



Digital Predistortion Techniques for RF Power Amplifiers

Course Code: RF7-ON Duration: 2 Days Course Level: Intermediate

Course Overview

Cellular networks, digital TV and broadcast, satellite and terrestrial point-to-point systems all require linear performance from RF transmitters. Modern modulation methods, such as OFDM and CDMA, demand levels of transmitter linearity that are increasingly difficult to obtain without some form of amplifier linearisation. Digital Predistortion is one such linearisation method that has become increasingly popular in recent times. This 2-day technical course explains and discusses the various techniques involved in applying digital predistortion to RF amplifiers and how to implement them.

Who Will Benefit?

This technical course is suitable for a broad range of RF PA designers, DSP engineers and system-level designers, who are either directly involved in PA design or a system that uses one. Digital hardware and software designers involved in the development of RF systems will also find the course useful because it provides most of the necessary background knowledge to design control and DSP functions for PA stages in a linearised transmitter system.

Learning Outcomes

Upon completion of this course, participants will be able to:

- ◆ Describe, measure and analyse non-linear effects in power amplifiers
- ◆ Evaluate digital predistortion methods
- ◆ Utilize and implement digital predistortion techniques
- ◆ Design and develop linearised power amplifiers

Business Benefits

The course will deliver the following business benefits:

- ◆ Reduced design and development times and costs
- ◆ Improved design and development efficiency
- ◆ Improved design quality and system performance
- ◆ Reduced development and project risks

Course Programme

The course content covers:

- ◆ Distortion and non-linear mechanisms in PAs
- ◆ Review of modulation formats and performance requirements
- ◆ Modulation amplitude probability distributions
- ◆ Introduction, theory and limitations of predistortion
- ◆ Digital predistortion architectures, including multi-carrier
- ◆ Bandwidth, clock rate and precision issues
- ◆ LUT and algorithmic approach
- ◆ Memory effect modelling
- ◆ Adaption issues and power control
- ◆ Introduction to DSP and DPD hardware
- ◆ ADC and DAC technology
- ◆ DSP, FPGA, ASIC technology
- ◆ Practical DPD architectures
- ◆ Linearisation software development
- ◆ Linearisation system components

Digital Predistortion Techniques for RF Power Amplifiers

Instructor

Detailed information about the course instructor is available on request.

Prerequisites

Participants would normally be qualified to degree level or equivalent in an electronic engineering, physics or mathematics-related subject. They should also have a good understanding of RF and microwave technology.

Course Level

Intermediate: Assumes the participant has general knowledge of the subject and professional experience of the specific areas covered.

Course Venue

Delivered on-site either at customer premises or at any suitable venue throughout the UK, Europe and Rest of the World.

Dates

Flexible according to your requirements.

Course Fees

Please call us on +44 (0)1962 855 730 to request a quote.

What's Included?

Course participants will each receive a set of high-quality bound course notes printed in full colour and a Certificate of Attendance.

Customisation

For on-site courses, we do not force your organisation to adopt a standard, 'one-size-fits-all' training programme. The standard course programme can be adapted both in content and duration according to your exact requirements and specifications. Our technical experts will assist you in identifying these, even if they are uncertain or unclear. The course programme is then fitted to your exact requirements. Please call us on +44(0)1962 855 730 to discuss your requirements in more detail.

Related Courses

Related courses include Antennas and Propagation for Wireless Communications Systems (RF2), Practical RF and Microwave Measurements (RF3), Practical Design of Wireless Digital Communications Systems (RF4) and PCB Design for RF and High-Speed Applications (RF5).

Terms and Conditions

We encourage you to read our Terms and Conditions, which cover important issues like payment and cancellation policies. Our Terms and Conditions can be found on our website.

Further Information

For further information about this course, please call us on +44 (0)1962 855 730.



The Technology Academy Limited
37-39 Southgate Street
Winchester
Hampshire
SO23 9EH
United Kingdom
t: +44 (0)1962 855 730
f: +44 (0)1962 854 400
e: enquiries@thetechnologyacademy.com
www.thetechnologyacademy.com