www.hidenanalytical.com
info@hiden.co.uk

HIDEN ANALYTICAL

Hiden QGA 2

Quantitative Gas Analysis Software

Introduction

Hiden QGA 2 quantitative gas analysis software is for quantitative analysis of gases and vapours, and is offered with Hiden's gas analysis systems.

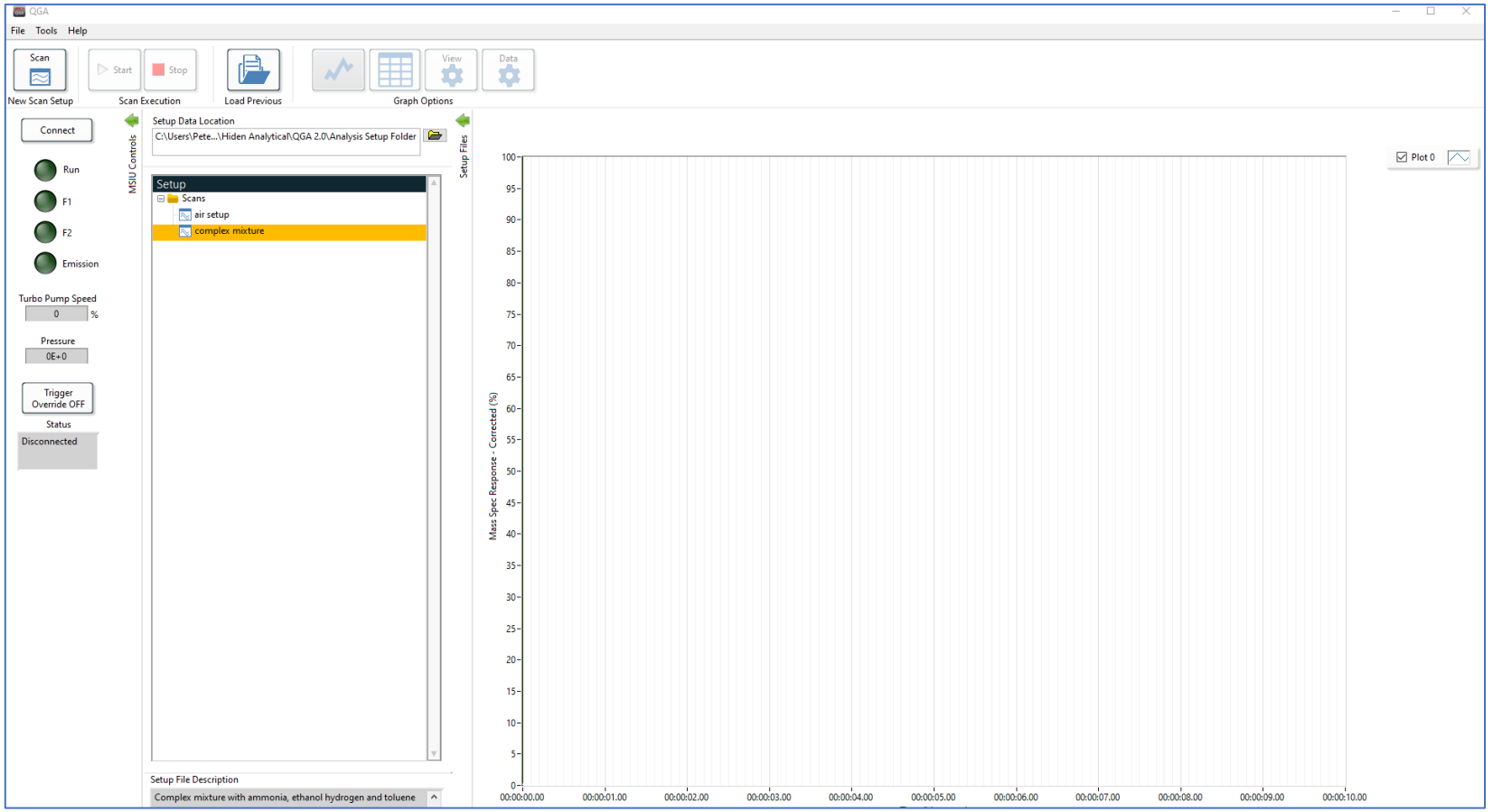
QGA software is designed for use by users with or without experience of mass spectrometry.

Set-up screens are intuitive and easy to navigate.
A calibration wizard guides the user through an automated procedure.

Raw data, corrected data and quantitative data is acquired, displayed (graphical and tabular formats) and saved in real time.

Data export on the fly to MS Excel and to tags for OPC compatible clients is included.

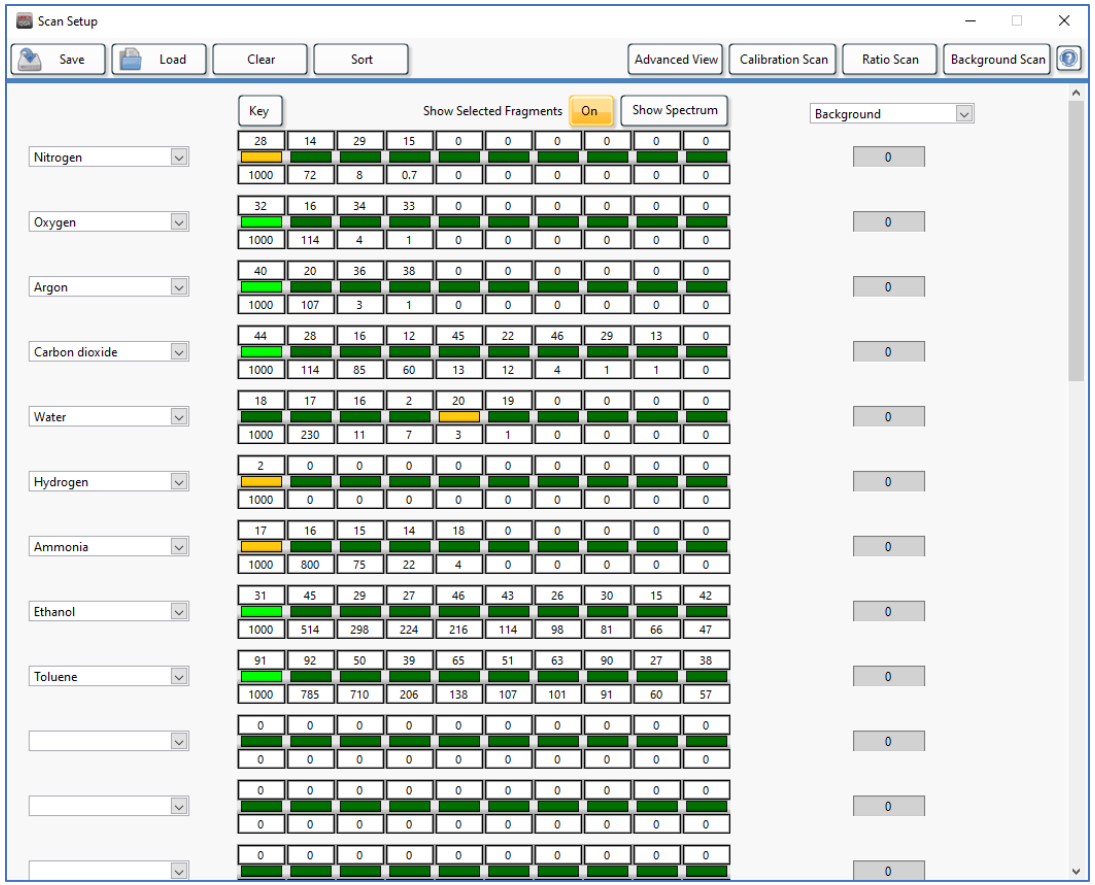
QGA 2 - Home Screen



Three control sections for instrument comms, analysis, data view/export.
Two display areas with mass spectral evaluator, emulating the iPad app.

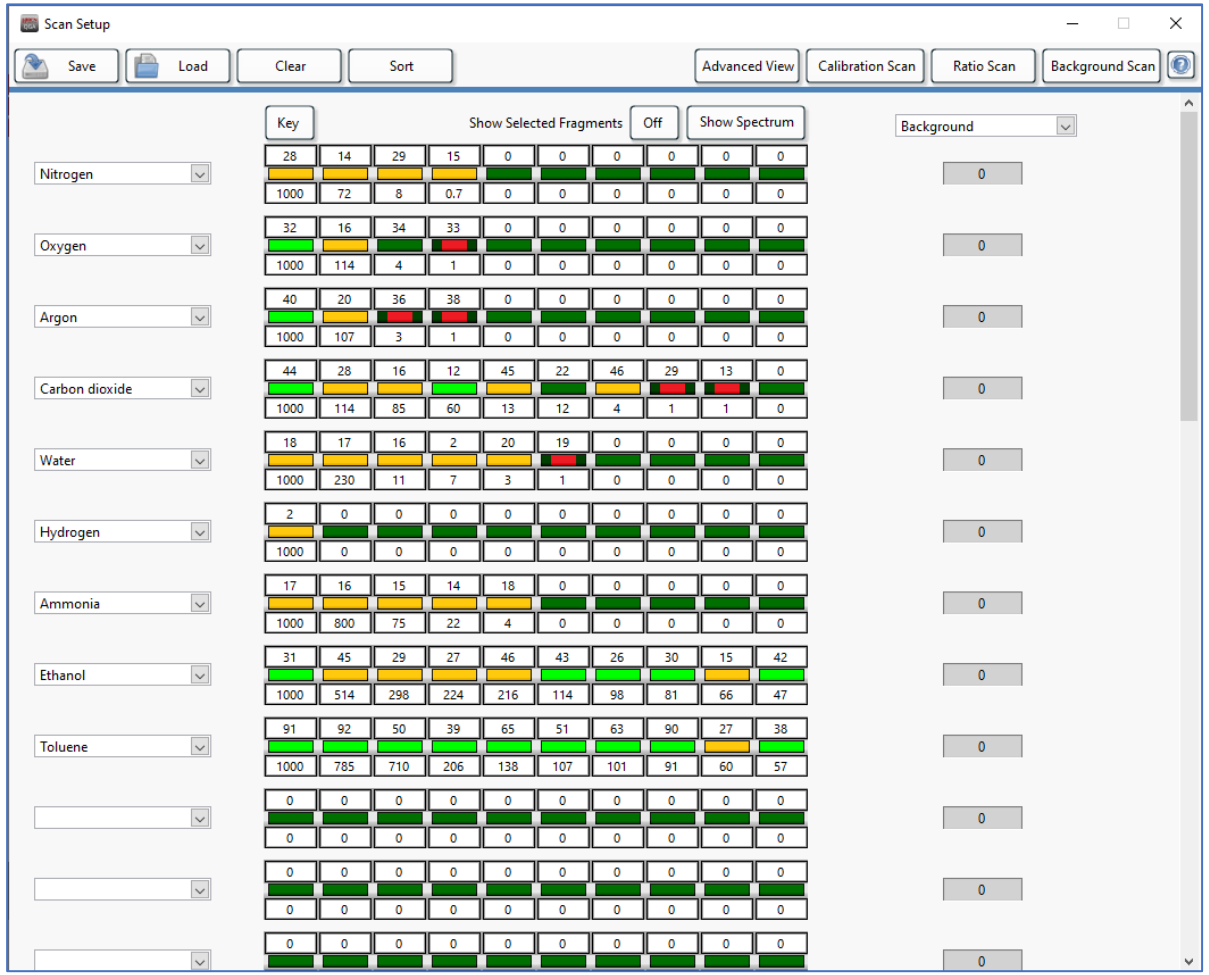
QGA 2 – Gas Analysis Recipe Set-Up

Gas and vapours included for analysis are selected from the library. The MS evaluator automatically selects the optimum mass peaks to complete the analysis. Recipes can be edited, saved and exported.

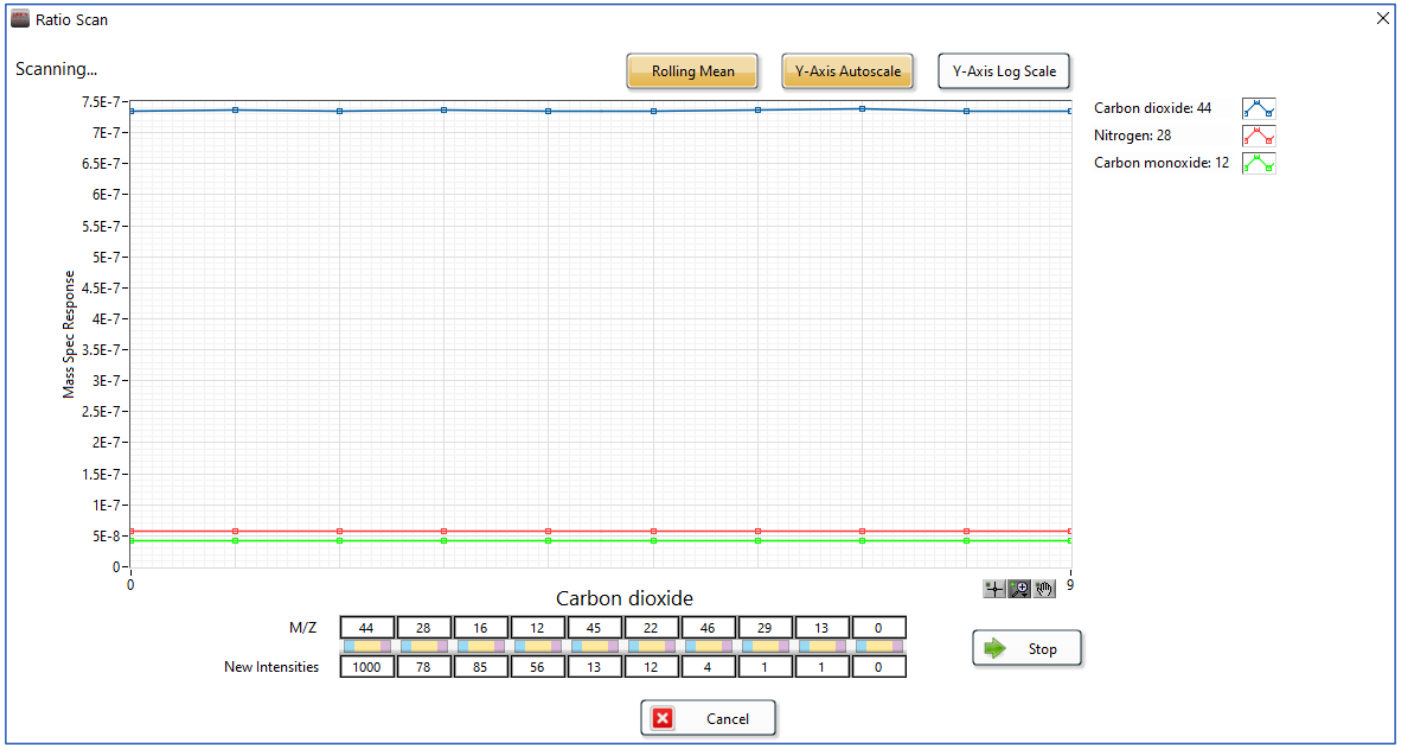


QGA 2 – Gas Analysis Recipe Set-Up

The gas set up can be viewed with filter ‘off’ as above or ‘on’ as shown in the previous slide. The filter off setting combined with the peak limit settings allows an advanced user to optimise peak selection for analysis.

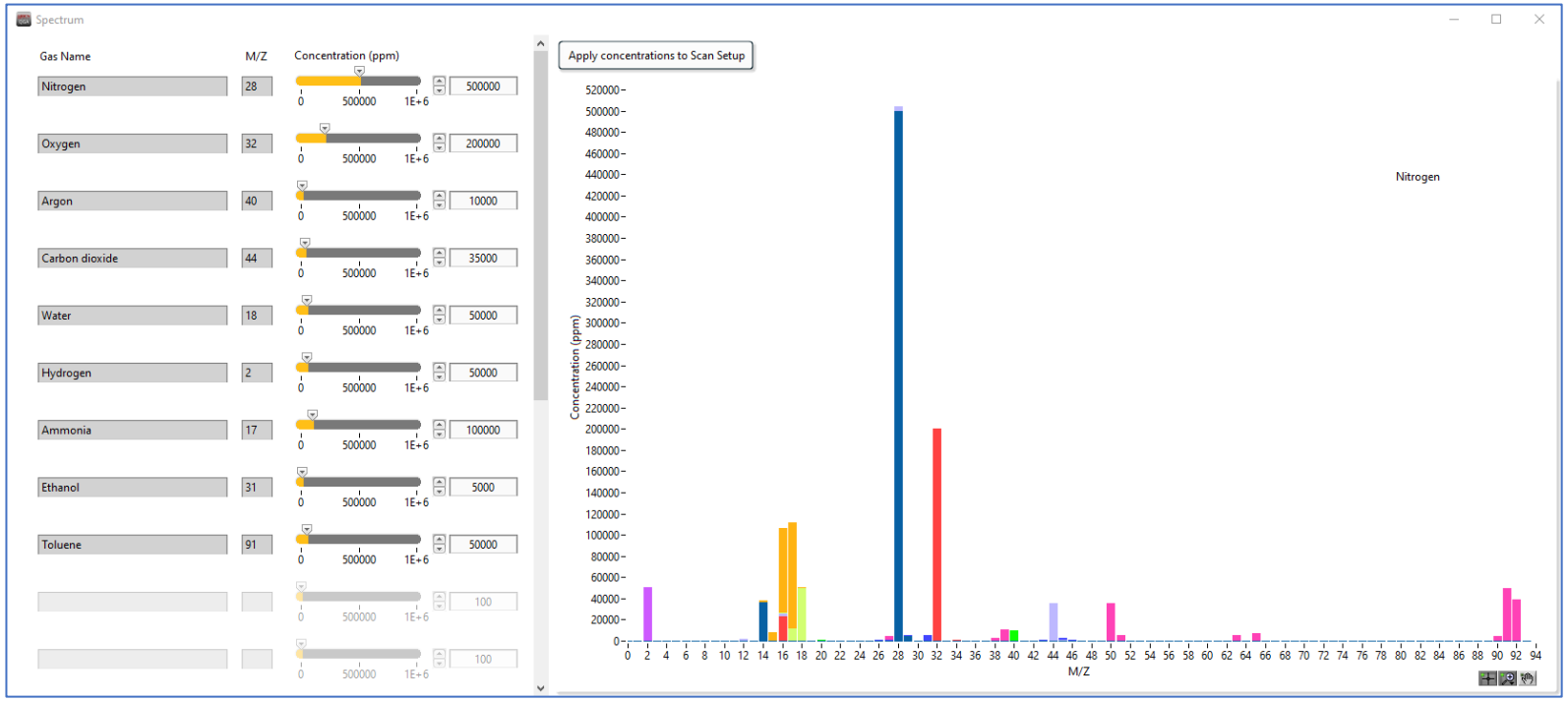


QGA – Ratio Analysis



The ratio analysis wizard ensures the fragment ratios used in any calculations are applicable to the specific setup and so improves accuracy.

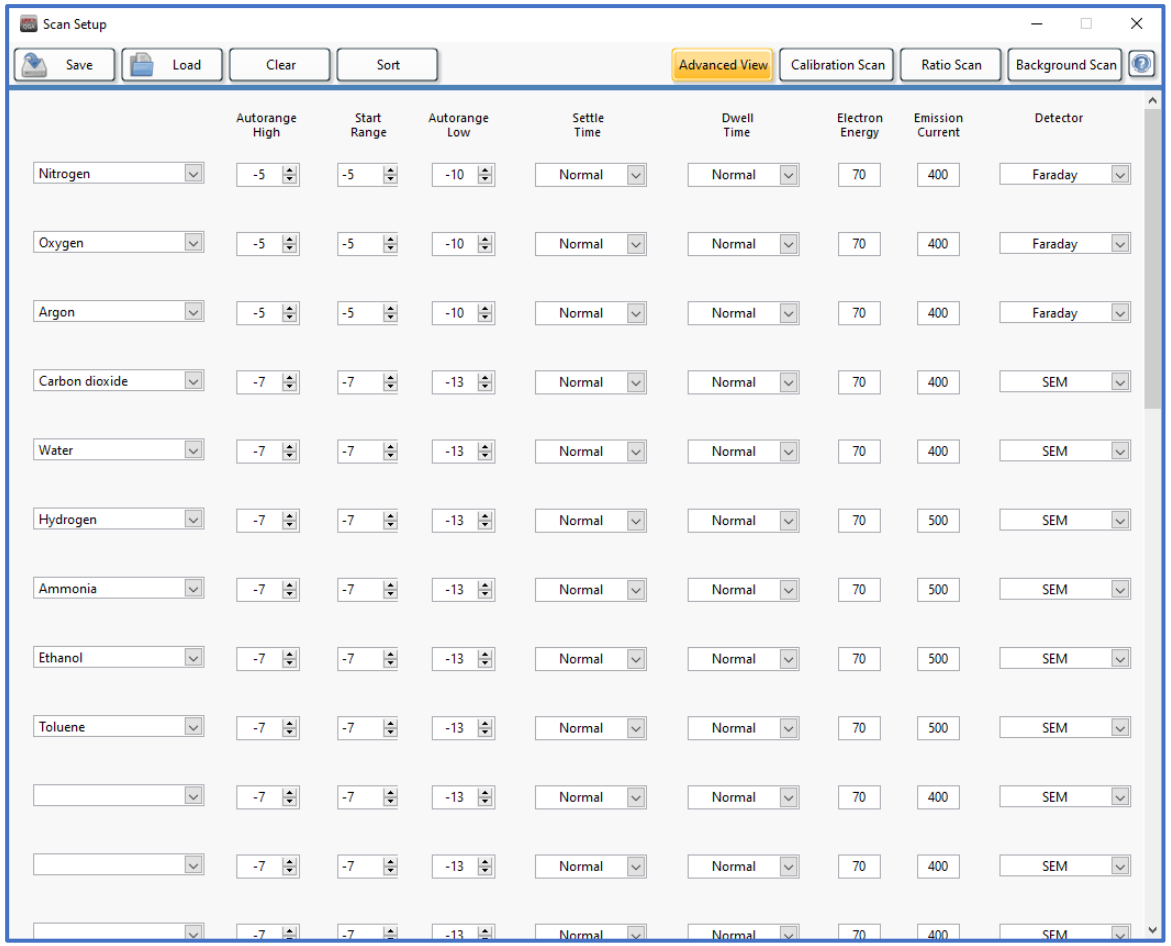
QGA 2 – Spectrum Analysis



The Spectrum analysis tool allows the user to view the effect of different concentrations on the overall spectrum. By applying the expected concentrations to the scan setup, settings are automatically adjusted to ensure the most applicable fragment mass is selected for each gas.

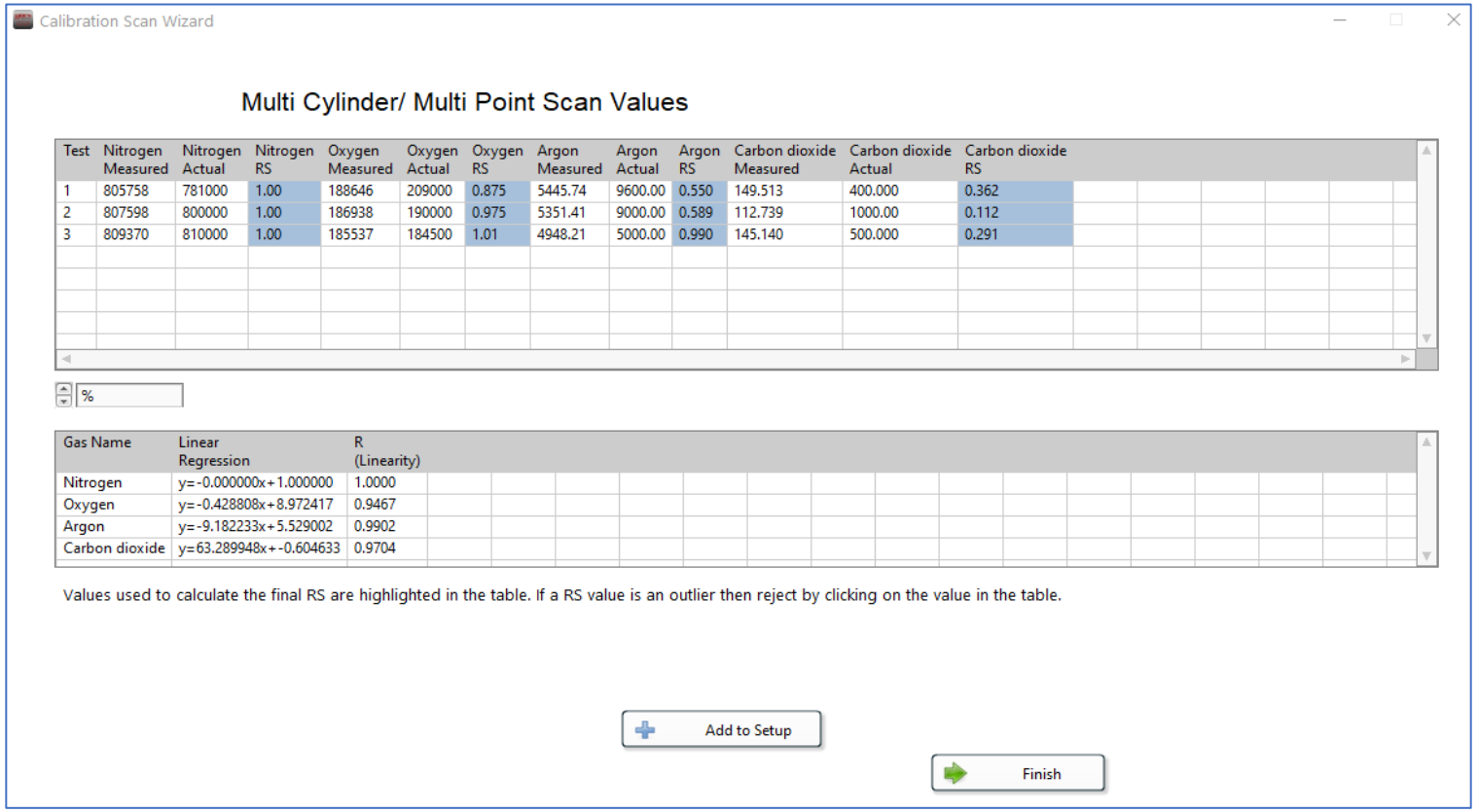
QGA 2 – Advanced settings

Advanced settings provide for control of the dynamic range, the soft ionisation parameters (emission current and electron energy), detector and the scan speed for each gas.



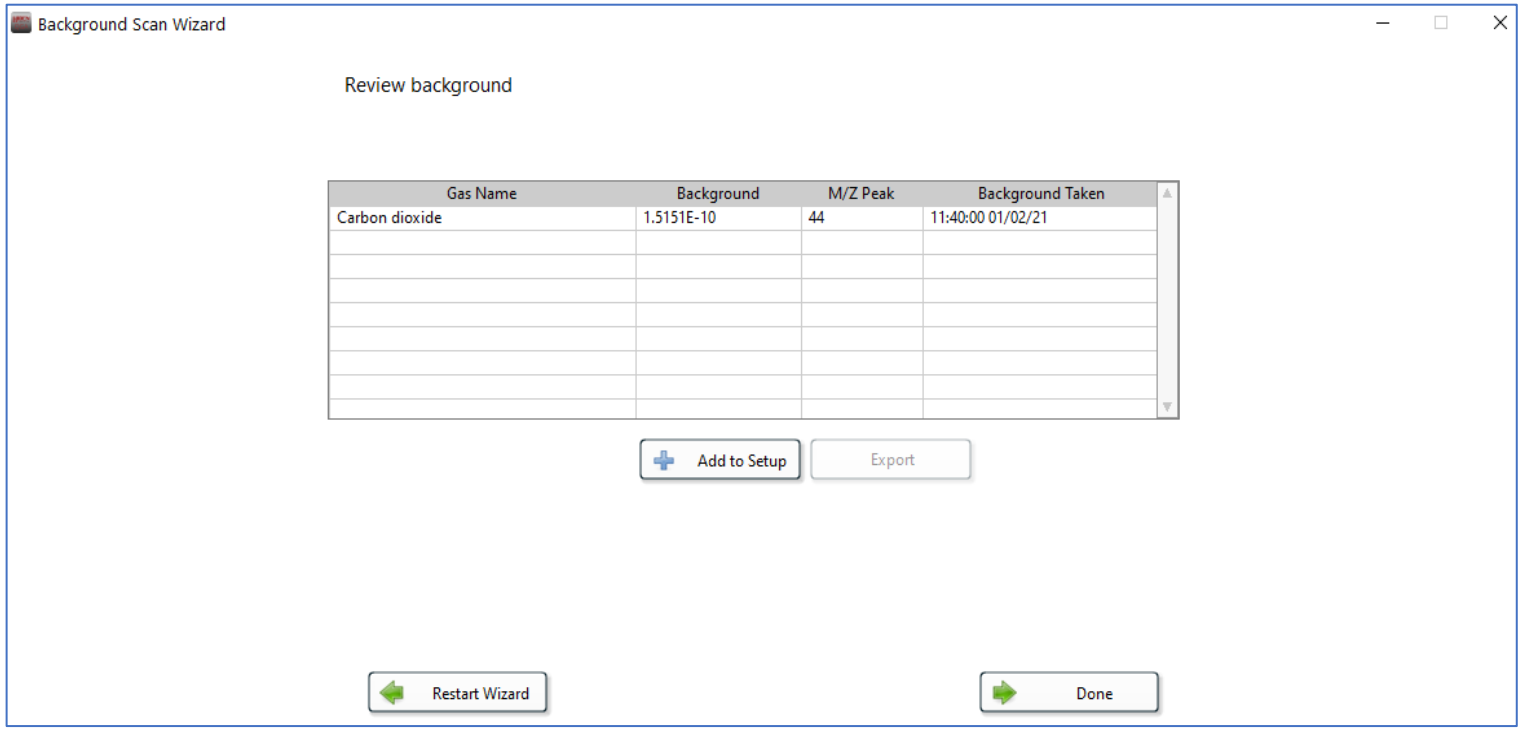
	Autorange High	Start Range	Autorange Low	Settle Time	Dwell Time	Electron Energy	Emission Current	Detector
Nitrogen	-5	-5	-10	Normal	Normal	70	400	Faraday
Oxygen	-5	-5	-10	Normal	Normal	70	400	Faraday
Argon	-5	-5	-10	Normal	Normal	70	400	Faraday
Carbon dioxide	-7	-7	-13	Normal	Normal	70	400	SEM
Water	-7	-7	-13	Normal	Normal	70	400	SEM
Hydrogen	-7	-7	-13	Normal	Normal	70	500	SEM
Ammonia	-7	-7	-13	Normal	Normal	70	500	SEM
Ethanol	-7	-7	-13	Normal	Normal	70	500	SEM
Toluene	-7	-7	-13	Normal	Normal	70	500	SEM
	-7	-7	-13	Normal	Normal	70	400	SEM
	-7	-7	-13	Normal	Normal	70	400	SEM
	-7	-7	-13	Normal	Normal	70	400	SEM

QGA 2 - Calibration Wizard



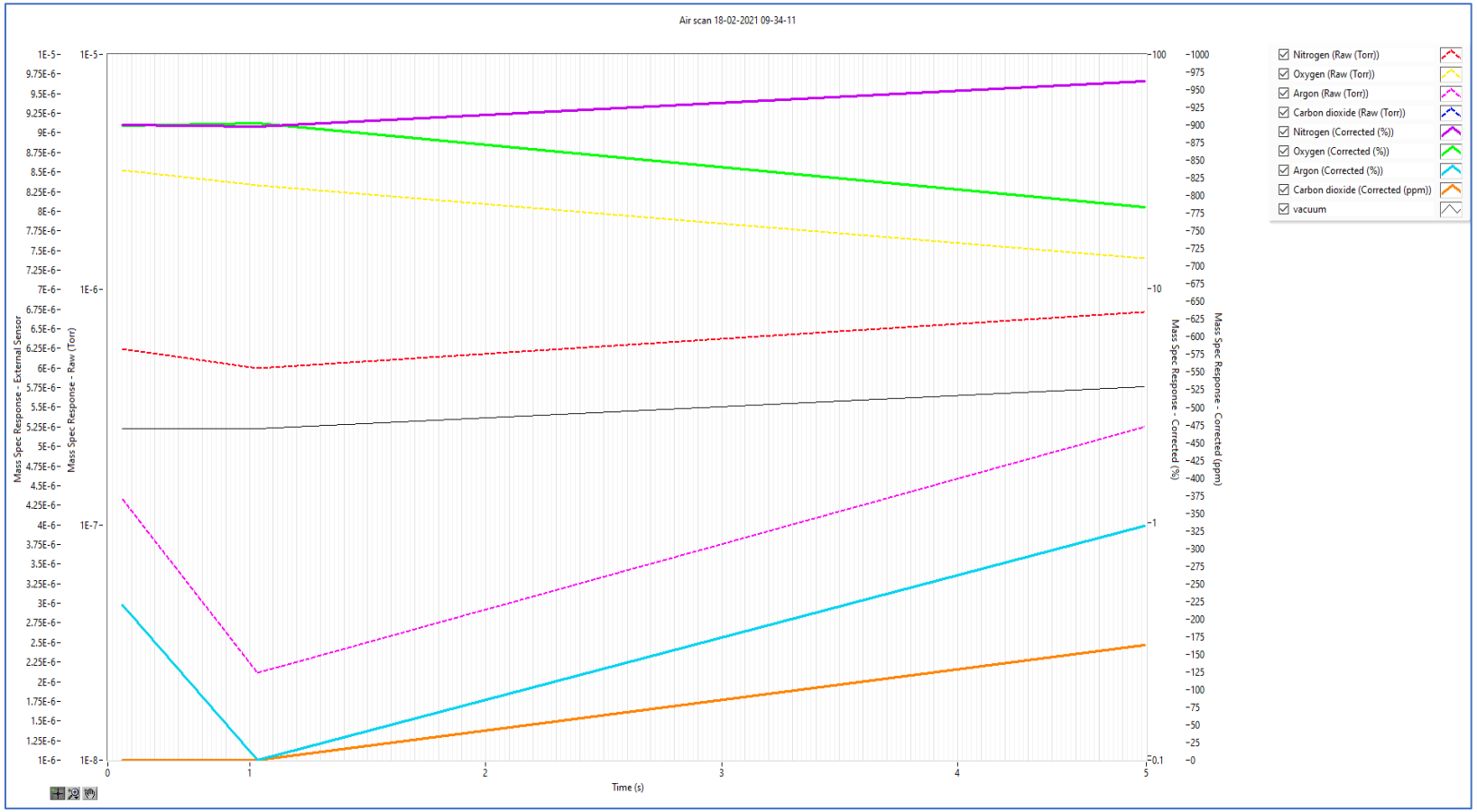
The Calibration Wizard simplifies calibration and automatically calculates sensitivity factors. Options of single mix calibrations, multiple mix or multipoint calibration for improved accuracy.

QGA 2 - Background Subtraction Wizard



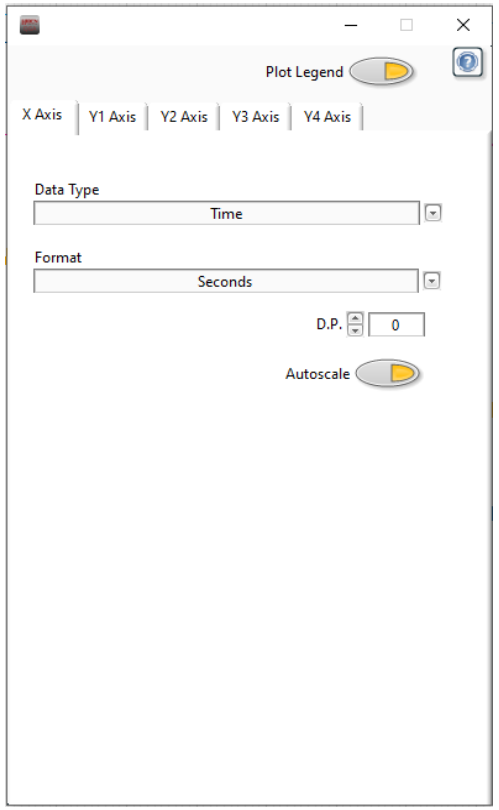
The instrument connected to a ‘zero’ gas can automatically scan the instrument ‘background signal’ for any selected gas. Measured data is automatically corrected for the background levels recorded. Applicable for measurements at PPM concentration levels for species including: CO_2, Water, Hydrogen, CO and Nitrogen

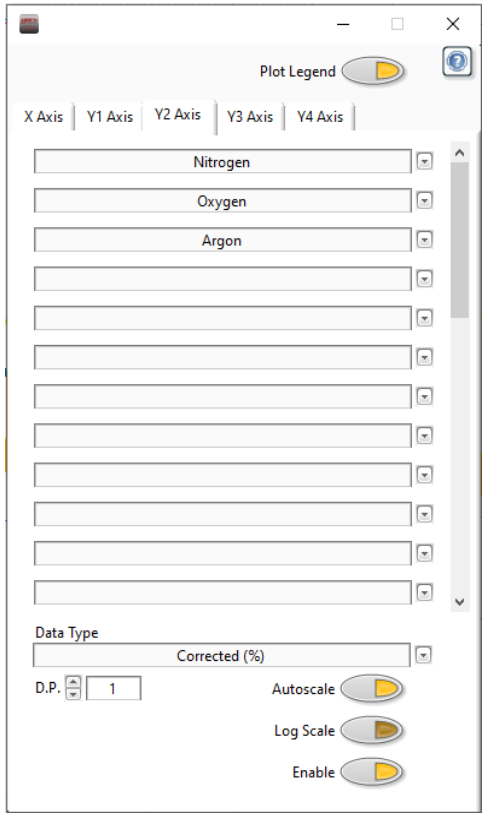
QGA 2 – Real Time Data Display



Graphical and tabular display with 4 y-axis control, displaying concentration, raw data, corrected data or external device data

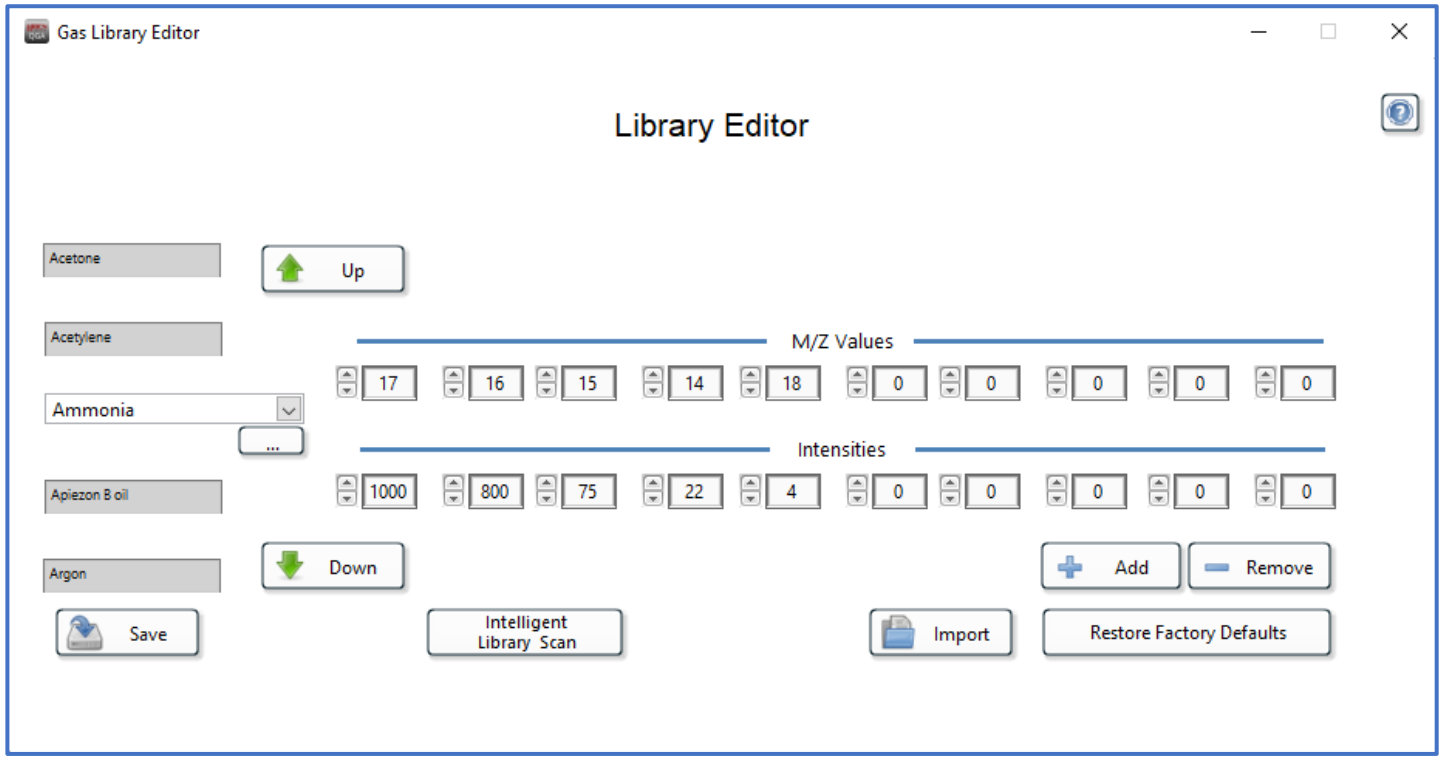
QGA 2 – Real Time Data Display





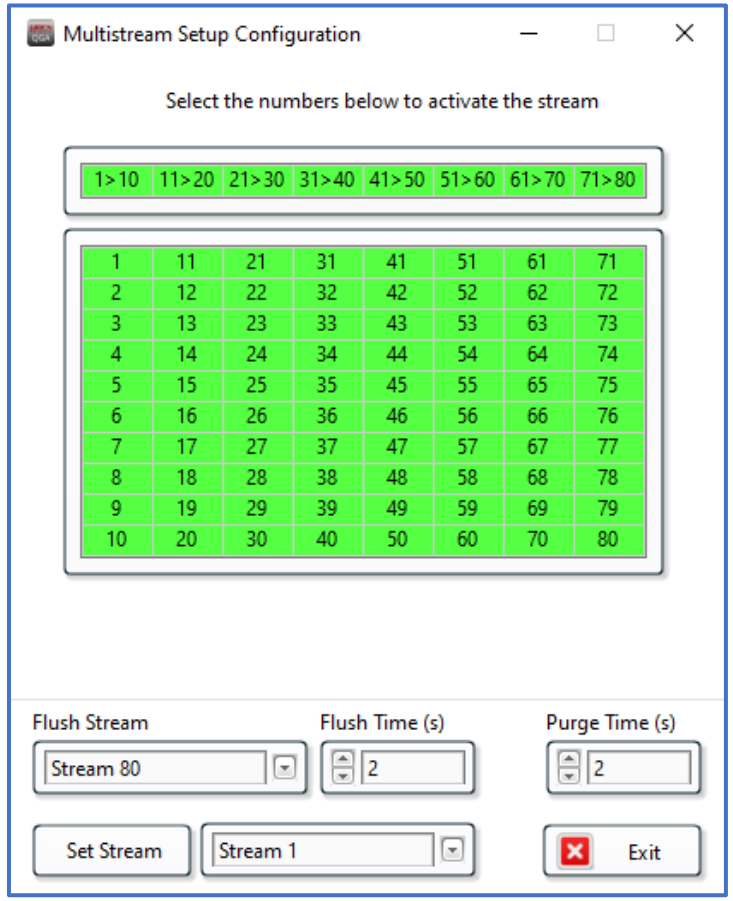
Display time or external device data on the X axis. Multiple options for Y axis. Data smoothing option

QGA 2 – Library Editor



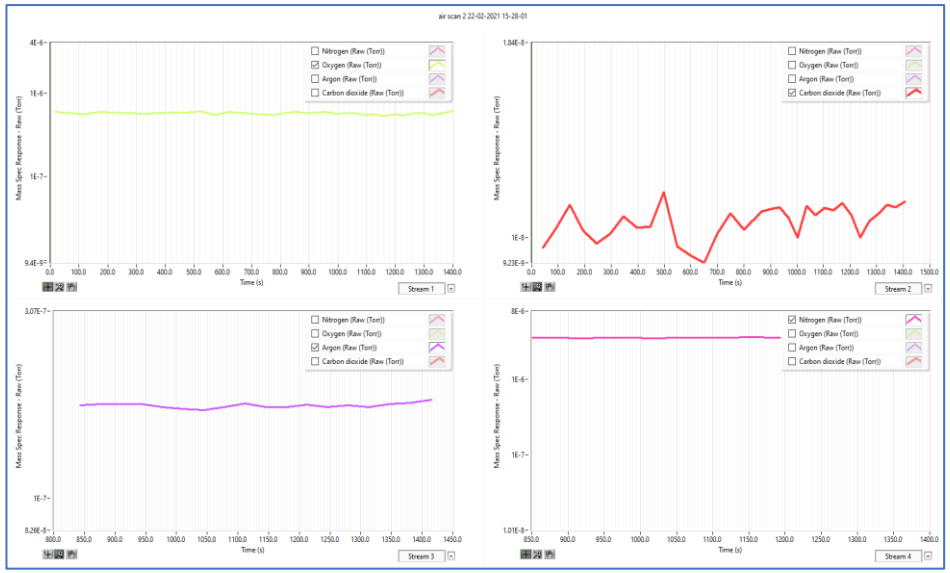
The library editor includes the ‘Intelligent Library Scan’ feature that automatically corrects the library entry for a given gas for specific instrument settings.

QGA 2 – Multistream



QGA multi-stream includes control for multi stream gas sampling inlets, with up to 80 streams. The sample stream sequence is fully editable before and during analysis.

QGA 2 – Multistream



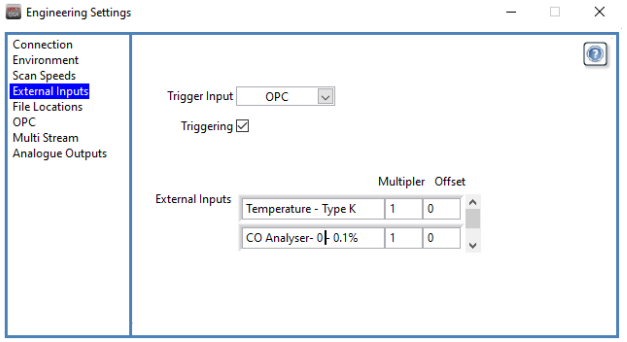
aircheck 28-07-2021 08-22-10

Time (hh:mm:ss)	Stream 1: Oxygen (Corrected (%))	Stream 2: Oxygen (Corrected (%))	Stream 3: Oxygen (Corrected (%))	Stream 4: Oxygen (Corrected (%))	Stream 5: Oxygen (Corrected (%))	Stream 6: Oxygen (Corrected (%))	Stream 7: Oxygen (Corrected (%))	Stream 8: Oxygen (Corrected (%))
00:00:11.64	15.99	15.97	15.91	16.12	16.16	15.93	16.11	15.83
00:00:23.54	15.98	16.21	16.31	16.13	16.26	16.22	16.09	16.14
00:00:35.25	16.08	15.98	15.94	16.06	16.21	15.78	16.11	16.26
00:00:46.84	15.88	16.06	16.10	16.13	16.20	16.11	16.04	16.17
00:00:58.65	15.92	16.16	15.89	16.04	15.89	15.97	15.87	16.01
00:01:10.14	15.86	15.79	15.90	16.18	16.11	16.22	16.14	15.84
00:01:22.05	16.02	16.11	15.76	15.82	15.82	16.17	15.92	15.94

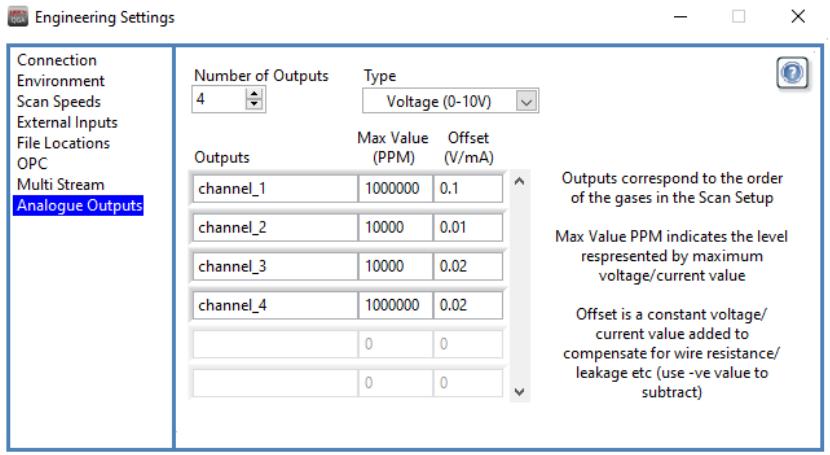
Stream 1
Stream 2
Stream 3
Stream 4
Stream 5
Stream 6
Stream 7
Stream 8

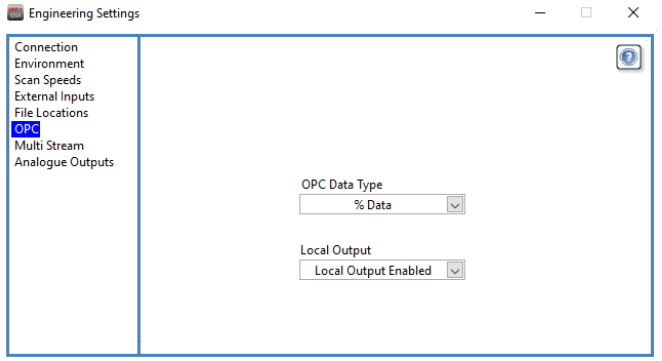
QGA Multi-stream displays up to 4 selected streams on a multi-plot and all selected streams in the tabular view

QGA 2 – External sensors and data export



Data from external sensors and devices can be acquired, stored and displayed together with the mass spectrometer data. Analysis start/stop can be controlled via an OPC trigger or from an I/O input/TTL trigger input.





Data is exportable to Excel, and is available to OPC servers through a shared variable engine that publishes data to OPC tags. Data can also be published as analogue outputs in 0-10V or 4-20mA format.

New Features in QGA - 2

- Automatic multiplier voltage optimisation
- Changes to multiplier voltage are effective during analysis
- Scan rate automatically optimised for best signal to noise
- User defined file locations
- Multipoint calibration for accurate quantification over high dynamic range
- Experiment specific fragment ratio assessment
- Spectral simulator for a quick overview of the spectrum with user control to dynamically show changes
- Automatic fragment selection tool based on expected concentration
- Location of overlapping fragments highlighted
- Easy gas position sorting to optimise scan
- Setup file can be created, edited and saved whilst scan is running
- Scan description can be added to setup file
- Real time data smoothing
- Historical data can be viewed during measurement
- Erroneous data point removal option
- Integration of CO analyser data with automatic correction of mass 28 signal
- Export options for background and calibration data, provides full audit of data
- View all streams in single table

Hiden QGA Users

Johnson Matthey
Imperial College London
NASA
Poitiers University
Nissan
KTH Stockholm
Karlsruhe Institute of Technology
University of Florida
The University of Hong Kong
Paul Scherrer Institut
ULB Brussels University
Texas A&M University
University of Sao Paolo
University College London
Technical University Denmark

Beijing Forestry University
CSIR – Indian Institute of Petroleum
Diamond Light Source
Shanghai Institute of Technology
Janssen Pharmaceutica
PDVSA
Air Liquide
BASF
TU Delft
Seoul National University
University of Manchester
University of British Columbia
USTB
University of Nottingham

Summary

- QGA software is designed for use by users with or without experience of mass spectrometry.
- Set-up screens are intuitive and easy to navigate. A calibration wizard guides the user through an automated procedure.
- Raw data, corrected data and quantitative data is acquired, displayed (graphical and tabular formats) and saved in real time.
- Data export on the fly to MS Excel and to tags for OPC compatible clients is included.
- Soft ionisation for reduced spectral fragmentation and simplified data interpretation
- QGA software is offered with Hiden's QIC series gas analysis systems.

- www.HidenAnalytical.com

- The Hiden website is an excellent resource with product pages, brochures, catalogues, product pages with some application notes, presentation and other information.

- Contact +44 1925 445225 for direct support.