Ukrainian hybrid optical and electrical cable 1G



Overview

This document provides detailed recommendations for optical/metallic hybrid cables used in communication systems, addressing their construction, characteristics, and applications.

Key Takeaways

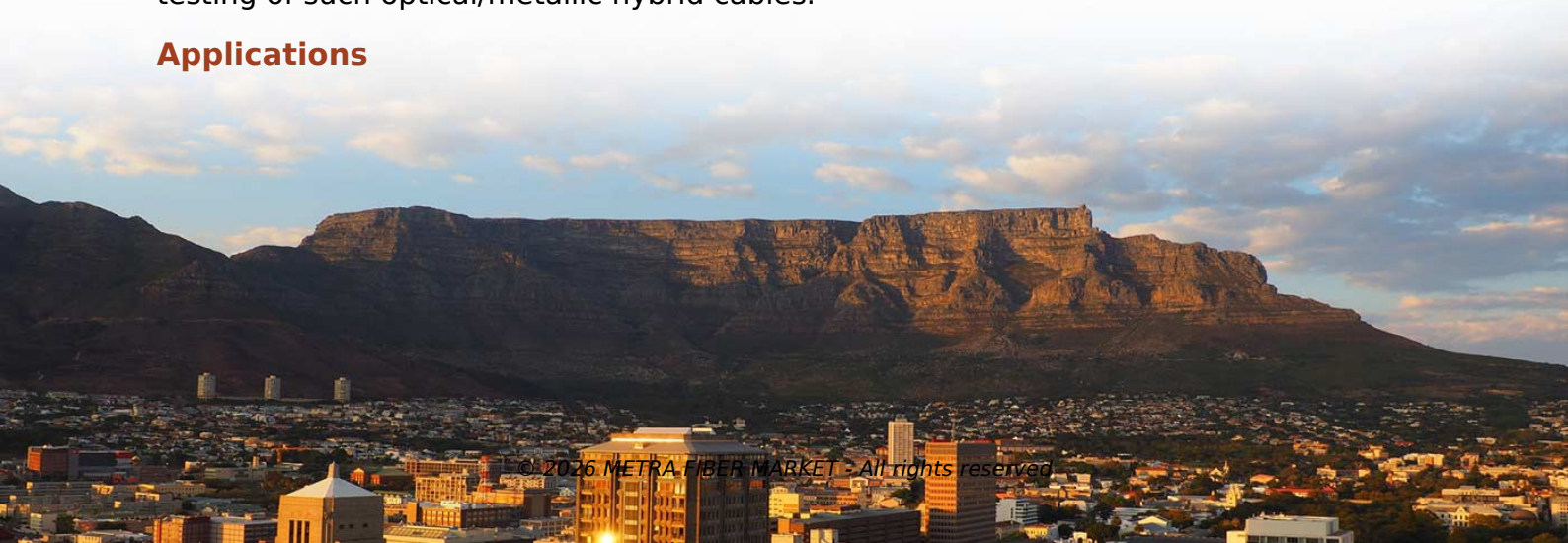
Ukrainian hybrid optical/electrical cables combine optical fibers for 1G data transmission with copper pairs for power delivery, meeting ITU-T standards and produced locally by companies like Electro Cable Group.

Technical Overview

Hybrid optical/electrical cables (OEHC) integrate optical fibers for high-speed data transmission and copper conductors for power delivery, not for telecommunication purposes. These cables can support data rates of 1 Gbit/s and beyond, making them suitable for applications requiring both power and secure, high-speed connectivity. The ITU-T Recommendation L.

109 provides guidance on the construction, environmental considerations, and testing of such optical/metallic hybrid cables.

Applications



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In Ukraine, these hybrid cables are used in telecommunication networks, FTTA (Fiber to the Antenna) systems, and military applications. For example, Ukrainian FPV drones employ fiber optic cables for secure video and control links, with copper or radio fallback for power or redundancy. The hybrid design ensures resistance to electronic warfare jamming while maintaining operational reliability.

Ukrainian Production

The Electro Cable Group (ECG), based in Ukraine, manufactures a wide range of cables, including hybrid optical/electrical types suitable for 1G data transmission.

EC

G emphasizes high-quality copper and fiber materials, environmental responsibility, and compliance with international standards such as VDE and RoHS. Despite challenges from the ongoing conflict, ECG continues to supply both domestic and export markets, supporting critical infrastructure and defense applications. Key AdvantagesHigh-speed data transmission via optical fibers (≥1 Gbit/s)Power delivery through integrated copper pairsEnhanced security against electronic interferenceLocal availability from Ukrainian manufacturersCompliance with ITU-T standards for hybrid cable construction These cables are particularly valuable in scenarios where simultaneous power and data delivery are required over a single cable, such as in remote installations, military drones, and FTTA deployments.

In summary, Ukraine produces ITU-T-compliant hybrid optical/electrical cables capable of 1G data transmission, combining high-speed fiber optics with copper power lines, with local manufacturers like ECG providing reliable, high-quality solutions for both civilian and defense applications.

Article Content

Recommendation ITU-T L.109(01/2024) Construction of

Recommendation ITU-T L.109 describes cable construction and provides guidance for the use of optical/metallic hybrid cables, which contains both optical fibres and metallic wires for

Recommendation ITU-T L.109 (01/2024)

This document provides detailed recommendations for optical/metallic hybrid cables used in communication systems, addressing their construction, characteristics, and applications.

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Recommendation ITU-T L.109.1 (11/2022)

This document outlines the specifications and requirements for Type II Optical/Electrical Hybrid Cables (OEHC), designed for access points and terminal equipment supporting data transmission beyond 1

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ITU-T L.109.1 (11/2022) Type II optical/electrical hybrid cables for ...

Type II optical/electrical hybrid cables for access points and other terminal equipment Summary Recommendation ITU-T L.109.1 explains the type II optical/electrical hybrid cable (OEHC) in which a

List of Cable companies in Ukraine

JSC Odessa Cable Works Odeskabel Odeskabel is considered to be one of the most profitable and promising cable plants in Ukraine. As for quality volumes telephone cables fiber optic (FOC),

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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