XneT Dynamic Data Links

NovelSat
Making Space in Space

Solutions

For Satellite Data & Cellular Networks

Cost-effective Satellite Solutions for Data Communications

NovelSat Xnet Remote Data Links solutions for Point-to-Point and Point-to-Multipoint satellite networks deliver the most efficient, flexible and cost saving operation. These solutions Include a family of satellite modems and network solutions such as a full featured NMS (Network Management System) and an encryption mechanism based on AES 256-bit keys. All are the perfect match for the specific challenges of data transmission in IP Trunking, Cellular Backhaul, Oil & Gas, Military, Maritime, Homeland Security, Disaster Recovery and more.

NovelSat Data Connectivity and the Cellular Backhaul Value Proposition

Enhanced Software-based Feature Set

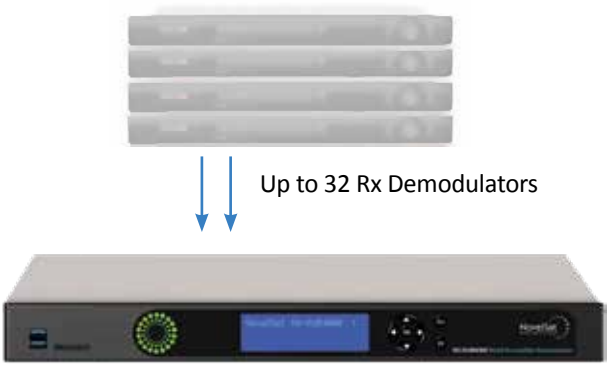
- **NovelSat NS4™ Satellite Waveform**
  The latest, most advanced satellite waveform from NovelSat enables up to 45% higher spectral efficiency compared with DVB-S2.
- **NovelSat DUET™ CeC™ (Carrier Echo Cancellation)**
  Transmitting both forward and return signals over the same frequency results in up to 50% in bandwidth saving.
- **Wireless Link Optimization Package**
  - TCP acceleration solution
  - IP header and payload compression
  - Internet optimization – Compress & control data & video traffic
  - Byte caching
  - Web object caching – Improves Web surfing performance

  - Advanced Cellular Compression (ACC)
- **IP Processing Enhancements**
  - VLAN switching (L2)/ Router mode (L3)
  - IP Transparent Bridging
- **NSPE™ IP Encapsulation**
  Unsurpassed encapsulation scheme compared with any other market standard: Provides negative overhead (up to 25% compression ratio)
- **Advanced QoS (Quality of Service)**
  Architecture based on two-level hierarchical queues, bandwidth allocation for each remote and 8 priority queues per remote.
- **Advanced ACM, AUPC**
  An optimal selection of MODCODs per remote. For links with fast fading changes, such as Ka band, NovelSat Fast ACM reacts to 1dB/sec changes in link conditions.
- **ProtCASTER data link protection**
  - AES 256-bit encryption

Enhanced Hardware Components

- **NS3000** High Data-Rate up to 425 Mbps x2
- **NS300X** Low Data-Rate up ot 30 Mbps x2
- Embedded TCP acceleration and packet compression

- **Redundancy Switch Series (1+1, N+1)**
  The NovelSat NSR9100 and NSR9800 provide hot standby for modulators, demodulators and modems while protecting up to 8 units.

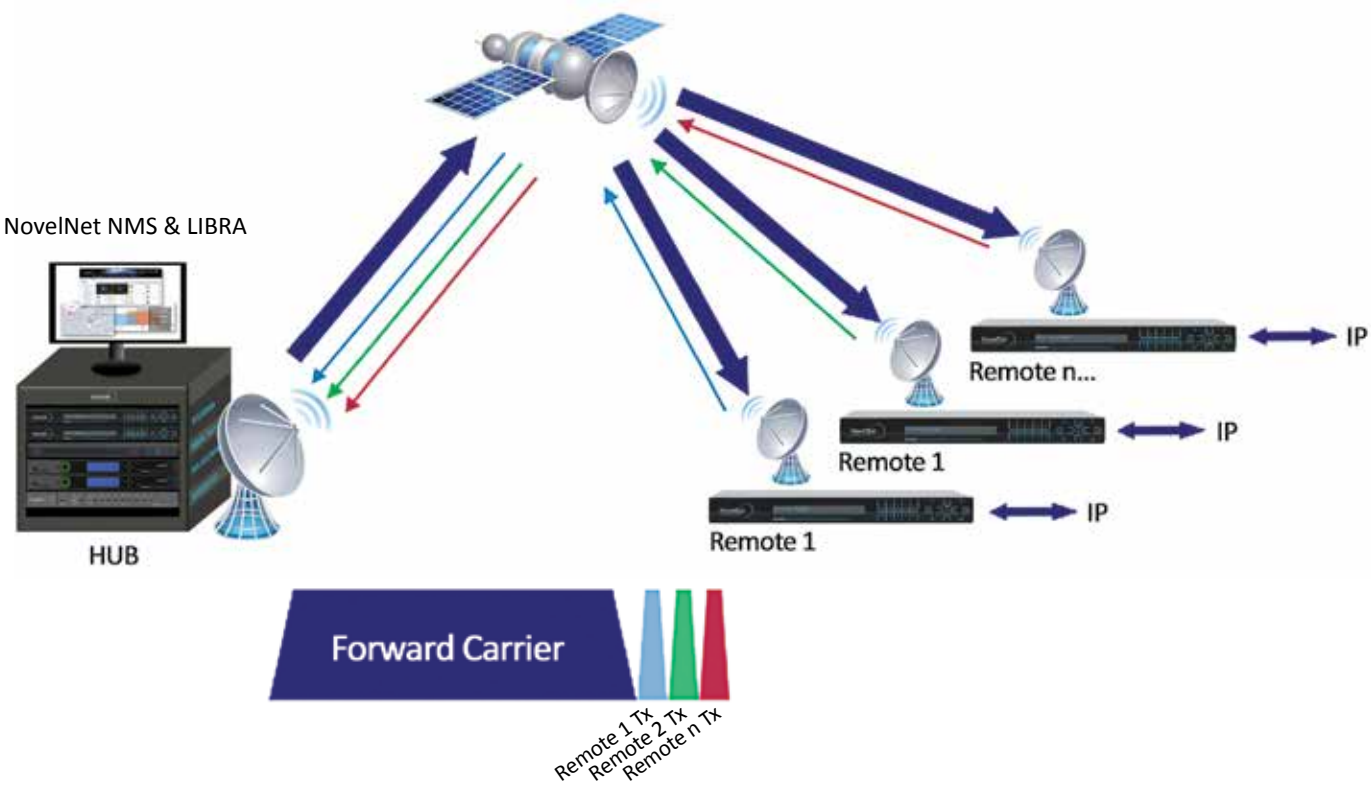


- **NovelSat NS-HUB4000 Multi Rx IP Demodulator Platform (Coming Soon)**
  - Up to 32 Rx Demodulators in a Single 1U platform
  - Compact Hub Terminal space saver

Point-To-Multipoint Network Structure Value Proposition

NovelSat point-to-multipoint architecture can support up to 128 remotes. In a typical P2MP architecture, the NovelSat NS4 waveform provides the world's most spectrum-efficient satellite transmission, delivering up to 45% more capacity compared with DVB-S2. The entire network can be managed from a single source using NovelNet NMS, which also enables optional Dynamic Resource Allocation.

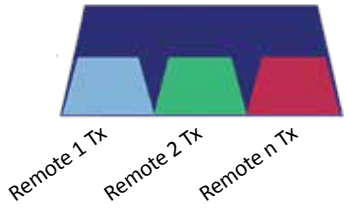
SCPC P2MP Architecture – Spectral Efficiency & CAPEX Savings



Carrier Echo Cancellation in Point-to-Multipoint Architecture

Maximize Your Satellite Bandwidth Savings

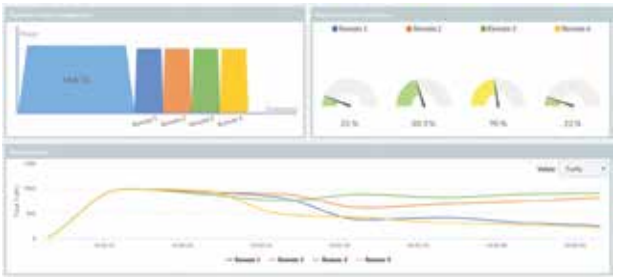
In this configuration, the HUB contains one modem per remote site. Only one modem transmits at the HUB. The others are in Receive mode. This configuration can serve a limited number of remote sites.



Network Management & Optimization Solutions

- **NovelNet NMS (Network Management System)**
  Smart and Secure Network Management Solution for Satellite Networks. A scalable platform that can be used to dynamically provision, manage and maintain services in satellite and mixed satellite-terrestrial communication networks.

- **NovelSat LIBRA - Dynamic Resource Allocation**
  Enables dynamic allocation of network resources and efficient spectrum usage in Point-to-Multipoint deployments (Hub with multiple remotes). This is valuable in cases where the data traffic load from the remotes to the hub varies and is not fixed. Dynamic capacity allocation is based instantaneous load at remote sites.



Reference Cases

Telefonica

Success Story: Cellular Backhaul

Challenge – Provide 4G services over satellite to Antarctica. Telefonica committed by law to provide 4G country wide.

Solution – NovelSat NS3000 Professional Satellite Modems running NovelSat NS4 and NovelSat DUET CeC technologies.

BSNL

Success Story: Cellular Backhaul

Challenge – BSNL was required by law to deliver cellular coverage to the whole country. They needed to select the satellite transmission solution that would deliver the best ROI.

Solution – Full end-to-end solution – NovelSat delivered 30 modems with acceleration units and redundancy switches using Ethernet IP.

Related products:

NS3000 Professional High-Data Rate Satellite Modem (up to 850Mbps)
NS300X IP Satellite Modem (up to 30Mbps)
NS-HUB4000 Multi Rx IP Demodulator Platform
NSR9100/NSR9800 N+1 Redundancy Switches