TIDA-00148
USB 2.0/3.0 Mass Storage Bridge for Automotive Infotainment Systems - Test Data

This document shares the test results of the TUSB9261-Q1 DEMO. Data provided are the Eye Diagram and the Spread Spectrum Clocking Profile.

Eye Diagram

The TUSB9261-Q1 Tx eye diagram uses the USB3.0 compliance pattern CP0, this eye is taken after a 3m long USB3 cable and 11 inch FR4 trace. As the TUSB9261-Q1 is a USB3.0 device, the 11 inch trace represents the worst case trace length of a host motherboard and the 3m cable represents the typical worst case USB3.0 cable length. The eye must have a minimum opening of 100mV in order to pass testing for automotive qualification. The TUSB9261-Q1 had an opening of 181mV and successfully passed the test.

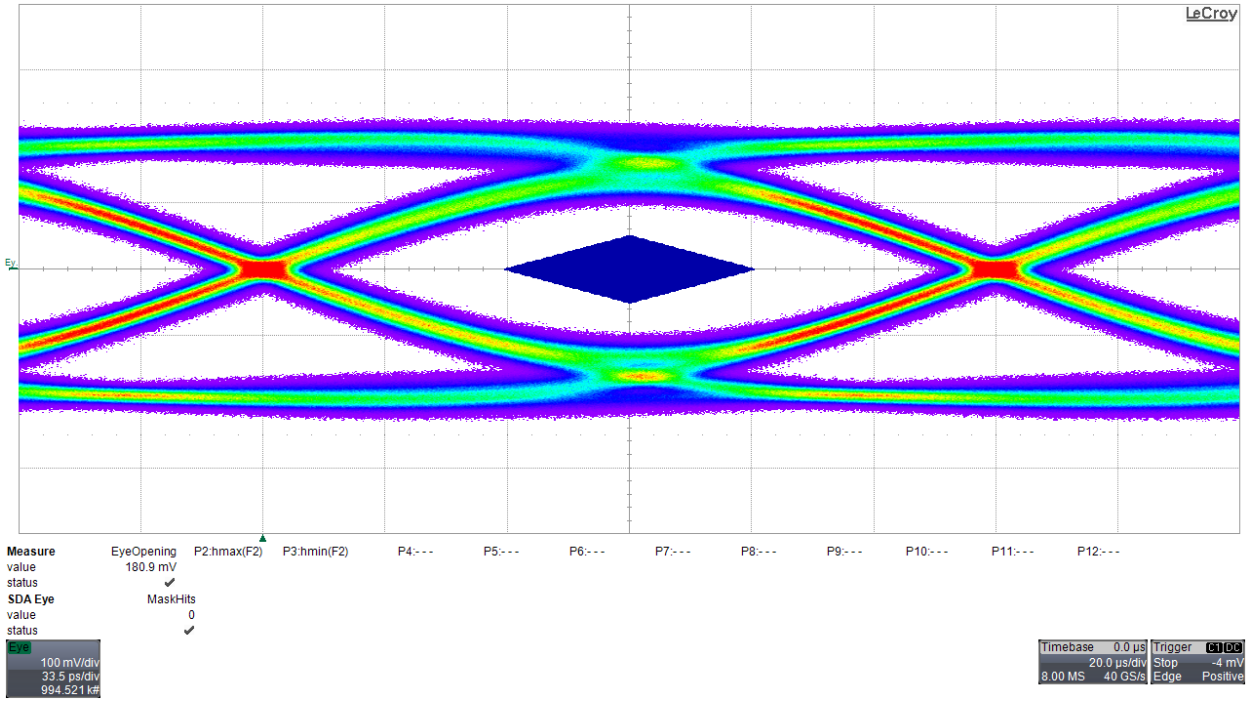

Figure 1. Tx eye diagram for TUSB9261-Q1. The eye height was 181mV.

SSC – Spread Spectrum Clocking profile

This test uses USB3.0 compliance pattern CP1 and measures the Spread Spectrum maximum deviation which is down spread (-3.7kPPM to -5.3kPPM). This test also measures the Spread Spectrum Modulation rate which must be between 30kHz and 33kHz. The TUSB9261-Q1 had a Spread Spectrum deviation of -4.9607kPPM and a modulation rate of 31.254kHz and successfully passed the test.

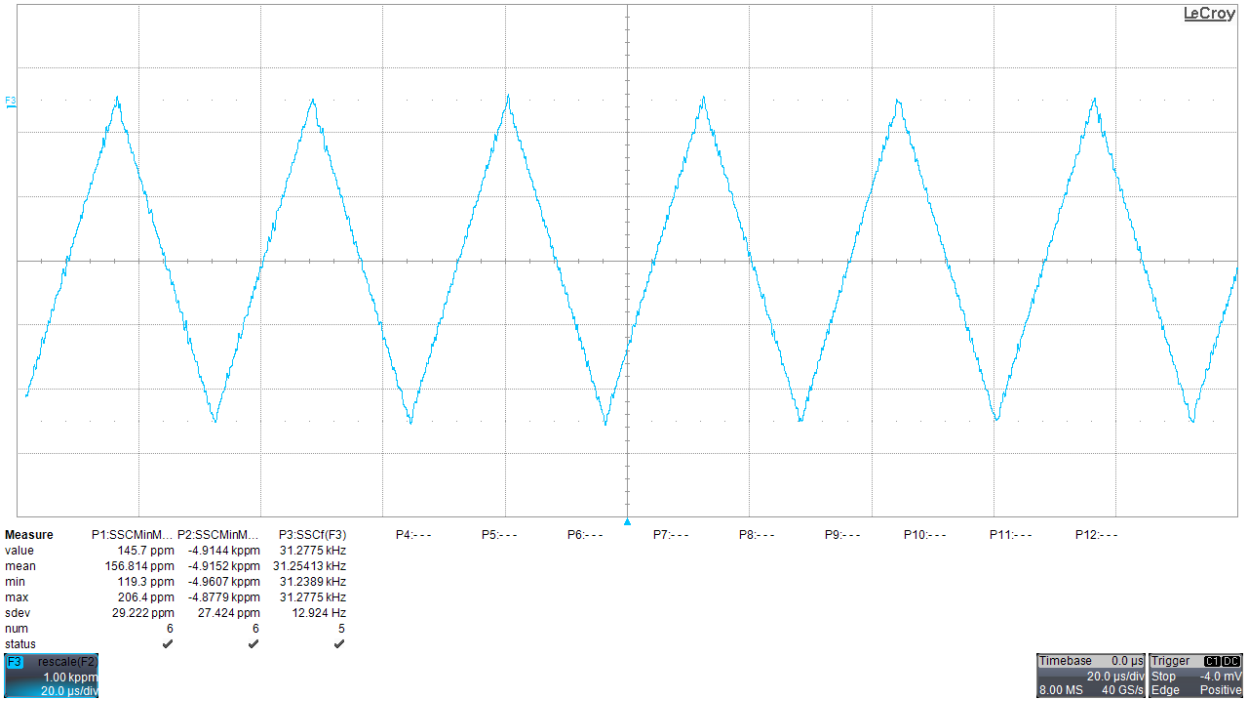

Figure 2. Spread Spectrum Clocking of TUSB9261-Q1. The SSC deviation was -4.9607kPPM and the modulation rate was 31.254kHz.

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