Agilent Technologies 8960 Series 10 E5515B,C,T Wireless Communications Test Set

Manual Operation: Getting Started Guide

AMPS/136 Mobile Test Application E1961A Revision: A.04
cdma2000/IS-2000 Mobile Test Application E1962A Revision A.01, E1962B Revision: B.01
GPRS Mobile Test Application E1964A Revision: A.01
GSM Mobile Test Application E1960A Revision: A.07
GSM_AMPS/136 Fast Switch Mobile Test Application E1985A Revision: A.01

Agilent Part No: 5967-5124

Print Date: March 2001

Agilent Technologies

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

Edition/Print Date

All Editions and Updates of this manual and their creation dates are listed below.

March 2001 - 5967-5124

Safety Summary

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.

GENERAL

This product is a Safety Class 1 instrument (provided with a protective earth terminal). The protective features of this product may be impaired if it is used in a manner not specified in the operation instructions.

All Light Emitting Diodes (LEDs) used in this product are Class 1 LEDs as per IEC 60825-1.

This product has been designed and tested in accordance with *IEC Publication 1010*, "Safety Requirements for Electronic Measuring Apparatus," and has been supplied in a safe condition. This instruction documentation contains information and warnings which must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

ENVIRONMENTAL CONDITIONS

This instrument is intended for indoor use in an installation category II, pollution degree 2 environment. It is designed to operate at a maximum relative humidity of 95% and at altitudes of up to 2000 meters. Refer to the specifications tables for the ac mains voltage requirements and ambient operating temperature range.

Ventilation Requirements: When installing the product in a cabinet, the convection into and out of the product must not be restricted. The ambient temperature (outside the cabinet) must be less than the maximum operating temperature of the product by 4° C for every 100 watts dissipated in the cabinet. If the total power dissipated in the cabinet is greater than 800 watts, then forced convection must be used.

BEFORE APPLYING POWER

Verify that the product is set to match the available line voltage, the correct fuse is installed, and all safety precautions are taken. Note the instrument's external markings described under Safety Symbols.

GROUND THE INSTRUMENT

To minimize shock hazard, the instrument chassis and cover must be connected to an electrical protective earth ground. The instrument must be connected to the ac power mains through a grounded power cable, with the ground wire firmly connected to an electrical ground (safety ground) at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

FUSES

Only fuses with the required rated current, voltage, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuse holders. To do so could cause a shock or fire hazard.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE

Do not operate the instrument in the presence of flammable gases or fumes.

DO NOT REMOVE THE INSTRUMENT COVER

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made only by qualified service personnel.

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

WARNING **The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.**

CAUTION The CAUTION sign denotes a hazard. It calls attention to an operating procedure, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

Safety Symbols


Caution, refer to accompanying documents


Warning, risk of electric shock


Earth (ground) terminal


Alternating current


Frame or chassis terminal


Standby (supply). Units with this symbol are not completely disconnected from ac mains when this switch is off.

To completely disconnect the unit from ac mains, either disconnect the power cord, or have a qualified electrician install an external switch.

Product Markings

CE - the CE mark is a registered trademark of the European Community. A CE mark accompanied by a year indicated the year the design was proven.

CSA - the CSA mark is a registered trademark of the Canadian Standards Association.

CERTIFICATION

Agilent Technologies certifies that this product met its published specifications at the time of shipment from the factory. Agilent Technologies further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by the Institute's calibration facility, and to the calibration facilities of other International Standards Organization members

Agilent Technologies Warranty Statement for Commercial Products

Agilent Technologies 8960 Series 10 E5515B,C,T Wireless Communications Test Set,
AMPS/136 Mobile Test Application E1961A
cdma2000 Mobile Test Application E1962B
GPRS Mobile Test Application E1964A
GSM Mobile Test Application E1960A
IS-2000 Mobile Test Application E1962A

Duration of Warranty: 1 year

1. Agilent Technologies warrants Agilent Technologies hardware, accessories and supplies against defects in materials and workmanship for the period specified above. If Agilent Technologies receives notice of such defects during the warranty period, Agilent Technologies will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or like-new.
2. Agilent Technologies warrants that Agilent Technologies software will not fail to execute its programming instructions, for the period specified above, due to defects in material and workmanship when properly installed and used. If Agilent Technologies receives notice of such defects during the warranty period, Agilent Technologies will replace software media which does not execute its programming instructions due to such defects.
3. Agilent Technologies does not warrant that the operation of Agilent Technologies products will be uninterrupted or error free. If Agilent Technologies is unable, within a reasonable time, to repair or replace any product to a condition as warranted, customer will be entitled to a refund of the purchase price upon prompt return of the product.
4. Agilent Technologies products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. The warranty period begins on the date of delivery or on the date of installation if installed by Agilent Technologies. If customer schedules or delays Agilent Technologies installation more than 30 days after delivery, warranty begins on the 31st day from delivery.

6. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by Agilent Technologies, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.
7. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL IS EXPRESSED OR IMPLIED AND AGILENT TECHNOLOGIES SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OR MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.
8. Agilent Technologies will be liable for damage to tangible property per incident up to the greater of $300,000 or the actual amount paid for the product that is the subject of the claim, and for damages for bodily injury or death, to the extent that all such damages are determined by a court of competent jurisdiction to have been directly caused by a defective Agilent Technologies product.
9. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL AGILENT TECHNOLOGIES OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

   FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

ASSISTANCE

Product maintenance agreements and other customer assistance agreements are available for Agilent Technologies products. For any assistance, contact your nearest Agilent Technologies Sales and Service Office.

Service and Support

Any adjustment, maintenance, or repair of this product must be performed by qualified personnel. Contact your customer engineer through your local Agilent Technologies Service Center. You can find a list of local service representatives on the Web at:

http://www.agilent-tech.com/services/English/index.html

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

United States Test and Measurement Call Center
(Toll free in US)

(800) 452-4844

Europe

(31 20) 547 9900

Canada

(905) 206-4725

Japan Measurement Assistance Center

(81) 426 56 7832
(81) 426 56 7840 (FAX)

Latin America

(305) 267 4288 (FAX)

Australia/New Zealand

1 800 629 485 (Australia)
0800 738 378 (New Zealand)

Asia-Pacific

(852) 2599 7777
(852) 2506 9285 (FAX)

Regional Sales Offices

United States of America:
Agilent Technologies
Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026
(tel) 1 800 452 4844

Canada:
Agilent Technologies Canada Inc.
2660 Matheson Blvd. E
Mississauga, Ontario
L4W 5G1
(tel) 1 877 894 4414

Europe:
Agilent Technologies
European Marketing Organization
P.O. Box 999
1180 AZ Amstelveen
The Netherlands
(tel) (3120) 547 9999

Japan:
Agilent Technologies Japan Ltd.
Measurement Assistance Center
9-1 Takakura-Cho, Hachioji-Shi,
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(tel) (81) 456-56-7832
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(fax) (305) 267 4286

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Forest Hill, Victoria 3131
6881

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(fax) (61 3) 9272 0749

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(tel) 0 800 738 378
(fax) (64 4) 802

Asia Pacific:

Agilent Technologies
24/F, Cityplaza One,
111 Kings Road,
Taikoo Shing, Hong Kong

(tel) (852) 3197 7777
(fax) (852) 2506 9233

Declaration of Conformity

According to ISO/IEC Guide 22 and CEN/CENELEC EN 45014

Manufacturer's Name	**Agilent Technologies UK Limited**	**Agilent Technologies, Incorporated**
Manufacturer's Address	Electronics Products & Solutions Group - Queensferry South Queensferry West Lothian, EH30 9TG Scotland, United Kingdom	RF Communications PGU 24001 E. Mission Avenue Liberty Lake, Washington 99019-9599 USA
Declares, that the product		
Product Name:	8960 Series 10 Wireless Communications Test Set	
Model Number:	**E5515B**	
Product Options:	This declaration covers all options of the above product.	

Conforms with the following European Directives

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC (including 93/68/EEC) and carries the CD Marking accordingly.

Conforms with the following product standards:

EMC	**Standard**	**Limit**
	IEC 61326-1:1997+A1:1998/EN 61326-1:1997+A1:1998	
	CISPR 11:1990 / EN 55011:1991	Group 1 Class A [1]
	IEC 61000-4-2:1995+A1:1998 / EN 61000-4-2:1995	4kV CD, 8kV AD
	IEC 61000-4-3:1995 / EN 61000-4-3:1995	3 V/m, 80-1000 MHz
	IEC 61000-4-4:1995 / EN 61000-4-4:1995	0.5V signal lines, 1kV power lines
	IEC 61000-4-5:1995 / EN 61000-4-5:1995	0.5 kV line-line, 1 kV line-ground
	IEC 61000-4-6:1996 / EN 61000-4-6:1996	3V, 0.15-80 MHz
	IEC 61000-4-11:1994 / EN 61000-4-11:1994	1 cycle, 100%
Safety	IEC 61010-1:1990+A1:1992+A2:1995 / EN 61010-1:1993+A2:1995 Canada CSA C22.2 No. 1010.1:1992	

Supplemental Information:

[1] The product was tested in a typical configuration with Agilent Technologies test systems

14 December 2000

R.M. Evans / Quality Manager

14 December 2000

W. V. Roland / Reliability & Regulatory Engineering Manager

For further information, please contact your local Agilent Technologies sales office, agent or distributor. Authorized EU-representative: Agilent Technologies Deutschland, GmbH, Herrenberger Strabe 130, D 71034 Boblingen, Germany

Declaration of Conformity

According to ISO/IEC Guide 22 and CEN/CENELEC EN 45014

Manufacturer's Name	**Agilent Technologies, Incorporated**	**Agilent Technologies, Incorporated**
Manufacturer's Address	Electronics Products & Solutions Group - Queensferry South Queensferry West Lothian, EH30 9TG Scotland, United Kingdom	
Declares, that the product		
Product Name:	8960 Series 10 Wireless Communications Test Set	
Model Number:	**E5515T**	
Product Options:	This declaration covers all options of the above product.	

Conforms with the following European Directives

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC (including 93/68/EEC) and carries the CD Marking accordingly.

Conforms with the following product standards:

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	IEC 61326-1:1997+A1:1998 / EN 61326-1:1997+A1:1998	
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	IEC 61000-4-2:1995+A1:1998 / EN 61000-4-2:1995	4kV CD, 8kV AD
	IEC 61000-4-3:1995 / EN 61000-4-3:1995	3 V/m, 80-1000 MHz
	IEC 61000-4-4:1995 / EN 61000-4-4:1995	0.5V signal lines, 1kV power lines
	IEC 61000-4-5:1995 / EN 61000-4-5:1995	0.5 kV line-line, 1 kV line-ground
	IEC 61000-4-6:1996 / EN 61000-4-6:1996	3V, 0.15-80 MHz
	IEC 61000-4-11:1994 / EN 61000-4-11:1994	1 cycle, 100%
Safety	IEC 61010-1:1990+A1:1992+A2:1995 / EN 61010-1:1993+A2:1995 Canada CSA C22.2 No. 1010.1:1992	

Supplemental Information:

[1] The product was tested in a typical configuration with Agilent Technologies test systems

14 December 2000

W. V. Roland / Reliability & Regulatory Engineering Manager

For further information, please contact your local Agilent Technologies sales office, agent or distributor. Authorized EU-representative: Agilent Technologies Deutschland, GmbH, Herrenberger Strabe 130, D 71034 Boblingen, Germany

Manufacturer's Declaration

This statement is provided to comply with the requirements of the German Sound Emission Directive, from 18 January 1991.

This product has a sound pressure emission (at the operator position) < 70 dB(A).

- Sound Pressure Lp < 70 dB(A).
- At Operator Position.
- Normal Operation.
- According to ISO 7779:1988/EN 27779:1991 (Type Test).

Herstellerbescheinigung

Diese Information steht im Zusammenhang mit den Anforderungen der Maschinenlärminformationsverordnung vom 18 Januar 1991.

- Schalldruckpegel Lp < 70 dB(A).
- Am Arbeitsplatz.
- Normaler Betrieb.
- Nach ISO 7779:1988/EN 27779:1991 (Typprüfung).

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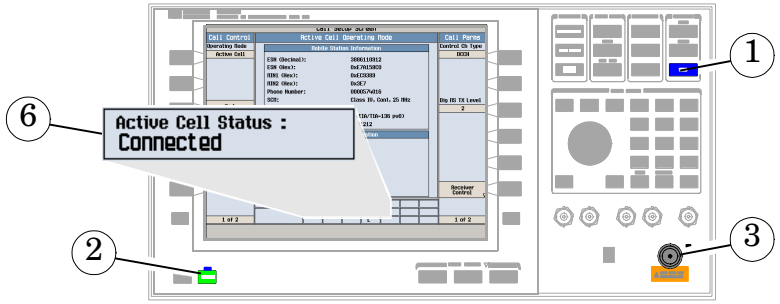
1 AMPS/136 Mobile Test Application

How Do I Make Measurements on a Mobile?

A. Establish a call.

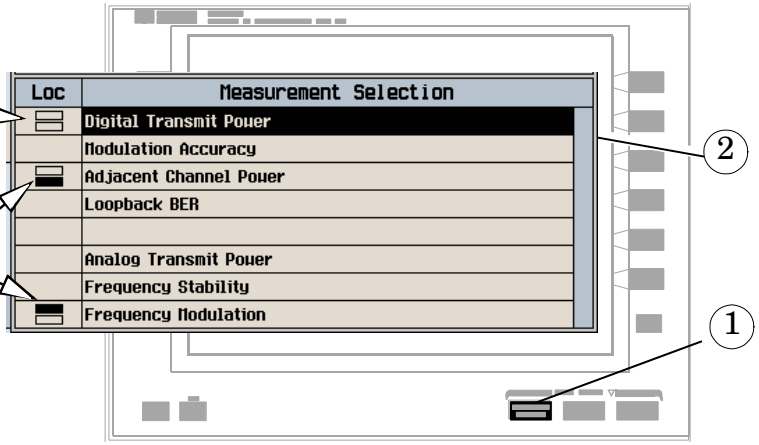


1. Press the blue **SHIFT** key.
2. Press the green **PRESET** key.
3. Connect the mobile to the RF IN/OUT port.
4. Turn the mobile on and wait for it to camp.
5. On the mobile, press 1, 2, 3, then press send.
6. Check for `Connected` in the `Active Cell Status:` field.

B. Select measurements.

The gray boxes indicate that the measurement is being made, but the results are not being displayed.

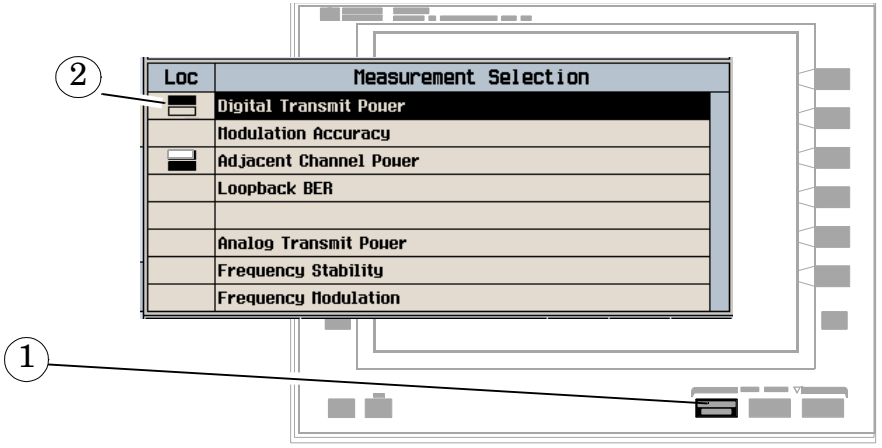
These black boxes indicate that adjacent channel power measurement results are being displayed in the lower measurement window, and frequency modulation measurement results are being displayed in the upper measurement window.



1. Press the Measurement selection key.
2. Highlight a measurement and press the knob.
3. Repeat steps 1 and 2 to add measurements.

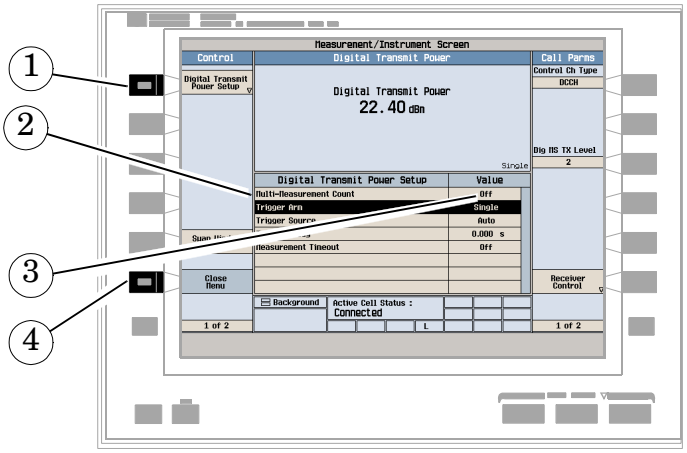
How Do I Change Measurement Setup?

A. Select a measurement.



1. Press the **Measurement selection** key.
2. Highlight a measurement to setup (the measurement must already be enabled) and press the knob.

B. Set up the measurement.



1. Press the measurement's setup key (**F1**).
2. Highlight a parameter and press the knob.
3. Enter a value or selection and press the knob.

NOTE For statistical measurement results, change the `Multi-Measurement Count` parameter from `Off` to a number >1.

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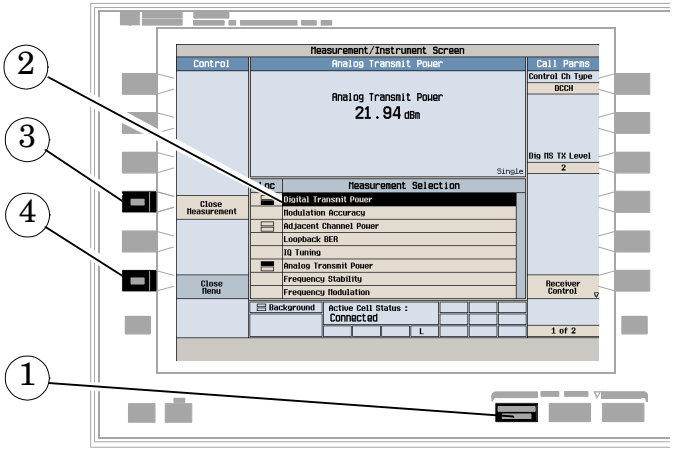
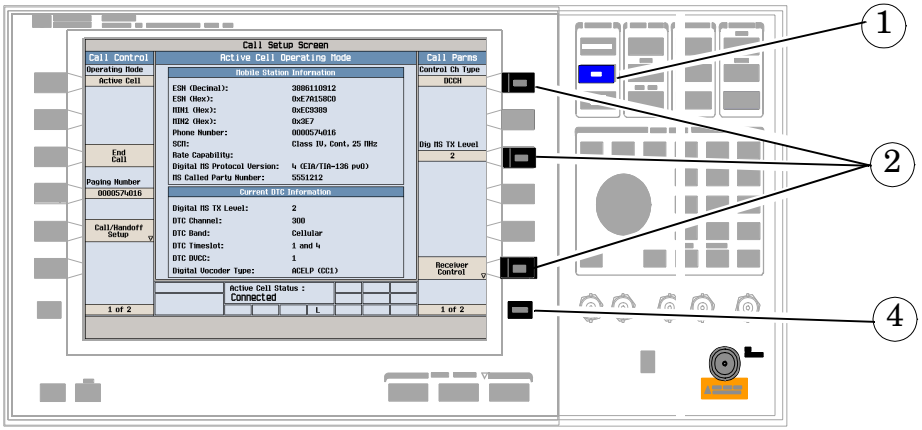
4. Press the `Close Menu` (**F6**) key.

How Do I Turn Off a Measurement?



1. Press the **Measurement selection** key.
2. Highlight the measurement you want to turn off.
3. Press the `Close Measurement` (**F4**) key.
4. Press the `Close Menu` (**F6**) key.

How Do I Change Call Parameters?



1. Press the **CALL SETUP** key.
2. On the Call Parms menu (1 of 2) press **F7**, **F9** or **F12**.
3. Enter a value or highlight a selection and press the knob.
4. Press the **More** key for additional call parameters.

How do I change the MS TX Level?

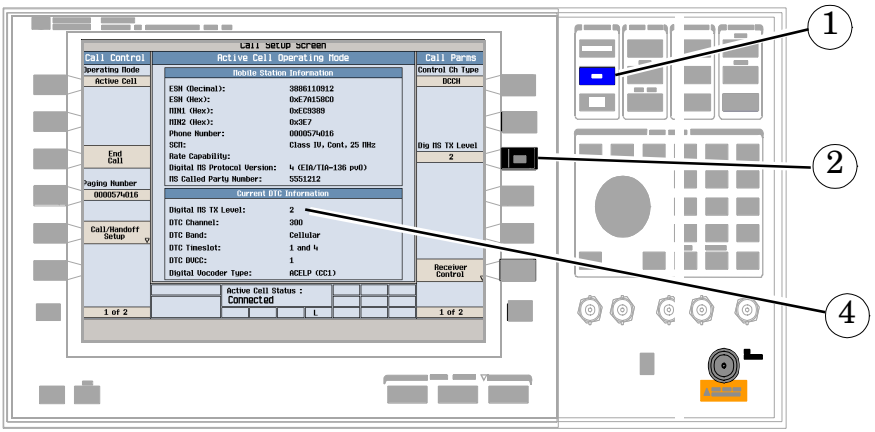
There are two ways to change the MS TX Level:

A. Change level immediately

B. Change level during a handoff

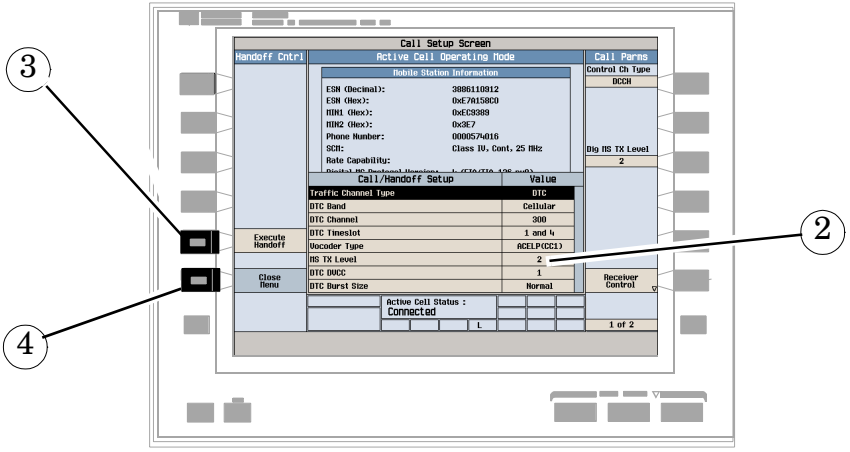
Both are explained below.

A. Change the digital MS TX level immediately.



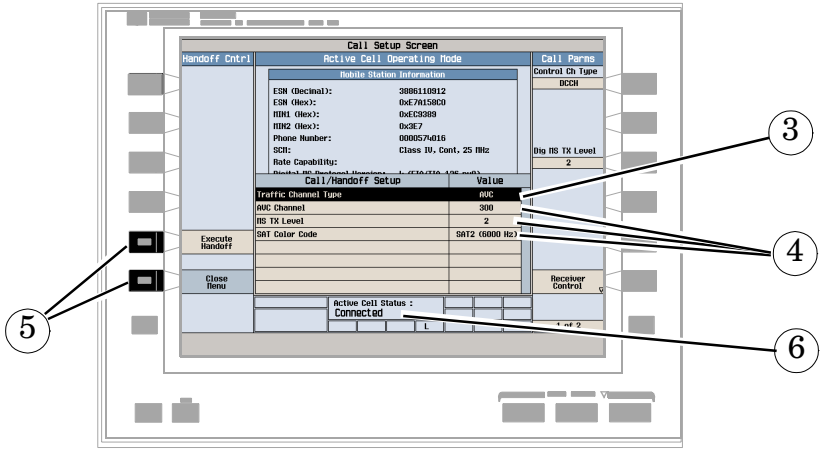
1. Press the **CALL SETUP** key.
2. On Call Parms menu (1 of 2), press the `Dig MS TX Level` (**F9**) key.
3. Select a new MS TX level and press the knob.
4. Check the current traffic channel info to see the new MS TX level.

B. Change the MS TX level during a handoff.



1. On Call Control menu, press the `Call/Handoff Setup` (**F5**) key.
2. Select and change the `MS TX Level`.
3. If you press the `Execute Handoff` (**F5**) key, the digital MS TX level changes.
4. If you abort the handoff by pressing the `Close Menu` (**F6**) key, digital MS TX level does not change.

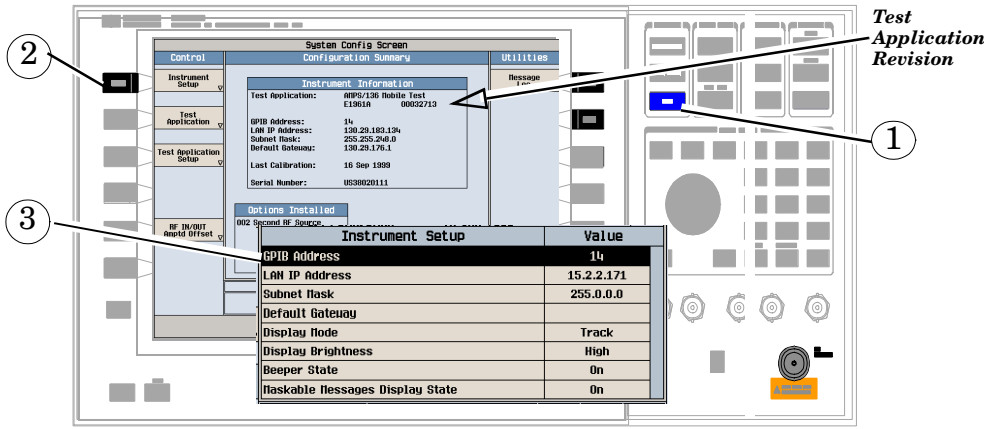
How do I Perform a Handoff?



1. Press the **CALL SETUP** key.
2. Press the `Call/Handoff Setup` (**F5**) key.
3. Select the type of channel to hand off to (AVC or DTC).
4. Change the various parameters for the AVC or DTC.
5. Press the `Execute Handoff` (**F5**) key to complete the handoff, or press the `Close Menu` (**F6**) key to abort the handoff.
6. Check for `Connected` in the `Active Cell Status:` field.
7. Note the change in the current traffic channel information.

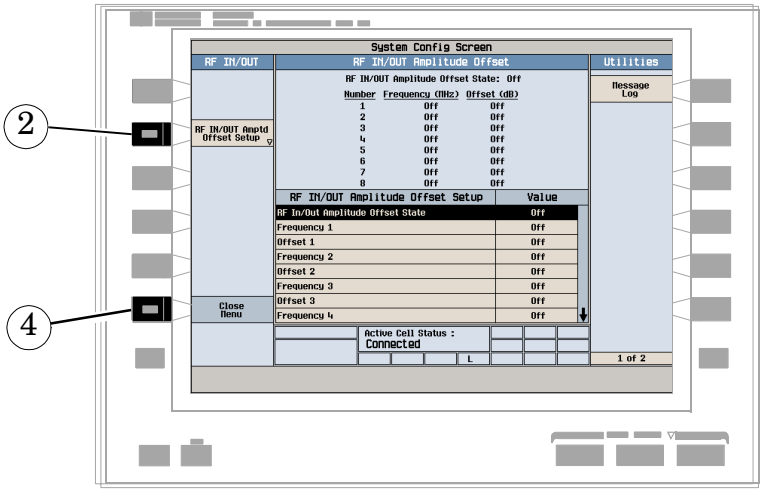
How Do I Configure the Test Set for My Test System?

A. Configure instrument information and setup.



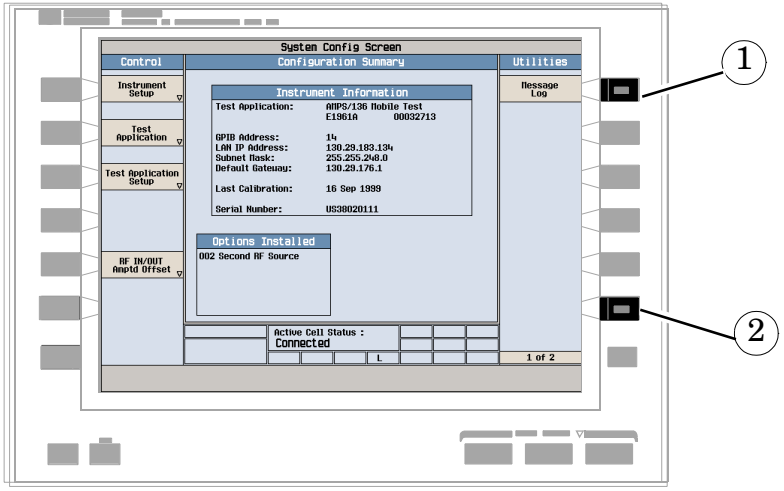
1. Press the **SYSTEM CONFIG** key.
2. Press the `Instrument Setup` (**F1**) key.
3. Adjust an instrument setting and then press the `Close Menu` (**F6**) key.

B. Set amplitude offsets.



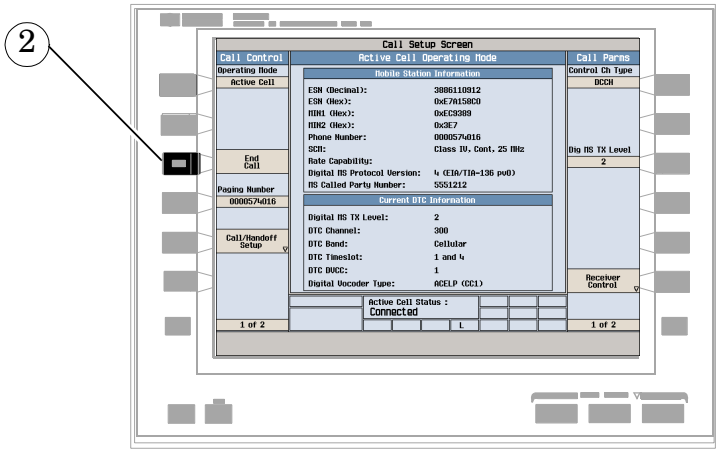
1. On the Configuration Summary Screen, press the `RF IN/OUT Amptd Offset` (**F5**) key.
2. On the RF IN/OUT Amplitude Offset screen, press the `RF IN/OUT Amptd Offset Setup` (**F2**) key.
3. Enter the amplitude offset for the test frequencies you use.
4. Press the `Close Menu` (**F6**) key.
5. Press the `Return to Config Summary` (**F6**) key.

C. Check the message log.



1. Press the `Message Log` (**F7**) key and view the message log.
2. Press the`Return to Utilities` (**F12**) key.

How Do I End a Call?

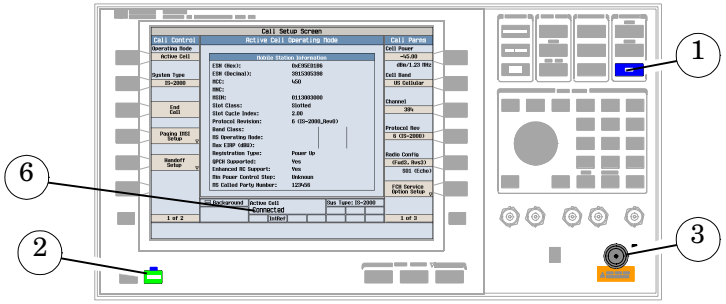


1. Press the **CALL SETUP** key.
2. Press the `End Call` (**F3**) key, or end the call from the mobile.
3. Check for `Idle` in the `Active Cell Status:` field.

2 cdma2000/IS-2000 Mobile Test Application

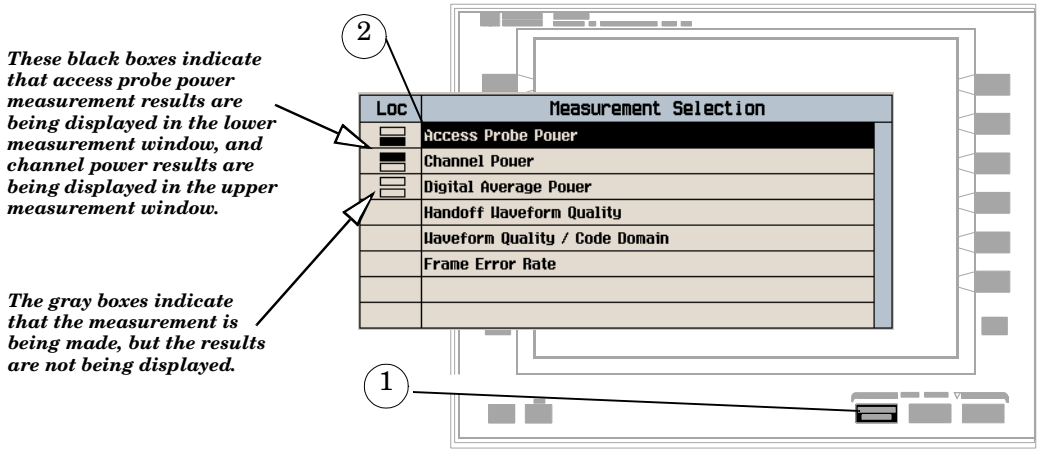
How Do I Make Measurements on a Mobile?

A. Establish a call.



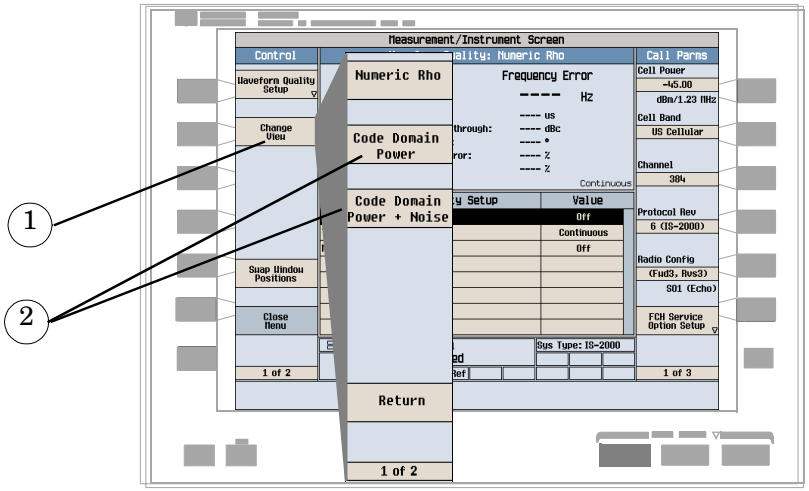
1. Press the blue **SHIFT** key.
2. Press the green **PRESET** key.
3. Connect the mobile to the Test Set.
4. Turn the mobile on and wait for it to camp.
5. On the mobile, press **1**, **2**, **3**, then press send.
6. Check for `Connected` in the `Active Cell` field.

B. Select measurements.



1. Press the **Measurement selection** key.
2. Highlight a measurement and press the knob.
3. Repeat steps 1 and 2 to add measurements.

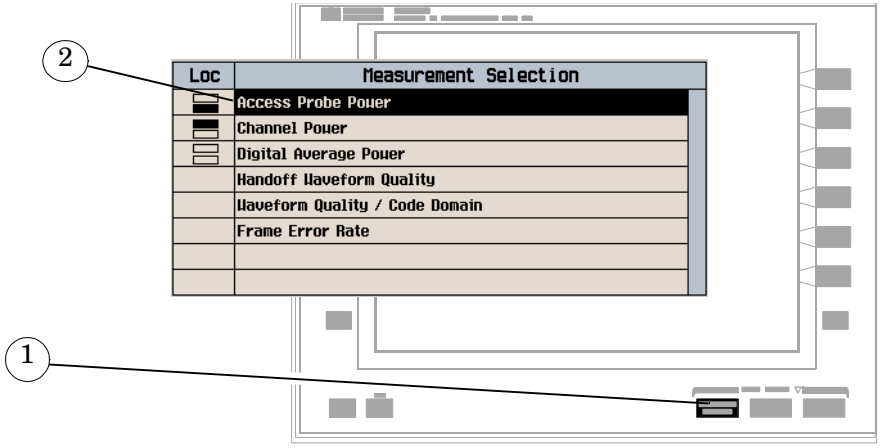
How Do I View a Graphical Measurement?



1. Select a measurement with a graphical view (for example Waveform Quality/Code Domain).
2. Press the `Change View` (**F2**) key.
3. Select the desired graphical view.

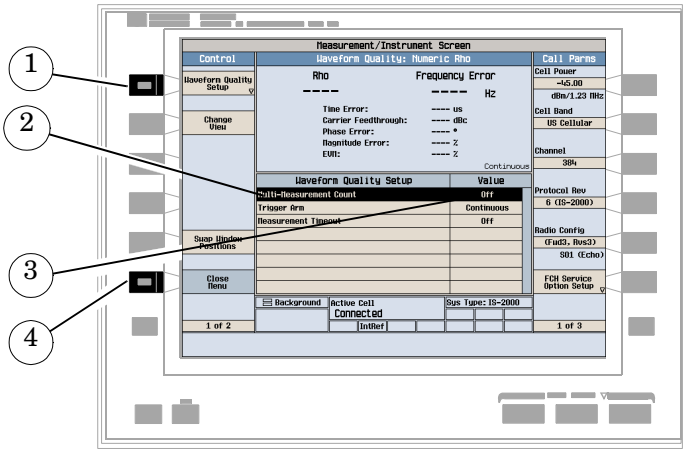
How Do I Change the Measurement Setup?

A. Select a measurement.



1. Press the **Measurement selection** key.
2. Highlight a measurement to set up and press the knob.

B. Set up the measurement.



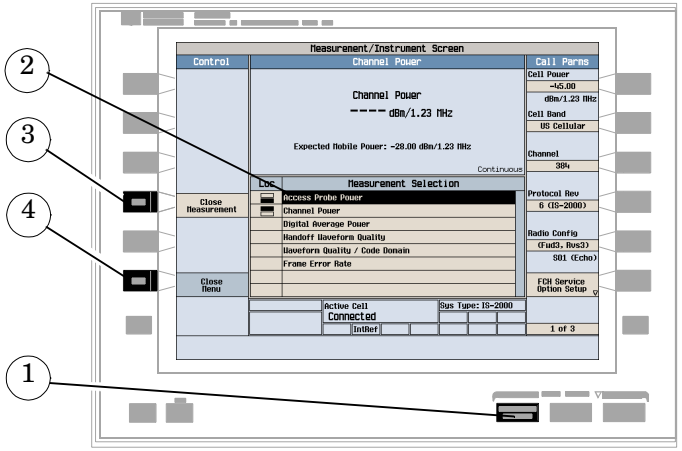
1. Press the measurement's setup (**F1**) key.
2. Highlight a parameter and press the knob.
3. Enter a value or selection and press the knob.

NOTE For statistical measurement results, change the `Multi-Measurement Count` parameter from "Off" to a number >1.

---

4. Press the `Close Menu` (**F6**) key.

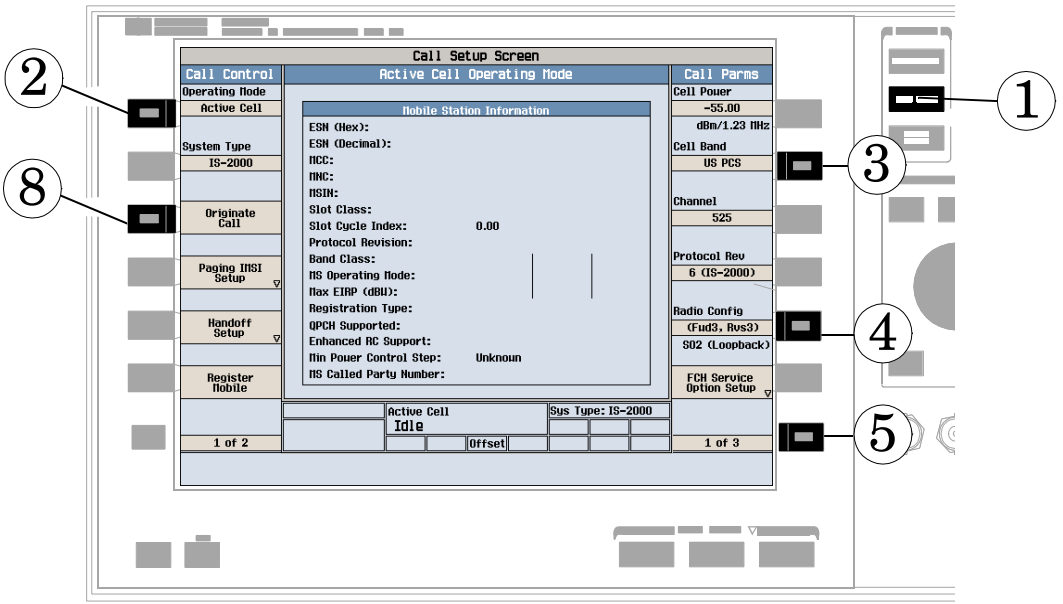
How Do I Turn Off a Measurement?



1. Press the **Measurement selection** key.
2. Highlight the measurement you want to turn off.
3. Press the `Close Measurement` (**F4**) key.
4. Press the `Close Menu` (**F6**) key.

How Do I Set Up a Call?

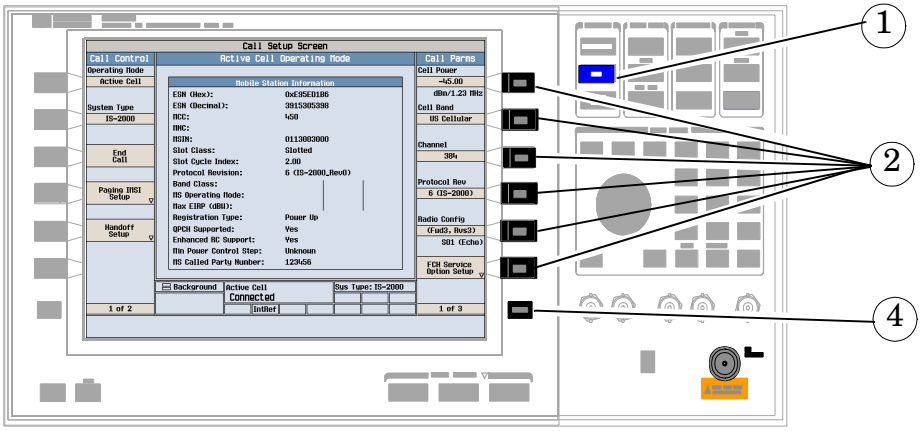
The Call Parms keys and Call Control keys provide access to the parameters needed to set up a call.



1. Press the **CALL SETUP** key.
2. Press the `Operating Mode` (**F2**) key and set the operating mode to `Active Cell`.
3. Press the `Cell Band` (**F8**) key and select the band in which you would like to bring up the call.
4. Press the `Radio Config` (**F11**) key and select the radio configuration in which you would like to bring up the call.

5. Check the rest of the Call Parms settings (keys **F7** through **F12**) then press the **More** key to check the settings displayed on the 2 of 3 and 3 of 3 menus.
6. Make sure the cell settings, such as SID (System Identification) are compatible with the mobile station. See “How Do I Change Cell Information?” on page 43.
7. Turn on power to the mobile station and wait for an indication that it has found service.
8. Make a mobile station originated call or wait for the mobile station to perform power up registration, then press the `Originate Call` (**F3**) key.
9. Verify that the call is connected.

How Do I Change Call Parameters?



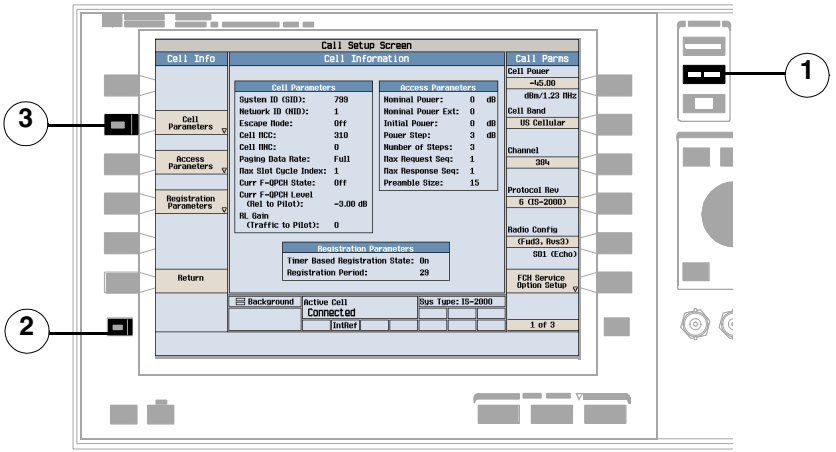
1. Press the **CALL SETUP** key.
2. On the Call Parms menu (1 of 2) press any key.
3. Highlight a selection and press the knob. Enter a value.
4. Press the **MORE** key for additional call parameters.

How Do I Change Cell Information?

There are three types of cell information: cell parameters, access parameters, and registration parameters.

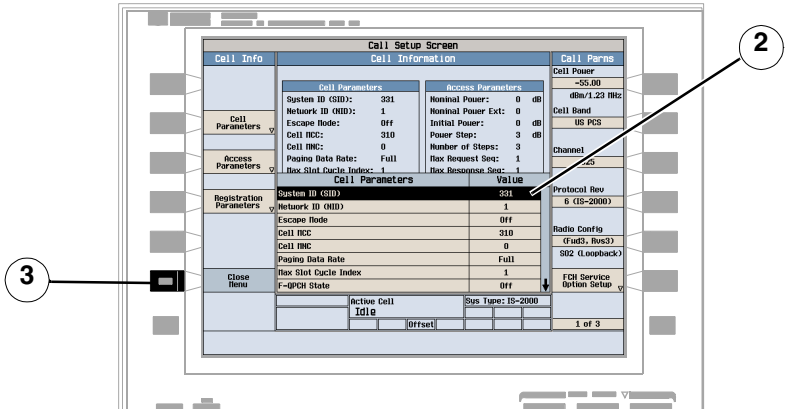
A. Set cell parameters.

1. Select the Cell Parameters menu.



1. Press the **CALL SETUP** key.
2. Press the **More** key.
3. Press the `Cell Info` (**F2**) key.
4. Press the `Cell Parameters` (**F2**) key.

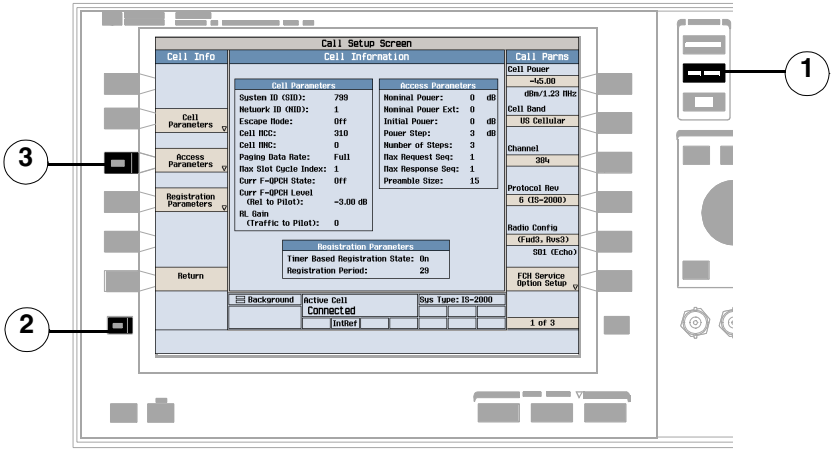
2. Set a cell parameter.



1. Turn the knob to highlight a parameter and then press the knob.
2. Enter a value or selection and press the knob.
3. Press the `Close Menu` (**F6**) key.

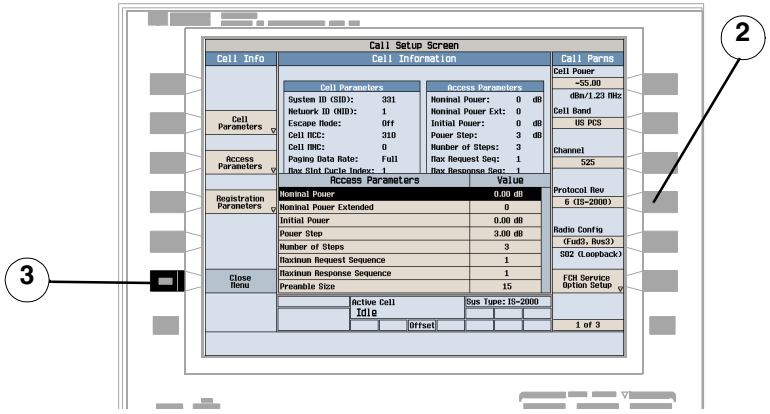
B. Set access parameters.

1. Select the Access Parameters menu.



1. Press the **CALL SETUP** key.
2. Press the **More** key.
3. Press the `Cell Info` (**F2**) key.
4. Press the `Access Parameters` (**F3**) key.

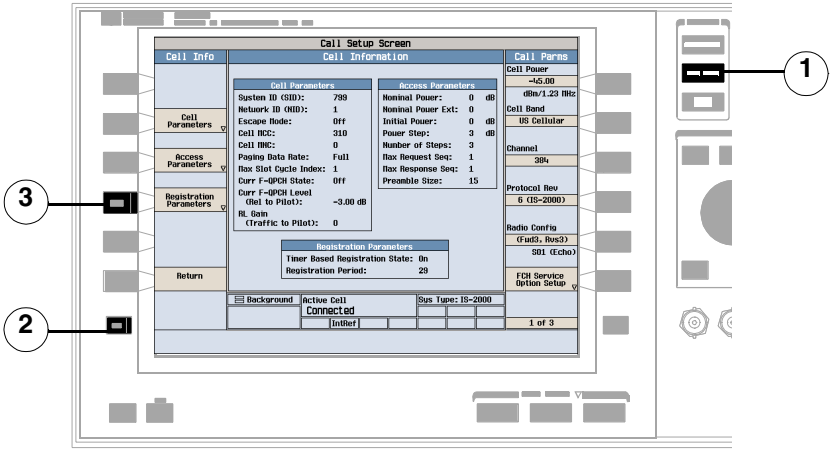
2. Set an access parameter.



1. Turn the knob to highlight a parameter and then press the knob.
2. Enter a value or selection and press the knob.
3. Press the `Close Menu` (**F6**) key.

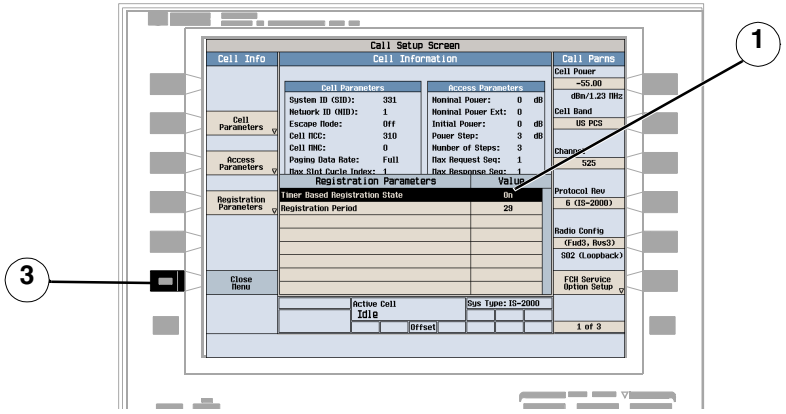
C. Set registration parameters.

1. Select the Registration Parameters menu.



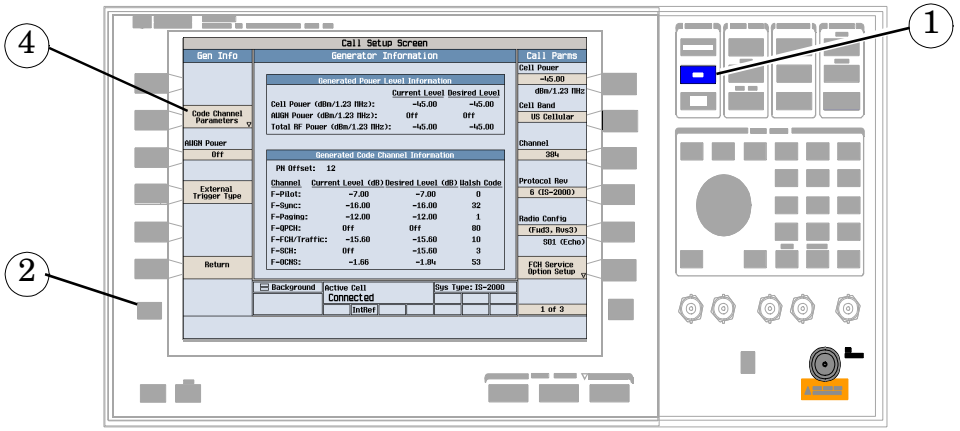
1. Press the **CALL SETUP** key.
2. Press the **More** key.
3. Press the `Cell Info` (**F2**) key.
4. Press the `Registration Parameters` (**F4**) key.

2. Set a registration parameter.



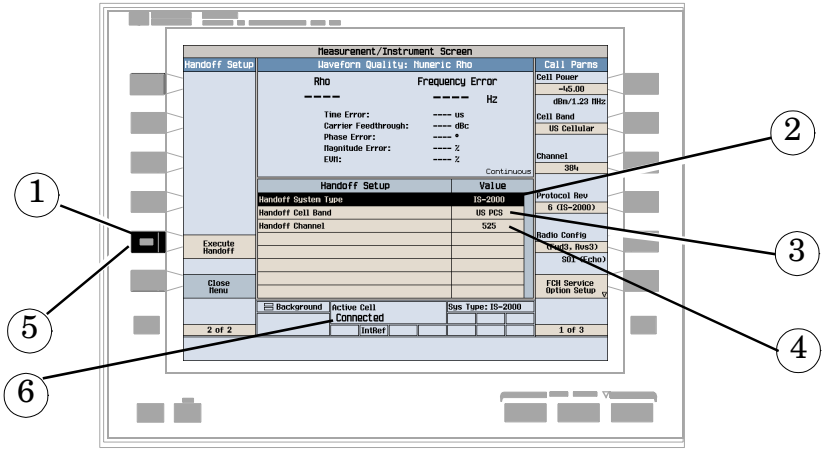
1. Turn the knob to highlight a parameter and then press the knob.
2. Enter a value or selection and press the knob.
3. Press the `Close Menu` (**F6**) key.

How Do I Change Code Channel Levels?



1. Press the **CALL SETUP** key.
2. Press the **More** key.
3. Press the `Generator Info` key.
4. Press the `Code Channel Parameters` **(F2**) key.
5. Set the level of the desired channel by using the knob and numeric keys.

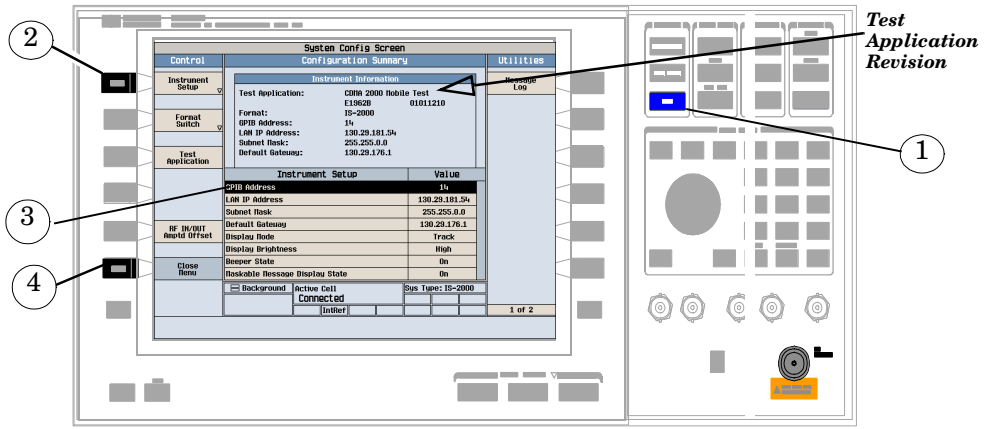
How Do I Perform a Handoff?



1. On the Call Setup screen, press the `Call/Handoff Setup` (**F5**) key.
2. Highlight the Handoff System Type parameter and select the desired system.
3. Highlight the Handoff Cell Band parameter and select the desired band.
4. Highlight the Handoff Channel parameter and select the desired channel.
5. Press the `Execute Handoff` **(F5)** key to complete the handoff, or the `Close Menu` (**F6**) key to abort the handoff.
6. Check for `Connected` in the `Active Cell` status field.

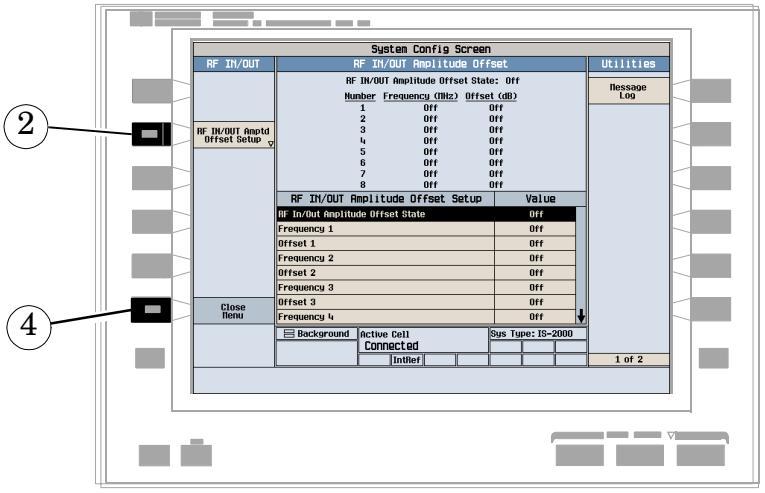
How Do I Configure the Test Set for My Test System?

A. Configure instrument information and setup.



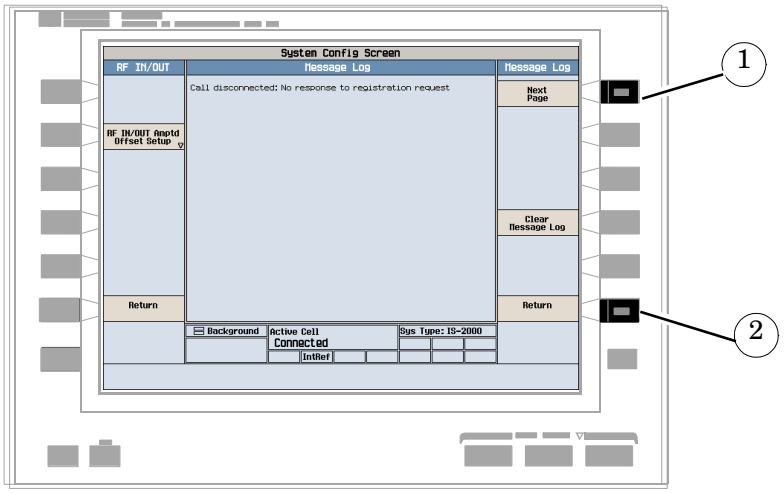
1. Press the **SYSTEM CONFIG** key.
2. Press the `Instrument Setup` (**F1**) key.
3. Adjust an instrument setting.
4. Press the `Close Menu` (**F6**) key.

B. Set amplitude offsets.



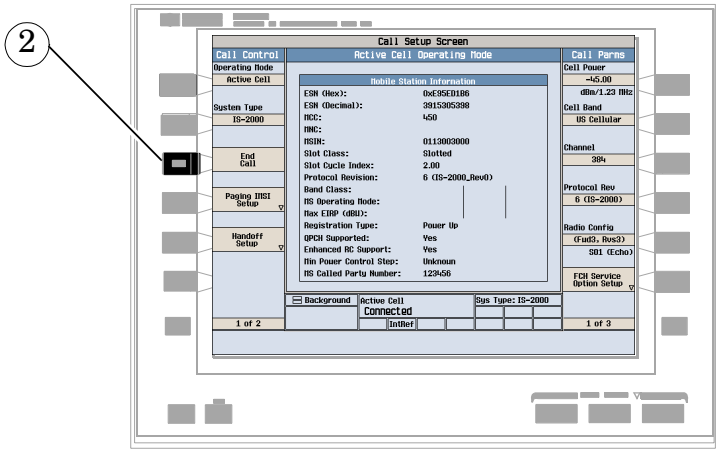
1. On the Configuration Summary screen (not shown), press the `RF IN/OUT Amptd Offset` (**F5**) key.
2. On the RF IN/OUT Amplitude Offset screen, press the `RF IN/OUT Amptd Offset Setup` (**F2**) key.
3. Enter the amplitude offset for the test frequencies you use.
4. Press the `Close Menu` (**F6**) key.

C. Check message log.



1. From any System Config screen, press the `Message Log` (**F7**) key and view the message log.
2. Press the `Return` (**F12**) key.

How Do I End a Call?

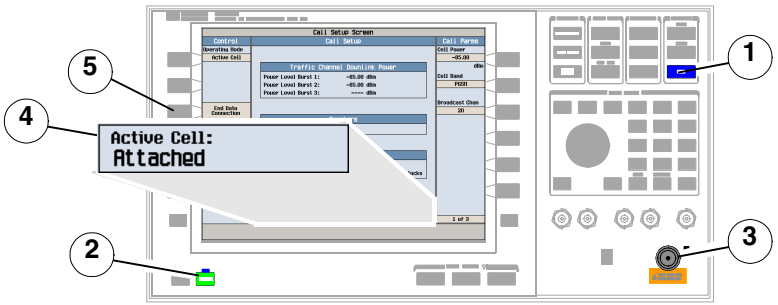


1. Press the **CALL SETUP** key.
2. Press the `End Call` (**F3**) key, or end the call from the mobile.
3. Check for `Idle` in the `Active Cell` status field.

3 GPRS Mobile Test Application

How Do I Make Measurements on a Mobile?

A. Establish a data connection.

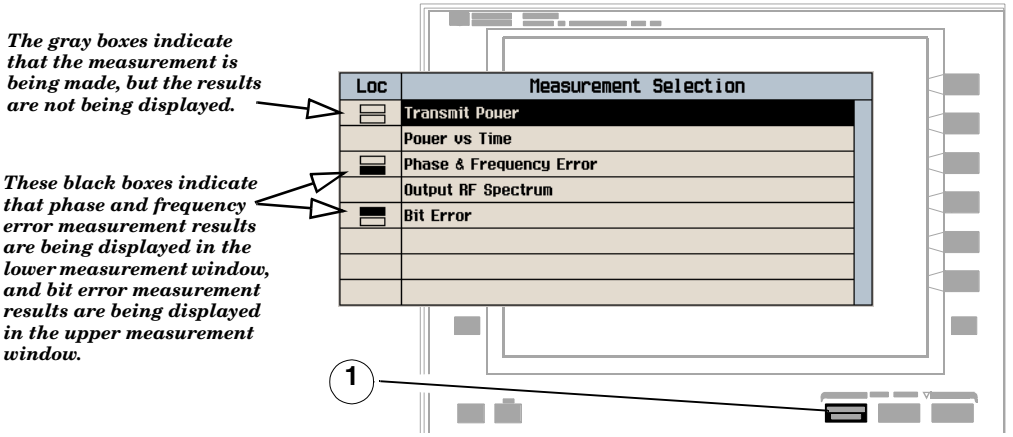


1. Press the blue **SHIFT** key.
2. Press the green **Preset** key.
3. Connect the mobile.
4. Turn the mobile on and wait for `Attached` in the `Active Cell:` field.

NOTE For mobiles that don't perform GPRS attach automatically, set the mobile to data mode.

5. Press the `Start Data Connection` (**F3**) key and watch for the `Active Cell:` field changing to `Transferring`.

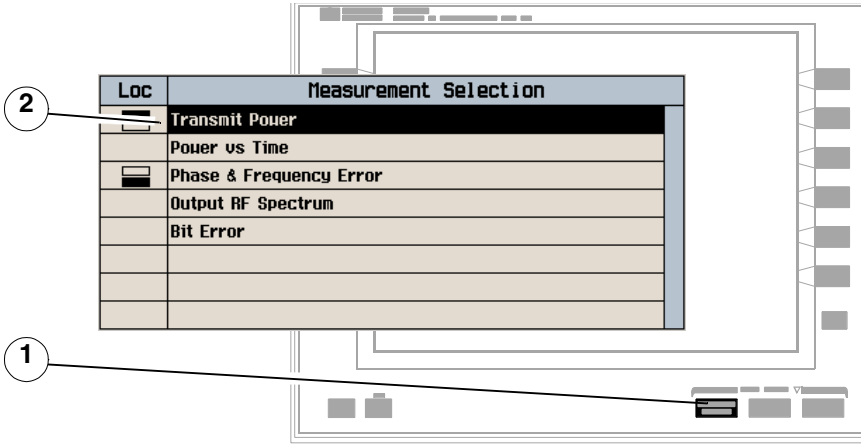
B. Select measurements.



1. Press the **Measurement selection** key.
2. Highlight a measurement and press the knob.
3. Repeat steps 1 and 2 to add measurements.

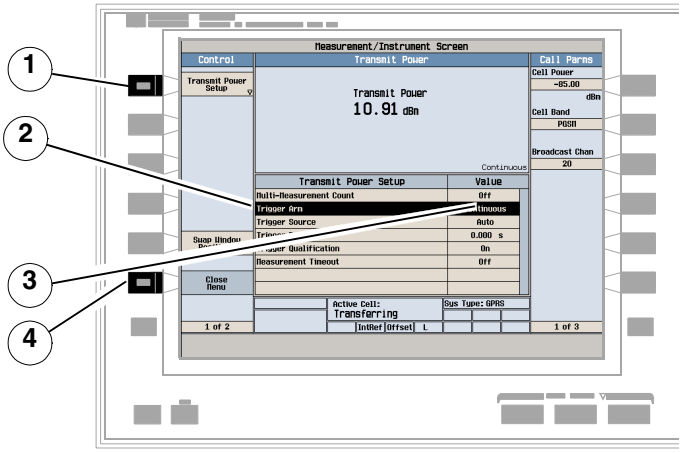
How Do I Change Measurement Setup?

A. Select a measurement.



1. Press the **Measurement selection** key.
2. Highlight a measurement to set up and press the knob

B. Set up the measurement.



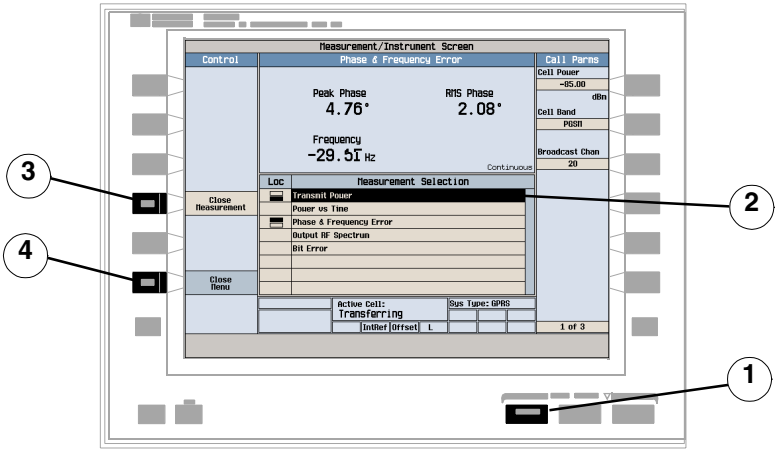
1. Press the measurement's setup (**F1**) key.
2. Highlight a parameter and press the knob.
3. Enter a value or make a selection and press the knob.

NOTE For Statistical measurement results, change the `Multi-Measurement Count` parameter from `Off` to a number >1.

---

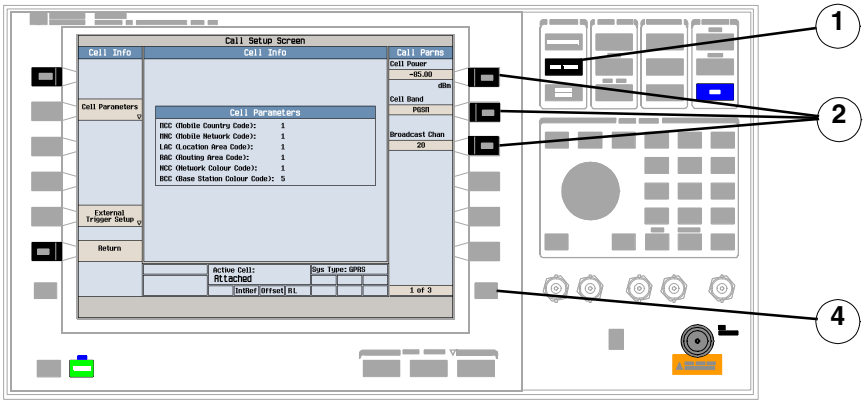
4. Press the `Close Menu` (**F6**) key.

How Do I Turn Off a Measurement?



1. Press the **Measurement selection** key.
2. Highlight the measurement you want to turn off.
3. Press the `Close Measurement` (**F4**) key.
4. Press the `Close Menu` (**F6**) key.

How Do I Change Call Parameters?



1. Press the **CALL SETUP** key.

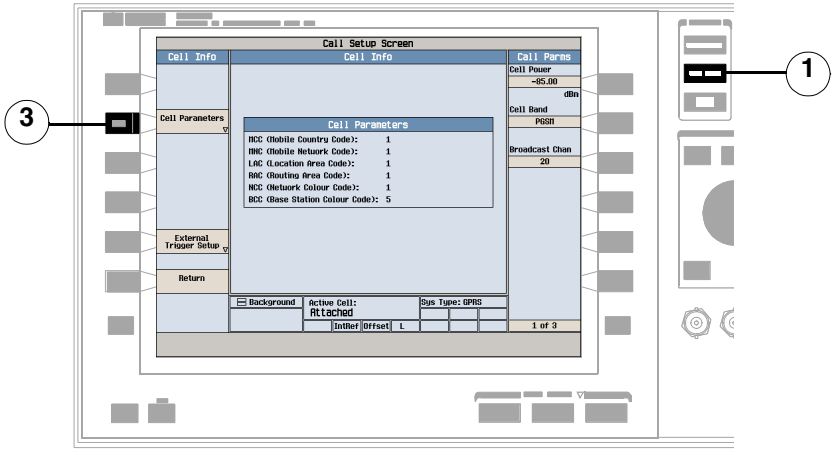
NOTE When the mobile is transferring data (`Active Cell:` field is `Transferring`) some call parameters cannot be changed.

2. On the Call Parms menu (1 of 3) press **F7**, **F8** or **F9**.
3. Enter a value or highlight a selection and press the knob.
4. Press the **More** key for additional call parameters.

How Do I Change Cell Parameters?

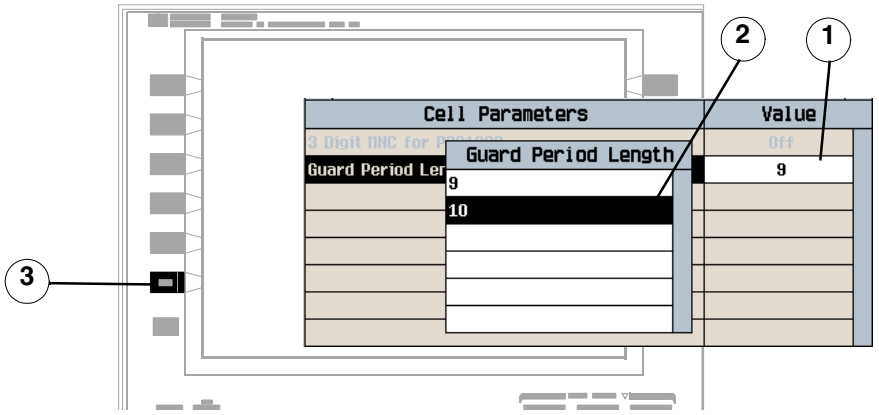
NOTE You can only change two cell parameters - 3 Digit MNC for PCS1900 and Guard Period Length. Other cell parameters such as MCC, MNC, and LAC are fixed. To change the 3 digit MNC for PCS1900 the cell must be set to off by pressing the **CALL SETUP** key, then `Operating Mode` (**F1**), and then selecting `Cell Off`.

A. Select the Cell Parameters menu.



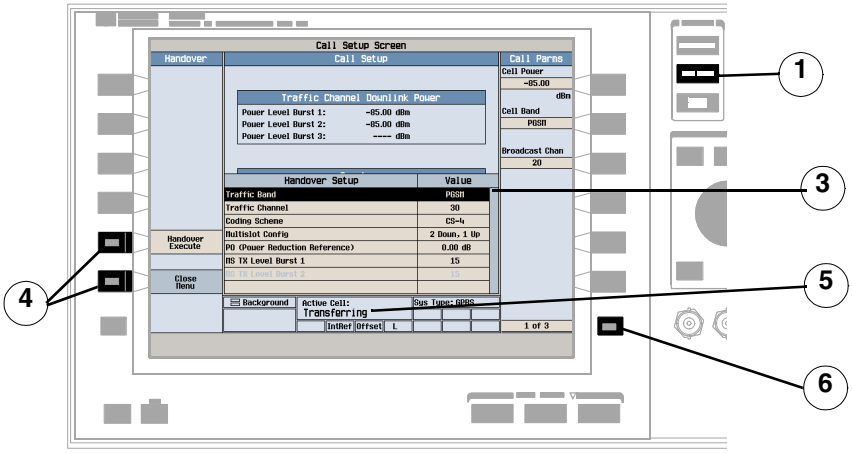
1. Press the **CALL SETUP** key.
2. Press the `Cell Info` (**F6**) key.
3. Press the `Cell Parameters` (**F2**) key.

B. Set a cell parameter.



1. Highlight a parameter and press the knob.
2. Enter a value or selection and press the knob.
3. Press the `Close Menu` (**F6**) key.

How Do I Perform a Handover?



1. Press the **CALL SETUP** key.
2. Press the `Handover Setup` (**F5**) key.
3. Change the various parameters, for example `Traffic Band`.
4. Press the `Handover Execute` (**F5**) key to complete the handover, or press the `Close Menu` (**F6**) key to abort the handover.
5. Check for `Transferring` in the `Active Cell:` field.
6. Press the **More** key to check that the changes have been implemented on the Call Parms menus (2 of 3) and (3 of 3).

How Do I Change the MS TX Level?

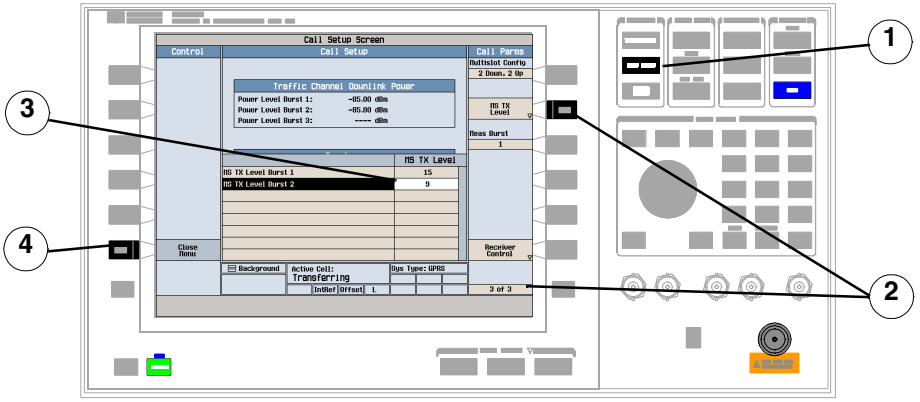
There are two ways to change the MS TX Level:

A. Change the level immediately

B. Change the level during a handover

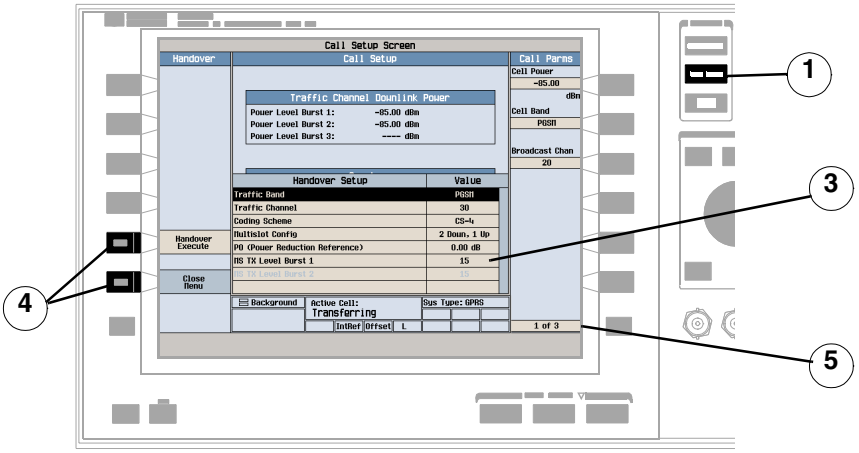
Both are explained below.

A. Change the MS TX level immediately.



1. Press the **CALL SETUP** key.
2. On the Call Parms menu (3 of 3) press the `MS TX Level` (**F8**) key.
3. Set a new MS TX level and press the knob.
4. Press the `Close Menu` (**F6**) key.

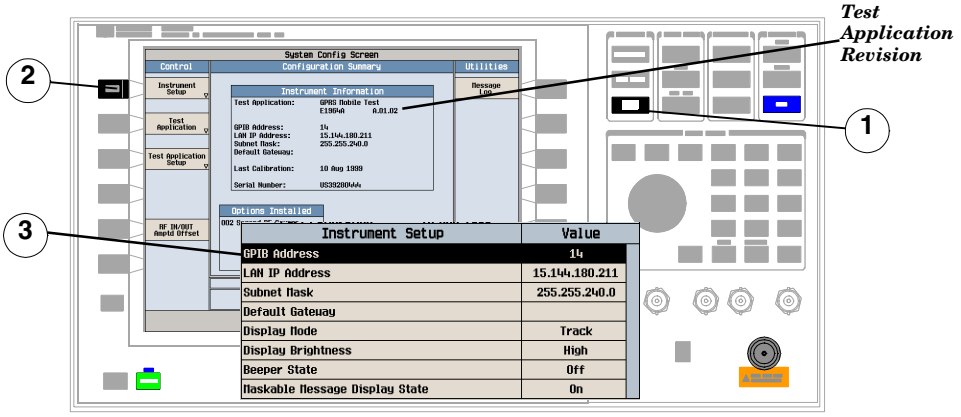
B. Change the MS TX level during a handover.



1. Press the **CALL SETUP** key.
2. On Control menu, press the `Handover Setup` (**F5**) key.
3. Select and change the `MS TX Level`.
4. Press the `Handover Execute` (**F5**) key to change the MS TX level, or press the `Close Menu` (**F6**) key to leave the level unchanged.
5. Use the **More** key to check that the MS TX level has been changed on the Call Parms menu 3 of 3.

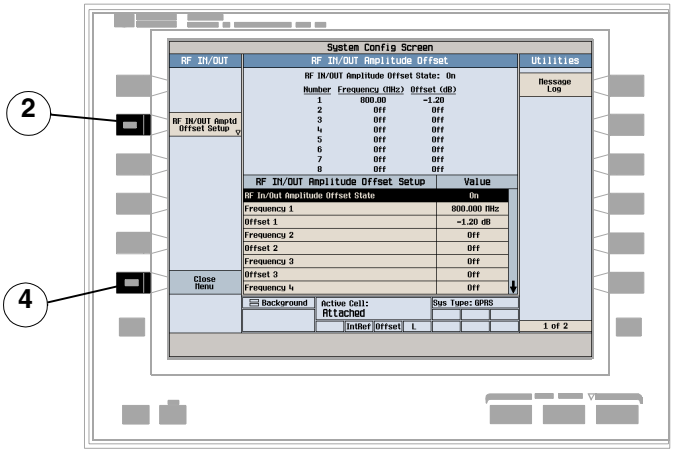
How Do I Configure the Test Set for My Test System?

A. Configure instrument information and setup.



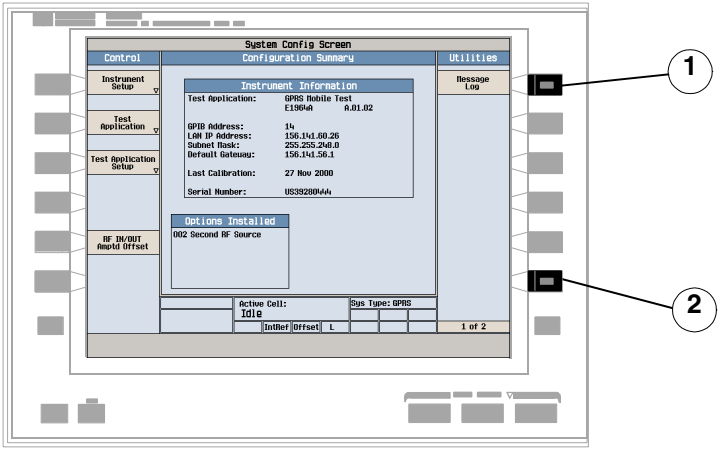
1. Press the **SYSTEM CONFIG** key.
2. Press the `Instrument Setup` (**F1**) key.
3. Adjust an instrument setting and then press the `Close Menu` (**F6**) key.

B. Set amplitude offsets.



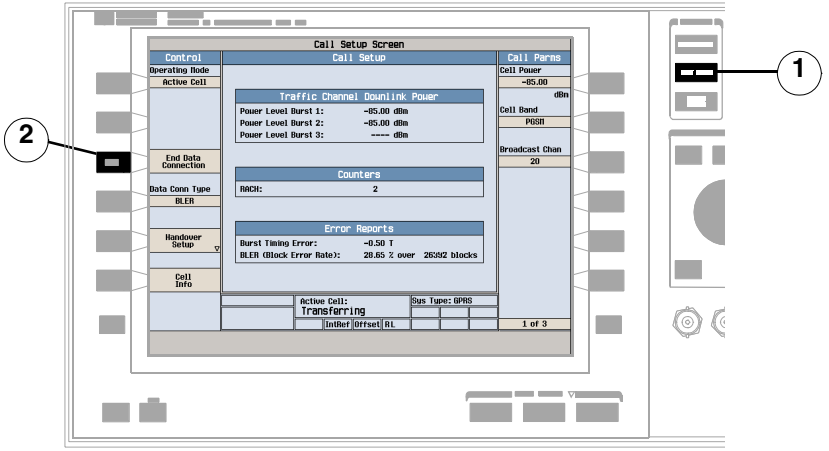
1. On the Configuration Summary screen, press the `RF IN/OUT Amptd Offset` (**F5**) key.
2. On the RF IN/OUT Amplitude Offset screen, press the `RF IN/OUT Amptd Offset Setup` (**F2**) key.
3. Enter the amplitude offsets for the test frequencies you use.
4. Press the `Close Menu` (**F6**) key.
5. Press the `Return` (**F6**) key to return to the Configuration Summary screen.

C. Check the message log.



1. Press the `Message Log` (**F7**) key and view the message log.
2. Press the `Return` (**F12**) key.

How Do I End the Data Connection?

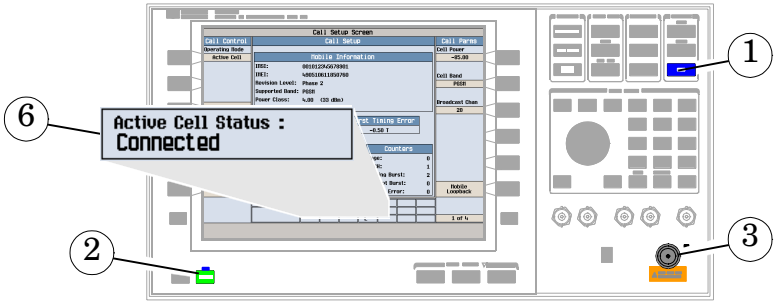


1. Press the **CALL SETUP** key.
2. Press the `End Data Connection` (**F3**) key, or end the data connection from the mobile.
3. To ensure the data connection has ended check for `Attached` in the `Active Cell:` field.

4 GSM Mobile Test Application

How Do I Make Measurements on a Mobile?

A. Establish a call.

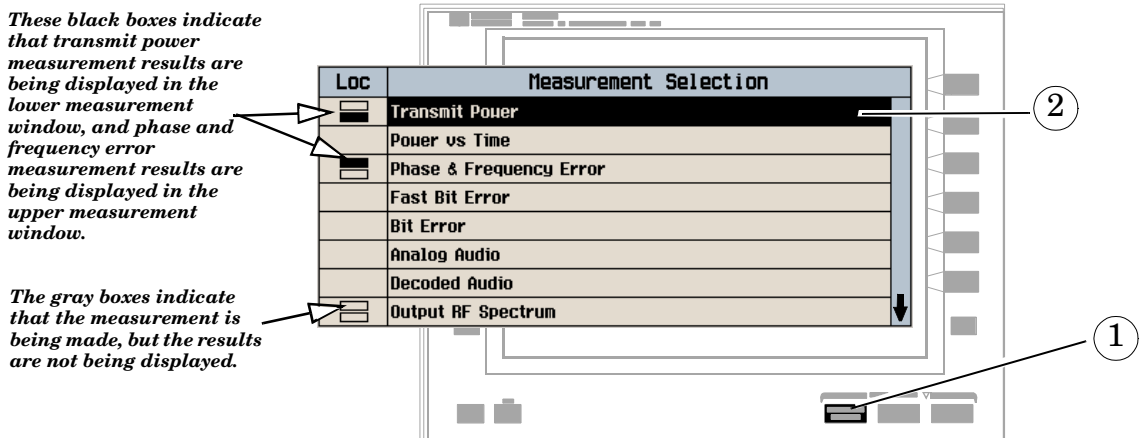


1. Press the blue **SHIFT** key.
2. Press the green **Preset** key.
3. Connect the mobile.
4. Turn on the mobile and wait for it to camp.

NOTE Is the mobile camped? PGSM is default cell band setting.

5. On the mobile press **1**, **2**, **3**, and then press send.
6. Check for `Connected` in the `Active Cell Status:` field.

B. Select measurements.

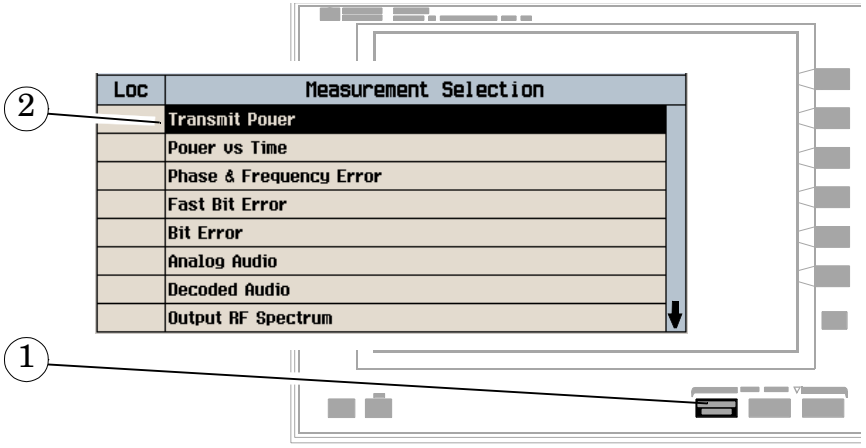


1. Press the **Measurement selection** key.
2. Highlight a measurement and press the knob.
3. Repeat steps 1 and 2 to add measurements.

.

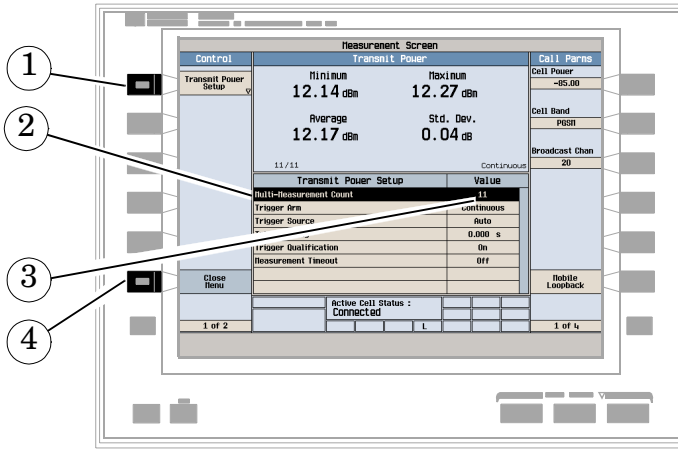
How Do I Change a Measurement's Setup?

A. Select a measurement.



1. Press the **Measurement selection** key.
2. Highlight a measurement to setup and press the knob.

B. Set up the measurement.



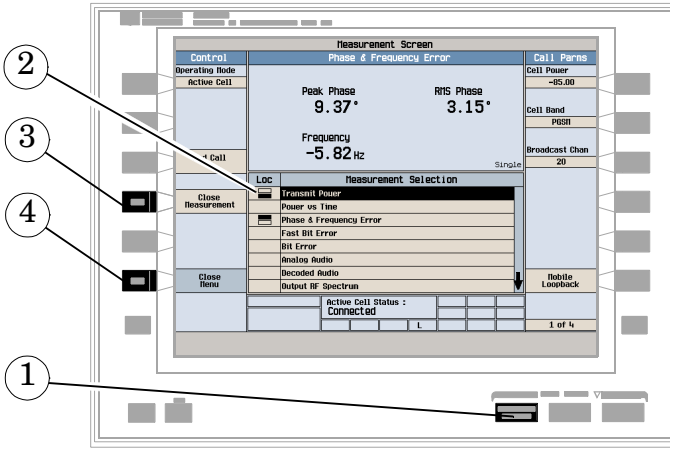
1. Press the measurement's setup key (**F1**).
2. Highlight a parameter and press the knob.
3. Enter a value or make a selection and press the knob.

NOTE For statistical measurement results, change the Multi-Measurement Count parameter from `Off` to a number >1.

---

4. Press the `Close Menu` (**F6**) key.

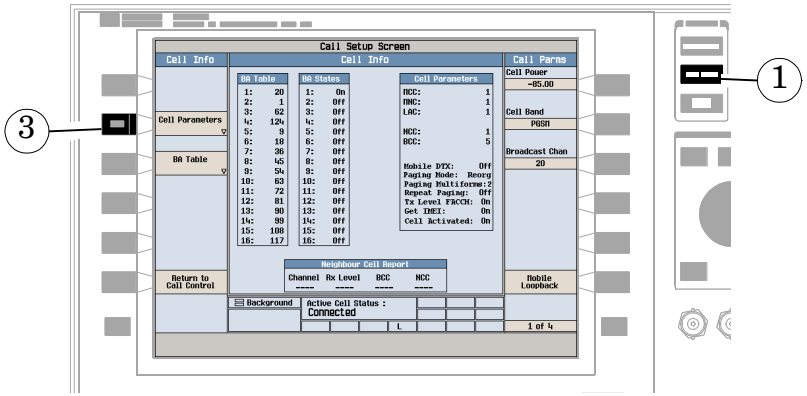
How Do I Turn Off a Measurement?



1. Press the **Measurement selection** key.
2. Highlight the measurement you want to turn off.
3. Press the `Close Measurement` (**F4**) key.
4. Press the `Close Menu` (**F6**) key.

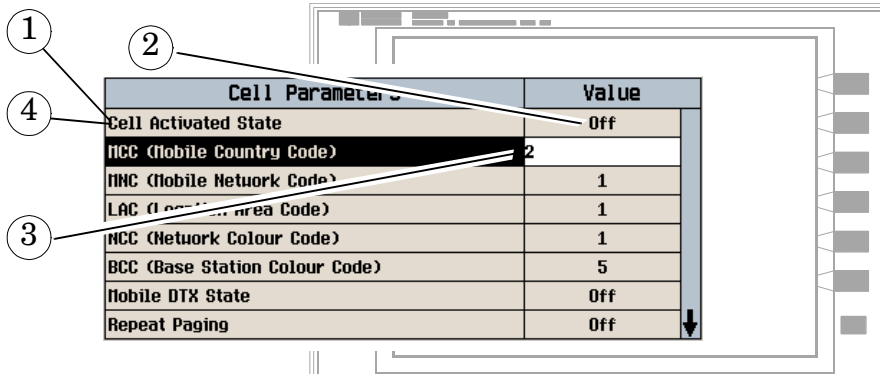
How Do I Change Cell Parameters?

A. Select the Cell Parameters menu.



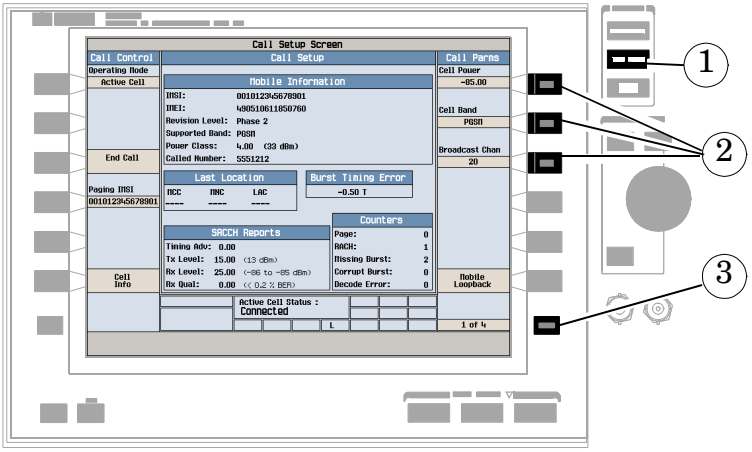
1. Press the **CALL SETUP** key.
2. Press the `Cell Info` (**F5**) key.
3. Press the `Cell Parameters` (**F2**) key.

B. Set a cell parameter.



- To change “network” cell parameters:
  1. Highlight `Cell Activated State` and press the knob.
  2. Set `Cell Activated State` to Off. (Highlight `Off` and press the knob.)
  3. Set network cell parameter to the desired value. (Highlight the parameter, press the knob, enter a value, and press the knob.)
  4. Set `Cell Activated State` to `On`.
- To change all other cell parameters:
  1. Highlight the parameter, press the knob, enter a value, and press the knob.

How Do I Change Call Parameters?

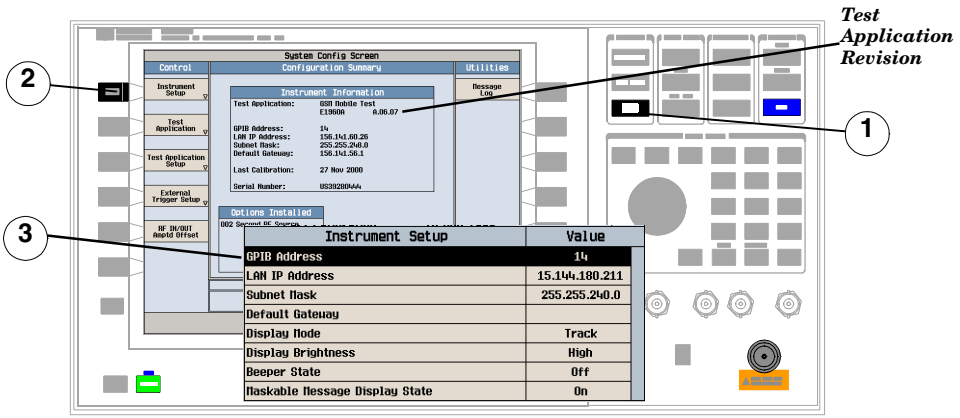


1. Press the **CALL SETUP** key.
2. Press **F7**, **F8**, or **F9**.
3. Enter a value or highlight a selection and press the knob.
4. Press the **More** key for additional call parameters.

NOTE For a dual-band handover, change the `Traffic Band` selection (`Call Parms` (**F7**) on menu 2 of 4).

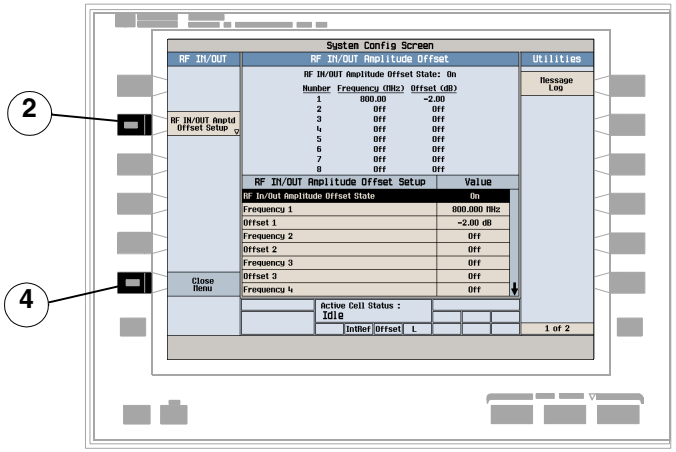
How Do I Configure the Test Set for My Test System?

A. Configure instrument information and setup.



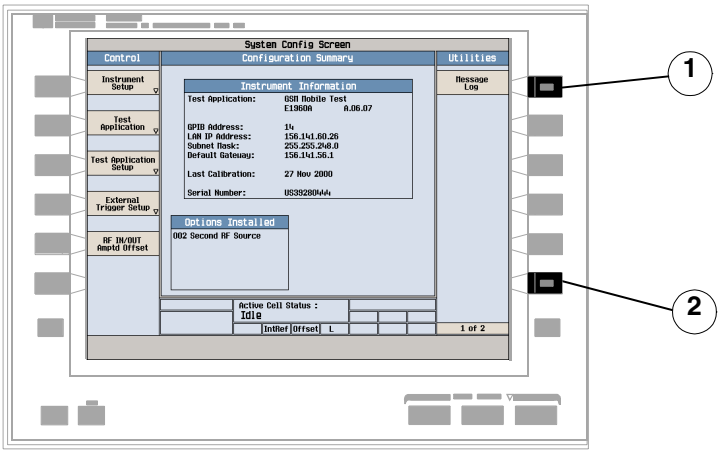
1. Press the **SYSTEM CONFIG** key.
2. Press the `Instrument Setup` (**F1**) key.
3. Adjust an instrument setting and then press the `Close Menu` (**F6**) key.

B. Set amplitude offsets.



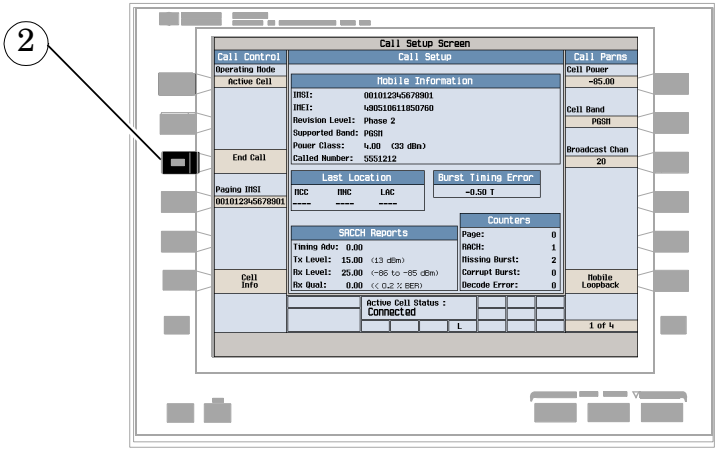
1. On the Configuration Summary screen, press the `RF IN/OUT Amptd Offset` (**F5**) key.
2. On the RF IN/OUT Amplitude Offset screen, press the `RF IN/OUT Amptd Offset Setup` (**F2**) key.
3. Enter the amplitude offsets for the test frequencies you use.
4. Press the `Close Menu` (**F6**) key.
5. Press the `Return` (**F6**) key to return to the Configuration Summary screen.

C. Check the message log.



1. Press the `Message Log` (**F7**) key and view the message log.
2. Press the `Return` (**F12**) key.

How Do I End a Call?

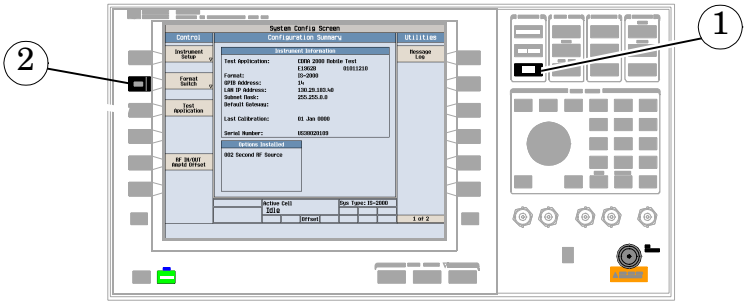


1. Press the **CALL SETUP** key.
2. Press the `End Call` (**F3**) key, or end the call from the mobile.
3. Check for `Idle` in the `Active Cell Status:` field.

5 GSM_AMPS/136 Fast Switch

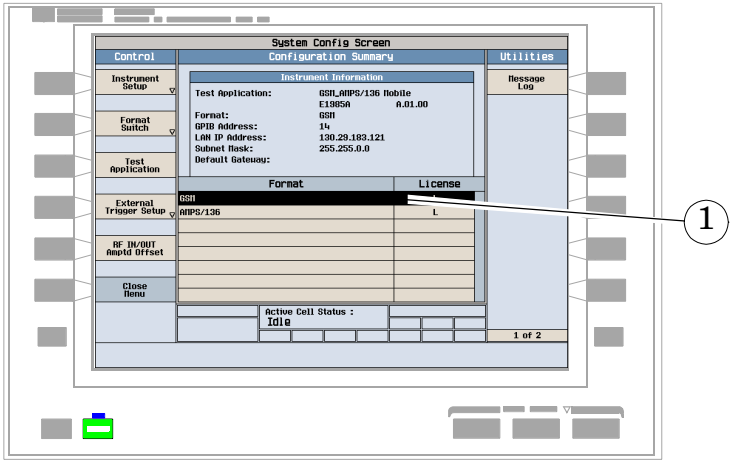
How Do I Switch Formats?

A. Choose a format.



1. Press the **SYSTEM CONFIG** key.
2. Press the `Format Switch` (**F2**) key.

B. Switch formats.

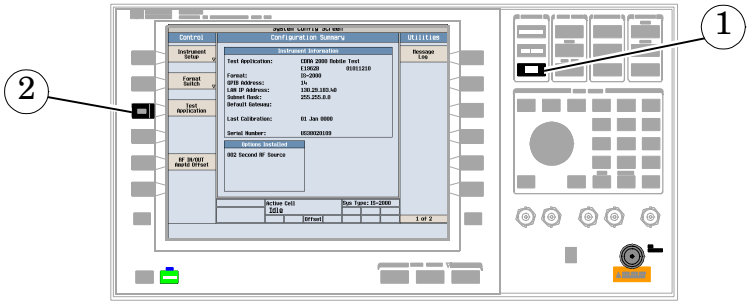


1. Turn the knob to highlight the desired format.
2. Press the knob to switch formats.

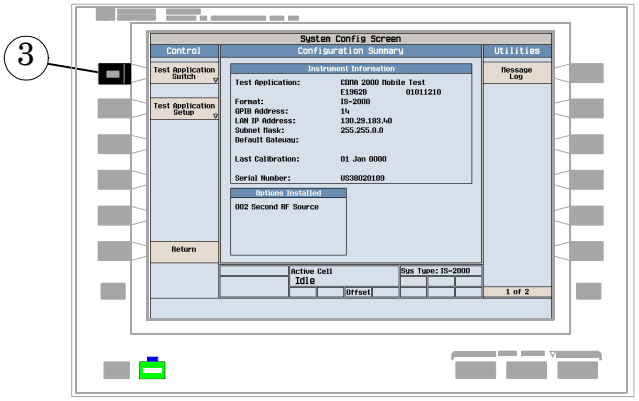
6 Switching Test Applications

How Do Switch Test Applications?

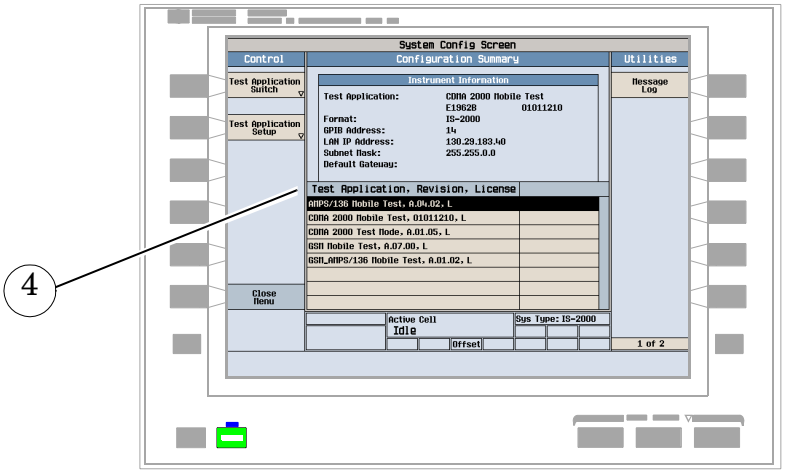
A. Choose a test application.



1. Press the **SYSTEM CONFIG** key.
2. Press the `Test Application` (F3) key.

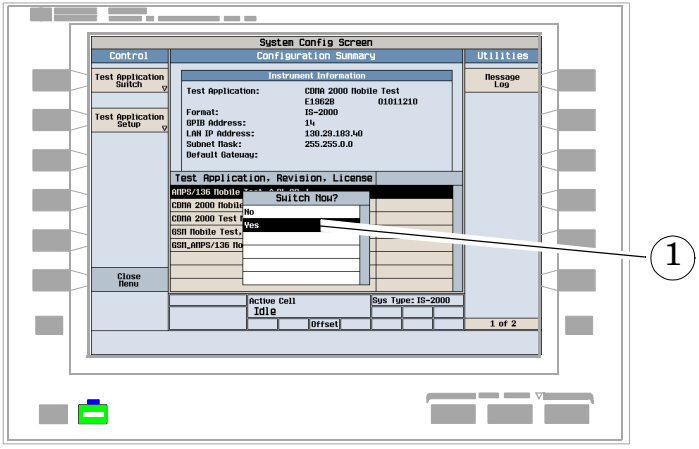


3. Press the `Test Application Switch` (**F1**) key, and wait for the Test Application, Revision, License menu to appear. There is a slight pause before the menu is displayed.



4. Turn the knob to highlight a test application name, and press the knob to select the TA.

B. Switch test applications.



1. Turn the knob to highlight `Yes` in the Switch Now? menu.
2. Press the knob to switch test applications.
3. Wait for the test set to reboot in the new test application.