

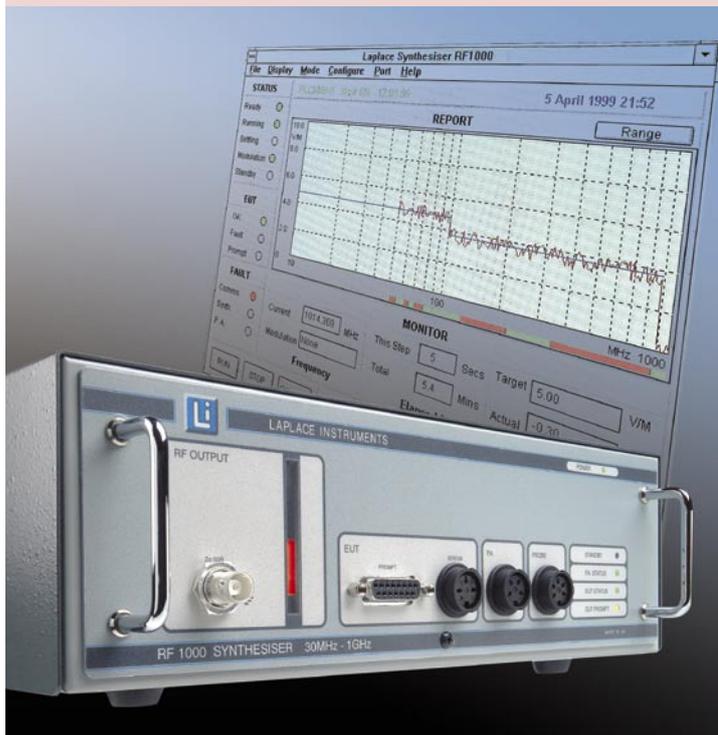
RF SYNTHESISER FOR IMMUNITY TEST

RF1000
RF2000

Matched to the requirements of IEC61000-4-3

A PC controlled signal source fully meeting all requirements for IEC61000-4-3 and featuring automatic scanning to pre-programmed schedules.

- ▼ Simple to use via PC 'Windows' software
- ▼ Easy USB interface
- ▼ Field probe input for automatic level control
- ▼ Suitable for use with any Power Amplifier and antenna / cell / chamber combination
- ▼ Standard IEC61000-4-3 tests pre-programmed



The RF1000 and RF2000 immunity test controllers which include a signal source matched to the RFI immunity requirements of IEC61000-4-3. Features such as sine and pulsed modulation, programmable start and stop frequencies, frequency step, and dwell time are provided as standard.

The RF1000 covers the range 30MHz-1GHz and the RF2000 covers 30MHz-2.4GHz. Both include powerful Windows control software with USB port interface.

When used with the LaplaCell range of test cells, these synthesisers provide full automatic control of field level and all that is needed to provide an automated compliance test facility. Advanced features such as pre-scanning, display of EUT status against applied field level and full Windows compatibility are standard.

EUT MONITORING. Real time monitoring and logging of EUT status facilitates accurate recording of test progress and reporting. Flexible EUT status response modes allow unattended testing for greatest productivity.

RESULTS. The frequency, field strength and EUT status can be plotted in real time on screen to show how the product is performing. At the end of the sweep, the plot can be saved and printed as part of the results documentation.

AUTOMATION. The RF1000 can automatically perform standard IEC61000-4-3 scans. In addition the user can enter custom sweeps with flexible step size, dwell time, modulation and field strength.

CONTROLLABILITY. The software also provides a powerful tool for specific product investigations. The single frequency mode can search out any weakness with automatic field strength ramping and fine control of frequency.



RF SYNTHESISERS... Do the work for you

The RF1000 and RF2000 are specifically designed to take the hassle out of testing to IEC61000-4-3. All aspects of the testing process are controlled by an 'intelligent' Windows software programme, included with the hardware

IEC61000-4-3

IEC61000-4-3 immunity testing requires that the EUT (equipment under test) operates satisfactorily when subject to a strong electromagnetic field.

This requires a scan at a certain fixed level (specified by the standard) of field strength. The 'scan' will comprise a series of 'steps' in frequency. Each step is specified as a percentage of current frequency value.

This percentage is variable from 0.5% to 5%.

At each step, the frequency is held, the level adjusted to achieve the required field strength as measured by the field sensor, a prescribed modulation mode is initiated and then the conditions held for a 'dwell' time. The EUT should be monitored to detect faulty operation during the test.

The Synthesiser

The synthesiser generates a signal at the required frequency, modulation and level which can be fed to the cell via a fixed gain Power Amplifier such as the Laplace RF1100 and/or the RF1200.

Frequency and modulation are values set by the PC software but the amplitude is automatically controlled via a field strength sensor feedback loop.

The PC provides the level set point in terms of sensor output (i.e. already adjusted to take account of cell characteristics). Two modes are available: real time feedback or pre-programmed level. The former takes account of the effect of the EUT inside the cell.

The RF1000 or the RF2000 also acts as an interface to the EUT with status input and 'prompt' output to exercise the product at each step.

A single frequency mode is available in which the cell is effectively controlled directly by the operator from the PC, enabling specific weaknesses in the EUT to be investigated.

Immunity System Components

▼ Synthesiser –

The RF1000 or RF2000. Linked to PC via USB port. Generates the required signals and controls the amplitude to produce required field strength inside cell. Also interfaces simple EUT status signal back to PC and generates simple 'prompt' signal to EUT under PC control.

▼ PC with RF1000 or RF2000 software package.

User interface and main control for the system.

▼ Test Cell

The LaplaCell provides an ideal test environment which includes feedback sensor. Fully calibrated as required by IEC61000-4-20

▼ EUT monitoring facilities:

- EUT excitation and monitoring.
- Video interface running in separate window. Camera and lighting facilities can be supplied in with the cell

▼ LETIS (Laplace EMC Test Integration System)

An optional item comprising a hardware unit that stacks with the other RF series and interfaces to the PC via USB to provide integrated signal routing facility. This avoids the need to manually change cables when switching power amplifiers at 1GHz or when changing from Immunity test to Emissions measurements

SPECIFICATION SUMMARY

Output	
Frequency range:	30MHz - 1GHz (RF1000) 30MHz - 2.4GHz (RF2000)
Frequency step:	0.5% to 5% of current value
Level (carrier signal):	-60dBm to 0dBm Indication: Bargraph indication of level.
THD (typical):	10%
Modulation:	off, 1KHz sine, 80% AM modulation 200Hz, 10Hz & 1Hz pulsed. 100% level
Output connector:	BNC
Ext. feedback probe:	Input: 0-2V
Mode:	Open loop or closed loop.
Excitation:	5V @ 20mA dc.
Connector:	5 pin (RF1000) or 8 pin (RF2000) circular
EUT status:	5V relay input
Fault modes:	Stop, pause, continue.
Connector:	3 pin circular
EUT prompt:	4 pole c/o volt free contacts.
Modes:	Pulsed, Continuous, off
Connector:	15 pin Dee type
P.A. interlock:	Contact closure enforces standby mode.
Connector:	4 pin circular

CONTROL:

From supplied PC software via standard USB serial port.

Environment:

Windows 98, NT, XP

Main control:

Start test (RUN)
Stop test (STOP)
Pause at frequency (Dwell)
Single frequency mode

Setup screen:

Enables all parameters of a test sweep and EUT details to be programmed.

Parameters:

Start and end frequencies
Frequency step (% of current value)
Field strength (0 - 10V/m)
Dwell time (1 - 99 seconds)
Modulation mode.

Single freq. Screen:

Manually or automatically ramp the field strength at one frequency.

Report screen:

Plot all details of the test including setup parameters, actual vs. target settings and EUT status.

Status window:

Real time indication of operating mode, EUT status and P.A. status.

MENUS

File:

All standard Windows facilities, including printer output and file Save, Save As and Open commands.

Mode:

Select operating mode and test sequence.
Standard IEC tests pre-programmed.

Config:

Enter cell characteristics, Probe calibration,

Indication:

Mains power
Output signal level (bargraph)
P.A. status, EUT status, EUT prompt

GENERAL

Supply:

110V or 230V, factory set 50 or 60Hz

Size:

120 x 64 x 188mm

Weight:

4.5kg

Available from:



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