CN-0167/CN-0373 Evaluation Board Test Procedure

TEST SET-UP AND EQUIPMENT

Table 1 contains a list of equipment required for this test procedure. Set up and connect the equipment as directed and shown in Figure 1. All connection points and jumper location names refer to the labels on the CN-0167/CN-0373 evaluation board.

Description	Quantity
Adjustable Power Supply (+6 V)	1
Oscilloscope and 3 probes	1
Multimeter	1
Laptop with Tera Term Emulator	1
USB cable	1

Procedure:

1. Apply 6 V to the J1 Barrel socket connector to power the board.
2. Connect a USB cable from the Laptop/PC to the J4 connector
3. Install the Tera Term Emulator on the PC/Laptop if required
4. Open a Tera Term emulator window.
    a. Select COM5 for RS-232 transmission. Set the Tera Term Serial Port baud rate to 460800.
    b. Select COM6 for RS-485 transmission. Set the Tera Term Serial Port baud rate to 460800.
5. Connect the oscilloscope probes to the ISOTXD, Y, and Z test points.

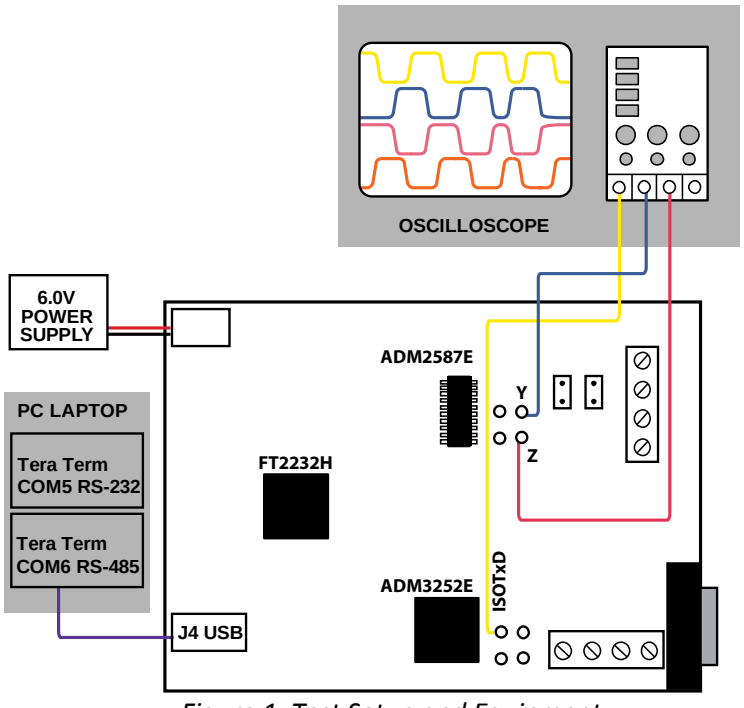

Figure 1, Test Setup and Equipment

CN-0167/CN-0373 Evaluation Board Test Procedure

TEST PROCEDURE

Ensure that setup steps 1 – 5 have been completed. Then perform the initial voltage checks on the test points listed.

INITIAL VOLTAGE CHECK

Measurement Description	Test Point(s)	Typical	Upper Limit	Lower Limit
Measure Input Voltage to the board with the multimeter between barrel connector C1 capacitor and GND1	C1 capacitor and GND1	6.0 V		
Measure Input Voltage to the board with the multimeter between U6 pin1 and GND1	U6 pin1 and GND1	5.0 V		
Measure voltage on the board with the multimeter between: VCC_REG and GND1_1	VCC_REG and GND1_1	4.99 V		
Measure voltage on the board with the multimeter between: ISO_VCC and GND1	ISO_VCC and GND1	3.3 V		
Measure voltage on the board with the multimeter between: +1_8V and GND1	+1_8V and GND1	1.8 V		
Measure voltage on the board with the multimeter between: VCC and GND3	VCC and GND3	3.3 V		
Measure voltage on the board with the multimeter between: LK1 position A ,and GND3	LK1 position A, and GND3	3.3 V		
Measure voltage on the board with the multimeter between: VCC1 and GND	VCC1 and GND	3.3 V		
Measure voltage on the board with the multimeter between: VISO and ISOGND	VISO and ISOGND	3.35 V		
Measure voltage on the board with the multimeter between: VISO1 and GND4	VISO1 and GND4	3.34 V		

TRANSMIT FROM USB PORT TO RS-485/RS-232 PORTS SIMULTANEOUSLY

1. Connect a USB cable from the Laptop/PC to the J4 connector.
2. Attach an oscilloscope probe to the ISOTXD test point next to the ADM3252E transceiver as shown in Figure 1.
    a. Ensure that ISOGND is used as the ground connection for the oscilloscope probe.
3. Attach an oscilloscope probe to the Y and Z test points next to the ADM2587E transceiver as shown in Figure 1.
    a. Ensure that Jumpers LK5 and LK6 are not connected. Ensure that Jumper LK1 is connected in position A.
    b. Ensure that GND4 is used as the ground connection for the oscilloscope probes.
    c. Use the MATH function of the oscilloscope to show the Y-Z differential signal.
4. Open a Tera Term emulator window, and select COM5 for RS-232 transmission, as shown in Figure 1. Set the Tera Term Serial Port baud rate to 460800. [Data: 8 bit, Parity: none, Stop: 1 Bit, Flow Control: none]
5. Open a Tera Term emulator window, and select COM6 for RS-485 transmission, as shown in Figure 1. Set the Tera Term Serial Port baud rate to 460800. [Data: 8 bit, Parity: none, Stop: 1 Bit, Flow Control: none]
6. Load the RS-485 and RS-232 data to be transmitted by selecting the Send option under the File menu for both COM5 and COM6. Choose any large data size file for continuous test transmission and hit send.

Compare the RS-232 signal on channel 1 with Figure 2.	ISOTXD and ISOGND test points	See Figure 2

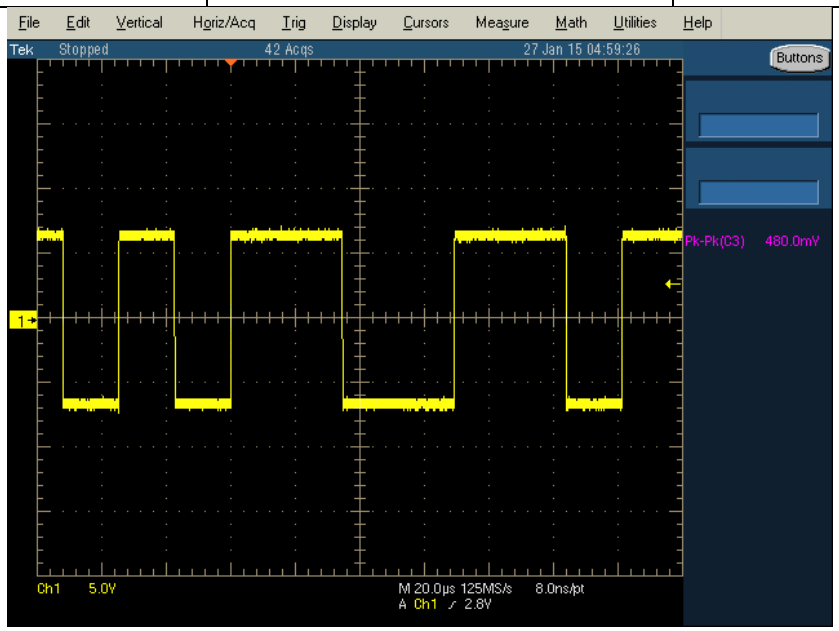

Figure 2, Isolated RS-232 Measurement - ISOTXD Signal to ISOGND

Compare the RS-485 signal on the MATH with Figure 3. (orange trace)	Y, Z test points, Y-Z MATH signals and GND4 test point	See Figure 3

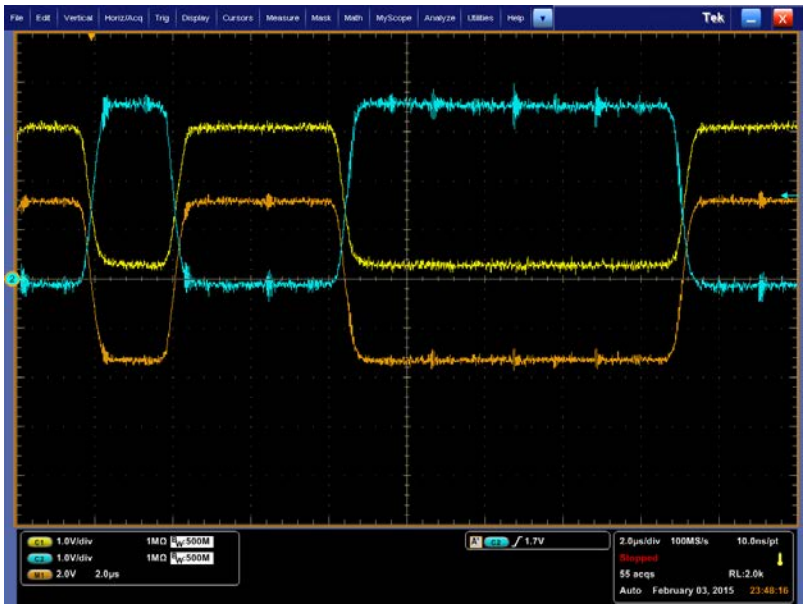

Figure 3, Isolated RS-485 Measurement - Y-Z MATH Signal to GND

Compare the RS-485 signal on the Y and Z pins with Figure 4 Ch1 Yellow = Y Ch2 Blue = Z	Y, Z test points and GND4	See Figure 4

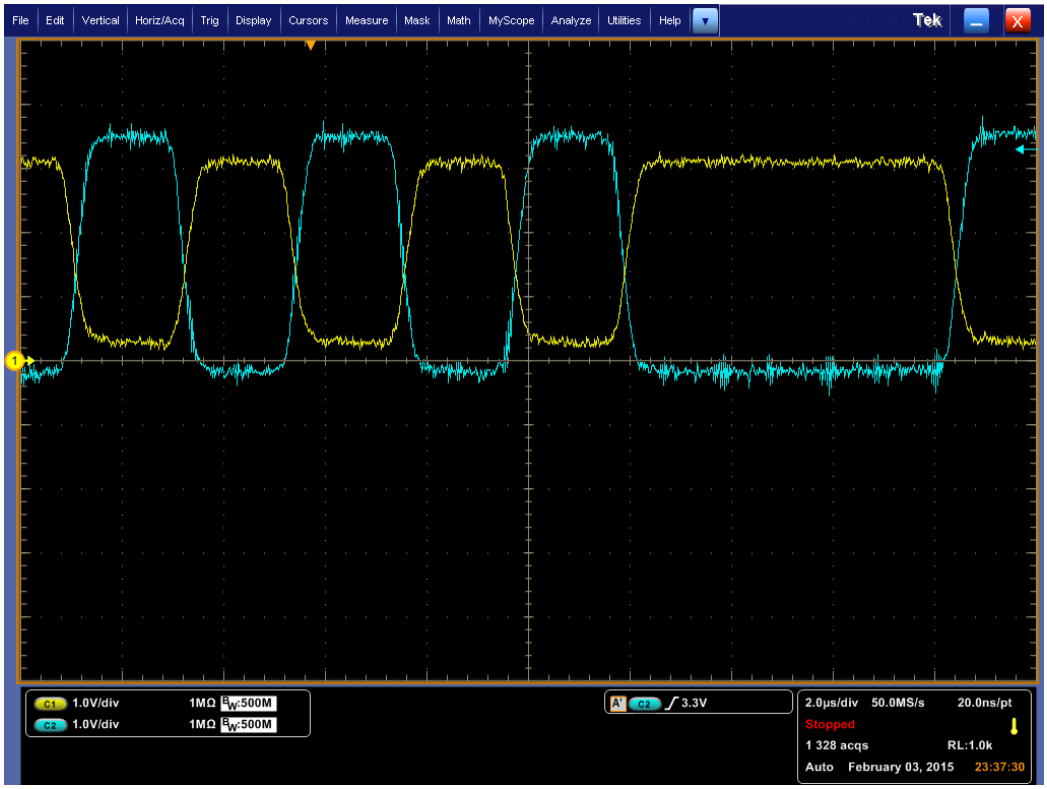

Figure 4, Isolated RS-485 Measurement – Y and Z Signals to GND4

POST TEST

Disconnect input power from J1, remove USB cable from J4 and remove any additional leads and wires if used.