Agilent
E7478A GPRS Drive-Test System

Product Overview

Quickly deploy your GPRS networks and manage multiformat environments

Agilent Technologies

Our drive test solution doesn't just uncover problems on your GPRS network – it allows you to fix them quickly.

Agilent's GPRS and data test platform offers a true drive test solution, providing end-to-end data testing combined with air interface testing. Users can easily identify and resolve problems to speed network deployment. Agilent's drive test platform will allow the addition of up to four phones, or a combination of phones and digital receivers, to evaluate 2G, 2.5G and 3G networks simultaneously from the same laptop PC. The flexible, scalable drive test platform is evolving to address the new technology formats required to meet future 3G network deployment goals.

Keeping your network optimized is vital. Changes in the environment continually affect network performance. You can't afford to have unhappy subscribers because there are holes in your coverage or because interference is causing dropped or blocked calls and poor data quality.

To migrate to new technologies and applications you need a drive-test system that will expand with your needs. The E7478A allows complete scalability on current formats (GSM, GSM-GPRS 900/1800/1900, TDMA, CDMA, W-CDMA/UMTS) (check for availability). The E7478A has features for site selection, optimization, troubleshooting, end-to-end data measurement, data application simulation, indoor analysis, and benchmarking.

Drive testing plays an important role in creating and maintaining a robust GPRS network. But you need a system that does more than just tell you that your network has problems.

Our drive-test system provides a fast, easy way to solve them.

Note: This document should be read in conjunction with the E7475A GSM Drive Test System Product Overview (Literature No. 5980-0439E) and the Wireless Data Measurement Product Overview (Literature No.5980-2310E) to gain a fuller appreciation of the drive-test methodology and capabilities.

Your customers expect high quality of service.

Manage your GPRS Integration

There is a rapid surge of growth in the wireless communications industry, with service providers racing to offer fast data services and internet access via mobile terminals. To accommodate this growth the GSM world is moving from a circuit switched to packet switched architecture through the adoption of GPRS. This fundamental structural change provides the network equipment manufacturers and wireless service providers with an array of technical challenges. Agilent Technologies offer the test and measurement solutions which meet these challenges to allow a smooth transition to the new enhanced network and services.

Agilent's established wireless solutions of drive-test systems has been expanded to include a GPRS measurement capability, the E7478A. These portable tools are an invaluable aid at the initial trials, network installation and in-service / network optimization life cycle phases. This gives you the full confidence that the end user is receiving a high quality of service, for both voice and data.

The E7478A GPRS Drive-Test System provides mobile measurement reports and protocol decode information to allow air interface characterization and fast problem resolution. This new addition to our drive test portfolio can be seamlessly integrated with all Agilent Technologies' existing drive test solutions allowing drive test measurements to be made simultaneously across multiple technologies.

GPRS Mobile Measurements include:

- Time slots in use
- TLLI
- Coding scheme in use
- Neighbor Cells
- RLC BLER
- RLC/MAC throughput
- Retransmitted RLC block rate

Data Services Implications

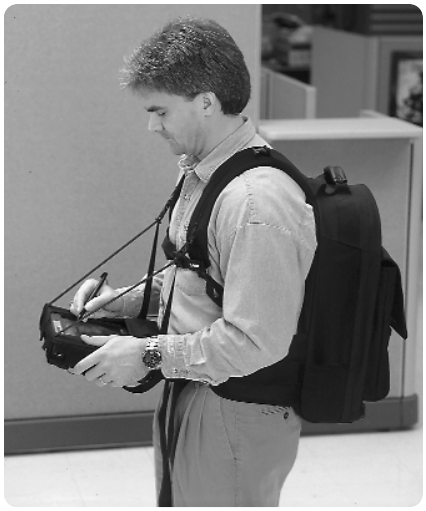
The introduction of data services raises the importance of planning and site survey activities. Indoor optimization is particularly important to maximize data throughput in strategic sites.

Maximize the return on your test equipment budget

Large revenue potential exists for network operators at airports (international roaming customers), shopping malls, subways and office blocks. It is crucial to properly optimize these indoor environments to maximize performance and revenue.

The E7478A systems easily converts from an outdoor to indoor system with complete reuse of your investments in receiver and phone hardware. By adding an indoor software license, an optional pen-based tablet computer and a specially designed backpack, the system can be transparently reused for both applications.

The system uses scanned maps for ease-of-use and allows absolute positioning to be able to merge indoor and outdoor data in post-processing. This allows verification of the complete subscriber experience in your network.



Optimize the indoor performance of your wireless network.

Powerful components in a compact package

To best measure the performance of the air interface of your GPRS network, Agilent has combined a series of powerful instrument and computing capabilities in a highly portable package.

- Specialized GPRS measurement capability
- Comprehensive GSM measurement capability
- Powerful software that logs phone and data measurements
- Dual-band GPRS test mobile phone
- Supports powerful data measurement capabilities via Client / Server software options
- Easy-to-use Windows®95, 98 or Windows NT®, interface
- Ability to integrate up to four phones into a single system and user interface (maximum of two phones for simultaneous GPRS / Data)
- Flexible export capability to mapping software for easy post-processing
- Compatibility with many third party post-processing packages
- Scalability between indoor and outdoor capability
- Compatible with compact digital receiver with specialized GSM measurements and optional, built-in GPS.

Don't just find problems—solve them.

Benchmark the competition

With competition intensifying, you are probably interested in how well your network compares with the networks of other cellular operators in your region. In the past, collecting competitive data probably meant owning multiple sets of instruments or doing multiple drives of the coverage area.

The E7478A GPRS drive-test system can make measurements on dual-band E-GSM900 / DCS1800 and 1900MHz networks. The system can be configured to handle up to four phones, all controlled by the same software on your laptop (maximum of two phones for simultaneous GPRS /Data).

It is possible to configure a system to support CDMA as well as GSM-GPRS measurement hardware, giving the capability to collect data simultaneously from several networks in one drive, using one system.

Control up to four test mobile phones for competitive comparisons.

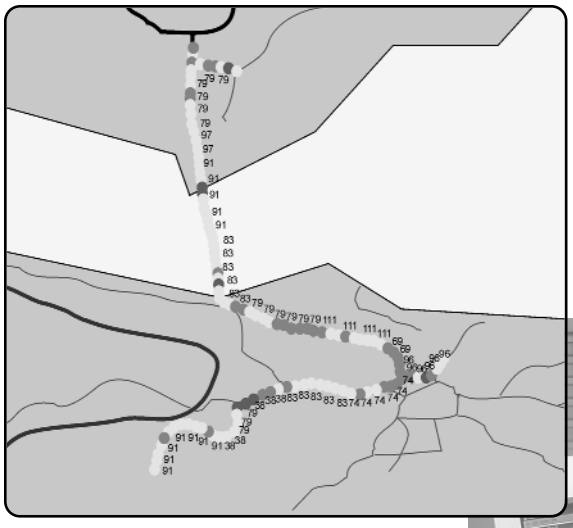
Put measurement data to work immediately

With highly automated measurements and flexible alert and alarm functions, many more of your technicians can perform drive-tests and gather data. The alerts and alarms can be set to trigger on almost any combination of complex measurement conditions, or they can simply be set to warn the driver when the laptop battery is running low, or if the GPS antenna is taken out.

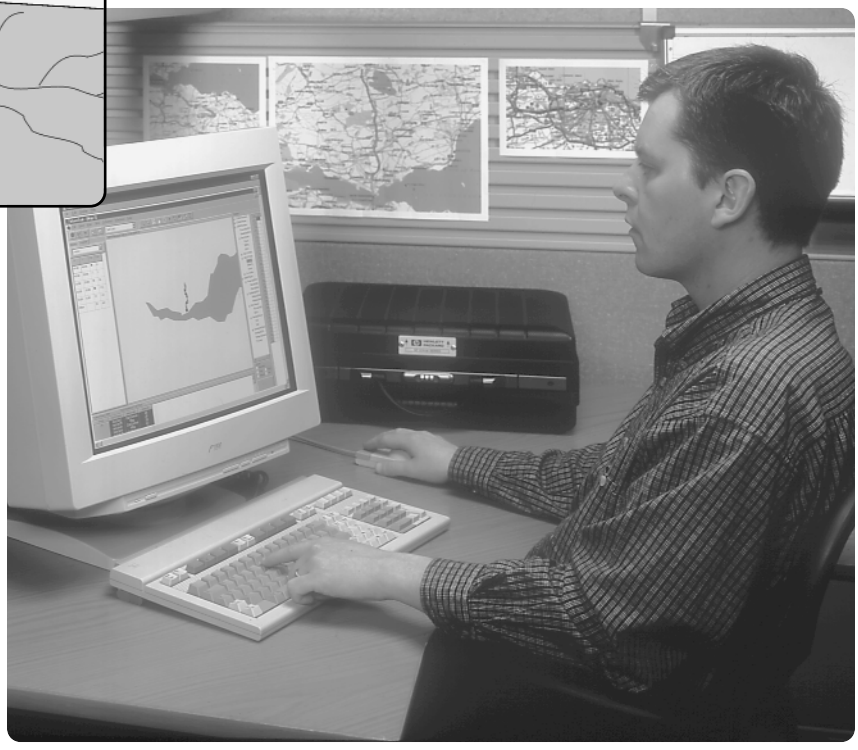
The system records measurements to a disk file that can be played back using VCR-type controls. You can jump forward or backward in the file to the location of recorded alarms and notes.

Data recorded by the drive system can easily be exported to post-processing tools such as Map Info, spreadsheets or many third-party post-processing tools.

An optional real-time line trace map is included that can show the base station positions and plot a single measurement result. The system will update the map plotting line data from the GPS coordinates taken during the drive.



Easy export to popular post-processing tools.



Flexible export capabilities allow for easy post-processing.

Key features and specifications

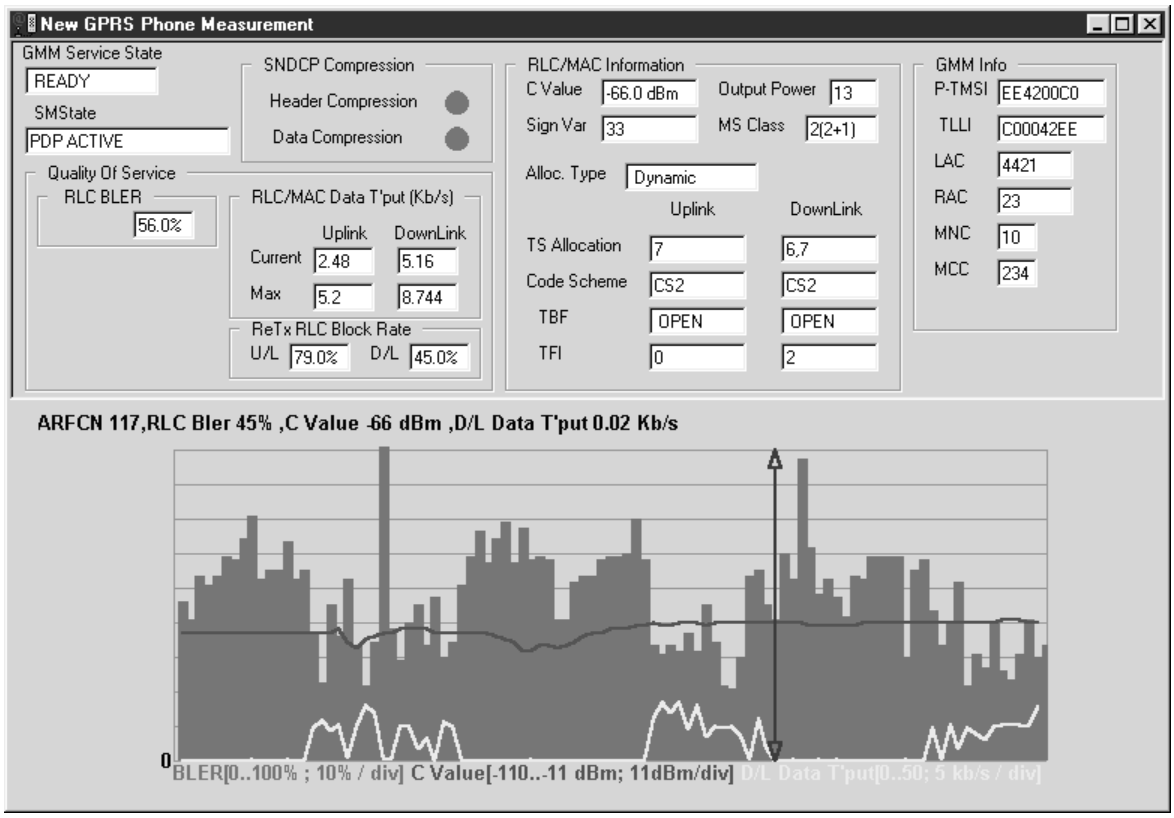
GPRS Test Mobile Phone

The E7478A software platform supports GPRS dual port data/trace mobiles, covering the 900, 1800 and 1900MHz frequency bands. Please check availability with your Agilent representative.

Use them to:

- Get a user's point-of-view of network performance
- Evaluate call-processing operations
- Perform selected call processing functions
- Measure and report the amplitude of the received base station
- Measure and report the signal quality of the received base station
- Read and report the neighbor cell list from the broadcast messages
- Report the amplitude of neighbor list base stations
- Log protocol messages in decoded form for easy interpretation
- Facilitate characterization of data transmission performance
- Quantify quality of service

Refer to E7478A GPRS Drive-Test System Data Sheet (Lit No. 5988-1506EN) for details.



Specialized GPRS phone measurements.

Key features and specifications continued

Increase the value of your investment

Caring for your GPRS network requires more than good test equipment, Agilent has the products, knowledge and services to help you and your team do the job. The range of services we offer includes productivity assistance, start-up assistance, training and education programs for RF technicians and engineers, on-site product and application consulting, product assistance and more. We can help you easily deploy, optimize and support your wireless network.

More information

We offer application notes that span many of today's RF network issues:

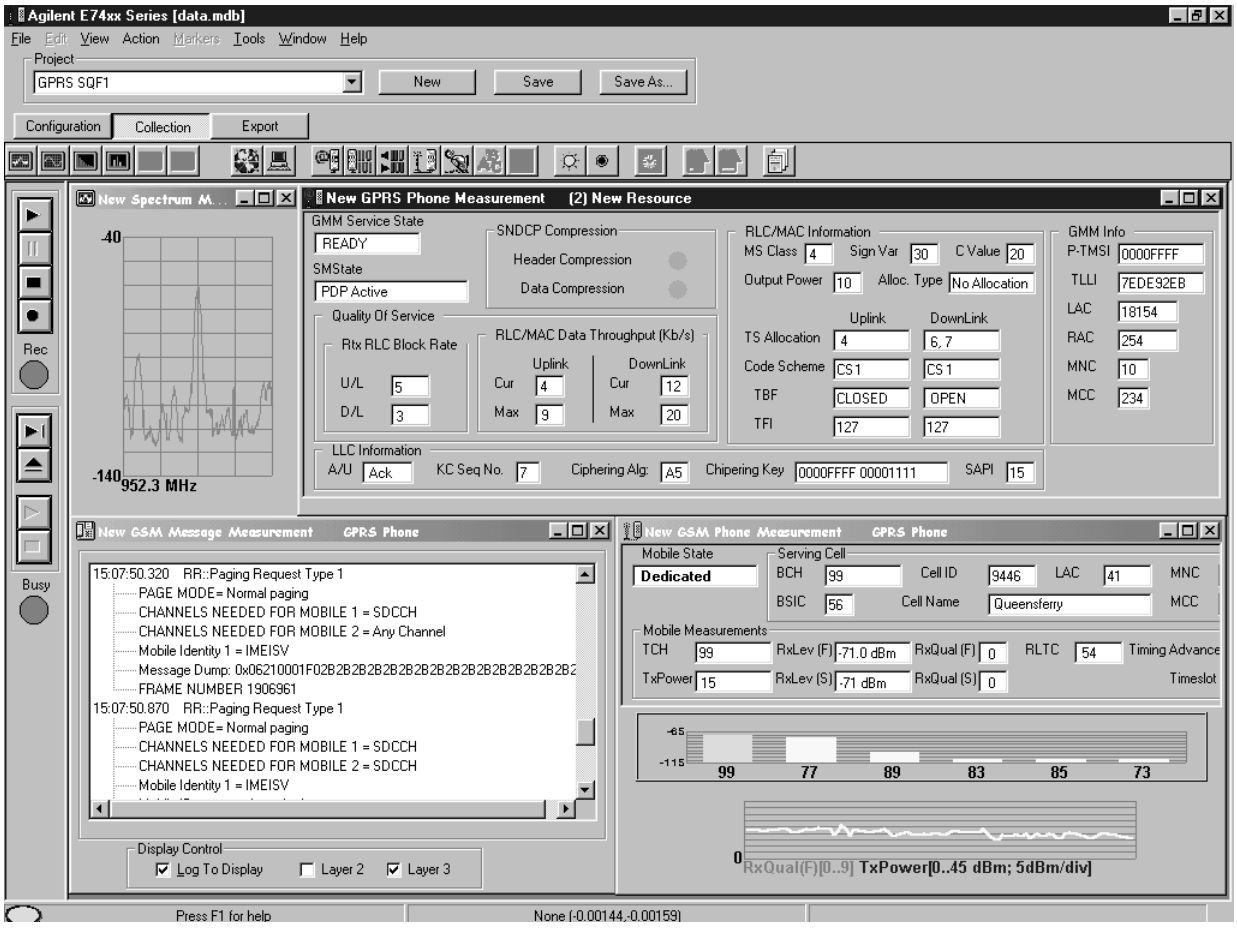
- Optimizing Your Wireless Network Today and Tomorrow. Solutions for CDMA Networks, Application Note 1345 (literature number 5968-9916E)
- Optimizing Your Wireless Network Today and Tomorrow. Identifying Interference for IS-136 TDMA Networks, Application Note 1342 (literature number 5980-0219E)
- Optimizing your GSM Network Today and Tomorrow. Troubleshoot Network Problems: Coverage, Interference, Handover, Margin and Neighbor Lists, Application Note 1344 (literature number 5980-0218E)

For specific examples of how the Agilent Technologies drive test solutions are used to solve optimization problems:

- Spectrum and Power Measurements Using the Agilent CDMA, TDMA and GSM Drive-Test Systems Product Note (literature number 5968-8598E)

For additional Agilent Technologies GPRS drive test information:

- Indoor Wireless Measurement System Product Overview (literature number 5968-8691E)



Powerful integrated measurement capabilities.

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

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Phone or Fax
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(tel) 1 800 452 4844

Canada:
(tel) 1 877 894 4414
(fax) (905) 282-6495

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Latin America:
(tel) (305) 269 7500
(fax) (305) 269 7599

Australia:
(tel) 1 800 629 485
(fax) (61 3) 9210 5947

New Zealand:
(tel) 0 800 738 378
(fax) 64 4 495 8950

Asia Pacific:
(tel) (852) 3197 7777
(fax) (852) 2506 9284

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