SLAM·STICK C ™

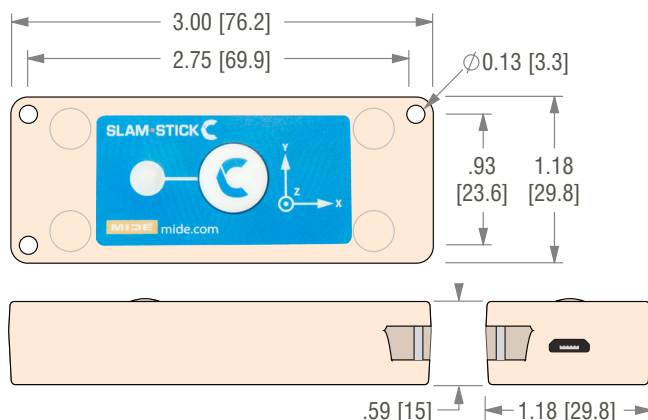**Vibration | Temperature | Pressure | Data Logger**

FEATURES

- Triaxial MEMS Accelerometer (±16g)
- Configurable Sampling Rate up to 3.2 kHz
- 1GB Onboard Memory (Up To 500 Million Data Points)
- Temperature & Pressure Sensors
- Time Stamped Data with Local Calendar Time
- Manual & Automatic Start/Trigger Modes
- Rechargeable Battery Life (>20hrs @ 100 Hz)
- Lightweight
- Micro-USB Interface for Set-Up & Data Download
- Analysis Software Included (Slam Stick Lab)
- EMI Qualified (MIL-STD-461F)

APPLICATIONS

- Vibration, Impact, and Shock Detection
- Aviation and Aerospace
- Mining Equipment Testing and Monitoring
- Structural Analysis and Health Monitoring
- Equipment Testing and Evaluation
- Determine Mechanical Resonances
- Crash Testing

PRODUCT DIMENSIONS

Dimensions are in inches and [millimeters]

DESCRIPTION

The Slam Stick C is a data logger capable of measuring acceleration in all three axes while also measuring temperature and pressure.

Its lightweight design and large surface area (3.5 in^2) minimize mass loading and enable two mounting options: adhesive mounting using the industrial strength double sided tape included with the product; or hard mounting, via the 3 bolt holes, for added durability. Its rugged enclosure and wide temperature operating range (-40°C to 80°C) enable the Slam Stick C to perform in many harsh environments.

A micro-USB receptacle allows for quick and easy connection to a computer where data can be analyzed with Midé's provided software package - Slam Stick Lab. The software also enables configuration of the device to meet a variety of customer needs. Triggers for data capture include time delays, calendar date/time wake up, acceleration and temperature and/or pressure triggers.

Midé includes a N.I.S.T. traceable calibration certification.

SPECIFICATIONS

Accelerometer Performance	LOG-0003-016G	Notes
Range	±16 g	
Broadband Noise[1]	< 0.01 g RMS	
Resolution[2]	0.004 g	13-bit
Sampling Rate Per Channel:	User Selectable from 12.5 Hz to 3.2 kHz	Selectable with Provided Software
Frequency Response Within ±5% Accuracy	X and Y Axis: 0 Hz to > 1,000 Hz Z Axis: 0 Hz to > 500 Hz	Frequency Response Plot on Page 3
Transverse Sensitivity	<10 %	

Temperature and Pressure Sensors		
Sampling Rate	1 Hz	
Temperature Accuracy	±1.0°C	-30°C to +80°C
Temperature Resolution	0.0625°C	12-bit
Pressure Relative Accuracy	±0.1 kPa	-10°C to +50°C
Pressure Resolution	1.5 Pa	20-bit

Environmental		
Operating Temperature	-40°C to 80°C (-40°F to 176°F)	
Recommended Storage Temperature	15°C to 30°C (59°F to 86°F)	Recharging Temperature 0°C to 45°C (32°F to 113°F)
Humidity	0 to 95 %RH	Non-Condensing
Pressure	20 kPa to 110 kPa (2.9 psi to 16.0 psi)	
Shock Limit	>1,000 g	10,000 g Shock Limit for Embeded Accelerometer
No Electric Field Susceptibility	2 MHz to 18 GHz @ 200 V/m	Refer to EMI Test Report (PDF)
No Magnetic Field Susceptibility	30 Hz to 100 kHz	Refer to EMI Test Report (PDF)

Physical		
Mass	40 grams	
Dimensions	0.50" x 1.18" x 3.00"	See Product Dimensions for Axis Direction
Case Material	Polycarbonate/ABS	
Mounting Torque (4-40 Bolt)	60 in-oz	Mounting with Double-Sided Tape is Optional

| Miscellaneous		
Battery Life @ 100 Hz Sampling Rate	>20 Hours	Refer to Page 3 for Different Sample Rates
Storage Capacity	1 GB (500 Million Data Points)	Refer to Page 3 for Different Sample Rates
Battery Lifetime - datasheet (pdf)	3 years	Battery Needs to be Charged Twice a Year (Minimum)

Analysis/Configuration Software Specifications		
Compatible Operating Systems	Windows	Program Files Included on Device
Interface	Micro-USB	6ft Micro-USB Cable Included with Purchase

[1] The noise reduces with slower sample rates.

[2] Resolution depends on sample rate.

FREQUENCY RESPONSE
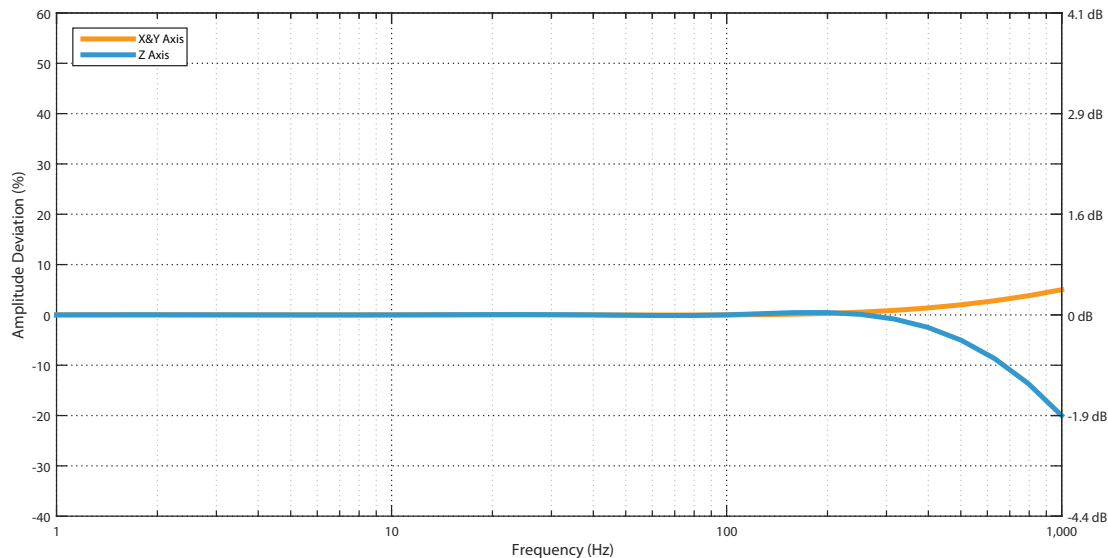
Note that the Slam Stick C has a DC response accelerometer (can measure down to 0 hertz). The plot only goes to 1 Hz because it is on a logaritmic scale. This data was generated with the sample rate at 3.2 kHz, and the unit taped to the mounting fixture.

Adequate compession of the tape was achieved by first bolting the unit to allow the tape to set, then removing the bolts. The mounting torque of these bolts was 60 in-oz.

BATTERY AND STORAGE LIFE

Extending Battery Life
Longer battery life is achievable by utilizing the triggering options. For example, configuring the Slam Stick C to record for 1 minute and sleep for 9 minutes (10% duty cycle) with a 100 Hz sampling rates enables the battery to last over 6 days.

For Continuous Recording
The Slam Stick C can record data even while plugged into power. External power supplies, such as standard portable phone chargers work well. When plugged into an external power source, the Slam Stick C will record until it runs out of storage. An upgrade to a 32GB storage card is available. Note that a single recording file size is limited to 4 GB.

Sampling Frequency (Hz)	Time available for 1 GB (hours)	Battery Life (hours)
12.5	4000	22.0
50	1000	21.0
100	500	20.0
400	125	18.5
800	63	18.0
1600	31	18.0
3200	16	14.5

SLAM·STICK C™

SOFTWARE OVERVIEW & FEATURES

Multiple Plots: Simultaneously view data from several sensor channels.

Analysis: FFT and spectrograms can be generated for every sensor channel. Rolling maximum, minimum, and mean can be plotted. Absolute maximum, minimum, as well as sampling rate and range of each sensor channel is provided. Unit conversion available.

Logger Configuration: Configure the sampling frequency, calendar wake, time delay, recording duration, acceleration and temperature / pressure triggers.

Export Data: Ability to export all data in a .CSV or .MAT format for use with Excel, MATLAB, or other analysis software packages. FFT and Spectrogram can also be exported. The time range of exported data is user selectable.

IDE Splitter: Built in tool to split up large files into more manageably sized files.

MATLAB Converter & Functions: Built in tool to convert Slam Stick C's .IDE recording files directly to a MATLAB® compatible format. MATLAB functions are also provided for data analysis.

PART NUMBERING INFORMATION

The part numbering of the Slam Stick C specifies the measurement range, storage size, and enclosure material. If a larger measurement range or aluminum enclosure is desired, please see Midé's Slam Stick X product.

Included with each purchase:
Slam Stick Lab analysis software; 6ft micro-USB cable; Mounting tape; Mounting bolts; User Manual and Quick Start Guide; N.I.S.T. Calibration Certification.

Part Numbering System:	LOG-0003-016G-1GB-PC	A = Slam Stick C
	A B C D	B = Measurement Range (only ±16g)
		C = Storage Size (1GB or 32GB)
		D = Enclosure material (only polycarbonate)

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