Genesis HIGH SPEED

Break the speed limit...with GEN5i

High-performance transient recording and data acquisition in a single box

up to
100 MS/s
sample rate
per channel

HBM

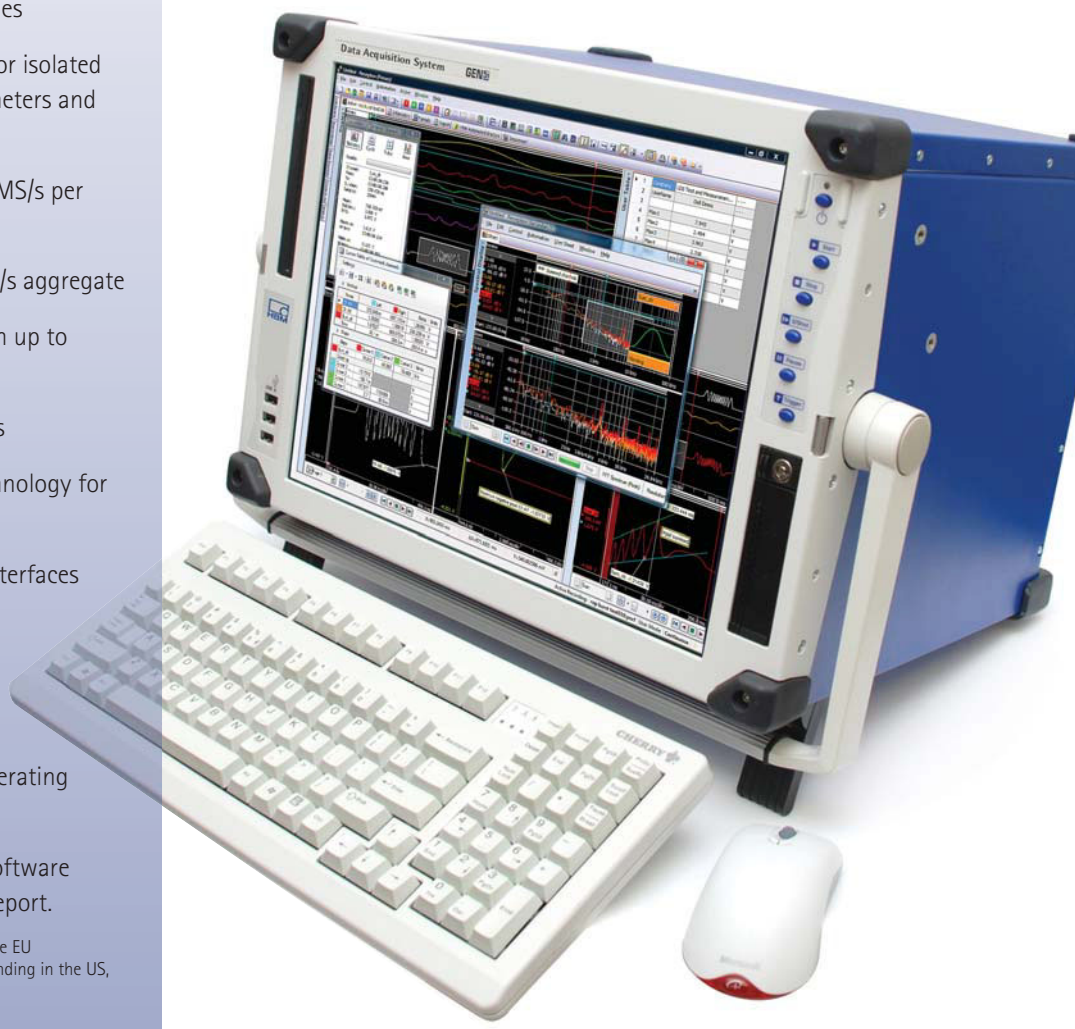
State of the art DAQ and transient recording capabilities

The GEN5i integrates a high-end PC and a state-of-the-art DAQ and transient recording system into a single, portable instrument. Unmatched performance combined with ease of use. Out of the box – the GEN5i. The future of DAQ.

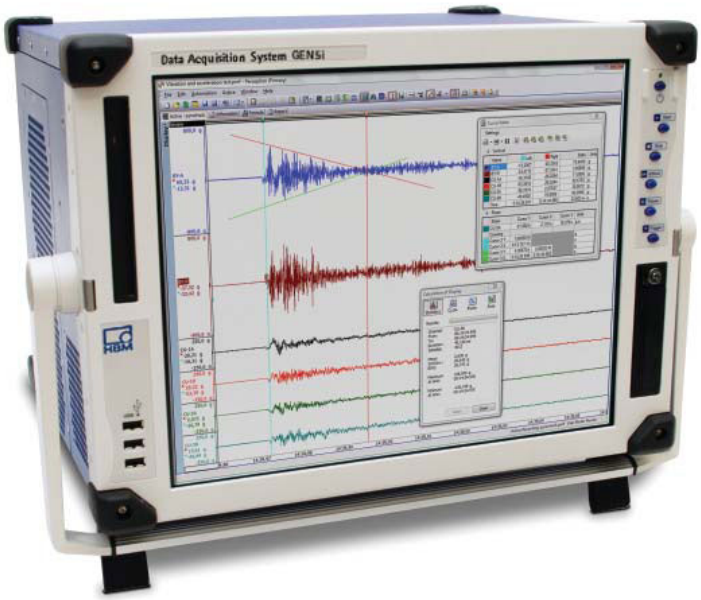
Fully-integrated DAQ instrumention

- Combines DAQ and PC in one instrument
- Robust and transportable
- Ready to run "out of the box"
- Up to 40 input channels
- Mix and match up to 5 input modules
- Wide range of signal conditioners for isolated DC, strain gages, sensors, accelerometers and more.....
- Sample rates from 200 kS/s to 100 MS/s per channel
- Direct to disk streaming rate 56 MB/s aggregate
- High-speed transient recording with up to 9 GByte memory
- Unique "dual-rate" recording modes
- Patent pending StatStream®(1) technology for lightning fast display: 100 GB in 4 s
- Optional IRIG, IRIG/GPS and SCSI interfaces
- Integrated high-end dual-core PC
- Full connectivity with WLAN, DVD-RW, USB, GBit Ethernet
- Windows Vista® Ultimate 64-bit operating system
- Perception Enterprise 64-bit DAQ software covering acquisition, analysis and report.

StatStream is a registered trademark in the US and the EU
(1) StatStream is patented in Germany and patent pending in the US, UK and France.



An integrated PC ready to perform.
Full PC performance and connectivity



The GEN5i is a fully-integrated instrument built on the latest PC technology. The dual-core processor in combination with 4GB of RAM and a RAID-0 hard disk provides the performance to get the most demanding task done in time.

Full connectivity ensures easy data back up or transfer, from the office, the lab, the factory floor or even out on the proving ground. And best of all, this is built on standard PC technology so that future updates and upgrades will be easy, thus securing your investment.

The large 17" inch high resolution TFT display gives a full overview even with many channels. This is a real convenience factor when the GEN5i is used as a PC.

Mouse and keyboard are standard and convert the instrument into a full PC. However, basic acquisition control is possible without them.

A high-end, yet standard motherboard is the backbone of GEN5i´s PC section. Three open PCI slots enable hardware expansion.

Besides the standard GigaBit LAN, an integrated 54 MBit WirelessLAN enables communication even from remote sites.

A total of 11 USB ports can be used to connect peripherals like printers, disk drives or USB thumb drives.

The built-in DVD-RW enables easy backup.

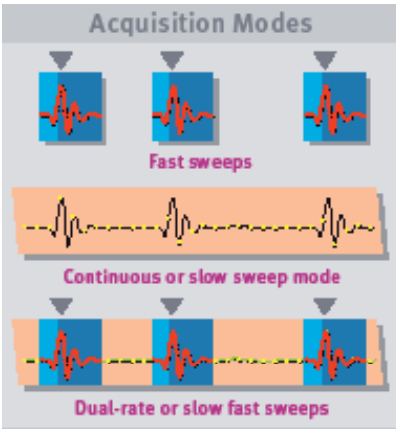
The optional, removable hard disk can be used for backups and data transfer to the PC.

Dual monitor support allows the use of a second high resolution monitor.

Flexibility and performance... out of the box

The GEN5i is ready to run right after unpacking. Power it on and you´ll see scrolling traces. Press START and you´ll do your first acquisition. And while getting started is easy, the performance is there for the most demanding tasks. Both transient memory recording as well as direct-to-disk streaming is possible – even at the same time. A selection of input amplifiers serves your most demanding needs. A "user mode" selection enables you to adapt the user interface to the task you need to accomplish.

GEN5i serves both transient memory acquisition as well as direct-to-disk streaming. Advanced modes like dual-rate recording combine the two.



Five input modules with up to 40 channels

can be mixed and matched, with isolation if needed and always with synchronized sampling.

GEN5i still maintains front panel buttons for the really important tasks: Start, Stop or Trigger can be initiated from here.

Acquisition modes: sample rate versus memory length

Storage location	Throughput	Memory length	Remark
Hard disk	28 MS/s aggregate	1200 GigaBytes	• File size is only limited by hard disk space • Sample rate is limited by the total aggregate rate
Transient	Full channel sample rate up to 100 MS/s per channel	Up to 1.8 GigaBytes per channel	• File size is only limited by transient memory per channel • No aggregate sample rate limit

Full sample rate or nearly unlimited memory capacity. Whatever your application serves best, it only takes seconds to switch modes with GEN5i.

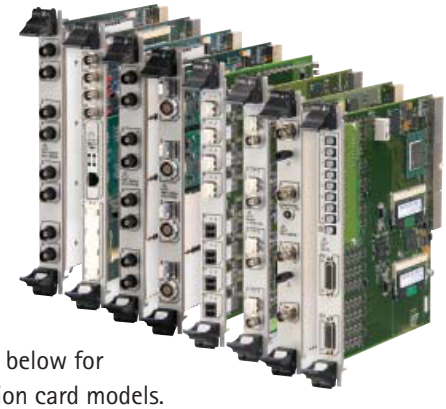
Options and accessories.
Input modules overview

The front cover protects the instrument and stores mouse, keyboard and cables

Select the proper input modules for your application

The design of the GEN5i mainframe delivers a substantial contribution to the measurement quality. The robust mechanical construction of the GEN5i housing guarantees many years of trouble-free operation, while the separately shielded housing for the DAQ portion eliminates every noise or crosstalk issue between the PC and the DAQ section.

The GEN5i can hold up to 5 acquisition cards, which can be freely mixed to best suit your application.



Refer to the table below for available acquisition card models.

Available options and accessories

- Removable HDD, 120 GB; removable SSD, 64 GB
- Solid state drive RAID-0 (instead of standard RAID-0)
- System installation on removable hard disk drive (or removable SSD)
- Carrying bag
- Shipping case
- 19" rack mount kit
- Master-slave interface board for true synchronization with additional GEN7t tower or GEN16t rack mainframes
- IRIG and IRIG/GPS expansion boards for precise timing and synchronization
- SCSI interface board for connection to an external hard disk or RAID array (for PC-independent storage)
- External SCSI hard disk drives or SCSI attached RAID.

Model	Input Type	Isolation	Sample Rate	Resolution	Memory	Channels
Basic200	Single Ended	no	200 kS/s	16 bit	64 MS	8
BasicXT200 iso	Unbalanced Diff(1)	yes	200 kS/s	16 bit	64 MS	8
Basic1M	Single Ended	no	1 MS/s	16 bit	128 MS	8
Basic1M iso	Unbalanced Diff(1)	yes	1 MS/s	16 bit	256 MS	8
BasicXT1M iso	Unbalanced Diff(1)	yes	1 MS/s	16 bit	256 MS	8
Bridge200 iso	Bridge / Diff	yes	200 kS/s	16 bit	64 MS	4
Bridge1M iso	Bridge / Diff	yes	1 MS/s	16 bit	256 MS	4
Uni200 iso	Diff / ICP / Shunt	yes	200 kS/s	16 bit	64 MS	4
Uni1M iso	Diff / ICP / Shunt	yes	1 MS/s	16 bit	256 MS	4
HiSpeed25M	Differential	no	25 MS/s	15 bit	64 MS	4
HiSpeed100M	Differential	no	100 MS/s	14 bit	900 MS	4
IsoDig MV	Unbalanced Diff(1)	yes	25 or 100 MS/s	14/15 bit	100-900 MS	1/4(2)
IsoDig HV	Unbalanced Diff(1)	yes	25 or 100 MS/s	14/15 bit	100-900 MS	1/4(2)
Marker1M	Binary/Counter/Timer	no	1 MS/s	1 bit	512 MB	64
Marker1M HV	Binary/Counter/Timer	yes	1 MS/s	1 bit	512 MB	32 + 8

(1) An unbalanced differential input can be used to do differential, off ground, isolated measurements.
(2) Four single-channel Fiber Optic Isolated Digitizer front-ends can be connected to a single acquisition card.

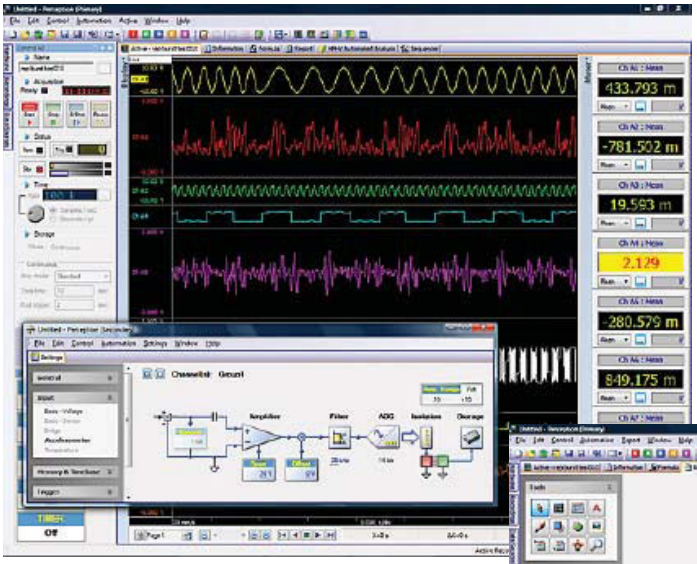
Perception Enterprise 64-bit software. The all-in-one solution

Easy yet powerful software

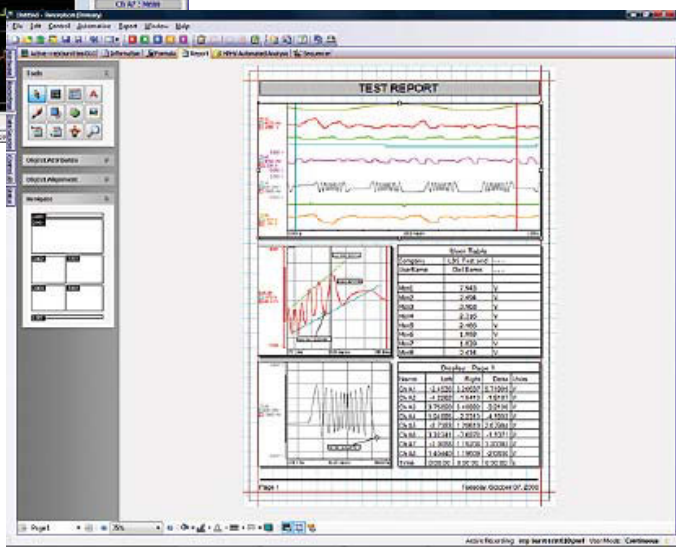
The heart of each DAQ system is its software. Beyond sample rate and amplifier specifications, it is the software which determines if you can do your job, and how effective you will be. Usability is the main feature of the Perception software. While offering powerful features for various applications, the whole design is always centered towards the user and his task. Making your life easier and solving your problem is our utmost priority. Our solution covers all aspects of DAQ "from sensor to report" in an integrated and "out-of-the-box" approach.

Perception Enterprise 64-bit software suite is a real 64-bit application ready for the future. With all needed options and features included, it offers unmatched stability, data security, performance and flexibility. And its user interface is "best in class".

ANALYSIS: Cursors, dual zoom, calculators and statistical readouts are useful for first inspection. Detailed results can be computed using the formula database with over 70 different functions available.



ACQUISITION: Hardware control and acquisition is the first task. Graphical setup of amplifiers, wizards and advisors help you through the process with flexible real-time displays of scrolling traces, digital displays or just VU meters.



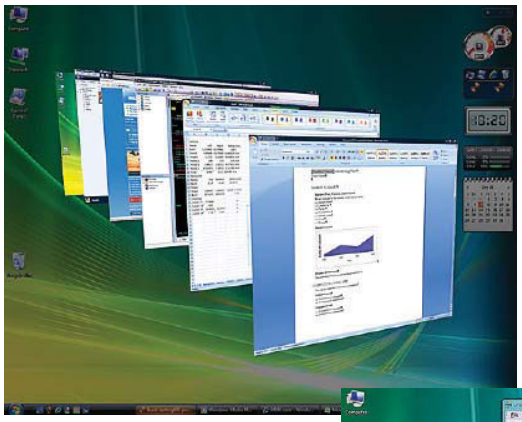
REPORTING: Print displays in seconds, or create a full report using the layout generator. Combine displays, result tables, trace markers, text and graphics into multi-page, multi-color documents.

Tight Microsoft® Office integration.
An environment ready for the future

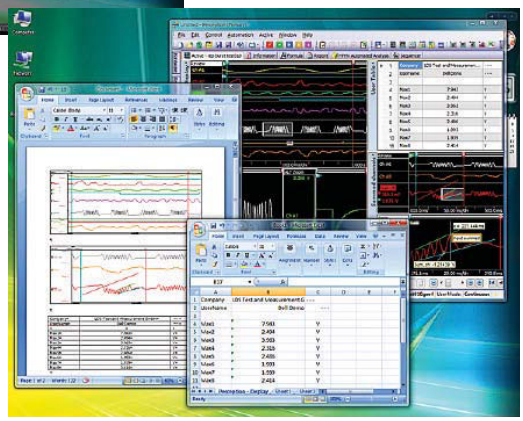
Future-proof solution

An instrument is only as reliable as its "engine". And as the GEN5i is designed for the future, it was a logical choice to build it on a state-of-the-art operating system.

Microsoft´s Windows Vista Ultimate 64-bit is the Enterprise class software base of the GEN5i. It is able to address more memory, larger hard disks and more peripherals than any other operating system, with server-type stability. And it offers built-in security and safety features for your important test-data storage.



The innovative Windows Vista Ultimate 64-bit offers all the maintenance and security tools needed to do professional work. Now and for the future.

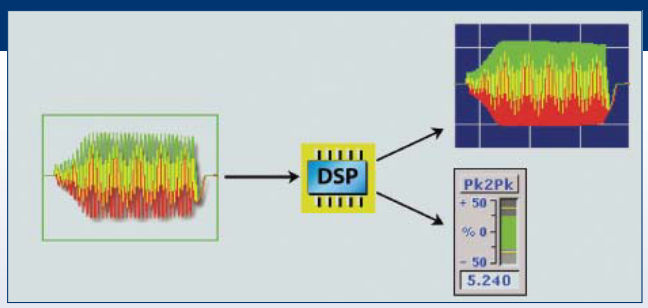


While Perception does all the DAQ tasks, there is also the need to bring the data over into the Microsoft Office environment. Cursor readouts or result tables come over to Excel® with a mouse click, displays or complete reports do just the same with Word®.

StatStream display technology

Genesis HighSpeed's exclusive, patented/patent pending StatStream display technology accelerates your measurement task with dedicated hardware and firmware. While recording, StatStream pre-processes a display summary at the full resolution of the GEN5i monitor.

When reviewing your stored files, the embedded StatStream data enables an accurate, detailed overview of any size file in seconds. Unlike competitive systems, the GEN5i has no need to inspect GigaBytes of information just to display the last kiloByte. As you zoom in, more detail is displayed while always maintaining the highest visible resolution.



Review benchmark

(16 channels sampled at 1 MS/s each = 32 MByte/s)

Acquisition time	Recording size	Load and display time
10 seconds	320 MB	2s
1 minute	1.92 GB	3s
10 minutes	19.2 GB	4s
1 hour	115.2 GB	4s

GEN5i is used worldwide in a variety of applications, from large scale test stands to power measurements, from blast testing to rocket launch monitoring, from telemetry data recording to fault finding in electrical installations.






From Odyssey to the GEN5i

Replace your old Odyssey with the new GEN5i and take advantage of:

- Less weight and smaller size
- Much more robust design
- Larger screen
- Better connectivity incl. USB, WLAN, DVD-RW....
- Integrated high-end PC
- Newest operating system
- 10 x more streaming speed
- 40 x more hard disk space
- 10 x more sample rate
- 400 x more transient memory
- Twice the amplifier accuracy.

Go to www.genesis-highspeed.com – Odyssey replacement section for a full comparison.

Find out more about GEN5i at www.GEN5i.com

measure and predict with confidence

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