Blast/Environment Vibration & Sound Analyzer

**Features**
- Blast/Environmental Vibration & Noise Measurement
- Vibration Measurement by JIS C 1510(dBV)
- Vibration Measurement by DIN4150
- Simultaneously 3-Axis Vibration Level & Sound Level Display
- Simultaneously Multi-Processing & Display
- Vibration & Sound measurement by Trigger Level of Vibration Level
- CDMA or WiFi Communication with PC Software
- 7" LCD Touch Screen
- Long term Data storage (4GB SD Memory card)
- Report and Post Processing & Analysis (Trace & FFT) Software on PC
- Check the Saved Result Data and Measurement Setup by SV1 on PC
- Measured data to convert to Trace, Octave, FFT graph on PC

**Applications**
- Blast Monitoring
- Pile Driving
- Construction Field
- Bridge Monitoring
- Power Plant Monitoring
- Building Vibration Monitoring

SV1 is based on smart phone technology with application software for Blast/Environment Vibration & Sound monitoring and analyzer on the portable rugged system.

**Specifications**

<table>
<thead>
<tr>
<th>System</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Win CE 5.0</td>
</tr>
<tr>
<td>Communication</td>
<td>Serial, Wireless(WiFi), CDMA Communication</td>
</tr>
<tr>
<td>CPU</td>
<td>PXA320 (806MHz)</td>
</tr>
<tr>
<td>Power</td>
<td>5V, 3A</td>
</tr>
<tr>
<td>LCD</td>
<td>7&quot; TFT-LCD +TSP</td>
</tr>
<tr>
<td>Power</td>
<td>5V, 3A</td>
</tr>
<tr>
<td>Memory</td>
<td>NAND 128MB</td>
</tr>
<tr>
<td>Operating environment</td>
<td>IP64</td>
</tr>
<tr>
<td>Flash memory</td>
<td>DDR SDRAM 128MB</td>
</tr>
<tr>
<td>System memory</td>
<td>Operating temperature</td>
</tr>
<tr>
<td>Slot and port</td>
<td>Storage temperature</td>
</tr>
<tr>
<td>External memory slot</td>
<td>SD/MMC Slot</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% ~ 95% Non-condensing</td>
</tr>
<tr>
<td>USB</td>
<td>1 Host, 1 Device</td>
</tr>
</tbody>
</table>

**DAQ Specifications**

| A/D Converter    | 24bit                  |
| Input Channel    | 4channel(3ch for Vibration and 1ch for Sound) |
| Sensor Type      | IEPE                   |
| Sampling Frequency| 3 channels with 512Hz for vibration and 1 channel with 32,768Hz for sound |
| Input Range      | ±5V(peak) or ±2.5V(peak) |
| Dynamic Range    | 17~134dB(50mm/Pa X 10Gain) |
| Input Signal Amplitude | 2, 4, 8, 16, 32, 64 |
| Signal to Noise Ratio | 100dB over |
| Frequency range  | 0.5 ~ 80Hz(3dB) for vibration and 0.5 ~ 16kHz(3dB) for sound |
| Operating temperature | -10 ~ 50°C |
**Blast Vibration & Sound Measurement**

- Provide the influence evaluation data nearby Structure: 3axis peak and PVS(mm/sec)
- Vibration Measuring Range: 100 mm/sec
- Frequency Range: 1 ~ 250Hz
- Vibration Accuracy: 1%
- Vibration Resolution: 0.01 mm/sec
- Vibration Measuring Sample Rate: 4048 samples/sec
- Storage Sample Rate: 514 samples/sec
- Sound Measuring Range: 30 ~ 130 dBA
- Frequency Range: 20 Hz ~ 16 KHz
- Sound Accuracy: IEC 60651:1979 Type2 (Type1 Option)
- Sound Data: Lmax, Leq

**BLS mode**

- Trigger Level: Set up from 0.1mm/sec by 0.1mm/sec step
- Measuring Mode: Manual, Single, Continuous
- Measurement Time: 1sec, 2sec, 3sec, 5sec, 10sec, 1min, 5min, 30min, 1hr, 1day, User definable time
- Data Storage Capacity: SD Memory Card 4G (Continuously 60 days for the measurement data including Graph)
- Measurement cycle time: no dead time

**Environmental Vibration & Sound Measurement**

- Measurement Results: Instantaneous, Leq, Lmax, Lmin,
- Statistic Vibration Level: L5, L10, L50, L90, L95
- Vibration Frequency Range: 1 ~ 80 Hz
- Measuring Range: 35 ~ 120dB
- Sound Frequency Range: 20 Hz ~ 16 KHz
- Dynamic Range: more than 90dB
- Measuring Time: 1sec, 2sec, 3sec, 5sec, 10sec, 1min, 5min, 30min, 1hr, 8hr, 1day, User definable set up
- Vibration Trigger Level: set up with 1 dB step from 45dB (to measure the wanted Vib. And Sound Level)
- Measuring Mode: Manual, Single, Continuous
- Data Storage Capacity: SD Memory Card 4G (Continuously 60days for the measurement data including Graph)
- Case: Rugged Pelican Case : 350 X 290 X 150 mm

**Remote Auto Measurement**

- Communication Type: CDMA Modem or Internet
- Remote Data Transmit and Receiving time Control
  (To Control interval time with Hour, Min, Sec Unit)
- Remote Auto Control up to Max 100 measuring equipments
- Remote Control Trigger Level and Measurement time
- Possible to measure during receiving the measured data
- No need Reset the Equipment by the receiving error
  (Simultaneously the Measurement mode and Communication mode)
- Basic 4GB Memory Card for the long terms vibration and sound measurement

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**Remote Auto Pelican Case**

- Environment Vibration mode 1
- Environment Vibration mode 2
Option Setup

Analyzing options (BLS, EVS)

Sound Channel:
Integration Time: F
Freq Weighting: A
Time Weighting: F

Vibro Channels:
ACC @Ref: 10.000 ±10^-5 m/s

Analyzing options (EV)

Weight
Window
Octave
FFT Len

Trigger options

Event List on PC

Analysis & Report Software

Regression Analysis

Time Trace & Result data and DIN 4150

The software allows users to analysis and report data stored in SD card
System Configurations

Environment/Blast Vibration & Sound Analyzer

3 Axis MEMS Sensor

- X, Y, Z-Axis 3CH output
- Offset adjustment
- Integrated power supply
- ±5V DC power input & Power LED
- ±4V differential or 0.9V ~ 4.5V single ended outputs or 4 - 20 mA
- Galvanized isolation
- Responds to DC & AC Acceleration
- ±2g, ±5g, ±10g, ±25g, ±50g, ±100g customized model

<table>
<thead>
<tr>
<th>Input Range</th>
<th>Frequency Response (Nominal, 3dB)</th>
<th>Sensitivity (Differential)</th>
<th>Output Noise, Differential (RMS, typical)</th>
<th>Max. Mechanical Shock (0.1ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>g</td>
<td>Hz</td>
<td>mV/g</td>
<td>µg/(root Hz)</td>
<td>g</td>
</tr>
<tr>
<td>±2</td>
<td>0~400</td>
<td>2000</td>
<td>5</td>
<td>2000</td>
</tr>
<tr>
<td>±5</td>
<td>0~600</td>
<td>800</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>±10</td>
<td>0~1000</td>
<td>400</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>±25</td>
<td>0~1500</td>
<td>160</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>±50</td>
<td>0~2000</td>
<td>80</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>±100</td>
<td>0~2500</td>
<td>40</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

1/4" Microphone(MI17)

Specifications

<table>
<thead>
<tr>
<th>Transducer type</th>
<th>Pressure transducer</th>
<th>Temperature range</th>
<th>-10~ +50 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>20 Hz to 15 kHz ± 3 dB</td>
<td>Noise</td>
<td>Lin(20 Hz to 20 kHz) &lt; 100 µV</td>
</tr>
<tr>
<td></td>
<td>100 Hz to 10 kHz ± 1 dB</td>
<td></td>
<td>&quot;A&quot;-weight &lt; 30 µV</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>50 mV/V ± 5%</td>
<td>Supply</td>
<td>Constant current source(ICP) 2~6 mA</td>
</tr>
<tr>
<td>Max. SPL</td>
<td>124 dB</td>
<td>Output socket</td>
<td>BNC-jack</td>
</tr>
</tbody>
</table>

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