

$N := 2^{13}$ $n := 0..N-1$ $f_c := 400$ $f_a := 2$ $m := 0.5$ Comparison of AM with suppressed sideband detection. Joe Sousa 9-1-9

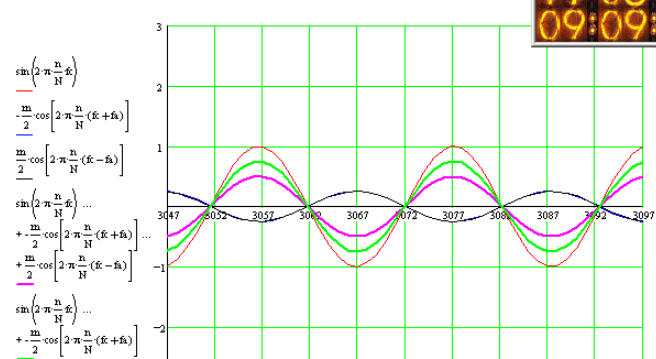
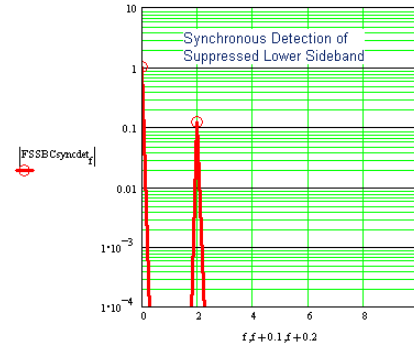
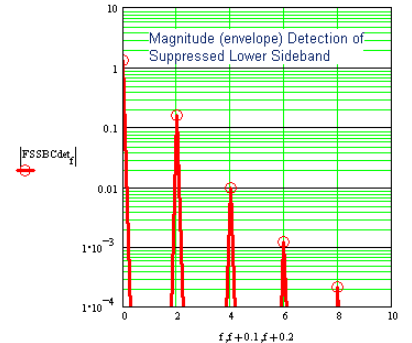
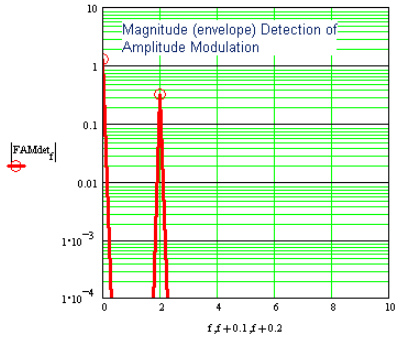
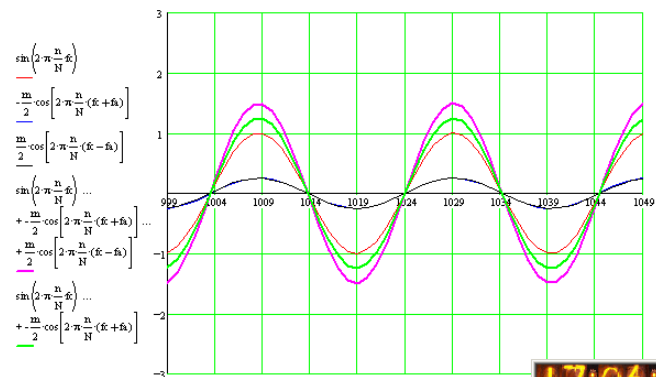
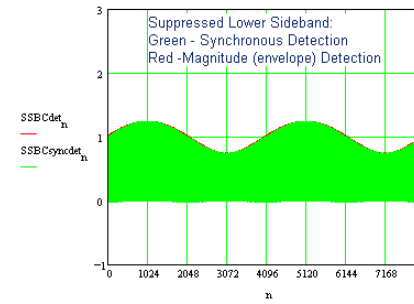
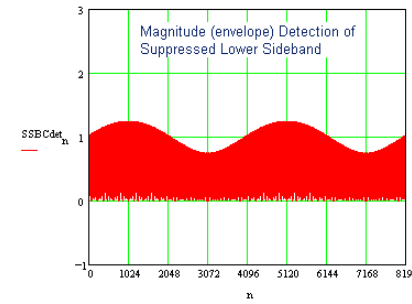
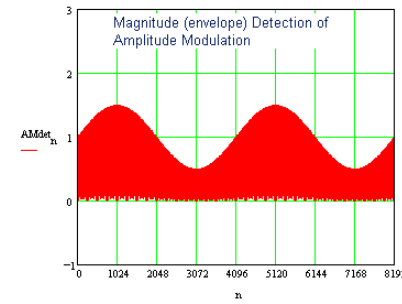
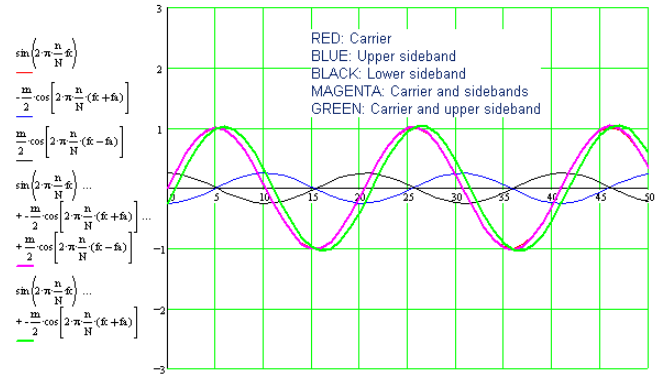
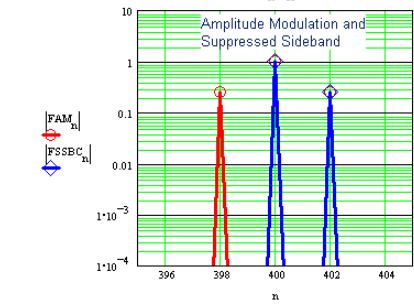
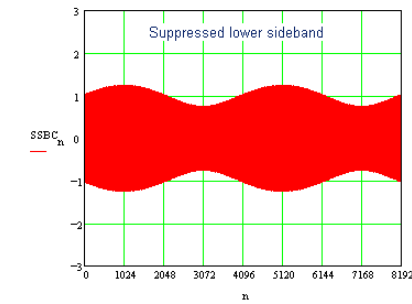
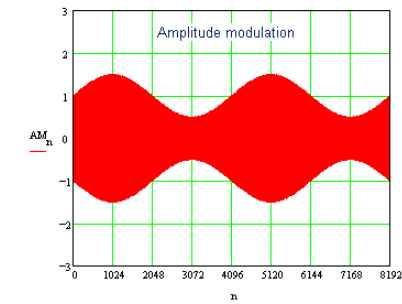
$$AM_n := \sin\left(2\pi\frac{n}{N}fc\right) \left(1 + \sin\left(2\pi\frac{n}{N}fa\right)m\right)$$

$$FAM_n := \text{cff}(AM) \cdot \frac{2}{\sqrt{N}} \quad f := 0.. \frac{N}{2} - 1 \quad FSSEBC_n := FAM_n \quad FSSEBC_{k-fa} := 10^{-12} \quad FSSEBC_{N-k+fa} := 10^{-12} \quad SSEC := \text{icfft}(FSSEBC) \cdot \frac{\sqrt{N}}{2} \quad AMdet_n := |AM_n|$$

$$SSECdet_n := |SSEC_n| \quad SSECsyncdet_n := \text{Re}\left(SSEC_n \sin\left(2\pi\frac{n}{N}fc\right)\right)$$

$$FAMdet_n := \text{fft}(AMdet) \cdot \frac{2}{\sqrt{N}} \quad FSSEBCdet_n := \text{fft}(SSECdet) \cdot \frac{2}{\sqrt{N}} \quad f := 0.. \frac{N}{2} - 1 \quad FSSEBCsyncdet_n := \text{fft}(SSECsyncdet) \cdot \frac{2}{\sqrt{N}}$$

$$FAM_k = i \quad FAM_{k+fa} = -0.25 \quad N = 20.48 \quad FAM_{k-fa} = 0.25$$



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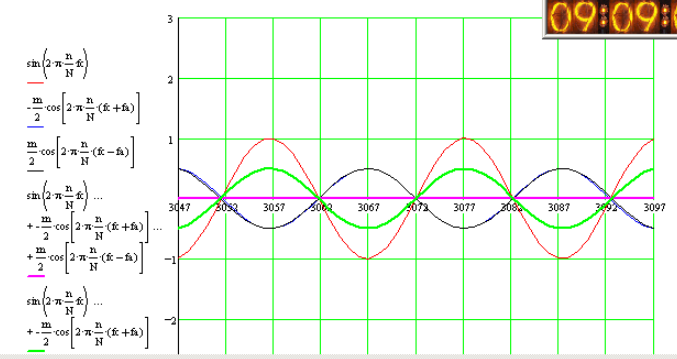
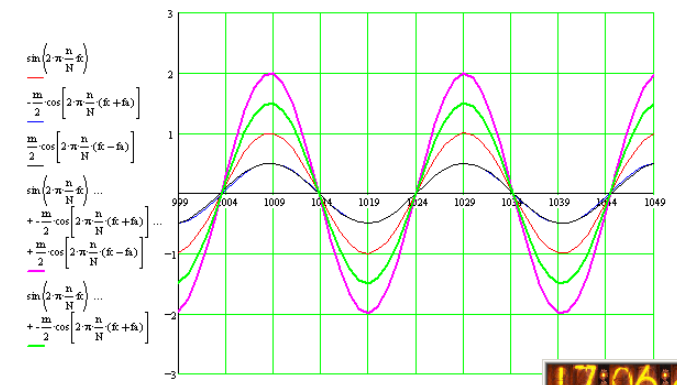
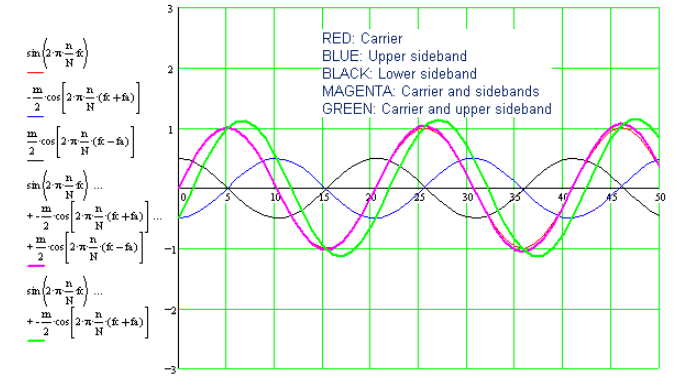
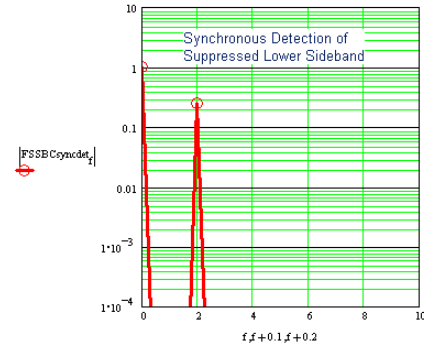
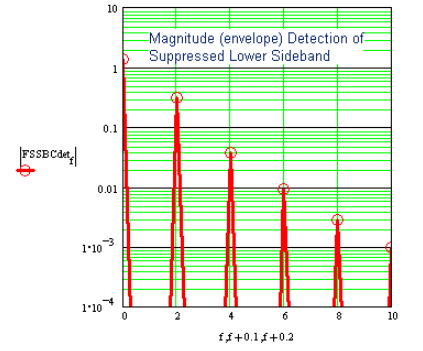
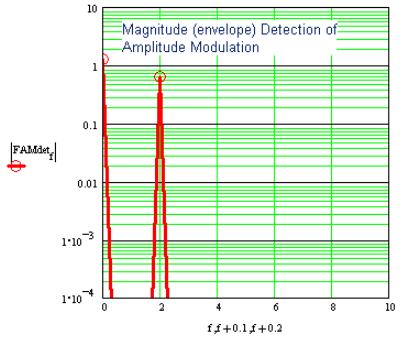
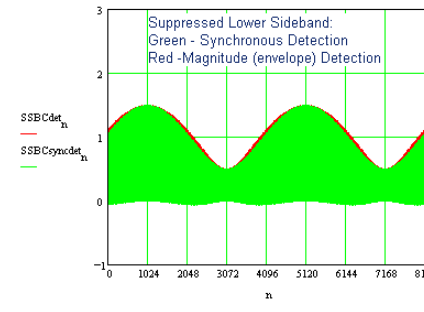
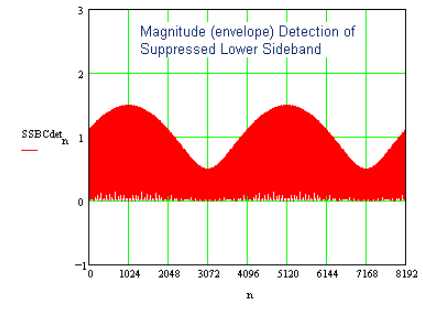
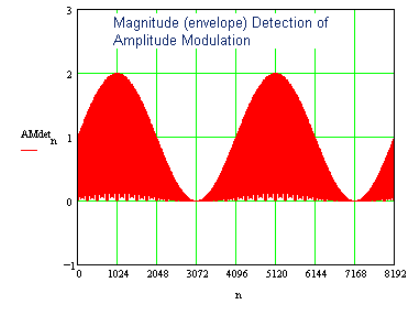
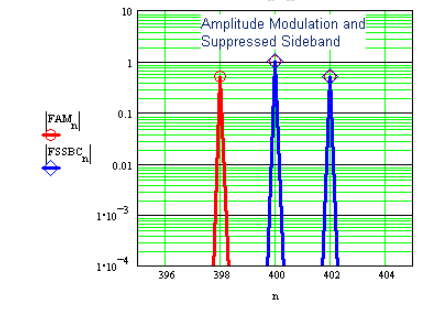
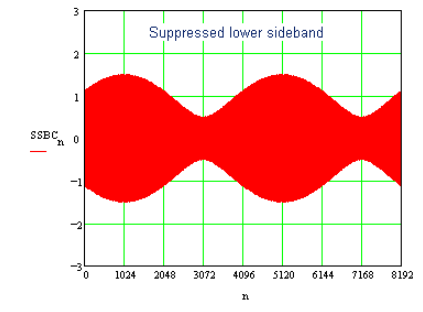
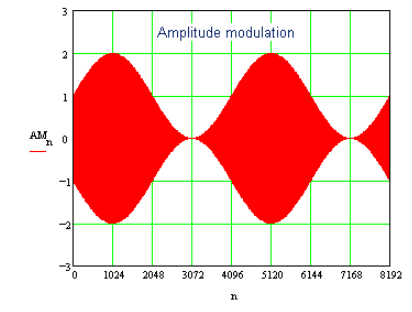
$$AM_n := \sin\left(2\pi\frac{n}{N}fc\right) \left(1 + \sin\left(2\pi\frac{n}{N}fa\right)m\right)$$

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$$FAM_{k-fa} = 0.5 \quad FAM_{k+fa} = -0.5 \quad N = 2048 \quad fc = 20.48$$



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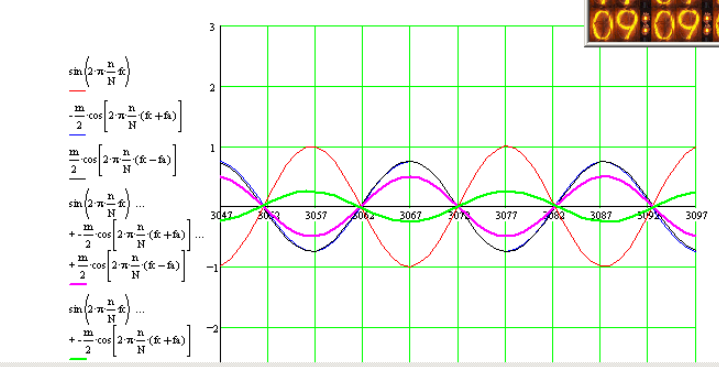
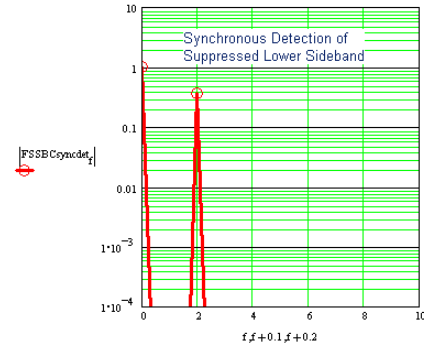
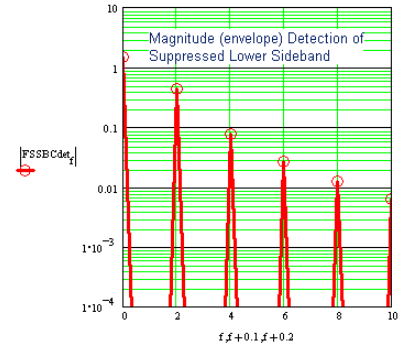
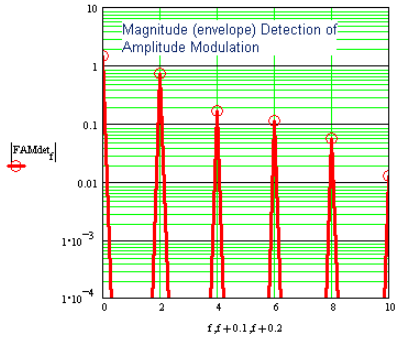
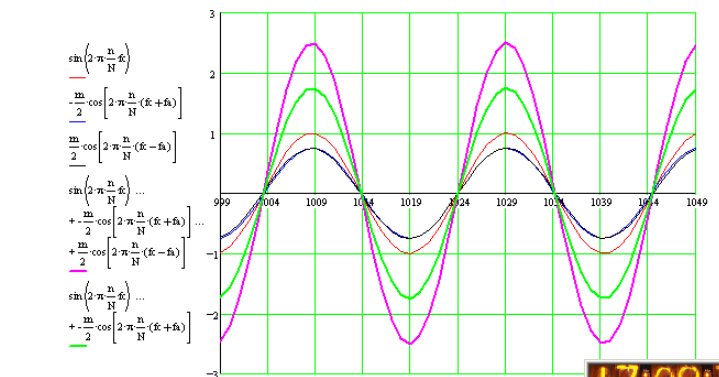
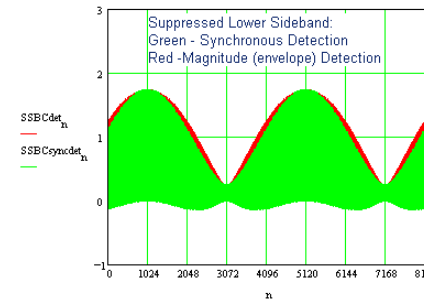
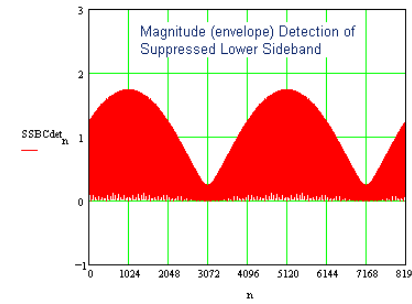
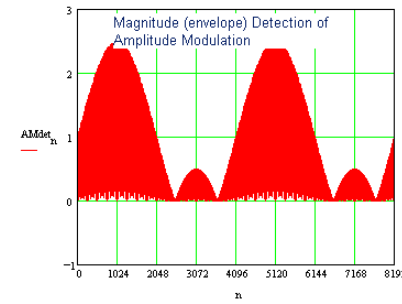
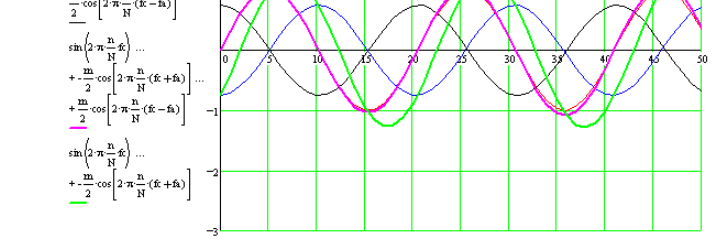
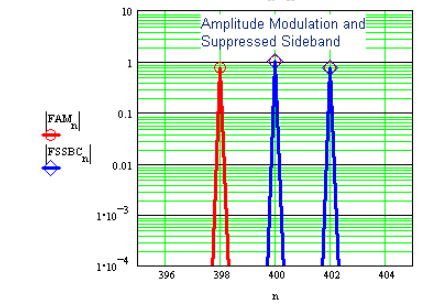
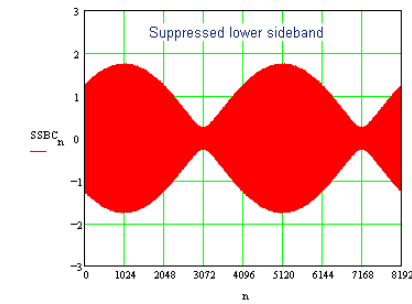
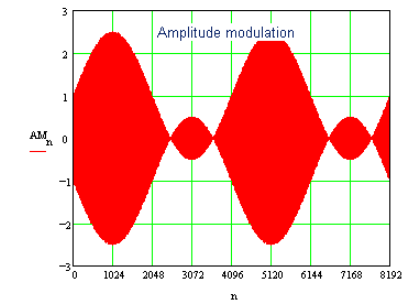
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$$FAM_k = i \quad FAM_{k+fa} = -0.75 \quad N = 20.48 \quad FAM_{k-fa} = 0.75$$



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