

Application Notes

RF-*id* SOLO™

Accuracy

Please note that the RF-*id* SOLO™ model IWxID1 has been factory calibrated to a 10Hz resolution in the 50MHz to 2.6GHz frequency range. You may find that the RF-*id* SOLO provides a more accurate frequency reading compared to the published frequency of the device being measured. For example, a wireless microphone may be set to 550.125MHz, but because of the high accuracy of the RF-*id* SOLO, the display may indicate a true center frequency transmission at 550.127MHz (off by 2KHz).

Note: Most wireless microphones frequencies will end in either 0 or 5. See “Calibration” on how to adjust for an off-set.

Signal Levels

The RF-*id* SOLO™ is designed for ‘Near Field’ measurements only (it is not intended to be used as a far-field frequency counter). Because of its near field design, and to accommodate a wide range of transmitter types, the RF-*id* SOLO accepts a wide range of signal levels. The input of the RF-*id* SOLO has been attenuated to a minimum measurement level of -40dbm (1uW) and any signals below this level will not be measured.

The RF-*id* SOLO’s maximum input level is +40dbm (10W). When dealing with transmitting devices which are assumed to be over 1W (for example: 2-way radios), we strongly recommend that you gradually ‘close the distance’ between the RF-*id* SOLO and the transmitter antenna, so as not to overload and burnout the input of the RF-*id* SOLO (not covered under the warranty).

Transmission Types

The RF-*id* SOLO works with both digital and analog single carrier transmissions in the 50MHz to 2.5GHz range and is not limited to just wireless microphone use. The RF-*id* SOLO can also be used with assisted listening devices, intercom, cell phones, 2-way radio, commercial RFID tags, etc... provided that the transmissions are not spread-spectrum or frequency hopping transmissions.

Frequency Lock

If the RF-*id* SOLO frequency counter is not able to lock onto a specific transmitter frequency it could also be that the transmitted signal is a spread-spectrum or frequency hopping transmission. Basically, this means is that there is not a single center frequency to lock on to. Even with that said you may still be able get a frequency range reading from the fluctuating readout.

If the transmitted signal is weaker than -40dbm at the RF-*id* SOLO frequency counter antenna input, the RF-*id* SOLO frequency counter may have intermittent display or a reading of “0.000”

Power

The unit can be used with the included universal power adapter/charger or via the internal rechargeable Li-ion battery. The adapter output is 5VDC at 1A and will charge the battery in about 4 hours. A fully charged battery will last for approximately 4 continuous hours, but if the RF-*id* SOLO is set to “Auto-Off” (conserves battery power) you can get days of use out of the RF-*id* SOLO. Replacement batteries are available through Kaltman Creations.

Near Field Measurement & Shielding

If you happen to open the RF-*id* SOLO case for battery replacement or calibration, you will notice a lead lining material on the inside of the lid. Please do not remove this material as it serves as additional shielding for high RF radiation, near field measurement taking. Removing this will void the warranty.

Calibration

For experienced technicians only – You may find that the RF-*id* SOLO provides a more accurate frequency reading compared to the published frequency of the device being measured. As mentioned in the “Accuracy” section, the readings may be off by a few kilohertz. If you are experiencing a consistent off-set value across all of your transmitters, you can adjust the internal tuning capacitor inside of the RF-*id* SOLO to match your transmitters. To do this, first remove the back of the RF-*id* SOLO. The internal tuning capacitor has a piece of yellow protective tape on it. Remove and save the tape. Alignment will require a very small flat blade screwdriver or a tuning/alignment tool. The adjustment is very precise and a very small turn makes a large adjustment. Adjust to your transmitter, replace the protective yellow tape and replace the back of the unit.