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CWS 500N2

CONTINUOUS WAVE SIMULATOR

FOR TESTS ACCORDING TO ...

› BMW GS 95002 (2001)
› DaimlerChrysler DC-10614
› EN 61000-6-1
› EN 61000-6-2
› Fiat 9.90110
› Ford ES-XW7T-1A278-AB
› Ford ES-XW7T-1A278-AC
› GMW 3097 (2001)
› GMW 3097 (2004)
› IEC 60601-1-2:2002
› IEC 61000-4-6
› IEC 61326
› IEC 61850-3
› ISO 11452-4
› ISO 11452-5
› Mercedes MBN 10284-2:2002
› MIL STD 461 D CS 114
› MIL STD 461 E CS 114
› PSA B21 7110
› Renault 36-00-808/--H
› RTCA/DO 160 Section 20
› SAE J1113-4

BULK CURRENT INJECTION (BCI) TESTING

Bulk Current Injection (BCI) is a test procedure to proof the immunity to electrical disturbances by narrowband electromagnetic energy. The test signal is injected by means of a current injection probe physically being a current transformer laid around the wiring harness. Immunity tests are performed varying the level and the frequency of the injected test signal. The BCI test methode is widely known in the automotive industry as well as in the military/aircraft industry to test single components of a complex system.
The CWS 500N2 is designed to be used also for tests with TEM cell, Stripline and Parallel Plate as well as CDNs and EM clamps for tests according to EN/IEC 61000-4-6 and related standards.

HIGHLIGHTS

› **MOST COMPACT EQUIPMENT**
› **SUPPORTING BCI, STRIPLINE AND TEM CELL APPLICATIONS**
› **BASIC FREQUENCY RANGE 9KHZ UP TO 400MHZ**
› **EXTENDABLE FREQUENCY RANGE UP TO 1GHZ**
› **BUILT-IN 100W CLASS A AMPLIFIER UP TO 400MHZ**

APPLICATION AREAS

AUTOMOTIVE
INDUSTRY
TELECOM
MEDICAL
AIRCRAFT
BROADCAST
MILITARY
RESIDENTIAL

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TECHNICAL DETAILS

BULK CURRENT INJECTION AS PER ISO 11452-4	
Output level	As required in ISO 11452-4, using closed loop or substitution method

BULK CURRENT INJECTION AS PER MIL 461 CS 114	
Output level	As required in MIL 461 CS 114, using the closed loop method

MEASUREMENTS FOR BULK CURRENT INJECTION	
Directional coupler	Included to measure forward power and reverse power
Forward power	Internal power meter #1
Reverse power	Internal power meter #2
Injected current	Internal power meter #3

TEST ROUTINES FOR BULK CURRENT INJECTION	
ISO 11452-4	Operation via icd.control
MIL 461 CS114	Operation via icd.control

IEC 61000-4-6	
Output level	1V - 30Vrms (emf) all standard test levels are guaranteed with all coupling methods

MEASUREMENTS, IEC 61000-4-6	
Cal in (BNC)	Integrated power meter to record the calibration data of a coupling device
Injected current	Measured by internal power meter
RF indicator	LED indicating the RF output status
LCD	Display of the test level and the preselected frequency value

TEST ROUTINES FOR IEC 61000-4-6	
Quick Start	Immediate start; easy-to-use and fast test routine
User Test routines	Frequency sweep
Service	Service, Set-up

OUTPUT	
RF output	N connector at the front panel
Ouptut power	Built-in amplifier (AMP3) Nominal: 20kHz - 300MHz, 50dBm Minimum: 10kHz - 400MHz, 47dBm
Gain amplifier	› 50dB
Output impedance	50ohm
Harmonic distortion	› -20dBc at max. power
Insertion loss	Approx. 1dB (directional coupler + RF relay)

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

TEST FREQUENCIES	
Frequency range	10kHz - 400MHz (built-in amplifier) 10kHz - 1,000MHz (ext. amplifier)
Unmodulated signal	CW (continuous wave)
Amplitude modulation	1kHz, 80% AM (EN/IEC 61000-4-6) 1kHz, 95% AM (automotive) 400Hz, 80% AM 50Hz, 80% AM (automotive) 2Hz, 80% AM (IEC 60601-1-2)
Pulse modulation	1Hz, 50% duty cycle (EN 50130-4) 1kHz, 50% duty cycle (MIL 461)

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

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TECHNICAL DETAILS

GENERAL DATA	
Dimensions, weight	19"/6HU, approx. 31kg
Supply voltage	115V or 230V +10/-15%, 50/60Hz
Input power	Max. 380W
Power factor	cos(phi) = 0.96 at max. output power as per IEC 555
Fuses	2x6.3AT (115V) or 2x3.15AT (230V)
Cooling	Active cooling, air ventilation
Temperature	10°C - 40°C
Rel. humidity	Max. 85%, non-condensing

ACCESSORIES	
Cables	N-type coaxial cables to connect the 3dB attenuator and/or the injection probe, BNC-coaxial cable to connect the current monitoring probe, with N-to-BNC adapter
icd.control	Extensive and most versatile remote control and reporting software. The standard library helps to configure the test setup. Multiple interruption functions automated by IEEE instruments or manually. Easy-to-use as well as expandable to complex test routines based on vector definitions.

OPTIONS	
ATT3/100	3dB attenuator, 100W
ATT20/15	20dB attenuator for current monitor path, the set includes 2 units
ATT20/100	20dB attenuator, 100W for small level RF signals as per MIL STD 461 an DO-160
T-50A	50ohm, 6W termination resistor
Calibration	Adaptors and cal jigs
CDNs	as per IEC 61000-4-6 (refer to seperate list)
Clamps	EM clamp as per IEC 61000-4-6 Current injection clamps Current monitoring clamps
R-100x	150ohm-to-50ohm matching impedance

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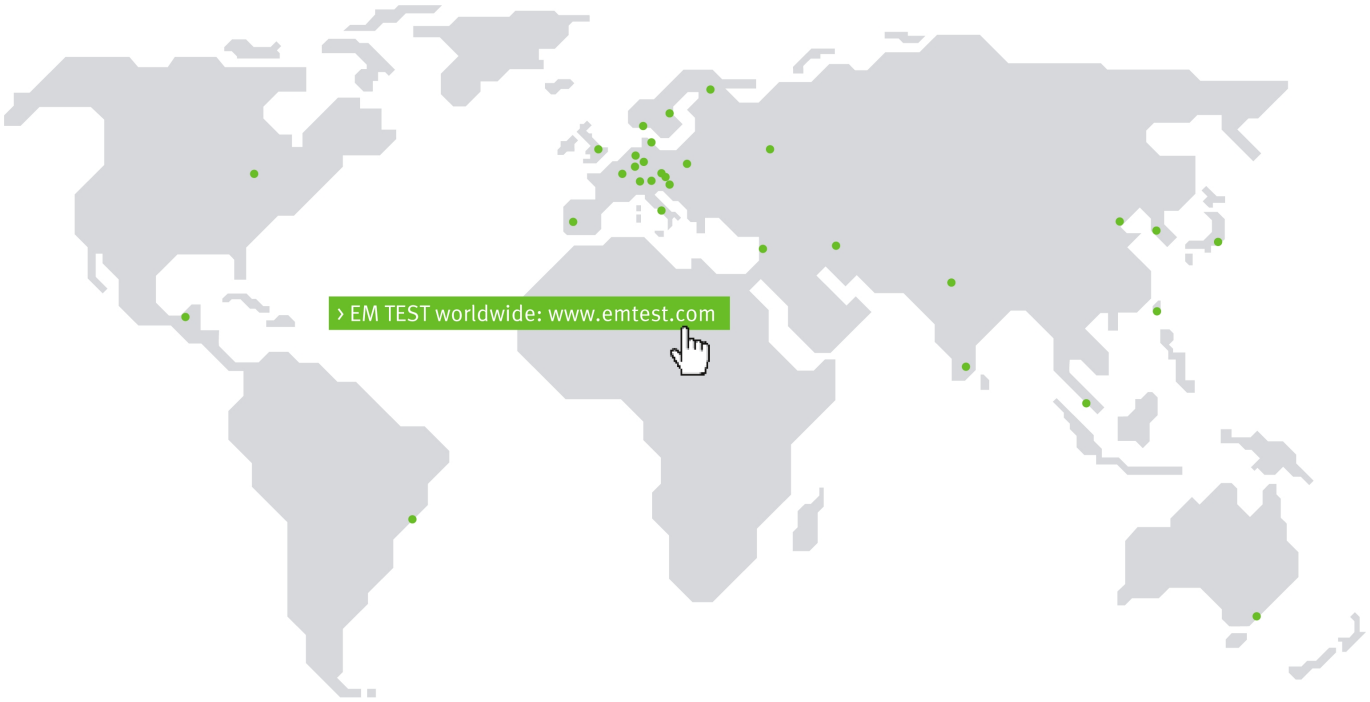
COMPETENCE WHEREEVER YOU ARE



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