LigoWave

LigoPTP RapidFire 5 – 23

LINK REPORT

Taiwan

LigoPTP RapidFire 5-23

Taoyuan City

China Airlines (CAL) has set a goal to establish a redundant data backhaul link between the CAL airport office and their DaiYen support center. This link was planned to serve as a back-up solution, if the existing fiber-optic link was to fail. The point-to-point stations have been deployed in the Dayuan District, Taoyuan City, Taiwan—a coastal area in the north-western part of the island.

The main challenge of setting up a data backhaul link in this area was the high level of environmental interference in the 5GHz frequency spectrum. To solve this problem, China Airlines has decided to utilize LigoWave's LigoPTP RapidFire 5-23 devices.

The idea behind the solution was to transmit a signal that would be strong enough to not be altered by the existing environmental noise. Since the RapidFire 5-23 unit delivers 54dBm of EIRP, it is more than capable of establishing a strong and steady link.
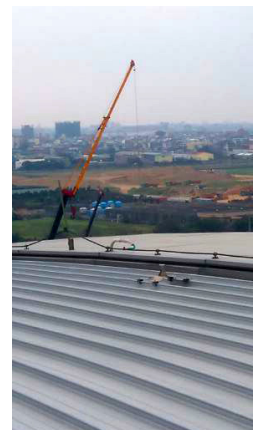
Moreover, the PTP device also utilizes the W-Jet V proprietary protocol, which minimizes environmental noise. This combined with a cleaner channel further solidified an effective link. These solutions were sufficient in suppressing the existing environmental noise and providing an efficient solution.

The distance between the master and the slave units was 2.6 kilometers. There were no physical obstacles obstructing the link, thus allowing high-speed data delivery, which averaged at 550Mbps of throughput over an 80MHz channel. The combination of 30dBm transmit power and 23dBi antenna gain guaranteed that the link remains stable and reliable.

Brief Summary

Criterion		Value
Distance between Sites		2,672 km
Altitude – Station A		Approx. 62 m
Altitude – Station B		Approx. 58 m
Frequency		5,800.0 MHz
Channel Width		80 MHz
Average Throughput		550 Mbps
Maximum Possible Throughput		700 Mbps
Signal Levels	Master	-56/-60 dBm
	Slave	-51/-56 dBm
Tx Power		31.0 dBm
Antenna Gain		23.0 dBi

Table | *Weitech Link Analysis Report*

Picture | *A site map of the PTP link.*

Path profile between TX and RX sites

Distance between Tx Site and Rx Site (km)

⬤ Point-to-Point Profile   ⬤ Line of Sight Path   ⬤ First Fresnel Zone   ⬤ 60 % of First Fresnel Zone