



Function Description:

1. AI-Powered Noise Suppression:

Intelligently senses ambient noise in real time and amplifies only human speech, effectively suppressing non-speech sounds such as footsteps, typing, fan noise, etc.

2. Sound Curtain Technology:

Ensures that sounds originating from the student area are not amplified, delivering pristine audio clarity in the teaching zone.

3. Optimized Microphone Deployment Strategy:

Teachers near the podium are captured by a microphone array for superior voice pickup.

One or two omnidirectional student microphones are installed in the student area to capture student voices during remote teaching.

4. Pickup Coverage Angles:

Teacher mic: 0° to 180° coverage with volume variation < 3 dB across the range.

Remote teaching mode: Both teacher and student mics switch to omnidirectional (360°) pickup for full-room audio capture sent to the far end.

5. Simultaneous Local Amplification & Remote Teaching:

No switching required—local sound reinforcement and remote interactive teaching operate concurrently, offering an integrated classroom audio solution.

6. Automatic Feedback Suppression (AFC):

Boosts system gain by ≥ 8 dB, enabling louder local amplification while effectively preventing acoustic feedback (howling).

7. Automatic Echo Cancellation (AEC):

Eliminates acoustic echo caused when loudspeaker output is picked up by microphones, preventing far-end participants from hearing their own voice.

Key Feature: AEC and AFC operate independently—even when local amplification (AFC) is active, far-end speech does not disrupt local sound, and local audio does not leak as echo to the remote side.

8. Automatic Noise Suppression (ANS):

Reduces steady background noise by ≥ 30 dB, significantly enhancing speech intelligibility in noisy classrooms.

9. Automatic Gain Control (AGC):

During remote teaching, boosts quiet speech by ≥ 15 dB, while automatically limiting output during high-volume scenarios (e.g., group reading) to avoid distortion.

10. Automatic Reverberation Reduction (ARR):

Noticeably reduces room reverberation when enabled, resulting in clearer and more intelligible speech.

11. Built-in Dual 30W Amplifier Module:

Delivers clear, nuanced, and dynamic sound with excellent tonal depth—ideal for natural-sounding voice reinforcement.

12. Wireless Microphone Support:

Automatically prioritizes wireless microphone input when detected for optimal amplification.

13. Dual External Audio Inputs:

Supports both remote audio reference signals and an additional external source (e.g., from a large display or teacher's PC). Playback of external audio does not interrupt local amplification.

14. Three Hardware Output Channels:

One output for recording/streaming devices

Two additional outputs support up to four passive speakers (two pairs)

15. Remote Software Control:

Device can be controlled via Ethernet (WLAN) or RS485 interface for configuration and operation.

16. Analog Volume Adjustment for System Integration:

To simplify integration with third-party hardware, analog volume can be adjusted directly on the device for:

Far-end input signal

Output signal sent to far-end

Output signal sent to loudspeakers

17. On-Device Keypad Control:

Integrated front-panel buttons allow users to turn amplification on/off and adjust volume up/down without external software.

Technical specifications:

Model	VM-C903
Supported Algorithms	AFC, ANS , AEC , AGC , ARR
Feedback Suppression Gain	≥ 18 dB
Noise Reduction Depth	≥ 30 dB
Echo Cancellation Depth	≥ 90 dB
Maximum Echo Tail Length	≥ 1 second
Reverberation Suppression	≥ 18 dB
Sampling Rate	48 kHz
Frequency Response	20 Hz – 20 kHz, ±0.3 dB
Total Harmonic Distortion (THD)	≤ 0.1%
POWER	Power switch
Input/Output Level	4 dBu
Input Impedance	20 kΩ
Output Impedance	200 kΩ
Power Input	DC 24 V / 2.7 A
PRI MIC	Primary microphone input
SUB MIC	Secondary microphone input
OTH MIC	Other microphone input (supports phantom-powered and wireless microphones; selection via PC utility)
LINE IN	External audio input (typically for PC audio signals)
AEC IN	Reference audio input for echo cancellation (typically connected to far-end signal during interactive sessions)
AEC OUT	Processed audio output for far-end transmission (typically sent to terminal devices)
Amplifier Output	Dual-channel 2 × 30 W power amplifier; supports two passive speaker outputs (compatible with 30 W, 8 Ω passive speakers)
USB Port	For firmware upgrades
WLAN	Network interface for remote control and monitoring
RS485	RS485 communication port
AC Input Voltage Range	100–240 V, 0.75 A, 50/60 Hz
Operating Voltage	DC 24 V (via internal power supply)
Dimensions (L × W × H)	200 × 159.8 × 40.5 mm
Operating Temperature	–10°C to +50°C
Storage Temperature	–20°C to +70°C
Net Weight	1,115 g
Color	White