Chroma Systems Solutions, Inc.

Confirming Ripple Current of an Electronic Load.

63600 Electronic Loads confirm low ripple current

Keywords Electronic Load, Ripple Current, 63600, 63610-80-20, 63600-2:

Title:

Confirming the ripple current on a DC electronic Load.

Product Family: **63600 DC Electronic Loads**

Abstract

Ripple current is the current deviation generated by the regulation and compensation of an electronic load. External ripple voltages from an applied voltage can distort the measurement of the actual ripple current generated by the Electronic Load. We will show the proper way to measure the actual ripple current from the load at the lowest levels.

Solution:

63610-80-20 Load low level measurement for Ripple Current.

The 63610-80-20 has a low range in Constant Current mode of 0 to 0.2amps.
To demonstrate the extreme low Ripple Current at this level we tested the Load under the following setup and conditions.

Using a 12AH battery as a source to minimize ripple voltage and with a 2KΩ, 1% Resistor in series with the 63610-80-20 Load module we are able to see the ripple current, based on the voltage drop across a 2KΩ resistor.

The Load was set to 5mA and the reading was 0.005 A on the Load display and stable.
The Loads rated accuracy is 0.1% of the Reading + 0.1% of the Full Scale
This equates to (5mA * 0.001) + (200mA * 0.001) = +/-205uA or 0.205mA
The Scope Screen shot below shows the voltage drop across the Series 2KΩ resistor

The Peak to Peak voltage reading was 4.00mV and this equates to a peak to peak ripple current of 0.2uA.

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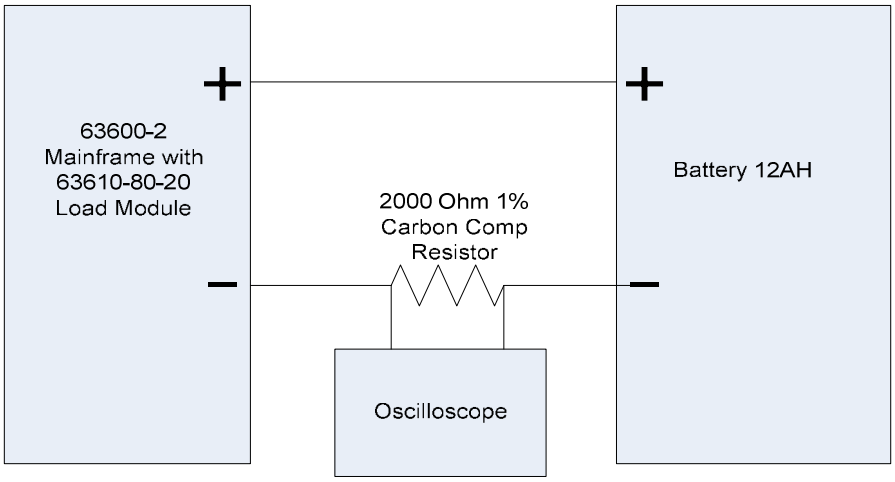
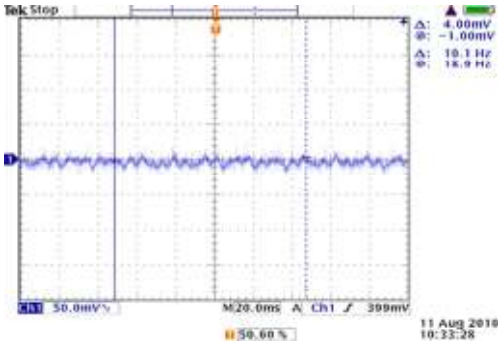
63610-80-20 Load Module Ripple Current test





Conclusion:

The Chroma 63600 family of DC electronic loads are known for Accuracy in measurements and High resolution in settings. Also known for being well regulated. The Confirmation of the 63610-80-20 ripple current and low current settings and mesurements show these characteristics of Chroma electronic loads and this method can be used for confirming the same specifications for higher current and higher wattage Electronic loads.