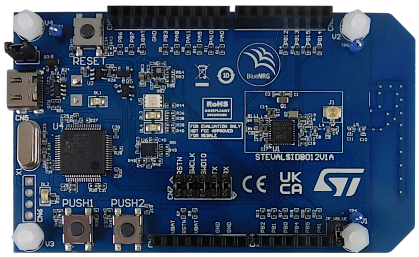
STEVAL-IDB012V1

Data brief

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



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

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

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)

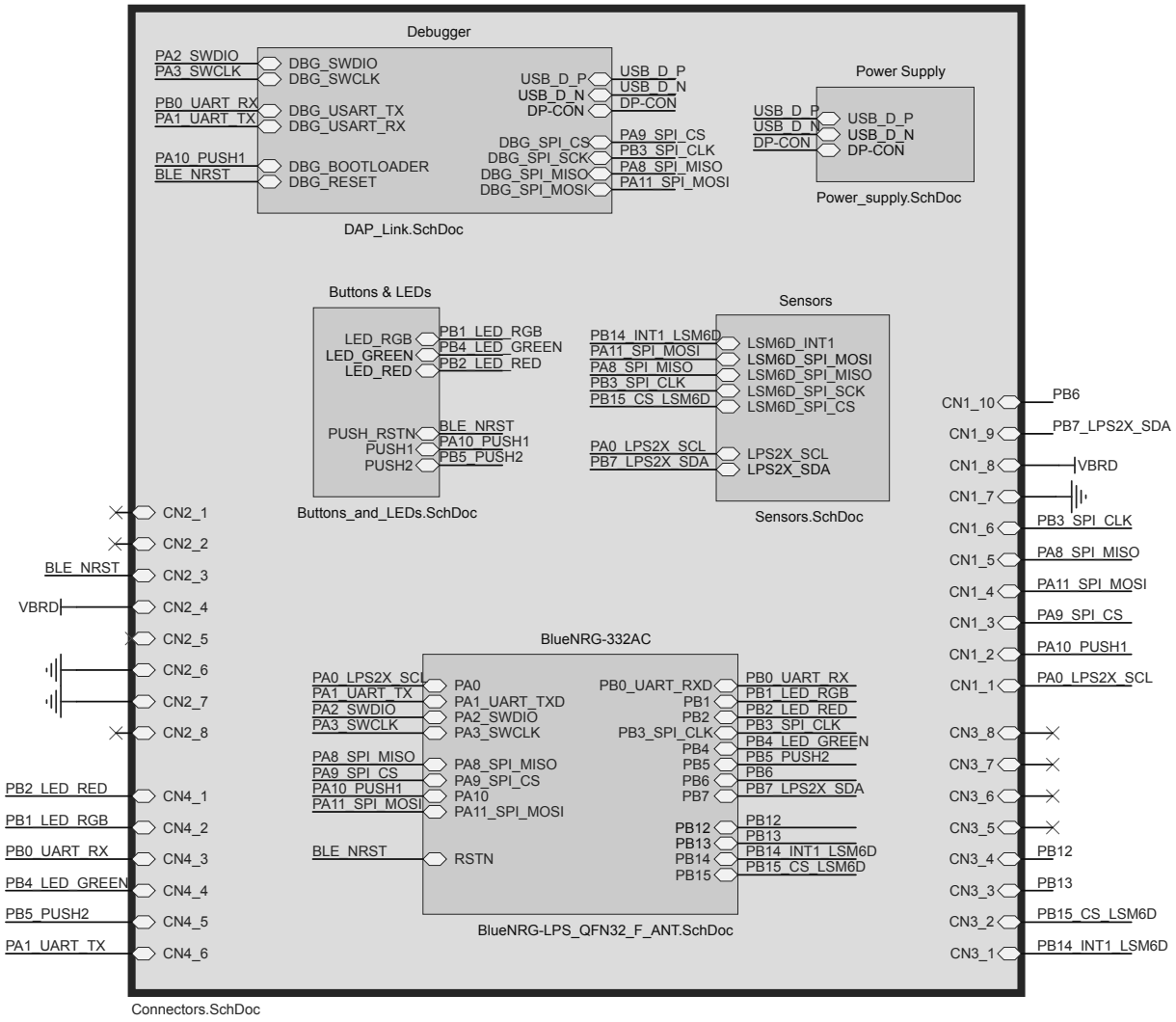


Figure 2. STEVAL-IDB012V1 circuit schematic (2 of 7)

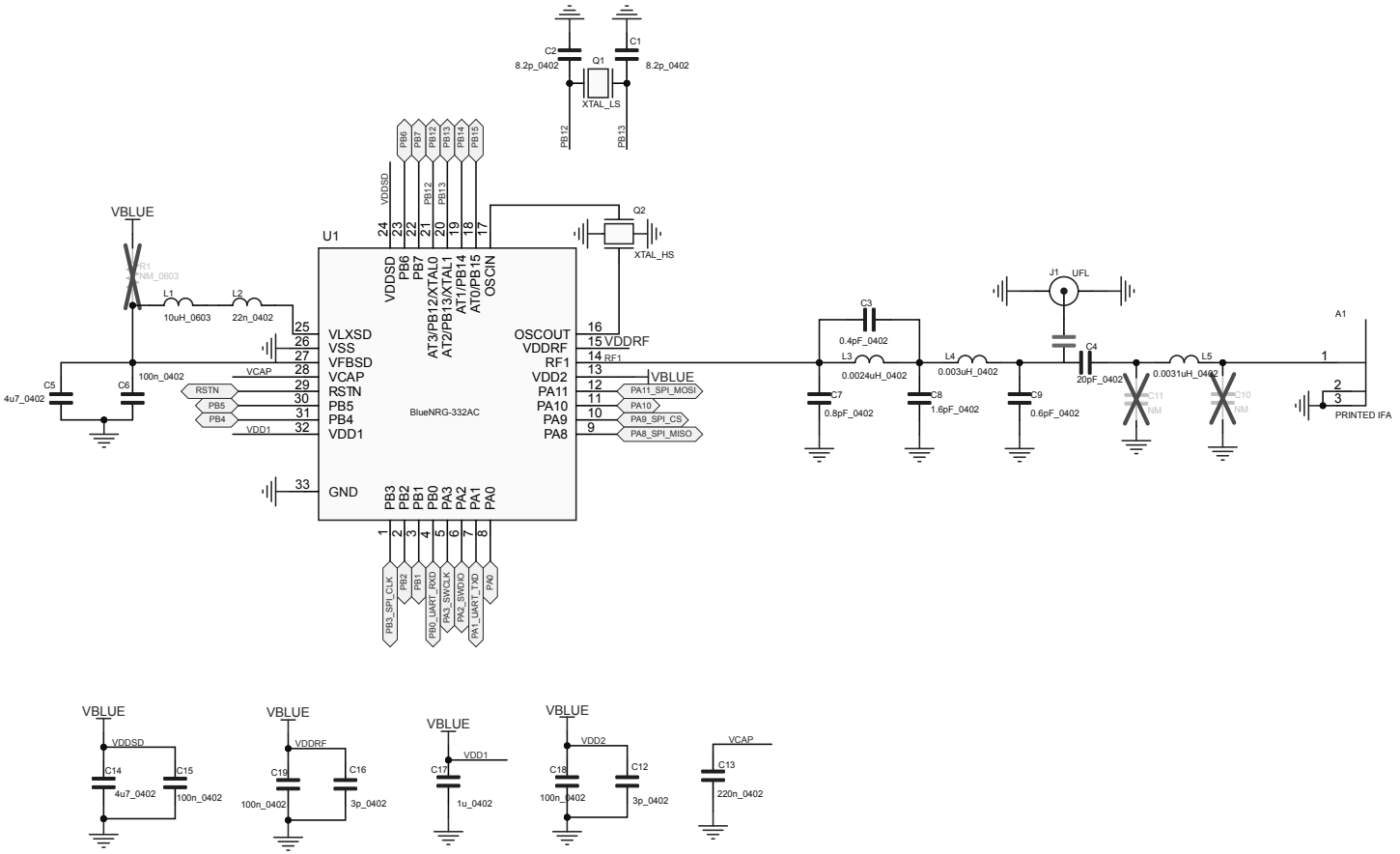


Figure 3. STEVAL-IDB012V1 circuit schematic (3 of 7)

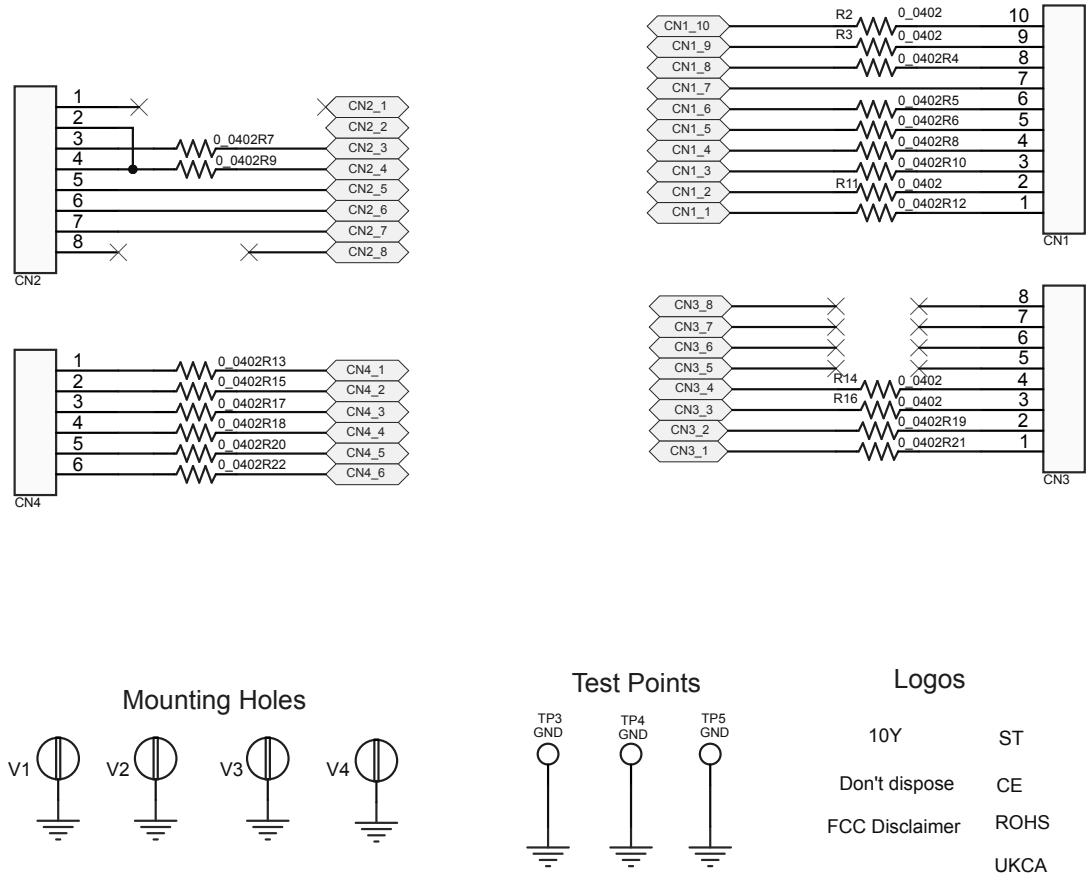


Figure 4. STEVAL-IDB012V1 circuit schematic (4 of 7)

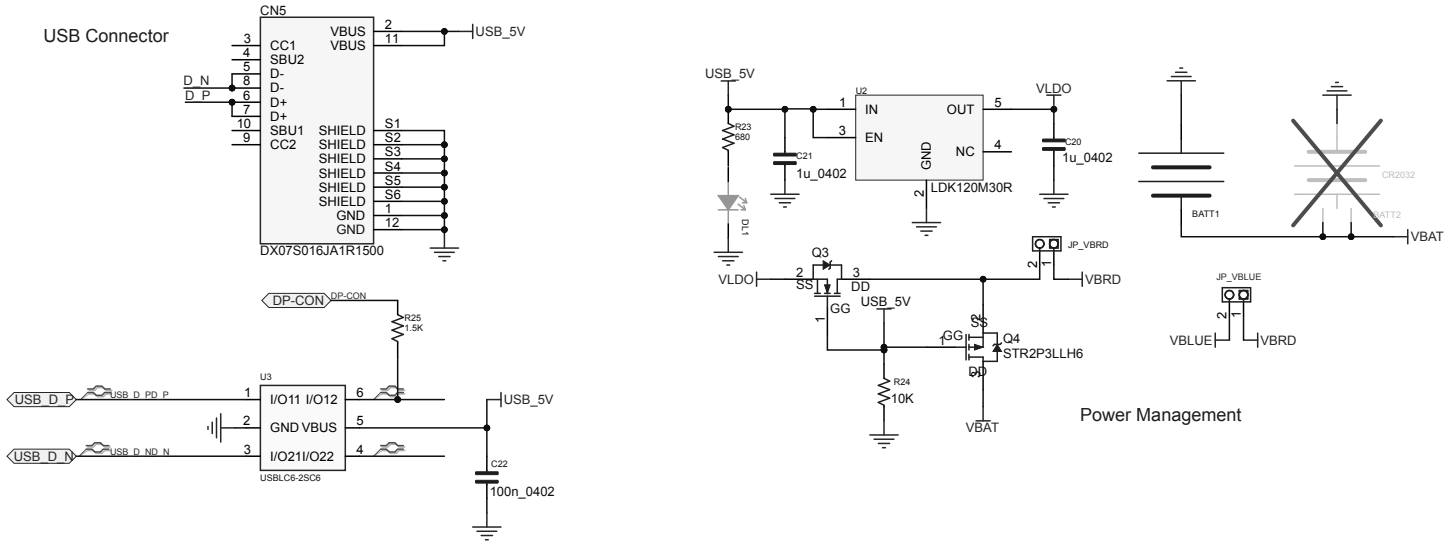


Figure 5. STEVAL-IDB012V1 circuit schematic (5 of 7)

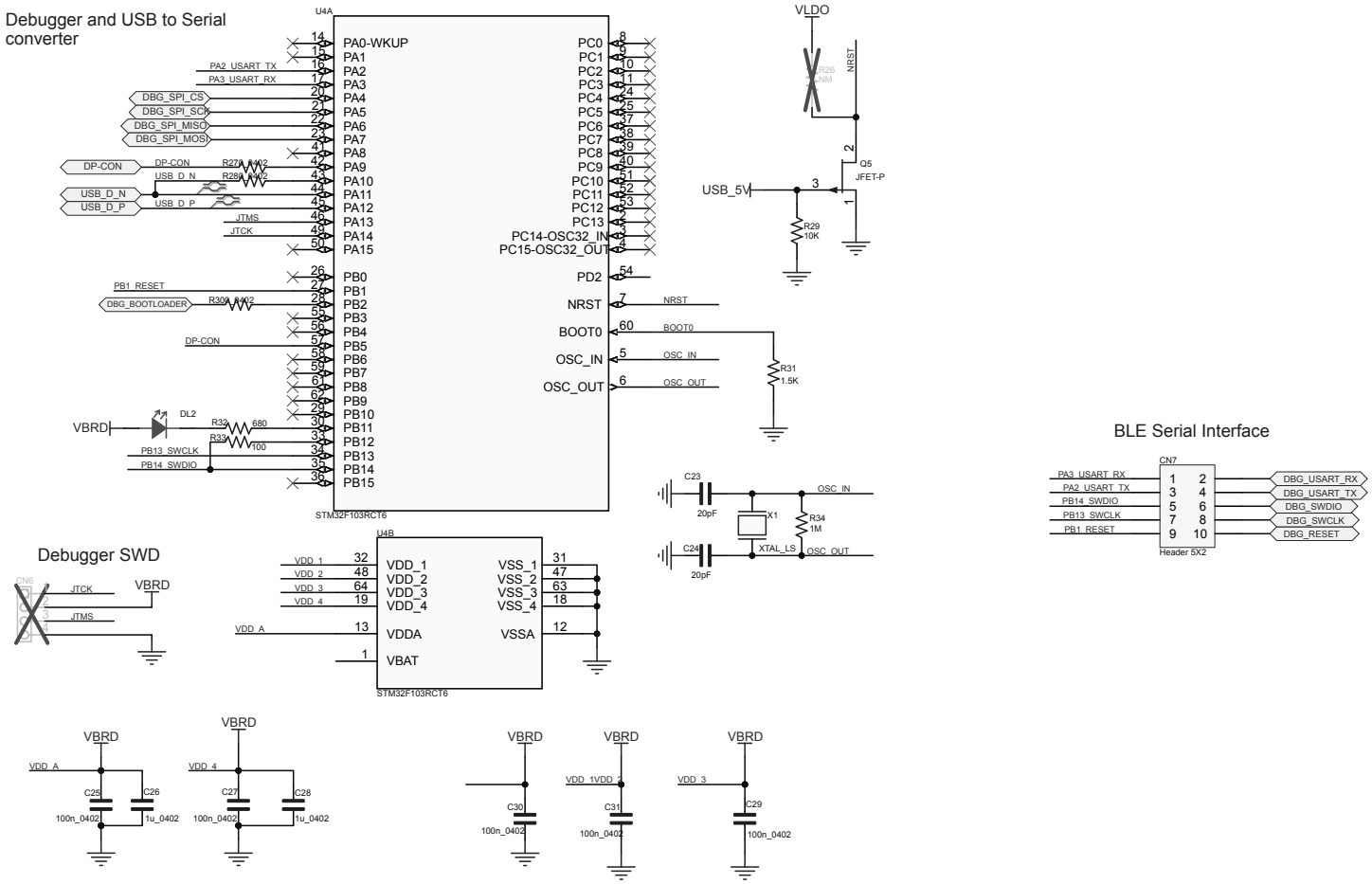


Figure 6. STEVAL-IDB012V1 circuit schematic (6 of 7)

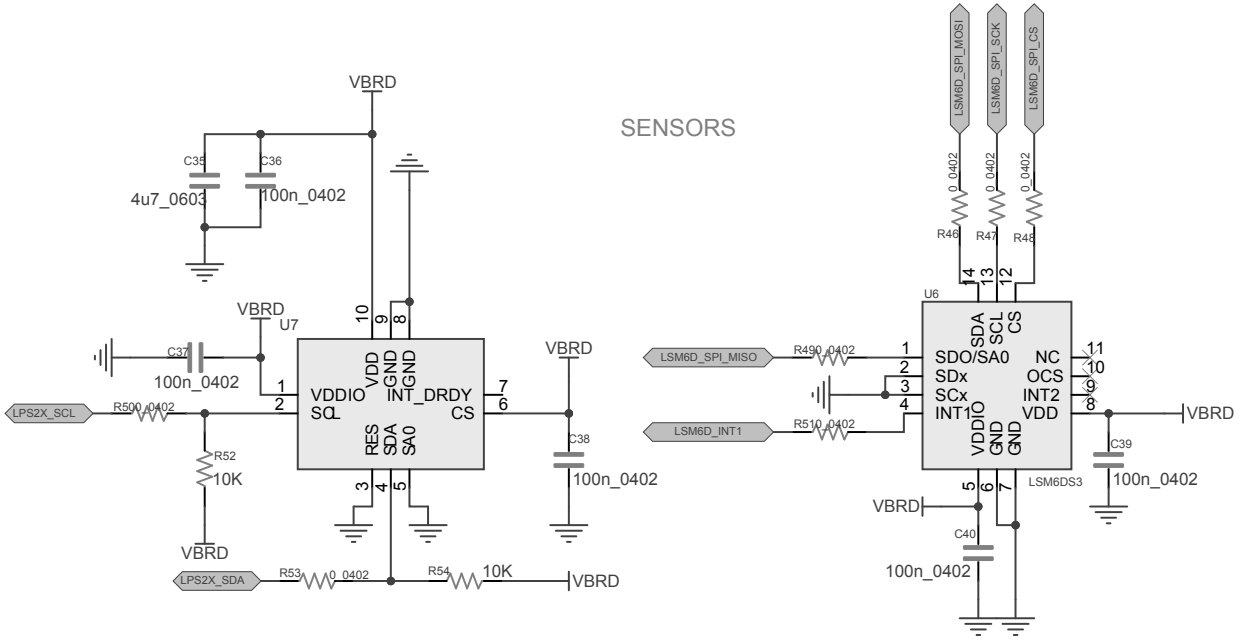
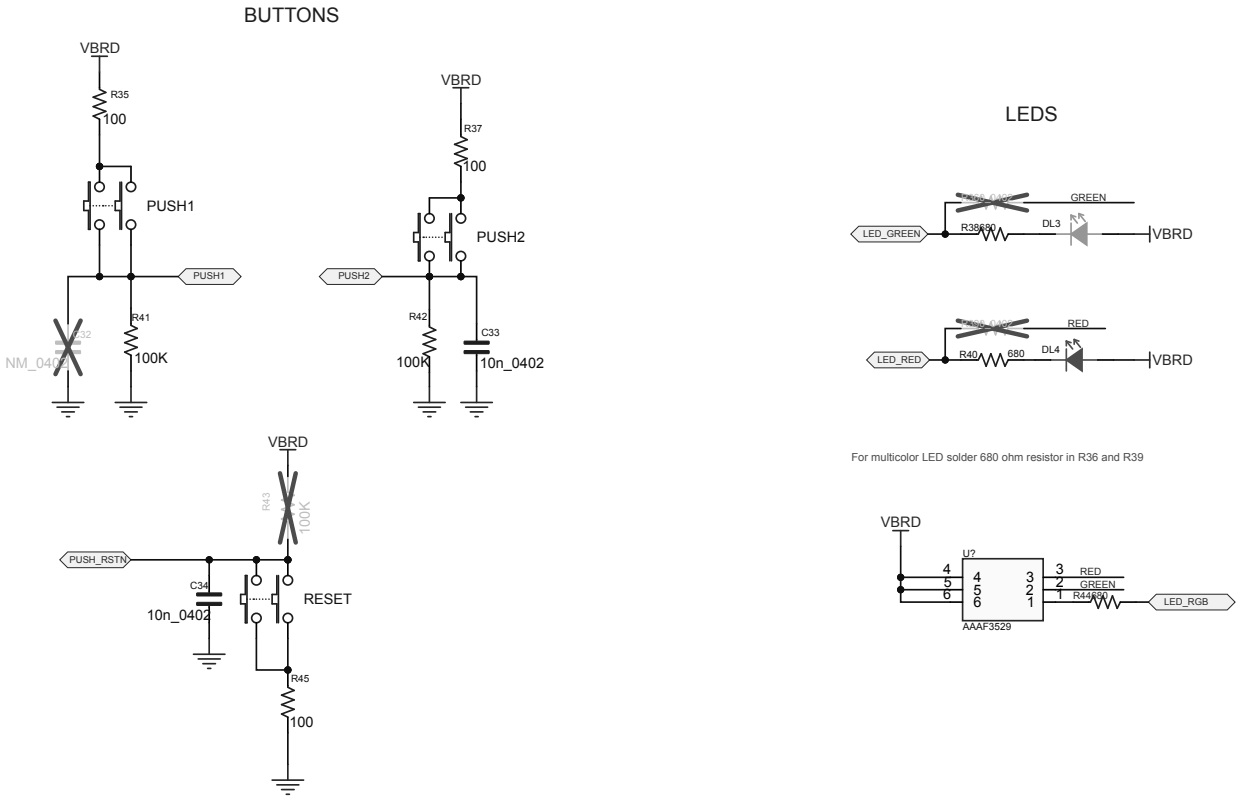


Figure 7. STEVAL-IDB012V1 circuit schematic (7 of 7)



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.