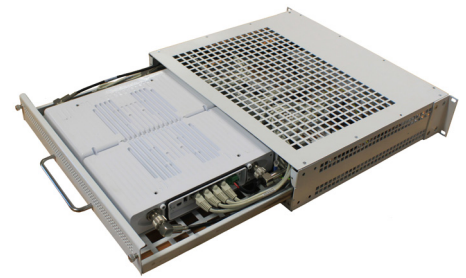


TORNADO 1+1 SYSTEM



Using multiple Mimomax Tornado radio units, this system provides automated support for both a warm and hot standby system where if one radio fails a second standby radio is automatically switched in to take over. The faulty radio can be replaced without impacting the operating radio, enabling the system to operate without loss of data.

The Tornado 1+1 system offers multiple configurations with the ability to switch over Serial, GPIO, alarm and antenna ports. The design also provides the flexibility of an optional two-antenna solution, where each radio has its own antenna to provide a redundant antenna solution.

Applications:

Our Advanced Redundancy point-to-point links are ideal for:

- » **Zero Interruption, Mission Critical, primary communications** links for Public Safety organizations
- » **Back up redundant links for use when primary communications** are down for Public Safety, Utilities or other organizations.

Mimomax also offers a Redundancy Upgrade Kit for customers who already have a Mimomax link in place. This kit contains an additional radio and the housing kit to build a fully redundant 1+1 system.

ELECTRICAL SPECIFICATION			
POWER SUPPLY			
Rated Input Voltage	Normal Operation	+/-13 to +/-50 Vdc	
Extreme Input Voltage	Normal Operation	+/-10.5 to +/-60 Vdc	
Total Power Consumption	Idle, Tx Off	Warm Swap	12.3-17.7 W
		Hot Swap	12.5-17.7 W
	Tx Active	Warm Swap	27-36.1 W
		Hot Swap	41.5-54.5 W
Power Consumption Per Power Connector	Idle, Tx Off	6.25-10.1 W	
	Tx Active	21-28.5 W	
ETHERNET			
Tx Peak Differential Voltage	100Base-Tx, 100 Ohm termination	1.00-1.05 V	
Tx Voltage Imbalance	100Base-Tx, 100 Ohm termination	2%	
Tx Rise/Fall Time	100Base-Tx	3-5 ns	
Tx Rise/Fall Imbalance	100Base-Tx	0-0.5 ns	
Tx Duty Cycle Distortion	100Base-Tx	+/- 0.5 ns	
Tx Overshoot	100Base-Tx	5%	
Tx Output Jitter	100Base-Tx, Peak to Peak	0.7-1.4 ns	
Tx Peak Differential Voltage	10Base-T, 100 Ohm termination	2.4 V	
Tx Output Jitter	10Base-T, Peak to Peak	1.4-11 ns	
Rx Squelch Threshold	10Base-T, 5MHz square wave	400 mV	
SERIAL			
Output Voltage Swing	Loaded with 3kOhms to ground	+/- 5 to +/-5.4 V	
Output Short Circuit Current		-60 to +60 mA	
Input Voltage		-25 to +25 V	
Input Low Threshold	Temperature ambient = +25	0.8-1.5 V	
Input High Threshold	Temperature ambient = +25	1.8-2.4 V	
5VDC Output Current		200 mA	
GPIO			
Input Voltage	Input	-0.3-60 V	
Current Sinking Capability	Output driving low	100mA	
Input Impedance		109 kOhms	
Alarm	Input Current (max)	300 mA	
	Switching Voltage (max)	33 VDC	
Reference Input	Level	-5 to +20 dBm	
	Frequency	10 MHz	
Reference Output	Level	0 dBm	
	Frequency	10 MHz	
1+1 SPECIFIC			
Radio Switch Over Time		0.2s	
IP Configuration Switch Over Time		7s	
PHYSICAL SPECIFICATION			
Dimensions (L x W x H)		17.32 x 15.75 x 3.46 in (440 x 400 x 88 mm) 2U standard size 19 inch rack	
Minimum Operating Temperature		-22°F (-30°C)	
Maximum Operating Temperature		+140°F (+60°C)	
Maximum Operating Humidity		95%RH Non-Condensing	
Minimum Storage Temperature		-40°F (-40°C)	
Maximum Storage Temperature		+176°F (+80°C)	
Maximum Storage Humidity		95%RH Non-Condensing	