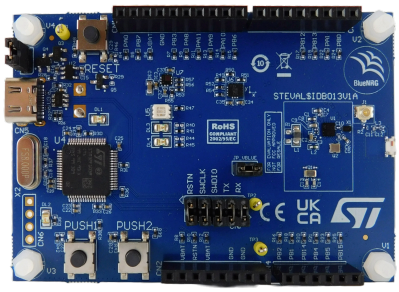
STEVAL-IDB013V1

Data brief

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



Product summary	
Evaluation platform based on BlueNRG-LPS system-on-chip	STEVAL-IDB013V1
BlueNRG-LP, BlueNRG-LPS DK SW package	STSW-BNRGLP-DK
Programmable Bluetooth Low Energy Wireless SoC	BlueNRG-332VC
Application	Wireless Connectivity

Features

- Bluetooth® Low Energy evaluation board based on the BlueNRG-LPS (BlueNRG-332VC)
- Bluetooth® Low Energy 5.2 certified SoC in WLCSP36 package:
  - Master, slave, and simultaneous master-and-slave roles
  - Long range, 2 Mbps data rate, advertising extensions, periodic advertising, CSA#2, GATT caching, LE ping procedure, periodic advertising and periodic advertising sync transfer, LE L2CAP connection-oriented channel, LE power control, and path loss monitoring
  - Supports direction finding with angle of arrival (AoA) and angle of departure (AoD)
- Uncompromised low-power radio performances:
  - Up to +7 dBm programmable output power (at antenna connector)
  - Excellent receiver sensitivity (-95 dBm @ 1 Mbps, -101 dBm @ 125 kbps - long range)
  - Very low power consumption: 3.4 mA Rx @ sensitivity level, and 4.3 mA Tx @ +0 dBm
- Integrated 32-bit core Arm Cortex®-M0+, 64 MHz 192-Kbyte flash memory, 24-Kbyte SRAM, MPU, extensive peripheral set
- Chip antenna, IPD, 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
- 3 user LEDs and 2 user buttons
- MEMS digital accelerometer/gyroscope
- MEMS digital pressure/temperature sensor
- Embedded CMSIS-DAP debugger and drag&drop programming support
- RoHS compliant

Description

The STEVAL-IDB013V1 evaluation platform is designed to help the user develop and test Bluetooth® Low Energy applications. It uses the low-power BlueNRG-LPS system-on-chip in combination with inertial and environmental MEMS sensors and 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 (6x PWM, I²C, SPI/I2S, USART, LPUART, 12-bit ADC SAR).

The BlueNRG-LPS is compliant with the Bluetooth® Low Energy specification, supporting: 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, direction finding (angle of arrival/angle of departure) features.

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

1 Schematic diagrams

Figure 1. **STEVAL-IDB013V1 circuit schematic (1 of 7)**

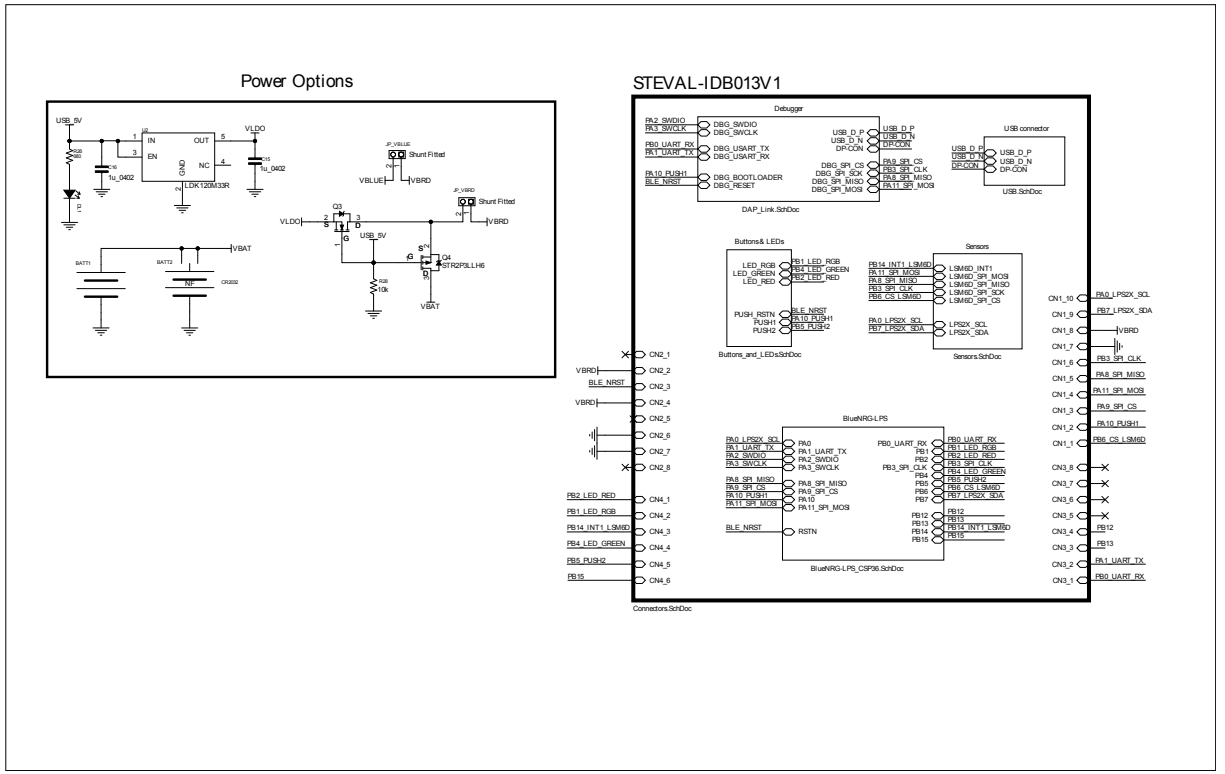


Figure 2. STEVAL-IDB013V1 circuit schematic (2 of 7)

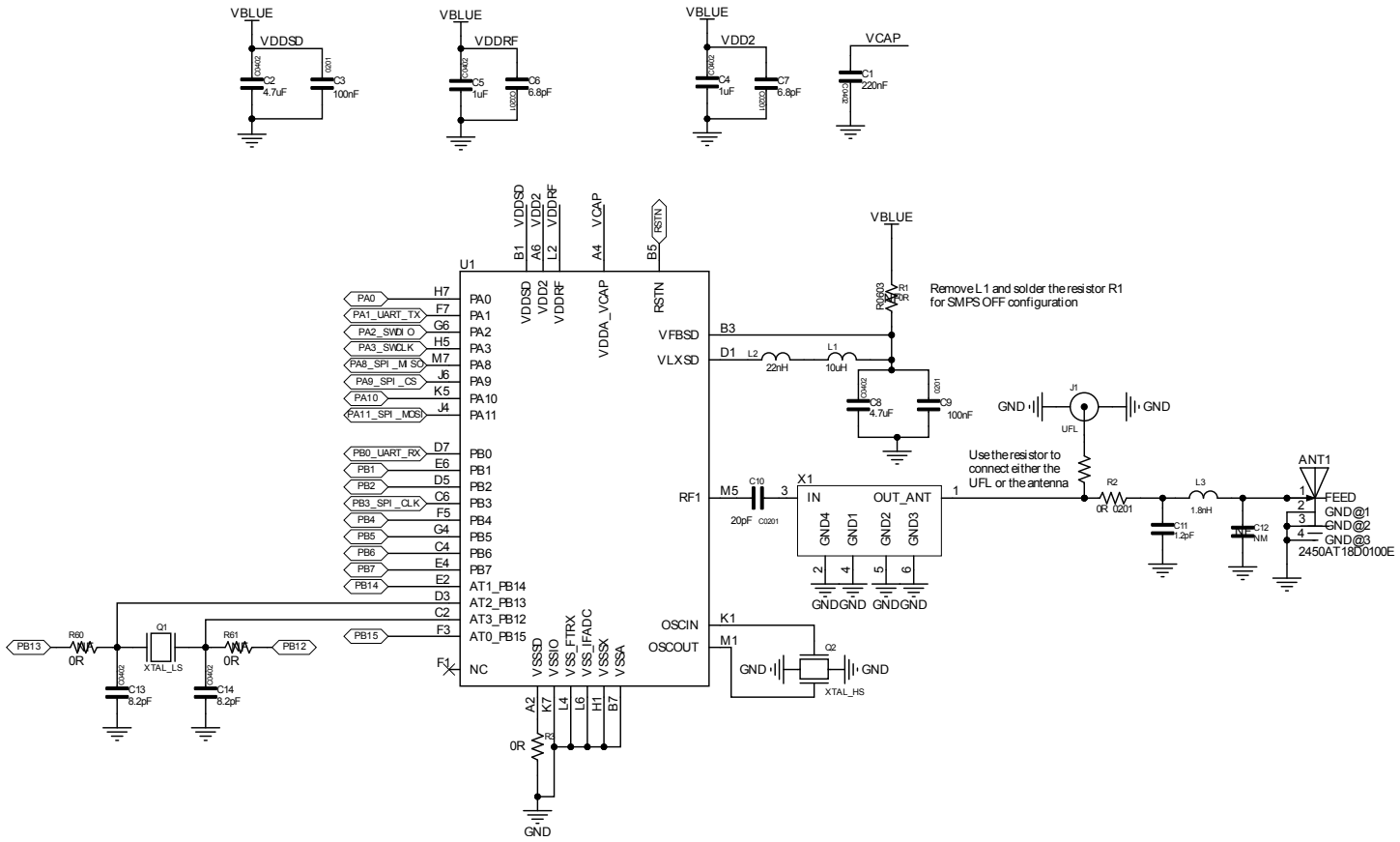


Figure 3. **STEVAL-IDB013V1 circuit schematic (3 of 7)**

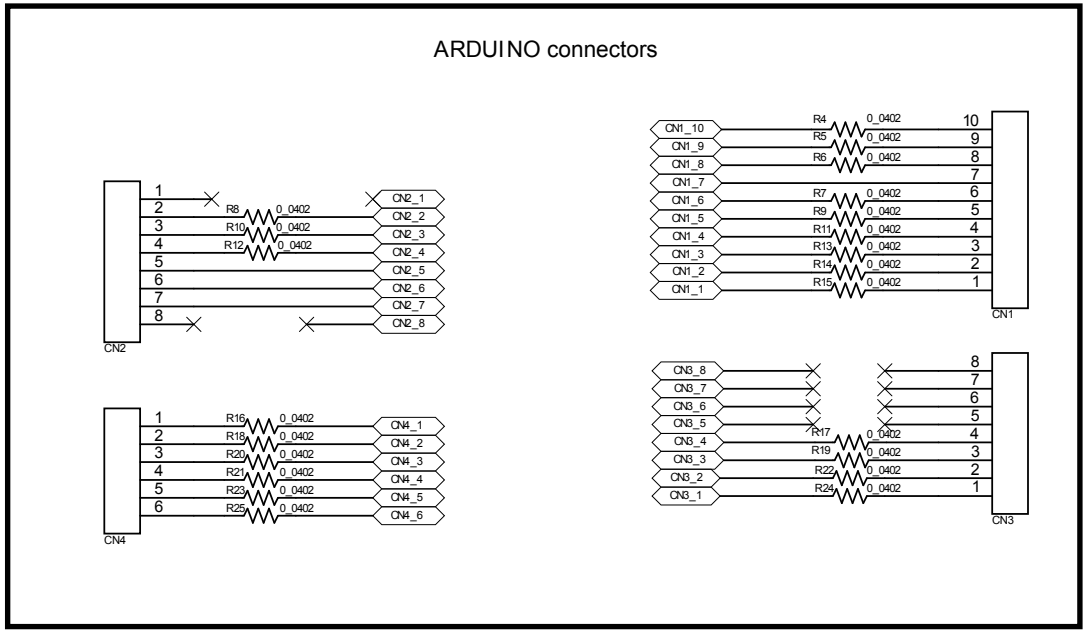


Figure 4. **STEVAL-IDB013V1 circuit schematic (4 of 7)**

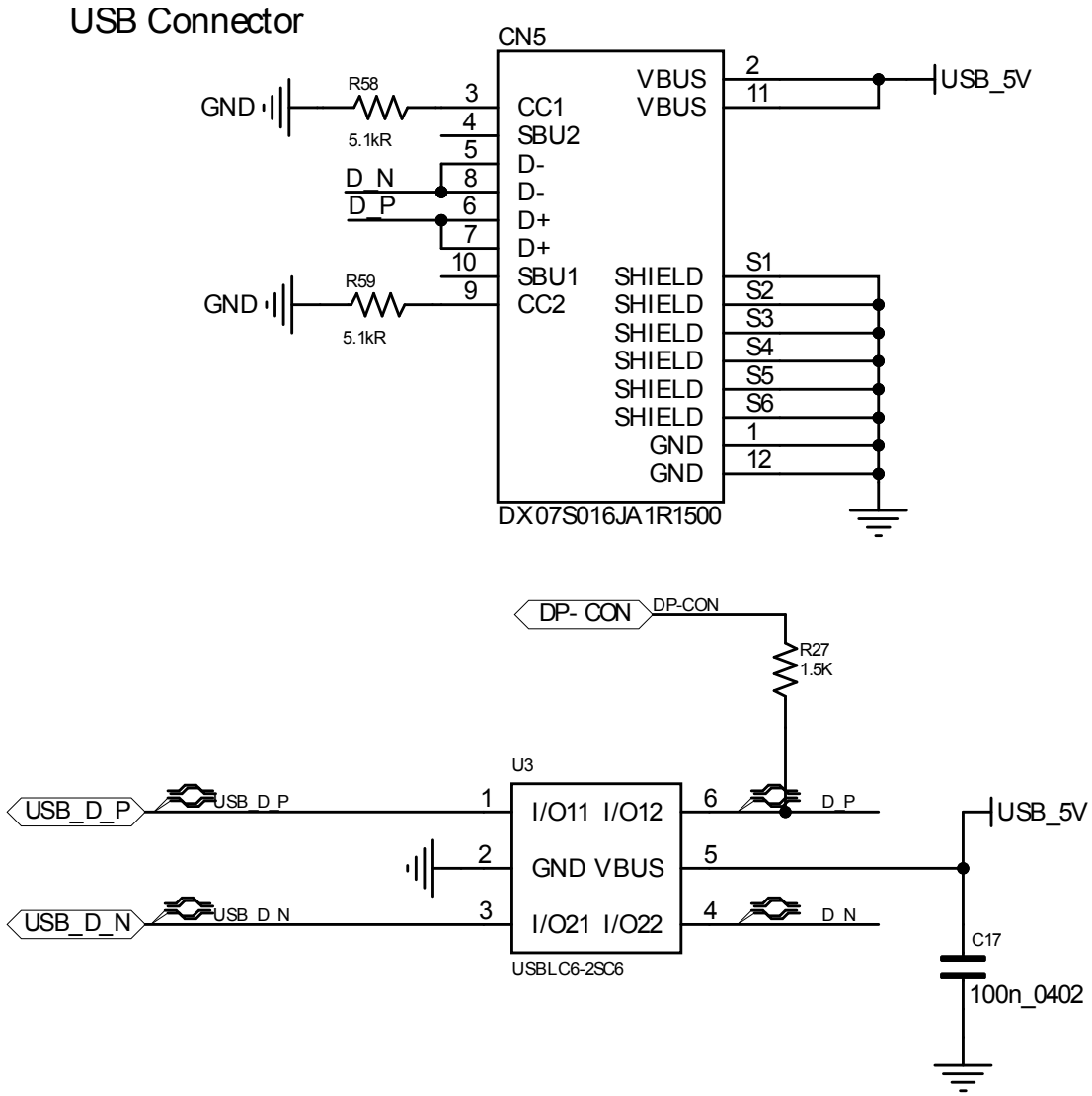
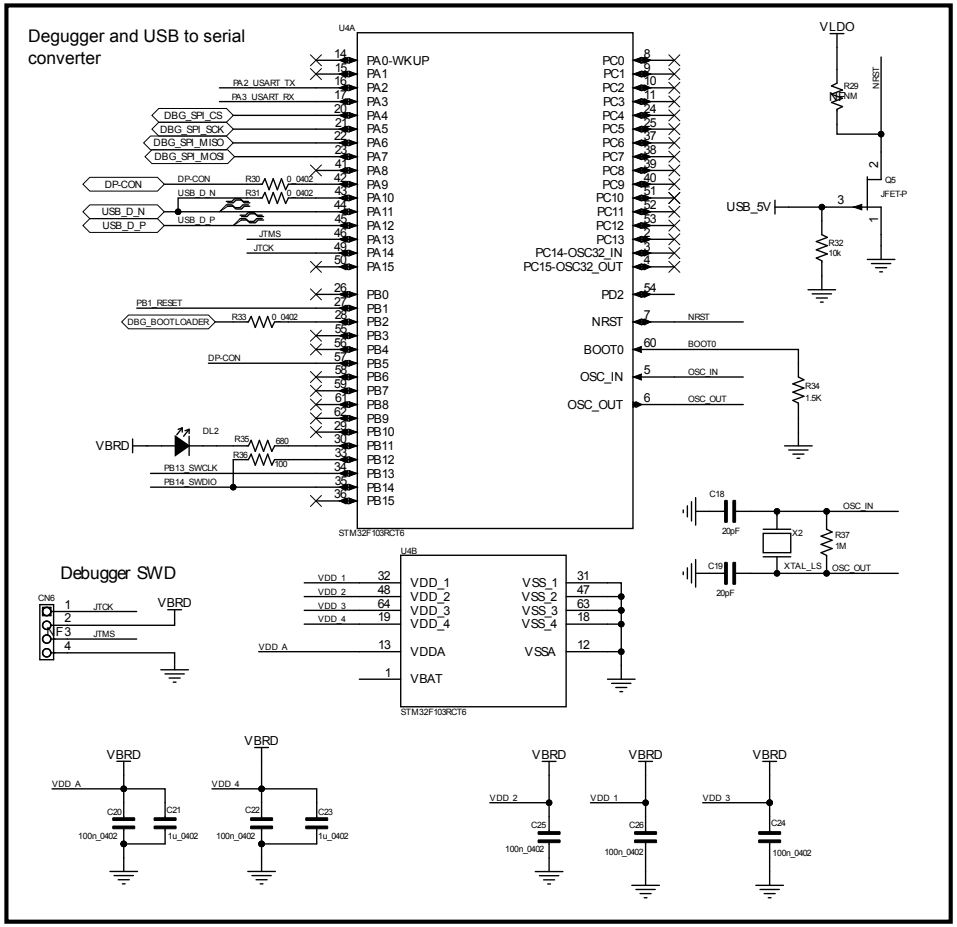
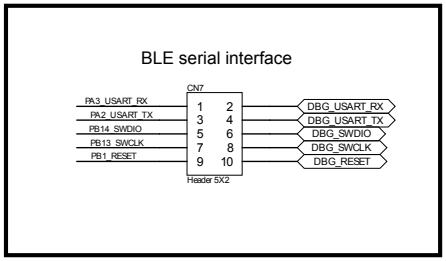


Figure 5. STEVAL-IDB013V1 circuit schematic (5 of 7)





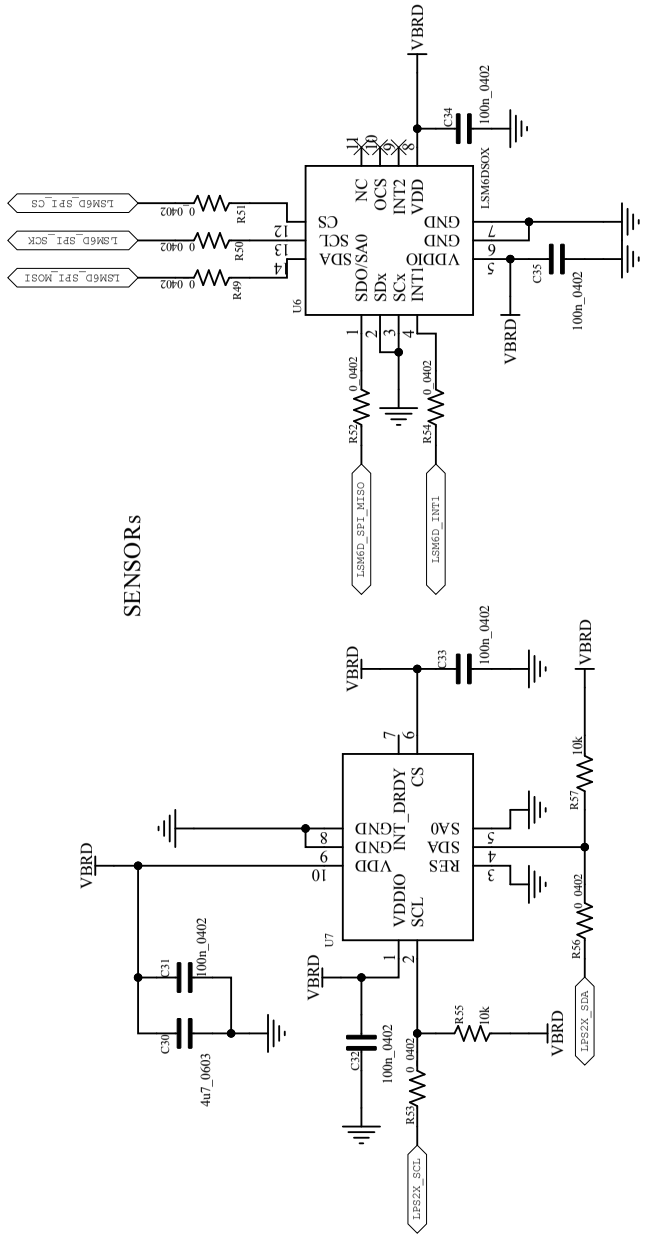
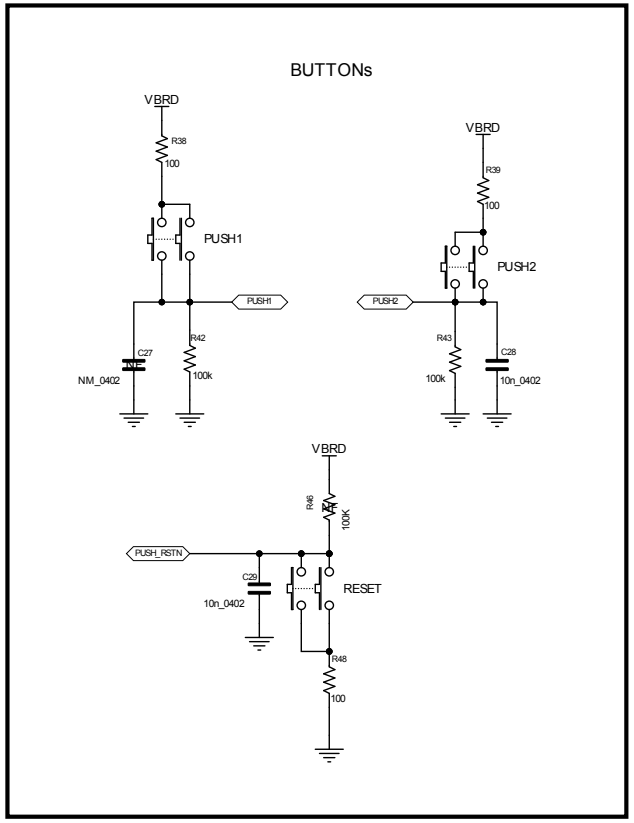
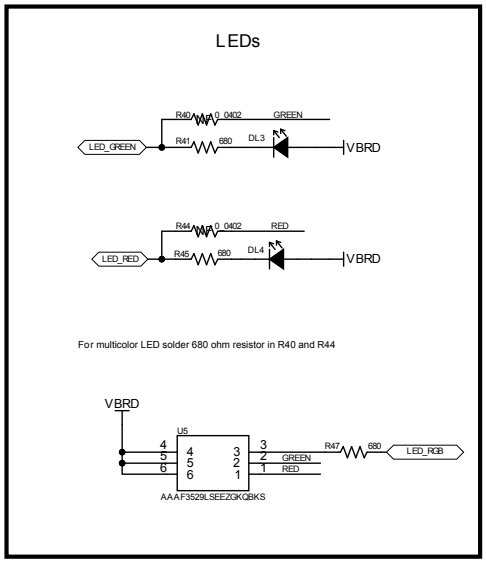


Figure 6. **STEVAL-IDB013V1 circuit schematic (6 of 7)**

Figure 7. **STEVAL-IDB013V1 circuit schematic (7 of 7)**





2 Kit versions

Table 1. **STEVAL-IDB013V1 versions**

PCB version	Schematic diagrams	Bill of materials
STEVAL$IDB013V1A	STEVAL$IDB013V1A schematic diagrams	STEVAL$IDB013V1A bill of materials

1. *This code identifies the STEVAL-IDB013V1 evaluation kit first version. It is printed on the board PCB.*

Revision history

Table 2. **Document revision history**

Date	Revision	Changes
05-Sep-2023	1	Initial release.