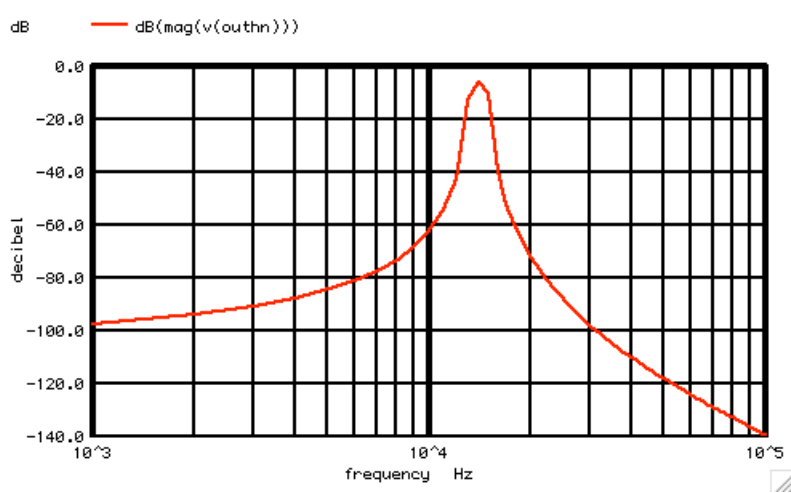
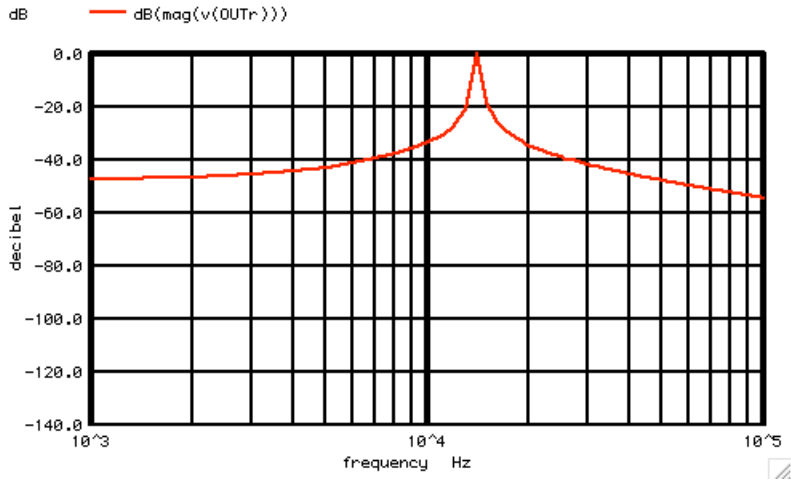


***=====Why_Window_With_Just_A_Cosine?=====**

Windowing with just a simple 100% amplitude modulated cosine can do much in terms of handling Spectrum leakage. The following shows the leakage for a 14.1KHz signal before and after applying the hanning window.

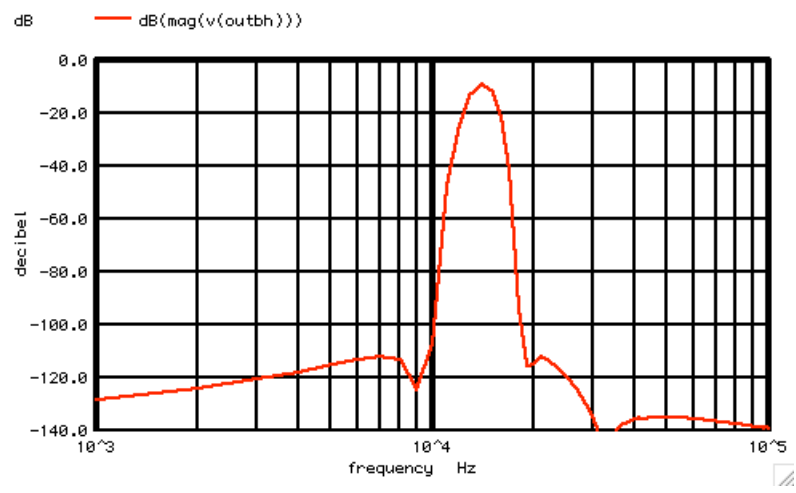
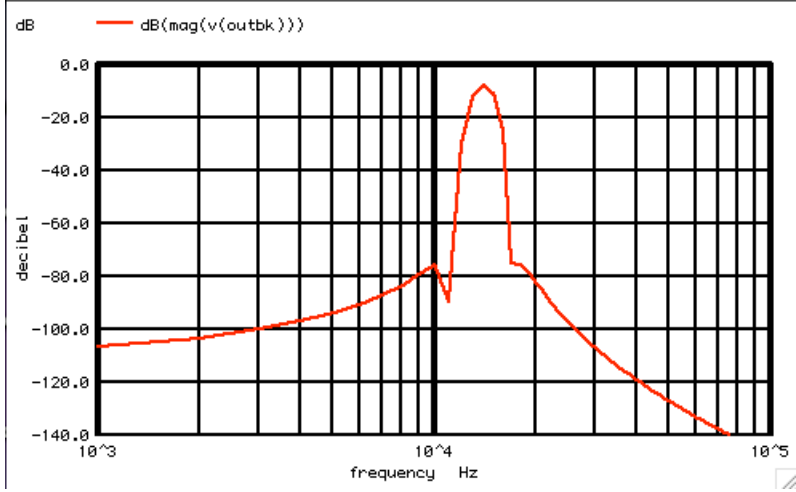
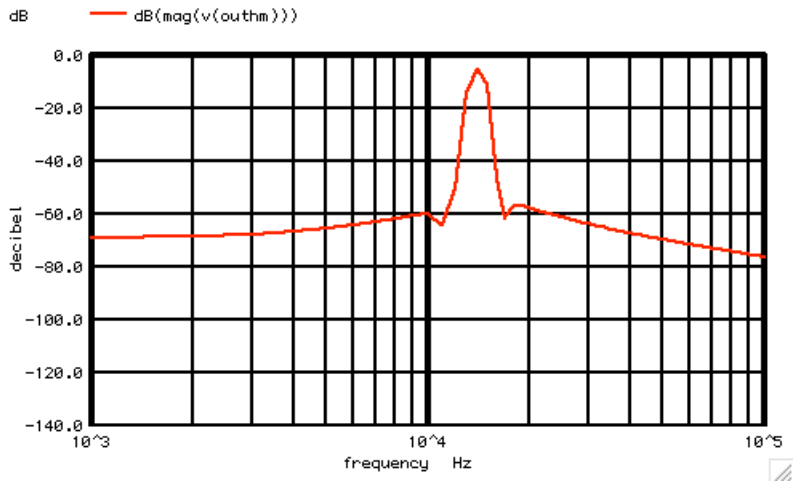


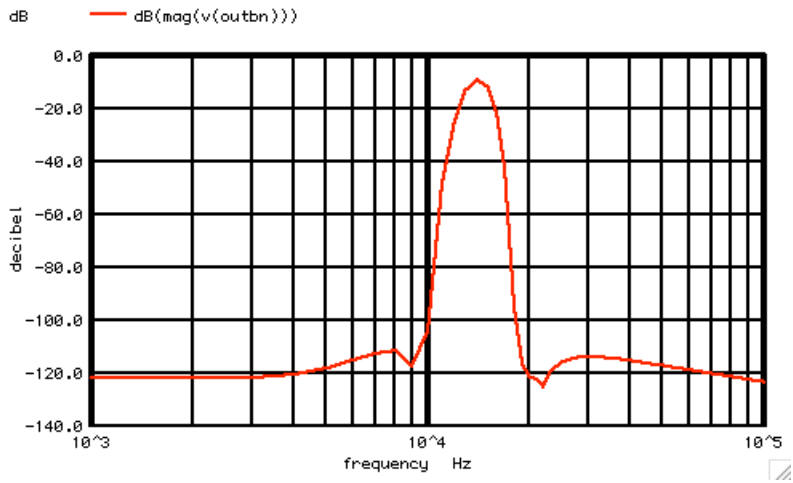
So why stop there? Does it need to be just 100% AM like Hamming? How about adding a little 2nd harmonic in the case of Blackman? How about adding a little 3rd harmonic, etc..

```

*V_SIN#  NODE_P  NODE_N  DC    VALUE  SIN(  V_DC  AC_MAG  FREQ  DELAY  FDamp)
Vsig     Vsig    0      DC    0      SIN(  0    1    14.1k
VCos1    VCos1   0      DC    0      SIN(  0    1    1k    -.25m
VCos2    VCos2   0      DC    0      SIN(  0    1    2k    -.125m
VCos3    VCos3   0      DC    0      SIN(  0    1    3k    -.0833333m

Brect    OUTR    0      V =   V(Vsig)
Bhann    OUTHN  0      V =   V(Vsig)*(.5    -.500000*v(VCos1))
Bhamming OUTHM  0      V =   V(Vsig)*(.54   -.460000*v(VCos1))
Bblack  OUTBK  0      V =   V(Vsig)*(.42   -.500000*v(VCos1)  +.080000*v(VCos2))
BblackHar OUTBH  0      V =   V(Vsig)*(.35875 -.488290*v(VCos1)  +.141280*v(VCos2)  -.0116800*v(VCos3))
BblackNut OUTBN  0      V =   V(Vsig)*(.3635819-.4891775*v(VCos1)  +.136595*v(VCos2)  -.0106411*v(VCos3))
    
```





=====**Full_Netlist_For_Copy_Paste**=====

```

Tweeking_Hann
.Option srcsteps = 1 set Gmin = 1.0000E-02
*=====Circuit_Netlist=====
*V_SIN#  NODE_P  NODE_N  DC    VALUE  SIN(  V_DC  AC_MAG  FREQ  DELAY  FDamp)
Vsig    Vsig    0      DC    0      SIN(  0    1    14.1k
Vtri    Vtri    0      DC    0      PWL(  0    0    .5m    1    1m    0 )
VCos1   VCos1   0      DC    0      SIN(  0    1    1k    -.25m
VCos2   VCos2   0      DC    0      SIN(  0    1    2k    -.125m
VCos3   VCos3   0      DC    0      SIN(  0    1    3k    -.0833333m
Brect   OUTR    0      V =   V(Vsig)
Bhann   OUTHN   0      V =   V(Vsig)*(.5    -.500000*v(VCos1))
Bhamming OUTHM   0      V =   V(Vsig)*(.54    -.460000*v(VCos1))
Bblack  OUTBK   0      V =   V(Vsig)*(.42    -.500000*v(VCos1)  +.080000*v(VCos2))
BblackHar OUTBH   0      V =   V(Vsig)*(.35875 -.488290*v(VCos1)  +.141280*v(VCos2)  -.0116800*v(VCos3))
BblackNut OUTBN   0      V =   V(Vsig)*(.3635819-.4891775*v(VCos1)  +.136595*v(VCos2)  -.0106411*v(VCos3))

.control
set pensize = 2
*TRAN  TSTEP  TSTOP  TSTART  TMAX  ?UIC?

tran .1u 1m 0 .1u
set specwindow= "rectangular"
spec 1k 100k 1k v(outr)
plot dB(mag(v(OUTR))) xlog ylimit -140 0

tran .1u 1m 0 .1u
set specwindow= "rectangular"
spec 1k 100k 1k v(outhn)
plot dB(mag(v(outhn))) xlog ylimit -140 0

tran .1u 1m 0 .1u
set specwindow= "rectangular"
spec 1k 100k 1k v(outhm)
plot dB(mag(v(outhm))) xlog ylimit -140 0

tran .1u 1m 0 .1u
set specwindow= "rectangular"
spec 1k 100k 1k v(outbk)
plot dB(mag(v(outbk))) xlog ylimit -140 0

tran .1u 1m 0 .1u
set specwindow= "rectangular"
spec 1k 100k 1k v(outbh)
plot dB(mag(v(outbh))) xlog ylimit -140 0

tran .1u 1m 0 .1u
set specwindow= "rectangular"
spec 1k 100k 1k v(outbn)
plot dB(mag(v(outbn))) xlog ylimit -140 0

.endc
.end

```