

Radio Approvals Workshop: All You Need To Know

Boston Marriott, Boston, MA

Presented by [AmericanTCB](#) and the [Washington Labs Academy](#)

Dates

September 22-23, 2010

8:30 am - to 5:00 pm daily

Location

[Boston Marriott](#)
[2345 Commonwealth Avenue](#)
[Newton Massachusetts](#)
[617-969-1000](#)

Instructors

[Michael Derby](#)
[Dennis Ward](#)

About The Seminar

Join the experts with ATCB and Washington Laboratories for a comprehensive overview of methods and requirements of EMC and Radio Regulations. This seminar will cover methods of testing, evaluation and certification requirements for commercial equipment with demands for EMC compliance. Specific focus on radio regulations compliance for products bound for global markets.

Included is an update on the recent TCB Council and FCC Training. Learn the specific requirements of the FCC Rules and Regulations including recent interpretations and policies and the impact of the new edition of ANSI C63.4 and the newly-issued ANSI C63.10. The seminar is a two-day comprehensive presentation on FCC, IC and EU requirements for Radio Certification. Updates from the FCC/TCB Council Training; the training will feature critical technical updates on regulations and policies from the FCC/TCB Council training in October 2009.

Who Should Attend

Design, development and test engineers and technicians will benefit from receiving the latest in critical updates on test methodology from practicing experts Dennis Ward and Michael Derby. As the technologies evolve, measurement and certification of devices are constantly evolving and creating challenges for the electronics industry. Keeping abreast of these changes and the nuances of the regulations is critical for speeding electronics products' time-to-market. Fierce competition from rival developers creates additional pressure to design the devices for compliance with the regulatory requirements and "getting it right the first time."

New spectrum and services are being allocated in the US and abroad as the demand for higher speed and multi-point access to information pushes developers to create highly integrated products. Exotic, broadband modulation techniques cram more bits-per-hertz into the allocated spectrum. As it is not uncommon to find multiple-transmitter devices, the challenge to certify

these devices creates issues dealing with radiation hazards, electromagnetic compatibility (EMC) and certification strategies.

Our Lecturers have a wealth of experience and information in the field of product testing and certification and will share their perspective and insight on EMC regulations and evolving requirements for radio frequency systems. This goal of this seminar is to present the latest information on these evolving requirements and to give attendees better understanding of the processes and procedures for approving equipment.

Seminar Overview

Specific topics include:

- Explanation of new technologies (3G, LTE, WiMAX and UWB)
- Updates from TCB Council workshop in Baltimore, October 2009 and the latest requirements and changes from FCC, IC and Europe
- Practical testing techniques
- Testing methodologies for electronic devices, with a focus on radio transmitter devices
- Measurement methods using spectrum analyzers including proper methods of determining power, averaging techniques, ACP measurements (and implemented algorithms), bandwidth and spurious emissions
- Measurement system sensitivity and overload considerations for linear measurements
- Dynamic range considerations
- Sweep time considerations (probability of intercept for broadband signals)
- Extending the frequency range beyond the coax medium (external mixing)
- Test accreditation, including calibration, uncertainties and engineer proficiency

Seminar Format: The Instruction You Need.

The seminar will focus on regulatory matters and the approval of wireless devices. The emphasis will be on consumer products and systems and the impact of FCC, IC Industry Canada and Europe.

Expert Instruction

Michael Derby has worked in the Testing and Certification field for the past twenty years, performing test and validation measurements for a wide variety of equipment destined for Global Markets. He has experience in the US and EU testing regimens and has responsibility for Notified Body and Certification approvals for a wide variety of radio frequency technologies, covering all Parts of the FCC Rules, ETSI/EN standards and Industry Canada Radio Standards Specifications.

Michael represents AmericanTCB on the R&TTE Conformity Assessment committees, making regular contributions and interfacing with laboratories, regulators, manufacturers and specifiers.

Dennis Ward is senior applications examiner for AmericanTCB. He has been involved in many aspects of EMC, wireless and product conformance for many years. He has worked as a EMC test engineer and Director of Laboratories for CKC Laboratories. He has consulted on numerous products for world-wide approval, including cellular, 3G, Wi-Fi, Spread Spectrum, Digital Transmission Systems, Wireless Access Points, and numerous licensed and unlicensed products. He has performed certification review for conformance with Specific Absorption Rate (SAR) requirements and radiation hazards.

Dennis has been directly responsible for accreditation issues and activities supporting Telecommunications Certification Bodies, accreditation to ISO Guide 65 and ISO Guide 17025. He is a EMC and ESD NARTE-Accredited Test Laboratory Engineer.

Course Outline

Radio Transmittal Approvals Workshop: All You Need To Know

Instructors: Dennis Ward and Michael Derby

Wednesday September 22, 2010

8:00 AM Registration

8:30 AM Introduction and overview of course

9:00 AM Licensed verses unlicensed devices

9:30 AM TCB Applications–TCB approval processes and confidence-building
Problem applications – common mistakes

11:00 AM Break

11:15 AM RF Exposure, Maximum Permissible Exposure (MPE)

12:00 Lunch

1:00 PM RF Exposure, Specific Absorption Rate (SAR)

2:00 PM Break

2:30 PM FCC Submissions from a Laboratory Perspective

3:30 PM RF hazards considerations: Portable vs Mobile RF hazards considerations:
Measurement vs predicted for single vs multiple transmitters and antenna(s)

4:30 PM Questions and Answers

5:00 PM End

Thursday September 23, 2010

8:30 AM US/FCC Radio Regulations overview

9:30 AM FCC Technical Rules

10:00 AM Break

10:15 AM Updates from TCBC Training: Permit But Ask Procedure, KDBs

11:30 AM Modular approvals and permissive changes

12:00 PM Lunch

1:00 PM 802.16, 802.11, WiMAX, LTE

2:00 PM HSUPA, KDB

2:30 PM CE Marking for the R&TTE Directive

3:00 PM Break

3:30 PM RTTED Approval for European market

4:30 PM Certification requirements for Industry Canada

5:00 PM End

Fee/Registration

Radio Transmitter Approvals Workshop: All You Need to Know

Registration fee is US\$895 per student.

Discounts! Second student from same company: 10% discount for second enrollment.

Fee Includes:

Lecture notebook, copy of the standard, lunch, breaks, and completion certificate.

Payment in advance via check, VISA or MasterCard preferred credit cards or bank transfer (ask for transfer details).

[Click HERE to register](#)