

# EAR-200

# SMART RF COUNTER 30MHz-2.8GHz

---

The SC-1 smart radio frequency counter is a pocket-sized, portable test instrument designed to locate and measure any digital, on/off keying or analog signal within the frequency range of 30 MHz -2.8 GHz. Set includes internal rechargeable NiCd battery pack, AC/DC adaptor, 7-section telescopic antenna and rubber 2.4 GHz antenna.

## General Instructions

### Basic Setup

1. Select and attach antenna.
  - a. The telescopic antenna is used to detect frequencies in the range of 1 MHz-3GHz and is best for general purpose use since its length can be adjusted to suit frequency requirements. Adjust shorter for UHF and fully extended for VHF/HF.
  - b. The rubber antenna is used for detection of 2.4 MHz frequencies.
2. Range Switch-

Move to 1 GHz position for frequencies between 30 MHz and 0.8 GHz. This setting can only be used with the telescopic antenna.

Move to the 2.8 GHz position for frequencies between 500 MHz and 2.8 GHz. This setting can be used with either antenna.
3. Turn unit ON by turning SQL (squelch) knob clockwise. Power will be indicated by red LED and unit will self-calibrate. Adjust knob to point at which vibration ceases and LED goes out.  
NOTE: CAL (Calibration) adjustment opening allows access to trimmer capacitor which provides about 10 PPM adjustment range of the time base oscillator. Adjustment is rarely necessary and should be done by a professional to avoid damage to settings.

### How to Sweep Area for RF Signals

1. Choose an area to be tested and set up unit as instructed above.
2. Thoroughly cover area by moving unit across all walls and surfaces. Give special attention to any accessible ceilings, floors, power outlets, computer connections, and telephone jacks as these are likely places for hidden transmitters and bugs. When a signal is detected, you will be alerted by vibration and frequency measurement will be displayed on screen. Sixteen section bargraph will indicate signal strength (-35 dBm-0 dBm).
3. When alerted to an RF signal, lower sensitivity by turning SQL knob counterclockwise until LED goes out and vibration ceases. Unit has now been recalibrated to lower sensitivity. Retest area where signal was detected. The HOLD button can be used at any time to freeze counter and display. Press HOLD again to release.
4. Repeat Step 3 until origin of RF signal can be pinpointed close enough for physical inspection. DO NOT make contact between unit and bug or transmitter as internal damage will occur!
5. Closely inspect pinpointed area for any audio or video transmission devices.
6. For a thorough sweep, repeat sweep procedure using the other antenna.

### Battery

To fully recharge internal battery, plug unit into the supplied AC/DC adaptor for 12-16 hours. The fully charged battery will power unit for up to five hours. Low battery icon on display will indicate low battery power. To maintain maximum battery capacity, occasionally allow battery to completely discharge before recharging. The NiCd battery should last for several years.

Warranty- This unit is warranted against manufacturer defects for one year from date of original purchase. Warranty excludes any unit that has been modified or subjected to unauthorized repairs, misuse, or abuse. Neither does it cover damage resulting from excessive power levels applied to the signal input.