Newtec

Newtec Dialog®

MDM3310
SATELLITE MODEM

MDM3310 on the Newtec Dialog® Platform

The Newtec MDM3310 Satellite Modem is a two-way, high throughput VSAT modem supporting a wide range of IP Services including Internet/Intranet access, VoIP, enterprise connectivity, backbones for backhauling, contribution and multicasting services. Its ease of installation and high performance modulation techniques enable network operators to offer various bandwidth intensive services in a cost effective way.

With a symbol rate up to 500 Mbaud and coding from QPSK to 64APSK in the forward channel, it enables network operators to set-up almost any type and size of network on any type of satellite.

Return Link Technology Flexibility for Tailored Services

For the return channel, a choice can be made between three different return technologies depending on the type of application. The modem supports DVB-S2X SCPC in the return, which allows for highly efficient, medium to very high rate dedicated return bandwidth, for applications such as high speed IP backbones, cellular backhauling, trunking, maritime, mobility and file/video contribution.

The MF-TDMA mode enables low rate overbooked and bursty traffic profiles for inactive sites in business continuity networks or for always-on connectivity in occasional use networks.

The third mode, Mx-DMA®, combines the best of both worlds and fills the gap between MF-TDMA and SCPC.

With Newtec's Mx-DMA, satellite bandwidth is allocated dynamically in real-time depending on traffic demand, Quality of Service (QoS) profiles and link conditions. Changes are seamless without packet loss or additional jitter.

This allows services with continuously changing rates as with MF-TDMA, but at SCPC efficiency. Mx-DMA allows network operators to deploy anything ranging from dedicated to low-to-medium

overbooked services at any given time at minimum space capacity cost.

Having the choice between these three return technologies in a network within a single modem guarantees network operators a business model with maximum flexibility in supported applications, responsiveness to new market opportunities and Service Level Agreement (SLA) schemes that fit customers' needs.

High Service Satisfaction

For a true broadband experience at minimal bandwidth consumption, the Newtec MDM3310 modem incorporates IP traffic enhancement software for TCP acceleration, pre-fetching, compression and encryption (not export controlled). Traffic can be classified in seven QoS classes based on IP traffic characteristics (protocol types, source/destination address and more). This allows the network operator to provide a flexible hierarchical QoS model depending on any application's SLA.

> The MDM3310 offers cost-effective satellite connectivity for a wide variety of professional applications on the Newtec Dialog platform.

Main Advantages

- High throughput upstream and downstream capabilities
- 500 Mbaud DVB-S2X forward
- MF-TDMA, Mx-DMA and SCPC return link
- VL-SNR support for extended availability and PSD restricted applications
- OpenAMIP and GXT file support for mobility
- The most optimal modulation and bandwidth allocation while guaranteeing the highest efficiency and availability
- Easy to use multilingual web GUI for installation, diagnostics and troubleshooting

SPECIFICATIONS
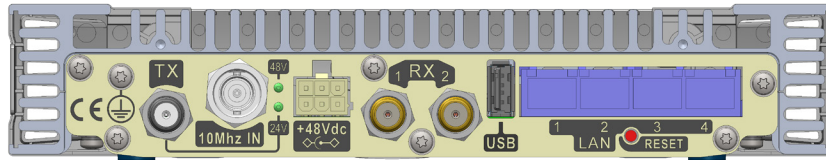
Key Features

- High performance unicast service rates up to 100/25 Mbps
- Transmit multicast up to 60 Mbps
- Receive multicast support (IGMPv2/static configuration) up to 250 Mbps
- Embedded TCP acceleration and encryption (not export controlled)
- Multilevel QoS with seven QoS Classes
- Low jitter for real time applications
- DNS Cache/Relay
- Versatile IP routing and addressing
- Support of IPv4 and IPv6
- Multiple virtual networks behind the modem
- DVB-S2X forward
- MF-TDMA 4CPM with Adaptive Return Link
- Mx-DMA HRC return with AUPC and ACM
- DVB-S2X return with ACM

Markets

- Enterprise/SME
- Trunking
- Cellular backhaul
- Government and defense
- Broadcast
- Offshore and maritime

Applications

- Internet/Intranet access
- VoIP telephony (SIP, H.323, …)
- 2G/3G/4G cellular backhauling
- Backbone connections, fiber restoration
- FNG/SNG live and file contribution

Satellite Link Interface

FORWARD CARRIER (RX)
- Standard   DVB-S2/DVB-S2X
- Modulation   QPSK, 8PSK, 16APSK, 32APSK, 64APSK
- FEC   BCH/LDPC
  49 MODCODs (normal frames):
  QPSK: from 1/4 to 9/10
  8PSK: from 3/5 to 9/10
  16APSK: from 26/45 to 9/10
  32APSK: from 32/45 to 9/10
  64APSK: from 11/15 to 5/6
  11 linear MODCODs (normal frames):
  8APSK-L: 5/9; 26/45
  16APSK-L: from 1/2 to 2/3
  32APSK-L: 2/3
  64APSK-L: 32/45
  41 MODCODs (short frames):
  QPSK: from 11/45 to 8/9
  8PSK: from 7/15 to 8/9
  16APSK: from 7/15 to 8/9
  32APSK: from 2/3 to 8/9
- Roll-off   5, 10, 15, 20, 25 and 35%
- Symbol rate 1 Mbaud to 500 Mbaud

RETURN CARRIER (TX)
- MF-TDMA mode
  Modulation Scheme 4CPM
  (Quaternary Continuous Phase Modulation)
  Channel bandwidth 128, 192, 256, 384, 512, 768, 1024, 1536, 2048, 2560, 3072, 3584, 4096, 6144, 8192 kHz
  MODCODs   0, 1, 2, 3, 4, 5
- Mx-DMA mode
  Modulation Scheme HRC
  Modulation   QPSK up-to 32APSK with 50 MODCODs
  VL-SNR spreading 2 – 12 on 10 MODCODS
  Roll-off   5%
  Symbol rate   32 kbaud - 20 Mbaud
- SCPC mode
  Modulation scheme S2 Ext
  Modulation   QPSK – 64APSK
  Roll-off   5, 10, 15, 20, 25 and 35%
  Symbol rate   1-40 Mbaud

Modem Interfaces

TX INTERFACE
- Frequency   950 - 2400 MHz
- Connector   F-Type - 75 Ohm
- TX level   -55 dBm to +5 dBm
- BUC power supply   24VDC, 4A/48V, 3.5A
- BUC reference   10 MHz, other frequencies as hardware option
- BUC reference level +3 dBm (+/- 2 dB)

RX INTERFACE (RX1/RX2)
- Frequency   950 – 2150 MHz
- Connector   F-Type - 75 Ohm
- RX level   -65 to -25 dBm
- LNB power supply   13/18VDC, 500mA
- Polarization selection power supply voltage
- LNB LO selection   22 kHz on/off
- LNB Reference   10 MHz

DATA INTERFACE
- Local Area Connection (LAN) 100/1000 TX (4/2 X RJ-45, auto MDI/MDIX)

MANAGEMENT INTERFACE
- Local Area Connection (LAN) 100/1000 TX (2 X RJ-45, auto MDI/MDIX)

FUTURE USE
- USB (future use)   USB 2.0
- Mass storage option (future use) MicroSD cards

Management

MULTILINGUAL WEB GUI
- Web-based multilingual GUI: no installation of client software required
- Supported web browsers: Internet Explorer, Mozilla Firefox, Google Chrome, Safari
- Management web GUI accessible via configurable management IP address

ANTENNA CONTROL
- OpenAMIP support

SNMP
- The modem support SNMPv2 for modem performance management.

Performance

LAYER 2 OR LAYER 3
- Max RX: 150 Mbps
- Max TX: 70 Mbps (HRC), 100 Mbps (SCPC)
- Maximum concurrent receive multicasts: 10
- Maximum concurrent transmit multicasts: 4

LAYER 3 - UNICAST TRAFFIC
- Concurrent (accelerated): 100/25 Mbps
- Concurrent (non-accelerated): 100/25 Mbps
- Number of TCP connections: 24.000

LAYER 2 - NON ACCELERATED TRAFFIC
- Concurrent receive/transmit: 100/25 Mbps

PPS
- RX only: 90 kPPS
- TX only: 90 kPPS
- RX + TX: 90 kPPS

Diagnostics & Configuration

- Self-test on management GUI for end-user and operator troubleshooting including diagnostics for support case reporting.
- Automatic software upgrades via satellite

Mechanical & Environment

- Housing (W x H x D) 220 x 40 x 330 mm
- Weight 1.7 kg
- Operating Temperature 0 to 50°C
- Humidity 5% - 95% non-condensing
- Storage Temperature -30 to 60°C

Power supply

- Modem: 48 Vdc, 4 Amps input
- Adapter AC, 50Hz\220-260V and 60Hz\100-130V -48 Vdc
- Modem power consumption: 60W maximum

Standards and Protocols

STANDARDS
Satellite Interface
- EN 302307-1   DVB-S2
- EN 302307-2   DVB-S2X
- EN 301 428 V1.3.1 (2006-02)   Ku-band VSAT spectrum usage
- EN 301 459 V1.4.1 (2006-02)   Ka-band VSAT spectrum usage
- EN 301 443   C-band VSAT spectrum usage

EMC
- ETSI EN 301 489-1 V1.6.1 (2005-09)
- ETSI EN 301 489-12 V1.2.1 (2003-05)
- ICES-003 Issue 4 (2004)
- FCC: title 47 of the CFR: 2008 part 15(b) Certification
- Safety   EN 60950-1 second edition
- RoHS   2002/95/EG directive compliant
- WEEE   2002/96/EG directive compliant
- CE   CE compliant and marked
- UL   UL compliant

LAN INTERFACE
- IEEE 802.3   10T Ethernet
- IEEE 802.3u   100TX Ethernet
- IEEE 802.2ab   1000TX Ethernet
- IEEE 802.1q   VLANs

PROTOCOLS
- Terminal Authentication, UDP, IP, IPv6, ICMP, TCP, ARP, FTP, DHCP, IP forwarding, Diffserv, DNS, IGMPv1/2

Newtec

SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS

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