TST311/D

Defence Communications Systems

KA/X/KU BAND FLYAWAY SATELLITE TERMINAL

The TST311/D provides excellent performance thanks to its integrated design, which cuts down the length of the waveguide paths and relevant losses. Thanks to a unique optical shape and accurate reflector surfaces, it provides good side lobe and excellent cross-polarization performance.

KEY FEATURES

- High integrated transceivers
- Low waveguide losses
- Solid-state amplification technology
- L Band IF interface
- 1.1m equivalent segmented composite parabolic reflector
- Dual offset antenna configuration
- RHCP/LHCP on-site setting circular polarization
- Star/mesh connectivity
- IP65 protection
- Automatic pointing and tracking (option)
  - Satellite auto pointing (SW option)
  - Satellite tracking (SW option)
- Options
  - Crypto feature: provision of an encryption capability, based on the AES encryption algorithm with 256 bit-sized key. Ciphering acts both on user traffic and signalling data.
  - 1.8m antenna
  - Local M&C ruggedised PC tablet
  - Fast replaceable transceivers

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MAIN FEATURES

The TST311/D Band terminal is a flyaway satellite terminal specifically designed to operate in military or civil Ka Bands. Fast replaceable X, Ku and Ka Ext. transceivers can also be provided.

Each Ka transceivers provide an L Band interface (Tx Band: 950MHz to 1450MHz; Rx Band: 950MHz to 1950MHz) and is able to translate the Modem 500MHz Tx Band in the RF lower half (29GHz to 29.50GHz civil Band/30GHz to 30.50GHz military Band) or in the upper half (29.5GHz to 30GHz civil Band/30.5GHz to 31GHz military Band) by means of electronically switched local oscillators.

The tactical DVB-RCS modem is part of the base Band and Antenna Movement Unit connected to the Transceiver by appropriate cables. The Modem supports DVB-S2 forward links and DVB-RCS return link with mesh capability and its hardware is optimized for IP networking, having outstanding throughput and high-capacity mesh links.

An L Band Interface is provided to connect an external modem. A suitable LCD display interface is provided as to guarantee the local MMI functionality. The antenna is easily transportable and can quickly be assembled by one person by using suitable quick-release-clamp technique (no special tools are required) in less than twenty minutes.

SYSTEM PERFORMANCE

OPERATING BAND	KA MIL	KA CIV	X	KU	KA EXT
Polarization	Circular	Circular	Circular	Linear	Circular
Tx Frequency (GHz)	30 to 31	29 to 30	7.9 to 8.4	13.75 to 14.5	29 to 31
EIRP typical (saturation)	52.5dBW	52dBW	50.5dBW	53.5dBW	52dBW
Rx Frequency (GHz)	20.2 to 21.2	19.2 to 20.2	7.25 to 7.75	10.95 to 12.75	19.2 to 21.2
G/T (clear sky, 23 °C, 20° El), typical	21.6dB/K	21.2dB/K	15.0dB/K 1	8.8dB/K	21.2dB/K
TX frequency range	950MHz to 1450MHz	950MHz to 1450MHz	950MHz to 1450MHz	950MHz to 1700MHz	950MHz to 1450MHz
RX frequency range	950MHz to 1950MHz	950MHz to 1950MHz	950MHz to 1450MHz	950MHz to 1950MHz	950MHz to 1950MHz

OPERATING BAND	KA MIL, KA CIV, X, KU, KA EXT
Antenna type	Dual offset
Antenna configuration	Gregorian

TECHNICAL SPECIFICATION

Antenna and feed
- Optic: dual offset type
- Reflector diameter: 1.1m equivalent, segmented configuration
- Polarization (on site setting)
  - Ka Tx: Circular RHCP (LHCP)
  - Ka Rx: Circular LHCP (RHCP)
  - Ku: Linear ±90°
- Mounting type: Elevation over azimuth
- Azimuth range: ±90° with respect to an initial setting
- Elevation: 10°to 90°
- Leveling capability: ±5°

Modem DVB-S2/DVB-RCS
- Tx L Band interface
  - Output: 950MHz to 1700MHz/ -35dBm to +10dBm,
  - 10MHz reference, on/off under modem control
- Rx L Band interface
  - Input: 950MHz to 2150MHz/ -65dBm to -25dBm, 10MHz reference signal: Level: +3dBm to +6dBm
- Phase noise
  - -86dBcHz max @ 10Hz
  - -127dBc/Hz max @ 100Hz
  - -137dBc/Hz max @ 1KHz
- Frequency stability (aging and temperature): ±2.5 ppm, 0.01ppm with network clock reference tracking
- Monitor and control interface: Ethernet

Power supply
- Main: 110VAC to 240VAC, 50Hz to 60Hz
- Power consumption: 600W max

EMI-EMC characteristics
- According to MIL-STD 461

Mechanical
- Height: 1600mm (max)
- Weight: 80Kg (max)
- Clearance area (operative condition): 1800mm (diameter)
- Clearance area (stow condition): 2500mm (diameter)
- Only two transit cases for single Band configuration
- Terminal transportation
  - Transit case size (WxDxH): 1080 x 620 x 400mm
  - Transit case gross weight: 60kg max
- One other transit case for any other frequency Band configuration trasportation
  - size (WxDxH): 860 x 560 x 350mm
  - gross weight: 30kg max

Environmental characteristics
- Temperature:
  - Operative: -32°C to +49°C
  - Storage: -33°C to +71°C
- Relative humidity (operative/storage): up to 100%
- Wind
  - Operative: 79km/h with anchoring
  - Survival: gusts of 90km/h lasting 5s
- Rain: Operative: 0.8mm/min for 12h
- Altitude (above the sea level):
  - Operative: 3000m
  - Storage: 10000m
- Protection: IP65

Safety
- 2006/95/CE Directive, CEI EN 60950-1; CE Marked

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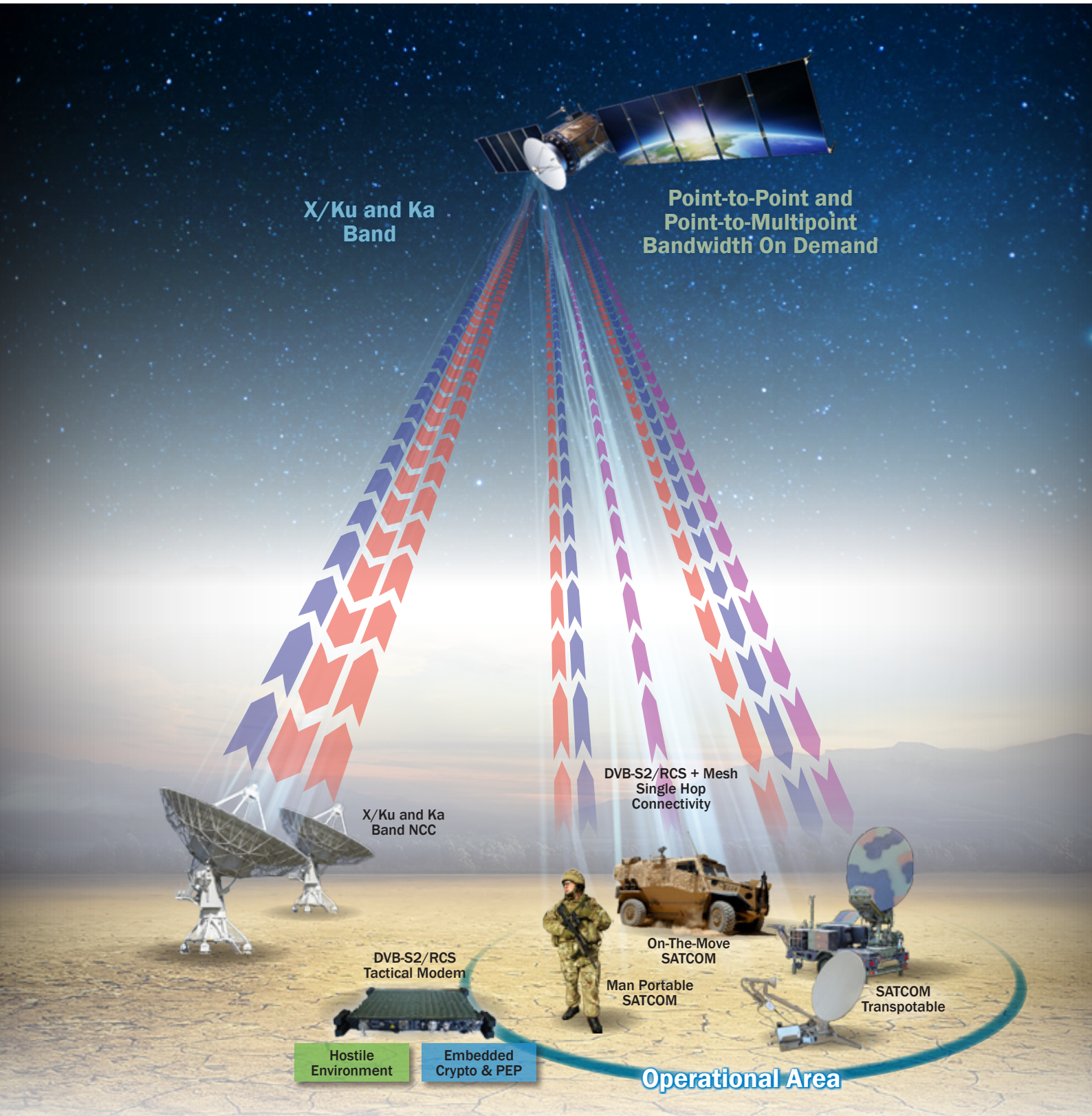

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