IBM technology in a new, feature-filled Token-Ring stackable hub

IBM 8239 Token-Ring Stackable Hub

- ***Offers two models, allowing you a choice of device and network management***
- ***Provides event-driven Token-Ring fault isolation through Token-Ring media management***
- ***Uses RMON and RMON2 in the Model 001 to provide analysis and trending for superior network management, plus beacon recovery and address-to-port mapping***
- ***Allows up to eight hubs in a single stack – all in one place or in a number of locations***
- ***Integrates with non-8239 Token-Ring hubs and concentrators using copper or fiber RI/RO connections (Model 001 only)***
- ***Provides 16 ports on each hub, plus a slot for an additional 16 ports when you need them***
- ***Supports fanout devices, such as the IBM 8228 or 8226, to allow a port to serve up to eight attaching devices over a single cable***
- ***Works well in a variety of SNMP-based network management products from IBM and other vendors***
- ***Fits well in small offices and large enterprises—wherever cost-effective, well-managed Token-Ring access is required***

The 8239 Token-Ring Stackable Hub is IBM's newest workgroup offering for the connection and management of devices in a LAN. One to eight hubs can be linked together and managed as one stack, connecting up to 256 devices. The 8239 is a complete replacement for the IBM 8238 Nways® Token-Ring Stackable Hub, offering the latest in Token-Ring technology and advanced network management support. Its attractive design, ease of use and competetive pricing provide real value to Token-Ring users.

Product Overview

The IBM 8239 Token-Ring Stackable Hub is the latest result of over 15 years of experience in designing and manufacturing industry-leading Token-Ring solutions. This highly functional hub is modular so that it is adaptable to a large number of environments—from small offices and branch offices to large establishments that rely on shared-media Token-Ring for a robust desktop solution. This is Token-Ring technology from the company where it all started—IBM.

Two models to match your management needs

Both models of the 8239 support out-of-band management through their EIA-232 ports. If you require in-band management, enhanced device management functions such as time-of-day scripts and single-command code update for Model 001s and Model 002s in the same stack, you should include at least one Model 001 in each stack. The Model 001 also supports Token-Ring media management, higher-level protocol monitoring and RMON and RMON2. Together these capabilities prevent trouble before it starts by identifying suspect adapters in the network and help you analyze network performance trends and retune the network before performance becomes substandard.

Because the 8239 stack can contain a mix of Model 001s and Model 002s, device and network management functions can be distributed among the hubs to improve availability and reduce the risk of a single point of failure.

Device management features

All hubs in the stack are manageable from a single point using out-of-band access (both models) or in-band access (Model 001 only).

New code can be loaded on the hub out-of-band using Xmodem and in-band using TFTP. When one model in a stack is loaded, all other similar models are also loaded. In addition, Model 001s will also update Model 002s in the same stack.

The 8239 uses ASCII script files containing 8239 terminal interface commands to provide network administrators with an easy method of configuring the stack or issuing frequently used commands. The Model 001 can trigger such commands to be executed on a time-of-day or RMON event basis.

Port security is maintained at configuration time by specifying which MAC addresses are permitted on each port and what action will be taken if there is a security intrusion. When events occur on the network or the hub that may affect operation, the 8239 can send a trap message to the network administrator's MAC address informing the administrator of the event.

Network management features

A Model 001 is required to support network management functions. Network management information is accessed either through the terminal interface or through an SNMP-compatible application.

The Model 001 also contains an embedded agent for Token-Ring media management that reports operational status and configuration information about adapters on the same LAN segment as the 8239. The Model 001's Surrogate Agent supports ring error monitoring, ring parameter server and configuration report server. You can obtain surrogate information from the 8239 through the terminal interface or an SNMP management application.

The Model 001 fully supports IETF RFC 1757 and IETF RFC 1513 RMON groups for Token Ring. You can also configure the Model 001 as an RMON2 agent (IETF RFC 2021 and RFC 2074) or as an ECAM agent to enable extensive higher-level protocol monitoring and analysis. RFC 1748 support provides network management information about the hub's Token-Ring interface.

Support for a wide variety of cabling types at industry-maximum distances

The 8239 offers superior flexibility in its cabling options—from its industry-standard intrastack Category 5 UTP to its support for all common twisted-pair types for hub-to-desktop cables. And both copper and optical fiber RI/RO modules are available to include other hubs in the segment. The 8239 makes it easy to get connected without having to install new building cabling.

Intrastack cabling

Up to eight 8239s can be linked together to form a single segment using industry-standard, TIA/EIA/ANSI 568A or ISO/IEC 11801 Category 5 cables and connectors. Each of the units in the stack can be up to 25 m (82 ft) apart without regard to the total distance among all 8239s in the stack. Distances over 25 m (82 ft) are supported if that the sum of all of the intrastack cable lengths minus the length of the shortest intrastack cable does not exceed 210 m (689 ft).

Hub-to-desktop cabling
The 8239's ports are compatible with all categories and types of copper twisted-pair cabling at both 4 and 16 Mbps. Any twisted-pair cabling system installed to meet the widely followed standards for TIA/EIA/ANSI 568A or ISO/IEC 11801 will easily meet the cabling requirements for 8239 port connections. In fact, the 8239 easily exceeds the 100 m (328 ft) horizontal cabling distances specified in both these standards.

Hub-to-desktop cabling	4-Mbps Ring Speed	16-Mbps Ring Speed
UTP, ScTP or FTP Category 3	250 m (820 ft)	100 m (328 ft)
UTP, ScTP or FTP Category 4	425 m (1394 ft)	210 m (689 ft)
UTP, ScTP or FTP Category 5	425 m (1394 ft)	225 m (738 ft)
STP or STP-A	750 m (2460 ft)	375 m (1230 ft)

RI/RO Cabling
The distances shown in the table apply for each RO-to-RI connection when both devices provide for IEEE 802.5-standard repeating at the RI and RO ports. If passive, non-repeating devices are included between powered, repeating components, you must make allowance for the signal loss incurred by these hubs.

RI/RO cabling	4-Mbps Ring Speed	16-Mbps Ring Speed
UTP, ScTP or FTP Category 3	250 m (820 ft)	100 m (328 ft)
UTP, ScTP or FTP Category 4	425 m (1394 ft)	210 m (689 ft)
UTP, ScTP or FTP Category 5	425 m (1394 ft)	225 m (738 ft)
STP or STP-A	750 m (2460 ft)	375 m (1230 ft)
62.5/125 multimode optical fiber	2000 m (6562 ft) or 11 dB	2000 m (6562 ft) or 11 dB

Switch or share - which way to go?
If your desktop LANs are running traditional client/server applications, expand your network by choosing a shared-media solution like the 8239 to provide excellent flexibility and manageability at an affordable price. In small offices, you can buy just the number of ports you need in increments of 16.

In larger environments, the flexible configurations of the 8239 integrate easily with existing Token-Ring hubs through the 8239 Model 001's optional copper or fiber RI/RO ports. In addition, the 8239's ability to attach fanout devices such as IBM 8228s or 8226s to a single lobe and provide connectivity for up to eight users per port helps you protect your equipment investment.

While high-speed Token Ring is an excellent solution for the backbone, most desktop environments are not sufficiently out of bandwidth to warrant swapping adapters and hubs throughout their LANs. So consider high-speed Token Ring for backbones to connect both shared and switched-media Token Rings to servers that are directly attached to the backbone.

The 8239 offers many or more of the same network management features as multifunction switching hubs but at a much lower price per port. So, if all your desktop LANs are Token Ring, the 8239's high performance and low cost per port make it an attractive choice.

8239 Nways Token-Ring Stackable Hub Specifications

Ordering information

Feature	FC	Part number
8239 Model 001		08L3033 (U.S.)
8239 Model 001		08L3313 (AP/EMEA)
8239 Model 002		08L3034 (U.S.)
8239 Model 002		08L3314 (AP/EMEA)
16-Port Expansion Feature (Models 001 and 002)	3035	08L3035
RJ-45 RI/RO Module (Model 001)	3036	08L3036
Optical Fiber RI/RO Module (Model 001)	3037	08L3037

Physical specifications

Model	Width	Depth	Height	Weight
001, 002	437 mm (17.2 in.)	427 mm (16.8 in.)	63 mm (2.5 in.)	7 kg (15.4 lb) empty; 7.4 kg (16.4 lb) fully loaded

Operating environment

Temperature	Relative humidity	Electrical power
10° to 40°C (50° to 104°F)	20% to 85%	88 to 265 V ac; 47 to 63 Hz

Total ports

16 fixed, 16 field-installable, up to 256 per stack supporting up to 260 attached devices (adapters)

Standards

Conforms to IEEE 802.5 Token-Ring shared-media standards

Cabling supported

100- or 120-ohm unshielded twisted pair (UTP), 150-ohm shielded twisted pair (STP), or 100-ohm screened twisted pair (ScTP) or foiled twisted pair (FTP) as specified in TIA/EIA/ANSI 568A or ISO IEC 11801.

Key Customer Benefits

- IBM technology ensures that the 8239 will fit seamlessly into your existing Token Rings and provide the most effective features in the field.
- Two models enable you to choose the amount of network and device management you want and to mix-and-match within a stack to distribute network and device management among the Model 001s and 002s in the stack.
- Distributed management reduces the risk of a single point of failure.
- IEEE 802.5 compliance means that your 8239 will work effectively with all other 802.5-compliant components from IBM or other vendors.
- Modular design allows you to purchase ports in increments of 16, so you buy only what you need.

Supplementary Information

The following sales tools are available for the 8239:

- Specification sheet:
  IBM 8239 Token-Ring Stackable Hub, G224-4564
- Information on the 8239 is available at:
  www.networking.ibm.com/netprod.html