**OBT IP network broadcasting applied to campus public address system**

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I. Overview of OBT (Obo) IP Network Broadcasting

OBTIP all-digital network audio system can transmit distances to every information point in the world. As long as the network arrives, the number of IP terminal hosts can be increased arbitrarily. The number of the terminals can be unlimited. Locally, the signal can be transmitted through the LAN, and the remote signal can be Passing through the Internet, that is, adding a terminal or host to the system, just connect the information point to the device that needs to be added.

Compared to other digital audio systems, the system is a peer-to-peer system. Each terminal host can send audio data and management commands to any other terminal host or host (server) in the system, and any host or terminal can be started. Stopping will not affect the normal operation of other terminals or hosts in the system.

The system is also a PNP (Plug and Play) compliant device that can quickly work with other devices in the system if a new terminal or host device is connected to the system. At any terminal with a display device, you can see the operating status of other terminals and can easily turn it off, which greatly reduces the maintenance cost of the user.

The overall goal of campus information construction is to build a campus information system with good information sharing, resource integration, centralized management and good service based on the principle of first-class planning, first-class design, first-class construction and first-class quality. OBTPAIP network broadcasting makes full use of a variety of information technologies to establish a multi-level, innovative and open model school, guided by new teaching concepts and management theories, surpassing the traditional secondary education model and improving the quality and efficiency of comprehensive education.

Second, the challenges of analog broadcasting, intelligent broadcasting, and addressable broadcasting

With the advancement of modernization of schools today, modern schools are rapidly developing in the direction of large-scale integration and networking, and the demand for broadcasting is increasing and increasing. However, the management of large-scale modern school broadcasting control systems is becoming more and more Complex, so the requirements of the system's function, convenience, and reliability are getting higher and higher, while the traditional analog broadcast, intelligent broadcast, and addressable broadcast can't meet the requirements of users: they can't make long-distance paging. It can not communicate with transmission, multi-directional communication, program can not interact, and the problem can not be reflected when it is urgent. Therefore, in order to adapt to various requirements of public broadcasting in large places such as schools, stations, highways, airports, etc., OBTPAIP network broadcasting came into being. It is like a LAN, easy to install, it contains all the functions of traditional broadcasting and compared Traditional broadcasting is more secure and stable.

No matter how complicated the traditional broadcasting system can be classified into the above, the difference is basically concentrated on the cross-capacity of the partition matrix and the intelligence of the timing player. The entire system relies on analog audio current drive, which is poor in scalability and controllability.

The IP network broadcasting system not only uses analog technology on both sides of the voice and audio source speakers, but the transmission platform of the entire system is based on the IP local area network. The system main control server and the voice decoding terminal all have independent IP addresses, and communicate using the standard TCP/IP protocol, and no partitioning is required. The voice coding device, the system master server, and the voice file library shown in the figure can be implemented by a high-performance PC server in a specific implementation.

In the IP network broadcasting system, all audio data can be converted into digital voice files and stored on a storage medium such as a hard disk, which provides a possibility for resource sharing. Because of the central brain of the system master server, all users on the IP network can freely use and develop under the license of the master server to maximize the utilization of the system. In the IP network broadcasting system, computer technology and network technology can be used without hindrance, and the application of the broadcasting system is bound to reach a higher level.

Third, OBT (Ou Bo company) IP network broadcasting system structure Ou Bo company IP network broadcasting system is a set of interactive radio system based on IP data network can be controlled by Chinese LCD screen.

(1). IP network broadcast central server: mandatory components. The main control component of the OBTIP network broadcasting system provides management functions such as system management, user management, terminal management, program management, and task management. It is the core of the entire system and consists of industrial-grade computers and control software.

(2). Relay server: components can be selected. A relay server is required when a network broadcast system needs to span multiple physical or logical network subnets. Its role is to act as a relay station between the system server and the broadcast terminal to improve network utilization.

(3). Sub-control point: optional component (recommended). The sub-control point is a major inevitable feature of the network broadcasting system. The sub-control point can be any desktop computer or laptop computer, as long as the Opel IP network broadcasting system client software is run. The sub-control point user must first control the broadcast system through the IP LAN or Internet network anytime and anywhere through the login and authority verification of the system server. The management of the broadcast system by the point of control is strictly limited by the authorization of the system administrator. All three types of devices can act as data collectors. As shown in the figure, the analog sound source is input to the sound card of the system server, and the system server automatically encodes the analog voice into a voice data file (a digital file format such as MP3) and stores it in a file library designated by the user. The same data collection can be done by the relay server and various sub-control points.

(4). Network broadcast terminal controller: an essential component. The playing task on the system server sends the voice data file to the broadcast terminal in the form of IP data message, decodes and restores it to the audio stream on the broadcast terminal, and then drives the power amplifier or the speaker to provide high-fidelity sound quality. With Chinese LCD screen, interactive on-demand, call, recording, independent control, combined control, and system two-way intercom can be realized directly on each broadcast terminal according to the authority. The broadcast system terminal can configure power and provide rich according to user needs. Interface type and control functions.

(5). Listening terminal: optional component (recommended). The monitoring terminal is used for real-time monitoring of the playing status of any other broadcasting terminal in the system, and is mainly applied to the pilot spot check and the broadcast administrator monitoring.

Fourth, OBTIP network broadcasting is applied to campus public address system

The campus public address system is a must-have daily application system for all schools. Its main applications include automatic music ringing, eye health broadcast gymnastics music, leadership speech, and listening test. At present, most public broadcasting systems on campus are analog systems, which have great limitations in application and do not conform to the current leading trend of education informatization in China. The introduction of the company's IP network broadcasting system can bring epoch-making changes to the campus public address system. The personalized and intelligent product design for language teaching enables the campus network application and distance education that stays in the concept for a long time to truly achieve practical purposes.

1, system function

(1), two-way control management

The IP network broadcast two-way controller can receive all the audios played remotely, and select any one of them to listen to, with a wireless interface; one group of local to local and remote play; can remotely call any one or more nodes in the system and the system Any two-way node or management node interactive paging, support local playback recording storage, remote management of any node of the control system according to the authority.

(2), personalized timed playback

Each voice broadcast terminal of the IP network broadcast can receive the personalized timed broadcast program of the system server separately and has a timed play operation because it has an independent IP address. The instructor can also set up on the Internet through a computer, or directly in the classroom through the IP broadcast terminal.

(3), classroom interactive on-demand

The real-time on-demand function of the company's IP network broadcasting enables teachers to communicate with the server in real time in the classroom to realize interactive teaching. The IP broadcast terminal host provides a personalized Chinese LCD display operation menu interface to assist teachers in flexible control operations.

(4), online radio broadcast

The company's IP network broadcast can convert the Internet network radio program received through the Internet radio software into the OBTPAIP network broadcast data format for real-time playback to the voice broadcast terminal. Such as the Voice of America, BBC, CNN and other specialized language teaching stations in China.

(5) Leadership online speech

The company's IP network broadcast enables leadership online speech. The leader does not need to go to the broadcast center, and any computer connected to the system server can realize remote speaking through the microphone of the computer. You can speak to the whole school or you can speak to some areas.

(6), real-time voice broadcast

The real-time broadcast function of the IPO broadcast program of the company can compress and store the programs from other sources in real time and store them on the server, and can simultaneously broadcast to the designated classroom terminal. The source of the broadcast can be other commercial or self-use radios, recorder decks, CD players, MP3 players, microphones, and the like. Used for listening tests and broadcast notifications.

(7), automatic music ringing

Obo's IP network broadcast can set personalized music ringtones and automatically play the up and down ringtones according to the arranged schedule. The work schedule can be adjusted automatically according to the spring and autumn, and provides special configuration options for rainy days and holidays.

(8), courseware resource conversion

Obo IP Network Broadcast provides powerful courseware production software, which can convert the school's original audio source courseware into various data files. Teachers can also listen to the sound while adding intelligent menu labels. Quickly classify and teach in segments.

(9), classroom audio amplification

The voice terminal of the company's IP network broadcast provides audio access. When there is no broadcast signal, the audio output of the teaching computer can be connected to the voice terminal and broadcasted by sound reinforcement. When the teacher is in class, the wireless lavalier microphone can be worn, and the voice of the speech can be connected to the voice terminal for sound amplification. The voice terminal can automatically switch the power of the power amplifier speaker according to the presence or absence of the voice signal.

2, system features

(1) Summary of characteristics

The company's IP network broadcasting system has the following characteristics: digital, personalized, networked, automated, user-friendly, intelligent, small engineering, zero maintenance. Personalization, automation and zero maintenance are the most notable features of the company's IP network broadcasting system.

Transmission digitization: Full digitalization provides high fidelity sound quality, using CD quality data file format, which is exactly the same as computer output.

Terminal personalization: Based on the IP data network, each voice terminal has an independent IP address, which fully implements a point-to-point personalized program.

Management network: teacher courseware production and arrangement, leadership speech, program timing playback can be operated remotely through the network.

Automated play: The instructor pre-programs the program playlist, specifies the play class, plays the program, and plays the time. The server will automatically play and unattended.

User-friendly operation: user-friendly graphical menu interface, Chinese network prompting operation of IP network broadcast terminal host, control program playback. The user-friendly operation is easy and simple, and improves the teaching efficiency of teachers.

Intelligent application: Teachers add intelligent tags during the teaching process to realize voice functions such as repeat, shift, and list loop playback; set up scheduled tasks through the network broadcast terminal host to realize automatic playback.

Simplification of the project: Oubo IP network broadcasting For schools that have already built campuses into ordinary classrooms, only need to add servers and install terminals. If the school classroom is not equipped with a network cable, the engineering volume of the data network is relatively simple, and only the network cable needs to be laid. Once built, the broadcasting system and the computer network system can be shared, reducing the redundant construction of multiple networks.

Maintenance of small quantification: Obo's IP network broadcasts are physically shared with the campus network, so no additional maintenance work is added beyond the maintenance of the campus network. In the application, the system can be set up to separate the network segment from the computer system, and the embedded system program of each voice terminal is solidified, and the virus infection is not loved. The system is stable and reliable as a whole, and the maintenance work is simple and easy.

(2) Application characteristics of Obo's IP network broadcasting in daily teaching practice

The application of Obo's IP network broadcasting in teaching practice is mainly in three aspects:

Classroom mutual support teaching: The instructor compiles the voice courseware on his own computer and uploads the server. During class, the program is viewed through the host of the broadcast terminal, and operations such as on-demand, broadcast control, repeat reading, and shifting are performed to realize interactive teaching.

Self-study training in the morning and evening: the instructors pre-arrange the class schedule, play the listening content or other improvement content that needs to be reviewed in time during the self-study time, create a good language learning atmosphere, and cultivate students' daily language habits.

Remote voice teaching: In addition to listening to online professional teaching radio stations, educational departments at all levels can organize excellent teachers to preside over radio stations or produce courseware according to the region to realize distance learning. Listening to the content includes the subject.

In addition, the company's Kangtong IP network broadcast also utilizes the characteristics of the broadcast system suitable for language teaching, such as initiative, compulsory, etc., to create a good language atmosphere on the campus, which is conducive to the development of students' daily language habits.

(3), configuration examples

The list of standard equipment configurations for the company's IP network broadcasting system is as follows:

IP network broadcasting system configuration list serial number description number

3.1, the digital part

3.1.1, OBT-9800A system software package (including tool software and operation manual) 1

3.1.2, OBT-9800IP Broadcast Host (Industrial Computer) 1

3.1.3, OBT-9700 outdoor IP broadcast terminal host (two-way) 1 on demand

3.1.4, OBT-9500 indoor IP broadcast terminal host (one-way) 2 on demand

3.1.5, network switch or router 4 as needed

3.2, the analog part

3.2.1, OBT-12X/90X/6XXX/7XXX series, all kinds of indoor and outdoor speakers / column / amplifier / 5 on demand

3.2.2, OBT-8610 broadcast dedicated CD player 1

3.2.3, JVC-1188 dual deck recorder 1

3.2.4, OBT-861818U professional cabinet 1

The IP network broadcasting system equipment is divided into two parts: the digital part and the analog part.

(1) Each indoor broadcast point is equipped with an indoor IP network broadcast two-way controller, such as a classroom, a teacher's office, a laboratory, etc., followed by a speaker.

(2) Outdoor playgrounds such as playgrounds, corridors, and parking lots can be equipped with outdoor IP network broadcasting two-way controllers, and then connected with rear-stage power amplifiers to drive multiple high-power outdoor sound columns and grass sound columns.

(3), IP network broadcast two-way controller is mainly used for classroom on-demand. It can be configured according to the principles of age, class, teaching and research group.

(4) The external audio box is optional. In the school classroom, there may be multiple voice systems: campus public address system, test room broadcast system, fire broadcast system, local multimedia speaker system, and so on. The external audio box aggregates all possible audio input signals in the local range to the IP network broadcast two-way controller, and then outputs to the speaker according to the priority level of each system or