

Radio Receivers

Q. The image channel selectivity of super heterodyne receiver depends upon

- (a) IF amplifiers only
- (b) RF and IF amplifiers only
- (c) Pre selector, RF and IF amplifiers
- (d) Pre selector and RF amplifiers only

Radio Receivers

Q. The image(second) channel selectivity of a super heterodyne communication receiver is determined by

- (a) antenna and pre selector
- (b) the pre selector and RF amplifier
- (c) the pre selector and IF amplifier
- (d) the RF and IF amplifier

Radio Receivers

- Q. A Super heterodyne Receiver is to tune the range from 4 to 10 MHz with an IF at 1.8 MHz. The range of Image frequencies are
- (a) 8 MHz to 20 MHz
 - (b) 2.2 MHz to 8.2 MHz
 - (c) 5.8 MHz to 11.8 MHz
 - (d) 7.6 MHz to 13.6 MHz

Radio Receivers

Q. A super heterodyne receiver is to operate in the frequency range 550 kHz -1650 kHz, with the intermediate frequency of 450 kHz. Let $R = \frac{C_{\max}}{C_{\min}}$ denote the required capacitance ratio of the local oscillator and I denote the image frequency (in kHz) of the incoming signal. If the receiver is tuned to 700 kHz, then

- (a) $R = 4.41, I = 1600$
- (b) $R = 2.10, I = 1150$
- (c) $R = 3.0, I = 1600$
- (d) $R = 9.0, I = 1150$

Radio Receivers

Q. *Common Data for Questions (1) & (2)*

A super heterodyne FM receiver operates in the frequency range 88 - 108 MHz. The IF and local oscillator frequencies are related that $f_{if} < f_{LO}$. We require that the image frequency fall outside the range 88 - 108 MHz.

1. The minimum required f_{if} is
 - (a) 10.7 MHz
 - (b) 455 kHz
 - (c) 20 MHz
 - (d) 10 MHz
2. The range of variation in local oscillator frequency is
 - (a) 98.7 MHz to 118.7 MHz
 - (b) 98 MHz to 118 MHz
 - (c) 95 MHz to 115 MHz
 - (d) 108 MHz to 128 MHz.

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Q. A superheterodyne receiver operates in the frequency range of 58 MHz - 68MHz. The intermediate frequency f_{IF} and local oscillator frequency f_{LO} are chosen such that $f_{IF} \leq f_{LO}$. It is required that the image frequencies fall outside the 59 MHz - 68 MHz band. The minimum required f_{IF} (in MHz) is _____.

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Q. For a superheterodyne receiver, the intermediate frequency is 15 MHz and the local oscillator frequency is 3.5 GHz. If the frequency of the received signal is greater than the local oscillator frequency, then the image frequency (in MHz) is _____

