

MEOS™ Antenna Tri-band



KONGSBERG

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The Tri-band MEOS™ Antenna for TT&C applications comes with a 3.7m reflector, a prime focus dual band feed with simultaneous S- and X-Band reception and S-Band transmission, a dichroic sub reflector, and a Cassegrain feed for Ka-band reception. The antenna sensitivity gives sufficient margin for data reception from remote sensing satellites in LEO and MEO orbits.

Designed for optimal reliability, the MEOS™ Antenna utilizes the most modern industrial components available. It includes a mature remote-control interface which provides seamless integration into ground networks.

The X/Y positioner allows strong wind operation without a radome. The X/Y geometry supports overhead tracking with no signal drop. With Auto track on all receive bands and polarizations, excellent G/T and sidelobe performance, the overall link budget is ideal for fast connectivity operations.

The antenna is equipped with custom filters to reject out of band signals. For example, S-band filtering provides more than 85dB rejection of the 5G 2.3GHz downlink band.

When integrated with a MEOS™ receiver and processing system, the complete solution works as a high-performance data reception and processing terminal.

HIGH RELIABILITY

- Robust ACU and servo units with low failure probability
- Dehydrator to supply dry air to the positioner, HPA, Electronics cabinet and feed to avoid internal condensation
- Heating of motors and the gears reduces wear
- Heating of HPA, to ensure start-up in the coldest conditions
- Drive chain replacement possible with reflector and positioner installed

RF SYSTEM

- S-Band
 - Downlink 2200 – 2300 MHz RHCP/LHCP selectable or dual polarisation
 - G/T spec 14 dB/K, typical and mid band
 - S-band RF direct 2200 – 2300 MHz output
 - Uplink 2025 – 2120 MHz RHCP/LHCP selectable polarization
 - EIRP > 50 dBW from a 100 W High Power Amplifier
- X-Band
 - 7750 – 8500 MHz RHCP/LHCP selectable or dual polarisation
 - X-band G/T Spec 26.5 dB/K, typical and mid band
 - IF Frequency: 800 – 1550MHz
- Ka-Band
 - 25.5 – 27 GHz RHCP/LHCP selectable or dual polarisation
 - X-band G/T Spec 32 dB/K, typical
 - IF Out block converted to 2400 MHz $\pm$ 750 MHz

Please contact KONGSBERG for other options.



FEATURES

- X/Y design for elimination of overhead keyhole
- ACU with Program Track and Auto Track
- Easy installation with use of Auto Alignment
- Web based monitor and control
- Remote monitoring and control over fibre optic cable
- GNSS time server in ACU
- External interfaces for integration by customer
- S-Band Uplink
- High torque motors for heavy wind operation
- Virtually no preventive maintenance needed

MEOS
MULTI-MISSION EARTH OBSERVATION SYSTEM

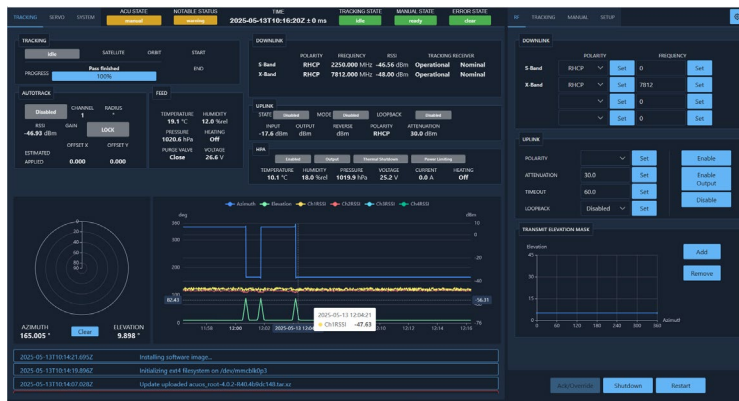
Environment

- Temperature*
 - Operational: -40° C to 60° C
 - Storage: -50° C to 60° C
- Relative humidity: 0-100 % including condensing
- Power requirements: 200 - 264 V AC, 50 – 60 Hz
- Nominal 230 V @ 25 A or 2 x 230V @ 16 A
- Weight: approx. 1000 kg
- The antenna is fully CE tested

Options

- Radome
- MEOS™ Control for remote monitor and control.
 - Real time and historic status available
 - Monitor and Control for external units e.g. demodulators, modulators, (see MEOS™ Control Product data sheet)
- MEOS™ Capture - Data Capture system
- MEOS™ Connect

* Can be optionally extended



3.7 m Tri-band Performance

S Band G/T (2250 MHz)	14 dB/K*
X Band G/T (8200 MHz)	26.5 dB/K*
Ka Band G/T (27 GHz)	32 dB/K*
S-band EIRP	> 50 dBW*
Pointing error	0.09° rms**
Pointing resolution	0.005° on both axis
Max Axis Travel Speed	6°/s
Wind speed operational S- and X-band	27 m/s
Wind speed operational Ka-band	20 m/s***
Wind speed survival	56 m/s
Tracking	Tracking from 0° elevation
Travel	Mechanical ±91°, Tracking from 0° elevation

* Radome losses not included

** Based on CFD (Computational fluid dynamics) and FEDEM (Finite Element Dynamics in Elastic Mechanisms) analysis for a 3.7 m reflector with 27 m/s wind

*** Value is subject to change



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