STEVAL-IPR002V1

Data logger and event logger based on M24LR64-R EEPROM

Features

- Evaluation system demonstrating dual communication interfaces (RF and I^{2}C) of M24LR64 EEPROM
- Demonstration board for recording temperature, motion (MEMS), humidity and light (photo diode) parameters in a dual EEPROM M24LR64-R
- Two operation modes:
  - RFID mode for reading and writing the EEPROM using an RFID kit (RFID starter kit reader used)
  - I^{2}C read and write using a microcontroller (STM8L used for demonstration)
- An inductive antenna of 20 mm x 40 mm size for RF communication with starter kit RFID reader
- Graphical user interface to evaluate the logged information from EEPROM
- The board also works with an Android NFC application called DatalogV3
- RoHS compliant

Description

The STEVAL-IPR002V1 is based on the M24LR64-R, a dual interface EEPROM which targets a wide range of applications such as industrial or medical equipment and consumer electronics.

RFID (13.56 MHz) and I^{2}C serial communication are the two interfaces available with EEPROM. This demo is an autonomous battery-powered RFID tag with logging capability for recording and storing the sensor data of the following sensors: temperature sensor, humidity sensor, vibration, freefall, tamper and light.

The value of different sensors is stored inside the EEPROM and then at later stages these logged values can be retrieved over the RFID interface

STEVAL-IPR002V1
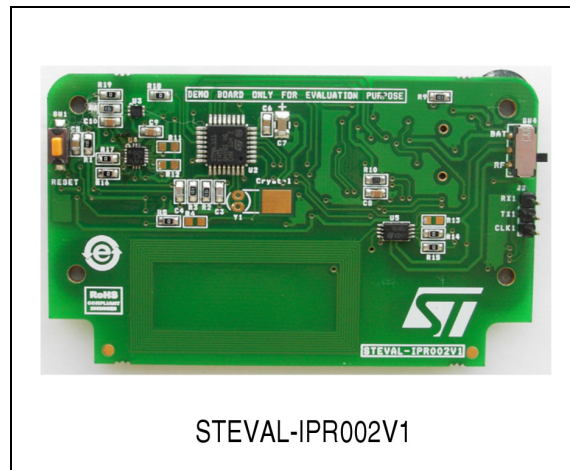
for evaluation. This data logger can be inserted along with any transported article and this article

can then be tracked throughout the supply chain, and the data can be scanned at any point using an RFID reader.

This system can operate in two modes: data logger mode and event logger mode.

In data logger mode, the system reads all the sensor values once every second and stores the same inside EEPROM. The system stops logging the data when the allocated memory for a particular sensor gets filled.

In event logger mode, the system configures the threshold limits for each sensor. Whenever the sense value is outside the set threshold limits, it is stored in the EEPROM.

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1 Schematic circuit

Figure 1. Schematic circuit
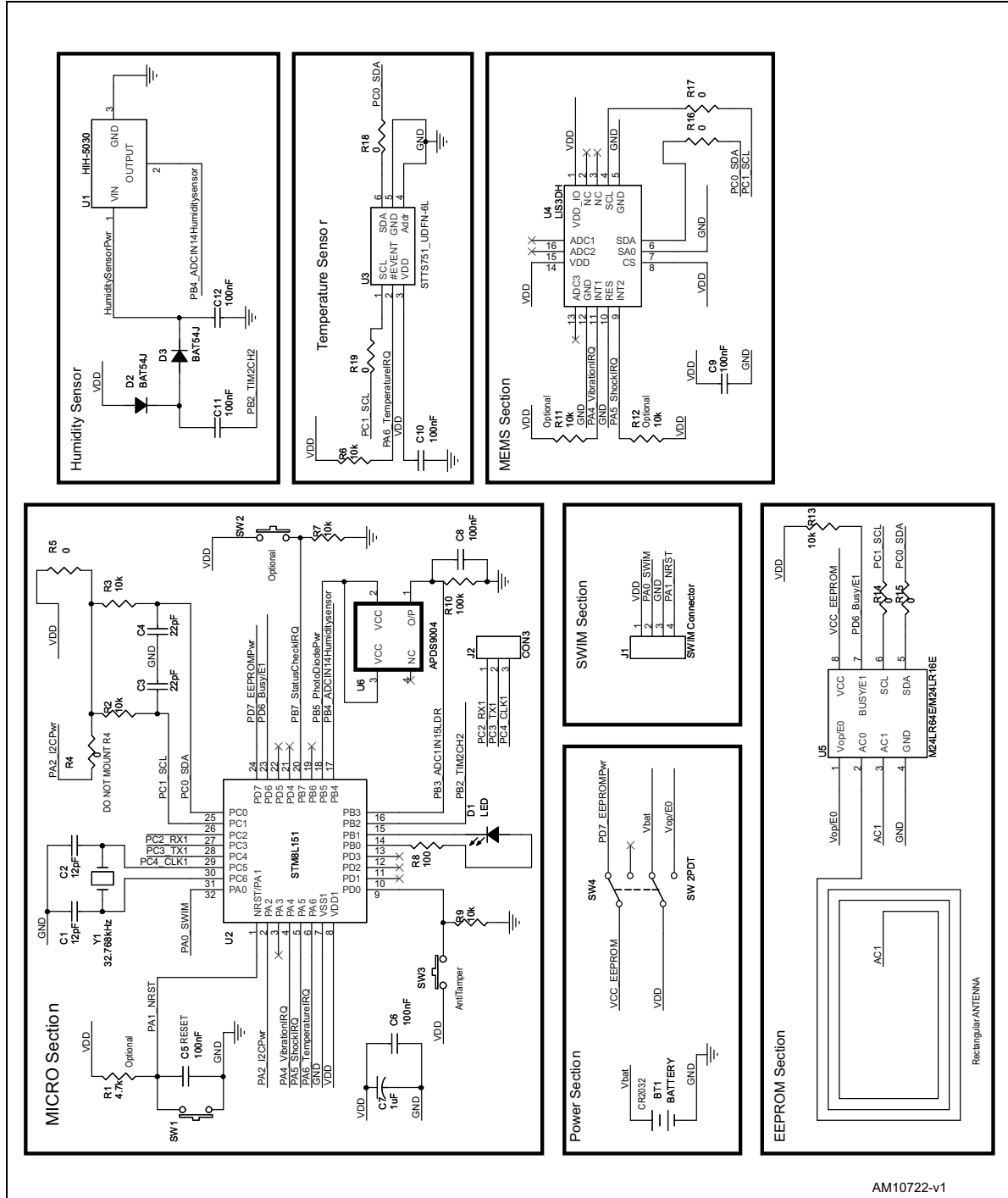
AM10722-v1

2 Revision history

Table 1.   Document revision history

Date	Revision	Changes
14-Nov-2011	1	Initial release.
15-Dec-2011	2	Minor text changes in cover page to improve readability.
12-Mar-2012	3	Modified: features.

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