### FCC Wireless Telecommunications Bureau

wireless.fcc.gov

### FCC Part 97 – Amateur Service Rules

www.arrl.org/part-97-amateur-radio
Why Amateur Radio?

Students and Educators
✓ Develop valuable real-world experience with RF electronics and devices
✓ Learn construction techniques and practices
✓ Visualize theory and translate it into practice
✓ Develop experience with antennas and RF propagation from MF through W band
✓ Use amateur radio in support of scientific experiments and data collection
✓ www.arrl.org/college-students-and-educators

Technical Professionals
✓ Freely experiment with and develop RF technology on your own
✓ Career development experience
✓ Contribute your expertise to public service
✓ Use your skills in an enjoyable hobby

Amateur Radio Licensing
The ARRL publishes a detailed and comprehensive licensing guide for all three U.S. license classes (Technician, General, and Extra) with practice exam software and a companion Q&A-style book for self-study or group learning.

Emergency Communications & Public Service
Amateurs have developed practical and effective technology and organizations that provide emergency and disaster relief communications.

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Student Lab & Team

Electronics

*Hands On Radio, Vol 1 & 2*
120 experiments on circuit theory & design, construction technique, CAD, transmission lines, antennas, and simple equipment

ARRL Handbook - Experimental Methods for RF Design

**Test Equipment for the Radio Amateur**
Introduction and guidelines for the use of test equipment for RF gear and instructions for building your own equipment and accessories

Microwave Technology Titles
- Microwave Know-How
- VHF/UHF Handbook
- International Microwave Handbook

Antennas & Transmission Lines

**Antenna Modeling for Beginners**
Step-by-step introduction to the use of low-cost NEC-2 modeling software (EZNEC) using a free demo version of the program.

PLUS – The ARRL Antenna Book, Transmission Line Transformers, Antenna for VHF and Above

Other radio science titles include:

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Electronics and RF Design

**The ARRL Handbook**
Now in its 90th edition, the Handbook covers everything from amplifiers and antennas through software-defined radio and test equipment from a practical perspective.

**Experimental Methods for RF Design**
by Hayward, Campbell, and Larkin
Guidance from experts on developing RF circuits and systems

Plus more RF electronics titles:
- ARRL RFI Book
- Hands-On Radio, Vol 1 & 2

**The ARRL Antenna Book – 22nd edition**
Theory and practical designs covering HF to microwave as well as propagation, transmission lines, and construction and test techniques

Other titles include:
- Transmission Line Transformers
- Antenna Modeling for Beginners
- ARRL Antenna Compendium Series
- Electronic Applications of the Smith Chart
- Yagi and Vertical Antenna Classics
**International Microwave Handbook**

Years of experience collected into one volume that covers 1.3 GHz through 24 GHz and higher amateur bands. Includes a general treatment of design and construction issues at microwave plus numerous radio and antenna projects.

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- VHF/UHF Antenna Classics
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- Radio Nature
- Radio Propagation

**Wireless Outside**

- Radio Orienteering
- Storm Spotting
- Transmitter Hunting