

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

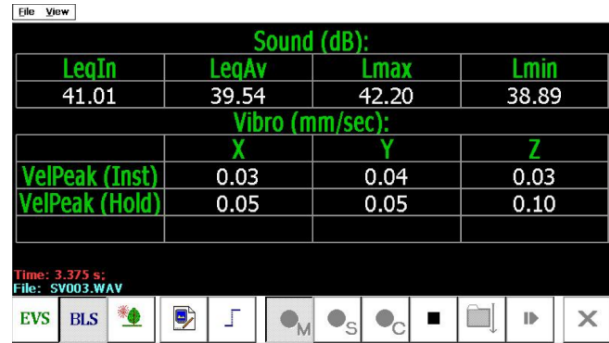
System		Communication	
Operating system	Win CE 5.0	Communication	Serial, Wireless(WiFi), CDMA Communication
CPU	PXA320 (806MHz)	Power	
LCD	7" TFT-LCD +TSP	Power	5V, 3A
Memory		Operating environment	
Flash memory	NAND 128MB	International protection	IP64
System memory	DDR SDRAM 128MB	Operating temperature	-20℃ ~ 50℃ (-4°F ~ 122°F)
Slot and port		Storage temperature	-40℃ ~ 70℃ (-40°F ~ 167°F)
External memory slot	SD/MMC Slot	Humidity	5% ~ 95% Non-condensing
USB	1 Host, 1 Device		

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 channels with 32,768Hz for sound
Input Range	±5V(peak) or ±2.5V(peak)
Dynamic Range	17~134dB(50mv/Pa X 10Gain)
	37~160dB(50mv/g 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℃

Blast Vibration & Sound Measurement

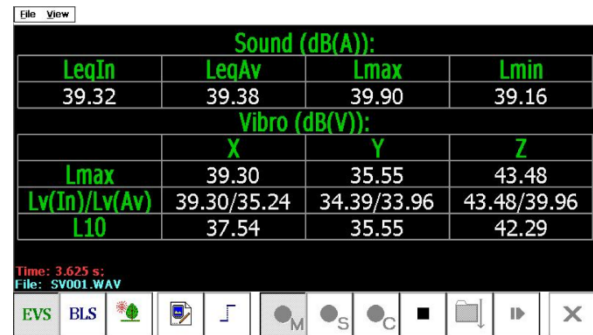
- Provide the influence evaluation data nearby Structure: 3axis peak and PVS(mm/sec)
- Vibration Measuring Range: 100 mm/sec
- Frequency Range: 1 ~ 250Hz
- Vibration Accuracy: 1%
- Vibration Resolution: 0.01 mm/sec
- Vibration Measuring Sample Rate: 4048 samples/sec
- Storage Sample Rate: 514 samples/sec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



BLS mode

Environmental Vibration & Sound Measurement

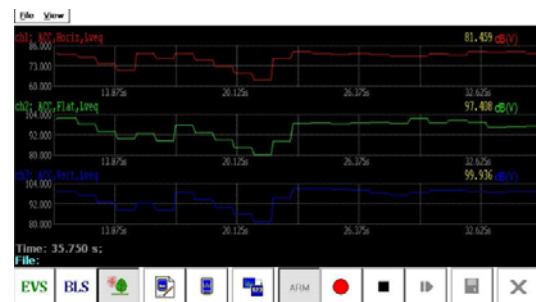
- Measurement Results : Instantaneous, Leq, Lmax, Lmin, Statistic Vibration Level : L5, L10, L50, L90, L95
- Vibration Frequency Range : 1 ~ 80 Hz
- Measuring Range : 35 ~ 120dB
- Sound Frequency Range : 30 ~ 130 dBA
- Sound Frequency Range : 20 Hz ~ 16 KHz
- Dynamic Range : more than 90dB
- Measuring 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 4GB (Continuously 60days for the measurement data including Graph)
- Case : Rugged Pelican Case : 350 X 290 X 150 mm



EVS mode

Remote Auto Measurement

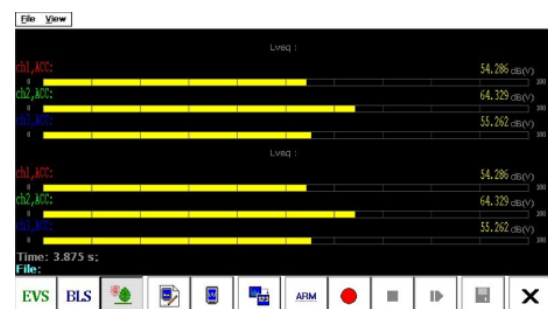
- Communication Type : CDMA Modem or Internet
- Remote Data Transmit and Receiving time Control (To Control interval time with Hour, Min, Sec Unit)
- Remote Auto Control up to Max 100 measuring equipments
- Remote Control Trigger Level and Measurement time
- Possible to measure during receiving the measured 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



Environment Vibration mode 1



Environment Vibration mode 2



Option Setup

Analyzing Options:
OK
Cancel

Sound Channel:
IntegrationTime: F
FreqWeighting: A
TimeWeighting: F

Vibro Channels:
ACC dBRef: 10.000 *10^-6 m/ss

AnalyzingOptions(EV):
OK
Cancel

Ch 1
Ch 2
Ch 3

Weight: Horiz Flat Vert
Window: RECT RECT RECT
Octave: OCT1/1 OCT1/1 OCT1/1
FFT Len: 512 512 512
Unit/Scale: Unit/Scale Unit/Scale Unit/Scale
Vibration:

General
Channels

Analyzing options(BLS, EVS)

Analyzing options(EV)

Trigger Options:
OK
Cancel

Trigger Level : 0.1 mm/sec
Recording Time : 1 hour

Trigger options

Analysis & Report Software

BlastSoft - Blast Vibrations & Sound Analysis Software - [Event Manager]

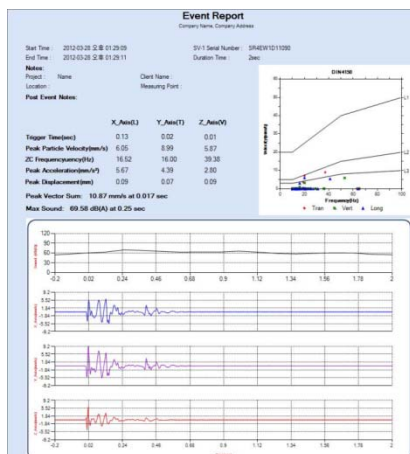
File View Tools Window Help

Event Manager Event Report Report Options Print Regression Analysis About

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

SI No.	FileName	Date/Time	Vel. Peak Hold(X_Axis)	Vel. Peak Hold(Y_Axis)	Vel. Peak Hold(Z_Axis)	PVS
1	SV010.BLS	2012-03-23 오후 5:13:50	0.04	0.08	0.04	0.08
2	SV011.BLS	2012-03-28 오전 8:10:26	0.39	0.40	1.20	1.22
3	SV012.BLS	2012-03-23 오후 5:23:42	0.04	0.05	0.03	0.06
4	SV013.BLS	2012-03-23 오후 5:35:21	0.04	0.04	0.03	0.05
5	SV014.BLS	2012-03-22 오전 2:54:58	0.04	0.04	0.03	0.06
6	SV015.BLS	2012-03-22 오후 7:50:16	0.04	0.05	0.03	0.05
7	SV016.BLS	2012-03-23 오후 5:12:59	0.06	0.13	0.14	0.18
8	SV017.BLS	2012-03-23 오후 5:13:28	0.05	0.06	0.04	0.08
9	SV019.BLS	2012-03-28 오전 1:29:03	6.05	8.99	5.87	10.87
10	SV020.BLS	2012-03-28 오전 1:29:26	1.43	4.12	2.18	4.52
11	SV021.BLS	2012-03-29 오전 6:34:58	0.11	0.08	0.29	0.32
12	SV022.BLS	2012-03-29 오전 6:35:15	0.03	0.03	0.03	0.04
13	SV023.BLS	2012-03-29 오전 9:20:24	0.03	0.04	0.03	0.04
14	SV024.BLS	2012-03-29 오후 8:14:31	0.03	0.03	0.03	0.04
15	SV025.BLS	2012-03-30 오전 7:09:31	0.03	0.04	0.03	0.05
16	SV026.BLS	2012-03-30 오전 7:09:42	0.05	0.10	0.03	0.07
17	SV027.BLS	2012-03-30 오전 7:10:01	0.71	0.47	0.49	0.81
18	SV028.BLS	2012-03-30 오전 7:10:22	0.03	0.04	0.03	0.05
19	SV029.BLS	2012-03-30 오전 7:10:30	0.03	0.03	0.02	0.04
20	SV030.BLS	2012-03-30 오전 7:10:34	0.03	0.04	0.03	0.04
21	SV031.BLS	2012-03-30 오전 10:52:33	0.49	0.35	0.45	0.75

Event List on PC



Time Trace & Result data and DIN 4150

Regression Analysis Input

SI No.	FileName	PPV(cm/s)	PVS(cm/s)	Time Of PVS	Velocity(Vv)	VL(Vib dB)	Weight(Kg)	Distance(m)
1	SV010.BLS	0.007999999	0.007999999	27.375	0.007999999	50.7663		
2	SV011.BLS	0.12	0.122	35.75	0.12	59.76074		
3	SV012.BLS	0.005	0.006	7	0.005	51.00517		
4	SV013.BLS	0.004	0.005	1.875	0.004	50.9682		
5	SV014.BLS	0.004	0.006	1.5	0.004	54.40897		
6	SV015.BLS	0.005	0.005	4.25	0.005	50.64648		
7	SV016.BLS	0.014	0.018	7.375	0.014	52.96615		
8	SV017.BLS	0.006	0.007999999	1.625	0.006	50.01755		
9	SV019.BLS	0.899	1.087	19.25	0.899	48.94954		
10	SV020.BLS	0.412	0.452	34.75	0.412	52.41451		
11	SV021.BLS	0.029	0.032	2.75	0.029	49.13256		
12	SV022.BLS	0.003	0.004	4.125	0.003	50.60405		
13	SV023.BLS	0.004	0.004	4.125	0.004	48.4602		
14	SV024.BLS	0.003	0.004	0.125	0.003	49.22277		
15	SV025.BLS	0.004	0.005	1	0.004	51.25832		
16	SV026.BLS	0.01	0.007	15	0.01	55.94108		
17	SV027.BLS	0.070999999	0.081	7.25	0.070999999	52.94398		
18	SV028.BLS	0.004	0.005	5.125	0.004	52.54681		
19	SV029.BLS	0.003	0.004	0.125	0.003	51.71664		
20	SV030.BLS	0.004	0.004	1.75	0.004	49.62627		

Regression Analysis Exit

Regression Analysis

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

System Configurations



Environment/Blast Vibration & Sound Analyzer

Sensors



MEMS Sensor



Microphone

Accessories



SD card



Pole



Power Adapter



USB Cable

3 Axis MEMS Sensor



Small Type



Large Type

- X, Y, Z-Axis 3CH output
- Offset adjustment
- Integrated power supply
- +5V DC power input & Power LED
- $\pm 4V$ differential or 0.5V - 4.5V single ended outputs or 4 - 20 mA
- Galvanized isolation
- Responds to DC & AC Acceleration
- $\pm 2g$, $\pm 5g$, $\pm 10g$, $\pm 25g$, $\pm 50g$, $\pm 100g$ customized model

Input Range	Frequency Response (Nominal, 3dB)	Sensitivity (Differential)	Output Noise, Differential (RMS, typical)	Max. Mechanical Shock (0.1ms)
g	Hz	mV/g	$\mu g/(\text{root Hz})$	g
± 2	0 ~ 400	2000	5	2000
± 5	0 ~ 600	800	7	
± 10	0 ~ 1000	400	10	5000
± 25	0 ~ 1500	160	25	
± 50	0 ~ 2000	80	50	
± 100	0 ~ 2500	40	100	

1/4" Microphone(MI17)

Specifications

Transducer type	Pressure transducer	Temperature range	-10~ +50℃
Frequency range	20 Hz~15 kHz : ± 3 dB	Noise	Lin(20 Hz~20 kHz) < 100 μV
	100 Hz~10 kHz : ± 1 dB		"A"-weight < 30 μV
Sensitivity	50 mV/Pa $\pm 5\%$	Supply	Constant current source(ICP) 2~6 mA
Max. SPL	124 dB	Output socket	BNC-jack



SV CORPORATION
Total Solution of Sound & Vibration

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