

TECHNICIAN EXAM QUICK STUDY SHEET

Key formulas, rules, and facts · hamradiolicense.pages.dev

EXAM STRUCTURE

Subelement	Topic	Qs
T1	FCC Rules	6
T2	Operating Procedures	3
T3	Radio Wave / Antennas	3
T4	Station Setup	2
T5	Electrical Principles	4
T6	Electronic Components	4
T7	Station Equipment	4
T8	Modes / Activities	4
T9	Antennas / Feed Lines	2
T0	Safety	3

KEY FORMULAS

- $E = I \times R$ (Ohm's Law: Voltage = Current \times Resistance)
- $P = E \times I$ (Power = Voltage \times Current)
- $P = I^2 \times R$ (Power = Current² \times Resistance)
- $\lambda = 300 / f$ (Wavelength meters = 300 / frequency MHz)
- Half-wave dipole = $468 / f(\text{MHz})$ [in feet]
- Quarter-wave vertical = $234 / f(\text{MHz})$ [in feet]
- +3 dB = double power -3 dB = half power
- +10 dB = 10 \times power -10 dB = 1/10 power

TECHNICIAN HF PRIVILEGES

Band	Technician Access
10m	CW: full band; Voice SSB: 28.300–28.500
15m	CW only: 21.025–21.200 MHz
40m	CW/data only: 7.025–7.125 MHz
80m	CW/data only: 3.525–3.600 MHz

KEY RULES TO MEMORIZE

- Station ID: every 10 min AND at end of contact
- ID method: English voice or CW (Morse code)
- License valid: 10 years; renewal: no retest, \$35 fee
- CSCE valid: 365 days from exam date
- FCC fee: \$35 — pay at pay.fcc.gov within 10 days
- FRN required: must have before exam (since Apr 2022)
- Cannot transmit until call sign in FCC ULS database
- Vanity call sign: 18-day window, no fee, up to 25 choices
- Technician: all VHF/UHF + limited HF (see left)
- Emergency exception: any station may transmit to preserve life

PHONETIC ALPHABET

A=Alpha	N=November
B=Bravo	O=Oscar
C=Charlie	P=Papa
D=Delta	Q=Quebec
E=Echo	R=Romeo
F=Foxtrot	S=Sierra
G=Golf	T=Tango
H=Hotel	U=Uniform
I=India	V=Victor
J=Juliet	W=Whiskey
K=Kilo	X=X-ray
L=Lima	Y=Yankee
M=Mike	Z=Zulu

REPEATER OFFSETS

Band	Offset	Direction
2 meters	600 kHz	+ above 147 MHz
1.25 meters	1.6 MHz	– (lower)
70 cm	5.0 MHz	+ (higher)