# Newtec

## Newtec Dialog®

# MDM3100
# IP SATELLITE MODEM

## MDM3100 on the Newtec Dialog® Platform

The Newtec MDM3100 IP Satellite Modem is a 2-way, high throughput modem supporting a wide range of IP Services like internet/intranet access, VoIP, enterprise connectivity and backbones for backhauling 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.

## Return Link Technology Flexibility for Tailored Services

The modem supports three return access technologies with the Newtec Dialog platform: MF-TDMA, SCPC and the new patented Mx-DMA™ (Cross-Dimensional Multiple Access). Mx-DMA incorporates MF-TDMA flexibility and on-demand variable bandwidth allocation at SCPC efficiency.

MF-TDMA satellite access technologies are typically targeting applications with highly overbooked and bursty traffic services, such as Internet access for consumers, SME, B2B and SCADA. SCPC on the other hand has more applicability in high data and video rate return links. In between there is a large amount of applications with low to medium overbooked services and important throughput rates up to 21 Mbps where Mx-DMA comes into the game.

The MDM3100 combines different access technologies with different coding and modulation to match different application requirements. The 4CPM (Quaternary Continuous Phase Modulation) is ideal for low bursty traffic and HighResCoding (HRC™) will optimize low to medium rate traffic.

The high granularity of MODCOD choices in HRC provides the best modulation and coding for each link condition while the use of short block codes minimizes latency over satellite.
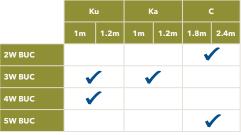
## High Service Satisfaction

For a true broadband experience at minimal bandwidth consumption, the modem incorporates IP traffic enhancement software for TCP acceleration, pre-fetching and compression. Traffic can be classified in seven different QoS classes based on IP traffic characteristics (protocol types, source/destination address…). Traffic in a specific class is given priority to match the Service Level Agreements.

> The MDM3100 offers cost-effective broadband connectivity for a wide variety of professional applications on the Newtec Dialog platform.

## Terminal Configurations

The modem is offered separately or in combination with the Newtec ODU Portfolio, a set of different antenna sizes and BUC/LNB combinations.

|         | Ku | | Ka | | C | |
|---------|-----|------|-----|------|------|------|
|         | 1m | 1.2m | 1m | 1.2m | 1.8m | 2.4m |
| 2W BUC  |    |      |    |      | ✔    |      |
| 3W BUC  | ✔  |      | ✔  |      |      |      |
| 4W BUC  | ✔  |      |    |      |      |      |
| 5W BUC  |    |      |    |      |      | ✔    |

Contact your sales representative for other ODU configurations (sales@newtec.eu)

## Main Advantages

- High throughput transmit and receive capabilities

- MF-TDMA, SCPC and Newtec patented Mx-DMA capabilities

- The most optimal modulation and bandwidth allocation while guaranteeing the highest efficiency and availability

- Up to 50% satellite bandwidth savings with Mx-DMA, a Newtec technology

- Bolstered with Newtec's technologies FlexACM®, ThiMM, Point&Play®, HRC

- Easy to use multilingual web GUI for installation, diagnostics and troubleshooting

- Forward efficiency improvement of 10 to 15% with Newtec's Clean Channel Technology®

# SPECIFICATIONS

## Key Features

- High performance unicast service rates up to 45/20 Mbps
- Transmit multicast up to 21 Mbps
- Receive multicast support (IGMPv2 / static configuration) up to 80Mbps
- Robust design with 19" rack mount kit option
- Embedded TCP acceleration
- Multi-level Quality of Service with seven classes
- Low jitter for real time applications
- DNS Cache/Relay and HTTP pre-fetching
- Layer 2 and Layer 3 support with versatile IP routing and addressing
- Support of IPv4 and IPv6
- Multiple virtual networks behind the modem
- 4CPM/MF-TDMA with Adaptive Return Link
- HRC with Automatic Uplink Power Control and ACM
- HRC/Mx-DMA and HRC/SCPC

## Markets

- Enterprise / SME
- Trunking
- Cellular Backhaul
- Government and Defense
- Broadcast
- Offshore and Maritime

## Applications

- Internet / Intranet access
- 2G/3G/Rural Cellular Backhauling
- VoIP telephony (SIP, H.323, …)
- Private Networks
- Banking
- Backbone Connections, Fiber Restoration
- FNG Contribution
- Fixed Government and NGO Networks
- School Networks

## POINT&PLAY Antenna Pointing

- The Point&Play tool provides pointing assistance during antenna installation. The small device uses audio feedback to indicate correct satellite identification and to signal accurate pointing.
- With Point&Play a terminal is easy to install, while the integrated terminal certification assures correct installation.

**POINT&PLAY**
**POINTING BECOMES CHILDPLAY**

## Satellite Link Interface

### FORWARD CARRIER (RX)
- Standard: DVB-S2 ACM
- Modulation: QPSK, 8PSK, 16APSK, 32APSK
- Roll-off: 5, 10, 15, 20, 25 and 35%
- Symbol rate: 1 - 63 Mbaud (upto 47 Mbaud for 16APSK, up to 38 Mbaud for 32APSK)

### RETURN CARRIER (TX) :
- 4CPM / MF-TDMA
  - Modulation: 4CPM with 6 MODCODs
  - Channel bandwidth: 128 kHz to 4 MHz
- HRC / Mx-DMA or SCPC
  - Modulation: QPSK up-to 32APSK with 40 MODCODs
  - Roll-off: 5%
  - Symbol rate: 30 kBaud - 20 Mbaud

## Performance

- Max RX Rate TCP: up to 45 Mbps
- Max RX Rate UDP: up to 45 Mbps (unicast) / 80 Mbps (multicast)
- Max TX Rate TCP: up to 20 Mbps
- Max TX Rate UDP: up to 20 Mbps (unicast) / 21 Mbps (multicast)

## Modem Interfaces

### RF OUTPUT (BUC INTERFACE)
- Connector: F
- Impedance: 75 Ohm
- Frequency: 950 – 1850 MHz
- TX Level: -55 to +5 dBm
- BUC Power Supply: 24 VDC, 3.5 A
- Ref Signal: 10 MHz

### RF INPUT (LNB INTERFACE)
- Connector: F
- Impedance: 75 Ohm
- Frequency: 950 – 2150 MHz
- RX Level: -65 to -25 dBm
- LNB Power Supply: 13/18 VDC, 500 mA

LOCAL AREA CONNECTION: 4 x GbE (RJ-45)
USB: USB 2.0 (future use)

## Mechanical & Environment

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

## Power supply

- DC Power Supply: 24 V
- Mains Adaptor Input: mains AC, 50 Hz\210-260 V and 60 Hz\100-130 V
- Mains Power Consumption: <120 Watt (depends on BUC type)
- Modem Power Consumption: <20 Watt

## IP Features

- Protocols: UDP, IPv4 & IPv6, ICMP, IGMPv2, TCP, ARP, DHCP, DNS, NTP, DiffServ Marking
- Networking: Static routes, Terminal VLAN VRF

## Management Interfaces

- Multilingual web GUI
- SNMP v2c
- Over-the-air Software & Configuration updates
- Over-the-air Monitoring, Self-test and Diagnostics
- Industry standard Antenna Control Unit management interface

## Software Release

- Specifications valid for Release 3.2 compatible with Newtec Dialog 1.3

## Standards

- EN 302307: DVB-S2
- EN 301428: Ku VSAT spectrum usage
- EN 301443: C VSAT spectrum usage
- EN 301459: Ka VSAT spectrum usage
- IEEE 802.3: 10T Ethernet
- IEEE 802.3u: 100TX Ethernet
- IEEE 802.3ab: 1000TX Ethernet
- IEEE 802.1Q: VLANs

# Newtec

**SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS**