SC to LC optical module



Overview

Differences Between SC and LC Connectors | LC vs SC While both SC SFP module and LC SFP module serve the same purpose of establishing a connection between.

Key Takeaways

To connect an LC optical module to an SC fiber cable, you need an LC-to-SC fiber adapter or patch cord, as LC and SC connectors are not directly interchangeable.

Understanding LC and S

C ConnectorsLC (Lucent Connector) is a small form-factor connector with a 1. 25 mm ferrule, designed for high-density applications and modern SFP modules. It uses a latch-based push-pull mechanism for secure connections and allows twice the port density compared to SC connectors in the same panel space.

L

C connectors are standard for 1G, 10G, 25G, and higher-speed transceivers in enterprise networks.

S

C (Subscriber Connector) has a larger 2. 5 mm ferrule and a square-shaped housing with a push-pull mechanism.

S

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C connectors are robust and easier to handle, making them common in legacy networks, FTTH, and PON applications. However, their larger size limits port density, which is why modern SFP modules rarely use SC connectors.

Connecting LC Modules to SC Cables

Since L

C and SC connectors differ in ferrule size and housing, direct connection is not possible. To interface an LC SFP module with an SC fiber cable, you can use: LC-to-SC Fiber Patch Cord: A duplex or simplex patch cable with an LC connector on one end (to plug into the SFP module) and an SC connector on the other end (to connect to the existing SC fiber infrastructure). This is the most common and reliable solution.

LC-to-SC Adapter: A small inline adapter that allows an LC connector to mate with an SC connector. This is useful for temporary connections or testing scenarios.

Practical Considerations

Insertion Loss: Using an adapter or patch cord introduces minimal insertion loss, but ensure high-quality components to maintain signal integrity. Port Density: LC connectors save space in high-density racks, while SC connectors occupy more panel space. Consider this when planning network upgrades.

Compatibility: Ensure the fiber type (single-mode or multi-mode) matches between the LC module and SC cable to avoid signal degradation. Durability: SC connectors are more robust for field handling, while LC connectors are better suited for data centers with frequent reconfiguration.

Recommendation

For most modern networks, the simplest solution is an LC-to-SC patch cord, which allows seamless connection between an LC SFP module and an SC fiber cable without modifying the module or the cable infrastructure. This approach maintains performance, minimizes insertion loss, and supports both single-mode and multi-mode fiber applications.

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