

Application brief

Smart Conferencing Systems

Design intelligent conference phones and video conferencing systems for exceptional performance and user experience

The way of working has dramatically changed with the rise of remote work and flexible office spaces. In this changing hybrid environment, conferencing systems and speakerphones are essential to enhance the productivity of remote teams and serve customers effectively.
The employee experience and functionality is further enhanced by smart features, including voice assistants for businesses, air quality monitoring, intuitive interactions and new connectivity technologies for greater convenience.

Infineon's portfolio provides exceptional performance, user experience and energy efficiency for the next generation of conferencing systems and speakerphones.

Your benefits when choosing Infineon to help you solve any application requirements for smart conferencing systems

Best-in-class **voice recognition**	› Highly sensitive XENSIV™ MEMS microphones for exceptional voice quality even in challenging environments › Low self-noise (SNR), wide dynamic range, low distortions, high acoustic overload point
Outstanding **audio performance**	› MERUS™ Class D amplifiers solutions provide best-in-class audio quality and have lowest power consumption for extended battery playback time › Less filtering/external components required due to its multi-level design, leading to less heat & overall BOM savings
Connectivity for highest interoperability and performance	› AIROC™ Bluetooth® LE portfolio and Wi-Fi + Bluetooth® combos as single-chip solution to enable small-form-factor IoT designs › Ultra-low-power Wi-Fi designed with battery operation in mind, whole home range with high throughput ensures clear audio streaming without audio dropouts anywhere in the home
Reliable **touch interaction and gesturing**	› State-of-the-art noise immunity capacitive touch and gesture detection for a reliable and durable speaker HMI › Advanced inductive touch sensors make possible sleek, futuristic user interfaces with metallic overlays
Advanced **sensing and more context awareness**	› XENSIV™ 60GHz radar sensor solutions bring innovative, intuitive sensing capabilities › Presence detection, segmentation, people tracking, vital sensing
Secured **cloud service provisioning**	› Easy & secure provisioning services with OPTIGA™ Trust M for maintaining speaker's unique identity & integrity › Unify different products under unified PKI architecture
Disruptive CO_2 sensor based on photoacoustic spectroscopy **(PAS)**	› High performance in a small size, XENSIV™ PAS CO2 sensor track the environment – for improved health, productivity, and overall well-being › Real-time CO_2 monitoring for demand-controlled applications for any commercial or private space while allowing users to accurately measure and adjust indoor air quality
Power portfolio for energy-efficient, space saving designs	› Wireless charging solutions for maximum performance, efficiency and safety › USB-C solutions for standardized power adapters and peripheral controllers › Extensive SMPS & PoE portfolio for energy-efficient, space-saving design › ESD devices for capable protection solutions with outstanding clamping

www.infineon.com/smart-conference-system

Create a novel, smarter conferencing system with Infineon's recommended product portfolio

Functional block	Product family		Product	Benefits
Audio input	Microphones		XENSIV™ MEMS microphones	› High performance microphone with low self-noise (high SNR) and low distortions, setting a new performance benchmark for a superior user experience in any room
Audio output	Class D amplifier		MERUS™ Class D audio amplifiers MA120xx	› Cooler, smaller and lighter amplifiers designed to maximize power efficiency and dynamic range while providing best-in-class audio performance in product form factors for great sounding audio products › Extended battery playback time or the reduction of battery size
Connectivity	Bluetooth® modules & Wi-Fi + Bluetooth Combos		AIROC™ Wi-Fi + Bluetooth® combos & Bluetooth® modules	› Best-in-class interoperability to the widest deployed wireless IP › Whole Home Range with high throughput for multi-channel audio and RSDB (Real Simultaneous Dual Band) for speaker sub-networks › Ultra-low-power technology designed with battery operation in mind
Sensing	Capacitive sensing touch controller		CAPSENSE™ capacitive touch sensing controller	› State-of-the-art noise immunity (SNR > 100:1) & water rejection are possible with CAPSENSE™ › Advanced inductive touch sensors create sleek, futuristic user interfaces with metallic overlay for any stylish work place
	Radar sensor		XENSIV™ 60 GHz radar sensor	› Unlock innovative features: Accurate presence detection and vibration detection based on ability to track sub-millimeter motion at high speed and accuracy, both stand-alone chip as well as system solution available
	CO_2 sensor		XENSIV™ PAS CO2	› Create invisible comfort: Along with size and cost advantages, the sensor delivers superior accuracy, providing a direct readout of the real CO_2 level
Security	IoT security controller		OPTIGA™ Trust M	› Easy & secure provisioning services with OPTIGA™ Trust M for maintaining speaker's unique identity & integrity › Unify different products under unified PKI architecture
Data communication	USB peripheral controllers		EZ-USB™ FX controller for high- and super-speed	› Most versatile USB peripheral controller which can add a USB 5Gbps connectivity to any system › USB 2.0 can add up to 480Mbps
Power	USB-C PD controller		EZ-PD™ USB-C controller	› USB-IF certified with market-proven USB PD stack, ensuring spec compliance and interoperability › Supports all USB PD profiles commonly used in USB-C power adapters › A highly-integrated solution that minimizes incremental BOM costs
	ESD protection		ESD111, ESD245	› Outstanding low capacitance devices for best signal integrity › High protection performance by ultra low clamping voltage
	Wireless charging		15 W inductive wireless power transmitter	› Powerful and cost-effective wireless charging solutions for high performance, smart and secure charging solutions supported by Infineon's unique wireless power controllers
	High-voltage MOSFETs	Flyback	700 V CoolMOS™ P7 (standard grade)	› Best price-competitive CoolMOS™ SJ MOSFET family › Lower switching losses than a standard MOSFET
		ACF, FMCI	600 V CoolMOS™ PFD7	› Lower Q_{rr}, lower hysteresis loss, low $R_{DS(on)}$
	SMPS Flyback converter Control ICs	QR flyback ICs	ICE5QSAG	› High efficiency and low standby power
		FFR flyback IC	XDPS21071	› High power density and ideal for USB-PD
	SMPS synchronous rectification	Low-voltage MOSFETs	OptiMOS™ PD	› Low conduction losses and reduced overshoot › Logic level switching/S308/PQFN 3.3x3.3 packages available
		Control ICs	IR1161LTRPBF	› High efficiency / simple external circuitry
	SMPS load switch	Low voltage MOSFETs	OptiMOS™ 30 V	› Low conduction losses › S308/PQFN 3.3x3.3 packages available

Published by
Infineon Technologies AG
81726 Munich, Germany

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Date: 04/2023

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