

Why Directional Couplers Are Better for High Power Measurements vs. Attenuators

Day-to-day field measurements of base station power has frustrated engineers and technicians alike because of the instability & uncertainty of measurement caused by using high power fixed attenuators to reduce the signal level into sensitive power meters. **Why?** Attenuators de-rate as input power increases and their case temperature rises, so full-power measurements are far different from the initial calibration point. **Directional couplers** have very low insertion loss and high directivity so the sampled power (at the coupled port) is **extremely stable** and isolated from changes in temperature or reflections as power levels increase. The unused power (and subsequent heat) is passed to the termination which is attached to the output of the coupler and away from your measurement path.



MECA has designed the **MFK-PMK-1 Power Measurement Kit** to replace high power attenuators as a means of reducing signal levels into sensitive power meters.

The kit features the following components:

- 1 each of a 500w, 30 dB, N-Female, 0.800 – 2.200 GHz, Directional Coupler (MECA 715-30-1.500V)
- 1 each of a 2w, N-Type Attenuators in 6, 10 & 20 dB (MECA 605-dB-1)
- 1 each of a 100w, N-Male Termination (MECA 490-1)

The additional attenuators can be added to the coupled port to optimize the input signal level into the power meter. The components are furnished in a hard-shell case with form-fitting foam inserts that eliminate concerns of damaging the RF components in transit. These sturdy cases can be stored in technician's vehicle or remote switch locations and are rugged enough to be stored among toolboxes and cable spools.

Power measurement kits are also available for TETRA/Public Safety (400 - 800 MHz) and WiMAX (2.000 - 4.200 GHz) applications



Build your own kit! Contact our Applications Engineers to design a customized kit for your unique applications.