



# Agilent 7820A GC Agilent 5975E GC/MSD

**Your best value for routine  
GC and GC/MS analysis**

The Measure of Confidence



**Agilent Technologies**

# Introducing the Agilent 7820A GC and 5975E GC/MSD

**Reliability and value, day after day.** If you're searching for a system that gives you maximum uptime, minimal maintenance, and reproducible results for *all* your standard GC analyses, then look no further than Agilent's GC and GC/MS instrument portfolio.

**The Agilent 7820A GC** is ideal for small- and medium-sized labs that are primarily concerned with routine analyses using standard GC methods. It was designed to provide a high return on your investment with features such as:

- Electronic pneumatics control and digital electronics
- Support for MSD ChemStation and EZChrom Elite Compact software
- Fast access to sequence information, instrument conditions, and run status

**Agilent's NEW 5975E GC/MSD** takes routine analyses to the next level, delivering consistent and dependable results. This bundled system includes the following components – saving you time and money:

- Pre-loaded MSD ChemStation software
- Split/splitless GC inlet
- Essential MS supplies, including a low-bleed column



Run after run, Agilent's 7820A GC delivers long-term performance and value you can count on.



The Agilent 5975E GC/MSD is built on a solid foundation of industry leadership, reliability, and performance.

To learn more about the Agilent GC and GC/MS portfolio, visit [www.agilent.com/chem/GC](http://www.agilent.com/chem/GC)

### Consistent, dependable results

The Agilent 7820A GC and 5975E GC/MSD both offer uncompromising GC performance for all your routine applications – including those that must comply with regulatory requirements. Agilent’s proven electronic pneumatic control (EPC) and digital electronics ensure excellent reproducibility, as well as reliable accuracy and precision.

### Easy to learn and use – for all users

With their intuitive user interface, Agilent’s 7820A GC and 5975E GC/MSD are both easy to operate, even for inexperienced or infrequent users. Because there are no gauges or manual gas knobs, errors are minimized. And with convenient, real-world design features and built-in self-diagnostics, the Agilent 7820A GC and 5975E GC/MSD are also easy to maintain.

### Lab-proven quality and long-life Agilent reliability

Why settle for “good enough,” when you can invest in quality? With a heritage of more than 40 years of GC leadership, Agilent has earned a worldwide reputation for reliability and uptime under the most demanding operating conditions.

### A robust choice from a GC industry leader

The Agilent 7820A GC and 5975E GC/MSD are both designed to optimize routine performance while minimizing complexity. That means *any* lab can take advantage of Agilent’s unmatched combination of reliable instrumentation, versatile software, and application-matched columns and supplies.

## Innovative technologies put speed, sensitivity, and powerful data mining tools within your lab’s reach



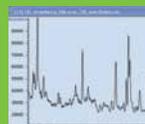
### Intuitive, user-friendly keypad

*Promotes easy, stand-alone operation and diagnostics*



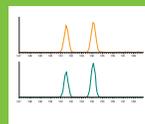
### Proprietary gold quartz quadrupole with 1050 u mass range

*Delivers optimal resolution and sensitivity across the mass range; ensures low mass deviation for longer-lasting tuning and calibration*



### High S/N Triple-Axis Detector

*This next generation off-axis detector minimizes noise and maximizes signal for the lowest detection limits*



### Synchronous SIM/Scan mode

*Allows you to selectively monitor for ions of interest at high sensitivity, while simultaneously acquiring spectra at scan rates up to 12,500 u/s*



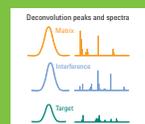
### GC/MS columns and supplies

*High-performance Agilent J&W GC columns and certified supplies maximize your analytical results*



### EZChrom workstation

*Flexible and scalable, EZChrom enables you to generate reports that conform to strict regulatory requirements*



### Agilent MSD productivity ChemStation

*Makes it easy even for non-expert operators to take advantage of advanced capabilities*

# Agilent 7820A GC

## Simplified operation and extra versatility help you get more done, every day.

For maximum reliability and trouble-free operation under all conditions, the 7820A GC takes advantage of many of the engineering features and technology incorporated in Agilent's industry-leading GC portfolio.

For example, full electronic pneumatics control (EPC) – on all inlets and the detectors – ensures a better repeatability of retention times and peak areas. By setting gas flows via the software, you can now save all of the important parameters of your method.

Digital electronics keep your set points constant from run to run, and operator to operator. So you get better retention time repeatability, more consistent results, and less rework.



New Electronic Pneumatic Control (EPC) module for the 7820A GC.

## Standard high precision inlets

- Split/splitless (SSL) for large bore and all capillary columns
- Packed purged injection port (PIIP) for packed columns

## Automatic valve control

For chemical and hydrocarbon processing applications, the 7820A GC system can automatically control up to two heated valves.

## High-sensitivity Agilent detectors for every sample type

**Flame ionization detector (FID)** – Wide dynamic response range enhances accuracy and minimizes sample prep requirements for samples that contain very high or very low compound concentrations.

**Nitrogen-phosphorus detectors (NPD)** – Offers superior sensitivity and selectivity for nitrogen- or phosphorus-containing compounds, such as pesticide residues in food and environmental samples.

**Thermal conductivity detector (TCD)** – Single-filament design provides lower noise and higher sensitivity for general purpose applications.

**Electron capture detector (micro-ECD)\*** – Combines unprecedented sensitivity and linearity with ruggedness and reliability – an ideal choice if your lab is analyzing halogenated organic compounds such as pesticides, PCBs and chlorinated solvents.

\*Not available in Japan.

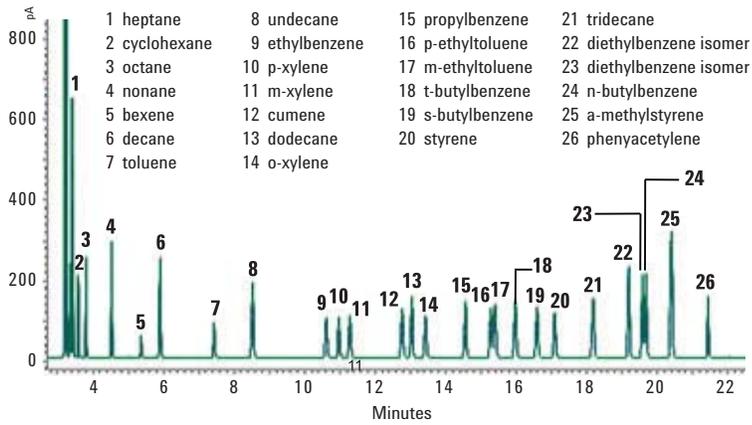
Compound	Retention Time (min.)		Peak Area (pA)	
	24C	30C	24C	30C
<b>C13</b>	3.7843	3.7820	45.2143	44.5105
<b>C14</b>	4.4213	4.4190	45.5790	44.8429
<b>C15</b>	5.0369	5.0344	457.8670	449.3625
<b>C16</b>	5.6238	5.6211	456.6820	449.5554

Retention time and area count changes are minimal – even as lab temperatures change throughout the day.

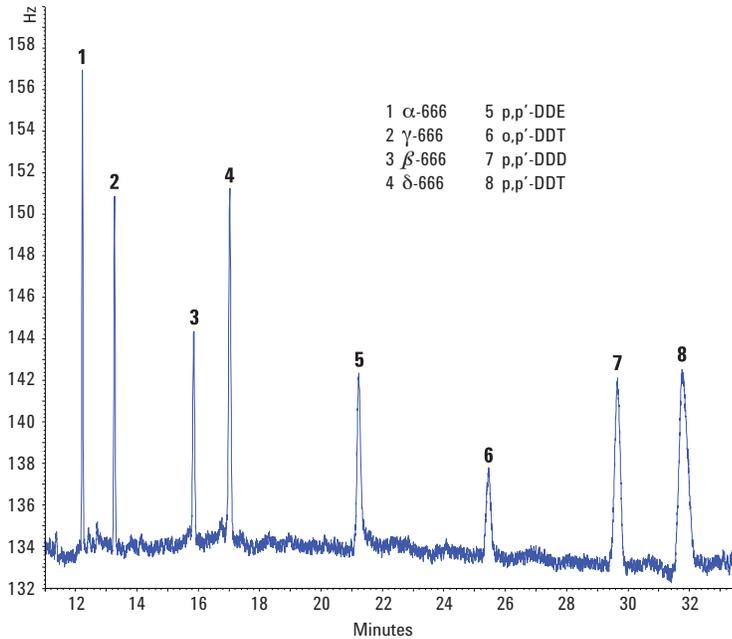
To learn more about the Agilent GC and GC/MS portfolio, visit [www.agilent.com/chem/GC](http://www.agilent.com/chem/GC)

**The uncompromising performance you expect from an industry leader.**

The 7820A GC offers performance you can depend on for all your routine analyses: outstanding sensitivity, reproducibility, accuracy, and precision. Exactly what you look for – and what you know you’ll find – in every Agilent analytical solution.



Overlay of 10 runs demonstrates the 7820A system’s outstanding repeatability.



Chromatogram of 500 ppt organochlorine pesticides run on Agilent 7820A GC with ECD.

**FID analysis for aromatic solvent.** An easy-to-use, single-column, method for aromatic solvent purity analysis meets the requirements of ten separate ASTM methods. EPC control and automatic injection ensures excellent repeatability for both retention time and peak area. In a single run, the wide dynamic response range of the flame ionization detector (FID) enables quantitative analysis of samples containing both very high and very low concentrations.

**Trace pesticides in drinking water.** The high sensitivity of the micro-ECD ensures confident detection, easily meeting stringent requirements of international regulatory agencies. The micro-ECD’s reduced susceptibility to contamination allows analyses in a variety of complex matrices. In this example, using nitrogen in place of helium as the carrier gas dramatically reduces cost per sample.

# Agilent 5975E GC/MSD

## Everyday reliability and performance made simple

Whether you're performing routine environmental analysis or teaching analytical courses, Agilent's 5975E GC/MSD has the performance and quality you need to meet the challenge.

## Start your analysis in a fraction of the time

This leading-edge GC/MSD includes an intuitive user interface and built-in diagnostics. The system arrives ready to perform with a split/splitless inlet, splitless liner, and preconditioned Agilent J&W low-bleed GC column.

## Dependability and value for your day-to-day applications

Agilent's 5975E GC/MSD increases your uptime so you spend more time running your samples and less time maintaining the system. It also delivers all the consistent, dependable results, and robustness you expect from Agilent at a truly exceptional value.

## All-in-one versatility helps you get more done every day

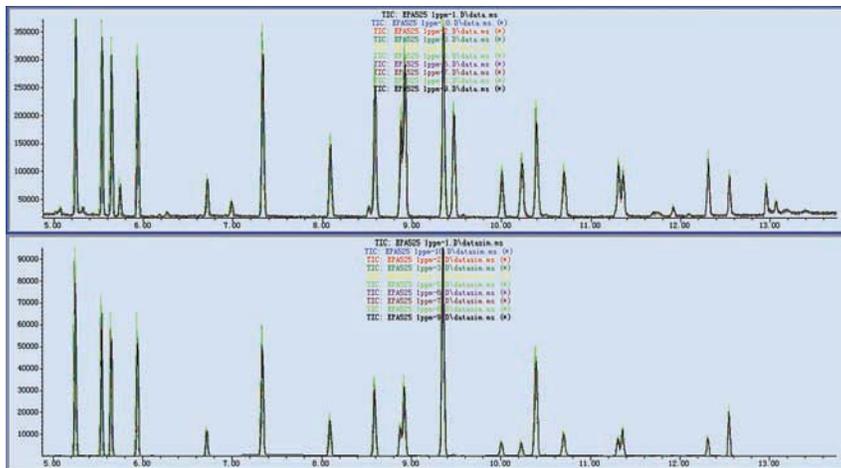
- **Bundled system** comes complete with GC, MSD, and pre-loaded software
- **Essential supplies included:** low-bleed septa, split/splitless liner, and conditioned Agilent J&W low-bleed GC column
- **Split/splitless inlet** for megabore and capillary columns
- **MSD ChemStation Software** includes easy to use graphical interface, preventive maintenance, and application specific features
- **Supports optional 16-sample automatic liquid sampler** for greater productivity



To learn more about the Agilent GC and GC/MS portfolio, visit [www.agilent.com/chem/GC](http://www.agilent.com/chem/GC)

## Repeatable results you come to expect from Agilent

**SIM/Scan Method.** With the 5975E GC/MSD it is possible to obtain SIM and scan data in the same analysis with virtually no sacrifice in sensitivity in each mode. In this example, after creating the scan method, a SIM method was created using the ChemStation's AutoSIM tool.



Note that both the scan and SIM chromatograms were obtained in a single synchronous SIM/scan run.

#	Compounds	Range(ppm)	Linearity(R <sup>2</sup> )
1	$\alpha$ -Lindane	0.01-1	0.9999
2	$\beta$ -Lindane	0.01-1	1.0000
3	$\gamma$ -Lindane	0.01-1	1.0000
4	$\delta$ -Lindane	0.01-1	0.9999
5	Heptachlor	0.01-1	0.9998
6	Aldrin	0.01-1	0.9997
7	Heptachlor exo-epoxide	0.01-1	0.9997
8	trans-Chlordane	0.01-1	1.0000
9	Endosulfan-I	0.01-1	1.0000
10	cis-Chlordane	0.01-1	0.9999
11	p,p'-DDE	0.01-1	0.9993
12	Dieldrin	0.01-1	0.9999
13	Endosulfan-II	0.01-1	0.9998
14	Endrin aldehyde	0.01-1	0.9999
15	p,p'-DDD	0.01-1	0.9999
16	Endosulfan sulfate	0.01-1	1.0000
17	p,p'-DDT	0.01-1	1.0000
18	Endrin ketone	0.01-1	1.0000
19	Methoxychlor	0.01-1	0.9999

**Outstanding reliability.** The 5975E GC/MSD provides reproducible results from one injection to the next and across a large range of concentrations.

# Flexible software choices

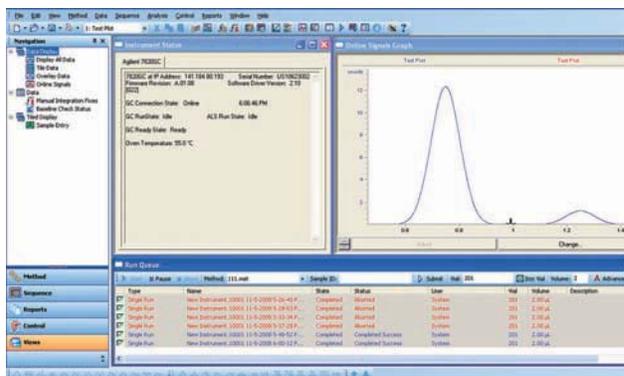
Made to fit your application, workflow, and budget – perfectly

From our friendly, familiar GC and GC/MSD ChemStation – to powerfully compatible EZChrom Elite data systems – everything is designed to help you make the most of every run, and every workday.

**Agilent EZChrom Elite Compact:**  
Your best choice for scalability and compatibility

This fast, powerful chromatography data system gives you:

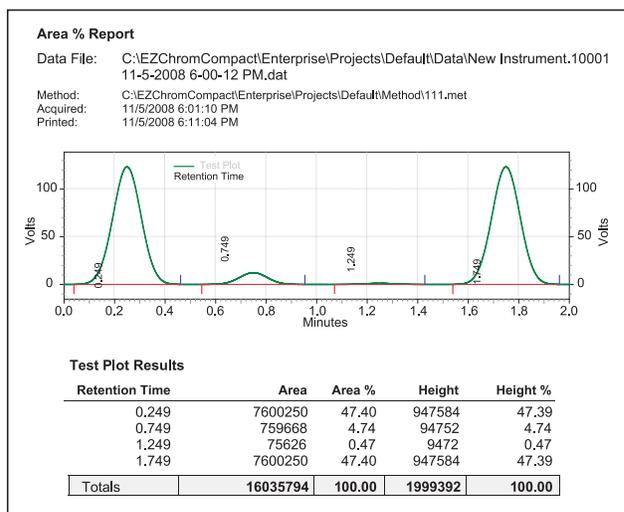
- Total control of two 7820 GCs – or one 7820 GC and 1120 HPLC – from a single PC
- Quick access to your most common tasks
- Pre-defined reports and built-in templates for customized layouts
- The ability to upgrade to EZChrom Elite when your needs change



EZChrom Elite Compact lets you view instrument status, current data, and run queue on a single screen.



A “virtual keyboard” allows you to control the instrument when you only use the data handling solution.



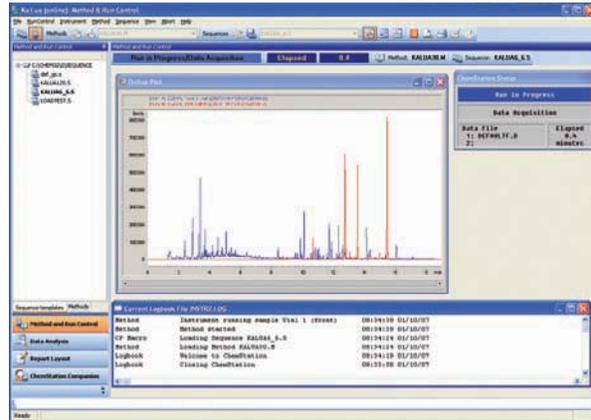
Use pre-defined reports, or create customized layouts, quickly with built-in templates and an object-based, intuitive editor.

To learn more about the Agilent GC and GC/MS portfolio, visit [www.agilent.com/chem/GC](http://www.agilent.com/chem/GC)

**Agilent GC ChemStation:**  
The industry's leading chromatography data system

Agilent GC ChemStation is a scalable data system for applications ranging from early product development to quality assurance. It puts complete control at your fingertips with:

- The ability to display, calibrate, and report data from up to four signals – without synchronizing separate runs or merging results
- Comprehensive features to help you meet the certification and quality control requirements of regulated industries
- LabAdvisor software for real-time GC system monitoring

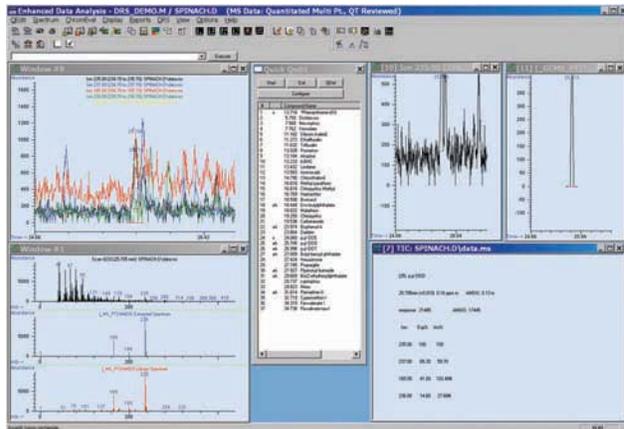


*Because Agilent's ChemStation data system lets you display, calibrate, and report data from up to four signals, it is especially useful for setting up and reporting complex analyses.*

**Agilent MSD ChemStation:**  
Simplifies the analytical process from sample introduction to final reporting

Our MSD ChemStation is a full-featured, integrated GC/MS software application for all tasks associated with data acquisition, processing, and reporting. It gives you the *confidence* that comes with:

- Easy, intuitive operation for expert and nonexpert operators
- Convenient configuration as part of the 5975E GC/MSD system
- The ability to quickly review and edit results, update expected retention times and ion ratios, and tentatively identify and estimate the concentration of unknowns



*The enhanced GC/MS data analysis reporting package.*

# Agilent 7693A Injection Tower

## Boost your productivity and eliminate the uncertainty of manual injection

The 7693A injection tower option automates your analyses of up to sixteen samples, while accommodating two solvent bottles and one waste bottle.

The exclusive fast-injection technology minimizes needle discrimination and sample degradation, and allows fully unattended operation – from injection through final reporting.

Best of all, this self-aligning “plug and play” injector is both portable and user friendly. It mounts in seconds without tools and transfers quickly between GCs.



The 7693A Injection Tower automates the analyses of up to sixteen samples.

## Best-in-class precision

Carbon #	Split Area % RSD	Splitless Area % RSD
10	0.20	0.26
12	0.20	0.27
14	0.20	0.27
16	0.21	0.30
18	0.23	0.28
20	0.25	0.28
22	0.28	0.28
24	0.30	0.28
32	0.39	0.30
36	0.29	0.35
40	0.34	0.27
44	0.27	0.33

Table refers to results of ten 1  $\mu$ L injections.

Whether you're detecting emerging contaminants in drinking water or testing drugs for purity, your results have to be correct, precise, and irrefutable. And the 7693A helps to ensure your best chromatography with advanced injection features:

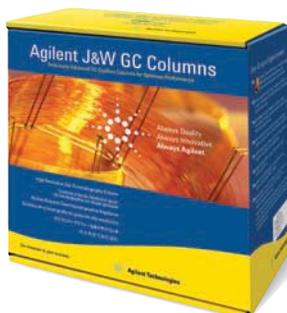
- **Multiple wash solvent capability** for pre- and post-injection needle rinsing reduces sample carryover. Agilent's new premium syringes further help to eliminate the possibility of carryover.
- **Pre-injection sample pumps and pre-injection washes** further reduce the possibility of carryover.
- **Single stroke injection volume as small as 0.01  $\mu$ L** and as large as 250  $\mu$ L let you precisely match injections to the exact needs of your analyses.
- **New line of Agilent syringes** offers longer plunger lifetime, lower carryover and greater accuracy over a wider range of injection volumes.

To learn more about the Agilent GC and GC/MS portfolio, visit [www.agilent.com/chem/GC](http://www.agilent.com/chem/GC)

# Agilent columns, supplies, and services

## Maintain sample integrity and keep your instrument performing as promised

- **Agilent J&W GC columns** are built using the industry's tightest QC specs and performance criteria for separation efficiency, retention characteristics, column bleed, and peak height ratio for active compounds. Each column is individually tested and shipped with its own Performance Summary Sheet for your peace of mind.
- **Capillary column ferrules and O-rings** are packaged clean and ready to use, allowing you to reduce conditioning time and run samples sooner.
- **Inlet GC liners** feature tight tolerances and lot-to-lot consistency to ensure reproducible sample vaporization and reliable results.
- **Agilent certified autosampler vials, septa, caps, and Gold Standard syringes** eliminate concerns about lost productivity – and samples – caused by unexpected sequence interruption. Each comes with a Certificate of Conformance that *proves* all specifications have been met.



Choose Agilent J&W columns for a leak-free, inert flow path to ensure lowest bleed and best signal-to-noise performance in your Agilent 5975E GC/MSD system.



## Maximize your uptime with Agilent's customer-enabled service and support features

The 5975E GC/MSD system's integrated hardware and software design features provide a completely new level of operational simplicity. There's a guided system set-up so that you can get your new system up and running without having to schedule a visit by an Agilent service representative.

Of course, Agilent's world-class customer service engineers and certified support partners are available to provide a full range of Agilent services, including installation, familiarization, training, maintenance, contractual repair and regulatory compliance support.

## Enterprise Edition Compliance Services

Agilent's Enterprise Edition compliance service is designed to provide a fully integrated qualification approach that's robust enough for your entire enterprise. It's a single comprehensive qualification protocol built on a fully automated software program – the patent-pending Agilent Compliance Engine – that provides consistently configured electronic reports, records and signatures to help speed compliance reviews and minimize your regulatory risk.



## The Agilent Value Promise – 10 years of guaranteed value.

In addition to continually evolving products, we offer something else unique to the industry – our 10-year value guarantee. The Agilent Value Promise guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model. Not only does Agilent ensure a safe purchase now, we help ensure your investment is as valuable to you in the long run.

## Agilent services let you focus on what you do best.

Should your Agilent instrument require service while covered by an Agilent service agreement, we guarantee repair or we will replace your instrument for free. No other manufacturer or service provider offers this level of commitment – keeping your laboratory running at maximum productivity.



### For more information

**Learn more:**

[www.agilent.com/chem/GC](http://www.agilent.com/chem/GC)

**Buy online:**

[www.agilent.com/chem/store](http://www.agilent.com/chem/store)

**Find an Agilent customer center in your country:**

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**U.S. and Canada:**

1-800-227-9770

[agilent\\_inquiries@agilent.com](mailto:agilent_inquiries@agilent.com)

**Europe:**

[info\\_agilent@agilent.com](mailto:info_agilent@agilent.com)

**Asia Pacific:**

[inquiry\\_lsca@agilent.com](mailto:inquiry_lsca@agilent.com)

Or contact your local Agilent Representative  
or Agilent Authorized Distributor

With the 2010 addition of Varian, Inc., Agilent now offers an even greater range of instrumentation and the most comprehensive columns and supplies portfolio in the market. Just as important are the best-in-class service and technical support teams, focused on finding solutions for our customers. Agilent is here to provide the technology – and *the Measure of Confidence* – you need to be successful.

This information is subject to change without notice.

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