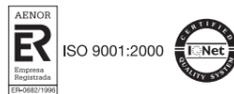


MILITARY COMMUNICATIONS & SPACE

# TSUB-40X

X-band SATCOM Terminal For Submarines

[indracompany.com](http://indracompany.com)



# X-BAND SATCOM TERMINAL FOR SUBMARINES



TSUB-40X is a SATCOM terminal for submarines that provides reliable communications between the submarine and the ground station

## Introduction

The TSUB-40X terminal for submarines developed by INDRA is member of the Indra's family of military naval SATCOM terminals.

The TSUB-40X terminal provides secure long-range communications between the submarine and the command centre ground station.

## Terminal overview

The TSUB-40X terminal is designed to fulfill the most demanding requirements and to withstand extreme environmental conditions. The terminal architecture has been developed in order to facilitate the maintenance tasks.

With the most advance and largely tested two axis stabilized antenna, the

TSUB-40X allows the user to maintain reliable and trustful communications. The TSUB-40X SATCOM terminal for submarines has already been delivered to different Navies and it is currently in operation.

## Highlights

- Automatic pointing system based on GPS and INS (Inertial Navigation System) information from submarine.
- Compliant with military standards.
- Simple and quick installation.
- Amagnetic version available.
- Security through customer furnished specific crypto devices.
- Modem agnostic: Different modems can be integrated in the TSUB-40X 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).

## Characteristics



### FUNCTIONAL CHARACTERISTICS

Antenna diameter	0.38m
Stabilization	Two axis (elevation over azimuth)

### TECHNICAL PERFORMANCES

Tx frequency band	7.90-8.40 GHz
Rx frequency band	7.25-7.75 GHz
EIRP	36 dBw
G/T	>1 dB/K @7.25 GHz
Intermediate frequency	70 MHz or L Band
Acoustic noise (inboard equipment)	≤49 dBA@1 m
Antenna system weight	<150 Kg
Submarine motion supported	Roll: ±25°, 8 sec period Pitch: ±15°, 6 sec period Yaw: ±8°, 15 sec period
Submarine interfaces	Prime power, GPS and INS
Input power	115V, 60 Hz
EMI/EMC	Acc. MIL STD 461F

### ENVIRONMENTAL CONDITIONS (ANTENNA SYSTEM)

Temperature (above deck)	-15°C to +50°C
Shock	41g, 4ms, half sine. Class A acc. BV0430
Humidity	100%
Salt fog	Acc. MIL STD 810
Solar radiation	Acc. MIL STD 810