



## EMC STANDARDS CE COMPLIANCE

IEC/EN 61000-3-2/3/11/12  
 IEC/EN 61000-4-4/5/8/11/13/14/17/27/28/29/34 · Semi F47  
 IEC/EN 60146-1-1 · IEC/EN 61000-2-2 · IEC/EN 61131-2  
 IEC/EN 61496-1 · IEC/EN 61800-3 · Germanischer Lloyd

**EMC Reference test system 2.0**  
 for fully compliant emission and immunity testing

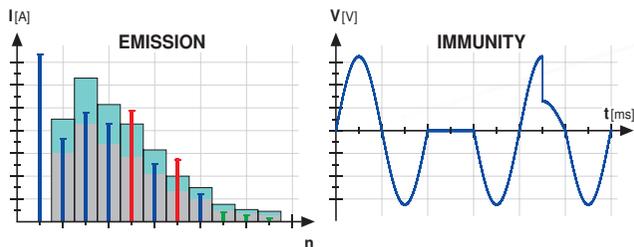
**APS** – 4-Quadrant voltage amplifier  
 Reference supply source for reproducible test results

**AIS** – Analyser impedance System  
 Harmonic analyser (IEC/EN 61000-4-7)  
 Flicker meter (IEC/EN 61000-4-15)  
 Line impedance simulation network up to  
 750A per phase incl. Japanese and Korean standards

**CE-Tester** – Burst and surge pulse generator

Magnetic field simulators  
 with testing coils and probes

**SPS TestManager** – Test and measurement software  
 platform for fully compliant EMC testing



## PRODUCT RANGE

### AC/DC VOLTAGE AND CURRENT AMPLIFIER

4-Quadrant source and sink mode  
 Single-, three- and multiphase PHIL simulators  
 V:0...1000V / I:0...10000A / P:0...300kW / f:DC...300kHz

### HIGH SPEED PHOTOVOLTAIC SIMULATORS

Testing of solar inverters up to 1MW  
 according to EN 50530 · IEC/EN 61683 · IEC/EN 61727  
 Transient time: <100µs / V:0...1500V / I:0...1250A / P:0...400kW

### RESONANT CIRCUIT AND RESISTOR LOAD

Anti-islanding tests according to IEC/EN 62116 and VDE V 0126-1-1

### AUTOMOTIVE ONBOARD POWER SUPPLY SIMULATORS

Testing and simulation of ground vehicle components and supply systems  
 according to ISO 7637 · ISO 16750-2 · ISO 21848 · LV 124 · LV 148 ·  
 SAE J 1113-11, MIL-STD-461 and various manufacturer specifications  
 V:0...800V / I:0...1000A / P:0...30kW / f:DC...300kHz

### AVIONIC ONBOARD POWER SUPPLY SIMULATORS

Testing and simulation of air vehicle components and supply systems  
 according to RTCA DO-160 · MIL-STD-704  
 and various manufacturer specifications  
 V:0...800V / I:0...1000A / P:0...30kW / f:DC...300kHz

### EMC TEST EQUIPMENT

Basic EMC System for fully compliant emission and immunity tests  
 according to IEC/EN 61000 -3-2 / -3-3 / -3-11 / -3-12 and -4-xx

### ANALYSER REFERENCE SYSTEM

Harmonic analyser and flicker meter  
 according to IEC/EN 61000-4-7 and IEC/EN 61000-4-15

### LINE IMPEDANCE SIMULATION NETWORK

Impedance: 0.00625Ω ... 0.68Ω (j0.0039Ω ... j0.393Ω)  
 according to IEC/EN 61000 -3-3 / -3-11 · JIS C 61000-3-2  
 and Korean Standard

### MAGNETIC FIELD SIMULATORS

Testing according to IEC/EN 61000-4-8 · EN 55103-2  
 and various manufacturer specifications  
 H:0...1000A/m / f:50...100kHz

### FULLY AUTOMATIC TEST EQUIPMENT

Testing of capacitors, circuit breakers, coils, fuses,  
 lighting equipment, relays and transformers  
 V:0...10000V / I:0...10000A / P:0...300kW / f:DC...300kHz



## PRODUCTS & APPLICATIONS

WE GET VOLTAGE INTO SHAPE



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## SOLAR SIMULATION

EN 50530 · IEC/EN 61683 · IEC/EN 61727 · CEI021  
IEC/EN 62116 · VDE V 0126-1-1

**Test system for fully compliant standard testing of the overall efficiency of solar inverters up to 1MW**

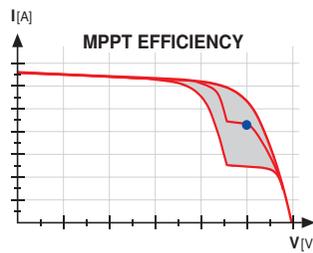
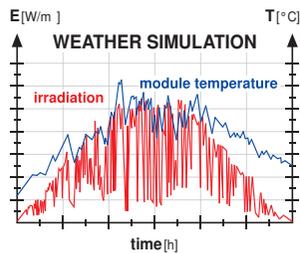
**PVS** – Highspeed PV simulator  
Reproduction of the characteristic of any solar cells and simulation of weather conditions and courses of the day

**PVS/BS** – Battery simulator  
Simulation of charge and discharge characteristics of energy storage systems

**RLC** – Adjustable resonant circuit and resistor load for compliant anti-islanding testing

**Grid Simulator** – Basic EMC System 2.0  
Reproduction and compliance testing of the grid interconnection of a solar inverter · High precision power analyser and oscilloscope

**DRU** – Power recuperation unit



## ONBOARD POWER SUPPLY SIMULATION

LV 124 · LV 148 · ISO 7637 · ISO 16750-2 · ISO 21848 · VDA 320 · SAE J 1113-11 · ISO 11452-8 · RTCA DO-160 · ABD 0100.1.8 · ABD 0100.1.8.1 · Boeing 787B3-0147 and various manufacturer specifications

**Onboard supply system simulation for fully compliant testing of automotive and avionic standards**

**LVA** – 4-quadrant amplifier  
Reference supply source with high bandwidth and very fast rise time for compliance tests

**LDS / TDG** – Load dump / pulse generators

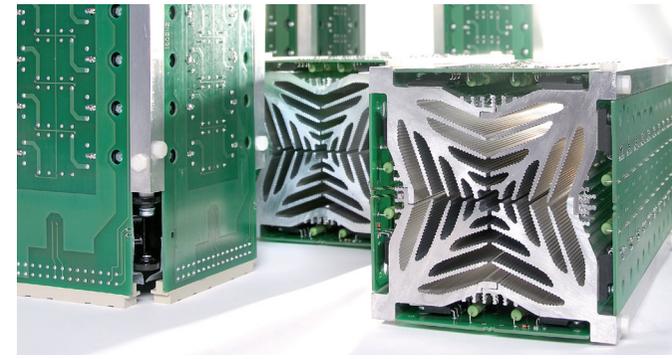
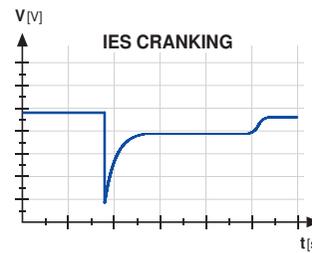
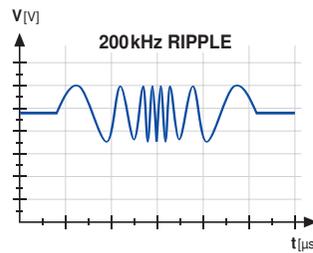
**CAR-TEST-SYSTEM 14** – Burst / surge pulse generator

**EMS** – Electronic switch for micro interruptions on power, signal and data lines

**HA1800** – High voltage tester

**SPS TestManager Automotive** –  
Test and measurement software for automotive standards for automotive onboard power supply systems

**SPS TestManager Avionic** –  
Test and measurement software avionic standards for avionic onboard power supply systems



## VOLTAGE AND CURRENT SUPPLY SIMULATION

Reference supply sources for simulation of AC/DC voltage and current variations

**Realistic grid simulators - PHIL power sources with arbitrary wave forms as well as high short-time and pulse overload capability**

**APS** – 4-quadrant voltage amplifier  
Very low THD even with non-linear loads, very low internal resistance, very fast rise time for fully compliant testing

**LVA** – 4-quadrant amplifier  
Reference supply source with high bandwidth and very fast rise time for fully compliant testing

**ACS** – 4-quadrant current amplifier  
Circuit breaker testing source

**DCS** – AC switch-mode current amplifier for industrial component and life-cycle testing

**DRU** – Digital Power Recuperation Unit  
Power recuperation capability for APS  
Source/sink power enhancement for APS

