

INFINEON'S XENSIV[™] SENSORS: EXTENDING HUMAN SENSING INTO THE DIGITAL WORLD

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Abstract: Infineon's XENSIV[™] sensor family was developed to meet today's sensing challenges in automotive, industrial, and consumer applications. Building on the company's in-depth system understanding, it is the broadest portfolio of sensor types on the market, giving customers the widest selection of ready-to-use solutions and offering fast time-to-market. Spanning acoustic, pressure, gas, magnetic, current, 3D image, and radar sensors, XENSIV[™] sensors are designed to "smartify" lives by enabling "things" to "see", "hear", "feel" and "understand" their environment; and has shipped over 20 billion units globally over the past decade. As a case example, the XENSIV[™] microphones introduce a new performance class for MEMS microphones that overcomes existing audio chain limitations, thanks to Infineon's revolutionary "Sealed Dual Membrane" (SDM) technology. Best-in-class signal to noise ratio (SNR) of up to 75 dB and high acoustic overload point (AOP) of 135 dB SPL enable crystal clear audio pick-up; never reported before for MEMS microphones. These high dynamic range, yet small footprint, microphones allow designers to reach a level of high audio performance that was previously only achievable by Electret Condenser Microphones (ECMs), while at the same time reaping the benefits inherent in MEMS technology, such as integration, scalability, and repeatability.



Bio: Ali Besharatian has been in the field of MEMS and microelectronics for over a decade, first as a researcher at the University of Michigan where he received his Ph.D. in EECS, and later in the semiconductors industry as R&D engineer and manager. His multidisciplinary work targets brining concepts to mass production for acoustic, chemical, optical, and inertial sensors, in areas spanning consumer electronics, healthcare, automotive industry, and homeland security. Since January 2019, Dr. Besharatian has been a Technical Program Manager at Infineon Technologies, representing Infineon as the strategic partner of major Bay Area consumer electronic companies. In his role, he serves as the primary regional technical interface for new product introduction (NPI) projects at Infineon's main customers for sensors. Dr. Besharatian has played a key role in bringing Infineon's cutting-edge MEMS microphone technology (XENSIV[™] SDM) from early prototypes to mass-production, enabling use-cases such as studio-quality audio pick-up in portable electronics and active-noise-cancelation in hearables for the first time.

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