

Evaluation platform based on the BlueNRG-LPS system-on-chip



Features

- Bluetooth® Low Energy evaluation board based on the [BlueNRG-LPS](#) SoC in QFN32 package that supports:
 - Master, slave, and simultaneous master-and-slave roles
 - Long range, 2 Mbps data rate
 - Direction finding with angle of arrival (AoA) and angle of departure (AoD)
 - Bluetooth® Low Energy data length extension, extended advertising and scanning, channel selection algorithm #2, GATT caching, LE ping procedure, LE power control, and path loss monitoring
- Uncompromised low-power radio performances:
 - Up to +8 dBm programmable output power (at antenna connector)
 - Excellent receiver sensitivity (-96 dBm @1 Mbps, -103 dBm @125 bps long range)
 - Very low-power consumption: 3.4 mA Rx @ sensitivity level, and 4.3 mA Tx @ +0 dBm
- Integrated PCB antenna, UFL connector for measuring equipment, and Arduino R3 connectors
- Three power options: USB cable, battery, and external power supply
- Associated [BlueNRG-LPS](#) development kit software package ([STSW-BNRGLP-DK](#)) including firmware and documentation
- Three user LEDs and two user buttons
- MEMS digital accelerometer/gyroscope
- MEMS digital pressure/temperature sensor
- Embedded CMSIS-DAP debugger and drag and drop programming support
- RoHS compliant

Product summary	
Evaluation platform based on BlueNRG-LPS system-on-chip	STEVAL-IDB012V1
BlueNRG-LP DK SW package	STSW-BNRGLP-DK
Programmable Bluetooth Low Energy Wireless SoC	BlueNRG-332AC
Application	Wireless Connectivity

Description

The [STEVAL-IDB012V1](#) evaluation platform is designed to develop and test Bluetooth® Low Energy applications using the low power [BlueNRG-LPS](#) system-on-chip, in combination with inertial and environmental MEMS sensors, a digital MEMS microphone, and various interface buttons and LEDs.

The [BlueNRG-LPS](#) features a 64 MHz, 32-bit Arm Cortex®-M0+ core, 192 KB programmable flash memory, 24 KB SRAM, MPU, and an extensive peripheral set (4x PWM, I²C, SPI/I²S, SPI, USART, LPUART, and 12-bit ADC SAR).

The [BlueNRG-LPS](#) is compliant with the Bluetooth® Low Energy specification. It supports master, slave, simultaneous master and slave roles, data length extension, 2 Mbps, long range, extended advertising and scanning, channel selection algorithm #2, GATT caching, LE ping procedure, LE power control and path loss monitoring, and direction finding (angle of arrival/angle of departure) features.

Serial communication with a PC and three power options (USB only, battery only, and external power supply) allow complex application development and testing flexibility.

1 Schematic diagrams

Figure 1. STEVAL-IDB012V1 circuit schematic (1 of 7)

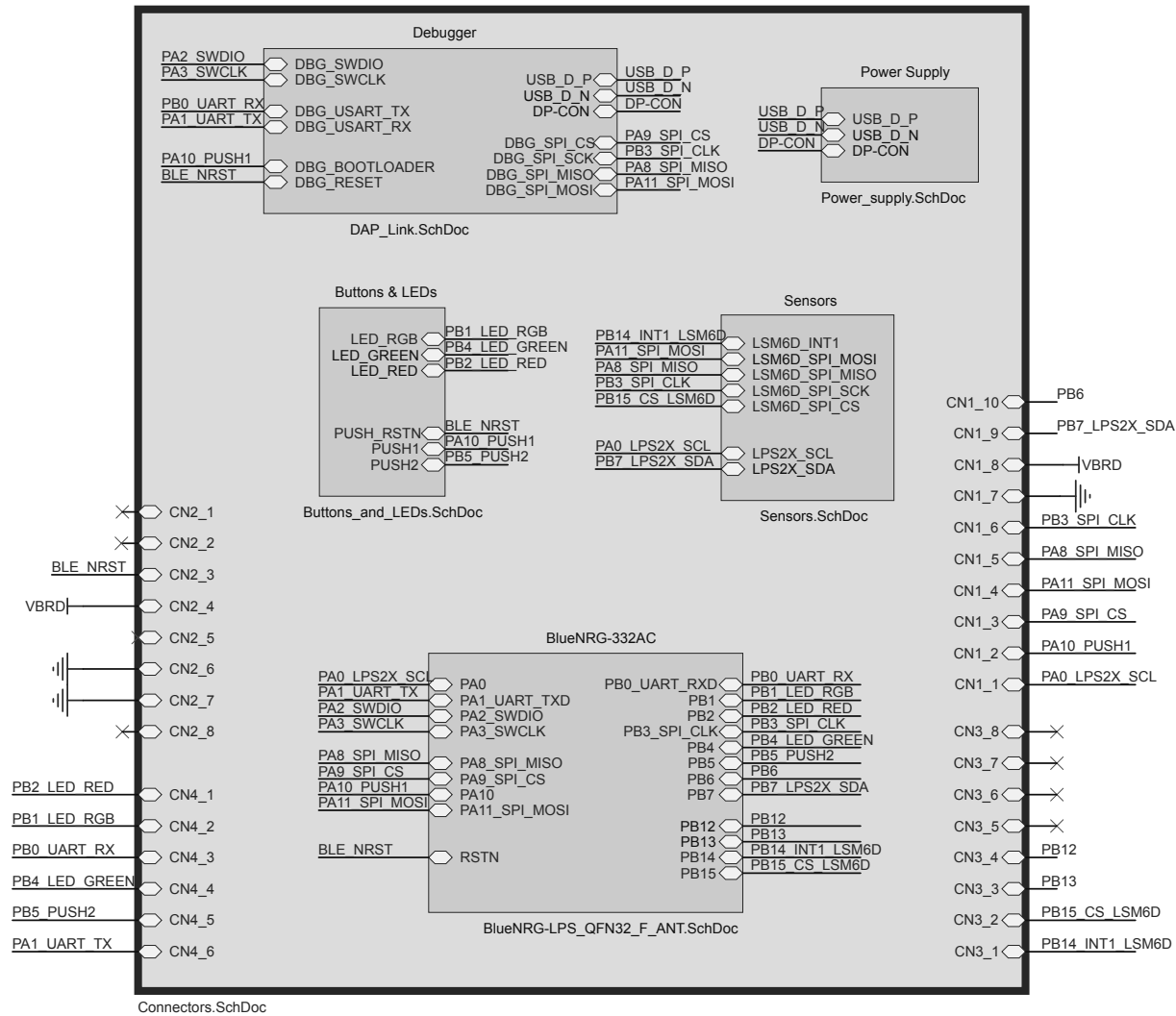
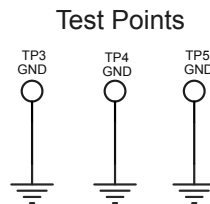
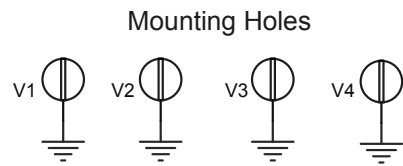
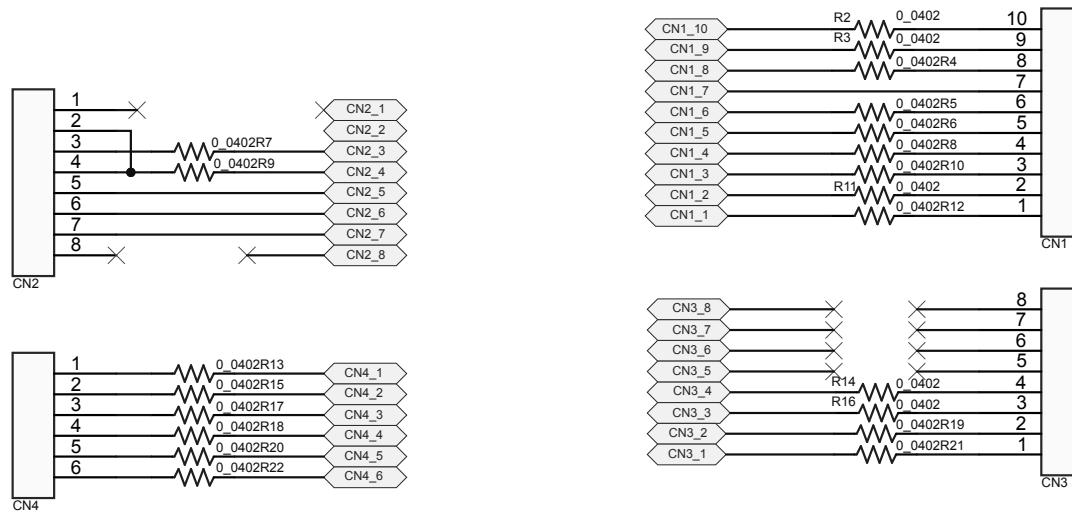


Figure 3. STEVAL-IDB012V1 circuit schematic (3 of 7)

ARDUINO Connectors



Logos

10Y ST
 Don't dispose CE
 FCC Disclaimer ROHS
 UKCA



Figure 4. STEVAL-IDB012V1 circuit schematic (4 of 7)

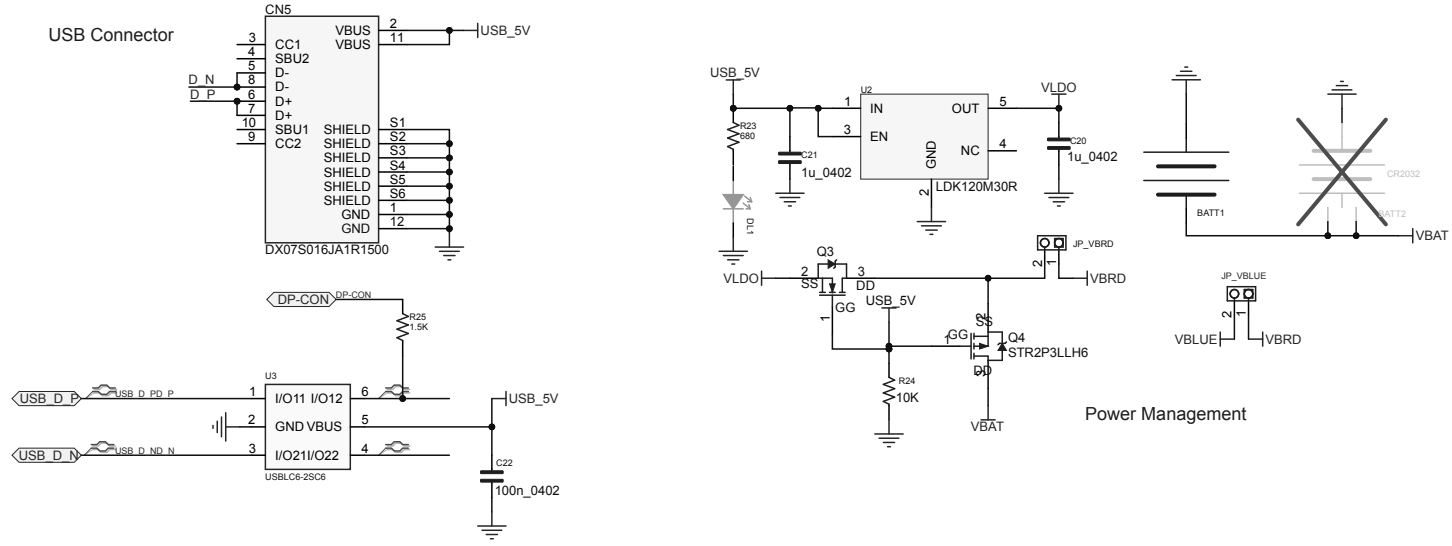


Figure 5. STEVAL-IDB012V1 circuit schematic (5 of 7)

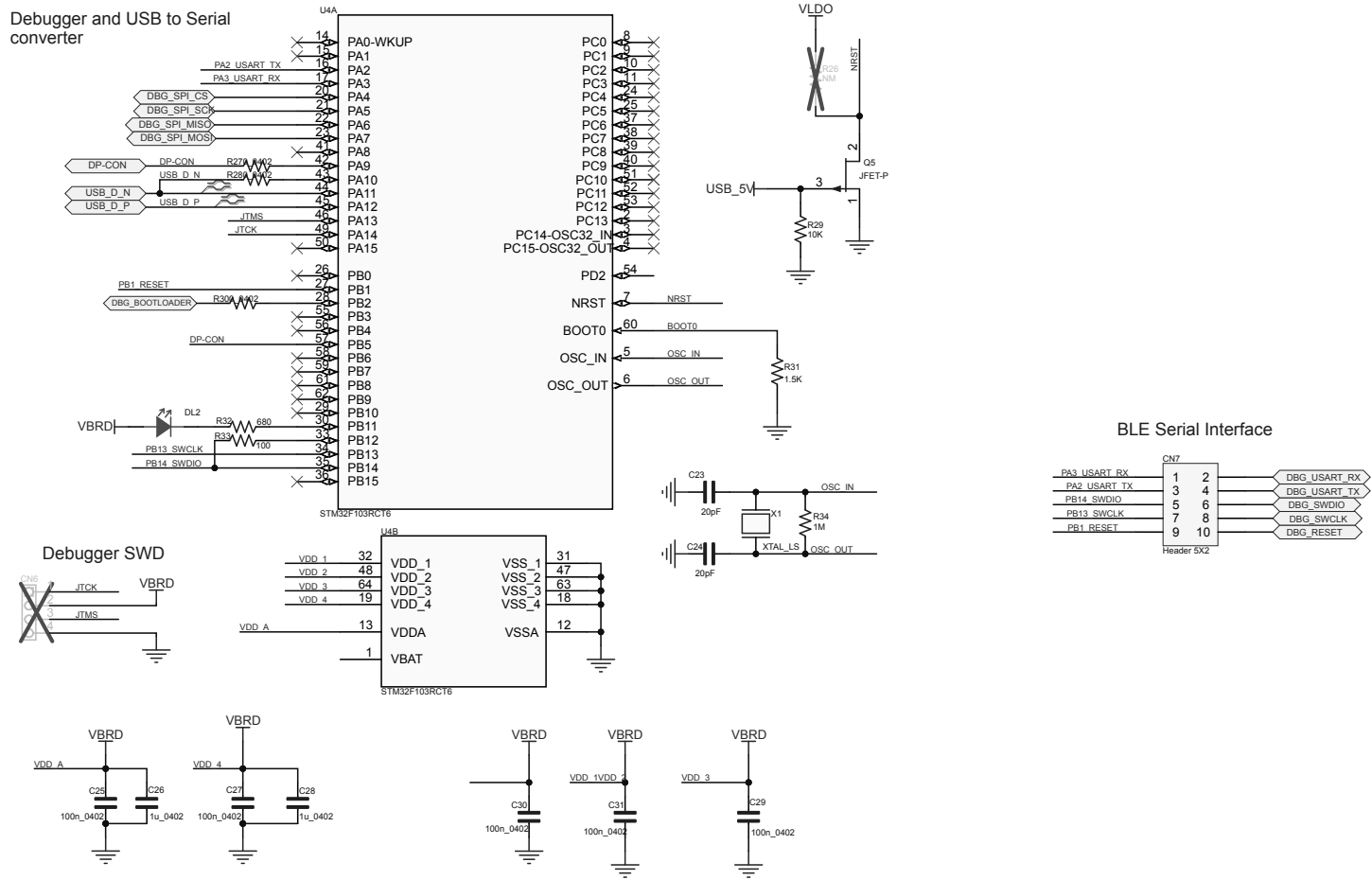


Figure 6. STEVAL-IDB012V1 circuit schematic (6 of 7)

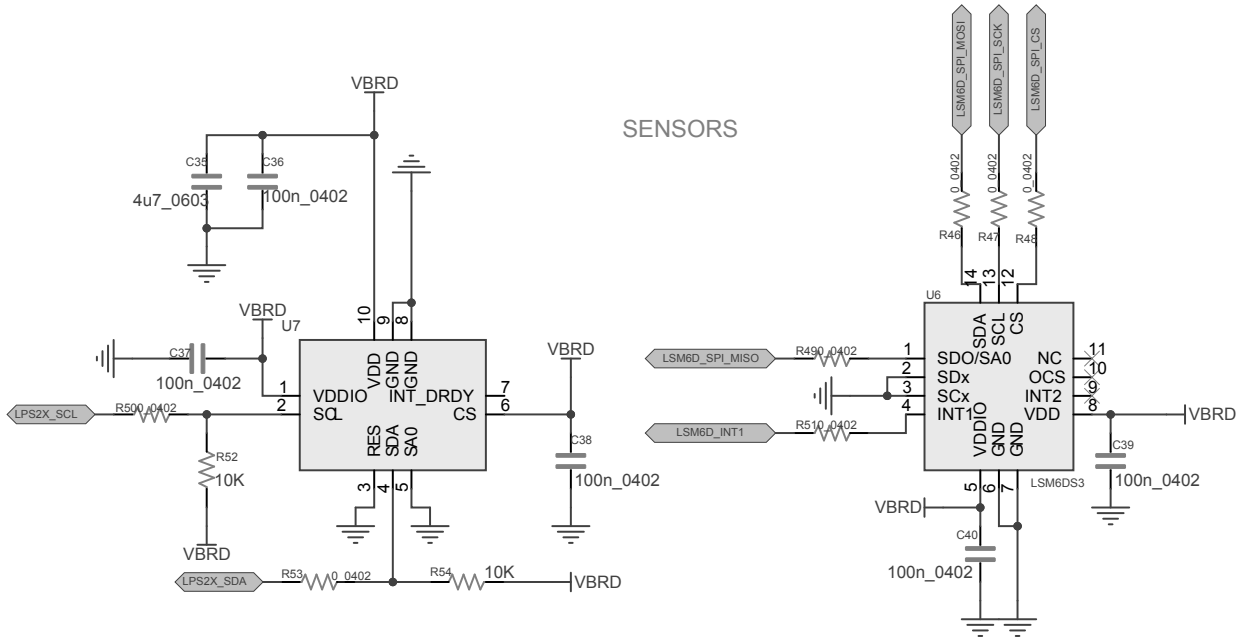
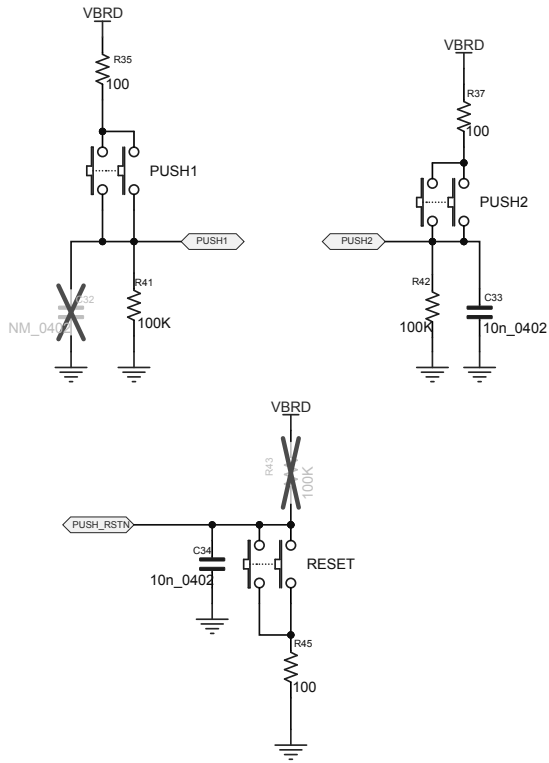
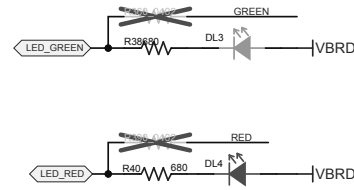


Figure 7. STEVAL-IDB012V1 circuit schematic (7 of 7)

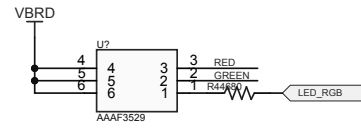
BUTTONS



LEDS



For multicolor LED solder 680 ohm resistor in R36 and R39



2 Kit versions

Table 1. STEVAL-IDB012V1 versions

PCB version	Schematic diagrams	Bill of materials
STEVAL\$IDB012V1A	STEVAL\$IDB012V1A schematic diagrams	STEVAL\$IDB012V1A bill of materials

1. This code identifies the STEVAL-IDB012V1 evaluation kit first version. It is printed on the board PCB.

Revision history

Table 2. Document revision history

Date	Revision	Changes
13-Apr-2022	1	Initial release.

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