



Model Number: VCN-10-xxxx

RF Engineering
and Custom Build

Vulcan L-band Matrix Router

128 x 128 signal routing taken to new levels



Front View of Model VCN-10-xxxx

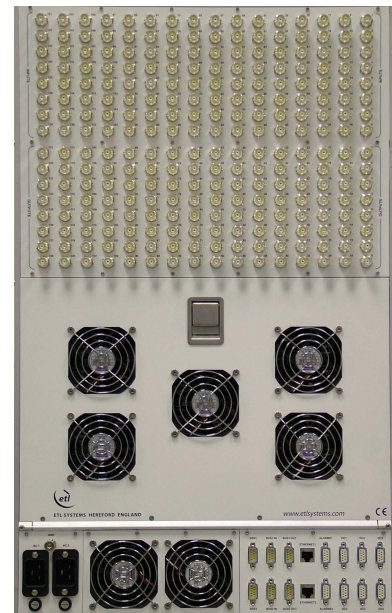
The Vulcan is a highly compact matrix in a 16U shelf and offers a full fan-out / fully distributive system covering 850 to 2150MHz.

Features include auto re-routing and a colour XGA Touch screen for fast 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 Vulcan L-band matrix is designed to offer an extremely compact form factor, and compliments the NiGMA range of high resilience routers. Derived from the TiTan IF matrix, Vulcan's revolutionary architecture focuses on compactness.

Offering up to 128 x 128 routing in one chassis, this resilient matrix offers a high performance solution to frequent signal routing changes.



Rear View of Model VCN-10-B5B5





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128 x 128 Vulcan L-band Matrix Router

Technical specifications and operating parameters

RF Parameters					
Capacity	128 inputs x 128 outputs		Expandable to 512 x 512		
Routing	Distributive, non-blocking		Any input can be connected to any number of outputs		
Frequency Range	850-2150 MHz (L-band)		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	
Unity Gain Setting					
Gain mean across band	0±2.5 dB	0±2.75 dB	0±3.0 dB	0±3.25 dB	
Gain Flatness	850-2150MHz	±3.0 dB	±3.2 dB	±3.5 dB	±3.85 dB
	Any 36MHz	±0.5 dB	±0.6 dB	±0.65 dB	±0.8 dB
Gain Tracking	±2.0 dB	±2.5 dB	±2.7 dB	±2.85 dB	
Full Gain Range					
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 Flatness	850-2150MHz	±2.0 dB	±2.2 dB	±2.5 dB	±3.25 dB
	Any 36MHz	±0.7 dB	±0.8 dB	±0.8 dB	±1.0 dB
Gain Alignment	±1.0 dB	±1.0 dB	±1.25 dB	±1.5 dB	
Gain Steps	1.0 dB Monotonous & control on inputs				
Input Return Loss	Typ	18 dB	16 dB	14 dB	12 dB
	Min	12 dB	12 dB	10 dB	8 dB
Output Return Loss	Typ	18 dB	16 dB	14 dB	12 dB
	Min	12 dB	12 dB	10 dB	8 dB
1dB Compression	≥ 0 dBm output power & unity gain setting				
IP3	≥ +10 dBm	Equal signals -15 dBm ≥300 kHz separation. In band products			
IP2	≥ +20 dBm				
Isolation	I/P-I/P	≥ 60 dB			
	I/P-O/P	≥ 60 dB typical		worst case ≥ 55 dB	
	O/P-O/P	≥ 60 dB			
Group Delay	≤ 2.0 ns		Pk-pk, any 60MHz segment		
Noise Figure	25 dB typical Unity Gain Setting				
Switching Time	≤ 100 ms TBC 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	85% non-condensing

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 (TBC)	
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
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 failure
Comms/Power Failure	Retains Settings
Remote Control Software	Available. Web Browser option available

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

Key Features
128 x 128 matrix system in a 16U high shelf
Dual redundant, hot-swap PSU's & CPU's
Single, hot-swap matrix cards
Self diagnostics – continuous monitoring

* Designed to run at or near minimum attenuation for nominal unity gain

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