

Technician Licensing Class

Introduction

Valid
July 1, 2018 Through June 30, 2022

Sterling Park Amateur Radio Club (SPARC)

- Web site: www.qsl.net/sterling
- Hold monthly meetings
- Have one other activity per month
- Technician License preparatory classes
- License examination sessions

License Levels

- Technician (entry-level license)
 - All amateur privileges above 50 MHz; limited CW, Phone, and Data privileges below 30 MHz
- General
 - Technician privileges plus most amateur HF privileges
- Amateur Extra
 - All amateur privileges

Technician License Exam Syllabus

- T1 *FCC Rules, descriptions and definitions for the amateur radio service, operator and station license responsibilities*
- T2 *Operating Procedures*
- T3 *Radio wave characteristics, radio and electromagnetic properties, propagation modes*
- T4 *Amateur radio practices and station setup*
- T5 *Electrical principles, math for electronics, electronic principles, Ohm's Law*
- T6 *Electrical components, semiconductors, circuit diagrams, component functions*
- T7 *Station equipment, common transmitter and receiver problems, antenna measurements and troubleshooting, basic repair and testing*
- T8 *Modulation modes, amateur satellite operation, operating activities, non-voice communications*
- T9 *Antennas, feedlines*
- T10 *AC power circuits, antenna installation, RF hazards*

Technician License Question Pool

Subelements	Topics	Pool Questions	Exam Questions
T1	T1A-T1F	78	6
T2	T2A-T2C	37	3
T3	T3A-T3C	34	3
T4	T4A-T4B	24	2
T5	T5A-T5D	50	4
T6	T6A-T6D	48	4
T7	T7A-T7D	48	4
T8	T8A-T8D	46	4
T9	T9A-T9B	25	2
T0	T0A-T0C	36	3
10	35	426	35

US Amateur Radio Bands

US AMATEUR POWER LIMITS — FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.



ARRL The national association for AMATEUR RADIO

KEY

Note:

CW operation is permitted throughout all amateur bands.

MW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.

Test transmissions are authorized above 51 MHz, except for 219-220 MHz.

- RTTY and data
- phone and image
- CW only
- SSB phone
- USB phone, CW, RTTY, and data
- Fixed digital message forwarding systems only

E - Amateur Extra
A - Advanced
G - General
T - Technician
N - Novice

See **ARRLWeb** at www.arrl.org for detailed band plans.

ARRL We're At Your Service

ARRL Headquarters:
860-594-0200 (Fax 860-594-0259)
email: hq@arrl.org

Publication Orders:
www.arrl.org/shop
Toll-Free 1-888-277-5289 (860-594-0355)
email: orders@arrl.org

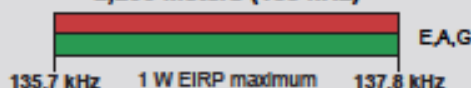
Membership/Circulation Desk:
www.arrl.org/membership
Toll-Free 1-888-277-5289 (860-594-0338)
email: membership@arrl.org

Getting Started in Amateur Radio:
Toll-Free 1-800-326-3942 (860-594-0355)
email: news@arrl.org

Exams: 860-594-0300 email: vec@arrl.org

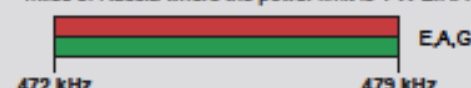
Amateurs wishing to operate on either 2,200 or 630 meters must first register with the Utilities Technology Council online at <https://utc.org/plc-database-amateur-notification-process/>. You need only register once for each band.

2,200 Meters (135 kHz)



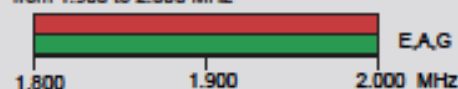
630 Meters (472 kHz)

5 W EIRP maximum, except in Alaska within 496 miles of Russia where the power limit is 1 W EIRP.



160 Meters (1.8 MHz)

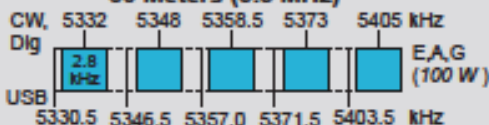
Avoid interference to radiolocation operations from 1.900 to 2.000 MHz



80 Meters (3.5 MHz)

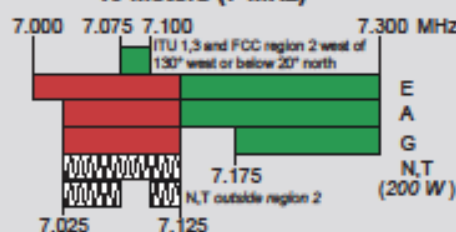


60 Meters (5.3 MHz)



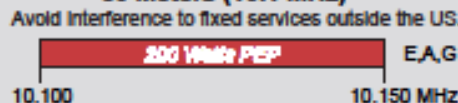
General, Advanced, and Amateur Extra licensees may operate on these five channels on a secondary basis with a maximum effective radiated power (ERP) of 100 W PEP relative to a half-wave dipole. Permitted operating modes include upper sideband voice (USB), CW, RTTY, PSK31 and other digital modes such as PACTOR III. Only one signal at a time is permitted on any channel.

40 Meters (7 MHz)

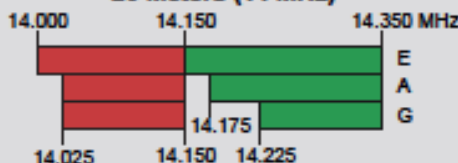


See Sections 97.305(c), 97.307(f)(11) and 97.301(e). These exemptions do not apply to stations in the continental US.

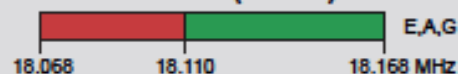
30 Meters (10.1 MHz)



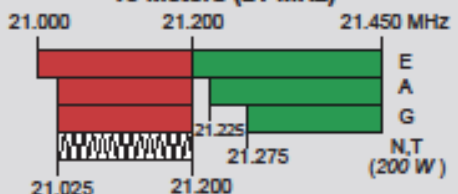
20 Meters (14 MHz)



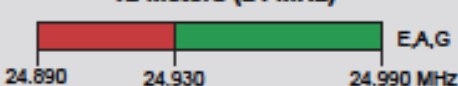
17 Meters (18 MHz)



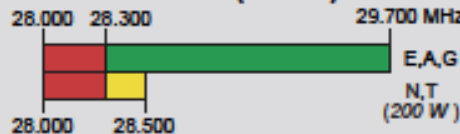
15 Meters (21 MHz)



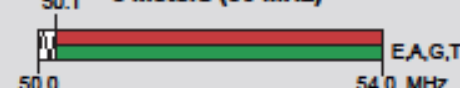
12 Meters (24 MHz)



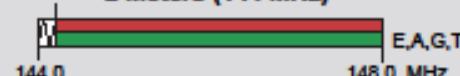
10 Meters (28 MHz)



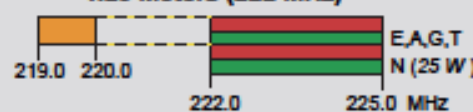
6 Meters (50 MHz)



2 Meters (144 MHz)

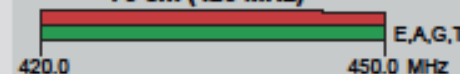


1.25 Meters (222 MHz)

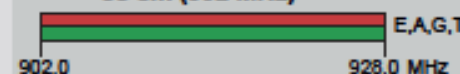


*Geographical and power restrictions may apply to all bands above 420 MHz. See The ARRL Operating Manual for information about your area.

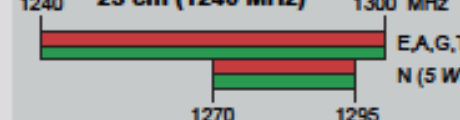
70 cm (420 MHz)*



33 cm (902 MHz)*



23 cm (1240 MHz)*

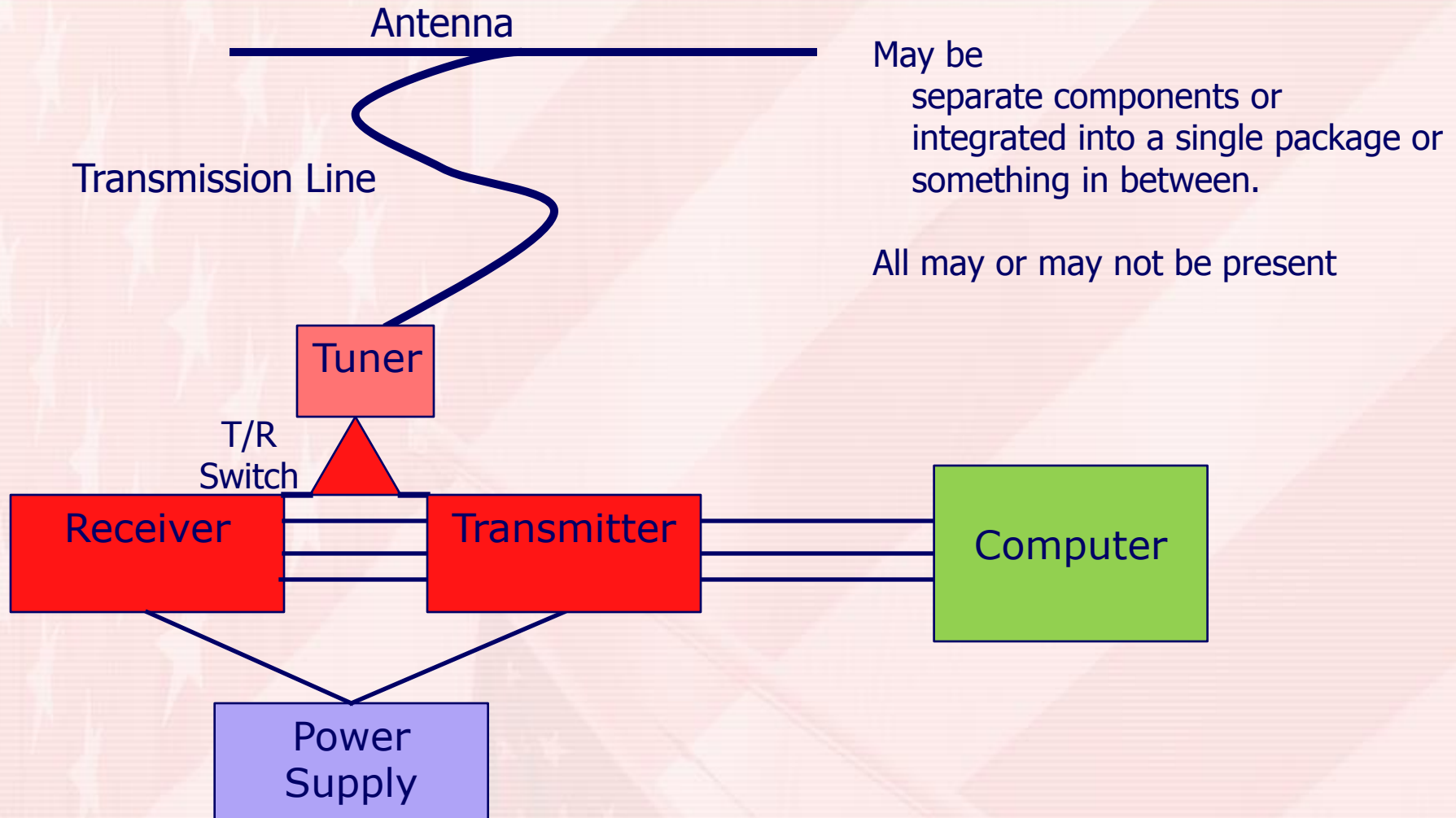


All licensees except Novices are authorized all modes on the following frequencies:

2300-2310 MHz	10.0-10.5 GHz ±	122.25-123.0 GHz
2390-2450 MHz	24.0-24.25 GHz	134-141 GHz
3300-3500 MHz	47.0-47.2 GHz	241-250 GHz
5650-5925 MHz	76.0-81.0 GHz	All above 275 GHz

± No pulse emissions

Parts of a radio



What radio do I buy?

Feature	Inexpensive Handheld	Modern Fixed/Mobile
Frequency		
Tech	2M/70cm	All HF/MF/UHF/VHF
General		All HF/MF/UHF/VHF
Extra		All HF/MF/UHF/VHF
Mode		
FM	X	X
SSB		X
CW		X
Digital		X (w/ or w/o computer)
Output Power		
QRP (<10 W)	X	
Low (~100 W)		X
High (~1500 W)		Only with amplifier