



LigoWave

LigoPTP RapidFire 6-25

# CASE STUDY

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Kazakhstan

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## Scenario

A LigoWave client has set up a 10.78km PTP link in Astana, Kazakhstan. The master device was placed on a roof of a building in the Orynbor Towers Condominium Complex.

The link uses 2x RapidFire 6-25 wireless bridges. It is set to operate at 24dBm transmit power with 25dBi gain over the 6.050GHz frequency.

Since the master device was installed among buildings, the rooftops made it challenging to ensure full link line of sight.

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## Product

The LigoPTP RapidFire 6-25 is a wireless outdoor PTP bridge for long-distance heavy-duty backhaul and industrial networks. The 6-N works over the 6GHz band, allowing users to find less-crowded channels, experience zero noise and interference, and reach greater range and throughput.

The 6-25 is equipped with a 1.2GHz CPU, a 30dBm radio, and a 25dBi integrated panel antenna housed in an IP67-rated casing. It also has a 2.4GHz management radio, integrated surge protection, and a second ETH PoE Out port.

The RapidFire uses up to 256-QAM modulations and the W-Jet proprietary protocol to deliver 700Mbps of throughput at 200,000+ packets per second. The wireless bridge also comes with a setup wizard and a single-sided configuration function to save time and money on installation.

RapidFire allows users to set very specific frequencies in 10kHz steps. There are also plans to launch non-standard channel widths such as 14MHz, 28MHz and 56MHz for specialized projects over licensed bands.

The W-Jet protocol is made for capacity-demanding scenarios, minimizing interference and stabilizing latency in long-distance links.

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## Results

Tests were done using Link Test, a proprietary link performance measuring tool available with LigoPTP and LigoDLB devices.

The RapidFire-based link showed good results despite its long distance and the rooftops obstructing the Fresnel Zone. Signal levels averaged at around -50dBm. The link delivered 243Mbps of throughput over a 40GHz channel using UDP simplex. Over the 80GHz channel, it jumped to 460Mbps using UDP simplex.

6GHz is an optimal alternative to the crowded 5GHz band. Better spectrum conditions ensure good signal levels and higher performance. It allows networks to operate at lower capacity, this way minimizing self-interference among sites and extending device operational life. Also, less noise means longer potential link distances.

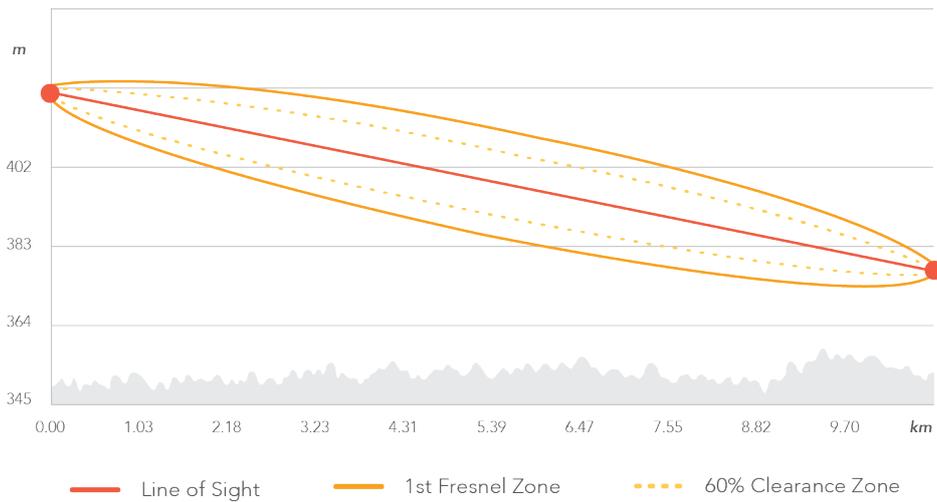
**LigoPTP RapidFire 6-25** | **10km Link** | **200,000+PPS**



Map | LigoPTP RapidFire 6-25

### PTP Link Simulator

10.78km (link)



Link path profile showing a downward wireless link. It does not include buildings, but is otherwise with clear line of sight.

**INFORMATION**

Product name: LigoPTP 6-25 RapidFire  
 Serial number: 0B1B  
 Firmware version: PTP.MA-1.v7.60.63478 (Update)  
 System uptime: 6 days 21:21:38

Friendly name: ot-lp  
 Device location: Orynbor Towers  
 Latitude/Longitude: 0 / 0  
 Height AGL, m: 0

**Radio**

Operating mode: MASTER  
 Max Tx data rate, Mbps: 400 (256-QAM 5/6)  
 Frequency, MHz: 6050 (6040-6080)  
 Channel width, MHz: 40

Tx power, dBm: 24  
 Antenna gain, dBi: 25  
 Noise level, dBm: -109/-109

Link ID: ot-lp

Remote site						Local site
Remote device	Link status	Tx power, dBm	Tx/Rx data rate, Mbps	Noise level, dBm	Signal level, dBm	Signal level, dBm
lp-ot 00:19:38	UP 6 days 21:20:56	24	399/399	-108/-108	 -52  -51	 -50  -53

**Network**

Low noise levels in the 6GHz band and -50dBm average signal level ensured good performance and stable connectivity.





## Contact Us

Need a 6GHz wireless network solution for your projects?  
Get in touch: [sales@ligowave.com](mailto:sales@ligowave.com)

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## Case Study of LigoPTP RapidFire 6-25

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