

## **FOR IMMEDIATE RELEASE**

July 18, 2011 (Revised December 2015)

### **Accel Instruments Introduced TS200 Modulated Power Supply**

IRVINE, California, July 18, 2011 – Accel Instruments introduces TS200 Modulated Power Supply for laboratory amplifier test applications.

The TS200 Modulated Power Supply is a unique instrument for many test and measurement applications such as LDO PSRR measurement, battery simulator, op amp CMRR measurement, function generator amplifier, transient response test, four-quadrant power supply, laboratory power amplifier and others. Unlike most wideband amplifiers on the market, the TS200 output high current up to 3.5A is available.

The modulated power supply is built for test and measurement applications. It outputs AC or DC voltage or both. For instant, it can output a 3.0V DC voltage with a 200mVpp AC sine wave added on top of the DC voltage. The TS200 includes a modulation input to modulate the voltage output to produce many different waveforms.

#### **Waveform Amplifier**

TS200 is also ideal as a [waveform amplifier for amplifying signals](#). It can drive high voltage or high current or high power loads. The [TS200 high current amplifier](#) is capable outputs up to 3.5A. As a waveform amplifier, it accepts AC or DC input from a function generator and amplify the waveform by a factor of 10. TS200 is also great for pulse amplifier and laboratory power amplifier.

#### **Battery Simulator**

TS200 modulated power supply is capable of source or sink current. It can be use as a battery simulator. The TS200 has a variable DC output that can easily simulate battery voltage changes. Thus it is great for battery charger testing such as those in battery-powered mobile electronic devices.

A battery simulator is an electronic instrument that will simulate lots of real battery electrical properties and characteristics. These characteristics are power, current, voltage, ESR, ect. It supplies the needed current, power, and voltage to the portable system much like an actual battery would. Generally a battery simulator will replace the battery inside a portable system for testing purpose. With advanced **battery simulator** available, test technicians can quickly and extensively tests these portable systems. Thorough testing is needed both for product development and mass production.

A lot of battery-powered devices include built-in charger circuits which recharges the battery. The charging circuitry must be completely and extensively verify that it meets all of the specifications and safely recharges the battery. A typical charging cycle is from depleted battery to fully charge usually takes several hours to finish. For that reason, charging cycle testing requires multiple hours. If the battery is replaced with a battery simulator, a complete charging cycle test can be done in seconds. Similarly, to empty an

actual battery by the system itself will take days. However battery simulator can easily simulate the battery becoming empty in seconds. At the same time, test engineers can observe how the device and charger behaves as the “battery” is drained. Instead of waiting for hours to test a real battery, a [battery simulator can quickly tests](#) the device to ensure it meets all of the specs in just a few seconds. Moreover, a *battery simulator* can quickly recreate an overcharge battery or even a completely drained battery (0V), both of which conditions are not easy to do with an actual battery.

Mid-power level systems frequently use many series connected battery cells to achieved higher voltage and delivery power more efficiently. These battery packs generally obtained optimal battery energy capacity by utilizing active cell balancing techniques. The battery charger itself and the cell balance circuit needs to be correctly tested. Several battery simulators are needed to be able to effectively and quickly test the cell balancing circuitry. Each simulator emulates a battery cell. Design engineers can recreate one or more cells are “out-of-balance” to stress test how the battery-cell-balancing circuits reacts. For example test engineer is able to simulate one of the cells is being over-charged and see how the balancing circuit behave. In a similar fashion it is very straightforward to emulate one of the batteries is broken (low voltage) and verifying the cell balancing circuit is working properly. In summary, it is important to test battery charger and cell balancing circuits by using a [battery simulator](#).

### **PSRR Measurement**

TS200 is great for power supply rejection ratio or [PSRR measurement](#). PSRR is often tested for LDO linear regulators, op-amps, audio amplifiers, etcetera. TS200 is especially powerful for LDO PSRR measurement with high output load current. Classic regulator PSRR test techniques such as capacitor or inductor coupled is not able to support high LDO load current (i.e. >500mA).

In conclusion the TS200 is very easy to use and very powerful. It is intended for general laboratory test applications such as arbitrary generator or function generator amplifier, battery simulator, CMRR/PSRR testing, supply transient response testing, four-quadrant power supply, and piezoelectric amplifier driver.

### **About Accel Instruments**

Accel instruments designs, develops, manufactures and markets electronic instruments for the specialized needs of electronics bench testing and research and development. We specialize in power electronic test and measurement such as voltage regulators, battery simulation, waveform amplifier, and more. Additional information about Accel instruments is available at [www.accelinstruments.com](http://www.accelinstruments.com).

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