

Product details

Two variants are available: a **Multiplexed QKD System** with O-band quantum channel, which removes the need for dark fiber when operating on a 'lit' optical fiber; and a **Long-Distance QKD System** with C-band quantum channel for the longest possible range.

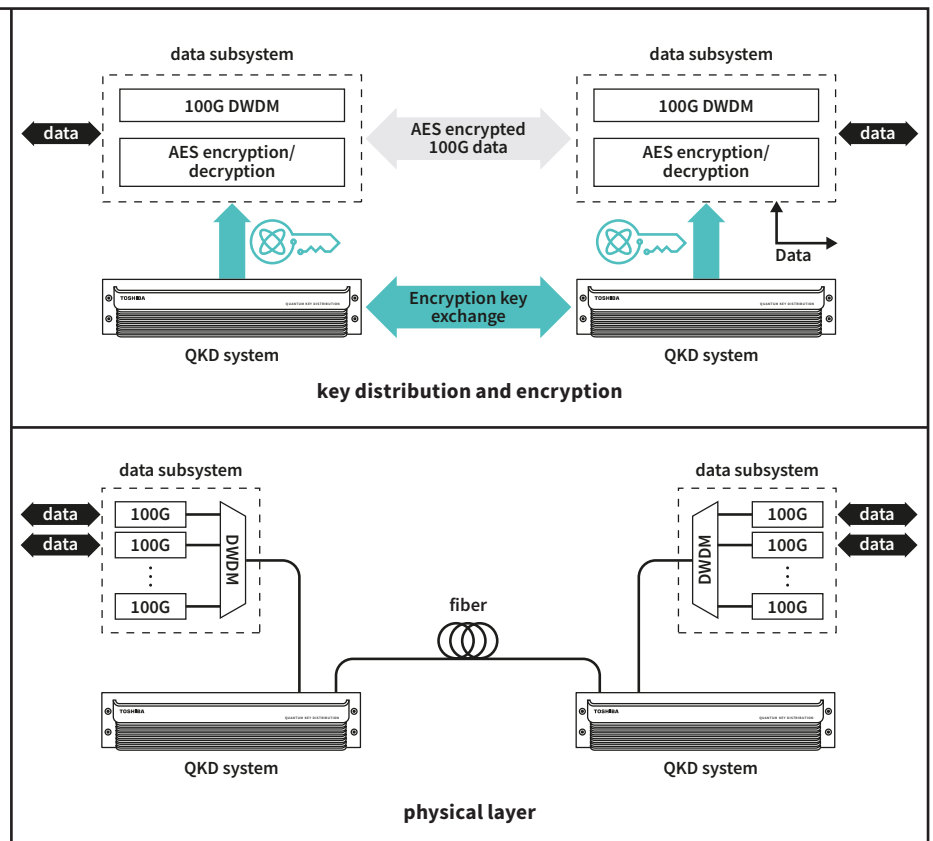


	Multiplexed QKD System	Long-Distance QKD System
Key Exchange Protocol	Toshiba T12 protocol (efficient BB84 protocol with decoy states and phase encoding)	Toshiba T12 protocol (efficient BB84 protocol with decoy states and phase encoding)
Quantum Wavelength	1310 nm	1550 nm
Fiber Requirement	Single fiber pair or single bidirectional fiber	Two fibers required
Multiplexing Compatibility	Option to multiplex high-bandwidth customer data in C-band (with >10dBm total launch power)	Limited-bandwidth multiplexing supported
Secure Key Rate	40 kb/s at 10 dB channel loss	300 kb/s at 10 dB channel loss
Maximum Range (using ideal SM fiber)	70 km	120 km
Detection Technology	Proprietary self-differencing semiconductor detectors	Proprietary self-differencing semiconductor detectors
Security Parameter	Key failure probability <math>< 10^{-10}</math>, corresponding to less than once in 30,000 years	Key failure probability <math>< 10^{-10}</math>, corresponding to less than once in 30,000 years
Key Management	Integrated Key Management System supporting ETSI GS/014 industry standard key delivery API	Integrated Key Management System supporting ETSI GS/014 industry standard key delivery API
Dimensions	Standard 19" rack mount (3U height)	Standard 19" rack mount (3U height)

Network Integration

Toshiba's QKD systems include add/drop filters for simple integration into existing fiber networks: all C-band user traffic can be passed through the unit without requiring additional multiplexing hardware.

The schematic (right) shows an example use case, with an AES encryptor obtaining keys from a Multiplexed QKD system to secure high-bandwidth data streams.



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