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iSound NL200

NearLink Wireless Microphone System

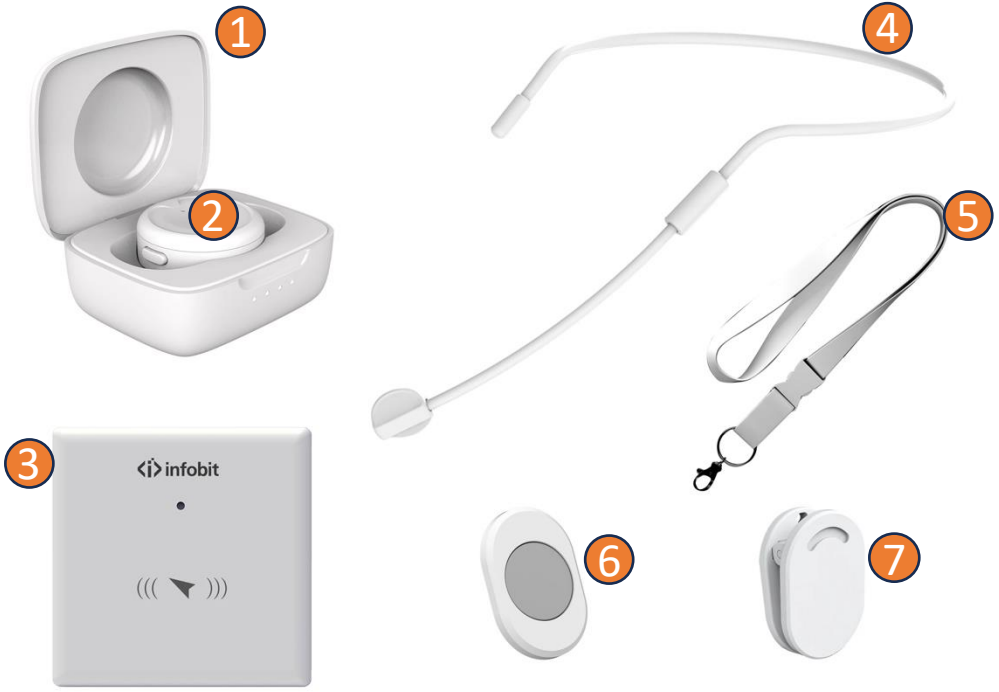
- NearLink 2.4G
- 4+ Hour Battery
- Ultra-Lightweight 10.5g
- DSP Audio Processing
- Voice-Lift

www.infobitav.com

The 5th Generation Classroom/Meeting Sound Reinforcement Solution

A complete NearLink wireless microphone solution for education and professional conference

- The **iSound NL200** is primarily designed for the **education/ conference**, specifically for **voice amplification** and **lecture recording**.
- Utilizing cutting-edge **NearLink** wireless transmission technology, it creates an **interference-free** speech environment. Powered by an advanced **RISC-V** chip, the device ensures **high performance and stability**.
- It features built-in intelligent algorithms—including **adaptive feedback suppression**, **automatic gain control**, **smart noise reduction**, and **intelligent equalization**—ensuring every word is delivered clearly to every student/audience without fluctuations in volume.
- The microphone is exceptionally **compact and lightweight**, offering a "barely-there" wearing experience.
- Compared to traditional handheld mics, it **frees up the teacher's/lecturer's hands**, allowing for more expressive body language.
- Unlike far-field microphones, it provides **superior sound quality** and a **wider pickup range**, allowing teacher/lecturer to **walk freely** around the room.
- One iSound NL200 combo includes a **charging case**, one **mic transmitter,** and one **receiver**. The charging case provides rapid power replenishment for the transmitter, while the receiver supports both **UAC** digital output and dual-channel **analog output**.



NO.	Name
1	Charging Case
2	Mic Transmitter
3	Receiver
4	Headwear accessory
5	Lanyard
6	Magnetic holder
7	Lavalier Clip

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NL200T

Lavalier Transmitter

Compact clip-on transmitter, 32mm diameter, 10.5g. NearLink 2.4G SLE protocol with up to 30m range.

NL200H

Headwear Accessory

Magnetic headwear accessory for consistent positioning. Freely switchable between lavalier and headworn styles.

NL200R

Wall-Mount Receiver

86-type (UK) box design with DSP processing, NFC pairing, UAC digital + analog outputs.

Transmitter

iSound NL200T

NearLink 2.4G SLE Protocol

Advanced RISC-V chipset for ultra-low latency wireless transmission

Ultra-Compact Design

32mm × 32mm × 13.8mm — only 10.5g. Virtually invisible on camera

4+ Hours Battery Life

Lithium battery with fast-charging case that charges the mic 3+ times

Flexible Wearing Styles

Switch freely between lavalier and headworn modes via magnetic accessories

Multi-Room Capable

Any microphone pairs with any receiver — eliminates crosstalk between rooms

One-Button Operation

Simple Power-ON button only — no complex setup required

Receiver

iSound NL200R

86-Type (UK) Wall Box Design

UK standard form factor — mounts directly into standard wall socket plate for clean, professional installation

Advanced DSP Processing

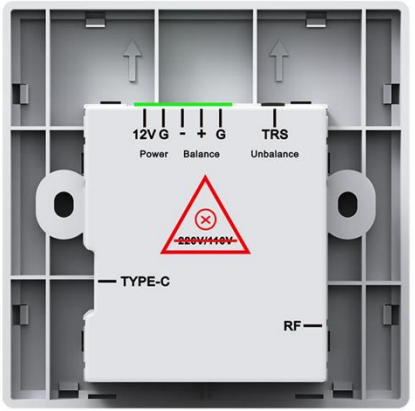
Built-in Acoustic Feedback Cancellation (AFC), Automatic Gain Control (AGC), Adaptive Noise Suppression & Room Acoustic Calibration

NFC Auto-Pairing

Tap to pair instantly. Automatically disconnects when powered off — no manual re-pairing needed

Multiple Audio Outputs

UAC digital, balanced analog (Phoenix terminal), and unbalanced analog (3.5mm TRS) — connects to any system



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NearLink Technology

SLE 1.0 — Next-Generation Wireless Standard

12 Mbps	0.25 ms	30 m	AES-128
Transmission Rate	**Audio Latency**	**Operating Range**	**Security**
6× faster than Bluetooth 2Mbps	20–28× lower than Bluetooth 5.3	Unobstructed, reliable signal	Military-grade encryption

NearLink SLE 1.0 Specifications

Bandwidth: Max. 4 Mbps

Frequency: 2.4 GHz ISM (2402–2480 MHz)

Anti-Interference: Adaptive Frequency Hopping (AFH)

Encoding: Polar Code

Campus Noise Reduction and **Teaching Sound Compensation** matters.

- Protecting **teacher hearing and teaching psychological health**, and protecting **student physical and mental health**, allowing the beautiful sounds of nature to enter the biological characteristics of life, and keeping noisy sounds away from the campus.
- According to data from the **World Health Organization (WHO),** more than **70%** of teachers suffer from varying degrees of vocal cord polyps and vocal cord diseases. In order to effectively protect the teachers' voices, **voice amplification is essential**. However, traditional teaching amplification equipment suffers from issues such as **high noise**, **significant feedback**, **sound distortion**, **uneven sound pressure**, **heavy weight**, **bulky size**, **fixed-frequency constraints**, and **short battery life**. These factors lead to **poor clarity**, **high energy consumption**, and **high failure rates**. In the current context of moving towards digital education, replacing traditional teaching amplification equipment with advanced, **high-quality wireless sound systems** is of great strategic importance for both education development and the physical and mental health of teachers.
- **Information security** have become important strategic directions for education and conference.

Pain points in ordinary classroom teaching scenarios.

- The average classroom covers **60-80m²**. Based on normal vocal needs, amplification systems are required for areas **exceeding 50m²**. Otherwise, a person's natural speaking volume is insufficient to clearly cover the entire room.
- **Hoarseness and throat pain** among teachers are often seen as common. On one hand, most teachers haven't received professional vocal training and may have poor habits or improper techniques, leading to vocal cord damage. On the other hand, because classrooms are large and have complex acoustics, it's hard for a teacher's voice to reach everyone clearly without shouting. Therefore, classroom amplification must be part of the teaching setup to **help teachers speak effortlessly and protect their throat health**.
- For students sitting in the back rows, poor classroom acoustics often make it **difficult to hear the teacher clearly**. Research suggests this situation is equivalent to having a hearing impairment, with reading ability (a crucial part of language skills and learning) being most affected. Consequently, classroom amplification is essential to prevent students from falling behind academically due to poor acoustics, which otherwise impacts **educational equity.**

The First Generation of Teaching Sound Reinforcement Systems—Waist-worn Amplifiers

ADVANTAGES: Integrated microphone and speaker, convenient for moving around.

DISADVANTAGES:

- **Sound Quality:** Low power, insufficient amplification, poor sound quality, and prone to feedback (squealing). The sound distribution is uneven—high volume in the front rows, damages students' hearing, while students in the back rows can't hear clearly, affecting learning efficiency.
- **Usage:** The equipment is heavy and requires long-term wearing, which affects the teacher's professional image. Additionally, teachers still have to speak forcefully for long periods, leading to occupational diseases like laryngitis.
- **Maintenance:** The equipment requires frequent charging by the user, and issues like loss or damage must be managed and maintained by the teachers themselves.

Desktop Gooseneck Microphones

ADVANTAGES: No need to wear anything; no need to charge batteries.

DISADVANTAGES:

- Fixed Equipment: Teachers must speak at close range, which restricts their movement and limits teaching activities.
- School Management: These systems have many ports and complex hardware. Their low level of "intelligence" makes maintenance for school staff quite tedious.
- Hygiene & Safety: Because the microphones are shared by multiple people, they can easily lead to the cross-infection of viruses.

Wireless Handheld Microphones

ADVANTAGES: Good pickup effect (sound quality); convenient for moving around the classroom.

DISADVANTAGES:

- Usage: Requires holding the microphone at all times, which causes arm soreness over long periods. It makes it difficult to use both hands for other tasks, reduces the ability to interact with students, and lessens the overall impact of the teaching.
- School Management: Managing consumables (like batteries) and general maintenance tasks are quite tedious.
- Hygiene & Safety: Shared use by multiple people can easily lead to cross-infection of viruses.

Ceiling-mounted Hanging Microphones

ADVANTAGES: "Sensationless" amplification (the teacher doesn't feel the equipment); no need to wear anything; no charging required.

DISADVANTAGES:
Sound Quality: Poor audio algorithm performance, severe background noise, and a tendency to pick up ambient room noise. The sound pressure is unstable, there is heavy echoing, and poor voice fidelity (the voice doesn't sound natural).
Listener Experience: High-decibel sound from a single direction can damage students' hearing. Listening for long periods causes ear fatigue/fullness and interferes with the brain, making it impossible to concentrate on the lesson and reducing learning efficiency.
School Management: The presence of many poles and messy wiring is unattractive, and maintenance costs are high.

Bluetooth Microphones

ADVANTAGES:

- Maintained by the Bluetooth SIG (Special Interest Group)
- Established technology (Early development/Mature)
- Good sound quality
- Broad compatibility
- Low power consumption

DISADVANTAGES:

- In pursuit of broad compatibility, high latency is incurred;
- In pursuit of low power consumption, transmission distance is shortened.

2.4G/ U band Microphones

ADVANTAGES:

- Long-distance transmission

DISADVANTAGES:

- Independently developed by various manufacturers, resulting in inconsistent development quality;
- Average sound quality;
- Moderate latency;
- Susceptible to many sources of interference, such as Wi-Fi and mobile phones.

iSound NL200 V.S **Bluetooth/2.4G/ U band** Microphones

Items	Bluetooth				
Wireless	Bluetooth	2.4GHz	U-Band	2.4G	NearLink
Distance	10m (in-door)	15m	15m	15m	**30m**
Sample Rate	/	48KHz/16bit	24KHz	48KHz	48KHz/16bit
Latency	20-200ms	35ms	15ms	20ms	15ms
Pairing	BT	IR	IR	Not support	NFC
Transmitter weight	/	23.5g	48.9g	15g	10.5g
Battery	/	5 hours	3 hours	3 hours	4-6 hours
Application	/	Education	Education	Education	Education/ Conference

The Low Latency Effect

- Excessive latency in wireless microphones will cause the audience to hear (double voice effect) two sounds almost simultaneously, creating an unnatural "echo-like" sensation.
- INFOBIT NearLink wireless microphones have a latency of only 15ms. In actual teaching, when a teacher wears the iSound NL200 and moves around the classroom, students will not hear the teacher's double voice, which prevents distraction.
- The "Double Voice" Effect: If the delay between the teacher's natural voice and the amplified sound is too long (typically over 17ms), it sounds like a distinct echo.
- The Solution: By keeping latency at 15ms, the INFOBIT iSound NL200 system ensures the natural and amplified voices blend seamlessly, keeping students focused on the content rather than a disorienting audio lag.

The Anti-interference Technology

- The iSound NL200 wireless microphones use SLE (Low Power Access) technology. It adopts efficient single-carrier transmission, QPSK modulation, and Polar channel coding. By utilizing signal frequencies more efficiently, leveraging the strong error correction capability of Polar codes, and incorporating an automatic frequency hopping mechanism, it significantly reduces the impact of interference. This ensures that voice transmission remains stable even in complex environments.
- Schools are densely populated with people and have complex wireless environments. When a teacher wears the NL200 wireless microphone during the teaching process, there will be no audio dropouts that cause students to be unable to hear the teacher's voice, which otherwise affects teaching effectiveness.

Key Technical Terms

- SLE (Low Power Access): A core mode of NearLink designed for low power consumption and high efficiency.
- Polar Codes: Advanced error-correction technology (also used in 5G) that ensures a clear signal even if some data is lost.
- Automatic Frequency Hopping: The system automatically switches to "clean" channels to avoid interference from Wi-Fi or other devices.

The High-Fidelity Sound Quality

- Objective Evaluation: The iSound NL200 wireless microphone features an audio sampling rate of 48KHz, a quantization bit depth of 24-bit, and a transmission bandwidth of up to 4Mbps. Using the perception-based audio quality evaluation tool ViSQOL, it achieved an objective MOS-LQO score of 4.6 (on a scale of 1.0–5.0, where higher scores indicate better quality).
- Subjective Evaluation: The Tsinghua Shenzhen International Graduate School compared it with other wireless microphones on the market and affirmed the superior audio quality of the iSound NL200 wireless microphone.
- In practical teaching scenarios, the high-fidelity amplification and excellent voice reproduction allow the teacher's voice to be clearly transmitted to every student. This improves teaching quality while also protecting students' hearing health.

- Key Technical Specs Explained
- 48KHz / 24-bit: This is "studio quality" audio, far exceeding the standard telephone or basic digital voice quality.
- MOS Score of 4.6: In the world of audio engineering, a score above 4.0 is considered "Excellent" or "Transparent" (meaning it sounds just like the original source).
- 4Mbps Bandwidth: This high data rate allows the signal to remain uncompressed and clear, unlike many Bluetooth systems that must "shrink" the audio to fit a small pipe.

The Long-Distance transmission

- The iSound NL200 wireless microphones have a transmission distance of up to 30 meters, thanks to Polar code technology and high transmission bandwidth.
- Polar code technology enhances signal reliability during long-distance transmission.
- The high transmission bandwidth of 4Mbps allows more data to be transmitted in the same amount of time, while reducing signal attenuation and interference during transmission.
- In actual teaching, teachers wearing the NL200 wireless microphones can move around the classroom freely, enhancing the impact of their lectures and improving student learning efficiency.

Why 30 Meters Matters?

- In a typical large classroom (60-80m²), a 30-meter range ensures that even if the receiver is at the front by the blackboard, the teacher can walk all the way to the back row to interact with students without the audio cutting out or crackling.

The Cost-effective Solution

- The iSound NL200 wireless microphones feature built-in adaptive feedback cancellation, automatic gain control, intelligent noise reduction, and intelligent equalization, resulting in low commissioning costs.
- The wiring is simple; you only need to install the receiver on the wall. It supports multiple output interfaces, which leads to low construction costs and simple operation and maintenance.
- Only one electrician is required for installation, which can help integrators and contractors reduce "hidden costs" such as commissioning and construction expenses.

Three Ways to Wear

Magnetic accessory system allows instant switching between wearing styles

Lavalier

< Discreet Audio Precision >

Clips directly onto clothing. Nearly invisible on camera. Ideal for presentations, lectures, and interviews where aesthetics matter.

Dropping / Pendant

< More Natural-Looking >

Hangs freely for consistent omnidirectional pickup regardless of head movement. Perfect for natural dialogue capture.

Headworn

< Maximum Gain Before Feedback >

Fixed distance from mouth ensures perfectly stable volume even when the speaker turns their head. Best for high-energy presentations.

Classroom · Conference Hall · Corporate Boardroom

Built for Education & Enterprise

K–12 & Higher Education

One teacher, one mic — hygienic and simple. Multi-room deployment eliminates cross-room interference.

Corporate Boardrooms

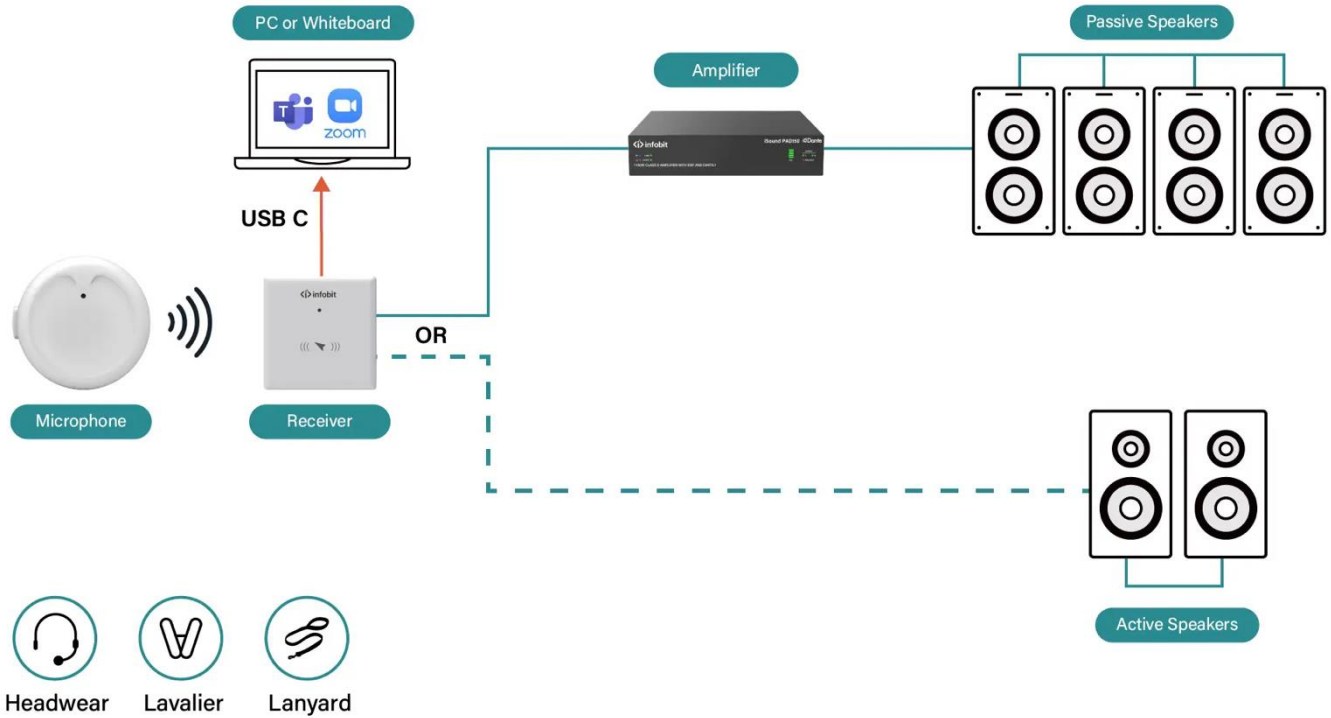
Wireless flexibility meets professional-grade audio. Bridges active teaching and boardroom communication.

Conference Halls

30-metre range allows presenters and performers to roam freely through large venues.

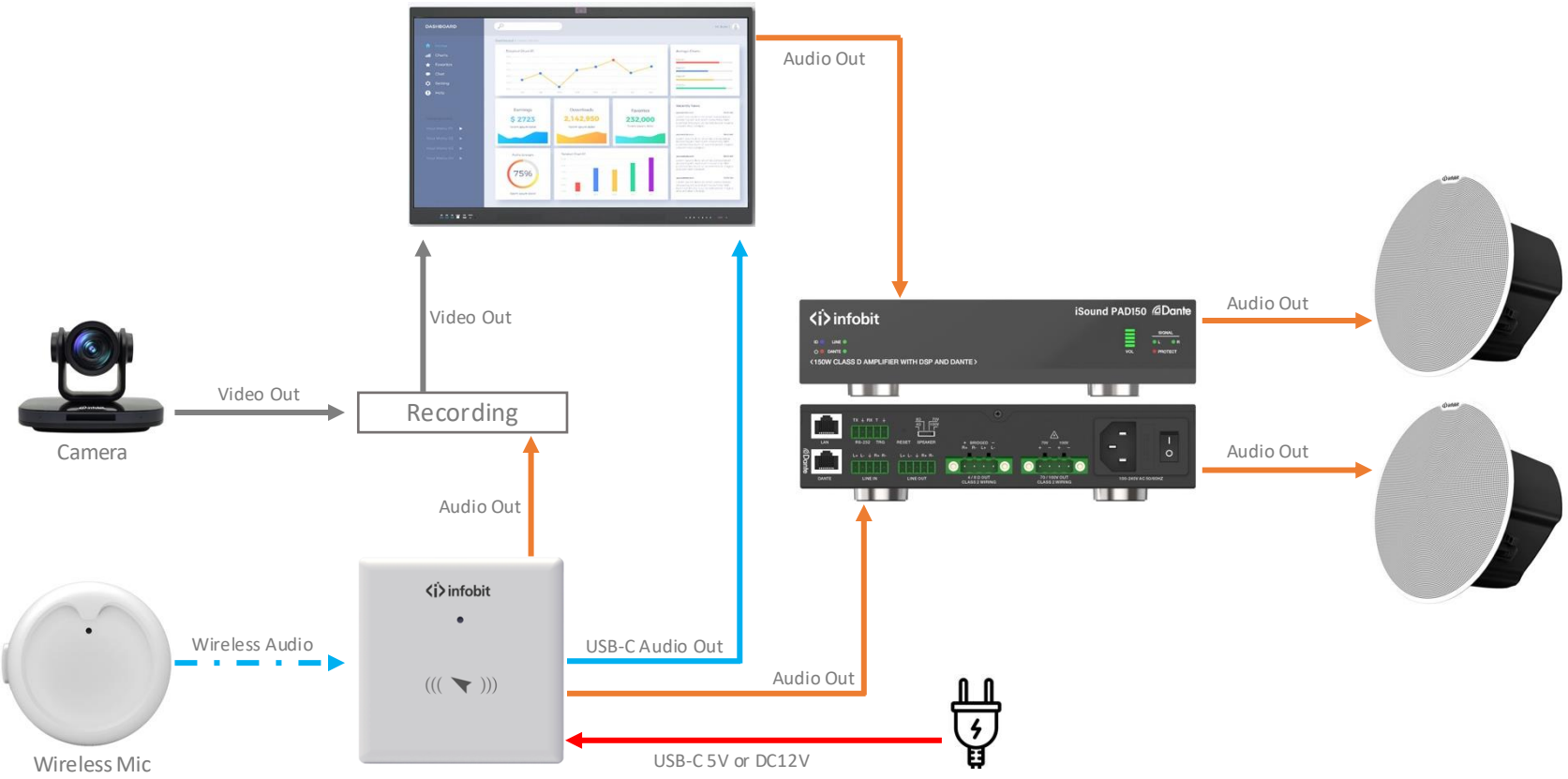
Training Rooms

NFC auto-pairing makes setup effortless. Perfect for rotating instructors and changing configurations.



Output Options: To Active Speaker | To Power Amplifier | UAC Digital Output | 3.5mm Unbalanced

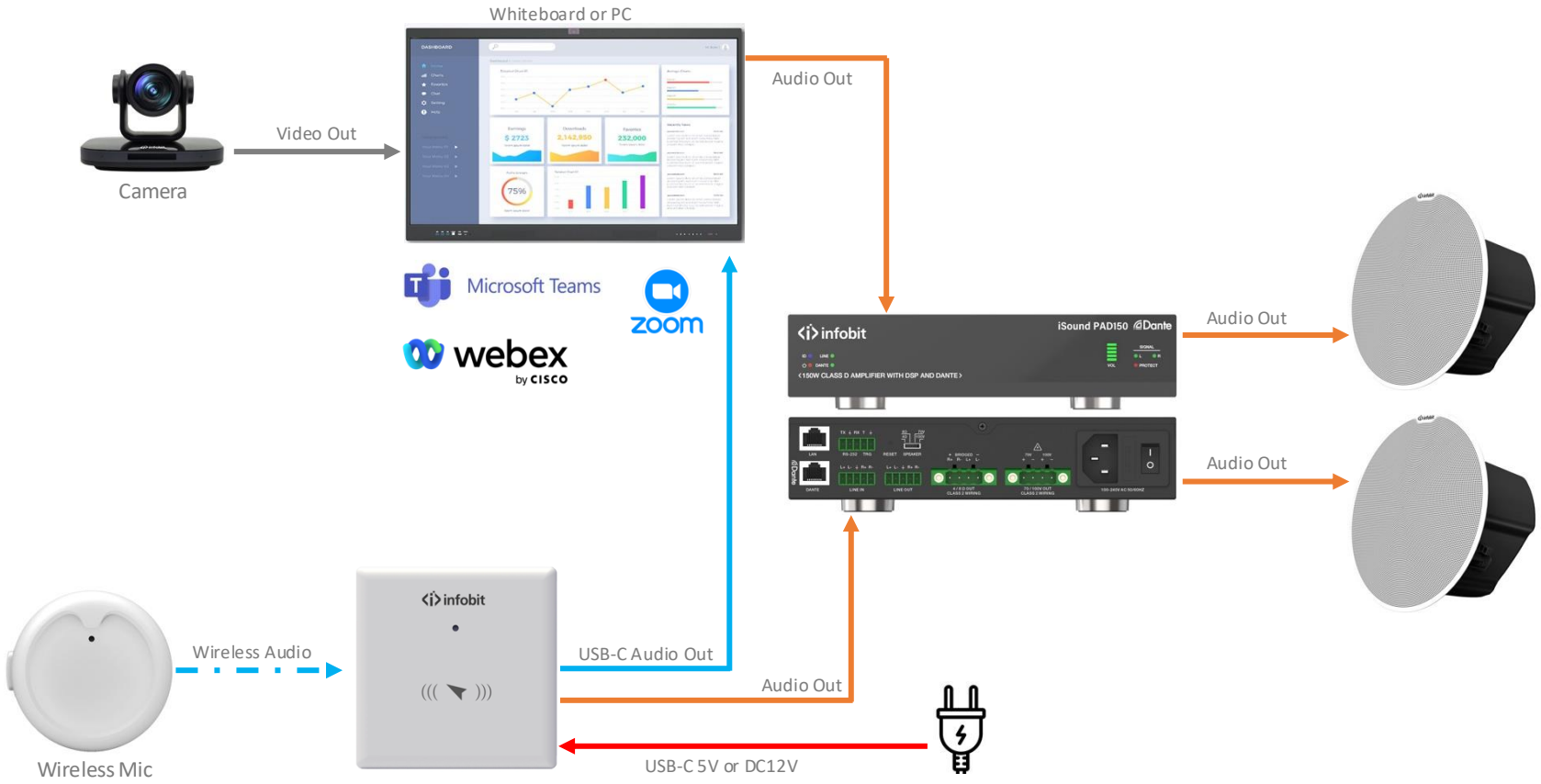
iSound NL200 | System Diagram with recorder



Output Options:

- To Active Speaker
- To Power Amplifier
- UAC Digital Output
- 3.5mm Unbalanced

iSound NL200 | System Diagram with Cloud Conference



Output Options: To Active Speaker | To Power Amplifier | UAC Digital Output | 3.5mm Unbalanced

Technical Specifications

Transmitter (NL200T / NL200H)	
Wireless Protocol	2.4G NearLink SLE
Operating Range	30 m (unobstructed)
Frequency Response	100 Hz – 20 kHz
Sample Rate / Bit Depth	48 kHz / 16-bit
SNR	≥ 80 dB
Battery Capacity	97 mAh
Battery Life	~4 hours
Weight	10.5 g
Dimensions	32 × 32 × 13.8 mm

Receiver (NL200R)	
Form Factor	86-type (UK) wall box
Dimensions	86.1 × 86.1 × 27.3 mm
Power Supply	DC 12V or USB-C
Audio Output	UAC digital / Phoenix XLR / 3.5mm
DSP Features	AFC, AGC, ANS, RAC
Pairing	NFC auto-pairing
Wireless Protocol	2.4G NearLink SLE
Operating Temp.	0°C – 50°C
Weight	30 g

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iSound NL200

NearLink Wireless Microphone System

- ✓ Ultra-Lightweight 10.5g
- ✓ 4+ Hour Battery
- ✓ 30m Range
- ✓ Advanced DSP
- ✓ NFC Pairing
- ✓ 86-Type Install

CONTACT US

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