LigoWave

DLB 5

Outdoor Wireless Device

DLB 5

LigoWave's DLB 5 is a versatile, very efficient, and stable 5 GHz access point. This product is equipped with an extreme output power (up to 29 dBm) 802.11n MIMO radio wrapped securely inside a robust enclosure. The two N-type connectors allow the connection of external antennas suited for a wide range of applications. The powerful radio core is coupled with an advanced and feature-rich operating system, optimized for high performance wireless communications while optionally allowing compatibility with older 802.11 a standard devices.

The smart dynamic polling based protocol (iPoll 2) ensures reliable communication even in congested areas with 64 client devices connected to the base-station.

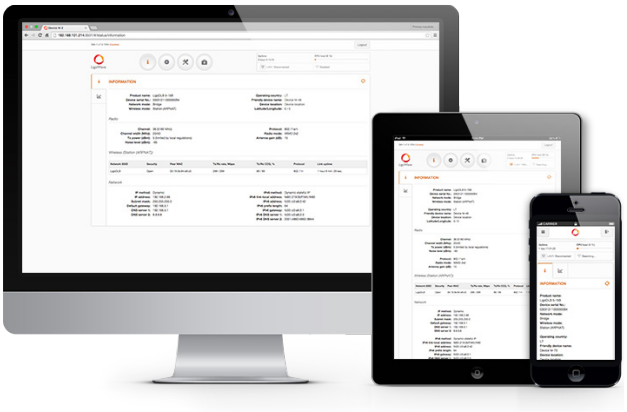
Equipped with LigoWave's dual firmware image feature, remote software upgrades are assured even if a power failure interrupts the process. The device will restart using the prior firmware in the event of an upgrade failure.

The enclosure is made of polycarbonate plastic with UV inhibitors to provide years of outdoor exposure in direct sunlight without cracking. The DLB 5 was designed and tested to meet an IP-67 rating as well as vibration, temperature, drop, salt, fog, and electrical surge standards to ensure a high level of reliability unsurpassed in the industry. It is equipped with a grounding plug and a grounded 24-volt PoE to allow a professional installation, resistant to electrical surges.

OS

The DLB OS is a highly functional and easy to use operating system. This powerful and flexible operating system ensures flawless operation of all DLB hardware devices and effortless setup for those deploying the networks.

- Smart polling data transmission protocol (iPoll 2)
- Dual-firmware image support
- Responsive HTML 5 based GUI
- 170 Mbps capacity
- 80,000 PPS rate
- IPv6 support
- Infinity Controller compatible



INFINITY CONTROLLER

The Infinity Controller is LigoWave's proprietary element management system that facilitates network installation, configuration, control, maintenance, monitoring, and expansion.

The Infinity Controller is designed to work with all Infinity (NFT), LigoDLB, and LigoPTP NEs. It offers full functionality with the Infinity and LigoDLB series, but supports only the monitoring feature for LigoPTP NEs.

The LigoPTP configuration scenario is currently undergoing development.

Specifications

Product/ distance recomendation	PTMP mode	PTP mode	PTP mode (full capacity)
DLB 5	Antenna dependent	Antenna dependent	Antenna dependent

Wireless

WLAN standard	IEEE 802.11 a/n, iPoll (proprietary)
Radio mode	MIMO 2x2
Radio frequency band	5.150 - 5.850 GHz (FCC 5.150 - 5.250 and 5.725 - 5.850 GHz)
Transmit power	Up to 29 dBm (country dependent)
Receive sensitivity	Varying between -97 and -75 dBm depending on modulation
Channel size	5, 10, 20, 40 MHz
Modulation schemes	802.11 a/n: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Data rates	802.11 n: 300, 270, 240, 180, 120, 90, 60, 30 Mbps
	802.11 a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
Error correction	FEC, Selective ARQ
Duplexing scheme	Time division duplex

Receive sensitivity (dBm)	802.11N/ iPoll (20/ 40 MHz)	15 Mbps	30 Mbps	45 Mbps	60 Mbps	90 Mbps	120 Mbps	135 Mbps	150 Mbps
		-97	-95	-93	-88	-85	-81	-79	-77
		30 Mbps	60 Mbps	90 Mbps	120 Mbps	180 Mbps	240 Mbps	270 Mbps	300 Mbps
		-94	-92	-89	-85	-82	-78	-77	-75
	802.11a	6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
		-97	-97	-95	-93	-90	-86	-82	-81
Output power (dBm - combined)	802.11N/ iPoll (20/ 40 MHz)	15 Mbps	30 Mbps	45 Mbps	60 Mbps	90 Mbps	120 Mbps	135 Mbps	150 Mbps
		29	28	28	28	27	27	25	24
		30 Mbps	60 Mbps	90 Mbps	120 Mbps	180 Mbps	240 Mbps	270 Mbps	300 Mbps
		28	28	28	28	26	26	24	23
	802.11a	6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
		29	29	29	29	29	27	26	25

Antenna

Type	External N-connectors
Gain	Antenna dependent

Wired

Interface	10/100 Base-T, RJ45

Software

Wireless operating modes	Access point (auto WDS), access point (iPoll 2), station (WDS, iPoll 2), station (ARP NAT)
Wireless techniques	Smart station polling, smart auto-channel, adaptive auto modulation, automatic transmit power control (ATPC)
Wireless security	WPA/WPA2 personal, WPA/WPA2 enterprise, WACL, user isolation
Wireless QoS	4 queues prioritization on iPoll 2
Network operating modes	Bridge, router iPv4, router IPv6
Network techniques	Routing with and without NAT, VLAN
WAN protocols	Static IP, DHCP client, PPPoE client
Services	DHCP server, SNMP server, NTP client, router advertisement daemon, ping
Management	HTTP(S) GUI, SSH, SNMP read, Infinity Controller, Telnet
Tools	Site survey, link test, antenna alignment

Physical

Dimensions	Length 150 mm (5.9 ''), width 115 mm (4.5 ''), height 55 mm (2.1 '')
Weight	450 g (16.2 oz)
Mounting	Combination wall / pole mount with quick swap bracket included

Power

Power supply	12 - 24 VDC passive PoE (24 V passive PoE adapter is included in the package)
Power source	100 – 240 VAC
Power consumption (max)	4.5 W

Environmental

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

Management

System monitoring	SNMP v3, Syslog, Web UI and Infinity Controller
Configuration:	WebUI, Infinity Controller

Regulatory

Certification	FCC/IC/CE