STACK
STACK
STACK®

WORLD CLASS
INSTRUMENTATION

INTEGRATED DASH DISPLAY SYSTEMS

The ST800 Dash Display System replaces all dashboard instruments - tachometer, oil pressure gauge, fuel pressure gauge, water temperature gauge, oil temperature gauge and voltmeter - with a single lightweight carbon composite display module.

OPTIONAL SEQUENTIAL SHIFT LIGHT

All Stack Dash Display Systems can drive the 5-LED Sequential Shift Light Module.

See Performance Features on opposite page.

ANALOGUE TACHOMETER
The preferred choice of most racers.

WIDE CHOICE OF DIAL FACES
See Dial Face section below for more information.

SUPER-BRIGHT WARNING LIGHTS

The dash features a user configurable and built-in, super-bright shift light. An external dash top or panel mount shift light can be simply plugged into the dash harness.

LIGHTWEIGHT CARBON COMPOSITE HOUSING
Fully sealed against water and dust to IP67.

BACK-LIT DISPLAY
Clear viewing under all lighting conditions

Driver selectable LCD display layers show different engine and performance information. Maximum peak value 'Tell-Tale' memory is provided on Speed, Temperature parameters and RPM, minimum peak value tell tales are provided on pressure and voltage parameters.

INTELLIGENT ALARMS

Provided on all monitored parameters. Alarm levels are user adjustable to suit individual vehicle requirements. An internal alarm light is standard and an optional external light can simply be plugged into the dash harness.

SOLID-STATE PRESSURE SENSOR
The new ST747 solid-state sensor is smaller, lighter, more accurate and more reliable. Supplied as standard with all ST800 Dash Display Systems.

ACTION REPLAY DASH DISPLAY

Specifically designed to offer an alternative to PC-based data acquisition systems, the Action Replay Dash Display provides the ideal introduction to multi-channel data recording for oval, sprint, hillclimb and drag racing. Record your RPM, speed*, temperatures, pressures and lap times* on the track. Back in the pits, you can replay the data on the Dash Display, showing the values for every point on the track. The 'M' model provides the ultimate feedback tool, by replaying the Performance Meter & Predictive Lap Time to display exactly how much time was gained/lost, and where on the track.

- Replay of all engine parameters, and optionally speed & laptimes* (Requires optional sensor at extra cost)
- Replay Performance Meter & Predictive Lap Time data (M model only).
- Alarms and laptimes pop-up on the display as they did while on-track.
- Records up to 15 runs, and up to 2 hours of data.
- Upgrade to full data logging with optional PC download/ software kit

* See Performance Features section on opposite page for more information.

DASH DISPLAY SYSTEMS FOR STREET & TRACK DAY

These systems are designed for vehicles and motorcycles which must meet road legal requirements, and feature speedometer, odometer and trip meter Each system includes all sensors (except fuel level sensor), mounting kit, switch kit, and professional ready-wired loom.

DIAL FACE OPTIONS

	0-8000 RPM	0-3-8000	0-4-10000	0-3-10500	0-6-13000	0-3-8000 Inverted	0-4-10000 Inverted	0-6-13000 Inverted	0-10-22000**	0-8000 White	0-3-8000 White**	0-6-13000 White**
ST8100	✓	✓	✓	✓	✓	✓	✓	✓	✓			
ST8100M	✓	✓	✓	✓	✓	✓	✓	✓	✓			
ST8100-AR	✓	✓	✓	✓	✓	✓	✓	✓	✓			
ST8100M-AR	✓	✓	✓	✓	✓	✓	✓	✓	✓			
ST8130	✓	✓	✓	✓	✓				✓	✓	✓	✓
ST8130P	✓	✓	✓	✓	✓				✓	✓	✓	✓
ST8130M	✓	✓	✓	✓	✓				✓	✓	✓	✓
ST8110SR	✓	✓	✓	✓	✓				✓	✓	✓	✓
ST8816S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

All the Street & Road legal models have Blue LED backlighting as standard. Race & rally models come with White LED backlighting as standard.

** Extra cost options

Dash Displays

Configurable Dash-Logger Systems

Enables you to monitor, display, alarm (and record) any combination of parameters and sensors.

New for 2008, the ST8816S System is designed specifically as an entry-level, fully-configurable Dash-Display and Dash-Logger System. The ST8816S provides an ideal combination of professional hardware and software. This system includes all harnesses and configuration software, and has 8 fully configurable and 4 pre-configured sensor inputs to suit almost any application. An optional CAN ECU link enables connection to a continuously increasing list of ECU's, eliminating the need for many additional engine sensors, and leaving the sensor inputs free for other data-logging inputs e.g. steering, brake pressures, etc.

Configuration of the system couldn't easier, using the supplied DataPro Designer "drag-and-drop" PC software. Just choose each parameter you want to monitor, and "drag" the appropriate sensor onto that input. Next, design your own layout of up to 6 different display screens. Finally, set an alarm level for each parameter you want a warning for. That's it!

Select the record rate for each parameter, and you have a powerful Dash-Logger System. A full version of DataPro V4 analysis software is included, allowing the user to analyse the most important engine, driver and vehicle performance parameters, and get instant feedback of time gains and losses as a result of changes between sessions and between different drivers. Furthermore, when ready for more channels, you can expand the system further to monitor and record up to 45 channels.

- Fully configurable Dash module with 14 sensor inputs
- Optional CAN ECU link eliminates the need for engine sensors
- PIN code upgrade for PLT, Performance Meter and Brake Bias displays
- Fully configurable data logging, including DataPro Analysis software – the easiest-to-use professional software in the industry!
- Internal 3-axis accelerometer provides lateral, long and vertical g
- Library of pre-configured layouts to help first time users
- Fully customisable and user configurable layouts for expert users

- Calculation of track maps from recorded vehicle data
- Overlay data from different laps, runs or drivers for data comparison
- Infinite zoom-in into any track section of the data and track map
- Toggle between distance and time based charting
- Interactive track map and data
- Upgrade options for additional sensor inputs and synchronized-video
- Multiple car teams supported with automated data download
- Plus...many more features... go to www.stackltd.com for full specifications...

Performance Features for Dash Display Systems
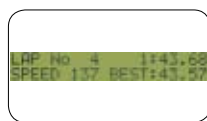
(Standard on some models)

Speed Sensor
Simply plug this speed sensor into the wiring loom to enable speed to be displayed on the LCD readout. (ST670)

Sequential Shift Light Module
All Stack Dash Displays can drive the new Sequential Shift Light Module. Using the display menus, each of the 5 shift lights can be independently programmed to a specific RPM value, to provide complete flexibility. The Sequential Shift Light connects to the dash harness with just 3 wires, and is ideal for dashtop mounting. (ST539)

Lap Timing System
The lap timing receiver simply plugs into the standard dash wiring harness. When the vehicle passes the track side beacon the lap time "pops up" in the graphic display with an accuracy of 1/100th of a second. At any time the driver can select the Lap Time Display layer to show the Last Lap Time, Best Lap Time and number of laps driven.

Lap Time Memory
Available for ST8100M and ST8130M systems only this feature records laps by session and indicates the time of the fastest lap each session.

Performance Meter & Predictive Lap Timing System

[1]
```
1:43.48  12.7 1:43.40
—          >███        +
```

[2]
```
1:43.48  28.1 1:43.25
—          >█████      +  [3]
```

[4]
```
1:43.48  54.5 1:43.10
—          >█████████  +
```

[1] Best Previous Lap Time:
Displays the fastest previous lap time.
Enables the driver to experiment with different lines through corners, with immediate visual feedback

[2] Running Lap Time:
Displays the time into the current lap.
Enables the driver to optimise qualifying, by giving early prediction of a fast lap, or a lap off the pace, which should be aborted.

[3] Predicted Lap Time:
Displays the current prediction of the next lap time.
Shows potential lap time when the driver cannot get a clear flag to flag lap in.

[4] Performance Meter:
Graphically displays the time difference between the current and best lap as an easy to read bar graph.
Functions as an in-car coach, continually setting pace for the driver to beat, and displaying how much time is lost each time a mistake is made.

Specifications

	Total Inputs	RPM	Speed (ST670)	Odo & Tripmeter	Oil Pressure	Fuel Pressure	Water Temp.	Oil Temp.	Battery Volts	Boost Pressure	Air Temp. Option (ST765)	3-axis G Sensor	CAN ECU Link Option	Sequential Shift Light (ST539)	Lap Timing (ST546)	Lap Memory	Predictive Lap Timer Display	Performance Meter Display	Brake Bias Display	PC Download Kit	Data Logging Option
ST8100	8	✓	Option.		✓	✓	✓	✓	✓						Option.						
ST8100M	8	✓	✓		✓	✓	✓	✓	✓					Option.	✓	✓	✓	✓			
ST8100-AR	8	✓	Option.		✓	✓	✓	✓	✓					Option.	Option.					Option.	
ST8100M-AR	8	✓	✓		✓	✓	✓	✓	✓					Option.	✓	✓	✓	✓		Option.	
ST8130	8	✓	✓	✓	✓		✓	✓	✓		Option.			Option.	Option.		✓	✓			
ST8130P	8	✓	✓	✓	✓	✓	✓	✓	✓					Option.	Option.						
ST8130M	8	✓	✓	✓	✓	✓	✓	✓	✓					Option.	✓	✓	✓	✓			
ST8110SR	8	✓	✓	✓	✓	✓	✓	✓	✓	✓				Option.	Option.						
ST8816S	8	✓							✓			✓	Option.	Option.	✓			Option.			✓

See Performance Features section above for more information.
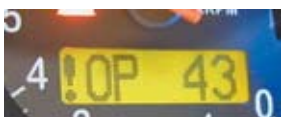
Dash Displays

STACK STACK STACK ®

ST700 Dash Displays

The ST700 Dash Display systems integrate tachometer, sequential shift light and voltmeter in a single 80mm instrument. Standard options include speedometer, lap timer and two pressure or temperature gauges. In addition the ST700 can be fitted with a range of performance options, including an acceleration timer, infrared lap timing system, split time memory and straight and corner speed readout. Standard features include...

- Adjustable day & night backlighting to suit ambient light conditions.
- Fully sealed against water and dust to IP67.
- Peak value 'Tell-Tale' memory is provided on all monitored parameters.
- Configurable for all vehicle types and negative earth ignition systems.
- Supplied with mounting bracket, switch kit, separate professional wiring loom and user manual.
- 1 year Competition Warranty.

Intelligent Alarm System

Intelligent alarms are provided on all of the monitored parameters. Alarm levels are adjustable to suit the individual vehicle requirements.

Neutral Gear Indicator

The dash can be simply connected to the neutral position switch of any sequential gear box - requires ST918051 harness.

Sequential Shift Light

The Sequential Shift Light features ultra bright LED's that can be set to operate in 4 different shift light patterns - Sequential, Sequential blink, bar and simultaneous modes. Each light can be set independently and brightness is adjustable to suit the ambient light conditions.

Configurable Inputs*

ST747

ST769

The ST700 features two configurable channels that can be set up for a pressure (oil, fuel, boost or general purpose) or a temperature (oil, water, air, differential, axle or general purpose). Choose between standard and solid state sensor options.

* requires optional analog sensor harness ST918049

ST700 Optional Performance Features
(Standard on some models)

Lap Timing System

The lap timing receiver simply plugs into the standard dash wiring harness. Each time the vehicle passes the track side beacon the lap time "pops up" on the graphic display to an accuracy of 1/100th of a second.

(ST546)

Acceleration Timer

This feature will record Standing 1/4 mile/400m time, and acceleration/deceleration time between any chosen speeds. Requires ST670 Speed Sensor.

(ST7095)

Lap And Split Time Memory

This feature records 75 Lap and Split Times (if Split Timing is activated) to help the driver evaluate their consistency.

(ST7090)

Speedometer, Odometer & Tripmeter

This option provides a street legal speedometer display readout with trip and odometer. The user can select MPH or km/h and miles or kilometres. Requires Speed Sensor (ST670)

(ST7094)

Performance Upgrade

The Performance upgrade consists of the Split Time system and the Straight and Corner Speed readout options. This upgrade provides real-time information that allows the driver to evaluate his own performance.

(ST7093)

Requires ST670 Speed Sensor and ST546 Lap Timing system.

Speed Sensor

Simply plug this sensor into the wiring loom to display speed on the LCD readout. (ST670)

ST700 System Specifications

Model	Speed (ST670)	RPM	Batt.	2x Config. Channels*	Neutral Indicator** (ST918051)	Lap Time (ST546)	Lap Memory (ST7090)	Perf. Upgrade (ST7093)	Accel. Timer (ST7095)	Odometer (ST7094)
ST700		✓	✓	✓	Option					Option
ST700M	✓	✓	✓	✓	Option	✓	✓	✓		Option
ST700SR	✓	✓	✓	✓	Option				✓	✓

Standard dial faces; 0-8000 RPM, 0-4-10500 or 0-6-15000 RPM, choice of black or white dial face.
Optional dial faces (add P.O.A.); 0-10750 or 0-3-13000 RPM, choice of black or white dial face.
ST700 sensor options; Note these are not included with the dash system and must be ordered separately, with ST918049 Sensor Harness.

Standard Sensors	10 bar/150 psi Pressure Sensor	M10	(ST744K)	1/8"NPTF	(ST745K)
	150° C Fluid Temperature Sensor	M10	(ST762K)	1/8"NPTF	(ST764K)
	-20 to 50° C Air Temp Sensor	M10	(ST765K)		
Solid-State Sensors	10 bar/150 psi Pressure Sensor	M10	(ST747-M10)	1/8"NPTF	(ST747-1/8"NPTF)
	-20 to 150° C Temperature Sensor	M6 x 1	(ST769)		
	0 to 3.5 bar/50 psi Boost Sensor	1/8"NPTF	(ST740)		

*Analog channels require optional Analog Sensor Harness (ST918049)
**Neutral Indicator harness requires Analog Sensor Harness (ST918049)

Dash Displays

ST8600 Steering Wheel Display

Stack, in conjunction with Farringdon, have produced a range of steering wheel display systems. This product uses the latest digital technology and is specifically designed for vehicles - such as Formula cars - where a conventional dash system cannot be easily fitted. The system is availbale in standard specification and as an "M" version that adds a speed sensor, infrared lap timing system, performance meter and predictive lap timing system to the standard package.

9 stage sequential shift light/tachometer

The 9 sequentially illuminated ultra-bright shift lights provide a precise indication of engine RPM, and rate of change of RPM, enabling the driver to perfectly anticipate gear shift points. Each shift light can be individually programmed for a specific RPM value.

Different coloured LED readouts enhance reading "at a glance"

Separate red and green LED readouts enable the driver to instantly identify specific information of interest.

Standard Features include:

- Display integrated into steering wheel (supplied)
- Gear No. indicator integrated into display
- Alarms on all engine parameters
- Peak Value Recall on all parameters
- High intensity LEDs ensure easy readability
- Shift lights can be individually programmed
- Supplied with control module, all sensors, and harnesses
- Mil-spec. connectors
- Fully compatible with Stack Data Acquisition systems

270 mm/340 mm steering wheel options

270 mm wheel

340 mm wheel

Model	Speed (ST670)	RPM	Oil Pres.	Fuel Pres.	Water Temp.	Oil Temp.	Battery	Gear No.	Lap Time	Lap No.	Lap Timing (ST546)	Performance Meter	Predict. Lap Readout
ST8600	Option	✓	✓	✓	✓	✓	✓	☑[1]	☑[3]	☑[3]	Option	Option	
ST8600M	✓	✓	✓	✓	✓	✓	✓	☑[2]	✓	✓	✓	✓	✓

☑[1] Requires appropriate gear position sensor,
☑[2] Requires appropriate gear position sensor, or RPM & Speed to be monitored
☑[3] Requires Manual (ST5097) or Infrared (ST546) lap timing kit

ST8850 SlimLine Configurable Display System

The ST8850 Liquid Crystal Display has been designed to present driver information in as clear and precise way possible. Backlit Transflective display technology guarantees a highly visible display in all environments from complete darkness to bright sunlight.

The large, 8mm high character, 2x20 display is used for displaying required values. During alarm conditions the whole display presents the warning message and associated alarm value. Simple operation controls enable scrolling through 6 display pages, with each layer having either 2, 4, or 6 values.

Tachometers

Clubman Tachometer

- Legendary Stack Stepper-Motor Needle Movement.
- Configurable for all negative earth and magneto ignition systems.
- Unrivalled Digital Quartz accuracy guaranteed for life.
- Peak RPM 'Tell-Tale' memory.
- User adjustable shift light (lamp not included).
- Exceptional reliability.
- Fully sealed against water and dust.
- Fits standard 80mm cut outs.
- LED maintenance free backlighting - white with black dialface / blue with white.
- Supplied with mounting bracket, switch kit, and user manual.
- 1 year Competition Warranty.

Choose From a Range Of RPM Scales And White Or Black Dial Faces

0-8,000 RPM
ST200 0-8000 (Black)
ST200 0-8000 (White)

0-4-10,500 RPM
ST200 0-4-10500 (Black)
ST200 0-4-10500 (White)

0-6-15,000 RPM
ST200 0-6-15000 (Black)
ST200 0-6-15000 (White)

Non-standard dial faces available at extra cost, please call for details.

Optional Shift Lights

Dash Top Mount Shift Light (ST534)

Panel Top Mount Shift Light
(ST537)

Classic Tachometers

Combining the best in modern technology with "Classic" styling to complement the car's original design.

Chronotronic™ 80mm Tachometers

This has to be seen to be fully appreciated!

- Accurate replica of original chronometric tachometer.
- Stepper-Motor Needle Movement re-creates 'chronometric' motion to 4000rpm.
- Chromed brass bezel.
- Maintenance-free white LED flood lighting.
- 0-10000 RPM dial face.
- Peak RPM 'Tell-Tale' memory.
- 1 Year Competition Warranty.
- Configurable for all negative earth and magneto ignition systems.

ST200 Classic Tachometers

Features classic styling and no backlighting. Other features as ST200.

ST200C 80mm Classic Tachometer

Choose from a range of RPM scales:
0-8000   0-10000   0-12000

ST230C 125mm Classic Tachometer

Choose from a range of RPM scales:
0-6000   0-8000

Action Replay Recording Tachometers

The Action Replay Tachometer provides the ideal introduction to data recording for oval, sprint, hillclimb and drag racing. The engine RPM for the last run (up to 25 minutes) is recorded in a solid-state memory, and at the touch of a button can be re-played via the needle on the dial. 'Re-live' your last run as many times as you like, to review your shift points, gearing and maximum RPM around the track. To aid analysis of the playback there are fast and slow modes available. Other features include:

- Stepper-Motor Needle Movement.
- Peak RPM 'Tell-Tale' memory.
- Maintenance free backlighting.
- Unrivalled accuracy guaranteed for life.
- User adjustable shift light.
- Configurable for all negative earth ignition systems.
- 1 Year Competition Warranty.

Supplied with mounting bracket, switch kit, removable professional wiring harness, shift light and manual.

ST400 80mm Tachometers

- Fits standard 80mm cut outs.
- Choose from a wide range of RPM scales:

0-8000	0-6-13000
0-3-8500	0-8-16000
0-4-10500	0-10-20000
0-5-12000	

ST430 125mm Tachometers

- Monster 125mm (5") dial face.
- Fits standard 80mm and Porsche Tachometer cut outs.
- Choose from a wide range of RPM scales:

0-8000	0-6-13000
0-10000	

Stack Gauges

Stack's proven technology is now available in a 52mm gauge! The NEW Stack instruments are available in three types: Stepper Motor Analogue, Electric Analogue and Mechanical Analogue.

Stack Professional Stepper Motor Analogue Gauges

These precision auxiliary instruments combine digital microprocessor accuracy with a high-precision stepper motor needle movement, to provide a new level of accuracy and reliability in 52mm gauges.

They combine the durability and readability of 270° mechanical gauges with the easy installation and safe operation of conventional electric gauges.

The 270° dialface together with the new white LED backlighting and illuminated needle ensure excellent readability day or night.

- 52mm diameter
- Fast, smooth stepper motor needle drive
- 270° full sweep movement for excellent readability
- Remotely mounted solid-state sensors keep hazardous fluids in the engine compartment
- Better than 2% accuracy
- All-electronic design for maximum reliability
- White LED through-the-dial backlighting
- White LED illuminated needle

Oil Pressure		Fuel Pressure		Fuel Pressure		Water Temperature		Oil Temperature	
ST3301	0-7 bar	ST3303	0-1 bar	ST3305	0-7 bar	ST3307	40-125°C	ST3309	60-140°C
ST3302	0-100 PSI	ST3304	0-15 PSI	ST3306	0-100 PSI	ST3308	100-260°F	ST3310	140-280°F

Boost Pressure		Exhaust Gas Temperature		Fuel Level*		Battery Voltage	
ST3311	-1.0 to +2.0 bar	ST3313	0-1100°C	ST3315		ST3316	8-18 V
ST3312	-1.0 to +2.0 PSI.	ST3314	0-2000°F				

All gauges come complete with wiring harness and associated sensor (except for fuel level gauge).

*Fuel Level gauge has 7 pre-set and a universal-programmable calibration, to suit all normal tank sensors with a resistance range of 0-280ohms.

Electric Gauges

These electric auxiliary instruments feature advanced 90° air-core movements and simple 3-wire installation. Electrical sensors keep hazardous fluids in the engine compartment. White LED backlighting and illuminated needle ensure excellent readability day or night. Supplied complete with wiring harness and associated sensor.

Oil Pressure		Water Temperature		Oil Temperature		Boost Pressure		Battery Voltage	
ST3201	0-7 bar	ST3207	40-120°C	ST3209	60-150°C	ST3211	-1.0 to +2.0 bar	ST3216	8-18V
ST3202	0-100 PSI	ST3208	100-250°F	ST3210	140-300°F	ST3212	-15 to +30 PSI		

Mechanical Gauges

This range of gauges have been specifically designed for vehicles with no or low powered electrical systems.

- Bronze bourdon tube 270° sweep movement
- White LED through-the-dial backlighting
- White LED illuminated needle
- 52mm diameter

Oil Pressure		Water Temperature		Boost Pressure	
ST3101	0-7 bar	ST3107	50-115°C	ST3111	-1.0 to +2.0 bar
ST3102	0-100 PSI	ST3108	120-240°F	ST3112	-1.0 to +2.0 PSI

Wideband Lambda Gauge

This is the ultimate tuning aid! Dual digital and radial LED displays provide accurate real-time readout of either air/fuel ratio or lambda (user-selectable). A 0-4Volt analogue output can be connected to a data-logger or to an ECU to provide real-time closed-loop feedback for improved mapping. Supplied complete with wiring harness and includes Bosch sensor.

Wideband Lambda Gauge
ST3401

- 0-4V Data Logger or ECU output
- User-selectable Air/Fuel or Lambda real time display
- Programmable Alarm warns of dangerous lean condition
- Peak Recall of leanest value during last run
- Selectable for all fuel types with AFR from 6:1 to 20:1
- 52mm diameter

Gauges

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