

Compact High Channel Count Data Acquisition Unit with 256 Parallel Channels



- Compact housing and customizable input connectors for easy instrument integration
- Streaming ADCs for continuous data acquisition (no buffering) and faster transmission
- Internal trigger generator allows external device triggering at defined frequencies. Continuous mode sends trigger signal as soon as previous acquisition is complete (highest frame rate).
- Up to 4 units operating in parallel for a total of 1024-ch
- Integrated amplifier chips with digitally controlled gain
- Compact 2 x 25 mm preamps per channel
- Optical and electrical trigger inputs
- Open SDK and access to raw ADC data
- Optimized for photoacoustic imaging as the highest priority

Channels	Channels per ADC ⁽¹⁾	256
	Preamps	2
	Channels per Preamp	128
ADC	Programmable Gain ⁽²⁾	6 to 51 dB
	Analog Bandwidth @ -6 dB ⁽³⁾	12.5 kHz to 25 MHz
	Resolution	12-bit
	Sampling Rate	40 MSPS
	Max Trigger / Frame Rate ⁽⁴⁾	200 Hz / fps
Preamp	Max Points ⁽⁵⁾	4096
	Preamplifier Gain ⁽⁶⁾	40 dB
	Input Impedance ⁽⁷⁾	39 kΩ
	Output Impedance	50 Ω
	Bandwidth @ -6 dB ⁽⁸⁾	40 kHz to 35 MHz

(1) All channels fully parallel for simultaneous data acquisition without multiplexing (upgradeable to 1024 channels)

(2) Depends on mode selection (additional 40 dB with integrated preamp)

(3) Depends on mode/parameter selection (low pass programmable filters available)

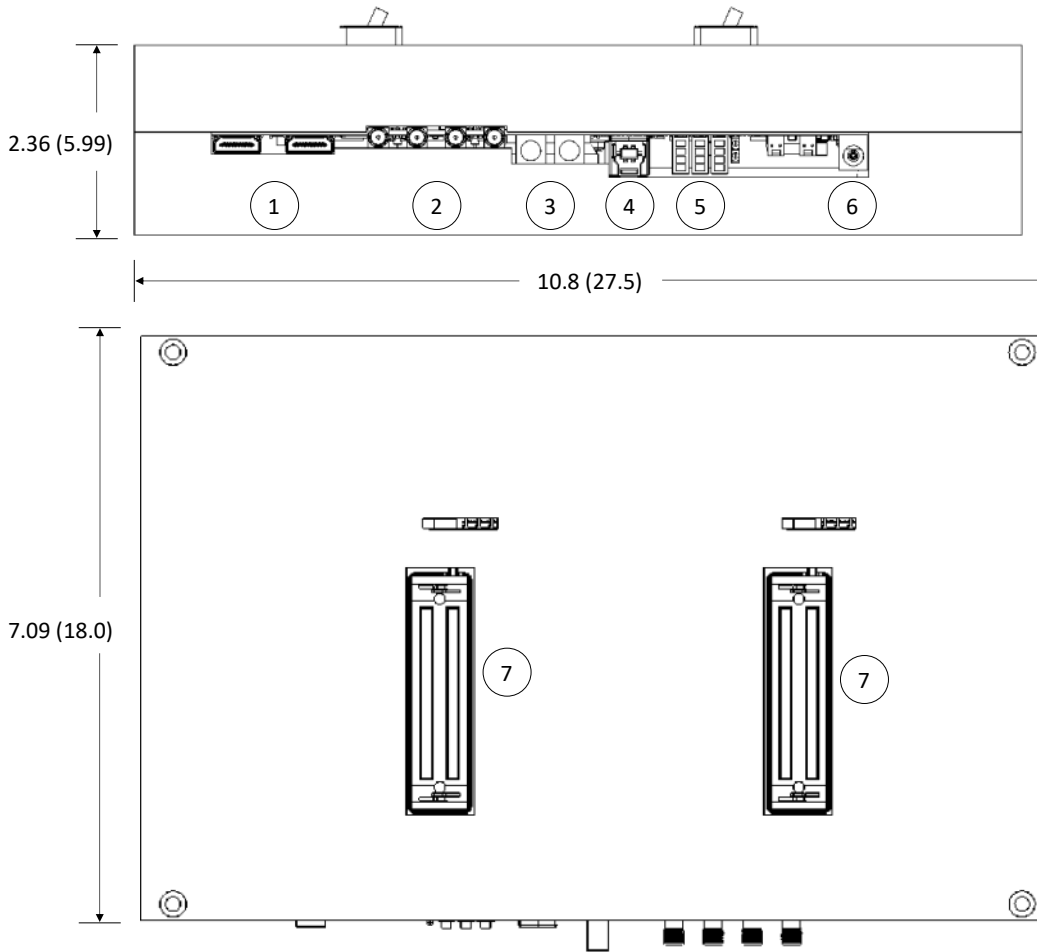
(4) Depends on PC specifications

(5) Per frame per channel

(6) Measured with 50Ω load (actual gain depends on probe capacitance)

(7) Customizable up to 1MΩ (HiZ is the best to minimize noise at high frequencies)

(8) Measured using signal generator and oscilloscope with 50Ω input



1. Synchronization ports for connecting up to four LEGION DAQ-256 in parallel
2. Two sets of programmable electrical trigger input and output (isolated SMA connectors)
3. Two optical trigger inputs for connecting 2 mm patch fibers allow precise triggering from the end-user's pulsed lasers
4. USB 3.0 port for high data transmission to end-user or PhotoSound provided computer
5. Status and diagnostic LEDs
6. 12VDC 5A (power supply included)
7. Medical grade Cannon QLC-260 probe input connectors with signal and ground pins for each channel to minimize crosstalk (pinout map available upon request). **Custom connectors and pin mapping to match existing third-party probes can be substituted in place of default connectors.**

All dimensions approximate in inches (cm).

Computer* (optional)	Software
4+ generation Core i7 Processor Nvidia Graphics Card for CUDA only 16+ GB DDR4 Memory 500+ GB PCIe Solid-State Drive Windows 10 64-bit	Windows 7/10 64-bit drivers Standalone DAQ Application Software Development Kit (LabView) TDMS data output

* End-user or PhotoSound provided



Up to four LEGION DAQ256 can be connected in parallel to offer an unprecedented number of channels (1024 total). Connect the units together yourself or have PhotoSound do it for you by connecting units together in a compact housing with integrated computer.

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 LEGION™ DAQ256 is classified EAR99 and does not require an export