SatExpander

SE330 OPEN / MEC SATELLITE MODEM

For Enterprise and Broadband Applications

PRODUCT SHEET

POWERFUL COMPACT MODEM

SatExpander SE330 Open / MEC Satellite Modem is a powerful and compact modem designed for serving multiple broadband applications. Delivering highly integrated and cost-efficient satellite connectivity solution, the SE330 satellite modem is ideal for Point-to-Point applications as well as for Point-to-Multi-Point satellite networks, working with SatExpander's data hub. The SE330 utilizes SatExpander 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 SE330 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 SE330 powerful computing module enables user-defined operating systems, data processing, as well as customized API and user interface. Allowing flexible customization of modem functionally as well as look & feel, the SE330 enables service providers to address different needs and markets.

COST EFFECTIVE SOLUTION FOR ENTERPRISE APPLICATIONS

Including multi-layer optimization and performance enhancement protocols, the SE330 satellite modem is equipped with 4 Gigabit Ethernet ports, making data transmission more efficient and cost-effective. The SE330 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 SE330 can perform as IP router (Layer3) reducing the need for additional equipment. The SE330 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 SE330 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 SE330 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 SE330 incorporates optional SatExpander DUET™ CEC™ (carrier-echo-cancellation) band reuse technology. Simultaneously using the same frequency band for both uplink and downlink carriers, the SE330 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

- 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 36Msps
- Integrated 4-port GbE LAN switch
- Leading bandwidth reuse - Zero implementation loss

SatExpander SE330 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
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
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: -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: 14V - 18V
Band select: 22KHz ±4KHz
Max. current: 350mA

ADDITIONAL INFORMATION

Additional HW interfaces

power:
100-240 VAC/2.5A
Data Interface:
4x Gigabit GbE/100/10 ports **Management port:** GbE 10/100/1000 **Front panel USB port:** USB A

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
Multi-access Edge Computing (user defined OS / Applications)
Baud Rate and Data Rate:
50Ksps to 36Msps
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: Size: 19" W x 9.6" D x 1RU (1.72") H
Weight : 4Kg

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