



Scalable broadband satellite system for smaller networks

The HN NOC_{CX} is the ideal Network Operations Center solution for service providers and enterprises with smaller initial network requirements, yet is easily expandable as service demand justifies. Like its large network counterpart, the HN NOC_{LX}, the CX version is unsurpassed in flexibility and scalability.

A highly efficient architecture incorporates numerous advanced features, including guaranteed quality of service levels for inroute bandwidth and industry-leading acceleration and compression technologies.

The HN NOC_{CX} comes in a compact and efficient single-rack package based on the same architecture as the full-sized HN NOC_{LX}, only optimized for smaller networks. With the addition of an expansion rack, the HN NOC_{CX} can be scaled to support the entire suite of broadband services for very large networks.

The HN satellite broadband infrastructure is the most advanced and widely deployed system worldwide, with over one million terminals shipped to customers in over 100 countries. Compliant with the IPoS global standard and optimized for high-speed IP connectivity over

satellite, all HN networks support a wide and growing range of multimedia, video, data, and voice applications.

HN NOC_{CX} Architecture

The HN NOC_{CX} architecture is highly modular and scalable, and enables rapid provisioning of a range of satellite broadband services from a single, comprehensive platform. Addition of an expansion rack enables the HN NOC_{CX} to be easily expanded as network demand justifies.

Efficiency and flexibility in utilizing satellite bandwidth is at the core of its design. For example, one or more terminals can be selected for guaranteed inroute bandwidth, while the remaining terminals share fair access via a truly dynamic bandwidth assignment algorithm. The HN NOC_{CX} supports outbound data rates up to 121 Mbps and aggregate inbound data rates up to 26 Mbps.

It is this flexibility, efficiency, and high quality of service that has earned the HN broadband systems the reputation as simply the best technology available on the market.

Features

HN NOC_{CX} Features

Intelligent, protocol-sensitive bandwidth assignment for optimum performance and efficiency for each application

Dynamically assigned inroute Committed Information Rate (CIR) per single/group of terminals

Efficiently engineered IP transport that supports data, as well as real-time applications with equal ease

Unique network security with integrated outbound encryption and conditional access
Comprehensive network management system that is used to both configure and manage the NOC and remote terminals

Active redundancy for all critical components ensures high availability

Highly modular, single-rack design provides scalability and enables rapid deployment

Services Supported

Broadband Internet access

Private IP network for corporate intranets

Multicast data delivery

Multimedia applications including MPEG4 video and DVR capabilities

VoIP telephony

Serial protocols including SDLC, X.25, and async services

Note: Some services mentioned above require the expansion rack for full support.

The IPoS Advantage

The entire HN family of satellite terminals and routers is compliant with the global IPoS (IP over Satellite) standard. IPoS enables the HN broadband system to provide superior inroute performance and efficiency.

Clearly defined interface conforming to the ETSI SI-SAP standard enabling back-end systems to work easily with the HN infrastructure

Truly dynamic bandwidth assignment—remote sites with no traffic are assigned no resources

Inroute Quality of Service—Committed Information Rates (CIR) per active remote terminal or group of terminals

Operation in the saturated region leading to better cost efficiency

Finer inroute granularity allowing a lower average burst overhead, thereby increasing efficiency

System Technical Specifications

Outbound Channel

DVB-S or DVB-S2 (optional) compliant

Frequency:

C-, Extended C-, Ku-, Ka-band

Modulation:

QPSK or 8PSK (DVB-S2)

Symbol Rates:

1, 1.25, 2.5, 5-45 Msps (in steps of 1Msps)

DVB-S Encoding:

Convolutional with concatenated Reed Solomon Viterbi $7/8$, $5/6$, $3/4$, $2/3$, or $1/2$

DVB-S2 Encoding:

LDPC with BCH outer code, ACM capable. Rates $1/2$, $2/3$, $3/4$, $5/6$, $7/8$, $8/9$, $9/10$.

Bit Error Rate:

10^{-10} or better

Inbound Channel

Transmit modulation:

OQPSK

Transmit encoding:

Rate $1/2$, $2/3$, $4/5$ TurboCode, Rate $1/2$ Convolutional

Transmit bit rates:

128 kbps - 1.6 Mbps

Size & Scalability

Base Configuration:

Single 45U rack

Supports up to 1,000 terminals

Supports up to 16 inbound channels

Expansion Rack:

Additional 45U rack

Scalable to several thousand terminals

Supports up to 16 additional inbound channels

Security

Integrated Conditional Access and DES encryption of outbound channel.

Network Management System

Hughes Vision® NMS

Remote Terminals & Appliances Supported

DW7000 Series

HN7000S Series

Voice Appliance

Serial Appliance

Hughes Acceleration Techniques

Advanced techniques including TCP spoofing, ACK reduction, and flow control, accelerate TCP traffic using Hughes proprietary Performance Enhancement Proxy (PEP)

Advanced compression algorithms including stateful compression, significantly improve compression ratios and resulting throughput

DNS caching eliminates satellite latency introduced by DNS lookup queries

For additional information, please contact us at globalsales@hns.com.



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