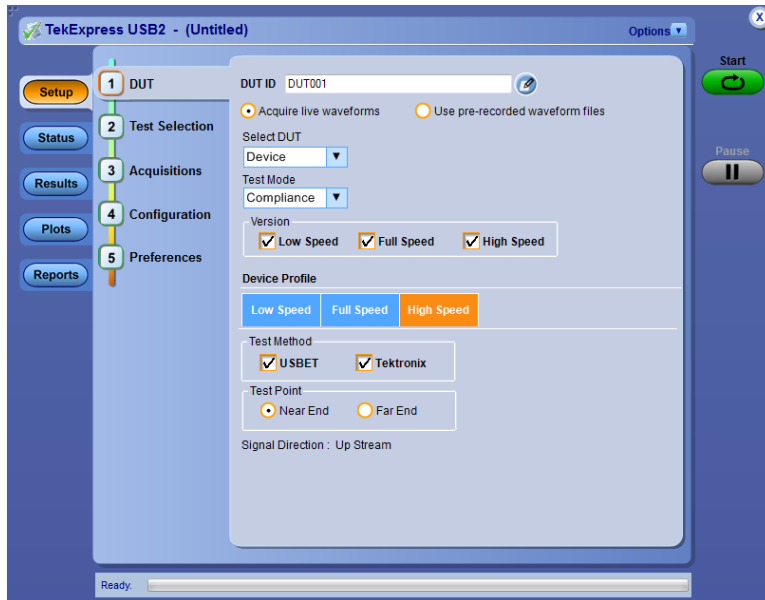


USB 2.0 Compliance Solution

Automated Efficient Solutions for USB Compliance Measurement Challenges



Test Name	Details	Speed	Pass/Fail	Value	Margin	Comments
Falling Edge Rate	Falling Edge Rate	High Speed	Pass	953.260 V/us	1179.740 V/us	N.A
Paired KJ Jitter	Max KJ Jitter	High Speed	Informative	37.461 ps	N.A	N.A
Paired KJ Jitter	Min KJ Jitter	High Speed	Informative	-31.774 ps	N.A	N.A
Paired KJ Jitter	RMS KJ Jitter	High Speed	Informative	10.075 ps	N.A	N.A
Signal Rate	Signal Rate	High Speed	Pass	480.022 Mbps	0.262 Mbps & 0.218 Mbps	N.A
Rising Edge Rate	Rising Edge Rate	High Speed	Pass	937.390 V/us	1195.610 V/us	N.A
Edge Monotonicity	Edge Monotonicity	High Speed	Pass	0.000 mV	50.000 mV	N.A
EOP Width	EOP Width	High Speed	Pass	8.0 bits	0.480 bits & 0.520 bits	N.A
Eye Diagram	Mask Hits	High Speed	Pass	0.000	0.000 & 1.000	N.A
Rise Time	Rise Time	High Speed	Pass	682.750 ps	382.750 ps	N.A
Consecutive Jitter	Max Consecutive Jitter	High Speed	Informative	58.905 ps	N.A	N.A
Consecutive Jitter	Min Consecutive Jitter	High Speed	Informative	-32.161 ps	N.A	N.A
Consecutive Jitter	RMS	High Speed	Informative	22.983 ps	N.A	N.A

USB (Universal Serial Bus) enables peripheral devices such as portable disk drives, printers and digital cameras to be connected to a PC using a universal interface socket. USB obsoletes the older serial and parallel ports technologies.

The USB Standard is maintained by the USB Implementers Forum, www.usb.org.

- Complete Physical Layer and Compliance Test Software Compliant with USB-IF Tests for USB 2.0**

TekExpress USB2 provides pre-defined oscilloscope setups for USB compliance testing.

- Comprehensive Set of Tests Fixtures and Probing Options**

Conduct Signal Quality tests, Inrush Current check, Drop and Droop test, Receiver Sensitivity and Impedance measurements with the Tektronix TDSUSBF and USB-IF test fixtures.

- Real-Time Oscilloscope for Fast, Accurate Signal Acquisition**

MSO/DPO5000/B, DPO7000C and MSO/DPO7000C/D/DX Series real-time oscilloscope with >2.5 GHz (High Speed) or >350 MHz (Low-speed/ Full-speed) for quick accurate validation

- Sampling Oscilloscope for USB Cable Characterization**

DSA8300 Series sampling oscilloscope for fast/accurate TDR results for USB Impedance Measurements.

- Signal Generators for USB Receiver Sensitivity Tests**

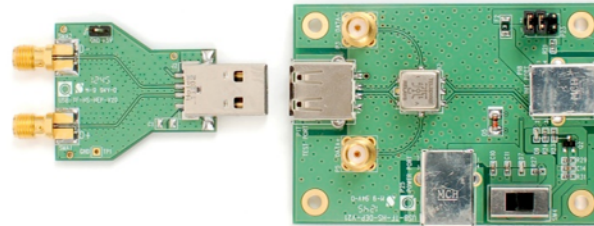
AWG5000/7000 deliver signals that include the worse-case jitter and noise to stress USB receivers.

USB 2.0 Compliance Solution

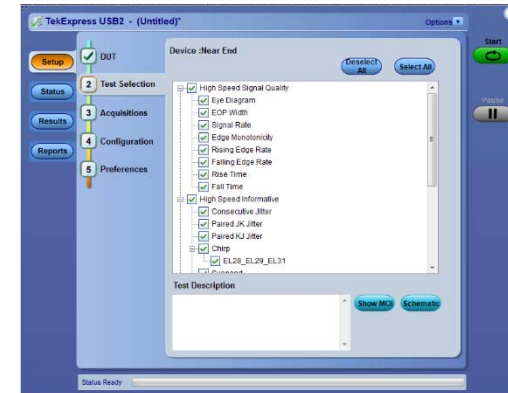
Automated Efficient Solutions for USB Compliance Measurement Challenges



TDSUSBF Test Fixture Set



USB2SIGQUAL High Speed Signal Quality Test Fixtures (order from USB.org)



HS SQ Test Selection

Recommended Equipment	Signal Quality	Receiver Sensitivity	Chirp Timing	Inrush Current	Cable Test
Instruments					
MSO/DPO5000/B, DPO7000C, MSO/DPO7000C/D/DX (2 GHz or higher) Oscilloscope	1	1	1		
DSA8300 Sampling Oscilloscope					1
80E04 TDR Module					1
AWG5000/7000 Series Arbitrary Waveform Generators		1			
PC with USBET Test Mode Software, Software available at usb.org	1	1	1		
Test Fixture					
TDSUSBF Test Fixture		1	1		
USB2SIGQUAL High speed Signal Quality Test Fixtures (order from USB.org)					
Application Software					
TekExpress USB2 Compliance Test Software (Option USB2)	1	1	1		
Probes					
P6243/P6248/P6330/TDP1500/TDP3500 Differential Probe	1	1			
TAP1500 or P6245 Active Single-Ended Probe	3				
TCP0030 or TCP202A Current Probe				1	

USB 2.0 Electrical Tests			
Signal Quality	High Speed Tests	Inrush Current Check	Droop Test
Eye Diagram	Receiver Sensitivity	Data-sufficiency Readout	Volts Readout
Jitter (JK, KJ, and consecutive)	Chirp	Coulombs and Capacitance listed across Inrush Regions	
Cross over Voltage Range	Reset		
Signal Rate	Resume		
End of Packet Width	Suspend		
Rising Edge Rate	Packet Parameter		
Falling Edge Rate	Monotonicity Test		