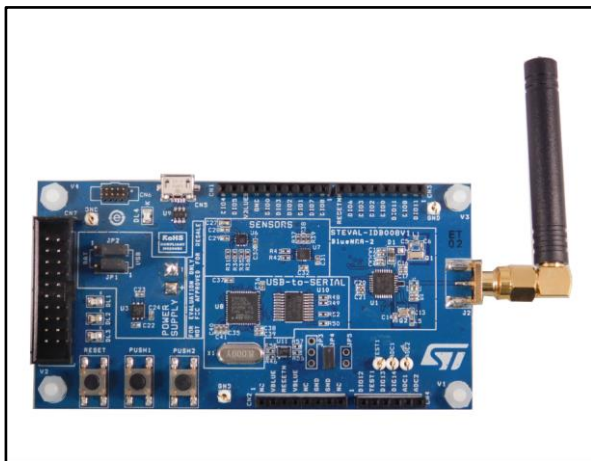


Evaluation platform based on the BlueNRG-2

Data brief



Features

- Bluetooth® SMART board based on the BlueNRG-2 Bluetooth low energy system on chip
- Associated BlueNRG-2 development kit SW package including firmware and documentation
- Up to +8 dBm available output power (at antenna connector)
- Excellent receiver sensitivity (-88 dBm)
- Very low power consumption: 7.7 mA RX and 8.2 mA TX at +0 dBm
- Bluetooth® SMART specification compliant, supports master, slave, simultaneous master-and-slave roles and Bluetooth low energy extended data length feature
- Integrated balun which integrates a matching network and harmonics filter
- SMA connector for antenna or measuring equipment
- 3 user LEDs
- 2 user buttons
- 3D digital accelerometer and 3D digital gyroscope
- MEMS pressure sensor with embedded temperature sensor
- RoHS compliant

Description

The STEVAL-IDB008V1 is an evaluation platform based on the BlueNRG-2, low power Bluetooth® smart system on chip with 256 KB Flash , 24 KB RAM, compliant with the Bluetooth SMART specification, supporting master, slave and simultaneous master-and-slave roles and Bluetooth low energy extended data length feature.

The STEVAL-IDB008V1 also provides a set of hardware resources for implementing a wide range of application scenarios: sensor data (accelerometer, pressure and temperature sensor), remote control (buttons and LEDs) and debug message management though USB virtual COM. Three power options are available (USB only, battery only, external power supply + USB) for high application development and testing flexibility.

1 Schematic diagrams

Figure 1: STEVAL-IDB008V1 circuit schematic (1 of 12)

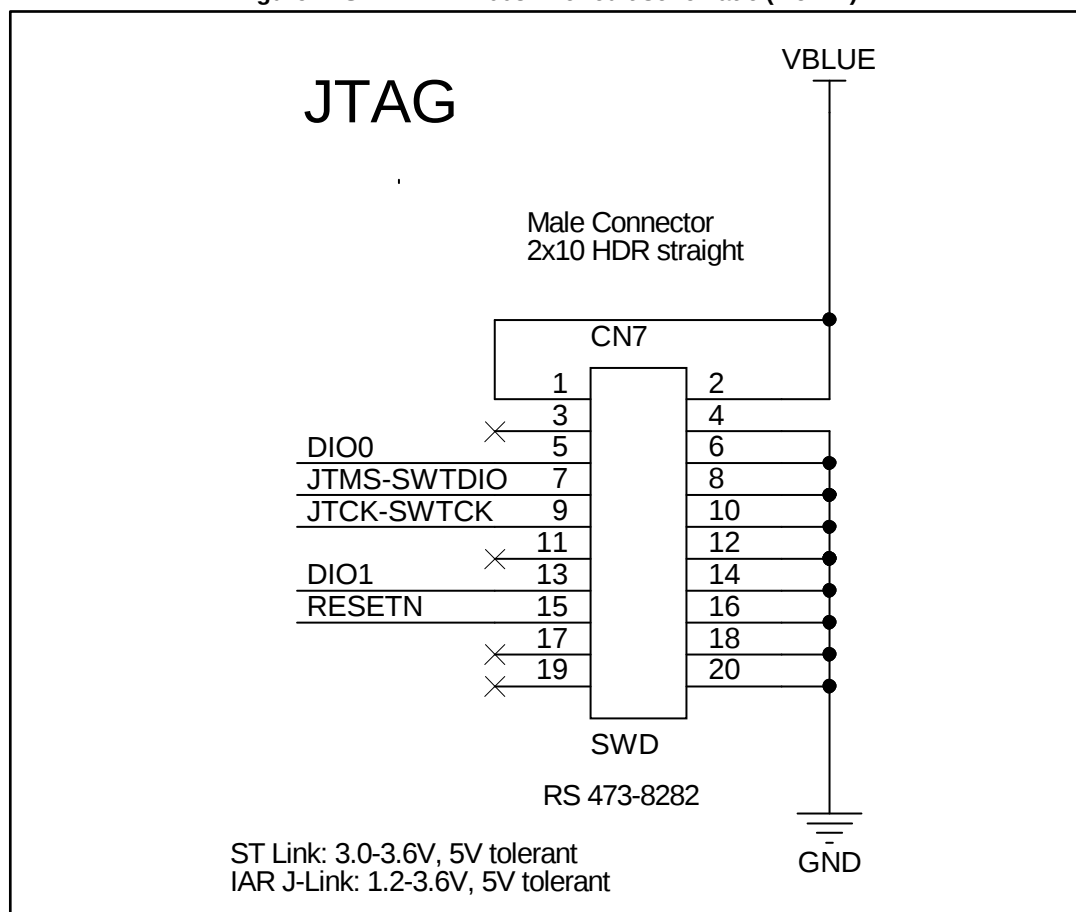


Figure 2: STEVAL-IDB008V1 circuit schematic (2 of 12)

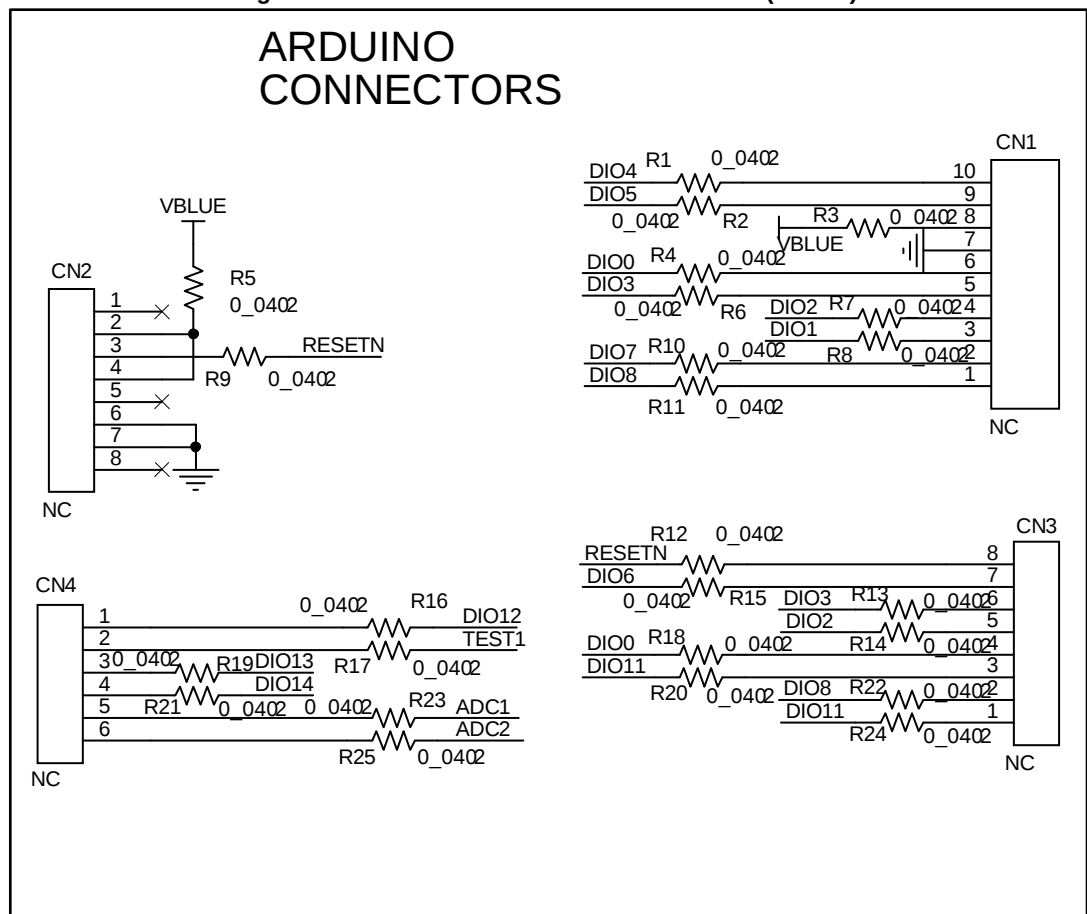


Figure 3: STEVAL-IDB008V1 circuit schematic (3 of 12)

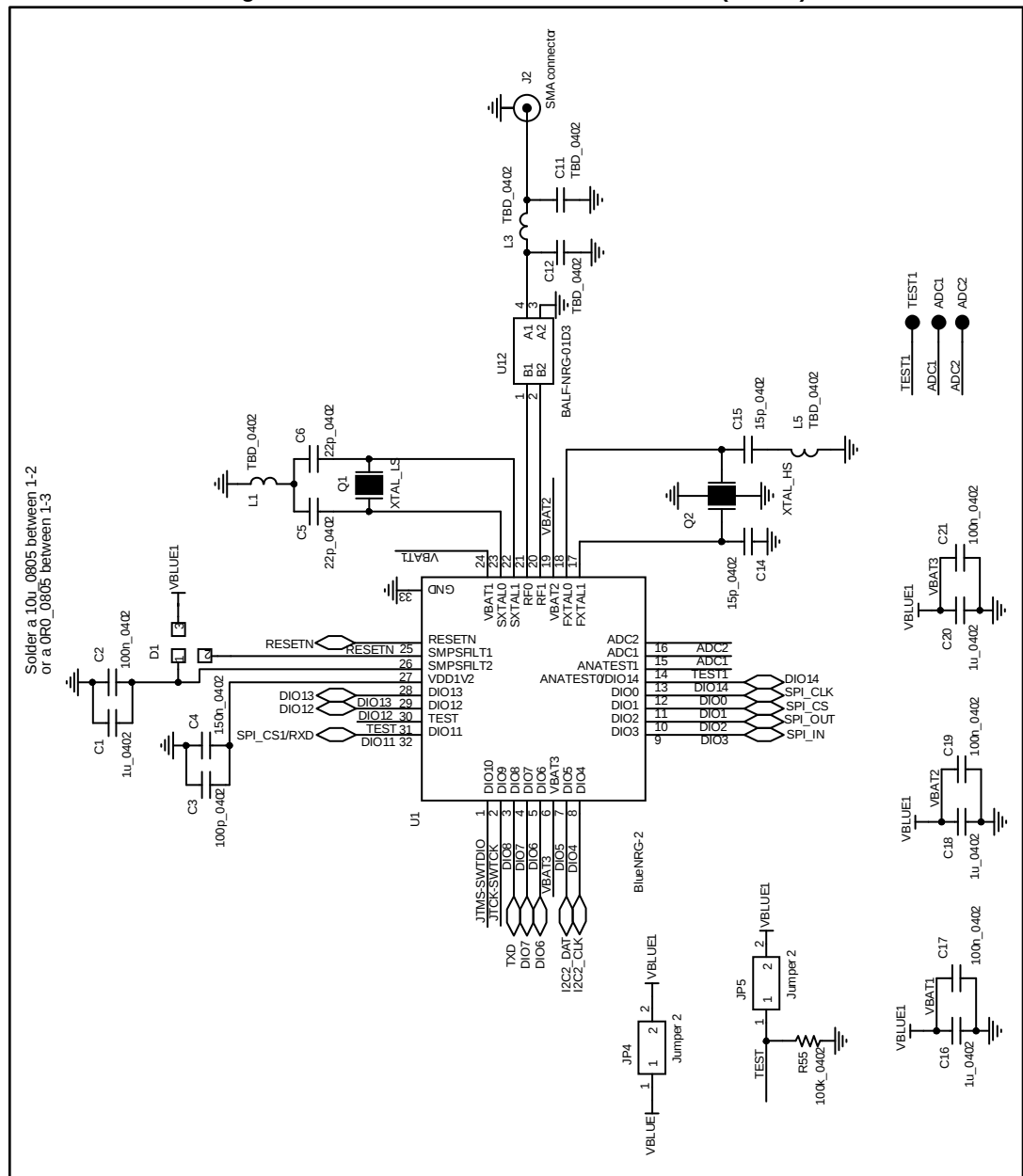


Figure 4: STEVAL-IDB008V1 circuit schematic (4 of 12)

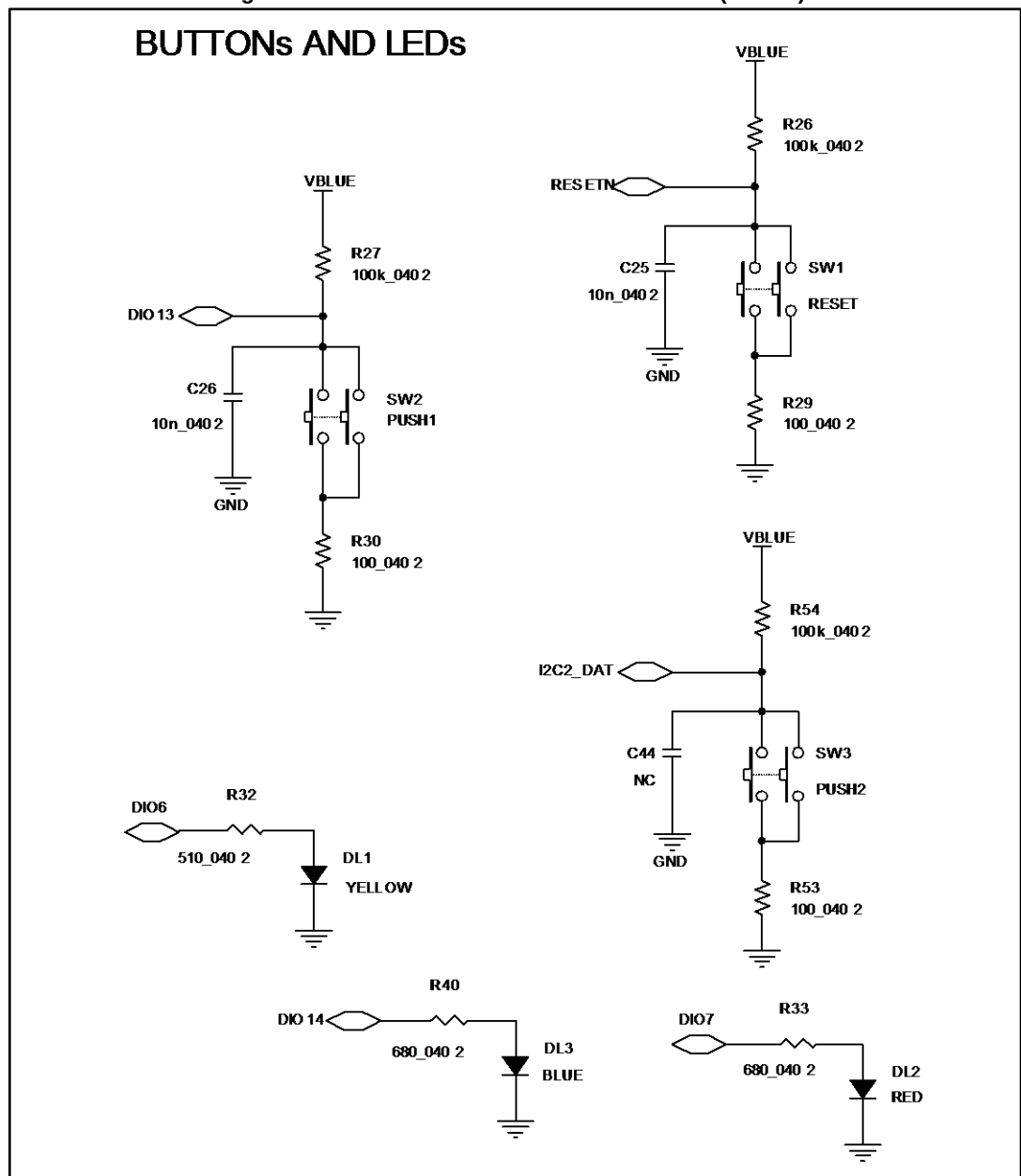


Figure 5: STEVAL-IDB008V1 circuit schematic (5 of 12)

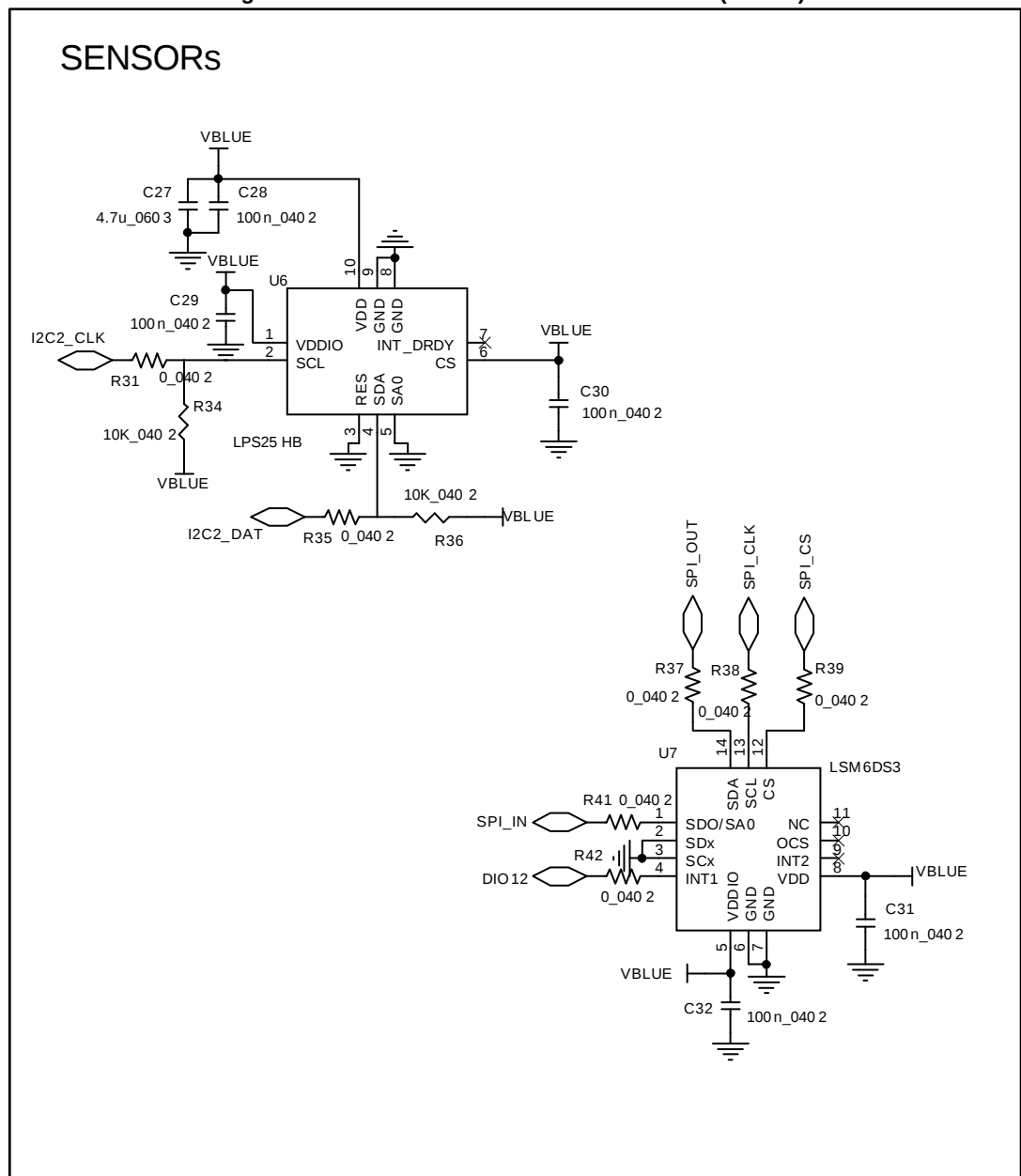


Figure 6: STEVAL-IDB008V1 circuit schematic (6 of 12)

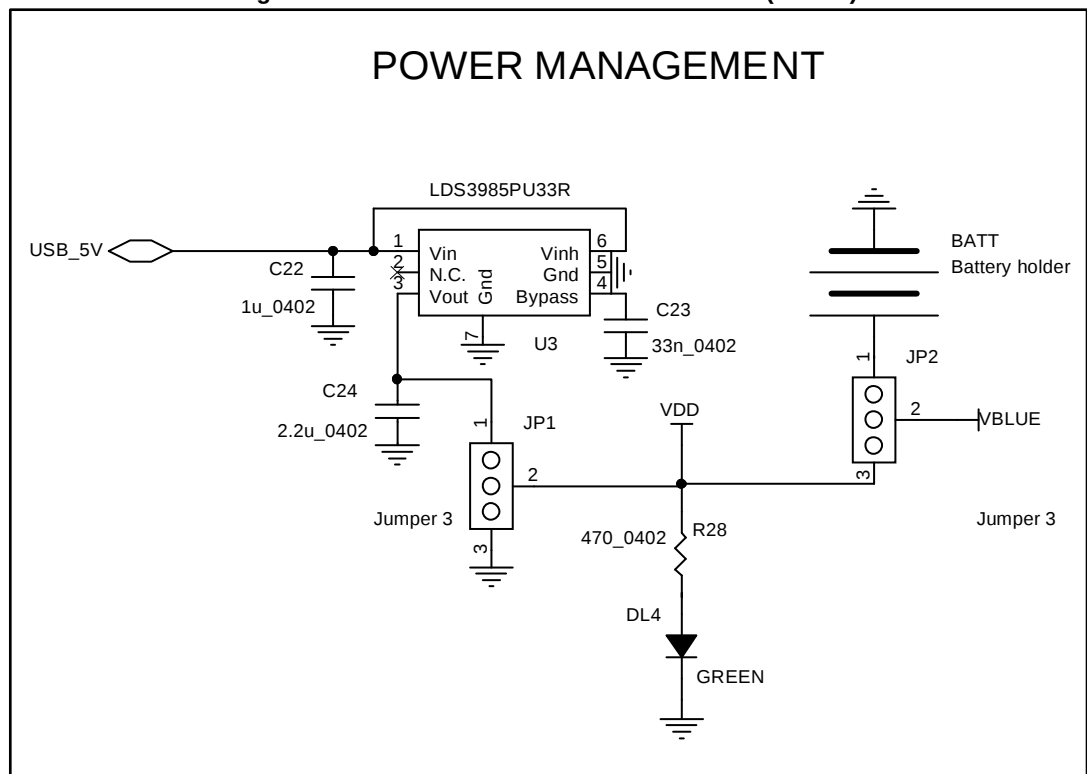


Figure 7: STEVAL-IDB008V1 circuit schematic (7 of 12)

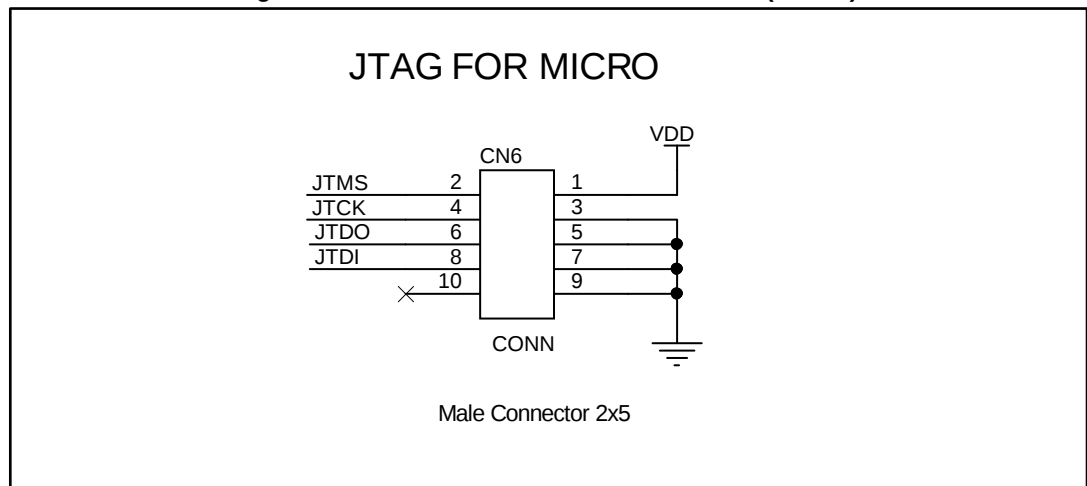


Figure 8: STEVAL-IDB008V1 circuit schematic (8 of 12)

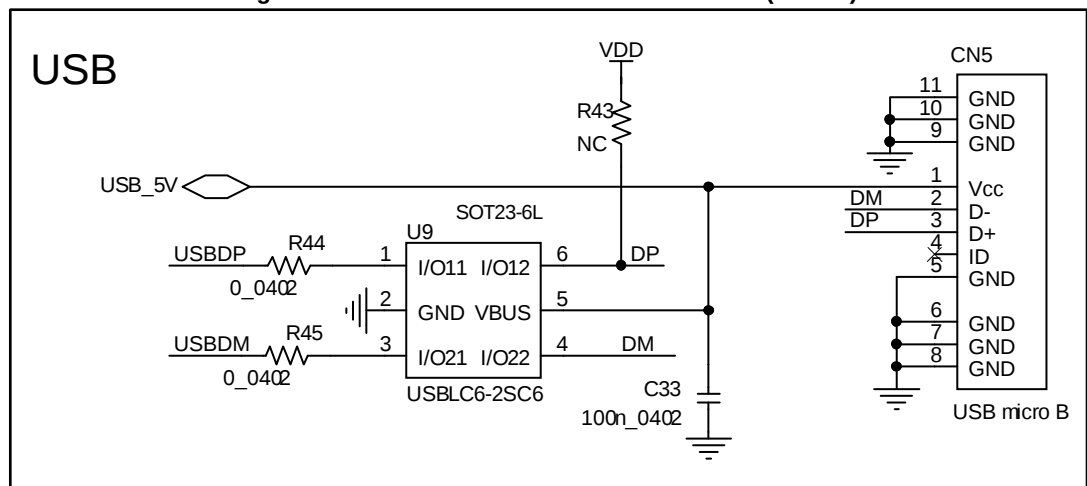


Figure 9: STEVAL-IDB008V1 circuit schematic (9 of 12)

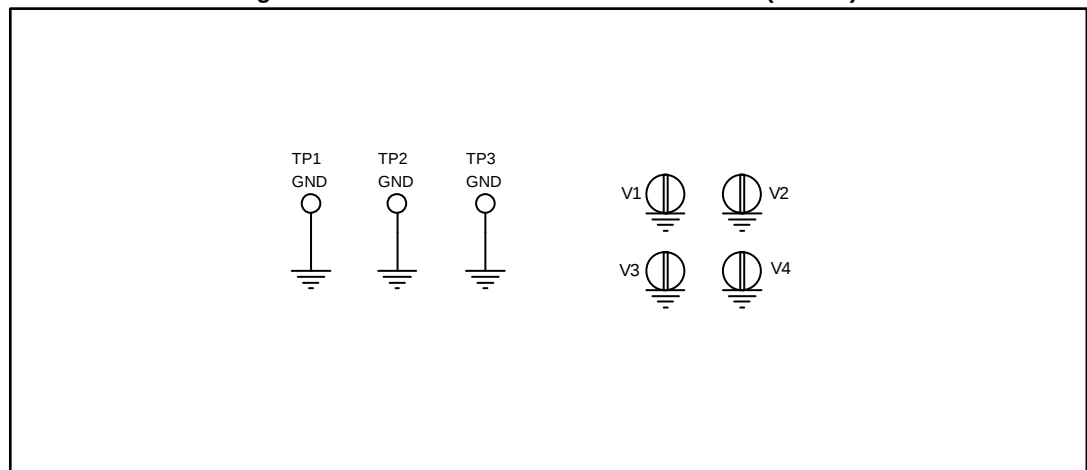
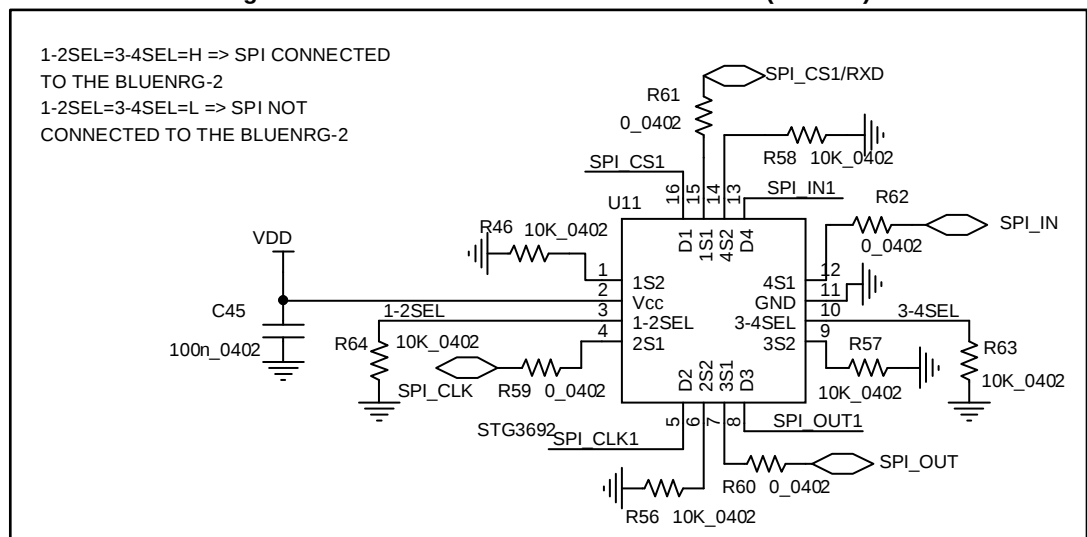


Figure 10: STEVAL-IDB008V1 circuit schematic (10 of 12)



LEVEL TRANSLATOR

The diagram illustrates a level translator circuit using the ST2378E IC (U10). The IC is a bidirectional level shifter with 20 pins. The connections are as follows:

- Pin 1 (VBLUE):** Connected to the VBLUE supply voltage.
- Pin 2 (VI):** Connected to the TXD signal through resistor R48 (0_0402).
- Pin 3 (I/OV11):** Connected to VDD.
- Pin 4 (I/OVcc2):** Connected to the SPI_CS1/RXD signal through resistor R49 (0_0402).
- Pin 5 (I/OV13):** Connected to VDD.
- Pin 6 (I/OVcc4):** Connected to VDD.
- Pin 7 (I/OV15):** Connected to VDD.
- Pin 8 (I/OVcc6):** Connected to the DIO7 signal through resistor R52 (0_0402).
- Pin 9 (I/OV17):** Connected to VDD.
- Pin 10 (Gnd):** Connected to ground.
- Pin 11 (OE):** Connected to ground through resistor R50 (10k_0402).
- Pin 12 (I/OVcc8):** Connected to VDD.
- Pin 13 (I/OV18):** Connected to VDD.
- Pin 14 (I/OVcc7):** Connected to VDD.
- Pin 15 (I/OV16):** Connected to VDD.
- Pin 16 (I/OVcc5):** Connected to VDD.
- Pin 17 (I/OV14):** Connected to VDD.
- Pin 18 (I/OVcc3):** Connected to VDD.
- Pin 19 (I/OVcc1):** Connected to VDD.
- Pin 20 (VDD):** Connected to the VDD supply voltage.

The IC is labeled U10 and ST2378E. The resistors are labeled R48, R49, R52, and R50, all with a value of 0_0402 or 10k_0402.

2 Revision history

Table 1: Document revision history

Date	Version	Changes
21-Jun-2017	1	Initial release.

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