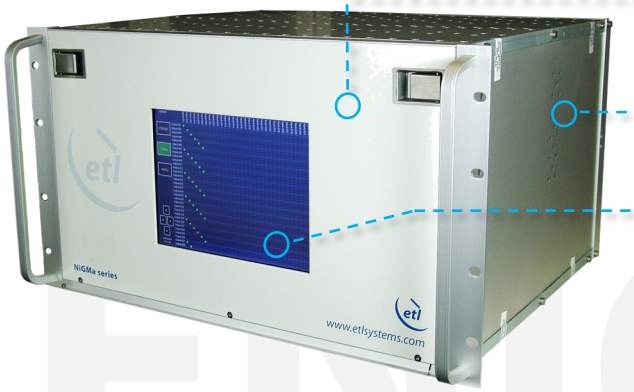
ETL Systems
Excelling in RF Engineering

Model Number:
NGM-48-S5S5

32 x 32 4 GHz Distributive Enigma Switch Matrix / Router

Typical applications:

- RF content acquisition for TVRO & IPTV headends
- Signal monitoring of satellite traffic
- Remote controlled unmanned satcom sites
- Test environment applications such as lab resource testing, network mobility testing & large scale wireless testing



1500 - 4000 MHz operating frequency range

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

Local control & monitoring via front panel VGA touchscreen

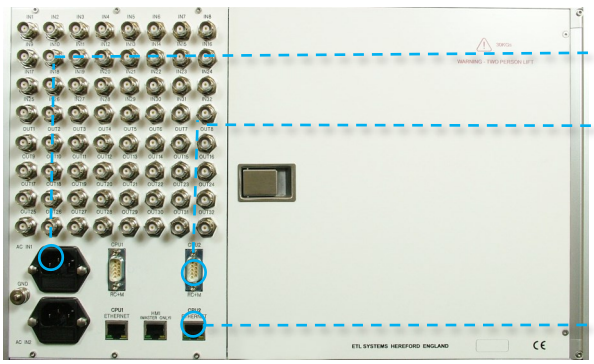
Self diagnostics with continuous monitoring of amplifiers, CPU's & PSU's

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

64 x 64 Enigma system with splitters & combiners

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

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	
Routing		Distributive (fan-out), non-blocking	Any input can be connected to any number of outputs
Frequency		1500 to 4000MHz	
Gain		8±2 dB	
Gain Flatness	Full band	±2.25 dB	
	Any 500MHz (1500-2500MHz)	±1.75 dB	
	Any 500MHz (2500-4000MHz)	±1.75 dB	
Input Return Loss	Typical	14 dB	
	Minimum	9.5 dB	
Output Return Loss	Typical	14 dB	
	Minimum	8.5 dB	
Isolation	Input-input	60 dB	Minimum between any 2 ports
	Output-output	60 dB	
	Input-output	50 dB	
Noise Figure		18.5 dB maximum	With one input routed to one output
1dB Gain Compression Point		+3 dBm (input power)	
OIP3	Typical	20 dBm	3rd order intercept point, output power
	Minimum	18 dBm	
Group Delay		<2ns	Across operational bandwidth
Switching Time		<50 ms	From receipt of command to implementation of path change
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 RS422/485 serial port and RJ45 Ethernet on rear panel
Alarms	Dry contact (D-type) & Ethernet (RJ45)
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
Hot-swap PSU		Yes
CPU		Dual redundant and hot swappable
Hot-swap CPU		Yes
AC Consumption		100W (max. consumption at steady state)
MTBF (hours)	Chassis	271,444 - excludes HMI & RF cards
	Switch Card	270,297
	Splitter Card	317,227

Physical	
Impedance	50Ω
RF connector	SMA
Dimensions	6U high x 450mm deep x 19" wide
Weight	35 kg Fully Populated as 32x32
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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