

MSR-Pro

MILITARY SATELLITE ROUTER - Professional



The MSR-Pro is a military satellite router that is scalable in both performance and capability, making it an optimal BLOS communication solution for all command levels.

The MSR-Pro is a professional VSAT solution for static and deployable arenas.

The terminal has low power consumption and the ruggedness required for operation in difficult environments. This robust terminal adapts to changing needs, facilitating the seamless upgrade of system capabilities over satellite using a simple software key. This scalability enables the initial minimal hardware investment with the option to move to a more powerful solution without having to purchase additional hardware. The MSR-Pro comes equipped with a dual 10/100BaseT Ethernet port for direct connection to LAN as well as an RS232 via USB and/or Ethernet port for direct connection to management.

The MSR-Pro supports from QPSK to 32APSK modulation and dynamic ACM (adaptive coding and modulation) on the outbound path and QPSK and 8PSK modulation with FEC of $\frac{1}{4}$ and $\frac{3}{4}$ @ QPSK and $\frac{2}{3}$ and $\frac{8}{9}$ @ 8PSK on the inbound path. 32APSK modulation combined with dynamic ACM improves the link efficiency by more than 50% compared to the DVB-S2 8PSK modulation and CCM. Furthermore, the MSR-R dynamic ACM enables it to have link availability up to 100% regardless of weather conditions.

The MSR-Pro supports DVB-S2/ACM in addition to DVB-S standard. It supports standard-based solutions that employ advanced technologies to offer unparalleled efficiency and functionality.

On the forward link the support of DVB-S2/ACM technology includes advanced LDPC coding and QPSK to 32APSK modulations for improved performance. The terminal supports LDPC codes, dual continuous and burst mode operation and data rates of up to 4 Mbps. It has a set of networking capabilities, including advanced quality of service (QoS) supporting TOS-DSCP, CB-WFQ and application prioritization, VLAN pass through and VLAN creation for easy support of MPLS and network separation with low overhead. It has embedded encryption module.

The MSR-Pro is designed for governmental and military solutions suitable for static and deployed arenas. The terminal is ideal for:

- Strategic network backup
- Broadcast
- LOS backup
- LOS aggregation
- Special forces
- LOS backhaul
- Tactical vehicles
- LOS diversity

Elbit Systems

Land and C⁴I

MSR-Pro

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TECHNICAL SPECIFICATIONS

Indoor Unit	
Ext. AC Power	100-240V, 60/50Hz, up to 3A
DC Power	24 VDC /3A (6A available for higher power)
Power Redundancy	Optional power redundancy through additional internal power supply
LAN Interface	Dual Ethernet (IEEE 802.3), 10/100BaseT, Auto detect
L-Band Input/Output Connectors	TNC-Connector, 50 Ohm
Dimensions	19" ,1U ; 217 X 441 X 44 (W X D X H) mm
Weight (including power supply)	2 Kg.
Management Console	RS232 – EIA/TIA-232 (Via USB connector), Telnet RG-45
Power Consumption	18W

Transmitter	
IF Range	L-band (950-1700MHz)
Access	Dynamic BM-FDMA, FDMA, DAMA & bandwidth on demand, SCPC
Modulation	8PSK, QPSK (Spacing 1.22 to 1.35 configurable)
Coding & FEC	Turbo code (DVB-RCS) R=3/4@QPSK, R=2/3, 8/9 @8PSK, LDPC R=1/4, 3/4@QPSK, R=2/3, 8/9 @8PSK
Information Rate	Up to 4Mbps
Signal Level	-45 to -5.5 dBm

Receiver	
IF Range	L-band (950-2150 MHz)
Access	DVB-S2/ACM, DVB/S broadcast (ETS 300 421) Packed/unpacked mode of MPE over DVB-S MPEG2-TS CCM, VCM, ACM
Modulation	QPSK/8PSK/16APSK/32APSK (for DVB-S2/ACM), BPSK/QPSK (as per DVB-S)
Coding & FEC	DVB-S2/ACM QPSK,8PSK,16APSK,32APSK: LDPC (rates 1/2, 2/3, 3/4, 3/5, 5/6, 8/9, 9/10) DVB-S convolution with Reed-Solomon (188/204) (rates 1/2, 2/3, 3/4, 5/6, 6/7, 7/8)
Channel Rate	1 to 45Msps (DVB-S2/ACM, DVB-S)
Information Rate	1 to 160bps (Per DVB-S2/ACM) 1 to 72Mbps (per DVB-S)
Signal Level	L- Band -65 to -35 dBm
Dual Receiver	Optional
Networking	Support of 802.1q, DHCP(server & Relay), NAT, PAT
Utilities	Inbound and outbound ACM, BoD, TRC, QoS-DSCP, acceleration,

Protocols	
	IP, TCP, UDP, ICMP

Outdoor Unit	
RF Frequency Band	C, extended C, Ku, extended Ku, Ka, X
Transmit level	4Amps (upon request up to 6Amps)
Receiver	Low-cost standard DRO LNB
Power Supply	24 VDC /2A, supplied via RF cable
Frequency Reference	10 MHz, supplied via RF cable
LNB Power and Signaling	Switchable 13/18VDC up to 350 mA, 22 KHz tone

Standard Compliance	
Safety	CE, EN 60950-1:2001; A11:2004 ITE, IEC 60950-1 Ed 2.0 b:2005
EMI/EMC	FCC part 15, Class B EN 61000-3-2:2001, EN 61000-3-3:1995 A1:2000, EN 300 386-2, EN 301 489-1 AS/NZS CISPR 22:2006
Standard Conformity	DVB-S2/ACM, ETSI EN 302 307 v.1.1.1 (2004-01) DVB-S, IESS-308, ETSI TBR

Environmental Conditions

Indoor Unit	
Operating Temperature	0° to +50° C
Storage Temperature	-25° to +85° C
Humidity	5% to 95% non-condensing
Altitude	Up to 10,000 feet

Outdoor Unit	
Operating Temperature	-40° to +55° C
Storage Temperature	-40° to +70° C
Relative humidity	Up to 100%
Altitude	Up to 10,000 feet



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