COMPACT SATCOM SOLUTION FOR ANY TYPE OF SURFACE SHIP

Cost effective & fully integrated MIL-spec terminal
- High data rate
- 3-axis stabilized antenna
- X, Ku and Ka-band configurations
- Easy on-board installation
- Compatibility with a wide range of modems

SURFSAT-S
Compact Naval SATCOM Terminal
SURFSAT-S is a sound and cost effective solution for providing MILSATCOM capabilities down to the smallest ships including mine hunters, fast patrol boats and interceptors. It is a fully integrated terminal with embedded RX & TX chains. Only a limited number of equipment is required to be located below deck.

X, Ku and Ka configurations
SURFSAT-S is compatible with a wide range of satellite resources including military satellites operating in X or Ka-band and civil satellites in Ku or Ka-band. The TX/RX polarization scheme is fixed or selectable. For the larger antennas, dual band configurations such as X/Ka or X/Ku are available.

Scalability - Flexibility
SURFSAT-S design has been guided with compactness and low weight objectives. Even fitted with the largest antenna SURFSAT-S can be located virtually anywhere on the ship superstructure. Shipyard’s top deck design and wiring work are both greatly simplified. Single and dual antenna configurations are available with antenna diameter ranging from 0.40 up to 1 m. Whatever the configuration SURFSAT-S is fitted with a comprehensive set of mask management and EMCON capabilities. Dual antenna terminals include an automatic antenna handover function.

3-axis stabilized antenna
The 3-axis pedestal is the guarantee of a seamless worldwide operation whatever the frequency band, even at high sea state or when a high elevation satellite is used.

Compatible with a wide range of modems
Thanks to a standard L-band interface SURFSAT-S is essentially modem agnostic. It can be delivered with a customer recommended modem, a standard modem and/or with Thales’s Modem 21e. Modem 21e provides enhanced flexibility in frequency planning, a very high spectral efficiency as well as anti-jamming capability. Modem 21e also provides an advanced ESM mode and guarantees binary integrity during antenna handover.

Main Features

### General
- **Ant. Diam.:** 0.4, 0.46, 0.75, 1 m
- **RF Perf.:** STANAG 4484, MIL-STD-188-164B
- **Modem Perf.:** STANAG 4486, STANAG 4606, ...
- **X-band Freq.:** 7.25 – 7.75 GHz (RX)/7.9 – 8.4 GHz (TX)
- **Ku-band Freq.:** 10.7 – 12.75 GHz (RX)/14 – 14.5 GHz (TX)
- **Ka-band Freq.:** 19.2 – 21.2 GHz (RX)/29 – 31 GHz (TX)

### X-band (0.75 m antenna)
- **TX/RX polar.:** RHCP/LHCP or LHCP/RHCP
- **EIRP:** > 50 dBW
- **G/T:** 11 dB/K typ.

### Ka-band (0.46 m antenna)
- **TX/RX polar.:** RHCP/LHCP or LHCP/RHCP
- **EIRP:** > 49 dBW
- **G/T:** > 13 dB/K

### Typical data rates
- **X-band:** > 1 Mb/s (0.75 m)
- **Ka-band:** > 1 Mb/s (0.46 m)

### Stabilization and tracking
- **Pedestal:** 3-axis
- **Tracking:** ephemeris, beacon
- **Attitude ctrl.:** through the ACU using embedded inertial sensors
- **C&M:** Windows-based MMI

### Modem interface
- **L-band:** 950 - 2050 MHz

### Physical (0.75 m antenna)
- **Overall Ø:** 90 cm (outdoor)
- **Height:** 130 cm (outdoor)
- **Weight:** < 100 kg (outdoor)
- **Cabinet:** < 10U (indoor)

### Environment
- **Op. Temp.:** -20°C to +60°C (outdoor)
- **Vibration:** MILSTD-167-1
- **Shock:** MILSTD-901D
- **EMI/EMC:** MIL-STD-461F