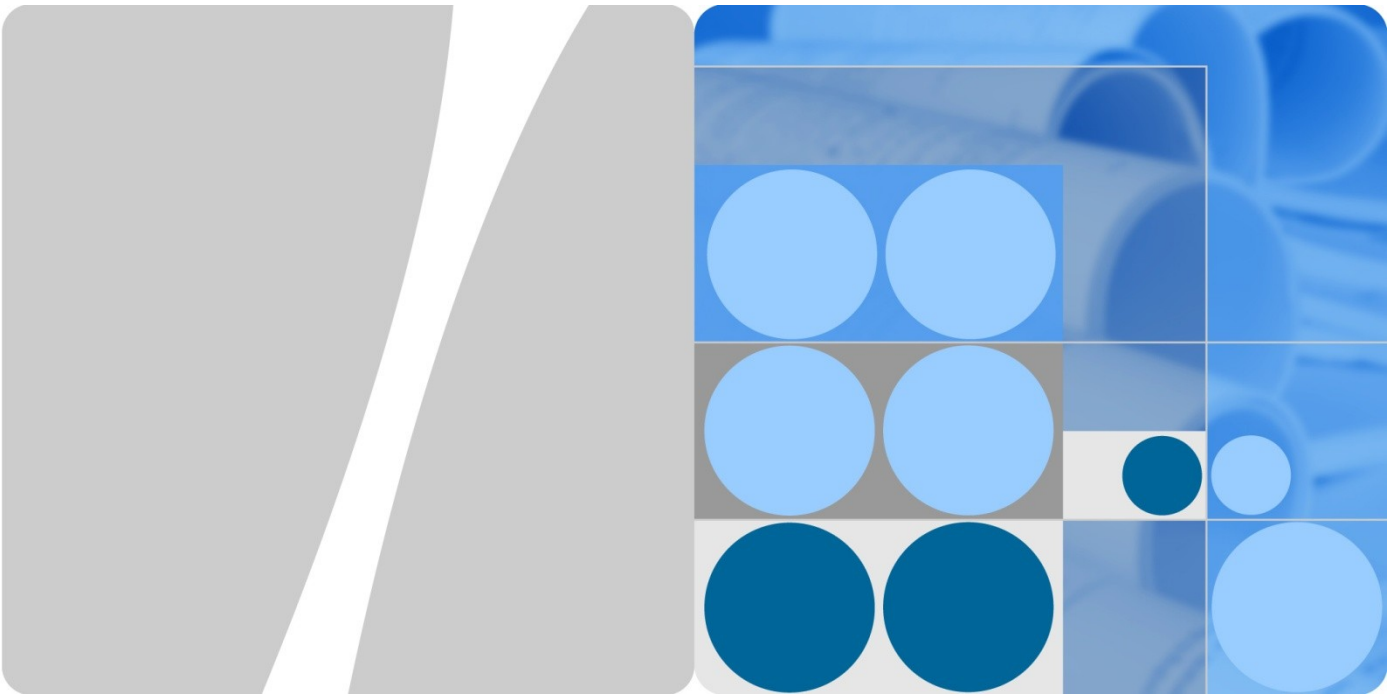

HUAWEI VPM220 Microphone Array

Product Description

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Contents

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.

HUAWEI VPM220 wireless microphone array (VPM220 or microphone array for short) is the only audio pickup device that can seamlessly integrate with the HUAWEI TEX0 series videoconferencing endpoints. VPM220 supports 360-degree sound pickup with up to a radius of 6 meters. Huawei HD video terminals support audio noise suppression (ANS), automatic echo cancellation (AEC), and automatic gain control (AGC) technologies. When used with Huawei HD video endpoints, VPM220 easily outperforms all currently available rival products.

1.2 Product Appearance and Structure

Figure 1-1 shows the appearance of VPM220.

Figure 1-1 Appearance of VPM220

VPM220 is a user-friendly, high-quality, and stylish device.

1.3 Product Features

1.3.1 Visually Stylish Appearance

Designed by the famous design company FROG, VPM220 incorporates the following features:

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

1.3.2 All-Around Audio Experience

VPM220's extraordinary performance derives from:

- 360-degree sound pickup with an optimal pickup distance of six meters.
- Support for dual-channel sound pickup using a single microphone array.

1.3.3 Compatibility with Cutting-Edge Audio Technologies

The combination of a VPM220 and HD video terminal 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 video terminal.

1.3.4 Private Communication Port and Low Power Consumption

A VPM220 can be connected to the HD video terminal through the HD-AI port. This port is used to transmit data and supply power to the VPM220. This realizes charging and communication using only one cable. Adopting a low-power-consumption design, a VPM220 consumes less than 2.5 W power.

2 Networks and Applications

VPM220 supports dual-channel sound pickup. One VPM220 can work in mono mode. A maximum of three VPM220s can be cascaded on a network. The HUAWEI TE30 can work with one VPM220.

Networked with the TEX0 series HD video terminal, VPM220 helps deliver high quality videoconferencing solutions. VPM220 offers the following advantages:

- More interfaces
- Higher expandability
- Reduced size
- Improved product quality
- Excellent audio
- Efficient heat dissipation

Take the network over which uses the TEX0 as an example.

2.1 Single VPM220 Network

Figure 2-1 and Figure 2-2 show a network with a single VPM220.

Figure 2-1 Network with a single VPM220(1)

Figure 2-2 Network with a single VPM220(2)

- Over this network, VPM220 communicates with TEX0 through a HD-AI port.
- The microphone arrays support a 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 is ±3 dB compared with the 3-meter scenario.

2.2 Multiple VPM220s Network

Figure 2-3 shows a network with multiple cascaded VPM220s.

Figure 2-3 Network with multiple VPM220s

Over this network:

- Three VPM220s are cascaded. They communicate with each other through HD-AI port. The first VPM220 (VPM220-1) also uses a HD-AI port to communicate with TEX0.
- TEX0 assigns an IP address to each VPM220. During the assignment, TEX0 appoints the VPM220 to which it directly connects (VPM220-1 shown in Figure 2-3) as the master microphone array and the other two as slave microphone arrays.

3 Specifications

3.1 Technical Specifications

Category	Item	Specifications
Protocol and standards compliance	Network port	None
	Audio input and output	None
	Input port	HD-AI port
	Output port	HD-AI port
	Sampling rate	48 kHz
	Frequency response	0.1–20 kHz
	AEC	-
	ANS	-
	AGC	-
Microphone	Sensitivity	38±2 dB
	Sound pickup distance	6 meters
	Sound pickup angle	360 degrees
Power and power supply	Input voltage	12V DC
	Output voltage	12V DC
	Power	< 2 W
Physical specifications	Ambient temperature	0ºC to 40ºC
	Dimensions (Unpacked)	145 mm x 26.5 mm (5.71 inches x 1.04 inches)
	Weight (Net)	163 g

3.2 Performance Specifications

Item	Specifications
Sound pickup distance	6 meters
Sound pickup angle	360 degrees
Frequency response	3 dB: 0.2 kHz–14 kHz 6 dB: 0.1 kHz–20 kHz
Sampling rate	48 kHz
Signal-to-noise ratio	• 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.
Startup duration	< 3s
Reconnection duration	< 2s

A Acronyms and Abbreviations

Acronym and Abbreviation	Full Name
AEC	Acoustic Echo Cancellation
AGC	Automatic Gain Control
ANS	Acoustic Noise Suppression
HD-AI	High Definition Audio Interface
MIC	Microphone
TIA	Telecommunications Industry Association