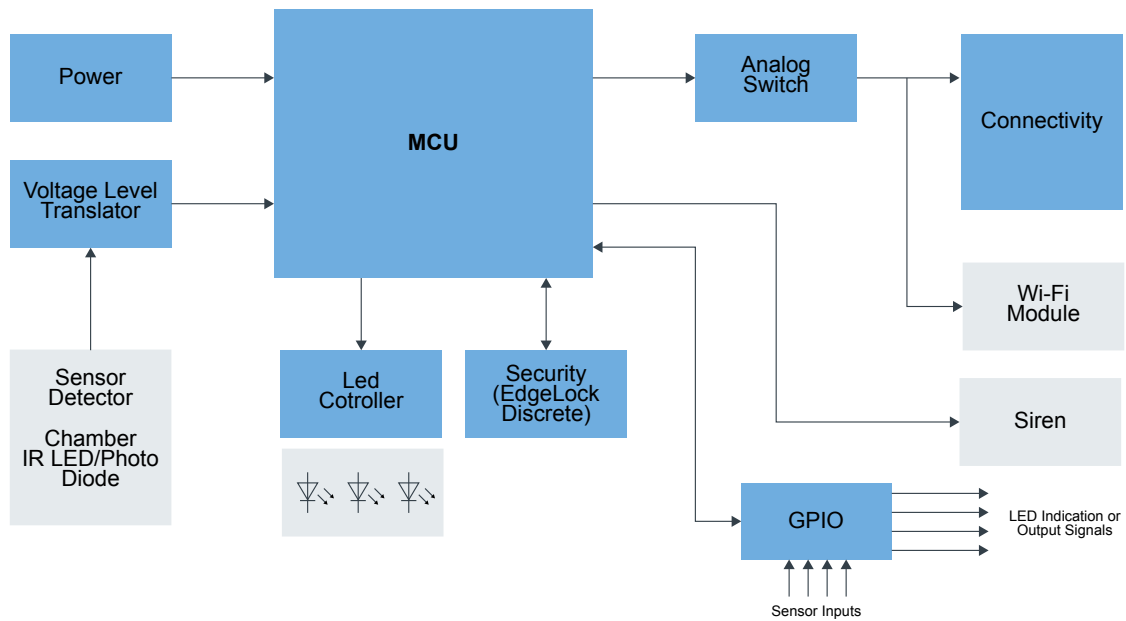# Building Safety

Last Updated: Mar 14, 2024

Smoke detectors are a vital safety feature of any home or building. They incorporate sensors to detect smoke, fire, carbon monoxide, and other noxious fumes.

Detectors are also becoming more intelligent as they seamlessly connect wirelessly with each other as well as to other parts of a building automation system. Working together with a thermostat and home automation or building gateway, these devices can alert individuals and authorities quicker, reducing the alert time and avoiding property damage and casualties.

Building Safety Block Diagram

Power → **MCU**

Voltage Level Translator → **MCU**

Sensor Detector / Chamber IR LED/Photo Diode → **Voltage Level Translator**

MCU → **Analog Switch** → **Connectivity**

Analog Switch → **Wi-Fi Module**

MCU → **Led Cotroller**

MCU ↔ **Security (EdgeLock Discrete)**

MCU → **Siren**

MCU → **GPIO** → LED Indication or Output Signals

Sensor Inputs → **GPIO**

■ NXP Technology   ■ Non NXP Technology   ⬚ Optional Technology

Recommended Products for Building Safety	
MCU	• KM3x: 50–75 MHz Precision Metrology MCUs with Segment LCDs Based on Arm® Cortex®-M0+ • LPC800 Arm Cortex-M0+ : LPC800 Series: Low-Cost Arm® Cortex®-M0+-Based MCUs
Connectivity	• 88W8977: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 4 (802.11n) + Bluetooth® 5.2 Solution • QN9090-30: QN9090/30: Bluetooth Low-Energy MCU with Arm®Cortex®-M4 CPU, Energy Efficiency, Analog and Digital Peripherals and NFC Tag Option
Power	• TEA1721AT: HV Start-Up Flyback Controller with Integrated MOSFET for 5 W Applications, F~burst = 430 Hz

Voltage Level Traslator	• GTL2014PW: 4-Bit LVTTL-to-GTL Transceiver
LED Controller	• PCA9632: 4-Bit Fm+ I²C-Bus Low-Power LED Driver
Analog Switch	• NX3DV3899: Dual Double-Pole Double-Throw Analog Switch
Security (EdgeLock Discrete)	• SE050: EdgeLock® SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility • SE051: EdgeLock® SE051: Proven, Easy-to-Use IoT Security Solution with Support for Updatability and Custom Applets • EDGELOCK-A5000: EdgeLock® A5000 Plug and Trust Secure Authenticator: Authentication Made Secure, Scalable and Easy
Air Conditioning GPIO	• PCAL9714: 14-Bit SPI I/O Expander with Agile I/O Features • PCAL9722: 22-Bit SPI I/O Expander with Agile I/O Features
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Air Conditioning GPIO	• MCX-A14X-A15X: MCX A14x/15x MCUs with Arm® Cortex® M33, Scalable Device Options, Low Power and Intelligent Peripherals • MCX-N94X-N54X: MCX N94x/54x Highly Integrated Multicore MCUs with On-Chip Accelerators, Intelligent Peripherals and Advanced Security • PCAL9714: 14-Bit SPI I/O Expander with Agile I/O Features • PCAL9722: 22-Bit SPI I/O Expander with Agile I/O Features

View our complete solution for Building Safety.

Note: The information on this document is subject to change without notice.