



ETL Systems
Excelling in RF Engineering

Model Number:
VCN-12-XXXX

128x128 Vulcan IF Switch Matrix / Router

Typical applications:

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



40 - 200 MHz
operating frequency range



RF Monitoring
of input signals



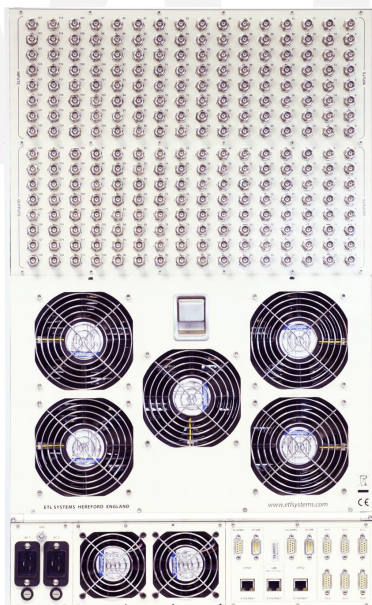
Automatic re-routing
in the event of card failure
with redundant paths



Ultra compact
128x128 routing in a 16U
high chassis



Local control & monitoring via front panel
touch screen & XGA Display



Variable gain to
balance input signals



Resilience from dual
redundant hot-swap power
supplies & CPU modules &
hot-swap RF cards



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



Dry contact alarm port & serial communications
for amplifier & power supply
status





Technical specifications and operating parameters

PRELIMINARY

RF Parameters					
Capacity		128 inputs x 128 outputs		Expandable to 1024 x 1024	
Routing		Distributive, non-blocking		Any input can be connected to any number of outputs	
Frequency Range		40-200 MHz (IF)		Extended frequency range available	
Input Levels		-70 dBm to -5 dBm		All parameters apply	
RF Connectors		50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type
Gain mean across band		0±2.5 dB	0±2.5 dB	0±2.5 dB	0±2.5 dB
Gain Flatness	40-200MHz	±1.5 dB	±1.5 dB	±2.0 dB	±2.0 dB
	Any 36MHz	±0.5 dB	±0.6 dB	±0.75 dB	±0.8 dB
Gain Tracking		±2.5 dB	±2.5 dB	±2.5 dB	±2.5 dB
Maximum Gain G _{max}		+10±1.5 dB	+10±1.5 dB	+10±1.5 dB	+10±1.5 dB
Minimum Gain G _{min}		-10±1.5 dB	-10±1.5 dB	-10±1.5 dB	-10±1.5 dB
Gain Steps		1.0 ±1.0 dB Monotonous & control on inputs			
Input Return Loss	Typical	20 dB	18 dB	16 dB	TBC
	Minimum	15 dB	14 dB	12 dB	TBC
Output Return Loss	Typical	20 dB	18 dB	16 dB	TBC
	Minimum	15 dB	14 dB	12 dB	TBC
1dB Compression		≥ 0 dBm output power measured at mid-band			
OIP3		≥ 10 dBm	3rd order intercept point, output power. Equal signals @ -15 dBm		
OIP2		≥ 20 dBm	2nd order intercept point, output power.		
Isolation	I/P-I/P	≥ 65 dB	Minimum between any 2 output ports		
	I/P-O/P	≥ 55 dB	Typically ≥ 60 dB		
	O/P-O/P	≥ 70 dB	Minimum between any 2 output ports		
Group Delay		< 2.0 ns	Peak variation across the operational bandwidth		
Noise Figure		28 dB typical at unity gain setting			
Switching Time		≤ 100 ms	From when command received by interface until the connection is made		

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	10,000 feet AMSL

Physical		
Dimensions	16U high x 620mm deep x 19" wide	It is recommended that a rack of at least 800x1000mm depth should be used
Weight	82 kg	
Colour	White 00-E-55 semi-gloss	

System Control		
Remote Control	Via RJ45 10/100 Base T. TCP/IP, SNMP Ethernet port or RS232/485 Serial Port Web browser interface included. PC software available.	
Local Control	Via front panel touch screen & XGA Display	
Display	Front panel XGA Display	
RF Monitoring	-50 to +5 dBm at unity gain	Input Power, High & Low Limits
Alarms	Dry contact alarm port on rear panel for PSU & Amplifier failure	
MTBF	Chassis	84,811 hours
	RF Cards	100,000 hours

Power		
PSU Power	85-264V AC (50/60Hz) Fused, 20A via IEC C20 inlets	
AC Consumption	1kW	Max. consumption at steady state
LNB Power	None	
PSU	Dual redundant, Diode OR	Either PSU rated to power matrix
Hot-swap PSU	Yes	
DC Output Source	6 off +5 Vdc at 4A	Fused with self resetting fuses
Input RF Power	+13 dBm Absolute Maximum	

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.