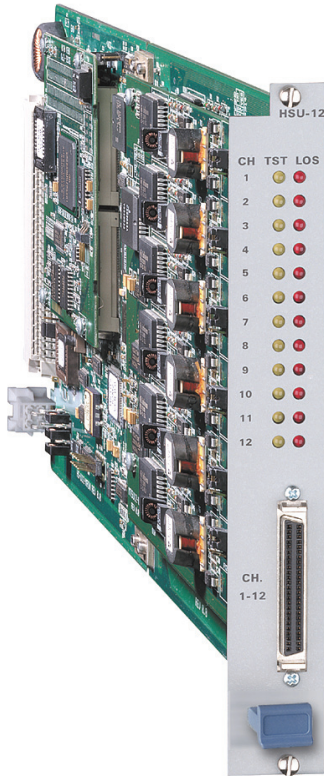


HS-U, HS-U-6, HS-U-12

4/6/12-Channel ISDN "U" Interface Data Modules



- 4, 6 or 12 sync/async data channels
- Programmable channel data rates from 1.2 to 128 kbps (sync) or 115.2 kbps (async)
- Integrated LT per channel, providing 2-wire, 2B1Q, "U" interface with range of up to 5.5 km (3.4 miles)
- LT or NT ("I" mode) operation per channel
- ISDN BRI repeater over ISDN facilities ("I" mode)

The HS-U, HS-U-6 and HS-U-12 modules feature 4, 6 or 12 data channels, with each channel operating at rates of up to 128 kbps. Each channel incorporates an integrated "U" interface Line Termination (LT), enabling data transmission to a remote Network Termination (NT) over a 2-wire unconditioned line.

Note: Unless otherwise specified, the term HSU denotes all three modules.

HSU modules can be configured to operate in either of two modes:

- "I" mode for extension of ISDN lines over non-ISDN infrastructure. The module can be configured to operate as NT or LT;
- "1" mode, serving as an LT. Utilizes built-in modems to work with Vibicom's 2B1Q modems or other units with "U" interface.

For transmission reliability, an optional modular second link provides automatic backup upon link failure. An optional second power supply provides power redundancy for failsafe operation.

Each of the four signals of the tributary interface is transmitted independently, so that each channel can be set to a different clock source.

Integrated ISDN "U" interface enables data transmission to a remote network over a 2-wire unconditional line

HS-U, HS-U-6, HS-U-12

4/6/12-Channel ISDN "U" Interface Data Modules

When operating in LT mode, the remote NT can be provided by 2B1Q short range modems. The HSU channel supplies the clock to the remote NT, which should operate in slave (loopback timing) mode.

When operating in NT mode (for "I" mode operation only), the HSU channel timing is taken from the remote LT equipment. This channel can become the external clock source for the VB-2030/VB-8030 system.

"I" mode channel configuration enables the VB-2030/VB-8030 system to transfer ISDN Basic Rate (2B+D) lines transparently over a network, to third party IDSL modems.

When configured for "1" mode, the channels serve as an LT for leased lines working with Vibicom's 2B1Q modems. In this mode, the data channels also provide configuration download capability compatible with the 2B1Q modem. This enables configuration changes on the local module's channel (such as data rate) to be automatically updated on the 2B1Q connected to that channel.

The HS-U-6 and HS-U-12 modules have 6, respectively 12 internal ports for D channel compression. These ports are used to "compress" the signaling information carried by D channels, before being sent to a main link. The routing of the D channels to compression ports is user-configurable: any D channel can be routed to any compression port on the same module. D channel compression can save up to 128 kbps per module.

Diagnostics include local and remote loopbacks on the individual module channels. The HSU modules can also remotely initiate loopbacks and BERTs on the 2B1Q. In addition, the HSU modules can be configured to run LLB and RLB initiated by commands received from the 2B1Q modem.

The modules' phantom feeding powers remote equipment. HS-U-6/12 can provide various phantom feeding voltages, ranging up to 120 VDC. The DC power source for the HSU modules can be a Ringer power supply module or unit. See separate *Ringers data sheet* for more information.

Note: For -48 VDC phantom feeding only, a -48 VDC powered VB-2030 chassis will not require a Ringer.

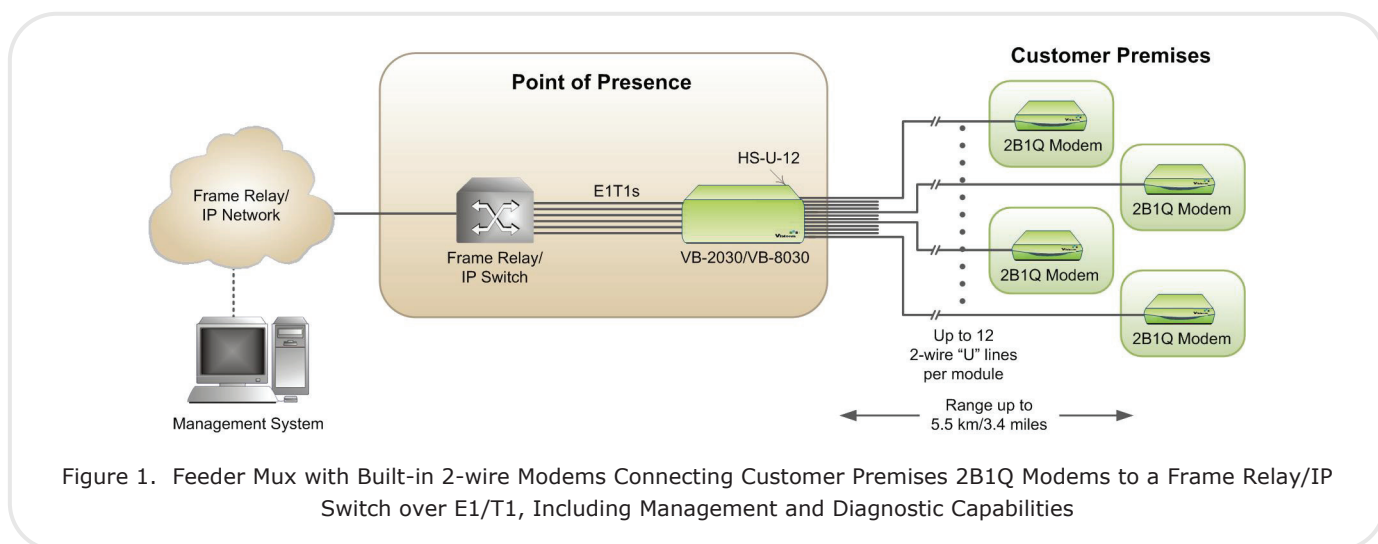


Figure 1. Feeder Mux with Built-in 2-wire Modems Connecting Customer Premises 2B1Q Modems to a Frame Relay/IP Switch over E1/T1, Including Management and Diagnostic Capabilities

HS-U, HS-U-6, HS-U-12

4/6/12-Channel ISDN "U" Interface Data Modules

Specifications

"U" INTERFACE

Number of Data Channels

HS-U: 4
HS-U-6: 6
HS-U-12: 12

Signal Format

Full duplex, 2B1Q per ANSI T1.601,
ETSI DTR/TM3002

Framing

2B+D

Line Type

Unloaded twisted pair cable

Impedance

135Ω

Range

5.5 km (3.4 miles) over 26 AWG
(0.4 mm)

Data Rates (per channel)

Sync: 1.2, 2.4, 4.8, 9.6, 16, 19.2, 32,
38.4, 48, 64 and 128 kbps

Async: 1.2, 2.4, 4.8, 9.6, 19.2, 38.4,
57.6 and 115.2 kbps

Connectors

HS-U: 8-pin RJ-45 (one per channel)
HS-U-6, HS-U-12: Single 50-pin
SCSI connector for all channels

TRUNK INTERFACE

Bit Mapping

According to data rate:

1.2 to 16 kbps: 2 bits
19.2 to 32 kbps: 4 bits
38.4 to 64 kbps: 8 bits
115.2 or 128 kbps: 16 bits (over 2 TSs)

B-Channel Timeslot Allocation

4x (1.2 to 16 kbps) in one TS
2x (19.2 to 32 kbps) in one TS
1x (38.4 to 64 kbps) in one TS
1x (115.2 or 128 kbps) in two TSs

D-Channel Timeslot Allocation

4 x D-channels (16 kbps) in one TS, or
each D-channel in a different TS

GENERAL

Timing

NT mode: HSU is linked to the
incoming clock from the remote LT
(e.g. ISDN switch)

LT mode: Transmit timing of the
HSU interface is locked to the
system nodal timing clock and passed
to the remote NT unit. Receive timing
is recovered from the remote NT unit

Indicators per Channel

LOS (red) - loss of sync
TST (yellow) - in test mode

Diagnostics (per channel)

Local digital loopback
Remote digital loopback (not in
NT mode)
Remote loopback on external unit
Externally initiated loc loopback
LLB on external unit
BERT on external unit
LLB + BERT on external unit
Local loopback + BERT on
external unit

Configuration

Programmable via the
VB-2030/VB-8030 management
system

Environment

Operating temperature: 0°C to
45°C (32°F to 113°F)
Storage temperature: -20°C to
+70°C (-4°F to +160°F)
Humidity: up to 95%,
non-condensing

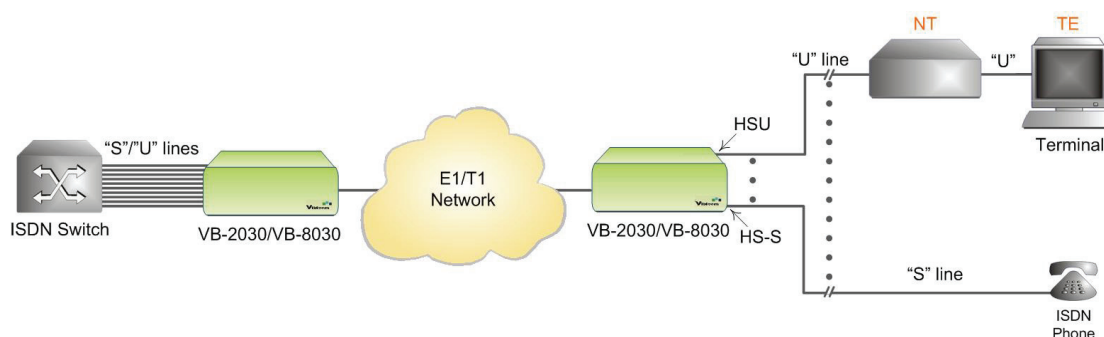


Figure 2. ISDN Extension over non-ISDN Infrastructure ("I" Mode)

HS-U, HS-U-6, HS-U-12

4/6/12-Channel ISDN "U" Interface Data Modules

Ordering

VB-2030M-HS-U

4-channel ISDN "U" interface data module for VB-2030

VB-2030M-HS-U-6

6-channel ISDN "U" interface data module for VB-2030

VB-2030M-HS-U-12

12-channel ISDN "U" interface data module for VB-2030

OPTIONAL ACCESSORIES

CBL-HSU6

Octopus cable for splitting the 50-pin SCSI connector of HS-U-6 into 6 x RJ-45 connectors, for direct connection to user equipment. Cable length is 2m (6 ft).

CBL-HSU12

Octopus cable for splitting the 50-pin SCSI connector of HS-U-12 into 12 x RJ-45 connectors, for direct connection to user equipment. Cable length is 2m (6 ft).

CBL-HSU12/OPEN/12M

Octopus cable for splitting the 50-pin SCSI connector of HS-U-12, open-end, 12m long



www.vibicom.com

900 Corporate Drive
Mahwah, NJ 07430 U.S.A.
Tel: 503-885-7952
Toll Free: 866-401-8731
Email: market@vibicom.com