USB CompuScope Family

High-speed Digitizers for USB

The USB CompuScope family of digitizers features high vertical resolution with up to 1.1 GS/s sampling in a compact USB 2.0 format.

GaGe's USB digitizers offer many powerful advanced features including:

APPLICATIONS

Communications
Signal Intelligence
Radar Design and Test
Lidar Systems
Fiber Optics
Manufacturing Test
Non-destructive Testing
Spectroscopy
High-Performance Imaging
Ultrasound Test

FEATURES

- 1 or 2 digitizing channels
- Up to 1.1 GS/s maximum sampling per channel
- 12 or 14 bits vertical resolution
- 128 MS on-board acquisition memory
- Up to 1.2 GHz bandwidth
- High-speed USB 2.0 Interface
- External Triggering and External or Reference Clock In
- Programming-free operation with GageScope® oscilloscope software
- Software Development Kits available for LabVIEW, MATLAB, C/C#

USB CompuScope Family Block Diagram
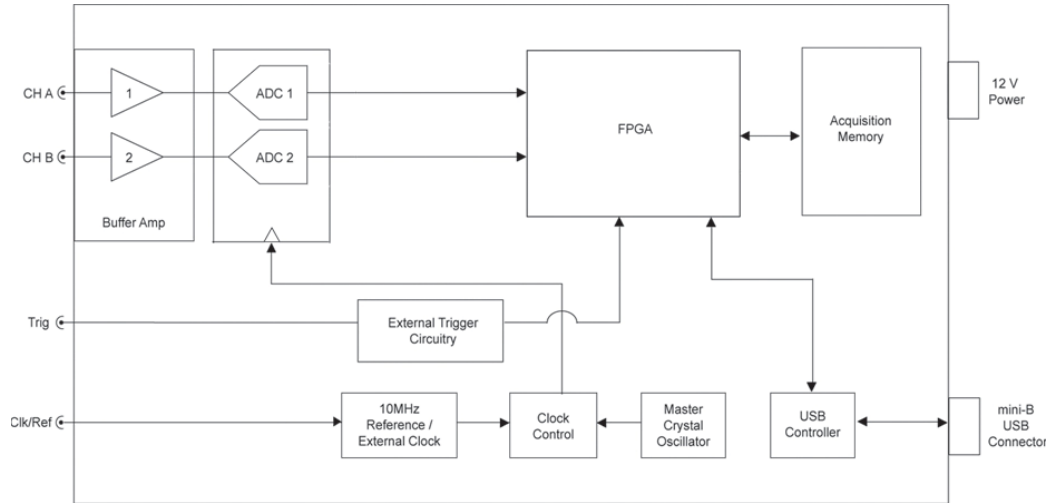
A/D SAMPLING

USB CompuScope Family	CS148001U	CS144002U	CS121G11U
Number of Inputs	1	2	1
Resolution	14-bit	14-bit	12-bit
Dynamic Parameters			
SINAD (see Note 1)	69dB	69dB	62dB
ENOB (SINAD) (see Note 2)	11.2	11.1	10.2
SFDR (see Note 2)	82dB	85dB	76dB
Maximum Sampling Rate per channel	800 MS/s	400 MS/s	1.1 GS/s
Sampling Rates	2 x MAX Sampling Rate/N		
	N= 2, 3…11	N= 2, 3…11	N= 2, 3…15
AC Coupled Bandwidth	10 Hz - 700 MHz	10 Hz - 1.2 GHz	10 Hz - 700 MHz
Flatness	300 MHz	800 MHz	300 MHz
Acquisition Memory (per channel)	128 MS	64 MS	128 MS

Connector:	SMA
Input Voltage Ranges:	±1.1 V
Impedance:	50 Ω
Coupling:	AC (10 Hz lower cut-off)
Gain Accuracy:	±5%
Absolute Max Input:	±2.2 V

TRIGGERING

Source:	CHA, CHB, EXT or Software
Trigger Level:	Variable for Internal Triggering. Fixed for External Triggering
Slope:	Positive/Negative for Internal Triggering. Positive for External Triggering.
Post-Trigger Data:	32 points minimum. Can be defined with 32 point resolution.

EXTERNAL TRIGGER

Impedance:	50 Ω
Amplitude:	Absolute maximum ±3 V
Voltage Range:	±2.5 V
Trigger Conditions:	0.5 V Level, Rising Edge
Coupling:	DC
Connector:	SMA

INTERNAL CLOCK

Accuracy:	±10 ppm (0 to 50°C ambient)

EXTERNAL CLOCK

Maximum Frequency: (see note 2)	400 MHz for CS144002U and CS148001U 550 MHz for CS121G11U
Minimum Frequency:	35 MHz
Signal Level:	Minimum 0.1 V RMS Maximum 0.7 V RMS
Termination Impedance:	50 Ω
Duty Cycle:	50% ±5%
Connector:	SMA
Coupling:	AC
Amplitude:	Absolute maximum 1.1 V RMS

EXTERNAL REFERENCE

The External Reference timebase is used to synchronize the
Internal Sampling Clock

Frequency:	10 MHz
Signal Level:	Minimum 0.3 V RMS
	Maximum 1.1 V RMS
Impedance:	50 Ω
Duty Cycle:	50% ±5%
Connector:	SMA
Coupling:	AC

MULTIPLE RECORD

Record Length:	32 points minimum.
	Can be defined with a 32 points resolution.
Pre-trigger Data:	None

TIMESTAMPING

Resolution:	One sampling interval

USB CASE SIZE

4″ x 1.2″ x 6.5″

USB COMPUSCOPE HARDWARE KIT INCLUDES:

-USB digitizer unit
-110/220 V to 12 V AC to DC adapter
-USB Cable
-Carrying case

†POWER (IN WATTS, PER UNIT)

<20 W (typical)

HOST PC REQUIREMENTS

Host PC, minimum Pentium II 500 MHz, with at least one free
USB 2.0 PORT, 128 MB RAM, 100 MB hard disk.

USB BUS INTERFACE

Compatibility:	USB 2.0
USB Connector Type:	mini-B
USB Throughput:	10 MB/s to PC memory

MULTI-UNIT SYSTEMS

Operating Mode:	Multiple Independent
Number of units:	Limited only by number of USB ports in host PC

OPERATING SYSTEMS

Windows Vista/Win 7:	All Versions (32-bit)
Windows XP:	SP2 or higher (32-bit)

APPLICATION SOFTWARE

GageScope: Windows-based software for programming-free operation

LITE Edition:	Included with purchase, provides basic functionality
Standard Edition:	Provides limited functionality of advanced analysis tools, except for Extended Math
Professional Edition:	Provides full functionality of all advanced analysis tools

SOFTWARE DEVELOPMENT KITS (SDK)

CompuScope SDK for C/C# for Windows*
CompuScope SDK for MATLAB for Windows
CompuScope SDK for LabVIEW for Windows

*C/C# SDK is CLR compatible and is compatible with LabWindows/CVI 7.0+ compiler.
Visual Basic.NET support available with purchase of C/C# SDK.

Contact your GaGe Sales Agent for information on Linux support.

WARRANTY

One year parts and labor

All specifications subject to change without notice.

Notes to specifications:

1) Measured at 70 MHz signal frequency

2) Sampling frequency is 2X external clock frequency for CS148001U and CS121G11U. Ratio is 1:1 for CS144001U

ORDERING INFORMATION

Hardware & Upgrades

CompuScope 144002U	USB-214-000
CompuScope 148001U	USB-114-000
CompuScope 121G11U	USB-112-000
2 Hour USB CompuScope Battery Pack	USB-BAT-001
4 Hour USB CompuScope Battery Pack	USB-BAT-002
Set 1 Cable SMA to BNC	ACC-001-031
Set 4 Cable SMA to BNC	ACC-001-033

GageScope® Software

GageScope: Lite Edition	Included
GageScope: Standard Edition	300-100-351
(with Purchase of CompuScope Hardware)	
GageScope: Professional Edition	300-100-354
(with Purchase of CompuScope Hardware)	

Software Development Kits (SDKs)

GaGe SDK Pack on CD	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

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www.gage-applied.com

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