

## 2008 Activity Report of Commission E (Electromagnetic Noise and Interference)

### Domestic Topics:

The power line communication system (PLC) has been brought into commercial application after critical controversies for three years between vendors of terminals, and other victim-sides, e.g. radio amateur or radio astronomers. In Japan, aerial lines are used as feeder line, which supplies electricity to homes, and radiation from it is seriously worried.

EMI control technologies are still of prime interest of high-speed electronic device supplier. Engineers who design electronic apparatuses are always more effective, more versatile method of EMI control. Research activities are held in many farms, but results are apt to be closed to the farm. EMC researches are held in a few universities out of more than 100 Universities that have engineering department.

Automobiles as well as electronics are commodities to be exported in order to support Japanese people. These days the electric vehicles are expected as a resolution for the global green-house effect, in which radio receivers must work with 30-100kW driving electric system. The EMC problems in automotives are problems of today and tomorrow in Japan. Thus EMC technologies to suppress noise are fundamental technologies that assure the existence of the country.

### Academic activities:

1. Commission E had, in the period of April 2008 to March 2009, 9 technical meetings in corporation with the Technical Committee on Electromagnetic Compatibility (EMCJ) of the Institute of Electronics, Information and Communication Engineers of Japan (IEICE). More than 100 papers were read there, 20-30 minutes each. Most of them were held in Japanese with English abstracts in proceedings. A few presentation were made in English, most of them are by foreign students or researchers. List of the titles are found in a web-page, <http://www.ieice.org/cs/emcj/index.html#abstract>.
2. A small sized international meeting, Pan-Pacific EMC Meeting (PPEMC) has been regularly held till the year of 2006. Third event was held May 15-16, 2008 at NTT Musashino R&D Center, Tokyo.
3. "2008 Electrical Design of Advanced Packaging and Systems, EDAPS 2008" was held in 10-12, Dec, 2008, Seoul, Korea. This is mainly related with LSI packaging but many EMC subjects are included.

4. “2008 Asia-Pacific Symposium on Electromagnetic Compatibility” was held in conjunction with the 19th Intern. Zurich Symposium on Electromagnetic Compatibility, as called “Asia-Pacific EMC Week in Singapore 2008” May 19 - 22, 2008.” This is independent with the one that is held in Zurich. Attracting EMC engineers in South-East Asia where electronics industries are emerging recently.

5. Chair of commission E in Japan, Prof. Ryuji Koga attended the URSI Assembly on August 2008, Chicago, and contributed to the discussion in the Commission-E Business meeting on the future scopes of the Commission.

#### Future International Meetings Related to Electromagnetic Noise

1. “2009 International Symposium on Electromagnetic Compatibility, Kyoto”.

It is one of periodically held every five years in Japan. This will be held in 20-24, July 2009 in Kyoto. More than 600 audiences and 250 presentations are expected. Scopes are as follows,

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|---------------------------------------|--|
| 1.Measurement Techniques              | 2.EMC Test Facilities                    |
| 3.Standards and Regulations           | 4.System-Level EMC                       |
| 5.Chip and Package Level EMC          | 6.PCB and Circuit Design for EMI Control |
| 7.Transmission Lines and Cables       | 8.Signal Integrity                       |
| 9.Immunity / Susceptibility           | 10.ESD and Transients                    |
| 11.Shielding and Grounding            | 12.EM Absorber                           |
| 13.Numerical Modeling                 | 14.Biological Effects and Safety         |
| 15.EM Environment Measurement         | 16.Power system EMC                      |
| 17.Automotive EMC                     | 18.Communication System EMC              |
| 19.EM Wave Propagation and Scattering | 20.Lightning and over-voltage protection |
| 21.Electromagnetic Product Safety     | 22.EMC Management                        |

Submission of papers is already closed with more than 200 entries. More than 500 audiences are expected.

2. 2009 Korea-Japan AP/EMC/EMT Joint Conference (KJJC-09) will be held May 14-15, 2009, RFID/USN Center at Songdo in Incheon, Korea.

3. 5<sup>th</sup> Asia-Pacific Conference on Environmental Electromagnetics(CEEM’09/Xi’ An) will be held in 16-19, Sept, 2009 , Xi’ An, China.