

 A professional sound system for indoor stadiums is displayed on a green lawn in front of a modern stadium. The system includes a large black DSPPA speaker cabinet, a tall stack of six black DSPPA speakers, and a DSPPA control console with a screen and various knobs. The stadium in the background has a distinctive curved, metallic facade under a blue sky with light clouds.

Professional Sound System for Indoor Stadiums

Solution Overview

Stadium Description

- The stadium is primarily used for sports games and rallies, where a professional sound system is required for events such as opening ceremonies, mass games, and live football match commentary. When considering the functional requirements of future sports competitions, it's important to also take into account theatrical performances. The professional sound system is a crucial component of the weak current system of the football field.
- To ensure the audience can receive information from the referee during games, the system must have a high sound transmission gain. Typically, the auditorium around the stadium is higher than the competition terrain. Speakers are suspended under the canopy for zone sound reinforcement, taking advantage of the directional characteristics of the speaker system to ensure sufficient sound pressure level and speech intelligibility in the auditorium. To minimize the impact of noise, the sound pressure level generally needs to be around 100dB.

Design Objective

- The primary objective of a sound system for a sports field is to amplify the speaker's voice in real-time so that it can be heard by the listener in the same acoustic environment. A successful sound reinforcement system must be loud enough (sufficient sound gain) and clear enough (low percentage of speech consonant articulation loss), as well as evenly cover the audience without covering areas where there is no audience.

Design Approach

- We utilize decentralized sound reinforcement based on outdoor arrangement and function positioning to achieve uniformity of sound pressure in the venue's sound field. Our speaker is designed to use for playground performances during ordinary times, while also meeting sound pressure requirements and usage suggestions.
- According to the national acoustic characteristic index standard for outdoor sound reinforcement system design, the maximum sound pressure level in the open field quasi-peak state: 125-4000Hz, with an average greater than or equal to 98dB. Our audio sound reinforcement system not only meets but exceeds this national standard, reflecting the superior performance of our system. The professional sound system's sound effect meets the first-level standard of language and music in the GYJ125 Acoustic Characteristic Index for Outdoor Sound Reinforcement System Design, achieving clear language, no distortion, sufficient sound pressure margin, and uniform sound field distribution.

Professional Sound System - Configuration Solution for Indoor Stadiums

- Pickup part: Our audio setup includes both a true diversity wireless handheld microphone and wired condenser microphone to ensure clear event broadcasting and leader speeches. Additionally, we utilize an antenna amplification system to prevent wireless signal loss or crosstalk.
- Regulation and Control Part: The whole system is regulated and controlled through the use of a digital mixing console, digital audio matrix, and feedback suppressor. The digital mixing console is user-friendly yet multifunctional, with various audio signal input and output interfaces to allow for connection to mobile sound reinforcement systems, radio and television broadcasts, large screen systems, recording and calling systems, press release areas, and background broadcasting systems. The console enables operators to perform quick mixing operations and can be easily expanded for future system expansion. The digital audio matrix has built-in peripheral modules for a range of processing operations and supports DANTE transmission, eliminating the need for long-distance wiring and ensuring a high signal-to-noise ratio. The feedback suppressor significantly reduces the occurrence of on-site sound howling for optimal system performance.
- Sound Reinforcement Reduction System: Our system utilizes highly directional dual 10" line array speakers for decentralized sound reinforcement. The line array speakers provide high sound pressure levels and can be adjusted vertically to accommodate different listening surfaces. Each group is equipped with an 18" subwoofer to compensate for lower frequency limits. A 800W constant resistance professional speaker supplements sound in areas that cannot be covered by the line array speakers while a monitor speaker helps the operator better understand the sound source.
- System Protection: To ensure the safety and reliability of the system, especially in the event of accidents, protecting the devices from damage and we also have equipped the system with power sequence controllers.

System Advantages

- Our system meets national acoustic standards for stadiums and is suitable for live broadcasts and rebroadcasts of various sports events, which is intelligent, digital, and scalable
- The system can be manually adjusted and intervened as needed to ensure its normal use in various functions, allowing for optimal control and performance at any time.



LA1420*6+LA142

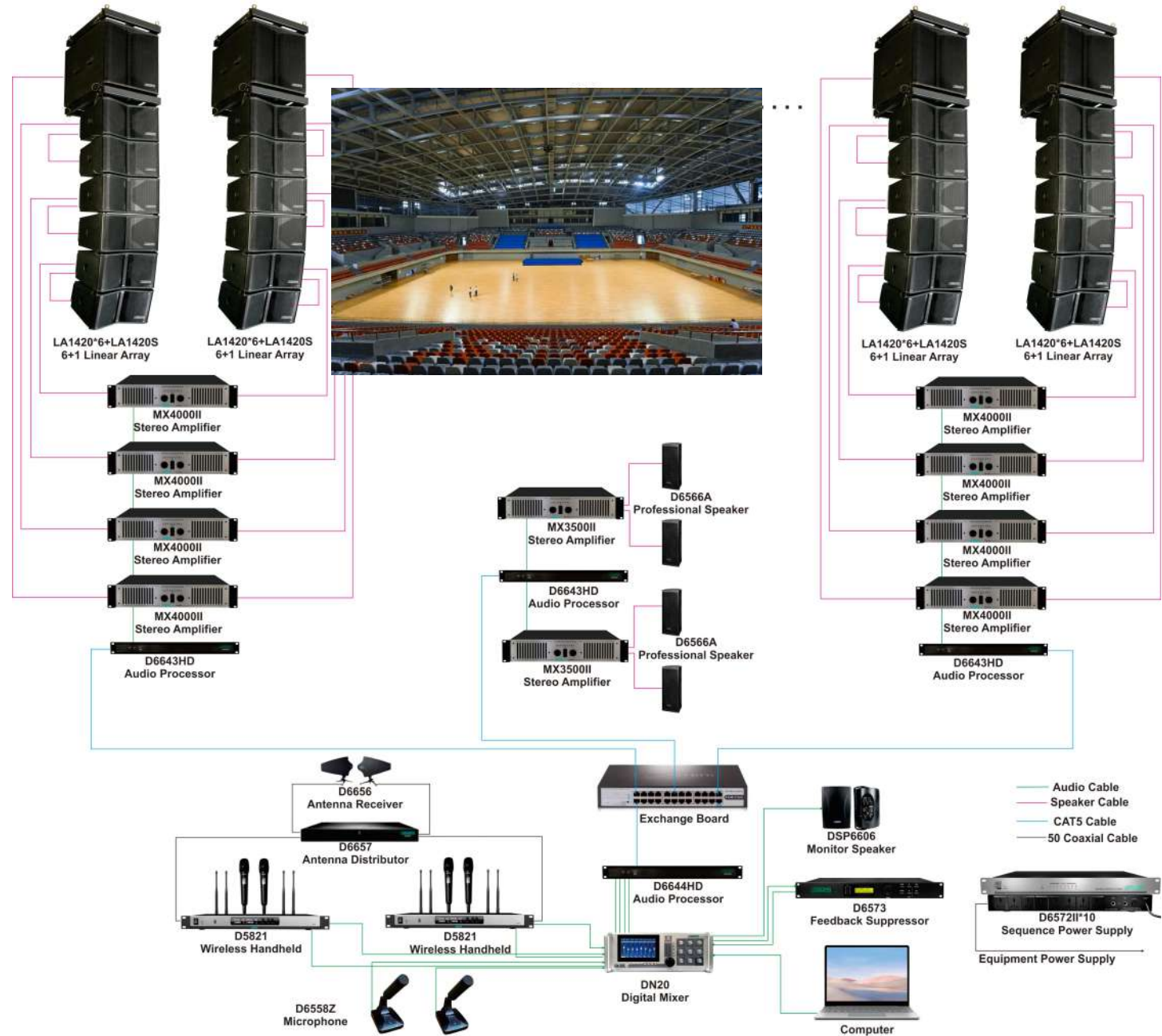


D6566A



Connection Diagram

No.	Model	Product Name	Quantity
Audio Source Part			
1	D5821	Wireless Handheld MIC System	2 Sets
2	D6656	Antenna Receiver	1 Set
3	D6657	Antenna Distributor	1 PC
4	D6558Z	Wired Microphone	2 PCS
Regulation and Control Part			
1	DN20	Digital Mixing Console	1 PC
2	D6643HD	Audio Processor	5 PCS
3	D6644HD	Audio Processor	1 PC
4	D6573	Feedback Suppressor	1 PC
Professional Sound System			
1	MX4000II	Professional Amlifier	20 PCS
2	MX3500II	Professional Amlifier	2 PCS
3	LA1420	Line Array Full-Range Speaker	60 PCS
4	LA1420S	Line Array Subwoofer	10 PCS
5	D6566A	Professional Speaker	4 PCS
6	DSP6606	Monitoring Speaker	1 Set
System Protection			
1	D6572II	Power Sequence Controller	10 PCS
Supporting Materials			
1	LA1420D	Mounting Bracket	10 PCS
2	LA142K	Shackle	40 PCS
3	Self-provided	Switch	1 PC
4	Self-provided	PC	1 PC



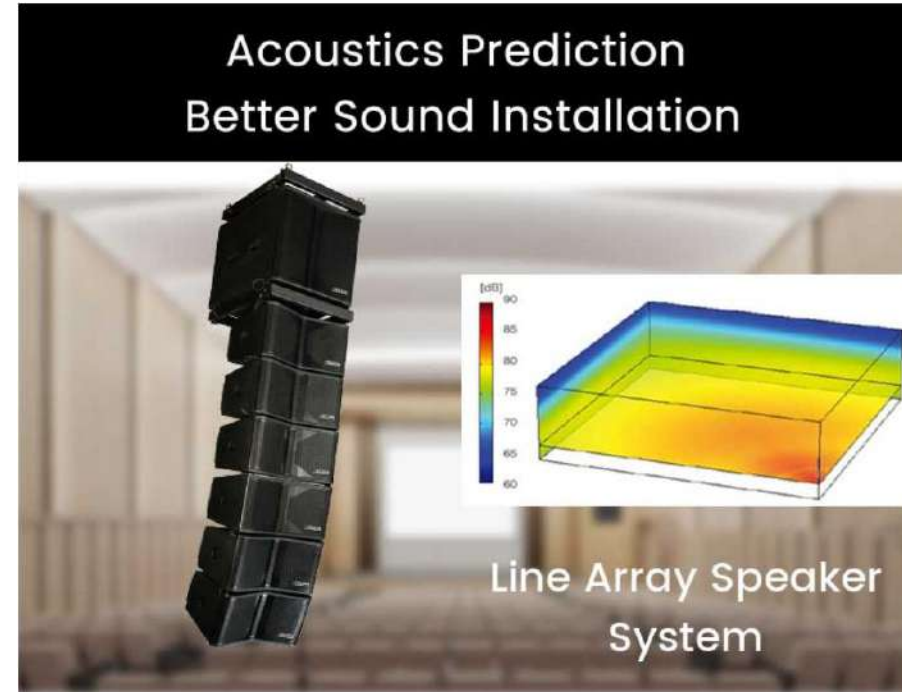
System Highlights



Dante Long-distance Transmission (D6644HD)

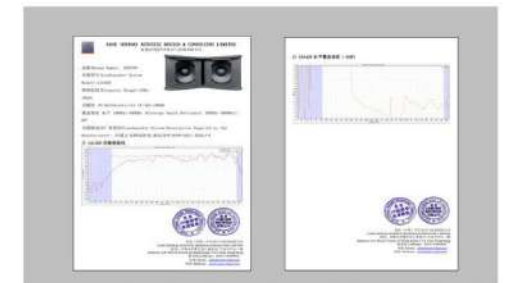
- The Dante protocol is utilized to connect the audio source to the LAN where D6644HD is located, enabling long-distance signal transmission, resulting in a cost-effective, low-latency, and highly accurate solution for connecting audio systems.

EASE Certification (LA1420)



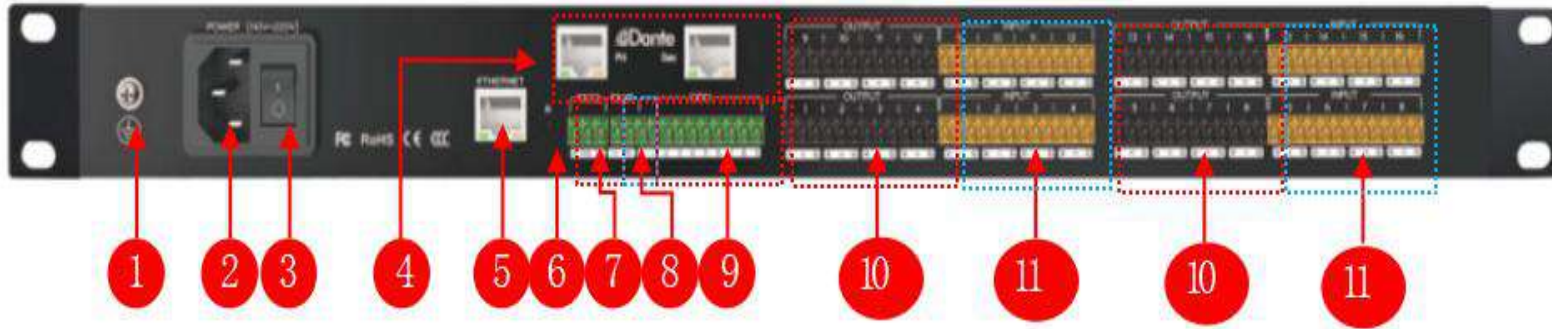
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Product Details

Rear Panel (D6644HD)



- (1) Chassis Grounded Point
- (2) POWER: 220VDC Power Input Interface
- (3) Power Switch
- (4) Dante: Used to connect to Dante digital audio network;
- (5) ETHERNET: 10M/100MEthernet interface, used to connect to the control terminal (PC, router, etc.);
- (6) RESET: Restore factory settings, long press for 5 seconds is effective;
- (7) RS232: Support central control commands and camera tracking, RX: receive data, TX: send data, G: ground;
- (8) RS485: Support camera tracking;
- (9) GPIO: GPIO control;
- (10) OUTPUT: Analog output;
- (11) INPUT: Analog input;

Audio Network Transmission (D6644HD)

- Access to the switch, take the local area network transmission, reduce the trouble brought by cabling.
- Multiple conference rooms can achieve audio interaction, command and scheduling.
- When the main conference room is in session, the device can assist the extended conference room to receive audio





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