MP23DB01HP

MEMS digital microphone for high fidelity applications

Digital bottom-port MEMS microphone with best-in-class acoustic overload point (AOP) handles input signals without distortion

The MP23DB01HP multi-mode digital microphone combines high performance and low current consumption.

Best in class AOP, high single-to-noise ratio (SNR), and sensitivity matching render the MP23DB01HP MEMS microphone perfect for any number of high-end personal electronics, computer, and automotive applications.

KEY FEATURES & BENEFITS

- Omnidirectional digital microphone
- Very low distortion / very high AOP (135dBSPL) and high SNR (65dBA)
- Multiple performance modes
- Low current consumption
- Sensitivity matching
- PDM single-bit output with option for stereo configuration
- 3.5 x 2.65 x 0.98 mm package with bottom-port design

KEY APPLICATIONS

- Mobile handsets, laptop and notebook computers
- Wearable/Hearable devices
- Devices enabling “always-on” feature
- Digital still and video cameras
- Smart home, smart speakers
- Hands free calls
- E-calls, in-car-connection

Save energy with multi-mode operation

Multi-mode operation can greatly benefit low-power applications by allowing the MP23DB01HP to switch dynamically between 'low power' and 'performance' modes

Enable voice command recognition

The high SNR at 65dBA enables voice command recognition from further distance (smart IoT, smart speakers).

Low distortion

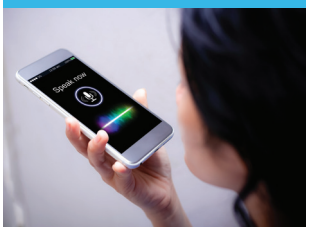
The high acoustic overload point (AOP) allows low distortion for superior fidelity in audio reproduction and avoids microphone saturation due to speaker proximity.

PDM output and sensitivity matching

Outstanding MEMS microphone sensitivity matching allows better noise cancelling and sound beamforming. Digital PDM output proven in A2B systems for automotive applications.

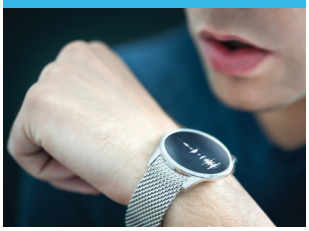
Breakthrough digital bottom port microphone for better performance in any application

Mobile handset



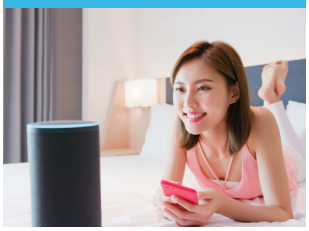
- Digital output
- Very low distortion

Wearables/Hearables



- Small form factor
- Low power mode

Smart IoT



- High SNR
- Sensivity matching

Automotive

- Flat freq response
- Reliability and robustness

Evaluation tools for different solutions

Application	X-Nucleo Expansion Board	Coupons	Audio Out	Software
Audio acquisition (PDM to PCM)	X-NUCLEO-CCA02M2	STEVAL-MIC006V1	/	X-CUBE-MEMSMIC1
Beamforming & Source Localization				
Acoustic Echo Cancellation			X-NUCLEO-CCA01M1	FP-AUD-SMARTMIC1*
Voice Streaming via Bluetooth			X-NUCLEO-IDB05A1	FP-AUD-BVLINK1

*GUI included

Ordering information

Part number	Port location	Package size (mm)	Supply voltage (V)	SNR (dB)	Sensitivity (dB)	AOP (dBSPL)	Current consumption (µA)
MP23DB01HP	Bottom	3.5 x 2.65 x 0.98	1.6 to 3.6	65 (NM)	-41± 1 (NM)	135 (NM)	800 (NM)
				64 (LP)	-24± 1 (LP)	120 (LP)	285 (LP)

Order code: FLMP23DB01HP1020