Transient Capture

Todays Presenter: Kevin Van Popering

We will begin shortly!

Transient Capture

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- **If you have an idea for a webinar, let us know!**

Topics

- What is Transient Capture testing?

- Applications

- "How to" in VibrationVIEW

- New features/Tips & Tricks

Transient Capture

- ## What is it?

  - Historically used with drop shock machines

  - Typical Applications

    - Package Testing

    - Product Life Testing

    - Pass/Fail production testing

  - Can be use for data acquisition

   - Transient Events

  - VR ObserVR capability

Drop Shock Machines

- Pulse Shape determined by drop pads

  - **Half-Sine** – produced by a flat elastomer drop pad

    - Deflection (thickness, density, etc.) of elastomer determines the pulse width

  - **Sawtooth** – produced by a lead drop pad

    - The shape determines the pulse width

    - Lead can be shaped many times

  - **Square/Trapezoid** – produced by air cylinders or a crumple material

- Pulse Width

  - Lighter objects will generally see a wider pulse

- Pulse Acceleration determined by:

  - Pads, DUT, frequency content, drop height (velocity), assist mechanisms (bungee cords), etc.

Drop Shock Machines
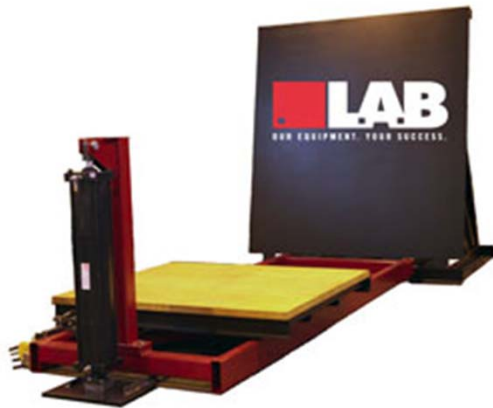
- Trigger

  - Trigger on any/all channels (Version 11)

- Capture Window

  - Capture total in milliseconds

  - Pre-capture and hold-off

- Filter

- Sample Rate – at least 10x the analysis frequency

- Frequency Analysis

  - Set Minimum and Maximum plotted Frequency (auto scale range)

- Output

  - Can use the output to drive a modal shaker (open loop)

  - Choose the output type

    - Burst Random

    - Linear Chirp

    - Exponential Chirp

  - Pulse Duration in Milliseconds

  - Output Level in Millivolts

Transient Capture Test Settings

| Trigger | Output | Tolerance | Breakpoints | SRS | Data | Tables |

Output
Output Type

Output Disabled ▼

Pulse duration 200 ms

Output level 5 mV

Output Frequency Range

	Sine	Random	
Start freq	1	1	Hz
End freq	100	100	Hz

Save   OK   Cancel

Tolerance Tab

- Create a Reference Pulse

  - Manual

  - Automatic

- Tolerance

  - Set the Min and Max

  - MIL-STD Pulse Limits are predefined

  - Can set individual Pre and Post pulse tolerances

- Breakpoint Table

  - Define the breakpoints of the desired SRS curve

- Tolerances

  - Can use the same tolerances for all breakpoints or select them individually

- Import

  - Import frequency and amplitude breakpoints from a text file

- SRS Analysis

  - Define the analysis parameters

  - Choose Damping and Q values

  - Choose Analysis Range

    - Frequency Range

    - Breakpoint Frequencies

Data Tab

- Where the data is saved

- Prompt for Run Name and
  Annotation Lines

  - Tools to help organize data

Tables Tab

- Tables

  - Automatically save tabular spread sheet data

- Choose how often data is saved

Transient Capture
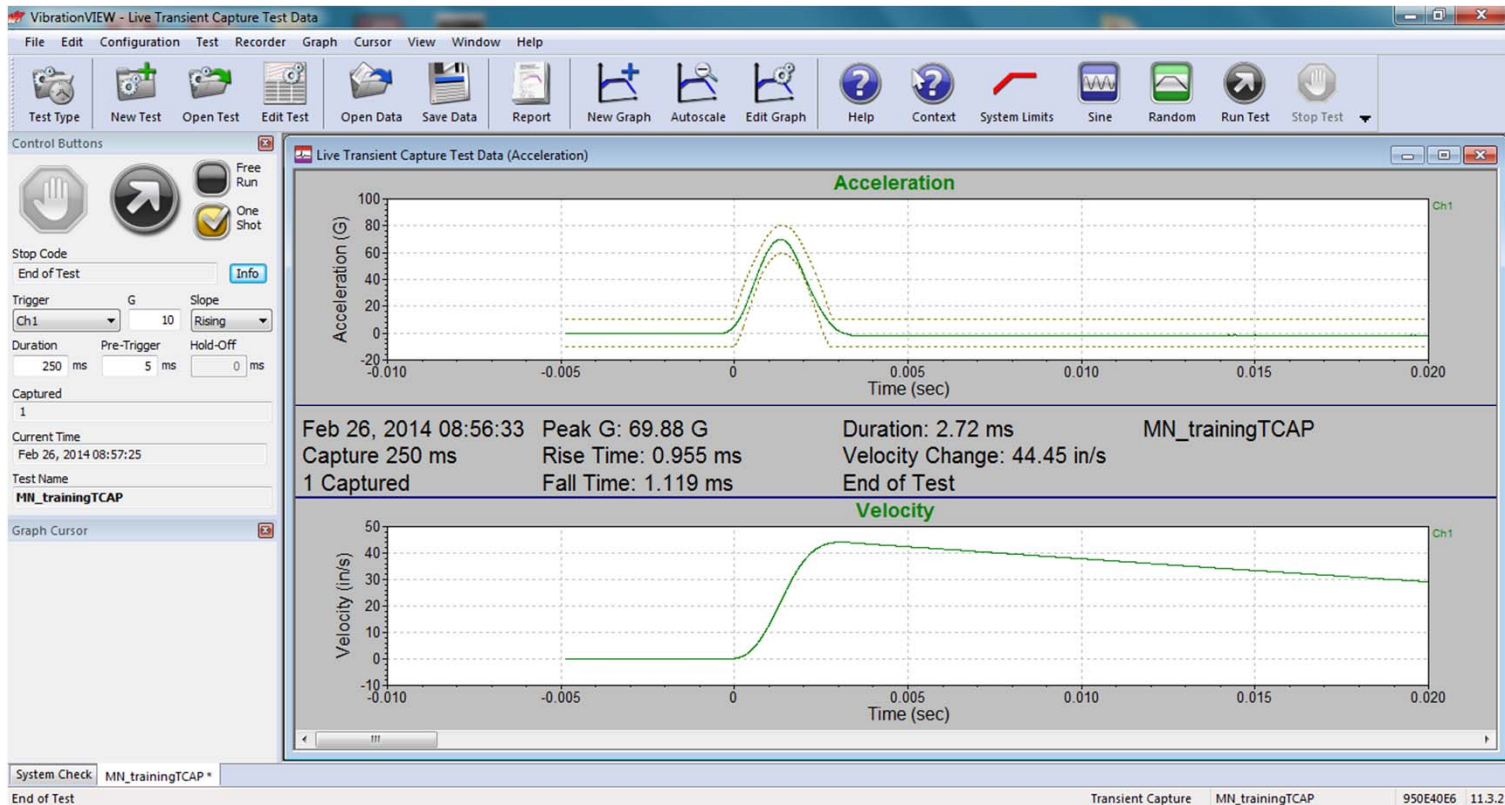
Thank You for Attending!

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