

## Compact Immunity Test System

### CCS 1000



#### In Compliance with

- |                     |                    |
|---------------------|--------------------|
| > IEC/EN 61000-4-4  | > EN 61543         |
| > IEC/EN 61000-4-5  | > GB/T 17626.5     |
| > IEC/EN 61000-4-8  | > GB/T 17626.4     |
| > IEC/EN 61000-4-9  | > GB/T 17626.8     |
| > IEC/EN 61000-4-11 | > GB/T 17626.9     |
| > IEC/EN 61000-4-29 | > GB/T 17626.11    |
| > IEC/EN 61008-1    | > GB/T 17626.29    |
| > IEC/EN 61009-1    | > ANSI/IEEE C62.41 |

#### Introduction

CCS 1000 is an intelligent multifunctional compact immunity (EMS) test system, which meets all the requirements of international standards and product standards for transient pulse, surge and voltage dip. Its test voltage is up to 10 kV. CCS series are the best choice for full compliance immunity test solutions. It not only meets the immunity testing requirements of CE, but also be capable of performing three-phase-five-line EUTs tests by using automatically controlled external CDNs (up to 400 A) of our company. Various enclosures needed are available to satisfying types of needs such as power frequency magnetic field tests.

Characteristics
> 5.7" color touch screen
> EUT surge failure detection function
> Ultra small simulator with a maximum capacity of 10.0 KV
> Surge test voltage and current monitoring and measurement
> Test the scheduling function
> Optional for external three-phase CDN modules
> Ethernet (RJ45 interface), used for PC remote

Application Areas	
> Communication	> Technology
> Telecom	> Military
> Medical	> Avionics
> Broadcast and TV	> New Energy Electrical Power
> Railway	> New Energy Vehicle

General Parameters			
Display Screen	5.7" TFT color touch screen	Power Supply	AC 110 V/220 V(± 10%), 50 Hz /60 Hz(±5%) (default AC 220 V 50 Hz in mainland China)
Fuse	6 A	Max Power Consumption	200 W
Memory Space	Infinite (PC storage)	Communication Mode	Ethernet (RJ45)
Dimension	19"/6U	Weight	Approx.32 kg
Ambient Temperature	15°C~35°C	Relative Humidity	45%~75%
Atmospheric Pressure	86 kPa~106 kPa		

EFT/burst Tests as per IEC 61000-4-4			
Test Voltage	0.25 kV~5 kV( $\pm 10\%$ )	Burst Duration	0.075 ms~750 ms
Source Impedance	50 $\Omega$	Burst Cycle	11 ms~9999 ms
Rise Time	5 ns( $\pm 30\%$ ), 50 $\Omega$ load, 1000 $\Omega$ load	Polarity	Positive, negative, alternative
Pulse Duration	50 ns $\pm 30\%$ , 50 $\Omega$ load	Test Duration	1 s~9999 s
	50 ns-15/+100 ns, 1000 $\Omega$ load	Phase synchronization	0° ~360°, 1° step or random
Pulse Frequency	0.1 kHz-1000 kHz	Trigger Mode	Automatic, manual or external trigger
Surge Tests as per IEC61000-4-5			
Test Voltage	0.3 kV~10 kV ( $\pm 10\%$ )	Polarity	Positive, negative, alternative
Test Current	0.15 kA~5 kA ( $\pm 10\%$ )	Trigger Mode	Automatic, manual or external trigger
Voltage Waveform	Front time: 1.2 $\mu$ s ( $\pm 30\%$ ), Time to half value: 50 $\mu$ s ( $\pm 20\%$ )	Pulse period	8 s~99 s (the shortest depends on test voltage)
Current Waveform	Front time: 8 $\mu$ s ( $\pm 20\%$ ), Time to half value:20 $\mu$ s ( $\pm 20\%$ )	Number of Test	1~999
Source Output	2 $\Omega$	Phase	0° ~360°, 1° step or random

Impedance		synchronization	
Coupling Resistance	10 Ω , 0 Ω coupling resistor Either IEC standard mode or customized mode is optional 3 digits on display	Surge Voltage and Current Peak Detection	Front panel BNC output, surge voltage: 1000 V:1 V Surge current: 500 A:1 V
Coupling Capacitance	9 μF, 18 μF		

**PFMF Tests as per IEC61000-4-8 with optional module MFT 400/1200 or VMT series and magnetic field coils**

Continuous Operating Current Range	1 A~120 A	Test Duration	1 s~28800 s
Current Waveform	50 Hz/60 Hz sine wave	Waveform Interval	1 s~9999 s
Current Distortion Rate	<5%	Coil Size	1000mm*1000mm (TCXS111/TCXS113)
Operating Current Range for Short Time	120 A~500 A	Coil shape	Rectangle
Magnetic Field Strength	TCXS 111 Single-turn coil: 1 A/m ~100 A/m (continuous) 100 A/m ~400 A/m (1 s-10s in short time) TCXS 113 Three-turn coil: 1 A/m	Trigger mode	Auto, Manual, External signal trigger

	~300 A/m (continuous) 300 A/m  ~1200 A/m (1 s-10 sin short time)		
Magnetic Field  Output Accuracy	Deviation 1dB ( minimal magnetic field intensity like 1A/m needs to be adjusted manually before tests.)	Output Magnetic Field Strength	Test Sequencing setup

**Pulse Magnetic Field Tests as per IEC 61000-4-9 with optional module PMC 1200 and magnetic field coils**

Output Magnetic Field Range	100 A/m~1200 A/m	Model of Coil	TCXS 111
Output Current	100 A~2000 A	Coil Size	1000*1000mm
Waveform	Risetime: 7.2μs~10.4μs duration: 18μs ~26μs	Coil Shape	Rectangle
Polarity	Positive,negative, alternative	Coil Turn	Single
Pulse Cycle	5 s~99 s (the shortest depends on test current)	Trigger Mode	Automatic, manual or external trigger
Phase	0°~360°, 1° step or	Output Magnetic	Test sequencing setup

synchronization	random	Field Strength	
Number of Test	1~999		

**Power Fail Tests as per IEC 61000-4-11 (with Optional Module VVT or VMT series) & IEC 61000-4-29**

EUT Max. Voltage	300 V AC, 300 V DC	Voltage Variation Level	0~100%
EUT Max. Current	AC/DC 16 A continuous current; AC 20 A continuous 5 s; 40 A continuous 3 s; 500 A impulse current	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)
Dip Level	0%~100% (for VVT/VMT series) 0%, 40%, 70%, 80%(for VVTxxxxSFseries)	Duration after Voltage Variation Decreasing	10 ms-99999 ms
Interruption level	0%	Time of Voltage Variation Increasing	500 ms~9999 ms (50%~100%) 1000 ms~9999 ms (0%~100%)
Dip and Interruption Rise/Fall Time	1 $\mu$ s ~5 $\mu$ s (100 $\Omega$ load)	Phase synchronization	0°~360°, 1° step or random
Dip and Interruption Interval	5 ms~9999 ms	Trigger Mode	Automatic, manual or external trigger
Dip and Interruption Duration	0.1~9999 cycle or 1ms~9999ms	EUT Current and Voltage Measurement	LCD display, BNC terminal: voltage 100:1, current 10 A:1 V
Dip and Interruption Test Duration	1 s~9999 s		

Models Selection								
Name	Model	IEC 61000- 4-4	IEC 61000 -4-5	IEC 6100 0-4-8	IEC 61000- 4-9	IEC 61000 -4-11	IEC 61000- 4-29	CDN single- phase- 3-line
Compact Immunity Test System	CCS 1000	√	√	√	√	√	√	
EFT/Burst CDN	EFTN 3816T	√						
Surge CDN	SPN 3816T		√					
EFT/Burst and Surge CDN	SEPN 3816T	√	√					
	SEPN 3832T	√	√					
Power Frequency Magnetic 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			√		√		
Pulsed Magnetic Field Converter	PMC 1200				√			

Coil	TCXS111			√	√			
	TCXS113			√				

\* CCS 1000 does not include built-in single-phase network and can be equipped with external coupling decoupling network for single/three-phase.

<b>Accessories</b>
User Manual, Fuse×2 (spare parts), Flat Grounding Wire, Radio-Frequency Wire, Testing Wire, Power Supply Wire





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