emtest
the benchmark for emc

CWS 500N1

CONTINUOUS WAVE SIMULATOR

FOR TESTS ACCORDING TO ...

› EN 300329
› EN 300340
› EN 300342-1
› EN 300386 V1.3.2
› EN 301489-1
› EN 301489-17
› EN 301489-24
› EN 301489-7
› EN 55024
› EN 61000-6-1
› EN 61000-6-2
› IEC 60601-1-2:2002
› IEC 61000-4-6
› IEC 61326
› IEC 61850-3

CWS 500N1 - THE SINGLE BOX SOLUTION FOR RF CONDUCTED IMMUNITY TESTING

The CWS 500N1 is the most compact single box test equipment for testing conducted rf immunity as per IEC 61000-4-6 and related standards. Apart from the 1kHz 80% AM signal the CWS 500N1 also generates a 2 Hz 80% AM signal to test medical appliances and a 1 Hz PM signal with 50% duty cycle required to test safety equipment like fire alarms.
Equipped with a 1 GHz current monitor the CWS 500N1 can be used up to 1 GHz by means of an external amplifier.
EM TEST supplies a large range of CDNs, EM clamp and current injection clamps as well as the corresponding calibration accessories.

HIGHLIGHTS

- **SIGNALGENERATOR 9KHZ - 1GHZ**
- **80W AMPLIFIER UP TO 300MHZ**
- **CONNECTION FOR EXTERNAL AMPLIFIERS UP TO 1GHZ**
- **2HZ, 400HZ, 1KHZ WITH 80% AM**
- **1HZ PM 50% DUTY CYCLE**
- **AUTOMATIC CALIBRATION**

APPLICATION AREAS

INDUSTRY
RESIDENTIAL
MEDICAL
BROADCAST
TELECOM

emtest
the benchmark for emc

TECHNICAL DETAILS

TEST LEVEL	
Output level	1V - max. 30Vrms (emf) all standard test levels are guaranteed with all coupling methods
Output power	80W (nominal)
Output impedance	50ohm
VSWR	Max. 3:1 at all phase angles and max. power
Harmonic distortion	‹ -20dBc at 20W

TEST FREQUENCIES	
Sinus (CW)	100kHz - 300MHz
Frequency bands	100kHz - 9.999MHz 10MHz - 99.99MHz 100MHz - 300MHz in the Quick Start menu the step size can be selected by the operator
Unmodulated signal	CW (continuous wave)
Amplitude modulation	1kHz, 80%AM as per IEC 61000-4-6 2Hz, 80%AM as per IEC 60601-1-2 400Hz, 80%AM
Pulse modulation	1Hz, 50% duty cycle as per EN 50130-4

MEASUREMENTS	
Cal in (BNC)	Integrated RF voltmeter (RMS), measuring input for CDN calibration
Monitor	Current monitor for clamp applications
RF indicator	LED indicating the RF output status
LCD	Online display of the test level and the preselected frequency value
Cal data F1 - F4	4 internal memories to save calibration data

TIME PARAMENTERS	
Dwell time for CW & AM	td = 0.3s - 9,999 s
Dwell time for PM	td = 3s - 9,999s
Pause time	tr = 0/0.3s - 9,999s

OUTPUT	
Direct RF output	BNC (on the front panel)

TEST ROUTINES	
Quick Start	Immediate test start; easy-to-use and fast
User Test routines	Voltage sweep Frequency sweep Dwell time sweep
Standard Test routines	Level 1 - Level 3 (IEC 61000-4-6) Automatic Level X - Level Y
Cal procedure	Calibration of the complete test set-up, calibration data saved in internal memory
Service	Service, set-up

SIGNAL GENERATOR	
Output level	-55dBm - 0dBm
Frequency range	9kHz - 1GHz
Output impedance	50ohm
Direct RF output	To control an external amplifier

MEASUREMENTS FOR BCI APPLICATION	
PM 1000	3-channel power meter up to 1GHz - to measure the Forward power - to measure the Reverse power - to measure the injected current

INTERFACE	
Serial interface	USB
Parallel interface	IEEE 488, addresses 1 - 30
Fail 1	BNC input; test will be stopped when active low
Fail 2	BNC input; test status will be saved (max. 10 events) when active low. Test will continue.

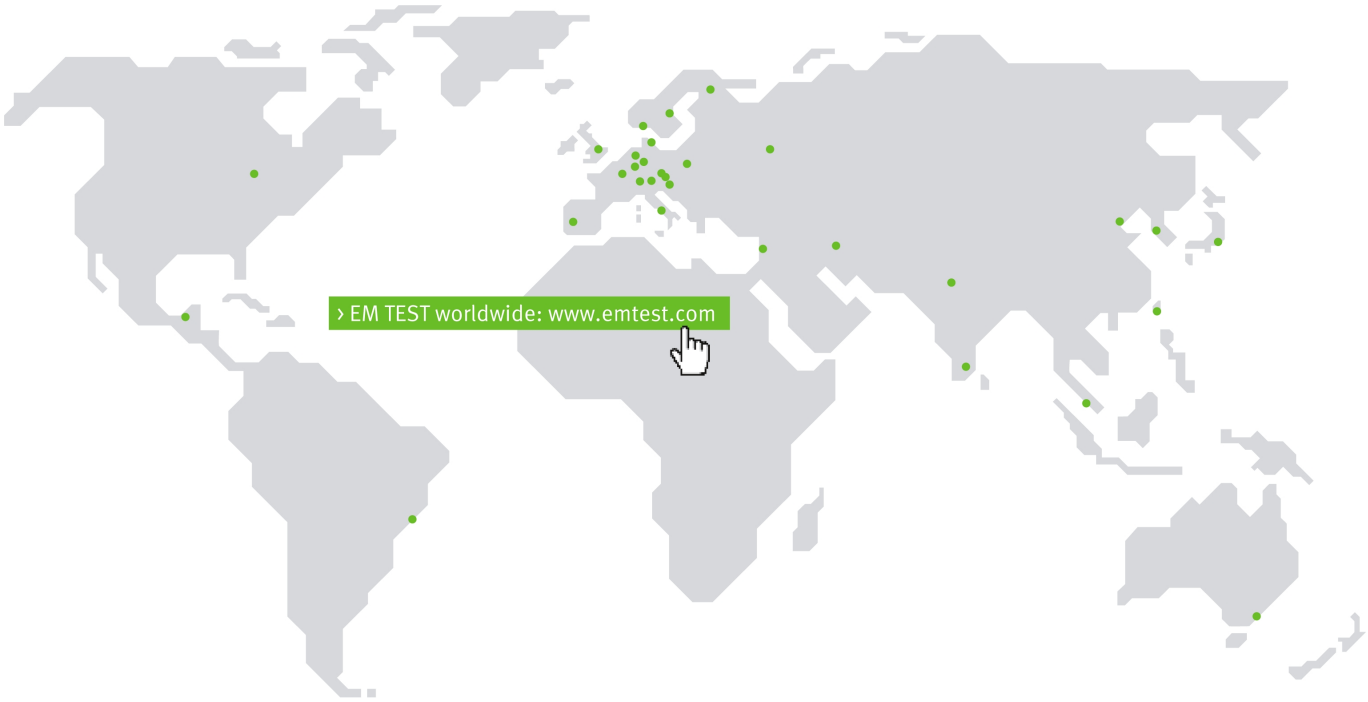
GENERAL DATA	
Dimensions, weight	19"/3HU, approx. 17kg
Supply voltage	115V - 230V +10/-15%, 50/60Hz
Input power	Max. 380W
Power factor	cos(phi) = 0.98 at max. output power as per IEC 555
Fuses	2 x 6.3AT (115V) or 2 x 3.15AT (230V)
Cooling	Active cooling, air ventilation
Temperature	10°C - 40°C
Rel. humidity	Max. 85%, non condensing

TECHNICAL DETAILS

OPTIONS	
ATT6/75	6dB attenuator, 75W
CDNs	As per IEC 61000-4-6 (refer to separate list)
Clamps	EM clamp as per IEC 61000-4-6 Current injection clamps Current monitoring clamps
T-50	50ohm termination resistor for CDNs and clamps
R-100x	150ohm-to-50ohm matching impedance for calibration
Cal adapters	For all types of CDNs and clamps
icd.control	Extensive and most versatile remote con-trol and reporting software. A standard library helps to configure the test setup. Multiple interruption functions automated by IEEE instruments or manually. Easy to use or expandable to complex test routines on the base of vector definitions.

emtest
the benchmark for emc

COMPETENCE WHEREEVER YOU ARE



CONTACT EM TEST DIRECTLY

Switzerland
EM TEST AG › Sternenhofstraße 15 › 4153 Reinach › Switzerland
Phone +41 (0)61/7179191 › Fax +41 (0)61/7179199
Internet: www.emtest.ch › E-mail: sales@emtest.ch

Germany
EM TEST GmbH › Lünener Straße 211 › 59174 Kamen › Deutschland
Phone +49 (0)2307/26070-0 › Fax +49 (0)2307/17050
Internet: www.emtest.com › E-mail: info@emtest.de

France
EM TEST FRANCE › Le Trident - Parc des Collines › Immeuble B1 - Etage 3 ›
36, rue Paul Cézanne › 68200 Mulhouse › France
Phone +33 (0)389 31 23 50 › Fax +33 (0)389 31 23 55
Internet: www.emtest.fr › E-mail: info@emtest.fr

P.R. China
EM TEST Representative Office Beijing › Rm 913, Leftbank ›
No. 68 Bei Si Huan Xi Lu › Haidian District › Beijing 100080 › P.R. China
Phone +86 (0)10 82 67 60 27 › Fax +86 (0)10 82 67 62 38
Internet: www.emtest.com › E-mail: emtestbj@public.bta.net.cn

Malaysia
EM TEST (M) SDN BHD › Unit B2-6, Jalan Dataran SD2 › Dataran SD2, PJU9 ›
Bandar Sri Damansara › 52200 Kuala Lumpur › Malaysia
Phone +60 (03)62 73 22 01 › Fax +60 (03)62 74 22 01
Internet: www.emtest.com › E-mail: sales@emtest.com.my

Poland
EM TEST Polska › ul. Lema 33, 26-613 Radom › Polska
Phone +48 518 64 35 12 › E-mail: info.polska@emtest.de