



## BMA 360 Ceiling Tile Microphone Array

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## Audio Performance

### *Architect's and Engineer's Specification*

The microphone frequency response of the Beamforming Ceiling Tile Microphone Array (BMA) shall be 20 Hz to 20 kHz with a dynamic range of >70 dB.

The integrated power amplifier of the BMA shall provide a frequency response of 20 Hz to 22 kHz.

The BMA shall have the following beamforming performance parameters:

- True Frequency Invariance (FiBeam™) in beam polar pattern across the voice range.
- Deep Sidelobes (DsBeam™) with a depth to 45 dB.

The BMA shall provide selectable coverage patterns accounting for different room shapes and sizes including rectangular, square, circular and semi-circular designs.

## Advanced Audio Processing and Control

### *Architect's and Engineer's Specification*

The BMA shall include the following advanced audio processing functions:

- 6th Generation ClearOne Automatic Echo Cancellation (AEC) processing.
- Noise Cancellation (NC) of up to 25 dB depth.
- Automatic Level Control (ALC) advanced speech normalization companding algorithm.
- Preprocessing audio optimization filtering features.

The BMA shall provide the following Voice Lift routing and management features:

- Submixing and auto-mixing of individual beams with up to 4 unique mixes.
- Beam silencing algorithm.
- Pre-AEC options for Submix channels

## Power and Connectivity

### *Architect's and Engineer's Specification*

The BMA shall include P-Link In and P-Link Out connectors for direct communication with a CONVERGE® Pro 2 DSP Processor.

Three BMA microphones shall be supported on a single P-Link.

The BMA shall receive power via the P-Link In port, or up to 90 Watts via the PoE++ port.

## Power Amplifier Specifications

### *Architect's and Engineer's Specification*

The BMA shall support 4 channels of amplification with the following parameters:

- 4x Type: 5.08 mm Header, Phoenix-type Euroblock connectors
- 15 Watts per channel
- Bridgeable to 2 channels @ 30 Watts

## Dimensions and Mounting

The BMA shall fit 24 in, 600 mm and 625 mm drop-ceiling grids.

The BMA shall be VESA®-mount ready, with 100 mm hole pattern for use with M4x10 mm screws.

The BMA shall have optional adapter kits to mount the BMA to hard ceilings.

## **Control and Configuration**

### *Architect's and Engineer's Specification*

The BMA shall be controllable by both CONSOLE® AI software and serial commands.

The BMA shall include the BEAMREPORT serial command and associated response which will provide reporting of beam activity when audio is detected.

## **Compliance and Warranty**

### *Architect's and Engineer's Specification*

The BMA shall be compliant with the following:

- EN 55032: 2015
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- EN 55035: 2017
- IEC 62368-1:2014 (Second Edition)
- UL2043

The BMA warranty period shall be 3 years from the date the product is sold to the end customer.

## **Conclusion**

The Beamforming Ceiling Tile Microphone Array shall be the BMA 360.