

LAMPIRAN A

SOURCE CODE PROGRAM

Form 1

```
Private Sub About_Click()
Form5.Show
End Sub

Private Sub Command1_Click()
If Comb1.Text = "" Then
yourMsg = MsgBox("Silahkan Pilih Jenis Bahan", 64, "Information")
GoTo Pass:
End If

If frekuensi.Text = "" Then
yourMsg = MsgBox("Silahkan Masukkan Frekuensi Center", 64,
"Information")
GoTo Pass:
End If

If Comb1.Text = "Lithium Niobate(LiNbO3)" Then kecepatan = 3978
If Comb1.Text = "Quartz" Then kecepatan = 3152

lambdac.Caption = kecepatan / frekuensi.Text
jarijari.Caption = lambdac.Caption / 4
p = 2 * jarijari.Caption
se.Caption = lambdac.Caption / p

If se.Caption = "2" And Comb1.Text = "Lithium Niobate(LiNbO3)"
Then ratio = 111
If se.Caption = "2" And Comb1.Text = "Quartz" Then ratio = 42
If se.Caption = "3" And Comb1.Text = "Lithium Niobate(LiNbO3)"
Then ratio = 65
If se.Caption = "3" And Comb1.Text = "Quartz" Then ratio = 25
If se.Caption = "4" And Comb1.Text = "Lithium Niobate(LiNbO3)"
Then ratio = 60
If se.Caption = "4" And Comb1.Text = "Quartz" Then ratio = 23

lebaridt.Caption = ratio * lambdac.Caption
bandwidth = 0.1 * frekuensi.Text
m.Caption = (2 * frekuensi.Text) / bandwidth
Pass:
End Sub

Private Sub Command2_Click()
Comb1.Text = ""
frekuensi.Text = ""
lambdac.Caption = ""
se.Caption = ""
jarijari.Caption = ""
m.Caption = ""
lebaridt.Caption = ""
End Sub

Private Sub Command3_Click()
Form1.Hide
```

```

Form2.Show
Form3.Hide
Form4.Hide
Form5.Hide
End Sub

Private Sub Exit_Click()
End
End Sub

Private Sub HelpTopics_Click()
Form4.Show
End Sub

```

Form 2

```

Private Sub About_Click()
Form5.Show
End Sub

Private Sub Command1_Click()
If Combol.Text = "" Then
yourMsg = MsgBox("Silahkan Pilih Jenis Window", 64, "Information")
GoTo Pass:
End If

If bandpass1.Text = "" Or bandpass2.Text = "" Or stopband1.Text =
"" Or stopband2.Text = "" Or sampling.Text = "" Or stopband.Text =
"" Or ripple.Text = "" Then
yourMsg = MsgBox("Silahkan Masukkan Input", 64, "Information")
GoTo Pass:
End If

Form3.List1.Clear
Form3.List2.Clear
Form3.List3.Clear
Form3.List4.Clear
Form3.List5.Clear

If stopband.Text <= 21 Then d = 0.922
If stopband.Text > 21 Then d = (stopband.Text - 7.95) / 14.36

deltaf1 = bandpass1.Text - stopband1.Text
deltaf2 = stopband2.Text - bandpass2.Text

If deltaf1 > deltaf2 Then deltaf = deltaf2
If deltaf1 < deltaf2 Then deltaf = deltaf1
If deltaf1 = deltaf2 Then deltaf = deltaf1

orde.Caption = ((sampling.Text * d) / deltaf) + 1
fc1 = bandpass1 - (deltaf / 2)
fc2 = bandpass2 + (deltaf / 2)
orde1.Caption = (((orde.Caption + 1) \ 2) * 2) + 1

```

```

a = ordel.Caption
jumlah = (a - 1) / 2

Dim hn(1000) As Double
Dim hdn(1000) As Double
Dim ahn(1000) As Double

For n = 0 To ((ordel.Caption - 1) / 2)

If n > 0 Or n < 0 Then hdn(n) = (1 / (n * 3.141592654)) * ((Sin((2
* 3.141592654 * n * fc2) / sampling.Text)) - (Sin((2 * 3.141592654
* n * fc1) / sampling.Text)))
If n = 0 Then hdn(n) = (2 / sampling.Text) * (fc2 - fc1)

If Combo1.Text = "Hamming" And n <= ((ordel.Caption - 1) / 2) Then
ahn(n) = 0.54 - 0.46 * Cos((2 * 3.141592654 * n) / (ordel.Caption
- 1))
If Combo1.Text = "Hamming" And n > ((ordel.Caption - 1) / 2) Then
ahn(n) = 0
If Combo1.Text = "Hanning" And n <= ((ordel.Caption - 1) / 2) Then
ahn(n) = (1 - Cos((2 * 3.141592654 * n) / (ordel.Caption - 1))) /
2
If Combo1.Text = "Hanning" And n > ((ordel.Caption - 1) / 2) Then
ahn(n) = 0

hn(n) = hdn(n) * ahn(n)
Next n

Dim temp(1000) As Double

For i = 0 To jumlah
temp(i) = hn(i)
Next i

For j = 0 To jumlah - 1

For i = j + 1 To jumlah
a = temp(i)
b = temp(j)

If a > b Then
k = a
a = b
b = k
temp(i) = a
temp(j) = b
End If

Next i
Next j

Form3.terbesar.Caption = temp(0)

Dim respon(100) As Double

```

```

For n = 0 To ((orde1.Caption - 1) / 2)
respon(n) = (hn(n) / temp(0)) * 0.5 * Form1.lebaridt.Caption
Form3.List1.AddItem n
Form3.List2.AddItem hdn(n)
Form3.List3.AddItem ahn(n)
Form3.List4.AddItem hn(n)
Form3.List5.AddItem respon(n)
Next n

```

```

Pass:
End Sub

```

```

Private Sub Command2_Click()
sampling.Text = ""
ripple.Text = ""
stopband1.Text = ""
stopband2.Text = ""
bandpass1.Text = ""
bandpass2.Text = ""
stopband.Text = ""
orde.Caption = ""
orde1.Caption = ""
Combol.Text = ""
Form3.List1.Clear
Form3.List2.Clear
Form3.List3.Clear
Form3.List4.Clear
Form3.List5.Clear
Form3.terbesar.Caption = ""
End Sub

```

```

Private Sub Command3_Click()
Form1.Show
Form2.Hide
Form3.Hide
Form4.Hide
Form5.Hide
End Sub

```

```

Private Sub Command4_Click()
Form1.Hide
Form2.Hide
Form3.Show
Form4.Hide
Form5.Hide
End Sub

```

```

Private Sub Exit_Click()
End
End Sub

```

```

Private Sub HelpTopics_Click()
Form4.Show
End Sub

```

Form 3

```
Private Sub About_Click()
Form5.Show
End Sub

Private Sub Command1_Click()
Form1.Hide
Form2.Show
Form3.Hide
Form4.Hide
Form5.Hide
End Sub

Private Sub Exit_Click()
End
End Sub

Private Sub HelpTopics_Click()
Form4.Show
End Sub

Private Sub List1_Click()
' Synchronize list boxes.
List2.TopIndex = List1.TopIndex
List2.ListIndex = List1.ListIndex
End Sub

Private Sub List2_Click()
' Synchronize list boxes.
List3.TopIndex = List2.TopIndex
List3.ListIndex = List2.ListIndex
End Sub

Private Sub list3_Click()
' Synchronize list boxes.
List4.TopIndex = List3.TopIndex
List4.ListIndex = List3.ListIndex
End Sub

Private Sub list4_Click()
' Synchronize list boxes.
List5.TopIndex = List4.TopIndex
List5.ListIndex = List4.ListIndex
End Sub

Private Sub list5_Click()
' Synchronize list boxes.
List1.TopIndex = List5.TopIndex
List1.ListIndex = List5.ListIndex
End Sub

Private Sub list1_Scroll()
List2.TopIndex = List1.TopIndex
End Sub
```

```
Private Sub list2_Scroll()  
    List3.TopIndex = List2.TopIndex  
End Sub
```

```
Private Sub list3_Scroll()  
    List4.TopIndex = List3.TopIndex  
End Sub
```

```
Private Sub list4_Scroll()  
    List5.TopIndex = List4.TopIndex  
End Sub
```

```
Private Sub list5_Scroll()  
    List1.TopIndex = List5.TopIndex  
End Sub
```

Form 4

```
Private Sub Command1_Click()  
Form4.Hide  
Form6.Hide  
End Sub
```

```
Private Sub Command2_Click()  
Form4.Hide  
Form6.Show  
End Sub
```

Form 5

```
Private Sub Command1_Click()  
Form5.Hide  
End Sub
```

Form 6

```
Private Sub Command1_Click()  
Form6.Hide  
Form4.Show  
End Sub
```

```
Private Sub Command2_Click()  
Form4.Hide  
Form6.Hide  
End Sub
```

LAMPIRAN B

PLOT RESPON


```

hham=[1.39130434782609e-2,-1.28057015050178e-2,9.61091754126795e-3,-
4.75385515476869e-3,-9.68551985981291e-4,6.41185464232615e-3,-
1.03097236639529e-2,1.16867117527483e-2,-1.03006011802991e-
2,6.87911946117882e-3,-2.96616603222305e-3,3.64154044590684e-4,-
3.72130052823128e-4,3.16010898622355e-3,-7.60107061119645e-
3,1.16933154940831e-2,-1.34275520674847e-2,1.17203989075777e-2,-
6.97210988324715e-3,9.57116293632637e-4,3.93900518002441e-3,-
5.80559561783447e-3,4.11300986159736e-3,1.38194285376007e-11,-
4.21651129849172e-3,6.10118010996902e-3,-4.24310273531512e-3,-
1.05661430905733e-3,7.88591390909836e-3,-1.35763973126291e-
2,1.59192384237885e-2,-1.41758183271225e-2,9.41004431167924e-3,-
3.98741826901569e-3,4.77269080888707e-4,-4.72855267458785e-
4,3.87779174660407e-3,-8.98266750491376e-3,1.32822353214949e-2,-
1.46398890785508e-2,1.22537650258612e-2,-6.98516274536507e-
3,9.18421686850517e-4];

```

```

hhan=[0,-2.20254576895154e-4,6.30424929019869e-4,-6.510704627533e-4,-
2.14215166774282e-4,1.98226791146258e-3,-4.06590390518456e-3,-
5.52757581200442e-3,-5.59570828887562e-3,4.16064523132187e-3,-
1.95223753837471e-3,2.56397749847936e-4,-2.76685816949655e-
4,2.45655033156728e-3,-6.12989565456533e-3,9.7231402896803e-3,-
1.14559401440307e-2,1.02194519652452e-2,-
0.006193063811608,8.63805096110586e-4,3.06410287394934e-3,-
5.3755514981585e-3,3.84798170665427e-3,1.3046472026475e-11,-
4.01237335995074e-3,5.84641953708934e-3,-4.0909723998244e-3,-
1.0242629059244e-3,7.68108497652051e-3,-1.32796465481421e-
2,0.01562926662295,-1.3963182737795e-2,9.29549881892513e-2,-
3.94873938716614e-3,4.7366366498852e-4,-4.70154819676623e-
4,3.86169770942878e-3,-8.95701425573373e-3,0.013258139182659,-
1.46250356684549e-2,1.22482621759993e-2,-6.9843804618884e-
3,9.18421686850517e-4];

```

```

[Hham,w]=freqz(hham);
[Hhan,w]=freqz(hhan);
Subplot(211),plot((w/pi)*0.25,20*log10(abs(Hham))),legend('Hamming')
Subplot(212),plot((w/pi)*0.25,20*log10(abs(Hhan))),legend('Hanning')

```