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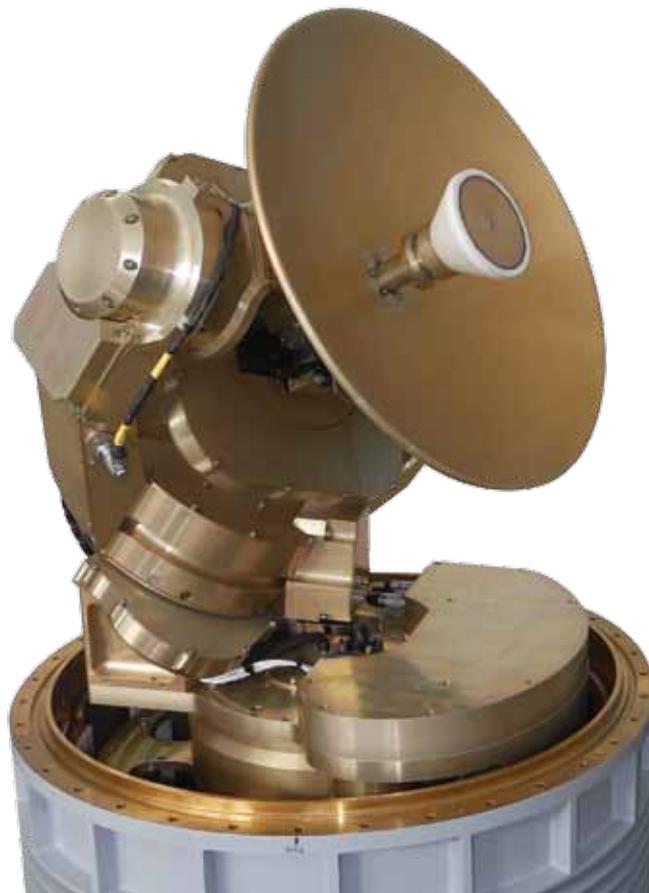
MILITARY COMMUNICATIONS & SPACE

TSUB-40Ku

Ku-Band SATCOM Terminal for Submarines

indracompany.com

KU-BAND SATCOM TERMINAL FOR SUBMARINES



TSUB-40Ku is a SATCOM terminal for submarines that provides reliable communications for submarines operating in Ku Band

Introduction

The TSUB-40Ku terminal has been designed by Indra with the experience gained after the development of a series of X Band SATCOM terminals for submarines operating in many Navies around the world.

By employing Ku Band, this terminal allows the submarine to be worldwide connected through the populated Ku Band satellite fleet complying with the most demanding requirements.

Terminal overview

The TSUB-40Ku terminal is designed to fulfill military requirements and to withstand extreme environmental conditions. The terminal architecture has been developed in order to reduce the lifecycle cost.

With the most advanced and largely tested three axis stabilized antenna, the TSUB-40Ku allows the user to maintain reliable and trustful communications. It is equipped with a fourth rotation axis for automatic linear polarization adjustment.

Highlights

- Compliant with military standards.
- Integrated GPS.
- Autonomous operation by complete internal tracking functions.
- The most reduced dimensions due to its compact mechanical design of the antenna system.
- Simple and quick installation.
- Security through customer furnished specific crypto devices.
- Modem agnostic: Different modems can be integrated in the TSUB-40Ku terminal depending on the end user needs.
- Different access methods are supported (FDMA, CDMA or TDMA).
- Local and remote monitoring and control through the Indra control SW (Genius).
- ITAR free.

Characteristics

Functional Characteristics

Antenna diameter	0.4m
Stabilization	Three axis

Technical Performances

Tx frequency band	13.75-14.50 GHz
Rx frequency band	10.95-12.75 GHz (3 sub-bands automatic switching)
Polarization	Linear (Automatic adjustment)
EIRP	>45 dBW
G/T	>6.5 dB/K @10.95 GHz
Intermediate frequency	L Band
Acoustic noise (inboard equipment)	≤49 dBA@1 m
Antenna system weight	<250 Kg
EIRP Spectral Density	Compliant with MIL STD 188 164A
Azimuth motion range	360°
Elevation motion range	-20° to +120°
Cross elevation motion range	±40°
Submarine motion supported	Roll: ±12°, 12 sec period Pitch: ±4°, 4 sec period
Submarine interfaces	Prime power, INS (if available)
Input power	220/115V, 50/60 Hz
EMI/EMC	Acc. MIL STD 461

Environmental Conditions (Antenna System)

Temperature (above deck)	-25°C to +45°C
Water pressure	40 bar
Humidity	100%
Salt fog	Acc. MIL STD 810



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