ACCSYS: EMC SOFTWARE

GENERAL FEATURES

Developed for a Windows environment, ACEMC is a suite of measurement software for testing electromagnetic, compatibility and radio measurement according to most of the standards used in the industrial, military, aeronautics, automotive, telecommunications, railway and aerospace sectors.

Of open design, ACEMC can make use of most of the measuring devices on the market, present in a driver library that the user can **extend at will**.

ACEMC can be used to **create monitoring applications**, based on a code that is supplied, allowing the performing of **operations defined by the user** during testing.

The results of the measurements can be displayed, via a dedicated "Graph" module, in the form of **configurable plots** (colour, appearance, etc.).

ACCSYS-ACEMC is divided into **three main modules**:

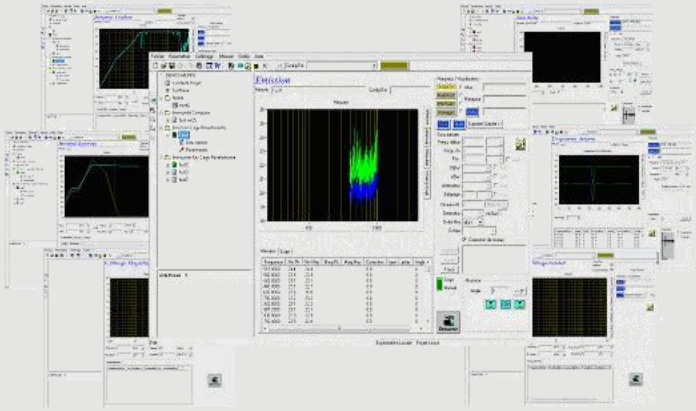
- The "**Hardware setup**" module
- The "**Calibration**" modules
- The "**Measurement"** module

ACEMC-ACEMC proposes **optional modules** including:

- Monitoring of equipment under test - **OMO**
- Component Testing (scalar measuring) - **OSA**
- Edition of measurement reports - **ORA**
- The axis controller (masts, turntables, etc.) – **OMP**

ACCSYS-ACEMC covers many types of tests and in particular:

- Radiated and conducted immunity testing
- Immunity to Direct Power Injections - DPI
- Magnetic field immunity
- Radiated immunity test in a reverberation chamber
- Radiated and conducted emission testing
- Measuring of emissions in a reverberation chamber
- Screening effectiveness measuring
- Antenna radiation field pattern measurement
- Radio sensitivity measurement
- Measurement of spurious emissions



ACEMC requires **little memory** and loads **instantly**.

ACEMC does not require an external database and can be used on a **local** machine, as in a **network** with **total security** for the **tests**.

The software makes use of **powerful algorithms for measurement and control**, that have proven their efficiency for a number of years, and their ability to rise to all situations.

The power of the algorithms, the real time calculations and the optimisation of the code make the software extremely fast and provide optimal test security.

ACEMC is used to **display, export and print reports** via Microsoft™ Word or Excel, incorporating all the data from the tests, based on a user-designed template.

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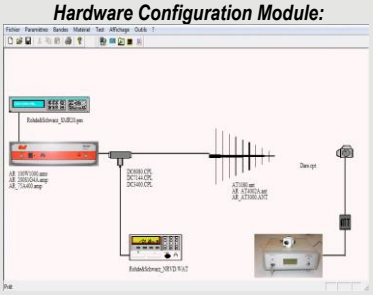
HARDWARE CONFIGURATION

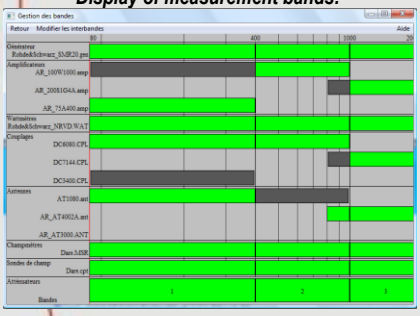
GENERAL FEATURES

- ✓ Define hardware environment
- ✓ Select devices represented in pictures
- ✓ Assigning by frequency range
- ✓ Management of automatic switching
- ✓ Access to device drivers
- ✓ Edit correction factors (antenna, losses, coupler, probe)
- ✓ Automatic configuration check

Hardware Configuration Module:



Display of measurement bands:



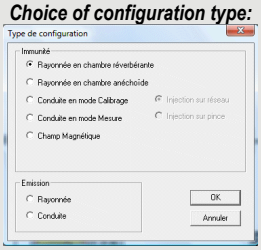
CLARITY

- ✓ Diagram form, illustrations and references correspond to the device model
- ✓ Makes it easy to use complex hardware configurations
- ✓ Representation by frequency ranges: a band describes the device to be used in the interval defined and the means to implement it
- ✓ Summary view of the configuration

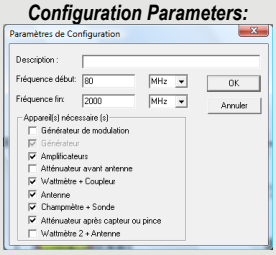
SIMPLICITY

- ✓ Open a selection window to **define the type of configuration** required (depending on the test)
- ✓ **Pre-defines the devices required** in the configuration parameters (devices pre-selected or greyed).
- ✓ **Facilitates** configuration
- ✓ **Prevents** possible errors

Choice of configuration type:

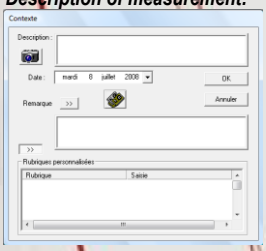


Configuration Parameters:



MEASUREMENT

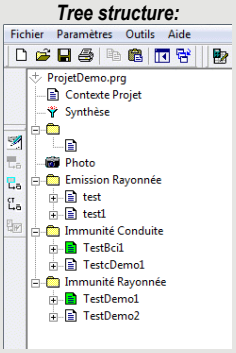
Description of measurement:



The measurement module is software that incorporates **several types of tests** and software tools.
These different elements are:

- ➢ **EMC Tests**
- ➢ **Radio Tests**
- ➢ **Calibration for conducted immunity measurement, magnetic**

Tree structure:



ORGANISATION

- ✓ The Measurement module is divided into two levels: **project level and test level**
- ✓ For each type of test, there is a **main window** with specific functions
- ✓ The **architecture** is the **same** for all the tests.
- ✓ The **tests** are **identified** by a description (comment, photos, etc.) and a list of parameters
- ✓ **Project tree structure classified** by type of test
- ✓ Each project is **a unique and independent file** of optimised size enabling secure functioning in a network.
- ✓ The application itself can be managed in a network and serve several test stations.

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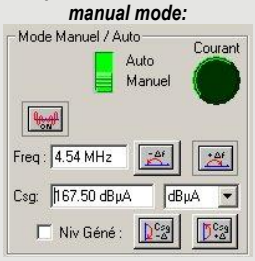
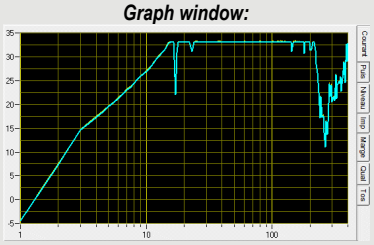
SELECTING THE TEST

- ✓ **Automatic mode** (automatic sequencing of frequencies) **or manual mode** (manual frequency sweep)
- ✓ **Search for susceptibility threshold** according to different modes of increment (logarithmic, linear or in stages).

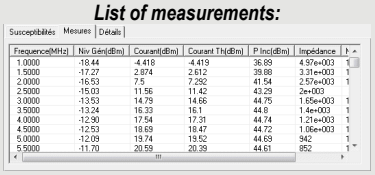
Operations available in manual mode:



Graph window:



List of measurements:



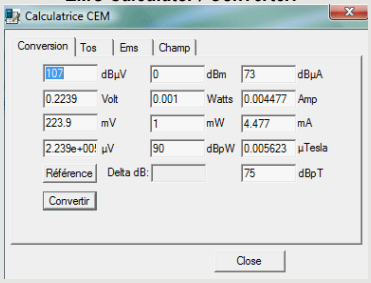
MEASUREMENTS

- ✓ Possibility of **starting** a measurement at the desired frequency
- ✓ The measurement can be **interrupted** at any time
- ✓ **Measurements can be displayed in real time** via a graph window and a list of configurable measurements.
- ✓ Test or project **templates can be saved**
- ✓ **Measurement fully automated** thanks to the monitoring and axis controller modules
- ✓ **Several tests can be automatically run in sequence**

UTILITIES

- ✓ **Direct access to Graph module** for displaying the results
- ✓ **Scalar** and amplifier **measurements**
- ✓ **Axis controller** (turntable, mast, stirrer, carriage, etc.)
- ✓ EMC **Calculator** and unit converter
- ✓ **Add tools external to the application** in a user-defined menu
- ✓ Automatic **archiving** of tests
- ✓ **Automatic creation of test** and project **reports** (pre-filled in and formatted)

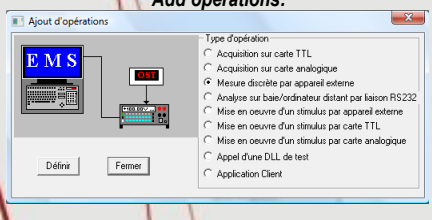
EMC Calculator / Converter:



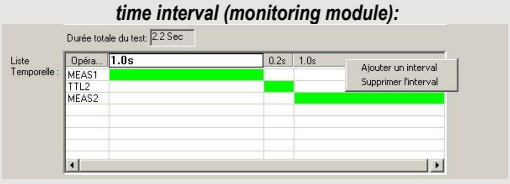
MONITORING

- ✓ Test object behaviour during immunity testing
- ✓ **Multiple functions** proposed during the observation: the measurement of digital information via TTL card, the calling of a test dll, application created by the user, stimulus via analogue card, measurement via IEEE/RS232 devices (circuit analysers, oscilloscopes, power meters, external measurement bays, etc.), video analysis …
- ✓ **Easy assigning of operations** by chronogram.
- ✓ **Monitoring** valid for all types of tests.

Add operations:



Window for assigning operations by time interval (monitoring module):



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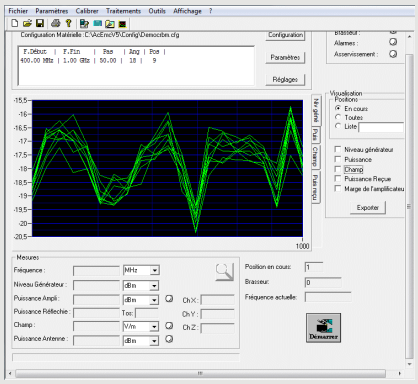
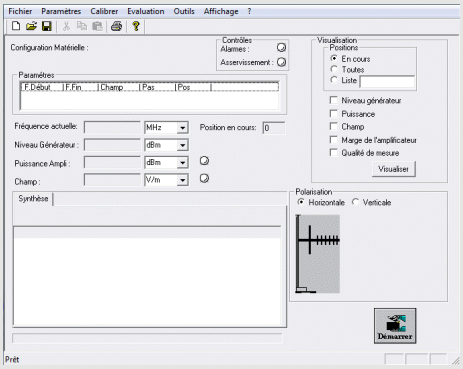
CALIBRATION

GENERAL

For **calibration and qualification**, ACEMC proposes several modules:

- ✓ Module for validation and calibration in an **anechoic chamber**
- ✓ Module for validation and calibration in a **reverberation chamber**
- ✓ Module for validation in a **quiet zone** (ANE, VSWR)
- ✓ Module for the **calibration** of cables, attenuators and amplifiers.

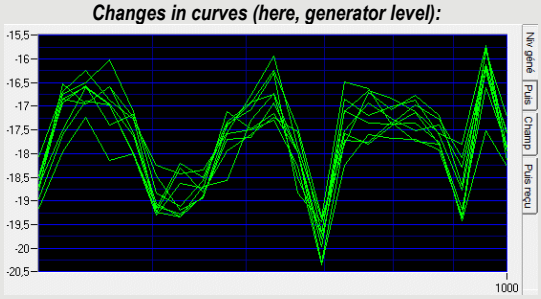




CONTROL AND VERIFICATION

- ✓ **Real time display** of the measurement in progress by means of numerical values and changes in curves (level, power, field, T.O.S., power margin, etc.).
- ✓ **Calculation of estimated results** in progress or before the end of the measurements
- ✓ **User selects** measurement **method**
- ✓ It is also **possible to impose stability constraints** on field measurements

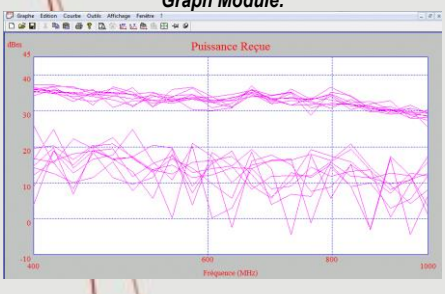
Changes in curves (here, generator level):



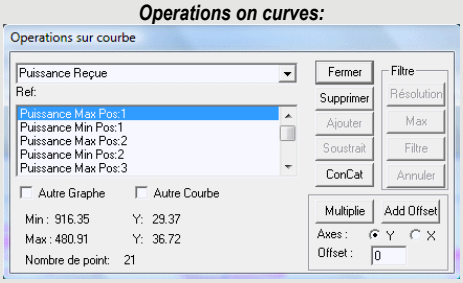
ANALYSIS AND GRAPHS

- ✓ ACCSYS-EMS is accompanied by a **graph utility** for quickly identifying delicate positions and frequencies.
- ✓ This module can perform a **number of operations on the curves** (concatenation, subtraction, multiplication, etc.)
- ✓ This utility simplifies the **analysis of curves** comprising numerous points by proposing filters to reduce their number

Graph Module:



Operations on curves:



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