

Common instrument problems with Kingfisher optical power meter & light source and solution

Q: An instrument won't respond, or is generally malfunctioning:

A: If the instrument runs on alkaline batteries, put in fresh batteries.

- If the instrument runs on re-chargeable batteries, try using it with the external power supply connected. The problem could be either a faulty battery, or some instruments require the battery to be removed for charging. On some older equipment with built in re-chargeable batteries, try re-charging for several minutes before operating the equipment.
- A charger may be faulty. Try using another similar charger, or check the charger output with a voltmeter (typically 9 - 15V DC)
- If instrument still doesn't respond, remove all power (batteries if accessible, and external power) for at least 1 minute, to force the processor to re-start.

Q: An optical power level seems to be wrong or unstable:

A Check that the meter wavelength is selected to match the light wavelength being measured.

- Check that the power meter is in absolute dBm mode, not relative dB mode.
- Clean and inspect all relevant patch cables and connectors. Try using different patch leads and thru connectors, or turn them around.
- Clean the meter interface, following the instructions in the manual.
- Check that a PC polish connector is not mated with an Angle Polish Connector (APC). This applies to anything other than a meter. The instrument connector type is generally labelled near the connector. This typically induces extra losses up to about 10 dB. (PC connectors are usually blue, and APC are usually green)
- Try a different instrument (interchangeable) connector adapter. There have been occasions where these get broken / bent / worn out, and a different adapter will show the problem. This also typically shows as an unstable reading.

Q:An optical power reading seems low at high power levels:

A:If measuring transmission equipment power levels, it is possible for signal modulation to cause a false reading. This problem is worse at high power levels, and diminishes rapidly as the power level drops. To observe (and cure) this, attenuate the signal into the meter (about 10 dB is good for a trial), and see if the reading comes to the expected value.

Q:An optical laser source doesn't seem very stable:

A:Laser sources achieve their best stability when used in a low reflection environment, which includes the connector going into the meter. To obtain optimum stability, use good PC or APC connectors, and use an APC connector into the power meter at the other end. Ensure all connectors are clean and tight.

- The source may need warming up for about 15 minutes. This applies each time the laser is turned on or off, or if the wavelength is changed. This applies to all brands of sources.
- The source stability specification may be qualified by an extensive warm up period, may be only valid at a stable temperature, and stability specifications are interpreted as follows: A +0.1 dB meter reading followed by a -0.1 dB meter reading is a specification of 0.1 dB. For example, if the meter reading varies from -6.00 dBm to -6.20 dBm. this is also a stability of 0.1 dB.
- Try a different instrument (interchangeable) connector adaptor. There have been occasions where these get broken / bent / worn out, and a different adaptor will behave differently.

KingfisherFiber China

澳大利亚翠鸟 KI2600KI2800 常见的光功率计和光源问题及解决方案

问：光功率计无法响应，或通常出现故障：

答：•如果光功率计使用碱性电池，请放入新电池。

•如果光功率计使用可充电电池，请尝试在连接外部电源的情况下使用它。问题可能是电池故障，或者某些光功率计需要取出电池进行充电。在某些内置可充电电池的较旧设备上，请在操作设备之前尝试重新充电几分钟。

•充电器可能有故障。尝试使用其他类似的充电器，或使用电压表（通常为 9-15V DC）检查充电器的输出

•如果光功率计仍然不响应，请断开所有电源（电池，如果有的话，以及外部电源）至少 1 分钟，以强制处理器重新启动。

问：光功率水平似乎是错误的或不稳定的：

答：•检查并选择仪表波长以匹配被测光波长。

•检查功率计是否处于绝对 dBm 模式，而不是相对 dB 模式。

•清洁并检查所有相关的跳线和连接器。尝试使用其他跳线和直通连接器，或将它们转过

来。

•按照手册中的说明清洁仪表接口。

•检查 PC 抛光连接器是否未与角度抛光连接器（APC）配对。这适用于仪表以外的任何东西。光功率计连接器类型通常在连接器附近标记。这通常会引起高达 10 dB 的额外损耗。（PC 连接器通常为蓝色，APC 通常为绿色）

•尝试使用其他乐器（可互换）连接器适配器。在某些情况下，它们会折断/弯曲/磨损，而另一个适配器会显示该问题。这通常也显示为不稳定的读数。在高功率水平下，光功率读数似乎较低：如果测量传输设备的功率电平，则信号调制可能会导致错误的读数。该问题在高功率水平下更加严重，并且随着功率水平的下降而迅速减少。要观察（并治愈）这种情况，请将信号衰减到仪表中（约 10 dB 可以试用），并查看读数是否达到预期值。

问：激光源似乎不太稳定：

答：•在低反射环境（包括连接器插入仪表）中使用时，激光源可实现最佳稳定性。为了获得最佳的稳定性，请使用良好的 PC 或 APC 连接器，并在另一端的功率计中使用 APC 连接器。确保所有连接器清洁牢固。

•光源可能需要预热约 15 分钟。每次打开或关闭激光器或更改波长时都适用。这适用于所有品牌的货源。

- 信号源稳定性规范可能需要较长的预热时间，可能仅在稳定的温度下才有效，并且稳定性规范的解释如下： $+0.1\text{ dB}$ 的仪表读数，然后是 -0.1 dB 的仪表读数是 0.1 分贝。例如，如果仪表读数从 -6.00 dBm 到 -6.20 dBm 不等。这也是 0.1 dB 的稳定性。
- 尝试使用其他光功率计（可互换）连接器适配器。在某些情况下，它们会折断/弯曲/磨损，并且其他适配器的行为也会有所不同。

翠鸟光纤-中国

澳大利亚翠鸟集团中国总代青岛福普泰通信科技有限公司