TocTec

Wireless Intercom System

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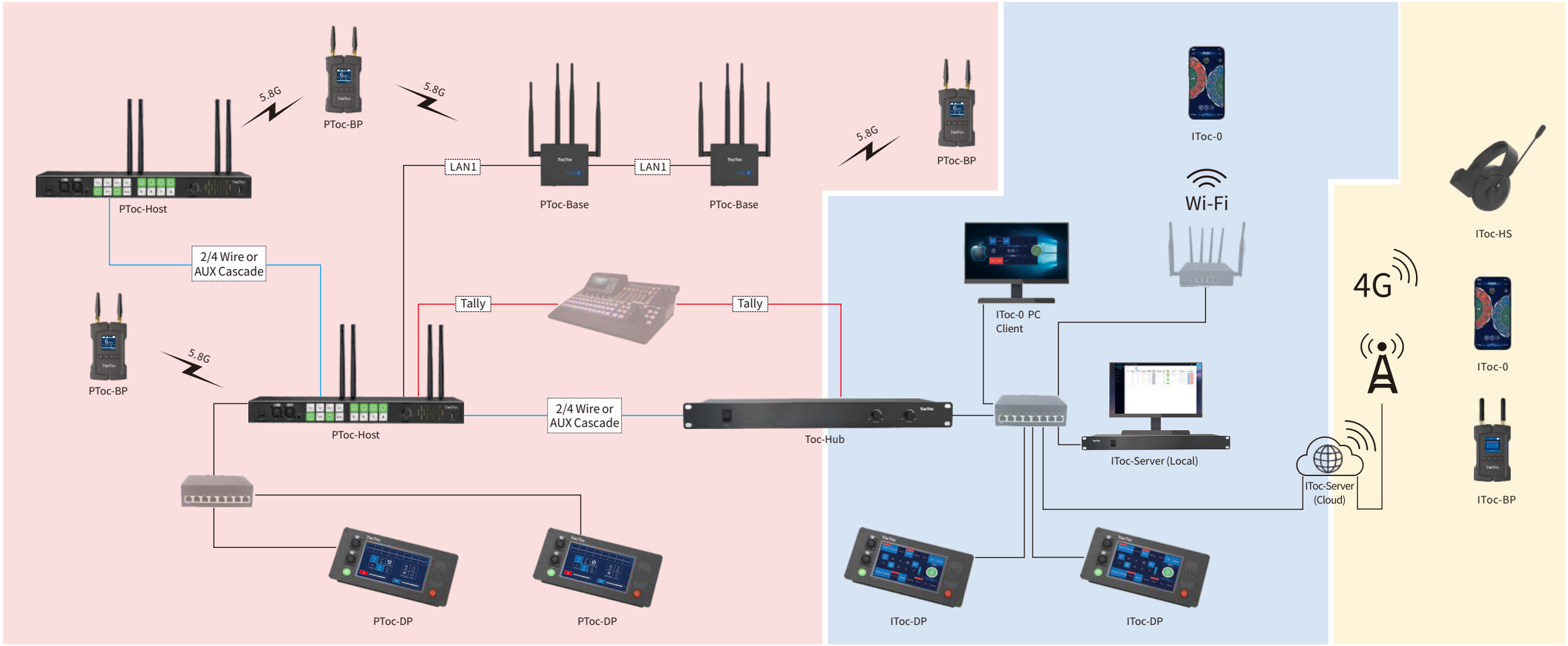
Zhengzhou TocTec Electronic Technology Co.,Ltd.

Zhengzhou TocTec Electronic Technology Co., Ltd., as a supplier of wireless intercom systems, is dedicated to providing customers with innovative multi-channel full-duplex intercom solutions. The TOCTEC wireless intercom system, incorporating multiple invention patents, is designed for complex communication environments.
It features multi-level command and group management, multi-channel full-duplex communication, cross-region or intercommunication and collaboration, high security protection, and emergency communication capabilities.
The system can achieve unified scheduling, hierarchical management, orderly communication, timely feedback, and rapid problem-solving in various complex environments, providing reliable intercom solutions for various industries.

The TOCTEC wireless intercom system is composed of the system host/server,wireless transceiver, wired and wireless terminals, signal switches, mobile APPs, and other hardware and software terminals.
The system, utilizing a combination of IP wired networks, 5.8G Wi-Fi self-hosted networks, and 4G mobile networks, is suitable for various application scenarios. Whether in large factories, command centers, theaters, emergency rescue situations, the system provides stable and efficient full-duplex wireless intercom services to meet complex communication needs.



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Intercom Architecture Diagram

- 5.8Ghz Intercom
- LAN/IP Network Intercom
- IP Network Intercom with Mobile Terminals

- Tally Cable
- 2/4-Wire Cascade or AUX Cascade
- Ethernet Cable

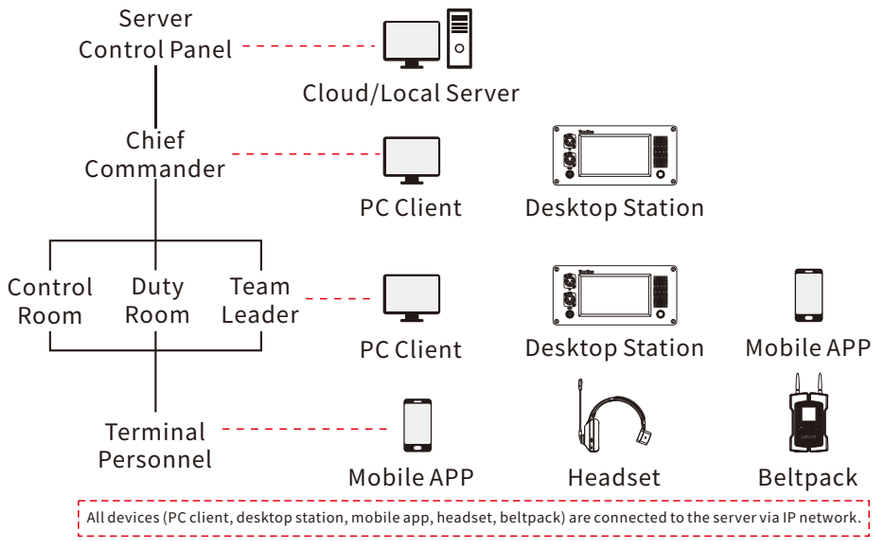
The TOCTEC wireless intercom system consists of two parts: IToc and PToc.
In areas with poor public network or signal coverage, transceivers are set up to form a private network, and the two systems can interconnect to build the entire intercom system.

IToc System

A multi-channel full-duplex intercom system based on public network transmission. It includes a server (cloud/local server optional), mobile clients (Android/iOS), PC client (MAC OS), desktop station, wireless headsets, and wireless beltpacks. It supports various communication modes such as multi-level, multi-group, multi-user full-duplex, group broadcast and point-to-point private chat.

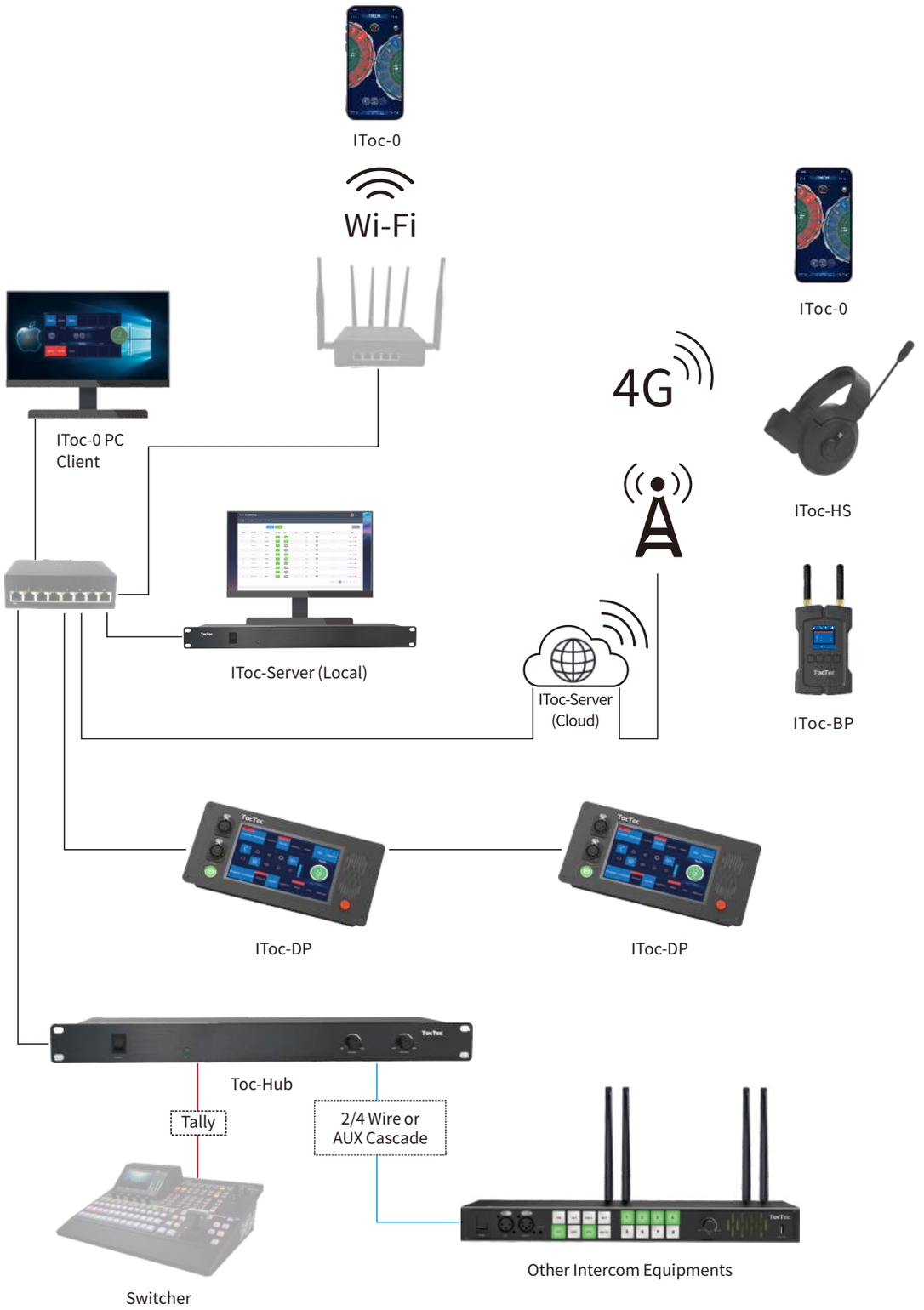
The system can be used in 4G networks, the internet, or local area networks, either separately or in combination. Users can set communication levels and permissions, edit group members, and arrange private chat lists and listening and talking permissions in the server control panel according to their communication needs. Command/control rooms and duty/monitoring rooms can be equipped with internet or local area network-connected PC client or desktop stations. Commanders and operators on the move can choose to use mobile clients, wireless headsets, or wireless beltpacks that connect to the public network as needed.

IToc System Application Diagram-1



Note: All devices in the network can be configured in server control panel in combination or individually. For example, in a small team, single type of terminal device can be selected to achieve full-duplex intercom among all team members.

IToc System Application Diagram-2



IToc Hardware

IToc-DP

- Supports full-duplex intercom for 16 groups on the same page simultaneously.
- Separate listen and talk functions, with three communication modes: listen only, talk only, and listen and talk simultaneously for any or multiple groups.
- Displays the online status of members in each group.
- Large and small broadcast functions, one-click call to selected group members or all online members.
- Lock screen to avoid mistouch. The talk button beside the screen can be used to open or close conversation after the screen is locked.
- Various installation methods including embedded, tabletop, and wall-mounted.

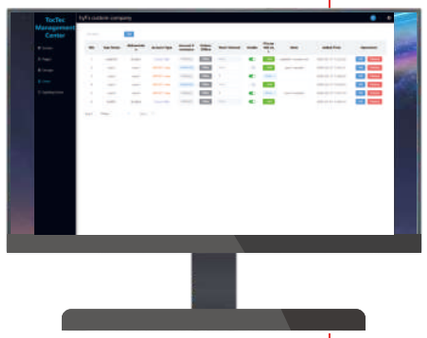
IToc-BP

Tally Light

IToc-HS

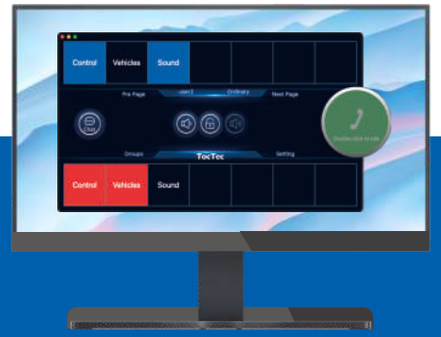
- Built-in 4G module for unlimited distance intercom.
- Color LCD screen displays device name, signal strength, battery level, group name, and various function settings.
- Joins up to 4 groups simultaneously for full-duplex intercom.
  Separate listen and talk functions, with three communication modes: listen only, talk
- only, and listen and talk simultaneously for any or multiple groups.
- Convenient set of full or half-duplex mode,
  Dual-sided talk buttons on the beltpack for both left or right-hand operation.The
- headset can be worn on either the leift or right ear.
- Built-in large-capacity lithium battery, with headset supporting 9 hours and beltpack 17 hours of full-duplex intercom, supports red & green Tally light.

IToc Software



IToc-Server

Setup and management of all terminals under the same organization.
View the status of all terminals and online status of users.
Preset or store all scenes and switch with a single click.
Manage user names, groups, personnel permissions, etc.
Available in local server and cloud server options.



IToc-0 PC Client

IToc-0 APPs

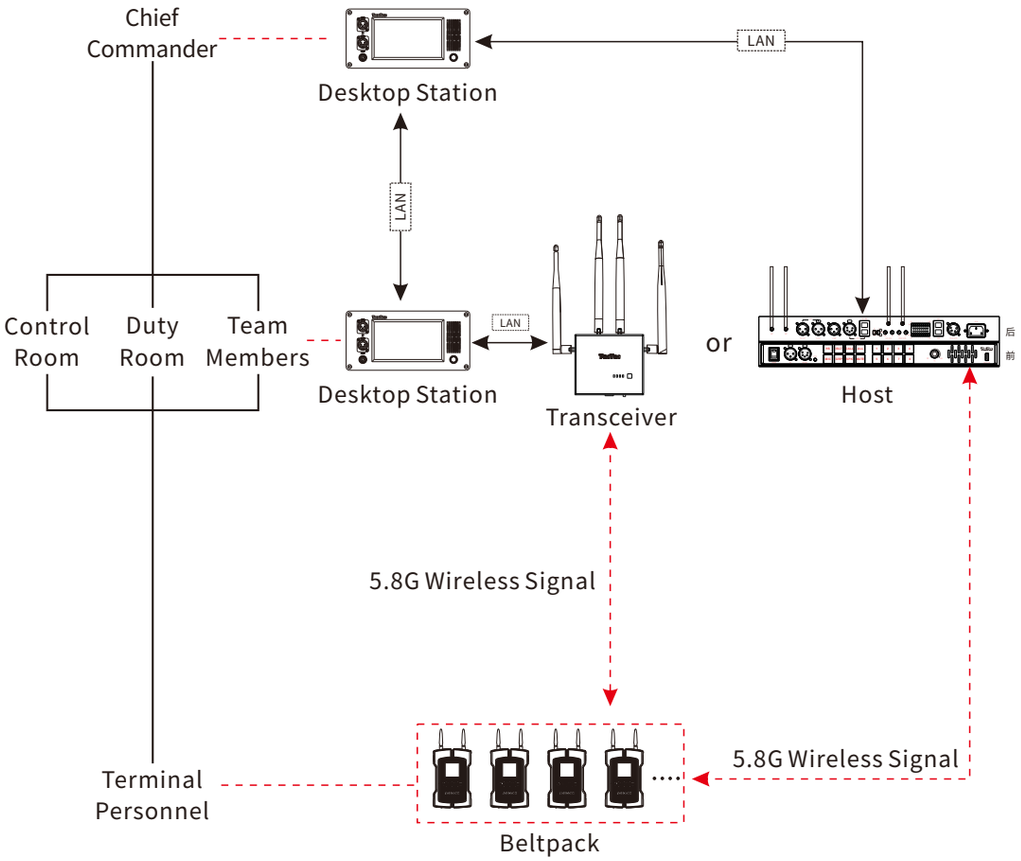
- Can be integrated into existing intercom systems to extend the coverage of local intercom system.
- Joins 7 groups simultaneously for full-duplex communication on each page, with more groups added in more pages.
- Separate listen and talk functions, with three communication modes: listen only, talk only, and listen and talk simultaneously for any or multiple groups.
- Private chat function for individual communication.
- Large and small broadcast functions, one-click call to all selected group members or all online members.
- Single click lock screen to avoid mistouch.
- Compatible with Android and iOS systems.

PToc System

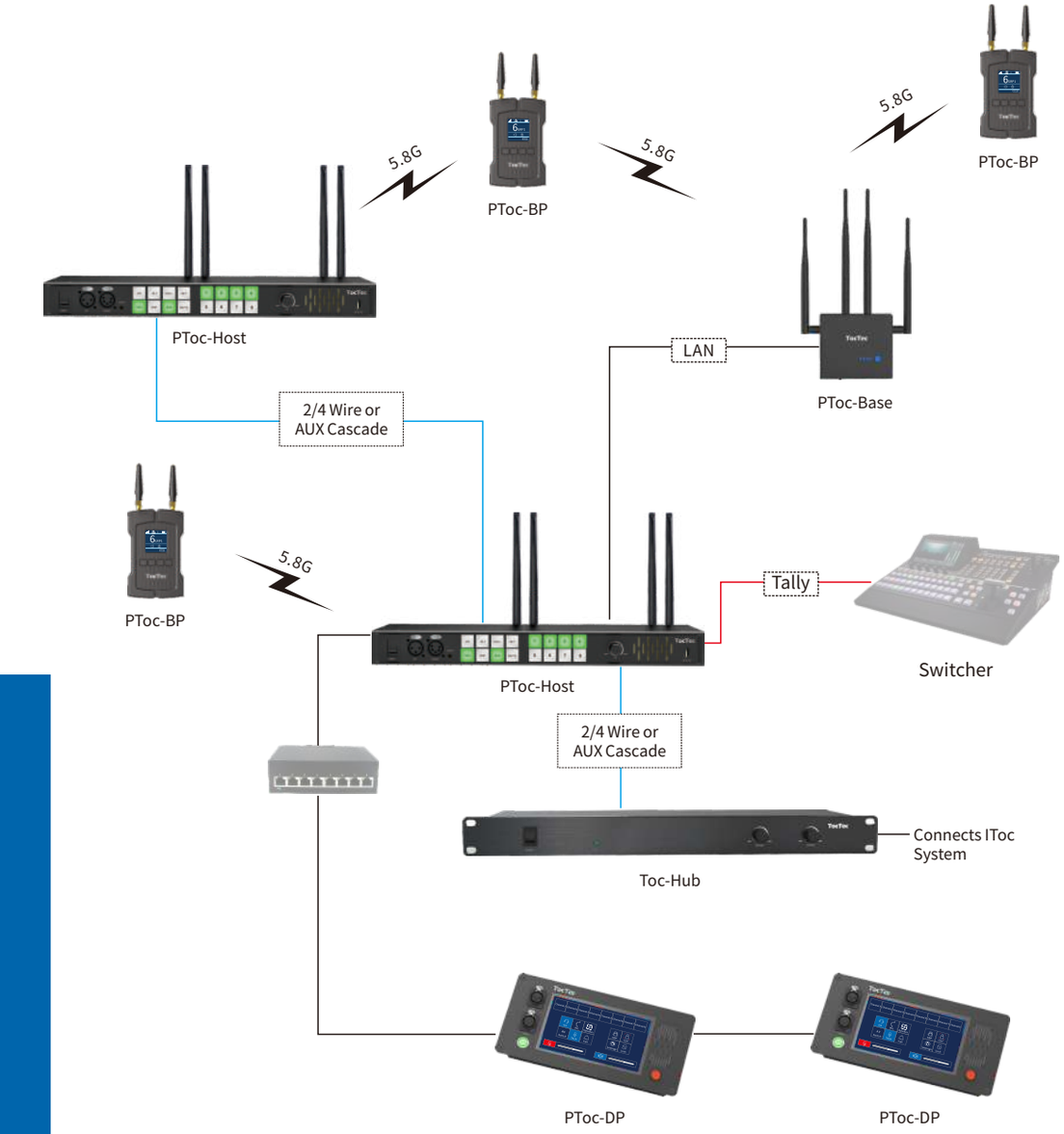
A multi-channel, full-duplex intercom system based on a self-organized Wi-fi network. It includes a host, transceivers, desktop stations, beltpacks and other hardware components. Multiple transceivers can be deployed to establish extensive communication coverage.

The system can connect to 4G public networks, the internet, or local area networks extending its coverage for various applications. Additionally, it can integrate with the TOCTEC 4G IToc system, providing extended range and increased flexibility.

PToc System Application Diagram-1



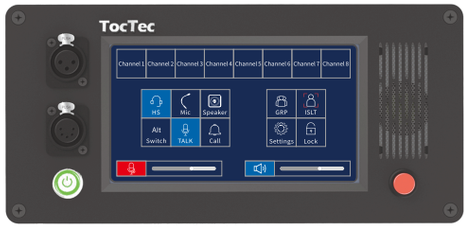
PToc System Application Diagram-2



PToc Hardware

PToc-Host

- Transmission distance up to 500 meters (unobstructed), cascaded with tranceivers, covering the entire communication area.
- Extremely low latency of 120ms.
- Supports up to 8 groups, with 16 beltpacks in full-duplex intercom simultaneously.
- Supports Tally signal transmission.
- Multiple hosts can achieve intercommunication within a LAN or over the internet.
- Cascades with the IToc system host, connecting all communication devices within IToc and PToc.
- Connects with your existing intercom hosts to achieve intercommunication for all communication terminals.



PToc-DP

- Connects to the host via network cable, enabling communication with other devices in the system and management based on permissions.
- Allows setting different modes such as Director, Team Leader, and Team Member according to the personnel’ s permission level.
- Possesses all functions of the host, cascades with base stations to control wireless beltpacks.
- Equips with gooseneck microphone port and headset port, built-in speaker, and 3.5mm audio output jack.
- Features a talk button that can replace the on-screen call button when the screen is locked to prevent accidental touches.

Toc-Hub

- Integrates IToc system communications into the PToc system or other intercom hosts via network cable/2-wire/4-wire connections.
- Supports Tally signal transmission and it can also be used independently with the IToc system to provide Tally signals.

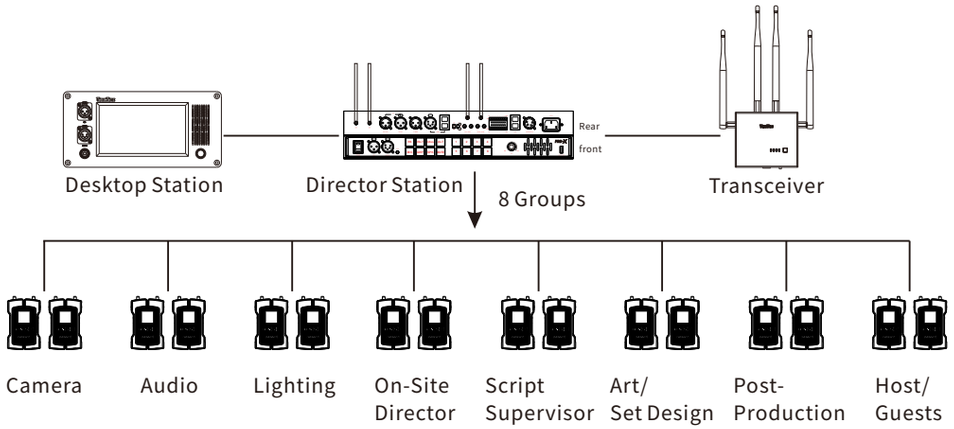
PToc-BP

- Color LCD screen shows beltpack number, group, talk status, and other information.
- Dual-side talk buttons and volume buttons for convenient operation with either hand.
- Compatible with most 3.5mm headphones.
- Supports Tally signal transmission.

PToc-Base

- Connects to the host via network cable, extending wireless signal coverage to any required area.
- Links between transceivers to cover all areas needing wireless communication.
- Can be powered by batteries or adapters.

TOCTEC Applications in Broadcasting and Television



In studio program production, the intercom system is an important tool to ensure the smooth running of the program and effective team communication. Key positions using the TOCTEC wireless intercom system include:

Director Station: The director oversees the entire program production process, requiring real-time communication with team members such as camera operators, audio engineers, and lighting technicians through the wireless intercom system.

Camera Operators: Receive instructions from the director to adjust camera angles and shots.

Audio Engineers: Coordinate with the director and other technicians through the wireless intercom system to ensure sound quality.

Lighting Technicians: Adjust lighting according to program needs in coordination with the director.

On-Site Directors: Follow the director's instructions via the wireless intercom system to guideon-site personnel.

Script Supervisors: Maintain contact with the director and other technicians through the wireless intercom system.

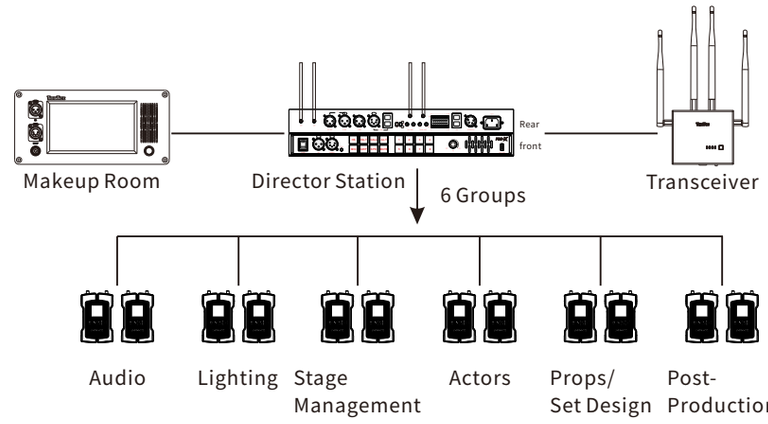
Art/Set Designers: Communicate with the director and others about set changes and procedures through the wireless intercom system.

Post-Production: In some live programs, post-production personnel need to communicate in real-time with the director’ s room via the wireless intercom system for immediate editing andeffects handling.

Hosts and Guests: In some cases, hosts and guests might connect to the wireless intercom system through headsets to receive instructions from the director or communicate with other program members.

The wireless intercom system is crucial for coordinating both in-studio and external staff, ensuring a smooth program flow and timely responses to potential issues.

TOCTEC Applications in Theaters



Theatrical performances are complex collective creative activities requiring multiple teams to communicate and cooperate in real-time through an wireless intercom system, ensuring quick and accurate information transmission among team members to keep theperformance on schedule and handle emergencies.

Director Station: The director communicates in real-time with technical teams and actors to direct the performance.

Sound Technicians: Coordinate sound effects and background music with the director and other technicians via the wireless intercom system, ensuring synchronization with the performance.

Lighting Technicians: Adjust lighting based on communication with the director and stage management through the wireless intercom system.

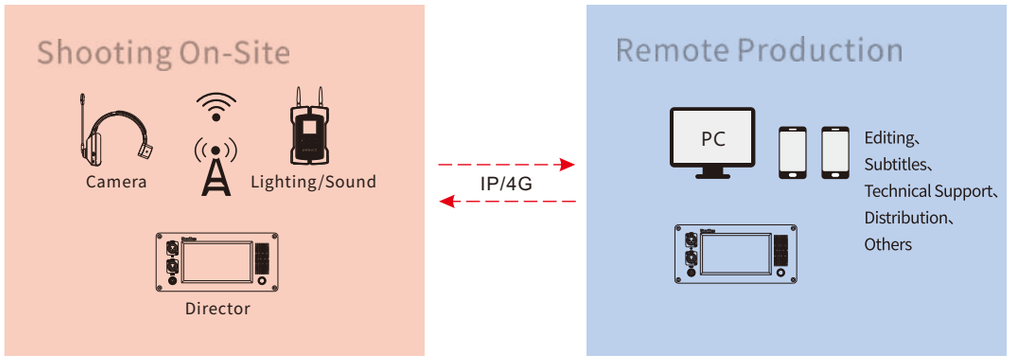
Stage Management: Coordinate actor entrances, set changes, and props through the wireless intercom system, ensuring everything is ready on stage. Maintain close contact with the director to handle any stage emergencies promptly.

Actors: May need to connect to the wireless intercom system via headsets in specific scenes to receive instructions from the director or communicate with stage management, ensuring their performance syncs with the overall show.

Props/Set Design Teams: Coordinate with stage management and the director via the wireless intercom system to ensure smooth scene changes and props arrangements in line with the performance schedule.

The wireless intercom system enables efficient and smooth communication at all stages of the theatrical performance, ensuring the show runs smoothly, actors and technical teams respond promptly to the director’ s instructions, and enhancing the audience experience. Whether in complex multi-act plays, operas, or musicals, the intercom system provides strong support for the entire team, ensuring the success of the performance.

TOCTEC Applications in Remote Shooting and Production



In remote shooting and production, TOCTEC wireless intercom system connects team members scattered across different countries and regions through IP and 4G networks, ensuringreal-time voice communication and collaboration anywhere, anytime.

The system provides a stable communication link globally via IP networks, Wi-Fi, and 4G networks. Directors, producers, camera operators, and post-production teams can utilize the system for high-quality voice calls, real-time coordination of shooting and production schedules, ensuring synchronized work across different locations.

The system supports various communication terminals to meet the needs of different scenarios:

Headset with Tally: For camera operators on-site to receive director's instructions.

Beltpack: Provides two-way communication for audio/lighting personnel, ensuring on-site effects.

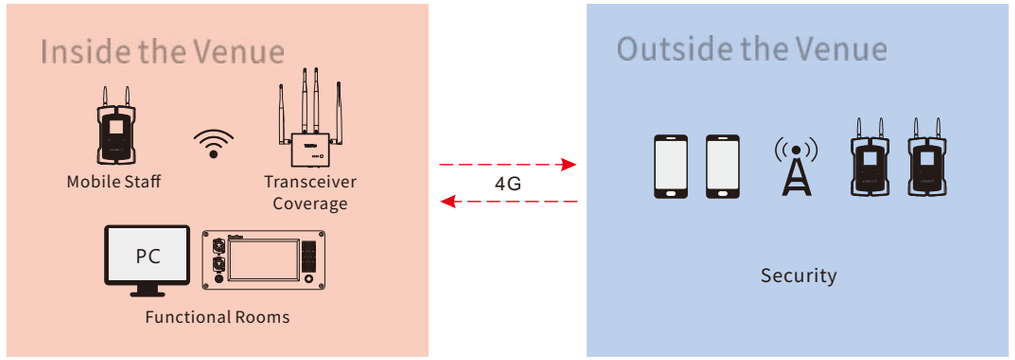
Mobile Apps and PC Client: Allows post-production teams to communicate with other team members, supporting remote work.

Desktop Station: Used by directors to command up to 16 groups, suitable for group management and coordination in large remote production projects.

The system allows setting communication priorities to ensure critical instructions are transmitted first in emergencies. The emergency broadcast function enables command personnel to issue important information to all team members with one click, quickly responding to unexpected events.

With the TOCTEC wireless intercom system, remote shooting and production teams can achieve efficient, seamless cross-regional collaboration, enhancing project execution and production quality, ensuring the project's smooth completion.

TOCTEC Applications in Sports Venues



TOCTEC wireless intercom system is designed to address the complex management needs of sports venues. In critical areas such as security, venue operations, event organization, and audience services, the system provides comprehensive communication support through its multi-level command, group management, multi-channelfull-duplex, and cross-regional communication functions.

Security Management: TOCTEC wireless intercom system enables real-time communication between the security command center and various security stations through the system host and wireless communication transceivers. It supports cross-regional communication, ensuring the command center can quickly handle abnormal events, safeguarding the safety of audience and staff. In emergencies, the system's high-security level ensures critical instructions can be transmitted seamlessly to all security posts, coordinating the execution of emergency measures.

Venue Operations: TOCTEC wireless intercom system allows the operations team to group and maintain full-duplex communication with the command center through communication stations and wireless terminal devices, reporting equipment status in real-time and responding to faults.

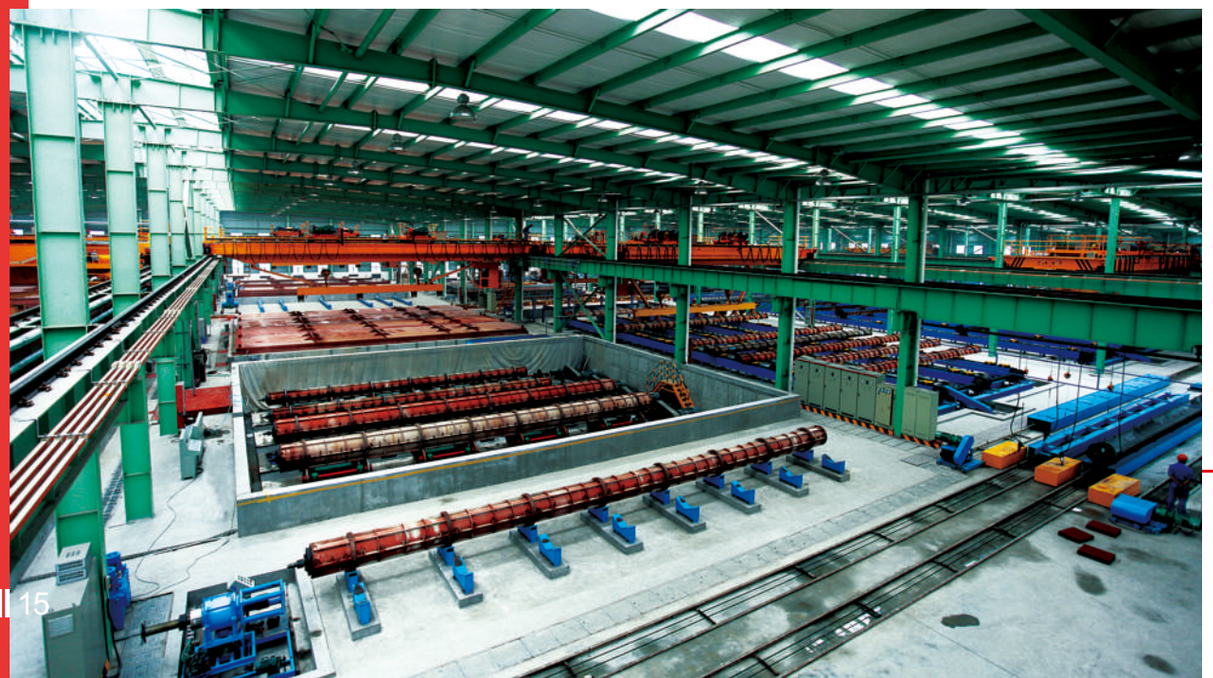
Additionally, the system supports cross-regional collaboration, enabling the operations team to communicate with remote technical support teams, ensuring complex issues are resolved promptly.

Event Organization and Audience Services: TOCTEC wireless intercom system assists the event command center in maintaining communication with referees, technical teams, security, and operations teams, ensuring smooth event progress. Audience service personnel can contact the command center via wireless terminal devices to address audience needs and emergencies promptly, enhancing the audience experience.

The TOCTEC wireless intercom system comprises system host/server, communication stations, wireless communication transceivers, wired and wireless communication terminals, signal switches, and mobile apps, providing flexible and stable communication solutions. The system ensures efficient management and security inside and outside the venue in daily operations and large-scale events, making it an indispensable toolfor modern sports venue management.

The system features multi-level command, group management, multi-channel full-duplex communication, and cross-regional intercom. It is suitable for scenarios requiring multi-department, multi-level coordination and command, high-security protection levels for emergency or unexpected situations without occupying the line, cross-regional or even cross-city collaboration. It can achieve unified personnel scheduling, hierarchical management, orderly communication, timely feedback, and rapid resolution in various complex communication environments.

This system meets the following application needs:



Intelligent Workshop

High-altitude Operations

Noisy Environment Operations

Application 1

Workers at the site are working with both hands and need to communicate with others in real-time, such as in intelligent workshops, power operations, or high-altitude construction.
Traditional walkie-talkies operate in half-duplex mode, requiring workers to press the talk button to speak and release it when finished, ensuring others on the same channel can speak when needed. This means workers have to free their hand to press the talk button.
The TOCTEC wireless intercom system supports multiple full-duplex devices on a single channel, allowing workers to keep the communication device on and communicate with team members throughout the operation, fully freeing their hands.

Applicable Scenarios:

- Workers in high-altitude, high-risk environments, where using both hands is safer.
- Workers needing to operate equipment with both hands simultaneously.
- Workers in high-risk, high-frequency, high-security environments where distraction is not safe.
- Workers wearing special protective gear, making it difficult to operate communication devices on-site.

Application 2

High-risk work sites require high levels of risk prevention, where timely reporting of information and immediate feedback on handling opinions are crucial to avoid major safety incidents, such as chemical plants, nuclear power plants, or oil drilling platforms.

When danger occurs, frontline personnel at different locations must report risks and communicate information promptly. Traditional walkie-talkies cannot support unlimited full-duplex intercom, which may result in communication channels being occupied during critical moments, preventing immediate reporting. Accident handling often requires urgent response, missing or delaying information can lead to irreparable consequences.

The TOCTEC wireless intercom system enables an operator to manage multiple channels with full-duplex communication. In emergencies, operators can promptly inform their workgroup about risk situations, discuss countermeasures, and collaborate on operations. People can simultaneously report to and receive feedback from higher-ups without delays due to line occupation or channel switching. The system's communication level permissions ensure that crucial calls and commands can temporarily override other communications, maintaining clarity in chaotic situations.

Applicable Scenarios:

- Operators working in high-risk areas with strict accident prevention protocols need to report and communicate site conditions immediately in emergencies.
- Command personnel must direct all on-site personnel promptly during an incident.
- Even if command personnel are off-site or in different cities, they can join the communication system instantly to understand and direct on-site activities.

Application 3

In scenarios where field personnel operate over large or non-fixed areas requiring high mobility, they need to coordinate among themselves while also needing command dispatch and task coordination for various emergency drills and on-site activities. For example, emergency action control centers, firefighting and rescue operations, and major events.

Traditional intercom devices may limit communication range due to distance requirements or signal penetration issues. When operators move out of the communication range or enter dead zones, they become disconnected. While existing 4G walkie-talkies can meet unlimited distance requirements, they cannot achieve multi-channel full-duplex communication on the same channel, causing delays in delivering critical and urgent information, which can have severe consequences in emergency operations.

The TOCTEC wireless intercom system utilizes public network technology to ensure operators can communicate without distance constraints within the signal coverage area. Whether on-site or temporarily dispatched to distant areas, command personnel and all team members can communicate instantly. The system's multi-level device setup allows seamless internal team communication, hierarchical command, highest priority command issuance, and unlimited full-duplex communication, ensuring urgent but orderly emergency drills or operations and maintaining an organized, timely, and efficient command and communication system.

Applicable Scenarios:

- Emergency drills, incident management, and disaster relief under public network signal coverage.
- On-site organization and security work for significant events under public network signal coverage.

Application 4

In environments with a large area and personnel distributed across different zones, there is a need for unified dispatch command, inter-departmental collaboration, and smooth communication channels for all levels of personnel in emergencies. For example, freight port dispatch, mining freight dispatch, airport/train station/subway security emergency dispatch, and large ship internal communication.

In such environments, traditional intercom management cannot simultaneously meet the complex communication needs within departments, between departments, between departments and superiors, and confidential communication between managers and key personnel. For example, in large port terminals, managers need to communicate with tugboats, truck dispatch, and cranes simultaneously; in large mining stations, the dispatch of vehicles for entry, loading, and exit; and in airports or large public places, emergency communication and coordination by security departments during incidents.

The TOCTEC wireless intercom system allows users to set up different communication permissions based on specific needs in the background, adding various departments and personnel to the communication network, and editing working relationships between personnel. This enables self-customization of multiple communication modes in complex scenarios, ensuring smooth multi-channel full-duplex communication for these custom requirements.

Applicable Scenarios:

- Large operational areas with numerous external and internal personnel needing unified and complex command and dispatch, ensuring unified command and evacuation in emergencies.
- Large operational units with complex department and personnel organizations needing inter-communication areas, enabling specific personnel dispatch for support in emergencies instead of the traditional intercom broadcast mode, which can overlook crucial information.

Application 5

For operations spanning large areas without regional limitations, where different operational units need to collaborate, or control/dispatch rooms need to track remote operators, such as long-distance logistics transportation dispatch and tracking. While 4G intercoms can achieve unlimited distance communication, they cannot ensure that all devices remain in communication state simultaneously and continuously, which is crucial for long-distance operators who need to keep their hands free and focus on their tasks while communicating with the dispatch/control room. For instance, it is dangerous for long-distance drivers to repeatedly press a talk button while driving.

The TOCTEC wireless intercom system allows dispatch personnel to set communication needs for all logistics drivers and their groups in the control/dispatch room. Dispatch personnel can communicate with all drivers or specific vehicles in real-time. The multi-channel full-duplex function ensures that the microphone can switch to an open state and remain open without line occupation when drivers encounter emergencies, enabling instant communication with the dispatch room.

Applicable Scenarios:

- Cross-regional remote operations dispatch and communication.
- Simultaneous coordination of different operators completing the same task across regions.

More Applications

Airport security and dispatch

Train station and subway security and communication

Freight terminal dispatch

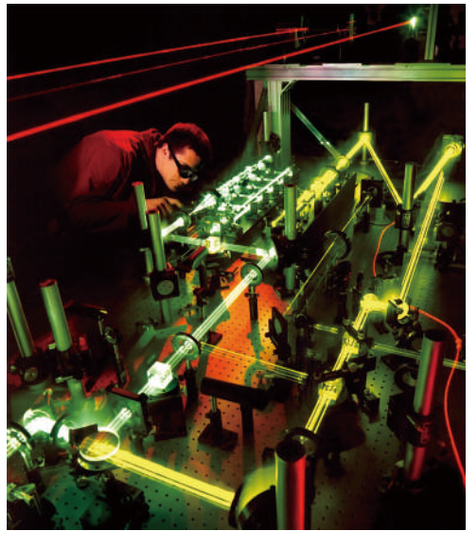
Large mining and cargo dispatch

Large ship integrated communication command

Customs clearance and inspection communication

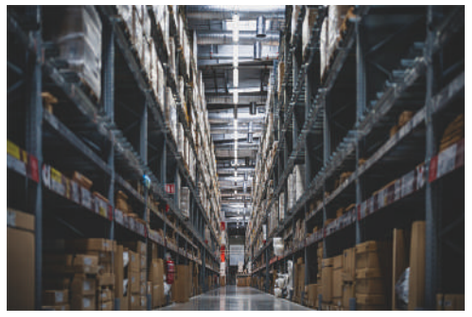
Surveying and exploration communication

Noisy or long-distance construction communication



Laboratory team member communication

Hyperbaric chamber/isolation protection medical communication



Large warehouse distribution dispatch

Emergency command