

Event Logger System



Key Features

- Continuous electrical resistance monitoring
- Failure criteria at 300 or 1000 Ohms
- Minimum 10 events to classify as failure
- Scan rate ~ 50 ms (channel-to-channel)
- Sample rate 1 μ s
- 132, 264, 528 and 1056 channels
- Integrated data logging software

The Event Logger is a high-channel count data logging system based on 4-wire measurement configuration. The channel count ranges from a minimum of 132 channels to a maximum of 1056 channels.

When used with a temperature cycling chamber, this system provides a complete solution for the continuous monitoring and measurements of resistance values for the qualification of interconnect reliability in the Temperature Cycling On-Board (TCOB) test.

The Event Logger is able to measure the electrical resistance of the Device Under Test (DUT) in real-time, with a scanning speed of ~50 ms channel-to-channel and a sampling rate of 1 μ s on all channels. Its software has a user interface that allows configurable control. There is live viewing of the DUT performance, with real-time capture of failure occurrences during the test.

The test summary and post-analyses features provide the user with basic tools to perform data analysis after the test.

Setup features:

- Test channel configuration for each test board
 - Select all or individual channel selection options
- Ability to monitor two Temperature Cycling chambers
 - Temperature data during Temperature Cycling tests is logged
- Option to label/name individual test boards for ease of reference
- Failure criterion setting (300, 1000 Ohms or other resistance value)
- Failure count setting (default is 10 counts for a failure event)
- Zeroing function for hardware switches
- “Burst Mode” option for quick analyses of channel stability

Monitoring features:

- Real-time failure logs data
- Real-time scan rate information
- Test completion information
 - Count down timer, estimated completion date and time
- Percentage of failure information
- Global view of channels under test

Analyses features

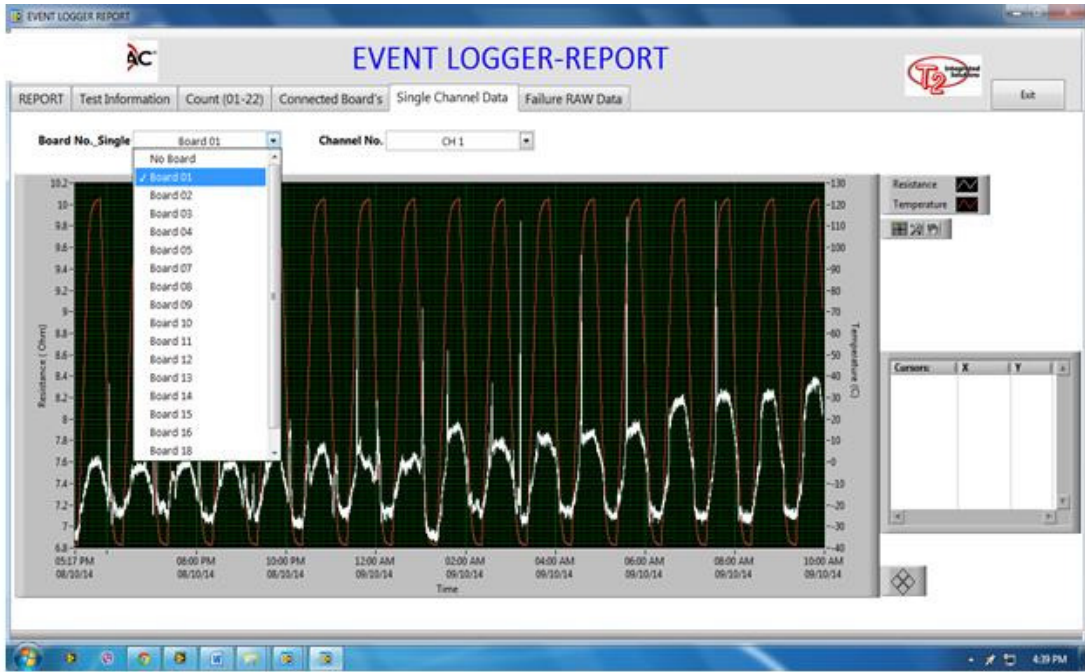
- Real-time display of temperature data of temperature cycling chamber/s
- Display of failure counts on board and channel levels
- Electrical resistance values on board and channel levels
- Channel reset option for non-valid failure event/s
- “Jotter” screen to record remarks and information pertaining to test
- Summary report screen and report saving options in PDF or MS Excel formats
- Resistance and temperature vs time plot
- Resistance vs time plot for 2 hours prior to time to failure to failure point

The screenshot displays the 'EVENT LOGGER' software interface. At the top, there are tabs for 'Information Tab', 'Count (01-11)', 'Count (12-22)', 'Values-Update', 'Failure Log Data', 'Failure-Reset', 'Remarks', and 'Channel List'. The main area is divided into several sections:

- Lot Information:** Customer Name: Custom Continue Run, Job Number: 123X45, Operator: SCS, Quantity: 1, Total Test Hour: 100, Remarks: Test to be run-Resume.
- Settings:** Resistance Threshold: 1000, Consecutive Intervals: 10, Active Channels: 322, Total Support Channels: 528, Log File Directory: C:\EL_Custom Continue Run_091020141649.
- Timing Information:** Test Start Time: 09/10/2014 04:49:46 PM, Est. End Time: 13/10/2014 08:49:46 PM, Test Run Time: 0000 Hr : 07 Min : 12 Sec, % of Failure Occurs: 0.93, Scan Rate (sec): 6.97.
- LOG DATAS:** 0000 Hr : 00 Min : 05 Sec Board 10:CH 11, 0000 Hr : 05 Min : 59 Sec Board 04:CH 18, 0000 Hr : 06 Min : 33 Sec Board 03:CH 22.
- Temperature:** BLTC 01 Temp: 62.3 °C, BLTC 02 Temp: 22.0 °C. Includes 'Connect?', 'Pause', and 'Stop' buttons.
- Test Status Grid:** A grid showing test results for 11 boards (Board #01 to Board #11) across 24 channels. Most cells contain '0', indicating no failure. Some cells contain '10', indicating a failure event.

At the bottom of the interface, a green status bar reads 'Testing in Progress...'.

Event Logger test screen with various data tabs



Resistance and temperature vs time plot for a particular board and channel