

# Invisible Antenna, Yet Real Sensation, for a Pleasant Tour of “China International Import Expo”

## National Exhibition and Convention Center (Shanghai)

- The building area above ground is 1,270 square meters, and the overall building area reaches 1,470 square meters.
- The world’s current second largest building to accommodate exhibitions

## Country/Region

China/Shanghai



## Current demand

The huge building (that looks like a clover), located to the west of Shanghai Hongqiao Central Business District, is meant to be an eye catcher; this is the location of the National Exhibition and Convention Center (Shanghai).

The first China International Import Expo will take place here. There will be more than 3,000 enterprises from more than 130 countries attending the event. The huge scale will encompass a far-reaching influence. Hence, ensuring smooth wireless access and communication—given the massive flow of people—becomes a stern challenge for the operator. Like many ultra-large venues, sufficiently ensuring the wireless access rate and reducing interfering signals experienced by users requires high-quality antennas in the National Exhibition and Convention Center (Shanghai) so wireless coverage—and the huge capacity of the encompassing network—may be realized at the same time despite limited spectrum conditions.

## Challenge

**How to realize smooth wireless communication given such a huge exhibition room and such a huge flow of people visiting the expo?**

The correct solution is only possible when the right problem is found. What matters is fulfilling the two key indicators of a wireless system—

### **coverage and capacity**

Under normal circumstances, the quality of antennas used in a large venue, good or bad, primarily has to do with key indicators such as third-order intermodulation, beamforming, and frequency range. To ensure the success of the China International Import Expo—and for the exhibitors and visitors to enjoy smooth

wireless communication—the operator had extremely strict requirements regarding the solution.

- First, quality and indicators of the product**
- Second, prior similar successful examples of the suppliers, if any**
- Third, technical and service levels of the supplier**

## Solution

CommScope, as the specialized supplier of wireless communication solutions, offers excellent solutions—the venue-formed antenna. This is a “dual” solution: First, it has full band coverage that is able to satisfy the smooth adaptation despite the various customized and various band wireless networks of different operators. Second, there are a complete series of products with different beamforming, different dimensions and different gains available to satisfy different design and traffic requirements.

In an ultra-large venue, interference among signals of the same frequency is also a difficult issue to be addressed as it seriously undermines the user experience. The Andrew forming antenna solution of CommScope easily takes care of this issue. Its narrow beam and outstanding horizontal/vertical sidelobe inhibiting features effectively control the level of interference. In addition, the excellent third-order intermodulation indicator effectively guarantees ultra-high capacity and rate.

Even with the design proposal, how strong do the antennas need to be for the installation design of such a huge venue?

The National Exhibition and Convention Center (Shanghai) is much bigger than other venues; hence, the requirements for design and installation are higher and more difficult to be fulfilled, too.

According to CommScope experts, its antennas are smaller and lighter and can be easily installed. In addition, it is easier to make them invisible—ensuring the beautiful appearance of the venue. CommScope’s antennas, for example, may be installed horizontally or vertically; the orientation can be freely adjusted for planning and design and optimized coverage.

During construction and installation, CommScope provides one-stop services, including field investigation, solution proposal, testing and comparison, installation training, supervision over installation, and optimization of the network.



What is particularly worth mentioning is that CommScope is an expert in antennas, with many years of experience. Its Andrew antenna is unparalleled throughout the industry in either design, material, or workmanship. It is known for requiring no maintenance over a period of 10 years of practical use—eliminating the concern of users while they use the product.

After the current comprehensive overhaul, the tests performed prior to the start of the first China International Import Expo rendered a 75 percent increase in the expected capacity and coverage of the antenna used in the venue, and a 45 percent increase in the access rate; the pre-established design goals are fulfilled.

CommScope (NASDAQ: COMM) helps design, build and manage wired and wireless networks around the world. As a communications infrastructure leader, we shape the always-on networks of tomorrow. For more than 40 years, our global team of greater than 20,000 employees, innovators and technologists has empowered customers in all regions of the world to anticipate what's next and push the boundaries of what's possible. Discover more at [commscope.com](http://commscope.com).

CommScope has successfully provided antenna solutions with complete coverage for multiple large and ultra-large venues at home and abroad. To support the China International Import Expo—which will have an international influence—the requirements for the quality, capacity and coverage, installation, and optimization of antennas are even higher. Despite the limited time and the daunting task, CommScope impressively helped the operator accomplish the antenna overhaul project to sufficiently ensure the quality communication for people inside the venue and to thoroughly address issues such as signal coverage and system usage. The needs of the operator are satisfied by making the best of the outstanding products of CommScope, setting another benchmark for wireless coverage in a venue because it truly feels the needs of customers and thinks what users think.



COMMSCOPE®

[commscope.com](http://commscope.com)

Visit our website or contact your local CommScope representative for more information.

© 2018 CommScope, Inc. All rights reserved.

All trademarks identified by ® or ™ are registered trademarks or trademarks, respectively, of CommScope, Inc. This document is for planning purposes only and is not intended to modify or supplement any specifications or warranties relating to CommScope products or services. CommScope is committed to the highest standards of business integrity and environmental sustainability with a number of CommScope's facilities across the globe certified in accordance with international standards, including ISO 9001, TL 9000, and ISO 14001. Further information regarding CommScope's commitment can be found at [www.commscope.com/About-Us/Corporate-Responsibility-and-Sustainability](http://www.commscope.com/About-Us/Corporate-Responsibility-and-Sustainability).

CS-113188-EN