



# SABRE Board for Smart Devices Based on the i.MX 7Dual Applications Processor

Our company delivers the next installment in a line of highly flexible, market-focused development tools with the SABRE board based on the i.MX 7Dual applications processor.

The i.MX 7 series is the first device in the market utilizing both the ARM® Cortex®-A7 and Cortex-M4 cores for general-purpose programmable processing.

This board enables HDMI out for simple quick out-of-the-box bring up, as well as LCD and electronic paper display (EPD) technology. The board comes with an on-board Wi-Fi®/Bluetooth® solution and the ability to easily expand the radio functionality through the mini PCIe® expansion slot. Additionally, the SABRE board facilitates software development with the ultimate goal of faster time-to-market through the support of Linux® OS, Android™ and FreeRTOS operating systems.

## THE INTEGRATED EPD HARDWARE CONTROLLER

The integrated E Ink® EPD controller is a hardware implementation which is used in most e-readers on the market today. This integrated EPD controller removes the cost of the external hardware controller and its associated memory, allowing customers to bring lower-cost solutions to market. The 4th generation E Ink EPD controller expands the display functionality and improves on display quality through integrated H/W algorithm acceleration.

## i.MX 7DUAL SABRE BOARD SYSTEM CONTENTS

- ▶ i.MX 7Dual applications processor-based system
- ▶ Power supply
- ▶ Quick Start Guide
- ▶ SD card containing boot image



## POWER-EFFICIENT PERFORMANCE WITH EXTENDED LOW-POWER MODES

The SABRE board allows for the implementation of designs that lower the power usage and extend battery life of portable designs. The base OS implements several power modes which give the user the ability to more effectively balance power versus performance, and switch into the lowest power modes during inactivity.

The SABRE board integrates an out of the box Wi-Fi 802.11ac solution which includes BT4.0/BLE. This certified solution gives users the ability to quickly prototype and evaluate their IOT connected designs.

Full integration of a 9-axis on-board sensor system provides for an optimized sensor hub design. This is provided through the integration of NXP's sensor solutions with:

- FXOS8700 three-axis digital accelerometer/magnetometer
- MPL3115A2R altimeter/pressure sensor
- FXAS21000 three-axis digital gyroscope

The PF3000 power management IC (PMIC) integrates a variety of discrete functions into a single device, helping to reduce the size and weight of the e-reader while extending battery life through innovative power management and control features.

## SOFTWARE AND TOOLS

The SABRE board comes pre-installed with a boot image flashed on one SD card. We offer Android, Linux OS and FreeRTOS board support packages. Find additional information at [www.nxp.com/iMXtools](http://www.nxp.com/iMXtools).

## i.MX 7DUAL SABRE BOARD



## BOARD FEATURES

<b>Processor</b>	<ul style="list-style-type: none"> <li>• i.MX 7Dual</li> <li>• Dual ARM® Cortex®-A7 @ 1 GHz</li> <li>• 512 KB L2 cache</li> </ul>
<b>Power Management</b>	<ul style="list-style-type: none"> <li>• PF3000 PMIC</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>• 1 GB DDR3</li> <li>• eMMC5.0 footprint</li> <li>• QuadSPI Flash</li> <li>• SD/MMC socket</li> <li>• NAND footprint</li> </ul>
<b>Display/ Camera Connectors</b>	<ul style="list-style-type: none"> <li>• HDMI</li> <li>• Parallel LCD</li> <li>• MIPI-DSI</li> <li>• Electronic paper display</li> <li>• MIPI-CSI (camera)</li> </ul>
<b>Wireless</b>	<ul style="list-style-type: none"> <li>• Wi-Fi® (802.11ac) onboard</li> <li>• BT4.0/BLE onboard</li> </ul>
<b>Audio</b>	<ul style="list-style-type: none"> <li>• Audio HP jack</li> <li>• External speaker connection</li> </ul>
<b>Connectivity</b>	<ul style="list-style-type: none"> <li>• USB Host connectors</li> <li>• microUSB OTG connector</li> <li>• ETH (1 Gbit) receptacle</li> <li>• ETH (10/100) receptacle</li> <li>• Full Mini PCIe® socket</li> <li>• SIM Card slot</li> <li>• CAN (DB-9)</li> <li>• GPIO</li> <li>• MFi module support</li> <li>• MikroBus expander</li> </ul>
<b>Debug</b>	<ul style="list-style-type: none"> <li>• JTAG connector</li> <li>• UART via USB</li> </ul>
<b>Sensors</b>	<ul style="list-style-type: none"> <li>• FXOS8700 three-axis digital accelerometer/magnetometer</li> <li>• MPL3115A2R altimeter/pressure sensor</li> <li>• FXAS21000 three-axis digital gyroscope</li> </ul>
<b>Tools &amp; OS Support</b>	<ul style="list-style-type: none"> <li>• Linux®</li> <li>• Android™</li> <li>• FreeRTOS</li> </ul>

[www.nxp.com/iMX7DSABRE](http://www.nxp.com/iMX7DSABRE) and [imxcommunity.org](http://imxcommunity.org)

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