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Stratix Switch Fiber Connection Facts

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Question

- What are all the different Fiber connections on the Stratix Switches?
- Do the Stratix managed switches or their expansion modules ship with SFP modules included?
- What types of fiber does the Stratix series support?
- Can different transceiver type communicate with each other?
- Can you use multimode fiber on one port then single mode on another port on the switch?
- Do non-switch devices like the 1783-ETAP1F, 1783-ETAP2F, and 1756-EN2F support OM3 fiber?

Environment

- Stratix 5700
- Stratix 5400
- Stratix 8300
- Stratix 8000
- Stratix 6000
- Stratix 2000

Answer

Fiber Connections on the Stratix Switches 2000, 6000, 5400, 5700 and 8x00:

- All fiber SFPs modules currently sold by Rockwell Automation offer LC connectors
- The Stratix 6000 is either 1000BASE-SX or 1000BASE-LX (that is 1000 Mbps only and either multi-mode or single mode)
- The Stratix 8x00 Base module seems to do it all with the correct SFP Module (Check below under More details)
- The Stratix 8000 Expansion module is eight LC port connectors with 100BASE-FX only (that is 100 Mbps multi-mode)

- Single-mode is good for distances up to 10km and Multi-mode for distances up to 2km
- The Stratix 5400, 5700 or the 8x00 nor it's expansion modules ship with SFP's except for the 1783-MX08F, they must be ordered separately.
- A single-mode transceiver cannot talk to a multi-mode transceiver.
- The correct cable must be selected for the type of fiber used.
- A 100 meg transceiver cannot talk to a 1 gig transceiver.
- You can use different fiber modes on different ports. Make sure that each of the ends are contain the same fiber mode. For example if one segment is multimode then both ends of the segment needs to be multimode.

Fiber Types Supported

- **OM1:** 62.5/125µm graded index multimode
- **OM2:** 50/125µm graded index multimode (500 MHz-km)
- **OM3:** 50/125µm graded index multimode (2000 MHz-km)
- **OM4:** 50/125µm graded index multimode (4700 MHz-km)
- **OS1:** 9/125µm single mode

More information regarding fiber types, options and considerations can be found in [Fiber Optic Infrastructure Application Guide](#)
(http://literature.rockwellautomation.com/idc/groups/literature/documents/td/enet-td003_-en-e.pdf) Publication ENET-TD003.

Note: See the above Application Guide for fiber capabilities for the 1783-ETAP Fiber modules and 1756-EN2F Ethernet fiber module.

Stratix 2000 (Unmanaged Switch)

From [Stratix 2000 Ethernet Unmanaged Switch Product Page](#)
(<http://ab.rockwellautomation.com/Networks-and-Communications/Stratix-2000-Ethernet-Switches#overview>)

- Fiber optic Ethernet data rate is 100 Mbps or 1Gbps
- Fiber optic link budget is Graded index multi-mode; 2000 meters
- Fiber Optic Link Budget:
 - 8 db with 62.5/125 mm multimode cable
 - 4 db with 50/125 mm multimode cable

Stratix 6000 (Managed Switch)

From [Stratix 6000 Ethernet Managed Switch User Manual](#)

([http://literature.rockwellautomation.com/idc/groups/literature/documents/um/1783-](http://literature.rockwellautomation.com/idc/groups/literature/documents/um/1783-um001_-en-p.pdf)

[um001_-en-p.pdf](http://literature.rockwellautomation.com/idc/groups/literature/documents/um/1783-um001_-en-p.pdf)) Publication 1783-UM001, the SFP modules are not included with the Stratix 6000 and must be purchased separately. The follow SFP modules below are supported on the Stratix 6000.

Also see [Stratix 6000 Ethernet Managed Switches](#)

(http://literature.rockwellautomation.com/idc/groups/literature/documents/in/1783-in004_-en-p.pdf)

Publication 1783-IN004.

- 1783-SFP1GSX - 1000BASE-SX multi-mode fiber transceiver
- 1783-SFP1GLX - 1000BASE-LX single-mode fiber transceiver
- Either transceiver uses LC connectors for the fiber cable.
- Notice no option for 100 Mbps.

Stratix Managed Switches (8x00, 5400/5410 and 5700)

From [Stratix Managed Switches User Manual](#)

(http://literature.rockwellautomation.com/idc/groups/literature/documents/um/1783-um007_-en-p.pdf)

(publication 1783-UM007), there are many base modules available:

- Combo ports are dual-purpose ports, each with a copper port and an SFP module slot. Only the copper or fiber may be used at any given time on the combo ports, not both.
- All transceivers use LC connectors for the fiber cable
- Speeds vary per model selected

And the correct SFP module must be selected:

- 1783-SFP100FX - 100BASE-FX multi-mode fiber transceiver
- 1783-SFP1GSX - 1000BASE-SX multi-mode fiber transceiver
- 1783-SFP100LX - 100BASE-LX single-mode fiber transceiver
- 1783-SFP1GLX - 1000BASE-LX single-mode fiber transceiver
- 1783-SFP100EXC - 100BASE-EX single-mode fiber
- 1783-SFP100ZXC - 100BASE-ZX single-mode fiber
- 1783-SFP100GEXE - 1000BASE-EX single-mode fiber
- 1783-SFP1GZX - 1000BASE-ZX single-mode fiber
- 1783-SFP10SGRE - 10GBASE-SR multi-mode fiber
- 1783-SFP10GLRE - 10GBASE-LR single-mode fiber
- 1783-SFP1GTE - 1000BASE-T-copper

As for the Stratix 8x00 Expansion modules

- 1783-MX08T Expansion module with 8 10/100BASE-T copper Ethernet ports (RJ-45 connectors)

- 1783-MX08F Expansion module with 8 100BASE-FX fiber optic Ethernet ports (on LC connectors). Notice that there is only one option for these Fiber ports; the 100Base-FX multi-mode which does not require SFP modules.
- 1783-MX04S Expansion module with 4 SFP slots compatible with 1783-SFP100FX and 1783-SFP100LX SFP modules.
- 1783-MX08S Expansion module with 8 SFP slots compatible with 1783-SFP100FX and 1783-SFP100LX SFP modules.
- 1783-MX04E Expansion module with 3 power over Ethernet ports
- 1783-MX04T04E Expansion module with 4 copper ports and 4 power over Ethernet ports

You may also consider the following articles

- [59827 - Connecting the Stratix 6000 switch to the Stratix 8000 switch Over Fiber](http://rockwellautomation.custhelp.com/app/answers/detail/a_id/59827)
(//rockwellautomation.custhelp.com/app/answers/detail/a_id/59827)
- [54106 - Stratix 8000 SFP Transceiver selection](http://rockwellautomation.custhelp.com/app/answers/detail/a_id/54106)
(//rockwellautomation.custhelp.com/app/answers/detail/a_id/54106)
- [59347 - Stratix 8000, 6000, 5700, and 2000 Quick Reference Guide](http://rockwellautomation.custhelp.com/app/answers/detail/a_id/59347)
(//rockwellautomation.custhelp.com/app/answers/detail/a_id/59347)

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