

## Multi-lead electrocardiogram (ECG) and body impedance demonstration board

Data brief

### Features

- Two power supply options: USB connector and external power connector
- Up to three HM301D: 12-lead ECG with bio-impedance measurement
- STG3692 low voltage high bandwidth quad SPDT switch to manage the HM301D SPI
- STM32F103CBT6: low power high performance 32-bit microcontroller powered by ARM<sup>®</sup> Cortex<sup>™</sup>-M3
- ESDALCL6-2SC6 provides ESD protection with very low capacitance
- USB 2.0 full-speed connection
- SWD/JTAG connector to program the MCU
- 37 debug test points to interact electrically with the ICs mounted on the board
- Reset button
- User LED and button
- Graphical user interface to manage HM301D and display data outputs
- Device firmware upgrade (DFU) procedure for easy upgrade of the STM32 firmware
- RoHS compliant



Any board can be used with a dedicated PC graphical user interface to demonstrate each of the various configurations.

### Description

The STEVAL-IME002V1 demonstration board is designed around the new HM301D diagnostic quality analog front end for bio-electric sensors and bio-impedance measurements.

This board is designed to demonstrate the use of HM301D in electrocardiographs (or patient monitoring systems).

It hosts a 32-bit microcontroller from the STM32 family which manages the SPI protocol of the HM301D, and the USB communication from/to the PC.

# 1 Schematic diagrams

Figure 1. HM301D section

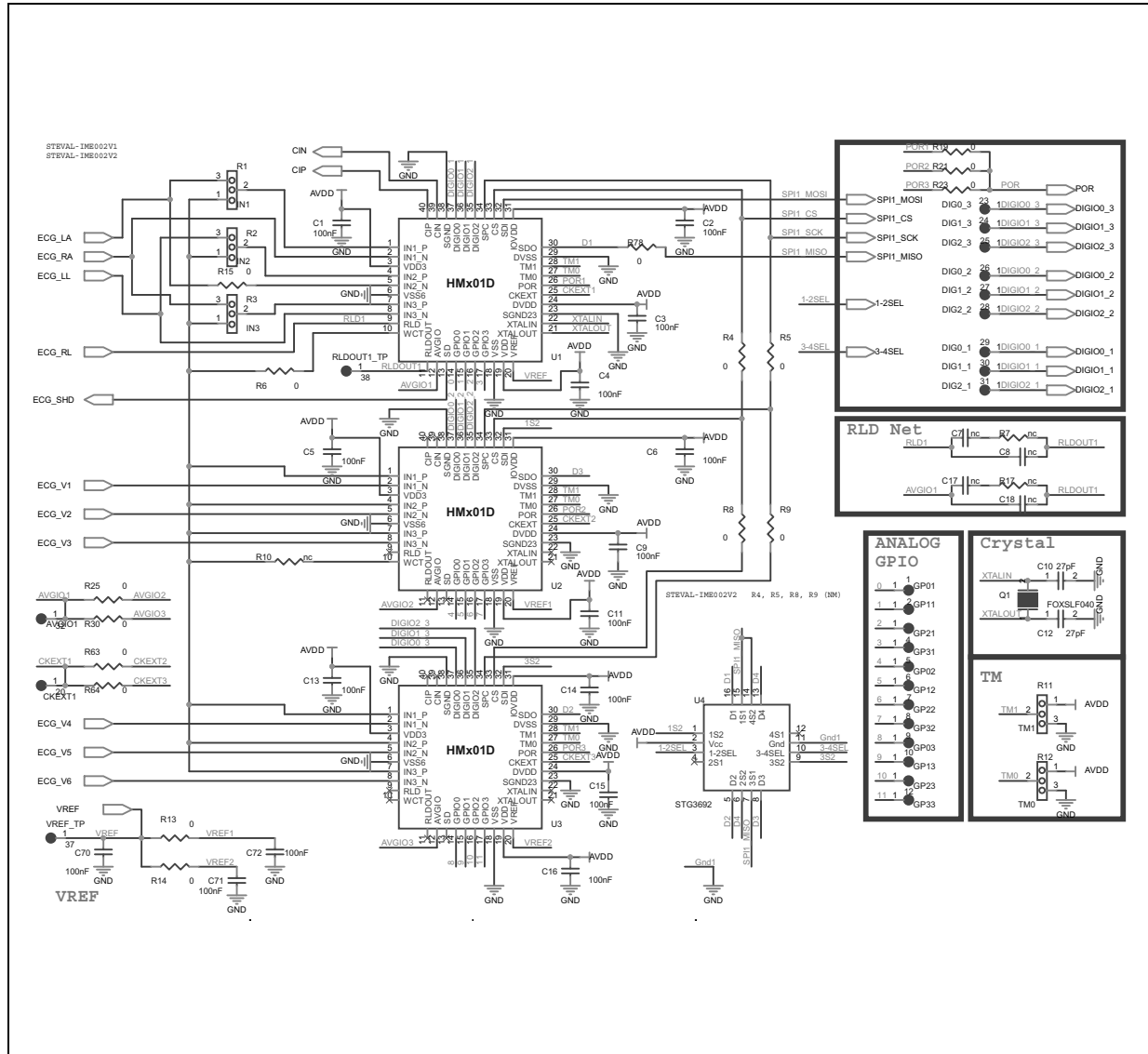


Figure 2. ECG connector section

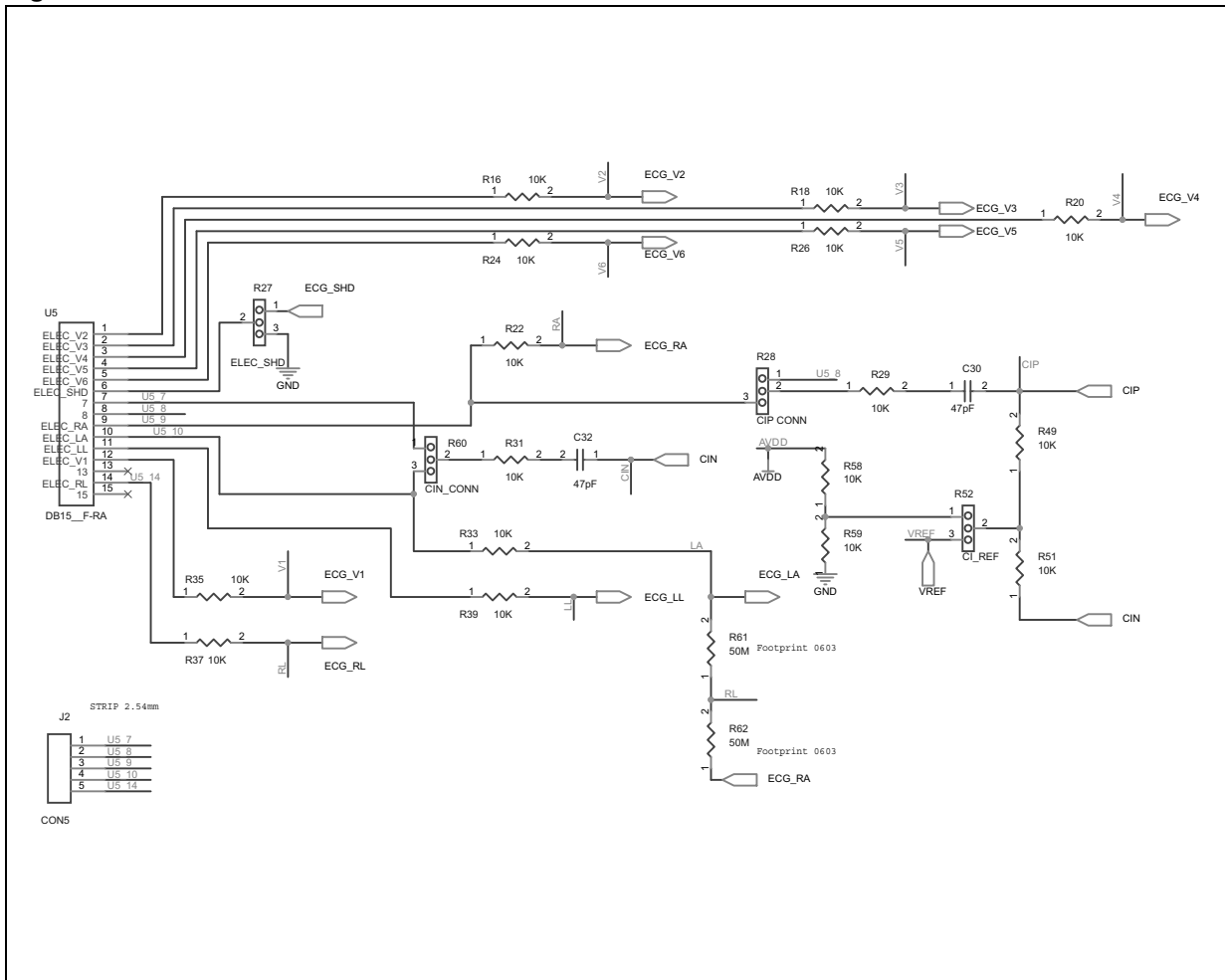


Figure 3. ESD protection

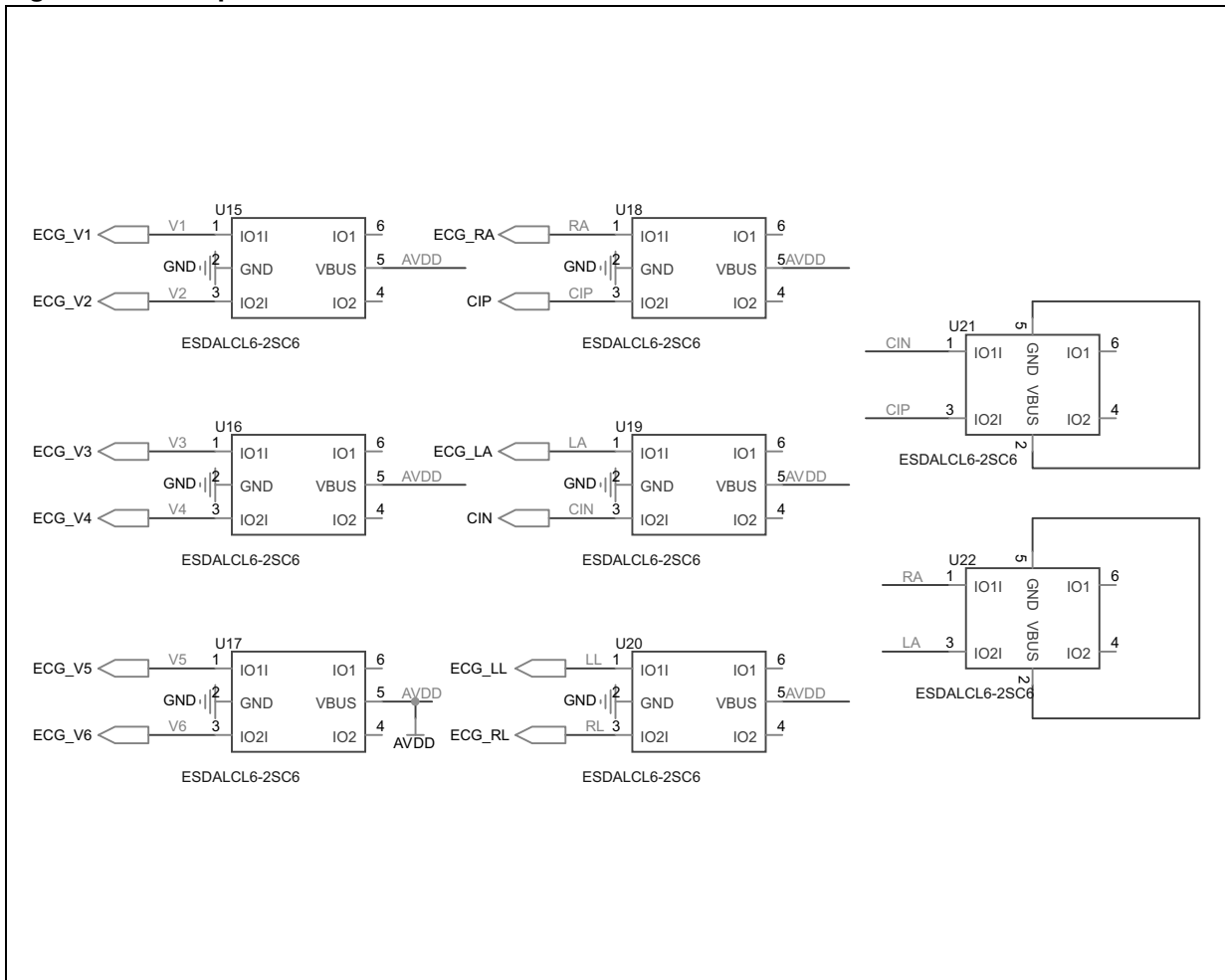


Figure 4. Connectors and buttons

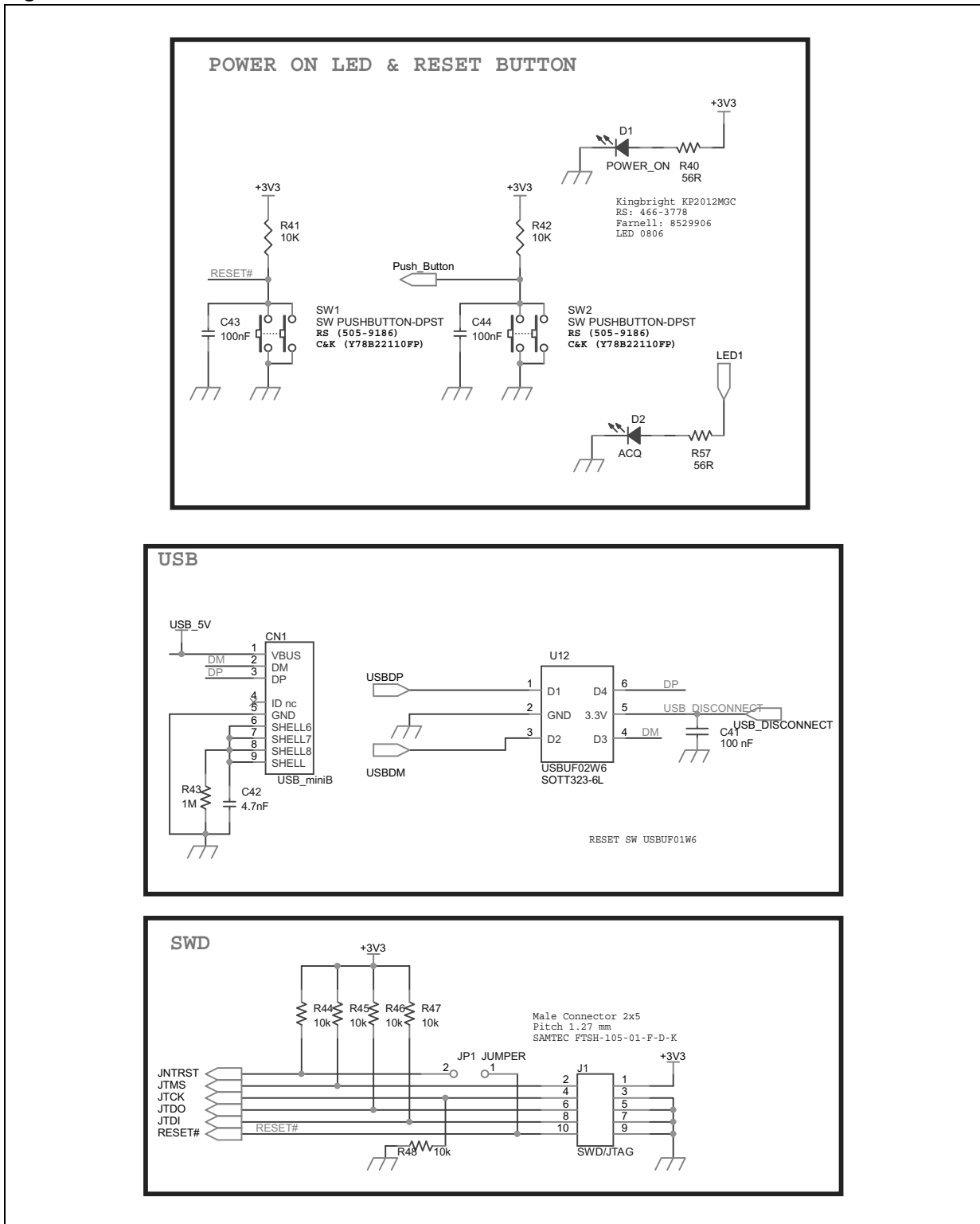


Figure 5. Microcontroller

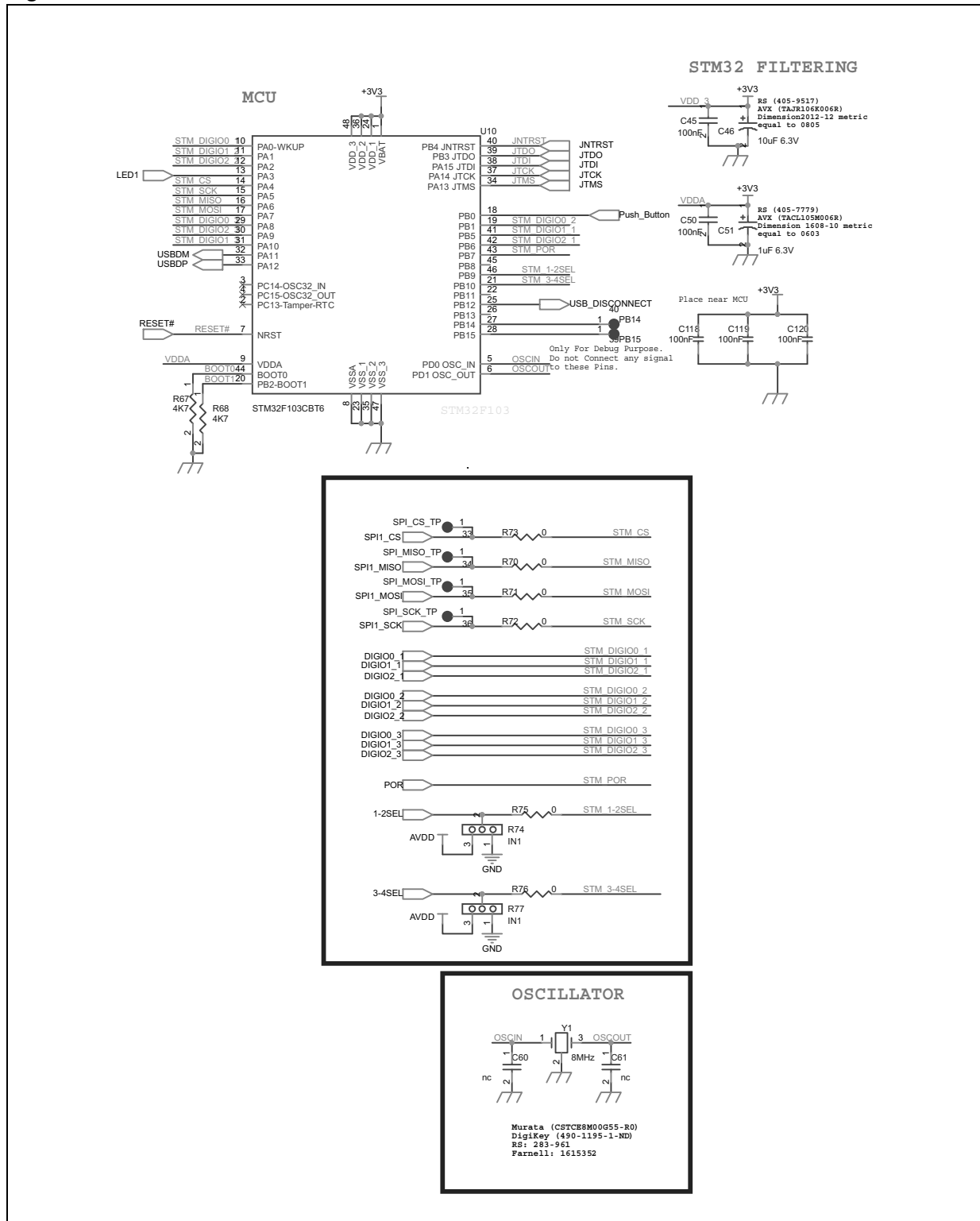
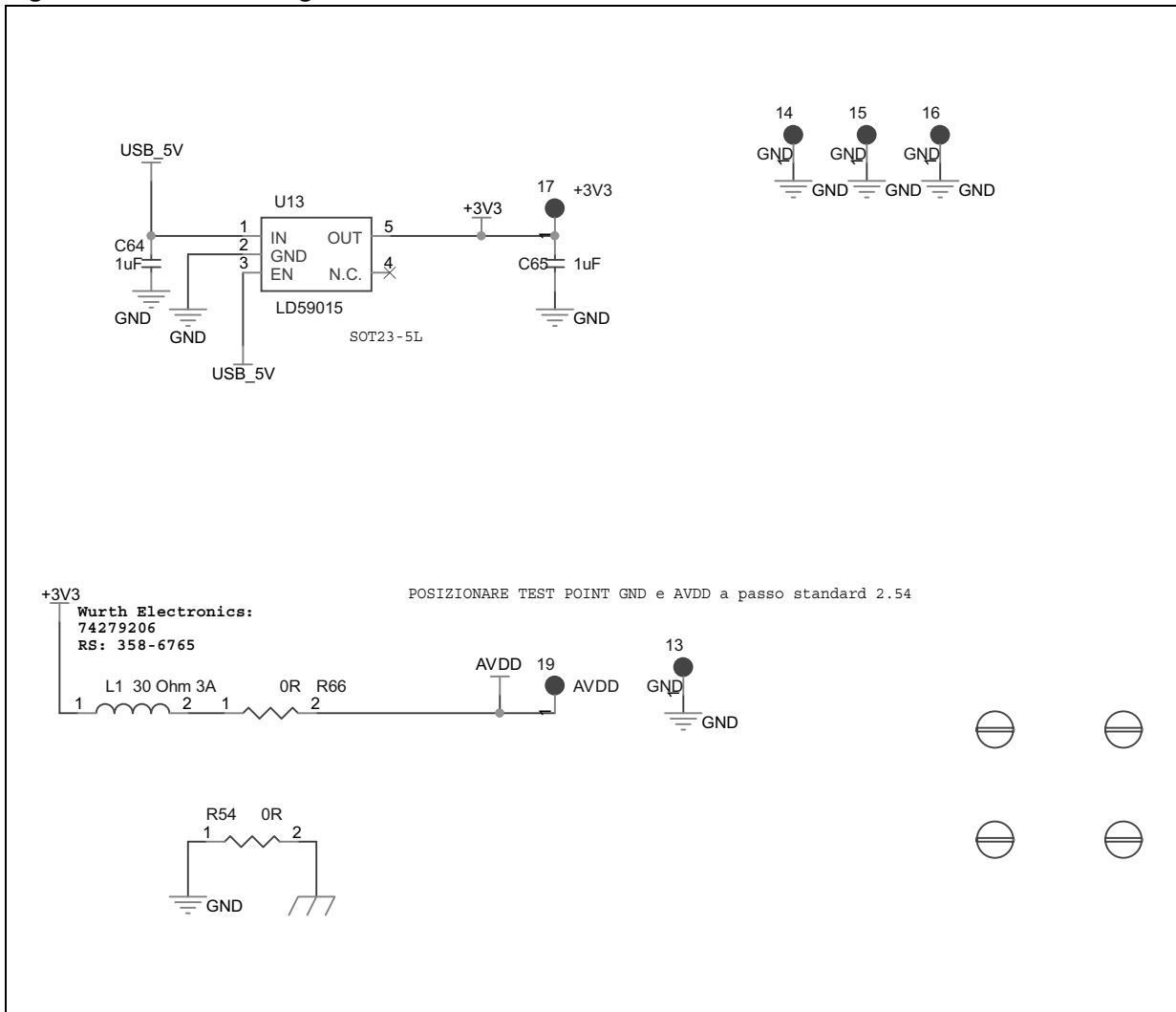


Figure 6. Power management



## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
11-Feb-2013	1	Initial release.



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