York EMC Services

CGE 02
Comb Generator Emitter

Product Technical Information
Comb Generator Emitter: CGE02

The Comb Generator Emitter 02 (CGE02) is a compact, battery powered, reference signal source that generates a broadband radiated and/or conducted output up to 26 GHz. When used as a verification reference source, the known output allows unknowns within systems or components to be measured or calculated. The compact size allows small enclosures to be evaluated when used as a reference source for shielding effectiveness measurements.

The CGE02 can be supplied with a 50 Ω SMA output connector (CGE02C) for direct connection to conducted test systems, or to an external antenna in order to generate test fields for evaluating radiated emission test systems. Alternatively, to achieve the best repeatability and compactness for purely radiated applications, the CGE02 can be supplied with an integrated antenna (CGE02R).

The CGE02 harmonic steps can be switched between 250 MHz and 256 MHz as standard, allowing more frequency points to be measured than is possible with a fixed-frequency source.

CGE02C with BP01 battery pack

Features

- **Stable output**
  - Repeatable measurements
- **Conducted and radiated options**
  - Evaluation of both conducted and radiated systems
- **250 MHz to 26 GHz output**
  - Applications across a broad frequency spectrum
  - Applicable to harmonics of high frequency systems
- **Compact and portable**
  - Comparisons between sites and environments
  - Shielding effectiveness measurements even of small enclosures
- **Battery powered**
  - No power or interconnecting cables affecting measurements

Applications

- **Shielding effectiveness of small enclosures e.g. PCs, servers, wireless communications equipment**
- **Radiated measurement systems validation and verification**
- **Reference source for:**
  - Daily pre-test verification checks if required by the accreditation authorities
  - Long term performance monitoring
  - Spectrum analyser / receiver pre-checks
- **Investigation of reverberation (mode stirred) chamber behaviour**
- **Characterisation of filter performance**
- **Cable loss measurements**
- **Inter-laboratory test programs**
- **Proficiency test programs**

Manufacturer's calibrations

CAL14	**Conducted** output power, 0 GHz to 26 GHz, measured using a spectrum analyser (**CGE02C only**)
CAL10	**Radiated** field strength, 1 GHz to 26 GHz, measured at 3 m in a FAR using a spectrum analyser (**CGE02R or CGE02C with monocone antenna only**)

Specifications

Frequency range	250 MHz to 26 GHz direct connection into a 50 Ω system 1 GHz to 26 GHz radiated using the integral antenna (CGE02R) or additional monocone antenna (CGE02C)
Step size	250 MHz or 256 MHz switchable
Output connector	50 Ω SMA socket (CGE02C only)
Temperature stability	<1 dB, at an ambient temperature of 15 °C to 35 °C
Time stability	Typically <1 dB over a 12 month period
Dimensions	CGE02C with battery pack – 76 mm diameter × 64 mm (74 mm incl. connector) CGE02C without battery pack – 76 mm diameter × 18 mm (28 mm incl. connector) CGE02R with battery pack – 76 mm diameter × 92 mm CGE02R without battery pack – 76 mm diameter × 46 mm
Weight	Approx 550 g (including battery)
Power supply	5 V 2 AHr battery pack External input 5.00 V ± 0.25 V, 300 mA
Operating time	6.5 hours typical with a fully charged battery pack
Indicators	Mode 1; 256 MHz steps. Mode 2; 250 MHz steps, incorrect power supply voltage

Standard kits: 250 MHz & 256 MHz switchable comb step size

Part Number	Description	Parts included
CGE02KIT01	Standard CGE02C comb generator emitter (**conducted** output) kit	• CGE02C comb generator emitter with SMA output connector • CAL14 – conducted output power measurement, 0 GHz to 26 GHz
CGE02KIT02	Standard CGE02R comb generator emitter (**radiated** output) kit	• CGE02R comb generator emitter with integral antenna • CAL10 – radiated electric field strength measurement, at 3 m in a FAR, 1 GHz to 26 GHz
CGE02KIT03	Enhanced CGE02C comb generator emitter (**conducted** and **radiated** output) kit	• CGE02C comb generator emitter with SMA output connector • MCN02 – detachable monocone antenna • CAL14 – conducted output power measurement, 0 GHz to 26 GHz

All kits are supplied with: BP01 5 V 2 AHr rechargeable battery pack, BCH04 universal input battery charger, hard case, manual.

Accessories

MCN02	Detachable monocone antenna (1 GHz to 26 GHz optimum used with CGE02C)
BP01	5 V 2 AHr detachable battery pack

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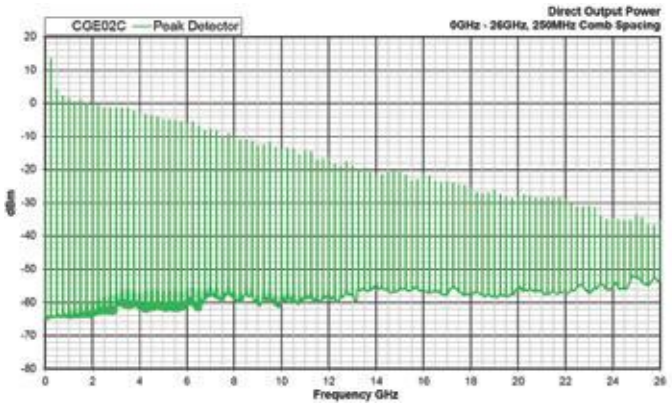
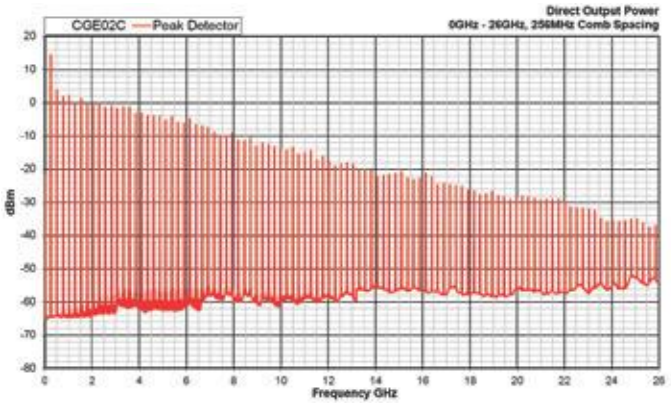
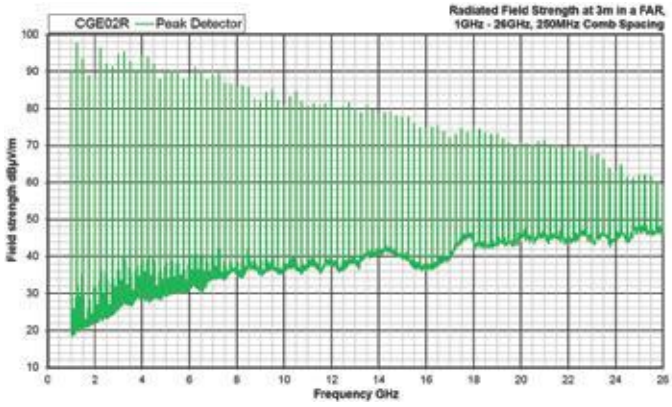
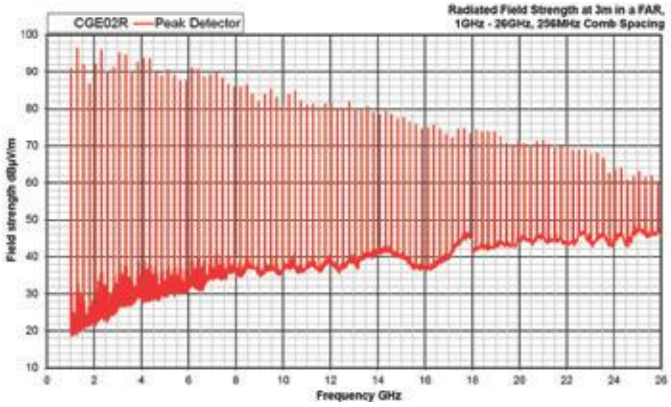
Typical output measurement results









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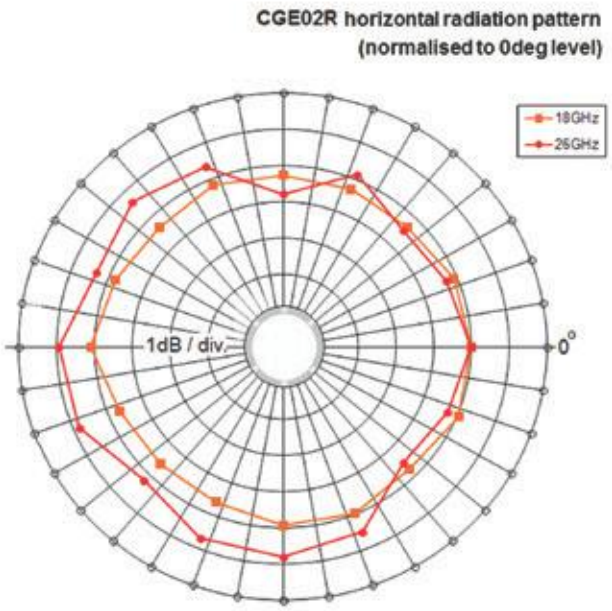
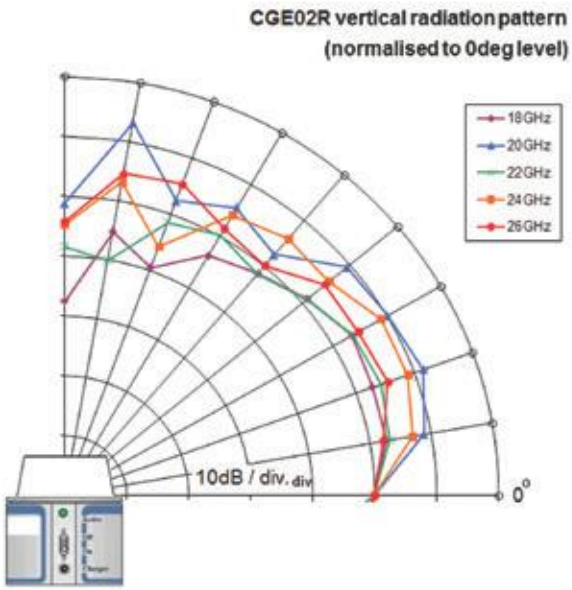
Radiation pattern





0° is in line with the indicator on the CGE

Y8680FLY05

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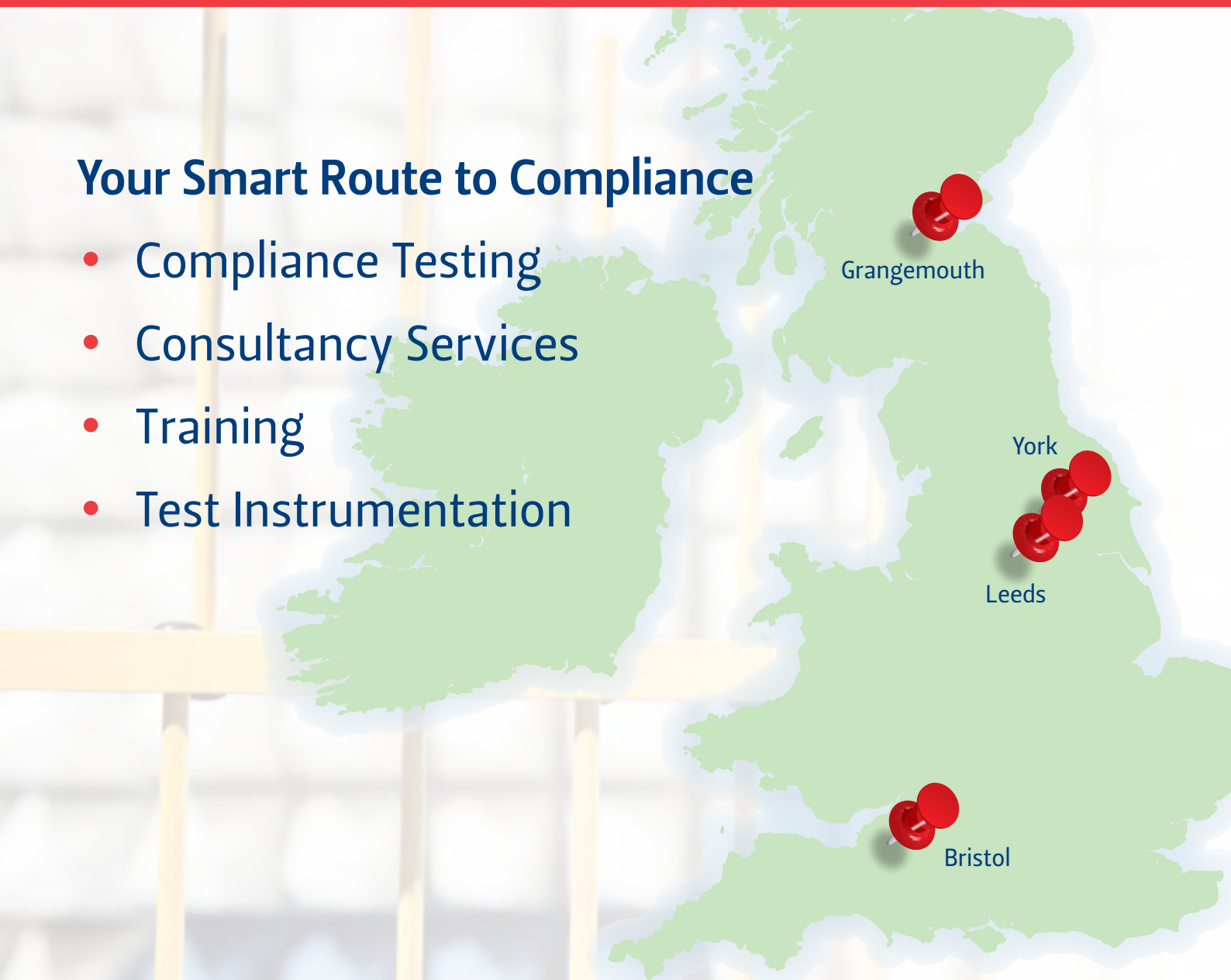

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