Part Number	Description
MCIMX7SABRE	SABRE Board, Hardware, i.MX 7

Overview

NXP® delivers the Smart Application Blueprint for Rapid Engineering (SABRE) board based on i.MX7Dual applications processor, utilizing both the ARM® Cortex®-A7 and Cortex®-M4 cores with enhanced security and power optimization.

With the goal of faster time to market, the SABRE board allows developers to evaluate the processors' primary features including hardware-enabled security, integrated EPD controller, LCD/HDMI/MIPI DSI display and flexible connectivity interface, plus rich on-board solutions to Wi-Fi®/Bluetooth®4.0+EDR (Supporting BLE), and dual 1 Gigabit Ethernet.

The corresponding software support enables developers to run a rich operating system like Linux® or Android™ on the ARM® Cortex®-A7 core and FreeRTOS on the ARM® Cortex®-M4 core, exploring the full potential of the Heterogeneous Multicore Processing (HMP) architecture.

L4.1.0_1.1.0_GA BSP release can support i.MX7D SABRE board. Developing uboot and Developing Kernel on public git may provide better support.

Features

i.MX 7Dual applications processor

On-board Memory and expansion

Power Management

Display/Camera Connectors

Wireless

Audio CODEC

Connectivity

Debug

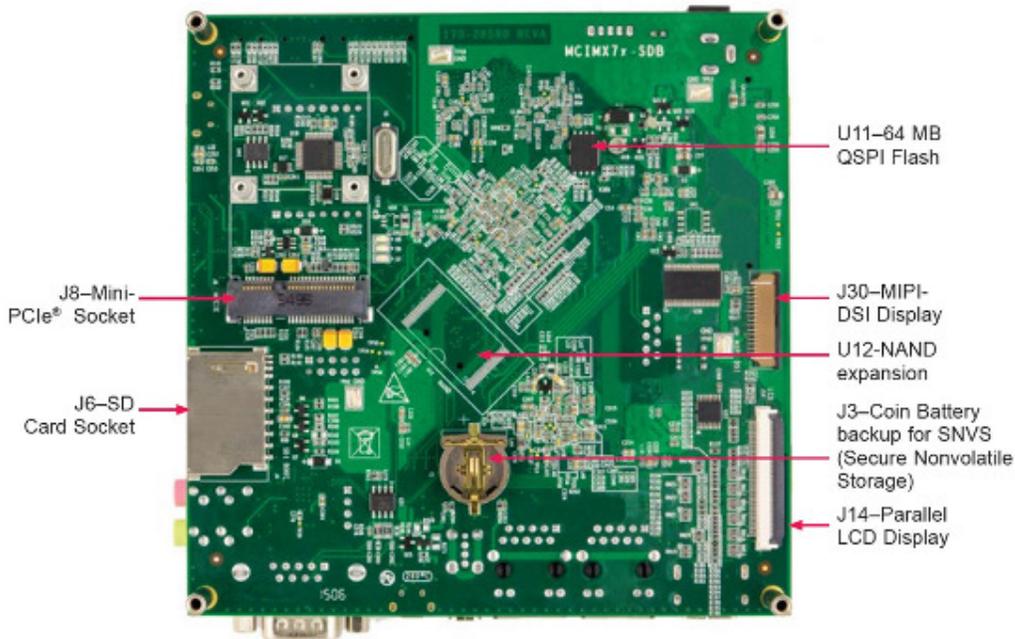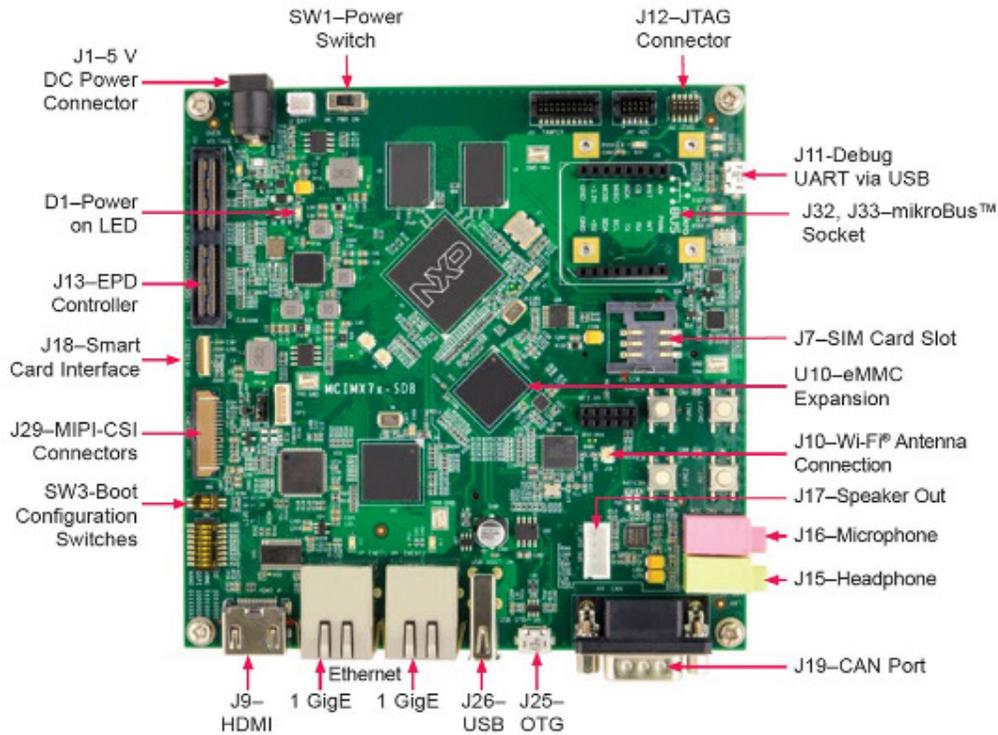**Sensor Fusion**

Kit Contains

- i.MX 7Dual SABRE board for smart devices
- Power supply
- USB cable (micro-B to standard-A)
- Quick Start Guide
- SD card with bootable Linux operating system demostration

Supported Devices

- i.MX7D: i.MX 7Dual Processors - Heterogeneous Processing with dual ARM® Cortex®-A7 cores and Cortex-M4 core

Instructions

1.1 Get Familiar with the Board

SW1–Power Switch

J12–JTAG Connector

J1–5 V DC Power Connector

J11-Debug UART via USB

D1–Power on LED

J32, J33–mikroBus™ Socket

J13–EPD Controller

J18–Smart Card Interface

J7–SIM Card Slot

U10–eMMC Expansion

J29–MIPI-CSI Connectors

J10–Wi-Fi® Antenna Connection

SW3-Boot Configuration Switches

J17–Speaker Out

J16–Microphone

J15–Headphone

J9– HDMI

Ethernet
1 GigE   1 GigE

J26– USB

J25– OTG

J19–CAN Port

U11–64 MB QSPI Flash

J8–Mini-PCIe® Socket

J30–MIPI-DSI Display

U12-NAND expansion

J6–SD Card Socket

J3–Coin Battery backup for SNVS (Secure Nonvolatile Storage)

J14–Parallel LCD Display

1.2 Insert the SD Card

The kit comes with an SD card with a pre-built NXP® Linux binary demo image. Without modifying the system, booting from the image will provide a default system with certain features for building other applications on top of Linux.

To understand more about NXP Linux/Android/FreeRTOS BSP, please continue reading the next sections.

1.3 Connect USB Debug Cable

Connect the micro-B end of the supplied USB cable into Debug UART port J509. Connect the other end of the cable to a host computer.

Terminal window configuration: 115200 baud, 8 data bits, 1 stop bit, no parity

1.4 Connect User Interface Devices

Connect monitor via the HDMI connector (J9). To interact with the user interface displayed on the monitor it may be desirable to attach a keyboard and/or a mouse in the USB port (J26).

1.5 Verify Boot Switches

By default, both of the two boot switches (SW2 and SW3) are configured to zero position. With the SD card inserted, the board will boot from the SD card. Without the SD card inserted, the board will be switched into serial downloader mode required by manufacturing tool (MFGTools). If any other boot source is desired, please refer to the silkscreen on the board near the switches.

1.6 Connect Power Supply

Connect the 5V power supply cable to the 5V DC power jack (J1).

When powered on by flipping the switch, the processor starts executing code from on-chip ROM. With default Boot Switch setup, this code reads the fuses to find out which media to search for a bootable image. Then it will find the SD card and begin U-Boot execution automatically.

Information will be printed in the COM9 (smaller number) serial console for A7 core. If you don't stop the U-boot process, it will boot the Linux kernel.