

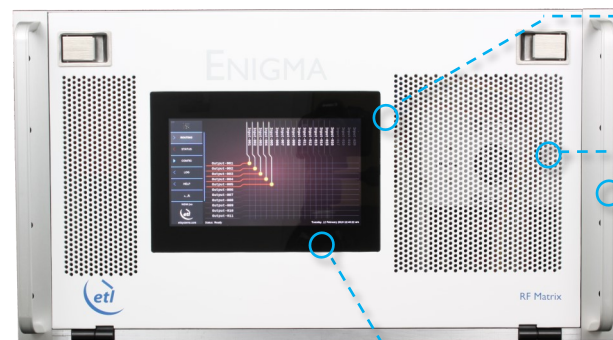


32 x 32 Enigma 50-2450 MHz Distributive Switch Matrix / Router

4th generation Enigma matrix with enhanced RF performance including variable gain 0 dB to +10dB settable per output.

Typical applications:

- RF content acquisition for TVRO & IPTV headends
- Signal monitoring of satellite traffic
- Remote controlled unmanned satcom sites



50 - 2450 MHz
operating frequency range



Suitable for HTS applications due to extended bandwidth



Upgraded local control & monitoring via front panel capacitive touchscreen



Compact up to 32 inputs x 32 outputs in a 6U high chassis



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



Expansion in single increments or with additional matrix modules for larger systems



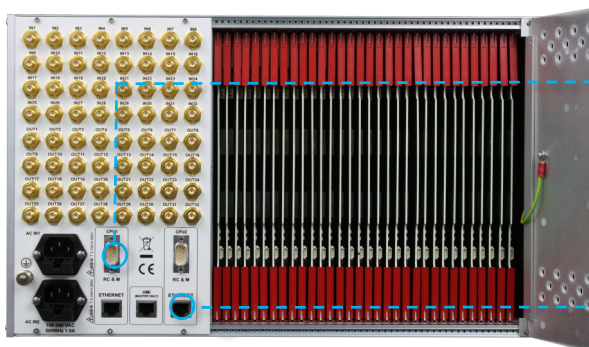
Resilience from dual redundant power supplies & CPU modules



Minimal impact from failure with hot-swap single input & output RF cards, dual power supplies & dual CPU's, fans



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



Future proof secure protocols with SNMPv3 & HTTPS



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





Technical specifications and operating parameters

RF Parameters					
Capacity	32 inputs x 32 outputs, fully populated				
Routing	Distributive, non-blocking	Any input can be connected to any number of outputs			
Frequency Range	50-2450 MHz				
Gain	0±1 dB Typical, mean across band				
Gain Control	0 to +10 in 0.25 dB steps		Settable at each output		
RF Connectors	50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type	
	All ports DC blocked				
Gain Flatness	50-2150 MHz	±1.25 dB	±1.25 dB	±1.5 dB	±1.5 dB
	Any 36 MHz	±0.25 dB	±0.25 dB	±0.5 dB	±0.5 dB
	50-2450 MHz	±2.5 dB	±2.5 dB	±3.0 dB	±3.0 dB
	Any 36 MHz	±0.5 dB	±0.5 dB	±0.75 dB	±0.75 dB
Input Return Loss	Typical	18 dB	18 dB	16 dB	16 dB
	Minimum	12 dB	12 dB	10 dB	10 dB
Output Return Loss	Typical	18 dB	18 dB	16 dB	16 dB
	Minimum	14 dB	14 dB	10 dB	10 dB
Isolation (Minimum between any 2 ports)	I/P - O/P	<2150 MHz		>2150 MHz	
		60 dB		50 dB	
	I/P - I/P	70 dB		60 dB	
	O/P - O/P	75 dB		75 dB	
Noise Figure Typical, 1 input routed to 1 output	0 dB	22 dB		24 dB	
	+10 dB	20 dB		22 dB	
1dB GCP Typical, Gain Compression Point, output power	0 dB	+3 dBm		+0 dBm	
	+10 dB	13 dBm		10 dBm	
OIP3	0 dB	Typical 18 dBm Minimum 12 dBm		Typical 18 dBm Minimum 10 dBm	
	+10 dB	Typical 25 dBm Minimum 20 dBm		Typical 25 dBm Minimum 20 dBm	
OIP2	Typical 32 dBm Minimum 30 dBm (@ 0dB gain)				
Group Delay	±1.5 ns across operational bandwidth				
Switching Time	< 50ms from receipt of a command to implementation of path change				
Input RF Power	+ 20 dBm		Absolute maximum		
Tech Spec Version	1.4				

System Control	
Local Control	Via Front Panel HMI capacitive touchscreen
Remote Control & Monitoring	Serial (RS232 or RS422/485) and Ethernet port via RJ45 10Base T/100 BaseTx. TCP/IP, SNMP v3, HTTPS & Web browser interface.
Alarms	Dry contact (D-type) & Ethernet (RJ45) for PSU & Amp. status

Power		
PSU Power	85-264Vac 50-60Hz	Fused 2A
AC Consumption	150W	Maximum consumption at steady state
PSU	Dual redundant & alarmed	Diode OR. Hot swappable
Hot-swap PSU	Yes	
CPU Redundancy	Dual redundant	Hot swappable
Input Cards	Hot swap	Failure effects only one input port.
Output Cards	Hot swap	Failure effects only one output port.
MTTR	20 minutes. 15 minutes to retrieve spare part and 5 minutes to replace.	Applies to LRUs only and assumed in house stock.
MTBF	Chassis	271,444
	Switch card	270,297
	Divider card	317,227
		Chassis excludes HMI & RF cards

Environmental	
Operating temperature	0 to 45°C
Gain Stability versus Temperature	0.05dB/°C
Storage temperature	-20°C to +75°C
Location	Indoor use only
Humidity	20 to 90% non-condensing
Altitude (operational)	10,000 feet AMSL (Above Mean Sea Level)
Altitude (storage)	30,000 feet AMSL (Above Mean Sea Level)

Physical	
Dimensions	6U high x 450mm deep x 19" wide
Weight	35 kg, 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.

