

Watch Monitoring Stations

Soft dB Monitoring Services

Watch Monitoring Stations Are Compact, Rugged and Packed with Powerful Features

3 Models Available:

- **NoiseWatch** Class 1 Noise Monitoring Station
- **VibWatch** Vibration and Overpressure Monitoring Station
- **ProWatch** versatile Noise, Vibration and Overpressure Monitoring Station

Acoustical Measurements:

- Complies to IEC 61672/ANSI S1.4 Class 1
- Leq, Lmax, Lmin, Lpeak, and SEL in A, C, and Z weightings
- 7 Percentiles (LN%) for selected weighting (A, C or Z)
- LAFtm5 (TaktMaximal) for impulsive content
- 1/1 Octave, 1/3 Octave and FFT spectra
- Simultaneous recording of interval data and audio event

Vibration Measurements:

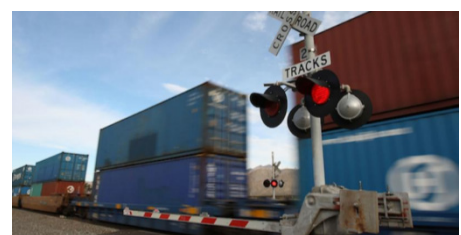
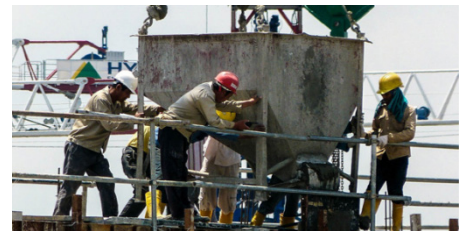
- Complies to ISEE, DIN 45669-1 and ISO 8041
- 0.5Hz – 1kHz Frequency Range
- 2 Dynamic Ranges ($\pm 2G$, $\pm 8G$)
- 2.7kHz Sampling Rate
- Simultaneous Measurement of:
 - User-defined Bandwidth Acceleration and Velocity;
 - Acceleration or Velocity Waveforms
 - ISO 8049 Wm Weighted Acceleration
 - DIN 45669 KBFT Weighted Velocity
 - Overpressure (OPL) peak level and waveform
- User-defined Band-Limiting filters
- Simultaneous recording of interval data and event waveforms
- Automatic Sensor Check

Embedded Power Solution:

- Large battery providing 5-days continuous run-time
- Optional solar kit providing unlimited power
- Optional main power-supply for permanent installations

Compatible with Soft dB Monitoring Solution:

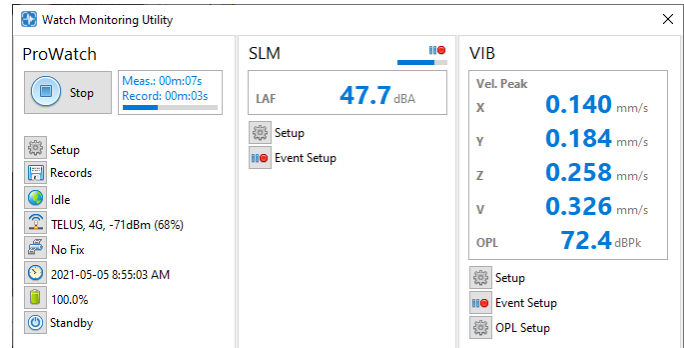
- Embedded 4G LTE module for data transfer, status, mail and SMS alerts
- Embedded GPS for accurate positioning and time synchronisation



Simple Deployment Management Software

The Watch Utility Software is a simple tool to setup the Watch Station.

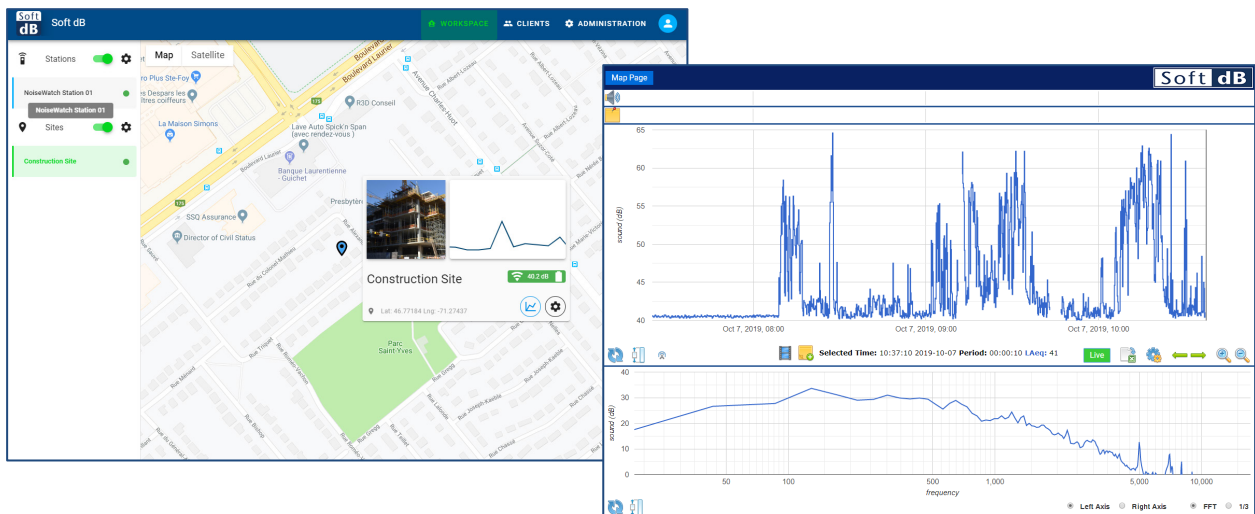
- Start/Stop the measurement;
- Change measurement setup;
- Manage Web Service parameters;
- Download records;
- View 4G modules status;
- View GPS module status;
- View battery status;
- View embedded calibration certificate.



Web-Based Monitoring Platform

Soft dB Monitoring Platform is a self-service web application that brings significant value to both short and long-term unattended noise measurement campaigns:

- Manage all your monitoring stations (registration, GPS coordinates, Battery status, etc.);
- Set alerts for monitoring stations warnings (low battery, offline, etc.);
- Manage exceedance alerts (SMS an emails);
- Real-time records uploads;
- Secure data hosting;
- Manage period durations (10m, 1h, etc.);
- Assign Monitoring stations to measurement sites;
- Create client access pages for specific sites.



Monitoring Station Technical Specifications

Measurement	NoiseWatch	VibWatch	ProWatch
Sound Level Meter (SLM)	✓		✓
Vibration (Acc., Vel. and OPL)		✓	✓
Memory*			
On-Board Memory Size*	16MB		
Timing			
Interval Records Duration	1s to 1h		
Interval Records Duration Resolution	1s		
Recording Mode	Continuous auto-store		
Align on Real-Time Clock	Yes		
Monitoring			
Cellular	4G LTE with HSPA+ fallback, embedded antennas		
GPS	56 Channels GPS, SBAS, QZSS, On-Board RTC		
Record Upload	Soft dB Monitoring Web Service		
Environmental			
Operating Temperature	-20°C to 40°C		
Storage Temperature	-30°C to 50°C		
Certified to	NEMA Type 4 – IP66		
Power			
Power	1.1W	1.3W	
Battery	168 Wh (12V-14Ah)		
Battery Life (without solar or power-supply)	132h (5days, 12h)	120h (5days)	
Physical			
Height	324 mm (12 ¾")		
Width	273 mm (10 ¾")		
Depth	145 mm (6 5/8")		
Weight	8.9kg (19.6lbs)		
Accessories			
USB Cable	0.9m (3') A to Micro-B		
Charger Pack	External Power-Supply, (24VDC, 2A). Uses solar panel connector to feed 24V DC		
Main Power-Supply (Optional)	Internal Power-Supply, (24VDC, 2A). Replaces solar panel connector with main cable pass-through		
Solar Panel (Optional)	50W solar panel (601 x 498mm / 23.7" x 19.6")		
Pole-Mount Bracket (Optional)	Accepts pipe straps for pole diameter 3cm to 30cm (1 ¼" to 11")		

*memory is unlimited when uploading records to Soft dB Web Monitoring Service

Sound Level Meter Technical Specifications

Sound Level Meter		
Standards	IEC 61672-1/ ANSI S1.4-1 (2013) Class 1, ANSI S1.43 (2007) Type 1, IEC 60651 (1979), Amd.1(1993-02), Amd.2(2000-10) Type 1	
Certificate	Embedded Calibration Certificate in Non-Volatile Memory	
Averaging	Exponential and Linear	
Time Weightings	Slow or Fast	
Frequency Weightings	A, C and Z	
Sampling Rate	44.1 kHz	
Input Ranges	Low	High
Peak Maximum Level	105 dBZpk	115 dBZpk
Under-Range Level	30 dBA	38 dBA
Electrical Noise Level	22 dBA	30 dBA
Total Noise Level	24 dBA	30 dBA
Microphone Nominal Sensitivity	28 mV/Pa	
Microphone Technology	Electret Condenser	
Spectrum		
Standards	IEC 61260-1/ ANSI S1.11-1 (2014) Class 1	
Averaging	Linear (Leq)	
1/1 Octave Spectrum	31.5 Hz to 8 kHz	
1/3 Octave Spectrum	20 Hz to 16 kHz	
FFT Spectrum	400 lines on 6 bandwidths from 17.2 kHz to 539 Hz	
Interval Records		
Measured Metrics	Leq, SEL, Lpeak (A, C and Z) Lmax, Lmin, (Fast or Slow, A, C and Z) LN% (1%, 2%, 5%, 8%, 10%, 50%, 90%, 95%, 99%), (Fast or Slow, A, C or Z) LAFtm5 (TaktMaximal) Spectra (1/1 Octave, 1/3 Octave and FFT)	
Metrics Resolution	0.1dB	
Audio Events		
Resolution	11.025kHz, 16-bit (8-bit or 4-bit adaptive dynamic compression)	
Event Trigger	User defined from 40 to 90 dB (A, C or Z - SPL Slow or Fast)	
Event Pre-Trig Duration	User defined from 0s to 3s	
Event Total Duration	User defined from 5s to 30s	
Memory*		
Maximum Interval Records*	97,920 (without FFT enabled) – 16,320 (with FFT enabled)	
Maximum Audio Events*	11m50s (8-bit compression) – 23m40s (4-bit compression)	
Accessories		
Microphone Windscreen	All Weather Protections	
Microphone BNC Cable	1.2m (4')	
Calibration Certificate	Tested in accordance with procedures from IEC 61672-3 (2013)	

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Vibration Technical Specifications

Vibration Meter	
Standards	ISEE (2017), DIN 45669-1 (2010), ISO 8041 (2005)
Certificate	Embedded Calibration Certificate in Non-Volatile Memory
Sensor Technology	Triaxial MEMS Accelerometer
Sampling Frequency	2.756 kHz
Axis	X (Trans.), Y (Long.), Z (Vert.), Vector-Sum
Signal Routing	Separate filters for Acceleration and Velocity, does not affect Standard ISO Wm and DIN KBFT
High-Pass Filter Frequencies (Hz)	0.5, 0.63, 0.8, 1.0, 1.25, 1.6, 2.0, 2.5, 3.125, 4.0, 5.0
Low-Pass Filter Frequencies (Hz)	100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000
Standard weighting filters	DIN 45669 KBF, ISO 8041 Wm
Self-Test	Electromechanical force injected on sensor
Vibration Sensor Physical	
Height	35 mm (1 3/8")
Width	57 mm (2 1/4")
Depth (without connector)	64 mm (2 1/2")
Depth (with connector)	78mm (3 1/16")
Weight	175g (6.2oz)
Density	1370kg/m ³ (85.5 lbs/ft ³)
Mounting	2x 4.5mm Through Holes (Accepts M4 or 8-32 machine screws)
Overpressure Level (OPL)	
Standards	ISEE (2017)
Peak Maximum Level	128 dBpk
Under-Range Level	56 dBpk
Bandwidth	2 Hz – 315 Hz
Sampling Rate	1,378 kHz
Microphone Nominal Sensitivity	6.3 mV/Pa
Microphone Technology	Electret Condenser
Measured Metric	Peak Overpressure Level (OPL pk)
Interval Records	
Measured Metrics	User-defined Bandwidth Acceleration (RMS and, Pk) (X, Y, Z and V) User-defined Bandwidth Velocity (RMS and Pk) (X, Y, Z and V) ISO 8041 Wm Weighted Acceleration (RMS and Pk) (X, Y, Z and V) DIN 45669 KBFT Weighted Velocity (0.125s Expo. RMS) (X, Y, Z and V) Earth Gravitational Field (Avg.) (X, Y, Z and V) Peak Overpressure Level (OPL pk)
Vibration Events	
Measured Metrics	All Metrics from Interval Records (0.093s data rate)
Waveforms	Acceleration or Velocity (X, Y and Z) (2,756 kHz) and OPL (1,378 kHz)
Memory*	
Maximum Vib. Interval Records*	81,600
Maximum Vib. Waveform Events*	9m28s

Vibration Technical Specifications (cont.)

Accessories						
Vib. Sensor Mounting Plate	57mm x 64mm x 19mm (with mounting hardware and 3 spikes)					
Vib. Sensor Extension Cable	M12, 4-Conductor, Female-Male, 10m (can be daisy-chained up to 100m)					
Vib. Sensor Calibration Certificate	Tested in accordance with procedures from ISEE (2017), DIN 45669-1 (2010), ISO 8041 (2005)					
OPL Microphone Windscreen	All Weather Protections					
OPL Microphone BNC Cable	1.2m (4')					
OPL Calibration Certificate	Tested in accordance with procedures from ISEE (2017)					
Vibration Sensor Dynamic Range*	Low Range			High Range		
	X, Y	Z	V Sum	X, Y	Z	V Sum
Peak Maximum Acceleration (m/s ²)	±19.61	±9.81**	±9.81**	±78.4	±68.6**	±68.6**
Wide-band (0.5Hz-1kHz) Acc. Peak Noise (m/s ²)	24.0m	34.0m	48.0m	30.0m	40.0m	58.0m
Wide-band (0.5Hz-1kHz) Acc. RMS Noise (m/s ²)	6.00m	8.50m	12.0m	7.50m	10.0m	14.5m
Wide-band (0.5Hz-1kHz) Vel. Peak Noise (m/s)	220u	400u	500u	400u	440u	720u
Wide-band (0.5Hz-1kHz) Vel. RMS Noise (m/s)	55.0u	100u	125u	100u	110u	180u
ISEE (1.6Hz-315Hz) Vel. Peak Noise (m/s)	120u	240u	300u	200u	260u	380u
ISEE (1.6Hz-315Hz) Vel. RMS Noise (m/s)	30.0u	60.0u	75.0u	50.0u	65.0u	95.0u
DIN (0.8Hz-100Hz) Vel. Peak Noise (m/s)	160u	340u	400u	280u	400u	560u
DIN (0.8Hz-100Hz) Vel. RMS Noise (m/s)	40.0u	85.0u	100u	70.0u	100u	140u
ISO Wm (0.8Hz-100Hz) Acc. Peak Noise (m/s ²)	2.20m	3.60m	4.80m	2.90m	4.00m	5.80m
ISO Wm (0.8Hz-100Hz) Acc. RMS Noise (m/s ²)	550u	900u	1.20m	730u	1.00m	1.45m
DIN KBFT (0.8Hz-100Hz) Vel. RMS Noise (m/s)	30.0u	60.0u	75.0u	45.0u	65.0u	90.0u

* Values in the above table are minimum specifications. Typical peak maximum acceleration is higher and typical vibration noise levels are lower.

** Dynamic range limited by Earth's gravitational field on vertical axis

