

SatExpander

SE350 HIGH-SPEED SATELLITE MODEM

For Premium and High-End Applications

PRODUCT SHEET

HIGH-SPEED SATELLITE MODEM

SatExpander SE350 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 SE350 satellite modem is ideal for Point-to-Point applications as well as for Point-to-Multi-Point satellite networks, working with SatExpander's Xnet hub system. The SE350 utilizes SatExpander NS4™ for providing very high-performance transmission and space segment efficiency, as well as supports standard DVB-S2 and DVB-S2X.

OPEN DESIGN FOR FLEXIBLE CUSTOMIZATION

The SE350 offers a secondary 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 SE350 enables service providers to address different needs and markets.

HIGH-EFFICIENCY SOLUTION FOR TELECOM APPLICATIONS

Leveraging performance enhancement protocols, hierarchical QoS mechanisms, and dynamic traffic shaping capabilities, the SE350 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 SE350 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 SE350 can perform as IP router (Layer3) reducing the need for additional equipment. The SE350 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 SE350 supports SatExpander 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 SE350 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

SatExpander SE350 incorporates optional SatExpander DUET™ CEC™ (Carrier-Echo-Cancellation) band reuse technology. Simultaneously using the same frequency band for both uplink and downlink carriers, the SE350 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, SatExpander 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 SatExpander NS4™ technology
- High speed up to 1Gbps
- Embedded TCP and GTP acceleration
- Open AMIP for mobility applications
- Optional AES-256 encryption
- Integrated 4-port GbE LAN switch
- Leading bandwidth reuse - SatExpander DUET™ Carrier-Echo-Cancellation with Zero implementation loss
- Rich QoS and IP Suite
- Multiple topologies: Point-to-Point and Point-to-Multipoint



SatExpander SE350 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)*

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

** 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:

Fast Ethernet 10/100 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:

SatExpander 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 120Msps

Up to 1Gbps aggregated

IP features:

Transparent Bridge mode (Layer 2)

Router mode (Layer 3)

Embedded TCP and GTP acceleration

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 / Edge

processing

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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For more information visit www.SatExpander.com

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