



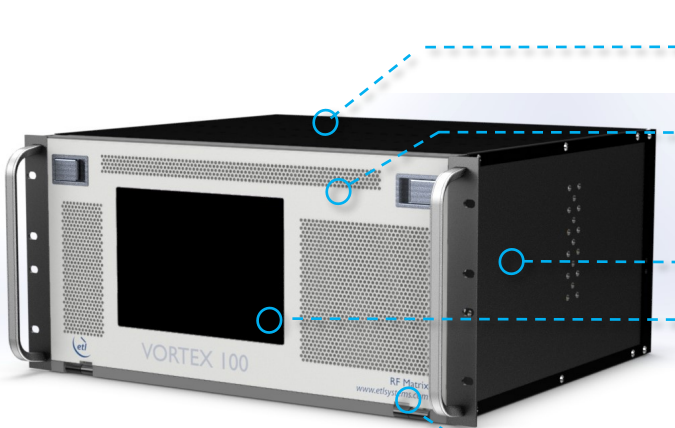
# 64 x 64 Vortex Extended L-band Distributive Switch Matrix / Router

New compact design & enhanced RF performance

**Typical applications:**

- Live news & sport traffic for larger teleports.
- High capacity signal monitoring of satellite traffic.
- RF content acquisition for TVRO & IPTV headends.
- Remote controlled unmanned satcom sites.

ETL's Vortex Extended L-band matrix has been redesigned to now offer an extremely compact form factor, and enhanced RF performance. Vortex uses the same leading edge technology switching cards as the Vulcan matrix, giving excellent RF performance in a compact chassis.



**850 - 2450 MHz**  
operating frequency range



**Improved RF Performance** including noise figure, return loss, OIP3 & isolation



**Compact** up to 64 inputs & 64 outputs housed in a 5U high chassis



**Local control & monitoring** via front panel capacitive touchscreen



**Expansion** in blocks of 16 or with additional matrix modules for larger systems



**Resilience** from dual redundant power supplies & CPU modules



**Minimal impact from failure** with hot-swap RF cards, power supplies, CPU & fans



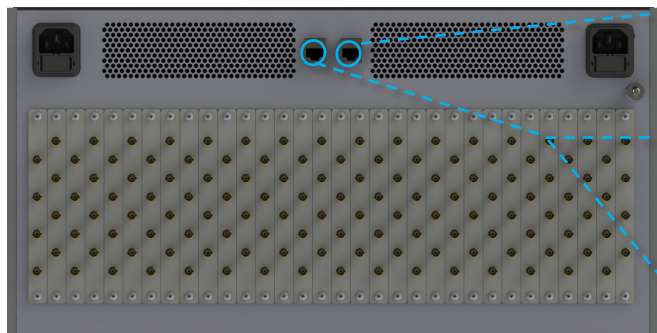
**Secure Communications** with SNMPv3, HTTPS



**Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface



**Self diagnostics** with continuous monitoring of amplifiers, CPU's & PSU's





## Technical specifications and operating parameters

General Parameters		
Capacity	64 inputs x 64 outputs	
Routing	Distributive, non-blocking	Any input can be connected to any number of outputs
Frequency Range	850-2450 MHz (IF/Extended L-band)	
Switching Time	<50ms	From receipt of a command to implementation of path change
Input RF Power	+20dBm	Absolute maximum

RF Parameters		
RF Connectors & Impedances	50Ω SMA	
Gain (Typical, mean across band)	0±1 dB	
Gain Flatness	Full band	±1.0 dB
	Any 36MHz	±0.25 dB
Input Return Loss	Typical	20 dB
	Minimum	16 dB
Output Return Loss	Typical	20 dB
	Minimum	16 dB
Isolation (Minimum between any two ports)	I/P - I/P	75 dB
	O/P - O/P	75 dB
	I/P - O/P	60 dB
Noise Figure (Typical, with one input routed to one output)	Typical	12 dB
	Maximum	14 dB
1 dB GCP 1 dB Gain Compression point, typical	0 dBm	
OIP3 3rd order intercept point, output power	Typical	18 dBm
	Minimum	15 dBm
OIP2 2nd order intercept point, output power	Typical	40 dBm
	Minimum	38 dBm
Group Delay	≤ 1 ns Variation across the operational bandwidth.	

Environmental		
Operating Temperature	0 to 45°C	
Location	Indoor use only	
Storage Temperature	-20°C to +75°C	
Humidity	20 to 90% non-condensing	
Altitude	operational	10,000 ft AMSL (above mean sea level)
	storage	30,000 ft AMSL (above mean sea level)

Power		
PSU Power	85-264Vac 50-60Hz	Fused 2A
AC Consumption	350W	Max. consumption at steady state

Reliability		
PSU	Dual redundant & alarmed Diode OR. Hot-swap	
CPU	Dual redundant Hot-swap	
Input Cards	Hot-swap	
Output Cards	Hot-swap	
Matrix Cards	Hot-swap	
MTTR	20 minutes 15 minutes to retrieve spare part & 5 minutes to replace	
MTBF (Hours)	Chassis	271,444 chassis excludes HMI & RF cards
	Switch Card	270,297
	Divider Card	317,227
	Matrix Card	TBC

System Control & Monitoring	
Local Control & Monitoring	Via Front Panel HMI capacitive touchscreen
Remote Control & Monitoring	Ethernet via RJ45, 10BaseT/100BaseTx ETL TCP/IP protocol SNMP Built-in Web Server
Alarms	Ethernet (RJ45)

Physical	
Dimensions	5U high x TBCmm deep x 19" wide
Weight	TBC fully populated
Colour	RAL9003 - White (semi-matte)

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.  
Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.