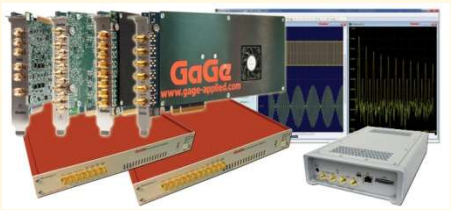
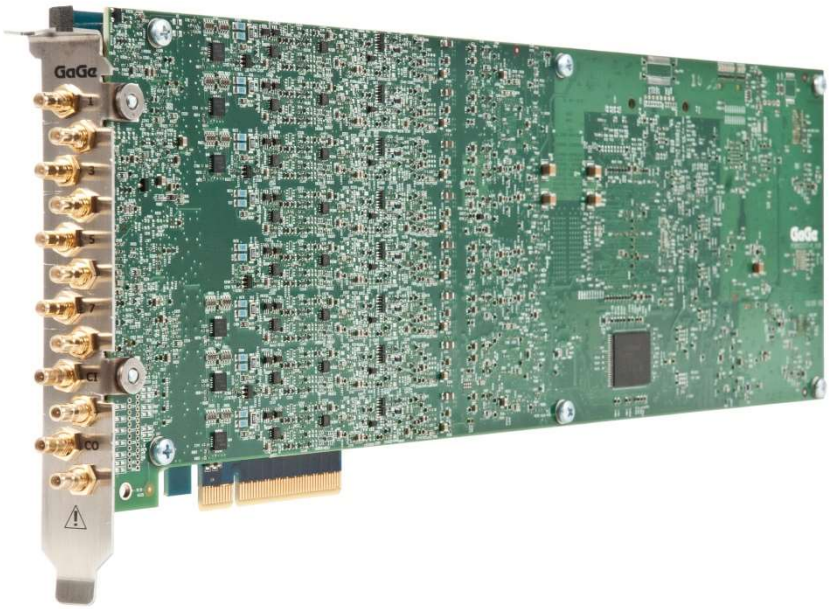
GaGe is a worldwide industry leader in high speed data acquisition solutions featuring a portfolio of the highest performance digitizers, PC oscilloscope software, powerful SDKs for custom application development, and turnkey integrated PC-based measurement systems.



Octopus Express CompuScope
8 CH, 25 to 125 MS/s, 14/16-Bit PCIe Digitizer



APPLICATIONS

RADAR Design and Test

Signals Intelligence (SIGINT)

Ultrasonic Non-Destructive Testing

LIDAR Systems

Communications

Spectroscopy

High-Performance Imaging

Time of Flight

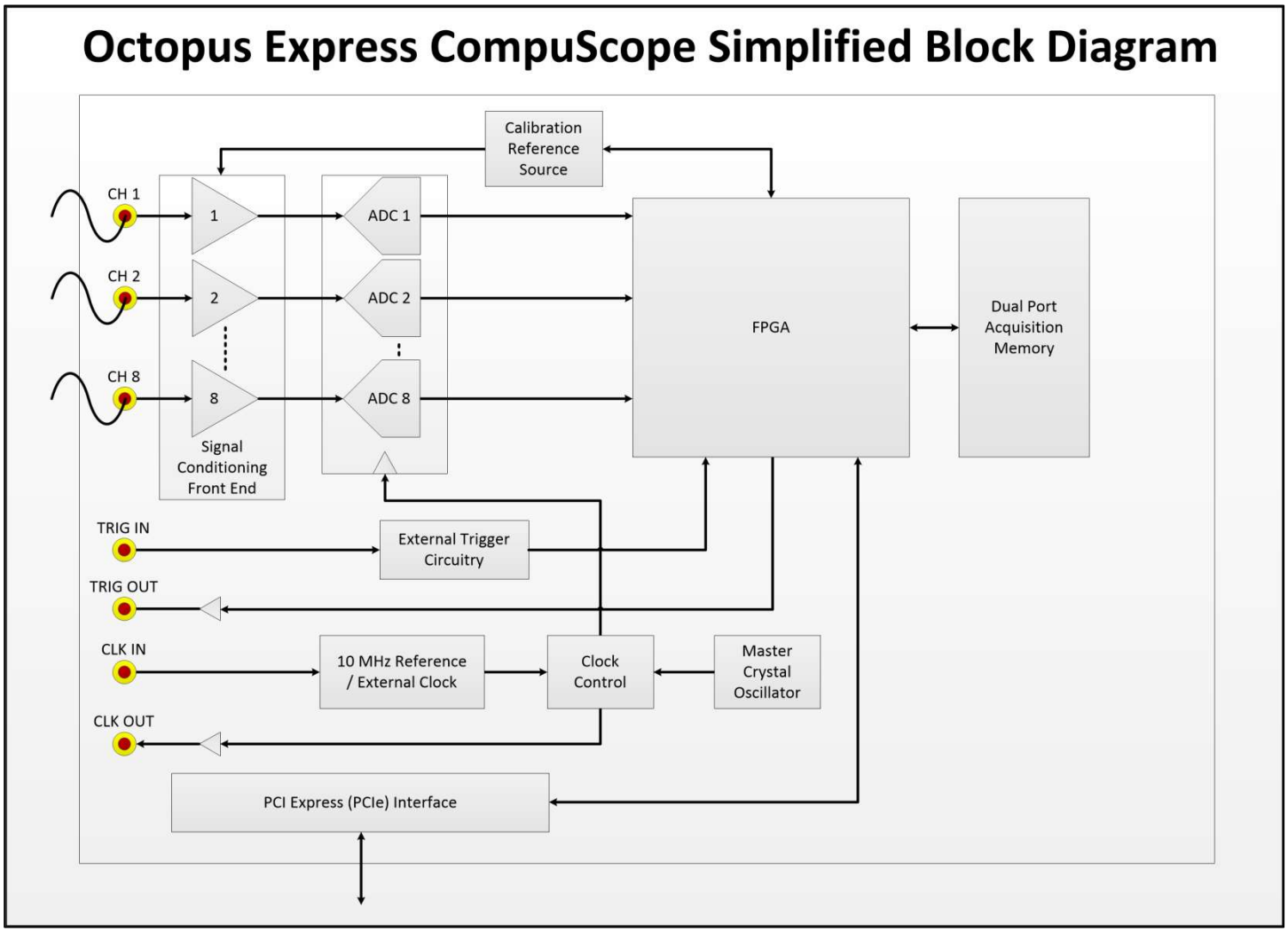
Life Sciences

Particle Physics

FEATURES

- 8 Digitizing Input Channels
- 125 MS/s, 100 MS/s, 65 MS/s or 25 MS/s Max. Sampling Rate per Channel
- 100 MHz or 20 MHz Analog Input Bandwidth
- 14-Bit or 16-Bit Vertical A/D Resolution
- 2 GS (4 GB) Onboard Memory Standard, Expandable up to 8 GS (16 GB)
- Dual Port Memory with Sustained PCIe Data Streaming at 2.0 GB/s
- Full-Featured Front-End with AC/DC Coupling and 50 Ω /1M Ω Inputs
- Software Control of Input Voltage Ranges, Coupling and Impedances
- Ease of Integration with External or Reference Clock In & Clock Out
- External Trigger In & Trigger Out
- Synchronized Multi-Card Systems up to 8 Cards for 64 Channels
- Full-Height Full-Length PCI Express (PCIe) Generation 2.0 x8 Card
- Programming-Free Operation with GaGeScope PC Oscilloscope Software
- Software Development Kits Available for C/C#, LabVIEW and MATLAB
- Windows 10/8/7 and Linux Operating Systems Supported

Octopus Express CompuScope Simplified Block Diagram



MAIN SPECIFICATIONS

Model #	:	CSE8382	CSE8482	CSE8385	CSE8387	CSE8389
# of Input Channels	:	8	8	8	8	8
Vertical A/D Resolution	:	14-bit	16-bit	14-bit	14-bit	14-bit
Max. Rate per Channel	:	25 MS/s	25 MS/s	65 MS/s	100 MS/s	125 MS/s

DYNAMIC PARAMETER PERFORMANCE

		14-bit A/D	16-bit A/D
ENOB	:	11.1 Bits	12.0 Bits
SNR	:	68.7 dB	74.0 dB
THD	:	-81.9 dB	-84.7 dB
SINAD	:	68.5 dB	73.5 dB
SFDR	:	84.6 dB	85.0 dB

Dynamic parameter measurements are done by acquiring a high purity 10 MHz sine wave with amplitude of 95% of the input range sampling at maximum 125 MS/s @ 14-bit and 25 MS/s @ 16-bit. These measurements were taken on the ±500 mV input range using 50 Ω termination and DC coupling and with applied anti-aliasing filter. Dynamic parameter calculations are done from a 16 kiloSample Fourier Spectrum after applying a 7-term Blackman Harris Windowing Function to the time-domain waveform.

A/D SAMPLING

Rates per Channel, Model dependent (software selectable)	:	125 MS/s, 100 MS/s, 65 MS/s, 50 MS/s, 40 MS/s, 25 MS/s, 20 MS/s, 10 MS/s, 5 MS/s, 2 MS/s, 1 MS/s, 500 kS/s, 200 kS/s, 100 kS/s, 50 kS/s, 20 kS/s, 10 kS/s, 5 kS/s, 2 kS/s, 1 kS/s
Rate Accuracy	:	±1 part-per-million (0° to 50° C ambient)

ACQUISITION MEMORY

Acquisition memory size is shared and equally divided among all active input channels (1, 2, 4 or 8).

Standard Size	:	2 GS (4 GB)
Optional Sizes	:	4 GS (8 GB), 8 GS (16 GB)
Architecture	:	Dual Port
Data Streaming	:	Yes

ANALOG INPUT CHANNELS

Connectors	:	SMB
Impedance	:	50 Ω or 1M Ω (software selectable)
Coupling	:	AC or DC (software selectable)
Analog Bandwidth	:	DC (50 Ω) = DC to 100 MHz (14-bit) or DC to 20 MHz (16-bit) AC (1M Ω) = 10 Hz to 100 MHz (14-bit) or 10 Hz to 20 MHz (16-bit)
Voltage Ranges	:	±100 mV, ±200 mV, ±500 mV, ±1 V, ±2 V, ±5 V, ±10 V (software selectable; ±10 V only available on 1M Ω)
Flatness	:	Within ±0.5 dB of ideal response to 90 MHz (14-bit) or 7 MHz (16-bit). Measured at 125 MS/s & 50 MS/s in the ±500 mV range with 50 Ω input impedance and 95% of full scale amplitude.
DC Accuracy	:	±0.5%. Measured on ±500 mV, ±1 V, ±2 V input ranges for both 50 Ω and 1M Ω input impedance settings.
DC User Offset	:	±1 x Full Range (above ±5 V is limited to ±2.5 V)
Absolute Max. Input	:	±15 V (50 Ω), ±75 V (1M Ω on all but two lowest Input Ranges, where Max is ±25 V)

LOW-PASS FILTER (14-bit Models Only)

Type	:	3-pole, 1 per Channel
Cut-Off Frequency	:	24 MHz
Operation	:	Individually Software Selectable

TRIGGERING

Engines	:	2 per Channel, 1 for External Trigger
Source	:	Any Input Channel, External Trigger or Software
Input Combination	:	All Combinations of Sources Logically OR'ed
Slope	:	Positive or Negative (software selectable)
Sensitivity	:	±2% of Full Scale Input Range of Trigger Source. This implies that signal amplitude must be at least 4% of full scale to cause a trigger to occur. Smaller signals are rejected as noise.
Accuracy	:	Less than ±2% of Full Scale for Channel Triggering
Post-Trigger Data	:	128 points minimum. Can be defined with 16 point resolution.

EXTERNAL TRIGGER

Connector	:	SMB
Impedance	:	2k Ω
Coupling	:	AC or DC
Bandwidth	:	>100 MHz
Voltage Range	:	±1 V, ±5 V (software selectable)

TRIGGER OUT

Connector	:	SMB
Impedance	:	50 Ω
Amplitude	:	0 – 2.5 V

CLOCK IN

Connector	:	SMB
Signal Level	:	Minimum 1 V RMS, Maximum 2 V RMS
Impedance	:	50 Ω
Coupling	:	AC
Duty Cycle	:	50% ±5%
Input Modes	:	External Clock (not supported on 16-bit CSE8482 model) or 10 MHz Reference Clock
External Clock Mode Rates	:	Minimum 10 MHz to Maximum Sampling Rate of 125 MHz
External Reference Clock Mode Rate	:	10 MHz ±1000 ppm; the external reference time base is used to synchronize the internal sampling clock.

CLOCK OUT

Connector	:	SMB
Signal Level	:	0 – 2.5 V
Impedance	:	50 Ω Compatible
Duty Cycle	:	50% ±5%
Output Modes	:	Maximum Sampling Clock Frequency or 10 MHz Reference Clock
Max. Frequency	:	125 MHz
Min. Frequency	:	10 MHz from External Clock, 1 kHz from Internal Clock

MULTIPLE RECORD

Pre-Trigger Data	:	Up to 32 kS Total
Record Length	:	128 points minimum. Can be defined with 16 point resolution.

TIME-STAMPING

Timing Resolution	:	One Sample Clock Cycle
Counter Turnover	:	>24 Hours Continuous

MULTI-CARD SYSTEMS

Master/Slave Mode	:	Provides synchronized triggering and sampling on all channels for all cards to create larger multi-channel systems.
Independent Mode	:	Each card operates independently within the system.
Number of Cards	:	2 to 8 Cards for up to 64 Channels Total

DIMENSIONS

Size	:	Single Slot, Full Height, Full Length

POWER CONSUMPTION

Power	:	25 Watts (typical)

PC SYSTEM REQUIREMENTS

PCI Express (PCIe) Slot	:	1 Free Full-Height Full-Length PCIe Gen1, Gen2 or Gen3, x8 or x16 Slot
Operating System	:	Windows 10/8/7 (32-bit/64-bit), Linux – Requires SDK for C/C#

ORDERING INFORMATION

Hardware

Model Number	A/D Resolution	# of Channels	Max. Sampling Rate per Channel	Memory Size	Order Part Number
CSE8382	14-bit	8	25 MS/s	2 GS (4 GB)	OCE-838-002
CSE8482	16-bit	8	25 MS/s	2 GS (4 GB)	OCE-848-002
CSE8385	14-bit	8	65 MS/s	2 GS (4 GB)	OCE-838-005
CSE8387	14-bit	8	100 MS/s	2 GS (4 GB)	OCE-838-007
CSE8389	14-bit	8	125 MS/s	2 GS (4 GB)	OCE-838-009

Memory Upgrades

Memory Upgrade: 2 GS (4 GB) to 4 GS (8 GB)	MEM-181-203
Memory Upgrade: 2 GS (4 GB) to 8 GS (16 GB)	MEM-181-205

Cable Accessories

Set 1 Cable SMB to BNC	ACC-001-001
Set 4 Cable SMB to BNC	ACC-001-003

Master/Slave Upgrades

Master Multi-Card Upgrade	OCE-181-012
Slave Multi-Card Upgrade	OCE-181-013

eXpert FPGA Firmware Options

eXpert PCIe Data Streaming	STR-181-000
eXpert Signal Averaging	250-181-001

GaGeScope Software

GaGeScope: Lite Edition	Included
GaGeScope: Standard Edition	300-100-351
GaGeScope: Professional Edition	300-100-354

Software Development Kits (SDKs)

GaGe SDK Pack (includes C/C#, MATLAB, LabVIEW SDKs)	200-113-000
CompuScope SDK for C/C#	200-200-101
CompuScope SDK for MATLAB	200-200-102
CompuScope SDK for LabVIEW	200-200-103

WARRANTY

Standard two years parts and labor.

Unless otherwise specified, all dynamic performance specs have been qualified on engineering boards. All specifications subject to change without notice.

Data Sheet Revision 1 – 09/22/2017
GaGe is a product brand of DynamicSignals LLC, an ISO 9001:2008 Certified Company

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