



Conducted Immunity Test System **CST CS114 (2 kHz)**

- MIL-STD-461H
- MIL-STD-461G
- RTCA DO-160
- GJB 151A
- GJB 151B
- GJB 151C
- HB 6167.22

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 (-60 dBm ~ +20 dBm)
- > Stable and Reliable Broadband Power Amplifier (2 kHz ~ 400 MHz)
- > Support high-precision closed-loop test with traceable results, and support optional current monitoring probe and closed-loop test method supported
- > 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 CS114(2 kHz) conducted immunity test system is an integrated automatic test system in accordance with MIL-STD-461H, MIL-STD-461G and RTCA DO-160, specifically for cable injection conducted susceptibility testing of military electronic products. 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 2 kHz ~ 400 MHz. The test system is also compatible with bulk current injection (BCI) immunity tests for automotive electronics as per ISO 11452-4 and GB/T 33014.4.

The whole test system, centrally controlled by EMC (CS114) 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	2 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 ~ 0dBm (2 kHz ~ 500 kHz) -120 dBm ~ +10dBm (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: 20 Hz ~ 1 MHz
Frequency Modulation (FM)	Max Frequency Deviation: 5 MHz Modulation frequency: 20 Hz ~ 1 MHz
Phase Modulation (ΦM)	Phase deviation range: 0° ~ 360° Modulation frequency: 1 Hz ~ 25 kHz
Output Port	N-Female
VSWR	< 1.5
Power Amplifier	
Frequency	2 kHz ~ 400 MHz
Output Power (1 dB compression point)	> 100 W
VSWR	< 1.5
Output Impedance	50 Ω
Output Port	N-Female
Power Meter	
Frequency	2 kHz ~ 3 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	1,000 W
Fuse	6 A
Dimension	6U rack, 450 (W)*280 (H)* 620 (D) mm
Weight	Approx. 40 kg
Ambient Temperature	15°C ~ 35°C
Relative Humidity	45% ~ 75%
Atmospheric Pressure	86 kPa ~ 106 kPa

Standard Accessories

Power Cord, RF Cable, Attenuator AT5-20dB, Grounding Wire, USB Cable, Snap-on Ferrite Core, User Manual

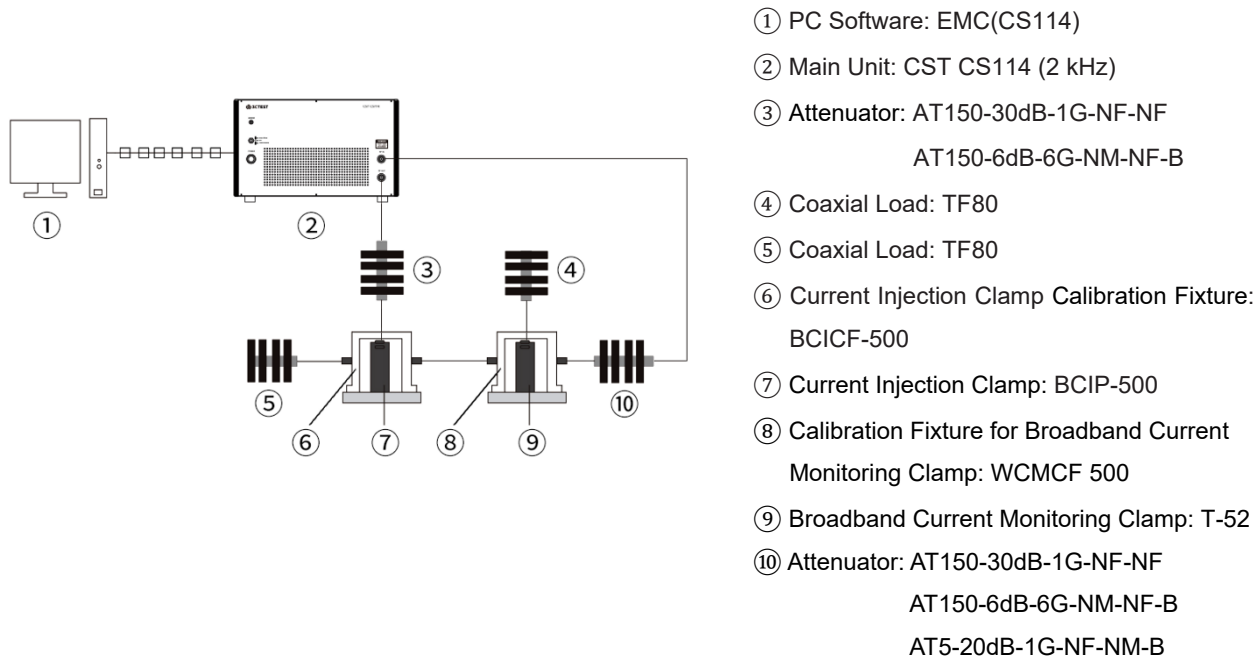
Optional Accessories

1	Test Software (This series of products shall be used with this software.)	Model: EMC (CS114) 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: AT150-6dB-6G-NM-NF-B Frequency: DC ~ 6 GHz Attenuation value: 6 dB Power: 150 W	
3	Attenuator	Model: AT150-30dB-1G-NF-NF Frequency: DC ~ 1 GHz Attenuation value: 30 dB Power: 150 W	
4	Coaxial Load	Model: TF80 Frequency: DC ~ 1 GHz Impedance: 50 Ω Power: 80 W	
5	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	

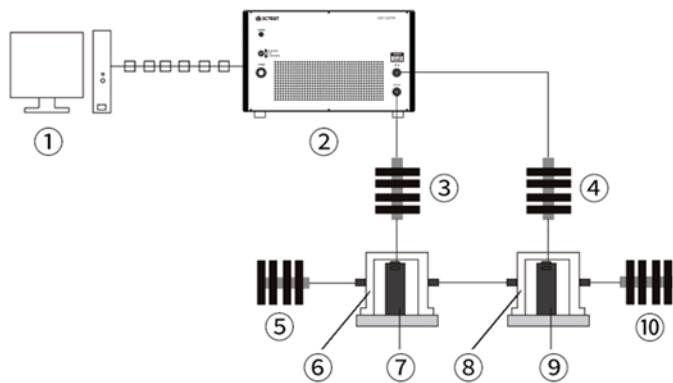
Optional Accessories

6	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	
7	Broadband Current Monitoring Clamp	Model: T-52 Frequency: 2 kHz ~ 400 MHz Transfer Impedance: 2.5 Ω (8 dBΩ) Inner Diameters: 40 mm Outer Diameters: 127 mm Height: 40 mm RF Current: 2 A Pulse Current: 100 A	
8	Calibration Fixture for Broadband Current Monitoring Clamp	Model: WCMCF 500 Frequency: DC ~ 500 MHz Characteristic impedance: 50 Ω Inner diameter: 40 mm Internal length: 64 mm Internal width: 127 mm Internal height: 132 mm	

Calibration-System Setup



Verification-System
Setup



- ① PC Software: EMC(CS114)
- ② Main Unit: CST CS114 (2 kHz)
- ③ Attenuator: AT150-30dB-1G-NF-NF
AT150-6dB-6G-NM-NF-B
- ④ Attenuator: AT150-30dB-1G-NF-NF
AT150-6dB-6G-NM-NF-B
AT5-20dB-1G-NF-NM-B
- ⑤ Coaxial Load: TF80
- ⑥ Current Injection Clamp Calibration Fixture: BCICF-500
- ⑦ Current Injection Clamp: BCIP-500
- ⑧ Calibration Fixture for Broadband Current Monitoring Clamp: WCMCF 500
- ⑨ Broadband Current Monitoring Clamp: T-52
- ⑩ Coaxial Load: TF80

CST Series
Comparison

Model	Power Amplifier Parameters	
	Frequency	Gain
CST 10200C	4 kHz ~ 400 MHz	53 dB ± 1 dB (200 W)
CST CS114	4 kHz ~ 400 MHz	50 dB ± 1 dB (100 W)
CST CS114(2 kHz)	2 kHz ~ 400 MHz	50 dB ± 1 dB (100 W)
	The working frequency of CST CS114(2 kHz) signal generator: 2 kHz ~ 3 GHz	

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