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 70Mmps, 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
- TSolP 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**

| Code rates and modulation: | BOC
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>QPSK</td>
<td>1/4, 13/45*, 1/3, 2/5, 9/20*, 1/2, 11/20*, 5/6, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10</td>
</tr>
<tr>
<td>8APSK</td>
<td>5/9(1/2), 26/45U,*</td>
</tr>
<tr>
<td>8PSK</td>
<td>3/5, 23/36*, 2/3, 25/36*, 13/18, 3/4, 5/6, 8/9, 9/10</td>
</tr>
<tr>
<td>32APSK</td>
<td>32/45*, 11/15, 3/4, 7/9*, 4/5, 5/6, 8/9, 9/10, 23/3(U)*</td>
</tr>
<tr>
<td>64APSK</td>
<td>32/45*, 11/15*, 7/9*, 4/5*, 5/6*, 32/45(U)*</td>
</tr>
<tr>
<td>Frame length</td>
<td>64800, 16200</td>
</tr>
</tbody>
</table>
| Baseband ROF             | SRRC 20%, 25%, 35% (optional 5%, 10%, 15%)

**NovelSat NS3/NS4**

| Code rates and modulation: | BOC
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>QPSK</td>
<td>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</td>
</tr>
<tr>
<td>8PSK</td>
<td>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</td>
</tr>
<tr>
<td>16PSK</td>
<td>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</td>
</tr>
<tr>
<td>32PSK</td>
<td>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</td>
</tr>
<tr>
<td>Frame length</td>
<td>19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10</td>
</tr>
<tr>
<td>Baseband ROF</td>
<td>“SRRC like” 2% (NovelSat NS4), 5%, 10%, 15%, 20%, 25%, 35%</td>
</tr>
</tbody>
</table>

## Input Interfaces

### L-Band Input

- **Connector**: Female 9-Pin D-Sub connector
- **Frequency range**: 950–2150 MHz in 1 Hz steps
- **Composite power**: < -20 dBm
- **Max. input level**: 0 dBm
- **Return loss**: > 10 dB

### IF-Band Input

- **Connector**: BNC (F) 75 Ohm
- **Frequency range**: 7 MHz to ±20 MHz, 14 MHz to ±40 MHz in 1 Hz steps
- **Composite power**: < -20 dBm
- **Max. input level**: 0 dBm
- **Return loss**: > 10 dB

### LNB Power Control

- **Voltage**: 11.5–14 V (Vert. Pol.), 16–19 V (Horiz. Pol.)
- **Band select**: 220 kHz ±4 kHz
- **Max. current**: 350 mA

### 10 MHz Reference Clock I/O (Optional)

- **Connector**: BNC (F) 50 Ohm
- **Ref. input power level**: -3 dBm up to +7 dBm (Default)
- **Ref. output power level**: +7 dBm
- **Waveform**: Sine wave

## Output Interfaces

### ASI Output

- **Connector**: BNC female with 75 Ohm coax
- **Stability**: ± 1.5 ppm over 0°C to 50°C
- **Aging**: ± 1 ppm/year

### 10 MHz Clock

- **Stability**: ± 10 ppb over 0°C to 50°C
- **Aging**: ± 6.5 ppb/day
- **Aging**: ± < 75 ppb/year

### 10 MHz Clock – High Stability (Optional)

- **Stability**: ± 10 ppb over 0°C to 50°C
- **Aging**: ± 6.5 ppb/day
- **Aging**: ± < 75 ppb/year

## Additional Information

### Monitor and Control Interfaces

- **SW interfaces**: Command line interface Web based graphical user interface SNMP V3
- **Serial RS232/RS485**: Front panel Female 9-Pin D-Sub connector
- **Ethernet 10/100**: Baseband interface to monitor and control the modulator Female 9-Pin D-Sub connector

### Optional Interfaces

- **Dual Ethernet 10/100/1G**

### Physical

- **Weight**: 3.5 Kg (7.7 pounds)
- **Size**: 13” W x 11” D x 4.75” H

### Environmental

- **Prime power**: 100–240 VAC, 50–60 Hz, 30 Watts Max.
- **Operating temp.**: 0 to 50°C
- **Storage temp.**: -40°C to 70°C
- **Operating humidity**: Up to 85% Non-Condensing
- **Storage humidity**: Up to 95% Non-Condensing

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* *DVB-S2/SX only*