SATPRO

Professional Smart Antenna Tracker

Professional automatic tracking antenna for Radio Control, Mavlink Telemetry and Video systems, for all types of applications with Aerial, Land or Maritime Vehicles

Improves maximum operating range.

Install any telecommunications system.

Adaptation to different types of high gain directional antennas.

Position control by mavlink telemetry or by commands from PC.

Optional, with XLRS systems, links up to

Radio Control & Telemetry	Range Max.	**250Km**
Full HD Video System	Range Max.	**150Km**
Analog Video System	Range Max.	**100Km**

Applications

Drones, Multirotors, Aircraft, Helicopters, Cars, Boats, Robots, RPA, UAS, UAV, UUV, UGV, ROV, USV, ASV...

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SATPRO is a tracking system, composed of a rotating head, two arms where the antennas are placed and an anchoring system to a fixed base or tripod.

Customizable, you can install the long range XLRS system up to 250Km (LOS) or any telecommunications system you need, including jammers for drones for example.

Prepared so that you can place different types of high gain directional antennas in various configurations since the standard aluminum profile arms are removable and allow various mechanical combinations to be made.

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Main Benefits of using SATPRO

More robust communications: Constant, strong and stable signal.
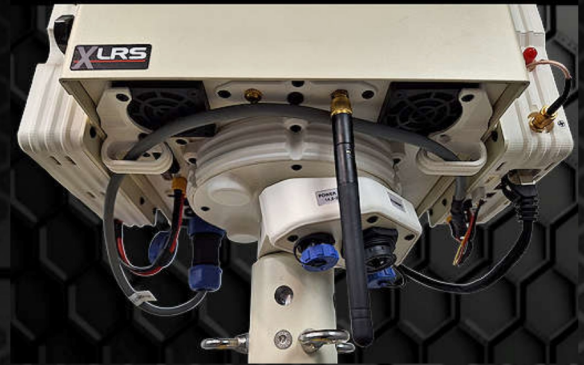
Install any telecommunications system.

Link up to 250Km (LOS) with XLRS systems.

Protection against overstressing of the axes.

8 to 10 hours of autonomy, consumption up to 12 times less than others.

Supports simultaneous external battery or power supply to increase autonomy.

The **SATPRO** automatically points and orients the high gain directional antennas, which automatically follow the movement of the vehicle in real time, to get the best amount of signal and get the longest possible range from the system.

Calculates by combining the position and distance of the vehicle's GPS and optionally the amount of RF signal received at the antennas.

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Functioning with XLRS systems

RC & Mavlink Telemetry up to 250Km (LOS)

SATPRO will have the WMX481 radio transmitter or similar installed that is connected through RCBUS.

Communication between SATPRO and GCS XLRS or XLRS Remote Controller, can be done via: RCBUS Cable, Wifi or Ethernet.

WMX481

Optionally, **a standard RC transmitter** can be connected using the BTSD1V3_CTRL, it communicates with the SATPRO through the RCBUS cable and then the connection with the RC transmitter is made through the trainer port and for Mavlink telemetry it is sent/received by USB to connect a PC or similar device.

Video System

Digital Video, up to 150Km (LOS): SATPRO will have the XVRE video receiver installed that is connected via Ethernet. The video signal will be sent through the SATPRO Ethenet port, with an HDMI Cable or HDMI Wireless to XVRE.

Analog Video, up to 100Km (LOS): SATPRO will have the XVID3V2 video receiver installed and will send the video signal through the 5.8Ghz TX or by cable.

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Functioning with other telecommunications systems

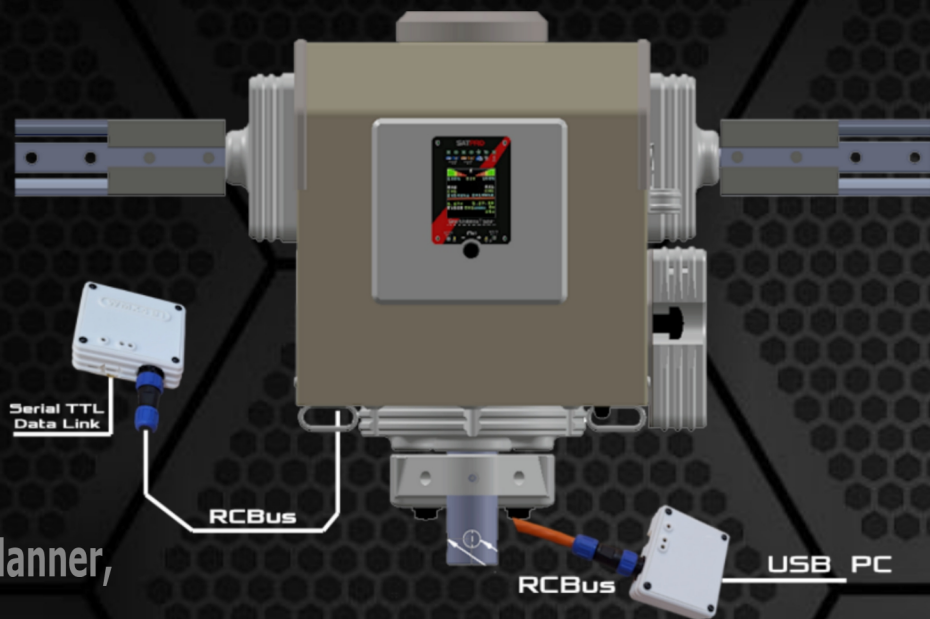For **SATPRO** to work by automatically pointing at the vehicle, it needs to receive Mavlink GPS telemetry data, so it can send the data through USB, Ethernet or Wifi.

The tracker antenna can receive X and Y position commands in degrees directly for use in any other application.
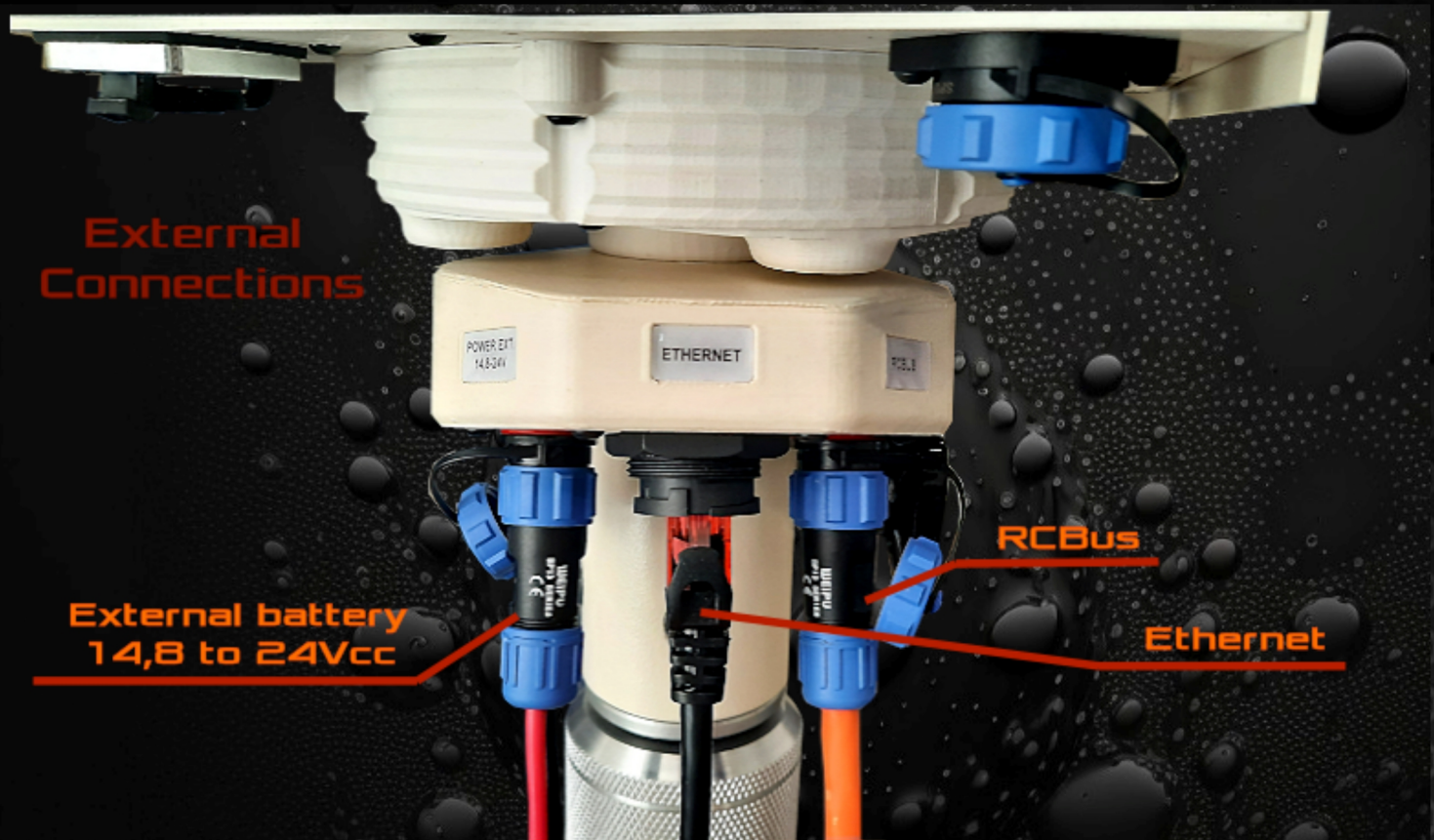
Data Link with Serial TTL interface: It connects through an RCBus to SATPRO converter at 38400b or 115200b.

PC - USB: Using a USB to RCBus converter, Mavlink commands or packets can be sent to 115200b for connection with software: Mission Planner, QGroundControl, etc.

Ethenet - Wifi: SATPRO has a UDP server to which you can send received Mavlink telemetry packets and it will position itself automatically, you can also send commands to position SATPRO directly.

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Conectivity - External Connections

Interfaces:

RCBUS: Communications between XLRS devices, Radio Module WMX481, Ground Control Stations, Remote Controllers, etc.
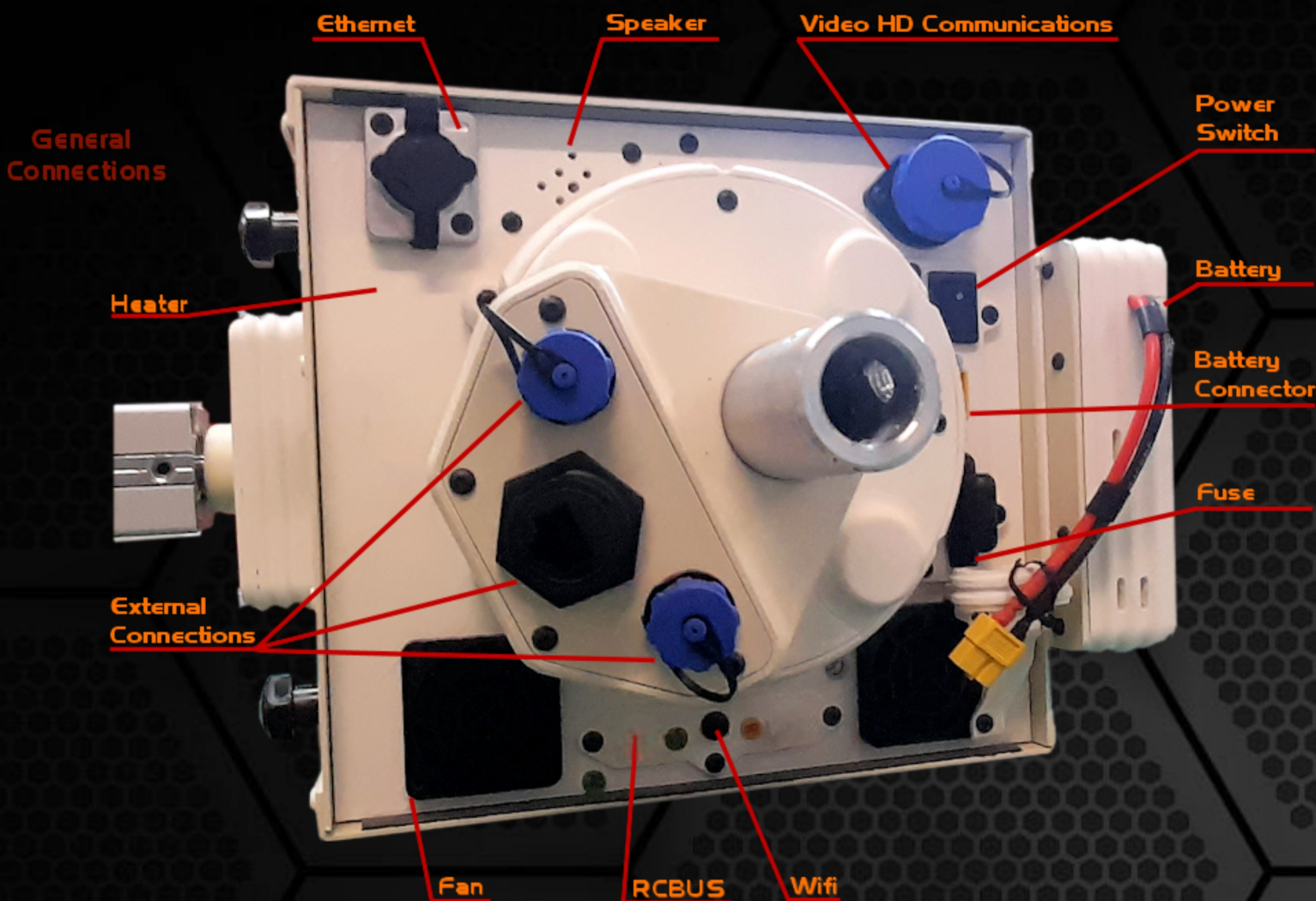
Ethernet: For data link communications or XVRE digital video receiver.

External Battery: To connect optional external battery.

Wifi: Communications between XLRS devices or to send Mavlink GPS telemetry data from a PC or similar.

USB: Mavlink telemetry or sending commands from PC, Optional with adapter.

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Conectivity - General Connections

Ethernet Port: For data link communiations or XVRE digital video receiver.

Speaker: The speaker emits an alarm to notify you of certain important alerts.

Video Communications: Power supply and auxiliary communications for XVRE digital video receiver.

Power Switch: ON/OFF switch for SATPRO.

Battery: 4S/14.8V/4800mAh LiOn battery.

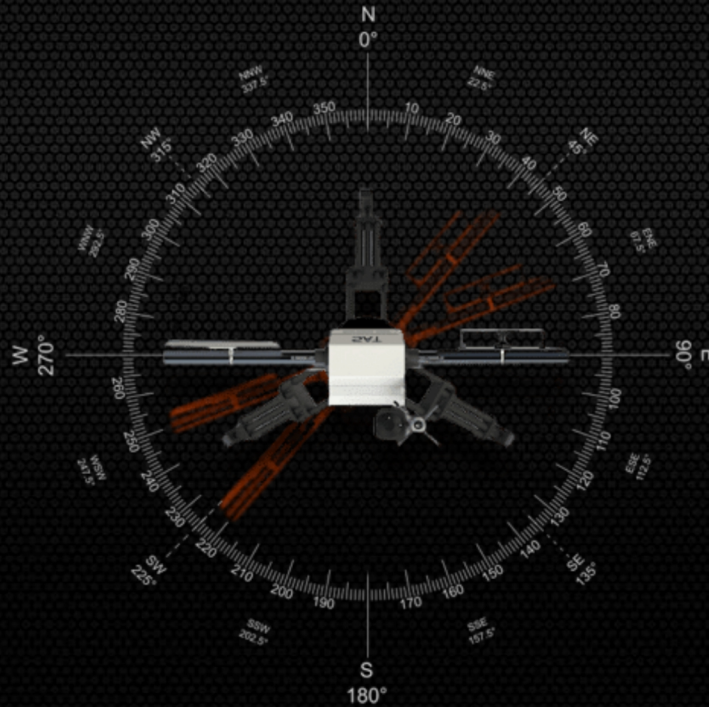**Battery Connector:** To connect the SATPRO battery.

Fuse: Value 5A.

Wi-Fi: Communications between XLRS devices or to send Mavlink GPS telemetry data from a PC or similar.

RCBUS: Communications between XLRS Devices, radio module WMX481 or similar.

Fan: When the SATPRO temperature is hot, it activates the fan automatically to cool the system.

Heater: When the SATPRO temperature is cold, it activates the heater automatically to keep the system within an optimal temperature range.

Rotation Axis 360º

SATPRO use a two-axis tracking mechanism to achieve precise rotation and tilt of the antennas. This mechanism is made up of motors, gears and encoders which are responsible for rotating and tilting the antenna according to the signals it receives from the control unit.

Tilt Axis -45º to 87º

The inclination angle of -45º allows you to carry out missions where SATPRO is located on a high point such as a mountain and the vehicle is below such as low flights, maritime navigation or terrestrial.

Control Display & Leds

It has a color display along with several integrated LEDs that provide you with real-time system information, showing essential data and allowing you to make informed decisions on the spot.

Vehicle GPS information: Latitude, Longitude, Distance, Height, Relative height of house, etc.

System and Motors Information: Time, Current Voltage, Target X and Y Degrees, X and Y Motor Steps, X and Y Degrees, etc.

And if an XLRS system is used, then some XLRS telemetry data can be displayed: RSSI RX, RSSI TX, Number of packets received, etc.

Alert System

It has an alert system that keeps you informed in case an emergency occurs in the SATPRO.

The speaker emits an alarm to notify you of certain important alerts, especially in critical conditions or unexpected situations, such as: Battery alert, Connection warnings, Emergency alarms, etc.

On the display, messages appear depending on the type of alarm.

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Internal and External Battery

It incorporates a 4S/14.8V/4800mAh LiOn battery, which has a 5A fuse and a protection circuit to prevent over-consumption, low and high voltage, as well as charging current control.

Consumption is very low, which allows it to last approximately 8 to 10 hours of continuous use, only with the consumption of the tracking antenna.

In addition, the battery is interchangeable, which means that users can replace it if necessary.

For added convenience, we've also included the option to connect a battery or external power supply. From 14.8V to 24V, allowing longer power life and greater flexibility in antenna use. Also, if both batteries are used at the same time, SATPRO will only consume of the battery with the highest voltage.

Thermal Control

SATPRO has a thermal insulation and control system, when temperatures are cold or hot, the thermal control comes into action to keep the Tracker Antenna within an optimal temperature range.

Thermal control helps SATPRO doesn't overheat in hot weather or freeze in cold weather.

Resistance in Drizzle Conditions

SATPRO incorporates a design that makes it resistant in light rain conditions.

Basically it is prepared in case it suddenly rains during a mission and it takes a while to protect it.

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Portability

Each SATPRO is delivered with a robust suitcase with protective foam, you can take your SATPRO anywhere safely, your equipment will be protected and ready for use in minutes.

Suitcase Dimensions:
70 x 50 x 40cm

Weight (Suitcase with SATPRO): 26Kg

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SJJ32 Tripod (Optional)

At SATPRO we have designed a specific coupling to be able to install it quickly and easily on the SJJ32 tripod.

Once SATPRO is coupled with the tripod, you only have to screw the two knobs without using tools.

It has 3 eyebolts to use steel slings and nail them to the ground with pegs.

Features

Min. height: approx. 1.30m.
Max. height: approx. 3.20m.
Tripod head: Adaptation piece for SATPRO.
Dimensions: 114 x 25 x 20 cm.
Weight (SJJ32): 7,05Kg.
Weight (Bag + Accesories): 9,5Kg.

Content

x1 SJJ32 Tripod + SATPRO Coupling.
x1 Transport Bag.
x2 Knobs M10x25mm.
x2 Nylon Washers M20x13x2mm.
x3 Heavy ground pegs 20cm with hook and hole.
x6 Small steel carabiners 40x40mm.
x3 Steel Slings, 3mm x 4 meter.
x3 Closed eye turnbuckles, M4.

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Manufactured by DMD. Digital Micro Devices. ©2023

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Specifications

x1 Speaker. The speaker emits an alarm to notify you of certain important alerts.

x1 Heater, 15W: When the SATPRO temperature is cold, it activates theheater automatically to keep the system within an optimal temperature range.

x1 Fan: When the SATPRO temperature is hot, it activates the fan automatically to cool the system.

General Connections

x1 RCBUS (Female Jack Connector): Communications between XLRS Devices, radio module WMX481 or similar.

x1 Ethernet Port (RJ45): For data link communiations or XVRE digital video receiver.

x1 Video Communications: Power supply and auxiliary communications for XVRE digital video receiver.

Extenal Connections (For Ground)

x1 RCBUS (3 Pins Male Connector): Communications between XLRS Devices, Ground Control Stations, Remote Controllers, BTSD1V3_CTRL and to updated firmware.

x1 Ethernet Port (RJ45): For data link communiations or XVRE digital video receiver, connect to network, PC or similar

x1 External Battery (3 Pins Male Connector): To connect external battery.

x1 Wi-Fi (Internal antenna o External with SMA-Female): Communications between XLRS devices or to send Mavlink GPS telemetry data from a PC or similar.

x1 USB: Mavlink telemetry or sending commands from PC, Optional with adapter.

Display & Leds

x1 Display: 1.5" TFT IPS Color display.

x1 Encoder with button: To manually start the north position.

x9 Leds: x1 Link TX1 | x1 RF TX1 | x1 Link TX2 | x1 RF TX2 | x1 Wifi | x1 Fan | x1 Heater | x1 Internal Battery | x1 External Battery.
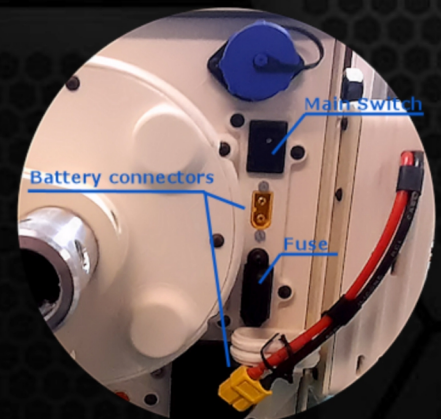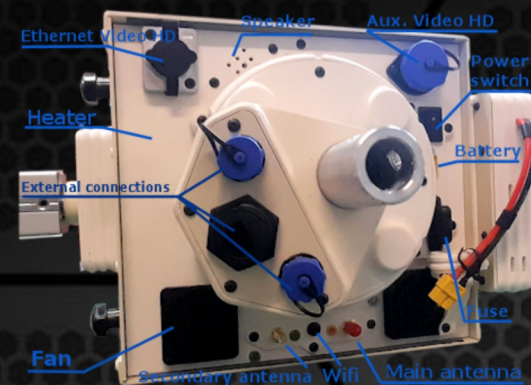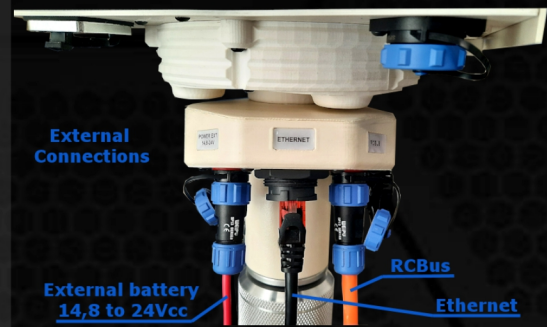
Battery

x1 Internal Battery: 4S/14.8V/4800mAh LiOn battery.

x1 Power Switch: ON/OFF switch for SATPRO.

x1 Battery Connector: To connect the SATPRO battery.

x1 Fuse: 5A.

External Connections

External battery 14,8 to 24Vcc

RCBus

Ethernet

Ethernet Video HD

Speaker

Aux. Video HD

Power switch

Heater

Battery

External connections

Fan

Secondary antenna

Wifi

Main antenna

Fuse

Link TX1 (Main)

RF TX1 (Main)

Link TX2 (Secundary)

RF TX2 (Secundary)

Wifi

Fan

Heater

Internal Battery

External Battery

Main Switch

Battery connectors

Fuse

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Mechanical Specifications

Positioner Mounting (Fixed without movement): Tripod, Building, Car, Van and other options possible.

Velocity Azimuth: max. 15°/sec.

Velocity Elevation: max. 15°/sec.

Azimuth Rotation: 360º Continuous.

Azimuth Calibration: Automatic.

Point Accuracy: <1º.

Elevation Rotation: -45º to +87º.

Height above ground with Tripod SJJ32 (Optional): 3.20m.

Tracking Antenna head weight together with the arms: 14.5Kg.

Tracking Antenna head weight (With Tripod SJJ32): 21.5Kg.

Environmental

IP Protection: IP54.

Resistant in drizzle Conditions: Basically it is prepared in case it suddenly rains during a mission and it takes a while to protect it.

Temperature: -20ºC to +55ºC.

Humidity: Up to 95%.

Maximum antenna weight with counterweight:

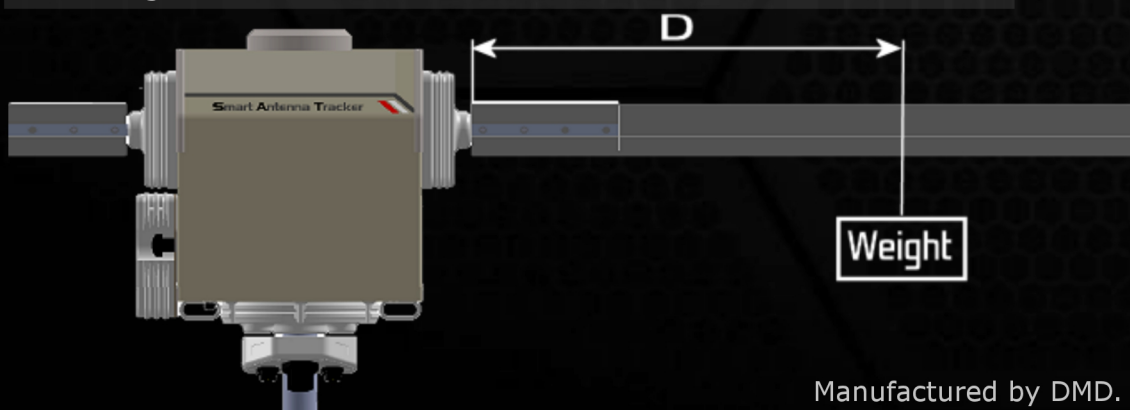   D = 125mm W.max. = 14Kg
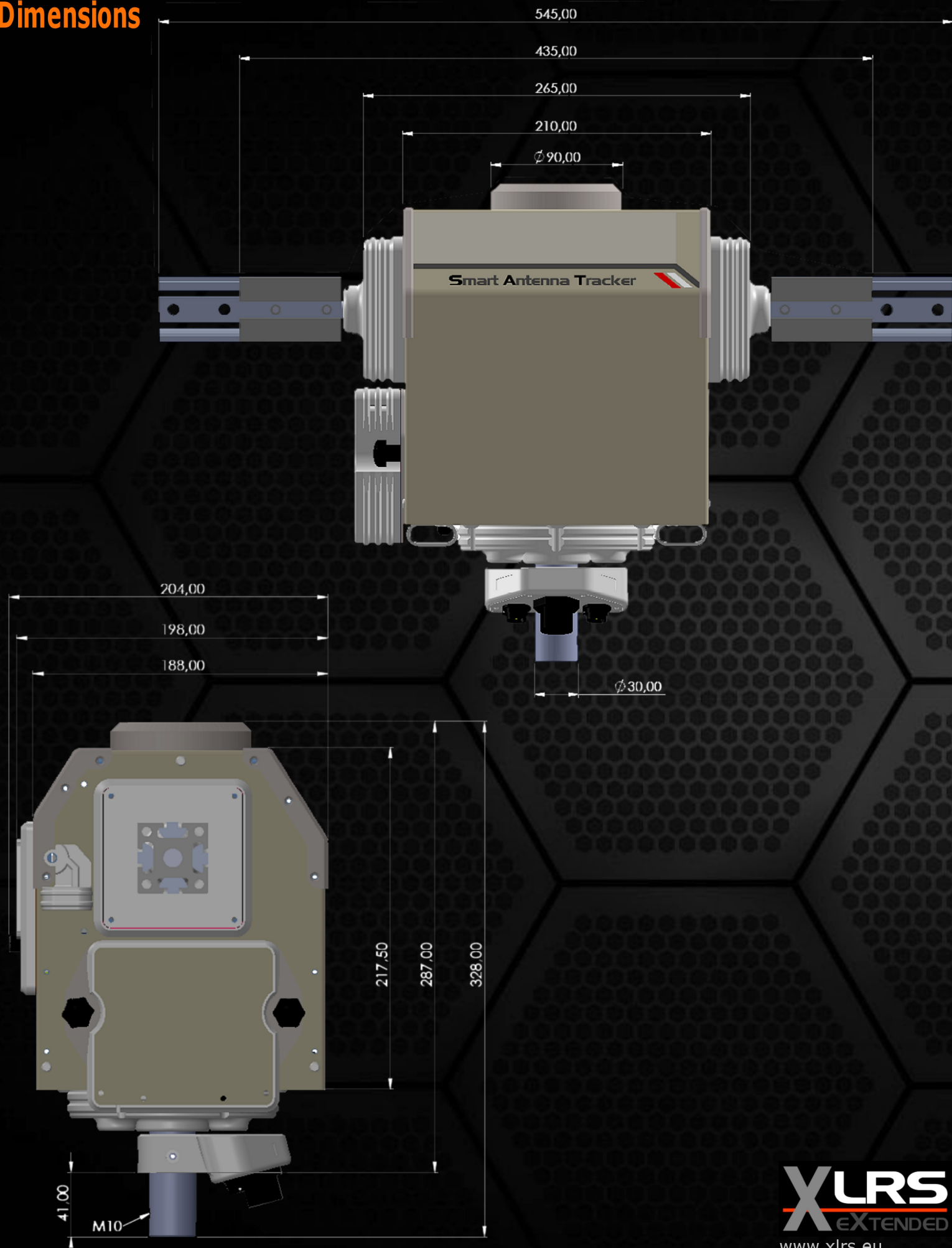   D = 250mm W.max. = 7Kg
    D = 300mm W.max. = 5.8Kg

Maximum total weight: 14Kg.

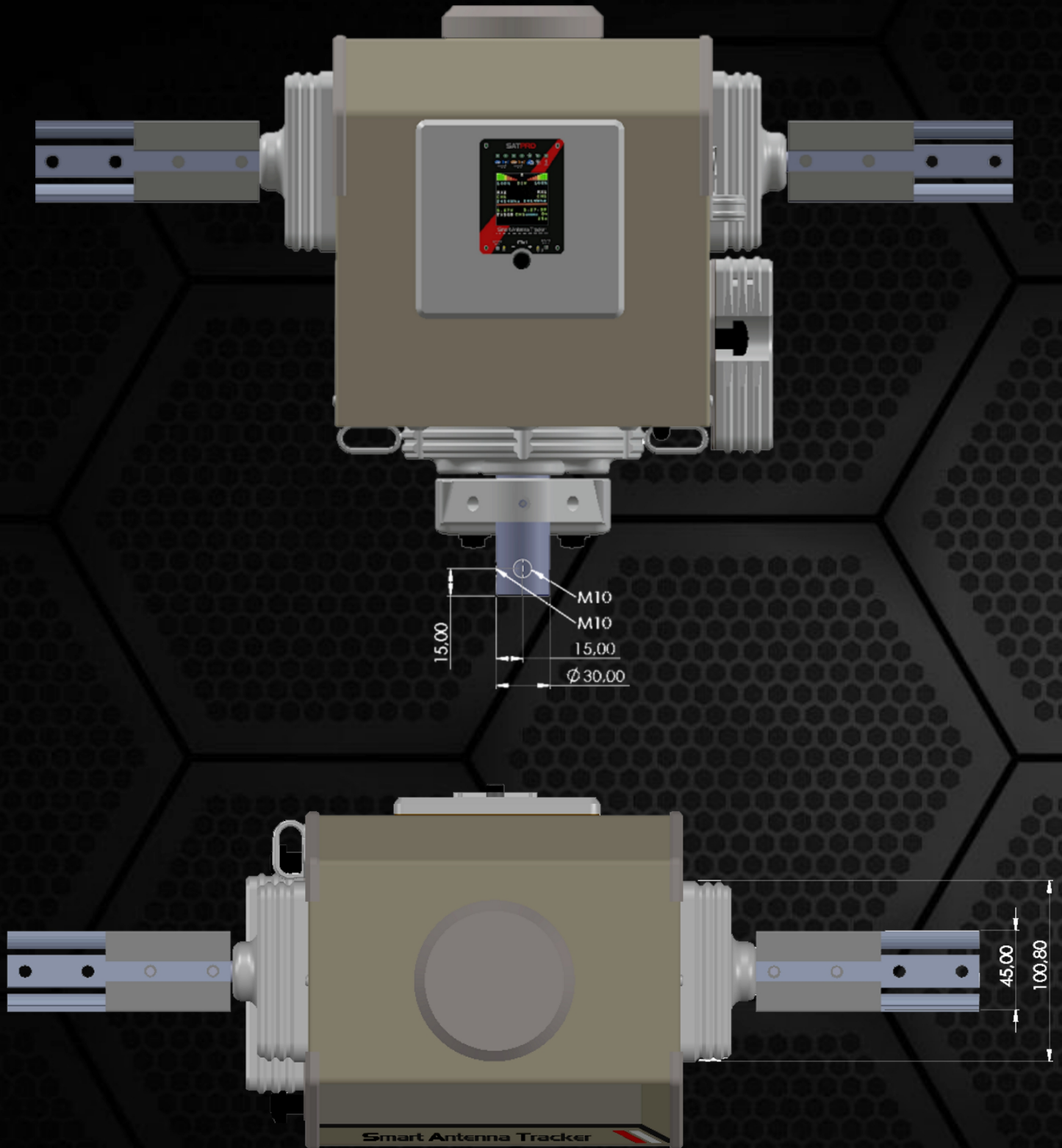**Typical weight with parabolic antenna (ANT24G24DB), without counterweight:** 2.8Kg

Typical counterweight for parabolic antenna (ANT24G24DB): 1.5 - 2Kg at 20 cm
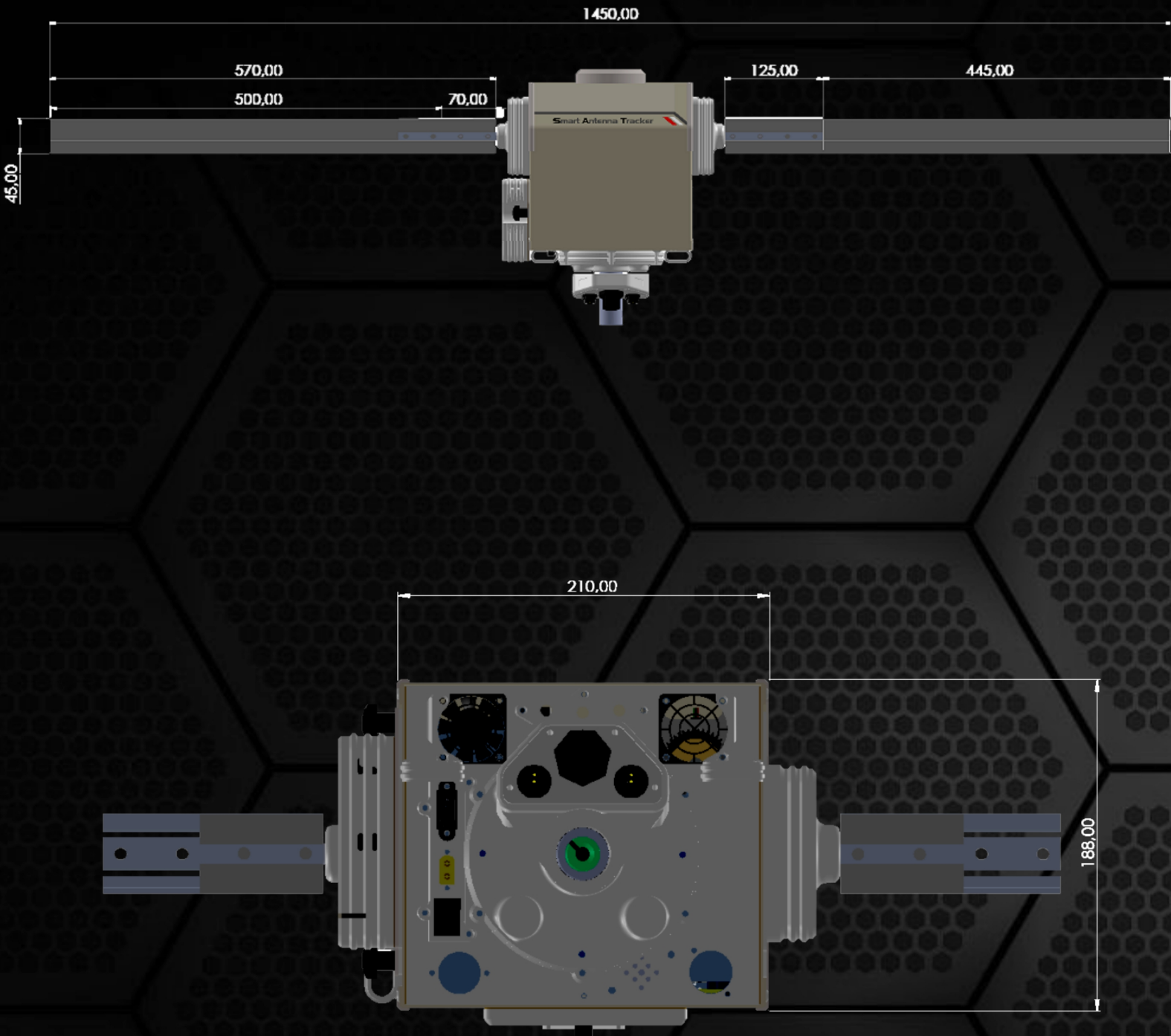

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Dimensions

545,00
435,00
265,00
210,00
Ø 90,00

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Ø 30,00

204,00
198,00
188,00

217,50
287,00
328,00

41,00
M10

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Dimensions

M10
M10
15,00
Ø30,00
15,00

45,00
100,80

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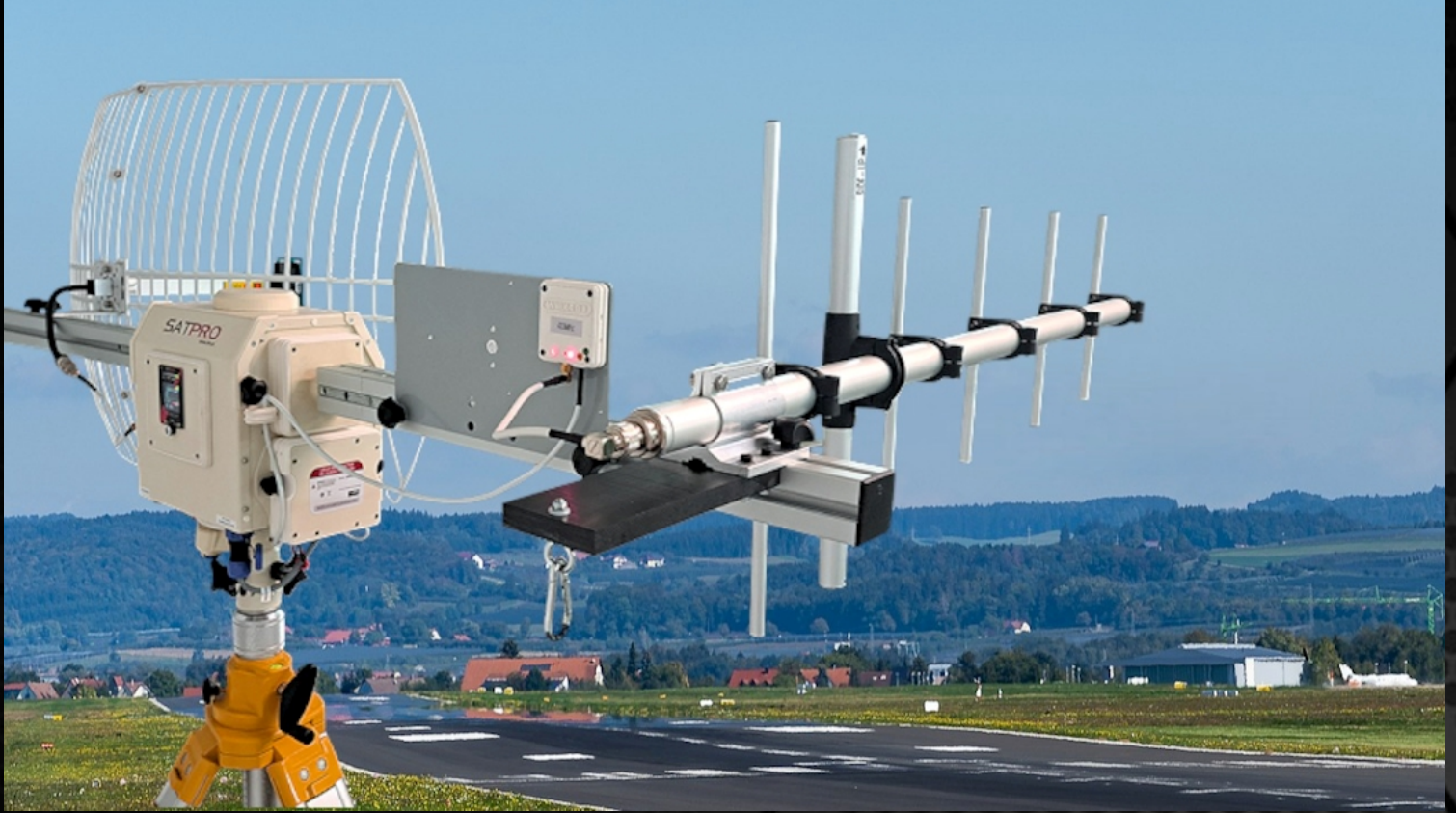
Dimensions

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Content

x1 SATPRO.
x1 Internal Battery.
x2 Aluminum profile 40cm.
x1 RCBus Cable.
x1 External battery power cable.
x1 Ethernet Cable 7 meters.
x1 Internal battery charger.
x1 Charger adapter.
x1 Suitcase.

Optional depending on version and selected configuration

x1 Omnidirectional antenna 2.4Ghz 3dBi for Wifi.
x1 BTSD1V3_CTRL. Mavlink GPS Telemetry converter by RCBUS to USB.
x1 SJJ32 Tripod.

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SATPRO Web:
SATPRO, Smart Antenna Tracker Professional.

Some product features are optional.