ETL Systems
Excelling in RF Engineering

Model Number:
NGMC-48-xxxx

32 x 32 4 GHz Combining Enigma Switch Matrix / Router

Typical applications:

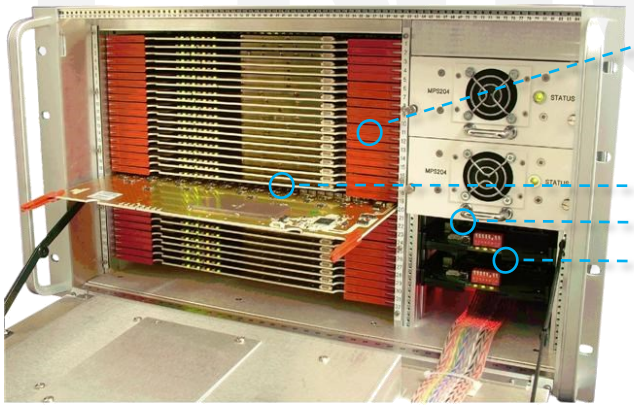
- RF content acquisition for TVRO & IPTV headends
- Signal monitoring of satellite traffic
- Remote controlled unmanned satcom sites
- Test environment applications such as lab resource testing, network mobility testing & large scale wireless testing

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

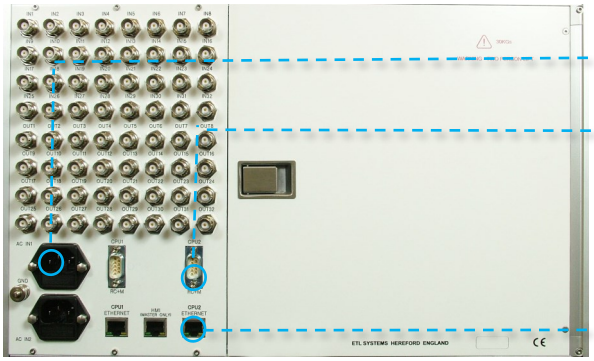
Self diagnostics with continuous monitoring of amplifiers, CPU's & PSU's



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, fully populated	
Routing		Combining, non-blocking	Many inputs can be routed to each output
Frequency		1500 to 4000MHz	
Gain		8±2 dB	
Input & output ports		50Ω SMA	All ports DC blocked
Gain Flatness	Full band	±2.25 dB	
	Any 500MHz (1500-2500MHz)	±1.5 dB	
	Any 500MHz (2500-4000MHz)	±1.5 dB	
Input Return Loss	Typical	14 dB	
	Minimum	9.5 dB	
Output Return Loss	Typical	14 dB	
	Minimum	10 dB	
Isolation	Input-input	60 dB	Minimum between any two ports
	Output-output	60 dB	
	Input-output	50 dB	
Noise Figure		21.5 dB maximum	With one input routed to one output
1dB Gain Compression Point		+5 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

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.

System Control	
Local Control	Touchscreen & VGA Display
Remote Connection	Serial (RS232 or RS422/485) and Ethernet (RJ45) 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 & alarmed
CPU		Dual redundant & hot swappable
Hot-swap PSU		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	
Input impedance & RF connector	50Ω SMA
Output impedance & RF connector	50Ω SMA
Dimensions	6U high x 450mm deep x 19" wide
Weight	35 kg Fully Populated as 32x32
Colour	White 00-E-55 semi-gloss

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

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