When the ADC is configured as 'Complex2X', and the ADC sampling rate is f_s, the maximum IF frequency (i.e f_{maxIF}) sampled is $\frac{f_s}{2}$. However, **the *bandwidth* of the signal provided by the ADC is f_s** (i.e. frequency content from $-\frac{f_s}{2}$ to $+\frac{f_s}{2}$ is unambiguously represented in the ADC signal).

When the ADC is configured as 'Complex1X', and the ADC sampling rate is f_s, **the bandwidth provided is still f_s**. However instead of providing the signal from $-\frac{f_s}{2}$ to $+\frac{f_s}{2}$, the signal supplied by the ADC is from 0 to f_s, meaning that the maximum IF frequency (f_{maxIF}) sampled is f_s.

Since the maximum unambiguous range, r for a given slope, s is proportional to f_{maxIF}, 'Complex1X' has twice the max range of 'Complex2X'. In practice, 'Complex1X' can sample up-to $0.9 \times f_s$, the remaining $0.1 \times f_s$ being the 'transition band' for the anti-aliasing filter.