



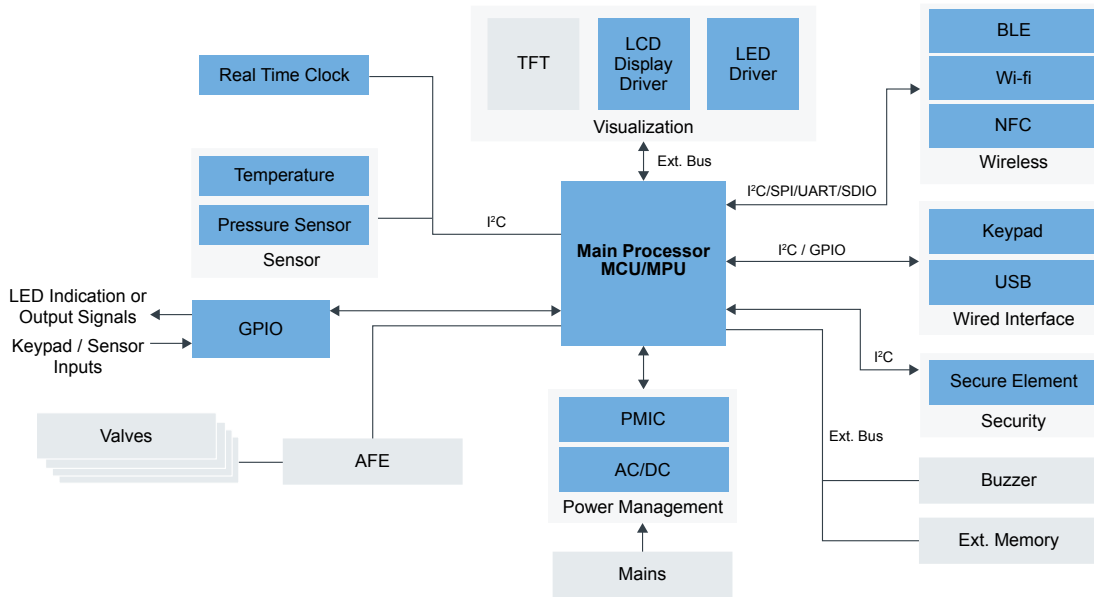
Respiratory Care

Last Updated: Apr 18, 2024

Respiratory care includes the promotion of optimum cardiopulmonary function and health, according to the AARC. To improve breathing, respiratory therapists give patients oxygen, make use of ventilators or respirators, and administer medication for the lungs.

NXP offers a broad portfolio of sensors and microcontrollers, such as Kinetis and i.MX RT crossover MCU families, capable of delivering sensing and precision for medical equipment and solutions used in respiratory care.

Ventilator Respirators Block Diagram



■ NXP Technology
 ■ Non NXP Technology
 Optional Technology

Recommended Products for Ventilator Respirators

Main Processor MCU / MPU	<ul style="list-style-type: none"> • NHS52S04: NHS52S04: Ultra-Low-Power Bluetooth® Low Energy Solution With Arm® Cortex®-M33 TrustZone® for Medical IoT • LPC553x: LPC553x/S3x: Advanced Analog Arm®Cortex®-M33-Based MCU Family • i.MX8MNANO: i.MX 8M Nano Family - Arm® Cortex®-A53, Cortex-M7 • KV3x: Kinetis® KV3x-100–120 MHz, Advanced 3ph FOC / Sensorless Motor Control MCUs based on Arm® Cortex®-M4 • i.MX-RT1020: i.MX RT1020: Crossover MCU with Arm® Cortex®-M7
Temperature	<ul style="list-style-type: none"> • P3T1035xUK: I3C, I²C-Bus, ±0.5 °C Accuracy, Digital Temperature Sensor • P3T2030xUK: I3C, I²C-Bus, 2.0 °C Accuracy, Digital Temperature Sensor • P3T1755DP: I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor • P3T1085UK: I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor

Gauge Pressure Sensor	<ul style="list-style-type: none"> • MPXx5050: Differential and Gauge Pressure Sensor (-50 to 50 kPa)
BLE	<ul style="list-style-type: none"> • NHS52S04: NHS52S04: Ultra-Low-Power Bluetooth® Low Energy Solution With Arm® Cortex®-M33 TrustZone® for Medical IoT • IW416: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 4 (802.11n) + Bluetooth® 5.2 Solution • IW612: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 6 (802.11ax) + Bluetooth® 5.4 + 802.15.4 Tri-Radio Solution
USB Type-C	<ul style="list-style-type: none"> • USB Type C: USB Type-C Plug'n Play: Efficient Data and Power Delivery
NFC	<ul style="list-style-type: none"> • PN7160: NFC Plug and Play Controller with Integrated Firmware and NCI Interface
Secure Element	<ul style="list-style-type: none"> • SE050: EdgeLock® SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility
PMIC	<ul style="list-style-type: none"> • PCA9450: Power Management IC (PMIC) for i.MX 8M Mini/Nano/Plus • PF8100-PF8200: 12-Channel Power Management Integrated Circuit (PMIC) for High-Performance Processing Applications • PCA9420-PCA9421: PMIC for Low Power Applications • Load Switches: Load Switches
AC/DC	<ul style="list-style-type: none"> • AC-DC Solutions: AC-DC Solutions
LCD Display Driver	<ul style="list-style-type: none"> • PCF8551: Universal 36 × 4 LCD Segment Driver • LCD Graphic Drivers: LCD Graphic Drivers • LCD Segment Drivers: LCD Segment Drivers
Real Time Clock	<ul style="list-style-type: none"> • PCF2131: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal
LED Driver	<ul style="list-style-type: none"> • PCA9956BTW: 24-Channel Fm+ I²C-Bus 57 MA/20 V Constant-Current LED Driver
Wi-fi	<ul style="list-style-type: none"> • IW416: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 4 (802.11n) + Bluetooth® 5.2 Solution • KW39-38-37: KW39/38/37: 32-Bit Bluetooth 5.0 Long-Range MCUs with CAN FD and LIN Bus Options, Arm® Cortex®-M0+ Core • QN9090-30: QN9090/30: Bluetooth Low-Energy MCU with Arm®Cortex®-M4 CPU, Energy Efficiency, Analog and Digital Peripherals and NFC Tag Option
Keypad	<ul style="list-style-type: none"> • General Purpose I/O (GPIO): General Purpose I/O (GPIO)
Air Conditioning GPIO	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 [Respiratory Care](#).

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