



Measuring Optical Power In Fiber Optic Systems

<p>This test will measure the optical power exiting the end of a fiber optic cable. This test is commonly used to measure the coupled power of a fiber optic source in a transmitter, power into a receiver or for setting references for optical loss measurements.</p>	<p style="text-align: center;">Test Diagram</p>
<p>Equipment Needed To Perform This Test</p> <ol style="list-style-type: none"> 1. Fiber optic power meter calibrated at the same wavelength as the source output (e.g. multimode: 850 and/or 1300nm, singlemode, 1310, 1490 and/or 1550 nm, POF 650 nm) capable of measuring optical power in the power range of the source. 2. Optical power meter adapters to mate to connector type on cable. 3. Reference cable that is the same fiber type and size as the cable plant and have connectors compatible to those on the source and cables. 4. Cleaning supplies 	
<p>Test Procedure</p> <ol style="list-style-type: none"> 1. Turn on meter and allow time to warm-up 2. Set meter to wavelength of source and “dBm” to measure calibrated optical power. 3. Clean all connectors and mating adapters. 4. Attach reference cable to source if testing source power or disconnect cable from receiver. 5. Attach power meter to end of cable and read measured power. 	<p>Note:</p> <p>A reference cable or known good patchcord is used for testing source power coupled into a fiber. Receiver power is tested by disconnecting the system cable connecting to the receiver and attaching it to the power meter to measure power.</p>
<p>Options For Testing</p> <p>Power is generally measured in “dBm” or dB referenced to 1 milliwatt of optical power. Optical power measurements may also be made in Milliwatts (mW) or microwatts (μW)</p>	
<p>Reducing Measurement Uncertainty</p> <ol style="list-style-type: none"> 1. Calibrate optical power meter according to manufacturer specified intervals. 2. Clean all connectors and remove meter adapter periodically to clean the adapter and power meter detector. 3. Do not bend fiber optic cables tightly to cause stress loss. 	
<p>Documentation</p> <p>Record the date of the test, operator, test equipment used, cable and fiber identification, test wavelength and measured power.</p> <p>See FOA Guide Reference (QR Code) for more details.</p>	