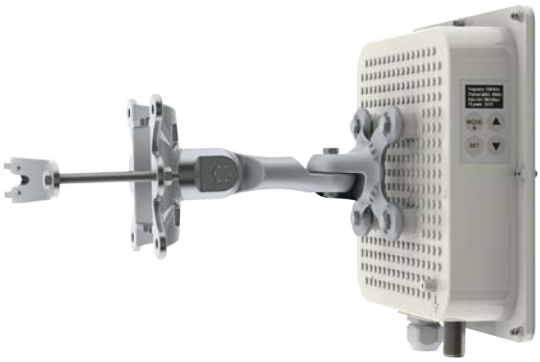
Ligo PTP 5-23/5-N

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



Product Overview

LigoWave delivers the most robust 5 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 5 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 5 series products offer an unlicensed PTP solution, ideal for dedicated access or backhaul applications (including VOIP) where other frequencies may be unavailable.

The LigoPTP 5-23/5-N product features an integrated 23 dBi panel antenna, with narrow beamwidth to enable long-range, rock-solid link connectivity or an external N-connector for your own antenna.

The LigoPTP 5-23/5-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 5-23/5-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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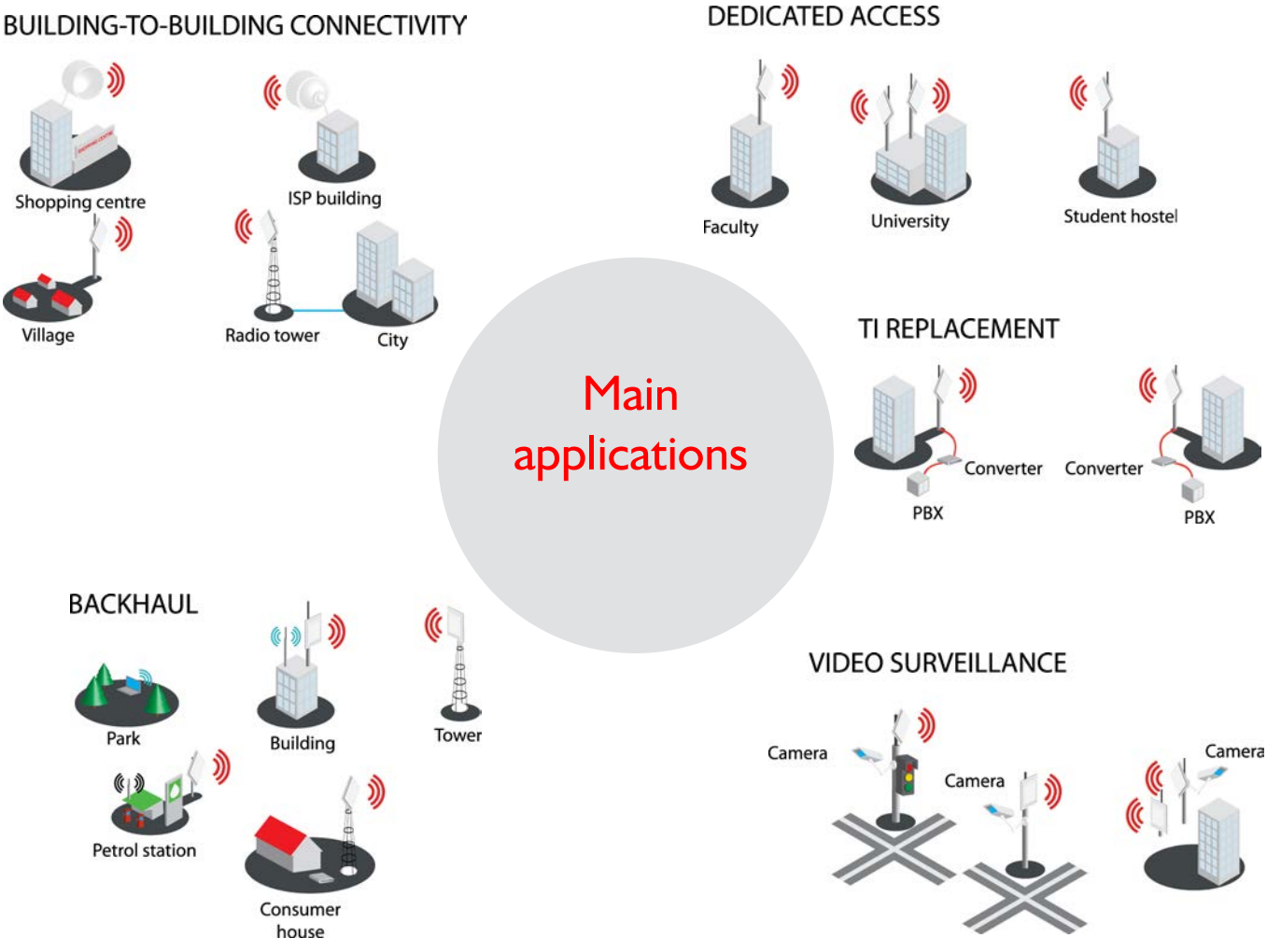
Key Features

- High, Adustable TX power 5 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
- 23 dBi integrated panel antenna for long distance PTP links or an externall 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.

Main applications



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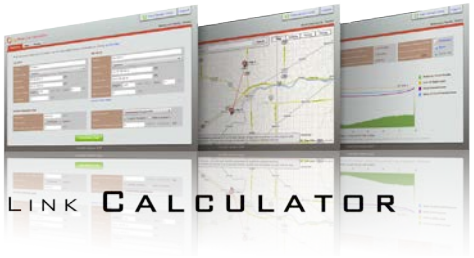
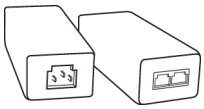


Summary

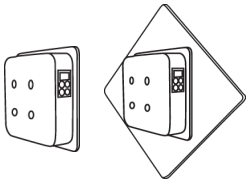
- Easy and quick planning;
- Free online application and can be used with all wireless equipment;
- Has integration with Google maps;
- Allows storing, downloading and pub lishing data about the links online.
- PDF results can even be used by instal lation teams!

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 addtion, 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.

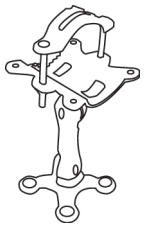
Package contents:



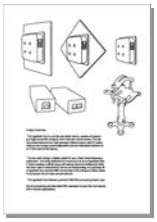
48 V PoE with grounding and lightining protection



LigoPTP 5-23/5-N outdoor unit

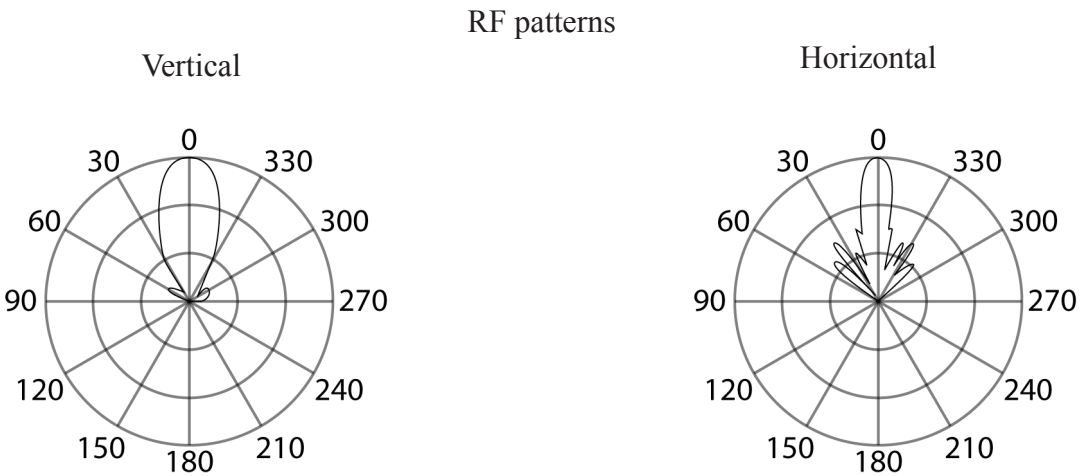


Professional mounting kit



Quick install guide

Antenna patterns (only for LigoPTP 5-23 product):



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LigoWave

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Radio specifications

Wireless technology	Proprietary W-Jet protocol
Operating mode	Point-to-point
Radio frequency band	4.990 – 5.85 GHz (Country dependent - FCC 5.745 to 5.825)
Channel size	Configurable 5, 10, 20, 40 MHz
Max transmit power	26 dBm (Country dependent)
Modulation schemes	BPSK, QPSK, 16QAM, 64QAM
Receive sensitivity	Varying between -94 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 5-23) or 1 N-Type connector (LigoPTP 5-N)
Gain	23 dBi (LigoPTP 5-23)
3dB Beamwidth V/H	10/10 degrees (LigoPTP 5-23)

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 40 km (25 mi), LOS

Security

Data encryption	Hardware based AES

Physical

Dimensions (LigoPTP 5-N)	Width 220 mm (8.7 ”), height 220 mm (8.7 ”), depth 80 mm (3.2 ”)
Dimensions (LigoPTP 5-23)	Width 335 mm (13 ”), height 335 mm (13 ”), 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, centralized Remote Control Management System

Regulatory

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