



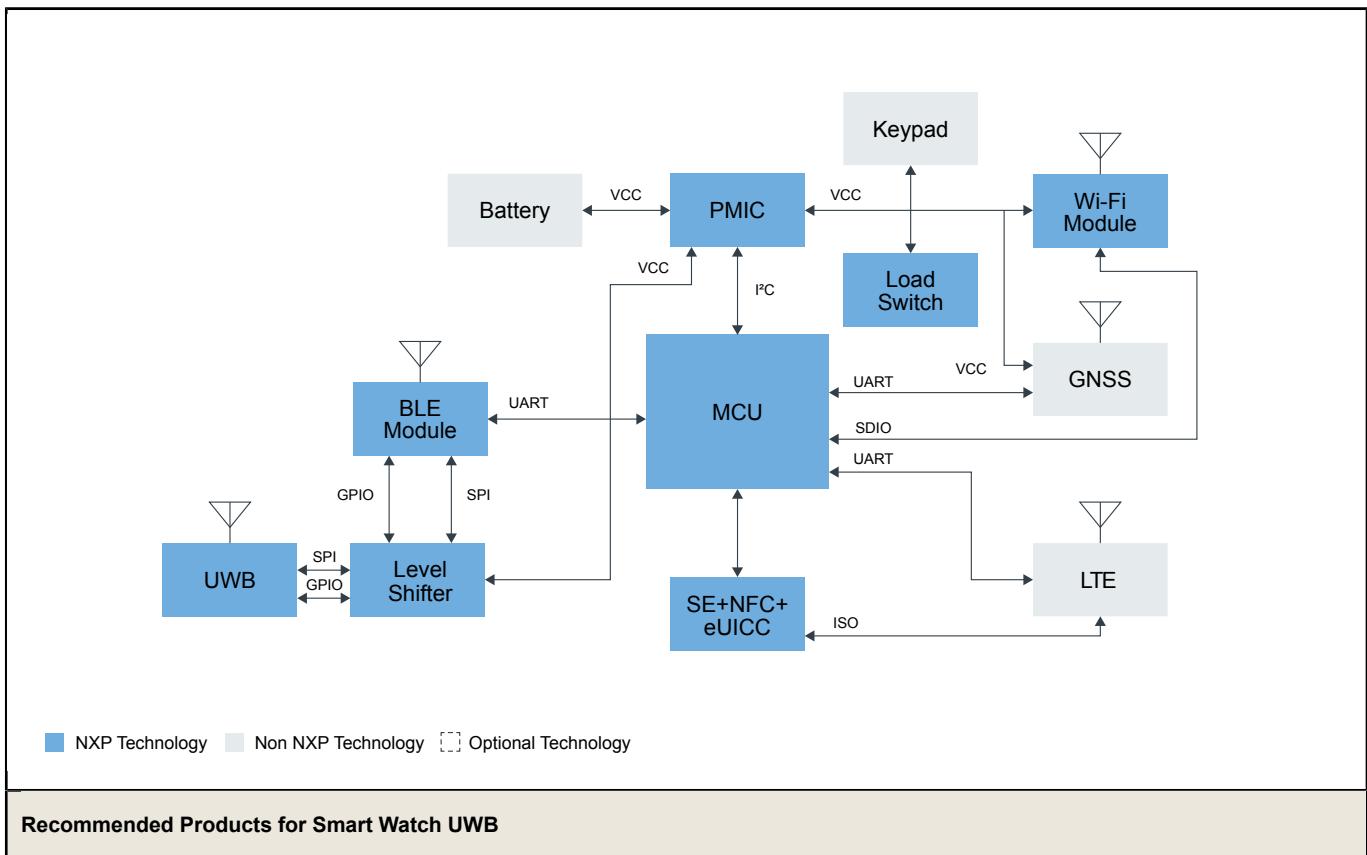
Smart Watch and Wristband

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Comfort, compact, fashionable, rich user experience, low power consumption and performance efficiency are just a few requirements of smart watch designers.

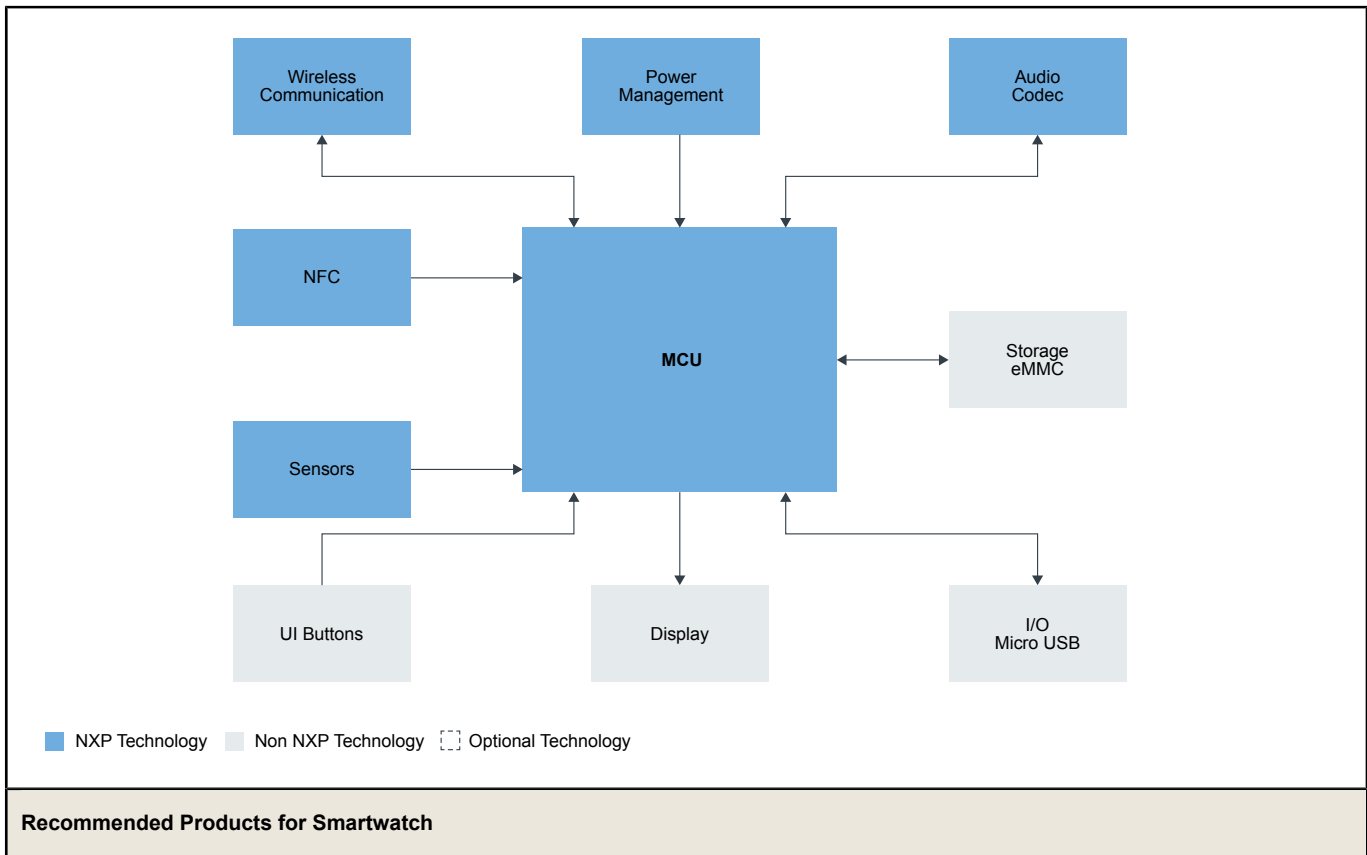
With a broad portfolio of sensors, connectivity, security and embedded processing, NXP's technology is designed to meet the growing and demanding need of smart watch designs. Take the i.MX RT500 family of crossover MCUs for example. This family of MCUs is optimized for low-power HMI application by combining a graphics engine and a streamlined Cadence® Tensilica® Fusion F1 DSP core with a next-generation Arm® Cortex®-M33 core.

Smart Watch UWB Block Diagram



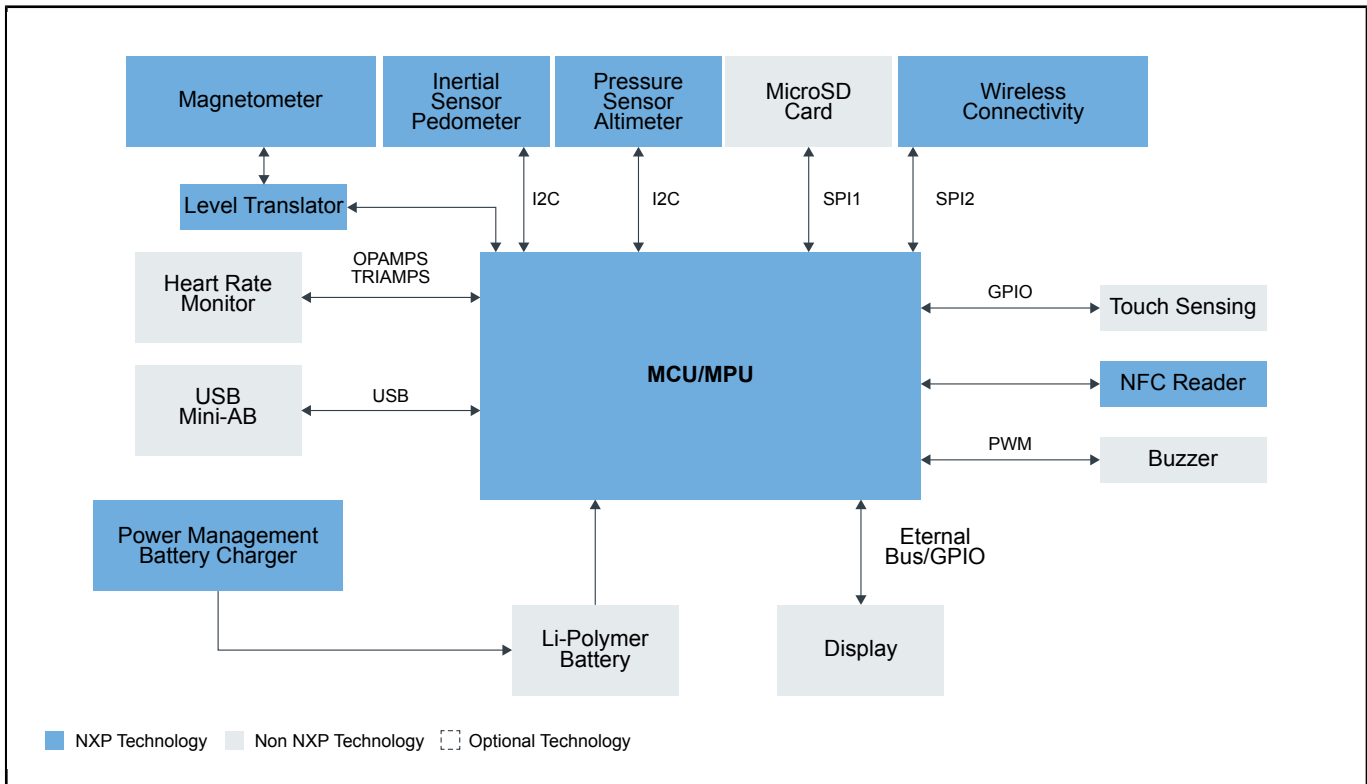
MCU	<ul style="list-style-type: none"> • i.MX-RT500: i.MX RT500 Crossover MCU with Arm® Cortex®-M33, DSP and GPU Cores • i.MX7ULP: i.MX 7ULP Family, Ultra-Low-Power with Graphics
PMIC	<ul style="list-style-type: none"> • PCA9420-PCA9421: PMIC for Low Power Applications • PCA9460: 13-Channel Power Management Integrated Circuit (PMIC) for Ultra Low Power Application
Wireless	<ul style="list-style-type: none"> • 88W8801: 2.4 GHz Single-Band 1x1 Wi-Fi® 4 (802.11n) Solution • QN9090-30: QN9090/30: Bluetooth Low-Energy MCU with Arm®Cortex®-M4 CPU, Energy Efficiency, Analog and Digital Peripherals and NFC Tag Option • Ultra-Wideband (UWB): Ultra wideband (UWB)
Wireless	<ul style="list-style-type: none"> • 88W8801: 2.4 GHz Single-Band 1x1 Wi-Fi® 4 (802.11n) Solution • QN9090-30: QN9090/30: Bluetooth Low-Energy MCU with Arm®Cortex®-M4 CPU, Energy Efficiency, Analog and Digital Peripherals and NFC Tag Option • Ultra-Wideband (UWB): Ultra wideband (UWB)
Load Switch	<ul style="list-style-type: none"> • NX3P2902BUK: Logic-Controlled High-Side Power Switch
Level Shifter	<ul style="list-style-type: none"> • NTS0308E: 8-Bit Dual-Supply Translating Transceiver (Open-Drain, Auto-Direction Sensing)
UWB	<ul style="list-style-type: none"> • SR150: Trimension™ SR150: Secure UWB Solution for IoT Devices

Smartwatch Block Diagram



MCU	<ul style="list-style-type: none"> • MCX A13x, 14x, 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 • i.MX7ULP: i.MX 7ULP Family, Ultra-Low-Power with Graphics • i.MX6ULL: i.MX 6ULL Single-Core Processor with Arm® Cortex®-A7 Core
Power Management	<ul style="list-style-type: none"> • PF1510: Power Management Integrated Circuit (PMIC) for Low Power Application Processors • PF1550: PMIC with 1A Li+ Linear Battery Charger for Low Power Processor Systems • PF3000: 12-Channel Configurable PMIC for i.MX6 and i.MX7 Application Processors • PCA9460: 13-Channel Power Management Integrated Circuit (PMIC) for Ultra Low Power Application
Wireless Communication	<ul style="list-style-type: none"> • KW31Z: Kinetis® KW31Z-2.4 GHz Bluetooth Low Energy Wireless Radio Microcontroller (MCU) based on Arm® Cortex®-M0+ Core • IW416: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 4 (802.11n) + Bluetooth® 5.2 Solution
NFC	<ul style="list-style-type: none"> • NTAG_I2C: NTAG I²C Plus 2K: NFC Forum Type 2 Tag with I²C Interface
Sensor	<ul style="list-style-type: none"> • FXLS8974CF: ±2g/±4g/±8g/±16g, Low-Power 12-Bit Digital IoT Accelerometer • FXLS8971CF: ±2g/±4g/±8g/±16g, Low Power 12-Bit Digital Accelerometer • MPL3115A2: Absolute Digital Pressure Sensor (20 to 110 kPa) • MMA8451Q: ±2g/±4g/±8g, Low g, 14-bit Digital Accelerometer
Audio Codec	<ul style="list-style-type: none"> • SGTL5000: Ultra-Low-Power Audio Codec

Wristband Block Diagram



Recommended Products for Wristband

MCU/MPU	<ul style="list-style-type: none"> • i.MX-RT500: i.MX RT500 Crossover MCU with Arm® Cortex®-M33, DSP and GPU Cores
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	<ul style="list-style-type: none"> • LPC546XX: Power-Efficient Microcontrollers (MCUs) With Advanced Peripherals Based on Arm[®] Cortex[®]-M4 Core
Inertial Sensor	<ul style="list-style-type: none"> • FXLS8971CF: ±2g/±4g/±8g/±16g, Low Power 12-Bit Digital Accelerometer • FXLS8974CF: ±2g/±4g/±8g/±16g, Low-Power 12-Bit Digital IoT Accelerometer
Pressure Sensors	<ul style="list-style-type: none"> • MPL3115A2: Absolute Digital Pressure Sensor (20 to 110 kPa)
Magnetometer	<ul style="list-style-type: none"> • FXOS8700CQ: Digital Motion Sensor - 3D Accelerometer (±2g/±4g/±8g) + 3D Magnetometer
Power Management	<ul style="list-style-type: none"> • MC34673: 1.2 A Single-Cell Li-Ion / Li-Polymer Battery Charger • MMPF0100: 14-Channel Configurable PMIC • PCA9460: 13-Channel Power Management Integrated Circuit (PMIC) for Ultra Low Power Application • PF3001: 10-Channel Configurable PMIC for i.MX6 and i.MX7 Application Processors
Wireless Connectivity	<ul style="list-style-type: none"> • KW41Z: Kinetis[®] KW41Z-2.4 GHz Dual Mode: Bluetooth[®] Low Energy and 802.15.4 Wireless Radio Microcontroller (MCU) based on Arm[®] Cortex[®]-M0+ Core • QN9080: QN908x: Ultra-Low-Power Bluetooth Low Energy System on Chip Solution • QN9090-30: QN9090/30: Bluetooth Low-Energy MCU with Arm[®]Cortex[®]-M4 CPU, Energy Efficiency, Analog and Digital Peripherals and NFC Tag Option • 88W9098: 2.4/5 GHz Dual-Band 2x2 Wi-Fi[®] 6 (802.11ax) + Bluetooth[®] 5.3
NFC Reader	<ul style="list-style-type: none"> • NFC Readers: EdgeVerse[™] NFC Readers
Level Translator	<ul style="list-style-type: none"> • PCA9306: Dual Bidirectional I²C-Bus and SMBus Voltage-Level Translator • P3A9606: Dual Bidirectional I3C/I²C-Bus and SPI Voltage-Level Translator

View our complete solution for [Smart Watch and Wristband](#).

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