

Getting Started with TDSHT3

You can use this side of the quick reference card to get started with the Source Differential Tests Select All test procedure. The other side contains a complete menu tree for the TDSHT3 HDMI Compliance Test Software.

NOTE. For additional procedures, refer to the *TDSHT3 Quick Start User Manual*. For complete operating instructions, refer to the *online help*.

TDSHT3 HDMI Compliance Test Software enables unprecedented efficiency by providing a comprehensive range of tests, including Jitter Tolerance. Start the application by using **Analyze > HDMI Compliance Test Software(1.3)** or **App > HDMI Compliance Test Software(1.3)**.

Source Differential Tests Select All

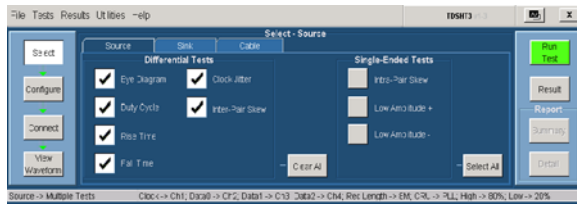
This option enables you to run the Eye Diagram, Duty Cycle, Rise Time, Fall Time, Clock Jitter, and Inter-Pair Skew simultaneously.

You will need one supported oscilloscope, two/four differential probes, one DC power supply 3.3 V, one EDID emulator, and one ET-HDMI-TPA-P fixture.

The four channel feature is supported only on DPO/DSA70000 series oscilloscopes with bandwidth greater than or equal to 8 GHz.

NOTE. You can set the probe control voltage to internal from the Preferences menu.

1. On the menu bar, click **Tests > Select > Source**.
2. In the Differential Tests pane, click **Select All**.



3. To change the configuration settings, click **Tests > Configure**. For most tests, you can use the factory default configuration. However, you can change the values by using the virtual keyboard. You can also restore the factory defaults or save and recall your own configuration settings. It is recommended that you save the configuration settings before you choose to select Recall Default or close the application.

For up-to-date information on Tektronix oscilloscope solutions for HDMI Compliance Test Software, access the www.tektronix.com Web page.

TDSHT3 Ordering Information

This software supports the TDS6000B, TDS6000C, TDS7404/TDS7404B, CSA7404/ CSA7404B, TDS7704B, and DPO/DSA70000 series of oscilloscopes. Refer to the *Optional Applications Software on Windows-Based Oscilloscopes Installation Manual* for a list of specific models. The applications disc includes a PDF file of the online help.

To order along with oscilloscope:

- Opt. HT3 - HDMI Compliance Test Software

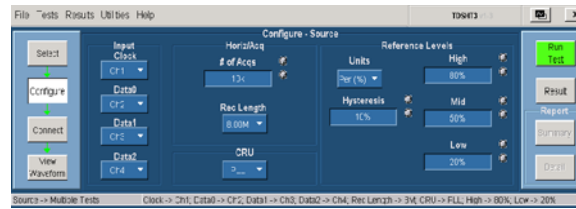
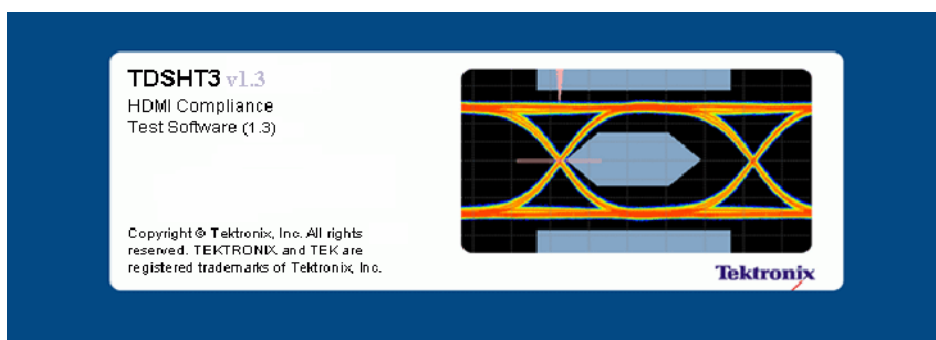
To order an upgrade for an existing oscilloscope:

- TDS6000B - Order TDS6BUP - Opt. HT3
- TDS7000/B - Order TDS7UP/7BUP - Opt. HT3
- CSA7000/B - Order TDS7UP/7BUP - Opt. HT3
- DPO/DSA70000 - Order DPO7UP - Opt. HT3

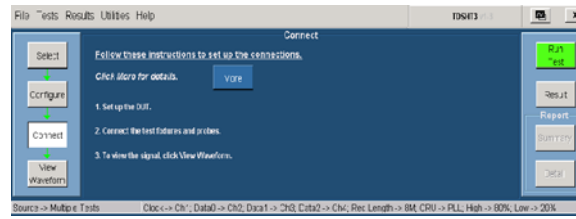
To order an upgrade from HDMI 1.2a to HDMI 1.3a compliance test software:

- TDS6000B - Order TDS6BUP - Opt. HT23
- TDS7000/B - Order TDS7UP/7BUP - Opt. HT23
- CSA7000/B - Order TDS7UP/7BUP - Opt. HT23
- DPO/DSA70000 - Order DPO7UP - Opt. HT23

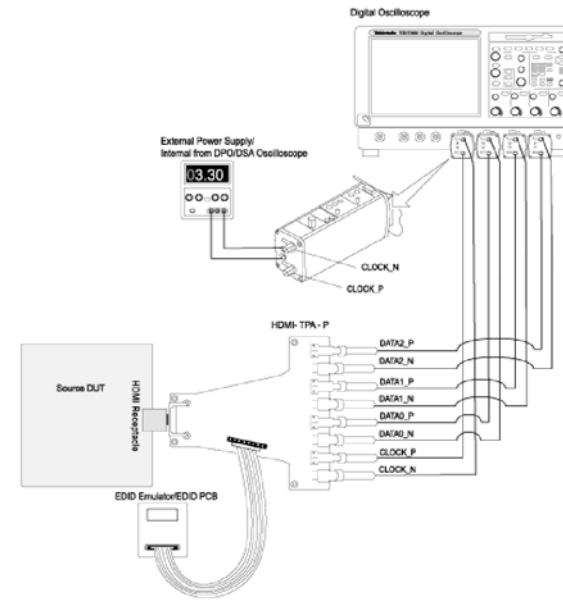
NOTE. You will be provided with two TDSHT3 applications, one supporting CTS 1.2a specification, displayed as TDSHT3, and the other for CTS 1.3b1 specification, displayed as TDSHT3v1.3. Both applications can be loaded onto the oscilloscope, but you can run only one application at a time.



4. To connect the DUT, click **Tests > Connect**.



5. Make the connections as follows:



6. Ensure that your signal in the oscilloscope display is similar to the sample signal. Click **View Waveform** to display a sample of the expected signal. If the displays are not similar, go back and check your configuration and connections.

Recommended Accessories

Oscilloscopes

- 16 M Record Length/Ch: Opt. 4 M or more (Eye Diagram and Jitter tests) for TDS6000B/TDS6000C series oscilloscopes
- 25 M Record Length/Ch: Opt. 2 XL or more (Eye Diagram and Jitter tests) for DPO70000 series oscilloscopes

TDR Tests

- Oscilloscope: TDS8200B/DSA8200 with 80E03 and 80E04 modules

Probes

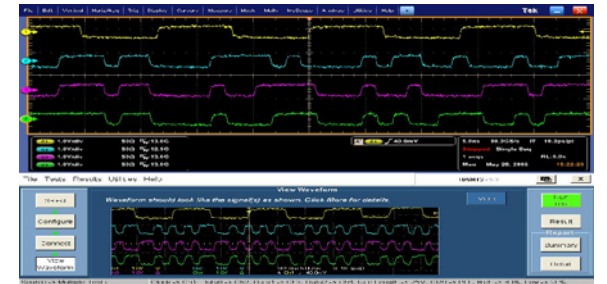
- Differential Probes: P731SMA for both single-ended and differential measurements. P735SMA can be used for differential tests of limited resolutions.
- Active Probes: P7240 (two probes) for single ended measurements using old fixtures.
- Probe Positioner: PPM100 Flexible Arm Probe Positioner.

Test Fixtures

- Plug type: ET-HDMI-TPA-P, available from Efficere Technologies
- Receptacle type: ET-HDMI-TPA-R, available from Efficere Technologies
- Receptacle type: HDMI-TPA-R adapter set - 013-A012-50 (can be used for limited resolution)
- Plug type: HDMI-TPA-P adapter set - 013-A013-50 (can be used for limited resolution)

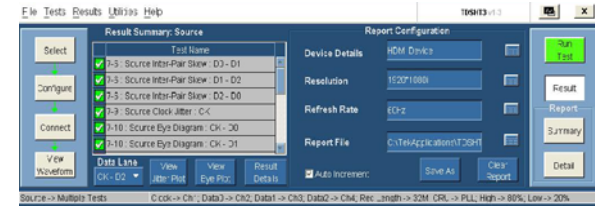
Ordering Fixtures

The fixtures are available under the Tektronix ordering system. For more details, contact your local sales representative.



7. Click **Run Test** to perform the test. The TDSHT3 HDMI Compliance Test Software sets up the oscilloscope and the test runs displaying a progress indicator.

8. If you have run the tests successfully, the software makes **Result** available automatically and displays the eye diagram plot and the clock jitter plot. You can also view both the result summary of the test and the report configuration in the result pane.



9. Click **Result Details** to display the results of the tests.

Test Name	Spec Range	Meas Value	Pass/Fail	Pass/Fail Criteria
7-5 Source Inter-Pair Skew - D3 - D1	Skew < 200 Ons	101.1	Pass	Min = 1.84810e-10, Max = 0.000, Avg = 101.100, Min = 101.100, Max = 101.100, Avg = 101.100
7-5 Source Inter-Pair Skew - D1 - D2	Skew < 200 Ons	101.1	Pass	Min = 1.84810e-10, Max = 0.000, Avg = 101.100, Min = 101.100, Max = 101.100, Avg = 101.100
7-5 Source Inter-Pair Skew - D2 - D0	Skew < 200 Ons	101.1	Pass	Min = 1.84810e-10, Max = 0.000, Avg = 101.100, Min = 101.100, Max = 101.100, Avg = 101.100

10. Click **Result Statistics** to display statistics for the tests.

Test Name	Population	Min	Max	Mean	Std Dev	Pk-Pk
Source Clock Jitter - Tx Clock TIE	144.72k	49.9560u	0.300	0.000	51.800u	89.9560u
Source Clock Jitter - Recovered Clock	144.72k	49.9560u	0.300	45.9272u	50.7200u	89.9560u
Source Eye Diagram - Tx Clock TIE	144.72k	49.9560u	0.300	0.000	51.800u	89.9560u
Source Eye Diagram - Recovered Clock	144.72k	49.9560u	0.300	45.9272u	50.7200u	89.9560u
7-4 Source Rise Time - CK	119.31k	50.440u	101.850u	100.775u	110.000u	1.4032u
7-4 Source Rise Time - D0	12.599k	50.340u	101.750u	100.775u	110.000u	1.3072u
7-4 Source Rise Time - D1	114.81k	50.740u	100.040u	100.775u	110.000u	1.2832u
7-4 Source Rise Time - D2	119.25k	101.100u	103.170u	101.850u	110.000u	1.0752u

The software calculates statistics for each selected test, and logs the statistics on a cycle-by-cycle basis in a fairly large waveform. The standard statistics are for the Maximum, Minimum, Mean, Standard Deviation, and Population.

TDSHT3 HDMI Compliance Test Software Reference Source Test

www.tektronix.com

077-0117-00

TDSHT3 Menu Tree

