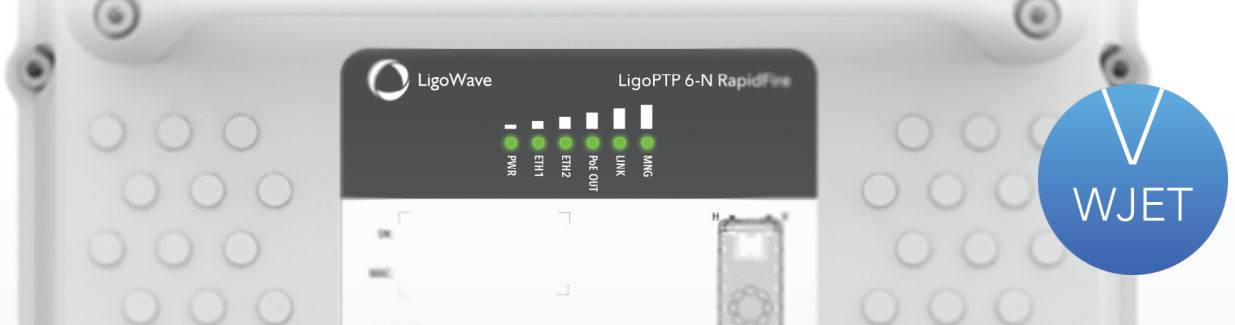# LigoPTP 4-N/ 4-23 RapidFire

Outdoor Wireless Point-to-Point Bridge
(Public Safety)

Outstanding Capacity

RapidFire delivers an extremely high 140Mbps (20MHz channel) throughput via its unique and powerful RF design that supports up to 256-QAM modulation and 26dBi output power. Our proprietary W-Jet V protocol, specifically engineered for high performing PTP scenarios, minimizes interferences even across long distances and stabilizes latency within 2-4 ms.

45°
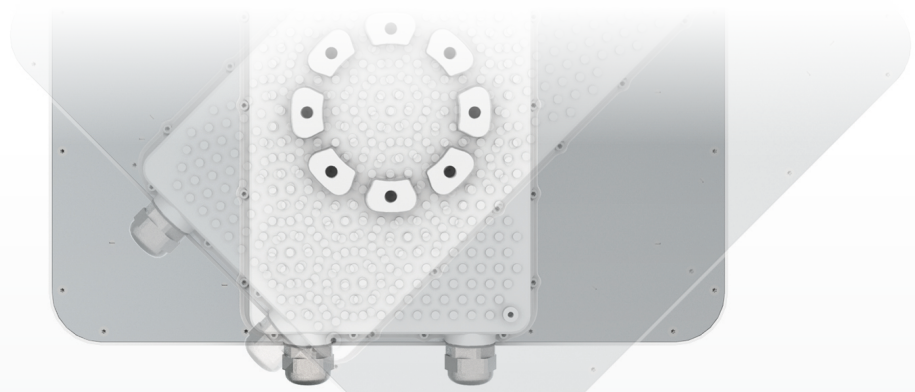
Professional Design

In addition to achieving maximum performance, LigoWave focuses on delivering flexibility and ease-of-use in our RapidFire series. The robust mounting bracket enables rapid deployment of the links and ensures survivability during high wind-load. The integrated antenna possesses a 45° rotation option which increases installation flexibility; especially advantageous in noisy spectrum areas. A GORE© membrane vent allows fast pressure equalization of the IP-67 rated cast aluminum enclosure to prevent condensation and to ensure seal performance . A detachable handle eases transporting the devices up towers and over rough terrains. Newly designed RGB LEDs indicate different device statuses and signal levels (in 1dBm steps) when aligning the antenna.
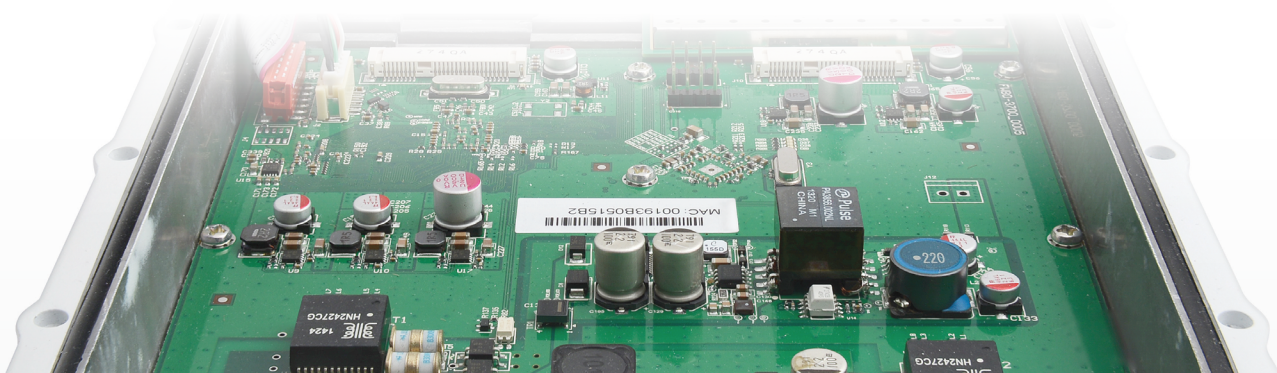
Powerful All-in-One Hardware Platform

LigoWave RapidFire delivers powerful performance with its new 1.2GHz CPU dedicated for data processing and high (200,000) packet per second delivery. Equipped with two Gigabit Ethernet ports, one with PoE passthrough, the unit allows for 1+1 (failover) or repeater links and is ideal for high-security video surveillance scenarios. RapidFire incorporates integrated surge and ESD protection according to IEC standards and passes Class 4 requirements.
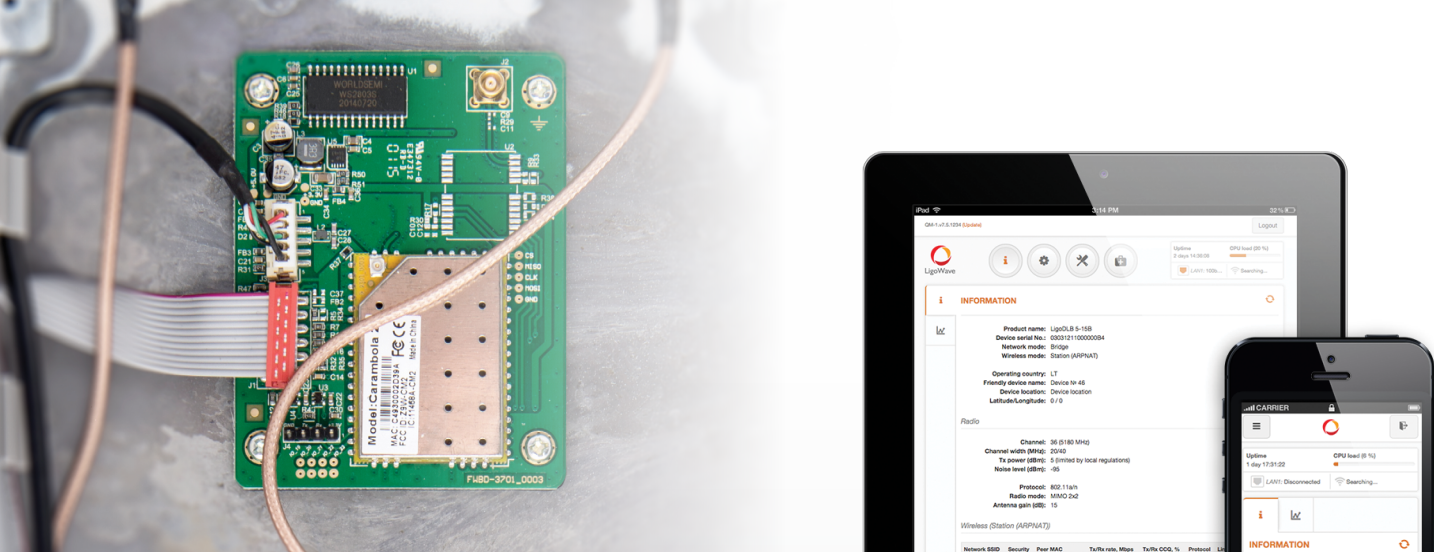
Wireless Configuration Interface

An internal 2.4GHz radio allows access into the Rapidfire GUI by wireless connection with any WIFI equipped device. This feature expedites the installation of links and alleviates the problem of troubleshooting in difficult-to-reach locations. Tests prove accessibility even when mounted on top of a 10-story building while standing 20 meters (65 ft) away!
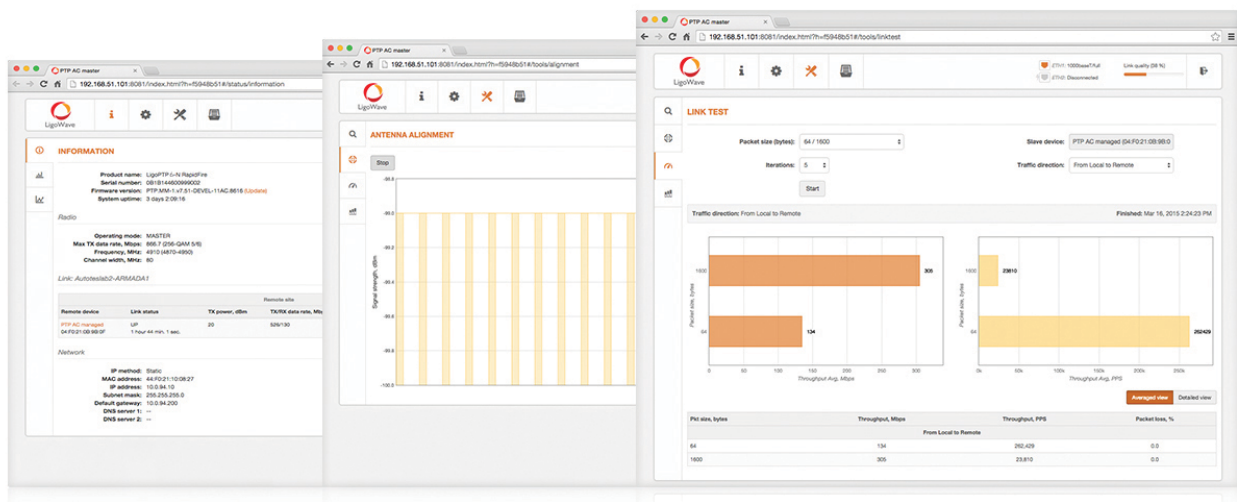
Powerful OS

The LigoPTP operating system ensures easy and rapid deployment of point-to-point links with stable, fast performance. An intuitive and responsive user interface adjusts the layout based on the size of your screen. Essential tools including Setup Wizard, link test, antenna alignment, spectrum analyzer, and site survey are included to make set-up and troubleshooting more efficient. Automatic mechanisms such as auto-channel and automatic transmit power control optimize the link for maximum performance even in areas with high interference.
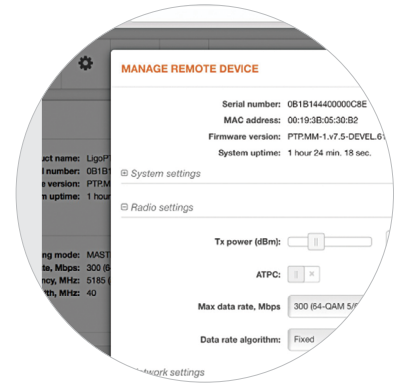
Setup Wizard

A link setup wizard guides the installer through the important steps of the set-up process.

Spectrum Analyzer

The integrated spectrum analyzer demonstrates the noise floor in order to find the optimum frequency.

Single Side Configuration

LigoPTP RapidFire simplifies link configuration by supporting single side configuration as parameters are automatically applied to slave units once set on the master side.

Easy Pre-Configuration

Multiple options to pre-configure LigoPTP RapidFire devices are displayed in a scheme below. Devices can be connected with each other using wired or wireless connectivity. End-user device can also connect to the master device using 2.4GHz access radio or using wire to the Ethernet port of the master device. LigoPTP RapidFire devices can be discovered using bonjour and SSDP protocols as well.

Wireless
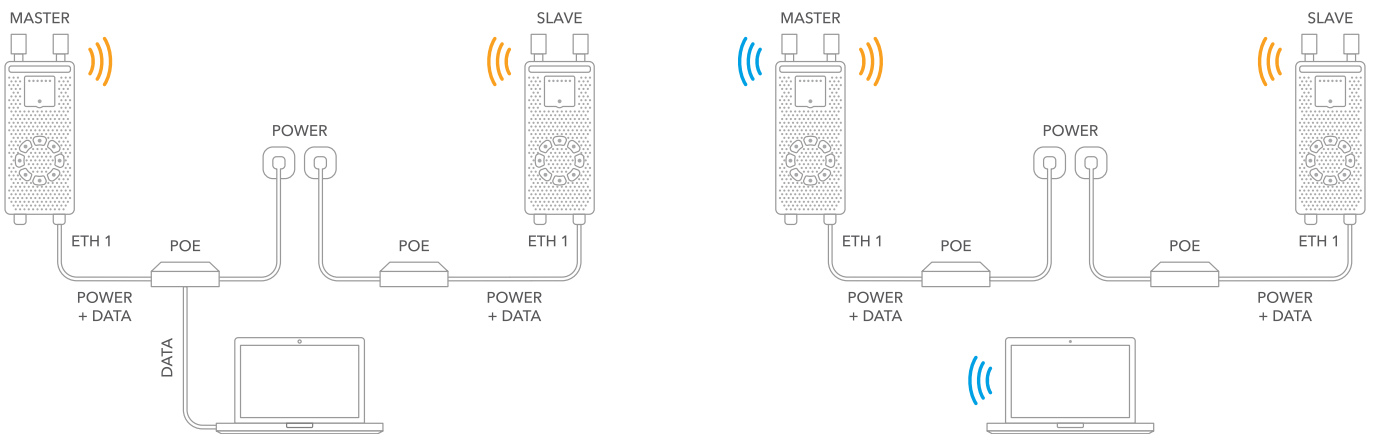
Wired

802.3af/at Inserter

DC input connector

Grounding pin

DIN rail mounting
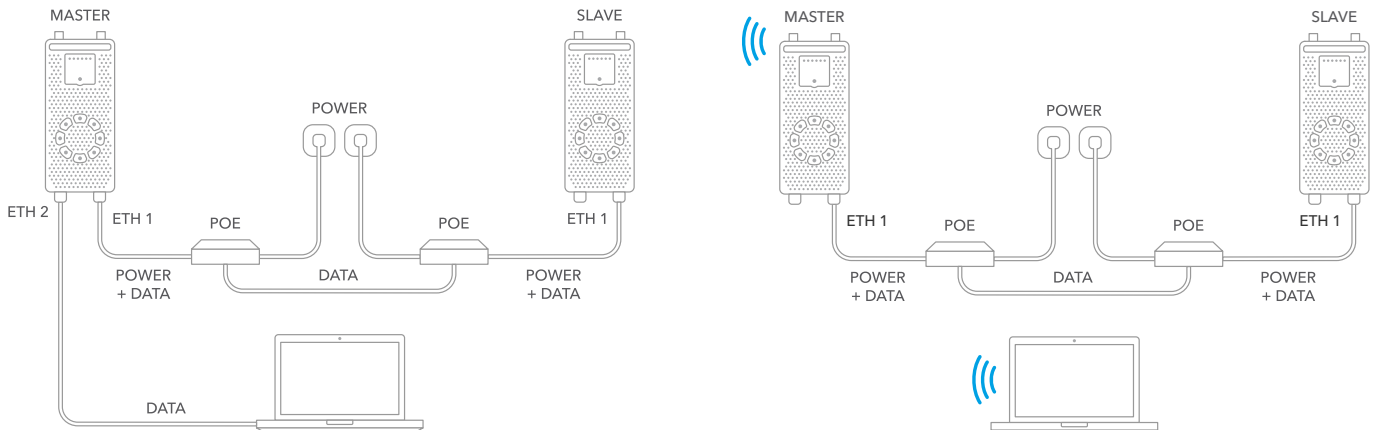
Electrical specifications

DC input voltage range	44.0–57.0V
IEEE 802.3af/at compliant	POE output
Output power	up to 28W
Power output	RJ45 pins 1,2,4,5 (+) and 3,6,7,8 (-)
Data rate	10/100/1000Mbps
Surge protection	2kV line to line,
	6kV line to ground (output port)

Physical specifications

DC input	
Data input jack	RJ45
Data + Power output jack	RJ45
Dimensions	117×87×34mm
Weight	270g
Operating temperature	-40 to +65C
UTP/FTP cable length	100m total
	(from switch to the device)

Radio

Wireless protocol	W-Jet V
Radio mode	MIMO 2×2
Frequency range	4.940 - 4.990GHz
Channel size	5, 10, 20MHz
Modulation schemes	OFDM (256-QAM, 64-QAM, 16-QAM, QPSK, BPSK)
Data rates @ 20MHz	173, 144, 130, 116, 87, 58, 43, 29, 14Mbps
Duplexing scheme	TDD
Error correction	BCC, LDPC
Automatic Channel Selection	DFS Compatability
Automatic TPC	Supported
Radio security	Hardware AES-128

Modulation, Mbps	173	144	130	116	87	58	43	29	14
TX Power, dBm	21	21	22	22	23	24	25	25	26
Receive Sensitivity, dBm	-73	-77	-79	-80	-84	-87	-92	-94	-97

Antenna

LigoPTP 4-23 RapidFire	Integrated directional dual-pol 23dBi panel
LigoPTP 4-N RapidFire	2 N-type connectors

Wired

First Interface	10/100/1000 Base-T with PoE IN (RJ45)
Second Interface	10/100/1000 Base-T with PoE OUT (RJ45)

Physical

Dimensions without mount:

LigoPTP 4-23 RapidFire	Length 379mm (14.9''), width 387mm (15.2''), height 51mm (2'')
LigoPTP 4-N RapidFire	Length 399mm (15.7''), width 174mm (6.8''), height 47mm (1.8'')
Mount length till pole	124mm (4.8'')

Weight including mount:

LigoPTP 4-23 RapidFire	3.9kg (8.5lb)
LigoPTP 4-N RapidFire	2.9kg (6.3lb)

Power

Power input method, voltage	PoE 802.3at, isolated 42 - 57 VDC
Power consumption (max)	8.6W
Power output method, voltage	PoE 802.3af, 48 VDC, 12.95W maximum

PoE inserter and AC/DC adapter are included

Environmental

Operating temperature	–40°C (–40F) ~ +65°C (+149F)
Humidity	0 ~ 90 % (non-condensing)

Software features

- Wizard for fast link setup
- Centralized control from master: A) Common wireless link parameters; B) Individual slave parameters
- Smart Auto-channel
- Robust data security
- QoS with hardware acceleration
- Spectrum analyzer
- Wireless signal and device state indication on RGB LEDs
- Dual firmware image

Management

Dedicated 2.4GHz radio for management

System monitoring	SNMP, GUI/HTTP(S), Shell/SSH and WNMS
System configuration	GUI/HTTP(S) and WNMS

Regulatory

Certification	FCC/IC/CE

Antenna specifications

V Pol

Azimuth

Elevation

H Pol

Azimuth

Elevation

Internal antenna

Frequency Range	4.940 - 4.990GHz
Gain	23dBi
Polarization	Dual-Linear
Cross-Pol Isolation	27dB
VSWR	1.5:1
Azimuth Beamwidth (H-pol)	6°
Azimuth Beamwidth (V-pol)	7°
Elevation Beamwidth	9°

LigoPTP 4-N/ 4-23 RapidFire