

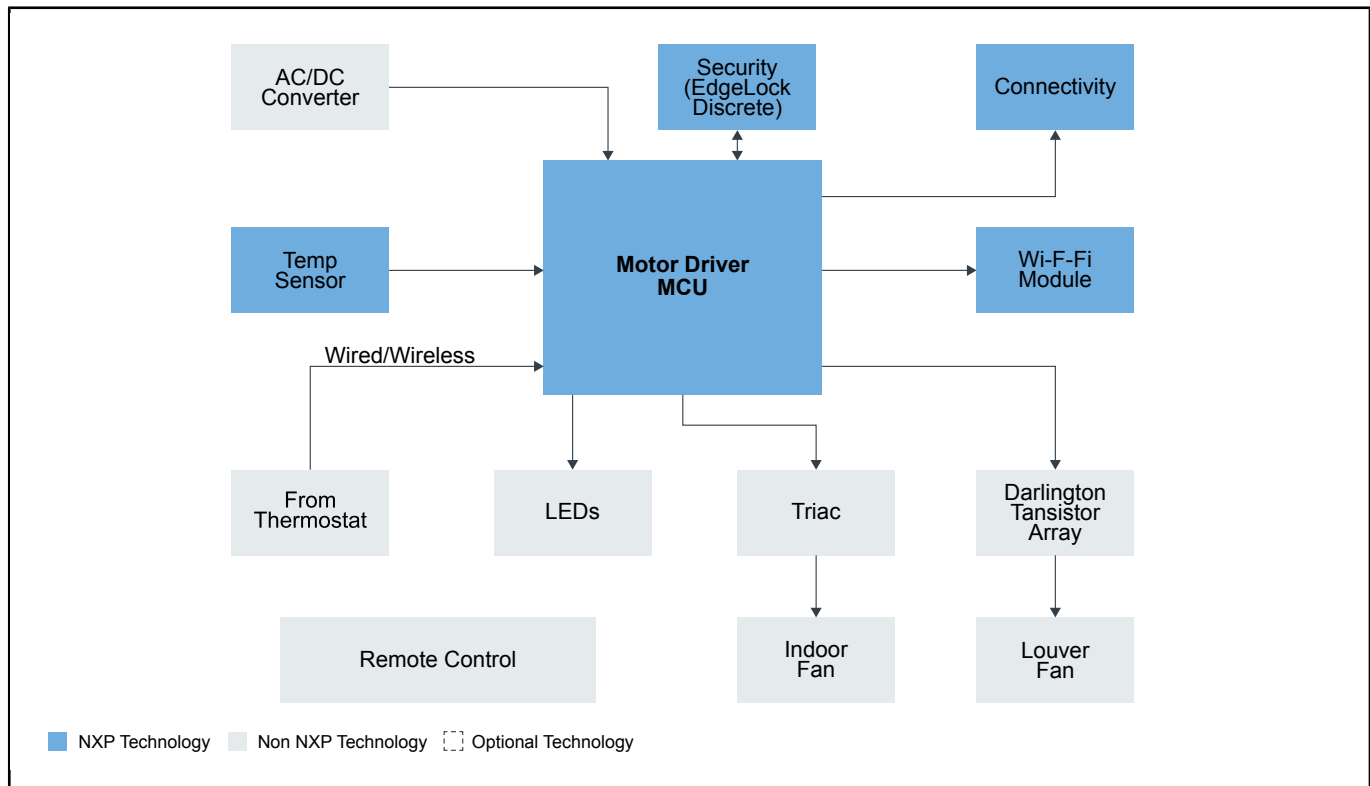


Air Conditioning (AC)

Last Updated: Jan 4, 2022

Air conditioning (AC) systems usually consist of an external unit, an internal unit and a remote control. These systems are based on inputs from a variety of sensors, controlling different types of motors such as stepper motors for flaps and DC/BLDC blower fan motors – and even an air purifying filter control. NXP offers semiconductor solutions for modern air conditioning systems that provide advanced motor control, increased power efficiency, quieter operation, a range of user interfaces and both IR and RF-based remote control.

Indoor Unit Block Diagram

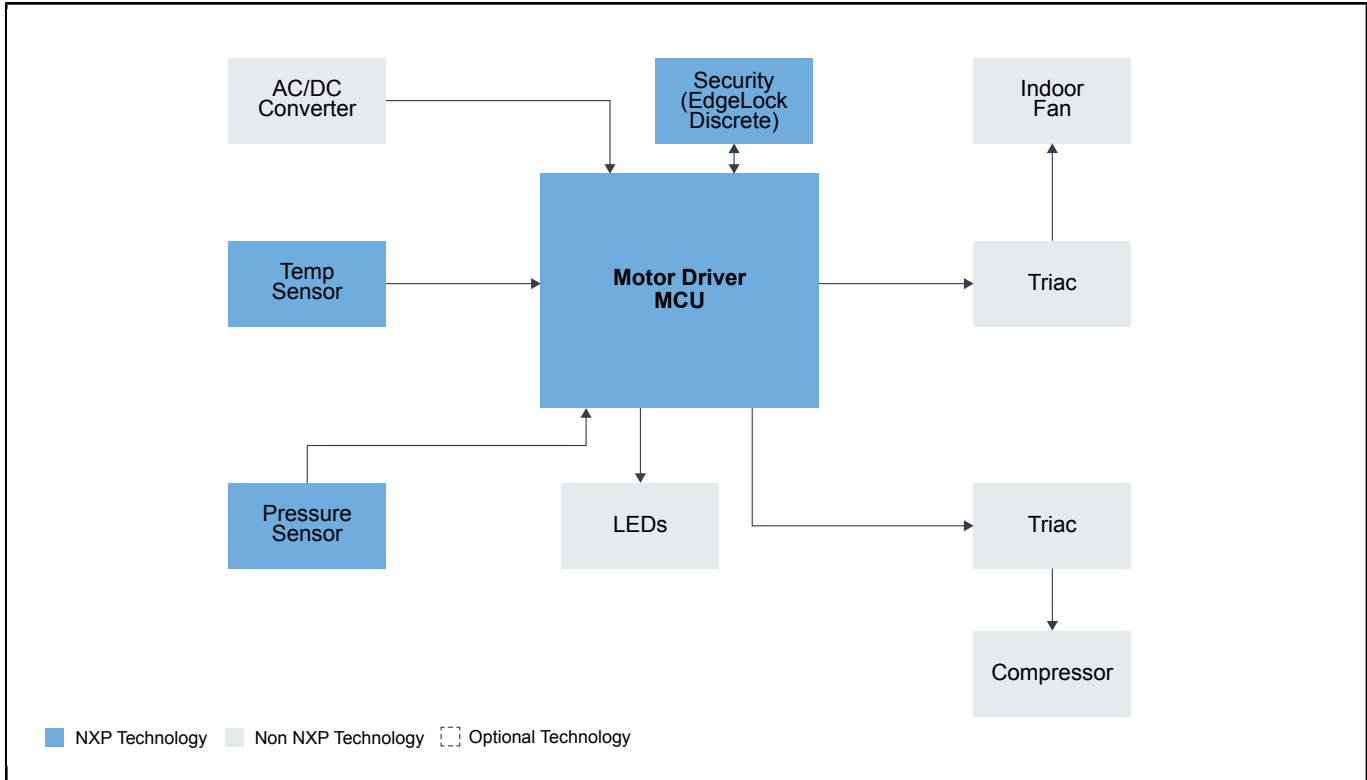


Recommended Products for Indoor Unit

MCU Driver	<ul style="list-style-type: none"> • KV3x: Kinetis® KV3x-100–120 MHz, Advanced 3ph FOC / Sensorless Motor Control MCUs based on Arm® Cortex®-M4 • KE04: Kinetis® KE04-48 MHz, Mainstream Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Core • i.MX RT1050 Crossover MCU with Arm® Cortex®-M7 Core
Connectivity	<ul style="list-style-type: none"> • JN5169: ZigBee and IEEE802.15.4 Wireless Microcontroller with 512 KB Flash, 32 KB RAM

Wi-Fi	<ul style="list-style-type: none"> • 88W8977: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 4 (802.11n) + Bluetooth® 5.2 Solution
Temperature Sensor	<ul style="list-style-type: none"> • LM75B: Digital Temperature Sensor And Thermal Watchdog • PCT2202UK: Ultra-Low-Power, 1.8 V, 1 Deg. C Accuracy, Digital Temperature Sensor with I²C-Bus Interface
Security (EdgeLock Discrete)	<ul style="list-style-type: none"> • EdgeLock® SE050: Plug & Trust Secure Element Family – Enhanced IoT security with high flexibility • EdgeLock® SE051: Proven, Easy-to-Use IoT Security Solution with Support for Updatability and Custom Applets • EdgeLock® A5000 Plug & Trust Secure Authenticator: Authentication Made Secure, Scalable and Easy

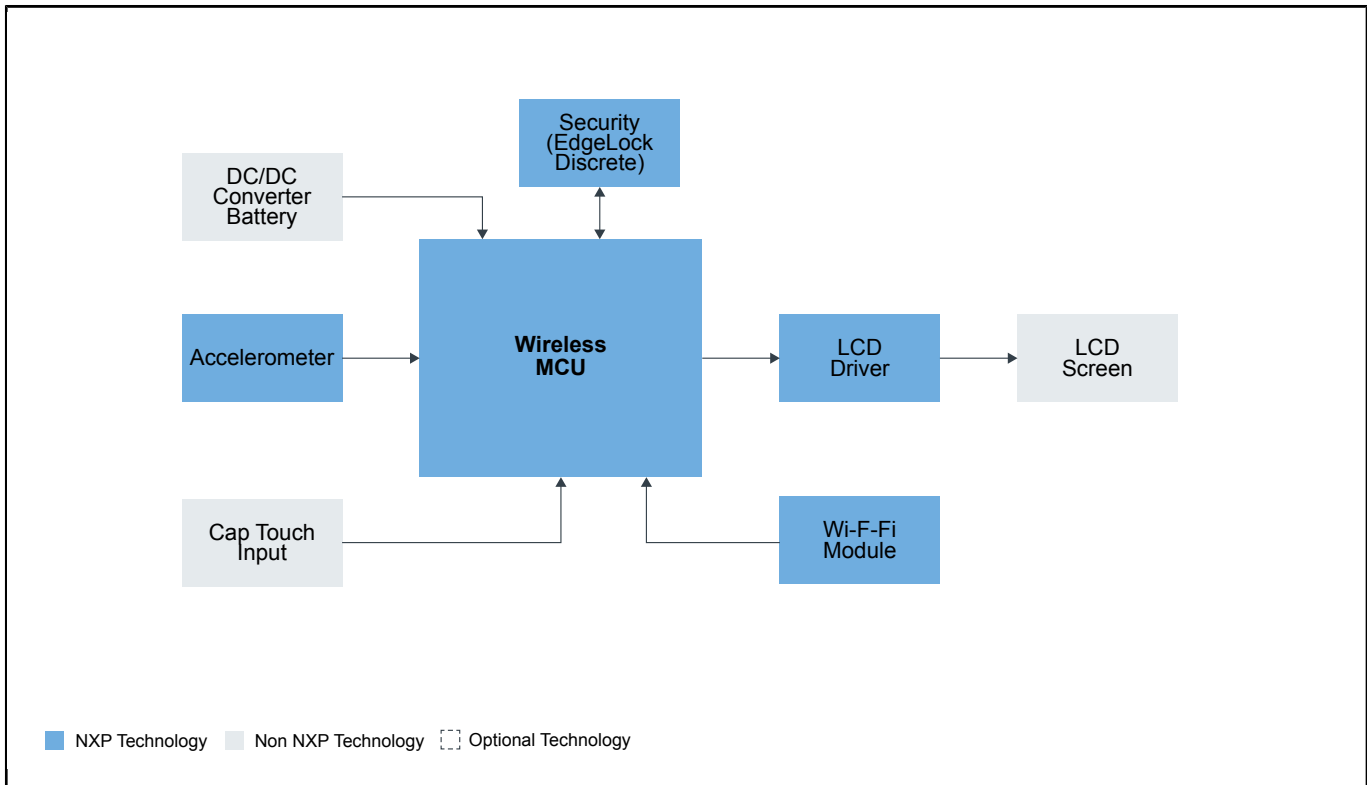
Outdoor (Compressor) Unit Block Diagram



Recommended Products for Outdoor (Compressor) Unit

MCU Motor Driver	<ul style="list-style-type: none"> • KV3x: Kinetis® KV3x-100–120 MHz, Advanced 3ph FOC / Sensorless Motor Control MCUs based on Arm® Cortex®-M4 • KE04: Kinetis® KE04-48 MHz, Mainstream Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Core • i.MX RT1050 Crossover MCU with Arm® Cortex®-M7 Core
Temperature Sensor	<ul style="list-style-type: none"> • LM75B: Digital Temperature Sensor And Thermal Watchdog • PCT2202UK: Ultra-Low-Power, 1.8 V, 1 Deg. C Accuracy, Digital Temperature Sensor with I²C-Bus Interface
Pressure Sensor	<ul style="list-style-type: none"> • MPX5100: 0 to 100kPa, Differential, Gauge and Absolute Integrated Pressure Sensor • MPXx5010: 0 to 10kPa, Differential and Gauge, Integrated Pressure Sensor
Security (EdgeLock Discrete)	<ul style="list-style-type: none"> • EdgeLock® SE050: Plug & Trust Secure Element Family – Enhanced IoT security with high flexibility • EdgeLock® SE051: Proven, Easy-to-Use IoT Security Solution with Support for Updatability and Custom Applets • EdgeLock® A5000 Plug & Trust Secure Authenticator: Authentication Made Secure, Scalable and Easy

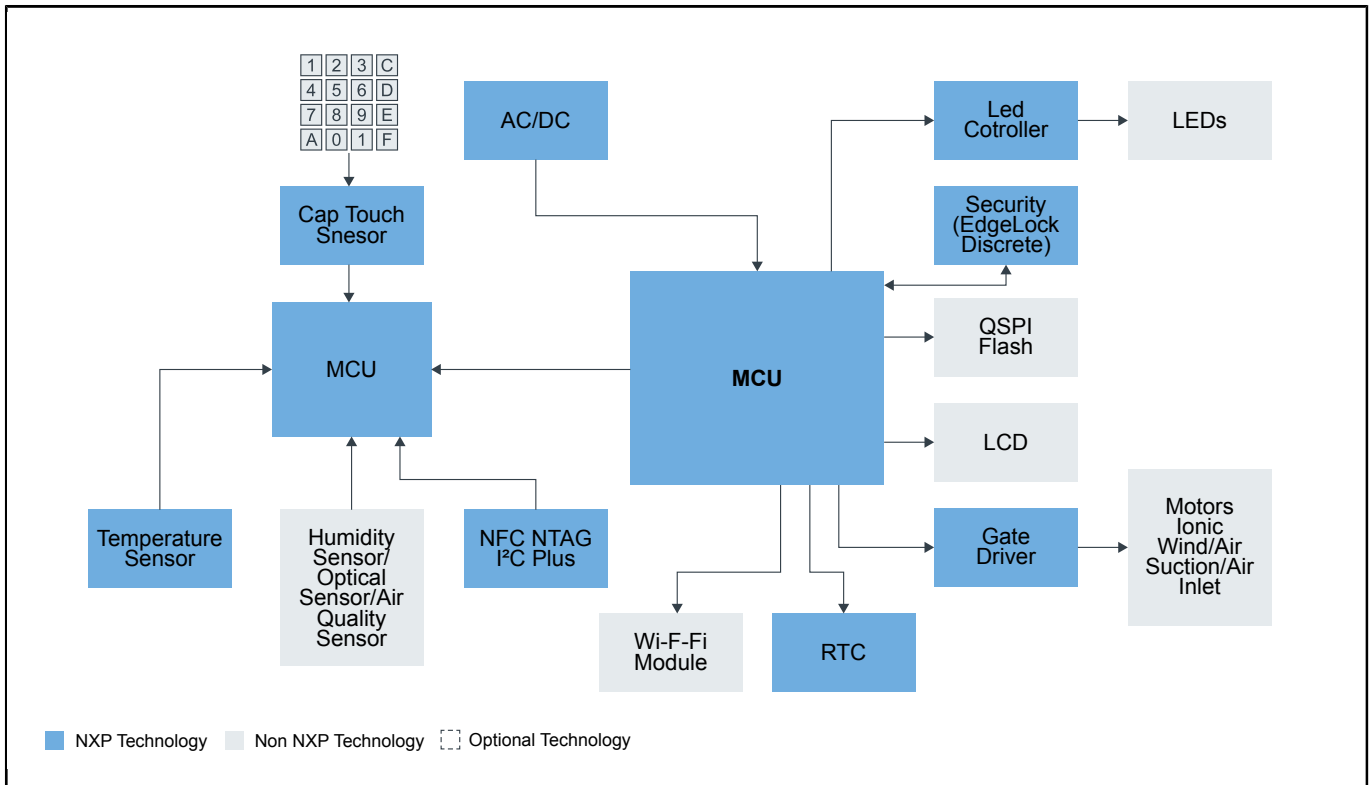
Remote Control Block Diagram



Recommended Products for Remote Control

Wireless MCUs	<ul style="list-style-type: none"> • JN5169: ZigBee and IEEE802.15.4 Wireless Microcontroller with 512 KB Flash, 32 KB RAM
Wi-Fi	<ul style="list-style-type: none"> • 88W8977: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 4 (802.11n) + Bluetooth® 5.2 Solution
Accelerometer	<ul style="list-style-type: none"> • FXLS8471Q: ±2g/±4g/±8g, Low g, 14-Bit Digital Accelerometer
LCD Driver	<ul style="list-style-type: none"> • PCA85132U: LCD Driver for Low Multiplex Rates
Security (EdgeLock Discrete)	<ul style="list-style-type: none"> • EdgeLock® SE050: Plug & Trust Secure Element Family – Enhanced IoT security with high flexibility • EdgeLock® SE051: Proven, Easy-to-Use IoT Security Solution with Support for Updatability and Custom Applets • EdgeLock® A5000 Plug & Trust Secure Authenticator: Authentication Made Secure, Scalable and Easy

Air Purifier Block Diagram



Recommended Products for Air Purifier

MCU	<ul style="list-style-type: none"> • LPC84X: Low-Cost Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Cores • i.MX RT1050 Crossover MCU with Arm® Cortex®-M7 Core
AC/DC	<ul style="list-style-type: none"> • TEA1936T: GreenChip SMPS primary side control IC
Temperature Sensor	<ul style="list-style-type: none"> • PCT2075: I²C-Bus Fm+, 1 Degree C Accuracy, Digital Temperature Sensor And Thermal Watchdog
LED Controller	<ul style="list-style-type: none"> • PCA9952_PCA9955: 16-Channel Fm+ I²C-Bus 57 MA Constant-Current LED Driver
RTC	<ul style="list-style-type: none"> • PCF85263A: Tiny Real-Time Clock/Calendar with Alarm Function, Battery Switch-Over, Time Stamp Input and I²C-Bus
Gate Driver	<ul style="list-style-type: none"> • GD3100: Advanced Single-Channel Gate Driver for Insulated Gate Bipolar Transistors and Silicon Carbide MOSFETs
NFC	<ul style="list-style-type: none"> • NTAG® 5 Link: NFC Forum-Compliant I²C Bridge for IoT on Demand
Security (EdgeLock Discrete)	<ul style="list-style-type: none"> • EdgeLock® SE050: Plug & Trust Secure Element Family – Enhanced IoT security with high flexibility
Cap Touch Sensor	<ul style="list-style-type: none"> • Touch Software

View our complete solution for [Air Conditioning \(AC\)](#).

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

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