SENKO®
Advanced Components

Quantum Networking

Connectors built for the next generation

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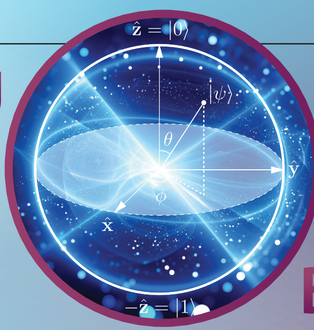
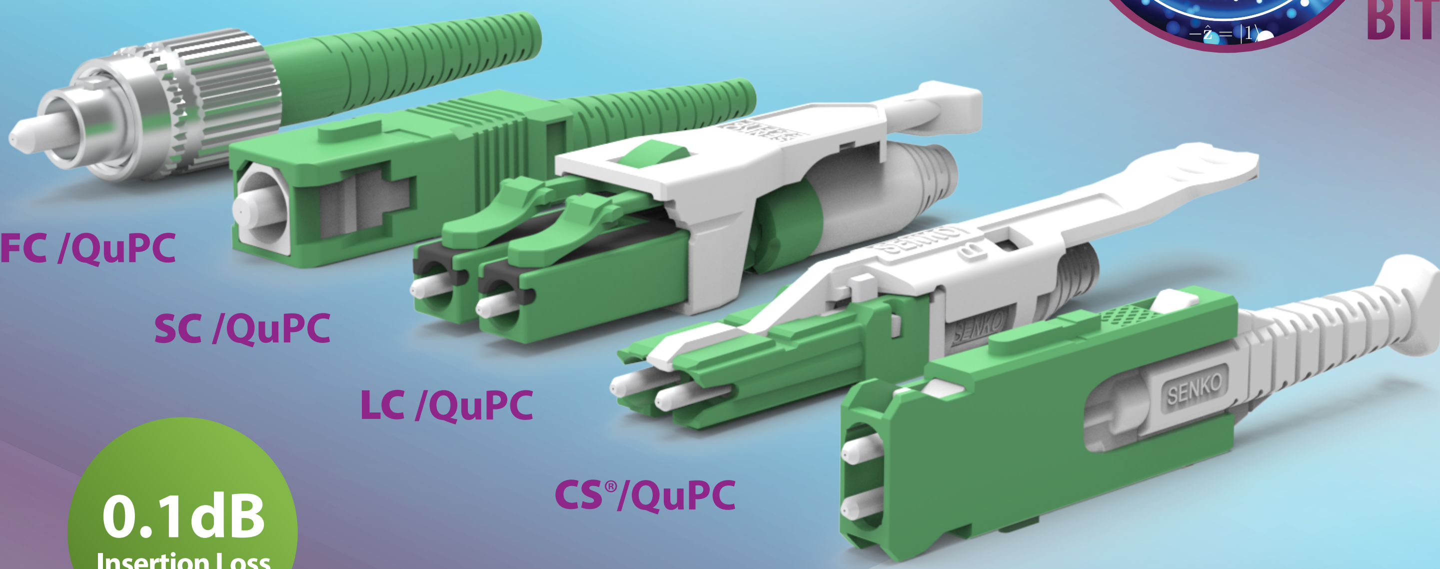

BIT



0.1dB
Insertion Loss

Ultra low-loss connectors designed for quantum networking applications

The future is here with QuPC assemblies

Next generation connectors with ultra-low insertion loss, high return loss, and high-density capabilities to support the advancement and reliability of quantum computing and quantum key distribution (QKD).

FEATURES

- Premium super low-loss < 0.1dB
- Optical return loss > 80dB
- High density
- Suitable for QKD networks

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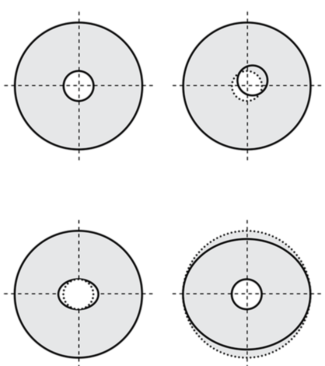
Quantum Networking

The future is here

Unlike traditional computers, which use binary digits or bits to perform operations, quantum computers use quantum bits or qubits. Quantum computers are expected to be able to solve mathematical problems that cannot be solved using conventional computers. Although this problem-solving capability enables computation far beyond classical computing, it inevitably present significant threats to cyber security and attach the foundations of today's cryptography.

Quantum Key Distribution (QKD), a means of enabling secure encryption and authentication in the presence of the unbounded computational power to be introduced by quantum information technologies. QKD enables the exchange of secret symmetric keys used for encryption and authentication. These keys are secure, even against eavesdropping attempts powered by quantum computing. SENKO is developing an optical approach to quantum computing with a line of Ultra Low-Loss connectors designed for Quantum Networking applications.

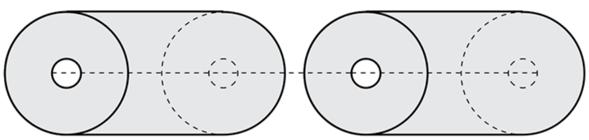
Core-cladding concentricity



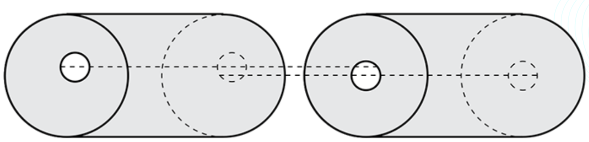
Minimizing the core-cladding concentricity error is essential for ensuring efficient light transmission through the fiber.

Core ovality and cladding ovality

Perfect ferrule concentricity

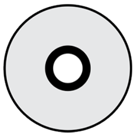


Ferrule concentricity error

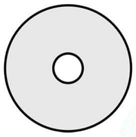


Both core and cladding should ideally maintain a perfect circular shape. Ovality or deviation from this ideal shape, can lead to increased loss and reflection.

Large ferrule hole diameter



Minimized ferrule hole diameter



The ferrule bore hole must precisely align with the fiber. Any deviation here can lead to misalignment and increased loss. Additionally, minimizing the size of the hole diameter is critical to maintaining fiber alignment.

SENKO ADVANCED COMPONENTS, INC.

CALL 1-888-32-SENKO

America
USA EAST 1-888-32-SENKO
USA WEST 1-858-623-3300
TEXAS 1-972-661-9080
Sales-Americas@senko.com

South America
BRAZIL +55-21-3736-7065
Sales-Brazil@senko.com

Asia
HONG KONG +852-2121-0516
SHANGHAI +86-21-5830-4513
SHENZHEN +86-755-2533-4893
Sales-Asia@senko.com

Europe
FRANCE +44 7939364565
Salesfrance@senko.com
GERMANY +49(0)15117683072
Sales-Germany@senko.com
ITALY +39 338 8919089
Sales-Italy@senko.com
POLAND +44 (0) 7796444488
Sales-Europe@senko.com

SPAIN & PORTUGAL +34 678042829
Sales-Iberia@senko.com
UK +44 (0) 1256 700880
Sales-UK@senko.com
OTHER +44(0) 1256 700880
Sales-Europe@senko.com

Asia Pacific
AUSTRALIA +61 (0) 3 9755-7922
Sales-Asia-Pacific@senko.com

Middle East North Africa
DUBAI +971 4 8865160
Sales-MENA@senko.com

Japan
TOKYO +81 (0) 3 5825-0911
Sales-Japan@senko.com