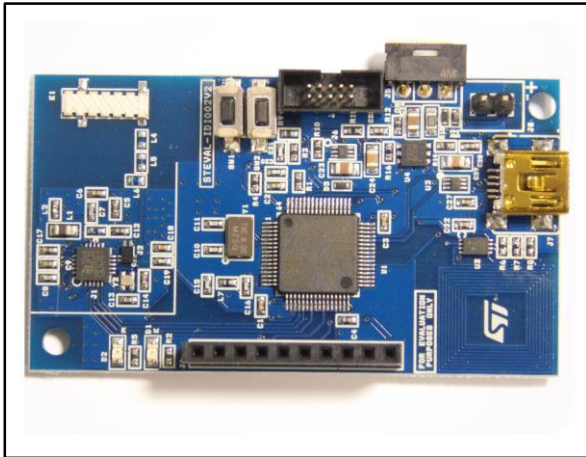

Multi-sensor RF platform 6LoWPAN & NFC interface board

Data brief

**Description**

The STEVAL-IDI002V2 is an evaluation platform for a 6LoWPAN multi-sensor RF network based on the SPIRIT1 Sub-GHz RF transceiver and the STM32L152RBT6 low power Cortex M3 microcontroller. The STM32L152RBT6 runs the open source 6LoWPAN Contiki stack. In addition to the 6LoWPAN stack, an application is provided which communicates with the various sensors on the STEVAL-IDI003V2 daughterboard through a 10-pin connector. Alternatively, this connector can be used to control/interface with any sensor or actuator. This 6LoWPAN multi-sensor RF board communicates with the STEVAL-IDI004V2 IoT wireless bridge evaluation board.

Features

- SPIRIT1-based 868 MHz RF platform
- Low power STM32L series microcontroller
- Contains the M24LR64E dual EEPROM
- Can be powered by USB or Li-Ion battery
- Runs the 6LoWPAN Contiki stack
- SPIRIT1:
 - Supports from 150 MHz to 956 MHz
 - 9 mA receiving & 21 mA transmitting at +11 dbm
 - Built-in AES 128-bit encryption
 - sensitivity up to -118 dbm
- To be used with multi-sensor board STEVAL-IDI003V2
- Can be used to evaluate/develop applications for IoT
- Android App available to connect to STEVAL-IDI004V2
- RoHS compliant

1 Schematic diagrams

Figure 1: STEVAL-IDI002V2 circuit schematic (1 of 7)

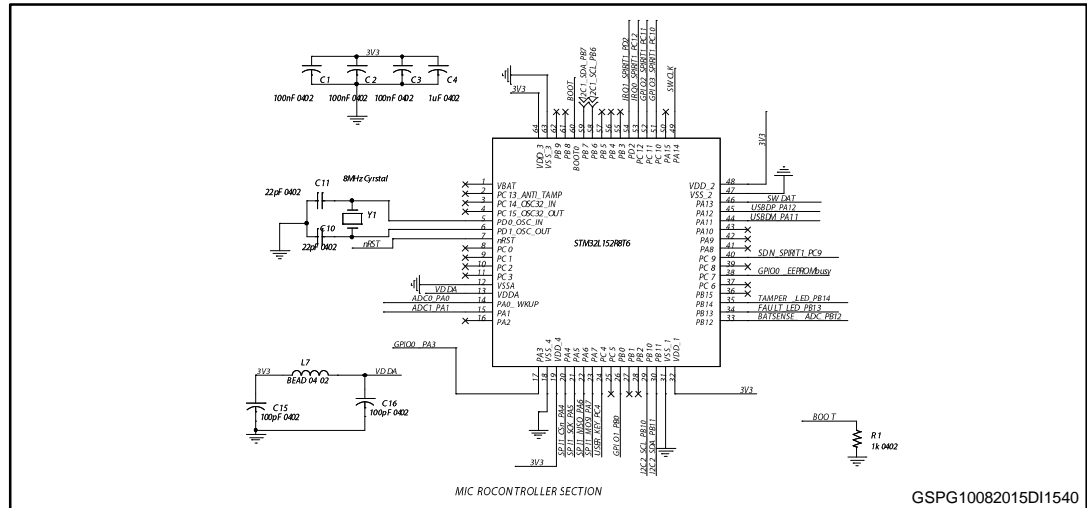
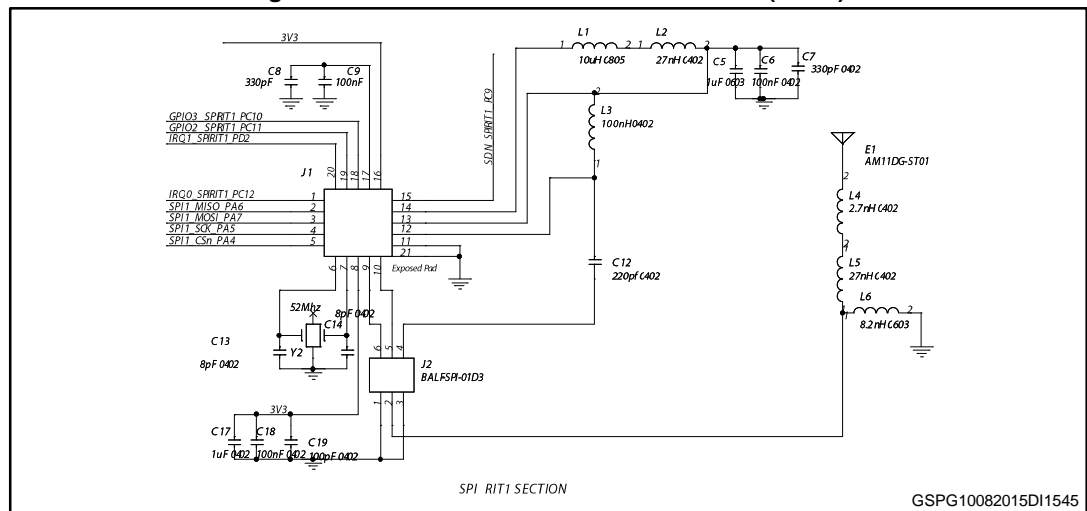


Figure 2: STEVAL-IDI002V2 circuit schematic (2 of 7)



The diagram shows two connectors and their connections. On the left, a 5-pin SWD connector (J3) is connected to a daughter board connector (J4). The connections are as follows:

- Pin 1 of J3 is connected to a 3V3 supply.
- Pin 2 of J3 is connected to SWD_{DAT}.
- Pin 4 of J3 is connected to SWD_{CLK}.
- Pin 6 of J3 is connected to a 1k 0402 resistor, which is then connected to nRST.
- Pin 8 of J3 is connected to nRST.
- Pin 9 of J3 is connected to ground.

The daughter board connector (J4) has 10 pins with the following labels:

- Pin 1: ADCL PA1
- Pin 2: ADCO PA0
- Pin 3: GPIO1 PB0
- Pin 4: GPIO0 PA3
- Pin 5: J2C2 SDA PB11
- Pin 6: J2C3 SCL PB10
- Pin 7: J2C1 SDA PB7
- Pin 8: J2C1 SCL PB6
- Pin 9: 3V3
- Pin 10: Ground

GSPG10082015DI1550

RESET, LSERKEY & STATUS LED's

GSPG10082015DI1555

BATTERY CONNECTOR, CHARGING & VOLTAGE REGULATOR SECTION

The schematic diagram illustrates the electrical connections for the battery section. Key components and their connections include:

- Input and Protection:** VIN is connected to a 100k 0402 resistor (R10) and a 10uF 0805 capacitor (C23). A diode (D3) protects the input line.
- Battery Holder (J8):** A COIN CELL BATTERY HOLDER with pins 1 (VBAT+), 2 (VBAT-), and 3 (GND).
- Switch (J5):** A SWITCH C/N/OFF that controls the VBAT+ line.
- Voltage Divider:** A 1M 0402 resistor (R11) and a 47K 0402 resistor (R12) connected to VBAT+ and GND, providing a BATSENSE signal to the ADC PB12.
- Filtering and Protection:** A 10uF 0805 capacitor (C26) and a diode (D4) are connected to the VBAT+ line. A 10uF 0805 capacitor (C24) is connected to the VBAT- line.
- Voltage Regulator (U4):** An STBC08PMR regulator with pins 1 (VBAT+), 2 (BAT), 3 (GN D), 4 (CHRG), 5 (PR OG), 6 (VC C), and 7 (GN D). It is connected to a 15k resistor (R16) and a 10uF 0805 capacitor (C29) for output filtering.
- Output:** The regulated output is labeled VBUS.

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Figure 6: STEVAL-IDI002V2 circuit schematic (6 of 7)

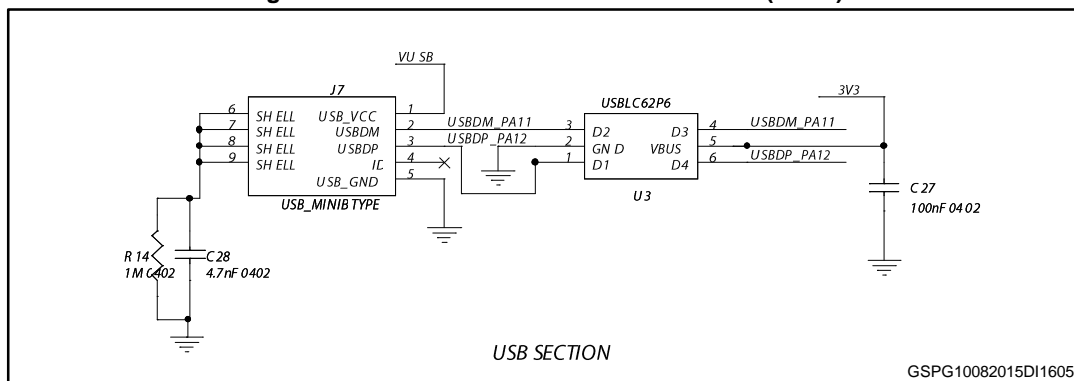
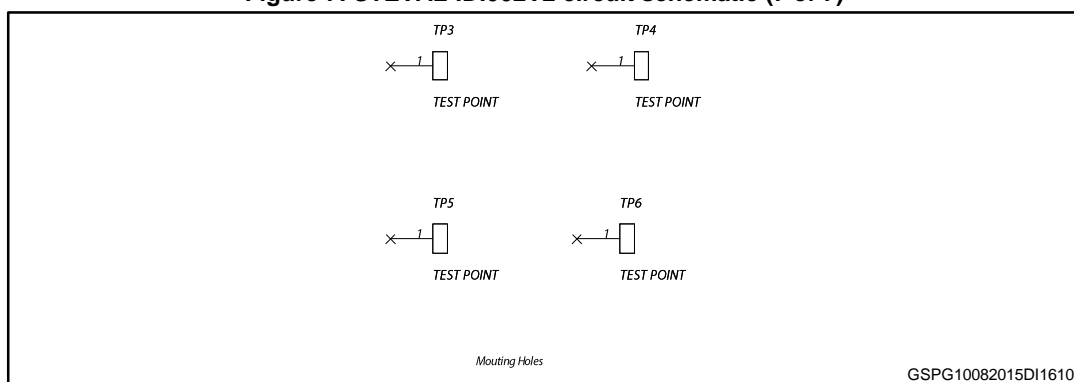


Figure 7: STEVAL-IDI002V2 circuit schematic (7 of 7)



2 Revision history

Table 1: Document revision history

Date	Version	Changes
06-Oct-2015	1	Initial release.

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