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READY. GO.

Skip the complex instrument setup and get results faster with a single-cartridge, multiapplication genetic analyzer

ThermoFisher SCIENTIFIC

Easy to use for all levels of experience

From a leader in genetic analysis instrumentation, the Applied Biosystems™ SeqStudio™ Genetic Analyzer is the only genetic analyzer that performs simultaneous sequencing and fragment analysis runs on the same plate. The SeqStudio Genetic Analyzer is easy to use with an integrated cartridge–based system, and allows you to access and monitor your run as well as view data remotely. The fully connected genetic analyzer, along with the simple cartridge design, can be easily shared by all researchers in the lab.

The SeqStudio Genetic Analyzer provides the latest advancements in touchscreen usability, allowing you to stay connected to your data easily. The system is designed for both new and experienced users who need simple and affordable Sanger sequencing and fragment analysis, without compromising performance or quality.



* SAE enablement requires on-site field service engineer and PC (desktop or laptop) purchased from Thermo Fisher Scientific.

- **Universal all-in-one cartridge**—unique functionality integrates POP-1 polymer, anode buffer, a polymer delivery system, and a capillary array; this novel system design allows for an on-instrument reagent life of four to six months (depending on the cartridge reaction size)
- **Obtain results you can trust**—the accuracy that you expect from an Applied Biosystems™ genetic analyzer
- **Reduced setup time**—combine Sanger sequencing and fragment analysis reactions in the same instrument run, enabled by POP-1 polymer and a universal cartridge design
- **Maximize benchtop space**—this compact instrument can be configured as a stand-alone system or with a computer to fit most laboratory needs
- **Traceability and data security**—an optional security, audit, and electronic signature (SAE) software module offers an electronic data chain of custody to help ensure integrity of your data*
- **Easy to access, analyze, and share data anytime, anywhere, with Connect, our cloud-based platform**—remotely monitor your runs, analyze sophisticated datasets in minutes, store data in a secure space, and share results online with colleagues using web browser–based software; monitor your runs in real time from mobile devices
- **Comprehensive software package**—Applied Biosystems™ Sequencing Analysis Software, SeqScape™ Software, Variant Reporter™ Software, GeneMapper™ Software, and Minor Variant Finder (MVF) Software are included with system purchase
- **Get up and running quickly**—every SeqStudio system includes SmartStart™ Orientation to get you up and running quickly in your lab: this covers basic setup, cloud enablement and connectivity, printer networking, starter reagent review, software use, and instrument operation and maintenance

Learn more at **thermofisher.com/seqstudio**

Generate high-quality data for a variety of applications

Sanger sequencing is the gold standard for sequencing technology—providing a high degree of accuracy, long-read capabilities, and the flexibility to support a diverse range of applications in many research areas. Although Sanger sequencing is highly recognized for DNA sequencing applications, it also supports applications in RNA sequencing and epigenetic analysis, enabling robust, reliable detection and quantitation of markers for cancer and other genetic disease studies. In addition, analysis of DNA fragments allows for a multitude of applications, from genotyping to bacteria identification and from plant screening to gene expression profiling.

De novo Sanger sequencing

De novo sequencing is the term used to describe the initial sequence analysis performed to obtain the primary genetic sequence of a particular organism.

Targeted sequencing using Sanger sequencing

Identifying heterozygous base positions or small insertions or deletions (indels) in genomic DNA is often employed to locate mutations or polymorphisms in diploid organisms, detect genetic rearrangements, and uncover rare variants.

Plasmid sequencing

Analysis of inserts subcloned into plasmids.

Oncology research

Maintaining gold-standard quality for studying the presence of mutant alleles in tumor tissue.

Species identification

Identification of species in an unknown sample by sequencing DNA of fingerprint loci.

Next-generation sequencing (NGS) confirmation

With superior performance and gold-standard Sanger sequencing technology, our genetic analyzers serve as your trusted partner for confirming NGS results.

CRISPR-Cas9 genome editing analysis

Confirmation of CRISPR-Cas9–mediated editing events.

Human cell line authentication

Analysis of specific genetic fingerprint of highly variable short tandem repeats (STRs).

Applied Biosystems™ SNaPshot™ genotyping

Detection of single-nucleotide polymorphisms (SNPs) to understand how the genome influences biological phenotypes.

Multiplex ligation–dependent probe amplification (MLPA™) analysis of human copy number variation

Study of inherited human diseases arising from variations in copy number of a locus.

Generate high-quality Sanger sequencing data with our proven workflow

We offer a complete product portfolio for every step of the Applied Biosystems™ workflow, from amplifying the DNA template, PCR cleanup, cycle sequencing, and sequencing cleanup to on-instrument consumables.

Find out how our products support each step of the workflow at **thermofisher.com/sangerworkflow**

Convenience for increased lab productivity

The SeqStudio Genetic Analyzer employs a cartridge-based system designed to be easy to use and easy to maintain. The SeqStudio instrument utilizes an all-in-one cartridge that contains the capillary array, polymer reservoir, and anode buffer (Figure 1).

The all-in-one cartridge design allows:

- Four to six months of on-instrument storage, depending on cartridge reaction size
- Easy removal
- POP-1 polymer
- Sanger sequencing and fragment analysis to be performed with no reconfiguration
- Compatibility with standard 96-well plates or 8-well strip tubes
- Four capillaries
- Radio-frequency identification (RFID) tags that track the number of injections (cartridge) and length of time on the instrument (cathode buffer container)
- Pre-run calibration performed automatically
- Recycling*

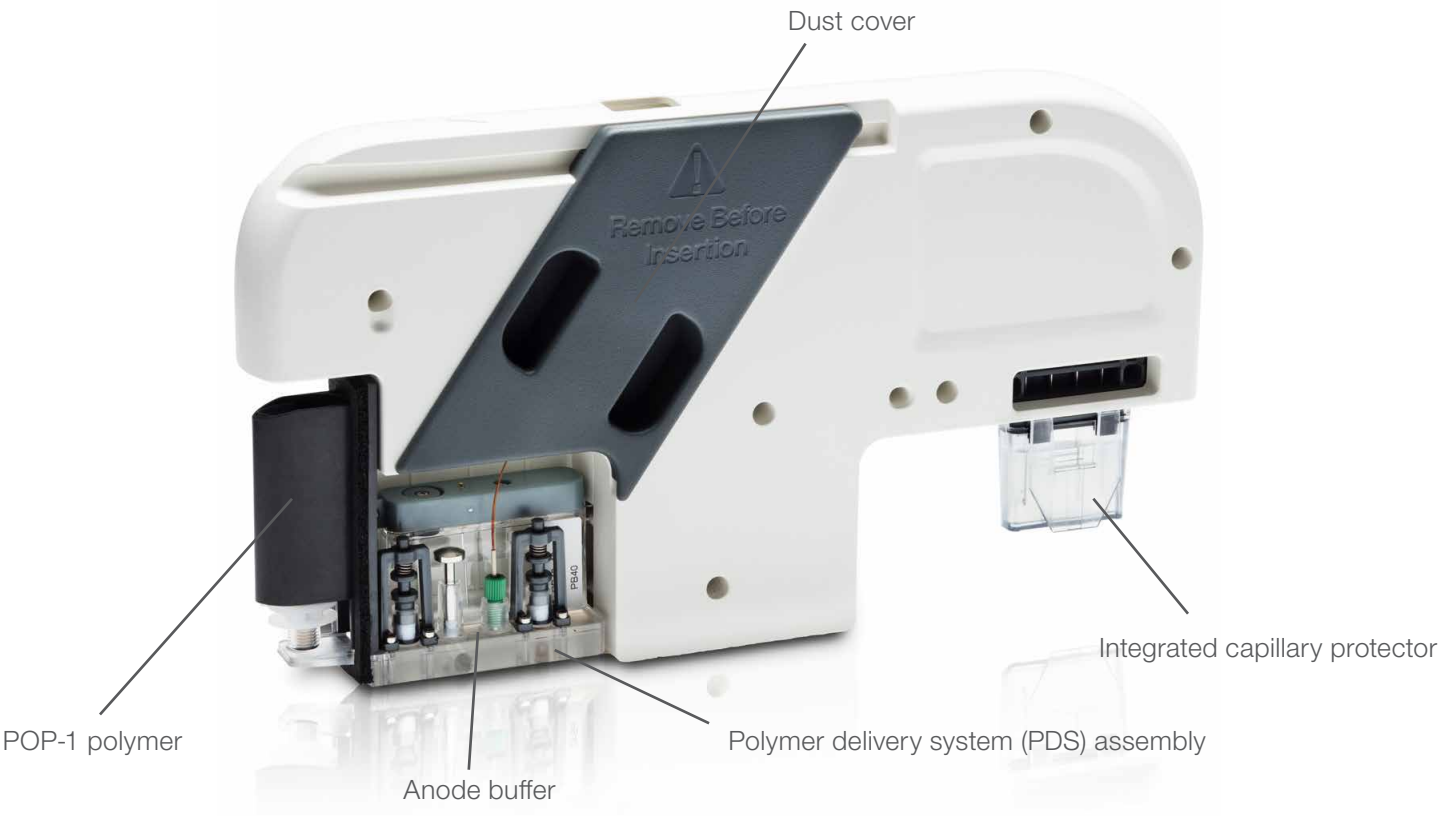


Figure 1. Integrated all-in-one cartridge design. The cartridge contains four capillaries, a detector, and a pump system that delivers polymer and buffers.

* Available in certain regions only. For more details, go to **thermofisher.com/seqstudiorecycling**.

Simple touchscreen interface and software

The SeqStudio Genetic Analyzer offers users the flexibility to set up their plate and samples, and start a run. Additional run modules can be created or modified via the integrated and interactive touchscreen. Results can be viewed in various formats on the screen, including a list or in “plate view” as well as from the sequencing plots or raw electropherograms.

A comprehensive Applied Biosystems™ software package includes the following:

Sequencing Analysis Software—uses a base-caller algorithm for pure- and mixed-base calls; analyzes, displays, edits, saves, and prints sample files generated from Applied Biosystems™ DNA and genetic analyzers

SeqScape™ Software—designed for mutation detection and analysis, SNP discovery, pathogen subtyping, allele identification, and sequence confirmation

Variant Reporter™ Software–designed for reference-based and non-reference–based analysis such as mutation detection and analysis, SNP discovery, and sequence confirmation

GeneMapper™ Software—designed to provide DNA sizing and quality allele calls for all Applied Biosystems™ electrophoresis-based genotyping systems; specializes in multiapplication functionality, including amplified fragment length polymorphism (AFLP) analysis, loss of heterozygosity (LOH), and microsatellite and SNP genotyping analysis; includes security and audit features

MVF Software—enables 5% somatic variant detection using Sanger sequencing, making Sanger sequencing a fast, cost-effective, and accurate way to call low-frequency somatic variants where the number of relevant targets is limited



Stay connected*

The SeqStudio Genetic Analyzer is integrated with Connect, our cloud-based platform, allowing you to stay connected to your data remotely. Accelerate your research and boost your laboratory's productivity with the following capabilities:

- Automatic data file uploading and storing
- Remote instrument monitoring
- Web-based applications, including free access to Quality Check (QC), Next-Generation Confirmation (NGC), Variant Analysis (VA), Peak Scanner (PS), and Microsatellite Analysis (MSA)
- Secure, scalable data storage with discretionary access to files and data

Quality Check

Automatically checks the quality of traces from DNA sequencing by capillary electrophoresis (CE). It provides a summary of results based on the quality parameter settings and automatically flags lower-quality traces for further inspection. Users can quickly and easily navigate to questionable or borderline data, and analyze, make adjustments to, or exclude traces from the study.

Variant Analysis

Finds variants in samples sequenced on Applied Biosystems genetic analyzers. It reports variants at genomic coordinates and allows users to export variant calls in standard VCF format. It reports genomic annotations for SNPs and provides links to the external databases.

Microsatellite Analysis

Microsatellite genotyping software that allows the user to analyze a mixture of DNA fragments, separated by size. This analysis provides a profile of the separation, precisely calculates the sizes of the fragments, and determines the microsatellite alleles present in the sample. Microsatellite analysis is commonly used in the research of microsatellite instability in cancer research, triplet repeat expansion in neurodegenerative diseases, species identification and characterization, and human sample authentication.

* If the optional SAE software module is enabled, cloud connection is disabled and remote access is unavailable.

Fast and powerful secondary analysis software to extract and share results

Applied Biosystems™ Analysis Modules are cloud-based, innovative data analysis applications that bring together multiple datasets in one convenient place, and render them in stunning data visualizations for enhanced analysis and insights. The web browser–based software is compatible with PC or Mac™ computers.

Anywhere, anytime access

Access your data with a compatible browser on any device, anytime. Runs can be set up using either the onboard computer or by using Plate Manager, the stand-alone software that operates from Connect, or on a separate computer (Figure 2). Each registered user has a PIN-protected account on Connect.

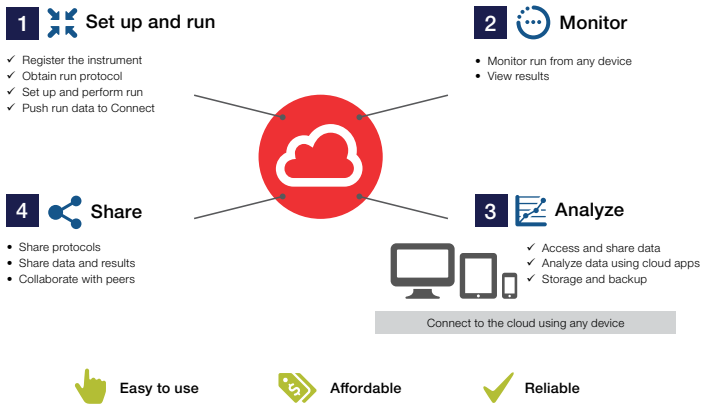


Figure 2. The SeqStudio Genetic Analyzer integrates seamlessly into Connect. By logging into your cloud-based account, remote features are accessible, including instrument monitoring, data analysis apps, and data sharing with your colleagues.

Next-Generation Confirmation

Confirms NGS variants using CE technology. It allows users to easily visualize the variants detected by both NGS and CE platforms, and to export confirmed variants in standard VCF format.

Peak Scanner

A DNA fragment sizing software that separates a mixture of DNA fragments according to their sizes, provides a profile of the separation, and precisely calculates the sizes of the fragments. The software allows users to view, edit, analyze, print, and export fragment analysis data.

Service plans designed for you

Service and support plans for the SeqStudio Genetic Analyzer are designed to meet your specific needs. Whether your laboratory requires the highest service levels and adherence to stringent regulatory guidelines, you need to maximize performance with a limited budget, or anything in between, we'll work with you to develop a solution that best suits your situation.

Comprehensive instrument warranty

Our factory-trained and certified field service engineers focus on delivering the highest-quality workmanship. During the warranty period, all repairs, including engineer time and travel, are covered.

Service plans

You may elect for additional instrument coverage to carry through your warranty period. Service plans provide comprehensive post-warranty support to help you maintain productivity, maximize the value of your investment, and optimize performance with professional consulting services. Benefits include:

- Prioritized response based on your business demands
- Scheduled planned maintenance, enabling optimum reliability
- Latest software updates
- Predictable operating costs, as parts, labor, and engineer travel are included



Compliance and analytical validation services

We've designed our compliance services to help you balance business and regulatory requirements. We provide a consulting service for analytical validation that provides protocols, templates, and guidance.

- Instrument Qualification (IQ)
- Operation Qualification (OQ)
- Instrument Performance Verification (IPV)

Table 1. Service plans at a glance.

	AB Maintenance (Plus)	AB Assurance	AB Complete
On-site response time	Target 2 business days*	Guaranteed 2 business days*	Guaranteed next business day*
Scheduled on-site planned maintenance	✓	✓	✓
Remote instrument diagnostics	✓	✓	✓
Parts, labor, and travel	10% discount (US only)	✓	✓
Priority access to remote service engineer		✓	✓
Requalification, post-planned maintenance (PM), and critical repairs			✓
Troubleshooting by field applications scientist			✓

* Response times vary by region.

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Technical specifications

Instrument specifications	
Number of capillaries	4
Number of dyes	6
Sample format	96-well standard plate and standard 8-well strip tubes
Applications	Sanger sequencing (resequencing for NGS confirmation, indels, heterozygote detection, minor variant detection, microbial identification, genome editing validation) Fragment analysis (microsatellite analysis, compatible with MLPA, cell line authentication, SNaPshot applications)
Dimensions (W x D x H)	49.5 x 64.8 x 44.2 cm
Weight	53.6 kg
Power input	100–240 V
Internal hard-drive storage	128 GB, approximately 3,500 injections or 14,000 reactions
On-instrument tracking	Radio-frequency identification (RFID)
Secondary analysis	• Sequence Analysis Software • SeqScape Software • Variant Reporter Software • GeneMapper Software • Minor Variant Finder Software • Sequencing Analysis Modules (QC, VA, and NGC) on Connect • Fragment Analysis Modules (PS and MSA) on Connect
Warranty	1-year instrument warranty included, extended warranty available
Training	SmartStart Orientation (includes a 1-day, on-site field application scientist training and setup with the Connect platform and online instrument management)
Communication interface	Connect platform with cloud-enabled systems, Wi-Fi, and RJ-45 Ethernet ports
Configuration	Stand-alone, optional desktop or laptop computer
Cartridge specifications	
Maximum number of injections/reactions	Up to 125 injections/500 reactions or samples (SeqStudio Cartridge v1) Up to 250 injections/1,000 reactions or samples (SeqStudio Cartridge v2)
Polymer type	POP-1 (for performing sequencing and fragment analysis)
On-instrument shelf life	4 months (SeqStudio Cartridge v1) or 6 months (SeqStudio Cartridge v2) after opening
Storage	2–8°C
On-instrument tracking	RFID
Recycling	For more details, go to **thermofisher.com/seqstudiorecycling**

Ordering information

Product	Cat. No.
SeqStudio Genetic Analyzer System with SmartStart Orientation (includes SeqStudio Genetic Analyzer SeqStudio Genetic Analysis Software, SmartStart SeqStudio 1-day training)	A35644
SeqStudio Genetic Analyzer System with SmartStart Orientation plus 1-year warranty (includes all items from A35644 plus additional 1-year warranty)	A35645
SeqStudio Genetic Analyzer System with SmartStart Orientation plus 3-year warranty (includes all items from A35644 plus additional 3-year warranty)	A35646
SeqStudio Starter Kit	A35000
SeqStudio Cartridge v1	A33671
SeqStudio Cartridge v2	A41331
Cathode Buffer Container, 4 pk	A33401
Cathode Buffer Container Reservoir Septa, 20 pk	A35640
96-Well Plate Septa, 20 pk	A35641
8 Strip Tube Septa, 24 pk	A35643
Integrated Capillary Protector	A31923
SAE Administrator Console Software v2.0 (optional)	A46170

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For product FAQs, protocols, training courses, and webinars, go to
thermofisher.com/technicalresources

Find out more at **thermofisher.com/seqstudio**

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