For more information,
welcome to visit our website.

www. 3ctest .cn

3CTEST

Brand Built On Quality & Service

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EMC TEST SOLUTIONS FOR

BASIC CONDUCTED IMMUNITY TEST

EMC Test Solutions

3CTEST

3CTEST was founded in 2004. Since its establishment, 3CTEST has always been committed to the R&D and manufacturing of EMC test equipment. During the past 18 years, 3CTEST developed through customer demand. Now we have grown to be the largest EMC test equipment manufacturer in China, featuring a wide range of product lines.

Our product line ranges from basic conducted immunity test, automotive test, and military test to aerospace test, etc. Offering high-end equipment and professional service to customers is what we always pursue.

Better work, better life

Social Responsibility

Great power comes with great responsibility

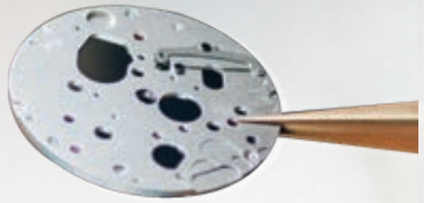
Scientific Research Strength

We have a team of qualified technicians, which enable us to provide competent and reliable equipment at full speed.

we actively participate in the national and international standard study and push forward the standard making and revision in China, which made us always keep pace with the ever-changing market needs.

Tailor our equipment solutions to fit the special requirement is also our unique advantage. We received many intractable needs during these years, and we always pleased to embrace the challenge and provide customers with perfect solutions finally.

Quality



ISO 9001 is strictly implemented to every equipment of 3CTEST. From selecting components supplier to manufacturing process control, we have strict procedures to ensure the product reliability. All the procedures are reviewed time to time to improve the efficiency.

The measurement instrument used in the design and manufacturing is calibrated regularly. We also built up laboratory to check products' performance.

Product Overview

- Industrial General Test
- Automotive Electronic Test
- Component Testing
- Communication Test
- Standard Test
- Aerospace test

Innovation

We have a team of professional EMC experts, including several PhDs, with expertise from standard research to hardware & software development. Now more than 100 patents have been obtained in the process of product development.

Each of our equipment is designed with an emphasis on innovation, we continually improve our product design, such as waveform perfection, structure adjustment, and customer experience optimizing.

Accurate pulse waveform

Reliable test for a long time

Smart design and top quality

Versatile solutions

Table of Content | Version 2023 V4

Compact Immunity Test System CCS 500 / CCS 600

IEC / EN 61000-4-4 / -5 / -8 / -9 / -11 / -29 IEC 60060-1

IEC 61000-4-4 EFT / Burst

Test voltage	0.25 kV - 4.8 kV (± 10%)
Pulse waveform	5 / 50ns, 50 ohm and 1000 ohm load
Pulse duration	50 ns ± 30%, 50 ohm load
	50 ns - 15 / + 100ns, 1000 ohm load
Source impedance	50 ohm
Polarity	Positive, Negative, Alternative
Pulse frequency	0.1 kHz - 1000 kHz
CDN	Built-in single-phase automatic CDN
	Single-phase-3-line AC 220 V 16 A Max: 250 V

IEC 61000-4-5 Surge

	CCS 500	CCS 600
Test voltage	0.3 kV - 5 kV (± 10%)	0.3 kV - 6 kV (± 10%)
Test current	0.15 kA - 2.5 kA ± 10%	0.15 kA - 3 kA ± 10%
Voltage waveform	1.2 µs ± 30%, 50 µs ± 20%	
Current waveform	8 µs ± 20%, 20 µs ± 20%	
Source impedance	2 ohm	
Polarity	Positive, Negative, Alternative	
CDN	Built-in single phase automatic CDN	
	Single-phase-3-line AC 220 V 16 A Max: 250 V	

IEC 61000-4-8 Power Frequency MagneticField Test Optional module MFT 400 or MFT 1200 is required

Magnetic field intensity	TCXS 111 single-turn coil:
	1-100 A / m (continuous) 100-400 A / m (1-10 s short time)
	TCXS 113 three-turn coil:
	1-300 A / m (continuous) 300-1200 A / m (1-10 s short time)
Current waveform	50 Hz / 60 Hz sine wave
THDi	< 5%
Continuous current	1 A - 120 A
Short - time current	120 A - 500 A
Coil size	1000*1000 mm (single - turn coil) or others

IEC 61000-4-9 Impulse Magnetic Field Test Optional module PMC 1200 is required

Magnetic field output	100 A / m-1200 A / m
Current output	100 A - 2000 A
Current waveform	6.4 µs ± 30%, 16 µs ± 30%
Coil size	TCXS111 (1000 x 1000 mm)

Compact Immunity Test System CCS 500 / CCS 600

IEC 61000-4-11 & IEC 61000-4-29 Power Failure Test
Optional module VVT 2216S or VVT 2216SV is required.

(*The last "V" in VVT 2216SV means voltage variation function.)

Eut max. Voltage	AC / DC 250 V
Eut max. Current	AC / DC 16 A continuous current
	AC 20 A continuous for 5 s; 40 A continuous for 3 s;
	500 A Impulse current
Interruption level	0%
Dip level	0% - 100% (select VVT or VMT series)
	0%, 40%, 70%, 80% (select VVT xxxxSF series)
Dip and interruption Duration	0.1 - 9999 cycle or 1 ms - 9999 ms
Dip and interruption Interval	5 ms - 9999 ms
Dip and interruption Test time	1 s - 9999 s
Dip and interruption Rise/fall time	1 - 5 μs (100 Ω load)
Time of voltage Variation decreasing	500 ms - 9999 ms (50%-100%) or abrupt (same with rise / fall time for dips and interruption)
	1000 ms - 9999 ms (0%-100%) or abrupt (same with rise / fall time for dips and interruption)
Voltage variation level	0-100%
Duration after volatge Variation decreasing	10 ms - 99999 ms
Time of voltage Variation increasing	500 ms - 9999 ms (50%-100%)
	1000 ms - 9999 ms (0%-100%)

CCS 500 / CCS 600 Test System Selection Guide

Name	Model	IEC 61000 - 4 - 4	IEC 61000 - 4 - 5	IEC 61000 - 4 - 8	IEC 61000 - 4 - 9	IEC 61000 - 4 - 11	IEC 61000 - 4 - 29	Single - phase CDN
Compact Immunity Test System	CCS 500/600	√	√	√	√	√	√	√
Burst / EFT CDN	EFTN xxxxT	√						
Surge CDN	SPN xxxxT		√					
Surge / Burst CDN	SEPN xxxxT	√	√					
PFMF module	MFT 400			√				
	MFT 1200			√				
AC Voltage Dips, Short Interruption and Variation Module	VVT 2216S					√		
	VVT 2216SV					√		
Power Fail and Power Frequency Magnetic Module	VMT 2216S			√		√		
	VMT 2216SV			√		√		
Impulse Magnetic Filed Converter	PMC 1200				√			

Compact Immunity Test System CCS 800

IEC / EN 61000-4-4 / -5 / -8 / -9 / -11 / -12 / -29 IEC / EN 61008-1, 61009-1

IEC 61000-4-4 EFT / Burst

Test voltage	0.25 kV - 8 kV (± 10%)
Pulse waveform (into 50Ω)	5 ± 1.5 ns, 50 ns ± 15 ns
Pulse waveform (into 1000Ω)	5 ± 1.5 ns, 50 ns (- 15 / + 100ns)
Pulse frequency	0.1 kHz - 1000 kHz
Burst repetition	11 ms - 9999 ms
Burst duration	0.075 ms - 750 ms
Coupling Capacitor	33 nF
Polarity	Positive, negative, alternative
CDN	Built-in single-phase automatic CDN
	AC 300 V 20 A / 32 A, DC 300 V 20 A / 32 A

IEC 61000-4-5 Surge 1.2 / 50 μs combination wave

Test voltage	0.25 kV - 8 kV (± 10%)
Voltage waveform	1.2 μs ± 30%, 50 μs ± 20%
Test current	0.125 kA - 4 kA ± 10%
Current waveform	8 μs ± 20%, 20 μs ± 20%
Source impedance	2 Ω, 12 Ω
Polarity	Positive, negative, alternative
Test interval	1 / 1 s @ 0. 5 kV, 1 / 12 s @ 8 kV
Calibration capacitor	Built-in 18 μF calibration
capacitor	0 Ω, 10 Ω
Coupling capacitor	9 μF, 18 μF
CDN	Built-in single-phase automatic CDN
	AC 300 V 20 A / 32 A, DC 300 V 20 A / 32 A

IEC 61000-4-5 Surge 10 / 700 μs combination wave

Test voltage	0.25 kV - 8 kV (± 10%)
Voltage waveform	10 μs ± 30%, 700 μs ± 20%
Test current	6.25 A - 200 A ± 10% (40 Ω)
Current waveform	5 μs ± 20%, 320 μs ± 20%
Source impedance	15 Ω, 40 Ω
Polarity	Positive, negative, alternative
Test interval	1 / 1 s @ 0.25 kV, 1 / 24 s @ 8 kV

IEC 61000-4-8 Power Frequency MagneticField Test
Optional module MFT 400 or MFT 1200 is required

Magnetic field intensity	TCXS 111 single-turn coil:
	1 - 100 A / m (continuous) 100 - 400 A / m (1 - 10 s short time)
	TCXS 113 three-turn coil:
	1 - 300 A / m (continuous) 300 - 1200 A / m (1 - 10 s short time)
Current waveform	50 Hz / 60 Hz sine wave
THDi	< 5%
Output current	1 A - 500 A
Pulse interval	1 - 9999 s
Coil size	1000*1000 mm (single - turn coil) or others

Compact Immunity Test System CCS 800

IEC 61000-4-9 Impulse Magnetic Field Test Optional module PMC 1200 is required

Output current	0.125 kA-4 kA ± 10%
Magnetic field strength	single turn coil 1m*1m：100-3600 A/m
	single turn coil 1m*2.6m：100-2640 A/m
Pulse waveform (1m*1m)	8 μs (+ 2.4 μs /- 0.8 μs), 20 μs (+ 6 μs /-2 μs)
Pulse waveform (1m*2.6m)	8 μs (+ 3.2 μs /- 0.8 μs), 20 μs (+ 8 μs /-2 μs)
Test interval	1/1 s@0. 5 kV、1/12 s@8 kV
Polarity	Positive, negative, alternative
Matching capacitor	Built-in 18 μF capacitor
Coil size	1000*1000 mm or others

IEC 61000-4-11 & IEC 61000-4-29 Power Failure Test Optional module VVT 2216S or VVT 2216SV is required. (*The last "V" in VVT 2216SV means voltage variation function.)

EUT max. voltage	AC 300 V 20 A/32 A 50/60 Hz、
	DC 100-300 V 20 A/32 A
EUT voltage frequency	45-65 Hz
Interruption level	0%
Calibration wave for AC (with 100Ω)	1 μs-5 μs
Calibration wave for DC (with 100Ω)	1 μs-50 μs
Inrush current	500 A
Dip level	0%-100% (select VVT or VMT series)
	0%, 40%, 70%, 80% (select VVT xxxxSF series)
Dip and interruption duration	0.3-9999 cycle or 1 ms-9999 ms
Dip and interruption interval	50 ms-50000 ms
Dip and interruption test time	1 s-9999 s
Dip and interruption rise/fall time	1-5 μs (100Ω load)

IEC 61000-4-12 Ring Wave Test

Output voltage for open circuit (PK1)	0.25 kV-8.0 kV ± 10%
Oscillatory frequency for open circuit voltage	100 kHz ± 10%
Front time for open circuit voltage (T1、10% – 90%)	0.5 μs ± 30% at P_{K1}
Front time for open circuit voltage	40% < (PK2) / (PK1) < 110%
	40% < (PK3) / (PK2) < 80%
	40% < (PK4) / (PK3) < 80%
Front time for short circuit current (T2、10% – 90%)	≤1 μs at P_{K1}
short ircuit current @ open circuit voltage (PK1) is 8000V	666 A ± 10% at 12 Ω; 266 A ± 10% at 30 Ω
Output impedance	12 Ω, 30 Ω
Test interval	1/1 s@0. 5 kV, 1/12 s@8 kV
Output impedance	Positive, negative, alternative
CDN	Built-in single-phase automatic CDN
	AC 300 V 20 A/32 A, DC 300 V 20 A/32 A

CDN for EFT/Burst and Surge Immunity Test SEPN Series

IEC/EN 61000-4-4/-5

SEPN 3832T SEPN 2550S SEPN 100100T10 SEPN 45100T

Model	Standard	Voltage			Coupling Capacitance		Impedance	EUT Rating			
		4.2kV	6kV	10kV	9/18uF	33nF	2/12Ω	1phase	3phase	AC	DC
SEPN 2232S	IEC 61000-4-4	√				√		√		AC 220V 32A	DC 220V 32A
	IEC 61000-4-5		√		√		√				
SEPN 2550S	IEC 61000-4-4	√				√		√		AC 250V 50A	DC 250V 50A
	IEC 61000-4-5		√		√		√				
SEPN 38100T	IEC 61000-4-4	√				√			√	AC 380V 100A	
	IEC 61000-4-5			√	√		√				
SEPN 3816T	IEC 61000-4-4	√				√			√	AC 440V 16A	DC 220V 16A
	IEC 61000-4-5		√		√		√				
SEPN 3816TM	IEC 61000-4-4	√				√			√	AC 380V 16A	DC 380V 16A
	IEC 61000-4-5		√		√		√				
SEPN 3832T	IEC 61000-4-4	√				√			√	AC 440V 32A	DC 220V 16A
	IEC 61000-4-5		√		√		√				
SEPN 4516S	IEC 61000-4-4	√				√		√		AC 450V 16A	DC 450V 16A
	IEC 61000-4-5		√		√		√				
SEPN 4520S	IEC 61000-4-4	√				√		√		AC 450V 20A	DC 450V 20A
	IEC 61000-4-5		√		√		√				
SEPN 4532S	IEC 61000-4-4	√				√		√		AC 450V 32A	DC 450V 32A
	IEC 61000-4-5		√		√		√				
SEPN 4532T	IEC 61000-4-4	√				√			√	AC 450V 32A	DC 450V 16A
	IEC 61000-4-5		√		√		√				
SEPN 45100	IEC 61000-4-4	√				√			√	AC 450V 100A	DC 600V 100A
	IEC 61000-4-5		√		√		√				
SEPN 45100TF	IEC 61000-4-4	√				√			√	AC 450V 100A	DC 600V 100A
	IEC 61000-4-5			√	√		√				
SEPN 45150DC	IEC 61000-4-4	√			√		√	√		DC 450V 150A	
	IEC 61000-4-5		√			√					
SEPN 6932T	IEC 61000-4-4	√				√			√	AC 690V 32A	DC 220V 16A
	IEC 61000-4-5		√		√		√				

Used with CCS series, EFT series or CWS series.

CDN for EFT / Burst and Surge Immunity Test

SEPN Series

Model	Standard	Voltage			Coupling Capacitance		Impedance	EUT Rating			
		4.2kV	6kV	10kV	9/18uF	33nF	2/12Ω	1phase	3phase	AC	DC
SEPN 69100T	IEC 61000-4-4	√				√			√	AC 690V 100A	DC 1000V 100A
	IEC 61000-4-5			√	√		√				
SEPN 10032T	IEC 61000-4-4	√				√			√	AC 700V 32A	DC 1000V 32A
	IEC 61000-4-5			√	√		√				
SEPN 10050T	IEC 61000-4-4	√				√			√	AC 700V 50A	DC 1000V 50A
	IEC 61000-4-5			√	√		√				
SEPN 1000T	IEC 61000-4-4	√				√			√	AC 700V 100A	DC 1000V 100A
	IEC 61000-4-5			√	√		√				
SEPN 1500T	IEC 61000-4-4	√				√			√	AC 690V 100A	DC 1500V 100A
	IEC 61000-4-5			√	√		√				
SEPN 15100T	IEC 61000-4-4	√				√			√	AC 690V 100A	DC 1500V 100A
	IEC 61000-4-5			√	√		√				
SEPN 15200T	IEC 61000-4-4	√				√			√	AC 700V 200A	DC 1500V 200A
	IEC 61000-4-5			√	√		√				
SEPN 100100T10	IEC 61000-4-4	√				√			√	AC 1000V 100A	DC 1500V 100A
	IEC 61000-4-5			√	√		√				
SEPN 700100T10	IEC 61000-4-4	√				√			√	AC 700V 100A	DC 1000V 100A
	IEC 61000-4-5			√	√		√				

Used with CCS series, EFT series or CWS series.

EDS Simulator EDS 16X / EDS 20X Series

IEC/EN 61000-4-2 IEC/EN 61000-6-1/-2

	EDS 16H	EDS 20H
Contact discharge	1000V-16, 500V(±5%)	1000V-20, 000V(±5%)
Air discharge	1000V-16, 500V(±5%)	1000V-20, 000V(±5%)
Repetition frequency	Single/0.1/0.2/0.5/1/2/5/10/20Hz	
Hold time	>5s	>5s
Polarity	Positive, Negative	Positive, Negative
RC modules	150pF/330 ohm	150pF/330 ohm
Rise time	0.8ns±25%	0.8ns±25%
Options	EDS 20H-PC communication For remote control	

EDS Simulator EDS 30T

IEC/EN 61000-4-2 IEC/EN 61000-6-1/-2

Contact discharge	200V-30, 000V(±5%)
Air discharge	200V-30, 000V(±5%)
Repetition frequency	Single/0.1/0.2/0.5/1/2/5/10/20Hz
Hold time	>5s
Polarity	Positive, Negative
Rise time	0.8ns±25%
RC modules	150pF/330ohm
Battery module(optional)	EDS01
	8*2600mAh Ni-MH rechargeable batteries to replace AC source

Optional RC module

150pF/330 ohm	500pF/0 ohm
150pF/150 ohm	500pF/100 ohm
500pF/500 ohm	1000pF/150 ohm
500pF/5000 ohm	150pF/0 ohm
330pF/2000 ohm	150pF/500 ohm
330pF/330 ohm	330pF/100 ohm
150pF/2000 ohm	6.8pF/10 ohm
50pF/100 ohm	250pF/500 ohm
100pF/1500 ohm	3500pF/2000 ohm
200pF/0 ohm	3500pF/0 ohm

Electrostatic Discharge Immunity Test Table ESDD

IEC/EN 61000-4-2

Table-top Type

Non-conducting table	1600×800×800 mm
Ground reference plane	2700×1800×2 mm
Vertical coupling board	500×500×3 mm
Horizontal coupling board	1600×800×2 mm
Insulating support	1600×800×0.5 mm
Grounding resistor	470 kΩ×2

Floor-standing Type

Insulating support	1100×800×100 mm
Ground reference plane	2700×1800×2 mm
Vertical coupling board	500×500×3 mm
Grounding resistor	470 kΩ×2

Calibration Equipment (Simple) for EDS Series ESDD-A

IEC/EN 61000-4-2

Testing table	1700×1200×700 mm
Vertical coupling plane	1580×800×1590 mm
EDS gun support	700×700×920 mm
Overall dimension	3000×1580×1590 mm

ESD Calibration Kits ESD-CALA

IEC/EN 61000-4-2 ISO 10605

ESD test voltage	Max. 30 kV
Insertion loss	± 0.5 dB 1 GHz , ± 1.2 dB 4 Ghz
	As per “target-attenuator-cable”, no need to test target
Output port	Coaxial SMA connector
Attenuator	According to the input power of oscilloscope, connect an attenuator externally to the output of ESD - CALA

High Voltage Divider EDS-HVM30

IEC/EN 61000-4-2 ISO 10605

Test voltage	Max. 30 kV
Discharge mode	Air discharge
Impedance	20 GΩ/3 pF
Attenuation Ratio	20651:1 (reference value)

Electrostatic Discharge Simulator (HBM/MM) EDS 10IC

Human Body Model (HBM) JEDEC JESD22-A115C Nov.2010
JEDEC JESD22-A114E Jan.2007 ANSI/ESD-STM5.1 2007
ANSI/JEDEC JS-001-2010 MIL-STD-883G 28 Feb.2006
ESDA ANSI/ESD STM5.2 2009 Machine Model (MM)

HBM short circuit current parameters

Discharge capacitor	100 pF
Discharge resistance	1500 Ω
Peak current ips	0.17 A±10% @250 V 0.33 A±10% @500 V
	0.67 A±10% @1000 V 1.33 A±10% @2000 V
	2.67 A±10% @4000 V 5.33 A±10% @8000 V
Pulse amplitude	5 - 8000 V (5% ± 5V)
Rise time	2-10 ns
Pulse width	150 ns±20 ns
Ringing amplitude	<15% peak current

HBM 500Ω Resistor Current Parameters

Peak current ipr	375-550 mA @1000 V
	1.5-2.2 A @4000 V
Ipr/ips	≥ 63%
Rise time	5-25 ns

MM Short Circuit Current Parameters

Discharge capacitor	200 pF
Discharge resistance	0 Ω
Peak current ip1	0.44 A±20% @25 V 0.88 A±20% @50 V
	1.75 A±10% @100 V 3.5 A±10% @200 V
	7.0 A±10% @400 V
Pulse amplitude	5 - 1000 V (5% ± 5V)
Ip2/Ip1	67%-90%
Cycle	66-90 ns

MM 500Ω Resistor Current Parameters

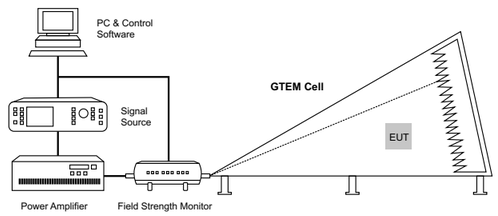
Peak currrent ipr	0.85-1.2 A @ 400 V
100ns current value i_{100}	0.23-0.40 A @ 400 V
I_{200}/i_{100}	30%-55%

General Parameters

Output voltage	HBM 5-8000 V (5% ± 5 V)
	MM 5-1000 V (5% ± 5 V)
Polarity	Positive, Negative, Alternative
Frequency	0.1 Hz-5 Hz
Trigger times	1-999
Trigger mode	Auto/Mannual/External trigger

Gigahertz Transverse Electromagnetic Cell GTEM Cells

IEC 61000-4-3



The GTEM Cells are designed for immunity tests for small size electrical and electronic devices. A complete system also requires standard signal source, power amplifier, field strength monitor, PC & control software.

GTEM Model Selection Guide

Gtem cell model	GTEM 250	GTEM 500	GTEM 750	GTEM 1000	GTEM 1250
Max. input power (w)	250 / 500	500 / 1000	600 / 1200	800 / 1600	800 / 1600
Number of EUT Power Sockets	1	2	2	2	2
External dimension L × W × H (cm)	115 × 64 × 44	300 × 165 × 110	400 × 220 × 147	500 × 276 × 184	600 × 330 × 220
Door size W × H (cm)	30 × 23	42 × 40	61 × 61	79 × 79	100 × 100
Wheels	None	Optional	Standard	Standard	Standard
Shield performance	10 kHz - 10 MHz: ＞ 50 dB		10 kHz - 20 MHz: ＞ 100 dB		
Impedance	50Ω				
Connector	Type N				
Max. EUT dimension L × W × H (cm)	20 × 20 × 15	40 × 40 × 30	60 × 60 × 50	75 × 75 × 70	100 × 100 × 85
EUT range	3 dB				
Frequency range	0.1 MHz - 8 GHz				
Typical swr (frequency 5 ghz)	1: 1.2				
Weight	80 kg	200 kg	400 kg	650 kg	850 kg

EFT / Burst Simulator EFT 500X / EFT 600X / EFT 700X / EFT 800X Series

IEC / EN 61000-4-4

	EFT 500X	EFT 600X	EFT 700X / 800X
Test voltage	0.25 kV - 4.8 kV ±10%	0.25 kV - 6 kV ±10%	0.2 kV - 8 kV ±10%
Polarity	Positive, Negative, Alternative		
Source impedance	50 Ω ± 30%		
Pulse waveform	5 / 50 ns, 50 Ω、1000 Ω load		
Rise time	5 ns ± 30%, 50 Ω load, 1000 Ω load		
Pulse duration	50 ns ± 30%, 50 Ω load、50 ns - 15 / + 100ns, 1000 Ω load		
Pulse frequency	0.1 kHz - 1000 kHz		
Burst repetition	11 ms - 10100 ms		
Test time	1 s - 9999 s		
Trigger mode	Automatic, manual or external		
CDN			
EFT 500S	Built-in single-phase CDN, AC 250 V / 16 A, DC 220V 16 A		
EFT 500T	Built-in 3-phase CDN, AC 380 V / 16 A, DC 220V 16 A		
EFT 500G	Without built-in CDN. Optional external CDNs are available for customization		
EFT 600S	Built-in single-phase CDN, AC 250 V / 32 A, DC 220 V 32 A		
EFT 600T	Built-in 3-phase CDN, AC 690 V / 32 A, DC 1000 V 32 A		
EFT 700S / 800S	Built-in single-phase CDN, AC 690 V / 32 A, DC 1000 V 32 A		
EFT 700T / 800T	Built-in 3-phase CDN, AC 690 V / 32 A, DC 1000 V 32 A		
Optional CDNs	External 3-phase CDN: EFTN 38xxxT / EFTN 69xxxT / EFTN 15xxxT series		
Options	Capacitive coupling clamp CCC 100		
	EFT/Burst calibration kit TFB 500 / TFB 1000		

CDN for EFT / Burst Immunity Test EFTN 3832T / EFTN 4550T

IEC / EN 61000-4-4

	EFTN 3832T	EFTN 4550T
Three-phase Automatic CDN	For EFT/Burst immunity test, voltage up to 4.2 kV.	
EUT Load Capacity	AC 380 V 32 A, 3-phase 5-wire DC 1000 V 32 A	AC 450 V 50 A, 3-phase 5-wire DC 110 V 50 A
Coupling Paths	Any combination of L1, L2, L3, N, PE	Any combination of L1, L2, L3, N, PE, DC+, DC-
Phase Sync.	Any combination of L1, L2, L3, N, PE with any phases and angles	
EUT power Switch	Automatic	
Coupling Capacitance	33 nF	
Coupling Attenuation	＜2 dB	

Manual HV High-Power CDN for EFT/Burst Immunity Tests EFTN 38200TM

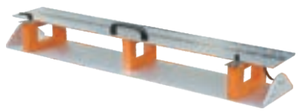
IEC/EN 61000-4-4

Test voltage	Max. 4.2 kV
Coupling paths	Any combination of L1, L2, L3, N, PE
Switching of coupling paths	Manual
Coupling capacitance	33 nF
Coupling attenuation	< 2 dB
Eut load capacity	3-phase 5-wire, AC 380 V, 200 A
Eut injection method	Via coaxial cable

CDN for EFT/Burst Immunity Test-Model Selection Guide

Model	CDN Load Capacity			Switch Mode	
		AC	DC	Manual	Auto
EFTN 3850T	3-phase 5-wire	440 V 50 A	220 V 16 A		√
EFTN 38100T		440 V 100 A	220 V 100 A		√
EFTN 38200T		440 V 200 A	220 V16 A		√
EFTN 38200TM		440 V 200 A	400 V 100 A	√	
EFTN 4550T		450 V 50 A	110 V 50 A		
EFTN 10032T		480 V 32 A	1000 V 32 A		√
EFTN 3816T		480 V 16 A	480 V 16 A		√
EFTN 3832T		480 V 32 A	480 V 32 A		√
EFTN 48100TM		480 V 100 A		√	
EFTN 6932T		690 V 32 A	220 V 16 A		√
EFTN 6950T		690 V 50 A	200 V 50 A		√
EFTN 15100T		690 V 100 A	1500 V 100 A		√
EFTN 69100TM		690 V 100 A	690 V 100 A	√	
EFTN 69100T		690 V 100 A	1000 V 100 A		√
EFTN 1550T		700 V 50 A	1500 V 50 A		√
EFTN 20050T		1000 V 50 A	2000 V 25 A		√
EFTN 70300T		700 V 310 A	1500 V 310 A		√
EFTN 70400T		700 V 400 A			√
EFTN 11080D			1100 V 80 A	√	

Capacitive Coupling Clamp CCC 100 / CCC 100 (8kV)



IEC/EN 61000-4-4

	CCC 100	CCC 100 (8kV)
Coupling capacitance	100 pF-1000 pF DC 5 kV	100 pF-1000 pF DC 8 kV
Insulating ability	> 5 kV (1.2/50 μs)	> 8 kV
Dimension	1040 × 140 × 110 mm	

Calibration Kit for Capacitive Coupling Clamp CA-CCC / CA-CCC (SHV)

IEC/EN 61000-4-4

	CA - CCC	CA - CCC (SHV)
Input voltage	Max. 5 kV	Max. 8 kV
Connector	BNC	
Dimension of insulating Material	1100 +/- 5mm × 130 +/- 1mm	
Dimension of copper plate	1050 +/- 5mm × 120 +/- 1mm	
	Plate thickness < 0.5 mm	

EFT/B Calibration Kit TFB 500/TFB 1000

IEC/EN 61000-4-4

	TFB500	TFB1000
Attenuation	54 dB	60 dB
Nominal voltage ratio	500: 1	1000: 1
Impedance	input 50 Ω,output 50 Ω	input 1000 Ω,output 50 Ω
Output impedance	50 Ω	
Pulse voltage	8 kV	
-3 db bandwidth	400 MHz	
Input terminal	BNC (The SHV interface needs to be customized)	

Electromagnetic Interference Decoupling Clamp EMID 1M

IEC/EN 61000-4-4

Attenuation factor for Eft/bursts	⩾ 20 dB
Passing cable diameter	38 mm
Dimension	520 × 130 × 120 mm
Working temperature	0℃-65℃
Weight	7.5 kg

High Frequency Noise Simulator INS-400/800

NECA TR-28 (JEMA)JEM-TR17 JEC0103-2005

	INS 400	INS 800
Output voltage	0.1 kV-2 kV ± 10%,	0.2 kV-4 kV ± 10%,
	Built-in 50Ω terminal loac	Built-in 50Ω terminal load
Polarity	Positive or negative	Positive or negative
Source impedance	50 Ω	50 Ω
Rise time	＜1 ns	＜1 ns
Pulse width	50 ns-1000 ns (50 ns step)	50 ns-1000 ns (50 ns step)
Repetition frequency	20 Hz-90 Hz, ±10%	20 Hz-60 Hz, ±10%
Phase sync	0-359°,±10% (Only for L1-L2)	0-359°,±10% (Only for L1-L2)
Eut capacity	AC 240 V 16 A、	AC 240 V 16 A、
	DC 60 V 16 A	DC 60 V 16 A
Trigger mode	Manual, auto, external	Manual, auto, external

Optional Accessories

Coupling/decoupling Network INSN 2032

AC 380V Three-phase-5-line 32A, input voltage 2kV

Coupling/decoupling Network INSN 4032

AC 380V Three-phase-5-line 32A, input voltage 4kV

Attenuator TFB 500

Impedance	input impedance 50 Ω
	output impedance 50 Ω
Attenuation ratio	500: 1
Freq. range	DC-400 MHz

Capacitive Coupling Clamp CCC 100

Coupling capacitance	100 pF-1000 pF DC 5 kV
Insulation	＞5 kV (1.2/50 μs)

Current Injection Clamp BCIP-400

Frequency	10 kHz-400 MHz
Inner diameter	ϕ40 mm

Combination Wave Lightning Surge Simulator（Output voltage ＜10 kV）

CWS 3G/CWS 20/CWS 60/CWS 120/CWS 600/CWS 800/CWS 1000 Series

IEC/EN 61000-4-5/-9 IEC/EN 61326 IEC 60255-22-5 IEC 61850-3

ITU-T K.12/.20/.45

CWS 20G

CWS 600 Series

CWS 800/1000 Series

CWS Series Model Selection Guide

Model	Output Voltage	Output Waveform							Output Impedance					
		1.2/50μs 8/20μs	10/700μs 5/320μs	1.2/50μs	5/50μs	10/100μs	10/200μs	10/350μs	2	12	15	40	42	500
CWS 3G	1-30 V	√							√					
CWS 20G	5-200 V	√	√	√	√	√	√	√	√			√		
CWS 60G	3-600 V	√							√					
CWS 120	1-1200 V	√							√	√			√	
CWS 120G	0.1-1200 V	√							√					
CWS 600T	0.3-6 kV		√								√	√		
CWS 600G	0.3-6 kV	√							√					
CWS 600CT	0.3-6 kV	√	√	√					√	√	√	√		√
CWS 600	0.3-6 kV	√							√	√				
CWS 800N	0.3-8 kV	√							√	√				
CWS 800CT	0.3-8 kV	√	√	√					√	√	√	√		√
CWS 1000N	0.5-10 kV	√							√	√				
CWS 1000CT	0.5-10 kV	√	√	√					√	√	√	√		√

Model	IEC 61000-4-5			IEC 61000-4-8	IEC 61000-4-9	Peak value acquisition	Dimension		
	Built-in Single/Three Phase CDN	External SPN Series	CDN 405 Series	Magnetic Field Coil TCXS Series	Impulse Magnetic Field PMC 1200		4U	6U	8U
CWS 3G		√					√		
CWS 20G							√		
CWS 60G		√				√		√	
CWS 120						√	√		
CWS 120G		√					√		
CWS 600T			√					√	
CWS 600G		√						√	
CWS 600CT		√	√	√	√	√		√	
CWS 600	√	√	√	√	√	√		√	
CWS 800N	√	√	√	√	√	√		√	
CWS 800CT		√	√	√	√	√		√	
CWS 1000N	√	√						√	
CWS 1000CT		√	√	√	√	√		√	

See page 18 for SPN series; See page 20 for CDN 405 series; See page 28 for TCXS series;

Multi-Function Lightning Surge Test bench（Output voltage ＞10kV）

CWS 2000（JEC210）、CWS 3000M / CWS 2000C & CWS 2000S /
CWS 1500C & CWS 1500（1500V）,CWS 2000C & CWS 2000（2000V）/
CWS 2000（1500）C & CWS 2000（1500）SH & CWS 2000（1500）ES

IEC 61000-4-5　IEC 61643-I　TU-T K.21　ITU-T K.44
JEC 210/212-The equipment model is CWS 2000（JEC210）

CWS 2000（JEC210）, CWS 3000M　Model Selection Guide

CWS 2000（JEC210）					
Output Waveform		Output Voltage	Output Current	Output impedance	Load impedance
1.2/50μs	8/20μs				
√		0.5kV-20kV	– –	6Ω/106Ω	50Ω
	√	0.5kV-20kV	0.1kA-4kA	5Ω	300Ω

CWS 3000M								
Output Waveform						Output Voltage	Output Current	Output impedance
1.2/50μs 8/20μs	10/700μs 5/320μs	1.2/50μs	8/20μs	10/350μs	10/1000μs			
√						2kV-30kV	1kA-15kA	2Ω
	√					1kV-10kV	25A-250A	15Ω/40Ω
		√				1kV-30kV	– –	500Ω
			√			2kV-15kV	4kA-30kA	0.5Ω
				√		0.5kV-15kV	50A-1100A	13Ω
					√	0.5kV-15kV	12A-350A	40Ω
Optional CDN	SPN series（Single / three phase CDN for surge immunity test）see page 18 for more information.							

CWS 1500C & CWS 1500（V）,CWS 2000C & CWS 2000（V）（Configuration mode）

1.2/50μs combination wave
- CWS 1500C, CWS 2000C　（Controller（4U））
- CWS 1500, CWS 2000　（Lightning Surge Generator（4U））

1.2/50μs combination wave + voltage wave
- CWS 1500C, CWS 2000C　（Controller（4U））
- CWS 1500V, CWS 2000V　（Lightning Surge Generator（4U））

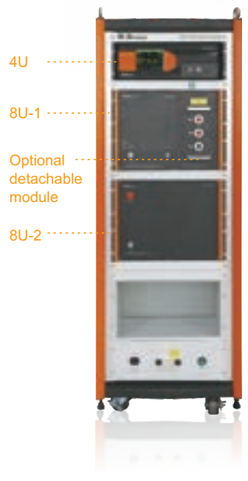
Model Selection Guide

Model No.	1.2/50μs 8/20μs	1.2/50μs	Output Voltage	Output Current	Impedance
CWS 1500C & CWS 1500	√		0.25-15kV	0.125-7.5kA	2Ω
CWS 2000C & CWS 2000	√		0.25-20kV	0.125-10kA	2Ω
CWS 1500C & CWS 1500V	√	√	0.25-15kV	0.125-7.5kA	2Ω/500Ω
CWS 2000C & CWS 2000V	√	√	0.25-20kV	0.125-10kA	2Ω/500Ω

Multi-Function Lightning Surge Test bench（Output voltage ＞10kV）

CWS 2000C & CWS 2000S（Configuration mode）

- Controller（4U）：CWS 2000C（4U）
- Generator（8U）：CWS 2000S（8U）
- Optional detachable module（8U）：
  - CWM Series（1.2/50μs combination wave module）
  - TSM Series（10/700μs combination wave module）
  - VWM Series（voltage wave module）
  - ICM Series（current wave module）



CWS 2000C & CWS 2000SH & CWS 2000ES
CWS 1500C & CWS 1500SH & CWS 1500ES（Configuration mode）

- Controller（4U）：CWS 1500C, CWS 2000C / CWS 1500S, CWS 2000S
- Generator（8U-1）：CWS 1500SH, CWS 2000SH
- Optional detachable module（8U-1）：
  - CWM 1500, CWM 2000　1.2/50μs combination wave
  - VWM 1500 □ / VWM 2000 □：A：1.2/50μs；B：4/300μs；C：10/200μs　voltage wave
  - ICM 500 □：A：10/350μs；B：4/10μs；C：8/20μs；D：10/1000μs　current wave
  - TSM 1000 / TSM 1500 / TSM 2000：10/700μs combination wave（10kV）No need to configure CWS 1500ES, CWS 2000ES；10/700μs combination wave（15kV, 20kV）need to configure CWS 1500ES、CWS 2000ES
- Energy-saving Module（8U-2）：CWS 1500ES, CWS 2000ES

Model Selection Guide

Model No.	CWS 2000C & CWS 2000S（need additional optional module）											
	CWS 2000C & CWS 2000SH & CWS 2000ES（need additional optional module.）											
	CWS 1500C & CWS 1500SH & CWS 1500ES（need additional optional module.）											
Optional Module	Output Waveform									Output Voltage	Output Current	Output impedance
	1.2/50μs 8/20μs	10/700μs 5/320μs	1.2/50μs	4/10μs	4/300μs	8/20μs	10/200μs	10/350μs	10/1000μs			
CWM xxxx	√									0.25-15kV (0.25-20kV)	0.125-7.5kA (0.5-10kV)	2Ω
VWM xxxxA			√								– –	500Ω
VWM xxxxB					√						– –	20Ω
VWM xxxxC							√				– –	6Ω
TSM xxxx		√									– –	15/40Ω
ICM xxxA								√		0.25-10kV	40-750A	13Ω
ICM xxxxB				√							0.5-10kA	1Ω
ICM xxxxC						√				0.25-5kV	1-10kA	0.5Ω
ICM xxxD									√	0.25-10kV	12.5-250A	40Ω

Note: The “xxx” in CWM/VWM/TSM xxx means voltage level. 1500 is for 15kV, 2000 is for 20 kV; The “xxx” in ICM xxx means current level. 50 is for 500A.

Coupling / Decoupling Networks for Surge Immunity Test SPN Series

IEC / EN 61000-4-5 ITU-T K.21

SPN 2216S

SPN 6932T10

SPN 38100TF

SPN 1550T1/T2

Model	Voltage				Coupling Mode		Coupling capacitance	Impedance	EUT load capacity			
	6kV	10kV	15kV	20kV	Manual	Auto	9/18μF	2/12Ω	Single phase	Three phase	AC	DC
SPN 1020DC	√					√	√	√	√			DC 1000V 20A
SPN 1020S	√					√	√	√	√		AC 700V 20A	DC 1000V 20A
SPN 2216S	√					√	√	√	√		AC 300V 16A	DC 220V 16A
SPN 2216S10		√				√	√	√			AC 300V 16A	DC 220V 16A
SPN 2216S15			√			√	√	√	√		AC 300V 16A	DC 250V 16A
SPN 2216SM20				√	√		√	√	√		AC 300V 16A	DC 220V 16A
SPN 2232S	√					√	√	√	√		AC 300V 32A	DC 220V 16A
SPN 20050T	√					√	√	√		√	AC 1000V 50A	DC 2000V 25A
SPN 3016SA20				√		√	√	√	√		AC 300V 16A	
SPN 3020S	√					√	√	√	√		AC 300V 20A	DC 220V 16A
SPN 3816T	√					√	√	√		√	AC 440V 16A	DC 220V 16A
SPN 3816T-D	√					√				√	AC 440V 16A	DC- 220V 16A
SPN 3832T	√					√	√	√		√	AC 440V 32A	DC 220V 16A
SPN 38100TM	√				√		√	√		√	AC 440V 100A	DC 440V 100A
SPN 38100TF		√				√	√	√		√	AC 440V 100A	DC 380V 100A
SPN 38200TM	√				√		√	√		√	AC 440V 200A	DC 440V 200A
SPN 3832T10		√				√	√	√		√	AC 440V 32A	DC 220V 16A
SPN 4816S15			√			√	√	√	√		AC 480V 16A	DC 250V 16A
SPN 6916T	√					√	√	√		√	AC 690V 16A	DC 220V 16A
SPN 6932T	√					√	√	√		√	AC 690V 32A	DC 220V 16A
SPN 69300T	8KV					√	√	0/10Ω		√	AC 690 310A	DC 1500V 310A
SPN 69100T		√				√	√	√		√	AC 690V 100A	DC 1000V 100A
SPN 69100TM	√				√		√	√		√	AC 690V 100A	DC 690V 100A
SPN 6932T10		√				√	√	√		√	AC 690V 32A	DC 220V 16A
SPN 69100TM15			√		√		√	√		√	AC 690V 100A	DC 1000V 100A
SPN 69400SM10		√			√		√	0/10Ω	√		AC 690 400A	DC 1500V 400A
SPN 70100TM20				√	√		√	√		√	AC 700V 100A	DC 1500V 100A
SPN 70300T	√									√	AC 700V 300A	
SPN 8032S	√					√	√	√	√		AC 800V 32A	DC-1 220V 16A
SPN 10032T	√					√	√	√		√	AC 690V 32A	DC 1000V 32A
SPN 10100T		√				√	√	√		√	AC 690V 100A	DC 1000V 100A
SPN 100400SM	√								√			DC 1000V 400A
SPN 15100T		√				√	√	√		√	AC 690V 100A	DC 1500V 100A
SPN 1550T1/T2		√				√	√	√		√	AC 1000V 50A	DC 1500V 50A

* Used together with CWS xxxx series

Coupling / Decoupling Network for Communication Lines CDN 405 Series

IEC / EN 61000 - 4 - 5


CDN 405T8


CDN 405T8-C


CDN 405T8A1


CDN 405AF8


CDN 405AF8-C


CDN 405AF4


CDN 405AF4
(仅1.2/50μs、8/20μs)


CDN 405AF2Y


CDN-405M40


CDN 405M40-5


CDN 405S1


CDN 405S9


CDN 405S8


CDN 405CAN


CDN 21AF8

Model Selection Guide Equipment with test voltage > 10 kV are available for customization.

	Coupling Waveform		Coupling Mode				Transmission Rate	EUT Operating Current	Test Voltage
	1.2 / 50 μs 8 / 20 μs	10 / 700 μs 5 / 320 μs	M Power Line	T Symmetrical Communication Line	AF Asymmetrical Line	S Shield Line			
CDN 405M40	√		√				100 kBit / s	16 A	6 kV
CDN 405M40-T	√		√						
CDN 405M40-5	√				√			5 A	
CDN 405T4	√			√			100 MBit / s	1 A	
CDN 405T8	√	√		√			10、100、1,000 MBit / s		10 kV
CDN 405T8 (POE/10kV)	√	√		√					
CDN 405T8A1	√	√		√					6 kV
CDN 405T8-C	√			√			100 MBit / s		
CDN 405AF2Y	√				√		100 kBit / s		
CDN 405AF4	√	√			√				
CDN 405AF4 (1.2/50μs、8/20μs)	√				√				
CDN 405AF8 (2A)	√				√			2 A	
CDN 405AF8	√				√			1 A	
CDN 405AF8-C	√				√				
CDN 405S1	√					√	10 MBit / s		
CDN 405S5	√					√			
CDN 405S8	√					√	1,000 MBit / s		
CDN 405S9	√					√	10 MBit / s		
CDN 405CAN	√			√					
CDN 21AF8	√	√			√				

Combination Communication Wave Surge Generator CWS 1089A

GR - 1089 - CORE 2011 Issue 6

	2 / 10μs (800V) 5端口 combination wave	2 / 10μs (1500V) 5端口 combination wave
Open-circuit voltage	200 V - 800 V (+20%)	200 V - 1500 V (+20%)
Short-circuit current	per line 25 - 100 a	per line 13.33 - 100 a
Rising time	1 - 2 μs	1 - 2 μs
Pulse duration	2 - 9 μs	2 - 9 μs
Repetition frequency	1 pulse per 8 seconds @ 800V	1 pulse per 11 seconds @ 1500V

	2 / 10μs (2500V) 5端口 combination wave	2 / 10μs (5000V) 5端口 combination wave
Open-circuit voltage	200 V - 2500 V (+20%)	200 V - 5000 V (+20%)
Short-circuit current	per line 40 - 500 A	per line 20 - 500 A
Rising time	1 - 2 μs	1 - 2 μs
Pulse duration	2 - 9 μs	2 - 9 μs
Repetition frequency	1 pulse per 6 seconds @ 2500V	1 pulse per 23 seconds @ 5000V

	10 / 360μs (1000V) 5端口 combination wave	10 / 360μs (1000V) 5端口 combination wave
Open-circuit voltage	50 V - 1000 V (+15%)	50 V - 1000 V (+15%)
Short-circuit current	per line 5 - 100 A	per line 1.25 - 25 A
Rising time	7.5 - 10 μs	7.5 - 10 μs
Pulse duration	250 - 358 μs	250 - 358 μs
Repetition frequency	1 pulse per 20 seconds @ 1000V	1 pulse per 20 seconds @ 1000V

	10 / 1000μs (1000V) 3端口 combination wave	10 / 1000μs (1000V) 3端口 combination wave
Open-circuit voltage	100 V - 1000 V (+15%)	100 V - 1000 V (+15%)
Short-circuit current	per line 16.6 - 166.6 A	per line 10 - 100 A
Rising time	6 - 10 μs	6 - 10 μs
Pulse duration	1000 - 1500 μs	1000 - 1500 μs
Repetition frequency	1 pulse per 51 seconds @ 1000V	1 pulse per 51 seconds @ 1000V

Combination Communication Wave Surge Generator CWS 1089B

GR - 1089 - CORE 2011 Issue 6

10 / 250μs combination wave

Open-circuit voltage	200 V - 4000 V (+16%)
Short-circuit current	134 - 2000 A (1.5Ω)
	100 - 2000 A (2Ω)
	25 - 500 A (8Ω)
Voltage rise time	4 - 10 μs
Voltage pulse duration	250 - 400 μs
Current rise time	7 - 10 μs
Current pulse duration	250 - 300 μs
Repetition frequency	1 pulse per 99 seconds @ 4000 V

Combined Multifunctional Lightning Surge Generator SG 968G

FCC part 68　TIA - 968 B

	10/160 combination wave	10/560 combination wave
Output voltage	0.25 - 1. 65 kV (± 5%)	0.25 - 0. 88 kV (± 5%)
Output current	31 - 220 A	33.3 - 115 A
Output voltage wave	6 - 10/160 - 260 μs	6 - 10/560 - 860 μs
Output current wave	5 - 10/160 - 210 μs	5 - 10/560 - 760 μs

	9/720 combination wave	2/10 combination wave
Output voltage	0.25 - 1. 65 kV (± 5%)	0.25 - 2. 75 kV (± 5%)
Output current	6.25 - 41.25 A	100 - 1100 A
Output voltage wave	9 ± 2.7/720 ± 144 μs	1 - 2/10 - 19 μs
Output current wave	5 ± 1.5/320 ± 64 μs	1 - 2/10 - 19 μs

Single - phase CDN

Decoupling waveform	2/10 μs
Decoupling amplitude	Less than 6 kV/3 kA
Coupling capacitance	18 μF
Decoupling inductance	1.5 mH
Load capacity	AC Single - phase 220 V 50 Hz 20 A

Multiple Waveforms Surge Generator SG 3483

IEC 61000 - 4 - 5

Output waveform Ⅰ	4 ± 30%/300 μs ± 20% voltage wave
Output waveform Ⅱ	10 ± 30%/200 μs ± 20% voltage wave
Output combination Waveform Ⅲ	10 ± 30%/700 μs ± 20% voltage wave
	5 ± 30%/320 μs voltage wave
Output peak voltage	20 kV ± 10%
Voltage polarity	Positive/Negative (automatic switching)
External CDN	Manual or automatic single/three - phase CDN

Three - phase Coupling/Decoupling Network SGN 3483T

IEC/EN 61000 - 4 - 5　IEC 61010 - 1

Load capacity	Three - phase five - wire	
	AC 380 V 50 Hz, DC 220 V 16 A	
Power Switch	Manual	
Coupling superimposed mode	Common mode 9 μF (+ 10 Ω)	
	Differential mode 18 μF	
Lightening surge test	Injection surge voltage	＜ 20 kV
	Injection surge current	＜ 10 kA (8/20 μs)
Impulse current test	Gap coupling	Voltage test more than 3kV
	Capacitance coupling	Voltage test less than 3kV
	Injection surge voltage	1 kV - 20 kV
	Injection surge current	＜ 20 kA (8/20 μs)

Radio - Frequency Conducted Disturbance Immunity Testing System CST 1075

IEC/EN 61000 - 4 - 6

Signal Generator

	CST 1075/CST 10150	CST 1075E/CST 10150E
Applicable standards	IEC/EN 61000-4-6	YY 0505 CS test
Frequency range	9 kHz - 3 GHz	9 kHz - 3 GHz
Frequency resolution	0.23 Hz	0.23 Hz
Frequency Stability over Temp.	± 0.5 ppm	± 0.5 ppm
Harmonics	≤ - 30 dBc	＜ - 30 dBc
Non-harmonics	≤ - 50 dBc	≤ - 50 dBc
Output power	- 120 dBm - 0 dBm (9 kHz - 500 kHz)	
	- 120 dBm - + 10 dBm (500 kHz - 3 GHz)	
Power accuracy	± 1.0 dB	± 1.0 dB
Power meter resolution	0.1 dB	0.1 dB
Internal modulation Source (LF)	Sinusoidal wave: 0.1 Hz - 500 kHz	
	Rectangular wave: 0.1 Hz - 20 kHz	
	Triangular wave/Sawtooth wave: 0.1 Hz - 100 kHz	
Amplitude modulation (AM)	Modulation depth: 0%-100%	Modulation depth: 0%-100%
	Modulated rate: 20Hz-1 MHz	Modulated rate: 1Hz-25 MHz
Frequency modulation (FM)	Max. frequency offset: 5 MHz	Max. frequency offset: 5 MHz
	Modulated rate: 20Hz-1 MHz	Modulated rate: 1Hz-25 MHz
Phase modulation (ΦM)	Phase modulation 0°-360°	Phase modulation 0°-360°
	20 Hz - 1 MHz	1 Hz - 25 MHZ
Pulse cycle	200 ns - 160 s	200 ns - 160 s
Pulse width	100 ns - 85 s	100 ns - 85 s
Output connector	N (female)	N (female)
Vswr	< 1.5:1	< 1.5:1

Power Meter

Frequency range	9 kHz - 6 GHz	9 kHz - 6 GHz
Test electrical level	- 50 dBm - + 20 dBm	- 50 dBm - + 20 dBm
Accuracy	± 0.2 dB	± 0.2 dB
Input connector	N (female)	N (female)
Vswr	< 1.1:1	< 1.1:1

Power Amplifier

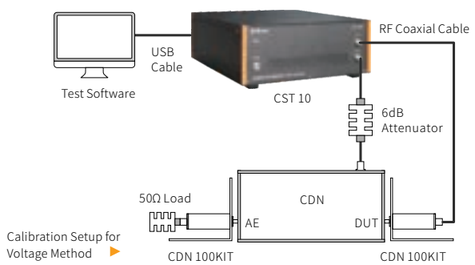
Frequency range	100 kHz - 230 MHz	100 kHz - 230 MHz
Gain	50 dB ± 1 dB (100 W)	50 dB ± 1 dB (100 W)
1db gain	48.5 dB ± 1 dB (75 W)	48.5 dB ± 1 dB (75 W)
Output impedance	50 Ω	50 Ω
Output Interface	N (female)	N (female)
Vswr	< 1.5:1	< 1.5:1

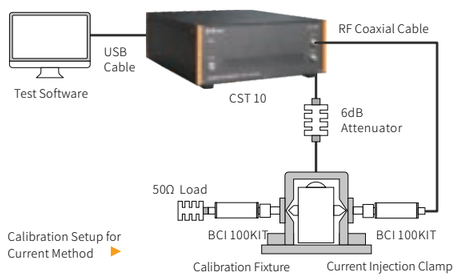
Power	CST 1075	1 dB Linear power 75 W
	CST 10150	1 dB Linear power 150 W

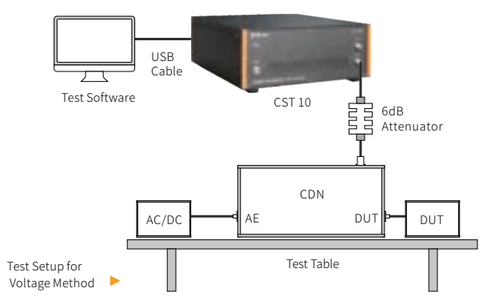
Radio-Frequency Conducted Disturbance Immunity Testing System CST 1075

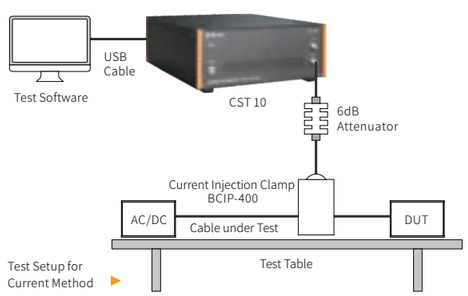
Test Set-up Accessories			Voltage Method	Current Method
CDN	Power line M series	M1, M2, M3, M2+M3, M4, M5, Single-phase/three-phase, up to 300 A	√	
	Unshielded balanced cables T series	T2，T4，T8	√	
	Unshielded unbalanced cables AF series	AF2，AF4，AF8	√	
	Shielded cables S series	S1，S2，S4，S8，S9，S25	√	
	Others	RJ11，RJ11S，RJ45，RJ45S，USB-C，USB-P	√	
	CDN calibration device 150Ωto 50Ω	CDN 100KIT	√	√
Electromagnetic injection clamp EMCL 100		Frequency range100 kHz-1 GHz Coupling factor< 3d (150 kHz-500 MHz) Internal diameter 23 mm/32 mm Contain standard calibration device EM CL100 KIT	√	√
Calibration fixture BCICF-400		Frequency: 1DC-400 MHz, characteristic impedance :50Ω		√
Current Injection Clamp BCIP-400		Frequency: 4 kHz-400 MHz		√
Attenuator		6 dB/80 W for CST 1075/1075E 6 dB/200 W for CST 10150/10150E	√	√
Test environment (unshielded indoor)		Test Table: 1,700*900*800 mm; GRP: 1,600*800*1,200 mm	√	√

Test Set-up for Radio-Frequency Conducted Disturbance Immunity Test as per IEC 61000-4-6









Radio-Frequency Conducted Disturbance Immunity Testing System CST 1075

Model	AC Voltage (line-ground)	DC Voltage (line-ground)	Maximum current	EUT/AE Port Type						The coupling mode			
				4 mm Banana	RJ11	RJ45	USB	BNC	RS 485	M Power Line	T Symmetrical Communication Line	AF Asymmetrical Line	S Shield Line
CDN M4N-32	250 V	400 V	32 A	√						√			
CDN M4/16	250 V	400 V	16A	√						√			
CDN M2/16	250 V	400 V	16A	√						√			
CDN AF2	60 V	100 V	0.5A		√							√	
CDN AF4	100 V	150 V	1A						√			√	
CDN USB	100 V	100 V	1A				√						√
CDN RJ45	100 V	150 V	1A			√							
CDN ST8	100 V	150 V	1A			√							√
CDN S1	100 V	150 V	1A					√					√
CDN S4	100 V	150 V	1A				√						√
CDN T2	60 V	100 V	0.5A	√							√		
CDN T4	100 V	150 V	1A						√		√		
CDN SRJ45	100 V	150 V	1A			√							√

Model	Frequency	Common Impedance (EUT)
CDN M4N-32 CDN M4/16 CDN M2/16 CDN S1 CDN USB CDN ST8 CDN AF2 CDN T2 CDN RJ45 CDN AF4 CDN T4 CDN S4 CDN SRJ45	150 kHz ~ 230 MHz	150 kHz ~ 24 MHz: 150 Ω ± 20 Ω 24 MHz ~ 80 MHz: 150 Ω + 60 Ω / - 45 Ω 80 kHz ~ 230 MHz: 150 Ω + 60 Ω / - 60 Ω

Electromagnetic Clamp EM CL100

IEC 61000-4-6

Frequency range	0.1 MHz-1000 MHz		
Nominal impedance	50 Ω		
Connector type	N (f)		
Max. input electric level	0.15-100MHz	100-230MHz	230-1000MHz
	100 W，15 min	100 W，5 min	50 W，3 min
Max. cable size	18 mm		
Dimension	664*130*128 mm (L*W*H)		

Power Frequency Magnetic Field Simulator MFS xxx Series

IEC/EN 61000-4-8

Magnetic field strength

MFS 400	1 A/m-100 A/m (continuous), 100 A/m-400 A/m (1s-10 s, short-term) (with TCXS 111 single-turn 1,000*1,000 mm square coil)
MFS 1200	1 A/m-300 A/m (continuous), 300 A/m-1200 A/m (1s-10s, short-term) (with TCXS 113 three-turn 1,000*1,000 mm square coil)
Output accuracy	less than 1 dB
Current waveform	50 Hz/60 Hz Sinusoid
Current distortion	< 5%
Coil shape	Square/circular
Coil size	1m*1m or other
MFS 400 - Optional Accessories	MFT 400 Power frequency magnetic field regulator
	TCXS 111 1,000*1,000 mm magnetic field coil
	VMT 2216SV 220 V, 16 A, incl. voltage variation
	VMT 2216S 220 V, 16 A, excl. voltage variation
MFS 1200 - Optional Accessories	MFT 1200 Power frequency magnetic field regulator
	TCXS 113 1,000*1,000 mm magnetic field coil
	TCXH 1110 1,000*1,000 mm magnetic field coil, Helmholtz
	VMT 2216SV 220 V, 16 A, incl. voltage variation
	VMT 2216S 220 V, 16 A, excl. voltage variation

Large Power Frequency Magnetic Field Interference Simulator Test System MFS 1200AS2250 / MFS 40000

IEC/EN 61000-4-8

	MFS1200AS2250	MFS 40000
Magnetic field strength	1-100 A/m (continuous), 100-1200A/m for 1-10 s (1*1m rectangular coil TCXS1125) 1-100 A/m (continuous), 100-1000A/m for 1-10 s (2*2m rectangular coil TCSX2250)	200-10000 A/m (continuous), 10000-40000A/m for 1-10 s (0.5m diameter rounded coil TCXSD05370)
Current Waveform	50 Hz/60 Hz Sinusoid	50 Hz/60 Hz Sinusoid
Current distortion	< 5%	< 5%
Waveform interval time	1-9999 s	1-9999 s
Test duration	1-28800 s	1-28800 s
Field coil size	2000*2000 mm, 1000*1000 mm	Diameter 500 mm
Coil parameters	TCXS1125 1320 x 180 x 1040 mm (1 A/m-1200 A/m) TCXS2250 2340 x 2060 x 300mm (1 A/m-1000 A/m)	TCXSD05370 Diameter 500 mm (200 A/m-40000 A/m)

Variable-Frequency Magnetic Field Immunity Simulator MFS AP Series

IEC/EN 61000-4-8

Max.output value of simulator	± 60 V, ± 30 A	
Magnetic field strength	TYX 130 (0-300 A/m 0-240 Hz)	
	TYX 150 (0-500 A/m 0-65 Hz)	
	TYX 180 (800 A/m 0-65 Hz)	
	TFX 180 (0-800 A/m 0-65 Hz)	
	TYX 1100 (0-1000 A/m 0-50 Hz)	
Magnetic field frequency	Adjustable frequency, 400Hz can be customized	
External synchronous phase	0-360°, set resolution to 0.1°	
Current distortion	< 5%	
Field coil	Magnetic coil or Helmholtz coil Rectangular coil (1 m × 1 m) or round coil (φ 1 m)	
Optional Accessories	Magnetic coil	Helmholtz coil
	TYX 130 (300 A/m)	TYXH 130 (300 A/m)
	TYX 150 (500 A/m)	TYXH 150 (500 A/m)
	TYX 180 (800 A/m)	TYXH 180 (800 A/m)
	TFX 180 (0-800 A/m)	TYXH 1100 (1000 A/m)
	TYX 1100 (1000 A/m)	

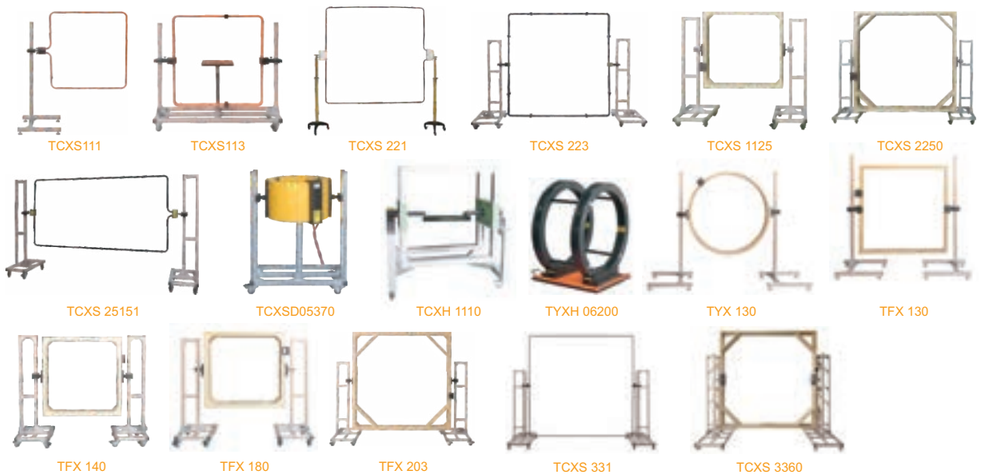
DC Magnetic Field Disturbance Simulator MFS 1000D

BS EN 12895: 2015

Magnetic field strength	1 A/m-1000 A/m
Current distortion rate	< 8%
Pulse interval	1 s-9999 s
Test duration	1 A/m-100 A/m: continuous from 1 s to 28,800 s
	≥ 100 A/m: continuous for 10 s
Triggering mode	Automatic, manual or external signal triggering
Coil size	3000 mm * 3000 mm
Coil shape	Rectangular
Test direction	90°/180°
Coil turns	60-turn
Optional accessories	TCXS 3360

Magnetic Field Coil Series TCXS / TCXH / TYX / TFX Series

IEC/EN 61000-4-8/-9/-10 ISO 11452-8



Model	Magnetic Field Strength	Magnetic Field Direction 90°/180°	Test Time	Number of turns	Coil Size
TCXS 111	1A/m-400A/m 1.26uT-504μT	√	≤100A/m for 8 hours ＞100A/m for less than 10s	Single	1000*1000mm
TCXS 113	1A/m-1200A/m 1.26uT-1512μT	√	≤400A/m for 8 hours ＞400A/m for less than 10s	Three	1000*1000mm
TCXS 221	1A/m-400A/m 1.26uT-504μT	√	≤100A/m for 8 hours ＞100A/m for less than 10s	Single	2800*2000mm
TCXS 223	1A/m-300A/m 1.26uT-378μT	√	≤100A/m for 8 hours ＞100A/m for less than 10s	Three	2000*2000mm
TCXS 1125	1A/m-1200A/m 1.26uT-1512μT	√	≤400A/m for 8 hours ＞400A/m for less than 10s		1320*1040mm
TCXS 2250	1A/m-1200A/m 1.26uT-1512μT	√	≤400A/m for 8 hours ＞400A/m for less than 10s		2340*2060mm
TCXS 25151	1A/m-50A/m 1.26uT-63μT	√	≤50A/m for 8 hours		2500*1500mm
TCXS 331	1A/m-30A/m 1.26uT-37.8μT	√	for 8 hours		3600*3050mm
TCXS 3360	1 A/m ~ 1000 A/m	√	≤100A/m for 8 hours ＞100A/m for 10s	60-turn	3000*3000mm
TCXSD05370	1A/m-40000A/m 1.26uT-50400μT	√	Always operation	Multi-turn	Diameter 500mm
TCXH 1110	1A/m-1200A/m 1.26uT-1512μT	√	1-100A/m always operation (1-400A/m is available for selection) 100-1000A/m for 1-10s	Multi-turn	1000*1000mm
TFX 130	0-300A/m 2uT-370μT	√	Always operation	Multi-turn	1000*1000mm
TFX 140	1-400A/m 1.26uT-504μT	√	Always operation	Multi-turn	1000*1000mm
TFX 180	0-800A/m 1.26uT-1008μT	√	Always operation	Multi-turn	1040*1040mm
TFX 203	1-30A/m 1.26uT-37. 8μT	√	Always operation	Multi-turn	2000*2000mm
TYX 130	0-300A/m 2uT-370μT	√	Always operation	Multi-turn	Diameter 1000mm
TYXH 06200	(max. magnetic field strength) 2100A/m @ 55A, 5min (standard magnetic field strength) 1260A/m@ 33A, continuous			32-turn	Diameter 600mm
TYXH 06400	(max. magnetic field strength) 4260A/m @ 30A, 5min (standard magnetic field strength) 2856A/m@ 20A, continuous			102-turn	Diameter 600mm

Single Phase Power Fail Simulator PFS 11XXX Series/22XXX Series

IEC/EN 61000-4-11/-29

EUT max. Voltage	AC 250V 50Hz-60Hz, DC 300V (PFS 22xxSD, PFS 22xxSVD series)
EUT max. Current	PFS 2216SD, PFS 2216SVD: 16A AC/DC continuous current; 20A for 5s; 40A for 3s; PFS 2210SVD, PFS 2210SVD: 10A AC/DC continuous current; 12A for 5s; 25A for 3s;
EUT current and voltage measurement	BNC terminal: voltage 100:1, current 10A:1V
Interrupt level	0%
Dips level	0%-100%
Repetition rate for dips and interruption	0.3-9999 cycle or 1ms-9999ms
Duration for dips and interruption	50ms-50000ms
Test time for dips and interruption	1s-9999s
Rise and fall time for dips and interruption	Generator rated current ≤75A: 1-5μs (standard resistance calibration) Generator rated current ＞75A: 1-50μs (standard resistance calibration)
AC voltage variation level	0-100%
Time for reduced AC voltage	10ms-99999ms
DC voltage variation level	0-120%
Repetition rate for DC voltage variation	1ms-99999ms
Duration for DC voltage variation	50ms-50000ms
Synchronization	0°- 360°, 1° step or random
Trigger mode	Automatic, manual or external
Optional function	Voltage variation and 2 d.c. power supplies are optional.

Peak Inrush Current Capability

Model	Peak Inrush Current Capability	Model	Peak Inrush Current Capability
PFS 1110D	24V/50A, 48V/100A, 110V/220A	PFS 2210SD	500A
PFS 1120D		PFS 2210SVD	
PFS 1125D		PFS 2216SD	
PFS 1130D		PFS 2216SVD	
PFS 1150D		PFS 2232SD	
PFS 2210D		PFS 2232SVD	
PFS 2225D		PFS 0505D	24V/50A, 48V/100A
PFS 2250D		PFS 0510D	

Generator with EUT rated less than 16A

Model	Peak Inrush Current Capability	Model	Peak Inrush Current Capability
PFS 2210SD	12V AC/DC continuous current 15A for 5s; 25A for 3s	PFS 2216SD	18V AC/DC continuous current 20A for 5s; 40A for 3s
PFS 2210SVD		PFS 2216SVD	

Three-phase Power Fail Simulator PFS 38XXX Series/69XXX Series

IEC/EN 61000-4-11/-34

EUT max. input voltage	Three-phase:
	420 V AC, 50/60 Hz±5% (PFS 38xxxx series),
	DC 300 V is optional
	480 V AC, 50/60 Hz±5% (PFS 45xxxx series),
	DC 300 V is optional
	720 V AC, 50/60 Hz±5% (PFS 69xxxx series),
	DC 300 V is optional
EUT max. continuous current	12 A (PFS xx10xxx series) 18 A (PFS xx16xxx series)
	33 A (PFS xx30xxx series) 55 A (PFS xx50xxx series)
	80 A (PFS xx75xxx series) 110 A (PFS xx100xxx series)
	220 A (PFS xx200xxx series)
Peak Inrush Current Capability	500 A (for product current ≤50 A)
	1000 A (for product current >50 A)
Protection	Built-in over current, short circuit, over voltage, over
	heat, surge, burst, ESD protection
	Other protection accessories for LINE IN and Line
	OUT are optional
Interruption level	0%
Voltage interruption mode	one phase, two-phase or three-phase
Dips level	0%-100%
Voltage dips mode	Line to neutral & Line to line
	PFSxxxxT1: IEC 61000-4-34: Figure 3a, 3b
	PFSxxxxT3: IEC 61000-4-34: Figure 3a, 3c
Repetition rate for Dips and interruption	0.3-9999 cycle or 1 ms-9999 ms (Models with suffix D are 1ms)
Duration for dips and interruption	50 ms-50000 ms
Test time for dips and interruption	1 s-9999 s
Rise and fall time for Dips and interruption	Generator rated current ≤ 75 A: 1-5 μs (standard resistance calibration)
	Generator rated current >75 A: 1-5 μs (standard resistance calibration)
Voltage variation level	0-100% (only for PFS 3810T1V)
Time for reduced voltage	10 ms-99999 ms (only for PFS 3810T1V)
Synchronization	0°- 360°, 1° step or random
Trigger mode	Automatic, manual, or external

Peak Inrush Current Capability

Peak Inrush Current Capability		Load Capacity for Equipment ≤16 A as per IEC 61000-4-11	
Rated Current	Peak Inrush Current Capability	Model	Load Capacity
≤ 50 A	500 A	PFS 3810T1	10 A AC/DC continuous current; 15 A lasts for 5 s; 25 A lasts for 3 s;
50 A-100 A	1000 A	PFS 3810T1V	
>100 A	>1000 A	PFS 3816T1	16 A AC/DC continuous current; 20 A lasts for 5s; 40 A lasts for 3 s;
		PFS 3816T1V	

Calibration Device of Peak Impulse Current PIC 1134

IEC 61000-4-11/29/34

Drive Capacity of Peak Impulse Current (No Requirement on Voltage Variation)	Max 500 A (power source: 220 V-240 V)
	Max 250 A (power source: 10 V-120 V)
Capacitance	1700 μf
Discharge resistance	4700 Ω
Current monitor	100 A: 1 V

Calibration Impedance R25/50/100 Ω
Adjustable Calibration Resistor Box R/1-16 Ω/1134

IEC 61000-4-11/34

	Impedance [Ω]	Accuracy [%]	Power [W]	Rated Current [I]
R100 Ω/1134	100	±10%	2000	≤50 A
R50 Ω/1134	50	±10%	3000	50 A< I≤ 100 A
R25 Ω/1134	25	±10%	6000	> 100 A
R/1-16/1134	1-16 Ω (adjustable)	--	4000	--

Anual Transformer VVT 2216SFM

IEC 61000-4-11

Operating voltage	AC 220 V (±10%), 50 Hz/60 Hz
Operating current	16 A
Dips and interruptions level	100%、80%、70%、40%、0%
Dimension	330 mm×335 mm×160 mm (L*W*H)

Direct-Current Power Failure Simulator PFS D Series

IEC 61000-4-29

VOLT DROP	PFS 0505D	PFS 0610D
Rated voltage	1-50 V, 0.1V step	1-60 V, 0.1V step
Max. Output current (steady state)	⩽5 A	⩽10 A
Voltage dips/surge voltage	0-120%	
Voltage dips/surge duration	0.1 ms-59.999 s	
Voltage rise/fall time	<50 μs (generator loaded with 100 Ω resistive load)	
Time intervals	0.1 s-99 s	
Measuring accuracy	Voltage：1%±0.1 V；Current：1%±0.1 A	
Overshoot / undershoot Of the output voltage	Less than 5 % of the change in voltage (generator loaded with 100 Ω resistive load)	
Ripple content	Less than 1% of the output voltage	
Load adjustment rate	Output voltage variation with the load (0 to rated current) < 5%	
Output impedance during A short interruption	＞100 kΩ	
SLOW SLOPES		
U1 voltage	1-50 V, 0.1V step	1-60 V, 0.1V step
U2 voltage	0-50 V, 0.1V step	0-60 V, 0.1V step

DC Power Failure Simulator PFS D Series

IEC 61000-4-29

Voltage dips/surge voltage	0-120%
Duration time for voltage dips and short interruptions	1 ms-99999 s
Interval time for voltage dips and short interruptions	50 ms-50000 ms
Testing time	1s-9999 s
Counter	1-9999
Voltage rise/fall time	<50 μs (generator loaded with 100 Ω resistive load)
Overshoot / undershoot of the output voltage	Less than 10 % of the change in voltage (generator loaded with 100 Ω resistive load)
Ripple content	Less than 1% of the output voltage
Load adjustment rate	Output voltage variation with the load (0 to rated current) < 5%
Output impedance during a short interruption	＞100 kΩ

Model Selection Guide

PFS 1130D	rated voltage DC 110 V, 30 A
PFS 1150D	rated voltage DC 110 V, 50 A
PFS 2205D	rated voltage DC 220 V,5 A
PFS 3016D	rated voltageDC 300 V, 16 A
PFS 4525D	rated voltage DC 450 V, 25 A
PFS 10010D	rated voltage DC 1000 V, 10 A
PFS 10075D	rated voltage DC 200 V - 1000 V, 75 A

Ring Wave Simulator RWS 600

IEC/EN 61000-4-12 ANSI/IEEE C62.41

Output voltage for open circuit (PK1)	0.25 kV-6.0 kV (± 10%) (up to 7.0kV)
Oscillatory frequency for open circuit voltage	100 kHz±10%
Front time for open circuit voltage (T1, 10% – 90%)	0.5 μs±30% at P_{K1}
Decay ratio for open circuit voltage	40% < (P_{K2}) / (P_{K1}) < 110%
	40% < (P_{K3}) / (P_{K2}) < 80%
	40% < (P_{K4}) / (P_{K3}) < 80%
Front time for shot circuit current (T2, 10% – 90%)	⩽1 μs at P_{K1}
shot circuit current (P1) @ open circuit voltage (PK1) is 6000 V	500 A±10% at 12 Ω; 200 A±10% at 30 Ω
Output impedance	12 Ω， 30 Ω automatic switch
Coupling network	Built-in three-phase AC automatic CDN
	AC 380 V，16 A Max: AC 450 V

Ring Wave Simulator with External CDN RWS 600GUL/RWPN 6916T

IEC/EN 61000-4-12 UL 60730-1

	RWS 600GUL
Output voltage for open circuit (PK1)	0.25 kV-6.0 kV (± 10%) (up to 7.0kV)
Oscillatory frequency for open circuit voltage	100 kHz±10%
Front time for open circuit voltage (T1, 10% – 90%)	0.5 μs±30% at P_{K1}
Decay ratio for open circuit voltage	40% < (P_{K2}) / (P_{K1}) < 110%
	40% < (P_{K3}) / (P_{K2}) < 80%
	40% < (P_{K4}) / (P_{K3}) < 80%
Front time for shot circuit current (T2, 10% – 90%)	⩽1 μs at P_{K1}
shot circuit current (P1) @ open circuit voltage (PK1) is 6000 V	1200 A±10% at 5 Ω; 218 A±10% at 27.5 Ω
Output impedance	5 Ω， 27.5 Ω automatic switch
Coupling network	See SPN series on page 15.

Damped Oscillatory Wave Simulator DOS 300

IEC 61000-4-10/-18 IEC 255-22-1

IEC 61000-4-18 Slow Damped Oscillatory Waveform

Test voltage	0.2 kV-3.3 kV , ± 10% （source port）
Polarity	Positive, negative
Source impedance	200 ohm ± 20%
Rise time	75 ns ± 20%
Repetition frequency	1-500 Hz, adjustable
	100 kHz （1~50 Hz）;
	1 MHZ （1 ~ 500 Hz, note: calibration frequency is 400 Hz）
Oscillation frequency	100 kHz，1 MHz ±10%
Decay rate	P_{k5} > 50% of P_{K1} value，P_{K10} < 50% of P_{K1} value
Burst duration	1-99 s
Burst interval	1-99 s
Number of repetition	1-999
Trigger mode	Auto, manual, external trigger
Sync	0°-360°, 1° step or random mode
Cdn	Built-in 3-phase A.C. / D.C automatic CDN
	AC 380 V 16 A / 440 V 32 A / 690 V 100 A
	DC 400 V 16 A / 1000 V 32 A / 1000 V 100 A
Option	CDN 418 series coupling / decoupling networks
	CDN 418AF8 Pulse voltage: 4 kV,Max. current: 1 A Coupling mode: capacitor coupling
	CDN 418T8 Pulse voltage: 4 kV,Max. current: 1 A Coupling mode: capacitor coupling
	CDN 418T8G Pulse voltage: 4 kV,Max. current: 1 A Coupling mode: GDT coupling
	CDN 418T8T Pulse voltage: 4 kV,Max. current: 1 A Coupling mode: TVS coupling
	CDN 418AFL8 Pulse voltage: 4 kV,Max. current: 1 A Coupling mode: capacitor coupling

IEC 61000-4-10 Damped Oscillatory Magnetic Field (Optional function)

Test current	5 A -120 A ± 10%
Polarity	Positive, negative, first positive then negative
Repetition frequency	1-500 Hz adjustable
	100 kHz (1-50 Hz)
Oscillation frequency	100 kHz，1 MHz ± 10%
Decay rate	PK5 > 50% of PK1 value，PK10 < 50% of PK1 value
Burst duration	1-99 s
Burst interval	1-99 s
Number of repetition	1-999
Option	Magnetic Field Coil TCXS 111
	Magnetic Field Strength 1 A/m-400 A/m
	Test Duration 5 h（magnetic field strength ≤ 100 A/m）
	< 10 s（magnetic field strength > 100 A/m）

Fast Damped Oscillatory Wave Simulator DOS 400F

IEC 61000-4-18 IEC 255-22-1

Test voltage	500 V-4 kV, ±10%
Polarity	Positive, negative
Rise time of voltage waveform	5 ns ±30%
Oscillatory frequency	3 MHz / 10 MHz / 30 MHz ±10%
Attenuation	Peak 5 > 50% of peak 1, Peak 10 < 50% of peak 1
Repetition frequency	Max.5000/s ±10%
Burst duration	50 ms±20%@3 MHz，15 ms±20%@10 MHz
	5 ms±20%@30 MHz
Burst period	300 ms±20%
Short circuit current	10-80 A±20%
Rise time of current waveform	3 MHz < 330 ns，10 MHz < 100 ns，30 MHz < 33 ns
Attenuation	Peak 5 > 25% of Peak 1, Peak 10 < 25% of peak 1
Trigger mode	Auto, manual and external
CDN	Built-in three phase CDN
	AC 380V 16A Max: AC 450V DC 300V 16

Coupling / Decoupling Network for Communication Lines CDN418 Series

IEC 61000-4-18

CDN 418AFL8

CDN 418TH8

CDN 418T8/T8G/T8T

Technical parameters		CDN 418AFL8	CDN 418TH8	CDN 418T8	CDN 418T8G	CDN 418T8T
Coupling wave	Damped oscillatory waveform	√	√	√	√	√
Coupling mode	AF: asymmetric line	√				
	T: symmetric line		√	√	√	√
Coupling component	SCD 90 gas discharge tube	√	√	√		
	GDT coupling				√	
	TVS coupling					√
Transmission rate	5 Mbit/s	√		√	√	√
	1000 Mbit/s		√			
Communication frequency	< 5 MHz	√		√	√	√
	10 MB, 100 MB, 1000 MB		√			
Working current	1A	√	√	√	√	√
Working voltage	Max. 12 V DC	√				
	Max. 250 V DC		√			
Pulse voltage	4 kV (6 kV can be customized)	√	√	√	√	√

Common-mode/Differential-mode Conducted Disturbances Simulator CDS 300

IEC/EN 61000-4-16/-19 IEC/EN 60255-22-7

	Common mode disturbances test continuous mode	short-term mode
Power frequency	DC, $16^{2/3}$ Hz, 50 Hz, 60 Hz	DC, $16^{2/3}$ Hz, 50 Hz, 60 Hz
Open circuit voltage	1 V(-10%)-30 V(+10%)	10 V(-10%)-330 V(+10%)
Signal level	(0.1-30) V (r.m.s.) or DC	(1-330) V (r.m.s.) or DC
Test level 1	1 V, continuous	10 V, continuous for 1s
Test level 2	3 V, continuous	30 V, continuous for 1s
Test level 3	10 V, continuous	100 V, continuous for 1s
Test level 4	30 V, continuous	300 V, continuous for 1s
Output impedance	50 Ω ± 10%	50 Ω ± 10%
Total harmonic distortion	< 10%(sinusoidal)	< 10%(sinusoidal)
Dc ripple	< 5%	< 5%
Phase sync	– –	0° ± 5%
Fall/rise time	– –	1 μs-5 μs

Output parameter for 15 Hz-165 KHz

Power frequency	10 Hz-165 KHz
Signal level	0.1-30 V (r.m.s.)
Test level 1	1 V-0.1 V-1 V
Test level 2	3 V-0.3V-3 V
Test level 3	10 V-1 V-10 V
Test level 4	30 V-3 V-30 V
Output impedance	50 Ω ± 10%
Total harmonic distortion	< 1%(sinusoidal)

	Differential Mode Voltage Disturbances Test	Differential Mode Current Disturbances Test
Frequency range	2 kHz-150 kHz	2 kHz-150 kHz
Load impedance	10 Ω ± 30%	1 Ω ± 0.3 Ω
Open circuit voltage	0.1 V(-10%)-20 V(+10%)	– –
Waveform	Sinusoidal, Total Harmoni Distortion (THD) <5%	– –
Max. current	– –	5 A
BNC output	– –	10:1(0.1 V/A)

Coupling Network (optional) - IEC/EN 61000-4-16

CN 416M2 / M3 - 32

CN 416M4N - 32

CN 416M5 - 32

CDN 416T2 / T4 / T8

Optional Model	Coupling Frequency	Line Impedance	Coupling Voltage	Coupling Mode	Working Voltage	Working Current
CN 416M2/M3-32	0 Hz-150 kHz continuous wave	M2/200Ω*2 M3/300Ω*2	300 V	single-phase 2-line or 3-line common mode (line to ground)	400 V AC 400 V DC	32 A
CN 416M4N-32		400 Ω*4		three-phase 4-line common mode (line to ground)		
CN 416M5-32				three-phase 5-line common mode (line to ground)		
CDN 416T2	DC/15 Hz-150 kHz continuous wave	200 Ω*2		2 line common mode (line to ground)	150 V AC 200 V DC	0.5 A
CDN 416T4		400 Ω*2	50 V	4 line common mode (line to ground)		
CDN 416T8		800 Ω*2		8 line common mode (line to ground)		
Isolation transformer	Select single or three phase isolation transformer as per IEC/EN 61000-4-16.					

Coupling/Decoupling Networks for Immunity to Conducted, Differential Mode Disturbances

	CDN 419M3-32	CDN 419M4N-32
Coupling frequency	2 kHz-150 kHz, continuous wave	
Coupling voltage	30 V	
Coupling mode	2-line/3-line differential-mode (L-N)	4-line (line-to-line) differential-mode
Coupling component	12 μF Capacitor	
Working voltage	250 V AC + DC	
Working current	Max.32A	

Coupling Networks CN14598-19

Coupling wave	Frequency voltage wave, lasting at least 10s
Coupling mode	Resistance and capacitance coupling, common mode and differential mode in two forms
Coupling component	100Ω/0.047uF, 100Ω/0.1uF, 220Ω/0.47uF, resistance and capacitance module, external
Working voltage	Max. 100V DC (100Ω/0.047uF) Max.150V DC (100Ω/0.1uF) Max. 300V DC (220Ω/0.47uF)

Balanced/unbalanced impedance converter Balun 50/10

Frequency	1 kHz-1 MHz
Ratio	1:2.25
Impedance ratio	1:5
Insertion loss	0 dB
Max. unsaturated voltage	30 V

Differential mode voltage test module R419-10 10 Ω ± 10%

Differential mode current test module RJJF-100 100 Ω

Differential mode current test module WCT 20

Frequency range	2 kHz-150 kHz
Max. current	5 A
Max. voltage	< 22 V
Impedance	1 Ω ± 0.3 Ω

Differential-Mode Conducted Disturbances Simulator DMS 200

IEC/EN 61000-4-19 IEC/EN 60255-22-7 JJF 1245.4-2019

	Differential mode voltage interference test	Differential mode current interference test
Frequency range	2kHz-150kHz	2kHz-150kHz
Load impedance	10Ω±30%	1Ω±0.3Ω
Waveform	Sinusoidal, Total Harmonic Distortion (THD) <5%	– –
Open-circuit voltage	0.1V-20V	– –
Max. current	– –	5A
BNC output	– –	10:1 (0.1V/A)

Options

Differential-mode current test module WCT 20

Frequency	2kHz-150kHz
Max. current	5A
Max. voltage	＜ 22V
Impedance	1Ω±0.3Ω

Coupling/decoupling network CDN 419M3-32

EUT voltage	Single-phase 3 lines, 32A, 250V AC/DC
Frequency	2kHz-150kH

Coupling/decoupling network CDN 419M4N-32

EUT voltage	Three-phase 4 lines, 32A, line-to-ground 250V AC/DC
Frequency	2kHz-150kH

Balanced/unbalanced impedance converter Balun50/10

Characteristic impedance	50Ω/10Ω
Frequency	2kHz-150kHz
Max. output voltage	400V

Differential-mode current test module RJJF-100

100 Ω（Current Range: 10mA-300mA）

Differential-mode voltage test module R419-10

Test matching module,10 Ω

Full Automatic Impulse Current Simulator
S6/S10/S15/S16/S20/S30 Series

IEC 61643-11 IEC 61312-1

S6xxx Series

PCC10000 & S6C3000

S10/15/20/30xxx Series

S16xxx Series

Technical parameters

Model		Test Current	Charging Voltage	Output Waveform					Output Impedance
				4/10μs	8/20μs	10/1000μs	10/350μs	20/50μs	
S6B Series	S6B600	0.1kA-6.6kA	6.6 kV	√					1Ω
S6C Series	S6C350	0.1kA-3.5kA	170V-6 kV		√				1.7Ω
	S6C700	0.1kA-7kA	86V-6 kV		√				0.86Ω
	S6C1000	0.1kA-10kA	52V-6 kV		√				0.52Ω
	S6C2000	0.2kA-20kA	52V-6 kV						0.26Ω
	PCC 10000 & S6C3000	0.25kA-30kA	6 kV		√				0.2Ω
	S6C4000	0.4kA-40kA	52V-6 kV		√				0.13Ω
S6D Series	S6D02	1A-20A	1 kV-6 kV			√			300Ω
S10A Series	S10A250	0.25kA-2.5kA	1 kV-10 kV				√		4Ω
	S10A500	0.5kA-5kA	1 kV-10 kV				√		2Ω
	S10A1000	1kA-10kA	1 kV-10 kV				√		1Ω
S10C Series	S10C2000	1kA-20kA	0.5 kV-10 kV		√				0.5Ω
	PCC 10000 & S10C2000	0.5kA-22kA	10 kV		√				0.5Ω
	S10C4000	2kA-40kA	0.5 kV-10 kV		√				0.25Ω
	S10C6000	3kA-60kA	0.5 kV-10 kV		√				0.166Ω
	S10C8000	4kA-80kA	0.5 kV-10 kV		√				0.166Ω
S10D Series	S10D50	0.01kA-0.5kA	1 kV-10 kV			√			20Ω
	S10D100	0.01kA-1kA	1 kV-10 kV			√			10Ω
S15C Series	S15C5000	2kA-50kA	0.5 kV-15 kV		√				0.3Ω
	S15C7500	2kA-75kA	0.5 kV-15 kV		√				0.2Ω
S16C Series	S16C4000	0.5kA-40kA			√				0.4Ω
S20C Series	S20C4000	1kA-40kA	0.5 kV-20 kV		√				0.5Ω
	S20C7000	5kA-70kA	1450V-20 kV		√				0.285Ω
	S20C10000	5kA-100kA	1 kV-20 kV		√				0.19Ω
S20D Series	S20D200	200A-2000A	1 kV-20 kV			√			10Ω
S30C Series	S30C6000	1kA-60kA	0.5 kV-30 kV		√				0.5Ω
	CSG2050	20kA						√	

Impulse Voltage Simulator VSG 255 Series

IEC/EN 60255-5/-27

	VSG 255-6	VSG 255-12
Test voltage	0.5 kV, 1 kV, 1.5 kV, 2.5 kV, 4 kV, 5 kV, 6 kV ±10%	6 kV, 8 kV, 10 kV, 12 kV ±10%
Waveform	1.2 μs±30%, 50 μs±20%	1.2 μs±30%, 50 μs±20%
Output impedance	500 Ω ±5%	500 Ω ±5%
Stored energy	0.5 J±10%	0.5 J±10%

Impulse Voltage Simulator VSG 335/VSG 335(xxx)/950/1200H

VSG 335/VSG 335(xxx):
IEC 61180-1 IEC 61180-2 IEC 60335-1
VSG 950: IEC 60065 IEC 60950-1
VSG 1200H: IEC 60060-1
VSG 950(10AA): IEC 60065 IEC 62368.1 IEC 60950-1

VSG 335(40BC)

VSG 950(10AA)

VSG 335 / 950 / 1200H

VSG 335(xxx)

Model No.	Test voltage	Voltage waveform	Inner impedance	EUT Breakdown alarming current	Polarity
VSG 335 Series	0.5 kV-12 kV, ±10%、1 kV-20 kV, ±10%、3 kV-30 kV, ±10%	1.2 μs ± 30%、50 μs ± 20%	12 Ω, 40 Ω, 500 Ω	300 mA-1200 mA	Positive, negative, first positive and then negative
VSG 335(20CAC)	1 kV-20 kV±10%		12 Ω、500 Ω		
VSG 335(30BC)	3 kV-30 kV±10%		500 Ω		
VSG 335(40BC)	4 kV-40 kV±10%		500 Ω		
VSG 950	0.5 kV-12 kV, ±10%、1 kV-20 kV, ±10%、3 kV-30 kV, ±10%		40 Ω, 1000 Ω		
VSG 1200H	12 kV±10%		37.5 Ω ±10%		
VSG 950(10AA)	Test voltage	Voltage step	Output impedance	Capacitance	
	1 kV-10 kV, ±10%	100 V	1000 Ω	1000 pF	

Voltage Pulse Generator SG 384G

IEC 384-14 IEC 255-5

Test voltage	1 kV-15 kV±10%
Voltage waveform	Front time: 1.2 μs ± 30%
	Time to half-value: 50 μs ± 20%
Source impedance	500 Ω ± 10%
Cx≤0.0039μF	Rs=62 ohm ± 10% automatic switch
0.0039μF<Cx≤0.012μF	Rs=45 ohm ± 10% automatic switch
0.012μF<Cx≤0.018μF	Rs=27 ohm ± 10% automatic switch
Cx=0.01μF ± 2%	Tr: 1.7 (0/+50) % μs
	Td: 46 (0/+50) % μs
Polarity	positive/negative
Pulase cycle	10 s-99 s (The minimum time depends on the test voltage)
Counter	1-999
Trigger mode	Automatic, manual and external
Voltage peak detection	Measurement value displayed on screen

Power Line Interference Generator YD-993G

YD-T 993-2006 ITU-T K.21/.44

Voltage Range	0.2-1.5 kV
Injection Time	0.1s-30 min
Counter	1-999
Test Interval	1-99 s
Test Mode	Inductance Mode/Contact Mode
Inductance Mode Impedance	200 Ω/600 Ω, Output energy > 10A²S
Contact Mode Impedance	10 Ω±10%, 20 Ω±10%, 40 Ω±10%, 80 Ω±10%, 160 Ω±10%, 300 Ω±10%, 600 Ω±10%, 1000 Ω±10%
CDN Capacity	Single-phase 3-wire, AC 220 V 16 A

Photovoltaic Impulse Voltage Generator PVSG 2500

IEC 60060-1 IEC 62109-1

Test voltage	500 V-25 kV ±3%
Voltage waveform	Front time：1.2 μs±30%
	Time to half value：50 μs±20%
Source impedance	< 2 ohm, 500 ohm
Polarity	Positive, negative, alternative
Pulse cycle	5 s-9999 s depends on voltage
Counter	1-9999 can be set
Trigger Mode	Manual, Auto, External Trigger, CRO trigger
Measurement	Monitor via coaxial port on front panel: 10 V@25 kV
EUT breakdown alarm current	100 mA-1200 mA

Photovoltaic Impulse Voltage Generator PVSG 3000

IEC 60060-1 IEC 61730-1 IEC 61730-2

Test voltage	2 kV-30 kV±3% calibration voltage 4 kV/8 kV
	(depends on load capacitance)
Voltage waveform	rise time：1.2 μs±30%
	duration：50 μs±20%
Waveform forming network	Depends on load capacitance
Capacitance range	11 capacitance ranges selectable from 20nF to 170nF
	20 nF-25 nF, 22.5 nF±3%
	25 nF-30 nF, 27.5 nF±3%
	30 nF-35 nF, 32.5 nF±3%
	35 nF-40 nF, 37.5 nF±3%
	40 nF-50 nF, 45 nF±3%
	50 nF-60 nF, 55 nF±3%
	60 nF-75 nF, 67.5 nF±3%
	75 nF-95 nF, 85 nF±3%
	95 nF-115 nF, 105 nF±3%
	115 nF-140 nF, 127.5 nF±3%
	140 nF-170 nF, 155 nF±3%
Polarity	Positive, negative
Pulse cycle	8 s-9999 s depends on voltage
Counter	1-9999 can be set
Trigger Mode	Manual, Auto, External Trigger, CRO trigger
Measurement	Monitor via coaxial port on front panel：10 V@30 kV
Display	Touch screen display maximum voltage：30000 V
Undervoltage protection	Test stops when the voltage does not reach the set value

CoreLab

IMMUNITY TEST SOFTWARE

CoreLab

Corelab is 3CTEST's integrated test software for PC remote control over models such as CCS series, CWS series, DO160 series, and national military standard series. It brings great convenience to users during operations with pre-set test parameters, test sequencing and one-key automatic operations.

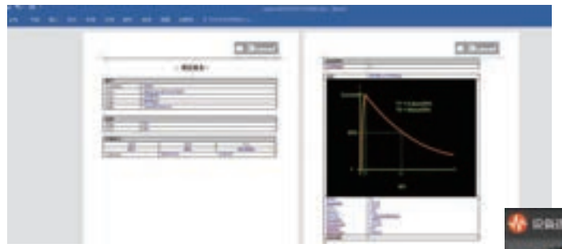
- Compatible with Windows 7, Windows 8 and Windows 10 operating systems;
- Support Ethernet interface and serial communication mode;
- Control over DO160 series（LSS 160SS, LSS 160MS, ETS 160MB and TPS-160S17）;
- Control over MIL-STD series（TPS-CS106, TPS-CS115, DOS-CS116）;
- Control over GJB series（PFS 181）;
- Control over generic test series （CCS/CWS series, CDS300, CMS 500/CMM 500, ADS 500, MFSxxAP, EDS 20H, etc.）;
- The waveform and standard library windows will have associated contents displayed by category according to the type of the added devices;
- Powerful test scheduling and test sequencing, one-click remote control;
- Automatic inspection, checking the status of connected devices and displays the automatic inspection diagnosis result;
- Pre-set test parameters for plenty test standards, analyze and calculate the data collected by the oscilloscope, and accurately display the parameter values;
- Automatic calibration function, monitoring the output voltage and current values from the oscilloscope and automatic adjusting such values if different from the standard test values,Test data recording, storage and processing;
- Test time, waveform name and subject information, etc. can be searched for in the test record query interface, and test reports can be generated accordingly with the selected items;
- Test setup management for calibration and testing. According to the selected mode of calibration or direct test, the corresponding test configuration diagram and required test accessories will be displayed.

- **Multi-window graphical UI**

  Each window with independent operation, waveform figure and parameters can be viewed at the same time.

- **Test scheduling, test sequencing, one-click testing**

  Multiple types of tests and multiple tests of one type can be added to a sequence, which can be run with one-click. Iterative testing of parameters can be realized, avoiding frequent parameter setting.



- **Intuitive device configuration and management interface, clear connection status**

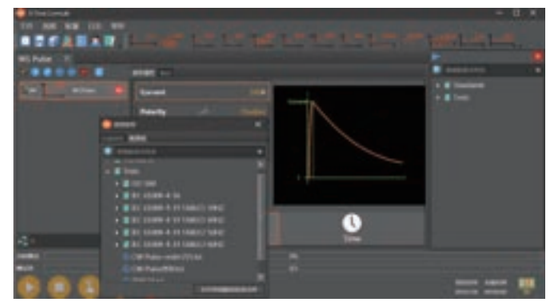
  All device information is displayed on a separate configuration interface, with connection status and online status of the devices.

- **Test report generation**

  Report header info. and test report template can be modifed. After the test, a report containing experimental data will be automatically generated. You can also generate a report at any time to record more information during the test.

- **Saving, loading and management of waveforms**

  Standard waveforms from the standard library or customized programmed waveforms can be saved and loaded. Users can customize the specified folder name for easy management and reuse.



MAS 3000

MEASUREMENT AND ANALYSIS SOFTWARE

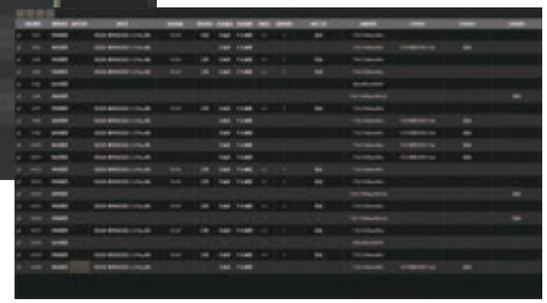
Measurement and Analysis Software – MAS3000

MAS3000 measurement and analysis software is specially designed for impulse voltage and impulse current test, which is capable of realizing on-line measurement display and professional analysis for lightning wave, operation wave and rectangular wave etc. on the basis of oscilloscope function. The MAS3000 can control multiple oscilloscopes and display all waveforms and data acquired from oscilloscopes, based on which, users could perform function operation and waveform combination.

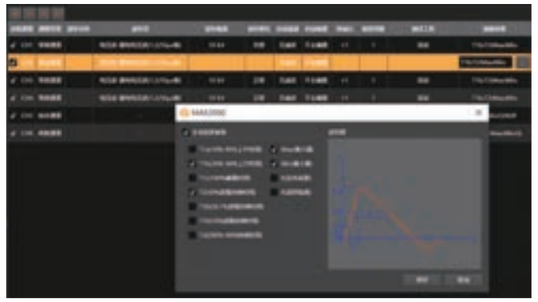
- Compatible with Windows XP / 7 / 8 / 10 OS;
- Unique UI design and intuitive operation;
- Supporting Ethernet RJ45 and serial port communication port;
- Oscilloscope of Tektronix series is used for waveform acquisition;
- Automatic saving test configuration, with uploading function;
- Record measurement result, with uploading function;
- Powerful waveform processing function and diverse filtering algorithms, with function of 1M, 0.5M, 0.2M low-pass filtering, digital average filtering, local filtering and lightning strike standard fitting algorithm processing;
- Save waveform into png./ bmp. format and make comparison with saved reference waveform.

3CTEST

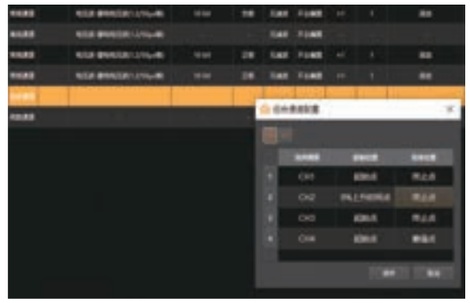
- Supporting multiple oscilloscopes simultaneously, real-time data acquisition.



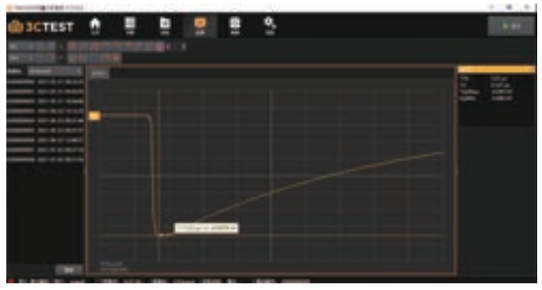
- Multiple oscilloscopes can be connected for waveform data acquisition simultaneously and real-time display



- Plenty of waveform computing function, including computing time waveform head and tail, peak value, waveform energy and duration etc.



- Function channel: energy computing of random combined waveform



- Feature point can be manually modified for peak value calculation to revise output result

- Combination channel: any channel waveform can be combined and jointed

LISN AR50 / J50 / J200 / J3000 / J3830 / ML500HVS

RTCA / DO 160 S20 & S22　RTCA / DO 160G　MIL - STD - 461E

LISN AR 50

LISN J50

LISN J200

LISN ML500HVS

LISN J3000

LISN ML 100S

LISN ML 600S

Options

Model	Standard	Test Voltage	Test Current	Max Short-time Current	Port	Inductance	Coupling Capacitance	Frequency Range
LISN AR 50	RTCA/DO-160 S20/S22	600 V DC 530 V 400 Hz 270 V 890 Hz	50 A	100 A	BNC type	5 μH	0.1 μF	0.01-400 MHz
LISN J50	MIL-STD-461E GJB 151B	500 V DC 250 V 50/60 Hz 135 V 400 Hz	50 A	75 A	N type	50 μH	0.25 μF	9 kHz-30 MHz
LISN J200	MIL-STD-461E GJB 151A/152B	500 V DC 270 V 50/60 Hz 135 V 400 Hz	200 A	300 A	N type	50 μH	0.25 μF	9 kHz-30 MHz
LISN J3000	MIL-STD-461E GJB 151B	6000 V (DC - 60 Hz)	3000 A (DC - 60 Hz)		N type	50 μH	0.25 μF	10 kHz-10 MHz
LISN ML500HVS	MIL-STD-461 GJB 151	1000 VDC 380 V 50 / 60 Hz	500 A		N type	50 μH	0.25 μF	9 kHz-30 MHz
LISN ML3000HVS	GJB 151B	> 10.5 kV	> 3150 A		N type			10 kHz-10 MHz
LISN ML 100S	MIL-STD-461 GJB 151B	500 V DC 300 V AC 50 Hz - 800 Hz	100 A		N type	50 μH	0.25 μF	9 kHz-30 MHz
LISN ML 600S	MIL-STD-461 GJB 151B	600 V DC 300 V AC 50 Hz - 800 Hz	600 A		N type	50 μH	0.25 μF	9 kHz-30 MHz

Balanced / Unbalanced High Frequency LISN　VHF - LISN BM3 - 16 / VHF - LISN NBM3 - 16

CISPR16 - 1 - 4 Ed.3.2

Frequency Range	30MHz-300MHz
Maximum AC voltage (line-to-ground)	250V
Maximum DC voltage (line-to-ground)	400V
Maximum current	16A
EUT Port type	4mm Banana (L / N / PE)
AE Port type	4mm Banana (L / N / PE)
Input impedance (EUT side)	
L line 30 MHz to 300 MHz	250Ω ± 20 %
N line 30MHz to 300 MHz	150Ω ± 20 %
PE line 30 MHz to 300 MHz	90Ω ± 20 %
Phase (EUT side L, N)	
30 MHz to 108 MHz	0 ± 11.5°
108 MHz to 300 MHz	0 ± 25.0°
Isolation (AE - EUT)	
30MHz to 300 MHz	> 40dB

Attenuator　A10

IEC 61000 - 4 - 5　IEC 61643 - 1

	A 10	A 10 - C
50Ω Attenuation	10 x	10 x
Input impedance	50Ω	75Ω
Output impedance	50Ω	75Ω
Input voltage	500 V (impulse signal)	
Maximum continuous voltage	< DC 5 V	
Frequency range	0 - 100 MHz	
Pulse compression	< 3000 V	
Accuracy of voltage measurement	⩽1%	

High-Voltage Differential Probe　VCF 80

IEC 61000 - 4 - 5

Attenuation	1000: 1
Measuring Accuracy	± 2% ± 5m VDC
Input Impedance	30 kΩ common-mode、60 kΩ differential-mode
Output Impedance	50Ω
Max Impulse Voltage	8 kV
-3 dB Bandwidth	8 MHz
Rise Time	40 ns
Response Time	30 ns
Output Terminal	Co-axial BNC connector
Operating Power	DC　24 V，1 A

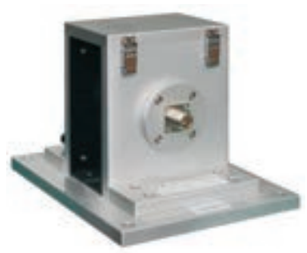
Current Injection Clamp BCIP-200/BCIP-400

MIL-STD-461E/F/G ISO 7637-3-2007/2016

	BCIP-200	BCIP-400
Frequency	10 kHz-200 MHz	4 kHz-400 MHz
Max. Input Power	100 w (Lasting for 30 min)	100 w (Lasting for 30 min)
	150 w (Lasting for 15 min)	150 w (Lasting for 15 min)
	200 w (Lasting for 5 min)	200 w (Lasting for 5 min)
Internal Diameter	40 mm	40 mm
External Diameter	127 mm	127 mm
Height	80 mm	70 mm
Weight	3.12 Kg	2.6 Kg

Calibration Fixture BCICF-200/BCICF-400/ WCMCF 500

MIL-STD-461E/F/G



	For Injection Probe		For Minitoring Probe
	BCICF-200	BCICF-400	WCMCF 500
Frequency	DC-200 MHz	DC-400 MHz	DC-500 MHz
Char. Impedance	50 Ω	50 Ω	50 Ω
VSWR	⩽2	⩽3.5	⩽4
Inner Diameter	– –	40 mm	40 mm
Inner Length	100 mm	94 mm	84 mm
Inner Width	127 mm	127 mm	290 mm
Inner Height	135 mm	133 mm	253 mm

Current Monitoring Probe TWCM-200/TWCM-500

MIL-STD-461E/F/G

	TWCM-200	TWCM-500
Frequency	1 kHz-200 MHz	1 kHz-500 MHz
Internal Diameter	40 mm	40 mm
Outside Diameter	127 mm	127 mm
Height	40 mm	40 mm
Transfer Impedance	5.6 Ω	5.6 Ω
	15 dB Ω	15 dB Ω
Connector Type	N type	N type
R-F Current	2 A	2 A
Pluse Current	100 A	100 A

Pulse transformer TPT-600 Series

MIL-STD-461F

	TPT-600-4	TPT-600-5	TPT-1200-1
Impulse Voltage (V)	600	600	600
EUT Load Capacity (A)	50	300	100
Dimension	210*160*165	450*250*185	450*250*185

Current Monitoring Probe CM 0220M/CM 0301M/CM 0302M/CM 0103M/CM 03203M

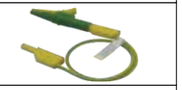
	CM 0220M	CM 0301M	CM 0302M	CM 0103M	CM 03203M
Sensitivity	0.01 V/A	0.001 V/A	0.001 V/A	0.1 V/A	0.002 V/A
Output impedance	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Max. Peak current	20,000 A	20,000 A	20,000 A	5,000 A	100,000 A
Max. Continuous current	150 A	400 A	520 A	50 A	150 A
Lower frequency (-3dB)	10 Hz	10 Hz	5 Hz	200 Hz	200 Hz
Higher frequency (-3dB)	20 MHz	1 MHZ	2 MHZ	20 MHZ	3 MHZ
Rise time	18 ns	350 ns	175 ns	18 ns	117 ns
Asecu	1 A·s	6 A·s	10 A·s	0.2 A·s	4 A·s
Internal Diameter	40 mm				
External diameter	116 mm				
Width	40 mm				
Interface form	BNC type				
Weight	1 kg				
Working temperature	0℃-65 ℃				

Reference Impedance LISN F 16A

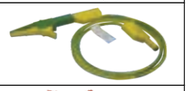
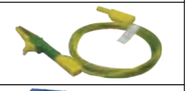
GB 17625.2-2007

Impedance values	0.24 Ω + jx0.15 Ω / 50 Hz
	0.16 Ω + jx0.1 Ω / 50 Hz
Voltage	AC 380 V (ph-ph) / 50 Hz
Current	16 A

Test Line (Made in Germany)

	Code Name	Specification	Picture
1	Material Code	CPK.FJ.X.L0CSX-015F-0001	
	Test Line	28.0124-01522 15F Red Double sheath	
2	Material Code	CPK.FJ.X.L0CSX-015F-0002	
	Test Line	28.0124-01521 15F Black Double sheath	
3	Material Code	CPK.FJ.X.L0CSX-040A-0001	
	Test Line	28.0124-04023+66.9755-23 40A Blue One end with sheath clip, one end sheath	
4	Material Code	CPK.FJ.X.L0CSX-040A-0002	
	Test Line	28.0124-04020+66.9755-20 40A yellow-green One end with sheath clip, one end sheath	
5	Material Code	CPK.FJ.X.L0CSX-040A-0003	
	Test Line	28.0124-04021+66.9755-21 40A Black One end with sheath clip, one end sheath	
6	Material Code	CPK.FJ.X.L0CSX-040A-0004	
	Test Line	28.0124-04022+66.9755-22 40A Red One end with sheath clip, one end sheath	
7	Material Code	CPK.FJ.X.L0CSX-040F-0001	
	Test Line	28.0124-04022 40F Red Double sheath	
8	Material Code	CPK.FJ.X.L0CSX-040F-0002	
	Test Line	28.0124-04021 40F Black Double sheath	
9	Material Code	CPK.FJ.X.L0CSX-040F-1001	
	Test Line	28.0124-04023 40F Blue Double sheath	
10	Material Code	CPK.FJ.X.L0CSX-040F-1002	
	Test Line	28.0124-04020 40F yellow-green Double sheath	
11	Material Code	CPK.FJ.X.L0CSX-050F-0001	
	Test Line	28.0124-05022 50F Red Double sheath	
12	Material Code	CPK.FJ.X.L0CSX-050F-0002	
	Test Line	28.0124-05021 50F Black Double sheath	
13	Material Code	CPK.FJ.X.L0CSX-050F-0003	
	Test Line	28.0124-05023 50F Blue Double sheath	
14	Material Code	CPK.FJ.X.L0CSX-050F-0004	
	Test Line	28.0124-05020 50F Yellow-green Double sheath	
15	Material Code	CPK.FJ.X.L0CSX-100F-0001	
	Test Line	28.0124-10022 100F Red Double sheath	
16	Material Code	CPK.FJ.X.L0CSX-100F-0002	
	Test Line	28.0124-10021 100F Black Double sheath	

Test Line (Made in Germany)

Number	Code Name	Specification	Picture
17	Material Code	CPK.FJ.X.L0CSX-100F-0003	
	Test Line	28.0124-10023 100F Blue Double sheath	
18	Material Code	CPK.FJ.X.L0CSX-100F-0004	
	Test Line	28.0124-10020 100F yellow-green Double sheath	
19	Material Code	CPK.FJ.X.L0CSX-100A-0001	
	Test Line	28.0124-10023+66.9755-23 100A Blue One end with sheath clip, one end sheath	
20	Material Code	CPK.FJ.X.L0CSX-100A-0002	
	Test Line	28.0124-10020+66.9755-20 100A yellow-green One end with sheath clip, one end sheath	
21	Material Code	CPK.FJ.X.L0CSX-100A-0003	
	Test Line	28.0124-10022+66.9755-22 100A Red One end with sheath clip, one end sheath	
22	Material Code	CPK.FJ.X.L0CSX-100A-0004	
	Test Line	28.0124-10021+66.9755-21 100A Black One end with sheath clip, one end sheath	
23	Material Code	CPK.FJ.X.L0CSX-150A-0001	
	Test Line	28.0124-15020+66.9755-20 150A yellow-green One end with sheath clip, one end sheath	
24	Material Code	CPK.FJ.X.L0CSX-200A-0004	
	Test Line	28.0124-20023+66.9755-23 200A Blue One end with sheath clip, one end sheath	
25	Material Code	CPK.FJ.X.L0CSX-200F-1001	
	Test Line	28.0124-20022 200F Red Double sheath	
26	Material Code	CPK.FJ.X.L0CSX-200F-1002	
	Test Line	28.0124-20021 200F Black Double sheath	
27	Material Code	CPK.FJ.X.L0CSX-200F-1003	
	Test Line	28.0124-20020 200F yellow-green Double sheath	
28	Material Code	CPK.FJ.X.L0CSX-0200-0002	
	Test Line	72000013-20020 200 Yellow-green Only one end with sheath clip	
29	Material Code	CPK.FJ.X.L0CSX-0200-0003	
	Test Line	72000013-20021 200 Black Only one end with sheath clip	
30	Material Code	CPK.FJ.X.L0CSX-0200-0004	
	Test Line	72000013-20022 200 Red Only one end with sheath clip	
31	Material Code	CPK.FJ.X.L0CSX-0200-0001	
	Test Line	72000013-20023 200 Blue Only one end with sheath clip	

After-sales Service

Is the beginning of winning the customers' trust

We love what we do! Continuously improve customer's experience is always our top priority.

We value any feedback from the customers.

Experienced engineers are on hand to provide prompt and superior service for any requests.

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