



*The **SnoMAX** system makes mission impossible look easy.*

*Easy Installation
Accurate / Affordable
Helpful Technical Support
Outstanding Data Analysis*

SnoPro data loggers do what other systems cannot - accurately measure clutch-belt slip and track-to-ground slip.

For the very first time, it is possible to accurately measure and analyze clutch belt slip under all track conditions. That makes proper clutch set-up a whole lot easier—and that's just the tip of the iceberg...

It is now possible to accurately evaluate engine, clutch and suspension variables for any sled: drag, circle track, speed run, or SnoX. Each important detail can be downloaded and compared to reveal the effects of even very small changes.

The good news doesn't stop there. You can also measure and record lateral G forces in turns, inline acceleration G forces during starts hole-shots, any temperature or pressure, air/fuel mixtures and of course, engine RPM.

Using our high speed GPS technology, **SnoPro** can record lap times and draw accurate course maps for any track. It can show the turn radius actually driven for each turn and each lap. It can even measure sled height above the snow. There is simply nothing else like it.

SnoPro data systems are, by far, the most effective and affordable data acquisition systems for your race sled.

RACE STUDIO software

RS3/RSA is easy to learn and use for beginning racers, yet powerful enough for experienced and trained race engineers. Software is always FREE, as are all future updates and it performs a host of valuable functions.

Set-up and Configuration

Used to set-up, configure, and calibrate all the data loggers. Also used to set GPS coordinates for any race track you might ever run, and configure your dash display. And it permits the creation of unlimited math channels.

Database manager

Serves as a data filing cabinet to store all your race data files while allowing quick recall, sorted by: track, event, driver, and vehicle. You can retrieve any file to overlay and compare to any other data file; all at the click of a mouse.

Analysis

While simple to use, it is extremely powerful. Multi-color data graphs are displayed as either time or distance based. You can view all data at any time or distance on the track. Data can be displayed as line graphs, x-y plots, histograms, frequency plots, or overlays and it draws an actual track map. **Track report** displays color-coded data on the map for any data channel. **Split report** shows not just lap times but best rolling lap, theoretical best lap and segment split times.

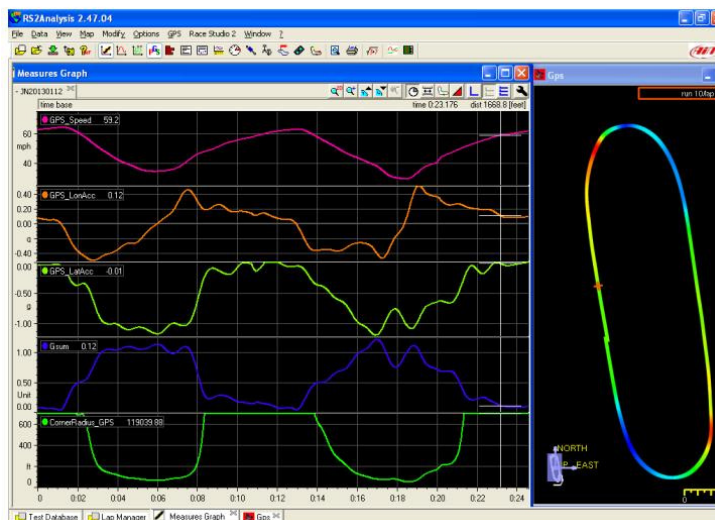


No other systems can provide so much information for your team, with such little time or budget..

The **SnoMAX** data logger system interfaces with the powerful **RS2** set-up and analysis software. This is not a partial system. It is complete, ready to install in your sled. And there are many optional sensors and accessories that allow you to customize your installation to your needs.

Lap time report displays laps as histograms to indicate trends. **Engine report** calculates power and torque while on the track. **Suspension analysis** displays suspension velocity for each corner of the vehicle.

Math channels can be constructed to create an unlimited number of virtual channels including: corner radius, Ackerman angles, understeer/oversteer, pitch & roll angles, clutch slippage, brake bias, axle rpm, slip angle, and potentially a long, long list of additional virtual channels.



SnoMAX

The next revolution in sled data logging is here!

Features

GPS lap-timing & detailed data
1 RPM (inductive or coil/trigger)
2 or 4 Speed Channels (JSspeed/Beltslip, etc.)
3 Built-In Accelerometers + Gyros
5 or 8 Analog Channels (Temp, Press, Position, etc.)
Internal Thermocouple Amplification
CAN & Serial ECU Interface Ready
Expansion Module Ready
5KHz sample rate (up to 1kHz/channel)
4GB Memory (removable SD card available)
12V & 5V Sensor Excitation
WIFI communications (SnoMAX-V only)

Starter Kits Include

1 RPM Pickup (for primary)
1 Magnetic Speed Sensor (for jackshaft)
1 Jackshaft Speed Collar
1 H2O or Inlet AirTemp Sensor
1 Fast-Response EGT Sensor
1 USB Download Cable
1 RaceStudio2 Setup/Analysis Software
Complete Hardcopy Documentation
Custom **SnoPro** Math Channels

We took the **SnoMAX**, the most successful data systems in sled racing history, and made it even better:

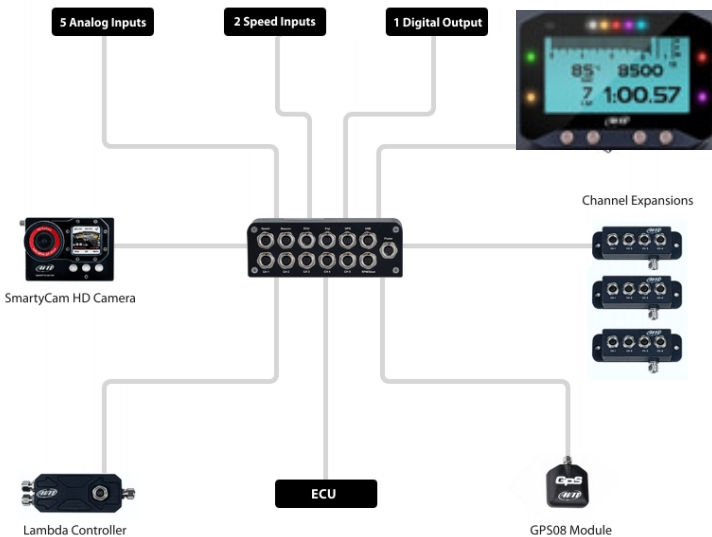
Compact weatherproof housing
3-axis accelerometers + gyros
Realtime math channels
Robust/Accurate GPS Module
Optional / Removable Dash

24 mounting orientations
Analog inputs for 0-5V/12V
Multiple ECU/CAN I/O Buses
Customizable Output Channels

The new **SnoMAX** lineup remains the ultimate in portability and logging power. Two systems are available, the **SnoMAX S** (using same connectors and sensors as previous units) and the professional-grade **SnoMAX V** (using Mil-Spec connections).

Run with or without a display. Each input channel individually configurable at sample rates from 1Hz to 1000Hz. Updated GPS module has better waterproofing and more accuracy. The system starts small and is expandable to meet your diverse needs. Optional external modules (compatible with previous generation units) let you add more channels, functions (Advanced Video, Multiple Lambdas, External LED's, SDcard downloads, Dashes, etc.) with simple sealed-wiring harnesses. More temperature sensors, belt-clutch slip sensor, ride height sensors, shock pots, strain-gauges, local accelerometers, more engine sensors—you name it, the **SnoMAX** can capture them all!

Uniquely, these units have capability to read/record today's complex CAN-bus output streams from manufacturers' ECUs, as well as let you define your own!



SnoMAX-S
5 Analog Inputs
130x35x47mm, 330g



SnoMAX-V
8 Analog Inputs
114x47x59mm, 300g

Optional Accessories

Compact Display
Lambda Sensors
Video Processor

Removable Sdcard Memory
Clutch-Belt Slip Sensor
T/C Expansions

ECU Interfaces
Crankcase Pressure
Pressures/Temps

External LEDs
Shock Travel Sensors
Ride Height Sensors

...AND VIRTUALLY ANY OTHER SENSOR YOU CAN IMAGINE!



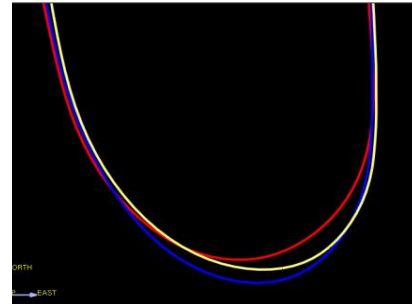
(630) 766-4402 PrecisionAutoResearch.com

Advanced GPS: Improves your track position!

Downloaded GPS data can be analyzed using the software along with all other logged data. You can even export your on-track position to Google Earth. Get detailed, lap-by-lap, 3D track graphics, banking, slope, and track elevation, foot by foot, every 1/10 of a sec.

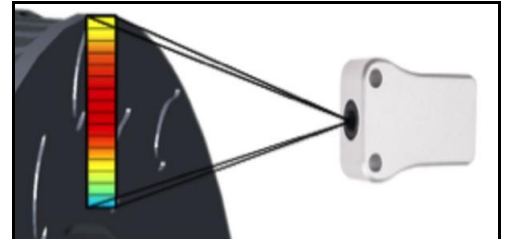
In your data, you'll see:

- Position, speed, heading, and altitude
- Line analysis overlays
- Track-to-Ground slippage
- Lateral, Longitudinal, and Vertical G forces
- Lap times (no beacon necessary!)



Infra Red Temperature Sensors

Non-contact, quick response Infra Red temperature sensors can be used to measure clutch belt temperature (outer or inner belt surfaces), brake disc temperature, radiator, oil cooler, slide rail, axle bearing, or even exhaust pipe wall temperatures.



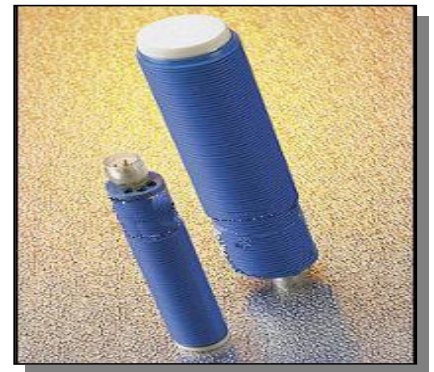
CVT Belt Slip Sensor

Clutch ratio (engine RPM divided by jackshaft rpm) is a superficial clutch ratio measurement, since belt slippage is not considered. It is now possible to accurately measure and record the apparent clutch ratio, true clutch ratio, and actual clutch slip at every rpm and speed point on the track or trail. The sensor is easily and quickly mounted and aimed at any point on the belt outer surface.



Ultrasonic Ride Height (Distance) Sensor

Ideal for dynamic height measurement, where physical sensor contact is impossible. Using ultrasonic technology permits an economical alternative to laser distance sensors to measure real-time ride height, suspension motion, clutch motion or height above the ground/snow/ice. Measurement distance available from 8 inches up to 20 feet! Accuracy down to 1mm.



Wide Band Oxygen (Lambda) Sensors

The only real way to accurately measure air/fuel mixture is with a wideband oxygen sensor. Even on a dyno, mixture at partial or transitional throttle are very difficult to measure. Using the Bosch wideband oxygen sensor, mixture can be recorded and downloaded for analysis by comparison against rpm, throttle position, temperature, air pressure and fuel jetting. Depending upon your system, we can offer two different Lambda setups.



Dynamic Engine Pressure Sensor

A new design concept permits measurement of critical pressures in a running engine, such as crankcase pressure and exhaust pipe pressure, while on the track. Data is logged for downloading and analysis using RaceStudio2 software and can be examined under dynamic operating conditions such as rpm and throttle position. Also suitable for turbo application measurement of boost pressure and exhaust back pressure.





The SnoPro Lineup

SnoPro is more than a data logger. It is a comprehensive data program for your sled racing campaign. The data loggers (**Kompact**, **Club**, **SnoMAX-S**, **SnoMAX-V**) obtain the raw data from the sled. We help you turn this into helpful information! We help you select proper sensors for your application. We build the system to fit your needs. The Window-based software programs are easy to use, but powerful enough for factory teams and engineering departments. They can be used for organizing outings and sled details, as well as hard-core analysis.

We pride ourselves on providing outstanding support and secure technical consultations, to help make your racing campaign successful. Please call us with any questions!

Kompact

The small, economical logger/laptimer which also serves as a portable, ECU-based logging powerhouse, with full GPS recording functionality.

Club

Modest display-based logger, for use with either ECU or traditional RPM pickups. Has 2 speed inputs and 4 analog inputs. GPS on-board, and uniquely equipped with two 12V 15A outputs.

SnoMAX-S

Evolution of the **SnoMAX** system, this powerhouse system is used by most top flight teams. Unlimited expansion capability. Used with or without dash. Compact aluminum housing can be placed anywhere on the sled.

SnoMAX-V

This unit takes logging to a level beyond the **SnoMAX-S**. Twin CAN buses, twin digital outputs, Mil-spec harness. USB, SDcard, and WIFI downloads. Suitable for telemetry and anything else you ask of it.

Sensors

Get to know us, and you'll realize we take our sensors seriously. As the eyes and ears of the systems, proper selection is critical. In many cases, we have developed our own sensors to support the cause.

Software

RS3 Setup software and **RaceStudio** Analysis software included with systems. **RaceDataPower** Engineering/Predictive Modeling software is available for advanced users. It all works together. Ask our winning teams!

Support

Unlimited on-site, online, and telephone support for all **SnoPro** products... for as long as you own them.



Precision AutoResearch

901 Hillside Dr. Bensenville, IL 60106 USA
Phone: (630) 766-4402 (630) 926-6695 Tech support
PrecisionAutoResearch.com
PARbrowser@aol.com