

RAD Kilomux 2100-2104



Features

- Modular integrating access multiplexer for data, voice, fax and LAN
- Advanced voice compression techniques maximize utilization of main link bandwidth and provide high quality low bit rate voice from 4.8 to 16 kbps per channel
- Kilomux main link modules support Fractional E1/T1, switched or leased ISDN, and DDS links. Main links data rates range from 9.6 to 1536 kbps
- TDMoIP main link enables operation over IP/Ethernet based networks
- Operation over radio and satellite links is enabled by main link buffers and echo cancellers implemented in the voice channels
- Analog and digital voice interfaces, with fax and data modem transmission support
- Two models are available:
 - Kilomux-2100 (3U high) supports up to 12 I/O modules
 - Kilomux-2104 (1U high) supports up to 4 I/O modules
- Kilomux-2100 supports optional redundant power supply
- Kilomux-2100 supports dual main links for load sharing, Drop & Insert or backup
- Wide range of I/O modules support:
 - Async data
 - Sync data
 - ADPCM/PCM voice
 - MPMLQ and PCELP compressed voice with fax/data modem relay
 - LAN internetworking
- Management via ASCII terminal, Telnet or RADview SNMP network management system

Description

- The compact, modular Kilomux time-division multiplexer supports data, voice, fax and LAN traffic over one or two main links, at rates from 9.6 to 1536 kbps each.
- Kilomux can be connected to services including leased line and DDS, as well as ISDN and Fractional E1/T1. Main link buffers and echo cancellation on the voice channels ensure full operation over radio and satellite.
- Kilomux supports both analog and digital voice interfaces for direct connection to PBX tie lines and extensions, ISDN PBX extension lines, telephone handsets and E1/T1 trunks.
- Kilomux uses time-division multiplexing (TDM) techniques to ensure minimal delay and protocol transparency, so that applications such as SNA and voice are assured the bandwidth and short delay they require.
- Kilomux traffic can be transported over IP or Ethernet-based networks, using its TDMoIP main link module.
- Kilomux enables transmission of high quality voice (either compressed or uncompressed). It supports the following:
 - PCM (64 kbps)
 - ADPCM voice compression techniques for voice, fax and data transmission (32 kbps)
 - MPMLQ voice compression algorithm enable voice, fax and data transmission at rates ranging from 16 kbps down to 4.8 kbps
 - Supported standard fax and data modem relay rates are between 14.4 to 2.4 kbps.
- Kilomux can be used in point to point applications between two sites, or in "V" or chain applications for multiple sites.
- Kilomux supports two independent configuration databases (day/night) and can switch between them in case of any network event. This feature enables alternate routing in case of failure.
- Various timing modes are available, enabling the system to take the received clock from a main link, a sub channel or an internal oscillator clock.

KILOMUX PRODUCT LINE

- The Kilomux product line features two chassis models for different network needs. The modular Kilomux design makes it easy to upgrade and customize by adding I/O and System modules.

Kilomux-2100

- Kilomux-2100 is a modular, 3U high device that supports system modules, up to 12 I/O modules, and optional redundancy for main link and power supply.

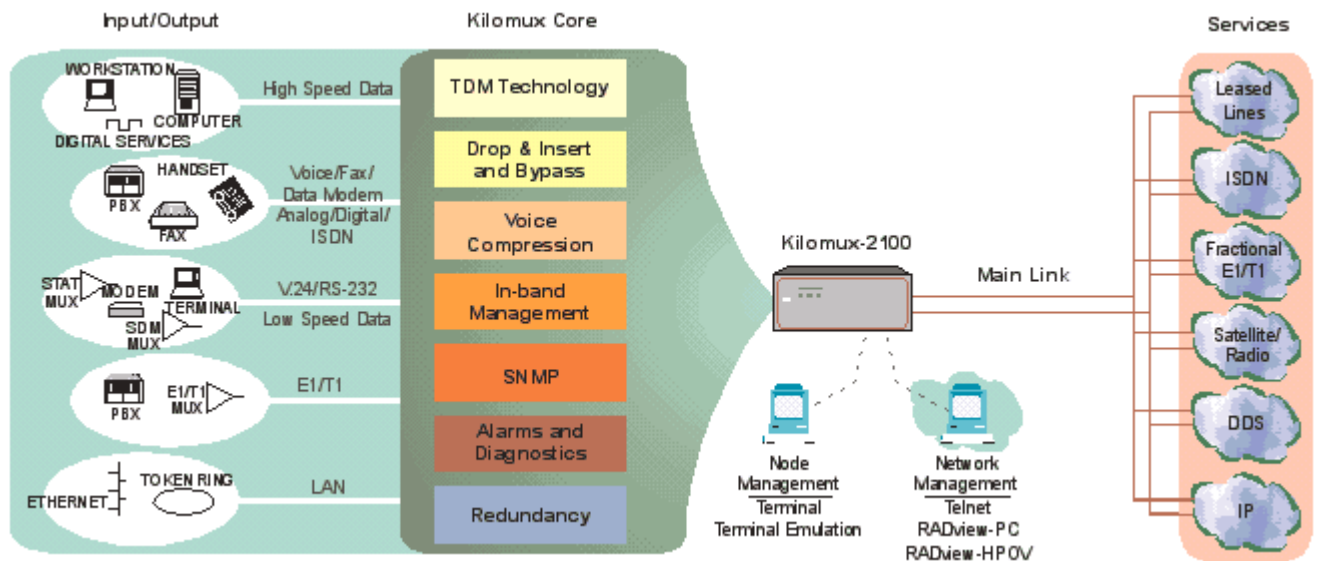
Kilomux-2100 features:

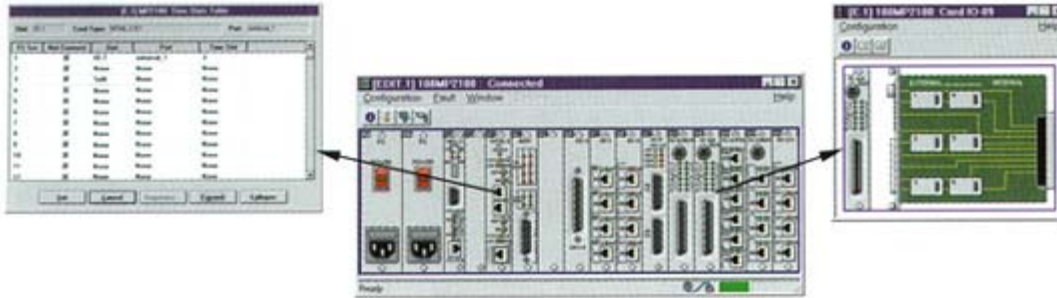
- A powerful CPU, able to meet future requirements
- Software download capability to facilitate system upgrades
- Full SNMP agent, providing improved RADview support (faster operation, capable of multiple unit management from a single station)
- Ethernet management port
- Telnet support.

Kilomux-2104

- With its compact size of only 1U, the Kilomux-2104 was designed for applications at smaller sites. Kilomux-2104 supports up to 4 I/O modules, and is limited to a single main link and a single power supply.

Note: Kilomux-2100/2104 are functionally compatible with the Kilomux-2000/2004, and support all Kilomux 2000 I/O, Main Link and System Modules.





RADview Network Management System

MAIN LINK MODULES

- Several different types of Kilomux main link (KML) modules are available for compatibility with various digital data service interfaces and public services.
- Interfaces supported:
V.35, V.24/RS-232,
V.36/RS 422/RS-530, X.21, G.703, standard CSU/DSU for DDS services,
Fractional E1/T1, ISDN Basic Access.
- TDM over IP main links support interfaces for 10/100BaseTx and fiber optic interfaces for 100BaseF Ethernet networks.
- The Kilomux-2100 supports up to two main link modules. The second main link module can be used as a redundant link for backup, or as a load-sharing link to provide double capacity.

SYSTEM MODULES

KCL.2

- Kilomux's Common Logic control module monitors system operation, sets configuration and ensures communication with the management station. Common Logic modules can also be ordered separately for special purposes.

KDI

- KDI is a system module that provides Drop & Insert functionality for dual-link Kilomux-2100, by bypassing any channel or combination of channels between link A and link B (see the Applications section on the following page). Refer to the separate KDI data sheet for more details.

I/O MODULES

- Up to 12 I/O modules can be accommodated by the Kilomux-2100 chassis. Up to 4 modules can be accommodated by the smaller Kilomux-2104.

High Speed KHS Modules

- Kilomux high-speed sync data modules operate at selectable data rates from 2.4 to 614.4 kbps per channel. Interfaces supported include V.35, V.36/RS 449, X.21, RS 530, as well as BRI ISDN, G.703.

Low Speed KLS Modules

- Low speed sync/async modules and statistical multiplexing data modules operate at selectable data rates from 0.3 to 64 kbps per channel.

Voice KVC and Voice/Fax/ Data Modem KVF Modules

- Support is provided for standard PCM and 32 kbps ADPCM voice, or high quality compressed voice. Advanced speech coding techniques include G.723.1 MPMLQ, which offers very high quality voice at bit rates as low as 6.4 kbps, and PCELP at 4.8 kbps.
- Voice/fax/data modem modules support automatic fax/data modem identification; enabling Group III fax and data modem transmission at rates up to 14.4 kbps.
- Both analog and digital voice interfaces are supported for connection to PBX tie lines, extensions or directly to telephones, as well as to E1/T1 trunk connections and ISDN PBXs.

LAN Modules

- Ethernet and Token Ring Internetworking modules connect between remote Ethernet and Token Ring LANs.

DIAGNOSTICS

- Kilomux incorporates numerous test features for easy maintenance and fast fault detection. On power-up and during normal operation, automatic self-test and link-tests are performed. Any problems are reported to the system management.
- Local and remote loops can be performed for every main link and I/O channel via user commands. Additionally, a built-in BERT can test any I/O data channel.

MANAGEMENT

- Kilomux system operation and management - including configuration, diagnostics, and monitoring of the local and remote units - can be performed via ASCII terminal, Telnet or RADview.

ASCII Terminal

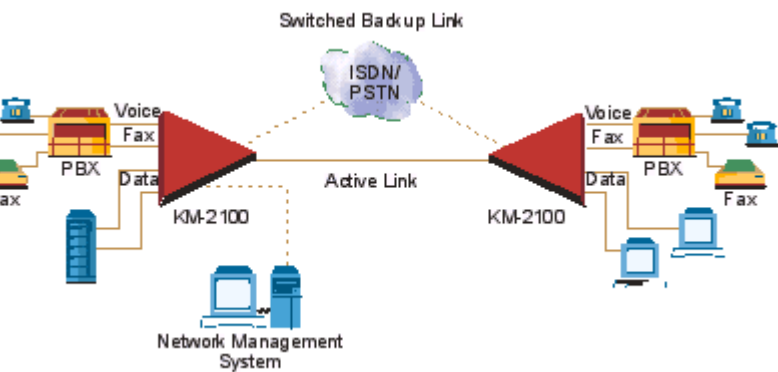
- An ASCII terminal can be connected locally, through a dial up modem or via Telnet.

RADview Management System

- RADview, RAD's Network Management System running over PC or UNIX (HP OpenView), enables complete monitoring and control of multiple Kilomux-2100/2104 chassis from a central station via a user friendly GUI.
- The system provides direct on-line supervision, configuration, diagnostics and alarm reception. Storing all configuration information in non volatile memory ensures data integrity in the event of power failure.

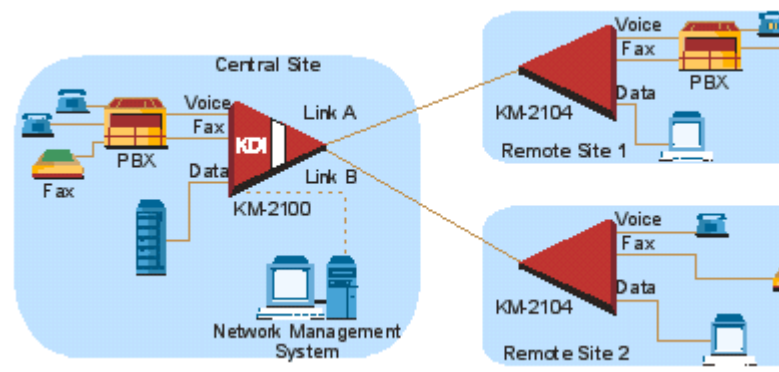
Applications

Point-to-Point Network



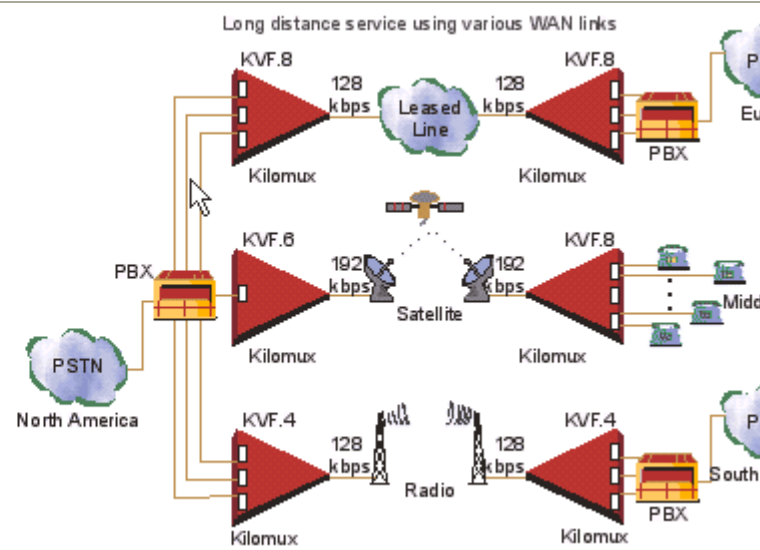
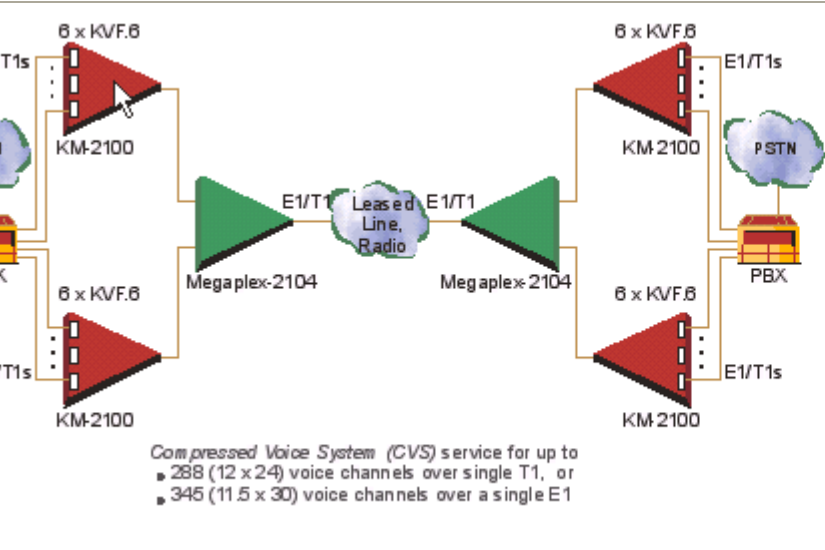
is suitable for integrating all traffic requirements between two sites over a variety of links. A dual link option supports both load sharing between the two as well as automatic backup with priority bumping.

"V", Ring and Chain Topology with Drop & Insert, Bypass

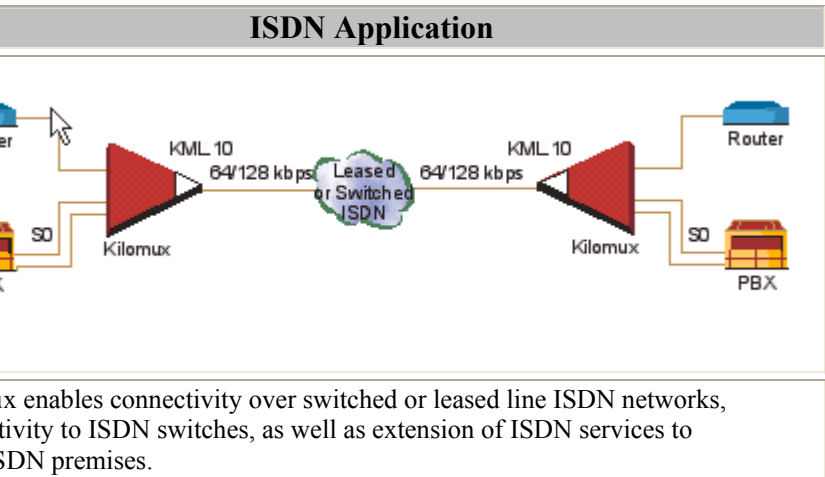


For connectivity between three or more sites, Kilomux supports Drop & Insert and bypass used in "V", Ring or Chain topologies.

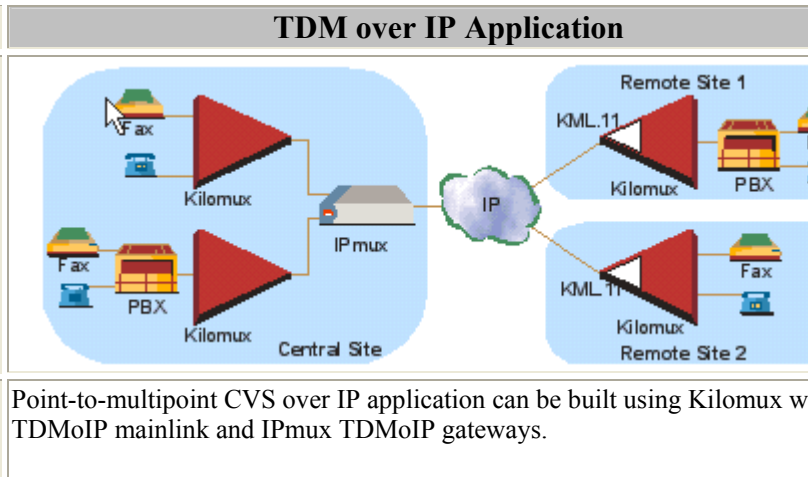
Public Network Access



Excellent voice quality at very low bit rates (up to 12:1 compression) offered by Kilomux, enables service providers to meet customer quality requirements with minimal bandwidth. These properties, together with excellent support for wireless links, make Kilomux ideal for applications providing telephony services to remote locations.



Kilomux enables connectivity over switched or leased line ISDN networks, providing access to ISDN switches, as well as extension of ISDN services to remote ISDN premises.



Point-to-multipoint CVS over IP application can be built using Kilomux with TDMoIP mainlink and IPmux TDMoIP gateways.

Ordering

Basic units include: chassis, single power supply, single main link and common logic. (All I/O modules, as well as additional system, main link and power supply modules, are ordered separately.)

KM-2100/~/*/ ?
12-I/O slot Modular Multiplexer

KM-2104/~/*/?

4-I/O slot Modular Multiplexer

ORDERING OPTIONS

- ~ Specify power supply:
 - 24** for 24 VDC (KM-2100 only)
 - 48** for -48 VDC low power
 - 48HP** for -48 VDC high power
 - AC** for 100-240 VAC low power
 - HP** for 100-240 VAC high power
- * Specify management interface
(in addition to supervisory port):
 - DP** for V.24/RS-232 dial port
 - EU** for Ethernet 10BaseT (UTP)
 - EB** for Ethernet 10Base2 (BNC)
- ? Specify main link interface:
 - V35** for V.35
 - V24** for V.24/RS-232
 - V36** for V.36/RS-422/RS-530
 - X21** for X.21
 - 703** for G.703, co-directional
 - DDS** for standard DDS
 - T1** for fractional T1, G.703/G.704
 - E1** for fractional E1, G.703/G.704
 - S** for ISDN "S" interface
 - U** for ISDN "U" interface
 - IP** for TDMoIP main link with Ethernet 10/100BaseTX
UTP interface
 - IP-MMLC** for TDMoIP main link for Ethernet
100BaseF with multimode fiber, and an LC-type
connector
 - &%** for fiber optic (for KM-2100 only)
- &** Specify fiber optic interface
connector type:
 - ST** for ST type connector
 - FC** for FC/PC type connector
- %** Specify optical interface
wavelength and transmitter type
 - 85** for 850 nm, multimode, LED
 - 13** for 1300 nm, single mode, LED
 - 13L** for 1300 nm, single mode,
laser diode
 - 15L** for 1550 nm, single mode,
laser diode

SYSTEM MODULES

(for KM-2100 chassis only)

KM-2100M-KCL.2/*

Common Logic module

KM-2000M-KPS.#

Power Supply module

Specify input voltage:

3 for -48 VDC, 25W

4 for 100-240 VAC, 50W

5 for 24 VDC, 25W

7 for -48 VDC, 56W

KM-2100M-KPS.8

Power Supply module for 100-240 VAC, 130W

Publication No: 425-100-12/01



data communications

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