A ONE-WEEK TRAINING IN ELECTROMAGNETIC COMPATIBILITY OF INTEGRATED CIRCUITS
SEPT 21-25, 2015

Description of the Course Topic

The five-day course is focused on electromagnetic compatibility of integrated circuits.

A set of basic concepts is proposed as an introduction, covering specific units, parasitic impedance of interconnects, origin of noise, noise margins, time/frequency conversion and adaptations.

The second focus concerns parasitic emission, how to design low emission circuits and how to measure the IC emission using standard IEC 61967 methods.

A third topic concerns susceptibility, with focus on measurement methods (IEC 62132) and hardware/software techniques to improve immunity to interference.

The fourth part is related to modeling approaches for predicting EMC (IEC 62433), based on standards such as IBIS, ICEM and ICIM.

The fifth part deals with EMC guidelines for improved emission and immunity to interference.

Afternoons are dedicated to practical sessions including an access to the EMC laboratory of INSA Toulouse, for hands-on experiments of IC characterization (IEC 62132) and hardware/software techniques to improve immunity to interference.

Finally, roadmaps and future challenges are briefly reviewed.

Illustrations of these concepts are made using IC-EMC (www.ic-emc.org), a freeware including unique features and tools for efficient EMC simulations of integrated circuits.

Audience:

PhD Students in electronics and IC design, IC users, IC designers, Researchers in CMOS design.

Accreditation:

• The administrative part of the course is fully handled by INSA Toulouse continuing education.
• The format of exam and of evaluation at the completion of the course are based on Eurodots recommendations.
• Format of exam and of evaluation at the completion of the course is based on written reports adjusted to Eurodots recommendations.
• The registration fee and what is included in this fee: printed matters, USB key with PPT slides, software for practical trainings, application notes, access to the EMC lab, 5 lunches at INSA restaurant.
• Lodging arrangements and costs: several low cost hotels (20-40 EUR/night) walking distance to INSA, direct link via subway to city center (15 min).
• Registration fee: 2000 EUR per person; 1500 EUR for PhD/Master Students.

What attendees say

« The experiments were very well prepared »
« The training course was perfectly matched to our needs »
« I like the philosophy of EMC of Dr. Boyer and Prof. Sicard. A big part is to investigate EMC without any knowledge of the design »
« The presenters were very good indeed. Everything was on-time. There was a good atmosphere of collaboration. I was not bored at all for a week. »
« Both presenters have showed a great motivation, knowledge and excellent didactic approach »
« The overall impression of the course is satisfactory. Thank you very much »
« The course gave me a broad overview of this topic. I really recommend this course. »
« The educational methods, materials, along with the IC-EMC software was excellent »

Lecturers

Etienne SICARD graduated from the University of Toulouse (B.S degree in 1984) and obtained a PhD in 1987 at LAAS/CNRS laboratory. His is a professor at INSA Engineering School. He gives scientific support to industrial projects in electromagnetic compatibility (EMC) of integrated circuits (IC). He was a distinguished lecturer from the IEEE EMC society (2006-2007) on the topic “EMC of ICs”. He chaired the 6th International Workshop “EMC Compo 2009” in Toulouse. His research interests include CMOS design for improved EMC, software development (Microwind, IC-EMC) & signal processing for speech therapy. Since 2003, he has organized 25 training sessions for professionals, industries, researchers and PhD students in the topic EMC of ICs.

Alexandre BOYER graduated from INSA engineering school in 2004 and obtained a PhD in 2007 in electromagnetic compatibility of Integrated Circuits. He has been a senior lecturer in electronics, microelectronics and signal processing since September 2008. His research interest concern the modelling of IC immunity, the robustness and reliability of IC, as well as software tool development for EMC. In 2011, he joint the LAAS/CNRS laboratory, as part of the research group Power Management System Integration.

Practical Information (first input):

• Venue and travel info: all documents sent to attendees
• Lodging arrangements and costs: several low cost hotels (20-40 EUR/night) walking distance to INSA, direct link via subway to city center (15 min)
• Registration fee and what is included in this fee: printed matters, USB key with PPT slides, software for practical trainings, application notes, access to the EMC lab, 5 lunches at INSA restaurant.
• Lodging arrangements and costs: several low cost hotels (20-40 EUR/night) walking distance to INSA, direct link via subway to city center (15 min)
• Registration fee: 2000 EUR per person; 1500 EUR for IEEE or SEE members; 950 EUR for PhD/Master Students.

Website:

http://www.ic-emc.org

Eurotraining website: http://ecd.eurotraining.net
> Course service > Quality labelled courses > EMC of ICs

Registration: INSA Toulouse Continuing Education

Location: INSA, 135 avenue de Rangueil, 31077 Toulouse FRANCE
Loba MARINO - Tél.: +33(0)5.61.55.92.53 - mail: fca@insa-toulouse.fr

Come to INSA: Subway line B, Station Faculté de Pharmacie.