

HUAWEI VPM220W Microphone Array

Product Overview

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About This Document

Purpose

This document describes the positioning, features, application scenarios, and technical specifications of the HUAWEI VPM220W wireless microphone array (VPM220W or microphone array for short).

Intended Audience






This document is intended for:

- End users
- Huawei agents

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol Conventions

| Symbol | Description |
|--|---|
|  DANGER | Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. |
|  WARNING | Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
|  CAUTION | Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. |
|  NOTICE | Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury. |
|  NOTE | Calls attention to important information, best practices and tips. |

| Symbol | Description |
|--------|--|
| | NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration. |

Change History

| Issue | Date | Description |
|-------|------------|--|
| 02 | 2017-06-05 | This issue is the second official release, and includes the following changes: Chapter 3 Specifications Added Wi-Fi features descriptions. |
| 01 | 2013-09-30 | This issue is the first official release. |

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1 Product Positioning and Features

1.1 Product Positioning

With the rapid development of IP telecommunications technology and bearer network quality, videoconferencing technology has matured in various aspects, including high-definition (HD) video and high-fidelity (hi-fi) audio. To meet customer demands, Huawei has designed and produced a new series of microphone arrays to be used with existing videoconferencing products to form a complete HD videoconferencing solution.

VPM220W supports 360-degree sound pickup with up to a radius of 6 meters. Huawei videoconferencing endpoints support audio noise suppression (ANS), automatic echo cancellation (AEC), and automatic gain control (AGC) technologies. When used with HUAWEI TEX0 series videoconferencing endpoints, VPM220W easily outperforms all currently available rival products.

1.2 Product Appearance and Structure

Figure 1-1 shows the appearance of VPM220W.

Figure 1-1 Appearance of VPM220W



VPM220W is a user-friendly, high-quality, and stylish device.

1.3 Product Features

1.3.1 Flexible Deployment Options

VPM220W connects to the videoconferencing endpoint using Wi-Fi to enable the following:

- **Placement**
The microphone array's position can be adjusted based on the number of conference attendees and the placement of seats in the conference room.
- **Networking**
Thanks to its strong signal stability and anti-interference capabilities, VPM220Ws can be networked with videoconferencing endpoints using Wi-Fi, which eliminates the need for cascading.
- **Management and maintenance**
VPM220W has no external cables, which prevents accidental disconnections.

1.3.2 Visually Stylish Appearance

Designed by the famous design company FROG, VPM220W incorporates the following features:

- High-quality touch sensors
- Elegant black housing
- Mini LED indicators in soft colors and multiple display modes
- Non-slip base and appropriate device weight
- Green components, design and functionality

1.3.3 All-Around Audio Experience

VPM220W's extraordinary performance derives from:

- 360-degree sound pickup with an optimal pickup distance of six meters.
- Anti-interference wireless signals.

1.3.4 Compatibility with Cutting-Edge Audio Technologies

The combination of a VPM220W and HUAWEI TEX0 videoconferencing endpoint not only achieves AEC, AGC, and ANS, but also reduces power consumption of the microphone array because all audio processing operations are performed by the videoconferencing endpoint.

1.3.5 Energy-Saving

Designed to use minimal energy, VPM220W requires 2 W power at most when running and 0.7 W power on standby.

1.3.6 Easy to Charge

VPM220W is provided with a battery and charging socket for both a single and cascaded microphone arrays. A fully charged battery provides 8 hours of use time or 24 hours of standby time.

2 Networks and Applications

Networked with the TEX0 series videoconferencing endpoint, VPM220W helps deliver high quality videoconferencing solutions. Compared with the previous VPM210 model, VPM220W offers the following advantages:

- Reduced size
- Improved product quality
- Excellent audio
- Efficient heat dissipation

The network in Figure 2-1 uses the TE60 as an example.

Figure 2-1 VPM220W network



Over this network:

- Two VPM220Ws are networked with the TE60 and pick up sounds through Wi-Fi.
A wireless microphone connects to the videoconferencing endpoint through Wi-Fi, and a wired microphone connects to the videoconferencing endpoint through a private port.
- The microphone arrays support a 30-meter transmission distance and 6-meter sound pickup distance.

Different sound pickup distances results in different frequency response performance.

- At 7-kHz bandwidth and 3-meter sound pickup distance, the frequency response meets the TIA-920 requirements.
- At 7-kHz bandwidth and 6-meter sound pickup distance, the frequency response fluctuation is ± 3 dB on the basis of the 3-meter scenario.

3 Specifications

| Category | Item | Specifications |
|-----------------------------------|------------------------|---|
| Protocol and standards compliance | Network port | None |
| | Audio input and output | None |
| | Input port | Micro USB |
| | Output port | None |
| | Sampling rate | 48 kHz |
| | Frequency response | 3 dB: 0.2 kHz–14 kHz 6 dB: 0.1 kHz–20 kHz |
| | Signal-to-noise ratio | <ul style="list-style-type: none"> The idle signal-to-noise ratio of a single microphone in the hardware circuit is 70 dB. The audio signal-to-noise ratio after processing through the microphone array equals or exceeds 30 dB. |
| | AEC | Supported |
| | ANS | Supported |
| | AGC | Supported |
| Microphone | Sensitivity | 38±2 dB |
| | Sound pickup distance | 6 meters |
| | Sound pickup angle | 360 degrees |
| | Reconnection duration | < 10s |
| Power and power supply | Input voltage | 100–240 V AC 50/60 Hz |
| | Output voltage | 5±5% V DC |

| Category | Item | Specifications |
|-------------------------|------------------------|------------------|
| | Power | ≤ 2 W |
| Wi-Fi | Technical standard | IEEE 802.11b/g/n |
| | Working frequency band | 2400–2483.5 MHz |
| | Maximum transmit power | <20 dBm |
| Physical specifications | Ambient temperature | 0°C to 40°C |
| | Dimensions | 146 mm x 27 mm |
| | Weight (unpacked) | 0.12 kg |

4 Acronyms and Abbreviations

| Acronym and Abbreviation | Full Name |
|--------------------------|---|
| AEC | Acoustic Echo Cancellation |
| AGC | Automatic Gain Control |
| ANS | Acoustic Noise Suppression |
| MIC | Microphone |
| TIA | Telecommunications Industry Association |
| Wi-Fi | Wireless Fidelity |