

General License Examination – Memorization Sheet

General Class HF Frequency Privileges

10 meters	28000 – 29700 kHz (28300-29700 phone)
12 meters	24890 – 24990 kHz
15 meters	21025 – 21200 kHz and 21300 – 21450 kHz
17 meters	18068 – 18168 kHz
20 meters	14025 – 14150 kHz and 14225 – 14350 kHz (the last digits are 25-50, 25-50)
30 meters	10100 – 10150 kHz
40 meters	7025 – 7125 kHz and 7175 – 7300 kHz
80/75 meters	3525 – 3600 kHz and 3800 – 4000 kHz
160 meters	1800 – 2000 kHz

Bolded items are in the question pool

Maximum 1500 watts PEP, **Except** 200 watts PEP on 30 meters (10100 – 10150 kHz)

60 meter rules

5 authorized channels 2.8kHz wide with USB and 100 watts ERP maximum. No interference to adjacent services and records must be kept if gain antenna is used.

RTTY/data near center of CW allocation (170Hz shift for amateur RTTY)

20 meter RTTY 14.070 – 14.095 MHz 20 meter PSK31 14.070

Maximum Symbol Rate for Packet, RTTY, or Data

Below 10 meters (28 MHz)	300 baud	
10 Meter band	1200 baud	
6 and 2 meters	19.6 kilobaud	Maximum 20Khz bandwidth

General privileges can be used immediately with General CSCE by adding “/AG” to callsign on CW and phone

Minimum Channel Separation

CW	150 – 500 Hz	RTTY	250 – 500 Hz
SSB	3 kHz		

International Telegraph Union (ITU) Regions

Region 1 – Europe and Africa
Region 2 – North and South America
Region 3 – Asia and Australia

Power Multipliers

One S-Unit = 6dB = 4 fold power change
3dB = 2 fold power change

Sideband Operation (upper freqs, upper SB)

Below 20 MHz use lower sideband (LSB)
Above 20 MHz use upper sideband (USB)

Propagation

D layer absorbs

E layer maximum single hop distance 1200 miles at altitude of 70 miles

F2 layer maximum single hop distance 2500 miles

A two tone linearity test uses two **non-harmonically related** audio tones

Wire Sizes

15 amp circuit requires 14 gauge wire and 15 amp breaker

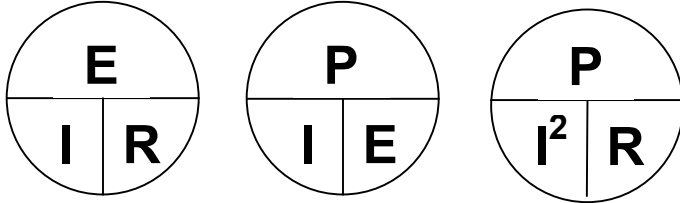
20 amp circuit requires 12 gauge wire and 20 amp breaker

Peak Envelope Power

$$PEP = [(0.707PEV)(0.707PEV)]/RL$$

Where: PEV = Peak Voltage
RL = Resistive Load

Ohm's Law and Power Formulas



E = Voltage in Volts
I = Current in Amperes
R = Resistance in Ohms
P = Power in Watts

Cover the value you need and divide or multiply the remaining values as appropriate

Examples:

$$E = I \times R$$

$$I = E / R$$

$$R = E / I$$

$$P = I \times E$$

$$I = P / E$$

$$E = P / I$$

$$P = I^2 \times R$$

$$R = P / I^2$$

Threshold Power for Station Evaluation

10 meters – 50 watts

15 meters – 100 watts

20 meters – 225 watts

30 meters – 500 watts

30 MHz (10 meters) – 300 MHz (1.25 meters) are highest exposure risk

50 MHz has the highest exposure risk overall (lowest permitted power).

1270 MHz is resonant frequency of eyes