TELEDYNE
PARADISE DATACOM
A Teledyne Technologies Company

Q-NET™

Satellite Bandwidth Manager

Powering Next-Generation Satcoms

OVERVIEW

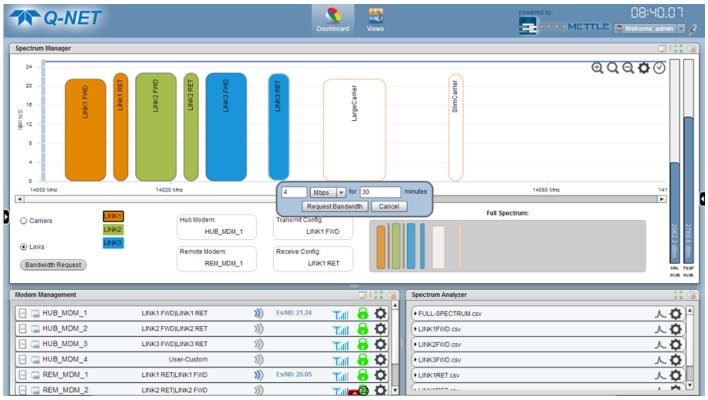
The problem is familiar. Service providers want to share bandwidth effectively *and* ensure links are highly efficient. Historically, this has required choosing between TDMA and SCPC solutions. Now, for the first time, **Q-NET™**, an open, innovative, scalable, fully-featured satellite resource management system, resolves this age-old dilemma. It does this by using new technology that combines unparalleled bandwidth-efficiency with flexible carrier management, giving the best of both worlds.

Q-NET™, when coupled with the best-in-class bandwidth efficiency of the **Q-Flex™** satellite modem, delivers the highly variable throughput services that constantly changing traffic patterns demand. The **Q-Flex™** modem embodies a new concept in satellite modem technology - a ***flexible software-defined modem based on a universal hardware platform*** that does what you want, now and in the future.

As well as bandwidth management, **Q-NET™** provides full network infrastructure management of all resources and services, including system performance monitoring and both real-time and historical data analysis.

Applications

- Point-to-point and point-to-multipoint IP
- Star, mesh and hybrid systems
- Cellular E1 and IP backhaul
- Corporate networks
- ISPs



Q-NET™, *developed by Teledyne Paradise Datacom in partnership with CodeMettle.*

FEATURES

- Dynamic management of satellite bandwidth
- Network infrastructure management
- Scalable from small to large networks
- Single central server with automated backup
- Supports all network topologies
- Sophisticated suite of web management tools for monitoring, control, analysis and reporting
- Advanced IP features including encryption, acceleration, compression, ACM and traffic shaping
- Per-traffic-stream full provisioning of quality of service
- Leading bandwidth-saving technology
- Leading network diagnostic tools including signal-under-carrier interference detection, spectrum monitors, constellation monitors, traffic analysers, etc.
- Optional redundancy system to ensure the highest levels of system availability
- Customizable support packages to give you the level of support you need

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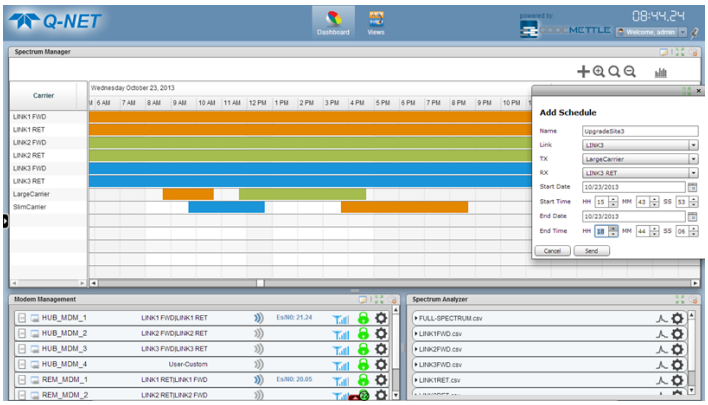
Q-NET™ Bandwidth Manager

Satellite resources are allocated from a centrally managed pool, allowing bandwidth to be shared amongst all users. Bandwidth can be allocated manually, scheduled at defined times or allocated dynamically based on current demand.



Q-NET™ *Bandwidth Scheduler showing transponder carrier assignment over time.*

For star networks, an MCPC shared-outbound carrier is transmitted from the hub to all remote sites. Contention for bandwidth is managed with minimal control overhead, resulting in the highest bandwidth efficiency in the industry.

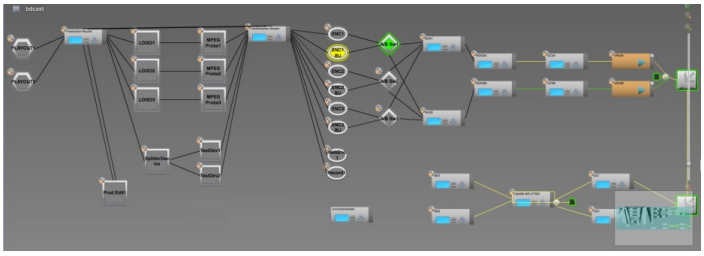
Dynamic bandwidth management is provided via flexible, automated carrier switching that supports a wide variety of bandwidth sharing policies. As well as controlling bandwidth allocation between sites, sophisticated control over individual traffic streams within the overall traffic stream is supported. All common quality of service mechanisms are supported including DSCP, MPLS, IEEE 802.1p, etc.

Q-NET™ includes the ability to manage and monitor both ground-segment and transponder power usage.

Q-NET™ Resource & Service Management

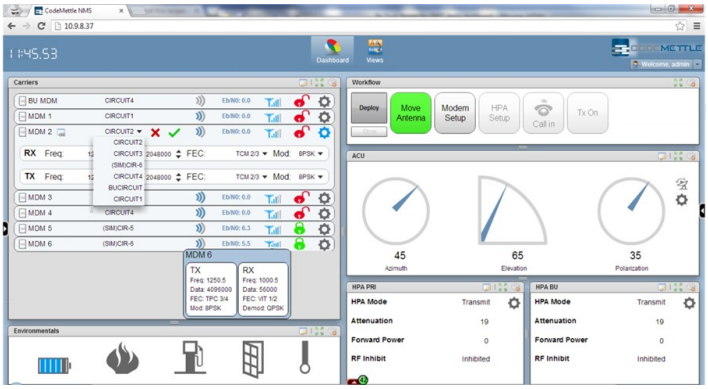
Q-NET™ supports the management of all network infrastructure resources and services.

A graphical Topology Editor, together with resource and service managers, allows administrators to quickly create and edit system resources, services, relationships and roles.



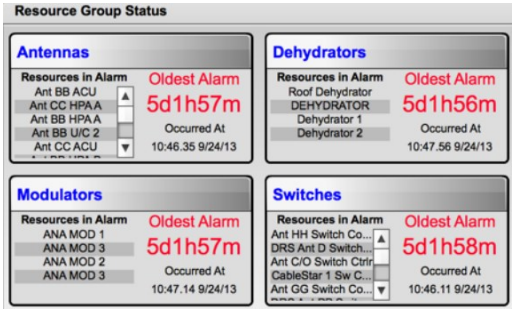
Q-NET™ *Topology Editor allows the network to be defined as a set of inter-related resources, services and roles.*

Dashboards provide system-wide information on resources, services, alarms and operator notifications. Dashboards can be customised for each type of user in order to present only the information that is required and can be used to automate workflows such as link deployments.



Q-NET™ *Dashboards allow customisable views of network information including resources, services, alarms and system notifications.*

Q-NET™ *supports workflow automation and easy access to all key system performance indicators.*



System-wide performance information within **Q-NET™** *Traffic Analyser can be viewed at a summary level or at an individual resource or service level, as required.*

Q-NET™ Traffic Analyser

The Traffic Analyser allows real time and historical analysis of network performance.

Using SNMP, performance data is automatically gathered from the terminals in the system and is stored in a central database. The data can be viewed graphically over a desired time period. Different performance data can be viewed together in order to identify trends and synchronous events.

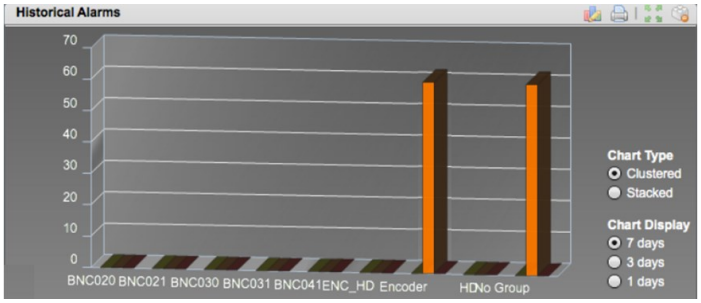
Traffic analysis allows viewing traffic by protocol, source, destination, time, transmit, receive, dropped packets and errored packets.

In addition to terminal performance data, the Traffic Analyser collates and maintains a set of performance data on the network itself. This includes precise bandwidth allocation and usage metrics allowing the overall effectiveness of the network to be readily identified. Distinctive coloring on the graphs alerts the operator to problem hot-spots such as link failures. Alarms can be easily cross-correlated with configuration changes, a common source of unexpected system problems.

The Traffic Analyser is designed to allow operators to quickly become familiar with traffic patterns in the network to support better capacity and operational planning.

Q-Net™ Report Generator

The Report Generator allows the easy generation of system performance reports.

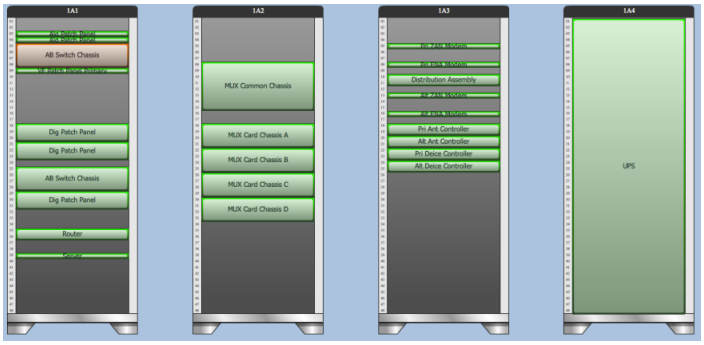


Q-NET™ *Report Generator showing historical system information.*

The Report Generator allows any view of the network metrics to be exported as a PDF, PPT, spreadsheet or plain text document. The output can be integrated directly into quality reports and other documentation.

The Report Generator supports the generation of typical quality of service metrics commonly found in Service Level Agreements (such as availability, jitter, latency, packet loss and throughput).

Standardised and customised pie, line and bar charts can be generated along with cross-tabulated matrices and filtered summary performance reports, either on demand or periodically.



Q-NET™ *Rack View allows you to view the operational status of each piece of equipment at any site, mirroring the actual physical layout of the equipment.*