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
- $\bullet \text{Measured data to convert} \quad \text{to Trace, Octave, FFT graph on PC}$

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°C ~ 50°C (-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 °C

Blast Vibration & Sound Measurement

•Provide the influence evaluation data nearby Structure: 3axis peak and PVS(mm/sec)

 Vibration Measuring Range: 100 mm/sec 	Eile <u>V</u> iew			
•Frequency Range: 1 ~ 250Hz		Sound	(dB):	
	LegIn	LegAv	Lmax	Lmin
• Vibration Accuracy: 1%	41.01	39.54	42.20	38.89
•Vibration Resolution: 0.01 mm/sec		Vibro (n	nm/sec):	
•Vibration Measuring Sample Rate: 4048 samples/sec		X	Y	Z
•Storage Sample Rate: 514 samples/sec	VelPeak (Inst)	0.03	0.04	0.03
Cound Management 20, 120 dDA	VelPeak (Hold)	0.05	0.05	0.10
•Sound Measuring Range: 30 ~ 130 dBA				
 Frequency Range: 20 Hz ~ 16 KHz 				
•Sound Accuracy: IEC 60651:1979 Type2 (Type1 Option)	Time: 3.375 s; File: SV003.WAV			
•Sound Data: Lmax, Leq	EVS BLS	🖻 🖌 🖣	● _S ● _C ■	
•Trigger Level: Set up from 0.1mm/sec by 0.1mm/sec step		BLS	node	
•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

		Journa (ub(nj).	
 Measurement Results : Instantaneous, Leq, Lmax, Lmin, 	LegIn	LegAv	Lmax	Lmin
Statistic Vibration Level : L5, L10, L50, L90, L95	39.32	39.38	39.90	39.16
•Vibration Frequency Pange : 1 ~ 80 Hz		Vibro (dB(V)):	
		Х	Y	Z
•Measuring Range : 35 ~ 120dB	Lmax	39.30	35.55	43.48
•Sound Frequency Range : 30 ~ 130 dBA	Lv(In)/Lv(Av)	39.30/35.24	34.39/33.96	43.48/39.96
•Sound Frequency Range : 20 Hz ~ 16 KHz	L10	37.54	35.55	42.29
•Dynamic Range : more than 90dB	Time: 3.625 s; File: SV001.WAV			
•Measuring Time : 1sec, 2sec, 3sec, 5sec, 10sec, 1min, 5min, 30min,	EVS BLS	I	● _S ● _C ■	ĨЩ I▶ 🗙

Elle View

EVS mode

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

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	AnalyzingOptions(EV):				OK	Cancel
Sound Channe IntegrationTime: F FreqWeighting: A TimeWeighting: F Vibro Channel ACC dBRef: 10.000 ¥ *:	l: • • 5: .0^-6 m/ss	Weight Window Octave FFT Len	Ch 1 Horiz RECT • OCT1/1 • 512 • Unit/Scale Vibration	Ch 2 Flat RECT OCT1/1 S12 Unit/Scale	Ch 3 Vert RECT OCT1/1 512 Unit/Scale		1
Analyzing options(E	BLS, EVS)	General Channels	Analyzin	g options	s(EV)		
Τ	rigger Options: Trigger	OK	Cancel				

Trigger options

Analysis & Report Software

BlastSoft - Blast Vibrationa & Sound Analys	is Softwar	e - [Event k	lanager]				
File View Tools Window Help							
🚅 Event Manager 🔒 Event Report 📝 Report Op	tions	Print	Regression Analysis	About			
🛐 Open 🔊 Copy 🕺 Delete 📑 Print 🛔	Print List	Expor	t 鹶 Post Event Notes	Archive	der 🧶 EVS 둸 Exps	rt(CVS) Total Even	ts: 21
😢 Desktop	SI. No.	FileName	Date/Time	Vel. Peak Hold(X_Axis)	Vel. Peak Hold(Y_Axis)	Vel. Peak Hold(Z_Axis)	PVS
🗑 😑 내 운서	1	SV010.BLS	2012-03-23 오車 5:13:50	0.04	0.08	0.04	0.08
🗉 👮 내 컴퓨터	2	SV011.BLS	2012-03-28 오전 8:10:26	0.39	0.40	1.20	1.22
😠 🔜 내 네트워크 환경	3	SV012.BLS	2012-03-23 오幸 5:23:42	0.04	0.05	0.03	0.06
第20 第20 第20 第30 第30 第30 第30 第30 第30 第30 第30 第30 第3	4	SV013.BLS	2012-03-23 오후 5:35:21	0.04	0.04	0.03	0.05
ELS data	5	SV014.BLS	2012-03-22 97 2:54:58	0.04	0.04	0.03	0.06
comic4portable+v0,8,5	6	SV015.BLS	2012-03-22 오幸 7:50:16	0.04	0.05	0.03	0.05
🖩 🗀 RealWave	7	SV016.BLS	2012-03-23 오후 5:12:59	0.06	0.13	0.14	0.18
🗀 RealWave 설치방법(한전KPS)	8	SV017.BLS	2012-03-23 오후 5:13:28	0.05	0.06	0.04	0.08
🛅 RealWave 카탈로그	9	SV019.BLS	2012-03-28 오幸 1:29:03	6.05	8.99	5.87	10.87
🖩 💼 SOTI	10	SV020.BLS	2012-03-28 오車 1:29:26	1.43	4.12	2.18	4.52
B C SVI PC Program	11	SV021.BLS	2012-03-29 오전 6:34:58	0.11	0.08	0.29	0.32
🗉 🛅 SV1 Program	12	SV022.BLS	2012-03-29 오전 6:35:15	0.03	0.03	0.03	0.04
🖩 🛅 SW2011x86sp00	13	SV023.BLS	2012-03-29 오픈 9:20:24	0.03	0.04	0.03	0.04
טאלא 🗀 🗀 און א	14	SV024.BLS	2012-03-29 오章 8:14:31	0.03	0.03	0.03	0.04
🗀 규격	15	SV025.BLS	2012-03-30 오전 7:09:31	0.03	0.04	0.03	0.05
🛛 🗈 닭	16	SV026.BLS	2012-03-30 오콘 7:09:42	0.05	0.10	0.03	0.07
🛽 🕲 도면	17	SV027.BLS	2012-03-30 오전 7:10:01	0.71	0.47	0.49	0.81
🗉 🗀 바탕화면	18	SV028.BLS	2012-03-30 오전 7:10:22	0.03	0.04	0.03	0.05
🗀 발구지	19	SV029.BLS	2012-03-30 오전 7:10:30	0.03	0.03	0.02	0.04
🗀 생물	20	SV030.BLS	2012-03-30 오전 7:10:34	0.03	0.04	0.03	0.04
🗉 🗀 재풍사진	21	SV031.BLS	2012-03-30 오전 10 52:33	0.49	0.35	0.45	0.75
🖩 📔 회원명부정리	1						

Event List on PC

		Cam	pary Name, Company Ad					
at Time : 2012-03-20 9.8 0	1 25 05		SV-1 Setal Number	584EW101	1090			
nd Time 2012-03-28 9.# 01	129:11		Duration Time :	2rec				
utes:						0.0		
uject : Nane	0	ent Name						
cation :	34	nanumg Foint :			1			
ost Event Notes:					1			/
	X.Aux(L)	Y_Asis(T)	Z_Asis(V)			/	_	
inner Teneluer)	0.13	0.02	0.01	1 -		/		
ok Particle Velocitation (s)	6.05	8.90	5.87	1	1			
fines and a sociality	16.62	16.00	10.15	1 -	-		-	-
ank Accelerationism (sD)	5.67	4.30	2.50		1	/		
the Charles and	0.09	0.07	0.09		1			-
on restances (num)	10.000	- 37			1			
	0.24	0.46 0	60 0.9	1.12	134	156	1.78	
	0.24 M	0.45 0	60 0.9	1.12	134	156	1.78	
	0.24 Marriel Marriel	0.45 0.	a 0.9	1.12	134	156	1.78	

SI. No.	FileName	PPV(cm/s)	PVS(cm/s)	Time Of PVS	Velocity(Vv)	VL(Vib dB)	Weight(Kg)	Distance(n
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	0.07099999	0.081	7.25	0.07099999	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		

Time Trace & Result data and DIN 4150

Regression Analysis

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

System Configurations



Environment/Blast Vibration & Sound Analyzer

3 Axis MEMS Sensor



Small Type



Large Type

Sensors





MEMS Sensor

Microphone

Accessories

4_{GB}



Power Adapter

Pole



USB Cable

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

Innut Bongo	Frequency Response	Sensitivity	Output Noise, Differential	Max. Mechanical Shock
input Range	(Nominal, 3dB)	(Differential)	(RMS, typical)	(0.1ms)
g	Hz	mV/g	μg/(root Hz)	g
±2	0 ~ 400	2000	5	2000
±5	0 ~ 600	800	7	
±10	0 ~ 1000	400	10	
±25	0 ~ 1500	160	25	5000
±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		Lin(20 Hz~20 kHz) < 100 µN
	100 Hz~10 kHz :±1 dB		"A"-weight < 30 ⊭⁄
Sensitivity	50 mV/Pa ±5%	Supply	Constant current source(ICP) 2~6 mA
Max. SPL	124 dB	Output socket	BNC-jack



RM. 302, Sangshin B/D, 719-1 Yi-Dong, Sangrok-Gu, Ansan, Kyungki-Do, 426-857, Korea. TEL : +82-31-501-4030 FAX : +82-31-501-4032