



Conducted Immunity Test System

CST 10500D(50M)

■ ISO 7637-4

— 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
- > Accurate traceable closed-loop test; optional current probe for closed-loop method
- > High expandability, supports conducted immunity testing
- > Automated test procedures double testing efficiency
- > High-stability hardware configuration for worry-free long-term operation
- > Support monitoring and overrange protection functions for temperature, VSWR and power

— Introduction

CST 10500D (50M) Conducted Immunity Test System is an integrated automatic test system specially developed for pulsed sinusoidal injection tests on power lines of electric vehicles, fully designed in compliance with ISO 7637-4 and is used for RF induced conducted immunity testing with frequencies ranging from 100 kHz to 50 MHz.

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.

The whole test system, centrally controlled by EMC(7637-4A) 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

Pulsed Sine Waveform	
Frequency	100 kHz ~ 50 MHz
Output Voltage	>200 V _{pp}
Number of Pulse Sine Cycles	1~100
Reptation Time	1 μs ~ 500 s
Output Port	N-Female
VSWR	< 1.5
Signal Generator	
Frequency	1 μHz ~ 50 MHz
Frequency Temperature Stability	±1 ppm + 10 pHz
Harmonics	< -55 dBc
Non-Harmonic	< -60 dBc
Output Power	≤ 10 MHz: 1.0 mV _{pp} ~ 10 V _{pp} ≤ 30 MHz: 1.0 mV _{pp} ~ 5.0 V _{pp} ≤ 50 MHz: 1.0 mV _{pp} ~ 2.5 V _{pp}
Power Accuracy	± 1.0 dB
Resolution	0.1 dB
Internal Modulation Source (LF)	Sine wave/ Square wave/Triangular wave/ Sawtooth wave: 2 mHz ~ 1 MHz
Amplitude Modulation (AM)	Modulation depth: 0% ~ 120% Modulation frequency: 2 mHz ~ 1 MHz
Frequency Modulation (FM)	Max Frequency Deviation: 5 MHz Modulation frequency: 2 mHz ~ 1 MHz
Phase Modulation (ΦM)	Phase deviation range: 0° ~ 360° Modulation frequency: 2 mHz ~ 1 MHz
Pulse Period	1 μs ~ 500 s
Output Port	N-Female
VSWR	<1.5
Power Amplifier	
Frequency	100 kHz ~ 50 MHz
Output Power (1dB compression point)	>500 W
VSWR	< 1.5
Output Impedance	50 Ω
Output Port	N-Female

Technical Parameters

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, ± 10%, 50 Hz / 60 Hz
Max. Power Consumption	1,000 W
Fuse	6 A
Dimension	22U rack, 600 (W) *1,250 (H) *800 (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, Clip-on Ferrite Core, Fuse, User Manual

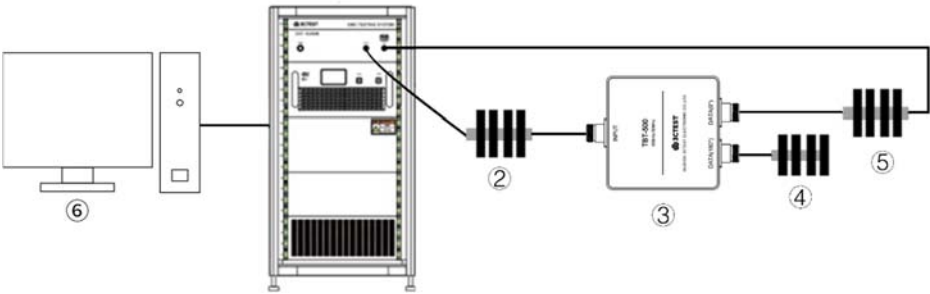
Optional Accessories

1	Test Software (This series of products shall be used with this software)	Model: EMC (7637-4A) 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: AT500-3dB-1G-NF-NF-A Attenuation value: 3 dB Power: 500 W	
3	Attenuator	Model: AT500-40dB-4G-NF-NF-A Attenuation value: 40 dB Power: 500 W	
4	Coaxial Load	Model: TF80 Frequency: DC ~ 1 GHz Impedance: 50 Ω Power: 80 W	
5	Balun Transformer	Model: TBT-500 Frequency: 100 kHz ~ 50 MHz Power: 100 W Insertion loss: ≤1 dB (The single-ended output of Balun has inherent -3 dB loss due to energy conservation principle) Characteristic impedance: 50 Ω VSWR: ≤ 3	

Optional Accessories

6	HV Shield Enclosure	Shielding attenuation: >100 dB Front panel ports: 4*N-Female, RF HV+, RF HV-, 2*AUX Rear panel ports: HV+, HV- Cable gland size: 36 mm	
7	Load Resistor & Isolation Capacitor	Model: 7637-4R500C140 Loop resistance & capacitance: R:500 Ω, C:10 μF Decoupling capacitance: 140 μF	
8	HV Artificial Network	Model: TANHV 200 Test voltage: 700 V Test current: 250 A Dimensions: 490 mm * 200 mm * 215 mm	

System Setup



- ① Main Unit: CST 10500D(50M)
- ② Attenuator: AT500-3dB-1G-NF-NF
- ③ Balun Transformer: TBT-500
- ④ Coaxial Load: TF80
- ⑤ Attenuator: AT500-40dB-4G-NF-NF-B
- ⑥ Test Software: EMC (7637-4A)

CST D Series
Selection Guide

Model	Signal Generator		Power Amplifier	
	Frequency	Resolution	Frequency	1 dB Gain
CST 1075D	1 μHz ~ 35 MHz	0.1 dB	100 kHz ~ 230 MHz	48.5 dB ± 2 dB (75 W)
CST 1075D(50M)	1 μHz ~ 50 MHz	0.1 dB	100 kHz ~ 230 MHz	48.5 dB ± 2 dB (75 W)
CST 10500D(50M)	1 μHz ~ 50 MHz	0.1 dB	100 kHz ~ 50 MHz	57 dB ± 1 dB (500 W)

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