



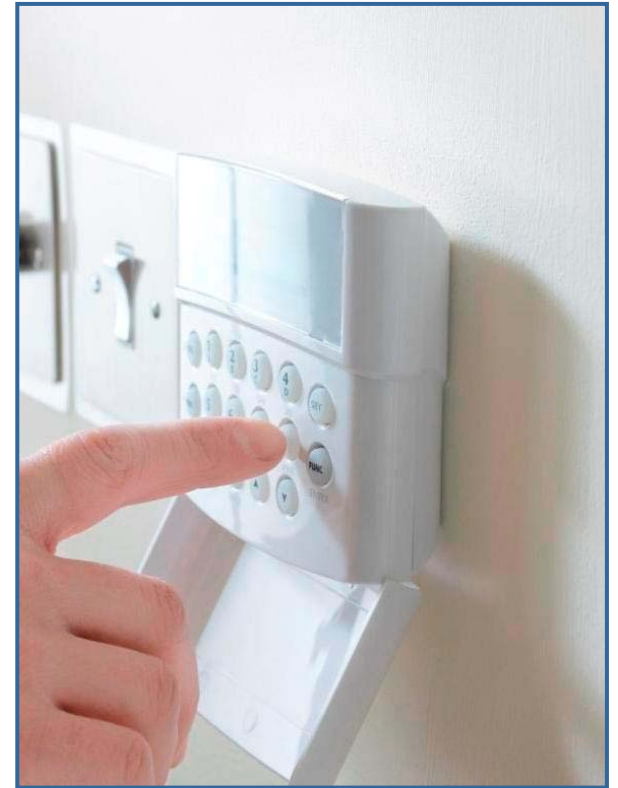
SILICON LABS

Intelligent Home Security

Intelligent Home Security Solutions



- ◆ Silicon Labs offers enabling technology for this growing market, for example:
 - Microcontrollers
 - Wireless receivers
 - Voice DAAs and codecs
 - Ethernet controllers
 - Modems



Intelligent Home: Home Security meets Home Automation



Silicon Labs Capabilities: Core Processing

- ◆ Intelligent home security designs require a processor wakes up quickly, captures and processes information, and goes to sleep quickly
 - The C8051F9xx 8-bit MCU is optimized for this environment

- ◆ Requirement: extremely low power
 - 170 uA/MHz active current @ 25 MHz
 - As low as 300 nA sleep current with embedded RTC active
 - 50 nA sleep current with embedded RTC disabled
 - Power-optimized RTC only needs calibration every 36 hours
 - ~2us wake-up from sleep mode
 - 3.3us analog acquisition time from lowest power mode
 - Integrated battery monitoring

- ◆ Requirement: high performance/low system cost
 - 25MHz, single-cycle 8051 compatible MCU
 - High levels of integration / lower overall system costs
 - High-resolution ADC with fast wake-up and acquisition time - ideal for low power sensing
 - Temp sensor – ideal for temp calculations or calibrations
 - Real-time clock with programmable alarm – can be used for scheduling
 - Flexible I/O with “wake-up-on-change” capabilities
 - Programmable output can supply power to other devices (e.g. radio)



C8051F9xx
Low Power MCU



Silicon Labs Capabilities: Wireless Connectivity

- ◆ Intelligent home security devices utilize short range wireless connectivity to send alarm and status data
 - EZRadio and EZRadioPRO™ transmitters, receivers, & transceivers are ideal for this application
- ◆ Requirement: Extended range
 - Up to +20 dBm TX power and -121 dBm Rx sensitivity
 - Industry-leading link budget (141 dBm)
 - Open air range of over 3km
- ◆ Requirement: Link robustness
 - Built-in antenna diversity algorithm
 - Integrated high-performance power amplifier and low-noise amplifier
 - Extremely robust indoor links
- ◆ Requirement: Increased battery life
 - Industry's lowest power wireless solution
 - Ultra-low transmit and standby current consumption
 - Fast wake times
 - Low-battery detect feature



Si4xxx
EZRadio & EZRadioPRO™
Short Range Wireless ICs



Silicon Labs Capabilities: Other I/O & Peripherals

- ◆ Intelligent home security devices require supporting peripherals to capture, interpret, and transmit a wide variety of information
 - Silicon Labs offers a range of peripheral ICs that are well suited for these applications

- ◆ Requirement: Information capture
 - CP210x USB-to-UART
 - Full-speed USB 2.0 function controller and integrated transceiver

- ◆ Requirement: Information interpretation
 - Si3000 Audio Codec
 - High performance, highly-integrated 16-bit audio codec
 - Si3050 Voice DAA
 - High performance, cost-effective global Voice DAA with integrated codec

- ◆ Requirement: Information transmission
 - Si24xx Modems
 - Complete modem solution includes patented silicon DAA that can withstand over 6kV of surge
 - CP220x Ethernet Controllers
 - Small, high performance 10-BaseT Ethernet Controller
 - Si340x Power over Ethernet Controllers
 - Complete Powered Device (PD) controller that integrates key high-voltage discretes





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