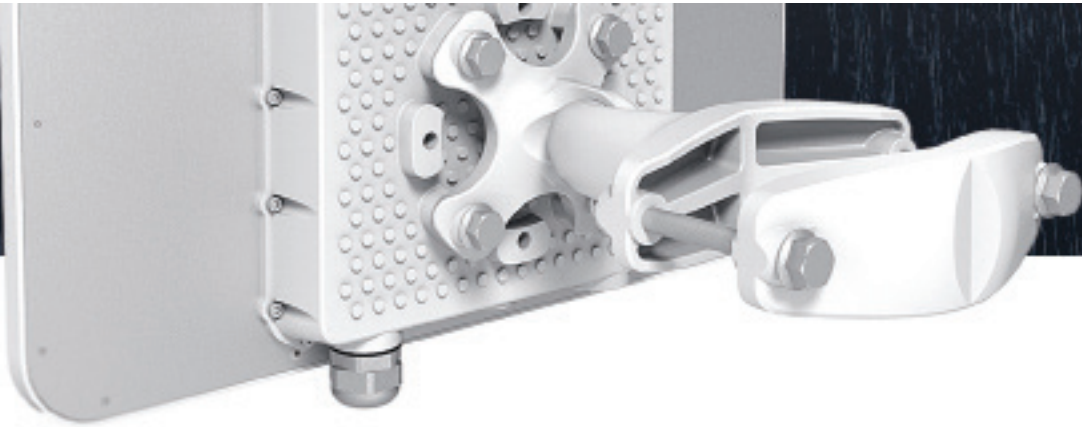# LigoDLB MACH 5 ac

5 GHz high-capacity wireless device

Incredible performance

500+ Mbps throughput - a result of powerful hardware platform with 802.11ac technology based radio and a proprietary data transmission protocol (iPoll). Incorporating a 720 MHz powerfull CPU, a iPoll3 / 11ac radio and 128Mbytes of RAM and 128Mbytes of flash memory, the LigoDLB ac series devices are an ideal solution for capacity demanding applications. State of the art RF design with great output power and sensitivity parameters improve range and capacity over highest the modulation - 256 QAM. The 48V Gigabit Ethernet port (802.3af) allows utilizing the full capacity of the radio when used in a point-to-point or point-to-multipoint network design. LigoDLB ac series devices are backwards compatible with LigoDLB devices using iPoll mode, which helps to expand or upgrade existing networks using the latest technologies over time.

Built to perform

LigoDLB MACH 5 ac is designed to provide maximum performance in any conditions. Metal IP standards rated enclosure not only protects from harsh weather conditions, but also allows using high-power radio for long distance links at the same time creating a shield for unwanted RF noise from nearby sources. Directional 23 dBi panel antenna makes this product ideal for medium to long range communication both in point to point and point to multipoint scenario. Such outstanding quality and flexibility makes this product ideal option for wireless bridging especially in mission critical connectivity applications requiring reliable data transmission.
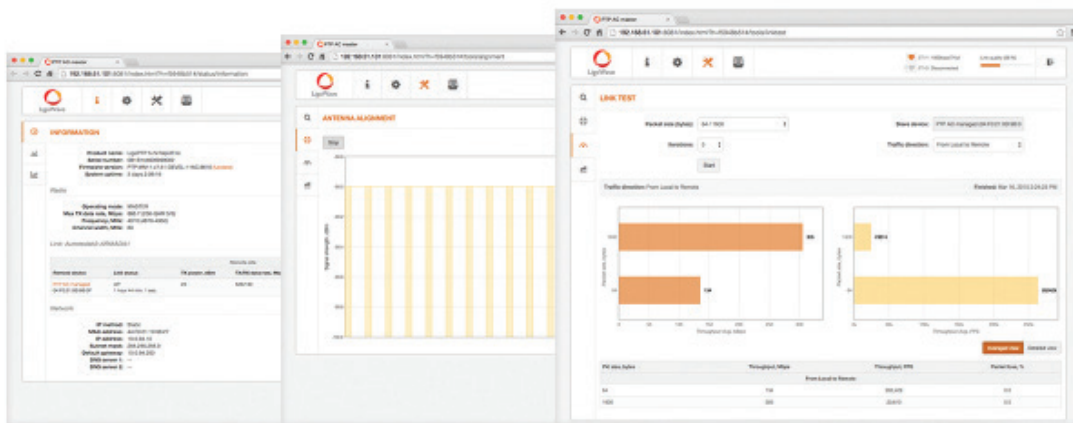
Powerfull OS

The LigoDLB OS is a highly functional and easy to use operating system embedded in all LigoDLB hardware devices for effortless setup and trouble free operation. High performance (500 Mbps) allows offering more bandwidth together with additional services such as VoIP and IPTV. This is possible when using LigoWave's smart QoS mechanism and multi-cast traffic enhancements for triple play services. Such services are essential for all next generation service providers to complement their existing portfolios. iPoll, LigoWave's proprietary transmission protocol, ensures smooth performance with a high number of clients even in noisy environments.

Specifications

Product/ distance recommendation	PTMP mode	PTP mode	PTP mode (full capacity)
LigoDLB MACH 5ac	12 km/ 7.45 mi	20 km/ 12.43 mi	5 km/ 3.15 mi

Wireless

WLAN standard	IEEE 802.11 a/n, iPoll (proprietry)
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)
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
Management	Time division duplex
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 dual-polarized directional panel antenna
Gain	23 dBi

Wired

Interface	10/100 Base-T, RJ45
Duplexing scheme	TDD

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 watchdog
Management	HTTP(S) GUI, SSH, SNMP read, WNMS, Telnet
Tools	Site survey, link test, antenna alignment

Physical

Dimensions	Length 379 mm (14.9 ''), width 387 mm (15.2 ''), height 80 mm (3.15 '')
Weight	3.3 kg (7.3 lb)
Mounting	Combination, heavy duty wall / pole mount 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 v1/2c/3 server, Syslogs, system alerts via e-mail and SNMP trap

Regulatory

Certification	FCC/IC/CE

Antenna specifications

V Pol

Azimuth

Elevation

H Pol
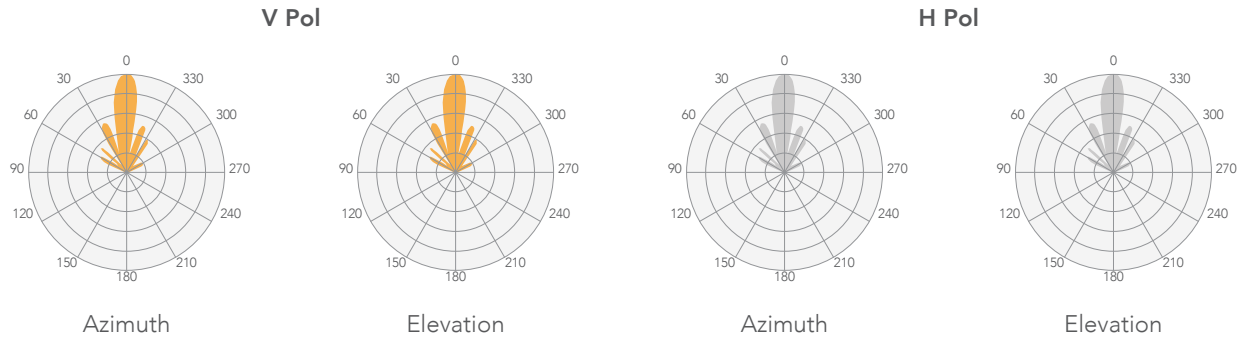
Azimuth

Elevation

Frequency range	5.1 - 5.9 GHz
Gain	23 dBi
Polarization	Dual linear
Cross-pol Isolation	27 dBi
VSWR	1.5:1
Azimuth beamwidth (H pol)	6 deg
Azimuth beamwidth (V pol)	7 deg
Elevation beamwidth	9 deg

LigoDLB MACH 5ac