



**Application Note**

# **AS5xxx-EK-USB- PB**

## **UART Programmer Operation Manual**

## Content Guide

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## Revision History

| Revision | Date       | Owner | Description                          |
|----------|------------|-------|--------------------------------------|
| 1.0      | 28.08.2013 | dsch  | Initial version                      |
| 1.1      | 13.08.2014 | ekno  | Updates and corrections              |
| 1.2      | 04.12.2014 | mzie  | Updated to latest corporate template |
| 1.3      | 03.02.2015 | mzie  | Minor corrections                    |

## 1 General Description

This application note describes more in detail the usage of the AS5xxx-EK-USB-PB UART Programmer.

Figure 1: AS5xxx-EK-USB-PB UART Programmer

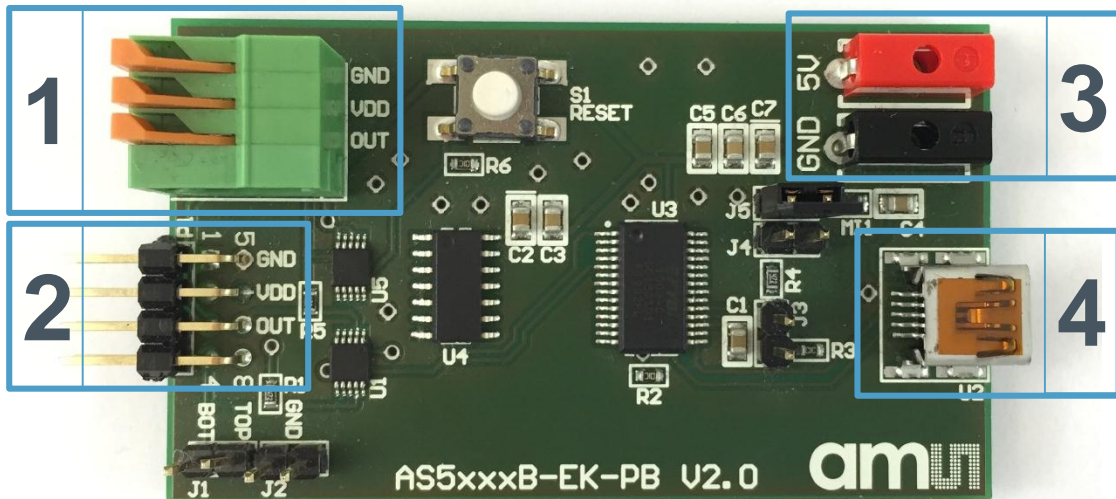


Figure 2: Connector description

| Pos. | Item                               |
|------|------------------------------------|
| 1    | Universal connector (e.g. AS5403X) |
| 2    | Connector for AS5x6y devices       |
| 3    | External power supply connectors   |
| 4    | Mini-USB socket                    |

## 1.1 Communication

The Mini-USB socket is used for communicating with the computer. Therefore, a Mini-USB to USB cable is necessary. The board is using a FT232R – USB-to-UART IC by FTDI. Therefore the installation of the VCP (Virtual COM Port) is necessary to detect the USB device as a COM Port.

The driver can be downloaded from the official FTDI website using following link:  
<http://www.ftdichip.com/Drivers/VCP.htm>

## 1.2 Power supply

By default the 5V supply voltage is provided by the USB interface. Depending if the jumpers J3, J4 and J5 are open or closed the supply source can be switched to external power supply.

**Figure 3: Jumper configuration**

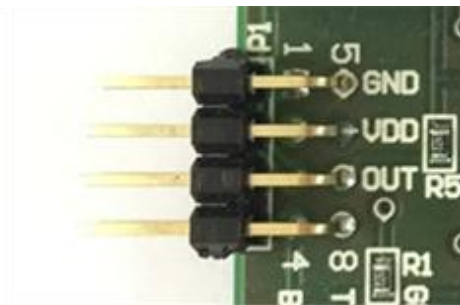
| J3  | J4  | J5  | Supply source |
|-----|-----|-----|---------------|
| SET | SET | NC  | External      |
| NC  | NC  | SET | USB           |

## 2 Connecting options

### 2.1 AS5x6y

For connecting AS5x6y devices the connector P1 is used. When connecting a single die IC (AS5161 or AS5162) the bottom (BOT) interface has to be used. The required pull-up resistor for the UART communication is also included on this board.

**Figure 4: Connector P1**



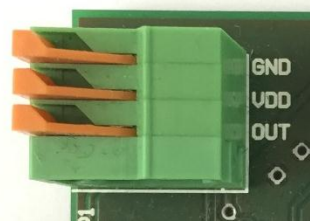
|   |   |
|---|---|
| 1 | 5 |
| 2 | 6 |
| 3 | 7 |
| 4 | 8 |

| Pin # | Symbol     | Description               |
|-------|------------|---------------------------|
| 1     | GND Bottom | Ground Bottom die         |
| 2     | VDD Bottom | Supply voltage Bottom die |
| 3     | OUT Bottom | Output signal Bottom die  |
| 4     | OUT Bottom | Output signal Bottom die  |
| 5     | GND Top    | Ground Top die            |
| 6     | VDD Top    | Supply voltage Top die    |
| 7     | OUT Top    | Output signal Top die     |
| 8     | OUT Top    | Output signal Top die     |

## 2.2 Universal Connector socket

For more connecting options the board offers a universal connector socket. This socket provides access to GND, VDD and OUT (BOT) signals. This may be used to connect to an AS5403X adapter board. Also in this case the required pull-up resistor for UART communication is included.

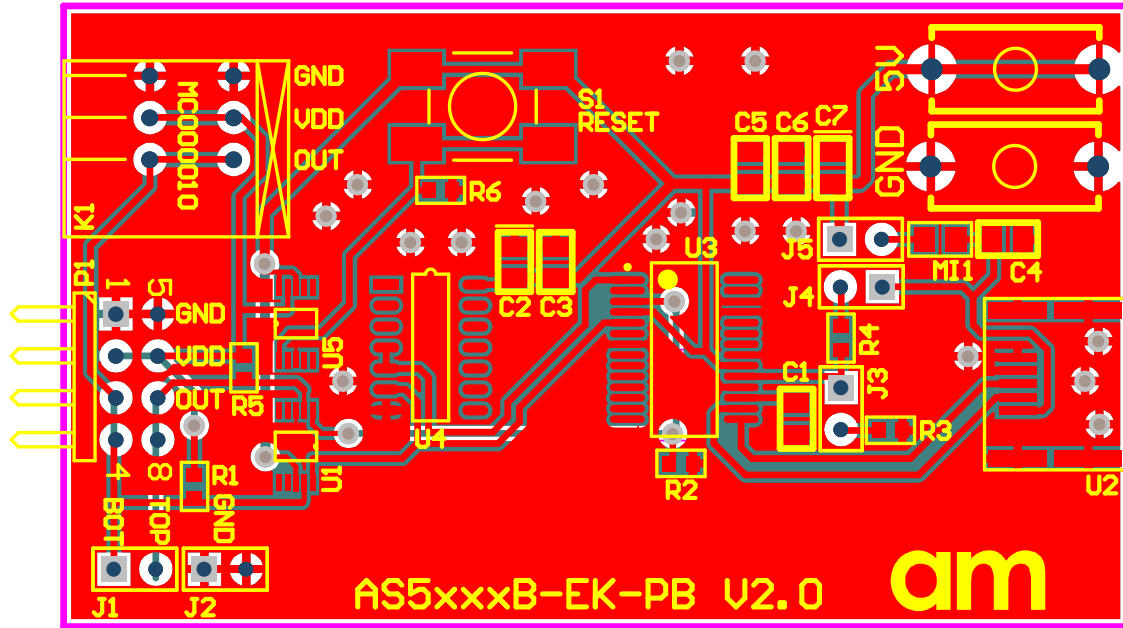
**Figure 5: Universal Connector socket**



### 3 AS5xxx-EK-USB-PB Hardware

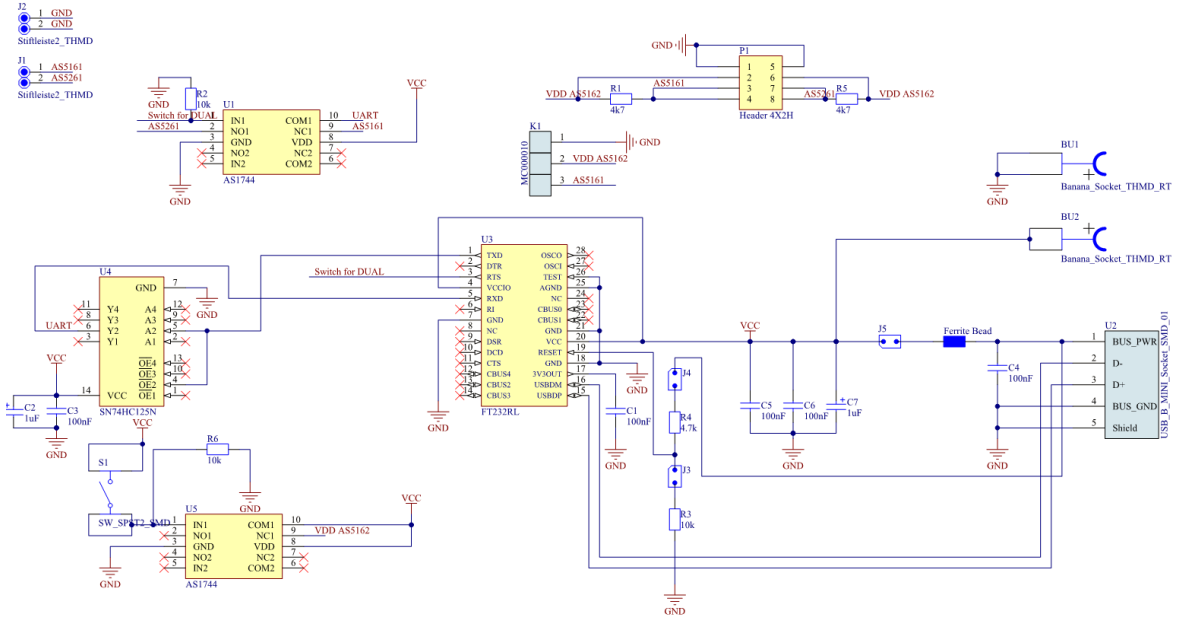
#### 3.1 AS5xxx-EK-USB-PB PCB layout

Figure 6: AS5xxx-EK-USB-PB PCB layout



### 3.2 AS5xxx-EK-USB-PB schematic

Figure 7: AS5xxx-EK-USB-PB schematic





## 4 Contact Information

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