

PCIe Cardsfor OEM Broadcast Applications



NovelSat NS20C Satellite Demodulator Card



NovelSat NS10C Satellite Modulator Card

The NS10C/NS20C are versatile PCie OEM broadcast modulator and demodulator cards that support all satellite transmission standards, including DVB-S/S2/S2X and NovelSat NS4, as well as the NovelSat DRM (Digital Rights Management) license. This makes them capable of meeting the demands of any broadcast application.

The NS10C and NS20C PCIe OEM cards are designed for easy integration into any PC-based satellite broadcast platform for Cable, DTH and OTT live delivery of SD, HD and Ultra HD content. They are ideal for both terrestrial and space-side OEM satellite broadcast applications including mobile flyaways, expandable all-in-one transmission ground solutions and even satellite.

Reduce space demands and setup and service time with SNGs and flyaways. Easily build all-in-one distribution solutions by integrating a modulator into an encoder, convert a decoder into an IRD by adding a demodulator, enhance transcoders, multiplexers, statmuxes, packagers and origin servers.

NovelSat NS4 provides marked advantages that set it apart from the field:

Lower Satellite Bandwidth: Satellite bandwidth savings of up to 45% compared with DVB-S2 and 21% vs. DVB-S2X.

Variety of Roll-Off Usage: From 35% down to 2% ROF (offered in NS4 waveform).

Higher Data Rate & Smaller Dish: Same data rate using a smaller dish. The NS10C/NS20C support high data rates of up to 425Mbps using 80Msps, enabling transmission of a single carrier over an entire 84MHz transponder.

The NS2OC 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:

- · DVB-S2X, DVB-S/S2, DVB-DSNG, DVB-CID standard compliant
- · NovelSat NS3/NS4 waveforms
- Supported Modulations: QPSK,
 8PSK, 16APSK, 32APSK, 64APSK,
 128APSK & 256APSK
- NovelSat Dynamic Distortion
 Compensator Highly effective in non-linear channels
- Support for IF output Mode 50MHz-180MHz
- Support for Extended L-Band 950MHz-2150MHz
- Adaptive Code Modulation (ACM)
- · 10Mhz Reference Clock In/Out

Applications:

- · DSNG/Flyaways
- · Broadcast Contribution
- · Broadcast Distribution
- Support for NovelSat DRM (Data Right Management)

NovelSat PCIe OEM Modulator/Demodulator Cards - Specifications

Raseband

DVB-S/DSNG

Inner code Convolution **QPSK** 1/2, 2/3, 3/4, 5/6, 7/8 8PSK 2/3, 5/6, 8/9 160AM 3/4,7/8

Outer Code Reed Solomon (204, 188, T=8) Interleaving (1=12)

Frame length 204, 188 **Baseband ROF** SRRC 25%, 35%

NovelSat NS3/NS4 DVB-S2/S2X

Outer code Outer code LDPC LDPC Inner code Inner code Code rates and modulation: Modulations QPSK, 8PSK, 16APSK, 32APSK, 64APSK

OPSK 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 5/9(1)* 26/45(1)*

3/5, 23/36*, 2/3, 25/36*, 13/18*, 3/4, 5/6, 8/9, 9/10 **RPSK** 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()*, 5/9(L)*, 3/5(L)*, 2/3(L)*

Power level

Return loss

Phase noise

Connector

Waveform

Connector

Power level

Return loss

Phase noise

Spurious

Frequency range

Power accuracy/ temp. stability

4.3" x 6.6"

Ref. input power level

Ref. output power level

Spurious

Power accuracy/ temp. stability

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** 32/45*, 3/4*, 29/45(L)*, 2/3(L)*, 31/45(L)*, 11/15(L)*

Frame length 64800, 16200

Baseband ROF SRRC 2%, 5%, 10%, 15%, 20%, 25%, 35%

*DVB-S2X only **NS10C only

10MHz Reference Clock I/O (Optional)

Frame length

Baseband ROF

BNC (F) 75 Ohm

+0.5dB/+0.5dB

Meets IESS-308

BNC (F) 75 0hm

+7dBm Typical

Sine wave

-3dBm up to +7dBm

50MHz to 180MHz in 1Hz steps

<-55dBc in band and out of band at max. power

-40/+3 dBm in 0.1dB steps

+0.5dB/+0.5dB

Meets IESS-308

>15 dR

>15 dR

50MHz to 180MHz in 1Hz steps

<-55dBc in band and out of band at max. power

-40/+3 dBm in 0.1dB steps

64800, 16200

"SRRC like" 2% (NovelSat NS4), 5%,

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

NS10C Modulator Interfaces

L-Band Output **IF-Band Output**

Connector Connector Frequency range Frequency range 950-2150MHz in 1Hz steps (optional 10MHz out combined on port)

-40/+3 dBm in 0.1dB steps Power level +0.5dB/+0.5dB Power accuracy/ temp. stability Return loss >12 dR

Spurious <-55dBc in band and out of band at max. power

Phase noise @100Hz-70dBc, @1KHz-80dBc, @10KHz-85dBc, @100KHz-95dBc,

@1MHz-100dBd

SMA (F) 50 0hm

Identical to L-Band/IF-Band frequencies Frequency

Power level -30 dBm to -45 dBm

> 7dB Return loss

Monitoring Output

NS20C Demodulator Interfaces (4x L Band -or- 4x IF Band)

L-Band IF-Band

Connector

950-2150MHz in 1Hz steps (optional 10MHz out combined on port) Frequency range -40/+3 dBm in 0.1dB steps Power level

+0.5dB/+0.5dB Power accuracy/ temp. stability >12 dB

Return loss Spurious <-55dBc in band and out of band at max. power

@100Hz-70dBc, @1KHz-80dBc, @10KHz-85dBc, @100KHz-95dBc, Phase noise

@1MHz-100dBc

LNB Power Control 10MHz Reference Clock I/O (Optional)

Voltage 11.5-14 V (Vert. Pol.), 16-19V (Horiz. Pol.)

Band select

350mA Max. current

Web based graphic user interface

Connector BNC (F) 50 Ohm -3dBm up to +7dBm (Default) Ref. input power level

Ref. output power level +7dBm Waveform Sine wave

Additional Information

Physical Monitor and Control Interfaces PC Interface Environmental

PCI Express V2.1 x1 lanes SW interfaces 25 Watts Max Power SNMP V3 110mm x 167mm Operating temp. 0 to 50°C

Size

Storage temp. -40°C to 70°C Operating humidity Up to 85% Non-Condensing

Storage humidity Up to 95% Non-Condensing



Related products: NovelSat NS1000 Satellite Modulator,

NovelSat NS2000 Satellite Demodulator

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