

Can DTU communicate via fiber optics



Article Overview

Yes, DTU can communicate via fiber optics, including advanced quantum-encrypted links over significant distances.

DTU has successfully demonstrated communication over fiber-optic networks, including a quantum-encrypted connection with the Niels Bohr Institute in Copenhagen. This connection, established over an existing fiber network spanning approximately 18 kilometers, used a deterministic single-photon source to create an unbreakable communication link, highlighting DTU's capability in secure, high-tech fiber-optic communication. Researchers at DTU have also extended quantum-encrypted communication over 100 kilometers using Continuous Variable Quantum Key Distribution (CV QKD), showing that fiber-optic links can support long-distance, secure data transfer while leveraging existing internet infrastructure. Fiber-optic communication at DTU uses light pulses transmitted through optical fibers, which provide high bandwidth, low interference, and long-distance transmission advantages compared to traditional electrical cabling.

Key Features of DTU's Fiber-Optic Communication

- **Quantum Encryption:** Uses single photons to generate encryption keys that cannot be intercepted without detection, ensuring secure communication.
- **Distance Capability:** Demonstrated links range from 18 km to 100 km, with potential for further expansion using advanced techniques.
- **Applications:** Supports secure video links, data transfer, and research in quantum communication and cybersecurity.
- **Infrastructure:** Operates over existing fiber networks, making it compatible with st...

Article Content

Jun 28, 2026

High-speed Communication

High-speed Communication specialization Design of communication systems and networks. The focus is optical communication and

May 10, 2026

Fiber-optic cable

A fiber-optic cable, also known as an optical-fiber cable, is an assembly similar to an electrical cable but

Apr 04, 2026

Multicore fibers for high-capacity submarine transmission systems

Applications of multicore fibers (MCFs) in undersea transmission systems are investigated, and various potential architectures of

Jul 12, 2026

How does fiber optics work?

Fiber-optic cables carry information between two places using entirely optical (light-based) technology. Suppose you

Oct 09, 2025

Fundamentals of fibre-optic communication systems

This course provides the basis for advanced courses in optical communication such as 34153 Physical Concepts in

Sep 30, 2025

How Does Fiber-Optic Internet Work?

A fiber connection lets you hop online thanks to fiber-optic cables, which use light signals to

Sep 20, 2025

100 kilometers of quantum-encrypted transfer | EurekAlert!

Researchers at DTU have succeeded in using quantum encryption to securely transfer information 100 kilometres via

Aug 30, 2025

DTU Researchers Achieve Record 100km Quantum-Encrypted Data

Researchers at the Technical University of Denmark (DTU) have successfully used quantum encryption to securely

Mar 23, 2026

Fiber-optic communication

OverviewTechnologyBackgroundApplicationsHistoryParametersComparison with electrical transmissionGoverning standards

Modern fiber-optic communication systems generally include optical transmitters that convert electrical signals into optical signals, optical fiber cables to carry the signal, optical amplifiers, and optical receivers to convert the signal back into an electrical signal. The information transmitted is typically digital information generated by computers or telephone systems.

Nov 18, 2025

Fiber-optic communication

Wavelength-division multiplexing (WDM) is the technique of transmitting multiple channels of information through a single optical fiber

Mar 27, 2026

Drone Communication Solutions: Drone Fiber Optic Cable

In fiber optic technology, this tethered system—where a drone is connected via a fiber optic

Oct 04, 2025

Delhi Technological University

Delhi College of Engineering is one of the TIFAC COREs (Technology Information, Forecasting & Assessment Council's Centres Of

May 28, 2026

An Unprecedented 100 km - Researchers Set New Distance Record

In this experiment, published in Science Advances, we securely distributed a quantum-encrypted key 100 kilometers

Jun 07, 2026

Denmark's first quantum-secured fibre-optic link

Researchers at the Technical University of Denmark (DTU) and the Niels Bohr Institute - University of

Oct 11, 2025

Denmark's first quantum-secured fibre-optic link established between ...

Researchers at the Technical University of Denmark (DTU) and the Niels Bohr Institute - University of Copenhagen (NBI) have

Dec 13, 2025

How to communicate between DTU

After the connection is established, the front-end equipment and the back-end center can carry out wireless data

Jul 17, 2026

What is DTU? The core functions of DTU devices

Therefore, DTU can be connected to various user devices that use serial communication, and there is no need to make changes to

Jul 23, 2026

Unbreakable fibre network connection established between DTU and

The researchers at DTU and the Niels Bohr Institute have therefore developed new technology for creating a single-photon-based

Sep 25, 2025

OPTICAL FIBER COMMUNICATION

Fibre Optics Material Choice? H.H.Hopkins and N.S.Kapnay in 1950's used cladding fiber: Good image properties demonstrated for

Dec 23, 2025

Danish world record: First quantum-secured fibre-optic link

The video link must be transmitted over an 18-kilometre-long existing fibre-optic connection between DTU and the

Oct 20, 2025

Optical communication for the development of a green Internet

Optical communication involves transporting data using light. The Internet works by sending data via infrared light pulses that run

Jul 27, 2025

ATO Data Transfer Unit DTU User Manual PDF

-DTU has four operating modes, if low power consumption is not required, normal communication is recommended to configure the

Apr 27, 2026

Unbreakable fibre network connection established between DTU and

In collaboration with researchers from the Niels Bohr Institute, DTU researchers have demonstrated a 100 per cent

Dec 25, 2025

Key Devices in Smart Grids: DTU, FTU, and TTU

DTU, as an industrial-grade communication device, is primarily responsible for data collection, transmission, and remote monitoring.

Dec 09, 2025

Fundamentals of fibre-optic communication systems

Explain the building blocks of a coherent transmitter and how advanced modulation formats can be

Mar 14, 2026

Built-in resilience for Arctic subsea cables

Thanks to recent progress in fibre sensing technology, such new subsea cables will become more resilient than

Oct 28, 2025

100 kilometers of quantum-encrypted transfer | ScienceDaily

It works by sending data via infrared light running through optical fibres. They function as light guides laid in cables,

Sep 30, 2025

Fiber-Optic Drone Technologies: A Multidisciplinary Review from ...

This paper explores the emergence of fiber-optic tethered drone technologies as a resilient alternative that significantly

May 12, 2026

Underappreciated Reasons Fiber Drones Are So Effective

While the most widely known advantage of fiber optic drones is that they are immune to radio frequency (RF) detection and jamming,

Jul 04, 2026

Wired FPV Drones on Optical Fiber: a Dead End, a Band Aid, or a

Read more: Ukrainian Developers Present Optical Fiber FPV Drone (Video) Highcat HCX drone controlled via a fiber

Aug 10, 2025

Fiber-Optic Communication

Fiber optic communication is defined as a method of transmitting information using light signals through guided-wave channels,

Mar 27, 2026

Fiber Sensors & Supercontinuum

Fiber-optical sensors and imaging technologies are being increasingly employed in the fight against disease, environmental pollution,

May 16, 2026

What Is Fiber Optics? Definition from SearchNetworking

What is fiber optics? Fiber optics, or optical fiber, refers to the technology that transmits information as light pulses

Jan 18, 2026

How to communicate between DTU

How to communicate between DTU The structure of DTU How to communicate between GPRS DTU The main function

Oct 01, 2025

What is Data Terminal Unit? A Comprehensive

In today's world, IoT communication devices are emerging in abundance, with many

Contact Us

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

Website: <https://www.chromadecksigns-eastrand.co.za>

Email: sales@chromadecksigns-eastrand.co.za

Phone: +32 2 318 5792

Address: Avenue Louise 500, 1050 Brussels, Belgium

This document is for informational purposes only. Specifications subject to change without notice.

