LP-288ai V2.0 TURBO OFDM
Compact outdoor radio with throughput booster.

LP288aiV2_SS_ENB01W

Characteristics

- Information Rate Booster (IRB) technology.
- 108Mbps Data rate (turbo mode).
- 18dBi Gain Integrated antenna.
- LOW LATENCY.
- HIGH CAPACITY.
- SUPPORT TDM (E1/T1) over IP.
- TDM over IP PRIORITY (Customized).
- IP-68 Water & Dust Resistant.
- IEC61000-4-5 Surge Protection.
- Outstanding MTBF.

Applications

- VOIP/ Video / Data convergence Backhaul.
- TDM over IP Backhaul.
- Double-play WISP (VoIP + Data) Backhaul.
- Private Enterprise Network Infrastructure.
- Monitoring of remote systems.

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The LP-288ai V2.0 is part of the Mercury Series of Radios by Lanpro, and is designed for Carriers and Internet Service Providers to address the last-mile wireless infrastructure solution with high performance and reliability. It supports the Voice Over IP (VoIP) application and delivers higher throughput up to 50Mbps in a 20 MHz channel Bandwidth by Information Rate Booster (IRB) technology, it comes with software controllable RF power output in 0~20dBm with 1dBm steps, and distance adjustment for optimal distance VS throughput performance.

The compact outdoor enclosure with a 18dBi (4.9~5GHz) integrated panel antenna is water and dust resistant and complies with the IP68 standard. It has a robust design made with industrial components that makes the radio work well in harsh environment and extends the Medium Time between Failures (MTBF) performance to higher levels.

Data encryption such as WEP, WPA-PSK and WPA/2 (AES-128bits) provide the necessary security. Enhanced access control can be done with the use of MAC address filtering, both on AP and client side.

A Product Highlights

- **Information Rate Booster (IRB) – Truly throughput higher than data rate?**
  We were told that the truly throughput were only about half of the declared data rate since the IEEE 802.11b age. But now, we doubled the truly throughput performance of the LP-288ai V2.0 by Throughput Booster (TPB) technology with the same channel bandwidth.

- **QoS for TDM (E1/T1) over IP transmission**
  LP-288ai V2.0 can transmit TDM packets over IP via enabling of the QOS function, it also supports TDM priority to ensure the quality by customization.

- **Robust design for harsh environments**
  For complete outdoor applications, radio can balance the internal pressure itself automatically, complies with IP-68 water resistant standard and IEC61000-4-5 standard on surge protection.

- **Effective spectrum utility and 108Mbps Turbo data rate**
  LP-288ai V2.0 supports multiple channel bandwidth (5/10/20/40MHz), which can be adjusted easily by software. It also supports turbo mode in 40MHz channel bandwidth with 108Mbps data rate.

- **Security**
  WEP 64 / 128 / 152 bits, 802.1x Authentication (EAP), MAC access control, disable broadcast the SSID, client isolation, WPA-PSK, WPA-TKIP encryption and WPA2 (AES-128bits) build the highest security mechanism to prevent the malicious attacks from the internet.

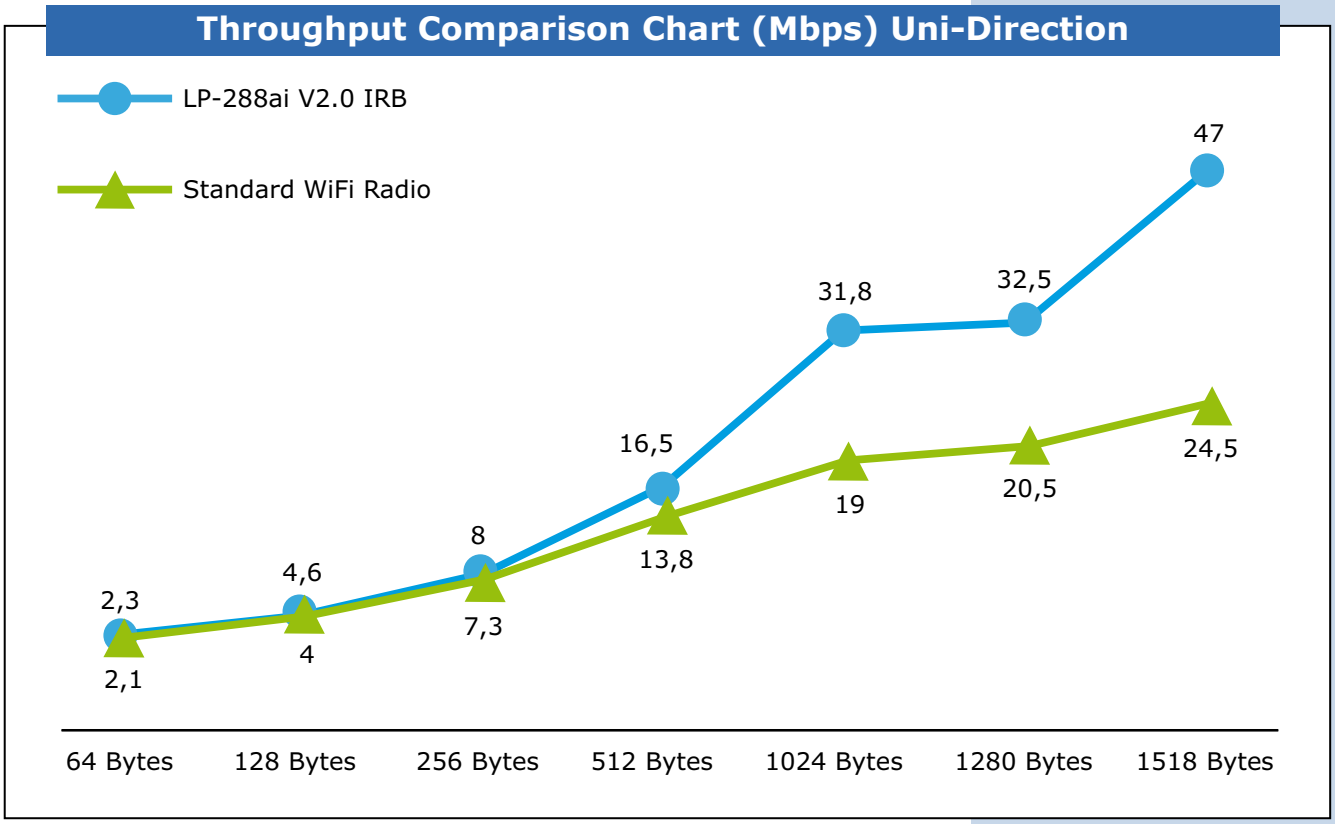
- **Warranty**
  1 year Warranty Covering Parts and Manufacturing Defects.

B Throughput performance – Uni-direction

Truly throughput comparison (RFC2544 test by SmartBits)							
RFC 2544 (IEEE 802.11 Standard WiFi Radio)							
Frame Size	64 Bytes	128 Bytes	256 Bytes	512 Bytes	1024 Bytes	1280 Bytes	1518 Bytes
Pass Rate	2.1 Mbps	4 Mbps	7.3 Mbps	13.8Mbps	19 Mbps	20.5 Mbps	24.5Mbps
Latency (Round Trip)	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms
* 0% Packet loss, Uni-direction, UDP Packets (20MHz channel Bandwidth)							
RFC 2544 LP-288ai Information Rate Booster (IRB)							
Frame Size	64 Bytes	128 Bytes	256 Bytes	512 Bytes	1024 Bytes	1280 Bytes	1518 Bytes
Pass Rate	2.3 Mbps	4.6 Mbps	8 Mbps	16.5 Mbps	31.8 Mbps	32.5 Mbps	47 Mbps
Latency (Round Trip)	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms
* 0% Packet loss, Uni-direction, UDP Packets (20MHz channel Bandwidth)							
RFC 2544 LP-288ai Information Rate Booster (IRB)							
Frame Size	64 Bytes	128 Bytes	256 Bytes	512 Bytes	1024 Bytes	1280 Bytes	1518 Bytes
Pass Rate	9.5 Mbps	13.7 Mbps	18.5 Mbps	20.5 Mbps	24 Mbps	29 Mbps	41 Mbps
Latency (Round Trip)	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms
* 0% Packet loss, Uni-direction, UDP Packets (20MHz channel Bandwidth)							
TCP Effective throughput LP-288ai Information Rate Booster (IRB)							
Uni-Directional	42 Mbps Max. (with 1518 Bytes frame size) 27 Mbps Max. (with Random frame size)						
Bi-Directional	Totally 58 Mbps Max. (29Mbps each direction with 1518 Bytes frame size) Totally 34 Mbps Max. (17Mbps each direction with Random frame size)						
* 20MHz channel Bandwidth							

Below chart shows the test results from the previous table. Throughput comparison (RFC2544 test by SmartBits) in different packet sizes among:

1. Standard WiFi Radio
2. LP-288ai V2.0 Information Rate Booster (IRB)



C Throughput performance – Bi-direction

Truly throughput comparison (RFC2544 test by SmartBits)							
RFC 2544 (IEEE 802.11 Standard WiFi Radio)							
Frame Size	64 Bytes	128 Bytes	256 Bytes	512 Bytes	1024 Bytes	1280 Bytes	1518 Bytes
Pass Rate	1.2 Mbps	2.2 Mbps	4.1 Mbps	7.7Mbps	10.8 Mbps	11.5 Mbps	13.6Mbps
Latency (Round Trip)	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms
* 0% Packet loss, Bi-direction, UDP Packets (20MHz channel Bandwidth)							
RFC 2544 LP-288ai Information Rate Booster (IRB)							
Frame Size	64 Bytes	128 Bytes	256 Bytes	512 Bytes	1024 Bytes	1280 Bytes	1518 Bytes
Pass Rate	1.5 Mbps	3 Mbps	5 Mbps	10.5 Mbps	20 Mbps	20.5 Mbps	29.4 Mbps
Latency (Round Trip)	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms	2 ms
* 0% Packet loss, Bi-direction, UDP Packets (20MHz channel Bandwidth)							
TCP Effective throughput LP-288ai Information Rate Booster (IRB)							
Uni-Directional	42 Mbps Max. with 1518 Bytes frame size 27 Mbps Max. with Random frame size						
Bi-Directional	Totally 58 Mbps Max. (29Mbps each direction with 1518 Bytes frame size) Totally 34 Mbps Max. (17Mbps each direction with Random frame size)						
* 20MHz channel Bandwidth							

Below chart shows the test results from above table. Throughput comparison (RFC2544 test by SmartBits) in different packet sizes among:

1. Standard WiFi Radio
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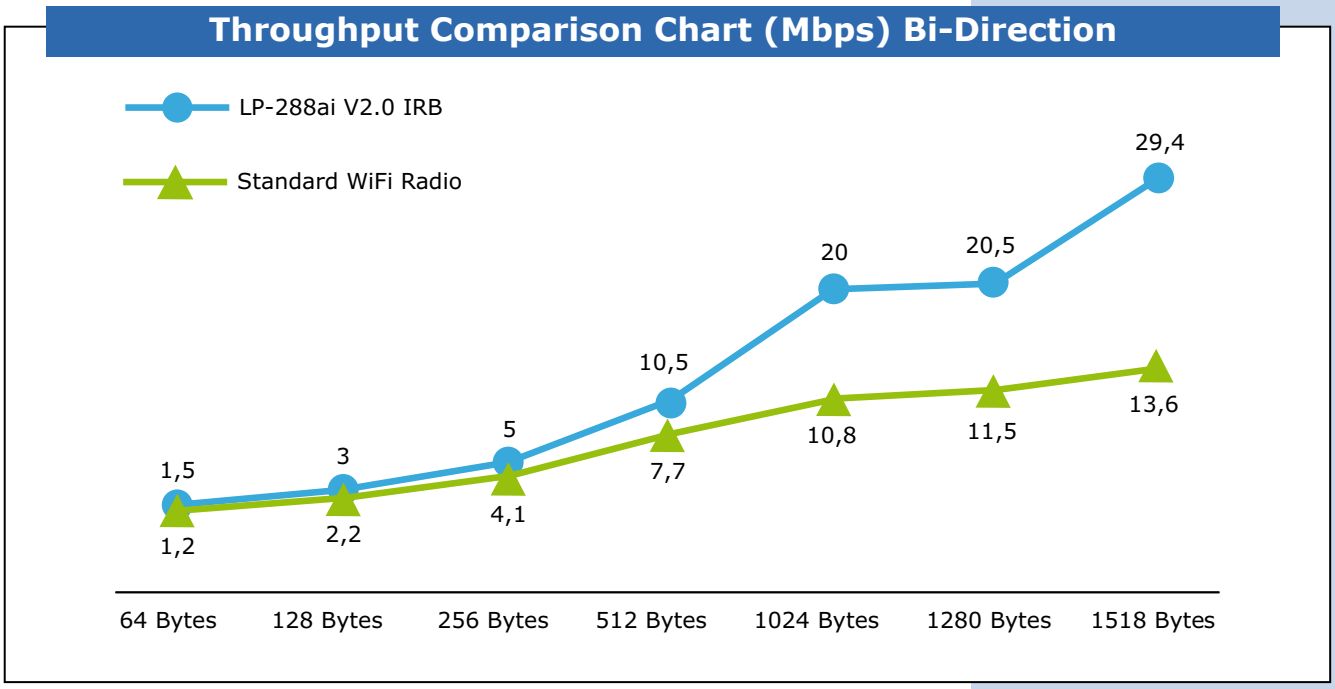

RADIO	
Operating Frequency	5150 ~ 5850 MHz
Channel Bandwidth	Software selectable channel bandwidths of 5, 10, 20 and 40MHz
Output Power	18dBm (±2dB) @ QAM-64 19dBm (±2dB) @ QAM-16 20dBm (±2dB) @ QPSK 20dBm (±2dB) @ BPSK
Receive Sensitivity (BER 1E10-6) In a 5MHz channel	-71dBm (±2dB) @ QAM-64 -81dBm (±2dB) @ QAM-16 -84dBm (±2dB) @ QPSK -89dBm (±2dB) @ BPSK
Frequency Stability	±10 ppm
Modulation / Data rate	OFDM / Up to 108 Mbps data rate
Range	Up to 8 Km.
INTERFACES	
Ethernet	IEEE 802.3(10Base-T) / IEEE 802.3u(100Base-Tx)
MANAGEABLILITY	
Management and setup	Web-based
SNMP agents	V1, V2c
Password Access control to configuration	2 levels
Operating System	Windows XP/7
Network Architecture	PTMP- Base Station or PTP Bridge
Bandwidth management	YES
VLAN transparent	YES
SECURITY	
Data Encryption	64/128/152 bits encryption; WPA-PSK, WPA2 (AES-128 bit)
Authentication	802.1x Auth. (EAP)
Authorization	MAC Address Access and protocol Filter
Other security	Disable broadcast SSID(suppress SSID); Wireless Isolation
ANTENNA	
Frequency	4900~5900 MHz
Gain	18dBi
Beamwidth	H 33° ; E 12°
VSWR	≦2.0
Front to back ratio	40 dB
Impedance	50 ohms
ADVANCED	
TDM (E1/T1) Packets Priority	YES (Customization)
VoIP Packets Priority	YES

ENVIRONMENT	
Operating Temperature	-30°C~60°C
Storage Temperature	-40°C~70°C
Humidity	95% non-condensing
POWER SUPPLY	
DC 24V, 50-60Hz or DC +/-48V (Optional)	
PHYSICAL	
Dimension	215 (L) ×122 (W) × 65 (H)
Weight	0.8 Kg; 1.8lb
WARRANTY	
2 year	
ADVANCE	
Base Station Scanning	RSSI
Watchdog	

D How to Order

LP-288ai V2.0	**5GHz, (5150-5850 MHz), EIRP=38dBm, compact Turbo OFDM Outdoor Subscriber with 18dBi panel antenna.**