Features:
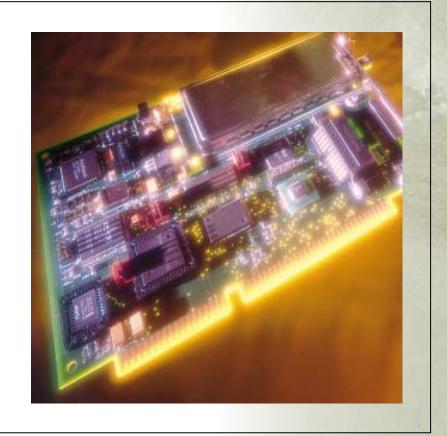
» *Operates on HFC and Coaxial Cable TV Networks*

» *Easy Installation*

» *Low-Cost System*

» *Delivers Internet and Online Services*

» *High Performance — 27 Mbps on a 6 Mhz Channel*

» *MPEG-2 Digital Transport*

» *Next Generation 64 QAM RF Receiver*

» *Flexible Telephone Backchannel Link*

» *Network Transparent — Cable, Satellite, Wireless*

» *Standard TCP/IP Software Operation*

» *PC ISA Compatible Interface*

SURFboard

General Instrument is poised to bring the Internet and multimedia services to your customers today with a pragmatic technology solution that works with your existing broadband infrastructure.

The SB1000 network interface card uses state-of-the-art 64 QAM RF modulation to deliver 27 Mbps on a 6 MHz channel to the personal computer, incorporating a phone modem link to initiate sessions and communicate requests back to the network servers.

As a plug-and-play compatible device, user installation becomes a one-step process, combining easy-to-use software with auto-configuring hardware. Software drivers support Windows 95, Windows 3.1 and Windows for Workgroups.

To ensure headend-to-PC network reliability and operation, the network provides comprehensive remote and local network management and troubleshooting tools for RF operation, link reliability, IP diagnostics and other functions. The SURFboard system will support DES-based encryption, providing privacy between network users. GI's PC Passcard security element is field upgradeable.

GI **General Instrument**

Half-size ISA-bus network adapter card with F-type connector to plug into cable TV network; uses 64 QAM RF with forward error correction for a 27 Mbps data throughput over a 6 MHz channel. Return path by telephone modem over public telephone network.

PC Communication Software

Operating Systems: (not supplied)	Windows® 95 Windows® 3.1 Windows® for Workgroups
Drivers:	NDIS, Packet Driver
Interface:	WINsock
Protocols:	TCP/IP PPP
TCP/IP Stack:	Sunsoft PCNFS
Phone Dialer:	GI PPP Connection Dialer (part of packet driver)
WEB Browser: (not supplied)	HTML web browser

Adapter Card Interface

Plug-and-play installation

Bus Interface:	PC ISA 16-bit bus
Input Connector:	F Type coaxial cable connector

Security Module

Supports DES-based encryption. Field programmable software encryption and decryption; built-in plug-on adapter card for optional hardware security module.

RF Receiver (Downstream)

Bandwidth:	6 MHz (includes guard band)
Data Rate:	26.9707 Mbps
Modulation Type:	QAM (64 point constellation)
Symbol Rate:	5.057 Msymbols/sec
Operating Range:	+ 16 to -9 dBmv
Nominal Input Level:	+ 0 dBmv
Input Impedance:	75 ohm (nominal)
Capture Range:	+/- 100 KHz
Equalizer:	16-tap adaptive decision feedback
Frequency Control:	54-806 MHz; 62.5 kHz min. step size

RF, Transport System, and Control

» All digital IF sampled architecture

» Blind Acquisition in < 100 msec

» Performance within 0.5 dB of theory at 1E-5 BER

» Downstream Performance: 10E-9 BER at 25dB C/N

» MPEG-2 Transport

» Forward Error Correction Modulation: ITU J.83-B Standard, Trellis Coded Modulation for Cable Transmission (General Instrument DigiCipher® II-compatible)

» Filtering of PIDs for each user (user can accept one to four PIDs)

Power Requirements

Power:	8 watts (supplied by ISA bus in PC)
Input power:	+5 VDC @ 500 mA +12 VDC @ 300 mA -12 VDC @ 50 mA
Max Ripple:	100mV peak-to-peak

Environmental Parameters

Storage temperature:	-20 to +80 degrees C
Operating temperature:	0 to +40 degrees C
Operating humidity:	50% RH max

Physical Dimensions

SURFboard adapter card	4.5" W x 7" L
Security module	0.38" H x 1.75" W x 3" L

GI General Instrument