THE COMPANY

MOTEC was founded in 1987 with the aim of providing world class products, superior customer service and the most advanced technology available.

A strong commitment to delivering the best possible solutions, state-of-the-art hardware and user friendly software has earned *MOTEC* international recognition as a leader in engine management and data acquisition systems.

As automotive technology continues to evolve, *MOTEC* reinforces its dedication to research and development with an innovative range of products and sophisticated software, all backed by an outstanding package of total customer support and an exceptional two year product warranty.

DATA ACQUISITION

In today's fiercely competitive motorsport environment, data acquisition systems have become one of the most powerful tools to success.

Using sophisticated analysis software and data collected from a variety of sensors, the behaviour of a vehicle can be comprehensively investigated, the effects of changes evaluated in detail and improvements made.

By recording and analysing information about temperature, speed, acceleration, strain and movement, users can gain valuable insights into performance and reliability, resulting in more efficient testing and tuning and greater predictability on race day.

This information can also be used to determine pit stop strategy, to assess and compare driver technique and to ensure maintenance schedules are met.

NEW *i2* DATA ANALYSIS SOFTWARE

MOTEC's groundbreaking new *i2* data analysis software has been developed over a number of years with valuable input from professional race teams worldwide.

It delivers an extensive package of powerful analysis tools and innovative data management features, whilst maintaining a simple and intuitive user interface.

Designed from the ground up for speed and flexibility, *i2* allows a diverse range of users to tailor their analysis environment with any combination of graphs, gauges and reports in a Workbook based project.

There are two levels of functionality - *i2 Pro* and *i2 Standard*. *i2 Pro* requires the optional *Pro Analysis* upgrade on *MOTEC* ECUs and Logging systems, while the *Standard* version is free for all users.

Those familiar with *MOTEC*'s original *Interpreter* analysis program will notice significant advances in this new generation software, which can be downloaded at no cost from the *MOTEC* website at **www.motec.com.au**.

SUMMARY OF *i2* FEATURES

- Intuitive Workbook/Worksheet User Interface
- Project Based (for easy management)
- Circuit/Drag/Bike/Rally Template Profiles
- Global Channel Settings
- User Defined Colour Schemes
- Simple Drag and Drop Channel Selection
- Multi Channel Time/Distance Graph
- Multi Channel Histograms
- Multi Channel FFT Plots
- Scatter Plots
- Mixture Map (Lambda)
- Suspension Analysis
- Synchronised Video
- Telemetry Style Animation
- Track Based Section Reports
- Channel Based Section Reports
- Time Based Section Reports
- Multi Overlay Support (for all components)
- Graphical Overlay Alignment
- Dual Cursor Support (with full differential statistics)
- Variance Plot
- Overlapped/Tiled Graph Mode
- Multi Component Cursor and Zoom Linking
- Automatic Track Generation and Editing
- Maths Equation Editor
- Fast 'On Demand' Maths Evaluation
- Maths Plugins
- Setup Sheets (Vehicle Constants)
- Data Gating
- Automatic Unit Conversion
- Data Export

COMPLETE CUSTOMISATION

The increasing diversity of **MOTEC** users in recent years has prompted a need for software that easily adapts to individual preferences.

i2's unprecedented level of customisation allows users, both professional and amateur, to tailor data analysis tools to suit their specific requirements.

i2's menus and terminology adapt to suit the specific type of motorsport category, for example Circuit Racing, Drag Racing or Rally.

Customisations such as user settings, screen layouts and maths are stored in an **i2** Project for ease of administration particularly when dealing with multiple vehicles or motorsport categories and when sharing data in a team environment.

WORKBOOKS & WORKSHEETS

i2's Workbook and Worksheet structure is flexible and intuitive, allowing users to systematically organise data into logical screen layouts.

Each Worksheet can contain any combination of analysis components including graphs, histograms and gauges, all of which may be individually customised.

The software is equipped with existing worksheet templates that can be tailored to individual requirements.
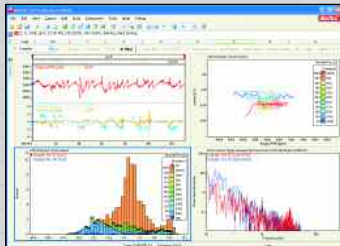
COMPONENTS

i2's flexible set of components allows users to easily and effectively view their data. These components include:

- Time/Distance Graphs
- Histograms
- Frequency (FFT) Plots
- Track Reports
- Section Time Reports
- A variety of telemetry style gauges
- Scatter Plots
- Suspension Histograms
- Mixture Map (Lambda)
- Channel Reports
- Synchronised Video

Any number of these components can be placed on the Worksheets and individually configured with settings such as Channels, Display and Data options.
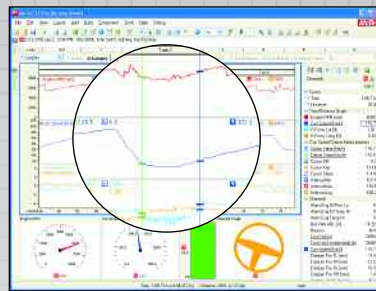
CHANNELS

Many channel properties such as colour, display units and min/max scales can be changed globally, allowing users to maintain consistency across all data components.

i2 can perform automatic unit conversion to ensure that channels are displayed in the users preferred units (for example metric or imperial).

GRAPHS

Graphs are a fundamental part of data analysis and are the single most important tool for seeing changes in data over time or distance. **i2**'s Graph component is quick and easy to use, incorporating a number of unique and powerful features:


DUAL CURSOR MEASUREMENTS

Differential measurements can be made by placing two independently controlled cursors on the one graph.

**i2** automatically calculates the difference in channel value between the two cursors, as well as the min, max, average and time/distance differential. Comparisons can also be made simultaneously across multiple overlays.

OVERLAPPED & TILED MODES

Users can group any number of channels together on the same scale, or configure them individually. Channels can be displayed in a simple tiled mode or overlapped for a more advanced view.
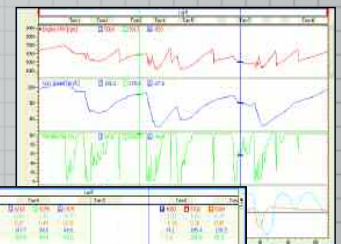
i2 can quickly toggle between these modes with the press of a key.
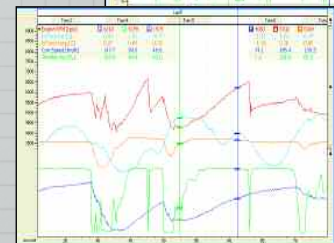
OVERLAYS

Overlays provide an effective way of comparing multiple sets of data by simultaneously displaying two or more laps from previous outings, sessions or drivers.

Whilst being an effective tool for highlighting problematic areas, overlays can also identify the best performance through a section of track. When evaluating driver consistency it is easy to see differences in braking points, throttle application and steering input.
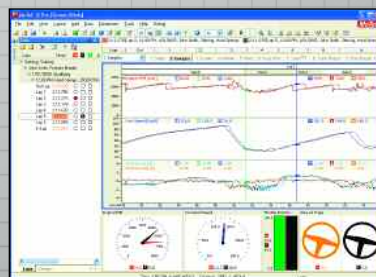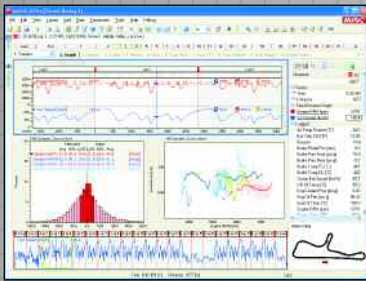

GRAPHICAL OVERLAY ALIGNMENT

In conjunction with the ability to view data in distance mode, **i2** provides a simple mechanism to graphically slide the overlay data into precise alignment.

TIME VARIANCE

The Graph Variance Plot provides a quick view of where time has been gained or lost between laps, making it easy to zero in on areas of difference.

CURSOR & ZOOM LINKING

The graph zoom level and cursor position can be linked to other components such as histograms, scatter plots or other graphs. The displayed data and cursors will shift in accordance with the selection, updating all of the components consistently.

DATA EXPORT

Channel data can be exported for the outing, lap or currently zoomed area.

REPORTS

The various *i2* reports provide simple to read statistical summaries in both tabular and graphical format.

USER DEFINED TRACK SECTIONS

Any number of sections may be defined for use in reports. This flexibility enables multiple reports to be based on different track sections.

CHANNEL REPORTS

Channel reports allow users to view statistical summaries across track sections (or laps) for any number of configured channels. Statistical functions include: min, max, average and standard deviation along with section start and end values and their differences.

SECTION TIME REPORTS

Section time reports show section split times along with gain/loss times for overlays. The report also includes the fastest rolling and eclectic lap times and consistency highlighting.

Both Section Time Reports and Channel Reports support export of data into CSV formats.

TRACK REPORTS

Track Reports present the same channel statistics as the Channel Report but in a graphical format, making it easy to see where the events occurred.

The Track Report also shows one or more channels as a colour gradient which is useful for identifying braking or accelerating areas, or for visualising any other channel. The colour gradients of two laps can also be compared side by side.

In addition, *i2*'s Cursor Animation feature shows the relative track position at any time during two different laps.
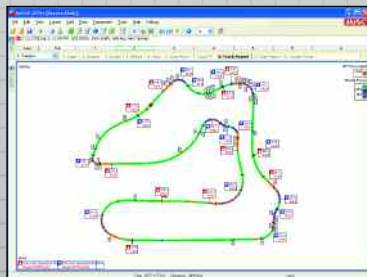
VIDEO

i2 allows users to link multiple video streams (e.g. from in-car cameras), with logged data, enabling synchronised playback of footage alongside other analysis components.

Multiple camera angles can be viewed concurrently and, when overlay data is selected, these views update to show a side by side comparison.

No special hardware is required; users simply mount a standard video capture device.
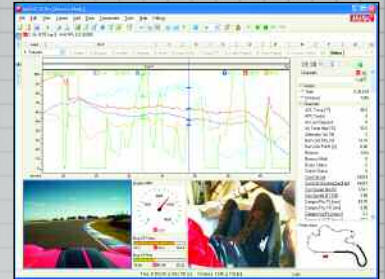
MATHS

The new *i2* maths system provides fast, easy to use facilities.

FAST ON DEMAND MATHS PROCESSING

i2's maths system uses an 'on demand' calculation mechanism to reduce data load times. Maths channels are only calculated as needed so users are never left waiting for unnecessary calculations. This ensures fast access to the data when it counts.
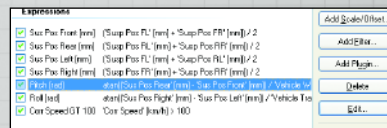
MATHS EQUATIONS

i2's new expression editor allows users to enter maths equations in a simple and easy to read format. With an extensive set of in built maths functions, new channels can be derived from logged and existing maths channels. Simple import and export facilities enable maths to be easily shared with others.

PREDEFINED MATHS CALCULATIONS

i2 includes a number of predefined maths calculations, tailored to suit each racing category. For example, circuit racing includes oversteer, pitch and roll calculations while drag racing includes calculations such as clutch slip and input shaft speed.

SETUP SHEETS

i2's setup sheets allow vehicle setup parameters such as spring rates and gear ratios to be recorded for each log file. These values can then be used in maths to create vital analysis channels.

The setup sheets are stored in a spreadsheet, giving users a great deal of flexibility in how they use the data.
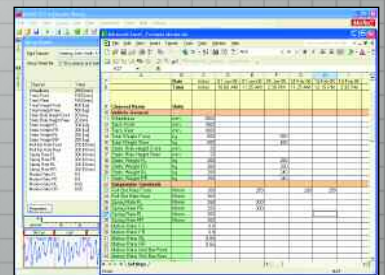
DATA GATING

i2 supports advanced Data Gating, allowing regions of data to be excluded from histograms, scatter plots and other components according to a user specified maths condition.

COLOUR SCHEMES

The Colour Schemes feature allows the overall appearance of *i2* to be changed to suit user preferences, or to adapt to indoor and outdoor lighting.

For example, some users may prefer to work with a black background rather than white, while others may wish to define their own.

The print colours can be defined separately to ensure optimum print clarity and minimal ink usage.

DRAG RACING FEATURES

i2's drag racing support not only includes changes to the menus and terminology but also includes specialised maths functions like clutch slip, wheel lift correction and automatic start of run insertion.

AUTO RUN INSERTION

To quickly and precisely align logged data against an actual run, users simply enter their time slip details and *i2* automatically determines the start of the run in the data.

i2 also allows drag racers to enter other important details such as lane, weather, split times and terminal speed.
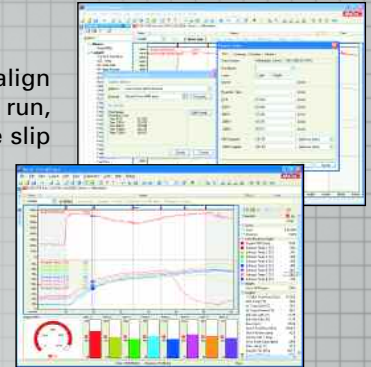
i2 DATA ANALYSIS SOFTWARE SPECIFICATIONS

| FEATURE	i2 PRO	i2 STD	FEATURE	i2 PRO	i2 STD
ANALYSIS COMPONENTS			**TRACK**		
Graphs (number/number of channels)	Unlimited	5/10	Automatic Track Generation	✔	✔
Graph - Window Zoom	✔	✔	Track Section Editor (Standard Sections)	✔	✔
Graph - Overlapped Channels	✔	✘	User Defined Track Sections	✔	✘
Graph - Min/Max/Average Measurements	✔	✔	**MATHS**		
Graph - Variance	✔	✔	Basic Maths – Smooth, Scale & Offset	✔	✔
Graph - Filter, Scale & Offset	✔	✔	Wheel Lock Correction	✔	✔
Graph - Dual Cursor for comparative measurements	✔	✘	Maths Expressions - Plain Text Maths Editor	✔	✘
Graphical Errors and Status Display	✔	✔	Multiple Maths Files, Maths Import/Export	✔	✘
Gauges (Configurable)	✔	✔	Maths Plugins (Maths Module)	✔	✘
Histogram (number/number of channels)	Unlimited	2/1	Data Export (Graph, Histo, Scatter and Reports)	✔	✘
Suspension Velocity Histograms, Multi Channel	Unlimited	✘	Vehicle Setup Sheet (Vehicle Constants) (Excel)	✔	✘
FFTs (Fast Fourier Transform), Multi Channel	Unlimited	✘	Units Conversion	✔	✔
Scatter Plots (number/number of channels)	Unlimited	2/2	**DETAILS**		
Mixture Map (number/number of channels)	Unlimited	1/2	Details Editor	✔	✔
Track Map Report (number/number of user channels)	Unlimited	1/0	Compare Details (side by side)	✔	✔
Rainbow Track Maps	Unlimited	0	**MISCELLANEOUS**		
Section Times Reports	Unlimited	1	User Definable Projects	✔	✘
Channel Reports	Unlimited	2	Application Profiles (Circuit Racing, Rallying, Drag Racing etc.)	✔	✔
Synchronised Video	✔	✘	User Definable Worksheet Layouts	✔	✘
			Colour Schemes	✔	✔
Overlays	Unlimited	1	Global Channel Colours, Scales and Units	✔	✔
Graphical Overlay Alignment	✔	✔	Make Reference Lap	✔	✔
Data Gating	✔	✘	Channel Aliases and Mapping	✔	✔
Zoom and Cursor Link Selectable	✔	✘	Drag and drop Channel Selection	✔	✔
Animation	✔	✔	View Device Configuration	✔	✔
Edit Lap Beacons & Lap Times	✔	✔	Unload Device Data	✔	✔
Lap Stretching	✔	✔	Print	✔	✔

Visit www.motec.com.au to download *MOTEC*'s all new *i2* Data Analysis Software, or to learn more about *MOTEC* hardware, software and training. You can also download our comprehensive product catalogue which includes:

ENGINE MANAGEMENT SYSTEMS (ECUs):
MOTEC's range includes: M4, M48, M400, M600, M800, M880 and M800 Plug & Play.

ADL2 & SDL DASH LOGGERS:
Tailor a data acquisition system to your needs with our all-in-one solutions.
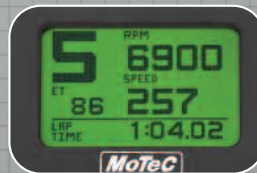
MINI DIGITAL DISPLAY (MDD):
The MDD is a compact digital display for use with *MOTEC*'s Dash Loggers and ECUs.

PROFESSIONAL LAMBDA METER (PLM):
The fully configurable PLM accurately determines exhaust gas mixture for various fuels.

SENSORS, CONNECTORS & ACCESSORIES:
A full range is available to suit individual applications. See catalogue for details.

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