

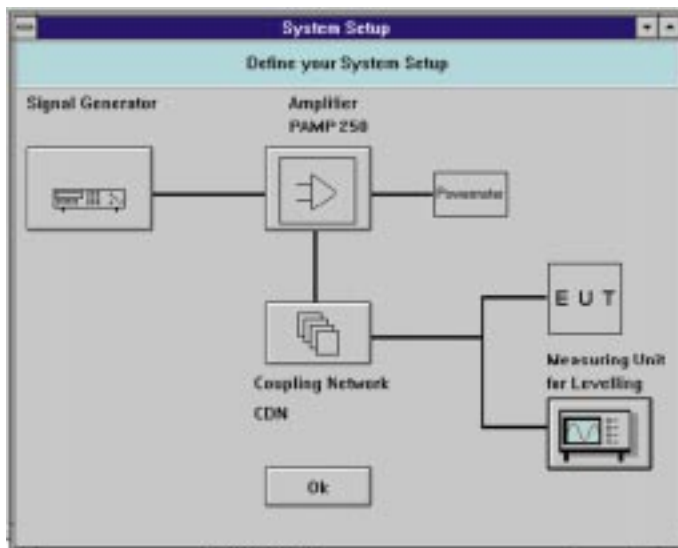
# Radio-Frequency Conducted Immunity EMC Test System PAMP<sup>®</sup> IEC 1000-4-6



When Quality is an issue,  
the choice is Haefely Trench

**HAEFELY**  **TRENCH**  
HIGH VOLTAGE TECHNOLOGY

# PAMP<sup>®</sup> Conducted Immunity RF Test Systems



The PAMP<sup>®</sup> system from Haefely Trench offers:

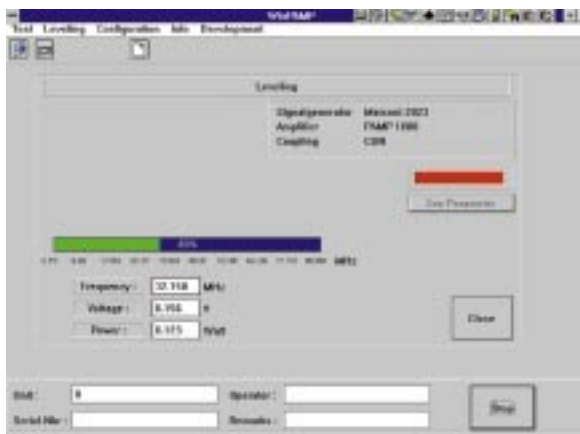
- Free choice of RF signal generator
- Power amplifier with integrated power meter card (25 W or 100 W)
- Choice of coupling/decoupling networks
- Computer control from Haefely Trench WinPAMP<sup>®</sup> system software
- Modular design to optimise user choice
- ASCII text test reports easily integrated into existing report formats
- System integrity guaranteed by continuous power level monitoring.

The solution for EMC tests to:

IEC 1000-4-6  
 EN 61000-4-6  
 ENV 50141  
 part EN 50082-1  
 part EN 50082-2

PAMP<sup>®</sup> test system enables automatic immunity testing for electromagnetic disturbances generated by Radio-Frequency (RF). Covering the frequency range 150 kHz to 230 MHz.

This is an efficient and reliable tool for compliance and development tests.



## Continuous Calibration Monitor

The unique Continuous Calibration Monitor increases user confidence that an EUT is receiving correct signal levels as defined in the test routine. Once a system calibration (levelling) has been performed, the amplifier output is continuously measured using the integrated power meter and significant changes are reported by the WinPAMP software.

The levelling data base is automatically linked to a test procedure with the same system components.

## RF Generators

WinPAMP® system software can control RF generators from different manufacturers using a GPIB interface.

A typical generator currently available for this application will have the following minimum specification:

- Frequency : 0.15 - 230 MHz
- Resolution: 1 Hz
- Level: -140 to +13 dBm
- Modulation: AM Sinewave depth : 80% frequency : 1 KHz

As an option PAMP amplifiers can be supplied with a signal generator built into one unit with the amplifier and power meter.

## Power Amplifiers

PAMP amplifiers are rated at linear power output **NOT** at gain compression. Two versions are available:

- 25 W for use with direct injection, CDNs and an EM coupling clamp
- 100 W for use with an EM coupling clamp or current injection clamp.

Both PAMP amplifiers have an integrated power meter used with active control in the WinPAMP® system software to measure variations in amplifier characteristics. Amplifiers from many different manufacturers can be operated with the WinPAMP® software.

## Coupling Devices

There are two basic methods for selecting the type of coupling network:

- direct injection into cables using a CDN
- indirect injection with the EM or current clamps.

CDNs are the most efficient in terms of power requirement. EM clamps need higher power but both of these CDN types can be used with the a 25 W amplifier. Current clamps are very inefficient and need higher power in the region of 100 W.

The modular approach makes it easier to select system components best suited to the application and makes for greater flexibility when upgrading.

## PAMP Technical Specifications

	PAMP 250	PAMP 1000
Frequency Range	150 kHz to 230 MHz	150 kHz to 80 MHz
Linear Power	25 W	100 W
Input/output Impedance	50 Ohms	50 Ohms
Gain	> 40 dB	> 47 dB
Overdrive protection	+ 13 dBm maximum	+ 13 dBm maximum
Input VSWR	2:1	2.5:1
Harmonics	- 20 dBc	- 20 dBc
Spurious signal	- 60 dBc	- 60 dBc
Class of operation	A - linear	A / A B - linear
General		
RF-connections	front panel type N connector	front panel type N connector
Communication interface	GPIB	GPIB
Main Supply	115 V or 230 V AC	115 V or 230 V AC
Dimensions	19"x 4U (178mm) x 380 mm	19"x 4U (178 mm) x 450 mm
Weight	15 kg	20 kg
Quality		
Manufacturing	ISO 9001	ISO 9001
EMC & Safety	CE mark	CE mark

## Accessories

### Coupling/Decoupling Network selection guide

No of wires	1	2	3	4	5	8
Application						
1-phase earth 2 A	M1					
1-phase mains 16 A		M2	M3			
3-phase mains 16 A				M4	M5	
3-phase mains 32 A					M5/32	
coaxial 50 $\Omega$	S1					
unbalanced screened cables				S4		S8
unbalanced unscreened cables		AF2		AF4		AF8
balanced unscreened cables		T2		T4		T8

### EM Clamp selection guide

Distance EUT - AE	< 1m	1m	2m	> 2m
Application				
Bundled cables	Current clamp	EM 101	EM 101	EM 101/FTC 101
Single cables	Current clamp	EM 101	EM 101	EM 101/FTC 101

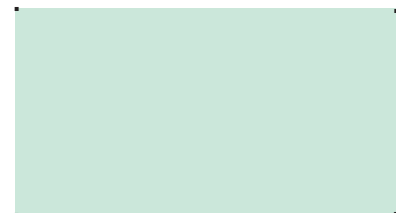
Ordering Information	Code Number
PAMP 250	249 668.1
PAMP 1000	249 669.1
Options:	
WinPAMP software package	249 686.1
Integrated Signal Generator	249 670.1
M2023 signal generator	249 671.1
Attenuator 6dB / 25W	249 672.1
EM 101 coupling clamp	249 673.1
FTC 101 Decoupling clamp	249 674.1
CDN M1	249 675.1
CDN M2 / M3	249 676.1
CDN M4	249 677.1
CDN M5	249 678.1
CDN M5 / 32	249 679.1
CDN S1	249 680.1
CDN S4	249 681.1
CDN S8	249 682.1
CDN AF4	249 683.1
CDN AF8	249 684.1
CR 100A ( 150 / 50W adapter)	249 685.1

Haefely Trench also manufacture quality products for:

ESD	IEC 1000-4-2
EFT	IEC 1000-4-4
SURGE	IEC 1000-4-5
LINE	IEC 1000-4-11
Harmonics & flicker	IEC 1000-3-2/-3

and many other industrial specifications

For more information, contact your Haefely Trench representative:



Data and Technical specification can change without notice.  
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