

ARES Series



Arès 1.5 m

DESCRIPTION

This station is designed for signals reception in the 2.3 GHz frequency band (others bands are available upon request).

A friendly Man Machine Interface installed on a PC allows its remote Monitoring & Control via a RS232 serial link.

Reception is made through a 1.5 m dish equipped with auto tracking feed in RHCP including 0.7 dB NF LNA, and filters.

Transmission is made through a 0.6 m dish in LHCP. Auto-tracking in RHCP or LHCP

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

Auto-tracking uses **Single Channel Monopulse technique**.

The station is mainly composed of the following parts:

- External two-axis auto-tracking antenna
 - **Electronic compass** for automatic north reference.
 - **Electronic spirit level** for automatic set-up (transportable version)
- Control & servo power rack
- Antenna Control Unit
- Tracking receiver

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SPECIFICATIONS

TM and TC ANTENNAS

- Type.....1.5 m dish with primary SCM feed for TM
0.6 m dish with primary feed for TC
- Tracking technique.....Single Channel Monopulse, 2 axes
- Frequency bandwidth.....2.5 GHz (TM) & 2.2 GHz (TC)
- Gain.....27 dB typ. @ 2.5 GHz
18.5 dB @ 2.2 GHz
- Polarization.....RHCP (TM) and LHCP (TC)
- 3 dB beamwidth.....5.6° @ 2.5 GHz and 16° @ 2.2 GHz
- Side lobes.....< 17 dB (TM) and 14 dB (TC)

MECHANICAL

- Antennas dimensions.....1.5 m (TM) and 0.6 m (TC)
- Total weight (pedestal and dishes).....210 kg
- Color (ant. & pedestal).....RAL9003 (white) or other upon request.

OPTIONS

- Omni directional antennas for short range operation
- Video system installed at the back of the dish.
- Optical encoders: 13, 14 bits
- Operating temperature : -30° C

PEDESTAL

- Type.....Elevation over Azimuth
- Elevation range.....-5° to +90° or -5° to +185°
- Azimuth range.....Unlimited (continuous rotation with rotary joint/slip ring assembly) or Limited (+/- 205°)
- Rotation speed max.....≥ 20°/s on both axes (30°/s in option)
- Acceleration max.....≥ 100°/s² typ. on both axes
- Pointing accuracy.....± 0.08° (in manual mode)
- Optical encoders.....12 bits

ENVIRONMENTAL

- Storage temperature.....-35° to +70°C
- Operating temperature.....-20 to +50°C (outdoor)
- Rain.....Up to 50 mm/hour
- Relative humidity.....0 to 100% (outdoor)
- Operating wind load.....100 km/h
- Survival wind load.....160 Km/h

ELECTRICAL

- Power supply.....through Control & Servo Power Rack
- Pedestal consumption.....220 VAC, 50 Hz, 0.2 kVA

An interface created by users for users

DESCRIPTION

The dedicated software, through the color display, provides a user friendly interface (see below non contractual example of ACU screen).

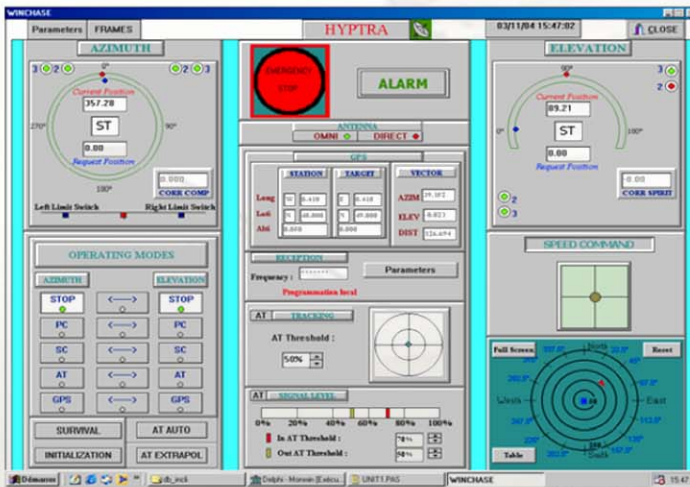
The software can be easily customized for user's needs.

Touch screen with integrated PC in option

MONITORING INFORMATION available through the PC Man-Machine Interface

- Elevation and Azimuth pedestal angles
- Selected operating mode
- Tracking signal level (when Auto-tracking mode is active)
- Tracking errors
- Tracking polarization in operation
- Alarms

Remote Monitoring and Control by TCP/IP protocol Available



SPECIFICATIONS

OPERATING MODES available through the PC Man- Machine Interface

Elevation and Azimuth axes are independent :

- STOP : Stop on El. and Az. ;brakes are switched on
- MANUAL : El. and Az. axes reach the angular positions received through the PC (0 to 360° with 12 bits ;step = 0.08°)
- SLEW : El. and Az. axes speed adjustment(-20 to +20°/s with 8 bits ; step = 0.16°/s)
- AUTO-TRACKING : manual or automatic (with tracking error angle criteria or HF signal level criteria)
- SLAVE/GPS :-: The ACU elaborates El. and/or Az. angles through the target GPS information received by RS232 link under NMEA 0183 standard (only GPGGA sentence is useful).

The ground station's GPS location is manually entered by the operator through the keyboard. The target range is calculated by the ACU and displayed on the screen.

- MEMORY TRACK : as back up mode in case of autotracking lost.

When auto-tracking is lost, the antenna continues travelling of Az and El with extrapolated speed.

- PRESET : Up to 10 El. and Az. angles can be stored

- SURVIVAL : El. 90°, brakes applied on El. and Az.

- INITIALIZATION : The ACU calculates the correction to be applied according to the electronic spirit level and compass information.

- AUTOTRACKING SUPPORTED BY GPS: When GPS data from aircraft are available, the operator through the Man Machine Interface, can follow the aircraft and locates the aircraft into the 5 dB antenna pattern.

Option:

Starting in AutoTracking mode, if for any reason, the aircraft reaches this " 5 dB circle" then the antenna will automatically switch to GPS tracking mode.

Then when antenna will cross the 2 dB circle on its way back, the antenna will switch automatically in Auto-Tracking mode