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DEVICES; 4.3.1 PIN Diodes; 4.3.2 MEMS Switches; 4.3.3 FET Switches; 4.3.5 Varactors; 4.3.6 Summary; References; Chapter 5 FAAs Based on Mechanical Tuning Techniques; 5.1 MICROSTRIP PATCH ANTENNAS; 5.1.1 Stacked Patches; 5.1.2 Electrostatic Actuation; 5.1.3 Magnetostatic Actuation; 5.1.4 Pneumatic Actuation; 5.1.5 Rotating Stacked Patches; 5.2 QUADRIFILAR HELIX 5.3 SLOT DIPOLE WITH PIEZOELECTRIC TRANSDUCER 5.4 PIFAs; 5.5 LIQUID-BASED DRAs; 5.6 SUMMARY; References; Chapter 6 FAAs Using Tunable Substrates; 6.1 FAAs DESIGNED USING FERRITES; 6.1.1 Microstrip Patch Antennas; 6.1.2 Ferrite-Filled Cavity-Backed Slot Antenna; 6.1.3 Ferrite Resonator Antenna; 6.2 FAAS DESIGNED USING FERROELECTRICS; 6.3 LIQUID CRYSTAL-BASED FAAS; 6.4 BULK SEMICONDUCTOR-BASED FAAS; 6.5 THIN-FILM SEMICONDUCTOR-BASED FAAS; 6.6 SUMMARY; References; Chapter 7 FAAs With Integrated Devices and Continuous Tuning; 7.1 DIODE-LOADED FAAs 7.1.1 Microstrip Patch Antenna Loaded With a Schottky Diode 7.1.2 Slot Antenna Loaded With a Photodetector Diode; 7.2 TRANSISTOR-LOADED FAAs; 7.3 MEMS-LOADED FAAs; 7.3.1 CPW-Fed Rectangular Ring Slot Antenna; 7.3.2 CPW-Fed Rectangular Microstrip Patch Antenna; 7.4 VARACTOR-LOADED FAAs; 7.4.1 Loop Antennas; 7.4.2 Printed Monopole Antennas; 7.4.3 Dipole Antennas; 7.4.4 Compact Helical Antennas; 7.4.5 IFAs; 7.4.6 PIFAs; 7.4.7 Slot Antennas; 7.4.8 DRAs; 7.4.9 Microstrip Patch Antennas; 7.5 SUMMARY; References; Appendix A; Chapter 8 FAAs With Integrated Devices and Discrete Tuning

## 8.1. PIN-DIODE CONTROL

### Sommario/riassunto

Mobile data subscriptions are expected to more than double and mobile wireless traffic to increase by more than tenfold over the next few years. Proliferation of smart phones, tablets, and other portable devices are placing greater demands for services such as web browsing, global positioning, video streaming, and video telephony. Many of the proposed solutions to deal with these demands will have a significant impact on antenna designs. Antennas with frequency agility are considered a promising technology to help implement these new solutions. This book provides readers with a sense of the cap.