Newtec

1IF, 4IF AND XIF
NEWTEC DIALOG® HUBS

Newtec Dialog® Platform

Newtec Dialog® is a **scalable and flexible multiservice satellite platform** which allows operators to build and adapt their infrastructure easily as their business and the satellite market grows. Newtec Dialog will secure the future of operators, giving them the power to offer a variety of fixed and mobile services while making hassle-free decisions on which technology to use.

Flexibility

Newtec Dialog is built for flexibility. Whether the satellite service provider sells a single service or multiple services into different markets, Newtec Dialog hubs allow customers to **choose optimal technology without compromise.** Using the advanced Quality of Service management, service providers can implement tailor-made services for many markets which, when combined with the most optimal transmission technology running on MDM2000, MDM3000 and MDM5000 series modems, will result in a **very bandwidth-efficient yet cost-effective solution.** End users can now be served with optimal Service Level Agreements (SLA) for the right price.

Scalability

The Newtec Dialog platform can be configured to match the size and satellite network configuration for any customer application; a vast choice is available in terms of satellite bands, transmission speed, power, modulation and amount of forward and return links. The hub scales smoothly and cost effectively from small (few terminals) to large networks (hundreds of thousands of terminals) and from single coverage area to multiple coverage areas on any frequency band. It can serve one or multiple satellites, including high-throughput spot beam configurations. The hubs can be deployed remotely in different teleports while being managed centrally via a single Newtec Dialog Network Management System. Three types of hubs are available. The 1IF Hub for small scale, dedicated networks, the 4IF Hub for small gateway deployments and the XIF Hub for large gateway deployments.

Newtec Dialog hubs provide a **high degree of modularity.** Service providers can start with a small Newtec Dialog platform configuration to address the customers' initial needs. As the business evolves and grows, the platform can be easily extended by adding licenses, and modulator and multicarrier demodulator units. The hub modularity facilitates a **unique pay-as-you-grow investment, unmatched ease of installation and instant service deployment.**

Efficiency

Newtec Dialog enables the most optimal modulation and bandwidth allocation for any given service offering. The Newtec Dialog platform supports DVB-S2 and DVB-S2X ACM transmission from hub to terminals.

As well as SCPC and MF-TDMA return links to the hub, the platform includes a third revolutionary and patented return link technology, called Mx-DMA™. Mx-DMA is a fit for applications running throughput rates from 32 Kbps up to 75 Mbps with a low to medium overbooking. Mx-DMA typically results in about 50% satellite bandwidth savings or double the number of customers per MHz.

Newtec Dialog hubs provide you with a flexible, modular and reliable platform. As a service provider or operator you can build your business to the size you need it. As a result of the low upfront CAPEX, you invest as your business grows.

Carrier Grade Reliability

Newtec Dialog hub modules' built-in redundancy enables carrier grade services. The hub modules can be optionally equipped in full redundant configuration, assuring availability of 99.99%.

Advanced Network Management System

Whatever the network size, the Newtec Dialog platform comes with an advanced Network Management System (NMS). Configurations, monitoring and diagnostics are easy-to-use and workflow based. The NMS includes extensive Virtual Network Operator (VNO) capabilities, allowing VNOs to independently operate and manage their terminal population and network resources.
The NMS comes standard with an extensive Application Programmatic Interface (API). Based on the API, network operators and/or VNOs can easily integrate the Newtec Dialog platform into their respective OSS/BSS systems

click here to REQUEST A QUOTE!

SPECIFICATIONS

Key Features

- Supports multiple satellites, multiple frequency bands, regular and spot beam satellites
- Scalable from five to hundreds of thousands of terminals
- Highly efficient DVB-S2 and DVB-S2X ACM in the forward
- SCPC, MF-TDMA and Newtec Mx-DMA return link technology on a single forward
- Customizable number of forward modulator and multicarrier demodulator units
- Advanced hierarchical Quality of Service management
- Extensive networking/routing capabilities, easy integration into terrestrial network using Layer 2 and Layer 3 network types
- Fully integrated, connecting directly to IP and RF uplink and including:
  - Forward link equipment (IF or L-band)
  - Return link equipment (L-band)
  - Traffic and Quality of Service management
  - Acceleration/Compression/Encryption
  - Newtec Dialog Network Management System
- Carrier grade availability, better than 99.99%
- Easy-to-install and maintain

Applications

- Backbone Connections, Fiber Restoration
- Content Contribution and Distribution
- 2G/3G/Rural Cellular Backhaul
- Fixed Government and NGO Networks
- School Networks
- Banking
- Private Networks
- Point-of-Sales - Lottery
- Telemetry - SCADA
- Internet Access

Markets

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

Related Products

Newtec Dialog platform

M6100	Broadcast Modulator
MCD7000	Multicarrier Demodulator
MDM3300	Satellite Modem
MDM3100	IP Satellite Modem
MDM2210	IP Satellite Modem
MDM2500	IP Satellite Modem
MDM3310	IP Satellite Modem
MDM5000	Satellite Modem

Technologies

Mx-DMA and HighResCoding (HRC™): Mx-DMA (Cross-Dimensional Multiple Access) combines the best qualities of SCPC and MF-TDMA technologies and solves the difficult choice of having to select one or the other. On the one hand, the new return technology will provide MF-TDMA-like on-demand variable bandwidth, while on the other hand, Mx-DMA uses HRC coding and modulation which results in SCPC-like efficiencies (from QPSK up-to 32APSK using 40 distinct MODCODs).

DVB-S2X: The new DVB-S2X standard, released in February 2014, results in yet another 15-30% efficiency gain in a typical distribution network.

FlexACM®: is the unique and market proven end-to-end solution combining a range of technologies to maximise the efficiency of IP applications over adaptive satellite links at optimal efficiency.

S2 Extensions: With the full implementation of S2 Extensions, staggering efficiency gains by up to 64% can be achieved for professional applications over satellite.

Equalink®: gives significant improvements by pre-distorting the modulated signal resulting in 10% bandwidth gains and higher Quality of Service.

Clean Channel Technology: improves satellite efficiency by up to 15% compared to the current DVB-S2 standard by implementing smaller roll-offs (5%, 10%, 15%) and advanced filter technology, thereby allowing optimum carrier spacing.

Cross-Layer-Optimization: is the satellite modulation equipment that is in continuous interaction with Acceleration, Compression, Bandwidth Management and IP Shaping technology. As soon as a satellite link condition changes, the link will be auto-optimised following Quality of Service and Priority Settings without the loss of data or link.

Thin Margin Manager (ThiMM): offers an accurate prediction of the upcoming variation (depth and direction) of the link condition. As a result, the excess link margin can be kept to the absolute minimum and further increase the efficiency of the link.

Noise & Distortion Estimator (NoDE): provides an estimation of the amount of linear and non-linear distortion on the received signal in order to provide the real satellite link margin and helps FlexACM to work at maximum accuracy.

Newtec

HUB6501 1IF HUB

- Small networks
- Hubs hosted at customer premises
- One satellite network, up to 250 terminals
- Up to 150 Mbps of satellite capacity
- Includes all traffic processing functionality
- Optional redundancy
- Low initial cost

Small Scale, Dedicated Networks

The HUB6501 1IF Hub is designed to specifically address small and dedicated networks. It can support a single satellite network, up to 250 terminals and up to 150 Mbps of traffic processing, including Quality of Service and congestion management, acceleration, compression and encryption. Like all Newtec Dialog hubs, it provides flexibility to easily add high capacity multicarrier demodulators which support SCPC, MF-TDMA and Newtec's patented Mx-DMA return link technologies. The hub easily integrates with the 'IP backbone' router and the RF gateway up/downlink. Optional redundancy can provide better than 99.99% availability.

Forward Channel

- Standard: DVB-S2/DVB-S2X ACM
- Modulation: QPSK to 256APSK
- Carrier bandwidth: Max. 133Mbaud
- Roll-off: 5, 10, 15, 20, 25 and 35%
- Pre-distortion Equalink

Return Channel

MX-DMA AND SCPC HIGH RESOLUTION CODING
- Modulation VLSNR, QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth 0.030 to 20 Mbaud

MF-TDMA 4CPM
- Modulation 4CPM
- Carrier bandwidth 0.128 to 4 MHz

SCPC / DVB-S2 AND S2 EXTENSIONS
- Modulation QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth Max. 133 Mbaud

Hub Architecture

- Satellite networks: 1
- IP throughput: 150 Mbps aggregate forward and return
- Terminals: Up to 250
- Modem Hardware: M6100 modulator, MCD7000 multicarrier demodulator
- Modulators: 1 + optional redundant per IF
- Demodulators: Maximum 8 or 7+1 redundant per IF

Hub Interfaces

- IP User traffic: Gigabit Ethernet, 1 + 1 redundant
- IP Management traffic: Gigabit Ethernet, 1 + 1 redundant
- RF output: L-band (950-2150 MHz), IF (50-180 MHz)
- RF input : L-band (950-2150 MHz)
- 10 MHz reference in/out 1 input, 1 output

Mechanical & Environment

- Housing: Collection of 1U rack-mountable devices (standard 19 inch rack optional)
- Total number of units: Depends on configuration (5U to 18U)
- Operating temperature: 10° to 35°C / 50° to 95°F
- Humidity: 10 to 85% relative, non-condensing.
- Storage temperature: -30° to 60°C / -22° to 140°F

Mains Power Supply

- Power Supply: 100-120 V, 50/60 Hz, or 200-240 V, 50/60 Hz

SPECIFICATIONS

HUB6504 4IF HUB

- Up to four satellite networks
- Up to 800 Mbps of satellite capacity, including all traffic processing
- Up to 133 Mbaud DVB-S2X forward carriers
- Support for SCPC, MF-TDMA and Mx-DMA return links
- Carrier grade reliability with built-in redundancy
- Low initial cost, pay-as-you-grow

Small Gateway Deployment

Hosting up to four satellite networks in a single rack, the Newtec HUB6504 is the ideal solution for service providers looking for small gateway deployments. The modularity of the hub gives service providers agility to respond to their customer and market needs in a fast and cost-effective way. Additional satellite networks can be added easily and rapidly, simply by adding additional modulators, multicarrier demodulators and blade servers into the preconfigured rack slots and activation in the Newtec Dialog Network Management System. High capacity multicarrier demodulator units can support SCPC, MF-TDMA and Newtec's patented Mx-DMA return link technology.

60,000 Terminals, 800 Mbps Satellite Traffic, Carrier Grade

The hub easily integrates with the 'IP backbone' router and the RF gateway up/downlink. Built in redundancy provides better than 99.99% platform availability.

Forward Channel

- Standard: DVB-S2/DVB-S2X ACM
- Modulation: QPSK to 256APSK
- Carrier bandwidth: Max. 133Mbaud
- Roll-off: 5, 10, 15, 20, 25 and 35%
- Pre-distortion Equalink

Return Channel

MX-DMA AND SCPC HIGH RESOLUTION CODING
- Modulation VLSNR, QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth 0.030 to 20 Mbaud

MF-TDMA 4CPM
- Modulation 4CPM
- Carrier bandwidth 0.128 to 4 MHz

SCPC / DVB-S2 AND S2 EXTENSIONS
- Modulation QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth Max. 133 Mbaud

Hub Architecture

- Satellite networks: Up to 4
- IP Throughput: Up to 800 Mbps
- Terminals: Up to 60,000
- Modulator/Demodulator units: Up to 18 slots
- Modem Hardware: M6100 modulator, MCD7000 multicarrier demodulator
- Modulators: 1 + optional redundant per IF
- Demodulators: Maximum 8 or 7+1 redundant per IF
- Blade servers: 16 slots available, depending on satellite network configuration

Hub Interfaces

- User data: Gigabit Ethernet, 3 + 3 redundant
- Management data: Gigabit Ethernet, 1 + 1 redundant
- RF output per satellite network: L-band (950-2150 MHz), IF (50-180 MHz)
- RF input per satellite network: L-band (950-2150 MHz)
- 10 MHz reference input: 1 per rack
- 10 MHz reference output: 1 per satellite network

Mechanical & Environment

- Housing: 19" rack, 42U
- Weight: max. 580 kg (maximal configuration)
- Operating temperature: 10° to 35°C / 50° to 95°F
- Humidity: 10 to 85% relative, non-condensing.
- Storage temperature: -30° to 60°C / -22° to 140°F

Power Supply

- Power Supply: 220-240 V, 50/60 Hz, IEC60309 or 200-208 V, 50/60 Hz, Locking CS8265C

Newtec

HUB7208/7303 XIF HUB

- Highly flexible and scalable hub architecture
- Optimized baseband density & flexibility with baseband matrix
- Up to 500 Mbaud forward carriers
- Carrier grade reliability with built-in redundancy
- Support for SCPC, MF-TDMA and Mx-DMA return links
- Pay-as-you-grow

Highly Flexible and Scalable

The Newtec XIF Hub is the solution for gateway deployments serving a multitude of beams, transponders or satellites. The use of a baseband matrix brings N:M redundancy for up 32 multicarrier modulators and/or demodulators in one rack. In addition, the matrix fan in/out capabilities allows to simplify interfacing with the gateway RF infrastructure. Capacity can be extended easily and rapidly, simply by adding additional multicarrier modulators, demodulators and blade servers and activation in the Newtec Dialog Network Management System. High capacity multicarrier modulator units support DVB-S2X carriers, whereas the high capacity multicarrier demodulator units can support SCPC, MF-TDMA and Newtec's patented Mx-DMA return link technology.

High Throughput

The Newtec XIF Hub is designed for operators seeking high throughput through its 10 Gbps Ethernet switching infrastructure. With support for Forward DVB-S2X carriers up to 500Mbaud, they can leverage the high bandwidth transponders provided by HTS satellites.

Forward Channel

- Standard: DVB-S2/DVB-S2X ACM
- Modulation: QPSK to 256APSK
- Carrier bandwidth: Max. 500Mbaud, 525MHz
- Roll-off: 5, 10, 15, 20, 25 and 35%
- Data throughput 2 Gbps
- Pre-distortion No*

* Future upgradable to support Equalink

Return Channel

MX-DMA AND SCPC HIGH RESOLUTION CODING
- Modulation VLSNR, QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth 0.030 to 20 Mbaud

MF-TDMA 4CPM
- Modulation 4CPM
- Carrier bandwidth 0.128 to 4 MHz

SCPC / DVB-S2 AND S2 EXTENSIONS
- Modulation QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth Max. 133 Mbaud

Hub Architecture

- Modulator/Demodulator units: Up to 32 slots
- Modem Hardware: MCM7500 multicarrier modulator, MCD7000 multicarrier demodulator
- Modem Redundancy: N:M redundancy
- Fan-in/out baseband matrix
- Server Hardware : Blade servers
- Server Redundancy: N:1 redundancy

Hub Interfaces

- Ethernet User data: 10 GbE or 40 GbE
- Ethernet Management data: 1 GbE
- RF output per satellite network: L-band (950-2150 MHz)
- RF input per satellite network: L-band (950-2150 MHz)
- Reference input: IEEE1588v2 or 10MHz

Mechanical & Environment

- Operating temperature: 10° to 35°C / 50° to 95°F
- Humidity: 10 to 85% relative, non-condensing.
- Storage temperature: -30° to 60°C / -22° to 140°F

Power Supply

- Power Supply: 208-240VAC, 50/60 Hz

HUB MODULATOR AND DEMODULATORS

The Newtec Dialog hubs are equipped with modulators and multicarrier demodulators according to the satellite network requirements. Full detailed specifications can be found on the respective product leaflets on our website.

(1) Modulator specifications, network configuration may be limited by modem capabilities.
(2) Multicarrier demodulator can process up to 3000 logged-on terminals, generating concurrent traffic

MCD7000 MULTICARRIER DEMODULATOR

SCPC AND MX-DMA HIGH RESOLUTION CODING

- Modulation VLSNR, QPSK, 8PSK, 16APSK, 32APSK
- Carrier bandwidth 0.030 to 20 Mbaud
- Number of carriers 24
- Processing bandwidth 50 MHz
- Data throughput 216 Mbps

MF-TDMA 4CPM

- Modulation 4CPM
- Carrier bandwidth 0.128 to 4 MHz
- Number of carriers 80 (2)
- Processing bandwidth 16 MHz
- Data throughput 22 Mbps

SCPC DVB-S2 AND S2 EXTENSIONS

- Modulation QPSK to 32APSK
- Carrier bandwidth max. 133 Mbaud
- Number of carriers 3
- Processing bandwidth 3 x 140 MHz
- Data throughput 370 Mbps

MCM7500 MULTICARRIER MODULATOR

DVB-S2 / DVBS2X

- Modulation QPSK to 256APSK
- Carrier bandwidth Max. 500 Mbaud, 525MHz
- Roll-off 5, 10, 15, 20, 25 and 35%
- Pre-distortion No*
- Number of carriers 1
- Data throughput 2 Gbps

* Future upgradable to support Equalink

M6100 MODULATOR

DVB-S2 / DVBS2X

- Modulation(1) QPSK to 256APSK
- Carrier bandwidth(1) Max. 133 Mbaud
- Roll-off 5, 10, 15, 20, 25 and 35%
- Pre-distortion Equalink
- Number of carriers 1
- Data throughput(1) 370 Mbps

This brochure is provided for information purposes only.
The details contained in this document, including product and feature specifications, are subject to change without notice and shall not bind Newtec in any way.

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