

The LPCXpresso54102 Sensor Processing/Motion Solution has been developed by NXP and its partners to provide all that you need to develop an always-on sensor processing product. The Solution combines an LPCXpresso54102 board and a Sensor Shield Board (SSB), plus application software and sensor fusion software from Bosch Sensortec.



### Feature summary

The LPCXpresso54102 Sensor Processing/Motion Solution includes the following features:

- LPCXpresso54102 development board with:
  - Built-in Link2 high-speed USB based debug probe
  - Support for external debug probes
  - Tri-color LED
  - Target Reset, ISP and WAKE buttons
  - On-board 1.8/3.3V or external power supply options
  - Built-in MCU power consumption and supply voltage measurement for LPC54102 device and sensor board
  - UART, I<sup>2</sup>C and SPI port bridging from LPC54102 target to usb via Link2 device
  - FTDI UART connector
- Sensor Shield Board with:
  - Bosch Sensortec sensors:
    - BMI055 inertial measurement unit
    - BMC150 digital compass
    - BMM150 magnetometer
    - BMP280 pressure/humidity sensor
  - Murata pressure sensor
  - MAX44000 ambient light and proximity sensor
  - Ack.me AMS0002 Bluetooth LE module
  - IR remote control driver
  - Dual Knowles digital microphones
  - Headers for easy prototyping of additional SPI and I<sup>2</sup>C sensors
- Supported by NXP Sensor Framework and Bosch Sensortec BSXlite sensor fusion library, available for free download at [www.lpcware.com](http://www.lpcware.com) (subject to license terms and conditions).

### Development Tools

The LPCXpresso54102 Sensor Processing/Motion Solution is fully supported by the LPCXpresso Integrated Development Environment (IDE), which is available for free at [www.lpcware.com/lpcpresso/home](http://www.lpcware.com/lpcpresso/home). The on-board CMSIS-DAP debug interface also enables the kit to be used with third-party tools from vendors such as Atollic, IAR, Keil, Mentor Graphics and Rowley. An external debug probe, such as those available from SEGGER, can be used by simply connecting it to the board via the P1 connector and powering the board via the J3 (power only) usb connector.

### Board specifications

Recommended operating conditions: 0 to 70°C ambient

Weight: 1.8 ounces

Size: 4.8 x 2.3 inches including connectors

The LPCXpresso54102 SMPS is RoHS compliant.