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Subject: RFD

classmate

Date

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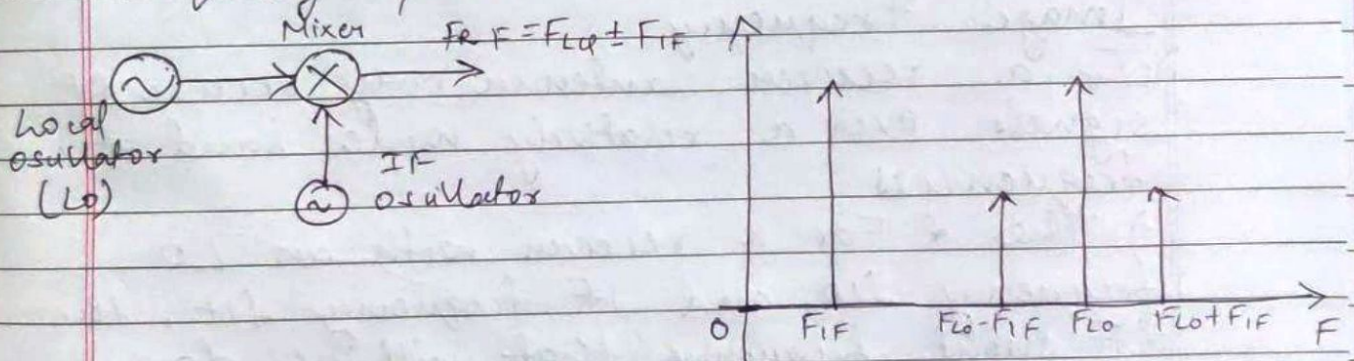
Q.2) List out mixer characteristics and discuss with suitable sketches

Ans. Mixer is a device used to translate a signal of one frequency to another.

Mixer characteristics are as follows:

- 1) Image frequency
- 2) Conversion Loss
- 3) Noise effects
- 4) Intermodulation distortion.

Frequency up-conversion



- 1) It occurs in a transmitter
- 2) A local oscillator signal at the relatively high frequency f_{Lo} is connected to one of the input ports of the mixer.

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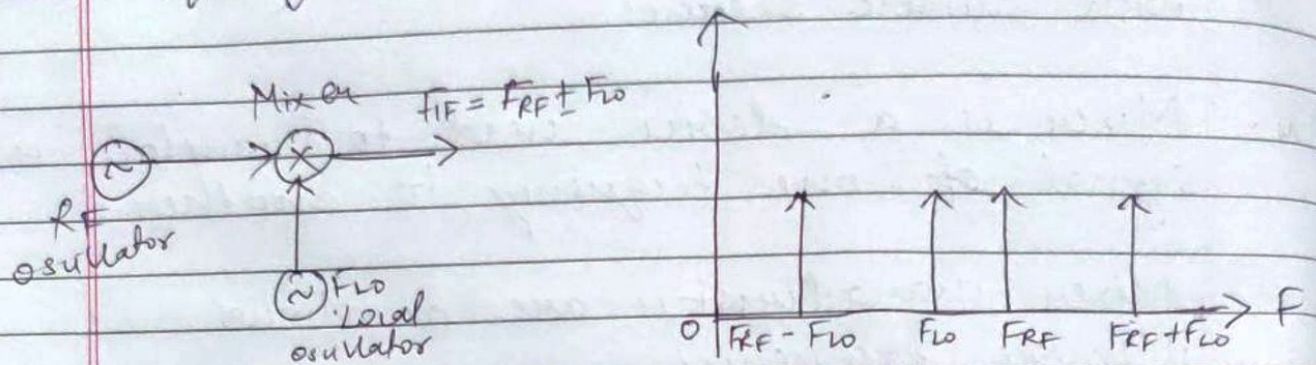
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Frequency down conversion



A Local oscillator (LO) signal at the relatively high frequency f_{LO} is connected to one of the input ports of the mixer.

Image Frequency

1) In a receiver, antenna may receive RF signals over a relatively wide band of frequencies.

2) Then & For a receiver with an LO frequency f_{LO} and IF frequency f_{IF} , the RF input frequency that will be down-converted to the IF frequency as $f_{RF} = f_{LO} + f_{IF}$.

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Q.4)

Ans.

Radiated emission is unintentional release of electromagnetic energy from an electronic device or apparatus. Conducted emission refers to mechanism that enables electromagnetic energy to be created in an electronic device and coupled to its AC power chord.

Benefits of good EMC designs

1) Safety:

As the number of small electronic devices such as cellular phones and laptop computer increases, the potential for possible safety hazards also increases.

2) Reduction of expense.

It is generally far less expensive to identify and fix problems during the design phase of product.

3) Increased reliability:

Proper EMC techniques applied during the design phase can increase product reliability.

4) Legality:

Electronic devices must meet various legal requirements.