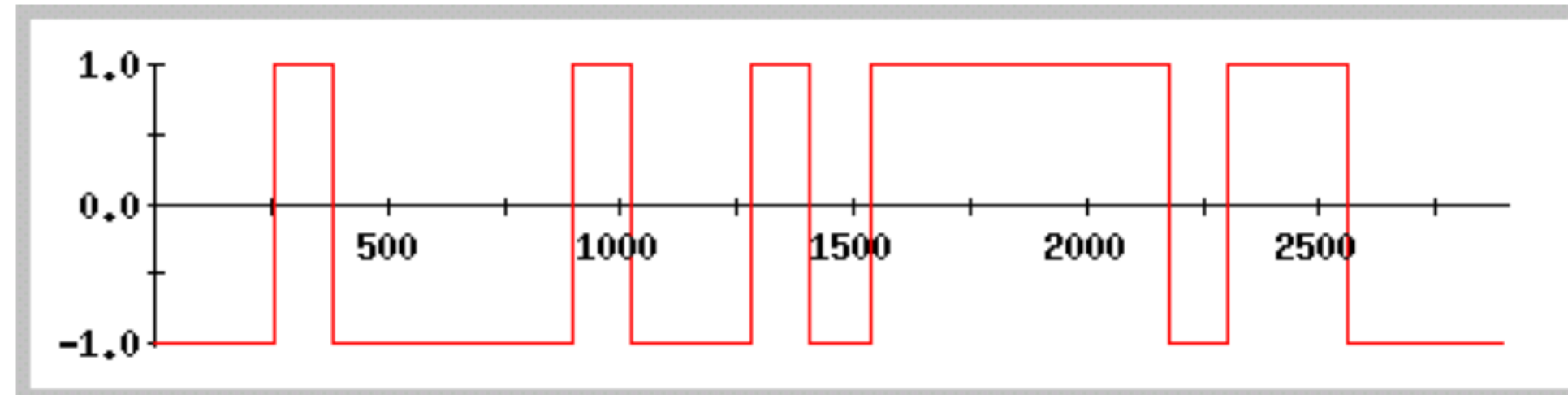


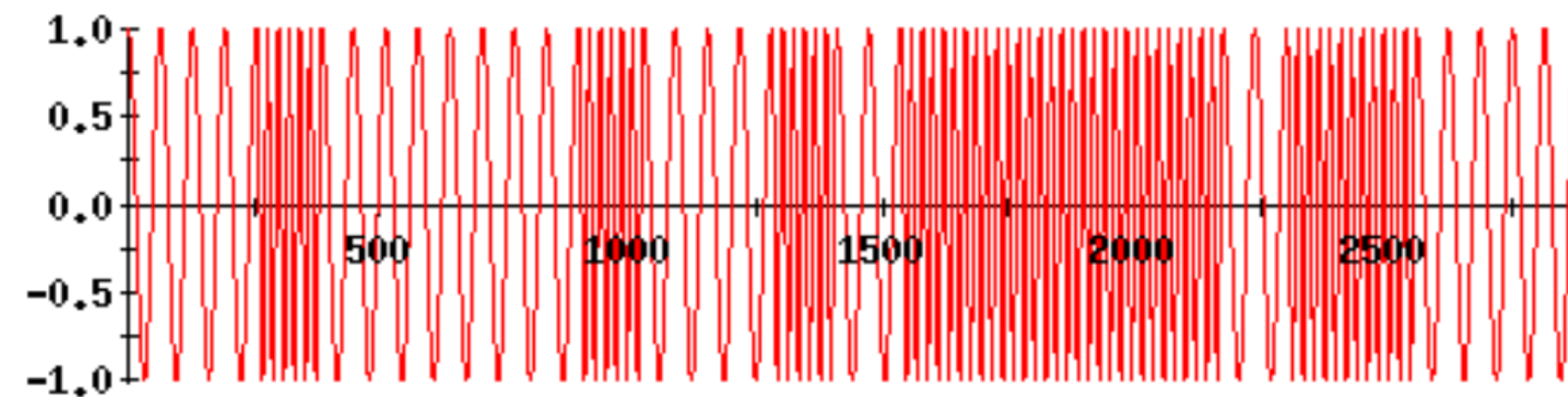
Frequency and Bandwidth of a Signal

Baseband



a. Binary message signal, $m(t) = 2$

FSK
Modulated
Signal



b. Modulated signal, $s(t)$ with $f_c = 4$

Carrier (central) frequency = 4

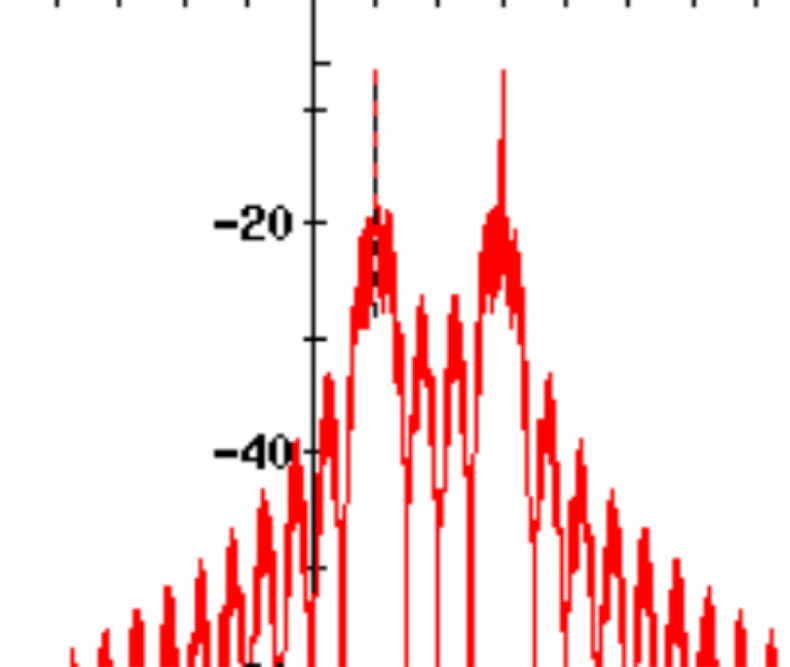
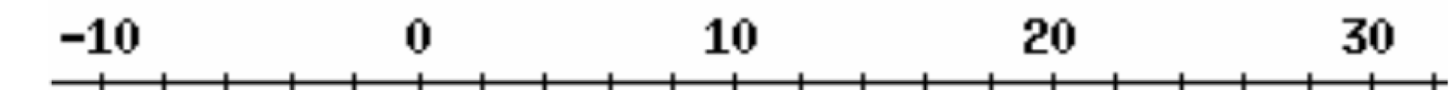
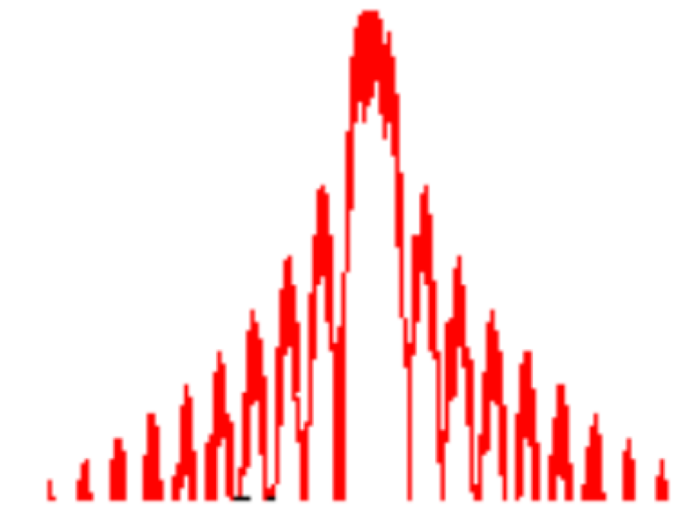
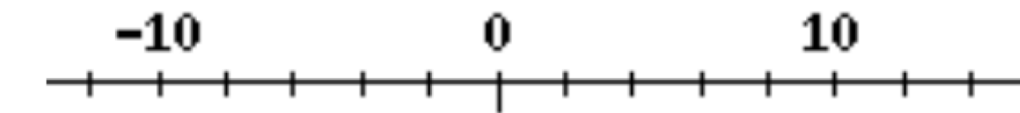


Figure 9- Spectrum of the modulated signal, D_{eff} is equal 2. Note the two impulses at frequencies 2 and 6 Hz.

<http://complextoreal.com/wp-content/uploads/2013/01/fm.pdf>

Note: Different modulation techniques will require different bandwidths for the same data rate.