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Find the *DynamicSignals / GaGe CompuGen 1100* at our website: *Click HERE*

We offer the widest range of high-speed digitizers and instrumentation cards available on the market today. Our powerful PC-based instrumentation products allow you to create reliable, flexible and high-performance solutions quickly and easily.

Reduce development time and costs for testing complex applications such as radar, wireless communications, spectroscopy, etc. by using our Windows-based application software or our SDKs.

APPLICATIONS

Stimulus-response test systems
Wireless communications
Manufacturing test

CompuGen 1100

High-speed arbitrary waveform generator card



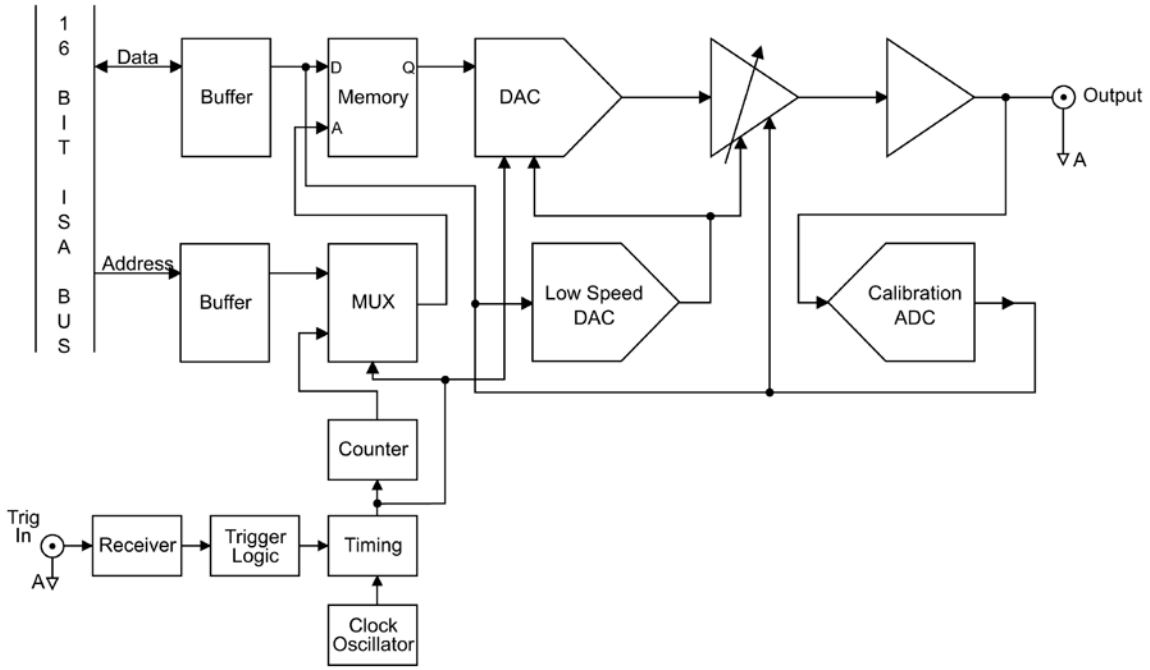
Arbitrary waveform generator and function generator card capable of providing aperiodic analog waveforms.

FEATURES

- 12 bit resolution
- 80 million conversions per second
- Up to 16 MegaSamples of on-board memory
- 12.5 ns Time Resolution
- Up to 8 Cards in a Master/Slave System for up to 8 Simultaneous output channels
- Free CGWin software for creating, editing and generating waveforms
- Free Software Development Kits for C/C++, MATLAB and LabVIEW

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CompuGen 1100 Simplified Block Diagram



COMPUGEN 1100
Traditional waveform generators provide simple, periodic waveforms appropriate for audio and RF applications. The complex analog and digital circuits of today require the stimuli to be customized.

CompuGen 1100 enables the user to create a large number of varying analog and digital outputs and store them for future reference.

CREATE AND EDIT WAVEFORMS
Arbitrary waveforms are generated by creating a digital representation of the waveform in the memory on-board CompuGen 1100. This digital pattern is then converted into an analog signal using a high-speed Digital-to-Analog Converter (DAC) and amplifiers. The output gain and filtering can be set by software.

Arbitrary waveforms can be specified in several ways:

- Using equations
- Selecting from previously stored waveforms on disk
- Selecting from a library of standard waveforms
- Transferring data from CompuScope cards for replaying

MEMORY DEPTH
One of the most powerful features of CG1100 is the huge on-board memory buffer it has. With up to 16 Megasamples of on-board memory, CompuGen 1100 is one of the most powerful D/A cards in the world.

CRYSTAL-BASED STABILITY
The CompuGen 1100 waveform synthesis is controlled by a stable 80 MHz crystal oscillator. This provides temperature stability, long-term stability and precision far above those available in standard waveform generators.

MEMORY LOOPING
Memory looping allows the memory on-board CompuGen 1100 to be optimized. For example, a 1000 point pattern can be repeated 100 times, thereby using up only 1000 words of on-board memory, instead of taking up 100,000 words of memory.

Memory looping is completely seamless. The pattern advances from the last sample back to the first in exactly one clock cycle. Seamless memory looping makes CompuGen 1100 the most powerful arbitrary waveform generator on the market.

ON-BOARD FILTER
CompuGen 1100 has on-board selectable low pass filters for smoothing the output waveform by reducing the quantization error caused by the Digital to Analog Converter.

These software-controlled filters may be switched off when fast rising signals have to be generated.

FAST AMPLIFIER
The amplifier used on the CompuGen 1100 has a very high output slew rate, 50 Ω output impedance and output short protection up to ±50 Volts.

UP TO 80 MILLION CONVERSIONS PER SECOND
The CompuGen 1100 generates analog output at a maximum D/A conversion rate of 80 million samples per second (MS/s) with 12-bit vertical resolution.

AMPLITUDE
The CompuGen provides a maximum output of ±10 Volts into a 1 kΩ load and a ±5 Volt output into a 50 Ω load.

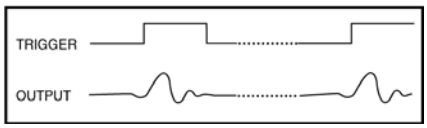
12-BIT RESOLUTION
The CompuGen 1100 provides 12 bit vertical resolution (4096 levels) on the output signal.

TRIGGERING
Internal and external trigger capability is provided for burst mode operation. An arbitrary waveform is produced as a single burst up on receiving a trigger either through software or by comparing the external trigger input with the level and slope set through software.

The trigger can also initiate periodic signal bursts timed through software.

RETRIGGERABLE MODE

Another triggering mode available on the CompuGen 1100 outputs the programmed signal every time a trigger occurs. Once the generation of the output signal has ended, the trigger is re-armed in hardware. No software interaction is required.



PROGRAMMABILITY

The CompuGen 1100 is fully programmable for customer applications. Software Development Kits (SDKs) for C/C++, MATLAB and LabVIEW are provided with your CompuGen 1100.

MULTI-CARD SYSTEMS

A Multi-Card system, comprising one Master and up to 7 Slave boards, can be ordered if more than one output channel is needed.

All signals necessary for synchronization of multiple CompuGen boards are passed from the Master to the Slave CompuGen boards using a Master/Slave Interconnect. These signals include the Conversion Clock, Trigger and other initialization signals.

THREE-PHASE SIMULATION

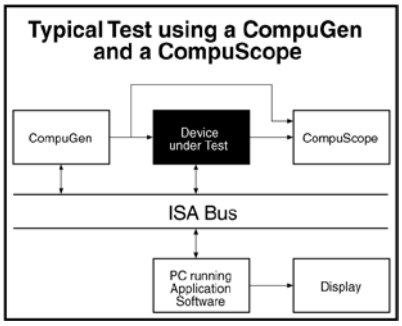
Multiple CompuGen 1100 cards can be used to simulate three-phase voltage and current waveforms with control over the phase of each output.

INTEGRATION WITH COMPUSCOPE CARDS

CompuGen cards operate under software that can load and store GageScope SIG files. These are data files captured by CompuScope cards.

As such, the first level of integration between the CompuGen and CompuScope cards can be achieved using signal files. It is possible to capture a signal using a CompuScope and then regenerate it with a CompuGen 1100.

Yet another level of integration can be achieved by using the two cards in the same system, with the application software controlling both cards using software drivers.



SYSTEM REQUIREMENTS

ISA bus compatible PC with at least one free ISA slot; 128 MB RAM, 50 MB free space on hard drive; SVGA video.

SIZE

Single-slot full-length ISA card

POWER REQUIREMENTS (MAX)

+5 Volts	15 Watts
+12 Volts	9 Watts
-12 Volts	1 Watts
-5 Volts	0.5 Watts

FEATURES

Pattern Output Modes:	Single-shot, continuous looping
Record Length:	4 points minimum
Record Resolution:	2 points
Trigger Modes:	Single, timed, or retriggerable

DIGITAL TO ANALOG CONVERSION

Output:	1 per card
Amplitude:	20 Vp-p into 1 kΩ 10 Vp-p into 50 Ω
Resolution:	12 bits
Accuracy:	±2% excluding offset
Clock Frequency:	Maximum 80 MHz Minimum 1 Hz
Conversion Rates:	80 MHz, 40 MHz, 20 MHz, 10 MHz, 5 MHz, 2 MHz, 1 MHz, 500 kHz, 200 kHz, 100 kHz, 50 kHz, 20 kHz, 10 kHz, 5 kHz, 2 kHz, 1 kHz
Output Frequency:	10 MHz to 61 µHz
Buffer Depth:	512K, 1M, 2M, 4M, 8M, or 16M samples
Full-scale Output Range:	±100 mV, ±200 mV, ±500 mV, ±1 V, ±2 V, ±5 V Voltages are specified with 50 Ω termination. With no termination,voltage is doubled.
Output Impedance:	50 Ω
Filter:	Software-selectable (5 MHz, 20 MHz, Infinite)
Output Protection:	Short-protected up to ±50 V
Connector:	BNC

FREQUENCY STABILITY

Long Term:	100 ppm

TRIGGER

Source:	Internal or External
External Trigger:	0 to 5 V TTL
Trigger Slope:	Rising or Falling
Connector:	BNC

EXTERNAL CLOCK (OPTIONAL)

Clock Frequency:	Minimum DC, Maximum 80 MHz
Voltage:	0 to 5 V TTL
Connector:	BNC
Selection:	Software-selectable

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MULTI-CARD SYSTEMS

Operating Modes: Master/Slave or Multiple/Independent

Maximum Number of Cards:
- Master/Slave: 8 (1 Master and 7 Slave cards)
- Multiple/Independent: Limited by backplane

OPERATING SYSTEMS SUPPORTED

Windows 95/98/ME/2000/XP CompuGen Driver version 1.3x.xx

SOFTWARE DEVELOPMENT KITS (SDK)

CompuScope SDK for C/C++ for Windows
CompuScope SDK for MATLAB for Windows
CompuScope SDK for LabVIEW for Windows

APPLICATION SOFTWARE

CGWin Software (for Win 95/98/NT)

MATERIALS SUPPLIED

One CompuGen 1100 card
One Gage CompuGen ISA CD
includes CGWin Software for Windows, Drivers, and SDKs

RECOMMENDED ACCESSORIES

50 Ω Shunt

WARRANTY

One year parts and labor
All specifications subject to change without notice;
specifications are not guaranteed under all possible combinations of modes of operation.

ORDERING INFORMATION

Hardware & Upgrades

CompuGen 1100 - 512K	110-101-001
CompuGen 1100 - 1M	110-101-002
CompuGen 1100 - 2M	110-101-003
CompuGen 1100 - 4M	110-101-004
CompuGen 1100 - 8M	110-101-005
CompuGen 1100 - 16M	110-101-006
CG1100 Memory Upgrades	Contact Factory
CG1100: External Clock Upgrade	110-181-011
CG1100: Master Multi-Card Upgrade	110-181-012
CG1100: Slave Multi-Card Upgrade	110-181-013
CG1100: 50 Ohm Shunt	110-111-001

Application Software

CGWin Software	Included

Software Development Kits (SDKs)

CompuGen SDK for C/C++	Included
CompuGen SDK for MATLAB	Included
CompuGen SDK for LabVIEW	Included

All Upgrades performed at the factory.

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