



i.MX Applications Processors

SABRE Board for Smart Devices Based on the i.MX 6 Series

Overview

The Smart Application Blueprint for Rapid Engineering (SABRE) board for smart devices was created to simplify product design by offering a feature-rich development platform that allows developers to work with the majority of the i.MX 6 series processor's primary features. It provides a basic product design and serves as an example for how to layout complex, high-speed interfaces such as DDR. The SABRE board for smart devices includes complete hardware design files and board support packages (BSP) for Android™, Linux® and MQX™ (for Cortex-M4 on i.MX 6SoloX applications processors).

SABRE boards enable designers to quickly get started with i.MX 6 series processors. The MCIMX6Q-SDB enables development on i.MX 6Quad and i.MX 6Dual processors, and the MCIMX6SX-SDB on i.MX 6SoloX processors. There are a number of accessory boards that work with the SABRE-SDB to provide additional capabilities such as multi-touch display and Wi-Fi connectivity. Refer to freescale.com/SABRESDB for more information.

MCIMX6Q-SDB Features

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|---------------------|---|
| Processor | <ul style="list-style-type: none"> • Freescale i.MX 6Quad 1 GHz processor based on the ARM® Cortex®-A9 core |
| Development for | <ul style="list-style-type: none"> • i.MX 6Quad and i.MX 6Dual |
| Memory/storage | <ul style="list-style-type: none"> • 1 GB DDR3 SDRAM up to 533 MHz (1066 MTFS) memory • 8 GB eMMC flash |
| Display | <ul style="list-style-type: none"> • 2x LVDS connectors • HDMI connector • LCD expansion connector (parallel, 24-bit) |
| User interface | <ul style="list-style-type: none"> • Power, reset, volume buttons |
| Power management | <ul style="list-style-type: none"> • Freescale MMPF0100 |
| Audio | <ul style="list-style-type: none"> • Wolfson audio codec • Microphone and headphone jacks |
| Expansion connector | <ul style="list-style-type: none"> • Camera MIPI CSI port • I²C, SSI, SPI signals |
| Connectivity | <ul style="list-style-type: none"> • Full-size SD/MMC card slots (2x) • 7-pin SATA data connector • 10/100/1000 Ethernet port • 1x USB 2.0 OTG port (micro USB) |
| Debug | <ul style="list-style-type: none"> • JTAG connector (20-pin) • 1x Serial-to-USB connector (for JTAG) |
| OS support | <ul style="list-style-type: none"> • Linux® and Android™ (Freescale) • Others supported via third party (QNX, WindowsCE) |
| Tools support | <ul style="list-style-type: none"> • Manufacturing tool (Freescale) • Processor Expert IOMUX tool (Freescale) |
| Additional features | <ul style="list-style-type: none"> • 3-axis Freescale accelerator • USB plug power supply |



SABRE Board for Smart Devices System Contents

- i.MX 6Quad or 6SoloX processor-based system
- Power supply
- Quick start guide
- Bootable SD card



Figure 1: MCIMX6Q-SDB

MCIMX6SX-SDB Features

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|---------------------|--|
| Processor | <ul style="list-style-type: none"> • Freescale i.MX 6SoloX 1 GHz processor based on the ARM® Cortex®-A9 core and 200 MHz Cortex-M4 core |
| Development for | <ul style="list-style-type: none"> • i.MX 6SoloX |
| Memory/storage | <ul style="list-style-type: none"> • 1 GB DDR3L SDRAM up to 400 MHz • 32 MB x2 QSPI NOR flash |
| Display | <ul style="list-style-type: none"> • LVDS connector • LCD expansion connector (parallel, 24-bit) |
| User interface | <ul style="list-style-type: none"> • Buttons: power (sw3), reset (sw2), function1, function2 • Switch: power |
| Power management | <ul style="list-style-type: none"> • Freescale MMPF0200 |
| Audio | <ul style="list-style-type: none"> • Wolfson audio codec • Microphone and headphone jacks • Board-mounted microphone |
| Expansion connector | <ul style="list-style-type: none"> • Parallel camera MIPI CSI port • I²C and signals |
| Connectivity | <ul style="list-style-type: none"> • Full-size SD/MMC card slots (3x) • Two gigabit Ethernet connectors • 1x USB 2.0 OTG port (micro USB) • mPCIe connector • 12-bit ADC connector • 2x CAN (DB-9) using Freescale MC34901 CAN transceiver |
| Debug | <ul style="list-style-type: none"> • JTAG connector (20-pin) • 1x Serial-to-USB connector (for JTAG) |
| OS support | <ul style="list-style-type: none"> • Linux® and Android™ (Freescale), MQX (Freescale) for Cortex-M4 • Others supported via third party (QNX, WindowsCE) |
| Tools support | <ul style="list-style-type: none"> • Manufacturing tool (Freescale) • Processor Expert IOMUX tool (Freescale) |
| Additional features | <ul style="list-style-type: none"> • Freescale MMA8451 three-axis digital accelerometer • Freescale MAG3110 three-axis digital magnetometer • Ambient light sensor |



Figure 2: MCIMX6SX-SDB

Software and Tools

The SABRE board comes with an SD card pre-installed with the Android operating system (MCIMX6Q-SDB) or the Linux operating system (MCIMX6SX-SDB). Additional software is available from Freescale and third parties. In addition to optimized BSPs, Freescale also provides a large portfolio of optimized video, speech and audio codecs. More information is available at freescale.com/SABRESDB.

For additional information, please visit freescale.com/iMXSABRE
Join fellow i.MX developers online at imxcommunity.org
— an active community of open source developers.



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