
Low data-rate, short-range USB dongle transceiver in 433 MHz band based on the SPIRIT1

Data brief

**Description**

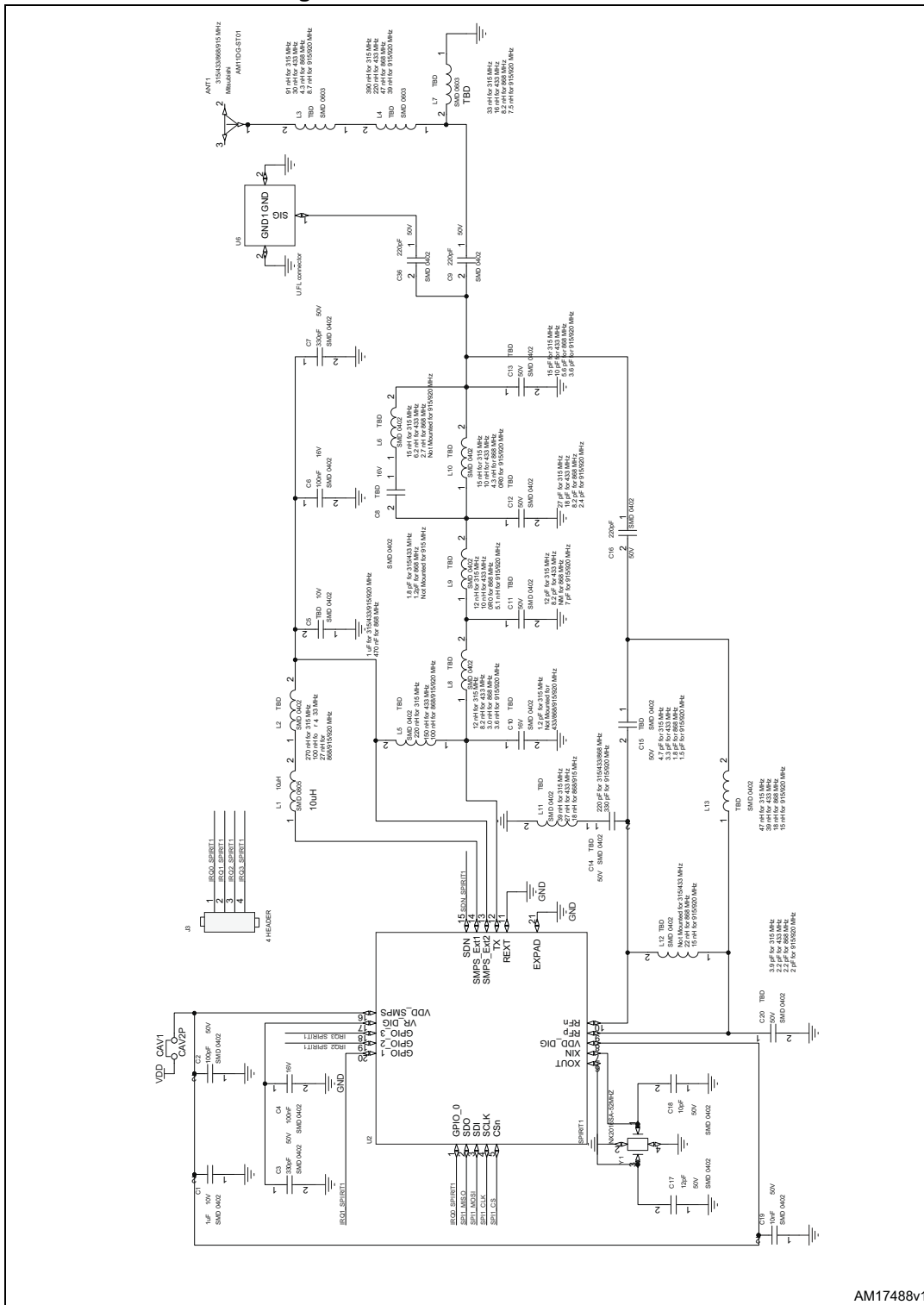
The STEVAL-IDS001V3 demonstration board is based on the SPIRIT1, which is a sub-GHz low power, low data-rate transceiver suitable for ISM bands and Wireless M-BUS. The board is equipped with an STM32L low power microcontroller to control the SPIRIT1. The board also features a USB connector for PC GUI interaction and firmware update. An optional JTAG connector (not mounted) allows the development of specific firmware on the microcontroller.

Features

- SPIRIT1 low power sub-GHz transceiver integrated in a USB dongle for direct PC connection
- External components tuned for 433 MHz band
- STM32L microcontroller
- Suitable for Wireless M-BUS systems
- Associated SPIRIT1 development kit includes: documentation, firmware for STM32L and GUI
- Optional debug connector (not mounted)
- USB interface
- Modulation schemes: 2-FSK, GFSK, MSK, GMSK, OOK, and ASK
- Air data rate: from 1 to 500 kbps
- Very low power consumption (9 mA RX and 21 mA TX at +11 dBm)
- Excellent receiver sensitivity performance (up to -118 dBm)
- Low duty cycle RX/TX operation mode
- Automatic acknowledgment, retransmission, and timeout protocol engine
- AES 128-bit encryption co-processor
- SPI interface for microcontroller
- RoHS compliant

1 Schematic diagram

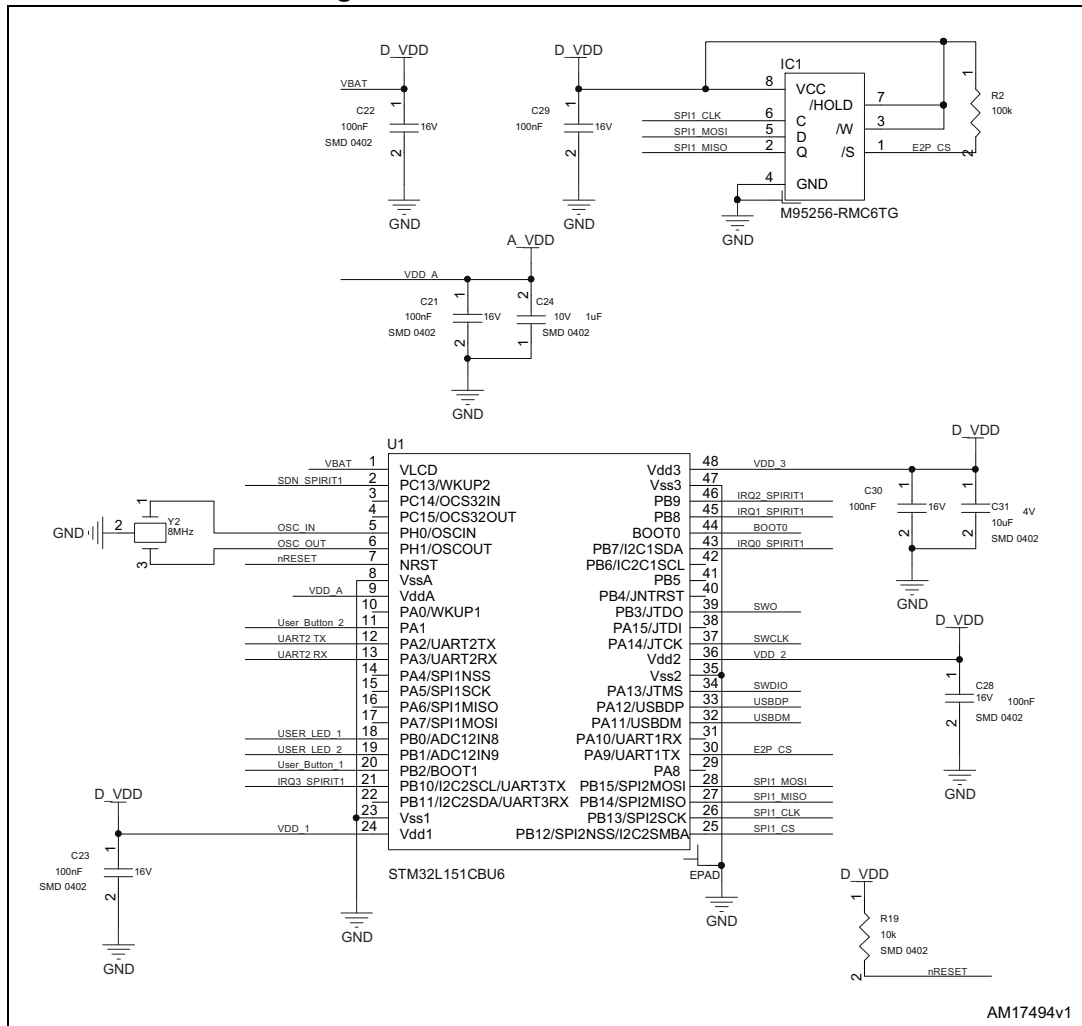
Figure 1. SPIRIT1 circuit schematic



AM17488v1



Figure 2. Oscillator circuit schematic



AM17494v1

Figure 3. SWD circuit schematic

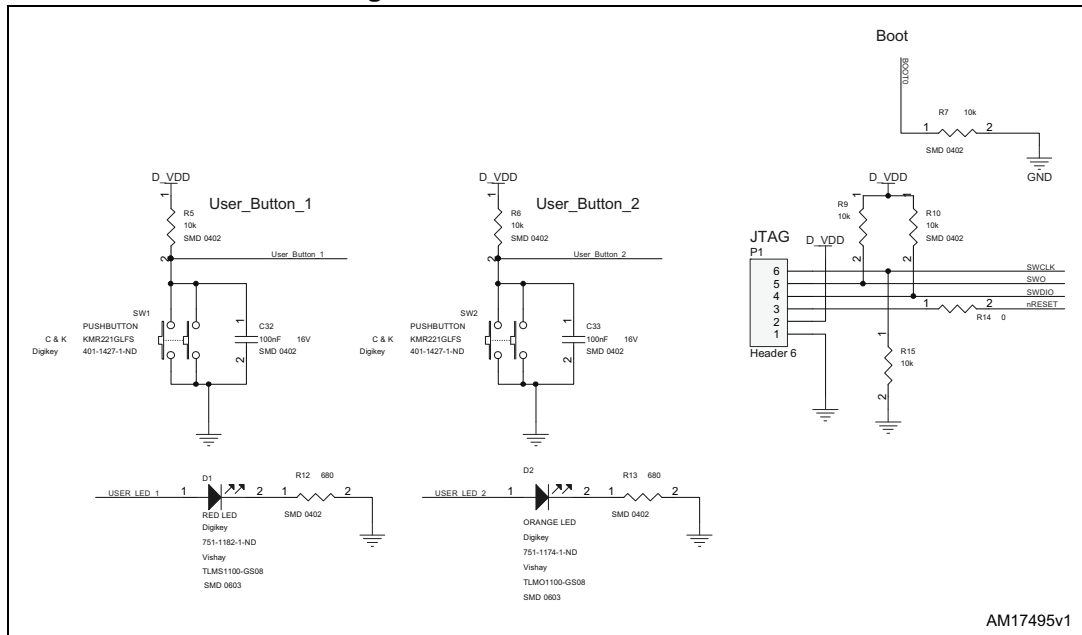


Figure 4. USB circuit schematic

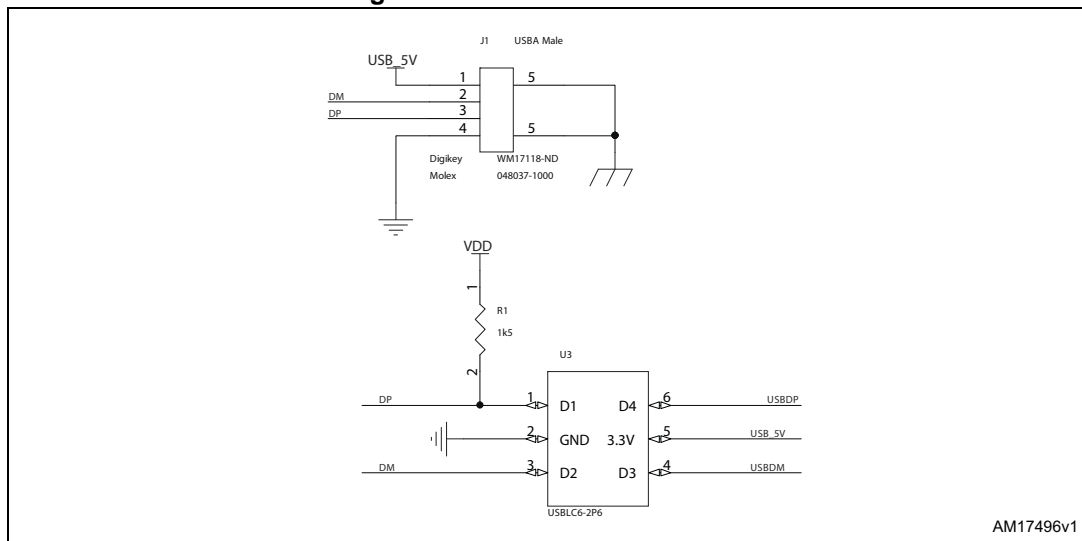
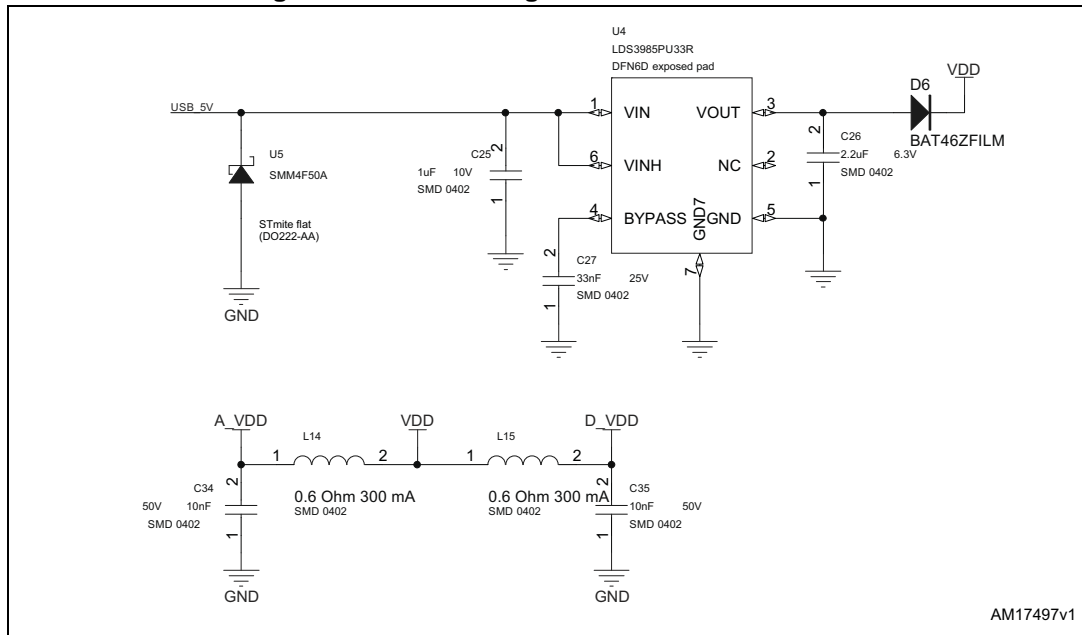


Figure 5. Power management circuit schematic



AM17497v1

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
28-Jun-2013	1	Initial release.

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