

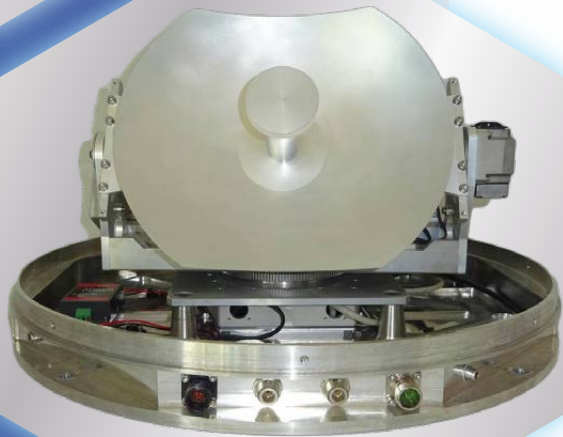
SKY-STEALTH 30Ku

AIRBORNE - LAND - NAVAL
HI PERFORMANCE SOTM



KU-BAND

Standard Ku-band
or Low Ku-band
version



SKY-STEALTH antennas family is the latest breakthrough SATCOM on the move & airborne compliant terminals on the market. Designed and engineered by the same team that has created outstanding multiband communications products for the past 10 years,

SKY-STEALTH products are available in different RF configurations to fully cover all the market requests, as monoband antenna in X, Ka, Ku bands or Dual band configurations as Ku/Ka or X/Ka. Available in both 30 or 45 cm parabolic dish size,

the system has a dual reflector configuration ensuring the highest efficiency, while providing a low cross-polarization thanks to its corrugated feed-horn. Size, weights and interfaces have been chosen for being compliant with the most demanding avionics standards: on the dual-band version our team has integrated two bands so different from each other in just one single RF optic package, achieving monoband-like antenna performance while avoiding trade-offs deriving from the antenna small size.

SkyComm

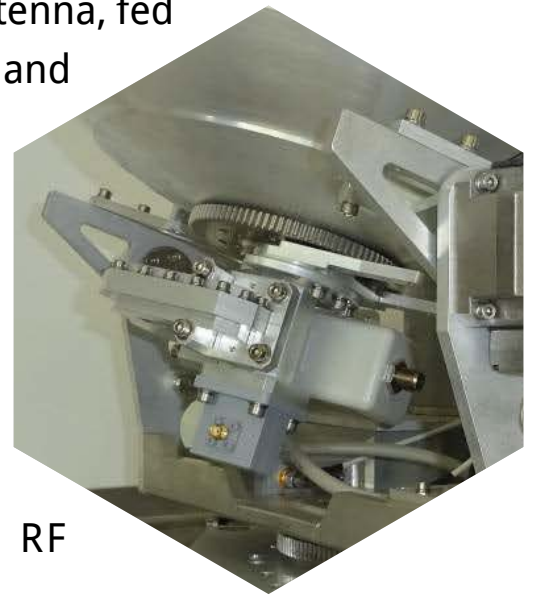
AN ANGEL COMPANY

KEY BENEFITS

- ◆ Lightweight
- ◆ High RF Efficiency
- ◆ Robust pedestal for GEO, MEO and LEO satellite tracking (OneWeb approved)
- ◆ New and Improved pointing Algorithm. Compliant with NORAD TLE data
- ◆ Innovative AHRS drifting compensation Algorithm
- ◆ Fully Self-Contained system (modem and BUC up to 50W included upon request)

Radio-Frequency

Radio-Frequency design has been optimized to obtain the best link budget and the highest efficiency. A dual reflector ring focus antenna, fed by a corrugated feedhorn, ensures high efficiency and low sidelobes radiation patterns. A compact OMT (Ortho-Mode Transducer) with the associated filters allows to obtain the linear cross-polar polarization with the necessary Tx to Rx isolations. All the experience acquired designing multi-band systems has been used to create this RF architecture capable to fit in the limited available space. The overall result is a high efficiency and very compact RF subsystem.



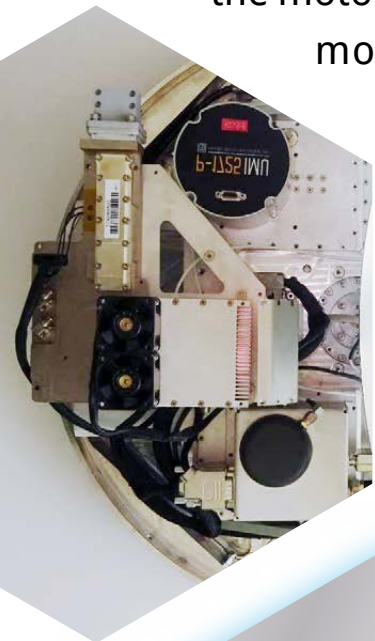
Mechanics

Mechanical design guarantees outstanding tracking performances even during the most intricate aerial evolutions, thanks to the use of advanced electric motors coupled to the structure via harmonic gearboxes. The movement of the stabilization and aiming axes takes place through Brushless DC electric motors with Hall effect sensors, served by an absolute incremental Encoder with an accuracy of 0.1 arc seconds. Aeronautical aluminium alloy and stainless steel AISI 304 alloys have been selected to withstand the harshest environments without

compromising the performances of the antenna system, decreasing the needs of periodical maintenance. Size and swept volume are optimized for tail or fuselage mounting on airplanes, helicopters or unmanned vehicles.

Electronic

Antenna Control Unit (ACU) has been specifically tailored on the antenna to take advantage of all the available space. All the electronic boards are self-contained in the moving part of the antenna, minimizing the impact in term of space and cable routing required to set-up the vehicle. The ACU is based on several modules that manage the motors, the attitude system, the tuner. All the modules are constantly monitored through dedicated hardware to implement the BIT functions, hardware watchdog is implemented to monitor critical failures of software or of the power supply system. Innovative algorithm based on hyper-complex mathematics, borrowed from astronautics attitude system, has been implemented to improve the pointing dynamics and delete uncertainties caused by heading drifting effects. All the Antenna parameters and diagnostic data are available through an intuitive and user-friendly web interface.



ABOUT SKYCOMM

SkyComm is an engineering company in partnership with Angel group for rethinking access to space telecommunications with more than 25 years of experience in designing and manufacturing stabilized satellite antennas. SkyComm's strength is based on its constant adherence to the highest technological standards and innovative transmission methods realizing terminals that are unmatched in terms of gain, tracking power and unflinching connectivity, even under the most severe environmental conditions.

TECHNICAL SPECIFICATIONS

Radio frequency:

Reflector:

300 mm Al alloy

Operative Frequency Range:

TX: Standard Ku 13.75-14.5GHz GHz

RX: Standard Ku 10.70-12.75 GHz

TX: Low Ku 12.75-13.25 GHz

RX: Low Ku 10.70-11.45 GHz

Polarization (auto switchable):

GEO:

Linear Cross-Polar with skew control

LEO:

RHCP / LHCP

Max EIRP @PLin

≥45.1 dBW (50W linear power BUC)

Min G/T @30° elevation, clear sky

8 dB/K

XPD On-Axis

≥ 30 dB

Standards:

Antenna is certified according to the

MIL-STD-810G, MIL-STD-167-1A,

MIL-STD-461F and RTCA-DO-160G

OpenAMIP compliant

Pedestal & Tracking Specifications:

Pointing Accuracy:

Pointing error < 0.2°

Pointing resolution < 0.1°

Tracking Range & Performances:

Elevation range -10° to 120° @ 200°/s

Azimuth 360° unlimited @ 100°/s

SAT Acquisition:

< 5 seconds hot, 2 minutes cold

Pointing Methods:

1) Open loop via external gyro and GPS source

2) Rf closed loop via AGC receiver or external Beacon receiver or both

3) Open loop combined with ext. modem lock

This Advanced Tracking Pedestal can track any kind of satellite in GEO, MEO and LEO orbit (OneWeb approved) using NORAD data. It also can be programmed to track any kind of free target

Modems Compatibility:

Via standard L band modem, or latest generation modems for HTS satellite (iDirect, Viasat)

Modem and BUC agnostic

OpenAMIP, OpenBMIP protocols available

Temperatures:

Operating -40 °C / +70 °C

Storage -55 °C / +85 °C

Weight:

~10 Kg

Antenna Dimensions:

340 mm x 340 mm x 428 mm

Power Consumption

110 W (No BUC)

Power Supply

20V DC to 50V DC