

MODERN COMMUNICATION TECHNOLOGY

**Airport EVAC System  
Product Introduction**

Guangdong Baofu Electronics Co., Ltd.

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# Part 1 Overview

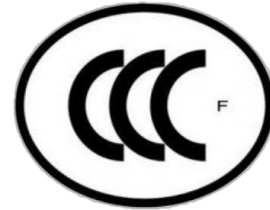




The airport EVAC system greatly integrates broadcasting of airport business, BGM, and fire alarm. At ordinary times, it is used for airport business, including services such as paging, announcements, BGM, etc. And it can be switched to fire broadcast when needed. The functions of the airport EVAC system are mainly as following:

1. Publish the daily business information of the airport, including flight information, boarding broadcast, boarding urging broadcast, final boarding broadcast, etc.
2. Provide service broadcast for passengers, including epidemic prevention and control broadcast, public welfare broadcast, paging broadcast and BGM broadcast, etc.
3. Emergency announcement, including firefighting, air defense, and public emergency, etc.

- ※ "Code for Engineering Design of Public Broadcasting System in Civil Transport Airport Terminal Building" MH/T 5020-2016
- ※ "Civil Transport Airport Public Address System Test Specification" MH/T 5038-2019
- ※ "Specifications for Broadcasting Terms in Civil Airport Terminals" MH/T 1001-95
- ※ "Public Broadcasting System Engineering Technical Specifications" GB 50526-2010
- ※ "Code for Fire Protection Design of Buildings" GB 50016-2018
- ※ "Fire linkage control system" GB 16806-2006
- ※ "Code for Design of Automatic Fire Alarm System" GB 50116-2013
- ※ "Code for Design of Fire Communication Command System" GB 50313-2013
- ※ "Fire detection and fire alarm systems" EN 54-16-2008
- ※ "Environmental Management System Requirements and Guidelines for Use" - ISO 14001: 2015
- ※ "Quality Management System Requirements"-ISO 9001:2015
- ※ "Guangzhou Baolun Electronics Company Enterprise Standard" ITC-BZ-2020-V0.7



## Business broadcast

## Service broadcast

## Emergency broadcast

### Platform function

Business broadcast

Priority management

Zoning management

Routine broadcast

Zoning override

TTS broadcast

Clock synchronization

Semi-automatic broadcast

Background broadcast

Automatic broadcast

Timed broadcast

Repeated broadcast

Programming management

Broadcast prompt tone

Automatic volume adjustment

Noise detection and processing

Fire broadcast

Manual broadcast

Self check

Log management

System monitoring

System management

Real-time recording

Help intercom

### Hardware function

Amplifier detection

Redundant power supply

System failure alarm

AB loop

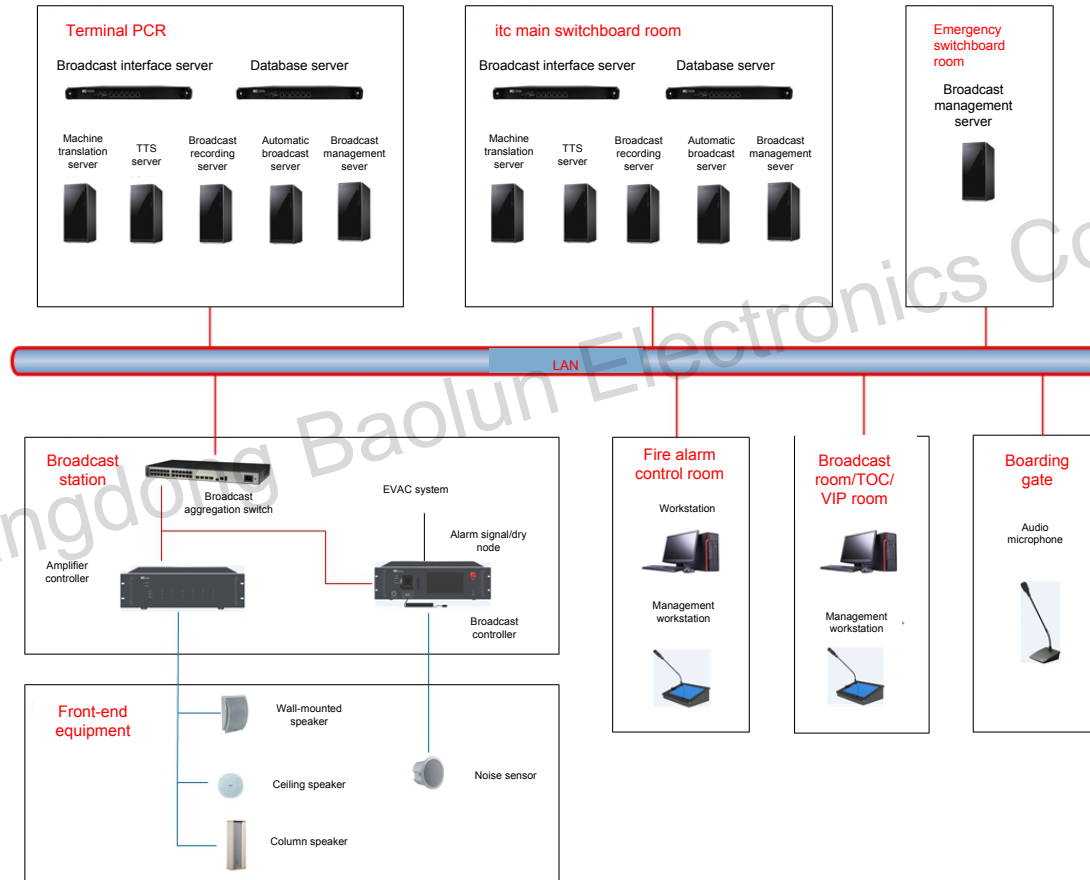
Loop detection

Amplifier automatic backup

Emergency audio backup

2+1 backup

# System structure



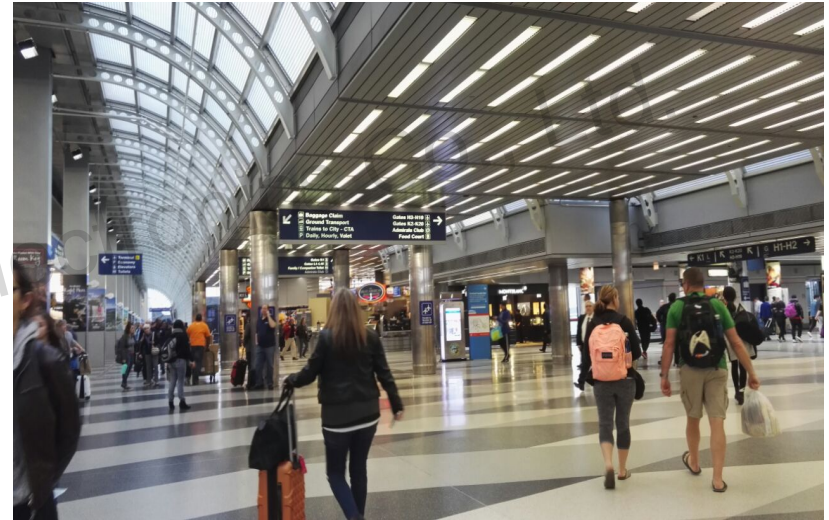
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# Part 2 System Introduction



- Compactness: Various functional input and output interfaces can be installed in the same frame
- Openness: It has its own network audio transmission protocol, which can be connected with mainstream network audio transmission protocols such as CobraNet and Dante through hardware expansion.
- Flexibility: plug-in card design, various functional boards can be selected as required
- Scalability: Function and partition expansion can be realized by adding function boards to meet the needs of later system upgrades
- Lightweight: low-loss class D power amplifier module, reducing the weight of power supply and equipment
- Energy saving: the power amplifier supports idle standby function, and enters the sleep state to reduce energy consumption when there is no input
- Decentralized: devices can be configured in a decentralized manner and have unified management functions
- Reliability: Support server backup, power amplifier hot backup, power backup and other hot backup modes
- Advanced Ambient Noise Detection (ANC)





## Pain Points of Airport EVAC Solution

01 Most airport EVAC systems in China use foreign products and are even monopolized;

02 Recently, some airport solutions have poor application flexibility and versatility, and cannot better meet the needs of airport EVAC systems;

03 Foreign systems lack original technical support and customized software, which are mainly provided by third-party integrators;

04 Most manufacturers use third-party digital audio transmission technology and lack independent intellectual property;

05 The system currently on the market is relatively expensive and has low cost performance;

## Advantages of its Airport EVAC Solution

A leading manufacturer in audiovisual and lighting industry;

Plug-in card design supports optional board cards and board card mixing; the amplifier supports cross-device backup; the system supports various interfaces and protocols, making the connection convenient;

itc provides function customization, pre-sales and after-sales technical support, bringing fast response speed and short project period;

Independent and controllable digital audio patent technology;

itc airport EVAC system is provided by the original manufacturer and is greatly cost-effective;

## Pain Points of Airport EVAC Solution

01 Currently, amplifier hot backup of most EVAC system requires an external amplifier guide or a backup amplifier;

02 The EVAC systems of most manufacturers do not support redundant power supply, or require an additional power management device;

## Advantages of its Airport EVAC Solution

01 The software defines the backup amplifiers and the number of main amplifiers. It supports amplifier switching of up to 8 main amplifiers and 1 backup, and supports across-device amplifier backup;

02 Support the built-in redundant power supply and dual 220V or 220V+24V power supply modes, and no additional power management device is required.

03 Support multilingual translation with fast response speed and excellent accuracy.

## Business PA System

The PA system mainly consists of conventional broadcast and background broadcast, which are controlled by the broadcasting management computer. It is used to broadcast flight information, business information, special announcements in the terminal building.

## Emergency EVAC system

Emergency EVAC takes precedence over any other audio sources; the priority order is fire broadcast, air defense broadcast, and emergency broadcast. Emergency EVAC can be used for regional broadcast on a required floor, and for whole area in the entire building.



# Integrated system

## Recording system

Support seamless connection with the recording system: support automatic recording and storage inside the PA system, including recording the content of the entire business broadcast.

## TTS broadcast

The system can realize text-to-speech through the operation interface. The synthesized speech can be pre-listened, and can be broadcast within the broadcasting area.

## 2+1 backup

The system server has a 2+1 backup function. When the main controller fails, the spare and emergency controller can take over the work to ensure the normal operation of the system.

## Redundant power supply

The built-in dual power supply supports dual 220V or 220V+24V power supply modes. When one of the power modules fails, it will not affect the normal operation of the device.



## Amplifier hot standby

The system has the amplifier automatic backup function. It supports freely setting the switching mode of the main and standby amplifiers, and supports up to 8 mains and 1 standby.

## Emergency audio backup

The amplifier has an analog audio input interface. When the system network is paralyzed, the analog audio input interface can be used for emergency broadcast.



# Part 3 Product Introduction

## Features

- With a 7-inch touch screen to view device status and zone status;
- With different LED indicators to identify the status of the device;
- With emergency microphone, support one-key microphone broadcast and server offline broadcast function;
- Built-in mute button, support manual failure mute;
- Built-in buzzer, support failure sound and light prompt;
- Built-in monitoring speaker supports zone monitoring function;
- Support dual power supply design. When the main power supply fails, it will automatically switch to the backup power supply.
- Support mixed plugging of boards.





### Controller cabinet (VA-6500 CC31)

Support insertion of up to 14 boards, support display of device status and zone status, monitoring and microphone broadcasts.



### Audio board (VA-6500C CA31)



The audio board is used for external audio collection, connected to the AV audio signal output by DVD, satellite receiver and other equipment, and then played to each zone.

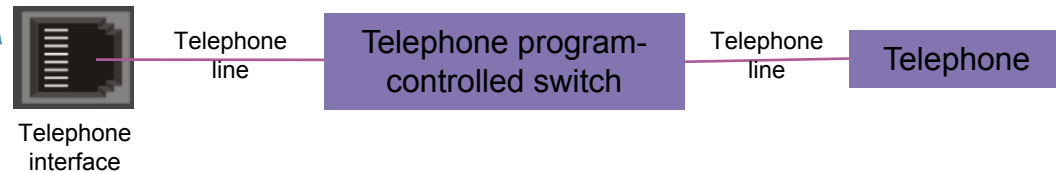
Configure when you need to receive external audio source, the number of boards is variable

## Telephone board (VA-6500C CT31)



The telephone interface board is used to process the telephone dialing operation, and can realize the function of live broadcasting or recording of the telephone. After the phone broadcast is completed, if there is no sound for a long time, it is judged to be on-hook, and the phone broadcast will be forcibly hung up after 10 seconds.

Configure when the telephone broadcast function is required, the number of boards is variable



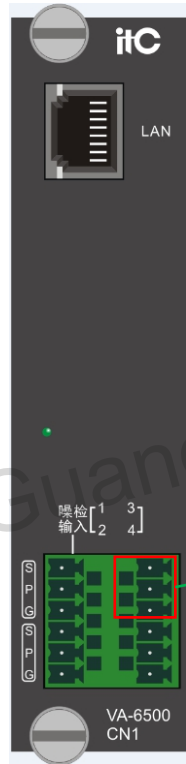
## FAS short circuit board (VA-6500CF31)



The short-circuit board is linked with the fire panel, receives the alarm signal from the fire panel, and triggers the alarm broadcast. The open-circuit alarm or short-circuit alarm can be configured through software.

Configure when alarm linkage function is required, each board has 4 linkage interfaces, and the number of boards is variable

## Noise detection board (VA-6500CN31)



Main function:

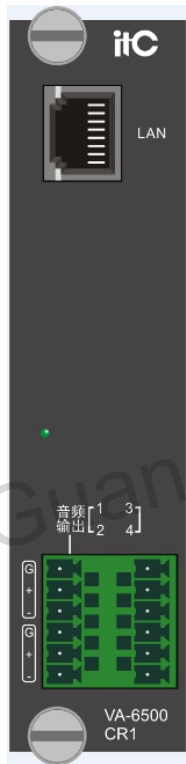
1. Connect to noise detection probes, each noise detection channel can connect up to 16 noise detection probes. Collect environmental noise data and upload it to the system to automatically adjust the output volume of the area.
2. Report the working status of the device: online status, fault status, etc.

Optional on demand, configure when noise detection/volume automatic adjustment function is required.



The white wire of the communication input terminal of the noise detection probe is connected to the S port of the noise detection board, the red wire is connected to the P port, and the black wire is connected to the G port. After connection, the red LED of the probe is the power indicator light, and the green LED is the signal light. When it flashes, it means normal communication. When it doesn't flash, it means there is no communication.

### Recording board (VA-6500CR31)



Main function:

1. Audio output interface - docking with a third-party recording system, and sending the broadcast audio in the PA system to the recording system for storage.
2. LAN interface—connect to an external switch, transmit control commands and audio, report the working status of the board, etc.

Configure on demand, with independent third-party recording system, docking through an analog interface; if you need to record by yourself, you do not need a recording board, but require recording controllers VA-6502HR1 and VA-6503SR1

### Radio board (VA-6500FM31)

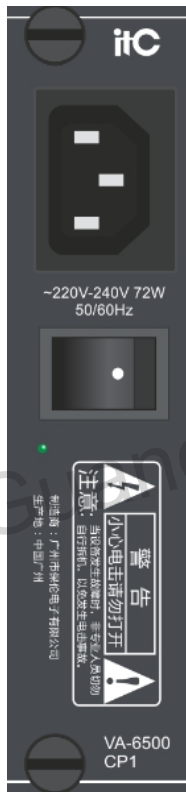


The FM/AM radio board is used to receive FM and AM radio signals to realize radio broadcasting.

Configure on demand, configure when the radio function is required, the number is variable.

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## Power board (VA-6500CP31)



Main function:

1. Provide power for the cabinet and boards
2. Support the working state indication of the board
3. Support maintenance and repair with uninterrupted power, the start-stop function on the module is required

If dual power supplies are required, configure two boards.



## Features

- Support different power selection of digital power amplifier board
- Support main and standby power amplifier switching mode with a maximum of 8 main and 1 standby
- Support local emergency audio input
- Support speaker three-phase four-wire wiring
- Support speaker circuit open circuit, short circuit, grounding detection, short circuit automatic isolation
- Support detection of speaker open circuit, short circuit, and ground, and support automatic isolation of short-circuit loops
- Support the delayed power-on of the power amplifier board to prevent the impact on the power grid when starting up
- Support idle sleep function of power amplifier board
- Support start key of amplifier board, support hot swap
- Support dual power supply design; when the main power supply fails, it will automatically switch to the backup power supply;

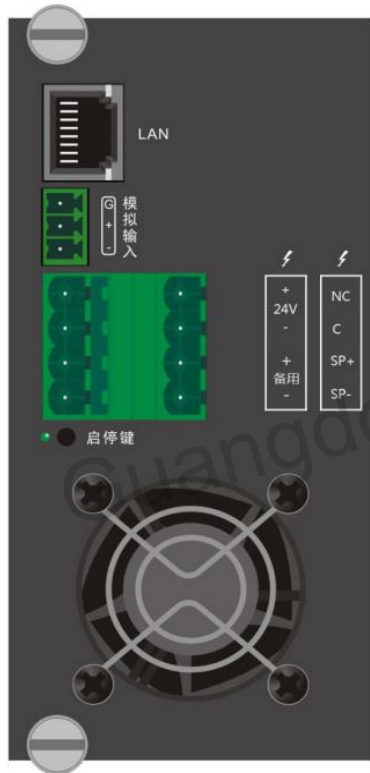


### Power amplifier cabinet (VA-6501PC31)

Support insertion of up to 7 boards, and support indication of online status, failure status and standby status of each board.



## Power amplifier board (VA-6501PA31/32/33/35)



Main functions:

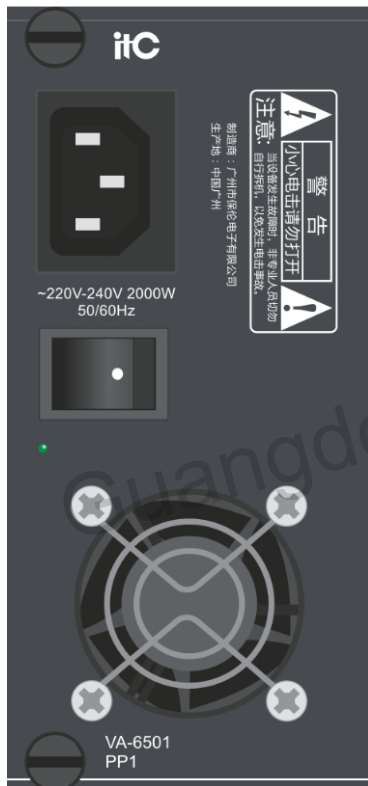
1. High-efficiency Class D amplifier
2. Built-in digital decoder to decode network audio directly
3. Support disconnected local emergency audio input broadcast
4. Support loop status detection of output zone
5. Support speaker three-phase four-wire wiring
6. Support automatic switching of amplifier board failure; support main and standby switching mode with a maximum of 8 main and 1 standby;
7. Support maintenance and repair with uninterrupted power, the start-stop function on the module is required

Number of boards supported: 6 (up to 6 boards can be inserted when the cabinet adopts single power supply)

Note:

1. When the emergency audio signal is connected, regardless of whether there is a network signal or not, the analog signal will be output first.
2. The standby input interface is connected to the output interface of the standby amplifier board

## Power board (VA-6501PP31)



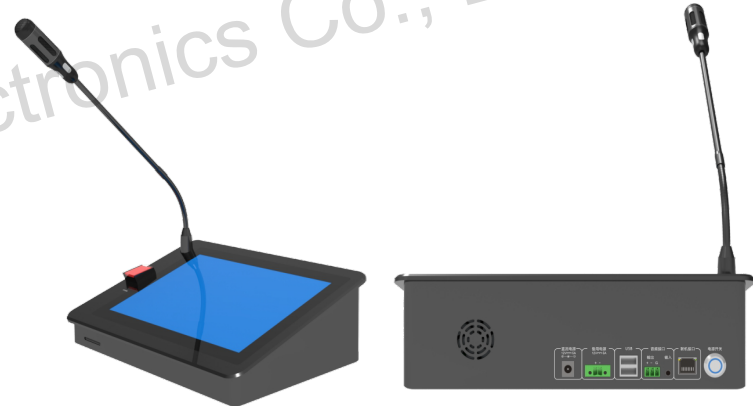
Main functions:

1. Provide power for the cabinet amplifier boards
2. Support working status indication of the boards

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Applied to the airport EVAC system, the full-featured broadcast console supports broadcast, monitoring, recording and other functions, and supports one-key emergency broadcast within all zones.

- Support to control the system through touch operation
- Come with an emergency button for manual entry into emergency mode with the highest priority. After pressing, emergency broadcast will be performed in the whole area
- Support zone monitoring and internal two-way intercom
- Support timed task configuration, support task list viewing and management.
- Support voice broadcast queuing
- Support voice broadcasting and TTS broadcasting tasks; support saving TTS converted media files.
- Support recording tasks, which can be saved in local media library or initiate broadcast tasks.
- Support local media library management, support operations such as file upload or deletion.



Applied to the airport EVAC system, the microphone with monitoring and intercom function, is managed and dispatched by comprehensive monitoring software.

- Adopt self-developed data transmission technology, support extremely low end-to-end transmission delay
- Support zone monitoring and internal two-way intercom
- Support paging broadcast, support scheduling through system management software, and support broadcast paging to designated zones.
- Support echo cancellation function to suppress network echo.



▲ **Thanks** ▲

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