



## CommScope® Wired for Wireless® Solution Frequently Asked Questions

### Q: What is the Wired for Wireless® Solution?

A: CommScope's Wired for Wireless® Solution is a carrier-neutral structured infrastructure solution that enables mobile communications inside buildings eliminating dead zones and spotty coverage. The Wired for Wireless Solution's unique structured design makes wireless coverage inside buildings dramatically more affordable by simplifying installation and eliminating the need for costly site surveys and custom network designs. The solution's design includes coaxial cables, connectors, antennas and cable management apparatus connected together in such a way as to provide a blanket of wireless coverage throughout an entire building, to meet evolving indoor wireless needs for years to come.

### Q: What are the main customer benefits of the Wired for Wireless Solution?

A: The Wired for Wireless Solution is designed to eliminate dead zones and spotty coverage inside enterprise buildings, it reduces the total cost of installation and eliminates future disturbances by shifting the installation of the passive infrastructure to the primary construction phase, and it protects the indoor wireless network from changes in the outdoor network by providing uniform coverage that is independent of outdoor network signal levels.

### Q: What types of buildings is the Wired for Wireless Solution designed for?

A: The Wired for Wireless Solution is designed to provide a platform for uniform indoor coverage in all Enterprise buildings – healthcare facilities, schools and universities, financial institutions, corporate buildings, and more.

### Q: Should I install the Wired for Wireless Solution in all floors or just high floors and underground floors?

A: Depending on floor size and construction materials, lower floors may receive stronger signal levels from the outdoor network, while high floors and underground spaces are most likely to be lacking in coverage. However, the goal of uniform and carrier-neutral coverage in the Enterprise should not depend on the outdoor network's signal levels. Installing the Wired for Wireless Solution on all floors will provide a platform for uniform and carrier-neutral coverage with consistent QoS levels that will not be impacted by changes to the outdoor network.

**Q: Does the Wired for Wireless Solution support WiMax implementations?**

A: Yes. The Wired for Wireless Solution supports 2.6 GHz WiMax implementations. The HELIAX® ½ inch 50 Ohm coaxial cables are capable of supporting frequencies up to 6 GHz. The CellMax™ antennas support frequencies up to 2700 MHz and are capable of supporting WiMax in the 2.6 GHz range. The Wired for Wireless Solution is primarily designed to support In-Building Wireless implementations for technologies such as Analog, iDEN, GSM, GPRS, EDGE, UMTS, HSDPA, HSUPA, LTE, CDMA2000, EV-DO, etc.

**Q: Does the Wired for Wireless Solution support Public Safety systems?**

A: Yes. The Wired for Wireless Solution supports Public Safety wireless applications in the 700/800 MHz band. Public safety systems typically operate in the 400 MHz band or the 700/800 MHz band. The HELIAX® ½ inch coaxial cables fully support both bands. The CellMax™ antennas support the 700/800 MHz band. Support for the 400 MHz band requires a lower density of larger antennas, and most customers prefer to install them as needed.

**Q: Does the Wired for Wireless Solution support Wi-Fi implementations?**

A: The Wired for Wireless Solution can support some Wi-Fi implementations. However, CommScope believes that the deployment of parallel system based on twisted pair cable is a more efficient solution for Wi-Fi support. The HELIAX® ½ inch 50 Ohm coaxial cables are capable of supporting frequencies up to 6 GHz. The CellMax™ antennas support frequencies up to 2700 MHz and are capable of supporting IEEE 802.11b/g Wi-Fi implementations. However, the Wired for Wireless Solution is primarily designed to support In-Building Wireless implementations for technologies such as Analog, iDEN, GSM, GPRS, EDGE, UMTS, HSDPA, HSUPA, LTE, CDMA2000, EV-DO, etc.

**Q: Does the Wired for Wireless Solution support active in-building wireless equipment from multiple vendors?**

A: Yes. The Wired for Wireless Solution is designed to support multiple vendors of active equipment that can interface with 50 ohm coaxial cables and N-Type connectors.

**Q: Other vendors support Distributed Antenna Systems over twisted pair cabling, why should I choose a solution that uses coaxial cabling?**

A: The Wired for Wireless solution is a multiband, carrier-neutral solution. Twisted pair solutions are bandwidth limited to support one carrier over at least one cable, and typically require a much higher expense for the active portion of the system. The majority of the industry uses 50 Ohm coaxial cable, since it offers the widest range of choices in the future.

**Q: What about systems using 75 Ohm cable to the antennas?**

A: A few vendors use 75 Ohm cable in the horizontal. These systems require active electronics at each antenna point and as such this drives the overall cost of the system up dramatically. The majority of the industry uses 50 Ohm coaxial cable to the antennas, since it offers the widest range of choices in the future.

**Q: What about systems using optical fiber to the antennas?**

A: A few vendors use optical fiber in the horizontal. These systems require active electronics at each antenna point and as such this drives the overall cost of the system up dramatically. The majority of the industry uses 50 Ohm coaxial cable to the antennas, since it offers the widest range of choices in the future.

**Q: What is the minimum required separation distance from the ½ inch coaxial cable to UTP cables?**

A: There is no minimum separation required between the Wired for Wireless HELIAX® cables and UTP cables, they can be installed side by side. For easier management, it is suggested that the UTP be on one side of the cable trays and the coaxial cable be on the other.

**Q: Can the ½ inch coaxial cable be installed in the same pathways as UTP cables?**

A: Yes. Wired for Wireless HELIAX® ½ inch 50 Ohm coaxial cables can share pathways with UTP cables. For easier management, it is suggested that the UTP be on one side of the cable tray and the coaxial cable be on the other.

**Q: When should I install directional vs omni-directional antennas?**

A: Generally, ceiling-mounted omni-directional antennas will be installed throughout the Enterprise, making up over 95% of antennas in a Wired for Wireless installation. Directional antennas may be deployed on the perimeter walls to create a boundary between the in-building system and the wide area network, benefiting both, and may also be used in stairwells pointing up and down to ensure uniform coverage in vertical spaces.

**Q: Why should I install the Wired for Wireless Solution at the same time as structured cabling if the carriers will bear the cost later? Will the carriers not install the cabling and antennas when I need them?**

A: Installing the Wired for Wireless Solution at the same time as the structured cabling system lowers system installation costs and eliminates the need for disruptions when coverage is needed. Faced with rising infrastructure costs throughout their network, carriers may be unwilling or slow to deploy active equipment for in-building wireless coverage if they also need to deploy cables and antennas. Additionally, the Wired for Wireless solution provides the Enterprise with options to support carrier-owned and/or Enterprise-owned equipment as applicable.

**Q: What are the testing requirements for the Wired for Wireless Solution?**

A: In order to verify proper cable handling and correct connector installation, all installed Wired for Wireless cabling must be tested using a spectrum analyzer with a signal source and sweep capability.

**Q: Does the Wired for Wireless Solution include coaxial splitters?**

A: No. For ease of design and installation, the Wired for Wireless Solution uses point-to-point cabling between the CellMax™ antennas and the telecommunications room. Splitters are added later when the active equipment is installed.

**Q: What are the antenna spacing guidelines in the Wired for Wireless Solution?**

A: Wired for Wireless guidelines specify that antennas are evenly spaced in a grid pattern at 100 ft (30 m) intervals. Antennas in the outer edge of the grid should be no further than 20 ft (6 m) from an outer wall, and an antenna should be placed within 20 ft (6 m) of an elevator core. This provides for an antenna point within 72 ft (22 m) of any user, which provides homogeneous RF coverage and thus service throughout the structure. Stairwells must also be covered with omnidirectional or back-to-back directional antennas every 6th floor starting with floor 3 (or in every other floor if the stairwell has no central opening).

**Q: What is the maximum coaxial cable length in a Wired for Wireless installation?**

A: The maximum coaxial cable length in a Wired for Wireless is 295 ft (90 m), matching the maximum length of Permanent Links in the structured cabling installation and ensuring uniform wireless coverage.

**Q: Does CommScope offer design and installation training for the Wired for Wireless Solution?**

A: Yes. The SP6200 Wired for Wireless course covers design and installation, as well as testing requirements, labeling requirements and warranty registration procedures.

**Q: Does CommScope offer a 20 Year Warranty for the Wired for Wireless Solution?**

A: Yes. CommScope offers a 20 Year Extended Product Warranty for registered Wired for Wireless installations designed and installed by a CommScope Authorized BusinessPartner who has obtained the Wired for Wireless Specialization.

**Q: How can I purchase the Wired for Wireless Solution?**

A. CommScope's Wired for Wireless Solution is available worldwide from CommScope's global network of Authorized BusinessPartners. To find an Authorized BusinessPartner near you, please contact your local CommScope Sales Representative or CommScope Customer Care Representative.

**Q: How can I become a certified Wired for Wireless BusinessPartner?**

A. To become certified for Wired for Wireless, the BusinessPartner must be in compliance and up to date with the requirements of the CommScope Enterprise BusinessPartner Program including members of staff that have either SYSTIMAX Design & Engineering (D&E) and/or Installation & Maintenance (I&M) certifications, or Uniprise Certified Installer (UCI) certification as required by the relevant program, and that they have then passed the SP6200 Wired for Wireless certification course. If any of these certifications expire, or the certified person leaves the BusinessPartner, the BusinessPartner will no longer be certified for Wired for Wireless until the certified personnel have been updated or replaced.



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