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COMPUSCOPE 512

COMPUSCOPE 512

The CompuScope 512 digitizes analog signals with a resolution of 12 bits at a sampling rate of up to 5 MHz and stores the resulting digital pattern in the on-board memory. The IBM PC is then allowed to access the memory and retrieve the data for further processing.

5 MSPS, 12 BIT SAMPLING

The CompuScope 512 uses two monolithic flash A/D converters, each running at 5 MSPS.

On-board programmable gain amplifiers and offset control circuits ensure measurement accuracy and long term thermal stability.

MEMORY DEPTH

CompuScope 512 is currently available with memory depths of 512 K, 1M, 2M, 4M, 8M and 16M samples. Models with higher memory depths will be available in the near future.

The maximum number of sample points available for each channel is equal to half the memory depth of the CompuScope 512 model being used.

For example, in the 512 KB model there are 256K points per channel in the dual channel mode.

Each sample is a 12 bit word.

The data stored in the CompuScope 512 memory can be transferred to the PC memory or hard disk for post processing without any interface bus (no GPIB or IEEE 488 bus required).

In fact, the CompuScope 512 memory is mapped into the memory map of the IBM PC, so it can be accessed just as easily and quickly as the PC's own memory.

According to benchmarks, data throughput to the PC memory is in excess of 1 Megawords per second on a 80486DX66 based machine.

INTERRUPT CAPABILITY

CompuScope 512 can be made to interrupt the 80x86 processor by selecting appropriate switches on the card.

The interrupts can be generated upon receiving a trigger, upon filling up memory or upon completion of an acquisition.

SHIELDED ANALOG INPUT

The shielded section of the CompuScope 512 contains programmable gain amplifiers which control the input amplification of the two channels.

In addition to the shielding, the six layer CompuScope 512 printed circuit board also protects sensitive analog signals with three power planes.

FLEXIBLE TRIGGERING

CompuScope 512 can be triggered from channel A, B, EXT or software. All parameters are controlled by software.

FREE GAGESCOPE DIGITAL OSCILLOSCOPE SOFTWARE

CompuScope 512 is accompanied by a free copy of the powerful, full color GageScope software which allows the CompuScope 512 to be used as a digital oscilloscope.

Software features include real-time screen updates, real-time control of oscilloscope parameters, cursor measurements, zoom capability, optional X-Y display, optional FFT, optional Averaging etc. Please see the specification sheet on GageScope for more details.

DRIVERS AND OEM SUPPORT

Gage's OEM Support Program offers qualified developers and OEMs the support to make the CompuScope 512 a part of

their products.

Gage supplies source code drivers for the CompuScope 512 in Borland C, Visual C and Quick BASIC. The source code routines, along with a sample program are accompanied by a detailed reference manual.

Gage also supplies a Windows 3.x DLL which supports Borland C, Visual C, and Visual BASIC.

Yet other drivers are available for programmers who intend to use third party software packages such as LabView, LabWindows for DOS, LabWindows CVI, HyperSignal, or DasyLab.

MULTI-CARD SYSTEMS

One of the most unique features of the CompuScope cards is the Multi-Card system that can be configured.

A Multi-Card system, comprising one Master and up to 7 Slave boards, can be ordered from the factory if the user wants to capture more than two channels with a common clock and trigger. A board to board cable will be supplied with the system. This cable carries all the signals needed for proper synchronisation.

EXTERNAL CLOCK

An external clock option can be ordered from the factory in situations where a special sampling frequency is desirable.

GATED DIGITIZATION

A Gated Digitization option can be ordered from the factory. Data is stored in the RAM only when the external TTL GATE input is HIGH. This can be useful when it is desirable to stack successive data captures in the on-board memory.

MULTIPLE RECORDING

Multiple Recording, a standard option, allows CS512 to capture data on successive triggers and stack it in the on-board memory.

This is useful for applications in which a series of bursts of data have to be captured in quick succession.

LOW COST

CompuScope 512 is offered at an "OEM" price, even in single-unit quantities, in order to allow its use in cost-sensitive applications.

SYSTEM REQUIREMENT

IBM PC AT, 386, 486, Pentium or ISA compatible PC with 640 kilobytes of RAM, VGA, EGA, CGA or Hercules graphics card and monitor and 1MB hard disk space. 80x87 coprocessor recommended.

SIZE

Single slot full length 16 bit ISA PC board

POWER

17 Watts at + 5 Volt
0.6 Watt at + 12 Volt
6 Watt at - 12 Volt
0.05 Watt at - 5 Volt

CHANNELS A & B

Inputs per card : 2

Impedance : 1 M OHMW, 20 pF

Coupling : AC or DC

Bandwidth : 5 MHz

Resolution : 12 bits

Voltage Range : $\pm 100\text{mV}$, $\pm 200\text{mV}$,
 $\pm 500\text{mV}$, $\pm 1\text{V}$, $\pm 5\text{V}$

Amplitude : Absolute Max ± 15 Volts

Accuracy : ± 0.5 %

Sampling Rate

Channel A: 5 MSPS max 2 MSPS, 1 MSPS,...

Channel B: 5 MSPS max 2 MSPS, 1 MSPS,...

Aperture jitter : 10 ps, rms

Memory Depth: Programmable with 64 sample resolution

Channel A : up to half on-board memory

Channel B : up to half on-board memory

SNR : 65 dB @ 5 MSPS
1 MHz input in +/- 1V range

Protection : Diode Clamped

Connector : BNC

MEMORY DEPTHS AVAILABLE

Memory Depth : 512K, 1M, 2M, 4M, 8M and 16Msamples (12 bit samples)

TRIGGERING

Source : CH A, CH B, Ext or Kbd

Type : Analog triggering

Mode : Pre, Mid, or Post-trigger

Levels : 256 per trigger level

Slope : Positive or Negative

EXTERNAL TRIGGER

Impedance: 1 MOhm, 30 pF

Amplitude : Absolute Max ± 15 Volts

Voltage Range : ± 1 V and ± 5 V

Coupling : AC or DC

Bandwidth : 5 MHz

Connector : BNC

TEST OUTPUT

Amplitude : 0 to 200 mV square wave

Frequency : 100 kHz, typical

Connector : BNC

DISPLAY (GAGESCOPE SOFTWARE)

Traces : Up to 32. Either from hardware, disk or math

Timebase : 1 Ms/div to 100 ns/div

Vertical Scale : 1KV/div to 100 uV / div

Scrolling : All channels

Trigger Marker : Displayed on screen

Cursors : Absolute, dV and dT

Channel ID : Each channel identified
at both ends of the trace

Zero Reference : For each channel

Zoom : 1-2-5 sequence

OUTPUT (GAGESCOPE SOFTWARE)

Hard Copy : HP LaserJet, HP InkJet or Epson dot matrix

File Format : GageScope binary format, 2 column ASCII

MATHEMATICAL ANALYSIS

Functions : Addition, Subtraction, Multiplication or Division of up to any three channels. All channels must have the same sample rate

Optional FFT : Up to 4096 point dual channel FFT with Rectangular, Parzen, Welch, Hanning, Hamming, Exact Blackman windows.

Selectable center frequency, span and vertical scale.

Cursor measurements on the FFT curve

Optional X-Y : Upto 4096 point continuous or unlimited single shot display of any two channels from the same CompuScope cards or any disk channels

Optional

Averaging: Up to 4096 point continuous or unlimited single shot display of any two channels from the same CompuScope card or any disk channels.

SOFTWARE DRIVERS

Available in source code in Borland C, Visual C and Quick BASIC. Available for the LabWindows and LabView environments. Available as a DLL for the Windows 3.x environment for Visual BASIC, Visual C++, and Turbo Pascal for Windows.

MATERIALS SUPPLIED

One CompuScope 512 card

One GageScope software package, including a Reference Manual

WARRANTY

One year parts and labor

All specifications subject to change without notice

ORDERING INFORMATION

Product Order Number

CompuScope 512-512K 512-101-002

CompuScope 512-1M 512-101-004

CompuScope 512-2M 512-101-005

CompuScope 512-4M 512-101-006

CompuScope 512-8M 512-101-007

CompuScope 512-16M 512-101-008

GageScope Single-Card Included

GageScope Multi-Card 200-001-002

GageScope: FFT Module 200-001-003

GageScope: X-Y Module 200-001-004

GageScope: Averaging 200-001-005

GageScope: Maintenance Program 200-111-123

512K to 1M Upgrade 512-181-001

512K to 2M Upgrade 512-181-002

512K to 4M Upgrade 512-181-003

512K to 8M Upgrade 512-181-004

512K to 16M Upgrade 512-181-005

1M to 2M Upgrade 512-181-006

1M to 4M Upgrade 512-181-007

1M to 8M Upgrade 512-181-008

1M to 16M Upgrade 512-181-009

2M to 4M Upgrade 512-181-010

2M to 8M Upgrade 512-181-011

2M to 16M Upgrade 512-181-012

4M to 8M Upgrade 512-181-013

4M to 16M Upgrade 512-181-014

8M to 16M Upgrade 512-181-015

External Clock Upgrade 512-181-016

Master Multi-Card Upgrade 512-181-017

Slave Multi-Card Upgrade 512-181-018

Gated Digitization Upgrade 512-181-019

CS512 Calibration 512-181-020

CompuScope C Drivers 200-113-001

CompuScope Quick BASIC Drivers 200-113-002

CS512 LabWindows Drivers 200-113-004

CompuScope Windows DLL 200-113-005

CompuScope LabVIEW 200-113-006

CompuScope LabWindows CVI Driver 200-113-007

CompuScope Windows NT DLL 200-113-008

X10 / X1 Probe, Extra 220-100-001

X100 Probe 220-100-002

All upgrades performed at the factory



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