CPD 09

ACTIVE PoE++ POWERED AND DSP CONTROLLED FULLRANGE LOUDSPEAKER

POE · Dante · MAXX CONTROL · MAXX REMOTE · 3.5-WAY · FIRTEC DSP · HDSP · VALTEC BEAM · CARDIOID · POINT SOURCE

one cable
complete sound

www.ks-audio.com

CPD 09 - Smart Loudspeaker Technology for Seamless Integration

At KS AUDIO, we understand that modern installations demand more than just great sound, they require smart, scalable, and network-ready solutions. That's why we developed the **CPD 09**, a next-generation full-range loudspeaker designed in collaboration with Innosonix GmbH, experts in advanced amplifier technology.

The **CPD 09** delivers outstanding audio performance with features that simplify installation and control:

- √ *Power over Ethernet (PoE++) for single-cable connectivity, no external power supply needed*
- √ *DANTE™ AoIP and full network integration for streamlined audio distribution*
- √ *Remote management and monitoring for configuration and diagnostics over standard IP networks*
- √ *Cardioid dispersion even in the mid-low frequencies, reducing unwanted rear sound*
- √ *Adjustable vertical coverage for precise targeting in complex acoustic environments*

Whether for corporate, hospitality, education, or performance venues, the **CPD 09** combines cutting-edge functionality with flexible deployment options—making it the smart choice for modern AV integration.

Architecture and Design in the Digital Age

Modern architecture is no longer just about form and aesthetics. In today's buildings, technological infrastructure plays an increasingly important role.
When designing new office buildings, public facilities, and residential complexes, architects and designers not only consider natural light, spatial efficiency, and sustainability, but also digital connectivity.

A key element of this is the installation of internet and network infrastructure. Already in the design phase, careful planning is given to the placement of server rooms, cable ducts, Wi-Fi access points, and the implementation of Power over Ethernet (PoE), which allows devices such as cameras, sensors, and loudspeakers to be powered and connected through a single network cable.

The **CPD 09** is designed specifically to meet the demands of professionals who expect the highest standards in audio reproduction, in every sense of the word.

With the simplest infrastructure, you can now deliver a speech, host a musical interlude, or play pre-recorded music anywhere in a building. No more hauling racks of equipment or large speaker systems.

The **CPD 09** is also an outstanding solution for mobile installations. A single, lightweight Ethernet cable is all it takes to conquer even the most complex audio challenges. The speaker includes a 36 mm mounting flange on the bottom for easy use with standard speaker stands, which can optionally be omitted for fixed installations such as the practical carrying handle on top for maximum portability.

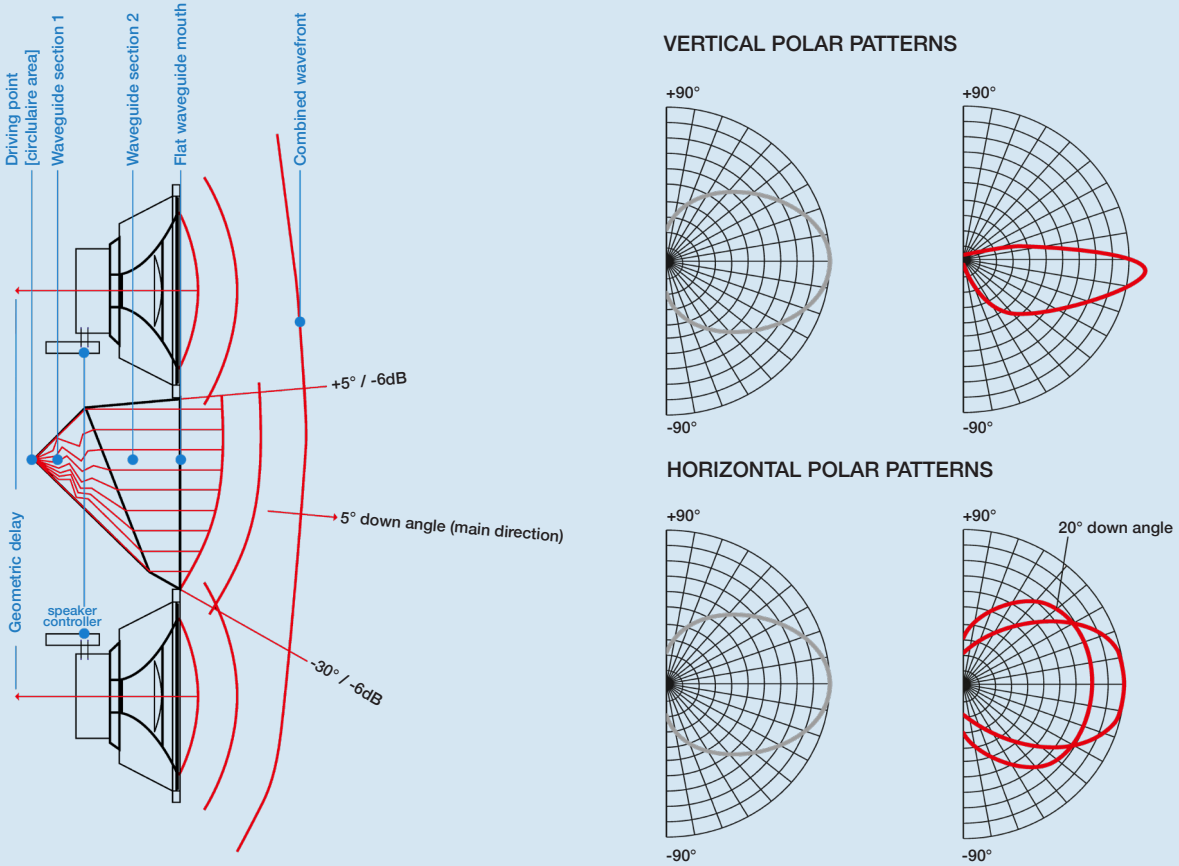
The **CPD 09** is the versatile tool of choice for the most demanding audio professionals.

HDSP™ – High Definition Sound Projector

Discover what sets it apart

In the **CPD 09**, two worlds come seamlessly together: premium acoustic engineering by KS AUDIO and cutting-edge amplifier/DSP technology by Innosonix.

Figure A



Precision Dispersion Meets Intelligent Design

The HDSP™ (High Definition Sound Projector) is an advanced acoustic concept that redefines the dispersion characteristics of compact loudspeakers. At its core lies a highly engineered mid/high frequency waveguide — the visual hallmark of the design — but the acoustic performance of the entire system is further refined through targeted electronic optimization.

Vertical Dispersion Engineering – Directional Control with Purpose

In Section 1 of the waveguide (see Figure A), the driver's output is shaped into a cylindrical wavefront, drawing inspiration from line array technology. Unlike traditional designs, the HDSP™ waveguide applies this transformation asymmetrically: the upper section generates a flatter wavefront for enhanced long-throw performance, while the lower section creates a more curved wavefront, reducing sound pressure directly in front of the speaker.
This intelligent shaping causes the wavefront to slope downward — directing energy where it's needed and minimizing acoustic spill where it's not. The result is improved intelligibility and reduced early reflections, particularly in challenging acoustic environments.

Asymmetric Horizontal Dispersion

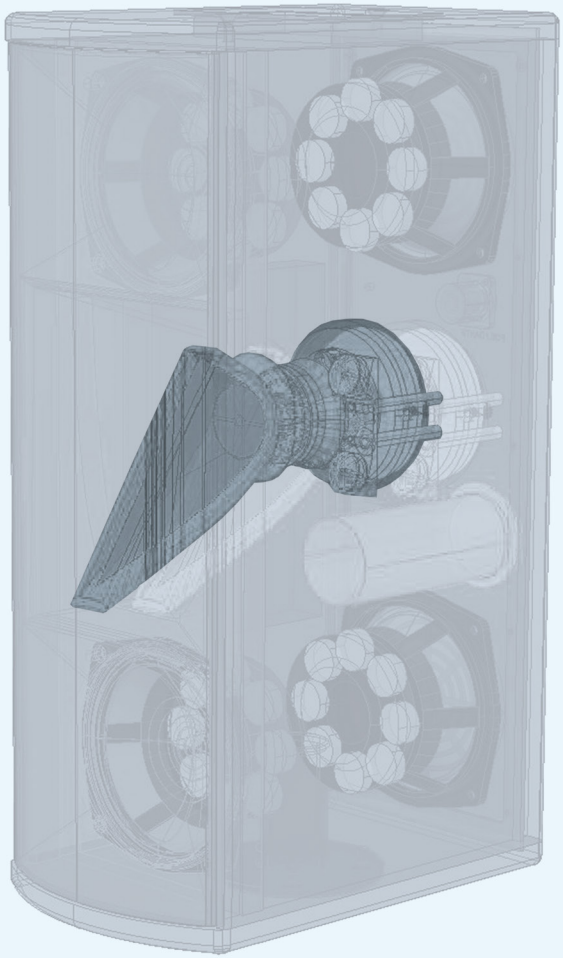
Section 2 of the waveguide controls horizontal dispersion through a carefully sculpted geometry. The upper portion is narrower and deeper, producing a focused 60° horizontal beam ideal for precise coverage at distance. Toward the bottom, the waveguide widens and opens to 120°, providing broad, even coverage for the near field.
This gradual transition from a narrow 60° horizontal beam angle to a wide 120° beam angle ensures consistent SPL distribution across the audience area — without compromising clarity or focus.

Integrated System Tuning – Cohesive Full-Range Output

The two 5" low-frequency drivers on the front meticulously matched to the HF driver and waveguide system via advanced frequency tuning. This results in a coherent acoustic response across the entire bandwidth, delivering smooth transitions between driver sections and maintaining consistent dispersion at all frequencies.

VALTEC™ – Variable Acoustic Lens Technology – BEAM-STEERING

The **CPD 09** leverages the powerful potential of VALTEC™ technology in a unique and purpose-driven way. While our website details the full scope of VALTEC™ and its dynamic influence on wavefront shaping via rotatable acoustic lenses, the implementation in the **CPD 09** has been specially optimized for targeted beam control.



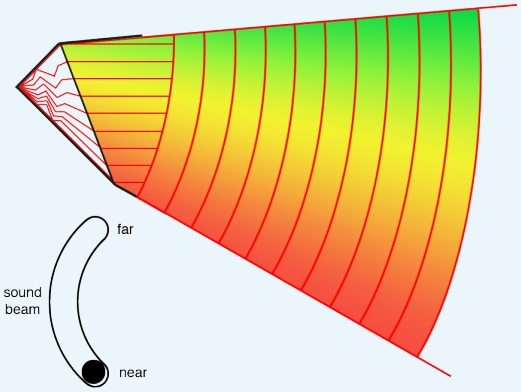
In the **CPD 09**, final wavefront curvature is shaped within the HDSP™ waveguide, making VALTEC™ responsible for managing the initial energy distribution into the waveguide. The rotatable VALTEC™ lenses allow precise steering of the compression driver's output, directing acoustic energy either primarily toward the upper or lower section of the HDSP™ entrance, or any point in between.

This flexibility means the **CPD 09** can be adapted from near-field to far-field applications and everything in between, with exceptional accuracy. Whether you need to project energy toward the back of a venue or concentrate it on a closer audience zone, VALTEC™ lets you fine-tune the vertical energy focus to suit the acoustic environment perfectly.

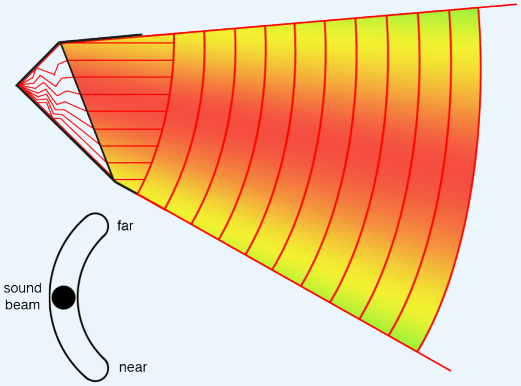
The system ensures that acoustic energy is directed only where it's needed — toward the audience — and not toward reflective surfaces where it would arrive delayed, causing phase issues, reduced clarity, and compromised intelligibility. At the same time, it avoids wasting sound energy in areas without listeners.

A user-friendly rear-panel control allows fast and precise adjustment of the loudspeaker's dispersion characteristics, enabling optimal coverage in any environment or application.

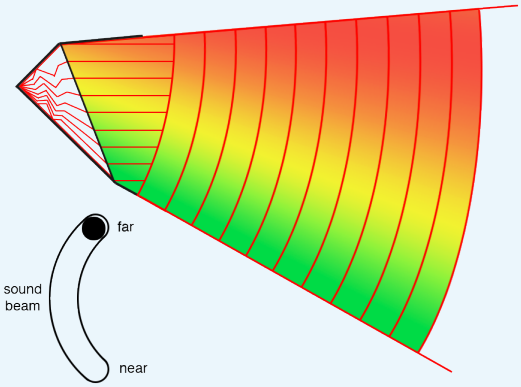
The diagram on the next page illustrates the energy distribution patterns corresponding to various VALTEC™ configurations. Intermediate settings are fully adjustable, allowing precise optimization of the loudspeaker's radiation behavior for any acoustic scenario.



Nearfield *refers to the listening zone close to the loudspeaker, typically within a few meters.*



Midfield *coverage targets the audience zone between the front and the rear, typically from around 3 to 10 meters from the loudspeaker. It plays a critical role in ensuring a smooth transition in level, tone, and clarity across the venue.*



Farfield *coverage ensures that audiences located farther from the loudspeaker, for* ***CPD 09*** *this is 10-20 metres, receive clear and intelligible sound with minimal level drop-off.*

Controlled Low-Mid Frequencies Through CARDIOID Design

Every sound engineer knows the challenge: unwanted low-mid frequency buildup — especially in live environments or mic-heavy setups — often leads to feedback, listener fatigue, and client frustration. More critically, these resonances severely degrade speech intelligibility, prompting users to raise the volume — which only worsens the issue.

The **CPD 09** addresses this problem at its source.

Equipped with rear-facing low-frequency drivers, the **CPD 09** utilizes a true cardioid configuration. This setup is specifically engineered to cancel rearward sound radiation in the critical low-mid frequency range. The result: focused forward projection and controlled rear output — all within a single, compact enclosure.

The Benefits of the **CPD 09**'s Cardioid Design:

- Minimized rear sound radiation, reducing unwanted reflections on stage or against walls.
- Improved speech clarity thanks to reduced room interaction in the low-mid range.
- Significantly lower risk of microphone feedback, particularly in live and monitor-heavy environments.
- More efficient acoustic energy use, directing sound where it matters, toward the audience.

This cardioid architecture not only enhances sonic performance, but also simplifies system tuning and delivers consistent, high-quality results in acoustically challenging spaces.


VALTEC
BEAM
POINT
SOURCE
HDSP
CARDIOID
POE
3.5-WAY
Dante
FIRTEC
DSP
MAXX
CONTROL
MAXX
REMOTE

ELECTRONICS

The intelligent power and control solution

The Innosonix platform redefines what's possible with Power over Ethernet (PoE++) in professional audio.

Their engineers have developed one of the most efficient power supplies on the market, enabling the amplifier to deliver an impressive 4 x 120W output—all through PoE++. More than just power, it also ranks among the most sonically neutral amplifiers in its class, ensuring precise, uncolored audio reproduction.

The advanced 4-way DSP incorporates cutting-edge filter technology and dedicated presets. Each **CPD 09** is individually calibrated and assigned a custom preset, ensuring that the crossover and FIR filter stages are precisely matched to the loudspeakers. Built-in limiters provide reliable protection for safe and consistent performance.

Efficient power management is essential for modern system integration. That's why the **CPD 09** features an Auto Standby Mode, designed to reduce unnecessary power consumption without compromising performance.

Integrated Audio over IP (AoIP) using the DANTE™ protocol guarantees industry-standard, reliable signal transmission across the network.

For system integrators, the **CPD 09** offers full remote access and real-time control via Innosonix's ultra-modern WEB GUI MAXX Remote software—an intuitive, robust platform that leaves no integration need unmet.

MAXX CONTROL puts you in complete command of your **CPD 09**. With a 32-band equalizer, a wide range of filter options, and precise time alignment control, it offers advanced audio tuning capabilities. Plus, you can remotely monitor the performance of your **CPD 09** for added convenience and oversight.

For more details about MAXX REMOTE please visit: *https://www.innosonix.de/software*

PoE++ (Power over Ethernet)

The **CPD 09** receives its power (PoE++), audio signal (AoIP), and remote control data (Ethernet) — all through a single network cable.

This significantly reduces cabling requirements and saves space, especially in network racks or remote corners of a building. As a result, installation and deployment costs are also lower.

Traditionally, network cables have been used primarily for data transmission and are not designed to carry high currents. This meant that PoE++ could previously only power low-consumption network devices such as phones or access points. However, with the introduction of PoE++ (IEEE 802.3bt), it has become possible to transmit significantly more Power over Ethernet, enough to supply energy-hungry devices.

With the development of the **CPD 09** PoE++ amplifier, Innosonix engineers have taken a major step forward. They have succeeded not only in creating an exceptionally powerful amplifier, but one with enormous power reserves, capable of reproducing complex, dynamic audio signals with full detail and stability — even over extended periods of operation.

The result has to be heard to be believed.

Conclusion

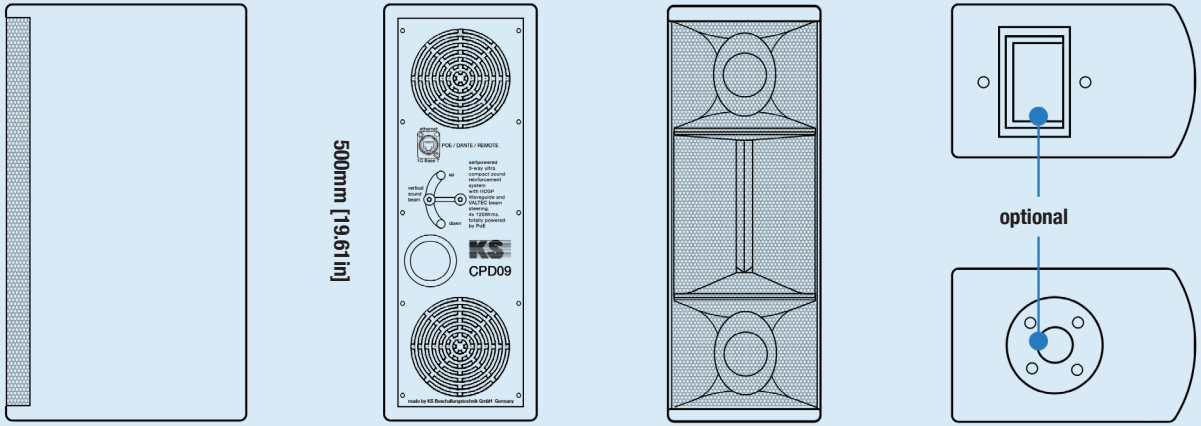
Whether you're designing for corporate AV, education, hospitality, or public spaces, the **CPD 09** delivers streamlined deployment, powerful performance, and future-ready flexibility.

ACOUSTIC SPECIFICATIONS

Frequency response LOW CUT (via DSP)	68 - 19.000Hz +-2dB OFF / 70 / 120Hz
Max. SPL - 1m. free field	128dB
Nominal horizontal dispersion	120° nearfield down to 60° into the farfield
Nominal vertical dispersion	35° with 5° down-angle
Transducers	LF: four 5" ND cone HF: one 1.75" diaphragm / 1.0" throat ND compression driver
Acoustic Principle	LF: bass-reflex and cardioid HF: HDSP™ High Definition Sound Projector / VALTEC™ Beamsteering

DIMENSIONS AND WEIGHTS

24kg | 53lb



ELECTRONIC SPECIFICATIONS

AMPLIFIER

Output Power Standard 1kHz 1% THD	
LF front	240W
LF back	120W
HF	120W
Frequency response	10Hz-20kHz +- 0.0 - 0.1dB
S/N typ	108dBA
Protection	Overtemperature, DC and Overcurrent

DSP

Architecture	ARM based 32/64-bit floating point
Input	
Audio	Ethernet RJ-45 / DANTE™ AoIP
Latency	3.04ms @44.1kHz / 2.8ms @48kHz
Network	(100Mbit/s Ethernet + PoE)
Level Control	Mute, Volume, Phase via MAXX REMOTE and CONTROL software
Filter per channel / Filter types	32 x EQ / Highpass / Lowpass - bell, notch, highshelf, lowshelf, allpass 1th / 2nd order

POWER

Power supply	Isolated switch mode with constant current draw based on PoE++ Class
Recommend Cable	AWG23 - CAT5e to CAT7

EXTRA

Software	MAXX REMOTE + MAXX CONTROL by INNOSONIX GmbH
Accessories	Fliphandle, 36mm Standflange, All RAL colors, All kinds of brackets and mounting

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