




MonitEM - RF MONITORING SYSTEM

-  **Monitoring of an emission source.**
-  **Monitoring of a sensitive place.**
-  **Communication of the data gathered.**

ELECTROMAGNETIC RADIATION

The effect of Electromagnetic Radiation on the general public is becoming a concern as the number of sources increases dramatically. Of all the types of radio frequency equipment designed for communication applications, the greatest concern is directed at Mobile Telephone Base Stations.

Recent legislation limiting the maximum levels of electromagnetic radiation permitted from these installations has been introduced to protect the public, but compliance testing is often performed infrequently and then over a short period of time.

CONTINUOUS MEASUREMENTS (24/365)

MonitEM is a state-of-the-art measuring system manufactured and developed by Wavecontrol an engineering company working in the field of electromagnetic compatibility and RF & Microwave testing.

MonitEM can be installed as a single monitoring station, or multiple monitoring units can be configured to provide, for example, a city wide monitoring system.

All Monitoring Stations carry out continuous electromagnetic field measurements (24/365) providing averages of the obtained values as specified in international standard requirements. All measurement data obtained is sent to the Control Center for processing.

The user may communicate with the Monitoring Stations from the Control Center to check the electromagnetic field levels and to program several parameters.



REMOTE MONITORING STATIONS

MonitEM consists of a precision Electromagnetic Radiation measuring system plus a data logging and communications system that transmits the recorded data at regular intervals to a control centre.

CONTROL CENTER

The Control Centre is where the recorded data is processed and reports produced. Using the Internet the user can access the recorded data and review the results recorded, plus configure **MonitEM**.

The Control Centre software allows the user to view the data as a list or as a graph. The user can set time, date and level variables to produce graph applicable to their application.

A GIS (Geographical Information System or Mapping System) is included in the Control Software. The GIS permits easy positioning of the stations on a standard map or on a UTM coordinate aerial picture.



ALARM SYSTEM

MonitEM can be programmed to provide an alarm signal if the recorded level of electromagnetic radiation exceed set levels. The Control Centre can then alert the user when this event occurs.

The Control Center receives this alarm warning and shows in real time which remote monitoring station is measuring field levels above the programmed threshold.

APPLICATIONS

MonitEM is an ideal system for those responsible for base station reliability and performance. Continuous verification that the electromagnetic radiation produced by the base station is below recommended international limits maintains public confidence.

The system is also ideal for those responsible for ensuring either employees or members of the public are not subjected to unsafe levels of electromagnetic radiation. Locations such as public buildings, hospitals and schools can benefit from knowing the output from sources close to their facilities.

MonitEM SYSTEM**Base Station**

High Electromagnetic Field radiation.

Data Control Center

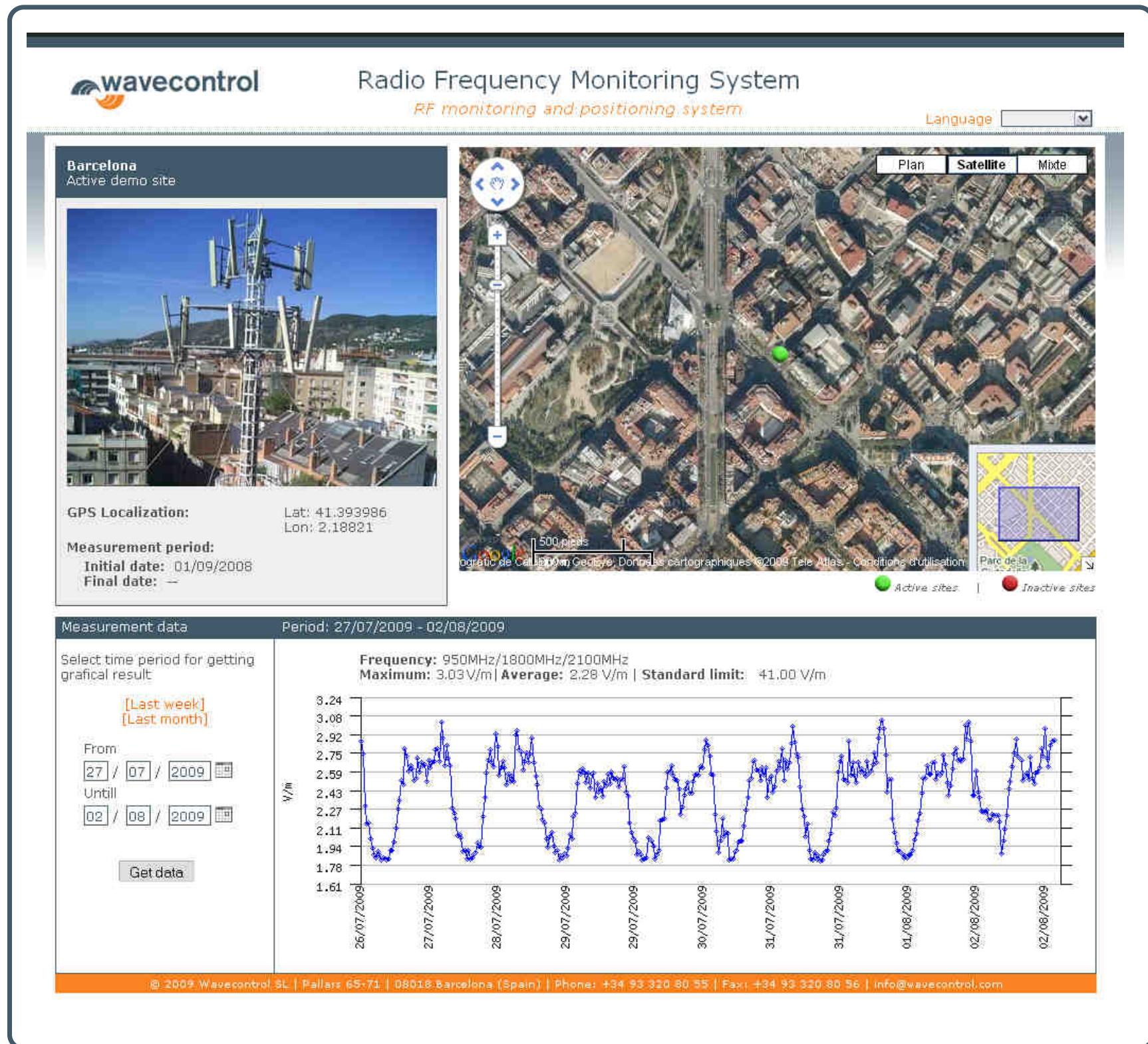
The Control Centre Software receives all measured data and stores it in the data base. The data base management application allows the user to display all the stored data as a list or in graphical mode view, from an initial to a final date.

Remote Monitoring Station

Located in specific places, performs Electromagnetic Field level measurements 24 hours/day, 365 days/year:

- ☞ Continuous RMS real time Electromagnetic. Field level measurements.
- ☞ Isotropic field sensor (probe) incorporated.
- ☞ Several probes available to cover different frequency bands.
- ☞ Data averaging.
- ☞ Periodic storage of the measured data.
- ☞ Alarm level (programmable).
- ☞ Wireless data transfer to Data Control Center.

DATA CONTROL CENTER



Configuration:

- Remote Monitoring Station management.
- Unlimited number of Remote Stations.
- Measurement parameters definition: identification, alarm levels, storage time, data transfer time, etc ...

Alarm Warnings and data view:

- Alarm reception warning.
- Received alarms management.
- All remote stations measurements view.
- Report generator.
- GIS - map positioning of remote stations.

Measurements:




- Real time alarm warning.
- Electromagnetic Field Level measurement from any station.
- Reception of periodic measurement reports from the Monitoring Stations.

Internet:

- MonitEM** is designed to be controlled directly using any internet browser (internet access required).

WPF3 - BROAD BAND PROBE

Measuring Electric Field from 100 kHz to 3 GHz

-  Isotropic and RMS measurement
-  FM, TV, mobile telephony, ...
-  High sensitivity starting at 0.3 V/m

Technical Specifications

Sensor type	Isotropic, RMS diode technology
Frequency band	100 kHz - 3 GHz
Range	0.3 - 150 V/m (CW) 0.3 - 25 V/m (RMS)
Dynamic range	54 dB
Sensitivity	0.3 V/m
Resolution	< 5%
Frequency response	±1.8 dB (1 MHz - 3 GHz)
Linearity	± 0.5 dB (0.5 V/m - 100 V/m)
Isotropic deviation	± 1 dB
Calibration	Internal EEPROM memory
Calibration period	24 months (recommended)
Operating temperature	0°C to +50°C
Temperature response	+0.5 dB/-1 dB (5°C to 50°C, related to 25°C)
Dimensions	28.5 x 10.5 x 10.5 cm.
Weight	95 g.



WPF8 - BROADBAND PROBE

Measuring Electric Field from 100 kHz to 8 GHz

 Isotropic and RMS measurement

 **New** Frequency band from 100kHz to 8 GHz

 High sensitivity starting at 0.2 V/m




Technical Specifications

Sensor type	Isotropic, RMS diode technology
Frequency band	100 kHz - 8 GHz
Range	0.2 - 120 V/m (CW) 0.2 - 20 V/m (RMS)
Dynamic range	52 dB
Sensitivity	0.2 V/m
Resolution	< 5%
Frequency response	± 2 dB (4 MHz - 7.5 GHz) ±1 dB (900 MHz - 3 GHz)
Linearity	± 0.5 dB (0,5 - 100 V/m)
Isotropic deviation	±1.5 dB (100 kHz – 8 GHz)
Calibration	Internal EEPROM memory
Calibration period	24 months (recommended)
Operating temperature	0°C to +50°C
Temperature response	±0.5 dB (0°C to 50°C, related to 25°C)
Dimensions	28.4 cm x 6 cm Ø
Weight	95 g.



WPT - MOBILE TELEPHONY PROBE

Measuring 900, 1800 and 2100 bands Electric Field

-  Isotropic and True RMS measurement
-  The best sensitivity starting at 0.06 V/m
-  High interband attenuation

Technical Specifications

Sensor type	Isotropic, True RMS
Frequency band	GSM900, GSM1800 and 3G
Range	0.06 – 61 V/m (RMS)
Dynamic range	> 60 dB
Sensitivity	0.06 V/m
Resolution	0.1 dB
Interband attenuation	>15 dB between GSM900 – GSM1800 >5 dB between GSM1800 – 3G
Frequency response	± 1.5 dB (950, 1850 and 2140 MHz)
Linearity	< ± 0.6 dB (0.15 - 50 V/m)
Isotropic deviation	< ± 0.5 dB
Calibration	Internal EEPROM memory
Calibration period	24 months (recommended)
Operating temperature	-30°C to +80°C
Temperature response	±0.8 dB (-20°C to 60°C)
Dimensions	28.5 x 10.5 x 10.5 cm.
Weight	140 g.

