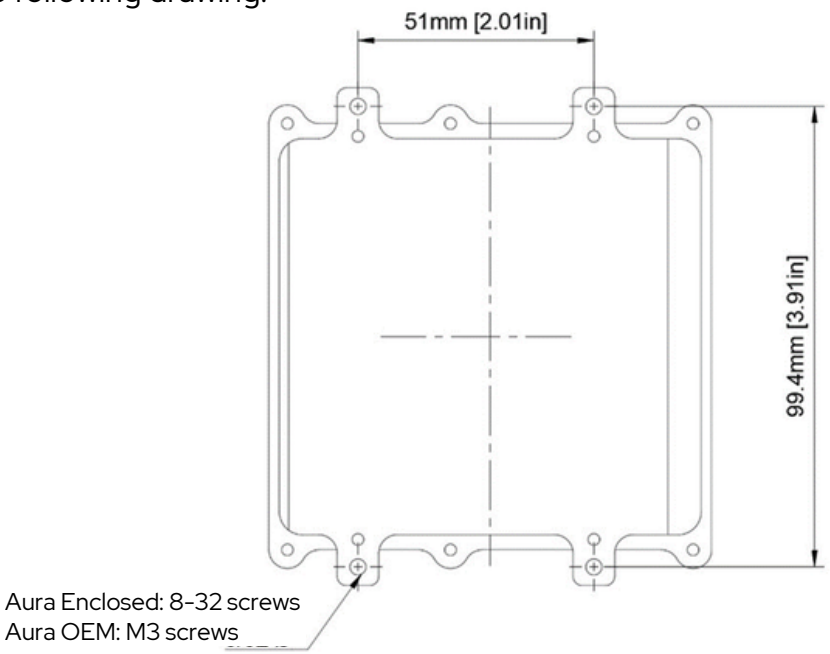
Environmental Considerations:

- In case of installing Aura near your GNSS antennas - Ensure the GNSS antenna's installation site is free from obstructions and has a clear view of the sky for optimal GNSS signal reception.
- Avoid placing the device near sources of interference or radiating antennas.

> **!** We recommend a preliminary bench test on a test platform before permanent installation. We also suggest contacting our technical department to schedule an integration session to help optimize your Aura's performance.

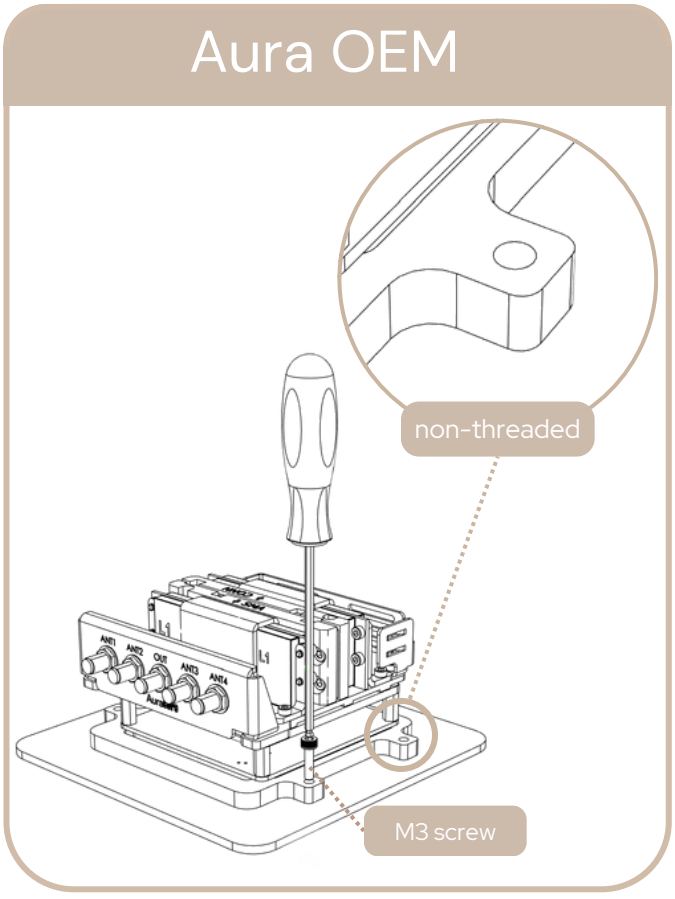
Mounting Aura

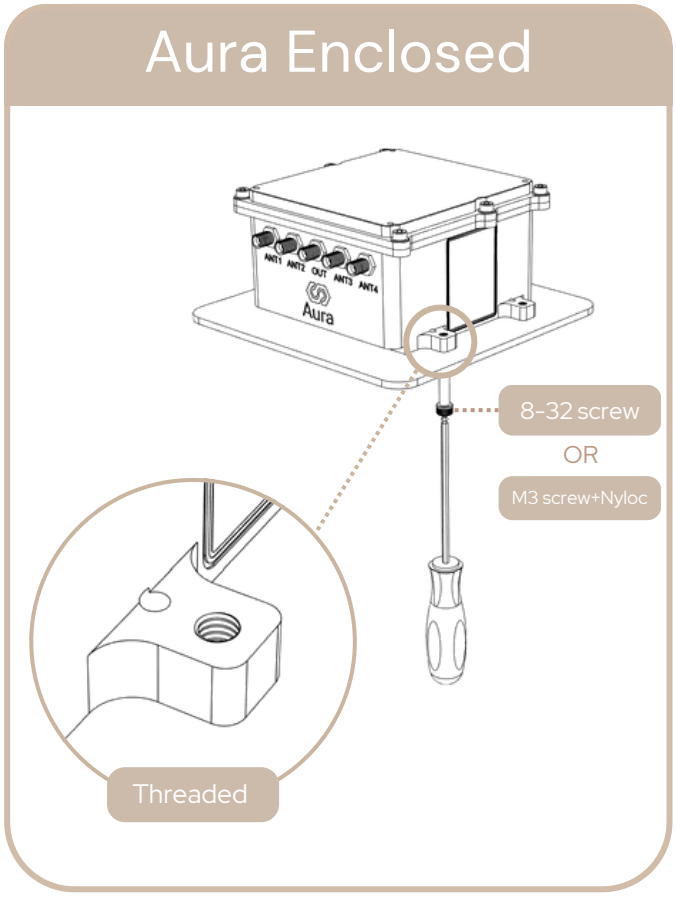
- Mark the desired installation position on the surface, aligning with the screw locations as shown in the following drawing:



- **Aura Enclosed:** all four mounting tab holes are <u>threaded</u> for **8-32 screws**. Therefore, please ensure the correct orientation and direction when installing the screws.

- **Aura OEM:** all four mounting tab holes are <u>non-threaded</u>, compatible with **M3** screws.
- The system must be tightly secured to the mounting surface.

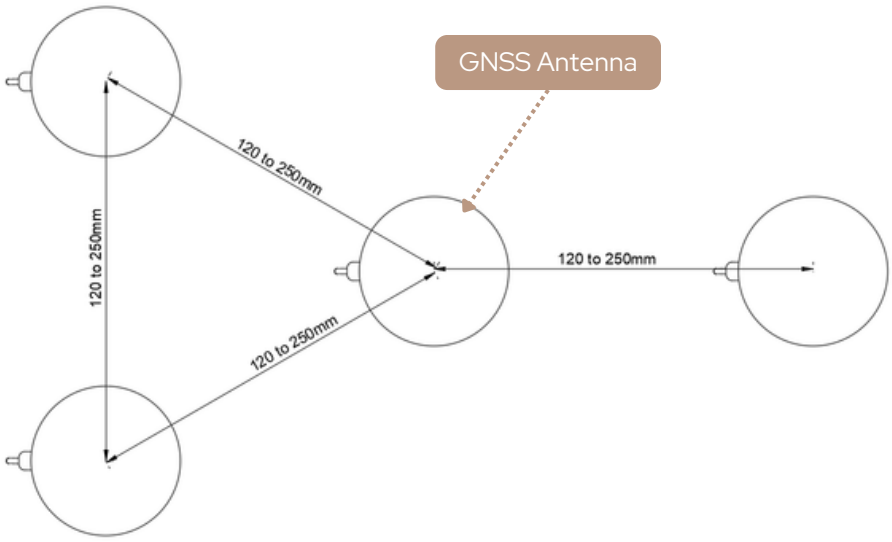




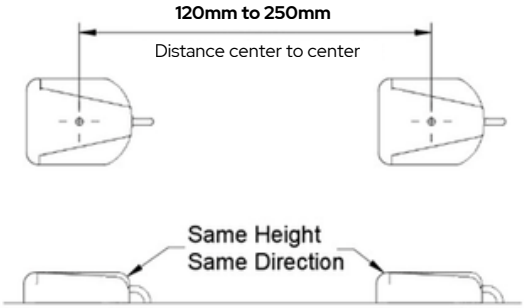
Installing Antennas

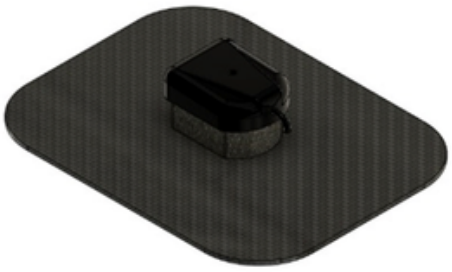
Antennas Placement:

- Arrange the four GNSS antennas in a 'Y' configuration as shown below. Select a spacing between 120mm and 250mm, ensuring this distance is kept uniform between all antennas. This configuration is flight-tested and optimized for. This configuration has been tested and optimized for optimal performance:

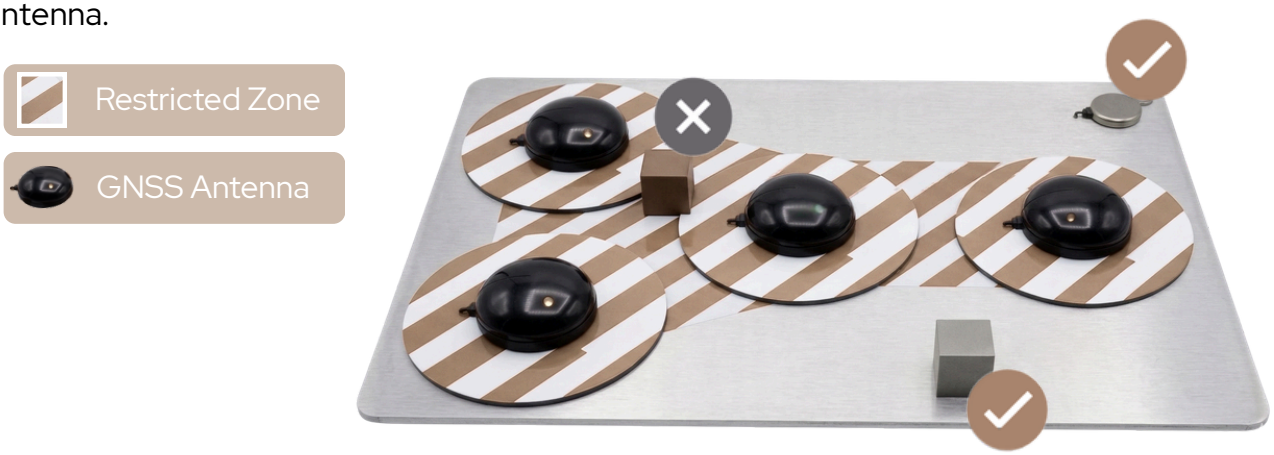


- Antennas should be aligned symmetrically.
- Avoid placing antennas near obstructions or radiating devices.
- For patch antennas: when installed on carbon fiber, ensure a minimum 10mm elevation.
- Some antennas require a ground plane, ensure you follow the manufacturer's instructions.
- Ensure all antennas are installed at the same height (max variance 10mm).





- Do not place objects of any kind between the antennas or within a 60mm radius of any antenna.

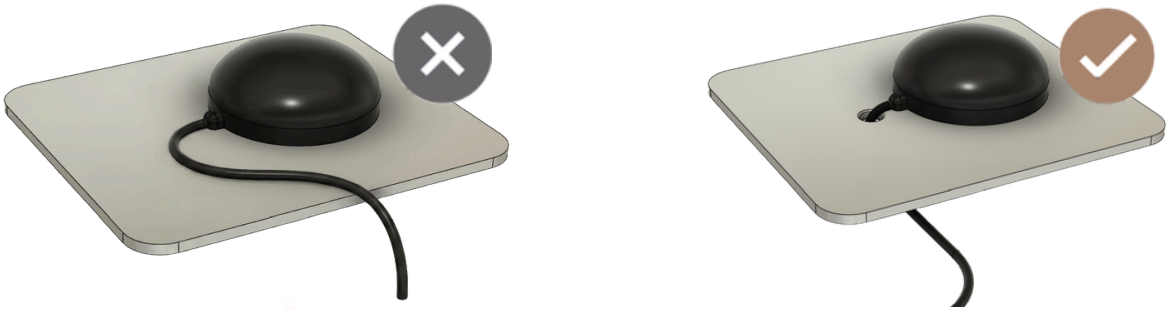


- Place the antennas on a horizontal surface with a clear view of the sky.
- Ensure all antennas are oriented in the same direction.
- The specific placement of each antenna within the array does not matter



Antennas Cables

- Use cables of equal length between the antennas and Aura (tolerance up to 10mm). Using different cable lengths between the antennas will degrade the unit's performance.
- Ensure that all antennas use the same type of cable.
- Do not bend the antenna cables with a sharp radius, and avoid coiling the cable.
- Avoid routing cables across the antenna mounting surface. Instead, route the RF cables beneath the mounting surface.



These guidelines reflect the optimal configuration. For alternative setups, please contact technical support for assistance in ensuring performance tailored to your needs.

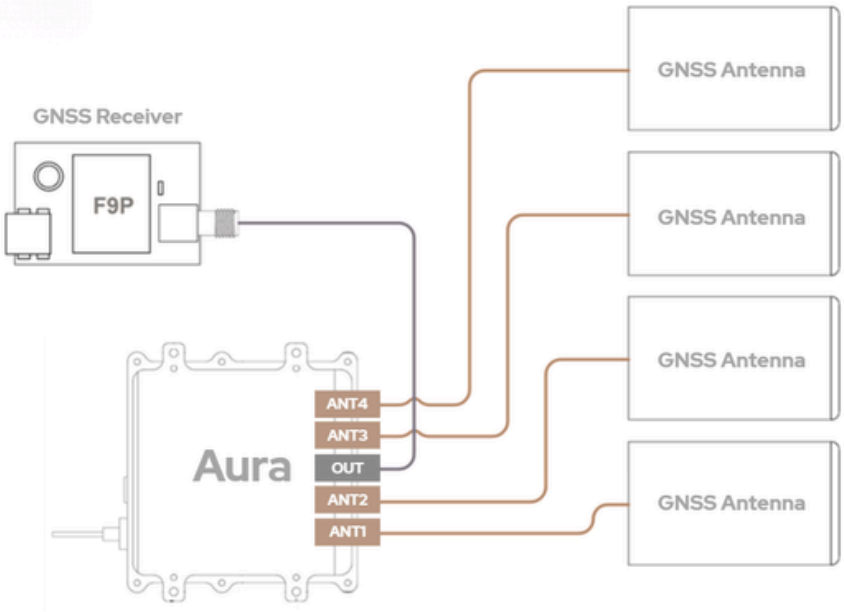
RF wiring Diagram

The Aura module is designed to be integrated between the antenna array and the GNSS receiver.

- **Antenna Inputs:** The four antenna ports on the Aura unit are labeled ANT1, ANT2, ANT3, and ANT4. These connectors are SMA female or MMCX Female depends on your ordered unit configuration, and therefore the antenna cables must be terminated with SMA male or MMCX Female connectors. depends on your HW version. If your antennas do not have SMA connectors, appropriate adapters should be used.

- **RF Outputs:** The Aura unit provides a primary RF output connector labeled OUT. This is the primary protected RF output and must be connected to the GNSS receiver's RF input. It delivers the resilient GNSS signal.

RF wiring Diagram

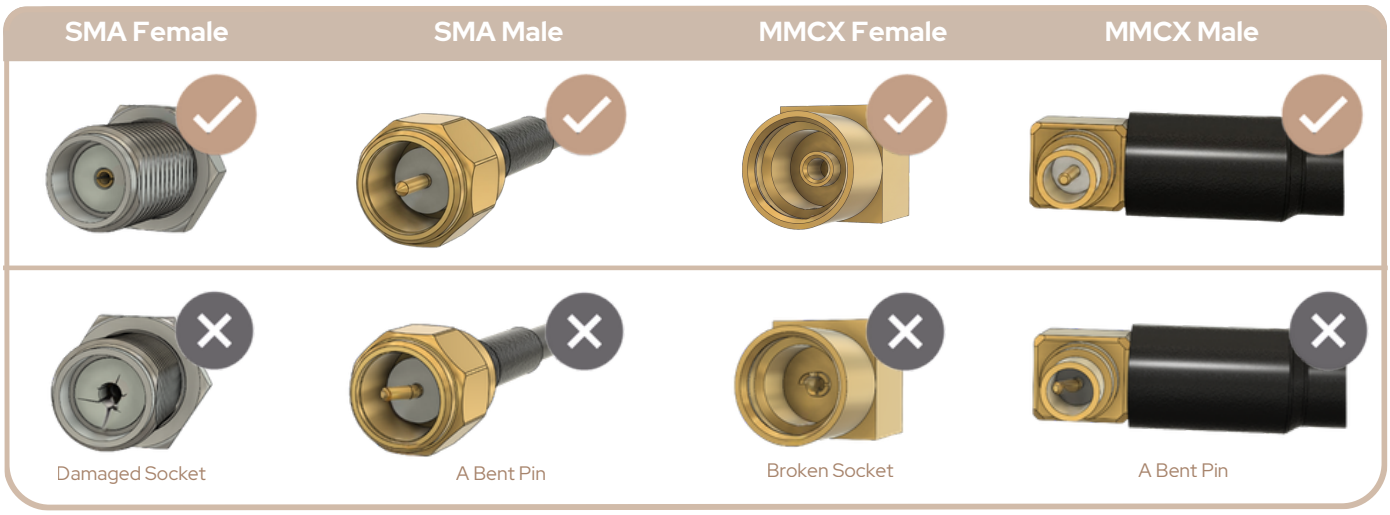


Important Compatibility Note: The Aura system requires a GNSS receiver with a physical RF input connector. Integrated GNSS/Antenna units (such as the Here4 or similar "All in One" modules) are not compatible with the Aura anti jamming system as they do not allow for an external RF signal interface.

Connecting Coaxial (RF) Cables

Secure Connections:

- Before connecting an SMA connector, check for damage, such as a bent or missing center pin, or cracks in the female connector. Ensure the threads are complete



- Connect the RF out connector (**Out**) to the GNSS receiver's RF antenna input.
- Connect the four antennas to connectors **ANT1, ANT2, ANT3**, and **ANT4** using an SMA torque spanner set to 0.6Nm



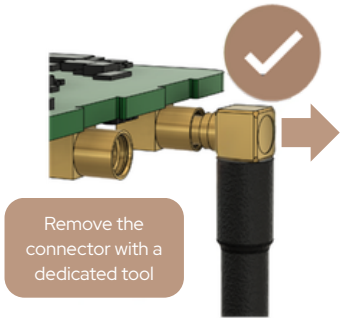
- Conformally route the antenna cables away from any moving parts.
- Avoid placing the RF cabling near EMI noise generators or components likely to cause EMI interference at all costs.
- Prevent any damage to your RF cable assemblies: ensure cables are not bent, deformed, or snagged to cause damage to the internal wiring or the connector ends.
- Please use high quality sealed SMA connectors. To prevent the risk of moisture ingress, we recommend cables with high quality sealed SMA connectors.

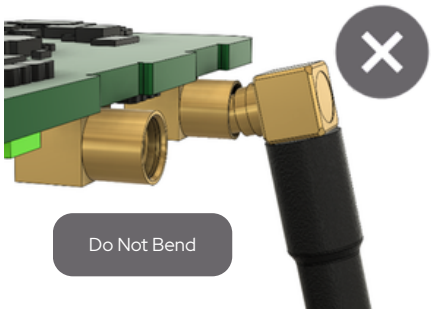


- Please use high quality RF cables with double shielding with low attenuation (loss). The following table lists the recommended cable types:

RF Cable Type	Info	
RG-174	Flexible Short Distance	
RG-316	Flexible Short Distance	
LMR200	Outdoor | Mid Distance	
LMR400	Outdoor | Long Distance	

When connecting/disconnecting MMCX connectors, do so carefully without twisting or applying uneven pressure. Use a dedicated tool for removal.





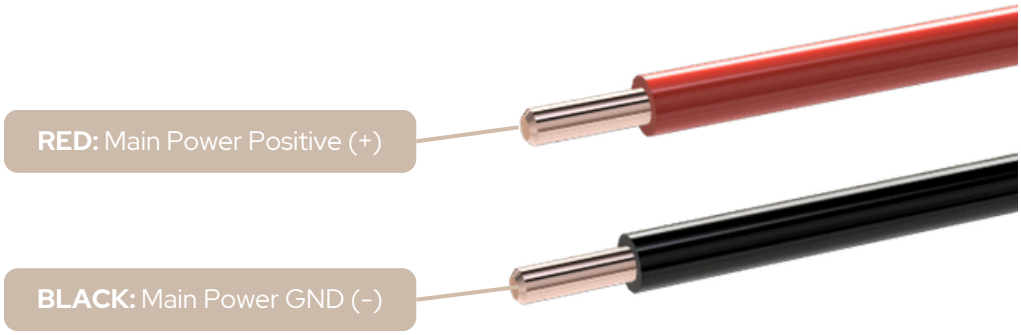
Power Supply Connection

1. Cable Length:

- Ensure the power supply voltage output is between 6 and 32VDC and can provide at least 16W of power.

2. Connect Power:

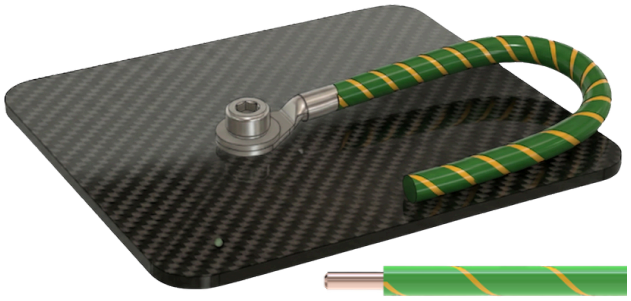
- Connect the positive terminal of the power supply to the red wire of Aura.
- Connect the negative terminal of the power supply to the black wire of Aura.
- secure any excess antenna cable and power wires.
- **Caution 1:** Double check the Red and black wire to prevent reversed polarity.
- **Caution 2**: DO NOT connect the Shield Ground Wire / Drain Wire (green/yellow) to the power supply.



Shield Ground Wire / Drain Wire

- The shielding Shield Ground Wire/Drain Wire (Green and Yellow) should be connected to a grounded chassis or frame whenever possible. In drones or UAVs, this wire can be secured directly to the airframe, including carbon fiber surfaces.

WARNING: Do not connect Shield cable directly to the main power ground terminal



Tidy Up: Secure any excess cables and wires to prevent damage or interference.

Power On:

- Ensure all connections are secure.
- Power on the GNSS receiver and the Aura unit.

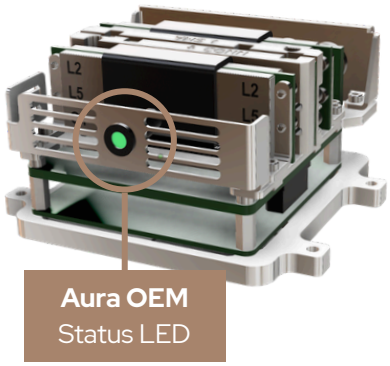
Operational Guidelines

General Operation

- **Aura** operates automatically without the need for manual intervention.
- The system continuously monitors and mitigates GNSS jamming signals.

LED Indicators

At the front of the Aura enclosed / rear Aura OEM, near the wiring harness output, there is an indicator LED that displays the system status as long as it is connected to power.



Aura OEM
Status LED



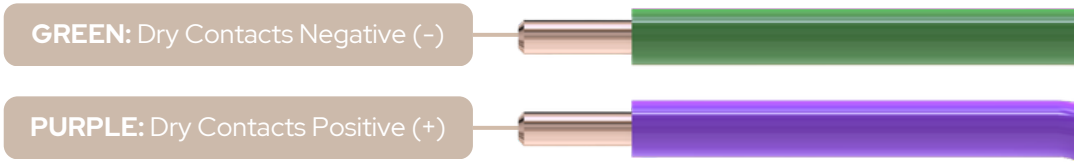
Aura Enclosed
Status LED

The following table describes all the LED states and their meanings:

LED State		System status
Flashing Red		Initializing
Solid Red		Built-In Test (BIT) Error
Flashing Green		System active, no jamming detected
Flashing Green/Orange		System active, jamming detected
Flashing Orange		System active, Heavy jamming

Dry Contact

When the system detects jamming, the internal circuit of the dry contact wires is closed. When no jamming is detected, the external circuit remains open.

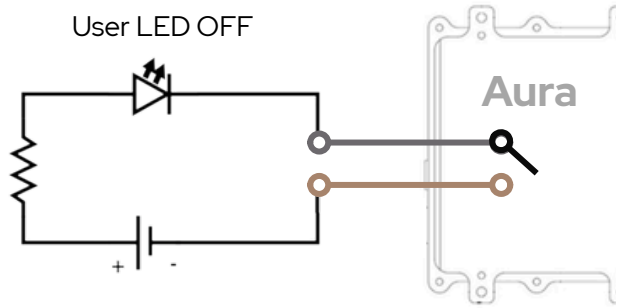


You can connect a custom circuit according to the following specifications:

- Dry Contact: PURPLE and GREEN wires
- Opto-coupler
- Maximum Voltage: 32V
- Maximum Current: 500mA

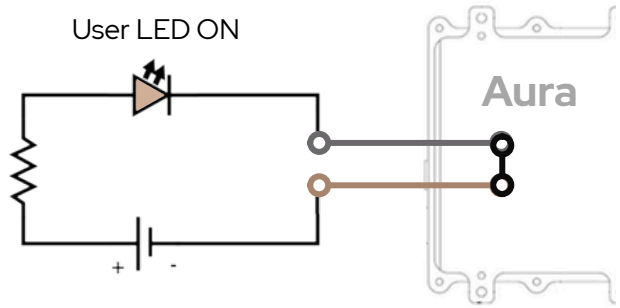
Note: Polarity can be reversed due to the full bridge rectifier at the dry contact input.

NO JAMMING



When no jamming is detected, the Aura system's internal dry contact remains open, keeping the user's external circuit in an open state.

JAMMING

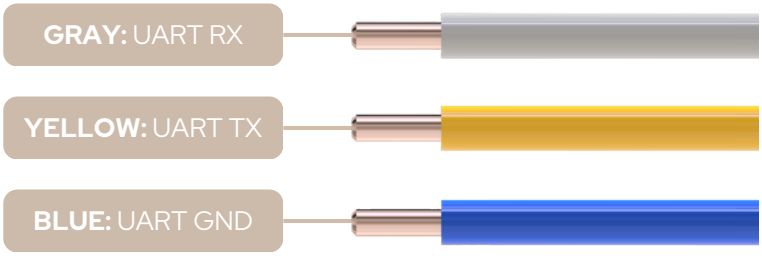


Upon jamming detection, the Aura system closes its internal dry contact circuit, thereby closing the user's external circuit via the dry contact wires.

TTL | UART Communication

By using UART TTL communication with the Aura unit, you can receive a variety of status messages and configure certain features. To enable this functionality, connect the UART wires to your UART adapter, according to the wiring table provided below:

- Voltage: 3.3V (LVTTL)
- Baud Rate: 115200
- No Parity
- 1 Start/Stop Bit



The UART interface is intended for maintenance. It does not include a built-in GNSS receiver

Once connected via a TTL/UART adapter, the system's status messages may be viewed using standard terminal emulators, based on the configuration specified in the preceding section.

System Status Messages

The Aura proactively or automatically transmits several information messages about the system's status.

1. BIT (Built-In Test)

After initialization, Aura sends a Built-In Test (BIT) indicating the system's health:

- System version
- The frequency protected bands that are installed in the unit.
- System usability status
- <bit> SYSTEM Ready or <bit> SYSTEM Error

2. Status Message

Every 10 seconds, a text string is sent via UART containing:

- Maximum signal strength measured in each frequency band during the last 10-second period
- System temperature
- Jamming Status (0= Jamming not detected or 1= Jamming detected)

Band, 0, Max_PD, <**PD1**>, Max#, <**J1 Status**>
Band, 1, Max_PD, <**PD2**>, Max#, <**J2 Status**>
Logic temperature [oC], <**Temp1**>
PP_RFIC temperature [oC], <**Temp2**>
Jamming Status, <**J3 Status**>

10s

Messege Parameters Description

Parameter	Description
PD1	Peak Detector signal strength recorded in band 1 over the last 10 seconds.
PD2	Peak Detector signal strength recorded in band 2 over the last 10 seconds.
J1 Status	0 = Band 1: Jamming not detected. 1 = Band 1: Jamming detected.
J2 Status	0 = Band 2: Jamming not detected 1 = Band 2: Jamming detected
J3 Status	0 = Jamming not detected, System in Bypass mode. 1 = Jamming detected, protection active.
Temp1, Temp2	Temperature Status

3. Request for information from the system

A binary request can be sent to the system for more information:

Request string	The value that the system will send back
uint8_t system status; //0	System Usability OK/Not OK
uint8_t Antennas Status; //1	The integrity of antennas in the system (information about working antennas and whether there are malfunctioning/not connected antennas)
uint8_t gnss_band1; //2	What GNSS frequencies are installed in the system
uint8_t gnss_band2; //3-	
	What GNSS frequencies are installed in the system 0- L1/E1 1- L2 2- G1 3-L5
uint8_t temperature_rfic_lsb; //12	System temperature

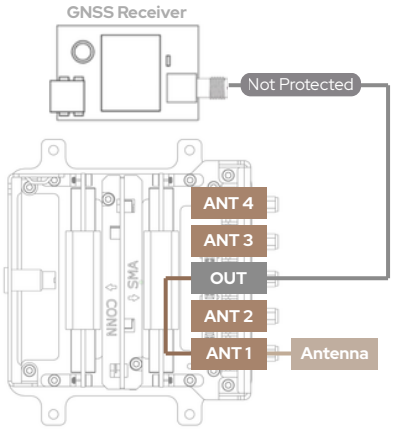
Aura Operating Modes & System Behavior

The Aura system features an intelligent switching mechanism between two primary modes Bypass Mode and Active Protection Mode. This ensures immediate protection when jamming is detected and high efficiency during quiet periods.

1. Bypass Mode (Standby)

Aura stays in Bypass Mode as long as no jamming is detected.

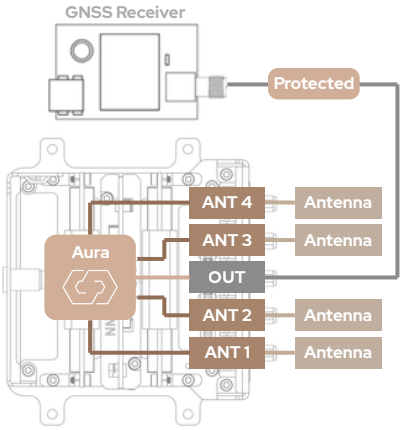
Feature	Description
LED Indicator	Aura Status LED Blinking Green
RF Signal Path	ANT1 → OUT . The signal is passed through without processing
OUT Bands	All bands supported and received by the ANT1 antenna
Transition to Active	Instantaneous. The system activates protection the moment a threat is identified.
Antenna Power	ANT1: Powered directly by the GNSS Receiver. ANT2, ANT3, ANT4: Powered by the Aura system.



2. Active Protection Mode (Null Steering)

Activated automatically upon detection of interference via ANT2 input.

Feature	Description
LED Indicator	Alternating Blinking Orange and Green
RF Signal Path	The system utilizes all antennas to perform Null Steering, providing a protected RF signal to the OUT port.
OUT Bands	Protected Band #1 + Protected Band #2 + Passthrough Bands
Transition to Bypass	If no jamming threat is detected for 2~3 minutes, Aura reverts to Bypass Mode to save power. The RF routing and antenna power supply switch back to their Bypass configurations automatically.
Antenna Power	Aura provides power to all antennas (including ANT1). Receiver voltage (within the 2.7–12Vdc range) does not interfere with operation.



- **Critical Detection Path:** ANT2 is also a dedicated sensign RF path for interference detection. If ANT2 is disconnected or faulty, the system will fail to detect jamming and will remain in Bypass Mode, leaving the protection algorithm inactive.
- **Warning:** Do not place a DC block between the Aura OUT port and the GNSS Receiver, as this will disrupt the antenna power pass through mechanism.

Antenna Voltage and Gain Configuration

To ensure optimal performance and prevent hardware damage, the antenna power supply and Aura Gain settings must be suitable to the antennas specifications.

1. Antenna Voltage Supply (DC Power)

The system provides a configurable DC voltage to the auxiliary antennas (ANT2, ANT3, and ANT4). In Bypass mode, ANT1 is powered by the host receiver, but the system takes over this power supply during Active Protection mode.

- Configurable Range: 2.7 to 12Vdc.
- Factory Default: 5 Vdc

> **WARNING:** Before connecting the GNSS antennas, verify their required operating voltage. Providing voltage outside the antenna's specified range may result in permanent damage or signal loss.

2. Antenna Gain

The Antenna gain amplifies GNSS signals before they reach the Aura protection algorithm. a suitable Gain setting is vital for optimal performance and reliable system behavior

- Configurable Range: 26dB - 32dB
- Factory Default: 26 dB

IMPORTANT: Please check the antennas Datasheet and verify that your antennas operate within the 26dB to 32dB Gain range. Note that even if an antenna meets these requirements, if its actual Gain deviates from the 26dB default by more than ±2dB, you must manually reconfigure the system to match the antenna's specific Gain value. This is essential to maintain high protection efficiency and to prevent the Aura jamming detection logic from malfunctioning.

> Antenna voltage and Gain settings can be configured via the Aura GUI software. For further details and to request access to the GUI, please contact infiniDome technical support department.

Power Supply and Antenna Parameters

Power Supply Specification					
Supply Voltage	Receiver DC line	*+6*		+32	Volts DC
Power Consumption	Including antennas		9W		Watt
Antenna Bias	Voltage	2.7		12	Volts
	Current per o/p	2		25	mA

Antenna Parameters

Item	Description		Value		Units
Type	Receiver DC line	*Min.*	*Typ.*	*Max*	n/a
Elements			2		n/a
Gain			30		dB
Noise Figure			2		dB
Supply Voltage			2.75		Volt
Supply Current		2	10	20	mA

Troubleshooting

Common Issues and Solutions

GNSS Receiver Does Not Acquire Position Lock:

1	Check for Obstructions: • Ensure there are no buildings, tunnels, or other obstructions around or above the application. • Move to another location if necessary.
2	Isolate Internal Jamming Sources: • Switch off other electronic devices to reduce potential interference.
3	Inspect Cable Connections: • Check for any damage, excessive bending, or loose connections. • Ensure all cables are correctly secured.
4	Test GNSS Receiver and Antennas: • Verify the GNSS receiver functions correctly when connected directly to antenna #1. • Repeat the test with the other antennas. • If both antennas work correctly, reconnect the Aura
5	Verify Antenna Connections: • Ensure antennas are connected to Aura ANT1, ANT2, ANT3 and ANT4. • Ensure the SMA connectors are properly secured.
6	Verify RF Output Connection: • Ensure the Aura OUT connector is connected to the GNSS receiver. • Ensure the SMA connectors are properly secured.
7	Check GNSS Receiver Compatibility: • Confirm the GNSS receiver matches the frequency bands installed in Aura.
8	Power Supply Check: • Ensure 6 - 32VDC external power is connected. • Verify power source output. • Verify power source polarity.
9	LED Indicator Check: • Ensure the green LED is ON when an active GNSS receiver is connected.

Continuously reboots (red LED flashes, turns off, and flashes again):

1	Verify that the system is receiving a stable input voltage between 6V and 32V DC, and ensure the power supply meets the maximum power requirement of 16W.

Jamming indication immediately upon system startup (flashing green and orange LED):

1	Check for Obstructions: • Ensure testing is conducted outdoors under an open sky, away from noisy laboratory environments or external interference. • Any radiating equipment can interfere with the system's sensitive components. Even a GNSS repeater or a nearby Jetson computer may be detected as a jamming source. • Verify the system's PD value by connecting via the UART interface.
2	• Verify Antenna Gain: Check the datasheet to ensure it falls within 26-32dB range. • Action: If the gain is more than 2dB+/- the system default (26dB), contact our support to update the antenna configuration using the Aura GUI tool.

The system is not detecting jamming:

1	ANT2 port is the sensing antenna. Faulty antenna or cabling will prevent jamming detection. • Swap Antenna 2 (ANT2) with Antenna 3 (ANT3) and check if the status changes. If jamming is then detected, replace the faulty cable or antenna.
2	• Ensure the system is configured with antennas gain values according to the antenna datasheet and system requirements (refer to the previous section).

No messages received over UART:

1	• Verify there are no wiring errors or physical damage to the UART cabling. • Ensure the system is powered on and receiving 6-32V DC. • Try swapping the RX and TX lines and verify UART GND connected. • Confirm that the communication is set to 115200 baud rate.
2	• Ensure the system is powered on and receiving 6-32V DC.

No satellite fix/signal during non jamming periods:

1	When no jamming is present, ANT1 is connected directly to OUT (Receiver Output). • Verify that the receiver's output voltage is sufficient and compatible with antenna specs. • Eensure there is no DC Block between the receiver and the system. • Verify ANT1 and its cabling by swapping them with known working components.
2	• Ensure the system is powered on and receiving 6-32V DC. If the system is not powered, no RF signal will reach the receiver, even in the absence of jamming.

Jamming indication persists after the jamming signal has stopped:

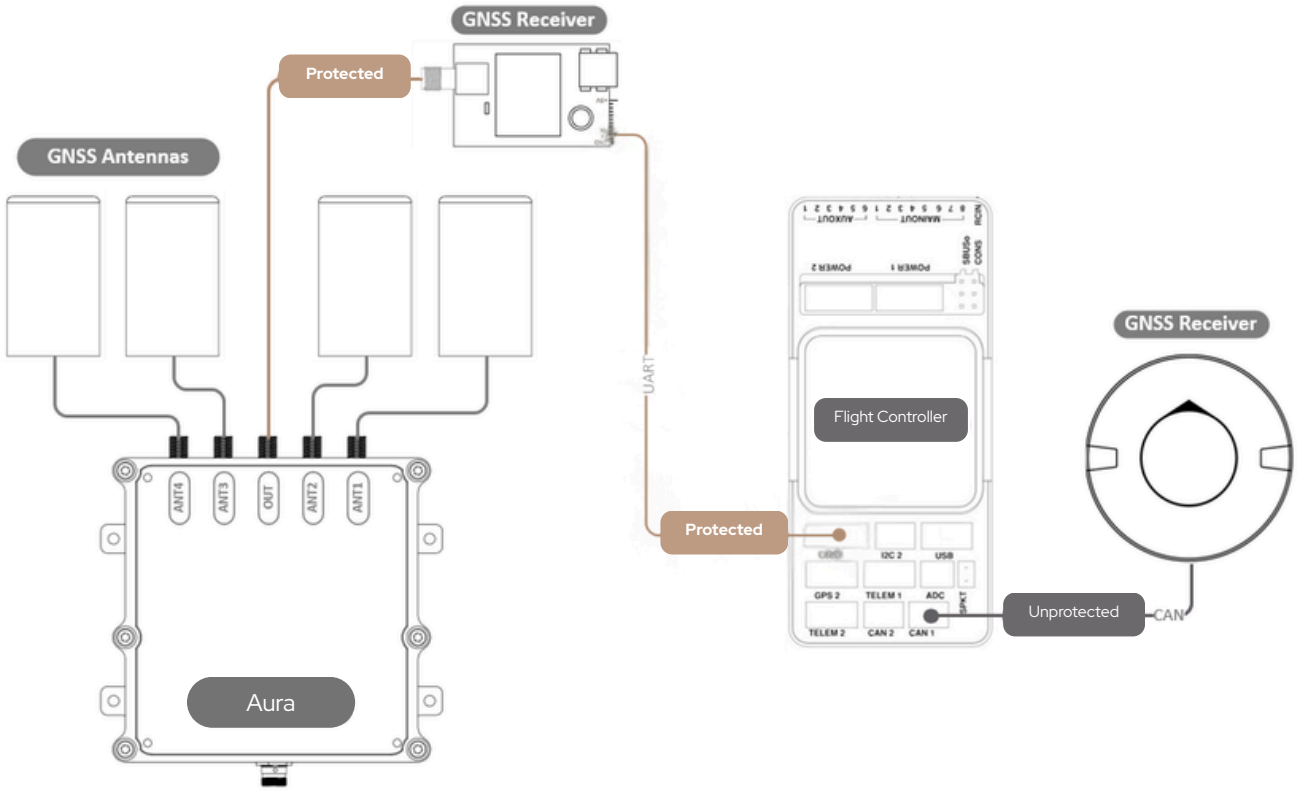
1	• Cooldown Period: protection persists for ~2 mins after jamming stops. • Recovery: System reverts to bypass mode once the environment is confirmed clear (~2 min).

Appendix – Pixhawk Integration

This appendix to the integration guide provides guidance on the integration of Aura with an ArduPilot/PX4-based firmware system. It will be demonstrated using u-blox ZED-F9P GNSS receiver as a representative example only. The instructions will include a wiring guide, system parameters, and additional essential settings, including possible configurations for integration with Aura.

Connection Configuration

The diagram below shows the typical way to integrate a Aura with a Pixhawk/ArduPilot FC and a GNSS receiver. The receiver that is connected to the Aura and uses the GPS1 port on the ArduPilot FC will have protection, but the second GNSS receiver (CAN1) will remain unprotected.



Aura requires a GNSS receiver with a dedicated antenna/RF input port.
The Aura unit must connect to this input, effectively replacing the standard antenna. This means that GNSS receivers that combine both the antenna and the receiver into a single module (e.g., HERE3, HERE4) are incompatible.

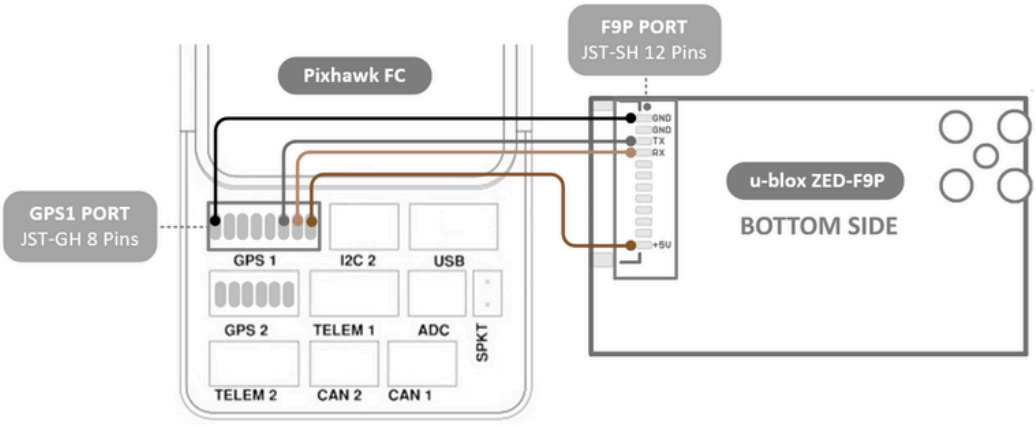
Wiring Diagrams *(u-blox ZED-F9P GNSS)

The following wiring diagrams depict the connection method for a u-blox ZED-F9P GNSS receiver when interfaced with either the GPS1 or GPS2 port.

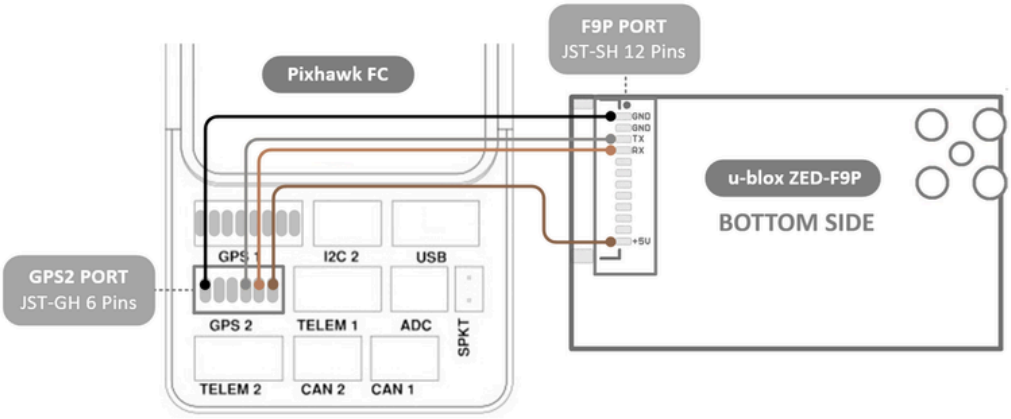
Please Note: The pinouts for the TELEM1 and TELEM2 ports are the same as the GPS2 port.

** u-blox ZED-F9P breakout board provided by infiniDome*

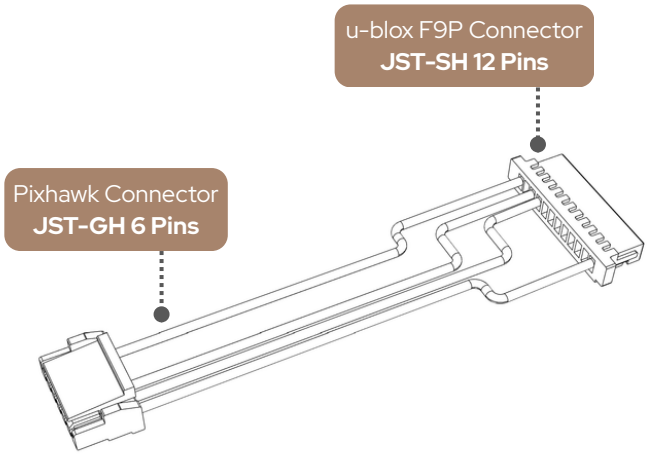
Wiring Diagram for connecting to the Pixhawk **GPS1** Port:

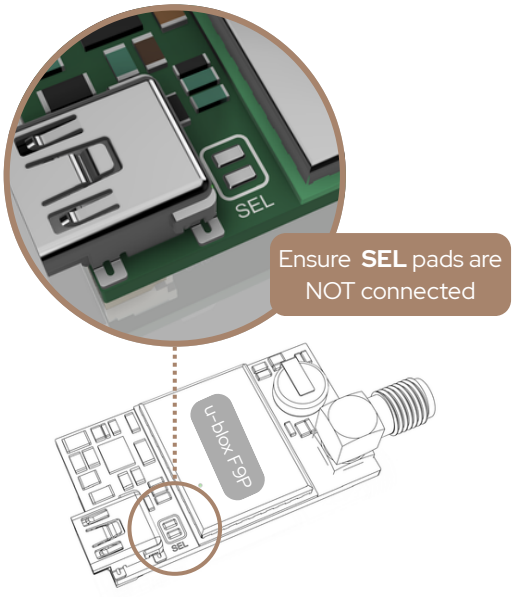


Wiring Diagram for connecting to the Pixhawk **GPS2** Port:



Wiring:





ArduCopter Parameters

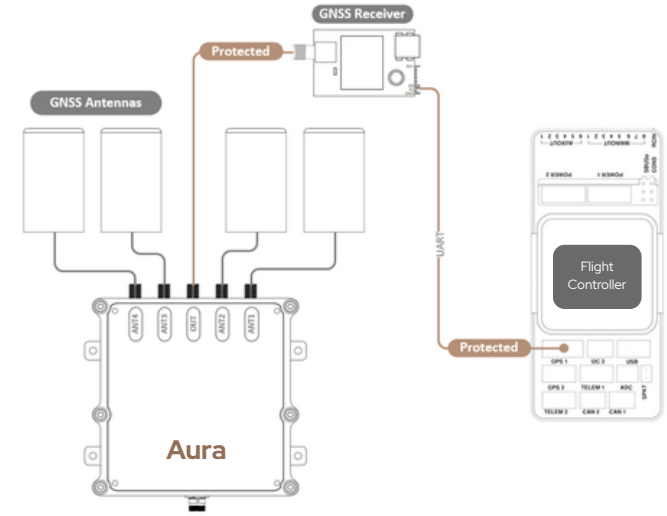
CRITICAL WARNING REGARDING PARAMETER MODIFICATION

- Infinidome shall not be held liable or responsible for any damage whatsoever that may result from the modification of the parameters mentioned herein.
- This process MUST be executed ONLY by the by an authorized representative on their behalf who possesses a thorough understanding of the action being performed.
- By proceeding with the modification of these parameters, the entity performing the change assumes all liability and responsibility for the outcome.
- Furthermore, failure to correctly implement parameters changes may lead to unpredictable flight behavior, loss of control, and/or system failure.

Parameters for a Single u-blox F9P GNSS Receiver

When Connected as a Single Receiver to the GPS1 Port. Please Make sure no other serial port defined to GPS protocol (5).

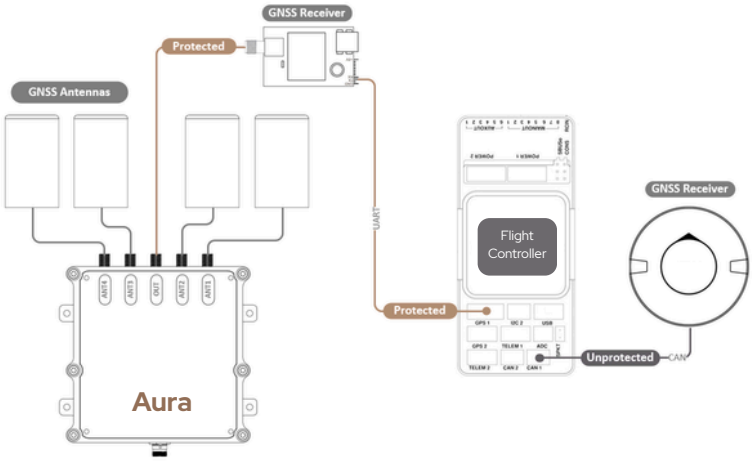
Parameter	Value
SERIAL3_PROTOCOL	5
SERIAL3_BAUD	115
GPS_TYPE1	2
GPS_TYPE2	-1
GPS_DELAY_MS2	50



F9P Receiver (Protected) Parallel Connection with HERE3/4 (Unprotected)

When the F9P receiver is connected to GPS1 port in parallel with a HERE3/4 (CAN). For the HERE parameters, you must follow the manufacturer's guide.

Parameter	Value
SERIAL3_PROTOCOL	5
SERIAL3_BAUD	115
GPS_TYPE1	9
GPS_TYPE2	2
GPS_AUTO_CONFIG	2
GPS_DELAY_MS2	50



Help and Support

Maintenance

Aura does not contain any user-serviceable parts and has no moving parts. Therefore, concerning the CAUTIONS on page 4, no maintenance is required apart from examining all the cable assemblies for a secure connection, damage, and corrosion.

Additional Support

Please scan for further assistance:

infiniDome.com