

SV1

Seismic / Human Response Vibration & Sound Analyzer



www.svdigital.com



SV CORPORATION

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SV1



Features

- Seismic / Human Response 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
- Internet or LTE 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

- Seismic Monitoring
- Mining Monitoring
- Ground Vibration Monitoring
- Pile Driving
- Construction Field
- Bridge Monitoring
- Factory Floor Vibration Monitoring
- Power Plant Monitoring
- Building Vibration Monitoring

SV1 is based on Smart phone technology with versatile application software to measure the Seismic/Human Response Vibration & Sound monitoring and analysis on the portable rugged system.

Main Specifications

Operating system	WinCE 5.0(Device), Windows7 and higher (32bit, 64bit)(PC)	USB Interface	1 Host, 1 Device
CPU	PXA320 (806MHz)	Power	5V, 3A
LCD	7" TFT-LCD +TSP	International protection	IP64
Flash memory	NAND 128MB	Dimension	350(W) x 290(D) x 150(H) mm
System memory	DDR SDRAM 128MB	Weight	4.0 Kg (without accessories)
External memory slot	SD/MMC Slot	Operating temperature	-20°C ~ 50°C (-4°F ~ 122°F)
Communication	Serial, Wireless(WiFi), Internet, LTE	Humidity	5% ~ 95% Non-condensing

Data Acquisition Unit Specifications

A/D Converter	24bit
Input Channel	4channel(3ch for Vibration and 1ch for Sound)
Sensor Type	IEPE
Sampling Frequency	Vibration : 1024 Hz for each channel / Sound : 16384Hz
Input Range	±5V(peak)
Measuring Range	Sound : 30 dB up to 140 dB
	Vibration : 37 dB up to 156 dB
Frequency Range	Vibration : 0.5 ~ 200Hz(3dB) (option 500Hz(3dB)) / Sound : 20 ~ 8000 Hz(3dB)
Accuracy	+/- 3%
Linear Accuracy	+/- 0.1 dB/30Hz
Trigger Range	0.127 to 250 mm/s
Record Time	1 to 10 Sec, up to 30 minutes
Signal to Noise Ratio	>= 120dB

Seismic Vibration & Sound Measurement

[Vibration]

- Provide the influence evaluation data nearby Structure : 3axis peak and PVS(mm/sec)
- Vibration Measuring Range : 250 mm/sec
- Frequency Range : 0.5 ~ 200Hz for each channel(option 500Hz)
- Vibration Accuracy : Less than 1%
- Vibration Resolution: 0.01 mm/sec
- Vibration Measuring Sample Rate: 1024 samples/sec
- Storage Sample Rate: 1024 samples/sec

[Sound]

- Sound Measuring Range: 35 ~ 140 dB
- Frequency Weighting Filter : A and L
- Frequency Range : 20 Hz ~ 8000 Hz
- Sound Accuracy : IEC 60651 Type2
- Sound Data : Simultaneously Lmax, Lmin, LeqLn, LeqAv

[Common]

- Trigger Level : Set up from 0.1mm/sec to 250 mm/sec
- Measuring Mode : Selectable Manual, Single, Continuous mode (Up to 250 Events)
- Selectable 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

Sound (dB):			
LeqIn	LeqAv	Lmax	Lmin
41.01	39.54	42.20	38.89
Vibro (mm/sec):			
	X	Y	Z
VelPeak (Inst)	0.03	0.04	0.03
VelPeak (Hold)	0.05	0.05	0.10

Time: 3.375 s:
File: SV003.WAV

Seismic Measurement BLS mode

Human Response Vibration & Sound Measurement

- Measurement Results : Instantaneous Sound Leq, Lmax, Lmin, Statistic Vibration Level L5, L10, L50, L90, L95
- Vibration Frequency Range : 0.5 ~ 80 Hz (up to 500Hz)
- Vibration Measuring Range : 37 up to 156 dB
- Sound Measuring Range : 30 up to 140 dB
- Weighting Filter : A and L
- Sound Frequency Range : 20 Hz ~ 8000 Hz
- Dynamic Range : more than 120 dB
- Selectable 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 Vibration And Sound Level)
- Measuring Mode : Selectable Manual, Single, Continuous mode up to 250 events
- Data Storage Capacity : SD Memory Card 4GB (Continuously 60days for the measurement data including Graph)

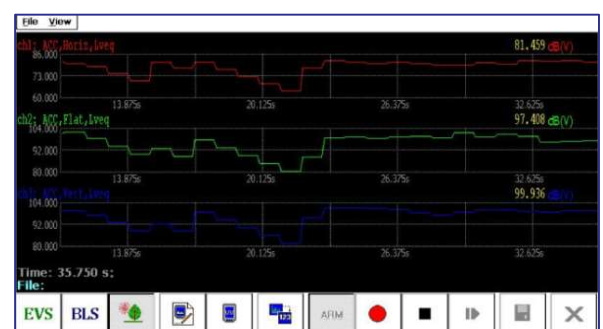
Sound (dB(A)):			
LeqIn	LeqAv	Lmax	Lmin
39.32	39.38	39.90	39.16
Vibro (dB(V)):			
	X	Y	Z
Lmax	39.30	35.55	43.48
Lv(In)/Lv(Av)	39.30/35.24	34.39/33.96	43.48/39.96
L10	37.54	35.55	42.29

Time: 3.625 s:
File: SV001.WAV

Human Response Measurement EVS mode

Remote Auto Measurement

- Communication Type : Internet or LTE
- 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 and Communication mode)



Human Response Vibration mode by JIS C 1510

Leq :	
ch1, ACC:	54.286 dB (V)
ch2, ACC:	64.329 dB (V)
ch3, ACC:	55.262 dB (V)
Liveq :	
ch1, ACC:	54.286 dB (V)
ch2, ACC:	64.329 dB (V)
ch3, ACC:	55.262 dB (V)

Time: 3.875 s:
File: EVS



3-axis Human Response Vibration mode by JIS C 1510

BlastSoft - Blast Vibrations & Sound Analysis Software - (Event Manager)

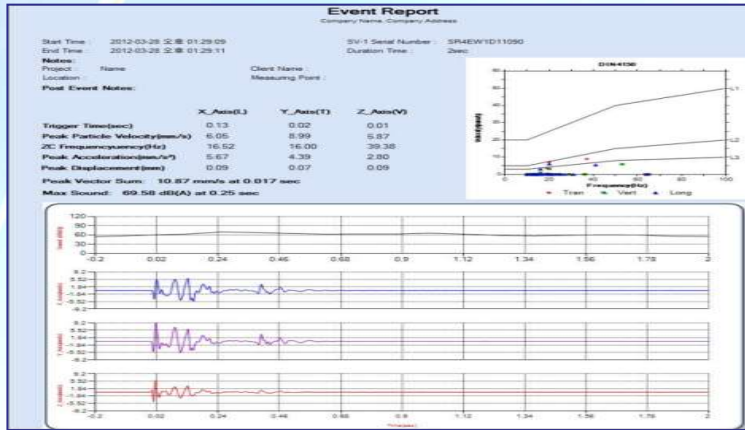
File View Tools Window Help

Event Manager Event Report Report Options Regression Analysis About

Open Copy Delete Print Print List Export Post Event Notes Archive New Folder EVS Export(V/S) Total Events: 21

Sl. No.	FileName	Date/Time	Vel. Peak Hold(X_Axis)	Vel. Peak Hold(Y_Axis)	Vel. Peak Hold(Z_Axis)	PVS
1	SW010.BLS	2012-03-23 오후 5:13:50	0.04	0.06	0.04	0.08
2	SW011.BLS	2012-03-28 오전 8:10:26	0.39	0.49	1.20	1.22
3	SW012.BLS	2012-03-23 오후 5:23:42	0.04	0.05	0.03	0.06
4	SW013.BLS	2012-03-23 오후 5:35:21	0.04	0.04	0.03	0.05
5	SW014.BLS	2012-03-22 오전 2:54:58	0.04	0.04	0.03	0.06
6	SW015.BLS	2012-03-22 오후 7:50:16	0.04	0.05	0.03	0.05
7	SW016.BLS	2012-03-23 오후 5:12:59	0.06	0.13	0.14	0.18
8	SW017.BLS	2012-03-23 오후 5:13:28	0.05	0.06	0.04	0.08
9	SW018.BLS	2012-03-28 오전 1:29:03	6.05	8.99	5.87	10.87
10	SW020.BLS	2012-03-28 오후 1:29:26	1.43	4.12	2.18	4.52
11	SW021.BLS	2012-03-29 오전 6:34:58	0.11	0.08	0.29	0.32
12	SW022.BLS	2012-03-29 오전 6:35:15	0.03	0.03	0.03	0.04
13	SW023.BLS	2012-03-29 오전 6:36:24	0.03	0.04	0.03	0.04
14	SW024.BLS	2012-03-29 오후 8:14:31	0.03	0.03	0.03	0.04
15	SW025.BLS	2012-03-30 오전 7:09:31	0.03	0.04	0.03	0.05
16	SW026.BLS	2012-03-30 오전 7:09:42	0.05	0.10	0.03	0.07
17	SW027.BLS	2012-03-30 오전 7:10:01	0.71	0.47	0.49	0.81
18	SW028.BLS	2012-03-30 오전 7:10:22	0.03	0.04	0.03	0.05
19	SW029.BLS	2012-03-30 오전 7:10:30	0.03	0.03	0.02	0.04
20	SW030.BLS	2012-03-30 오전 7:10:34	0.03	0.04	0.03	0.04
21	SW031.BLS	2012-03-30 오전 10:52:33	0.49	0.35	0.45	0.75

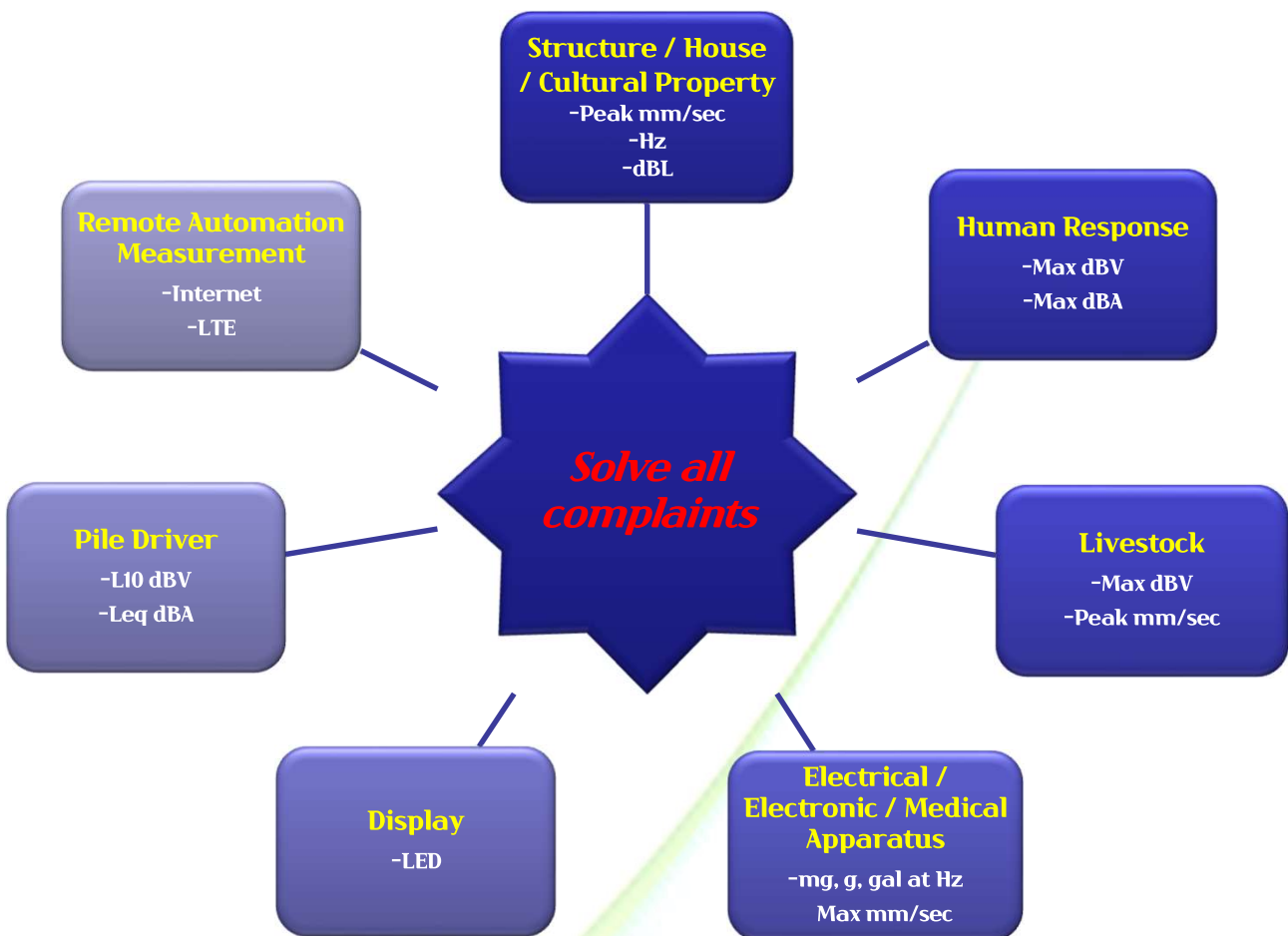
Event Lists on PC



Time Data, Result data and DIN 4150

Analysis & Report Software
- Powerful PC Software

- The user can store the measured data in SD card to do the post processing, analysis and report PC.
- The user can get the report by JIS C1510 and DIN 4150 with this post processing software.
- Software along with manual for use in window system and analysis.
- Time history graph of displacement, acceleration & particle velocity.
- Frequency Vs Energy graph and also in numerical form of above waveform.
- Peak value of displacement, acceleration and particle velocity, frequency and energy release with corresponding time and release.
- F.F.T analysis. The software should have the provision for giving raw data in ASCII and/or standard data base format for use in the third party software.
- **Optional Post-processing software(DatsliteNVE)** (attached) : ASD(Auto Power Spectral Density), FFT, Trends(Acceleration, Velocity, Displacement), Digital filtering and so on



Company Specialized in Sound/Vibration



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