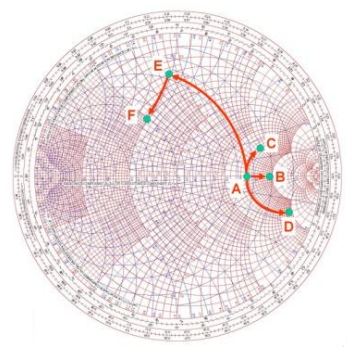
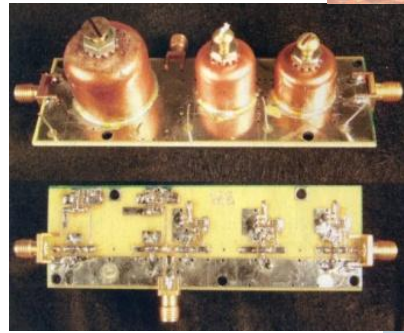
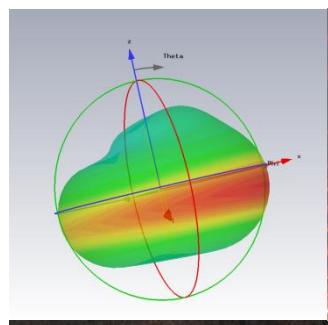


Amateur Radio

Science, Service, Skill

RF from long-wave through 250 GHz



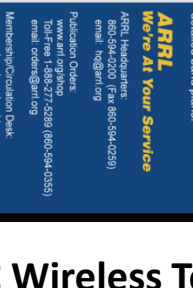
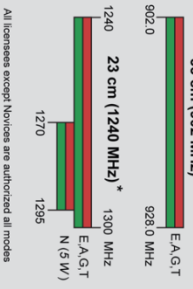
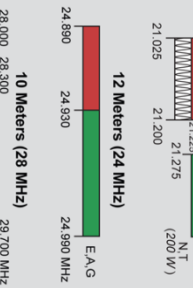
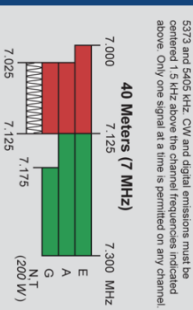
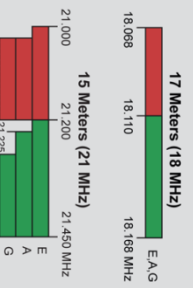
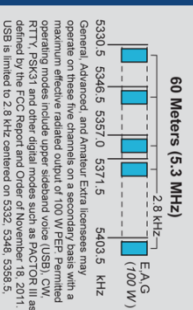
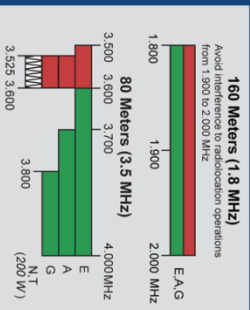
US Amateur Radio Bands

Effective Date
March 5, 2012

Published by:
ARRL AMATEUR RADIO®
www.arrl.org
225 Main Street, Newington, CT, USA, 06111-1694



US AMATEUR POWER LIMITS
FCC §73.13. An amateur station must use the minimum transmitter power necessary to carry out the defined communications. (b) No station may transmit with a transmitter power exceeding 1.5 W PEP.



Phone and image bands are permitted between 7.075 and 7.100 MHz for FCC licensed stations in ITU Regions 1 and 3 and by FCC licensed stations in Region 2. Max CW power is 100 W PEP. See Sections 97.303(c) and 97.307(f)(11).
 CW only between 7.025 and 7.075 MHz and between 7.100 and 7.125 MHz. CW only between 7.175 and 7.225 MHz. CW only between 7.225 and 7.275 MHz. CW only between 7.275 and 7.325 MHz. CW only between 7.325 and 7.375 MHz. CW only between 7.375 and 7.425 MHz. CW only between 7.425 and 7.475 MHz. CW only between 7.475 and 7.525 MHz. CW only between 7.525 and 7.575 MHz. CW only between 7.575 and 7.625 MHz. CW only between 7.625 and 7.675 MHz. CW only between 7.675 and 7.725

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

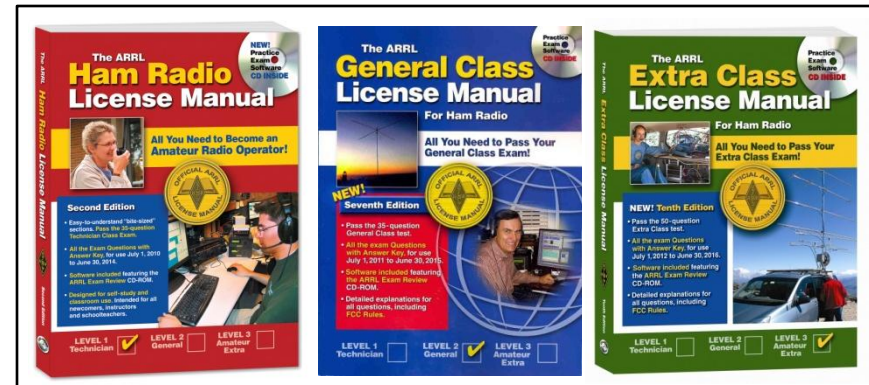
Technical Professionals

- ✓ 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

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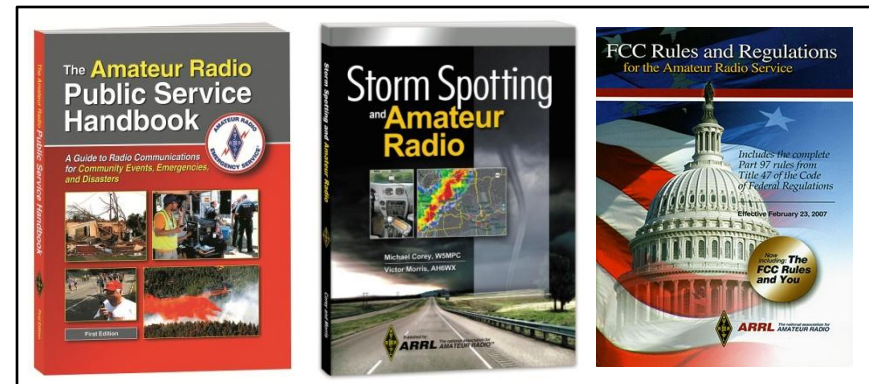


Amateur Radio Licensing

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.



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

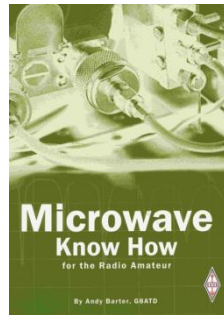


Test Equipment for the Radio Amateur

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

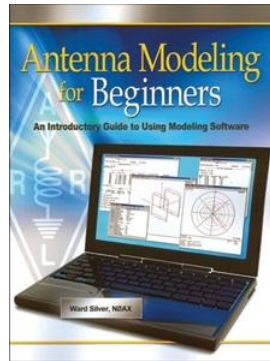
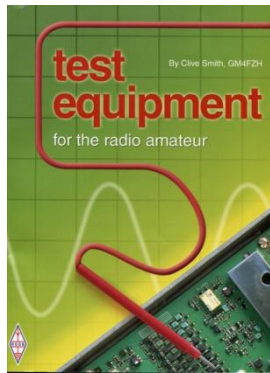
Antenna Modeling for Beginners

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:

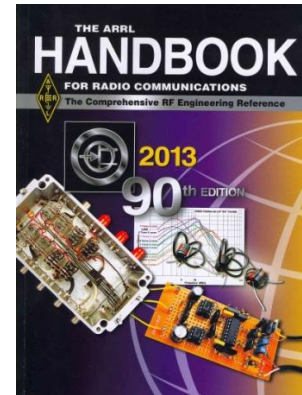
Radio Science for the Radio Amateur, Radio Auroras, Radio Nature, and Amateur Radio Astronomy



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.

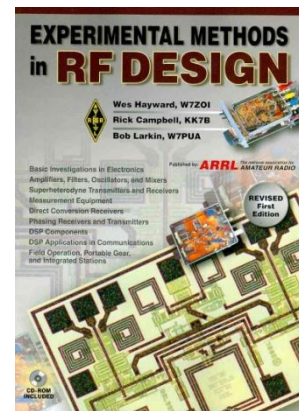


Experimental Methods for RF Design

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*

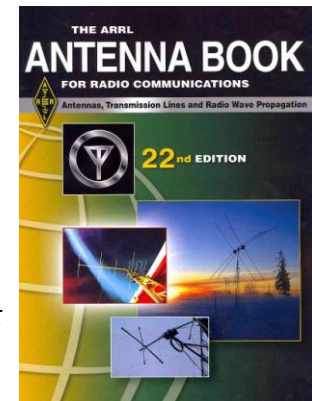


The ARRL Antenna Book – 22nd edition

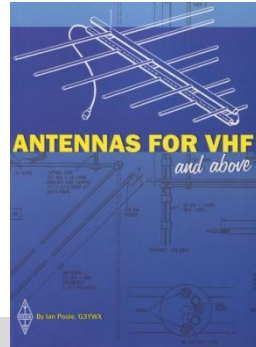
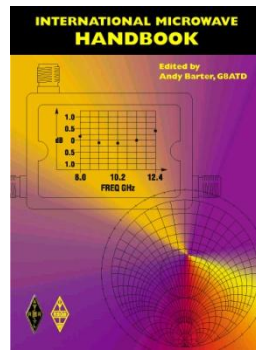
Theory and practical designs covering HF to microwave as well as propagation, transmission lines, and construction and test techniques

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*



VHF/UHF/Microwave

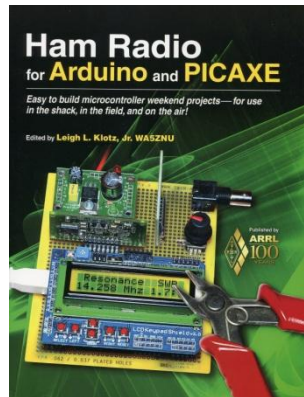


International Microwave Handbook

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.

More titles are available:

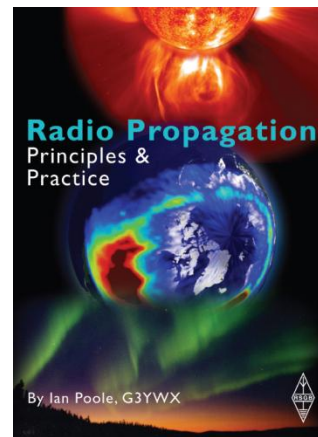
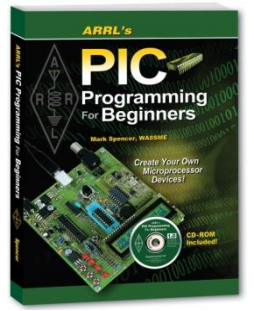
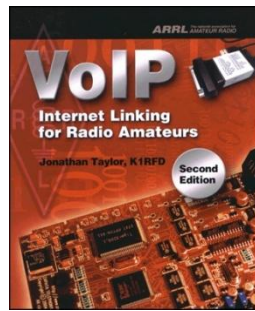
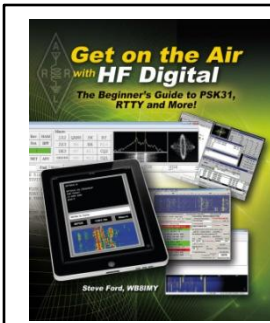
- ✓ *Microwave Projects – Vol 1 & 2*
- ✓ *VHF/UHF Antenna Classics*
- ✓ *Antennas for VHF and Above*
- ✓ *Microwave Know How*



Digital Communications & Microprocessors

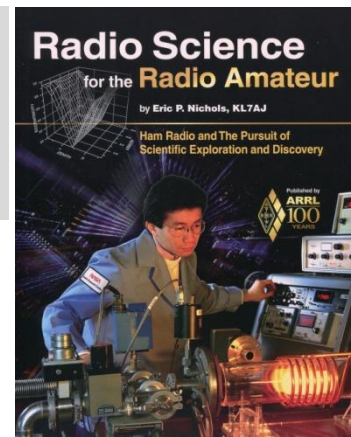
Ham Radio for Arduino and Picaxe

Applications and design instruction for two of the most popular microprocessors.



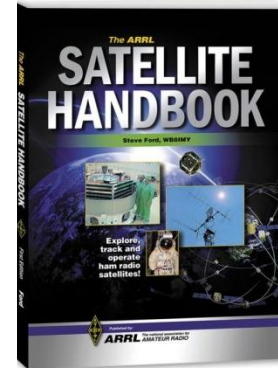
Science and Space

- ✓ *Radio Science for the Radio Amateur*
- ✓ *Radio Propagation*



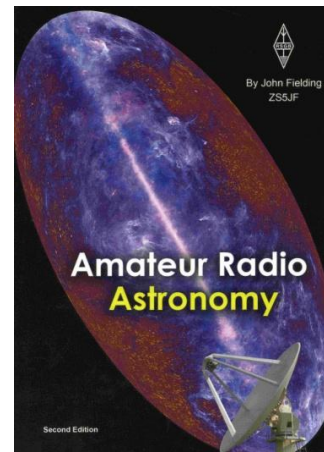
Field Operations

- ✓ *Emergency Power for Radio Communications*
- ✓ *Amateur Radio on the Move*
- ✓ *GPS and Amateur Radio*



Observational Science

- ✓ *Amateur Radio Astronomy*
- ✓ *Radio Nature*
- ✓ *Radio Propagation*



Wireless Outside

- ✓ *Radio Orienteering*
- ✓ *Storm Spotting*
- ✓ *Transmitter Hunting*

