



STEVAL-MKI081V1

MEMS demonstration board based on the LPR403AL
(analog output 2-axis gyroscope)

Data brief

Features

- Two working modes:
 - analog (AWM)
 - digital (DWM)
- RoHS compliant

Description

The STEVAL-MKI081V1 demonstration board is designed to provide the user with a complete, ready-to-use platform for demonstration of the LPR403AL product family.

The kit includes a sensing element and an IC interface capable of translating information from the sensing element into a measured signal that can be used for external applications.

In addition to the MEMS sensor, the demonstration board uses an ST7 microcontroller which functions as a bridge between the sensor and the PC. This makes it possible to download the graphical user interface (GUI) from the website or to use dedicated software routines for customized applications.

The STEVAL-MKI081V1 demonstration board has been designed for use in two working modes: analog and digital.

In analog mode (AWM) the microcontroller on the board is disabled and the analog outputs of the device are available to the user on a dedicated connector. This is the default working mode when the power supply is applied either through the USB connector or through the supply connector.

In digital mode (DWM) the microcontroller on the board is enabled and allows the user to digitally acquire the output signals of the device, to see them on the PC through the dedicated GUI, and to control the control pins of the device.

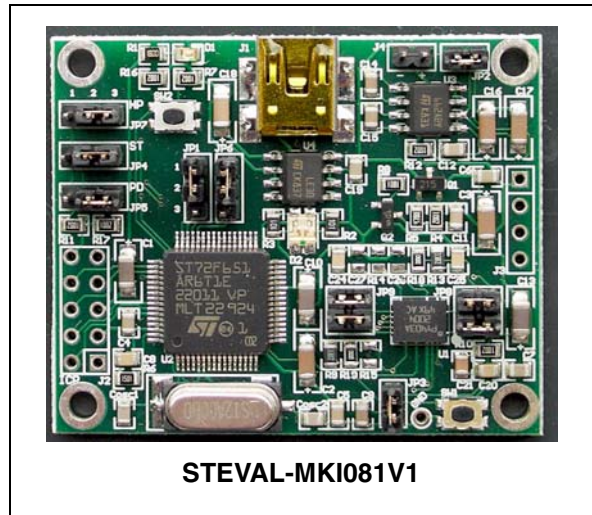


Figure 1. Schematic circuit

The schematic diagram illustrates the internal circuitry of the AM07290v1. At the core is the ST72766 MB171E microcontroller (U2), which is interfaced with a power supply section (U1) for Vcc and Vref. It also manages current measurement (JP3) and voltage measurement (JP2) signals. The microcontroller's I/O pins are connected to a 16x2 LCD display (U3) and various status LEDs (D1, D2). The circuit includes numerous passive components such as resistors (R1-R16), capacitors (C1-C17), and a crystal oscillator (U3). A switch (SW1) is used for mode selection, and a potentiometer (P1) is connected to the Vref pin. The diagram is a detailed representation of the hardware design for this specific module.

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
18-Aug-2010	1	Initial release.

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