Largest fiber optic cable



Overview

This list incorporates leading players, including Dekam-Fiber, Corning, Prysmian, and CommMesh, which stand out for their contributions to high-performance cables.

Key Takeaways

The 2Africa subsea cable is currently the largest fiber optic cable in the world, spanning approximately 45,000 kilometers with a design capacity of up to 180 terabits per second. 2Africa Cable OverviewThe 2Africa cable is a monumental global telecommunications project designed to enhance internet connectivity across Africa, the Middle East, and Europe. Announced in 2020, it is a consortium-led initiative including major companies like Meta, China Mobile International, MTN GlobalConnect, Orange, stc, Telecom Egypt, Vodafone, and WIOCC.

The cable system is expected to deliver more bandwidth than all existing subsea cables serving Africa combined, using Spatial Division Multiplexing (SDM1) to increase fiber pairs and data throughput.

Specifications and Impact

Length: ~45,000 kilometers, encircling the African continent and connecting 23 countries. Capacity: Up to 180 terabits per second on key segments. Technology: Advanced fiber and ribbon designs, including bend-insensitive fibers to maintain signal quality.

Impact: Provides faster, more reliable internet, bridging the digital divide, and supporting economic growth, education, and digital inclusion.

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High Fiber Count Cables

In addition to subsea length, fiber density is another measure of “largest” in terms of capacity. Modern high fiber count cables can contain up to 6912 fibers in a single cable, using innovations like flexible ribbon designs and reduced buffer coatings to maximize fiber density. For example, Corning's 3456-fiber cable has a diameter of only 32 mm (~1.

3 inches) yet packs an extremely high fiber density, with 54% of the cable cross-section occupied by fibers. These cables are primarily used in data centers and metro backbones, supporting 5G networks and high-capacity urban infrastructure. Other Notable CablesFLAG (Fibre-optic Link Around the Globe): 28,000 km long, connecting the UK, Japan, India, and other regions, previously one of the longest subsea cables.

High-capacity metro and data center cables: While shorter, these can have thousands of fibers in a single cable, enabling massive local bandwidth.

Summary

The 2Africa cable holds the record for length and global connectivity, while high fiber count cables like the 6912-fiber designs represent the largest capacity per cable. Both innovations demonstrate the rapid evolution of fiber optic technology to meet growing global data demands.

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