MAXWSNENV

Wireless Sensor Node Environmental Sensor Demo Kit

General Description

The MAXWSNENV demo kit provides a convenient platform evaluating the capabilities of the environmental sensor version of Maxim's wireless sensor node (WSN). The kit provides an excellent foundation for the Internet of Things (IoT) applications.

The WSN board includes a microcontroller, BLE transceiver, multiple environmental sensors and coin-cell holder. The WSN kit also includes a programming adapter compatible with the ARM mbed HDK specification.

Kit Contents

- MAXWSNENV environmental sensor board with a preprogrammed demo
- MAXHDK, ARM mbed HDK-compatible hardware development board
- USB standard A-to-micro-B cable (for connecting MAXHDK to a PC)
- Coin-cell battery

Benefits and Features

- Microcontroller Plus BLE Transceiver Provides a Convenient Development Platform
- On-Board Sensors for Temperature, Ambient Light, Humidity, and Barometric Pressure Measure Environmental Data
- Low-Power Operation Extends Battery Life
- ARM mbed-Compatible HDK Interface Provides Quick Connection to Toolchain
- General-Purpose Pushbutton Switch and Tri-Color LED Allow for Real-Time Input and Feedback
- On-Board Battery Holder Provides Convenient and Replaceable Power Source

Block Diagram
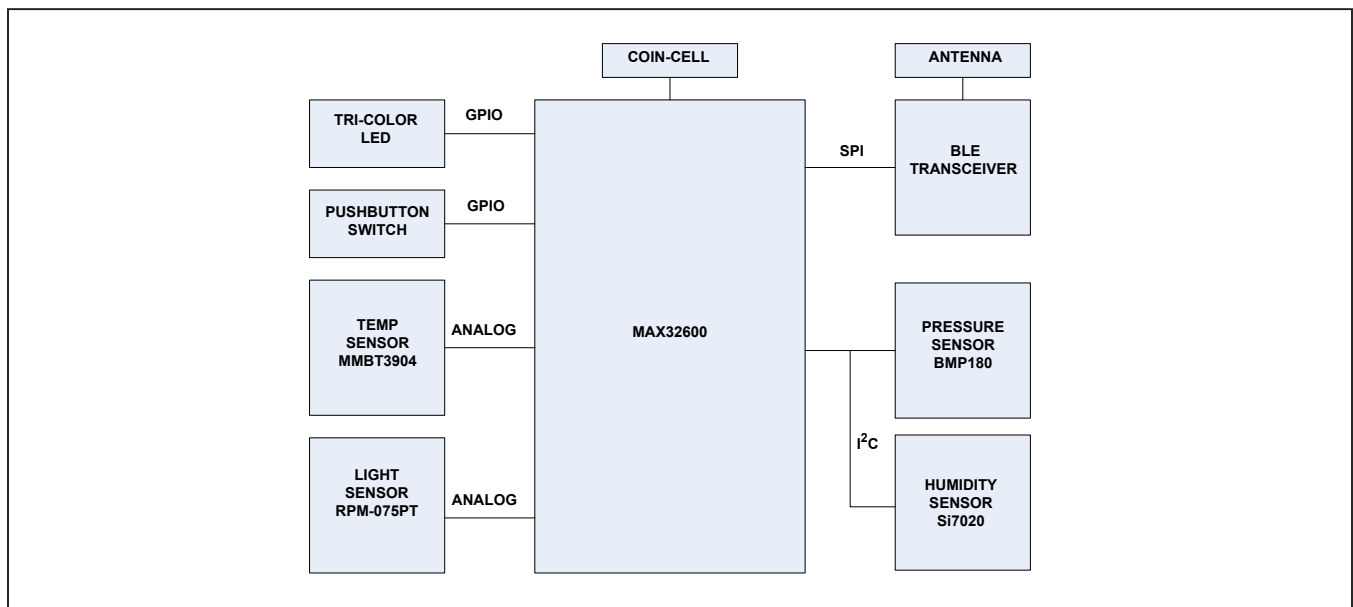
Detailed Description

This demo kit is general purpose in nature, however, the included sensors allow for the development of sophisticated wireless sensor network and IoT nodes. This section describes each major function or component on the MAXWSNENV board.

Use the MAXWSNENV board with the following separate documents:

- MAXWSNENV data sheet (this document)
- MAX32600 data sheet
- MAX32600 user guide
- MAXWSNENV board schematic
- MAXWSNENV board bill-of-materials

Board Power

The demo board is powered by on-board coin-cell battery or by a connected MAXHDK.

Bluetooth Low-Energy (BLE) Controller

The Bluetooth® low-energy controller is Bluetooth V4.0 compliant.

Sensors

The MAXWSNENV is fitted with four environmental sensors. Digital sensors are connected to the MAX32600 I2C master interface. Analog sensors are connected to the MAX32600 ADC interface. The MAXWSNENV includes the following sensors:

- BMP180 pressure sensor
- SI7020-A10 humidity sensor
- RPM-075PTT86 phototransistor
- NPN diode temperature sensor

Pushbuttons

Pushbutton SW1 can be used to generate an input for test purposes on port pin P1.5. SW1 is normally open, and therefore, provides a logic 0 when depressed. Firmware defines the action taken on this switch closure.

Pushbutton SW2 provides a power-on-reset function to the MAX32600 microcontroller.

USB

The MAXWSNENV board provides access to the MAX32600 USB D+ and D- signals on connector J1 pins 16 and 18, respectively.

LEDs

A single, tri-color LED with series resistors is connected to GPIO pins P1.4, P1.6, and P1.7.

Component List and Schematic

Refer to the following files attached to this data sheet for component information and schematic:

- MAXWNENV_BOM.xls
- MAXWNENV_Schematic.pdf

Ordering Information

PART	TYPE
MAXWSNENV#	Demo kit

#Denotes RoHS compliant.

Bluetooth is a registered trademark of Bluetooth SIG, Inc.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	5/15	Initial release	—

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

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