

CORNET Microsystems ED7 Quick user's manual:

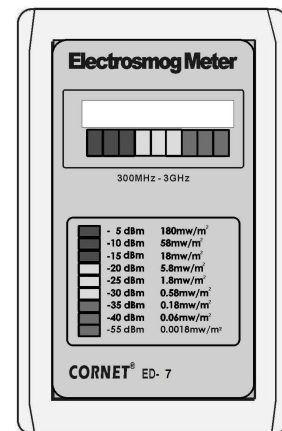
CORNET Microsystems Inc., ED7 Electromog meter is designed for quick measurement of high frequency (RF) Electromagnet wave field strength and power density for living environment, excellent for individual or company with Electromagnetic wave safety concerns. It has broad bandwidth 300MHz to 3GHz useful detection range, high sensitivity of -55dBm to 0dBm and quick response time.

Applications:

- High frequency (RF) electromagnetic wave field strength measurement - Mobile phone base station antenna radiation power density measurement
- Wireless communication applications (AM/FM, TDMA, GSM, DECT, CDMA, 3G)
- RF power measurement for transmitters
- Wireless LAN (Wi-Fi) detection, installation
- Spy camera, wireless bug finder
- Cellular/Cordless phone radiation safety level
- Microwave oven leakage detection
- Personal living environment EMF safety

Features:

- Broad Frequency range: 300MHz to 3GHz useful detection range
- High Dynamic range: 60 dB
- High sensitivity: -55dBm to 0dBm
- Peak power density measurement: 0.0018mw/m² to 0.58w/m²
- 9 high brightness LED to display power density level with 3 safety range indications
- Continues wave (AM/FM) and high speed digital burst RF (GSM, TDMA, DECT, CDMA, Wi-Fi)
- Sound signature output of digital RF singals (GSM, TDMA, DECT, CDMA, Wi-Fi, 3G)
- Super fast response time
- Small, compact handheld design 60mmx94mm
- Battery operated (9V DC) * a regular 9V battery is used, not included in the package



Usage guide:

*** You need to purchase a 9V battery, open the ED7 with screwdriver and put the battery in ED7 first!

- (1) Handle the ED7 with right hand in vertical direction, power-on the unit using power switch on the right hand side of the Ed7
- (2) Measured field strength/power density is shown on the ED7 with 9 LED lights.
- (3) Most high frequency RF antenna such as Mobile phone base station is vertical polarized (in vertical direction), therefore the ED7 is normally used in vertical direction. Rotating the ED7 to find the maximum radiation power direction to take care of high frequency RF wave reflections.
- (4) The RF sensing element is located inside the left hand side of ED7; please do not cover the left hand side of the ED7 with hand or other objects.
- (5) Most of modern communication devices (Mobile phone, Wireless LAN, Wi-Fi, etc..) use digital communication technology with burst RF signals, therefore when measuring this type of RF radiation, several LED lights will blinking at the same time. This is normal and can be used as an indication of pulse type of signals modulations. For continues waves (AM/FM) the LED light will be stable. ED7 measures peak power density with very fast response time. It is more accurate than the Needle or Digital type of readouts which only shown the average value of signal power most of the time.
- (6) ED7 is a High frequency (RF) type of Electrical field measuring device. It is used for applications such as Mobile phone base station antenna radiation, Microwave oven, Cellular/cordless phone, Radio transmitters.
- (7) Sound signature of modern digital RF modulations can be monitored by speaker, volume can be adjusted by volume control, The stronger the signal the higher the sound volume. The GSM base stations emit a harsh sounding 1733 Hz high pitched whistle. 3G base stations emit a 1,500 Hz high-pitched whistle. DECT cordless phones and their base units emit a 100Hz pulsing sound. WiFi wireless network emit their radiation in short scratchy pulsing / clicking noise. Background Noise emit Hiss sound.

NOTE: ED7 is not for low frequency magnetic field measurement (AC power transformer, high voltage power transmission line, motor ...) which should be measured with Gauss-meters, such as CORNET ED25G RF/LF dual mode Electromog meter.

Field strength/power density readout:

ED7 use 9 high brightness LED to indicate the measured power density. With 3 safety range indications.

LED color	Power level	Power density	Indication	Action
RED3	-5 dBm	0.18 w/m ²	Safety range#3 Italy standard (0.1w/m-sq)	Caution!
RED2	-10 dBm	0.058 w/m ²	Safety range#2 Swiss standard (0.04w/m-sq)	Caution!
RED1	-15 dBm	0.018 w/m ²	Safety range#1 Russian standard (0.02w/m-sq)	Caution!
YELLOW3	-20 dBm	0.0058 w/m ²		safe
YELLOW2	-25 dBm	1.8 mw/m ²		safe
YELLOW1	-30 dBm	0.58 mw/m ²		safe
GREEN3	-35 dBm	0.18 mw/m ²	Wireless LAN typically in this range	safe
GREEN2	-40 dBm	0.06 mw/m ²	Some signal source around	safe
GREEN1	-55 dBm	0.0018 mw/m ²	Very low signal level	safe

* Electromagnetic wave field strength/power density decays very fast with distance (distance square), keep a good distance from the high frequency RF signal source can reduce the high frequency radiation effect. Alumina foil or window sun reflector film (silver color) can be used as a good and cheap shielding material for RF radiations.

* ED7 is designed for quick living environment RF radiation evaluation and reference only. Official RF safety radiation measurement procedure is complicate and should be handled by trained technical person with lab instruments. Safety range standard are listed here as a reference only. ED7 is not medical instrument, Please do not use it in medical, legal or other related applications.

The European Community provided general guidelines in its Council Recommendation of July 1999.¹ ICNIRP published similar guidelines in April 1998.² Table I gives a sampling of the international and national field-strength limit values for the general public and continuous exposure

950Mhz 1850Mhz

International	Council Recommendation 1999/519/EC	42 V/m (4.75W/m ²)	59 V/m (9.25W/m ²)
International	ICNIRP Guidelines, April 1998	42 V/m (4.75W/m ²)	59 V/m (9.25W/m ²)
Austria	ÖNORM S1120	49 V/m (6.33W/m ²)	61 V/m (10W/m ²)
Belgium	Belgisch Staatsblad F.2001-1365	21 V/m (1.18W/m ²)	30 V/m (2.31W/m ²)
Germany	26. Deutsche Verordnung	42 V/m (4.75W/m ²)	59 V/m (9.25W/m ²)
Italy	Decreto n. 381, 1998	6 V/m (0.1W/m ²) 20 V/m (1W/m ²)	6 V/m (0.1W/m ²) 20 V/m (1W/m ²)
The Netherlands	Health Council	51 V/m (6.92W/m ²)	83 V/m (18W/m ²)
Switzerland	Verordnung 1999	4 V/m (0.04W/m ²)	6 V/m (0.1W/m ²)
United States	IEEE C95.1	49 V/m (6.33W/m ²)	68 V/m (12W/m ²)
China	Draft: National Quality Technology Monitoring Bureau	49 V/m (6.33W/m ²)	61 V/m (10W/m ²)
Japan	Radio-Radiation Protection Guidelines, 1990	49 V/m (6.33W/m ²)	61 V/m (10W/m ²)

A sampling of international and national field-strength limits for mobile communications frequencies.