

NS2000 Demodulator

A New Standard for Broadcast Satellites.

NovelSat's innovative NS2000 – is a state-of-the-art demodulator designed for high demand satellite reception. NS2000 is the only system in the market that incorporates superior NS3™ technology, delivering significantly higher spectral efficiency compared to DVB-S2.



The NS3™ system has several marked advantages that set it apart from the competition:

- **Lower Satellite Bandwidth:** Savings of 20% to 78% satellite bandwidth (over available DVB-S2 equipment in the market)
- **Higher Data Rate:** Increases transmitted data rate by 20% to 50% (over available DVB-S2 equipment in the market)
- **Smaller Dish:** Reduction of dish size. Achieves the same data rates using a smaller dish

The NS2000 supports high data rates of up to 365Mbps using 70MSPs, which enables transmission of one carrier over a 72MHz transponder.

The NS2000 dual-channel option can divert a stream to one of the two interfaces on the board. The interfaces can be a combination of any two interfaces. This enables transmission quality that is dependent upon the interface content.

Dual-channel operation also enables the combination of Ethernet streaming and the ASI interface, easing migration to IP streaming while controlling the QoS of each stream.

The NS2000 has groundbreaking signal processing methods such as an adaptive equalizer and error correction techniques that enable the receiver to be more robust to impairments.



Key Features:

- Compatible with the innovative NS3™ protocol
- DVB-S2 (EN302-307) compliant
- Data rate up to 365Mbps
- DDC™ - Dynamic Distortion Compensator, highly effective in non linear channels
- Dual-channel mode
- Extended L-Band 950MHz-2150MHz
- IF output mode 50MHz-180MHz
- 10MHz reference In/Out
- Dual ASI output interface
- Dual Ethernet 1Gb output interface
- ACM mode

NS2000 Demodulator – SPECIFICATIONS

Baseband

DVB-S2		NS3™	
Inner code	BCH	Inner code	BCH
Outer code	LDPC	Outer code	LDPC
Code rates and modulation:		Modulations	
QPSK	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	QPSK, 8PSK, 16APSK, 32APSK, 64APSK	
8PSK	3/5, 2/3, 3/4, 5/6, 8/9, 9/10	Frame length	64800, 16200
16APSK	2/3, 3/4, 4/5, 5/6, 8/9, 9/10	Baseband ROF	"SRRT like" 5%, 10%, 15%, 20%, 25%, 35%
32APSK	3/4, 4/5, 5/6, 8/9, 9/10		
Frame length	64800, 16200		
Baseband ROF	SRRC 20%, 25%, 35%		

Input Interfaces

L-Band Input		IF-Band Input	
Connector	F-Type (F) 75 ohm	Connector	BNC (F) 75 Ohm
Frequency range	950-2150MHz in 1Hz steps	Frequency range	70MHz±20MHz, 140MHz±40MHz in 1Hz steps
Level	-70+10log(F)/-20 dBm (F in MBAUD)	Signal level	-70+10log(F)/-20 dBm (F in MBAUD)
Composite power	< -20dBm	Composite power	< -20dBm
Max. input level	0 dBm	Max. input level	0 dBm
Return loss	>10 dB	Return loss	>10 dB
LNB Power Control		10MHz Reference Clock I/O (Optional)	
Voltage	11.5-14V (Vert. Pol.), 16-19V (Horiz. Pol.)	Connector	BNC (F) 50 Ohm
Band select	22KHz ±4KHz	Ref. input power level	-3dBm up to +7dBm (Default)
Max. current	350mA	Ref. output power level	+7dBm
		Waveform	Sine wave

Output Interfaces

ASI Output		10 MHz Clock		10 MHz Clock – High Stability (Optional)	
2 ASI interfaces that can function in parallel		Stability	±1.5 ppm over 0degC to 50degC	Stability	±10 ppb over 0degC to 70degC
Connector	BNC (F) with 75 Ohm coax	Aging	±1.0 ppm/year	Aging	<± 0.5 ppb/day <± 75 ppb/year

Additional Information

Monitor and Control Interfaces		Optional Interfaces	Physical	Environmental	
SW interfaces	Command line interface Web based graphic user interface SNMP V3 Front panel	Dual Ethernet 10/100/1G	Weight	Prime power	100-240 VAC, 50-60Hz, 45 Watts Maximum
			Size	Operating temp.	0 to 50°C
				Storage temp.	-40°C to 70°C
Serial RS232/RS485	Female 9-Pin D-Sub connector			Operating humidity	Up to 85% Non-Condensing
Ethernet 10/100	BaseT interface to monitor and control the modulator			Storage humidity	Up to 95% Non-Condensing
Alarm interface	Female 9-Pin D-Sub connector				