LigoWave

Model:LigoDLB Propeller 5
LAN MAC: 001953513996E
SN: 0101010000000021
FCC ID: V3V-DLBPROP5
IC: 7871A-DLBPROP5

LAN
PWR

DLB PROPELLER 5

Outdoor Wireless Device

DLB PROPELLER 5

The DLB Propeller 5 is a new generation wireless device designed for client and small scale base-station applications. It has a unique mechanism to do mechanical antenna parameter shifting and achieve the best performance in different operating modes (patent pending).

This product is equipped with a high output power MIMO radio (up to 28 dBm) and 15 dBi dual-polarized antenna which make the device ideal for short to medium range wireless communication.

Our dual firmware image will allow safe software upgrades. The device will restart using the prior firmware in the event of an upgrade failure.

The DLB Propeller 5 uses an advanced and feature-rich operating system which supports bridge/router and repeater modes (repeater mode allows the product to operate as an access point and as a station at the same time). The DLB OS also supports LigoWave's iPoll2 (proprietary wireless communication technology) to increase throughput, packet per second rate and stabilize latency on your network. It has a user-friendly HTML 5 based GUI with instant reconfiguration without a reboot, includes useful installation tools (site survey, delayed reboot, spectrum analyzer, ping, traceroute) and is compatible with our standalone and cloud based Wireless Network Management System (WNMS) - one of the most advanced management tools on the market.

The DLB Propeller 5 can be rotated to the horizontal orientation for use as a client device.   This greatly reduces interference, as the main noise source is on the azimuth. Alignment is easy as only left and right movement of the device is necessary (no need to move it upwards or downwards as the antenna angle on the elevation is wide).

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
- WNMS compatible
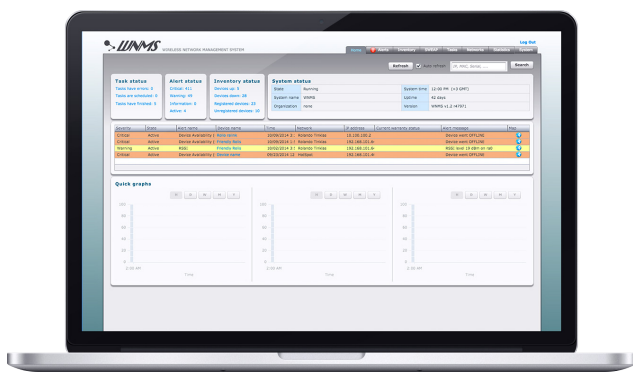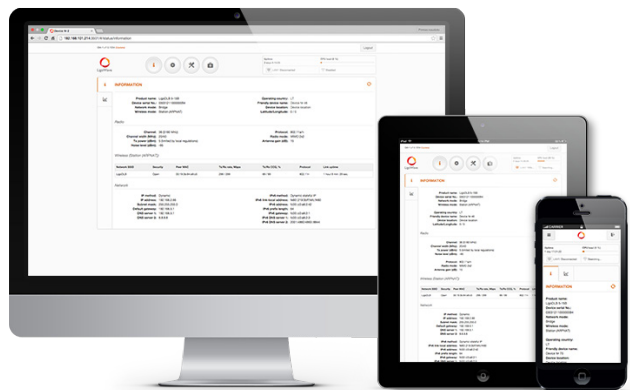
WNMS

WNMS is a FREE enterprise grade Wireless Network Management System. A single software solution simplifies a large number of management and monitoring tasks for network administrators. LigoWave's comprehensive network management system supports several thousands of nodes. Multiple networks may be maintained and monitored using one server. A rich feature set helps to diagnose network problems effectively, visualize networks on a map, perform scheduled firmware upgrades automatically, track states of devices, get failure alerts, and collect statistics. The Web-based system environment supports multi-user accounts. Several administrators may manage different networks on the same server, without having access to each other's equipment. WNMS is available as a stand-alone version for Linux and Windows servers, as a cloud-based system and as a mobile application for Android devices.

Specifications

Product/ distance recommendation	PTMP mode	PTP mode	PTP mode (full capacity)
DLB Propeller 5	5 km/ 3.11 mi	7 km/ 4.35 mi	4.5 km/ 2.8 mi

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 & 5.745 - 5.850 GHz)
Transmit power	Up to 28 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	Integrated directional dual - polarized panel
Gain	15 dBi

Wired

Interface	10/100 Base-T, RJ45

Networking

Operating modes	Bridge, Router
WAN	Static IP, DHCP client, PPPoE client
NAT	Routing w/ or w/o NAT
Static routing	Supported
DHCP	Client, Server, Relay
Port forwarding	Supported
VLAN	Supported for management and data
Wireless security	WEP, WPA/WPA2 Personal, WPA/WPA2 Enterprise, WMM, WACL
User isolation	Supported

Softwave

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 withouth NAT, VLAN
WAN protocols	Static IP, DHCP client, PPPoE client
Services	DHCP server, SNMP server, NTP client, router advertisement daemon, ping watchdog
Management	HTTP(S) GUI, SSH, SNMP read, WNMS, Telnet
Tools	Site survey, link test, ping, traceroute, spectrum analyzer, delayed reboot

Physical

Dimensions	Length 175 mm (6.89 ''), width 65 mm (2.56 ''), height 29 mm (1.14 '')
Weight	94 g (3.32 oz)
Power supply	12 - 24 VDC passive PoE (24 V passive PoE adapter is included in the package)
Power source	100 – 240 VAC via included adapter
Power consumption	4.5 W

Environmental

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

Management

System monitoring	SNMP v1/2c/3 server, Syslogs, system alerts via e-mail and SNMP trap

Regulatory

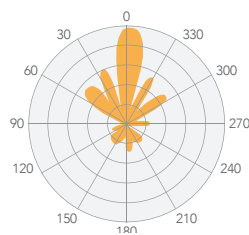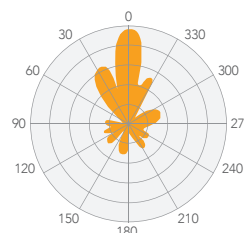|	
Certification	FCC/IC/CE

Antenna specifications
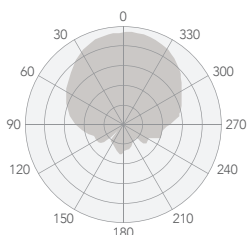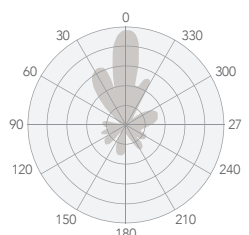

V Pol
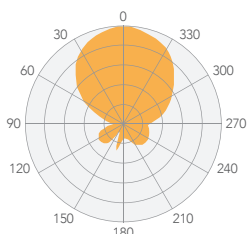
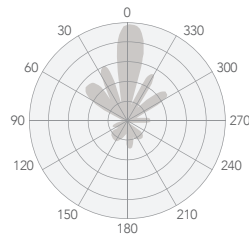
Azimuth

Elevation

V Pol

Azimuth
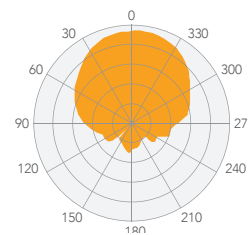
Elevation

H Pol

Azimuth

Elevation
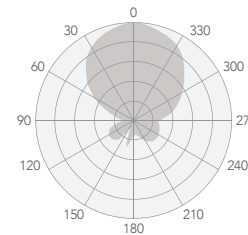
H Pol

Azimuth

Elevation

Vertical position

Frequency range	5.1 - 5.9 GHz
Gain	15 dBi
Polarization	Dual linear
Cross-pol Isolation	30 dBi
VSWR	<1.4
Azimuth beamwidth (H pol)	60 deg
Azimuth beamwidth (V pol)	60 deg
Elevation beamwidth	15 deg

Horizontal position

Frequency range	5.1 - 5.9 GHz
Gain	15 dBi
Polarization	Dual linear
Cross-pol Isolation	30 dBi
VSWR	<1.4
Azimuth beamwidth (H pol)	15 deg
Azimuth beamwidth (V pol)	15 deg
Elevation beamwidth	60 deg

DLB PROPELLER 5

LigoWave