ETL Systems

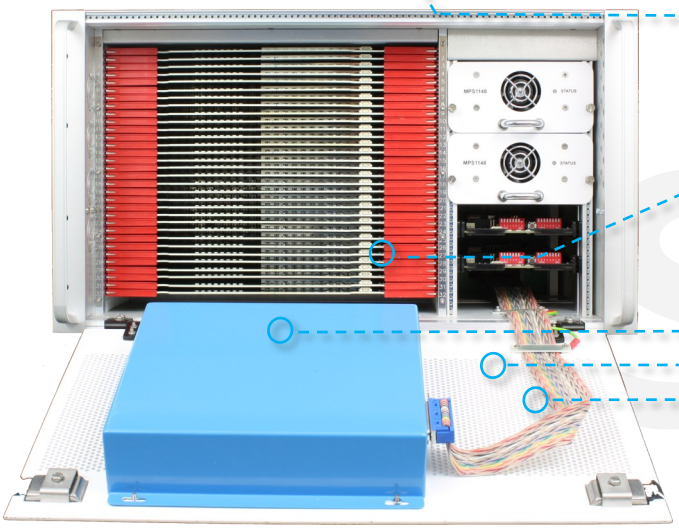
Excelling in RF Engineering

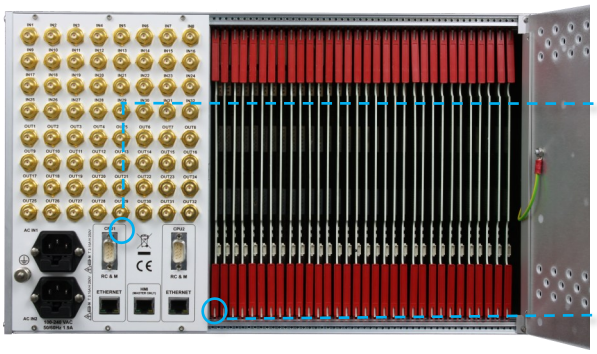
Model Number:
NSN-103-xxxx

32 x 32 Ensign Extended L-band Fan-In-Fan-Out Switch Matrix / Router with 0-10dB variable gain

Typical applications:

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





Switching flexibility with the ability to split and combine feeds at the same time (FIFO)

0-10 dB Variable gain to balance input and output signals

500 - 3150 MHz operating frequency range

Suitable for HTS applications due to extended bandwidth

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

Upgraded local control & monitoring via front panel capacitive touchscreen

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

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

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 for amplifier & power supply status

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

Future proof secure protocols with SNMPv3 & HTTPS

ETL Systems

Excelling in RF Engineering

Model Number: NSN-103-xxxx

Technical specifications and operating parameters

RF Parameters					
Capacity		32 inputs x 32 outputs, fully populated			
Routing		Fan-in Fan-out (FIFO)		Split and combine feeds at the same time	
Frequency Range		500-3150 MHz (Extended L-band)			
Gain		0±1 dB		Typical, mean across band	
Gain Control		0 to + 10 in 0.25 dB steps		+5 dB independently settable at each input and output	
RF Connectors		50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type
		All ports DC blocked			
Gain Flatness Any 36 MHz	850-2450 MHz	±1.25 dB	±1.25 dB	±1.5 dB	±1.5 dB
	500-3150 MHz	±3.0 dB	±3.0 dB	±3.5 dB	±3.5 dB
	<2450 MHz	±0.5 dB	±0.5 dB	±0.5 dB	±0.5 dB
	>2450 MHz	±0.75 dB	±0.75 dB	±0.75 dB	±0.75 dB
Input Return Loss	Typical	18 dB	18 dB	16 dB	16 dB
	Minimum <2150MHz	14 dB	14 dB	10 dB	10 dB
	Minimum >2150MHz	12 dB	12 dB	8 dB	8 dB
Output Return Loss	Typical	18 dB	18 dB	16 dB	16 dB
	Minimum <2150MHz	14 dB	14 dB	10 dB	10 dB
	Minimum >2150MHz	12 dB	12 dB	8 dB	8 dB
Isolation (min between any 2 ports)	I/P - O/P	60 dB			
	I/P - I/P	75 dB			
	O/P - O/P	75 dB			
Group Delay		< 2 ns across operational bandwidth			
Noise Figure	0dB Gain	Typical: 18 dB Maximum: 22 dB		Typical, 1 input routed to 1 output	
	10dB Gain	Typical: 14 dB Maximum: 18 dB			
1dB GCP		< 2450 MHz	> 2450 MHz	Output power	
	0dB Gain	-3 dBm	-5 dBm		
	10dB Gain	+3 dBm	0 dBm		
OIP3	0dB Gain	10 dBm	10 dBm	Typical	
	10dB Gain	15 dBm	13 dBm		
OIP2		Typical: 25 dBm, minimum 20 dBm, at 0 dB gain			
Switching Time		< 50ms		From receipt of a command to implementation of path change	
Input RF Power		+ 20 dBm		Absolute maximum	

System Control	
Local Control	Via Front Panel capacitive touchscreen
Remote Control	Ethernet via RJ45, 10BaseT/100BaseTx, ETL TCP/IP Protocol SNMPv3, HTTPS & built in Web Server
Alarms	Dry contact (D-type) & Ethernet (RJ45) for PSU & Amp. status

Power			
PSU Power		85-264Vac 50-60Hz	Fused 2A
AC Consumption		150W	Max. 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 mins. 15 mins to retrieve spare part, 5 mins to replace.	Applies to LRUs only and assumed in house stock
MTBF	Chassis	271,444	Chassis excludes HMI & RF cards
	Combiner card	317,227	
	Divider card	317,227	

Environmental	
Operating temperature	0 to 45˚C
Storage temperature	-20˚C to +75˚C
Location	Indoor use only
Humidity	20 to 90% non-condensing
Altitude (operational)	2,000 m AMSL (Above Mean Sea Level)
Altitude (storage)	10,000 m AMSL (Above Mean Sea Level)

Physical	
Dimensions	6U high x 560mm 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.

ETL SYSTEMS LIMITED
Coldwell Radio Station
Madley
Hereford
England HR2 9NE

TELEPHONE
+44 (0)1981 259020

EMAIL
info@etlsystems.com

FACSIMILE
+44 (0)1981 259021

WEB
www.etlsystems.com

RoHS COMPLIANT
Pb-Free
ISO 9001 QUALITY MANAGEMENT
UKAS MANAGEMENT SYSTEMS 015