VESTIGIAL SIDEBAND MODULATION

EEEN 462 – ANALOGUE COMMUNICATION

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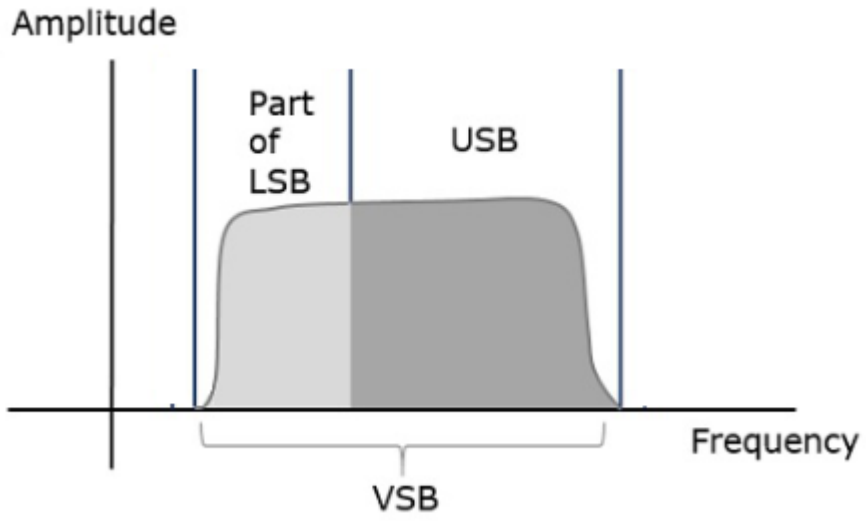
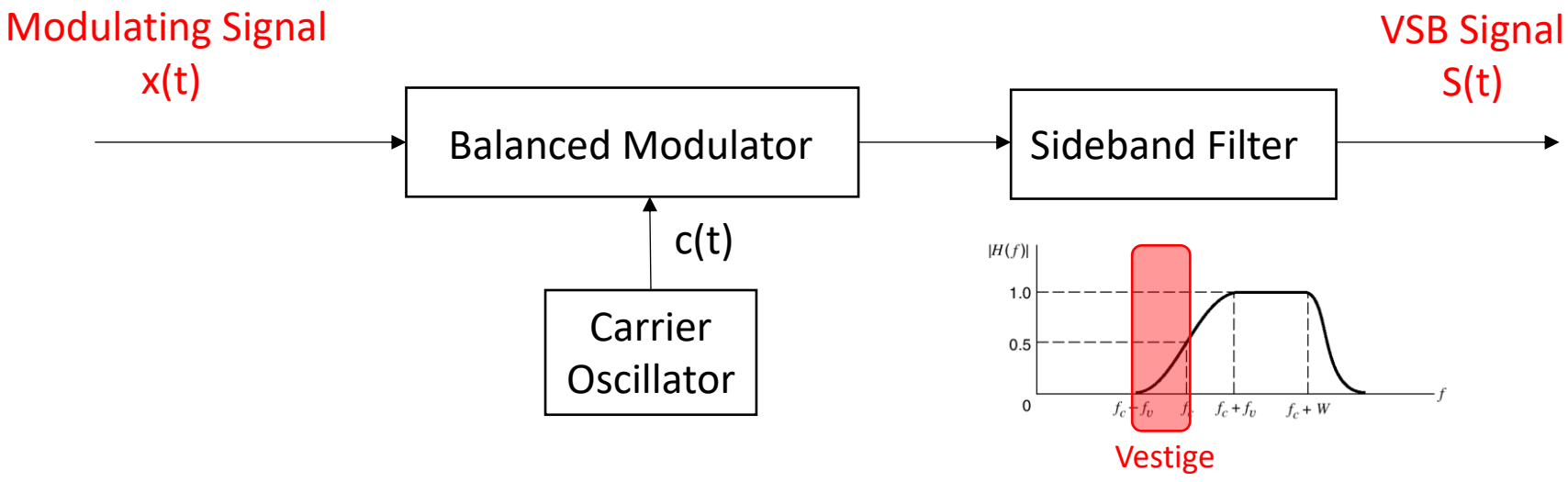
WHAT IS VESTIGIAL SIDEBAND MODULATION?

Vestigial sideband (VSB) modulation is a type of amplitude modulation (AM) that transmits a signal by partially suppressing one sideband and passing the other almost completely.



WHY DO WE NEED A VESTIGE?

1. **Vestigial Sideband (VSB) Modulation** relaxes the stringent requirement on the frequency response of the sideband filter by allowing part of the unwanted sideband (called vestige) to appear in the output.
2. VSB signals are easier to generate because some roll-off in filter edges is allowed.
3. VSB therefore results in system simplification and is a compromise between DBSC and SSB-SC.

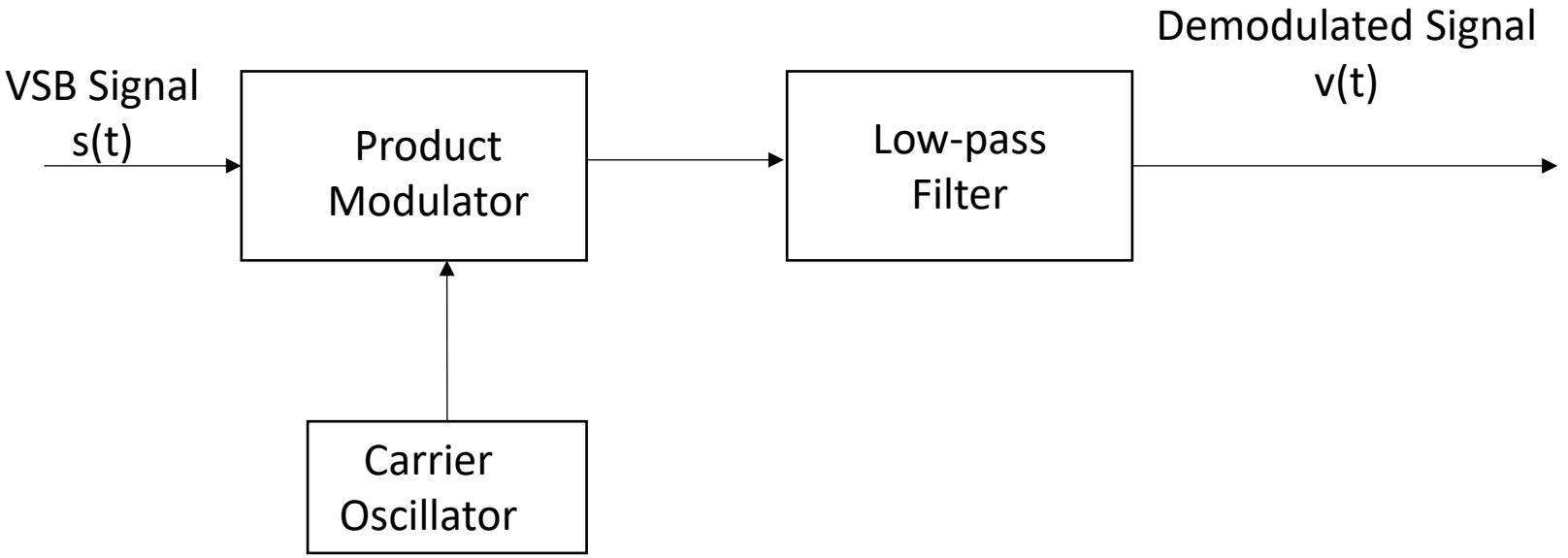


ADVANTAGES OF VSB

1. Efficient use of bandwidth
2. Less constraints on filter thus making it easier to design filters
3. Easier to transmit low-frequency components in applications such as Video transmission.

DEMODULATION OF VSB SIGNALS

VSB signals are demodulated by using multiplying the VSB signal with a locally generated carrier



APPLICATION OF VSB MODULATION

1. The most prominent and standard application of VSB is for the transmission of television signals.
2. PAL Television picture signal has nominal bandwidth of 6 MHz
3. If DSB-SC modulation was used, it would have required at least 12 MHz for each TV channel.
4. VSB modulation is used to confine the signal to about 8MHz.