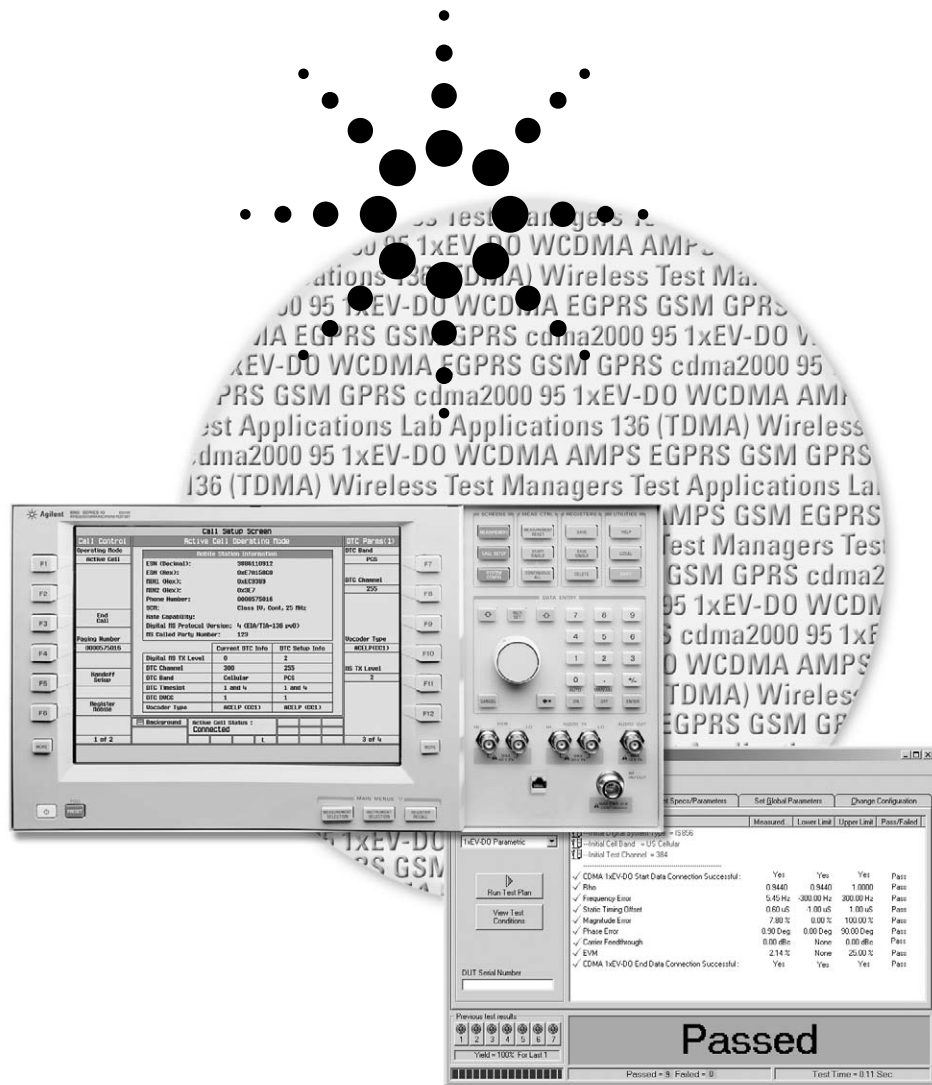


Agilent 8960 Series 10 Wireless Communications Test Set

Configuration Guide



This configuration guide describes how to configure a new 8960 test set for single or multiple wireless formats and lists the upgrades available for existing 8960 test sets.

Notice

For the newest 8960 configuration information, select the 8960 Configuration guide from the Key Library at www.agilent.com/find/8960

8960 Series 10 Wireless Test Set – Mainframe, Applications, and Software

The building blocks of the 8960 are an E5515 test set mainframe and mobile test applications (TAs) or lab applications (LAs). Test applications provide parametric test capability. Lab applications test parametric performance and add signaling functionality.

Wireless Test Manager is a family of easy-to-use 8960 test automation software. Wireless Test Manager runs on a Windows® PC.

Configuring a New 8960 for Your Application

Tables 1 and 2 show the recommended or required options to purchase with a new 8960 for testing various wireless formats. Table 1 is for testing parametric performance with a TA. Table 2 is for testing parametric performance and signaling functionality with an LA. Table 3 lists LA annual contracts. An annual contract provides early LA releases and LA upgrades for the term of the contract.

If adding a TA or LA to an existing E5515 mainframe, refer to the section entitled, *Adding wireless technology formats to your 8960 test set*.

Table 1. Configuring a new 8960 with a test application

Wireless technology format (Parametric performance)	TA model (option)	Mainframe model	Mainframe options (model no. - option)		Wireless Test Manager
	Required		Required	Required	
AMPS/136 (TDMA)	E1961A	E5515C¹ or B¹		002, 003²	E6563A
cdma2000/IS-95/AMPS	E1962B	E5515C¹	003	002	E6560C/67C
Release A: New control channels	E1962B-401	E5515C ¹	003	002	E6560C/67C
Advanced AMPS	E1962B-402	E5515C ¹	003	002	E6560C/67C
Authentication	E1962B-403	E5515C ¹	003	002	E6560C/67C
Fast device tune ⁴	E1999A, E1999A-201	E5515C ¹	003	002	
W-CDMA	E1963A	E5515C¹	003	002	E6562C/68C
W-CDMA video test	E1963A-401	E5515C ¹	003	002	
HSDPA test mode	E1963A-403	E5515C ¹	003	002	
Fast device tune ⁴	E1999A, E1999A-201	E5515C ¹	003	002	
1xEV-DO	E1966A	E5515C¹	003	002	E6564C/67C
Release A	E1966A-102	E5515C ¹	003	002	
Fast device tune ⁴	E1999A, E1999A-201	E5515C ¹	003	002	
GSM/GPRS³	E1968A³	E5515C¹ or B¹	002	003²	E6566C/68C
GSM	E1968A-101	E5515C ¹ or B ¹	002	003 ²	E6566C/68C
GPRS	E1968A-102	E5515C ¹ or B ¹	002	003 ²	E6566C/68C
EGPRS	E1968A-103	E5515C ¹ or B ¹	002	003 ²	E6566C/68C
GSM and GPRS	E1968A-201	E5515C ¹ or B ¹	002	003 ²	E6566C/68C
GSM, GPRS, and EGPRS	E1968A-202	E5515C ¹ or B ¹	002	003 ²	E6566C/68C
PAvT	E1968A-410	E5515C ¹ or B ¹	002	003 ²	
Test application fast switching⁵	E1987A	E5515C¹	002, 003		E6569C
UMTS Test Application Suite⁶	E1993A	E5515C¹	002, 003		E6568C
cdma2000®/1xEV-DO TA Suite⁷	E1996A	E5515C¹	003	002	E6569C
Test Application Suite⁸	E1991B	E5515C¹	002, 003		E6569C

1. New E5515s will not work with older revision or discontinued applications. For information on application compatibility, go to www.agilent.com/find/E5515 and select either E5515B or E5515C Release Notes from the Key Library.
2. Option 003 is not available to order on new E5515Bs.
3. Must order at least one format option (-101, 102, 103, 201 or 202) with E1968A GSM/GPRS TA.
4. Fast device tune is for calibration of specific chipsets. Contact your Agilent Representative for detailed information.
5. E1987A allows fast switching across all TA technology formats.
6. E1993A UMTS TA Suite includes TAs for W-CDMA, GSM, GPRS, EGPRS, and fast switching. Model numbers included are E1963A, E1968A-202, and E1987A. Does not include E1963A-401, 403, E1968A-410, or E1999A-201. Order feature options separately.
7. E1996A cdma2000_1xEV-DO Suite includes TAs for cdma2000, 1xEV-DO, and fast switching. Model numbers included are E1962B, E1966A, and E1987A. Does not include E1962B-401, 402, 403, E1966A-102, or E1999A-201. Order feature options separately.
8. E1991B TA Suite includes TAs for cdma2000, 1xEV-DO, IS-95, W-CDMA, GSM, GPRS, EGPRS, 136 (TDMA), AMPS, and fast switching. Model numbers included are E1961A, E1962B, E1963A, E1966A, E1968A-202, and E1987A. Does not include feature options E1962B-401, 402, 403, E1963A-401, 403, E1966A-102, E1968A-410, or E1999A-201. Order feature options separately.

Table 2. Configuring a new 8960 with a lab application

Wireless technology format (Parametric and signaling)	LA model (option)	Mainframe model	Mainframe options (model no. - option)		Wireless Test Manager
	Required		Required	Required	
GSM/GPRS	E6701E	E5515C¹ or B¹	002	003²	E6566C/68C
EGPRS⁴	E6704A	E5515C¹ or B¹	002	003²	E6566C/68C
cdma2000 cdma2000 fading ³	E6702B E6702B	E5515C¹ E5515C ¹	003 003, 004	002 002	N5880A N5880A
W-CDMA W-CDMA fading ³	E6703D E6703D	E5515C¹ E5515C ¹	003 003, 004	002 002	N5882A N5882A
HSDPA 3.6 Mbps IP data	Contact Agilent				
1xEV-DO 1xEV-DO fading ³	E6706A E6706A	E5515C¹ E5515C ¹	003 003, 004	002 002	N5884A N5884A
Release A	E6706A-102	E5515C ¹	003	002	
2.4 Mbps IP data	Contact Agilent				
cdma2000/1xEV-DO LA Suite⁵	E6716A	E5515C¹	003	002	N5880A & 84A
UMTS Lab Application Suite⁶	E6717B	E5515C¹	002, 003		E6568C/69C
Lab Application Suite⁷	E6719D	E5515C¹	002, 003		E6569C
Lab application fast switching⁸	E6785D	E5515C¹	002, 003		E6569C

1. New E5515s will not work with older revision or discontinued applications. For information on application compatibility, go to E5515 Release Notes at www.agilent.com/find/E5515releasenotes.
2. Option 003 is not available to order on new E5515Bs.
3. More information on fading is on the Web. Go to www.agilent.com/find/E6702B for cdma2000 fading. Go to www.agilent.com/find/E6703D for W-CDMA fading.
4. E6701E LA required for E6704A LA.
5. E6716A cdma2000/1xEV-DO LA Suite includes LAs for cdma2000 and 1xEV-DO. Model numbers included are E6702B and E6706A. Does not include E6706-102. Order E6706A-102 Release A separately.
6. E6717B UMTS LA Suite includes LAs for W-CDMA, GSM, GPRS, EGPRS, and fast switching. Model numbers included are E6701E, E6703D, E6704A, and E6785D.
7. E6719D LA Suite includes LAs for cdma2000, W-CDMA, GSM, GPRS, EGPRS, and limited fast switching. Model numbers included are E6701E, E6702B, E6703D, E6704A, E6706A, and E6785D. Does not include E6706-102. Order E6706A-102 Release A separately.
8. E6785D fast switches between GSM/GPRS and W-CDMA. Requires E6701E and E6703D LAs. Order E6704A LA to add EGPRS to fast switching.

Table 3. Lab application annual contracts and extensions

Format	Application	Annual contract	Annual contract extension ¹
GSM/GPRS (EGPRS)	E6701 (E6704)	E6720A-001	E6720A-201
W-CDMA	E6703	E6720A-003	E6720A-203
1xEV-DO	E6706	E6720A-006	E6720A-206
UMTS	E6717 (E6701/E6703)	E6720A-017	E6720A-217

1. When renewing, order the annual contract extension to avoid overlapping existing and new terms.

Test Set Mainframes

E5515C 8960 Series 10 mainframes. (Require at least one Agilent Technologies test or lab application. E5515C is required for CDMA capability in a new test set. Older revision and discontinued applications are not compatible with new E5515s. Trying to run incompatible applications will cause new E5515s to lock-up. For more information on application compatibility, go to www.agilent.com/find/8960 and select E5515C or E5515B Release Notes from the Key Library.

Test set mainframe options

E5515B-002 Second RF source. (Required for all GSM, GPRS, and EGPRS applications.)
E5515C-002

E5515C-003 Flexible CDMA base station emulator. (Required for all cdma2000/IS-95/AMPS, W-CDMA, and 1xEV-DO applications. Not available in new E5515Bs.)

E5515C-004 Digital Bus. (Enables fading in cdma2000, 1xEV-DO, and W-CDMA LAs. Requires E5515C-003. Not available in E5515B.)

E5515C-370 E6571A Wireless Test Manager run-time license. Compatible with E656xA/B/C Wireless Test Manager models. Requires a PC with parallel port.

E5515B-ABA Documentation for applications purchased with a mainframe.
E5515C-ABA Includes all 8960 test and lab application documentation. Consists of a CD-ROM with programming guides, getting started guides, and paper copies of GPIB syntax guides. US-English localization. To download documentation in other languages, go to www.agilent.com/find/8960, select product model, Key Libraries, and download the Help files. Not all languages are available.

E5515B-0B0 Delete documentation on applications purchased with a mainframe.
E5515C-0B0

E5515B-AX4 Rack flange kit without handles.
E5515C-AX4

E5515B-AX5 Rack flange kit with handles.
E5515C-AX5

E5515B-UK6 Commercial calibration certificate with test data.
E5515C-UK6

Standard warranty

R-51B-001-C 1-year return-to-Agilent warranty

Optional warranty

R-51B-001-3C 1-year return-to-Agilent warranty extended to 3 years

Optional calibration

R-50C-011-3 Agilent Calibration Upfront Support Plan 3 year coverage
R-50C-021-3 Z540 Calibration Upfront Support Plan 3 year coverage

Operational verification

E5515B-B8A Operation verification at installation. Contact your Agilent Sales Representative for more information.
E5515C-B8A

Accessories

Programmed test SIM cards
E5515-61286 UMTS (W-CDMA) USIM card. Included with E6703C
08922-61887 GSM SIM card (programmed micro-size, 15 mm x 25 mm)
08922-80047 GSM SIM card (programmed, credit card size)

Test Applications and Feature Options

- E1961A** AMPS/136 mobile test application. (Requires E5515C or E5515B.)
- E1962B** cdma2000/IS-95/AMPS mobile test application. (Requires E5515C and E5515C-003.)
- E1962B-401** cdma2000 Rel A New Control Channels. (Requires E5515C and E5515C-003.)
- E1962B-402** Advanced AMPS. (Requires E5515C and E5515C-003.)
- E1962B-403** cdma2000 authentication. (Requires E5515C and E5515C-003.)
- E1963A** W-CDMA mobile test application. (Requires E5515C and E5515C-003.)
- E1963A-401** W-CDMA video phone test. (Requires E5515C and E5515C-003.)
- E1963A-403** HSDPA test modes. (Requires E5515C and E5515C-003.)
- E1966A** 1xEV-DO terminal test application. (Requires E5515C and E5515C-003.)
- E1966A-102** 1xEV-DO Release A. (Requires E5515C and E5515C-003.)
- E1968A** E1968A GSM/GPRS mobile test application. GSM, GPRS and EGPRS wireless technology functionality is available. Must specify an option for a specific format or combination of formats.
- E1968A-101** GSM functionality. (Requires E5515C and E5515C-002, or E5515B and E5515B-002.)
- E1968A-102** GPRS functionality. (Requires E5515C and E5515C-002, or E5515B and E5515B-002.)
- E1968A-103** EGPRS functionality. (Requires E5515C and E5515C-002, or E5515B and E5515B-002.)
- E1968A-201** GSM/GPRS functionality. (Requires E5515C and E5515C-002, or E5515B and E5515B-002.)
- E1968A-202** GSM/GPRS/EGPRS functionality. (Requires E5515C and E5515C-002, or E5515B and E5515B-002.)
- E1968A-410** EGPRS phase and amplitude versus time. (Requires E5515C and E5515C-002, or E5515B and E5515B-002.)
- E1987A** Fast switching test application. Fast switches across all TA formats. (Requires at least two TAs, E5515C, and E5515 options for the wireless formats to be switched.)
- E1991B** 8960 test application suite. Includes TAs for GSM, GPRS, EGPRS, AMPS, 136 (TDMA), cdma2000, IS-95, 1xEV-DO, W-CDMA and fast switching. Contains E1968A, E1968A-202, E1961A, E1962B, E1963A, E1966A and E1987A TAs. (Requires E5515C, and E5515C-202, and E5515C-003. E1991B is for installation on a single 8960 test set. TA feature options such as E1962B-401, 402, 403, E1963A-401, 403, E1966A-102, E1968A-410, E1999A, and E1999A-201 are ordered separately; they are not included in the E1991B TA suite.)
- E1993A** 8960 UMTS test application suite. Includes TAs for GSM, GPRS, EGPRS, AMPS, W-CDMA and fast switching. Contains E1968A-202, E1963A, and E1987A TAs. (Requires E5515C, and E5515C-002, and E5515C-003. E1993A is for installation on a single 8960 test set. TA feature options such as E1963A-401, 403, E1968A-410, E1999A, and E1999A-201 are ordered separately; they are not included in the E1993A TA suite.)
- E1996A** 8960 cdma2000/1xEV-DO test application suite. Includes TAs for cdma2000, IS-95, 1xEV-DO, AMPS and fast switching. Contains E1962B, E1966A, and E1987A TAs. (Requires E5515C, and E5515C-003. E1996A is for installation on a single 8960 test set. TA feature options such as E1962B-401, 402, 403, E1966A-102, E1999A, and E1999A-201 are ordered separately; they are not included in the E1996A TA suite.)
- E1999A** E5515 application features.
- E1999A-201** Fast device tune measurement. Enables fast device tune measurement in E1962B, E1963A, E1966A, and E1987A TAs. (Requires E1962B, E1963A, or E1966A TA.)

Note: If adding a test application to an existing mainframe, see the section entitled, *Adding wireless technology formats to your 8960 test set.*

Test application includes

- Test application license.
- 8960 documentation set. (Includes documentation for all 8960 TAs and LAs. Must specify language localization option. When ordered with an E5515 mainframe use E5515 application documentation options.)
- If ordering more than one TA, specify language localization option for one TA and order Option 0B0 on the other TAs to avoid receiving multiple 8960 documentation sets.

Test application options available when ordered standalone (without an E5515 mainframe)

- TA Model#-010** Test application installation set for test applications purchased standalone. (CD-ROM with the necessary files and utilities needed for loading test applications. Test applications can be downloaded from www.agilent.com/find/8960ta. Option 010 is recommended if you do not have high-speed Internet access.)
- TA Model#-ABA** Documentation for test applications purchased standalone. Includes all test and lab application documentation. Consists of CD-ROM with programming guides, getting started guides, and paper copies of GPIB syntax guides. US-English localization. To download document in other languages, go to www.agilent.com/find/8960, select Key Libraries and download the Help files. Not all languages are available.
- TA Model#-0B0** Delete documentation.

Lab Applications and Feature Options

- E6701E** GSM/GPRS lab application. (Requires E5515C and E5515C-002, or E5515B and E5515B-002. Order E5515C-004 to enable fading.)
- E6702B** cdma2000 lab application. (Requires E5515C and E5515C-003.)
- E6703D** W-CDMA lab application. (Requires E5515C and E5515C-003. Order E5515C-004 to enable fading.) Includes E5515-10007 UMTS (W-CDMA) USIM card.
- E6704A** EGPRS lab application. (Requires E6701E and E5515C with E5515C-002 or E5515B with E5515B-002.)
- E6706A** 1xEV-DO lab application. (Requires E5515C, E5515C-003. Order E5515C-004 to enable fading.)
- E6706A-102** 1xEV-DO Release A. (Requires E5515C and E5515C-003.)
- E6785D** Fast switching lab application for GSM/GPRS/EGPRS_W-CDMA. (Requires E6701E, E6703D, E5515C, E5515C-002, and E5515C-003. For EGPRS capability, add E6704A. Order E5515C-004 to enable fading.)
- E6716A** cdma2000/1xEV-DO lab application suite. Includes LAs for cdma2000 and 1xEV-DO. Contains E6702B and E6706A LAs. Feature option E6706A-102 for 1xEV-DO Release A is ordered separately; E6706A-102 is not included in the E6716A Suite. (Requires E5515C and E5515C-003. Order E5515C-004 to enable fading. E6716A is for installation on a single test set.)
- E6717B** 8960 lab application UMTS suite. Includes LAs for GSM, GPRS, EGPRS, and W-CDMA. Contains E6701E, E6703D, E6704A, and E6785D fast switching LA. (Requires E5515C, E5515C-002, and E5515C-003. Order E5515C-004 to enable fading. E6717B is for installation on a single 8960 test set.)
- E6719D** Lab application suite. Includes LAs for GSM, GPRS, EGPRS, cdma2000, W-CDMA, 1xEV-DO, and fast switching. Contains E6701E, E6702B, E6703D, E6704A, and E6706A LAs plus E6785D fast switching LA. Feature option E6706A-102 for 1xEV-DO Release A is ordered separately; E6706A-102 is not included in E6719D Suite. (Requires E5515C, E5515C-002, and E5515C-003. Order E5515C-004 to enable fading. E6719D is for installation on a single 8960 test set.)
- E6720A** Annual upgrade contracts for 8960 lab applications. Must specify an option for each format. For contract renewals, order the contract extension to avoid overlap of existing and renewal terms.
- E6720A-001** For E6701 GSM/GPRS and E6704A EGPRS LAs
- E6720A-002** For E6703 W-CDMA LA
- E6720A-006** For E6706 1xEV-DO LA
- E6720A-017** For E6701 GSM/GPRS, E6704A EGPRS, E6703 W-CDMA LAs
- E6720A-201** Contract extension for E6701 GSM/GPRS and E6704A EGPRS LAs
- E6720A-202** Contract extension for E6703 W-CDMA LA
- E6720A-206** Contract extension for E6706 1xEV-DO LA
- E6720A-217** Contract extension for E6701 GSM/GPRS, E6704A EGPRS, E6703 W-CDMA LAs

Note: If adding a lab application to an existing mainframe, see the section entitled, *Adding wireless technology formats to your 8960 test set.*

Annual contracts include

- Individualized early notification of new LA models and revisions
- LA subscription releases give early access to new features and enhancements
- LA upgrades and licenses (if required) over the term of the contract at no additional charge
- New applications and licenses delivered electronically on demand via the Web

Lab applications include

- Lab application license.
- Wireless protocol advisor (WPA) software for specified format. WPA is PC software that works with 8960 lab applications to capture and analyze wireless protocols.
- 8960 application documentation. (Must specify localization option. When ordered with E5515 mainframe use E5515 application documentation options.)
- If ordering more than one LA, specify language localization option for one LA and order Option 0B0 on the other LAs to avoid receiving multiple 8960 documentation sets.

Lab application options available when ordered standalone (without an E5515 mainframe)

LA Model#-010 Lab application installation set. (CD-ROM with the necessary files and utilities needed for loading lab applications. LAs can be downloaded from www.agilent.com/find/8960la. Option 010 is recommended if you do not have high-speed Internet access.)

LA Model#-ABA Documentation for lab applications purchased standalone. Includes all test and lab application documentation. Consists of CD-ROM with programming guides, getting started guides, and paper copies of GPIB syntax guides. US-English localization. To download document in other languages, go to www.agilent.com/find/8960, select Key Libraries, and download the Help files. Not all languages are available.

LA Model#-0B0 Delete documentation.

Wireless protocol applications (WPA) ordered standalone (without an LA)

E6584A PC software that works with 8960 lab applications to capture and analyze wireless protocols. (Included with LA. To order without LA, order E6584A and option to specify format.)

E6584A-001 GSM/GPRS/EGPRS decodes for WPA software.

E6584A-002 cdma2000 decodes for WPA software

E6584A-003 W-CDMA decodes for WPA software

E6584A-006 1xEV-DO decodes for WPA software

Wireless Test Manager Software

Wireless test managers require a specific model and revision of TA and LA. See the individual test manager (WTM) data sheet or overview to determine compatible TAs and LAs at www.agilent.com/find/wtmanagers. Wireless test managers run Visual Basic .NET® and utilize a USB security key.

Find your software development platform and select your products...

Formats	WTM model
TA and LA wireless test managers	
cdma2000/IS-95/AMPS	E6560C, E6560C-100
1xEV-DO	E6564C, E6564C-100
W-CDMA	E6562C, E6562C-100
GSM/GPRS/EGPRS	E6566C, E6566C-100
W-CDMA/GSM/GPRS/EGPRS	E6568C, E6568C-100
cdma2000/IS-95/1xEV-DO	E6567C, E6567C-100
Run-Time License for all formats	E6571C
LA wireless test managers	
cdma2000/IS-95 AMPS	N5880A, N5880A-100
1xEV-DO	N5884A, N5884A-100
W-CDMA	N5882A, N5882-100

Upgrading an Existing 8960 Test Set

The 8960 is a flexible test set that can be upgraded to meet your changing wireless test needs. There are four types of 8960 upgrades

1. updating an existing test/lab application
2. upgrading an application to a new model number
3. upgrading a test application to a lab application
4. adding a wireless technology format

To get timely information about 8960 application improvements, register for Agilent Email Updates at www.agilent.com/find/emailupdates.

1. Updating a TA or LA revision to get new features

TAs and LAs are periodically revised to add new features, improve performance, or resolve known issues. Some new features are a free upgrade. Other new features require a TA option upgrade, LA model upgrade, LA option upgrade, or an E5515 main-frame hardware upgrade. To determine if a hardware (HW) upgrade may be required to enable a feature, refer to Table 4 for TAs and Table 5 for LAs. Contact your Agilent Sales Representative to specify and order hardware upgrades.

TA and LA downloads are available at www.agilent.com/find/8960ta. A valid application or feature option license is required. Contact your Agilent Sales Representative for application upgrade information.

Table 4. New TA feature upgrades

TA format	Feature	Application	Feature option upgrade ¹	HW capable? ²
cdma2000	cdma2000 Rel A new control channels	E1962B	E1962BU-401	Yes
	Advanced AMPS	E1962B	E1962BU-402	Yes
	Authentication	E1962B	E1962BU-403	Yes
	Real time vocoder	E1962B	None	Check
	Fast device tune	E1962B	E1999A, E1999A-201	Check
W-CDMA	Video test	E1963A	E1963AU-401	Check
	BLER with asymmetrical RMCs	E1963A	None	Check
	HSDPA test modes	E1963A	E1963AU-403	Check
	Default DPCH offset (DOFF)	E1963A	None	Check
	Band 7	E1963A	None	Check
	Fast device tune	E1963A	E1999A, E1999A-201	Check
1xEV-DO	Release A	E1966A	E1966AU-102	Check
	Fast device tune	E1966A	E1999A, E1999A-201	Check
GSM/GPRS/EGPRS	PAvT	E1968A	E1968A-410	Yes
	Digital ORFS	E1968A	None	Check
	Class 10 measurements	E1968A ³	None	Check

1. Some TA features are enabled by a feature option. Required feature options are listed. If no feature option is listed, the feature is standard in the current revision of the specified TA and no feature option is required.
2. This feature may require an E5515 hardware upgrade to run on some E5515s. "Yes" means any E5515 capable of running the application model will run the specified feature. "Check" means the E5515 may need a hardware upgrade to run the specified feature. Contact your Agilent representative for more information.
3. E1968A plus required technology format feature option (e.g. E1968A-101, 102, 103, 201, or 202).

Table 5. New LA feature upgrades

LA format	Feature	Application/feature option ¹	HW capable? ²
GSM/GPRS/EGPRS³	PAvT	E6701E/E6704A ³	Yes
	Digital ORFS	E6701E/E6704A ³	Check
	Class 10 measurements	E6701E/E6704A ³	Check
	EGPRS Class 12 signaling	E6701E/E6704A ³	Check
	Runs on special E5515 high data rate hardware	E6701T ⁴ /E6704A ³	Check
cdma2000	Fading	E6702B	Check
	cdma2000 Rel A new control channels	E6702B	Yes
	Advanced AMPS	E6702B	Yes
	Authentication	E6702B	Yes
	Real time vocoder	E6702B	Check
	Fast device tune	E6702B	Check
	Runs on special E5515 high data rate hardware	E6702T ⁴	Check
W-CDMA	384 K data throughput	E6703D	Check
	BLER with asymmetrical RMCs	E6703D	Check
	Fading	E6703D	Check
	Video test	E6703D	Check
	HSDPA test modes	E6703D	Check
	Band 7	E6703D	Check
	Fast device tune	E6703D	Check
	3.6 Mbps HSDPA IP data	E6703T ⁴	Check
1xEV-DO	Fading	E6706A	Check
	Fast device tune	E6706A	Check
	Release A	E6706AU/E6706AU-102	Check
	2.4 Mbps IP data	E6706T ⁴	Check

1. Some LA features are enabled by a feature option. Required feature options are listed. If no feature option is listed, the feature is standard in the current revision of the specified LA.
2. "Check" means an E5515 may require a hardware upgrade to the specified feature. "Yes" means any E5515 capable of running the application model will run the specified feature. Contact your Agilent representative for more information.
3. Add E6704A for EGPRS.
4. E6703T, E6701T, E6702T, and E6706T require a special E5515 hardware configuration. Please contact your Agilent Representative for more information.

2. Upgrading an existing application to a new model number

Upgrading a TA or LA to new model number (e.g. E1985B to E1987A or E6701C to E6701D) offers important new features and functionality. LA upgrades to newer model numbers are offered as an upgrade product. TA upgrades may be free downloads or upgrade products. TA and LA upgrades are customer-installable. Refer to Table 6 for available TA model upgrades and Table 7 for available LA upgrades. Some TA and LA model upgrades may require an E5515 hardware upgrade to run or enable specific features. Contact your Agilent Sales Representative for specific application upgrade information.

Table 6. TA model number upgrades

TA format	Application		Upgrade to order
	From	To	
GSM TA	E1960A	E1968A-101	Free upgrade ^{1, 2}
GPRS TA	E1964A	E1968A-102	Free upgrade ^{1, 2}
Fast switch TA	E1985A, B, C, D, or E	E1987A	Free upgrade ^{2, 3}

1. E5515B with serial number < GB40470001 or < US40350001 may require a hardware upgrade. Please contact an Agilent Sales Representative for more information.
2. Download free upgrades at www.agilent.com/find/8960ta.
3. E5515C with serial number < GB45070001, E5515B with serial number < GB45080001 or any US serial number may require a hardware upgrade. Please contact an Agilent Sales Representative for more information.

Table 7. LA model number upgrades

LA format	Application		Upgrade to order
	From	To	
GSM/GPRS LA	E6701D	E6701E	E6701EU-001 ¹
GSM/GPRS LA	E6701C	E6701E	E6701EU-002 ¹
cdma2000 LA	E6702A	E6702B	E6702BU-002
W-CDMA LA	E6703A	E6703D	E6703DU-002 ¹
W-CDMA LA	E6703B	E6703D	E6703DU-003 ¹
W-CDMA LA	E6703C	E6703D	E6703DU-004 ¹
Fast switching	E6785A, B or C	E6785D	Free upgrade ^{1,2}

1. May require an E5515 hardware upgrade to run or enable certain features.
2. E5515C with serial number < GB45070001, E5515B with serial number < GB45080001 or any US serial number may require a hardware upgrade. Please contact an Agilent Sales Representative for more information.

3. Upgrading a test application to a lab application

Upgrading a TA to an LA (e.g. E1962B to E6702B) is customer-installed. Some TA to LA upgrades may require an E5515 mainframe hardware upgrade. TA to LA upgrades must be customer installed, they cannot be ordered pre-installed on new instruments. Contact your Agilent Sales Representative for compatibility information.

Table 8. TA to LA upgrades

Format	Application		Order
	From	To	
cdma2000 TA to LA	E1962B	E6702B	E6702BU-001
W-CDMA TA to LA	E1963A	E6703D	E6703DU-001 ¹
1xEV-DO TA to LA	E1966A	E6706A	E6706AU-001 ^{1,2}
Fast switching	E1987A	E6785D	Free upgrade ^{1,2}

1. May require an E5515 hardware upgrade to run or enable certain features.
2. E5515C with serial number < GB45070001, E5515B with serial number < GB45080001 or any US serial number may require a hardware upgrade. Please contact an Agilent Sales Representative for more information.

4. Adding wireless technology formats to your 8960 test set

You can add any TA or LA to an existing E5515B or E5515C. Being able to purchase another wireless format for your existing E5515 may save considerable expense when compared to purchasing a new test set. Adding a new TA or LA to an existing E5515B or E5515C may require a hardware upgrade. Contact your Agilent Sales Representative for details and delivery information.

Important: Existing TAs and LAs installed on an E5515B or E5515C may have to be updated to a newer revision or new model after a hardware upgrade. Older LA models may not work on an upgraded E5515. Before ordering an E5515 hardware upgrade, check with your Agilent Sales Representative to make sure you've ordered the necessary LA upgrades to run on the upgraded E5515 hardware.

For more product information visit our Web site at:
www.agilent.com/find/8960



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