

Ligo PTP 2-19/2-N

2.4 GHz point-to-point integrated/connectorized backhaul device



Product Overview

LigoWave delivers the most robust 2.4 GHz PTP solution on the market by coupling ultra-high output power, flexible channel width capability (5/10/20/40 MHz), and industry-leading proprietary software mechanisms.

The LigoPTP 2 Series products offer carrier-class link connectivity, delivering true TCP throughput capability of 70 Mbps and packets-per-second performance of 50,000 PPS. The LigoPTP 2 series products offer an unlicensed PTP solution, ideal for dedicated access or backhaul applications (including VOIP) where other frequencies may be unavailable.

The LigoPTP 2-19/2-N product features an integrated 19 dBi panel antenna, with narrow beam-width to enable long-range, rock-solid link connectivity or an external N-connector for your own antenna.

The LigoPTP 2-19/2-N showcases an array of advanced software mechanisms that provide optimal point-to-point connectivity for high-throughput, long distance links.

LigoWave's proprietary PTP mechanisms utilize techniques such as Dynamic Time Division Duplexing (TDD) to dynamically allocate bandwidth in the direction needed, thus increasing link efficiency and greatly decreasing the impact that distance has on throughput of the link.

The LigoWave point-to-point products also feature selective repeat ARQ technology, an enhanced error-correction software mechanism that optimizes data traffic to provide very high throughput over high-bandwidth, long-range links even in the presence of interference.

The LigoPTP 2-19/2-N is also compatible with RCMS, a centralized configuration, firmware, and statistics server offered by LigoWave for carrier class diagnostic and configuration management capabilities.

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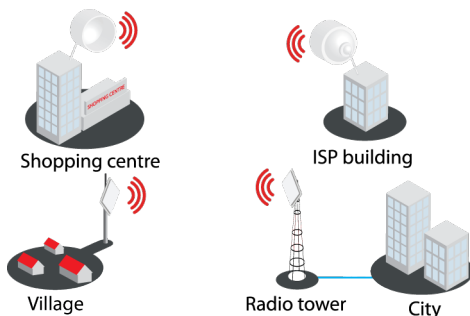
Key Features

- High, Adjustable TX power 2.4 GHz PTP solution, ideal for:
Dedicated Access
Backhaul
- Flexible center channel and channel width capability (5/10/20/40 MHz) for throughput optimization
- True TCP throughput up to 70 Mbps
- 50,000 packets-per-second (PPS) - ideal for VOIP backhaul applications
- ARQ (Selective Repeat) for very high throughput
- Dynamic TDD for bandwidth optimization
- 19 dBi integrated panel antenna for long distance PTP links or an external N-connector for your own antenna
- PoE built-in for single cable installation
- Advanced security technologies
- Comprehensive management features
Web GUI
Command line management via SSH
RCMS server support for configuration
SNMP V1/2/3 with traps supporting MIBs: 802.1, 802.1x, MIBII
Syslog support
- Rugged articulating bracket solution for multi-facet mounting

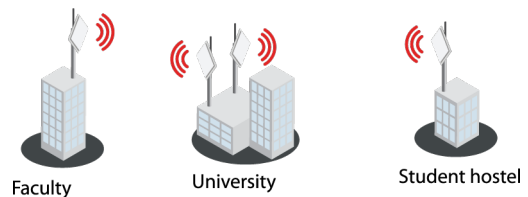


W-jet is LigoWave's proprietary wireless protocol that combines special techniques to achieve great performance and reliability even over long distances. The W-jet protocol is the result of years of development and gives LigoWave PTP products the ability to outperform other products on the market while simultaneously optimizing ROI for the customer.

BUILDING-TO-BUILDING CONNECTIVITY



DEDICATED ACCESS

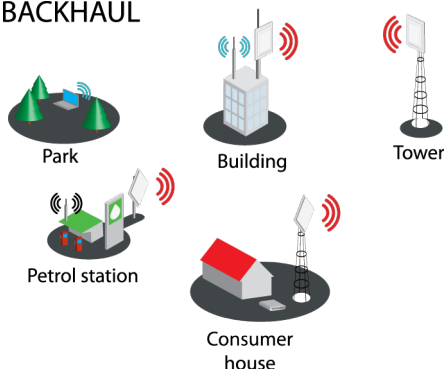


TI REPLACEMENT

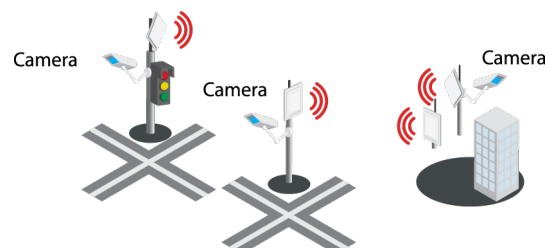


Main applications

BACKHAUL

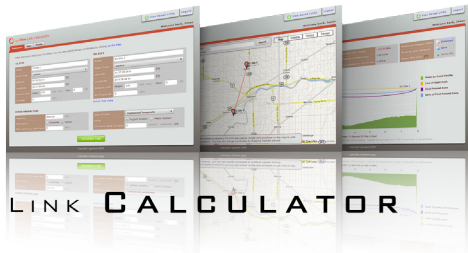


VIDEO SURVEILLANCE



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Summary

- Easy and quick planning;
- Free online application and can be used with all wireless equipment;
- Has integration with Google maps;
- Allows storing, downloading and publishing data about the links online.
- PDF results can even be used by installation teams!

LigoWave's link calculator is a link planning tool available online at <http://www.ligowave.com/linkcalc/>. The link calculator allows LigoPTP users to calculate link performance expectations taking into account geographical information, distance between the units, antenna height and gain, transmit power, and other factors in order to choose the most suitable product available from LigoWave's extensive product portfolio. In addition, custom calculations using other vendors' equipment specs can be used, making the LigoWave link calculator the ultimate link planning tool. At the same time, this tool is offered free of charge, and users only need to register to get quick and easy access to this very helpful tool. On top of that, each user is able to save and create a database of links, download a PDF document that contains all the necessary information about the link, and publish a hyperlink online so that it could be shown to other people during the evaluation process.

Package contents:



48 V PoE with grounding and lightning protection



LigoPTP 2-19/2-N outdoor unit



Professional mounting kit

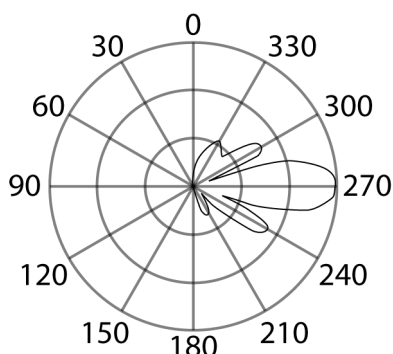


Quick install guide

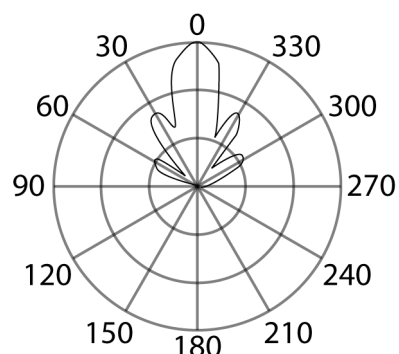
Antenna patterns (only for LigoPTP 2-19 product):

RF patterns

Vertical



Horizontal



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Sales offices:

EMEA:

Veiveriu 150-IIIa. Kaunas,
LT-46931, Lithuania

Sauletekio al. 15-610, Vilnius, LT-
20000, Lithuania

Americas:

138 Mountain Brook Dr.
Canton, GA 30115, USA

984 Shetland Ave. Winter Springs, FL
32708 USA

Asia Pacific:

China-Beijing

Room 602, Everlast Plaza, No. 39,
Anding Road,
Chaoyang District, Beijing, China
100029

China-Shanghai

4H, No. 92, Guiping Road, Zuhui Dis-
trict, Shanghai, China 200233

China-Huizhou

No. 6, Huifeng East 2 Road, Zhongkai
Hi-Tech Industrial Development Zone
Huizhou, Guangdong, China

China-Shenzhen

No. 9, Dragon Jade Industrial District,
Bantian Village Buji Town Longgang
District, Shenzhen, China

Hong-Kong

B7, 6F, Chung Mei Centre, 15B Hing
Yip Street, Kwun Tong, Kowloon, Hong Kong

Singapore

60 Kaki Bukit Place, #08-04/05 Eunos
Tech Park, Singapore 415979

Indonesia

Gedung Starpage Jl. Salemba Tengah
No. 5 Lt. 3, Jakarta Pusat, Indonesia

Taiwan

12F, No.33 Sec. 2, Roosevelt Road,
Taipei, Taiwan

Malaysia

No. 17 Jalan P2/12, Bandar Teknologi
Kajang, 43500 Semenyih, Selangor,
Malaysia

Philippines

3rd Floor. ETPI Bldg. #2161 Soler St,
Conner Calero St. Sta Cruz, Manila
City, Philippines

Thailand

169 Soi Sirindhorn 7, Charansanitwong
Road, Bangbamru, Bangplad, Bangkok
10700, Thailand

India

New No. 6, Old No. 16, Rajagopalan
Street, Valmiki Nagar, Thiruvanniyur,
Chennai 600041, India

Radio specifications

Wireless technology	Proprietary W-Jet protocol
Operating mode	Point-to-point
Radio frequency band	2.4 - 2.483 GHz
Channel size	Configurable 5, 10, 20, 40 MHz
Max transmit power	24 dBm (Country dependent)
Modulation schemes	BPSK, QPSK, 16QAM, 64QAM
Receive sensitivity	Varying between -92 and -74 dBm depending on modulation and channel size
Error correction	FEC, Selective ARQ
Duplexing scheme	Dynamic time division duplex

Antenna

Type	Integrated directional panel (LigoPTP 2-19) or 1 N-Type connector (LigoPTP 2-N)
Gain	19 dBi (LigoPTP 2-19)
3dB Beamwidth V/H	18/18 degrees (LigoPTP 2-19)

Data Interface

Physical interface	10/100 BaseT
Protocol	Ethernet IEEE 802.3
Connector type	RJ45
Surge protection	Built-in

Link performance

Real data (TCP) throughput	70 Mbps aggregate (35 Mbps full-duplex)
Max packets per second	50,000
Packet latency	2 ms (64 bytes packet)
Recommended link distance	Up to 30 km (18.6 mi), LOS

Security

Data encryption	Hardware based AES
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Physical

Dimensions (LigoPTP 2-19)	Width 385 mm (15 "), height 385 mm (15 "), depth 100 mm (3.9 ")
Dimensions (LigoPTP 2-N)	Width 220 mm (8.7 "), height 220 mm (8.7 "), depth 80 mm (3.2 ")
Weight	3.7 kg (8 lb) (mount included)
Power supply	9 - 48 VDC, passive PoE
Power source	100 - 240 VAC via included adapter
Power consumption	12 W

Environmental

Operating temperature	-20°C (-4 F) ~ +60°C (+140 F)
Humidity	0 ~ 90 % (non-condensing)

Management

System configuration interfaces	User-friendly web GUI, SSH CLI, SNMP v1/2c/3 with traps, central- ized Remote Control Management System
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Regulatory

Certification	FCC/CE
Ingress protection	IP-67
Safety	RoHS compliant