جامعة بيرزيت

BIRZEIT UNIVERSITY

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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Section:
Sec 5

Date:
25/7/2024

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

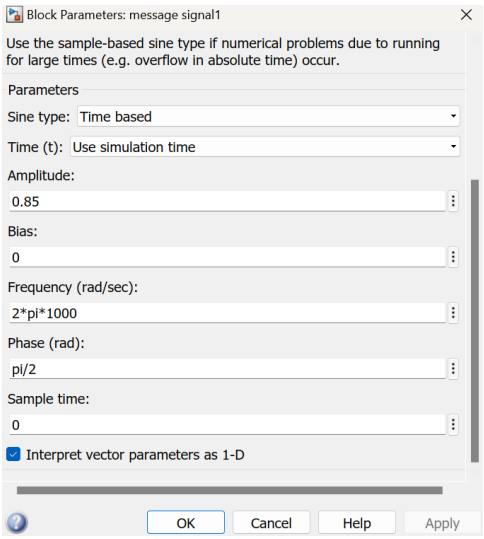

Figure1 : Block parameter for m(t)

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

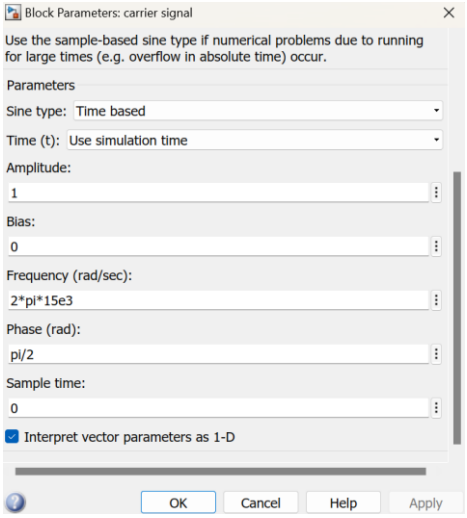

Figure2 :Block parameter for c(t)

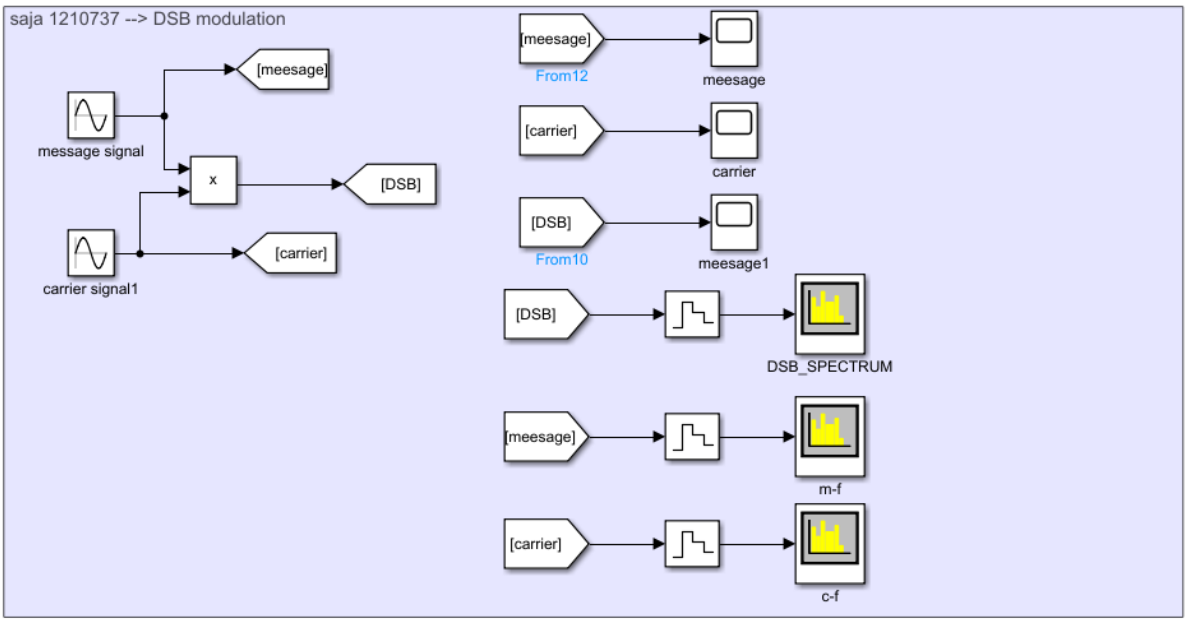

Figure 3:DSB_SC Modulation Schematic diagram

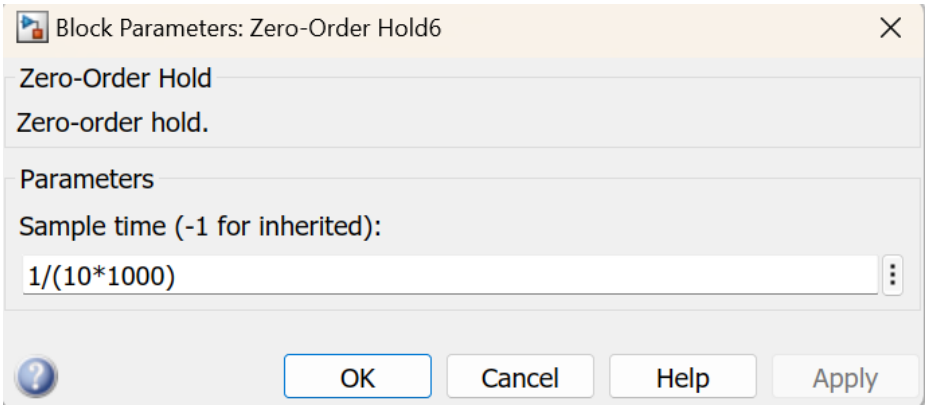

Figure 4: setting for zero hold in message signal

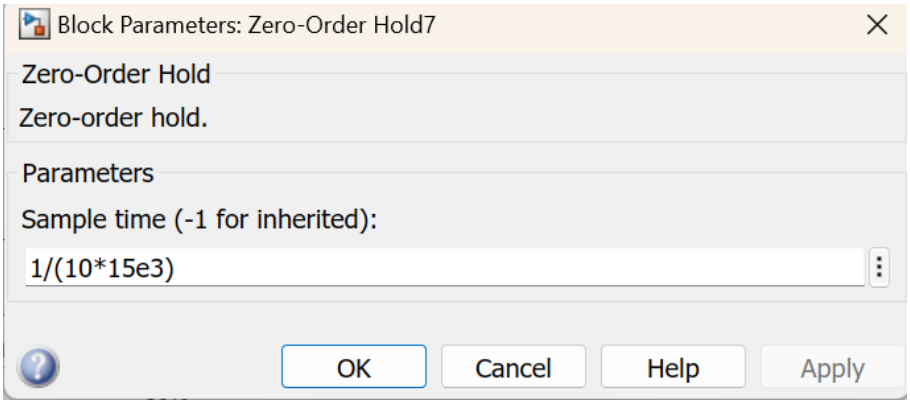

Figure 5:setting for zero hold in carrier (and it is same for DSB modulated signal)

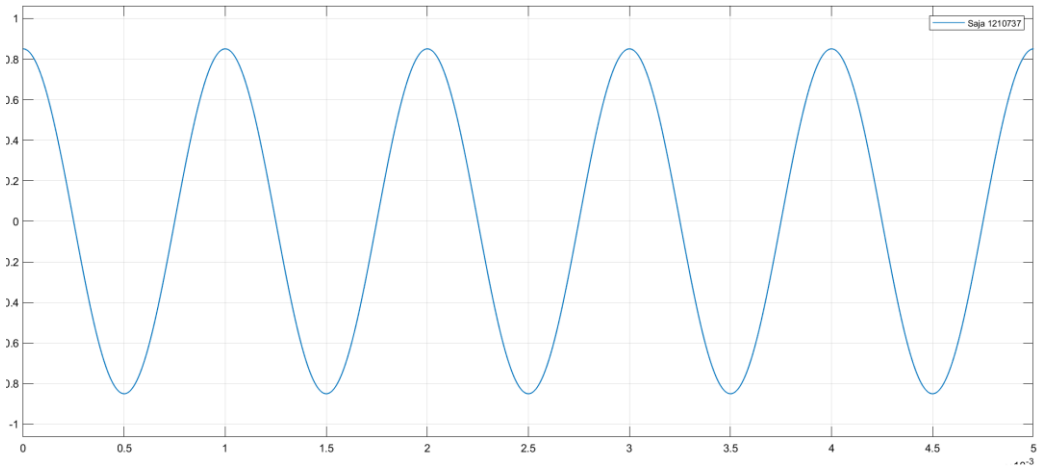

Figure6 : Message signal in time domain

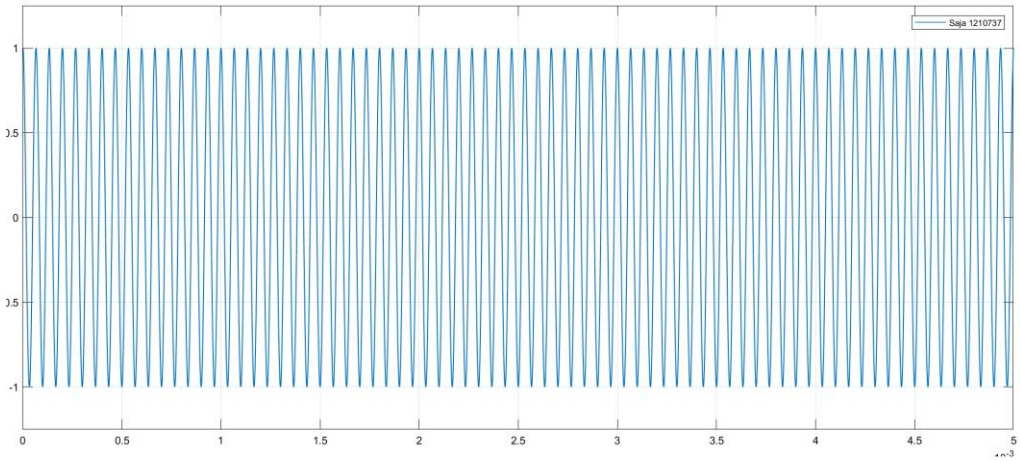

Figure 7:Carrier Signal in time domain

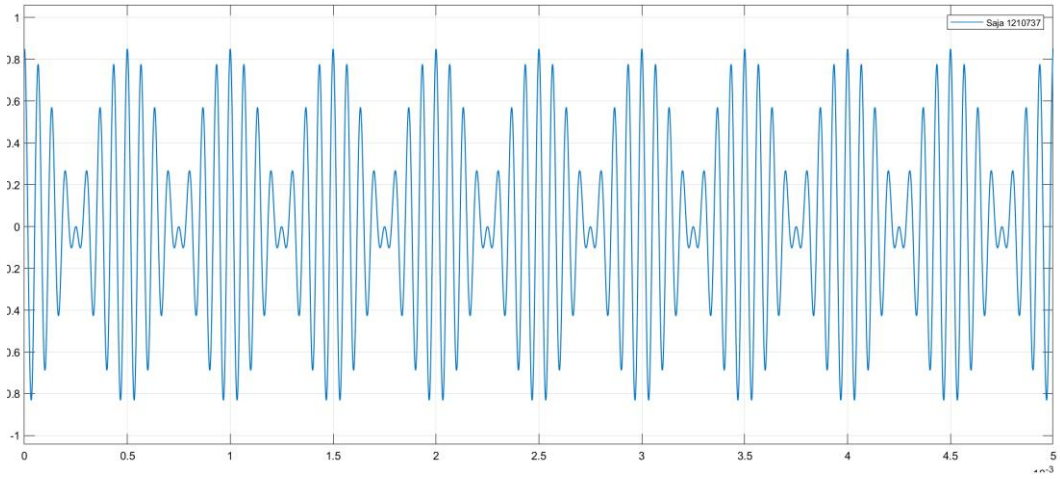

Figure 8:DSB-SCModulated signal - in time domain

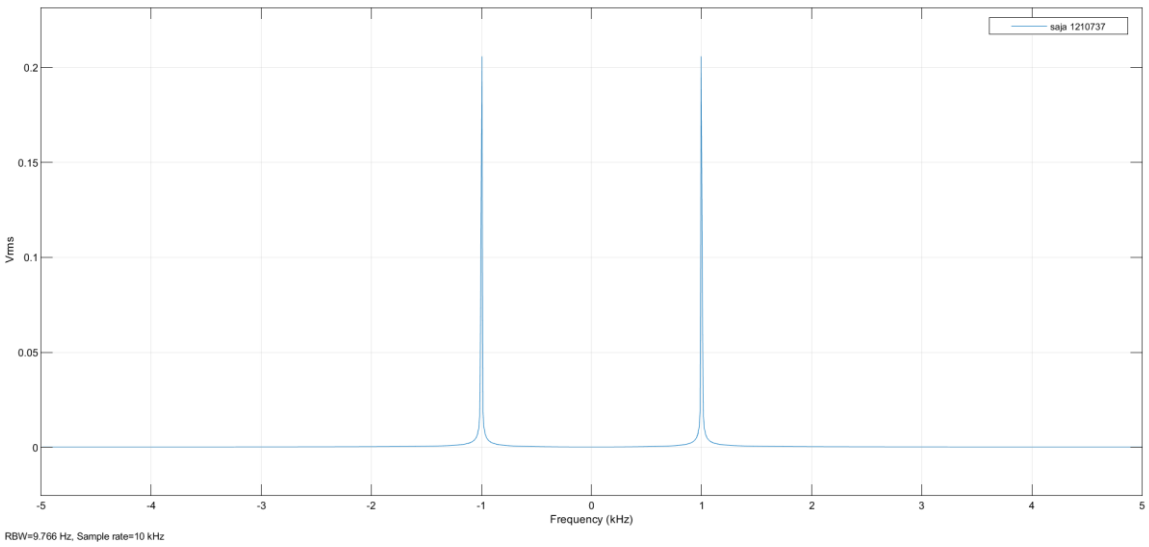

Figure 9:Spectrum of meesage signal

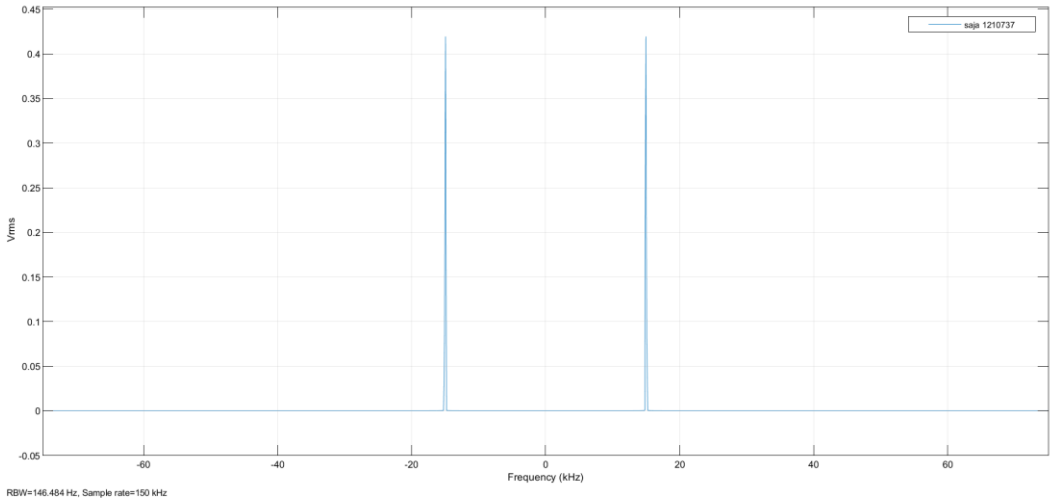

Figure 10: spectrum of carrier signal

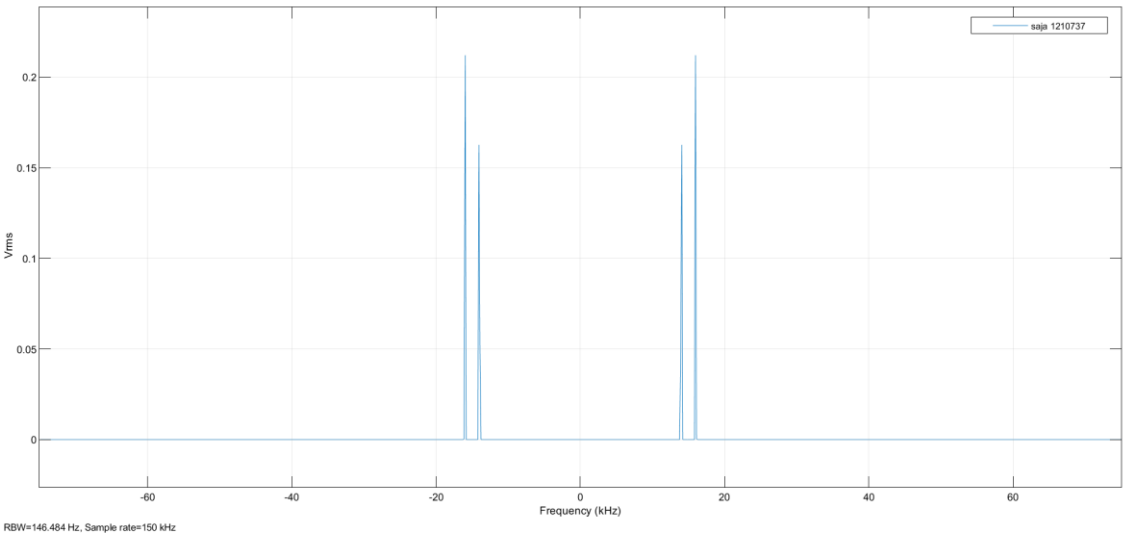

Figure 11: spectrum for DSB-SC Modulated signal

B- DSB Carrier Demodulation Schematic Diagram:

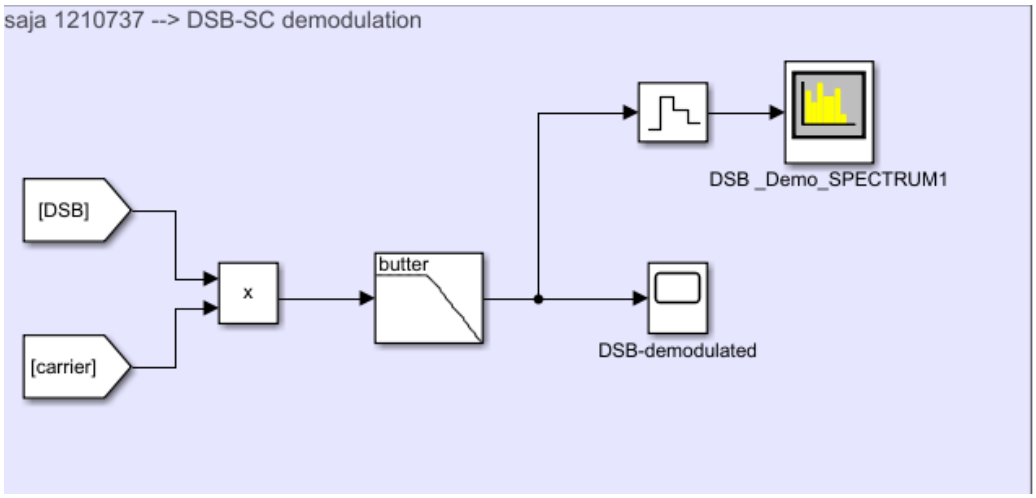

Figure 12:DSB-SC DeModulation Schematic Diagram

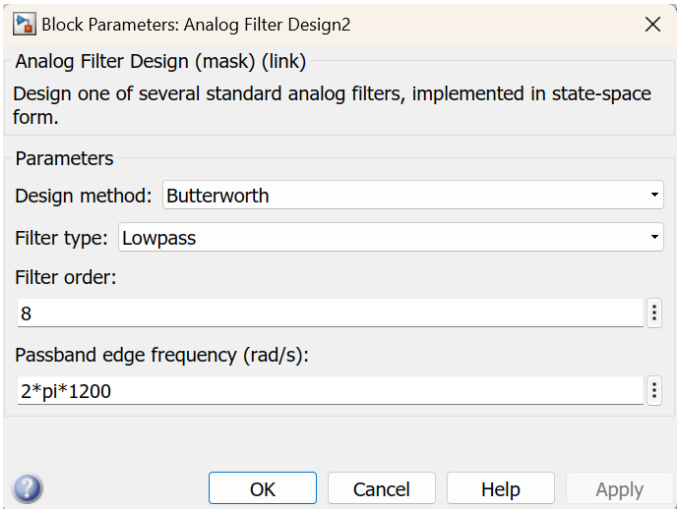

Figure 13: Analog filter setting

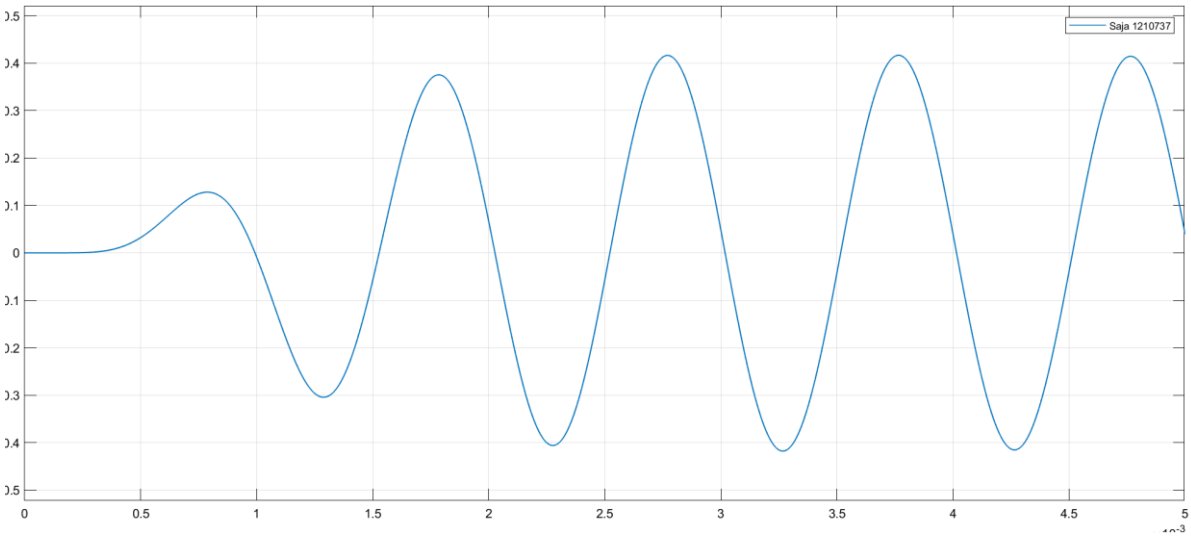

Figure 14:DSB-SC DeModulated signal – in time domain

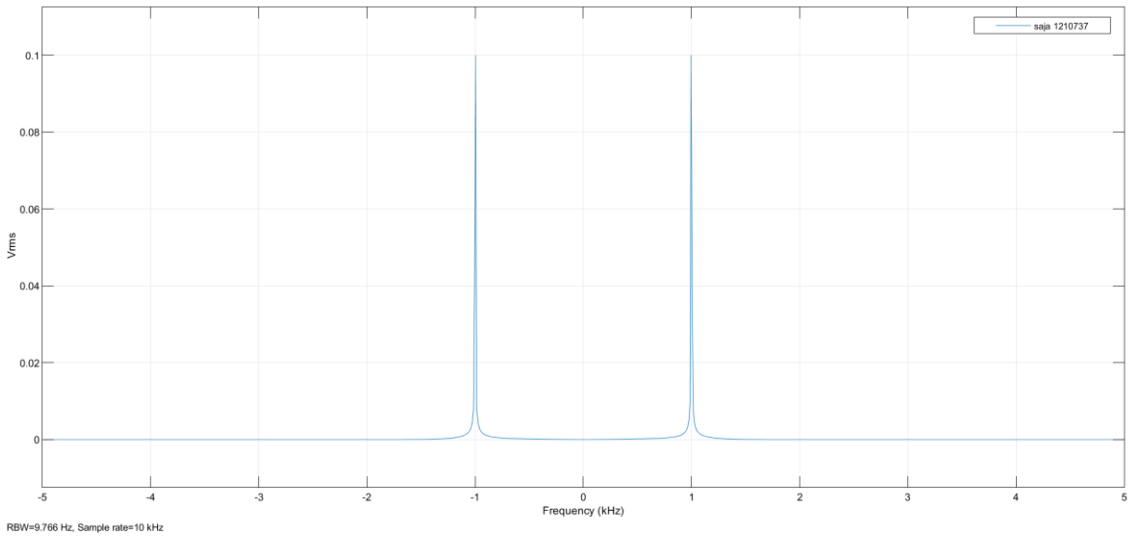

Figure 15: spectrum of DSB-SC Demodulated signal

c- SSB Modulation method 1:

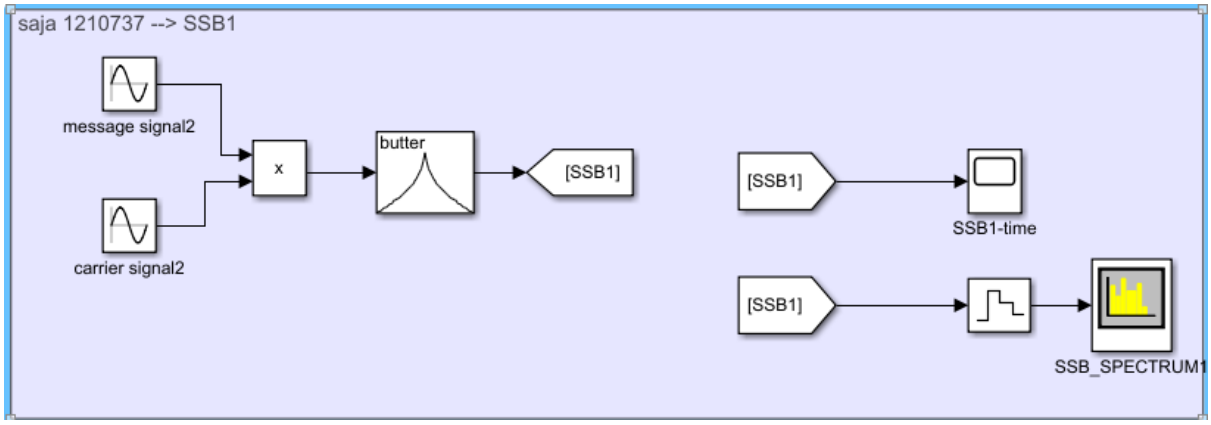

Figure 16:SSB Modulation method 1 Schematic Block Diagram

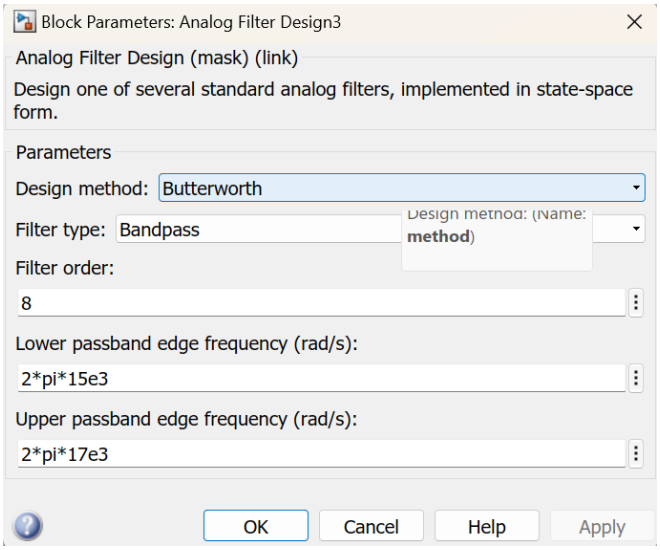

Figure 17: Bandpass filter setting

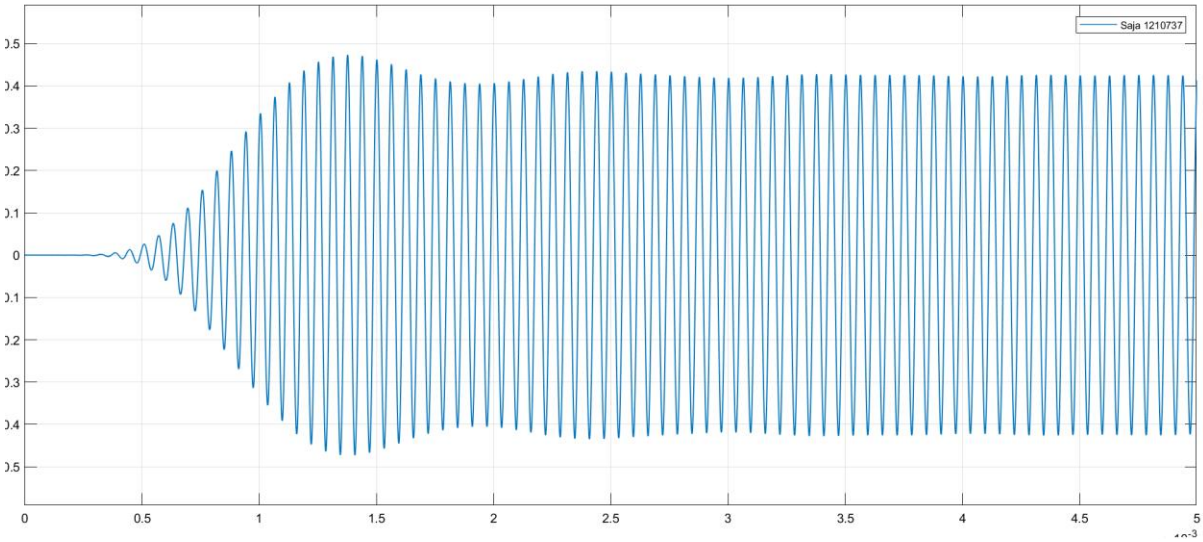

Figure 18: SSB Modulated signal –time domain method 1

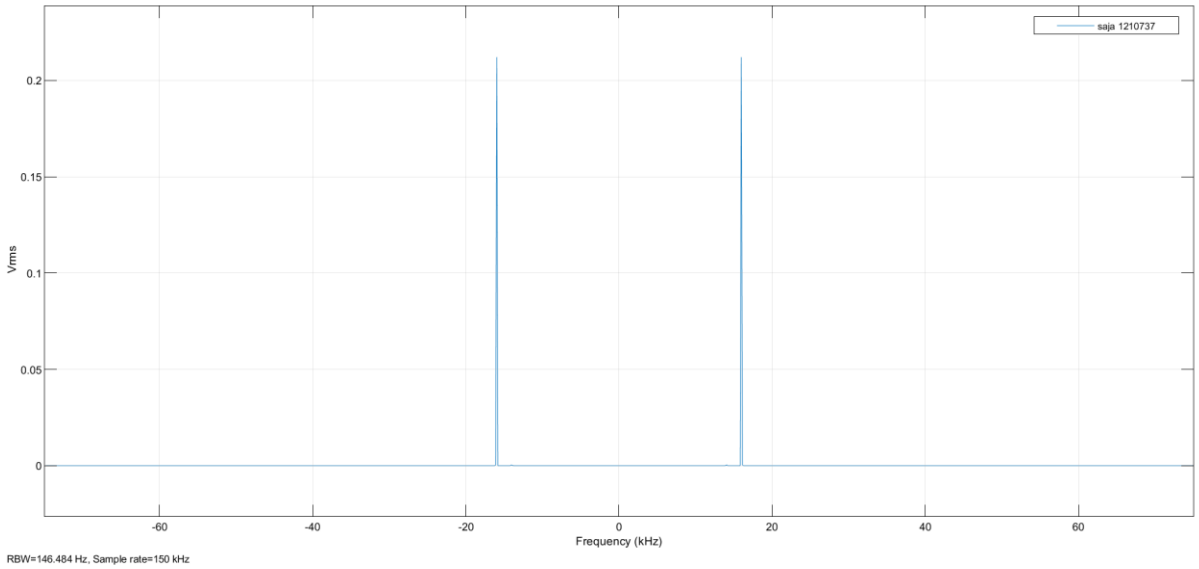

Figure 19: spectrum of SSB Modulated signal method 1

D-SSB Demodulation method 1:

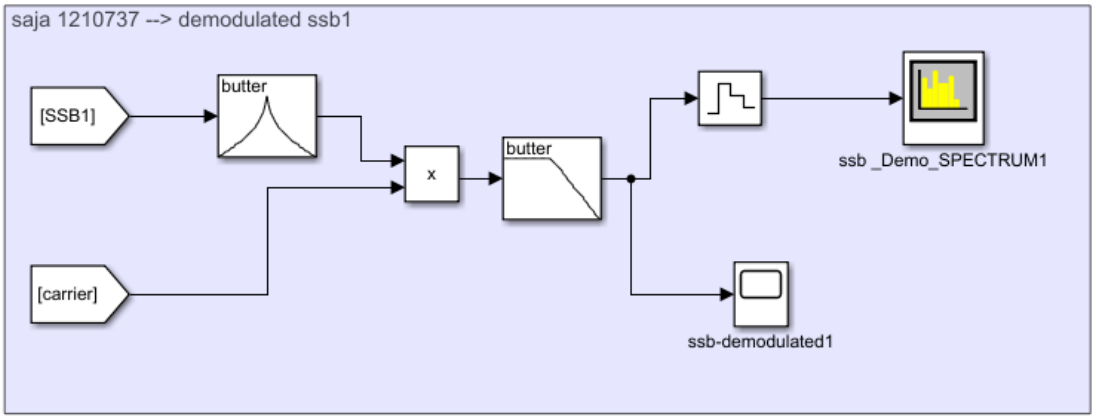

Figure 20:SSB Demodulation Schematic Diagram method 1

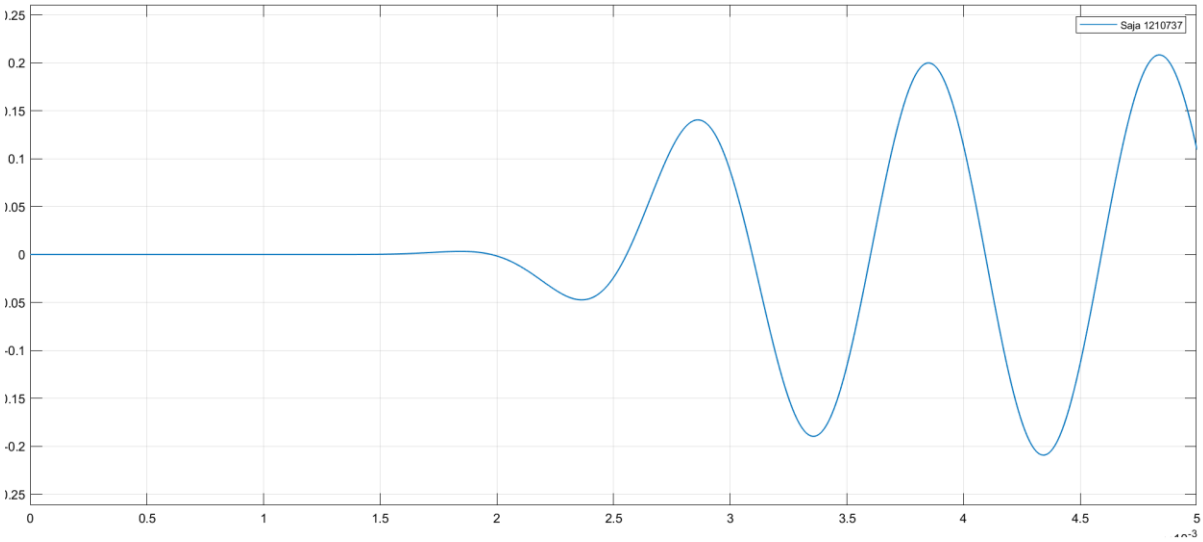

Figure 21:SSB DeModulated signal - time domain method 1

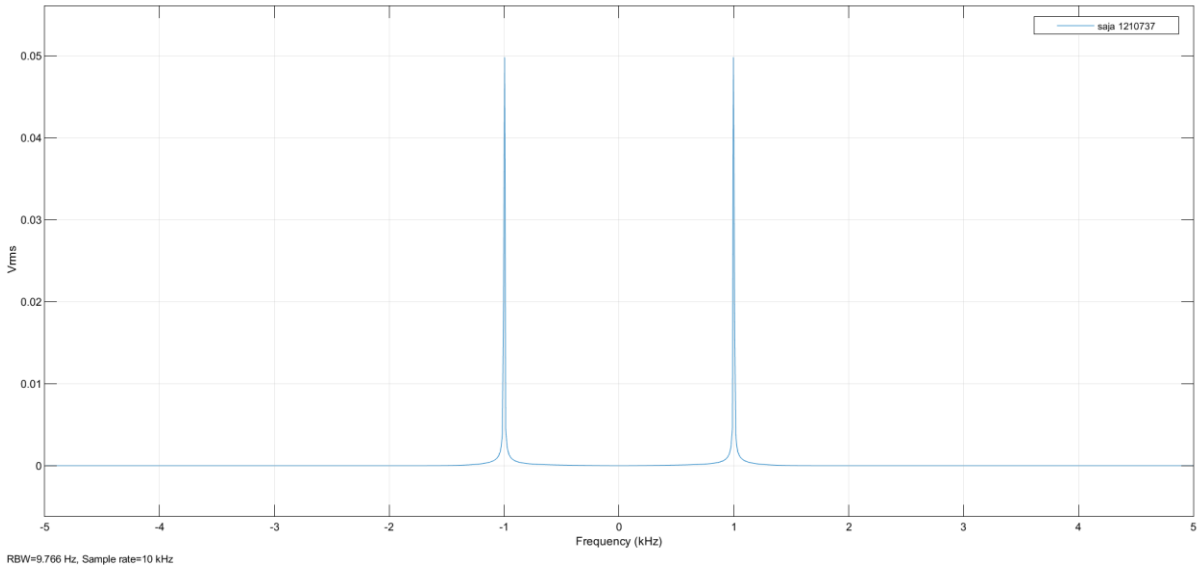

Figure 22: spectrum of SSB DeModulated signal method 1

E-SSB Modulation method 2:

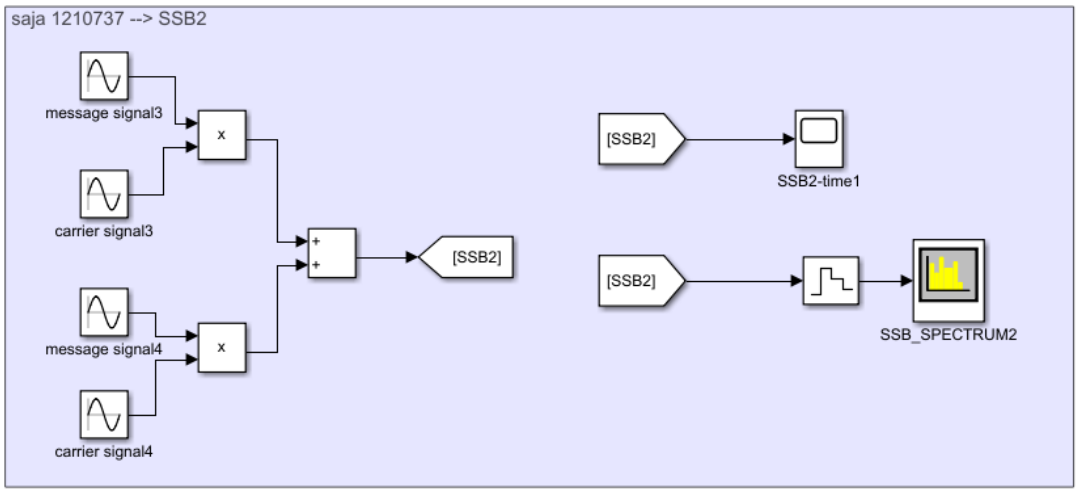

Figure 23:SSB modulation Schematic diagram method 2

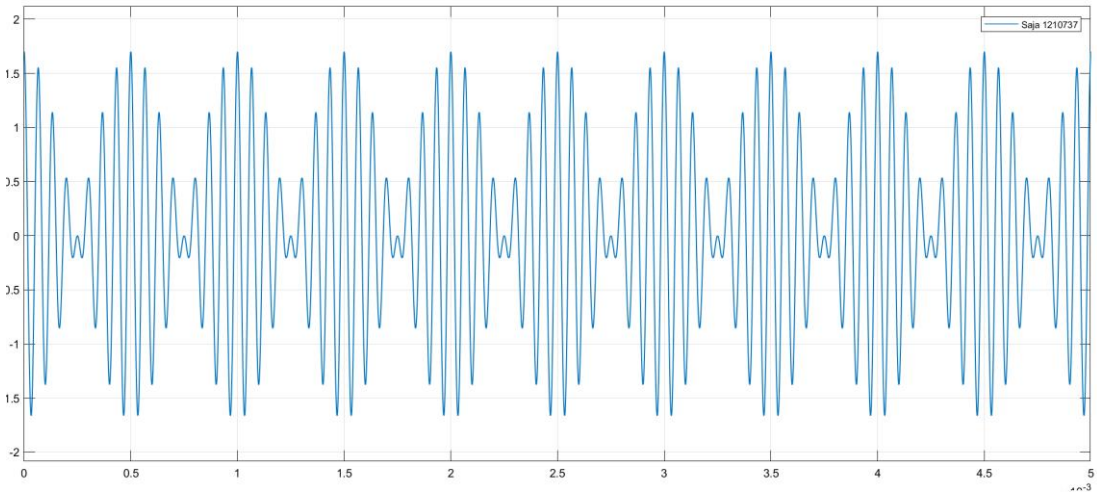

Figure 24: Modulated Signal method 2

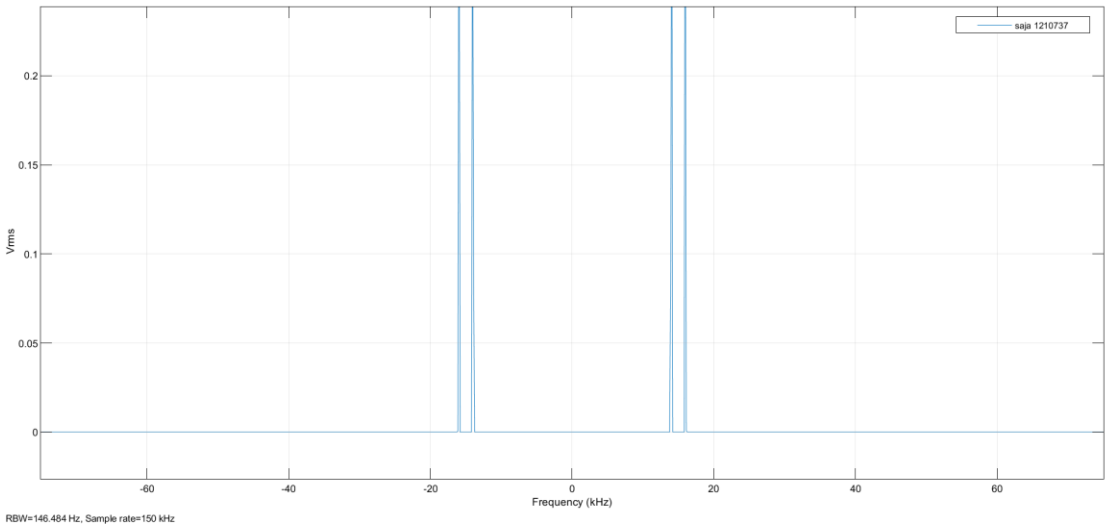

Figure 25: spectrum of Modulated Signal method 2

F- SSB Demodulation method 2:

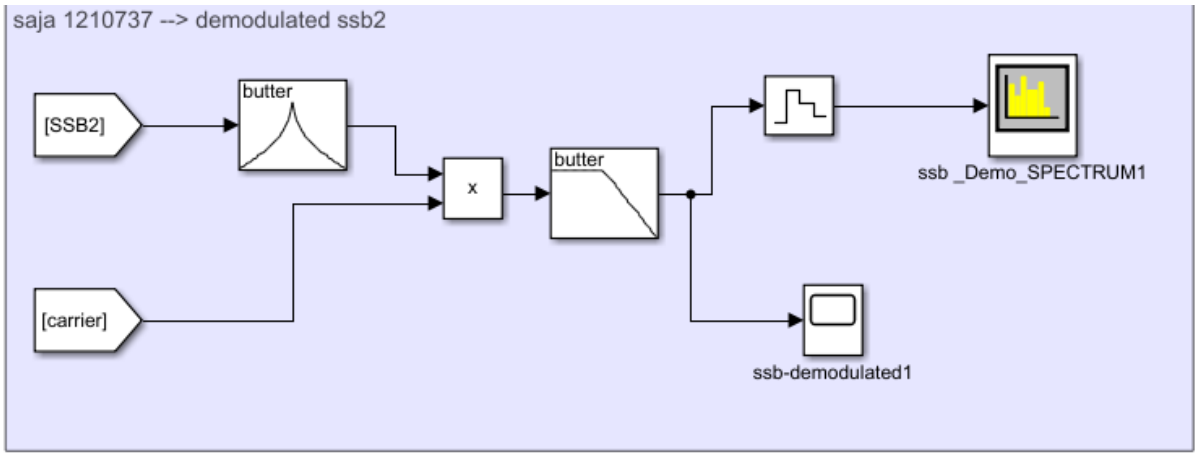

Figure 26:SSB Demodulation Schematic diagram method 2

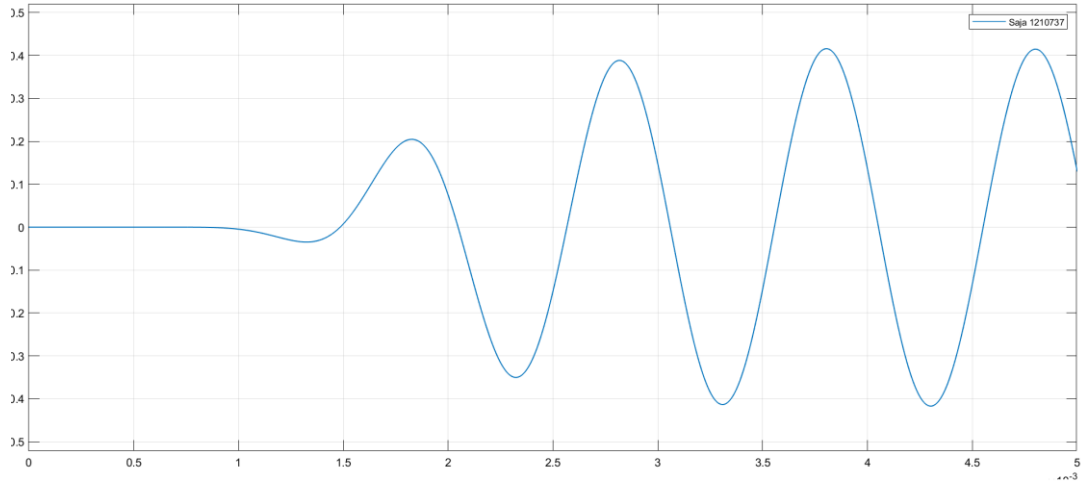

Figure 27:SSB Demodulated signal method 2

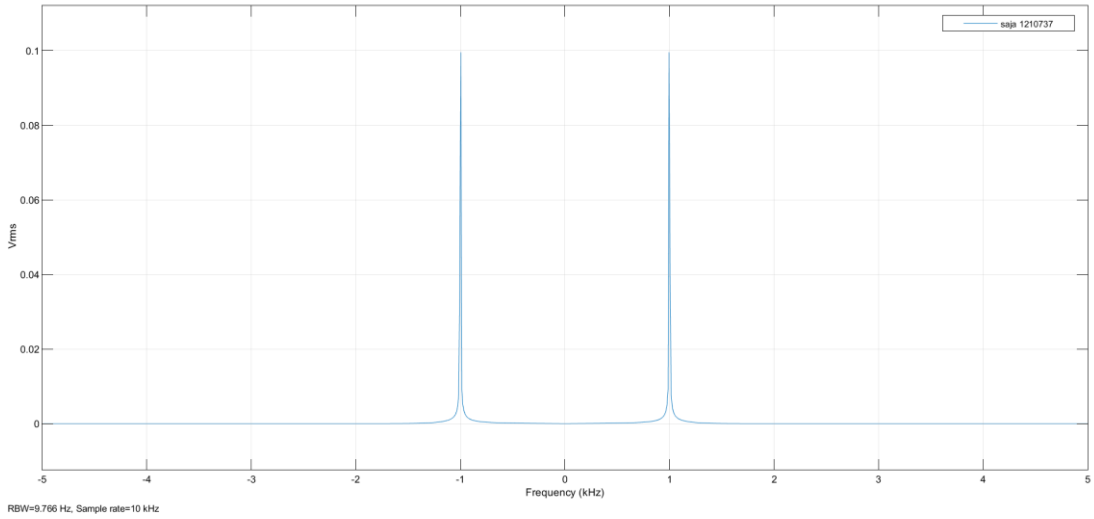

Figure 28: spectrum of SSB Demodulated signal method 2