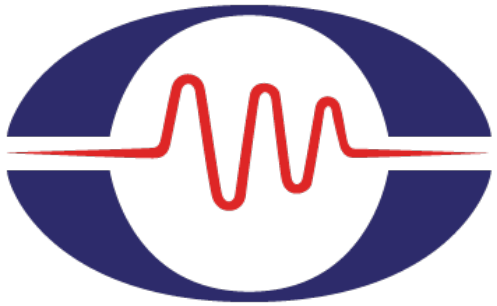
Power System Measurement Solutions



PICOTEST

TI TPS7A3301EVM PSRR Case Study

1A Negative Voltage Linear Regulator

Picotest products are designed to simplify measurements
and maximize the value of your instruments

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PSRR Case Study Test Equipment Used

OMICRON Lab Bode 100 Vector Network Analyzer



Picotest J2123A Negative Voltage Line Injector



Picotest P9610A Low Noise 36V/7A Power Supply

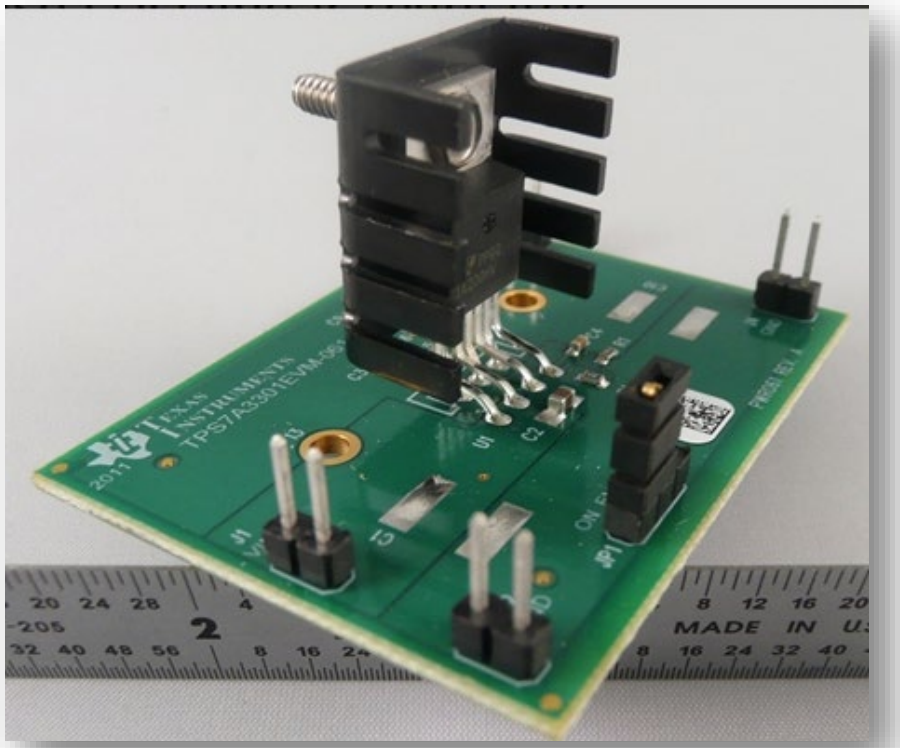




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TI TPS7A3301EVM
-15V@1A Linear Regulator



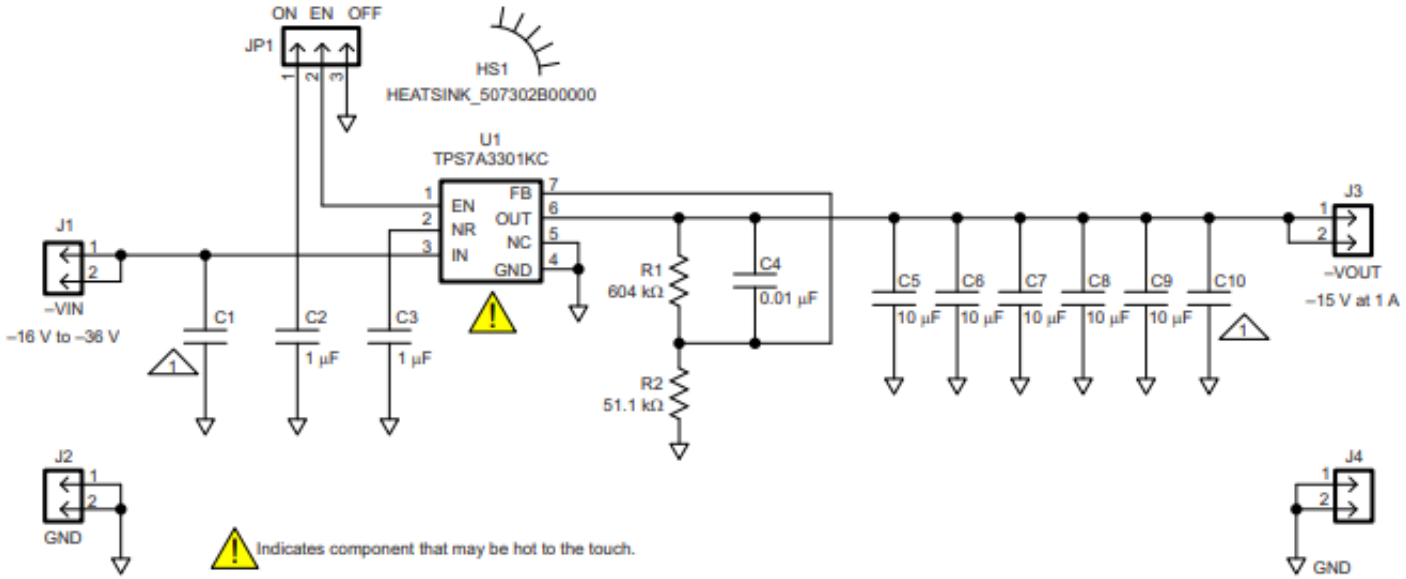


Figure 7. TPS7A3301EVM-061 Schematic

Photograph and schematic courtesy of Texas Instruments
https://www.ti.com/tool/TPS7A3301EVM-061#technicaldocuments

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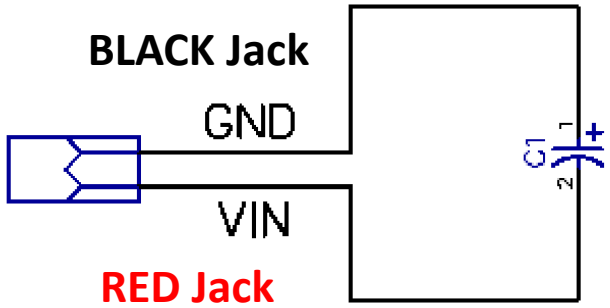
Test Setup Overview

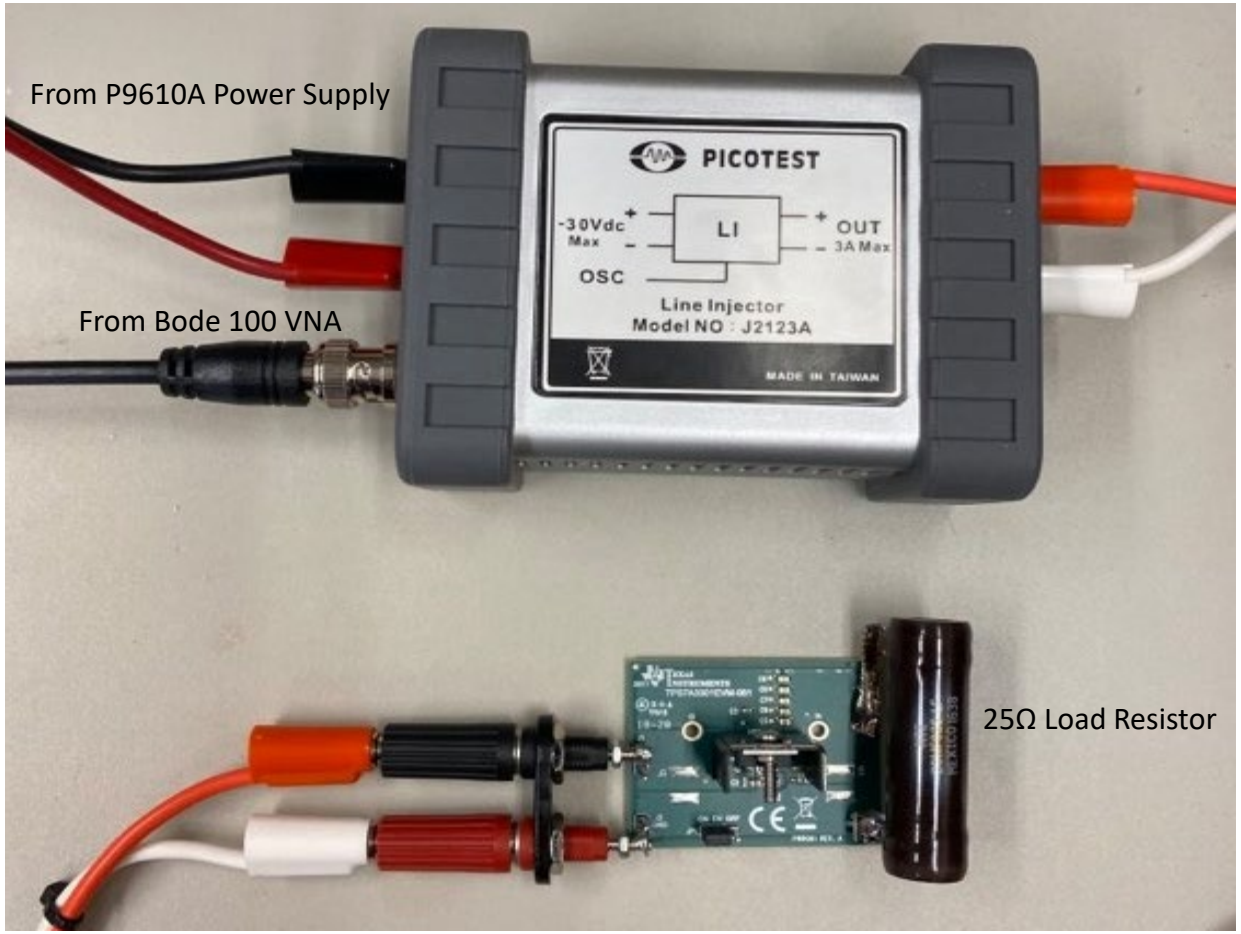
NOTE:

The J2123A will be damaged if the input voltage is reversed. In a negative voltage system, the black jack (ground, return or 0 volts) should be more positive than the red (negative supply voltage).

To clarify, there is a polarized internal capacitor connected per Figure 1. Do not apply a reverse voltage across this capacitor.

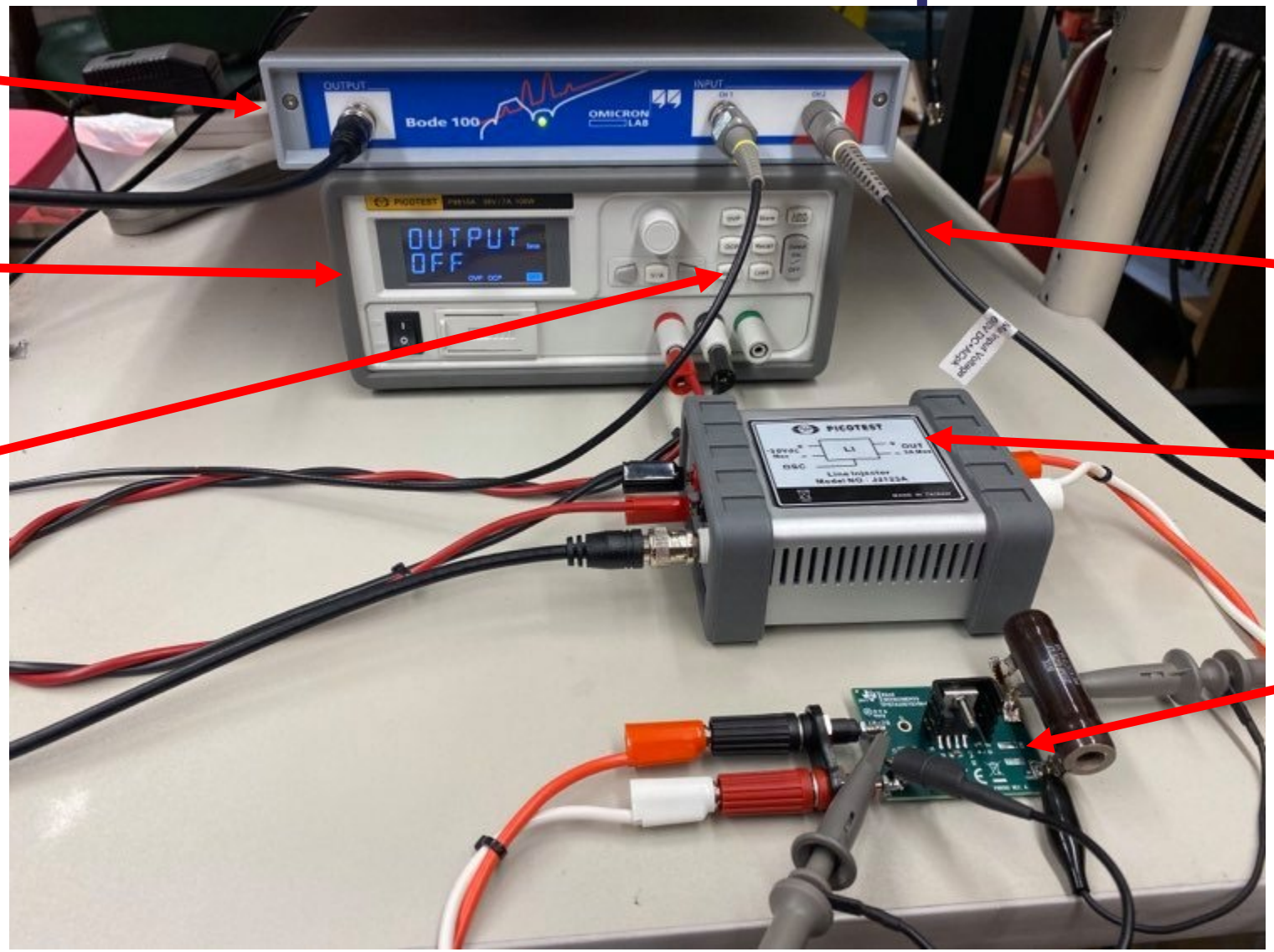
J2123A Internal Input Connection





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PSRR Test Setup

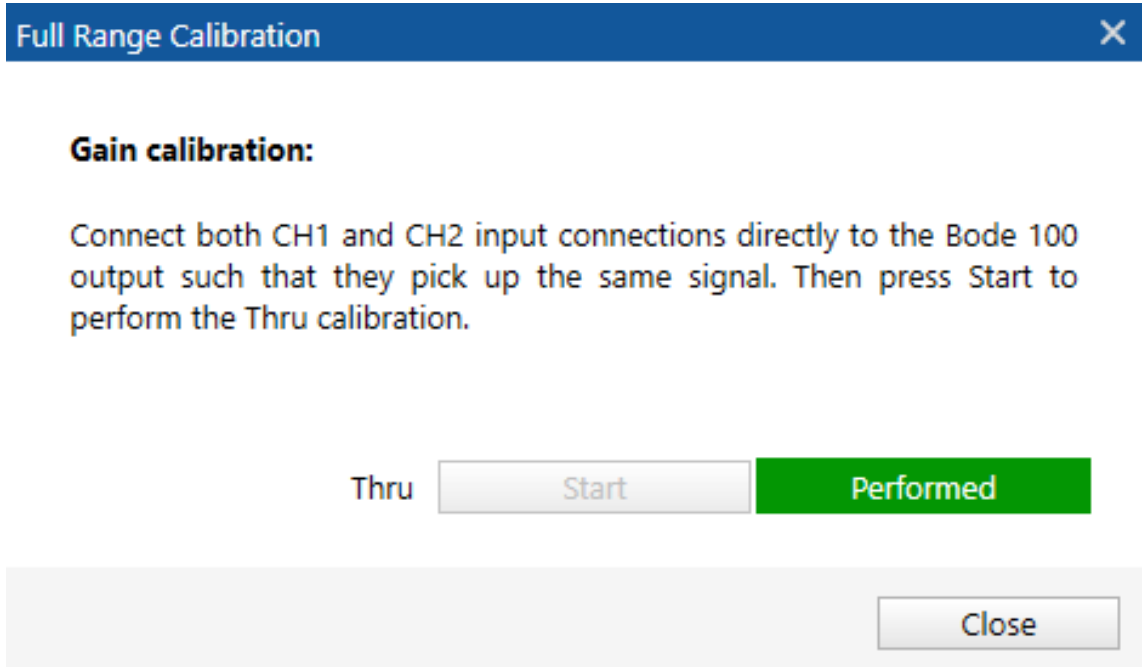


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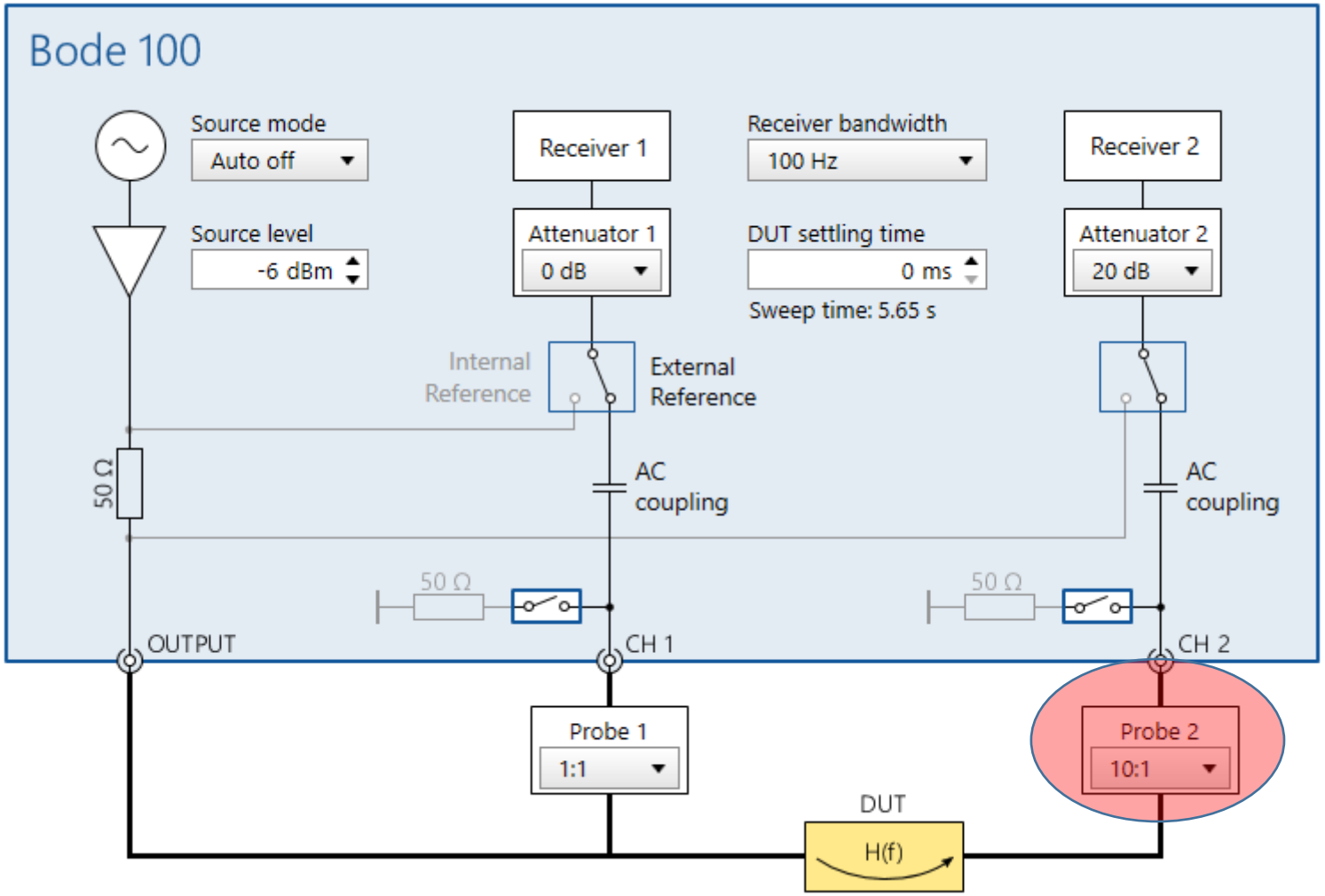
Bode 100 Gain Phase Thru Calibration

Move the output connection to the input so both the 1X and 10X probes are connected to the evaluation board input.



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Bode 100 Gain/Phase Hardware Setup

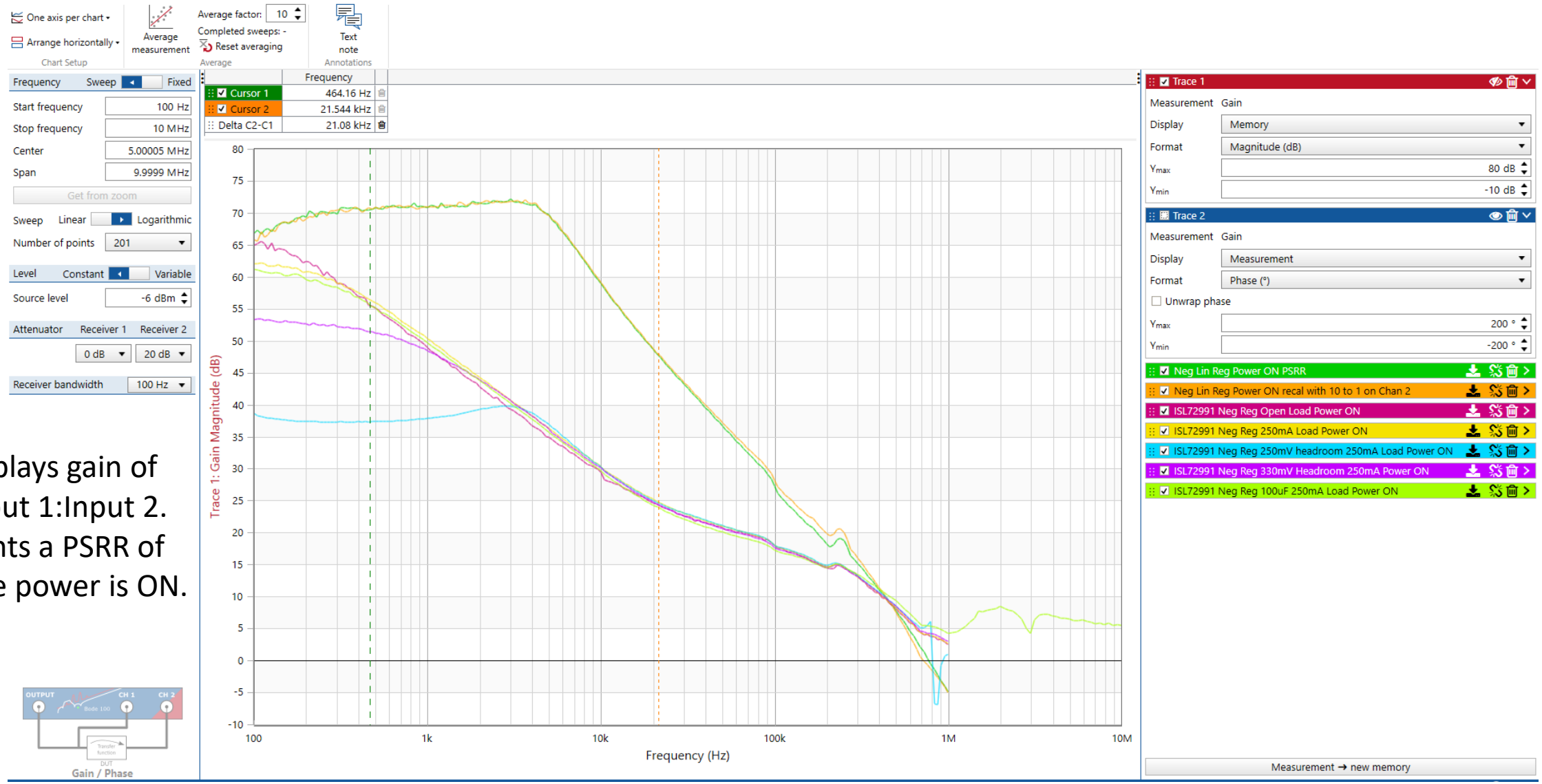


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PSRR Test Results

This test displays gain of Bode 100 Input 1:Input 2. This represents a PSRR of 70db when the power is ON.



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