APPLICATION BRIEF

AR and smart glasses

Compute. Connect. Sense.

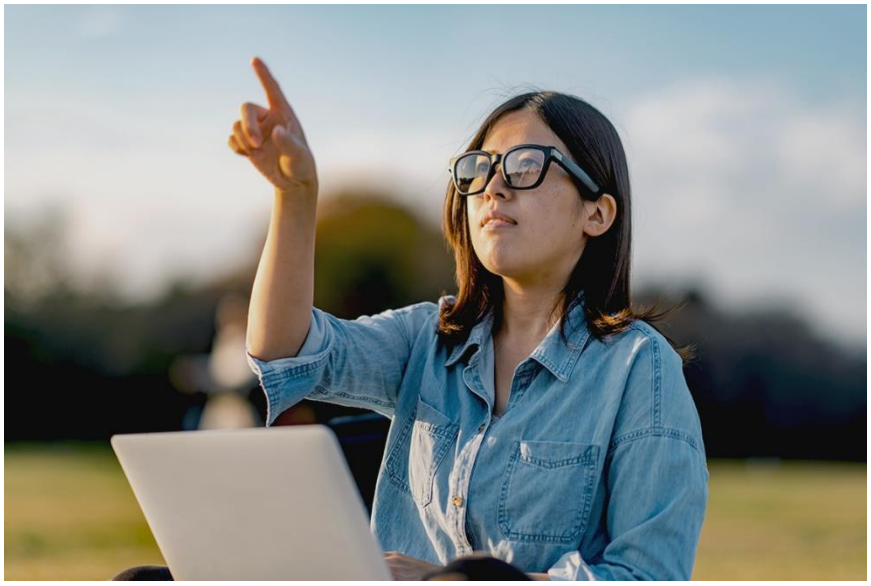
Smart glasses are connected eyewear for digital augmentation, providing users with features beyond audio, such as cameras, voice assistants, gesture control, and visual overlays.

While some smart glasses may not have a display, they include at least one smart feature beyond audio playback. They are designed to enhance productivity, communication, and contextual awareness in everyday life without creating a fully immersive experience, as a virtual reality (VR) headset.

Infineon offers a broad range of products to empower every design of smart glasses:

- PSOC™ EDGE low power MCU with multi-core processors and neural processing unit to handle smart glasses tasks
- PSOC™ 4000T "always-on" touch controller for wearable use sensing and user control, robust to environmental conditions
- AIROC™ Wi-Fi + Bluetooth® combo with low-power and small form factor to streamline system complexity & support excellent co-existence performance
- XENSIV™ MEMS microphone with low-power in a small package, enabling all kinds of voice functions
- Extensive portfolio in memory, sensors, optics, and security

For more information visit AR and smart glasses website.



Key features

- Slim and fashionable design
- Longer-lasting battery life
- Advanced acoustic and audio performance
- Stable wireless connection with mature co-existence solution
- A smarter personal assistant with Synchronized multi-modal HMI and Edge/Cloud AI deployment

Key benefits

- Small form factor solution integrating MCU, Wi-Fi/Bluetooth®, Touch, Microphones, etc.
- Multi-device SIP solution
- Low-power performance at both component and system level
- Infineon acoustic elements, such as MEMS microphone, DSP, NPU/ML, Bluetooth® audio, etc.
- Infineon offers audio solutions with dedicated internal resources and audio partners
- Proven Wi-Fi/Bluetooth® combos with integrated sub-system, ideal for smart glasses architecture
- Infineon PSOC™ Edge MCUs and DEEPCRAFT™ software support Edge AI and ML, making devices smarter with ease

APPLICATION BRIEF

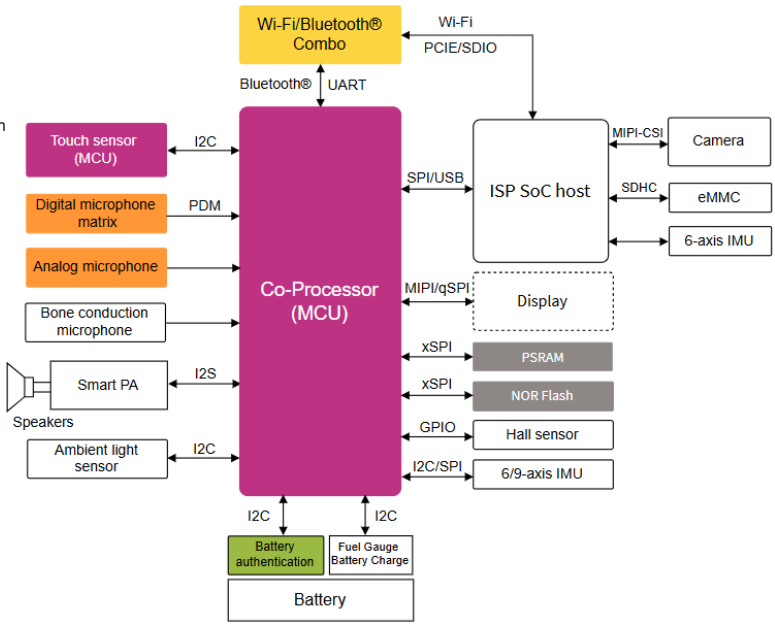
Block diagram of smart glasses with camera

PSOC™ Edge always-on + NPU & DSP accelerated compute
- ✓ Maximize Smart Glass workloads which run in a low power domain
- ✓ Audio & voice processing with machine learning and DSP
- ✓ Corresponding software including music playback with Bluetooth®, Low Power Wake Word Detection, DEEPCRAFT™ Voice Assistant, Audio Enhancement

PSOC™ 4000T with CAPSENSE ™
- ✓ On/Off Detection + Touch user control in single device
- ✓ Incredibly robust to environmental conditions hair, water, sweat

AIROC™ Proven Wi-Fi/BT Combo, Wi-Fi 6/6E compliance
- ✓ Multi offerings for low power or high throughput use case in Wi-Fi, CYW55512 for low power and CYW55571 for high throughput
- ✓ Separate Wi-Fi and Bluetooth® sub-system simplify complexity of system, support excellent co-exist performance

XENSIV™ MEMS Microphones
- ✓ IM70A135 low power analog mic for wake word detection
- ✓ IM66D130M digital mic with 3x2x0.98mm package and cost friendly
- ✓ Bone conduction microphone for audio without background noise



Product summary

Product type	Product	Description
Low power MCU	PSOC™ Edge E84	High performance Arm® Cortex-M55 + Ethos™-U55 NPU accelerated compute low-power Arm® Cortex®-M33 paired with ultra-low power NNLite to maximize battery life
Touch MCU	PSOC™ 4000T	Ultra-low power for “always-on”; Robust to environment
Wireless connectivity	AIROC™ CYW55512 AIROC™ CYW55571	1x1 DB HT20, Wi-Fi 6 for low power 1x1 DB HT80, Wi-Fi 6 for high throughput
Digital microphone	XENSIV™ IM65D130M	Highly compact, low-power digital microphone, optimized for smart glasses and AI-powered accessories
Analog microphone	XENSIV™ IM70A135	High performance analog XENSIV™ MEMS microphone
NOR flash	SEMPER™ NANO NOR FLASH	External memory

Published by
Infineon Technologies AG
Am Campeon 1-15, 85579 Neubiberg
Germany

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Public

Version: V1.0_EN
Date: 06/2026

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