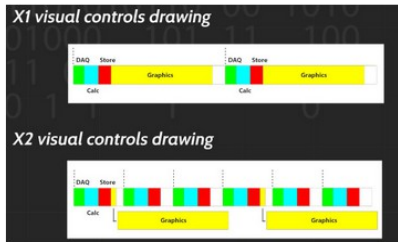


Step by step we are continuing to utilise advantages of powerful DEWEsoft hardware to achieve major software improvements. DEWEsoft X2 is the fastest software we have made. And by faster we really mean FASTER. DEWEsoft X2 is a major upgrade for all users of DEWEsoft instruments and it is **free of charge**.

### 10x

Faster Graphics



DEWEsoft X2 decoupled graphics rendering processes to be run in parallel to DAQ, Math calculations and storage processes allowing render thread to draw graphics totally independent of acquisition.

### 4x

Faster Math



In addition to parallel graphics rendering we are using modern CPU technology **SIMD** to do calculations in parallel. Math performance is dramatically increased. A typical demanding math operations like combustion analysis is performing up to 4x faster compared to X1. This allows more math operations to be performed in real time.

### 500 Hz

Acquisition Loop Speed

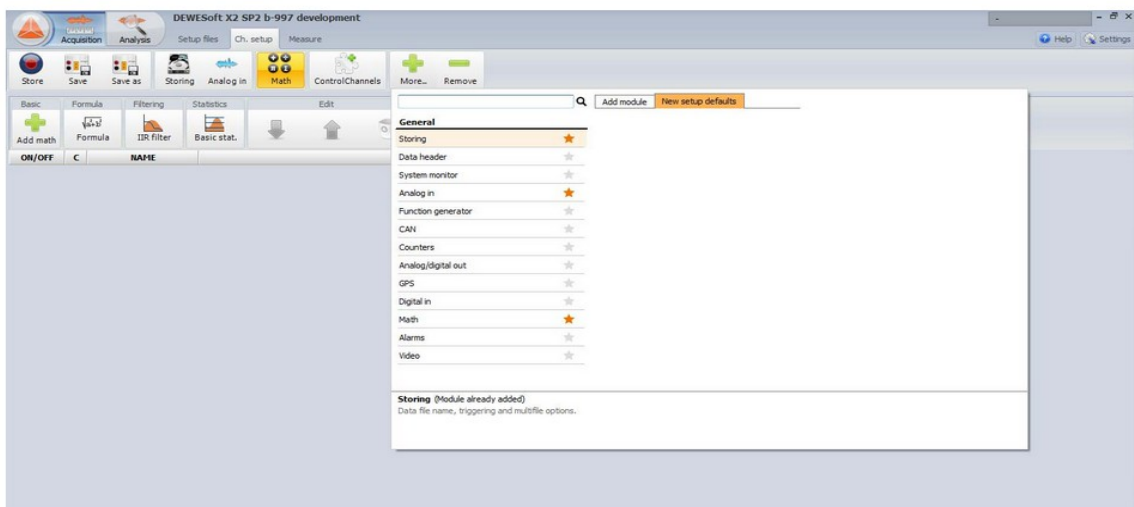
Test	X1	X2
Average acquisition loop	50+ Hz	1000 Hz
Sample interval	30 ms	3,2 ms
AI-DO(sync connector)-AI	50 ms	4 ms
AI-DO(ACC+ module)- AI	50 ms	7.5 ms
AI-Async AO-AI		6 ms
AI-FGen-AI	500 ms	50-70 ms

If we compare the DEWEsoft X1 to X2, the reaction time of output vs input **decreased a lot**. This is allowing almost real time command execution and is possible only because we are developing both hardware and software in-house which enables us to push the limits of our solution.

Need

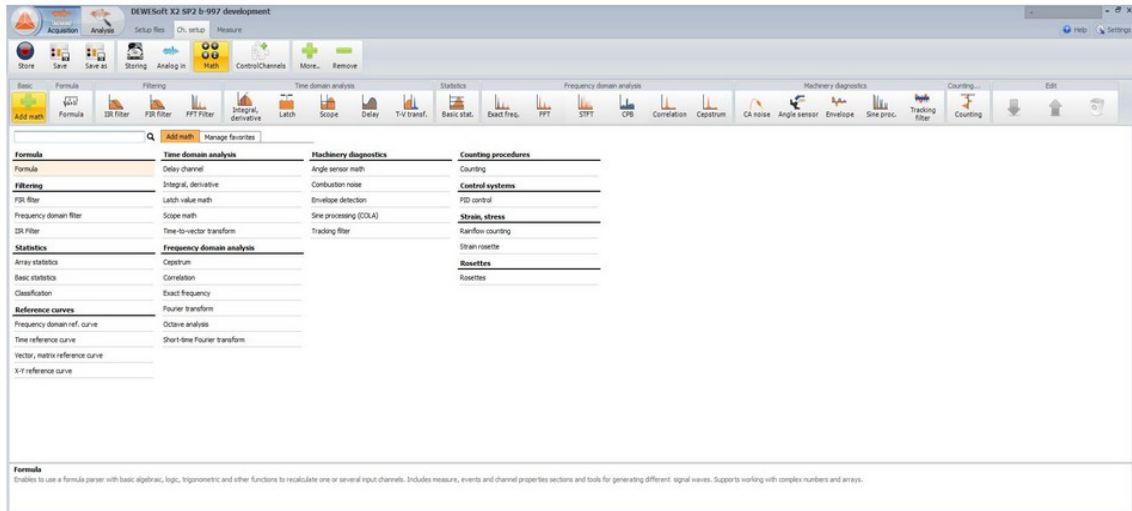
## Module Manager

DEWEsoft X2 now has intuitive module manager. Module manager is a set of supported interfaces (inputs and outputs) and math application modules that you can add into your project. Use built-in search functionality to quickly find needed ones and edit favorites which are then always available for your new projects.

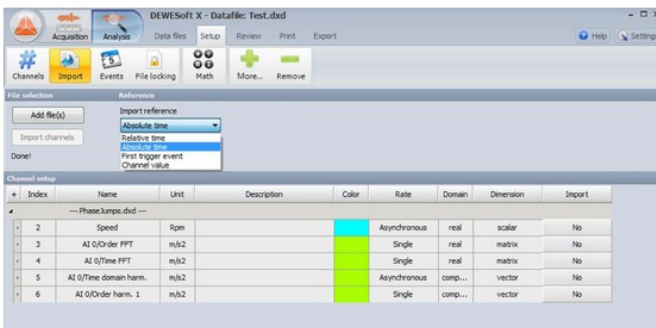


### Math Manager

Similar to module manager, we have created one-click manager for all built-in math functionality.

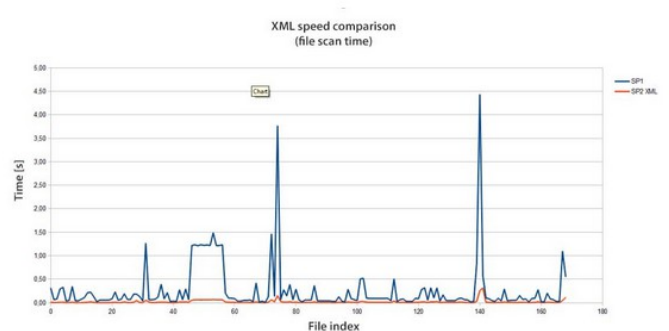


### File Import/Merge



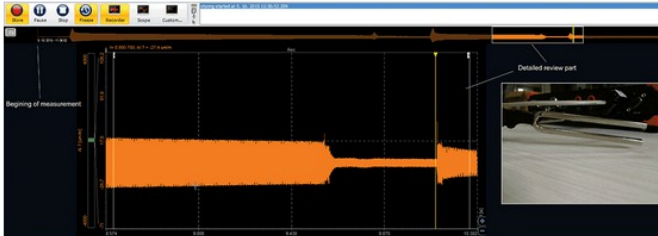
One of the most often requested features was to merge or combine multiple data files together. DEWEsoft can import sync and async time domain channels, frequency domain or any other array channels and constant values. Merge can be done by relative time, absolute time (NET files), trigger events or channel values.

### Faster XML Processing



DEWEsoft X2 can now load, save and scan setup and data files up to 10 times faster than in X1. Multi-files also improved and there is now no data lost events on multifile switch on setups with hundreds of channels (CAN, plugins, ...).

### Grand View



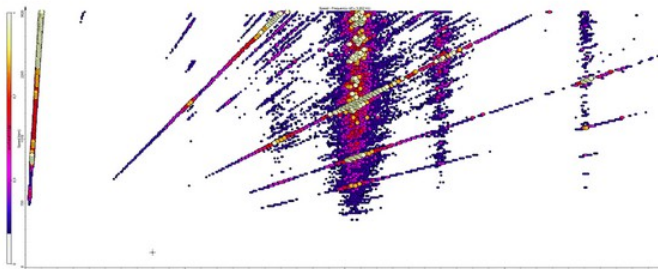
The **Grand View** feature allows you to review stored data during data acquisition, without interrupting data acquisition and storing process. You are able to zoom into any region of data already stored on disk during the measurement and review any type of signal including video, which makes (long term) measurements easier to manage.

### CAN offline decoding



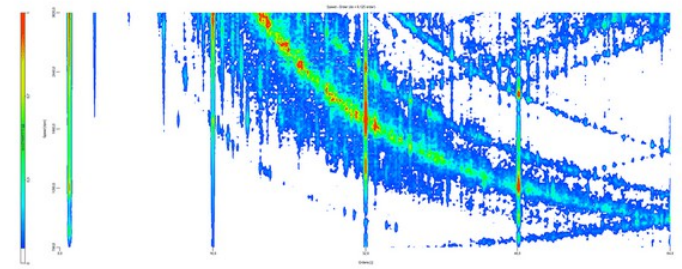
Acquire raw CAN traffic and do everything else later in analyse. Load DBC in analyse mode or update it with merge option if new version is available. Scan bus for all stored messages or add new messages manually. Add new signals, change scaling...

### Campbell Diagram



Visualisation of 3 dimensional values on a single plane, mostly used in Order tracking. Range of values is segmented in defined number of levels and each level is represented by a circle, whose radius and colour depends on level's index; bigger values are represented with larger circles and colours higher on the colour map. For better analysis of data, cutoff of lower levels can be applied.

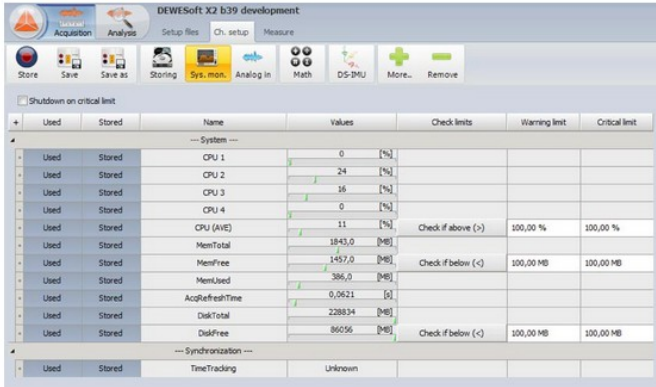
### 3D Graph Cutoff



3D graph is now able to cutoff noise floor, so that peaks are easier to see. Cutoff can be changed either in the left properties menu or by scrolling the mouse over Z axis.



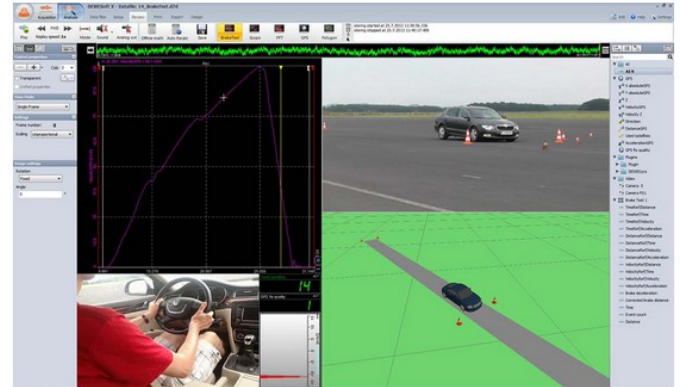
### System Monitor



Used	Stored	Name	Values	Check limits	Warning limit	Critical limit
---System---						
Used	Stored	CPU 1	0 [%]			
Used	Stored	CPU 2	24 [%]			
Used	Stored	CPU 3	16 [%]			
Used	Stored	CPU 4	0 [%]			
Used	Stored	CPU (Ave)	11 [%]	Check if above (->)	100,00 %	100,00 %
Used	Stored	MemTotal	1843,0 [MB]			
Used	Stored	MemFree	1457,0 [MB]	Check if below (-<)	100,00 MB	100,00 MB
Used	Stored	MemUsed	386,0 [MB]			
Used	Stored	AccRefreshTime	0,0621 [s]			
Used	Stored	DiskTotal	228834 [MB]			
Used	Stored	DiskFree	86056 [MB]	Check if below (-<)	100,00 MB	100,00 MB
---Synchronization---						
Used	Stored	TimeTracking	Unknown			

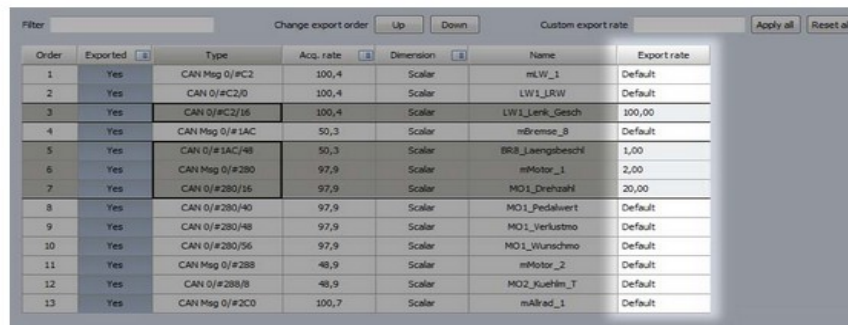
System monitor is new feature in DEWESOFT X2 used for monitoring system resources and performance. CPU parameters like load, refresh time, free memory, temperature and instrument status parameters like fan speed, temperatures and battery indications can be used just like any other channel in DEWESOFT.

### Improved Video (H.264)



Video engine is improved to support modern codecs like H.264. We now support cameras which are doing compressions in the cameras themselves. Acquisition of video is faster, files are smaller and DEWESOFT does not require any additional external codecs. We also added rotation of the video with arbitrary angle.

### Custom Export Rate



Order	Exported	Type	Acc. rate	Dimension	Name	Export rate
1	Yes	CAN Msg 0/#C2	100,4	Scalar	mLW_1	Default
2	Yes	CAN 0/#C2/0	100,4	Scalar	LW1_LRW	Default
3	Yes	CAN 0/#C2/16	100,4	Scalar	LW1_Lenk_Gesch	100,00
4	Yes	CAN Msg 0/#1AC	50,3	Scalar	mBremse_8	Default
5	Yes	CAN 0/#1AC/48	50,3	Scalar	BR8_Laengbeschl	1,00
6	Yes	CAN Msg 0/#2B0	97,9	Scalar	mMotor_1	2,00
7	Yes	CAN 0/#2B0/16	97,9	Scalar	MO1_Drehzahl	20,00
8	Yes	CAN 0/#2B0/40	97,9	Scalar	MO1_Pedalwert	Default
9	Yes	CAN 0/#2B0/48	97,9	Scalar	MO1_Verlustmo	Default
10	Yes	CAN 0/#2B0/56	97,9	Scalar	MO1_Wunschno	Default
11	Yes	CAN Msg 0/#2B8	48,9	Scalar	mMotor_2	Default
12	Yes	CAN 0/#2B8/8	48,9	Scalar	MO2_Kuehm_T	Default
13	Yes	CAN Msg 0/#2C0	100,7	Scalar	mAlrad_1	Default

In DEWESOFT X2 export rate can be defined independently of the channel sample rate. Each channel can be exported at its own export rate or by default selected channel is exported at its original rate.

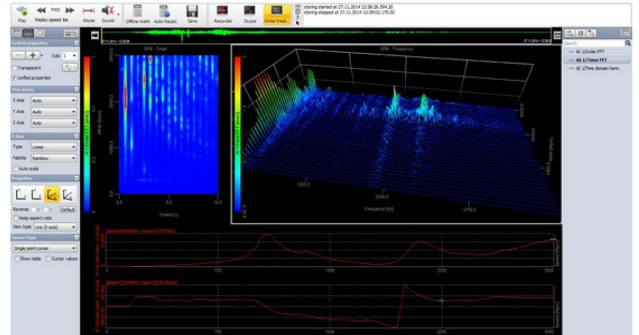
### New FFT Analyzer



The new FFT Analyzer in DEWESOFT X2 added much needed features like cursors function to add markers. You can add free, harmonic, sideband, max, RMS and damping markers.

You can compare different measurements together by using new import/merge functionality. All the features of FFT work in online or offline mode.

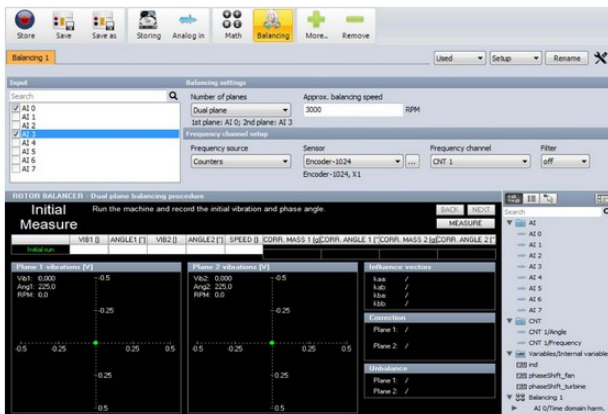
### Optimized Order Tracking



Order tracking application math was optimized and therefore **gained performance boost by 50%**. But that's not all. Order tracking also got new features like:

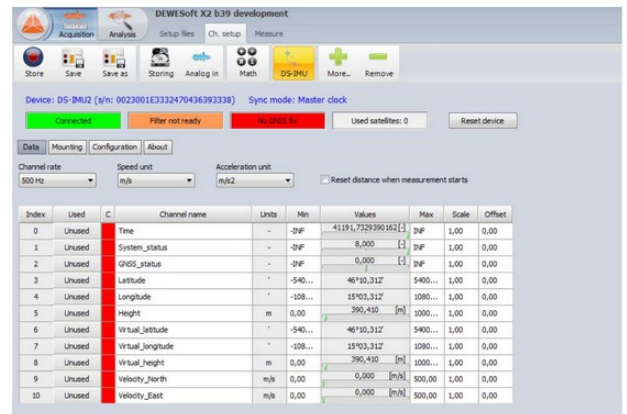
- Order cuts from 3D waterfall diagram
- 2D charts in frequency domain
- Line view on 3D waterfall diagram

### Redesigned Rotor Balancer



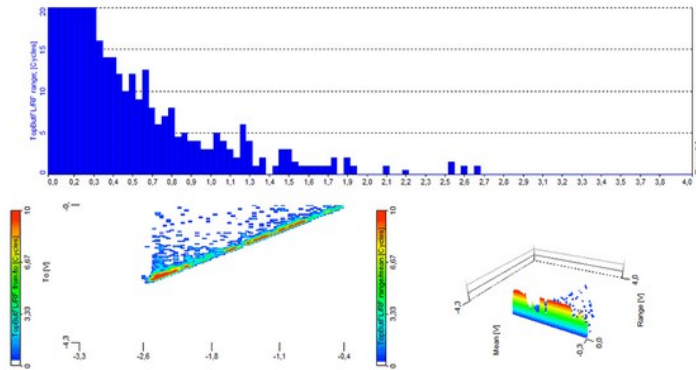
Rotor Balancer was redesigned in DEWESOFT X2 and is now available in form of **DEWESOFT application** instead of visual control. All settings of rotor balancer were simplified for easier configuration. There is no more needed to setup order tracking in order to use rotor balancer.

### DS-IMU Plugin



This plugin adds support for our own DS-IMU (Inertial Measurement Unit) next generation navigation instruments. It features up to 500 Hz output data rate and complies to IP67 & MIL-STD-810G environmental protection. It is synchronised with all other DEWESOFT devices and input sources.

### Fatigue Analysis



Fatigue Analysis toolbox represents a powerful fatigue analysis solution covering fatigue analysis stages from preprocessing and cycle counting to visualisation and data export. Preprocessing tools include turning points filter, rainflow filter and discretisation filter. Cycle counting methods support rainflow counting (compliant with ASTM E 1049-85) and Markov counting. Visualisation tools include range histograms, from-to matrices and range-mean matrices.



### DEWESoft X2 versions

DEWESoft X2 comes with many features and functionalities out of the box. Some of the analysis and math features are available as an option or upgrade. For more details see the feature matrix bellow. You can request for [fully-featured 30-day evaluation license online](#). This will allow you to evaluate Dewesoft X2 with all features for 30 days.

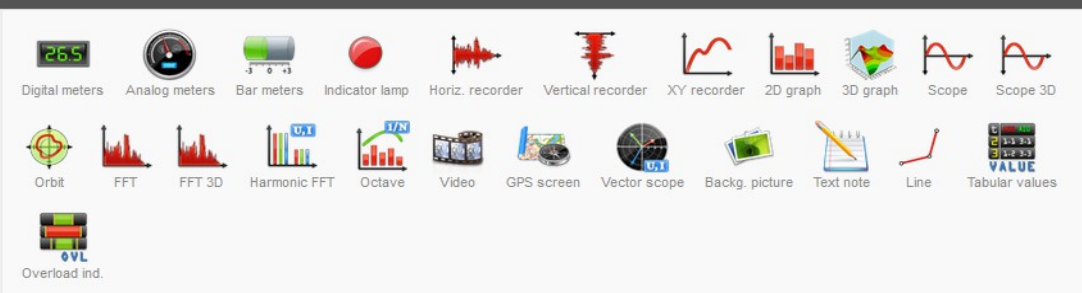
	EVALUATION FREE	PROFESSIONAL FREE with DEWESoft HW	DSA UPGRADE	ENTERPRISE UPGRADE	AUTOMOTIVE UPGRADE
<b>High speed acquisition cards</b>					
DEWESoft SIRIUS, KRYPTON, DEWE-43, MINOTAURS	✓	✓	✓	✓	✓
<b>Low/medium speed acquisition devices</b>					
DEWESoft DS-NET	✓	✓	✓	✓	✓
CPAD	✓	✓	✓	✓	✓
<b>Vehicle buses</b>					
DEWESoft CAN/J1939 devices	✓	✓	✓	✓	✓
Vector CAN/J1939 devices	✓	option	option	✓	✓
J1587/J1708 devices	✓	option	option	option	✓
XCP, CCP	✓	option	option	option	option
<b>Other input sources</b>					
GPS receivers <a href="#">Supported devices</a>	✓	✓	✓	✓	✓
Timing devices <a href="#">Supported devices</a>	✓	✓	✓	✓	✓
Gyro platform <a href="#">Supported devices</a>	✓	option	option	option	✓
Kistler wheels <a href="#">Supported devices</a>	✓	option	option	option	✓
PCM telemetry <a href="#">Supported devices</a>	✓	option	option	option	option
ARINC 429, MIL-STD-1553 devices <a href="#">Supported devices</a>	✓	option	option	option	option
ScramNET <a href="#">Supported devices</a>	✓	option	option	option	option
User inputs (control channels)	✓	✓	✓	✓	✓
<b>Cameras</b>					
DEWESoft cameras DS-CAM	✓	✓	✓	✓	✓
DirectX compatible cameras	✓	✓	✓	✓	✓
GigE cameras	✓	✓	✓	✓	✓
FLIR thermovision cameras	Option	Option	Option	Option	Option
Photron high speed cameras	✓	Option	Option	✓	Option
Video post synchronisation	✓	✓	✓	✓	✓
<b>Other</b>					
Sensor database	✓	✓	✓	✓	✓
TEDS support	✓	✓	✓	✓	✓
File import (merge)	✓	✓	✓	✓	✓
File export (to all formats)	✓	✓	✓	✓	✓
<b>Outputs</b>					
Alarm monitoring	✓	✓	✓	✓	✓
Analog replay of data	✓	✓	✓	✓	✓
CAN output	✓	✓	✓	✓	✓
Function generator	✓	✓	✓	✓	✓

Online/Offline Math					
<b>Basic Math</b> Formula editor, Filters (IIR, FIR), Cepstrum, Envelope detection, Exact frequency extraction, Integration, Derivation, Octave analysis, Statistics (Basic, Array), Reference curve, Latch, Combustion noise, Angle sensor math, Counting (Histogramming), Harmonic tracking filter, Two-sided Fourier transform	✓	✓	✓	✓	✓
Balancing	✓	option	✓	✓	option
Combustion analyser	✓	option	option	option	option
Fatigue analysis	✓	option	option	option	option
FFT analyser (basic)	✓	✓	✓	✓	✓
FFT analyser (advanced) Advanced cursors, bearing fault	✓	✗	✓	✓	✓
FRF	✓	option	✓	✓	✓
Human body vibration	✓	option	✓	✓	option
Order tracking	✓	option	✓	✓	✓
Power analysis	✓	option	option	✓	✓
Psophometer	✓	option	option	option	option
Sound level	✓	option	✓	✓	✓
Sound power	✓	option	option	option	option
SRS *	✓	option	✓	✓	✓
Torsional vibration	✓	option	✓	✓	✓

\* works only in analysis mode

### Visual Instruments

Available visual instruments



- Digital meters
- Analog meters
- Bar meters
- Indicator lamp
- Horiz. recorder
- Vertical recorder
- XY recorder
- 2D graph
- 3D graph
- Scope
- Scope 3D
- Orbit
- FFT
- FFT 3D
- Harmonic FFT
- Octave
- Video
- GPS screen
- Vector scope
- Backg. picture
- Text note
- Line
- Tabular values
- Overload ind.

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