NovelSat
Making Space in Space

NovelSat NSR9100 N+1 Redundancy Switch

NovelSat NSR9800 N+1 Redundancy Switch

NovelSat **NSR9100/NSR9800**
N+1 Redundancy Switch Series

The NovelSat N+1 Redundancy Switch solution enables hot standby redundancy for up to 8 NovelSat modulators, demodulators or modems. The N+1 switch supports RF switching as well as terrestrial interfaces switching.

The redundancy switching system monitors the 'health' of the protected units and, in case of an alarm, copies the failed unit's configuration to the redundant unit and automatically replaces the faulty unit's functions with the spare (+1) unit.

The redundancy switch can support from 1+1 configuration using the NSR9100 1U chassis and up to 8 + 1 with a single NSR9800 3U chassis (up to 3 supported ports).

Key Features

- Supports switching of modulator, demodulator and modem
- Support from 1+1 up to 8+1 units
- Automatic or manual backup switching mechanism
- Automatic or manual unit recovery
- Automatic or manual configuration file transfer and recovery
- Full redundancy of all ports (RF and terrestrial)
- Alarm status front panel indications
- Power Supply: 110/220v AC
- Management & Control via Web GUI, CLI, SNMP and front panel
- All protected TX ports include power monitoring
- Extractable switching cards
- Supports additional expansion units

NSR9100 vs NSR9800 Configuration Support

Both the NovelSat NSR9100 and NSR9800 redundancy switch are designed for flexibility, enabling various configurations depending on which ports (interfaces) require coverage (L band TX, L band RX, IF band, ASI, GbE, TSoIP).

NSR9100 (1U chassis) Supported Configurations

Redundancy Configuration		Backup Interfaces		
Product		ASI 1	ASI 2	GbE
NS1000 Modulator	1:1	Full support for any interface combination		
NS1000 Modulator	Up to 4:1	Any one of three Interfaces		
NS2000 Demodulator	1:1	Full support for any interface combination		
NS2000 Demodulator	Up to 4:1	Any one of three Interfaces		
NS3000/ NS300X	1:1	Any two out of three Interfaces		

NSR9800 (3U chassis) Supported Configurations

Redundancy Configuration		Backup Interfaces		
Product		ASI 1	ASI 2	GbE
NS1000 Modulator	Up to 8:1	Full support for any interface combination		
NS2000 Demodulator	Up to 8:1	Full support for any interface combination		
NS3000/ NS300X	Up to 4:1	Full support for any interface combination		
NS3000/ NS300X	Up to 8:1*	Any one of three Interfaces		

*More than one interface requires an additional NS9100 or NS9800 unit.

Two NSR9x00 Redundancy Units can be cascaded to expand support for additional (more than 8) components – Modulators, Demodulators, and Modems.

NovelSat NSR9100/NSR9800 Specifications

Switching Cards

Interface	Type	Description
IF, ASI	BNC (75Ω)	DC to 500MHz, Insertion Loss (in / out) < 1.5dB, Isolation (in/in, in/out) > 80dB, Return Loss (In/out) > 20db
L-Band Out	Type SMA(50Ω) female	500 to 2500MHz, Insertion Loss (in / out) < 2.5dB, Isolation (in/in, in/out) > 60dB, Return Loss (In/out) > 20db
L-Band In	Type F-Type (50Ω) female	500 to 2500MHz, Insertion Loss (in / out) < 2.5dB, Isolation (in/in, in/out) > 60dB, Return Loss (In/out) > 20db
E1 (Balanced)	RJ-45	2048MHz
Ethernet	RJ-45	1000BaseT GbE

Monitor and Control Interfaces

Interface	Type	Description
Alarm In	2x 9 pin D-Type Connector	8 alarms inputs
Alarm Out	15 pin D-type connector	8 alarms outputs
RS232	9 pin D-type connector, RS232 standard	M&C serial interface
Ethernet	RJ-45, 10/100BaseT	M&C Ethernet interface

Unit LEDs

PS1, PS2	Power supply status indications
Alarm	General unit alarm
Auto	Unit operating in automatic mode
Manual	Unit is operating in manual mode
Remote	Unit is controlled from remote
Alarm R to 8	Operational units alarm status
	Green no alarm
	Red reporting alarm
	Off – not connected
Protected R to 8	Operational units protection status
	Green – can be protected
	Red – not protected
	Orange – is replaced by redundant unit
	Off – masked

Additional Information

Input power	Up to +20dBm
Power monitoring	Down to -35dBm
DC path through	Standard up to 18V/1A
	1:1 card L band TX port up to 48V/4A (BUC feeding support)
Dimensions (mm)	1U: H: 43, W: 439 L: 440
	3U: H: 130, W: 439 L: 317
Certification	CB, TUV, CE

Environmental

Operating temp.	0 to 50ºC
Operating humidity	Up to 95% Non-Condensing
Storage temp.	-40ºC to 70ºC
Storage humidity	Up to 95% Non-Condensing
Operating Altitude	Up to > 2500 meters

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Related NovelSat products: NS3000 Professional High-Data Rate Satellite Modem (up to 850Mbps), NS300X IP Satellite Modem (up to 30Mbps), NS1000 Satellite Modulator, NS2000 Satellite Demodulator.

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