Test Report

Pass

Test Configuration Details	
Application	
Name	D9020USBC USB3.2
Version	3.52.0.0
Device Description	
Test Mode	Host
10G	No
5G	Yes
Reference Clock Option	SSC
User defined S-parameter file	C:\Users\Public\Documents\Infiniium\Apps\USB3Test\TransferFunctions\U7242A_Deembed__USB3_TX_Host_Channel.tf4
User defined SSP S-parameter file	C:\Users\Public\Documents\Infiniium\Apps\USB3Test\TransferFunctions\N7015A_Deembed__TypC_TypC_14p1dbAt5GHz_Embed.tf4
Test Session Details	
Infiniium SW Version	11.71.00035
Infiniium Model Number	UXR0334A
Infiniium Serial Number	MY63040139
Debug Mode Used	No
Compliance Limits	USB 3.2 Specification version 1.0 (official)
Last Test Date	2026-07-30 10:50:25 UTC -05:00

Summary of Results

Test Statistics	
Failed	0
Passed	15
Total	15

Margin Thresholds	
Warning	< 5 %
Critical	< 0 %

Pass	# Failed	# Trials	Test Name (click to jump)	Actual Value	Margin	Pass Limits
✓	0	1	5G TSSC-Freq-Dev-Min	-4.846750 kppm	28.3 %	-5.300000 kppm <= VALUE <= -3.700000 kppm
✓	0	1	5G TSSC-Freq-Dev-Max	147.314 ppm	25.4 %	TSSCMin ppm <= VALUE <= TSSCMax ppm
✓	0	1	5G SSC Modulation Rate	31.217180 kHz	40.6 %	30.000000 kHz <= VALUE <= 33.000000 kHz
✓	0	1	5G SSC Slew Rate	5.102 ms	49.0 %	VALUE <= 10.000 ms
✓	0	1	5G SSC df/dt	356.7 ppm/us	71.5 %	VALUE <= 1.2500 kppm/us
i	0	1	5G Short Channel Random Jitter	609 fs	100.0 %	Information Only
✓	0	1	5G Short Channel Maximum Deterministic Jitter	12.171 ps	85.8 %	VALUE <= 86.000 ps
✓	0	1	5G Short Channel Total Jitter at BER-12	20.743 ps	84.3 %	VALUE <= 132.000 ps
✓	0	1	5G Short Channel Template Test	0.000	100.0 %	VALUE = 0.000
✓	0	1	5G Short Channel Differential Output Voltage	454.3 mV	32.2 %	100.0 mV <= VALUE <= 1.2000 V
i	0	1	5G Random Jitter (CTLE ON)	589 fs	100.0 %	Information Only
✓	0	1	5G Far End Maximum Deterministic Jitter (CTLE ON)	33.409 ps	61.2 %	VALUE <= 86.000 ps
✓	0	1	5G Far End Total Jitter at BER-12 (CTLE ON)	41.698 ps	68.4 %	VALUE <= 132.000 ps
✓	0	1	5G Far End Template Test (CTLE ON)	0.000	100.0 %	VALUE = 0.000
✓	0	1	5G Far End Differential Output Voltage (CTLE ON)	234.3 mV	12.2 %	100.0 mV <= VALUE <= 1.2000 V

Report Detail

Summary Next

5G TSSC-Freq-Dev-Min

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.5.3, Table 6-16)

The purpose of this test is to verify that the measured SSC deviation is within the conformance limits specified in Table 6-16 of the USB 3.2 Specification.
Actual Value Measurement Name: SSC Deviation (ppm) (5G) [2307]
Pass Limits: -5.300000 kppm <= VALUE <= -3.700000 kppm

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Max UI (ppm)	Min UI (ppm)
-4.846750 kppm	28.3 %	(no value)	(no value)	(no value)	-4.846750 kppm	-4.839943 kppm

Summary Previous Next

5G TSSC-Freq-Dev-Max

USB 3.2 Specification, Rev 1.0 (
USB 3.2 Specification, Rev 1.0, Section 6.5.3, Table 6-16
Refer to ECN 018 of USB3.0 specification if Radio Friendly SSC option is turned on.
)

The purpose of this test is to verify that the measured SSC deviation is within the conformance limits specified in Table 6-16 of the USB 3.2 Specification.
If Radio Friendly SSC option is turned on, this test will verify SSC deviation is within the conformance limits specified in ECN 018 of USB3.0 specification.
Actual Value Measurement Name: Worst SSC Deviation (ppm) (5G) [2311]
Pass Limits: TSSCMin ppm <= VALUE <= TSSCMax ppm

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Max UI (ppm)	Min UI (ppm)	PassLimit Min (TSSCMin)	PassLimit Max (TSSCMax)
147.314 ppm	25.4 %	(no value)	(no value)	(no value)	144.281 ppm	147.314 ppm	-300.000 ppm	300.000 ppm

Summary Previous Next

5G SSC Modulation Rate

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.5.3, Table 6-16)

The purpose of this test is to verify that the measured SSC modulation rate is within the conformance limits specified in Table 6-16 of the USB 3.2 Specification.
Actual Value Measurement Name: Modulation Rate (Hz) (5G) [2308]
Pass Limits: 30.000000 kHz <= VALUE <= 33.000000 kHz

Actual Value	Margin	Modulation rate measurement	ConfigChannel	ConfigLane	PDOPMute
31.217180 kHz	40.6 %	Success	(no value)	(no value)	(no value)

Summary Previous Next

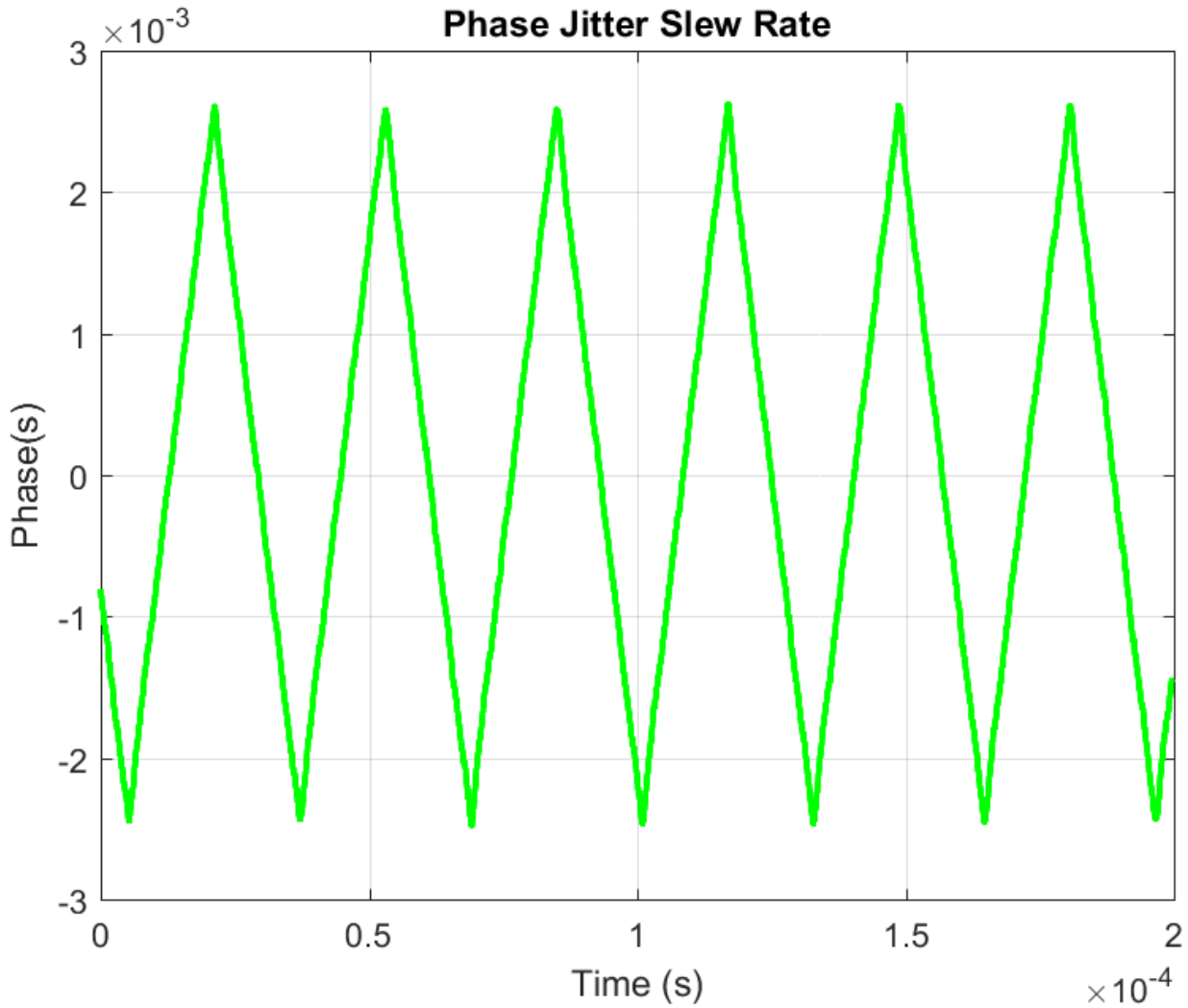
5G SSC Slew Rate

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.1, Table 6-17)

The purpose of this test is to ensure the combination of SSC and all other jitter sources within the bandwidth of the CDR must not exceed the allowed slew rate as listed in Table 6-17.
Actual Value Measurement Name: Max Slew Rate (5G) [2310]
Pass Limits: VALUE <= 10.000 ms

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Slew Rate	Min Phase	Max Phase	Test Pattern
5.102 ms	49.0 %	(no value)	(no value)	(no value)	(See image)	-2.48 ms	2.62 ms	CP1

Slew Rate



Summary Previous Next

5G SSC df/dt

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.1, Table 6-17)

The purpose of this test is to verify that the maximum df/dt is never exceeded as specified in Table 6-17 of the USB 3.2 Specification.
Actual Value Measurement Name: SSC df/dt (ppm/us) (5G) [2313]
Pass Limits: VALUE <= 1.2500 kppm/us

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	SSC df/dt measurement
356.7 ppm/us	71.5 %	(no value)	(no value)	(no value)	(no value)

Summary Previous Next

5G Short Channel Random Jitter

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the measured random jitter, Rj measured at TP1 is within the limits as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: RJ (5G) (Short Channel) [32282]
Pass Limits: Information Only

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	Rj_rms	Rj_Total	Test Pattern
609 fs	100.0 %	(no value)	(no value)	(no value)	1.000000000 M	609 fs	8.572 ps	CP1

Summary Previous Next

5G Short Channel Maximum Deterministic Jitter

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the measured deterministic jitter, Dj measured at TP1 is within the limits as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: DJ (5G) (Short Channel) [32292]
Pass Limits: VALUE <= 86.000 ps

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	DJ_dd	Test Pattern
12.171 ps	85.8 %	(no value)	(no value)	(no value)	1.000000000 M	12.171 ps	CP0

Summary Previous Next

5G Short Channel Total Jitter at BER-12

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the measured total jitter, Tj measured at TP1 is within the limits as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: Tj at BER 10-12 (5G) (Short Channel) [32296]
Pass Limits: VALUE <= 132.000 ps

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	Tj at BER 10-12	Rj_rms(ps)	DJ_dd(ps)
20.743 ps	84.3 %	(no value)	(no value)	(no value)	1.000000000 M	20.743 ps	609 fs	12.171 ps

RJ Test Pattern	DJ Test Pattern	TJ Equation

CP1	CP0	TJ = DJ(CP0) + 14.069 * RJrms(CP1)

Summary Previous Next

5G Short Channel Template Test

USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19

The purpose of this test is to perform an eye mask test at TP1 using the eye mask template as specified in table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: Mask Test Failures (5G) (Short Channel) [32210]
Pass Limits: VALUE = 0.000

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	Non-Transition Failures	Transition Failures
0.000	100.0 %	(no value)	(no value)	(no value)	1.000000000 M	0.000	0.000

Non-Transition Eye Diagram	Transition Eye Diagram	Total Failures	CTLE Index	DFE Tap	NonTrans Max Voltage	NonTrans Min Voltage
(See image)	(See image)	0.000	1.000	0.000	322 m	-321 m

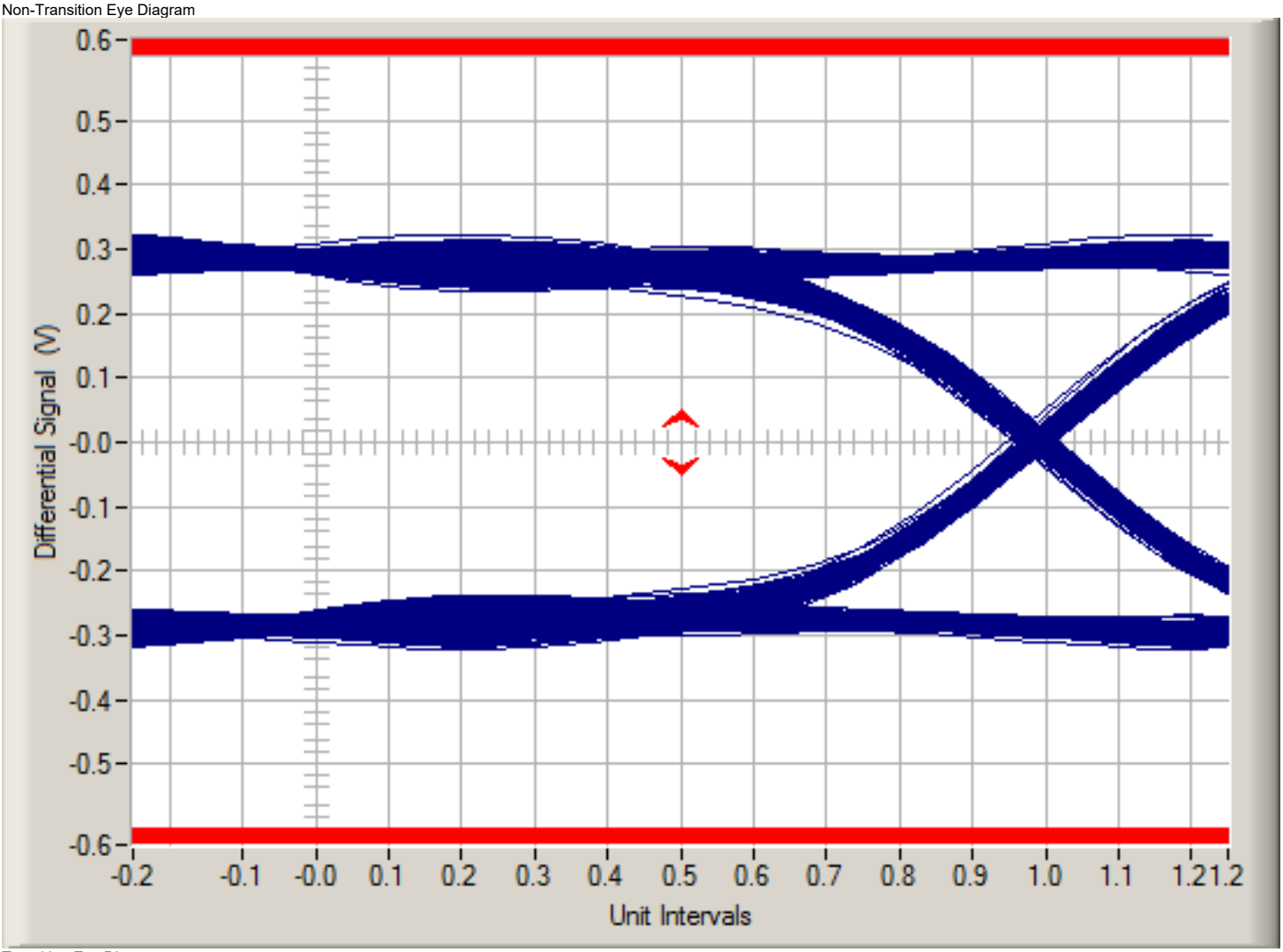
NonTrans Lower Margin Voltage	NonTrans Upper Margin Voltage	NonTrans Eye Height	Trans Max Voltage	Trans Min Voltage
-179 m	175 m	454 m	344 m	-341 m

Trans Lower Margin Voltage	Trans Upper Margin Voltage	Trans Eye Height	Maximum Peak to Peak Jitter	Mean Recover UI	Min Eye Width
-213 m	220 m	533 m	20 p	200.515	179.262

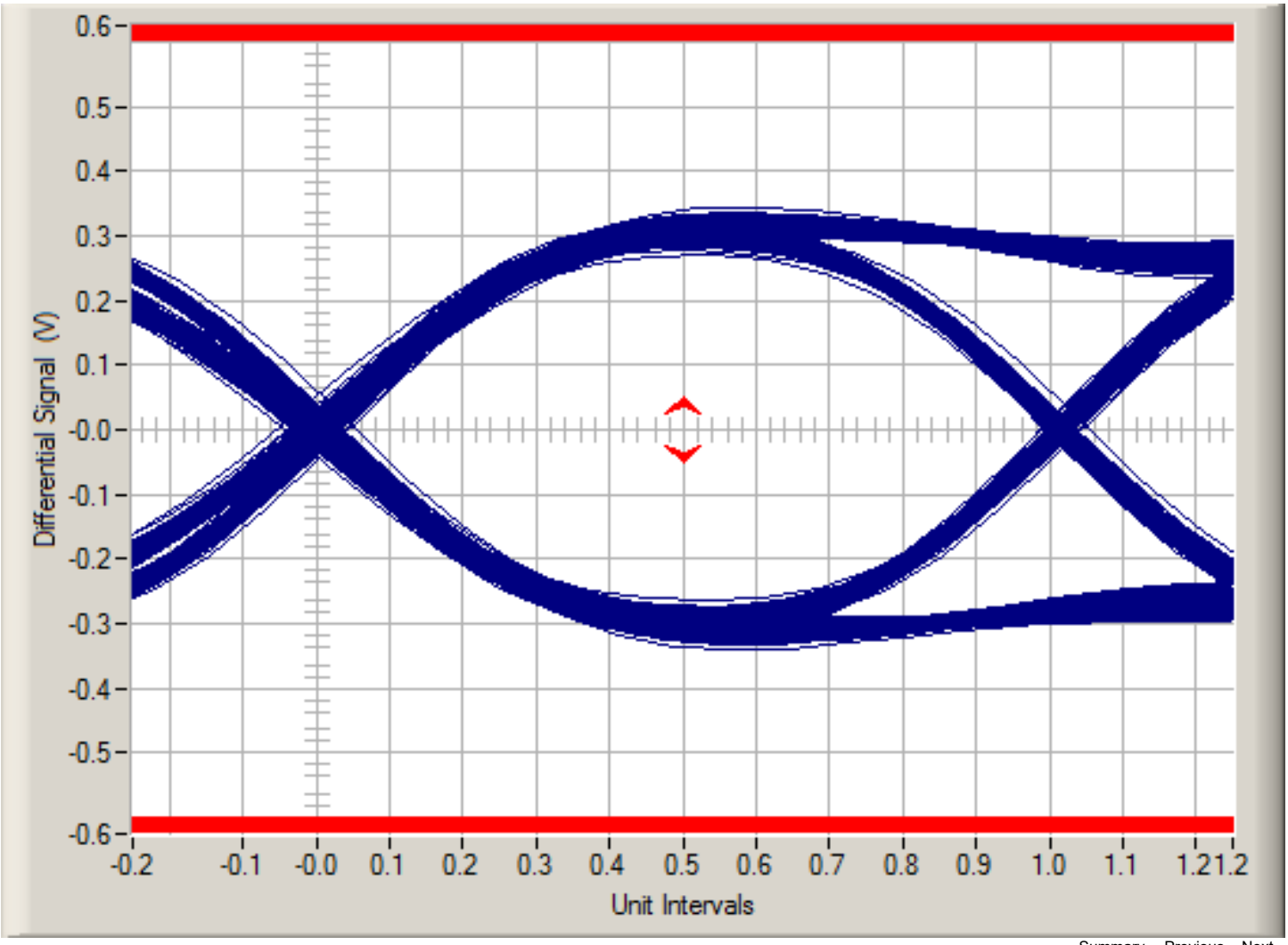
Composit Eye Height	Composit Eye Location	Min Time Between CrossOver	Test Pattern
454 m	500 m	200 p	CP0

Template File
C:\ProgramData\Keysight\Infiniium\Apps\USB3Test\SigTest5G\templates\usb_3_5gb\USB_3_5Gb_CP0_RjIN_SHORT.dat

Non-Transition Eye Diagram



Transition Eye Diagram



Summary Previous Next

5G Short Channel Differential Output Voltage

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the differential output voltage measured at TP1 meets the minimum eye height as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: PeakToPeakVoltage (5G) (Short Channel) [32241]
Pass Limits: 100.0 mV <= VALUE <= 1.2000 V

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute
454.3 mV	32.2 %	(no value)	(no value)	(no value)

Summary Previous Next

5G Random Jitter (CTLE ON)

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the measured random jitter, Rj measured at TP1 is within the limits as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: RJ (5G) (Far End) (CTLE ON) [22820]
Pass Limits: Information Only

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	Rj_rms	Rj_Total	Test Pattern
589 fs	100.0 %	(no value)	(no value)	(no value)	1.000000000 M	589 fs	8.289 ps	CP1

Summary Previous Next

5G Far End Maximum Deterministic Jitter (CTLE ON)

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the measured deterministic jitter, Dj measured at TP1 is within the limits as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: DJ (5G) (Far End) (CTLE ON) [22920]
Pass Limits: VALUE <= 86.000 ps

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	DJ_dd	Test Pattern	OptDeembedMode5G
33.409 ps	61.2 %	(no value)	(no value)	(no value)	1.000000000 M	33.409 ps	CP0	Std A to Std B

Embedded channel file
U7242A_Deembed__USB3_TX_Host_Channel.tf4

Summary Previous Next

5G Far End Total Jitter at BER-12 (CTLE ON)

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the measured total jitter, Tj measured at TP1 is within the limits as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: Tj at BER 10-12 (5G) (Far End) (CTLE ON) [22960]
Pass Limits: VALUE <= 132.000 ps

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute	Number of UI for USB3 Gen1 testing	Tj at BER 10-12	Rj_rms(ps)	DJ_dd(ps)
41.698 ps	68.4 %	(no value)	(no value)	(no value)	1.000000000 M	41.698 ps	589 fs	33.409 ps

RJ Test Pattern	DJ Test Pattern	TJ Equation
CP1	CP0	TJ = DJ(CP0) + 14.069 * RJrms(CP1)

Summary Previous Next

5G Far End Template Test (CTLE ON)

USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19

The purpose of this test is to perform an eye mask test at TP1 using the eye mask template as specified in table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: Mask Test Failures (5G) (Far End) (CTLE ON) [22100]
Pass Limits: VALUE = 0.000

Actual Value	Margin	Number of UI for USB3 Gen1 testing	Non-Transition Failures	Transition Failures	Non-Transition Eye Diagram
0.000	100.0 %	1.000000000 M	0.000	0.000	(See image)

Transition Eye Diagram	Total Failures	CTLE Index	DFE Tap	NonTrans Max Voltage	NonTrans Min Voltage	NonTrans Lower Margin Voltage
(See image)	0.000	1.000	0.000	232 m	-230 m	-68 m

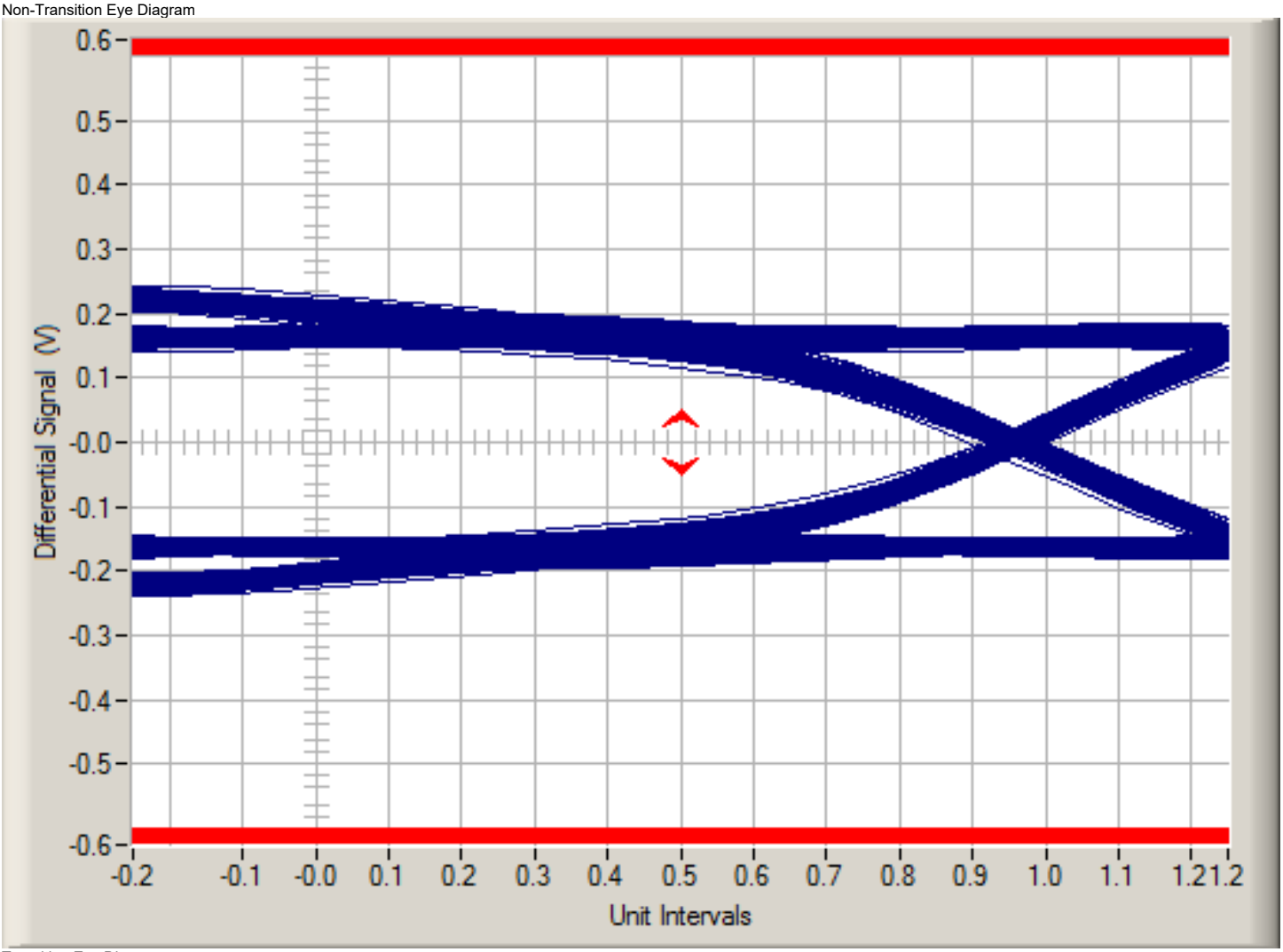
NonTrans Upper Margin Voltage	NonTrans Eye Height	Trans Max Voltage	Trans Min Voltage	Trans Lower Margin Voltage	Trans Upper Margin Voltage
66 m	234 m	248 m	-245 m	-107 m	112 m

Trans Eye Height	Maximum Peak to Peak Jitter	Mean Recover UI	Min Eye Width	Composit Eye Height	Composit Eye Location
319 m	40 p	200.501	158.307	234 m	500 m

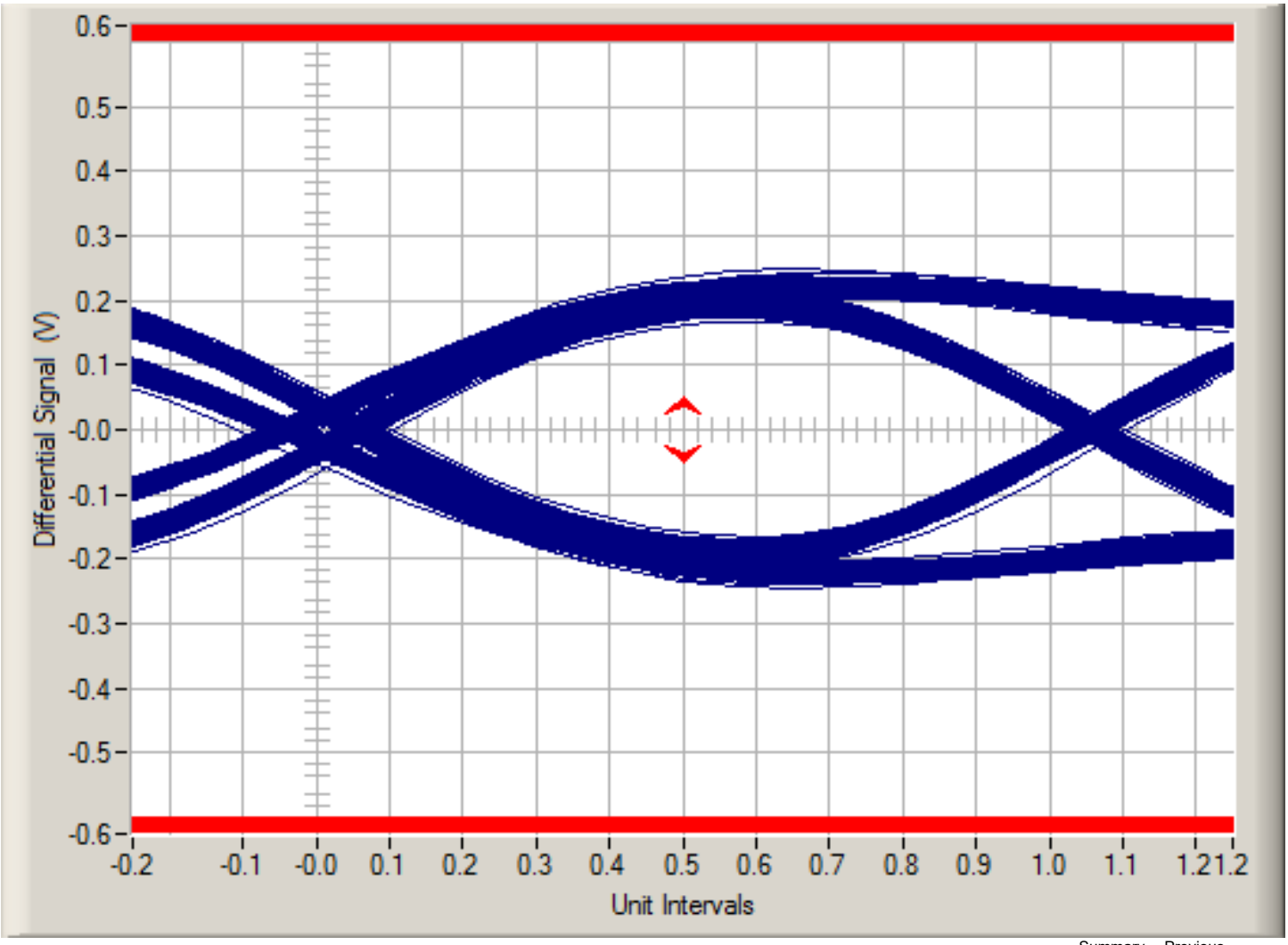
Min Time Between CrossOver	Test Pattern	Template File
200 p	CP0	C:\ProgramData\Keysight\Infiniium\Apps\USB3Test\SigTest5G\templates\usb_3_5gb\USB_3_5Gb_CP0_RjIN.dat

OptDeembedMode5G	Embedded channel file (5G)	ConfigChannel	ConfigLane	PDOPMute
Std A to Std B	U7242A_Deembed__USB3_TX_Host_Channel.tf4	(no value)	(no value)	(no value)

Non-Transition Eye Diagram



Transition Eye Diagram



Summary Previous

5G Far End Differential Output Voltage (CTLE ON)

USB 3.2 Specification, Rev 1.0 (USB 3.2 Specification, Rev 1.0, Section 6.7.3, Table 6-19)

The purpose of this test is to verify that the differential output voltage measured at TP1 meets the minimum eye height as specified in Table 6-19 of the USB 3.2 specification.
Actual Value Measurement Name: PeakToPeakVoltage (5G) (Far End) (CTLE ON) [22410]
Pass Limits: 100.0 mV <= VALUE <= 1.2000 V

Actual Value	Margin	ConfigChannel	ConfigLane	PDOPMute
234.3 mV	12.2 %	(no value)	(no value)	(no value)