

QMax™ Tuning Software Tool

Introduction

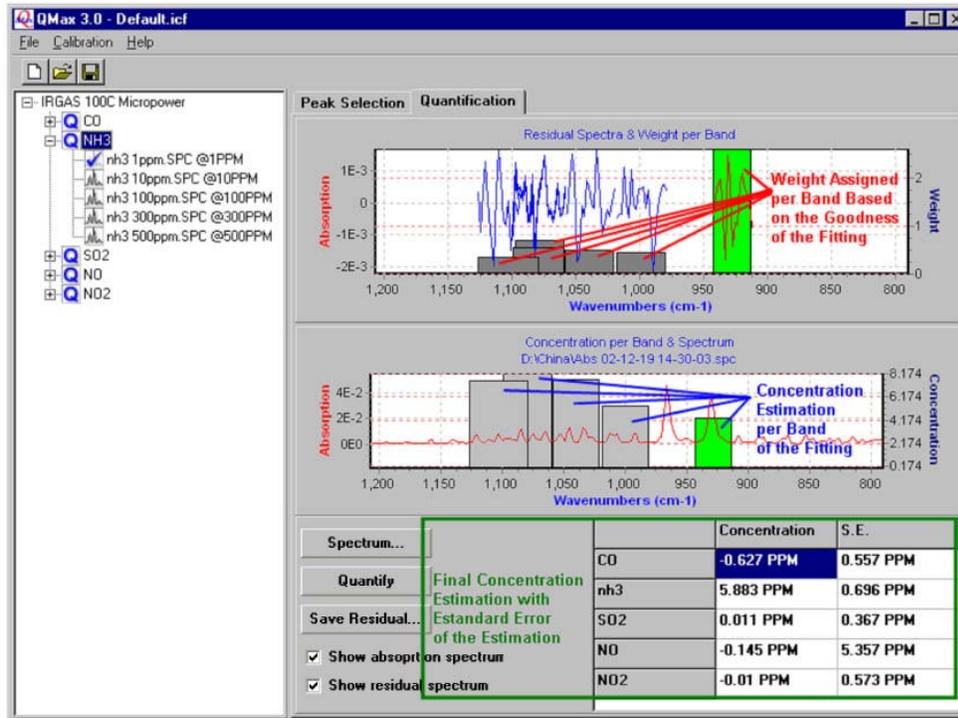
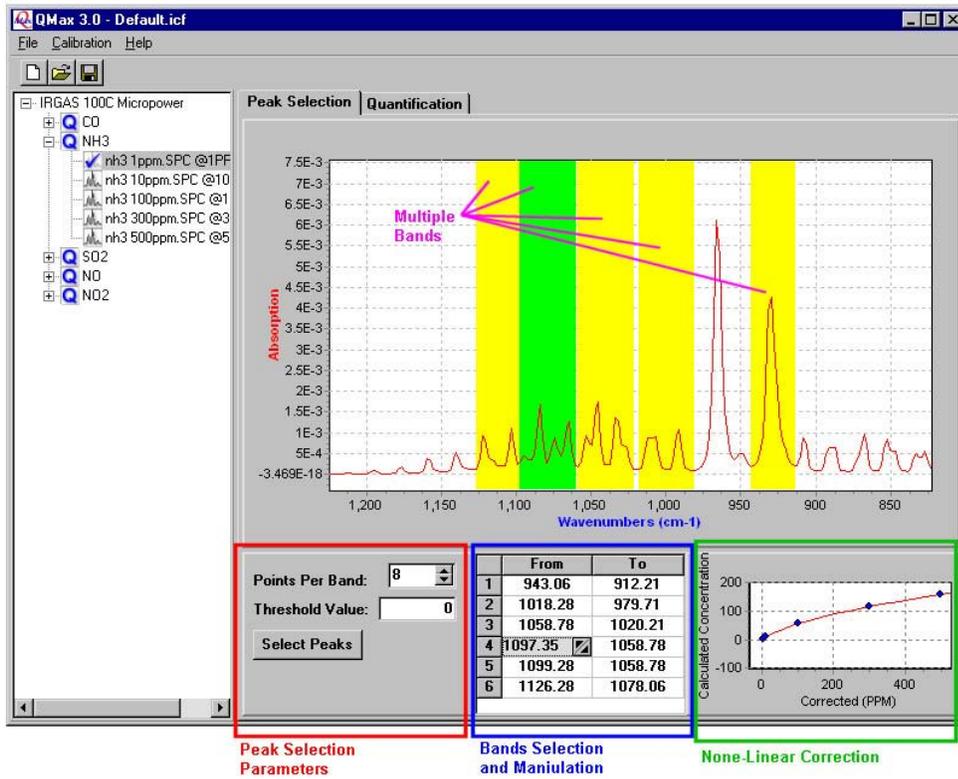
- SPGAS™ is a sophisticated gas analysis software that performs the quantification or estimation of the concentrations of known gases in a gas mixture.
- The SPGAS quantification analysis engine (chemometric package) is based upon a modified version of the Classical Least Square (CLS) multivariate calibration method which is called Weighted Multi-Band CLS. This method, instead of using the entire infrared absorption spectrum of a molecule, divides the absorption spectrum of a molecule into different regions called bands, and then performs a quantification analysis on each band; the goodness of concentration estimation for each individual band is weighted and a weighted average concentration is calculated for the entire set of bands.
- The quantification analysis engine requires the use of a calibrated standard spectral database and the absorption spectral features of the molecule to be used for quantification analysis. The database has the calibrated spectral records at known concentrations of those gases species for which gas mixture concentrations are required to be known. This information, the calibration database and the band information, defines a *Quantification Set*.
- QMax™ was designed to generate and fine tune the quantification sets required by the SPGAS quantification analysis engine. The fine-tuning tools provided by QMax permits the post analysis of previously collected absorption spectra to establish the goodness of the calibrated spectra fitting and to establish the presence of unknown components.

Key Features

The following list represents the key features offered by QMax and the SPGAS Quantification analysis engine:

- Weighted Multi-band Classical Least Squares concentration analysis
- Deviations from Beer's Law and non-linear corrections per band
- On screen visualization per band of residual spectrum, weighted analysis, and concentration estimation.
- Save residual spectrum
- Each individual Quantification Set provides:
 - Serialization
 - Data Password Protection
 - CRC file modification detection
 - Inclusion of reference spectral into the quantification analysis.

Sample Screens



System Requirements

Every PC system on the market currently has sufficient power to run any of the SPGAS applications. The following list represents the absolute minimum requirements for QMax to run properly.

- **Processor:** Intel or AMD Processor, 166 Mhz (Minimum)
- **Operating System:** Windows 98, Windows Me, Windows NT 4.0 or Windows 2000
- **Memory:** 64MB (Minimum)
- **Disk Space:** 20MB (Minimum free space)
- **Screen Resolution:** 800x600 with 256 colors (Minimum)