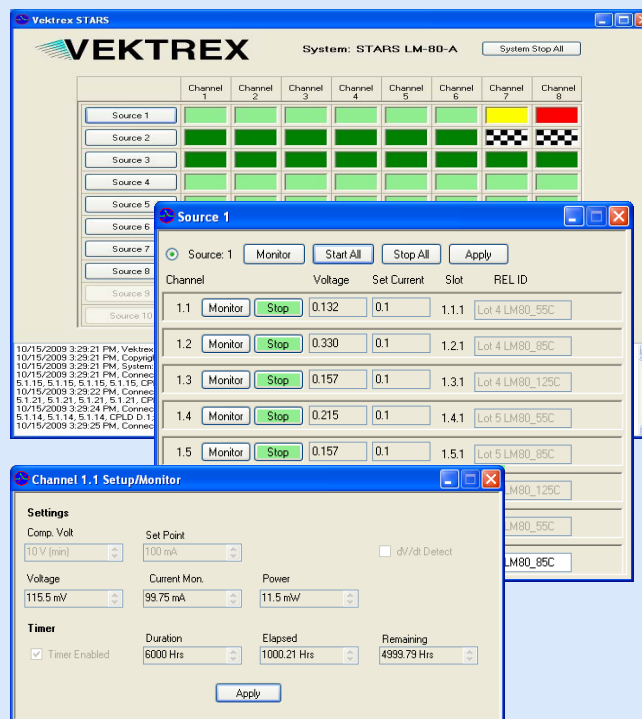# STARS – SpikeSafe Test and Reliability Software

- Manage hundreds of simultaneous reliability tests

- Independent control of up to 256 SpikeSafe channels   - DC or pulsed mode

- Flexible LED power cycling protocols - 1 to 60 minutes on/off

- Voltage, current and temperature logging & graphing

- No data loss or damage to LEDs in event of power-loss shutdown

- Source channel restart upon detection of anomaly or failure

- Duration timers track test time

STARS Automates Reliability Testing

Efficient Batched Operation

STARS (SpikeSafe Test and Reliability Software) manages reliability, burn-in, and other long-term tests enabling unattended, automated operation. With the easy to use software interface, users can specify key test parameters such as lot number, current, compliance voltage, temperature limits, and test duration. During testing, these LED operating parameters are monitored continuously and output to data log files at a user-specified interval.   LED failure events are also logged and time-tagged, thus providing detail for device failure analysis. STARS supports independent startup and shutdown of each channel allowing users to run multiple independent LED batches on a single system, maximizing output. Used by the world's leading LED manufacturers, STARS simplifies controlling and collecting data for crucial reliability tests.

Ordering Information

Part Number	Description
STARS-8	Controls and monitors up to 8 source channels
STARS-64	64 channel version
STARS-128	128 channel version
STARS-256	256 channel version
STAR Plot	Visual representation of the log files generated by STARS (no additional charge with STARS purchase)

Applications:

- Reliability tests – LEDs, Laser Diodes, Rectifiers
- Stress Screening
- Burn-in and Production Test
- LM-80 Energy Star compliance

# STARS – SpikeSafe Test and Reliability Software

Simple Test Setup for Each Channel

STARS controls each source channel independently. Using simple Source and Channel Setup/Monitor windows, the operator enters different key parameters for each source channel. Key parameters include test mode, voltage, current and test duration. All setup parameters are saved to disk and automatically recalled if STARS is shut down for maintenance or because of a power failure.

Several test modes are available:
- DC
- Pulsed
- Power Cycling (1 to 60 minutes on/off)
- Triggering with External Pause

The external pause feature halts source current when an external signal is received. External Pause can be used to implement a light safety interlock to darken LEDs when a chamber door is opened.
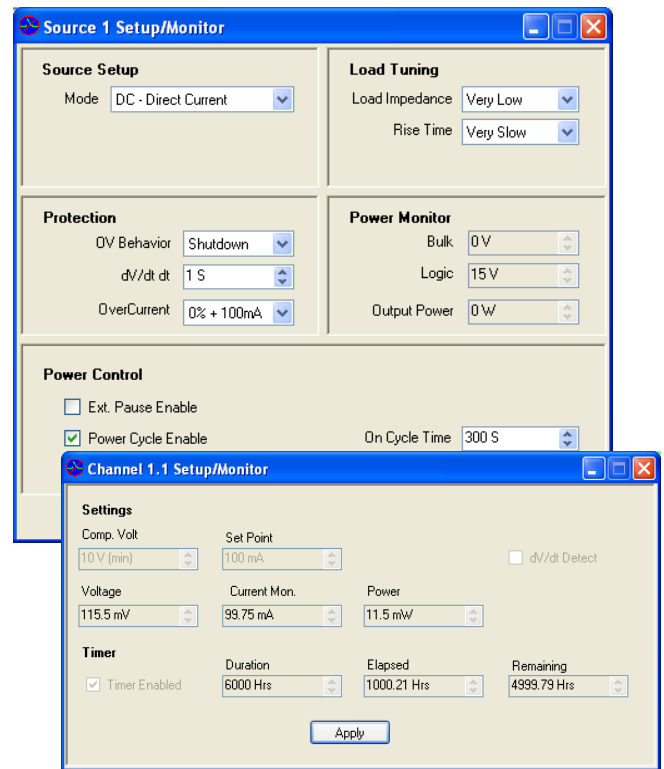

Source and Channel Setup Windows Speed Up Test Configuration

Run Time Executive Overview

STARS provides an executive overview during test runs showing color-coded status for each system channel. Using this tool, operators can quickly determine if load boards need attention. A detailed, scrollable log provides additional information about load board faults, operator actions and other events.

STARS Color-Coded Status
- Gray: No test execution/no power
- Yellow: Attention is needed.
- Red: Test has failed/power is off.
- Green: Test is running.
- Dark Green: Test is running but paused.
- Checkered: Test is complete.
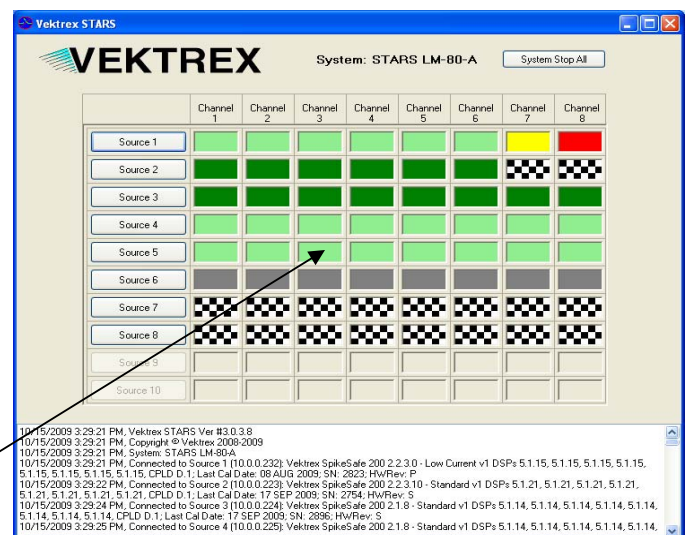
Color Coding Provides Visual Summary

STARS – SpikeSafe Test and Reliability Software

Log Data Tracked by Load Board

Each source channel is identified by a unique identification string defined by the operator. The reliability load board ID or barcode provides a unique identifier. This unique identifier is also used to name the data log file where all data associated with that load board is tracked. Using the unique ID allows the data to be tracked even if the load board is removed and replaced in a new location in the system. The data logs provided by this unique identifier are stored in Comma Separated Value (CSV) files making them easy to import into spreadsheets or other files.
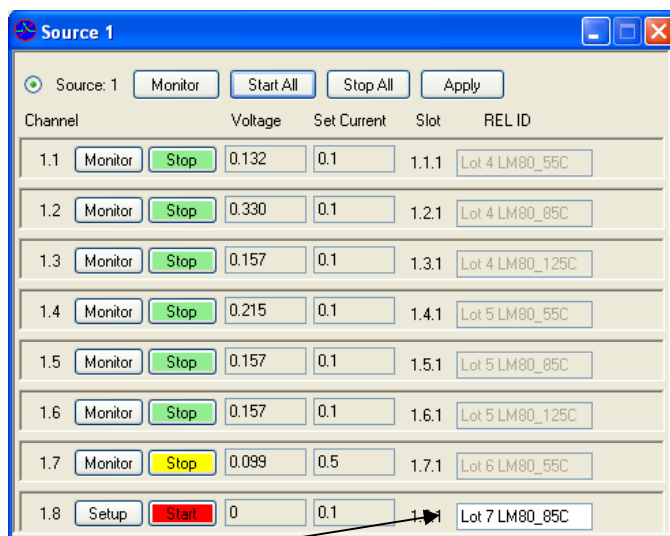
Operator Entered Unique Load Board ID

Load Board ID (REL ID) Used to Track All Data

Temperature Logging With Out-of-Limit Shutdown

STARS can be configured to log load board or chamber temperature along with its normal voltage and current logging. This is especially important as LM-80 requires temperature data logs to fulfill its testing requirements.

Additionally, if temperatures exceed the high and low temperature limits configured, STARS automatically halts drive for that channel. This secondary form of failure protection can preserve LEDs from harmful overstress or failure.
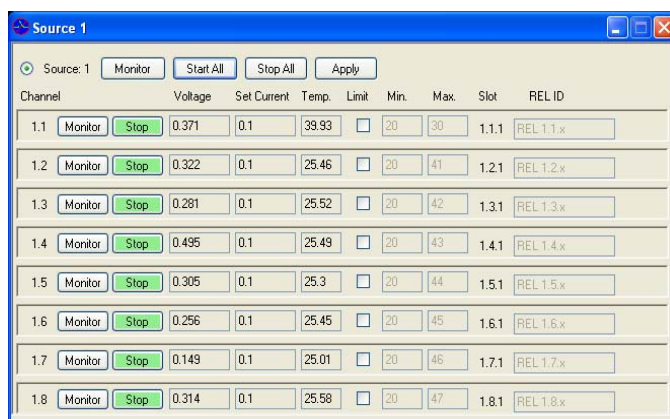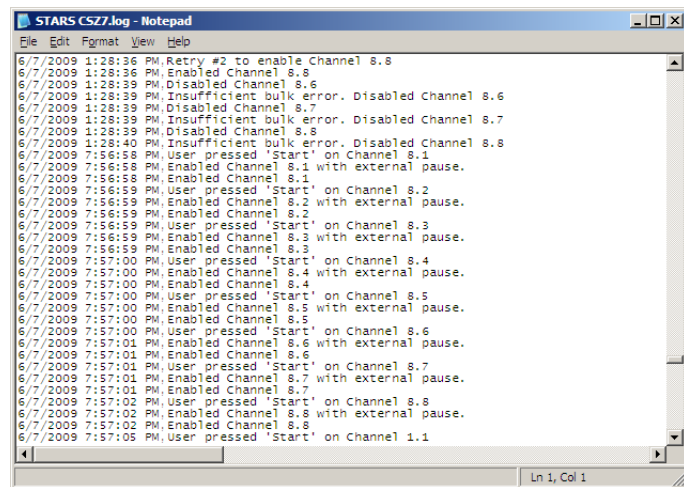

Temperature Limits Protect LEDs from Overstress

STARS – SpikeSafe Test and Reliability Software

Data Logging/Plotting Detects Faults

STARS continuously logs voltage and current data along with all events associated with a channel. These logs are stored in Comma Separated Value (CSV) files that are easily imported into spreadsheets or databases. The logs can also be viewed with STAR Plot. STAR Plot provides a graphical view of the data where defects such as internal shorts in LED arrays, connector wear, and even thermal problems may be identified.

The plots below show current and voltage for a device. Note the 3V Vf drop identifying a failure mode.

Event Log File Captures Load Events and Operator Actions

Specifications

Operating System:	Windows XP
SpikeSafe Models Support:	SS200 – 500mA SS200 – 5A SS200 – 10A SS200 – Fast Pulse
Channels:	Maximum 256 channels
Logging Interval:	1S minimum, 24hours maximum With temp logging, 30S min
Power Cycle Times:	1 minute minimum, 1 hour maximum
Duration Timer:	0.01 hour minimum, 100,000 hours maximum
Temperature Channels:	0-160
Configuration Files	Text-based
STARS Support	Email and phone support for 1 year

3 Volt Vf Drop
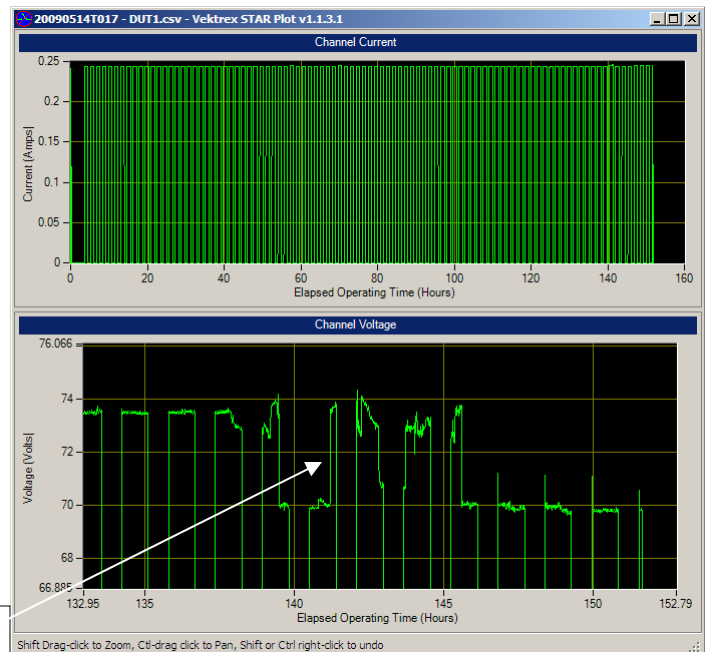
STAR Plot of Data Log shows LED Array with Internal Shorting Fault

VEKTREX

For more information see www.vektrex.com
Contact: Melissa Ford
Phone: (858) 558-8282 x6
melissa@vektrex.com