

**VULCAN SERIES Product Family Description Long Distance High capacity Point to point, point to multi-point Backhaul 2.3 GHz to 6.06 GHz Outdoor TDMA Subscriber with Internal Antenna**

VULCANai\_PFD\_ENC01W

**Features:**

- Time-Division Multiple Access (TDMA).
- Long distance Point to point, Point to Multi-point backhaul links.
- Variable frequencies.
- 2.3/2.4/4.9/5 GHz.
- IP-68 water & dust resistant.
- IEC61000-4-5 surge protection.
- Outstanding MTBF.

**Applications**

- High capacity backhaul in long distances up to 50 Km.
- 5/10/20/40 MHz adjustable channel bandwidth.
- Cost-effective alternative to wired network environment.
- Redundant link between buildings.
- Dedicated ISP connections for high-reliability subscribers.
- Enterprises or Institutions LAN and PBX extension for high-reliability subscribers.
- IP-68 rating of the box for hostile environment.



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The VULCAN Series by LanPro is an ideal solution for high capacity Point to Point and Point to multi-Point backhaul for 2.3/4.9 GHz licensed bands, and 2.4/5 GHz ISM band wireless deployment in long distances up to 50 Km, providing the customer more options besides the crowded ISM band. The use of an internal antenna simplifies the deployment work.

5/10/20/40 MHz adjustable channel bandwidth provides flexibility of deployment to channel plan and high capacity backhaul – truly total accumulated throughput (uplink + downlink) up to 50 Mbps with 40 MHz channel BW.

The series utilizes OFDM – TDMA technology which allowing the balanced uplink/downlink tunnels in a single channel with least collision and highest efficiency. The Ethernet products are primarily designed to provide standard Ethernet interface in a wireless link between distant sites

The VULCAN Series of radios has powerful security management because they use a proprietary protocol and supports WEP 128 bits, and AES-256 bits encryption. It also has an advanced security and isolates connected CPEs (Layer 2 Isolation). All these functions make the network much more secure and reliable.

## A Product Highlights

- **Effective spectrum utility / variable capacities**

The VULCAN series have 4 levels of channel bandwidth (5/10/20/40 MHz) options, which are adjustable via software. This function provides flexibility to channel plans and variable capacities for different applications.

- **Low EIRP for long system and high capacity transmission**

The VULCAN series improve the throughput performance up to 50~70% more than the standard Wi-Fi products. This means that the system has the same performance with lower EIRP (smaller antenna) compared to other standard Wi-Fi products.

- **Time-Division Multiple Access (TDMA) technique**

TDMA tech can avoid the packets collision and send the packets more efficiently and in a stable way to improve the capacity and quality of data transmission in long distance or NLOS (Near/ Non-Line of sight) situation.

- **High output power OFDM technology and integrated antenna**

Integrated panel antenna with the high output power OFDM technology provides best performance and lowest price and at the same time makes the VULCAN series to be the most cost effective solution in the long distance wireless backhaul market.

- **Proprietary security**

The VULCAN series uses a proprietary protocol; hence it cannot connect to other standard Wi-Fi products. It also provides WEP 128 bits, AES-256 bits encryption, an advanced security, and isolates connected CPEs (Layer 2 Isolation) to build the highest security mechanism to prevent malicious attacks from the Internet.

- **Antenna alignment (audible antenna alignment included)**

The site survey function provides the RSSI (signal strength) info to indicate the status of antenna alignment. Audible antenna alignment feature for aligning the antenna by the headphone of your mp3 player, quite easy and simple.

- **Heavy duty construction**

Prepared for hostile environment, the IP-68 rating guarantees long life operation.

## B Specifications

RADIO					
Model No.	LP-V2324aix41	LP-V2424aix41	LP-V4949aix44	LP-V4958aix46	LP-V5160aix46
Frequency Range	2302-2482 MHz	2402-2482 MHz	4940-4990MHz	4958-5875 MHz	5150-6060 MHz
OUTPUT Amplifier POWER (EIRP)					
64QAM (54 Mbps)	38 (±2) dBm	38 (±2) dBm	40 (±2) dBm	41(±2) dBm	41 (±2) dBm
16QAM (36 Mbps)	40 (±1) dBm	40 (±1) dBm	42 (±1) dBm	45(±1) dBm	45 (±1) dBm
BPSK (18 Mbps)	41 (±1) dBm	41 (±1) dBm	44 (±1) dBm	46(±1) dBm	46 (±1) dBm
QPSK (6 Mbps)	41 (±1) dBm	41 (±1) dBm	44 (±1) dBm	46(±1) dBm	46 (±1) dBm
CCK (DSSS)	41 (±1) dBm	41 (±1) dBm	N/A	N/A	N/A
Antenna Gain	18 dBi	18 dBi	23 dBi	23 dBi	23 dBi
Receive Sensitivity (Packet error rate:10%)	-75 dB (±2) dBm @64QAM 2/3 -82 dB (±2) dBm @16QAM 1/2 -86 dB (±2) dBm @64QPSK 1/2 -90 dB (±2) dBm @64BPSK 1/2				
Modulation / Media Access	OFDM / TDMA				
Channel Bandwidth	5 / 10 / 20 / 40 MHz				
Frequency Stability	±10 ppm				
INTERFACES					
Ethernet	IEEE 802.3 (10 Base-T) / IEEE 802.3u (100 Base-Tx)				

<b>ADVANCE</b>		
Base Station Scanning	RSSI	
Watchdog	Yes	
Audible antenna alignment	Yes	
<b>ANTENNA</b>		
Frequency	2.3 / 2.4 GHz	4.9 / 5 GHz
	2.302 GHz~2.482 GHz	4.9 GHz~6.1 GHz
Gain	18 dBi	23 dBi
Beamwidth	H 16° ; E 16°	H 11.4° ; E 10.6°
VSWR	1.7 :1	1.7 :1
Front to back ratio	40 dB	40 dB
Impedance	50 Ohm	50 Ohm
Antenna Alignment	Audible Antenna Alignment beeper(Optional)	
<b>MANAGEABILITY</b>		
Management and setup	Web-based configuration	
Network Architecture	PTP / PtMP	
Operating System	Windows 98 / 2000 / NT / XP	
SNMP agents	MIB II	
Protocol	TCP/IP, IPX/SPX, NetBEUI	
<b>SECURITY</b>		
Data Encryption	WEP 128bits/AES-256bits	
Other security	Proprietary Protocol/Isolates connected CPEs (Layer 2 Isolation)	
<b>ENVIRONMENT</b>		
Operating Temperature	<b>-30~55°C</b>	
Storage Temperature	-30~70°C	
Humidity	95% non-condensing	
<b>POWER SUPPLY</b>		
Option X: 1 =100-264 VAC 50-60 Hz, 24 VDC or Option X: 2 =48 VDC (for Telecom grade).		
<b>PHYSICAL</b>		
Frequency	2.3 / 2.4 GHz	4.9 / 5 GHz
Dimensions	Typical 330 (L) * 295 (W) *105 (H) mm	Typical 335 (L) * 335 (W) *81 (H) mm
Weight	2.8 Kg ; 6.17 lib	<b>2.9 Kg ; 6.39 lb</b>

**C** How to order

<b>LP-V2324ai141</b>	2302-2482 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 41 dBm, AC 100-264V, 50-60 Hz, 24 VDC.
<b>LP-V2424ai141</b>	2402-2482 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 41 dBm, AC 100-264V, 50-60 Hz, 24 VDC.
<b>LP-V4949ai144</b>	4940-4990 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 44 dBm, AC 100-264V, 50-60 Hz, 24 VDC.
<b>LP-V4958ai146</b>	4958-5875MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 46 dBm, AC 100-264V, 50-60 Hz, 24 VDC.
<b>LP-V5160ai146</b>	5150-6060 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 46 dBm, AC 100-264V, 50-60 Hz, 24 VDC.
<b>LP-V2324ai241</b>	2302-2482 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 41 dBm, 48 VDC.
<b>LP-V2424ai241</b>	2402-2482 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 41 dBm, 48 VDC.
<b>LP-V4949ai244</b>	4940-4990 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 44 dBm, 48 VDC.
<b>LP-V4958ai246</b>	4958-5875 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 46 dBm, 48 VDC.
<b>LP-V5160ai246</b>	5150-6060 MHz Vulcan Series Outdoor TDMA Subscriber with Internal Antenna EIRP: 46 dBm, 48 VDC.