

Agilent IFT Scripts for LTE-CDMA InterRAT (N5973A-1FP)

Installation Guide



Agilent Technologies

Notices

© Agilent Technologies, Inc. 2011

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Agilent Technologies, Inc. as governed by United States and international copyright laws.

Trademark Notices

Windows®, MS Windows XP®, and MS Windows 7® are either registered trademarks of Microsoft Corporation in the United States and/or other countries.

Warranty

The material contained in this document is provided “as is,” and is subject to being changed, without notice, in future editions. Further, to the maximum extent permitted by applicable law, Agilent disclaims all warranties, either express or implied, with regard to this manual and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Agilent shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein. Should Agilent and the user have a separate written agreement with warranty terms covering the material in this document that conflict with these terms, the warranty terms in the separate agreement shall control.

Statement of Compliance

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. The documentation contains information and warnings that must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

Manual Part Number

N5973-90001

Edition

October 2011
Version 8.0.5.0

Technology Licenses

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

Restricted Rights Legend

If software is for use in the performance of a U.S. Government prime contract or subcontract, Software is delivered and licensed as “Commercial computer software” as defined in DFAR 252.227-7014 (June 1995), or as a “commercial item” as defined in FAR 2.101(a) or as “Restricted computer software” as defined in FAR 52.227-19 (June 1987) or any equivalent agency regulation or contract clause. Use, duplication or disclosure of Software is subject to Agilent Technologies’ standard commercial license terms, and non-DOD Departments and Agencies of the U.S. Government will receive no greater than Restricted Rights as defined in FAR 52.227-19(c)(1-2) (June 1987). U.S. Government users will receive no greater than Limited Rights as defined in FAR 52.227-14 (June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

Safety Notices

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. Agilent Technologies Inc. assumes no liability for the customer’s failure to comply with these requirements.

CAUTION

A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Where to Find the Latest Information

Documentation is updated periodically. For the latest information about the N5973A-1FP IFT product, consult the following website: www.agilent.com/find/N5973A_software.

For the latest information about the E6621A PXT product, including operating and application information and product and accessory information, see the following website: www.agilent.com/find/pxt.

For the latest information about the 8960 product, including operating and application information and product and accessory information, see the following website: www.agilent.com/find/8960

Is your product software up-to-date?

Periodically, Agilent releases software updates to incorporate product enhancements, and fix known defects. To search for software updates for your Agilent N5973A-1FP, go to the Technical Support website at www.agilent.com/find/N5973A_software.

NOTE	You are directed to the above website, because it contains information specific to the N5973A-1FP. In general, all PXT software products are available for download from www.agilent.com/find/softwaremanager . All 8960 software products are available for download from this is the website: www.agilent.com/find/wlcontract .
-------------	--

IMPORTANT	You need an active Agilent Upgrade Contract (AUC) for the 8960 and a Software and Technical Support Contract (STSC) for the PXT in order to obtain the most current software for these two products.
------------------	--

This page is intentionally left blank.

Table of Contents

1	Introduction	1
2	Overview of System Configuration and Components	2
	Wireless Test Set and PC Requirements	2
	Test Setup Configuration: LTE – CDMA InterRAT Handover	2
3	Installation	3
	File Locations	3
	Location of User Data	3
	Location of Software Applications	3
	Back-up Previous IFT Files.....	4
	IFT Server PC.....	4
	Uninstall	4
	Install	4
	IFT Client PC.....	4
	Uninstall	4
	Install	4
	After installing on MS Window 7 - 64 bit pc	4
	Licensing	6
4	Setting Up the System	7
	Test Setup Configuration: LTE – CDMA InterRAT Handover.....	7
	Setup Procedure	8
	Setting the E-EPC-E IP Addresses	10
	Setting Up the UEs	11
5	Service and Support	14
	Calling Agilent Technologies.....	14
	Web-based support.....	14
	E-mail support.....	14
	Locations for Agilent Technologies.....	15

This page is intentionally left blank.

1 Introduction

Welcome to the ***Agilent N5973A-1FP IFT Scripts for LTE-CDMA InterRAT Installation Guide***. The purpose of this guide is to provide you with installation and licensing instructions for the Agilent N5973A 1FP.

In this book, you'll find:

[Overview of System Configuration and Components](#)

[Installation](#)

[Setting Up the System](#)

[Service and Support](#)

2 Overview of System Configuration and Components

This section provides an overview of the components required to use the N5973A-1FP as well as the test setup configuration diagram for the LTE-CDMA InterRAT operations.

Wireless Test Set and PC Requirements

Refer to the N5973A-1FP release notes located here: www.agilent.com/find/N5973A_software.

Test Setup Configuration: LTE – CDMA InterRAT Handover

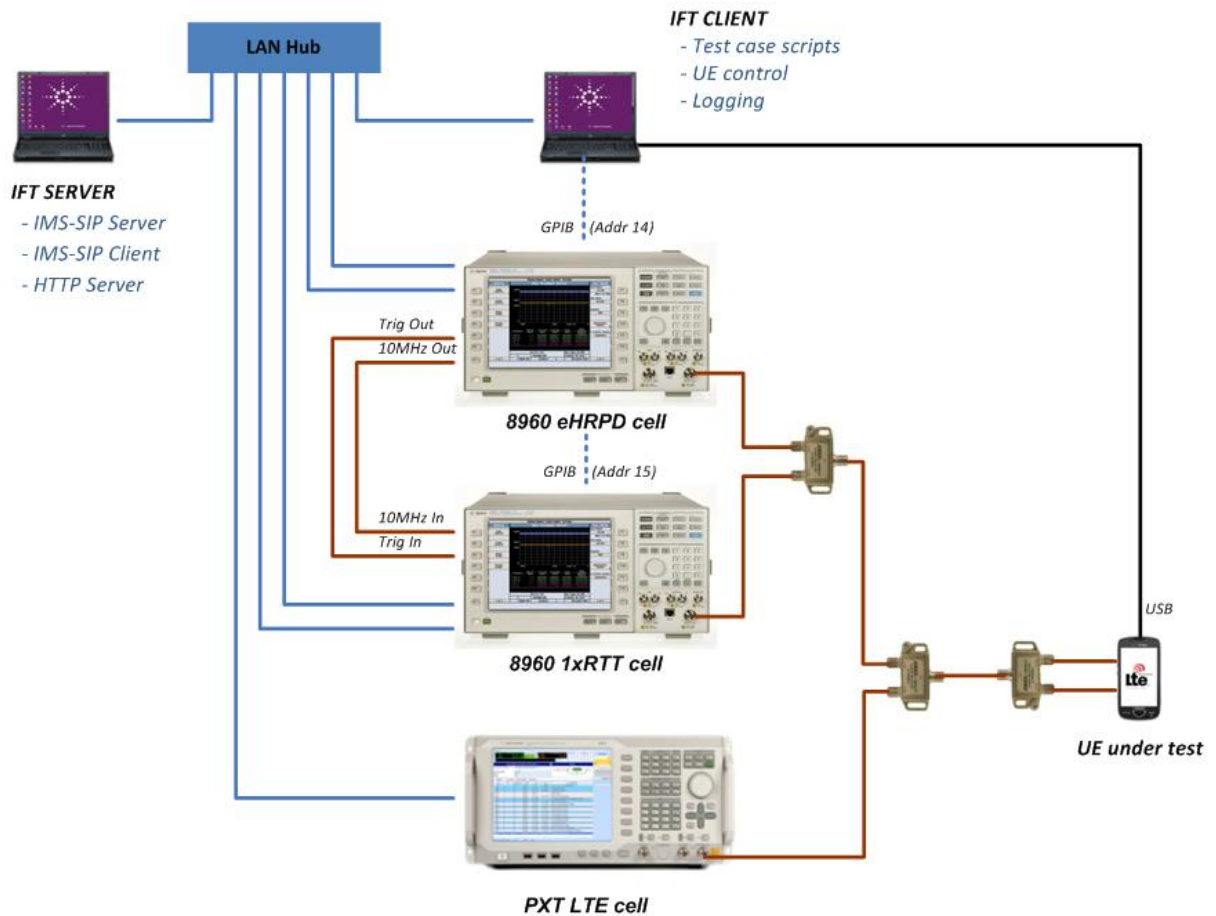


Figure 2-1: System Configuration (Also shown in chapter 4)

3 Installation

File Locations

Location of User Data

Windows 7: C:\Users\Public\Public Documents\Agilent

Windows XP: C:\Documents and Settings\All Users\Shared Documents\Agilent

NOTE	Since the above directory paths are different, this document will reference these “User Data” locations like this: <OS Public Agilent>.
-------------	---

Location of Software Applications

All software applications required for this product are available for download from these locations shown below. For “Instrument Software Requirements”, see table 4-1 on page 7.

Test System Component	Location of Software
N5973A-1FP	www.agilent.com/find/N5973A_software
N5971A	www.agilent.com/find/wlcontract
N597X	www.agilent.com/find/wlcontract
E6621A	www.agilent.com/find/softwaremanager ¹
E5515C 8960 (eHRPD)	www.agilent.com/find/wlcontract
E5515C 8960 (1xRTT)	www.agilent.com/find/wlcontract
E6584A (WPA)	www.agilent.com/find/E6584A
Agilent IO Libraries	www.agilent.com/find/iosuite
N5973A-SIM	Contact Agilent

1. An active E6621A software and technical support contract (STSC) is required to access the software manager website (displayed above), together with the login credentials registered by you or your company for activation. See the section on licensing in the *Agilent PXT Wireless Communications Test Set Getting Started Guide* for instructions to activate your STSC.

Back-up Previous IFT Files

IMPORTANT	If IFT Server or IFT Client PCs are already setup for use with other products, it is advisable to back up any files you wish to keep, before proceeding. See " Location of User Data " section above to locate the files you need to back-up.
------------------	---

IFT Server PC

Uninstall

1. N597X
2. Now SMS

Install

- N597X ≥ version A.08.00

NOTE	Be sure to select Always connect on Filezilla after the installation completes.
-------------	--

IFT Client PC

Uninstall

1. N5971A
2. Remove all folders and files from these two directory locations:
 - <OS Public Agilent>\N5971A
 - C:\Program Files\Agilent\N5971A

Install

1. WPA ≥ version A.10.01
2. Agilent IO Libraries ≥ version 16
3. N5971A ≥ version A.08.00

NOTE	During this installation, when you are instructed to select a LAN connection, choose "LAN" and NOT "WLAN".
-------------	---

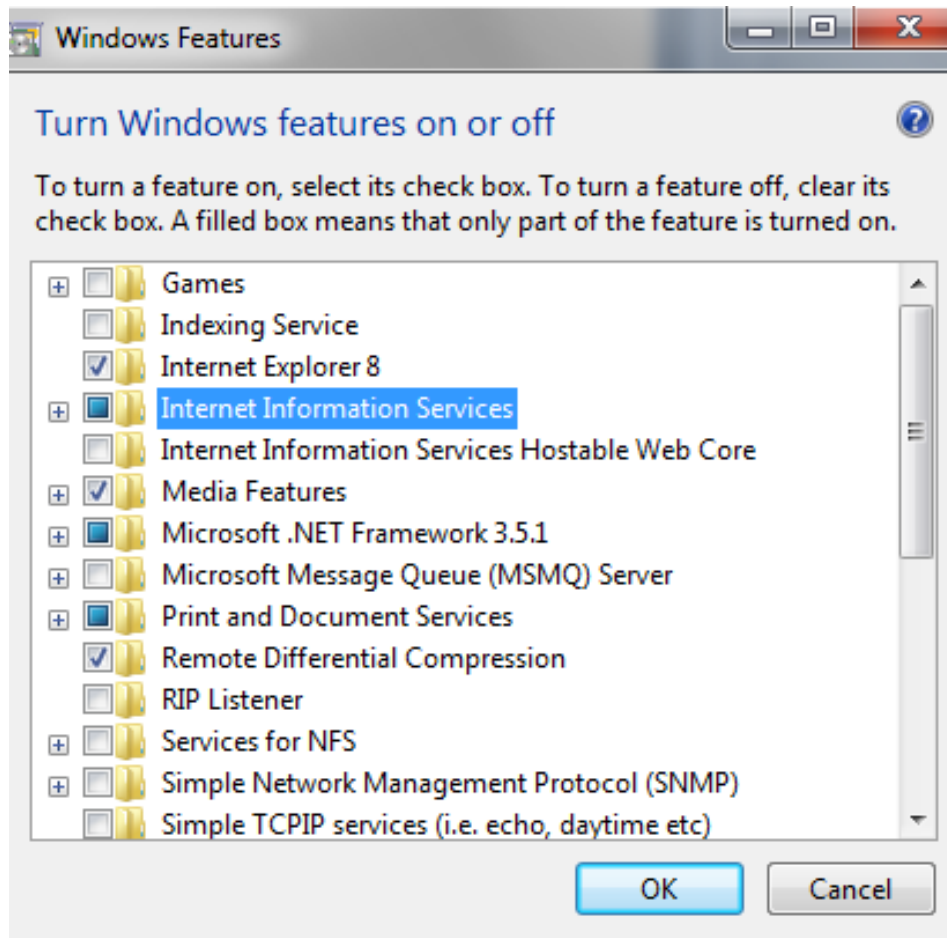
4. N5973A ≥ A.8.0.5.0

After installing on MS Window 7 - 64 bit pc

If you have just completed the above installation procedure on a pc using MS Windows 7 (64 bit) operating system, you must enable World Wide Web Services and Windows Communication Foundation HTTP Activation.

Access these options by selecting **Start > Control Panel > Programs > Programs and Features > Turn Windows features on or off.**

The following window is displayed:

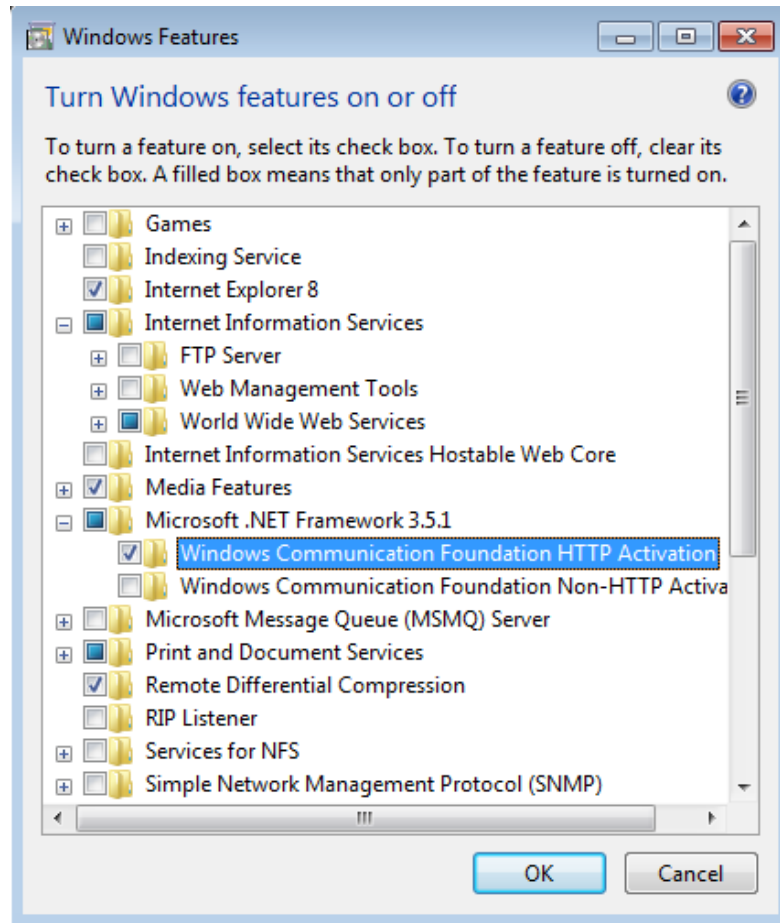


Expand **Internet Information Services** and select **World Wide Web Services**.

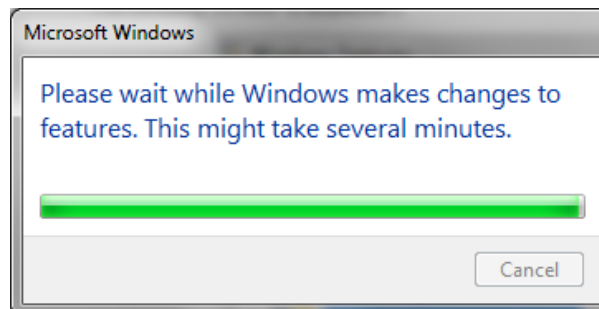
Expand **Microsoft .NET Framework 3.5.1** and select **Windows Communication Foundation HTTP Activation**.

Agilent N5973A IFT Scripts for LTE-CDMA InterRAT Installation Guide

Your settings now appear as displayed below.



Select **OK** and then wait until the message window below closes, indicating the changes to these settings are complete.



Licensing

When you purchase the N5973A-1FP alone or in conjunction with the N5971A, you receive a "License Entitlement Certificate". Follow the instructions on this certificate to redeem your license keys for these products.

NOTE

Both N5971A and N5973A-1FP are licensed using a soft-key installed on the host PC. The previous N5971A-1TP physical USB license keys are no longer supplied, but can still be used to license the N5971A when inserted into a USB port of the host PC.

4 Setting Up the System

Test Setup Configuration: LTE – CDMA InterRAT Handover

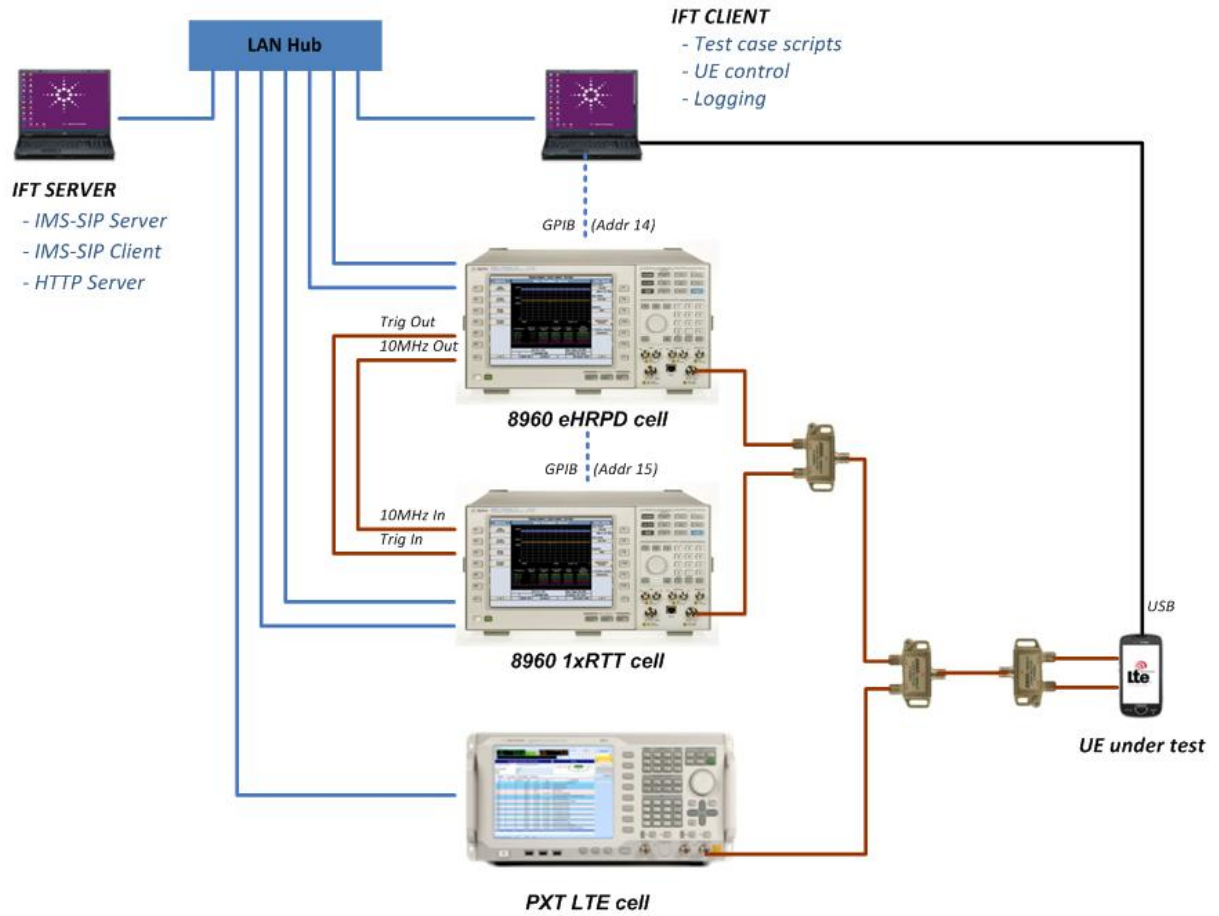


Figure 4-1: System Configuration (Also shown in Chapter 2)

Table 4-1: Instrument Software Application Requirements

Cell	Product	Description	Version
E5515C 8960 (eHRPD)	E6706E	1xEV-DO Lab Application	≥ E.00.06
E5515C 8960 (1xRTT)	E6702E	cdma2000 Lab Application	≥ E.00.06
E6621A PXT (LTE)	N6050A	LTE FDD Base Station Emulation	≥ 6.1.2.0
	N6052A	LTE enhanced BSE and IP Data test	≥ 6.1.2.0

Setup Procedure

NOTE	When discussing E6621A PXT key paths within tables or text, instrument front-panel keys are represented in bold ; softkeys appear in <i>bold, italics</i> .
-------------	---

1. Connect all components as shown in Figure 4-1, above, ensuring all wireless test sets are loaded with the appropriate software described in Table 4-1 above.
2. Ensure all components are set to the following IP/GPIB addresses shown in Table 4-2, below.
3. Set the PXT to TCP/IP for remote control by pressing **Config > Network Setup > Remote Ctrl Setup > TCP/IP > Apply**.

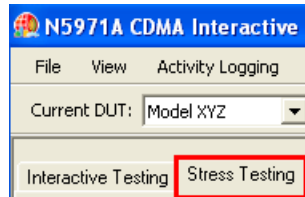
Table 4-2: Component IP/GPIB Addresses

Component	IP	Subnet Mask	Gateway	GPIB Address
IFT Client PC	192.168.1.11	255.255.255.0	192.168.1.60	
IFT Server PC	192.168.1.230	255.255.255.0	192.168.1.60	
8960 (eHPRD)				14
8960 LAN IP Address ¹	192.168.1.13	255.255.255.0	192.168.1.60	
8960 LAN IP Address 2 (Data+) ¹	192.168.1.14	255.255.255.0	192.168.1.60	
8960 (1xRTT)				15
8960 LAN IP Address ¹	192.168.1.16	255.255.255.0	192.168.1.60	
8960 LAN IP Address 2 (Data+) ¹	192.168.1.17	255.255.255.0	192.168.1.60	
PXT (LTE)²				
PXT IP	192.168.1.60	255.255.255.0	192.168.1.230	
E-EPC-E	See “ Setting the E-EPC-E IP Addresses ” on page 10 to configure these settings.			
UE	See “ Setting Up the UEs ” on page 10 to configure these settings.			

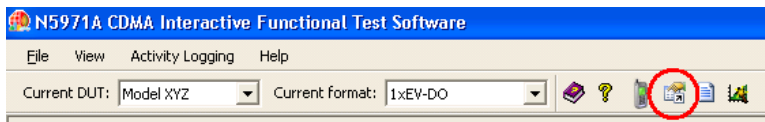
1. This setting is accessed via **System Config > F1**. It is labeled on the 8960 display as “Instrument Setup” and is often referred to as “F1 – Instrument Setup”.

2. The actual setting is “IP” and is part of the **TCP/IP Setup** menu. To access this menu, select **Config > Network Setup > IP Setup**. Make your changes and then select **OK**.

- Copy the E6621A PXT scenario file, entitled, "irat_Idle.LBMF"
from this location on the IFT Client PC:
<OS Public Agilent>\N5971A\TestData\LteCdmaInterRatDocs\ScenarioFiles
to this location on the PXT (LTE)
D:\Program Files\Agilent\E6621A\LTE-Scenario
- Launch N5971A on the IFT Client PC.
- Select the **Stress Testing** tab in the main IFT application.



- Display the N5971A Scripting Tool by double-clicking the icon outlined in red below.



- Run the "Initialize" test script to ensure that everything is configured correctly (on the IFT Client PC).
If necessary, modify the **A8960_GpibInterface** setting in the Settings.xml file located here:
<OS Public Agilent>\N5971A\TestData\LteCdmaInterRatDocs
to match your configuration.
- Connect the UUT to the IFT Client PC and determine the COM port to which it is attached.

Right click on **My Computer** and select **Properties > Hardware > Device Manager > Modems**; then look for the USB connection to the UUT. The number of this port needs to be added to the setting **UutComPort** in the UE specific settings file, located here:

<OS Public Agilent>\N5971A\TestData\LteCdmaInterRatDocs

IMPORTANT

If the N5971A is running, it needs to be stopped and restarted in order for the changes to take effect.

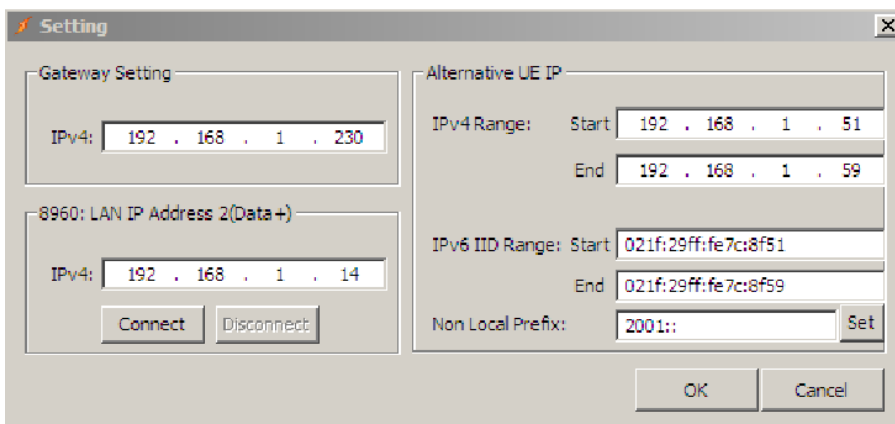
Setting the E-EPC-E IP Addresses

NOTE	You will need to plug in a USB mouse and keyboard to the PXT in order to setup the E-EPC-E (Embedded-Evolved Packet Core-Entity) IP addresses.
-------------	--

To access the E-EPC-E setup menu, right click on the orange icon, in the task bar at the bottom of your MS Windows screen and select **Setting**, as shown below.



The following window is displayed:



Use the mouse and keyboard you connected to the PXT (LTE), to insert the setting values required by the scenario file you are using.

NOTE	The settings shown above are those values set in the scenario file (irat_Idle.LBMF) you loaded into step 4, above.
-------------	--

IMPORTANT	For interRAT handovers the E-EPC-E should be connected to the 8960 (eHRPD) – prior to initiating any IP Context on the 8960 (eHRPD) or PXT (LTE). This is achieved by using the Connect button on the above window, or by initiating the connection from the appropriate page on the 8960 (eHRPD). Before continuing, ensure that the 8960 (eHRPD) reports the “EPC Connection Status” as “Connected”.
------------------	---

Gateway Setting:

This is where all UE uplink IP data is directed during InterRAT testing, regardless to which subnet the IP data is destined. When setting up an interRAT handover procedure, this IP address is the target for all UE IP traffic and is set to the IFT Server IP address. If being used on a corporate LAN this could instead be set to the network **Default Gateway**.

8960: LAN IP Address 2(Data+):

Set this to the **8960 LAN IP address 2 (Data+)**. Ensure that both LAN sockets on the 8960 are connected to the test network.

Alternative UE IP:

IPv4 Range:

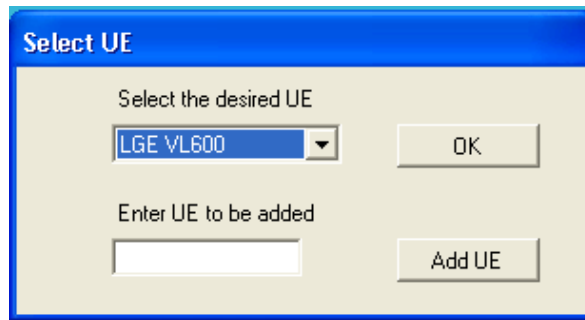
This is the IPv4 address range used when the UE requests an IPv4 address when attached to the 8960. Note that this should match any scenario file in use for interRAT handovers.

IPv6 IID Range:

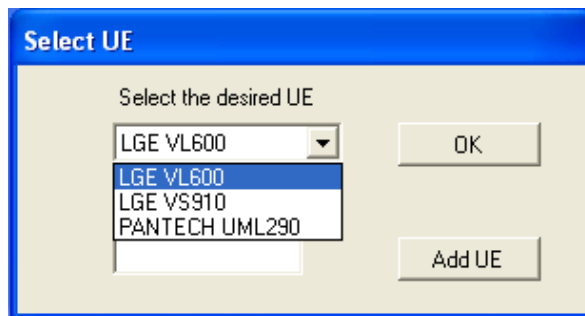
This is the Ipv6 address range used when the UE requests an IPv6 address when attached to the 8960 (eHRPD). Note that this should match any scenario file in use for interRAT handovers.

Setting Up the UEs

When the "Initialize" script is run, the following message box is displayed.



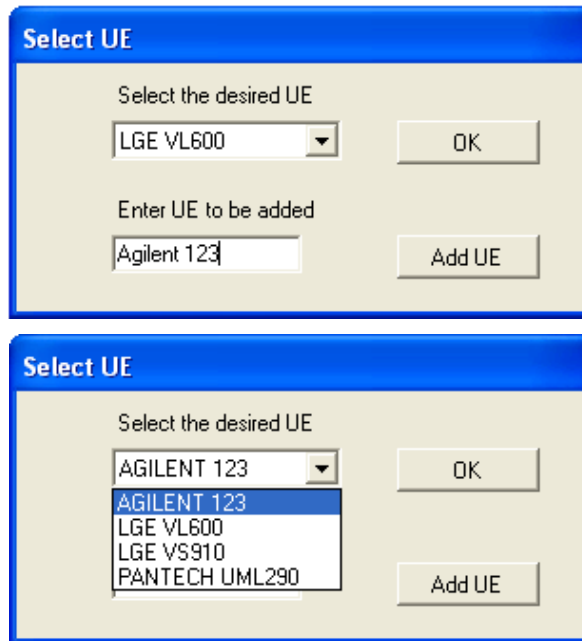
Select one of the UE's from the drop down list or add a new UE.



The UEs available from the drop-down list are defined in the **AvailableUe** setting, located in the Settings.xml file.

Agilent N5973A IFT Scripts for LTE-CDMA InterRAT Installation Guide

If you select **Add UE**, the new UE defined in the **Enter UE to be added** field is added to the drop down list. However, this UE is removed from the list when the N5971A is restarted.



Selecting **OK** generates a default UE-specific settings file for the UE (if one does not already exist) at this location:

C:\Documents and Settings\
All Users\Documents\Agilent\N5971A\TestData\LteCdmaInterRatDocs\AGILENT 123.xml

Table 4-3: UE-Specific Settings File Configuration

NOTE	In the field column below, “Uut” is referring to “UE under test”.
-------------	---

Field	Description
UutDeviceName	Connect the UE to the IFT Client PC and determine the Device Name. This MUST contain enough characters to uniquely identify the UE from the Interface List using the route print command.
UutComPort	Connect the UE to the IFT Client PC and determine the COM port to which it is attached.
UutBaudRate UutDataBits UutStopBits UutParity UutFlowCtrl	Used to configure UE Hyper Terminal

Table 4-3: UE-Specific Settings File Configuration (continued)

Field	Description
UutAtCmdxxx	<p>If the value starts with "MAN%" this indicates that no AT commands are available and the user will be prompted to perform this step manually.</p> <p>If the value starts with "AT", this defines the AT command and this step will be performed automatically.</p>
UutAtCmdTest	Used to confirm that we can send AT commands to UE
UutAtCmdResetDevice	Used to Reset the UE
UutAtCmdConnectToLte UutAtCmdConnectToEvdo UutAtCmdCheckForNetwork	Used to connect the UE to the required Network
UutAtCmdSendTestMessage UutAtCmdSetDestinationAddress UutAtCmdSetCallbackNumber SmsDomain SmsLocalUserName SmsRemoteUserName SmsTestMessage	Used to send SMS to UE
LteRfAmplitude	This sets the RF Amplitude on the PXT.
LteRefLevel	This sets the Reference Level on the PXT.
ImsPdnId	This defines the value of the IMS PDN ID that will be returned from the UE.
InternetPdnId	This defines the value of the Internet PDN ID that will be returned from the UE.

5 Service and Support

Calling Agilent Technologies

Agilent Technologies has offices around the world to provide you with complete support for your products. For help, to obtain servicing information or to order replacement parts, contact the nearest Agilent Technologies office listed on page 14 . In any correspondence or telephone conversations, you will need the product number, full serial number, software revision and any other pertinent contract numbers.

Web-based support

You can directly enter and manage your support requests online via

www.agilent.com/find/mysupportcenter.

The first time you use My Support Center you will be asked to create a profile and provide proof of entitlement. Once your profile is created, you can use the online support center to enter your support request.

Each support request will be given a unique case number which you can use to track the progress of your support case. A technical expert will contact you via phone or email (whichever you have stated as your preferred option) to resolve your issue.

English, Japanese, Korean, and Mandarin local language support is available.

E-mail support

You can also contact our technical support at the following e-mail addresses:

- wireless_test_support_america@agilent.com
- wireless_test_support_japan@agilent.com
- wireless_test_support_europe@agilent.com
- wireless_test_support_asia@agilent.com
- wireless_test_support_korea@agilent.com

Your support request will be routed to a technical expert who will contact you via e-mail or phone (whichever you have stated as your preferred option) to help resolve your issue.

English, Japanese, Korean, and Mandarin local language support is available.

Locations for Agilent Technologies

Online assistance: <http://www.agilent.com/find/assist>

If you do not have access to the Internet, one of these centers can direct you to your nearest representative:

If you have a current STSC for the E6621A, you can contact Agilent at the email addresses listed in "Software and Technical Support Contracts" on page [15](#).

Should the Declaration of Conformity be required, please contact an Agilent Sales Representative, or the closest Agilent Sales Office. Alternately, contact Agilent at: www.agilent.com.

Americas

Brazil
(11) 4197 3500

Canada
(877) 894 4414

Mexico
01800 5064 800

United States
(800) 829 4444

Asia Pacific

Australia
1 800 629 485

India
1 800 112 929

Malaysia
1 800 888 848

China
800 810 0189

Japan
0120 (421) 345

Singapore
1 800 375 8100

Hong Kong
800 938 693

Korea
080 769 0800

Taiwan
0800 047 866

Other Asian Countries:

www.agilent.com/find/contactus

Europe & Middle East

Austria
43 (0) 1 360 277 1571

Germany
49 (0) 7031 464 6333

Spain
34 (91) 631 3300

Belgium
32 (0) 2 404 93 40

Ireland
1890 924 204

Sweden
0200-88 22 55

Denmark
45 70 13 15 15

Israel
972-3-9288-504/544

Switzerland
0800 80 53 53

Finland
358 (0) 10 855 2100

Italy
39 02 92 60 8484

United Kingdom
44 (0) 118 9276201

France
0825 010 700*
*0.125 €/minute

Netherlands
31 (0) 20 547 2111

Other Asian Countries:

www.agilent.com/find/contactus

