ETL Systems
Excelling in RF Engineering

Model Number:
NGMC-47-xxxx

32 x 32 Enigma L-band Combining Switch Matrix / Router with –20 dB gain, enhanced performance & high linearity

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

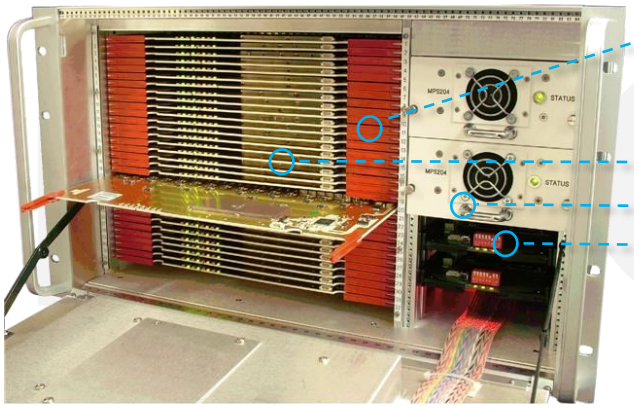
1000 - 2000 MHz operating frequency range

-20 dB Gain & High Linearity ensures overall RF gain signal performance is optimised

Local control & monitoring via front panel VGA touchscreen

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

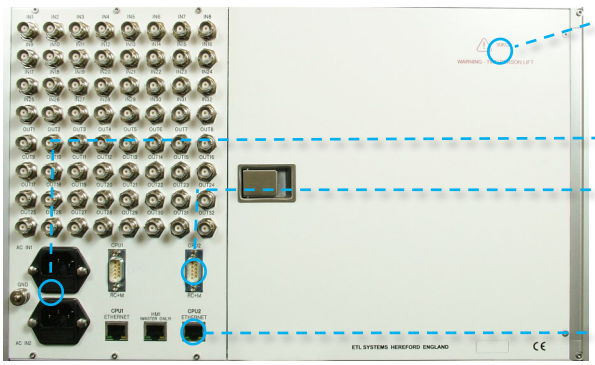
Expansion in single increments or with additional matrix modules for larger systems



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

64 x 64 Enigma system with splitters & combiners

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



Resilience from dual redundant power supplies & CPU modules

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

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

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Technical specifications and operating parameters

RF Parameters					
Capacity		32 inputs x 32 outputs, fully populated			
Routing		Combining (fan out), non-blocking	Many inputs can be routed to each output		
Frequency		1000 to 2000MHz (L-band)			
Connector & impedances		50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type
Gain		-20 ± 1 dB typical , mean across band			
Gain Flatness	1000-2000MHz	±1.0 dB	±1.0 dB	±1.5 dB	±1.5 dB
	Any 125MHz	±0.5 dB	±2.25 dB	±2.5 dB	±2.5 dB
	Any 10MHz	±0.2 dB	±0.5 dB	±0.75 dB	±0.75 dB
Input Return Loss	Typical	18 dB	16 dB	14 dB	14 dB
	Minimum	16 dB	14 dB	12 dB	10 dB
Output Return Loss	Typical	18 dB	16 dB	14 dB	14 dB
	Minimum	16 dB	14 dB	12 dB	10 dB
Isolation	Input-output	50 dB			
	Input-input	60 dB			
	Output-output	60 dB			
Noise Figure		40 dB typical, 1 input routed to 1 output at minimum gain			
1dB Gain Compression Point	At max gain	10 dBm at output power, at minimum gain			
OIP3	At max gain	+25 dBm typical 3rd order intercept point, output power, at minimum gain			
Group Delay		<3ns Across operational bandwidth			
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	20-90% non-condensing
Altitude	10,000 feet AMSL

System Control	
Local Control	Touchscreen & VGA Display
Remote Connection	Via RS232 or RS422/485 serial port and RJ45 Ethernet port on rear panel
Alarms	Dry contact (D-type) & Ethernet (RJ45) for PSU & Amp. status
SNMP Traps	For alarms & monitoring
Comms / Power Failure	Retains settings
Remote Control Software	Available

Power			
PSU power		85-264Vac 50/60Hz Fused 2A	
PSU		Dual redundant and alarmed. Diode OR . Hot swappable	
CPU redundancy		Dual redundant. Hot swappable	
Hot-swap PSU		Yes	
AC Consumption		100W (max. consumption at steady state)	
MTBF (hours)	Chassis	170,740	Chassis excludes HMI & RF cards
	Switch Card	270,297	
	Combiner Card	317,227	

Physical	
Input & output RF connectors	SMA
Input & output impedance	50 Ω
Dimensions	6U high x 450mm deep x 19" wide
Weight	35 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.

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