

SURFboard® Broadband Network Hub

[Model SB7100]

Features:

- » Modular hub, rack-mountable chassis
- » Field-proven, reliable network and components
- » High-capacity network: 27 Mbps/channel
- » Operates in existing cable and MMDS systems
- » High performance TCP/IP operation
- » Standard MPEG-2 digital transport of IP packets
- » Standard interface to IP router or switch
- » Physical interfaces for 10BaseT, 100BaseTX
- » Expandable RF channel architecture
- » SNMP-manageable, MIB-II support
- » Java™-based element management
- » Command line interface
- » User authentication



The SURFboard® network from General Instrument provides high-bandwidth data connectivity to your existing broadband infrastructure. The SB7100 Broadband Network Hub is a 12-slot modular chassis that interfaces with a TCP/IP network and provides downstream information to SURFboard cable modems. Integration with standard ISP equipment, including routers, telephone modem banks, and access servers, is straightforward.

The SURFboard network uses a 64 QAM link technology to provide 27 Mbps in a single 6 MHz channel, making efficient use of channel spectrum. The SURFboard network carries IP data in standard MPEG-2 packets, making interoperability with other network components simple. To assure headend-to-computer network reliability and operation, the network is designed to provide network management and trou-

bleshooting tools for RF operation, IP diagnostics, and other functions.

A single SB7100 can be configured with up to three 6 MHz, 27 Mbps downstream channels. The number of users you can serve with a single channel will depend on the throughput you wish to provide your subscribers. The SURFboard real-time software provides high-speed downstream processing of TCP/IP packets into standard MPEG-2 format. The packets are modulated using 64 QAM for delivery over the broadband network.

For network management, the SB7100 contains a user-authenticated command line interface, an SNMP agent, and an Element Manager that interfaces with standard network management systems and provides real-time data on operating status and performance levels.

[Model SB7100]

Rack-mounted, 12-slot chassis with 10BaseT or 100BaseTX switchable, auto-sensing interfaces. System uses 64 QAM RF with forward error correction for a 27 Mbps data throughput over a 6 MHz channel. The embedded real-time software converts incoming IP packets into MPEG-2 packets for output.

CHASSIS COMPONENTS AND MODULES

12-slot Rackmount Chassis

Master Processor Module

Downstream Processor Module (1 to 3 per chassis)

64 QAM/FEC Module (1 to 3 per chassis)

ETHERNET INTERFACES

10BaseT/100BaseTX switchable, auto-sensing

SOFTWARE

Operating System: VxWorks®

Embedded Software: SURFboard application
to convert IP to MPEG-2 format

Network Management:

- » SNMP agent resident on Master Processor Module (MIB-II compliant)
- » HTTP interface for remote management via standard Web browser
- » SURFboard MIB (ANSI-compliant)

Protocols: TCP/IP
MPEG-2

RF CHARACTERISTICS

Bandwidth: 6 MHz (includes guard band)
Data Rate: 27 Mbps per QAM channel after FEC
Modulation Type: QAM (64-point constellation)
Symbol Rate: 5.057 Msymbols/sec
Output Impedance: 75 ohm (nominal)
Output IF Frequency: 44 MHz

RF, TRANSPORT SYSTEM, AND CONTROL

All digital IF-sampled architecture
Downstream Performance: 10E-9 BER at 25dB C/N
MPEG-2 Transport, DSM-CC for IP data encapsulation
Forward Error Correction: ITU J.83-B
Standard, Trellis-Coded Modulation

POWER REQUIREMENTS

Power: 340 watts
(max with full configuration)
Input Voltage: 90 to 130 VAC (47-63 cycles)
180 to 264 VAC (47-63 cycles)

ENVIRONMENTAL PARAMETERS

Storage Temperature: 0° to 60° C
Operating Temperature: 0° to 40° C
Operating Humidity: 10% to 85% RH non-condensing
Operating Altitude: -1000 feet to +5000 feet (above 5000, decreased max. air temperature)
Noise Level: <= 62dB OSPL @ 3 feet

PHYSICAL DIMENSIONS

Rackmount chassis: 19"L x 17"W x 12.25"H



6450 Sequence Drive
San Diego, California 92121
619.455.1500
<http://www.gi.com>