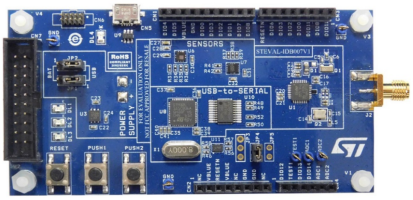

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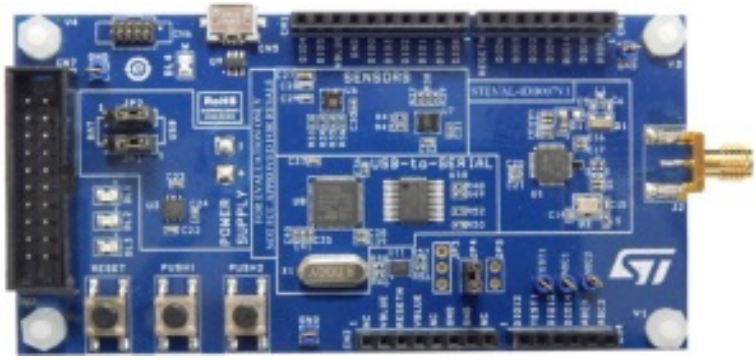


Contents

Introduction

The STEVAL-IDB007Vx (STEVAL-IDB007V1/STEVAL-IDB007V2) is an evaluation board based on BlueNRG-1 (QFN32 package).

The STEVAL-IDB008Vx (STEVAL-IDB008V1/STEVAL-IDB008V2) is an evaluation board based on BlueNRG-2 (QFN32 package).

The STEVAL-IDB008V1M is an evaluation board based on BlueNRG-M2SA module (BlueNRG-2 QFN32 package).

The STEVAL-IDB009Vx (STEVAL-IDB009V1) is an evaluation board based on BlueNRG-2 (QFN48 package).

BlueNRG-1 (QFN32 package) and BlueNRG-2 (QFN32 and QFN48 packages) are low power Bluetooth® smart systems-onchip compliant with the Bluetooth® specification and support master, slave and simultaneous master-and-slave roles.

The document content is valid for the STEVAL-IDB007Vx, STEVAL IDB008Vx and STEVAL-IDB009Vx platforms. Any specific difference is highlighted whenever it is needed.

Development platforms

This item is no longer available for sale

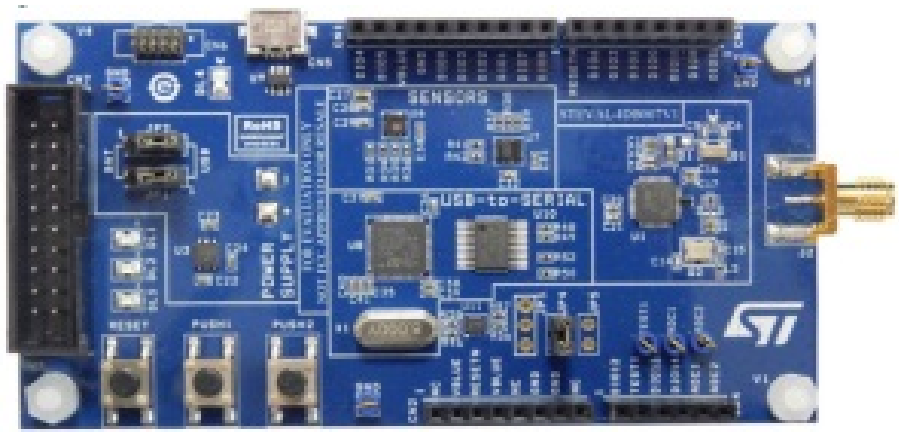
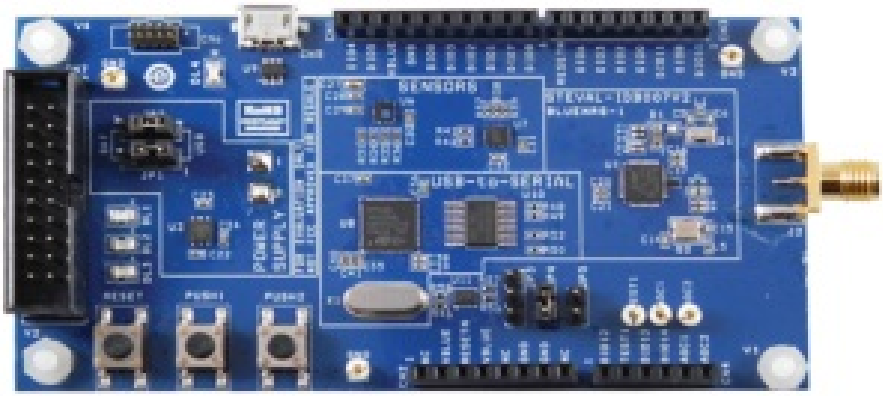


Figure 1. STEVAL-IDB007V1 development platform



based on BlueNRG-1 SoC
Figure 2. STEVAL-IDB007V2 development platform

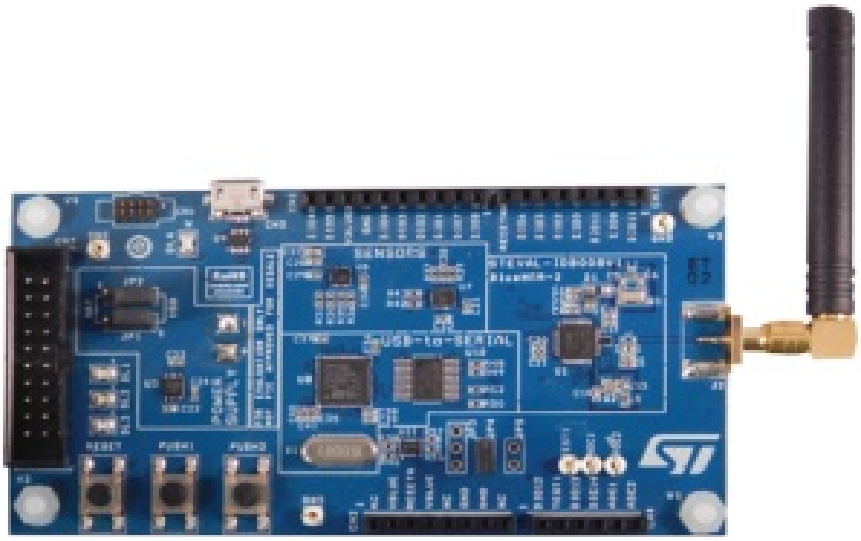


Figure 3. STEVAL-IDB008V1 development platform

Figure 4. STEVAL-IDB008V2 development platform

based on BlueNRG-2 SoC in QFN48 package
Figure 5. STEVAL-IDB009V1 development platform

based on BlueNRG-2 SoC in QFN48 package
Figure 6. STEVAL-IDB008V1M development platform

Acronyms and abbreviations

Table 1. List of acronyms

Acronym	Description
BLE	Bluetooth low energy
DK	Development kit
SW	Software
USB	Universal serial bus

Getting started

The evaluation board is preprogrammed with sensor profile firmware (BLE_SensorDemo.hex), which allows setting and establishing a connection with a smartphone (iOS or Android).

Any Bluetooth Low Energy device like a smartphone can connect to the BLE sensor profile demo. For example, the LightBlue application can connect to the sensor profile device. When you use the LightBlue application, detected devices appear on the screen with the BlueNRG name. By tapping on the box to connect to the device, the screen shows a list of all the available services; tapping a service shows the characteristics for that service. The sensor profile firmware implements a proprietary Bluetooth profile that exposes two services: acceleration and environmental service.

The acceleration service contains the following characteristics:

- acceleration, which gives the current value of the acceleration detected by the MEMS sensor on the evaluation board
- free fall characteristic, which allows detection of free-fall condition by the LSM6DS3 MEMS sensor on the evaluation board (the condition is detected if the acceleration on the three axes is near zero for a certain amount of time).

The environmental service contains characteristics that expose data from some environmental sensors, such as temperature sensors.

Powering up the evaluation board running the sensor profile firmware (peripheral role)

Two power options are available:

- **Batteries** – To power the selected evaluation board using batteries, 2 AAA batteries must be inserted into the battery holder at the rear of the board, and jumper JP1 set to position 2-3 and jumper JP2 set to position 1-2 (Figure 7. Board power options).
  Note: In battery operating mode, if R59, R60 and R62 resistors are mounted, you should remove them to make LSM6DS3 function correctly
- **USB** – To power the selected evaluation board through USB, jumper JP1 must be in position 1-2 and jumper JP2 set to position 2-3 (Figure 7. Board power options). Connect a USB cable to the micro-USB connector (Figure 7. Board power options) and to a PC USB port.

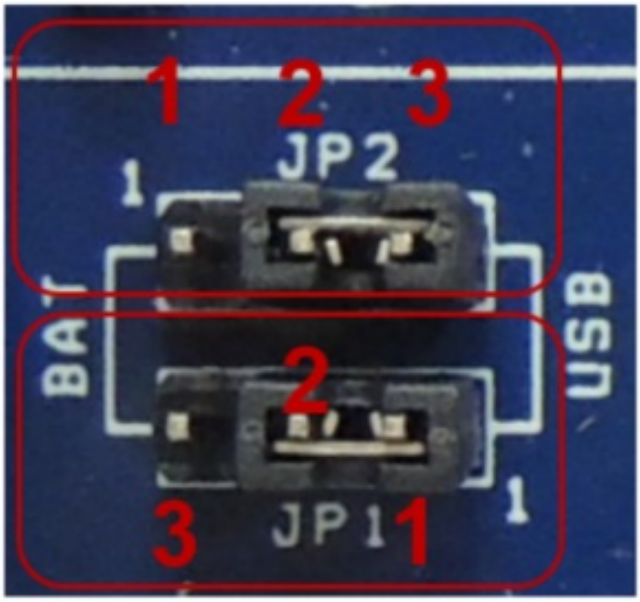


Figure 7. Board power options

Once powered, the evaluation board sensor profile firmware starts advertising, waiting for a smartphone to connect to it.

Software demonstration applications

- In order to develop a software application for the STEVAL-IDB007Vx, STEVAL-IDB008Vx or STEVALIDB009Vx evaluation board, it is recommended to start with the reference demonstration applications provided within the BlueNRG-1_2 DK SW package for BlueNRG-1, BlueNRG-2 BLE stack v2.x family (STSW-BLUENRG1-DK) available on the STEVAL-IDB007Vx, STEVAL IDB008Vx, STEVAL-IDB009Vx web pages.
- Unzip the file, launch the related installer and follow installation steps.
- Wait for the package installation to complete.
- The Projects folder in DK SW package contains the available demonstration applications, IAR projects, sources and header files.
- IAR Embedded Workbench for ARM (EWARM) tool is needed for building and downloading software applications running on the BlueNRG-1, BlueNRG-2 microcontrollers.

Note:

For a description of the available BlueNRG-1, BlueNRG-2 demonstration applications and supported platforms, refer to BlueNRG-1, BlueNRG-2 development kits user manual available on the related web page. The BLE_SensorDemo.hex prebuilt binary images for BlueNRG-1, BlueNRG-2 platforms are also provided within the DK software package, in the Firmware folder. Keil MDK-ARM and WiSE-Studio for ARM (GCC) toolchains projects are also available.

References

Table 2. Reference information

What	Where	Description
BlueNRG-1 Bluetooth Low Energy wireless System on Chip	**BlueNRG-1**	BlueNRG-1 device web page
BlueNRG-2 Bluetooth Low Energy wireless System on Chip	BlueNRG-2	BlueNRG-2 device web page
Bluetooth Low Energy Specification	**https://www.bluetooth.org/en-us/specification/** adopted-specifications	Bluetooth Low Energy specification web page
STSW-BLUENRG1-DK	STEVAL-IDB007V1, **STEVAL-IDB007V2**, **STEVAL-IDB008V1**, **STEVAL-IDB008V2** and **STEVAL-IDB009V1** web pages, Tools and Software section	BlueNRG-1_2 DK SW package for BlueNRG_1, BlueNRG-2 BLE stack v2.x family, with reference demonstration applications
STEVAL-IDB007V1**(1)**	**BlueNRG-1**, Evaluation Tools section	STEVAL-IDB007V1 platform web page
STEVAL-IDB007V2	**BlueNRG-1**, Evaluation Tools section	STEVAL-IDB007V2 platform web page
STEVAL-IDB008V1**(1)**	BlueNRG-2, Evaluation Tools section	STEVAL-IDB008V1 platform web page

STEVAL-IDB008V2	BlueNRG-2, Evaluation Tools section	STEVAL-IDB008V2 platform web page
STEVAL-IDB009V1	BlueNRG-2, Evaluation Tools section	STEVAL-IDB009V1 platform web page
STEVAL-IDB008V1M	BlueNRG-2, Evaluation Tools section	STEVAL-IDB008V1M platform web page
UM2071	STEVAL-IDB007V1, **STEVAL-IDB007V2**, **STEVAL-IDB008V1**, **STEVAL-IDB008V2** and **STEVAL-IDB009V1** web pages	BlueNRG-1, BlueNRG-2 Development Kits User Manual

Revision history

Table 3. Document revision history

Date	Revision	Changes
14-Jul-2016	1	Initial release.
19-Dec-2016	2	Updated STEVAL-IDB007V1 Bluetooth® low energy evaluation board on the cover page .
23-Oct-2017	3	Added: reference to STEVAL-IDB008V1 BlueNRG-2 evaluation platform, reference to BlueNRG-1_2 DK SW package for BLE stack v2.x family and reference to BlueNRG-1_V1 DK SW package for BLE stack v1.x family.
02-May-2018	4	Updated Introduction. Added references to STEVAL-ID007V2 and STEVAL-IDB008V2 evaluation platforms.
27-Nov-2018	5	Updated title and Introduction. Added Section 1 Development platforms and references to the STEVAL-IDB009V1 evaluation platform (BlueNRG-2 QFN48 package).
20-Mar-2019	6	Updated Section 3.1 Powering up the evaluation board running the sensor profile firmware (peripheral role). Removed references to BlueNRG-1_V1 DK SW package.
13-Oct-2021	7	Added reference to STEVAL-IDB008V1M development platform. Updated **Section 3 Getting started** and **Section 5 References**.

Documents / Resources

	**ST UM2094 STEVAL-IDB007Vx Evaluation Boards** [pdf] User Manual UM2094, UM2094 STEVAL-IDB007Vx Evaluation Boards, STEVAL-IDB007Vx, STEVAL-IDB008Vx