Getting Started with TDSJIT3 and TDSJIT3E

You can use this side of the Quick Reference to get started taking measurements with the Jitter Analysis Measurements Application (TDSJIT3 or TDSJIT3E). The other side contains a complete menu tree for TDSJIT3 and TDSJIT3E software.

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

The TDSJIT3 and TDSJIT3E applications represent third generation jitter analysis tools from Tektronix. TDSJIT3 includes random and deterministic jitter separation (Rj/Dj) and bit error ratio estimation (BER). These applications are designed to meet general purpose testing requirements.

Requirements

- TDS5000, TDS5000B, TDS6000, TDS/CSA7000B or TDS/CSA7000 oscilloscope
- TDSJIT3/TDSJIT3E Jitter Analysis Software
- 1 m BNC to BNC coaxial cable or voltage probe appropriate to connect to probe compensation signal
- BNC TCA (TDS6000 and some TDS7000 models)

To set up the oscilloscope, follow these steps:

1. In the oscilloscope front panel, press the DEFAULT SETUP button. This sets the oscilloscope into a known state for this example only.

NOTE. *You do NOT need to perform step 1 before each jitter measurement.*

2. Connect the BNC cable between the PROBE COMPENSATION Signal BNC and the CH 1 BNC.
3. Press the AUTOSET button.
4. Set up the following Vertical menu controls:
   - Select 50 Ω Termination
   - Adjust CH 1 Scale to 100 mV
   - Adjust CH 1 Offset to 900 mV
   - Adjust Position to 0
5. Press the RUN/STOP button to set the oscilloscope to the RUN mode.
6. Set up the following Horizontal menu controls:
   - Adjust the Horizontal Scale to 40 ms/div
   - Adjust the Record Length to 200000

   An alternative method to set these Horizontal controls is through the front panel knobs, as follows:
   - Turn the HORIZONTAL SCALE knob to set the value; a readout below the lower right quadrant of the graticule indicates the value
   - Turn the Resolution knob to adjust the acquisition rate to 500 kS/s, 2 µs/pt

   The oscilloscope displays a free running waveform, about 1.5 divisions high.

To set up the TDSJIT3 or TDSJIT3E application, follow these steps:

1. Select File> Run Application> Jitter Analysis 3 (or Jitter Analysis 3 Essentials) in the oscilloscope menu bar.

NOTE. *There will be a short delay while the application is loading.*

2. In the application menu bar, go to the Measurements> Select menu.
3. Press the Clock Period measurement button.

NOTE. *The default measurement source is CH 1. You can select other channels and waveform sources through the pull-down Select Source menu.*

After you select a measurement, the name of the measurement appears in the list on the right that shows selected measurements and their sources. To delete a measurement, press the select button next to the measurement name, and press the CLEAR button.

4. Select the Measurements> Configure> Source Reference Levels tab, and press the AUTOSET All Active Sources button.

NOTE. *This sets the reference levels for all sources defined in the measurement list. To modify what the Autoset function uses as midpoint, high, and low reference levels, press the AUTOSET Setup button. To Autoset a source for a single measurement, press the appropriate button from the Select Source list, and then press AUTOSET Selected Source.*

5. Press the Go To Results button (bottom button on the left of the screen), and select the All Statistics tab (which is the default).
6. Press the Measure Single sequence button (last one on the right of the screen) to start the measurement process.

   The oscilloscope acquires a waveform and transfers it to the application. The application performs edge detection and timing analysis, calculates statistics, and displays measurement results.

NOTE. *The Results menu includes several tabs. The All Statistics tab shows complete statistics for each measurement. To select a different measurement to display, press the selection button next to the measurement list. To select a summary of partial details of all measurements, select the Min/Max or the Mean/Std Dev tabs.*

To obtain maximum accuracy use the highest sample rate available on the instrument, for example 20 GS/s on a TDS6604. Also make the vertical size of the signal at least 4 divisions; ideally between 7 and 8 divisions.

TDSJIT3 Ordering Information

This application supports the TDS5000B, TDS5000, TDS6000, TDS/CSA7000B or TDS/CSA7000 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 Option JT3 was ordered with your new TDS or CSA oscilloscope:

- TDSJIT3 is installed and enabled

To order an upgrade for an existing oscilloscope:

- Order TDS5UPB Option JT3
- Order TDS5UP Option JT3
- Order TDS6UP Option JT3
- Order TDS7BUP Option JT3
- Order TDS7UP Option JT3
- Order CSAB7UP Option JT3
- Order CSA7UP Option JT3

To order an upgrade for TDSJIT3E to TDSJIT3:

- Order TDS5BUP Option J23
- Order TDS5UP Option J23
- Order TDS6UP Option J23
- Order TDS7BUP Option J23
- Order TDS7UP Option J23
- Order CSA7BUP Option J23
- Order CSA7UP Option J23

TDSJIT3 Essentials Ordering Information

This application supports the TDS5000, TDS5000B, TDS6000, TDS/CSA7000B or TDS/CSA7000 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 Option J3E was ordered with your new TDS or CSA oscilloscope:

- TDSJIT3 Essentials is installed and enabled

To order an upgrade for an existing oscilloscope:

- Order TDS5BUP Option J3E
- Order TDS5UP Option J3E
- Order TDS6UP Option J3E
- Order TDS7BUP Option J3E
- Order TDS7UP Option J3E
- Order CSA7BUP Option J3E
- Order CSA7UP Option J3E

Recommended Accessories

AWG710 — 4.0 GS/s Arbitrary Waveform Generator

P7260 — 6.0 GHz active probe
-3 dB probe tip bandwidth with TDS6604

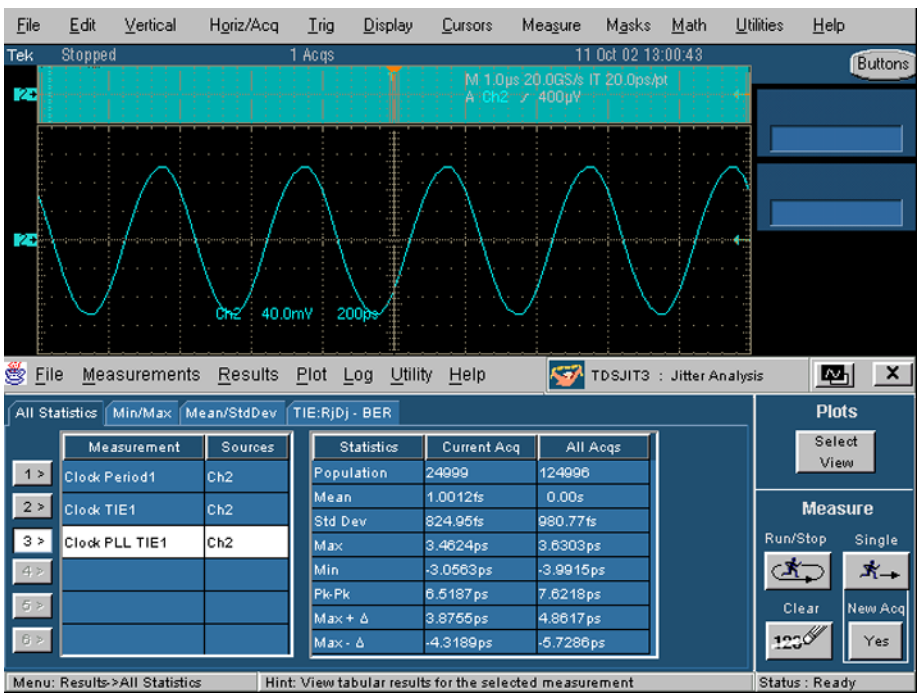
P7240 — 4.0 GHz active probe
-3 dB probe tip bandwidth with CSA/TDS7404

P7380SMA — 8 GHz differential adapter

P7350SMA — 5G Hz differential SMA probe

P7350 — 5G Hz differential probe
-3 dB probe tip bandwidth with TDS6604 and above

P7330 — 3.0 GHz active differential probe
-3 dB probe tip bandwidth with CSA/TDS7404

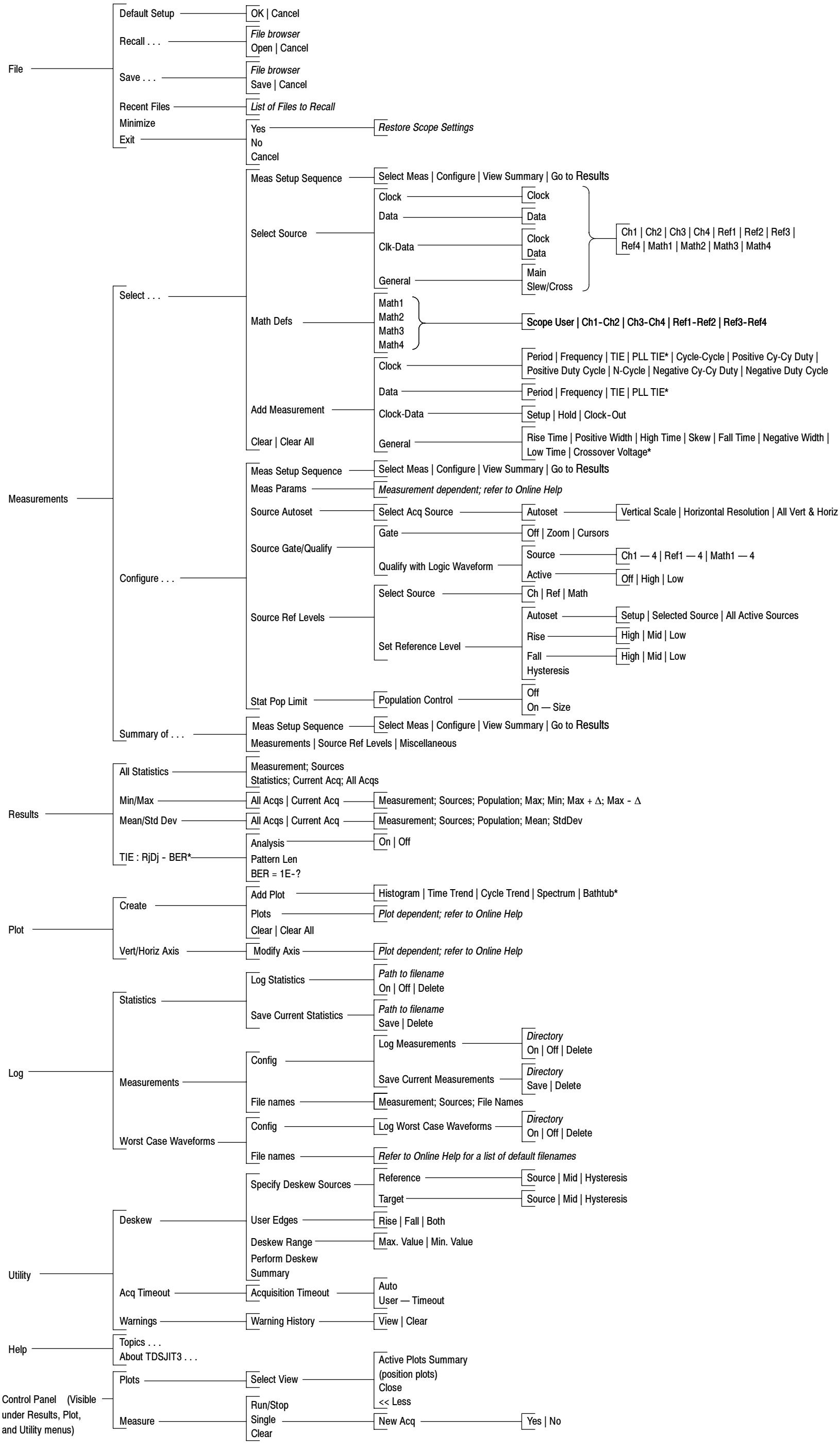


TDSJIT3 and TDSJIT3E Jitter Analysis Measurements Application Reference

www.tektronix.com

071-1079-02

TDSJIT3/TDSJIT3E Menu Tree



*** These measurements are only available in TDSJIT3.**

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