

**B-003-008-004 (B)**

In a regulated power supply, the output of the rectifier is connected to the \_\_\_\_\_.

- A regulator
- B filter
- C output
- D transformer

**B-003-008-005 (A)**

In a regulated power supply, the output of the filter connects to the \_\_\_\_\_.

- A regulator
- B transformer
- C rectifier
- D output

**B-003-008-006 (D)**

In a regulated power supply, the \_\_\_\_\_ is connected to the regulator.

- A rectifier
- B input
- C transformer
- D output

**B-003-009-001 (B)**

In a Yagi 3 element directional antenna, the \_\_\_\_\_ is primarily for mechanical support purposes.

- A director
- B boom
- C reflector
- D driven element

**B-003-009-002 (D)**

In a Yagi 3 element directional antenna, the \_\_\_\_\_ is the longest radiating element.

- A director
- B driven element
- C boom
- D reflector

**B-003-009-003 (B)**

In a Yagi 3 element directional antenna, the \_\_\_\_\_ is the shortest radiating element.

- A driven element
- B director
- C boom
- D reflector

**B-003-009-004 (D)**

In a Yagi 3 element directional antenna, the \_\_\_\_\_ is not the longest nor the shortest radiating element.

- A boom
- B director
- C reflector
- D driven element

**B-003-010-001 (D)**

Which list of emission types is in order from the narrowest bandwidth to the widest bandwidth?

- A CW, SSB voice, RTTY, FM voice
- B CW, FM voice, RTTY, SSB voice
- C RTTY, CW, SSB voice, FM voice
- D CW, RTTY, SSB voice, FM voice

**B-003-010-002 (A)**

The figure in a receiver's specifications which indicates its sensitivity is the:

- A RF input signal needed to achieve a given signal plus noise to noise ratio
- B audio output in watts
- C bandwidth of the IF in kilohertz
- D number of RF amplifiers

**B-003-010-003 (B)**

If two receivers of different sensitivity are compared, the less sensitive receiver will produce:

- A more signal or less noise
- B less signal or more noise
- C a steady oscillator drift
- D more than one signal

**B-003-010-004 (D)**

Which of the following modes of transmission is usually detected with a product detector?

- A Double sideband full carrier
- B Frequency modulation
- C Pulse modulation
- D Single sideband suppressed carrier

**B-003-010-005 (C)**

A receiver designed for SSB reception must have a BFO (beat frequency oscillator) because:

- A it reduces the passband of the IF stages
- B it phases out the unwanted sideband signal
- C the suppressed carrier must be replaced for detection
- D it beats with the received carrier to produce the other sideband

**B-003-010-006 (C)**

A receiver receives an incoming signal of 3.54 MHz, and the local oscillator produces a signal of 3.995 MHz. To which frequency should the IF be tuned?

- A 3.995 MHz
- B 3.54 MHz
- C 455 kHz
- D 7.435 MHz

**B-003-010-007 (B)**

What kind of filter would you use to attenuate an interfering carrier signal while receiving an SSB transmission?

- A A pi-network filter
- B A notch filter
- C A band pass filter
- D An all pass filter

**B-003-010-008 (C)**

The three main parameters against which the quality of a receiver is measured are:

- A sensitivity, stability and cross-modulation
- B sensitivity, selectivity and image rejection
- C sensitivity, selectivity and stability
- D selectivity, stability and frequency range

**B-003-010-009 (B)**

A communications receiver has four filters installed in it, respectively designated as 250 Hz, 500 Hz, 2.4 kHz, and 6 kHz. If you were listening to single sideband, which filter would you utilize?

- A 500 Hz
- B 2.4 kHz
- C 250 Hz
- D 6 kHz

**B-003-010-010 (C)**

A communications receiver has four filters installed in it, respectively designated as 250 Hz, 500 Hz, 2.4 kHz and 6 kHz. You are copying a CW transmission and there is a great deal of interference. Which one of the filters would you choose?

- A 2.4 kHz
- B 6 kHz
- C 250 Hz
- D 500 Hz

**B-003-010-011 (D)**

Selectivity can be placed in the audio stages of a receiver by the utilization of RC active or passive audio filters. If you were to copy CW, which of the following bandpasses would you choose?

- A 2100 - 2300 Hz
- B 300 - 2700 Hz
- C 100 - 1100 Hz
- D 750 - 850 Hz

**B-003-011-001 (B)**

What does chirp mean?

- A An overload in a receiver's audio circuit whenever CW is received
- B A small change in a transmitter's frequency each time it is keyed
- C A high-pitched tone which is received along with a CW signal
- D A slow change in transmitter frequency as the circuit warms up

**B-003-011-002 (A)**

What can be done to keep a CW transmitter from chirping?

- A Keep the power supply voltages very steady under transmit load
- B Add a key-click filter
- C Keep the power supply current very steady under transmit load
- D Add a low pass filter

**B-003-011-003 (B)**

What circuit has a variable-frequency oscillator connected to a buffer/driver and a power amplifier?

- A A digital radio transmitter
- B A VFO-controlled CW transmitter
- C A crystal-controlled AM transmitter
- D A single-sideband transmitter

**B-003-011-004 (D)**

What type of modulation system changes the amplitude of an RF wave for the purpose of conveying information?

- A Phase modulation
- B Amplitude-rectification modulation
- C Frequency modulation
- D Amplitude modulation

**B-003-011-005 (C)**

In what emission type does the instantaneous amplitude (envelope) of the RF signal vary in accordance with the modulating audio?

- A Pulse modulation
- B Frequency shift keying
- C Amplitude modulation
- D Frequency modulation

**B-003-011-006 (D)**

Morse code is usually transmitted by radio as:

- A a series of key-clicks
- B a continuous carrier
- C a voice-modulated carrier
- D an interrupted carrier

**B-003-011-007 (B)**

A mismatched antenna or transmission line may present an incorrect load to the transmitter. The result may be:

- A the output tank circuit breaks down
- B full power will not be transferred to the antenna
- C loss of modulation in the transmitted signal
- D the driver stage will not deliver power to the final

**B-003-011-008 (D)**

One result of a slight mismatch between the power amplifier of a transmitter and the antenna would be:

- A smaller DC current drain
- B lower modulation percentage
- C radiated key-clicks
- D reduced antenna radiation

**B-003-011-009 (D)**

An RF oscillator should be electrically and mechanically stable. This is to ensure that the oscillator does not:

- A become over modulated
- B generate key-clicks
- C cause undue distortion
- D drift in frequency

**B-003-011-010 (D)**

The input power to the final stage of your transmitter is 200 watts and the output is 125 watts. What has happened to the remaining power?

- A It has been used to provide greater efficiency
- B It has been used to provide negative feedback
- C It has been used to provide positive feedback
- D It has been dissipated as heat loss

**B-003-011-011 (C)**

The difference between DC input power and RF output power of a transmitter RF amplifier:

- A is due to oscillating
- B radiates from the antenna
- C appears as heat dissipation
- D is lost in the transmission line

**B-003-012-001 (A)**

What may happen if an SSB transmitter is operated with the microphone gain set too high?

- A It may cause splatter interference to other stations operating near its frequency
- B It may cause interference to other stations operating on a higher frequency band
- C It may cause atmospheric interference in the air around the antenna
- D It may cause digital interference to computer equipment

**B-003-012-002 (D)**

What may happen if an SSB transmitter is operated with too much speech processing?

- A It may cause digital interference to computer equipment
- B It may cause atmospheric interference in the air around the antenna
- C It may cause interference to other stations operating on a higher frequency band
- D It may cause audio distortion or splatter interference to other stations operating near its frequency

**B-003-012-003 (A)**

What is the term for the average power supplied to an antenna transmission line during one RF cycle, at the crest of the modulation envelope?

- A Peak envelope power
- B Peak output power
- C Average radio-frequency power
- D Peak transmitter power

**B-003-012-004 (B)**

What is the usual bandwidth of a single-sideband amateur signal?

- A Between 3 and 6 kHz
- B Between 2 and 3 kHz
- C 1 kHz
- D 2 kHz

**B-003-012-005 (D)**

In a typical single-sideband phone transmitter, what circuit processes signals from the balanced modulator and sends signals to the mixer?

- A IF amplifier
- B RF amplifier
- C Carrier oscillator
- D Filter

**B-003-012-006 (A)**

What is one advantage of carrier suppression in a double-sideband phone transmission?

- A More power can be put into the sidebands for a given power amplifier capacity
- B Only half the bandwidth is required for the same information content
- C Greater modulation percentage is obtainable with lower distortion
- D Simpler equipment can be used to receive a double-sideband suppressed-carrier signal

**B-003-012-007 (B)**

What happens to the signal of an overmodulated single-sideband or double-sideband phone transmitter?

- A It has higher fidelity and improved signal-to-noise ratio
- B It becomes distorted and occupies more bandwidth
- C It becomes stronger with no other effects
- D It occupies less bandwidth with poor high-frequency response

**B-003-012-008 (B)**

How should the microphone gain control be adjusted on a single-sideband phone transmitter?

- A For a dip in plate current
- B For slight movement of the ALC meter on modulation peaks
- C For full deflection of the ALC meter on modulation peaks
- D For 100% frequency deviation on modulation peaks

**B-003-012-009 (B)**

The purpose of a balanced modulator in an SSB transmitter is to:

- A make sure that the carrier and both sidebands are in phase
- B suppress the carrier and pass on the two sidebands
- C make sure that the carrier and both sidebands are 180 degrees out of phase
- D ensure that the percentage of modulation is kept constant

**B-003-012-010 (B)**

In a SSB transmission, the carrier is:

- A of no use at the receiver
- B reinserted at the receiver
- C transmitted with one sideband
- D inserted at the transmitter

**B-003-012-011 (C)**

The automatic level control (ALC) in a SSB transmitter:

- A increases the occupied bandwidth
- B reduces the system noise
- C controls the peak audio input so that the power amplifier is not overdriven
- D reduces transmitter audio feedback

**B-003-013-001 (C)**

What may happen if an FM transmitter is operated with the microphone gain or deviation control set too high?

- A It may cause atmospheric interference in the air around the antenna
- B It may cause interference to other stations operating on a higher frequency band
- C It may cause interference to other stations operating near its frequency
- D It may cause digital interference to computer equipment

**B-003-013-002 (D)**

What may your FM hand-held or mobile transceiver do if you shout into its microphone and the deviation adjustment is set too high?

- A It may cause digital interference to computer equipment
- B It may cause atmospheric interference in the air around the antenna
- C It may cause interference to other stations operating on a higher frequency band
- D It may cause interference to other stations operating near its frequency

**B-003-013-003 (A)**

What can you do if you are told your FM hand-held or mobile transceiver is overdeviating?

- A Talk farther away from the microphone
- B Talk louder into the microphone
- C Let the transceiver cool off
- D Change to a higher power level

**B-003-013-004 (B)**

What kind of emission would your FM transmitter produce if its microphone failed to work?

- A A phase-modulated carrier
- B An unmodulated carrier
- C A frequency-modulated carrier
- D An amplitude-modulated carrier

**B-003-013-005 (B)**

Why is FM voice best for local VHF/UHF radio communications?

- A Its RF carrier stays on frequency better than the AM modes
- B It provides good signal plus noise to noise ratio at low RF signal levels
- C The carrier is not detectable
- D It is more resistant to distortion caused by reflected signals

**B-003-013-006 (B)**

What is the usual bandwidth of a frequency-modulated amateur signal for +/- 5kHz deviation?

- A Greater than 20 kHz
- B Between 10 and 20 kHz
- C Less than 5 kHz
- D Between 5 and 10 kHz

**B-003-013-007 (C)**

What is the result of overdeviation in an FM transmitter?

- A Increased transmitter range
- B Poor carrier suppression
- C Out-of-channel emissions
- D Increased transmitter power

**B-003-013-008 (D)**

What emission is produced by a reactance modulator connected to an RF power amplifier?

- A Multiplex modulation
- B Amplitude modulation
- C Pulse modulation
- D Phase modulation

**B-003-013-009 (D)**

Why isn't frequency modulated (FM) phone used below 28.0 MHz?

- A The transmitter efficiency for this mode is low
- B Harmonics could not be attenuated to practical levels
- C The frequency stability would not be adequate
- D The bandwidth would exceed limits in the Regulations

**B-003-013-010 (D)**

You are transmitting FM on the 2 metre band. Several stations advise you that your transmission is loud and distorted. A quick check with a frequency counter tells you that the transmitter is on the proper frequency. Which of the following is the most probable cause of the distortion?

- A The power supply output voltage is low
- B The repeater is reversing your sidebands
- C The frequency counter is giving an incorrect reading and you are indeed off frequency
- D The frequency deviation of your transmitter is set too high

**B-003-013-011 (B)**

FM receivers perform in an unusual manner when two or more stations are present. The strongest signal, even though it is only two or three times stronger than the other signals, will be the only transmission demodulated. This is called:

- A surrender effect
- B capture effect
- C attach effect
- D interference effect

**B-003-014-001 (A)**

What do many amateurs use to help form good Morse code characters?

- A An electronic keyer
- B A key-operated on/off switch
- C A notch filter
- D A DTMF keypad

**B-003-014-002 (B)**

Where would you connect a microphone for voice operation?

- A To an antenna
- B To a transceiver
- C To a power supply
- D To an antenna switch

**B-003-014-003 (C)**

What would you connect to a transceiver for voice operation?

- A A terminal-voice controller
- B A splatter filter
- C A microphone
- D A receiver audio filter