

SER300/2000/3600 EMI Test Receiver

1kHz - 300MHz/ 2GHz/ 3.6GHz



Key Features

- **Frequency Range: 1kHz - 300MHz/ 2GHz/ 3.6GHz**
- Including CISPR-AVG, CISPR-RMS, and QPK detector
- Resolution Bandwidth: 1Hz - 3MHz (-3dB), 200Hz/9kHz/120kHz/1MHz (-6dB)
- All digital detectors are reliable and stable
- Dual RF input protection for measurement safety
- Rich testing options for different applications
- Support ETR measurement analysis software

Introduction

The SER series EMI test receivers comply with CISPR 14-1:2020 standard, integrated CISPR-AVG, CISPR-RMS, QPK detectors, and electromagnetic interference measurement. According to CISPR, EN, FCC and MIL standards, which is suitable for EMI testing in home appliances, lighting, automotive electronics, medical, and other industries. Combined with ETR PC measurement software and a wealth of test options, accurate automated testing is possible. The whole system is equipped with a spectrum analysis module and a tracking signal generator to meet the testing needs of users in different fields.

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Applications

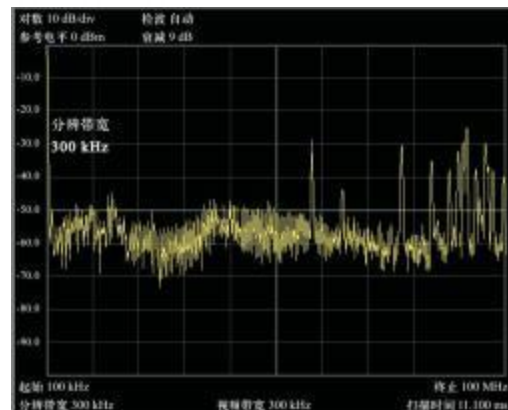
- Diagnosis and Analysis of EMI Problems in Product Development Stage
- EMI testing in lighting, home appliances, automotive electronics, medical, and other industries
- EMI conducted disturbance test
- EMI radiation disturbance test
- Product pre-certification test
- EMC automated testing
- General spectrum measurement and analysis

Application Testing

EMI Receive Testing



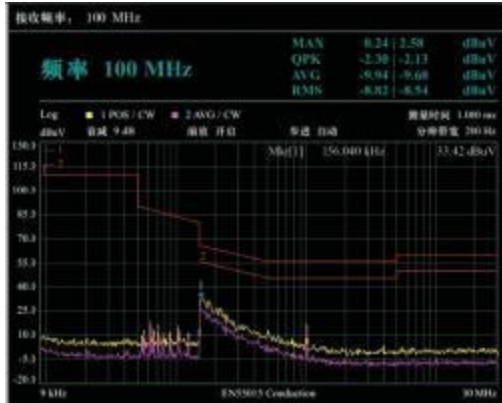
Near Field Diagnosis



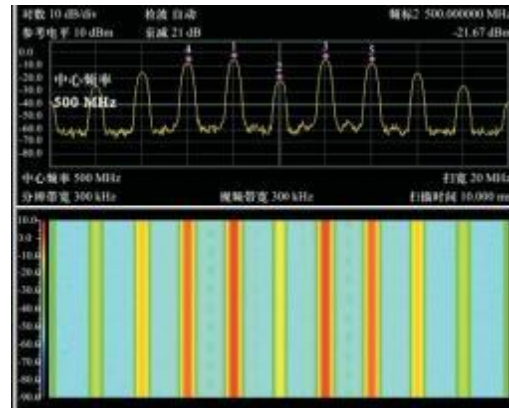
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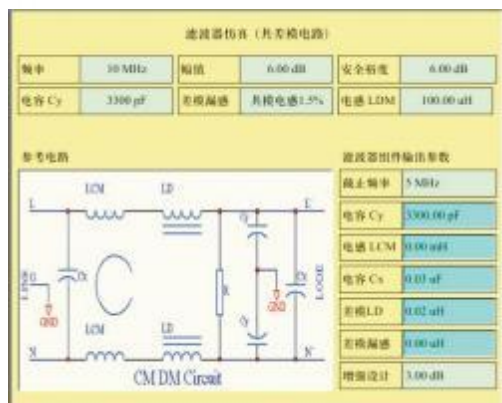
Standard Testing



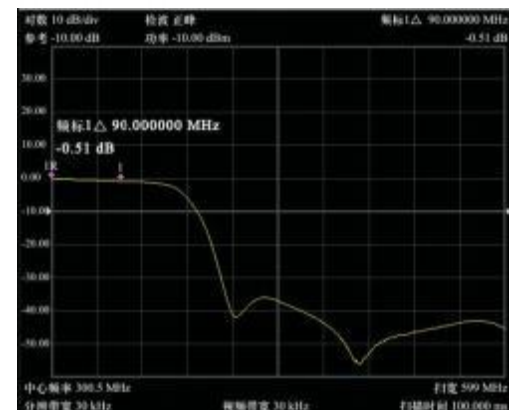
General Spectrum Analysis



Filter Design Simulation



Network Measurement



Technical Specifications

Spectrum Analysis Mode		
Frequency Range	SER300	1kHz - 300MHz
	SER2000	1kHz - 2GHz
	SER3600	1kHz - 3.6GHz
Reading Accuracy	$\pm(\text{Frequency standard reading} \times \text{Frequency reference accuracy} + 1\% \times \text{Sweep width} + 10\% \times \text{RBW} + 0.5 \times [\text{Sweep width} / n(\text{scan spot}-1)] + 1\text{Hz})$	
Internal Benchmark (10MHz)	Aging Rate	1ppm/year
	Temp Drift	<0.5ppm(15°C - 35°C)

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Single Sideband Phase Noise (f=500MHz)			
Frequency Offset 30kHz	-90dBc/Hz		
Frequency Offset 1MHz	-110dBc/Hz		
Amplitude			
Maximum Input Level	Average Continuous Power	+36dBm	
	Maximum DC Input Voltage	50Vdc	
Display Average Noise Level			
Channel	Frequency	Pre-amplifier off	Pre-amplifier on
Frequency Conversion Channel	100kHz - 1MHz	$\leq -100\text{dBm} - 30 \cdot (f/100\text{kHz})\text{dB}$	$\leq -120\text{dBm} - 30 \cdot (f/100\text{kHz})\text{dB}$
	1MHz - 10MHz	$\leq -130\text{dBm}$	$\leq -150\text{dBm}$
	10MHz - 1GHz	$\leq -135\text{dBm}$	$\leq -155\text{dBm}$
	1GHz - 3.6GHz	$\leq -140\text{dBm}$	$\leq -148\text{dBm}$
Low Frequency Channel	5kHz - 10kHz	/	$\leq -110\text{dBm}$
	10kHz - 10MHz	/	$\leq -125\text{dBm}$
Amplitude Measurement Uncertainty (20 °C ~ 30 °C)			
Comprehensive Amplitude Accuracy (90%)	$\pm 1.8\text{dB}$		
Resolution Bandwidth (-3 dB)			
Resolution Bandwidth Range	1Hz - 3MHz, continuous stepping		
Resolution Bandwidth Conversion Uncertainty	$1\text{Hz} \leq \text{RBW} \leq 500\text{kHz}$	$\pm 0.6\text{dB}$	
	$\text{RBW} > 500\text{kHz}$	$\pm 1.0\text{dB}$	
Resolution Bandwidth Accuracy	<10%		
Attenuator			
Attenuator Range	0 - 39dB, 3dB stepping		
Attenuator Uncertainty	$\pm 1.0\text{dB}$		
Frequency Response			
5kHz - 200kHz	$\pm 1.8\text{dB}$		
200kHz - 3.6GHz	$\pm 1.5\text{dB}$		

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Residual Response		
≤ -96dBm		
Detector		
Automatic, normal, positive peak, negative peak, sampling		
Scan Time		
Frequency Conversion	Span = 0	1ms - 3000s
Channel	Span > 0	3ms - 3000s
Input Port Standing Wave Ratio		
50MHz - 1GHz	≤ 2.0	
EMI Receiving Mode		
Frequency Range	SER300	1kHz - 300MHz
	SER2000	1kHz - 2GHz
	SER3600	1kHz - 3.6GHz
Reading Accuracy	± (Frequency reading × frequency reference accuracy + half of the last display unit)	
Amplitude Measurement Uncertainty (20°C~30°C)	Comprehensive Amplitude Accuracy (90%)	±2.0dB
	Resolution Bandwidth Range	200Hz/9kHz/120kHz/1MHz
Resolution Bandwidth (-6dB)	Resolution Bandwidth Accuracy	<10%
	Detector	Positive peak, negative peak, Quasi-peak, average, RMS
Scan Time	100us - 100s	
Scan Spots	101 - 1001	
Number of Traces	3 (Parallel detection)	
Frequency List	10	
Frequency Response	±2.0dB	
Tracking Source		
Frequency Range	10kHz - 1.5GHz	
Output Power	-30dBm to 0dBm	
Output Flatness	±3dB	

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General Information

Display	8.4 inch true color TFT-LCD
Resolution	800×600
Communication Port	LAN, USB
Working Temperature	0°C to 40°C
Storage Temperature	-30°C to +70°C
Weight	7.5kg
Size (L*W*H)	400mm×280mm×190mm

Standard Package

No.	Item
1	EMI receiver host
2	CD (manual)
3	Power cord (220VAC)
4	N/SMA-JK connector
5	Double SMA cable (80cm)
6	Built-in tracking source (10kHz - 1.5GHz)

Options

No.	Item	Description
SER-3	Line impedance stabilization network (LISN)	LISN016
SER-4	Coupled decoupling network (CDN)	CDNE016
SER-5	Pulse limiter	PLA030
SER-6	RF switch	RFS003
SER-7	EMC testing software	EMC.ETR
SER-8	LNA	LNA010
SER-9	Current Injection Probe	PRB030

Note: Information will conduct the necessary updates, the contents of this document are subject to change without notice.

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No.	Item	Description
SER-10	φ30 Clamp RF Probe	PRB330
SER-11	Probe Calibration Fixture	CLA001
SER-12	Near Field Probe	ANT01
SER-13	USB Power Meter	UP60

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