Leverage the Genius Inside

Wrap your OEM products around Agilent's
high-speed digitizer technology

Agilent Technologies

Leverage the Genius
Inside

Every new product takes shape in a different way, but all share a common issue: Tradeoffs must be made in the pursuit of metrics such as time-to-market, competitive pricing and profit margin. The pursuit of those goals often involves another important choice: Design in-house or buy off-the-shelf.

As you weigh the choices, consider Agilent. We're known for test and measurement equipment that offers industry-leading performance, accuracy and reliability. Those same attributes are built into Agilent Acqiris high-speed digitizers that can be designed into your end-user products. Whether you choose to do the integration on your own or with our help, we can help you create a cost-effective solution that minimizes project risk and accelerates your time-to-market. Work with us—and leverage the genius embedded inside our products.

Reduce the risks—today and tomorrow

Whether you're the product architect or project manager, our technology can enhance the products you're creating. When you choose our high-speed digitizer technologies, your projects can benefit in five important ways:

- Faster time to market
- Smaller size and lower power consumption
- Better measurement fidelity and signal integrity
- Higher measurement throughput
- Lower total cost of ownership (TCO)

The net result is a lower cost of integration that comes from reduced development time, greater reuse of designs and the advantages of open architectures, including future upgradeability. This forward-looking approach will help you shape future solutions faster, too.
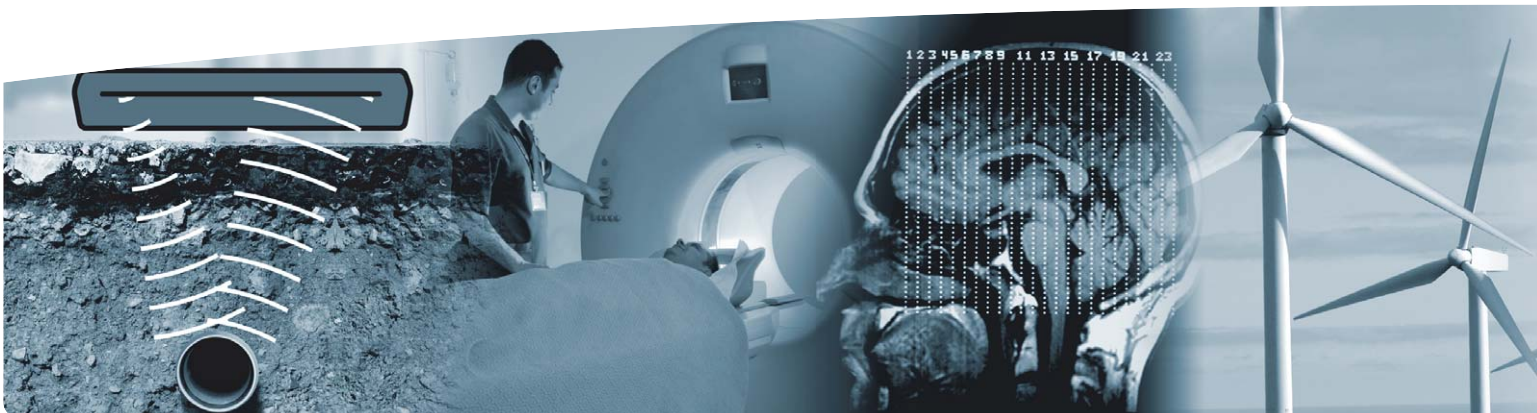
Wrap your Products around our Technologies

To support the needs of original equipment manufacturers (OEMs), we offer a range of hardware products, software elements and, for specific customer needs, development services. We illustrate our offering as a set of three nested spheres.

Agilent-proprietary technologies—and know-how—are at the core. These unique elements include data-converter chipsets, analog front-end technology and digital data-handling devices. Together, these application-specific integrated circuits (ASIC), with commercial off-the-shelf (COTS) technologies, provide three key advantages:

- Provide easy access to low-power, high-fidelity data acquisition
- Ensure maximum data throughput to the host processor
- Reduce measurement time and cost

These components are available only as embedded parts of our high-speed digitizer products, which comprise the second sphere. These boards and modules include analog-to-digital converters (ADC) and digital-to-analog converters (DAC). Key capabilities include onboard real-time processing, memory storage and data streaming.

The third layer is your product, which can be wrapped around the two inner spheres. This is often the fastest way to create a working prototype or get your initial end-user product to market.

Agilent core technology

Agilent embedded ADC/DAC board

OEM Product

Build on our toolkits and software

On the software side, we support operating systems such as VxWorks, Linux and Windows®. We also offer software designed for multichannel data acquisition.

Let us help create your solution

If you need hands-on development support, we're ready to help with your design starting from concept, prototype to manufacture. We have experience supporting designs for applications in ultrasound, laser, lidar, radar, RF antennas and beyond.

Who better than Agilent to adapt our technologies, products and software to suit your application?

Utilize our Product Families

At the product level, we offer a range of modular solutions for data conversion in the form of standard ADCs and DAC cards.

These cover a wide range of specifications and capabilities:

- Sampling rates of 500 MSa/s and 1, 2, 4 or 8 GSa/s
- Resolution of 8, 10, 12 or 14 bits
- Wide bandwidths up to 3 GHz
- Small to large acquisition memories
- High throughput
- On-board real-time processing
- From single to multi-channels solutions

Some modules also feature real-time processing and data streaming. To ensure maximum flexibility, we support industry-standard form factors and interfaces such as PCI, PCIe, PXI-H, PXIe, and AXIe.

For detailed information about our ADCs and DACs technology, please visit us on the Web at **www.agilent.com/find/embedded-digitizers**
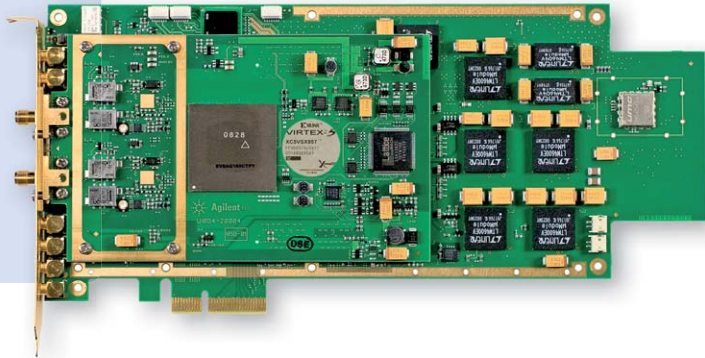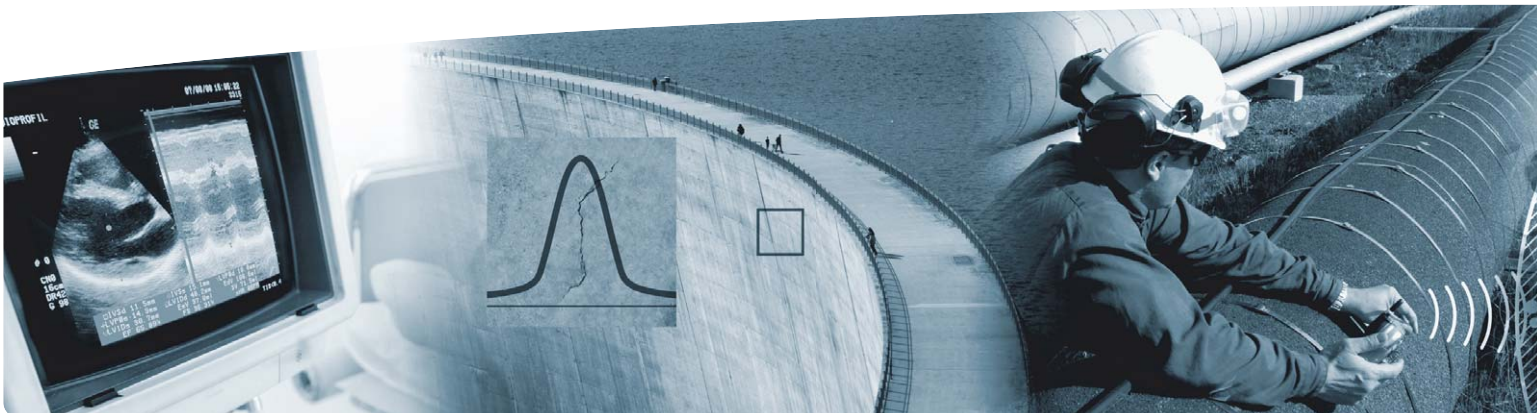
Get the Right Mix of Features and Performance

Our technology spans a range of features and performance points that can be tuned to meet challenging measurement needs in commercial, industrial, aerospace and defense applications. Examples include medical imaging, ultrasound, radar, lidar, time-of-flight (TOF) imaging, high-energy physics, non-destructive testing and environmental monitoring.

Standard Digitizers provide an attractive balance of features and performance.

IF Digitizers provide excellent performance for radio frequency (RF) and microwave applications.

Digitizing Oscilloscopes offer a broad feature set.

With **Component Digitizers**, our focus is on creating solutions for OEMs. For these projects, the key to success is achieving the optimum balance of features and performance. Working with you and your team, we start with a high-end digitizer and customize it with the blend of features and performance that fits your requirements.

Unlike a typical R&D project, our commitment is to deliver the digitizer that has exactly what you need—nothing more, nothing less.

Our deliverable to you will be a finely tuned device at a price point that fits within your business needs. Your final result will be an OEM product that meets the needs for your application.

A whole range of digitizers to fit your requirements.

Leverage the Genius Embedded Inside

Tremendous levels of customization are possible. This flexibility is based on four key elements:

• Base boards
• Mezzanine boards
• Firmware
• Software

Regardless of form factor, the base cards share a common technology foundation. Mezzanines contain front-end signal conditioning and the ADC/DAC, and they share a common footprint with the base cards.

Memory and acquisition control (MAC) and field-programmable gate array (FPGA) data processing unit (DPU) share common base designs, enabling easy porting of both firmware and software between different solutions. Firmware can support specific requirements such as fast Fourier transform (FFT), digital downconversion (DDC), finite impulse response (FIR) filtering, intermediate frequency (IF) digitization, data decimation and pulse integration.

Incorporate Advanced Technologies

Agilent Acqiris high-speed digitizers embody our technical know-how and incorporate a variety of advanced technologies. These are implemented as FPGAs, ADC chipsets, analog front ends, digital data-handling devices, and COTS chips.

Our proprietary ADC chipsets are designed to optimize high-speed performance. They also help ensure excellent signal fidelity in a wide range of applications.

To further enhance signal fidelity, we've developed excellent analog front-end technology. This provides the signal conditioning, amplification and interleaving functions essential to data acquisition at gigasample-per-second rates.

Accurate multi-channel acquisition and cross-channel measurements depend on digital data-handling components. These provide the vital clock and synchronization signals that make it possible to capture and memorize acquired data with maximum data throughput.

Specialized ASICs make low-power, high-fidelity data acquisition more accessible. They also accelerate data throughput to the host processor, further reducing measurement time and cost.
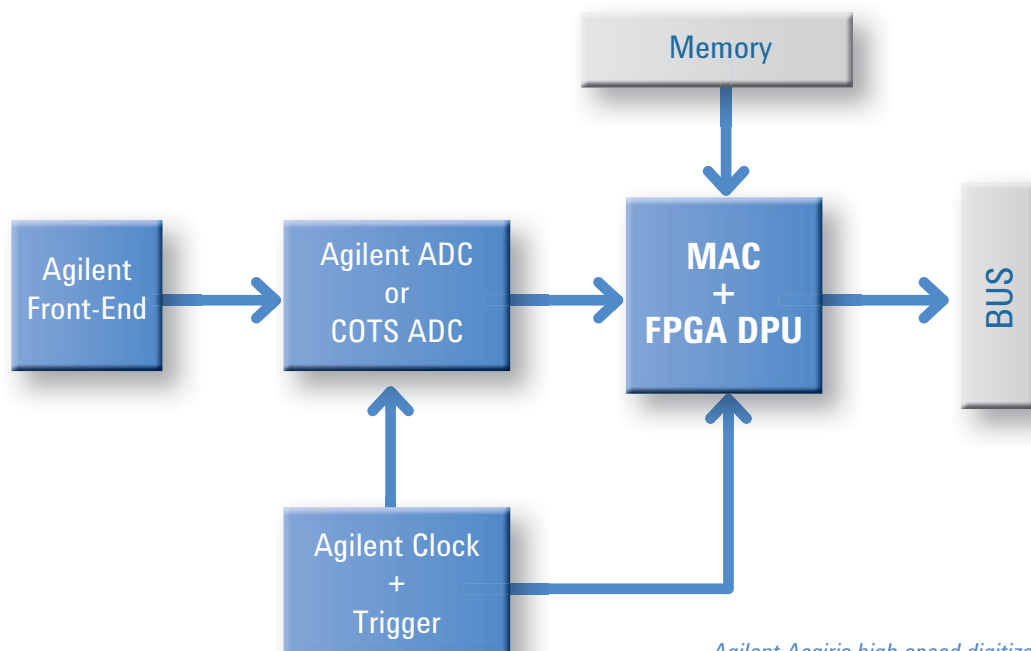
Agilent Acqiris high-speed digitizer architecture.

Put our Expertise
to Work for You

Our driving philosophy should be clear: We want to put excellent data converter technologies in the hands of an ever wider number of users. For OEMs, we want to ensure that your end users are quickly and easily capturing, storing, measuring and analyzing signals with the highest fidelity.

Behind the scenes, our core team has a tremendous amount of expertise in data conversion and ADC/DAC design. For example, our engineering staff includes hardware designers and software developers with decades of cumulative experience in a vast range of applications.

Contact us: Meet EDGAR

We call our team EDGAR, which stands for Embedded Digitizer Guru's at Reach.

Please contact us via e-mail at:
edgar@agilent.com

Our goal is to respond within 24 hours.

EDGAR is also the entry point for our "ask an expert" service. You can interact with one of our in-house physicists, engineers or test-and-measurement specialists to define and refine your next product design.
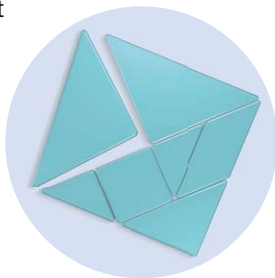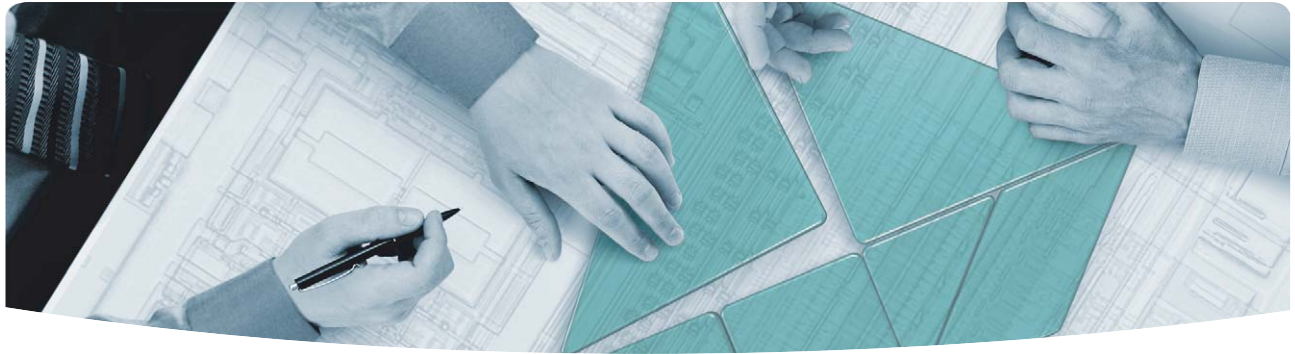
The Modular Tangram

The four-sided geometric symbol that appears in this document is called a tangram. The goal of this seven-piece puzzle is to create identifiable shapes—from simple to complex. As with a tangram, the possibilities may seem infinite as you begin to create a new test system. With a set of clearly defined elements—hardware, software—Agilent can help you create the system you need, from simple to complex.

DISCOVER the Alternatives ...

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For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at: **www.agilent.com/find/contactus**

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Denmark	45 70 13 15 15
Finland	358 (0) 10 855 2100
France	0825 010 700*
	*0.125 €/minute
Germany	49 (0) 7031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
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Product specifications and descriptions in this document subject to change without notice.

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