

Agilent Solutions for Mobile Device Assisted GPS (A-GPS) Test

Ensure your UMTS/cdma2000® mobile device meets CTIA standards for A-GPS operation and integrates seamlessly into cellular networks

A-GPS is an enhanced position location method based on the satellite-based global positioning system (GPS). It ensures fast position location information for mobile devices by obtaining precise positioning data from base stations that monitor GPS satellites constantly. This positioning data, called Assistance Data, allows the mobile to determine, and report back its exact location information to the network within seconds, rather than taking up to several minutes using unassisted GPS techniques.

Service providers are requiring mobile device testing to ensure A-GPS operation does not interfere with cellular phone calls, especially emergency calls.

Agilent 8960 for A-GPS testing

Whether you are validating mobile A-GPS functionality from your lab bench, performing A-GPS pre-conformance tests with the Agilent GS-9000 Design Verification Test System, or executing CTIA 3.0 Test Plan for Mobile Station Over the Air Performance testing with industry leading antenna measurement system providers like Satimo or ETS-Lindgren, the 8960 has the A-GPS performance required for testing A-GPS mobile devices – across the R&D lifecycle.

Agilent GS-9000 A-GPS Design Verification Test (DVT) system capabilities

- 3GPP Defined Test Cases (2G/3G)
 - Sensitivity coarse time assistance
 - Sensitivity fine time assistance
 - Normal accuracy
 - Dynamic range
 - Multi-path performance
 - Moving scenario and periodic update
- SUPL server – available 2009
- TTFF (time to first fix)
- Raw satellite data (Satellite ID, C/No, Pseudo Range RMS, Doppler, Whole Chip, Fractional Chip)
- Report latitude and longitude with Mobile Station Based methodology
- Position Calculation and reporting with Mobile Station Assisted methodology
- 2D error calculation
- Multiple GPS scenarios
- Individual satellite power control
- Sensitivity searches
- User defined GPS scenario generation
- Assistance data generator (RRC/RRLP) (location server)



Agilent Technologies

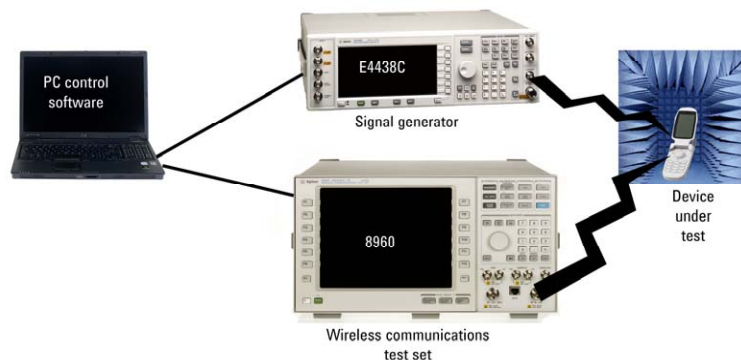
Support for *CTIA Test Plan for Mobile Station Over the Air Performance - Total Isotropic Sensitivity (TIS)*

Agilent's 8960 test set supports A-GPS testing needs such as TIS testing by acting as a base station with A-GPS message pipe capability - sending A-GPS assistance data messaging to and from the wireless device or phone under test. The phone acknowledges receipt of the data and performs location calculations, returning its location information to the 8960 test set through the appropriate UMTS or cdma2000 technology-dependent protocol messaging. Such functionality makes the 8960 an ideal system component for Agilent's GS-9000 A-GPS DVT test systems and for antenna testing solutions by industry leading antenna measurement system providers, ETS-Lindgren and Satimo.

For more information on A-GPS antenna measurements systems go to

- ETS-Lindgren www.ets-lindgren.com/wireless
- Satimo www.satimo.com

Total Isotropic Sensitivity Test



Basic A-GPS setup includes:

- Agilent 8960 with a lab application to emulate the cellular network and provide the A-GPS message pipe
- Agilent E4438C ESG with a GPS personality for simulating up to 8 satellite signals
- PC control software to perform instrument control, send GPIB commands, generate assistance data, and parse and analyze the wireless device's location information report. Agilent's GS-9000 DVT system provides this PC software and capability.
- SUPL server emulation capability -- available in 2009

cdma2000 is a registered certification mark of the Telecommunications Industry Association. Used under license.

Assistance data messages supported

GSM/GPRS/EGPRS

RRLP (Radio Resource Location Services (LCS) Protocol) assistance data messages

W-CDMA/HSPA

RRC (Radio Resource Control) assistance data messages

cdma2000

TIA-801 assistance data messages

The 8960 has industry leading base station emulation capability, RF measurements, IP data throughput performance, and test flexibility required for testing today's high data rate cellular devices. These capabilities provide a unique platform to test evolving cellular applications such as A-GPS, UMA/GAN, and data throughput -- including handovers between these applications under both standard and real-world test conditions.

For information on the Agilent GS-9000 A-GPS DVT solutions, TIS testing solutions, and the Agilent 8960 A-GPS capabilities, go to www.agilent.com/find/AGPS

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

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2009
Printed in USA, March 20, 2009
5990-3871EN