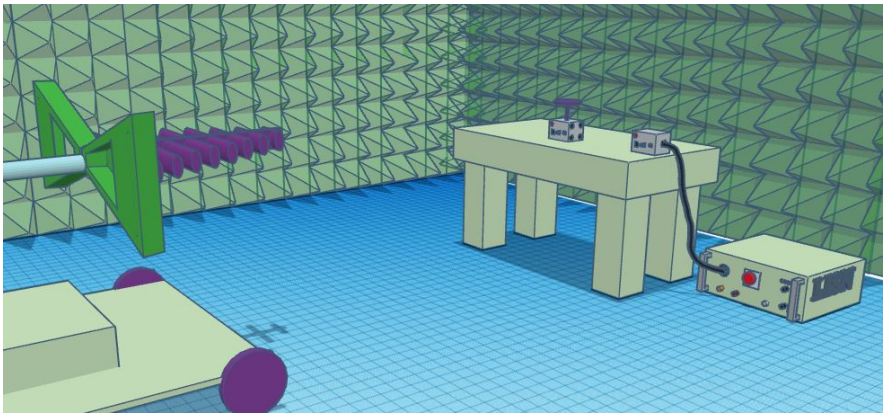
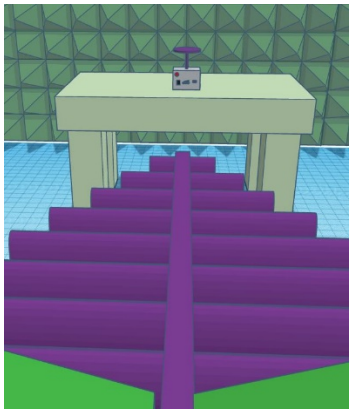
Comb Generators Selection Guide

A Comb generator is required to maintain a quality setup. It is used to measure a known field for Radiated or Conducted Emissions testing. With the use of this known emitter, measurements can be compared with other test sites and labs. Also, readings can be taken and compared over time within the lab and to track the variation of stability of your hole test system. It is an aid to meet quality requirements. Many quality standards require a way to verify measurement equipment before each use. This tool is used to meet this requirement. Secondly, the quality standards require inter-lab comparison. This tool also makes this possible.

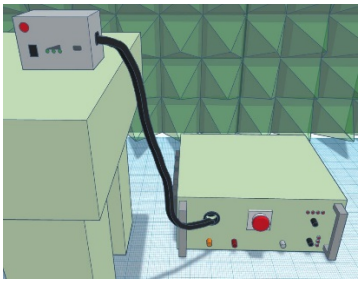
A comb Generator produces an array of frequency spikes spaced by a set frequency spacing, given the look of a hair comb on a spectrum analyzer. The output is stable at each frequency point. This gives an excellent repeatable measurement source that is small, battery-powered making it easy to grab for quick checks. Many comb generators are paired with a monopole or disk antenna for convenience of use.

Noise sources are offered for these requirements as well. A noise source is different as it produces a wide frequency white noise across a given frequency range. A noise source does not output set frequencies to verify the frequency parameter. However, being a wideband noise source, there are no gaps in frequency output, which can allow a complete sweep of all frequencies within the band. This is a case of why a comb generator might be better. However, many feel the comb generator is a better tool since it can verify the frequency measurement of your measurement receiver. We feel this advantage makes the comb generator a better choice.





For use in conducted immunity, the comb generator is connected directly into the EUT power port of the LISN or Telecom ISN. The injected signal can then be measured with the receiver to verify the measurement path.



Comb Generator Selection Guide

	Product	Frequency	Frequency Step	Suggested Application	Specifications	Accessories
CG-01-05		5 MHz – 1 GHz	5 MHz	RE	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Mini USB Charger, USB cable, Wooden box
CG-01-10		10 MHz – 1 GHz	10 MHz	RE	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Mini USB Charger, USB cable, Wooden box
CG-01-25		25 MHz – 1 GHz	25 MHz	RE	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Mini USB Charger, USB cable
CG-01 5/10		30 MHz – 1 GHz	5 MHz and 10 MHz	RE	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Mini USB Charger, USB cable, Wooden box
CG-10/500		10 kHz- 30 MHz	10 kHz and 500 kHz	CE	Output: IEC320 C14 RJ11, RJ45 Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Earthing cable, Mini USB Charger, USB cable, Wooden box
CG-10/500L		10 kHz- 30 MHz	10 kHz and 500 kHz	CE	Output: IEC320 C14 Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Earthing cable, Mini USB Charger, USB cable, Wooden box
CG-50/500		50 kHz- 30 MHz	50 kHz and 500 kHz	CE	Output: IEC320 C14 RJ11, RJ45 Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Earthing cable, Mini USB Charger, USB cable, Wooden box

	Product	Frequency	Frequency Step	Suggested Application	Specifications	Accessories
CG-50/500L		50 kHz- 30 MHz	50 kHz and 500 kHz	CE	Output: IEC320 C14 Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Earthing cable, Mini USB Charger, USB cable, Wooden box
CG-10L510R		50 kHz – 30 MHz 5 MHz – 1 GHz	10kHz/500kHz 5/10MHz	← CE ← RE	Output: IEC320 C14 SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Earthing cable, Mini USB Charger, USB cable, Wooden box
CG-50L10100R		50 kHz – 30 MHz 10 MHz – 7.5 GHz	50kHz/500kHz 10/100MHz	← CE ← RE	Output: IEC320 C14 SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Earthing cable, Mini USB Charger, USB cable, Wooden box
CG-50/500R		50 kHz- 30 MHz	50 kHz and 500 kHz	RE – monopole antenna verification	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 300 x300 x 1085 mm	Incl. long monopole antenna (SMA), Mini USB Charger, USB cable
CG08-10/100R		10 MHz – 7.5 GHz	10 MHz and 100 MHz	RE	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Mini USB Charger, USB cable, Wooden box
CG08-100R		100 MHz – 7.5 GHz	100 MHz	RE	Output: SMA (F) Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. extending monopole antenna (SMA), Mini USB Charger, USB cable, Wooden box
CG-100/500		100 kHz – 400 MHz	100 kHz and 500 kHz	CE	Output: IEC320 C14 RJ11, RJ45 Run time: 16 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Earthing cable, Mini USB Charger, USB cable, Wooden box

	Product	Frequency	Frequency Step	Suggested Application	Specifications	Accessories
CG118-100CF		100 MHz – 18 GHz	100 MHz (flatter output)	RE	Output: SMA (F) Run time: 7 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Disc Antenna, Mini USB Charger, USB cable, Wooden box
CG118-250RF		1 – 18 GHz	250 MHz (flatter output)	RE	Output: Antenna attached Run time: 8 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Mini USB Charger, USB cable, Wooden box
CG118-250CF		1 – 18 GHz	250 MHz (flatter output)	RE	Output: SMA (F) Run time: 8 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Disc Antenna, Mini USB Charger, USB cable, Wooden box
CG126-250R		250 MHz – 18 (40) GHz	250 MHz	RE	Output: Antenna attached Run time: 8 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Mini USB Charger, USB cable, Wooden box Usable up to 40GHz @1m
CG126-250C		250 MHz – 18 (40) GHz	250 MHz	RE	Output: 2.92 (F) Run time: 8 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Disc Antenna, Mini USB Charger, USB cable, Wooden box Usable up to 40GHz @1m
CG140-1000C		1 – 40 GHz	1 GHz	RE	Output: 2.92 (F) Run time: 6 hr Charge time: 10 hr 120 x 82 x 85 mm	Incl. Disc Antenna, Mini USB Charger, USB cable, Wooden box Usable up to 40GHz @3m R version with antenna attached available
RefRad X		10 kHz - 3 GHz	10 kHz, 1 MHz, and 5 MHz	CE & RE	Output: Type N (F) Run time : 6 hr 135(diam) x255 mm	Unit can be configured in different ways With Conical antenna, transportation case, LISN adaptors, Horizontal holder, FiberLink,…

	Product	Frequency	Frequency Step	Suggested Application	Specifications	Accessories
SG 9301		10 kHz – 1000 MHz	100 Hz, 1 kHz, 10 kHz, 100 kHz, and 1 MHz	CE & RE	Output: Type N (F) Run time : 10 hr 200 x 69 x 67 mm	Only the Comb Generator is supplied, can be paired with a Broadband mini Biconical antennas as shown, hooked up to LISNs with calibration adaptors. A 10dB attenuator (DGA 9552 N 10 dB) is suggested with high VSWR Requires Charger ACS 110
SG 9303		0.01 - 8 GHz	10 & 100 MHz	RE	Output: Type N (F) Run time : 8 hr 200 x 69 x 67 mm	Only the Comb Generator is supplied, can be paired with a Broadband mini Biconical antenna. A 10dB attenuator (DGA 9552 N 10 dB) is suggested with high VSWR Requires Charger ACS 110
SG 9302		0.1 - 18 GHz	100 MHz (minor adjustment allowed to match up to receiver)	RE	Output: Type N (F) Run time : 8 hr 150 x 80 x 130 mm	Only the Comb Generator is supplied, can be paired with a Broadband mini Biconical or Double Ridge horn antenna. A 10dB attenuator (DGA 9552 N 10 dB) is suggested with high VSWR antennas or connections USB charger included
TBCG1		100 MHz – 6 GHz	100 MHz	RE	Powered with 9V alkaline battery 80 x 61 x 27 mm	Ideally used for pre-compliance applications

Field Source Applications

- normalized site attenuation measurements in fully anechoic rooms (FAR)
- system checks for test labs (radiated emission)
- shielding measurements
- investigation of table and mast influence
- laboratory inter-comparison measurements
- test site correlation measurements (same type)
- correlation of alternative test methods

Comb Generator Applications

- system checks for test labs (radiated emission)
- system checks for test labs (conducted emission)
- “pseudo” EUTs
- cable loss calibrations
- normalized site attenuation measurements (SAC)
- normalized site attenuation measurements (FAR)
- laboratory inter-comparison measurements
- test site correlation measurements (same type)
- correlation of alternative test methods
    - (TEM cells / GTEMS / small pre-complinet chambers)
- chamber factor measurements
- investigation of table and mast influence