Case Study

Guangzhou Dongtiwan Residential Community

Comba
Enhancing Communications

Bringing Total Wi-Fi Coverage to a Residential Area the Smart Way

How a residential development in China's third-largest city covered its residents with Wi-Fi service using Comba's Power Line Communications (PLC) System

About Comba

Comba Telecom provides the infrastructure and solutions to mobile operators and enterprises to enhance and extend their wireless communications networks.

Comba's Wi-Fi Business History:

***1997**: Comba Telecom founded*

***2002**: Started development of solutions for Wi-Fi data services*

***2003**: Comba listed on the Hong Kong Stock Exchange.*

***2008**: Formally established the Wireless Access Business Unit incorporating Wi-Fi solutions*

***2009**: Comba Network Solutions launched in the global market offering integrated end-to-end solutions.*

Comba becomes one of the top three carrier Wi-Fi suppliers to Chinese operators.

***2010**: Wi-Fi solution released in international market, including South America, Middle East, and Southeast Asia*

***2011**: Over 32 provinces in China have deployed Comba's Wi-Fi products and solutions*

The Scenario

Dongtiwan Residential Community

Dongtiwan is an upmarket residential community located in central Guangzhou, China, made up of 8 buildings with 6-9 units on each floor.

The operator wanted to bring its Wi-Fi service to the entire community, but some units suffered from insufficient coverage. The community, however, has been owner-occupied since 2006 and installing a traditional in-building system would have caused unacceptable disruption to residents.

As an experienced in-building system provider, Comba was asked to devise a solution that would be acceptable to all parties.

An effective solution would need to satisfy three concerns:

(1) **Coverage:** Provide targeted, floor-by-floor coverage to reach residents

(2) **Property Management:** Avoid impacting residents' daily life, install a system without getting bogged down in cumbersome ownership issues

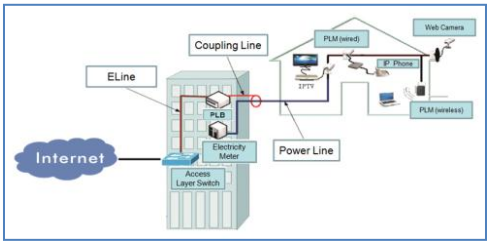
(3) **Cost:** Control the cost and timing and construction

The Solution

After conducting a detailed study of the site, Comba ascertained that feeding Wi-Fi coverage into the building through existing power lines could meet the customer's objective most cost effectively.

A centralized–control network mode was used, with the following configuration:

AC → Switch → Broadband Remote Access Server → OLT → ONU → Power Line Bridge → Power Line Modem → Terminal



PLC System Architecture

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Comba's PLC Products

Comba's Power Line Communication (PLC) products enables carrier-grade Wi-Fi coverage into a building at minimum cost by using its greatest pre-existing assets—power lines—to transmit data

Power Line Bridge:

- *Supports HomePlug AV*
- *Physical rate over power line to 500Mbps*
- *Transmission range over 200m*
- *Supports 100-24-V (50/60Hz) AC and POE*

Power Line Modem (Wired):

- *Physical rate over power line to 200Mbps*
- *Compliant with IEEE 802.3, HomePlug AV*
- *Voltage: 100-240V AC, 50/60Hz*
- *128 bits AES over power line*

Power Line Modem (Wireless):

- *Wireless connection rate up to 150Mbps (HT20) and 300Mbps (HT40)*
- *Wireless module supports WAP, WAP2, 64/128/152 bits WEP, concealed SSID, MAC address access control list*
- *IEEE 802.3 compliant, HomePlug AV*
- *Voltage range: 100-240V AC, 50/60Hz*
- *128 bits AES over power line*

L-R:: Power Line Bridge, Power Line Modem (Wired), Power Line Modem (Wireless)

ONUs and Power Line Bridges were installed into the power-operated wells, with each bridge covering 3-5 floors.

Couplers were used to combine the CMCC signal over the power line, and transmit it to the every power outlet in the department.

This allowed residents to gain Internet access simply by plugging a Power Line Modem into their power outlet.

Residents can receive the operator's Wi-Fi from each Power Line Modem and connect to the internet using portal authentication by entering the name and password provided by the operator. Each modem supports one computer and one mobile device, with two modems under each Power Line Bridge.

Today, up to 10 new Wi-Fi customers can enjoy access in each building, without any expensive installations or new cabling systems. Comba continues to offer full technical support to the operator through its local service team.

The Results

Comba's PLC successfully transmitted internet to users through power line to bring, stable, high-speed wireless surfing to every corner of the complex, while also saving construction time, cost, and simplifying the process.

Based on the success of this particular project, the operator has since invited Comba to deploy similar systems in sites around China.

Comba Products & Services

- Power Line Bridge
- Power Line Modem
- Installation & Commissioning
- Post Installation Support

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

The products and services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to Comba Telecom Inc. conditions of contract. Nothing in this publication forms any part of any contract.

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