



NS330R OPEN / MEC SATELLITE MODEM

PRODUCT SHEET

POWERFUL COMPACT MODEM

NOVELSAT NS330R Open / MEC Satellite Modem is a powerful and compact modem designed for serving multiple telecom and enterprise applications. Delivering highly integrated and cost-efficient satellite connectivity solution, the NS330R satellite modem is ideal for Point-to-Point applications as well as for Point-to-Multi-Point satellite networks, working with NOVELSAT's data hub. The NS330R utilizes NOVELSAT NS4™ for providing very high-performance transmission and space segment efficiency, as well as supports standard DVB-S2 and DVB-S2X.

MEC-ENABLED ARCHITECTURE

The NS330R hosts an add-on powerful computing module, providing a dedicated architecture for implementing MEC (Multi-access Edge Computing). Running a MEC platform at the network edge allows for multiple MEC applications such as CDN, low latency services, data caching, IoT aggregation, real-time multimedia analytics and more.

OPEN DESIGN FOR FLEXIBLE CUSTOMIZATION

The NS330R powerful computing module enables user-defined operating systems, data processing, as well as customized API and user interface. Allowing flexible customization of modem functionality as well as look & feel, the NS330R enables service providers to address different needs and markets.

COST EFFECTIVE SOLUTION FOR ENTERPRISE APPLICATIONS

Including multi-layer optimization and performance enhancement protocols, the NS330R satellite modems are equipped with 4 Gigabit Ethernet ports, making data transmission more efficient and cost-effective. The NS330R hierarchical QoS mechanisms and dynamic traffic shaping capabilities demonstrate smooth performance of real time applications such as VoIP and Video while insuring minimal jitter and low delay. 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 NS330R can perform as IP router (Layer3) reducing the need for additional equipment. The NS330R 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 NS330R 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 NS330R 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 NS330R incorporates optional NOVELSAT DUET™ CEC™ (carrier-echo-cancellation) band reuse technology. Simultaneously using the same frequency band for both uplink and downlink carriers, the NS330R 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

- Open / MEC satellite modem
- Integrated powerful computing module
- High performance and efficiency
- Highly flexible customization options
- Optional AES encryption
- Scalable symbol rate from 50Ksps to 40Msps
- Integrated 4-port GbE LAN switch
- Leading bandwidth reuse - Zero implementation loss



NOVELSAT NS330R IP SATELLITE MODEM – SPECIFICATIONS

BASEBAND

NS4™

Inner Code: BCH

Outer Code: LDPC

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

Frame Length: 16200, 64800

ROF:

“SRRC Like” 2%, 5%, 10%, 15%, 20%,
25%, 35%

DVB-S2 / DVB-S2X

Inner Code: BCH

Outer Code: LDPC

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)*

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:

5%, 10%, 15%, 20%, 25%, 35%

* DVB-S2X

** Optional

MODULATOR RF INTERFACE

L-Band

Connector:

N-type f(50)Ohm, 10MHz ref out
24+48V - 65W

Frequency Range:

950-2150MHz in 10Hz steps

Power Level: -30 to 0dBm

Power setting resolution: 0.1dB

Power accuracy/ temp. stability: ± 0.5dB

Monitor port: SMA (F) 50 Ohm

10MHz Reference:

Stability: ± 1.0 ppm over 0°C to 50°C
(standard)

Aging: ± 1.0 ppm/year (standard)

Return Loss: >-12

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: -106+10log(F) (F in MSPS)

Max: -20dBm

Composite power: <-20 dBm

Return loss: >12dB

Max. input level (No damage): 0dBm

LNB power control:

Voltage: 14 V - 18V

Band select: 22KHz ±4KHz

Max. current: 350mA

ADDITIONAL INFORMATION

Additional HW interfaces

Power:

100-240 VAC/2.5A

Optional 12VDC

Data Interface:

4x Gigabit GbE/100/10 ports

Management port: GbE 10/100/1000

Front panel USB port: USB A

SW interfaces

Enhancements 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 40Msps

Up to 60Mbps Aggregated

Multi-access Edge Computing

IP Features:

Transparent Bridge mode (Layer 2)

Router mode (Layer 3)

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

User define- OS and application

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 cooling scheme

Mechanical

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

Weight : 4Kg.