Microsemi AcuEdge™ Technology
Audio Processor Selector Guide

Microsemi's AcuEdge Technology integrates industry-leading features and dedicated firmware to deliver high-quality, hands-free voice performance while reducing system design complexity.

The new Microsemi AcuEdge Technology consists of license-free, royalty-free intelligent audio IP algorithms. When combined with Microsemi's highly-integrated ZL380 series of audio processors, the solution accelerates customers' time-to-market through validated reference design and easy-to-use development tools including the Microsemi Audio Interface Box (AIB) Kit that utilizes the MiTuner™ GUI software.

Hands-free communications equipment must support high-quality voice in severe noise conditions. For example, speakerphone designers must compensate for vibration created by plastic enclosures, echo, and double-talk.
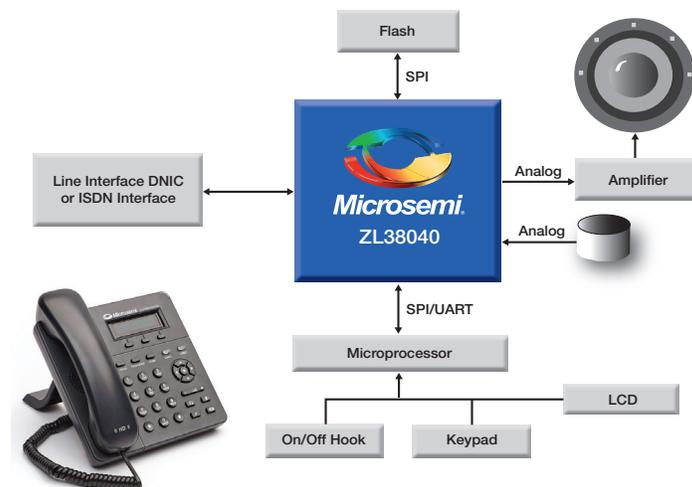
As illustrated in the application block diagrams, Microsemi's AcuEdge Technology simplifies design and delivers voice quality improvements in hands-free communication systems.

In complex noise environments such as large conference rooms and building lobbies, Microsemi's AcuEdge Technology cancels echo, maintains a constant ambient noise (comfort noise), and converges during double-talk situations.
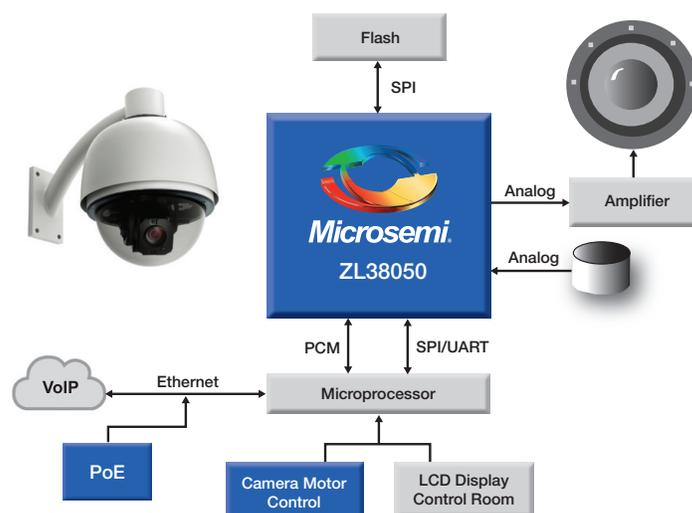
Digital video recorders (DVR), network video recorders (NVR), or security camera users have difficulty trying to monitor a large number of video feeds for certain incidents, crimes, or events. By adding audio to the surveillance camera, it will enable security personal at the control room to make judgement calls on security concerns. Microsemi AcuEdge Technology will provide audio enhancement to allow more accurate monitoring.

Microsemi Audio Processor delivers excellent performance in double-talk situations. While most solutions deliver only halfduplex operation, Microsemi's proprietary algorithm is able to continuously converge and track changes in the echo path to support full duplex operation during double-talk situations.
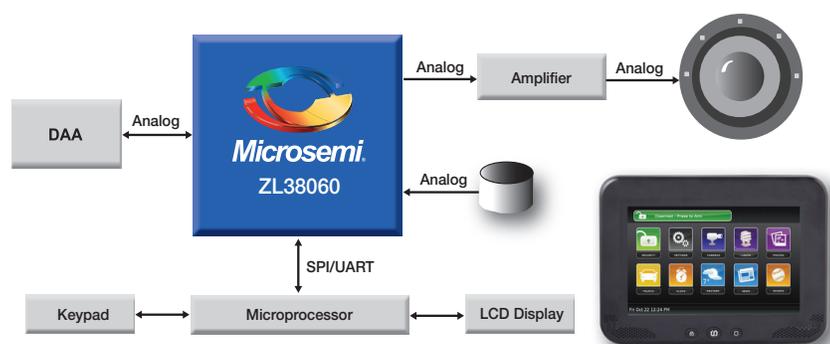
IP Phone Application

Security System Application

Connected Home Application

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Hardware	ZL38040	ZL38050	ZL38060
Wideband/narrowband processing	√	√	√
Host interface: SPI, UART, I2C	√	√	√
Standalone (controllerless) auto-boot from Flash	√	√	√
TDM port configurable as PCM or I2S	√	√	√
GPIO	14	14	14
Crystal-less operation (through TDM clock)	√	√	√
Digital microphone interface	√	√	√
16-bit DAC	√	√	√
Firmware	**ZL38040**	**ZL38050**	**ZL38060**
Wideband/narrowband AEC	√	√	√
Stationary NR	√	√	√
Dynamic range compression	√	√	√
G.722 wide band coding	√	√	√
Howling cancellation	√	√	√
Equalizer	√	√	√
AGC/ALC	√	√	√
Call progress tone detection and generation	√		√
Line echo cancellation	√		√
Secondary/stereo bypass at 8/16/44.1/48 KHz	√		√
Initial convergence conditioning	√	√	√
Audio mixing	√		
Broadcast mode	√		√
Monitoring mode	√		
½ duplex mode	√	√	√
Switched attenuation mode	√	√	√
GPIO control mode	√	√	√
Dynamic EQ mode	√	√	√
Applications	**ZL38040**	**ZL38050**	**ZL38060**
IP phone	√		
IP camera		√	
Connected home (intercom and security system)			√

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions, security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California and has approximately 4,800 employees globally. Learn more at www.microsemi.com.

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