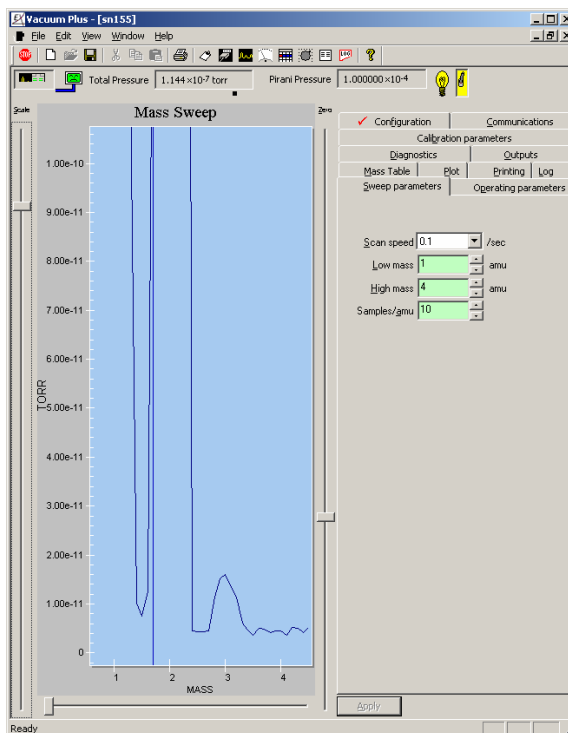
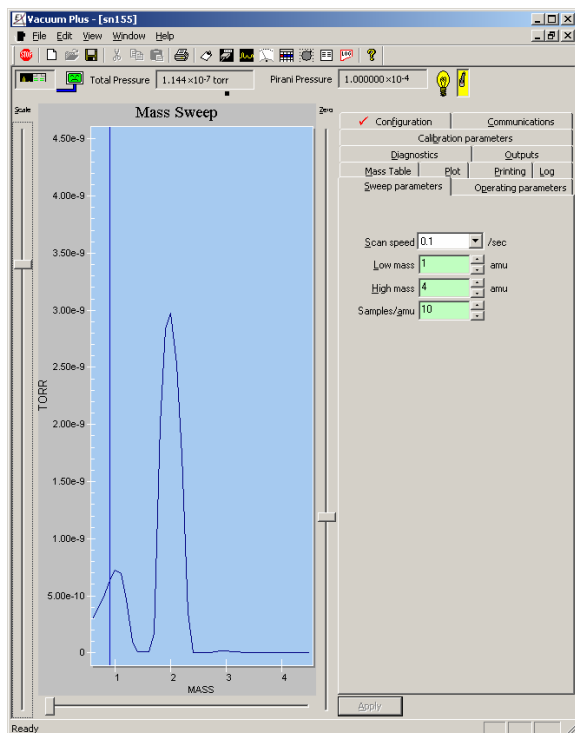


Application Note Number 9: An Honest Mass 1

Abstract: Most Quadrupole RGAs and magnetic systems that have mass ranges above 100 amu have difficulties getting down to mass one. The Extorr's unique electronics package allows for an honest mass 1.

If you look through the mass spectrometer and residual gas analyzer literature, you rarely find mass spectra taken down to mass one and often not even to mass 2 or 3. Mass spectral libraries, even those from highly respected sources such as NIST often do not report masses from organic compounds below mass 10. Common sense would argue that any molecule loaded with hydrogen atoms will produce protons upon electron impact. So why are these peaks not reported? It surely can not be for lack of interest. If done properly, the intensity of these peaks may prove crucial for compound identification. The answer is that most quadrupole systems do not do these low mass ions very well. For a quadrupole it requires that the electronics maintain their percentage voltage regulation over three orders of magnitude. Most manufactures can not. Extorr does.



The screen shots above of the spectra from an ion pumped system shows data from the first three masses at two intensity scale settings.