Features
- Multichannel USB mic array
- Stereo Class D amplifier
- Onboard DSP for beamforming/ noise reduction / AEC / de-reverb

Technical
- XMOS XVSM 3000 series
- USB 2.0 audio streaming
- Knowles SPH1668LM4H MEMS (7)
- 2x15Wrms digital audio amplifier
- 12 x RGB led

OS compatibility
- UAC2.0 with Windows ASIO driver, OS X driverless, Linux Alsa 2.0

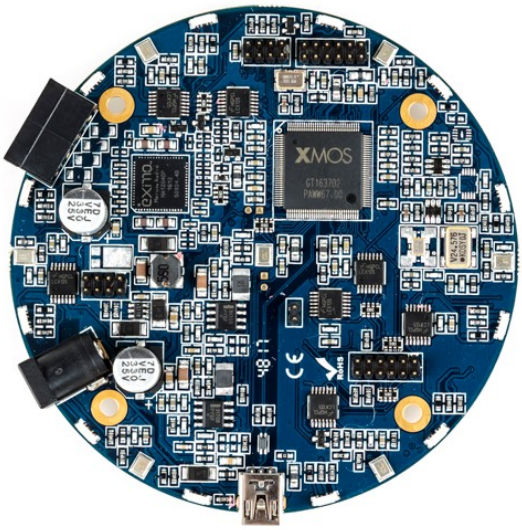
Power
- USB Bus powered (Amplifier OFF)
- 12VDC powered (Amplifier ON)

Applications
- Voice activated projects
- Far field microphone applications
- Compatible with Alexa/Google Home SDK/Siri/Watson/Cortana
- Speakerbox for conferencing
- Robotics/IoT/Smart home..

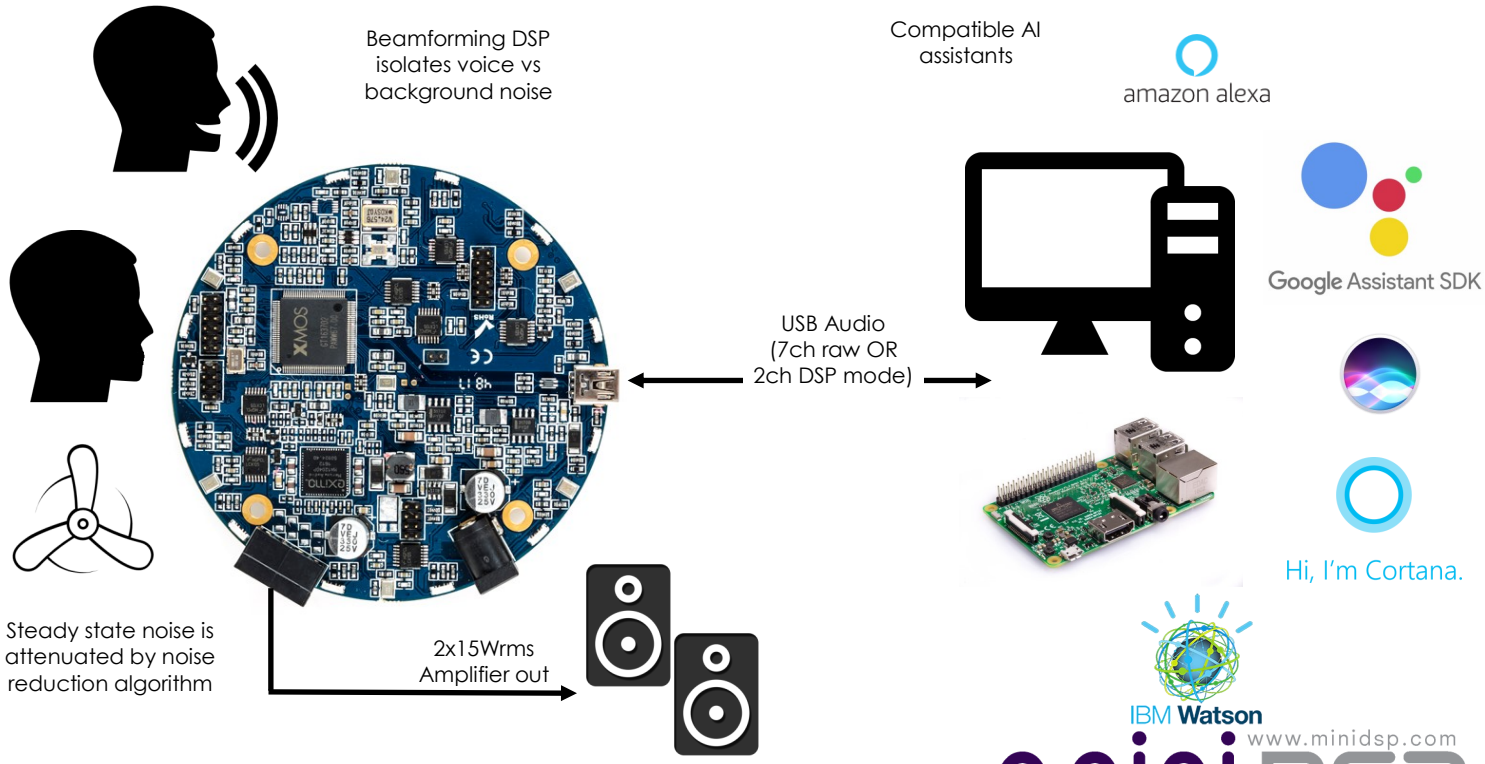
The **UMA-8-SP** is a high-performance USB microphone array paired with a digital audio amplifier. Seven high-performance MEMS microphones are configured in a circular arrangement to provide high-quality voice capture in farfield microphone applications such as AI assistants, conferencing, robotics…

Leveraging the onboard DSP processing, the **UMA-8-SP** supports voice algorithms including beamforming, noise reduction, acoustic echo cancellation and de-reverb. The UMA-8-SP is a fully compliant UAC2 audio interface with driverless support for Mac/Linux and ASIO drivers for Windows. An onboard 2x15Wrms digital amplifier provides an all-in-one microphone array + amplifier integration. The perfect fit to build your own AI assistant or conferencing unit.

From DIYers to OEM, this pocket-size platform is engineered for flexibility in firmware, software and hardware. Feel free to contact miniDSP on how we can help kickstart your new project!



SYSTEM DIAGRAM



TECHNICAL SPECIFICATIONS

Item	Description
USB streaming engine	XMOS XSVM 3000 - Multicore USB audio processor with embedded DSP
USB audio capabilities	USB audio recording in 2 possible modes depending on firmware: - 8-channel mode (7 x MEMS installed + 1 x spare PDM port in the center) - Stereo recording with DSP processing enabled USB audio playback: Stereo channel to digital audio amplifier
DSP processing (prebuilt firmware)	• Beamforming with configurable beam width (up to 20dB attenuation) • Perceptual acoustic echo cancellation (up to 80dB attenuation) • Noise suppression (up to 20dB attenuation) • De-reverb (up to 20dB attenuation)
UAC2.0 drivers	Driverless interface for Mac OS X v10.6.4 and up Thesycon Windows ASIO driver (All versions) Linux Alsa 2.0 compliant
Resolution / Sample rate	24bit @ 11/16/32/44.1/48 kHz
Amplifier output	Stereo class D amplifier / 2x15Wrms amplifier output (Mono Audio Output) >90% efficiency at full power.
MEMS microphones	7 x Knowles SPH1668LM4H with low noise buffer and high performance modulator • Low distortion: 1.6% @ 120 dB SPL • High SNR: 65 dB and flat frequency response • RF shielded against mobile interference • Ominidirectional pick-up pattern
LED	12 x RGB LED / Bottom mounted
Expansion connector	2 x 12-pin, 2 mm pitch expansion connector for connectivity to hardware.
Power supply	USB powered (Amplifier disabled) or +12VDC (Amplifier enabled)
Dimensions (diameter) mm	90 mm diameter / 20mm height with LED ring, 14mm height without LED ring

MECHANICAL DRAWINGS

J3 / Audio data & clocks

J3.1 - I2S_OUT_0	J3.2 - I2S_IN_0
J3.3 - I2S_OUT_1	J3.4 - I2S_IN_1
J3.5 - I2S_OUT_2	J3.6 - I2S_IN_2
J3.7 - I2S_OUT_3	J3.8 - I2S_OUT_4
J3.9 - MCLK	J3.10 - I2S_BCLK
J3.11 - GND	J3.12 - I2S_LRCLK

J4 / XMOS JTAG connector

J2.1 - GND	J2.2 - 3.3V
J2.3 - GND	J2.4 - 3.3V
J2.5 - N/A	J2.6 - UART_TX
J2.7 - UART_RX	J2.8 - XMOS_RST
J2.9 - I2C_SDATA	J2.10 - I2C_SCLK
J2.11 - N/A	J2.12 - N/A