

PORTABLE GROUND TRACKING ANTENNA

& ANTENNA CONTROL UNIT

Discover a full operating modes antenna in less than 30 Kg



< 1 m

< 50 cm

DESCRIPTION

The proposed system is a portable ground station used in S-band or C band for data reception and/or transmission with 19 dB gain (S band), 25 dB (C band).

Dual channel reception (with polarization diversity) is achieved through a flat array antenna which can be dismantled from its two-axes pedestal (elevation over azimuth) and transported in a carrying case when not used. The pedestal can then be handled separately.

An Antenna Control Unit (ACU), which is a ruggedized portable PC with specific software, allows the remote monitoring and control of the system. A control & servo power rack (integrated in a weatherproof box with handle) sends orders to the pedestal according to the operating mode selected with the ACU.

Target tracking can be achieved through the two main modes: **Auto-tracking** or **GPS tracking**.

Auto-tracking uses Single Channel Monopulse technique, and needs linear IF and AGC signals from the customer's receiver.

The user only has to assemble these 4 portable elements (antenna, pedestal, control rack, and PC) and the whole station is ready to be operated.

The station is mainly composed of the following parts:

- External two-axis auto-tracking antenna
- **Electronic compass** for automatic north reference.
- Control & servo power rack
- Antenna Control Unit
- Tracking receiver (in option)



The antenna can be carried in two cases (supplied in option)

SPECIFICATIONS

FLAT ANTENNA

- **Type**.....array with protective radome and primary feed
- **Tracking technique**.....Single Channel Monopulse, 2 axes
- **Frequency bandwidth**.....2200 to 2450 MHz or 4500 to 4600 MHz
- **Gain**.....19 dB typ. @ 2.3 GHz and 25 dB typ. @ 4.6 GHz
- **Polarization**.....RHCP /LHCP switchable
- **3 dB beamwidth**.....11° (El.) x 20° (Az.) @ 2.3 GHz or 20° (El.) x 11° (Az.) @ 2.3 GHz
- **3 dB beamwidth**.....5° (El.) x 10° (Az.) @ 4.6 GHz or 10° (El.) x 5° (Az.) @ 4.6 GHz
- **Side lobes**.....< 11 dB

MECHANICAL

- **Antenna dimensions**..... 630 x 410 mm
- **Antenna weight**..... ~ 7 Kg
- **Pedestal height**.....~ 0.6 m
- **Pedestal weight**..... ~ 22 Kg
- **Color (ant. & pedestal)**..... RAL9003 (white) or other upon request.

PEDESTAL

- **Type**.....Elevation over Azimuth
- **Elevation range**.....-3° to +90°
- **Azimuth range**.....Unlimited (continuous rotation with rotary joint/slip ring assembly)
- **Rotation speed max**.....≥ 30°/s on both axes
- **Acceleration max**.....≥ 100°/s² on both axes
- **Pointing accuracy**.....± 0.08° (in manual mode)
- **Optical encoders**.....12 bits

ENVIRONMENTAL

- **Storage temperature**.....-35° to +70°C
- **Operating temperature**.....-30 to +50°C (outdoor)
- **Rain**.....Up to 50 mm/hour
- **Relative humidity**.....0 to 100% (outdoor)
- **Operating wind load**.....50 km/h (with tripod) 120 km/h (fixed)

ELECTRICAL

- **Power supply**.....through Control & Servo Power Rack
- **Pedestal consumption**.....~ 0.1 kVA

OPTIONS

- Fitted Trolley Case for transport