Perception Basic FFT

Specifications

PERCEPTION BASIC FFT

The *Perception* software not only offers a powerful and extremely fast time domain display of live and stored data, the Basic FFT option also enables to transfer the data into the frequency domain and to display amplitudes over frequency. Therefore the user can obtain valuable information about the content of mixed signals like vibrations, shocks or noisy signals beyond what is visible in a time domain display.

Take a look into more details

The Basic FFT option offers the most common and useful single channel analysis functions like FFT or Linear Spectrum, Power Spectrum, PSD, ESD and others.

A broad selection of weighting windows and averaging options turn the Perception software into an entry level signal analysis tool.

And best, all of this can be done with data acquired with all recording systems supported by Perception, as our state of the art GEN DAQ product flagship, our rugged LIBERTY DAQ, or our Dimension or Sigma data recorders.

Even legacy products like BE256, MultiPro or the legendary Vision – as all supported by Perception – can be turned into a Dynamic Signal Analyzer by this new option.

### Frequency domain data in Live, Review while recording or Review

One of the key features of the Perception software is the ability to display live data, to review data while still being recorded, and of course offer powerful review.

Applying this concept to the Basic FFT option, the Perception software now can display live FFTs, can analyze PSDs of stored data while still recording and offer all of that in review as well. Name the Dynamic Signal Analyzer able to do this.

Linked displays and frame cursors

To maintain easiest correlation between time and frequency domain data, each "Spectral display" is linked to a time domain display. So whatever you see in the time domain, you´ll see in the frequency domain as well. No need for a special, complicated FFT display setup.

And as the FFT is applied to a block of data, while Perception offers to store continuously, a unique "block" cursor is used to mark in the time domain display the frame currently displayed in the frequency domain. Therefore the user gets the time domain info and the corresponding FFT snapshot information at a given position – correlating time and frequency domain data never was easier.
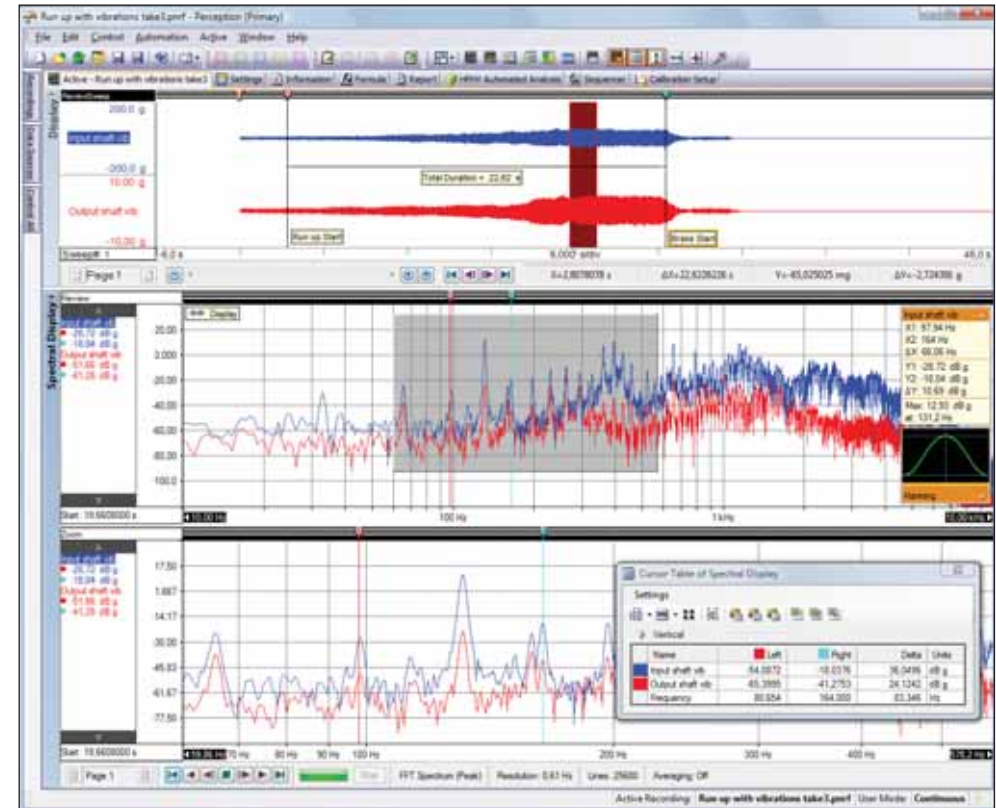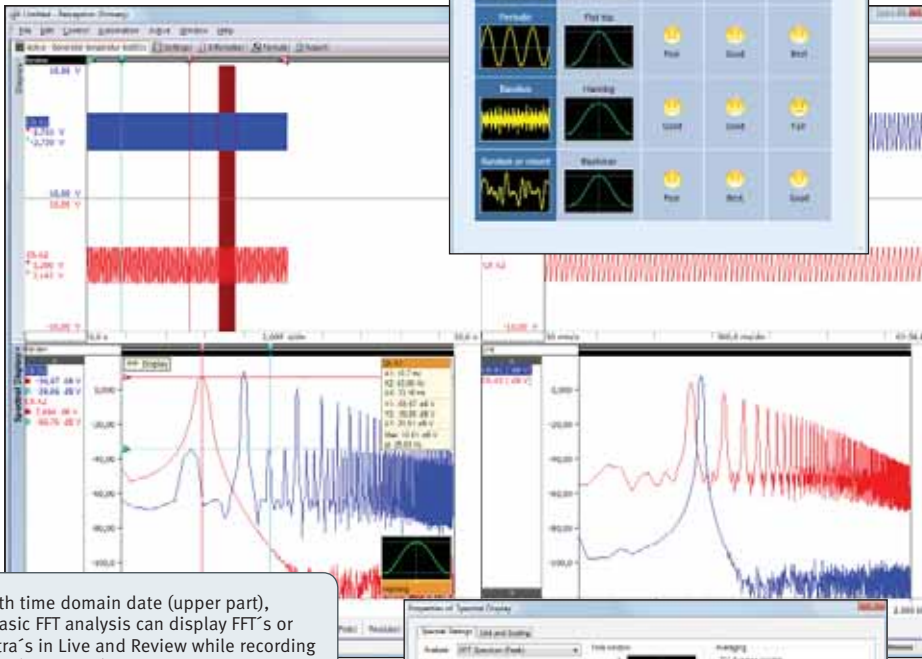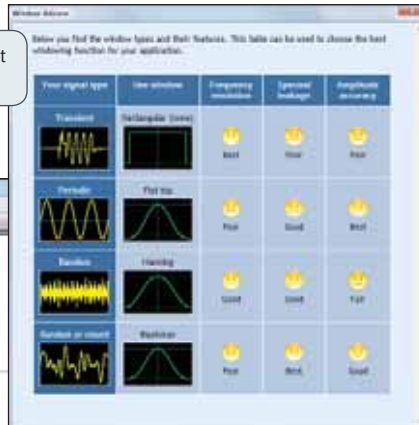

The Basic FFT option enables simultaneous time domain and frequency domain analysis of the same signals.

The on-screen Advisors assist users to select the proper windows and analysis function

As with time domain date (upper part), the Basic FFT analysis can display FFT´s or Spectra´s in Live and Review while recording modes (lower part)

All relevant parameters for the FFT analysis are entered in a single, simple and intuitive menu

Analysis functions (all single channel)

- FFT spectrum (Peak)
- Linear Spectrum (RMS)
- Auto Power Spectrum
- Power Spectral Density
- Energy Spectral Density
- RootHertz Spectrum

Windows selection

- Rectangular
- Hanning
- Flattop
- Blackman

Advisors help you to do the right thing

It´s not easy to select the proper analysis function and weighting window, as each analysis and window has its pros and cons; also, the "best" selection is pending from the signal type and the desired result; the build in Analysis Advisor and Windows Advisor of Perception´s Basic FFT option offer help for non-experienced users to choose the best analysis and window for any signal type and application.

Averaging options

- Linear
- Logarithmic
- Peak Hold

Frame cursor

The frame cursor indicates FFT block in time domain display; in case Averaging is enabled, the averaging area is marked as well

Live FFT Performance

The Live performance of the Basic FFT option is purely pending from the selected acquisition parameters like number of channels, sample rates and the PC performance.

Frame size / Number of lines / Resolution

Live:
Block size	256 to 65 536 samples
# of lines	100 to 25 600 lines

Review:
Block size	256 to 1 048 576 samples
# of lines	100 to 409 600 lines

Resolution The resolution is determined by the used sample rate and the block size: Resolution = sample rate / blocks size

Example: For a 102.4 kS/s sample rate the resolution ranges from 1.56 Hz/line to 400 Hz/line.