SECURED HIGH DATA RATE COMMUNICATIONS AT SEA

- C, X, Ku and Ka-band capabilities
- Single and dual-band configurations
- ESM Mode
- 3-axis stabilized antenna
- Seamless antenna handover

SURFSAT-L
Naval SATCOM Terminal
SURFSAT-L is a high data rate naval SATCOM terminal for medium to large ship. The power handling capability of the antenna (in excess of 2 kW) and the possibility to rely on large antenna make when required SURFSATL able to deliver very large EIRP. Such capability is key to achieve very high data rate, to transmit several carriers simultaneously or to overcome severe jamming conditions.

C, X, Ku and Ka capabilities
SURFSAT-L is compatible with a wide range of satellite resources including military satellites operating in X or Ka-band and commercial satellites in C, Ku or Ka-band.

Single or dual-band configurations
SURFSAT-L is available in single or dual-band configurations. Simultaneous dual-band provides enhanced flexibility in planning connectivity between forces: for instance the combination of long-haul communications with in-theatre communications at different frequency band is easily performed. Furthermore it benefits shipbuilders during top-deck design providing multi-band capability at reduced footprint.

3-axis stabilization
3-axis is the guarantee of a seamless worldwide operation whatever the frequency band, even at high sea state. SURFSAT-L pushes even further this architecture and relies on a patented pantographic X-Y gimbals. This technology architecture allows cost effective dual-band configurations.

Scalability - Flexibility
SURFSAT-L is the most versatile Naval MILSATCOM terminal to date. Single and dual antenna configurations are available with antenna diameter ranging from 1.20 up to 2.60 m. The TX/RX polarization scheme is fixed or selectable. Whatever the configuration SURFSAT-L is fitted with a comprehensive set of mask management and emission control capabilities. Dual antenna terminals include an automatic antenna handover function.

Compatible with a wide range of modems
SURFSAT-L is compatible with any L-band interfaced modem. When delivered with Thales’s Modem 21e, SURFSAT-L provides the highest spectral efficiency, anti-jamming, seamless antenna handover and ESM modes to avoid adverse impacts on the ship RESM System.

Main Features

**General**
- **Ant. Diam.**: 1.2, 1.5, 2.1, 2.4 & 2.6 m
- **RF Perf.**: STANAG 4484, MIL-STD-188-164B
- **Modem Perf.**: STANAG 4486, STANAG 4606, ...
- **Multiband cont.**: X/C, X/Ku, X/Ka, Ku/Ka
- **X-band Freq.**: 7.25 – 7.75 GHz (RX)/7.9 – 8.4 GHz (TX)
- **C-band Freq.**: 3.4 – 4.2 GHz (RX)/5.85 – 6.65 GHz (TX)
- **Ku-band Freq.**: 10.7 – 12.75 GHz (RX)/13.75 – 14.5 GHz (TX)
- **Ka-band Freq.**: 19.2 – 21.2 GHz (RX)/29 – 31 GHz (TX)

**X-band (2.1 m version)**
- **TX/RX polar.**: RHCP/LHCP or LHCP/RHCP
- **EIRP**: up to 72 dBW
- **G/T**: > 20 dB/K

**Ku-band (2.4 m version)**
- **TX/RX polar.**: VP/HP or HP/VP
- **EIRP**: up to 73 dBW
- **G/T**: > 25 dB/K

**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 (2.1 m version)**
- **Overall Ø**: 2.66 m (outboard)
- **Height**: 3 m (outboard)
- **Weight**: 380 kg typ. (outboard)

**Environment (outboard)**
- **Op. Temp.**: -25° to +55°C
- **Shock**: MIL-STD-901D
- **Vibrations**: MIL-STD-167-1
- **EMI/EMC**: MIL-STD-461F

**Options**
- **Low PIM**
- **LNA protection cell**
- **Dual satellite tracking**
- **70 MHz IF interface**

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