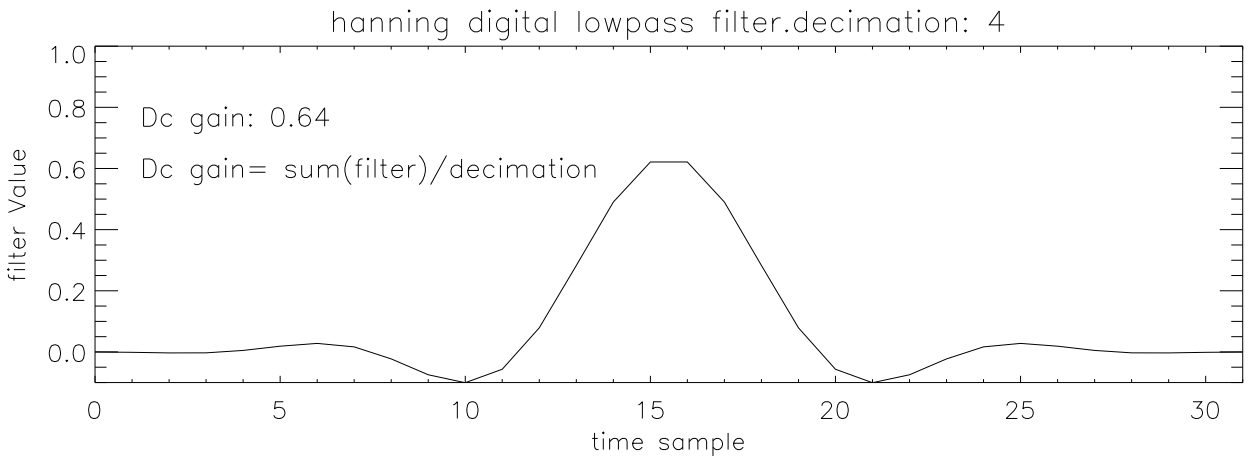
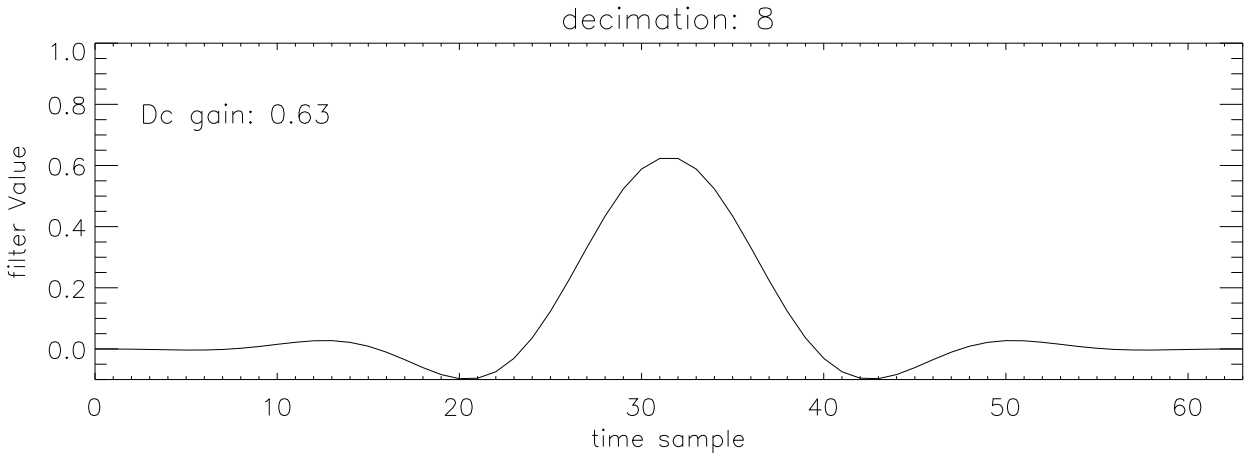
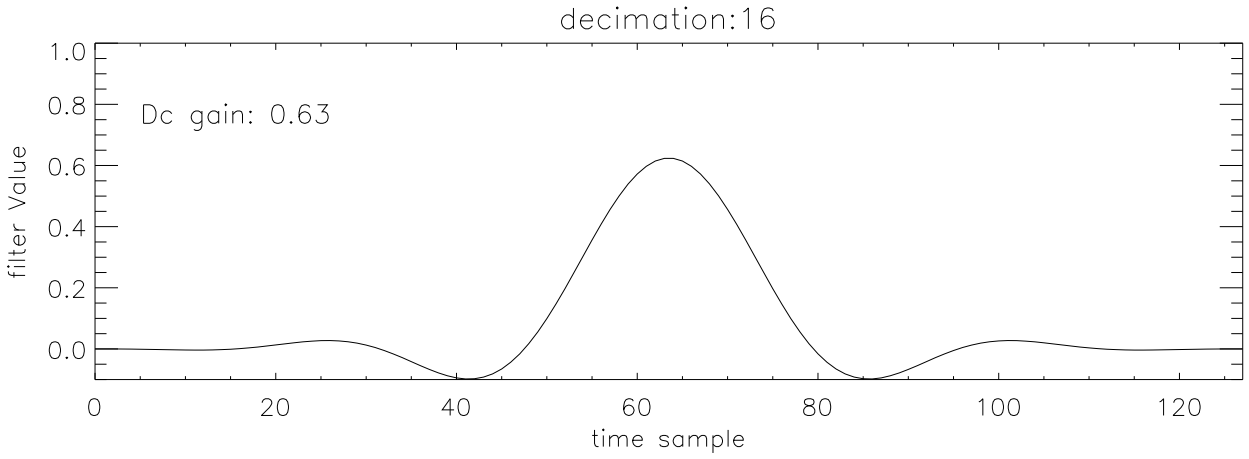
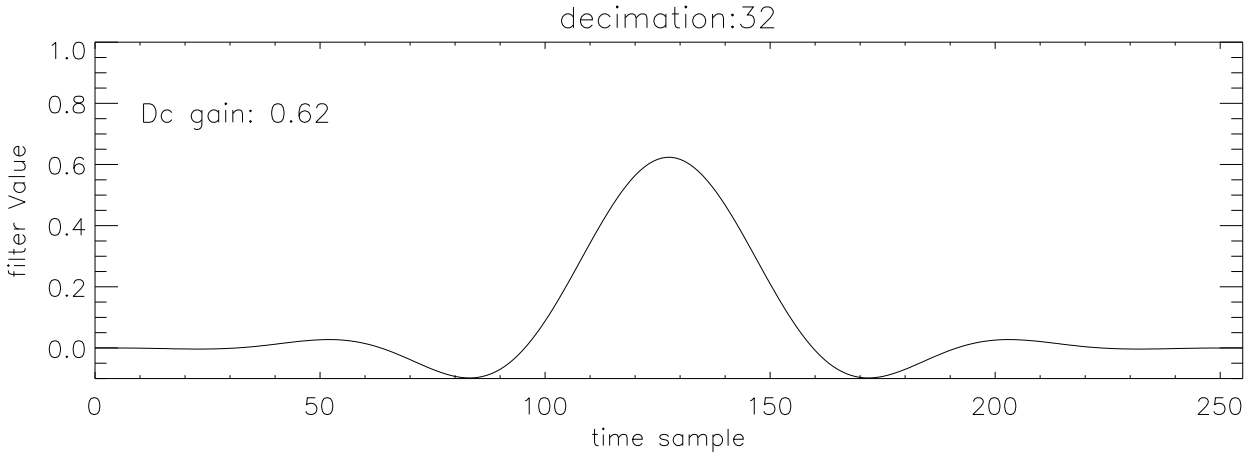
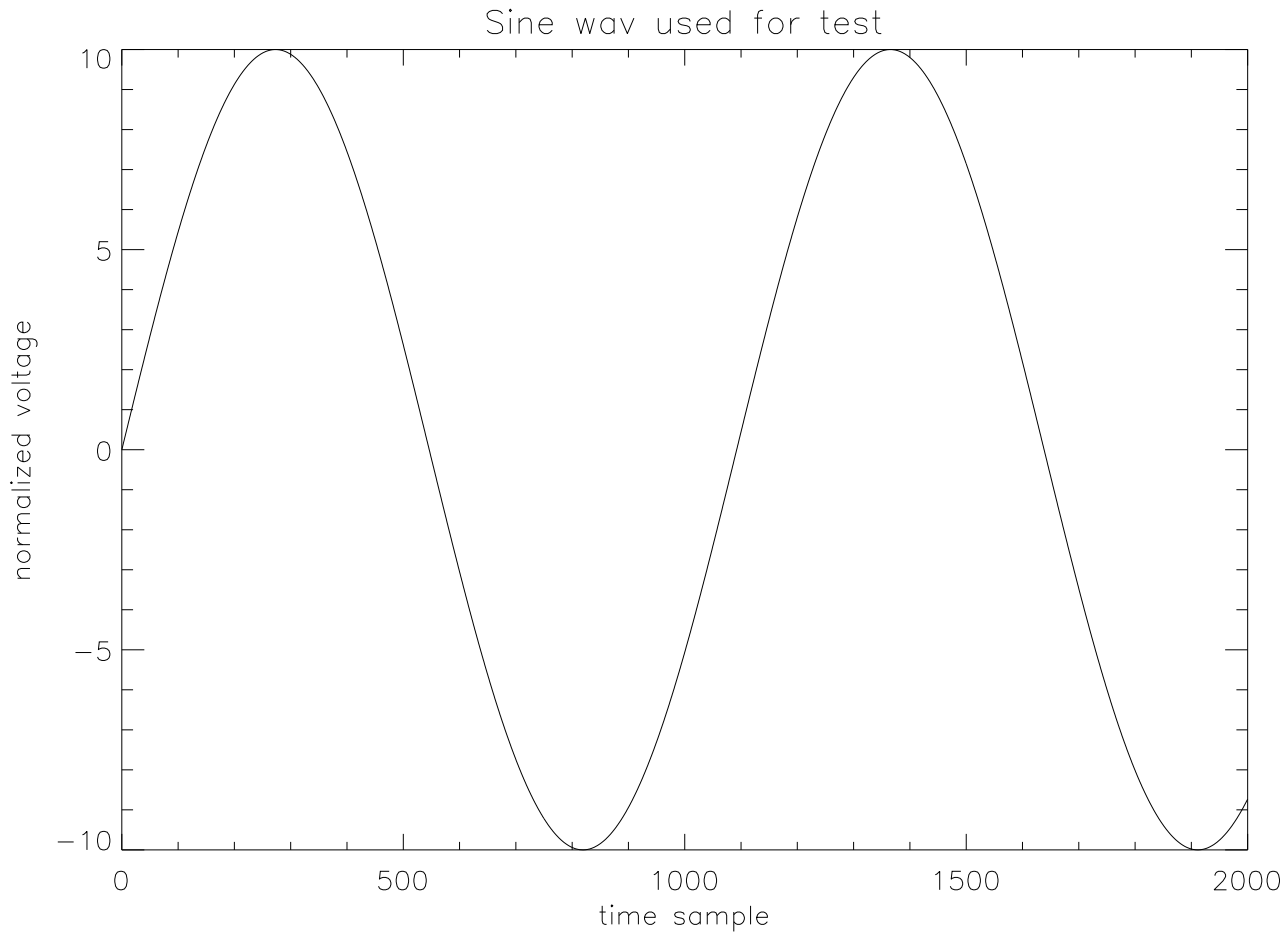
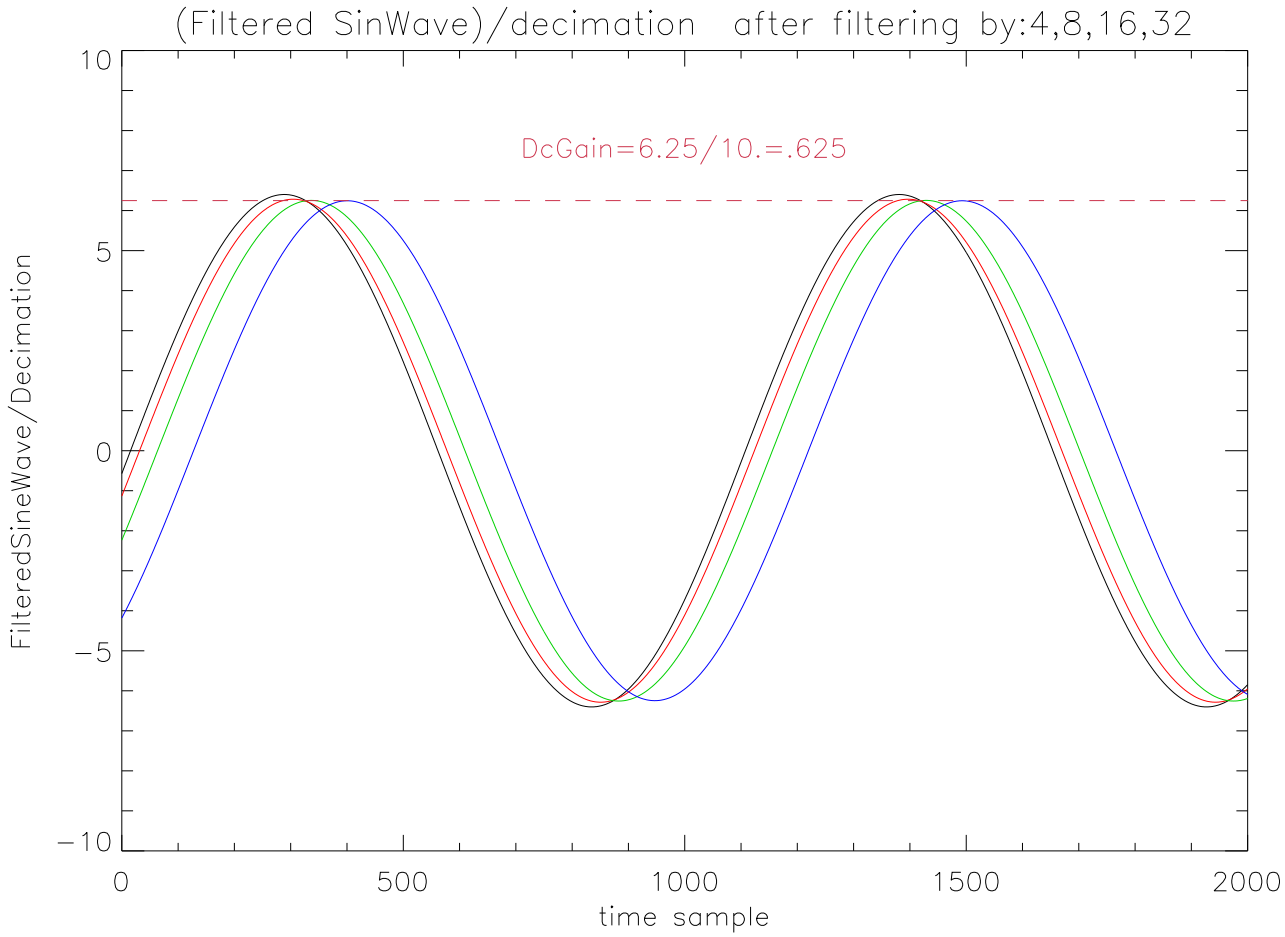

hanning digital lowpass filter.decimation: 4
Dc gain: 0.64
Dc gain= sum(filter)/decimation
filter Value
time sample

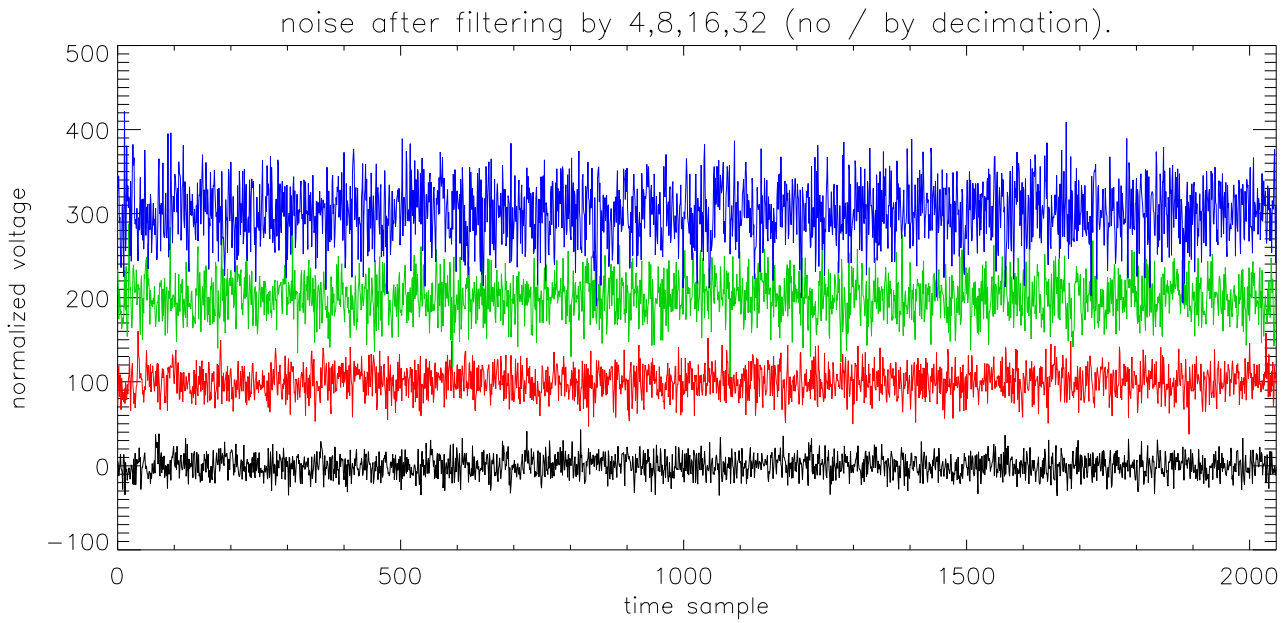

decimation: 8
Dc gain: 0.63
filter Value
time sample

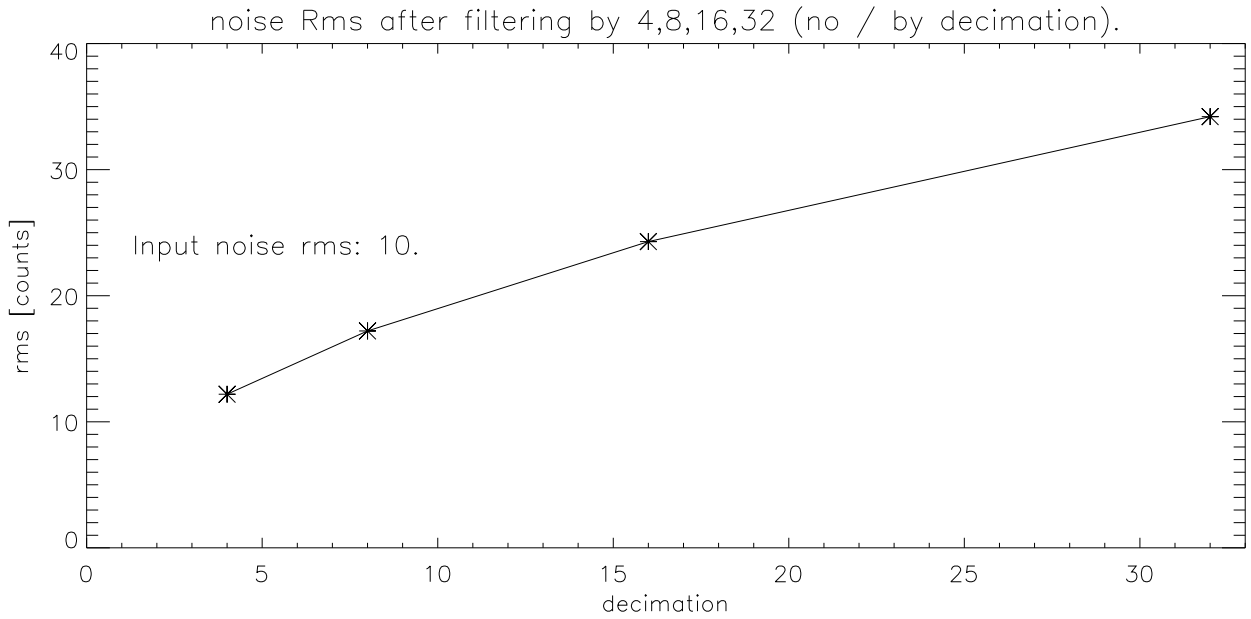

decimation:16
Dc gain: 0.63
filter Value
time sample

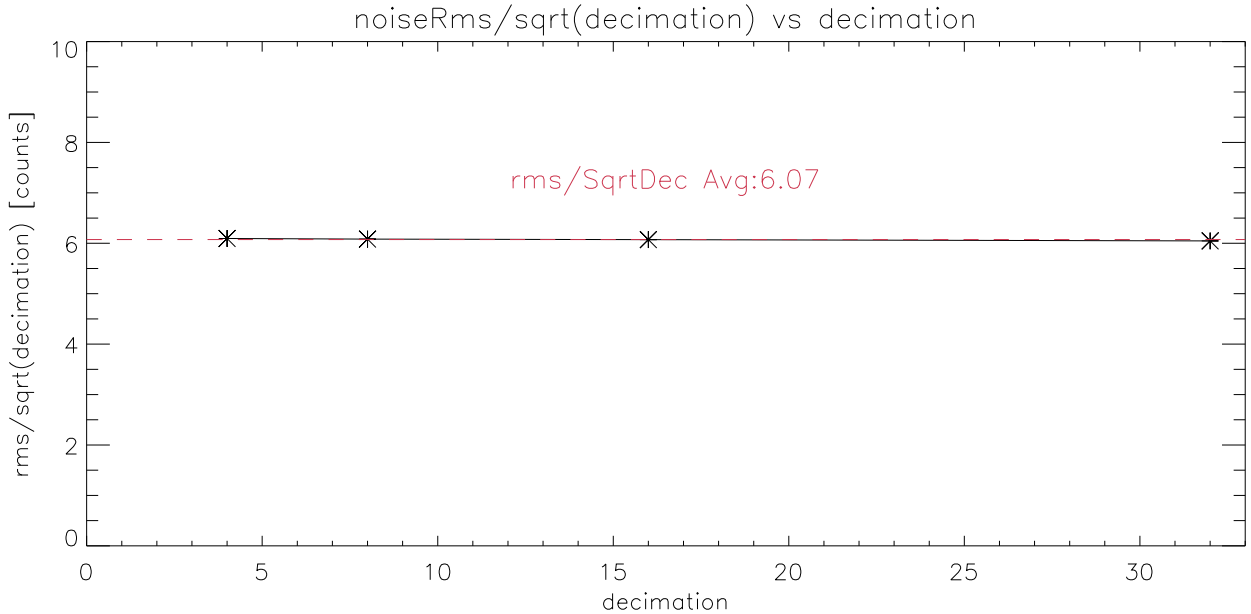

decimation:32
Dc gain: 0.62
filter Value
time sample


Sine wav used for test
normalized voltage
time sample
10
5
0
−5
−10
0
500
1000
1500
2000


(Filtered SinWave)/decimation after filtering by:4,8,16,32
DcGain=6.25/10.=.625
FilteredSineWave/Decimation
time sample
10
5
0
−5
−10
0
500
1000
1500
2000


noise after filtering by 4,8,16,32 (no / by decimation).
normalized voltage
time sample
500
400
300
200
100
0
−100
0
500
1000
1500
2000


noise Rms after filtering by 4,8,16,32 (no / by decimation).
Input noise rms: 10.
rms [counts]
decimation
40
30
20
10
0
0
5
10
15
20
25
30


noiseRms/sqrt(decimation) vs decimation
rms/SqrtDec Avg:6.07
rms/sqrt(decimation) [counts]
decimation
10
8
6
4
2
0
0
5
10
15
20
25
30