

Product Document



Eval Kit Manual

AS5270

Adapter Board

AS5270-MF_EK_AB

Content Guide

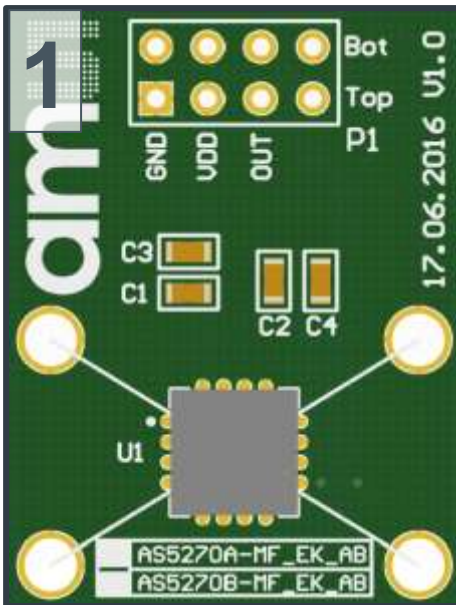
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1 Introduction

The AS5270 adapter board is a small PCB allowing simple and quick testing or evaluation of the AS5270 magnetic position sensor without the need to design and manufacture an own PCB.

1.1 Kit Content

Figure 1: Kit content



Pos.	Item	Comment
1	AS5270-MF_EK_AB	Adapter board
2	AS5000-MD8H-1	Diametric Magnet, D8x2.5mm, NdFeB, Bomatec AG

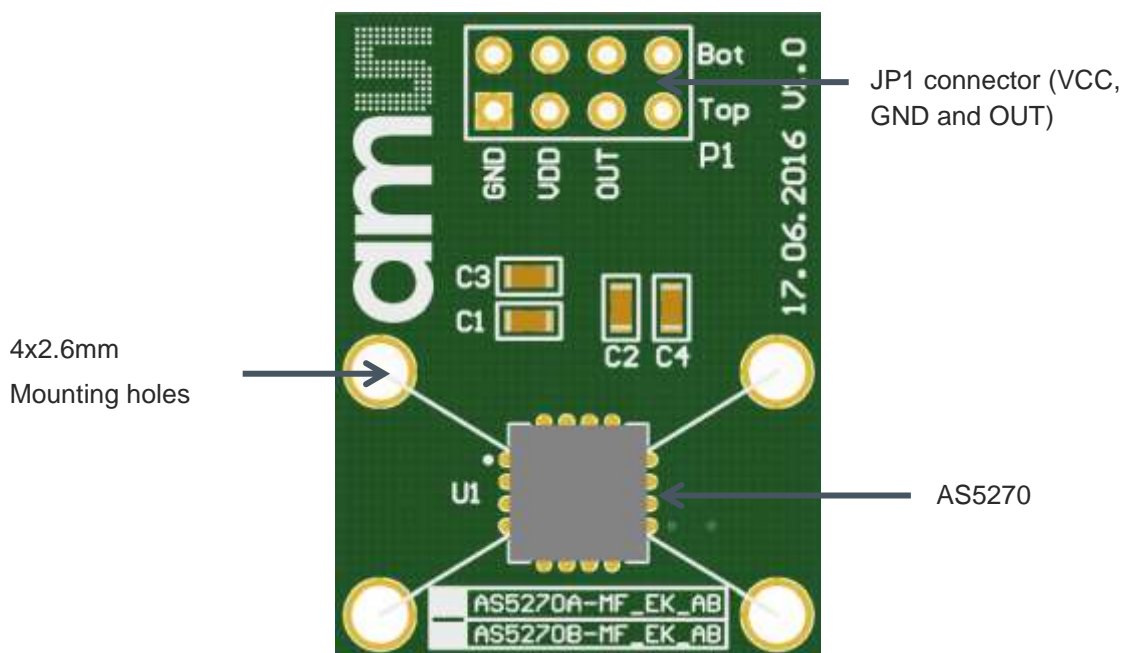
2 Board description

The PCB can be connected to an external microcontroller or to the AS5xxx-EK-USB-PB UART Programmer which can be used in combination with the AS5270 Software GUI provided by ams AG.

JP1 is populated with a 2x4 female pin header it is required for the power supply (VDD_T, VDD_B, GND_T and GND_B) and output (OUT_T and OUT_B). This connector directly fits to the UART Programmer.

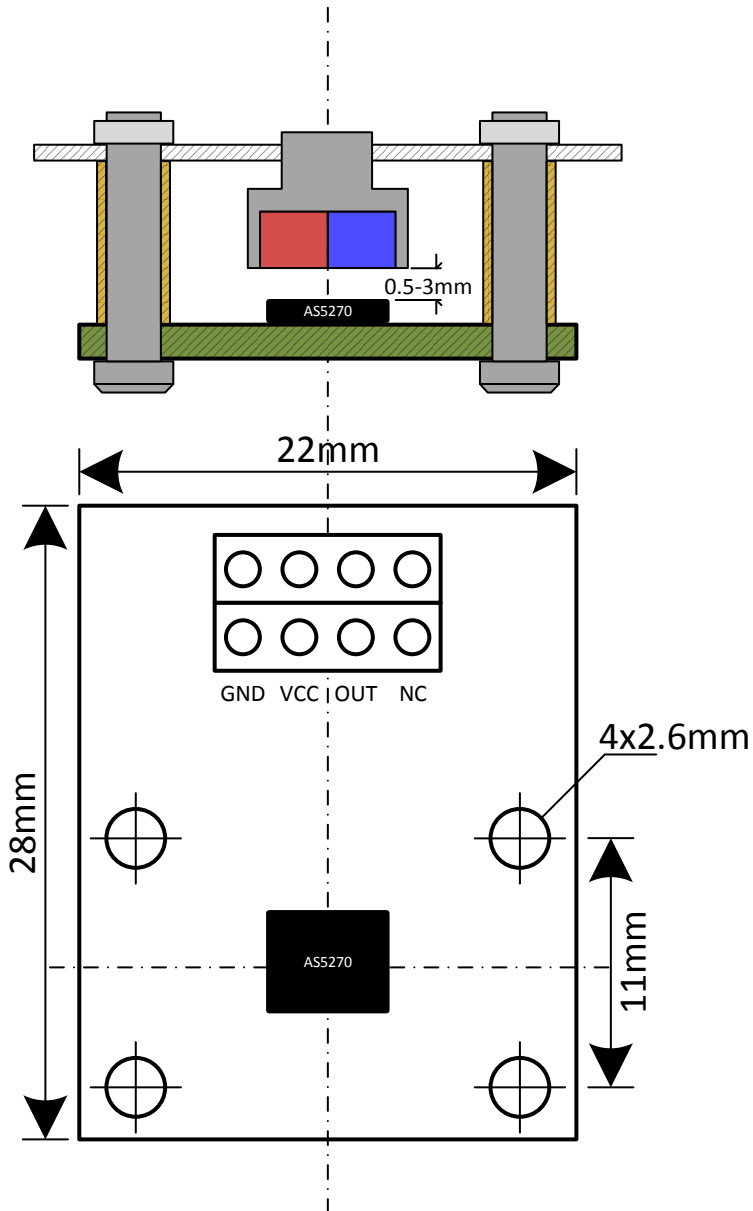
All necessary external components C2 (VDD3V3_T-GND), C4 (VDD3V3_B-GND) and C1, C3 (VDD-GND) are already populated to the PCB.

Figure 2: AS5270 adapter board



2.1 Mounting the AS5270 adapter board

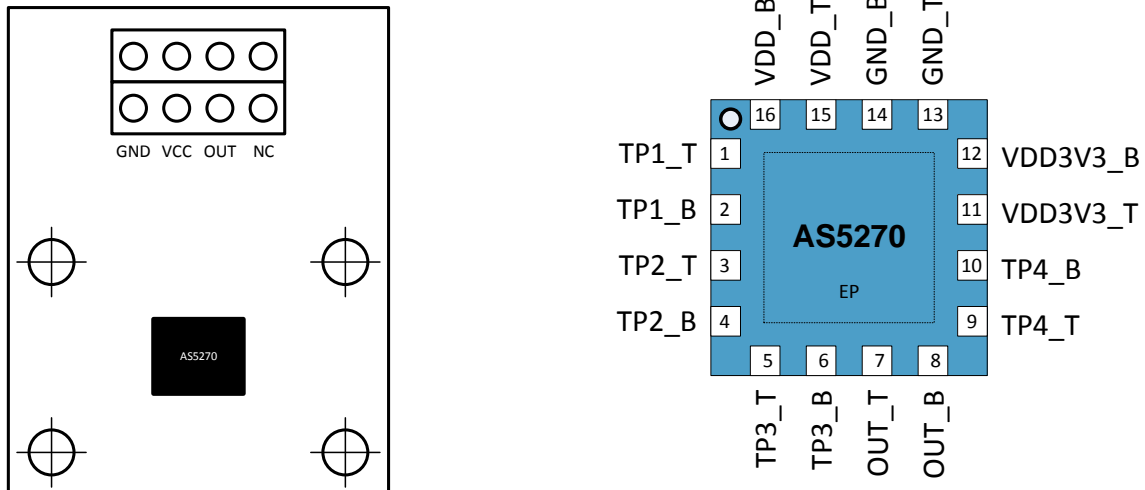
Figure 3: Mounting and dimensions



A 8x2.5mm diametric magnet must be placed over or under the AS5270 sensor, and should be centered in the middle of the package with a tolerance of 0.5mm. The airgap between the magnet surface and the package should be maintained in the range 0.5mm to 3mm. The magnet holder must not be ferromagnetic. Materials as brass, copper, aluminum, stainless steel are the best choices to make this part.

3 AS5270 adapter board and pinout

Figure 4: AS5270 adapter board and sensor pinout



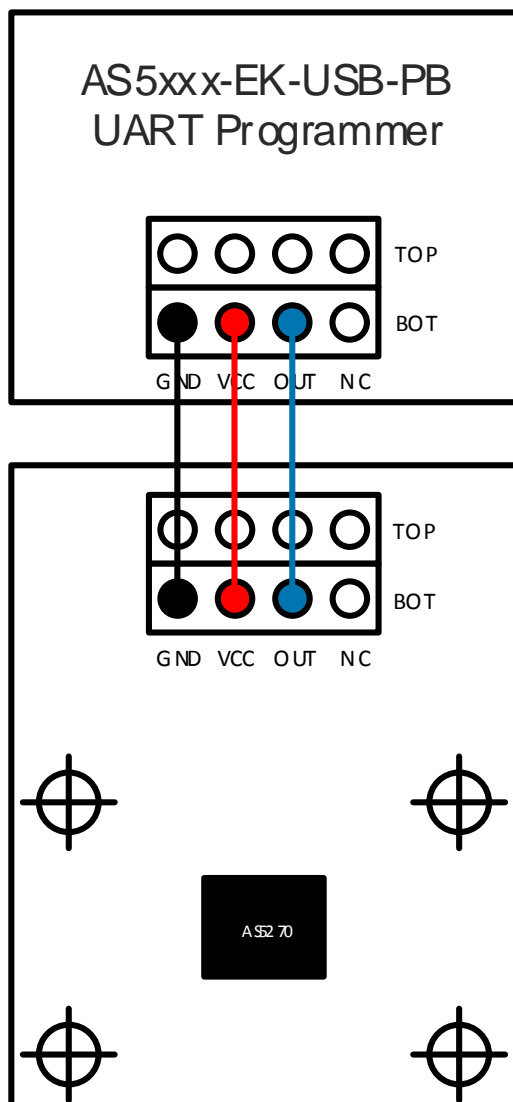
Pin# Board	Pin# AS5270	Symbol board	Type	Description
JP1 - 1	13	GND_B	Power supply	Ground
JP1 - 2	14	GND_B	Power supply	Ground
JP1 - 3	15	VCC_T	Power supply	Positive supply voltage
JP1 - 4	16	VCC_B	Power supply	Positive supply voltage
JP1 - 5	7	OUT_T	Analog or digital output	Output Top (UART in communication mode)
JP1 - 6	8	OUT_B	Analog or digital output	Output Bottom (UART in communication mode)
JP1 - 7		NC		
JP1 - 8		NC		

4 Operation case

4.1 Connection to AS5xxx-EK-USB-PB UART Programmer

The AS5270 adapter board can be directly connected to the AS5xxx-EK-USB-PB UART Programmer using only 3 lines, each for every die (VDD, GND and OUT). The voltage supply is coming directly from the programmer which can either be supplied directly via 5V from USB or externally. The UART communication is taking place over the OUT pin. The necessary pull-up resistor is already in place on the programmer PCB.

Figure 5: One device SPI mode, unidirectional – 3 wire

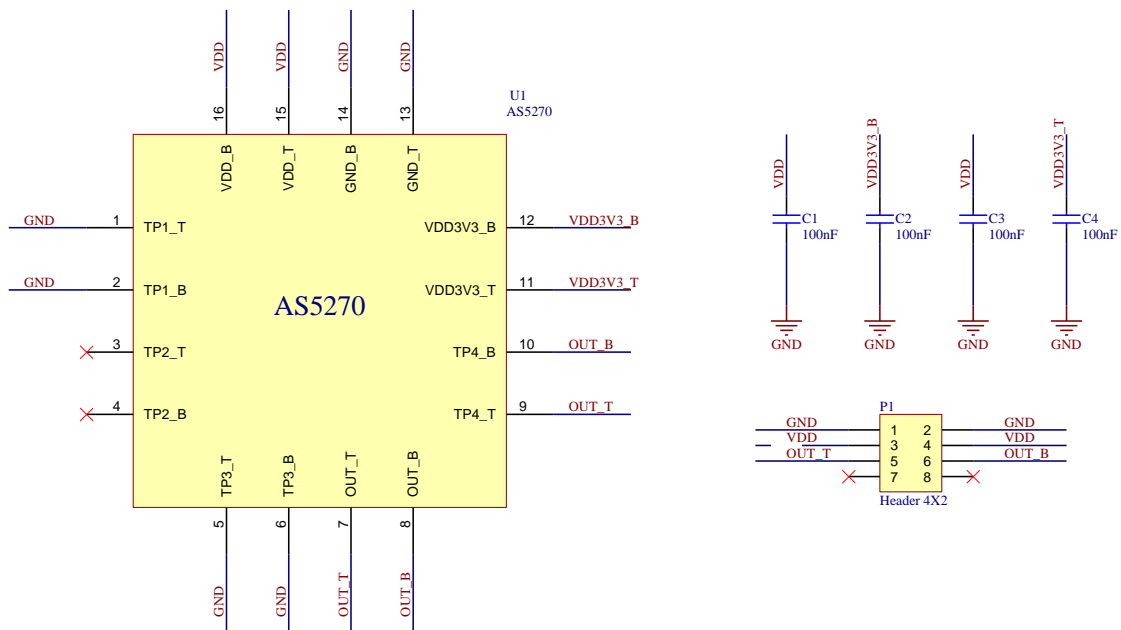


5 AS5270-MF_EK_AB Hardware

5.1 AS5270-MF_EK_AB schematics

The PCB schematic is shown in Figure 6: Schematics.

Figure 6: Schematics



5.2 AS5270-MF_EK_AB PCB layout

The PCB layout is shown in Figure 7: Top Layer and Figure 8: Bottom Layer.

Figure 7: Top Layer

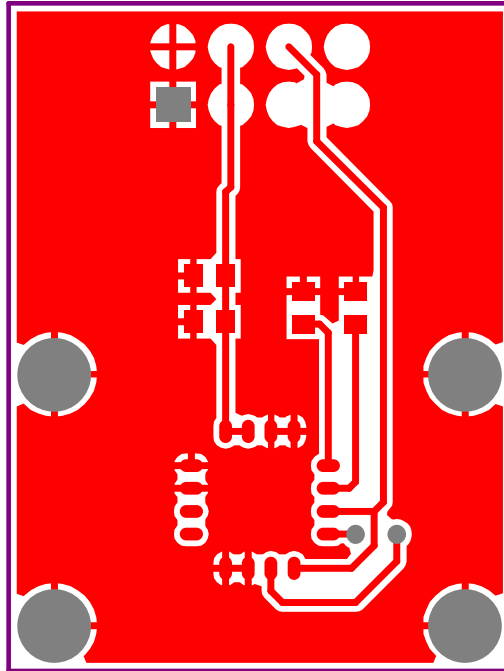
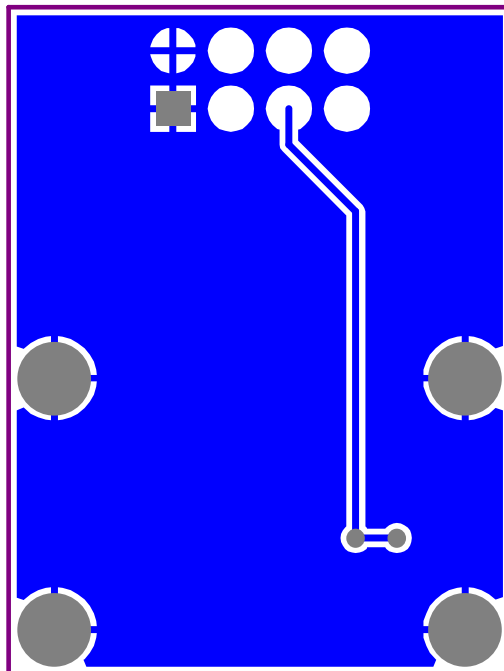


Figure 8: Bottom Layer



6 Ordering & Contact Information

Ordering Code	Description
AS5270-MF_EK_AB	AS5270 Eval Kit Adapter Board

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8 Revision Information

Changes from previous version to current revision 1-01 (2017-Jul-18)	Page
Initial version 1-00	
Review 1-01	

Note: Page numbers for the previous version may differ from page numbers in the current revision.
Correction of typographical errors is not explicitly mentioned.