



**TELEDYNE
LECROY**



USB3 Test Report

Overall result: Pass

DUT:	TUSB522
Comment:	OS=0 DE=0 EQ=F
Time of session start:	04/04/2016 17:43:33
Operator:	Diego
Temperature	25° C
Standard in use:	USB3
Run1:	
Time of run:	2016/04/04 17:43:39
Configuration in use:	Host Scope Only (TX Tests) tst
Limits in use:	ComplianceLimits
Oscilloscope Name:	LCRY0425N49707 Model: SDA813ZI
Oscilloscope Serial #:	LCRY0425N49707
Computer:	LCRY0425N49707
Oscilloscope firmware version:	7.9.0.1 (Build 213841)
QualiPHY core version:	7.9.0.5 (Build 214613)
QualiPHY script version:	7.9.0.5
Stylesheet version:	1.2.0.6

Summary Table

[\[Hide Table\]](#)

Pass	Run #	Test	Measurement	Current Value	Test Criteria
	1	1.2	SSC Deviation Max (max)	-64.4 PPM	-300.0 PPM <= x <= 300.0 PPM or -2.3000 kPPM <= x <= -1.7000 kPPM
	1	1.2	SSC Deviation Max (min)	-84.8 PPM	-300.0 PPM <= x <= 300.0 PPM or -2.3000 kPPM <= x <= -1.7000 kPPM
	1	1.2	SSC Frequency Modulation Rate	32.144 kHz	30.000 kHz <= x <= 33.000 kHz
	1	1.2	SSC Deviation Min (max)	-4.5598 kPPM	-5.3000 kPPM <= x <= -3.7000 kPPM
	1	1.2	SSC Deviation Min (min)	-4.6217 kPPM	-5.3000 kPPM <= x <= -3.7000 kPPM
	1	1.3.1	Tj_CP1	51.12 ps	x <= 132.00 ps
	1	1.3.1	Rj(rms)CP1	1.514 ps	x <= 3.270 ps
	1	1.3.2	Phase Jitter Slew Rate Max	2.589 ms/s	x = 0 µs/s +/- 10.000 ms/s
	1	1.3.2	Phase Jitter Slew Rate Min	-2.635 ms/s	x = 0 µs/s +/- 10.000 ms/s
	1	1.3.3	Ti_CP1 SigTest	16.8834 ps	x <= 132.00 ps
	1	1.3.3	Rj (rms) CP1 SigTest	1.1391 ps	x <= 3.270 ps
	1	1.3.1	Ti_CP0	54.91 ps	x <= 132.00 ps
	1	1.3.1	Rj(rms) CP0	1.533 ps	x <= 3.270 ps
	1	1.3.1	Dj_CP0	33.05 ps	x <= 86.00 ps
	1	1.3.1	Min Pulse Time	188.549 ps	Informational Only
	1	1.3.1	Avg UI	200.4667 ps	Informational Only
	1	1.3.4	Eye Diagram Mask Hits	0 hits	x = 0 hits
	1	1.3.4	Eye Height	366 mV	100 mV <= x <= 1.200 V
	1	1.3.3	SigTest Pass / Fail Result	Pass	match "Pass"
	1	1.3.3	Ti_CP0 SigTest	51.9150 ps	x <= 132.00 ps
	1	1.3.3	Rj (rms) CP0 SigTest	1.1391 ps	x <= 3.270 ps
	1	1.3.3	Dj_DD CP0 SigTest	35.8988 ps	x <= 86.00 ps
	1	1.3.3	Min Time Between Crossovers (after channel) SigTest	179.282 ps	Informational Only
	1	1.3.3	Avg UI SigTest	200.4815 ps	199.9400 ps < x < 201.0656 ps
	1	1.3.3	Max PP Jitter SigTest	51.618 ps	Informational Only
	1	1.3.5	Non Transition Eye Violations	0 hits	x = 0 hits
	1	1.3.5	Transition Eye Violations	0 hits	x = 0 hits
	1	1.3.5	Total Eye Violations	0 hits	x = 0 hits
	1	1.3.5	Eye Height SigTest	367.8 mV	Informational Only
	1	1.3.5	Max Non Trans Voltage SigTest	326.5 mV	Informational Only

Pass	Run #	Test	Measurement	Current Value	Test Criteria
	1	1.3.5	Min Non Trans Voltage SigTest	-329.7 mV	Informational Only
	1	1.3.5	Max Trans Voltage SigTest	333.3 mV	Informational Only
	1	1.3.5	Max Trans Voltage SigTest	-334.1 mV	Informational Only
	1	1.3.5	Min Non Trans Upper Margin	150.0 mV	Informational Only
	1	1.3.5	Max Non Trans Lower Margin	-148.7 mV	Informational Only
	1	1.3.5	Max Trans Upper Margin	135.0 mV	Informational Only
	1	1.3.5	Max Trans Lower Margin	-132.8 mV	Informational Only
	1	1.3.5	Min Eye Width SigTest	148.085 ps	Informational Only
	1	1.4.1	Vtx-ac-cm-pp active	44.715 mV	Informational Only
	1	1.4.2	Vtx-dc-cm	-1 mV	Informational Only
	1	1.5	Differential Voltage Deemphsized Level	984.0 mV	Informational Only
	1	1.5	Differential Voltage Min	-493.0 mV	Informational Only
	1	1.5	Differential Voltage Max	491.0 mV	Informational Only
	1	1.5	Differential Voltage Full Swing Level	984.0 mV	Informational Only
	1	1.5	De-emphasis Ratio	0.00 dB	Informational Only
	1	1.6.1	Short Channel Tj CP1 SigTest	16.4224 ps	$x \leq 132.00 \text{ ps}$
	1	1.6.1	Short Channel Rj (rms) CP1 SigTest	1.1197 ps	$x \leq 3.270 \text{ ps}$
	1	1.6.2	Short Channel SigTest Pass / Fail Result	Pass	match "Pass"
	1	1.6.2	Short Channel Tj CP0	34.1072 ps	$x \leq 132.00 \text{ ps}$
	1	1.6.2	Short Channel Rj (rms) CP0	1.1197 ps	$x \leq 3.270 \text{ ps}$
	1	1.6.2	Short Channel Dj DD CP0	18.3643 ps	$x \leq 86.00 \text{ ps}$
	1	1.6.2	Short Channel Min Time Between Crossovers (after channel)	184.304 ps	Informational Only
	1	1.6.2	Short Channel Avg UI	200.4816 ps	$199.9400 \text{ ps} < x < 201.0656 \text{ ps}$
	1	1.6.2	Short Channel Max PP Jitter	32.555 ps	Informational Only

Details

[\[Up \]](#)

 Pass	Measurement: SSC Deviation Max (max)		
	Current Value: -64.4 PPM	Test Criteria:	-300.0 PPM <= x <= 300.0 PPM or -2.3000 kPPM <= x <= -1.7000 kPPM
	Timestamp: 04/04/2016 17:46:08	Limit Name:	SSCDeviationMax or SSCRadioFriendlyMax

[\[Up \]](#)

 Pass	Measurement: SSC Deviation Max (min)		
	Current Value: -84.8 PPM	Test Criteria:	-300.0 PPM <= x <= 300.0 PPM or -2.3000 kPPM <= x <= -1.7000 kPPM
	Timestamp: 04/04/2016 17:46:09	Limit Name:	SSCDeviationMax or SSCRadioFriendlyMax

[\[Up \]](#)

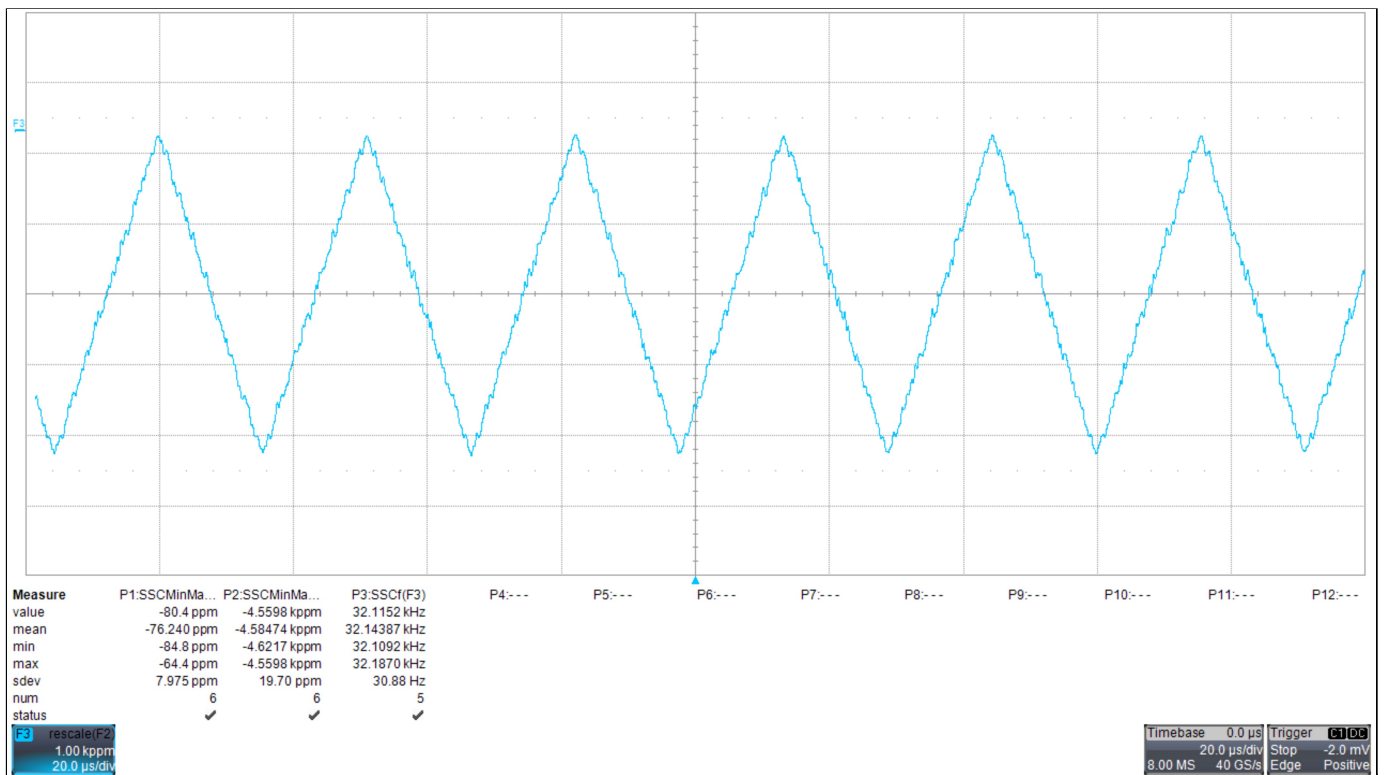
 Pass	Measurement: SSC Frequency Modulation Rate		
	Current Value: 32.144 kHz	Test Criteria:	30.000 kHz <= x <= 33.000 kHz
	Timestamp: 04/04/2016 17:46:09	Limit Name:	SSCFreq

[\[Up \]](#)

 Pass	Measurement: SSC Deviation Min (max)		
	Current Value: -4.5598 kPPM	Test Criteria:	-5.3000 kPPM <= x <= -3.7000 kPPM
	Timestamp: 04/04/2016 17:46:09	Limit Name:	SSCDeviationMin

[\[Up \]](#)

 Pass	Measurement: SSC Deviation Min (min)		
	Current Value: -4.6217 kPPM	Test Criteria:	-5.3000 kPPM <= x <= -3.7000 kPPM
	Timestamp: 04/04/2016 17:46:09	Limit Name:	SSCDeviationMin



Spread Spectrum Test

Timestamp: 04/04/2016 17:46:10

[\[Up \]](#)

 Pass	Measurement: <i>Tj_CP1</i>	
	Current Value: 51.12 ps	Test Criteria: $x \leq 132.00$ ps
	Timestamp: 04/04/2016 17:47:12	Limit Name: Tj

[\[Up \]](#)

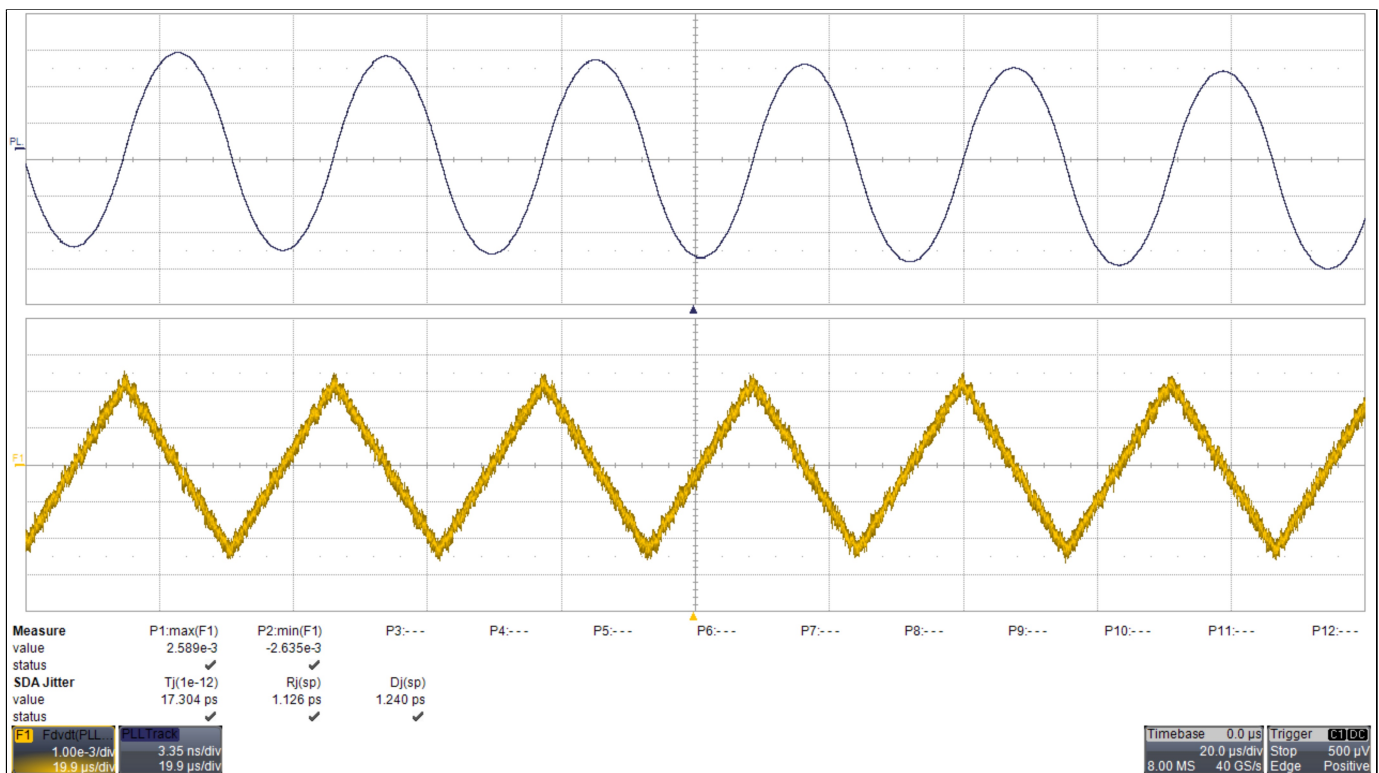
 Pass	Measurement: <i>Rj(rms)CP1</i>	
	Current Value: 1.514 ps	Test Criteria: $x \leq 3.270$ ps
	Timestamp: 04/04/2016 17:47:12	Limit Name: Rj

[\[Up \]](#)

 Pass	Measurement: <i>Phase Jitter Slew Rate Max</i>	
	Current Value: 2.589 ms/s	Test Criteria: $x = 0 \mu\text{s/s} \pm 10.000$ ms/s
	Timestamp: 04/04/2016 17:47:25	Limit Name: TcdrSlew

[\[Up \]](#)

 Pass	Measurement: <i>Phase Jitter Slew Rate Min</i>	
	Current Value: -2.635 ms/s	Test Criteria: $x = 0 \mu\text{s/s} \pm 10.000$ ms/s
	Timestamp: 04/04/2016 17:47:25	Limit Name: TcdrSlew



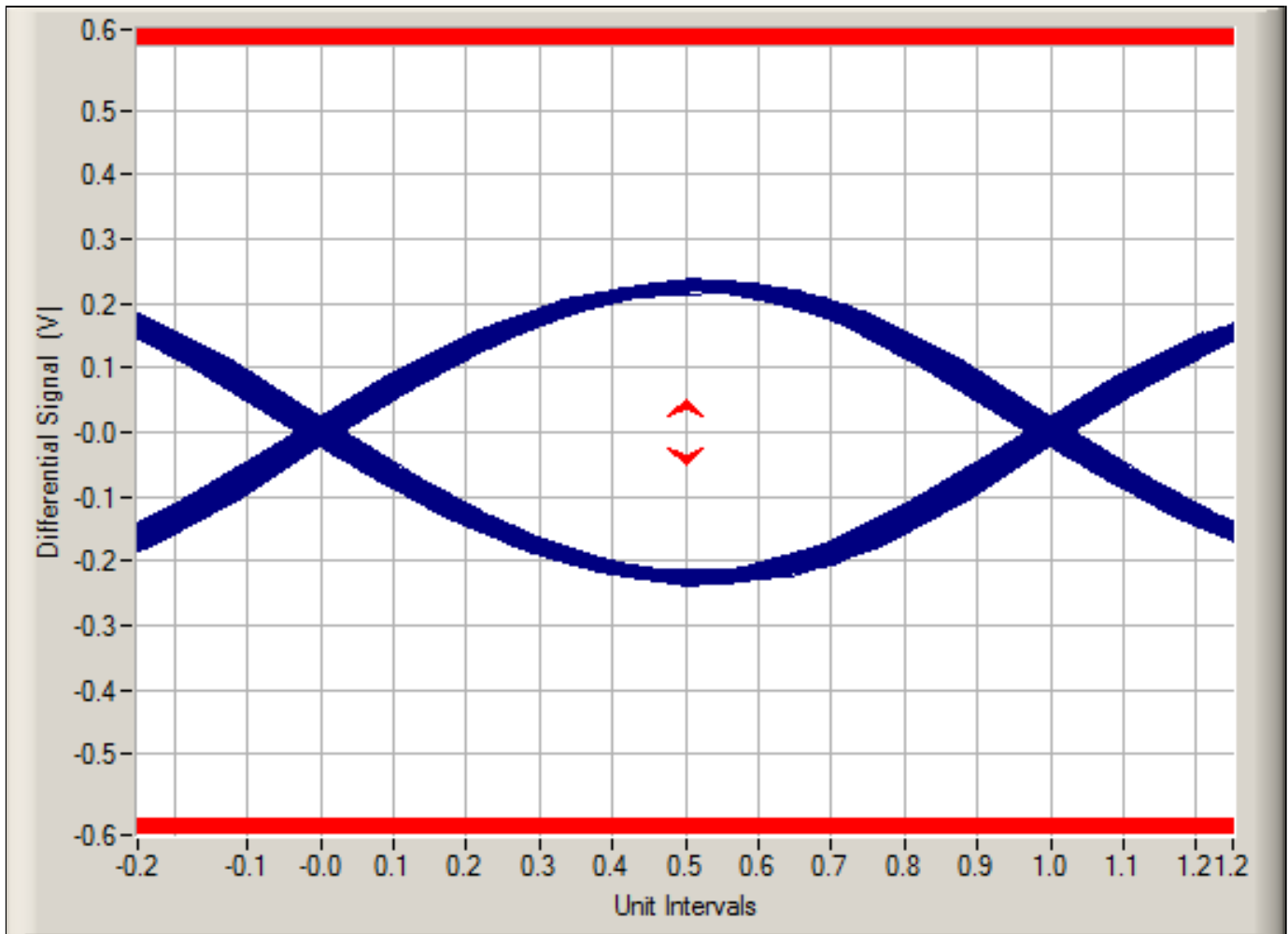
Phase Jitter Slew Rate
Timestamp: 04/04/2016 17:47:25

[\[Up \]](#)

 Pass	Measurement: <i>Tj CP1 SigTest</i>	
	Current Value: 16.8834 ps	Test Criteria: $x \leq 132.00$ ps
	Timestamp: 04/04/2016 17:47:37	Limit Name: Tj

[\[Up \]](#)

 Pass	Measurement: <i>Rj (rms) CP1 SigTest</i>	
	Current Value: 1.1391 ps	Test Criteria: $x \leq 3.270$ ps
	Timestamp: 04/04/2016 17:47:37	Limit Name: Rj



SigTest CP1 Eye Diagram

Timestamp: 04/04/2016 17:47:37

[\[Up \]](#)

 Pass	Measurement: Tj CP0		
	Current Value:	54.91 ps	Test Criteria: x <= 132.00 ps
	Timestamp:	04/04/2016 17:49:54	Limit Name: Tj

[\[Up \]](#)

 Pass	Measurement: Rj(rms) CP0		
	Current Value:	1.533 ps	Test Criteria: x <= 3.270 ps
	Timestamp:	04/04/2016 17:49:54	Limit Name: Rj

[\[Up \]](#)

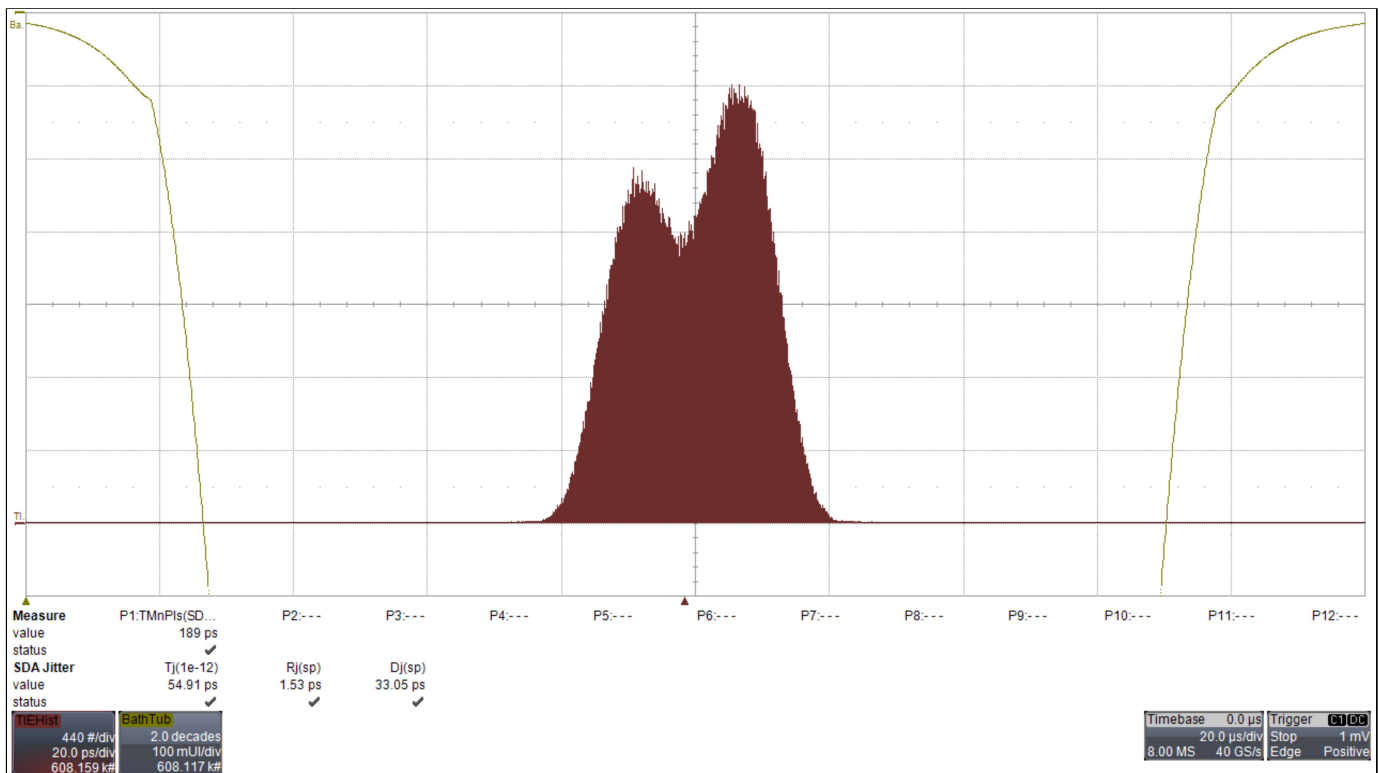
 Pass	Measurement: Dj CP0		
	Current Value:	33.05 ps	Test Criteria: x <= 86.00 ps
	Timestamp:	04/04/2016 17:49:54	Limit Name: Dj

[\[Up \]](#)

	Measurement: Min Pulse Time		
	Current Value:	188.549 ps	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:49:54	Limit Name: MinPulse

[\[Up \]](#)

	Measurement: Avg UI		
	Current Value:	200.4667 ps	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:49:54	Limit Name: UISSC

**Jitter CP0**

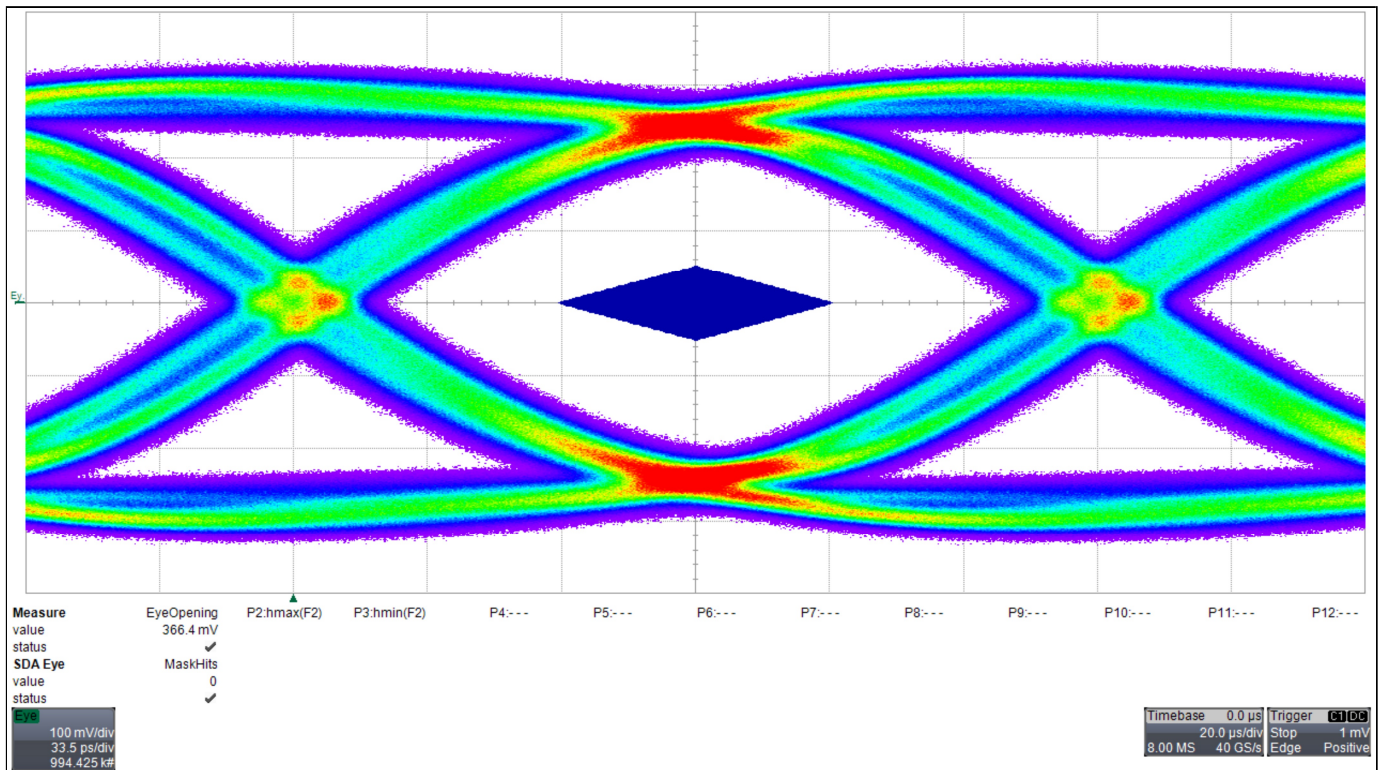
Timestamp: 04/04/2016 17:49:55

[\[Up \]](#)

 Pass	Measurement: Eye Diagram Mask Hits	
	Current Value: 0 hits	Test Criteria: $x = 0$ hits
	Timestamp: 04/04/2016 17:50:22	Limit Name: MaskHits

[\[Up \]](#)

 Pass	Measurement: Eye Height	
	Current Value: 366 mV	Test Criteria: $100 \text{ mV} \leq x \leq 1.200 \text{ V}$
	Timestamp: 04/04/2016 17:50:22	Limit Name: EyeHeight



Eye Diagram

Timestamp: 04/04/2016 17:50:22

[\[Up \]](#)

 Pass	Measurement: SigTest Pass / Fail Result		
	Current Value:	Pass	Test Criteria: match "Pass"
	Timestamp:	04/04/2016 17:50:34	Limit Name: OverallPassFail

[\[Up \]](#)

 Pass	Measurement: Tj CP0 SigTest		
	Current Value:	51.9150 ps	Test Criteria: $x \leq 132.00$ ps
	Timestamp:	04/04/2016 17:50:34	Limit Name: Tj

[\[Up \]](#)

 Pass	Measurement: Rj (rms) CP0 SigTest		
	Current Value:	1.1391 ps	Test Criteria: $x \leq 3.270$ ps
	Timestamp:	04/04/2016 17:50:34	Limit Name: Rj

[\[Up \]](#)

 Pass	Measurement: Dj DD CP0 SigTest		
	Current Value:	35.8988 ps	Test Criteria: $x \leq 86.00$ ps
	Timestamp:	04/04/2016 17:50:34	Limit Name: Dj

[\[Up \]](#)

 	Measurement: Min Time Between Crossovers (after channel) SigTest		
	Current Value:	179.282 ps	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:50:34	Limit Name: InfoOnlyS

[\[Up \]](#)

 Pass	Measurement: Avg UI SigTest		
	Current Value:	200.4815 ps	Test Criteria: $199.9400 \text{ ps} < x < 201.0656 \text{ ps}$
	Timestamp:	04/04/2016 17:50:34	Limit Name: UISSC

[\[Up \]](#)

 	Measurement: Max PP Jitter SigTest		
	Current Value:	51.618 ps	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:50:34	Limit Name: InfoOnlyS

[\[Up \]](#)

 Pass	Measurement: Non Transition Eye Violations		
	Current Value:	0 hits	Test Criteria: $x = 0$ hits
	Timestamp:	04/04/2016 17:50:34	Limit Name: MaskHits

[\[Up \]](#)

 Pass	Measurement: Transition Eye Violations		
	Current Value:	0 hits	Test Criteria: $x = 0$ hits
	Timestamp:	04/04/2016 17:50:34	Limit Name: MaskHits

[\[Up \]](#)

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Pass

Measurement: **Total Eye Violations**

Current Value: 0 hits

Test Criteria: x = 0 hits

Timestamp: 04/04/2016 17:50:35

Limit Name: MaskHits

[\[Up \]](#)



Measurement: **Eye Height SigTest**

Current Value: 367.8 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Max Non Trans Voltage SigTest**

Current Value: 326.5 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Min Non Trans Voltage SigTest**

Current Value: -329.7 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Max Trans Voltage SigTest**

Current Value: 333.3 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Max Trans Voltage SigTest**

Current Value: -334.1 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Min Non Trans Upper Margin**

Current Value: 150.0 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Max Non Trans Lower Margin**

Current Value: -148.7 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Max Trans Upper Margin**

Current Value: 135.0 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

[\[Up \]](#)



Measurement: **Max Trans Lower Margin**

Current Value: -132.8 mV

Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35

Limit Name: InfoOnlyV

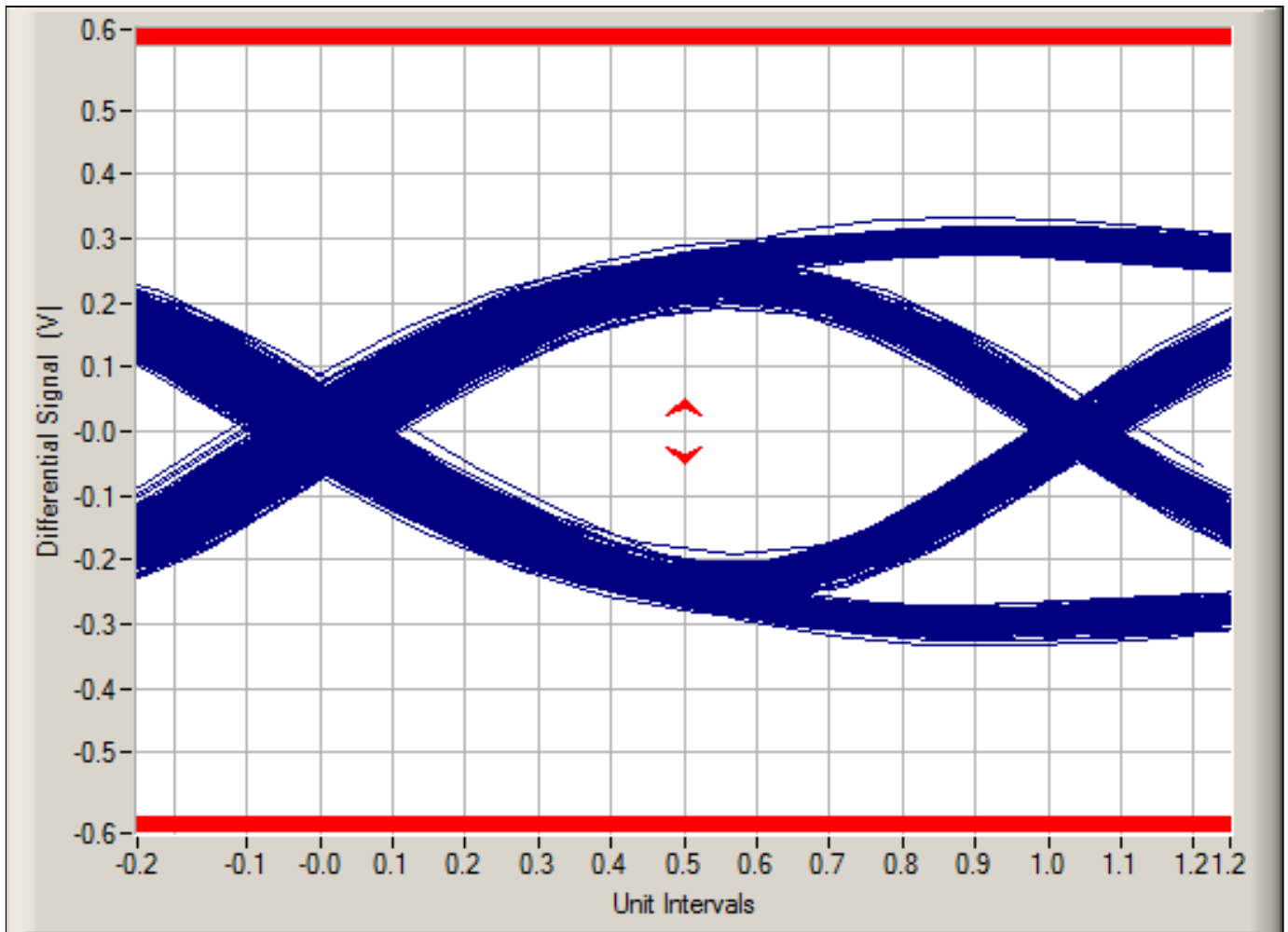
[\[Up \]](#)



Measurement: **Min Eye Width SigTest**

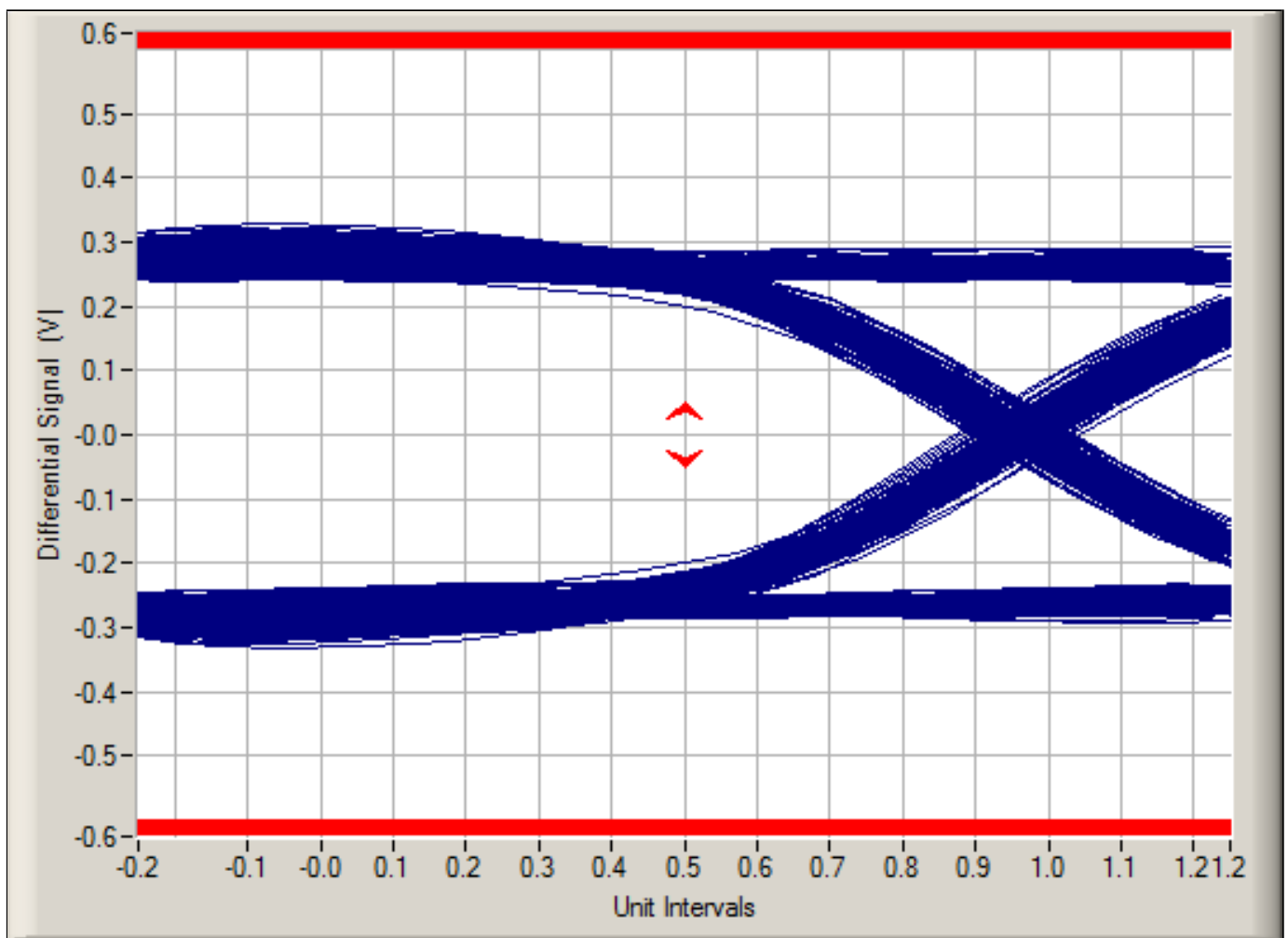
Current Value: 148.085 ps Test Criteria: Informational Only

Timestamp: 04/04/2016 17:50:35 Limit Name: InfoOnlyS



SigTest CP0 Transition Eye Diagram

Timestamp: 04/04/2016 17:50:35



SigTest CP0 Non Transition Eye Diagram

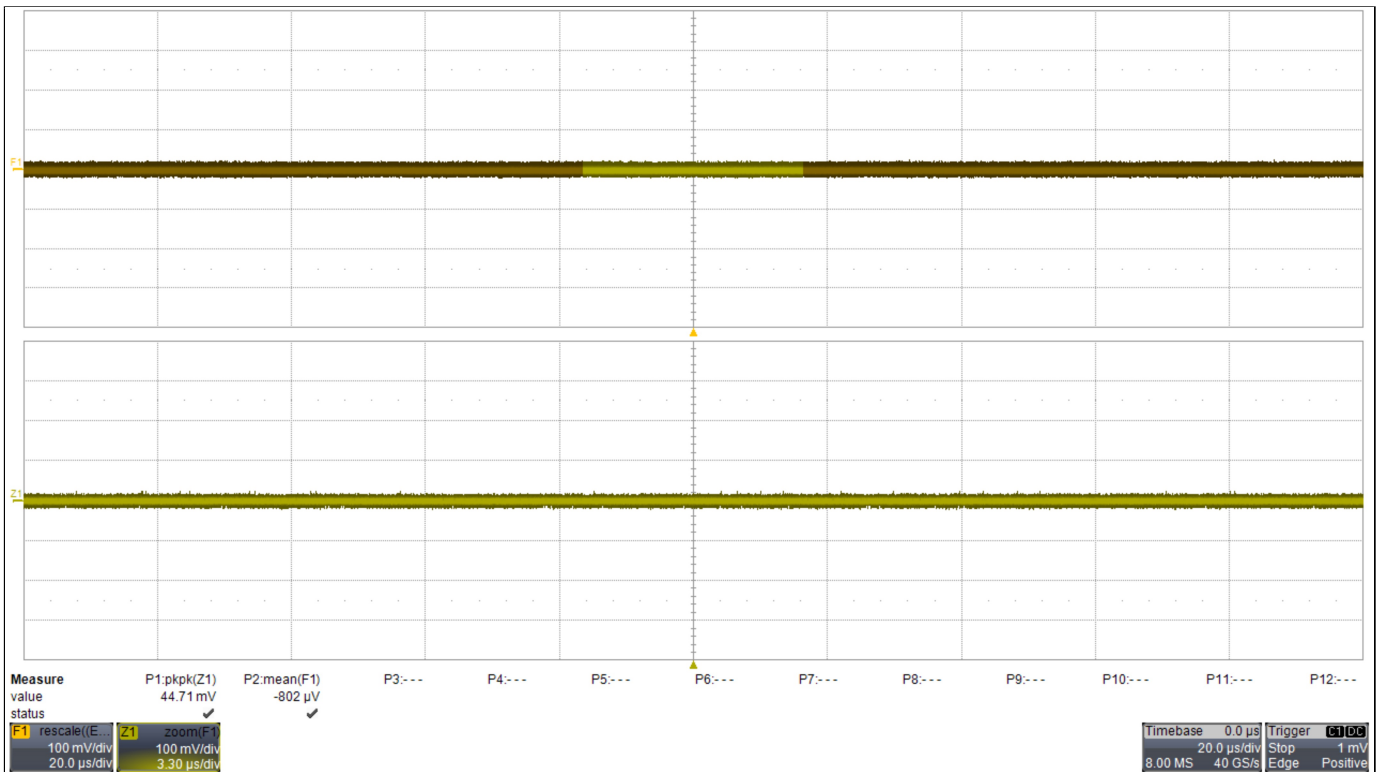
Timestamp: 04/04/2016 17:50:35

[\[Up \]](#)

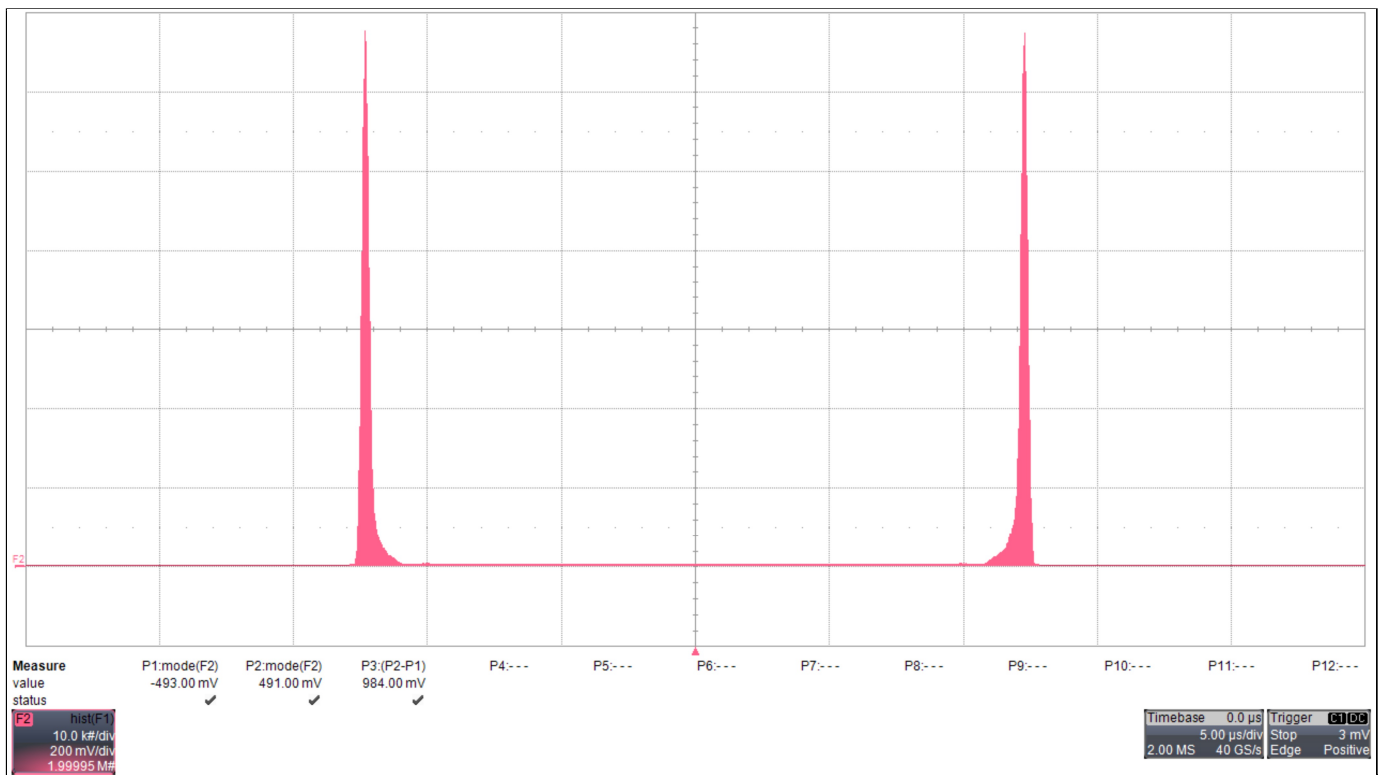
	Measurement: Vtx-ac-cm-pp active		
	Current Value:	44.715 mV	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:50:43	Limit Name: Vtx-ac-cm-pp

[\[Up \]](#)

	Measurement: Vtx-dc-cm		
	Current Value:	-1 mV	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:50:44	Limit Name: Vtx-dc-cm



Common Mode Voltage
Timestamp: 04/04/2016 17:50:45



Differential Voltage De-emphasized Level
Timestamp: 04/04/2016 17:51:17

[\[Up \]](#)

	Measurement: Differential Voltage Deemphsized Level		
	Current Value:	984.0 mV	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:51:17	Limit Name: InfoOnlyV

[\[Up \]](#)

	Measurement: Differential Voltage Min		
	Current Value:	-493.0 mV	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:52:37	Limit Name: InfoOnlyV

[\[Up \]](#)

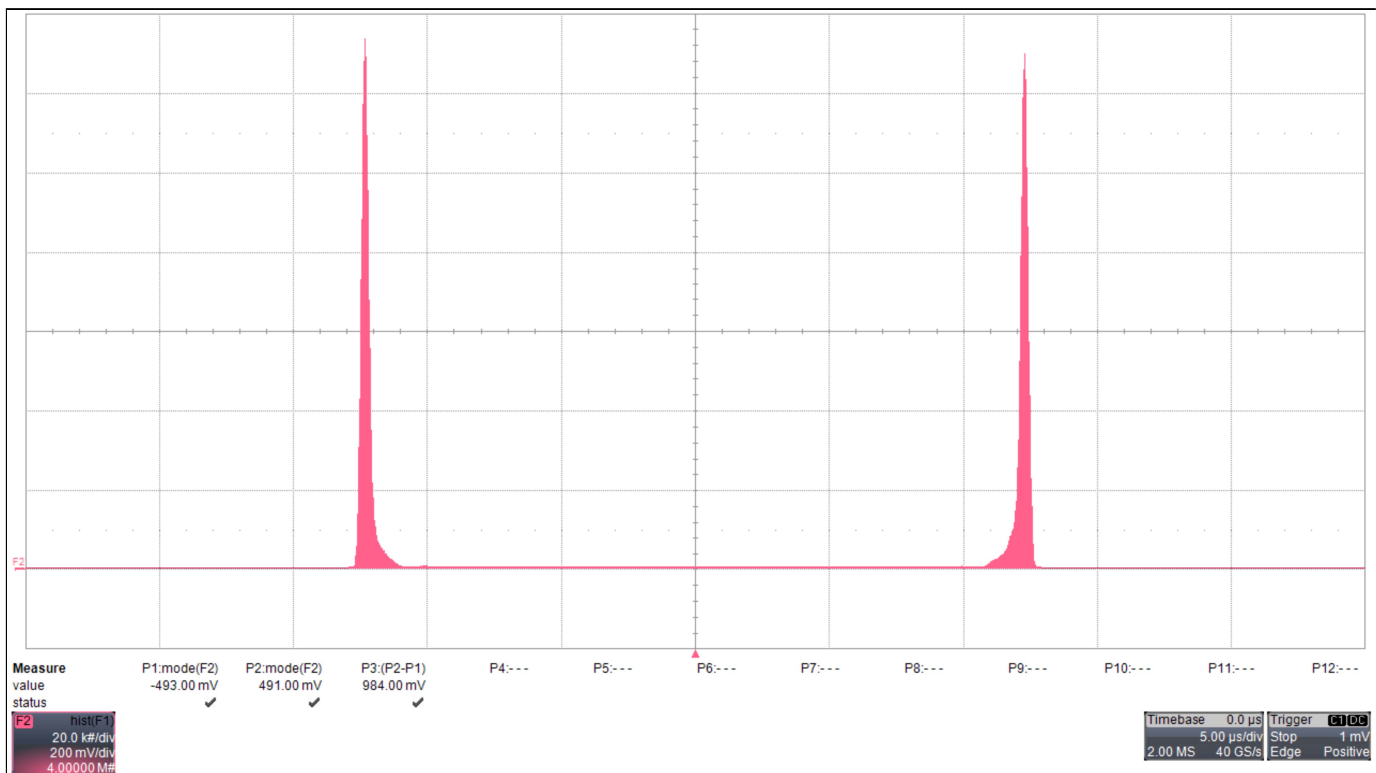
	Measurement: Differential Voltage Max		
	Current Value:	491.0 mV	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:52:37	Limit Name: InfoOnlyV

[\[Up \]](#)

	Measurement: Differential Voltage Full Swing Level		
	Current Value:	984.0 mV	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:52:37	Limit Name: Vtx-diff-pp

[\[Up \]](#)

	Measurement: De-emphasis Ratio		
	Current Value:	0.00 dB	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:52:37	Limit Name: Vtx-de-ratio

**Differential Voltage Full Swing Level**

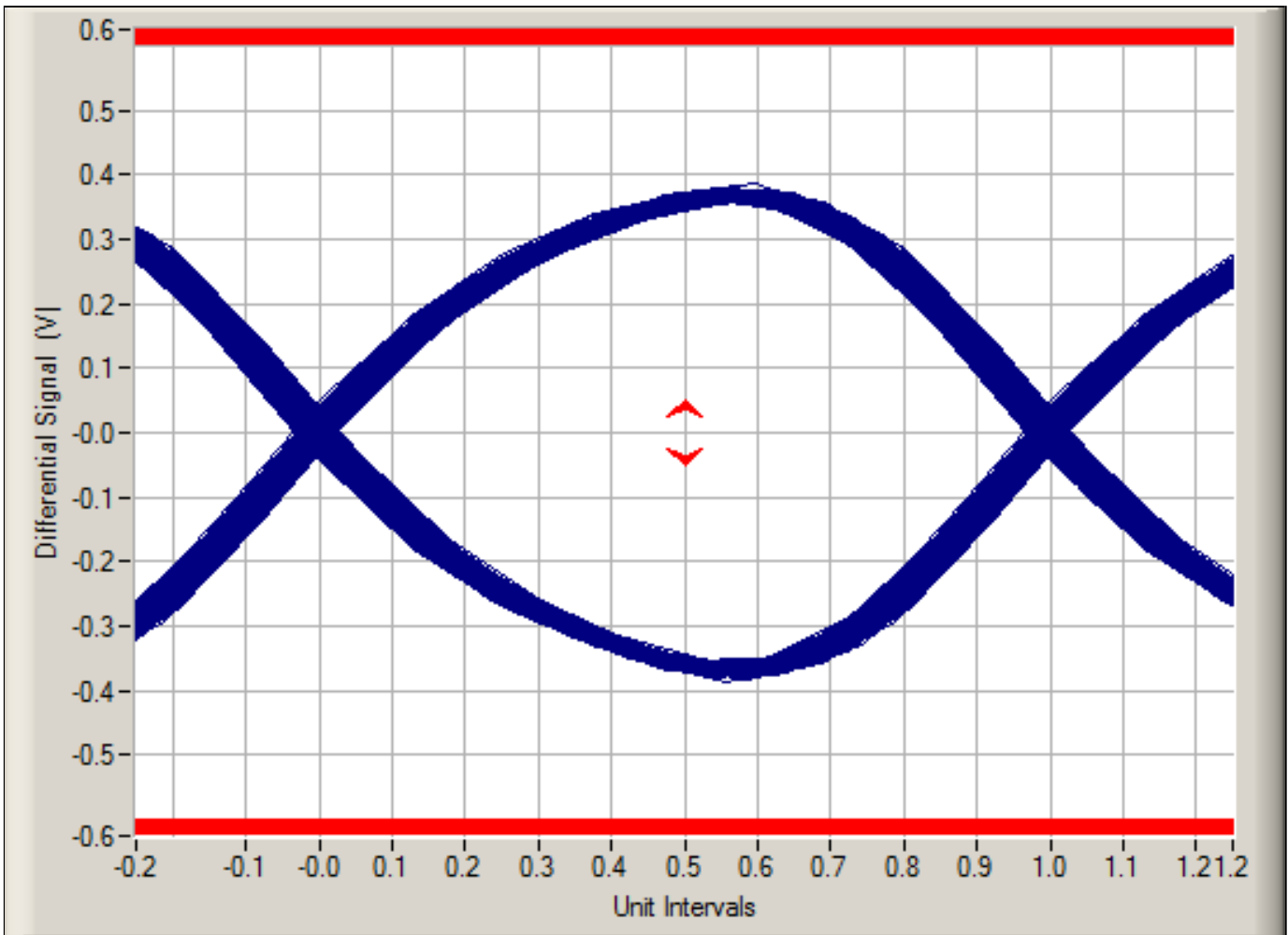
Timestamp: 04/04/2016 17:52:37

[\[Up \]](#)

 Pass	Measurement: Short Channel Tj CP1 SigTest	
	Current Value: 16.4224 ps	Test Criteria: $x \leq 132.00$ ps
	Timestamp: 04/04/2016 17:52:45	Limit Name: Tj

[\[Up \]](#)

 Pass	Measurement: Short Channel Rj (rms) CP1 SigTest	
	Current Value: 1.1197 ps	Test Criteria: $x \leq 3.270$ ps
	Timestamp: 04/04/2016 17:52:45	Limit Name: Rj



Short Channel SigTest CP1 Eye Diagram

Timestamp: 04/04/2016 17:52:45

[\[Up \]](#)

 Pass	Measurement: Short Channel SigTest Pass / Fail Result		
	Current Value:	Pass	Test Criteria: match "Pass"
	Timestamp:	04/04/2016 17:52:54	Limit Name: OverallPassFail

[\[Up \]](#)

 Pass	Measurement: Short Channel Tj CP0		
	Current Value:	34.1072 ps	Test Criteria: $x \leq 132.00$ ps
	Timestamp:	04/04/2016 17:52:54	Limit Name: Tj

[\[Up \]](#)

 Pass	Measurement: Short Channel Rj (rms) CP0		
	Current Value:	1.1197 ps	Test Criteria: $x \leq 3.270$ ps
	Timestamp:	04/04/2016 17:52:54	Limit Name: Rj

[\[Up \]](#)

 Pass	Measurement: Short Channel Dj DD CP0		
	Current Value:	18.3643 ps	Test Criteria: $x \leq 86.00$ ps
	Timestamp:	04/04/2016 17:52:54	Limit Name: Dj

[\[Up \]](#)

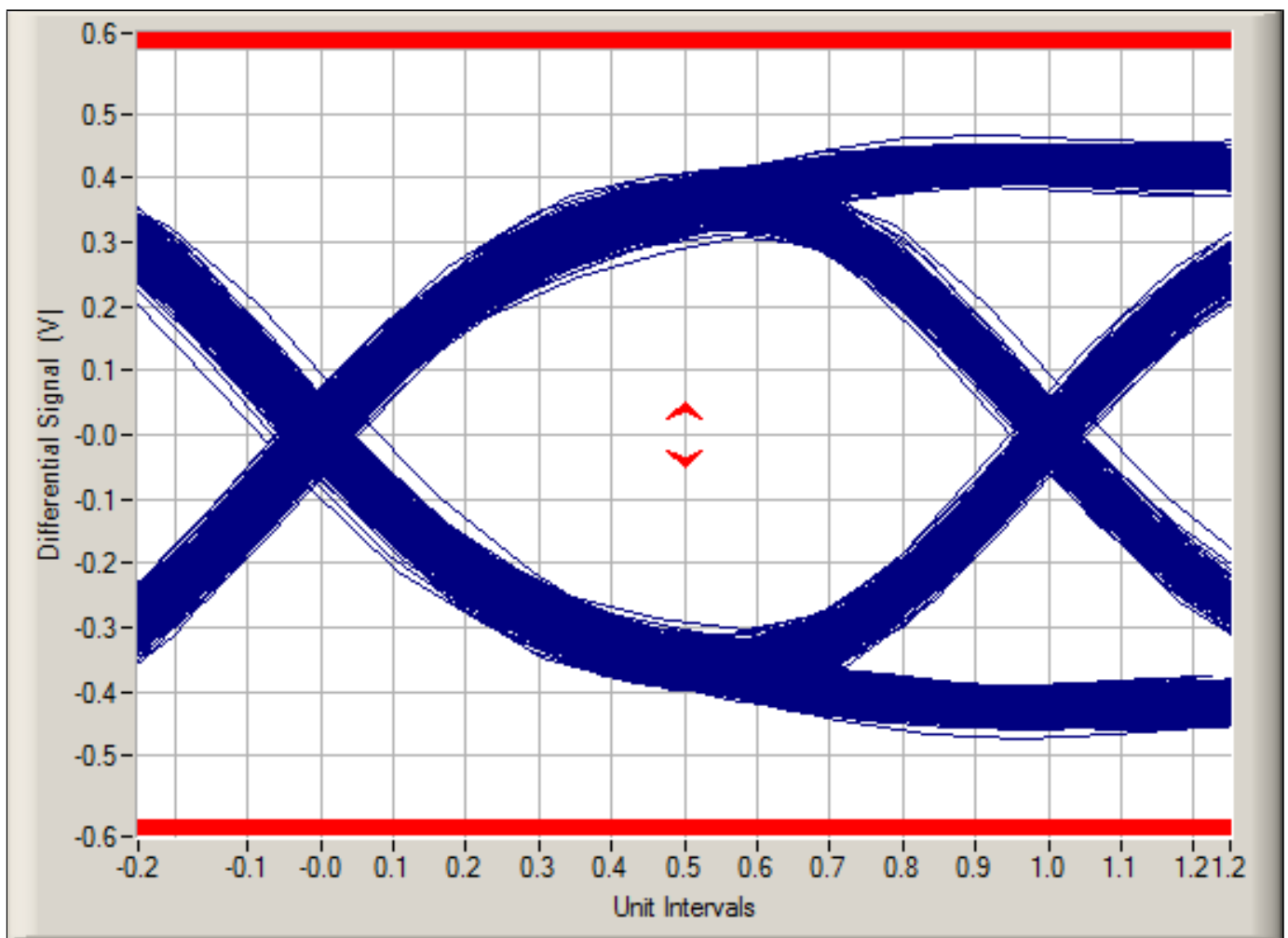
	Measurement: Short Channel Min Time Between Crossovers (after channel)		
	Current Value:	184.304 ps	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:52:54	Limit Name: InfoOnlyS

[\[Up \]](#)

 Pass	Measurement: Short Channel Avg UI		
	Current Value:	200.4816 ps	Test Criteria: $199.9400 \text{ ps} < x < 201.0656 \text{ ps}$
	Timestamp:	04/04/2016 17:52:54	Limit Name: UISSC

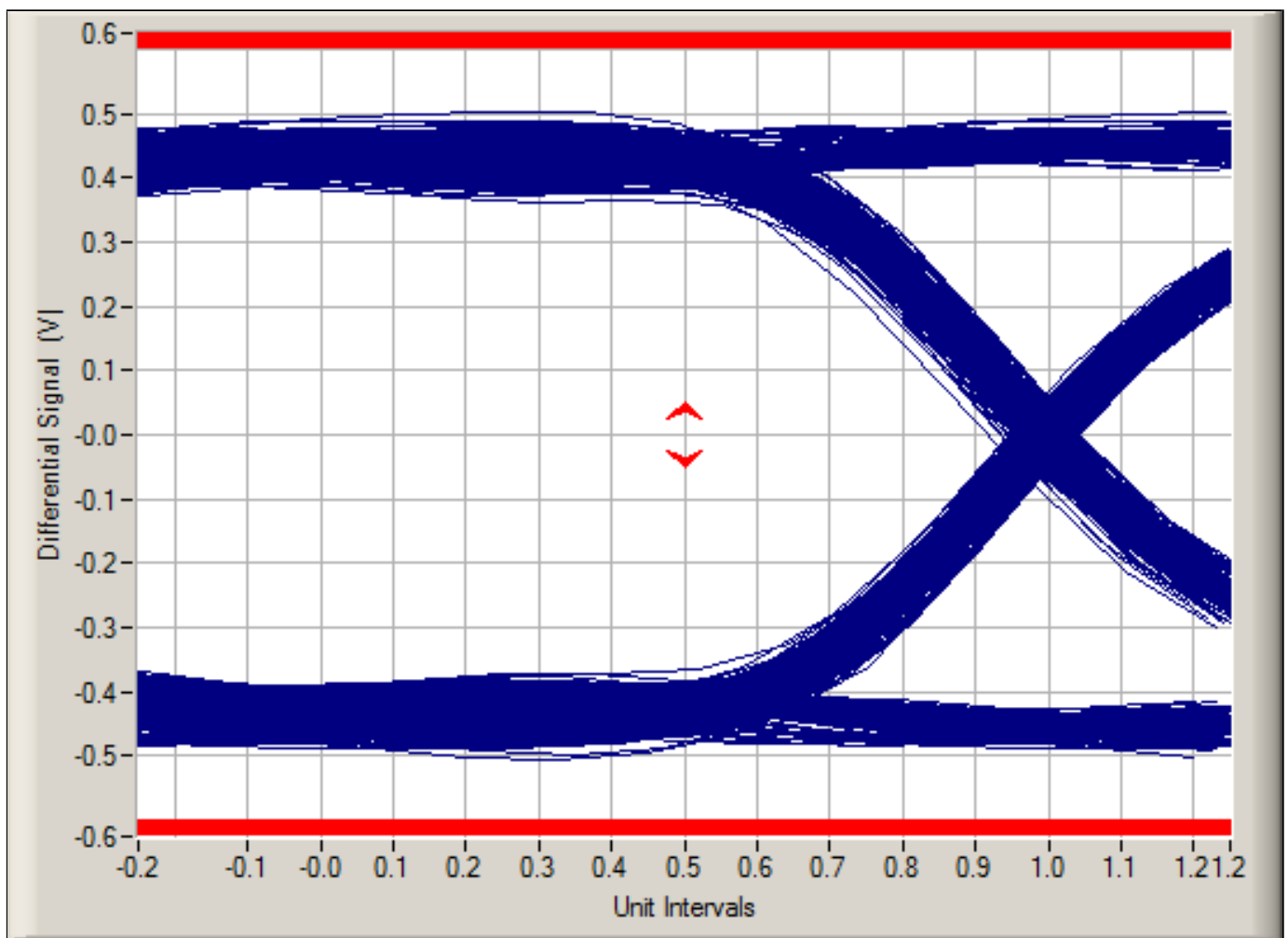
[\[Up \]](#)

	Measurement: Short Channel Max PP Jitter		
	Current Value:	32.555 ps	Test Criteria: Informational Only
	Timestamp:	04/04/2016 17:52:55	Limit Name: InfoOnlyS



Short Channel SigTest CP0 Transition Eye Diagram

Timestamp: 04/04/2016 17:52:55



Short Channel SigTest CP0 Non Transition Eye Diagram

Timestamp: 04/04/2016 17:52:55

--- End of report ---