

Frequently Asked Questions

We're often asked about the advantages of our new KWX Wireless Transceivers on a Keri access system. KWX units can be used to link up the Master Controller (PXL-500, PXL-250, or Entraguard) with single or multiple controllers throughout a building or building complex. An advantage to Keri's KWX units is that both wired and wireless network spurs can co-exist on the same network. This document lists a number of frequently asked questions and their answers regarding KWX Wireless Transceivers.

When should I use Wireless Transceivers?

Consider going wireless by looking at the cost of pulling hardwire (at \$60.00 - \$90.00 per hour) versus using two or more Keri KWX units. Some installations will only require one installer rather than the two often needed when stringing cable.

Wireless is most effective when there is a difficult cable run to overcome. Groups of two or more controllers can be located close enough to each other so that an RS-485 network cable can be quickly and easily strung between them. If the distance between groups makes it problematical for running cable, each of these groups can then use a KWX unit to communicate with each other.

So it is easy to see, when looking at the pricing of the KWX units, that Keri Wireless is often cheaper than hardwire even in standard construction buildings. Wireless use is obvious in buildings where you know it's going to be a tough cable run, but you may find that Keri Wireless goes in so fast and easy that it's often cheaper to use on just a regular job. Add-ons and system changes are now made simple.

What kind of range can I expect in a building?

This depends on the construction of the building. Typically, a normal industrial building (one without a large number of metallic interior walls) will see a range of 300 to 500 feet between the central unit (connected to the network loop with the master controller) and a remote unit. In a more open environment, you may see up to 1,000 feet. By following the installation guidelines of where to place the central unit and the remote units, you will maximize your coverage distance. Keep in mind, the RF signal will penetrate wood, concrete, stone, etc. but not metal. The unit's test mode feature will help you determine the range per your installation's environment.

How can I be sure Keri's KWX units are going to work in the job I'm bidding?

Just use the units themselves—Keri's KWX units are their own testers.

Take two KWX units to the job site. Take one unit, temporarily mount it in a central location near where controllers will be located, attach a battery, flip the test switch at the bottom of the unit to the ON position, and the red test LED starts blinking, indicating the unit is sending out a sample PXL controller data stream. For best operation, place the unit high up, at least 7 feet above floor level.



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Take the second unit, attach a battery, ensure the test switch is in the OFF position, and watch the green signal strength LEDs. Take the second unit to each area where you may want to place PXL controllers and check the status of the signal strength LEDs. Feel free to move the unit around in the desired mounting location. If you see one or more green lights you have a solid location. Also, you can have a cable run of up to 1,000 feet from the KWX unit to the controller, so you can almost always find a location that provides a solid signal.

Keep in mind that you will find dead spots if you locate the unit near large metal objects, such as heating and air conditioning ducts, structural beams and posts, large pieces of metal backed insulation, etc. Keri's KRX units can tolerate a lot of metal in the general area, but you can't put it so close to metal that it creates an RF shadow.

Can I use Keri Wireless to minimize lightning problems?

Yes, in most cases, this will work. The biggest source of lightning damage is from a long run of RS-485 communication cable; particularly if some of that run is outdoors. Replace this long lightning prone RS-485 cable with a KWX link. This removes the path a lightning induced surge would use to couple its high voltage spikes into and blow out the controllers communications circuits.

Can you tell me in plain, everyday terms how Keri Wireless Transceivers work? What are the different parts that make up the system?

There are only two parts: the KWX unit and its attached antenna.

Each KWX unit is a **transceiver** (a combined transmitter and receiver) operating at 902-925 Mhz in the ISM frequency band. Keri also builds the same systems using 2.4 Ghz transceivers which is the only band allowed in Europe. The 2.4 Ghz frequency is also used in the USA in a wide variety of computer links such as Blue Tooth, Wi-Fi, Intel Centrino, etc. The 900 Mhz frequency set is preferred because you get far better building penetration and the signal is more tolerant of metal structures. This makes the 900 Mhz frequency better for access control applications.

A KWX unit connected to a master controller becomes the central unit, relaying all of the system commands out to the remote KWX units connected to different controller spurs. The remote units, in turn, relay responses and status back to the central KWX unit.

Keri's KWX units use frequency hopping spread spectrum (FHSS) to continuously change the unit's center frequency several times per second according to a pseudo-random set of channels. This makes illegal monitoring of FHSS signals extremely difficult. These are the kinds of techniques used in cell phones, cordless telephones, and wireless computer communications.

