AC-DC Conversion with Bidirectional Option

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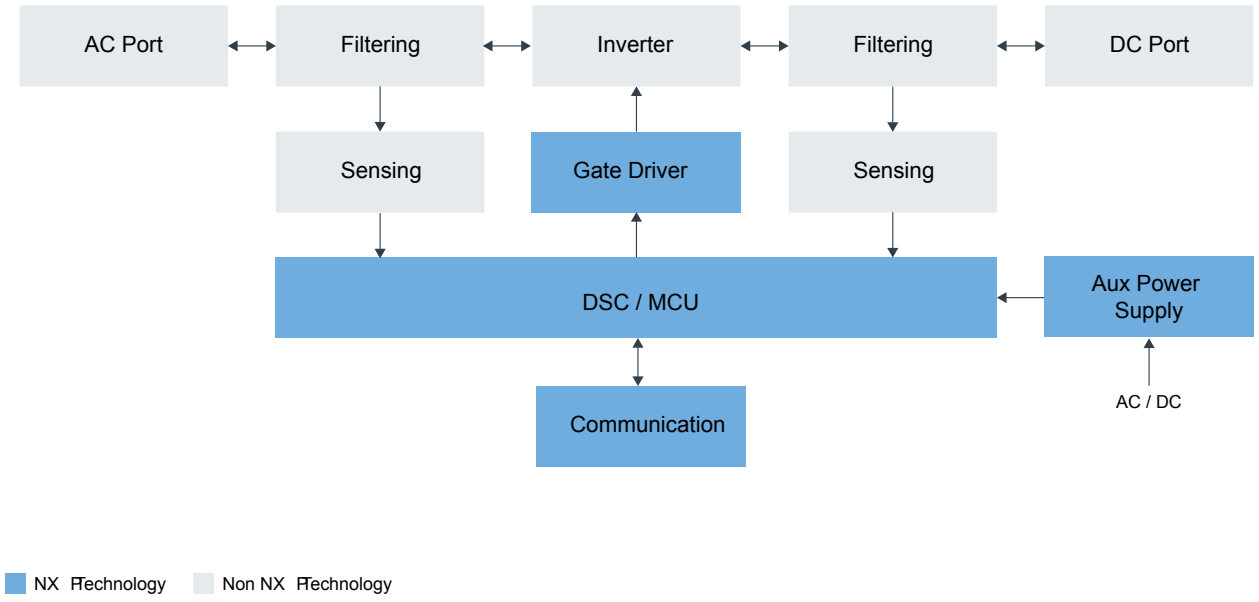
A power conversion system is an integral component to convert energy from various sources to specific DC or AC voltage and power levels. It can be found in most electric and electronics applications including power supplies, EV chargers, solar inverters, UPS, transformers, energy storage systems (ESS) and more. The main challenges of power conversion systems are energy efficiency in the conversion and quality of output (PFC, stability, reliability, etc.).

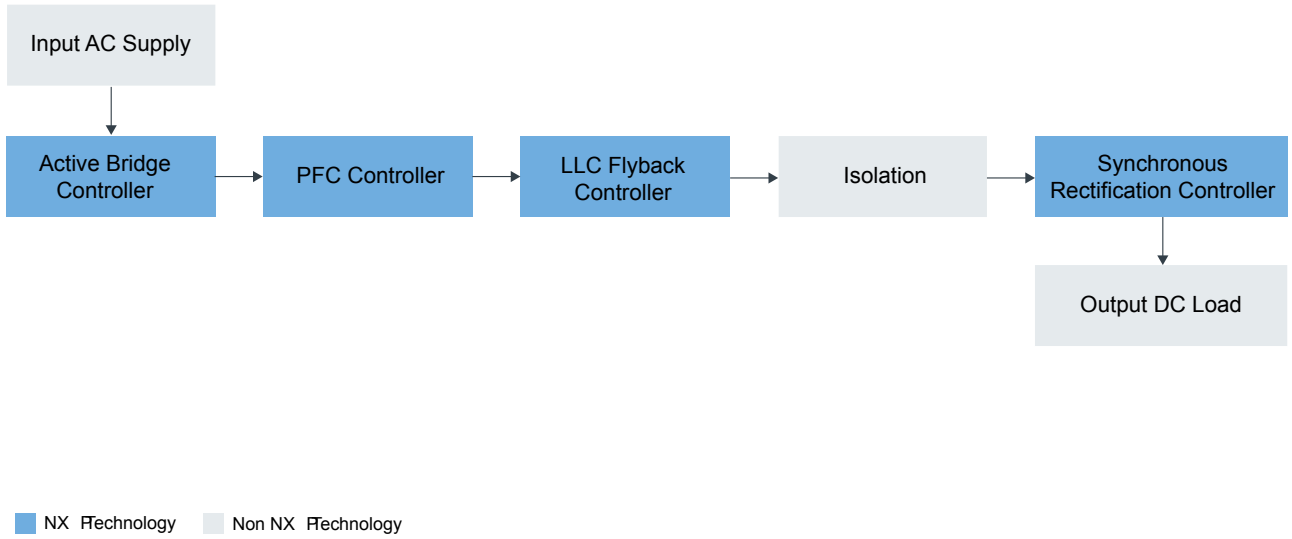
Programmable AC/DC Converter Block Diagram



Recommended Products for Programmable AC/DC Converter	
DSC / MCU	• MC56F80xxx: DSCs with Integrated FPU and Trigonometric Math Engine with OPAMP and Quadrature Decoder • MC56F81xxx: Up to 100MHz Digital Signal Controllers with DSASS and Operational Amplifier • MC56F82xxx: MC56F826xx and MC56F827xx Digital Signal Controllers • MC56F83xxx: Performance Level Digital Signal Controllers, USB FS OTG, CAN FD • MC56F84xxx: Digital Signal Controllers • KV4x: Kinetis KV4x-168 MHz, High Performance Motor / Power Conversion MCUs based on Arm® Cortex®-M4 • KV5x: Kinetis® KV5x-240 MHz, Motor Control and Power Conversion, Ethernet, MCUs based on Arm® Cortex®-M7 • i.MX-RT1160: i.MX RT1160 Crossover MCU Dual-Core Arm® Cortex®-M7 and Cortex-M4 • i.MX-RT1170: i.MX RT1170: 1 GHz Crossover MCU with Arm® Cortex® Cores • i.MX-RT1180: i.MX RT1180: Crossover MCU with TSN Switch and EdgeLock®
Gate Driver	• GD3160: Advanced High Voltage Isolated Gate Driver with Segmented Drive for SiC MOSFETs • GD3100: Advanced High Voltage Isolated Gate Driver for IGBT and SiC MOSFETs

	• GD3162: Advanced High Voltage Isolated Gate Driver with Dynamic Gate Strength Control
Power Supply	• TEA1721AT: HV Start-Up Flyback Controller with Integrated MOSFET for 5 W Applications, F~burst = 430 Hz
Communication	• TJA1052IT: Galvanically-Isolated High-Speed CAN Transceiver • TJA1100: TJA1100, IEEE 100BASE-T1 Compliant Automotive Ethernet PHY Transceiver • TJA1410: TJA1410, 10BASE-T1S PMD Transceiver

Configurable AC/DC Converter Block Diagram



Recommended Products for Configurable AC/DC Converter

Active Bridge Controllers	• TEA2226: TEA2226AT Digital Configurable LLC Controller • TEA2209T: Active Bridge Rectifier Controller • TEA19363T: GreenChip SMPS Primary Side Control IC with QR/DCM Operation and X-Capacitor Discharge
PFC Controllers	• TEA2376: TEA2376xT, Digital Configurable Interleaved PFC Controllers • TEA2017: Digital Configurable LLC and Multimode PFC Controller • TEA19162T: PFC Controller
LLC Flyback Controllers	• TEA1723DT: HV Start-up Flyback Controller with Integrated MOSFET for 11 W Applications, F~Burst = 1270 Hz • TEA1721BT: HV Start-up Flyback Controller with Integrated MOSFET for 5 W Applications, F~Burst = 905 Hz • NXP EasyEVSE Development Platform (i.MX 93, Linux OS, Wi-Fi 6)
Synchronous Rectification Controllers	• TEA1998TS: GreenChip Synchronous Rectifier Controller • TEA1993TS: GreenChip Synchronous Rectifier Controller • TEA2093: GreenChip Synchronous Rectifier Controller

View our complete solution for AC-DC Conversion with Bidirectional Option.

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