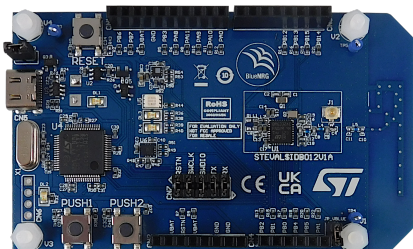


Evaluation platform based on the BlueNRG-LPS system-on-chip



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.

Schematic diagrams

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

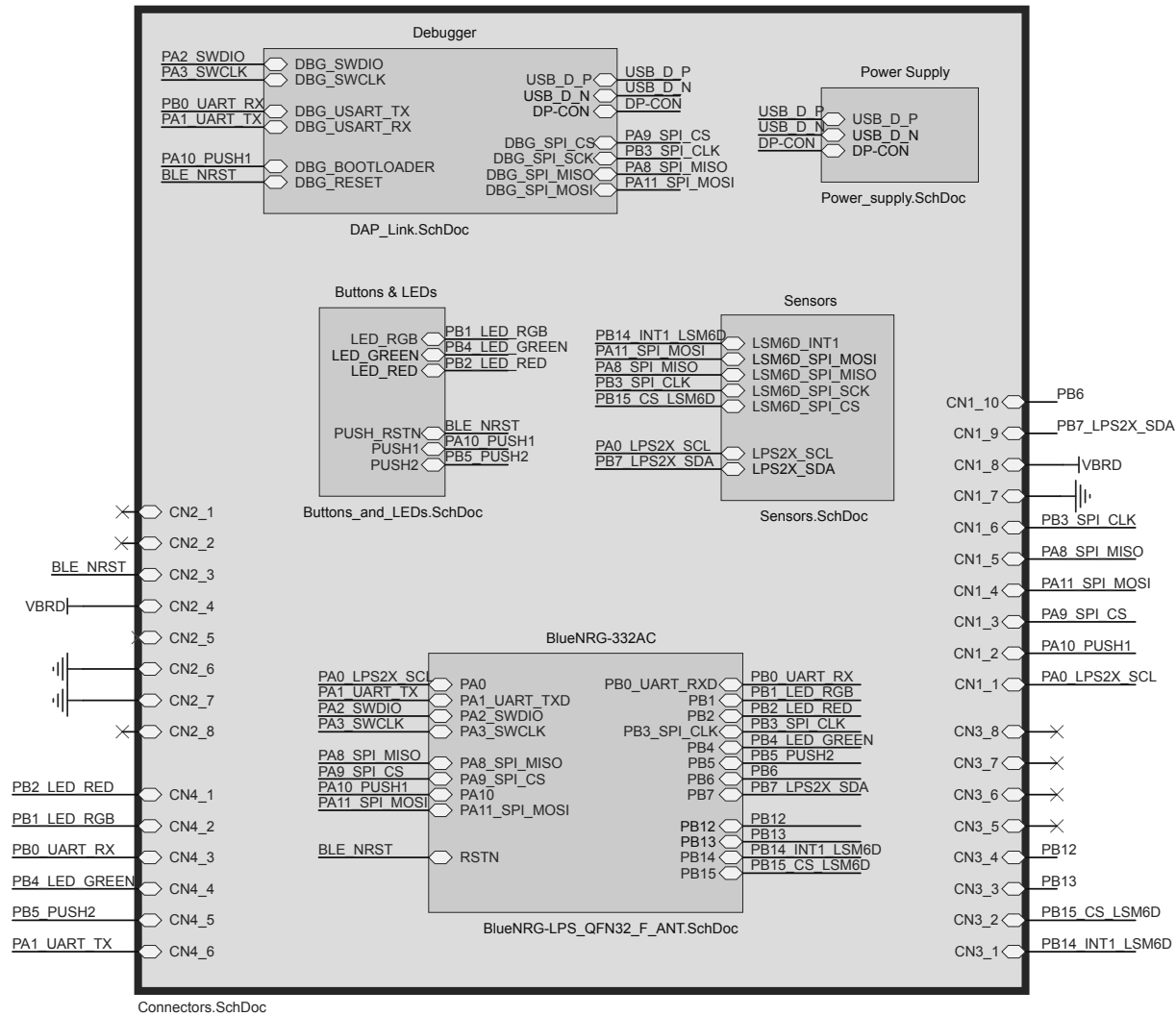


Figure 2. STEVAL-IDB012V1 circuit schematic (2 of 7)

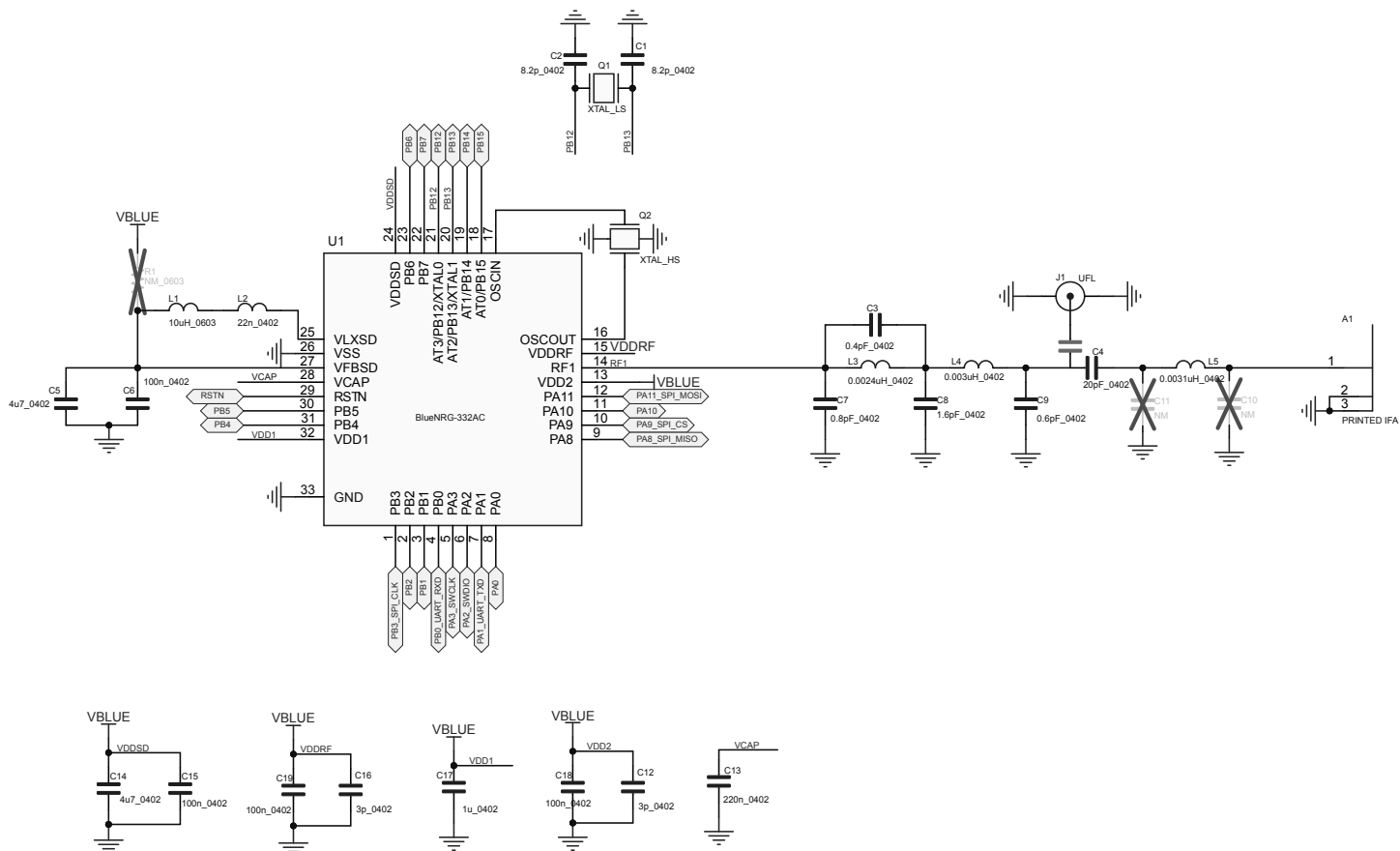
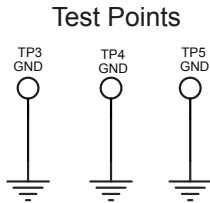
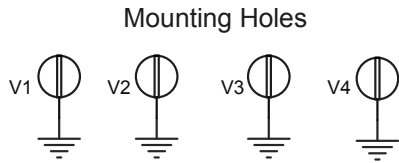
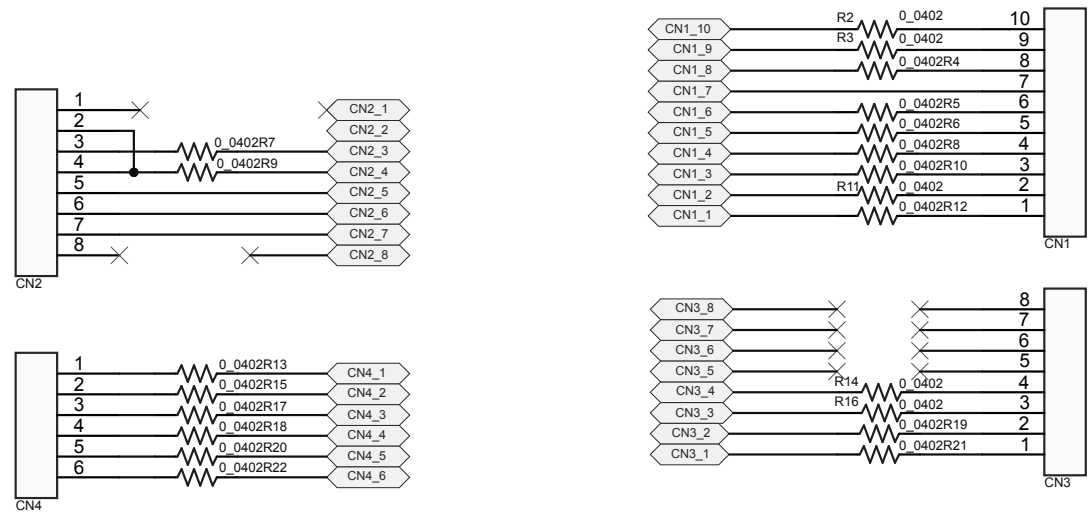


Figure 3. STEVAL-IDB012V1 circuit schematic (3 of 7)
ARDUINO Connectors



Logos

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



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

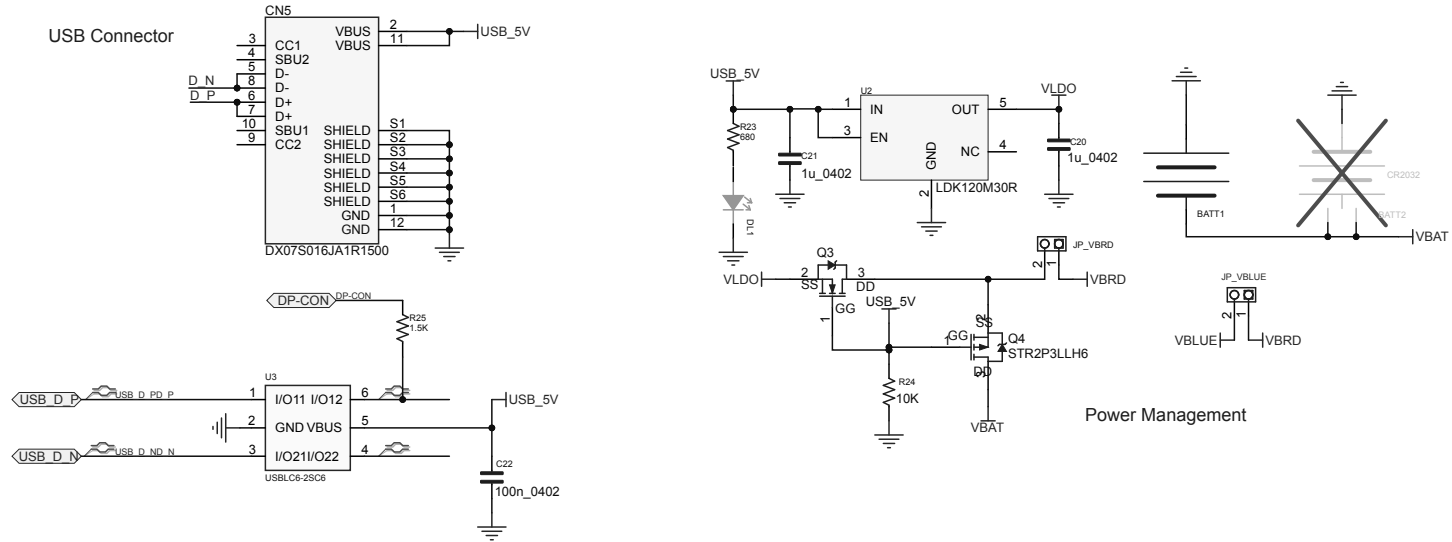


Figure 5. STEVAL-IDB012V1 circuit schematic (5 of 7)

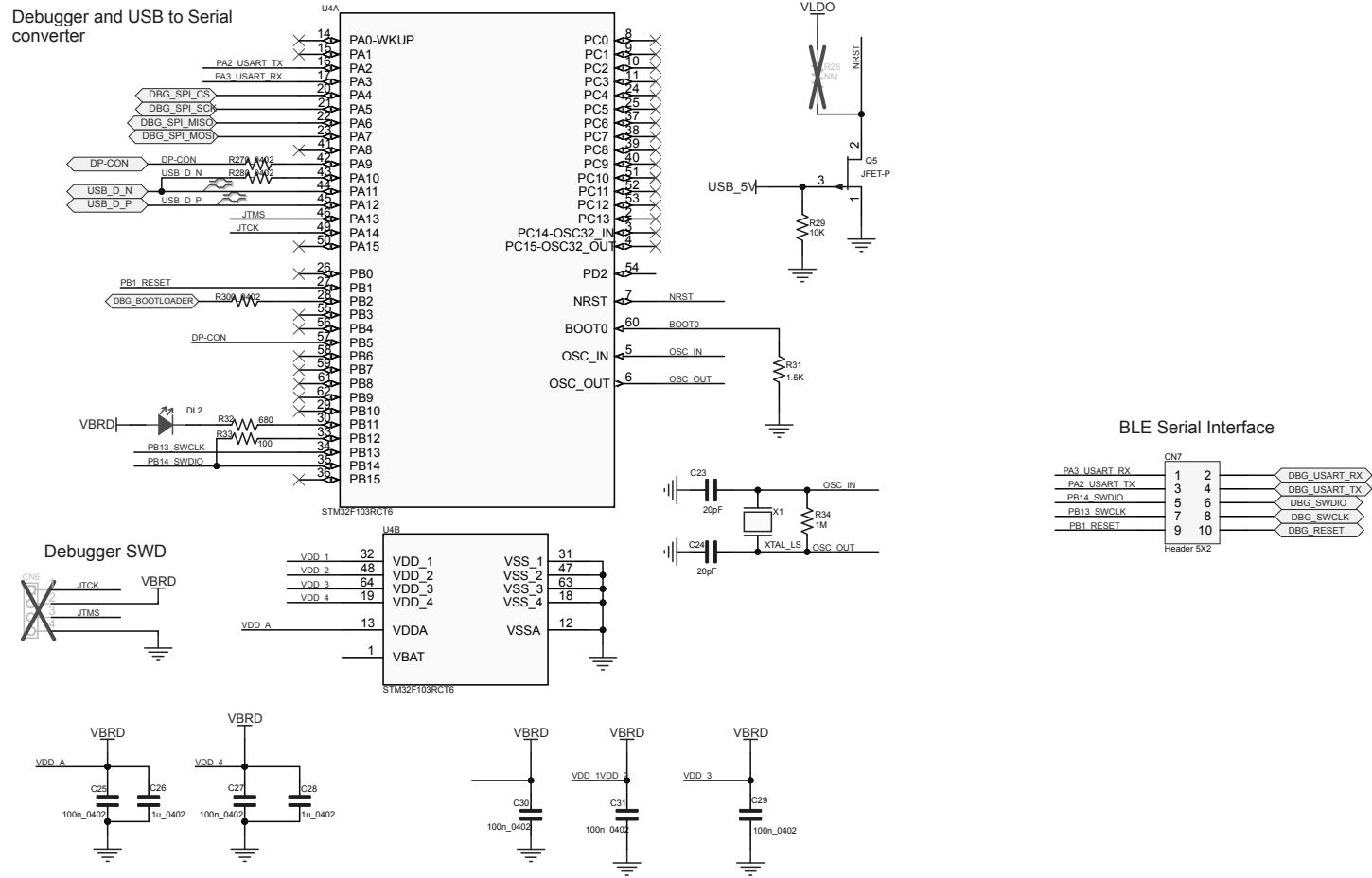


Figure 6. STEVAL-IDB012V1 circuit schematic (6 of 7)

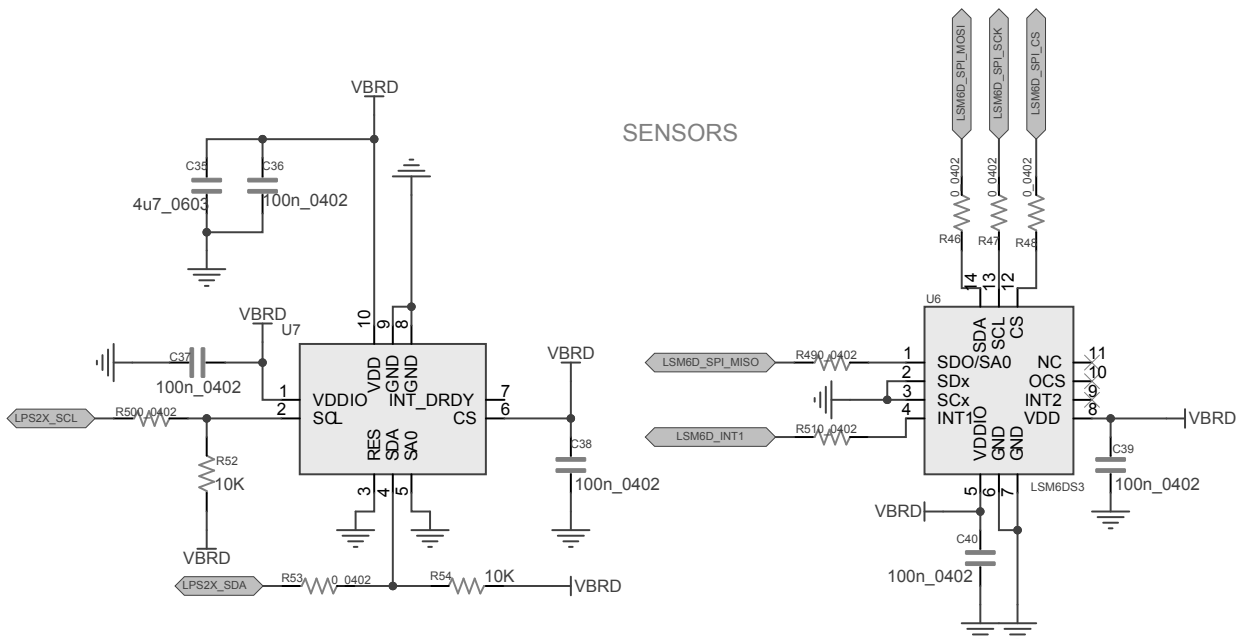
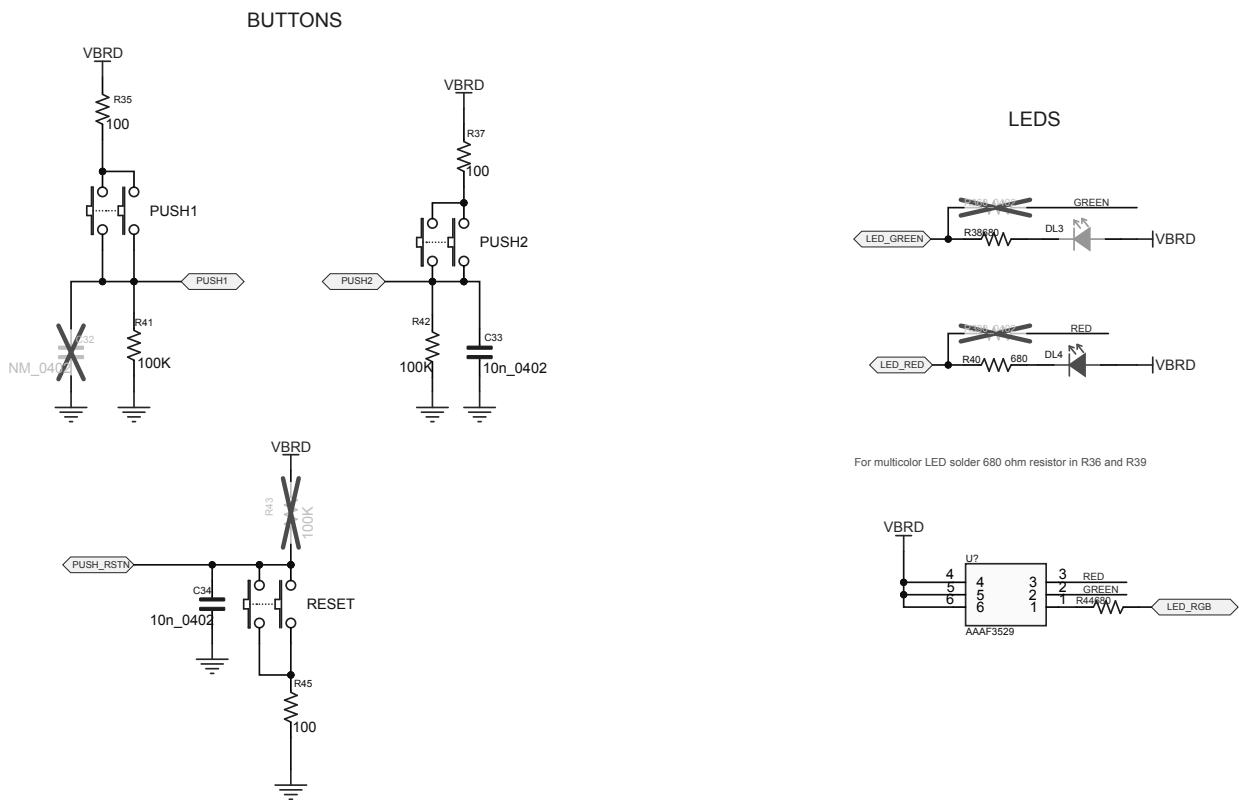


Figure 7. STEVAL-IDB012V1 circuit schematic (7 of 7)



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.

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2022 STMicroelectronics – All rights reserved