

***PHAROS*** 

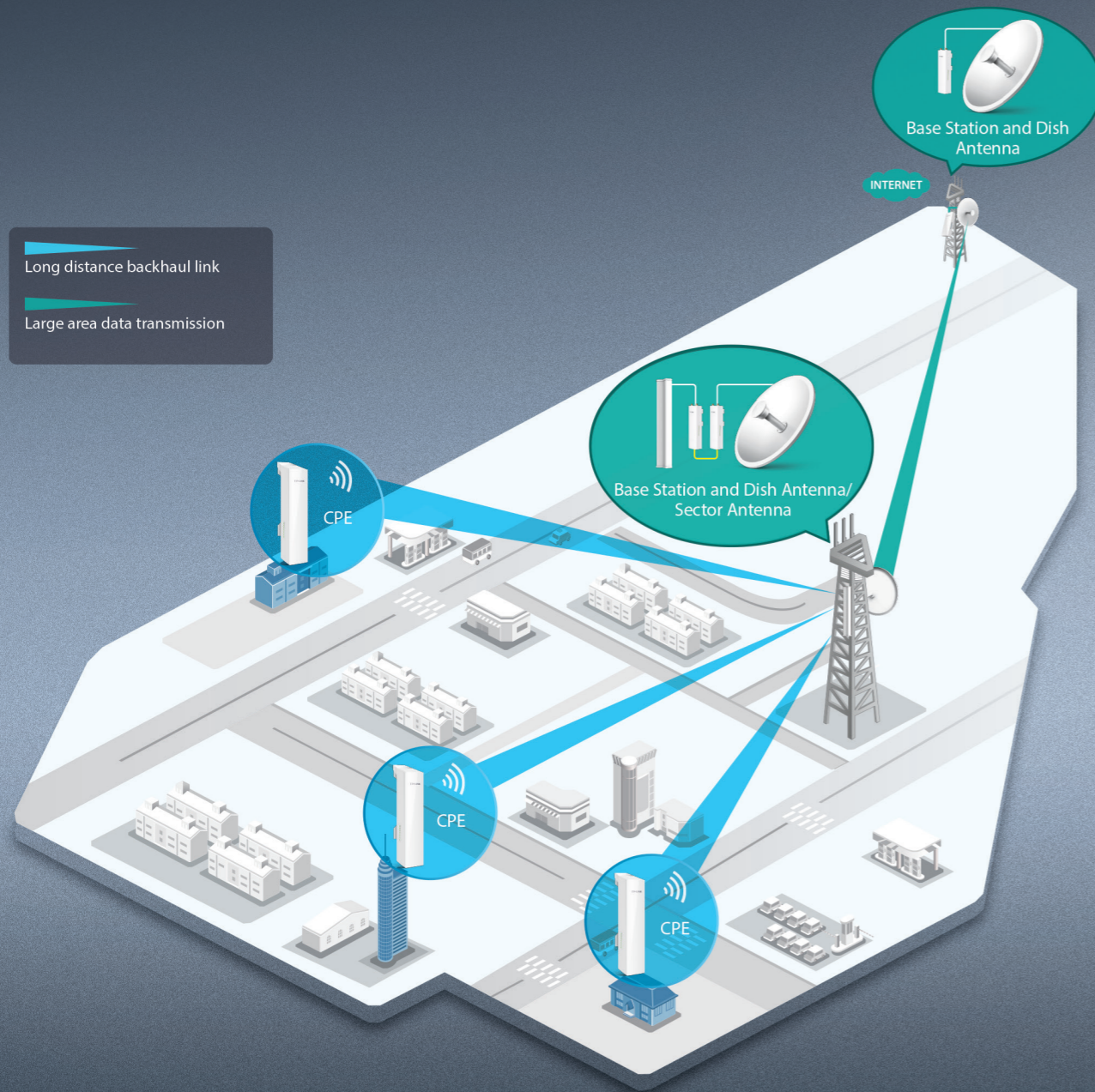
# Wireless Broadband Solution





# Wireless Broadband Solution

Building A high Performance WISP Network



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## Wireless Broadband Solutions

Pharos WISP Solution

Wireless Surveillance Solution

**PHAROS**

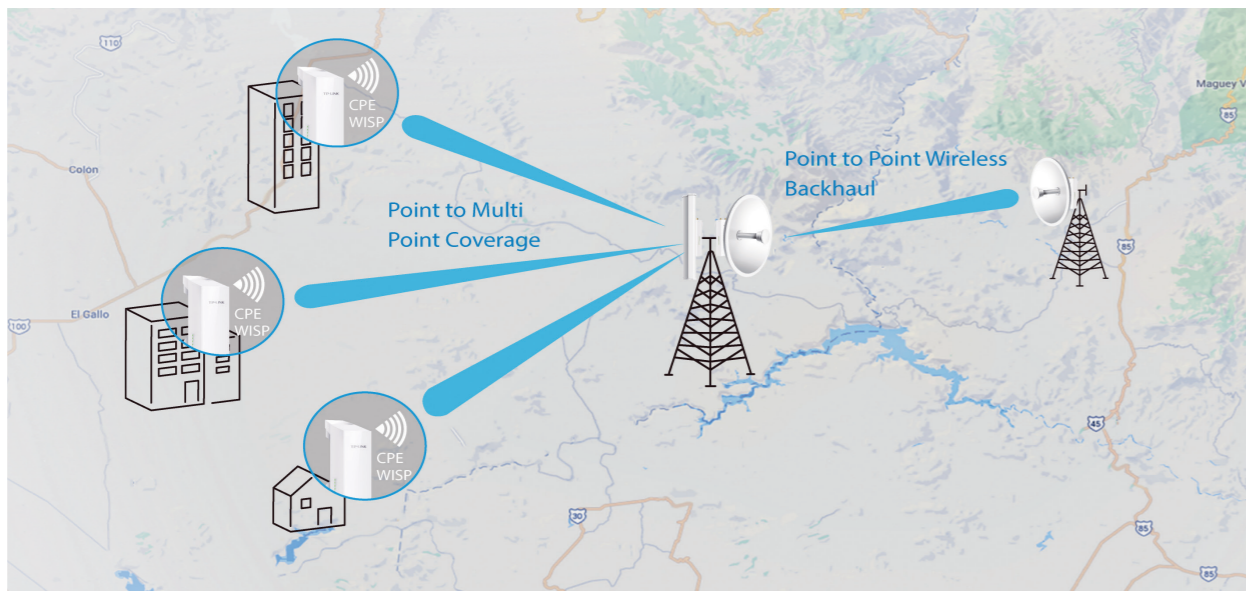
## Wireless Internet Service Provider Solution

Due to the poor infrastructure that exists in some areas, as well as the inconvenience and expense of deploying a wired network, WISP (Wireless Internet Service Provider) solutions are often more suitable for providing local internet access. WISP solutions allow users in remote areas to enjoy high-quality service at an attractive price. Flexible deployment and easy installation ensure that these solutions can provide excellent performance and competitive pricing, allowing wireless Internet access to reach an even greater share of the market.

In the highly competitive wireless Internet market, the TP-LINK Pharos Series offers excellent performance and value, which allows providers to offer excellent quality of service and create satisfying experiences for customers.

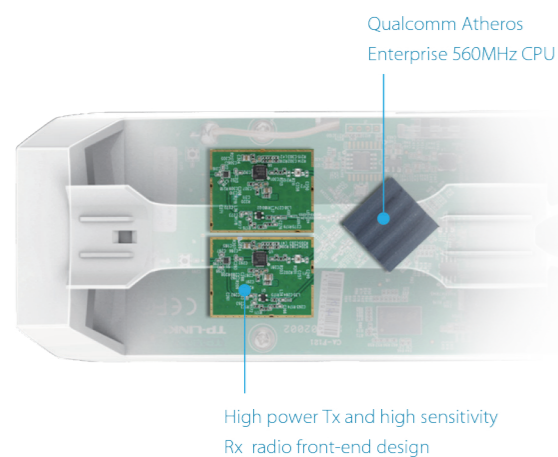
### Pharos Solution

TP-LINK Pharos Solutions help WISP to transfer the Internet from a remote service center to the local area and spread it to all the customers who live in the sparsely populated area.



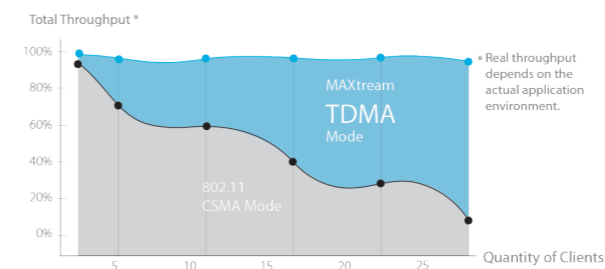
### Building a High Performance Wireless Network

As a WISP, nothing is more important to your business than the ability to build a reliable high-speed network. The Pharos Solution helps you overcome all common challenges and provide superlative service.



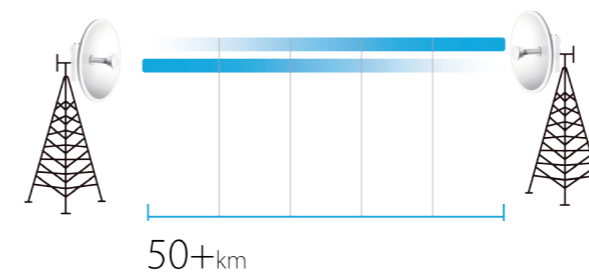
#### Enterprise level hardware design provides maximum performance

In order to maximize the performance and stability of the wireless network, Pharos Base Stations contain Qualcomm Atheros enterprise-level chipsets, high gain-antennas, and high-power amplifiers.



#### MAXtream TDMA Technology brings performance to a whole new level

To ensure optimal network performance, TP-LINK has incorporated MAXtream TDMA Technology into the Pharos solution. This helps to mitigate the effects of signal competition and collisions, which frequently occur on large networks with many client devices. It also enhances and protects the effective throughput of crowded networks.

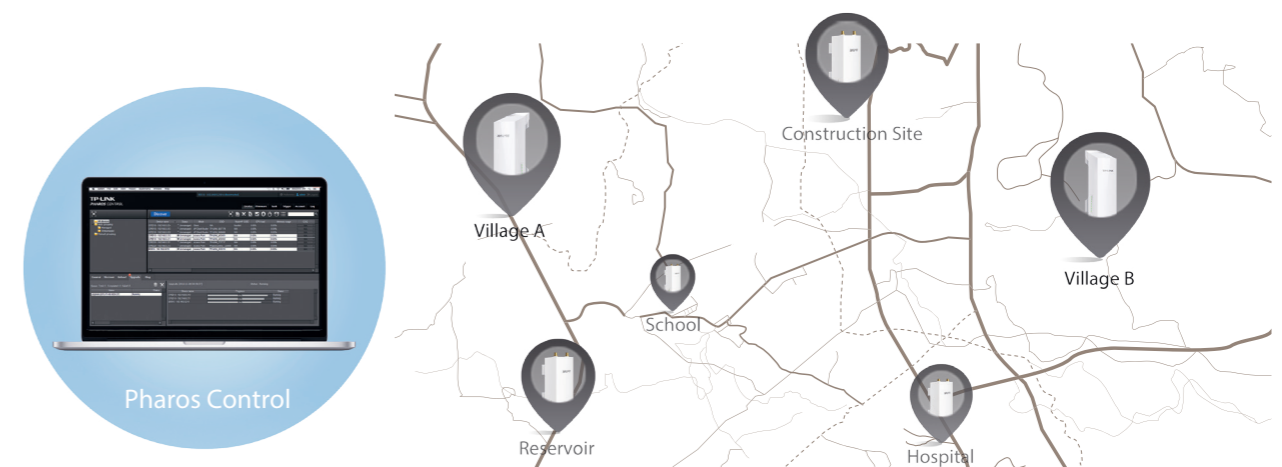


#### Proven throughput that exceeds your expectations

Pharos Series devices are proven to provide exceptional network speeds, helping you overcome the bottleneck effect that plagues most existing networks. The real throughput of a Pharos Base Station in a Point-to-Point link usually reaches a speed that no other product its price range can achieve.

### Centralized Management Platform Easily Control All Devices

CPEs and Base Stations are usually distributed and installed throughout vast geographic areas. Therefore, individual, on-site management of devices represents a major inconvenience. Pharos Control is a free centralized management platform that allows WISPs to manage and control every network device from any connected PC.

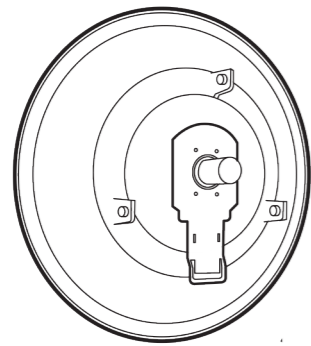


### Exceptional Industrial Design for Ultimate Convenience and Reliability

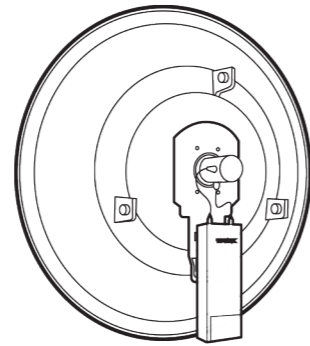
Pharos Base Stations and Antennas are designed to function as a single, seamless unit that provides a comprehensive solution for efficient PtP and PtMP data transmission.

Pharos devices also feature advanced lightning protection and weatherproof enclosures, ensuring that they can survive even the most challenging of environmental conditions.

STEP 01




STEP 02



### Range recommendations for each device

Point to Point						
	CPE Solution				Base Station and Antenna Solution	
						
Model No.	CPE210	CPE220	CPE510	CPE520	WBS210 with TL-ANT2424MD	WBS510 with TL-ANT5830MD
Frequency	2.4GHz		5GHz		2.4GHz	5GHz
Distance	Up to 5 km	Up to 13 km	Up to 15 km	Up to 20 km	Up to 30 km	Up to 50 km

Point to Multi-Point					
	Frequency	AP	Client	Distance	Coverage
	2.4GHz	WBS210 & TL-ANT2415MS	CPE210	3km	120°(6dB) 90°(3dB)
CPE220			5km		
5GHz	WBS510 & TL-ANT5819MS	CPE510	10km		
		CPE520	15km		



### An Ideal Guardian for the Things You Value Most

The Pharos Wireless Surveillance Solution makes it easy and convenient to monitor events at complex outdoor areas, such as construction sites, reservoirs, forests, etc. Pharos devices can provide Point-to-Point links or Point-to-Multi-Point coverage areas that match the specific demands of any application scenario.



### Specifically Designed for Complex Environments

Specially designed hardware and weatherproof enclosures allow Pharos Series devices to provide comprehensive outdoor surveillance solutions for complex and hazardous environments. Now you can save time and money while taking control of your entire surveillance network from the comfort of your desktop.



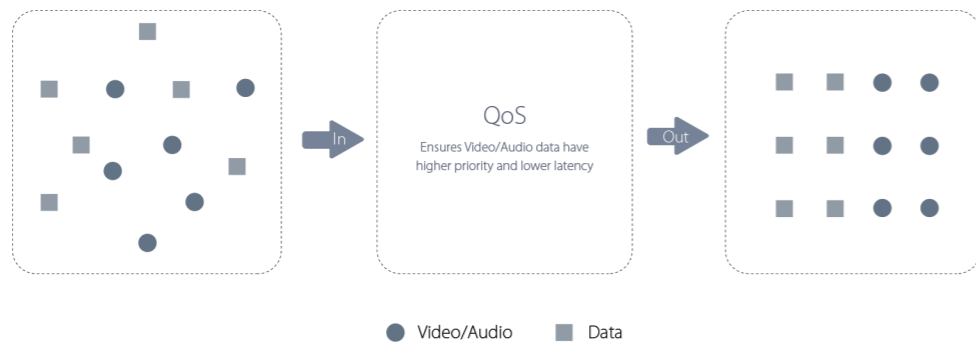
# PHAROS

## Wireless Surveillance Solution

Safety and security are concerns that seem to grow ever stronger in our modern, ever-changing world. The size, complexity, and unique hazards of some areas can prevent security personnel from ensuring safety and protecting assets. Cameras and other devices help, but installing wired surveillance systems can be difficult and costly. Pharos Series devices use wireless technology to provide flexible, cost-effective solutions for outdoor surveillance applications.

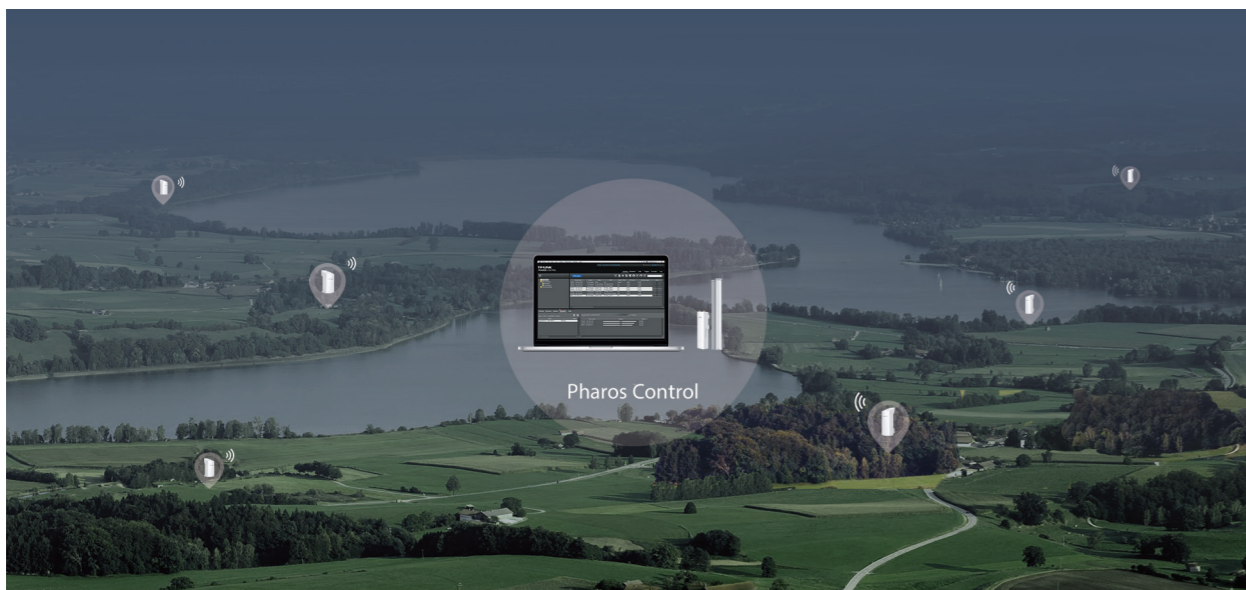
### QoS for Buffer-Free Audio and Video Streams

Pharos devices improve QoS and provide low-latency transmission for video and voice data. Prioritizing video and voice streams guarantees a satisfactory surveillance experience that is free from buffering.



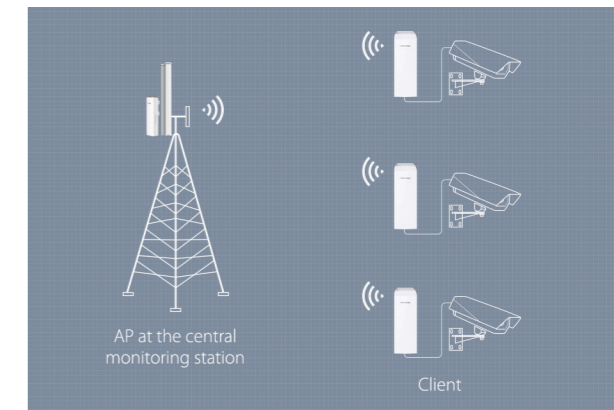
### Centralized Management Platform Easily Control All Devices

In complex remote environments, a centralized management platform is absolutely essential. Pharos Control allows you to control every device on the network from any connected PC. The platform makes management more convenient and does not require administrators to undergo any specialized training.



### Topology Overview

A Base Station, equipped with a sector antenna, serves as an access point (AP) at the central monitoring station. Distributed CPEs transfer the data streams, from the IP Cameras, back to the base station to build a comprehensive wireless surveillance system.



### Range recommendations for each device

Point to Multi-Point					
	Frequency	AP	Client	Distance	Coverage
	2.4GHz	WBS210 & TL-ANT2415MS	CPE210	3km	120°(6dB) 90°(3dB)
			CPE220	5km	
	5GHz	WBS510 & TL-ANT5819MS	CPE510	10km	
			CPE520	15km	

## Case Studies

Peru WISP

## TP-LINK Helps WISP

◀ to Provide Reliable Wireless Connectivity in Peru



Company Name: WISP ( Wireless Internet Service Provider )

Agent: Kroton

Location: Peru, Latin American

Profile: Small WISP provides Wireless Internet Access Service to the residents of Lima





All parts of the network have been functioning well since February of 2015 and performance has greatly exceeded Marlon's expectations. Marlon is preparing to deploy more TP-LINK products and Kroton plans to recommend TP-LINK's Pharos Solution to other WISP customers.



## BACKGROUND

Kroton is a medium communication equipment agent in Latin American, Marlon is one of the Kroton's customers who needed a solution working in very difficult conditions of access, where the big internet service provider do not provide the service. Marlon's small WISP business provides the Wireless Internet Access to 150 user in very difficult conditions in Villa Maria del Triunfo-Lima. Marlon hope his internet service can cover the remote subscribers who scatteredly lived in the suburb of Lima, where is lack of the proper communication equipment.

## CHALLENGE

The customers' homes are dispersedly located in Villa Maria of Lima where a lot of people lived in a region with harsh wireless environment.

### • Dispersed Over Wide Areas

The target consumers of Marlon dispersedly lived at Villa Maria, and they lived scatteredly in a wide district. And this area lacks proper wired communication facilities, so it's too unwise and hard to deploy wired connection for his customer.

### • Harsh Wireless environment

There are a number of WISPs providing wireless internet service to the people of Villa Maria. The wireless environment is becoming more and more complex, resulting in that wireless competition and collisions among wireless devices will be so enormous that the real throughput of the network will drop, it have a serious impact on end-user experience.

In this situation, Marlon was looking for a solution that can provide their client access to the Internet

service permanently and with a faster access to service compared to its competitor.

### • Efficient Network Management

After the network deployment, the network equipment will be deployed to remote places according to the places of end consumer, and these installation location always are hard-to-reach like high buildings' roof for the max performance. Efficient network management of a WISP solution is a critical criteria.

### • Reliable and Stable Network

Marlon want to offer a competitive internet service to his consumer, and it will be important to his business. Because he cannot stand the short life time of the old solution, most of existing outdoor wireless devices can operate 1~2 years only, they are eager to get a more reliable solution to build a reliable and stable network for his business. users and customers should be protected.



## SOLUTION

For these difficulties, large internet service providers do not offer this service in those places. Limiting in the way access to internet service to these people. In addition to providing service and support Marlon tries to keep its population in communication with the globalized world.

TP-LINK's Pharos series provides a high performance and capital-effective enterprise class outdoor wireless solution, designed for outdoor wireless backhaul and point-to-multipoint connections. Pharos series products use flexible and cost-effective wireless connection to replace the expensive fixed wired connections for outdoor networking applications.

### • P2MP wireless connections for dispersed customer

With Qualcomm Atheros enterprise level chipsets, high gain antennas and high power amplifiers, the Pharos series CPE510 are built to maximize and stabilize long distance wireless transmission performance.

Provide PtMP coverage in a large area (3.2 km radius) with many wireless devices. Use switches to connect each CPE to 3-20 subscribers.

Provide each subscriber with 1 Mbps bandwidth. The most remote CPE will be placed 3.2 km from the base station.

### • TP-LINK MAXtream TDMA Technology ensures the high-performance in harsh wireless environment

TP-LINK's Pharos series develops proprietary MAXtream TDMA Technology to incredibly improve wireless performance in complex wireless environments, which is designed for eliminating the effects of troublesome wireless competition and collisions, making Pharos solution ideal for harsh wireless environment.

- **Advanced Centralized Management System**

This TPLINK solution delivered to Marlon adds an effective and easy network tool at the same time that provides a better service to their customers. Pharos Control - TP-LINK's intuitive and user-friendly Centralized Management Control Software, allows administrators to easily manage all the devices in their network from any PC, with no extra cost or special training. Functions like device discovery, status monitoring, firmware upgrading, and network maintenance can be all be remotely managed.

- **Professional Design for Outdoor Use**

The specially designed weatherproof enclosure and PoE power supply ensure that Pharos series can be used in various weather conditions, from dry to humid, in temperatures from -30°C~70°C (-22 F ~158 F ). The 6KV lightning protection and grounding design improve the reliability of Pharos series devices in the thundering weather, extending their service life. All of these factors combine to make TP-LINK's Pharos Series the best, most cost-effective solution on the market.



“

**Marlon had problems with similar solutions had been remedied delivering: Better coverage: Delivering customer service where I could not reach before. Security: Have the network more stable and noting that comes with a better signal than the competition.**

”

## BENEFITS FOR CUSTOMERS

A stable and reliable WISP network solution enables a WISP to provide consistent, high quality Internet service to consumers in remote areas. Centralized management allows network administrators to remotely manage a variety of network devices that are deployed in hard-to-reach locations.

Pharos Series products have helped Marlon build a reliable, cost-effective wireless network and offer high quality Internet access to customers the Villa Maria area of Lima, resulting in improved quality of life.

All parts of the network have been functioning well since February of 2015 and performance has greatly exceeded Marlon's expectations. Marlon is preparing to deploy more TP-LINK products and Kroton plans to recommend TP-LINK's Pharos Solution to other WISP customers.

