



Model Number: VTX-10-xxxx

RF Engineering
and Custom Build

64 x 64 L-band Vortex Matrix

Compact hot-swap switch matrix with 5.0 dB variable gain



Front View of Model VTX-10-xxxx

The Vortex is a highly compact matrix in an 8U shelf and offers a full fan-out / fully distributive switch matrix covering 850 to 2150MHz.

Features of Model VTX-10 include variable gain and a colour XGA Touch screen for local control and monitoring.

All active RF and CPU cards are designed to be hot-swapped from the front and rear without removing RF cables or connectors.

ETL's new Vortex L-band matrix is designed to offer an extremely compact form factor, and compliments the NiGMA and Vulcan ranges of high resilience routers. Vortex uses the same leading edge technology switching cards as the Vulcan matrix, giving excellent RF performance in a compact chassis.

Offering up to 64 x 64 routing in one chassis, this resilient matrix offers a high performance solution to frequent signal routing changes. Vortex can be part populated in blocks of 16 inputs or outputs for smaller matrices and then hot expanded as your routing requirements change.



Rear View of Model VTX-10-xxxx





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Technical specifications and operating parameters

RF Parameters					
Capacity	64 inputs x 64 outputs				
Routing	Distributive, non-blocking	Any input can be connected to any number of outputs			
Frequency Range	850-2150 MHz (L-band)				
RF Connectors	50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type	
Unity Gain Setting					
Gain (mean across band)	0±2.0 dB	0±2.5 dB	0±2.75 dB	0±3.0 dB	
Gain Flatness	850 –2150 MHz	±2.5 dB	±2.5 dB	±2.75 dB	±3.0 dB
	Any 60 MHz	±0.75 dB	±0.75 dB	±0.75 dB	±0.85 dB
Gain Tracking	±2.0 dB	±2.0 dB	±2.5 dB	±2.85 dB	
Full Gain Range					
Max Gain G_{max}	5.0±1.5 dB	5.0±1.5 dB	5.0±2 dB	5.0±2 dB	
Min Gain G_{min}	0±1.5 dB	0±1.5 dB	0±2 dB	0±2 dB	
Gain Flatness (any gain setting over -15-+15dB)	850 –2150 MHz	±3.0 dB	±3.0 dB	±3.25 dB	±3.5 dB
	Any 60 MHz	±0.7 dB	±0.8 dB	±0.85 dB	±1.0 dB
Gain Steps	0.25 dB monotonous				
1dB Compression	≥0 dBm (typically 3.5 dBm)		output power and at unity gain setting		
Noise Figure	25 dB typical		28 dB worst case		
Input Return Loss	18 dB typ	16 dB typ	14 dB typ	12 dB typ	
	14 dB min	12 dB min	10 dB min	8 dB min	
Output Return Loss	18 dB typ	16 dB typ	14 dB typ	12 dB typ	
	12 dB min	12 dB min	10 dB min	8 dB min	
IP3	≥+ 10 dBm				
IP2	≥+ 20 dBm				
Isolation	I/P - O/P	≥ 60 dB	Typical, worst case ≥ 55dB		
	I/P - I/P	≥ 60 dB			
	O/P - O/P	≥ 60 dB			
Group Delay	≤ 2.0 ns	Pk-pk, any 60MHz segment			
Input Levels	-70 dBm to -5 dBm		All parameters apply		
Switching time	≤ 100 ms TBC	From when command received by interface until connection is made			

Environmental	
Operating temperature	0 to 35°C
Location	Indoor use only
Storage temperature	-20°C to +75°C
Humidity	85% non-condensing

Power		
AC Power	85-264Vac 47-63Hz	Fused 20A via IEC C20 inlets
Rated Load	Maximum demand 1.6kW (each inlet)	Typically <1kW total load
DC Source	6 off +5Vdc at 4A	To power ETL peripherals. Fused with self resetting fuses
LNB Power	None	
DC Source	6 off + 5Vdc at 4 A	
PSU	Dual redundant	Either PSU is rated to power the matrix

System Control	
Local Control	Integral touch screen control panel
Remote Control	Via RS232/485 serial port or RJ45 Ethernet port. 10/100 Base T. TCP/IP and SNMP. Web browser option available
RF Monitoring	None See Model VTX-20
Display	Front panel LCD

Physical	
Dimensions	8U high x 620 mm deep
Weight	35 kg (TBC)
Colour	White 00-E-55 semi-gloss

Key Features	
Housed in a compact 8U high chassis	
Variable Gain	
Local & remote control	
Dual redundant power supplies	

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