



## Success Story

Zyxel's GPON Network Keeps Top Thai University Focused on its Studies with Faster, Stabler Internet



Education



Prince of  
Songkla  
University



Thailand



Zyxel  
GPON  
Solution

## Overview

### Challenges

- Replace the existing VDSL network with faster, more robust infrastructure
- Eliminate the risk of damage from power surges
- Support network extension over longer distances

### Results

- High-speed wired and wireless internet connections
- Reliable connectivity through durable, environment-proof network infrastructure
- Data transmission achieved throughout faculty's residential area

### Solution

- Zyxel GPON Solution

### Summary

Prince of Songkla University is ranked among the top 10 universities in Thailand, largely on the back of its efforts to attract and cultivate leading talent. However, until recently, the Faculty of Medicine was seeing its growth stymied by unstable internet connections resulting from damaged VDSL equipment. Compounding matters was that the existing infrastructure was constraining how far the network's data transmission could be extended. A network overhaul was prescribed, and Zyxel filled it. Here's how.

## Background

Prince of Songkla University (PSU), established in 1967, is a prestigious educational institution in southern Thailand. One of the 10 highest ranked universities in the country,

PSU is known for its focus on innovation and academic excellence, which it fuels by enrolling and nurturing young talent and providing a wealth of resources.

## Challenges

The university previously adopted VDSL to provide internet access to the Faculty of Medicine's residence. The faculty's staff rely on in-room internet connections for research and self-study, making strong, stable access critical given how important video streaming and other online research is in the field. Unfortunately for them, the VDSL network infrastructure previously in place couldn't support their increasing bandwidth demands, all too often resulting in internet outages. And the faculty was facing other problems, too.

The first was the risk of all too common lightning-caused power surges damaging its VDSL customer-premises equipment (CPE). The second was that the distance limitations of the VDSL technology meant it was difficult to connect the faculty's central office equipment (COE) to the residence's CPE.



## Solutions and Benefits

The school wanted to deliver reliable and robust internet for use in all faculty areas without needing to worry about distance or power surges. After consulting with its system integrator partner CS Loxinfo, PSU identified Zyxel's GPON solution as being able to address each of its needs, providing high-speed internet connections to all 50 houses that make up the faculty's staff.

The GPON solution consists first of **OLT1408A 1U Pizza Box 8-port GPON Optical Line Terminals**. The robust OLT1408A fiberoptic COE delivers broadband access with 10G uplink and 1G downlink. This means the faculty's staff are no longer stuck with intermittent internet when in their residence – they now enjoy connection speeds of up to 1 Gbps for less loading and more learning.

Also part of the solution are **PMG5617GA Dual-Band Wireless AC/N GPON Home Gateway Units with 4-port GbE LAN ONTs**, which feature the 802.11ac standard WiFi technology to ensure the fastest possible data transfer rates. Meanwhile, their dual-band concurrent wireless connections maintain stable wireless performance. With its built-in front-end module, the unit is specifically designed to eliminate dead spots in any environment, so residents

can enjoy seamless WiFi coverage throughout the faculty's premises.

Fiber optic technology was crucial to the solution, as it is significantly more stable and robust than the VDSL used in the past. The fiber optic cable provides higher bandwidth than copper cables for carrying more data including large multimedia files. Besides, it eliminates the risk of network damage from lightning surges, thereby ensuring the robustness and longevity of the new infrastructure. Fiber broadband also supports longer data transmission distances, making it a dramatically easier and more cost-effective choice for extending network access.

Life at PSU's Faculty of Medicine today is vastly easier thanks to the seamless, high-speed connectivity delivered to its residence by the GPON network. With this one-time investment on fiber infrastructure, the school now has a robust, future-proof network with lower management costs. This means staff, students, and administrators alike can all properly focus on why they're there: learning.

## Products Used

### OLT1408A • 1U Pizza Box 8-port GPON OLT



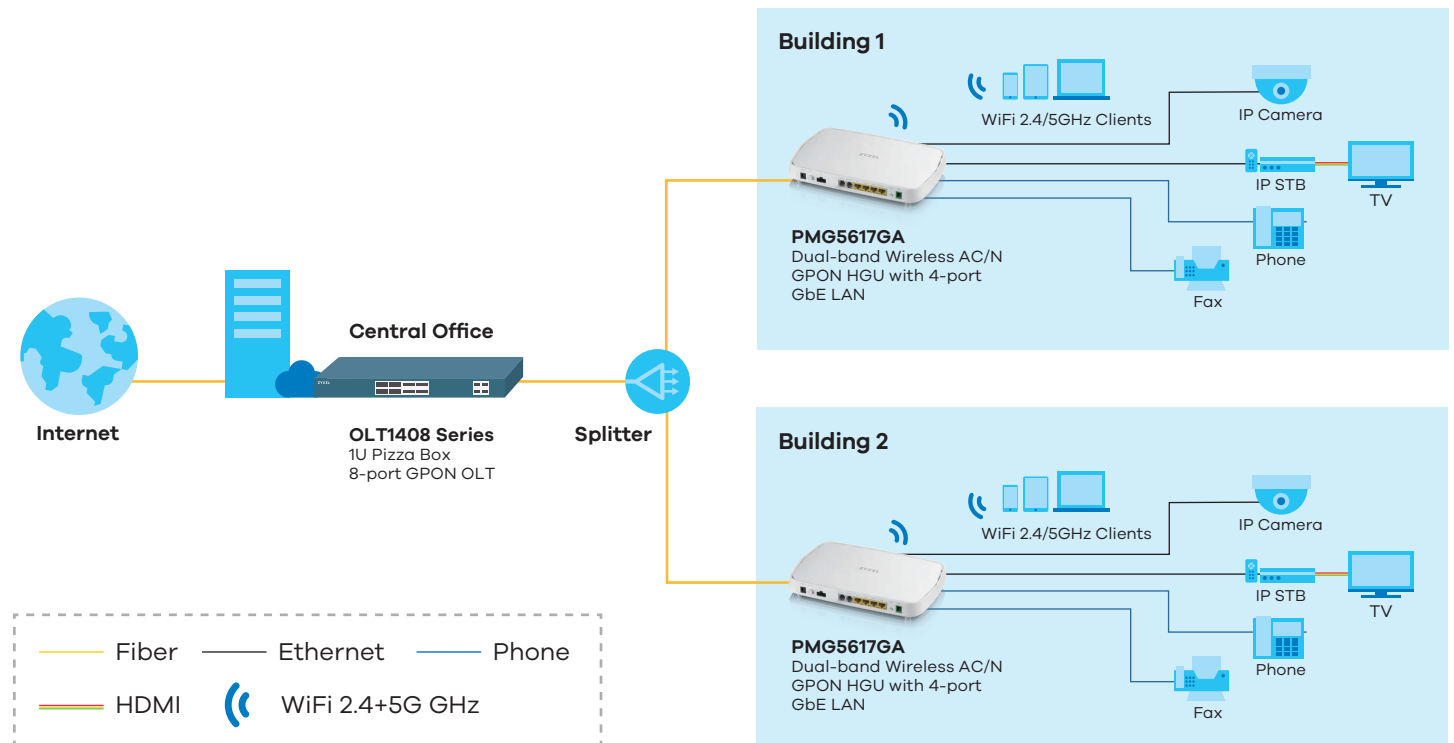
- 8 ITU-T G.984-compliant GPON ports; each port supports up to 128 ONT
- 4 x 10G/2.5G/1G port (SFP+/SFP, fiber)
- 8 x GE 1/2.5G port (SFP, fiber) and 8 x 100/1G port (RJ-45, copper)
- Dual power module plus battery charger
- Temperature-hardened

### PMG5617GA • Dual-band Wireless AC/N GPON HGU with 4-port GbE LAN



- Integrated internet services through fiber optics
- Dual-band 5G Hz 11ac (2x2) & 2.4 GHz 11n (2x2) for superior performance and coverage
- ZyXel OPAL firmware offers better flexibility and faster time to market
- Provisioning and remote management through TR-069 along with OMCI

## Diagram



## About Zyxel

Focused on innovation and customer-centricity, Zyxel has been connecting people to the Internet for over 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for telcos and service providers, business and home users. Zyxel is building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play. Zyxel, Your Networking Ally.

Copyright © 2020 Zyxel and/or its affiliates. All rights reserved. Zyxel, the Zyxel logo are registered trademarks of Zyxel and/or its affiliates. All other brands, product names, or trademarks mentioned are the property of their respective owners. All specifications are subject to change without notice.