



# Improving Passenger Experience with Fast and Secure Internet Connectivity

## Overview

Zhinan Bus is dedicated to providing high-quality public transportation to meet various customer needs, ensuring convenient and safe transportation services. As the demand for broadband services grows due to the rapid rise of 4G LTE networks, Zhinan Bus sought assistance from Zyxel Networks to upgrade its network equipment. This upgrade aims to enhance passengers' internet experience and improve bus operational efficiency. Passengers can enjoy high-speed internet connectivity onboard thanks to the successful installation and modernization of the network infrastructure. The bus company benefits from a smart cloud platform that facilitates more efficient network management and troubleshooting processes.

## Challenges

Most mobile routers operate independently and lack Simple Network Management Protocol (SNMP) compatibility for centralized control, leaving IT system integrators without adequate management platforms to monitor and regulate router statuses. When installed on buses, the network equipment faces increased physical impact and vibration, requiring high stability and durability. Moreover, with the rise in cyberattacks targeting public networks, wireless networks on buses pose privacy risks, particularly when connected to sensitive data or personal devices. The new network infrastructure should provide appropriate security measures.

The mobility of buses may lead to LTE connection interruptions due to base station switching or signal interference, causing unstable network connections for passengers. Furthermore, bus crossing urban and suburban areas may experience unstable or insufficient LTE coverage, particularly in mountainous regions or underground tunnels where signals may be disrupted or weak.

### Customer

Zhinan Bus Company

### Industry

Transportation

### Location

Taipei, Keelung and Taoyuan, Taiwan

### Partner

Yung Jih Cheng Co., Ltd.

## Customer Background

Established in 1954, Zhinan Bus Company is a famous transportation company in Taiwan. It primarily operates city bus services in Taipei City, New Taipei City, and Taoyuan City, along with national highway bus routes.



## Solutions

To address the networking equipment requirements of Zhinan Bus, ZyXel Networks proposed the Nebula LTE3301-PLUS 4G LTE-A indoor router, with installation and maintenance carried out by Yung Jih Cheng. This router offers numerous benefits: firstly, it supports 4G LTE-A and gigabit Ethernet connections to ensure stable connectivity. Secondly, the Nebula LTE3301-PLUS can be managed via the Nebula cloud platform, providing centralized and simplified network management. This router sends alert notifications automatically in case of device malfunctions, enabling IT personnel to address network issues promptly.

## Product List



- Nebula LTE3301-PLUS 4G LTE-A Indoor Router

## Results

The project has addressed several challenges faced by Zhinan Bus, such as enabling centralized control to manage independent mobile routers, ensuring durability and stability to withstand physical shocks and vibrations on buses, and enhancing security measures to protect against privacy risks associated with wireless networks. This installation significantly improves bus operational efficiency and streamlines network management through integration with the Nebula cloud networking solution. Most importantly, it enhances the passenger experience with high-speed internet connectivity onboard, thereby boosting the bus company's reputation.

- Enhanced passenger experience with high-speed internet connectivity onboard
- Streamlined network management improves operational efficiency
- Strengthened security protection safeguards against privacy risks
- Stable network connections without the impact of physical shocks and vibrations when installed on buses

