



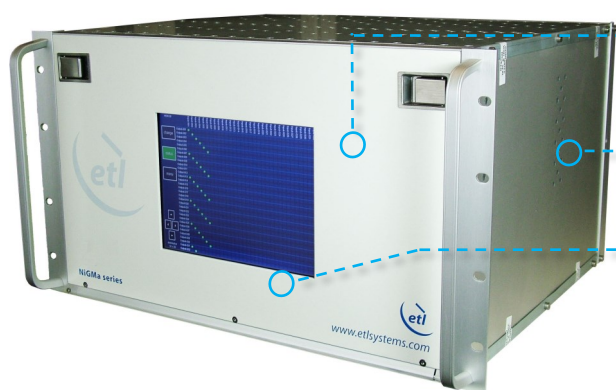
ETL Systems  
Excelling in RF Engineering

Model Number:  
NGMC-25-xxxx

# 32 x 32 Enigma IF & L-band Combining Switch Matrix / Router

## Typical applications:

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



**50 - 2150 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



**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



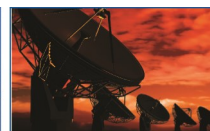
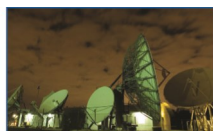
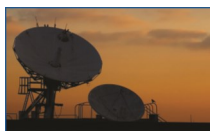
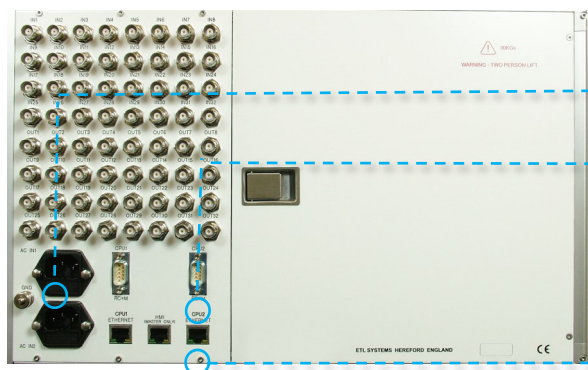
**Resilience** from dual  
redundant power supplies  
& CPU modules



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



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





### Technical specifications and operating parameters

RF Parameters					
Frequency		50-200 MHz	950-1750 MHz	950-1950 MHz	850-2150 MHz
All connector types, frequency dependant					
Isolation	I/O	65 dB	65 dB	60 dB	60 dB
	I/I	75 dB	75 dB	70 dB	70 dB
	O/O	75 dB	75 dB	70 dB	70 dB
NGMC-25-B5B5 (all ports 50 ohm BNC)					
Flatness	Operational bandwidth	±1.0 dB	±1.0 dB	±1.25 dB	±1.5 dB
	Any 36MHz	±0.35 dB	±0.25 dB	±0.25 dB	±0.25 dB
Input return loss	Typical	22 dB	18 dB	18 dB	17 dB
	Minimum	18 dB	16 dB	16 dB	14 dB
Output return loss	Typical	22 dB	18 dB	17 dB	16 dB
	Minimum	18 dB	16 dB	16 dB	14 dB
NGMC-25-S5S5 (all ports 50 ohm SMA)					
Flatness	Operational bandwidth	±1.0 dB	±1.0 dB	±1.25 dB	±1.25 dB
	Any 36MHz	±0.25 dB	±0.20 dB	±0.20 dB	±0.25 dB
Input return loss	Typical	22 dB	18 dB	17 dB	16 dB
	Minimum	18 dB	16 dB	16 dB	14 dB
Output return loss	Typical	22 dB	18 dB	18 dB	17 dB
	Minimum	18 dB	16 dB	16 dB	15 dB
NGMC-25-B7B7 (all ports 75 ohm BNC)					
Flatness	Operational bandwidth	±1.2 dB	±1.02 dB	±1.5 dB	±2.0 dB
	Any 36MHz	±0.25 dB	±0.25 dB	±0.25 dB	±0.30 dB
Input return loss, Typical		12 dB	12 dB	10 dB	10 dB
Output return loss, Typical		18 dB	18 dB	16 dB	15 dB
NGMC-25- F7F7 (all ports 75 ohm F-types)					
Flatness	Operational band width	±1.2 dB	±1.02 dB	±1.5 dB	±2 dB
	Any 36MHz	±0.25 dB	±0.35 dB	±0.35 dB	±0.40 dB
Input Return Loss, Typical		10 dB	8 dB	8 dB	8 dB
Output Return Loss, Typical		15 dB	15 dB	14 dB	12 dB
ALL VERSIONS					
Gain		0 ± 1 dB		Mean across band	
1dB Compression	Typical	3.5 dBm		At unity gain	
	Minimum	0 dBm			
Noise figure	Typical	23 dB			
	Maximum	26 dB			

System Control	
Local Control	Touchscreen & VGA Display
Remote Connection	Via RS232/485 serial port and RJ45 Ethernet
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 Diode OR
Hot-swap PSU		Yes
Input RF Power		+20 dBm Absolute Maximum
AC Consumption		100W (max. consumption at steady state)
MTBF (hours)	Chassis	271,444
	Switch Card	270,297
	Combiner Card	317,227

Physical	
Dimensions	6U high x 450mm deep x 19" wide
Weight	35 kg Fully Populated as 32x32
Colour	RAL9003 White semi-matte

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

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.