DEWESoft®

VEHICLE ANALYSIS

WELCOME TO THE DEWESOFT EXPERIENCE. ONE SOFTWARE, ONE HARDWARE, ONE SOLUTION.

7 YEAR WARRANTY

DEWESoft®

V23-2

HARDWARE OVERVIEW

SIRIUS® MODULAR

Most flexible and distributable single slices with USB and EtherCAT® interface.

SIRIUS® SBOX

Synchronized, highly reliable data logger and powerful data processing computer.

SIRIUS® XHS

High-speed data acquisition system (15 MS/sec) with the new Hybrid ADC technology capable of high-bandwidth transient recording and very high-dynamic, alias-free data acquisition.

SIRIUS® R4/R4rt/R4-HUB

Integrated solution with 4 SIRIUS slices and powerful SBOX computer or USB hub in one unit with real-time EtherCAT® slave interface.

GPS AND IMU DEVICES

High accuracy 100Hz GPS receivers and Inertial Measurement Units (IMU) with Real-time Kinematics (RTK) support for the most precise position based test and measurement applications.

EASY TO USE AND VERSATILE

Get your measurements in 30 seconds.

DEEP IN FUNCTIONALITY

With an amazing set of features, Dewesoft instruments are used in most advanced research labs around the world; all functions are available at the same time in one software.

DUAL CORE HIGH DYNAMIC

Dewesoft Sirius increases signal dynamic to 160 dB by using two ADC converter per channel with different gains. Both - time domain and frequency domain data have an amazing dynamic signal performance.

PLUG AND PLAY

Any device, sensor or signal. Smart sensors with TEDS are recognized automatically.

ALL-IN-ONE

Dewesoft hardware can perform a wide variety of measurement tasks. Every function is available in a single Dewesoft X software package.

DEWESOFT 7-YEAR WARRANTY

Our warranty covers that the instruments function as promised for a period of 7 years from the day of the delivery.

KRYPTON®

Ultra rugged and distributable data acquisition devices from -40 to +85 °C operating range.

SIRIUS® R1DB/R2DB

Small-size instrument with embedded computer, 12" display and batteries.

OBSIDIAN®

Embedded data logger with low-power ARM processor and Linux OS.

MODULAR AND EXPANDABLE

Can you imagine FFT analyzer with thousands of channels? We can... Systems can be gradually expanded from one to unlimited number of channels.

NO HIDDEN COSTS

Software license is included in every system. Free lifetime software upgrades included. No yearly maintenance or upgrade fees, free online training courses.

PRECISE POSITIONING

Dewesoft GPS and IMU devices can provide centimeter level accuracy.

TOTAL SOLUTION

Combine your NVH measurements with data recording, electrical power, combustion, vehicle dynamic and other powerful Dewesoft tools.

SuperCounter®

Patented Supercounter technology provides perfect angle and angular speed information which is a base to align data from time to angle domain.

PERFECT VEHICLE CONNECTIVITY

Connection to any vehicle by using either CAN, CAN FD, J1939, OBDII, XCP, CCP, LIN, FlexRay.

FULLY SYNCHRONISED

Data from various sources are perfectly aligned: Analog, Digital, Counter, Vehicle buses, Video, ...

SIRIUS® XHS AND XHS-PWR

HYBRID ADC TECHNOLOGY

Offers everything you ever wanted out of a high-end data acquisition system. High bandwidth and high dynamic mode available and software selectable per channel.

HIGH GALVANIC ISOLATION

High channel-to-channel and channel-to-ground isolation prevents damage to the systems from excessive voltage and avoids ground loops.

VARIETY OF AMPLIFIERS

High voltage amplifiers that can measure 2000 V peak directly. Low voltage amplifiers for connecting almost any current sensor. ACC amplifiers for connecting high-speed accelerometers and pressure sensors. The XHS range of amplifiers available will grow in the future and will also include charge and strain gauge amplifiers.

The future is here - and it is in the form of a single device. 15 MS/s sampling rate. 5 MHz Bandwidth. Up to 150 dB Dynamic Range. Meet our new Hybrid ADC data acquisition technology.

SMALLEST FORM FACTOR

With the standard SIRIUS sized chassis you can easily carry the SIRIUS XHS in your backpack along with your laptop for field measurements.

ALIAS FREE MODE

Up to 2 MS/s data can be acquired with an extremely high dynamic range, similar to our SIRIUS DualCoreADC devices. The data is totally alias-free, so all higher frequencies are fully rejected. Such an acquisition mode is typically found in Sigma-delta ADCs, and general data recording applications.

By today's standard, you would need two totally separate data acquisition devices for those measurements and applications. But the new SIRIUS XHS data acquisition system allows you to select per channel, depending on the measurement application, the appropriate mode of ADC operation.

PERFECT SYNCHRONIZATION

Even though you can select some channels to be high bandwidth and some to be alias free, filtering is made in the way that all signals are perfectly time aligned with zero phase shift.

DC-CT CURRENT TRANSDUCER

DC-CT represents an innovative principle of isolated measurement of DC and AC currents. This compact-sized patented technology allows you to measure peak currents up to 2000 A and leakage currents - with high bandwidth and ultimate performance.

HIGH BANDWIDTH MODE

This mode offers more than **5 MHz** bandwidth and **15 MS/s** sampling rate, SIRIUS XHS can acquire impulse, step, and square signals without any ringing or overshoot. Such an acquisition mode is perfect for transient recording and power analysis, and would usually be found in SAR ADCs.

NAVION® i2

CENTIMETRE ACCURACY

NAVION® i2 supports Real-time Kinematics (RTK) correction data, which improves the positional accuracy down to one centimeter. RTK also allows easy connection with NTRIP devices.

SOFTWARE INCLUDED

Includes award-winning DewesoftX software with free lifetime updates. Additional software plugins for ADAS, Vehicle Dynamics, Brake Testing and other applications can be added.

STATIC HEADING

Dual Antenna Heading provides instant and accurate heading even while standing still. This dramatically shortens time of initialization and calibration and serves as a great benefit for vehicles with limited maneuverability.

PERFECT SYNCHRONIZATION

NAVION's integrated GNSS receiver provides an extremely precise time source (<20 ns) that serves as a clock provider for all Dewesoft DAQ instruments. This allows precise data alignment with additional analog and digital signals, plus bus data from CAN, CAN FD, LIN Bus, FlexRay and more.

- High-performance, six degrees of freedom
- MEMS-based inertial navigation system
- Highly accurate position, orientation, velocities, and accelerations on all axes
- Precise synchronization with other Dewesoft data acquisition instruments

ROBUST, RUGGED & RELIABLE

Proven navigation algorithms for air, land and sea, within a robust aluminum enclosure. IP67 environmental protection allows operation in outdoor environments and temperatures from -40 to 71°C (-40 to 160 °F) and MTBF > 50k hours.

EXTENSIVE CONNECTIVITY

NAVION i2 supports multiple interfaces, including CAN, RS232 and Ethernet. This allows easy Wi-Fi connection, and for RTK correction data to be transferred to multiple NAVION systems over a DS-WIFI network.

GPS AND IMU DEVICES

	NAVION i2	DS-IMU1	DS-VGPS-HS/HSC	DS-GYRO3
NAVIGATION				
Standalone/SBAS/RTK (horizontal positioning)	1.2 m	2 m	1.2 m	-
Velocity accuracy	0.015 m/s	0.05 m/s	0.02 m/s	-
Roll & Pitch accuracy (dynamic)	0.03 °	0.1 °	-	0.1 °
Heading accuracy (dynamic with GNSS)	0.08 °	0.2 °	-	0.1 °
Slip angle accuracy	0.08 °	0.3 °	-	-
Output data rate	Up to 100 Hz	Up to 100 Hz	20/100 Hz	up to 1600 Hz
GNSS				
Supported navigation systems	GPS L1, L2, L5; GLONASS L1, L2, L3 BeiDou B1, B2 Galileo E1, AltBOC, E5a, E5b NavIC (IRNSS) L5	GPS L1C/A, GLONASS L1OF, BeiDou B1I	GPS L1, L2* GLONASS L1, L2*	-
Supported SBAS systems	SBAS L1, L5 QZSS L1, L2, L5	-	WAAS, EGNOS, MSAS, GAGAN, QZSS	-
ADDITIONAL FEATURES				
Dual antenna heading	✓	-	-	-
RTK positioning	✓	✓	✓	-
HARDWARE				
Operating voltage	9 to 36 V	5 to 36 V *USB powered	9 to 36 V	5 V *USB powered
Operating temperatures	-40 °C to 71 °C (0.8 °C/min Max)w	-40 °C to 85 °C	0 °C to 60 °C	-40 °C to 85 °C
INERTIAL SENSORS				
Accelerometers	✓	✓	-	✓
Gyroscope		-	-	✓
Magnetometer		-	-	✓

RTK 1 CM ACCURACY

Optional RTK upgrade of all GPS units, improving positioning accuracy down to 1 cm.

USB, CAN, RS232, ETHERNET

GPS instruments offer a variety of data connection interfaces from USB, CAN, RS232 and Ethernet

High accuracy 100Hz GPS receivers and Inertial Measurement Units (IMU) with Real-time Kinematics (RTK) support for the most precise position based test and measurement applications.

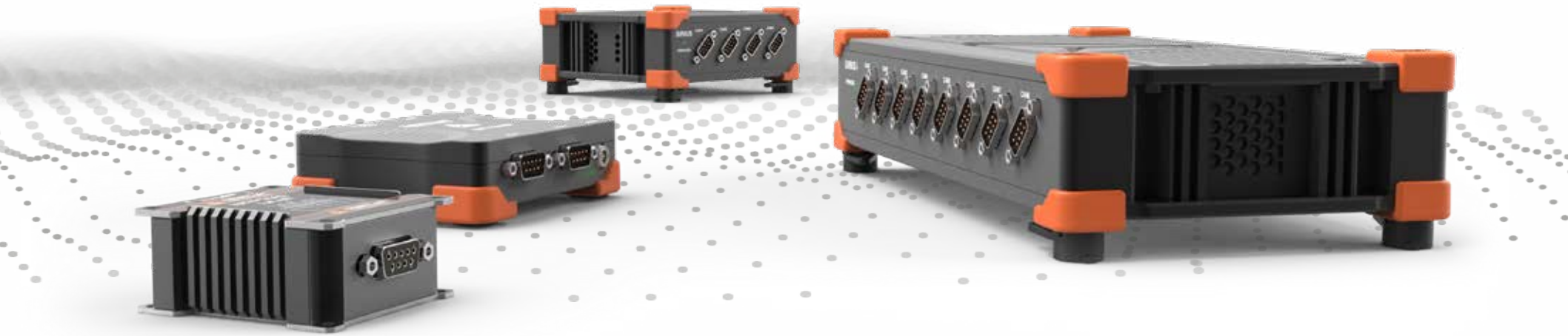
INERTIAL MEASUREMENT UNITS

Very rugged IMU units - IP67 degree of protection - which in addition to GPS receivers have an integrated 3-axis accelerometer and 3-axis gyroscope to improve dead reckoning.

CAN BUS AND CAN FD INTERFACES

DEWESOFT 7-YEAR WARRANTY

Our warranty covers that the instruments function as promised for a period of 7 years from the day of the delivery.



CAN FD, XCP, FLEXRAY AND LIN

Using third party hardware, additional interfaces are supported.

RAW DATA ANALYZER

Graphical interface for easy CAN decoding and finding signals without a CAN DBC.

OBDII AND J1939 SUPPORT

CAN interfaces have XCP/CCP, OBDII, J1939 and other standard support.

Multichannel USB and single channel EtherCAT® CAN BUS. Software with support for OBDII, J1939, XCP/CCP, CAN transmit, DBC and AUTOSAR XML files.

NATIVE CAN FD SUPPORT

SIRIUS can be ordered with CAN FD or with standard CAN port.

PLUG-AND-PLAY CAN INTERFACES

Robust and easy to use interfaces. Connect your CAN device to the USB port of any laptop or PC, or to any SBOX or KRYPTON CPU computer. The device will be recognized automatically, and be ready to use in a moment.

1, 2, 4 OR 9 CAN PORTS

Multiple CAN devices can be connected together to expand to more CAN ports.

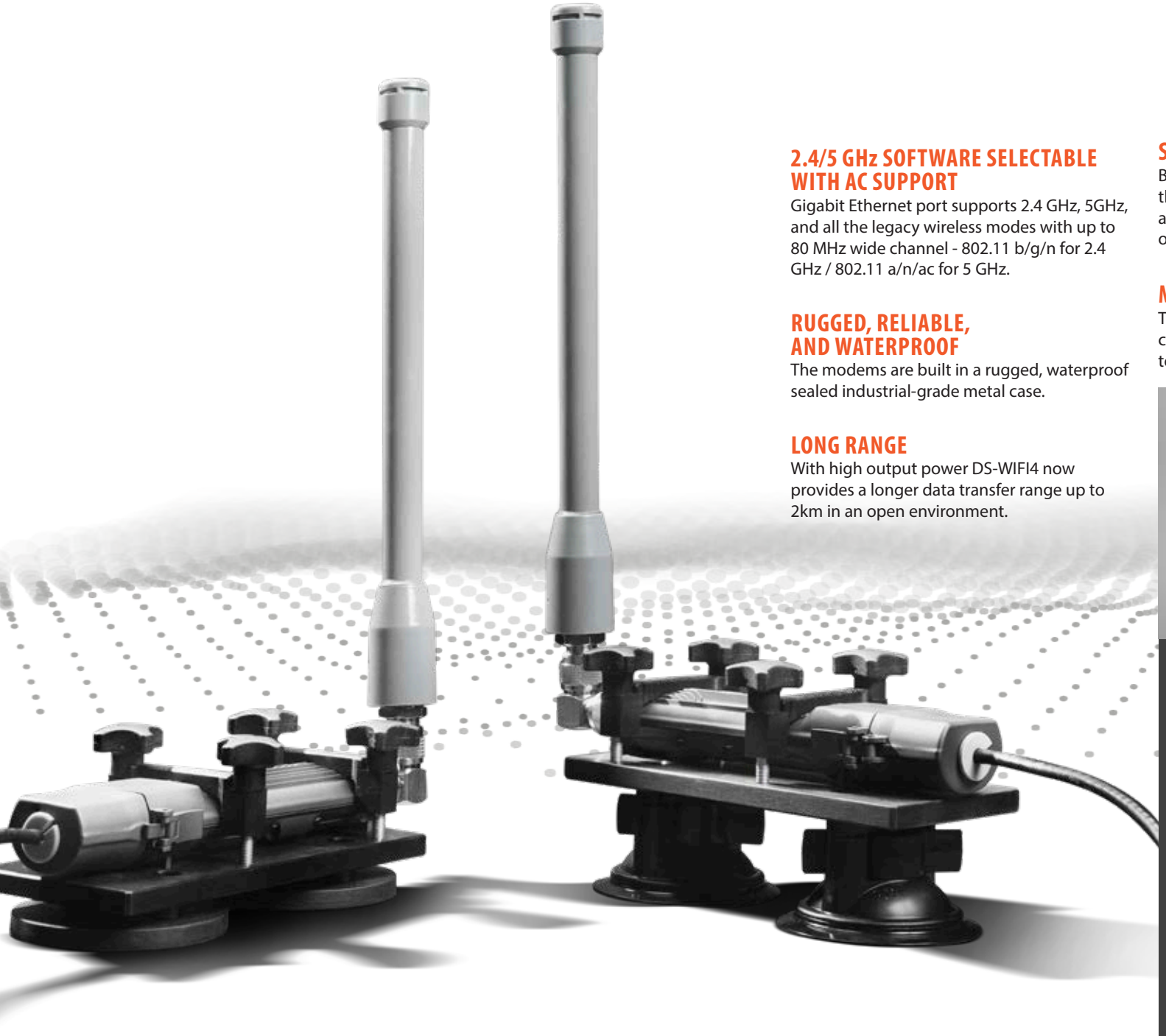
DBC AND ARXML FILE SUPPORT

Included DewesoftX software enables import of DBC or AUTOSAR XML files which will automatically set the CAN channel list.

FANLESS CHASSIS AVAILABLE

1, 2 and 4 port CAN port are fanless by default, and even the 9 port CAN device can also be built into a fanless aluminium chassis with IP50 degree of protection for worry-free CAN acquisition in harsh, dusty environments.

DS-WIFI



2.4/5 GHz SOFTWARE SELECTABLE WITH AC SUPPORT

Gigabit Ethernet port supports 2.4 GHz, 5GHz, and all the legacy wireless modes with up to 80 MHz wide channel - 802.11 b/g/n for 2.4 GHz / 802.11 a/n/ac for 5 GHz.

RUGGED, RELIABLE, AND WATERPROOF

The modems are built in a rugged, waterproof sealed industrial-grade metal case.

LONG RANGE

With high output power DS-WIFI4 now provides a longer data transfer range up to 2km in an open environment.

SMALL SIZE

Because of the small and compact size of the wireless modems, they can be placed anywhere on the vehicle, motorcycle, or any other object.

MOUNTING ACCESSORIES INCLUDED

The DS-WIFI kit includes all mounting and cabling accessories that you need to connect to your DAQ systems.

DS-WIFI device is a Wi-Fi modem for long-range wireless data transfer between our data acquisition systems. It is perfectly suited for testing moving objects and for remote measurement applications.

EtherCAT® ACCESSORIES

DEWESOFT 7-YEAR WARRANTY

Our warranty covers that the instruments function as promised for a period of 7 years from the day of the delivery.

EtherCAT® HUB

EtherCAT® HUB allows connection and power injection for up to 7 EtherCAT® slave devices (KRYPTON, SIRIUSe, IOLITE).

EtherCAT® GPS JUNCTION

Used similarly as ECAT sync junction for synchronization between USB and EtherCAT® based data acquisition devices using GPS as a synchronization time source.

EtherCAT® REPEATER

EtherCAT® repeater is a part of EtherCAT® accessories used for extension of EtherCAT® hybrid cables allowing maximum connection of two 50m long cables.

EtherCAT® SYNC JUNCTION

Used to synchronize acquisition from Dewesoft EtherCAT® based data acquisition devices like KRYPTON with USB data acquisition devices like SIRIUS USB and DEWE-43A.

Power and synchronization accessories for KRYPTON and SIRIUS EtherCAT® and USB data acquisition systems.

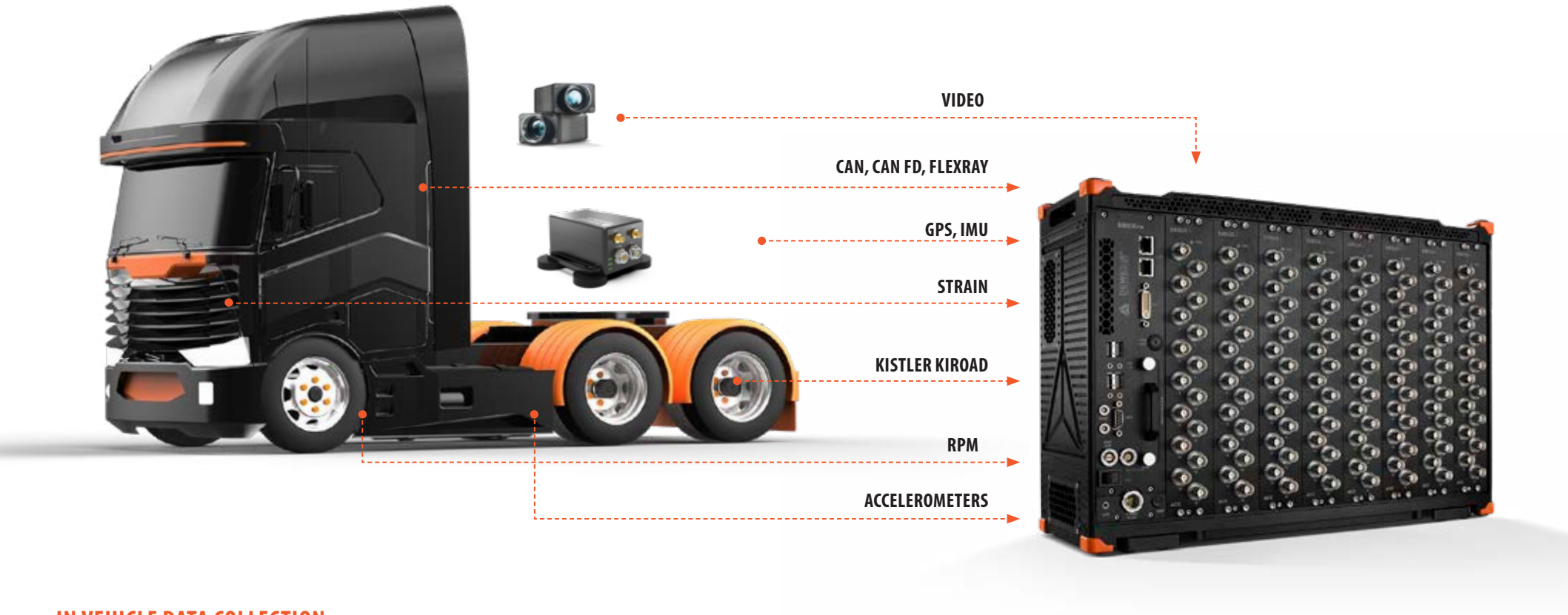
EtherCAT® POWER INJECTOR

Used to inject additional power into the EtherCAT® measurement chain. It is simply connected into the EtherCAT® chain as any other EtherCAT® DAQ module. ECAT power injector will inject and supply fresh power for all the DAQ nodes.

EtherCAT® POWER JUNCTION

Used to connect any EtherCAT® data acquisition device like KRYPTON or SIRIUS with the power supply and standard PC computer with the RJ45 Ethernet port.

ROAD LOAD DATA ANALYSIS



IN VEHICLE DATA COLLECTION

Virtually any analog, counter, and digital sensor can be connected to the system. Measure vibration, strain & stress, acceleration, forces, wheel speed.

OTHER DATA SOURCES

Additional synchronized acquisition of other sources is possible within the same system – Kistler RoaDyn, Kistler Kiroad wheel force transducers, GPS, inertial sensors, CAN, CAN FD, OBDII, J1939, LIN, FlexRay, XCP/CCP, Video, etc.

PERFECT SYNCHRONIZATION

Acquired data from various sources are synchronized with microseconds accuracy.

RPCIIII EXPORT

Data analysis and replay data can be directly exported to standard RPCIII format.

Durability measurements during actual test drives or on testbeds, either for entire vehicle or certain components. Various smart technologies eliminate re-testing, and dramatically shorten test time.

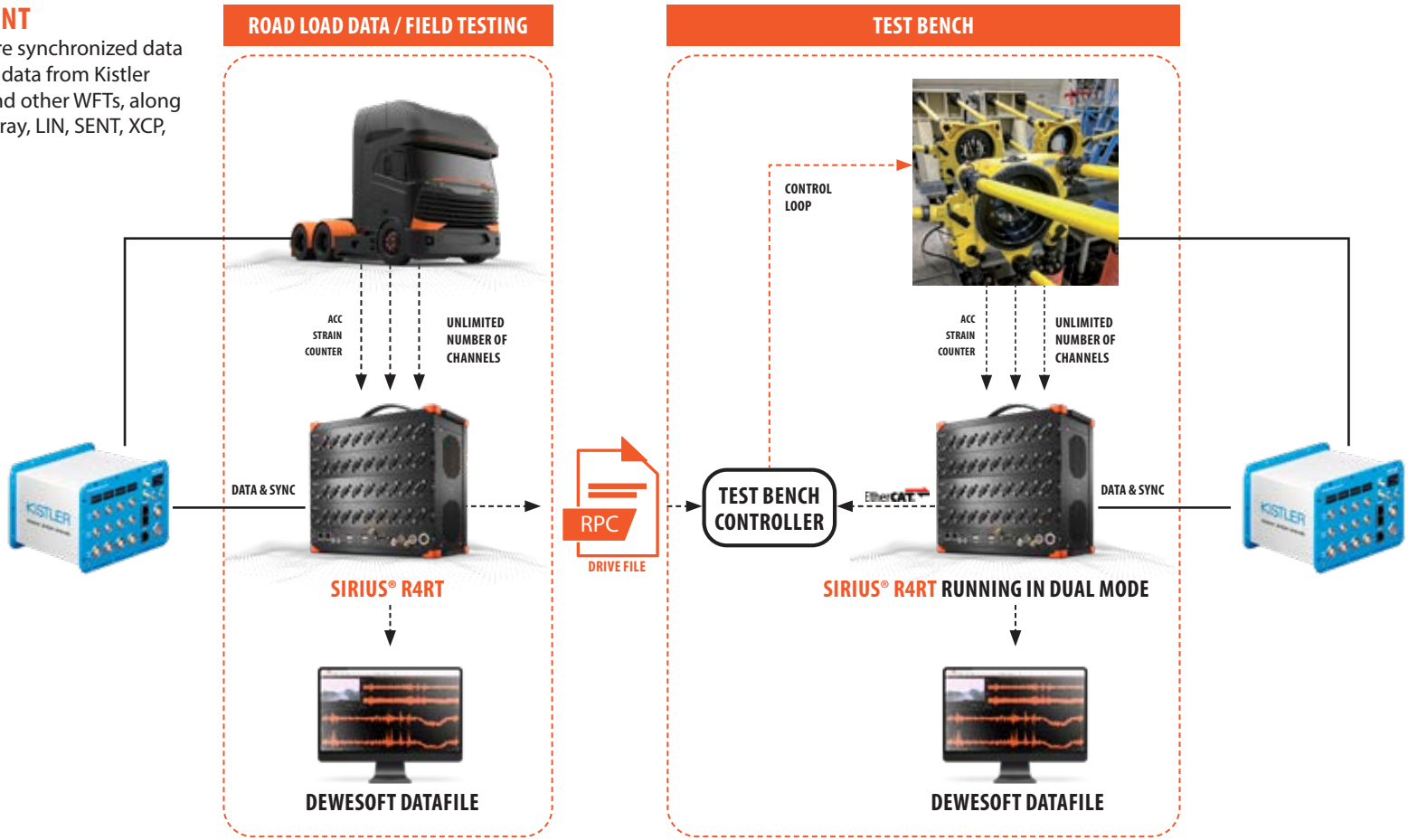
ADDITIONAL ANALYSIS

Combine different applications and analysis with the same system. Vehicle dynamics, combustion analysis, vibration, etc. can be combined in one synchronized data file.

DURABILITY TESTBED INTEGRATION

SINGLE MEASUREMENT

Dewesoft system can store synchronized data from SIRIUS devices with data from Kistler KiRoad or Roadyn2000 and other WFTs, along with vehicle CAN FD, Flexray, LIN, SENT, XCP, CCP and other sources.



TEST BED INTEGRATION

The EtherCAT® slave port on the R8RT and R4RT can feed the data to any EtherCAT® master controller in real-time. This solution offers easy integration with MTS and Instron road load simulators, with just one cable.

REDUCED COMPLEXITY

Compared to traditional sensor input -> analog out -> analog in the conditioned data is sent digitally and therefore greatly reduces complexity of the system.

Analog signal transfer is a thing of the past with Dewesoft's all-in-one durability test solution. Save time and money by using the same system for acquisition and driving the testbed - using a single EtherCAT® cable.

PORTABLE SETUP FILES

Dewesoft allows easy transfer of the channel setup to MTS testbed reducing setup time and risk of error.

ANALOG OUTPUT

The Dewesoft R8 with optional rear analog outputs is the perfect solution for replaying recorded data, and transmitting analog signals to control the test bed.

ONE SYSTEM FOR ROAD AND LAB TESTING

Save your money! A single Dewesoft system can be used to record data on real or proving ground roads - and also in the lab, to replay the recorded data into the road load simulator.

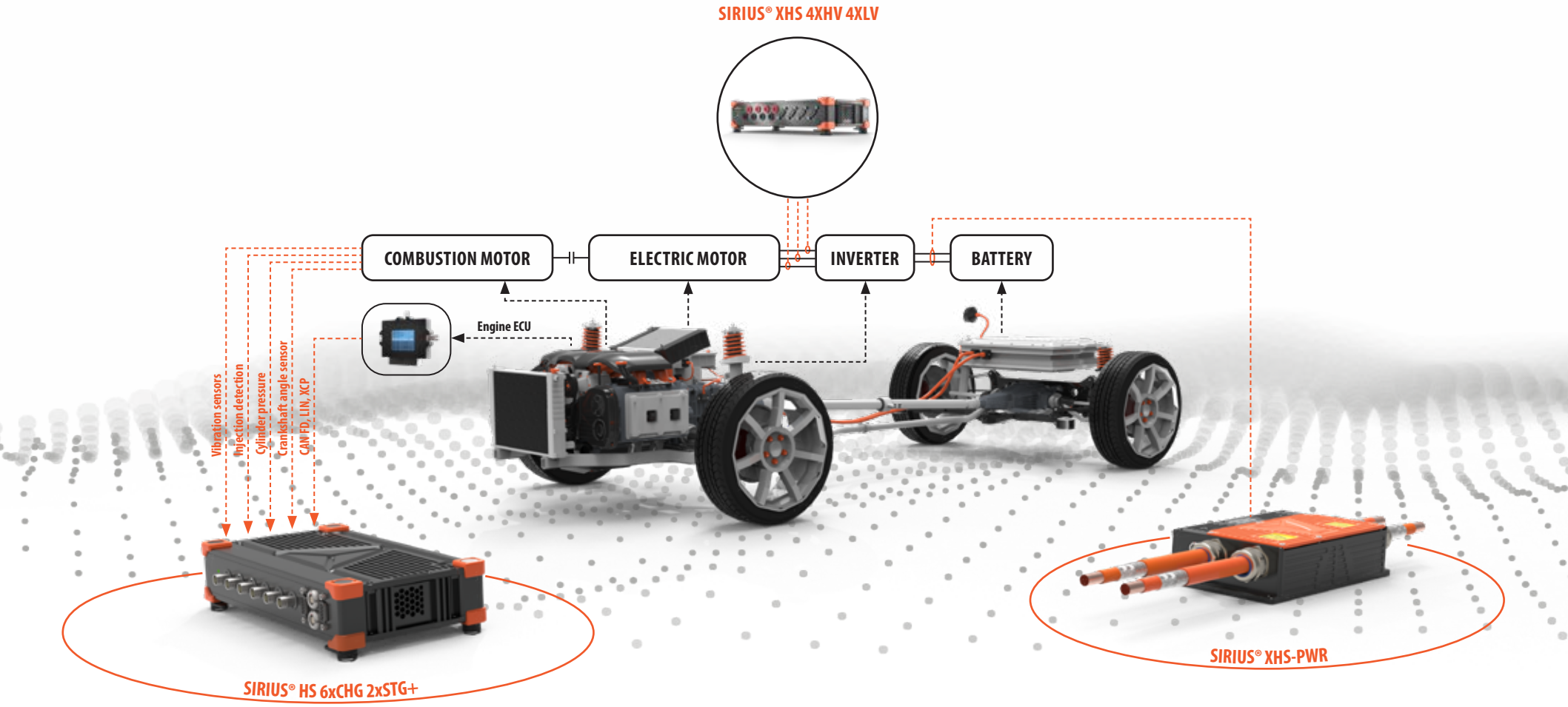
COMBUSTION & HYBRID ANALYSIS

MULTIPLE DATA INTERFACES
CAN, CAN FD, J1939, XCP, CCP, LIN, SENT, ModBus, OPC UA, Flexray, Ethernet, GPS, Video,...

DIRECT SENSOR SUPPORT
Integrated charge type amplifier for cylinder pressure sensors and direct connection of any RPM sensor (stock - 60-2, encoder, CDM+trig).

NEW KNOCKING ALGORITHM
Knocking can be accurately detected and measured with the updated knocking algorithm with an output of the actual knocking signal curve.

PERFECT INTEGRATION
Interface to testbed via AK-protocol for laboratory use. CAN or XCP compatible with ETAS INCA, Vector CANape, or ATI Vision for mobile use.



COMBUSTION & HYBRID ANALYSIS

ADVANCED CALCULATIONS
Knock detection, thermodynamics, polytropic coefficient, compression curve...

READY FOR ANY ENGINE
Cylinder deactivation, variable compression ratio, dual polytropic coefficient with automatic detection and input.

STANDARD OUTPUTS
Maximum pressure, MEP, power, work, torque, temperature, average outputs...

HIGHEST ACCURACY
Angle resolution from 2° to 0.025° crank angle.

Complex measurements made easy with our new combustion analyzer. From the smallest single cylinder engines to the largest multi-cylinder ones. Simultaneous use of the combustion analyzer with the power module makes the perfect solution for hybrid engine test!

E-MOBILITY

MOTOR/INVERTER TESTING

Combined motor and inverter testing is the Power Analyzers domain. It offers a high number of input channels for both voltage and current measurements, and provides synchronized data acquisition on all channels.

The Dewesoft R8D Power Analyzer can measure 8 x 3-phase systems simultaneously using a single measurement device. This enables the measurement of an entire power system (e.g. electric vehicle, aircraft, ship etc.) completely synchronous.

The analyzer combines the functionalities of motor and inverter testing and analysis as well as the capability to measure other parameters such as speed, torque, temperature, video, GPS, and CAN.

Earlier typical test bed applications required the use of multiple measurement instruments - Power Analyzer, Scope, Data Logger, CAN reader etc. The Dewesoft Power Analyzer facilitates the measurement and analysis of all the data that would have been measured with such devices in a single measurement device.

- Efficiency
- Power & power quality analysis
- Analyzing 1-12 phase motors
- Raw data analysis
- Transient recording
- Data logging
- Scope
- Vectorscope
- Measurements such as speed, torque, temperature, etc...

All the data can be stored at the full-sampling rate and all analysis can be done during the measurement. Furthermore, the unique post-processing functionality enables data manipulation after the measurement (e.g. mathematics, power analysis settings, etc.). For instance if phase voltages were falsely connected this can be rectified, eliminating the need to repeat the measurement.

TYPICAL CONFIGURATION

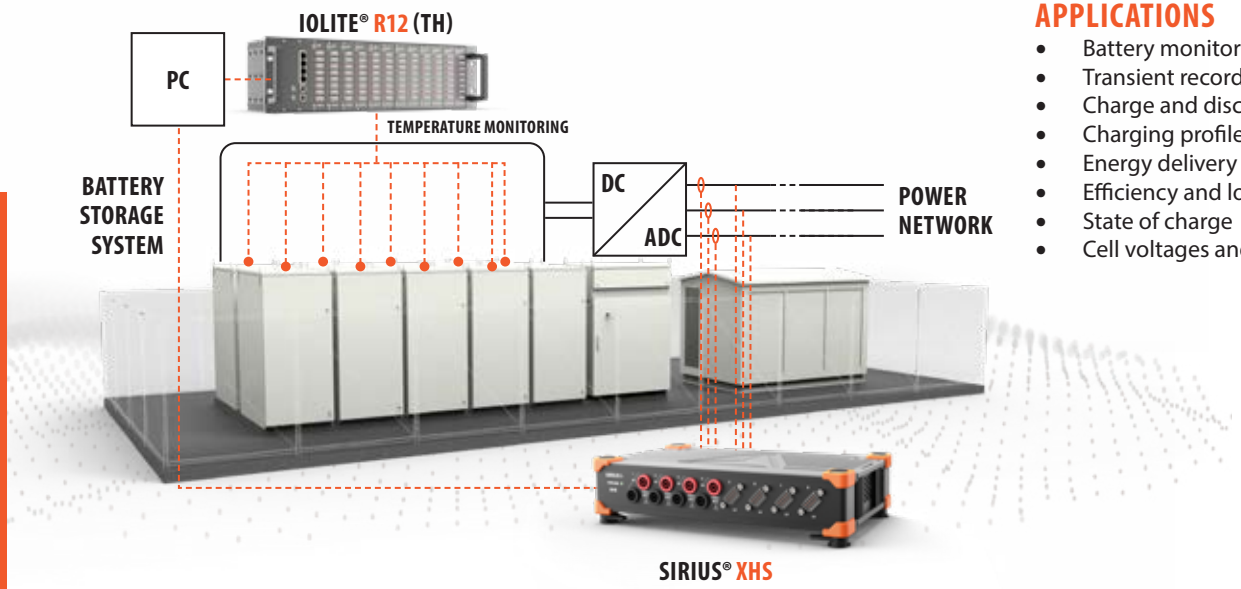
12x Voltage
12x Current
Power Supply for Current transducer
1x Torque
1x Speed

BATTERY TESTING

The batteries in battery electric vehicles (BEVs) are exposed to conditions not optimal for batteries. These include extreme temperatures both hot and cold, humidity, as well as vibrations and shocks. These all have an effect on the stability of power delivery and efficiency of the battery.

EXTENSIVE TESTS

This makes it crucial to do extensive tests on batteries: starting from the cell-characteristics leading up to the complete powertrain of the BEV. Detailed analysis requires temperature and voltage measurement at multiple points e.g. 50x cell voltage and 50x cell temperature measurements.
The flexible and scalable solution from Dewesoft can be configured to encompass over 1000 channels with many different sensors - all synchronised for a detailed analysis.



Battery testing has a broad spectrum of testing requirements, Dewesoft covers them all with ease, whether only one or a combination, the Power Analyzer and Power Quality Analyzer delivers the best results all of the time.

BATTERY DEVELOPMENT

Cell characterisation, endurance and aging tests, shock and vibration, misuse tests such as crash tests, short-circuit tests, overheating-, overloading-, overcharge- tests, forced discharge tests, impact/crush test, thermal misuse,

GENERAL BATTERY TESTING

Voltage and current, power and energy, temperature and humidity, pressure and vibration,

BATTERY CHARGING ANALYSIS

AC/DC charging, charging energy, charge-/discharge efficiency, charging process and time, harmonic analysis as well as inductive and conductive charging.

BATTERY TROUBLE SHOOTING

Such as voltage drops, voltage commutation unbalance and inrush currents.

APPLICATIONS

- Battery monitoring
- Transient recording
- Charge and discharge analysis
- Charging profiles
- Energy delivery
- Efficiency and losses
- State of charge
- Cell voltages and temperatures

EV CHARGING ANALYSIS

CONDUCTIVE AND INDUCTIVE CHARGING

Charging whether conductive (plug-in charging) or inductive (wireless charging) can be analyzed with Dewesoft data acquisition devices, for both alternating current (AC) and direct current (DC).

With higher switching frequencies of the inverter (up to 150 kHz), high sampling rates of up to 15 MS/s ensure that even the fastest transients can be monitored and analyzed.

CHARGING PROFILE AND TIME

This types of tests include analyzing the charging station itself over the different charging levels. Furthermore, they involve analyzing the charging process of the battery starting at the power delivery to the charging station to bulk, as well as the absorption and floating stages of charging.

CHARGE AND DISCHARGE EFFICIENCY

During charging and discharging some energy is lost through heat. The quotient of the amount of energy that is delivered by the battery and the amount of energy that was delivered to the battery, can be measured. Additionally, the efficiency of the drive train from the battery over the inverter to the electrical motor, auxiliary power consumption and finally the actual power that arrives at the wheels, can be measured and analyzed.

TESTBED / ON-ROAD TESTING

Dewesoft data acquisition devices offer the modular design and flexibility that is suited for both testbench testing and in-vehicle testing.

SUPPLY FOR SENSORS

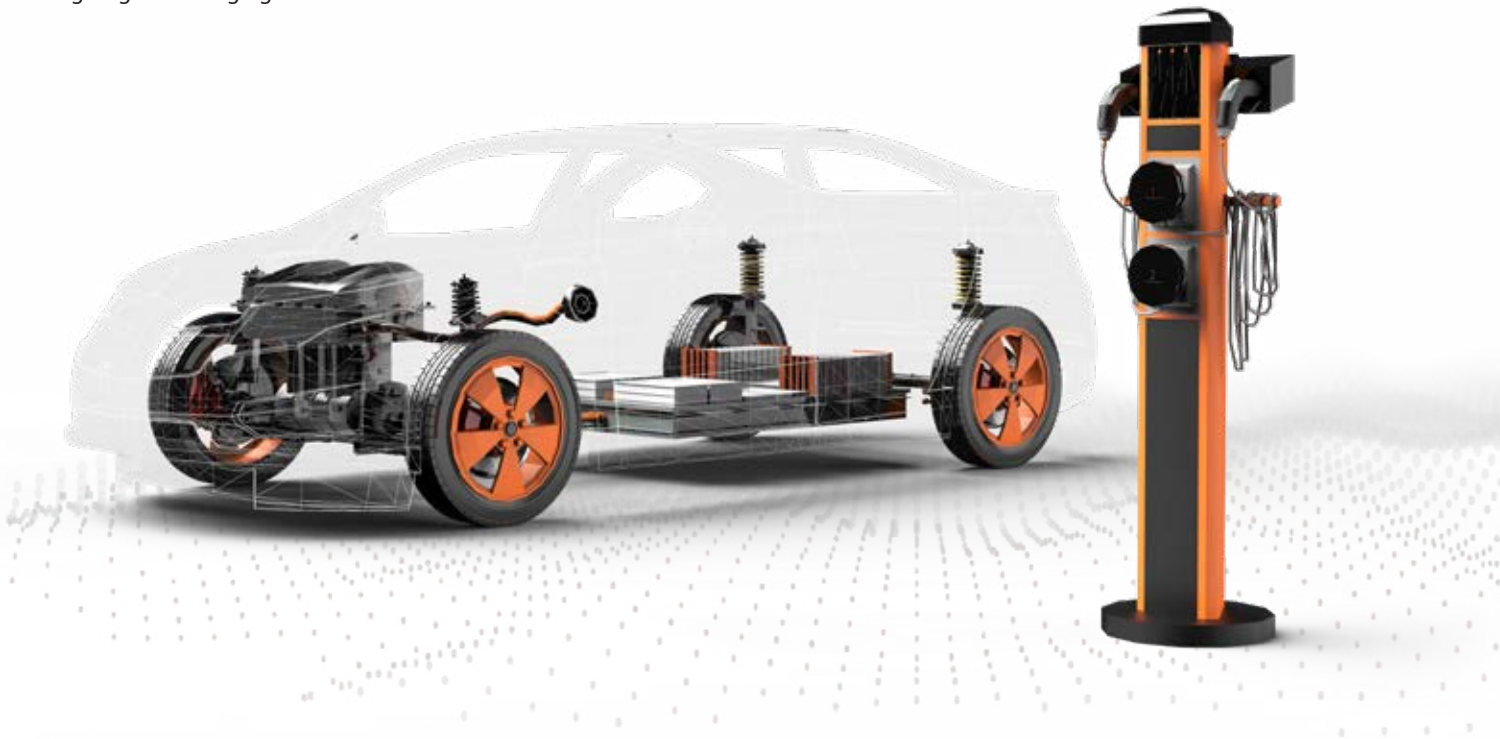
For real-drive tests no auxiliary power is needed from the vehicle. The Dewesoft battery packs - which are hot swappable - can power the Dewesoft system as well as the current transducers and other sensors. With SIRIUSi-PWR-MCTS2 even zero flux transducers that need up to 20 W per unit can be powered. This ensures a true measurement without external influences.

IN-VEHICLE USE

Measurements on BEVs under real-drive conditions require a powerful, mobile, and extra compact measurement system due to the constraints in space. The system also needs to be able to power measurement sensors and other auxiliary systems such as screens directly. Dewesoft Power Analyzers well-suited for this application.

TESTBENCH

Test benches use several important interfaces such as CAN, OPC-UA, DCOM, etc. to receive and relay information. The Dewesoft NET option provides a remote control feature for Dewesoft data acquisition systems, enabling you to control the entire test procedure from a single PC in the control room.



TYPICAL CONFIGURATION

IOLITE® modules
for temperature monitoring
(8x TH, 8x RTD)

SIRIUS® XHS
for inverter monitoring

BRAKE NOISE

VDA 303 AND SAE J2521
Software is developed according to VDA 303 guideline and compatible with SAE J2521.

SQUEAL TRACKING
Each detected squeal is tracked. During the squeal event, statistics on squeal parameters and other DewesoftX channels (temperatures, RPMs, vehicle speed...) can be calculated.

CALCULATION SETTINGS
Squeals are detected from amplitudes of sound and mechanical vibration. Fourier transformation settings are integrated. Only direct time-domain measurements are needed to detect squeal events.

Detect and track brake noise events from microphone and accelerometer measurements.

EASY PAIR DEFINITION
Detects squeal events from paired microphone and accelerometer measurements. Pairs are generated automatically from specified accelerometer and microphone channels.

FLEXIBLE CONFIGURATION
The number of microphone and accelerometer channels is not limited by the software.

BRAKE TESTING

ONLINE CALCULATIONS
Instant calculation of outputs like MFDD, start speed, stopping time, corrected brake distance, brake deceleration, maximum deceleration and custom outputs.

REAL-TIME RESULTS
Results validated and visualized in real-time during the test allow an easy check if the tests are successful.

The brake test system from Dewesoft is very flexible and covers all kind of brake tests, braking comfort and testing vehicles with regenerative braking.

SUPPORTS STANDARDS
Brake tests according to several international standards like ECE13H, FMVSS 135, etc.

BRAKE PEDAL SENSOR
Direct brake pedal force, travel, and pressure sensor inputs via analog or CAN interface.

AUTOMATED WORKFLOW AND REPORTS
Automated testing procedures and reporting.

WIDE RANGE OF APPLICATIONS
Built-in analysis of standard brake tests, plus ABS testing, braking comfort, and brake squeal allow for additional test standards or maneuvres to be performed, such as tire, acceleration, handling, and/or fuel consumption tests.

BRAKE TEMPERATURE
Measures and logs multiple brake temperature and pressure channels.

POLYGON AND GPS SOLUTIONS

3D VISUALIZATION
Freely definable view angles gives a perfect view of the manoeuvre.

ANY GPS DATA SOURCE
GPS data from various sources can be used for measurement, and as inputs for the Polygon module. CAN, Ethernet or RS232 data can be read directly from 3rd party devices.

UNIVERSAL
Suitable for ground, air (high G testing, performance testing) or sea (handling tests, pass by noise, obstacle avoidance test) applications.

EXACT VEHICLE SHAPE
2D shape of the vehicle can be defined for exact front and rear vehicle reference point outputs.

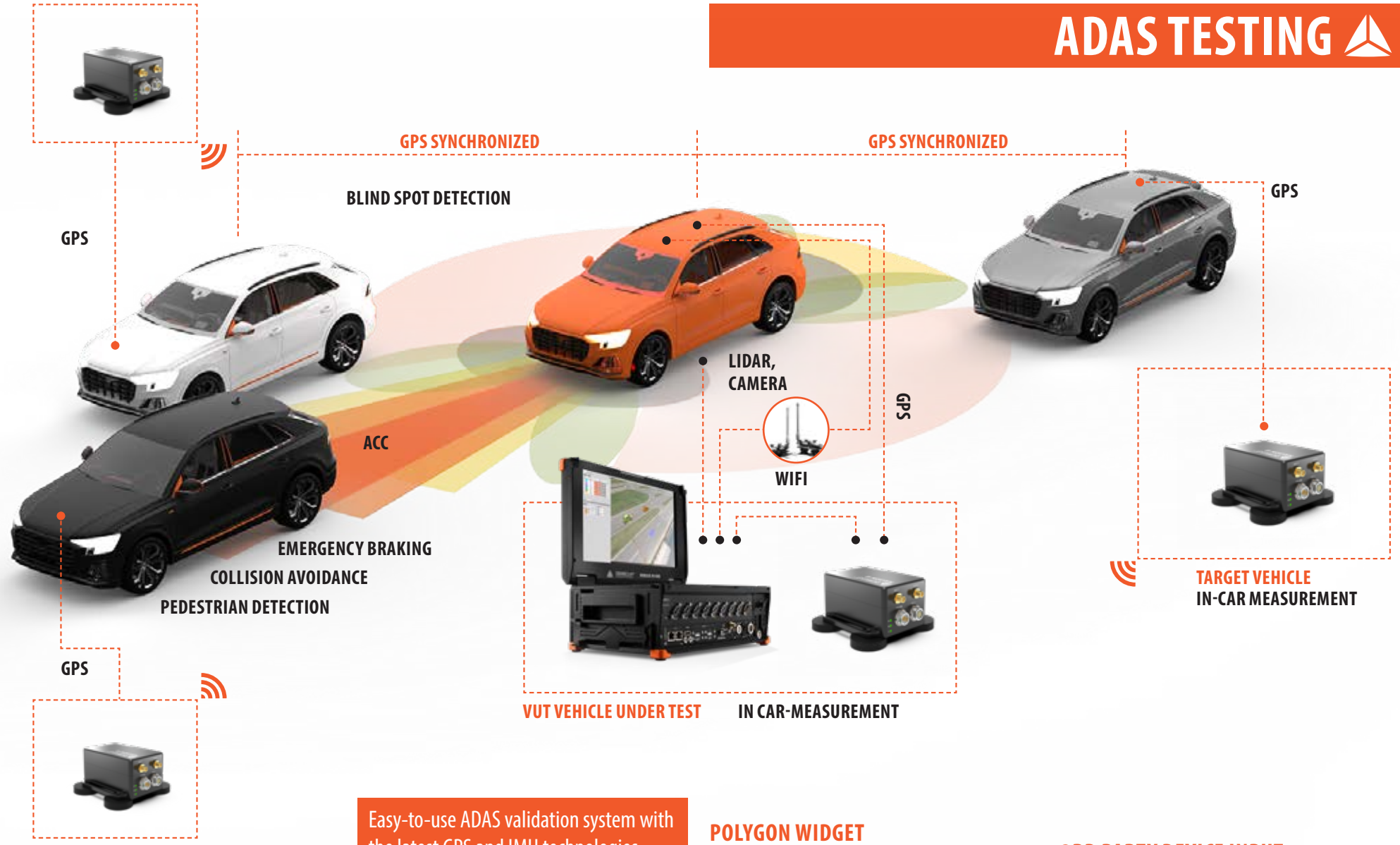
PERFECT HARDWARE
Synchronous acquisition of 2 cm RTK GPS and IMU sensor with additional analog, digital and vehicle bus channels.

The Dewesoft polygon option is the most versatile and widely used tool for performance tests. Along with the new OpenStreetMaps widget, it makes the ideal vehicle testing suite.

PARAMETER OUTPUTS
Each calculated parameter like distance, position, time to collision or overlapping are available as output channels.

NEW MAP WIDGET
Uses a tile server hosted by Dewesoft (OpenStreetMap). Online or offline (pre-downloaded) map usage possible. Multiple tracks can be displayed at once with channel based color tracking.

ADAS TESTING



PRECISE GPS AND IMU

Rugged and reliable miniature GPS aided inertial navigation system with high dynamic, 100 Hz update rate and static initialization. High-accuracy GPS or IMU with optional RTK support, offering 2 cm positioning accuracy.

Easy-to-use ADAS validation system with the latest GPS and IMU technologies with 2 cm accuracy. Advanced driver assistance systems are automated, which increase safety and improve the driving experience.

POLYGON WIDGET

Powerful 3D visualization of moving and static objects at any position.

POLYGON MATH

Math functions to place several moving and static objects and calculations of real-time positions, distances and angles from any object to another as well as collision calculations.

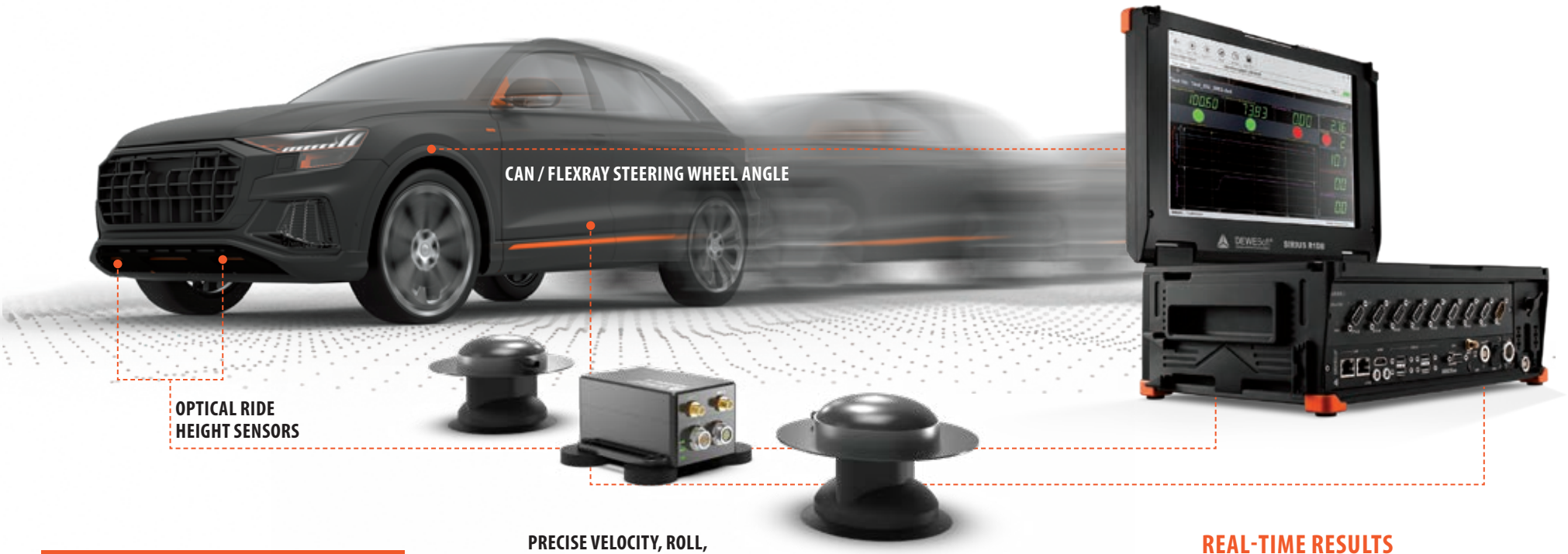
3RD PARTY DEVICE INPUT

Direct support for OxTS, Genesys and LORD inertial platforms.

RANGE OF APPLICATIONS

Collision avoidance testing, blind spot detection, adaptive cruise control testing, autonomous vehicles testing, lane departure warning, and lane assist system testing.

VEHICLE DYNAMICS



The Vehicle Dynamics is a plugin for standard test maneuvers for vehicle dynamics with quick pass/fail evaluation for the driver.

Test type	Ref. standard
Steady-state cornering	ISO 4138
Step steer input	ISO 7401
Step steer non-linear	Based on ISO 7401
On center sinus steer	ISO 13674-1
Pseudo-Random Steer	ISO 7401, ISO TR-8726
Pulse Input Method	ISO 17288-2
Slowly increasing steer	ECE 13H
Sine with dwell	ECE 13H

STANDARD VEHICLE TEST MANEUVERS

Dewesoft Vehicle Test Suite provides easy-to-use automated testing for multiple standard test maneuvers. For every type of test, validation criteria and other objective parameters are calculated and made available as calculated channels in the measurement files.

AUTOMATED RESULTS AND STATISTICS

Summary table with statistics and overlay results from a batch of test runs provides quick analysis of results.

REAL-TIME RESULTS

Results are visualized and validated in real time as the test is running, allowing instant verification of test success or failure.

AUTOMATED WORKFLOW

Pre-defined testing maneuvres and easy-on screen controls for the operator to configure and run the tests.

INS/GNSS FOR AUTOMOTIVE TESTING

DS-IMU1 and Navion i2 with single or dual antenna GPS provide accurate positioning and on-device calculations of slip angle, velocities, distances…

VEHICLE NETWORK SYSTEMS

MASTER OR SLAVE DAQ SYSTEM

Dewesoft can be the master DAQ system and gather synchronized data from multiple sources and buses, or be used as a signal conditioner where measured analog data is sent to other systems over CAN or XCP (Vector Canape, ETAS INCA, ATI Vision,…).

Forget exporting data from multiples sources and having to use various DAQ systems at once. Dewesoft's support for all major vehicle buses will replace your complete measurement lab with a single system.

MULTIPLE BUS SUPPORT

Support for CAN, CAN FD, Ethernet, J1939, OBDII, Flexray, CCP, XCP, LIN, SENT, Modbus, OPC UA,…

XCP MASTER/SLAVE

XCP is available as a software plugin where any channel can be transmitted over XCP. While the native XCP support on XHS and OBSIDIAN is limited to 1 MS/s, XCP Master plugin can read synchronized data from multiple devices at 5 MS/s.

NATIVE CAN FD SUPPORT

Full speed CAN FD is available on SIRIUS devices with read or write functionality. DBC or ARXML configuration import is supported as standard.

NVH SOLUTIONS

ALL NVH SOLUTIONS AVAILABLE IN A SINGLE SOFTWARE PACKAGE, USING THE SAME HARDWARE.

FFT ANALYZER
Top performance, advanced cursor functions, very high freely selectable line resolution, flexible averaging as well as many advanced functions for in-depth analysis.

SOUND LEVEL METER
IEC 61672 Class 1 sound level meter supports measurements in either air or water and can be combined with all other physical measurement parameters, vehicle bus systems, video, GPS and other math to build a thorough image of your entire measurement.

SOUND INTENSITY
Complies to Sound Intensity-based Sound Power calculation - Discrete points method (9614-1) and Scanning method (9614-2). Complete measurement chain of sound intensity solution can be calibrated according to IEC 61672.

ORDER TRACKING
Due to a high sampling and advanced alias free re-sampling mechanism, data is available in all three domains (time, frequency and order), everything at the same time in one screen and data file, perfectly synchronized. All angle sensors from tacho, encoder, geartooth, geartooth with missing or double teeth, tape sensors and others are supported to perfectly determine angle and rotational speed with 10 nsec resolution using Supercounter technology.

OCTAVE ANALYZER
True octave filters exactly represent the filter sets defined by the IEC 61260 standards and offer the user a real time response for vivid live visualization of data, crucial for advanced acoustic analysis.

SOUND POWER
Fully compliant with relevant sound power standards ISO 3741,ISO 3743-1, 3743-2, ISO 3744, ISO 3745, ISO 639-3,ISO 639-4, ISO 639-5 and ISO 639-6.

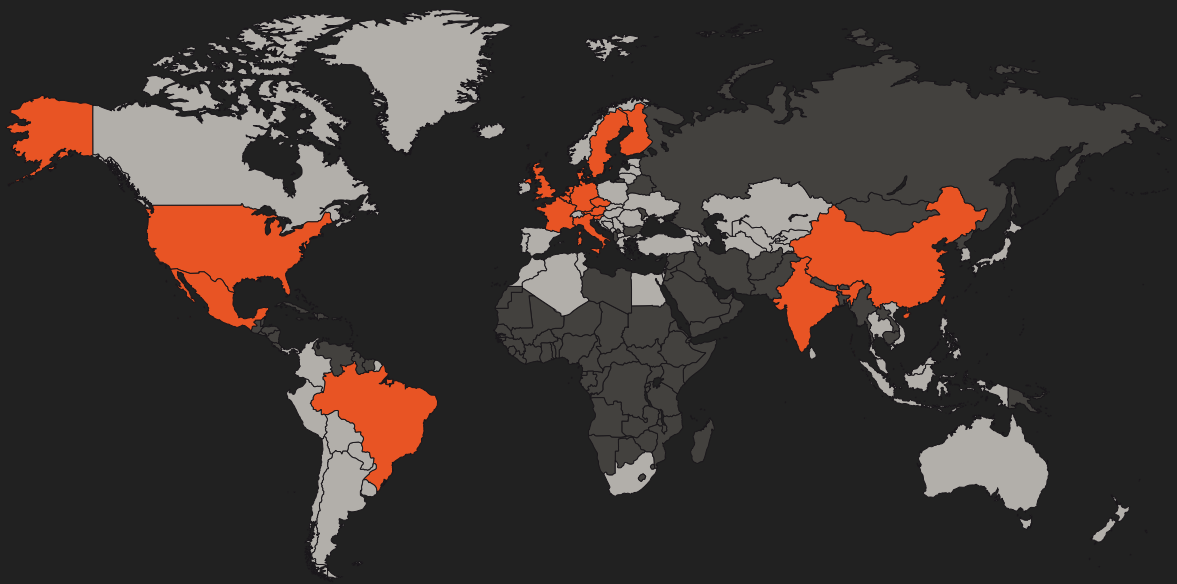
MODAL ANALYSIS
In combination with in-built function generator module, the system allows any type of excitation from fixed sine with 1 mHz resolution, sweep sine, random, step sine, chirp, burst and others. Operating deflection shapes (ODS), mode indicator functions (MIF), COLA analysis are fully implemented while operational modal analysis (OMA) and time domain ODS are available with close integration in connection to external software package.

BEARING FAULT (ENVELOPE)
Easily identify the bearing fault frequencies with the help of automatic markers in the spectrum. Defects on the cage, rolling element, outer or inner race (FT, BSF, BPFO, BPFI) and also their harmonics can be seen. Large database is available where the manufacturer and bearing number can be selected.

FATIGUE
Standard counting algorithms like Rainflow ASTM and Markov counting. Preprocessing or local extreme detection. Temporary fatigue results available online including additional math channels. Post processing with recalculation and export to multiple data formats.

BALANCING
Single plane (narrow disc) or dual plane (long shaft) balancing. Users are guided through the balancing steps for flawless operation including easy setup of angle sensor with live preview. Multiple modules can be combined for multi axis balancing to save time and greatly improve the quality of balancing.

ROTATIONAL AND TORSIONAL VIBRATIONS
Rotational and torsional vibration module along with order tracking are a strong tool to troubleshoot such issues in automotive, industrial or power-generation applications. Math module support any type of sensors. Sensors type can be totally different for both ends of the rotor.



DEWESOFT® WORLDWIDE: SLOVENIA, Austria, Belgium, Brazil, Czech, China, Denmark, Finland, France, Germany, Hong Kong, India, Italy, Mexico, Singapore, Sweden, UK, USA and PARTNERS IN MORE THAN 50 COUNTRIES

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Vehicle Analysis Brochure V23-2