Quick Start Guide

i.MX53 SABRE platform for automotive infotainment

freescale™

About the SABRE Platform for Automotive Infotainment

This section provides information about the Smart Application Blueprint for Rapid Engineering (SABRE) platform for automotive infotainment based on i.MX53 and the location of the connectors and switches.

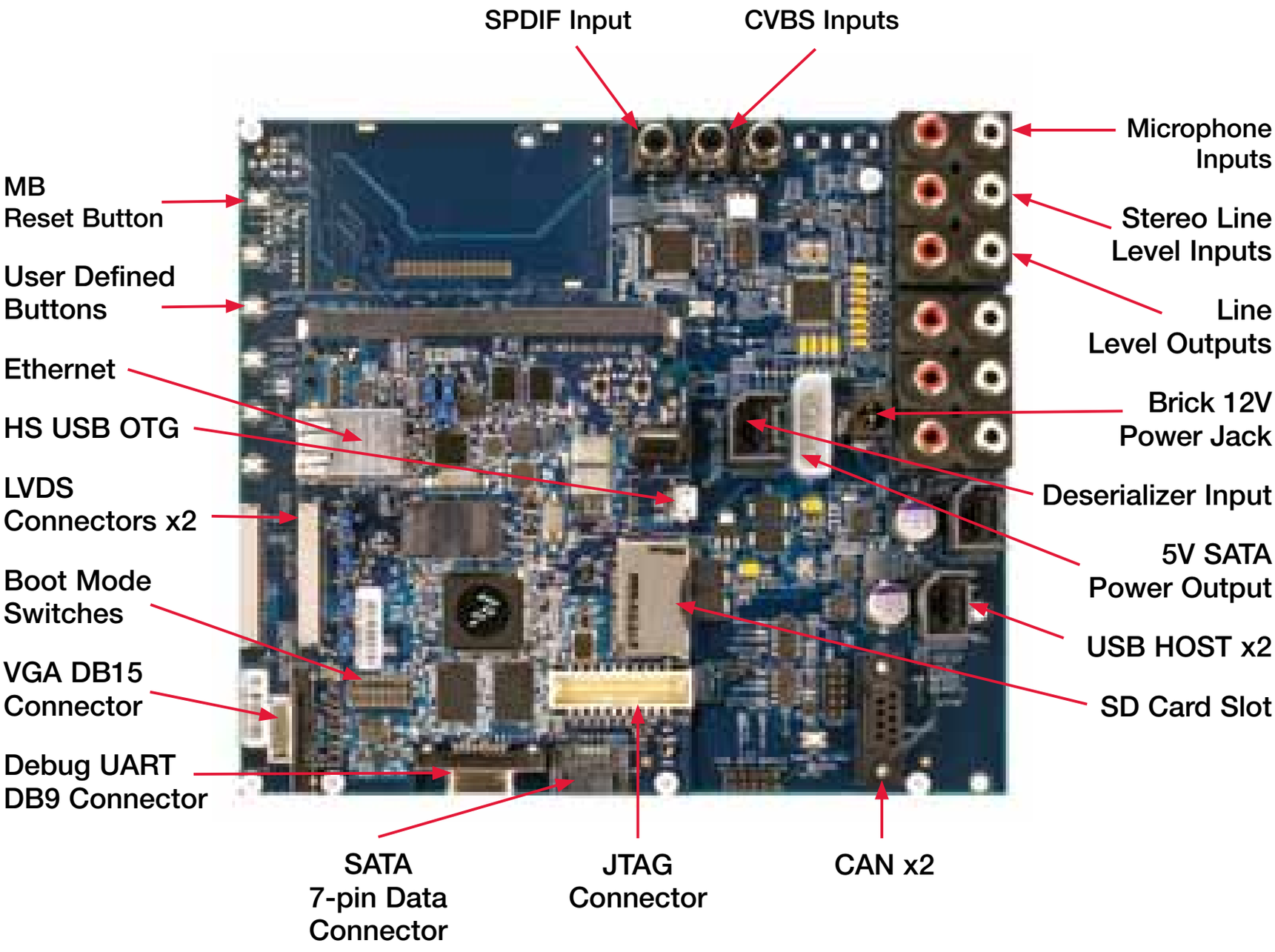
The SABRE platform for automotive infotainment offers a solid foundation for next-generation converged telematics and infotainment platform designs. The i.MX53 family of applications processors represents Freescale's next generation of advanced multimedia and power-efficient implementation of the ARM® Cortex™-A8 core for the automotive market. With core processing speeds up to 800 MHz as well as a high level of integration, the SABRE platform for automotive infotainment enables customers to re-create today's consumer user experiences in the car. The following features are available in the SABRE platform for automotive infotainment processor card:

- i.MX53 automotive applications processor running up to 800 MHz
- 4 x 2 Gb DDR3 running up to 400 MHz (800 MHz DDR)
- 32 MB 16-bit parallel NOR flash
- NAND flash socket
- LVDS output
- VGA output
- SD card interface
- High-Speed USB OTG interface
- 1.5 Gbps SATA interface
- Ethernet interface
- JTAG and UART interfaces
- Capable of running stand-alone on common 5V power supply
- 281 card-edge fingers for main board connection or interface to user's system

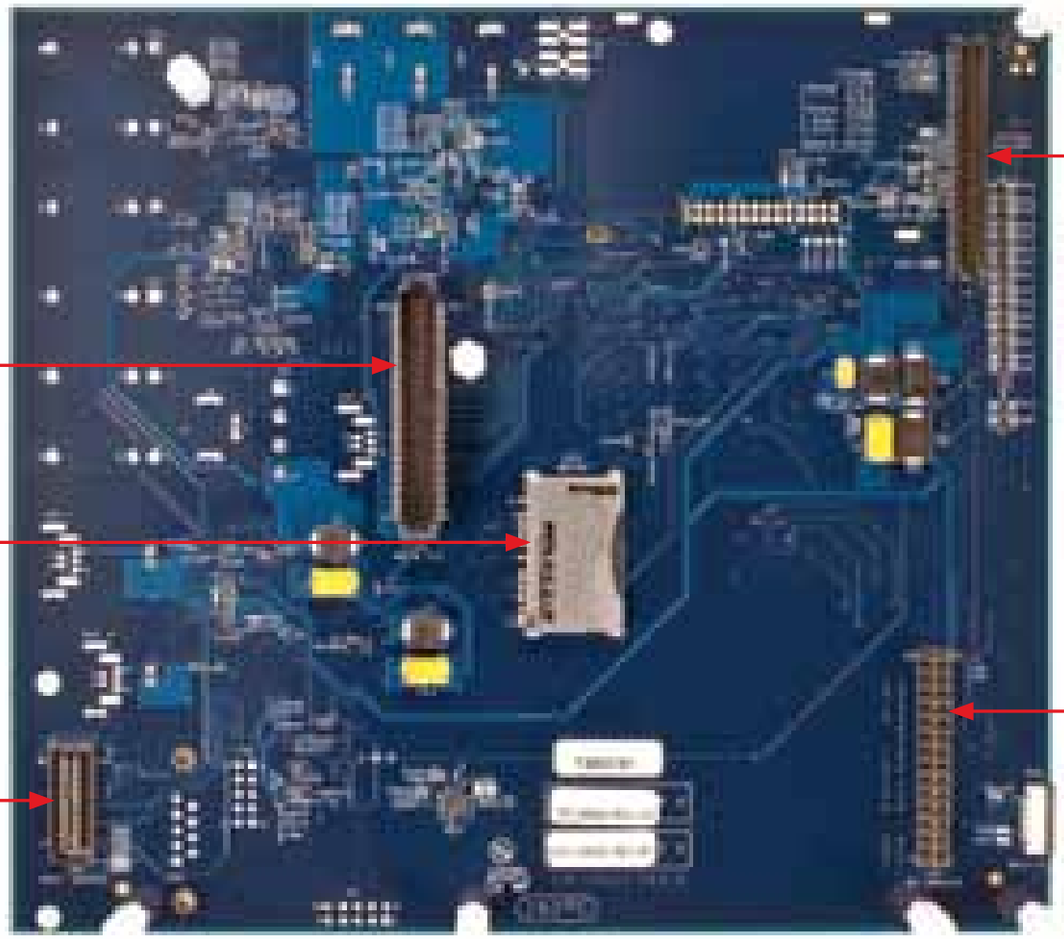
SABRE platform for automotive infotainment main board

- LVDS output
- Multi-channel CODEC analog I/O for up to eight channel outputs, one stereo line input and two microphone inputs
- SPDIF receive interface
- IAP module connector
- De-serializer input for remote video/ camera input
- Dual-channel ADC to facilitate camera and video analog signal inputs
- Dual USB host connectors
- Sirius/XM radio module connector
- Terrestrial broadcast tuner module connector
- GPS module connector (UART)
- MLB25/50 INIC connector
- Low- and high-speed CAN interfaces
- Bluetooth module connector (I^2S + UART)
- SD card interface (Wi-Fi® or data cards)
- 16-bit parallel expansion header
- 12V DC input

Get to Know the SABRE Platform for Automotive Infotainment (TOP)



Get to Know the SABRE Platform for Automotive Infotainment (Bottom)



Getting Started

This section describes how to use the SABRE platform for automotive infotainment and the components in the kit. This section also describes the PC requirements to develop applications using the platform.

1 Unpacking the Kit

The SABRE platform for automotive infotainment is shipped with the items listed in **Table 1**.

Ensure the items listed in **Table 1** are available in the development kit. Remove the board from the antistatic bag and perform a visual inspection.

2 Web-based Contents

Refer to **freescale.com/iMX53tools** for the latest documents and software.

SABRE Development Kit Contents

Item	Description
Board	SABRE platform for automotive infotainment board
Cables	• USB cable (micro-B to standard-A) • USB adapter A-female to A-female • Power cord 3-pin female to 3-pin male
Power Supply	12V/5.5A power supply
Documentation	Quick Start Guide (this document)
SD Cards	Contain bootable OS images (Windows® Compact 7, Android™, Linux®)

Table 1

Setting Up the Board

1 Insert SD Card

Insert the supplied SD card into the SD card socket J15 on the top side.

2 Setup Boot Switches

Set the boot dip switches to boot from SD card per **Table 2**.

3 Connect RS232 Cable

Connect the RS232 cable to the debug UART port J19. Support the connector with one hand while plugging in the cable.

Serial port configuration: 115.2 Kbaud, 8 data bits, 1 stop bit, no parity.

4 Connect VGA Cable

Connect a VGA cable to the video output port J18. Connect the other end of the cable to a suitable monitor. Support the connector with one hand while plugging in the cable.

5 Connect Power Supply

Connect the 12V power supply cable to power jack J1 on the main board. Three green LEDs and two red LEDs should illuminate when the system powers up properly. Once the cable is plugged, the system will power up and begin the boot process. If the system doesn't boot up right away or if re-boot is needed, press CPU reset switch, SW2.

Switch Configuration

Table 2 shows the S1 switch configuration to boot the platform from different devices.

Switch Position	NAND Flash 8-bit ECC	NAND Flash 16-bit ECC	Parallel NOR Flash	SD on CPU Card	MMC on CPU Card	Serial NOR Flash
1	Off	On	Off	Off*	Off	Off
2	Off	Off	Off	Off*	Off	Off
3	Off	Off	Off	On*	On	On
4	On	On	On	Off*	Off	Off
5	On	On	Off	Off*	Off	Off
6	On	On	Off	Off*	Off	On
7	Off	Off	Off	Off*	Off	On
8	Off	Off	Off	Off*	On	On
9	On	On	Off	On*	On	Off
10	On	On	Off	Off*	Off	Off

Table 2 (*Default)

For NAND flash, switch position 2 determines whether Ready/Busy is used: Off = R/B not used, On = R/B used.

Notes:

- Insert CPU card jumper J11 at 2-3 to boot from serial NOR flash. Leave jumper at 1-2 (default) for other cases.
- Install CPU card jumper J10 2-3 (default) for automatic power up when power is applied. Move to 1-2 for CAN control of power.

Jumper Configuration

Table 3 shows the jumper configuration for the CPU board.

Reference	Shunt Installation	Function
J3	1 – 2 2 – 3*	Steer UART2 data to GPS receiver Steer UART2 data to satellite receiver
J4	1 – 2 2 – 3*	Steer UART2 data from GPS receiver Steer UART2 data from satellite receiver
J5	1 – 2* Remove	Allow serial NOR flash programming Write protect serial NOR flash
J10	1 – 2 2 – 3*	CAN control of power Power-on bypass (automatic power up)
J11	1 – 2* 2 – 3	Do not boot from SPI NOR Boot from SPI NOR
J14	1 – 2 2 – 3*	Enable HSYNC to VGA connector Enable OE_B for EIM
J16	1 – 2 2 – 3*	Enable VSYNC to VGA connector Enable WE_B for EIM

Table 3 (*Default)

Quick Start Guide for i.MX53

Warranty

One (1) year limited warranty. Please visit us online at **freescale.com/iMX53tools** for complete warranty information.

Having trouble?

Visit **freescale.com/support** for a list of phone numbers within your region.

For more information, visit freescale.com/iMX53tools.
Join the online i.MX community at imxcommunity.org

Doc Number: IMX53SBRAIQSG / REV 0
Agile Number: 926-78633 / REV A