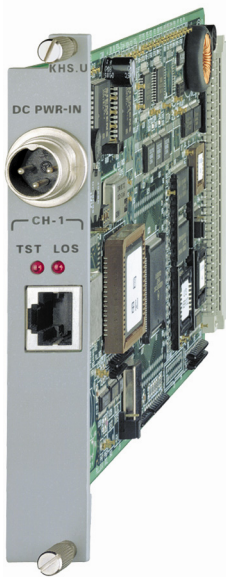


Kilomux-2100/2104

# KHS.U

ISDN "U" Interface Data Module



- ISDN BRI line extension over non-ISDN facilities
- Programmable data rates per B Channel: 16, 32 or 64 kbps
- Phantom power feeding to the remote end
- Transparent ISDN (2B+D) extension
- Fits into any Kilomux enclosure I/O slot

The KHS.U data module features a single data channel, operating at data rates of up to 128 kbps. The data channel includes an integrated "U" interface, enabling data transmission over a 2-wire unconditioned line for distances of up to 5.5 km (3.4 miles).

The "U" interface carries two B channels and one D channel (16 kbps). The user can individually configure each B channel for payload data rates of 16, 32 and 64 kbps. Each channel can be independently connected to the Kilomux main link.

2B1Q line coding (incorporating an adaptive echo cancellation technique) is used to transmit full-duplex data over a 2-wire twisted pair line. The 2B1Q line coding provides the specified operating range over facilities designed with up to 42 dB of cable loss at 40 kHz and 1300Ω resistance.

KHS.U can be configured to work in either LT (Line Termination) or NT (Network Termination) mode. LT mode is used when KHS.U operates opposite user's terminal equipment, while NT mode is for operating opposite ISDN switches.

Single data channel  
with ISDN "U"  
interface



data communications

The Access Company

# KHS.U

## ISDN "U" Interface Data Module

In LT mode, the remote NT can be provided by RAD's ASM-31 or ASMi-31 baseband modems. The KHS.U channel supplies the clock to the remote NT which is operating in slave (loopback timing) mode.

KHS.U enables a Kilomux multiplexer to transfer ISDN Basic Rate (2B+D) lines transparently over a network.

Data rates and all other parameters of the KHS.U are software-selectable through the Kilomux management system.

KHS.U diagnostics include local and remote loopbacks.

KHS.U's phantom feeding provides power for the remote equipment to which it is connected. The power source for the phantom feeding is provided to KHS.U by an external Ringer-2000 unit or KM-Ringer module (see separate data sheet).



Figure 1. KHS.U Application Extending ISDN "U" Interface to a Remote Location

## Specifications

### U INTERFACE

**Number of Data Channels**

One

**Signal Format**

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

**Framing**

2B+D

**Line Type**

One unloaded twisted pair cable

**Impedance**

135Ω

**Loop Loss**

42 dB max @ 40 kHz

**Range**

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

**Data Rates per B Channel**

16, 32 and 64 kbps

**Data Rates per D Channel**

16 kbps

**Connector**

8-pin RJ-45

### TRUNK INTERFACE

**Bit Mapping**

B Channel

(according to data rate):

16 kbps: 2 bits

32 kbps: 4 bits

64 kbps: 8 bits

D Channel: 2 bits

### GENERAL

**Timing**

NT mode:

KHS.U is locked to the  
incoming clock from the LT

LT mode:

Transmit timing of the "U"  
interface is locked to the nodal  
timing clock and passed to the remote  
NT unit (ASMi-31)

**Diagnostics**

Local loopback

Remote loopback

**Indicators**

LOS (loss of sync)

TST (test mode)

**Management**

Programmable via Kilomux management  
system

**Power Consumption**

0.4A @+5V

**Phantom Feed Power Supply**

Up to 60 VDC







## KHS.U

## ISDN "U" Interface Data Module

## Ordering

KM-2000M-KHS.U/#/ε

Table 1. Kilomux-2100/2104 Data Modules

	 KHS.1	 KHS.2	 KHS.U	 KHS.703	 KLS.2	 KLS.1/N
No. of Channels	2	2	1	2	4	2
Interface	V.35, RS-530, V.36/RS-449 or X.21	V.35, RS-530, V.36/RS-449 or X.21, V.24/RS-232	ISDN "U"	Codirectional, per G.703	V.24/RS-232	V.24/RS-232, Sync or Async
Connector	Two 25-pin D-type, female	Two 25-pin D-type, female	RJ-45	RJ-45	Four RJ-45 connectors	Two 25-pin D-type, female
Data Rates	32, 48, 56, 64, 128, 192, 256 or 384 kbps*	2.4 kbps to 614.4 kbps*	Per B Channel 16, 32 and 64 kbps Per D Channel 16 kbps	64 kbps	300 bps to 19.2 kbps async. (statistically multiplexed)	Group 1: 300 bps to 38.4 kbps, sync and async, Group 2: 7.2, 14.4, 28.8, 57.6 kbps, sync and async, Group 3: 8, 16, 24, 32, 48, 56, 64 kbps, sync

**Note:** The supported channel data rates specified in Table 1 are dependent on the main link rates employed. To view limitations please refer to Specifications in the relevant module data sheets.

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