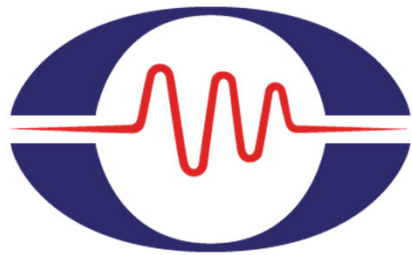


Power System Measurement Solutions



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

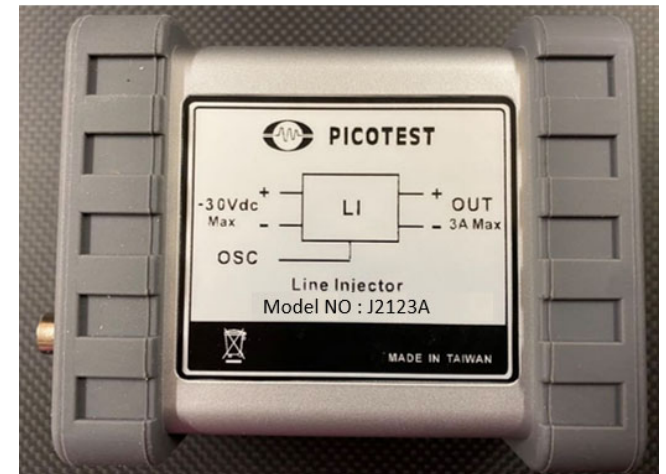


PSRR Case Study Test Equipment

Omicron Bode 100 Vector Network Analyzer



Picotest J2123A Negative Voltage Line Injector



Picotest P9610A Low Noise 36V/7A Power Supply



TI TPS7A3301EVM -15V@1A Linear Regulator

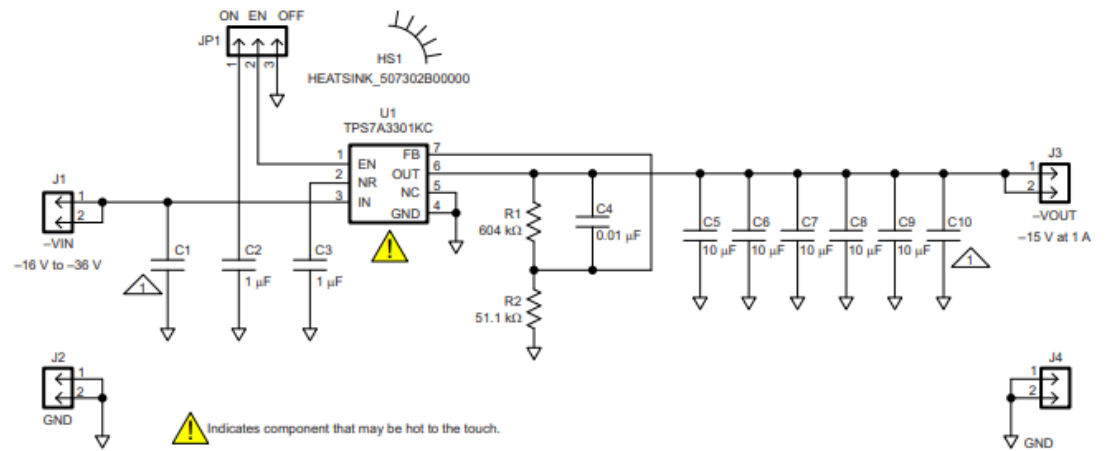
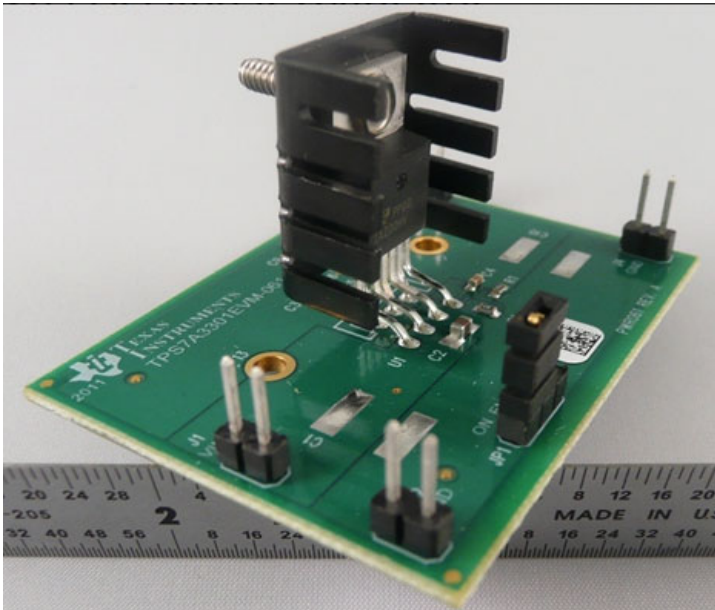


Figure 7. TPS7A3301EVM-061 Schematic

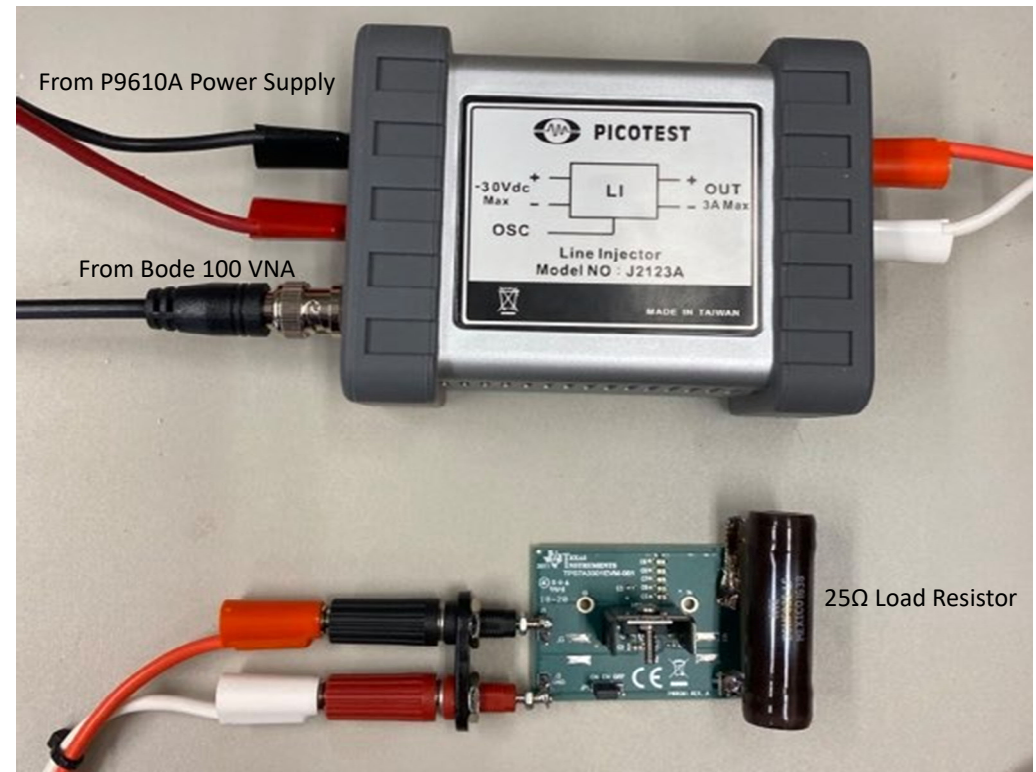
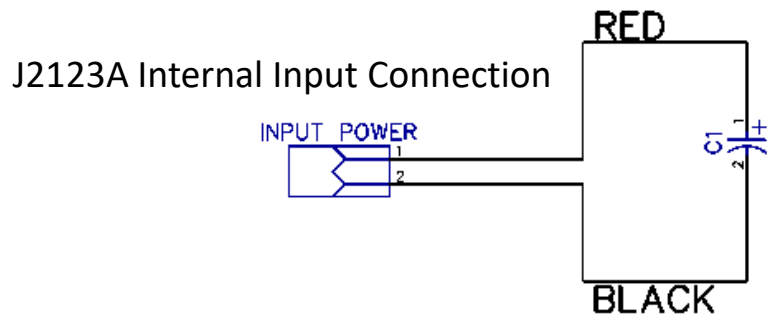
Photograph and schematic courtesy of Texas Instruments
<https://www.ti.com/tool/TPS7A3301EVM-061#technicaldocuments>

Test Setup Overview

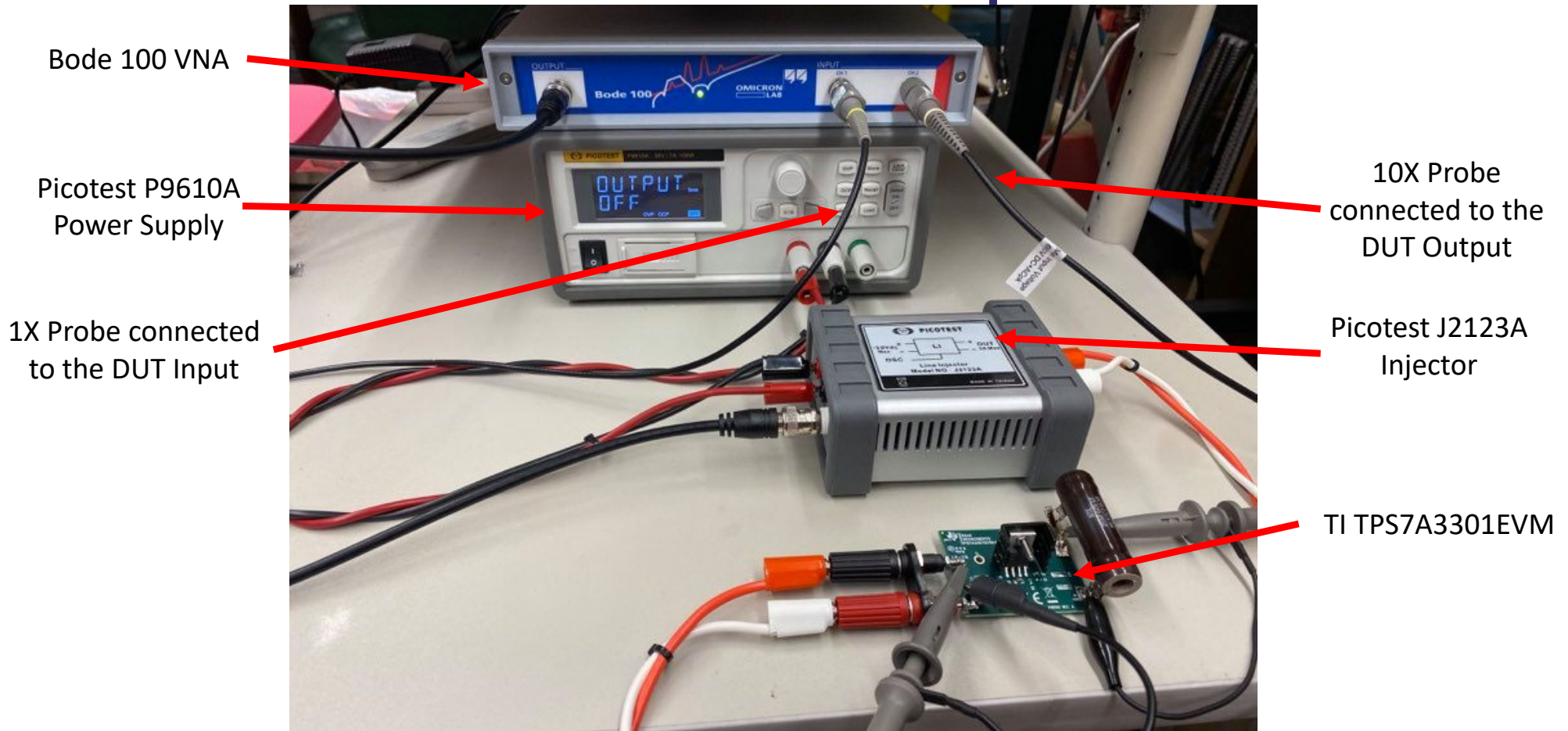
NOTE:

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

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



PSRR Test Setup



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.

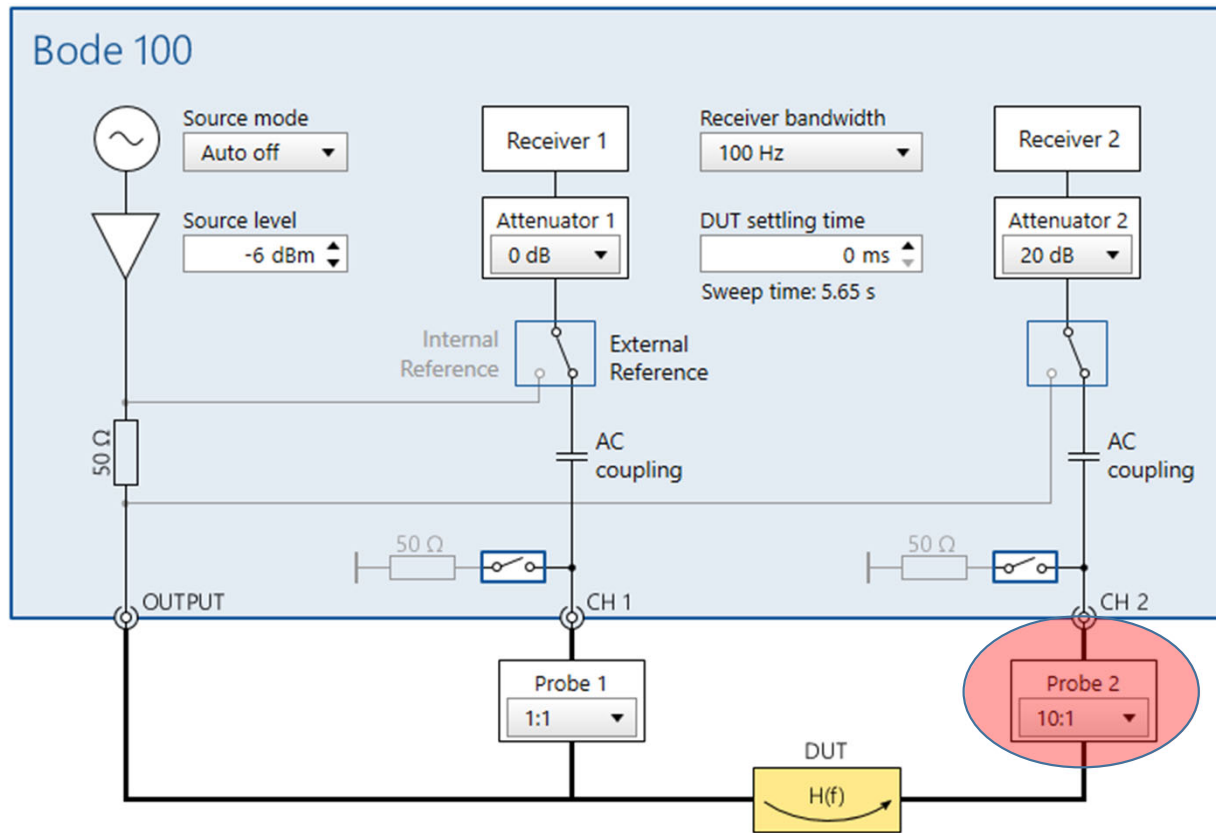
Full Range Calibration ×

Gain calibration:

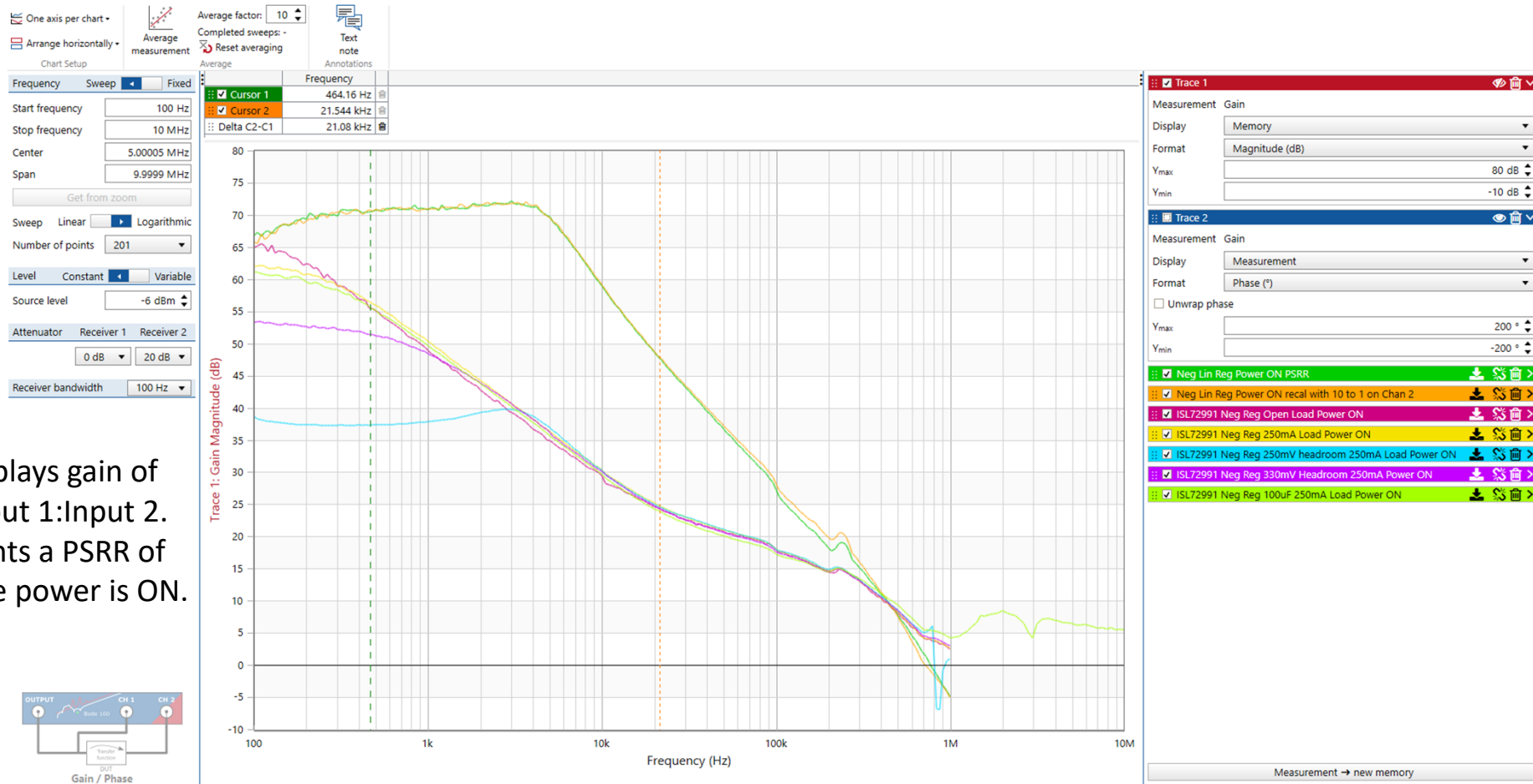
Connect both CH1 and CH2 input connections directly to the Bode 100 output such that they pick up the same signal. Then press Start to perform the Thru calibration.

Thru

Bode 100 Gain/Phase Hardware Setup



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.

