

**EXPERIMENT#4**

**TO ANALYZE SINGLE SIDE BAND (SSB) AMPLITUDE MODULATION AND DEMODULATION**

**OBJECTIVE:**

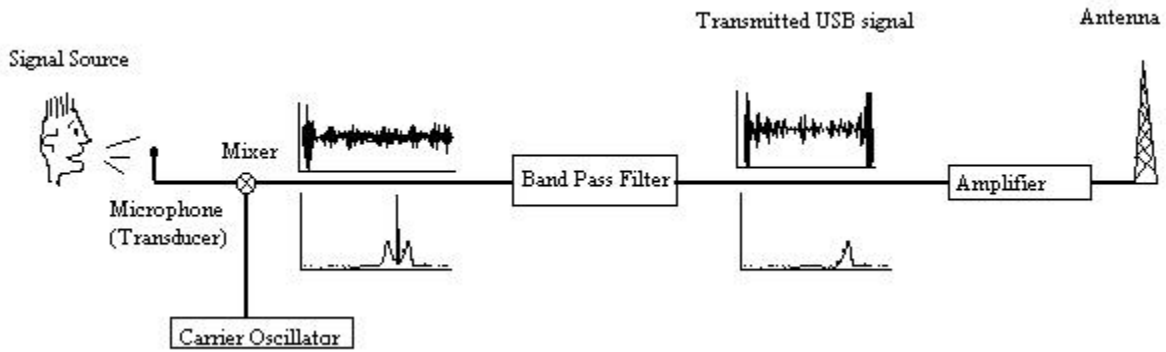
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**SINGLE SIDE BAND AM MODULATION:**

In single-sideband (SSB) modulation only the upper sideband or the lower sideband is transmitted. Thus, SSB modulation requires half the bandwidth of AM or DSBSC-AM modulation. A band-pass filter is added which instead of two side bands, allow a single side band to be transmitted.



**BENEFITS OF SSB AM MODULATION:**

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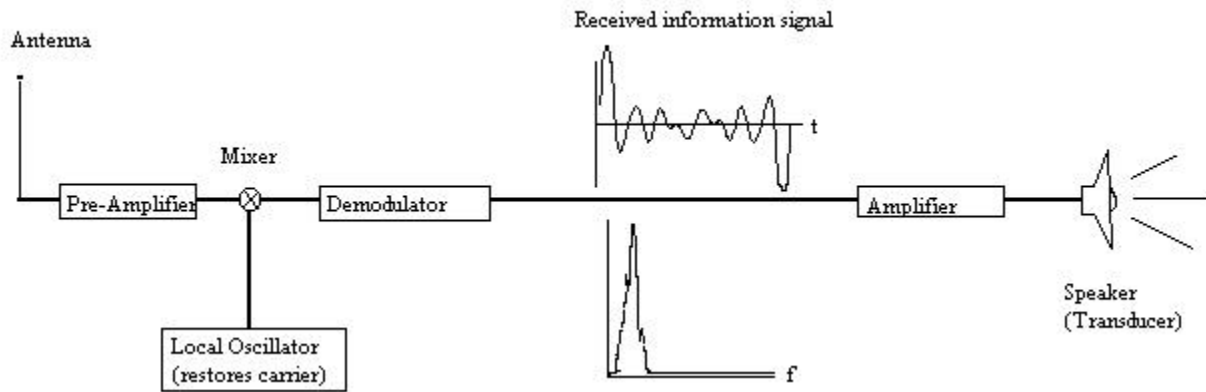
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## SINGLE SIDE BAND AM DEMODULATION:

SSB signal which multiplied by the LO to produce  $x(t)$ , and passing through LPF to isolate the baseband signal. The receiver in a SSB system has its own carrier signal (from a local oscillator) that is put back in. The receiver looks like:



You must add a band pass filter to the transmitter and a local oscillator to the receiver to make a conventional system into SSB.

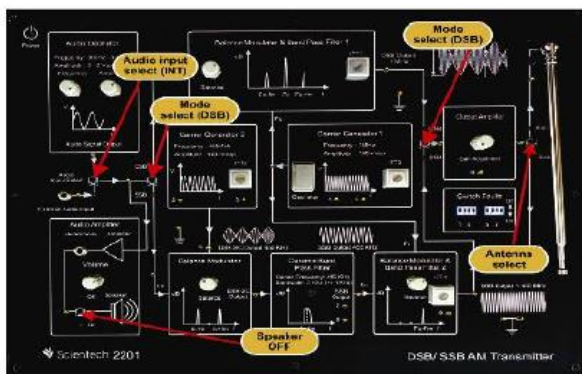
## EQUIPMENT USED:

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**PROCEDURE:**

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**Lab Task:**

*Observe the output of DSB/SSB Transmitter and Receiver and attach the output.*

**CONCLUSION:**

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## Post Lab Questions

**a) What is IF Amplifier used for?**

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**b) What is the difference between DSB and SSB Transmission?**

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**c) What is Ceramic Band Pass filter used for?**

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