taara

Fast, affordable connectivity
using beams of light

Taara overview
Next Generation Wireless Optical Communication

Taara utilizes Wireless Optical Communication (WOC), a line-of-sight technology, to deliver high-speed, high-capacity connectivity over long distances. Like fiber, but without the cables, Taara's technology relies on the optical spectrum to transmit information through the air as narrow, invisible beams.

Taara links can be used to rapidly extend high-capacity networks from a fiber point of presence without the time, cost, and hassle involved in digging or stringing fiber along poles. With no right of way costs, signal interference, or spectrum licenses, Taara offers a cost-effective way to bring high-speed connectivity to the world.

01

Quick deployment

- Can be installed and uninstalled in less than a day
- Easy to transport and require limited support equipment
- May be mounted on poles, towers, or rooftops

02

Connectivity across difficult terrain

- Sites located around water bodies
- Forested regions
- Railway tracks and dense urban areas

03

No right of way permits

- No right of way permits or spectrum licenses
- Data is transmitted wirelessly with Class 1M eye-safe lasers in the unlicensed infrared band (193 THz)

04

Cost competitive & easy to integrate

- Significantly favorable economics on a cost per GB/km compared to traditional alternatives
- Based on open standards to work with existing infrastructure

Features & benefits

- 20 Gbps bidirectional throughput
- Up to 20 km operating range
- Energy efficient (40W power consumption per unit)
- Low environmental impact without the need to dig

- Low total cost of ownership compared to traditional radio antennas
- Rapid deployments and redeployments with low weight and wind load

Use cases

High bandwidth backhaul

- Extend fiber capacity
- Augment radio capacity

Improve network resilience

- Backup to fiber
- Disaster recovery

Urban last-mile extension

- High-rise multi-dwelling residences
- Universities, hospitals, enterprises

Rapid deployment & redeployment

- Connectivity to crowded events
- Test new markets

Bridge challenging terrain

- Water body crossings
- Fiber islands

Secure data transmission

- Low probability of interference
- Low probability of detection

How it works

## The speed of fiber, the flexibility of wireless

In the same way that traditional fiber uses light to carry data through cables in the ground, Taara Lightbridge uses light to transmit information at speeds as high as 20 gigabits per second and distances up to 20 km. Taara Lightbridge consists of two terminals containing mirrors and sensors that point, acquire, and track beams of light, ensuring they remain on target. Even if a tower sways due to wind, or a bird flies through the laser path, our technology ensures uninterrupted communication.

By extending our customer's fiber optic networks, Taara Lightbridge can relay fast and abundant internet to places where it's not practical or economically viable to deploy fiber.
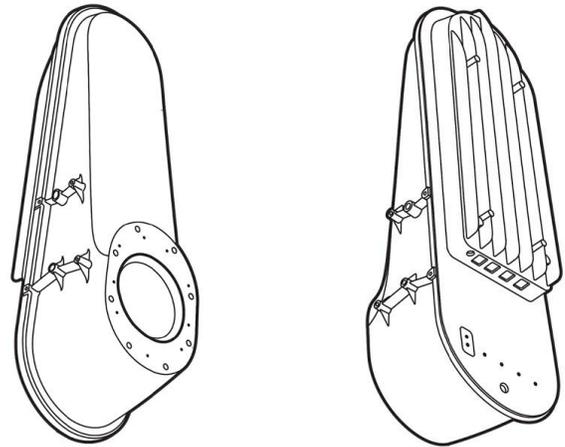
FRONT

BACK
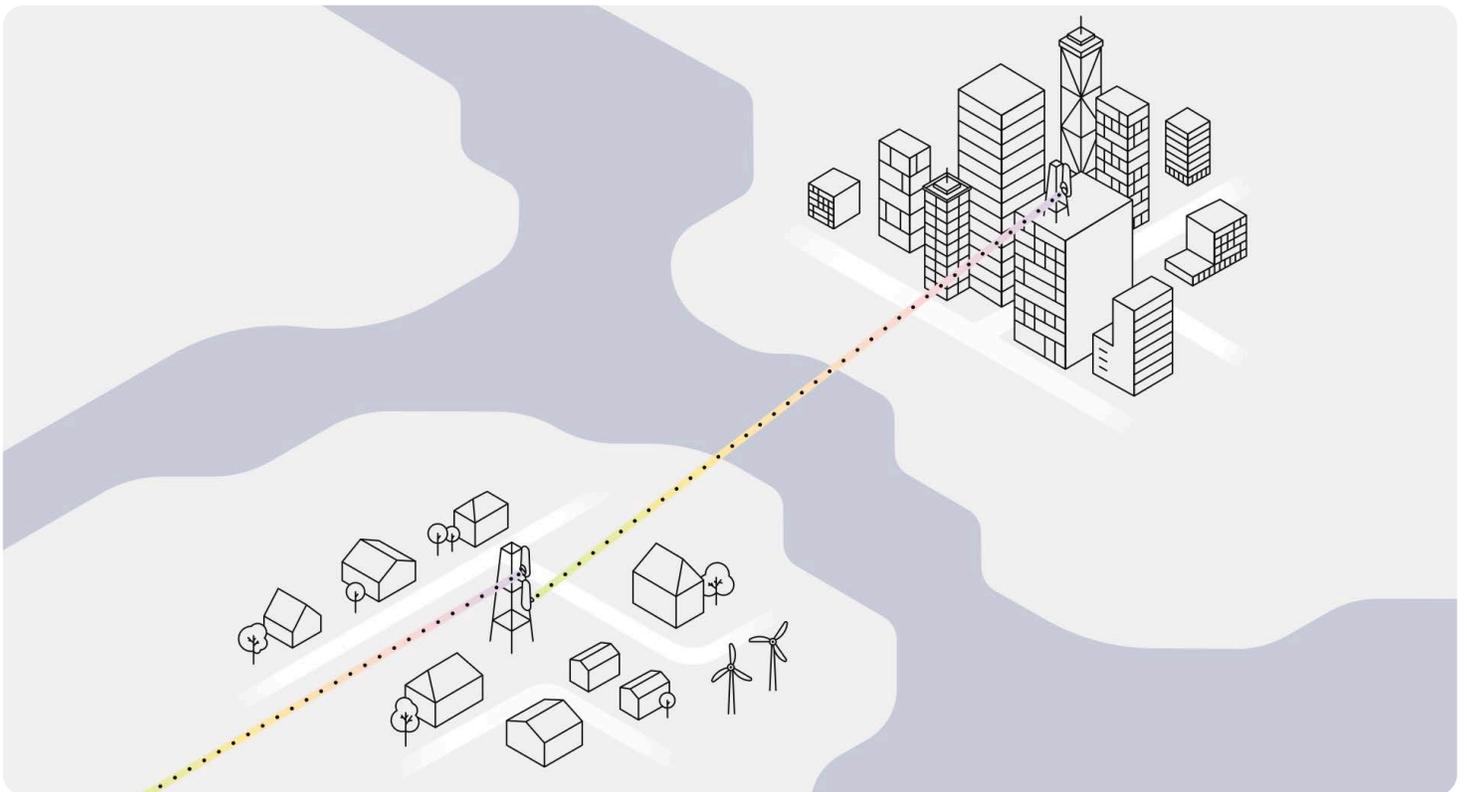
Data sheet

Terminal specifications

PARAMETER	VALUE
Throughput	20 Gbps full-duplex
Range	400 m to 20 km
Latency	Minimum latency (processing delay) < 160 µs Mean latency < 5 ms
Dimensions	220 mm x 240 mm x 750 mm
Weight	13 kg
Regulatory compliance	IEC 62368-1, 60950-22, FCC 15.b, EN 300 386

Power specifications

PARAMETER	VALUE
Power consumption	40 W typical; 60 W maximum
Power connections	± 38 to ± 58 V ± 48 V DC (nominal) or PoE++ (UPoE)

Environmental specifications

PARAMETER	VALUE	
Operating temperature range (ambient)	-20 to 55°C	Can operate at up to 65° solar loading
Storage temperature range (ambient)	-40 to 85°C	
Relative humidity	5 – 100 %	

Laser specifications

PARAMETER	VALUE
Classification	Class 1M (eye safe)
Maximum output power	30 dBm
Wavelength range	1535 – 1565 nm
Regulatory compliance	IEC 60825-1, 60825-12, 21CFR Part 1040