

How to connect network cables and fiber optic cables to the socket panel



AI Overview

To connect network (Ethernet) and fiber optic cables to a socket panel, you must follow proper preparation, connector alignment, and cable management procedures to ensure reliable performance and avoid damage.

Connecting Fiber Optic Cables

- **Prepare the Fiber Wall Socket:** Install the back box into a wall opening, ensuring it is secure and accessible. The back box houses the fiber pigtail and protects the delicate fiber end-face from dust and physical damage (SC/APC or LC connectors are common) .
- **Prepare the Fiber Cable:** Strip the outer jacket carefully, clean the fiber with alcohol, and cleave the fiber at a precise angle ($\leq 0.5^\circ$) to ensure optimal signal transmission .
- **Splice or Connect the Fiber:** Fusion-splice the incoming fiber to the pre-terminated pigtail inside the back box, or use a connector kit if splicing is not required. Snap the pigtail into the socket adapter and attach the faceplate .
- **Connect to the ONT or Router:** Use a fiber patch cable to connect the wall socket to the Optical Network Terminal (ONT) or fiber-ready router. Ensure the connector type matches the port (e.g., SC/APC to SC/APC) .
- **Test the Connection:** Verify signal strength using an Optical Time Domain Reflectometer (OTDR) or visual fault locator. Ensure the light levels are within the recommended range (e.g., -8 dBm to -27 dBm for GPON networks) .
- **Cable Management:** Coil excess fiber inside the back box with a minimum bend radius of 30mm, cap unused ports, and secure cables with velcro straps to prevent tension or kinks

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Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://ntmmgroup.co.za>

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town, 7441, South Africa

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