

1. Record Nr.	UNINA9910812375203321
Autore	Graham Adrian W
Titolo	Communications, radar, and electronic warfare // Adrian William Graham
Pubbl/distr/stampa	Hoboken, N.J., : John Wiley & Sons, 2010
ISBN	0-470-97714-0 0-470-97717-5 1-280-74686-6 9786613677785 0-470-97716-7
Edizione	[1st ed.]
Descrizione fisica	1 online resource (400 p.)
Classificazione	TEC041000
Disciplina	621.384
Soggetti	Radio wave propagation Radio frequency Wireless communication systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Preface -- Glossary -- PART ONE / BASIC THEORY -- 1 Introduction -- 1.1 The Aim of this Book -- 1.2 Current Radio Technology -- 1.3 Factors Constraining Radio Communications -- References and Further Reading -- 2 Management of the Radio Spectrum -- 2.1 Spectrum Management Fundamentals -- 2.2 Civil Spectrum Management -- 2.3 Military Spectrum Management -- 2.4 Management of EWActivities -- References and Further Reading -- 3 The Radio Channel -- 3.1 Frequency Aspects of the Radio Channel -- 3.2 Narrowband Signals -- 3.3 Frequency Hopping Signals -- 3.4 Wideband Signals -- 3.5 The Effect of Movement on the Radio Channel -- References and Further Reading -- 4 Radio Links in the Presence of Noise -- 4.1 Sources of Radio Noise -- 4.2 Effects of Noise -- 4.3 The Radio Receiver -- 4.4 Radio Link Budgets in the Presence of Noise -- References and Further Reading -- 5 Radio Links in the Presence of Interference -- 5.1 Sources of Radio Interference -- 5.2 Interference in the Spectral Domain -- 5.3 Interference in the Time Domain -- 5.4 Interference Mitigation Techniques -- References and Further Reading -- 6 Radio Links and

Deliberate Jamming -- 6.1 The Purpose of Jamming -- 6.2 How Jamming Works -- 6.3 Types of Communications Jammers -- 6.4 Jamming Mitigation Techniques -- References and Further Reading -- 7 Radar and Radar Jamming -- 7.1 Introduction to Radars -- 7.2 The Radar Equation -- 7.3 Types of Radar -- 7.4 Radar Jamming Techniques -- 7.5 Radar Jamming Mitigation Techniques -- References and Further Reading -- 8 Radio-Controlled Improvised Explosive Devices -- 8.1 The Poor Man's Weapon of Choice: IEDs -- 8.2 Radio Control for IEDs -- 8.3 Detection of IED Radio Control Systems -- References and Further Reading -- PART TWO / PRACTICAL -- 9 Predicting HF Radio -- 9.1 Propagation at HF -- 9.2 HF Skywave Link Budgets -- 9.3 Groundwave -- References and Further Reading -- 10 VHF to SHF Radio Prediction -- 10.1 Propagation above HF -- 10.2 Modelling Methods -- 10.3 Deterministic Models. 10.4 Empirical Models -- 10.5 Combined Models -- 10.6 Link Budgets -- References and Further Reading -- 11 Data Requirements for Radio Prediction -- 11.1 Why Consider Modelling Requirements? -- 11.2 Communications System Parameters -- 11.3 ES Specific Parameters -- 11.4 EA Specific Parameters -- 11.5 Radar Specific Parameters -- 11.6 Third-Party Characteristics -- 11.7 General Antenna Characteristics -- 11.8 Antenna Environment Considerations -- 11.9 Terrain Data -- 11.10 Ground and Radio Clutter Data -- 11.11 Sunspots, Ionospheric and Atmospheric Data -- References and Further Reading -- 12 Planning and Optimising Radio Links -- 12.1 Path Profile Prediction -- 12.2 Optimising a Link -- 12.3 Re-Broadcast Links -- 12.4 Linked Networks -- References and Further Reading -- 13 Planning Radio Networks for Coverage -- 13.1 Coverage Predictions -- 13.2 Optimisation of Radio Networks -- 13.3 Limiting Coverage -- References and Further Reading -- 14 Interference Analysis -- 14.1 Introduction to Radio Interference Analysis -- 14.2 Fading Considerations -- 14.3 Interference from other Channels -- 14.4 Different Ways of Representing Co-Existing Signals -- References and Further Reading -- 15 Management Techniques for Interference -- 15.1 Preventing Interference -- 15.2 Managing Interference -- 15.3 Interference Reports -- References and Further Reading -- 16 Management of Interference at a Radio Site -- 16.1 Special Features of Radio Sites with Multiple Systems -- 16.2 Sources of Interference at a Radio Site -- 16.3 Methods of Managing Interference at Radio Sites -- References and Further Reading -- 17 Communications Electronic Warfare -- 17.1 Introduction -- 17.2 Detection and Intercept Networks -- 17.3 Direction Finding Networks -- 17.4 Communications Jammers -- 17.5 The Role of Unmanned Airborne Vehicles -- 17.6 Countering Enemy Communications Electronic Warfare -- References and Further Reading -- 18 Non-Communications Electronic Warfare -- 18.1 Non-Communications EW -- 18.2 Radar Jamming Techniques. 18.3 Platform Self Protection Methods -- 18.4 Parametric Information Collection Methods -- References and Further Reading -- 19 Countering Radio-Controlled IEDs -- 19.1 Introduction to IEDs -- 19.2 Radio Controlled IED -- 19.3 Basic IED Counter Methods -- 20 Summary and Conclusions -- Appendix A: Working with Decibels -- Appendix B: Common Conversion Formulae and Reference Tables -- Index.

Sommario/riassunto

"The book is structured systematically, enabling the reader to utilise the methods explained to improve radio spectrum exploitation in practice"--
