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Get Started

Download installation
software and documentation
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at www.nxp.com/imx6xsabre.

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Document Number: IMX6SOLOXQSG REV 3
Agile Number: 926-27962 REV D



Quick Start Guide

SABRE Board for Smart Devices

Based on the i.MX 6SoloX
Applications Processor

SMART APPLICATION BLUEPRINT FOR RAPID
ENGINEERING (SABRE)



ABOUT THE SABRE BOARD FOR SMART DEVICES BASED ON THE i.MX 6SOLOX APPLICATIONS PROCESSOR

The Smart Application Blueprint for Rapid Engineering (SABRE) board for smart devices introduces developers to the i.MX 6SoloX applications processor. Provided with the SABRE design, and available at www.nxp.com/imx6xsabre, are hardware design files, tools and board support packages (BSP) for Linux® and Android™.

FEATURES

The following features are available with the SABRE board for smart devices based on the i.MX 6SoloX applications processor:

- ▶ i.MX 6SoloX applications processor
 - 1 GHz ARM® Cortex®-A9
 - 200 MHz Cortex-M4
- ▶ 1 GB DDR3L, 400 MHz
- ▶ 32 MB x 2 QSPI NOR flash
- ▶ Three SD card slots
- ▶ LVDS connector
- ▶ LCD expansion port connector
- ▶ mPCIe connector
- ▶ Parallel camera connector
- ▶ 12-bit ADC connector
- ▶ USB OTG connector
- ▶ USB host connector
- ▶ 3.5 mm audio stereo HP jack
- ▶ Board-mounted microphone
- ▶ Debug port for Cortex-A9 and Cortex-M4 cores via USB micro-AB connector
- ▶ 12-bit ADC connector
- ▶ JTAG 20-pin connector
- ▶ Two Gigabit Ethernet connectors
- ▶ Two CAN bus connectors
- ▶ Sensor package including:
 - 3-axis accelerometer
 - Digital compass
 - Ambient light sensor

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 www.nxp.com/imx6xsabre for further information on recommended accessory boards.

GET TO KNOW THE SABRE BOARD FOR SMART DEVICES BASED ON THE i.MX 6SOLOX APPLICATIONS PROCESSOR

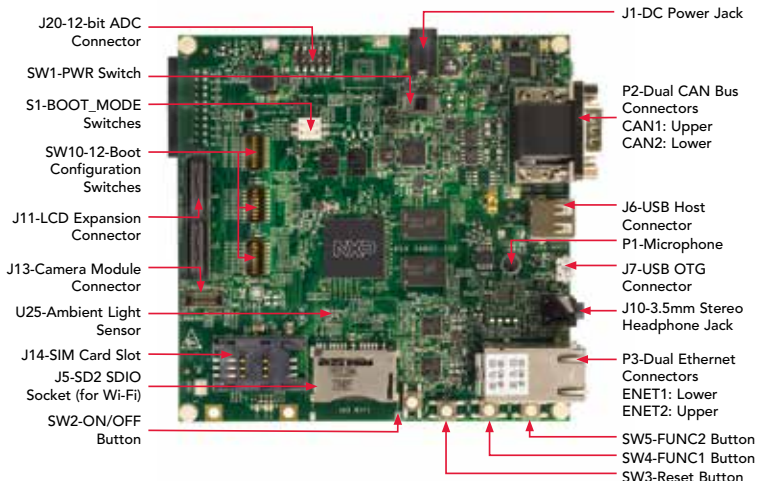


Figure 1: Front side of i.MX 6SoloX SABRE-SDB (top)

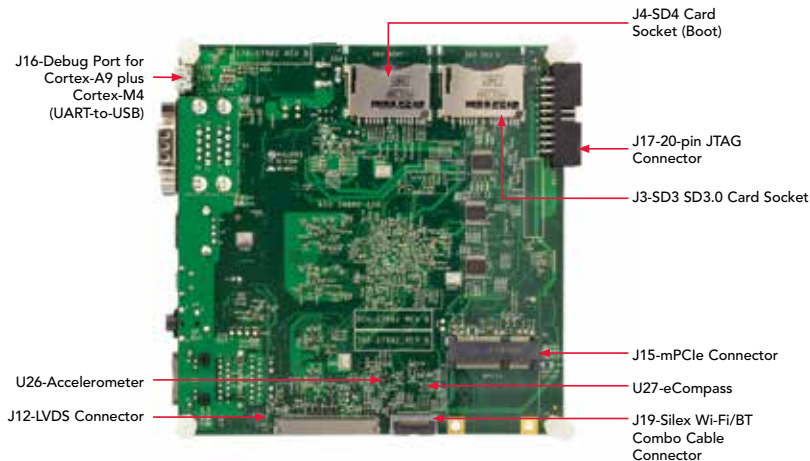


Figure 2: Back side of i.MX 6SoloX SABRE-SDB (bottom)

GETTING STARTED

This section describes how to use the SABRE board for smart devices and the components in the kit.

1 Unpacking the Kit

The SABRE board for smart devices is shipped with the items listed in Table 1. Ensure the items listed in Table 1 are available in the i.MX 6SoloX development kit. Remove the board from the antistatic bag and perform a visual inspection.

**TABLE 1: SABRE BOARD FOR SMART DEVICES
BASED ON i.MX 6SOLOX DEVELOPMENT KIT CONTENTS**

ITEM	DESCRIPTION
Board	i.MX 6SoloX SABRE board for smart devices
Cable	USB cable (micro-B to standard-A)
Power Supply	5 V/5 A universal power supply
Documentation	SABRE Board for Smart Devices Quick Start Guide (this document)
SD card	Bootable Linux image

GETTING STARTED CONTINUED

2 Download Software and Tools



Download installation software and documentation under **"Getting Started"** at www.nxp.com/imx6xsabre.

Table 2 lists the documents available on the kit website.

TABLE 2: "JUMP START YOUR DESIGN" CONTENTS

ITEM	DESCRIPTION
SABRE board for smart devices documentation	<ul style="list-style-type: none"> ▶ Schematics, layout and Gerber files ▶ SABRE board for smart devices quick start guide (this document)
Software development tools	Android and Linux BSPs
SABRE board for smart devices demo images	Copy of the latest Android and Linux BSP images that are available for the user program to their SD card

SETTING UP THE SYSTEM

1 Insert SD Card

Insert the SD card into socket SD4.

2 Connect USB Debug Cable (Optional)

Connect the micro-B end of the supplied USB cable into debug port J16. Connect the other end of the cable to a PC acting as a host terminal. Two UART connections will appear on the PC for debugging Cortex-A9 and Cortex-M4. If needed, the serial-to-USB drivers can be found at www.ftdichip.com/FTDrivers.

Terminal window configuration:

- ▶ 115.2 kbaud
- ▶ 8 data bits
- ▶ 1 stop bit
- ▶ no parity

3 Connect LVDS Panel

Connect the LVDS panel with capacitive touch (MCIMX-LVDS1) to the LVDS connector J12.

4 Connect Ethernet Cable (Optional)

Connect an Ethernet cable to the lower port of the Ethernet jack P3.

5 Connect Power Supply

Connect the 5 V power supply cable to the 5 V DC power jack J1. When power is connected to the smart device, it will automatically begin the boot sequence.

NOTE: Switch SW1 PWR to ON.

BOOT PROCESS FOR LINUX IMAGE

1 Boot Process

- ▶ During the boot process, there will be operating system status information scrolling on the terminal window of the PC (if connected). The Linux penguin images will initially appear in the upper left corner of the display.
- ▶ When the boot process is complete, the Yocto Project® operating system will be displayed on the LVDS panel.
- ▶ To work from the terminal window on the host PC, press enter at the terminal window to get the command prompt. Log in as root.

DIP SWITCH CONFIGURATION

Table 3 shows the jumper configuration to boot the smart device from SD card slot SD4.

**TABLE 3: SABRE BOARD FOR SMART DEVICES
DIP SWITCH CONFIGURATION**

SW10							
D1	D2	D3	D4	D5	D6	D7	D8
Off	Off	Off	Off	Off	Off	Off	Off
SW11							
D1	D2	D3	D4	D5	D6	D7	D8
Off	Off	On	On	On	Off	Off	Off
SW12							
D1	D2	D3	D4	D5	D6	D7	D8
Off	On	Off	Off	Off	Off	Off	Off

BUTTON FUNCTIONS

Table 4 shows the functions of the push buttons and switch on the board.

TABLE 4: SABRE BOARD FOR SMART DEVICES BUTTON OPERATIONS

ITEM	DESCRIPTION
SW2	<p>SABRE board ON/OFF button</p> <ul style="list-style-type: none">▶ In Yocto Project, short press does nothing.▶ In Yocto Project, long press does nothing.▶ Press and hold the button (> 5 sec) will force an immediate hardware shutdown.▶ If board is in the OFF state, short press (> 0.5 sec) of the button will turn on (boot) the system.▶ If board is in the STANDBY state, short press of the button will bring the system out of standby (resume operations, no boot).
SW3	<p>SABRE board RESET button</p> <ul style="list-style-type: none">▶ Short press of the button will reset the system and begin a boot sequence.
SW1	<p>SABRE board PWR switch</p> <ul style="list-style-type: none">▶ Sliding the switch to the ON position connects the 5 V power supply to the SABRE board main power system.▶ Sliding the PWR switch to OFF position removes all power from the board.
SW4	Function 1
SW5	Function 2



Example system set up with SABRE Board for Smart Devices based on i.MX 6SoloX (Refer to www.nxp.com/imx6xsabre for further information on recommended accessory boards).