SUPER-485 EVM Test Procedure

Test Plan # Super-485 Revision N/A
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Rev -	4-3-02	E.Cole	Originated

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All test equipment used for production testing of the Super-485 EVM shall be current calibrated equipment.

SUPER-485 EVM Test Procedure

The SN65HVDV2x devices are TIA/EIA-485 (a.k.a. RS-485) transceivers installed on the circuit board. The SN65HVD22, the device installed on the initial release of the EVMs, is an individual transceiver (SN75176 Footprint, U2). The EVM as delivered incorporates termination resistors at the transceiver I/O, driver input, and receiver output. These aid in testing a single transceiver while not having to deal with a transmission line or additional I/Os. This procedure outlines the necessary tests and adjustments that must be performed by the manufacturer in order to confirm that the EVM is functioning properly.

NOTE:
This test procedure should be read in conjunction with the Super-485 EVM Users Guide, which contains the user, notes for the EVM, as well as schematics, bill-of-material (BOM) information and PCB layout drawings. This information is not repeated in this document

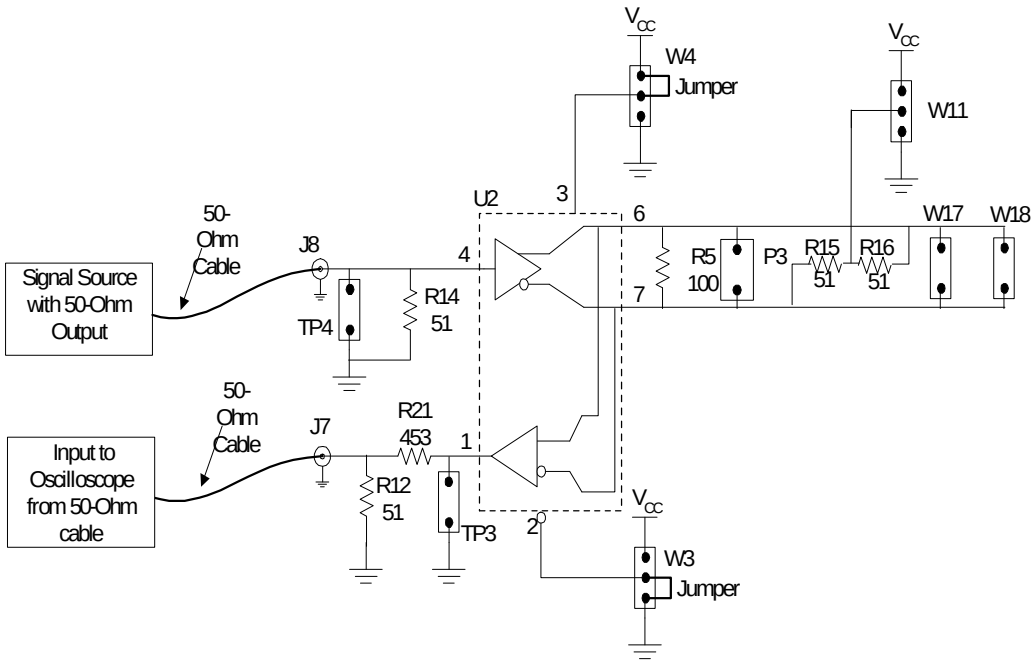
Recommended test equipment

In Table 1is a list of the test equipment required to test the Super-485 EVM. Equipment other than the recommended model may be used if it satisfies the specification listed inTable 1.

Table 1: Test equipment

Equipment required	Signals/functionality required
Oscilloscope, Tektronix TDS784D	General purpose (1GHz bandwidth, 10 mV/div min., 1 channel)
Active Voltage Probe, Tektronix P6245	1.5 GHz, 10X, <1pF, 1MÙ
Differential Probe, Tektronix P6247	1GHz, <5pf, 1MÙ
1 Power supply	7mV-30V dc, 0.1mV accuracy and resolution
DMM	4 ½ digit resolution
Function or Pattern Generator	15MHz, 3.3Vpp min, 50-Ohm output
Jumper cables/ Patch cords	2-Banana jack to banana jack cables, 2-SMA to BNC 50-Ohm cable assemblies 1-Clip lead to BNC 50-Ohm cable assembly

The test set-up is shown below in Figure 1.



The operator shall perform the following steps:

1. Verify all installed jumper settings against Table 2 Jumper Positions.

Table 2 Transceiver Test Jumper Positions

Jumper	Position
W11	Not Installed
W3	LO (pin 2 to pin 3)
W4	HI (pin 2 to pin 1)

2. Set the DC power supply to read +5.0V at the output terminals. Connect the positive output of the power supply to J17 and the minus output to J18 of the EVM.

3. Switch the power supply on, verify the current does not exceed 100mA.

4. Set function generator to output a 500 KHz square wave, 3.3 volts p-p, 50% duty cycle, with a 1.5V positive offset.

5. Use a 50-Ohm coaxial cable, with BNC/SMA connectors, to connect the function generator output to EVM coaxial connector J8.

6. Use a 50-Ohm coaxial cable, with BNC/SMA connectors, to connect the oscilloscope input to J7. **Make sure channel 2 of oscilloscope is set to 50 ohm input impedance.**

7. Set the oscilloscope as follows:

Vertical Menu	Horizontal Menu	Trigger Menu
100mV/Div	Time Base – Main	Edge
Bandwidth - Full	Trigger Position – 10%	Source – Ch1
Offset – 0V	Horizontal Position – Frame 1	Coupling – DC
Coupling DC 50Ù	500nS/Div	Slope – Rising
		Level – 170mV

8. The trace on the oscilloscope should look as shown in Figure 2.

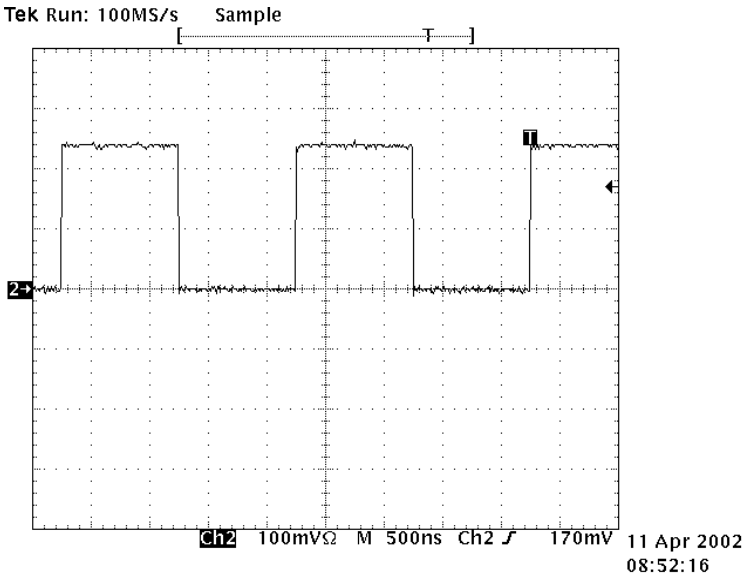


Figure 2 Transceiver Output Test Signal at J7

9. Using a differential scope probe (Tek P6247 or equivalent) connected to W17, and the vertical scale set to 1.00v/div, the trace on the oscilloscope should appear as shown in Figure 3.

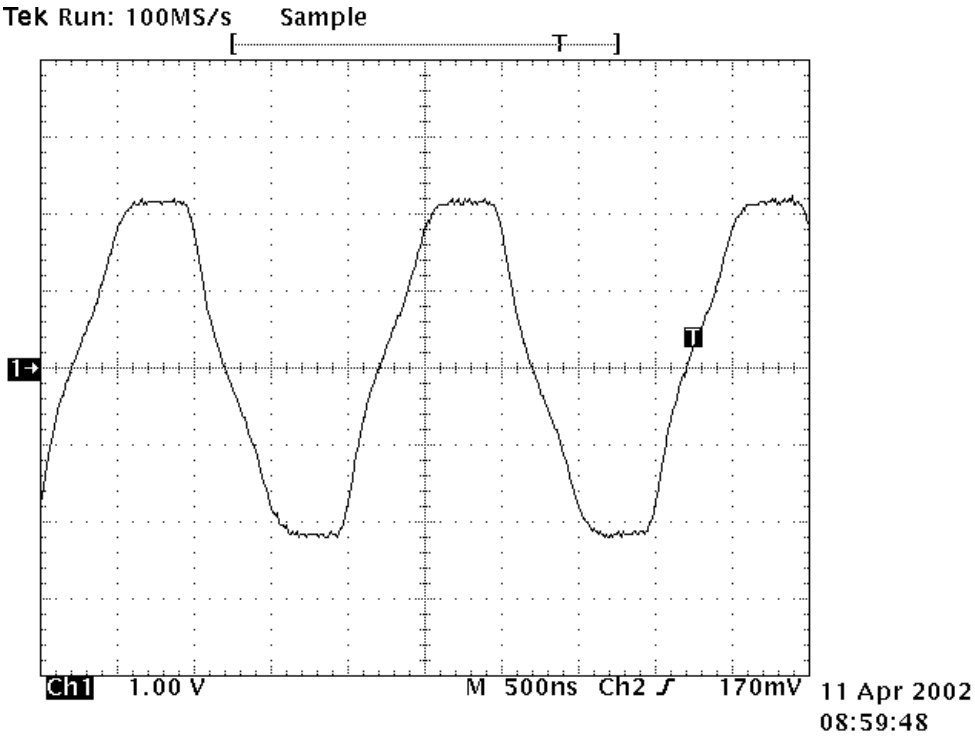


Figure 3 Transceiver Output Test Signal at W17

10. Turn the Power Supply Off

ALL Tests Completed

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