



IBM 8260 Multiprotocol Intelligent Switching Hub Token Ring Media Modules Release Note

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This release note applies to the following IBM 8260 Token Ring Modules Version v1.50:

- Active Per-Port Switching Media Module (Model Number T18PSA) –
Boot Version v1.0, Operational Version v1.50
- Passive Module (Model Number T20MS) –
Boot Version v1.0, Operational Version v1.50
- Dual Fiber Repeater (Model Number T10R-F) –
Boot Version v1.0, Operational Version v1.50
- Active Per-Module Switching Media Module (Model Number T18MSA) –
Boot Version v1.0, Operational Version v1.50
- Jitter Attenuator Card (Model Number T-JIT).

Note: Make certain all Token Ring media modules in the 8260 hub are running the code versions listed above.

To display the current software version, enter the SHOW MODULE VERBOSE command.

This release note contains the following sections:

- Corrected Problems
- New Feature
- Operating Considerations
- Known Problems
- Documentation Corrections and Issues.

Store this release note in the Release Note section of your 8260 Reference Library.

Corrected Problems

This section identifies problems that have been corrected in Token Ring (TR) Media Module software Version v1.50.

- Intermittent problems occurred with prolonged or unresolved beaconing on the Active Per-Module Media Module (Model Number T18MSA) or the Passive Per-Module Media Module (Model Number T20MS). This no longer occurs.
- Previously, in the Dual Fiber Repeater Module (Model Number T10R-F) and the Active Per-Port Switching Media Module (Model Number T18PSA), large changes in the ring would take over a minute to show up in the ring map. The ring map now updates in 30 to 40 seconds.
- When a ring poll was interrupted on a T18MSA or T20MS, it was possible for a port to incorrectly display all 0s (zeros) for its MAC address. This problem has been corrected.
- The Beacon Threshold feature now works correctly when it is set to a value greater than zero. Previously, the counter which used this threshold value was off by one. A port would be allowed one extra wrap before it was beacon wrapped permanently.
For example, previously, if the Beacon Threshold value was 7, the port would be allowed 8 beacon wraps before it was beacon wrapped permanently.
- For the Active Per-Module Media Module (Model Number T18MSA) and the Passive Per-Module Media Module (Model Number T20MS), changing Mismatch Resolution from disable to enable will now automatically remap the ring.
- Beginning with DMM Version v4.11 for IBM, sporadic Module Up/Down messages no longer appear. These also occurred as a result of a timing issue on Token Ring Media Modules. This is corrected.

New Feature

Hardware problems such as faulty Jitter Attenuators can cause network corruption, resulting in unstable networks. Improvements have been made to try to detect these types of hardware problems and to remove a faulty module from a ring.

If a module is faulty and it enters a 'Fault on Module' state, the following occurs:

1. The module is removed from the ring.
2. All ports are beacon wrapped.
3. All trunks are beacon wrapped.
4. If there is a T-MAC on the module, it is beacon wrapped.
5. All of the module LEDs are turned off.

When using the SHOW commands to view the module's status information, the following information displays:

- For a SHOW MODULE command, a 'Board failure' status displays
- For a SHOW PORT command, a 'BCN THRES ERROR' status displays for each port
- For a SHOW TRUNK command, a 'BEACON WRAPPED' status displays for each trunk.

When a module is in the Fault on Module state, the various SET commands are ignored. Inserting and Deinserting stations or trunks have no effect on the module.

In order to remove a module from the Fault on Module state, you must reset the module using the RESET MODULE command or physically unplug the module and then plug it back into the hub.

Note: In order for a module to enter the Fault on Module state, it must first enter Beacon Recovery. Hardware problems which are not severe enough to cause the modules to enter Beacon Recovery will not be detected.

In addition, not all hardware problems which cause a module to enter Beacon Recovery will be detected. For example, hardware failures which cause a module to enter Beacon Recovery and then quickly exit cannot be detected.

Note: Hardware problems classified as faults on the backplane cannot be detected.

Operating Considerations

This section describes the following operating considerations that apply to software Version v1.50 and later:

- Using NVRAM Storage
- Ring Mapping Considerations
- Required Software Support
- Passive Media Module Issue
- Active Per-Module Switching Module Issues
- Jitter Attenuator Card Assignment on a T10R-F Module
- Failed Jitter Attenuator Card
- Copper and Fiber Trunk Considerations
- Enabling Mismatch Resolution
- Beacon Recovery in an 8260 Network

- Using the DMM BOOTP Function
- Using Media Module Software Version v1.50 With Earlier Software Versions.

Using NVRAM Storage

When configuring the IBM 8260 Token Ring Media Modules, you must have an IBM 8260 DMM (Distributed Management Module) or an Advanced DMM/Controller Module installed in order to configure the media modules with information saved in the NVRAM storage. Configuration to NVRAM settings is not available using the IBM 8250 Management Module.

Ring Mapping Considerations

This section lists considerations when using the Ring Mapping function.

- To map MAC addresses which are external to the 8260 module domain (stations connected to devices or hubs using 8260 fiber or copper trunks), you must have a T-MAC assigned to the network with `rmon_group` and `rmon_ring_station_stats` enabled. All indirectly-connected stations (those external to the 8260 module domain) are mapped to "external" in the logical map.
- A known limitation regarding Mismatch Resolution exists on the Active Per-Module Media Module (T18MSA) when the module's trunks are enabled. When trunks on an APM are enabled the module behaves as if Mismatch Resolution is disabled regardless of how Mismatch Resolution was set.

If the T18MSA has trunks enabled and fan-out or MAC-less stations attached, the ring map may be incorrect. The number of entries reported on the T18MSA Module is the number of ports that have phantom, but there may be a mismatch in the port to station mapping when you attach a fan-out device or MAC-less station. To minimize the inaccuracy of the ring map, insert the fan-out device or MAC-less station at the highest numbered active port.

If trunks on the T18MSA are disabled or not configured, then Mismatch Resolution runs if you enable it and the ring map will be correct.

- A limitation in address-to-port mapping exists on port-switching modules (T18PSA and T10R-F). Occasionally, ring map entries for stations inserted on port-switched modules are not reported unless the port-switched module has at least 2 ports with stations participating in the Neighbor Notification Process.

For example, this limitation occurs after the module is reset or after the ports are assigned to a different network.

Note: If you assign a T-MAC with `rmon_ring_station_stats` enabled to the network, then these stations will be listed in the ring map as 'external'.

After the module has 2 or more MAC stations inserted on the same network, then all stations on this module are properly reported in the ring map even after there is a change that results in only 1 station being on the network.

- If you assign a T-MAC with `rmon_group` and `rmon_ring_station_stats` enabled to a ring with other T-MACs as part of the logical ring (that is, two different networks are trunked together), the other T-MACs will be listed as external in the logical ring map.
- If you assign a T-MAC with `rmon_group` and `rmon_ring_station_stats` enabled to a ring, the logical map for that ring is in order of token flow. Otherwise, the logical map for that ring is in order of slot and port.
- Inaccurate information may display in a ring map if the same Locally Administered MAC address is used by two or more stations that are part of disjoint rings that are in the same hub.

Required Software Support

This section describes the software required to support Token Ring Media Module software Version v1.50.

- You must be running 8260 Distributed Management Module (DMM) or Advanced DMM/Controller software Version v4.12 or later.

Note: DMM software Version v4.12 is also required to manage the PORT SECURITY function.

- You must be running T-MAC software Version v3.02 and later.

Passive Media Module Issue

This section describes an IBM 8260 Token Ring Passive Media Module Ring Speed Detection issue.

When any new station inserts in the ring, current implementation of ring speed detection on passive media modules causes a burst of soft errors. Soft errors are normal when inserting stations on and removing stations from an operating ring. The limited amount of soft errors produced by the speed detection algorithm do not impact network operation.

If the number of errors you experience is unacceptable, disable speed detection for all ports on the passive modules. The beacon recovery algorithm will beacon wrap a wrong speed station even when speed detection is disabled. In this case, there is an initial stream of Beacon Frames, Ring Purges, Claim Frames, and Soft Errors. These frames stop when the module Beacon Wraps the port.

Active Per-Module Switching Module Issues

This section describes operating issues regarding the Active Per-Module Switching Module.

- If a station was inserted at the wrong speed on an Active Per-Module Switching Module, the DMM (Distributed Management Module) generates a trap message reporting the port status as OKAY. Then a PORT DOWN trap is generated indicating a loss of phantom. This does not affect the ring because the station was never allowed to insert into the ring.
- The DMM allows the user to set a Speed Threshold value with the SET MODULE {slot} SPEED_THRESHOLD command. Speed threshold is only implemented for the Passive Module and if you issue this command there is no affect on the Active Per-Module Switching Module.

Jitter Attenuator Card Assignment on a T10R-F Module

This section describes an operating consideration regarding the Jitter Attenuator Card on a Dual Fiber Repeater Module (Model Number T10R-F).

You can install a Jitter Attenuator Card in either of two locations on the Dual Fiber Repeater Module. The module finds the Jitter Attenuator Card and assigns it to the correct fiber trunk port automatically.

Failed Jitter Attenuator Card

You can identify a failed Jitter Attenuator Card on a Passive Media Module when the following conditions exist:

- A Passive Media Module will not come up.
- The DMM shows 'WARNING - Module not communicating. Failed or initializing for its slot'.
- The LED for port 12 on the Passive Media Module is lit solid.

To resolve these conditions, replace the failed Jitter Attenuator Card or perform a module reset. If you cannot resolve this, contact your local service representative for assistance.

Copper and Fiber Trunks Considerations

This section describes special considerations for copper and fiber trunk connections.

1. When you configure copper and fiber trunks on a Token Ring media module, install the cables before you enable trunk ports.

2. If you move a trunk from one network to another network using the SET TRUNK RING_IN/OUT NETWORK command or if you change the speed of the network that a trunk is assigned to using the SET NETWORK TOKEN_RING RING_SPEED command, follow these steps:
 - a. Disable the trunk port or ports.
 - b. Change the trunk network setting or the trunk's network speed.
 - c. Enable the trunk port or ports.

Caution: If you use inband connectivity to disable a trunk and your inband connectivity path includes the trunk you are disabling, your inband connectivity will be lost. You must use out-of-band connectivity to reenable the trunk port or ports.

3. If you move trunk cables from one media module to another media module, follow these steps:
 - a. Disable the trunk ports on both media modules.
 - b. Move the trunk cables from one media module to another.
 - c. Enable the trunk ports on the media module that now contains the trunk cables.

Caution: Failure to follow the procedures in item 1, 2, or 3 may result in network corruption, prolonged beaconing, or may cause modules to enter the Fault on Module state.

4. If beaconing occurs on a copper trunk of an Active Per-Module Switching Module and the trunk is beacon wrapped as part of the recovery process, you may need to disable and then enable the trunk so the trunk can reconnect later.
5. When ports 17 and 18 of the T18MSA are configured as RI/RO trunk ports, the module can be used to connect through RI/RO connections to the following products using copper wiring:
 - IBM 8228
 - IBM 8238
 - IBM 8230: All 8230 Models
 - IBM 8250:
 - Token Ring Management Modules (F/C 3823, 3884)
 - 8-port MAU Module (F/C 3820)
 - Fiber Repeater Module (F/C 3822)
 - Copper Repeater Module (F/C 7386).

- IBM 8260: 18-port Active Per-Port Switching Media Module, T18PSA (F/C 3018)

In all the configurations involving the products listed above, automatic ring recovery is performed upon a trunk failure.

Enabling Mismatch Resolution

This section describes operating issues regarding Mismatch Resolution. The following issues are explained:

- Periodic relay clicking on T20MS and T18MSA
 - Ring mapping upon startup or reset of an 8260 Per-Module Switching Media Module (Model Numbers T18MSA and T20MS).
1. Enabling Mismatch Resolution causes soft errors on the network and may also result in *periodic relay clicking* on the modules under the following conditions:
 - a. The media module is assigned to a network that has Mismatch Resolution enabled and has fan-out or MAC-less devices attached to the module. This does not apply to a T18MSA that has its trunks enabled.
 - b. A beaconing event occurs on that network.

To avoid this condition of soft errors on the network, set mismatch resolution to disable by executing the SET NETWORK TOKEN_RING {network} MISMATCH_RESOLUTION DISABLE command.

Note: However, if Mismatch Resolution is disabled, the ring map may be inaccurate when there are fanout devices or MAC-less stations inserted on the T18MSA or T20MS.

2. When you first power on or reset a module and Mismatch Resolution is enabled, it could take some time to resolve ring mapping. This condition occurs if the network has several fan-outs attached. If the network has only a few ports with fan-outs, then resolving the ring map will take no longer than usual.

Note: This condition only occurs when you start up or reset a module.

Beacon Recovery in an 8260 Network

An operating limitation occurs with the Beacon Recovery feature under certain network conditions.

Beacon Recovery can take longer if you:

- Connect an unmanaged 8250 module to an 8260 module and the 8250 trunk disconnects.
- Connect copper trunks to a managed 8250 module and a trunk problem occurs.

Warning: It is not recommended to connect an unmanaged 8250 module to an IBM 8260 network.

Note: When an 8260 is connected to an 8250 through trunks, the 'Beacon Trunk Retry' parameter on the TRMM (8250 Token Ring Management Module) should be set to a value of 100 or greater. This prevents the 8250 trunks from being prematurely disabled by the TRMM's beacon recovery algorithm.

Using the DMM BOOTP Function

Warning: If you are **not** using the DMM BOOTP function, then *disable* it. Otherwise, you may experience T-MACs moving from one ring to another. This is normal operation.

Using Media Module Software Version v1.50 With Earlier Software Versions

IBM recommends that you download all Token Ring media modules with operational software Version v1.50 and later.

If you have Token Ring media modules running operational software Version v1.50 in the same setup with media modules that have earlier versions, then problems in the earlier software versions may mislead you to think that there are problems with the media modules running software Version v1.50 and later.

Known Problems

This section describes ring mapping problems that may occur in Token Ring Media Module software Version v1.50.

- MAC-less devices do not appear in the ocTRnetMapSummary MIB table when a T-MAC is on the same ring and the T-MAC has rmon_group and rmon_ring_station_stats enabled.
- Occasionally, when stations from one ring with a Token Ring Medium Access Control Card (T-MAC) and with rmon_group and rmon_ring_station_stats enabled are moved to another ring, some of the stations that were moved to the new ring may be incorrectly reported in the ring map for the original ring as well as correctly reported in the ring map for the new ring. This situation only occurs when the T-MAC becomes the only station on the ring.
To remove the entries from the original ring map, disable and then enable rmon_ring_station_stats on the T-MAC assigned to the original ring map.
- When the last remaining station on an Active Per-Module Media Module (Model Number T18MSA) or a Passive Media Module (Model Number Model Number T20MS) is removed or moved to another module, the station still shows up in the ring map as being on the original module. This problem resolves itself when you insert a station into the original module.
- If a MAC-less device is inserted on a module-switching module (T18MSA or T20MS), the MAC-less device is not reported in the ring map unless there is at least one MAC station inserted on the same module that participates in the Neighbor Notification process. After this condition is met, MAC-less devices will continue to be properly reported in the ring map even if the MAC-less device becomes the only station inserted on the module (that is, after all of the MAC stations on the module deinsert from the ring).

Documentation Corrections and Issues

This section of the release note applies *only* to the following documents:

- *IBM 8260 Token Ring Media Modules User's Guide* (Document Number SA33-0256)
- *Installing a Token Ring Jitter Attenuator Card* (Part Number 59G0250).

This section contains additional information as well as clarification to specific areas of the user's guide and installation document. This information will be added to the next revision of the user guide.

This section contains the following documentation corrections and issues:

- Ring Mapping on an Active Per-Module Media (T18MSA) Module When Trunks Are Configured
- Determining Fiber Cable Lengths Using Alternate Fiber Diameters
- Maximum Lobe Lengths

- Network Statistics Information
- Additional Configuration Information
- Setting the Lobe/Trunk Jumper
- Enabling Mismatch Resolution Command
- Trunk Compatibility Modes
- Troubleshooting
- Installing a Token Ring Jitter Attenuator Card.

Ring Mapping on a T18MSA When Trunks Are Configured

In Chapter 1, Introduction, under the section titled Active Per-Module Switching Media Module (Model Number T18MSA), the following information will be added to the next version of the user's guide. (This information is not in the current version of the user's guide SA33-0256-1.)

The additional information describes an operating issue when using a T18MSA when trunks are configured.

Mismatch Resolution does not run on the T18MSA when T18MSA trunks are enabled, which may result in an incorrect ring map. When trunks are enabled, the number of entries reported on a T18MSA is the number of ports that have phantom. Although only the *active* ports are listed, the port to station mapping may be incorrect when fan-out or MAC-less devices are present.

When a fanout or MAC-less device is attached to an T18MSA with trunks enabled, the address map information may be inaccurate for ports below the fanout or MAC-less device. The address map information for the other modules on the same network is accurate. If you use fanout or MAC-less devices on an T18MSA with trunks enabled, IBM recommends that you insert the fanout device at the *highest numbered active* port.

Determining Fiber Cable Lengths Using Alternate Fiber Diameters

This section applies to Chapter 2, Designing and Expanding the Network, the section labeled IBM Trunk Cable Recommendations. The information in this section will help you when configuring trunk cable requirements.

Chapter 2, Table 2-10, Alternate Fiber Diameter Distances, contains distance estimates that may not have been tested.

Use the alternate fiber diameter distances listed below in Table 2 to help you determine the fiber cable length associated with the use of alternate fibers based on 62.5/125 (the defacto cable that is used). By specification the maximum distance for any fiber length is 2 kilometers.

Table 1. Alternate Fiber Diameter Distances

Alternate Diameter Fiber Size	Average Transmit Power	Receiver Power Range	Link Loss Required
50/125	-16.4 dBm to -22.4 dBm	-12 dBm to -28 dBm	0
62.5/125	-13 dBm to -19 dBm	-12 dBm to -28 dBm	0
85/125	-10.7 dBm to 16.7 dBm	-12 dBm to -28 dBm*	1.3 db
100/140	-8.8 dBm to -14.8 dBm	-12 dBm to -28 dBm*	4 db

*If you use 85/125 or 100/140, you can overdrive the receiver.

Maximum Lobe Lengths

This section applies to Chapter 2, Designing and Expanding the Network, the section labeled IBM Lobe Cable Length Recommendations. The introductory sentence to Table 2-3 and the note following Table 2-3 have been clarified.

- The introductory sentence to Table 2-3 should read:
Table 2-3 identifies maximum lobe lengths for 4 Mbps and 16 Mbps networks using STP and UTP cables in single closet configurations. The lobe cable lengths in this table support the number of stations listed in Table 2-2.
- The note following Table 2-3 should read:
*With the exception of the 190 stations which should be reduced if there are more than 25 stations with lobe lengths approaching 800 meters.

Network Statistic Information

The following new information will be added to the next revision of the user's guide. This information will be documented in Chapter 4, Configuring the Modules.

Statistics are not accurate on a beaconing ring. To correct this condition, resolve beaconing and then clear all statistics. This is normal operation.

Additional Configuration Information

The information applies to Chapter 2, Designing and Expanding the Network. A section, titled Additional Configuration Information will be added to assist you when configuring trunks on Token Ring media modules.

Unreliable network information may display when the following two configuration conditions are met:

1. You have two media modules with their trunks configured on the same network.

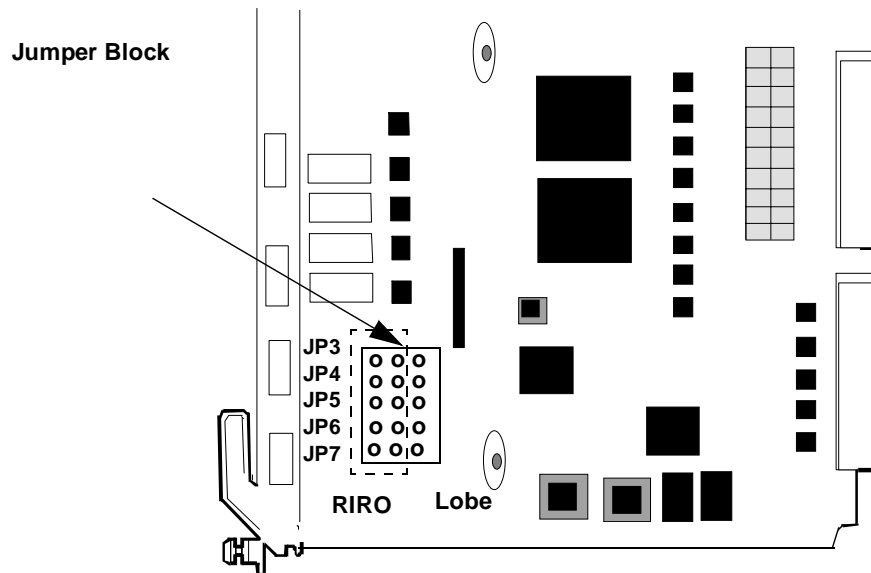
2. The modules are connected to each other by one of the RI/RO trunk pairs.

When you try to ping stations on the two modules, unreliable network information displays. You may not be able to pass data between the two modules. Avoid this type of configuration.

Setting the Lobe/Trunk Jumper

This section applies to Chapter 3, Installing the Module, the section titled Setting the Lobe/Trunk Jumper (T18PSA and T18MSA). In Figure 3-2, the module component side view is missing the JP3 switch on the jumper block.

The following diagram shows the correct jumper for Figure 3-2.



Enabling Mismatch Resolution Command

In Chapter 4, Configuring the Module, the section titled Enabling Mismatch Resolution (Passive Module Only) is incorrect. The title should include the Active Per-Module Media Module also.

This section title should read:

Enabling Mismatch Resolution (Passive and Active Per-Module Media Modules Only)

Trunk Compatibility Modes

In Chapter 4, Configuring the Module, the section titled Trunk Compatibility Mode, Table 4-1, 8260 Compatibility Settings, will contain the following compatibility modes:

To Connect 8260 Modules to:	Set Compatibility Mode to:
3Com CoreBuilder™ 5000 modules	CB5000
3Com ONline™ System Concentrator	ONline
3Com ONsemble	ONsemble
IBM 8238 Token Ring Stackable Hub	8238
IBM 8230 CAU	8230
IBM 8228 MAU	8230
IBM 8260 Multiprotocol Switching Hub	8260
All IBM 8250 Multiprotocol Intelligent Hub Token Ring Modules except for the IBM 8250 T04MS-CR	8250
IBM 8250 T04MS-CR	8238

Note: The compatibility mode for ONcore has changed from ONcore to CB5000 if you are running DMM Version v5.0 or later.

Troubleshooting

This section applies to Chapter 5, Troubleshooting. The following sections contain clarification and additional useful information.

General Troubleshooting Tips

The second bulleted item in the list on page 5-2 should read:

- Any attaching device or station is set to the same ring speed as the network that the port (per-port-switching media modules) or module (per-module-switching media modules) is assigned to.

Troubleshooting Using the Port Status LEDs

Table 5-2 includes the following two additional table cells under the *1 blink LED state*.

LED State	Indication	Possible Cause	Corrective Action
1 blink	Port enabled, no phantom.	Station speed does not match the network speed.	Check the speed of the station and network. Make sure the speeds match.
		Station not inserted on ring.	Run your software application. This will cause the Token Ring end station to insert onto the ring.

Trunk Interoperability Problems

In the section titled Trunk Interoperability Problems, item number 7 has been added to the numbered list:

7. Check that the jumpers for the trunks are set properly when the trunk ports are enabled.

Installing a Token Ring Jitter Attenuator Card

The document *Installing a Token Ring Jitter Attenuator Card* (Part Number 59G0250) describes how to install the Jitter Attenuator Card.

This section lists additional installation steps that should be added to this installation procedure for the Token Ring Jitter Attenuator (JA) Card.

Perform the following additional installation steps:

1. After you insert the standoff screws, check the seating of the connector.
2. Press the JA Card directly over the connector and make sure the card is fully seated.

Note: For customers who receive a Jitter Attenuator Card with an adhesive tape, there is a document with new installation instructions. Refer to the document titled *Installing an IBM Token Ring Jitter Attenuator Card*, Document Number 29H4418.

