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# Introduction to the EMC Society and PI Standardization

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# A tour round the topics

- What is the EMC Society (a very brief summary)
- SI & PI Standardization to date
- The Power Integrity Virtual Sandpit event





# The EMC Society

## **IEEE EMC Society Mission**

To foster the development and facilitate the exchange of scientific and technological knowledge in the discipline of electromagnetic environmental effects and electromagnetic compatibility, as detailed in the EMCS's field of interest (FOI), and promote literary, educational and professional aspects thereof, that benefit members, the profession and humanity.





# The EMC Society

## **IEEE EMC Society Vision**

To be the recognized and respected global organization and leading provider of scientific and engineering information and services in the field of electromagnetic environmental effects and electromagnetic compatibility engineering, technology, and innovation for the betterment of society and the preferred professional development source for our members.





# The EMC Society

## **IEEE EMC Society Field of Interest Statement**

The Field of Interest of the Society involves engineering related to the electromagnetic environmental effects of systems to be compatible with themselves and their intended operational environment. This includes: standards, measurement techniques and test procedures, instrumentation, equipment and systems characteristics, interference control techniques and components, education, computational analysis, and spectrum management, along with scientific, technical, industrial, professional or other activities that contribute to this field.





# TCs and SCs

TC 1 EMC Management

TC 2 EMC Measurements

TC 3 Electromagnetic Environment

TC 4 Electromagnetic Interference Control

TC 5 High Power Electromagnetics

TC 6 Spectrum Engineering

TC 7 Low Frequency EMC

TC 8 - Aeronautics and Space EMC

TC 9 Computational Electromagnetics

TC 10 Signal and Power Integrity

TC 11 Nanotechnology and Advanced Materials

TC 12 EMC for Emerging Wireless Technologies

SC 1 Special Committee on Smart Grid

SC 2 Special Committee on Low Frequency EMC is now TC 7

SC 4 EMC for Emerging Wireless Technologies is now TC 12

SC 5 Power Electronics EMC





# A first step in SIPI standardization

## **P370 Electrical Characterization of Printed Circuit Board and Related Interconnects at Frequencies up to 50 GHz.**

This document addresses the quality of measured S parameters for electrical printed circuit board (PCB) and related interconnect at frequencies up to 50 GHz. This might include but is not limited to: test fixturing, methods and processes for controlling the accuracy and consistency of measured data for broadband signals with frequency content up to 50 GHz. The standard is applicable to: PCB and related interconnects (including package, connector, cable, etc.) used in high speed digital applications, operating with signals at frequencies up to 50 GHz; most industries using such interconnects; major measurement approaches (Time Domain or Frequency Domain) for collecting S-Parameter data; significant methods of removing/de-embedding fixture and instrumentation effects.





# Power Integrity Standard Sandpit

**We are looking to identify potential standardization activities for the IEEE**

- Interactive series of linked on-line workshops
- Involves 20 – 40 people
- Includes mentor(s)
- Mix of multidisciplinary stakeholders from industry and academia (and in this case across multiple Societies and potentially Councils)
- Focussed on novel approaches to addressing (in this case) the dearth of standards products for Power Integrity
- They are intensive discussion forums based on ‘out of the box’ or ‘lateral’ thinking to identify needs and products.
- The schedule will be undertaken over several days to allow for relaxation of the participants between each intensive and demanding session





# Power Integrity Sandpit

- The meeting schedule will allow
  - The opening meeting to
    - define the scope of the issue
    - The shared language
    - Sharing an understanding of the participants expertise
    - A general problem 'topology' from which to generate breakout groups
  - The series of separate 'breakout' meetings will create innovative approaches to the problem
  - The final meeting will turn the breakout ideas into standards project ideas, which will then be turned into PARs by the various groups.





# Summary

- I believe there is an overlap with the work of the IBIS community
- We can identify issues that we can work collaboratively on
- Our TC10 (Signal and Power Integrity) is a natural point of communication between the Society and the IBIS community
- I hope the 'virtual sandpit' will be of interest and we have colleagues in the meeting who will be interested to join the discussion.

