

Sub RunFFT()

```
"=====
" Program:  RunFFT
" Desc:
"
" Called by: user
" Call:
" Arguments:
" Comments:  Written quickly. No error-checking.
" Changes-----
" Date      Programmer  Change
" 7/5/13    Luckydog    Written
"=====
```

Dim sContent As String

Dim sTgtSheet As String, sFFTSheet As String

Dim tgtRef As Range

Dim nClearCount As Integer

Dim N As Integer

Dim REX(0 To 1023) As Double

Dim IMX(0 To 1023) As Double

Dim PI As Double

Dim NM1 As Integer

Dim ND2 As Integer

Dim M As Integer

Dim J As Integer

Dim I As Integer

Dim K As Integer

Dim TR As Double

Dim TI As Double

Dim Count As Integer

Dim L As Integer

Dim LE As Integer

Dim LE2 As Integer

Dim UR As Double

Dim UI As Double

Dim SR As Double

Dim SI As Double

Dim JM1 As Integer

Dim IP As Integer

"Get the controlling variables

With ThisWorkbook

 sTgtSheet = .Names("TargetSheet").RefersToRange

 Set tgtRef = Worksheets(sFFTSheet).Cells(1, 1)

End With

" turn off auto calculate

Application.Calculation = xlManual

'-----manual FFT calculation-----

"-----Bit Reversal Sorting-----

PI = 3.14159265

N = 1024

NM1 = N - 1

ND2 = N / 2

M = CInt(Log(N) / Log(2))

J = ND2

K = ND2

" set IMX() to 0

Count = 0

Do

IMX(Count) = 0

Count = Count + 1

Loop While Count < N

' read in Rex()

Count = 1

Do

REX(Count - 1) = tgtRef.Cells(Count, 1)

Count = Count + 1

Loop While Count <= N

For I = 1 To (N - 2)

If (I < J) Then

TR = REX(J)

REX(J) = REX(I)

REX(I) = TR

End If

K = ND2

Do Until (K > J)

J = J - K

K = K / 2

Loop

J = J + K

Next I

"-----Now N 1 bit f domain results in REX(0 To N-1)-----

For L = 1 To M

LE = CInt(2 ^ L)

LE2 = LE / 2

UR = 1

```
UI = 0
SR = Cos(PI / LE2)
SI = -Sin(PI / LE2)
```

```
For J = 1 To LE2
    JM1 = J - 1
```

```
    For I = JM1 To NM1 Step LE
```

```
        IP = I + LE2
        TR = REX(IP) * UR - IMX(IP) * UI
        TI = REX(IP) * UI + IMX(IP) * UR
        REX(IP) = REX(I) - TR
        IMX(IP) = IMX(I) - TI
        REX(I) = REX(I) + TR
        IMX(I) = IMX(I) + TI
```

```
    Next I
```

```
    TR = UR
    UR = TR * SR - UI * SI
    UI = TR * SI + UI * SR
```

```
Next J
```

```
Next L
```

```
'-----Now Rex() and IMX() contain N bit f domain output-----
```

```
'Write Rex() and Imx() result to columns E,F
```

```
Application.Calculation = xlManual
```

```
Count = 1
```

```
Do
```

```
    tgtRef.Cells(Count, 5) = REX(Count - 1)
```

```
    tgtRef.Cells(Count, 6) = IMX(Count - 1)
```

```
    Count = Count + 1
```

```
Loop While Count <= N / 2
```

```
Application.Calculation = xlAutomatic
```

```
Application.Calculation = xlAutomatic
```

```
End Sub
```