Online Data Logger - and live telemetry system

RT Live is a new type of data logger, which logs directly to a secure cloud storage using a wireless mobile internet connection. Data logged by the unit can be accessed over the internet, and all inputs to the device can also be monitored in real time over the internet using any web browser (including Microsoft, Apple and Android products), or using our PC software.

RT Live is ideal for applications where data logging or monitoring is required, but the vehicle is inaccessible. Typical examples would be mileage accumulation vehicles, customer vehicles, climatic testing or field trials. In addition, it also simplifies data handling, and allows office based engineers to access test data as it is being collected at the test track.

The RT Live unit can be used for simple applications as a standalone unit, just requiring an external 12v power feed. The built-in inputs include:

- Standard accuracy 5Hz GPS
- CAN data input port
- 8 channels built analogue inputs
- RPM input

Alternatively the RT Live unit can be used as part of a Complete Automotive Testing System (CATS), which can include a combination of Race Technology's SPEEDBOX, thermocouple, analogue modules and DASH4PRO display. Note that the RT Live unit can also be used in combination with the DL2 data logger, in this configuration all data can be logged locally to the SD card, whilst just summary data is sent to the cloud storage.

As well as sending the data to the cloud storage for later download and review, all data is also simultaneously available as a live telemetry feed. Summary telemetry can be viewed on the RT Cloud web site. Or more detailed telemetry is available on the "Live Monitor" application.

When a mobile data connection is not available the data is automatically buffered in the RT Live internal memory and uploaded to the storage facility the next time a connection is available. All data is stored on the cloud as standard format Race Technology data (RUN) files which are compatible with all Race Technology's software, including the comprehensive data analysis package. Alternatively the raw data can be very easily converted to other formats including Excel and Matlab. The cloud service is a commercial service provided by Amazon EC2, the data is held securely and fully backed up with redundancy.

Each RT Live unit is registered on the Race Technology website before first use. Either a single unit can be registered to an account, or a batch of units can be registered together for ease of management of a vehicle test fleet. The SIM card in the RT LIVE PRO is user accessible from the front panel, so the SIM card can be changed to suit the location or testing requirements. Race Technology can also supply SIM cards if required: data usage can be managed on a straightforward PAYG method, with a payment gateway on the web interface to purchase credit as required.

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GPS	Outputs position, speed, position accuracy and speed accuracy every 200ms with no interpolation.
Data Upload	3G mobile data connection to online cloud storage
Internal Memory	64Mbyte, enough to buffer approx 24 hours of data when there is no 3G connection
Logging Control	Set to log whenever external power is applied, when movement occurs, or manual control
Analogue Inputs	8 external inputs, all 12 bit resolution and 0-12v. All inputs are protected to twice maximum input voltage.
Sample Rates	20Hz for RPM and analogue inputs.
Maximum No Channels	No hard limit, potentially 100s
Power Supply Requirements	12v nominal input, minimum of 10v, maximum of 15v. Current consumption ~180mA including GPS, +5v Reference Out Maximum current draw 100mA, tolerance 1%.
RPM Signal (High Level)	Triggered by fast voltage transients. Can be connected directly to the low tension side of the ignition coil.
RPM Signal (Low Level)	Triggering voltage requires a low input of <1v and a high input of >4v and 15v maximum. Suitable for connection directly to most ECU tacho outputs. Maximum input frequency >300Hz.
Serial Port	Full speed serial port, compatible with other Race Technology products. Outputs data for display on in vehicle DASH unit. Also used for re-flashing, diagnostics and configuration. Also used to connect to an ECU adapter for logging additional data.
CAN Port	Add CAN output data from other devices or engine data from vehicle CAN bus. 1Mbit CAN speed
SIM Card	Embedded in the unit in standard RT LIVE, user accessible on RT LIVE PRO
Antennas	Separate external 3G and GPS antenna connections, for optimum performance
Telemetry Update Rate	5Hz to internet browser, 10Hz direct to PC. Dependent on 3G signal conditions and local internet speed
Working Temperature	-20°C to 50°C

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