



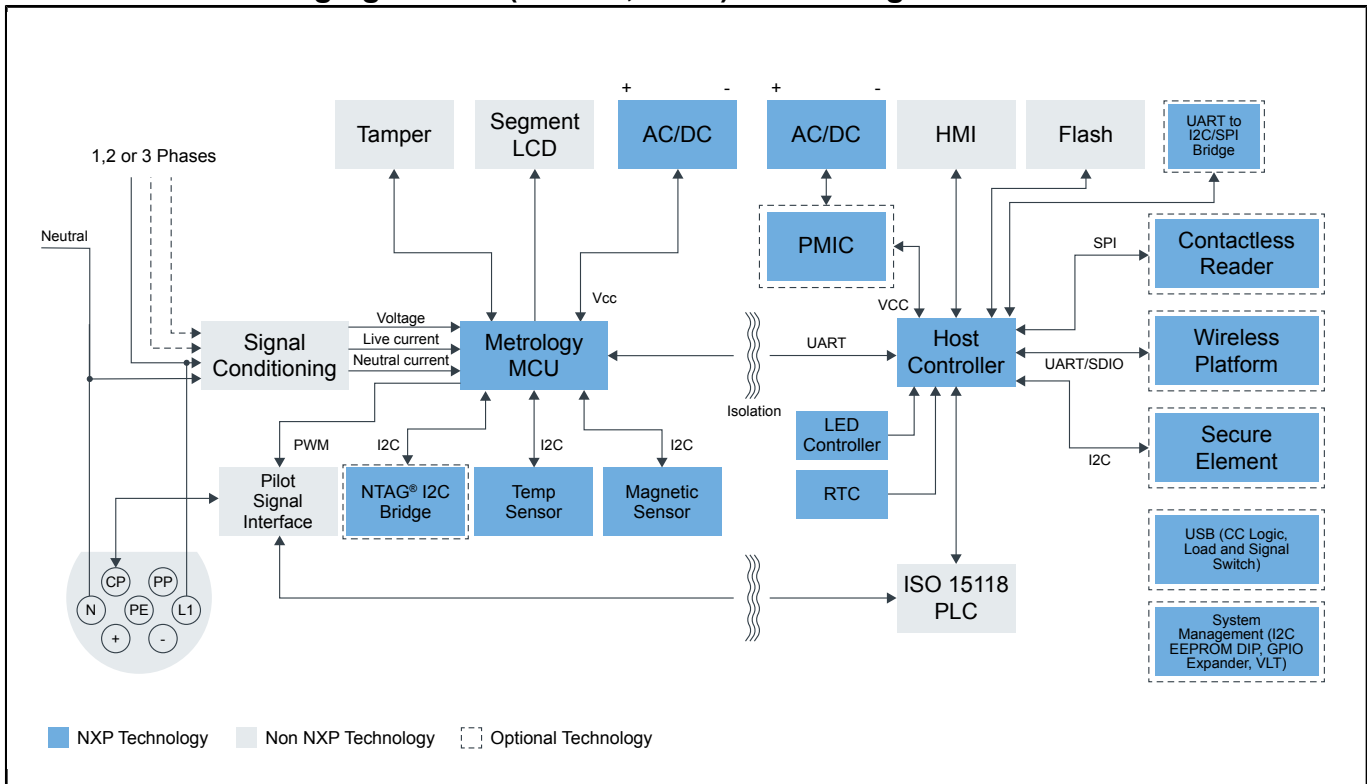
# EV Charging Station

Last Updated: Apr 18, 2024

An Electric Vehicle (EV) charging station supplies power for recharging electric vehicles. Typical EV charging stations are made up of at least one smart controller board and one power socket board. The smart controller manages security, services and connectivity to a remote server and the power socket board distributes and measures energy.

EV charging stations require high levels of efficiency, accuracy, connectivity and security. NXP solutions meet the requirements with accurate power measurement, device management and data security. Our rich enablement supports faster time to market with less complexity and reduced cost, and NXP's product longevity program supports longer product lifecycles.

## AC Residential Charging Station (Level 1,2 or 3) Block Diagram



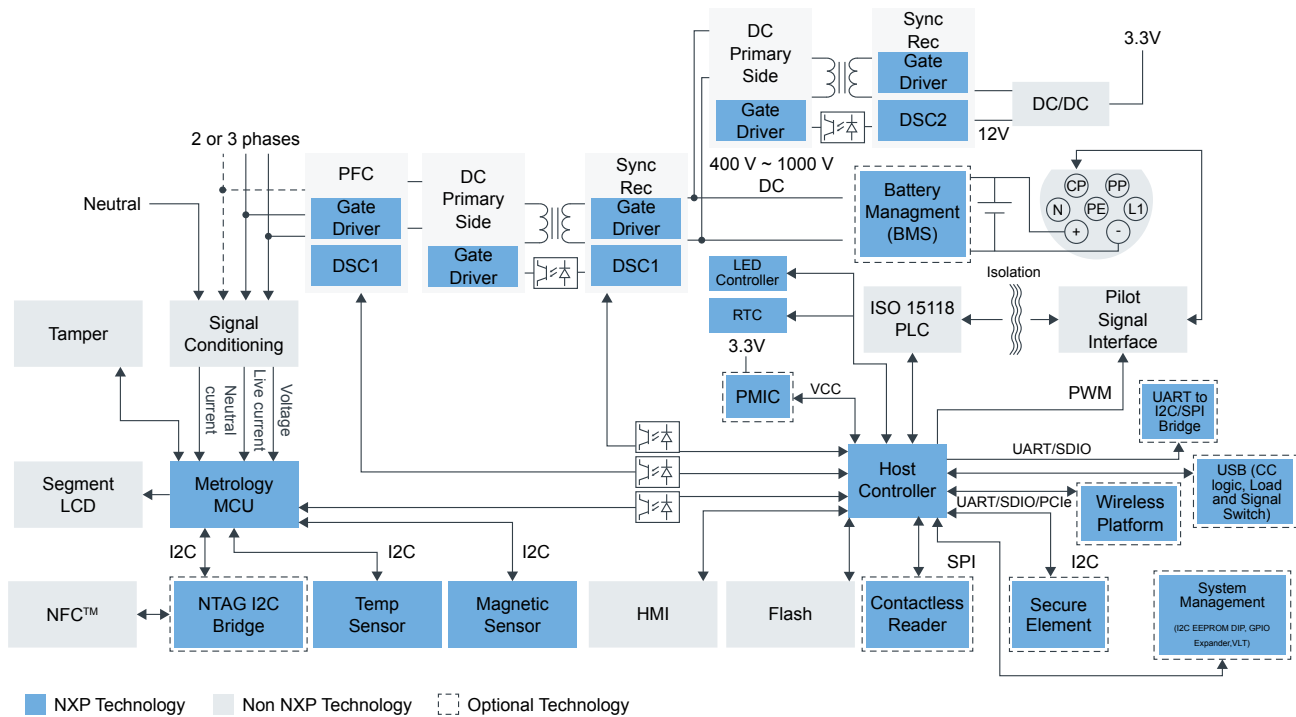
### Recommended Products for AC Residential Charging Station (Level 1,2 or 3)

<p>Metrology MCU</p>	<ul style="list-style-type: none"> <li>• <a href="#">MCX-A14X-A15X</a>: MCX A14x/15x MCUs with Arm® Cortex® M33, Scalable Device Options, Low Power and Intelligent Peripherals</li> <li>• <a href="#">MCX-N94X-N54X</a>: MCX N94x/54x Highly Integrated Multicore MCUs with On-Chip Accelerators, Intelligent Peripherals and Advanced Security</li> <li>• <a href="#">KM3x</a>: 50–75 MHz Precision Metrology MCUs with Segment LCDs Based on Arm® Cortex®-M0+</li> </ul>
<p>Contactless Reader</p>	<ul style="list-style-type: none"> <li>• <a href="#">PN5180</a>: Full NFC Forum-Compliant Frontend IC</li> </ul>
<p>AC/DC</p>	<ul style="list-style-type: none"> <li>• <a href="#">TEA1723DT</a>: HV Start-up Flyback Controller with Integrated MOSFET for 11 W Applications, F~Burst = 1270 Hz</li> </ul>

NTAG I2C Bridge	<ul style="list-style-type: none"> <li>• <a href="#">NTAG_I2C</a>: NTAG I<sup>2</sup>C Plus 2K: NFC Forum Type 2 Tag with I<sup>2</sup>C Interface</li> </ul>
Secure Element	<ul style="list-style-type: none"> <li>• <a href="#">SE050</a>: EdgeLock<sup>®</sup> SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility</li> </ul>
Host Controller	<ul style="list-style-type: none"> <li>• <a href="#">i.MX RT Crossover MCUs</a>: i.MX RT Crossover MCUs</li> <li>• <a href="#">i.MX8M</a>: i.MX 8M Family - Arm<sup>®</sup> Cortex<sup>®</sup>-A53, Cortex-M4, Audio, Voice, Video</li> <li>• <a href="#">i.MX8XLite</a>: i.MX 8XLite Applications Processors for Telematics, V2X and Industrial Control</li> <li>• <a href="#">i.MX8MNANO</a>: i.MX 8M Nano Family - Arm<sup>®</sup> Cortex<sup>®</sup>-A53, Cortex-M7</li> <li>• <a href="#">LPC5500 Arm Cortex-M33</a>: LPC5500 Series: Arm<sup>®</sup> Cortex<sup>®</sup>-M33 Based Microcontroller Series for Mass Market, Leveraging 40nm Embedded Flash Technology</li> </ul>
Magnetic sensor	<ul style="list-style-type: none"> <li>• <a href="#">NMH1000</a>: NMH1000 Ultra-Low Power and Low-Voltage Magnetic Switch</li> </ul>
Temperature Sensor	<ul style="list-style-type: none"> <li>• <a href="#">P3T1035xUK</a>: I3C, I<sup>2</sup>C-Bus, ±0.5 °C Accuracy, Digital Temperature Sensor</li> <li>• <a href="#">P3T2030xUK</a>: I3C, I<sup>2</sup>C-Bus, 2.0 °C Accuracy, Digital Temperature Sensor</li> <li>• <a href="#">P3T1750DP</a>: I3C/I<sup>2</sup>C-Bus, ±1 °C Accuracy, Digital Temperature Sensor</li> <li>• <a href="#">PCT2075</a>: I<sup>2</sup>C-Bus Fm+, 1 Degree C Accuracy, Digital Temperature Sensor and Thermal Watchdog</li> <li>• <a href="#">P3T1755DP</a>: I3C/I<sup>2</sup>C-Bus ±0.5 °C Accurate Digital Temperature Sensor</li> </ul>
Wireless Platform	<ul style="list-style-type: none"> <li>• <a href="#">K32W041AM-A</a>: K32W041AM/A: High Performance, Secure and Low-Power MCU for Zigbee<sup>®</sup>, Thread<sup>™</sup> and Bluetooth<sup>®</sup> LE 5.0 with High Tx Power Option</li> <li>• <a href="#">K32W061_41</a>: K32W061/41: High-Performance, Secure and Ultra-Low-Power MCU for Zigbee<sup>®</sup>, Thread<sup>™</sup>, and Bluetooth<sup>®</sup> LE 5.0 with Built-In NFC Option</li> <li>• <a href="#">IW416</a>: 2.4/5 GHz Dual-Band 1x1 Wi-Fi<sup>®</sup> 4 (802.11n) + Bluetooth<sup>®</sup> 5.2 Solution</li> <li>• <a href="#">OL2385AHN</a>: Low-Power Multi-Channel UHF RF Wireless Platform</li> </ul>
PMIC	<ul style="list-style-type: none"> <li>• <a href="#">PCA9450</a>: Power Management IC (PMIC) for i.MX 8M Mini/Nano/Plus</li> </ul>
RTC	<ul style="list-style-type: none"> <li>• <a href="#">PCF2131</a>: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal</li> <li>• <a href="#">PCF8563</a>: Real-Time Clock/Calendar</li> <li>• <a href="#">PCF8523</a>: 100 NA Real-Time Clock/Calendar with Battery Backup</li> </ul>
LED controllers	<ul style="list-style-type: none"> <li>• <a href="#">PCA9632</a>: 4-Bit Fm+ I<sup>2</sup>C-Bus Low-Power LED Driver</li> <li>• <a href="#">PCA9955BTW</a>: 16-Channel Fm+ I<sup>2</sup>C-Bus 57 mA/20 V Constant-Current LED Driver</li> <li>• <a href="#">PCA9959</a>: 24-Channel SPI Serial Bus 63 mA/5.5 V Constant Current LED Driver</li> </ul>
System Management	<ul style="list-style-type: none"> <li>• <a href="#">PCA9555A</a>: Low-Voltage 16-Bit I<sup>2</sup>C-Bus I/O Port with Interrupt and Weak Pull-Up</li> <li>• <a href="#">PCAL9722</a>: 22-Bit SPI I/O Expander with Agile I/O Features</li> <li>• <a href="#">PCAL9714</a>: 14-Bit SPI I/O Expander with Agile I/O Features</li> <li>• <a href="#">PCAL6408A</a>: Low-Voltage Translating, 8-Bit I<sup>2</sup>C-Bus/SMBus I/O Expander</li> <li>• <a href="#">PCAL6416A</a>: Low-Voltage Translating 16-Bit I<sup>2</sup>C-Bus/SMBus I/O Expander</li> <li>• <a href="#">NTS0104</a>: Dual-Supply Translating Transceiver (Open-Drain, Auto-Direction Sensing)</li> <li>• <a href="#">NTB0104</a>: Dual-Supply Translating Transceiver (Auto-Direction Sensing, Three-State)</li> <li>• <a href="#">PCA9306</a>: Dual Bidirectional I<sup>2</sup>C-Bus and SMBus Voltage-Level Translator</li> <li>• <a href="#">PCA9561</a>: Quad 6-Bit Multiplexed I<sup>2</sup>C-Bus EEPROM DIP Switch</li> </ul>
Bridge	<ul style="list-style-type: none"> <li>• <a href="#">Bridges</a>: Bridge IC Solutions</li> <li>• <a href="#">SC18IM704</a>: UART to I<sup>2</sup>C-Bus Bridge</li> <li>• <a href="#">SC18IS606</a>: I<sup>2</sup>C-Bus to SPI Bridge</li> <li>• <a href="#">SC18IS604</a>: SPI to I<sup>2</sup>C-Bus Bridge</li> </ul>
USB or analog switch	<ul style="list-style-type: none"> <li>• <a href="#">NX5P3090UK</a>: USB PD and Type-C Current-Limited Power Switch</li> <li>• <a href="#">NX3P1108UK</a>: Logic-Controlled High-Side Power Switch</li> <li>• <a href="#">NX20P0477</a>: USB Type-C CC Smart Protection</li> </ul>

- [NX3DV221](#): High-Speed USB 2.0 Switch with Enable
- [NX3DV642GU](#): Three-Lane High-Speed MIPI-Compatible Switch
- [NX5L2750CGU](#): Analog Switch with Negative Swing Audio Capability
- [PTN5150](#): CC Logic for USB Type-C Applications

## DC Charging Station (DC Fast, DC Rapid or DC Ultra) Block Diagram



### Recommended Products for DC Charging Station (DC Fast, DC Rapid or DC Ultra)

<p>Metrology MCU</p>	<ul style="list-style-type: none"> <li>• <a href="#">MCX-A14X-A15X</a>: MCX A14x/15x MCUs with Arm® Cortex® M33, Scalable Device Options, Low Power and Intelligent Peripherals</li> <li>• <a href="#">MCX-N94X-N54X</a>: MCX N94x/54x Highly Integrated Multicore MCUs with On-Chip Accelerators, Intelligent Peripherals and Advanced Security</li> <li>• <a href="#">KM3x</a>: 50–75 MHz Precision Metrology MCUs with Segment LCDs Based on Arm® Cortex®-M0+</li> </ul>
<p>Temperature Sensor</p>	<ul style="list-style-type: none"> <li>• <a href="#">P3T1035xUK</a>: I3C, I<sup>2</sup>C-Bus, ±0.5 °C Accuracy, Digital Temperature Sensor</li> <li>• <a href="#">P3T2030xUK</a>: I3C, I<sup>2</sup>C-Bus, 2.0 °C Accuracy, Digital Temperature Sensor</li> </ul>

	<ul style="list-style-type: none"> <li>• <a href="#">P3T1750DP</a>: I3C/I<sup>2</sup>C-Bus, ±1 °C Accuracy, Digital Temperature Sensor</li> <li>• <a href="#">PCT2075</a>: I<sup>2</sup>C-Bus Fm+, 1 Degree C Accuracy, Digital Temperature Sensor and Thermal Watchdog</li> <li>• <a href="#">P3T1755DP</a>: I3C/I<sup>2</sup>C-Bus ±0.5 °C Accurate Digital Temperature Sensor</li> </ul>
NTAG I2C Bridge	<ul style="list-style-type: none"> <li>• <a href="#">NTAG_I2C</a>: NTAG I<sup>2</sup>C Plus 2K: NFC Forum Type 2 Tag with I<sup>2</sup>C Interface</li> </ul>
Mag + Accel Sensor	<ul style="list-style-type: none"> <li>• <a href="#">FXLS8974CF</a>: ±2g/±4g/±8g/±16g, Low-Power 12-Bit Digital IoT Accelerometer</li> </ul>
Contactless Reader	<ul style="list-style-type: none"> <li>• <a href="#">PN5180</a>: Full NFC Forum-Compliant Frontend IC</li> </ul>
Secure Element	<ul style="list-style-type: none"> <li>• <a href="#">SE050</a>: EdgeLock<sup>®</sup> SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility</li> </ul>
Host Controller	<ul style="list-style-type: none"> <li>• <a href="#">i.MX RT Crossover MCUs</a>: i.MX RT Crossover MCUs</li> <li>• <a href="#">iMX8MPLUS</a>: i.MX 8M Plus – Arm<sup>®</sup> Cortex<sup>®</sup>-A53, Machine Learning, Vision, Multimedia and Industrial IoT</li> <li>• <a href="#">iMX8XLite</a>: i.MX 8XLite Applications Processors for Telematics, V2X and Industrial Control</li> <li>• <a href="#">i.MX8MNANO</a>: i.MX 8M Nano Family - Arm<sup>®</sup> Cortex<sup>®</sup>-A53, Cortex-M7</li> <li>• <a href="#">LPC5500 Arm Cortex-M33</a>: LPC5500 Series: Arm<sup>®</sup> Cortex<sup>®</sup>-M33 Based Microcontroller Series for Mass Market, Leveraging 40nm Embedded Flash Technology</li> <li>• <a href="#">S32G2</a>: S32G2 Processors for Vehicle Networking</li> </ul>
Wireless Platform	<ul style="list-style-type: none"> <li>• <a href="#">K32W041AM-A</a>: K32W041AM/A: High Performance, Secure and Low-Power MCU for Zigbee<sup>®</sup>, Thread<sup>™</sup> and Bluetooth<sup>®</sup> LE 5.0 with High Tx Power Option</li> <li>• <a href="#">K32W061_41</a>: K32W061/41: High-Performance, Secure and Ultra-Low-Power MCU for Zigbee<sup>®</sup>, Thread<sup>™</sup>, and Bluetooth<sup>®</sup> LE 5.0 with Built-In NFC Option</li> <li>• <a href="#">IW416</a>: 2.4/5 GHz Dual-Band 1x1 Wi-Fi<sup>®</sup> 4 (802.11n) + Bluetooth<sup>®</sup> 5.2 Solution</li> <li>• <a href="#">OL2385AHN</a>: Low-Power Multi-Channel UHF RF Wireless Platform</li> </ul>
DSC1	<ul style="list-style-type: none"> <li>• <a href="#">MC56F83xxx</a>: Performance Level Digital Signal Controllers, USB FS OTG, CAN FD</li> </ul>
DSC2	<ul style="list-style-type: none"> <li>• <a href="#">MC56F81xxx</a>: Up to 100MHz Digital Signal Controllers with DSASS and Operational Amplifier</li> </ul>
RTC	<ul style="list-style-type: none"> <li>• <a href="#">PCF2131</a>: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal</li> <li>• <a href="#">PCF8563</a>: Real-Time Clock/Calendar</li> <li>• <a href="#">PCF8523</a>: 100 NA Real-Time Clock/Calendar with Battery Backup</li> </ul>
BMS	<ul style="list-style-type: none"> <li>• <a href="#">Battery Management System (BMS)</a>: Battery Management System (BMS)</li> </ul>
Gate Driver	<ul style="list-style-type: none"> <li>• <a href="#">GD3160</a>: Advanced High Voltage Isolated Gate Driver with Segmented Drive for SiC MOSFETs</li> </ul>
PMIC	<ul style="list-style-type: none"> <li>• <a href="#">PCA9450</a>: Power Management IC (PMIC) for i.MX 8M Mini/Nano/Plus</li> </ul>
Magnetic sensor	<ul style="list-style-type: none"> <li>• <a href="#">NMH1000</a>: NMH1000 Ultra-Low Power and Low-Voltage Magnetic Switch</li> </ul>
System Management	<ul style="list-style-type: none"> <li>• <a href="#">PCA9555A</a>: Low-Voltage 16-Bit I<sup>2</sup>C-Bus I/O Port with Interrupt and Weak Pull-Up</li> <li>• <a href="#">PCAL9722</a>: 22-Bit SPI I/O Expander with Agile I/O Features</li> </ul>

	<ul style="list-style-type: none"> <li>• <a href="#">PCAL9714</a>: 14-Bit SPI I/O Expander with Agile I/O Features</li> <li>• <a href="#">PCAL6408A</a>: Low-Voltage Translating, 8-Bit I<sup>2</sup>C-Bus/SMBus I/O Expander</li> <li>• <a href="#">PCAL6416A</a>: Low-Voltage Translating 16-Bit I<sup>2</sup>C-Bus/SMBus I/O Expander</li> <li>• <a href="#">NTS0104</a>: Dual-Supply Translating Transceiver (Open-Drain, Auto-Direction Sensing)</li> <li>• <a href="#">NTB0104</a>: Dual-Supply Translating Transceiver (Auto-Direction Sensing, Three-State)</li> <li>• <a href="#">PCA9306</a>: Dual Bidirectional I<sup>2</sup>C-Bus and SMBus Voltage-Level Translator</li> <li>• <a href="#">PCA9561</a>: Quad 6-Bit Multiplexed I<sup>2</sup>C-Bus EEPROM DIP Switch</li> </ul>
USB or analog switch	<ul style="list-style-type: none"> <li>• <a href="#">NX5P3090UK</a>: USB PD and Type-C Current-Limited Power Switch</li> <li>• <a href="#">NX3P1108UK</a>: Logic-Controlled High-Side Power Switch</li> <li>• <a href="#">NX20P0477</a>: USB Type-C CC Smart Protection</li> <li>• <a href="#">NX3DV221</a>: High-Speed USB 2.0 Switch with Enable</li> <li>• <a href="#">NX3DV642GU</a>: Three-Lane High-Speed MIPI-Compatible Switch</li> <li>• <a href="#">NX5L2750CGU</a>: Analog Switch with Negative Swing Audio Capability</li> <li>• <a href="#">PTN5150</a>: CC Logic for USB Type-C Applications</li> </ul>
Bridge	<ul style="list-style-type: none"> <li>• <a href="#">Bridges</a>: Bridge IC Solutions</li> <li>• <a href="#">SC18IM704</a>: UART to I<sup>2</sup>C-Bus Bridge</li> <li>• <a href="#">SC18IS606</a>: I<sup>2</sup>C-Bus to SPI Bridge</li> <li>• <a href="#">SC18IS604</a>: SPI to I<sup>2</sup>C-Bus Bridge</li> </ul>
LED controllers	<ul style="list-style-type: none"> <li>• <a href="#">PCA9632</a>: 4-Bit Fm+ I<sup>2</sup>C-Bus Low-Power LED Driver</li> <li>• <a href="#">PCA9955BTW</a>: 16-Channel Fm+ I<sup>2</sup>C-Bus 57 mA/20 V Constant-Current LED Driver</li> <li>• <a href="#">PCA9959</a>: 24-Channel SPI Serial Bus 63 mA/5.5 V Constant Current LED Driver</li> </ul>

View our complete solution for [EV Charging Station](#).

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

---

**www.nxp.com**

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2024 NXP B.V.