



Hi3516A/Hi3516D USB Eye Pattern Test Report

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About This Document

Purpose

This document describes the test results of the USB eye pattern on the Hi3516A/Hi3516D demo board.

Related Version

The following table lists the product version related to this document.

Product Name	Version
Hi3516A	V100
Hi3516D	V100

Intended Audience

This document is intended for:

- Technical support engineers
- Board hardware development engineers

Change History

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made in previous issues.

Issue 02 (2016-10-28)

This issue is the second official release.

Section 2.2 is deleted.

Issue 01 (2015-06-10)

This issue is the first official release.



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1 Test Devices

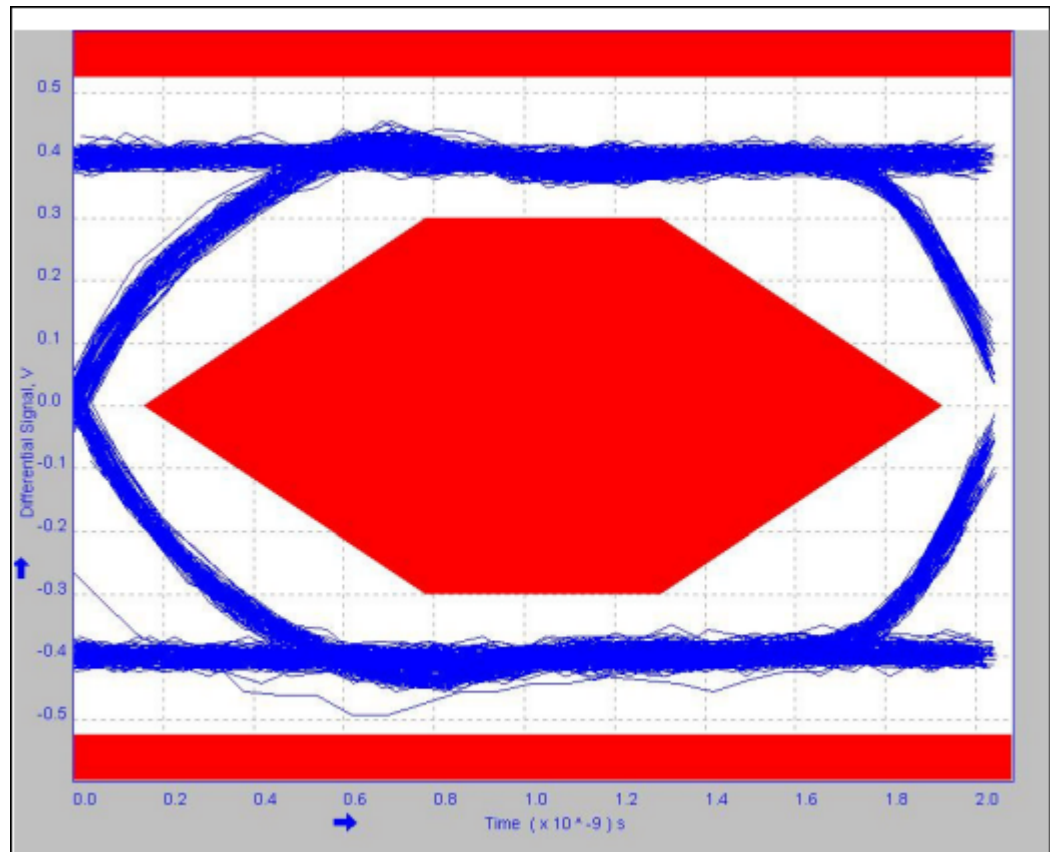
The test devices include the Tek oscilloscope and USB fixture.



2 Test Results

2.1 USB Host Mode

When the test points are close to the device, the test results are as follows:





Results based on USB-IF / Waiver Limits :

Measurement Name	Minimum	Maximum	Mean	pk-pk	Standard Deviation	RMS	Population	Status
Monotonic Property	-	-	-	-	-	-	0	Pass
Eye Diagram Test	-	-	-	-	-	-	-	Pass
Signal Rate	470.0385Mbps	491.6814Mbps	480.0295Mbps	0.0000bps	3.455937Mbps	480.2730Mbps	509	Pass
EOP Width	-	-	17.12797ns	-	-	-	1	Pass
EOP Width (Bits)	-	-	8.221929	-	-	-	1	Pass
Falling Edge Rate	1.130747kV/us	1.427012kV/us	1.288550kV/us	296.2647 V/us	54.78474 V/us	1.289703kV/us	107	Pass
Rising Edge Rate	1.158927kV/us	1.505792kV/us	1.297916kV/us	346.8647 V/us	61.42697 V/us	1.299356kV/us	108	Pass

Monotonicity test is performed on the test limits of 15.0% and 85.0%.

Additional Information :

Consecutive Jitter range : -40.68ps to 43.10ps RMS Jitter 16.27ps

KJ Paired Jitter range : -27.96ps to 28.30ps RMS Jitter 9.820ps

JK Paired Jitter range : -24.86ps to 25.41ps RMS Jitter 10.72ps

Rising Edge Rate:1.297916kV/us (Equivalent Rise Time = 493.10 ps)

Falling Edge Rate:1.288550kV/us (Equivalent Fall Time = 496.68 ps)

The margin of the USB eye pattern is sufficient, and the test result is PASS.