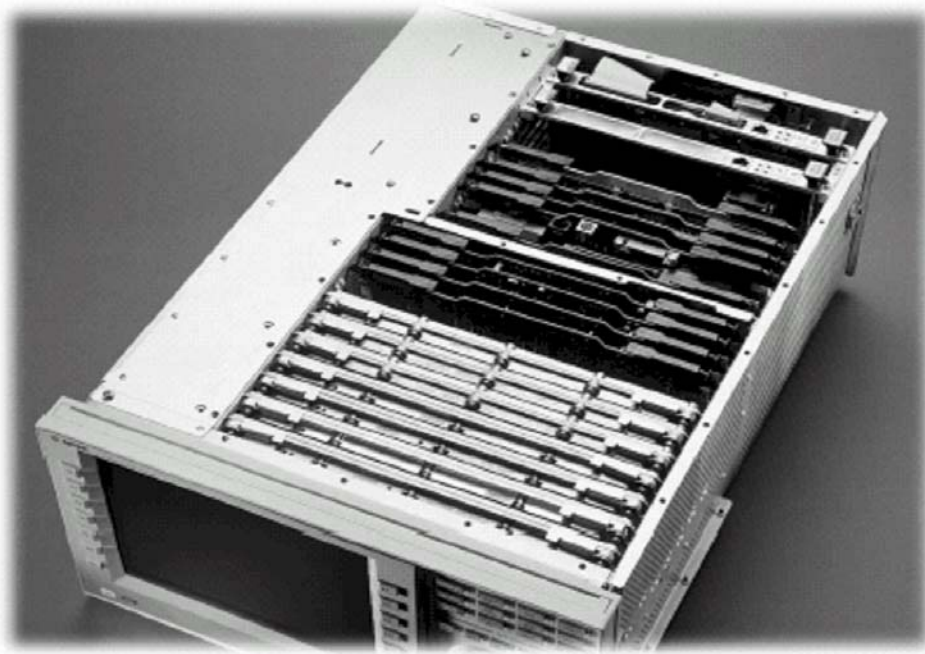


Installation Note

**Agilent Technologies 8960 Wireless Communication Test Set
DSP Upgrade 3
Kit Part Number: E5515CU-607**



Notice

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E5515-90366



Agilent Technologies

**Agilent Technologies 8960 Wireless Communication Test Set
 DSP Upgrade 3
 Kit Part Number: E5515CU-607**

| | |
|---|--|
| Product Affected: | E5515C |
| Associated Options: | Options 508, 515, 613 |
| Replaces Board: | E5515-61262 or below |
| Applications Supported: | See Appendix 1 |
| To Be Performed By: | (X) Agilent Technologies Service Center (X) Personnel Qualified by Agilent Technologies |
| Estimated Installation Time: | 1.0 hours |
| Estimated Verification Time: | 0.5 hours |

Introduction

This kit provides the instructions for installing Option 607 DSP Processor into the E5515C Wireless Test Set. This is one of several upgrades that are required to enable the latest E5515C high speed capabilities and features.

NOTE: This upgrade kit requires the installation of the most current revisions of application software that is compatible with this HW. Failure to install compatible applications may result in boot-up failures.

NOTE: It is assumed that the E5515 is fully operational prior to a HW upgrade. Installing HW upgrades in a non-operational instrument may complicate a successful installation and verification process.

If this kit is one of several HW options being installed, the following installation sequence is recommended. The actual installation will depend on the specific HW option kit(s) being installed:

- 1) Bottom section RF modules (RFIO, Attenuators)
- 2) Top section RF modules (Vector, Synth Doubler, BBG)
- 3) Digital modules (ADC, DSP, RTI, LSS, Protocol)
- 4) Rear section modules (HDD, Host Processor, Rear Panel)

Installation Kit Parts List

| Item | Qty | Description |
|------|-----|-----------------------------------|
| 1 | 1 | DSP Module Assembly |
| 2 | 1 | Installation Note (this document) |

Tools Required

T-20 drivers

Safety Considerations

WARNING Before you disassemble the test set, turn the power switch off and unplug

the power cord. Failure to unplug the test set can result in personal injury.

CAUTION Electrostatic discharge (ESD) can damage or destroy electronic components. All work on electronic assemblies should be performed at a static-safe workstation.

Install Compatible Versions of Existing Applications:

Upgrade all existing compatible applications to the latest revision.

HW compatibility info is available at: www.agilent.com/find/e5515releasenotes

Test Application downloads are available at: www.agilent.com/find/8960TA

Lab Application downloads are available at: www.agilent.com/find/8960upgrades

1. Make active one of the new application versions. This will ensure the instrument will boot to a compatible application after the HW installation.
2. Follow the Firmware installation instructions that come with the Applications

Remove Non-compatible Applications:

1. Remove all non-compatible applications from the test set. Removing older application revisions prevents improper operation of the test set. The test set must be connected to a PC using a cross-over cable via the test set's LAN port.
 - a. Run the Agilent 8960 File Utility
 - b. Select the Direct Connection (Single test set) button.
 - c. Select the Test Application tab.
 - d. Highlight the old revision(s) of application(s) and select the Delete From test set button. All licenses should remain on the instrument. Removing an application does not remove the license for that application.

HW Disassembly:

Remove outer cover and top cover for the 8960

1. Remove handles and rear bumpers.
2. Remove the screws on the rear panel holding outer cover.
3. Slide outer cover off.
4. Remove the 26 screws holding the top cover on and remove the cover.

Remove the DSP Assembly

1. Carefully remove the DSP Module Assembly. Refer to the *Replaceable Parts List (E5515A/B/C/T)* in the *Troubleshooting and Repair* section of the 8960 Assembly Level Repair area at: www.agilent.com/find/8960toolbox for board location.

HW Assembly:

Install Board

1. Install the DSP Assembly into the module slot 14. Make sure the DSP module is fully inserted into the motherboard connectors.

Replace covers:

1. Replace the top cover and secure it with the 26 screws.
2. Slide the outer shroud (cover) on.
3. Replace the screw on the rear
4. Attach the rear bumpers and handles.

Verification Test after all HW Upgrades are Installed

1. Turn on the E5515. The unit should boot to the new Application.
2. Check for boot up and/or error messages. If any error message are displayed, re-check installation process for errors.
3. After warming up the instrument for at least 30 minutes, perform the user calibrations.

Calibration Procedure for Instruments with Option 003

| | Calibration Interval = 1 year | | | | Calibration Interval = 1 month | | |
|-----------------------|--|--|--|---|--|--------------------------------|------------------------|
| Application Or Format | IQ Calibrations (See Note 1) | Burst Mod Offset 1 Calibration | Thermal Power Null Adjust | Digital Average Power Calibration | Spectrum Monitor Calibration | Channel Power Calibration | Calibrate Measurements |
| Cdma2000/IS-95/AMPS | Step 1 Perform IQ1 and IQ2 once from one of these applications or formats | Step 2 Perform once from one of these applications or formats | Step 3 Perform once from one of these applications or formats | Step 4A Perform once from one of these applications or formats Step 4B Cycle Power | Step 5 Perform once from one of these applications or formats | Covered by Step 5 (See Note 2) | |
| 1xEV-DO | | | | | | | |
| W-CDMA | | | | | Step 6 Perform once from this application | Covered by Step 6 (See Note 2) | |
| GSM/GPRS/EGPRS | | | | | Step 7 Perform once from one of these applications or formats | | |
| AMPS/136 | | | | | | | |

Note 1 – Calibrate Second IQ Modulator only applies to instruments with Option 002: RF Source 2.
Note 2 – You do not need to run this calibration if Spectrum Monitor calibration is run first.

Calibration Procedure for Instruments without Option 003

| | Calibration Interval = 1 year | Calibration Interval = 1 month |
|-----------------------|--|--|
| Application or Format | IQ Calibrations (See Note 1) | Spectrum Monitor Calibration |
| GSM/GPRS/EGPRS | Step 1 Perform IQ1 and IQ2 once from one of these applications or formats | Step 2 Perform once from one of these applications or formats |
| AMPS/136 | | |

Note 1 – Calibrate Second IQ Modulator only applies to instruments with Option 002: RF Source 2

4. If additional verification testing is desired, tools are available from Agilent to verify the functional and parametric performance of the instrument.
 - a. Self Test software – requires no external test equipment. Good for functional verification if traceable parametric measurements are not required. For more information, see <http://wireless.marketing.agilent.com/docloader.asp?did=12376>

- b. Test Set Verify software and system – requires external test equipment. Best for traceable functional verification parametric measurements. For more information, see <http://www.spk.agilent.com/~yerxa/Upgrades/index.htm>

Questions and concerns contact Agilent Technologies Support:

Phone: (800) 827-3848 (U.S. & Canada)

Web: www.agilent.com/find/8960support

Appendix 1

NOTE: For the most up-to-date summary of compatible E5515 applications, access the E5515 Mainframe Revision website at: www.agilent.com/find/e5515releasenotes

All existing Applications must be upgraded to the latest revision and switched to one of the new revisions. All non-compatible Applications must be upgraded to work with the new boards that are included in this upgrade kit. Follow the Firmware installation instruction that come with the Applications.

| Summary of Supported Applications | | |
|-----------------------------------|---------------------------------|--------------------|
| E1961A | AMPS/136 | A.12.00 or greater |
| E1962B | CDMA 2000 TA | B.14.00 or greater |
| E1963A | W-CDMA TA | A.13.00 or greater |
| E1966A | 1xEV-DO TA | A.09.00 or greater |
| E1968A | GSM/GPRS/EGPRS TA | A.09.00 or greater |
| E1976A | 1xEV-DO FTM TA | A.03.00 or greater |
| E1987A | GSM/GPRS/W-CDMA Fast Switch TA | A.08.00 or greater |
| E6590A | GSM/GPRS RF Modem -- Anite | B.05.00 or greater |
| E6701F | GSM/GPRS Lab App F | F.01.00 or greater |
| E6702B | CDMA 2000 Lab App B | B.07.00 or greater |
| E6703E | WCDMA/HSPA Lab App E | E.01.00 or greater |
| E6706B | 1xEV-DO Lab App | B.01.00 or greater |
| E6785E | GSM/GPRS_W-CDMA Lab App E | E.01.00 or greater |
| Applications Not Compatible | | |
| E1960A | GSM | NOT SUPPORTED |
| E1962A | CDMA 2000 TA | NOT SUPPORTED |
| E1964A | GPRS | NOT SUPPORTED |
| E1985A/B/C | GSM/GPRS_AMPS/136_W-CDMA | NOT SUPPORTED |
| E1985E | CDMA2000_1xEV-DO | NOT SUPPORTED |
| E6701A/B/C/D/E | GSM/GPRS Lab App B/C/D/E | NOT SUPPORTED |
| E6701T/U | GSM/GPRS LA – High Data Rate | NOT SUPPORTED |
| E6702A | CDMA 2000 Lab App A | NOT SUPPORTED |
| E6703A/B/C/D | W-CDMA Lab App | NOT SUPPORTED |
| E6703T/U | WCDMA/HPPA LA – High Data Rate | NOT SUPPORTED |
| E6706A | 1xEV-DO Lab App | NOT SUPPORTED |
| E6785A/B/C/D | GSM/GPRS_W-CDMA Lab App | NOT SUPPORTED |
| E6785T/U | Fast Switch LA – High Data Rate | NOT SUPPORTED |

Table 1