Common Power Supply Measurements

MSO and DPO Series oscilloscopes



MSO/DPO4000 Series

- 350 MHz to 1 GHz
- 2 or 4 Analog Channels
- 16 Digital Channels (MSO)
- 10 M Record Length
- Up to 5 GS/s Sample Rate



MSO/DPO3000 Series

- 100 MHz to 500 MHz
- 2 or 4 Analog Channels
- 16 Digital Channels (MSO)
- 5 M Record Length
- 2.5 GS/s Sample Rate



TDP0500/TDP1000

- Mid-voltage differential probe
- 500 MHz / 1 GHz Bandwidth
- ±42 V (DC + pk AC) Differential Input Voltage Range
- 100 Hz, 10 kHz, and 1 MHz Bandwidth Limiting Filters



TCP0030

- AC/DC current probe
- DC to >120 MHz Bandwidth
- 30 A_{RMS} / 50 A_{peak} Pulse Current Capability



TCP0150

- AC/DC current probe
- DC to 20 MHz Bandwidth
- 150 A_{RMS} / 500 A_{peak} Pulse Current Capability

Recommended Power Analysis Options and Probing Accessories

	MSO/DPO4000 Series	MSO/DPO3000 Series
Power Analysis Application Module	DPO4PWR	DPO3PWR
AC/DC Current Probes	TCP0030, TCP0150	TCP0030, TCP0150
Differential Probes	TDP0500, TDP1000	TDP0500
High-Voltage Differential Probes	P5200, P5205 or P5210 with TPA-BNC	P5200, P5205 or P5210 with TPA-BNC
High-Voltage Passive Probe	P6015A	P6015A
Probe Deskew Accessories	TEK-DPG and 067-1686-00	TEK-DPG and 067-1686-00
Power Solution Bundle	DPO4PWRBND	DPO3PWRBND

Power Solution Bundle

SAVE!

Save 25% - Includes a suite of products to perform common power analysis measurements.

Power Solution Bundle includes:

- DPO4PWR or DPO3PWR Module
- P5205, TDP0500, TCP0030 Probes
- TPA-BNC Adapter
- Probe Deskew Accessories
- Hard-Sided Carrying Case

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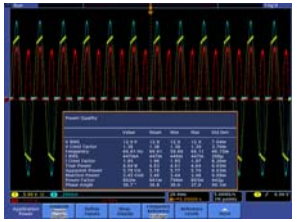
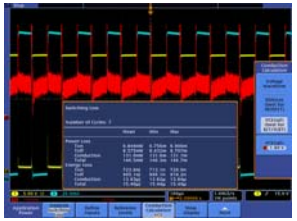
Working with Power

A Quick Guide to Common Power Supply Measurements



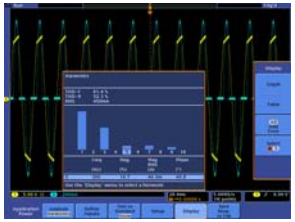
Power Quality Measurements

- RMS, crest factor, true power, reactive power, apparent power, power factor, and phase angle measurements on voltage and current



Switching Loss Measurements

- Turn-on, turn-off, conduction, and total power and energy losses



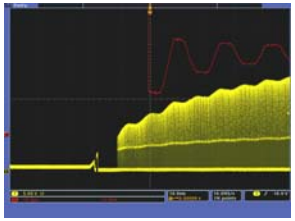
Harmonics Measurements

- THD-F, THD-R, and RMS measurements, and magnitude and phase of each harmonic
- Pre-compliance Testing to IEC 61000-3-2 and MIL-STD-1399



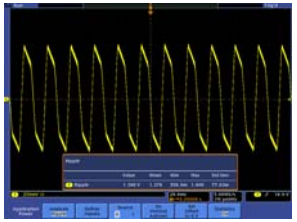
Safe Operating Area (SOA)

- X-Y display of the switching device voltage and current
- Mask testing of the signals relative to a graphical description of the device specification limits



Modulation Analysis

- Graphical display of the cycle-to-cycle variations in the modulated switching signal
- +/- pulse width, +/- duty cycle, frequency, and period



Ripple Measurements

- Table of measurements and measurement statistics for the AC components of the signals

MSO and DPO Series Oscilloscopes Offer:

- **Automated power measurements** such as power quality, switching loss, harmonics, safe operating area, modulation, ripple and slew rate for fast, accurate results
- **Automated probe deskew** to ensure maximum measurement accuracy

Complete Power Probing Portfolio:

- **Current Probes** for AC and DC currents from 1 mA to 150 A_{RMS} or 500 A_{peak}
- **High-Speed Differential Probes** up to 1 GHz bandwidth for differential signals to ±42 V
- **High Voltage Probes** for differential signals to 5600 V or ground-referenced signals to 20 kV

Learn More…



Power supplies and converters pose significant challenges to the embedded system designer.

Get the **Power Application Note** to learn more about common power supply measurements, challenges, and how to overcome them.

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