

1. Record Nr.	UNINA9911019668003321
Titolo	Communicating embedded systems : network applications / / edited by Francine Krief
Pubbl/distr/stampa	London, : ISTE Hoboken, N.J., : Wiley, 2010
ISBN	1-118-55762-X 1-299-31539-9 1-118-61851-3
Descrizione fisica	1 online resource (348 p.)
Collana	ISTE
Classificazione	ST 153
Altri autori (Persone)	KriefFrancine
Disciplina	621.3815/31
Soggetti	Networks on a chip
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	English translation of: Les systemes embarques communicants : mobilite, securite, autonomie, published by Hermes Science/Lavoisier, France, 2008.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Communicating Embedded Systems; Title Page; Copyright Page; Table of Contents; General Introduction; Chapter 1. Introduction to Embedded Systems; 1.1. Introduction; 1.2. Embedded system: a definition; 1.3. Properties of an embedded system; 1.4. The significance of Moore's Law; 1.5. Embedded systems and the system on silicon; 1.6. Embedded systems and communications; 1.7. Embedded systems and security; 1.8. Embedded systems and time constraints; 1.9. Embedded systems and free software; 1.10. Embedded systems and their design; 1.11. An example of multimedia embedded system design 1.12. Conclusion 1.13. Bibliography; Chapter 2. Quality-of-Service Routing in Mobile Ad Hoc Networks; 2.1. Introduction; 2.2. Mobile ad hoc networks: concepts, characteristics, challenges; 2.2.1. Concepts and basic principles; 2.2.2. Limits and challenges; 2.2.3. MAC protocols for ad hoc networks; 2.2.4. Node mobility and location; 2.3. QoS routing: general considerations; 2.3.1. Functions of routing protocols; 2.3.2. Classification of routing protocols; 2.3.3. Expected routing protocol properties; 2.3.4. QoS routing problems; 2.4. Best-effort routing protocols in MANETs

2.4.1. Criteria for routing protocol classification
2.4.2. Presentation of routing protocols; 2.5. QoS routing in MANETs; 2.5.1. Approaches for QoS routing; 2.5.2. Resource reservation; 2.5.3. Examples of reservation methods; 2.5.4. Estimation models; 2.5.5. Presentation of the main QoS routing protocols; 2.6. Conclusion; 2.7. Bibliography; Chapter 3. Self-Management of Ad Hoc Sensor Networks; 3.1. Introduction; 3.2. Wireless sensor networks; 3.2.1. Fields of application for sensor networks; 3.2.2. The principal components in a sensor; 3.2.3. Importance of energy in sensor networks
3.2.4. Transmission technologies
3.2.5. Routing algorithms; 3.2.6. Main commercial offerings; 3.2.7. Key issues; 3.2.8. Projects on sensor networks; 3.3. Autonomic sensor networks; 3.3.1. Autonomic networking; 3.3.2. Self-configuration of sensor networks; 3.3.3. Self-healing of sensor networks; 3.3.4. Self-optimization of sensor networks; 3.3.5. Self-protection of sensor networks; 3.3.6. Projects relating to autonomy in sensor networks; 3.4. An example of self-configuration; 3.4.1. Energy optimization and automatic classification; 3.4.2. The LEA2C energy optimization algorithm
3.4.3. Performance evaluation of the LEA2C algorithm
3.4.4. Improvements to the LEA2C algorithm; 3.5. Conclusion; 3.6. Bibliography; Chapter 4. RFID Technology; 4.1. Introduction; 4.2. Automatic identification systems; 4.2.1. Barcodes; 4.2.2. Optical character recognition (OCR) systems; 4.2.3. Biometric identification; 4.2.4. Microchip cards; 4.2.5. RFID systems; 4.3. The components of an RFID system; 4.4. The different types of RFID systems; 4.4.1. Bottom of the range RFID systems; 4.4.2. Mid-range RFID systems; 4.4.3. Top of the range RFID systems; 4.5. RF ranges; 4.6. Information security
4.6.1. Symmetric mutual authentication

Sommario/riassunto

Embedded systems become more and more complex and require having some knowledge in various disciplines such as electronics, data processing, telecommunications and networks. Without detailing all the aspects related to the design of embedded systems, this book, which was written by specialists in electronics, data processing and telecommunications and networks, gives an interesting point of view of communication techniques and problems in embedded systems. This choice is easily justified by the fact that embedded systems are today massively communicating and that telecommunications and network
