

QRP-DrWM 4-Port Directional Coupler/Power Meter. By: W5USJ v.1a 4 Jul 2018 Short Form Instructions

Voltages used for calibration at Buildathon were incorrectly used from the W7EL power meter. That meter used an entirely different directional coupler and generated 60% higher output voltage than the coupler used in the Buildathon power meter. Conversely, the Buildathon coupler voltage is only 40% of that from the W7EL coupler.

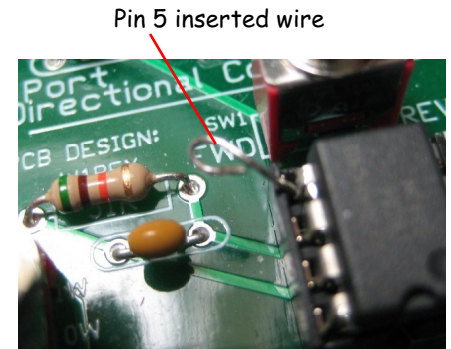
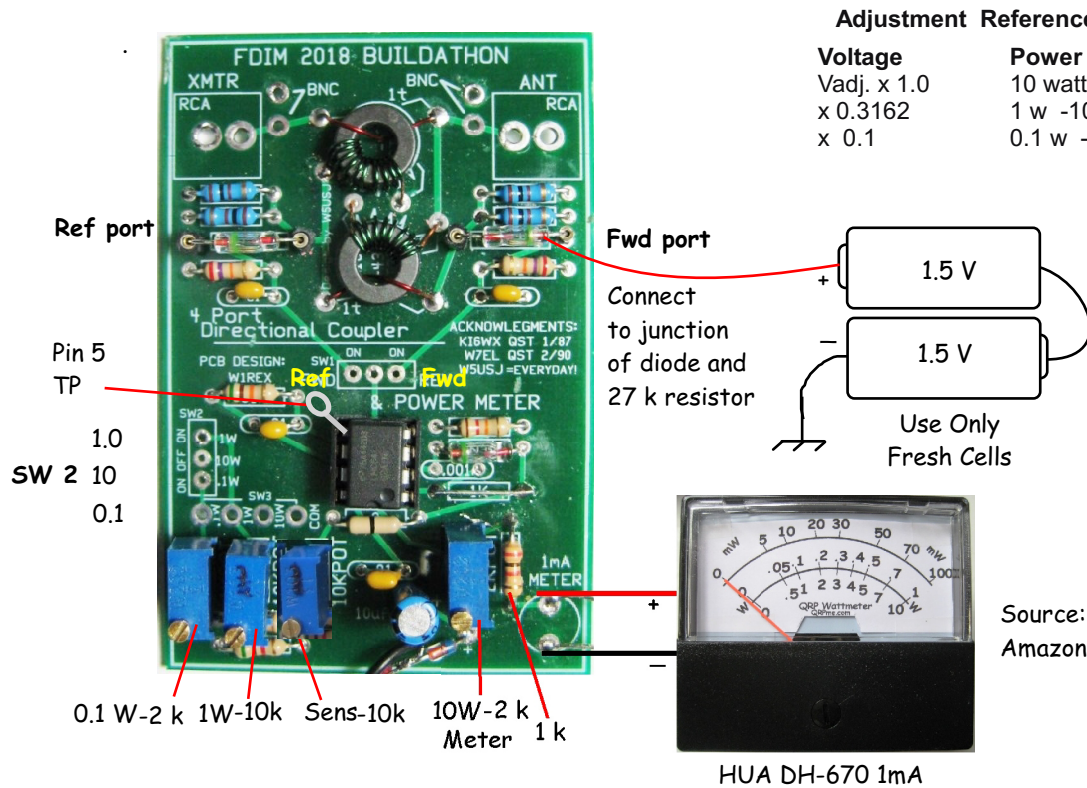
The 4-port directional coupler used in the Buildathon meter is similar to that used in the W1FB, WM-2, NoGaWatt, GQRP, W5USJs WM-2 work-a-like and others. QRPme first used the 4-port coupler for the Kit of the Month club project.

Ensure that phase of inductors is the same, that is, both windings are in the **same** direction, clockwise or anti-clockwise

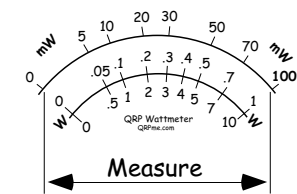
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| [1] Connect 9V to DUT (battery snap) | [9] Adjust 1W pot for 1mA FS |
| [2] Connect 1mA meter to meter pads | [10] Set Sens Pot to 0.253 V at pin 5 |
| [3] Connect jumper from 3 Vdc to Fwd port | [11] Set SW2 to 0.1W position |
| [4] Set SW2 to 10W position | [12] Adjust 0.1 W pot for 1mA FS |
| [5] Set Sens Pot for 2.53 V at pin 5 | [13] Set SW2 to 10W position |
| [6] Adjust meter pot for 1mA FS | [14]: Return Sens pot to top of range |
| [8] Set Sens Pot to 0.8 V at pin 5 | [15] Remove all setup hookups but meter |
| [7] Set SW2 to 1W position | |

Power Measurements

- [1] Source of accurately measured 10W
 - [2] Accurate 50 Ohm Dummy Load
 - [3] 10 dB and 20 dB attenuator or 2, 10s
 - [4] Input, 10 W observe meter
 - [5] Insert 10 dB SW2 to 1 W position observe meter,
 - [6] SW2 to 0.1 W pos, add 10 dB observe meter
- If you're sure of accurate power levels, tweak the adjustments a little for full scale readings.



Insert wire clipped from installed resistor carefully along side Pin 5
Note: pinch the end of the wire to flatten it. Makes it easier to insert



Adjust proportional to fit meter
Typical Logarithmic Power Scales