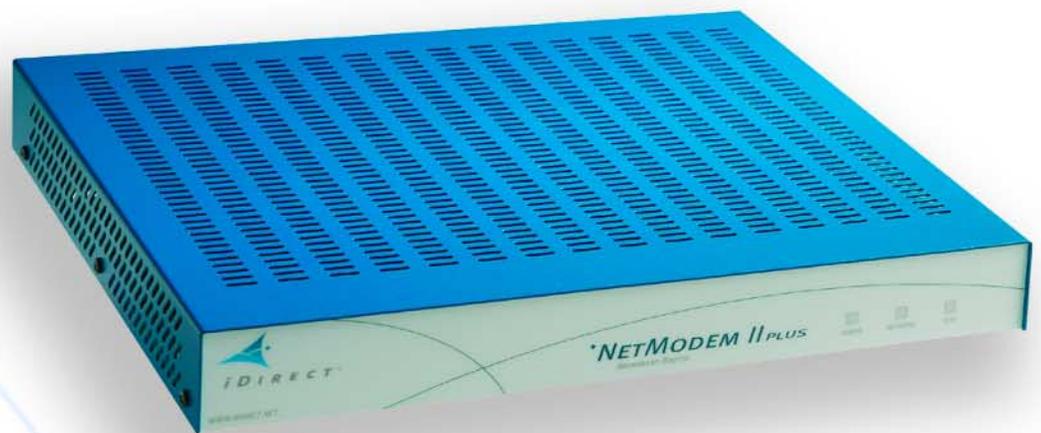


NetModem II Plus Broadband Router Solution

Give your **customers** broadband IP access...
anywhere in the **world**



The first
product designed from the
ground up to **deliver**
broadband IP communications
via **satellite**

A REVOLUTION IN BROADBAND IP CONNECTIVITY

There's a huge demand for high-speed broadband IP communications, especially in remote locations where conventional land-based solutions may not be available, or cost-effective. iDirect Technologies has broken the technology barrier with solutions that allow enterprises of any size — in virtually any location — to access broadband IP communications via satellite. Our unique end-to-end technology provides all the flexibility, capability, and reliability that enterprise customers need to support critical business applications.

A SMARTER SOLUTION FOR THE ENTERPRISE

With iDirect Technologies, satellite network operators can offer enterprises lightning fast, reliable, broadband IP connections — at data throughput speeds up to 9.1 Mbps — no matter where the enterprise is located. At the same time, businesses can take advantage of iDirect's solutions to build secure enterprise networks that aren't limited by the constraints of land-based technologies while simultaneously overcoming legacy satellite performance obstacles.

SUPPORTING ALL ENTERPRISE APPLICATIONS

iDirect's wireless solutions are designed to enable enterprise IT application delivery when performance, bandwidth, and efficient capital costs are required. In a single turnkey solution, enterprises get fast, reliable, cost-effective, broadband IP connections for LAN-to-LAN connectivity and/or direct point-to-point links (iSCPC), no matter where they're located. Configurable Quality of Service levels are available to support a variety of applications including:

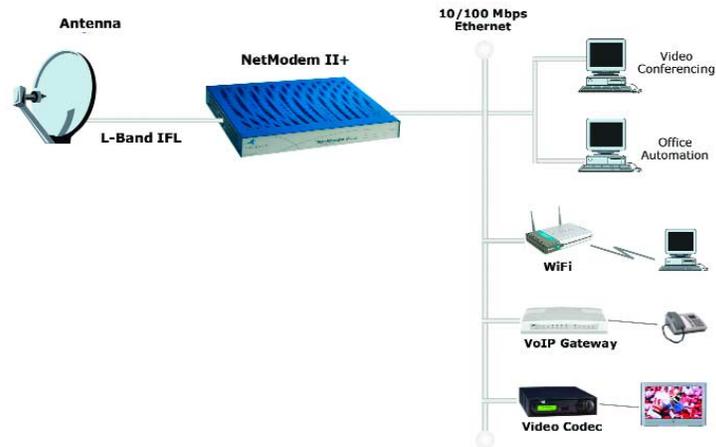
- ◆ Corporate intranets/extranets
- ◆ E-mail
- ◆ E-procurement
- ◆ Multicasting
- ◆ Corporate databases and distributed applications (i.e. ERP, CRM, Data Warehousing)
- ◆ VPN
- ◆ "Toll Quality" Voice over IP (VoIP)
- ◆ Large file transfer, including image transfers
- ◆ Web research
- ◆ Distance learning
- ◆ Video

Businesses also benefit from the ability to standardize their broadband communications systems on a single technology platform, greatly reducing both the direct and indirect costs associated with the deployment and maintenance of a network.

SUPERIOR TECHNOLOGY IS BUILT IN

The iDirect NetModem II *Plus* Broadband Router is a compact, set-top terminal that routes IP traffic over satellite networks. This highly advanced Enterprise Class solution integrates all the hardware and software needed to deliver bi-directional broadband connectivity, easily and efficiently, while enabling the highest data rates available in the

SAMPLE CUSTOMER SITE CONFIGURATION



industry today with throughput speeds of up to 9.1 Mbps. Better still, the NetModem II *Plus* is highly scalable for both inbound and outbound data rates, which allows users to easily accommodate current and future bandwidth requirements.

In addition to industry-leading technologies including TDMA, Turbo Product Code, and TCP Acceleration, the NetModem II *Plus* offers unique capabilities that optimize IP application performance through highly efficient bandwidth usage, greater flexibility, and enhanced reliability.

iDirect Technologies' unparalleled Real Time Traffic Management (RTTM) features enable mission-critical information to reach the desired destination quickly and efficiently. iDirect RTTM features include:

- ◆ Application QoS
- ◆ Group QoS
- ◆ Segmentation & Reassembly
- ◆ Committed Information Rate
- ◆ Feathering Timeslot Allocation
- ◆ Compressed RTP (cRTP)

Deterministic TDMA Network Architecture (D-TDMA) takes our innovative TDMA implementation to a whole new level of efficiency. iDirect's D-TDMA algorithm allocates bandwidth among multiple remote sites, based on instantaneous conditions. Several times a second, our D-TDMA feature will allocate bandwidth based on criteria such as the queue depth at each remote, the CIR (Committed Information Rate) configuration, Quality of Service and Prioritization requirements, as well as any Rate Limiting established at each remote. It results in industry-leading efficiency that lets you carry more applications and traffic over your available bandwidth.



high speed anywhere

Quality of Service (QoS) features enable you to automatically identify, classify, and prioritize data traffic across the network to provide a host of flexible service and application options for customers. Traffic can be prioritized by protocol, source or destination address, port numbers, and other criteria – allowing you to offer customers different service levels for different applications (such as VoIP) or for different locations. **Group QoS** options allow you to prioritize real-time traffic or non-real-time traffic over shared bandwidth – offering you the most flexible and granular QoS capabilities in the industry.

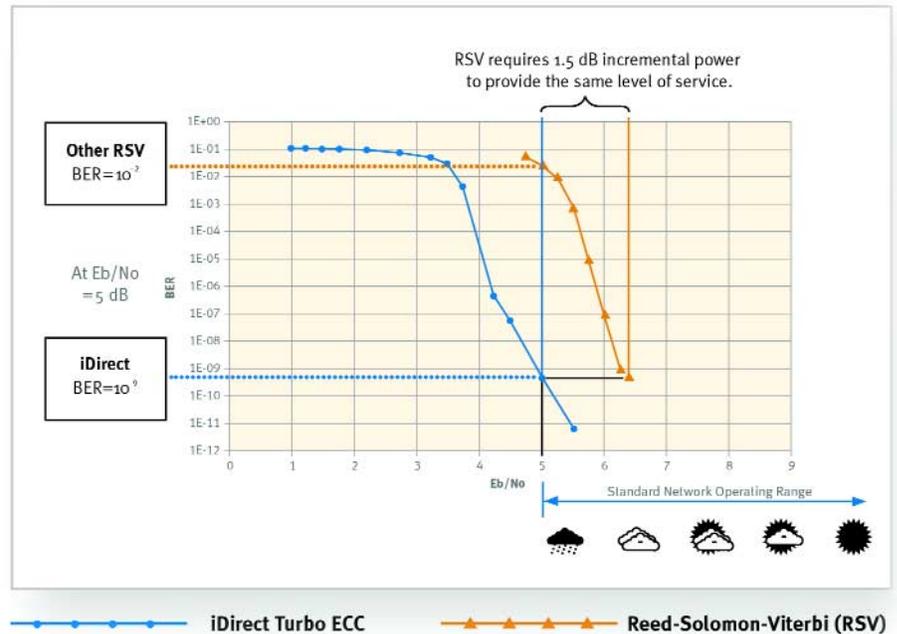
Capacity Optimization is inherent throughout the iDirect solution. With 1.2 Carrier Spacing we deliver 14% savings in bandwidth, through more efficient use of your transponder capacity. In addition, by using a native IP solution you'll save 10 - 50% capacity vs. an inefficient MPEG Encapsulation scheme.

iDIRECT MAKES IT EASY TO SUCCEED

iDirect's industry-leading IP broadband solution is remarkably simple to install and service. This integrated, easy-to-use remote solution enables you to bring customers online quickly. We provide everything you need — the set-top box, antenna, and outdoor electronics.

The NetModem II *Plus* solution also utilizes an L-band interfacility link that requires fewer physical resources and allows for lower cost equipment. All that is required of your customer is electricity for the indoor unit and rooftop access for the antenna. Remote sites do not even require an exterior electrical power supply.

Installations generally take less than a few hours. To integrate the system with the customer's LAN, you simply need a



Increased Power Savings in BER performance vs. RSV

The chart above illustrates the significant increase in power savings delivered by iDirect Turbo ECC (Error Correction Coding) versus legacy Digital Video Broadcasting (DVB) using Reed-Solomon-Viterbi. The iDirect solution delivers even greater gains, of more than 3 dB, when compared against other error correction techniques. The improved coding gain allows for a reduction in equipment and service costs.

standard Ethernet 10/100 Mbps LAN interface. Once service is activated, it can be proactively monitored 24/7 to provide rapid fault resolution and maximum service uptime.

EXTENSIVE PARTNERSHIP SUPPORT

iDirect Technologies offers a premier, full-scale partnership program

unmatched in the satellite industry. We have a deep commitment to helping you create a sustainable business model by providing products and services that add value – every step of the way. Whether you're generating new opportunities, installing a customer site, or resolving a technical issue, iDirect will always be there with tools and resources to help ensure your success.

A SWIFT-DEPLOY OPTION

In situations where there is a need to turn up IP connectivity quickly – such as in emergency response situations, a new construction site, or as a back-up facility in a disaster recovery situation — the iDirect Technology Swift Deploy solution offers a way to get online and begin operating quickly. This completely self-contained system includes a high-speed NetModem II *Plus* Router, Satellite Antenna, and outdoor electronics. Get it up and running in just minutes, without special tools.

NETWORK CONFIGURATION

Network Topology	Star
Multiple Access	TDM (Downstream) D-TDMA (Deterministic TDMA) Multi-Frequency TDMA (Upstream) Configurable number of Upstream Carriers per Downstream Configurable frame length (number of slots/frame)
Channel Rates	Outroute: 11.5 Mbps or 5.75 Msps Inroute: 5.75 Mbps or 2.875 Msps
Channel Spacing	1.2
Modulation	QPSK
IP Data Rates	Outroute: 64kbps – 9.1Mbps Inroute: 64Kbps – 4.2Mbps (Max. of 1 Mbps @ 0.66 FEC and 4.2 Mbps @ 0.793 FEC)
FEC	Outroute: Turbo Product Coding (TPC) Rate 0.793 Inroute: TPC Rate 0.793 or TPC Rate 0.66
Eb/No	4.6 Eb/No for 10 ⁻⁹ Quasi Error Free @ 0.793 FEC 5.4 Eb/No for 10 ⁻⁹ Quasi Error Free @ 0.66 FEC

INTERFACES

SatCom Interfaces	TxIF: Type-F, 950 - 1700 MHz RxIF: Type-F, 950 - 1700 MHz TVRO: Type-F, 950 - 1700 MHz
Data Interfaces	LAN: RJ45, 10/100 Ethernet RS-232: RJ45 (for GPS or Console connection)
Protocols Supported	TCP, UDP, ICMP, IGMP, RIP Ver2, Static Routes, NAT, DHCP, DNS Caching, cRTP
Security	3DES Link Encryption (optional)
Traffic Engineering	QoS (CBWFQ), CIR, Rate Limiting, Dynamic Allocation

MECHANICAL/ENVIRONMENTAL

Size	W 11.75" x D 10.50" x H 1.75" (W 29.9 cm x D 26.7 cm x H 4.5 cm)
Weight	7 lbs (3.18 Kg)
Operating Temperature	0° to 50°C (+32° to +122°F)
Input Voltage	100-250 VAC Universal Input, 2A Max @ 100VAC

NETWORK CONFIGURATION - SAME AS NETMODEM II PLUS

TRANSPORTABLE UNIT

Antenna Size	KU-Band 1.2M SD Dish
LNB	DRO
Block-Up Converter (BUC)	4W

MECHANICAL/ENVIRONMENTAL

Size	W 19" x D 11.6" x H 13.5" (W 48.3 cm x D 29.5 cm x H 34.3 cm)
Weight	12 lbs. (5.4 kg)
LAN Port	RJ-45, 10/100 Base - T

SWIFT DEPLOY CRATES

Size	Cable Reel Case: 24x26x25 ODU Case: 21x29x17 Modem Rack Case: 20x20x10 Reflector Case: 52x12x31 Tripod Mount Case: 56x17x16
Weight	Cable Reel Case: 80 lbs. ODU Case: 56 lbs. Modem Rack Case: 79 lbs. Reflector Case: 77 lbs. Tripod Mount Case: 103.5 lbs.

THE iSCPC POINT-TO-POINT SOLUTION

For situations where you need dedicated, SCPC point-to-point connections — or where private line connections aren't available or practical — the iDirect Technologies NetModem II *Plus* can be specially configured as an iSCPC terminal. Instead of sharing bandwidth and network slots with other users, you essentially have your own dedicated link.