

Day 1	Day 2	Day 3	Day 4	Day 5
Introduction to EMC <ul style="list-style-type: none"> • What is EMI? • What is EMC? • EMI Propagation Mechanisms • Sources of EMI • EMC Regulations 	Overview of EMC Design Principles <ul style="list-style-type: none"> • Why design for EMC? • How to reduce Emissions • Fundamentals of design 	Screening and Enclosures <ul style="list-style-type: none"> • Definitions and physics behind screening • Modelling enclosures • H field and E field screening • Apertures 	Introduction to Military <ul style="list-style-type: none"> • History of Military EMC • Overview of EMC Management Required • Operational Environments Introduction 	EMC Testing Workshop Interactive Demonstrations <ul style="list-style-type: none"> • Introduction to testing • Radiated Emissions interactive demonstration
Decibels <ul style="list-style-type: none"> • What is a Decibel? • Why do we need Decibels? • EMC & Radio engineers dB usage 	Conducted Interference <ul style="list-style-type: none"> • Types of disturbance • Interconnection techniques • Components & filters • Live demonstrations 	Crosstalk <ul style="list-style-type: none"> • Fundamentals of transmission lines and crosstalk • Line parameters • Coupling factors • Live demonstrations 	Military EMC Environment <ul style="list-style-type: none"> • Military electromagnetic environment • Platforms • Lightning • Electro Static Discharge (ESD) • DC and Low Frequency Magnetic Fields • Nuclear Electromagnetic Pulses (NEMP) • Intentional Transmitters 	<ul style="list-style-type: none"> • Radiated Immunity interactive demonstration
EM Waves & Radiation Mechanisms <ul style="list-style-type: none"> • Review of EM Theory • Wave characteristics • Elemental Antennas • Elemental Electric and Magnetic Dipoles • Practical Antennas 	EMC on a PCB <ul style="list-style-type: none"> • Coupling mechanisms and the effects of PCB Layout • EMI & Digital circuits • EMI & Analogue circuits • Live demonstrations 	Shielding Modelling: Case Studies <ul style="list-style-type: none"> • Definitions and physics behind screening • Modelling enclosures • H field and E field screening • Apertures 	Military EMC Standards <ul style="list-style-type: none"> • Defence Standard 59-411 • MIL STD 461 • Other military standards • Military equipment and the EMC Directive • Commercial standards & Gap analysis 	<ul style="list-style-type: none"> • Conducted emissions interactive demonstration
EMC Directive & Technical Documentation <ul style="list-style-type: none"> • The New Directive 2014/30/EU • Scope • Essential requirements • Conformity Assessment • Technical Documentation • Notified Bodies • Declaration of Conformity • On-going Compliance 		Fixed Installations and On-site Testing <ul style="list-style-type: none"> • Fixed installations and the EMC directive • What to do if you can't CE mark • Testing emissions on site • Rail specific on-site measurements 	Military EMC Testing <ul style="list-style-type: none"> • Test layout & equipment • Tests types and requirements • Documentation 	<ul style="list-style-type: none"> • Conducted immunity interactive demonstration