**FOR IMMEDIATE RELEASE**
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# Accel Instruments Announces the TS250 Waveform Amplifier - An Instrument for Amplifying Function Generators

IRVINE, California, April 20, 2015 – The TS250 waveform amplifier is a unique instrument ideal for function generator amplifier. It amplifies current or voltage or power for driving heavy loads.

The TS250 is ideal for many test and measurement applications such as LDO and amplifier PSRR test, battery simulator, op-amp CMRR measurement, high-frequency Helmholtz coil driver, general function generator amplifier, transient response test, four-quadrant power supply, lab power amplifier and more. The TS250 offers eight voltage ranges to choose from ±10V to +65V. Refer to the datasheet for more information. The TS250 output peak current is up to 7A for the low-voltage model. Higher current is possible by connecting two or more TS250 in parallel.

## Function Generator Amplifier

The TS250 is ideal as a function generator amplifier for amplifying current. It can drive high current or high power or high voltage loads. It can output up to 7A peak current for the low-voltage model and reduce current for the higher voltage models. As a high current amplifier, it accepts AC or DC voltage input from a function generator to drive a heavy load that requires high current or high voltage. The TS250 features a selectable gain of 0dB or 20dB. The TS250 served as the missing link between function generator and oscilloscope. It is also great for pulse amplifier and laboratory power amplifier.

## Battery Simulator

The TS250 can source or sink current in all four quadrants. It is a great tool for simulating a battery being charged or discharged. It has a variable DC output that can easily **simulate battery** voltage changes. It is ideal for battery charger testing such as those in battery operated portable electronic systems. The TS250 features a current-monitor LCD-display eliminates the need for an external DMM for current monitor.

Battery simulator is a test measuring instrument that emulates most of the critical battery characteristics. These characteristics are power, current, voltage, ESR, ect. A battery simulator provides the required current and voltage to the portable device. Usually a battery simulator will replace the battery inside a portable device for testing purpose. With advanced battery simulator available, designers can quickly and extensively tests these mobile systems. Extensive verification testing is needed during device design and final production testing.

A great deal number of battery-powered devices that include built-in charger circuit which will recharges the battery. The charging circuitry needs to be completely and extensively verify that it meets all of the specifications and reliably recharges the battery. From depleted battery to full, a charging cycle often requires multiple hours to complete. Therefore it will take many hours to

test a charging cycle. By using a battery simulator, charging cycle testing can be finished in seconds. Likewise, to empty an actual battery by the system itself may take days. In contrast, a *battery simulator* can quickly simulate an empty battery with a turn of a knob. While battery is emulated and "charging", designers can watch how the system and charger reacts as the “battery” is drained. A battery simulator can test electronic devices to ensure that they meet all of the specs without the need for waiting for hours. Furthermore, a battery simulator can quickly simulate an overcharge battery and a completely drained battery (zero volt), both of which conditions are hard to do with an actual battery.

Medium-powered electronic systems generally use multiple batteries connected in series for high voltage and power. These battery packs frequently achieved highest battery energy capacity by using active cell balancing techniques. The battery charger itself plus the cell balance circuit must be adequately tested. In order to efficiently and quickly test the cell balancing circuit, several battery simulators are needed. Every simulator simulates an individual battery cell. To stress test the battery-cell-balancing circuit, test engineers can emulate one or more battery cells are getting “out-of-balance”. For instance designer can just simulate one of the cells is being overcharged and observe how the balancing circuit reacts. Similarly it is very easy to simulate one of the batteries is damaged (no voltage) and validate the cell balancing circuit is operating properly. In conclusion, it is critical to test battery charger and cell balancing circuits by utilizing a **battery simulator**.

## PSRR/CMRR Measurement

TS250 is ideal for power supply rejection ratio or PSRR measurement. PSRR is commonly tested for LDO regulators, op amps, audio amps, etc. The TS250 is especially powerful for LDO PSRR testing at high load current. Conventional regulator PSRR test techniques such as capacitor or inductor coupled unable to support high LDO load current (e.g. >1A). The TS250 can also test op-amp PSRR and CMRR.

The TS250 is easy to use and intuited. It is designed for general laboratory applications such as function generator amplifier, battery emulator, electromagnet driver, PSRR/CMRR testing, transient response testing, four-quadrant power supply, and piezoelectric 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.

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OUTPUT CURRENT
0.00
Accel Instruments
TS250
Waveform Amplifier
OUTPUT VOLTAGE
5.00
OUTPUT
ON/OFF
INPUT
IN
AC
Hi-Z
20dB
+
-
OFFSET
ON/OFF
LINE
± 20V
MAX
DC
50Ω
0dB