

## Enterprise Small Cell Solutions: Helping Businesses Ascend to the Next Level

*How Yong-Li Enterprises enabled 3G and Wi-Fi services in a remote office/factory location to facilitate their global expansion*

### About Yong-Li Hardware Enterprise

Yong-Li Hardware Enterprise was founded in 1995 and produces high-class furniture, cabinet hardware, decorative hardware and surface plating.

The enterprise has a developed 56,000 m<sup>2</sup> factory, with Yong-Li Metal Products Factory, Yong-Li Electroplating Factory and other professional production factories, specializing in cabinet hinges, staircase handrail, surface plating and other fields. Yong-Li Hardware Enterprise works on research and development, design, mold making, production and sales.

(Source: Ailbaba)



### About the Installation Site

Located at Jinli town in Guangdong Province, the enterprise is served with developed land and water transportation networks from the provincial capital, Guangzhou City, and near the Guangzhou-Zhaoqing Expressway.

Despite the proximity to transportation networks, the Yong-Li facilities were not covered by any 3G network services. The office that was selected for the installation of the Comba solution covered 1,200m<sup>2</sup>, and up to 40 persons.

### The Scenario

The Yong-Li Hardware Enterprise is located in a remote area without TD-SCDMA or Wi-Fi coverage. Since communications is an essential business tool, Yong-Li needed to set up both TD-SCDMA and Wi-Fi coverage within the office.



*Yong-Li is focuses on both domestic and international markets. Hence, TD-SCDMA and Wi-Fi services are required to to facilitate their business development.*

After contacting the mobile operators, it was found the TD-SCDMA and wi-fi coverage was not implemented due to two main issues:

- **Critical mass:** Since there are relatively few users in the area, there was not a compelling case for operators to install a macrocell and enable services in the area.
- **Siting issues:** the factory district lacked suitable sites for a macrocell, and local regulations made acquiring a new site difficult

With a seemingly impasse between the operator (who needed a business case for implementing coverage) and the end-user (who required coverage to facilitate its

growth), Comba was tasked to resolve the situation to the satisfaction of both parties.

Enterprise broadband internet connectivity was Yong-Li's main communication vehicle to their international customers. Comba surmised that if the new solution could make use of the existing public broadband as a backhaul, it could implement a rapid, efficient and cost effective solution for both the operator and the end-user.

### The Solution

Working with the operator, Comba assessed a number of possible solutions to resolve office's problem whilst being cognizant of operation and capital expenditure costs.

Amongst those assessed included:

- (1) **Installing new outdoor NodeB and antenna** – this would provide TD-SCDMA coverage and capacity, but service quality would suffer from penetration loss and the number of subscribers would be low given the cost.
- (2) **Deploy nodeB together with in building system** – this would resolve the indoor coverage issues. However, the in-building system would require intrusive construction work and the cost would also be prohibitively high.

# Case Study

## Yong-Li Hardware Enterprise

### The Comba TD-SCDMA Enterprise Small Cell

Deployed for in-building capacity and coverage, Comba's TD-SCDMA Enterprise Small Cell brings 3G and Wi-Fi service to new and existing cell sites at a fraction of the CAPEX and OPEX of a traditional macrocell solution.



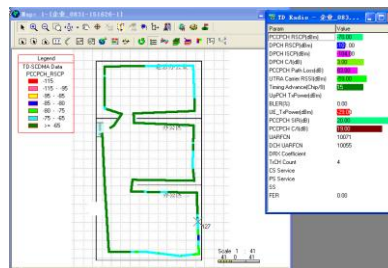
TD-SCDMA Enterprise Small Cell

#### Features:

- Adds 3G capacity and coverage to small or hard-to-reach areas
- Precise coverage, allowing fine-grained 3G service delivery to target users
- Quick, plug-and-play installation
- Built-in WiFi 802.11b/g/n
- Built-in antennas and option to integrate with in-building DAS
- Backhaul through pre-existing public broadband eliminates the CAPEX of acquiring and building new sites, reduces OPEX from backhaul transmission, power and operations
- Self-optimizing and configuring capabilities help avoid interference between cells and improve user experience
- Remote control and management through Comba's Network Management System (NMS), including software upgrades and service

- (3) **Install TD-SCDMA Small Cell Solution.** By installing the TD-SCDMA Small Cells, TD-SCDMA and Wi-Fi could be provided quickly at low cost to the operator.

After careful analysis, the 3<sup>rd</sup> scenario was deemed the most effective option in terms of effectiveness and cost.



Comba's TD-SCDMA Small Cell was installed in the office of the factory, and the walk-through test result was strong.

As a result, two **TD-SCDMA Small Cells** were deployed. The benefits of deploying this solution included:

- (1) **Multimode operation:** the Enterprise Small Cell can provide both TD-SCDMA and Wi-Fi coverage with single unit.
- (2) **Can provide capacity** up to 21 simultaneous users for each Enterprise Small Cell.
- (3) **Lower CAPEX and OPEX than alternatives:** since the TD-SCDMA service uses the existing public

broadband as backhaul, there is no need for cable deployment and construction work. Avoids site acquisition costs and lowers electricity and other operating costs.

- (4) **Ease of management:** the Enterprise Small Cell can adjust its output power in order to reduce interference between two Small Cells. No extra frequency planning is required.

### The Results

Comba monitored the signal performance after installation, and found that the TD-SCDMA Enterprise Small Cell provided high quality 3G coverage and service. In the tests, received signal power was sufficient for continuous coverage throughout the area.

*Yong-Li reported that its staff now enjoyed a stable and effective 3G and Wi-Fi services – a vast improvement from when it had zero services in the past!*

### Comba Products & Services

- TD-SCDMA Enterprise Small Cell
- Installation & Commissioning
- Post Installation Support

For more information, contact your Comba representative, or visit: <http://www.comba-telecom.com>

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