



Simplifies Network Configuration

Allows Specific Connectivity

Provides Fault Detection

System 3000™ Token Ring repeater modules provide connectivity between System 3000 concentrators to build single rings supporting up to 260 stations on shielded twisted pair (STP) wire and 144 stations on unshielded twisted pair (UTP) wire.

They also provide host connections to IBM and other IEEE 802.5 Token Ring-compatible devices, allowing multiple hubs to build enterprise-wide Token Ring networks over long distances — up to 2,500 feet over STP or two kilometers over fiber optic cable modules.

A hot-swap capability allows insertion into, or removal from, an operating System 3000 hub without network disruption.

The repeater modules can support primary and secondary backbone links, providing redundancy in the event of primary link backbone failure. Reliability is also assured by regenerating signals passing between hubs. In addition, System 3000 Token Ring repeater modules are fully integrated into Bay Networks network management systems, providing management stations with status information and control capabilities.

Benefits

Simplifies Network Configuration

Occupying a single slot in a Model 3000 Premises or Model 3030 Department concentrator, the System 3000 Token Ring repeater modules from Bay Networks provide Ring-In and Ring-Out connections to compatible ports on other intelligent hubs. The modules also regenerate signals passing between concentrators, enabling widespread Token Ring configurations to be built with greater ease, simplicity, and integrity. In rings utilizing unshielded twisted pair (UTP) wire, the System 3000 Token Ring repeater modules provide the signal regeneration required between hubs.

Allows Specific Connectivity

Token Ring repeater modules can connect to either of two Token Ring buses on the System 3000 concentrator backplane, each of which represent a separate physical ring. The modules are assigned to a specific ring by setting a switch prior to installation. Each ring can operate at either 4 megabits per second (Mbps) or 16 Mbps; ring speed is determined by the attached host devices.

Provides Fault Detection

Two versions of the Token Ring repeater module are available, one for shielded twisted pair (STP) wire and one for fiber optic cable. The Model 3532 STP Repeater Module is designed to automatically wrap if it detects a cable break or power loss in an adjacent Model 3532. The Model 3534 can also detect cable detachments on the Ring-In or Ring-Out ports and will automatically wrap to a Token Ring backup path to maintain ring operation.

The Model 3534-ST Fiber Optic Repeater Module is designed to detect fiber optic cable detachments and faults on the Ring-In or Ring-Out ports and will automatically wrap to the Token Ring backup path to maintain ring operation. Networks configured with Model 3534-ST modules also automatically wrap if a cable break or power loss is detected in an adjacent Model 3534-ST.

Features

Model 3532 STP Repeater Module

The Model 3532 STP Repeater Module features one Ring-In and one Ring-Out port, each with a female DB-9 connector. The Ring-In/Ring-Out ports support connections to compatible System 3000 modules, IBM multistation access units, IBM copper or fiber optic repeaters, or other IEEE 802.5-compatible devices. In normal configurations, the Model 3532 supports electrical drive distances of up to 2,500 feet at 4 Mbps and 1,100 feet at 16 Mbps.

Connections to external devices using standard IBM Cabling System or other compatible patch cables are accomplished via the Model 909 STP Wall Outlet/Trunk Adapter Cable. The Model 909, which features a 9-pin female D connector on one end and an IBM Data Connector on the other, is equivalent to the IBM Cabling System's Type 6 cable and exhibits the same characteristics as the IBM Model 6339088 Wall Outlet Adapter Cable.

Using a Model 909 allows direct connections to IBM Cabling System patch panels, IBM patch cables, or any equipment that supports IBM data connectors.

Model 3534-ST Fiber Optic Repeater Module

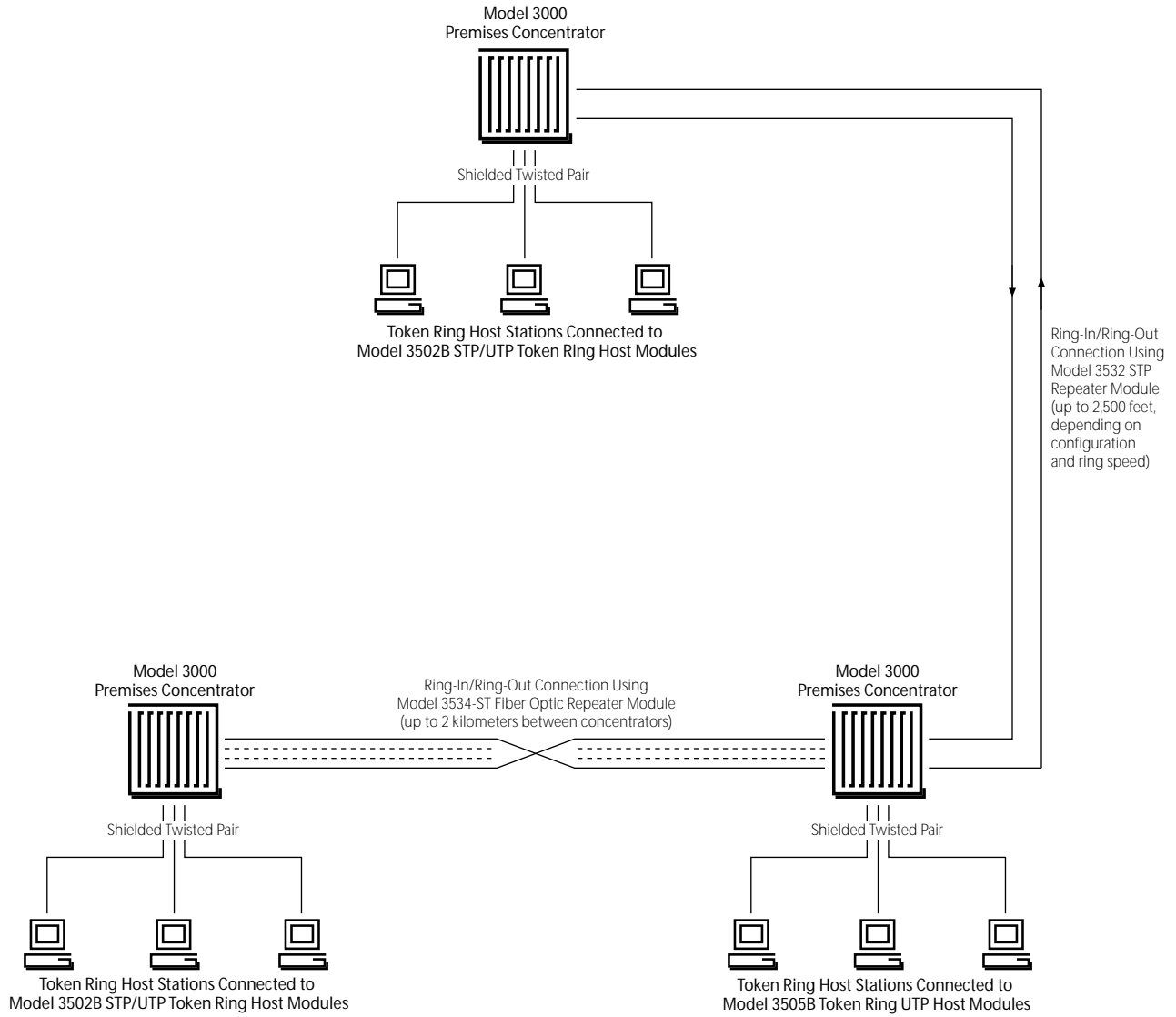
The Model 3534-ST Fiber Optic Repeater Module features two duplex ST fiber connectors to provide Ring-In and Ring-Out connections to other concentrators. One ST duplex fiber port provides the primary Ring-In and Ring-Out connection, while the second port provides a connection to a backup path used in the event of a primary trunk link failure. With the Model 3534-ST, Token Ring hubs separated by up to 2 kilometers can be interconnected to create a single physical ring.

With Network Management

The modules are fully integrated into Bay Networks DOS- and UNIX-based Optivity® network management systems. In networks configured with Optivity, the modules supply the management station with dynamic status, configuration, and performance information, as well as monitoring and control capabilities. The modules can also be manually wrapped by user command from the network management station.

Front-panel LEDs indicate power status, module bypass under network management, the assigned ring, and the ring's speed. Individual LEDs for the Ring-In/Ring-Out ports indicate ring wrap under network management and the presence of a phantom signal from an adjacent Bay Networks Token Ring hub.

Figure 1 | Token Ring Repeater Modules Connect Concentrators Separated by up to Two Kilometers to Create a Single Physical Ring Supporting a Maximum of 260 Stations



Technical Specifications

Technical specifications for the System 3000 Token Ring Repeater Modules are shown in Table 1.

Table 1 | System 3000 Token Ring Repeater Modules Technical Specifications

Data Rates	4 Mbps or 16 Mbps differential Manchester encoding
Compatibility	IEEE 802.5 Token Ring access method and physical-layer specifications
Flammability	PCB designed to meet UL 94-V1
Electromagnetic Emissions	Meets requirements of FCC Part 15, Subpart B, Class A
Electrical Specifications	
Model 3532	
Power Consumption	6.5W at +5V; 2.4W at +12V; 8.9W total
Thermal Rating	29.3 Btu/hr (max)
Model 3534-ST	
Power Consumption	8W at +5V; 3W at +12V; 11W total
Thermal Rating	37.5 Btu/hr (max)
Optical Specifications (Model 3534-ST)	
Transmitter/Receiver	LED/PIN diodes
Wavelength	850 nm
Optical Power Coupled into a 62.5/125-micron, 0.275 NA fiber	-9 dBm +2 dB/-3 dB peak
Optical Power Coupled into a 50/125-micron, 0.23 NA fiber	-13 dBm +2 dB/-3 dB peak
Optical Receiver Sensitivity	<-27 dBm peak
Optical Receiver Dynamic Range	-7 dBm to -27 dBm peak
Optical Power Budget	For 62.5/125 micron = 15 dB For 50/125 micron = 11 dB
Safety Agency Approvals	
	UL Listed (UL 1950)
	CSA certified (CSA 22.2 #950)
	TUV licensed (EN 60 950)
Environmental Specifications	
Operating Temperature	5°C to 40°C
Operating Humidity	85% max relative humidity, noncondensing
Operating Altitude	10,000 ft (3,048 m), 40°C max
Storage Temperature	-25°C to 70°C
Storage Humidity	95% max relative humidity, noncondensing
Physical Dimensions	
	(H) 15 in. x (W) 1.2 in. x (D) 10.5 in.
	(H) 38.1 cm x (W) 3.1 cm x (D) 26.7 cm
Weight	
Model 3532	2 lbs, 3 oz (1.0 kg)
Model 3534-ST	2 lbs 8 oz (1.1 kg)

Ordering Information

Ordering Information for the System 3000 Token Ring Repeater Modules is shown in Table 2.

Table 2 | System 3000 Token Ring Repeater Modules Ordering Information

Order Number	Description
3532	Model 3532 Token Ring Shielded Twisted Pair (STP) Repeater Module
3534-ST	Model 3534-ST Token Ring Fiber Optic Repeater Module



For more sales and product information, please call **1-800-8-BAYNET**.

United States

Bay Networks, Inc.
4401 Great America Parkway
Santa Clara, CA 95054
1-800-8-BAYNET

Bay Networks, Inc.
8 Federal Street
Billerica, MA 01821-5501
1-800-8-BAYNET

Europe, Middle East, and Africa

Bay Networks EMEA, S.A.
Les Cyclades – Immeuble Naxos
25 Allée Pierre Ziller
06560 Valbonne, France
+33-92-966-996 Fax
+33-92-966-966 Phone

Pacific Rim, Canada, and Latin America

Australia +61-2-9927-8888
Brazil +55-11-247-1244
Canada 416-733-8348
Hong Kong +852-2-539-1388
India +91-11-301-0404

Japan +81-3-5402-7001
Mexico +52-5-202-7599
China +8610-238-5177
Singapore +65-323-3522

World Wide Web: <http://www.baynetworks.com>

Copyright © 1996 Bay Networks, Inc. All rights reserved. Bay Networks, Bay Networks logo, People connect with us, and System 3000 are trademarks, and Optivity is a registered trademark of Bay Networks, Inc. All other brand and product names are trademarks or registered trademarks of their respective companies. Information in this document is subject to change without notice. Bay Networks, Inc. assumes no responsibility for errors that appear in this document. Printed in USA.