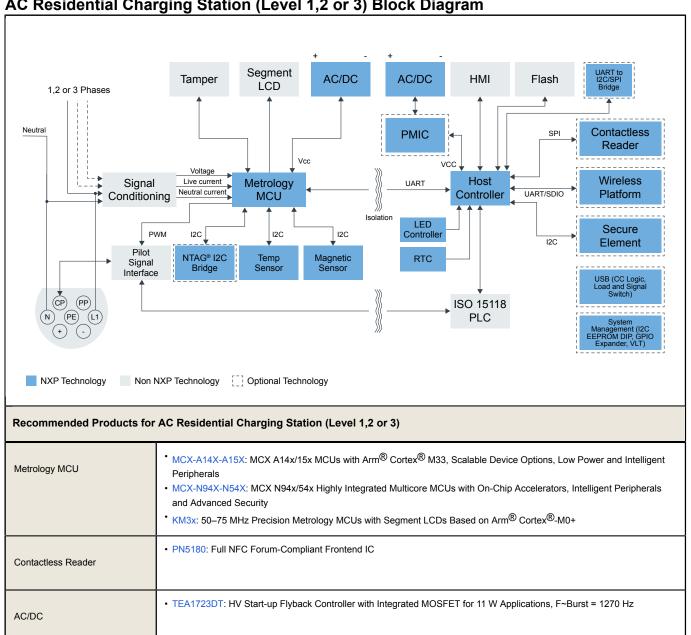


Last Updated: Apr 18, 2024

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.

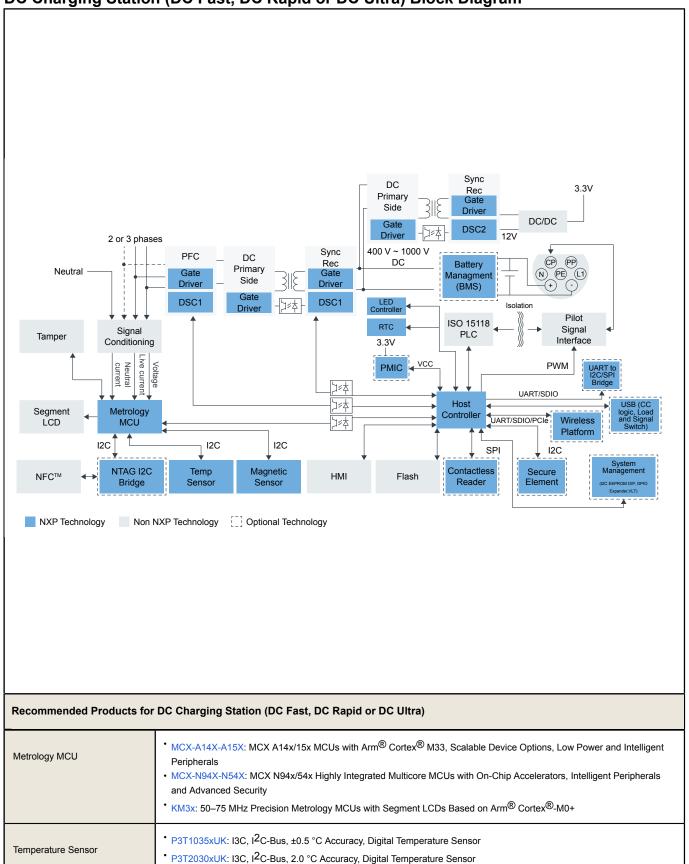
AC Residential Charging Station (Level 1,2 or 3) Block Diagram



NTAG I2C Bridge	NTAG_I2C: NTAG I²C Plus 2K: NFC Forum Type 2 Tag with I²C Interface
Secure Element	SE050: EdgeLock [®] SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility
Host Controller	i.MX RT Crossover MCUs: i.MX RT Crossover MCUs i.MX8M: i.MX 8M Family - Arm [®] Cortex [®] -A53, Cortex-M4, Audio, Voice, Video iMX8XLite: i.MX 8XLite Applications Processors for Telematics, V2X and Industrial Control i.MX8MNANO: i.MX 8M Nano Family - Arm [®] Cortex [®] -A53, Cortex-M7 LPC5500 Arm Cortex-M33: LPC5500 Series: Arm [®] Cortex [®] -M33 Based Microcontroller Series for Mass Market, Leveraging 40nm Embedded Flash Technology
Magnetic sensor	NMH1000: NMH1000 Ultra-Low Power and Low-Voltage Magnetic Switch
Temperature Sensor	 P3T1035xUK: I3C, I²C-Bus, ±0.5 °C Accuracy, Digital Temperature Sensor P3T2030xUK: I3C, I²C-Bus, 2.0 °C Accuracy, Digital Temperature Sensor P3T1750DP: I3C/I²C-Bus, ±1 °C Accuracy, Digital Temperature Sensor PCT2075: I²C-Bus Fm+, 1 Degree C Accuracy, Digital Temperature Sensor and Thermal Watchdog P3T1755DP: I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor
Wireless Platform	 K32W041AM-A: K32W041AM/A: High Performance, Secure and Low-Power MCU for Zigbee[®], Thread[™] and Bluetooth[®] LE 5.0 with High Tx Power Option K32W061_41: K32W061/41: High-Performance, Secure and Ultra-Low-Power MCU for Zigbee[®], Thread[™], and Bluetooth[®] LE 5.0 with Built-In NFC Option IW416: 2.4/5 GHz Dual-Band 1x1 Wi-Fi[®] 4 (802.11n) + Bluetooth[®] 5.2 Solution OL2385AHN: Low-Power Multi-Channel UHF RF Wireless Platform
PMIC	PCA9450: Power Management IC (PMIC) for i.MX 8M Mini/Nano/Plus
RTC	PCF2131: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal PCF8563: Real-Time Clock/Calendar PCF8523: 100 NA Real-Time Clock/Calendar with Battery Backup
LED controllers	PCA9632: 4-Bit Fm+ I ² C-Bus Low-Power LED Driver PCA9955BTW: 16-Channel Fm+ I ² C-Bus 57 MA/20 V Constant-Current LED Driver PCA9959: 24-Channel SPI Serial Bus 63 mA/5.5 V Constant Current LED Driver
System Management	PCA9555A: Low-Voltage 16-Bit I²C-Bus I/O Port with Interrupt and Weak Pull-Up PCAL9722: 22-Bit SPI I/O Expander with Agile I/O Features PCAL9714: 14-Bit SPI I/O Expander with Agile I/O Features PCAL6408A: Low-Voltage Translating, 8-Bit I²C-Bus/SMBus I/O Expander PCAL6416A: Low-Voltage Translating 16-Bit I²C-Bus/SMBus I/O Expander NTS0104: Dual-Supply Translating Transceiver (Open-Drain, Auto-Direction Sensing) NTB0104: Dual-Supply Translating Transceiver (Auto-Direction Sensing, Three-State) PCA9306: Dual Bidirectional I²C-Bus and SMBus Voltage-Level Translator PCA9561: Quad 6-Bit Multiplexed I²C-Bus EEPROM DIP Switch
Bridge	Bridges: Bridge IC Solutions SC18IM704: UART to I²C-Bus Bridge SC18IS606: I²C-Bus to SPI Bridge SC18IS604: SPI to I²C-Bus Bridge
USB or analog switch	NX5P3090UK: USB PD and Type-C Current-Limited Power Switch NX3P1108UK: Logic-Controlled High-Side Power Switch NX20P0477: USB Type-C CC Smart Protection

- 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



	 P3T1750DP: I3C/I²C-Bus, ±1 °C Accuracy, Digital Temperature Sensor PCT2075: I²C-Bus Fm+, 1 Degree C Accuracy, Digital Temperature Sensor and Thermal Watchdog P3T1755DP: I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor
NTAG I2C Bridge	NTAG_I2C: NTAG I²C Plus 2K: NFC Forum Type 2 Tag with I²C Interface
Mag + Accel Sensor	FXLS8974CF: ±2g/±4g/±8g/±16g, Low-Power 12-Bit Digital IoT Accelerometer
Contactless Reader	PN5180: Full NFC Forum-Compliant Frontend IC
Secure Element	SE050: EdgeLock [®] SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility
Host Controller	i.MX RT Crossover MCUs: i.MX RT Crossover MCUs IMX8MPLUS: i.MX 8M Plus – Arm® Cortex®-A53, Machine Learning, Vision, Multimedia and Industrial IoT iMX8XLite: i.MX 8XLite Applications Processors for Telematics, V2X and Industrial Control i.MX8MNANO: i.MX 8M Nano Family - Arm® Cortex®-A53, Cortex-M7 LPC5500 Arm Cortex-M33: LPC5500 Series: Arm® Cortex®-M33 Based Microcontroller Series for Mass Market, Leveraging 40nm Embedded Flash Technology S32G2: S32G2 Processors for Vehicle Networking
Wireless Platform	 K32W041AM-A: K32W041AM/A: High Performance, Secure and Low-Power MCU for Zigbee[®], Thread[™] and Bluetooth[®] LE 5.0 with High Tx Power Option K32W061_41: K32W061/41: High-Performance, Secure and Ultra-Low-Power MCU for Zigbee[®], Thread[™], and Bluetooth[®] LE 5.0 with Built-In NFC Option IW416: 2.4/5 GHz Dual-Band 1x1 Wi-Fi[®] 4 (802.11n) + Bluetooth[®] 5.2 Solution OL2385AHN: Low-Power Multi-Channel UHF RF Wireless Platform
DSC1	MC56F83xxx: Performance Level Digital Signal Controllers, USB FS OTG, CAN FD
DSC2	MC56F81xxx: Up to 100MHz Digital Signal Controllers with DSASS and Operational Amplifier
RTC	PCF2131: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal PCF8563: Real-Time Clock/Calendar PCF8523: 100 NA Real-Time Clock/Calendar with Battery Backup
BMS	Battery Management System (BMS): Battery Management System (BMS)
Gate Driver	GD3160: Advanced High Voltage Isolated Gate Driver with Segmented Drive for SiC MOSFETs
РМІС	PCA9450: Power Management IC (PMIC) for i.MX 8M Mini/Nano/Plus
Magnetic sensor	NMH1000: NMH1000 Ultra-Low Power and Low-Voltage Magnetic Switch
System Management	PCA9555A: Low-Voltage 16-Bit I ² C-Bus I/O Port with Interrupt and Weak Pull-Up PCAL9722: 22-Bit SPI I/O Expander with Agile I/O Features

	PCAL9714: 14-Bit SPI I/O Expander with Agile I/O Features PCAL6408A: Low-Voltage Translating, 8-Bit I²C-Bus/SMBus I/O Expander PCAL6416A: Low-Voltage Translating 16-Bit I²C-Bus/SMBus I/O Expander NTS0104: Dual-Supply Translating Transceiver (Open-Drain, Auto-Direction Sensing) NTB0104: Dual-Supply Translating Transceiver (Auto-Direction Sensing, Three-State) PCA9306: Dual Bidirectional I²C-Bus and SMBus Voltage-Level Translator PCA9561: Quad 6-Bit Multiplexed I²C-Bus EEPROM DIP Switch
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LED controllers	PCA9632: 4-Bit Fm+ I ² C-Bus Low-Power LED Driver PCA9955BTW: 16-Channel Fm+ I ² C-Bus 57 MA/20 V Constant-Current LED Driver PCA9959: 24-Channel SPI Serial Bus 63 mA/5.5 V Constant Current LED Driver

View our complete solution for EV Charging Station.

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

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