

# CG50/500R

## Comb Generator

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## I. General Information

The CG50/500R is a standard signal source paired with a monopole antenna, featuring two switchable steps at 50kHz/step and 500kHz/step respectively, with a frequency range up to 30MHz. It is adept at verifying the accuracy of radiated sites.

## II. Shipping List

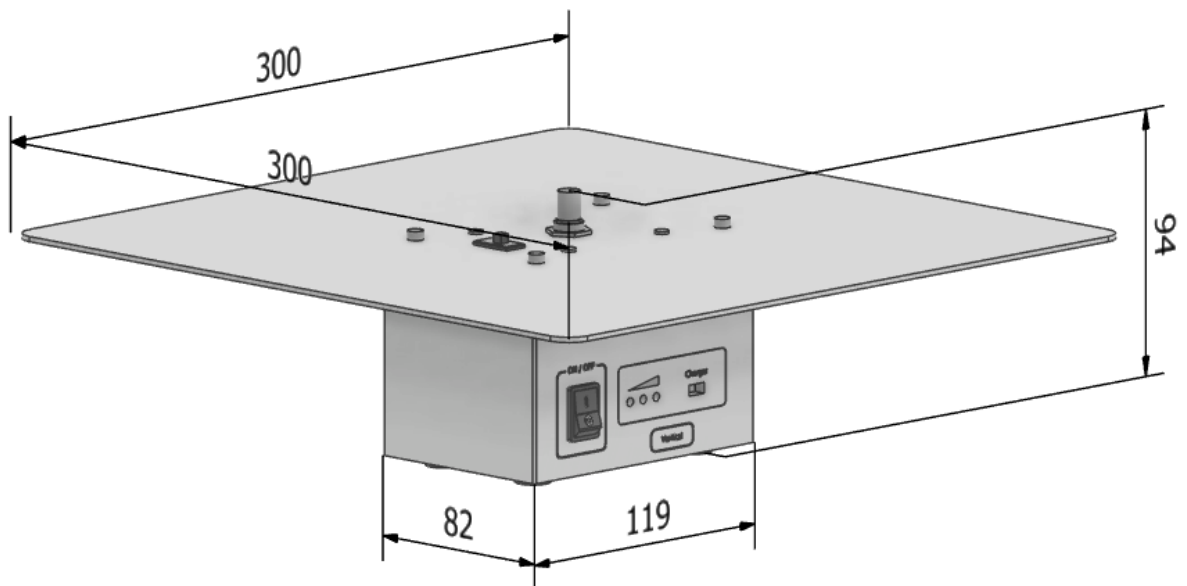
- |  |                     |
|--|---------------------|
| 1. CG50/500R Unit                          | 5. USB Cable        |
| 2. Monopole Antenna                        | 6. Grounding plate  |
| 3. Charger Adapter CE Eligibility Criteria | 7. Operation Manual |
| 4. Earth bonding cable                     |                     |



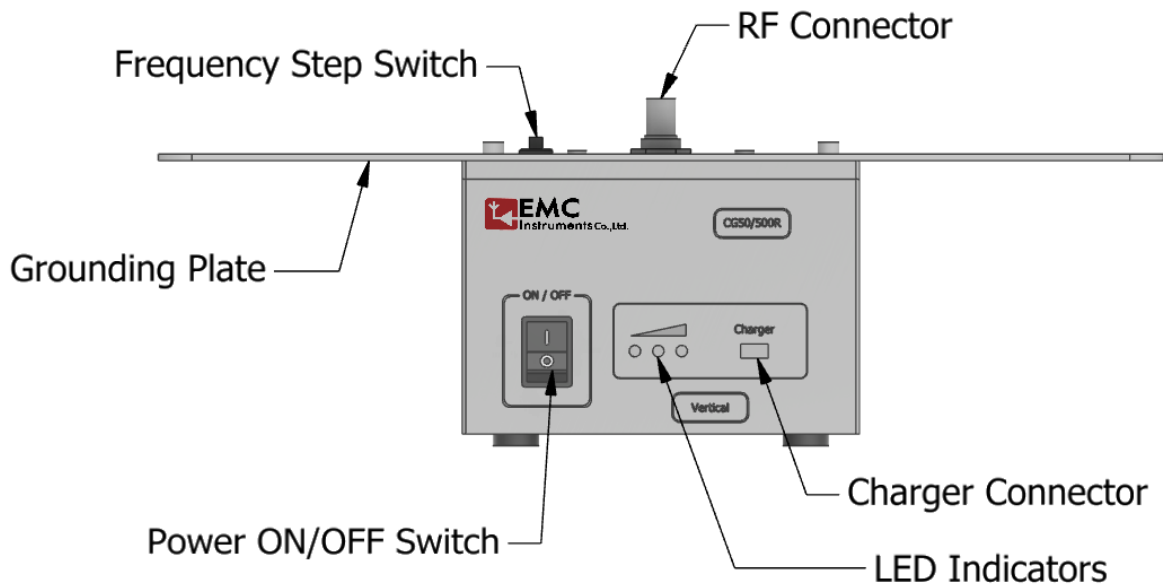
Figure 2-1 CG50/500R Comb Generator and Accessories

### III. Specifications

<b>Frequency Range</b>	<b>50kHz - 30MHz</b>
<b>Frequency Step Size</b>	<b>50kHz / 500kHz step switchable</b>
<b>RF Connector</b>	<b>BNC Female</b>
<b>Battery Type</b>	<b>Lithium-ion Rechargeable Battery</b>
<b>Battery Capacity</b>	<b>3.6V/6000mAh</b>
<b>Charging Input</b>	<b>DC 5V/500mA</b>
<b>Charge Time</b>	<b>8 - 10 Hours</b>
<b>Usage Time</b>	<b>8 hours</b>
<b>Charging Connector</b>	<b>Mini USB Socket</b>
<b>Charger Adapter</b>	<b>Input: 100 - 240 Vac / 50 - 60Hz, 0.3A Output: 5V DC, 2A max</b>
<b>Weight</b>	<b>1.2 kg</b>



#### IV. Overview



Item	Description
Frequency Step Switch	Select frequency step size 50kHz/500kHz
LED Indicator	Battery status indicator
Mini USB Connector	For charge input (5V DC)

#### V. Operation

##### 1. Battery Charging

Prior to utilizing the field reference source, it is necessary to charge the internal batteries. A recommended minimum charge time of 8 hours is advised.

**CAUTION: Ensure that the Power switch is in the OFF position during charging.**

**CAUTION: The charger input for the CG50/500R must not exceed 5.2V DC.**

##### 2. General Operation

###### a. Power ON/OFF Switch

**Do not power on without connecting any antennas, loads, or other items.**



The switch is used to turn the unit's power on or off.

Before proceeding with the operation, please eliminate static electricity.

**Before powering on**, ensure that the **antenna or signal reception equipment** has been properly **connected**.

**Before installing or uninstalling** the antenna, please **turn off** the comb generator.

b. Power On Indicator

When the Power On indicator LED is illuminated, the Comb Generator is ready for use.



When 3 LEDs are illuminated, the battery level is in the range of 70~100%.



When 2 LEDs are illuminated, the battery level is in the range of 40~70%.



When 1 LED is illuminated, the battery level is in the range of 20~40%.

If only one LED is lit upon powering on, the battery level is within the range of 20~40%. In this case, please recharge the CG50/500R unit. If all LEDs are not illuminated at power-on, indicating a critically low battery, immediate recharging of the CG50/500R unit is required.

The LED will flash during the CG50/500R charging process and will remain fully lit once the battery has been completely charged.

c. Recommends of Site Validation

The CG50/500R Comb generator is suitable for validating test sites and conducting daily checks. To minimize measurement deviations, it is essential to maintain consistent test setups and installations, taking into account the following considerations:

- The antenna for should be installed at the same position and orientation for each test.
- Ensure that the position and orientation of the CG50/500R remain consistent in each test setup. For instance, mark both the test table and Comb generator, using these marks to align them at the same position and orientation.
- Ensure a secure connection by tightly twisting the antenna connector for CG50/500R into place.
- Ensure consistent cable placement, including both the power cord and earth bonding cable, throughout each test.
- Maintain uniform cable length for optimal results; using the same cable for each test is recommended.
- Establish a consistent ground connection point for all tests, ensuring a secure and reliable connection.
- Avoid testing at low battery status.

d. Output Connection

The CG50/500R is equipped with a female BNC connector on the top panel, where achieving a matching impedance to a  $50\Omega$  system is crucial. It is recommended to use a BNC pad or attenuator to minimize impedance mismatches across the frequency range.

Install the Antenna accessories and the 30cm\*30cm ground plane for radiation test.



# CERTIFICATE OF COMPLIANCE

We certify that all units shipped against your subject purchase order are in conformance with the specifications and contractual requirements. Test records and other evidence of conformance are included with this shipment. Original documents are available for review at our facility upon request.

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<b>Customer</b>	Absolute EMC Llc		
<b>Order No.</b>	PO-00344	<b>Model</b>	CG50/500R
<b>Date of Order</b>	20240128	<b>Serial No.</b>	CG50-567

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## Equipment For Measurement :

**Type : Spectrum Analyzer**

**Model : FSP38**

**Serial No. : 91700347**

**Manufacturer : R&S**



*Alen Chen.*

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**Alen Chen**

**Engineer of Quality Assurance**



# CG50/500R Comb Generator



## Specifications

<b>Frequency Range</b>	<b>50kHz – 30MHz</b>
<b>Frequency Step</b>	<b>50kHz / 500kHz step switchable</b>
<b>Power Requirements</b>	<b>USB mini, +5Vdc</b>
<b>Output Connectors</b>	<b>50 ohm, BNC Female</b>
<b>Charging Time</b>	<b>8 – 10 Hours</b>
<b>Usage Time</b>	<b>16 Hours</b>
<b>Size (mm * mm * mm)</b>	<b>Comb Generator 120 * 82 * 85</b> <b>Grounding Plate 300 * 300 * 2</b>
<b>Net Weight</b>	<b>1.2 kg</b>

# Output Level Conducted Test

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## Description

The test involves measuring the output level of the Comb generator across its frequency range. In the first step, connect the spectrum analyzer and CG50/500R using a cable in the circuit. Attach the RF cable from the BNC Female connector on the CG50/500R to the Spectrum Analyzer's front input RF port.

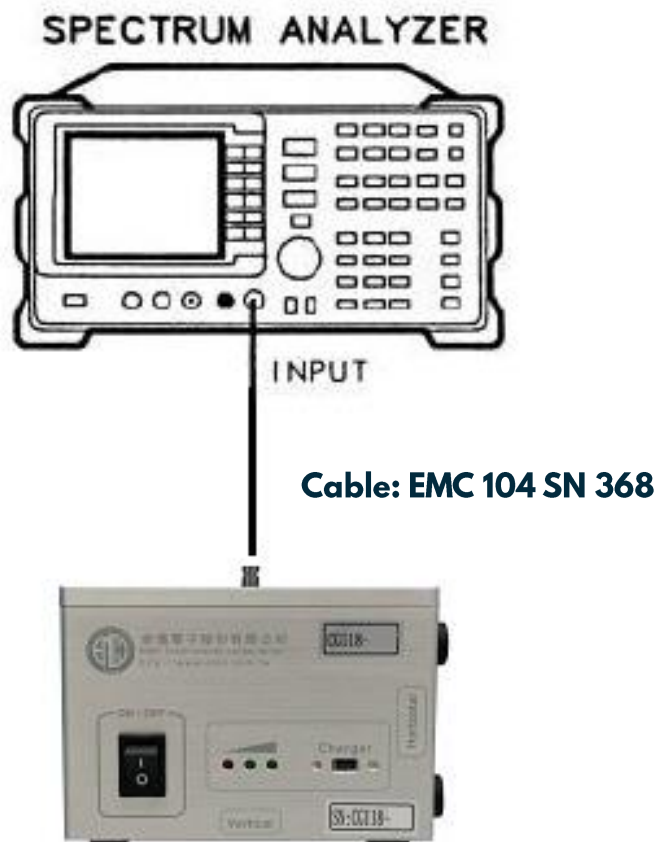


Fig. Output Level Measurement Test Setup

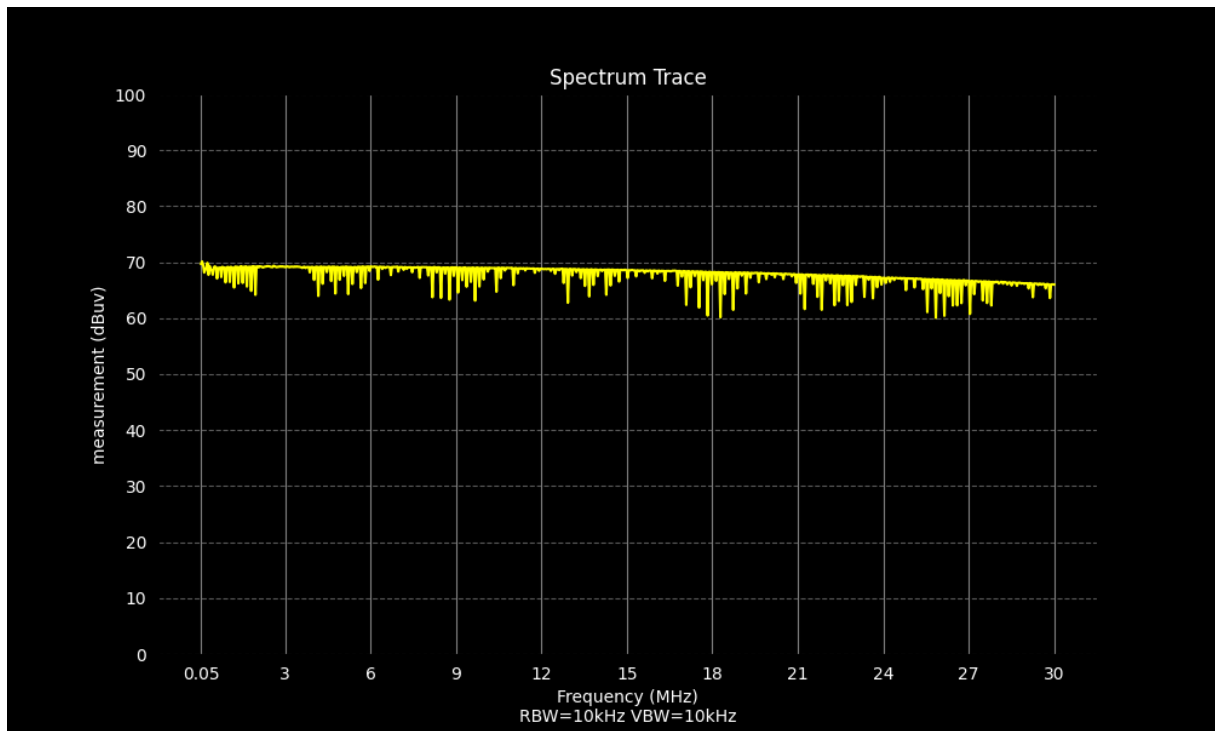
**Date of Measured :**

**Customer : Absolute EMC Llc**

**Model : CG50/500R**

**Serial No. : CG50-567**

- **50kHz / step**



- **500kHz / step**

