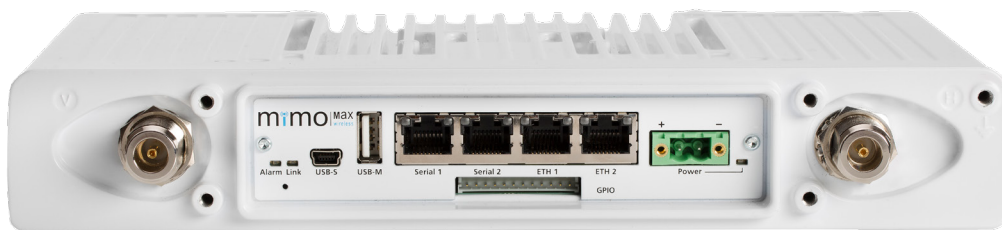


UBIIK MIMOMAX TORNADO

Radio Spec Sheet



The Ubiik Mimomax Tornado is a full-duplex, software flexible, ultra spectrally efficient, long range point-to-multipoint remote radio unit with built-in intelligent network features for Critical Network Infrastructure. With scalable data rates and an efficient random access protocol, it can provide near real-time access to a large number of remote sites with very high reliability and low latency. The Ubiik Mimomax Tornado is fully compatible with all Ubiik Mimomax narrowband products and provides economical SCADA and Telemetry solutions to remote sites in the Power, Gas and Water acquisition and distribution industries.

KEY FEATURES

- ▶ *Point-to-Point, Point-to-Multipoint*
- ▶ *Linux Applications Engine*
- ▶ *Ultra Spectrally Efficient*
- ▶ *Scalable Data Throughput Rates*
- ▶ *SCADA, Telemetry & Data Solutions*
- ▶ *Software Flexible & Intelligent*
- ▶ *Very Low Latency*
- ▶ *Very Low Power Consumption*
- ▶ *Capacity to Simultaneously Operate in Poll and Interrupt Modes*
- ▶ *400MHz, 700MHz, 800MHz, 900MHz Licensed Spectrum*
- ▶ *Ethernet, Serial & USB Interface*
- ▶ *IP Data Encryption & Firewall Security*
- ▶ *Advance Software Features*
- ▶ *User Settable Frequency*
- ▶ *User Programmable Power*
- ▶ *Indoor & Outdoor Mountable*



TORNADO RADIO SPECIFICATIONS				
		400MHz	700MHz	900MHz
Gross Data Rates	75kHz 50kHz 25kHz 12.5kHz	240/480/720/960kbps Uplink and/or downlink 480/960/1440/1920kbps Full-duplex (available at 900MHz) 160/320/480/640kbps Uplink and/or downlink 320/640/960/1280kbps Full-duplex 80/160/240/320kbps Uplink and/or downlink 160/320/480/640kbps Full-duplex 40/80/120/160kbps Uplink and/or downlink 80/160/240/320kbps Full-duplex		
Configuration	2 x 2 Full Duplex MIMO			
Supply Voltage	10.5v DC to 60V DC			
Maximum Power Consumption	26W (at 13.8V) 20W typical			
Standby Power Consumption	<6W typical			
Ambient Temperature Range	-30°C (-40°C) to +60°C (+70°C)			
Mounting	1U High Rack Mount Pole Mount Wall Mount DIN Rail Mount			
Dimensions (L x W x H)	173 x 266 x 43mm			
Weight	2 kg radio unit only, excl. mounts			
RECEIVER				
Modulation	QPSK/16/64/256QAM			
Number of MIMO receivers	2			
Symbol Rate	75kHz 50kHz 25kHz 12.5kHz	- 2x40k symbols/sec 2x20k symbols/sec 2x10k symbols/sec	- 2x40k symbols/sec 2x20k symbols/sec 2x10k symbols/sec	2x60k symbols/sec 2x40k symbols/sec 2x20k symbols/sec 2x10k symbols/sec
Modulation ⁽³⁾ Sensitivity for 10 ⁻⁴ BER	75kHz 50kHz 25kHz 12.5kHz	- <-109.5/-103/97/91dBm <-112.5/-106/-100/-93.5dBm <-115.5/-109/-103/-96dBm	- <-110.5/-104/-98/-92dBm <-113.5/-107/-101/-94.5dBm <-116.5/-110/-104/-97dBm	<-107.5/-101/-95/-89dBm <-109.5/103/97/91dBm <-112.5/-106/-100/-93.5dBm <-115.5/-109/-103/-96dBm
Modulation ⁽³⁾ Sensitivity for 10 ⁻⁶ BER	75kHz 50kHz 25kHz 12.5kHz	- <-108.5/-102/-96/-89.5dBm <-111.5/-105/-99/-92dBm <-114.5/-108/-102/-94.5dBm	- <-109.5/-103/-97/-90.5dBm <-112.5/-106/-100/-93dBm <-115.5/-109/-103/-95.5dBm	<-106.5/-100/-94/-87.5dBm <-108.5/-102/-96/-89.5dBm <-111.5/-105/-99/-92dBm <-114.5/-108/-102/-94.5dBm
Frequency Range	400-430MHz 420-450MHz 440-470MHz		757-758 and 787-788MHz	806-869MHz 852-933MHz 896-960MHz
Frequency Step Size	5 kHz & 6.25 kHz selectable			
Frequency Accuracy and Stability	better than +/- 1ppm			
Nominal Channel Bandwidth	12.5 kHz, 25 kHz, 50kHz (75kHz is software upgradeable at 900MHz)			
TRANSMITTER				
RF Power Output	Avg. before duplexer 2 x 26dBm, Avg. after duplexer 2 x 24dBm Peak before duplexer 2 x 34dBm, Peak after duplexer 2 x 32dBm			
RF Power Control Range	>20 dB			
Other Details	Modulation, Number of MIMO receivers, Symbol Rates, Frequency Range, Frequency Step Size, Frequency Accuracy and Stability are the same as Receiver			
DUPLEXER (INTERNAL)				
Type	Bandpass			
Tx / Rx Split	5 MHz minimum	30 MHz	9 MHz minimum	
Frequency Range	400 to 470 MHz	757-758 & 787-788 MHz	806 to 960 MHz	
Duplexer Sub Bands	400-430 MHz 440-450 MHz 450-470 MHz	757-758 to 787-788 MHz	806-869 MHz 852-933 MHz 896-960 MHz	
Stop Band Attenuation	>60 dB @ >5 MHz from centre	>75 dB	>60 dB @ >9 MHz from centre	
Pass Band Bandwidth	1 MHz min	3 MHz (-0.5dB)	4 MHz (-0.5dB)	
DUPLEXER (EXTERNAL)				
Type	Bandpass		Bandpass	
Tx / Rx Split	4.5 MHz	Available on request		6 MHz minimum
Frequency Range	400 to 470 MHz			806 to 960 MHz
Insertion Loss	<1.75 dB			<1.5 dB
Stop Band Attenuation	>70 dB			>70 dB
Pass Band Bandwidth	2 MHz (-0.5dB)			tunable, 1 MHz min
Mounting	2U High Rack Mount			1U High Rack Mount
INTERFACE (DIGITAL & ANALOGUE)				
ETHERNET	Dual 10BaseT/100BaseT Connector: 2 x RJ45			
ASYNCHRONOUS SERIAL	Format: Dual RS232 Connector: 2 x RJ45 Baud Rate: 300 - 115,200 baud			
USB	High speed USB 2.0 Connector: Type A and mini B			
ALARM	1 set of volt-free change over contacts			
GPIO Analogue/Digital	4 x s/w configurable I/O ports			
FREQUENCY REFERENCE Input/Output	isolated differential pair			

Important: Specifications are subject to change without prior notice. Please visit ubiikmimomax.com for more info, or email us at sales@ubiikmimomax.com.