Gigamon®

G-TAP M Series Hardware Guide

GigaVUE M Series

Product Version: 2.3.01 and above Document Version: 1.0

(See Change Notes for document updates.)

Contents

About This Guide

This guide describes how to rack mount, assemble, and connect the Gigamon Tapping Access Point (G-TAP) M Series modules manufactured by Gigamon® Inc.
The G-TAP M Series modules contain from one to six passive, optical splitter TAPs for common optical media and speeds. Similar to the rest of the G-TAP line, the G-TAP M Series modules provide visibility to 1Gb, 10Gb, 25Gb, 40Gb, and 100Gb traffic.
The G-TAP M Series modules are built to access multimode short-range links and single-mode, long-range links. The optical TAPs of the modules provide a duplication of production network traffic for analytic and security tools.
The G-TAP M Series modules have the following capabilities:

- The number of modules that can be installed in a G-TAP M Series chassis are:
  o Up to six modules can be installed in a G-TAP M Series TAP-M200, which is a 1 Rackmount Unit (RU) chassis.
  o Up to three modules can be installed in a G-TAP M Series TAP-M100T, which is a 1/2 RU chassis.
  o Up to two multimode unidirectional TAP modules from the TAP-Mxx1ULT family can be installed in a G-TAP M Series TAP-M202ULT, which is a 1 RU chassis.
- Visibility to higher-density links leveraging higher speed optics.
- Completely passive. The G-TAP M Series modules never require power, software, or configuration.
- LC Duplex connectors or MPO/MTP connectors for network links leading directly into the Gigamon Deep Observability Pipeline.
- Integration with all GigaVUE nodes.

There are also two G-TAP M Series breakout panels that provide for the breakout or aggregation of GigaVUE ports.

Installing and Removing G-TAP M Series Modules

A G-TAP M Series module consists of one, two, three, four, or six TAPs and installs into either a 1 RU G-TAP M Series chassis (TAP-M200 or TAP-M202ULT), or a 1/2 RU G-TAP M Series chassis (TAP-M100T). A G-TAP M Series chassis can contain up to six M Series modules. G-TAP M Series TAPs using MPO/MTP connectors have up to three TAPs per module. TAPs using LC connectors have up to six TAPs per module as shown in Figure 1 G-TAP M Series Module with Six TAPs and LC Connectors.

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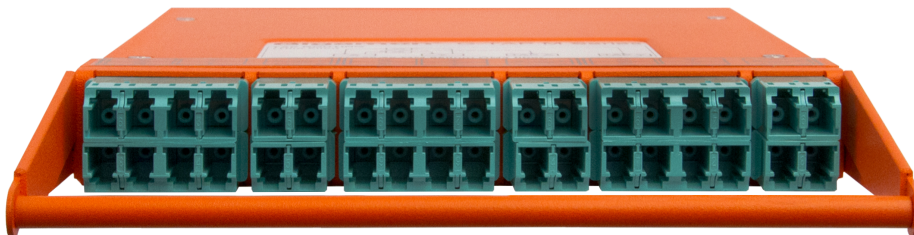
Figure 1   *G-TAP M Series Module with Six TAPs and LC Connectors*

The following chapter discusses the process for installing and removing the G-TAP M Series modules.

Installing G-TAP M Series Modules in a G-TAP M Series Chassis

To install G-TAP M Series modules in a G-TAP M Series chassis, do the following:

1. Install the G-TAP M Series chassis in a rack. Following figures show examples of 1RU G-TAP M Series TAP-M200 chassis, TAP-M202ULT chassis, and 1/2RU G-TAP M Series TAP-M100T chassis that are empty.

    > **NOTE:** You can either flush mount the rack or install it with a 3in setback.

Figure 2   *Empty 1RU G-TAP M Series TAP-M200 chassis*

Figure 3   *Empty 1RU G-TAP M Series TAP-M202ULT chassis*

Figure 4   *Empty 1/2RU G-TAP M Series TAP-M100T chassis*

2. Hold the module by the handle and gently slide it into one of the slots in the chassis.

3. Push the module into the slot until it is seated. Magnets inside the chassis hold the module in place.

4. Repeat steps 2 and 3 for each module to be inserted into the chassis. Following figures show the G-TAP M Series chassis with modules installed in each slot.

Figure 5   *G-TAP M Series TAP-M200 Chassis with Modules Installed*

Figure 6   *G-TAP M Series TAP-M202ULT Chassis with Modules Installed*

Figure 7   *G-TAP M Series TAP-M100T Chassis with Modules Installed*

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Removing G-TAP M Series Modules

To remove a G-TAP M Series module, do the following:

1. Hold the module by the handle and pull it forward to release it from the magnets inside the chassis.

2. Gently slide the module out of its slot.

Connecting G-TAP M Series Modules

Links are tapped with G-TAP M Series by disconnecting an existing link between two network devices (for example, the connection between an access switch and a distribution network) and reconnecting the link so that network data flows through one TAP.

Disconnecting Fiber from the Modules

LC Duplex or MPO/MTP connectors are easily accessed when connected to the module. Merely pull the TAP module out of the G-TAP M Series chassis by 3in or 4in. This alleviates the need for special connector latches or extraction tools.

Routing and Port Labels

A module has a set of either three, four, or six TAPs, depending on which module is used. Each TAP has an X port, a Y port, and two TAP ports. The ports are indicated by the orange label on the top panel to assist with the proper connections of the TAP to the network. Each module also has a routing diagram on the top panel. The breakout panels PNL-M341 and PNL-M343 also have routing and port labels.

There are two types of TAPs—Fused TAPs and Thin Film TAPs. Following table provides the list of TAPs under each type:

Table 1: Fused and Thin Film TAPs

Fused TAPs	Thin Film TAPs
	M251T, M251LT, M251ULT, and M251
M253	M253T, M253LT, and M253ULT
	M271T, M271LT, M271ULT, and M271
M273	M273T, M273LT, and M273ULT
M473	M252LT, M261LT, M262LT, M263LT, and M272LT
	M451T, M451ULT, M453T, and M473T
	M471, M471T, M471ULT, and M471-SR10
	TAP-M506T and TAP-M506A

Routing Labels

Figure Figure 8Routing Diagram for Fused Type TAPs shows the routing diagram that is on the top panel of the Fused type G-TAP models. Refer to the Connecting G-TAP M Series Modules for the list of Fused TAPs.
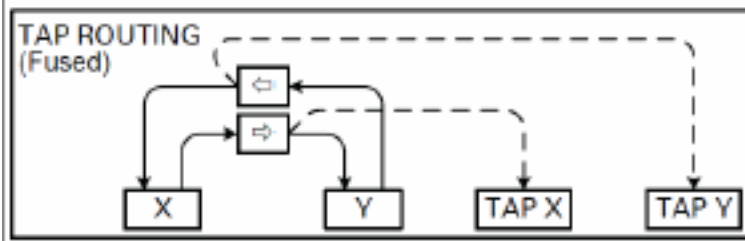
Figure 8   *Routing Diagram for Fused Type TAPs*

Figure Figure 9Routing Diagram for Thin Film Type TAPs shows the routing diagram that is on the top panel of Thin Film type G-TAP models. Refer to the Connecting G-TAP M Series Modules for the list of Thin Film TAPs.
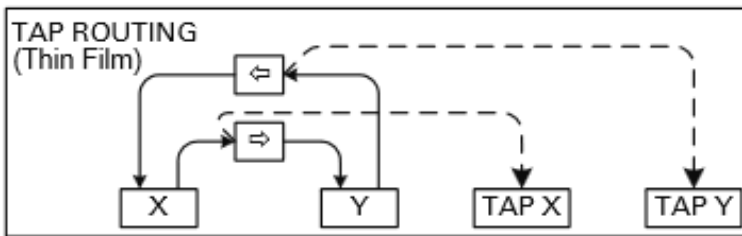
Figure 9   *Routing Diagram for Thin Film Type TAPs*

Figure Figure 10Routing Diagram for G-TAP M506A or G-TAP M506T shows the routing diagram that is on the top panel of the G-TAP M506A or G-TAP M506T.
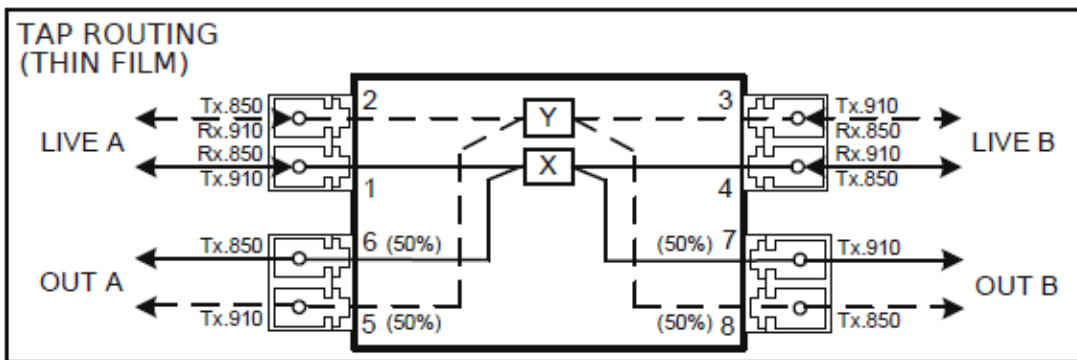
Figure 10   *Routing Diagram for G-TAP M506A or G-TAP M506T*

Figure Figure 11Routing Diagram for Breakout Panels PNL-M341, PNL-M341T, PNL-M343, and PNL-M343T shows the routing diagram that is on the top panel of breakout panels PNL-M341, PNL-M341T, PNL-M343, and PNL-M343T.

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Figure 11   *Routing Diagram for Breakout Panels PNL-M341, PNL-M341T, PNL-M343, and PNL-M343T*

Port Labels

Figure Figure 12Port Label for G-TAP M251, M 251T, M253T, M271, M271T, M273, M273T, M453, and M473 shows the port label that is on the top panel of G-TAP models M251, M251T, M253T, M271, M271T, M273, M273T, M453, and M473.

Figure 12   *Port Label for G-TAP M251, M 251T, M253T, M271, M271T, M273, M273T, M453, and M473*

Figure Figure 13Port Label for G-TAP M451, M451T, M453T, M471, M471T, M471-SR10, and M473T shows the port label that is on the top panel of G-TAP models M451, M451T, M453T, M471, M471T, M47 1-SR10, and M473T.

Figure 13   *Port Label for G-TAP M451, M451T, M453T, M471, M471T, M471-SR10, and M473T*

Figure Figure 14Port Label for G-TAP M251LT, M252LT, M253LT, M253ULT, M261LT, M262LT, M263LT, M271LT, M272LT, M273LT, and M273ULT shows the port label that is on the top panel of G-TAP models M251LT, M252LT, M253LT, M253ULT, M261LT, M262LT, M263LT, M271LT, M272LT, M273LT, and M273ULT.

Figure 14   *Port Label for G-TAP M251LT, M252LT, M253LT, M253ULT, M261LT, M262LT, M263LT, M271LT, M272LT, M273LT, and M273ULT*

Figure Figure 15Port Label for G-TAP M251ULT and M271ULT shows the port label that is on top of G-TAP model M251ULT and M271ULT.

Figure 15 *Port Label for G-TAP M251ULT and M271ULT*

Figure Figure 16Port Label for G-TAP M451ULT and M471ULT shows the port label that is on top of G-TAP model M451ULT and M471ULT.

Figure 16 *Port Label for G-TAP M451ULT and M471ULT*

Figure Figure 17 Port Label for G-TAP M506A shows the port label that is on top of G-TAP model M506A.

Figure 17 *Port Label for G-TAP M506A*

Figure Figure 18 Port Label for G-TAP M506T shows the port label that is on top of G-TAP model M506T.

Figure 18 *Port Label for G-TAP M506T*

Figure Figure 19Port Label for Breakout Panels PNL-M341, PNL-M341T, PNL-M343, and PNL-M343T shows the port label that is on the top panel of breakout panels PNL-M341, PNL-M341T, PNL-M343, and PNL-M343T.
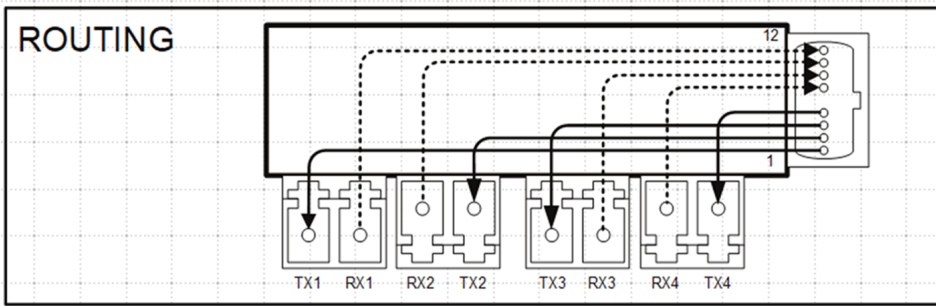

Figure 19 *Port Label for Breakout Panels PNL-M341, PNL-M341T, PNL-M343, and PNL-M343T*

Connecting G-TAP M Series Breakout Panels

Breakout panels are used to breakout single ports to multiple ports or to aggregate multiple ports to a single port.
There are two G-TAP M Series breakout panels available:

- PNL-M341
- PNL-M343

This section provides the following information:

- Connecting G-TAP M Series Breakout Panels

○

PNL-M341 Breakout Panel Connection

The PNL-M341 is a Multimode (MM) breakout panel with a granularity of three breakouts per module. It provides three MPO ports for 40Gb/100Gb SR4 optics and 12 LC ports for 10Gb/25Gb SR optics.

> **NOTE:** Purchase MPO and LC patch cables separately

The PNL-M341 breakout panel contains three breakout modules labeled A, B, and C, and can be used for the breakout of a 40Gb port to four 10Gb links or for the aggregation of four 10Gb links to a 40Gb port, or for the breakout of a 100Gb port to four 25Gb links or for the aggregation of four 25Gb links to a 100Gb port.

Refer to Figure 20PNL-M341 Connections for Breakout for an example of using the PNL-M341 breakout panel to breakout a single 40Gb tool port to multiple 10Gb fiber outputs.
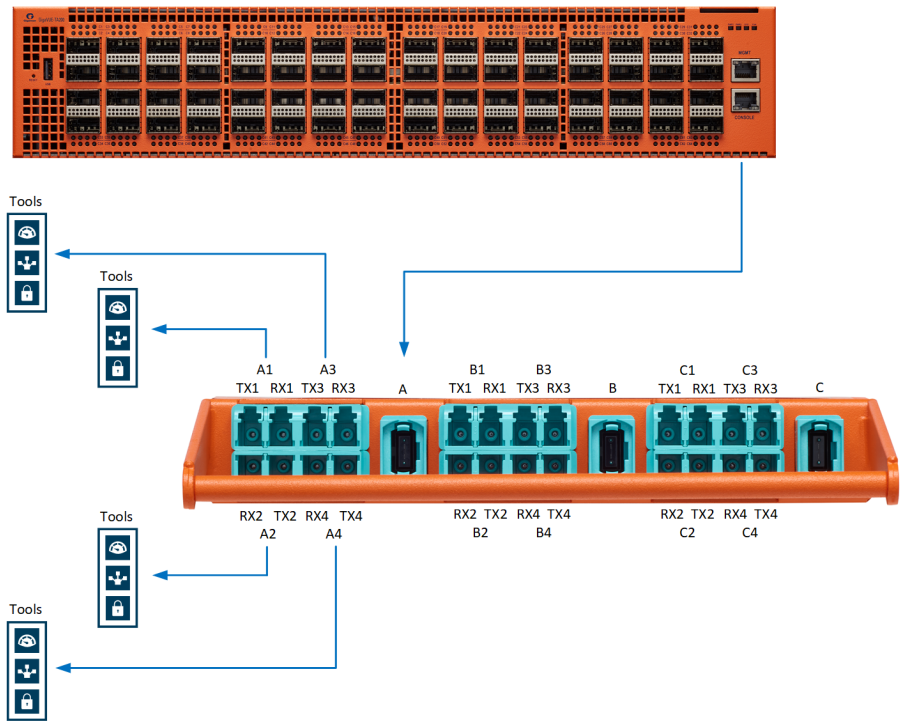
Figure 20 *PNL-M341 Connections for Breakout*

Refer to Figure 21PNL-M341 Connected to a TA10 for Aggregationfor an example of using the PNL-M341 breakout panel to aggregate multiple ports to a single tool port.
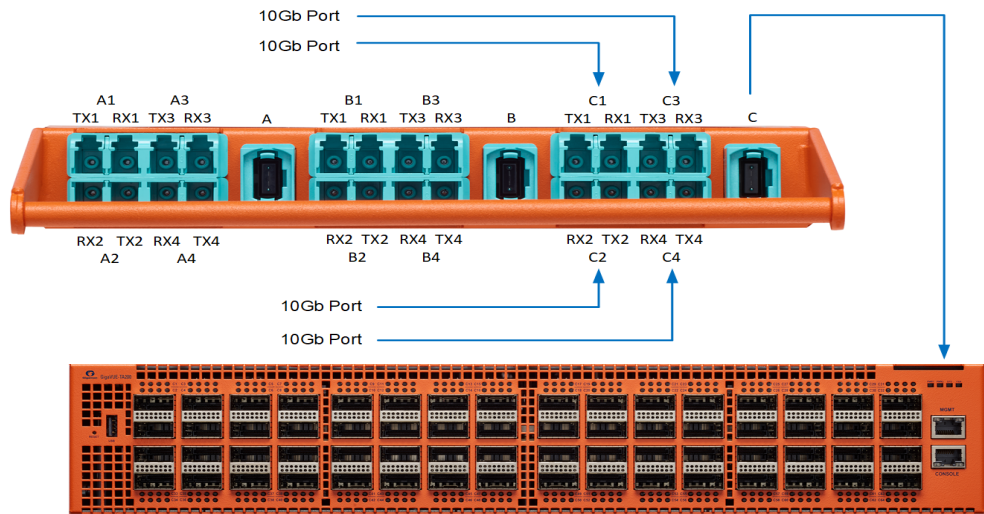
Figure 21 *PNL-M341 Connected to a TA10 for Aggregation*

MPO and LC Connectors and Cabling

The PNL-M341 breakout panel has three MPO connectors, each going to four LC duplexes. The MPO ports are MTP (UPC with pin-male), aqua color. The LC ports are LC (UPC), aqua color.

The MPO port connectors support 40Gb/100Gb SR4 MM QSFP+/QSFP28 transceivers. The LC port connectors support 10Gb/25Gb SR MM SFP+/SFP28 transceivers.

The MPO port connectors take MM QSFP MTP(F)/UPC-MTP(F)/UPC cabling.

The LC port connectors take MM LC/UPC-LC/UPC duplex cabling.

PNL-M343 Breakout Panel Connection

The PNL-M343 is a Singlemode (SM) breakout panel with a granularity of three breakouts per module. It provides three MPO ports for 40Gb PLR4 optics and twelve LC ports for 10Gb LR optics.

> **NOTE:** Purchase MPO and LC patch cables separately.

The PNL-M343 breakout panel contains three breakout modules labeled A, B, and C, and can be used for the breakout of a 40Gb port to four 10Gb links or for the aggregation of four 10Gb links to a 40Gb port.

Refer to Figure 22PNL-M343 Connections for Breakout for an example of using the PNL-M343 breakout panel to breakout a single 40Gb tool port to multiple 10Gb fiber outputs.
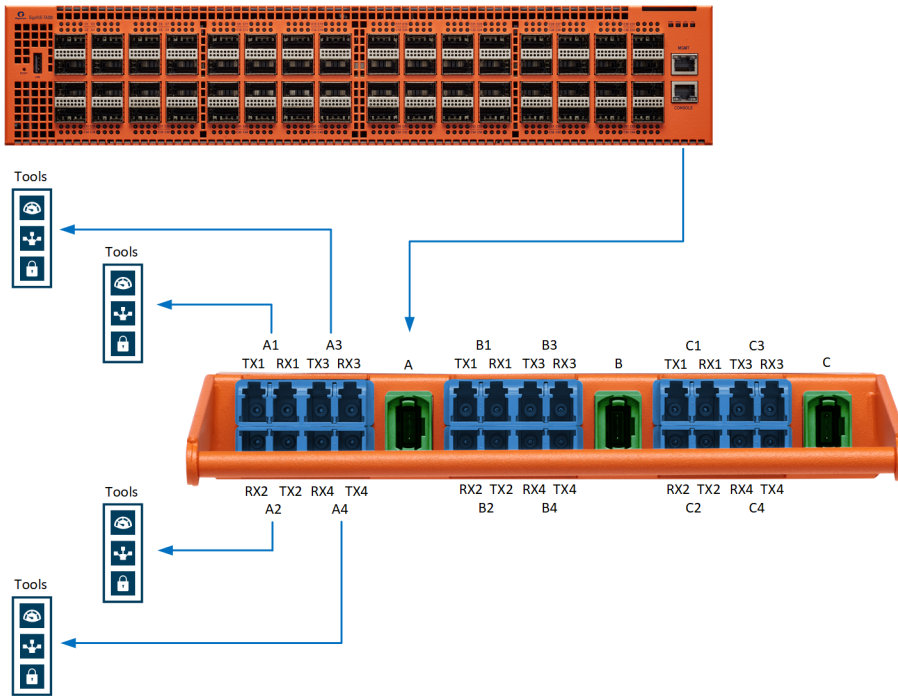
Figure 22 *PNL-M343 Connections for Breakout*

Refer to Figure 23PNL-M343 Connected to a TA10 for Aggregation for an example of using the PNL-M343 breakout panel to aggregate multiple ports to a single tool port.
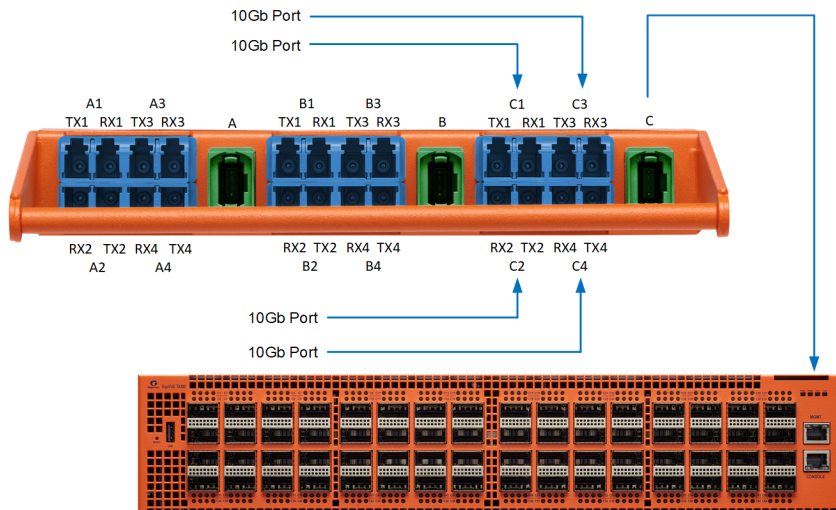
Figure 23 *PNL-M343 Connected to a TA10 for Aggregation*

MPO and LC Connectors and Cabling

The PNL-M343 breakout panel has three MPO connectors, each going to four LC duplexes. The MPO ports are MTP (APC with pin-male), green color. The LC ports are LC (UPC), blue color.

The MPO port connectors support 40Gb/100Gb PLR4 SM QSFP+ transceivers. The LC port connectors support 10Gb/25Gb LR SM SFP+ transceivers.

The MPO port connectors take SM QSFP MTP(F)/APC-MTP(F)/APC cabling.
The LC port connectors take SM LC/UPC-LC/UPC duplex cabling.

Connecting the PNL-M341 or PNL-M343 for Breakout

To use the PNL-M341 or PNL-M343 to breakout a single port to multiple ports:

1. On the GigaVUE node, set the port mode to **4x** for the 40Gb ports that will connect to the breakout panel. You can change the mode using GigaVUE-OS CLI or GigaVUE-FM.

2. Use a patch cable to connect the GigaVUE node to an MPO port (such as A) on the breakout panel. The traffic on MPO Port A is sent to four different transmitting LC ports, such as TX1 to TX4 on A1 to A4.

3. Connect the LC ports (such as A1 to A4) on the breakout panel to tools.

Refer to Figure 20PNL-M341 Connections for Breakout or Figure 22PNL-M343 Connections for Breakout.

Connecting the PNL-M341 or PNL-M343 for Aggregation

To use the PNL-M341 or PNL-M343 breakout panel to aggregate multiple GigaVUE 10Gb ports (from a network port or 10Gb tool port) to a single 40Gb fiber output:

1. Connect the GigaVUE 10Gb port to any of the receiving LC ports on the breakout panel, such as Rx1 to RX4 on C1 to C4. These ports are aggregated to the corresponding MPO port (C).

2. Connect the MPO port (C) on the breakout panel, to the destination 40Gb port.

> **NOTE:** If the destination port is a 40Gb network port on a GigaVUE HC Series or GigaVUE TA Series visibility node, the port must be in **4x** mode.

Refer to Figure 21PNL-M341 Connected to a TA10 for Aggregation or Figure 23PNL-M343 Connected to a TA10 for Aggregation.

G-TAP M Series TAP Module Specifications

This chapter describes the features and benefits, module specifications, physical dimensions and electrical characteristics of G-TAP M Series

Features and Benefits

Feature	Benefit
Powerful Traffic Mirroring Capabilities	The G-TAP M Series modules passively mirror 100% of network traffic including errors, non-standard network traffic, and network packets that do not conform to established protocol standards enabling detailed analysis, security, and monitoring.
Completely Passive TAP	The G-TAP M Series modules rely on passive full duplex fiber optic splitters, which results in non-point-of-failure operation. It requires no power source to operate.
GigaVUE® Integration	Easy integration with the full family of GigaVUE® Visibility Fabric™ nodes for maximum flexibility. Connect the G-TAP M Series modules to network ports on a GigaVUE fabric node to take advantage of powerful intelligent traffic filtering, aggregation, and modification offered through Visibility Fabric architecture.

G-TAP M Series TAP Module Specifications

There are three types of G-TAP M Series modules:

Type	Products
Multimode (MM)	• Short Reach (SR) for 10Gbps, 40Gbps, and 100Gbps products • Short Wavelength (SX) for 1.25Gbps products
Single-mode (SM)	• Long Reach (LR) for 10Gbps, 40Gbps, 100Gbps and 400 Gbps products • Long Wavelength (LX) for 1.25Gbps products
Bi-directional (BiDi)	• Cisco BiDi for 40Gbps and 100Gbps products

Table 2: MM, SR TAP Modules describes the MM, SR TAP modules.

Table 2: MM, SR TAP Modules

G-TAP M Series Module	Speed	Split Ratio	Max Network Loss	Max TAP Loss	Connector	Mounting Chassis	Fiber Type
TAP-M251	1G/10G	50/50	3.9dB	3.9dB	LC (UPC)	TAP-M100T/TAP-M200	MM (50/125 micron) for 850nm wavelength
TAP-M251T	1G/10G	50/50	3.9dB	3.9dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M251LT	1G/10G/25G	50/50	3.9dB	3.9dB	LC (UPC)	TAP-M100T/TAP-M200	

G-TAP M Series Module	Speed	Split Ratio	Max Network Loss	Max TAP Loss	Connector	Mounting Chassis	Fiber Type
TAP-M251ULT	1G/10G/25G	50/50	3.9dB	5.1dB	LC (UPC)	TAP-M202ULT	
TAP-M261LT	1G/10G/25G	60/40	3.15dB	5.15dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M271	1G/10G	70/30	2.2dB	6.2dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M271T	1G/10G	70/30	2.2dB	6.2dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M271LT	1G/10G/25G	70/30	2.2dB	6.2dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M271ULT	1G/10G/25G	70/30	2.2dB	7.4dB	LC (UPC)	TAP-M202ULT	
TAP-M451	40G/100G	50/50	4.3dB	4.3dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	
TAP-M451T	40G/100G	50/50	4.3dB	4.3dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	
TAP-M451ULT	40G/100G	50/50	4.3dB	5.5dB	MPO/MTP (UPC)	TAP-M202ULT	
TAP-M471	40G/100G	70/30	2.8dB	6.4dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	
TAP-M471-SR10	100G	70/30	2.8dB	6.6dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	
TAP-M471T	40G/100G	70/30	2.8dB	6.4dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	
TAP-M471ULT	40G/100G	70/30	2.8dB	7.4dB	MPO/MTP (UPC)	TAP-M202ULT	

Contents

G-TAP M Series Module	Speed	Split Ratio	Max Network Loss	Max TAP Loss	Connector	Mounting Chassis	Fiber Type
TAP-M252LT	100M/1G	50/50	3.9dB	3.9dB	LC (UPC)	TAP-M100T/TAP-M200	MM (62.5/125 micron) for 850nm wavelength
TAP-M262LT	100M/1G	60/40	3.15dB	5.15dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M272LT	100M/1G	70/30	2.2dB	6.2dB	LC (UPC)	TAP-M100T/TAP-M200	

Table 3: SM, LR TAP Modules describes the SM, LR TAP modules, and describes the BiDi TAP module[1].

Table 3: SM, LR TAP Modules

G-TAP M Series Module	Speed	Split Ratio	Max Network Loss	Max TAP Loss	Connector	Mounting Chassis	Fiber Type
TAP-M253	1G/10G/400G Base	50/50	3.7dB	3.7dB	LC (UPC)	TAP-M100T/TAP-M200	SM (9/125 micron) for 1310nm or 1550nm wavelength
TAP-M253T	1G/10G/25G/40G/100G/400G Base	50/50	3.7dB	3.7dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M253LT	1G/10G/25G/40G/100G/400G Base	50/50	3.7dB	3.7dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M253ULT	1G/10G/25G/40G/100G/400G Base	50/50	3.7dB	4.2dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M263LT	1G/10G/25G/40G/100G/400G Base	60/40	3.05dB	4.95dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M273	1G/10G/400G Base	70/30	2.0dB	6.1dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M273T	1G/10G/25G/40G/100G/400G Base	70/30	2.0dB	6.1dB	LC (UPC)	TAP-M100T/TAP-M200	

[1]The insertion loss numbers were tested using MPO/MTP™ cabling.

G-TAP M Series Module	Speed	Split Ratio	Max Network Loss	Max TAP Loss	Connector	Mounting Chassis	Fiber Type
TAP-M273LT	1G/10G/25G/40G/100G/400G Base	70/30	2.0dB	6.1dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M273ULT	1G/10G/25G/40G/100G/400G Base	70/30	2.0dB	6.6dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M453	40G/100G/400G	50/50	3.7B	3.7dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M453T	40G/100G/400G	50/50	4.3dB	4.3dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	
TAP-M473	40G/100G/400G	70/30	2.0dB	6.1dB	LC (UPC)	TAP-M100T/TAP-M200	
TAP-M473T	40G/100G/400G	70/30	2.8dB	6.7dB	MPO/MTP (UPC)	TAP-M100T/TAP-M200	

NOTE: TAP-M453 and TAP-M473 support 100Gb CWDM4, in addition to LR4.

Table 4: BiDi TAP Modules describes the BiDi TAP modules.

Table 4: BiDi TAP Modules

G-TAP M Series Module	Speed	Split Ratio	Max Network Loss	Max TAP Loss	Connector	Fiber Type
TAP-M506	40Gb	50/50	3.9dB	3.9dB	LC (UPC)	MM (50.5/125 micron) for 850nm/900nm wavelength
TAP-M506A	40Gb/100Gb	50/50	3.9dB	3.9dB	LC (UPC)	
TAP-M506T	40Gb/100Gb	50/50	3.9dB	3.9dB	LC (UPC)	

Table 5: MM, SR and SM, LR Breakout Panels describes the MM, SR and SM, LR breakout panels.

Table 5: MM, SR and SM, LR Breakout Panels

G-TAP M Series Breakout Panel	Speed	Network Loss	Connector	Fiber Type
PNL-M341	40Gb SR4 100Gb SR4	≤0.70dB	MPO-12 (UPC)	MM (50 micron) for 850nm wavelength
	10Gb SR 25Gb SR	≤0.30dB	LC (UPC)	MM (50 micron) for 850nm wavelength
PNL-M341T	40Gb SR4 100Gb SR4	≤0.70dB	MPO-12 (UPC)	MM (50 micron) for 850nm wavelength
	10Gb SR 25Gb SR	≤0.30dB	LC (UPC)	MM (50 micron) for 850nm wavelength
PNL-M343	40Gb PLR4 100Gb PLR4	≤0.75dB	MPO-12 (APC)	SMF-28e for 1270 ~ 1630nm wavelength
	10Gb LR 25Gb LR	≤0.30dB	LC (UPC)	SMF 1310nm wavelength
PNL-M343T	40Gb PLR4 100Gb PLR4	≤0.70dB	MPO-12 (APC)	SMF-28e for 1310/1550nm wavelength
	10Gb LR 25Gb LR	≤0.30dB	LC (UPC)	SMF 1310/1550nm wavelength
TAP-M452	100G	3.90dB	MTP	

Physical Weight and Dimensions

Table 6: Physical Weight and Dimensions of Chassis and TAP module describes the physical weight and dimensions of Chassis and TAP module.

Table 6: Physical Weight and Dimensions of Chassis and TAP module

Feature	Height	Width	Depth	Weight
Chassis	1.72in (4.38cm)	17.3in 44.0cm)	6.10in (15.5cm)	Empty: 3.84lbs (1.7kg) Full: 12.2lbs (5.5kg)
TAP Module	0.84in (2.14cm)	5.38in (13.7cm)	8.94in (22.7cm)	1.4lbs (0.64kg)
Breakout Panel	0.84in (2.14cm)	5.38in (13.7cm)	8.94in (22.7cm)	1.4lbs (0.64kg)

Electrical Characteristics

G-TAP M Series TAP Module Specifications describes the electrical characteristics of the G-TAP M Series modules.

Table 7: Electrical Characteristics of the G-TAP M Series Modules

Type	Specification
Power Requirements	Not Applicable. The G-TAP M Series modules are passive.
Link TAP Capacity	Each module taps up to six duplex links (three for MPO cabling). Each link produces two outputs: one from each direction in the link. Up to six modules can be housed in the 1 RU G-TAP M Series chassis.
Operating Temperature	32°F to 140°F (0°C to 60°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Storage Humidity	10% to 90%, relative, non-condensing
Altitude	Up to 15,000ft (4.6km)

Troubleshooting and Best Practices

This section provides information about some of the common issues that you may face when cabling TAPs and how to troubleshoot the issues. It also lists few best practices that you must follow to ensure smooth cabling. Refer to the following sections for details:

Common Issues and Troubleshooting

This section lists few common issues that you may face when cabling TAPs and how to troubleshoot the issues.

Common Issues and Troubleshooting

Common Issues	Description	Troubleshooting Tips
Misconnected cabling or using wrong cable types	Sometimes, cables may be mislabeled due to which you may have plugged in the wrong cable.	Each transceiver is designed and optimized to work with specific cables for specified distances. Ensure that you connect the appropriate transceivers and cables on both ends. Refer to the *"Cable Matrix for Copper TAPs and Fiber TAPs"* in the *GigaVUE-OS Compatability and Interoperability Matrix*.
Failure to breakout monitored links	There may be instances when the switch and router connections that use standard duplex cabling are not broken out into simplex fiber cables on the receiving end.	Ensure that both monitor links are broken out into simplex fiber cables and are individually attached to the Rx connections on the receiving end.
Flipped connections	Sometimes, a duplex cable may not be crossed properly such that the Tx on one end is connected to the Rx on the other end. The issue could be anywhere along the cabling path or the patch panels, which	Disconnect the plastic housing and flip the LC connections on one end of the connection.

Common Issues	Description	Troubleshooting Tips
	means that the light is not passing through the cable.	
Mismatched transceivers	The transceiver type used on both ends of the connection is not identical.	Ensure that the transceiver type is identical on both ends of the connection. For example, a 10G LR4 transceiver that sends traffic from one end must be paired with the same transceiver type on the receiving end.
Dirty connections	Dust, dirt, and oils all inhibit light and cause poor connections.	Use new cables with dust caps. Clean all connections before use. Refer to the .
Bad transceivers	A transceiver is an electronic component that is designed to transmit and receive light. It can malfunction.	Always keep spare transceivers and replace them as required.
Bad TAPs	Passive TAPs are the most reliable networking and security products available because they contain a minimal number of components and do not require any software. But like any hardware, a TAP could be defective.	Always keep spare TAPs and replace them as required.
Crimped Cabling	If a bend is too tight, the fiber will not be able to properly transmit the signal.	Ensure that the bends in the cabling are not tight so that the fiber transmits signal properly.
Bad connections	Light degrades at given rates over distance. Light may also degrade with too many connections. Both these scenarios may cause bad connections	Do not exceed specified maximum distances. Be aware light degrades with each connection; use as few patch panels as possible.

Generic Troubleshooting Steps

Most TAP failures are due to improper cabling. To troubleshoot a TAP failure, you must ensure that the light is not impeded or broken along the way from the beginning till the end of the connection. Figure 24Troubleshoot Generic TAP Issues is a flow chart that illustrates the generic steps to troubleshoot TAP failures. Follow the steps provided in the flow chart to isolate the issue and take corrective action.

Start

Transceivers with same speed and appropriate cables are connected properly on both ends

—No→ Connect the appropriate transceivers and cables on both ends

Yes

Verify link connectivity (for links with multiple patch panels) using a hand-held light meter

Link connectivity is established

—No→ Replace the cable, and then the transceiver, if required

Yes

Verify link light indicators

Indicators go down on both ends when one side is disconnected

Yes

No

Run "show port" command to check light levels

Light level is within the specification mentioned in the Transceiver Specifications table in the Hardware Installation Guide

Yes

Collect traffic statistics from both endpoint nodes

Contents

Statistics match reasonably on both endpoints

—No→ Run "show port stats port-list <x/y/z>" command to verify configurations and take appropriate corrective
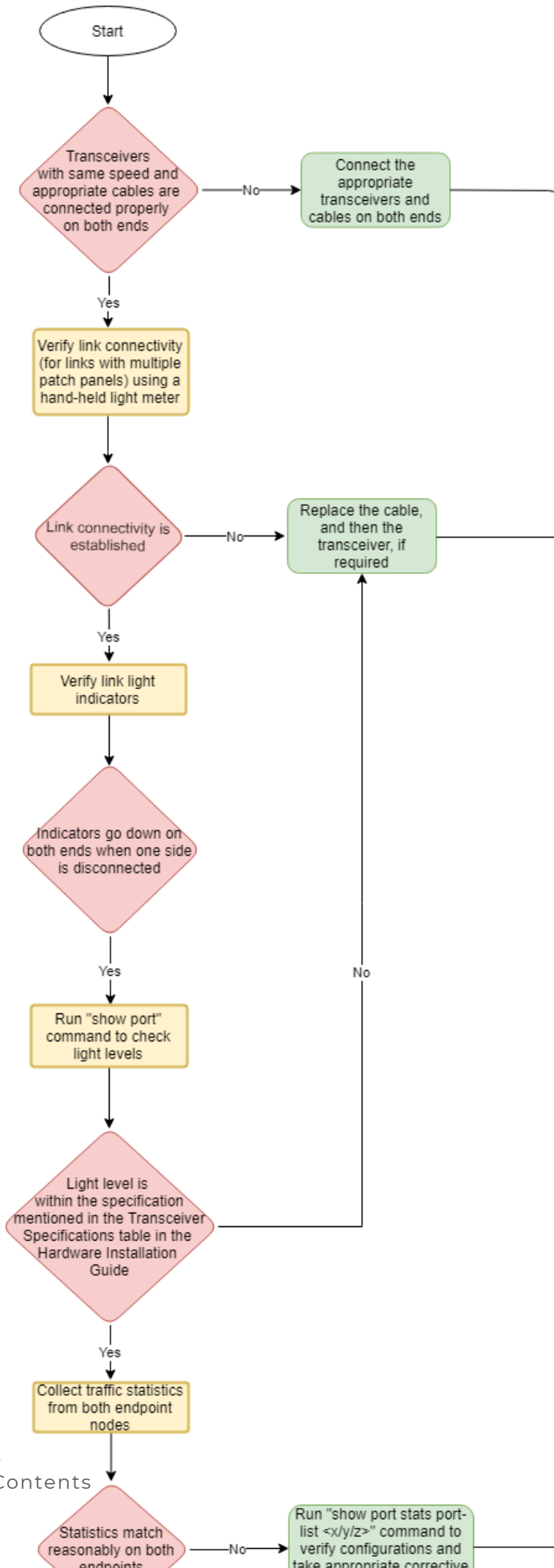
Figure 24 *Troubleshoot Generic TAP Issues*

Best Practices

When connecting TAPs, ensure you adhere to the following best practices:

- Prior to connecting any cable, both the port and cable adapter must be cleaned as follows:
  - Clean each port on the TAP using the optical fiber cleaner pen prior to cable insertion.
  - Clean the MPO/MTP adapters using the MPO/MTP port cleaner pen.
  - Clean the LC adapters using the LC port cleaner pen.
  - Clean each cable adapter using the optical fiber cleaner cassettes prior to cable insertion.
  - Visually inspect cable adapter to ensure no dust particles are present on the adapter front.
  - If dust is clogged in the cable and it is not possible to clean, use a new cable.
- Port caps must be installed when ports on the TAP are not in use.

> **NOTE:** The G-TAP models M471 and M471-SR10 are highly susceptible to dust. Properly clean all connections before use.

Additional Sources of Information

This appendix provides additional sources of information. Refer to the following sections for details:

- Documentation
- Documentation Feedback
- Contact Technical Support
- Contact Sales
- The VÜE Community

Documentation

This table lists all the guides provided for GigaVUE M Series software and hardware. The first row provides an All-Documents Zip file that contains all the guides in the set for the release.

> **NOTE:** In the online documentation, view What's New to access quick links to topics for each of the new features in this Release; view Documentation Downloads to download all PDFs.

Table 1: Documentation Set for Gigamon Products

GigaVUE M Series 2.3.01 and above Hardware and Software Guides
DID YOU KNOW? If you keep all PDFs for a release in common folder, you can easily search across the doc set by opening one of the files in Acrobat and choosing **Edit > Advanced Search** from the menu. This opens an interface that allows you to select a directory and search across all PDFs in a folder.
Hardware how to unpack, assemble, rackmount, connect, and initially configure ports the respective GigaVUE M Series devices; reference information and specifications for the respective GigaVUE M Series devices
GigaVUE-HC1 Hardware Installation Guide
GigaVUE-HC3 Hardware Installation Guide
GigaVUE-HC1-Plus Hardware Installation Guide
GigaVUE-HCT Hardware Installation Guide
GigaVUE-TA25 Hardware Installation Guide
GigaVUE-TA25E Hardware Installation Guide
GigaVUE-TA100 Hardware Installation Guide
GigaVUE-TA200 Hardware Installation Guide
GigaVUE-TA200E Hardware Installation Guide

GigaVUE M Series 2.3.01 and above Hardware and Software Guides
GigaVUE-TA400 Hardware Installation Guide
GigaVUE-OS Installation Guide for DELL S4112F-ON
G-TAP A Series 2 Installation Guide
GigaVUE M Series Hardware Installation Guide
GigaVUE-FM Hardware Appliances Guide
Software Installation and Upgrade Guides
GigaVUE-FM Installation, Migration, and Upgrade Guide
GigaVUE-OS Upgrade Guide
GigaVUE V Series Migration Guide
Fabric Management and Administration Guides
GigaVUE Administration Guide covers both GigaVUE-OS and GigaVUE-FM
GigaVUE Fabric Management Guide how to install, deploy, and operate GigaVUE-FM; how to configure GigaSMART operations; covers both GigaVUE-FM and GigaVUE-OS features
Cloud Guides how to configure the GigaVUE Cloud Suite components and set up traffic monitoring sessions for the cloud platforms
GigaVUE V Series Applications Guide
GigaVUE V Series Quick Start Guide
GigaVUE Cloud Suite Deployment Guide - AWS
GigaVUE Cloud Suite Deployment Guide - Azure
GigaVUE Cloud Suite Deployment Guide - OpenStack
GigaVUE Cloud Suite Deployment Guide - Nutanix
GigaVUE Cloud Suite Deployment Guide - VMware (ESXi)
GigaVUE Cloud Suite Deployment Guide - VMware (NSX-T)
GigaVUE Cloud Suite Deployment Guide - Third Party Orchestration
Universal Cloud TAP - Container Deployment Guide
Gigamon Containerized Broker Deployment Guide
GigaVUE Cloud Suite Deployment Guide - AWS Secret Regions

GigaVUE M Series 2.3.01 and above Hardware and Software Guides
GigaVUE Cloud Suite Deployment Guide - Azure Secret Regions
Reference Guides
GigaVUE-OS CLI Reference Guide library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE HC Series and GigaVUE TA Series devices
GigaVUE-OS Security Hardening Guide
GigaVUE Firewall and Security Guide
GigaVUE Licensing Guide
GigaVUE-OS Cabling Quick Reference Guide guidelines for the different types of cables used to connect Gigamon devices
GigaVUE-OS Compatibility and Interoperability Matrix compatibility information and interoperability requirements for Gigamon devices
GigaVUE-FM REST API Reference in GigaVUE-FM User's Guide samples uses of the GigaVUE-FM Application Program Interfaces (APIs)
Factory Reset Guidelines for GigaVUE-FM and GigaVUE-OS Devices Sanitization guidelines for GigaVUE Fabric Management Guide and GigavUE-OS devices.
Release Notes
GigaVUE-OS, GigaVUE-FM, GigaVUE-VM, G-TAP A Series, and GigaVUE Cloud Suite Release Notes new features, resolved issues, and known issues in this release ; important notes regarding installing and upgrading to this release **NOTE:** Release Notes are not included in the online documentation. **NOTE:** Registered Customers can log in to My Gigamon to download the Software and Release Notes from the Software and Docs page on to My Gigamon. Refer to How to Download Software and Release Notes from My Gigamon.
In-Product Help
GigaVUE-FM Online Help how to install, deploy, and operate GigaVUE-FM.

How to Download Software and Release Notes from My Gigamon

Registered Customers can download software and corresponding Release Notes documents from the **Software & Release Notes** page on to My Gigamon. Use the My Gigamon Software & Docs page to download:

- Gigamon Software installation and upgrade images,
- Release Notes for Gigamon Software, or
- Older versions of PDFs (pre-v5.7).

To download release-specific software, release notes, or older PDFs:

1. Log in to My Gigamon.
2. Click on the **Software & Release Notes** link.
3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "GigaVUE-FM" and Release: "5.6," enter "pdf" in the search box, and then click **GO** to view all PDF documentation for GigaVUE-FM 5.6.xx.

> **NOTE:** My Gigamon is available to registered customers only. Newer documentation PDFs, with the exception of release notes, are all available through the publicly available online documentation.

Documentation Feedback

We are continuously improving our documentation to make it more accessible while maintaining accuracy and ease of use. Your feedback helps us to improve. To provide feedback and report issues in our documentation, send an email to:
documentationfeedback@gigamon.com

Please provide the following information in the email to help us identify and resolve the issue. Copy and paste this form into your email, complete it as able, and send. We will respond as soon as possible.

Documentation Feedback Form		
About You	**Your Name**	
	Your Role	
	Your Company	
For Online Topics	**Online doc link**	*(URL for where the issue is)*
	Topic Heading	*(if it's a long topic, please provide the heading of the section where the issue is)*

For PDF Topics	**Document Title**	*(shown on the cover page or in page header)*
	Product Version	*(shown on the cover page)*
	Document Version	*(shown on the cover page)*
	Chapter Heading	*(shown in footer)*
	PDF page #	*(shown in footer)*
How can we improve?	**Describe the issue**	*Describe the error or issue in the documentation.* *(If it helps, attach an image to show the issue.)*
	How can we improve the content? **Be as specific as possible.**	
	Any other comments?	

Contact Technical Support

For information about Technical Support: Go to **Settings** ⚙ **> Support > Contact Support** in GigaVUE-FM.

You can also refer to https://www.gigamon.com/support-and-services/contact-support for Technical Support hours and contact information.

Email Technical Support at support@gigamon.com.

Contact Sales

Use the following information to Gigamon channel partner or Gigamon sales representatives.

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

Partners: www.gigamon.com/partners.html

Premium Support

Email Gigamon at inside.sales@gigamon.com for information on purchasing 24x7 Premium Support. Premium Support entitles you to round-the-clock phone support with a dedicated Support Engineer every day of the week.

The VÜE Community

The VÜE Community is a technical site where Gigamon users, partners, security and network professionals and Gigamon employees come together to share knowledge and expertise, ask questions, build their network and learn about best practices for Gigamon products.

Visit the VÜE Community site to:

- Find knowledge base articles and documentation
- Ask and answer questions and learn best practices from other members.
- Join special-interest groups to have focused collaboration around a technology, use-case, vertical market or beta release
- Take online learning lessons and tutorials to broaden your knowledge of Gigamon products.
- Open support tickets (Customers only)
- Download the latest product updates and documentation (Customers only)

The VÜE Community is a great way to get answers fast, learn from experts and collaborate directly with other members around your areas of interest.

Register today at community.gigamon.com

Questions? Contact our Community team at community@gigamon.com.

Glossary

D

decrypt list

need to decrypt (formerly blacklist)

decryptlist

need to decrypt - CLI Command (formerly blacklist)

drop list

selective forwarding - drop (formerly blacklist)

F

forward list

selective forwarding - forward (formerly whitelist)

L

leader

leader in clustering node relationship (formerly master)

M

member node

follower in clustering node relationship (formerly slave or non-master)

N

no-decrypt list

no need to decrypt (formerly whitelist)

nodecryptlist

no need to decrypt- CLI Command (formerly whitelist)

P

primary source

root timing; transmits sync info to clocks in its network segment (formerly grandmaster)

R

receiver

follower in a bidirectional clock relationship (formerly slave)

S

source

leader in a bidirectional clock relationship (formerly master)