

GREENBOX 3 DEVELOPMENT PLATFORM FOR S32Z AND S32E REAL-TIME PROCESSORS



Supports integration of diverse, real-time applications for new vehicle architectures and software defined vehicles

The NXP GreenBox 3 is a versatile development platform for the S32Z and S32E real-time processors which integrates high-performance processing, peripherals, networking and connectivity interfaces in a rugged enclosure. The GreenBox 3 is ideal for development and demonstrations of integrated and isolated real-time applications, for domain and zonal control, safety processing and vehicle electrification.

TECHNICAL FEATURES

- NXP S32E288 real-time processor
- NXP S32K148 microcontroller
- Memory support:
 - 32 MB embedded flash memory
 - 2 GB LPDDR4 DRAM
 - 32 GB eMMC 5.1 flash memory
 - 1 kb (128 B) serial EEPROM
 - MicroSD slot
- SJA1110A 10-port automotive TSN Ethernet switch
- NXP transceivers: TJA1448 dual high-speed CAN, TJA1081 FlexRay, TJA1124 LIN
- Dedicated dual motor control and battery management circuitry and connectors
 - MC33664 isolated network high-speed transceiver for BMS
- Ethernet Interfaces: 10BASE-T1S, 6x Gigabit Ethernet, 6x 100BASE-T1 Ethernet
- Communications Interfaces: CAN FD, CAN XL, FlexRay, LIN, SENT
- Other Interfaces: DSPI, I3C, DSPI, PSI5, SPI, UART, Zipwire
- JTAG and OpenSDA debug and Aurora trace interfaces
- ISO 26262 ASIL D functional safety
- +12 VDC input with fully regulated switching power supply
 - Power management (FS26/FS86/PF5030)

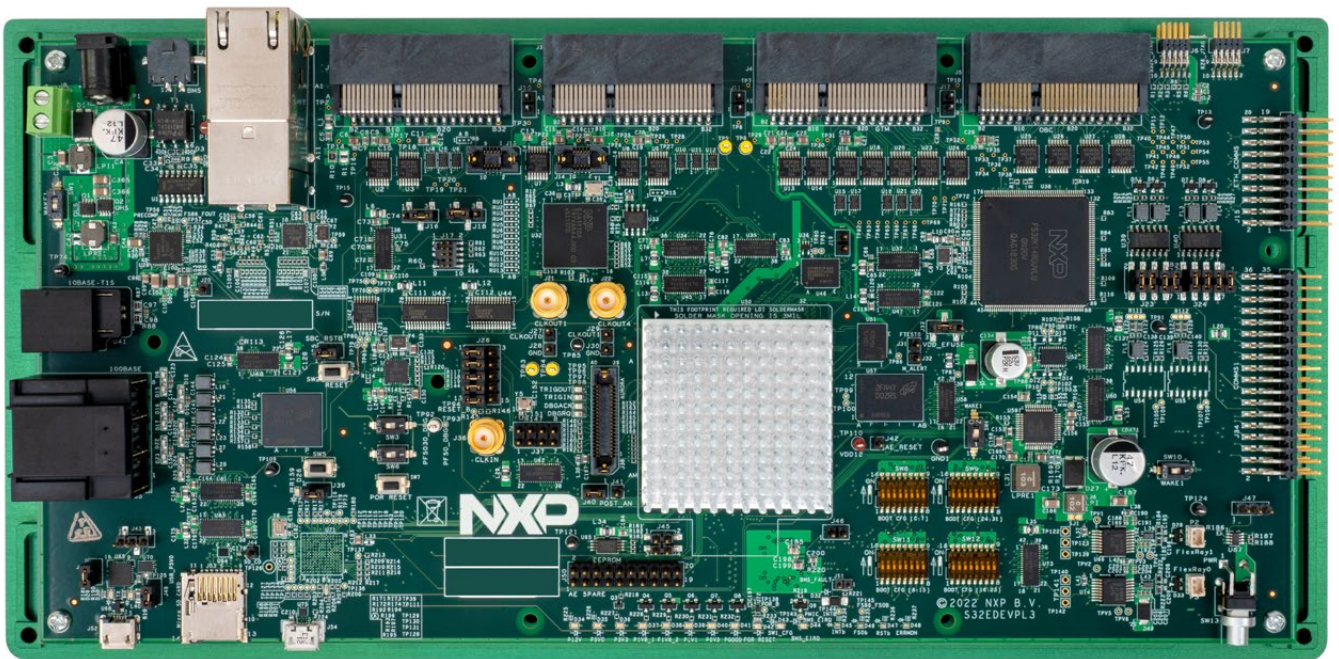
ENABLEMENT TOOLS

- NXP GreenVIP Vehicle Integration Platform
- NXP S32 Design Studio Integrated Development Environment (IDE)
 - GCC compiler, trace and debugger components
- S32 Configuration Tools Suite
 - Pins, clocks, peripherals, IVT, DCD, QSPI parameters and DDR tools
- Real-Time Drivers (RTDs) including AUTOSAR MCAL support
- FreeRTOS™ real-time operating system
- Zephyr real-time operating system
- FreeMASTER real-time debug monitor and data virtualization tool including FreeMASTER Lite
- Hypervisor support
- NXP AI/ML Enablement (NXP eIQ® Auto)

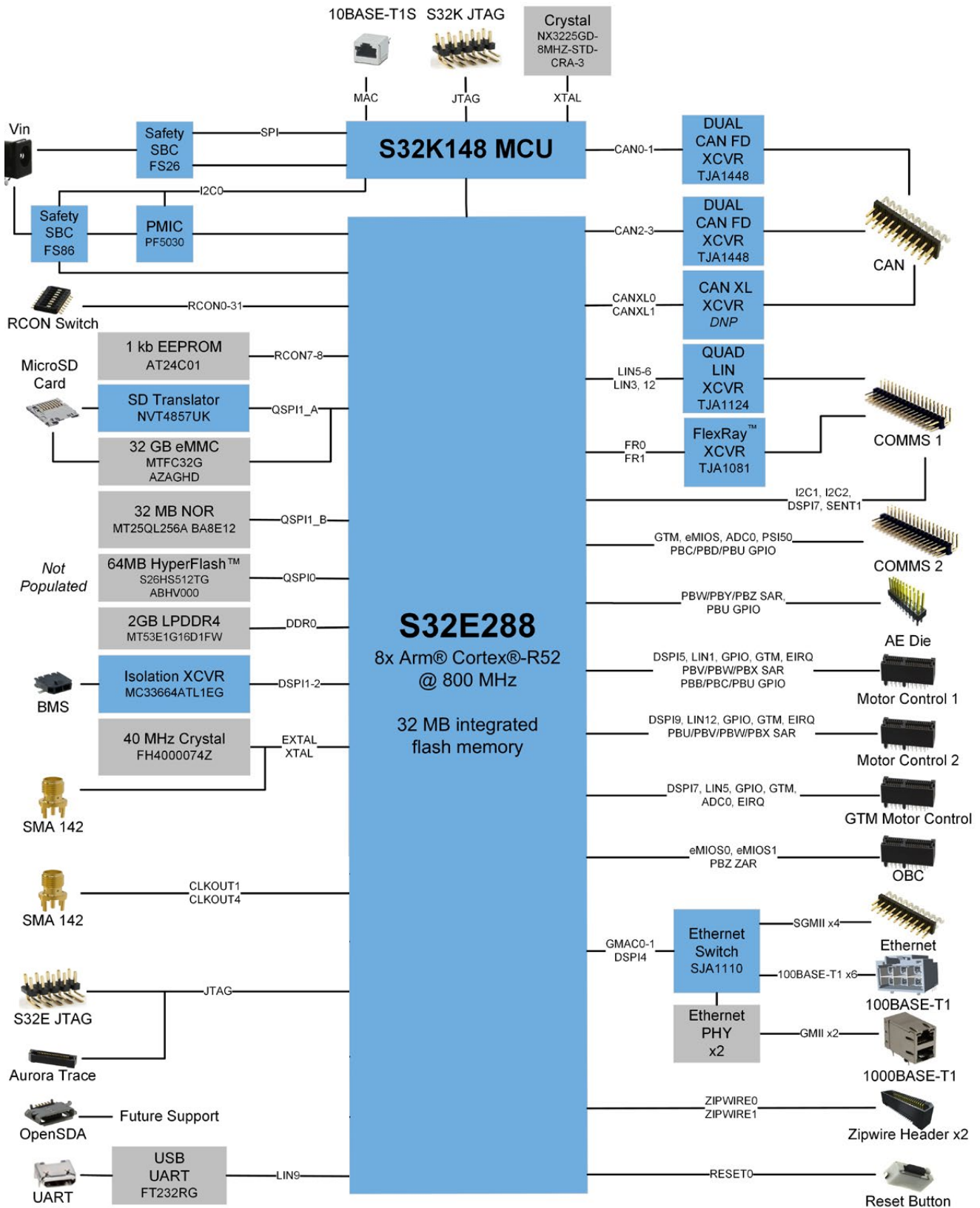
S32E288 PROCESSOR SPECIFICATIONS

Processor Cores	8x Arm® Cortex®-R52 split-lock cores (4x lockstep) operating at up to 1 GHz Arm Cortex-M33 lockstep pair for System Manager @ 400 MHz FP vector DSP/ML processor (25 GFLOPS)
On-chip Memory	19 MB total SRAM
Ext. Memory I/Fs	LPDDR4 (DRAM/flash), uSDHC (SD/eMMC), QuadSPI (NOR flash/HyperRAM)
CAN	CAN offload engine (FlexLLCE), CAN FD, CAN XL
Other Interfaces	DSPI, I3C, MSC, PSIS, SENT, SPI, UART, Zipwire
Ethernet	Integrated Ethernet Switch (NETC3)
Security	Hardware Security Engine (HSE)
A/D Converters	3.3/5 V 12-bit SAR ADC (68 channels), 1.8 V 12-bit SAR ADC (8 channels)
Timers	CTU, eMIOS, GTM 4.1, PITs, STMs, SWTs

GREENBOX 3 INSIDE PCB



GREENBOX 3 BLOCK DIAGRAM



NXP Technology

www.nxp.com/GreenBox3

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