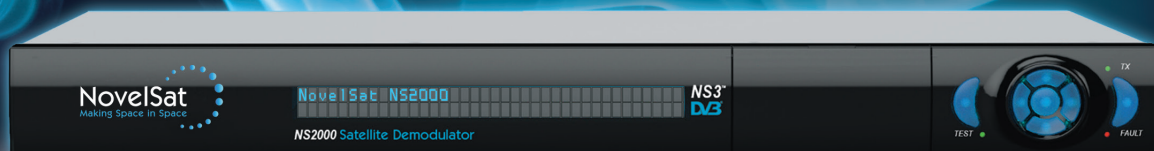


NovelSat NS2000 Satellite Demodulator

NovelSat
Making Space in Space



A New Standard for Satellite Broadcast

The NovelSat NS2000 is a state-of-the-art demodulator designed for high demand satellite reception. The NS2000 is the only system on the market that incorporates superior NovelSat NS4™ technology, delivering significantly higher spectral efficiency compared with DVB-S2.

Lower Satellite Bandwidth: Satellite bandwidth savings of more than 40% (over available DVB-S2 equipment in the market)

Higher Data Rate: Increases transmitted data rate by over 100% (compared with DVB-S2 equipment)

Smaller Dish: Achieves the same data rate 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 also offers a software package with features designed to effectively detect and mitigate various types of Radio Frequency Interference.

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 resilient to impairments.



Key Features:

- Compatible with the innovative NovelSat NS4 protocol
- DVB-S2 and DVB-S2X standard compliant
- Data rate up to 365Mbps
- NovelSat DDC™ - Dynamic Distortion Compensator, highly effective in non-linear channels
- TSoIP Support
- RFI (Radio Frequency Interference) mitigation software package
- 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

NovelSat NS2000 Satellite Demodulator – Specifications

Baseband

DVB-S2/S2X		NovelSat NS3/NS4	
Inner code	BCH	Inner code	BCH
Outer code	LDPC	Outer code	LDPC
Code rates and modulation:		QPSK	1/4, 1/3, 2/5, 13/30, 7/15, 1/2, 8/15, 17/30, 3/5, 19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10
QPSK	1/4, 13/45*, 1/3, 2/5, 9/20*, 1/2, 11/20*, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	8PSK	2/5, 13/30, 7/15, 1/2, 8/15, 17/30, 3/5, 19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10
8APSK	5/9(L)*, 26/45(L)*	16APSK	2/5, 13/30, 7/15, 1/2, 8/15, 17/30, 3/5, 19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10
8PSK	3/5, 23/36*, 2/3, 25/36*, 13/18*, 3/4, 5/6, 8/9, 9/10	32APSK	2/5, 13/30, 7/15, 1/2, 8/15, 17/30, 3/5, 19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10
16APSK	26/45*, 3/5*, 28/45*, 23/36*, 2/3, 25/36*, 13/18*, 3/4, 7/9*, 4/5, 5/6, 77/90*, 8/9, 9/10, 1/2(L)*, 8/15(L)*, 5/9(L)*, 3/5(L)*, 2/3(L)*	64APSK	19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10
32APSK	32/45*, 11/15*, 3/4, 7/9*, 4/5, 5/6, 8/9, 9/10, 2/3(L)*	Frame length	64800, 16200
64APSK	11/15*, 7/9*, 4/5*, 5/6*, 32/45(L)*	Baseband ROF	"SRRC like" 2% (NovelSat NS4), 5%, 10%, 15%, 20%, 25%, 35%
Frame length	64800, 16200		
Baseband ROF	SRRC 20%, 25%, 35% (optional 5%, 10%, 15%)		

*DVB-S2X only

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	11.5-14 V (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 0°C to 50°C	Stability	±10 ppb over 0°C to 50°C
Connector	BNC female 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	3.5 Kg (7.7 pounds)	Prime power	100-240 VAC, 50-60Hz, 30 Watts Max.
Serial RS232/RS485	Female 9-Pin D-Sub connector			Size	19" W x 18" D x 1.75" 48.3 x 45.7 x 4.45 cm	Operating temp.	0 to 50°C
Ethernet 10/100	BaseT interface to monitor and control the modulator					Storage temp.	-40°C to 70°C
Alarm interface	Female 9-Pin D-Sub connector					Operating humidity	Up to 85% Non-Condensing
						Storage humidity	Up to 95% Non-Condensing