

EVAL-ADM2587EARDZ Arduino Shield

EVAL- ADM2587ERPIZ Raspberry Pi Shield

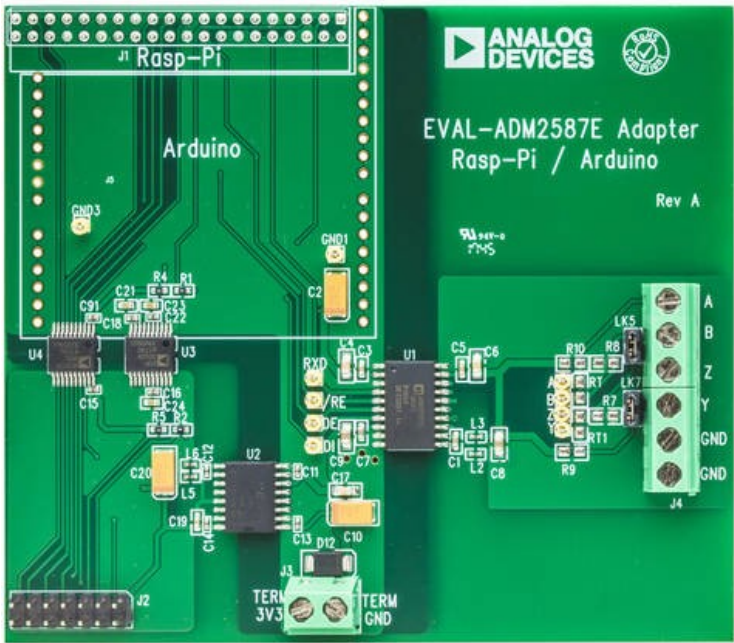
Use the EVAL-ADM2587EARDZ Arduino Shield with the widely available Arduino UNO to easily evaluate the ADM2587E RS-485 transceiver, the ADM3260 I2C isolator, and the ADuM3151 SPI isolator. The ADM2587E, ADM3260, and ADuM3151 integrate Analog Devices, Inc., iCoupler® technology. The ADM2587E and ADM3260 also integrate Analog Devices isoPower dc-to-dc converter into a single package.

The EVAL-ADM2587EARDZ Arduino Shield & EVAL-ADM2587ERPIZ Raspberry Pi Shield use an identical basic design, J1 Raspberry Pi connector populated for EVAL-ADM2587ERPIZ, and the J5 Arduino connector block is populated for the EVAL-ADM2587EARDZ.

This Wiki guide provides hardware references and Arduino software for full integration of the EVAL-ADM2587EARDZ in a demonstration platform. This wiki guide also provides hardware references and Raspberry pi sample code for the EVAL-ADM2587ERPIZ.



Connectors and Jumper Configurations



Port	Function
J1	This is a GPIO female connection to be used with the raspberry pi version of the board EVAL ADM2587ERPIZ.
J2	This is used to connect the ADM3260 isolated I2C or ADuM3151 isolated SPI to external devices.
J3	This is used to supply power to the logic side of the board.
J4	This 6-way connector is used for an RS-485 bus cable. A and B are the ADM2587E receiver inputs while Y and Z are the driver outputs. Ground terminals are provided for cables with ground wires.
J5	This is a GPIO male connection to be used with the Arduino version of the board EVAL ADM2587EARDZ.
LK5	When LK5 is closed the receiver input B pin is connected to the driver output Z pin. When both LK5 and LK7 are closed the board is configured for half duplex operation. When both LK5 and LK7 are open the board is configured for full duplex operation.
LK7	When LK7 is closed the receiver input A pin is connected to the driver output Y pin. When both LK5 and LK7 are closed the board is configured for half duplex operation. When both LK5 and LK7 are open the board is configured for full duplex operation.

EVAL-ADM2587EARDZ Arduino Shield & EVAL-ADM2587ERPIS Raspberry Pi Shield Example Code

Arduino UNO code is provided so that that user can perform a loopback test mode for the ADM2587E RS-485 transceiver. Load the 'eval_adm2587eardz_arduino_shield_example_code.zip' sketch to an Arduino UNO. Connect jumpers LK5 and LK7. Use an oscilloscope to measure the waveforms on the DI, /RE, A, B, Y, Z, and RxD test points. The Arduino sketch outputs a constant bit stream on the ADM2587E DI pin. The loopback test echos the DI voltage waveform to the RxD pin. The bus voltages on the A, B, Y, and Z pins can also be measured.

Raspberry pi code is also provided so that the user can perform a loopback test mode for the ADM2587E RS-485 transceiver. Load the 'eval_adm2587erpiz_raspberry_pi_shield_example_code.zip' sketch to the Raspberry pi. Voltage waveforms can be measured on the RS-485 logic and bus interface pins, similar to the Arduino example given above.

Schematic, Bill of Materials, Gerber Files and Layout Files

- [PCB Layout and Mounting Diagram](#)
- [Schematic](#)
- [Bill of Materials for raspberry pi board](#)
- [Bill of Materials for arduino board](#)

Change Log

- Initial Revision
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Resources

- Data Sheet: http://www.analog.com/media/en/technical-documentation/data-sheets/ADM2582E_2587E.pdf [http://www.analog.com/media/en/technical-documentation/data-sheets/ADM2582E_2587E.pdf]
 - Data Sheet: <http://www.analog.com/media/en/technical-documentation/data-sheets/ADM3260.pdf> [<http://www.analog.com/media/en/technical-documentation/data-sheets/ADM3260.pdf>]
 - Data Sheet: http://www.analog.com/media/en/technical-documentation/data-sheets/ADuM3151_3152_3153.pdf [http://www.analog.com/media/en/technical-documentation/data-sheets/ADuM3151_3152_3153.pdf]
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Software

[eval_adm2587eardz_arduino_shield_example_code.zip](#)

[eval_adm2587erpiz_raspberry_pi_shield_example_code.zip](#)
