



Faculty of Engineering & Technology
Department of Electrical & Computer Engineering
ENEE4113-COMMUNICATIONS LAB
Exp 2: DSB-SC and SSB-SC
Pre Lab #2

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Table of Contents

List of Figure:	2
Block simulation:	3
A- DSB-SC modulation Schematic diagram:.....	3
B- DSB-SC Demodulation Schematic Diagram:	7
C- SSB Modulation method 1:	8
D-SSB Demodulation method 1:.....	9
E-SSB Modulation method 2:	11
F- SSB Demodulation method 2:	12

List of Figure:

Figure1 : Block parameter for $m(t)$	3
Figure2 :Block parameter for $c(t)$	3
Figure 3:DSB-SC Modulation Schematic diagram.....	4
Figure 4: setting for zero hold in message signal	4
Figure 5:setting for zero hold in carrier (and it is same for DSB modulated signal).....	4
Figure6 : Message signal in time domain	5
Figure 7:Carrier Signal in time domain	5
Figure 8:DSB-SC Modulated signal - in time domain.....	5
Figure 9:Spectrum of message signal	6
Figure 10: spectrum of carrier signal	6
Figure 11: spectrum for DSB Carrier Modulation Modulated signal	6
Figure 12:DSB-SC DeModulation Schematic Diagram	7
Figure 13: Analog filter setting.....	7
Figure 14:DSB-SC DeModulated signal – in time domain	7
Figure 15: spectrum of DSB-SC Demodulated signal	8
Figure 16:SSB Modulation method 1 Schematic Block Diagram	8
Figure 17: Bandpass filter setting	8
Figure 18: SSB Modulated signal –time domain method 1	9
Figure 19: spectrum of SSB Modulated signal method 1	9
Figure 20:SSB Demodulation Schematic Diagram method 1	9
Figure 21:SSB DeModulated signal - time domain method 1	10
Figure 22: spectrum of SSB DeModulated signal method 1	10
Figure 23:SSB modulation Schematic diagram method 2.....	11
Figure 24: Modulated Signal method 2	11
Figure 25: spectrum of Modulated Signal method 2	11
Figure 26:SSB Demodulation Schematic diagram method 2	12
Figure 27:SSB Demodulated signal method 2.....	12
Figure 28: spectrum of SSB Demodulated signal method 2.....	12

Block simulation:

A- DSB-SC Modulation Schematic diagram:

$$M(t) = 0.85 \cos(2 \pi (1000)t)$$

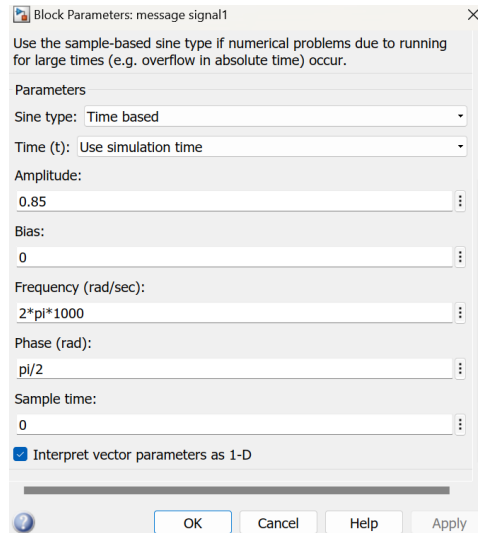


Figure1 : Block parameter for m(t)

$$C(t) = 1 \cos (2 \pi (15000)t)$$

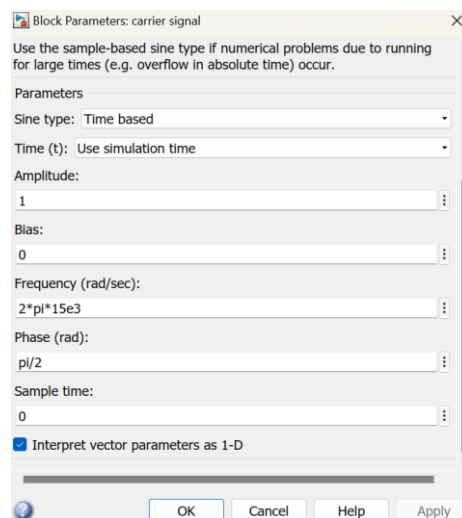


Figure2 :Block parameter for c(t)

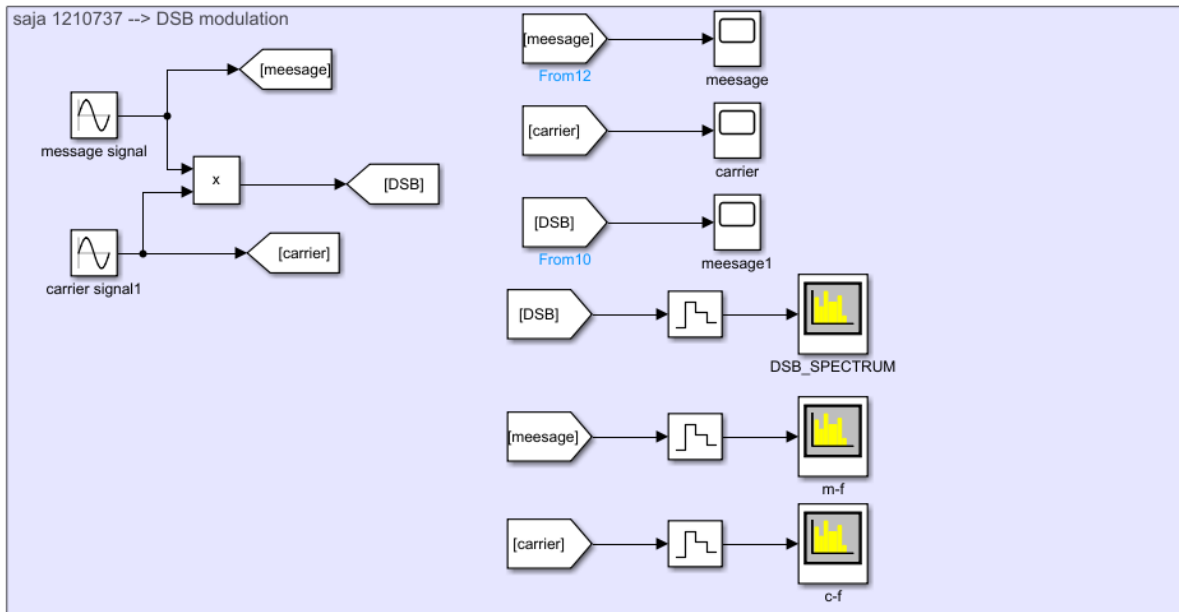


Figure 3:DSB_SC Modulation Schematic diagram

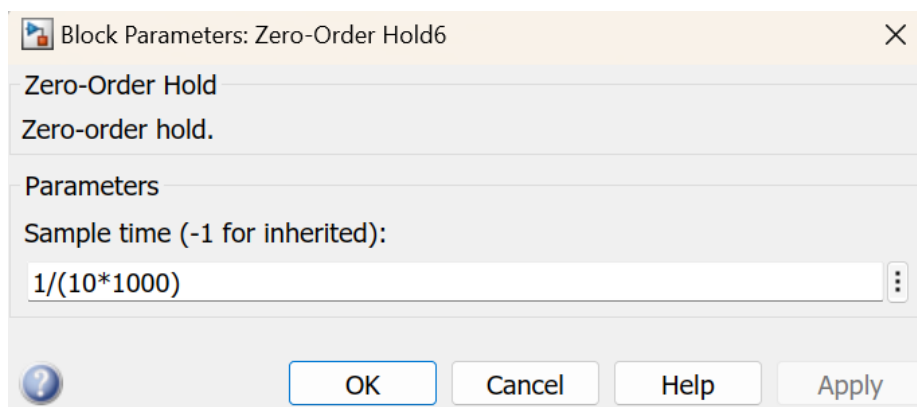


Figure 4: setting for zero hold in message signal

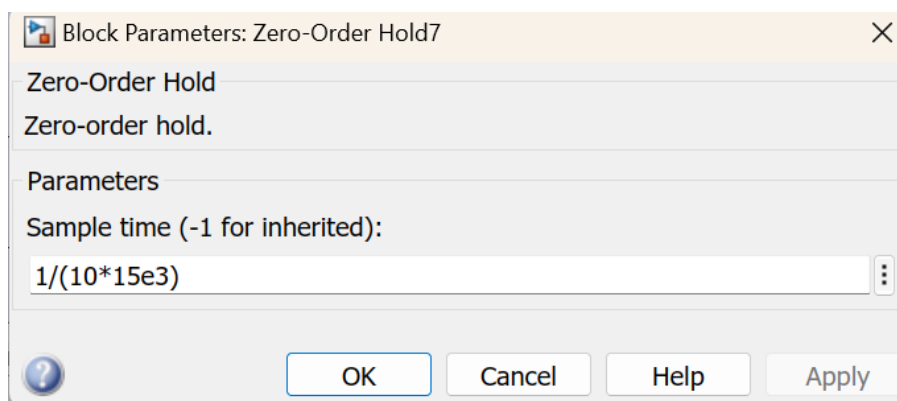


Figure 5:setting for zero hold in carrier (and it is same for DSB modulated signal)

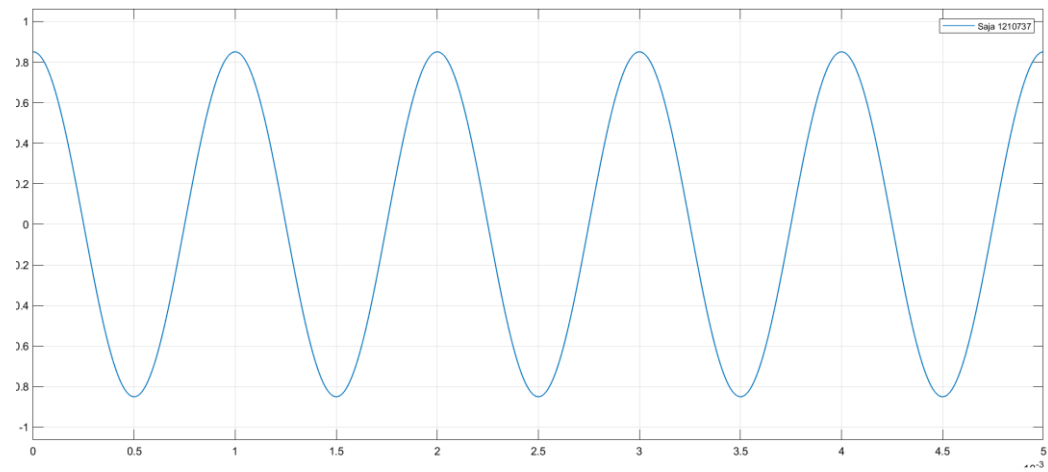


Figure6 : Message signal in time domain

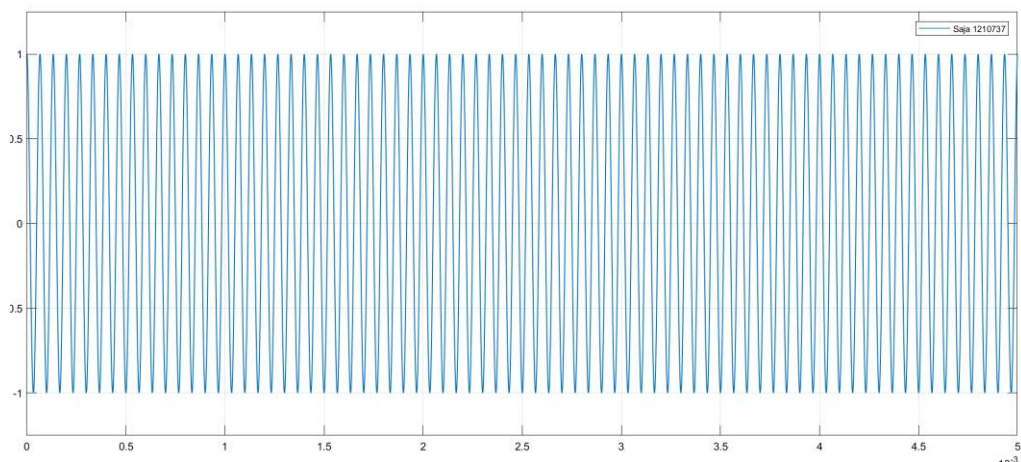


Figure 7:Carrier Signal in time domain

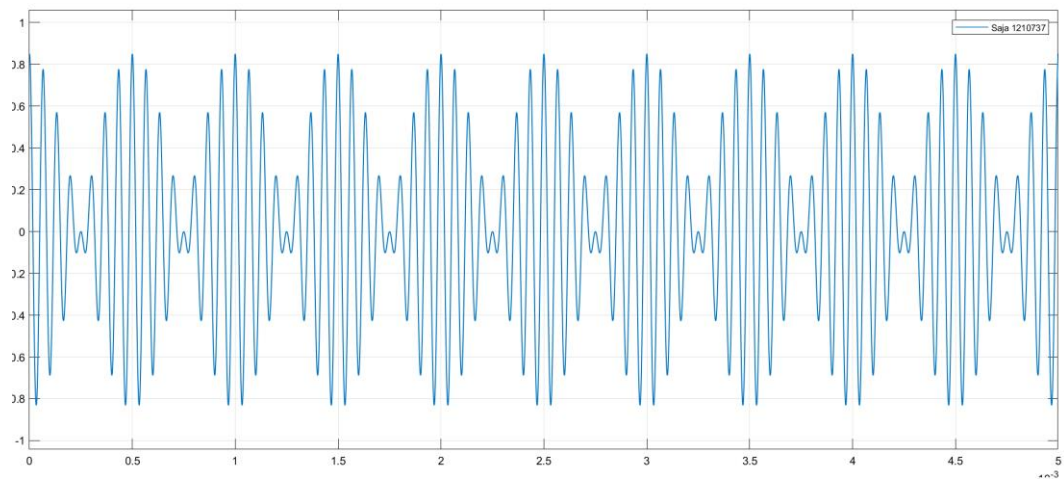


Figure 8:DSB-SCModulated signal - in time domain

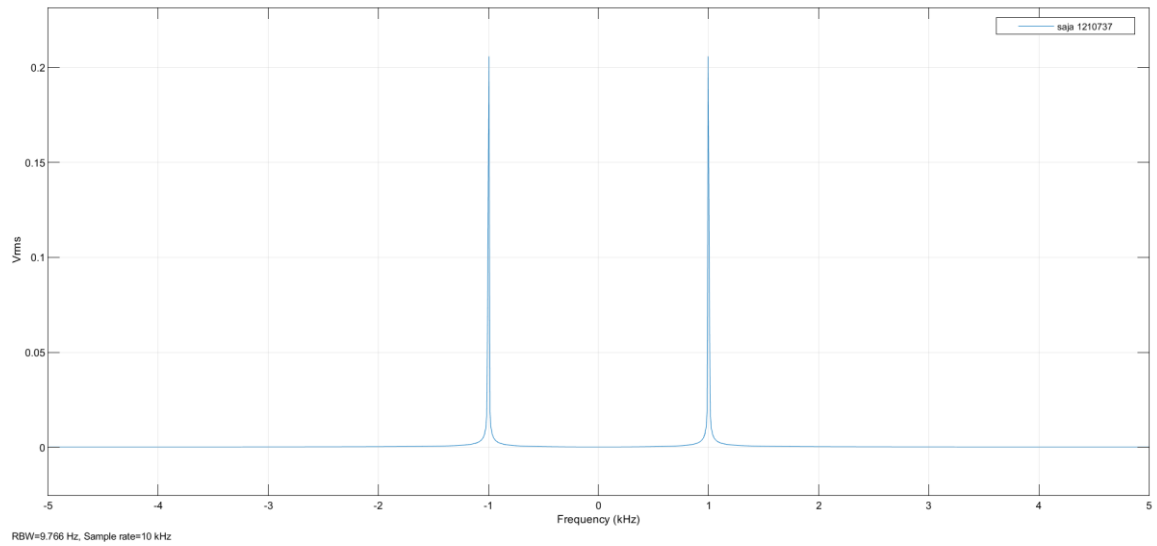


Figure 9:Spectrum of meesage signal

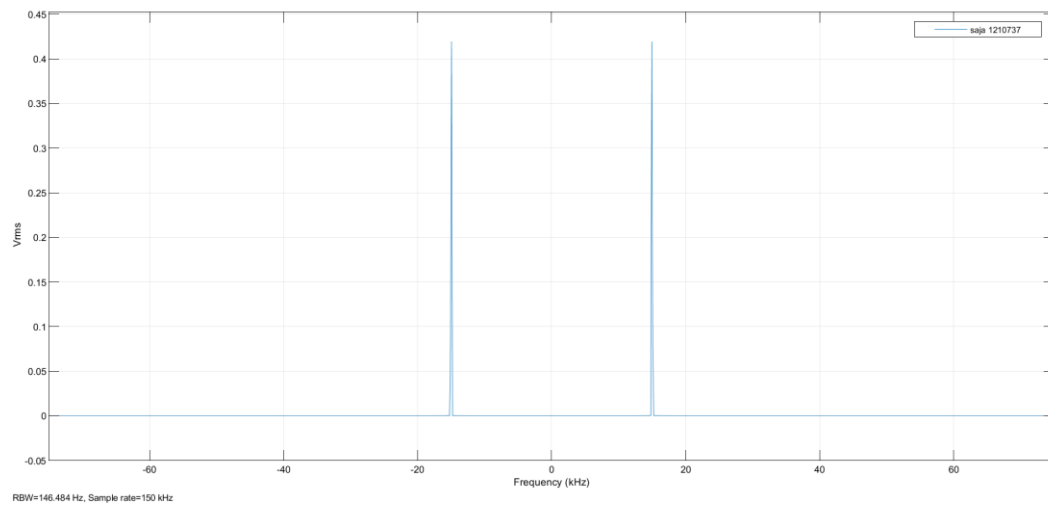


Figure 10: spectrum of carrier signal

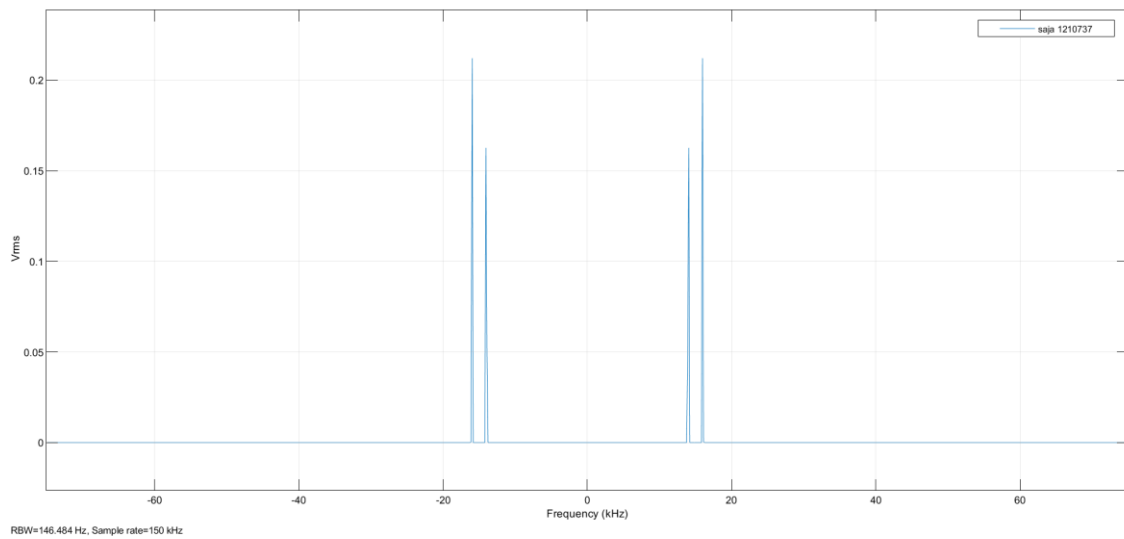


Figure 11: spectrum for DSB-SC Modulated signal

B- DSB Carrier Demodulation Schematic Diagram:

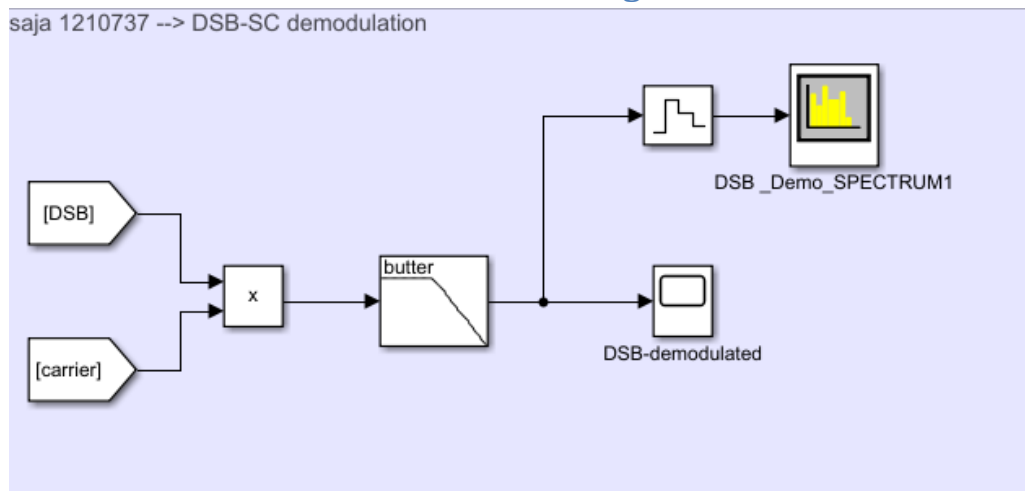


Figure 12:DSB-SC DeModulation Schematic Diagram

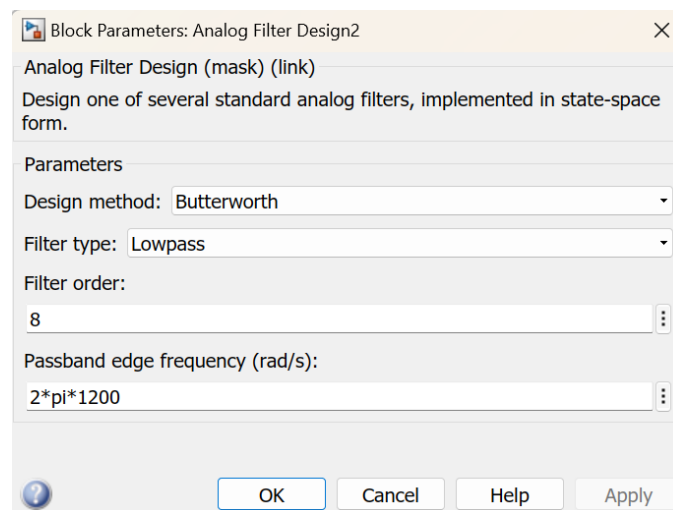


Figure 13: Analog filter setting

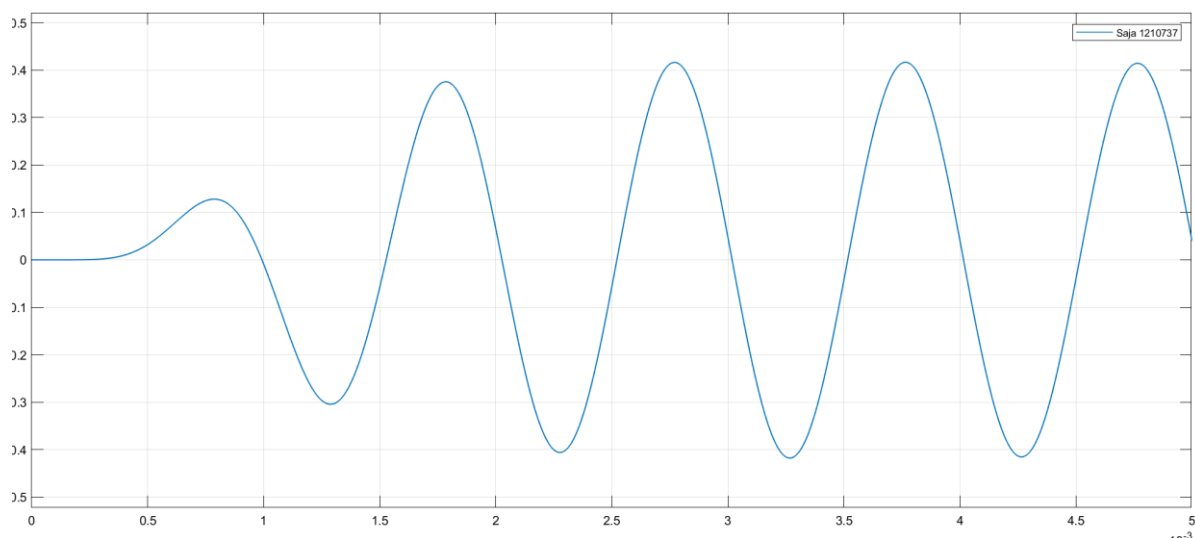


Figure 14:DSB-SC DeModulated signal – in time domain

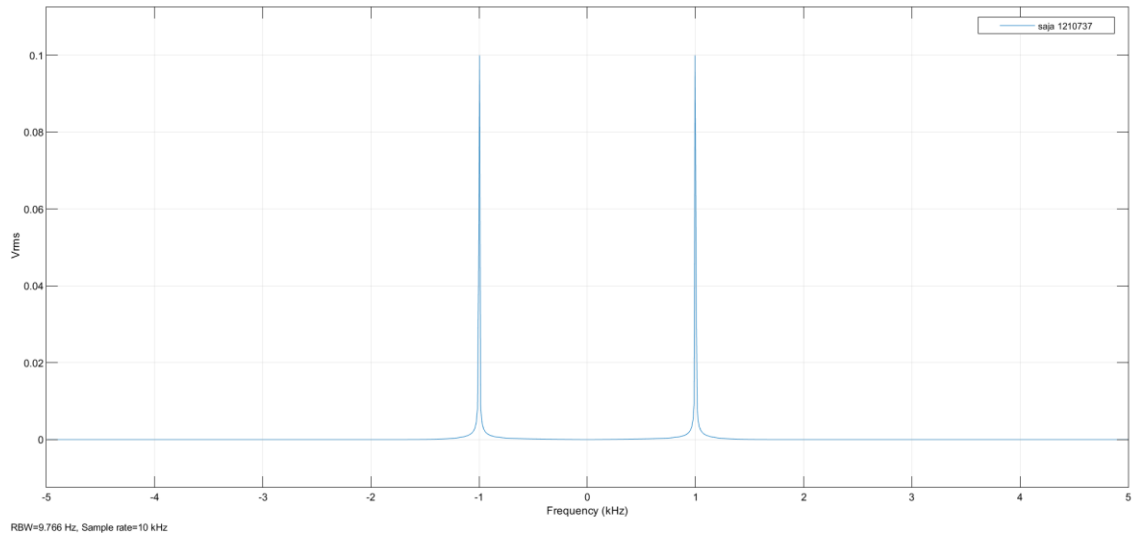


Figure 15: spectrum of DSB-SC Demodulated signal

c- SSB Modulation method 1:

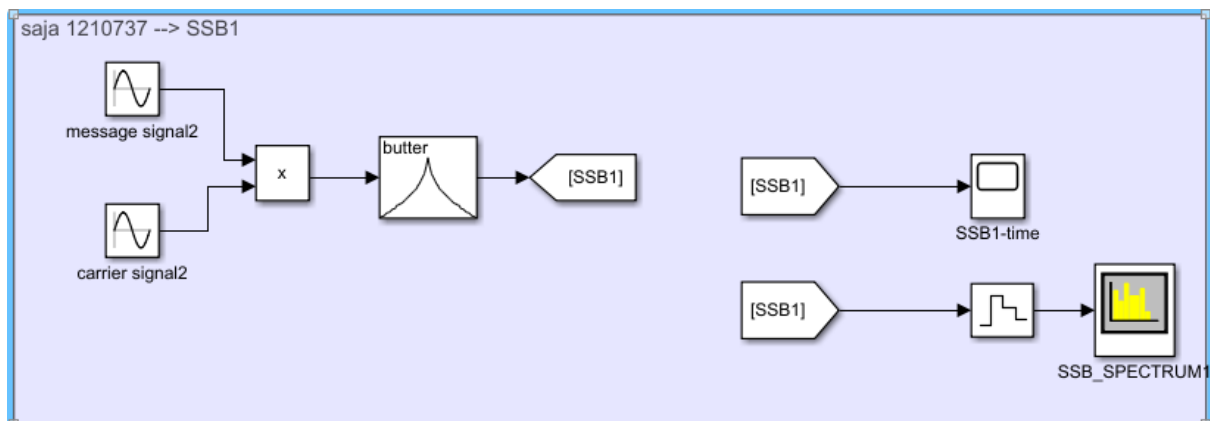


Figure 16:SSB Modulation method 1 Schematic Block Diagram

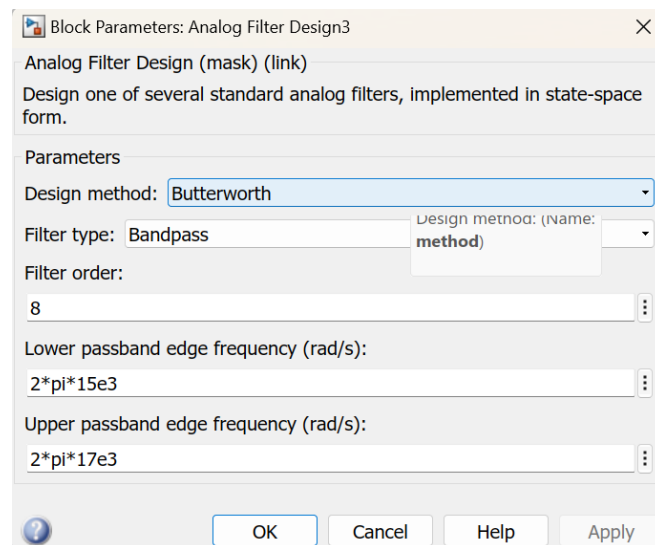


Figure 17: Bandpass filter setting

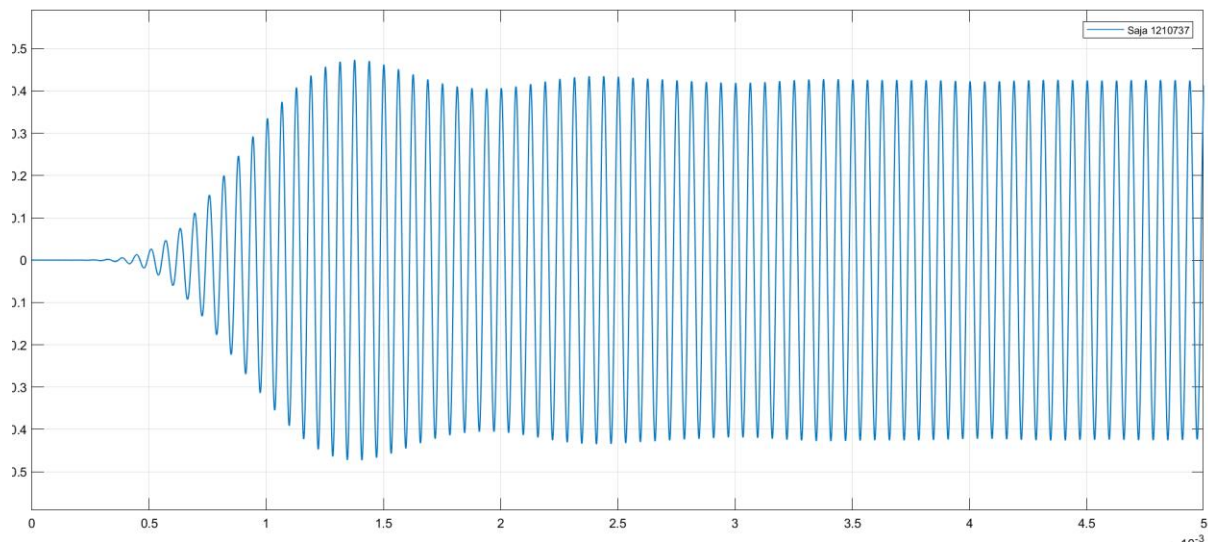


Figure 18: SSB Modulated signal –time domain method 1

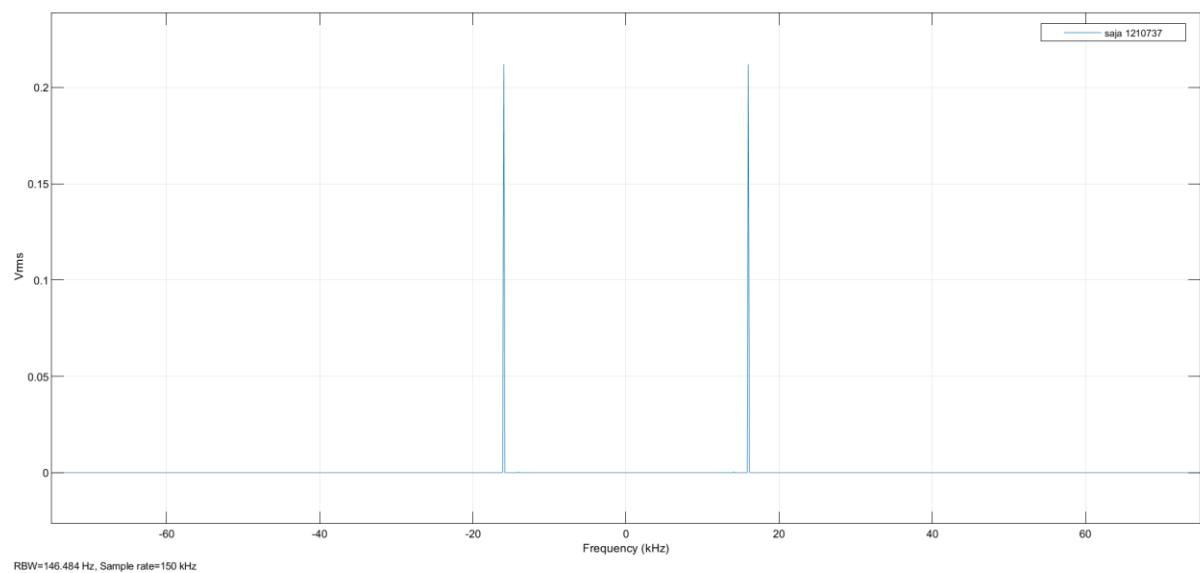


Figure 19: spectrum of SSB Modulated signal method 1

D-SSB Demodulation method 1:

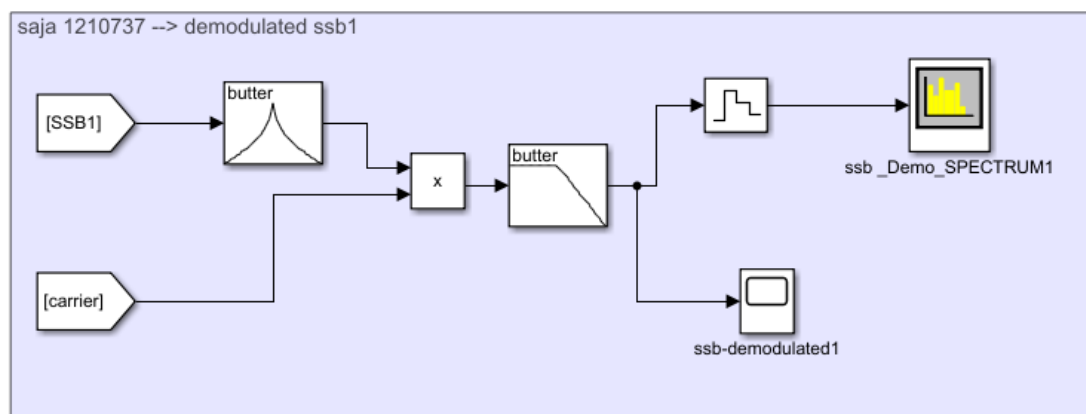


Figure 20:SSB Demodulation Schematic Diagram method 1

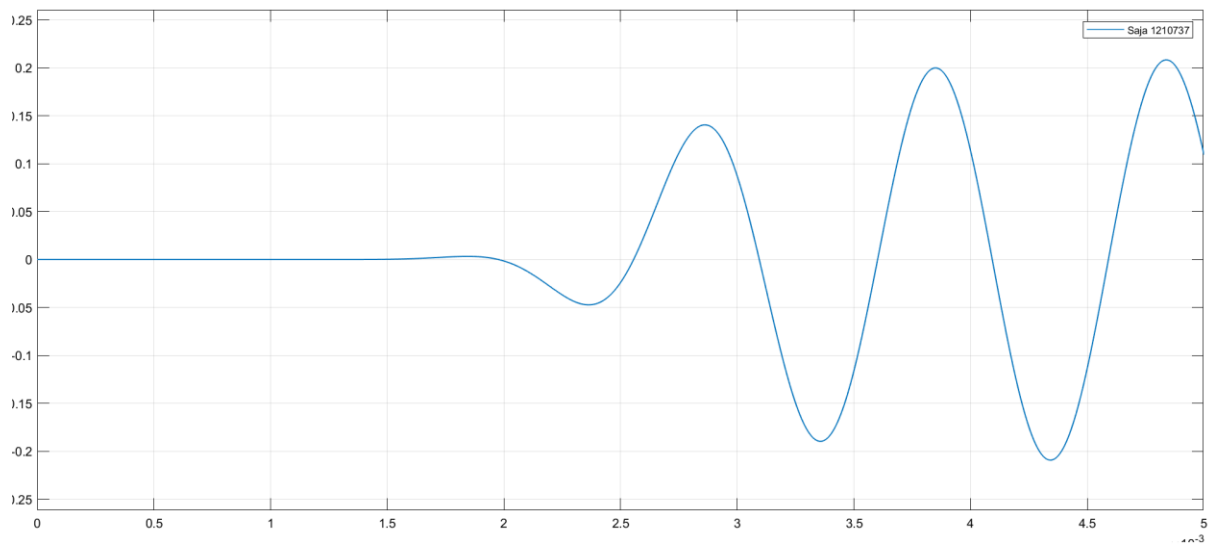


Figure 21:SSB DeModulated signal - time domain method 1

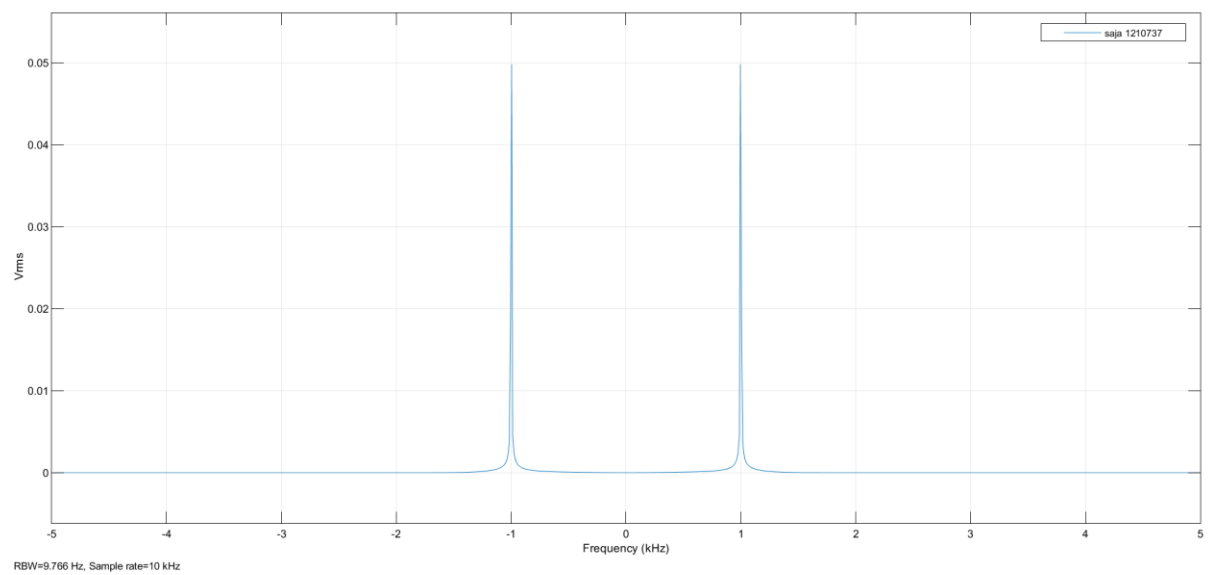


Figure 22: spectrum of SSB DeModulated signal method 1

E-SSB Modulation method 2:

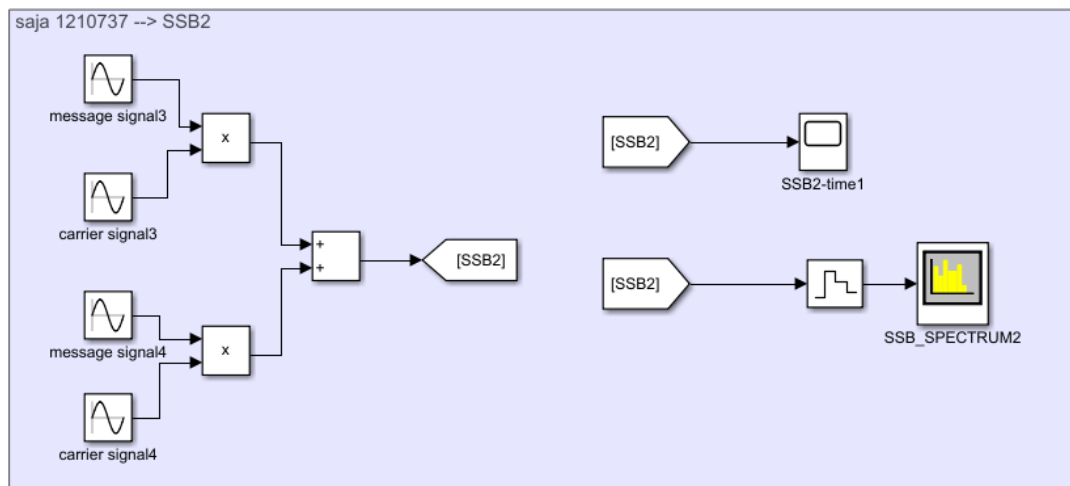


Figure 23:SSB modulation Schematic diagram method 2

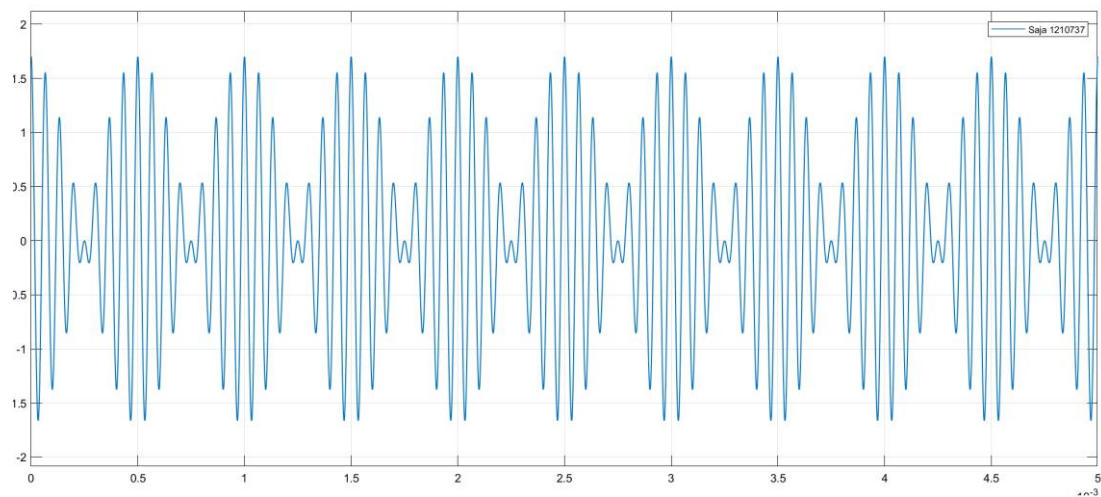


Figure 24: Modulated Signal method 2

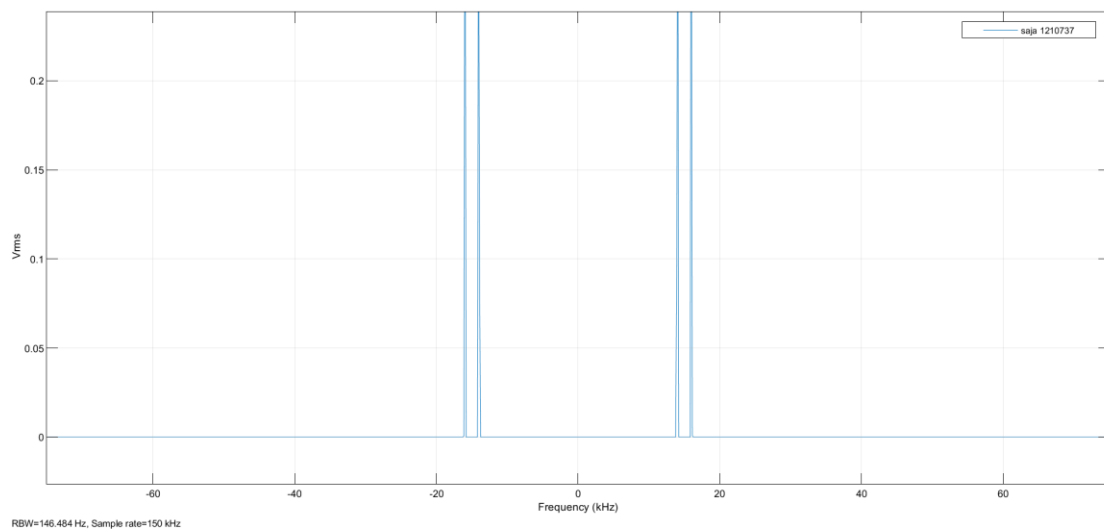


Figure 25: spectrum of Modulated Signal method 2

F- SSB Demodulation method 2:

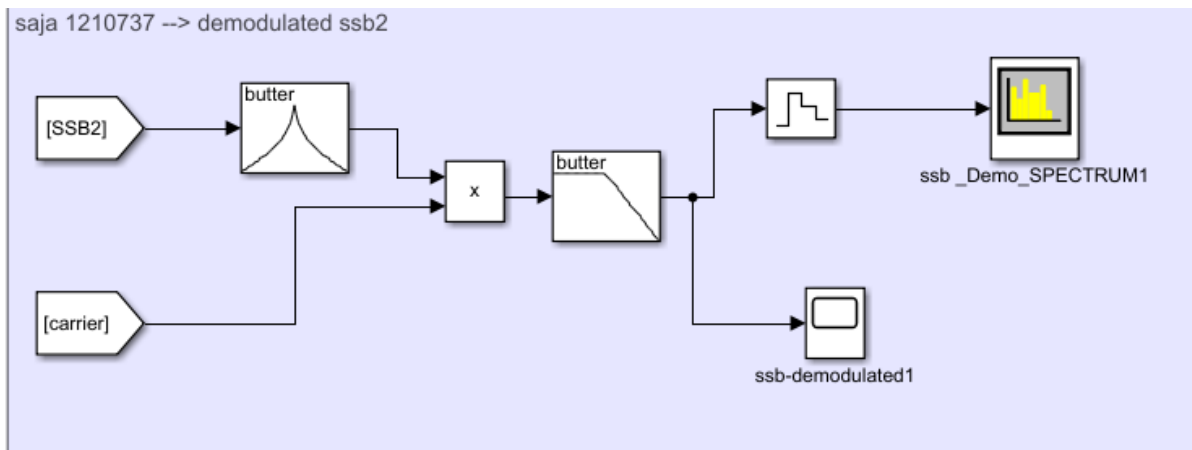


Figure 26:SSB Demodulation Schematic diagram method 2

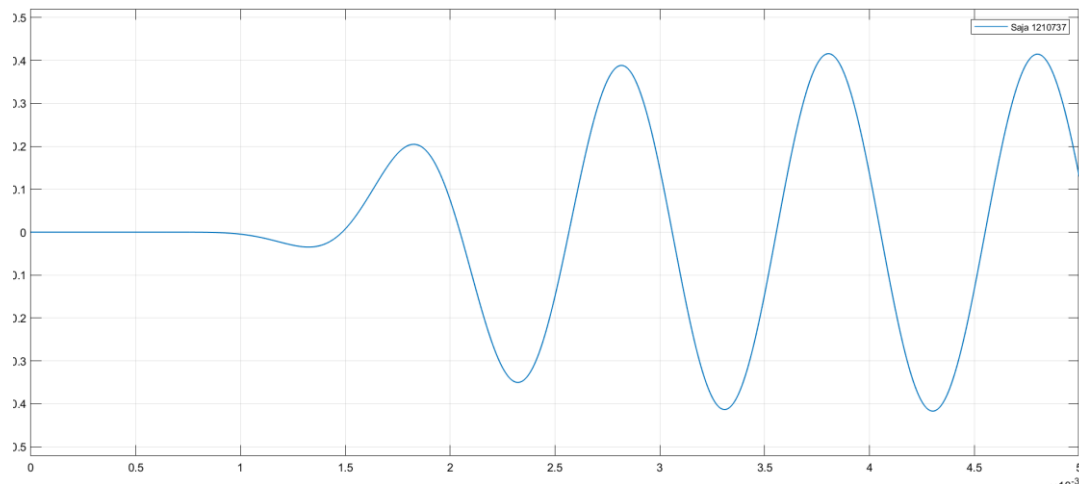


Figure 27:SSB Demodulated signal method 2

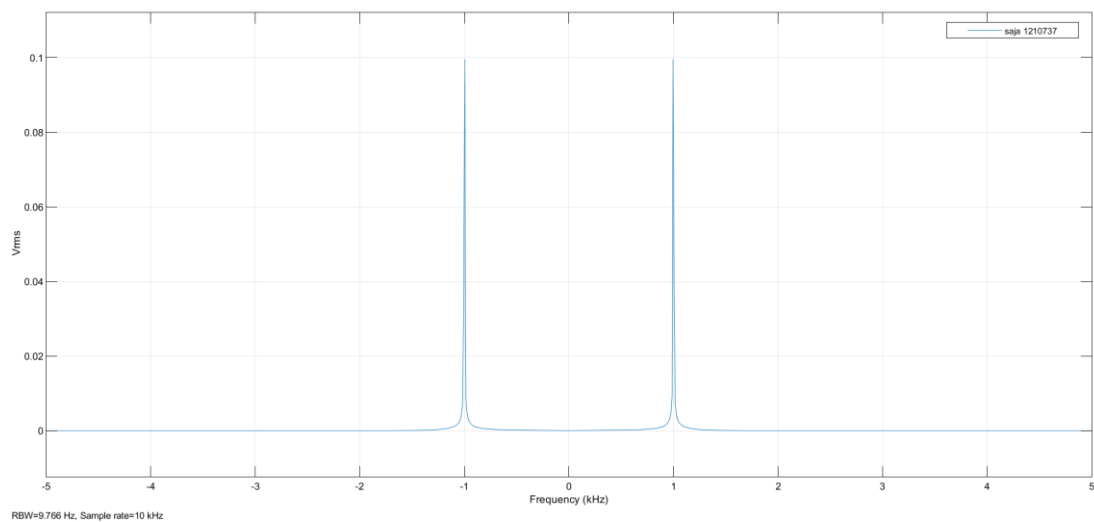


Figure 28: spectrum of SSB Demodulated signal method 2