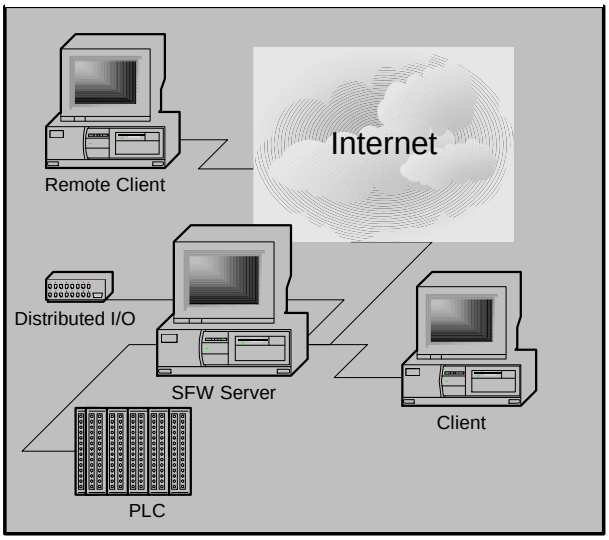
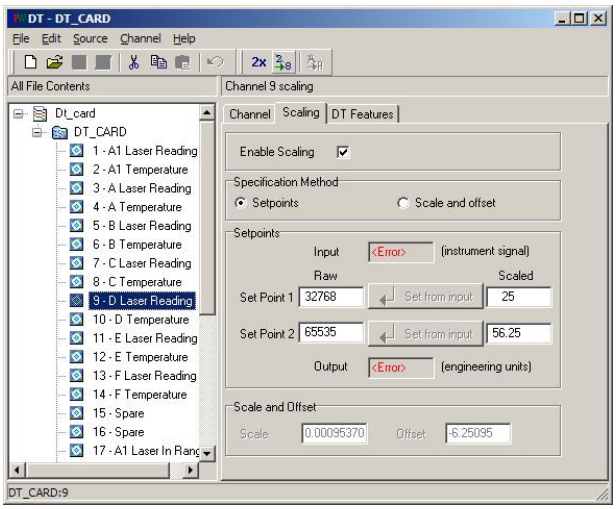
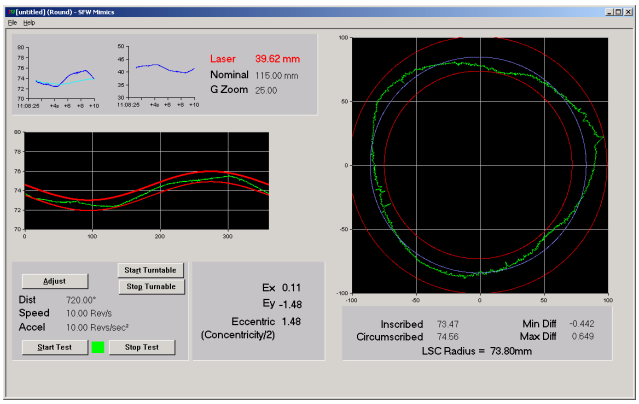
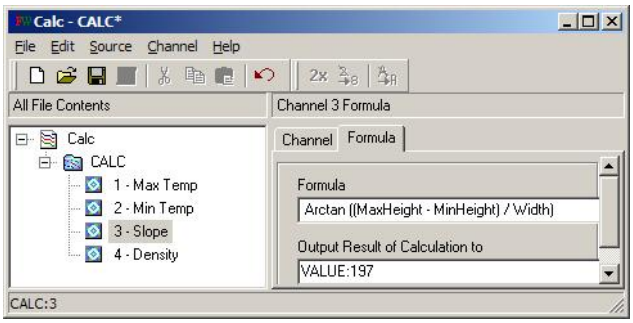
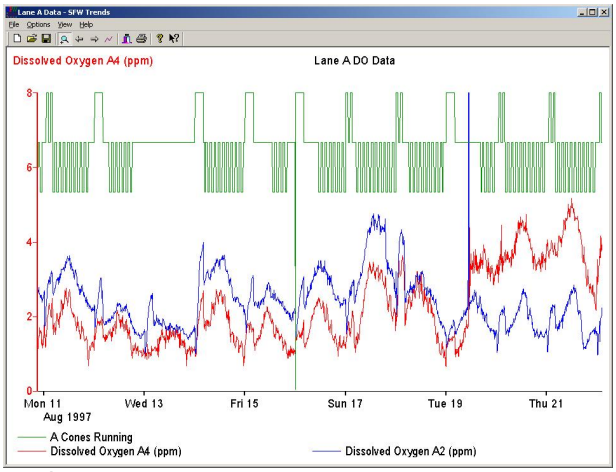
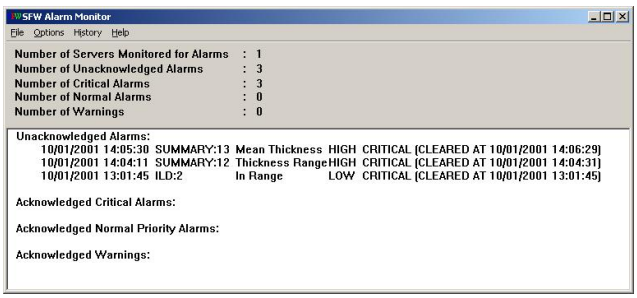
SFW	**Software for Measurement, Monitoring & Control** **Data Sheet**
Introduction	SFW has been developed by Applied Industrial Systems as the basis for the company's measurement, inspection and automation systems. SFW is used across many industrial sectors. Applications include: • Laser measurement systems (extrusion measurement, board measurement, gauging) • Management of vision inspection & measurement systems (assembly verification, damage detection, gauging) • Data acquisition and logging (production test, R&D test rigs) • SCADA (plasterboard manufacturing, water treatment process, windfarm)
Architecture	SFW provides support for multiple clients with access to multiple servers. Clients can be 'thin', or, for lower bandwidth connections, can hold their own configurations and use their connection to access data only. Clients can, if required, perform local calculations and do their own logging. AIS provide first line support by connecting as a client via VPN or PSTN modem. This enables speedy diagnosis and resolution of problems. 
Data Acquisition and Communication Protocols	**OPC client**: support for any number of devices with OPC server connectivity. This means all major PLC vendors including Siemens, Allen Bradley, GE-Fanuc, Telemechanique, Mitsubishi, Omron. **OPC Server**: allows access to results by MES or SCADA systems. **PC I/O cards**: Data translation DT series, Instrunet, Micro-Epsilon IF2004 (ILD1800, ILD2200, ODC2500 with encoder support).  **RS232**: Datascan 7000, Datascan Solo, Nudam 6000, ADAM, Micro-Epsilon ILD1401, ILD1800, Modbus RTU. **USB**: Labjack, PMD1608-FS, PMD-1208LS

Mimics	SFW mimics provide a highly flexible tool for building displays with controls, navigation and clear presentation of results. On a live system mimics are correctly animated by current data in edit mode. It really is WYSIWYG.  All shapes can be moved in the X and/or Y direction according to channel values and can be animated by value or alarm status. Shapes include: ♦ Alphanumeric ♦ Rectangles ♦ Lines and Pointers ♦ Bitmaps – threshold selections or triggered animations ♦ Buttons – for navigation, control of values and command actions ♦ Hotspots – invisible buttons ♦ Group boxes and panels ♦ Time based and X/Y Trends - these can handle fast buffered data, multiple traces and can be used to capture events ♦ Sub Mimics ♦ Compound shapes for creating instrument mimics - dials, bar graphs etc. Support for look up files throughout SFW provides very powerful indirection. All channels can be given meaningful names that can be linked to plant items or areas, or even simulations, so that the same configuration (of a mimic, a set of calculations, a logger or a trend) can be pointed at any number of plant items without the need for duplication.
Calculations	Calculations can be performed on instantaneous values or on events captured in discrete buffers of high speed data. Formulae can be typed in using arithmetic, boolean and trigonometric operations.  Trigger conditions can be set up to define the start and end of an event. The data is then available as an array of measurements that define nature of some object under examination. This array can be can be operated on statistically in addition to applying formulae to individual elements. Array operations include maximum, minimum, mean, differentiation, peak detection, peak counting, filtering, smoothing and sorting.
Control	Calculation results can be fed directly to control outputs, but for more complex applications SFW provides a scripting engine for setting up intelligent control algorithms. Scripts can be written in any languages that support COM (for example VB script or Java script) The script manager provides a facility for configuring scripts to be run in response to events.

Logging	Any number of loggers can be configured to log selected channels by significant change and/or selected period. Loggers can automatically start new log files in product and/or batch folders when product or batch names change. Logs can be can be configured to cover any selected interval (day, week, month etc.). All files are .csv format and can be imported directly into Microsoft Excel.
Trends	Trend graphs can be configured to display multiple channels from a selected log file with time axis pan and zoom. Log file boundaries are transparent to trends. For example, a common configuration for log files is to create one per day. The trend package can read data and display a graph for, say, a week's worth of data. The trend user is unaware of the separate files. Trends can also export data from multiple log files for import to Microsoft Excel.  Zoom to the current time and trends will pan automatically to preserve a display of the most recent data.
Alarms	SFW provides three levels of alarm (Warning, Normal, Critical) with annunciation by email, SMS message or with the Alarm Monitor.  The alarm monitor can be configured to force its way to the top of the desktop on any server or client if a serious alarm occurs, even if the user is currently engaged in another application. Alarm transitions and acknowledgements are all logged and alarm history reports allow filtering by severity, channel or action.
About AIS	Formed in 1990, AIS has a long and successful track record of developing windows based real-time software systems for industrial applications. AIS is a Microsoft Certified Partner and has ISO9001 & TickIT quality approvals. Microsoft CERTIFIED Partner DNV UKAS QUALITY MANAGEMENT 013 TickIT

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