

# QUANTUM AND HARDWARE

**MICROSOFT™ RIBBON INTERFACE**

Latest modern interface for improved user experience and ease of use.

**SOFTWARE WRITTEN IN MS VISUAL C/C++**

Software is written in the most advanced developer environment offering the best machine compiled code, advanced features, customization, and faster executed code.

**NEW ENHANCED GAUGE CONTROLS**

All new Gauge controls offer a vast array of possibilities for viewing live data. A Live HP control allows users to view real time Power and Torque plots during a dynamometer run. The following is a list of controls: Multi-Gauge, Half Gauge, LED Gauge, Meter, Numeric, Vertical & Horizontal Level, Vertical and Horizontal Scroll, Thermo, Trend Chart, Live HP, MAP. Custom Gauge templates can be created, edited, saved, and load. Standard templates are included. Real Time Horsepower and Torque over Engine RPM plotting during a run now available.

**GAUGE USER INTERFACE RIBBON LAYOUT SUPPORTING AWD AND PAU OPERATION THROUGH RIBBON BUTTONS AS WELL AS DC-HANDHELD**

User can now control operation fully through DC-Handheld and Quantum.

**MODE I OPERATION PLUS**

Mode I operation allows Gauge Screen to be displayed for enriched tuning experience.

**GAUGE RUN PLAYBACK**

Previous dynamometer Runs can be played back within the Gauge View for analysis or demonstration.

**CAN SUPPORT FOR LOGGING REAL TIME DATA FROM ECUS**

ECU Manufacturers supporting CAN output can be pulled into Quantum during live dynamometer runs.

**NEW ENHANCED 3D RACE DATA VIEW AND PLAYBACK**

Actual real time 3D graphics during Race test rivaling the graphics of video games is now available both in real time and playback.

**NEW DYNAMIC CHANNEL SUPPORT AND CREATION**

Channels are created dynamically so system is not bound to specific previous defined channels.

**NEW IMPROVED COMPUTATION ENGINE**

Computational Data Channels are optimized for improved speed and data averaging.

**ABILITY TO MODIFY RPM RATIO AFTER THE RUN TO FIX TORQUE SKEW**

Edit Run Dialog Box supports recalculation of Engine RPM with modified ratio. CSV import and Dynamic channel support.

**QUANTUM FACEBOOK™ AND WEB PUBLISHER**

Quantum allows WEB enabled devices to view Dyno Graphs. Quantum also provides for graphs to be published to Facebook™ Pages with one-click.

**DATA VIEW TRIM/UN-TRIM DATA POINTS**

Data points at the beginning or end of the run can now be trimmed and un-trimmed. Hence, data is never thrown away, just optimized for user analysis and display.

**SOFTWARE SECURITY AND CONFIGURATION USB KEY**

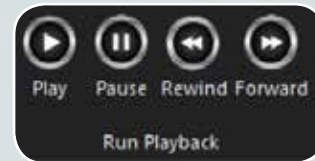
Quantum does not need an activation code to perform dynamometer runs and is able to run stand alone for data viewing. All dynamometer configuration data and software options are stored on a USB security key.



Microsoft™ Ribbon Interface



Enhanced Gauge Controls



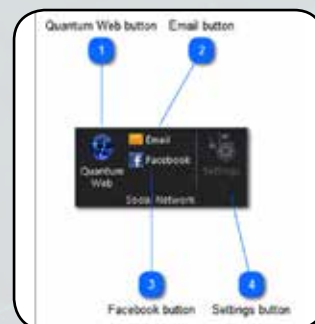
Gauge Run Playback



Support for Logging Real Time Data from ECUs



Enhanced 3d Race View



Facebook™ and WEB Publisher



**DC CONTROLLER**

Our DC-Controller is an all-in-one high performance dynamometer electronic control unit with standard atmospheric sensing (humidity, temperature and barometric pressure). RPM signal is derived from the frequency inputs (optical sensor). Wideband A/F input (NTK Wideband O2 Sensor - support for 2 sensors available). There are 8 differential analog inputs, RS-232 Input, 2 DC-XBUS ports, 2 Dynocom dynamometer ports for All-Wheel-Drive support.

The data acquisition system Interfaces to the PC via USB 2.0 (Dynocom Industries drivers included) with a 12 VDC power adapter. With communication to other Dynocom modules via our high-speed DX-BUS using standard CAT-5 cabling, you will be able to leverage your investment for years to come by adding powerful optional modules like our 16 (32 single ended) channel, 24 bit, high-speed Data Acquisition System (DC-xDAS) capable of capturing over 30,000 samples/s of data.

**DC A/FM WIDEBAND AIR/FUEL METER**

Dynocom's DC A/FM is a wideband air fuel meter which also has an analog output that can output a linearized 0-5VDC signal to ECU's, DAQ's, gauges, and other dynamometer systems. The unit can use either the NTK or the Bosch wideband sensors.

The DC A/FM comes complete with the following: NTK production grade sensor • DC A/FM module with large, bright digital display controller (~3.4in x 2.7in x 1.3in) • Stainless Steel O2 Bung • 16 Foot High Quality Cable • Defaults to Lambda can display AFR • AFR supports gasoline and methanol fuel • Two (2) analog output (range is 0.55 to 1.24 Lambda) • Comprehensive Installation, troubleshooting and tuning manual.

**Compatible Fuel Types:** • Gasoline / Petrol (leaded or unleaded) • Alcohol (Methanol), Ethanol, Compressed Natural Gas (CNG), Liquefied Petroleum Gas (LPG) and Propane

**DC HANDHELD**

Our digital handheld controller supports start/stop & configuration capabilities—keeping “dyno” operators in the driver’s seat. The DC-Handheld is standard equipment with any chassis dyno purchase.

It is hardwired for fail-safe operation of braking and control. The backlit 4x25 LCD character display provides for remote data display of individual dyno runs without leaving the vehicle. It has an integrated dyno run “GO/Logging” and “STOP/Brake” LED’s. It also provides positive feedback on the keypad. Increase and decrease load, see HP and Torque numbers in real-time.

**ODBI WIRELESS**

Dynocom has introduced a real time data acquisition for OBDII port on all 1996 and newer vehicles. This data is available to be viewed live in Quantum and is also graphed and saved into the dyno run.

**ITACH**

The Dynocom I Tach (Intelligent Tachometer) is a stand-alone unit which can also be used with all Dynocom chassis dynamometer systems for picking up an RPM signal via injector or spark plug wire. This unit streams data directly to the DC/Controller and also includes a built in Boost Sensor that data logs directly into the Quantum Software.

**DC 5 GAS**

This machine meets BAR and OIML standards and will provide you with an emission diagnostics and trouble-shooting tool that will drastically reduce your diagnostic and tune-up time. The DC-5 GAS analyzer measures five emission gases, including Hydrocarbons (HC), Carbon Monoxide (CO), Carbon Dioxide (CO2), Oxygen (O2) and Oxides of Nitrogen (NOX). Based on gas concentrations, and DC-5 GAS will calculate the Air to Fuel Ratio (AFR), Lambda ( Grams per Mile (GPM). It will also provide a read-out for an optional Tachometer that handles up to 30,000 RPM. With this much information in one place, you can diagnose and tune any fuel-related issues while having all of the relevant information displayed in six super-bright, oversized displays.



DC Controller



Wideband Air/Fuel Meter



DC Handheld



OBDII Wireless



ITACH

Dynocom's Quantum software is the most advanced user friendly, intuitive, feature packed dynamometer software in the world. Quantum takes all of the standard features from previous versions of our software (DynocomPute X) and improves in all areas – graphing, data logging, database searching, 3D Mapping and 3D Racing. The brain of a dynamometer system is the software which is responsible for generating the results you and your customers depend on. Quantum can be installed and used with Dynocom's DC-Controller on either a desktop, notebook, or tablet PC (including wireless capabilities).

Quantum was designed to allow the user/operator to get the most accurate and repeatable results from your Dynocom dynamometer and provide the ability to perform a variety of tests to simulate real world conditions. The modern user friendly interface will allow you to easily review data, playback runs, import ECU specific log files, import ECU specific real time data, and compare previous runs with a few clicks of the mouse button.

Quantum is intuitive and is designed to load dynamometer specific settings from a USB security key. The USB key maintains your specific parameters and settings for your Dynocom dynamometer model and is matched to the hardware. All specific calibration settings are maintained on the USB key and match each specific Dynocom dynamometer when it calibrated and shipped from the factory.

**QUANTUM FEATURES & BENEFITS**

**IMPORTING THIRD PARTY CSV FILES TO A SESSION RUN**

Quantum allows users to import CSV files logged using Third Party Software during a specific dyno run. This allows data to be compared with data acquired using Quantum during a dynamometer run.

**NEW ENHANCED RUN TYPES**

- Quantum has added many new Dynamometer Run Types such as:
- VRS, Virtual Road Simulation (Dynamic Vehicle Params, Published EPA Vehicle Coefficients, or Road Load @ 50 MPH ) w/wo Incline
  - Race (0-60 MPH, 0-100 MPH, 0-100 KPH, 50-70 MPH, 80-110 KPH, Min to Max Speed, 1,8 mile, 1/4, mile, 1/2 mile, Full Mile) w/wo VRS
  - PAU Load Specific (Constant, Step, Accel/Ramp, Custom Force)
  - Speedometer/Odometer
  - Enhanced Manual Roll On w/wo Load (Load configured over Speed or Engine RPM)
  - Dynamic Roll On w/Dynamic load during dyno run
  - Static Roll On w/wo Load
  - Built In Vehicle EPA database includes the most current comprehensive data for dynamic vehicle co-efficients and parameters.

**HIGH SPEED OPTICAL BASED SPEED SENSOR W/ UP TO 200 CPR INTERRUPT DRIVEN PULSES**

**ENHANCED LOAD CELL CALIBRATION, FILTERING TABLES AND AUTO ZEROING LOAD CELL**  
Load cell calibration via multiple calibration routines. Load Cell can Auto Zero before every run for more consistent and repeatable data. Enhanced PID feedback control for loading. The most accurate in the industry. 24 Bit A/D load sensor data conversion for detecting the smallest changes of force. The sensitivity is adjustable from 14-24 bit - the highest in the industry.

**TEMPORARILY HOLD CURRENT SPEED ON RUN START**

User can hold at the current speed (Constant Hold Speed) when starting a RO Run test. This allows for the buildup of boost in forced induction engines to create more consistent data.

**BUTTERWORTH FILTERING ENABLED USER CONTROL**

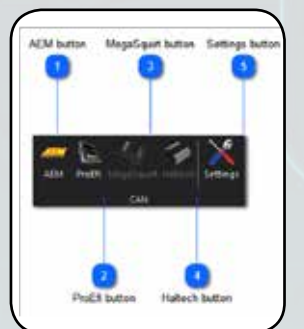
User can filter run data to smooth out specific frequencies that hinder run comparisons of data.

**MERGE GEAR CHANGES**

User can enable the automatic filtering of runs having multiple gear changes or automatic transmissions.

**AWD VIRTUAL SETUP GRAPHICAL WIZARD PAGE**

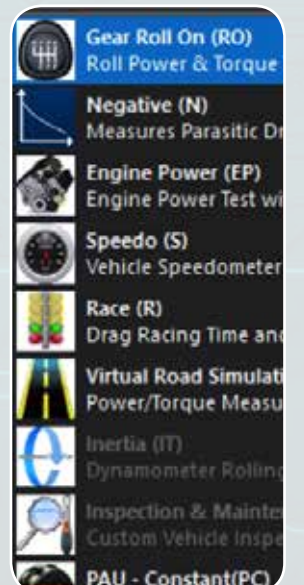
User can swap physical AWD parameters through wizard that automatically changes setup parameters allowing user to switch direction of vehicle operation on dynamometer without having to change any parameters.



Importing CSV Files



Enhanced Run Types



AWD Virtual Set Up