

4G SMALL CELL

A Quick 4G LTE Solution for Unserved Indoor Customers

As directed by the Malaysian Communications and Multimedia Commission (MCMC), Malaysia has implemented a phased shutdown of the nationwide 3G network, which was completed by the end of March 2022. The objective of the 3G sunset initiative is to repurpose the spectrum for the 4G network, thereby enhancing the mobile data experience and enabling the development of innovative services based on LTE technology.

Comba Telecom, a trusted partner, has been selected by a Tier-1 mobile operator in Malaysia to address the issue of poor LTE coverage in specific areas following the 3G shutdown. This case study highlights the successful deployment of Comba 4G Small Cell in a 4-Star Hotel situated in Putrajaya, Malaysia.

POOR LTE NETWORK COVERAGE INSIDE HOTEL PREMISE

The customer is a 4-star hotel located in Putrajaya, Malaysia. The hotel relied on 3G coverage for both data and voice services; however, it faced poor 4G network coverage following the shutdown of the 3G network. Although the hotel has WiFi coverage, not all phones are compatible with WiFi calling. Taking a proactive approach, the operator aims to establish 4G coverage in the hotel's

ballroom and offices with minimal lead time and disruption. The goal is to ensure that the customer experience is not compromised during the transition.

COMBA'S 4G SMALL CELL SOLUTION

In order to improve network coverage within the hotel premises, four Comba

4G Enterprise Small Cell units were strategically deployed. Specifically, two units were placed in the ballroom area, while the remaining two were positioned within the offices.

These units are equipped with 2x2 MIMO technology, supporting **4G LTE Band 3** and offering versatile mounting options on walls or under office ceilings.

I. WALL-MOUNTED SCENARIO



II. CEILING-MOUNTED SCENARIO



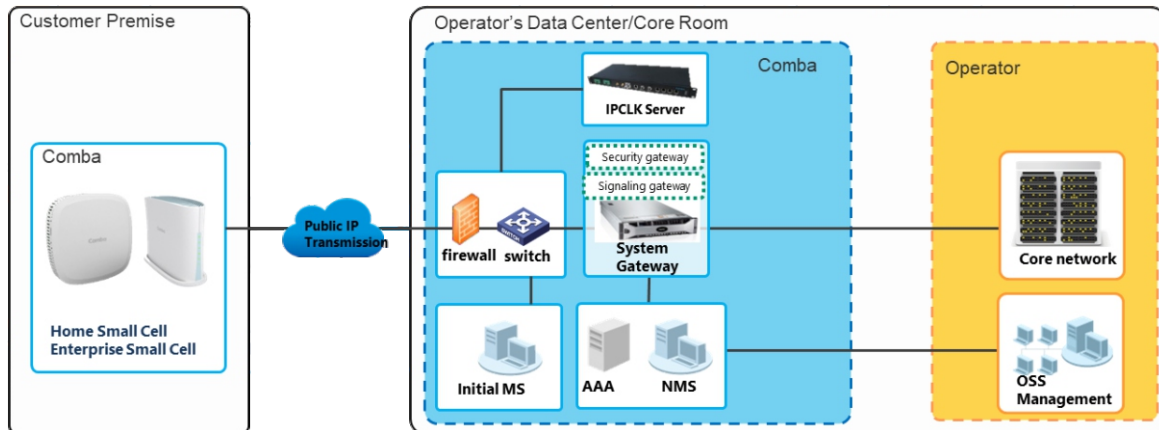
Case Study



By utilizing existing public backhaul options like public broadband, we eliminate the need for costly and time-consuming installation of new transmission lines. Additionally, a single POE cable is used to connect both data and power to the Small Cell,

simplifying the installation process and reducing cable clutter. This not only saves valuable resources but also ensures a faster deployment of our services. With preconfigured parameters, setting up the small cell is a breeze. In just 15 minutes, it can be

brought on-air, enabling swift connectivity for indoor users. This streamlined process allows for a quick and hassle-free implementation, ensuring that customers can enjoy uninterrupted 4G LTE connectivity without delay.



Picture illustrate the network topology of Small Cell solution.

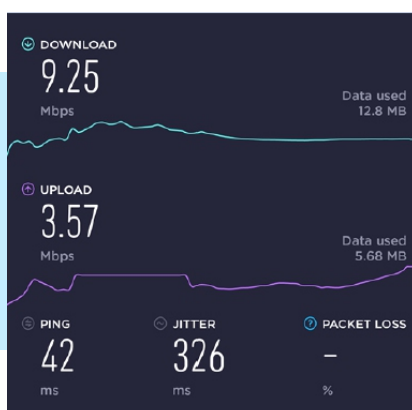
Better Connectivity and Throughput Performance

The implemented solution led to notable improvements in 4G LTE coverage, enhanced mobile data throughput, and the provision of high-quality voice calls through the 4G VoLTE service. These enhancements

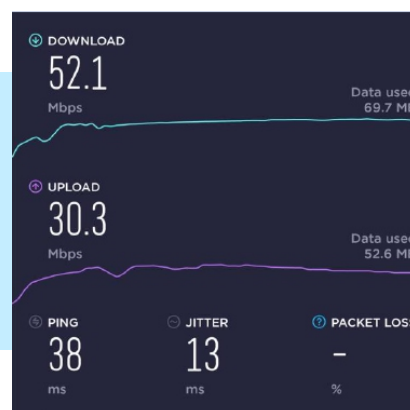
significantly boosted the overall network performance and elevated the user experience within the hotel premises. Overall, Comba provides a cost-effective and efficient way to cater to the needs of unserved indoor

customers. By leveraging existing infrastructure and reducing setup time, we aim to help operators bridge the connectivity gap and deliver a high-quality 4G LTE experience for all.

**BEFORE
INSTALLATION**
DL Throughput: 9.25Mbps
UL Throughput: 3.57Mbps
Latency: 42ms



**AFTER
INSTALLATION**
DL Throughput: 52.1Mbps
UL Throughput: 30.3Mbps
Latency: 38ms



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