USB2 Test Report

Overall result: Pass

DUT:	dummy
Comment:	
Time of session start:	11/10/2023 14:06:09
Operator:	test user
Temperature	25° C
Standard in use:	USB2

Session ID: 109, Continuation #: 1:

Time of run:	2023/11/10 14:06:11
Configuration in use:	High Speed Device - All Tests (Copy)
Limits in use:	USB Limits
Oscilloscope Name:	LCRY0427N50357 Model: SDA816ZI
Oscilloscope Serial #:	LCRY0427N50357
Computer:	LCRY0427N50357
Oscilloscope firmware version:	10.3.0.2 (Build 372273)
QualiPHY core version:	10.3.0.3 (Build 369776)

QualiPHY script version:	10.3.0.3
Stylesheet version:	1.2.0.8
PassFailFromUSBIFScript:	Yes
RecordMoreScreens:	Yes
StartingPortNumber:	1
USBET script version:	2.20.00

Summary Table

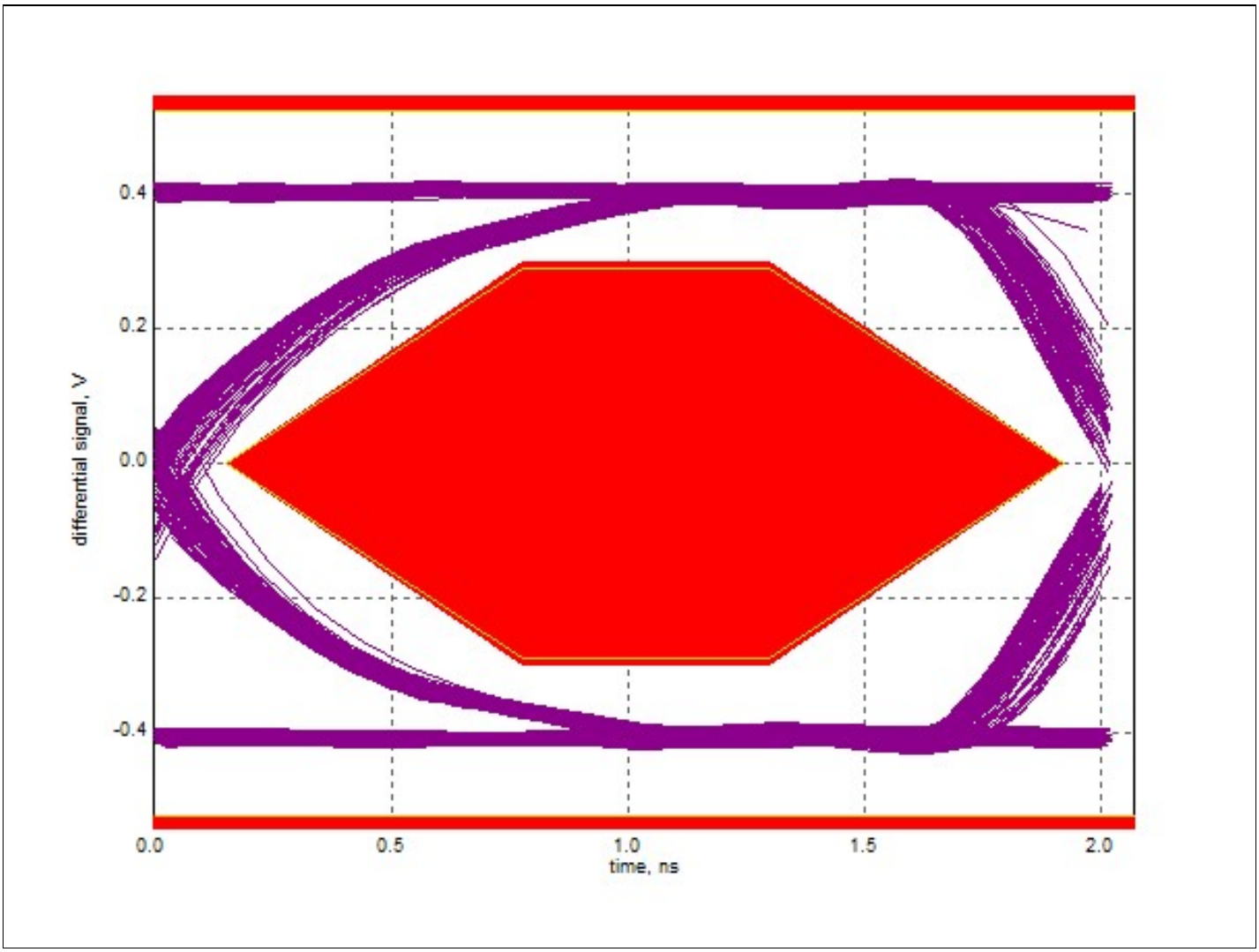
[Hide Table]

Pass	#	Test	Measurement	Current Value	Test Criteria
✔	1	EL_<2,4,6,7>	Signal Quality Overall Result	pass	matchAnyIgnoreCase
ℹ	1	EL_<2,4,6,7>	Signal Rate	480.056700 Mbits	Informational Only
ℹ	1	EL_<2,4,6,7>	Max Consecutive Jitter	111.08 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Min Consecutive Jitter	-73.29 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Mean Consecutive Jitter	33.87 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Max JK Jitter	57.98 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Min JK Jitter	-79.08 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	RMS JK Jitter	29.11 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Max KJ Jitter	95.41 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Min KJ Jitter	-84.57 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	RMS KJ Jitter	25.96 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Rising Edge Rate	887.770 MV/s	Informational Only
ℹ	1	EL_<2,4,6,7>	Rise Time	720.91 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Falling Edge Rate	1.029230 GV/s	Informational Only
ℹ	1	EL_<2,4,6,7>	Fall Time	621.83 ps	Informational Only
ℹ	1	EL_<2,4,6,7>	Monotonic Edge	0 mV	Informational Only
✔	1	EL_21	Sync Bit Count	32 bits	x = 32 bits
✔	1	EL_25	EOP Length	8.40 bits	7.50 bits <= x <= 8.50 bits
✔	1	EL_22	Inter-packet Gap #1 After Received Packet	121.8 bits	8.0 bits <= x <= 192.0 bits
✔	1	EL_22	Inter-packet Gap #2 After Received Packet	112.7 bits	8.0 bits <= x <= 192.0 bits
✔	1	EL_28	Device Chirp K Latency	1.08577 ms	2.50 us <= x <= 6.00000 ms
✔	1	EL_29	Chirp K Duration	1.67 ms	1.00 ms <= x <= 7.00 ms
✔	1	EL_31	HS Turn On Time After Chirp	2.9 us	x <= 500.0 us
✔	1	EL_38	Suspend Timing	3.034 ms	3.000 ms <= x <= 3.125 ms
✔	1	EL_39	Suspend D- Volts	-7.8 mV	x <= 800.0 mV
✔	1	EL_39	Suspend D+ Volts	3.11 V	2.70 V <= x <= 3.60 V
✔	1	EL_40	HS SOF After Resume	Pass	matchIgnoreCase
✔	1	EL_40	Resume Amplitude D-	398.9 mV	x = 412.5 mV +/- 87.5 mV
✔	1	EL_40	Resume Amplitude D+	325.5 mV	x = 412.5 mV +/- 87.5 mV
✔	1	EL_27	Reset Time	3.14 ms	3.10 ms <= x <= 6.00 ms
✔	1	EL_28	Suspend to Reset Time	968.3 us	2.5 us <= x <= 6.0000 ms
ℹ	1	EL_8	J Voltage D+	0 mV	Informational Only
✔	1	EL_8	J Voltage D-	5.1 mV	-20.0 mV <= x <= 20.0 mV
✔	1	EL_8	K Voltage D+	4.7 mV	-20.0 mV <= x <= 20.0 mV
ℹ	1	EL_8	K Voltage D-	0 mV	Informational Only
✔	1	EL_9	SE0 D- Voltage	3.7 mV	-20.0 mV <= x <= 20.0 mV
✔	1	EL_9	SE0 D+ Voltage	3.1 mV	-20.0 mV <= x <= 20.0 mV

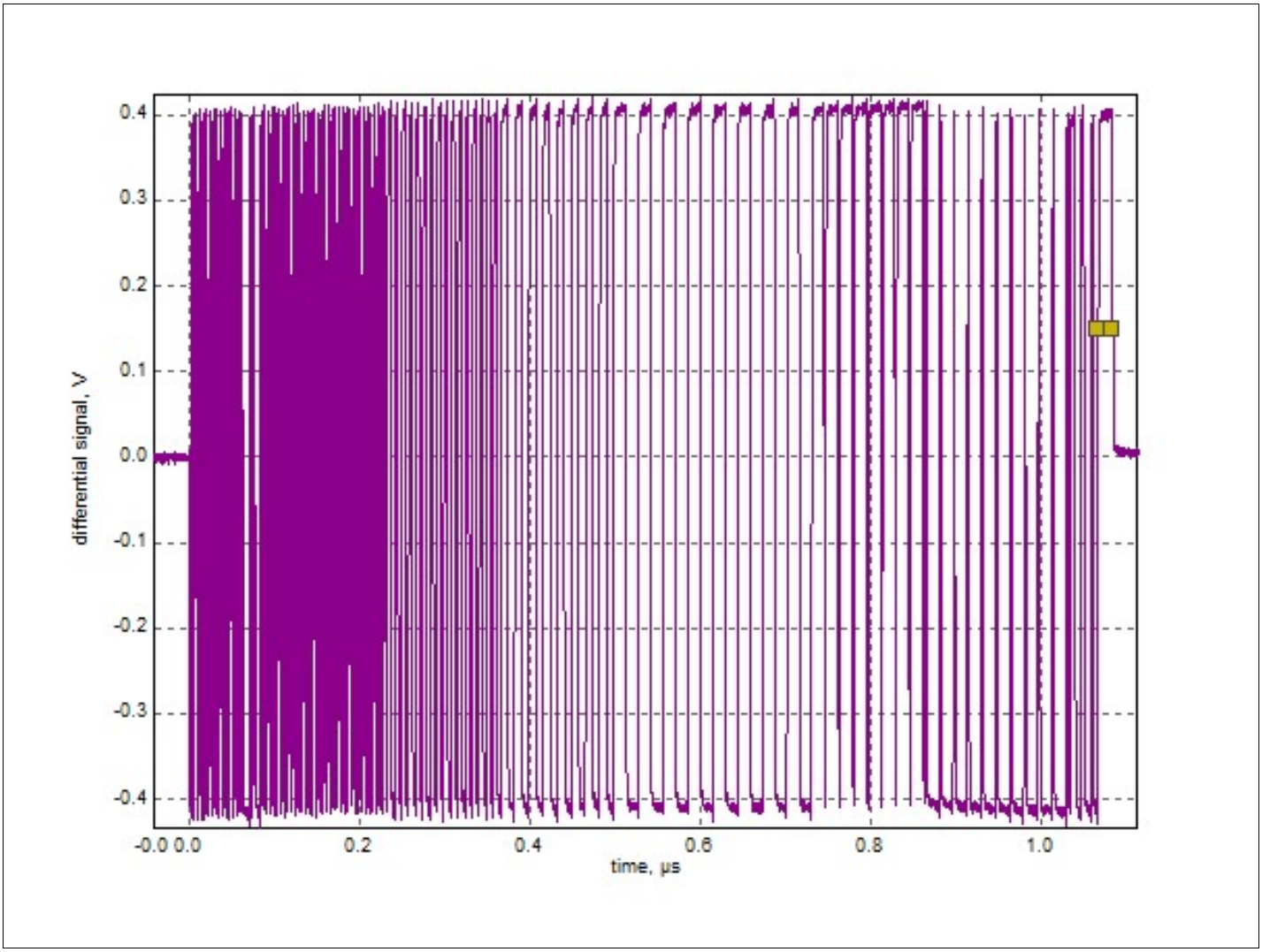
Details

EL_<2,4,6,7> - HS Device Near End Signal Quality

*** Device Upstream Tests ***



Upstream Eye Diagram, Path on Scope: D:\Applications\USB2\Results\HSUpstreamSQ23Eye.png
Timestamp: 11/10/2023 14:11:43



Scope Capture Data Plot, Path on Scope: D:\Applications\USB2\Results\HSUpstreamSQ23Plot.png
Timestamp: 11/10/2023 14:11:43

USB-IF Report - Click below to view
click here to view

[Up]

Pass			
Measurement: ***Signal Quality Overall Result***			
Current Value:	pass	Test Criteria:	matchAnyIgnoreCase
Timestamp:	11/10/2023 14:11:43	Limit Name:	PassMatchStrict

[Up]

Measurement: ***Signal Rate***			
Current Value:	480.056700 Mbits	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlyBits

[Up]

Measurement: ***Max Consecutive Jitter***			
Current Value:	111.08 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***Min Consecutive Jitter***			
Current Value:	-73.29 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***Mean Consecutive Jitter***			
Current Value:	33.87 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***Max JK Jitter***			
Current Value:	57.98 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***Min JK Jitter***			
Current Value:	-79.08 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***RMS JK Jitter***			
Current Value:	29.11 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***Max KJ Jitter***			
Current Value:	95.41 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***Min KJ Jitter***			
Current Value:	-84.57 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

Measurement: ***RMS KJ Jitter***			
Current Value:	25.96 ps	Test Criteria:	Informational Only
Timestamp:	11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

	Measurement: ***Rising Edge Rate***		
	Current Value: 887.770 MV/s	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:11:43	Limit Name:	InfoOnlySlew

[Up]

	Measurement: ***Rise Time***		
	Current Value: 720.91 ps	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

	Measurement: ***Falling Edge Rate***		
	Current Value: 1.029230 GV/s	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:11:43	Limit Name:	InfoOnlySlew

[Up]

	Measurement: ***Fall Time***		
	Current Value: 621.83 ps	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:11:43	Limit Name:	InfoOnlypS

[Up]

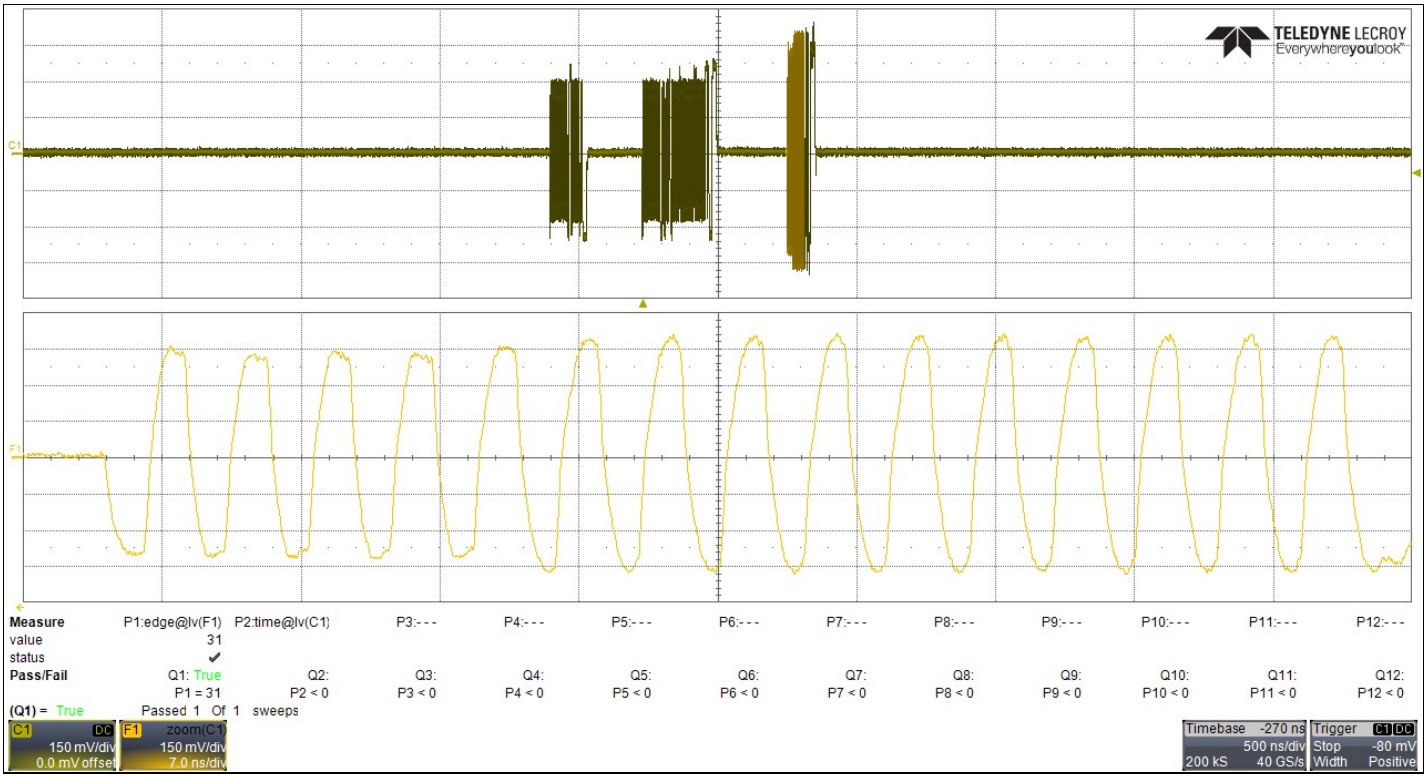
	Measurement: ***Monotonic Edge***		
	Current Value: 0 mV	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:11:43	Limit Name:	InfoOnlymV

EL_<21,22,25> HS Upstream Packet Param

Test EL_21 - HS Upstream Sync Bit Count

[Up]

Pass	Measurement: ***Sync Bit Count***		
	Current Value: 32 bits	Test Criteria:	x = 32 bits
	Timestamp: 11/10/2023 14:19:51	Limit Name:	HSSyncBits



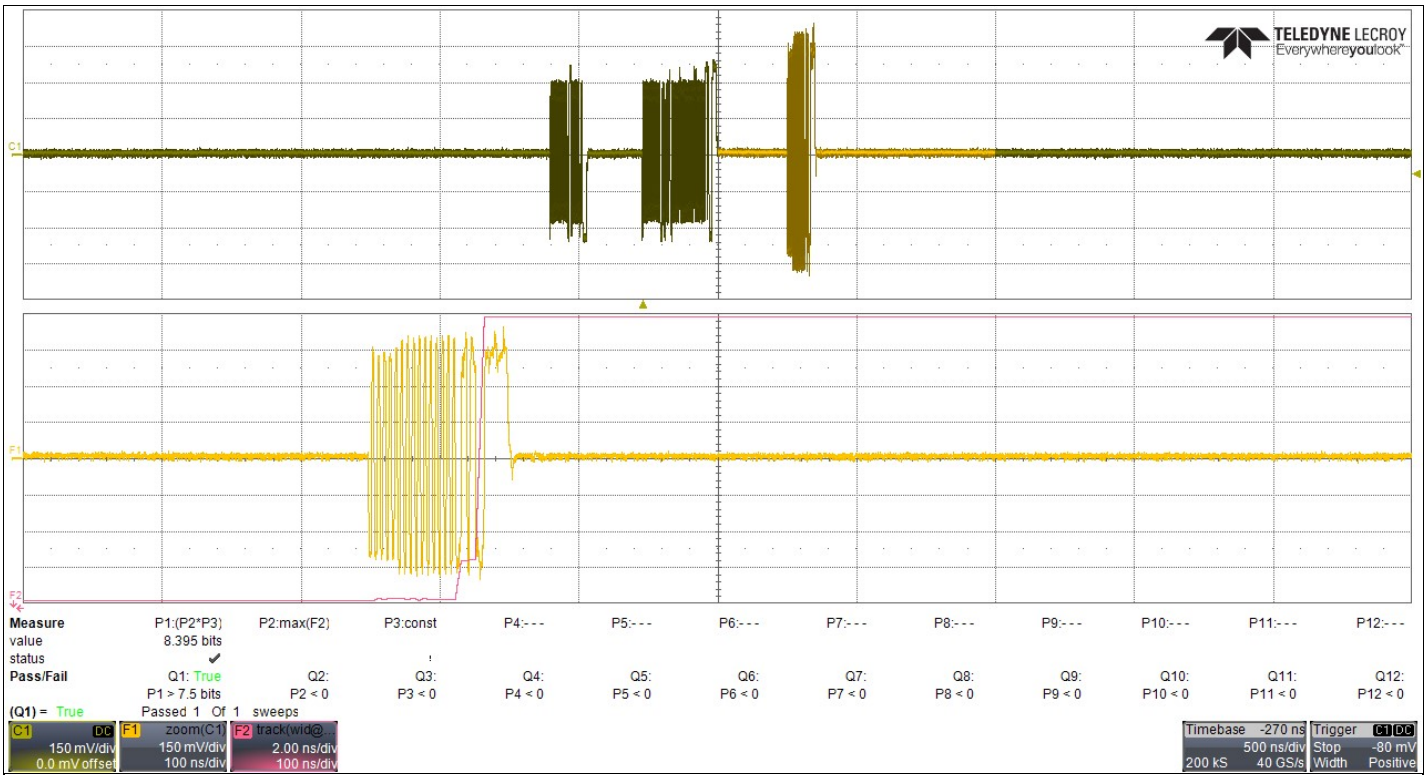
EL_21 - HS Upstream Packet Sync Bit Count

Timestamp: 11/10/2023 14:19:51

Test EL_25 - HS Upstream EOP Width

[Up]

✔ Pass	Measurement: ***EOP Length***		
	Current Value: 8.40 bits	Test Criteria:	7.50 bits <= x <= 8.50 bits
	Timestamp: 11/10/2023 14:19:52	Limit Name:	HSEOPWidthBits



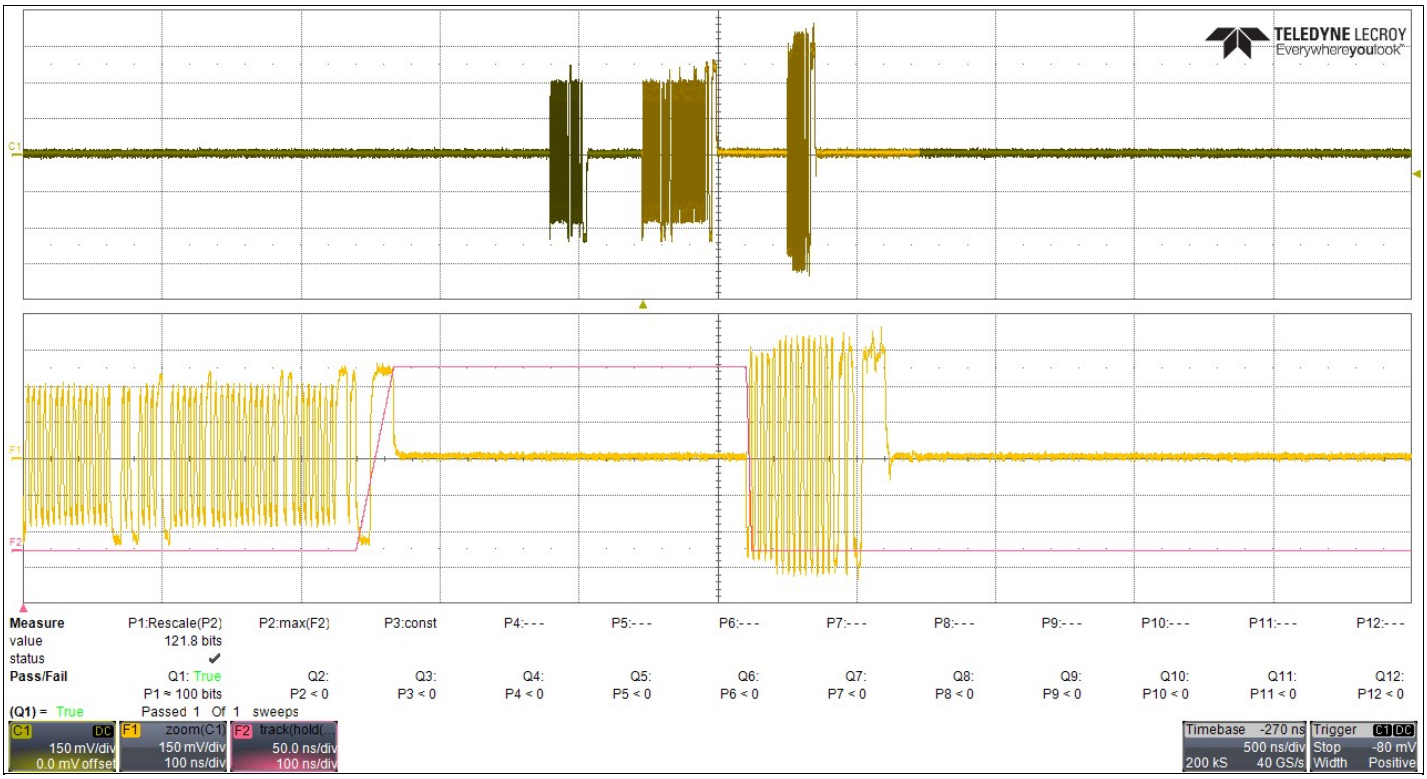
EL_25 - HS Upstream Packet EOP Width

Timestamp: 11/10/2023 14:19:52

Test EL_22 - HS Upstream Inter-Packet Gap #1

[Up]

✔ Pass	Measurement: ***Inter-packet Gap #1 After Received Packet***		
	Current Value: 121.8 bits	Test Criteria:	8.0 bits <= x <= 192.0 bits
	Timestamp: 11/10/2023 14:19:53	Limit Name:	HSInterPacketGap



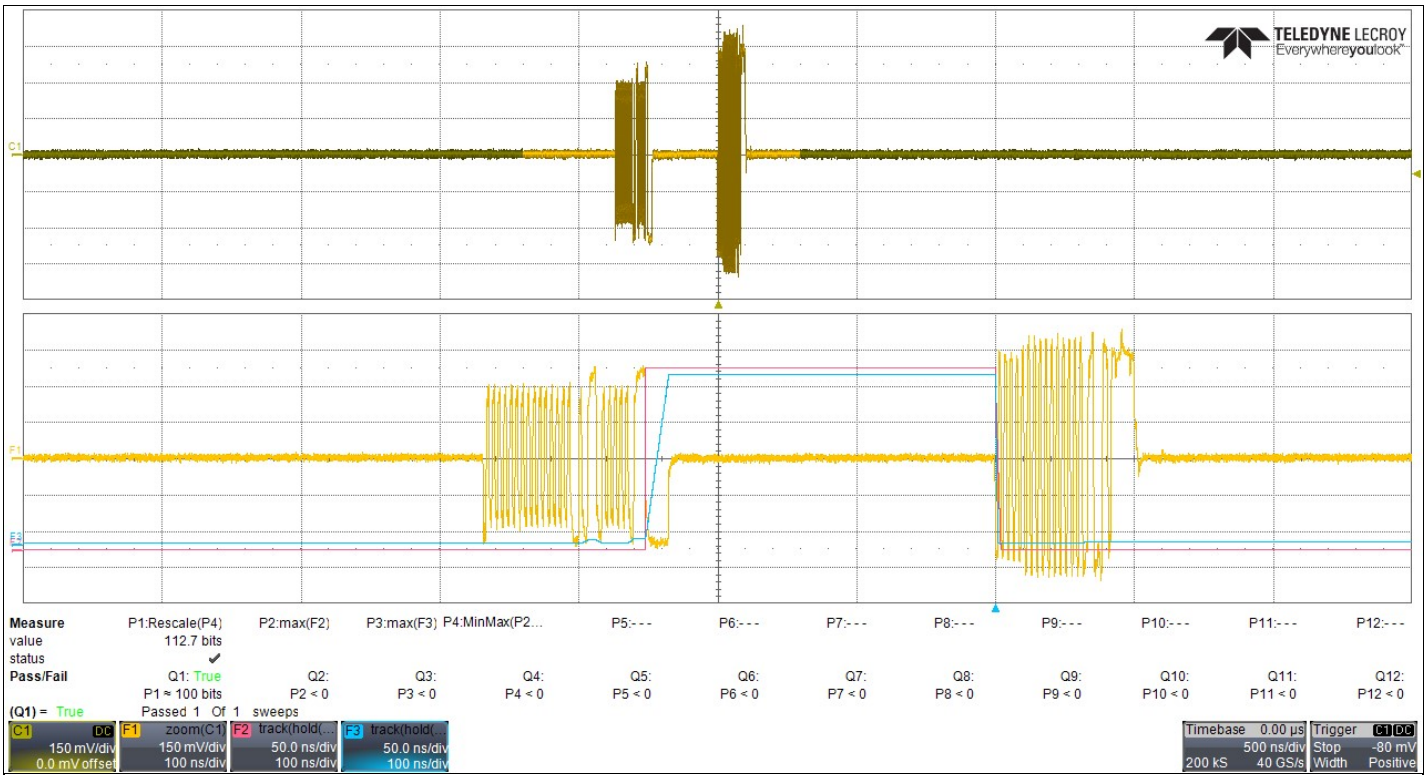
EL_22 - HS Upstream Inter-Packet Gap #1 After Received Packet

Timestamp: 11/10/2023 14:19:54

Test EL_22 - HS Upstream Inter-Packet Gap #2

[Up]

✔ Pass	Measurement: ***Inter-packet Gap #2 After Received Packet***		
	Current Value: 112.7 bits	Test Criteria:	8.0 bits <= x <= 192.0 bits
	Timestamp: 11/10/2023 14:20:28	Limit Name:	HSInterPacketGap



EL_22 - HS Upstream Inter-Packet Gap #2 After Received Packet

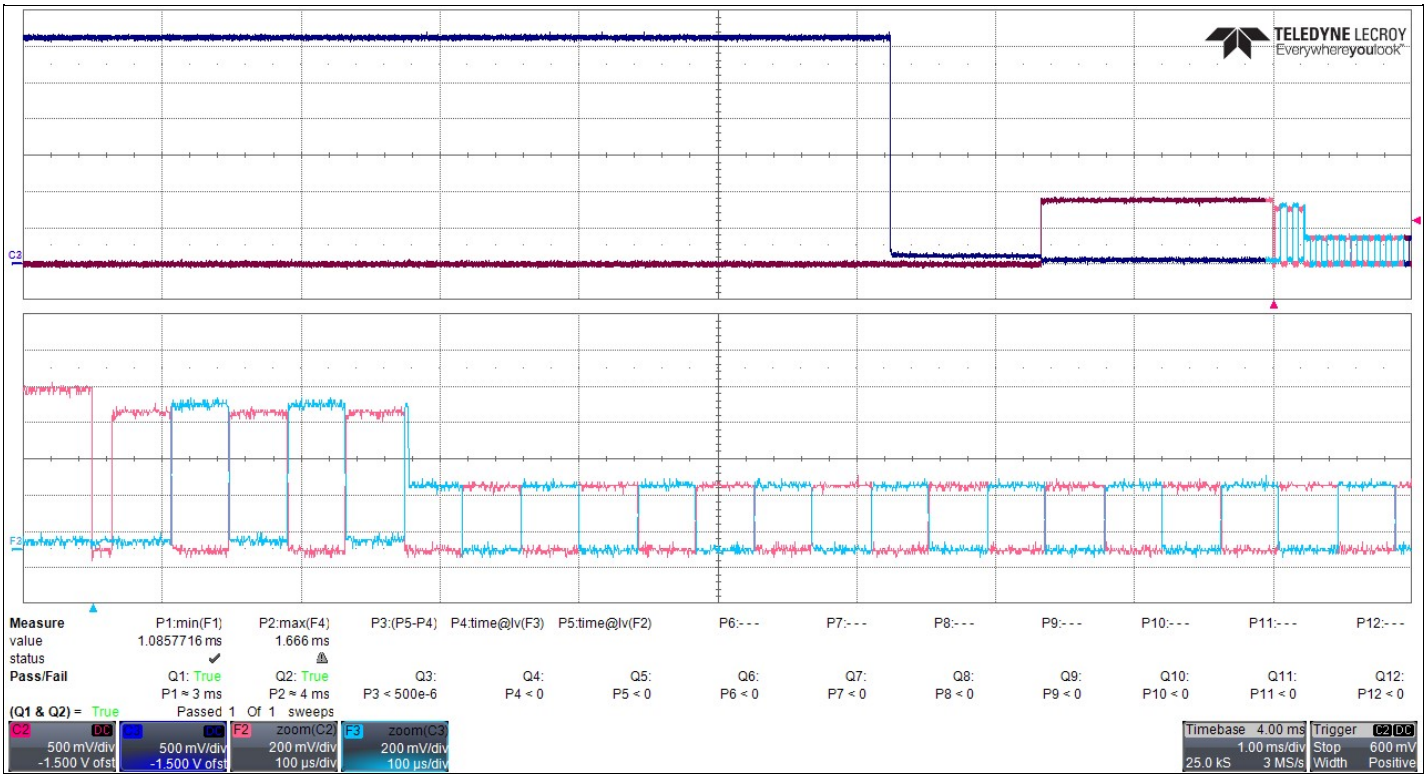
Timestamp: 11/10/2023 14:20:28

EL_<28,29,31> HS Chirp Timing

Test EL_28 - Upstream Chirp-K Latency

[Up]

Pass	Measurement: ***Device Chirp K Latency***		
	Current Value: 1.08577 ms	Test Criteria:	2.50 us <= x <= 6.00000 ms
	Timestamp: 11/10/2023 14:23:34	Limit Name:	ChirpKLatency



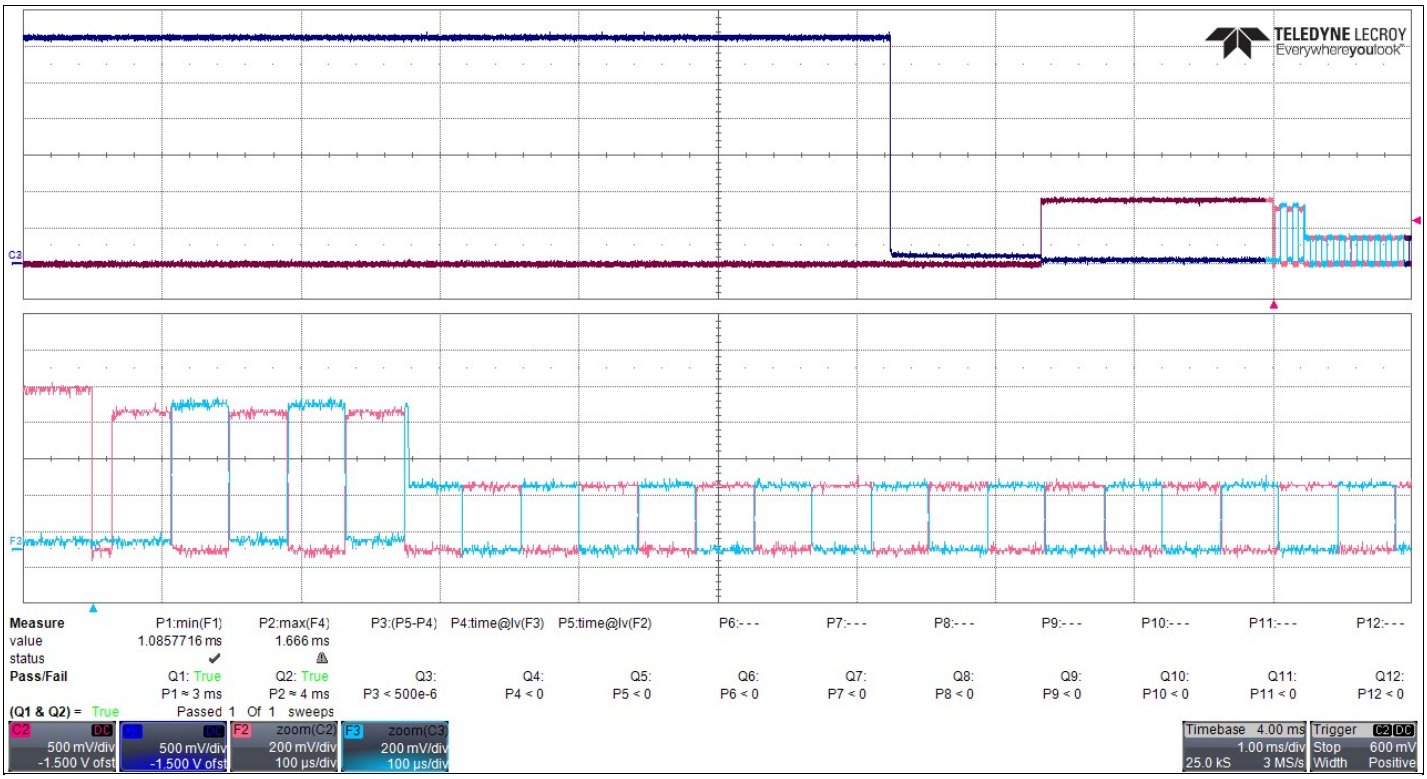
EL_28 - HS Device Chirp K Latency After Reset From Full Speed

Timestamp: 11/10/2023 14:23:34

Test EL_29 - Upstream Chirp-K Duration

[Up]

Pass	Measurement: ***Chirp K Duration***		
	Current Value: 1.67 ms	Test Criteria:	1.00 ms <= x <= 7.00 ms
	Timestamp: 11/10/2023 14:23:34	Limit Name:	ChirpKDuration



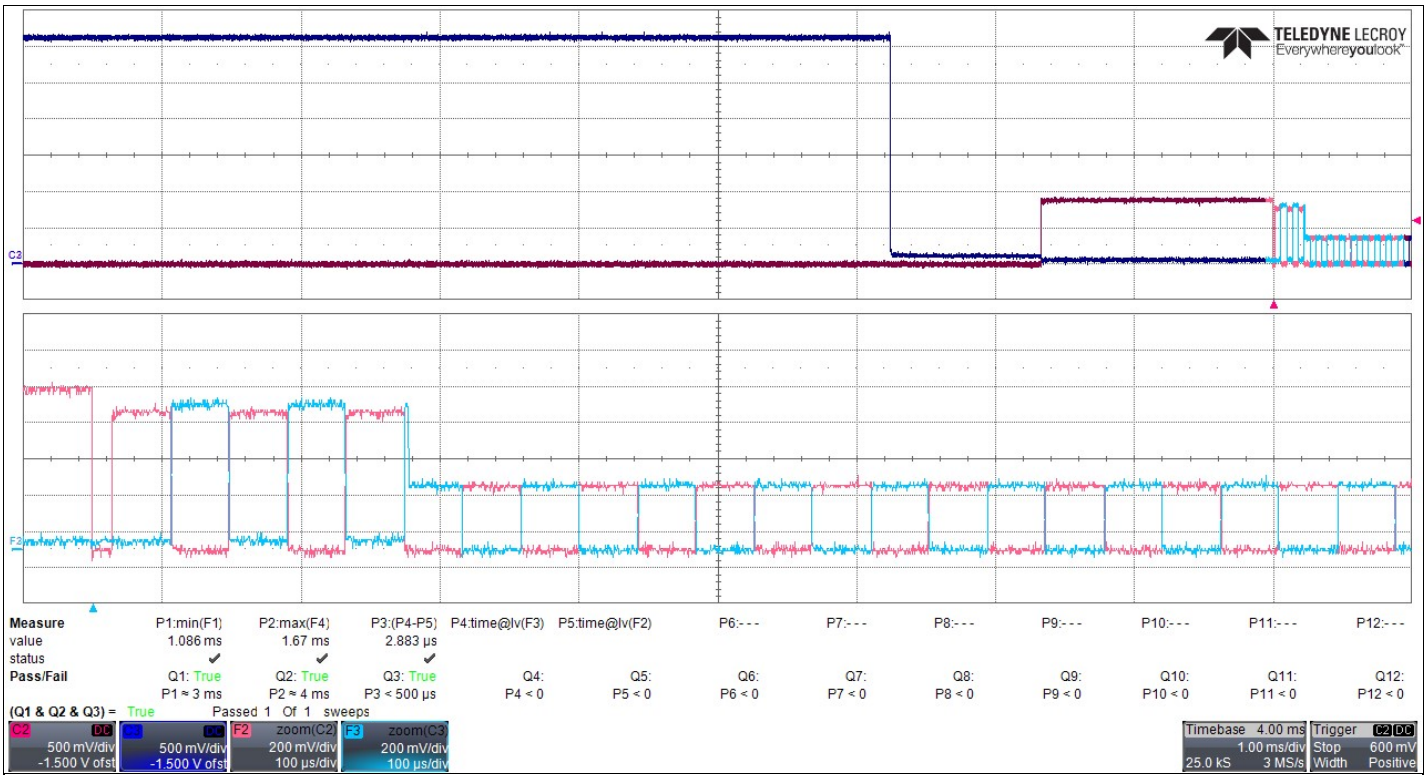
EL_29 - HS Device Chirp K Duration

Timestamp: 11/10/2023 14:23:34

Test EL_31 - Device Turn On

[Up]

Pass	Measurement: ***HS Turn On Time After Chirp***		
	Current Value: 2.9 us	Test Criteria:	x <= 500.0 us
	Timestamp: 11/10/2023 14:23:37	Limit Name:	ChirpTurnOnMax



EL_31 - HS Device HS Termination Turn On Time After Chirp

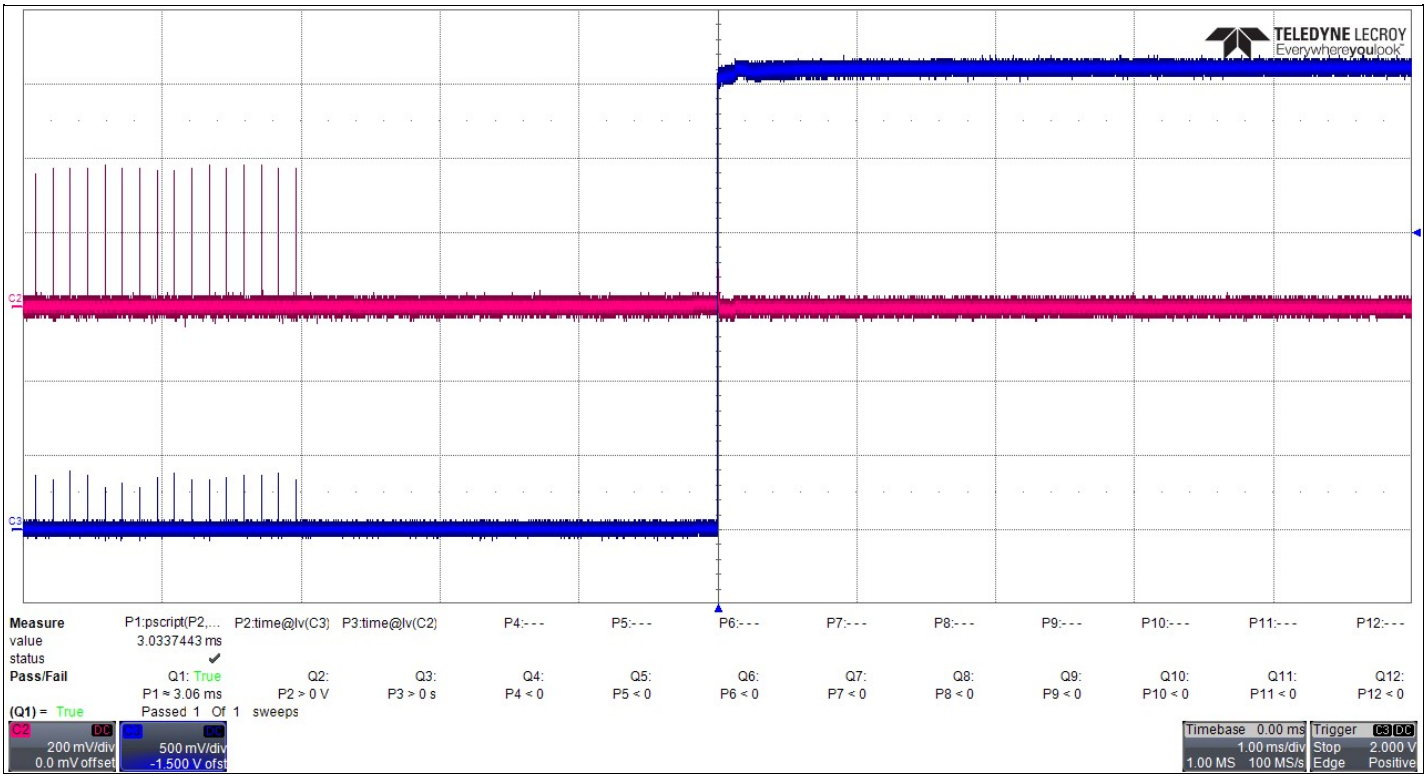
Timestamp: 11/10/2023 14:23:37

EL_<27,28,38-40,> HS Suspend Resume Reset

Test EL_38 - HS Device Suspend Timing

[Up]

✔ Pass	Measurement: ***Suspend Timing***		
	Current Value: 3.034 ms	Test Criteria:	3.000 ms <= x <= 3.125 ms
	Timestamp: 11/10/2023 14:25:36	Limit Name:	SuspendRange



EL_38 - HS Device Suspend Timing
Timestamp: 11/10/2023 14:25:37

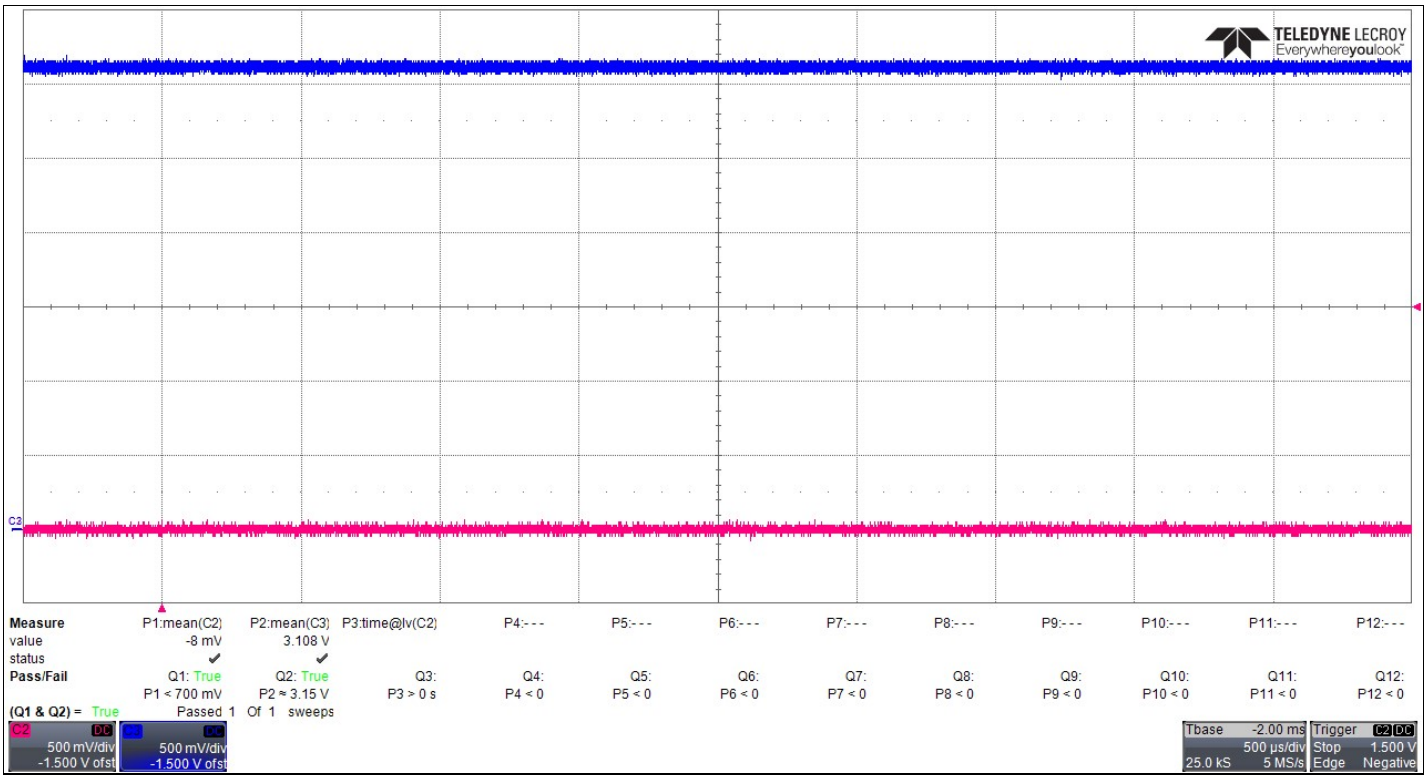
Test EL_39 - HS Suspend

[Up]

Pass	Measurement: ***Suspend D- Volts***		
	Current Value: -7.8 mV	Test Criteria:	x <= 800.0 mV
	Timestamp: 11/10/2023 14:25:39	Limit Name:	SuspendDMinusVoltage

[Up]

Pass	Measurement: ***Suspend D+ Volts***		
	Current Value: 3.11 V	Test Criteria:	2.70 V <= x <= 3.60 V
	Timestamp: 11/10/2023 14:25:39	Limit Name:	SuspendDPlusVoltage



EL_39 - HS Suspend
Timestamp: 11/10/2023 14:25:39

Test EL_40 - HS Resume

[Up]

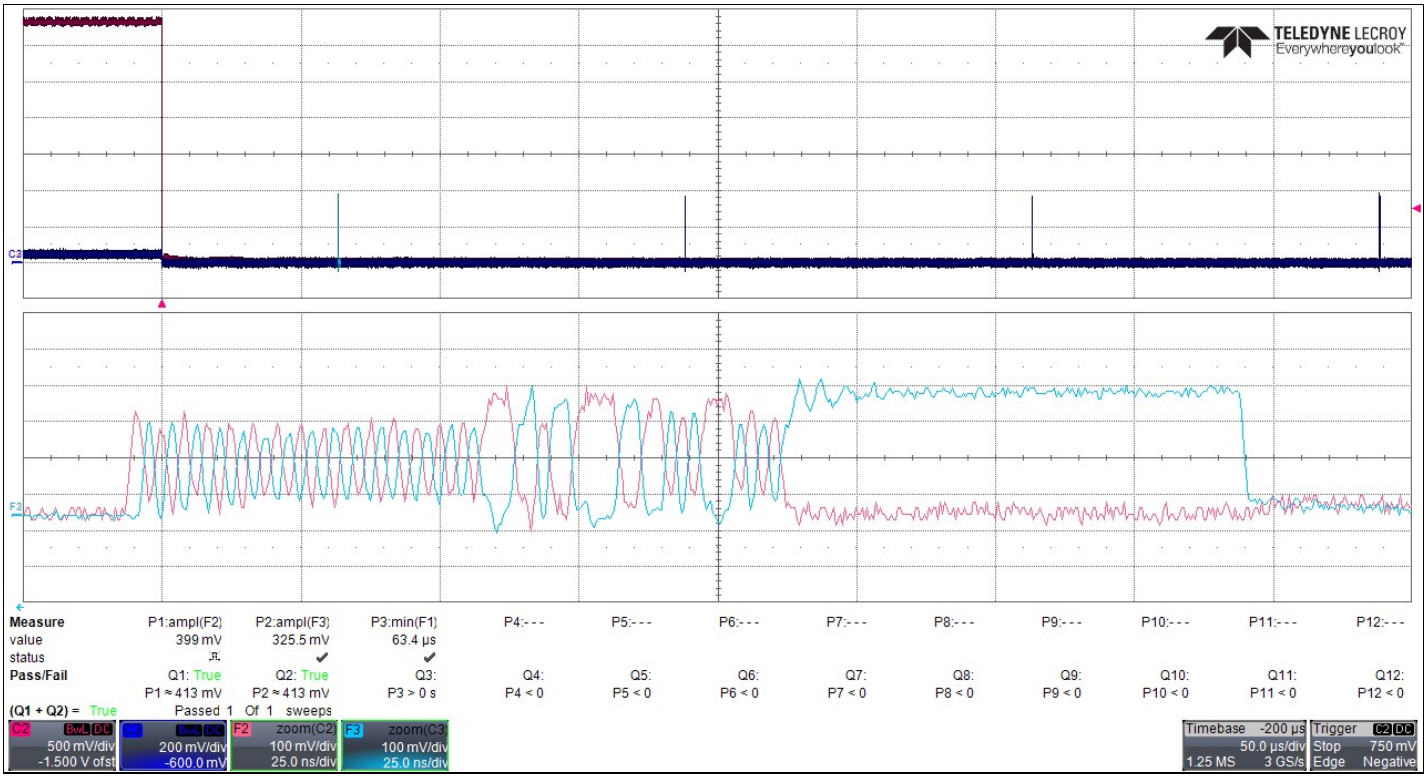
Pass	Measurement: ***HS SOF After Resume***			
	Current Value:	Pass	Test Criteria:	matchIgnoreCase
	Timestamp:	11/10/2023 14:25:55	Limit Name:	ResumeHSTerminations

[Up]

Pass	Measurement: ***Resume Amplitude D-***			
	Current Value:	398.9 mV	Test Criteria:	x = 412.5 mV +/- 87.5 mV
	Timestamp:	11/10/2023 14:25:55	Limit Name:	ResumeSOFampl

[Up]

Pass	Measurement: ***Resume Amplitude D+***			
	Current Value:	325.5 mV	Test Criteria:	x = 412.5 mV +/- 87.5 mV
	Timestamp:	11/10/2023 14:25:55	Limit Name:	ResumeSOFampl

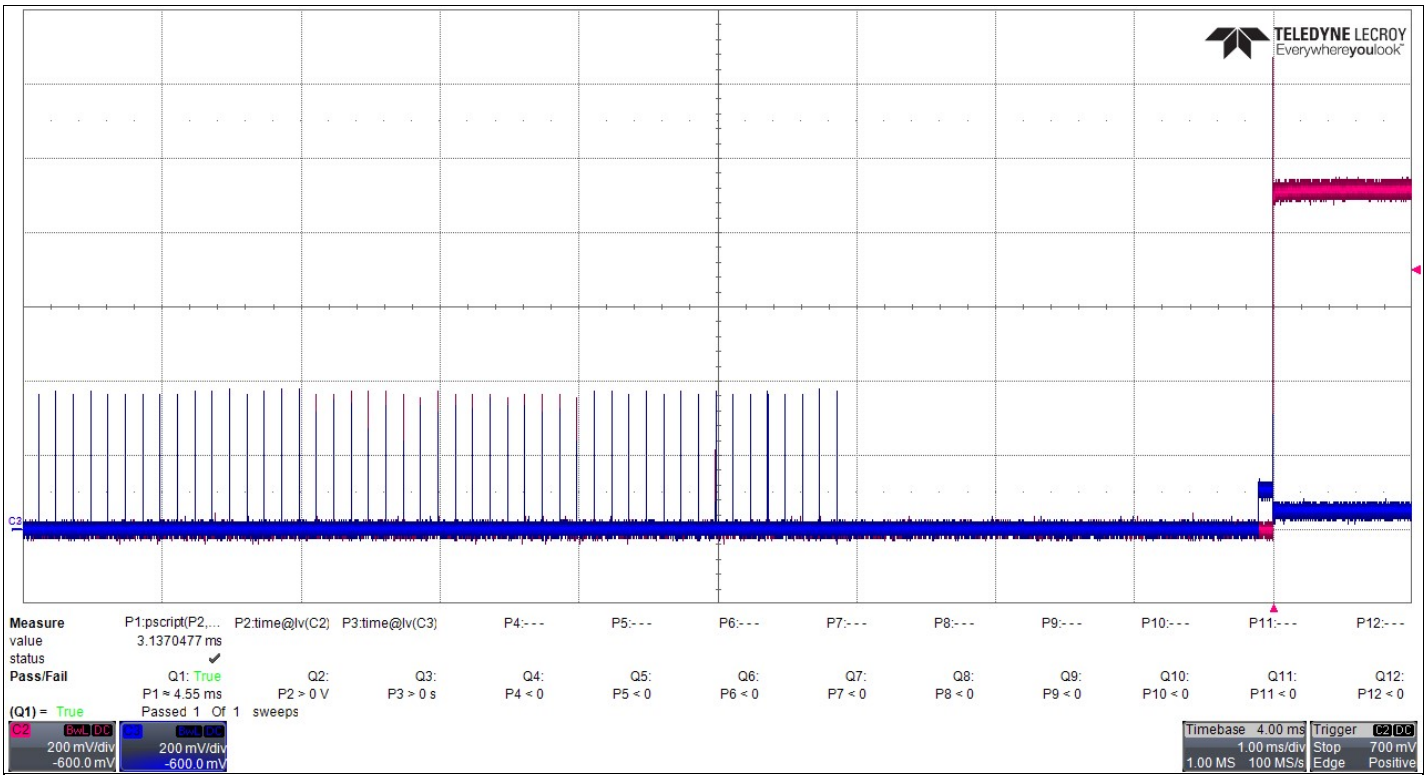


EL_40 - HS Resume
Timestamp: 11/10/2023 14:25:55

Test EL_27 - HS Reset

[Up]

✔ Pass	Measurement: ***Reset Time***		
	Current Value: 3.14 ms	Test Criteria:	3.10 ms <= x <= 6.00 ms
	Timestamp: 11/10/2023 14:26:10	Limit Name:	ResetTiming



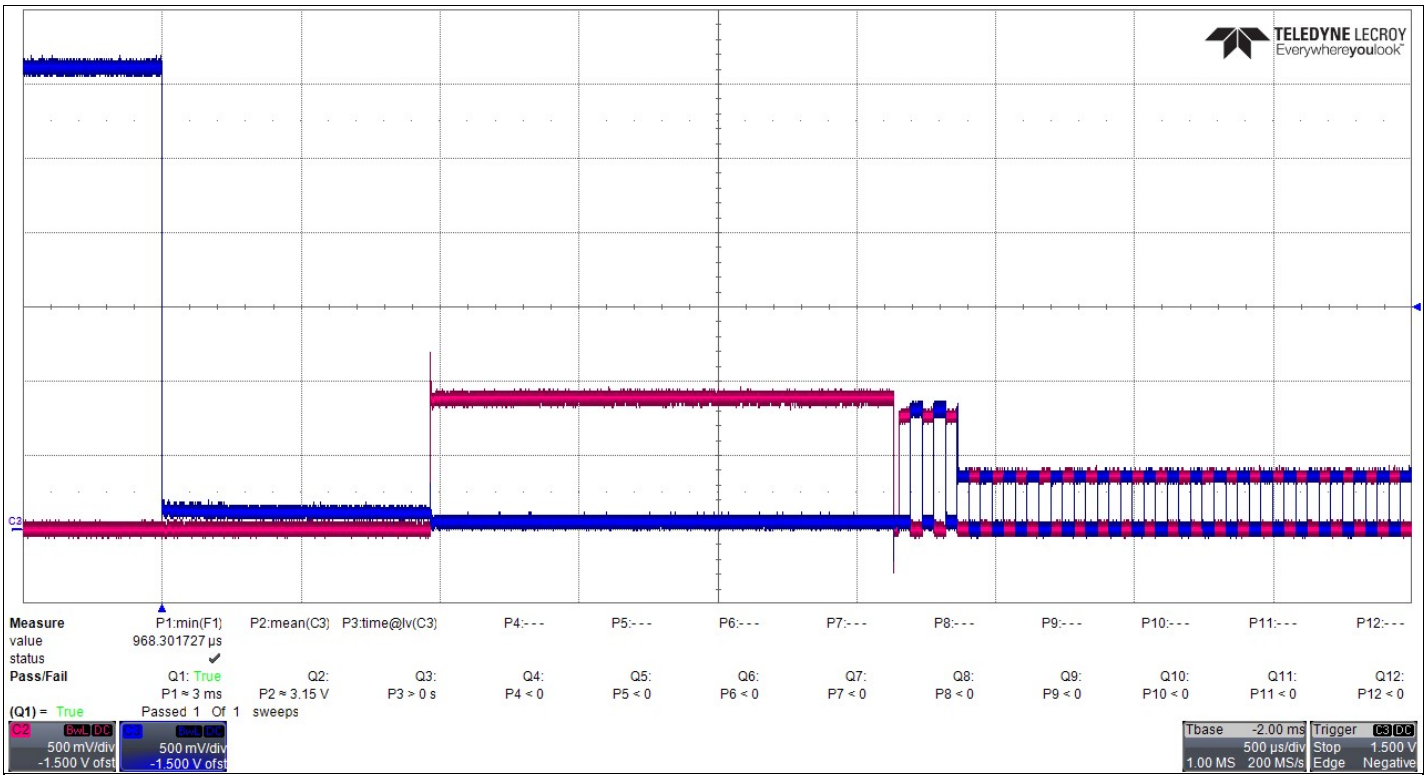
EL_27 - HS Reset

Timestamp: 11/10/2023 14:26:10

Test EL_28 - HS Suspend to Reset Timing

[Up]

✔ Pass	Measurement: ***Suspend to Reset Time***		
	Current Value: 968.3 us	Test Criteria:	2.5 us <= x <= 6.0000 ms
	Timestamp: 11/10/2023 14:26:30	Limit Name:	SuspendToResetTime



EL_28 - HS Suspend to Reset Timing

Timestamp: 11/10/2023 14:26:30

EL_<8,9> - HS Upstream J, K & SE0 Voltages

Test EL_8 - D+ & D- J & K Voltages

[Up]

	Measurement: ***J Voltage D+***		
	Current Value: 0 mV	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:30:48	Limit Name:	InfoOnlymV

[Up]

Pass	Measurement: ***J Voltage D-***		
	Current Value: 5.1 mV	Test Criteria:	-20.0 mV <= x <= 20.0 mV
	Timestamp: 11/10/2023 14:30:48	Limit Name:	HSVoltMin

[Up]

Pass	Measurement: ***K Voltage D+***		
	Current Value: 4.7 mV	Test Criteria:	-20.0 mV <= x <= 20.0 mV
	Timestamp: 11/10/2023 14:30:48	Limit Name:	HSVoltMin

[Up]

	Measurement: ***K Voltage D-***		
	Current Value: 0 mV	Test Criteria:	Informational Only
	Timestamp: 11/10/2023 14:30:48	Limit Name:	InfoOnlymV

Test EL_9 - D+ & D- SE0 Voltage

[Up]

Pass	Measurement: ***SE0 D- Voltage***		
	Current Value: 3.7 mV	Test Criteria:	-20.0 mV <= x <= 20.0 mV
	Timestamp: 11/10/2023 14:32:01	Limit Name:	HSVoltMin

[Up]

Pass	Measurement: ***SE0 D+ Voltage***		
	Current Value: 3.1 mV	Test Criteria:	-20.0 mV <= x <= 20.0 mV
	Timestamp: 11/10/2023 14:32:01	Limit Name:	HSVoltMin

EL_<16,17,18> - HS Upstream Receiver Sensitivity

--- End of report ---