# **Getting Started with TDSUSB2**

You can use this side of the Quick Reference to start to take measurements with the USB2.0 Compliance Test Package (TDSUSB2). The other side contains a complete menu tree for TDSUSB2 software.

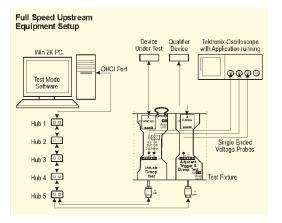
**NOTE.** For complete operating instructions and General Safety information, refer to the Online Help for the application.

The package includes an application (Universal Serial Bus measurements software) and a USB2.0 comprehensive compliance test fixture.

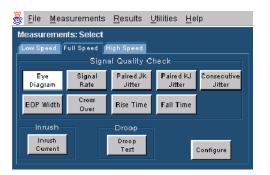
The design of the package helps you to test if USB2.0 devices meet the compliance test requirements of the USB2.0 industry for physical layer measurements. The package supports these tests: Signal Quality, Inrush current test, Droop test, Chirp and Receiver sensitivity testing.

# Performing Signal Quality Test

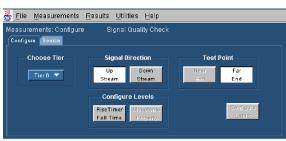
- **1.** Select File >Run Application >TDSUSB2 in the oscilloscope menu bar.
- **2.** Connect the device under test (DUT) to the Device SQ section of the test fixture.



**3.** Select Measurement > Select and choose a test for the appropriate signal speed (Low, Full or High speed).



**4.** Select Measurement > Configure and set up the application in the Configure and Source tabs.



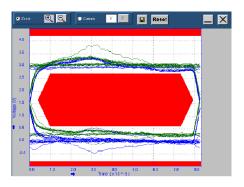
leasurements: Configur Configure Source	e Signal Quality Che	ck
	Live/Ref	
Ch1 V	) Single Ended D+ Ch1 V D. Ch2 V	Qualify Channel
S From File	kApplications\TDSUSB2\Wavef	orme

**5.** Push the "Running Man" button to start taking measurements.



The application displays results as a summary and as an eye-diagram as shown below.

👹 <u>F</u> ile	Measurements	Results	Utilities	Help		
Results:	Summary		gnal Qua	lity Check		
	Signal Rate	PAS	s	Rise Time	PASS	Eye Diagram
	Paired JK Jitter	PAS	s c	rossover Voltage	PASS	Waveform Plot
	Paired KJ Jitter	PAS	s	EOP Width	VPASS	
Co	nsecutive Jitter	PAS	s			Overall Result
	Fall Time	PAS	s			PASS



**6.** Select Results > Details to view the results in a statistical format.

ð	<u>File M</u> easure	ments <u>R</u> esu	ults <u>U</u> tilities	Help							
F	Results: Details Signal Quality Check										
	Measurement	Min	Мах	Mean	Std. Dev.		Eye Diagram				
	Signal Rate	11.86439Mbps	12.13594Mbps	12.00015Mbps	96.38392kbps	12	Waveform				
	Paired JK Jitter	-204.0969ps	93.33419ps	0.0000s	103.2336ps	98	Plot				
	Paired KJ Jitter	-25.20853ps	32.90996ps	-9.540881ps	20.82394ps	21					
	Consecutive Jitter	-129.2674ps	848.9164ps	381.1416ps	418.6280ps	<sup>55</sup> 👻	Overall Result				
						Þ	PASS				

### **Generating a Compliance Report**

To produce a compliance test report, select Utilities > Report Generator.

For up-to-date information on Tektronix oscilloscope solutions for USB2.0 compliance testing, access the **www.tektronix.com/Measurement/scopes/** web page.

# **TDSUSB2** Ordering Information

(Supports CSA7000, TDS5000 (except TDS5052), TDS6000, and TDS7000 series, and TDS694C oscilloscopes; refer to the *Optional Applications Software on Windows-Based Oscilloscopes Installation Manual* for a list of specific models. The applications CD includes a PDF file of the installation manual.)

If you order Option USB with a new oscilloscope:

USB 2.0 Universal Serial Bus Measurements Software is installed and enabled

To order for an existing Windows-based oscilloscope:

- Order the CSA7UP Option USB (software only)
- Order the TDS5UP Option USB (software only)
- Order the TDS6UP Option USB (software only)
- Order the TDS7UP Option USB (software only)
- To order for an existing TDS694C oscilloscope:
- Order TDSUSB2 for the USB 2.0 Compliance package; this includes software and hardware (TDSUSBF)
- Order the TDSUSBS (software only)

- If you order TDSUSBF
- USB 2.0 Compliance Test Fixture only

### **Recommended Accessories**

TDSUSBF USB2.0 Compliance Test Fixture

DG2040 Data Generator

AWG610 Arbitrary Waveform Generator

**TDS8000** series oscilloscope with an 80E04 Time Domain Reflectometer (TDR) sampling module

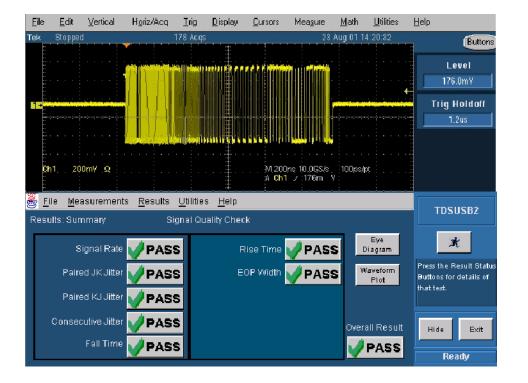
P6248 Differential probe

TCP202 Current probe

P6245/P6243 Single ended probes

**NOTE.** To test High Speed USB2.0 devices, you can use this application with TDS694C, TDS7404, and TDS7254 oscilloscopes.

TDSUSB2 Universal Serial Bus Package Reference



#### www.tektronix.com



