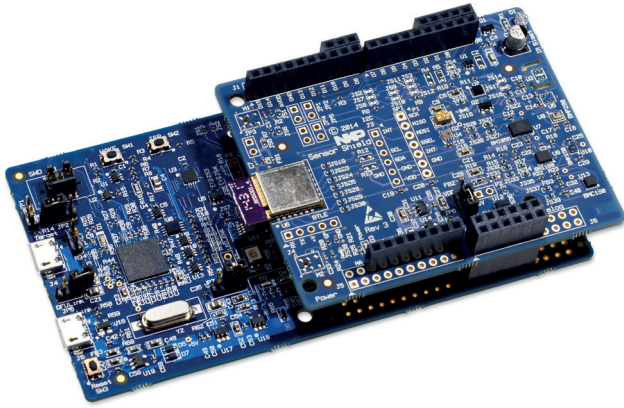




NXP LPC54102-based Application-in-a-box Sensor Processing/Motion Solution

Complete solution for motion-based, always-on sensor-processing applications

This all-in-one solution, based on the ultra low power LPC54102 microcontroller, provides everything needed to bring sensor-based motion and other sensor-processing applications to market quickly.

KEY FEATURES

- ▶ Complete hardware and software design, ready to customize
- ▶ 32-bit LPC54102 Cortex-M4F/M0+ microcontroller
- ▶ LPCXpresso54102 development board
- ▶ Sensor Shield Board
- ▶ LPCOpen software drivers
- ▶ LPC Sensor Fusion Framework
- ▶ Bosch BSX Lite Sensor Fusion Library
- ▶ Software demo
- ▶ Documentation

KEY BENEFITS

- ▶ Add 6- or 9-axis motion sensors to your application
- ▶ Integrated sensor fusion middleware and portable sensor fusion framework
- ▶ Sensor Fusion APIs allow users to easily create applications that use motion sensors
- ▶ Additional digital sensors (pressure/temperature, ambient light, proximity)
- ▶ Software development tools for a quick start to writing, compiling, and running sensor-based applications
- ▶ Gives end-product designers access to a rich set of reference design materials, including documentation, porting guide, and schematics

- ▶ Stackable hardware to support more sensors or add plug-in modules
- ▶ Large set of pinouts for measurement and prototyping
- ▶ On-board debugger included
- ▶ Low power

APPLICATIONS

- ▶ Tablets, smartphones
- ▶ Portable fitness, health monitoring
- ▶ IoT nodes
- ▶ Asset tracking
- ▶ Robotics and Unmanned Vehicles
- ▶ Gaming, entertainment
- ▶ Pointing Devices

The NXP LPC54102-based Application-in-a-box Sensor Processing/Motion Solution enables a new generation of always-on, context-aware products. The system listens to, monitors, and aggregates data from several sensors and processes this data using complex sensor-fusion software, included in the solution.

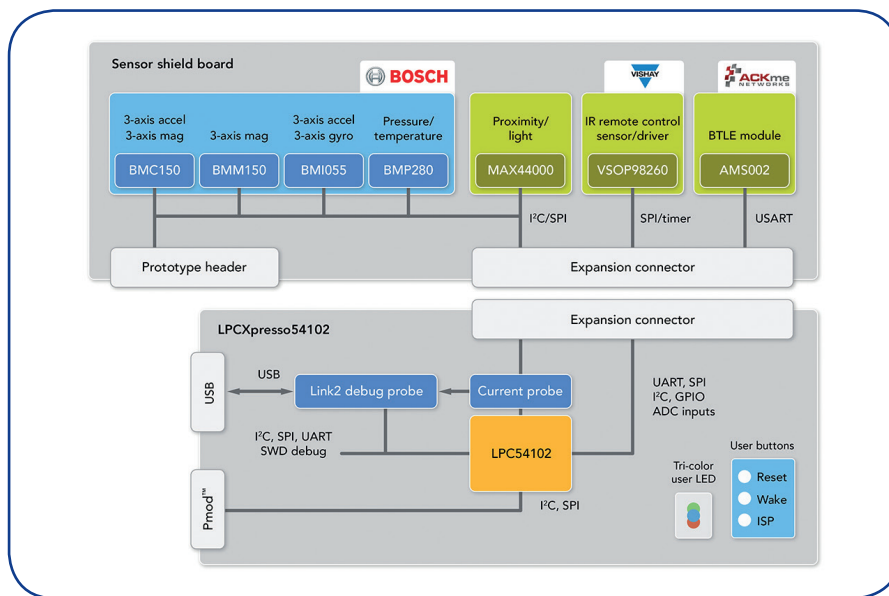


NXP has partnered with Bosch Sensortec to offer an integrated solution that makes it easy to incorporate motion/inertia and other sensor data into a variety of end applications.

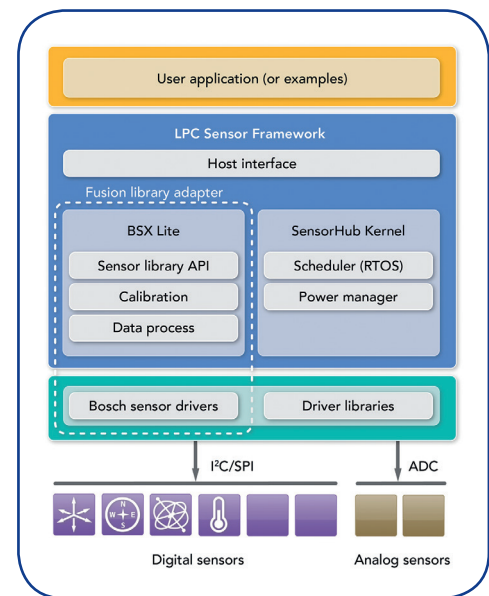
The solution includes commercial and development licenses for Bosch Sensor Fusion (BSX Lite). The software combines motion-sensor data to get accurate, sensor signals or derived sensory information with minimal memory requirements.

What's in the box

32-bit LPC54102 Cortex-M4F/M0+ microcontroller	
LPCXpresso 54102 development board ▶ Built-in Link2 high-speed USB based debug probe ▶ Support for external debug probes ▶ Tri-color user-programmable LED ▶ Target Reset, ISP and WAKE buttons ▶ On-board 1.8/3.3 V or external power-supply options ▶ Built-in MCU power consumption and supply voltage measurement for LPC54102 device and sensor board ▶ UART, I²C, and SPI port bridging from LPC54102 target to USB via Link2 device ▶ FTDI UART connector	Software ▶ LPCOpen software drivers ▶ LPC Sensor Fusion Framework ▶ Bosch BSX Lite Sensor Fusion (includes development and commercial license) ▶ Demo
Sensor Shield Board ▶ Bosch Sensortec sensors: BMI055 inertial measurement unit, BMC150 digital compass, BMM150 magnetometer, BMP280 pressure/temperature sensor, MAX44000 ambient light and proximity sensor ▶ ACKme AMS0002 Bluetooth LE module ▶ IR remote-control driver ▶ Headers for easy prototyping of additional sensors	Documentation ▶ Quick Start Guide ▶ User Guide ▶ Schematics



LPC54102 solution diagram



LPC54102 application software

Solution web page: www.nxp.com/spm-solution
 Ordering information: www.nxp.com/demoboard/OM13078.html

www.nxp.com

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