ESI 24 – QUICK START GUIDE

Electro-Smog (EMF) Detector — Radio Frequencies detection with enhanced sensitivity — 50 MHz to 10 GHz frequency range — excellent Wi-Fi detection

- **What is Electro-Smog?**

We refer to Electro-Smog as Electro-Magnetic Fields (EMF) produced by technology. EMF are "generated in the radiofrequency bands (RF/EMF) by popular wireless devices like cell phones, cordless phones, baby monitors, tablets, Wi-Fi enabled computer equipment, cell phone towers/antenna arrays, radio/television broadcast facilities, and wireless smart meters, among others. EMFs are also emitted in the extremely low frequency band (ELF/EMF) by electrical appliances, electrical wiring, and power lines". (source: https://emfscientist.org)

- **Operate your detector: the battery**

Insert / changing: when putting the battery in place, please make sure that the battery cable is not sited underneath the battery, but is placed instead at the side of the battery, between the battery and the compartment wall. *Failure to comply with instructions can cause damage to cable and / or cause battery compartment lid to not close properly.*
Battery check: upon start up, one of the two upper LEDs will light up briefly, either the green one (battery power between 25% and 100%) or the red one (battery power below 25%). If the red LED is steadily flashing, power is too low and the battery needs to be replaced.
Battery saving: the device will switch off automatically after 10 minutes in order to save battery.
Warning / Safety : Keep this device out of reach of children!

- **Detect ambient electro-smog and identification of pulsed radiation sources (mobile radio: GSM, UMTS / G3, cordless telephones (DECT), WLAN (Bluetooth), radar surveillance stations, etc. by means of an acoustic signal proportional to the modulation frequency** **(i.e. electric fields from electric cables and appliances (such as computers, fuse boards, lamps and power supplies), magnetic fields from high voltage lines, transformers and inverters, or Hyper Frequencies resulting from cell towers, WiFi/WiMax networks or cordless landline phones, etc.)**

1. Press once the "on-off" button to **switch on the device** in standard mode.
2. Hold the device **at arm length** away from your body.
3. **Move slowly** around to detect ambient electro-smog (the device performs a new detection every two seconds).

NB: to **switch the sound** on or off, press and hold the "on-off" button.

- **Detect ambient Radio Frequencies (RF) smog with enhanced sensitivity (detecting peak values)** **(i.e. Radio Frequencies resulting from cell towers, WiFi/WiMax networks or cordless landline phones, radio and TV broadcasting, etc.)**

1. Press once the "on-off" button to **switch on the device** in standard mode.
2. Press the "select" button once to **enter high-resolution RF mode**. LED 1 and 2 will stay lit.
3. Hold the device **at arm length** away from your body.
4. **Move slowly** around to detect ambient radiation (the device performs a new detection every two seconds).

NB: In this mode, all 18 LEDs show RF radiation. LED 1 and 2 (bottom left) show the lowest radiation level while LED 18 (top right) shows the highest radiation level.
To **switch the sound** on or off, press and hold the "on-off" button.

- **Check electrical appliances for avoidable electric fields** **(originating from appliances such as lamps)**

A **switched off** electrical appliance lacking a grounding cable will often generate an electric field, if the socket is plugged the wrong way around. Your device allows to check for plug direction.

1. Press the "on-off" button to **switch on the device** in standard mode.
2. Press the "select" button twice to **enter plug checking mode**. The upper green LED (next to the plug symbol) will light up.
3. Hold the device **at arm length** away from your body, and **near the switched off appliance** you want to test (e.g. lamp). The upper red LED (next to the plug symbol) will light up if an electric field is present.

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Standard mode table (indicative field strength is shown by means of each row of 6 LEDs)

Low-frequency magnetic and electric field (detection range: 16 Hz - 3 kHz; detection on all three dimensions (3D)) and **RF field (radio waves)** (detection range: 50 MHz - 10 GHz)

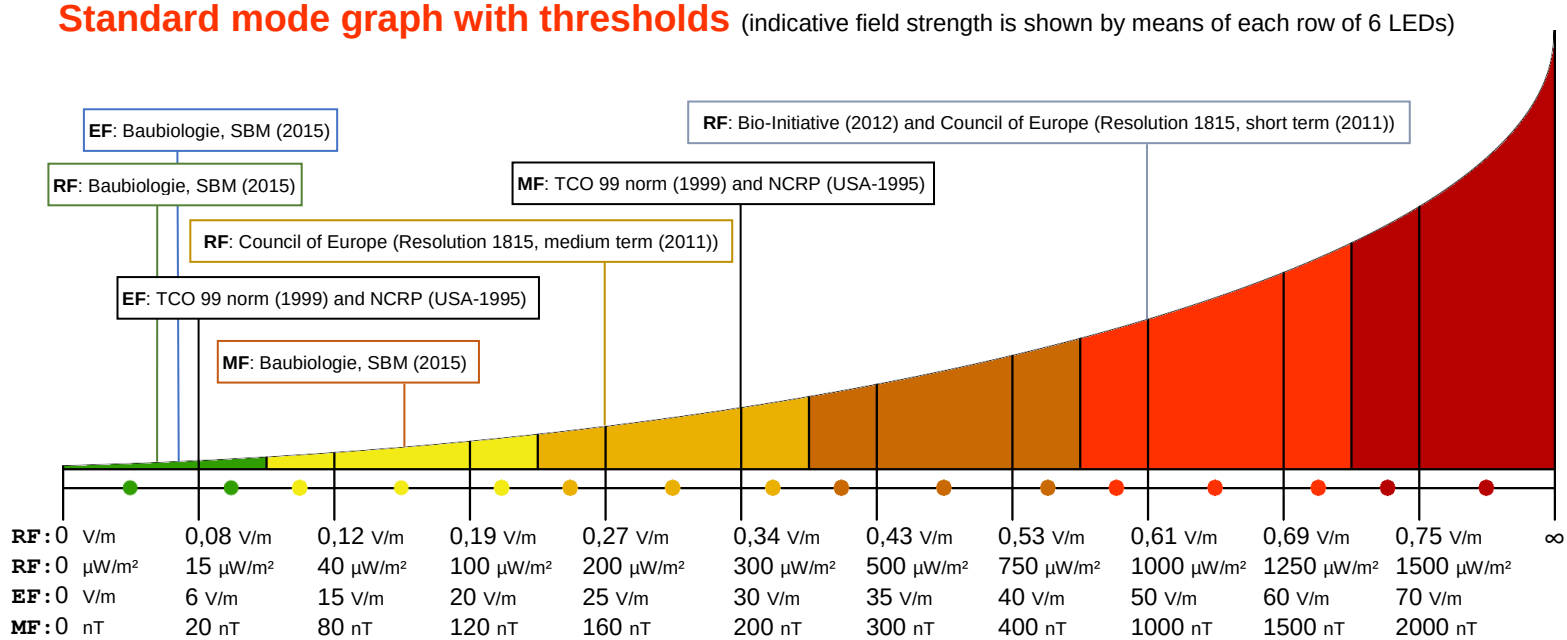
Values* for the ESI 24 Detector	Very weak → Very strong										
	Green	**Green / Amber 1**	**Amber 1**	**Amber 1 / Amber 2**	**Amber 2**	**Amber 2 / Red 1**	**Red 1**	**Red 1 / Red 2**	**Red 2**	**Red 2 / Red 3**	**Red 3**
Alternating magnetic field* in nT (Nanotesla)	< 20	20 to 80	80 to 120	120 to 160	160 to 200	200 to 300	300 to 400	400 to 1000	1000 to 1500	1500 to 2000	> 2000
Alternating electric field* in V/m (Volt per meter)	< 6	6 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 50	50 to 60	60 to 70	> 70
Radio Frequency field* around 2,5 GHz in V/m (Volt per meter)	< 0,08	0,08 to 0,12	0,12 to 0,19	0,19 to 0,27	0,27 to 0,34	0,34 to 0,43	0,43 to 0,53	0,53 to 0,61	0,61 to 0,69	0,69 to 0,75	> 0,75
Radio Frequency field* around 2,5 GHz in µW/m² (Microwatt per square meter)	< 15	15 to 40	40 to 100	100 to 200	200 to 300	300 to 500	500 to 750	750 to 1000	1000 to 1250	1250 to 1500	> 1500

High-resolution RF mode table (enhanced sensitivity) (indicative field strength is shown by means of all 18 LEDs) Detection range: 50 MHz - 10 GHz, **values in V/m** (Volt per meter) **and µW/m²** (Microwatt per square meter), values for frequencies around 2.5 GHz

LED	1+2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
V/m*	0,02	0,03	0,06	0,09	0,12	0,14	0,17	0,19	0,31	0,43	0,53	0,61	0,69	0,75	0,81	0,87	0,92
µW/m²*	1	2,5	10	20	40	50	75	100	250	500	750	1000	1250	1500	1750	2000	2250

* All values are peak values. Actual values can slightly vary from the values specified in this table as a result of differences in individual electronic components. Exposure limits depend on individual sensitivities. The measured values are purely indicative and do not create liability of EPE Conseil.

Standard mode graph with thresholds (indicative field strength is shown by means of each row of 6 LEDs)



RF: 0 V/m	0,08 V/m	0,12 V/m	0,19 V/m	0,27 V/m	0,34 V/m	0,43 V/m	0,53 V/m	0,61 V/m	0,69 V/m	0,75 V/m	∞
RF: 0 µW/m²	15 µW/m²	40 µW/m²	100 µW/m²	200 µW/m²	300 µW/m²	500 µW/m²	750 µW/m²	1000 µW/m²	1250 µW/m²	1500 µW/m²	
EF: 0 V/m	6 V/m	15 V/m	20 V/m	25 V/m	30 V/m	35 V/m	40 V/m	50 V/m	60 V/m	70 V/m	
MF: 0 nT	20 nT	80 nT	120 nT	160 nT	200 nT	300 nT	400 nT	1000 nT	1500 nT	2000 nT	

Indicative field strengths for **Radio Frequencies** (RF) in Volt per meter (V/m) and Microwatt per square meter (µW/m²), **Electric Fields** (EF) in Volt per meter (V/m) and **Magnetic Fields** (MF) in Nanotesla (nT), depending on the colour of the LEDs that light up. The thresholds mentioned above are recommendations and norms from the corresponding sources (see hereunder).

- Baubiologie MAES-SBM. (2015). Valeurs indicatives en Baubiologie pour les zones de repos. In *Complément au standard de la technique de mesure en baubiologie SBM-2015.* Retrieved December 2, 2015, from http://baubiologie.fr/IMG/pdf/valeurs_sbm-2015_fr.pdf. (**recommendation**)
- BioInitiative. (2012). BioInitiative Report 2012. In A Rationale for Biologically-based Exposure Standards for Low-Intensity Electromagnetic Radiation. Retrieved November 16, 2015, from http://www.bioinitiative.org/table-of-contents/. (**recommendation**)
- Council of Europe. (2011). Resolution 1815 (2011) Final version. In *The potential dangers of electromagnetic fields and their effect on the environment*. Retrieved November 16, 2015, from http://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-en.asp?fileid=17994&. (**recommendation**)
- NCRP, (1995) "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields", NCRP Report No.86, Bethesda, Maryland, USA. (**norm**)
- TCO Development. (2012). TCO-Certified-Displays-6.0. In *TCO Development*. Retrieved November 16, 2015, from http://tcodevelopment.com/files/2013/04/TCO-Certified-Displays-6.0.pdf#page=28. (**norm**)