

### **Does my Comb Generator require Calibration?**

To answer this question, we must first consider the way in which a comb generator is used, as well as the purpose for which it is used.

While Comb Generators can be used for many different applications, their primary intended application is as a reference source for periodic verifications (or site checks) of a conducted or radiated emission measurement system/test site.

#### TYPICAL PROCESS FOR PERIODIC MEASUREMENT SYSTEM/SITE VERIFICATIONS (SITE CHECKS):

Reference amplitude measurements of the comb generator output signals are performed when the measurement system/test site is already known to be in proper working order. Ideally, this is done immediately, or soon after all components of the measurement system have been individually calibrated. When applicable, this also includes calibration of the test site, usually in the form of Normalized Site Attenuation (NSA).

Then, on a periodic/regular basis (usually before each test), the same comb generator output signals are re-measured, and then compared with the original reference set of measurements. The measured amplitudes of the signals during the site checks should be consistent (within a predefined tolerance, typically  $\pm 3$  dB) with the reference measurements.

If the amplitudes measured during any given site check are within the predefined tolerance of the original reference measurements, then the site is deemed to be in proper working order for testing. If the amplitudes fall outside of the predefined tolerance of the original reference readings, then there may be some problem with the measurement system/site, which should be identified and corrected prior to being used for testing.

For a device such as a comb generator, there is no “standard” against which it can be calibrated. Therefore, any ‘calibration’ would essentially be just a characterization of its output, as there is no defined PASS/FAIL criteria. And, especially with regard to its radiated output, any calibration/characterization performed on a test site other than the site on which it will ultimately be used for site checks, would hold little value; as the site will, to some degree, affect the measured values.

Considering the previous paragraph, along with the site check process described above; the process of performing the reference measurements, as described in the latter, should be considered to be the “calibration” (or characterization) of the comb generator.

In addition, if you are a 17025 accredited laboratory requiring 17025 accredited calibration; the same holds true; as any 17025 accredited test laboratory is allowed to calibrate its own equipment.