Digital Power Management Analysis Application Software

Key Features

Applications
- Digital Multi-phase Power Management ICs (PMIC)
- Voltage Regulator Modules (VRM)
- Point-of-load (POL) switching regulators
- Low-dropout (LDO) regulators
- Half-bridge DC-DC converters
- Unregulated DC supplies
- Embedded system power rail debug and analysis
- Embedded system power delivery network (PDN) validation

Capabilities
- Per-cycle parameters
- Per-cycle Waveforms
- Ripple
- Ringing
- Overshoot
- Droop
- Noise
- Settling Time

Teledyne LeCroy Digital Power Management Analysis Application Software translates complicated multi-phase PMIC, VRM, POL, LDO and other DC rail behaviors into per-cycle measurements and displays per-cycle Waveforms to provide complete and fast understanding of power system behaviors.

Numeric Measurements Table
Various measurements can be selected for display in a mean value table. RMS, Sdev, Mean, Pk-Pk, Pk+, Pk- and Frequency are supported. Mean values are calculated over a user-defined cyclic period. Touch a mean value and a per-cycle Waveform is instantly displayed.

Per-cycle Waveforms
Understanding power system behaviors over time is key to cause-effect analysis. These waveforms make it simple to identify and quantify behavior changes during transient load events.

Customized Source Names
Rename sources for all measurements to something specific to your design (e.g., POL1, VrailA, 1.5Vdc, etc.). These names are carried into the Numerics table and per-cycle Waveform displays.

Compatibility
The application package is compatible with Teledyne LeCroy HDO6000A, HDO8000, and WavePro HD 12-bit up to 8 GHz (HD4096) and HDO9000 10-bit up to 4 GHz (HD1024) models.

Zoom+Gate Dynamic Analysis
Capture long acquisitions and Zoom+Gate with instant table value updates and views of DC power/voltage rail and load current behaviors.
**COMPLETE AND FAST UNDERSTANDING**

### Numerics Table for Mean Values

A simplified and concise table displays rows (sources) and columns (measurements) with a single mean value in each cell for multiple measurements. The source names can be renamed for your specific needs.

<table>
<thead>
<tr>
<th>Source</th>
<th>RMS</th>
<th>Sdev</th>
<th>Mean</th>
<th>Pk+</th>
<th>PkPk</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>900mV</td>
<td>899.554 mV</td>
<td>6.013 mV</td>
<td>899.534 mV</td>
<td>925.01 mV</td>
<td>34.30 mV</td>
<td>506.228 kHz</td>
</tr>
<tr>
<td>700mV</td>
<td>700.219 mV</td>
<td>4.143 mV</td>
<td>700.207 mV</td>
<td>720.82 mV</td>
<td>25.82 mV</td>
<td>506.228 kHz</td>
</tr>
<tr>
<td>1.5V</td>
<td>1.498786 V</td>
<td>5.923 mV</td>
<td>1.498767 V</td>
<td>1.51836 mV</td>
<td>31.78 mV</td>
<td>506.228 kHz</td>
</tr>
<tr>
<td>1.7V</td>
<td>1.199963 V</td>
<td>4.021 mV</td>
<td>1.199956 V</td>
<td>1.71541 mV</td>
<td>27.62 mV</td>
<td>506.228 kHz</td>
</tr>
<tr>
<td>Vrail</td>
<td>999.481 mV</td>
<td>3.432 mV</td>
<td>999.478 mV</td>
<td>1.01215 V</td>
<td>15.28 mV</td>
<td>506.228 kHz</td>
</tr>
<tr>
<td>Irail</td>
<td>2.7343 μA</td>
<td>19.5 mA</td>
<td>2.7342 μA</td>
<td>3.158 μA</td>
<td>160 μA</td>
<td>506.228 kHz</td>
</tr>
<tr>
<td>I2Vin</td>
<td>12.0159 V</td>
<td>38.6 mV</td>
<td>12.0158 V</td>
<td>12.632 V</td>
<td>1.028 mV</td>
<td>506.228 kHz</td>
</tr>
</tbody>
</table>

### Per-cycle Waveforms Show Dynamic Behaviors

Just touch the Numerics table mean value to get a per-cycle Waveform display of the measurement value over time. This provides an intuitive view of the system behavior that makes it easy to understand complex dynamic behaviors.

The image to the right shows acquired voltage and current signals on the left and per-cycle Waveforms on the right. Each per-cycle Waveform is comprised of over 2500 measurement values.

### Zoom+Gate Dynamic Analysis

Use Zoom+Gate to isolate the acquisition and per-cycle Waveform view to a specific area of interest. Change location and zoom ratio and the table instantly updates to gate the measurement values to just the area of interest.

### Ordering Information

**Product Description**

**Recommended High Definition Oscilloscopes and Options**

- Digital Power Management Analysis Software Option for HDO6000A Oscilloscopes
- Digital Power Management Analysis Software Option for HDO8000A Oscilloscopes
- Digital Power Management Analysis Software Option for HDO9000 Oscilloscopes
- Digital Power Management Analysis Software Option for WavePro HD Oscilloscopes

**Product Code**

- HDO6K-DIG-PWR-MGMT
- HDO8K-DIG-PWR-MGMT
- HDO9K-DIG-PWR-MGMT
- WPHD-DIG-PWR-MGMT

**Customer Service**

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year. This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge

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