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X-BAND ON THE MOVE SATELLITE TERMINAL TSO-102/D X

GENERAL

The TSO-102//D X is a X Band Phased Array Antenna based communication “OnThe Move” terminal.
It can be widely used for vehicle and general ground application military use where communication on the move and space saving are mandatory requirements.

The TSO-102/D X antenna system is based on a state of art active Phased Array technology.
Reliability is improved using a mix of electrical and mechanical beam steering.

Dynamic platform compensation for roll, pitch and yaw is provided by an attitude heading reference system.
Advanced antenna tracking system allows rapid satellite acquisition and tracking

Motorized Mechanical setup elevation can be used to incline antenna getting best performances in extreme conditions of looking angle satellite.
To achieve this the antenna will be tilt in warming setup, depending on the geographic position.

The TSO-102/D X provides a high performance and certified DVB-RCS MF-TDMA modem which support DVB-S2 forward link.

The modem, is optimized for IP networking, Advanced QoS, traffic acceleration, VPNs and many other features.
The Modem is ready to support full-meshed network configuration. Added software features, makes the terminal suitable for interactive data, voice, and video conferencing, plus multicast IP applications.
All the functions are controlled and monitored by a local laptop PC o remotely trough any of the communication links using standard network protocol.

KEY FEATURES

Mountable on different platforms such as: Armoured and tracked platforms, Mobile command posts on armoured and command support.

- High Integration
- Only two subsystems for a complete terminal.

High Efficiency

- Bandwidth-on-Demand
- Efficient, high speed QPSK modulation, header compression, section packing and intelligent capability request algorithms

Fast Deployement

- Ready to use.

The TSO-102//D X consists of an Outdoor Unit (ODU) and an Indoor Unit (IDU).
The IDU consists of a DVB-RCS modem and laptop for monitor and control.

TECHNICAL SPECIFICATIONS

RF Frequency Band	
Transmit Band:	7900÷8400 MHz
Receiver Band:	7250÷7750 MHz
IF Frequency Band	
Tx Band	950 ÷ 1450 MHz
Rx Band	950 ÷ 1450 MHz
Performance	
G/T	≥ 6.5 dB/K
EIRP	≥ 40 dBW
Looking Angle Satellite	
70°	≥ LA ≥ 25° Best Performance
85°	≥ LA ≥ 5° Restricted Performance (20% max degrad. on EIRP and G/T)
Satellite acquisition time	
First Acquisition	
Time@Steady vehicle:	<15 sec.
Reacquisition Time On the Move:	3sec<t<15sec
Angular Velocity and Acceleration	
Azimuth Velocity	~ 360 deg / sec
Azimuth Acceleration	~ 2000 deg / sec^2
Elevation Velocity:	Electronic Steering
Elevation Acceleration:	Electronic Steering
Test land	
Maximum vehicle speed:	90 Km/h on flat track
Max track slope:	30%
Mechanical	
Motorized Mechanical Elevation:	0° ÷ 45° (depending on Looking angle satellite)
Size Outdoor Unit[mm]:	700 (W) x 850 (D) x H 225 ≤ H ≤ 685 depending on Mechanical Elevation
Size Indoor Unit:	19'' rack mountable 1U
Clearance Area:	1150 mm
Height in Stow Mode:	225 mm
ODU overall weight:	< 75 Kg
IDU overall weight:	< 15 Kg
Safety	
According to directive	73/23/EEC amended by 93/68/EEC
EMI / EMC	
According to	MIL-STD-461 B / MIL-STD-462 for Test Method (Ground Army)
Electrical & Environmental	
Power Supply:	24-28 Vdc
Power Consumption:	500 W (750 W Peak)
According to	MIL-STD-1275
Operating Temperature:	-32 to 49 °C
Storage Temperature:	-33 to 71 °C
Humidity:	Up to 100%

DVB-RCS MODEM

IP QoS and Bandwidth-on-Demand	
Traffic Classification:	May use combination of 802.1p, DSCP, Protocol Type, IP Source Address, IP Destination Address, TCP/UDP Source Port or Destination Port
QoS Treatment:	Seven QoS Groups with multiple priority queues for bandwidth-on-demand, plus discard group
Capacity Requests:	RDBC, VDBC, AVDBC and FCA in combination, (and CRA for static assignments)
IP Packet Encapsulation & Compression	
Format:	(Tx & Rx) DVB-RCS standard MPEG2 MPE with section packing, without regard to packet boundaries per EN 301 192 & ISO 13818-1
Header Compression:	Removes up to 23 bytes (on Tx), 21 bytes on (Rx), on each encapsulated IP packet
IP Routing and IP Stack Support	
Routing:	Unicast and Multicast IP
Protocols:	IP, UDP, TCP, ARP, ICMP, IGMP, DHCP Server, DNS Cache, Telnet, SNMPV2c
Advanced Options:	TCP Acceleration; HTTP Acceleration; NAT; GRE Tunnels; VLANs
Management Interfaces	
Local:	RS-232 CLI
Remote:	Telnet, SNMP v2c, Web GUI
Software Upgrade:	Local, TFTP or multicast via satellite
Compliance	
DVB-RCS:	ETSI EN 301 790; SatLabs
DVB-S / S2:	ETSI EN 300 421 / EN 302 307
TDM Receive (DVB-S2 & DVB-S)	
Modulation:	QPSK (DVB-S2/S), 8PSK (DVB-S2)
Symbol Rates:	1 - 30 Msps (DVB-S2); 1 - 45 Msps (DVB-S)
FEC Rates:	1/2, 2/3, 3/4, 5/6, 7/8 (RS-Viterbi); 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 (LDPC+BCH)
Roll-off Factor:	20%, 25%, or 35%
TDMA Transmit (DVB-RCS)	
Modulation:	QPSK
Symbol Rates:	125 Ksps to 3 Msps
FEC Rates:	1/2, 2/3, 3/4, 4/5, 6/7 (Turbo Codes)
Frequency Hopping:	Fast

For more information please email **infomarketing@selex-es.com**
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