

Evaluation Board for the **ADM2483** Half-Duplex *iCoupler* Isolated RS-485 Transceiver

FEATURES

RS-485 transceiver with electrical data isolation
500 kbps data rate
Slew rate-limited driver outputs
Suitable for 5 V or 3 V operation on V_{DD1}
Suitable for 5 V operation on V_{DD2}
 $V_{IORM} = 560$ V peak
256 nodes on bus

ADM2483 APPLICATIONS

Low power RS-485/RS-422 networks
Isolated interfaces
Industrial field networks
Multipoint data transmission systems

EVALUATION KIT CONTENTS

EVAL-ADM2483EBZ

GENERAL DESCRIPTION

The EVAL-ADM2483EBZ allows easy and quick evaluation of the isolated **ADM2483** RS-485 transceiver. The evaluation board allows all of the input and output functions to be exercised without the need for external components.

The **ADM2483** differential bus transceiver is an integrated, galvanically isolated component designed for bidirectional data communication on balanced, multipoint bus transmission lines. Using Analog Devices, Inc., *iCoupler*® technology, the **ADM2483** combines a 3-channel isolator, a three-state differential line driver, and a differential input receiver into a single package. The logic side of the device is powered with either a 5 V or 3 V supply, and the bus side uses only a 5 V supply.

EVALUATION BOARD DIGITAL PHOTOGRAPH



Figure 1.

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REVISION HISTORY

6/11—Revision 0: Initial Version

EVALUATION BOARD CONFIGURATIONS

SETTING UP THE EVALUATION BOARD

The EVAL-ADM2483EBZ allows the isolated [ADM2483](#) RS-485 transceivers to be easily and quickly evaluated. The evaluation board allows all of the input and output functions to be exercised without the need for external components.

A termination resistor, R_T , of $120\ \Omega$ is fitted on the receiver input. This can be removed if the board is connected to a bus already terminated at both ends. The value of the termination resistor should be equal to the characteristic impedance of the cable used.

The logic side is suitable for 5 V or 3 V operation on VDD1. There is a $0.1\ \mu\text{F}$ decoupling capacitor, C1, fitted between VDD1 and GND1. The bus side is suitable for 5 V operation on VDD2. There is a $0.1\ \mu\text{F}$ decoupling capacitor, C2, fitted between VDD2 and GND2.

If fail-safe biasing is required for other parts on the bus that do not have the offset receiver threshold of the ADM2483, bus biasing resistors can be fitted on the receiver input by inserting R1 and R2.

Refer to [AN-960 Application Note](#), *RS-485/RS-422 Circuit Implementation Guide*, for an explanation of bus termination and fail-safe biasing.

EVALUATION BOARD SCHEMATIC AND ARTWORK

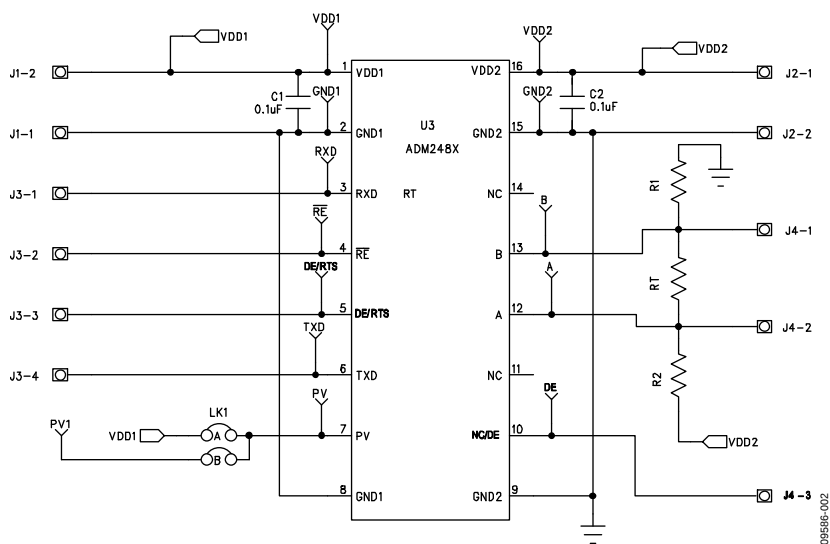


Figure 2. EVAL-ADM2483EBZ Evaluation Board Circuit Diagram

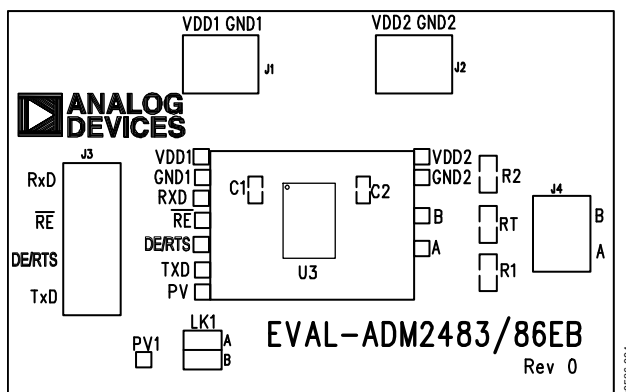


Figure 3. EVAL-ADM2483EBZ Evaluation Board Silkscreen

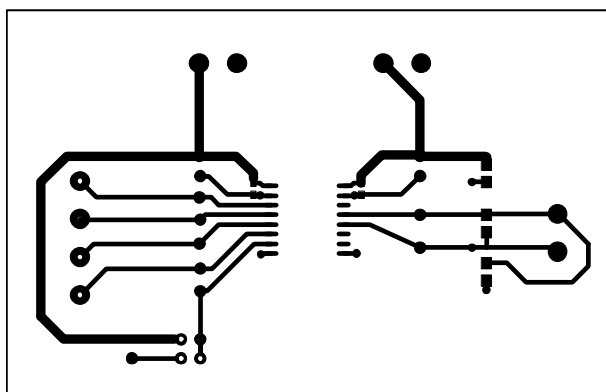


Figure 4. EVAL-ADM2483EBZ Evaluation Board Component Side

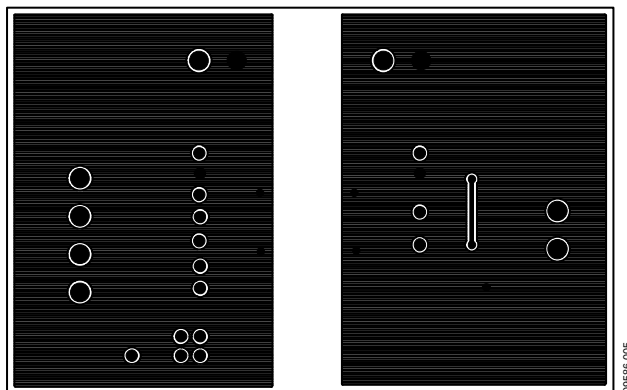


Figure 5. EVAL-ADM2483EBZ Evaluation Board Solder Side

ORDERING INFORMATION

BILL OF MATERIALS

Table 1.

Quantity	Reference Designator	Description	Supplier/Part Number
2	R1, R2	Resistor, do not insert	Not applicable
1	RT	Resistor, 120 Ω , 0805	Multicomp/MC 0.1W 0805 1% 120R
2	C1, C2	Capacitor, Size 0805, 100 nF	AVX Corp./08055C104KAT2A
2	J1, J2	CON\POWER, 2-pin terminal block (5 mm pitch)	Lumberg/KRM 02
1	J3	CON\POWER4, 4-pin terminal block	Lumberg/KRM 04
1	J4	CON\POWER, terminal block, PCB, 3-way	Lumberg/KRM 03
1	LK1	Board-to-board connector header, 4-way, 2-row and Jumper $\times 2$	SPC Technology/SPC20499, Harwin/M7566-05
1	U3	SO16WB	Analog Devices/ADM2483BRWZ
2	GND1, GND2	Test point, black	Vero Technologies/20-2137
2	VDD1, VDD2	Test point, red	Vero Technologies/20-313137
2	A, B	Test point, green	Vero Technologies/20-313138
7	RXD, DE, $\overline{RE}$, PV, TXD, PV1, DE/RTS	Test point, yellow	Vero Technologies/20-313140

RELATED LINKS

Resource	Description
ADM2483	Product Page, 2.5 kV Signal Isolated, 500 kbps, Half Duplex RS-485 Transceiver with Power Valid Input
AN-960	RS-485/RS-422 Circuit Implementation Guide

NOTES

NOTES

**ESD Caution**

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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