

North Korea s fiber optic communication



Overview

Explore North Korea's efforts to develop fiber optic infrastructure, its implications for connectivity, and the challenges of understanding its telecommunications landscape.

Key Takeaways

North Korea's fiber optic network forms a controlled domestic backbone and connects internationally via China and Russia, supporting both the state-run intranet and limited global internet access.

Domestic Fiber Optic Infrastructure

North Korea has developed a national fiber optic backbone primarily to support its domestic intranet, known as Kwangmyong, which is accessible to most citizens, while global internet access is restricted to a small elite. The network began in the early 1990s with a Pyongyang fiber optic factory and expanded with a 300 km trunk line to Hamhung in 1995. By the early 2000s, fiber optic cables connected major cities including Pyongyang, Hamhung, Nampo, Rajin-Songpa, and Sinuiju, often following railway lines and major roads to facilitate installation and maintenance.

Ministries and government institutions are connected via fiber optics, ensuring centralized control over communications.

International Connectivity



North Korea's main international internet connections are through fiber optic links to China and Russia. The primary link to China runs from Pyongyang to Dandong, operated by China Unicom, while a second connection to Russia was established in 2017 via the TransTeleCom network, crossing the Tumen River on the Korea-Russia Friendship Bridge. These connections provide limited global internet access for government, research, and foreign entities, while the majority of citizens remain on the domestic intranet.

Technical and Strategic Considerations

Fiber optic cables in North Korea are used to transmit data as light signals, offering faster and more reliable communication than traditional copper lines. The network is largely buried or routed along infrastructure corridors, such as railways and roads, to protect it from environmental and security risks. The government tightly monitors all traffic, and mobile networks like Koryolink and Kangsong NET rely on fiber optics for backhaul, with 4G LTE deployed in 2023 to improve data speeds and public service delivery.

Historical Development
 1995: First fiber optic trunk from Pyongyang to Hamhung.
 1998: Pyongyang connected to Sinuiju on the Chinese border.
 2000: Expansion to Nampo, Hamhung, Rajin-Songpa, and Rajin-Songpa to Hunchun (China),.

2010: China Unicom link activated for international internet.
 2017: Russia-North Korea fiber link via TransTeleCom.

Implications

The fiber optic network allows North Korea to modernize communications while maintaining strict control over information flow. It supports mobile networks, government operations, and limited international connectivity, but the majority of citizens remain isolated from the global internet. Improved fiber infrastructure could enhance economic efficiency and internal communication, but the regime's focus on control limits broader societal access.

In summary, North Korea's fiber optic network is a strategically controlled system that underpins both domestic intranet services and selective international connectivity, reflecting the country's balance between modernization and information control.

Article Content

Exploring the Quest for North Korean Fiber Optic Cables

Explore North Korea's efforts to develop fiber optic infrastructure, its implications for connectivity, and the challenges of understanding its telecommunications landscape.

Telecommunications in North Korea

OverviewInternational connectionsHistoryTelephoneTelevisionRadioInternetInternet cafes

North Korea has had a varying number of connections to other nations. Currently, international fixed line connections consist of a network connecting Pyongyang to Beijing and Moscow, and Chongjin to Vladivostok. Communications were opened with South Korea in 2000. In May 2006 TransTeleCom Company and North Korea's Ministry of Communications have signed an agreement for the construction and joint op

How is North Korea's fiber optic network structured?

An expert on North Korean internet information examines the extent of North Korea's fiber optic network based on a small amount of information published in a presentation.

North Korea Fibre Optic Cable Market (2025-2031) | Trends, Outlook ...

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Internet in North Korea

The country has some broadband infrastructure, including fiber optic links between major institutions. Online services for most individuals and institutions are provided through a free domestic-only

North Korea Fibre Optic Cables Market (2025-2031) | Industry

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Internet Access in North Korea. How North Korea's Secret Internet

Despite its isolation, North Korea has invested in building a fiber-optic communication backbone over the past few decades – primarily to improve domestic communications and support

Information Technology Progress in North Korea and Its Prospects

With the support of the UNDP, North Korea's fiber optical cable construction started off by connecting Pyongyang and the regional cities. Now the fiber-optic cable networks expand throughout the nation.

Hunting For North Korean Fiber Optic Cables-lazarusholic

It was presented by the DPRK to the ICAO on the state of their aviation industry and their ADS-B deployment inside North Korea. However, one slide in particular caught my eye because it

Global Train Communication Network Market Size, Industry Share,

Global Train Communication Network Market Size By Technology Type (Fiber Optic Communication, Wireless Communication), By Component Type (Hardware, Software), By End-User

RF-over-Fiber (RFOF) Market Rising on Development Activities

The RF-over-Fiber market continues to attract investments focused on photonic integration, defense communication technologies, advanced optical networking, and telecom

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Fiber Optic Kits Industry Forecast: Market Shifts and Strategic ...

The global fiber optic kits market is poised for substantial growth, with significant contributions expected from key regions. North America, particularly the United States and Canada,

Fiber optic cable Market Size, Share & Trends, 2034

Global Fiber Optic Cable Market Size The global fiber optic cable market size was valued at USD 13.84 billion in 2025 and is anticipated to reach USD 15.26 billion in 2026 and USD 33.29

Optical Transceiver Market Size, Share, Trends | Forecast

North America dominated the global optical transceiver market with a share of 35.90% in 2025. The optical transceiver is the core part of optical communication and comprises an

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Submarine Fiber Optics Market Size, Industry Trends & Forecast

Submarine Fiber Optics Market Size and Forecast Analysis The trajectory of the submarine fiber optics market over the next five years is characterized by a confluence of

Plastic Fiber Optic Module Industry Research Report 2026

The North America market for Plastic Fiber Optic Module is forecast to increase from US\$ million in 2026 to US\$ million by 2032, corresponding to a CAGR of % over 2026-2032.

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

