

Nearity

CONFERENCE SPEAKERMIC

User Manual



Model: AW-A20

V1.0

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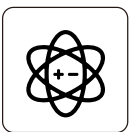
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1. Product Overview

● 1.1 Product Introduction

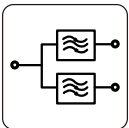
NEARITY has launched its flagship conference speakermic, A20. This product boasts an 8-unit omnidirectional microphone array and utilizes deep learning-based technology to cancel noise, echo, and reverberations. It can pick up voices within a 5m radius, providing a seamless conference experience. Additionally, the built-in high-fidelity speaker ensures high-quality full-duplex communication. Daisy chain technology allows up to 5 A20 units to be connected, enabling coverage of rooms of varying sizes.

● 1.2 Features



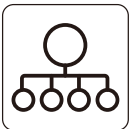
- Advanced proprietary algorithms

Effectively removes acoustic echo and room echo to provide meeting equity in even the most challenging environments.



- Full duplex communication

Allows for simultaneous speakers to be heard at both ends without missing a word.



- Daisy-chain expansion

Connect up to 5 units in a combined array for larger or more complex meetings.



- Plug-and-play setup

USB and ethernet connections provides for easy flexible installation and is compatible with leading UC platforms.



- Customizable audio settings

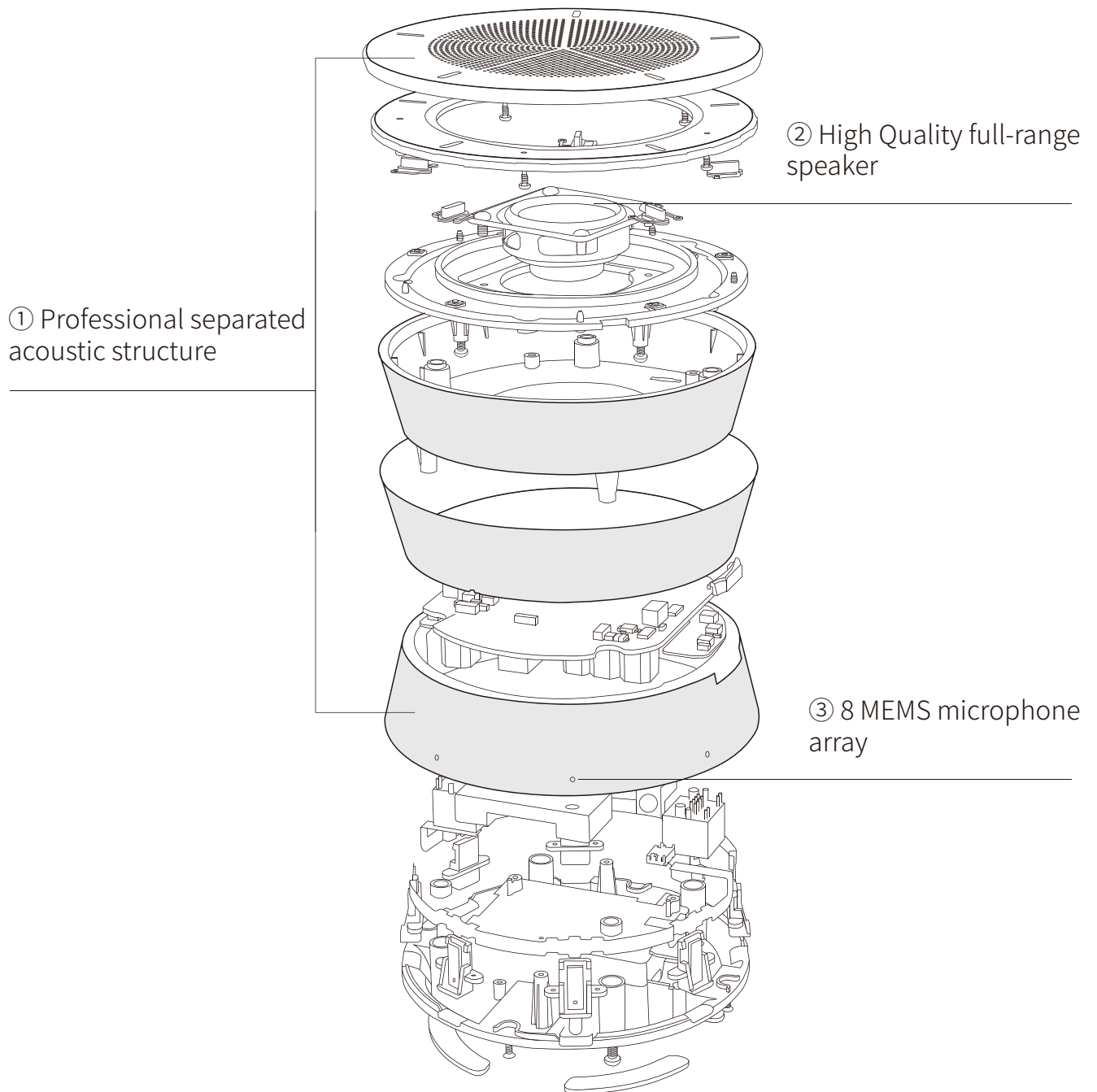
According to the sound environment of different conference rooms, noise reduction, de-reverberation, and echo cancellation parameters can be adjusted to obtain the best sound effect.

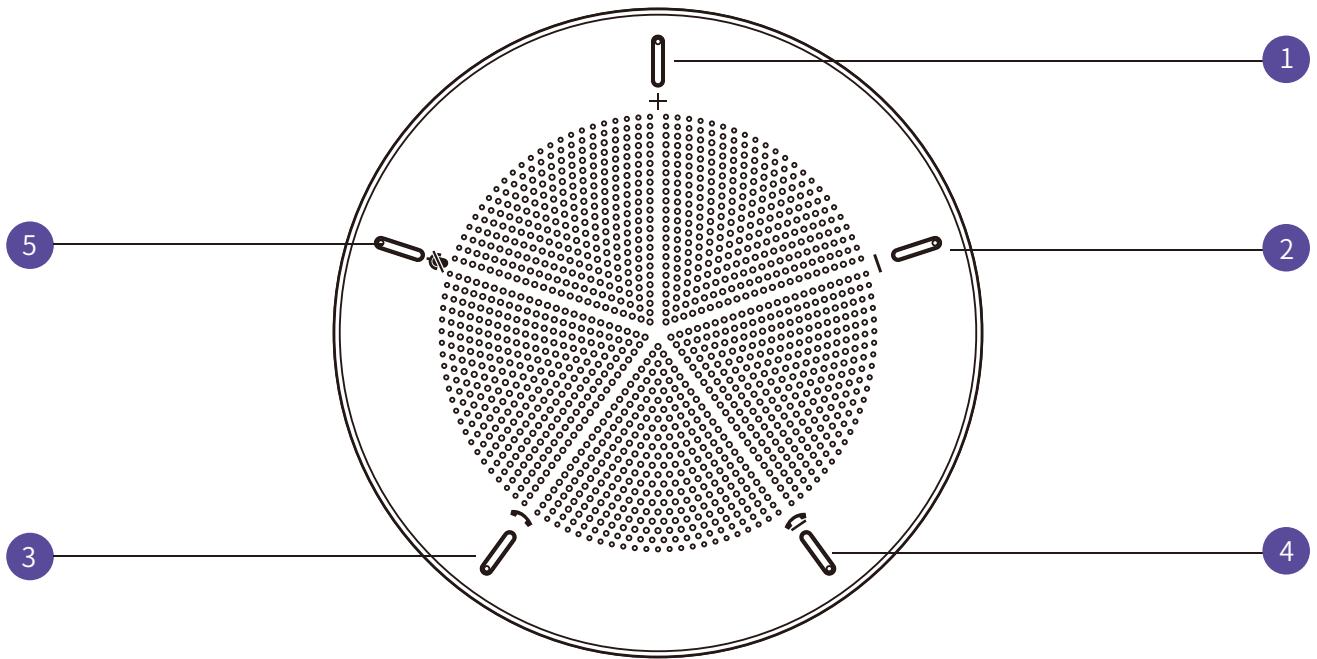
● 1.3 Packing List

A20 * 1	USB cable(3m) * 1	Cat6 Ethernet cable * 1	Power Adapter * 1	User manual * 1

● 1.4 Basic Information

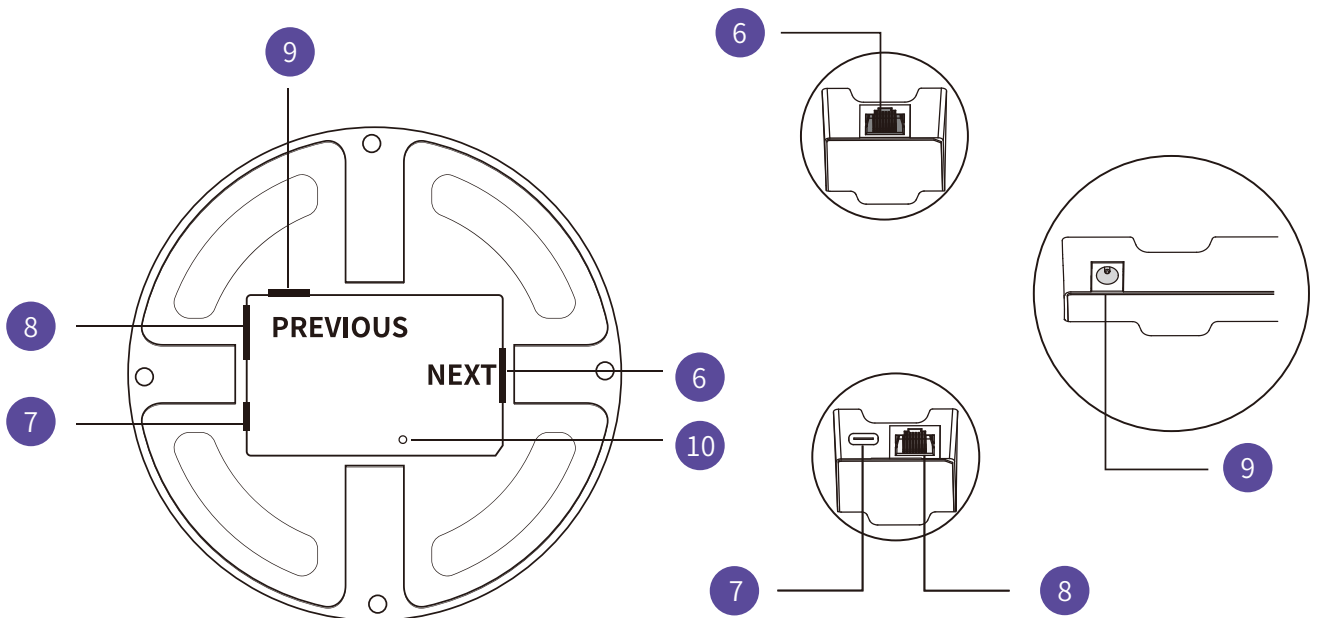
1.4.1 Physical Structure





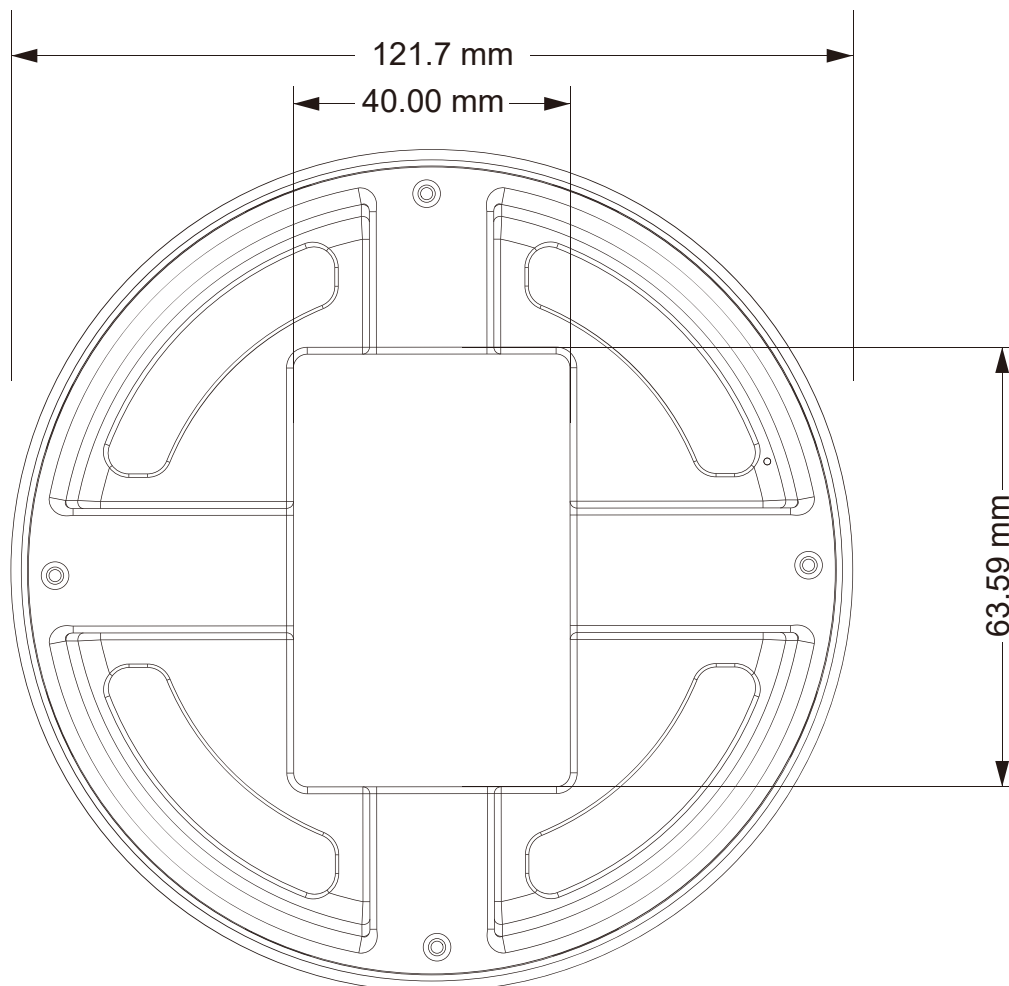
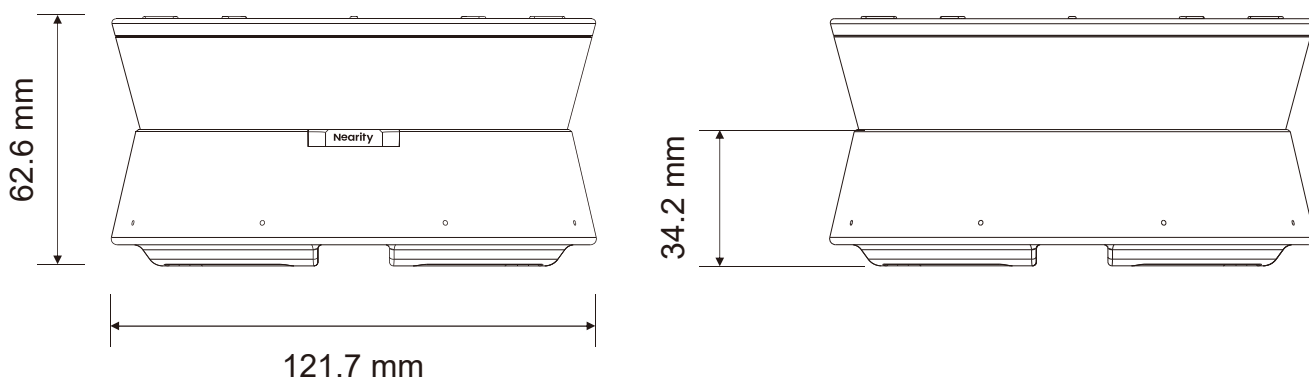
- ① Volume+
- ② Volume-
- ③ Answer call*
- ④ End call*
- ⑤ Mute

(*Answer call and End call button should match with the specific VC software.)



- ⑥ POE output (for daisy-chain the next A20)
- ⑦ USB Type-C
- ⑧ POE input (for daisy-chain with the previous A20 or C30R)
- ⑨ DC power port
- ⑩ Reset button

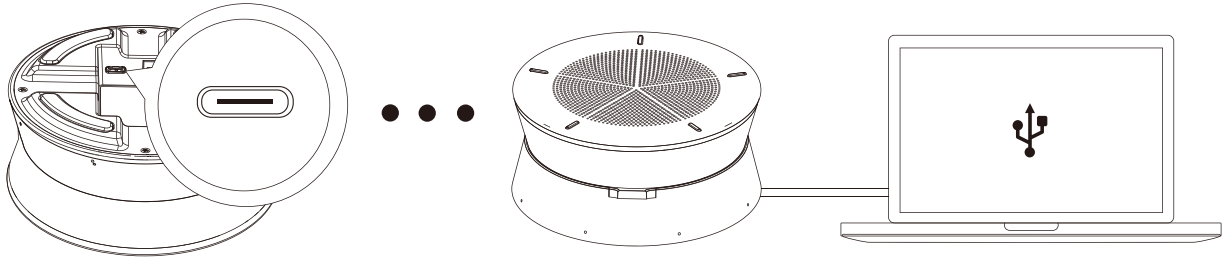
1.4.2 Dimension



2. Deployment

● 2.1 Connection

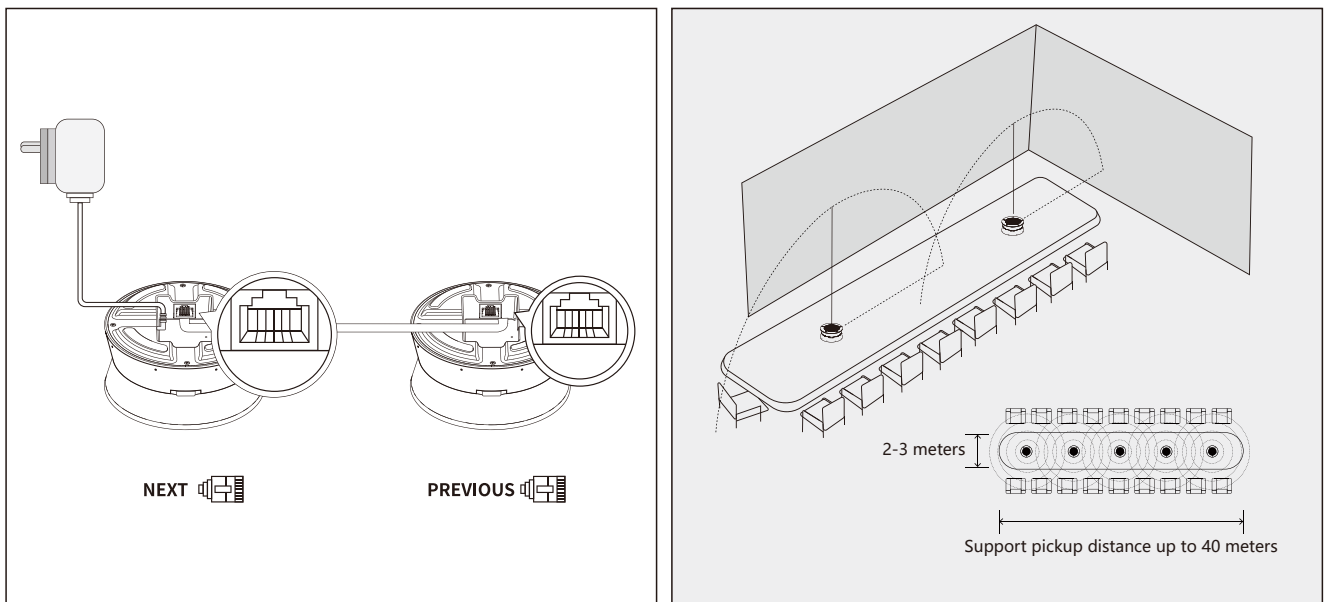
2.1.1 Single A20 connects with Laptop / PC



When using one unit, no additional power is required. A single USB port can provide both power and data transfer.

2.1.2 Daisy-chain connection

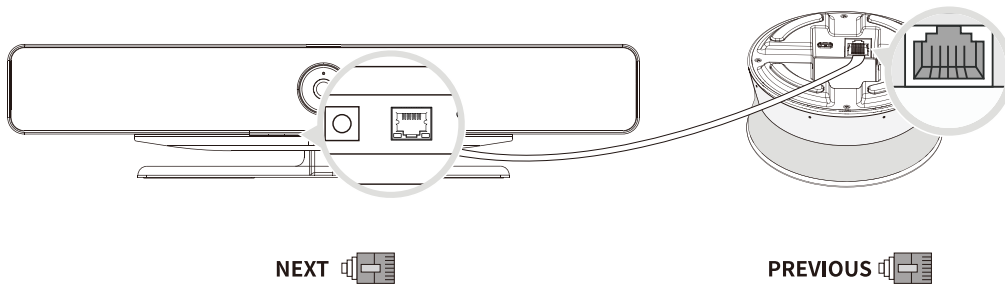
The latest daisy chain technology enables up to 5 devices to connect seamlessly, providing clear, uninterrupted audio for meetings. The first A20 is connected to a PC via USB and powered by an adapter.



The Daisy Chain technology enables the A20 to be a perfect fit for different-sized meeting rooms, from small to large.

2.1.3 A20 daisy-chain with C30R

The two are complementary: C30R offers high-definition video for one A20 situation, while A20 boosts the sound and pickup range for one C30R situation. One C30R can connect up to 4 A20 units.



The C30R is connected to the computer via USB, and then the C30R's network port is connected to the previous network port of the first A20 through the network cable

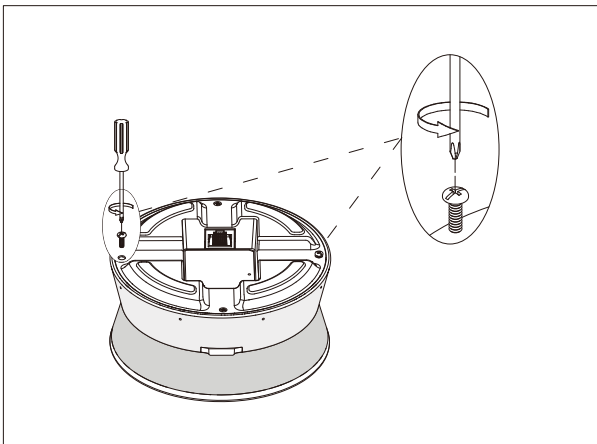
● 2.2 Installation Instructions

2.2.1 Desktop Installation

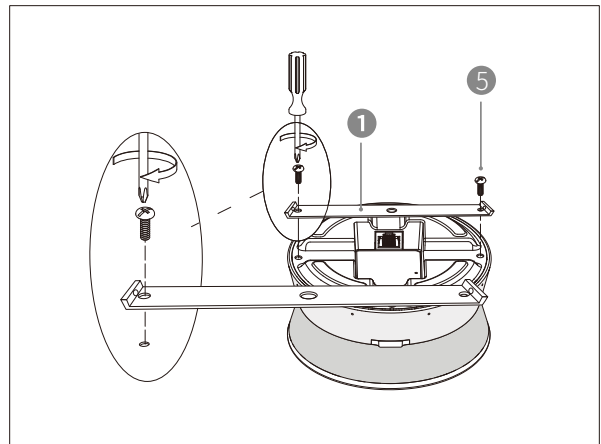
Place the A20 device on the top of your desk, in the middle between each speaker or in the middle of the desk.

2.2.2 Bracket Installation

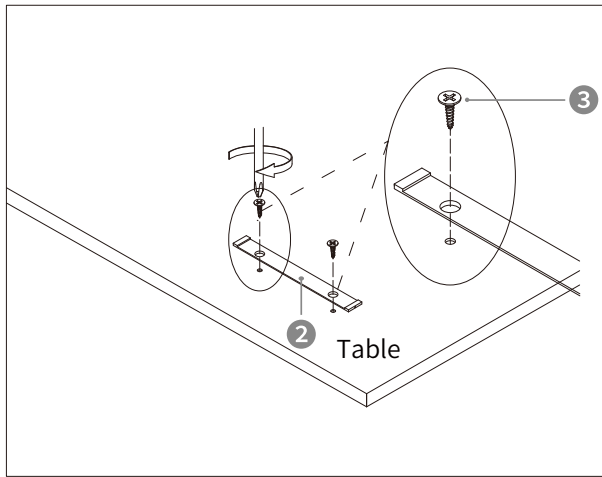
The A20 can be secured to a tabletop using a fixed bracket for stability in use.



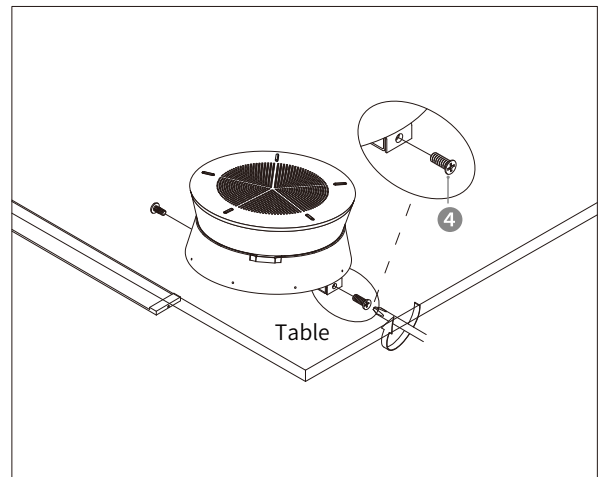
① Take out the two screws that were already in the bottom of the A20. Line up the holes at each end of the long metal plate. Put the flat-headed long screws through the holes to attach the metal plate to the bottom of the A20. Finally, use the bracket to attach the A20 to the table.



② Line up the holes on the small metal plate with the U-shaped groove on the larger metal plate. Then, use small screws with flat heads to keep them in place.



③ Use pointed self-tapping screws to secure the short iron plate to the table-top. Once the screws are in place, the installation is finished.



④ The diagram shows that the fixed installation is now finished.

3. Operation Guide

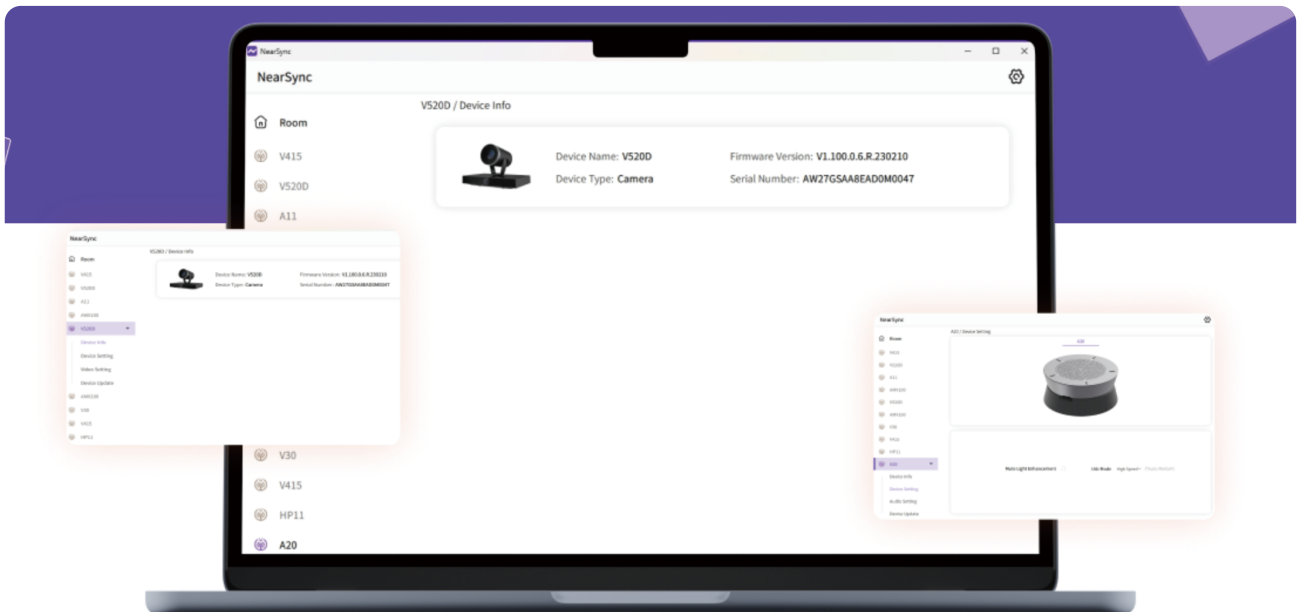
● 3.1 Indicators

Solid blue-white:	Connected and in use.
Solid Green:	Connected and being called by authenticated (HID interoperability) software.
Solid Red:	Muted.
Flash blue-white:	Firmware Upgrading.
Solid Yellow:	DC power is supplied, but USB connection has failed.
Mute light enhancement display status:	<ol style="list-style-type: none"> 1. The mute key is blue-white, and other keys are red, indicating that the device is in mute state; 2. The mute key is red and other keys are blue-white, indicating that the device is in unmute state.

● 3.2 Nearsync Tool

3.2.1 Downloading link

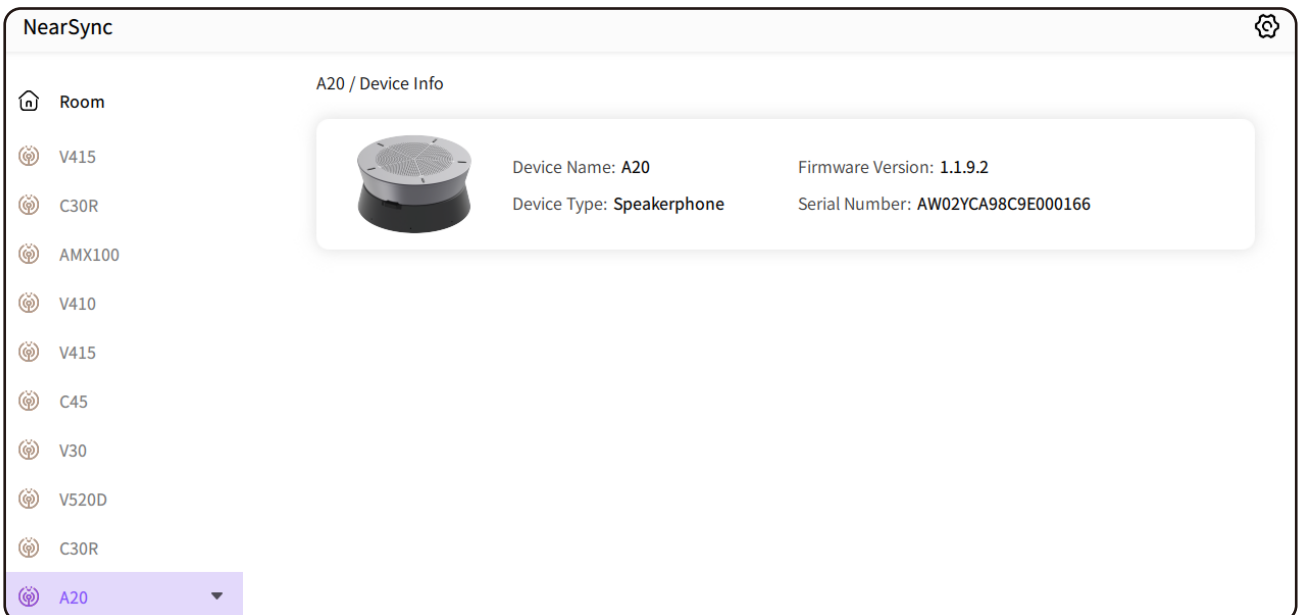
Download the Nearsync on the official website.<https://nearity.co/resources/dfu>



3.2.2 Nearsync Operation

3.2.2.1 Product information

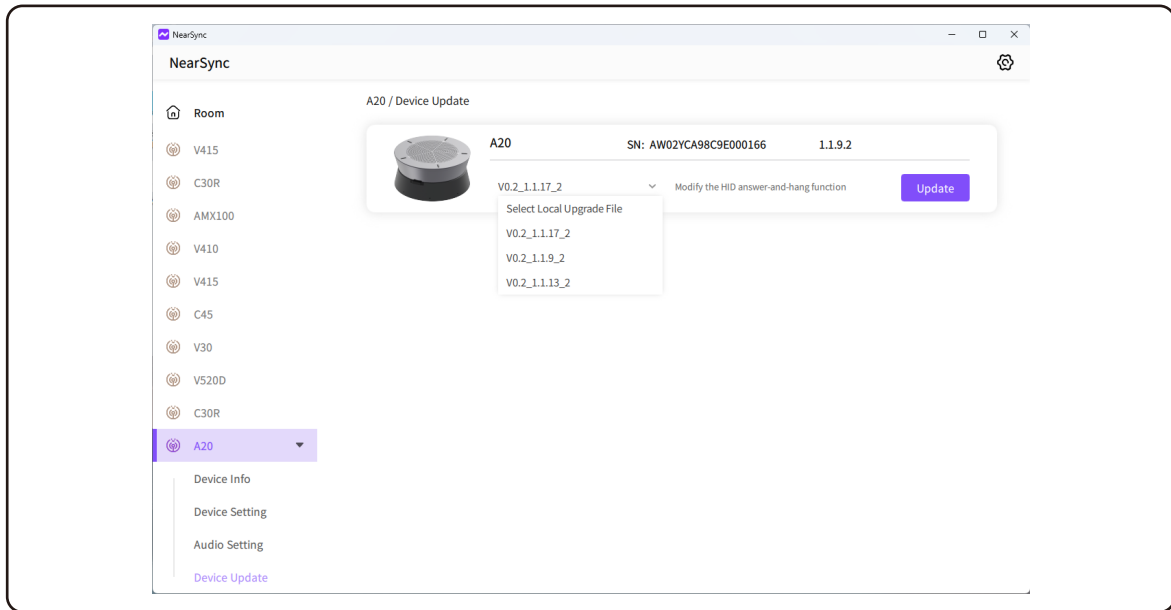
After the A20 is connected to the computer via USB, nearsync automatically recognizes the device information.



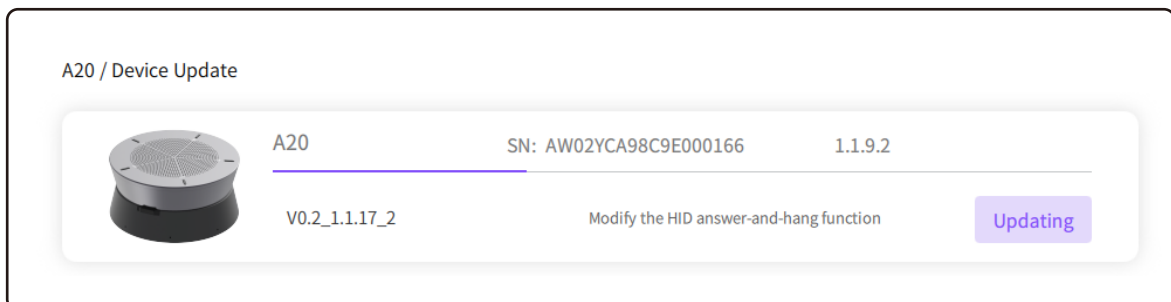
1. Device picture
2. Device information
3. When there are multiple units daisy-chain, it will show several picture here. for example, A20 daisy-chain.
4. You can switch the device you want to nearsync by clicking on the picture here.

3.2.2.2 Upgrade Firmware

3.2.2.2.1 Upgrade online



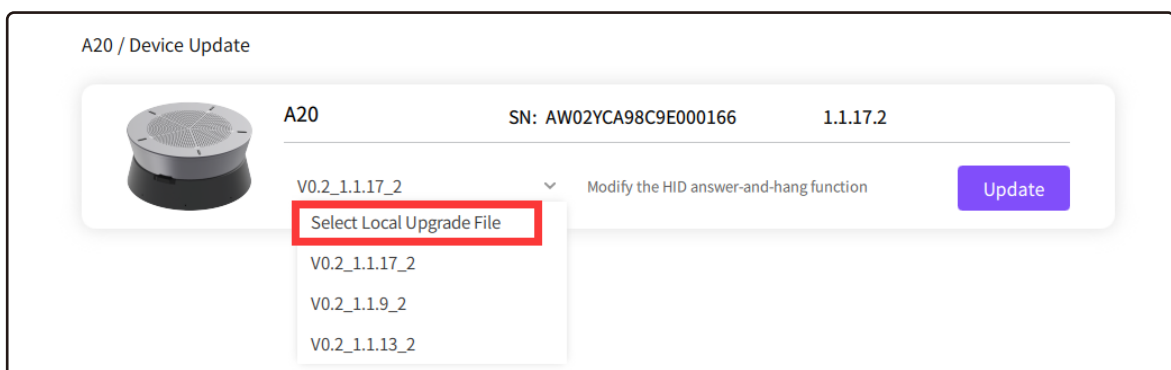
1. Choose the unit you want to update.
2. Select the firmware version you want to update. The latest versions will be displayed under the menu.
3. Click Update to start. And it will show the update process as follows:



4. When updating finishes, the device will restart automatically.

3.2.2.2.2 Local update

Sometimes we need to customize the firmware version according to the current room sound environment. Ensure you've already gotten the firmware from our technical team before you start local update.

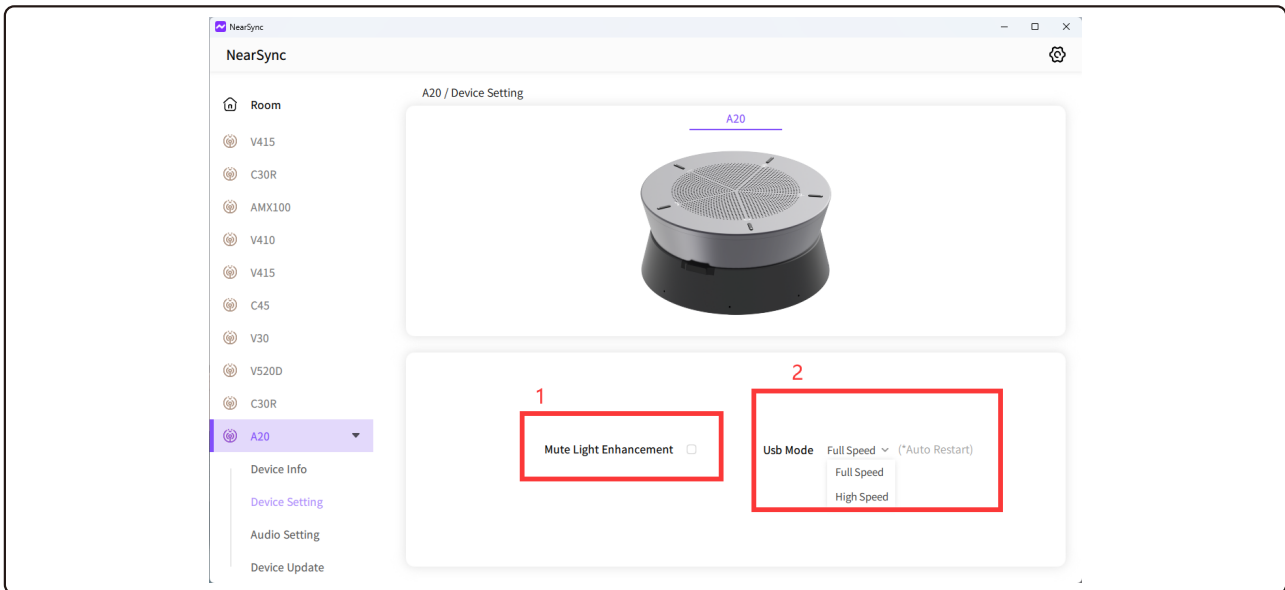


1. Choose the firmware on your PC/Laptop
2. Click the Update button to start. And it will show the update process as follow:



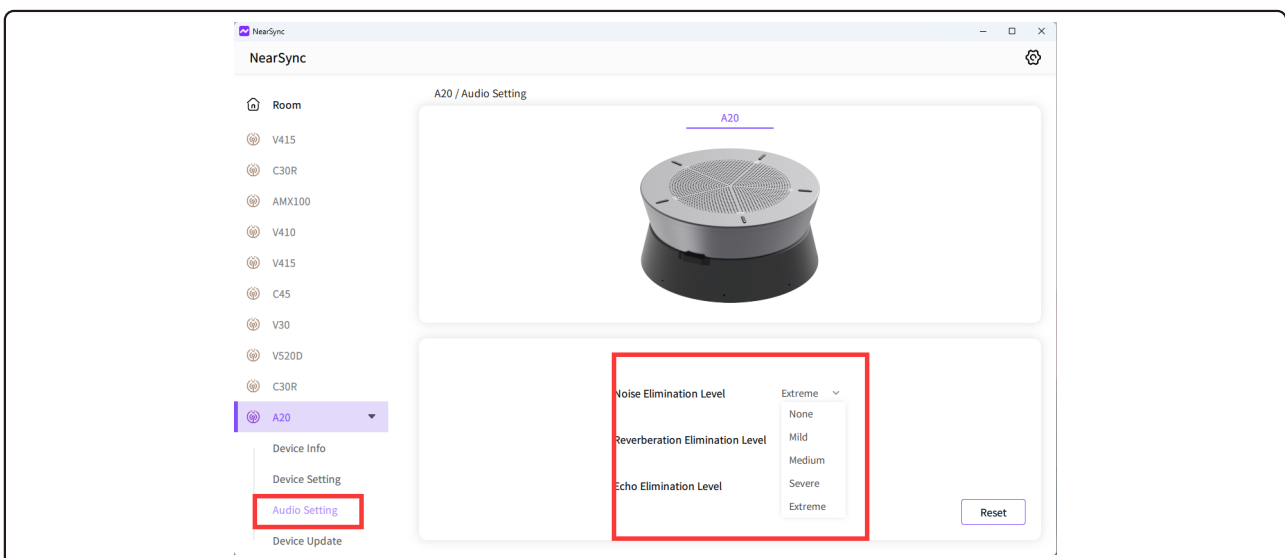
3. When updating finishes, the device will restart automatically.

3.2.2.3 Device Setting



- 1, When the feature is enabled, the mute mode indicator will switch status.
- 2, The USB mode can be switched between High Speed and Full Speed. High Speed mode is usually used, while Full Speed is used to address compatibility issues with some Android Pads.

3.2.2.4 Adjust audio effects



The noise reduction, reverberation elimination and echo suppression levels can be set independently. There are five levels to choose from: None, Mild, Medium, Severe, and Extreme.

4. Specification

Technical Specifications	
Microphone Features	8 MEMS microphones array
	Effective pickup distance: 5m(16ft)
	Sensitivity: -26dBFS 94dB SPL@1kHz
	SNR: 65dBA@20kHz bandwidth, A-weighted
Speaker Characteristics	Rated output power: 4Ω/1.5W
	Speaker frequency response: 155Hz~16kHz
	Speaker volume: 80±3dB @1m
	THD<5%
Audio Characteristics	Beamforming
	Noise suppression
	Full-duplex
	Reverb and Echo cancellation
	Automatic Gain Control (AGC)
Daisy-chain	POE UTP RJ45 (CAT6)
	Up to 5 units via POE connection
Physical Characteristics	Height: 64mm (2.5 inches) Width: 120mm (4.7 inches) Depth: 120mm (4.7 inches)
	Net weight: 544g (19.19 oz)
	Color: Galaxy Gray
Power and Connectivity	External power supply: DC 48V/0.6A or USB 5V/0.5A
	Compatible operating systems: Windows/Mac/Linux
	USB port: USB 2.0 Type-C
Packing List	1x A20
	1x USB cable(3 meters)
	1x UTP ethernet Cat6 Cable(3 meters)
	1x Power adapter
	1x User manual

5. FAQ

Q: How to confirm if the device is working normally?

A: According to the connection method above, after connecting the USB to the computer, you can use the following steps to check:

- **Light:** The device indicator is blue-white
 - **Playback:** The PC selects A20 as the speaker device, and plays the audio source. Make sure there is no noise, lag and other phenomena
 - **Recording:** Open Audicity or other recording software to see if the waveform changes evenly, play the recording file and confirm whether the sound quality is normal
-

Q: What video conference software is Nearity devices compatible with?

A: No restrictions. Nearity devices employ the international standard USB connection method, making them compatible with most major video conferencing software, such as Zoom, Teams, Google Meet, Tencent Meeting, and Webex.

Q: How many people can A20 cover as recommendation?

A: According to best practice design, it is recommended that one A20 microphone cover a radius of 2-4 meters, or 6-8 people. When A20 is daisy chained up to 5 units, it can cover an area of approximately 50 square meters, accommodating up to 40 people.

Q: Is the Microphone in the C30R still working when Daisy-chain with A20?

A: C30R's microphone is not available when daisy chained with A20s due to the different sound pickup effects. When both C30R and A20 are used to take sound simultaneously, it can cause an unstable pickup. Therefore, we have intentionally disabled C30R's microphone when cascading with A20s.

Q: Why do online participants hear their echo in the meeting?

A: Check if the conference software uses A20 for both the microphone and speaker at the same time. NEARITY A20 has an 8-element array that uses beamforming technology to eliminate acoustic and room echo, ensuring clear communication in conference rooms even in challenging environments.

Q: Why do remote participants hear continuous distractions during meetings?

A: Check if the conference room has any ultrasonic, infrared, or other sensors. If so, turn them off and try again.

Q: When multiple A20s are daisy-chained, the indicator of the second A20 turns yellow and does not function correctly.

A: Check if all A20 units' firmware versions are the same.

Q: When multiple A20s are connected with daisy chain technology, the second one is not activated.

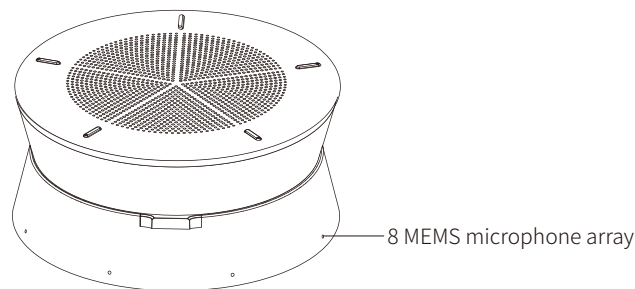
A: Check if the following two occurred:

1. The primary A20 is not connected to the power source;
2. The order of the network cable connections is incorrect. Refer to Chapter 2.1.2 for more information.



CAUTION

- Please keep the device horizontally;
- Connect the device using the provided cable. The standard USB cable length is 3m, but you can purchase a longer one if needed (we recommend UGREEN brand). The maximum recommended length for a USB cable is 5m. If you need a longer cable, buy an extension cable with a signal amplifier; otherwise, it may cause signal instability, resulting in equipment not being recognized, noise, and other issues;
- Ensure that the USB connection is stable. Avoid frequently plugging and unplugging, as well as applying external force, as this may damage the USB interface or cable;
- When cascading multiple devices, be sure to connect DC power supply;
- Do not cover the microphone hole shown in the image below. Doing so may affect the quality of your audio.



- Ensure that nothing is blocking the device on the table;
- When cleaning the table, make sure not to wipe the device;
- Unauthorized disassembly and strong impacts can cause damage to the device;
- The equipment should be kept away from high temperature environment, heat source, strong magnetic field, strong electric field;
- Consistent exposure to loud noises can cause hearing loss;
- The A20 has a sound pickup range of up to 3 meters in a quiet, reverberation-free environment. For larger areas, increase the number of A20s for daisy-chaining, or purchase a longer CAT6 cable;
- After the A20 is daisy-chain with C30R, the A20 is powered by the network cable, and there is no need to supply power through the adapter.