

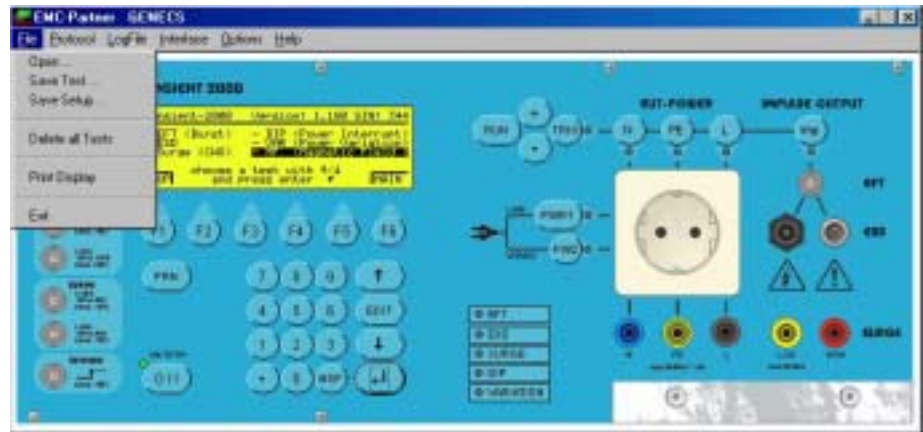
Immunity Tests

EMC -
PARTNER



TRA-, MIG- and ESD-System

GENECS Software



I Surge

II ESD

III Surge

IV Dips, Variation



Why Remote Control? Why Automatic EMC Tests?

Why Remote Control?

The GENECS Software allows the remote control of the TRANSIENT-2000 System with a PC. The software „GENECS" should be used when the following needs occur:

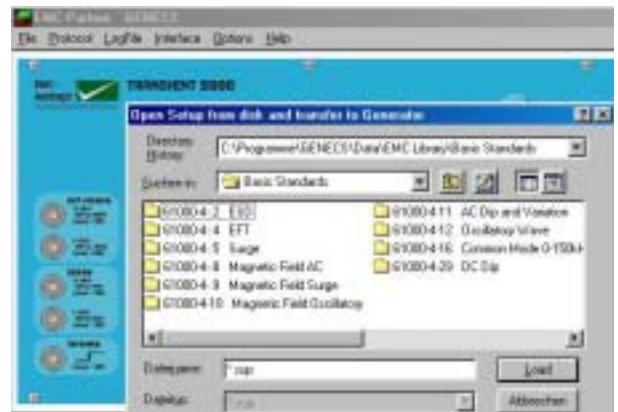
- Large EUT e. g. control racks or distributed system must be tested.
- For the EFT test the TRANSIENT-2000 must be placed either on the reference plate on the floor or elsewhere in the large system.
- A lot of different equipment must be tested. With "GENECS" the test files and the Program files can be easily organised on the PC.
- When the TRANSIENT-2000 is a part of a laboratory in a faraday cage. The generator must be controlled via an optical link.
- The measuring results V_{peak} and I_{peak} of the SURGE test should be used for statistical investigation e.g. insulation tests.
- Protocol must be available at test end and stored in the PC.
- An automatic EUT failed detection is required.
- The immunity tests specified in the basic standard must be available in a library to shorten the test set-up time and reduce the setting errors.

A "Test Manager" based Software must be used when the following needs occur:

- Protocol layout must be customised formatted and must be available at test end.
- An automatic EUT failed detection with a DSO is required.
- EMC test must be integrated in a manufacturing process.
- Immunity test and Emission measurement must be controlled from one software.

The outstanding features of the GENECS Software

- Remote control of TRANSIENT-2000 from a PC on a realistic front-plate copy of the TRANSIENT-2000.
- All test levels specified in the basic standard are ready to use in the library (files).



- Offers different failure detections during the EMC test.
- Unlimited test files and program files storage.
- Collecting of test values during the EMC test for statistical investigation.
- GENECS supports Microsoft Windows Versions 95, 98, NT.
- GENECS is a stand alone software
- As soon as the communication between GENECS and TRANSIENT-2000 operates the display in the software is equal to the display on the tester.

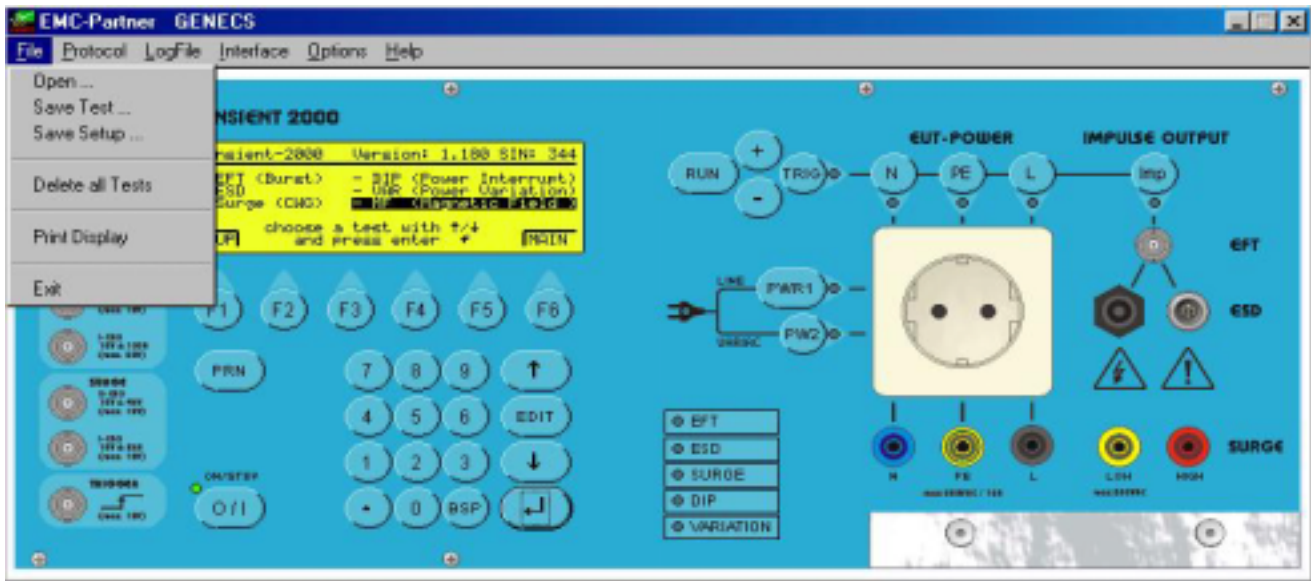
All TRANSIENTS-2000, sub-versions included, are shown with the GENECS Software.

The GENECS does not include:

- EUT failed behaviour with DSO
- Verification program
- Tools to make customized protocol layouts.

Customized program option is available on demand, please ask your representative for more information.

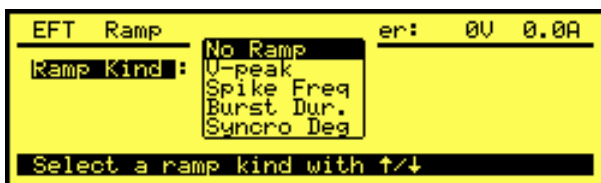
Remote Control of the TRANSIENT-2000 System



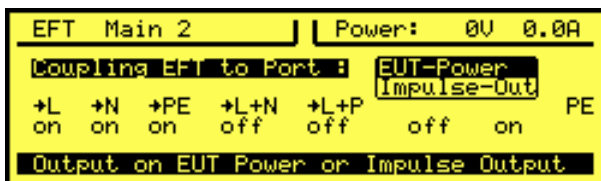
For each kind of TRANSIENT-2000 tests (EFT, ESD, surge, dips, variation, MF, dips d.c.), there is an individual test setting display.



As an example, the setting display for the EFT (Burst) test is shown.

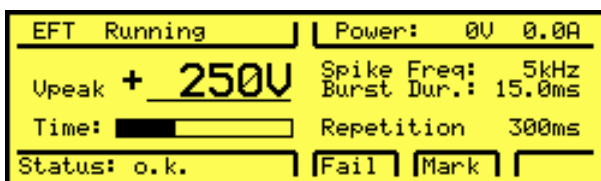


For all EMC tests (ESD, EFT, surge, dips, variation and magnetic field) ramp function can be programmed. With the ramp, the immunity of a piece of equipment can be checked without gaps.



All coupling paths can be selected automatically.

For data line testing a separated high voltage output can be activated "Impulse-Out".



In operation mode all important values are displayed. Under "Fail" a visual recognized EUT failure can be protocol, and the test will show as a "Fail". With "Mark" notices can be added in the test report.

Protocol, Library

Protocol

Generally an EMC test contains three different parts as following:

1. Writing a test plan

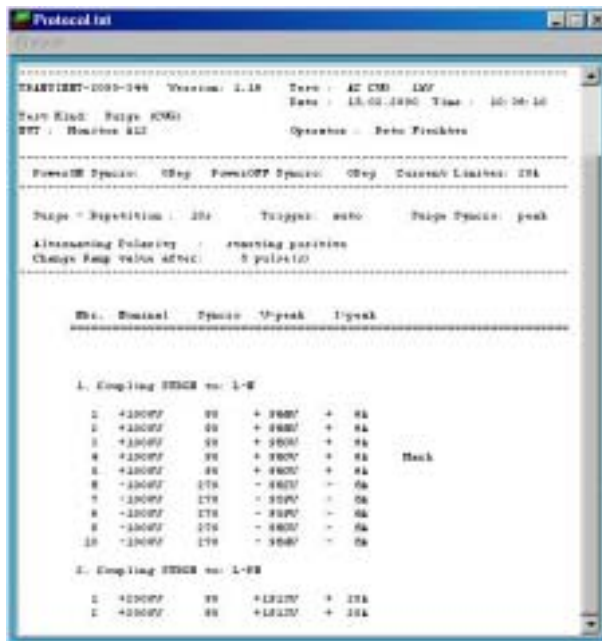
Content: the standard which must be applied, the selected test level, the defined performance criteria, operating condition of the test equipment, etc.

2. EMC test

with an immunity tester

3. Printing documentation

including test results as bases of the EC declaration of conformity



Example of a surge protocol

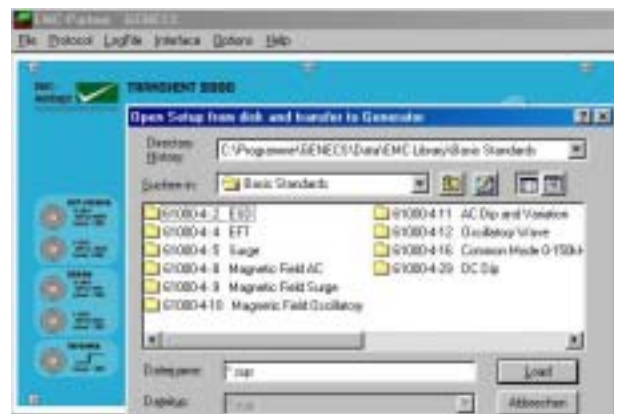
Overview about all tests carried out

At the end of the tests the test results are summarised in the "Generic Logfile" ready for you and your customer.



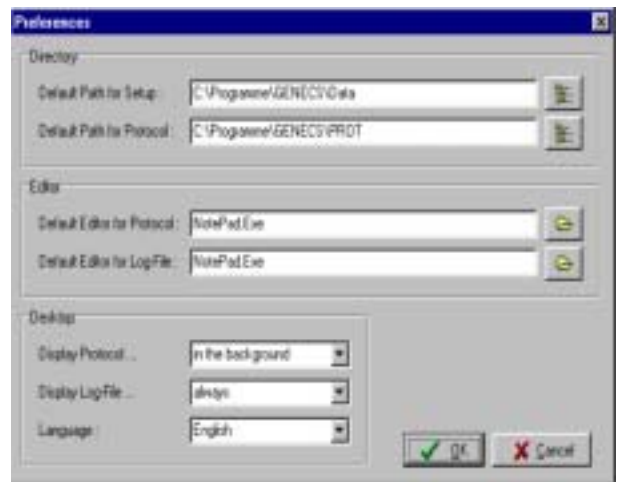
Library

- The library contains all tests in the basic standards 1000-4-2, -4, -5, -8, -9, 11 specified levels. By mouse click the program can be started.
- By copying the existing library files new adapted test can be set up.
- Under "File" all customized test can be stored.



Options

- Under options the different preferred software paths can be programmed.



EUT failed behaviour during an EMC test

GENECS Software "Standard"
 Different „EUT failed" detections during EMC tests are possible. With the EUT-Input of the TRANSIENT-2000 or with the different buttons in operation mode.

- The simplest and very often used method is the "Fail" or "Mark" function. With "Fail" in the protocol will be written Test Failed".

EFT Running	Power: 0V 0.0A
Upeak + 250V	Spike Freq: 5kHz
Time:	Burst Dur.: 15.0ms
Status: o.k.	Repetition 300ms
	Fail Mark

EUT Failure Control

- Manual check and stop of the PROGRAM with the "Stop Run" function if an incorrect behaviour of the test object is observed
- Check of the peak value measurements in the TRANSIENT-2000 during the SURGE test. If a measurement is outside of the set limit values, the further progress of the TEST can be determined with the functions "Protocol", "Stop Run", "Next Setup".

EUT-Control	Power: 0V 0.0A
Action if FAILED	Upeak-max : 9999V
Protocol	Upeak-min : 0V
Next Setup	Ipeak-max : 9999A
Stop RUN	Ipeak-min : 0A
Action when EUT is FAILED	

EUT Failed Input

When a single channel failure detection is sufficient, the „EUT-failed input of the TRANSIENT-2000 on the rear side can be used.



Test Manager "TEMA Software"
 With the Test Manager complex tests can be programmed.

EMC-PARTNER AG, 4242 Laufen, Switzerland --- The widest rang
 Operator : R.Casanova LOT Nbr. : 0122567
 Remarks : Mfg. Date : 03.03.2001
 Test output on Port 1..2

Setup DSO for XY-capacitor Test

Maximum 24 pulses per sample
 Total number of pulses : 0 of 24
 Result : Application block <24

first of three in a sequence
 2kV positive on port 1
 Result : Test completed
 Report 3 in File : xy-2kV-Port1.txt

check for flashover

As option to the TEMA the DSO control can be added to use the DSO for failure detection.



- When wave shapes (u, i, t, etc.) for the EUT failure behaviour must be used a DSO can be used.
- During the TEST run, there is the possibility of transferring the four measurements, Meas1..Meas4, which are built into the Tektronix DSO, to the customized software and evaluating them.
- As soon as the DSO has been set into the desired mode, the setting record of the complete DSO can be transferred into a file using the TRACS DSO Upload function in the DSO dialogue.

Additional Software

GENECS Software can control up to four testers



MIG Tester requires an access code.
All four tester can be controlled via one serial port of a PC.

TRACS-plus Software to control TRA1000



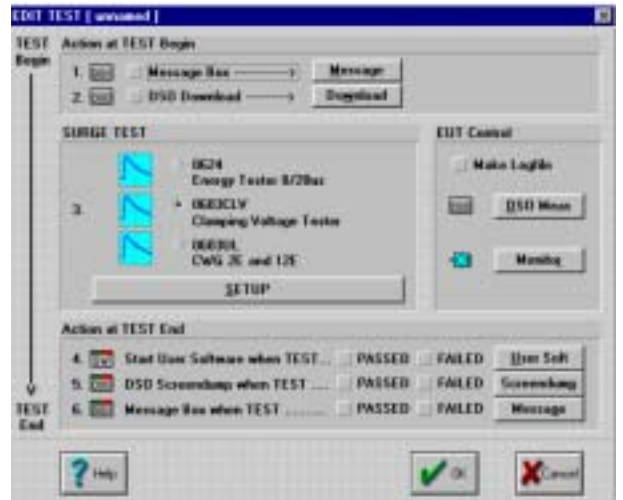
The TRACS software was designed to control the TRANSIENT1000.

The control of the TRA2000 with the TRACS software cannot be guaranteed. There will be no further updates of the TRACS-plus software.

Test Manager Software

The Test Manager software substitutes the TRACS and MIGCS Software when using together with the TRANSIENT2000 and MIG2000.

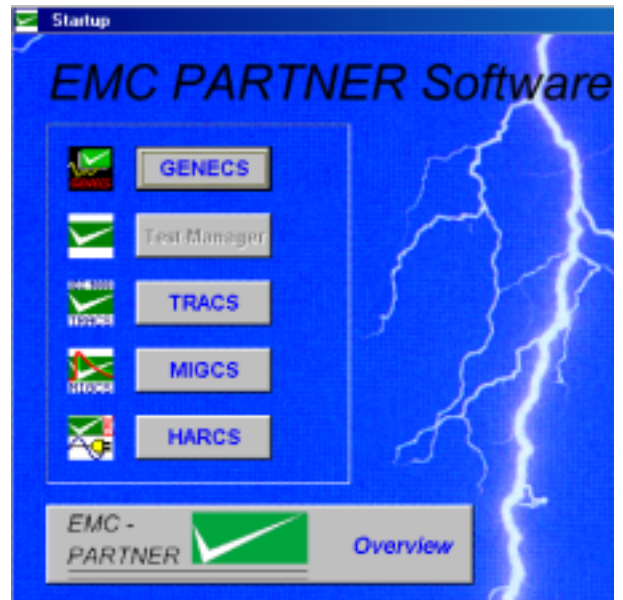
MIGCS Software to control MIG1000



The MIGCS software was designed to control the different MIG1000.

The MIG2000 can only be controlled with the TEMA software.

DEMO Programmes are available on EMCP Soft CD



All programs of EMC PARTNER can be demonstrated from a CD without loading onto a hard-disk. All software can be downloaded from www.emc-partner.com.

EMC PARTNER's Product Range

Immunity Tests



The TRA2000 performs all of the following transient tests on electronic equipment that are required for the CE-mark up to full levels: **ESD, EFT, surge, dips, a.c. magnetic field, surge magnetic field and common mode tests**. A large range of accessories for different applications is available: MF antennas, three phase couplers, verification sets, coupling kits, etc. The TRA2000 complies with IEC 61000-4-2, -4, -5, -8, -9, -11, -12p, -16, -29p.



The Modular Impulse Generator (MIG) performs **damped oscillatory tests**: 100 kHz, 1 MHz, voltage and magnetic field tests. The MIG complies with IEC 61000-4-8, -9, -10, -12 as well as with IEC 60255-4, -5, -22.



The HAR1000 with the Immunity software performs the following tests: **harmonics, voltage variation and ripple on d.c.** The HARMONICS-1000 complies with IEC 61000-4-13, -14, -17, -29p.

Lightning Tests

EMC PARTNER offers a wide range of testers in accordance with FCC 68 part D, ITU K.44, ETS 300 046, Bellcore and RTCA DO-160D, etc. for telecom, aircraft and military electronic equipment testing.



Component Tests



EMC PARTNER offers a wide range of modular impulse generators (MIG) for transient component testing on: varistors, arresters, surge protective devices (SPD), capacitors, circuit breakers, watt-hour meters, protection relays, insulation material, suppressor diodes, connectors, chokes, fuses, resistors, emc-gaskets, cables, etc.

EMC PARTNER has the largest range of impulse generators in the range up to 100 kV and 100 kA. Below is an example for an insulation tester up to 24 kV.



Emission Measurements



One unit performs all measurements on the power supplies of electronic equipment and products for the CE-Mark. The HAR1000 includes an amplifier for a clean power source, a line impedance network, the measurement systems Harmonics and Flicker. Accessories: three phase extension, "Immunity" and "ANASIM" software. Complies with IEC 61000-3-2 and -3.

We look forward to working with you

For more detailed information please contact our representative in your area or EMC PARTNER in Switzerland. For information on further products please visit also our website.

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Asia: China, Hong Kong, Israel, Japan, Malaysia, South Korea, Taiwan, ...

Australia: Australia, New Zealand

Europe: Austria, Belgium, France, Germany, Great Britain, Hungary, Ireland, Italy, Netherlands, Scandinavia, Spain, ...

You will find contact information for all representatives at EMC PARTNER's website www.emc-partner.com.

Your local representative:

EMC PARTNER offers
the largest range of
impulse test equipment
up to 100 kA and 100 kV
in the areas of:

Immunity Tests

Lightning Tests

Component Tests

Emission Measurements