



Testing UMTS Node B's using the Racal Instruments Wireless Solutions 6413A.

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Summary

This application note is intended to be a guide to testing a UMTS Node B using 6413A.

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Introduction to this document

This application notes is based on 6413A software release version 2.21. It is intended to be a complete guide on testing a UMTS Node B using 6413A.

This Application Note is divided into 2 sections. The first section covers all the functions of 6413A, including setting up global parameters, running a test and saving test reports, without any detail discussions on the selection of specific parameters.

The second section, the Appendix, contains tables on the parameters applicable for the different tests.

This document refers to 3GPP 25.141 in many places. The 6413A system uses the specification as a basis for the tests procedures performed.

A field user should have no difficulty on running tests on a Node B after reading the first section.

General System Configuration

For simplicity, this document assumes that the lub connection to the Node B is via a single E1 link.

The 6413A system may also be configured to support T1 and J1 standards, as well as IMA protocol running over up to 8 E1, T1 or J1 connections.

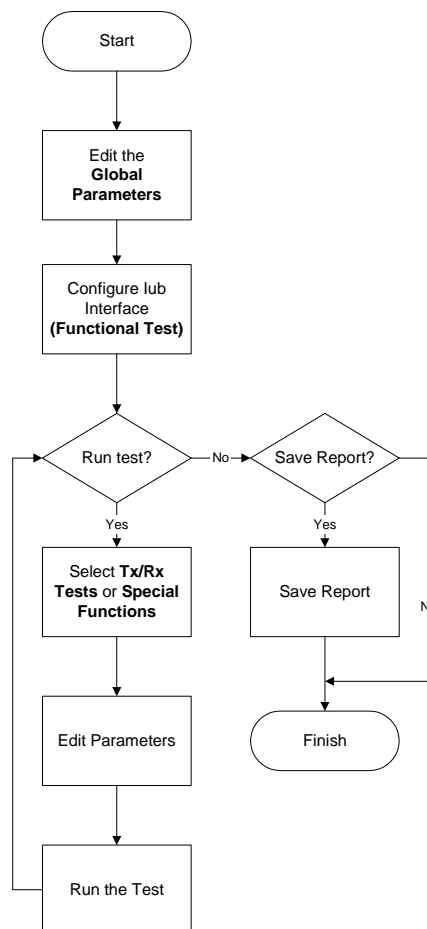


Generic Testing Procedure

The flow chart below describes how to perform individual test(s) against a Node B.

Running tests on the system follows the generic process below:

1. Edit the **Global Parameters**
2. **Configure the lub Interface**
3. Once the lub is configured correctly, the user may run a test by:
 - a. Editing the parameters associate with the test, then
 - b. Run the test
 - c. Repeat a and b on other test(s) as required
4. Finally, the user may save a report on any tests performed for future use.





Setting up the 6413A's "Global Parameters"

Press **Global Parameters**, located on the top left hand corner



Figure 1: Main menu



This screen allows the user to define all the global parameters relevant to the Node B to be tested. The user may go through different fields by either pressing on the field (i), or by using the **up** and **down** navigation buttons on the right hand side (ii).

When a field is selected, a window with all the options will pop up (iii), or a number pad will pop up allowing the user to enter a desired value (ii on Figure 3).

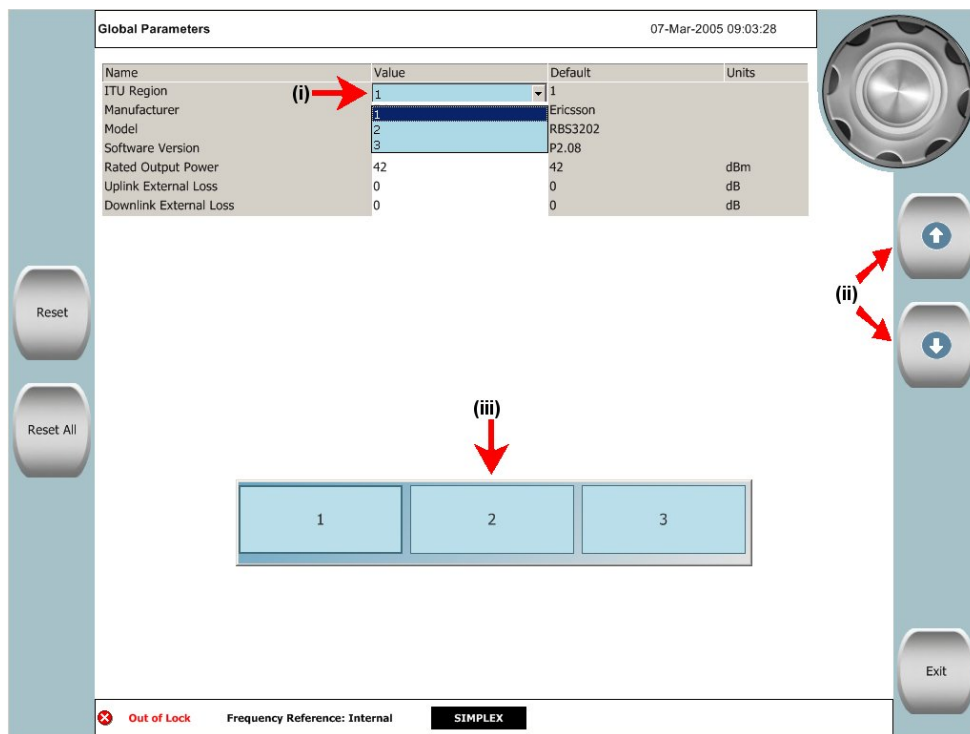


Figure 2: Global Parameters



There are 3 ways to change the value selected

- a) Selecting the desired option by touching that particular option on a pop up window (iii on Figure 2)
- b) Inputting the desired value on the number pad, and then press the **ENT** button. (ii)
- c) By turning the spinwheel. (iii) Note that the spinwheel will only work when the value is not entered by number pad.

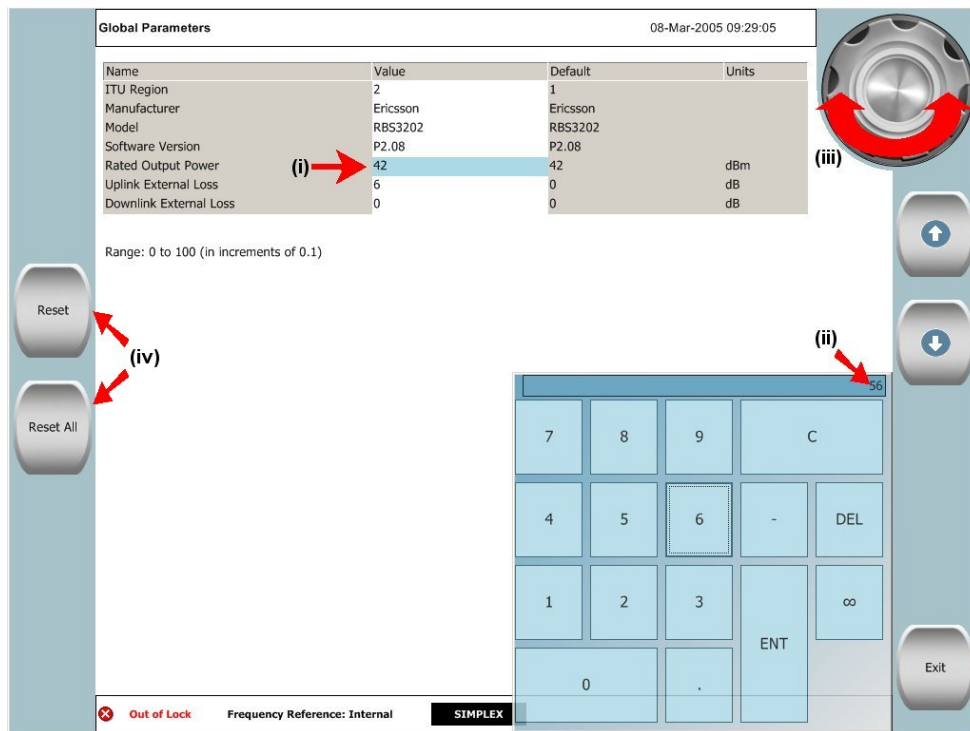


Figure 3: Global Parameters with number pad

The value entered by using the number pad is displayed inside the dark blue area on top of the number pad. A user may use the **DEL** button to delete the last input digit or use **C** button to clear the whole input string.

The user may wish to use the **Reset** or **Reset All** button to reset single or all field(s) in this page to default value(s) (iv on Figure 3).



Below is a list of **Global Parameters**

Name	Default	Units (if applicable)	Options	Definitions
ITU Region	1		1, 2, 3	Specifies the testing region of the Node B. ITU region 1 covers Europe, Middle East, Africa and North Asia ITU region 2 covers North and South America, Caribbean and Greenland ITU region 3 covers South Asia, Australia, New Zealand and Oceania
Manufacturer				Specifies the manufacturer of the Node B*
Model				Specifies the model of the Node B
Software Version				Specifies the software version of the Node B
Rated Output Power	42	dBm	0: 0.1 :100	Specifies the Rated output power of the Node B. As defined in 3GPP TS 25.141 section 3.1
Uplink External Loss	0	dB	0: 0.01 :50	Specifies the cable loss between Node B's Rx and 6413A
Downlink External Loss	0	dB	0: 0.01 :50	Specifies the cable loss between Node B's Tx and 6413A

If an entered value in the Global Parameters dialog box is out of range, a message will pop up to warn the user (example below).

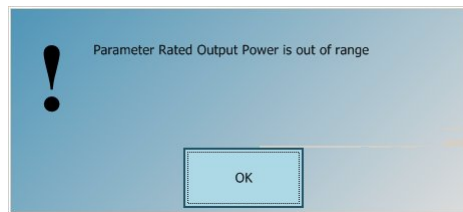


Figure 4: Input out of range warning

When finished, Press **Exit** on the bottom right to save the parameters into the system and continue.



Configuring the IUB Interface

From the main screen, press **Functional Tests**, located on the left hand side just below the **Global Parameters** button.



Figure 5: Main menu

Select **Configure IUB Interface** (The highlighted functions are available on current software release), and then select **Edit Test Parameters** on the bottom right.

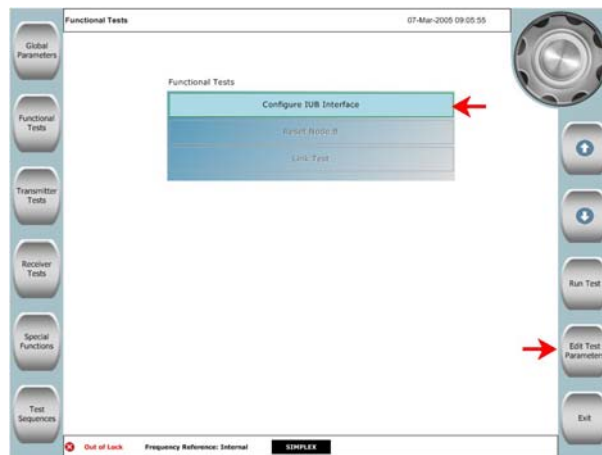


Figure 6: Functional Tests menu



Enter the parameters applicable to the Node B under test. The user interface is similar to the **Global Parameters** page. Please refer to the Appendix for a list of parameters for this section and their definitions.

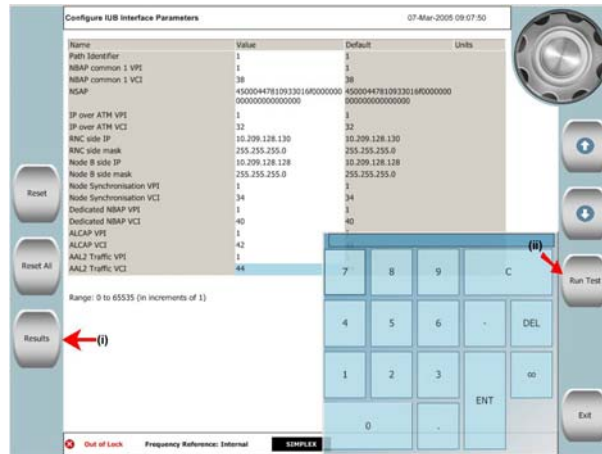


Figure 7: Parameter page for Configure Iub Interface

When all parameters required to configure the Iub (ATM) interface have been entered, press the **Run Test** button (ii) to start the communication process between the 6413A and the Node B. This particular operation tests for correct Node B Iub operation. During the test, the 6413A screen displays the progress of the test as shown below. Note that most tests on the 6413A have a similar sequence of screen displays during the execution of the test.



When the test is running, the first screen informs user of the expected RF connection between the Node B and the 6413A. In addition, it also informs the user about the test progress.



Figure 8: Starting a test (in this case lub configuration)

Once the test is in progress, the screen changes to a simpler test running screen. The flashing green “LED” (i) indicates the test is running and the status bar at the bottom of the screen (ii) indicates the test progress. The user may stop the test by pressing the **Stop Test** button.



Figure 9: Running lub configuration



When the test is completed, or when the user manually stops the test, he may leave the test screen by pressing the **Exit** button.



Figure 10: Iub Configuration completed



Performing Receiver Tests

The capability to perform **Receiver Tests** is one of the main features of 6413A. The following **Receiver Tests** are available for the software release 2.21:

- **Reference Sensitivity Level** (TS 25.141 section 7.2)
- **Dynamic Range** (TS 25.141 section 7.3)
- **Absolute Sensitivity** (Additional Test)
- **Uplink Wideband Power** (Additional Test)

After a user has finished setting up the global parameters and configuring the lub interface. He is ready to perform any test that the system is capable of undertaking.

Note that the 6413A undertakes full demodulation of the signal transmitted from the Node B to determine timing and synchronisation. The 6413A does not need timing markers or any other external equipment from the Node B to perform synchronisation.

As an example of running a receiver test, the process of running the test to determine the Reference Sensitivity Level of a Node B, as defined in 3GPP TS 25.141 section 7.2, is shown below

The **Receiver Tests** button is located on the middle left and can be accessed from most menu screens.



Figure 11: Select Receiver Test



Inside the **Receiver Tests** menu, the user may select the test he wishes to perform, and then press the **Edit Tests Parameters** button on the right.

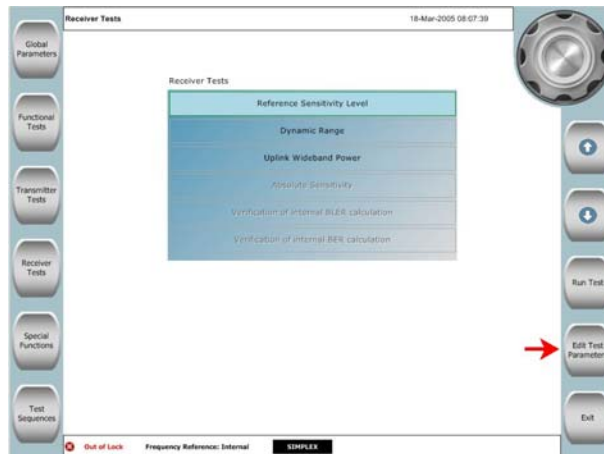


Figure 12: Receiver Test menu

In the “Edit Parameters” screen some fields are greyed out because they are linked to other fields within the system. They are treated as global parameters and will be updated automatically when the linked field is changed. E.g. Down/Up link frequencies are calculated from the values of Down/Up link UARFCN and will be updated automatically when user changes the value of Down/UP link UARFCN.



Figure 13: Parameters for Reference Sensitivity Level



Once the user is happy with all the parameters, the test can be started by pressing the **Run Test** button. The screens displayed during the progress of the test are similar to that shown above related to the configuration of lub. All tests will have one or more displays showing the value of test result.

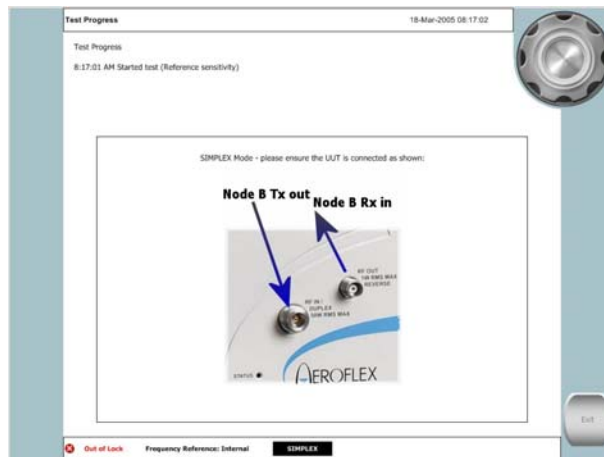


Figure 14: Check the RF connection

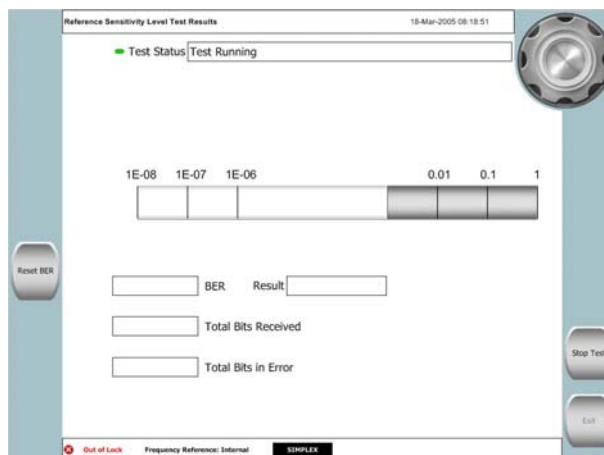


Figure 15: Running Reference Sensitivity Level test

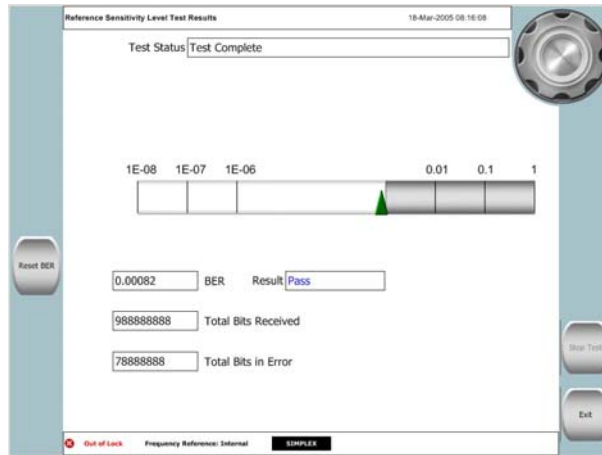


Figure 16: Test Complete

Once the test is complete, the final screen displays the results obtained.



Performing Transmitter Tests

The 6413A is also capable of performing **Transmitter Tests**.

The tests available on the software release 2.21 are shown below, with their corresponding section in the 3GPP specification for reference. More tests will be available for future releases.

- **Maximum Output Power (MOP)** (3GPP TS 25.141 section 6.2.1)
- **Error Vector Magnitude (EVM)** (3GPP TS 25.141 section 6.7.1)
- **Peak Code Domain Error (PCDE)** (3GPP TS 25.141 section 6.7.2)
- **Frequency Error (FE)** (3GPP TS 25.141 section 6.3)
- **CPICH Power Accuracy (CPICH)** (3GPP TS 25.141 section 6.2.2)
- **Adjacent Channel Leakage Ratio (ACLR)** (3GPP TS 25.141 section 6.5.2.2)
- **Absolute CPICH Power Accuracy** (Additional Test to 3GPP)
- **Occupied Bandwidth** (3GPP TS 25.141 section 6.5.1)

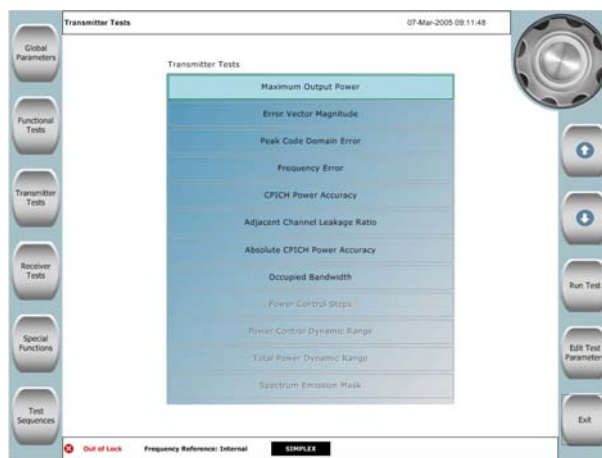


Figure 17: Transmitter Tests menu

The procedure for running a transmitter test is the same as running a receiver test. The user first selects the test he wishes to execute. Then presses the **Edit Test Parameters** button to change any parameters. Followed by pressing **Run Test** button to execute the test.



System Special Functions

In the current release, there are two special functions

- **Multi Mode**
- **Spectrum Analysis Graph**

More functions will be available on future releases.

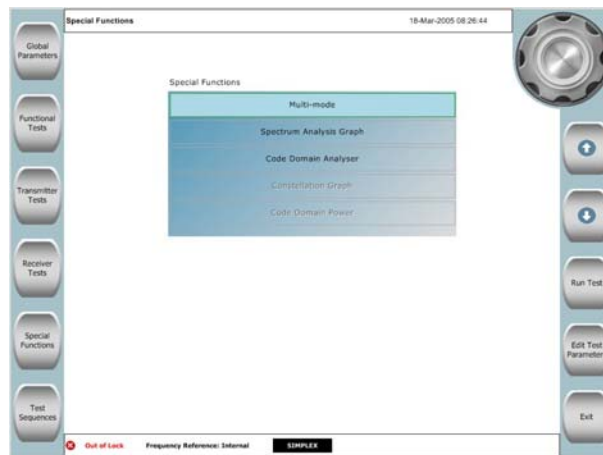


Figure 18: Special Functions menu

Multi-mode

This function allows a user to perform 5 **Transmitter Tests**, EVM, FE, PCDE, MOP and CPICH, simultaneously in real time.

It is a quick way to perform a health check on a Node B. Please be aware that because all five tests are running simultaneously with the same *test model*, the results may not be the same as the result of running each test in it's standalone mode with the optimal test model specified in TS 25.141.

For most accurate results, transmitter tests should be performed with their own specific settings.

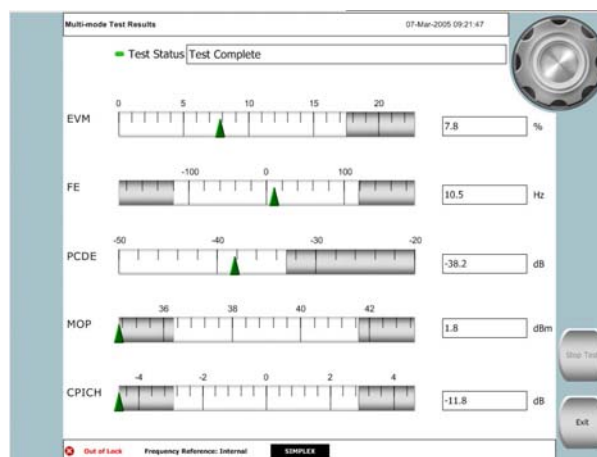


Figure 19: Multi Mode test result



Spectrum Analysis Graph

This function allows a user to view and check the signal being transmitted by the Node B in the frequency domain. This is a useful test to show that a cell has been successfully set up on the Node B.

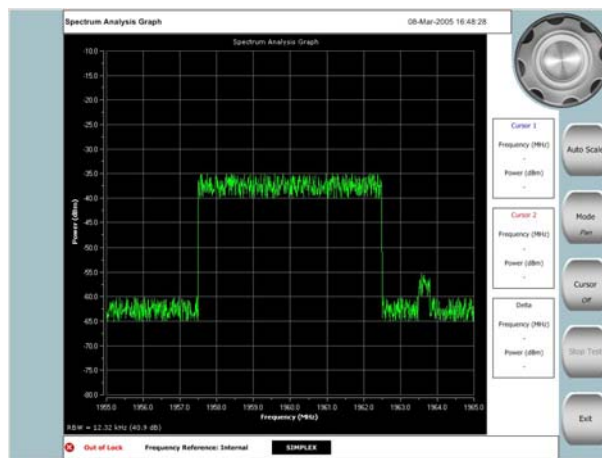


Figure 20: Spectrum Analysis Graph

A user may use the **Auto Scale** button to shrink or stretch the waveform so it fills the screen appropriately.

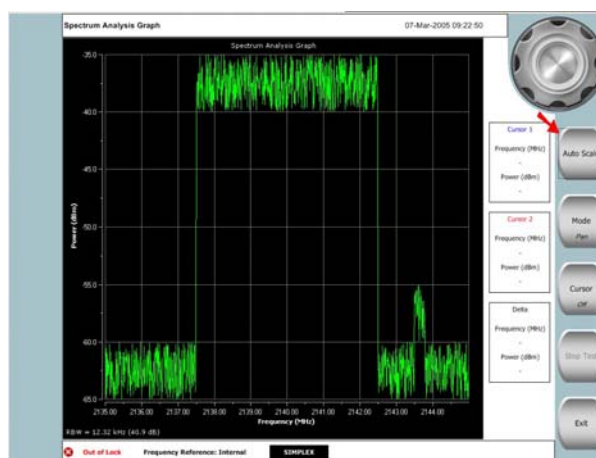


Figure 21: Auto scaled graph



The 6413A supports 2 display modes, **pan** and **zoom mode**. Pressing the mode button will cycle between these 2 modes. When the machine is in **pan mode**, a user may scroll the waveform horizontally or vertically by pressing on the touch screen to drag the Frequency or Power axis as shown below.

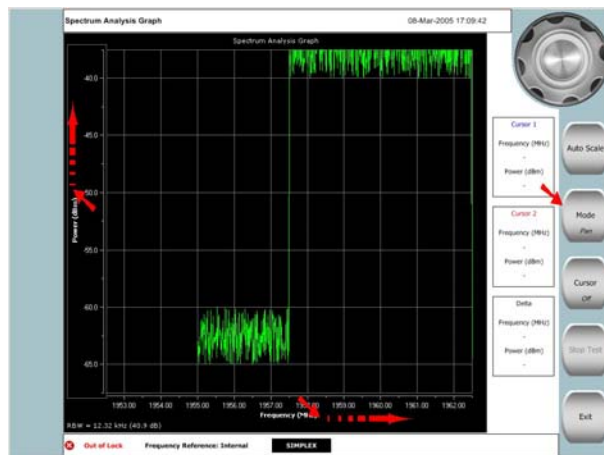


Figure 22: Pan Mode

When the machine is in **zoom mode**, a user may zoom in by pressing on the touch screen and drag the Frequency axis to the right or the Power axis up. To zoom out, drag the Frequency axis to the left or the Power axis down.

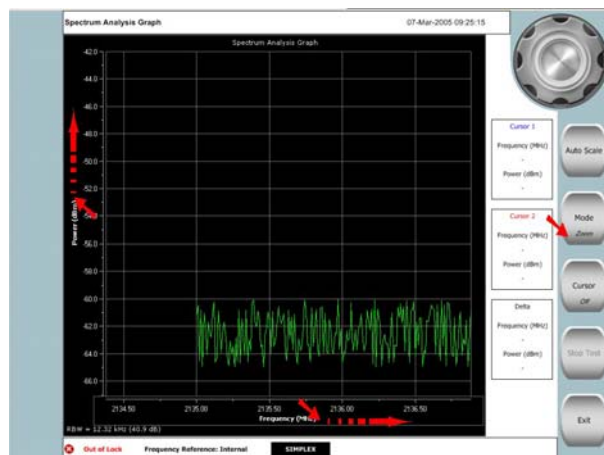


Figure 23: Zoom Mode



A user may use the **Cursor** function to mark the frequency he is interested in and calculate the difference in frequency and power between two cursor points. Cursors are turned off by default, to activate them press the **Cursor** button once. A dark blue line will appear in the middle of the screen with a tag attached. This is cursor 1. The user may drag the line to the frequency he interested in.

Alternatively, he may wish to use the spinwheel to scroll the cursor. The frequency and the power of the cursor position are shown both in the box between the buttons and display and also the tag attached to the cursor. The tag can be repositioned up and down along the cursor by selecting it, holding and dragging it.

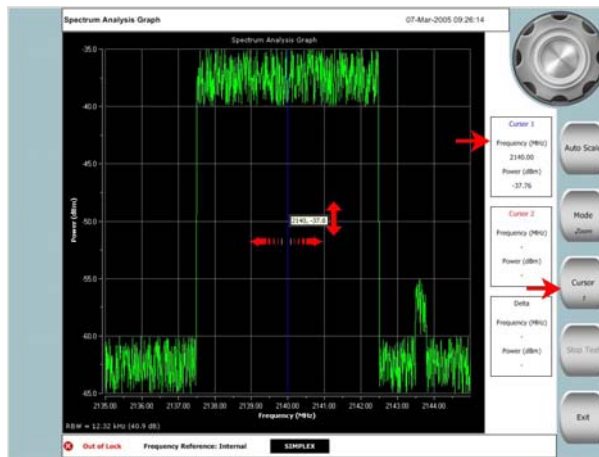


Figure 24: Cursor 1

By pressing the **Cursor** button once more. The second cursor, a dark red line appears. The control for this cursor is the same as cursor 1. The absolute frequency difference and absolute power difference will be displayed in the Delta box. If the user wants to change the position of cursor 1, he may achieve it by first selecting the cursor by pressing cursor 1 or it's tag, then move it to the new position.

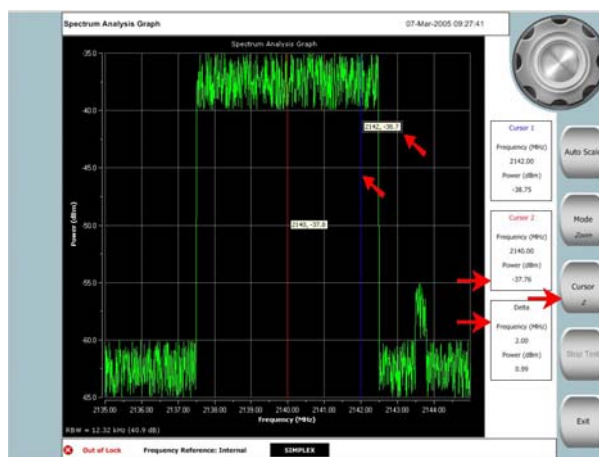


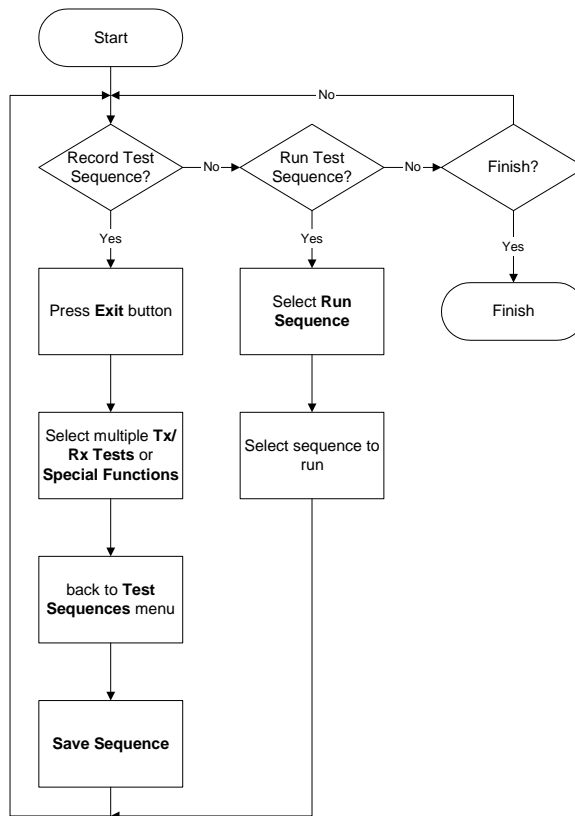
Figure 25: Cursor 1 & 2

To switch off all cursor, simply press the **Cursor** button again.



Test Sequences

The flow chart below describes how to record or run pre-recorded test sequence(s).





It is possible to create test sequences for a list of tests that need to be executed frequently. To record a test sequence, first press **Test Sequences**, located at the bottom left of the title screen; follow by **New Sequence**

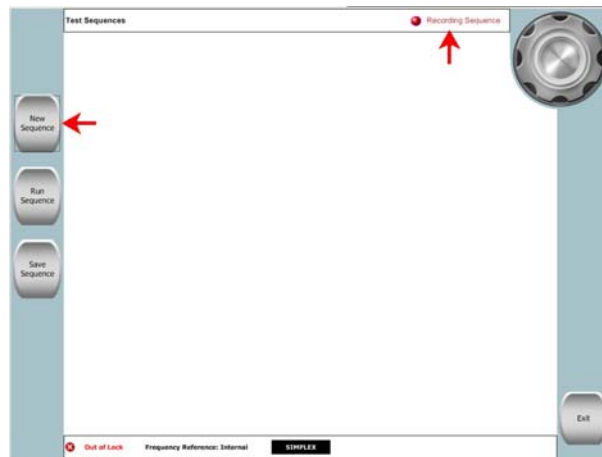


Figure 26: Test Sequence menu

Now title bar will show a flashing dot and “Recording Sequence”, indicating it is in recording mode. Press **Exit** to go back to title screen. The user can now start to record the desired test sequence by selecting the tests he wishes to run.

The process is identical to running individual tests except that the *test running* screen will not be shown. As for individual tests, the user may edit the test parameters for those tests and the program will record all the parameters associate with tests selected. The user should set the parameter *test mode* for all the tests that he would wish to run as *Single Shot Test*.

When finished recording, go back to **Test Sequences** and select **Save Sequence**. A window will pop up informing the user of the file name of the test sequence and the directory where it will be stored. At this point the user may change the target drive and directory using the **Up** and **Down** navigation buttons. Press **Save** to save the sequence.



Figure 27: Save sequence

Later, users may re-call the test sequence by pressing the **Run Sequence** button; a window will pop up allowing user to choose which sequence to run



Figure 28: Run Sequence



Results Header

A user may wish to change the result header for the test result document. This can be achieved by selecting the **Result Header** button on the main menu. An on-screen keyboard will pop up enable user to input *Operator Name, Comment, UUT Software Version and UUT Serial Numbers*.



Figure 29: Result Header menu



Test Results

A user may view all the tests executed by pressing the **Test Results** button on the title screen, located on the top right. This will produce the test results screen below:



Figure 30: Test Results menu

On this screen a user can view all the tests he has run, the date and time he ran them and the result of the test. It also allows users to save the results by pressing the **Save** button. A window similar to the test sequence saving window will pop up allowing a user to choose where to save the test results.



Figure 31: Save test result

A user may also load previously saved results by pressing the **Load** button. A similar window will appear allowing user to choose the test results to be loaded.



By pressing the **Test Report** button, a user is able to read through a more detail test report on every test performed. The user may read through the page by dragging the report and choose different pages by using the spinwheel or **Up** and **Down** navigation buttons.

By default, the report is zoomed such that the document width fit the display width. It is possible to view the whole page by pressing the **zoom** button. In addition, the user may view all the pages by pressing anywhere on the report twice. Press twice again on any page to view that page in single page mode.

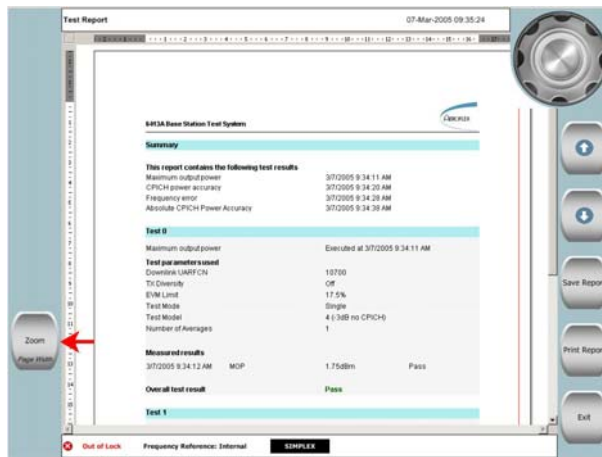


Figure 32: Test Report in default view

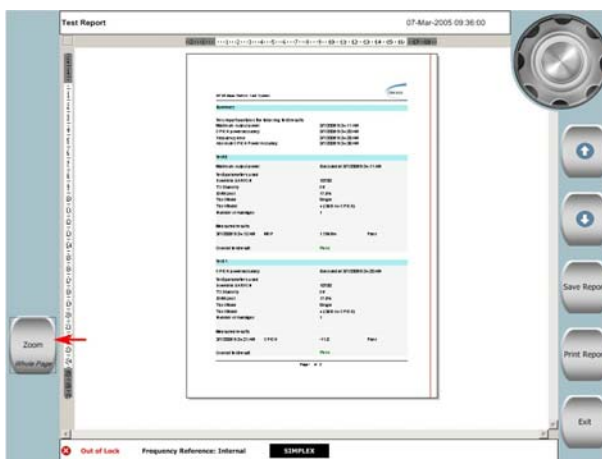


Figure 33: Test Report in single page view



Figure 34: Double click anywhere to view all

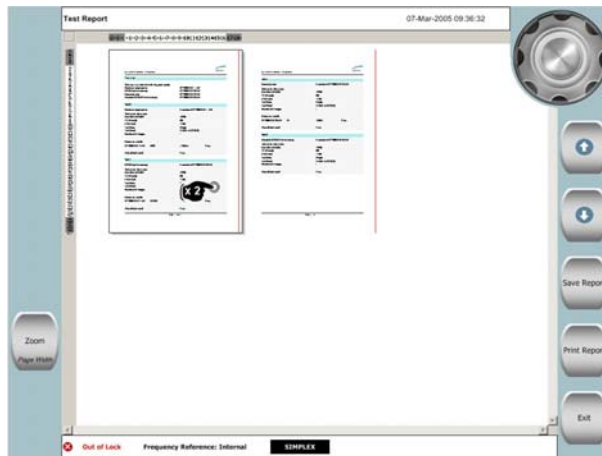


Figure 35: View all test report



In the **Test Report** view, a user may wish to save the report by pressing the **Save** Report button, so he may edit or view the report on other computers. Currently allowed saving formats are HTML, Rich Text or PDF. Once the format is chosen, a saving window will pop up, allowing user to chose where the report is going to be saved. The location may be to the local drive, or a USB pen style drive inserted into the unit.

A user may wish to record a new set of tests result by pressing the **Start New Log** button. If the previous tests results have not been saved, a dialog will come up to warn the user (below). If he still wants to proceed, the old results will be erased and another dialog will appear to indicate a new log has started.

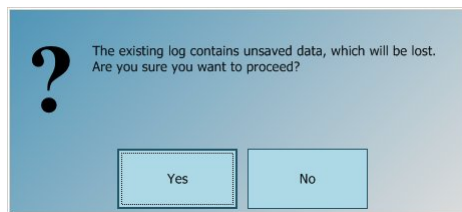


Figure 36: Test Result unsaved warning

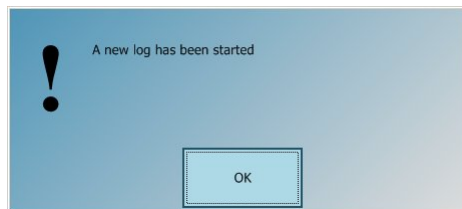


Figure 37: New Log warning



Options

Under the **Options** menu, a user can choose the Frequency Reference to be either *External*, *Internal*, *Net P* or *Net F*; switch Spinwheel on or off; change the RF connection mode between simplex and duplex; and alter the monitor contrast level. After any changes have been made, the user should press **Apply** on the bottom right corner to apply the new settings.



Figure 38: Options menu

On the left there are 4 buttons. The **Clean Screen** button switches off the touch screen for approximately 45 seconds, allowing user to clean the touch screen. **Only soft dry cloths should be used to clean the screen.**

The **About** button will displays an information screen which shows all software, hardware and FLEXIm license information for the product.

The **Self Test** button runs a self-test on the machine, and informs user of the results of the self tests. The self-test result will be saved automatically.

The **Restore Settings** button will change all the parameters and setting back to the factory defaults. A warning dialog will come up asking the user to confirm the process.

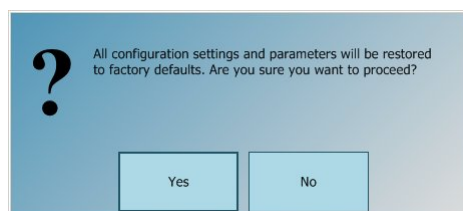


Figure 39: Restore Setting warning



Help

The 6413A has a built in help function that users can read through to understand what to do when problems occur. This User Guide covers everything from Aeroflex Services Support details, how to operate 6413A, troubleshooting, maintenance and the product specifications

Navigation within the help function is simple. The navigation button on the left allows a user to go **back** and **forward** through pages and the **Content** button allows a user to go back to the contents of the help file. Navigation is through the selection of hyperlinks on each page.

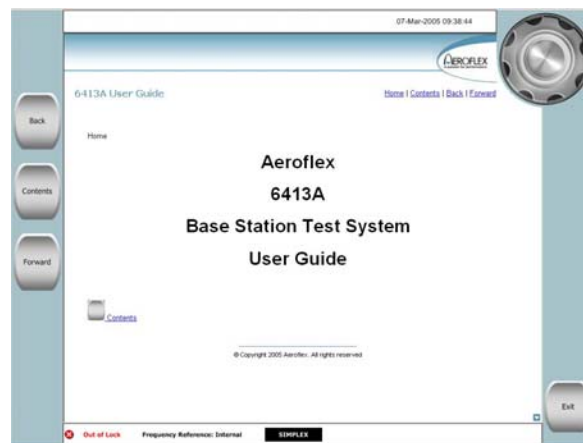


Figure 40: Help menu



Quit

To exit the program, simply press the **Exit** button on the bottom right. If there are unsaved test results, a warning will come up asking the user to confirm the action.

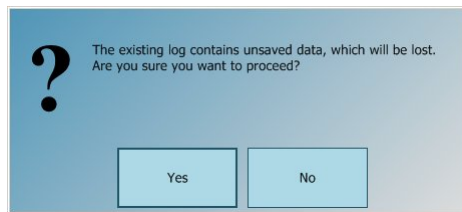


Figure 41: Test Results unsaved warning



Appendix

This appendix give full parameter lists for each of the functional tests

Note that greyed out fields indicate that the parameter is not user modifiable in that screen.

min value – max value means the user may input any integer number in the range of *min value* to *max value*.
min value: step size : max value means user may input any number in the range of *min value* to *max value*, in increment of *step size*.

Parameters for Functional Tests

Configure Iub Interface

Name	Default	Options	Definitions
Path Identifier	1	1 - 4294967295	Specifies the Path identifier in ALCAP message, defines the path transport channel ID
NBAP common 1 VPI	1	0 - 255	Specifies the Virtual Path Identifier (VPI), that NBAP will use
NBAP common 1 VCI	38	0 - 65535	Specifies the Virtual Channel Identifier (VCI), that NBAP will use.
NSAP	Depends on Node B	Depends on Node B	Specifies the NSAP number of Node B
IP over ATM VPI	1	0 - 255	Specifies the VPI for IP over ATM
IP over ATM VCI	32	0 - 65535	Specifies the VCI for IP over ATM
RNC side IP	10.209.128.130		Specifies the IP address for Radio Network Controller emulator
RNC side mask	255.255.255.0		Specifies the subnet mask for Radio Network Controller emulator
Node B side IP	10.209.128.128		Specifies the IP address for the Node B
Node B side mask	255.255.255.0		Specifies the subnet mask for the Node B
Node Synchronisation VPI	1	0 - 255	Specifies the VPI for Node Synchronisation
Node Synchronisation VCI	34	0 - 65535	Specifies the VCI for Node Synchronisation
Dedicated NBAP VPI	1	0 - 255	Specifies the VPI for Dedicated NBAP
Dedicated NBAP VCI	40	0 - 65535	Specifies the VCI for Dedicated NBAP
ALCAP VPI	1	0 - 255	Specifies the VPI for ALCAP
ALCAP VCI	42	0 - 65535	Specifies the VCI for ALCAP
AAL2 Traffic VPI	1	0 - 255	Specifies the VPI for AAL2 Traffic
AAL2 Traffic VCI	44	0 - 65535	Specifies the VCI for AAL2 Traffic



Parameters for Receivers Tests

Reference Sensitivity Level

As defined in 3GPP TS 25.141 section 7.2.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Uplink Scrambling Code	1000			Indicate the uplink scrambling code used by 6413A
Uplink Power	-120.3	dBm	-130: 0.1 : -55	Specifies the output power of RF out on 6413A
Data Rate	12.2	kbps		Indicate the data rate of the uplink channel
BER Limit	0.001		0: 0.001 : 1	Specifies the BER value that should not be exceeded or test will fail. As defined in 3GPP TS 25.141 section 7.2
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>No. bits for BER measurement</i> denotes the number of bits taken before a new result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
No. bits for BER measurement	50000	bits	10 ⁴ : 10 ⁴ : 10 ⁹	Specifies numbers of bit to be sent for BER test measurement.
Downlink Power	42	dBm	0: 0.1 :42	Indicates the power output by Node B Tx
Cumulative Mode	Off		Off, On	Enable/Disable performing test cumulatively



Dynamic Range

As defined in 3GPP TS 25.141 section 7.3.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Uplink Scrambling Code	1000			Indicate the uplink scrambling code used by 6413A
Uplink Wanted Signal Power	-89.8	dBm	-130 : 0.1 : -55	Specifies the Uplink Wanted Signal Power, which will affected the BER. As defined in 3GPP TS 25.141 section 7.2
Interfering AWGN Absolute Power	-73	dBm/3.84MHz	-130 : 0.1 : -55	Specifies the Interfering AWGN Absolute Power, which will affected the BER. As defined in 3GPP TS 25.141 section 7.2
Data Rate	12.2	kbps		Indicate the data rate of the uplink channel
BER Limit	0.001		0: 0.001 : 1	Specifies the BER value that should not be exceed or test will be failed. As defined in 3GPP TS 25.141 section 7.2
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>No. bits for BER measurement</i> denotes the number of bits taken before a new result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
No. bits for BER measurement	50000	bits	10 ⁴ : 10 ⁴ : 10 ⁹	Specifies numbers of bit to be sent for BER test measurement.
Downlink Power	42	dBm	0: 0.1 :42	Indicates the power output by Node B Tx
Cumulative Mode	Off		Off, On	Enable/Disable performing test cumulatively



Uplink Wideband Power

Additional Test to 3GPP.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Uplink Scrambling Code	1000			Indicate the uplink scrambling code used by 6413A
Uplink Power	-120.3	dBm	-130: 0.1 : -55	Specifies the output power of RF out on 6413A
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>No. bits for BER measurement</i> denotes the number of bits taken before a new result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Downlink Power	42	dBm	0: 0.1 :42	Indicates the power output by Node B Tx
Wideband Power Error Limit	2.9	dB	0: 0.1 :10	
Actual Lower Limit	-123.2			Together with upper limit, indicated where the uplink power should remain within.
Actual Upper Limit	-117.4			Together with lower limit, indicated where the uplink power should remain within.



Absolute Sensitivity

Additional Test to 3GPP.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Uplink Scrambling Code	1000			Indicate the uplink scrambling code used by 6413A
Date Rate	12.2	kbps		Indicate the data rate of the uplink channel
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>No. bits for BER measurement</i> denotes the number of bits taken before a new result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Downlink Power	42	dBm	0: 0.1 :42	Indicates the power output by Node B Tx
Absolute Sensitivity Uplink Start Power	-120	dBm	-133.6: 0.5 :-110	
Absolute Sensitivity Limit	-122	dBm	-133.6: 0.5 :-110	



Parameters for Transmitter Tests

Maximum Output Power (MOP)

As defined in 3GPP TS 25.141 section 6.2.1.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	1 (16DPCH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Number of Averages	1		1 - 100, infinite	Indicate the machine to take how many test result to generate the output, infinite means generate running average
Downlink Power	42	dBm		Indicates the power output by Node B Tx
Expected Output Power	0	dBm		The expected power from Node B
Actual Lower Limit	-2.7	dB		Together with upper limit, indicated where the output power should remain within. As defined in 3GPP TS 25.141 section 6.2.1
Actual Upper Limit	2.7	dB		Together with lower limit, indicated where the output power should remain within. As defined in 3GPP TS 25.141 section 6.2.1



Error Vector Magnitude (EVM)

As defined in 3GPP TS 25.141 section 6.7.1.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
EVM Limit	17.5	%	0: 0.1 :25	Specifies the EVM threshold, exceed such threshold will fail the test. As defined in 3GPP TS 25.141 section 6.7.1.
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	4 (-3dB no CPICH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Number of Averages	1		1 - 100, infinite	Indicate the machine to take how many test result to generate the output, infinite means generate running average
Downlink Power	39	dBm		Indicates the power output by Node B Tx



Peak Code Domain Error (PCDE)

As defined in 3GPP TS 25.141 section 6.7.2.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
PCDE Limit	-33	dB	-50: 0.1 : 0	Specifies the PCDE threshold, exceed such threshold will fail the test. As defined in 3GPP TS 25.141 section 6.7.2.
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	3 (16 DPCH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Number of Averages	1		1 - 100, infinite	Indicate the machine to take how many test result to generate the output, infinite means generate running average
Downlink Power	42	dBm		Indicates the power output by Node B Tx



Frequency Error (FE)

As defined in 3GPP TS 25.141 section 6.3.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Allowed Frequency Measurement Error	12	Hz	0: 0.01 :20	Specifies the allowed frequency measurement error in Frequency Limit, as defined in 3GPP TS 25.141 section 6.3
Frequency Limit (ppm)	0.05	ppm	0: 0.001 :0.5	Specifies the Frequency Error in ppm. As defined in 3GPP TS 25.141 section 6.3
Frequency Limit (Hz)	117	Hz		This value is calculated as follow: $f_{\text{downlink}} \times f_{\text{limit(ppm)}} + f_{\text{error}}$ exceed this limit will fail the test.
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	3 (16 DPCH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Number of Averages	4		1 - 100, infinite	Indicate the machine to take how many test result to generate the output, infinite means generate running average
Downlink Power	39	dBm		Indicates the power output by Node B Tx



CPICH Power Accuracy (CPICH)

As defined in 3GPP TS 25.141 section 6.2.2.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	2		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Number of Averages	1		1 - 100, infinite	Indicates the machine to take how many test result to generate the output, infinite means generate running average
Expected Relative CPICH Power	0	dBm		Indicates the power relative to maximum output power, depends on test model.
CPICH Power Error Limit	2.9	dB	0: 0.1 :10	Specifies the CPICH Power Error, exceed such error will fail the test. As defined in 3GPP TS 25.141 section 6.2.2
Downlink Power	42	dBm		Indicates the power output by Node B Tx



Adjacent Channel Leakage Ratio (ACLR)

As defined in 3GPP TS 25.141 section 6.5.2.2.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	1 (16 DPCH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
ACLR Adjacent Channel Limit	44.2	dB	0: 0.1: 100	Specifies the power level, when exceed by Adjacent channel (5MHz offsets both side of channel frequency) will fail the test. As defined in 3GPP TS 25.141 section 6.5.2.2
ACLR Alternate Channel Limit	49.2	dB	0: 0.1 :100	Specifies the power level, when exceed by Alternative channel (10MHz offsets both side of channel frequency) will fail the test. As defined in 3GPP TS 25.141 section 6.5.2.2
Downlink Power	42	dBm		Indicates the power output by Node B Tx



Absolute CPICH Power Accuracy

Additional Test to 3GPP

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Number of Averages	1		1 - 100, infinite	Indicate the machine to take how many test result to generate the output, infinite means generate running average
CPICH Power Error Limit	2.9	dB	0: 0.1 :10	Specifies the CPICH Power Error, exceed such error will fail the test. As defined in 3GPP TS 25.141 section 6.2.2
Downlink Power	42	dBm		Indicates the power output by Node B Tx
Absolute CPICH Power	39	dBm	-10: 0.1 :42	Specifies the power output by CPICH



Occupied Bandwidth

As defined in 3GPP TS 25.141 section 6.5.1.

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
Uplink UARFCN	9750		9600 - 9900 for Region 1, 3 9250 - 9550 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the uplink. Equal to 5 x Uplink Frequency.
Uplink Frequency	1950	MHz	1920 - 1980 for Region 1, 3 1850 - 1910 for Region 2	Uplink Frequency is calculated by the Uplink UARFCN
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	Basic Cell (no DPCH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Downlink Power	42	dBm		Indicates the power output by Node B Tx
Occupied Bandwidth Limit	5	MHz	1: 0.1 :10	Specifies the width of a frequency band such that, the mean power emitted should be 0.5% of the total mean transmitted power. As defined in 3GPP TS 25.141 section 6.5.1



Parameters for Special Functions

Multi Mode

Name	Default	Units (if applicable)	Options	Definitions
TX Diversity	Off		Off	Enable/Disable TX Diversity option.
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Downlink Primary Scrambling Code	0		0 - 511	Specifies the primary scrambling code for the Node B
EVM Limit	17.5	%	0: 0.1 :25	Specifies the EVM threshold, exceed such threshold will fail the test. As defined in 3GPP TS 25.141 section 6.7.1.
Allowed Frequency Measurement Error	12	MHz	0: 0.01 :20	Specifies the allowed frequency measurement error in Frequency Limit, as defined in 3GPP TS 25.141 section 6.3
Frequency Limit (ppm)	0.05	ppm	0: 0.001 :0.5	Specifies the Frequency Error in ppm. As defined in 3GPP TS 25.141 section 6.3
PCDE Limit	-33	dB	-50: 0.1 : 0	Specifies the PCDE threshold, exceed such threshold will fail the test. As defined in 3GPP TS 25.141 section 6.7.2.
Frequency Limit (Hz)	117	Hz		This value is calculated as follow: $f_{\text{downlink}} \times f_{\text{limit(ppm)}} + f_{\text{error}}$ exceed this limit will fail the test.
Test Mode	Single		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Test Model	4 (-3dB no CPICH)		1 (64 DPCH), 1 (32 DPCH), 1 (16 DPCH), 2, 3 (32 DPCH), 3 (16 DPCH) 4 (-3dB w/ CPICH), 4 (-3dB w/o CPICH) 4 (-18dB w/ CPICH), 4 (-18dB w/o CPICH) Basic Cell (no DPCH)	Specifies a test model to be used for testing. Test models are defined in 3GPP TS 25.141 section 6.1.1
Number of Averages	1		1 - 100, infinite	Indicate the machine to take how many test result to generate the output, infinite means generate running average

**Multi Mode (cont'd)**

Name	Default	Units (if applicable)	Options	Definitions
Expected Relative CPICH Power	0	dBm		Indicates the power relative to maximum output power, depends on test model.
CPICH Power Error Limit	2.9	dB	0: 0.1 :10	Specifies the CPICH Power Error, exceed such error will fail the test. As defined in 3GPP TS 25.141 section 6.2.2
Downlink Power	39	dBm		Indicates the power output by Node B Tx
Expected Output Power	0	dBm		The expected power from Node B
Actual Lower Limit	-2.7	dB		Together with upper limit, indicated where the output power should remain within. As defined in 3GPP TS 25.141 section 6.2.1
Actual Upper Limit	2.7	dB		Together with lower limit, indicated where the output power should remain within. As defined in 3GPP TS 25.141 section 6.2.1



Spectrum Analysis Graph

Name	Default	Units (if applicable)	Options	Definitions
Local Cell ID	Not set		Depends on Node B	Specifies the identity of a configured cell
Downlink UARFCN	10700		10550 - 10850 for Region 1, 3 9650 - 9950 for Region 2	Specifies the UTRA Absolute Radio Frequency Channel Number of the downlink. Equal to 5 x Downlink Frequency.
Downlink Frequency	2140	MHz	2110 - 2170 for Region 1, 3 1930 - 1990 for Region 2	Downlink Frequency is calculated by the Downlink UARFCN
Test Mode	Continuous		Single, Continuous, Continuous with log	Single Mode: Test will be run once and the result will be logged. Continuous Mode: Test will be run continuously. The parameter <i>Number of Averages</i> denotes the number of tests will be run before an average result is displayed. Only the last result will be logged. Continuous with log: Same as Continuous Mode except every test result will be logged
Average Length	10		1 - 100, infinite	Specifies how many trace are taken for drawing the graph
Downlink Power	42	dBm	0: 0.1 :42	Indicates the power output by Node B Tx