03b*Trunk* Modems

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The 03b*Trunk* product suite is supported by the most advanced modulation technologies in the industry. 03b*Trunk* is offered in unprecedented data rates ranging from 100 Mbps to 1 Gbps with a forward-to-return ratio of approximately 3:1, and supports applications such as VoIP, video conferencing and private corporate data network applications.

ViaSat MEOLink High Speed Modem

ViaSat has developed a new modem to provide very high speed IP Trunking services for 03bTrunk customers. This modem is based on the proven high performance ETSI DVB-S2 modulation and coding standards with very low implementation losses. These modems operate from 10 Msymbols/sec. up to 180 Msymbols/sec. in 1 Msymbol/sec. increments. To overcome rain fade, the modem supports the full range of DVB-S2 modulation rates (QPSK, 8PSK, 16APSK, and 32APSK), as well as the full suite of forward error correction coding levels, and adaptive coding and modulation (ACM). The peak data rate is 810 Mbps in each direction at 180 Msymbols/sec., 32APSK modulation, and rate 9/10ths coding.

The ViaSat MEOLink modem with one modulator and two demodulators is designed to provide seamless handover from the setting satellite to the rising satellite with no dropped or duplicate packets. At the time of handover, the single modulator is connected to the two antennas and transmits the same signal over the setting and rising satellites. The two demodulators receive packet streams from setting and rising satellites, compare the streams to ensure there are no dropped packets, then eliminate any duplicate packets. Therefore a modem is required at each end of the link. The modems are designed to be spared 1:N with a hot standby at the Gateway side and 1:1 at the customer terminal if required.

The ViaSat MEOLink modems are transparent Layer 2 devices and support Ethernet standard link features including standard 1000BaseT electrical interface standards, 802.1p QoS features, 802.1q VLAN features, and GSE frame encapsulation.

The ViaSat MEOLink modems support point-to-point and point-to-multipoint operation over the 03b satellite links. An efficient single forward link carrier can be used for multiple customer sites within an 03b beam and ACM adjusts each site's data rate depending on local conditions. The modems have separate data and control plane Ethernet interfaces that provide high reliability security of management and control traffic.

Specifications

DVB-S2 Modem

- Symbol Rates From 10 Msps to 180 Msps in 1 Msps steps
- All Modulations and Codes (QPSK, 8PSK, 16APSK, 32APSK)
- 810 Mbps Peak Data Rate Each Direction

DVB-S2 Transmitter

- Pre-Processing Corrects Linear Effects (Group Delay and IFL Cable Tilt)

Dual DVB-S2 Receivers

- Make-Before-Break Operation During Satellite Handover
- No Lost or Repeated Packets

Baseband Interfaces

- 1000BaseT Ethernet
- Separate Data and Control

Processing

- 802.1p,q (QoS and VLAN)
- GSE Encapsulation
- Point-to-Point and Point-to-Multipoint ACM
- Ethernet Header Compression

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