

EEE341

Introduction to Communication Engineering
Laboratory



Inspiring Excellence

Lab – Report (Software)

Section: 02

Experiment no.

02

Experiment Name:

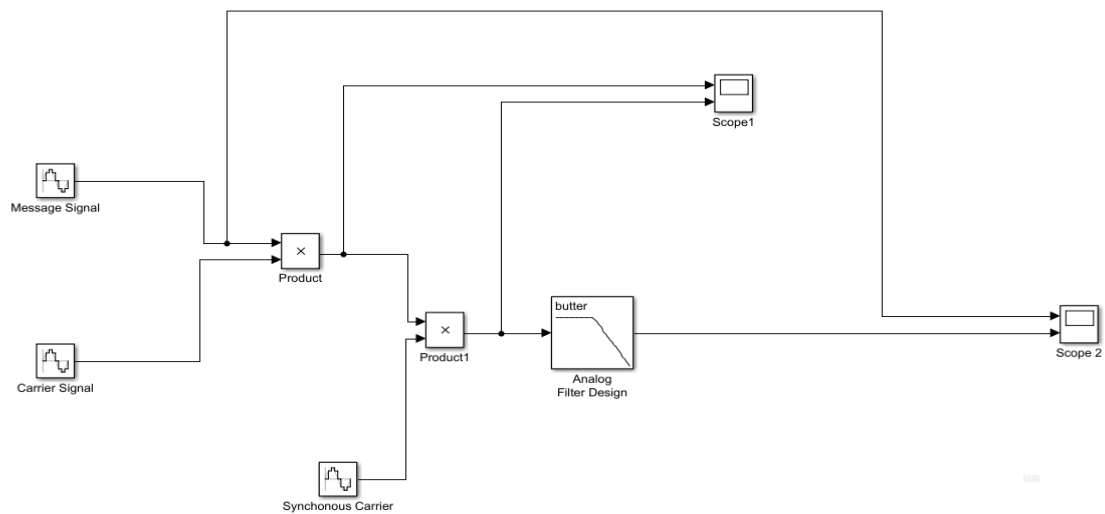
AM-DSB-SC and AM-SSB-SC Modulation and Demodulation

Prepared by:

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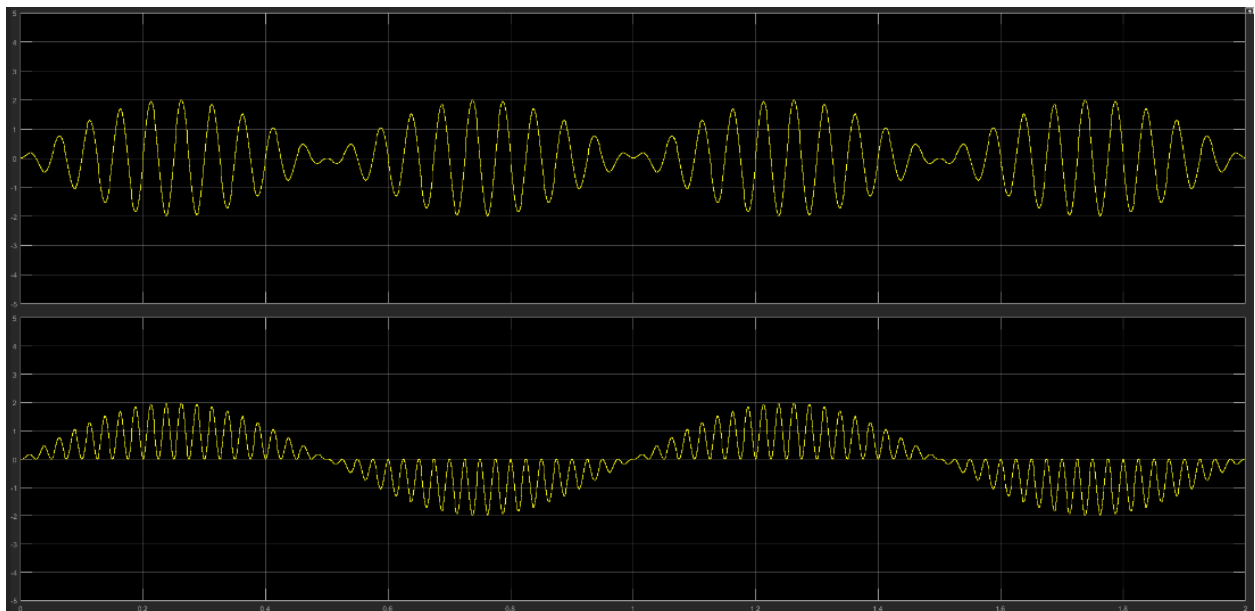
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Example 1: AM-DSB-SC Modulation and Demodulation



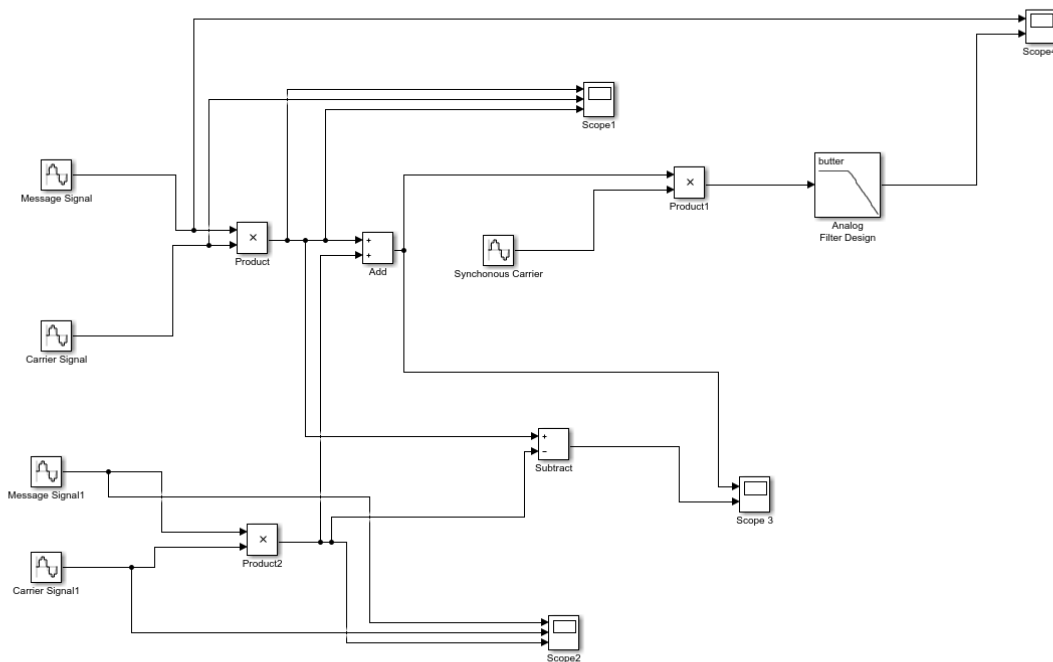
AM-DSB-SC signal can be easily detected using product detector. In AM-DSB-SC we put a message signal and a carrier signal, after modulating we measured the signal from scope 1. After that demodulate the signal and pass through a low pass filter which gives us the same signal from scope 2.

For AM-DSB-SC modulation,



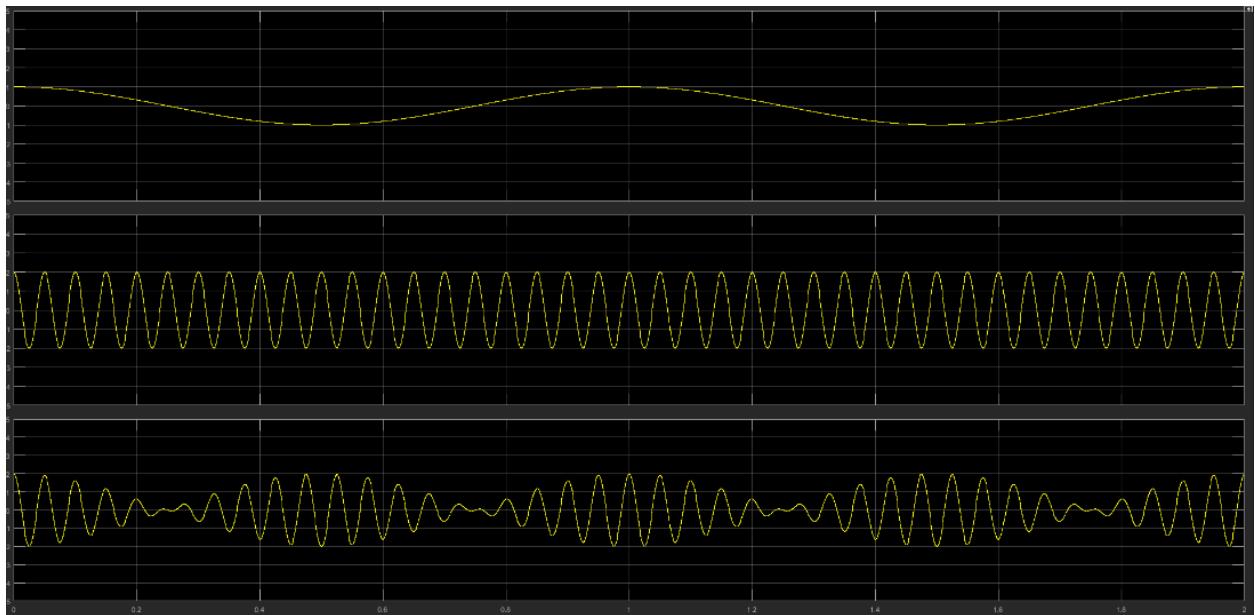
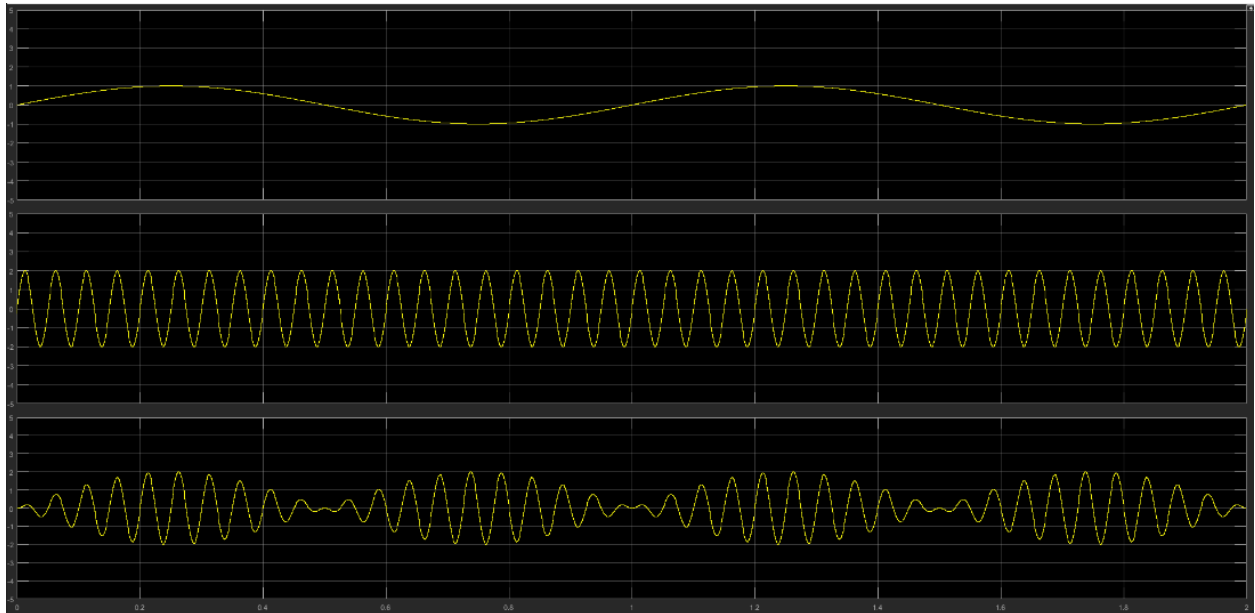
Double-sideband suppressed carrier transmission is transmission in which frequencies produced by amplitude modulation are symmetrically spaced above and below the carrier frequency and the carrier level is reduced to the lowest practical level, ideally being completely suppressed.

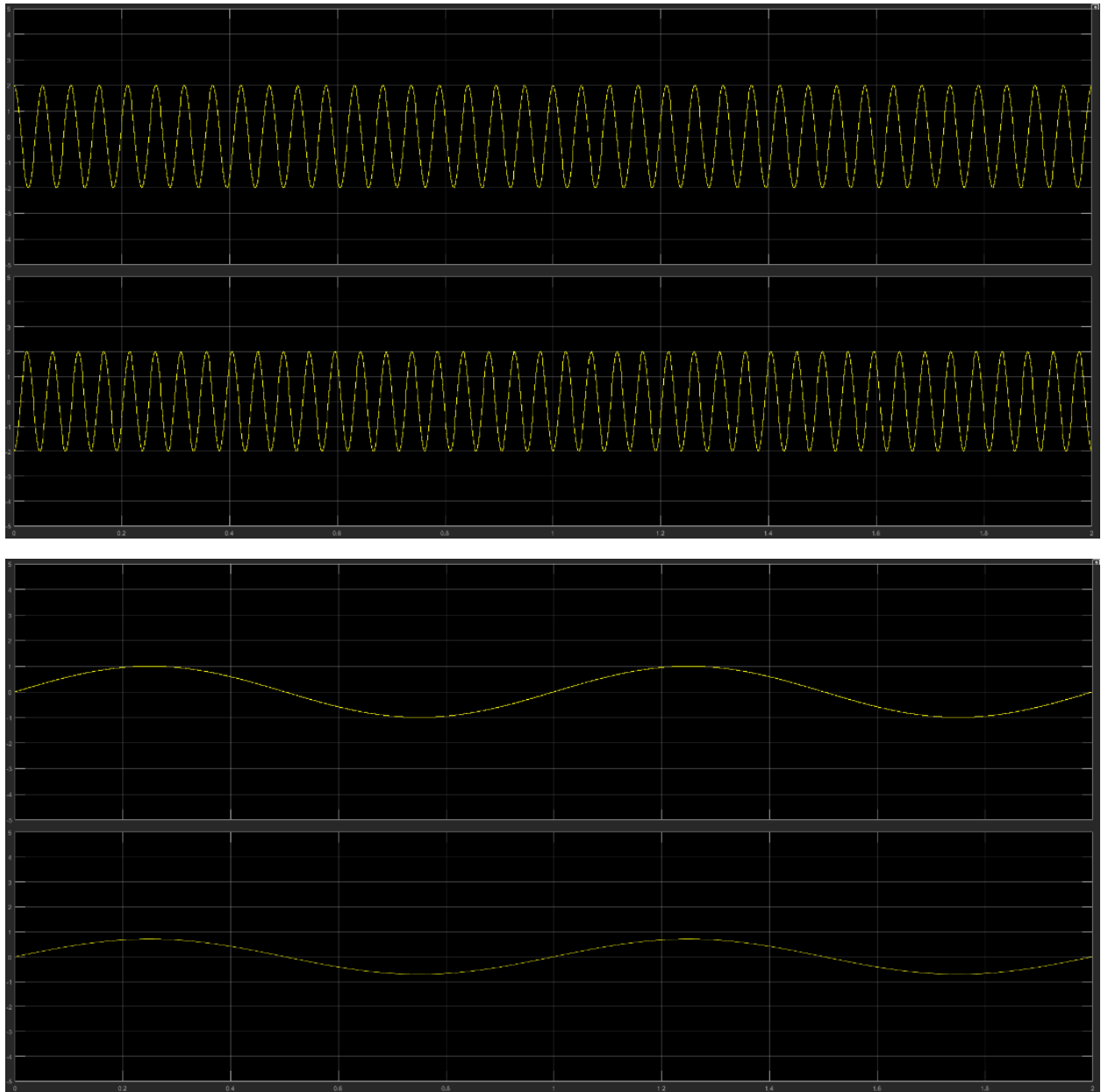
Example 2: AM-SSB-SC Modulation and Demodulation



SSB signal can be detected using product detector as used in previous experiment. The figure shown above shows that an USB and a LSB is passing through a low pass filter. Scope 1,2 and 3 are shown for USB and LSB. And after passing through a low pass filter we get wave shape from scope 4.

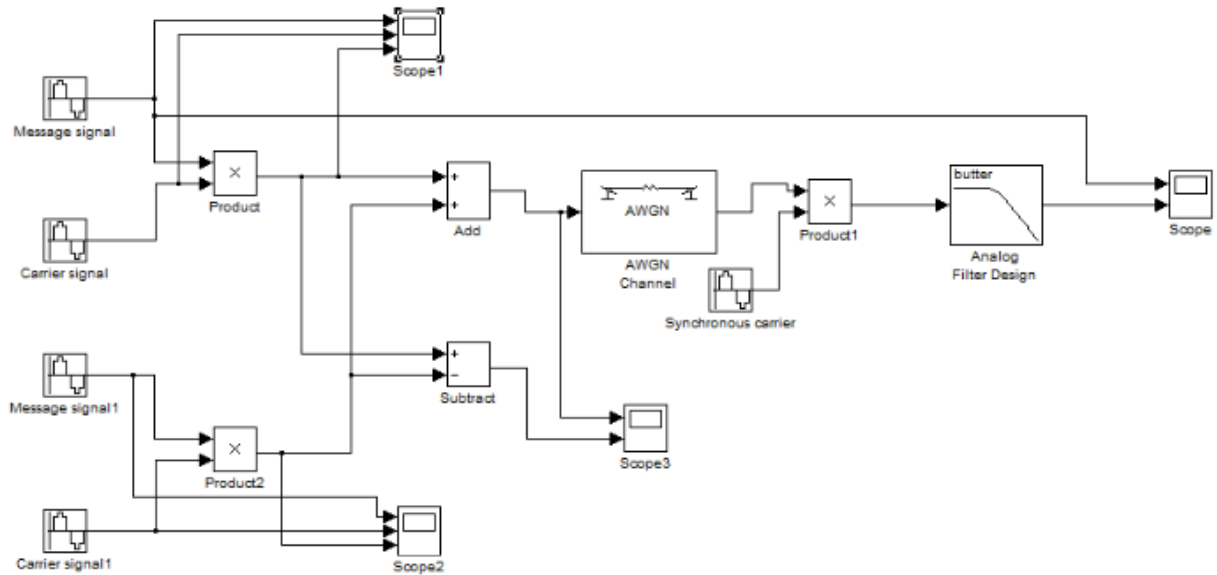
For AM-SSB-SC modulation,



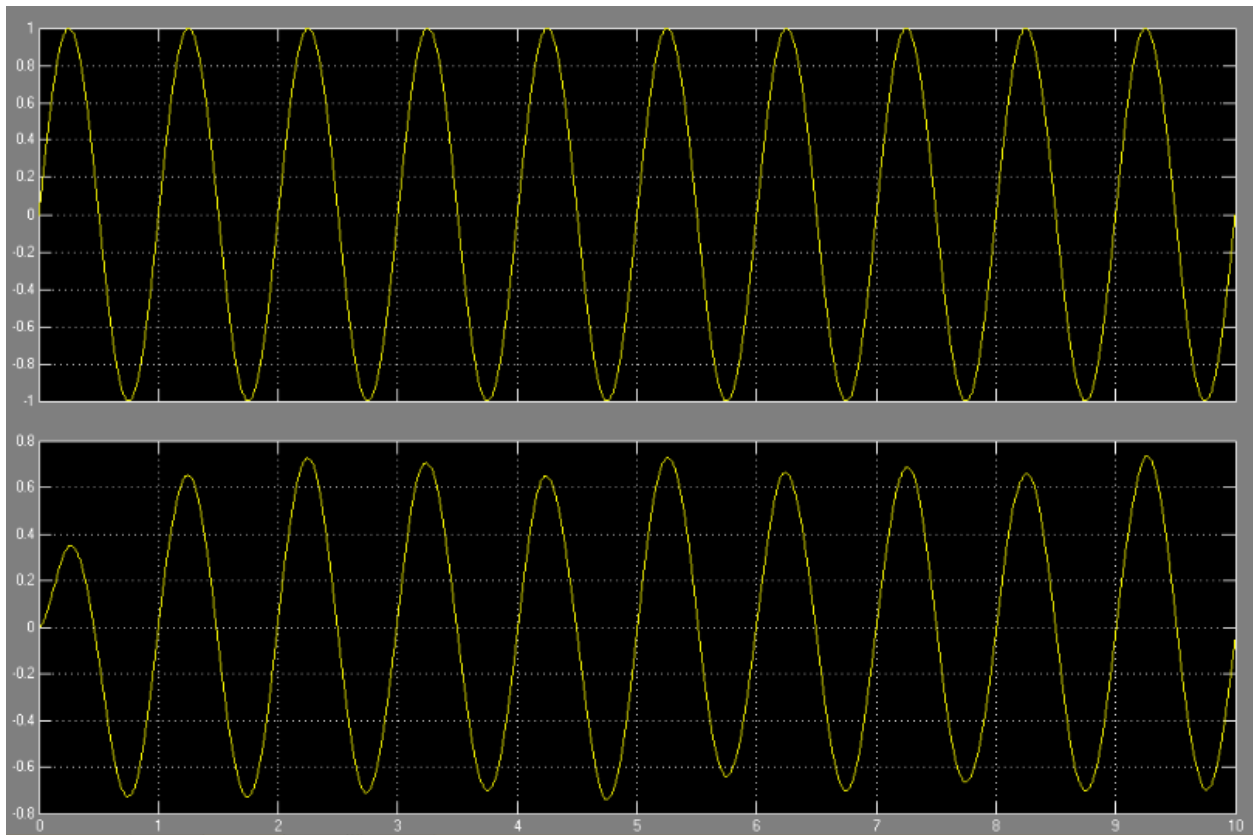


In radio communications single sidebands modulation or single sideband suppressed carrier modulation is a type of modulation, used to transmit information such as an audio signal by radio waves.

Example 3: AM-SSB-SC Modulation and Demodulation Adding AWGN Channel.



For AM-SSB-SC modulation adding AWGN channel,



AWGN is often used as a channel model in which the only impairment to communication is a linear addition of wide band or white noise with a constant spectral density and a Gaussian distribution of amplitude.