

1 The XAP integrated dashboard and datalogger

The original Monza's XAP dashboards can be software upgraded to become a powerful data logger.

Three packages are available to satisfy all customers :

- The standard package : You need to add only 2 wheel sensors, a beacon receiver, a loom and your XAP dashboard will be a powerful 11 channels data logger, with up to 80 minutes of data recording.
- The driver package : You need to add to the standard package a 2G sensor, a steering sensor, and the GPS module. Your data logging system is now perfect for a fine analysis of the driver and car performances. With the **Erace** software, 16 physical and 3 mathematical channels are available and its memory is still up to 80 minutes of data recording.

Integrating the data logger inside the dashboard gives the following features :

- The logger status, for example the internal memory state, can be straightly displayed on the dashboard. It's easier than a PC connection, specially when the team is very busy.
- All the recorded laps can be read on the dashboard screen by the driver before the data's download.
- Up to four split time give driver's performance in real time.
- The dashboard logger diag screen checks directly sensors status. It's usefull.
- The sensors initialisation can be made without any PC. It's easy to use.
- With the can line straight to the ECU the dashboard receives and records the real RPM value, without any measurement error.
- The diagnostic informations of the engine sensors are also recorded to ease the team towards a stealthy problem.

And, as the same electronic module is including all the parts (dashboard and data logger), there are only advantages : no loom, no connector problems, and the datas displayed are exactly the same than those recorded..

For further informations regarding all the XAP dashboard screens, refer to the manual available on the download section of the web site.

2 The GPS module

The XAP datalogger, is connected with a GPS (Global Position System) module, this equipment use is new and exclusive for data logging.



The GPS module

The GPS offers lot's of new very interesting functions :

- The map tracing uses the real car positions, so it's the end of all the strange maps realised with the lateral G sensor.
- With the race simulation mode, available in the Erace software, it's possible to replay on your PC all the race, datas synchronisation done by the satellite time.

And a lot of new features, that you'll discover in the future !

3 Hardware Specifications

	Dash Monza
CPU	
Microprocessor	16 bits ST10F168 20 Mhz
Flash memory upgraded by PC	256 KBytes
Eeprom memory	64 KBytes
Data logging memory	512 Kbytes Flash
Screen	
Matricial LCD screen	128 x 64 pixels
Backlight	White Leds
High powers Leds	8 orange for RPM, 3 red for alerts
Sterring switch for control	2
Inputs/outputs	
Wheel speed input	2
Lap time coded	1
CAN line 1 Mbits	1
RS232 for download and GPS	1
Analogic input 0-5V	3

The XAP 8 channel beacon signal uses 12 high power infrared Leds to mark the lap or a split point on a track. The last lap time, the best lap time and the split time are always displayed for the driver.

Using a flash memory, the dashboard can be easy upgraded with a PC.

4 The Erace analysis software

The data recorded in the XAP dashboard will be analyzed by the new **Erace** software. This powerful Windows software integrates all you need, and more :

- **Analysis screens** : x versus time, x versus distance, exact value, histograms, channel report, offset and scare modified for each channel, virtual dash.
- **Mathematical channels** : linear G, slip factor, KUS, time lost/win.
- **Diagnostic screen** : allows to display for each session, the diagnostic data created by the logger.
- **Lap tools** : you can edit, create, merge, delete lap, shift the beacon, and the split reports includes the best theoretical lap and the best rolling lap,
- **Map tools** : make with GPS data, create up to 10 split time with specific name for each.
- **Car setup tools** : a setup file for each car can be graphically created, and saved.
- **Dash setup** : the RPM ON/OFF value for each leds, the lap time display value, the lap time delay value, the min best lap value can be modify and saved on a dash file.
- **Team's tools** : a specific team file can be created including the driver's name and the car number . During the download process, the car number will be detected, and the driver name like this the car setup will be automatically saved with the data.
- **Output** : Export to Microsoft Excel, full Windows printing capability

5 Package specifications

Standard Kit :
Including : <ul style="list-style-type: none">- 2 wheels sensors with trigger disks and fitting parts.- 1 IR lap time receiver.- 1 loom.- 1 RS232 download cable.- 1 dash software upgrade.- 1 analyse software Erace V1.0.- 1 user manual.
Physical Channels : 9 <ul style="list-style-type: none">- RPM (10 Hz/15 bits).- Speed (10 Hz/8 bits).- Distance (10 Hz/16 bits).- Gear number (10 Hz/8 bits).- Throttle (10 Hz/8 bits).- Water temp (2Hz/8 bits).- Air temp (2Hz/8 bits).- Vbat (2Hz/8 bits).- Lap time.
Diagnostique Channels : 9 <ul style="list-style-type: none">- Poil _Alert (10 Hz).- WaterTP _Alert (10 Hz).- Battery _Alert (10 Hz).- Diag_throttle (10 Hz).- Diag_battery (10 Hz).- Diag_waterTP (10 Hz).- Diag_airTP (10 Hz)- Diag_pot_gear (10 Hz).- Diag_Padm (10 Hz).
Mathematical Channels : 3 <ul style="list-style-type: none">- Linear G.- Slip factor.- Time win/lost
Recording time : 80 minutes = 1 hours 20 minutes
Driver kit upgrade :
Including : <ul style="list-style-type: none">- 1 2G sensor : Linear and lateral.- 1 steering sensor + fitting parts.
Physical Channels : + 5 <ul style="list-style-type: none">- Linear G (10 Hz/12 bits).- Lateral G (10 Hz/12 bits).- Steering angle (10 Hz/8 bits).

Mathematical Channels : + 1

- KUS.

Recording time : 80 minutes = 1 hours 20 minutes

Necessary parts for each team :

Beacon transmitter including solid battery and charger.

GPS, for the MAP tracing.