

The Spectral Window in Units of Parts per Million

- One Part per Million (ppm) is one-millionth of the NMR Radio Frequency. For Example:

For ^1H Observe on the Unity-300: NMR Frequency = 300 MHz = 300 million Hz = 300×10^6 Hz

1 ppm = one millionth of 300 million Hz =

$$1 \times 10^{-6} \times 300 \times 10^6 \text{ Hz} = 300 \text{ Hz}$$

- The Spectral Width can be Expressed in ppm:

Example: SW = 4000 Hz = $4000 / 300 = 13.33$ ppm

- The Final Limits of the Spectral Window Depend on the Position of the Reference Peak.

Example: TMS peak at -1700 Hz Audio Frequency

Spectral Window -2000 to +2000

TMS is 1 ppm (300 Hz) from Right Edge of Window

Spectral Width in ppm = $4000 / 300 = 13.333$ ppm

Spectral Window: -1 ppm to 12.333 ppm