



**ETL Systems**

New technologies  
in RF distribution

Model Number:  
VTRC-102-1616

# Up to 16x16 Extended L-band Combining Victor series Switch Matrix / Router

### Typical applications:

- TVRO, smaller teleports and satellite ground stations.
- Oil and gas applications.
- RF distribution in cruise liners or luxury yachts.
- SNG and outside broadcast trucks.

VTRC-102 is an Extended L Band 16x16 Combining Matrix in a compact 1U chassis with output RF detection.



**850 - 2450 MHz**  
operating frequency range. Ka-band ready



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



**Variable gain** to balance input signals



**Secure Communications** with SNMPv3, HTTPS



**Compact** housed in a 1U high chassis



**RF signal monitoring** of each output



**Remote control & monitoring** via RJ45 Ethernet via RJ45, 10BaseT/100BaseTx, ETL TCP/IP protocol, SNMPv3 & Web Browser Interface



**Resilience** from dual redundant hot-swap power supplies & field serviceable HMI & CPU





**Technical specifications and operating parameters**

RF Parameters					
Capacity	Up to 16 inputs x 16 outputs				
Routing	Combining, non-blocking	Many inputs can be routed to each output.			
Frequency Range	850—2450 MHz				
Switching Time	< 50ms (From receipt of a command to implementation of path change)				
RF Detect	-35dBm to +10dBm RF power detection at each output port (RF reported power, indicative only).				
RF Connectors	50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type	
Flatness	Full band	±1.75 dB	±1.75 dB	±2.0 dB	±2.0 dB
	850-2150MHz	±1.25 dB	±1.25 dB	±1.5 dB	±1.5 dB
	Any 36MHz	±0.3 dB	±0.3 dB	±0.5 dB	±0.5 dB
Input Return Loss	Typical	20 dB	20 dB	14 dB	14 dB
	Minimum	14 dB	14 dB	10 dB	8 dB
Output Return Loss	Typical	20 dB	20 dB	14 dB	14 dB
	Minimum	14 dB	14 dB	10 dB	8 dB
Gain	Gain	0 ± 2 dB		Typical, mean across band	
	Gain Control	0 to +5 dB		Settable at each output	
	Gain steps	0.25 dB			
1dB GCP	Full Band	+10 dBm		Output power	
	850-2150 MHz	+13 dBm		Output power	
OIP3	Full Band	20 dBm		Typical	
	850-2150 MHz	25 dBm		Typical	
OIP2	Typical	36 dBm		2nd order intercept point,	
	Min	34 dBm		2nd order intercept point	
Isolation	I/P - O/P	60 dB		Minimum between any 2 ports	
	I/P - I/P	75 dB		Minimum between any 2 ports	
	O/P - O/P	75 dB		Minimum between any 2 ports	
Group Delay	< 1 ns				
Noise Figure	Typical	20 dB (Typical with one input routed to one output)			
	Max	22 dB (Typical with one input routed to one output)			
Spurious	Carrier Related	-65 dBc (Excluding harmonics. Max Carrier level -10dBm. )			
	Carrier Un-related	-85 dBm (Within operating frequencies)			
Input RF Power	+ 20 dBm		Absolute maximum		

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 (Operational) 30,000 feet AMSL (Storage)
Gain stability vs Temperature	0.05 dB/°C

Power		
PSU Power	85-264Vac 50-60Hz	Fused 2A
AC Consumption	20W	Max. consumption at steady state
PSU	Dual redundant	Diode OR.
MTBF	Chassis	> 250,000
	Matrix Card	> 100,000

System Control	
Local Control & Monitoring	HMI
Remote Control & Monitoring	Ethernet via RJ45, 10BaseT/100BaseTx ETL TCP/IP, SNMPv3, HTTPS, Built in Web Server
Alarms	Via Ethernet (RJ45) or HMI
PSU Redundancy	Dual Redundant & Alarmed

Physical	
Dimensions	1U high x 650mm deep x 19" wide
Weight	10 kg
Colour	RAL 9003 semi-matte (white)

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.

Note 3: Typical parameters are guide figures and measured data may deviate from the quoted figures. ETL endeavours to exceed the quoted typical parameters where practically possible.

