

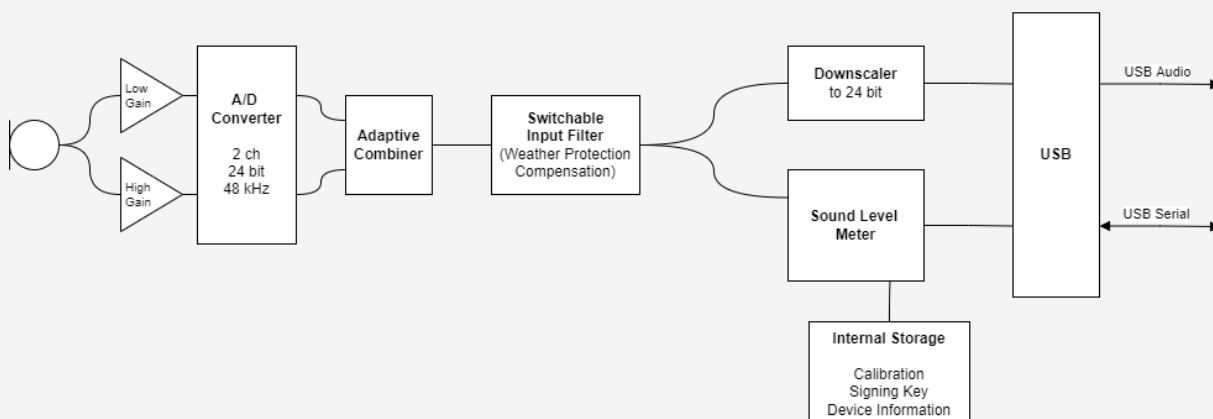


General

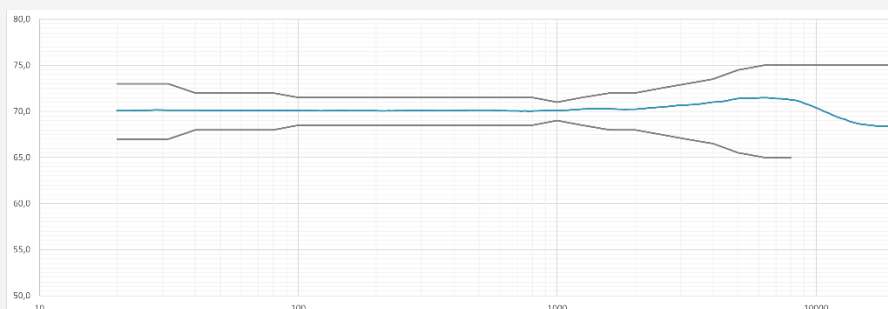
The SPL Tools S1 is an omnidirectional measurement microphone (class 2 frequency response) combined with an integrated sound pressure level meter.

The device can be used simultaneously as a USB measurement microphone and as a calibrated SPL meter. Due to its internal two channel architecture, the full dynamic range can be used without manual switching. The internal sound level meter operates on the full resolution of the combined audio channels using 32-bit float arithmetic. To ensure audio class compatibility, the audio signal is presented as 24-bit fixed on the USB audio endpoint. The measured values can be displayed and recorded using the SPL Sense software. The audio signal can be used for measurement software or for recording.

The calibration used to calculate dB SPL values is stored internally together with key material to ensure measure value integrity.



Directional Characteristic	Omni-directional
Noise	<35dBA
Dynamic Range	30dBA – 135dBZ
Frequency Response	



Determined using 10 different devices in a calibrated, anechoic chamber. Class 2 tolerance.

USB Audio

Driver	USB Audio Class 1.0 compatible (No additional drivers needed for Windows 10 and Mac OS X)
Sampling rate	48kHz
Bit depth	24bit

USB Serial Measurement Data (with SPL Sense or own Software)

Measured sound pressure level data can be received over the built in USB serial endpoint. The following data packets can be activated or deactivated on the interface:

FValue (every 125ms)

- A, C and Z weighted, fast (LFA, LFC, LFZ)
- 1/3rd octave spectral values (31 bands)

Tick (every 1s)

- A, C and Z weighted levels, leq integrated over 1s (Leq 1s A, Leq 1s C, Leq 1s Z)
- A, C and Z weighted highest fast levels within the last 1s (MaxF 1s A, MaxF 1s C, MaxF 1s Z)
- 1/3rd octave spectral values (31 bands), Leq-integrated over 1s, FFT size 4096 with hann window
- 1/3rd octave highest fast levels (31 bands), FFT size 4096 with hann window
- Clip / Low / Healthcheck flags

Interval (every 1min, can be aligned to the system clock of the host system)

- A, C and Z weighted level, leq integrated over 60s (Leq 60s A, Leq 60s C, Leq 60s Z)
- A, C and Z weighted highest fast level within the last 60s (MaxF 60s A, MaxF 60s C, MaxF 60s Z)
- 1/3rd octave spectral values (31 bands), Leq-integrated over 60s, FFT size 4096 with hann window
- 1/3rd octave highest fast level (31 bands) within the last 60s, FFT size 4096 with hann window
- Clip / Low / Healthcheck flags (temperature too high, voltage too low)
- digital signature (over blocks of 15 intervals) ensuring the integrity of the measured intervals and the validity of the sensor calibration.

Please contact us for a detailed interface specification or a prepared library for your OEM integration.

Data Integrity

To ensure data integrity, the interval packets are digitally signed before transmission using a digital certificate. This certificate is generated when the sensor is calibrated and valid as long as the calibration is valid.

When the host application (e.g. SPL Sense) stores the signatures, the validity of the recorded measure values und the sensor calibration can be verified after recording the data.

Scope of delivery

- SPL Tools S1
- 4m USB type A to XLR 4 pin cable
- Mounting clamp
- Case with zipper

Dimensions

SPL Tools S1

Length	143mm
Rear diameter	19mm (3/4")
Front (Capsule) diameter	13mm (1/2")
Weight	56g

Transport Case

Width	26cm
Height	7cm
Depth	8cm
Weight	405g (including S1, cable and clamp)

Additional information

Power	5V / 100mA
USB	USB 2.0 Full speed
Color	black
Material (S1)	metal
Conformity and standards	CE, RoHS In accordance with DIN EN 61672-1:2014-07 and EN 61326-1

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