EMPIR EURAMET
The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

Webinar - Measurement methods for the frequency range 2-150 kHz (Supraharmonics)

Date: 11th November 2020 at 10h UTC

Duration: 2 hours

Join for free via Skype: URL to ADD

Purpose:

The growth of power converters in equipment such as renewable generation and electric vehicle chargers has led to a build-up of EMI in the 2-150 kHz range. These frequencies are above the traditional power quality (PQ) range, which is used to regulate emissions of equipment connected to the public electricity supply. The lack of emission limits in the past has resulted in increased EMI related malfunction of mass market goods as well as premature aging of connected consumer and professional equipment. The lack of measurement infrastructure in the 2- 150 kHz range is hindering the ability to regulate emission in this frequency range and this workshop will explore the challenges and progress toward a framework for PQ measurements.

The EU funded EMPIR programme project *SupraEMI* was initiated to define a new normative measurement method for the 2-150kHz frequency range and associated R&D. This workshop will present findings at the halfway point in this three year project.

The workshop will present and discuss some of the EMI problems that exist due to 2-150 kHz emissions and give an update on the response of IEC SC77A in the definition of new PQ standards to cover this frequency range. This includes the need for grid measurements to assess disturbance levels in relation to the newly established compatibility levels and the compatibility of the measurement methods with the traditional analogue approach used by CISPR-16. The need to define a new digital measurement method to be included in the PQ measurement standard IEC61000-4-30 will be discussed and digital implementations of the CISPR-16 methods will be presented. A number of novel algorithms have been published in recent years, these will be summarised and a comparison of their performance and efficiency will be presented. The suitability of the measurement methods used by EMC test houses will be considered, in particular the comparison of the used artificial mains network with complex mains impedance measurements in the 2-150 kHz range.

(Continued on the next page)

This project 18NRM05 SupraEMI has received funding from the EMPIR programme co-financed by the Participating States and from the European Union's Horizon 2020 research and innovation programme.

The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

11th November 2020 at 10h UTC to 12h UTC (11h CET to 13h CET).

Join for free via Skype: URL to ADD

Agenda:

1. The problem of 2-150kHz conducted EMI in public electricity networks.
   Paul Wright NPL. (30mins)

2. Discussion. (10 mins)

3. Characterisation of different types of emission in the range 2-150kHz.
   David de la Vega, UPV/EHU (15 mins)

4. A review and comparison of published 2-150kHz measurement methods.
   Deborah Ritzmann, NPL (20 min)

5. Adapting the CISPR 16 standard for power quality measurements.
   Stefano Lodetti, NPL (20 min)

6. CISPR 16 method: grid application and field experience.
   Victor Khokhlov, TUD (20 mins)

7. Discussion (10 mins)

8. Mains impedance measurements and defining Artificial Mains Networks for 2-150kHz EMC testing.
   Victor Khokhlov, TUD (20 min)

9. Next steps and final discussion. (10 mins)

Speakers:
Victor Khokhlov, TU Dresden, DE.,
Deborah Ritzmann, National Physical Laboratory, UK,
Stefano Lodetti, National Physical Laboratory, UK,
David de la Vega, UPV/EHU, ES.,
Paul Wright, National Physical Laboratory, UK.