EME Guard

+ • **Accurate measurement with triaxial isotropic probe**
• **Customization of vibrating alarm thresholds**
• **Data storage software**
• **Robust, all weather design**

Main features

User profile

- Anyone working close to emitting antennas (broadcast, base station, radars …)
- Installation and maintenance staff, broadcast, PMR and mobile phone operators or regulatory bodies employees

Measurement capabilities

- Continuously records the electromagnetic field level and alerts user to potential over-exposure

Frequency bands

- 27 MHz to 40 GHz

Related recommendations

- FCC 96-326
- ICNIRP
- Safety Code 6
- 2013/35/UE
  New EU Directive

- Exposure thresholds are user-definable and can be adapted to any recommendation

System Configuration

Software

- ■ EME Guard Analysis

Equipment

- ■ Case
- ■ Belt clip
- ■ USB cable
- ■ Battery charger

Accessories

- ☐ Holster

Services

- ■ Calibration report
- ■ Initial calibration
- ☐ Additional calibration
- ☐ Training
- ☐ Extended warranty

■ Included   ☐ Optional

A user friendly and flexible instrument

The EME Guard Analysis software defines two user profiles:

❶ Administrator mode, gives additional rights to configure the device to requirements (threshold definition).

❷ User mode, enables download and visualization of measurements recorded in the embedded memory of the device.

The Administrator can customize the device according to the thresholds defined by his own guidelines.

→ Only the Administrator is given right of access to device configuration and customize.

STEP 1: Define the reference threshold that will trigger the visual alarm. The 4 warning lights are activated as soon as exposure level attains 25%, 50%, 75% and 100% of the chosen reference threshold.

STEP 2: Define the thresholds that will trigger the audio and vibrating alarms:

Over a 6 minute mean: the alarm is triggered as soon as the mean calculated over the preceding 6 minutes exceeds the predetermined threshold. This 6 minute calculation is the reference duration which conforms to the ICNIRP recommendations.

Or:

**Instantaneous:** as soon as a measurement exceeds the threshold, the alarms are triggered.

Alarm front view

The measurement files are downloaded on the PC's hard disc as binary files, thus ensuring the safety of historical data.

STEP 3: Define the recording period.

STEP 4: Start the device (ON/OFF button) and perform measurements.

STEP 5: Import the measurements in the form of secure files using a USB cable and display the results.
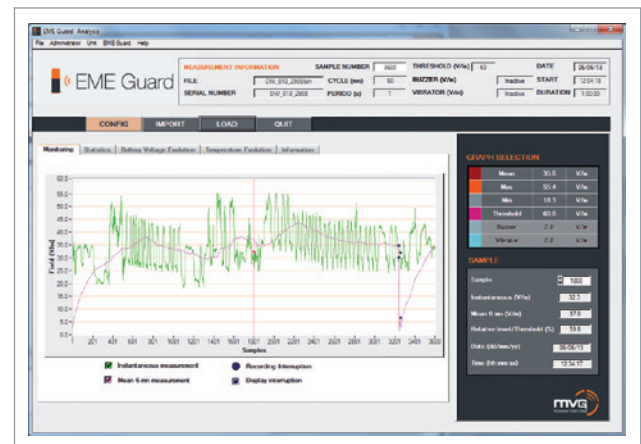
High performance probe for accurate measurements

The EME Guard is equipped with a triaxial probe which guarantees measurement isotropy. Each device comes with a calibration report. The performance of this sensor has been optimized to ensure maximum isotropy.

Isotropy at 1400 MHz

Isotropy at 2100 MHz
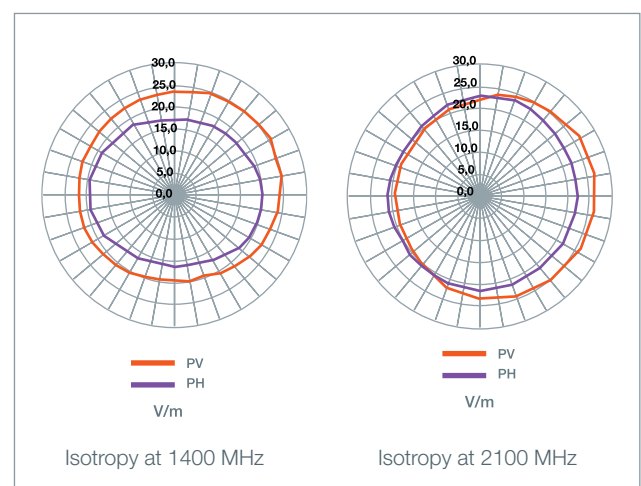
▮ A robust product

The device is equipped with an auto-test system which is launched when the device is switched on. This test ensures that the EME Guard is functioning normally and that battery level is sufficient. In any case, if the battery level is too low, an orange warning light alerts the user immediately.

The case is metallic and ensures an IP55 Ingress Protection level, ideal for outdoor use.

TECHNICAL CHARACTERISTICS

Frequency range	27 MHz – 40 GHz
Upper detection limit	200 V/m
Lower detection limit	5 V/m
Damage Level (CW):	> 4000 V/m (> 29 dB above standard)

MEASUREMENT UNCERTAINTY

Axial isotropy	+/- 1 dB at 1400 MHz +/- 2 dB at 2100 MHz
Frequency response	27 MHz - 2.5 GHz: +/- 3 dB 2.5 GHz - 6 GHz: + 6/0 dB 6 GHz - 10 GHz: + 12/+ 6 dB 10 GHz - 20 GHz: + 10/0 dB 20 GHz - 40 GHz: + 8/- 3 dB

ALARM & CONFIGURATION

Reference threshold	Configurable by the user 20, 40, 60, 80, 100 or 140 V/m
Alarm mode	Instantaneous or 6 min. mean
Visual alarm	4 LEDs 25%, 50%, 75% and 100% of the reference threshold
Audio alarm	Activated (from 5 V/m to 137 V/m) or de-activated
Vibrator	Activated (from 5 V/m to 137 V/m) or de-activated
Low battery indicator	Orange LED

MEASUREMENT CONFIGURATION

Update period for display and alarms	1 sec
Measurement recording	Activated or de-activated
Recording capacity	30 000 measurements MAX
Recording period	1-255 sec
Duration of recording	
• min.	1 mn
• max.	Duration in mn = $\dfrac{30\,000\ \text{points} \times \text{recording period (sec)}}{60}$

CONDITIONS FOR USE

Temperature, humidity	-10 to 50°C, 85% max. humidity
Power supply of battery charger	110 - 240 VAC, 50 - 60 Hz
Battery	Lithium-Ion
Battery life	> 100 hours
Type of link	USB

MECHANICAL CHARACTERISTICS

Dimensions	172 x 60 x 35 mm (H, L, W) without belt clip
Weight	320 g
Protection	IP 55

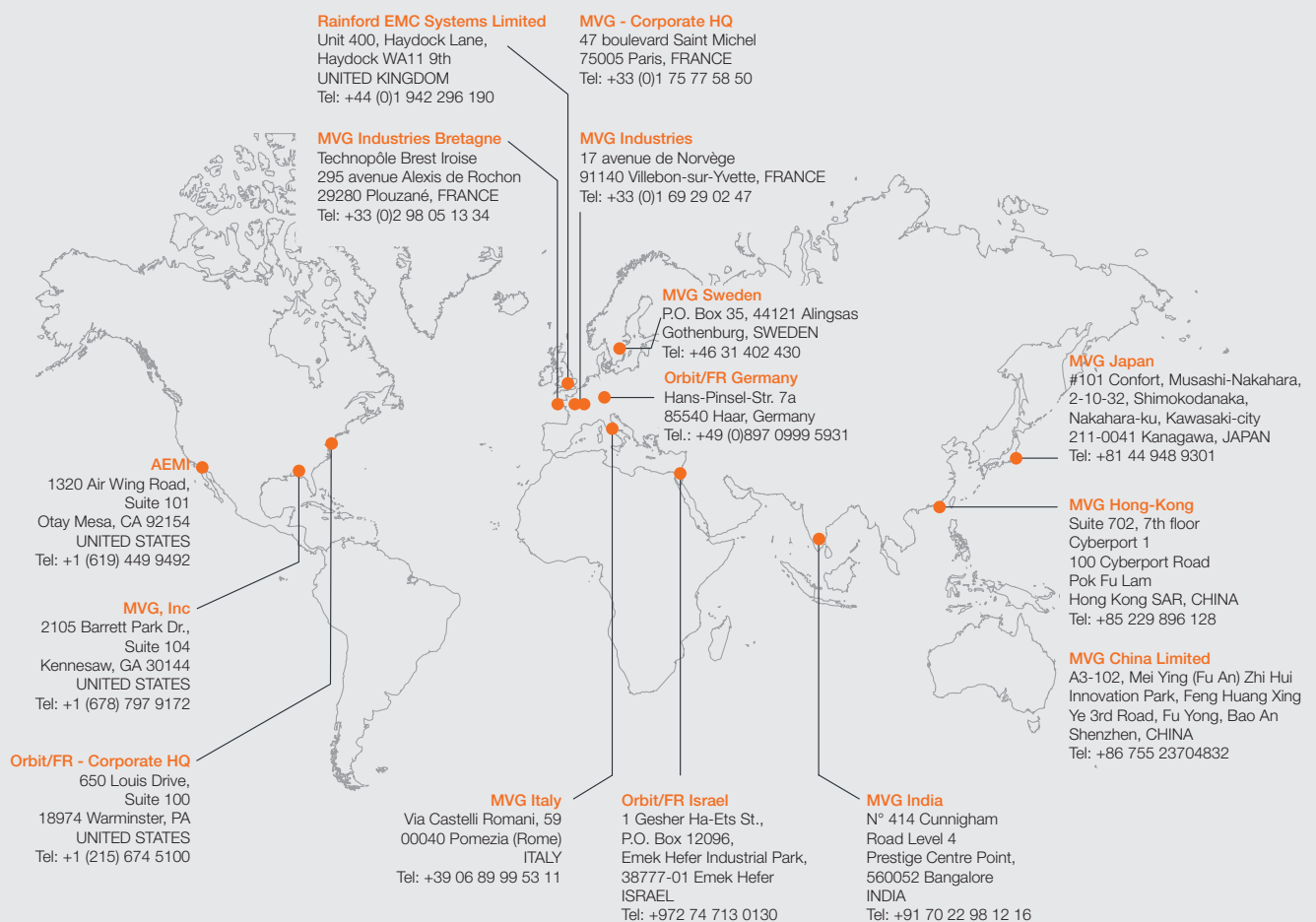## HARDWARE REQUIREMENTS

Processor	PC Pentium 500 MHz or equivalent
Cable link	USB
Operating system	XP / WIN7 / WIN8 / WIN10
Memory	256 MB RAM
Free space on hard disk	100 MB

About Microwave Vision Group (MVG)

Since its creation in 1986, The Microwave Vision Group (MVG) has developed a unique expertise in the visualization of electromagnetic waves. These waves are at the heart of our daily lives: Smartphones, computers, tablets, cars, trains, planes - none of these devices and vehicles would work without them. Year after year, the Group develops and markets systems that allow for the visualization of these waves, while evaluating the characteristics of antennas, and helping speed up the development of products using microwave frequencies.

The Group's mission is to extend this unique technology to all sectors where it will bring strong added value. Since 2012, MVG is structured around 3 departments: AMS (Antenna Measurement Systems), EMC (Electro-Magnetic Compatibility), EIC (Environmental & Industrial Control).

MVG is present in 10 countries, and generates 90% of sales from exports. The Group has over 350 employees and a loyal customer base of international companies.

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