

RIVO MULTITRADE OPTICAL SYSTEMS

Mobile broadband installation requires the installation of a fiber optic splitter



Overview

That is to say, if two fibers are close enough to each other, the transmitting light in an optical fiber can enter into another optical fiber.

Key Takeaways

Fiber optic splitters are not always required for mobile broadband installation, but they are essential in Passive Optical Networks (PON) when a single fiber serves multiple endpoints. Role of Fiber Optic Splitters

A fiber optic splitter is a passive device that divides a single optical signal into multiple outputs or combines multiple signals into one, enabling efficient sharing of a single fiber among several users or devices . In Fiber-to-the-Home (FTTH) or PON networks, splitters allow one optical line from the provider to serve multiple homes or endpoints, which reduces infrastructure costs and simplifies network deployment . They operate without electricity, relying on light physics, and can function bidirectionally for two-way communication .

When a Splitter Is Needed

- Required: In networks where a single fiber must serve multiple subscribers, such as FTTH deployments or shared mobile broadband backhaul in rural or multi-dwelling units, a splitter is necessary to distribute the signal efficiently .



- Not Required: If the mobile broadband installation involves a dedicated fiber line for a single endpoint or uses wireless backhaul without fiber sharing, a splitter is not needed .

Types and Selection

Splitters come in different types and ratios:

- FBT (Fused Biconical Taper): Cost-effective for small networks (1:2 to 1:8) and short distances.
- PLC (Planar Lightwave Circuit): Suitable for larger networks (1:16, 1:32, 1:64) with uniform signal distribution and minimal insertion loss . The choice depends on network size, fiber type (single-mode or multimode), and environmental conditions (indoor vs. outdoor installation), .

Installation Overview

Installing a fiber optic splitter involves several key steps:

- Identify Requirements: Determine the split ratio, number of outputs, and compatible wavelength range .
- Prepare Fibers: Strip, cleave, and clean fiber ends carefully to prevent signal loss .
- Connectorization and Splicing: Attach connectors and perform fusion or mechanical splicing, verifying signal strength at each point .
- Labeling and Documentation: Clearly mark input/output ports and record configurations for future maintenance . Proper installation ensures signal quality, network reliability, and minimal data loss .

Conclusion

While not every mobile broadband installation requires a fiber optic splitter, it is essential in shared fiber networks or PON setups to distribute signals efficiently. Understanding the network design and subscriber requirements will determine whether a splitter is necessary for your installation .

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An optical fiber patching cabinet. The yellow cables are single-mode fibers; the orange and blue cables are multi-mode fibers:

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The fiber line from the pole is brought into the splitter box. If there is no pre-existing infrastructure, a smaller fiber jumper will be run to

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