CROWN
CASTLE

Optical Encryption

Optical Encryption from Crown Castle uses revolutionary technology to offer Federal Information Processing Standards (FIPS-certified) encryption of in-flight data from end-point to end-point.

Our easy to implement solution offers maximum protection and throughput and optimizes latency by encrypting all of your in-flight data at the optical level—regardless of where it's generated. Whether you have a 10Gbps or 100Gbps connection, you'll maintain total control over your security parameters and keys. And since it can easily be added to one of our exisitng solutions, you won't need to purchase, deploy or manage costly new equipment.

Key Benefits

Security

Maximize your security with industry-leading technology that encrypts in-flight data from end-point to end-point at Layer 1.

Flexibility

Our solution is protocol agnostic, allowing you to avoid cumbersome configurations for multiple protocols. Optical Encryption can be ordered as a new service or as an upgrade to existing Wavelengths, both without standalone encryption boxes—keeping both capital and operating expenses low.

Efficiency

Encryption management runs out-of-band so no overhead is added. You also receive full line rate performance at all frame sizes and protocols with minimal latency impact.

Control

You can upgrade at will to keep up with technology or align with changing requirements. You maintain your own security protocols and keys, and a dedicated management tool gives you complete control over all your security parameters.

More than
25 Years
of Expertise

NYSE
S&P 500

Our Solutions

> Towers
> Small cells
> Dark Fiber
> Ethernet
> Wavelength
> Managed SD-WAN
> Internet Access
> Private Networks
> Colocation
> Cloud Connect
> **Optical Encryption**
> DDoS Defense
> Bandwidth on Demand
> Fixed Wireless
> Ultra-Low Latency
> Video Transport

Technical Specifications

SOLUTION	DESCRIPTION
Bandwidth Options & Handoff Protocols	Encryption over Wavelength - 10Gbps: 10 GigE, FC800, FC1200, OC-192, OC-192c Encryption over Managed Private Optical Network - 10Gbps: 10 GigE, FC800, FC1200, OC-192, OC-192c - 40Gbps: 40 GigE, OC-768 - 100Gbps: 100 GigE
Protocols Protected	Optical Encryption is protocol agnostic, encrypting all payload data, at all packet and frame sizes, at full line rate. The service protects all major transport protocols, including Ethernet, IP, SONET, Fiber Channel, Video Transport and OTN.
Availability	Availability specs are based on the design of the network delivering the encryption service. Options are available for route diversity with failover to ensure the highest availability possible.

Security Features

> NIST-Compliant AES-256 encryption

> Elliptic Curve Cryptography (ECC) algorithms

> Diffie-Hellman secured key negotiation (including Elliptic Curve)

> X.509 certificate support for authentication

> Easily integrates into enterprise Public Key Infrastructure (PKI) using x.509 certificate-based authentication

> Support for Certificate Revocation List (CRL)

> Hitless AES-256 key rotation every second

> TLS-secured and mutually authenticated interface for encryption management

> Elliptical Curve certificates

Security Certifications

SOLUTION	DESCRIPTION
Encryption Service over Wavelength (10Gbps)	- FIPS 140-2 Level 3 - FIPS 197 – AES-256 - IBM GDPS - EMCW - Brocade
Encryption Service over Managed Private Optical Network (10Gbps, 40Gbps, 100Gbps)	- FIPS 140-2 Level 2·FIPS 197 – AES-256 - IBM GDPS - EMCW - Brocade

CROWN CASTLE

Crown Castle owns, operates and leases more than 40,000 cell towers and approximately 85,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

For more information, please contact 1-833-458-0787 or visit **CrownCastle.com**