COMMSCOPE®

CommScope helps inwi streamline to prepare for 5G

Mobile provider deploys Morocco's first 28-port, all-in-one antenna

inwi™

Customer

inwi

Location

Casablanca, Morocco

Challenges

- Reduce overall antenna count
- Cut install time, eliminate mistakes
- Eliminate TDD-to-FDD interference
- Enable 5G readiness
- Ensure excellent coverage, service

Solution

- 28-port RRZZVVT4S4-65D-R8 antennas
- MLOC-4-F1XM-HM-3M cluster connectors
- MLOC-5-F1XM-HM-3M cluster connectors

With a national mobile penetration rate of about 125 percent, Morocco is among the most developed mobile markets in North Africa. The vast majority of the country's internet connections (93.2 percent) are over cellular connections. Currently, the fastest growing wireless provider in Morocco is inwi, headquartered in Casablanca. Its nationwide mobile/fixed network serves more than 12.5 million users with a mix of 2G/3G/4G and fixed wireless access (FWA) services.

Since its founding, inwi has earned a reputation as a technology and innovation leader. Since 2017, the carrier has been rated the #1 internet provider by nPerf. Significant investment in fixed wireless service and a optimised TDD radio deployment have established inwi as the leader of internet and data services. Most recently, it became the country's first to deploy an innovative 28-port, all-in-one antenna from CommScope, streamlining its network and paving the way for 5G.

Consolidating antennas to grow spectrum

Large spectrum bands availability benefit inwi in capacity and traffic management but not without challenges, network complexity design increase, interference
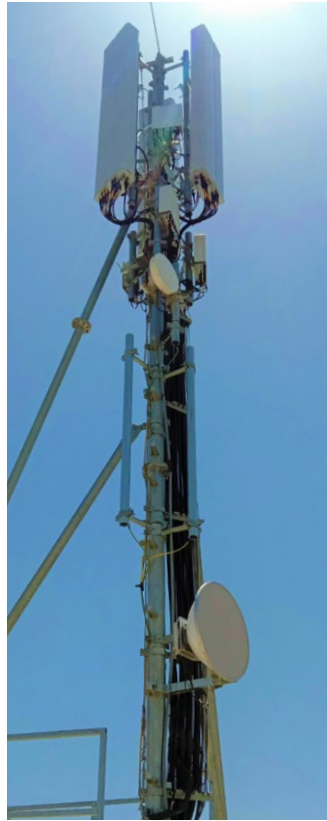
"We needed a customized antenna solution; one that could support a wide range of spectrum bands, and was fast and easy to install and connect," Kharlamov explained. So when they began preparing their network for 5G, inwi called on CommScope and their innovative all-in-one antenna.

inwi discovers like-minded partner in CommScope

inwi's project team had a specific list of criteria in selecting the right solution, most of which focused as much on the potential partner as on the antenna solution. The quality and capabilities of the solution were paramount. inwi also needed a partner with a proven international track record and local support who could advise on technical and operational issues. A delivery lead time that could keep pace with the network's aggressive build schedule was also critical.

After meeting with CommScope and learning about their unique all-in-one, 28-port antenna solution, inwi officials knew they had found the right solution. The antenna solution would enable them to dramatically streamline the network infrastructure and costs, and CommScope offered all the technical expertise and global resources inwi needed.

A network makeover

The all-In-one antenna is part of CommScope's robust 5G portfolio. It features twenty eight ports and supports a wide range of frequencies and technologies. Two planar arrays with separate calibration ports enable beamforming across all TDD bands. The antenna is also optimized for software-defined sector-splitting, in case inwi decides to deploy six-sector sites.

Another unique feature of the antenna is the advanced M-LOC cluster connectors. To support the TDD radios, the number of antenna ports have grown to as many as 28 per antenna. With the use of higher MIMO orders and beamforming technology, the risk of cross-feed errors has increased as well.

CommScope's next-generation M-LOC cluster connectors enable installers to connect and calibrate four or five ports at the same time. A tool-less snap-fit design ensures correct alignment and secure connections. In addition to reducing installation time and costs, the M-LOC technology enables inwi to address critical challenges such as mating issues, PIM reduction, advanced radio support and cable manageability. The 28-port, all-in-one antenna features four and five M-LOC cluster connectors for the two planar beamforming arrays.

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>
> **Alexei Kharlamov—CTIO, inwi**

risk is higher, deployment and maintenance complications at the cell sites have multiplied.

"Using multiple spectrum bands, especially in dense areas, presents a major challenge with regards to tower loading and space," explained Alexei Kharlamov, inwi's CTIO.
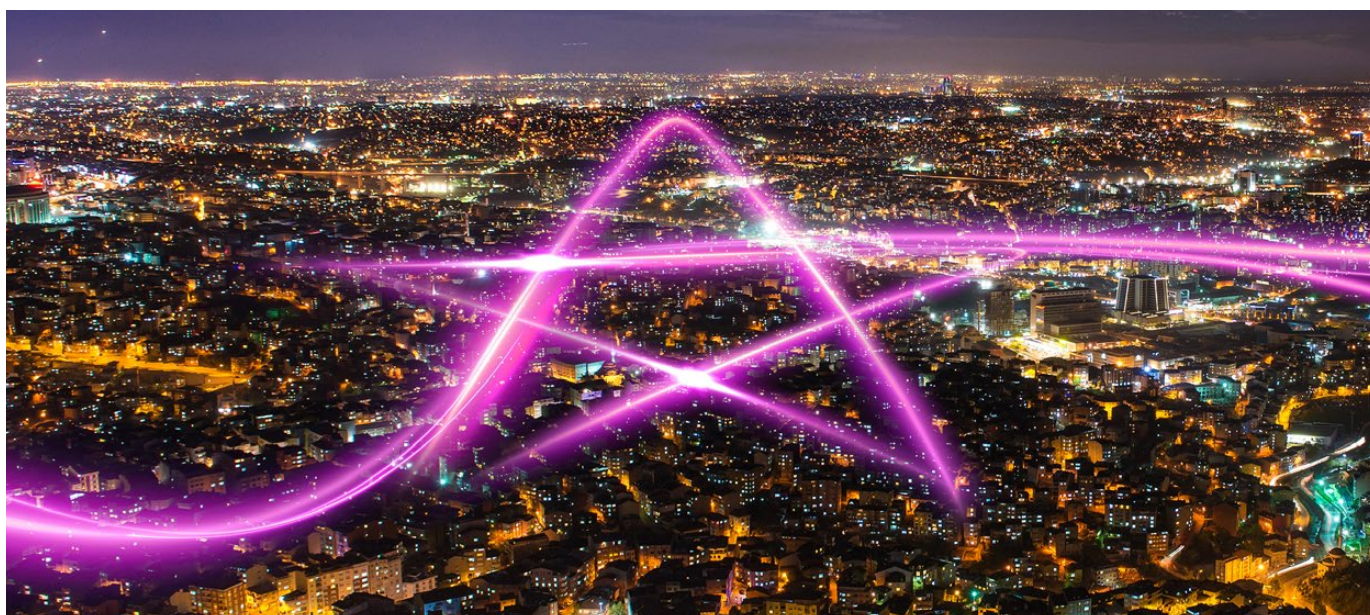
One of inwi's key objectives, therefore, was to reduce the number of antennas on the towers while also facilitating future network transition to 5G. At the same time, the carrier was transitioning to radios that support frequency division duplexing (FDD) and time division duplexing (TDD). The FDD/TDD combination significantly increases the number of ports per antenna and the installation challenges.

Lean, agile and ready for the future

inwi has been able to dramatically consolidate multiple technology-specific antennas in a single unit that delivers excellent coverage and quality performance. By reducing antenna counts, Morocco's Mobile Internet Leader has reduced tower lease and equipment maintenance costs and freed up valuable tower space for future use.

At inwi, the future of Morocco's mobile capabilities is at hand. They successfully completed field trials, and the new, all-in-one antennas and M-LOC technology are performing flawlessly. The successful collaboration between inwi and CommScope kept the project moving, despite the effects of the global pandemic on global supply chains and logistics. Looking forward, inwi is confident they've found a trusted advisor who can help them consolidate their Mobile Internet number 1 position in Morocco.

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com

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