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Eval Kit Manual

AS5601

Standard Board

AS5601-SO_EK_ST

Table of Contents

1 Introduction

The evaluation kit allows an easy and fast evaluation of the AS5601 rotary magnetic position sensor in the lab or together with an existing system. It includes all required material to evaluate the product features.

The small adapterboard is fully assembled with AS5601 position sensor and its necessary external components. All relevant signals are available on a dual-row 2.54mm 4-pin header footprint and can be easily wired to an existing application.

The USB I&P Box is an easy-to use programming and demonstration tool. It can be used to configure the device and to program a configuration.

A small magnet holder and a knob with a magnet attached on its shaft is enclosed to show the functionality of the AS5601.

The AS5601 is an easy-to-program magnetic rotary position sensor with incremental quadrature (A/B) and 12-bit digital outputs (I^2C). Additionally, the PUSH output indicates fast airgap changes between the AS5601 and magnet which can be used to implement a contactless pushbutton function in which the knob can be pressed to move the magnet toward the AS5601. Based on planar Hall technology, this device measures the orthogonal component of the flux density (Bz) from an external magnet while rejecting stray magnetic fields.

The I^2C interface is used for configuration and user programming of non-volatile parameters in the AS5601.

1.1 Kit Content

This kit contains following material listed in Table 1. Additional material can be found on our webpage.

Table 1:
Kit Content

No.	Item	Info
1	USB I&P Box	Programming and Interface Box
2	AS5601-SO_EK_AB	Adapterboard including reference magnet
3	RMH05-DK-XX-1.0	Rotary Magnet Holder with Knob

For a detailed description of each item please refer to the specific manual. All manuals are available online on the amsAG website.

2 Getting Started

The AS5601 adapter board is ideal for rapid setup of a contactless potentiometer because it includes all necessary tools to operate and configure the AS5601.

This first steps describes how to connect and use the USB I&P Box together with the AS560X Demo Software and the adapter board.

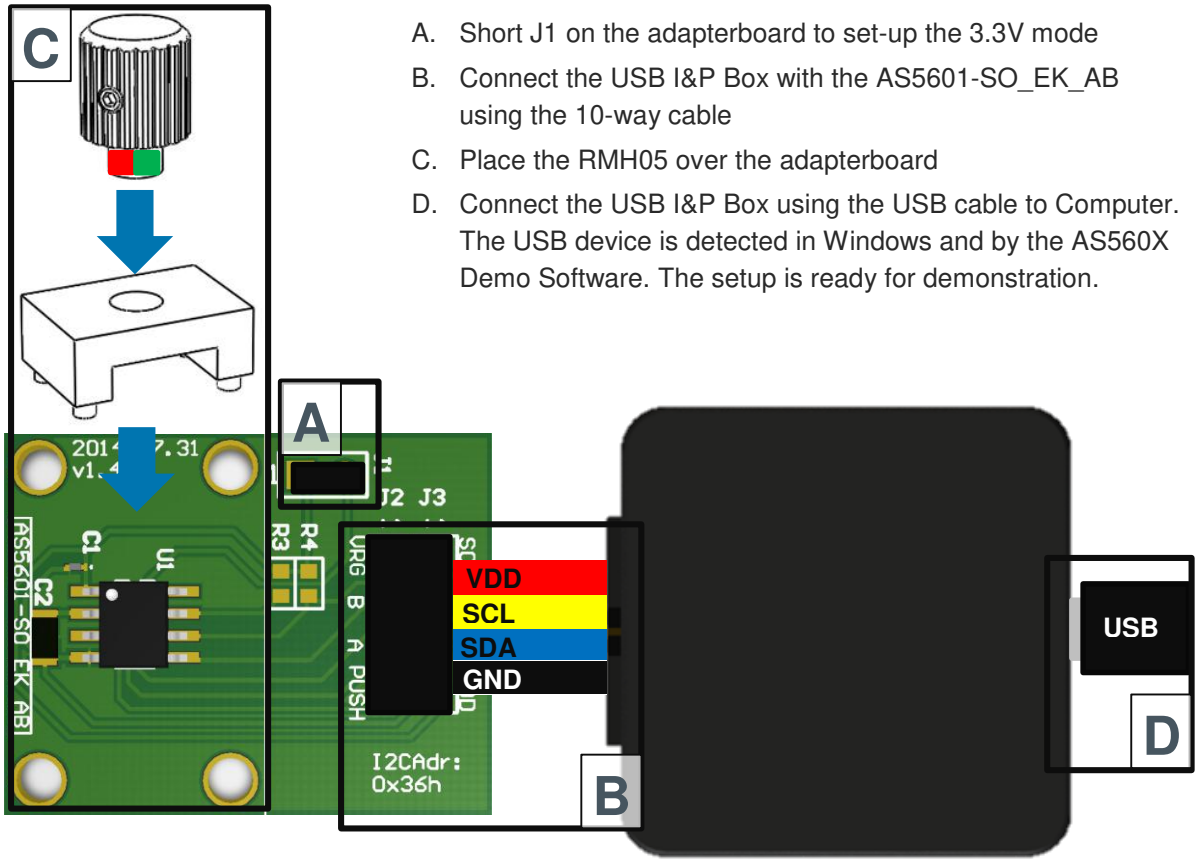
1st Install the AS560X Demo Software

The Software is located on the USB drive that comes with the USB I&P Box or it can be downloaded from our webpage. After installation run the software.

2nd Assemble the Hardware Setup

Follow the Instructions shown below in Figure 1 to set-up the kit.

Figure 1:
Setup Instructions



A. Short J1 on the adapterboard to set-up the 3.3V mode
B. Connect the USB I&P Box with the AS5601-SO_EK_AB using the 10-way cable
C. Place the RMH05 over the adapterboard
D. Connect the USB I&P Box using the USB cable to Computer. The USB device is detected in Windows and by the AS560X Demo Software. The setup is ready for demonstration.

Note: The AB signals of the quadrature incremental interface cannot be detected using the initial version of the USB I&P Box.

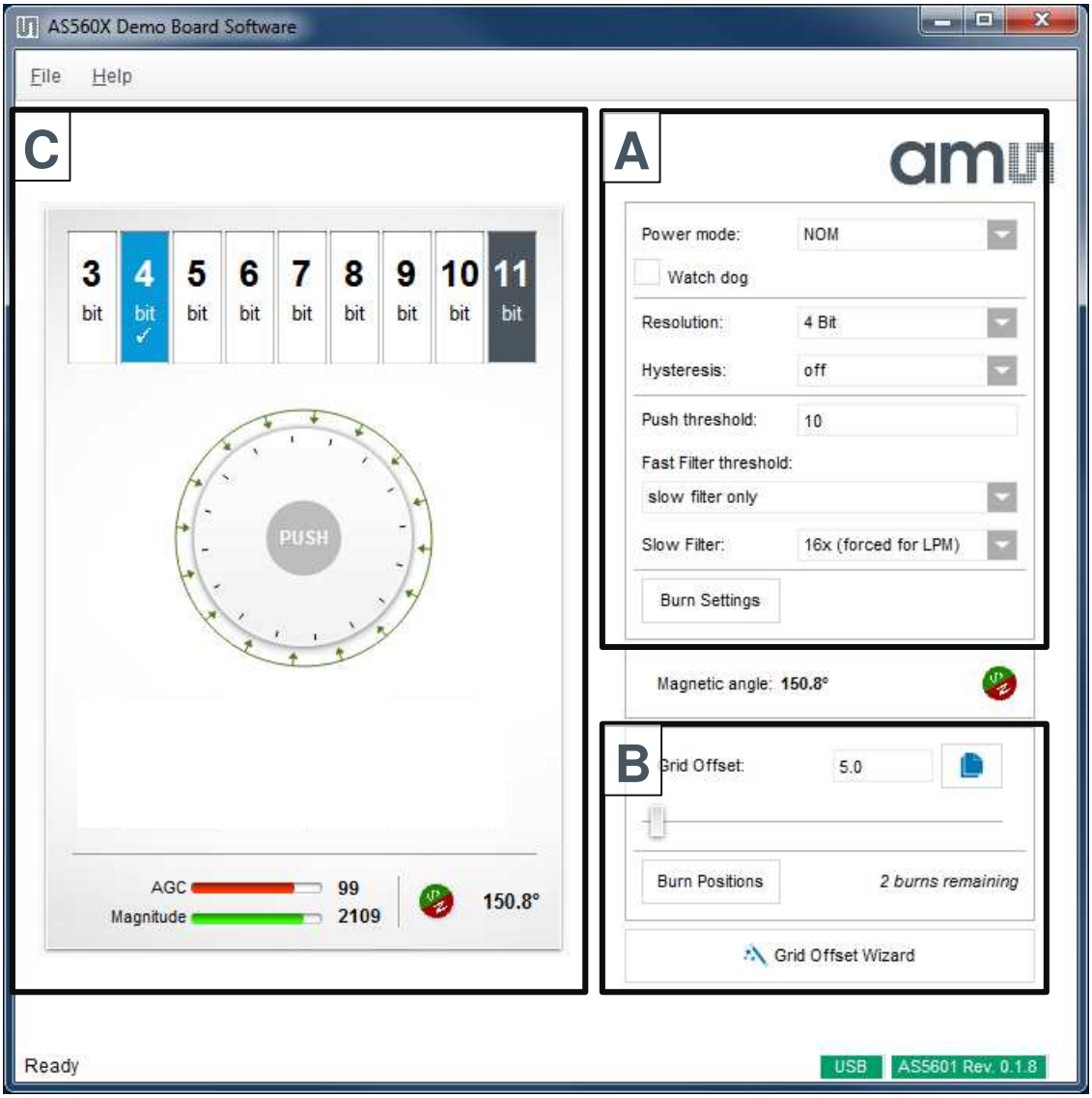
Note: It might be necessary to perform a firmware update on the USB I&P Box if a wrong firmware was detected. In this case, the user will be prompted to allow an automatic firmware upgrade.

3rd Start using the software

Following parts of the software are used to perform a configuration and to read-out the AS5601. Refer to Figure 2 for reference. Read the software user manual for details.

A. Perform the desired configuration
B. Perform the required grid and grid offset programming. Use the wizard function for reference.
C. Verify the results

Figure 2:
General Software Instructions



3 Ordering & Contact Information

Ordering Code	Description
AS5601-SO_EK_ST	AS5601 Eval Kit Standard Board

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5 Revision Information

Initial version 1-00

Changes from 0-00 (2014-Jul-2) to current revision 1-00 (2014-Jul-31)	Page
Initial version	

Note: Page numbers for the previous version may differ from page numbers in the current revision.