

# CommScope low-loss combiners deliver network modernization solutions to UAE's top wireless carrier



**“As network demands increase, the competition for limited tower space is intensifying. The CommScope LLC’s versatility and customizability give operators the option of sharing tower space and/or upgrading their networks to increase coverage and capacity while reducing the number of antennas and associated components on the tower—a true win-win solution.”**

**—Indeep Sidhu,  
Director, Filters,  
EMEA and APAC,  
CommScope**



The Middle East–Africa (MEA) region is among the fastest-growing wireless markets in the world. But with explosive growth comes significant challenges, including overloaded towers and rooftops, and few available options for new sites. With minimal insertion loss compared to traditional hybrid units, CommScope’s customized low-loss combiners (LLC) enable Etisalat UAE to expand their network on existing sites—without a major CapEx investment

## Etisalat UAE leads wireless network expansion in the region

Emirates Telecommunications Corporation (Etisalat) has more than 6.3 million mobile subscribers in the UAE, representing a market penetration in excess of 140 percent. The quality and coverage of Etisalat UAE’s extensive network has helped make the UAE a world leader in providing seamless and high-quality connectivity to its citizens.

Etisalat UAE is a long-time CommScope customer that has relied on CommScope solutions to enable their rapid network expansion and delivery of high-quality service.

## A new kind of combiner for today's new capacity demands

To meet the increased capacity demanded by higher data throughput in the country, Etisalat UAE has been forced to add new antennas on rooftops or towers for UMTS900 or LTE1800 introduction at existing sites. Most of the time, they are facing situations where rooftops are already full of antennas—or towers are already overloaded, with serious stability and wind-load issues.

One solution is a same-band combiner—a unit that combines two base stations on the same band (GSM900 and UMTS900 or GSM Op1 and GSM Op2) into a common port to reduce the number of antennas required. But introducing a passive unit in the RF path usually leads to an insertion loss that reduces the power available for coverage and capacity.

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**“The solution met our technical requirements for outdoor sites with minimal insertion loss and spectrum efficiency, and will also allow speeding up UMTS900 deployment with the reduction of tower loading. For indoor applications, the use of LLC 900s instead of 3 dB couplers will increase the coverage area and boost our IBS solution.”**

**— Hasan Ali Bulhoon, Senior Director,  
Mobile Access Planning and Voice Optimization,  
Etisalat UAE**

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To minimize this power loss, CommScope has developed a new type of in-band combiner designed to deliver only 0.5 dB of insertion loss—compared with traditional one-size-fits-all hybrid combiners that lose 3 dB and essentially waste most of the power available. CommScope's 900 MHz and 1800 MHz LLC models are custom combiner solutions, tailored to the client's spectrum, that enable carriers to reduce the number of antennas and speed up network expansion using same-band combiners to introduce UMTS900 or LTE1800 at existing sites and reduce tower load. CommScope LLCs have excellent spectrum efficiency, with a minimal guard band of 0.6 MHz for LLC 900 and 0.7 MHz for LLC 1800.

CommScope low-loss combiners can be used to introduce UMTS900 or LTE1800 at outdoor sites as well as indoor sites. The LLCs replace traditional hybrid 3 dB combiners to allow operators to boost older



IBS solutions and increase coverage and traffic—generating new revenue with a modest investment.

## CommScope LLCs simplify network modernization for Etisalat UAE

After successful trials performed at outdoor and indoor sites, Etisalat UAE decided to adopt the LLC 900 solution to upgrade their network sites to UMTS900. They were able to reduce the number of antennas on top of crowded towers and rooftops and leverage LLC 900's best-in-class spectrum efficiency to cost-effectively reuse its GSM900 channels to accommodate increasing network traffic.

Benefits of the CommScope LLC solution for network modernization include:

- Cost savings due to a reduced number of antennas, feeders, cables and jumpers
- Reduced tower loading for increased safety and stability—plus more free space for potential site sharing
- Improvement of performance due to the same band combiner's isolation value of -30 dB and insertion loss of 0.45 dB
- Increased network coverage and traffic from replacing hybrid -3 dB combiners
- Reduced maintenance costs due to high mean time between failures, which require fewer site visits
- Faster deployment due to easier installation—no need to add an additional antenna and feeders

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