



**ETL Systems**

New technologies  
in RF distribution

Model Number:  
VTXC-100-XXXX

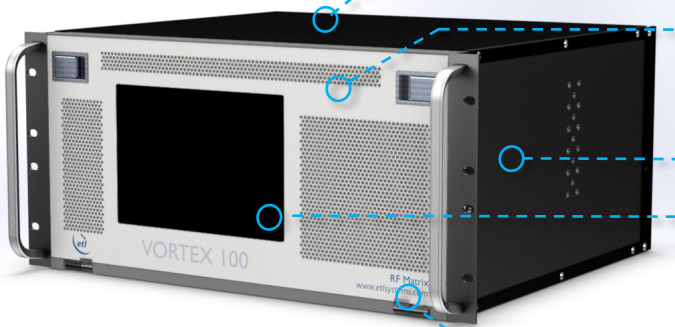
# 64 x 64 Vortex Extended L-band Combining Switch Matrix / Router

New compact  
design & enhanced RF performance

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

### 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.



**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



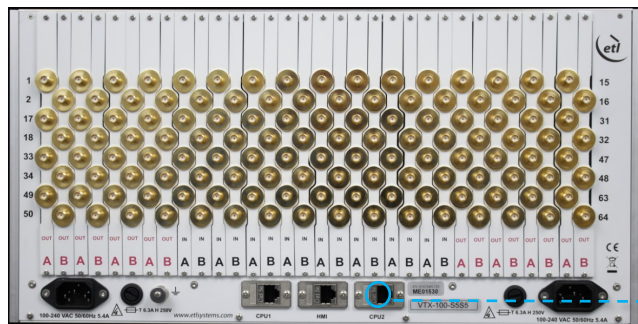
**Secure Communications** with SNMPv3, HTTPS



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



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



Note: Rear image shows distributive model





**Technical specifications and operating parameters**

General Parameters		
Capacity	64 inputs x 64 outputs	
Routing	Combining, non-blocking	Many inputs can be routed to each output
Frequency Range	850-2450 MHz (Extended L-band)	
Switching Time	<50ms	From receipt of a command to implementation of path change
Input RF Power	+20dBm	Absolute maximum

Environmental		
Operating Temperature	0 to 45°C	
Gain Stability versus Temperature	0.05dB/°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)

RF Parameters					
RF Connectors & Impedances	50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type	
Gain (Typical, mean across band)	0±2 dB	0±2 dB	0±2 dB	0±2 dB	
Gain Flatness	850-2450MHz	±2.50 dB	±2.50 dB	±2.75 dB	±2.75 dB
	Any 36MHz in 850-2450MHz	±0.45	±0.45	±0.5	±0.5
	850-2150MHz	±1.25 dB	±1.25 dB	±1.50 dB	±1.50 dB
	Any 36MHz in 850-2150MHz	±0.30 dB	±0.30 dB	±0.50 dB	±0.50 dB
Input Return Loss	Typical	20 dB	20 dB	14 dB	14 dB
	Minimum	12 dB	12 dB	8 dB	8 dB
Output Return Loss	Typical	20 dB	20 dB	14 dB	14 dB
	Minimum	14 dB	12dB	8 dB	8 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	23 dB			
	Maximum	26 dB			
1 dB GCP output power	Typ. 12 dBm				
OIP3 output power	Typical	25 dBm			
	Minimum	21 dBm			
OIP2 2nd order intercept point, output power	Typical	40 dBm			
	Minimum	38 dBm			
Group Delay	≤ 1 ns Variation across the operational bandwidth.				

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	>250,000 chassis excludes HMI & RF cards
	Switch Card	>250,000
	Divider Card	>300,000
	Matrix Card	>100,000

System Control & Monitoring	
Local Control & Monitoring	Via Front Panel HMI capacitive touchscreen
Remote Control & Monitoring	Ethernet via RJ45, 10BaseT/100BaseTx ETL TCP/IP protocol SNMPV3, HTTPS Built-in Web Server
Alarms	Ethernet (RJ45)

Physical	
Dimensions	5U high x 550 mm deep x 19" wide
Weight	40 kg
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.

