

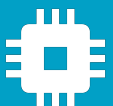


Subsystems for the  
UAS intergration into  
the airspace

# *Mobile Ground Station with BLE/Wi-Fi Technology*



Data sheet & User manual



## Introduction

**MGS** station combines **ADS-B** and **BLE/Wi-Fi RemoteID** Omnidirectional receiver station with multi-constellation **GNSS** sensor to provide the best accuracy. **LTE** connectivity which simple setup of the MQTT broker allows usage in all LTE/4G rich environments without the need for any additional cabling to send data. It has been designed to allow quick and easy assemble enclosed in IP67 case for high weather condition resistance. Device comes with all necessary cables and antennas for straight forward installation which takes less than 5 minutes.

Data can be used with your server (user gets full data access). There is no obligation to send data to foreign servers, user always retains data.

Air traffic data is also available via API and can be integrated with third-party software and applications, for example using the MQTT protocol.

It is a perfect solution if you are conducting many VLOS/BVLOS operation in different places where safety is critical.

## Applications

- Airports and critical infrastructure
- Nationwide traffic management systems (manned and unmanned)
- Perfect solution for local airfields
- U-Space and UTM systems
- Network based Remote Identification (central monitoring)

For more information please contact: [support@aerobits.pl](mailto:support@aerobits.pl).

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# 1 Technical parameters

## 1.1 Basic technical information

Parameter	Description	Typ.	Unit
First Band	ADS-B	1090	MHz
Second Band	BLE/Wi-Fi	2400	MHz
Sensitivity (ADS-B)		-90	dBm
Sensitivity (BLE)		-105	dBm
Sensitivity (Wi-Fi)		-90	dBm
Integrated GNSS	Multi-GNSS for precise time stamp		
LTE Cat. 1	Data transport layer (global bands)		

Table 1: General technical parameters.

## 1.2 Electrical specification

### 1.2.1 Power supply

Parameter	Value
Power connector	Standard USB connector (programming and power supply)
Power consumption	1.5 W
Power supply	100 - 240 VAC

Table 2: Power supply of MGS-BLE

## 1.3 Mechanical specification

### 1.3.1 Mechanical parameters

Parameter	Value
Dimensions	170 x 170 x 100 mm
Weight	0.5 kg (Module without cables and antennas) 2.5 kg (With cables, arm and antennas)

Table 3: Mechanical parameters of MGS-BLE

## 2 Quick start

### 2.1 Scope of delivery

1. Omni-directional Ground Station
2. ADS-B antenna
3. BLE \ Wi-Fi antenna
4. Power Supply Cables
5. Small assembly parts
6. Antenna's installation arm
7. Distance bracket

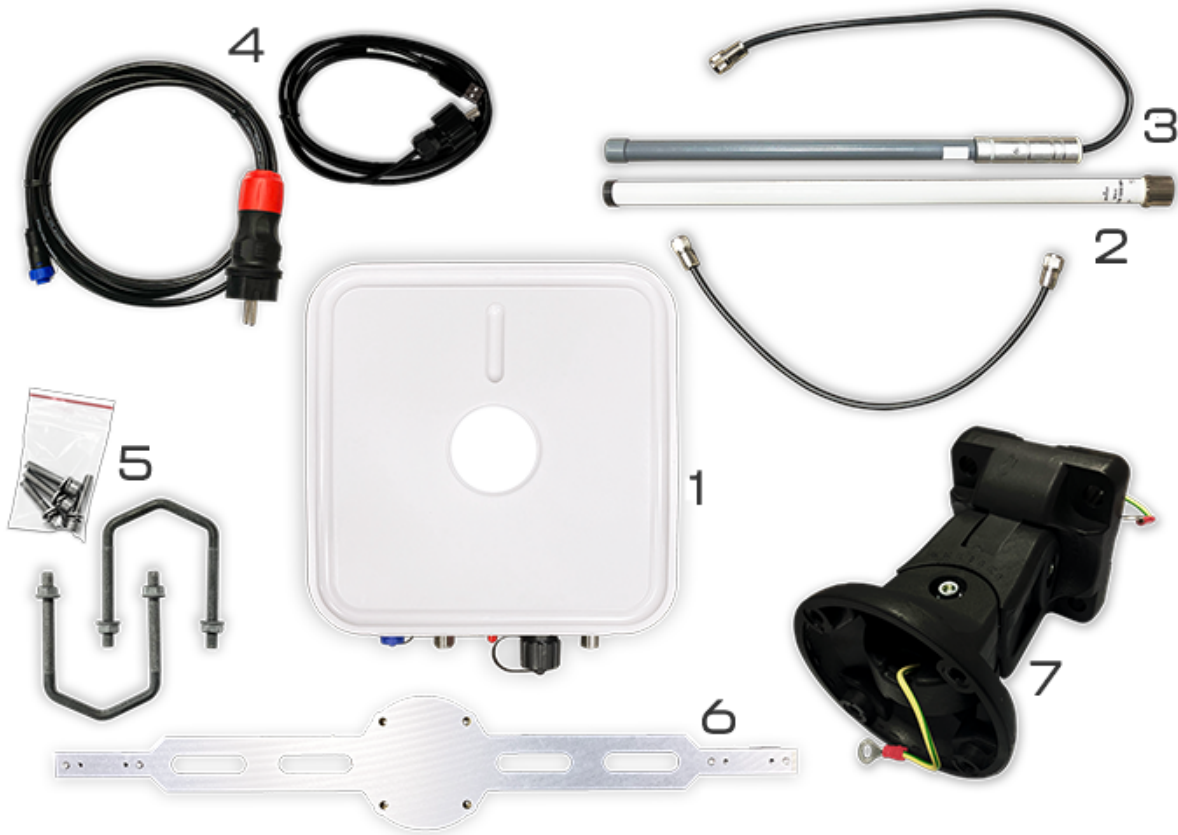


Figure 1: MGS-BLE equipment kit

### 2.2 Installation process

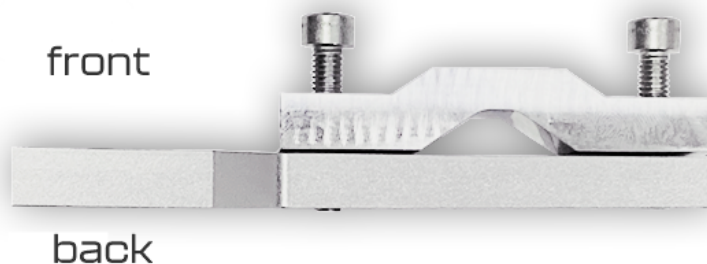
#### 2.2.1 Mounting

1. Take the MGS out of the box and place facing down - as shown on the picture.



2. Place the arm on the MGS case (without installed antennas).

**NOTE: Please observe correct direction.** Front of the arm and front of the case have to face the same direction.



Rotate MGS as shown on the picture below.

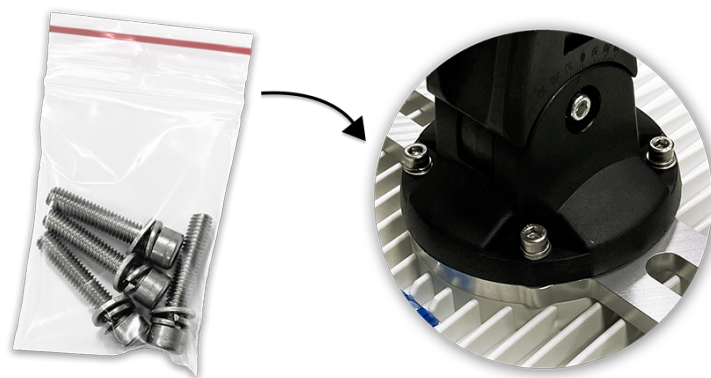


3. Mount black distance bracket with the protective earth conductor on the case.

**NOTE:** It is important that the cable is connected to the appropriate hole, which is marked on the case with following electrical marking.



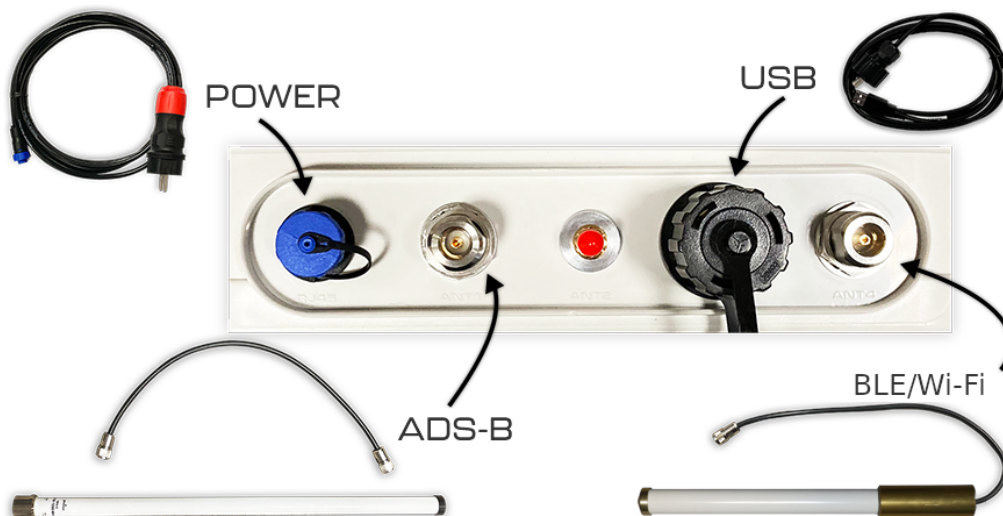
For installation, use the screws included in the kit.



4. After installing the arm, attach the antennas. Loosen the screws on both sides of the arm and tighten them after inserting antennas. It is recommended to install antennas one by one to avoid damaging them.



5. After the mechanical part of installation, connect the antennas to the device and the device to the power supply as shown below. **Do not use both power sources at the same time.**



6. Correct mounting shown below.





## 2.2.2 Power supply connection

**NOTE: Do not use both power sources at the same time. Please disconnect power supply cable (100-240 VAC) before programming MGS via USB cable.**



### 2.2.3 Mounting to the tripod

1. Take the MGS out of the box and place on tripod just like below, and tighten the screws.



2. Use blue spirit level to setup straight up .

**NOTE: Use tripod legs and MGS black distance basket.**



3. Example of correct assembly



## 2.3 Inserting a SIM/chip card

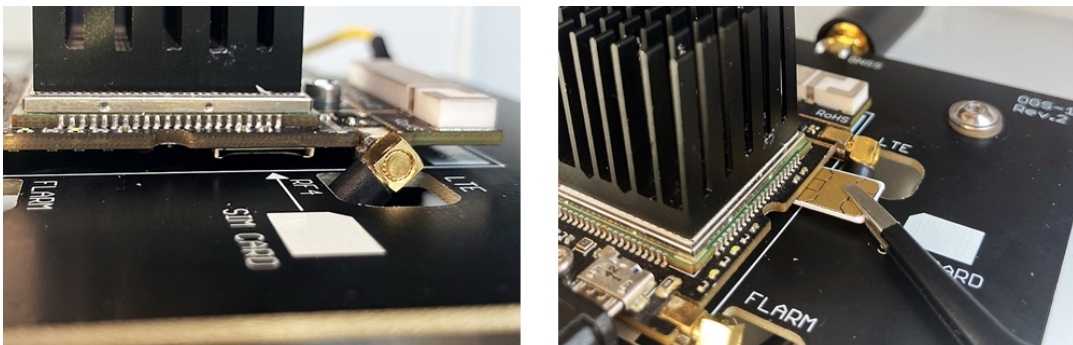
Ground stations based on the **HOD V2** need a valid SIM card. Recommended way to change/insert SIM card is described below.

### 1. Disconnect module.

Ensure that you have HOD disconnected and take off module cover. To unmount cover you will need a cross screwdriver.

### 2. Find SIM card slot and insert SIM card.

It is not recommended to unmount the HOD V2 because of very sensitive connections. The slot is visible after turning the housing.



Insert SIM card into slot visible on the picture above. A simple way to do it is to grab SIM with tweezers and push it carefully directly into slot. Then attach the device back (if unmounted) and mount the cover.

Please read carefully

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