

PremNet[®]

Unilink Link Modules

- Cost-effective fiber optic transport across campus, metropolitan area, or wide area networks
- Support for singlemode or multi mode fiber, and LED or laser transmitters
- Support of Wave-Division Multiplexing (WDM) for shared-fiber applications
- Single-ring, multi-ring, and dual main ring network configurations
- Transmission distances up to 60 km
- Self-healing protection switching design through redundant ring support

PremNet®

Unilink Link Modules

The PremNet® high-speed broadband access system provides transport of LANs, ATM, data, voice, and video traffic over campus, local area, or wide area networks. The PremNet system uses T3 (45 Mbps), Unilink (100 Mbps), SONET/SDH OC-3c/STM-1 (155 Mbps), or ATM OC-3c/STM-1 (155 Mbps) technology in the backbone. Through the use of these technologies, PremNet provides a transparent connectivity between geographically dispersed locations over private or public networks.

The PremNet link module is the device located in each PremNet node on the network that creates a backbone connection and enables communication between the PremNet nodes. To suit any price or performance requirement, Milgo offers a wide selection of PremNet Link modules: Unilink, SONET/SDH OC-3c/STM-1, T3, and ATM OC-3c/STM-1.

Features

- Transmits at a rate of 100 Mbps over 20 PremNet Time-Division Multiplexed (TDM) timeslots
- A 45° optical mounting on the front panel (for both the transmitter and the receiver)
- The same receiver design for all three module types
- Support for singlemode (using a laser source) or multimode fiber (using an LED source)
- Phase Lock Loop (PLL), which filters jitter in standby mode allowing for operation of up to 16 nodes in a ring. A lock-detect signal is also provided.
- Compatible with other PremNet link modules in supporting multi-ring networks.

High-Speed Backbone Transport

The PremNet Unilink module is a high-speed, full duplex transmission card that uses fiber optics to transport data, voice, and video traffic between nodes for the PremNet system.

PremNet Unilink modules are available in various versions and support various distances for reliable, high-speed backbone transport. They include the 100 Mbps technology, which is typically used in campus or metropolitan area private networks. However, PremNet systems support interworking of nodes through both private and public networks.

Multiple Application Support

PremNet Unilink modules interwork with other link modules (SONET/SDH OC-3c/STM-1, ATM OC-3c/STM-1, T3) to form multi-ring networks. PremNet Unilink modules support multiple types of applications and provide native transport of voice, video, and data traffic, including Ethernet, Token Ring (4/16 Mbps), V.35, T1/E1, 4-wire voice, RS-232, RS-422, and one-way and two-way video.

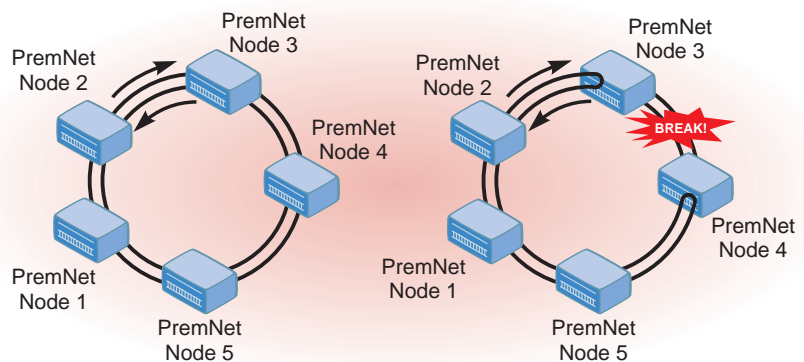
Flexible Ring Topologies

The PremNet system allows you to configure different topologies based on your needs, and supports both single-ring and multi-ring topologies. Multi-ring topology allows you to connect up to 16 PremNet backbone rings to form a seamless, centrally managed complex network. The PremNet System also supports dual main ring configuration, which doubles the backbone bandwidth to 200 Mps. Additionally, the PremNet system supports counter-rotating ring configuration for redundancy.

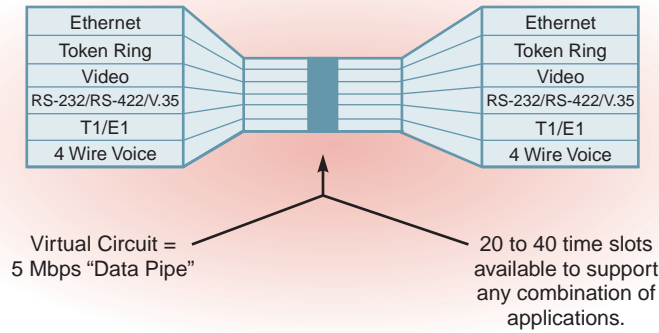
Fault Tolerance and Protection Switching

The PremNet Link modules play an active role in PremNet ring recovery, and are designed to protect against three primary failure conditions: cable breaks, link module failures, and node failures. Any of these failures invoke protection switching to maintain network integrity, which is an important feature in mission-critical situations.

To ensure protection switching, each PremNet node uses at least two link modules in counter-rotating ring mode. In the figure below, the active and standby rings are connected so that they run in opposite directions. These redundant rings provide ring "healing" when the primary ring is broken. Loss of a node, or both fiber connections between any two nodes, is not catastrophic and is a recoverable fault.



PremNet Ring Recovery Using Counter-Rotating Ring (CRR) Configuration



Multiple Applications over Unilink Link Modules in a PremNet Network

A Wide Range of Versions for Your Performance Needs

Nine versions of the PremNet Unilink module are available to meet a wide variety of price and performance needs. Choices range from the low-cost 850 nm Unilink module, which connects PremNet nodes across short distances (such as between floors within a building), to the powerful singlemode 1550 nm Unilink module, which supports long-distance local area networks or multi-building applications.

PremNet Unilink modules transmit 4B/5B encoded data at a rate of 100 Mbps over singlemode or multimode fiber. The transmitter is designed to accept most available sources, with primary use at the 1300 nm and 1550 nm wavelengths.

Distance Specifications

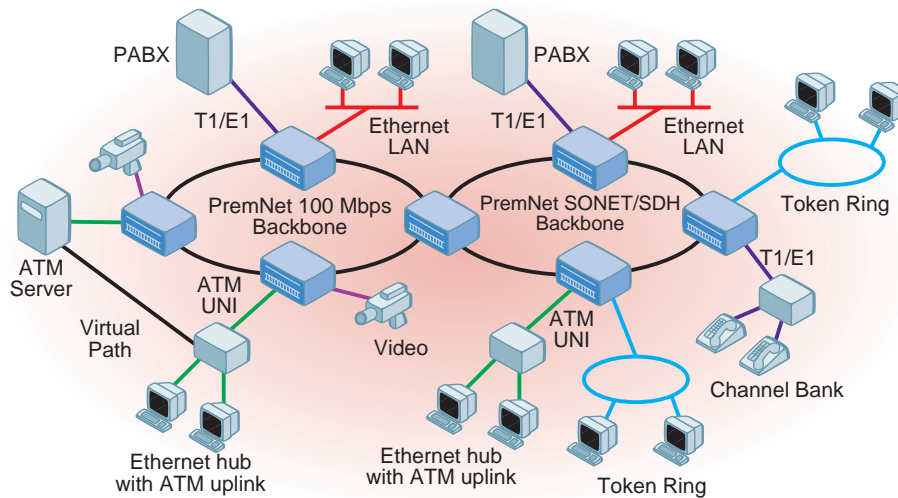
When designing and specifying an optimum backbone network, network designers need to account for factors like fiber budget, distances, and optics. Refer to the technical specifications for recommended maximum distances (between link modules) for the various 100 Mbps Unilink modules.

Wave-Division Multiplexing Support

The 1550 nm PremNet Unilink module enables the PremNet to use an external Wave-Division Multiplexer (WDM). Wave-Division Multiplexing greatly increases the capacity of singlemode fiber by combining two or more signals with different wavelengths and transmitting those signals over a single fiber. The type of fiber becomes an important factor when choosing WDM.

Choice of Network Management

PremNet Unilink modules and the entire PremNet network can be managed from a variety of network management platforms: Milgo CMS® network management systems, your existing SNMP-compliant network management platform, or PremNet's local onboard management (via an asynchronous terminal attached to any PremNet node on the network).



PremNet transports a range of multimedia applications within a building, campus, or metropolitan area, using single-ring or multi-ring topologies.

technical specifications

Description	Part Number	Connector Type	Tx Power (dBm)			Rx Sensitivity (dBm)		Loss Budget Tx-Rx (dB)		Maximum Distance	
			Min.	Typ.	Max.	Min.	Typ.	Min.	Typ.	Max.	Typ.
850nm Multimode LED	PN850124	ST	-19	-17	-15	-29	-30	10	13	1 km	.5 km
1300nm Multimode LED (short range)	PN850085	ST	-14	-11	-7	-30	-35	16	24	8 km	5 km
1300nm Singlemode Laser (intermediate range)	PN850088	ST	-12	-10	-8	-30	-36	18	26	50 km	35 km
	PN850089	FC									
	PN850090	SC									
1300nm Singlemode Laser (long range)	PN850091	ST	-3	-1	+1	-30	-36	27	35	60 km	50 km
	PN850092	FC									
	PN850093	SC									
1550nm Singlemode Laser	PN850098	FC	-2	0	+2	-30	-36	28	36	70 km	60 km

Configuration Maximum	Up to four modules per node
Power Output	9800 mw (typical)
Environmental	Operating temperature 32° to 122° F (0° to 50° C)
	Storage temperature -40° to 158° F (-40° to 70° C)
	Humidity 95% noncondensing
Network Management	Managed via PremNet integrated enhanced network management module (ENMM), Milgo CMS management systems, or SNMP-compliant network management platform

¹Maximum distances are nominal at room temperature. Typical distances are nominal over 0 to 50 degrees centigrade.

*Under ideal conditions. Distances may vary according to power budgets, bandwidth, temperature, humidity, and chromatic dispersion of the fiber optic cable.

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