

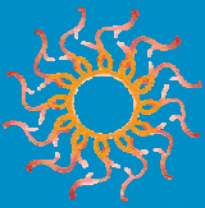
MakSat MMS MAX MIMO



Highlights

- 📶 200 Mbps net aggregate throughput*
- 📶 Native TDM (Up to 16 E1s/T1s) *
+ Ethernet over the same link
- 📶 5Ghz
- 📶 Long range – 150kms*
- 📶 Advanced MIMO, OFDM and Diversity technologies





Reaching 200 Mbps aggregate throughput and providing IP and TDM over same link make this product ideal for today's and tomorrow's networks, preparing operators for the seamless migration from legacy TDM to all-IP networks such as LTE/4G.

Radio Technologies Inside

OFDM Modulation

Orthogonal Frequency-Division Multiplexing (OFDM) is a leading modulation technique that enables effective transmission of large amounts of digital data over a radio link in multi-path and signal intensive environments. Based on the concept of redundant transmission, OFDM works by splitting the radio signal into multiple smaller sub-carriers transmitted simultaneously at different frequencies to the receiver. OFDM enables MMS MAX MIMO to operate smoothly even in challenging non line-of-sight environments.



MIMO

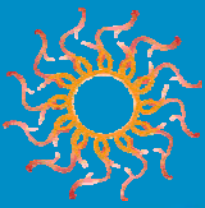
MIMO (Multiple Input Multiple Output) spatial multiplexing gives MMS MIMO the power to increase channel capacity, extend operational range and enhance link availability without the need for additional bandwidth or transmit power. The high-rate information signal is split into two lower-rate streams, with each stream transmitted from a different antenna on the same frequency channel and efficiently reproduced at the receiver side.

Diversity

Antenna diversity uses two antennas to improve the quality and reliability of the wireless link. When applied, the same data stream is duplicated and transmitted over both antennas allowing the receiver to select the best of the two signals. Employing antenna diversity allows MMS MAX MIMO to compensate for multipath interference and improves wireless connectivity.



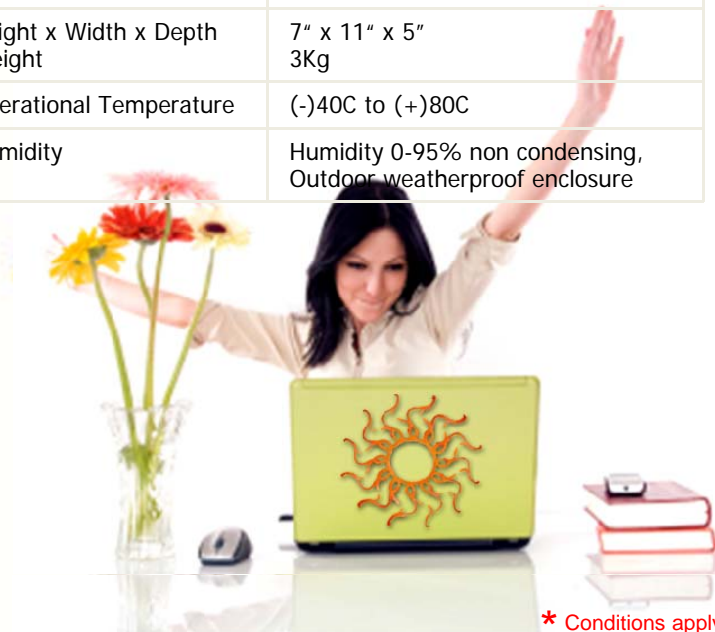
* Conditions apply



Specifications:

Radio Operation	5GHz
Channel Width	(+/-) 2.5 Mhz, 5 Mhz, 10 Mhz
Receive Sensitivity	Uptp -96dBm
Processing Gain	> 10 dB
Antenna	Dual polarity Maksat Dish, 29dbi, 60cm
Integrated Design	23dbi Cross Polarity Integrated
Option of Additional Ethernet 10/100 Interface	Yes, upto 3
Wireless Data Rate	54 Mbps, 108 Mbps
Super fast Mode upto 108 Mbps	Yes
RF Modulation Scheme	QAM64, QAM16, QPSK, BPSK, CCK (OFDM, DSSS)
Duplex Format	TDD, FDD
Certification	FCC, ISO 9001-2000
Range	Up to 100 Km
Output Power	Super power MIMO, upto 26dBm
Software controllable	Yes (Steps of 1 dB)
Extended Range (XR)	Best in the industry (-) 105 dBm
Watch Dog Timer	Software/Hardware/Temperature
QOS/COS/GOS	Yes
Bandwidth Management	Yes
Router	Yes
Monitor/Control	Through Ethernet port using HTTP/HTTPS/Telnet
Packet Format	IEEE 802.3 and Ethernet II

Network Connection	10 /100 Base T
	RJ Female Ethernet Connection
Bridge Functionality	Intelligent Local Packet Filtering (self-learning), Node by node user configurable data rates (CIR and MBR)
Network Topologies	Any point-to Multipoint
	Multipoint-to Multipoint
Repeater Mode	Built-in Mode
RF Collision Management	Combined TDD and FEC
Security	256 bit AES, WPA and WPA2 encryption, Security, VPN and firewall
Data Security Password	Network attachment is password protected
Remote Management	HTTP ,Telnet
SNMP	MIB2
Management Port Functionality	Full configuration/management from any station through a command line
Software Management	File download over RF for firmware updates
Power Adapter Requirement	110 VAC or 220 VAC , 7V - 18V DC
Power Consumption	Less than 20W (fully loaded)
Height x Width x Depth Weight	7" x 11" x 5" 3Kg
Operational Temperature	(-)40C to (+)80C
Humidity	Humidity 0-95% non condensing, Outdoor weatherproof enclosure



* Conditions apply



Specifications:



MCS Index	Spatial Streams	Modulation Type	Coding Rate	Data Rate Mb/s			
				20 MHz channel		40 MHz channel	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	BPSK	1/2	6.50	7.20	13.50	15.00
1	1	QPSK	1/2	13.00	14.40	27.00	30.00
2	1	QPSK	3/4	19.50	21.70	40.50	45.00
3	1	16-QAM	1/2	26.00	28.90	54.00	60.00
4	1	16-QAM	3/4	39.00	43.30	81.00	90.00
5	1	64-QAM	2/3	52.00	57.80	108.00	120.00
6	1	64-QAM	3/4	58.50	65.00	121.50	135.00
7	1	64-QAM	5/6	65.00	72.20	135.00	150.00
8	2	BPSK	1/2	13.00	14.40	27.00	30.00
9	2	QPSK	1/2	26.00	28.90	54.00	60.00
10	2	QPSK	3/4	39.00	43.30	81.00	90.00
11	2	16-QAM	1/2	52.00	57.80	108.00	120.00
12	2	16-QAM	3/4	78.00	86.70	162.00	180.00
13	2	64-QAM	2/3	104.00	115.60	216.00	240.00
14	2	64-QAM	3/4	117.00	130.00	243.00	270.00
15	2	64-QAM	5/6	130.00	144.40	270.00	300.00

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