



# Wired & wireless intercoms: the future of in-flight communication

In aviation, communication is a key pillar of safety and operational efficiency. Whether coordinating in the cockpit, managing crew tasks, or handling in-flight emergencies, a reliable **intercom system** is essential. These systems **facilitate clear and instant communication** between pilots, co-pilots, cabin crew, and, in some cases, passengers. Intercom solutions are broadly classified into wired and wireless systems. Each type offers distinct advantages depending on operational needs. Understanding their functionalities can help operators choose the best solution for their aircraft.

## Wired intercom systems: the industry standard

Wired intercom systems have been the aviation standard for decades. These systems use **physical cabling** to connect various stations, ensuring **stable and interference-free** communication. Integrated into the avionics of the aircraft, they provide **high-quality audio transmission**, which is crucial in high-noise environments.

### ✓ Key benefits:

- ✓ **Stable & reliable** – Direct wired connections ensure **uninterrupted communication**.
- ✓ **Superior audio quality** – Clear voice transmission, even in noisy conditions.
- ✓ **Continuous power supply** – Wired intercoms are powered by the aircraft's electrical system, eliminating battery concerns.
- ✓ **Integration with avionics** – Enables **seamless communication with ATC** and external systems.

### ⚠ Challenges:

- **Complex installation** – Requires routing cables throughout the aircraft.
- **Limited mobility** – Crew members are restricted to areas with connection points.
- **Maintenance needs** – Cables can wear over time, requiring replacements.



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## Wireless intercom mobility

Wireless intercom systems leverage modern RF (Radio Frequency) technology such as **DECT (1.9 GHz), Bluetooth, and ISM band solutions**. These systems eliminate the need for cabling, allowing crew members greater freedom of movement while maintaining clear and secure communication.

### ✓ Key benefits:

- ✓ **Enhanced mobility** – Essential for **Search and Rescue (SAR) missions**, where team members need hands-free communication while operating outside the aircraft.
- ✓ **Quick & easy installation** – Available in **fixed or removable** configurations to extend existing wired systems.
- ✓ **Scalability** – Easily expandable to accommodate more crew members without major modifications.
- ✓ **Redundancy** – Acts as a backup to wired systems in case of failure.
- ✓ **Secure communication** – High-level **encryption** prevents unauthorized access and interference.
- ✓ **Full-duplex audio** – Ensures real-time, **two-way communication** without interruptions.
- ✓ **Low latency** – Critical for operations where split-second decisions matter.



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## Advanced features of our wireless intercom solutions

- ◆ **Optimized transmission power** – Maintains communication with minimal interference, adjusting power based on mission needs.
- ◆ **Custom communication groups** – Allows crew members to communicate in select groups. For example, in a SAR mission, the hoist operator can coordinate separately with the flight crew while the medic communicates with the patient.
- ◆ **Multi-Standard radio capabilities** – Supports both **DECT** and **long-range radio** solutions, allowing seamless switching based on distance requirements.
- ◆ **Compliance with aviation standards** – Certified under **DO-160, MIL-STD-810, MIL-STD-461** for reliability in extreme conditions.
- ◆ **Noise attenuation & filtering** – Advanced **Active Noise Reduction (ANR)** and microphone filtering for clear voice communication in high-decibel environments.



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## The future of aviation intercoms: hybrid solutions

As aviation technology evolves, the next step in intercom systems is a **hybrid approach**—combining the reliability of wired solutions with the flexibility of wireless technology. These advanced systems will enhance **safety, efficiency, and adaptability**, making them ideal for commercial aviation, military operations, and specialized missions like SAR.

### Why hybrid systems?

- **Best of both worlds** – Retains the reliability of wired systems while offering wireless flexibility.
- **Seamless integration** – Works with existing avionics and intercom networks.
- **Future-proofing** – Adapts to evolving aviation needs with modular configurations.

**Ready to upgrade your aircraft's communication system?**

✉ **Contact us today** for a **tailored intercom solution!**

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