Online Data Logger - and live telemetry system
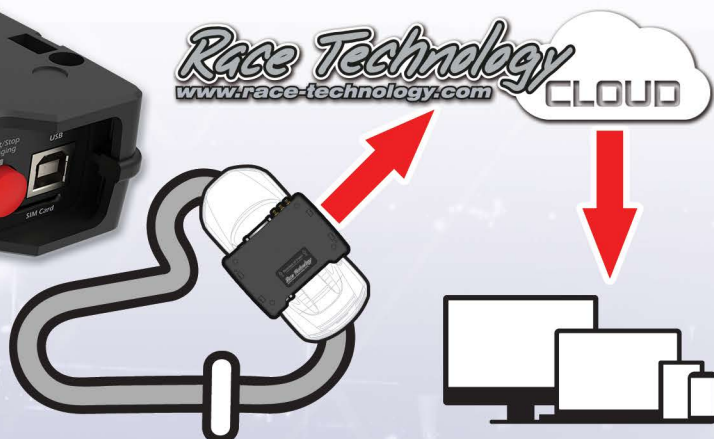
RT LIVE is a new type of data logger, which logs directly to a secure cloud storage using a wireless mobile internet connection. Data logged by the unit can be accessed over the internet, and all inputs to the device can also be monitored in real time over the internet using any web browser (including 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:

- GNSS receiver - Four GNSS positional accuracy options to suit the application, from standard 1m down to 2cm dual frequency RTK
- CAN data input port
- 8 channels built analogue inputs - switchable range: 0-5V or 0-25V ranges.
- RPM input

Alternatively the RT LIVE unit can be used as part of a complete system of Race Technology equipment including 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 website. Or more detailed telemetry is available on the "Live Monitor" application. Virtual dashboards can be used and configured to graphically show the telemetry data.

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 RT Cloud website before first use. Multiple units can be registered to an account together for easy management of a vehicle test fleet. The SIM card in the RT LIVE is user accessible, so the SIM card can be changed to suit the testing location.

Two connector options:

Motorsport

Professional testing

Race Technology
www.race-technology.com

GNSS Options:	10Hz GPS + GLONASS 20Hz GPS + GLONASS + BeiDou + Galileo 20Hz GPS + GLONASS + BeiDou + Galileo Dual Frequency 5/10Hz GPS + GLONASS + BeiDou + Galileo Dual Frequency + RTK (2-3cm positional accuracy)
Data Upload	Mobile data connection to online cloud storage
Internal Memory	64Mbyte, enough to buffer over 12 hours of data when there is no Mobile data connection
Logging Control	Set to log whenever external power is applied, when movement occurs, or manual control
Analog Inputs	8 external inputs with individually switchable range. Low = 0-5V, high = 0-25V range.
Sample Rates to Cloud Storage	20Hz for RPM and analogue inputs.
Maximum No Channels	No hard limit, potentially 100s
Power Supply Requirements	12v nominal input, minimum of 9v, maximum of 20v. Current consumption 200mA at 12V in operation, and 15mA at 12V in sleep mode. +5v Reference Out Maximum current draw 100mA.
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.
Case Construction	Black powdercoated diecast aluminium
Connector Type	Deutsch DTM motorsport or easily populated 25way D-type professional testing options
Serial Port	Full speed serial port, compatible with other Race Technology products. Outputs data for display in vehicle DASH unit. Also used for re-flashing, diagnostics and configuration. Also used to connect to an ECU adapter for logging additional data.
USB	Configuration / reflash
LCD	Multi-screen information to show: Screen 1. Connection status, turn around time, correction age Screen 2. GPS and GLONASS satellite information Screen 3. Galileo and BeiDou satellite information (RTK version only) Screen 4. GNSS mode and correction age (RTK version only) Screen 5. RS232 port rate and messages Rx and Tx Screen 6. CAN bus rate and load/status Screen 7. Logging status, uplink speed, time to finish upload Screen 8. Errors
CAN Input	Optional CAN input, get data from other devices or engine data from vehicle CAN bus. 1Mbit CAN speed
SIM Card	Micro-SIM (3FF)
Telemetry Update Rate	Typical update rate to website browser is 5Hz, live data upload to PC software is 10Hz. Depending on signal and local internet speeds.
Working Temperature	-20°C to 50°C
Weight	540g
Dimensions	163mm x 118mm x 34mm
Antenna (Main and Aux)	4G LTE compatible
Antenna (GPS)	Single or dual frequency (depending on GNSS receiver specification) magnetic mount antenna 3.3v

Website live telemetry data:

Live PC data using virtual dashboards: