



# Public Safety Communication Systems

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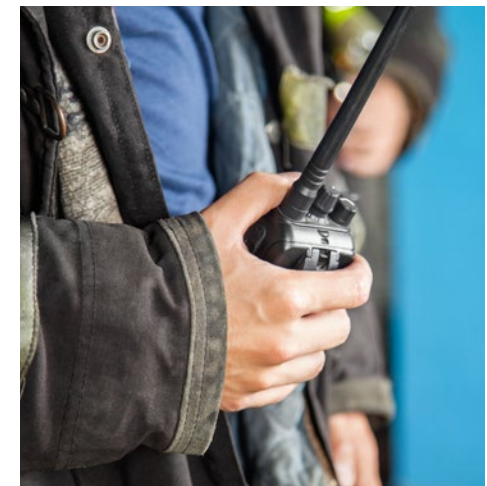
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across the nation.



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# What is a Public Safety Communication System?

A **public safety communication system**, also known as an **Emergency Responder Radio Communication System (ERRCS)**, is an antenna-based system that ensures first responders and safety officials will maintain mission-critical wireless communications during emergency situations within building structures of all sizes.



# Why are Public Safety Communication Systems Essential?



The single most important reason public safety communication systems exist and are necessary is to ensure critical communications between members of first responder teams that can mean the difference between life and death as they coordinate and execute emergency response tactics.

Following the tragedies of the September 11, 2001 attacks on New York, Washington, and Shanksville, Pa., the 9/11 Commission stated:

*"The inability to communicate was a critical element at the World Trade Center, Pentagon, and Somerset County, Pa., crash sites ... the occurrence of this problem at all three very different sites is strong evidence that compatible and adequate communications among public safety organizations at the local, state, and federal levels remains an important problem."*


And with that conclusion, a renewed emphasis was placed on establishing local ordinances, codes, and dedicated frequencies to guarantee a communications infrastructure that would support first responders' radios and other communications systems within buildings and large structures.



# Codes, Ordinances & Public Safety Communication Systems

States, cities, and counties across the country have established ordinances within their building codes that require the presence of a public safety communication system. These ordinances typically cover new building construction and in many cases, renovated buildings. They establish performance thresholds for the reliability and coverage area of the ERRCS solution, and set testing and certification requirements that must be met for buildings to meet code. Additionally, an ERRCS design will also need to meet the standards of the NFPA (National Fire Protection Association) and the IFC (International Fire Code).

Building owners and operators are responsible for adhering to all codes and ordinances related to their properties, but **Pierson Wireless' team of public safety communications experts will assist you in understanding and navigating the requirements of your municipality.**



# How Does a Public Safety Communication System Work?

Public safety communication systems are similar to a distributed antenna system (DAS) utilized to enhance cellular signals throughout a structure. A public safety communication system leverages a donor antenna to receive RF transmissions from first responder radios, and those signals are in turn collected, amplified, and rebroadcast within the structure via a connected network of antennas.

The Authority Having Jurisdiction (AHJ) mandates which private frequencies are required to operate across a public safety communication system. They also determine the acceptable signal strength thresholds, the extent of property coverage that's required, and the frequency of testing and certification for the system.

A public safety communication system design also needs to account for:

 **Equipment Enclosures**

 **Backup Power Solutions**

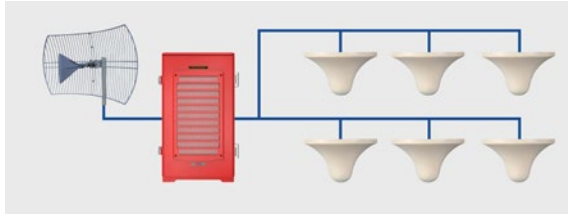
 **Antenna Isolation**

 **Fire Ratings for Cables and the Equipment Room**

 **FCC Compliant Signal Boosters**

 **System Monitoring**

# Coverages & Examples

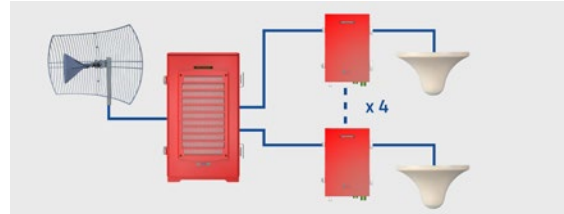


## Small Coverage Area

Coverage up to ~150,000 square feet

Examples include:

- ✓ Small-to-medium sized single-story retail
- ✓ Warehouses
- ✓ Small to medium-sized office buildings

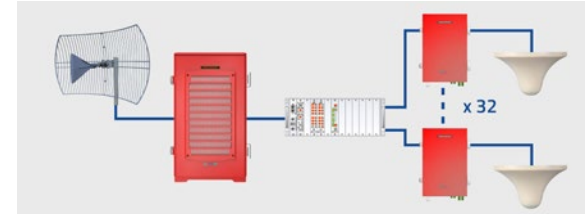


## Medium Coverage Area

Coverage up to ~500,000 square feet

Examples include:

- ✓ Multi-story commercial buildings
- ✓ Healthcare facilities
- ✓ Apartments and residential buildings



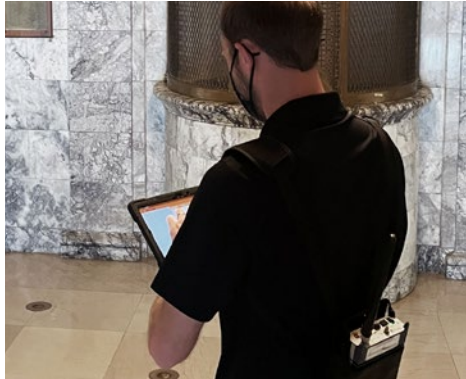
## Large Coverage Area

Coverage up to ~4 million square feet

Examples include:

- ✓ Large industrial complexes
- ✓ High-rise buildings
- ✓ Entertainment venues

# Industry-leader in Public Safety Solutions



**Pierson Wireless is an industry-leader in public safety solutions that provide reliable in-building coverage that protects and saves lives.** Our designs and solutions meet NFPA, IFC and local building code requirements. Pierson Wireless solutions are capable of supporting all frequencies and public safety radio technologies, and we offer comprehensive monitoring packages to ensure the operability of your public safety communication system solution. Contact us today to arrange a consultation by a Pierson Wireless public safety communications expert.



THANK YOU!

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