RealWave Pocket Analyzer

**PDA Multi-Function Analyzer
with Real-Time FFT • Spectrogram •
FFT Based Octave Analyzer, Vibration Level
Meter and FFT Based RPM Meter**

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Total Solution of Sound & Vibration

RealWave Pocket Analyzer

The data acquisition card using CF Card Type II is inserted to the Compact Flash Memory Slot of PDA (Model HP iPAQ hx4700 or hx2700) to analyze Real Time FFT· Spectrogram· FFT Based Octave Analyzer, Vibration meter with versatile filter and Human vibration filter, FFT Based RPM Meter as a portable and convenient equipment.

Basic Function

- Input : 1 channels of IEPE Type microphone or Accelerometer input (Hardware)
- Real time data (Wave File) store and replay
- Sensor Calibration : Sensitivity Calibration by Software
- Measurement configuration setup for objective and axis
- Option of measurement configuration store and recall from file
- Data Export
  - Image file : BMP, JPEG
  - Text file : TEXT, EXCEL, MATLAB
- Input signal gain : 1, 2, 4, 8, 16, 32, 64 times selectable
- Detector : Overload Detector
- Scale control of x and y axis : Linear, Logarithms, and dB selectable
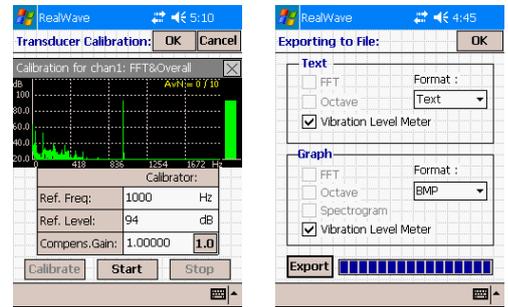

Calibration

Data Export
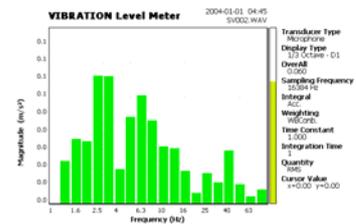
Exported Graph

Vibration Meter Software (Option)

- Sampling rate : 32768Hz
- Filter : High pass Filter with 1Hz, 5Hz and 10Hz
  Band pass Filter with 2~300Hz, 2~1kHz, 10~500Hz and 10~1kHz by ISO10816
- 3 Detectors : RMS, Peak, Peak-Peak Parallel display
  - Parallel display & measurement of acceleration, velocity and displacement
  - Independent option setup by detector.
  - Acceleration Unit : m/s^2, cm/s^2, mm/s^2, $\mu m/s^2$, g and dB selectable
  - Velocity Unit : m/s, cm/s, mm/s, $\mu mm/s$, $\mu m/s$ and dB selectable
  - Displacement Unit : m, cm, mm, μm and dB selectable
  - RMS, Peak, Peak-to-Peak, Max value output
- Display : 3 detectors value simultaneously, detector value and trace graph
- Measurement data and wave file store and replay in real time
- Time constant : 35msec(Impulse), 0.125sec(Fast), 1sec(Slow), etc.
- After integration, the high pass filter of 10Hz can be used. The velocity and displacement values will be valid only over 10 Hz
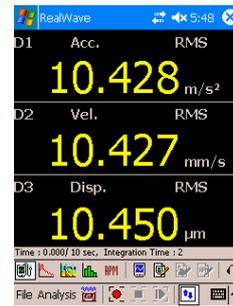
Acceleration, Velocity, Displacement Display
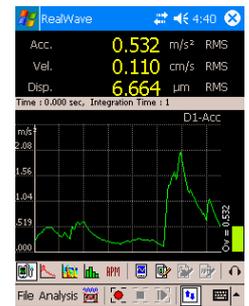
Vibration Value & Trace Display
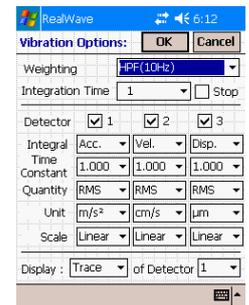
Vibration Option Setup

Human Vibration Measurement & Filter (ISO8041, ISO2631-Part 1, ISO 6954)

- General Vibration Measurement Mode
- Human Vibration Sampling Frequency : 1024 Hz
- Whole Body Combined Filter (ISO8041, ISO6954)
- FFT Based Octave Analysis (1/1, 1/3, 1/6 Octave)
  - 4096 Buffer Size, Hanning Window, 75% Overlap, Exponential Averaging

FFT based Octave Analysis and 3 mode of Vibration Measurement

FFT, Spectrogram, FFT Based Octave Analyzer

- Sampling Frequency Selectable (246~32768Hz)
- Buffer Size Selectable : Max. : 4096
  (Max. 1600 lines)
- Windowing : Rectangular, Hanning, Flattop.
- Averaging : Linear, Peak, Max(No. of Averaging), Exponential(Time Constant)
- Weighting : A, B, C, D, E
- Nth Octaves : 1/1, 1/3, 1/6 Octave
- Auto Peak Detecting, Auto-Scaling
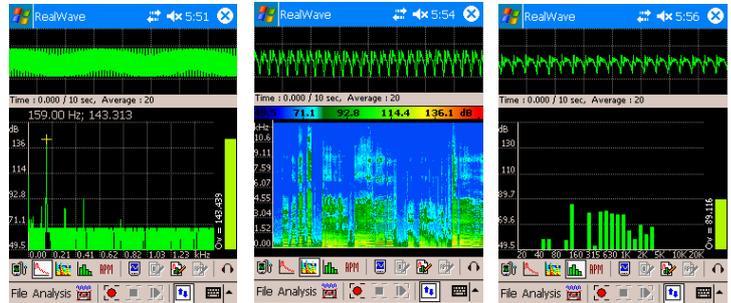
Time Signal and
FFT Spectrum

Time Signal and
Spectrogram

Time Signal
and Octave

Sound Hearing (Wave File Hearing)

The user can hear the real sound using a headphone in the mode of Real Time FFT · Spectrogram · FFT Based Octave Analyzer, Vibration meter function in real time.
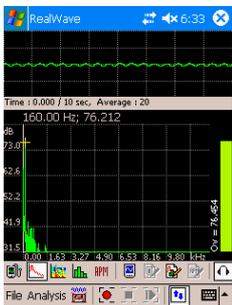
Real Sound Hearing Mode

RealWave Software Program in PC

All of the measurement and analysis data is measured by PDA and CF Card can be transfer to this RealWave software program in PC by trace of data, octave, and text file, and then the user can make a report and data management using Excel.
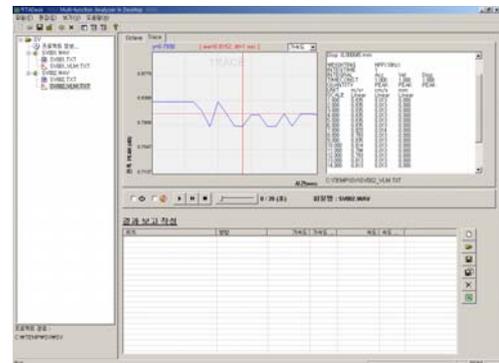
Calculated RPM Meter from FFT

It can be calculated the RPM value from the peak of the first order in FFT mode when the user measure the vibration using an accelerometer or microphone.

- Max. RPM : 96000 RPM (4096 Hz Sampling Frequency)
- 4096 Buffer Size, Hanning Window, Linear Averaging
- RPM Calculation compensated Picket Fence Error
- Velocity / Displacement FFT Graph

Interface with PC

To connect with pc by USB 2.0 cable and Microsoft ActiveSync, in connecting, the PC and PDA recognize simultaneously. The user can find all of the data to be supported from the PDA by clicking of folder of mobile device in Windows Explorer. Bluetooth can be connected by a notebook PC with Bluetooth.

- PDA HP iPAQ hx4700 or hx2700
  (Screen Protected film, Silicon Case)
- RealWave Pocket Analyzer Hardware (CF Card Type II)
- RealWave Pocket FFT Analyzer Software
  (1CD - Microsoft ActiveSync, Firmware Upgrade Program)
- RealWave Desk Program (Available If they buy the
  vibration mode)
- USB Sync Cable
- 1GB SD Card
- Manual
- Aluminum Bag for PDA and CF Card
  (370mm × 270mm × 80mm, 1.78kg)

- Accelerometer and Cable
- IEPE Microphone and Cable
- PDA Extended Battery (1800mAh or 3600mAh)
- Headphone
- SD Memory Card
- Memory Card Reader

- Specification recommended PDA : HP iPAQ hx4700
  Series, HP iPAQ hx2700 Series
- Number of Channel : 1 channel
- Input Range : IEPE and Analog Input ±5V (Peak)
- Dynamic Range

Gain	Input (V)	Sound	Vibration	
		dB	m/s^2	dB (Ref 10^{-6}m/s^2)
1	5	44~134	0.03~981	90~180
2	2.5	38~128	0.015~490.5	84~174
4	1.25	32~122	~245.3	78~168
8	0.625	26~116	~123.6	72~162
16	0.3125	20~110	~61.3	65~156
32	0.15625	14~104	~30.7	59~150
64	0.078125	8~98	~15.3	53~144
Microphone Sensitivity : 50mV/Pa, Accelerometer Sensitivity : 50mV/g				

- ADC : 16Bits to be output by Digital Gain from 24Bits
- Gain of Input Signal (Digital Gain) : 1, 2, 4, 8, 16, 32, 64
- SNR : More than 95dB
- Max. Sampling Frequency : 32768 Hz
- Real Time Frequency Bandwidth : 0.5Hz~12.8kHz
- Interface : CF Card Type II (16.7Mbps)
- Battery Life :
  1800mAh – More than 2 Hours in Measuring
              More than 2 Hours in waiting Measurement
              More than 5 Hours in waiting PDA
  3600mAh – More than 5 Hours in Measuring
              More than 8 Hours in waiting Measurement
              More than 11 Hours in waiting PDA

(Measuring Condition : iPAQ hx4700 Series,
 Backlight brightest, PDA waiting time 96Hrs)

Accelerometer (Option)
or
Microphone (Option)
Data Acquision Card (CF Card Type)
Headphone(Option)
Aluminum Bag
PDA + Standard Configuration
(RealWave Pocket Analyzer Software,
 USB Sync Cable, 1GB SD Card, English Manual)

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