LP-ATRX496027a3X
ATREX Series 4.9 – 6.06 GHz Licensed Band EIRP 27dBm MIMO PTP / PTMP Ethernet Radio
with 2 x 2, 4 x 4 or 6 x 6 external MIMO antenna configurations with 100~264 VAC 50~60Hz, 48VDC output Converter, 45 W max. and a 48 VDC PoE Injector

Características

- PTP/ PTMP Ethernet backhaul.

- 4.9~6.06 GHz Operating Frequency.

- MIMO HT-OFDM Modulation.

- Integrated Multi-Radio Interfaces.

- Fast Data Switching Technology.

- 14 Channel Bandwidths: (2.5/3 /3.5/4/5/6/7/8/10/15/20/30/40/ 52 MHz).

- Up to 268 Mbps Real TCP Throughput.

- GPS Coordinates and Internet map database.

- 5.2 bits/s/Hz amazing spectral efficiency.

- Multi-hops repeating & Built-in NMS.

- Real Aggregate TCP Throughput ≥320Mbps @ 4x4 & 6x6 Base Station.

- High Efficiency in Multi-hops Repeating.

- Low Throughput dropped (≥100 Mbps @ 10 hops).

- Short Latency increased (≤10 ms @ 10 hops).

- Latency in 20 Hops: 35ms.

- IP-68 Water & Dust Resistant standard, IP-69h with GORETM membrane.

- IEC61000-4-5 Surge Protection.

- Outstanding MTBF.

- Propietary PoE powered: **X=3:** 100~264 VAC 50-60Hz, 48VDC output Converter, 45 W max., and a 48 VDC PoE Injector.

| 2.5/3/3.5/4/5/6/7/8/10/15/20/30/40/52 MHz Bw | PtmP | PtP | MIMO | OUTPUT POWER 27 dBm | HT-OFDM | 12/14/17/20/25/30 35/40/51/77/104 158/215/268 Mbps | MULTI-HOPS |

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Multi-Hops Repeater in ATREX Series 4.9 – 6.06 GHz Licensed Band EIRP 27dBm MIMO PTP / PTMP Ethernet Radio with 2 x 2, 4 x 4 or 6 x 6 external MIMO antenna configurations offers customers a great solution for PTP / PTMP / Hot zone applications by integrated multi-radios interfaces (up to 3* Radio modules) and Fast Data Switching technology from LanPro.

This series shows incredible efficiency on multihops repeating – truly throughput ≥100Mbps and only ≤ 10 ms total latency after 10 extended hops. And low throughput drop per hop(~5Mbps), much different from the traditional Wi-fi that dropped 50% throughput per each extended hop and can't get reply from remote device after 5~6 hops for too long latency.

There are 14 channel BW options can be selected easily by software (2.5/3/3.5/4/ 5/6/7/8/10/15/20/30/40/52 MHz). This feature provides the flexibility of deployment channel plan in crowded city area or high capacity backhaul -- throughput up to 268Mbps.

With MIMO HT-OFDM (High Throughput OFDM) technology, this radio is a high capacity PTP / PTMP backhaul for 5GHz ISM band wireless deployment.

It utilizes coordinate and built-in NMS with internet map database to show the environment and status of the link. Customers can easily figure out the linking situation of the deployed radios.

A Product Highlights

● **Integrated Multi-radios interfaces on Atrex-MIMO platform.**
Multiple radios interfaces were integrated by "Fast Data Switching" technology from LanPro inside the Atrex-MIMO series platform. There are 3 models for options:

     LP-ATRX496043a31 (1*radio)
     LP-ATRX496043a32 (2*radios)
     LP-ATRX496043a33 (3*radios)

and each radio interface can be configured independently to run different wireless connectivity missions.

● **High efficiency transmission in multi-hops repeating**
The backbone throughput will remain in a high level even after several hops repeating. (≥100 Mbps @ 10 hops), and the total latency is short as well (≤10 ms @ 10 hops)

● **Effective spectrum utility/variable capacities with 14 channel Bandwidths**
This radio has 14 channel Bandwidths: (2.5 / 3 / 3.5 / 4 / 5 / 6 / 7 / 8 / 10 / 15 / 20 / 30 / 40 / 52MHz) for optional, which is adjustable via software. This function provides flexibilities of channel plan in crowded urban environment and variable capacities for different applications.

● **MIMO HT-OFDM technology provides amazing spectral efficiency**
Up to 5.2 bits/s/Hz amazing spectral efficiency for all channel BW provided by the MIMO HT-OFDM technology. Work with the variable channel BW options, these two combination features provides great benefits for both crowded urban area and rural area with less interference.

Channel BW (MHz)	2.5	3	3.5	4	5	6	7	8	10	15	20	30	40	52
Real TCP throughput (Mbps)	12	14	17	20	25	30	35	40	51	77	104	158	215	268
App	Valuable spectrum				Crowded urban						Rural			

● **GPS Coordinates and Internet map database**
GPS Coordinates marked system and internet map database help the administrator to monitor the connection structure and unit status in the PTP / PTMP network.
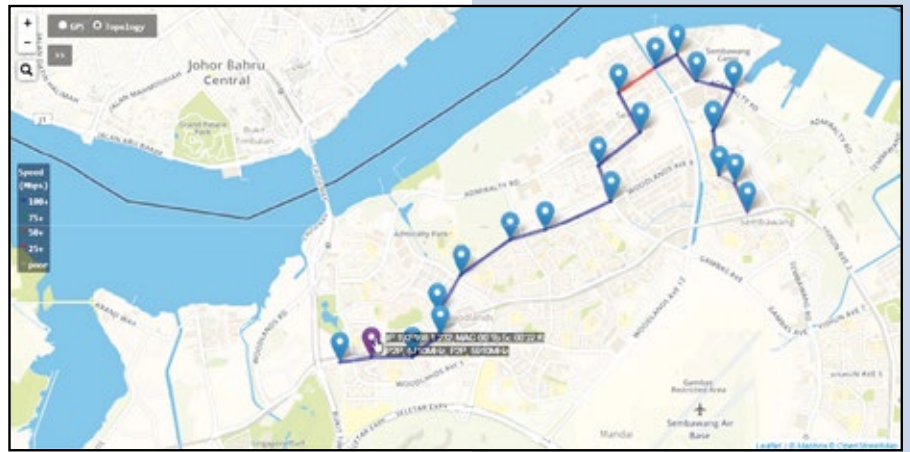
● **Robust design for harsh environment**
For complete outdoor applications, radio can balance the internal pressure itself automatically, complies with IP-68 water resistant

B Typical Graphical User Interface (GUI) showing Network Management EXAMPLES

GPS Coordinates Input setting page
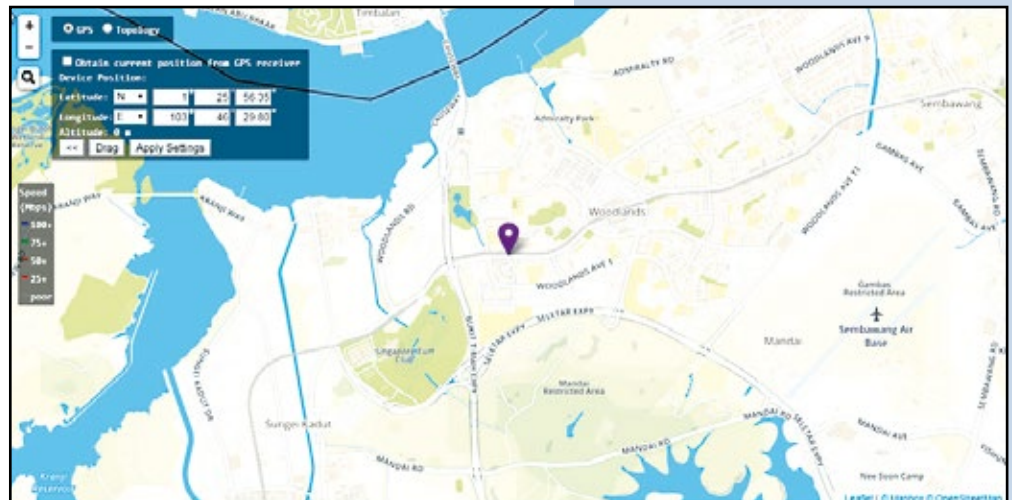
Local Site info-purple node

Remote Site info-blue node

Link status

Link performance-poor (red line)

Status of node & neighboring sites

C Specifications

RADIO	
Frequency Range	4.9 to 6.06 GHz
Channel Bandwidth	2.5/3/3.5/4/5/6/7/8/10/15/20/30/40/52 MHz
Frequency Stability	±2 ppm
Modulation	MIMO HT-OFDM

MCS Index	HT-OFDM / HT20				HT-OFDM / HT40			
	Data Rate (Mbps)		Tx Output Power (dBm)	Rx Sensitivity (BER 1E10-6)	Data Rate (Mbps)		Tx Output Power (dBm)	Rx Sensitivity (BER 1E10-6)
	GI=800ns	GI=400ns			GI=800ns	GI=400ns		
MCS8	6.5/13	N/A	27 (±1.5)	-94/-92 dBm	27	30	27 (±1.5)	-92/-90 dBm
MCS9	13/26	N/A	27 (±1.5)	-92/-90 dBm	54	60	27 (±1.5)	-89/-87 dBm
MCS10	13/26	N/A	26 (±1.5)	-90/-87 dBm	81	90	26 (±1.5)	-87/-83 dBm
MCS11	26/52	N/A	25 (±1.5)	-87/-84 dBm	108	120	25 (±1.5)	-84/-81 dBm
MCS12	39/78	N/A	24 (±1.5)	-84/-81 dBm	162	180	24 (±1.5)	-81/-79 dBm
MCS13	52/104	N/A	23 (±1.5)	-80/-77 dBm	216	240	23 (±1.5)	-78/-75 dBm
MCS14	58.5/117	N/A	23 (±1.5)	-78/-75 dBm	242	270	23 (±1.5)	-76/-73 dBm
MCS15	65/130	N/A	23 (±1.5)	-76/-73 dBm	270	300	23 (±1.5)	-71/-71 dBm

C Specifications

| INTERFACES	
Ethernet	10/100/1000 Base-T RJ-45 port with M25 Cable Gland
Ethernet Port Surge Protection	As per the IEC61000-4-5 standard
Wireless Interface	Wireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors / 6 x N-type Female Connectors

MANAGEABILITY	
Gestión y programación	Web-based (Chrome/IE 9.0 or later)
Agentes SNMP	MIB II
Protocolo	TCP/IP, IPX/SPX,NetBEUI
Arquitectura de Red	PTP(1+0)/2+0)/Multi-hops/PTMP
Alineación de antena	WEB GUI Local / Información Remota
NMS embebido	Live linking status of the network by GPS coordinates and internet map database
Others	VLAN (IEEE 802.1Q, IEEE 802.1p)
	QoS (IEEE 802.1p)

SECURITY	
Data Encryption	WPA-PSK / WPA2-PSK
Advanced security	Mac Access Control/ Disable Broadcast SSID / Proprietary Protocol

ENVIRONMENTAL	
Operating Temperature	-30ºC~60ºC
Storage Temperature	-30ºC~70ºC
Relative Humidity	95% non-ondensing

POWER SUPPLY OPTIONS	
*Note: LP-ATRX496027a3x Radios are basically 48 VDC powered **X=3:** 100~264 VAC 50~60Hz, 48VDC output Converter, 45 W max., and a 48 VDC PoE Injector	
LP-ATRX496027a31	10 Watts (typical) / 12 Watts (Max.) @ DC 48V
LP-ATRX496027a32	16 Watts (typical) / 19 Watts (Max.) @ DC 48V
LP-ATRX496027a33	22 Watts (typical) / 26 Watts (Max.) @ DC 48V

PHYSICAL	
Dimensions	259 (L) ×250 (W) × 75 (H) mm
Weight	1.8 Kg

WARRANTY
One (1) Year against manufacture or parts defects

D True Value of narrow bandwidth with high spectral efficiency

1. More effective non-overlapping channels for flexible channel Plan
2. More total assumption capacity due to more effective narrow band channels in limited clear band without interferences.

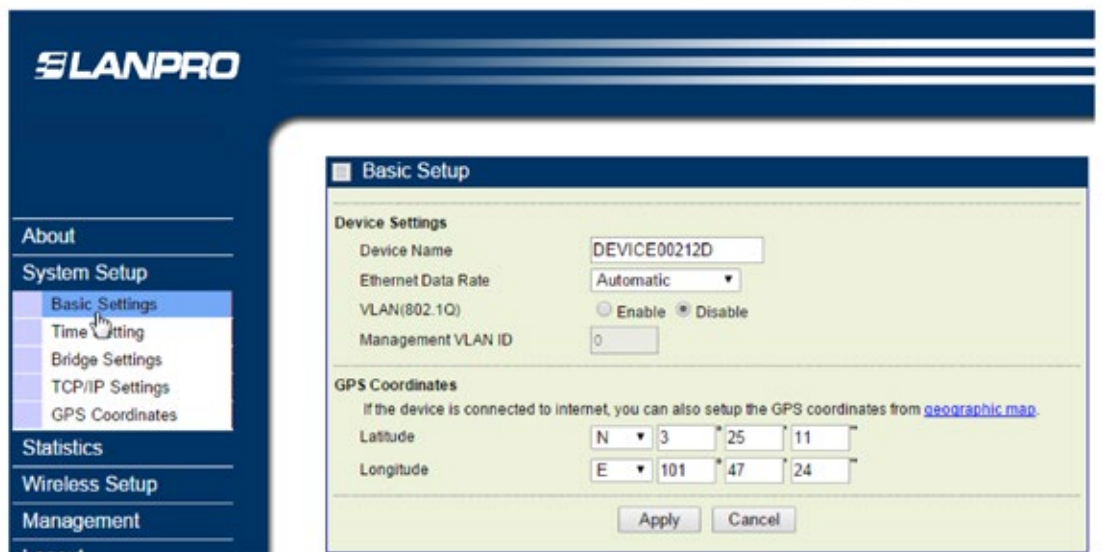**EXAMPLE: IN A 170MHZ AVAILABLE RANGE WITH OTHER INTERFERENCE SOURCE**
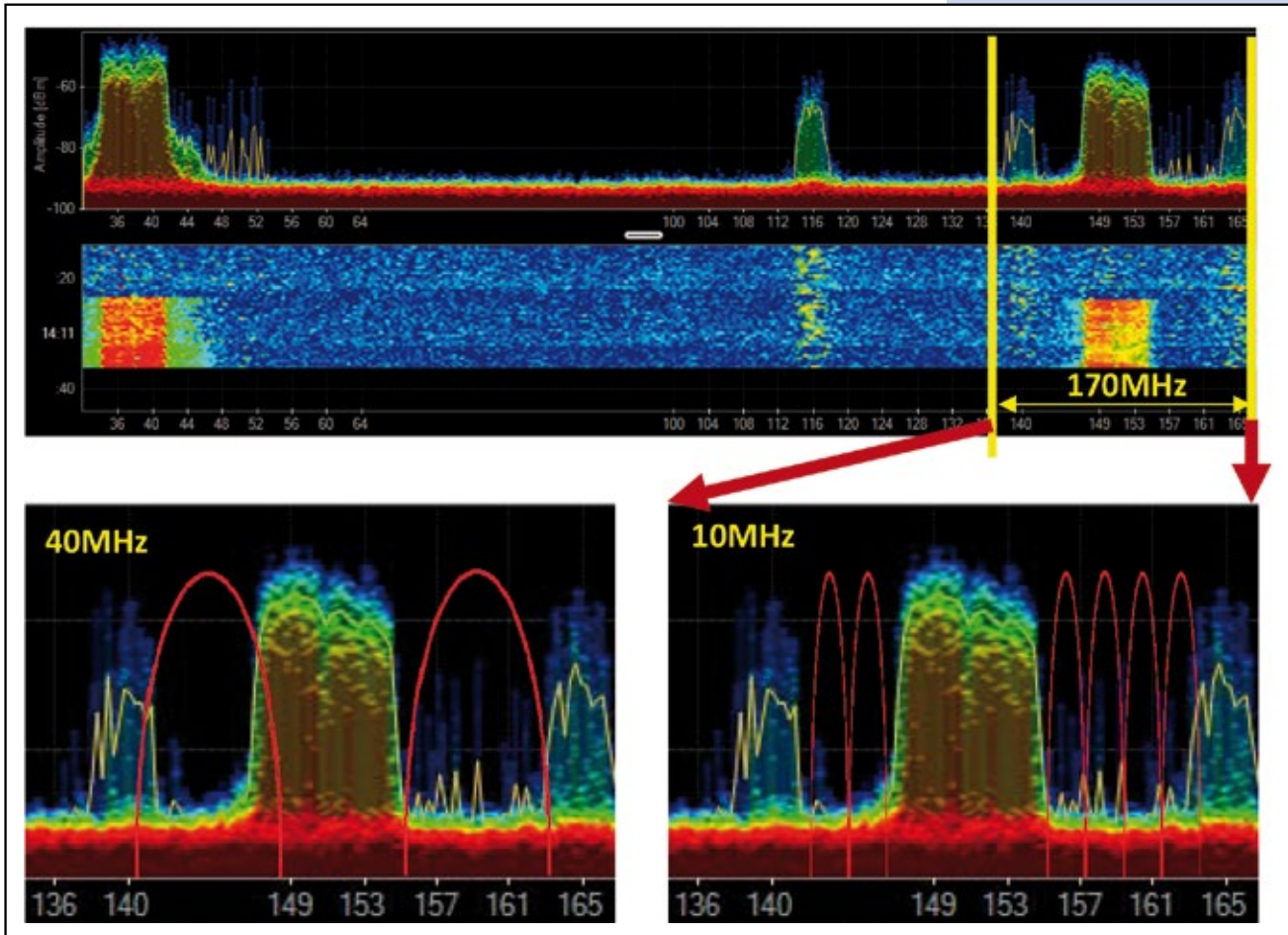
40 MHz channel BW: 1 x effective channel without interference only, total throughput < 300Mbps.
10 MHz channel BW: 6 x effective channels without interferences, each channel offers 50Mbps TCP throughput. Total throughput about 300Mbps.
2.5 MHz channel BW: 24 x effective channels without interferences, each channel offers 12Mbps TCP throughput. Total throughput about 300Mbps.

Channel BW (MHz)	2.5	3	3.5	4	5	6	7	8	10	15	20	30	40	52
Real TCP throughput (Mbps)	12	14	17	20	25	30	35	40	51	77	104	158	215	268
App	Valuable spectrum				Crowded urban						Rural			

CHANNEL BW & TCP THROUGHPUT LIST TABLE
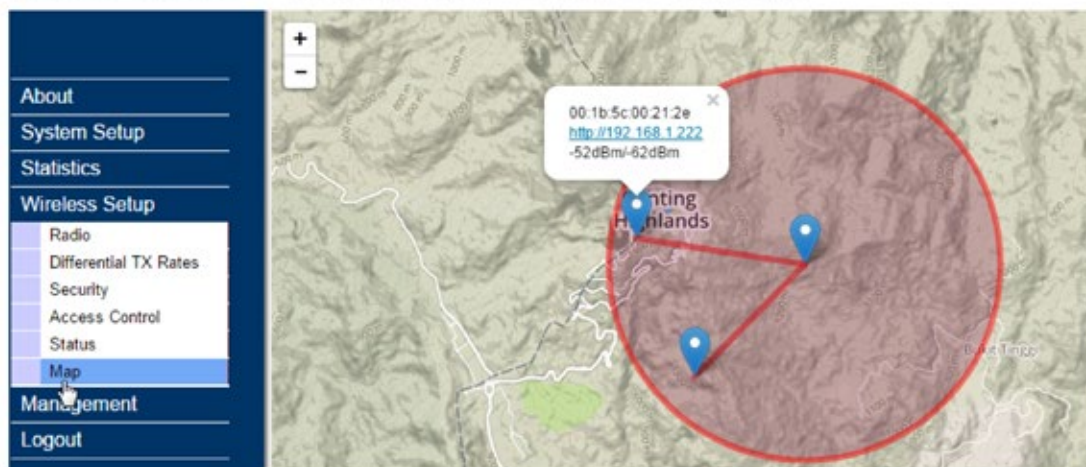
E   The Membrane Vents Enhance the Reliability, Quality and Image of Your Products.

GORETM Membrane Vents are designed to enhance the free passage of gases and vapors, equalizing the pressure differential between the enclosure and ambient before it builds to the point that a seal is compromised. Water, dust, dirt, cleaning agents and most oils are repelled by the oleophobic membrane, thereby protecting expensive and sensitive electronics.
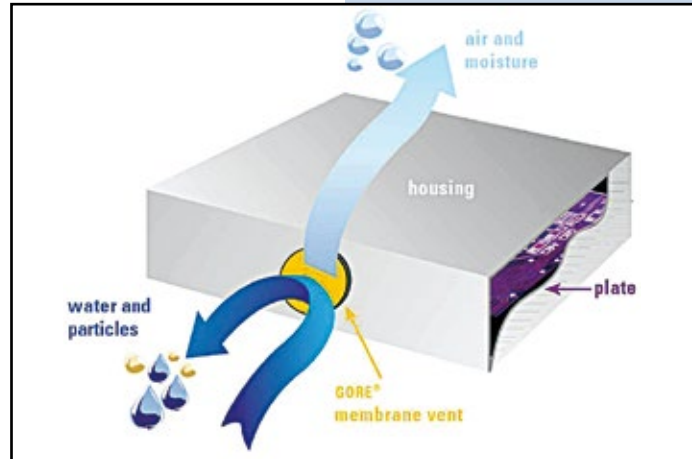
- Water proof and dust proof to IP69K, protecting sensitive electronics.
- High airflow allows pressure equalization to prevent stress on enclosure seals, ultimately lowering enclosure design and manufacturing costs.
- Water and oil repellant ePTFE membrane is inert, non-shedding, chemically resistant, UV resistant and enclosed in a tough polyamide housing to ensure a long trouble-free service life even in extreme conditions.
- The micro-porous structure of the ePTFE membrane even keeps salt crystals from passing, minimizing electrical malfunctions caused by salt corrosion.
- Moisture vapor permeable to help aid in condensation and fogging reduction.
- Screw-in housing with silicone O-ring for versatile and easy installation.

F   How to Order

LP-ATRX496027a31	**ATREX Series 4.9 – 6.06 GHz Licensed Band EIRP 27 dBm 2x2 MIMO High Capacity PTP / PTMP Ethernet Radio for use with one external MIMO antenna with 100~264 VAC 50~60Hz, 48VDC output Converter, 45 W max., and a 48 VDC PoE Injector.**
LP-ATRX496027a32	**ATREX Series 4.9 – 6.06 GHz Licensed Band EIRP 27 dBm 4x4 MIMO High Capacity PTP / PTMP Ethernet Radio for use with two external MIMO antennas with 100~264 VAC 50~60Hz, 48VDC output Converter, 45 W max., and a 48 VDC PoE Injector.**
LP-ATRX496027a33	**ATREX Series 4.920 – 6.075 GHz Licensed Band EIRP 27 dBm 6x6 MIMO High Capacity PTP / PTMP Ethernet Radio for use with three external MIMO antennas with 100~264 VAC 50~60Hz, 48VDC output Converter, 45 W max., and a 48 VDC PoE Injector.**

LanPro is continuously improving its products and reserves the right to change specifications and availability without prior notice.