Aerobits

Subsystems for the
UAS intergration into
the airspace

Mobile Ground Station

Data sheet & User manual

Mobile Ground Station

Introduction

MGS station combines **LTE**, **GNSS**, **ADS-B** and **FLARM** technologies in a very convenient form. It has been designed to allow quick and easy assemble. Packed in a very nice and sturdy case, comes with all necessary cables and antennas for straight forward installation which takes less than 5 minutes.

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
- Ground Network air traffic surveillance systems

For more information please contact: support@aerobits.pl.

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1 Technical parameters

Parameter	Description	Typ.	Unit
First Band	ADS-B	1090	MHz
Second Band	FLARM	868	MHz
Sensitivity (ADS-B)		-90	dBm
Sensitivity (FLARM)		-130	dBm
Integrated GNSS	Multi-GNSS for precise time stamp		
LTE Cat. 1	Data transport layer (global bands)		

Table 1: General technical parameters.

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2 Electrical specification

2.1 Power supply

Parameter	Value
Power connector	6 pin JST (power and data) or mirco USB (power and data), SMA (antennas)
Power consumption	1.5 W
Power supply	5 V (external power supply, such as a power bank)

Table 2: Power supply of MGS

2.2 LED indicators

LED	Color	Function
A (ADS-B)	White	Flashing – reception of 1090 MHz avionics frame (ADS-B)
G (GNSS)	White	Flashing – GNSS fixed Off – No GNSS fix, wait or change position for better satellite coverage
F (FLARM)	White	Flashing – reception of valid FLARM frame (868 MHz)
L (LTE)	White	Flashing – LTE communication in progress Off – No mobile network, wait or change position for better network coverage
P (Power)	Green	Constant light - Power supply presence Off – No power, connect or recharge power source

Table 3: Electrical parameters

Figure 1: MGS front

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3 Mechanical specification

3.1 Mechanical parameters

Parameter	Value
Dimensions	130 x 175 x 45 mm
Weight	0.5 kg

Table 4: Mechanical parameters of MGS

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4 Quick start

4.1 Scope of delivery

1. Multi-receiver with LTE conectivity
2. Antennas (ADS-B, FLARM, GNSS, LTE)
3. FLARM Licence
4. Cable set and small assembly parts
5. Power Supply Cable
6. Mechanical installation components
7. Tri-pod with antenna’s instalation arm
8. Transport case

Figure 2: MGS equipment kit

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4.2 Installation

Figure 3: Combination overview

4.2.1 Installation process

1. Install the arm on the tripod.
2. Place the antennas on top of the arm.
3. Route the antenna cables to the corresponding sockets.
4. Secure the device and the antennas and consider the important notices for the installation given below.
5. Connect the device to a power supply.

NOTE: Once powered up, the device communicates its status via the LED descriptions mentioned in section above.

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4.2.2 Important notices during installation

- Do not cross over antenna cables.
- Mount all antennas right on the arm and in the next step click them into the receiver unit.
- Do not power up the device before completing installation of all elements.
- The device is watter resistant, IP67.

4.3 Inserting a SIM/chip card

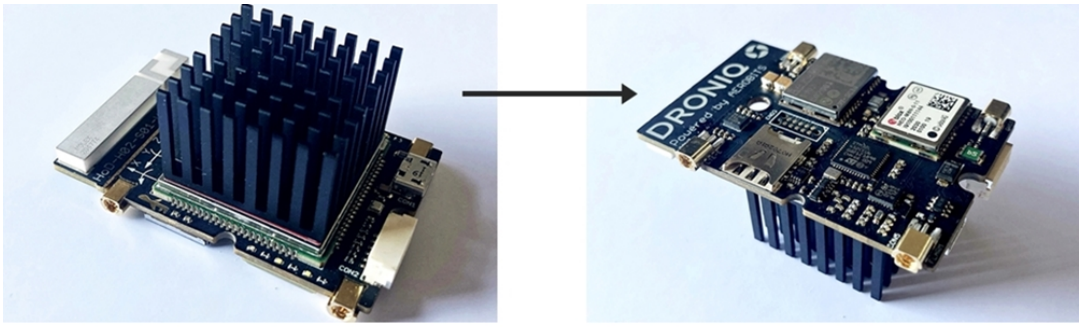
Ground stations based on **the HOD V2** need a valid SIM card. Recommended way to change/insert SIM card is described below.

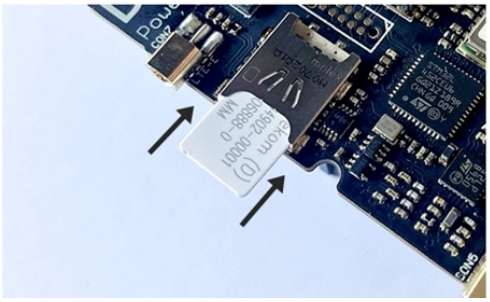
1. Disconnect module.

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.

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5 Revision history

Date	Revision	Changes
05-May-2021	1	Initial release.

Table 5: Revision history.

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