

TSM231/B C, X, KU, KA MIL, KA CIV TRAILER MOUNTED MULTI-BAND SATELLITE TERMINAL

The TSM231/B is a compact multiband transportable Satellite Terminal designed to establish voice, video and data communications anywhere, especially in a tactical scenarios. Designed for operation in severe environments, it allows easy transportation and fast deployment.

KEY FEATURES

- Compactness
 - Compact-size, easy-to-transport light terminal
 - Mounted on a single-axis homologated trailer
- High integration
 - All onboard: user/network interfaces, switching capabilities, satellite access
 - Four band RF capability: C, X ,Ku, Mil Ka and Civil Ka
 - Dual band RF capability on board the trailer
 - Interchangeable Feed/LNB and SSPC

- High efficiency
 - Powerful Reed Solomon coding for satellite and terminal power optimisation
 - High efficiency voice compression: as low as 8 kbps (CELP)
 - Satellite bandwidth optimisation by means of Native IP DVB/S2-RCS access modem
- Flexibility
 - Mains or generating set power source
 - UPS with internal battery
 - Comprehensive user and network interfaces
- Network capabilities
 - Anchoring function to smaller satellite terminals
 - Mesh gateway DVB/S2-RCS capabilities
- Easy and reliable operation
 - Easy and quick deployment
 - Set up time less than 60 minutes
 - Very fast satellite band change (few minutes)
 - Transportable by land, naval and air carriers (including C130J and CH47)



TSM231



SYSTEM PERFORMANCE

	X BAND	KU BAND	C BAND	KA BAND MILITARY	KA BAND CIVIL
Polarization	Circular	Linear	Circular/Linear	Circular	Circular
Tx frequency (GHz)	7.900 to 8.400	13.750 to 14.500	5.850 to 6.425	30.000 to 31.000	29.000 to 30.000
Tx bandwidth	500MHz	750MHz	575MHz	500+500MHz	500+500MHz
Tx antenna gain at	42.6dBi	47.0dBi	40dBi	53.5dBi	53.2dBi
flange feed (low)					
EIRP (saturated)	62dBW	64.5dBW	60.5dBW	66.8dBW	66.5dBW
Rx frequency (GHz)	7.250 to 7.750	10.950 to 11.700	3.625 - 4.200	20.200 to 21.200	19.200 to 20.200
		12.250 to 12.750			
Rx bandwidth	500MHz	500 / 750MHz	575MHz	1000MHz	1000MHz
Rx antenna gain at	41.7dBi	45.3dBi	35.7dBi	50.7dBi	50.2dBi
LNA input (low)					
G/T	21dB/K	25dB/K	16.2dB/K (40K)	26.5dB/K	26.0dB/K
(clear sky, 23 °C, 10° El)	(@ 7.5GHz)	(@ 11.7GHz)	(@ 3.625GHz)	(@ 30.0GHz)	(@ 29.0GHz)
Antenna type	Offset	Dual offset	Offset	Dual offset	Dual offset

	X, KU, C, KA MIL, KA CIV
Antenna diameter	2.lm
Azimuth range	±70°
Elevation range	10º to 85º

It provides satellite access for X or Ka band military satellites and C, Ku or Ka band commercial satellites. It is compliant with Military NATO, Sicral, Syracuse, Skynet and ATHENA FIDUS satellites and commercial Intelsat and Eutelsat standards.

Thanks to its multi link capability (up to 4 simultaneous links), the TSM231/B can be effectively employed as Anchor Station exchanging data, voice and trunk traffic with remote units, such as other similar or smaller terminals, and fixed strategic earth stations.

Four interchangeable feeder and SSPA units can be provided, one for each transmission band. The operating feeder is installed on the antenna itself, while the X band RF subsystem can be transported within the terminal. The others RF subsystems can be provided in bespoke transit cases.

An easy and fast satellite band change is achieved by use of a latch mechanism and quick-disconnect flanges.



MAIN FEATURES

Satellite channels

- Up to 4 simultaneous carriers (FDMA or MF-TDMA)
- Intelsat and Eutelsat compliant (IESS 308, 309, 310, EEES 502)

Antenna

2.1m equivalent diameter Dual-band Antenna compliant to the following Satellite Specifications:

- X-band: Sicral, NATO, DSCS, Skynet, Syracuse
- Ku-band: Eutelsat (Std M), Intelsat (Std E1)
- C-band: Intelsat (Std H2)
- Ka band Mil: ATHENA FIDUS
- Ka band Civ: ATHENA FIDUS

Trunk interfaces

- Two configurable as transparent
- Eurocom Trunk
- Eurocom/EES Gateway
- STANAG4206
- ITU-T E1 with selectable Euro ISDN/QSIG/R2/CAS protocol

Local subscribers

- Voice
- Data
- LAN



User interfaces

In accordance with Eurocom, NATO and ITU/ETSI standards

Monitor and control

- Local Control: by onboard M&C PC
- Remote Control facility: over the satellite link
- Diagnostics: Power-on self-test and on-line BITE

Primary power

AC Source (Mains or Generating Set)

- Voltage: 230VAC (-15 +6%), mono-phase
- Frequency: 47 to 63Hz
- Power Consumption: < 5kW

On board UPS

- Backup Time: 5 min
- Tolerated Primary Power interruption rate: not higher than once every 6 hours

Environmental conditions

- Operational temp: -32°C to +49°C (STA-2895: C1/A1)
- Storage temp: -33°C to +71°C
- Relative Humidity: up to 100%
- Rain: 50mm/h
- Operational Wind: 55km/h with blasts up to 65 km/h
- Non-operational Wind: 120km/h
- EMI/EMC: equipment are CE or MIL STD 461 compliant

Physical

- Overall weight (including trailer): 1500kg
- Set up time: < 60 minutes (with two trained operators)

Composition

The TSM231/B consists of the following basic components:

- Motorized Antenna and RF front end
- DVB/S2-RCS modems
- FDMA modems
- Access and switching equipment
- Frequency reference generator
- Combiner/splitter patch panels
- Interface panel
- Ancillaries









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