



Professional Sound System for a Football Stadium

Solution Overview

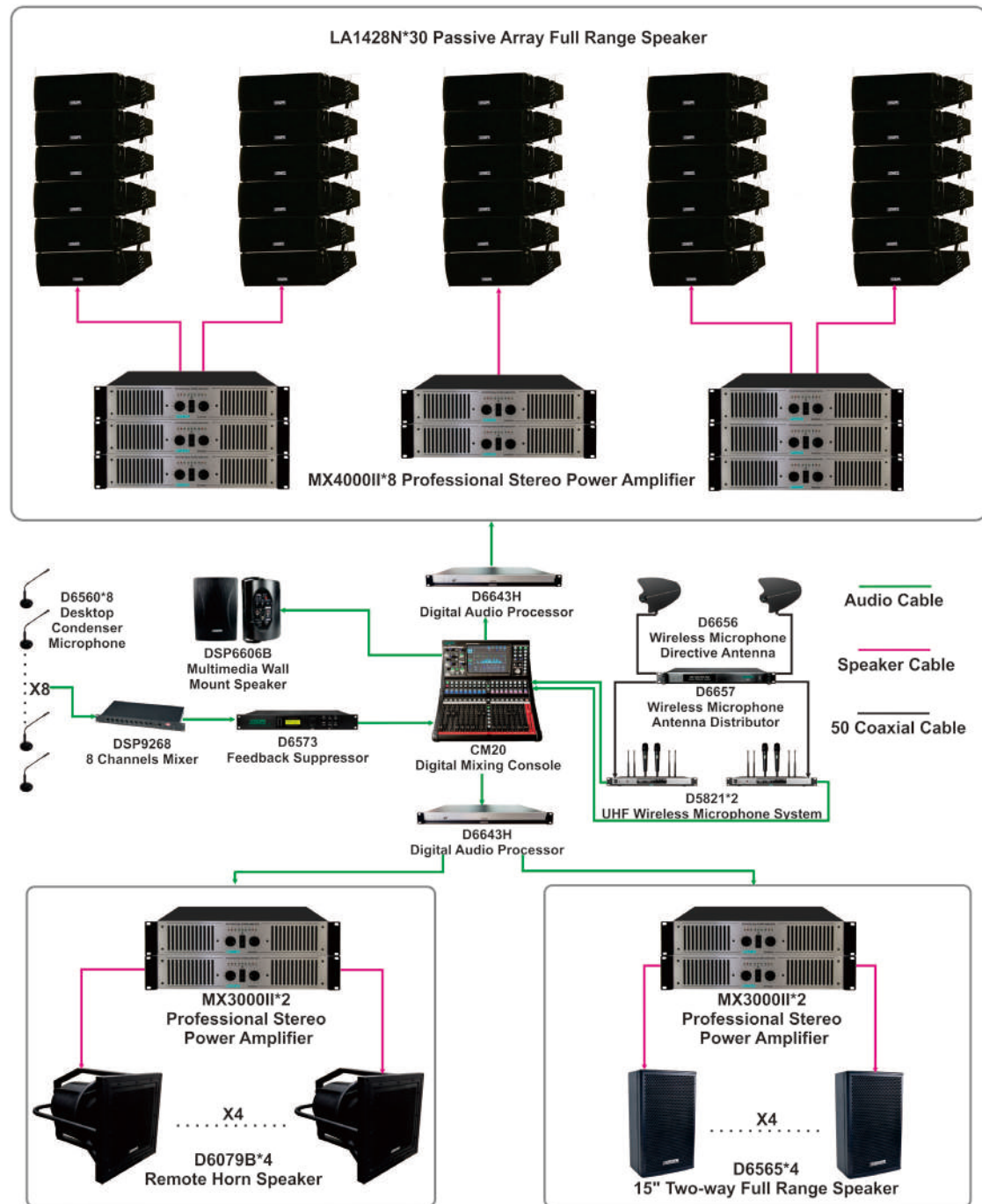
- The football stadium is mainly used for sports competitions and gatherings, and its professional sound reinforcement system is required for the live commentary of admission ceremony, group gymnastics and football games. Meanwhile, we need to take into account the functional requirements of various sports competitions in the future, as well as cultural and artistic performances.
- In order to allow the audience to hear the information sent by the referee during the game, the system is required to have a relatively good sound transmission gain. Generally, the auditorium around the football stadium is high and the playing field is low. Therefore, line array speakers are often suspended under the waterproof canopy for partition sound reinforcement, and the directional characteristics of the speaker system are used to ensure that the auditorium has sufficient sound pressure level and good speech intelligibility. To minimize the influence of noise, the sound pressure is generally required to be around 100dB.



- The football stadium is 105 meters long and 68 meters wide, with an area of 7,140 square meters.
- There is an independent sound control room on the top floor of the stands, which can observe the entire football stadium.
- There are separate lighting lampposts at the four corners of the football stadium.
- There is a row of chairs in the middle of the stands, which is 25 meters long and 10 meters wide.

Pro Sound System Connection Diagram

No.	Model	Product Name	Quantity
Sound Source Part			
1	D5821	True Diversity UHF Wireless MIC System (with 2 Handheld MICs)	2 PCS
2	D6656	Wireless Microphone Directive Antenna	1 PC
3	D6657	Wireless Microphone Antenna Distributor	1 PC
4	D6560	Desktop Condenser Microphone	8 PCS
5	DSP9268	8-Channel Mixer	1 PC
Regulation and Control Part			
1	CM20	Digital Mixing Console	1 PC
2	D6643H	12-Channel Digital Audio Processor with Echo Suppressor	2 PCS
3	D6573	Feedback Suppressor	1 PC
Sound Reinforcement and Restoration System			
1	MX4000II	Professional Stereo Power Amplifier	8 PCS
2	MX3000II	Professional Stereo Power Amplifier	4 PCS
3	LA1428N	Passive Array Full-Range Speaker	30 PCS
4	D6565	15" Two-way Full-Range Speaker	4 PCS
5	D6079B	Remote Horn Speaker	4 PCS
6	DSP6606	Multimedia Wall Mount Speaker	1 PC

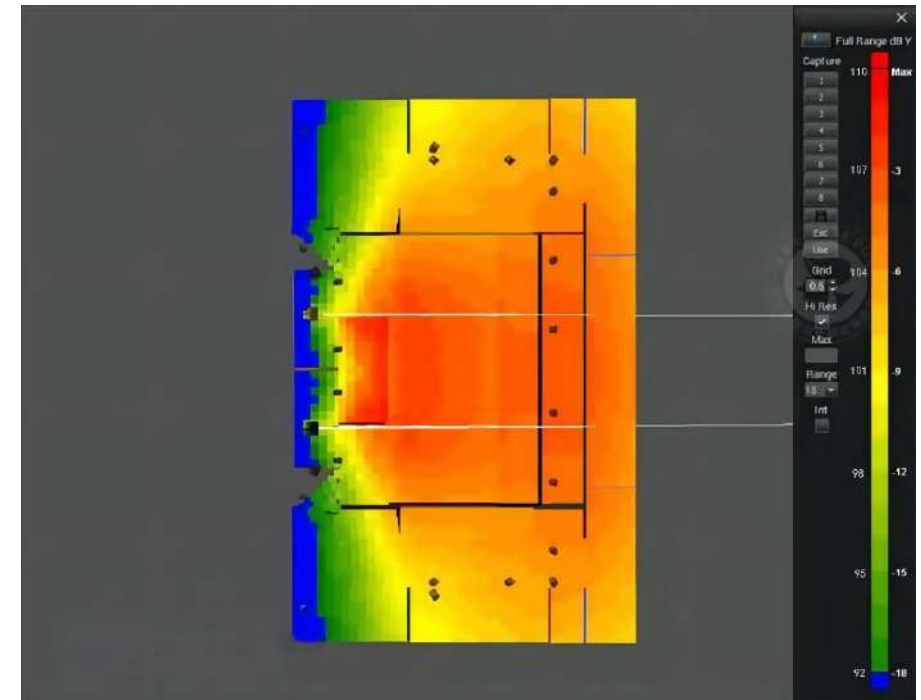


Pro Sound System - Configuration Solution for A Football Stadium

- Sound Pickup Part: The true diversity wireless handheld microphones and wired condenser microphones are used to ensure the needs of broadcasting events and speeches by leaders. At the same time, an antenna amplification system is equipped to ensure that wireless signals will not fail over a long distance such as frequency loss and frequency crosstalk.
- Regulation and Control Part: The digital mixing console, digital audio matrix and feedback suppressor are applied to regulate and control the whole system. The digital mixing console features user-friendly interfaces and powerful functions, with a variety of audio signal input and output interfaces to connect sound reinforcement system, radio and television broadcast output, large screen system, recording and calling system, press release area and background broadcasting system. It allows the operator to quickly carry out mixing operations, and it can be expanded for subsequent expansion of the system. The digital audio matrix is built-in with abundant peripheral modules for various processing operations on the entire system, while ensuring the signal-to-noise ratio and reducing the failure rate. The feedback suppressor greatly reduces the possibility of on-site sound howling and ensures the operation of the entire system.
- Sound Restoration System: The centralized sound reinforcement is adopted. The sound of 6 line array speakers starts from the rostrum and is directly aimed at the audience in the field, so that the audience can hear the direct sound coming from the same direction; the horn speakers are installed on the lampposts in the field for long-distance sound transmission and make up the sound in the field. In the middle channel of the stands, two-way full-range speakers are used for sound reinforcement. The monitor speaker is provided for the operator with better understanding of the state of the sound source.

Sound Field Test

- The sound pressure of the whole field reaches 107dB, which can not only meet the national acoustic standards for football stadiums, but meet the first-level standard for both speech and music in the GYJ125 Acoustic Characteristic Index for Outdoor Sound Reinforcement System Design, achieving clear speech, no distortion, sufficient sound pressure margin, and uniform sound field distribution.
- At the same time, it meets the needs of live broadcasting and rebroadcasting of various sports events, which is characterized by intelligence, digitalization and strong scalability.



■ Control Room Equipment

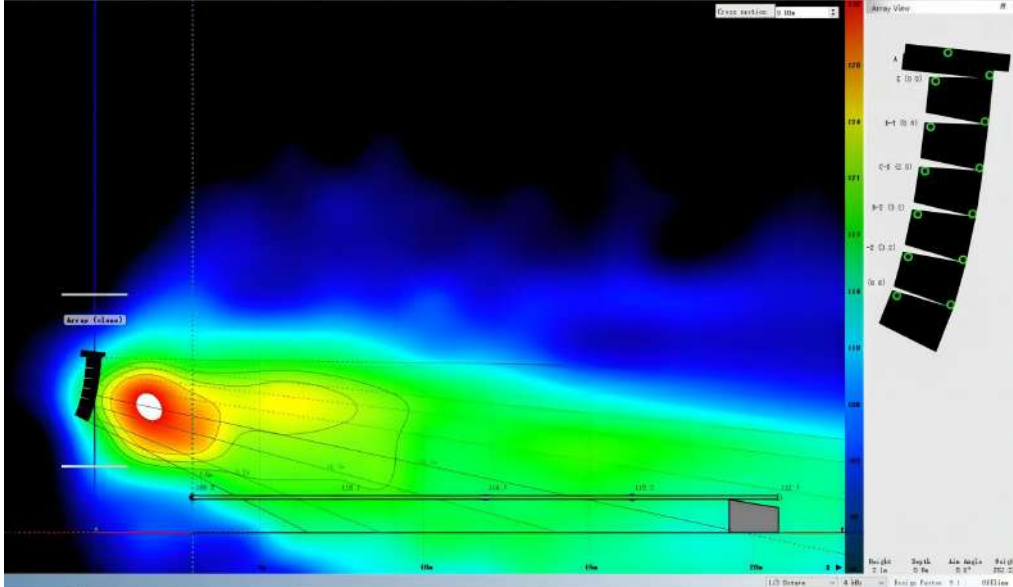
- The control room of the football stadium is usually designed with the best view for easy observation of the field. Since the transmission of external sound is blocked by doors and windows of the room, a monitoring system is equipped to ensure accurate and clear audio signals in the control room.
- With a digital mixing console, it can capture and process audio signals in real time, and can quickly generate and edit audio to meet the needs of music production and live streaming.
- It provides a professional working environment for the control room, enabling the operator to precisely process and optimize audio signals for optimum sound performance.



System Equipment Highlight

Passive Array Full-Range Speaker (LA1428N)

- The system is a mini line array system with high power and high sound pressure level.
- The speaker box body is made of special plywood for sea vessels, with high reliability, and all metal accessories are made of high-quality aluminum alloy.
- Unit driver: 8" woofer×2, 1.75" tweeter×1; rated power: 400W.
- Dimensions (W×D×H): 643mm×385mm×232mm; weight: 16kg.



LA1428N*6



Installation Effect

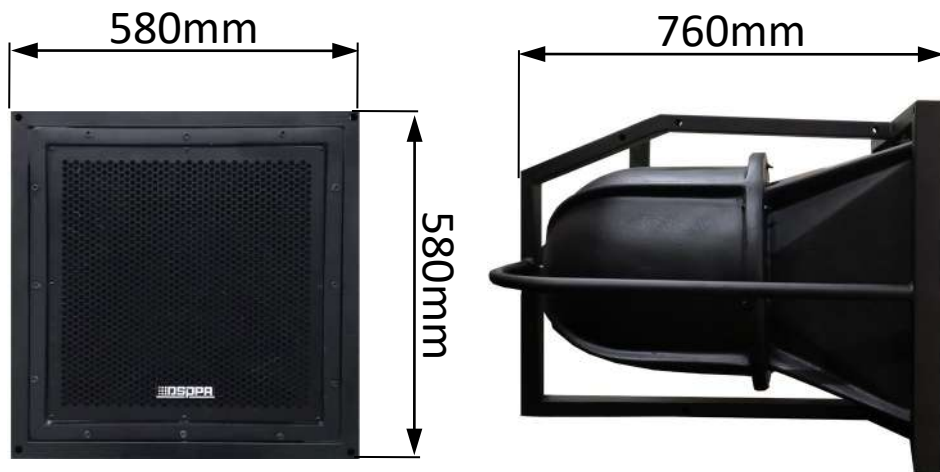


- The sound pressure level of line array speakers can reach up to 126dB, with uniform coverage, uniform diffusion, strong directivity, and small difference in volume between far and near fields.
- The centralized sound reinforcement is adopted. The sound starts from the rostrum with good directivity, and is directly aimed at the audience in the field, so that the audience can hear the direct sound coming from the same direction with minimized echo.
- The superimposed effect of multiple line array speakers results in a long range, so that the volume heard by the audience in the front and back courts is very close, avoiding the embarrassment that the front court feels too loud and the back court cannot hear it.

System Equipment Highlight

Remote Horn Speaker (D6079B)

- Two-way all-weather horn speaker system.
- The speaker box body is made of glass fiber reinforced plastic, which is waterproof, UV-resistant and sturdy.
- The coaxial point sound source intelligently optimized and designed by computer provides clear sound quality, rich sound level and fine treble.
- The low-frequency unit applies a compressed horn converter to improve the sound pressure level and extend the transmission distance.
- Unit driver: 15" woofer×1, 3" tweeter×1; rated power: 400W.



Installation Effect



- The horn speakers are installed on the lampposts in the field for long-distance sound transmission and make up the sound in the field.
- The horn speaker can enhance the direction of sound, making the sound more focused and expressive; intensify the appeal of music, making the sound more natural; improve the intelligibility of speech, making the sound clearer and eliminating noise interference.
- It is suitable for outdoor spaces with a large area, meeting the requirements of long-range outdoor sound reinforcement, uniform sound pressure coverage, high intelligibility, and minimized echoes.

System Equipment Highlight

15" Two-Way Full-Range Speaker (D6565)

- Two-way full-range system with inverted low-frequency radiation.
- The wooden speaker box is sprayed with water-based paint with large black spots on the surface, and the perforated metal mesh is backed with acoustic sound-permeable cotton.
- With high-efficiency and high-quality unit configuration, it can be suspended for installation.
- Unit driver: 12" woofer×1, 1.75" tweeter×1; rated power: 350W.
- Dimensions (H×W×D): 601×364×385mm; weight: 23kg.



Installation Effect



- The sound effect of the two-way full-range speaker is more balanced, which can better restore the details and expressiveness of the music, and can bring people a more comfortable feeling.
- It is suitable for professional performance sites, various conference venues, mobile performances, squares, shopping centers and other places.



Guangzhou DSPPA Audio Co., Ltd.

Address

NO.1 Xiahe Road, Jianggao, Baiyun,
Guangzhou, Guangdong, China

Tel

+86-20-37166520

Public Address
Division

export@dsppa.com
www.dsppatech.com

Conference | ProAV
Division

conference@dsppa.com
www.dsppacs.com