# ams

## Eval Kit Manual

# AS5600

## Standard Board

**AS5600-SO_EK_ST**

# Table of Contents

# 1    Introduction

The evaluation kit allows an easy and fast evaluation of the AS5600 rotary magnetic position sensor in the lab or together with an existing system. It includes all required material to evaluate all product features.

This small adapterboard is fully assembled with AS5600 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 AS5600.

The AS5600 is a programmable Hall-based rotary magnetic position sensor with a high-resolution 12-bit analog or PWM output for contactless potentiometers. 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 default range of the output is 0 to 360 degrees, but the full resolution of the device can be applied to smaller range by programming a zero angle (start position) and maximum angle (stop position).

The I²C interface is used for configuration and user programming of non-volatile parameters in the AS5600. Additionally the device can be programmed in 3-wire mode without any programmer.

## 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 | SAP | Info |
|-----|------|-----|------|
| 1 | USB I&P Box | 990600795 | Programming and Interface Box |
| 2 | AS5600-SO_EK_AB | 990600786 | Adapterboard including reference magnet |
| 3 | RMH05-DK-XX-1.0 | 990600534 | 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 AS5600 adapter board is ideal for rapid setup of a contactless potentiometer because it includes all necessary tools to operate and configure the AS5600.

This first steps describes how to connect and use the USB I&P Box together with the AS560X Demo Software and the adapter board.
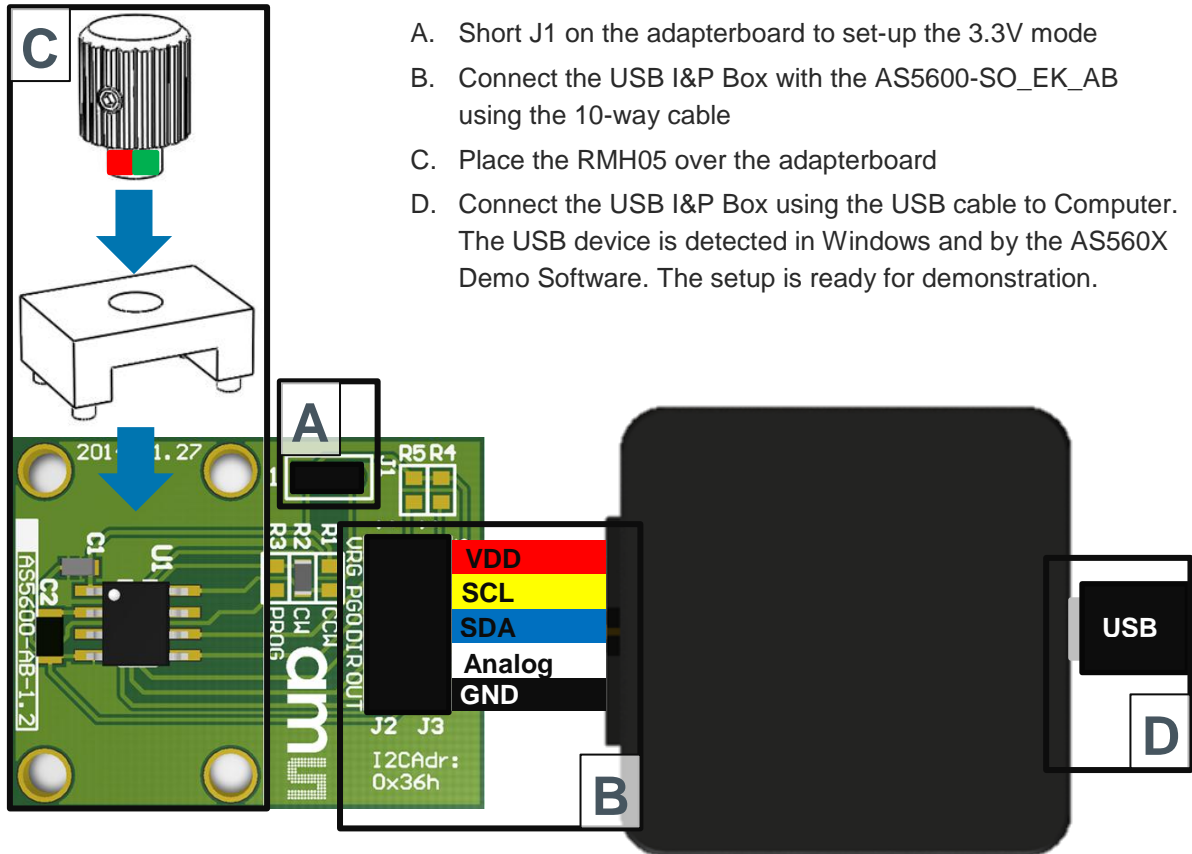
### 1st Install the AS5600 Demo Software

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.

## 2<sup>nd</sup> Assemble the Hardware Setup

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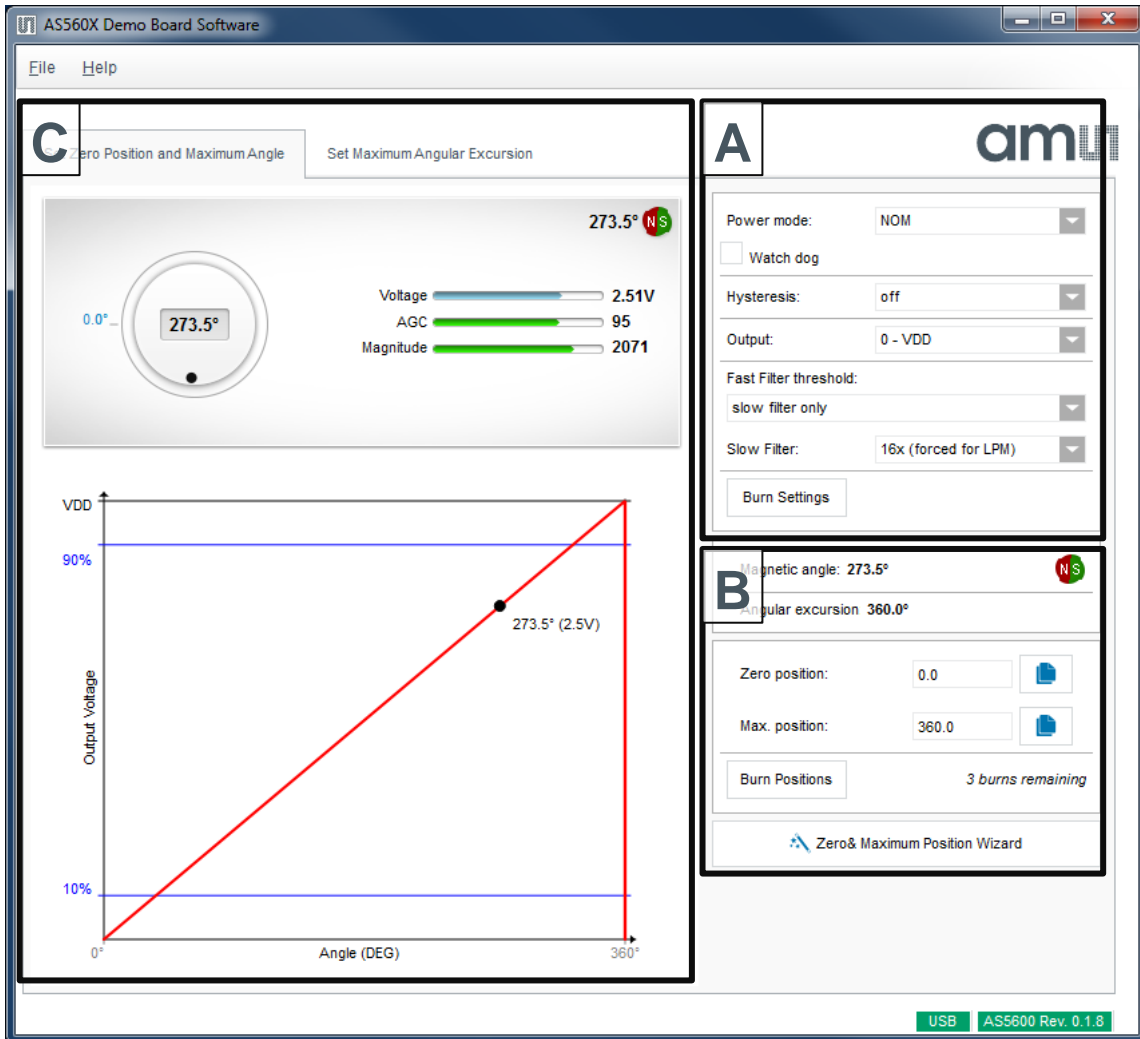
Figure 1:
**Setup Instructions**



A. Short J1 on the adapterboard to set-up the 3.3V mode
B. Connect the USB I&P Box with the AS5600-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:** 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 steps are required to perform a configuration and to read-out the AS5600. Refer to Figure 2 for reference. Read the software user manual for details.

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

Figure 2:
**General Software Instructions**

# 3 Ordering & Contact Information

| Ordering Code | Description |
|---|---|
| AS5600-SO_EK_ST | AS5600 Eval Kit Standard Board |

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Tobelbaderstrasse 30

8141 Unterpremstaetten

Austria, Europe

Tel:  +43 (0) 3136 500 0

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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-2) | Page |
| --- | --- |
| Initial version | |

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

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