



Conducted Immunity Test System **CST 20150E**

- IEC 61000-4-39
- IEC 60601-1-2
- IEC 61000-4-6
- GB/T 17626.39
- GB/T 17626.6
- YY 9706.102

Features

- > Highly integrated design with built-in signal generator, RF power amplifier and power meter
- > Built-in an internal wide dynamic range power meter for real-time and precise monitor
- > Support high-precision closed-loop test with traceable results
- > Automated test procedures double testing efficiency
- > High-stability hardware for worry-free long-term operation
- > Support monitoring and overrange protection functions for temperature, VSWR and power

Introduction

The CST 20150E conducted immunity test system is an integrated automatic test system in accordance with IEC 61000-4-39, IEC 61000-4-6, YY 9706.102, designed for radiated fields in close proximity - immunity test, conducted immunity test, and supporting pulse and sinusoidal injection tests for power supply lines of electric vehicles. Adopting a highly integrated design, it comes with a built-in signal generator, RF power amplifier and RF power meter, greatly reducing setup costs and system complexity. Built-in wide dynamic range power meter ensures real-time and precise monitoring, stable test procedures and reliable measurement results. Output frequency range of the test system is 9 kHz ~ 230 MHz.

The whole test system, centrally controlled by EMC (-4-39) and EMC (-4-6) software (this product requires the software for operation), can improve system scalability and test efficiency. Test results support one-click saving, printing and internal enterprise sharing.

Application Areas



Technical Parameters

RF Signal Generator	
Frequency	9 kHz ~ 3 GHz
Frequency Resolution	0.23 Hz
Frequency Temperature Stability	± 0.5 ppm
Harmonics	≤ -30 dBc
Non-Harmonic	≤ -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
Resolution	0.1 dB
Internal Modulation Source (LF)	Sine wave: 0.1 Hz ~ 500 kHz Square wave: 0.1 Hz ~ 20 kHz Triangular wave/Sawtooth wave: 0.1 Hz ~ 100 kHz
Amplitude Modulation (AM)	Modulation depth: 0% ~ 100% Modulation frequency: 1 Hz ~ 25 kHz
Frequency Modulation (FM)	Max Frequency Deviation: 5 MHz Modulation frequency: 1 Hz ~ 25 kHz
Phase Modulation (Φ M)	Phase deviation range: 0° ~ 360° Modulation frequency: 1 Hz ~ 25 kHz
Output Port	N-Female
VSWR	< 1.5
Power Amplifier	
Frequency	9 kHz ~ 230 MHz
Output Power (1 dB compression point)	> 150 W
VSWR	< 1.5
Output Impedance	50 Ω
Output Port	N-Female
Power Meter	
Frequency	9 kHz ~ 6 GHz
Measurement Range	-60 dBm ~ +20 dBm
Measurement Accuracy	± 0.5 dB
Input Port	N-Female
VSWR	< 1.3

General Parameters

Working Power	AC 220 V, $\pm 10\%$, 50 Hz / 60 Hz
Max. Power Consumption	500 W
Fuse	6 A
Dimension	4U rack, 450 (W)*280 (H)* 620 (D) mm
Ambient Temperature	15°C ~ 35°C
Relative Humidity	45% ~ 75%, RH (no condensation)
Atmospheric Pressure	86 kPa ~ 106 kPa

Standard Accessories

Power Cord, RF Cable, Grounding Wire, Test Cable, USB Cable, Attenuator, Snap-on Ferrite Core, Fuse, User Manual

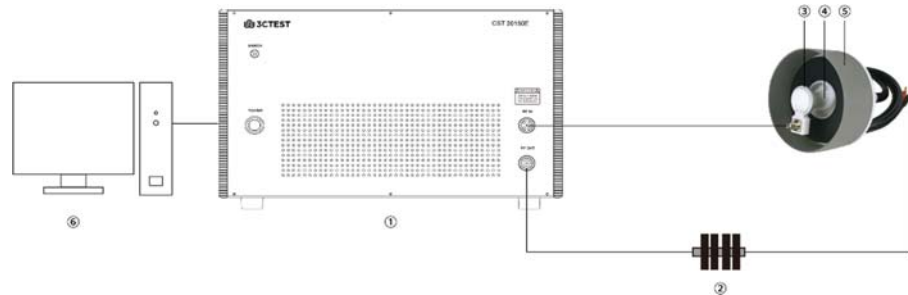
Optional Accessories

Radiated Fields in Close Proximity – Immunity Test			
1	Test Software (This series of products shall be used with this software.)	Model: EMC (-4-39) A RF conducted immunity test software for the CST series; support Windows 10 and USB communication; enable remote calibration and test operations	
2	Attenuator	Model: AT150-3dB-6G-NF-NF-B Frequency: DC ~ 6 GHz Attenuation value: 3 dB Power: 150 W	
3	Radiating Loop	Model: HFRA 5164 Frequency: 10 kHz ~ 120 MHz Diameter: 100 m	
4	Matching Network	Model: NFCN 1356 Frequency: 13.56 MHz Impedance: 50 Ω Max. Power: 15 W Magnetic field strength: 15 A/m Interface: BNC	
5	Probe Holder	Model: LoopHolder 5164-39 the holder of FESP 5134-1	
6	Magnetic Field Probe	Model: FESP 5134-1 Frequency: 10 kHz ~ 400 MHz Diameter: 40mm Turn: 1	
7	Radiating Loop	Model: FESP 5132 Frequency: DC-150 kHz Diameter: 120 mm	
8	Magnetic Field Probe	Model: FESP 5134-40 Frequency: 5 Hz ~ 250 kHz Diameter: 40 mm	
9	Probe Holder	Model: LoopHolder50 the holder of FESP 5134-40	

Optional Accessories

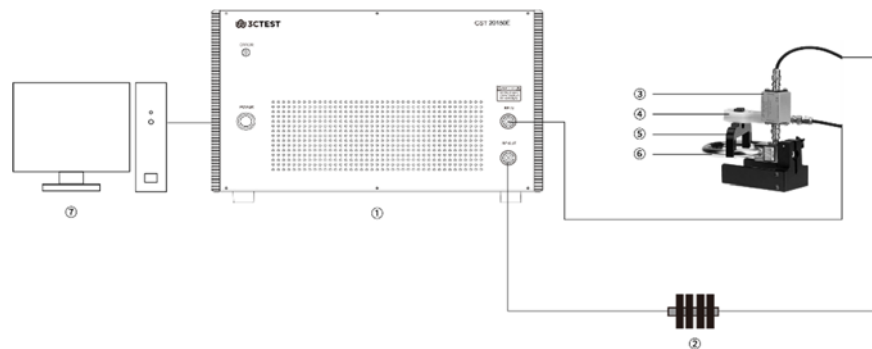
Conducted Immunity Test			
1	Test Software (This series of products shall be used with this software.)	Model: EMC (-4-6) A RF conducted immunity test software for the CST series; support Windows 10 and USB communication; enable remote calibration and test operations	
2	Attenuator	Model: AT150-3dB-6G-NF-NF-B Frequency: DC ~ 6 GHz Attenuation value: 3 dB Power: 150 W	
3	Coupling/Decoupling Network	CDN M Series CDN T Series CDN AF Series	
4	150 Ω to 50 Ω CDN Calibration Adapter	Model: CDN 100KIT Insertion loss: 9.5 dB $\pm$ 0.5 dB Number: 2	
5	Electromagnetic Clamp	Model: EM CL100 Frequency: 100 kHz ~ 1 GHz Power: 100 W (5 min cont.) Directivity: $\geq$ 10 dB above 0.1 MHz (including 150 Ω to 50 Ω calibration adapter)	
6	Current Injection Clamp	Model: BCIP-500 Frequency: 2 kHz ~ 500 MHz Power: 100 W (30 min cont.) 150 W (15 min cont.) 200 W (5 min cont.) Interface: N Inner Diameter: 40 mm Outer Diameter: 127 mm Height: 70 mm	
7	Current Injection Clamp Calibration Fixture	Model: BCICF-500 Frequency: DC ~ 500 MHz Characteristic Impedance: 50 Ω Inner Body Diameter: 40 mm Inner Length: 80 mm Inner Width: 127 mm Inner Height: 135 mm	
8	150 Ω to 50 Ω Calibration Adapter	Model: BCI 100KIT Insertion loss: 9.5 dB $\pm$ 0.5 dB Number: 2	

9 kHz ~ 150 kHz System Setup —Radiated fields in close proximity



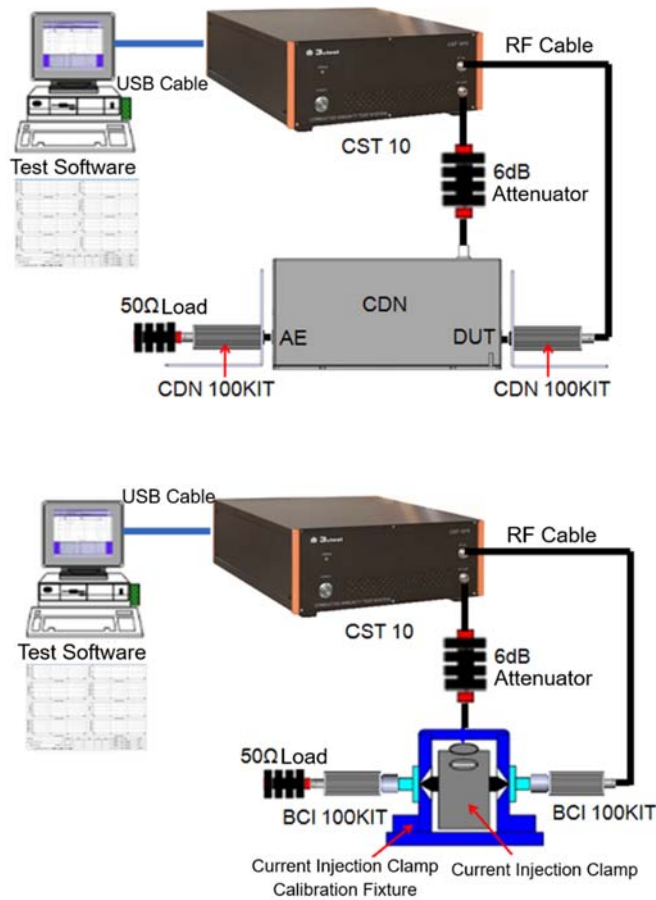
- ① Main Unit: CST 20150E
- ② Attenuator: AT150-3dB-6G-NF-NF-B
- ③ Magnetic Field Probe: FESP 5134-40
- ④ Probe Holder: LoopHolder50
- ⑤ Radiating Loop: FESP 5132
- ⑥ PC software: EMC(-4-39)

150 kHz~26 MHz System Setup —Radiated fields in close proximity



- ① Main Unit: CST 20150E
- ② Attenuator: AT150-3dB-6G-NF-NF-B
- ③ Matching Network: NFCN 1356
- ④ Magnetic Field Probe: FESP 5134-1
- ⑤ Probe Holder: LoopHolder 5164-39
- ⑥ Radiating Loop: HFRA 5164
- ⑦ PC software: EMC(-4-39)

Conducted Immunity
Test System Setup



Series Model
Comparison

Model	Power Amplifier Parameters	
	Frequency	1 dB Gain
CST 1075	100 kHz ~ 230 MHz	48.5 dB ± 2 dB (75 W)
CST 10150	100 kHz ~ 230 MHz	51.8 dB ± 2 dB (150 W)
CST 1075E	100 kHz ~ 230 MHz	48.5 dB ± 2 dB (75 W)
CST 20150E	9 kHz ~ 230 MHz	51.8 dB ± 2 dB (150 W)

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