NOVELSAT

NS350 HIGH-SPEED SATELLITE MODEM

For Premium and High-End Applications

PRODUCT SHEET

HIGH-SPEED SATELLITE MODEM

NOVELSAT NS350 High-Speed Satellite Modem is a powerful modem designed for the most demanding telecom and high-end applications. Delivering highly integrated carrier-grade satellite connectivity solution, the NS350 satellite modem is ideal for Point-to-Point applications as well as for Point-to-Multi-Point satellite networks, working with NOVELSAT's Xnet hub system. The NS350 utilizes NOVELSAT NS4™ for providing very high-performance transmission and space segment efficiency, as well as supports standard DVB-S2 and DVB-S2X.

HIGH-EFFICIENCY SOLUTION FOR TELECOM APPLICATIONS

Leveraging performance enhancement protocols, hierarchical QoS mechanisms, and dynamic traffic shaping capabilities, the NS350 demonstrates smooth performance with minimal jitter and low delay for multiple telecom applications such as data trunking, cellular backhauling and air/sea/land connectivity. The NS350 satellite modem is equipped with 4 Gigabit Ethernet ports, making data transmission more efficient and cost-effective. With true transparent bridging (Layer 2) data remains fully intact from source to destination making it suitable for service providers and mobile network operators to provide full end to end services. In addition, the NS350 can perform as IP router (Layer3) reducing the need for additional equipment. The NS350 supports point-to-point and point-to-multipoint operations and incorporates advanced high-efficiency encapsulation scheme.

SCALABLE PERFORMANCE

Providing very high performance transmission and space segment efficiency, the NS350 supports NOVELSAT NS4™ waveform as well as standard DVB-S2 and DVB-S2X. High performance receiver technology demonstrate superior resilience to phase noise, adjacent satellite interference, jamming and weather fluctuations, providing higher availability and better efficiency. Coupled with the DUET™ unique carrier echo cancellation technology, the NS350 can simultaneously use the same bandwidth for both uplink and downlink, doubling the traffic at the same satellite bandwidth.

BEST-IN-INDUSTRY BANDWIDTH REUSE TECHNOLOGY

NOVELSAT NS350 incorporates optional NOVELSAT DUET™ CEC™ (Carrier-Echo-Cancellation) band reuse technology. Simultaneously using the same frequency band for both uplink and downlink carriers, the NS350 modem doubles traffic at the same satellite bandwidth. The all-digital, built-in echo canceller provides exceptional performance, delivering lossless uplink and downlink across all modulations and codes. Supporting very high SNR difference between uplink and downlink, NOVELSAT DUET™ offers expansive dynamic range for asymmetric connectivity as well as enhances transmission security by enabling carrier concealment through transmission below noise level.

HIGHLIGHTS

- **Supporting demanding telecom applications: data trunking, cellular backhauling and air / sea / land connectivity**
- **High performance and efficiency with NOVELSAT NS4™ technology**
- **High speed up to 1Gbps**
- **Support for TCP and GTP acceleration**
- **Open AMIP for mobility applications**
- **Optional AES-256 encryption**
- **Integrated 4-port GbE LAN switch**
- **Leading bandwidth reuse - NOVELSAT DUET™ Carrier-Echo-Cancellation with Zero implementation loss**
- **Rich QoS and IP Suite**
- **Multiple topologies: Point-to-Point and Point-to-Multipoint**

NOVELSAT NS350 IP SATELLITE MODEM – SPECIFICATIONS

BASEBAND

NS4™

Inner code: LDPC
Outer code: BCH
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
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
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
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
64APSK:
19/30, 2/3, 32/45, 3/4, 4/5, 5/6, 8/9, 9/10
128APSK:** 3/4*, 7/9*
256APSK:**
29/45-L*, 2/3-L*, 31/45-L, 32/45, 11/15-L*, 3/4
Frame length: 16200, 64800
ROF:
"SRRC Like" 2%, 5%, 10%, 15%, 20%, 25%, 35%

DVB-S2 / DVB-S2X

Inner code: LDPC
Outer code: BCH
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
8APSK: 8/9(L)*, 26/45(L)*
8PSK:
3/5, 23/36*, 2/3, 25/36*,13/18*, 3/4, 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)*
32APSK:
32/45*, 11/15*, 3/4, 7/9*,4/5, 5/6, 8/9, 9/10, 2/3(L)*
64APSK: 11/15*, 7/9*, 4/5*, 5/6*, 32/45(L)*
Frame length: 16200, 64800
ROF SRRC:
5%, 10%, 15%, 20%, 25%, 35%

* DVB-S2X
** Future

MODULATOR RF INTERFACE

L-Band

Connector:
N-type (F) 50 Ohm, 10MHz ref out, +24V/+48V/80W
Frequency range:
950-2150MHz in 10Hz steps
Power level: -30 to 0dBm
Power setting resolution: 0.1dB
Monitor port: SMA (F) 50 Ohm
10MHz reference:
Stability: ± 1.0 ppm over 0°C to 50°C
Return loss: >12dB
Spurious:
-55dBc in band and out of band at max power
Phase noise:
100Hz: –70dBc, 1KHz: –80dBc, 10KHz: –85dBc 100KHz: –95dBc, 1MHz: –100dBc

DEMODULATOR RF INTERFACE

L-Band

Connector:
N-type (F) 50 Ohm
Frequency range:
950-2150MHz in 10Hz steps
Signal level: -75+10log(F) (F in MSPS) Max: -20dBm
Composite power: <-20 dBm
Return loss: >12dB
Max. input level (No damage): 0dBm
LNB power control:
Voltage: 13V - 18V
Band select: 22KHz ±4KHz
Max. current: 350mA

ADDITIONAL INFORMATION

Additional HW interfaces

Power:
Single / Dual power supply
100-240 VAC / 2.5A
± 48 VDC
Data interface:
4xGbE 10/100/1000
Management port: GbE 10/100/1000 Mbps
Front panel HOST port: USB-A
Front panel CONSOLE port: USB-C **Front panel PRESET selection button Front panel factory reset button**

SW interfaces

Enhancement features:
NOVELSAT DUET™ CeC™ (Carrier Echo Cancellation) technology
ACM – Adaptive Coding & Modulation AUPC (Automatic Uplink Power Control)
AES-256 bit link encryption
Carrier ID (CID) compliant
Baud Rate and Data Rate:
50Ksps to 110Msps
Up to 1Gbps aggregated
IP features:
Transparent Bridge mode (Layer 2)
Router mode (Layer 3)
Open AMIP support
IP Encapsulation (NSPE2)
DiffServ and priority-based queuing Jumbo frame support (10,000 Bytes)
Management interfaces:
Command line interface - Telnet / SSH Web GUI - HTTP / HTTPS
SNMP - V2/V3 (with Dual Mode option) OTA (Over The Air): M&C, software upgrade
Optional user defined OEM GUI
Up to 4 full configuration presets loaded via host USB for easy field reconfiguration

Environmental

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
Cooling: Fan: right to left cooling

Mechanical

Size: W 19" x D 9.6" X H 1RU (1.72")
Weight : 2.5Kg

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