Hong Kong 香港科技園
Science & Technology Parks

Co-organized by:

LEXIWAVE
Reinventing RFIC

Training on **RF PCB Design and Measurement**

Date: **Jul 12-13, 2007 (THU-FRI)**
Time: **9:30am – 5:00pm**
Fee: **HK$ 2,000 per person**
HK$ 1,800 ONLY
for early birds !

Venue: **Training Room, 1/f., Core Building, Science Park, Shatin, Hong Kong**

Introduction:

Product life cycle of consumer products is getting shorter and shorter due to the competitive business environment nowadays. RF design particularly on Printed-Circuit-Board (PCB) layout becomes crucial on determining the success of wireless communication products as PCB layout affects greatly on the performance, stability and reliability of the products. This course is aimed to provide an opportunity for participants to acquire technical insights on some vital aspects of RF PCB Layout and RF Measurement from industry perspective. It is structured into two modules. The first module will cover the vital aspect and considerations on RF PCB Layout and Design. Designs on commercial products will be presented to the participants to gain in-depth and integral perspective on RF PCB layout and design. The second module will provide an overview on RF instrumentation and measurement techniques. Specific issues pertaining to different RF designs, i.e. receiver, transmitter will be highlighted for discussion and demonstration. Measurement demonstration will be performed with state-of-the-art RF equipments at the Wireless Communication Laboratory of the Hong Kong Science and Technology Park. Both modules will be conducted by experienced RF experts from the industry with local and overseas working experience. Given the knowledge and information provided by the training, it is hoped that the participating engineers or mangers can develop RF products with the fewest number of iteration and top performance.

Who should attend:

RF designers, wireless product designers, field application engineers, business development engineers and managers, design managers

Instructors:

Dr. C M Yuen received his B.Eng. and Ph.D degree in Electronic Engineering from the City University of Hong Kong. His research interest is mainly in the design of RF and Microwave circuits for low voltage and low power consumption wireless systems. He has twenty years of experience in RF product design and manufacturing in Hong Kong and Mainland China. Dr. Yuen is currently an advisory engineer in the field of HDTV and IPTV.

Mr. Henry Lau received his M.Sc. and MBA degrees from UK and US respectively. He has more than 20 years of experience in designing RF system, products and RFICs in both Hong Kong and US. He has worked for Motorola and Conexant in US as Principal Engineer on developing RFICs for cellular phone and silicon tuner applications. Mr. Lau holds four US patents and has two patents pending. He is currently running Lexiwave Technology Ltd., a fabless semiconductor company in Hong Kong and US designing and selling RFICs.

Transportation: http://www.hkstp.org/english/hksp/hksp_location/hksp_loc_sitemap.html

Course Content:

RF PCB Design and Measurement Techniques (July 12 - 13)

Printed circuit board design for RF circuits

- circuit design, schematic diagram to PCB design
- single / double side component placement
- best utilization of board area
- arrangement of layers
- trace routing : length minimization and width maximization
- board material / characteristic de-sensitization
- grounding and ground plane
- power line routing and power plane
- decoupling
- via holes : location, size and quantity
- shielding
- design examples

Printed circuits board design for analog and digital circuits

- analog circuits
  - component placement
  - isolation of weak / strong signals / noise / differential pair
  - linear / switching power supply
- digital circuits
  - digital noise : clock, signal and power
  - trace length equalization
  - decoupling
  - design examples

EMC issues

- EM interference : prevention and suppression
- EM susceptibility : anti-jamming improvement
- Electrostatic discharge : component location, grounding and trace routing

Mechanical design

- chassis design for maximum board area
- placement of components, antenna, and input / output connectors
- mounting, mechanical strength
- heat sink / ventilation / heat transfer / thermo relief

PCB design for mass production

- single / double side component placement
- single / double side surface mounted components for wave soldering / reflow soldering
- penalization / breakaway / fiducial marks
- test points and test pins

RF Instrumentation and Measurements (July 13)

General Information : cables and connectors, test points, fixtures and test jigs, S-parameters

Receiver

- sensitivity test
- outband rejection test
- channel acquisition

Transmitter

- output measurement
- modulation measurement
- phase noise & residual FM

Laboratory testing

- sub-circuit test
- product test
- RFIC application circuit test and measurement

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Registration Form

Training on **RF PCB Design and Measurement Techniques**

July 12-13, 2007 (9:30am – 5:00pm)
Training Room, 1/f., Core Building 1, Science Park, Shatin
Standard Course Fee*: HK$ 2,000 per person*

HK$ 1,800 per person for full payment received on or before June 27, 2007

*Reimbursement for 75% course fees from entitled T(M)AP applicable for Science Park tenants/Incubatees

Return form with full payment before July 4, 2007 to
FAX: 2607 4040 or **EMAIL:** enquiry.iuc@hkstp.org
Enquiry: Industry & University Collaboration, BDTS, HKSTP (TEL: 2629 6695)

Company: ______________________________ [ ]SP Tenant [ ]Incubatee
Address: ______________________________
Contact: ______________________________ Title: ______________
Tel: ______________ Fax: ______________ E-mail: ______________

Note: Payment receipt will be mailed to above address and contact person

Name	Title	Email	Sub-Total
			HK$
			HK$
			HK$
			HK$
		Total:	HK$

Payment

I shall pay for the Total Amount of **HK$** ______________ by below marked payment method:

[ ] **By Cheque**

Payable to **"Hong Kong Science and Technology Parks Corporation"** with copy of this registration form to:

Hong Kong Science and Technology Parks Corporation
Unit 307, IC Development Centre, Hong Kong Science Park, Shatin
Attention: Industry & University Collaboration (RF PCB Design & Measurement course)

[ ] **By Credit Card** ☐ VISA ☐ MasterCard

Card Number: _______ - ________ - _________- _________ Expiry Date :______(MM)/ ______ (YY)

Name of Cardholder: ______________________________ Signature: ________________

Remarks:

1. *First-come-first-served for registration completed with full payment. Substitutions allowed. Cancellations non-refundable.*
2. *Class would be re-scheduled/cancelled (refundable) if registration below expected size.*
3. *Organizer reserves the right to amend program without prior notice.*

This information is brought to you by Industry & University Collaboration, HK Science & Technology Parks Corp ("HKSTP").
HKSTP is a statutory body set up by the Government of the Hong Kong Special Administrative Region with the mission in leading the transformation of Hong Kong into Asia's hub for technology and innovation in the four focused clusters: Electronics, Biotechnology, Precision Engineering, Information Technology & Telecommunications.

Transportation: http://www.hkstp.org/english/hksp/hksp_location/hksp_loc_sitemap.html