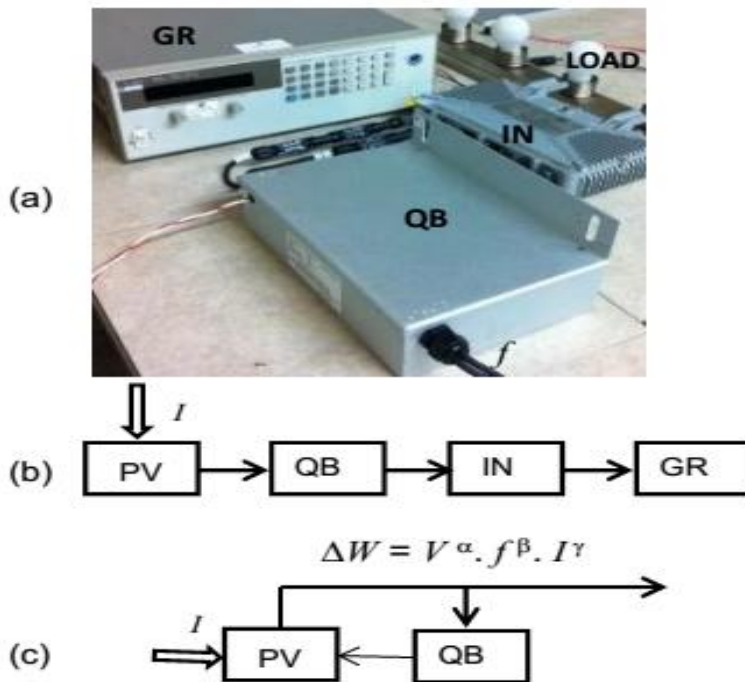


# QuantumBoost™ System Test Video Script

This is the start of the live customer demo of QuantumBoost™ in a complete simulated PV system consisting of Solar Module, Inverter and Grid load. Here we see the QuantumBoost™ device as it is shipping today. In this setup, we have a grid simulator, microinverter, and the load (light bulb strip) representing the system. Using the same PV module under the same light conditions, when we add in QB versus non QB to measure the results. On average, we see an increase in real power output from the inverter of 36%. This is a single panel test used with and without QB1500S to allow us to measure power output accurately under controlled circumstances using simulated Sun (indoor).



- a) Schematic of the test configuration:
  - 1) PV – photovoltaic panel; (not shown in diagram)
  - 2) QB – Quantum Boost;
  - 3) IN – Inverter;
  - 4) GR – grid simulator.
  - 5) LOAD – Fixed resistive load using light bulbs
- b) Increase in the output power (Delta W) of PV panels by high voltage ( $V$ ) pulses of frequency,  $f$ .
- c) **Device is powered from the solar panel**

In the video, you can see the results from the grid simulator for the power draw to light the load (6 incandescent bulbs).

In the first step, we add in the solar panel and measure the power from the grid. It goes down in the same way your meter would start to turn backwards as power generated from the solar panel begins to

feed the load therefore needing less power from the grid. When we disconnect the solar panel, the power from the grid increase to maintain constant power to the load.

In the second step we connect QB1500 to the solar panel and connect the other side to the inverter. As you can see the amount of power required from the grid is lower now by a specified amount. When we do the calculation for how much additional power is being contributed by QB is approximately 36%.

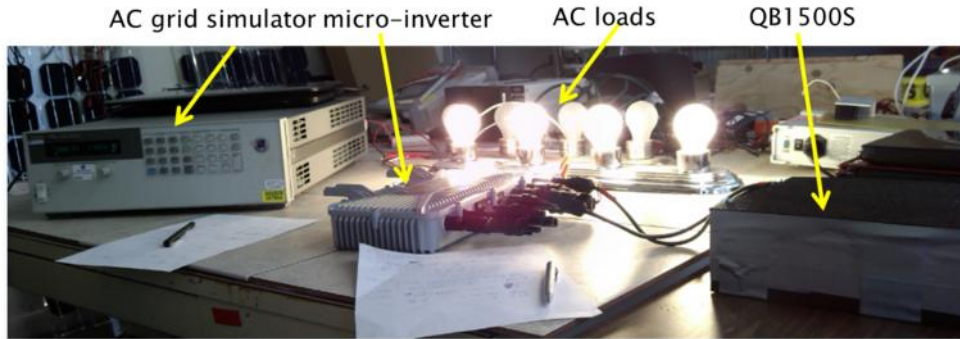


Figure: Measurement set up for indoor IV testing which connects to the solar panel in the chamber



Systems test for February 27, 2014

Direct		
Time		1:20PM
Initial (W)		377
With PV (W)		261
Difference (W)		116

With QB		
Time		1:30PM
Initial (W)		377
With PV+QB (W)		219
Difference (W)		158

Delta Power (W)		42
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<b>Percentage Gain</b>		<b>36%</b>
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