

HX System TGW100 Transportable Gateway

HUGHES[®]

Scalable broadband satellite system for smaller, rapidly deployable networks



From Hughes, the world leader in satellite broadband networking, the HX TGW100 is designed and optimized for smaller, rapidly deployable networks where provisioning high-quality, high-bandwidth links is critical. Fully compatible with the advanced HX System family, the HX TGW100 employs flexible and efficient satellite broadband technology to support a wide range of commercial and government applications.

The HX TGW100 is suited for applications where network transportability is critical—including homeland security, continuity of operations, tactical military, and remote news gathering. Standing just 24" in height, the HX TGW100 is a size- and cost-efficient solution to support the rapid deployment of smaller satellite networks in difficult operating conditions.

Based on the same architecture as the larger, fully-redundant HX System gateway, the HX TGW100 provides unsurpassed flexibility and scalability in a small, powerful package. It comes in a compact eight rack unit (RU) transit case optimized for rapid network deployment. With the addition of an expansion pod, the HX TGW100 can easily be scaled to support the entire suite of HX System services for larger networks. Personnel trained to operate the HX TGW100 are also able to operate larger-scaled HX regional hubs because of the common product architecture and Network Management System (NMS).

HX TGW100 Architecture

The HX TGW100 architecture is highly modular and scalable, and enables rapid deployment and provisioning of HX System services from a single comprehensive platform. Fully compliant with DVB-S2/IPoS, the world's leading satellite transmission standard, including Adaptive Coding and Modulation (ACM), bandwidth efficiency and flexibility are 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 HX TGW100 supports outbound data rates of up to 121 Mbps and inbound data rates of up to 3.2 Mbps.

HX TGW100 Features

- Supports star and star/mesh configurations
- AES encryption option for both outroute and inroute channels
- Supports seamless, geographically diverse redundancy option
- Intelligent, protocol-sensitive bandwidth assignment for optimum performance and efficiency for each application
- Wide range of Quality of Service (QoS) options including dedicated bandwidth assignments
- Efficiently engineered IP transport that supports data and real time voice (VoIP) applications
- Comprehensive NMS is used to configure and manage the gateway and remote terminals
- Over-the-air features downline load capabilities
- Optimized for SCPC replacement
- Supports satellite on-the-move (mobile) terminals

HUGHES, the world leader in satellite networking, has introduced the HX System, designed and optimized for small networks where the provision of high-quality and high-bandwidth links is the most important criterion. Building upon the heritage and capabilities of the more than 700,000 broadband satellite terminals shipped by Hughes, the HX System incorporates many of the advanced features pioneered by Hughes including integrated TCP acceleration and advanced IP networking features.

System Technical Specifications

Services Supported

- Broadband WAN connectivity to corporate and government intranets
- Secure, private IP networking
- High-speed video streaming
- Multicast data delivery
- Multimedia applications including MPEG-4 video and DVR capabilities
- VoIP telephony
- Serial protocols including Async, SDLC, X.25
- On-the-move (mobile terminal) operation

Note: Some services mentioned above require an expansion pod for full support.

The DVB-S2/IPoS with ACM Advantages

The HX TGW100 is fully compliant with the global IPoS standard, the world's first standard to be approved by the TIA, ETSI, and ITU standards organizations, and which incorporates the DVB-S2 standard in its latest version (IPoS v2). The Hughes implementation includes ACM, which yields up to 50 percent more efficient bandwidth utilization and higher throughputs than the DVB-S specification.

DVB-S2/IPoS with ACM advantages include:

- Clearly defined interface conforms to the ETSI SI-SAP standard enabling back-end systems to work easily with the HX infrastructure
- Optimum transmission efficiency through a combination of coding and modulation of the outbound channel that can be configured for each remote terminal
- Continually optimized link performance (even during high rain conditions) by dynamic adjustment of error-correcting codes and modulation based on signal quality feedback from remote terminals
- Truly dynamic bandwidth assignment—remote sites with no traffic are assigned no resources
- Multiple inroute quality of service options—Committed Information Rates (CIRs) per active remote terminal or group of terminals

Outbound Channel

DVB-S/DVB-S2 compliant
Adaptive Coding and Modulation (ACM)
Frequency: C-, Extended C-, Ku-, Ka-band
Modulation: QPSK/8PSK
Symbol Rates: 1 to 45 Msps (in steps of 1 Msps)
Encoding DVB-S: Convolutional with concatenated Reed Solomon; Viterbi 7/8, 5/6, 3/4, 2/3, or 1/2
Encoding DVB-S2: BCH with LDPC 3/5, 2/3, 3/4, 5/6, 8/9, or 9/10 (8PSK)
1/2, 3/5, 2/3, 4/5, 5/6, 8/9, 9/10 (QPSK)
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 to 3.6 Mbps

Size and Scalability (Base Configuration)

Single 8 RU transit case
Supports up to 100 terminals
Supports up to 4 inbound channels

Security

Access and DES encryption of outbound channel
Optional AES bidirection encryption

Network Management Systems

Hughes Vision[®] NMS

Remote Terminals and Appliances Supported

HX 50
HX 100
HX 150
Mesh Appliance
Voice Appliance
Serial Appliance

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

www.hughes.com

HUGHES is a registered trademark of Hughes Network Systems, LLC. All other trademarks are the property of their respective owners. © 2007 Hughes Network Systems, LLC. All rights reserved. All information is subject to change.

VSAT 345 NOV 07
H37135

HUGHES[®]

11717 Exploration Lane Germantown, MD 20876 USA