Key and Data Field Reference, Volume 2: I-Z

Agilent Technologies
ESG Vector Signal Generator

This guide applies to the signal generator models listed below. Due to our continuing efforts to improve our products through firmware and hardware revisions, signal generator design and operation may vary from descriptions in this guide. We recommend that you use the latest revision of this guide to ensure you have up-to-date product information. Compare the print date of this guide (see bottom of this page) with the latest revision, which can be downloaded from the website shown below.

E4438C Vector Signal Generator

www.agilent.com/find/signalgenerators

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Key and Data Field Reference, I–Z

I

Immediate

Supported   All with Option 001 or 002

Use this softkey to enable immediate retriggering for single trigger operation. In this state, the waveform will reset and replay from the start immediately upon receiving a trigger.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 67, 88, 247

Remarks   None

In the BERT Menu

Supported   All with Option UN7

This softkey starts the measurement as soon as the ESG achieves synchronization.

With **Immediate** selected, BER measurements are initiated and repeated until you set the **BERT Off On** softkey to Off, or until you set the BERT trigger source to Trigger Key, Bus, or Ext.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 6, 8

Remarks   None

Impairments

Supported   All with Option 406

Use this softkey to access a menu from which you can configure various impairment functions.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 239

Remarks   None

Impairments Off On

Supported   All with Option 406

This softkey sets the operating state of the impairment function.

Off   When you select Off, no impairment settings are applied.

On   When you select On, the impairment settings are applied.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 239

Remarks   None

Impedance 75 Ohm High

Supported   All with Option UN7

Use this softkey to set the input termination mode of the rear panel BER DATA IN, BER CLK IN, and BER GATE IN connectors.

75 Ohm   This choice sets the input termination mode to 75 ohms.

High   This choice sets the input termination mode high.

Preset: High

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 6

Remarks   None

Increment Scramble Code

Supported   All with Option 400

This softkey will sort carriers by frequency offset and auto-increment scramble codes starting from the current scramble code value for the lowest frequency carrier.

Preset   N/A

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	If the lowest frequency carrier has a scramble code value of N/A, the auto-increment value will start at 0.

Increment Timing Offset

Supported   All with Option 400

This softkey will sort carriers by frequency offset and auto-increment timing offsets. The new values will start with the current timing offset for the lowest frequency carrier and increment by 1 for each subsequent carrier.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Initial Phase

Supported   All with Option 400

This field displays the initial phase of the muticarrier waveform. The units are not specified, but the value represents degrees.

Preset	0
Range	0–149
Location	See *Key and Data Field Menu Maps* guide: Page 11
Remarks	None

Init Pwr

In Uplink PhyCH Type PRACH

Supported   All with Option 400

This field displays the initial power (Init Power) level of the preamble. The field is displayed in the PRACH Power Setup menu.

The `Init Power` field is coupled to and changes with the number of preambles, ramp step, and maximum power (Max Power) field. If a ramp step is set to a value other than 0.00 dB, the initial power will be the power level at the start of the ramp; the first

preamble.

For example, if the number of preambles is set to 4, the ramp step set to 1 dB, and the maximum power set to –20 dBm, then the initial power will be –23 dBm. The first preamble will be at –23 dBm, second at –22 dBm, third at –21 dBm and fourth at –20 dBm.

Preset	–136.00 dBm
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 270, 271
Remarks	None

In Uplink PhyCH DPCH

Supported   All with Option 400

This field displays the initial power (Init Pwr) level of the dedicated physical channel (DPCH). The field is displayed in the Transmit Power Control Setup menu.

The Init Pwr field is coupled to the Power Step field. The Power Step will only change in increments of the value set by the Power Step field. Init Power can not be set lower than the Minimum Power.

Preset	0.00 dB
Range	–40 to 0
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The **Power Mode Norm TPC** softkey must be set to **TPC** (TPC highlighted) for the Init Power field to appear.

Initial Bit Count

Supported   All with Option 300

This softkey enables you to set the initial bit count for the sensitivity search measurement function in the EDGE uncoded configuration.

Preset	13920
Range	1392–2147483647
Location	See *Key and Data Field Menu Maps* guide: Page 11
Remarks	None

Initial Block Count

Supported   All with Option 300

This softkey enables you to set the initial block count value for the sensitivity search measurement function in the EDGE downlink MCS5 or MCS9 configuration.

Preset   600

Range   *MCS5*: 1–1500000

     MCS9: 2–1500000

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   For MCS9, only even values can be entered with a minimum value of 2. If odd numbers are entered, a +1 will be added to the value to make it an even value.

Initial Frame Count

Supported   All with Option 300

This softkey enables you to set the initial speech frame count value for the sensitivity search measurement function in the GSM configuration.

Preset   25

Range   1–6000000

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   None

Initialize Phase Fixed Random

Supported   All with Option 001 or 002

This softkey sets the initial state for the tones, as part of initializing the multitone table editor.

    Fixed   When you select Fixed, the initial phase of all tones are set to 0 degrees.

    Random   When you select Random, the initial phase of the tones is set to randomly generated phases based on the **Random Seed Fixed Random** softkey selection.

Preset   Fixed

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 103
Remarks	None

Initialize Table

Supported	All with Option 001 or 002

This softkey accesses a menu that enables you to set the initial values for the multitone configuration.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 66, 103
Remarks	None

Insert

Supported	All with Option 001 or 002

Use this softkey to access a menu from which you can select different methods of inserting bits, or to execute the insertion of a specified number of bits.

Preset	N/A
Range	N/A
Location	Insert is located in the bit file editor menus.
Remarks	None

Insert 0's

Supported	All with Option 001 or 002

Use this softkey to insert a specified number of zeros into the current position of the bit file editor.

Preset	N/A
Range	N/A
Location	Insert 0's is located in the bit file editor menus.
Remarks	None

Insert 1's

Supported   All with Option 001 or 002

Use this softkey to insert a specified number of ones into the current position of the bit file editor.

Preset   N/A

Range   N/A

Location   Insert 1's is located in the bit file editor menus.

Remarks   None

Insert DPDCH

Supported   All with Option 400

This softkey enables you to insert a Dedicated Physical Data Channel (DPDCH) into the uplink Edit Channel Setup table editor. After pressing this softkey, press the **Done** softkey to insert the channel into the Edit Channel Setup table editor.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 248

Remarks   This softkey is available in uplink only.

Insert PN9

Supported   All with Option 001 or 002

Use this softkey to adjust the seed value of a 9-bit pseudorandom bit sequence. You can then insert it into the current bit file.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 85, 79, 113, 128, 144, 160, 176, 192, 208, 224

Remarks   None

Insert PN15

Supported   All with Option 001 or 002

Use this softkey to adjust the seed value of a 15-bit pseudorandom bit sequence. You can then insert it into the current bit file.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 85, 113, 128, 144, 160, 176, 192, 208, 224
Remarks	None

Insert Row

Supported   All

Use this softkey to insert a copy of the highlighted row directly above that row in a table or list.

Preset	N/A
Range	N/A
Location	Insert Row is located in the table editor menus.
Remarks	None

Insert Selected Waveform

Supported   All

Use this softkey to insert the highlighted waveform into the sequence you are building.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 92
Remarks	None

Insert Waveform

Supported   All

This softkey accesses a menu and table editor which enable you to insert a waveform

into the current row of the table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 90
Remarks	None

Insert Waveform Sequence Contents

Supported   All

Use this softkey to insert the contents of the highlighted sequence into the sequence you are building.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 92
Remarks	None

Installed Board Info

Supported   All

Use this softkey to display information about the installed boards in the signal generator. Refer to Figure 1.

Figure 1   **Installed Board Information**

Additional Page Indicator

The gray and white vertical bar on the left side of the display indicates that there is an additional page of information. Use the **Page Down** softkey to display the next page. Use the **Page Up** softkey to return to the previous page.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   A status of DETECTED means that the installed board was automatically detected by the internal computer.

                       A status of FIXED means that the installed board or devise was detected and is available for use.

Instrument Adjustments

Supported   All

Use this softkey to access a menu of front panel adjustments for the signal generator. This menu enables you to adjust the reference oscillator, set the value of the step keys and the front panel knob and so forth.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   None

Instrument Info/Help Mode

Supported   All

Use this softkey to display a menu of softkeys detailing some of the signal generator functions and operations.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   None

Instrument Options

Supported   All

Use this softkey to access a menu from which you can install license keys and manage hardware options.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 233

Remarks   None

Int

Supported   All with Option 001 or 002

This softkey enables you to automatically toggle the RF output power for each timeslot between main and alternate amplitudes using the internal baseband generator's timeslot settings. You can assign either main or alternate amplitude to each timeslot using the **Timeslot Ampl Main Delta** softkey.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 5

Remarks   None

Int Phase Polarity Normal Invert

Supported   All

Use this softkey to invert the internal Q signal, reversing the rotation direction of the phase modulation vector.

Normal   When you choose Normal, the phase relationship between the I and Q signals is not altered by the phase polarity function.

Invert   When you choose Invert, the in-phase component lags the quadrature-phase component by 90° in the resulting modulation.

Preset   Normal

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   None

Intermod

Supported   All with Option 400

This softkey, in the downlink Test Setup menu, selects an intermodulation (Intermod) test. Third and higher order mixing of the two interfering RF signals can produce an interfering signal in the band of the desired channel. Intermodulation response rejection is a measure of the capability of the receiver to receiver a wanted signal on its assigned channel frequency in the presence of two or more interfering signals.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 257

Remarks   The test parameters for this test are defined in 3GPP TS25.101 v3.7.0 (2001-06).

Internal

Supported   All with Option 001 or 002

This softkey selects an internally generated signal as the modulation output.

Preset   N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 2, 95, 95
Remarks	None

In the CDMA Menu

Supported   All with Option 401

Use this softkey to configure the ESG to use the internal baseband generator data clock.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the BBG Data Clock field. Refer to "BBG Data Clock" on page 89 for more information.
Remarks	None

Int I/Q Skew Correction RF BB Off

Supported   All

This softkey is used to select the skew path to be optimized.

RF	When RF is selected, the skew is optimized for the I/Q signal applied to the RF Output. The BB (external I/Q output) output will be functional, but the I/Q skew applied will be optimized for the RF path. When using this choice, seven symbols of latency are added to the Arb based waveform. While in real-time mode, the maximum number of user symbols for the FIR is limited to 32.
BB	When BB is selected, the skew is optimized for the I/Q signal outputs on the rear panel. The RF output will be functional, but the I/Q skew applied will be optimized for the BB path. When using this choice, seven symbols of latency are added to the Arb based waveform. While in real-time mode, the maximum number of user symbols for the FIR is limited to 32.
Off	When Off is selected, the factory I/Q skew is turned off. Using the signal generator in this mode does not add any latency symbols. This setting is equivalent to performance achieved with firmware revisions prior to C.03.10.
Preset	RF

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 107

Remarks   This softkey is not active for existing ESG customers downloading C.03.10 firmware. See "I/Q Skew" on page 356 for manual adjustments.

Internal Monitor

Supported   All

This softkey selects the internal source as the low frequency output. The signal is available at the LF OUTPUT connector. The frequency and shape of the signal is internally configured.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   The internal monitor is selected after an instrument preset or when the on/off power-line switch is cycled.

Internal Pulse

Supported   All

This softkey enables you to internally generate a variable width pulse as the modulation waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 108

Remarks   N/A

Internal Ref Bandwidth

Supported   All with Option UNJ

This softkey enables you to adjust the bandwidth of the internal reference oscillator.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 233

Remarks   None

Internal Square

Supported   All

This softkey enables you to internally generate a square wave as the modulation waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 108

Remarks   N/A

Inverse Video Off On

Supported   All

This softkey selects the display mode, text and background, for the signal generator.

Off   Inverse mode is off, the signal generator has dark text on a light background; the normal display mode for the signal generator.

On   Inverse mode is on, the signal generator display has light text on a dark background.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   The inverse video state is not affected by a preset or by a power cycle.

Inverted

Supported   All with Option 401

Use this softkey to reverse the direction of phase rotation of the internal Q signal. In this mode, the in-phase component lags the quadrature-phase component by 90°.

Preset   N/A

Range   N/A

Location	This key is accessed by editing the Phase Polarity field. Refer to "Phase Polarity" on page 446 for more information.
Remarks	None

I Offset

Supported	All

Use this softkey to enter an origin offset voltage for internally generated in-phase signals. This offset is used to remove imperfections in the in-phase signal or to introduce calibrated impairments.

Preset	0.0%
Range	−100% to 100%
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	The **I/Q Adjustments Off On** softkey must be set to On to enable this adjustment.
	When using this key to minimize the LO feedthrough signal, optimum performance is achieved when the adjustment is made after all other I/Q path adjustments, such as those made with the [Int Phase Polarity Normal Invert] or [Modulator Atten xx db Manual Auto] softkeys. If other adjustments are made after minimization is performed, the LO feedthrough signal may increase.

I/O Setup

Supported	All with Option UN7 or 300

Use this softkey to access a menu that enables you to configure the I/O parameters for the baseband bit error rate measurement.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

IP Address

Supported   All

This softkey enables you to enter the internet protocol (IP) address for your IP network connection. No IP address is entered at the factory.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   The IP address setting is not affected by a preset or by a power cycle.

I/Q

Supported   All with Option 001 or 002

This softkey accesses a menu for I/Q modulation.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 236

Remarks   None

I/Q

Supported   All

Use this hardkey to access a menu from which you can configure the internal I/Q modulator. You can also toggle the operational state of the I/Q modulator, external burst envelope, high crest mode, and ALC.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   None

I/Q Adjustments

Supported   All

Use this softkey to access a menu of I/Q adjustment choices for internally generated or

externally applied I and Q signals. In this menu you can change the I/Q gain balance, I and Q offset voltages, and quadrature skew. You can also toggle the operational state of these I/Q adjustments.

The current operating state of the I/Q adjustments function is displayed under the **I/Q Adjustments** softkey.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   None

I/Q Adjustments Off On

Supported   All

This softkey toggles the operating state of the I/Q adjustments.

> Off   When this softkey is in the off position, I/Q adjustment values are not applied to the I and Q signals.

> On   When this softkey is in the on position, the values entered for I/Q gain balance, quadrature skew, I offset, and Q offset are applied to the I and Q signals.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   None

I/Q Calibration

Supported   All

Use this softkey to access a menu from which you can configure and execute an I/Q calibration. You can set the start and stop frequency for a user-defined I/Q calibration, or choose an I/Q calibration over the entire frequency range of the signal generator. In this menu, you can also restore the original factory calibration data for the I/Q modulator.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   I/Q calibration data is not affected by a preset or by a power cycle.

An I/Q calibration should be performed approximately every 30 days, but it can be performed at any time to peak the performance of the I/Q modulator.

I/Q Gain Balance Source 1

Supported   All

Use this softkey to change the I to Q gain balance for the **Source 1** selection. For example, if you enter a value of 1 dB, the I signal will have 1 dB more amplitude than the Q signal. The gain balance adjustment can be used with externally applied I and Q signals or with internally generated I and Q signals. Use the gain balance to remove imperfections in I and Q or to introduce calibrated impairments.

Preset   0.00 dB

Range   −4 dB to 4 dB

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   The **I/Q Adjustments Off On** softkey must be set to On to enable this adjustment.

I/Q Mapping Normal Invert

Supported   All with Option 401

Use this softkey to toggle the I/Q outputs between normal and inverted.

Normal   In this state, the I/Q outputs are not inverted.

Invert   In this state, data on the I channel is switched to the Q channel, and data on the Q channel is switched to the I channel.

Preset   Normal

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 245

Remarks   None

I/Q Mod Filter Manual Auto

Supported   All

Use this softkey to access a menu from which you can either manually apply an I/Q

modulation filter or select **Auto** to enable the ESG to automatically choose a filter based on the active digital modulation settings. You can override the automatic mode at any time by manually selecting a filter from this menu.

The selected filter type is displayed in parentheses.

Preset	Through
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 29, 41, 73, 91, 99, 106, 247
Remarks	This softkey appears in all Arb modulation format menus and under the **I/Q** front panel hardkey. When an Arb modulation format is turned on, the **I/Q Mod Filter Manual Auto** softkey under the **I/Q** hardkey will be disabled (greyed out).

I/Q Off On

Supported   All

This softkey toggles the operating state of the internal I/Q modulator.

Off	This setting disables the internal I/Q modulator. You can turn off the I/Q modulation with this softkey even though the digital modulation mode is enabled. With this configuration, the RF output signal would not be modulated but the I/Q signals will be present at the rear panel I/Q outputs.
On	This setting enables the internal I/Q modulator. **I/Q Off On** is also toggled automatically to On when any of the digital modulation formats are enabled.

When this softkey is set to On, the I/Q annunciator will be displayed.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	RF output power will be attenuated if the I/Q modulator is turned on and an I/Q signal is not applied.
	Although you can enable I/Q modulation with this softkey, the RF carrier is modulated only when you have also set **Mod On/Off** to On.

I/Q Out

Supported   All

Use this softkey to access a menu from which you can select a signal source to be routed to the rear panel I and Q output connectors.

Preset   Ext 50 Ohm

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 107

Remarks   When a digital modulation format is turned on, the **Source 1** and **I/Q Out** selections automatically switch to BBG1. When the digital modulation is turned off, the **Source 1** and **I/Q Out** selections automatically switch to Ext 50 Ohm. You can override the automatic settings by manually selecting a different source.

I/Q Out Gain Balance

Supported   All

Use this softkey to change the I to Q gain balance at the rear panel I and Q external outputs. For example, if you enter a value of 1 dB, the I signal will have 1 dB more amplitude than the Q signal. Use the gain balance to remove imperfections in I and Q or to introduce calibrated impairments.

Preset   0.00 dB

Range   −4 dB to 4 dB

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   None

I/Q Output Atten

Supported   All

Use this softkey to set the attenuation level of the I/Q signal at the rear panel I and Q output connectors. A setting of 0.00 dB will result in 100 percent output signal power, while a setting of 40.00 dB will result in 0.01 percent output signal power.

Preset   6.00 dB

Range   0.00–40.00 dB

Location   See *Key and Data Field Menu Maps* guide: Pages 99, 107

Remarks   None

I/Q Output Control

Supported   All

Use this softkey to access a menu from which you can change the parameters that
control the I and Q output signals. In this menu you can control the I/Q output
attenuation levels, I/Q output gain balance, and I and Q offset voltages. You can also
select an I/Q output filter.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   None

I/Q Output Filter Manual Auto

Supported   All

Use this softkey to access a menu of filters that can be applied to the I and Q output
signals.

The selected filter type is displayed under the **I/Q Output Filter** softkey.

Preset   Through

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 16, 29, 41, 73, 91, 99,
                  106, 247

Remarks   This softkey appears in all Arb modulation format menus and under
                  the **I/Q** front panel hardkey. When an Arb modulation format is turned
                  on, the **I/Q Output Filter Manual Auto** softkey under the **I/Q** hardkey will
                  be disabled (greyed out).

IQ Phase Normal Invert

Supported   All with Option 409

This softkey toggles the phase relationship of the GPS I and Q signals.

Normal   In this state, the C/A code phase is aligned with the in-phase
              component (I), and the P code phase is aligned with the

quadrature-phase component (Q).

Invert	In this state, the Q signal is inverted, and the I component lags the Q component by 90 degrees in the resulting modulation.
Preset	Normal
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 109
Remarks	N/A

I/Q Scaling

Supported	All with Option 001 or 002

Use this softkey to adjust the amplitude of the I/Q outputs (for better ACP).

Preset	100%
Range	1–200%
Location	See *Key and Data Field Menu Maps* guide: Pages 77, 119, 134, 150, 166, 182, 198, 214
Remarks	None

I/Q Skew

Supported	All

Use this softkey to input skew changes to the I and Q paths. Equal and opposite skew is applied to both paths (RF Output and I/Q outputs) simultaneously. A positive value delays the I signal relative to the Q signal, and a negative value delays the Q signal relative to the I signal.

If the **Int I/Q Skew Correction RF BB Off** softkey is active, the I/Q signals are already optimized and adjusting I/Q skew would add an impairment to the signals. For signals routed to the rear panel outputs (BB), you may want to adjust the I/Q skew to account for any mismatch in the cables connected to the I/Q BNC connectors. If the **Int I/Q Skew Correction RF BB Off** softkey is set to Off, then adjusting the I/Q skew could improve the EVM (Error Voltage Magnitude).

I/Q skew adjustments are preserved when the instrument state is saved. I/Q skew adjustments are also preserved when instrument settings are changed.

Using I/Q skew while playing a user FIR file greater than 32 symbols will generate an error.

Preset	0.000 sec
Range	±5 nsec
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	MSK, FSK, and C4FM are constant envelope modulations and cannot be skewed (**Int I/Q Skew Correction RF BB Off** softkey should be set to Off). Refer to "Int I/Q Skew Correction RF BB Off" on page 346.

IS95

Supported	All with Option 401

Use this softkey to select the forward synchronization type as defined by the IS-95 CDMA standard.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the F-SYNCH Type field. Refer to "F-SYNCH Type" on page 306 for more information.
Remarks	None

IS-95

In the Standard Menu

Supported	All

Use this key to select a standard cdmaOne IS-95 filter.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 25, 32, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264
Remarks	None

In the Baseband Generator Menu

Supported	All with Option 001 or 002

Use this softkey to select a standard IS-95 baseband filter.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 68, 76, 111
Remarks	None

IS-95 and IS-2000

Supported   All with Option 001 or 002

Use this softkey to access a menu of IS-95 and IS-2000 filters in the Select Filter menu. This menu displays the following filter choices: IS-95, IS-95 w/EQ, IS-95 Mod, IS-95 Mod w/EQ and IS-2000 SR3 DS.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 52, 58, 68, 78, 109, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264
Remarks	None

IS-95 Mod

In the Standard Menu

Supported   All

Use this key to select a modified version of the standard IS-95 filter. This filter is modified for improved adjacent channel power performance. The modification is done in a manner that meets the IS-95 error function criterion.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 25, 32, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264
Remarks	None

In the Baseband Generator Menu

Supported   All with Option 001 or 002

Use this softkey to select a modified version of the standard IS-95 baseband filter. This

filter is modified for improved adjacent channel performance. The modification, however, is done in a manner that still meets the IS-95 error function criterion.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 68, 76, 111

Remarks None

IS-95 Mod w/EQ

In the Standard Menu

Supported All

Use this softkey to select a modified version of the standard IS-95 filter. This filter is modified for improved adjacent channel power performance, and includes the equalizer for phase compensation required by a base station. The filter modification is done in a manner that meets the IS-95 error function criterion.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 25, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264

Remarks None

In the Baseband Generator Menu

Supported All with Option 001 or 002

Use this softkey to select a modified version of the standard IS-95 baseband filter. This filter is modified for improved adjacent channel performance, and includes the equalizer specified by IS-95. The filter modification is done in a manner that still meets the IS-95 error function criterion.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 68, 76, 111

Remarks None

IS-95 w/EQ

In the Standard Menu

Supported   All

Use this softkey to select the standard IS-95 filter with the equalizer for phase compensation required by a base station.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 25, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264

Remarks   None

In the Baseband Generator Menu

Supported   All with Option 001 or 002

Use this softkey to select a standard IS-95 baseband filter with an equalizer provided for phase compensation required by the base station.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 68, 76, 111

Remarks   None

IS95 OQPSK

Supported   All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a modulation, or load an I/Q map into the I/Q table editor.

Selecting an IS95 OQPSK Modulation

Use this softkey to select IS95 offset quadrature phase shift keying (OQPSK) for modulating a continuous stream of the selected data pattern. IS95 OQPSK modulation transmits data at the rate of 2 bits per symbol.

The modulation selection appears under the **Select**, **QPSK and OQPSK**, and **PSK** softkeys in the Modulation Type menus.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 82, 127, 143, 159, 175, 191, 207, 223, 226
Remarks	None

Loading an IS95 OQPSK I/Q Map into the Table Editor

Use this softkey to load an IS95 offset quadrature phase shift keying (OQPSK) I/Q map into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 86, 130, 146, 162, 178, 194, 210, 226
Remarks	None

IS95 QPSK

Supported	All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a modulation, or load an I/Q map into the I/Q table editor.

Selecting an IS95 QPSK Modulation

Use this softkey to select IS95 quadrature phase shift keying (QPSK) for modulating a continuous stream of the selected data pattern. IS95 QPSK modulation transmits data at the rate of 2 bits per symbol.

The modulation selection appears under the **Select**, **QPSK and OQPSK**, and **PSK** softkeys in the Modulation Type menus.

Preset	N/A
Range	N/A
Location	See Key and Data Field Menu Maps guide: Pages 65, 82, 127, 143, 159, 175, 191, 207, 223, 226
Remarks	None

Loading an IS95 QPSK I/Q Map into the Table Editor

Use this softkey to load an IS95 quadrature phase shift keying (QPSK) I/Q map into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See Key and Data Field Menu Maps guide: Pages 86, 130, 146, 162, 178, 194, 210, 226
Remarks	None

IS-97 Levels

Supported	All with Option 401

Use this softkey to set the IS-95A channel power levels to IS-97 standard specification levels.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 22
Remarks	None

IS2000

Supported	All with Option 401

Use this softkey to select the forward synchronization type as defined by the IS-2000 CDMA standard.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the F-SYNCH Type field. Refer to "F-SYNCH Type" on page 306 for more information.
Remarks	None

IS-2000 SR3 DS

Supported	All with Option 401

Use this softkey to select the standard IS-2000 spreading rate 3 direct spread filter.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 25, 32, 44, 68, 249
Remarks	This softkey is only available when **Multicarrier Off On** is toggled to Off.

ISDN

Supported	All with Option 400

This field displays the reference measurement setup data type selected for the DPCH as integrated services digital network (ISDN).

Preset	N/A
Range	N/A
Location	
Remarks	Refer to "AMR 12.2 (25.944 v4.1)" on page 72 for more information.

J

JSTD8

Supported   All with Option 401

Use this softkey to select the forward synchronization type as defined by the JSTD8 CDMA standard.

Preset   N/A

Range   N/A

Location   This key is accessed by editing the F-SYNCH Type field. Refer to "F-SYNCH Type" on page 306 for more information.

Remarks   None

K

Kaiser

Supported   All with Option 001 or 002

Use this softkey to apply the Kaiser windowing function to the selected filter. Selecting **Kaiser** also activates the Beta factor which you can adjust to change the trade-off between optimized ACP or EVM.

Windowing can be applied to any default FIR filter that you load into the Define User FIR table. Windowing improves out of band performance (ACP), but simultaneously degrades passband performance (EVM), by smoothing the filter's transition to zero.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 25, 38, 48, 56, 62, 72, 87, 114, 129, 145, 161, 177, 193, 209, 225, 255, 260, 269

Remarks   None

L

LAN Setup

Supported   All

Use this softkey to access a menu enabling you to enter a local area network (LAN) host name and IP address for communication over the LAN.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   None

Last Mkr Point

Supported   All with Option 001 or 002

This softkey enables you to set the last marker point when you define a range of points. You can use either the knob or the numeric keys to set this value, which must be greater than or equal to 1, and less than or equal to the total number of waveform points in the selected waveform.

If you enter a value for either the first marker point or the last marker point that would make the first marker point occur after the last, the last marker point is automatically adjusted to match the first marker point.

Preset   last waveform point

Range   1–total number of waveform points

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255

Remarks   None

LCMask

Supported   All with Option 401

This field displays the current long code mask value (in hexadecimal) for the forward link paging, fundamental and supplemental channels. This 42-bit binary number creates

the unique identity of the long code.

To change the long code mask for the paging channel, highlight the `LCMask` field, press the **Edit Item** softkey and set a new value using the **Field1**, **Field2** and **Field3** softkeys. To change the long code mask for the fundamental or supplemental channels, highlight the `LCMask` field, press the **Edit Item** softkey and set a new value using the **Header** and **Permuted ESN** softkeys.

Preset	*F-PCH:* 319A0200000 *F-FCH, F-SCH1, F-SCH2:* 31800000000
Range:	0–3FFFFFFFFFF
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

Leap Seconds

Supported   All with Option 401

This field displays the current leap seconds value. The Leap Seconds field is used to correct the Universal Coordinated Time (UTC). To change the leap seconds value, use the down arrow key to move the cursor to the second of data fields and highlight the Leap Seconds field. Press the **Edit Item** softkey and enter a new hexadecimal value.

Preset	00
Range	00–FF
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

Left

Supported   All with Option 400

This softkey selects a scramble code between 8191 and 16384 for the downlink ChipARB physical channel.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the ScrCode Type field. Refer to "ScrCode Type" on page 541 for more information.
Remarks	None

Left Alternate

Supported   All with Option 400

This softkey sets the downlink channel scramble type to left alternate. Selecting **Left Alternate** adds 8192 to the scramble code.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 248, 253

Remarks   None

LF Out

Supported   All

Use this hardkey to access a menu of softkeys that enable you to configure the internal, low frequency source.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   None

LF Out Amplitude

Supported   All

This softkey enables you to scale the output of the signal at the LF OUTPUT connector.

Preset   0.0 V

Range   0.0–5.0 V_p

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   None

LF Out Freq

Supported   All

Pressing this key allows you to enter a frequency for the internal function generator.

Preset	400.0 Hz
Range	0.5 Hz–100.0 kHz 0.5 Hz to 20.0 kHz if triangle, ramp or square wave is selected.
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	This softkey is available after selecting function generator as the LF Out Source.

LF Out Off On

Supported All

This softkey toggles the operating state of the source at the LF OUTPUT connector on and off.

Off	The low frequency output is disabled and no signal is available at the LF OUTPUT connector.
On	The selected source, for example function generator, is enabled and the signal is available at the LF OUTPUT connector.

Refer to the "LF Out Source" for more information on choosing the source.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	Once you have toggled this state on, the signal is immediately available at the LF OUTPUT connector. Neither the **RF On/Off** hardkey nor the **Mod On/Off** hardkey affect this state.

LF Out Period

Supported All

This softkey enables you to set the period of the low frequency pulse signal.

Preset	N/A
Range	16 ms–30.0 s
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	This softkey is available after selecting the internal source to operate as a function generator and selecting pulse as the waveform type.

LF Out Source

Supported   All

Use this softkey to access a menu of available sources for the low frequency output. You can choose to output the signal from one of the internal sources as it is being used by a modulation or you can use the internal source as a function generator and select that signal to output at the LF OUTPUT connector.

If you choose an internal source, the frequency and shape of the signal at the LF OUTPUT connector is set by the internal source. For example, if the internal source is currently assigned to an AM path configuration and AM is turned on, the signal output at the LF OUTPUT connector will have the frequency and shape of the amplitude modulating signal. You can scale the amplitude of the output signal using the **LF Out Amplitude** softkey.

If you choose to set the internal source as a function generator, you can select a frequency and shape in addition to selecting the amplitude for the LF output signal.

Preset	Internal Monitor
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	When you use an internal source as a function generator, any modulation with the internal source selected is turned off.

LF Out Start Freq

Supported   All

This softkey enables you to change the starting frequency for swept-sine low frequency output. This key is coupled to the **LF Out Freq** softkey in the LF Out menu and the **LF Out Tone 1 Freq** softkey in the LF Out dual-sine menu. An LF Out start frequency setting is reflected in the **LF Out Freq** and **LF Out Tone 1 Freq** softkeys. Conversely, if you change the value for either the **LF Out Freq** softkey or the **LF Out Tone 1 Freq** softkey, the value for the LF Out start frequency is changed.

Preset	400.0 Hz
Range	0.1 Hz–100.0 kHz (minimum increment is 0.1 Hz)
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	This softkey is available after selecting the internal source to operate as a function generator and selecting swept-sine as the waveform type.

LF Out Stop Freq

Supported   All

This softkey enables you to change the stop frequency for swept-sine low frequency output.

This key is coupled to the **LF Out Tone 2 Freq** softkey in the LF Out Dual-Sine menu. Any value set for the LF Out stop frequency is reflected in the **LF Out Tone 2 Freq** softkey.

Preset   400.0 Hz

Range   0 .1 Hz–100.0 kHz (minimum increment is .1 Hz)

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   This softkey is available after selecting the internal source to operate as a function generator and selecting swept-sine as the waveform type.

LF Out Sweep Time

Supported   All

This softkey enables you to set the sweep rate for the low frequency swept-sine output. The signal generator will sweep from the specified start frequency to the stop frequency at the rate set with this key.

Preset   100.0 ms

Range   1 ms–65.535 s (minimum increment is 1.0 ms)

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   This softkey is available after selecting the internal source to operate as a function generator and selecting swept-sine as the waveform type.

LF Out Sweep Trigger

Supported   All

Use this softkey to access a menu of choices that enables you to select the triggering mode for the swept-sine low frequency output.

Free Run   The source will continue sweeping without a trigger signal.

Trigger Key   The source will sweep after the front panel **Trigger** hardkey is pressed.

Bus   The GPIB is used to trigger the source for a sweep.

Ext   An external trigger, either a positive or negative signal, is used to

generate a sweep.

Preset	Free Run
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	This softkey is available after selecting the internal source to operate as a function generator and selecting swept-sine as the waveform type.

LF Out Tone 1 Freq

Supported   All

This softkey enables you to set the frequency for the low frequency output tone 1.

This key is coupled to the **LF Out Freq** softkey in the LF Out menu and the **LF Out Start Freq** softkey in the LF Out Swept-Sine menu. An LF Out tone 1 frequency setting is reflected in the **LF Out Freq** and **LF Out Start Freq** softkeys.

Preset	400.0 Hz
Range	0.1 Hz–100.0 kHz (minimum increment allowed is 0.5 Hz)
Location	See *Key and Data Field Menu Maps* guide: Page 101
Remarks	This softkey is available after selecting the internal source to operate as a function generator and selecting dual-sine as the waveform type.

LF Out Tone 2 Ampl % Of Peak

Supported   All

This softkey enables you to set the amplitude of the alternate frequency as a percent of the peak modulated amplitude. The sum of the two LF Out amplitudes results in the total LF Out amplitude set by the **LF Out Amplitude** softkey in the LF Out menu.

For example, if the total LF Out amplitude is 300 mV_p and you set the LF Out tone 2 amplitude percent of peak to 33%, then the amplitude of LF Out tone 1 will be 200.0 mV_p and the amplitude of LF Out tone 2 will be 100.0 mV_p (33% of 300.0 mV_p). The amplitude of the two tones will equal 300.0 mV_p.

Preset	50.0%
Range	0.0–100% (minimum increment is 0.1%)
Location	See *Key and Data Field Menu Maps* guide: Page 101

Remarks   This softkey is available after selecting the internal source to operate as a function generator and selecting dual-sine as the waveform type.

LF Out Tone 2 Freq

Supported   All

This softkey enables you to change the alternate frequency of the modulation source. The alternate frequency is the second frequency in the dual-sine mode or the stop frequency in swept-sine mode. This key is coupled to the **LF Out Freq** softkey in the LF Out menu and the **LF Out Stop Freq** softkey in the LF Out Swept-Sine menu.

Preset   400.0 Hz

Range   0.1 Hz–100.0 kHz (minimum increment allowed is 0.5 Hz)

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   This softkey is available after selecting the internal source to operate as a function generator and selecting dual-sine as the waveform type.

LF Out Waveform

Supported   All

This softkey accesses a menu from which you can choose a waveform to be generated by the internal modulation source.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks   None

LF Out Width

Supported   All

This softkey enables you to set the pulse width for the low frequency output pulse signal.

Preset   N/A

Range   8.0 µS – 30 Sec

Location   See *Key and Data Field Menu Maps* guide: Page 101

Remarks In the LF Out menu this softkey is available after selecting the internal source to operate as a function generator and selecting pulse as the modulating waveform type.

Link Control

Supported All with Option 400/401

Use this softkey to access a menu from which you can select a real-time CDMA2000 or W-CDMA channel and modify its parameters.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 51, 57, 262

Remarks None

Link Down Up

Supported All with Option 400

Use this softkey to select a W-CDMA downlink or uplink channel.

  Down Selects the downlink, base to UE, W-CDMA configuration.

  Up Selects the uplink, UE to base, W-CDMA configuration.

Preset: Down

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 244, 262

Remarks N/A

Link Forward Reverse

Supported All with Option 401

Use this softkey to toggle the CDMA2000 channel setup link selection between forward and reverse.

  Forward This mode enables the settings for a forward link (base to mobile) channel setup.

  Reverse This mode enables the settings for a reverse link (mobile to base) channel setup.

Preset	Forward
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 26, 39, 51, 57
Remarks	None

List

Supported   All

This softkey enables you to specify that only signal generator list sweep files be included in the catalog of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	None

Load All from NVWFM Memory

Supported   All with Option 001 or 002

This softkey enables you to load all of the files from non-volatile arbitrary waveform (NVWFM) memory to waveform (WFM1) memory where you can play the waveforms.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 89, 92
Remarks	None

Load Cal Array From Step Array

Supported   All

This softkey enables you to set up a table that includes the start frequency, stop frequency, and number of points that are defined in the Configure User Flatness Step Array menu.

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Page 4
Remarks	None

Load Default FIR

Supported	All with Option 001 or 002

Use this softkey to access a menu for automatically filling the FIR table editor with coefficient values from pre-defined filters such as root Nyquist, Nyquist, Gaussian and rectangle. The default filter parameters can also be selected in this menu allowing you to choose the filter alpha or BbT and the number of filter symbols.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 23, 33, 45, 54, 60, 70, 84, 112, 124, 140, 156, 172, 188, 204, 220, 251, 258, 265
Remarks	None

Load Default FSK

Supported	All with Option 001 or 002

Use this softkey to access a menu from which you can select a default symmetric FSK modulation and configure the frequency deviation for the FSK modulation selected.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 81, 126, 142, 158, 174, 190, 206, 222
Remarks	None

Load Default I/Q Map

Supported	All with Option 001 or 002

Use this softkey to access a menu from which you can select a standard I/Q mapping from a set of either PSK or QAM modulations.

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 80, 125, 141, 157, 173, 189, 205, 221
Remarks	None

Load From Selected File

Supported	All

Use this softkey to replace the current information in a table editor with the information in the highlighted file. You will be prompted for confirmation.

Preset	N/A
Range	N/A
Location	Load From Selected File is located in each of the catalog of files.
Remarks	This key is inactive unless at least one file has been stored to memory.

Load List From Step Sweep

Supported	All

This softkey enables you to copy the step sweep data points into the list sweep data points.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 231
Remarks	You can have only one sweep list at a time so be certain that you wish to overwrite the existing list.

Load Mirror Image of Fall Shape

Supported	All with Option 001 or 002

Use this softkey to load the Rise Shape Editor with a mirror image of the Fall Shape Editor when editing a burst shape. For more information on editing burst shapes, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 76, 122, 137, 153,

169, 185, 201, 217

Remarks	This softkey is available when the Rise Shape Editor is the active function; when the Fall Shape Editor is the active function, this softkey toggles to **Load Mirror Image of Rise Shape.**

Load Mirror Image of Rise Shape

Supported	All with Option 001 or 002

Use this softkey to load the Fall Shape Editor with a mirror image of the Rise Shape Editor when editing a burst shape. For more information on editing burst shapes, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 76, 122, 137, 153, 169, 185, 201, 217
Remarks	This softkey is available when the Fall Shape Editor is the active function; when the Rise Shape Editor is the active function, this softkey toggles to **Load Mirror Image of Fall Shape.**

Load Segment from NVWFM Memory

Supported	All with Option 001 or 002

This softkey enables you to load the selected file from non-volatile arbitrary waveform (NVWFM) memory to waveform (WFM1) memory where you can play the waveform.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 89, 92
Remarks	None

Load/Store

Supported	All

Use this softkey to access a menu for loading tables from, and storing tables to, non-volatile memory. Non-volatile memory enables you to retain files for future use after an instrument power cycle.

Preset	N/A
Range	N/A
Location	Load/Store is located in the table editor menus.
Remarks	None

Load Store

Supported   All

This softkey accesses a menu that enables you to load table values from, and store table values to, non-volatile memory. Non-volatile memory retains files for future use after an instrument power cycle.

Load	This enables you to load arbitrary waveform (NVARB) segments to the displayed catalog of files.
Store	This enables you to store waveform segments (WFM1) from volatile memory to non-volatile arbitrary waveform (NVWFM) memory.

Preset	N/A
Range	N/A
Location	Load Store is located in the table editor menus.
Remarks	None

`Long Code Mask`

Supported   All with Option 401

This field displays the current long code mask value (in hexadecimal) for the reverse link. This 42-bit binary number creates the unique identity of the long code. To change the long code mask, highlight the `Long Code Mask` field, press the **Edit Item** softkey and enter a new value.

Preset	00000000000
Range:	0–3FFFFFFFFFF
Location	See *Key and Data Field Menu Maps* guide: Page 57
Remarks	None

Long Code State

Supported   All with Option 401

This field displays the current long code seed value (in hexadecimal) used to generate the actual long code. The long code is a PN sequence that is used for scrambling in the forward channels and spreading in the reverse channels. To change the long code seed, highlight the Long Code State field, press the **Edit Item** softkey and enter a new value.

Preset	0000000000
Range	0–3FFFFFFFFF
Location	See *Key and Data Field Menu Maps* guide: Page 57
Remarks	None

Loop Selected Tests

Supported   All

This softkey is provided for self test diagnostics. Refer to the troubleshooting chapter of the service guide for more information.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 235
Remarks	This key is included for use by service personnel.

Low Amplitude

Supported   All with Option 300

This softkey enables you to set the minimum amplitude of the range to be searched.

Preset	*GSM*: TCH/FS –115.0 dBm

	EDGE: DL MCS5 –110.0 dBm
	            DL MCS9 –100.0 dBm
	            Uncoded –105.0 dBm

Range	–136 to 13 dBm
Location	See *Key and Data Field Menu Maps* guide: Page 8, 8, 11
Remarks	Optimum speed will be obtained if the search range is minimized to around 5–10 dB.

Low Capacity

Supported   All with Option 402

Use this softkey to select low capacity as the timeslot type for the active timeslot. When you have selected **Low Capacity** for a timeslot, the visual representation of the timeslot type on the display updates to show the configuration.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 196
Remarks	None

Low Capacity with Z Field

Supported   All with Option 402

Use this softkey to select low capacity with Z field as the timeslot type for the active timeslot. When you have selected **Low Capacity with Z Field** for a timeslot, the visual representation of the timeslot type on the display updates to show the configuration.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 196
Remarks	None

LTM OFF

Supported   All with Option 401

This field displays the current offset of local time (where 01 = 30 minutes, 02 = 60 minutes, 03 = 90 minutes, and so on) from the system time. The local time offset is displayed in hexadecimal notation. To change the local time offset, highlight the LTM OFF field, press the **Edit Item** softkey and enter a new value.

Preset	00
Range	00–3F
Location	
Remarks	None

M

Manual

Supported   All

This softkey enables you to manually toggle the RF output power between main and alternate amplitudes using the **Manual Trigger Main Delta** softkey.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 5

Remarks   None

Manual Mode Off On

Supported   All

This softkey toggles the operating state of the manual mode selection for the current sweep point.

Off	When Manual Mode is off, sweeping occurs over the entire list or range of points.
On	When Manual Mode is on, the selected sweep point controls the frequency and amplitude according to the sweep type.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 230

Remarks   This key is disabled when the **Sweep** softkey is set to Off.

Manual Point

Supported   All

This softkey enables you to choose a point in the sweep list. When Manual Mode is on, the selected point controls the output parameters (frequency and/or amplitude) according to the sweep type.

Preset	1
Range	1–maximum number in current sweep configuration
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	This key is disabled when **Manual Mode Off On** is set to Off.
	If list or step mode is controlling frequency and/or power, then the indexed point in the respective list(s) will be used.
	If the point selected is beyond the maximum number in current sweep configuration, then the point will be set to the maximum possible point, and an error will be generated.

Manual Trigger Main Delta

Supported   All with Option 001 or 002

Use this softkey to manually toggle the RF output power between main and alternate amplitudes.

For more information on alternate amplitude, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 5
Remarks	You must select Manual in the **Alt Ampl Trigger** menu for this softkey to be enabled.

Marker 1 2 3 4

Supported   All with Option 001 or 002

This softkey enables you to select a marker (1–4) and then set the selected marker to the first point, last point, or a range of points of a waveform. You may also set the marker off on all points of the waveform.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255
Remarks	For this softkey to be available, the modulation format must be enabled.

Marker 1

Supported   All with Option 001 or 002

Use this softkey to route marker 1 to control the Pulse/RF Blank, ALC Hold, or Alternate Amplitude features. This softkey also creates a signal on the EVENT 1 rear panel BNC connector.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 92, 105, 255

Remarks   None

Marker 2

Supported   All with Option 001 or 002

Use this softkey to route marker 2 to control the Pulse/RF Blank, ALC Hold, or Alternate Amplitude features. This softkey also creates a signal on the EVENT 2 rear panel BNC connector.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255

Remarks   None

Marker 3

Supported   All with Option 001 or 002

Use this softkey to route marker 3 to control the Pulse/RF Blank, ALC Hold, or Alternate Amplitude features. This softkey also creates a signal on the rear panel AUX I/O connector, pin 19.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255

Remarks   None

Marker 4

Supported   All with Option 001 or 002

Use this softkey to route marker 4 to control the Pulse/RF Blank, ALC Hold, or Alternate Amplitude features. This softkey also creates a signal on the rear panel AUX I/O connector, pin 18.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255

Remarks   None

Marker Polarity

Supported   All with Option 001 or 002

This softkey accesses a menu for setting the active polarity to active high or active low.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 20, 34, 49, 72, 92, 105, 255

Remarks   N/A

Marker 1 Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey enables you to set the polarity of marker 1.

   Neg   When you select Neg, the markers are set to a negative polarity.

   Pos   When you select Pos, the markers are set to a positive polarity.

Preset   Positive

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 20, 34, 49, 72, 92, 105, 255

Remarks   None

Marker 2 Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey enables you to set the polarity of marker 2.

    Neg   When you select Neg, the markers are set to a negative polarity.

    Pos   When you select Pos, the markers are set to a positive polarity.

Preset   Positive

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 20, 34, 49, 72, 92, 105, 255

Remarks   None

Marker 3 Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey enables you to set the polarity of marker 3.

    Neg   When you select Neg, the markers are set to a negative polarity.

    Pos   When you select Pos, the markers are set to a positive polarity.

Preset   Positive

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 20, 34, 49, 72, 92, 105, 255

Remarks   None

Marker 4 Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey enables you to set the polarity of marker 4.

    Neg   When you select Neg, the markers are set to a negative polarity.

    Pos   When you select Pos, the markers are set to a positive polarity.

Preset   Positive

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Page 20, 34, 49, 72, 92, 105, 255
Remarks	None

Marker Routing

Supported   All with Option 001 or 002

This softkey accesses a menu for routing markers to the Pulse/RF Blank, ALC Hold, and the Alternate Amplitude features.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 20, 34, 49, 72, 92, 105, 255
Remarks	N/A

Marker Utilities

Supported   All with Option 001 or 002

This softkey accesses a menu of operations for setting up markers. This includes setting marker polarity, routing markers to different features (such as RF blanking, ALC Hold, and Alternate Amplitude) and for setting markers for a specified waveform.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 16, 29, 41, 65, 91, 103, 246
Remarks	N/A

Max input

Supported   All with Option 400

This softkey, in the downlink Test Setup menu, defines the maximum receiver input power at the user equipment (UE) antenna connector that does not degrade the specified BER performance. The receiver is stressed with high levels of interference from unwanted signals.

Preset	N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Max Pwr

Supported   All with Option 400

This field displays the maximum power level for the physical random access channel (PRACH) preamble and the dedicated physical channel (DPCH). The maximum power setting is coupled to the ramp step and Init Power fields. Refer to "Init Pwr" on page 336. for more information.

Preset	–136.00 dBm
Range	–136.00 to 20 dBm
Location	See *Key and Data Field Menu Maps* guide: Pages 270, 273
Remarks	The preamble power will ramp up to the maximum power set in the Max Pwr field or until the AICH signal is received.
	The actual RF output is limited to the specifications of the signal generator although the value can be entered up to 20 dBm.

Mcarrier Spacing

Supported   All with Option 401

Use this softkey to access a menu from which you can select the carrier spacing for multicarrier spreading.

Preset	1.25 MHz
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 28, 40
Remarks	Cellular band uses 1.23 MHz and PCS band uses 1.25 MHz CDMA-standard carrier spacing.
	Spreading type must be set to multicarrier and the spread rate must be 3 (SR3) for this setting to become active.

MCDMA

Supported	All

Press this softkey to set the current catalog type to multicarrier CDMA (MCDMA) and display the catalog of MCDMA files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	Catalog type selection is not affected by a preset or by a power cycle.

MCS1 Configure

Supported	All with Option 300

Use this softkey to select a downlink packet data traffic channel with block type 5 in accordance with GSM 05.03.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 10
Remarks	None

MDMOD

Supported	All

Press this softkey to set the current catalog type to MDMOD and display the catalog of MDMOD files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	Catalog type selection is not affected by a preset or by a power cycle.

MDWCDMA

Supported	All

Press this softkey to set the current catalog type to multicarrier downlink W-CDMA

(MDWCDMA) and display the catalog of MDWCDMA files.

Preset　　　　N/A

Range　　　　N/A

Location　　　See *Key and Data Field Menu Maps* guide: Page 237

Remarks　　　Catalog type selection is not affected by a preset or by a power cycle.

Measurement Mode BER/BLER% Search

Supported　　　All with Option 300

This softkey selects the measurement mode for the GSM bit error rate test.

   BER/BLER%　This choice selects bit error rate or block error rate as the measurement mode.

   Search　　　This choice selects sensitivity search as the measurement mode.

Preset　　　　BER/BLER%

Range　　　　N/A

Location　　　See *Key and Data Field Menu Maps* guide: Page 8

Remarks　　　None

Memory Catalog

Supported　　　All

Use this softkey to access a menu of choices enabling you to display a catalog of user files. In addition, the menu displays file management functions and a menu for choosing file types.

Preset　　　　N/A

Range　　　　N/A

Location　　　See *Key and Data Field Menu Maps* guide: Page 232

Remarks　　　None

Message–Control Raw Data (RPS13)

Supported　　　All with Option 400

This softkey assigns message control raw data to the selected rear panel AUX I/O output

connector.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The message control raw data signal can be assigned to numerous different output connectors/pins. The **(RPS13)** designator refers to the remote SCPI command that corresponds to this softkey.

Message–Control Raw Data Clock (RPS14)

Supported   All with Option 400

This softkey assigns message control raw data clock to the selected rear panel AUX I/O output connector.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The message control raw data clock can be assigned to numerous different output connectors/pins. The **(RPS14)** designator refers to the remote SCPI command that corresponds to this softkey.

Message–Data Raw Data (RPS11)

Supported   All with Option 400

This softkey assigns message data raw data to the selected rear panel AUX I/O output connector.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The message data raw data signal can be assigned to numerous different output connectors/pins. The **(RPS11)** designator refers to the remote SCPI command that corresponds to this softkey.

Message–Data Raw Data Clock (RPS12)

Supported   All with Option 400

This softkey assigns the message data raw data clock to the selected rear panel AUX I/O output connector.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 273

Remarks   The message data raw data clock can be assigned to numerous different output connectors/pins. The **(RPS12)** designator refers to the remote SCPI command that corresponds to this softkey.

Message Pulse (RPS22)

Supported   All with Option 400

This softkey assigns message pulse to the selected rear panel AUX I/O output connector.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 273

Remarks   The message pulse can be assigned to different output connectors/pins.

`Message Type`

Supported   All with Option 401

This field displays the current message type value for the forward synchronization channel. The message types are displayed in hexadecimal notation. The message synchronizes the pilot PN sequence offset with the even second clock. To change the message type, highlight the `Message Type` field, press the **Edit Item** softkey and enter a new value.

Preset   01

Range   00–FF

Location   See *Key and Data Field Menu Maps* guide: Page 59

Remarks   None

Meter Address

Supported   All

This softkey enables you to select the external power meter GPIB address for use during the user flatness calibration.

Preset   N/A

Range   0–30

Location   See *Key and Data Field Menu Maps* guide: Page 5

Remarks   The meter address is not affected by a preset or by a power cycle.

The power meter is controlled only through a GPIB cable.

Meter Channel A B

Supported   All

Use this softkey to toggle external power meter monitoring between channel A and channel B.

   A   The external power meter is instructed to monitor channel A for input.

   B   The external power meter is instructed to monitor channel B for input.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 5

Remarks   This softkey is only available when using external power meters that have two channels.

The power meter channel selection is not affected by a preset or by a power cycle.

The power meter is controlled only through a GPIB cable.

Meter Timeout

Supported   All

This softkey enables you to select the remote timeout length of the external power meter during user flatness calibration.

Preset   N/A

Range	1.0 ms–100.0 s
Location	See *Key and Data Field Menu Maps* guide: Page 5
Remarks	The meter timeout setting is not affected by a preset or by a power cycle.
	The power meter is controlled only through a GPIB cable.

MFCDMA

Supported   All

Press this softkey to set the current catalog type to MFCDMA and display the catalog of MFCDMA files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	Catalog type selection is not affected by a preset or by a power cycle.

MFWCDMA

Supported   All

Press this softkey to set the current catalog type to multicarrier forward link CDMA (MFWCDMA) and display the catalog of MFWCDMA files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	Catalog type selection is not affected by a preset or by a power cycle.

Min Power

Supported   All with Option 400

This field displays the minimum power level for the dedicated physical channel (DPCH). The minimum power setting is coupled to the power step and Init Power fields. Refer to "Init Pwr" on page 336 for more information.

Preset	–40.00 dBm
Range	–40 to 0 dBm

Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	N/A

Mirror Table

Supported	All with Option 001 or 002

Use this softkey to mirror the FIR table entries such that the table doubles in size and the values in the top half of the table are duplicated in the bottom half of the table in reverse order.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 23, 33, 45, 54, 60, 70, 78, 112, 124, 140, 156, 172, 188, 204, 220, 252, 258, 265
Remarks	None

Mkr 2 To RF Blank Off On

Supported	All

This softkey enables you to select the operating state of the RF blanking function.

Off	When you select Off, RF blanking is turned off when marker 2 is set low.
On	When you select On, RF blanking is turned on when marker 2 is set low.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 91
Remarks	None

Mlt ESG Sync Trigger

Supported	All with Option 400

Use this softkey instantly synchronize the output signals of multiple ESGs while performing open-loop transmit diversity testing for W-CDMA. For more information on transmit diversity, refer to the User's Guide.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	None

Mlt-ESG-Sync Trigger-Out (DRPS42)

Supported   All with Option 400

This softkey assigns the multiple ESG synchronization trigger to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS42)** designator refers to the remote SCPI command that corresponds to this softkey.

Mobile Setup

Supported   All with Option 401

Use this softkey to access the table editor from which you can select and modify the parameters of the mobile station. Highlight the field you want to change and press the **Edit Item** key.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 57
Remarks	This softkey is available for the reverse link only.

Mod Index

Supported   All with Option 406

This softkey enables you to set the ratio of peak-to-peak frequency deviation to the bit rate for a Bluetooth signal.

Preset	0.315

Range   0.250–0.400

Location   See *Key and Data Field Menu Maps* guide: Page 239

Remarks   None

Mod Status Info Off On

Supported   All

This softkey turns the Modulation Status Information listing on or off.

On   When the modulation status is set to on, modulation information is displayed when you access one of the modulation menus, for example AM as shown in Figure 2 on page 397.

Off   When the modulation status is set to off, information about the status of the modulation, is not displayed.

Figure 2   **Modulation Status Information**
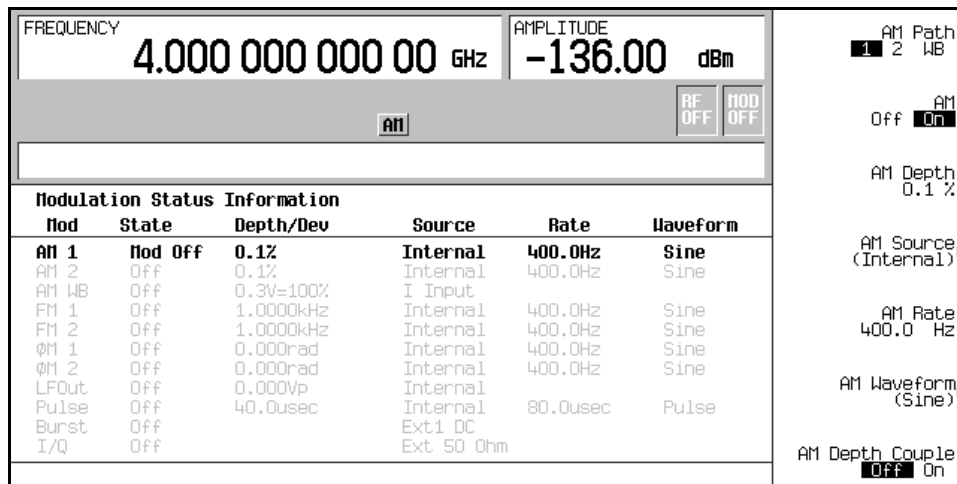
Preset   On

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   None

Mode

Supported   All

Use this hardkey to access a menu of modulation formats.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 15, 63, 102, 115, 243

Remarks   None

Mode 1 Optimize <10 kHz Offset

Supported   All without UNJ

Use this softkey to set the phase-lock loop bandwidth to optimize phase noise for offsets below 10 kHz.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 97

Remarks   None

Mode 2 Optimize >10 kHz Offset

Supported   All without UNJ

Use this softkey to set the phase-lock loop bandwidth to optimize phase noise for offsets above 10 kHz.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 97

Remarks   None

Modify All Scramble Codes

Supported   All with Option 400

This softkey enables you to set the scramble code field for all channels to the same value.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	None

Mode Setup

Supported   All

Use this hardkey to return to the main menu of the active digital modulation format you most recently accessed under the **Mode** hardkey. If a digital modulation format offers softkey selections for both **Arb Waveform Generator** and **Real Time I/Q Baseband**, as it does with the Custom format, you must select one of these choices for the **Mode Setup** key to recognize you accessed the format, so it can return you to its main menu. After a power cycle, if you have not yet accessed a digital modulation format, the **Mode Setup** key accesses the digital modulation format menu, as if you pressed the **Mode** key.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 102
Remarks	None

Modify License Key

Supported   All

Press this softkey to enter the license key for the highlighted software option. Software options are linked to specific hardware options that must be installed before the software option is valid. Adding new software options requires the use of a license key provided by Agilent Technologies at the time of purchase. Once the license key is entered, the software option will be enabled when you press the **Proceed with Reconfiguration** softkey.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 236
Remarks	If you enable an option that does not have the required hardware installed, the menus for that option will be activated but the option cannot operate, regardless of what the menus may indicate.

Modify Standard

Supported   All with Option 402

This softkey accesses a menu of choices that enables you to modify the following aspects of the standard transmission:

- filter characteristics (including user-defined FIR filters)

- symbol rate

- modulation type (including user-defined modulations)

- burst shape characteristics (rising edge time and delay; falling edge time and delay)

- phase polarity

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 116, 131, 147, 163, 179, 195, 211

Remarks   None

Modulation Catalog Types

Supported   All

Press this softkey to reveal a menu of real time I/Q modulation file types that can be selected.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 236

Remarks   None

Modulation Type

Supported   All with Option 001 or 002

Use this softkey to access a menu from which you can select predefined or custom modulation types, create user-defined I/Q and FSK modulations, or restore the default modulation type.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 74, 118, 133, 149, 165, 181, 197, 213
Remarks	None

Modulator Atten Manual Auto

Supported	All

This softkey toggles the attenuation mode of the internal I/Q modulator between manual and automatic.

Manual	In the manual mode, you can manually set the attenuation level of the I/Q modulator. A setting of 0.00 dB will result in 100 percent signal power, while a setting of 40.00 dB will result in 0.01 percent signal power.
Auto	In the automatic mode, the attenuation level is automatically set to a factory-determined value for best performance, based on the digital modulation settings.

Preset	Auto
Range	*Manual:* 0.00–40.00 dB *Auto:* N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 29, 41, 73, 91, 106, 107, 247
Remarks	This softkey appears in all Arb modulation format menus and under the **Mux** front panel hardkey. When an Arb modulation format is turned on, the **Modulator Atten Manual Auto** softkey under the **Mux** hardkey will be disabled (greyed out).

Msg Ctrl

Supported	All with Options 400, 403

This softkey is used to select the physical random access channel (PRACH) message control part as the reference for determining the power level for the Eb/No calculation. The selection is displayed in the `E Ref` field of the uplink physical random access channel PRACH AWGN table editor.

This selection is coupled to the `data rate`, `C/N value (dB)` field, the `C Power` field,

and the `N Power` field and can change the values displayed by these fields.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 271

Remarks   None

Msg-Ctrl Data

Supported   All with Option 400

This field displays the message control data type used for the uplink setup. To change the field selection, highlight the `Msg-Ctrl Data` field, press the **Edit Item** softkey and make a choice from the menu that appears.

Preset   3GPP STD

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 270

Remarks   The 3 GPP STD data is defined in 3 GPP Standard TS25.211. This standard defines fields and slot formats.

Msg Data

Supported   All with Options 400, 403

This softkey is used to select the physical random access channel (PRACH) data part as the reference for determining the power level for the Eb/No calculation. The selection is displayed in the `E Ref` field of the uplink physical random access channel PRACH AWGN table editor.

This selection is coupled to the data rate, `C/N value (dB)` field, the `C Power` field, and the `N Power` field and can change the values displayed by these fields.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 271

Remarks   None

Msg–Data Data

Supported   All with Option 400

This field displays the data type used for the uplink physical random access channel (PRACH) code message data part setup. To change the field selection, highlight the Msg-Data Data field, press the **Edit Item** softkey and make a choice from the menu that appears.

Preset	TrCh
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	The 3GPP STD data is defined in 3 GPP standard TS25.211. This standard defines fields and slot formats.

Msg Pwr

Supported   All with Option 400

This field displays the total message power for the physical random access channel (PRACH).

Preset	–136.00 dBm
Range	–136.00 to 20.00 dBm
Location	See *Key and Data Field Menu Maps* guide: Page 57
Remarks	The actual RF output is limited to the specifications of the signal generator although the value can be entered up to 20 dBm.

MSK

Supported   All with Option 001 or 002

Use this softkey to select minimum shift keying (MSK) modulation for modulating a continuous stream of the selected data pattern. MSK modulation transmits data at the rate of 1 bit per symbol.

The current phase deviation value appears under the **MSK** softkey in the Modulation Type menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 75, 121, 136, 152,

168, 184, 200, 216

Remarks   None

MTONE

Supported   All

Press this softkey to set the current catalog type to MTONE and display the catalog of MTONE files.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 237

Remarks   None

Multicarrier Define

Supported   All with Option 400/401

Use this softkey to access the multicarrier setup table, which is a table editor for defining custom digital modulation, IS-95A, CDMA2000, or W-CDMA multicarrier signals.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 16, 26, 244

Remarks   This softkey is only available when **Multicarrier Off On** is toggled to On.

Multicarrier Off On

Supported   All with Option 400/401

This softkey toggles the operating state of the multicarrier mode.

For information on multicarrier states, see the *User's Guide*.

Off   The selected modulation format has a single carrier in this state.

On   The multicarrier mode is enabled in this state. You can select a pre-defined IS-95A, CDMA2000, W-CDMA, or user-defined custom multicarrier signal.

Preset   Off

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 26, 65, 239
Remarks	For CDMA2000, the **Multicarrier Off On** softkey and related functions are accessible only when using the forward link setup.
	For W-CDMA, the **Multicarrier Off On** softkey and related functions are accessible only when using the downlink setup.

Multiframe Channel

Supported   All with Option 402

Use this softkey to display a menu of softkeys used to configure the data field (E) with a multiframe pseudorandom bit pattern.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 119, 134
Remarks	None

Multiple Channels

Supported   All with Option 400

This softkey displays a menu enabling you to set up one or more of the same type channels for insertion into the Edit Channel Setup table editor. After you have set the channel parameters and entered how many times you want the channel duplicated, press the **Done** softkey to insert the information into the Edit Channel Setup table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 253
Remarks	Multiple channels are only available for downlink.

Multitone

Supported   All with Option 001 or 002

This softkey accesses a menu of softkeys that enables you to create multitone signals using the dual arbitrary waveform generator. Within these menus, you will be able to create, select, and/or modify the waveform.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 103, 102
Remarks	None

Multitone Off On

Supported   All with Option 001 or 002

This softkey sets the operating state for the multitone function of the dual arbitrary waveform generator.

Off	When you select Off, the multitone signal is turned off.
On	When you select On, the multitone signal is turned on.
Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 103
Remarks	None

Mux

Supported   All

Use this hardkey to access a menu from which you can configure the I/Q multiplexer.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 107
Remarks	None

N

N Power

Supported   All with Option 400

This field displays the noise carrier power of the RF signal. This value is calculated from the RF power level. If the signal generator RF power = –20 dBm and C/N is set to 3.0 dB then the displayed C power will be –22.97 dBm. The C power is calculated as $10^{(-22.97/10)}$ = .00505 milliwatts. In this example the N power displayed on the signal generator is –25.97 dBm. The power calculation, shown previously, results in a .00253 milliwatt power level. Note that N means in-channel noise power and total noise power is 1.96 times larger than N. The sum of the C power and N powers, $2.53 \times 1.96 + 6.67$ is .010 milliwatts (approximately) and $10 \log_{10} .0100 = -20$ dBm; the signal generators RF power.

Preset   *Downlink*: –140.712917 dBm

                 Uplink: –138.957537 dBm

                 Uplink (PRACH): –138.935002 dBm

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 268, 271

Remarks   None

NADC

Supported   All with Option 001 or 002

This softkey appears in two different situations, to either select a predefined personality for a custom digital modulation format, or to access a menu from which you can configure a digital modulation.

Selecting NADC for Custom Digital Modulations

Use this softkey to select a predefined North American Digital Cellular (NADC) personality for the digital modulation format.

Preset   N/A

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Page 65
Remarks	None

Accessing the NADC Menu

Supported	All with Option 402

Use this softkey to display a menu of softkeys where you can generate a data pattern formatted into either a framed structure (where the data bits are located in fields defined by the NADC protocol), or a sequence that can be output one or more times.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 115, 147
Remarks	None

NADC Base

Supported	All

This softkey selects Standard Base as the frequency band for NADC. The output frequency depends on both the channel band and channel number selections.

Preset	*Channel*: 1
	Frequency: 870.030 MHz
Range	*Channels*: 1–799, 990–1023
	Frequency: 870.030–893.970 MHz, 869.010–870.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

NADC Mobile

Supported	All

This softkey selects Standard Mobile as the frequency band for NADC. The output frequency depends on both the channel band and channel number selections.

Preset	*Channel*: 1
	Frequency: 825.030 MHz

Range	*Channels*: 1–799, 990–1023
	Frequency: 825.030–848.970 MHz, 824.010–825.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

NADC Off On

Supported	All with Option 402

Use this softkey to set the operating state of the North American Digital Cellular (NADC) communications format.

Off	When you select Off, the NADC format is turned off.
On	When you select On, this sets up the internal hardware to generate a signal that follows the NADC format. The internal I/Q modulator generates π/4DQPSK digital modulation and the NADC and I/Q annunciators are turned on in the display. Although the digital modulation is enabled with this softkey, the RF carrier is modulated by the enabled modulation only when you have also set **Mod On/Off** to **On**.

Preset:	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 147
Remarks	Setting the **NADC Off On** softkey to On presets the following softkeys in the I/Q and MUX menus: **I/Q Off On** softkey is set to On. and **Source 1** and **I/Q Out** softkeys are set to BBG 1. You can override these selections in the I/Q and MUX menus.

Name And Store

Supported	All

This softkey enables you to store and rename (if necessary) the highlighted sequence.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 90
Remarks	None

Network ID

> **Supported**   All with Option 401
>
> This field displays the current network identification number for the base station. The network identification number is displayed in hexadecimal notation. To change the network identification number, highlight the Network ID field, press the **Edit Item** softkey and enter a new value.
>
> | | |
> |---|---|
> | **Preset** | 0001 |
> | **Range** | 0000–FFFF |
> | **Location** | See *Key and Data Field Menu Maps* guide: Page 59 |
> | **Remarks** | None |

No Limits

> **Supported**   All with Option 300
>
> This softkey enables you to set the pass/fail reporting function to use no limits. Therefore, no pass/fail result is displayed.
>
> | | |
> |---|---|
> | **Preset** | N/A |
> | **Range** | N/A |
> | **Location** | See *Key and Data Field Menu Maps* guide: Page 10, 11 |
> | **Remarks** | None |

No Thresholds

> **Supported**   All with Option UN7
>
> This softkey applies none of the stop-on-event criteria and enables the measurement to run for the selected total number of bits.
>
> | | |
> |---|---|
> | **Preset** | N/A |
> | **Range** | N/A |
> | **Location** | See *Key and Data Field Menu Maps* guide: Page 9, 10, 11 |
> | **Remarks** | None |

Noise

Supported   All

Use this softkey to select noise as the modulation waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101

Remarks   The selected waveform applies to the path configuration you have
selected. In the LF Out menu this softkey is available after selecting
the internal source to operate as a function generator.

Noise is generated as a peak to peak value; the RMS value is about
80.0% of the displayed value.

Noise Off On

Supported   All with Options 401, 403

Use this softkey to toggle the operating state of the calibrated noise generator.

Off   In this state, noise is not added to the active carrier.

On   In this state, the calibrated noise generator adds pseudorandom noise
to the active carrier for sensitivity and selectivity measurements and
bit error rate testing purposes.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 51, 57

Remarks   The bandwidth for noise equals two times the chip rate.

For the forward link, turning noise on will cause the even second delay
value to be adjusted to include a delay for noise. For the reverse link,
turning noise on will cause the even second delay and trigger advance
values to be adjusted.

Noise Seed

Supported   All with Option 406

This softkey enables you to set the value of the noise seed for the Bluetooth additive

white Gaussian noise (AWGN) waveform generator. A change in the seed value changes the noise pattern.

Preset   1

Range   1–65535

Location   See *Key and Data Field Menu Maps* guide: Page 239

Remarks   None

Noise Seed Fixed Random

Supported   All with Option 403

This softkey sets the operating state of the additive white Gaussian noise (AWGN) waveform generator noise seed.

Fixed	When you select a Fixed value, the same noise seed will be used in order to generate the same waveforms each time.
Random	When you select Random, the noise seed will change in order to generate a waveform with different random data each time.

Preset   Fixed

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 12

Remarks   None

Noise Setup

Supported   All with Options 401, 403

Use this softkey to access a menu from which you can configure and enable the calibrated noise personality.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 51, 57

Remarks   None

None

Supported   All with Option 001 or 002

In the Predefined Mode Menu

In this menu, use the **None** softkey to set up **Custom** based on no particular format.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 77

Remarks   None

In the Window Menu

In this menu, use the **None** softkey to select no windowing, which optimizes the filter for maximum passband performance (EVM).

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 24, 38, 48, 56, 62, 72, 87, 114, 129, 145, 161, 177, 193, 209, 225

Remarks   None

In the W-CDMA Menu

Supported   All with Option 400

In the TrCH Menu

No encoder is used for coding transport channels. No error protection coding is applied to the selected channel data bits.

Preset   N/A

Range   N/A

Location   This key is accessed by editing the Coding field. Refer to "Coding" on page 138 for more information.

Remarks   None

In the Window Menu

No windowing function is used for the selected filter. The filter is optimized for maximum passband performance: error vector magnitude (EVM).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 255, 260, 269
Remarks	None

NONE (RPS0)

Supported	All with Option 400

This softkey assigns no signal to the selected rear panel AUX I/O output connector.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 267, 273
Remarks	The **NONE** softkey, designating no signal, can be assigned to numerous different output connectors/pins. The **(RPS0)** designator refers to the remote SCPI command that corresponds to this softkey.

Normal

In the CDMA Menu

Supported	All with Option 401

Use this softkey to select the standard phase polarity for a signal. In this mode, the I and Q signals are not altered by the phase polarity function.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the ScrCode Type field. Refer to "Phase Polarity" on page 446 for more information.
Remarks	None

In the Real Time TDMA Menu

Supported   All with Option 402

Use this softkey to select normal as the timeslot type for the active timeslot. This timeslot type applies to both Enhanced Data Rates for GSM Evolution (EDGE) and Global System for Mobile Communications (GSM).

When you select **Normal** for a timeslot, the visual representation of the timeslot pattern updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132
Remarks	None

In the W-CDMA Menu

Supported   All with Option 400

This softkey selects a scramble code between 0 and 8191 for the downlink ChipARB physical channel.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the ScrCode Type field. Refer to "ScrCode Type" on page 541 for more information.
Remarks	None

Normal All

Supported   All with Option 402

Use this softkey to select normal as the timeslot type for all timeslots. This timeslot type applies to both Enhanced Data Rates for GSM Evolution (EDGE) and Global System for Mobile Communications (GSM).

When you select **Normal All**, the visual representation of the timeslot pattern updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132

Remarks   None

Num of Blk

Supported   All with Option 400

This field displays the number of coded blocks set for each transport channel selected for the downlink or uplink physical channel. The total input data in one transport channel is the number of blocks multiplied by the block size.

Preset	1 (for all transport channels)
Range	0 to 4095 *Downlink*, in Fixed positioning: 0 or equal to block set size
Location	See *Key and Data Field Menu Maps* guide: Pages 267, 271
Remarks	The total input data for one RACH is block size (BLKsize) multiplied by the number of blocks (NBLock).

Number of 80ms

Supported   All with Option 400

This field, in the multiple PRACH mode: PRACH Code Setup menu, displays the number of physical random access channel (PRACH) pattern repetitions to generate. The pattern will be repeated after the PRACH start trigger has been received.

Preset:	1 (for all transport channels)
Range:	0–2147447836 or Infinity
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	If infinity is selected, the pattern will repeat continuously. For this field to appear, the **PRACH Mode Single Multi** softkey must be set to **Multi.**

Number of Bits

Supported   All with Option 001 or 002

Use this softkey to specify the number of bits that will be affected by the current operation. Press the **Enter** softkey to apply the specified value.

Preset	1
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 79, 85, 110, 113, 123,

128, 138, 139, 144, 154, 155, 160, 170, 171, 176, 186, 187, 192, 202, 203, 208, 218, 219, 224

Remarks   None

Number of PRACH

Supported   All with Option 400

This field, in the Uplink Physical Type:PRACH Code Setup menu, displays the number of physical random access channel (PRACH) pattern repetitions to generate. The pattern will be repeated after the PRACH start trigger has been received.

Preset: 1

Range: 1–2147483647 or Infinity

Location   See *Key and Data Field Menu Maps* guide: Page 270

Remarks   If infinity is selected, the pattern will repeat continuously.

This field will only appear when PRACH Mode is set to Single.

Num of Pre

Supported   All with Option 400

This field is one of the selections available for the Uplink PhyCH Type: PRACH Power Setup menu and indicates the number of preambles in the physical random access channel (PRACH). The field displays the same number as that displayed in the PhyCH Setup: PRACH Timing Setup menu.

Preset: 1 (for all transport channels)

Range: 1–8388607

Location   See *Key and Data Field Menu Maps* guide: Page 271

Remarks   If infinity is selected, the preamble will repeat continuously.

Number of Preamble

Supported   All with Option 400

This field is one of the selections available for the Uplink PhyCH Type:PRACH Timing menu and displays the number of preambles to repeat in the physical random access channel (PRACH) pattern.

Preset: 1 (for all transport channels)

Range:	1–8388607
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	If infinity is selected, the preamble will repeat continuously.

Number of Tones

Supported   All with Option 001 or 002

This softkey enables you to set the number of tones in the multitone table editor. This is done as part of initializing the table editor.

Preset	10
Range	2–64
Location	See *Key and Data Field Menu Maps* guide: Page 103
Remarks	None

NVARB Catalog Types

Supported   All

This softkey accesses a menu from which you can select a non-volatile ARB waveform file type.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	None

NVHDR

Supported   All

This softkey specifies that only non-volatile ARB header file types be listed in the catalog of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 238
Remarks	None

NVMKR

Supported   All

This softkey specifies that only non-volatile ARB marker file types be listed in the catalog of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	None

NVWFM

Supported   All

This softkey specifies that only non-volatile ARB waveform file types be listed in the catalog of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 93, 237
Remarks	None

Nyquist

Supported   All with Option 001 or 002

This softkey selects a Nyquist (raised cosine) pre-modulation filter from either the Select (filter) menu or the Load Default FIR menu.

In the Select (filter) Menu

In this menu, use the **Nyquist** softkey to select this FIR filter for use in a modulation setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 17, 24, 28, 40, 52, 58, 68, 78, 109, 114, 120, 135, 151, 167, 183, 199, 215, 249, 264, 269
Remarks	None

In the Load Default FIR Menu

In this menu, use the **Nyquist** softkey to access a menu from which you can change the filter alpha value, specify the number of symbols, apply a windowing function, and generate a new FIR table that is loaded with the coefficients for a Nyquist filter. If you change a parameter, you can press the **Generate** softkey again to reload the FIR table.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 23, 38, 48, 55, 61, 69, 71, 80, 87 129, 145, 161, 177, 193, 209, 225, 254, 260, 269
Remarks	None

O

OCNS

Supported   All with Option 400

This softkey selects an Orthogonal Channel Noise Source (OCNS) for insertion into the Edit Channel Setup table editor. All symbols inserted into the channel are random values, rather than specific bit fields. After you have selected the channel, a menu of symbol rates will be displayed. Pressing the **Symbol Rate** softkey inserts the OCNS into the Edit Channel Setup table editor.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 253

Remarks   This softkey is only available for downlink.

Off

In the Standard Menu

Supported   All

In the Retrigger Mode Menu Use this softkey to disable retriggering for single trigger operation. In this state, triggers are ignored if they occur while a waveform is playing.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 19, 30, 41, 67, 88

Remarks   None

In the Sweep Menu

Use this softkey to turn off all sweep functions. The output signal is then set according to the current frequency and amplitude settings defined by the **Frequency** and **Amplitude** hardkeys.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 230

Remarks   None

In the Baseband Generator Menu

Supported   All with Option 001 or 002

This softkey appears in the Source 1 and I/Q Out menus.

In the Source 1 menu Use this softkey to turn off the Source 1 signal routing function. When this softkey is selected, no signals are routed to the internal I/Q modulator.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 107

Remarks   The **Source 1** selection is independent of the **I/Q Out** selection.

In the I/Q Out menu Use this softkey to turn off the I/Q Out signal routing function. When this softkey is selected, no signals are routed to the rear panel I and Q output connectors.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 107

Remarks   The **I/Q Out** selection is independent of the **Source 1** selection.

In the W-CDMA Menu

Supported   All with Option 400

This softkey is one of the selections available for the Uplink Physical Type:PRACH Timing menu. The softkey appears when the Message Part field in this menu is selected and the **Edit Item** softkey pressed. The **Off** softkey prevents the message part of the physical random access channel (PRACH) being played. Only preambles are transmitted.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 247

Remarks   None

Offset Q Off On

Supported   All with Option 001 or 002

Press this softkey to change the operational state of the user I/Q offset Q.

Off   When this softkey is set to Off, the Q output is not delayed from the I output.

On   When this softkey is set to On, the Q output is delayed by 1/2 symbol from the I output.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 80, 125, 141, 157, 173, 189, 205, 221

Remarks   This setting is not affected by a preset or by a power cycle.

On

In the Baseband Generator Menu

Supported   All with Option 001 or 002

Use this softkey to enable retriggering for single trigger operation. In this state, the waveform will retrigger at the end and play one more time if a trigger occurs while the waveform is playing.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 67, 88

Remarks   Retriggers do not accumulate. If several triggers are received during a waveform, it will only be replayed only once.

In the W-CDMA Menu

Supported   All with Option 400

This softkey is one of the selections available for the Uplink Physical Type:PRACH

Timing menu. The softkey appears when the Message Part field in this menu is selected and the **Edit Item** softkey pressed. The **On** softkey enables the message part of the physical random access channel (PRACH). The message part is generated after the preambles, specified in by the `Num of Preamble` field, have played.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 247
Remarks	Action is initiated after pressing the **Apply Channel Setup** softkey.

On/Off

Supported   All with Option 400

This field, in the downlink orthogonal channel noise simulator (OCNS) and dedicated physical channel (DPCH), and in the uplink multiple physical random access channel (PRACH) timing code table editor, indicates the operating state of the channel.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

OpenLoop Ant1

Supported   All with Option 400

Use this softkey to configure the ESG as antenna one in an open-loop transmit diversity test setup. Transmit diversity is used to diminish the effects of fading by transmitting the signal from two different cell sites (antennas), using two different encoding schemes.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 256
Remarks	For two-box Transmit Diversity testing, set one ESG to **OpenLoop Ant1** and set the other ESG to **OpenLoop Ant2**.
	For more information on transmit diversity testing, see the User's Guide.

OpenLoop Ant2

Supported   All with Option 400

Use this softkey to configure the ESG as antenna two in an open-loop transmit diversity test setup. Transmit diversity is used to diminish the effects of fading by transmitting the signal from two different cell sites (antennas), using two different encoding schemes.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 256

Remarks   For two-box Transmit Diversity testing, set one ESG to **OpenLoop Ant1** and set the other ESG to **OpenLoop Ant2**.

For more information on transmit diversity testing, see the User's Guide.

OpenLoop Ant1 SCH TSTD OFF

Supported   All with Option 400

Use this softkey to configure the ESG as antenna one in an open-loop transmit diversity test setup. This selection also deactivates time-switched transmit diversity (TSTD) for the synchronization channel (SCH). Transmit diversity is used to diminish the effects of fading by transmitting the signal from two different cell sites (antennas), using two different encoding schemes.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 256

Remarks   For two-box Transmit Diversity testing, set one ESG to **OpenLoop Ant1 SCH TSTD OFF** and set the other ESG to **OpenLoop Ant2 SCH TSTD OFF**.

For more information on transmit diversity testing, see the User's Guide.

OpenLoop Ant2 SCH TSTD OFF

Supported   All with Option 400

Use this softkey to configure the ESG as antenna two in an open-loop transmit diversity test setup. This selection also deactivates time-switched transmit diversity (TSTD) for

the synchronization channel (SCH). Transmit diversity is used to diminish the effects of fading by transmitting the signal from two different cell sites (antennas), using two different encoding schemes.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 256
Remarks	For two-box Transmit Diversity testing, set one ESG to **OpenLoop Ant1 SCH TSTD OFF** and set the other ESG to **OpenLoop Ant2 SCH TSTD OFF**.
	For more information on transmit diversity testing, see the User's Guide.

Operating Mode

Supported   All with Option 401

Use this softkey to access a menu from which you can select a predefined CDMA-standard reverse link channel configuration for real-time signal generation.

Preset	RadioConfig 3/4 Traffic
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

Optimize Φ Noise

Supported   All without UNJ

Use this softkey to access a menu for optimizing phase noise. In this menu, you can set the phase-lock loop bandwidth to optimize phase noise for offsets above or below 10 kHz, as shown in Figure 3 on page 427.

Figure 3   **Phase Noise Performance Mode 1 Versus Mode 2**
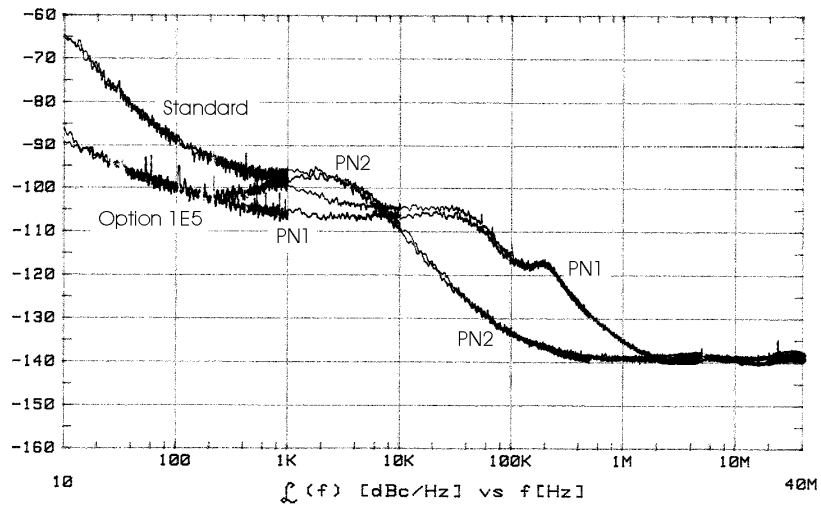
The selected phase noise optimization mode is displayed under the **Optimize Φ Noise** softkey.

Preset	Mode 2
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

Optimize ACP ADJ ALT

Supported   All with Option 400

Use this softkey to optimize the power of the selected channel.

ADJ	The ADJ selection optimizes the adjacent channel power.
ALT	The ALT selection optimizes the alternate channel power.
Preset	ADJ
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 244

Remarks	This softkey is only available for a single DPCH downlink Arb W-CDMA channel.

Optimize FIR For EVM ACP

Supported	All with Option 001 or 002

Use this softkey to optimize the filter for minimized error vector magnitude (EVM) or for minimized adjacent channel power (ACP).

EVM	The EVM selection provides the most ideal passband.
ACP	The ACP selection improves stopband rejection.
Preset	*Custom:* ACP *Other formats:* EVM
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 52, 58, 68, 74, 109, 120, 135, 151, 167, 183, 199, 215, 249, 256, 262
Remarks	This feature applies only to root Nyquist, and Nyquist filters; the softkey is grayed out when any other filter is selected.

Optimize for 1.000000000Msps Bandwidth

Supported	All with Option 001 or 002

Use this softkey to set the expected bandwidth of the external I and Q signals. The I/Q modulator attenuator will use this bandwidth setting to optimize the proper attenuation level.

Preset	1.0 Msps
Range	1.0 ksps–100.0 Msps (mega samples per second)
Location	See *Key and Data Field Menu Maps* guide: Page 107
Remarks	None

Options Info

Supported   All

Use this softkey to display all available options and the associated hardware. Refer to Figure 4 on page 429.

Figure 4   **Installed Option Information**

Option	The option number
Option Version	An alphabetic representation of the option revision
DSP Version	Version number of additional DSP code used with some hardware options

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   None

OQPSK

Supported   All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a

modulation, or load an I/Q map into the I/Q table editor.

Selecting a OQPSK Modulation

Use this softkey to select offset quadrature phase shift keying (OQPSK) for modulating a continuous stream of the selected data pattern. OQPSK modulation transmits data at the rate of 2 bits per symbol.

The modulation selection appears under the **Select**, **QPSK and OQPSK**, and **PSK** softkeys in the Modulation Type menus.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 82, 127, 143, 159, 175, 191, 207, 223
Remarks	None

Loading a OQPSK I/Q Map into the Table Editor

Use this softkey to load an offset quadrature phase shift keying (OQPSK) I/Q map into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 86, 130, 146, 162, 178, 194, 210, 226
Remarks	None

Other Patterns

Supported	All with Option 001 or 002

Use this softkey to access a menu from which you can select a data pattern. Each pattern contains an equal number of ones and zeroes. The selected pattern will be repeated as necessary to fill the data area.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 74, 116, 119, 131, 134, 147, 150, 163, 166, 179, 182, 195, 198, 211, 214

Remarks   None

Out-of-sync Test Off On

Supported   All with Option 400

This softkey toggles the operating state of theW-CDMA downlink out-of-sync test mode. In the out-of-sync test mode, you can test RF transmission control. The ESG simulates the loss of a downlink signal by stopping DPCH generation upon receiving a discontinuous transmission (DTX) signal through the PATT TRIG IN rear-panel BNC connector. For more information on out-of-sync testing, refer to the User's Guide.

Off	DPCH generation is not affected by a DTX signal.
On	DPCH generation is stopped while the DTX signal is in its active state.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks   None

Oversample Ratio

This softkey occurs in two different situations, enabling you to set the oversample ratio for either a custom modulation or a custom FIR filter.

In the CDMA Define Menu

Supported   All with Option 401

This softkey enables you to set the oversample ratio (number of filter coefficients per symbol) for CDMA modulation. Acceptable values range from 2 through 8. Using larger oversample ratios results in more completely filtered images but also uses up more waveform memory.

The upper limit of the oversample ratio is adjusted based on the waveform length and chip rate. The maximum oversample ratio is the smaller of the following three values:

• 40 Mcps divided by the Chip Rate

• 8

• 32 divided by the Waveform Length (Waveform Length is the number of CDMA short codes)

Preset   5

Range	2–8 (upper limit may vary–see remarks)
Location	See *Key and Data Field Menu Maps* guide: Page 17
Remarks	None

In the Define User FIR Menu

Supported   All with Option 001 or 002

This softkey enables you to set the oversample ratio (number of filter coefficients per symbol) to be applied to a custom FIR filter design. Acceptable values range from 1 through 32, where the maximum combination of symbols and oversample ratio is 1024 coefficients. An FIR filter selected for use in CDMA, however, cannot have more than 512 coefficients so the number of symbols and the oversample ratio should be selected accordingly.

Generally, the higher the symbol rate, the lower the oversample ratio of the resampled filter. Table 1 describes the signal generator's maximum oversample ratio capabilities for each real-time modulation type:

Table 1   **Maximum Oversample Ratio Capabilities**

Modulation Type	BPS	Maximum Oversample Ratio
BPSK MSK 2-LVL FSK	1	16
QPSK IS95 QPSK ISAT QPSK OQPSK IS95 OQPSK	2	16
8PSK D8PSK 8-LVL FSK	3	15
16PSK 16QAM	4	16
32QAM	5	15
64QAM	6	15

Table 1   **Maximum Oversample Ratio Capabilities**

Modulation Type	BPS	Maximum Oversample Ratio
256QAM	8	16

Preset   N/A

Range   1–32

Location   See *Key and Data Field Menu Maps* guide: Pages 23, 33, 45, 54, 60 70, 78, 112, 124, 140, 156, 172, 188, 204, 220, 252, 258, 265

Remarks   When the filter is selected for use, the signal generator may resample the filter with an oversample ratio between 2 and 16, based on the number of symbols, the symbol rate, and the number of bits per symbol of the modulation type.

This oversample ratio setting is not affected by a preset or by a power cycle.

OVSF Channelization Code

Supported   All with Option 400

This field displays the orthogonal variable spreading factor (OVSF) code used by the CPICH.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 257

Remarks   The length of the OVSF code, also known as the spreading factor (SF), is fixed to 0 and is not user defined. The other channels use channel code to refer to the OVSF code. for example the AICH.

P

P

Supported   All with Option 402

Use this softkey to make the preamble P field the active function. The current value appears in the P field near the bottom of the text area of the display. The preset value (when normal preset is selected) reflects the Digital European Cordless Telecommunications (DECT) format; a PP value of 5555 and an RFP value of AAAA.

Preset: AAAA

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 196

Remarks   None

Packet (DH1)

Supported   All with Option 406

This softkey accesses the packet setup menu. A packet is a single bundle of information transmitted within a piconet. A DH1 packet covers a single timeslot.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 239

Remarks   None

Page Down

Supported   All

This softkey enables you to move down in the display one page at a time.

Preset   N/A

Range   N/A

Location   Page Down is located in the table editor menus and in the catalogs of files.

Remarks   None

Page Up

Supported   All

This softkey enables you to move up in the display one page at a time.

Preset   N/A

Range   N/A

Location   Page Up is located in the table editor menus and in the catalogs of files.

Remarks   None

Paging

Supported   All with Option 401

Use this softkey to insert a paging channel into the current table editor.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 22, 35

Remarks   None

`Paging Indicator`

In the CDMA Menu

Supported   All with Option 401

This field selects which paging slots to enable for the quick paging channel. The slots are 80 ms in duration and start 20 ms before the zero-offset pilot PN sequence. To change the number of enabled paging slots, highlight the Paging Indicator field, press the **Edit Item** softkey and enter a new value.

Preset   0

Range   *2.4 kbps data rate:* 0–190; 191 enables all slots; –1 disables all slots
                  4.8 kbps data rate: 0–382; 383 enables all slots; –1 disables all slots

Location   See *Key and Data Field Menu Maps* guide: Page 53

Remarks   None

In the W-CDMA Menu

Supported   All with Option 400

This field displays the number of paging indicators per frame. This field is displayed for the paging indicator channel (PICH) and is used to alert the user equipment (UE) of a page message.

Preset   144

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 257

Remarks   This field is not user-definable. The value cannot be changed and the field is grayed-out. The user may transmit user defined paging indicators by selecting data type User File and loading the desired data file into the signal generator.

Pass Amplitude

Supported   All with Option 300

This softkey enables you to set the sensitivity search threshold amplitude value for the pass/fail evaluation.

Preset   *GSM*: –104.00 dBm

                 EDGE: DL MCS5 –101.0 dBm
                        DL MCS9 –91.5 dBm
                        Uncoded –95.0 dBm

Range   20.0 dBm to –136.0 dBm

Location   See *Key and Data Field Menu Maps* guide: Page 8, 8, 11

Remarks   None

Pass/Fail Limits

Supported   All with Option UN7

This softkey enables you to set the limit value of the pass/fail judgement function.

Preset   0.01

Range   0.0000001–1.00

Location   See *Key and Data Field Menu Maps* guide: Page 9, 10, 11

Remarks   None

Pass/Fail Off On

Supported   All with Option UN7

Use this softkey to set the operating state of the pass/fail judgement function.

Off   This choice disables the pass/fail function.

On   This choice causes the pass/fail judgement function to compare a BER
                   measurement result with the threshold level defined by the Pass/Fail
                   Limits function, and judges whether that BER measurement has
                   passed or failed.

Preset: Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   None

Pass/Fail Update

Supported   All with Option UN7

This softkey accesses the pass/fail judgement update mode menu. You can choose the
cycle end mode where either a pass or fail judgement is made for each BER
measurement result or the fail hold mode where the fail judgement is made once a
failure has been found during one loop of BER repeat measurements.

Preset: Cycle End

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   None

Patt Trig In 1

Supported   All with Option 001 or 002

This softkey enables you to trigger the internal digital modulation pattern generator
with a TTL/CMOS signal applied to the PATT TRIG IN rear panel BNC connector.

Preset   N/A

437

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 67, 83, 88, 118, 133, 149, 165, 181, 197, 213, 250
Remarks	None

Patt Trig In 2

Supported   All with Option 001 or 002

This softkey enables you to trigger the internal digital modulation pattern generator with a signal applied to the AUX I/O rear panel D-connector. For a description of the AUX I/O rear panel D-connector, refer to the rear panel section of chapter 1 of the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 67, 83, 88, 118, 133, 149, 165, 181, 197, 213, 250
Remarks	None

Pattern Trig In Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey selects the polarity of the TTL trigger signal at the signal generator's rear panel PATT TRIG IN connector.

Neg	Selects the falling edge of the TTL signal.
Pos	Selects the rising edge of the TTL signal.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 233
Remarks	N/A

Pattern Trigger

Supported   All with Option 001 or 002

Use this softkey to access a menu from which you can choose between the continuous,

single or gated triggering modes. The menu also contains a **Trigger Setup** softkey that enables you to adjust the trigger source, the continuous mode, and the gate active polarity.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 77, 116, 131, 147, 163, 179, 195. 211
Remarks	The pattern trigger function is not available if you use either a PN data sequence, or an external data source.

Payload Data

Supported	All with Option 406

This softkey accesses a menu from which you can select the payload data type. Payload data is the information that is carried in a packet. You can select from continuous PN9 (CPN9), truncated PN9 (TPN9), or create an 8-bit user defined pattern.

Preset	TPN9
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 239
Remarks	None

PCCPCH

Supported	All with Option 400

This softkey selects a Primary Common Control Physical Channel (PCCPCH) for insertion into the Edit Channel Setup table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 250, 253
Remarks	This softkey is only available for downlink.

P–CCPCH

Supported   All with Option 400

This softkey, in the downlink additive white gaussian noise (AWGN) channel, selects the primary common control physical channel (P–CCPCH) as the reference used to determine the Ec/No value.

Preset   N/A

Range   N/A

Location   This key is accessed by editing the `Ec Ref` field. Refer to "Ec Ref" on page 240 for more information.

Remarks   This softkey is also listed as a physical channel or as a channel block.

PCCPCH + SCH

Supported   All with Option 400

This softkey selects a pre-defined setup to be built into a waveform. This selection is meant to be a one-button solution for quickly generating downlink signals. After you have made this selection the Edit Channel Setup menu will display the signal parameters.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 244

Remarks   This softkey is only available for downlink.

PCCPCH + SCH + 1 DPCH

Supported   All with Option 400

This softkey selects a pre-defined setup to be built into a waveform. This selection is meant to be a one-button solution for quickly generating downlink signals. After you have made this selection the Edit Channel Setup menu will display the signal parameters.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 244

Remarks   This softkey is only available for downlink.

PCCPCH + SCH + 3 DPCH

Supported   All with Option 400

This softkey selects a pre-defined setup to be built into a waveform. This selection is meant to be a one-button solution for quickly generating downlink signals. After you have made this selection the Edit Channel Setup menu will display the signal parameters.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 244

Remarks   This softkey is only available for downlink.

P-CCPCH data (DRPS39)

Supported   All with Option 400

This softkey assigns primary common control physical channel (P-CCPCH) data to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks   The **(DRPS39)** designator refers to the remote SCPI command that corresponds to this softkey.

P-CCPCH data-clk (DRPS38)

Supported   All with Option 400

This softkey assigns the primary common control physical channel (P-CCPCH) data clock to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks	The **(DRPS38)** designator refers to the remote SCPI command that corresponds to this softkey.

P Code Pwr

Supported	All with Option 409

Use this softkey to set the P code power level, relative to the C/A code power level.

Preset	–3.00 dB
Range	–40.00 to 0.00 dB
Location	See *Key and Data Field Menu Maps* guide: Page 109
Remarks	This softkey is grayed out when Ranging Code is set to C/A.

PCS Base

Supported	All

This softkey selects PCS 1900 Base as the channel band for GSM. The output frequency depends on both the channel band and channel number selections.

Preset	*Channel*: 512
	Frequency: 1.930 GHz
Range	*Channels*: 512–810
	Frequency: 1.930–1.989 GHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

PCS Mobile

Supported   All

This softkey selects PCS 1900 Mobile as the channel band for GSM. The output frequency depends on both the channel band and channel number selections.

Preset	*Channel*: 512
	Frequency: 1.930 GHz
Range	*Channels*: 512–810
	Frequency: 1.850–1.909 GHz
Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

PDC

Supported   All with Option 001 or 002

This softkey appears in two different situations, to either select a predefined personality for a custom digital modulation format, or to access a menu from which you can configure a digital modulation.

Selecting PDC for Custom Digital Modulations

Use this softkey to select a predefined Personal Digital Cellular (PDC) personality for the digital modulation format.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 65
Remarks	None

Accessing the PDC Menu

Supported   All with Option 402

Use this softkey to display a menu of softkeys where you can generate a data pattern formatted into either a framed structure (where the data bits are located in fields defined by the PDC protocol) or a sequence that can be output one or more times.

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Page 115, 163
Remarks	None

PDC Bands

Supported   All

Use this softkey to access a menu from which you can select the frequency bands for PDC. The output frequency depends on both frequency band and channel selections.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 97, 98
Remarks	None

PDC Off On

Supported   All with Option 402

Use this softkey to set the operating state of the Personal Digital Cellular (PDC) format. Setting **PDC Off On** to On sets up the internal hardware to generate a signal that follows the PDC format.

Off	When you select Off, the PDC format is turned off.
On	When you select On, this sets up the internal hardware to generate a signal that follows the PDC format. The internal I/Q modulator generates π/4DQPSK digital modulation and the PDC and I/Q annunciators are turned on in the display. Although the digital modulation is enabled with this softkey, the RF carrier is modulated by the enabled modulation only when you have also set **Mod On/Off** to On.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 163
Remarks	Setting the **PDC Off On** softkey to On presets the following softkeys in the I/Q and MUX menus: **I/Q Off On** softkey is set to On. and **Source 1** and **I/Q Out** softkeys are set to BBG 1. You can override these selections in the I/Q and MUX menus.

Performance Req

Supported   All with Option 400

This softkey, in the downlink Test Setup menu, selects a performance requirement for the selected physical channel. This is a static propagation condition that is determined by the maximum block error rate BLER allowed when the receiver input signal is at a specified E_b/N_o limit.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Permuted ESN

Supported   All with Option 401

Use this softkey to access a menu from which you can set the forward fundamental or supplemental channel long code mask permuted electronic serial number used to communicate with a particular mobile.

Preset	00000000
Range	00000000–FFFFFFFF
Location	This key is accessed by editing the LCMask field. Refer to "LCMask" on page 366 for more information.
Remarks	None

P-GSM Base

Supported   All

This softkey selects P-GSM 900 Base as the channel band for GSM. The output frequency depends on both the channel band and channel number selections.

Preset	*Channel*: 1
	Frequency: 935.2 MHz
Range	*Channel*: 1–124
	Frequency: 935.2–959.8 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97

Remarks   None

P-GSM Mobile

Supported   All

This softkey selects P-GSM 900 Mobile as the channel band for GSM. The output frequency depends on both the channel band and channel number selections.

Preset   *Channel*: 1

Frequency: 890.2 MHz

Range   *Channel*: 1–124

Frequency: 890.2–913.8 MHz

Location   See *Key and Data Field Menu Maps* guide: Page 98

Remarks   None

Phase Dev

Supported   All with Option 001 or 002

Use this softkey to set the phase deviation for minimum shift keying (MSK) modulation.

The current phase deviation value appears under the **MSK** softkey in the Modulation Type menu.

Preset   90°

Range   0°–100°

Location   See *Key and Data Field Menu Maps* guide: Pages 75, 121, 136, 152, 168, 184, 200, 216

Remarks   None

Phase Polarity

Supported   All with Option 401

This field displays the current I/Q signal phase polarity. To change the field selection, highlight the Phase Polarity field, press the **Edit Item** softkey and make a choice from the menu that appears.

Preset   Normal

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Page 51
Remarks	None

Phase Polarity Normal Invert

Supported	All with Option 001 or 002

Use this softkey to invert the internal Q signal, reversing the rotation direction of the phase modulation vector.

Normal	When you choose Normal, the phase relationship between the I and Q signals is not altered by the phase polarity function.
Invert	When you choose Invert, the in-phase component lags the quadrature-phase component by 90° in the resulting modulation. Inverted phase polarity is required by some radio standards, and it is useful for lower sideband mixing applications. The inverted selection also applies to the I, I-bar, Q, and Q-bar output signals.
Preset	Normal
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 77, 118, 133, 149, 165, 181, 197, 213, 261, 262
Remarks	None

Phase Ref Set

Supported	All

This softkey enables you to define the current relative phase of the RF output signal as zero. Then all phase parameters are set relative to this zero reference.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

PHS

Supported	All with Option 001 or 002

This softkey appears in two different situations, to either select a predefined personality

for a custom digital modulation format, or to access a menu from which you can configure a digital modulation.

Selecting PHS for Custom Digital Modulations

Use this softkey to select a predefined Personal Handy Phone System (PHS) personality for the digital modulation format.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 65
Remarks	None

Accessing the PHS Menu

Supported   All with Option 402

Use this softkey to display a menu of softkeys where you can generate a data pattern formatted into either a framed structure (where the data bits are located in fields defined by the PHS protocol) or a sequence that can be output one or more times.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 115, 179
Remarks	None

PHS Off On

Supported   All with Option 402

Use this softkey to set the operating state of the Personal Handy Phone System (PHS) format.

Off	When you select Off, the PHS format is turned off.
On	When you select On, sets up the internal hardware to generate the structure that follows the PHS format.The internal I/Q modulator generates π/4DQPSK digital modulation and the PHS and I/Q annunciators are turned on in the display. Although the digital modulation is enabled with this softkey, the RF carrier is modulated by the enabled modulation only when you have also set **Mod On/Off** to On.
Preset	Off

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 179

Remarks	Setting the **PHS Off On** softkey to On presets the following softkeys in the I/Q and MUX menus: **I/Q Off On** softkey is set to On. and **Source 1** and **I/Q Out** softkeys are set to BBG 1. You can override these selections in the I/Q and MUX menus.

PHS Standard

Supported	All

This softkey selects a frequency band for PHS. The output frequency depends on both the frequency band and channel selection.

Preset	*Channel*: 1
	Frequency: 1.895 GHz
Range	*Channels*: 1–82, 251–255
	Frequency: 1.895–1.919 GHz, 1.893–1.894 GHz
Location	See *Key and Data Field Menu Maps* guide: Pages 97, 98
Remarks	None

PhyCH Setup

Supported	All with Option 400

This softkey displays a menu from which you can edit parameter fields and apply those parameters to the physical channel selected. The fields shown depend on the **PhyCH Type** selected.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 257, 263, 270
Remarks	This softkey is available for uplink only.

PhyCH Type

Supported   All with Option 400

This softkey displays a menu from which you can select available physical channel types.

Preset   N/A

Range   N/A

Location   See Key and Data Field Menu Maps guide: Pages 263, 270

Remarks   None

Physical Channel

Supported   All with Option 400

This softkey is always active unless the **Frequency** or **Amplitude** softkey is activated.Press the up/down arrow keys or rotate the front panel knob to select physical channel.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 257

Remarks   None

PI Bits

Supported   All with Option 400

This field displays the number of bits in the paging indicator.

Preset: 288

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 257

Remarks   The field is not user definable.

PICH

Supported   All with Option 400

This softkey selects a Paging Indicator Channel (PICH) for insertion into the Edit Channel Setup table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 253
Remarks	This softkey is only available for downlink.

In the AWGN Channel

This softkey, in the downlink additive white gaussian noise (AWGN) channel, selects the paging indicator channel as reference used to determine the Ec/No value. Refer to "Ec/No value" on page 239 for more information.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the Ec Ref field. Refer to "Ec Ref" on page 240 for more information.
Remarks	None

PICH 10ms FramePulse (DRPS37)

Supported	All with Option 400

This softkey assigns the paging indicator channel (PICH) 10ms frame pulse to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS37)** designator refers to the remote SCPI command that corresponds to this softkey.

PICH data (DRPS35)

Supported	All with Option 400

This softkey assigns paging indicator channel (PICH) data to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS35)** designator refers to the remote SCPI command that corresponds to this softkey.

PICH data-clk (DRPS34)

Supported   All with Option 400

This softkey assigns the paging indicator channel (PICH) data clock to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS34)** designator refers to the remote SCPI command that corresponds to this softkey.

PICH TimeSlot Pulse (DRPS36)

Supported   All with Option 400

This softkey assigns the paging indicator channel (PICH) timeslot pulse to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS36)** designator refers to the remote SCPI command that corresponds to this softkey.

Pilot

Supported   All with Option 401

This softkey appears in different situations, enabling you to either select the pilot channel as a setup, or insert a pilot channel into the channel setup table editor.

In the Setup Select and CDMA2000 Select Menus

Use this softkey to select the pilot channel for the current IS-95A or CDMA2000 setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 18, 22, 26, 39
Remarks	None

In the Channel Setup Table Editor

Use this softkey to insert a pilot channel into the current channel setup table.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 21
Remarks	None

Pilot Bits

Supported	All with Option 400

This data field, in the Edit Channel Setup table editor, displays the pilot bits used for the selected channel. The number of bits available depends on the slot format of the channel.

Preset	N/A
Range	2 – 16
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	Pilot bits are used as a timing reference in addition to the timing reference used by the CPICH.
	This field is only available for downlink.

Pilot Power

Supported	All with Option 400

This data field displays the power level of the pilot bits. Pilot bits are part of the DPCCH configuration.

Preset	N/A

Range	–20.00 to 20.00 dB
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	Pilot bits are typically transmitted at higher power levels to ensure they are received correctly.
	This field is only available for downlink.

Playback Ratio

Supported	All with Option 400

This field displays the ratio of compressed frames to uncompressed frames. For example, a playback ratio of 1:30 means that for every 30 normal frames there will be one compressed frame. The number entered for the playback ratio is the number of normal frames played before a compressed frame is played.

Preset	2
Range	1–4096
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	The sequence (number entered in the Playback Ratio field) of normal frames to compressed frames will continuously play.

Plot CCDF

Supported	All with Option 001 or 002

This softkey displays a plot of the complementary cumulative distribution function for the selected waveform. The plot displays the probability that the instantaneous envelope

power is x dB above the average power, where x is the number on the horizontal axis.
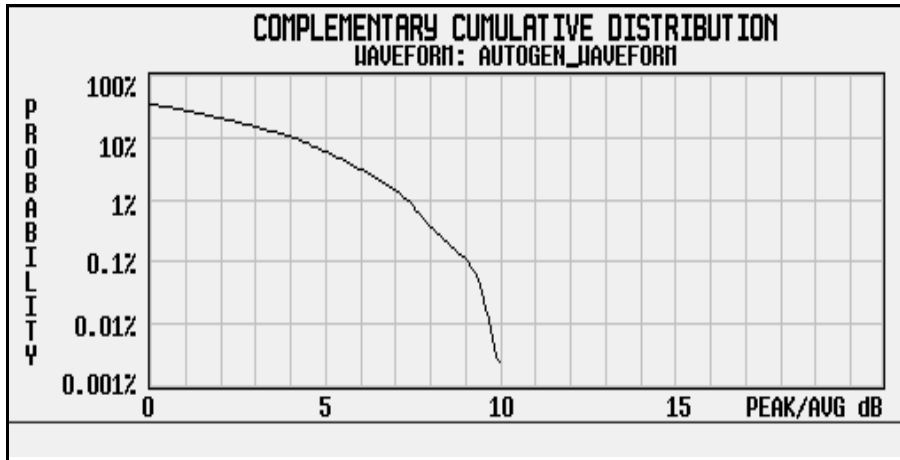
Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 12, 13, 29, 41, 65, 67, 89, 93, 103, 246
Remarks	None

PN9

In the Baseband Generator Menu

Supported   All with Option 001 or 002

This softkey selects an internally generated, ITU standard PN9 pseudorandom bit pattern.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 74
Remarks	None

In the Real Time GPS Menu

Supported   All with Option 409

This softkey selects an internally generated, ITU standard PN9 pseudorandom bit pattern.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 109

Remarks   None

In the Real Time TDMA Menu

Supported   All with Option 402

Press this softkey to select an internally generated PN9 pseudorandom bit pattern.

For unframed transmissions, PN9 appears in the Data field in the top line of the text area of the display.

For framed timeslot data fields, PN9 appears in the Data field or the B field, both of which are located near the bottom of the text area of the display.

For configuring the timeslot data fields, PN9 appears in either the Data field (all formats) or the following locations:

   DECT: B field

   EDGE and GSM: E field

   PDC and PHS: TCH field

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 116, 119, 131, 134, 147, 150, 163, 166, 179, 182, 195, 198, 211, 214

Remarks   None

In the BERT Menu

Supported   All with Option UN7

This softkey is one of the choices in the Data select menu. With PN9 selected, the incoming data to the BER DATA IN connector is assumed to be PN9 data.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   None

PN9 Mode Normal Quick

Supported   All with Option 402

This softkey sets the operating state of the pseudorandom 9-bit pattern generation.

Normal	When you select Normal mode, the maximum length PN9 sequence is generated. Use this mode for bit-error-rate testing (BERT).
Quick	When you select Quick mode, a truncated PN9 sequence is generated.

Preset   Normal

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212

Remarks   This softkey is only available when the **Data Format Pattern Framed** softkey is set to Framed.

PN9 Mode Preset Normal Quick

Supported   All

This softkey selects the preset value for PN9 mode.

Normal	The PN9 sequence is continuous from ONE timeslot to a matching timeslot.
Quick	The PN9 sequence is reset at the beginning of each timeslot.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 234

Remarks   None

PN9 Out

Supported   All with Option UN7

This softkey selects the following configuration for the bit error rate output using the AUX I/O rear panel connector:

Pin #   *Data*

1	PN9 Data–the incoming data to the BER DATA IN connector is assumed to be PN9 data.
4	BER Sync Loss–outputs the signal that indicates the synchronization loss state. This signal is only valid when the signal of the Meas End connector is high. Synchronization loss state is detected when the signal is low.
20	PN9 Clock–the clock signal for the PN9 Data. The falling edge of the PN9 Clock indicates the center of PN9 Data. The PN9 Clock rate is 37.5 Mbits per second.
21, 22	No Data–outputs the signal that indicates the no data status. The no data status is reported when there have been no clock inputs for more than 3 seconds or there has been no data change for more than 200 bits. This signal is valid only when the signal of the Meas End connector is high. No data status is detected when the signal is low.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   None

PN11

Supported   All with Option 001 or 002

This softkey selects an internally generated, ITU standard PN11 pseudorandom bit pattern.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 74

Remarks   None

In the Real Time TDMA Menu

Supported   All with Option 402

Press this softkey to select an internally generated PN11 pseudorandom bit pattern.

For unframed transmissions, PN11 appears in the Data field in the top line of the text area of the display.

For framed timeslot data fields, PN11 appears in the Data field or the B field, both of which are located near the bottom of the text area of the display.

For configuring the timeslot data fields, PN11 appears in either the Data field (all formats) or the following locations:

DECT:	B field
EDGE and GSM:	E field
PDC and PHS:	TCH field

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 116, 119, 131, 134, 147, 150, 163, 166, 179, 182, 195, 198, 211, 214
Remarks	None

In the BERT Menu

Supported   All with Option UN7

This softkey is one of the choices in the Data select menu. With PN11 selected, the incoming data to the BER DATA IN connector is assumed to be PN11 data.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 9
Remarks	None

PN15

In the Baseband Generator Menu

Supported   All with Option 001 or 002

This softkey selects an internally generated, ITU standard PN15 pseudorandom bit pattern.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 74

Remarks   None

In the Real Time GPS Menu

Supported   All with Option 409

This softkey selects an internally generated, ITU standard PN15 pseudorandom bit pattern.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 109

Remarks   None

In the Real Time TDMA Menu

Supported   All with Option 402

Press this softkey to select an internally generated PN15 pseudorandom bit pattern.

For unframed transmissions, PN15 appears in the Data field in the top line of the text area of the display.

For framed timeslot data fields, PN15 appears in the Data field or the B field, both of which are located near the bottom of the text area of the display.

For configuring the timeslot data fields, PN15 appears in either the Data field (all formats) or the following locations:

> *DECT*:   B field
>
> *EDGE and GSM*: E field
>
> *PDC and PHS*: TCH field

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 116, 119, 131, 134, 147, 150, 163, 166, 179, 182, 195, 198, 211, 214

Remarks   None

In the BERT Menu

Supported   All with Option UN7

This softkey is one of the choices in the Data select menu. With PN15 selected, the

incoming data to the BER DATA IN connector is assumed to be PN15 data.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 9
Remarks	None

PN20

Supported   All with Option 001 or 002

This softkey selects an internally generated, ITU standard PN20 pseudorandom bit pattern.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 74
Remarks	None

In the Real Time TDMA Menu

Supported   All with Option 402

Press this softkey to select an internally generated PN20 pseudorandom bit pattern.

For unframed transmissions, PN20 appears in the Data field in the top line of the text area of the display.

For framed timeslot data fields, PN20 appears in the Data field or the B field, both of which are located near the bottom of the text area of the display.

For configuring the timeslot data fields, PN20 appears in either the Data field (all formats) or the following locations:

  DECT: B field

  EDGE and GSM: E field

  PDC and PHS: TCH field

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 116, 119, 131, 134,

147, 150, 163, 166, 179, 182, 195, 198, 211, 214

Remarks   None

In the BERT Menu

Supported   All with Option UN7

This softkey is one of the choices in the Data select menu. With PN20 selected, the incoming data to the BER DATA IN connector is assumed to be PN20 data.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   None

PN23

Supported   All with Option 001 or 002

This softkey selects an internally generated, ITU standard PN23 pseudorandom bit pattern.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 74

Remarks   None

In the Real Time TDMA Menu

Supported   All with Option 402

Press this softkey to select an internally generated PN23 pseudorandom bit pattern.

For unframed transmissions, PN23 appears in the Data field in the top line of the text area of the display.

For framed timeslot data fields, PN23 appears in the Data field or the B field, both of which are located near the bottom of the text area of the display.

For configuring the timeslot data fields, PN23 appears in either the Data field (all formats) or the following locations:

   DECT: B field

EDGE and GSM: E field

PDC and PHS: TCH field

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 116, 119, 131, 134, 147, 150, 163, 166, 179, 182, 195, 198, 211, 214
Remarks	None

In the BERT Menu

Supported   All with Option UN7

This softkey is one of the choices in the Data select menu. With PN23 selected, the incoming data to the BER DATA IN connector is assumed to be PN23 data.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 9
Remarks	None

PN Offset

Supported   All with Option 401

Use this softkey to select the PN offset as a column by which the table will be sorted.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 25, 31, 43
Remarks	None

PN Offset

Supported   All with Option 401

This field displays the current pseudorandom number offset value. This is the time offset in the short sequence code assigned to each base station to give it a unique identity. To change the offset value, highlight the PN Offset field, press the **Edit Item** softkey and enter a new value.

Preset	0
Range	0–511
Location	See *Key and Data Field Menu Maps* guide: Pages 21, 31, 47, 51
Remarks	None

PN Sequence

Supported   All with Option 001 or 002

Use this softkey to access a menu of choices for pseudorandom internal data generation.

Preset	PN23
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 74, 109, 116, 119, 131, 134, 147, 150, 163, 166, 179, 182, 195, 198, 211, 214
Remarks	None

Point Trigger

Supported   All

Use this softkey to access a menu from which you can select a triggering mode for a point-by-point sweep. You can also configure the polarity of the TTL signal output at the TRIG IN connector using the **Trigger In Polarity Neg Pos** softkey in this menu.

Preset	Free Run
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	None

Polarity Setup

Supported   All with Option UN7

This softkey accesses a menu that enables you to select the polarity of the data, clock, and gate functions for BER measurements.

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

Post-FIR Clipping |I+jQ|

Supported	All with Option 400

This field displays the clip (limit) level of the post-FIR I and Q waveform filtering. A level of 100.0% or 0.00 dB equates to no clipping.

Preset	100.0%
Range	10.0 through 100.0%, in 0.1% increments
	−20.0 through 0.00 dB, in 0.1 dB increments
Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

Power

In the Standard Menu

Supported	All

This field enables you to set the power in the selected table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 103, 230,
Remarks	None

In the CDMA Menu

Supported	All with Option 401

This field displays the current channel power value. To change the channel power, highlight the Power field, press the **Edit Item** softkey and enter a new value.

Preset	0.00dB
Range	−40.0 to 0.00 dB
Location	See *Key and Data Field Menu Maps* guide: Pages 18, 21

Remarks Channel power settings may change when Equal Powers or
Scale to 0dB is applied.

In the W-CDMA Menu

Supported All with Option 400

This field displays the power level for the selected channel relative to carrier power. In
the downlink ChipARB channel this field displays the power of the compressed data
frame.

Preset N/A

Range –40.0 to 0.00 dB

Location See *Key and Data Field Menu Maps* guide: Pages 245, 257

Remarks None

Power

Supported All with Option 400

This softkey appears in the Multiple Channels menu where you can define a channel and
then insert multiple entries of that channel into the downlink Edit Channel Setup table
editor.

Press the **Power** softkey, then enter a power level for the channels that will be inserted.

After you set the channel parameters, and the number of times you want the channel
duplicated, press **Done** to insert the information into the table editor.

Preset 0.00 dB

Range –40.00 to 0.00 dB

Location See *Key and Data Field Menu Maps* guide: Pages 35, 46, 253

Remarks None

Power Control Bits

Supported All with Option 401

This field displays the current CDMA2000 power control bits value. The mobile uses this
value to request a power level change from the the base station. To change the power
control bits, highlight the Power Control Bits field, press the **Edit Item** softkey and
enter a new value.

Preset	0000 hexidecimal
Range	0000–FFFF hexidecimal
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	This field is available only for with the RadioConfig 3/4 Traffic pilot channel.

Power Control Signal Polarity Neg Pos

Supported All with Option 401

This softkey selects the polarity of the power control signal.

Preset	POS
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 263
Remarks	N/A

`Power dB`

Supported All with Option 400

This data field displays the power of the selected channel and is displayed in the Edit Channel Setup table editor when the **Multicarrier Off On** softkey is set to Off.

Preset	0.00 dB
Range	–40.00 to 0.00 dB
Location	See *Key and Data Field Menu Maps* guide: Pages 31, 43, 47, 248
Remarks	This field is displayed in both the uplink and downlink Edit Channel Setup table editor.

Power Hold Off On

Supported All with Option 400

This softkey sets the power control state of the dedicated physical channel (DPCH). The DPCH power is held on the **Hold On** selection. The **Hold Off** selection enables the dynamic power control.

Preset	1

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The power hold mode is automatically enabled when the dedicated physical channel (DPCH) **Power Mode Norm TPC** is set to **TPC.**

Power Meter

Supported	All

Use this softkey to access a menu from which you can select the external power meter model for use during the user flatness calibration.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 5
Remarks	The power meter selection is not affected by a preset or by a power cycle.
	The power meter is controlled only through a GPIB cable.

Power Mode Norm TPC

Supported	All

This softkey is used to set the power control mode of the dedicated physical channel.

Norm	This choice selects the normal power mode.
TPC	This choice selects the transmit power control mode.

Preset	Norm
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 263
Remarks	N/A

Power On Last Preset

Supported	All

This softkey selects the power-on operating state for the signal generator. You can select

either last or preset.

Last	Each time you cycle power to the signal generator, it will turn on using the same settings as when last turned off.
Preset	Each time you cycle power to the signal generator, it will turn on in either the factory-defined preset condition or in a user-defined preset condition. You make the choice between factory and user-defined preset with the **Preset Normal User** softkey.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	If Last is active, the signal generator must not receive commands for at least 3 seconds before the power is turned off to guarantee that the most recent state is saved. The power-on state is not affected by a preset or by a power cycle.

Power On/Preset

Supported   All

Use this softkey to access a menu of choices for power on and preset conditions. Refer to

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 232
Remarks	None

Power Search

Supported   All

Use this softkey to access the **Power Search Manual Auto** softkey. Power search is an internal calibration routine that improves output power accuracy when the automatic leveling control circuit (ALC) is off.

If you are using external I/Q modulation, the power search routine assumes that the I/Q input level is $\sqrt{I^2 + Q^2} = 0.5$ V$_{rms}$. Actual output amplitude will scale directly with $\sqrt{I^2 + Q^2}$.

Preset	N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 3, 99
Remarks	The **ALC Off On** softkey must be set to Off to enable the power search mode.

Power Search Manual Auto

Supported	All

This softkey toggles the power search mode between auto and manual.

Manual	The routine is not run until the **Do Power Search** softkey is pressed.
Auto	The routine will run automatically with each change to the RF frequency or power, and with each change to the AM, burst, pulse, or I/Q modulation state.
Preset	Manual
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 3, 99
Remarks	The **ALC Off On** softkey must be set to Off to enable the power search mode.

Power Search Reference Fixed Mod

Supported	All with Option 001

Use this softkey to select the reference used by the power search mode.

Fixed	A 0.5 V reference is used in this mode.
Mod	In modulated mode, the reference is the RMS value of the current I/Q modulation.
Preset	Fixed
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 3, 99
Remarks	The **ALC Off On** softkey must be set to Off to enable the power search modes.

Power Step

Supported   All with Option 400

This field, in the dedicated physical channel (DPCH) Transmit Power Control Setup menu, displays the increment value which the initial power (Init Power) is stepped.

Preset   0.5 dB

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 273

Remarks   None

Pp-m

Supported   All with Option 400

This field, in the Uplink Physical Type:PRACH Power menu, displays the power difference between the preamble and message control part of the physical random access channel (PRACH).

Preset   –4.56 dB

Range   –20.00 to 10.00 dB

Location   See *Key and Data Field Menu Maps* guide: Page 271

Remarks   None

PRACH

Supported   All with Option 400

This softkey sets the channel type of the uplink physical channel to the physical random access channel (PRACH). The PRACH carries the random access channel (RACH) transport channel used by the user equipment (UE) to request registration on the network.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 263, 270

Remarks   None

PRACH AGWN Setup

Supported   All with Option 400

This softkey accesses a the configuration screen for the physical random access channel (PRACH) additive white gaussian noise (AGWN) setup for single and multiple PRACH modes.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 270

Remarks   N/A

PRACH Code Setup

Supported   All with Option 400

This softkey accesses a the configuration screen for the physical random access channel (PRACH) code setup for single and multiple PRACH modes.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 270

Remarks   N/A

PRACH Input Signal Setup

Supported   All with Option 400

This softkey is one of the menu selections from the PRACH Rear Panel Setup menu. When selected, the rear panel input signal routing for the uplink PRACH is displayed.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 272

Remarks   None

PRACH Mode Single Multi

Supported   All with Option 400

Use this softkey to set the mode for the physical random access channel (PRACH).

Single	This selection configures the signal generator for a single PRACH.
Multi	This selection configures the signal generator for up to eight PRACHes.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 270

Remarks   None

PRACH Output Signal Setup

Supported   All with Option 400

This softkey is one of the menu selections from the PRACH Rear Panel Setup menu. When selected, the rear panel output signal routing for the uplink PRACH is displayed.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 272

Remarks   None

PRACH Power Setup

Supported   All with Option 400

This softkey accesses a the configuration screen for the physical random access channel (PRACH) power setup for single and multiple PRACH modes.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 270

Remarks   N/A

PRACH Power Setup Mode Pp-m Total

Supported   All with Option 400

This softkey determines how power is set for the PRACH.

Pp-m	Selecting Pp-m, the difference between preamble power and message

	control power or total., sets the ratio of the preamble power and message control power.
Total	Selecting Total mode sets the total power of the following parameters: message total power (data and control) control and preamble power (Max power of preamble).

Preset	Pp-m
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 271
Remarks	None

PRACH Processing (RPS19)

Supported   All with Option 400

This softkey assigns physical random access channel (PRACH) processing to the selected rear panel AUX I/O output connector or BNC.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The preamble raw data can be assigned to numerous different output connectors/pins. The **(RPS19)** designator refers to the remote SCPI command that corresponds to this softkey.

PRACH Pulse (RPS23)

Supported   All with Option 400

This softkey assigns the physical random access channel pulse to the selected rear panel AUX I/O output connector or BNC.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The PRACH pulse can be assigned to numerous different output connectors/pins. The **(RPS23)** designator refers to the remote SCPI command that corresponds to this softkey.

PRACH Rear Panel Setup

Supported   All with Option 400

This softkey accesses a menu from which you can view or configure the rear panel signal connections, routing and signal types.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	Available for uplink only.

PRACH Trigger

Supported   All with Option 400

This softkey is used to trigger a physical random access channel (PRACH) uplink transmission. This softkey is only available when **Trigger** is selected in the PRACH Trigger Source menu. The PRACH signal can be controlled in several ways.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 270, 271
Remarks	This softkey is grayed-out if **Immedi** is selected in the PRACH Trigger Source menu.

PRACH Trigger Setup

Supported   All with Option 400

This softkey accesses a menu for physical random access channel (PRACH) synchronization timing offset, base delay Tp-a, trigger framing, and trigger polarity.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	None

PRACH Trigger Polarity Neg Pos

Supported   All with Option 400

This softkey is used to configure the polarity of the PRACH Trigger signal.

Neg   Triggering is on the falling high–to–low signal transition.

Pos   Triggering is on the rising low–to–high signal transition.

Preset   Pos

Range   N/A

Location See *Key and Data Field Menu Maps* guide: Page 272

Remarks Available for uplink only.

PRACH Trigger Source Immedi Trigger

Supported   All with Option 400

This softkey selects the trigger type for the PRACH transmission. Refer to the "PRACH Trigger" on page 475 for more information on the PRACH trigger.

Immedi   This trigger source selection generates a PRACH sequence immediately.

Trigger   This selection generates a PRACH sequence after receiving the trigger command.

Preset   Immedi

Range   N/A

Location See *Key and Data Field Menu Maps* guide: Pages 270, 271

Remarks None

PRACH Timing Setup

Supported   All with Option 400

This softkey accesses the configuration screen for the physical random access channel (PRACH) timing setup for single and multiple PRACH modes.

Preset   N/A

Range   N/A

Location See *Key and Data Field Menu Maps* guide: Page 270

Remarks   N/A

PRAT

> **Supported**   All with Option 401
>
> This field displays the current paging channel data rate value used by the base station. To change the data rate, highlight the PRAT field, press the **Edit Item** softkey and enter a new value.
>
> **Preset**   00
>
> **Range**   00–03
>
> **Location**   See *Key and Data Field Menu Maps* guide: Page 53
>
> **Remarks**   None

Preamble

> **Supported**   All with Options 400, 403
>
> This softkey is used to select the physical random access channel (PRACH) preamble as the reference for determining the power level for the Ec/No calculation. The selection is displayed in the E Ref field of the uplink physical random access channel PRACH AWGN table editor.
>
> This selection is coupled to the data rate, C/N value (dB) field, the C Power field, and the N Power field and can change the values displayed by these fields.
>
> **Preset**   N/A
>
> **Range**   N/A
>
> **Location**   See *Key and Data Field Menu Maps* guide: Page 53
>
> **Remarks**   None

Preamble Pulse (RPS21)

> **Supported**   All with Option 400
>
> This softkey assigns preamble pulse to the selected rear panel AUX I/O output connector BNC. This signal is related to PRACH.
>
> **Preset**   N/A
>
> **Range**   N/A

Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The preamble pulse can be assigned to numerous different output connectors/pins. The **(RPS21)** designator refers to the remote SCPI command that corresponds to this softkey.

Preamble Raw Data (RPS15)

Supported	All with Option 400

This softkey assigns preamble raw data to the selected rear panel AUX I/O output connector or BNC. This signal is related to the PRACH.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The preamble raw data can be assigned to numerous different output connectors/pins. The **(RPS15)** designator refers to the remote SCPI command that corresponds to this softkey.

Preamble Raw Data Clock (RPS16)

Supported	All with Option 400

This softkey assigns preamble raw data clock to the selected rear panel AUX I/O output connector or BNC. This signal is related to the PRACH.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The preamble raw data clock can be assigned to numerous different output connectors/pins. The **(RPS16)** designator refers to the remote SCPI command that corresponds to this softkey.

Predefined Mode

Supported	All with Option 001 or 002

This softkey accesses a menu of single-keypress setups for various formats. When you select a format, default values for components of the format (such as modulation type, filter, and bits per symbol) are automatically set up.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 77
Remarks	None

Pre-FIR Clipping |I+jQ|

Supported   All with Option 400

This field displays the clip (limit) level of the pre-FIR I and Q waveform filtering. A level of 100.0% or 0.00 dB equates to no clipping.

Preset	100.0%
Range	10.0 through 100.0%, in 0.1% increments
	−20.0 through 0.00 dB, in 0.1 dB increments
Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

Preset Language

Supported   All

Use this softkey to access a menu of choices for selecting the programming language that is implemented after the **Preset** key is pressed. You can choose between SCPI, which is the language chosen for the signal generator for remote implementation of all features, 8648-compatible, and four versions of 8656/57-compatible languages. The 8648- and 8656/67-compatible languages are provided for remote implementation of some features so that this signal generator can be compatible with systems that use those instruments. Refer to the programming guide for specifics on which commands are implemented.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	The preset language is not affected by an instrument preset or by a power cycle.

Preset List

Supported   All

This softkey enables you to delete the current sweep list and replace it with a new list consisting of one point at a default frequency, amplitude, and dwell time.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 4, 231
Remarks	Be certain that you want to delete the current sweep list; you cannot recover the information once you press **Preset List**.

Preset Normal User

Supported   All

This softkey enables you to select a factory-defined preset or user-defined preset state for the signal generator.

Normal	A factory-defined preset is used if **Normal** is selected.
User	A user-defined preset is used if **User** is selected.
Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	A user-defined preset state is saved with the **Save User Preset** softkey.

Pre Sig

Supported   All with Option 401

This field enables you to set or edit the signature of the physical random access channel (PRACH) preamble for the multiple PRACH mode.

Preset	0
Range	0–15
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

P REV

Supported   All with Option 401

This field displays the current protocol revision level value for the real-time CDMA2000 forward synchronization channel. The protocol revision level is displayed in hexadecimal notation. To change the revision level, highlight the P REV field, press the **Edit Item** softkey and enter a new value.

Preset	01
Range	00–FF
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

P REV Min

Supported	All with Option 401

This field displays the minimum protocol revision level value for the real-time CDMA2000 forward synchronization channel. The minimum protocol revision level is displayed in hexadecimal notation. To change the minimum level, use the down arrow key to move the cursor to the second page of data fields and highlight the P REV Min field. Press the **Edit Item** softkey and enter a new value.

Preset	01
Range	00–FF
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

Primary Key

Supported	All with Option 400/401

Use this softkey to select the primary column by which the table will be sorted.

The current selection is displayed under the **Primary Key** softkey.

Preset	*IS-95A:* PN Offset *CDMA2000 (forward link):* Config *CDMA2000 (reverse link):* Rate *W-CDMA (downlink and uplink):* Rate
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 22, 25, 31, 43, 251
Remarks	None

Primary Scramble Code

Supported   All with Option 400

This field displays the primary scramble code for the arb multicarrier waveform. The primary scrambling code consist of scrambling codes n=16×i where i = 0 through 511. The nth set of secondary scrambling codes consists of scrambling codes 16×i+k, where k = 1 through 15.

There is one-to-one mapping between each primary scrambling code and the 15 secondary scrambling codes so that the i:th primary scrambling code corresponds to nth secondary scrambling codes.

Preset   N/A

Range   0–511

Location   See *Key and Data Field Menu Maps* guide: Page 53

Remarks   None

Proceed With Reconfiguration

This softkey appears in two different menus.

In the Software Options Menu

Supported   All

Press this softkey to enable the selected software option. The selected option must display a valid license key, indicated by a check mark. After pressing this softkey, press the **Confirm Change** softkey to verify that you want to reconfigure the signal generator with the option selected. If you do not want to continue, press the **Return** key.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 236

Remarks   If you enable an option that does not have the required hardware installed, the menus for that option will be activated but the option cannot operate, regardless of what the menus may indicate.

In the LAN Setup Menu

Supported   All

Press this softkey to enable any changes made in the LAN Setup menu. After pressing

this softkey, press the **Confirm Change** softkey to verify that you want to reconfigure the signal generator with the changes you made. If you do not want to continue, press the **Return** key.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 232
Remarks	None

PSCH

Supported	All with Option 400

This softkey inserts a Primary Synchronization Channel (PSCH) into the downlink Edit Channel Setup table editor. The PSCH, along with the Secondary Synchronization Channel (SSCH), provides an identifying signal to, and a timing reference for, each base station.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 250, 253
Remarks	This softkey appears in two places. If selected from the **Type** softkey menu in the **Multiple Channels** softkey menu, you must press the **Done** softkey to insert the channel into the Edit Channel Setup table editor.

PSCH Power

Supported	All with Option 400

This field displays the primary synchronization channel (PSCH) power. This channel consists of the primary synchronization code (PSC), a fixed 256-chip code broadcast by all W-CDMA base stations.

Preset	–8.30 dB
Range	–40.00 to 0.00 dB
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

PSCH State

Supported   All with Option 400

This field displays the on/off state for the primary synchronization physical channel (PSCH).

Preset   On

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 257

Remarks   None

PSK

Supported   All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a modulation, or load an I/Q map into the I/Q table editor.

Selecting a PSK Modulation

Use this softkey to display a menu of phase shift keying (PSK) modulation types to modulate a continuous stream of the selected data pattern. You can choose from QPSK and OQPSK, BPSK, π/4 DQPSK, 8PSK, 16PSK, D8PSK and EDGE.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 65, 75, 121, 136, 152, 168, 184, 200, 216

Remarks   None

Loading a PSK I/Q Map into the I/Q Table Editor

Use this softkey to display a menu of phase shift keying (PSK) modulation types that you can load into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 86, 130, 146, 162, 178, 194, 210, 226

Remarks   None

Pulse

Supported   All

This softkey enables you to select pulse as the modulating waveform.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 101, 108
Remarks	This key is available after selecting the internal source to operate as a function generator.

Pulse/RF Blank (None)

Supported   All with option 001 and 002

This softkey enables you to select a marker for Pulse/RF blanking function. When a marker is used for RF blanking, the RF output is transmitted when the selected marker signal is high. When the selected marker signal is low, the RF is blanked. RF blanking also integrates ALC Hold, so there is no need to select the ALC Hold function when using the Pulse/RF Blank function.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255
Remarks	N/A

Pulse Off On

Supported   All

This softkey toggles the operating state for the currently selected pulse modulation source.

Off	Use this setting to turn off the pulse modulation source.
On	Use this setting to turn on the pulse modulation source.

When pulse modulation is on, the PULSE annunciator is shown in the display.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 108
Remarks	The RF carrier is modulated by the enabled modulation only when you have also set **Mod On/Off** to On.

Pulse Period

Supported   All

This softkey enables you to change the pulse period for internally generated pulse modulation.

Preset	80.0 μsec
Range	8.0 usec–30.0 sec
Location	See *Key and Data Field Menu Maps* guide: Page 108
Remarks	If the value for pulse period is less than the value for pulse width, pulse width is changed to be 20 us less than pulse period.
	The pulse period applies only to internal pulse modulation; when external pulse modulation or internal square pulse modulation is selected, this key is disabled.

Pulse Rate

Supported   All

This softkey enables you to change the pulse rate for the internal square pulse modulation.

Preset	400.0 Hz
Range	100.0 mHz–100.0 kHz
Location	See *Key and Data Field Menu Maps* guide: Page 108
Remarks	The new value of pulse rate applies only to internal square pulse modulation; when external pulse modulation or internal pulse modulation is selected, this key is disabled.

Pulse Source

Supported   All

Use this softkey to access a menu of choices that enables you to select the pulse source
for modulation inputs.

Preset	Internal Pulse
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 108
Remarks	The RF carrier is modulated by the enabled modulation only when you have also set **Mod On/Off** to On.

Pulse Width

Supported   All

This softkey enables you to change the pulse width for internally generated pulse
modulation source.

Preset	40.00 μsec
Range	4.0 usec–30.0 sec
Location	See *Key and Data Field Menu Maps* guide: Page 108
Remarks	If the value for pulse period is less than the value for pulse width, pulse width is changed to be 20 ns less than pulse period.
	The pulse width applies only to internal pulse modulation; when external pulse modulation or internal square pulse modulation is selected, this key is disabled.

`Puncture`

Supported   All with Option 400

The field displays the puncture rate percentage for the transport channel or, if a negative
number, the number of bits to be added to the channel. Data can be removed from or
added to the fully coded channel. The number of bits removed or inserted is displayed as
a percentage of the total number of bits.

Preset	N/A
Range	–25400 to 100%

Location	See *Key and Data Field Menu Maps* guide: Pages 259, 267, 271
Remarks	This field is not user-definable. The value is computed based on the user selected TrCH setup.

PwrOffs

Supported	All with Option 400

This field displays the power level set for the compressed data frames. The increase in transmitted power for compressed frames, expressed in decibels (dB), is typically increased to compensate for the loss in coding gain.

Preset	0
Range	0–6 dB or AUTO
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	The power offset can also be automatically set by using the auto setting. The amount of gain depends on the number of DTX slots in the auto mode.

PWT

Supported	All with Option 001 or 002

This softkey selects a predefined personal wireless telephone (PWT) personality for the digital modulation format. The PWT standard is an adaptation of the DECT air-interface with a $\pi/4$ DQPSK modulation to reduce radio channel bandwidth.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 69
Remarks	None

Q

Q Offset

Supported   All

Use this softkey to set an origin offset voltage for internally generated quadrature-phase signals. This offset is used to remove imperfections in the quadrature-phase signal or to introduce calibrated impairments.

Preset   0.0%

Range   −100% to 100%

Location   See *Key and Data Field Menu Maps* guide: Page 99

Remarks   The **I/Q Adjustments Off On** softkey must be set to On to enable this adjustment.

When using this key to minimize the LO feedthrough signal, optimum performance is achieved when the adjustment is made after all other I/Q path adjustments, such as those made with the [Int Phase Polarity Normal Invert] or [Modulator Atten xx db Manual Auto] softkeys. If other adjustments are made after minimization is performed, the LO feedthrough signal may increase.

QAM

Supported   All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a modulation, or load a default I/Q map into the I/Q table editor.

Selecting a QAM Modulation

Use this softkey to display a menu of quadrature amplitude modulation (QAM) types to modulate a continuous stream of the selected data pattern. You can choose from 4QAM, 16QAM, 32QAM, 64QAM, and 256QAM.

The modulation selection appears under the **Select** and **QAM** softkeys in the Modulation Type menus.

Preset   N/A

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 65, 75, 86, 121, 136, 152, 168, 184, 200, 216
Remarks	None

Loading a QAM I/Q Map into the I/Q Table Editor

Use this softkey to display a menu of quadrature amplitude modulation (QAM) types that you can load into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 84, 130, 146, 162, 178, 194, 210, 226
Remarks	None

QOF

Supported	All with Option 401

This field displays the current quasi-orthogonal function channel value. To change the channel value, highlight the QOF field, press the **Edit Item** softkey and enter a new value.

Preset	0
Range	0–3
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

QPSK

Supported	All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a modulation, or load an I/Q map into the I/Q table editor.

Selecting a QPSK Modulation

Use this softkey to select quadrature phase shift keying (QPSK) to modulate a continuous stream of the selected data pattern. QPSK modulation transmits data at the rate of 2 bits per symbol.

The modulation selection appears under the **Select**, **QPSK and OQPSK**, and **PSK** softkeys

in the Modulation Type menus.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 82, 127, 143, 159, 175, 191, 207, 223, 226
Remarks	None

Loading a QPSK I/Q Map into the Table Editor

Use this softkey to load a quadrature phase shift keying (QPSK) I/Q map into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 86, 130, 146, 162, 178, 194, 210, 226
Remarks	None

QPSK and OQPSK

Supported	All with Option 001 or 002

This softkey appears in two different situations, enabling you to either select a modulation, or load a default I/Q map into the I/Q table editor.

Selecting a QPSK and OQPSK Modulation

Use this softkey to access a menu of quadrature phase shift keying (QPSK) and offset quadrature phase shift keying (OQPSK) modulation types to modulate a continuous stream of the selected data pattern. QPSK and OQPSK modulations transmit data at the rate of 2 bits per symbol. You can choose from QPSK, IS95 QPSK, Gray Coded QPSK, OQPSK, and IS95 OQPSK.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 75, 121, 136, 152, 168, 184, 200, 216
Remarks	None

Loading a QPSK and OQPSK I/Q Map into the Table Editor

Use this softkey to access a menu of quadrature phase shift keying (QPSK) and offset quadrature phase shift keying (OQPSK) modulation types that you can load into the I/Q table editor. For more information on mapping symbol positions with the I/Q table editor, see the *User's Guide*.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 86, 130, 146, 162, 178, 194, 210, 226
Remarks	None

Quadrature Skew

Supported   All

Use this softkey to adjust the phase angle between the I and Q vectors. When the quadrature skew is zero, the phase angle is 90 degrees. Positive skew increases the angle from 90 degrees while negative skew decreases the angle from 90 degrees.

Preset	0.0 degrees
Range	±10 degrees, minimum increment of 0.01 degrees
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	This softkey is only available for internally generated I and Q.
	When operating the signal generator in the 3.3 to 4 GHz frequency range, quadrature skew settings greater than ±5 degrees will not be within specifications.

Quarter

Supported   All with Option 401

Use this softkey to set the gating rate to one quarter, causing 4 power control groups (every fourth bit) to be transmitted. The gating rate field is available only in the reverse pilot channel.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the Gating Rate field. Refer to "Gating

Rate" on page 316 for more information.

Remarks   None

R

RACH TrCH

Supported   All with Options 400, 403

This softkey is used to select the physical random access channel (PRACH) random access channel (RACH) as the reference for determining the power level for the Eb calculation. The selection is displayed in the `E Ref` field of the uplink physical random access channel PRACH AWGN table editor.

This selection is coupled to the data rate, `C/N value (dB)` field, the `C Power` field, and the `N Power` field and can change the values displayed by these fields.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 271

Remarks   None

`Radio Config`

Supported   All with Option 401

This field displays the current radio configuration value. The radio configuration is a set of traffic channel transmission formats that define parameters, such as data rates and modulation characteristics. Radio configurations 1 and 2 are IS-95 backwards compatible.

To change the radio configuration value, highlight the `Radio Config` field, press the **Edit Item** softkey and enter a new value.

Preset   *Forward Link: F-FCH:* 1; *F-SCH1 and F-SCH2:* 3
                Reverse Link: depends on the selected operating mode

Range   *Forward Link: F-FCH:* 1–5; *F-SCH1 and F-SCH2:* 3–5
                Reverse Link: depends on the selected operating mode

Location   See *Key and Data Field Menu Maps* guide: Pages 53, 59

Remarks   None

RadioConfig 1/2 Access

Supported   All with Option 401

Use this softkey to select the RadioConfig 1/2 Access CDMA-standard reverse link channel configuration. This configuration consists of a radio configuration (RC) 1/2 reverse link access channel (R-ACH) only.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

RadioConfig 1/2 Traffic

Supported   All with Option 401

Use this softkey to select the RadioConfig 1/2 Traffic CDMA-standard reverse link channel configuration. This configuration consists of a radio configuration (RC) 1/2 reverse link fundamental channel (R-FCH) and an RC 1/2 reverse link supplemental 1 channel (R-SCH1).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

RadioConfig 3/4 Common Control

Supported   All with Option 401

Use this softkey to select the RadioConfig 3/4 Common Control CDMA-standard reverse link channel configuration. This configuration consists of a radio configuration (RC) 3/4 reverse link common control pilot channel (R-PICH) and an RC 3/4 reverse link common control channel (R-CCCH).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

RadioConfig 3/4 Enhanced Access

Supported   All with Option 401

Use this softkey to select the RadioConfig 3/4 Enhanced Access CDMA-standard reverse link channel configuration. This configuration consists of a radio configuration (RC) 3/4 reverse link enhanced access pilot channel (R-PICH) and an RC 3/4 reverse link enhanced access channel (R-EACH).

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 59

Remarks   None

RadioConfig 3/4 Traffic

Supported   All with Option 401

Use this softkey to select the RadioConfig 3/4 Traffic CDMA-standard reverse link channel configuration. This configuration consists of a radio configuration (RC) 3/4 reverse link traffic pilot channel (R-PICH), an RC 3/4 reverse link dedicated control channel (R-DCCH), an RC 3/4 reverse link fundamental channel (R-FCH), an RC 3/4 reverse link supplemental 1 channel (R-SCH1) and an RC 3/4 reverse link supplemental 2 channel (R-SCH2).

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 59

Remarks   None

Ramp

Supported   All

This softkey enables you to specify ramp as the modulating waveform.

Preset   Positive

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101

Remarks   In the LF Out menu this key is available after selecting the internal

source to operate as a function generator.

Ramp

Supported   All with Option 401

This field displays the operating state of the CDMA2000 power ramp function. When this function is enabled, the power level is increased over a time period specified by the Ramp Time data field, then decreased over the same period. The power ramp sequence is continuously repeated.

To toggle the power ramp operating state, highlight the Ramp field and press the **Edit Item** softkey.

Preset	On
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

Ramp Step

Supported   All with Option 400

This field is displayed in the PhyCH Setup: PRACH Power Setup menu and indicates the ramp step power level. The ramp step is the power level increase for the physical random access channel (PRACH) preamble. The ramping step power is in decibels. Refer to "Init Pwr" on page 336 for more information.

Preset	0 dB
Range	0–10 dB
Location	See *Key and Data Field Menu Maps* guide: Page 271
Remarks	Ramp step and Num of Pre are coupled to allow approximately 30 dB of range between the first and last preamble.

Ramp Time

Supported   All with Option 401

This field displays the CDMA2000 power ramp time. When the power ramp is enabled, the power level is increased over a time period specified by the Ramp Time data field, then decreased over the same period. The power ramp sequence is continuously repeated.

To change the ramp time value, highlight the `Ramp Time` field, press the **Edit Item** softkey and enter a new value.

Preset	1
Range	1–80 frames
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

Random

Supported	All with Option 400

This softkey selects random data as the data for the selected channel. Random data can be selected for both uplink and downlink.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 31, 43, 47
Remarks	None

Random Seed Fixed Random

Supported	All with Option 001 or 002

This softkey sets the mode of the random seed for the randomly generated phases of the multitone table editor tones. This is done as part of initializing the multitone table editor.

Fixed	When you select Fixed, the same random phases will be generated after each initialization.
Random	When you select Random, new phases will be generated after each initialization.

Preset	Fixed
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 103
Remarks	Use this softkey when the **Initialize Phase Fixed Random** softkey is set to the Random selection.

Ranging Code C/A P C/A+P

Supported   All with Option 409

This softkey sets the ranging code type for the modulated GPS carrier.

C/A	This choice selects a 1023-bit pseudorandom C/A (coarse acquisition) code that is BPSK modulated onto the L1 (1575.42 MHz) carrier. The C/A code factory set chip rate is 1.023 Mcps using a 10.23 Mcps reference clock.
P	This choice selects the precise (P) code which is a very long pseudorandom sequence that is BPSK modulated onto the L2 (1227.6 MHZ) carrier. The P code factory set chip rate is 10.23 Mcps using a 10.23 Mcps reference clock.
C/A+P	This choice permits both the C/A (coarse acquisition) and P (precise) codes to modulate the L1 carrier (1575.42 MHz) simultaneously by providing the C/A code on the I component and the P code in quadrature on the Q component.

Preset   C/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 109

Remarks   N/A

Rate

Supported   All with Option 400

This softkey selects the symbol rate, Rate ksps, as the parameter by which the Edit Channel Setup table editor will be sorted.

Preset   Rate

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 31, 43, 251

Remarks   This softkey appears in two places: the Primary Key softkey menu and the Secondary Key softkey menu. You must press the **Sort** softkey to order the listing.

Rate Full Half

Supported   All with Option 402

Use this softkey to select either a full- or half-rate traffic channel. Notice that your selection, either full-rate or half-rate, is shown on the display directly above the timeslot pattern visual representation.

    Full   When you select full-rate, the traffic channel utilizes two equally spaced timeslots of the frame. Timeslots 1, 2, and 3 are paired with timeslots 4, 5, and 6, respectively.

    Half   When you select half-rate, the traffic channel utilizes one timeslot of the frame.

Preset   Full-rate

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 148, 164

Remarks   None

Rate ksps

Supported   All with Option 400

This data field displays the symbol rate, in kilosymbols per second for the displayed channel.

Preset   N/A

Range: *Downlink*: 7.5 ksps–960 ksps

                     Uplink: 15 ksps–960 ksps

Location   See *Key and Data Field Menu Maps* guide: Page 248

Remarks   The rate choice menu is automatically shown when the appropriate channel is selected or when the field is edited.

                  The symbol rate can not be changed for some channels.

Rate Match Attr

Supported   All with Option 400

This field displays the rate matching attribute value for the selected transport channel. Press **Edit Item** to enter a value and terminate with the **Enter** softkey to set the value. A higher rate match attribute number indicates a higher priority for the channels data

bits. For example, the bits per frame will increase relative to other channels.

Preset: 256 for DCH1 and DCH2, 1 for all other transport channels

Range: 1–256

Location   See *Key and Data Field Menu Maps* guide: Pages 259, 267

Remarks   None

RCDMA

Supported   All

Press this softkey to set the current catalog type to reverse link CDMA (RCDMA) and display the catalog of RCDMA files.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 237

Remarks   Catalog type selection is not affected by a preset or by a power cycle.

Real-time AWGN Off On

Supported   All with Option 403

This softkey sets the operating state of the additive white Gaussian noise (AWGN) function.

     Off   When you select Off, the noise function is disabled.

     On   When you select On, the noise function is enabled.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 12

Remarks   None

Real Time CDMA2000

Supported   All with Option 401

Use this softkey to access a menu from which you can create real time CDMA2000 modulations.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 15, 51, 57
Remarks	None

Real Time GPS

Supported   All with Option 409

Use this softkey to access a menu from which you can set up simulated GPS satellite signals.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 102
Remarks	None

Real Time GPS Off On

Supported   All with Option 409

This softkey sets the operating state of the real time Global Positioning System (GPS) personality.

Off	This selection turns off the GPS personality.
On	This selection turns on the GPS personality. The GPS personality simulates the signal produced by an individual GPS satellite.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 109
Remarks	N/A

Real Time I/Q Baseband

Supported   All with Option 001 or 002

Use this softkey to access a menu from which you can build customized unframed data formats using the real time I/Q baseband generator.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 63, 74
Remarks	None

Real Time I/Q Baseband AWGN

Supported   All with Option 403

This softkey accesses a menu that enables you to set the parameters of the additive white Gaussian noise (AWGN) modulation which uses the continuous real-time modulation generator.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 12
Remarks	None

Real Time TDMA

Supported   All with Option 402

Use this softkey to access a menu of TDMA formats for creating real time modulations.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 102, 115
Remarks	None

Real Time W-CDMA

Supported   All with Option 400

Use this softkey to access a menu from which you can create real time W-CDMA modulations.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 243, 256

Remarks   None

Rear Panel Input Setup

Supported   All with Option 400

Use this softkey to access a menu from which you can configure real-time W-CDMA triggering input.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks   None

Rear Panel Output Setup

Supported   All with Option 400

Use this softkey to access a menu from which you can assign W-CDMA output signals to various rear-panel ports. Highlight the desired rear-panel port in the table editor and select an output signal from the menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks   None

Recall

Supported   All

Use this hardkey to access a menu of softkeys that enables you to select or delete registers and sequences.

Preset   RECALL Reg

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 228

Remarks   None

Recall Ref Osc Setting

Supported   All

Use this softkey to recall the last saved reference oscillator coarse and fine adjustment setting.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 233

Remarks   This adjustment is intended for use by service personnel. Refer to the calibration guide for more information.

RECALL Reg

Supported   All

Use this softkey to recall an instrument state from a saved register. Recalling a register also selects that register number for all keys which specify a register number in this menu. You can also use the front panel knob and the up and down arrow keys to scroll through all saved registers for the selected sequence.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 228

Remarks   None

Recall Secondary Frame State

Supported   All with Option 402

Use this softkey to recall the last instrument state saved as the data pattern for the secondary frame. This will overwrite the current instrument state. When the secondary frame state is turned on, the secondary frame will be generated using the recalled instrument state.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212

Remarks   None

Rectangle

Supported   All with Option 001 or 002

Use this softkey to select a, rectangular pre-modulation filter from either the Select menu or the Load Default FIR menu.

In the Select (filter) Menu

In this menu, pressing the **Rectangle** softkey selects this FIR filter for use in a modulation setup.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 17, 24, 28, 44, 52, 58, 68, 78, 109, 120, 129, 135, 151, 167, 183, 199, 215, 249, 264, 269

Remarks   None

In the Load Default FIR Menu

In this menu, use the **Rectangle** softkey to access a menu from which you can specify the number of symbols, apply a windowing function, and generate a new FIR table that is loaded with the coefficients for a rectangular filter. If you change a parameter, you can press the **Generate** softkey again to reload the FIR table.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 23, 38, 48, 55, 61, 71, 87, 69, 80, 114, 145, 161, 177, 193, 209, 225, 254, 260

Remarks   None

Ref Data Rate

Supported   All with Options 400, 403

This field displays the channel data rate used to calculate the Eb/No or Ec/No value. The rate is determined by the channel selected in the Eb Ref field (E Ref in uplink PRACH) field.

Preset   *Uplink (DPCH)*: 12.2 kbps

                Uplink (PRACH): 8.4 kbps

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 268, 271
Remarks	None

Ref Measure Setup

Supported	All with Option 400

This softkey accesses a menu from which you can select a reference measurement test setup for a physical channel. For downlink, this softkey is only available for the DPCH. For uplink, this softkey is available for DPDCH.

Preset	*Downlink*: N/A
	Uplink: RMC 12.2 kbps
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 257, 263
Remarks	None

Ref Param Setup

Supported	All with Option 400

This softkey accesses a menu from which you can select a compressed mode reference parameter set, as defined in the 3GPP specifications.

Preset	Custom
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Ref Osc Coarse

Supported	All

This softkey is provided for adjusting the internal reference oscillator. Refer to the calibration guide for more information.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 233

Remarks	This adjustment is intended for use by service personnel.

Ref Osc Fine

Supported   All

This softkey is provided for adjusting the internal reference oscillator. Refer to the calibration guide for more information.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 233
Remarks	This adjustment is intended for use by service personnel.

Ref Oscillator Source Auto Off On

Supported   All

This softkey switches off and on the signal generator's capability of automatically selecting between the internal reference oscillator and an external reference oscillator.

Off	The signal generator uses the internal reference only, even if an external reference is connected.
On	The signal generator detects when a valid reference signal is present at the 10 MHz IN connector and automatically switches from internal to external reference operation.

Preset	On
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

Ref Param Setup (Custom)

Supported   All with Option 400

This softkey accesses a menu from which a downlink (DL) reference type can be selected. The DL references available conform to parameters defined in 3GPP Standard TS25.101.

Preset	DL Reference 1.1
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This field is displayed in the uplink Compressed Mode Setup table editor

Ref Param Setup (TrCH BlkSize)

Supported   All with Option 400

This softkey accesses a menu for setting the transport channel block size of the PRACH.

Preset	TrCH BlkSize 168
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	This field is displayed for the DPCCH and the DPDCH in the Compressed Mode Setup table editor

Ref Sensitivity

Supported   All with Option 400

This softkey is a signal button set up for "Reference Sensitivity Testing" as described in 3GPP TS 25.101. Pressing this softkey sets up the transport channel for testing the minimum receiver input power measured at the user equipment (UE) antenna connector at which the bit error rate (BER) does not exceed a specific value.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Reference Frequency

Supported   All with Option 401

This softkey enables you to set the reference frequency of the external clock. It is available only when you are using an external reference applied to the BASEBAND GEN REF IN connector.

Preset	10.0000000 MHz
Range	250.0000 kHz-100.0000000 MHz

Location	See *Key and Data Field Menu Maps* guide: Page 12, 16, 91
Remarks	None

Reference Freq

Supported	All with Option 001 or 002

This softkey enables you to set the reference frequency of the external clock.

Preset	10.0000000 MHz
Range	250.0000 kHz–100.0000000 MHz
Location	See *Key and Data Field Menu Maps* guide: Pages 12, 16, 26, 29, 39, 41, 65, 91, 103, 239, 246
Remarks	This softkey is only available when you are using an external ARB reference applied to the BASEBAND GEN REF IN connector.

Reference Oscillator Adjustment

Supported	All

Use this softkey to access a menu of keys that are provided for adjusting the internal reference oscillator.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 233
Remarks	This adjustment is intended for use by service personnel. Refer to the calibration guide for more information.

Reference Out

Supported	All with Option UN7

This softkey selects the following configuration for the bit error rate output using the AUX I/O rear panel connector:

Pin #	*Data*
1	Data–the incoming data to the BER DATA IN connector is assumed to be PN9 data.
4	Sync Start–indicates the timing that the PN generator starts to

	generate a PN sequence. This signal can also indicate if the hardware is triggering a PN synchronization or making a measurement when the signal is high
20	Clock–the clock signal for the PN9 Data. The falling edge of the PN9 Clock indicates the center of PN9 Data. The PN9 Clock rate is 37.5 Mbits per second.
21	BER Error Out–output is normally low. One pulse whose width is about 80 ns indicates one error bit. Pulses for the error bits of one measurement cycle are not synchronized with the clock signal to the BER CLK IN connector, and are output during the signal of the Meas End connector when the measurement cycle is high.
22	PRBS Ref–uses the pseudo-random bit stream as the reference signal.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   None

Remote Language

Supported   All

Pressing this softkey reveals a menu of choices for the signal generator's remote language. The language selected will be implemented immediately without presetting the signal generator. Instrument specific languages such as 8657D NADC are available for compatibility with the signal generator. The SCPI language implements all of the signal generator's functions.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   Numerous instrument compatible languages are available for use by the signal generator. Refer to the programming guide for specifics on commands and information on programming languages.

Rename

Supported All with Option 001 or 002

Use this softkey to rename the current bit file.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 79, 110, 123, 138, 139, 154, 155, 170, 171, 186, 187, 202, 203, 218, 219

Remarks None

Rename Segment

Supported All with Option 001 or 002

This softkey enables you to rename the selected waveform segment in the displayed catalog.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Page 89, 93

Remarks None

Reserved

Supported All with Option 401

This field displays the current reserved bit setting for the forward synchronization channel. These reserved bits in the frame structure of this channel may be used in the future. Presently, all bits that are marked as reserved bits should be set to "0" in all frames. The base station and mobile will ignore the reserved bits.

Preset 0

Range N/A

Location See *Key and Data Field Menu Maps* guide: Page 53

Remarks None

Reset & Run

Supported   All with Option 001 or 002

Use this softkey to select the Reset & Run mode for continuous triggering. When this mode is selected, the waveform generator plays a sequence or frame continuously upon triggering. The waveform generator responds to subsequent triggers by immediately restarting the sequence.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 67, 83, 88, 118, 133, 149, 165, 181, 197, 213, 247

Remarks   None

Reset RS-232

Supported   All

Use this softkey to clear the RS-232 read/write buffer. Any unprocessed data is cleared and the buffer is readied for sending and receiving data over the RS-232 interface.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   All other RS-232 communication parameters are unaffected.

Reset to Initial Power

Supported   All

This softkey sets the current output power to the Initial Power.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 273

Remarks   Any time the power mode is changed, the start power is always set the the initial power.

Resolution

Supported   All with Option UN7

Use this softkey to specify the resolution of the clock and gate delays. Enter the value using the numeric keypad and terminate it by pressing the appropriate unit softkey.

Preset: 13.3 ns

Range: 26.7 nsec–80.0000 usec

Location   See *Key and Data Field Menu Maps* guide: Page 9

Remarks   The minimum resolution is 13.3 ns and corresponds to 1/75 MHz. The 75 MHz is the sampling clock of the BERT board. It must be a multiple of the minimum resolution and if not, the gate delay time is automatically rounded to a value that is the multiple value closest to the entered value.

Restore DECT Factory Default

Supported   All with Option 402

Use this softkey to reset Digital European Cordless Telecommunications (DECT) configuration to the factory default values.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 195

Remarks   None

Restore Default Burst Shape

Supported   All with Option 001 or 002

Use this softkey to reset the burst shape parameters to their preset values.

Preset values

	Rise Time, bits	**Rise Delay, bits**	**Fall Time, bits**	**Fall Delay, bits**	**Shape Type**
Custom	5.000	0.000	5.000	0.000	sine
DECT	10.000	0.000	10.000	0.000	sine

	Rise Time, bits	Rise Delay, bits	Fall Time, bits	Fall Delay, bits	Shape Type
EDGE	9.000	0.000	9.000	0.000	sine
GSM	3.000	0.000	3.000	0.000	sine
NADC	5.000	0.000	5.000	0.000	sine
PDC	4.000	0.000	4.000	0.000	sine
PHS	4.000	0.000	4.000	0.000	sine
TETRA	8.000	0.000	8.000	0.000	sine

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 76, 122, 137, 153, 169, 185, 201, 217

Remarks   None

Restore Default Filter

Supported   All with Option 001 or 002

Use this softkey to replace the current FIR filter with the default filter for the selected format.

Preset   *EDGE:* EDGE
GSM: Gaussian BbT = 0.300
DECT: Gaussian BbT = 0.500
CDMA2000 and IS-95A: IS-95 Mod w/EQ
Custom, NADC, and TETRA: Root Nyquist α = 0.350
PDC, PHS, and Digital Modulation: Root Nyquist α = 0.500
WCDMA: WCDMA

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 52, 58, 68, 74, 109, 120, 135, 151, 167, 183, 199, 215, 249, 256, 262

Remarks   None

Restore Default Modulation Type

Supported   All with Option 001 or 002

Use this softkey to restore the default modulation type for the current real time custom digital modulation setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 75, 121, 136, 152, 168, 184, 200, 216
Remarks	None

Restore Default Signal Polarities

Supported   All

This softkey is used to restore the signal generator's default signal polarities.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 236
Remarks	None

Restore Default Symbol Rate

Supported   All with Option 001 or 002

Use this softkey to replace the current symbol rate with the default symbol rate for the selected format.

Preset	*TETRA:* 18.000000 ksps *PDC:* 21.000000 ksps *NADC, Custom:* 24.300000 ksps *PHS:* 192.000000 ksps *EDGE, GSM:* 270.833333 ksps *DECT:* 1.152000000 Msps
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 74, 118, 133, 149, 165, 181, 197, 213
Remarks	None

Restore EDGE Factory Default

Supported   All with Option 402

Press this softkey to reset Enhanced Data Rates for GSM Evolution (EDGE) configuration to the factory default values.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 116

Remarks   None

Restore Factory Defaults

Supported   All with Option UNJ

This softkey re-sets the bandwidth of the reference oscillator to the factory-defined default state. The default value for the internal reference bandwidth is 125 Hz. The default value for the external reference bandwidth is 25 Hz

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 233

Remarks   None

Restore GSM Factory Default

Supported   All with Option 402

Use this softkey to reset Global System for Mobile Communications (GSM) configuration to the factory default values.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 131

Remarks   None

Restore NADC Factory Default

Supported   All with Option 402

Use this softkey to reset North American Digital Cellular (NADC) configuration to the factory default values.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 147

Remarks   None

Restore PDC Factory Default

Supported   All with Option 402

Use this softkey to reset Personal Digital Cellular (PDC) configuration to the factory default values.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 163

Remarks   None

Restore PHS Factory Default

Supported   All with Option 402

Use this softkey to reset Personal Handy Phone System (PHS) configuration to the factory default values.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 179

Remarks   None

Restore Sys Defaults

Supported   All

This softkey is used to restore the signal generator's system defaults.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	None

Restore TETRA Factory Default

Supported   All with Option 402

Use this softkey to reset Trans European Trunked Radio (TETRA) configuration to the factory default values.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 211
Remarks	None

Resync Limits

Supported   All with Option UN7

Use this softkey to specify the threshold level for resynchronizing BER measurements. Enter the value using the numeric keypad and terminate it by pressing the **%** or **ppm** softkeys.

Preset	0.4000
Range	0.0500–0.4000
Location	See *Key and Data Field Menu Maps* guide: Page 9
Remarks	None

Retrigger Mode

Supported   All with Option 001 or 002

Use this softkey to access a menu for operating the retrigger mode of single trigger operation. The retrigger mode enables the user to choose between normal single triggering (Off), retriggering after the completion of the current sequence (On), or immediately resetting a sequence and running from the start (Immediate).

Preset	On

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 67, 88, 247
Remarks	The retriggers do not accumulate. If several triggers are received during a waveform, it will only be replayed once.

Reverse

Supported   All with Option 401

Use this key to select a reverse traffic channel for the IS-95A setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 18
Remarks	None

Reverse Power Protection Normal 8648

Supported   All

This softkey is available only after selecting 8648A/B/C/D language compatible mode for the signal generator. The softkey selects the signal generator's reverse power protection mode (RPP). The choices are normal mode and 8648-compatible mode.

Normal	In normal mode, a tripped RPP circuit causes a caution message to be displayed and the front panel to be locked. Eliminate the source of the excess reverse power at the RF OUTPUT connector. Then press the **Reset RPP** softkey to continue operating the signal generator
8648	In 8648 mode, a tripped RPP circuit, causes a caution message to be displayed and the front panel to be locked. However, any command sent over the GPIB will reset the RPP circuit and return you to normal signal generator operation. This mode is provided for compatibility with systems that use the 8648.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	Repeated tripping of the RPP can cause damage to the signal generator. It is best to eliminate the source of excess reverse power and then reset the reverse power protection circuit by pressing the

Reset RPP softkey. The RPP mode is not affected by an instrument preset or by a power cycle.

Revert to Default Cal Settings

Supported	All

Use this softkey to restore the original factory calibration data for the internal I/Q modulator.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	None

R-GSM Base

Supported	All

This softkey selects R-GSM 900 Base as the channel band for GSM. The output frequency depends on both the frequency band and channel selection.

Preset	*Channel*: 1
	Frequency: 935.200 MHz
Range	*Channels*: 0–124, 975–1023
	Frequency: 935.000–959.800 MHz, 921.200–934.800 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

R-GSM Mobile

This softkey selects R-GSM 900 Mobile as the channel band for GSM. The output frequency depends on both the frequency band and channel selection.

Supported	All
Preset	*Channel*: 1
	Frequency: 890.200 MHz
Range	*Channels*: 0–124, 975–1023

Frequency: 890.000–914.800 MHz, 876.200–889.800 MHz

Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

Right

Supported	All with Option 400

This softkey selects a scramble code between 16384 and 24575 for the downlink ChipARB physical channel.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the ScrCode Type field. Refer to "ScrCode Type" on page 541 for more information.
Remarks	None

Right Alternate

Supported	All with Option 400

Use this softkey to set the downlink channel scramble type to right alternate. Selecting **Right Alternate** adds 16384 to the scramble code.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 248, 253
Remarks	None

Rise Delay

Supported	All with Option 001 or 002

Press this softkey to adjust the burst shape rise delay.

Preset	0.000 bits
Range	Minimum and maximum values depend on modulation type and symbol rate.
Location	See *Key and Data Field Menu Maps* guide: Pages 76, 122, 137, 153, 169, 185, 201, 217

| **Remarks** | None |

Rise Time

| **Supported** | All with Option 001 or 002 |

Press this softkey to adjust the burst shape rise time.

Preset:	*TETRA:* 8.000 bits
	Custom, NADC: 5.000 bits
	PDC, PHS: 4.000 bits
	EDGE: 9.000 bits
	GSM: 3.000 bits
	DECT: 10.000 bits
Range	Minimum and maximum values depend on modulation type and symbol rate.
Location	See *Key and Data Field Menu Maps* guide: Pages 76, 122, 137, 153, 169, 185, 201, 217
Remarks	None

Rising

| **Supported** | All with Option 401 |

Use this softkey to configure the signal generator to trigger on the rising edge of the signal applied to the PATT TRIG IN rear panel connector.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the `Trigger Edge` field. Refer to "Trigger Edge" on page 631 for more information.
Remarks	None

RMC 12.2 kbps (25.141 v5.4)

| **Supported** | All with Option 400 |

This softkey sets the uplink reference measurement channel (RMC) test setup rate to 12.2 kbps as described in the 3GPP Technical Specification (TS 25.141 v3.9).

| **Preset** | N/A |

R

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 263
Remarks	This reference measurement is automatically selected following an instrument preset.

RMC 64 kbps (25.141 v5.4)

Supported   All with Option 400

This softkey sets the uplink reference measurement channel (RMC) test setup rate to 64 kbps as described in the 3GPP Technical Specification (TS 25.141 v3.9).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 263
Remarks	None

RMC 144 kbps (25.141 v5.4)

Supported   All with Option 400

This softkey sets the uplink reference measurement channel (RMC) test setup rate to 144 kbps as described in the 3GPP Technical Specification (TS 25.141 v3.9).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 263
Remarks	None

RMC 384 kbps (25.141 v5.4)

Supported   All with Option 400

This softkey sets the uplink reference measurement channel (RMC) test setup rate to 384 kbps as described in the 3GPP Technical Specification (TS 25.141 v3.9).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 263

Remarks   None

Root Nyquist

Supported   All with Option 001 or 002

This softkey selects a root Nyquist (root-raised cosine) pre-modulation filter from either the Select menu or the Load Default FIR menu.

In the Select (filter) Menu

In this menu, use the **Root Nyquist** softkey to select this FIR filter for use in a custom modulation setup.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 52, 58, 68, 78, 109, 120, 129, 135, 151, 169, 183, 199, 215, 249, 264, 269

Remarks   None

In the Load Default FIR Menu

In this menu, use the **Root Nyquist** softkey to access a menu from which you can change the filter alpha value, specify the number of symbols, apply a windowing function, and generate a new FIR table that is loaded with the coefficients for a root Nyquist filter. If you change a parameter, you can press the **Generate** softkey again to reload the FIR table.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 24, 38, 48, 55, 61, 71, 87, 114, 145, 161, 177, 193, 209, 225, 254 260, 269

Remarks   None

RPICH

Supported   All with Option 401

Use this softkey to turn on the reverse link pilot channel within the current CDMA2000 RadioConfig 3/4 Traffic channel configuration. All other reverse link channels are turned off.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

RPICH RDCCH

Supported   All with Option 401

Use this softkey to turn on the reverse link pilot and dedicated control channels within the current CDMA2000 RadioConfig 3/4 Traffic channel configuration. All other reverse link channels are turned off.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

RPICH RDCCH RFCH

Supported   All with Option 401

Use this softkey to turn on the reverse link pilot, dedicated control and fundamental channels within the current CDMA2000 RadioConfig 3/4 Traffic channel configuration. All other reverse link channels are turned off.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 59
Remarks	None

RPICH RDCCH RFCH RSCH1

Supported   All with Option 401

Use this softkey to turn on the reverse link pilot, dedicated control, fundamental and supplemental 1 channels within the current CDMA2000 RadioConfig 3/4 Traffic channel configuration. The reverse link supplemental 2 channel is turned off.

Preset	N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 59

Remarks   None

RPICH RDCCH RSCH1 RSCH2

Supported   All with Option 401

Use this softkey to turn on the reverse link pilot, dedicated control, supplemental 1 and supplemental 2 channels within the current CDMA2000 RadioConfig 3/4 Traffic channel configuration. The reverse link fundamental channel is turned off.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 59

Remarks   None

RPICH RFCH RSCH1 RSCH2

Supported   All with Option 401

Use this softkey to turn on the reverse link pilot, fundamental, supplemental 1 and supplemental 2 channels within the current CDMA2000 RadioConfig 3/4 Traffic channel configuration. The reverse link dedicated control channel is turned off.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 59

Remarks   None

RS-232 Baud Rate

Supported   All

Use this softkey to access a menu of choices enabling you to set the baud rate for data communication over the RS-232 interface.

Preset   N/A

Range   300 – 57600 baud

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks The baud rate is not affected by a preset or by a power cycle.

RS-232 Echo Off On

Supported All

This softkey selects the operating state of the RS-232 echo function.

On When set to on, every character sent to the signal generator is echoed to the controller display.

Off When set to off, characters sent to the signal generator are not echoed to the controller display.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Page 232

Remarks The echo state is not affected by a preset or by a power cycle.

RS-232 Setup

Supported All

Use this softkey to access a menu of choices enabling you to configure communication protocol over the RS-232 interface.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Page 232

Remarks None

RS-232 Timeout

Supported All

This softkey enables you to set the RS-232 interface timeout period. If further input is not received within the assigned timeout period while a SCPI command is being processed, then the command is aborted and the RS-232 input buffer is cleared.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Page 232

Remarks   The timeout period value is not affected by a preset or by a power cycle.

Run Complete Self Test

Supported   All

Use this softkey to run an automated, internal diagnostic test that checks for detectable hardware failures. If there are hardware failures in the signal generator, refer to the troubleshooting section of the service guide.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   This key is included for use by service personnel.

Run Highlighted Tests

Supported   All

This softkey is provided for self-test diagnostics. If any tests fail then refer to the troubleshooting section of the service guide.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   This key is included for use by service personnel.

Run Selected Tests

Supported   All

This softkey is provided for self-test diagnostics. If any tests fail then refer to the troubleshooting section of the service guide.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   This key is included for use by service personnel.

RWCDMA

Supported   All

Press this softkey to set the current catalog type to RWCDMA and display the catalog of RWCDMA files.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 237

Remarks   A catalog type selection is not affected by a preset or by a power cycle.

S

S

This softkey appears in two locations.

In the DECT Format

Supported   All with Option 402

Use this softkey to select the 16-bit synchronization word (S) as the active function. The preset hexadecimal value (when normal preset is selected) for synchronization reflects the DECT format. The current value for S appears in the S field near the bottom of the text area of the display.

Preset:	*RFP timeslots*: E98A
	PP timeslots: 1675
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 132, 196
Remarks	None

In the GSM Format

Supported   All with Option 402

Use this softkey to select the 1-bit binary stealing flag for both stealing flag fields in the normal burst timeslot the active function. Although the stealing flag fields accept binary values of zero or one, the front panel data entry is actually hexadecimal. Any value entered that is greater than one is automatically clipped back to a value of one.

Preset	0
Range	0–1
Location	See *Key and Data Field Menu Maps* guide: Page 131
Remarks	None

SA

Supported   All with Option 402

Use this softkey to select a slow associated control channel as the timeslot type for the active timeslot.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 180

Remarks   None

SACCH

Supported   All with Option 402

Use this softkey to select the 12-bit slow associated control channel (SACCH). SACCH is used for transmission of control and supervision messages between a base station and a mobile. The preset hexadecimal value (when normal preset is selected) for SACCH reflects the North American Digital Cellular (NADC) or Personal Digital Cellular (PDC) format, displayed in the SACCH field near the bottom of the text area of the display.

Preset   *PDC*: 0000 (UP TCH and Up VOX),
                      000000 (Dn TCH)

              NADC: 000

Range   *PDC*: 0000–FFFF (UP TCH and Up VOX),
                      000000–FFFFFF (Dn TCH)

              NADC: 000–FFF

Location   See *Key and Data Field Menu Maps* guide: Pages 148, 164

Remarks   None

Satellite ID

Supported   All with Option 409

Use this softkey to set the identification number of the simulated GPS satellite or ground transmitter. The signal generator uses the unique pseudorandom noise (PRN) code assigned to the selected ID number to generate the C/A and P codes.

Preset   1

Range   1–37

Location	See *Key and Data Field Menu Maps* guide: Page 109
Remarks	N/A

Save

Supported	All

Use this hardkey to access a menu from which you can select, delete, and re-save registers (instrument states) and sequences (groups of registers). The menu shows the registers in use and any comments associated with the registers for the last sequence accessed. The menu is updated whenever you make any changes to the registers or to the comments.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 229
Remarks	Up to 100 storage registers and 10 register sequences are available, depending on the number and size of files.

Save Reg

Supported	All

Use this softkey to save the current instrument state in the specified register.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 229
Remarks	None

Save Secondary Frame State

Supported	All with Option 402

Use this softkey to perform the following functions:

- save the current instrument state to memory using the selected format (such as DECT) as the prefix and _SECONDARY_FRAME as the suffix

- move the data pattern to the end of the data generator memory where it can be used to generate the secondary frame data

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212
Remarks	When you turn on the secondary frame state, the secondary frame is generated as needed using the saved instrument state.

Save Setup to Header

Supported   All with Option 001 or 002

This softkey enables you to save the header information displayed in the `Current Inst. Settings` field of the table editor to a header file for the modulation format currently being used. Once this softkey is pressed, the instrument settings of the `Current Inst. Settings` field will be displayed in the `Saved Header Settings` field.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 21, 50, 73, 93, 106, 246
Remarks	For this softkey to be active, the modulation format must be enabled and the file being displayed must be the active file.

Save Seq[*n*] Reg[*nn*]

Supported   All

This softkey enables you to save the current instrument state in the specified register within the specified sequence. The instrument state includes all of your setup selections except list sweep data and functions that do not change by the preset function or by a power cycle.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 229
Remarks	Do not press this key until you have specified the correct sequence and register using the **Select Seq** and **Select Reg** softkey.

Save User Preset

Supported   All

Use this softkey to establish a user-defined preset state. Set up the signal generator for conditions that you want to use for your unique preset state. Once defined, press the **Save User Preset** softkey to save the state. Only one user-defined preset state is allowed, any previously-saved state will be over-written. Press the **Preset Normal User** softkey to select **User**, and your instrument state will be recalled by the signal generator any time you press **Preset**. Refer to for more information.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	The user's state definition is a state file; it is not affected by an instrument preset or by a power cycle.

Scale To 0dB

Supported   All with Option 400/401

This softkey scales all of the current channel powers so that the total power equals 0 dB while maintaining the power ratios between the individual channels.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 22, 35, 47, 53, 59, 251, 257, 268
Remarks	None

Scale Waveform Data

Supported   All with Option 001 or 002

This softkey accesses a menu that enables you to scale the waveform data. To enable scaling of non-volatile waveform (NVWFM) memory, move the waveform to WFM1 memory first. This can be done by selecting the waveform in NVWFM memory, the **Load Store** softkey must be set to Load, and selecting Load Segment from NVWFM memory. Then toggle the **Load Store** softkey to Store. This activates the **Waveform Utilities** softkey from which you can select the **Scale Waveform Data** softkey.

Preset	N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 91
Remarks	As the waveform is scaled down, it can lose bits of resolution. Once a bit of resolution is lost, it can not be regained by increasing the scaling value of the waveform.

Scaling

Supported	All with Option 001 or 002

This softkey enables you to change the scaling percentage of the selected waveform segment. You can set the scaling percentage to a resolution of 0.01% within the specified range. After entering the desired scaling percentage, terminate the entry with the **%** softkey.

Preset	100.00%
Range:	1.00%–100.00%
Location	See *Key and Data Field Menu Maps* guide: Pages 91, 92
Remarks	None

SCCPCH

Supported	All with Option 400

This softkey selects a Secondary Common Control Physical Channel (SCCPCH). The SCCPCH is used to transmit pages and signals to idling UEs.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 250, 253
Remarks	The pre-defined Test Models 1, 2, and 3 each have a SCCPCH as a part of the configuration. The SCCPCH can also be selected from the Edit Channel Setup, Insert Row menu and the Multiple Channels, Type menu.

SCPI

Supported	All

This softkey is available in the Preset Language menu and the Remote Language menu.

All signal generator features can be accessed using SCPI (Standard Commands for Programmable Instruments). Choosing **SCPI** in the Preset Language menu allows you to select this remote language as the default after a normal preset. Choosing **SCPI** in the Remote Language menu allows you to immediately use this language to control the signal generator.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 233, 234
Remarks	None

Scramble

Supported	All with Option 400

This softkey appears in the Multiple Channels menu where you can define a channel and then insert multiple entries of that channel into the downlink Edit Channel Setup table editor.

Press this softkey to access a menu where you can select the scramble code, scramble type, and scramble offset for those channels.

After you enter the desired values, press the **Done** softkey to terminate the entry.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 253
Remarks	This softkey is only available for downlink.

Scramble Code

Supported	All with Option 400

This softkey selects a scramble code or enables you to sort the Edit Channel Setup table editor by scramble code number. The primary scrambling codes consist of scrambling codes $n=16 \times i$ where $i = 0$ through 511. The nth set of secondary scrambling codes consists of scrambling codes $16 \times i+k$, where $k = 1$ through 15.

There is a one-to-one mapping between each primary scrambling code and the 15 secondary scrambling codes so that the i:th primary scrambling code corresponds to nth secondary scrambling codes.

For uplink, the scrambling code is used to encode DPCH.

Preset	0
Range	0–511
Location	See *Key and Data Field Menu Maps* guide: Pages 248, 251, 253
Remarks	This key appears in several locations. In the Sort menu, this softkey will order the channels by the scramble code. In other locations this softkey enables you to enter in a scramble code number. The scramble code number can be entered from a menu, front-panel knob, up/down arrow keys or from the numeric keypad.

Scrambling Code

In Real Time W-CDMA Downlink

Supported   All with Option 400

This data field displays the scramble code for each of the channels in the Edit Channel Setup table editor.

Preset	0
Range	0–511
Location	See *Key and Data Field Menu Maps* guide: Page 256
Remarks	This field is only displayed in the downlink Edit Channel Setup table editor.

In Real Time W-CDMA Uplink

Supported   All with Option 400

This data field displays the scramble code used to encode the dedicated physical channel (DPCH) and physical random access channel (PRACH) message part.

Preset	0
Range	*DPCH*: 0–16777215
	PRACH:0–8191
Location	See *Key and Data Field Menu Maps* guide: Pages 266, 270
Remarks	N/A

Scramble Off On

Supported   All with Option 402

Use this softkey to set the operating state of the scramble capability.

Off	When you select Off, the scrambling function is turned off.
On	When you select On, the data in the related fields will be scrambled using the seed value set with the **Scramble Seed** softkey.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 180, 212

Remarks   This softkey is only available when the **Data Format Pattern Framed** softkey is set to Framed.

Scramble Offset

Supported   All with Option 400

This softkey sets the scramble offset in the downlink Edit Channel Setup table editor. This is a value that is multiplied by 16 and added to the primary code . The primary code is entered under the scramble code softkey. To change the scramble offset, rotate the front-panel knob until the desired value is displayed, use the arrow keys, or enter the value using the numeric keypad and press the **Enter** and **Done** softkeys.

Preset   0

Range   0–15

Location   See *Key and Data Field Menu Maps* guide: Pages 248, 253

Remarks   This softkey is only available for downlink.

`Scramble Offset`

Supported   All with Option 400

This data field displays the scramble code offset for each of the channels in the Edit Channel Setup table editor.

Preset   0

Range   0–15

Location   See *Key and Data Field Menu Maps* guide: Page 248

> **Remarks** This field is only displayed in the downlink Edit Channel Setup table editor.

Scramble Seed

Supported All with Option 402

This softkey enables you to set the value of the scramble seed. Scramble seed specifies the scramble starting point in the PRBS generator. Enter values in hexadecimal.

In the Trans European Trunked Radio (TETRA) format, the 32-bit scramble seed comprises four fields. The two least significant bits are defined by the TETRA format as 1 (but you must input them anyway). The remaining 30 bits are the extended color code that is divided into three fields:

- mobile country code
- mobile network code
- color code

The two least-significant bits are appended to the color code, so if, for example, you set a color code of 1, a scramble seed of 7 is required.

Preset	*TETRA*: FFFFFFFF
	PHS: 3FFF
Range	*TETRA*: 00000000–FFFFFFFF
	PHS: 000–3FF
Location	See *Key and Data Field Menu Maps* guide: Pages 180, 212
Remarks	This softkey is only available when the **Data Format Pattern Framed** softkey is set to Framed.

Scramble Type

Supported All with Option 400

This softkey accesses a menu from which you can select Standard, Right Alternate, or Left Alternate as the scramble type in the downlink Edit Channel Setup table editor.

Preset	Standard
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 248, 253
Remarks	This softkey is only available for downlink.

Scramble Type

Supported   All with Option 400

This data field displays the scramble type for each of the channels in the Edit Channel
Setup table editor.

Preset   STD

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 248

Remarks   None

Scrambling Code

Supported   All with Option 400

This field is displayed in the uplink PRACH Code Setup and DPCH Code Setup menus
and the downlink base station (BTS) menu. For uplink, the scrambling code is used to
encode the signature of the physical random access channel (PRACH) preamble. For
downlink, the scramble code is determined by the value set in the SecScr Code OS
(secondary scramble code offset) field. The secondary scrambling code is the sum of the
primary scramble code and the non-zero secondary scramble code offset. The primary
scramble code is the product of the value set in the Scrambling Code field (0–511) and
16.

Preset   N/A

Range   *Downlink*: 0–511
                 Uplink: 0–8191

Location   See *Key and Data Field Menu Maps* guide: Pages 51, 256, 266, 270

Remarks   None

ScrCode Type

Supported   All with Option 400

This field is displayed in the downlink ChipARB and displays the scramble code being
used. To change the field selection, highlight the ScrCode Type field, press the **Edit Item**
softkey and make a choice from the menu that appears.

Normal   Select scramble codes (16*511 + 15) 0–8191

Left   Normal + 8192 = 16384

Right	Left + Normal = 24575
Preset	Normal
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Screen Saver Delay:

Supported   All

This softkey enables you to set a time interval before the screen saver is activated. This event, activating the screen saver, occurs after the specified time interval if there is no input from the front panel.

Preset	N/A
Range	1–12 hours
Location	See *Key and Data Field Menu Maps* guide: Page 232
Remarks	The screen saver delay state is not affected by a preset or by a power cycle.

Screen Saver Mode

Supported   All

This softkey selects **Light Only** or **Light & Text** for the screen saver. When you set the screen saver to Light Only, the display light is turned off after screen saver delay time has expired. When you set the screen saver to Light & Text, the display light and the text are turned off.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 232
Remarks	The screen saver mode is not affected by a preset or by a power cycle. If you are leaving the display unchanged for long periods of time, set the mode to light & text; this prevents text burn-in on the display.

Screen Saver Off On

Supported   All

This softkey selects the screen saver mode.

| Off | With the screen saver off, the display remains on indefinitely. |
| On | With the screen saver on, the display is turned off after a specified time interval when no input from the front panel has occurred. The display will turn back on when any front panel signal generator key is pressed |

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   The screen saver mode is not affected by a preset or by a power cycle.

Search DL MCS5 Configure

Supported   All with Option 300

Use this softkey to select the downlink MCS5 packet data channel to configure for the sensitivity search measurement.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   N/A

Search DL MCS9 Configure

Supported   All with Option 300

Use this softkey to select the downlink MCS9 packet data channel to configure for the sensitivity search measurement.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   N/A

Search Uncoded Configure

Supported   All with Option 300

Use this softkey to select the downlink uncoded channel to configure for the sensitivity search measurement.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   N/A

Second DPDCH I Q

Supported   All with Option 400

This softkey selects whether the second DPDCH, if present, is set on I or Q. Subsequent DPDCH channels will alternate between I and Q.

I   The second DPDCH is on I.

Q   The second DPDCH is on Q.

Preset   Q

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 248

Remarks   This softkey is displayed in the uplink Edit Channel Setup menu.

Secondary Frame Off On

Supported   All with Option 402

Use this softkey to select the operating state of the secondary frame. The secondary frame is a data pattern that coexists with the primary (the pattern that can be modified either from the front panel or by using SCPI commands).

Off   When you select Off, the secondary frame is turned off.

On   When you select On, the secondary pattern is generated from the instrument state saved using the **Save Secondary State** softkey.

Preset   Off

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212
Remarks	A frame must have already been set as the secondary frame to turn the secondary state on.

Secondary Frame Trigger

Supported   All with Option 402

This softkey accesses a menu of choices for triggering the use of either the primary frame or the secondary frame (whichever is not being currently used) when the current frame is completed. You can choose to trigger using the front panel **Trigger** hardkey, an external trigger supplied to the PATTERN TRIG IN connector, or by a SCPI command.

Preset	Ext
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212
Remarks	None

Secondary Key

Supported   All with Option 400/401

Use this softkey to select the secondary column by which the table will be sorted.

The current selection is displayed under the **Secondary Key** softkey.

Preset	*IS-95A:* Walsh Code *CDMA2000 (forward link):* Rate *CDMA2000 (reverse link):* Rate *W-CDMA (downlink and uplink):* Spread Code
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 22, 25, 31, 43, 251
Remarks	None

SecScr Code OS

Supported   All with Option 400

This field displays the secondary scramble code offset. The secondary scramble code

offset is added to the primary scramble code.

Preset	0
Range:	0–15
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Seed

Supported   All with Option 001 or 002

Use this softkey to enter the initial value of the pseudorandom bit sequence.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 79, 85, 113, 128, 144, 160, 176, 192, 208, 224
Remarks	None

Seg Advance Mode

Supported   All with Option 001 or 002

This softkey accesses a menu of choices for segment advance as the dual arbitrary waveform (ARB) generator trigger type.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 88
Remarks	None

Segment Advance

Supported   All with Option 001 or 002

This softkey selects segment advance as the dual arbitrary waveform (dual ARB) generator trigger type. After receiving a trigger, while operating with a waveform sequence, the sequencer will play the next segment in the sequence.

Preset	N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 88
Remarks	None

Select

Supported	All with Option 001 or 002

There are two softkeys named Select, one in the Filter menu and one in the Modulation type menu. In the Filter menu, you can select a pre-modulation filter type; in the Modulation type menu, you can select a modulation.

Selecting a Filter

In the Filter menu, use this softkey to access a menu for selecting the pre-modulation filter type. You can choose from Root Nyquist, Nyquist, Gaussian, Rectangle, APCO 25 C4FM, UN3/4 Gaussian (for backward compatibility with previous models of ESG), W-CDMA and various IS-95 and IS-2000 filters. In addition to the pre-defined filters, you can access the catalog of files stored in the signal generator memory. You can select any filter that you have either created externally and downloaded into memory, or that you have created internally in the Define User FIR menu and then subsequently stored.

The selected filter type is displayed under the **Select** softkey.

Preset	*NADC, PDC, PHS, TETRA and Custom:* Root Nyquist *GSM, DECT:* Gaussian *EDGE:* EDGE *CDMA,CDMA2000:* IS-95 Mod w/EQ *WCDMA:* WCDMA *GPS:* Rectangle
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 52, 58, 68, 74, 109, 120, 135, 151, 167, 183, 199, 215, 249, 256, 262
Remarks	None

Selecting a Modulation

In the Modulation Type menu, use this softkey to access a menu for defining the modulation types. In addition to the pre-defined modulations, you can access a catalog of FSK or I/Q files stored in the signal generator memory, where you can select a modulation that you have created and stored in either the Define User FSK or Define User I/Q menu.

The selected modulation type is displayed under the **Select** softkey.

Preset	*Custom, NADC, PDC, PHS, and TETRA:* π/4 DQPSK
	DECT: 2-Lvl FSK
	EDGE: EDGE
	GSM: MSK
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 75, 121, 136, 152, 168, 184, 200, 216
Remarks	None

Select/Deselect All

Supported   All

This softkey is provided for self-test diagnostics. Refer to the troubleshooting section of the service guide.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 235
Remarks	This key is intended for use by service personnel.

Select/Deselect Test

Supported   All

This softkey is provided for self-test diagnostics. Refer to the troubleshooting section of the service guide.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 235
Remarks	This key is intended for use by service personnel.

Select File

Supported   All with Option 001 or 002

Use this softkey to select a file in the displayed catalog of files. If you select a custom file

as a data pattern for modulated transmissions, `UserFile` appears in the `Data` field of the text display. If you select a custom file as the modulation type, `UserFile` appears in the `Mod Type` field of the text display.

Select File is located in each of the catalogs of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 28, 65, 68, 74, 76, 77, 78, 109, 111, 119, 120, 121, 122, 134, 135, 136, 137, 139, 150, 151, 152, 153, 155, 246, 264
Remarks	None

Select Reg

Supported	All

Use this softkey to select a specific register to be highlighted in the list of saved states.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 229
Remarks	If you use the front panel knob, each state is automatically activated as you pass over it.

Select Reg:

Supported	All

This softkey enables you to select a register for all softkeys that specify a register in this menu. For example, if you want to select register 5, press **Select Reg:**. The currently selected register is displayed in the active entry area. Change the number to 5 and press the **Select Reg** terminator softkey. Register 5 is now displayed in all softkeys which specify a register in this menu.

You can also use this softkey to select a register and save the current instrument state to that register. For example, if you want to select and save to register 6, press **Select Reg:**. The currently selected register is displayed in the active entry area. Change the number to 6 and press the **Save Reg** terminator softkey. Register 6 is now displayed in all softkeys which specify a register in this menu and the current instrument state has been saved to register 6.

Preset	N/A
Range	00–99
Location	See *Key and Data Field Menu Maps* guide: Page 229
Remarks	This setting is not affected by a preset or by a power cycle.

Select Seq:

Supported   All

This softkey enables you to select a sequence for all softkeys which specify a sequence in this menu. For example, if you want to select sequence 4, press **Select Seq:**. The currently selected sequence is displayed in the active entry area. Change the number to 4 and press the **Enter** terminator softkey. Sequence 4 is now displayed in all softkeys that specify a sequence in this menu.

Preset	N/A
Range	0–9
Location	See *Key and Data Field Menu Maps* guide: Pages 228, 229
Remarks	This setting is not affected by a preset or by a power cycle.

Select Waveform

Supported   All with Option 001 or 002

This softkey enables you to select the type of signal for the dual arbitrary waveform (Dual ARB) to generate.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 89
Remarks	If there are no waveforms or sequences, this softkey selects None.

Self Test

Supported   All

This softkey accesses an automatic, internal diagnostic test that checks for detectable hardware failures. If there are hardware failures in the signal generator, refer to the troubleshooting section of the service guide.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 235
Remarks	This key is intended for use by service personnel.

Sensitivity Search Configure

Supported   All with Option 300

This softkey accesses a menu that enables you to configure the parameters for the sensitivity search measurement functions.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 8
Remarks	This softkey is active when the **Measurement Mode BER/BLER% Search** softkey is set to Search.

Seq

Supported   All

Press this softkey to set the current catalog type to Seq and display the catalog of sequence files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 93, 237
Remarks	This key is intended for use by service personnel.

Set Date

Supported   All

This softkey is used to set the date of the display clock. Enter the date in the year-month-day (YYYYMMDD) format and terminate the entry by pressing the **Enter** softkey.

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Page 236
Remarks	None

Set Markers

Supported	All with Option 001 or 002

This softkey accesses a menu that enables you to set waveform markers on a selected waveform in arbitrary waveform (ARB) memory. To set markers in non-volatile arbitrary waveform (NVARB) memory, move the waveform to ARB memory first. This can be done by selecting the waveform in NVARB memory and setting the **Load Store** softkey to Store. This activates the **Set Markers** softkey.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255
Remarks	None

Set Marker Off All Points

Supported	All with Option 001 or 002

This softkey enables you to clear the active marker from all waveform points.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 91, 92, 105, 255
Remarks	This softkey is not available unless a waveform segment is selected.

Set Marker Off Range Of Points

Supported	All with Option 001 or 002

This softkey accesses a menu that enables you to clear the active marker over a range of points on the selected waveform.

Preset	N/A
Range	N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 91, 92, 105, 255

Remarks   This softkey is not available unless a waveform segment is selected.

Set Marker On First Point

Supported   All with Option 001 or 002

This softkey turns on the active marker on the first point of the selected waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 92, 105, 255

Remarks   This softkey is not available unless a waveform segment is selected.

Set Marker On Range Of Points

Supported   All with Option 001 or 002

This softkey accesses a menu that enables you to set the active marker over a range of points on the selected waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 49, 72, 91, 92, 105, 255

Remarks   This softkey is not available unless a waveform segment is selected.

Set Marker Off All Points

Supported   All with Option 001 or 002

This softkey enables you to clear the all markers on the selected waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 20, 34, 72, 92, 105, 255

Remarks   This softkey is not available unless a waveform segment is selected.

Set Time

Supported   All

This softkey is used to set the time of the display clock in the 24 hour format. Enter the hour values (00–23), minute and seconds values (00–59), and terminate the entry by pressing the **Enter** softkey.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 236

Remarks   None

Setup Select

Supported   All with Option 401

Use this softkey to access a menu for defining the type of digital modulation, IS-95A, or multicarrier IS-95A setup required for your application.

Preset   *Digital Modulation:* NADC
                  IS-95A: 9 Ch Fwd
                  Multicarrier IS-95A: 3 Carriers

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 16, 64

Remarks   To access the multicarrier IS-95A Setup Select menu, **Multicarrier Off On** must be set to On.

SF/2

Supported   All with Option 400

This softkey, in the Compressed Mode Setup menu, indicates that the compressed mode is implemented by reducing the spread factor (SF) by a factor or two. The reduction in the SF allows for a doubling of the data rate. Refer to "CM Method" on page 137 for more information.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 266

Remarks   If the dedicated physical data channel's (DPDCH) symbol rate is 960 kbps, the frame is not compressed because the lowest SF value is used and cannot be reduced further.

SFN–CFN Frame Offset

Supported   All with Option 400

This softkey sets the system frame number – connection frame number (SFN-CFN) frame offset. When selected, this softkey adds a delay to the frame counter by specifying the starting frame number. Frame number "0" starts with the system sync trigger reset signal when the frame offset is set to zero. For example, if the frame offset is set to two, the signal generator counter starts 2 frames after the system sync trigger.

Preset   0

Range   0–255

Location   See *Key and Data Field Menu Maps* guide: Page 263

Remarks   None

SFN reset-signal (DRPS5)

Supported   All with Option 400

This softkey assigns an SFN reset signal to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks   The **(DRPS5)** designator refers to the remote SCPI command that corresponds to this softkey.

SFN RST Polarity Neg Pos

Supported   All with Option 400

This softkey sets the polarity of the system frame number (SFN) reset (RST) signal for uplink synchronization.

    Neg   The signal generator responds to a falling edge reset signal.

Pos	The signal generator responds to a rising edge reset signal.
Preset	Positive
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 262, 263, 272
Remarks	None

SFN slot-pulse (DRPS10)

Supported   All with Option 400

This softkey assigns an SFN slot pulse to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS10)** designator refers to the remote SCPI command that corresponds to this softkey.

SFN sync-pulse (DRPS6)

Supported   All with Option 400

This softkey assigns an SFN synchronization pulse to the selected rear panel output port. You can assign a signal to an output port by highlighting the desired row in the table editor and selecting the desired signal from the softkey menu.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 261
Remarks	The **(DRPS6)** designator refers to the remote SCPI command that corresponds to this softkey.

Shape

Supported   All

This softkey enables you to specify that only signal generator shape files be listed in the

catalog of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 236
Remarks	None

Show Waveform Sequence Contents

Supported   All with Option 001 or 002

This softkey displays the contents of the selected waveform sequence in a table format. The content information displayed is a list of the waveforms and corresponding repetitions for that sequence.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 89, 90, 92
Remarks	This softkey is only active when a sequence is highlighted.

Signal Polarity Setup

Supported   All with Option 001 or 002

This softkey accesses a menu of external signals and choices for selecting the polarity of those signals.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 233
Remarks	None

`Signature`

Supported   All with Option 400

This field displays the signature for the PRACH preamble. The signature points to a node on the orthogonal variable spreading factor code (OVSF) code tree at a spread factor (SF) of 16. The signature helps the base station (BTS) know what OVSF code is going to be used to spread the message part of the PRACH signal.

Preset	0
Range	0–15
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	None

Sine

Supported	All

This softkey appears in two different situations, enabling you to either select a sine burst shape, or specify sine as a modulation waveform.

Selecting Sine as a Burst Shape

Use this softkey to specify sine for the timeslot burst shape. Sine, as it is modified by the default burst rise and fall values, is the default burst shape.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 76, 122, 137, 153, 169, 185, 201, 217
Remarks	None

Specifying Sine as a Modulation Waveform

This softkey enables you to specify sine as the modulation waveform for the internally generated, ac-coupled signal.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101
Remarks	The selected waveform applies only to the path configuration you have currently selected.

Single

Supported	All with Option 001 or 002

In the Trigger Menu

This softkey sets the trigger type to single. After receiving a trigger, the waveform will play once and then wait for another signal from the selected trigger source before playing again.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 88, 65, 247
Remarks	None

In the Segment Advance Menu

This softkey sets the segment advance mode to single. After receiving a trigger, the next segment is played once. Triggers received during play are ignored.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 88, 118, 133, 149, 165, 181, 197, 213
Remarks	This segment advance selection becomes active only when the trigger type is set to Segment Advance.

Single Sweep

Supported	All

Use this softkey to arm the sweep. The signal generator will begin the sweep as soon as the sweep trigger is received. The sweep sets the power and the frequency to the first point of the sweep while it is not initiated or is waiting for the sweep trigger. If you have set the sweep trigger to **Free Run**, a sweep is initiated as soon as you arm the sweep.

The ARMED annunciator will turn on in the display, unless the sweep trigger is set to **Free Run**.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	This key is disabled when **Sweep** is set to Off.

Slot Format

Supported　　All with Option 400

This field displays the slot format used for the dedicated physical channel. Slot formats are coupled with the channel code and symbol rate. For downlink, the 17 slot formats are described in the 3GPP Technical Specification (TS 25.141 V3.3). For uplink, the 6 slot formats for DPCCH and the 7 slot formats for DPDCH are described in the 3GPP Technical Specification (TS 25.211 V3.6).

Preset　　　　*Downlink*: 0

Range　　　　*Downlink*: 0–16 Refer to Table 2.

Table 2

Slot Format	0-1	2-7	8-11	12	13	14	15	16
Symbol Rate (ksps)	7.5	15	30	60	120	240	480	960
Max Ch Code	511	255	127	63	31	15	7	3

Preset　　　　*Uplink, DPCCH*: 0

Range　　　　*Uplink, DPCCH*: 0–5 Refer to Table 3.

Table 3

Slot Format	0	1	2	3	4	5
Symbol Rate (ksps)	15	15	15	15	15	15
Max Ch Code	255	255	255	255	255	255
Pilot Bits/Slot	6	8	5	7	6	5
TFCI Bits/Slot	2	0	2	0	0	2

Table 3

Slot Format	0	1	2	3	4	5
FBI Bits/Slot	0	0	1	1	2	2
TPC Bits/Slot	2	2	2	2	2	1

Preset   *Uplink, DPCCH*: 0

Range   *Uplink, DPCCH*: 0–5 Refer to Table 4.

Table 4

Slot Format	0	1	2	3	4	5
Symbol Rate (ksps)	15	15	15	15	15	15
Max Ch Code	255	255	255	255	255	255
Pilot Bits/Slot	6	8	5	7	6	5
TFCI Bits/Slot	2	0	2	0	0	2
FBI Bits/Slot	0	0	1	1	2	2
TPC Bits/Slot	2	2	2	2	2	1

Preset   *Uplink, PRACH*: 2

Range   *Uplink, PRACH*: 0–3 Refer to Table 5.

Table 5

Slot Format	0	1	2	3
Symbol Rate (ksps)	15	30	60	120
Channel Code	255	127	63	31

Location   See *Key and Data Field Menu Maps* guide: Pages 257, 266, 270

Remarks   None

Software Options

Supported   All

This softkey accesses a menu from which you can configure your signal generator to enable any software option that you have purchased. Software options are linked to specific optional hardware that must first be installed before the software option can be used. Adding new software options requires the use of a license key that is provided by Agilent Technologies at the time of purchase.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 236

Remarks   Do not modify the license key for enabled software options: you will disable the option.

NOTE   If a previously installed software option becomes disabled, verify the following:

- the optional hardware is present/installed.
- the hardware option is enabled.
- the software option is enabled with the correct license key.

Refer to your License Key Certificate for the correct license key or, if the option was installed by Agilent Technologies, contact your local service office and tell them the instrument's model number, the host ID number,

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and the software option that should be enabled

Sort Table

In the CDMA Menu

Supported   All with Option 401

Use this softkey to access a menu from which you can sort the CDMA channel setups based on the values in the columns selected using the **Primary Key** (first sort) and **Secondary Key** (second sort) softkeys.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 22, 25, 31, 43
Remarks	None

In the W-CDMA Menu

Supported   All with Option 400

This softkey accesses a menu from which you can sort the Edit Channel Setup table editor files by selecting primary and secondary keys. The primary and secondary keys are columns in the Edit Channel Setup table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	Sorting of the uplink channel is done by spread code and/or rate. The downlink channel can be sorted by spread code, rate, and/or scramble code.

Source 1

Supported   All

Use this softkey to access a menu from which you can select a signal source to be routed to the internal I/Q modulator.

Preset	Ext 50 Ohm
Range	N/A

Location   See *Key and Data Field Menu Maps* guide: Page 107

Remarks   When a digital modulation format is turned on, the **Source 1** and **I/Q Out** selections automatically switch to BBG1. When the digital modulation is turned off, the **Source 1** and **I/Q Out** selections automatically switch to Ext 50 Ohm. You can manually override the automatic settings.

Spcl Pattern 0's 1's

Supported   All with Option UN7

Use this softkey to set the parameter of the special pattern ignore function.

0's	With this choice, the function detects more than 80 bits of 0's in the incoming bit stream and ignores these bits during BER measurements.
1's	With this choice, the function detects more than 80 bits of 1's in the incoming bit stream and ignores these bits during BER measurements.

Preset   0's

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 6

Remarks   This key is enabled when the **Special Pattern Ignore Off On** softkey is set to On.

Spcl Pattern Ignore Off On

Supported   All with Option UN7

Use this softkey to set the operating state of the special pattern ignore function.

Off	This choice disables the special pattern ignore function.
On	With this choice, the function detects more than 80 bits of 0's or 1's in the incoming bit stream and ignores these bits during BER measurements.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 6

Remarks   None

Spectrum Invert Off On

Supported	All with Option 300

Use this softkey to set the spectrum inverting state of the received RF signal.

Off	With this choice, the spectrum state is unaffected.
On	This choice inverts the RF signal.
Preset	On
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 8, 8
Remarks	None

Spread Code

Supported	All with Option 400

This softkey selects spread code values as the parameter for sorting the Edit Channel Setup table editor.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 251
Remarks	N/A

`Spread Code`

Supported	All with Option 400

This data field displays the spread code number used for each channel in the Edit Channel Setup table editor. The spread code is an Orthogonal Variable Spread Factor (OVSF) code. This field is displayed for both uplink and downlink setups.

Preset	*Downlink*: 8
	Uplink: 0
Range	*Downlink*: 0–511
	Uplink: 0–255
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	The maximum spreading code that can be used for a particular channel

depends on the selected symbol rate for that channel.

Spread Rate

Supported   All with Option 401

This field displays the current spread rate value. The grayed-out text in this field indicates that you cannot change the value.

Preset   1

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 51, 57

Remarks   Spread rate 1 equals 1.2288 Mcps.

Spread Rate

Supported   All with Option 401

Use this softkey to access a menu from which you can choose a spread rate for the current CDMA2000 waveform.

Preset   SR1

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 26, 39

Remarks   This softkey becomes inactive (text is grayed-out) when multicarrier mode is on since the spread rate data is already contained in the individual carrier setups.

Spread Rate 1

Supported   All with Option 401

Use this softkey to select spread rate 1 for the CDMA2000 waveform.

Spread rate 1 equals a 1.2288 Mcps chip rate. Spread rate 1 has the advantage of being spectrally more efficient than spread rate 3, but with lower available data rates.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 26, 39

Remarks   None

Spread Rate 3

Supported   All with Option 401

Use this softkey to select spread rate 3 for the CDMA2000 waveform.

Spread rate 3 equals a 3.6864 Mcps chip rate. Higher data rates can be achieved using spread rate 3, though offset by greater bandwidth/spectrum usage.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 26, 39
Remarks	None

Spreading Type Direct Mcarrier

Supported   All with Option 401

This softkey toggles the CDMA2000 waveform spreading type between single (direct spread) and multiple carriers.

Direct	In this mode, transmissions are spread over a single carrier.
Mcarrier	In this mode, transmissions are spread over three carriers.

Preset	Direct
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 26
Remarks	This softkey is available only when the spread rate is 3, **Link Forward Reverse** is set to Forward, and **Multicarrier Off On** is set to Off.

Spurious Response

Supported   All with Option 400

This softkey selects spurious response as the test setup. The spurious response test is a measure of the receiver's ability to receive a desired signal in the presence of an unwanted signal. Refer to 3GPP Standard TS 25.101 for information on the spurious response setup.

Preset	N/A
Range	N/A

| Location | See *Key and Data Field Menu Maps* guide: Page 257 |
| Remarks | None |

Square

| Supported | All |

This softkey enables you specify a square wave as the modulating waveform.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101
Remarks	In the LF Out menu this softkey is available after selecting the internal source to operate as a function generator. The modulation applies only to the path configuration you have selected.

SR1 9 Channel

| Supported | All with Option 401 |

Use this softkey to insert a forward link, spread rate 1, 9 channel CDMA2000 setup into the multicarrier table.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 28
Remarks	None

SR1 Pilot

| Supported | All with Option 401 |

Use this softkey to insert a forward link, spread rate 1, single pilot channel CDMA2000 setup into the multicarrier table.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 28
Remarks	None

SR3 Direct 9 Channel

Supported   All with Option 401

Use this softkey to insert a forward link, spread rate 3, direct spread, 9 channel
CDMA2000 setup into the multicarrier table.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 28

Remarks   None

SR3 Direct Pilot

Supported   All with Option 401

Use this softkey to insert a forward link, spread rate 3, direct spread, single pilot
channel CDMA2000 setup into the multicarrier table.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 28

Remarks   None

SR3 Mcarrier 9 Channel

Supported   All with Option 401

Use this softkey to insert a forward link, spread rate 3, multicarrier spread, 9 channel
CDMA2000 setup into the multicarrier table.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 28

Remarks   None

SR3 Mcarrier Pilot

Supported   All with Option 401

Use this softkey to insert a forward link, spread rate 3, multicarrier spread, single pilot

channel CDMA2000 setup into the multicarrier table.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 28
Remarks	None

SSCH

Supported	All with Option 400

Pressing this softkey inserts a Secondary Synchronization Channel (SSCH) into the downlink Edit Channel Setup table editor. The SSCH channel sends a pattern of codes in each frame and is used to provide an identifying signal and timing reference for each base station.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 250, 253
Remarks	None

SSCH 2nd Scramble Group

Supported	All with Option 400

This field displays the secondary synchronization code (SSC) group. The SSC represents a code group of 16 subcodes, each with a length or 256 chips.

Preset	2nd Scramble Group 0
Range	0–15
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

SSCH Power

Supported	All with Option 400

This field displays the secondary synchronization channel (SSCH) power. This channel consists of the secondary synchronization code (SSC), a fixed 256-chip code broadcast by all W-CDMA base stations (BTS).

Preset	–8.30 dB
Range	–40 dB to 0
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

SSCH State

Supported	All with Option 400

This field displays the on/off state for the secondary synchronization channel (SSCH).

Preset	On
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Standard

Supported	All with Option 400

This softkey sets the downlink channel scramble type to standard.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 248, 253
Remarks	Standard scramble, left alternate, and right alternate are the scramble type choices.

Start Access Slot Position in 80ms Period

Supported	All with Option 400

This field enables you to set or edit the physical random access channel (PRACH) start access position within 80ms for the multiple PRACH mode.

Preset	0
Range	0–59
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	Access this field by setting the **PRACH Mode Single Multi** softkey to **Multi**

then press **PRACH Timing Setup.**

Start Frequency

Supported   All

Use this softkey to set the start frequency for an I/Q calibration.

You can select a portion of the frequency range for an I/Q calibration by setting the **Calibration Type User Full** softkey to User and entering new start and stop frequencies. This softkey is automatically set to the minimum specified frequency of the signal generator if you have set the **Calibration Type User Full** softkey to Full. If you toggle back to User from the Full setting, the User value for **Start Frequency** will be restored.

Preset	N/A
Range	100 kHz–stop frequency setting (up to maximum frequency of instrument)
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	This softkey is grayed out (not editable) until the calibration type is set to User.
	The **Start Frequency** setting is not affected by an instrument preset or by a power cycle.

Start Sub-Channel#

Supported   All with Option 400

This field displays the sub-channel number used for the first preamble generation timing of physical random access channel (PRACH).

Preset	0
Range	0–11
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	The 80 msec frame clock matches the cycle of sub-channel number zero.

Start-Trigger EchoBack (RPS25)

Supported   All with Option 400

This softkey assigns the physical random access channel start trigger pulse to the

selected rear panel AUX I/O output connector or BNC.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 273
Remarks	The PRACH pulse can be assigned to numerous different output connectors/pins. The **(RPS25)** designator refers to the remote SCPI command that corresponds to this softkey.

State

Supported   All

This softkey enables you to specify that only signal generator state files be listed in the displayed catalog of files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 234
Remarks	None

State

Supported   All with Option 401

This field displays the operating state of the selected real time CDMA2000 channel. To toggle the operating state of the selected channel, highlight the State field and press the **Edit Item** softkey.

Preset	Depends on the channel configuration
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 53, 59
Remarks	None

Step Dwell

Supported   All

This softkey enables you to set the dwell time for each point of a step sweep. The dwell time is the amount of time the sweep is guaranteed to pause after setting the frequency

and power for the current sweep/list point.

Preset	2.0 ms
Range	1.0 ms–60.0 s (in 1.0 ms increments)
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	Dwell time is used when the point trigger is set to **Free Run**.

Step/Knob Ratio

Supported   All

This softkey enables you to set the ratio between the increment value of the step keys and the front panel knob. For example, if you set the increment value for frequency to 1.0 MHz and set the step/knob ratio to 10/1, when frequency is the active function the up and down arrow keys will change the frequency in 1.0 MHz steps and the front panel knob will change the frequency in 1/10th of 1.0 MHz steps.

When you press **Step/Knob Ratio** the number displayed in the active entry area represents the arrow keys step size in the ratio. To enter a new value, rotate the front panel knob until the desired value is displayed, use the up and down arrow keys, or enter the value using the numeric keypad and press the **Enter** terminator key.

Preset	N/A
Range	1–10,000
Location	See *Key and Data Field Menu Maps* guide: Page 233
Remarks	This ratio applies only when you have a function active that has an associated increment value. The step/knob ratio is not affected by a preset or by a power cycle.

Stop CFN

Supported   All with Option 400

This field displays the first radio frame of the first pattern 1 connection frame number (CFN). It defines the stop CFN number to end compressed mode when a stop trigger occurs. When the stop trigger occurs, the next stop CFN will terminate the compressed mode operation regardless of the transmission gap pattern repetition count (TGPRC) number.

Preset	0
Range	0–255

Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	The signal generator counts the CFN relative to the system sync signal.

Stop Frequency

Supported	All

Use this softkey to set the stop frequency for an I/Q calibration.

You can select a portion of the frequency range for an I/Q calibration by setting the **Calibration Type User Full** softkey to User and entering new start and stop frequencies. This softkey is automatically set to the maximum specified frequency of the signal generator if you have set the **Calibration Type User Full** softkey to Full. If you toggle back to User from the Full setting, the User value for **Stop Frequency** will be restored.

Preset	N/A
Range	Current start frequency setting–maximum frequency of instrument
Location	See *Key and Data Field Menu Maps* guide: Page 99
Remarks	This softkey is grayed out (not editable) until the calibration type is set to User.
	The **Stop Frequency** setting is not affected by an instrument preset or by a power cycle.

Stop Measurement

Supported	All with Option 300

This softkey stops the current measurement.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 8, 8
Remarks	This softkey is active only when the format is enabled.

Store All To NVARB Memory

Supported	All with Option 001 or 002

This softkey enables you to store all of the files from arbitrary waveform (ARB) memory to non-volatile arbitrary waveform (NVARB) memory.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 89, 92
Remarks	None

Store All To NVWFM Memory

Supported   All with Option 001 or 002

This softkey enables you to store all of the files from arbitrary waveform (WFM1) memory to non-volatile arbitrary waveform (NVWFM) memory.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 89, 92
Remarks	None

Store Custom CDMA State

Supported   All with Option 401

Use this softkey to access a menu from which you can store the current custom CDMA state into a user-defined file. Afterward, you can recall this custom state from the signal generator's memory.

Along with the contents of the CDMA channel table editor (channel types, Walsh code, power levels, PN offset, and data), this softkey enables you to store the following signal generator state information to the memory catalog:

- FIR filter
- FIR filter file name
- FIR filter alpha
- FIR filter BbT
- channel setup
- chip rate
- waveform length
- oversample ratio

- normal or inverted I/Q mapping

- I/Q clipping

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40

Remarks   None

Store Custom Dig Mod State

Supported   All with Option 001 or 002

This softkey accesses a menu that enables you to store the current custom digital modulation state into a user-defined file. Afterward, you can recall this custom state from the signal generator's memory using the **Custom Digital Mod State** softkey.

This softkey stores the following signal generator state information to the memory catalog:

- filter information

- symbol rate

- modulation type

- FSK deviation

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 65

Remarks   This softkey is only available when **Multicarrier Off On** is toggled to Off.

Store Custom Multicarrier

Supported   All with Option 401

Use this softkey to access a menu from which you can store the contents of the multicarrier table editor into a file.

This softkey enables you to store the following information for each carrier:

- type of carrier

- frequency offset

- power level

- number of different carriers

- clipping parameters

- increment scramble code setting

- increment timing offset setting

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 18, 28, 245
Remarks	User defined files created using firmware prior to C.02.40 did not save the setting for Increment Scramble Code, Increment Timing Offset, and Clipping Type settings. When loading user defined files created with firmware prior to C.02.40, Increment Scramble Code and Increment Timing Offset will default to Off and the Clipping Type settings will default to 100%. Firmware C.02.40 will save the Increment Scramble Code, Increment Timing Offset and Clipping Type settings.
	To recall a custom multicarrier setup, use the **Custom CDMA Carrier** softkey.

Store Custom W-CDMA State

Supported   All with Option 400

This softkey accesses a menu where you can store the current custom W-CDMA state into a file. The stored state file can be recalled for later use as described under the **Custom W-CDMA State** softkey.

Along with the contents of the W-CDMA channel table editor, the following information is also stored:

- FIR filter

- FIR filter file name

- FIR filter alpha

- FIR filter BbT

- FIR filter channel (EVM or ACP)

- I/Q Mapping

- Link

- Chip rate

- ARB reference clock source (internal or external)

- ARB reference clock frequency

- Clipping Level

- Downlink TFCI state

- Uplink TFCI state

- Uplink DPDCH (second DPDCH I or Q)

- Uplink Scramble Code

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 245

Remarks   None

Store Ref Osc Setting

Supported   All

This softkey enables you to store the current coarse and fine reference oscillator adjustment settings. Refer to the calibration guide for more information.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 233

Remarks   This adjustment is intended for use by service personnel.

Store Segment To NVARB Memory

Supported   All with Option 001 or 002

This softkey enables you to store the selected file from arbitrary waveform (ARB) memory to non-volatile arbitrary waveform (NVARB) memory.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 89, 92

Remarks   None

Store Segment To NVWFM Memory

Supported   All with Option 001 or 002

This softkey enables you to store the selected file from arbitrary waveform (WFM1) memory to non-volatile arbitrary waveform (NVWFM) memory.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 89, 92

Remarks   None

Store To File

Supported   All

Use this softkey to store the current data to a file in the internal non-volatile memory for later recall and use.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 4, 28, 65, 69, 76, 78, 81, 82, 113, 127, 128, 129, 130, 143, 144, 145, 146, 159, 160, 161, 162, 231, 246, 268

Remarks   The file name can consist of up to 23 alpha-numeric and special characters.

Sub Channel Timing (RPS17)

Supported   All with Option 400

This softkey assigns sub channel timing to the selected rear panel AUX I/O output connector or BNC. The sub channel number sets the start of preamble transmission.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 273

Remarks	The sub-channel timing can be assigned to numerous different output connectors/pins. The **(RPS17)** designator refers to the remote SCPI command that corresponds to this softkey.

Subnet Mask

Supported	All

This softkey is used to configure the LAN subnet mask.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 232
Remarks	Your IT service can define up a subnet mask for the signal generator.

Supplemental1 Traffic

Supported	All with Option 401

Use this softkey to access a menu from which you can define and insert one or more supplemental 1 traffic channels into the CDMA2000 channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 35, 46
Remarks	This softkey is available only when **Multicarrier Off On** is set to Off.

Supplemental2 Traffic

Supported	All with Option 401

Use this softkey to access a menu from which you can define and insert one or more supplemental 2 traffic channels into the CDMA2000 channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 35, 46
Remarks	This softkey is available only when **Multicarrier Off On** is set to Off.

SW

Supported   All with Option 402

Use this softkey to select the 20-bit frame synchronization word as the active function. The preset hexadecimal value (when normal preset is selected) for SW reflects the Personal Digital Cellular (PDC) format, and appears in the SW field near the bottom of the text area of the display.

Preset   *UP TCH and Up VOX*: 785B4

                  Dn TCH: 87A4B

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 164

Remarks   None

Sweep

Supported   All

Use this softkey to access a menu from which you can configure the sweep parameters. In this menu you can choose to sweep frequency only, amplitude only, or both frequency and amplitude. You can also choose to turn off all sweep functions.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 230

Remarks   None

Sweep Direction Down Up

Supported   All

This softkey enables you to change the direction of the sweep.

Down   Choose Down to sweep from the last point in the list sweep to the first point, or from the step sweep stop frequency and amplitude to the start frequency and amplitude.

Up   Choose Up to sweep from the first point in the list sweep to the last point, or from the step sweep start frequency and amplitude to the stop frequency and amplitude.

Preset   Up

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	None

Sweep/List

Supported	All

Use this hardkey to access a menu of softkeys that enables you to define a series of points containing frequency, amplitude, and dwell time information for the signal generator to sweep.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	None

Sweep Repeat Single Cont

Supported	All

This softkey toggles the sweep repetition between single sweep and continuous sweep types. The sweep and point triggers will then trigger the sweep.

Single	Choose Single to configure the instrument to perform a single sweep upon triggering.
Cont	Choose Cont to configure the instrument to perform a continuous sweep loop upon triggering.

Preset	Cont
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	None

Sweep Trigger

Supported	All

Use this softkey to access a menu from which you can select a triggering mode for a sweep. You can choose triggering that, once a sweep is armed, occurs immediately, is

supplied by the GPIB or LAN, occurs on either the positive or negative edge of a signal supplied to the TRIG IN connector, or is initiated by the **Trigger** hardkey.

Preset	Free Run
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	You can also configure the polarity of the TTL signal output at the TRIG IN connector using the **Trigger In Polarity Neg Pos** softkey on this menu.

Sweep Type List Step

Supported   All

This softkey toggles the sweep type between list sweep and step sweep.

List	You can create a list sweep by supplying the frequency, amplitude, and dwell time for each point in the sweep.
Step	You can create a step sweep by supplying the start and stop frequency and amplitude, the number of points, and a dwell time. The signal generator then calculates the points between the first and last point in a linear manner.

Preset	List
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 230
Remarks	None

Swept-Sine

Supported   All

This softkey selects a swept-sine wave for the modulation waveform. A menu of choices for setting the parameters is also available with this softkey. The menu selections are dependent on the modulation format.

In each of these menus the TRIGGER OUT polarity can be selected to be either positive or negative.

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101
Remarks	In the LF Out menu this softkey is available after selecting the internal source to operate as a function generator.

Symbol Rate

This softkey occurs in different locations.

As a menu

Supported   All with Option 001 or 002

Use this softkey to access a menu from which you can set a new transmission symbol rate or restore the default symbol rate.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 74, 133, 149
Remarks	None

As a Setting

Supported   All with Option 001 or 002

Use this softkey to set a new transmission symbol rate value.

The current symbol rate is displayed under the **Symbol Rate** setting softkey.

Preset	*Custom, NADC*: 24.300 ksps *PDC*: 21.000 ksps *DECT*: 1.152000 Msps *PHS*: 192.000 ksps *EDGE, GSM*: 270.833 ksps *TETRA*: 18.000 ksps *APCO 25 w/C4FM, APCO 25 w/CQPSK*: 4.800ksps *CDPD*: 19.200 ksps *PWT*: 576.000 ksps
Range	*EDGE:* 1.000 ksps–25.000000 Msps *Other formats:* 1.000 ksps–50.000000 Msps
Location	See *Key and Data Field Menu Maps* guide: Pages 65, 74, 133, 149
Remarks	None

In W-CDMA Menus

Supported   All with Option 400

In downlink, this softkey appears in the Multiple Channels menu where you set a symbol rate value, define a channel and then insert multiple entries of that channel into the Edit Channel Setup table editor.

In uplink, this softkey appears in the Insert DPDCH menu where you can set a symbol rate value, select the number of channels, and select the first spread code.

Preset   *Downlink*: 30 ksps

                  Uplink: 60 ksps

Range   *Downlink*: 7.5 ksps–960 ksps

                  Uplink: 15 ksps–960 ksps

Location   See *Key and Data Field Menu Maps* guide: Page 253

Remarks   None

Symbol Rate

Supported   All with Option 400

This field displays the symbol rate for the selected channel. The symbol rate is shown in the active entry area of the display. For downlink, this field is displayed for the DPCH channel. For uplink, this field is active for the DPCCH and DPDCH.

Preset   *DPCH*: 7.0 ksps

                  DPCCH: 15.0 ksps

                  DPDCH: 60.0 ksps

Range   7.5–960.0 ksps

Location   See *Key and Data Field Menu Maps* guide: Pages 257, 266

Remarks   None

Slot Format, Symbol Rate and Maximum Channel Code for downlink are determined from Table 6:

Table 6

Slot Format	0-1	2-7	8-11	12	13	14	15	16

Table 6

Symbol Rate (ksps)	7.5	15.0	30.0	60.0	120.0	240.0	480.0	960.0
Max Ch Code	511	255	127	63	31	15	7	3

Slot Format, Symbol Rate and Maximum Channel Code for uplink are determined from Table 7:

Table 7

Slot Format	0	1	2	3	4	5	6
Symbol Rate (ksps)	15.0	30.0	60.0	120.0	240.0	480.0	960.0
Max Ch Code	255	127	63	31	15	7	3

Symbol Sync Out

Supported   All with Option 400

This field, displayed in the PRACH and DPCH output Rear Panel Setup menu, indicates symbol sync out rear panel connector settings. For example, signal type and connection locations are shown.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 267, 273

Remarks   For information on the rear panel AUX I/O connector configuration, refer to chapter 1 of the User's Guide.

Symbol Sync Out Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey is used to configure the polarity of the TTL signal at the SYM SYNC OUT pin of the AUX I/O connector.

Neg	Selecting Neg configures the TTL logic high at 0 volts.
Pos	Selecting Pos configures the TTL logic high as +5 volts.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 236
Remarks	None

Symbol Sync Polarity Neg Pos

Supported   All with Option 001 or 002

This softkey is used to configure the polarity of the TTL signal at the SYMBOL SYNC connector.

Neg	Selecting Neg configures the TTL logic high at 0 volts.
Pos	Selecting Pos configures the TTL logic high as +5 volts.

Preset	Pos
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 233
Remarks	None

Symbol Timing Err

Supported   All with Option 406

This softkey enables you to set a symbol timing error in either parts per million (ppm) or hertz (Hz). A 20 ppm timing error corresponds to a 20 Hz shift in the symbol rate.

Preset	0.0
Range	–50 ppm to 50 ppm
Location	See *Key and Data Field Menu Maps* guide: Page 239
Remarks	None

Sync

In the CDMA Menu

Supported   All with Option 401

Use this softkey to insert a synchronization channel into the current channel setup table.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 22, 35

Remarks   None

In the Real Time TDMA Menu

Supported   All with Option 402

Use this softkey to select synchronization as the timeslot type for the active timeslot. Synchronization is a downlink burst that allows the mobile to synchronize in time with the base station.

When you select **Sync** for a timeslot, the visual representation of the timeslot pattern on the display updates to show the selection.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 132

Remarks   None

SYNC

In the NADC Format

Supported   All with Option 402

This softkey enables you to select the 28-bit synchronization word that is used for slot synchronization, equalizer training, and timeslot identification.

The current value appears in the SYNC field near the bottom to the text area of the display.

Preset   A91DE4A

Range	0000000–FFFFFFF
Location	See *Key and Data Field Menu Maps* guide: Page 148
Remarks	None

In the PHS Format

Supported	All with Options 402

Press this softkey to select a synchronization channel as the timeslot type for the active timeslot. This channel includes the correct burst envelope timing and, for internally generated data, a correct cyclic redundancy check (CRC).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 180
Remarks	None

`Sync Delay`

Supported	All with Option 400

This field value sets the delay of the system frame number (SFN) synchronization when a Multi-ESG-Sync Trigger-In signal is received.

Preset	0 chips
Range	0–38399 chips
Location	See *Key and Data Field Menu Maps* guide: Page 256
Remarks	This function provides the capability of Inter-Cell Soft Handover test as described in TS.34.121 7.7.1 of the 3GPP standard. The test requires two basestations that generate the same signal but have a 10 chip timing offset. The two basestations are simulated by two ESGs and `Sync Delay` is the synchronization delay between the ESGs.

Sync Out

Supported	All with Option 001 or 002

Use this softkey to access a menu of choices for outputting a 1-bit synchronization signal to the EVENT 1 rear panel connector. You can set the synchronization signal to occur at various points, relative to the selected data pattern.

Preset	Begin Pattern
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 77, 116, 131, 147, 163, 179, 195, 211
Remarks	None

Sync Out Offset

Supported	All with Option 001 or 002

Press this softkey to set an offset from the synchronization location.

Preset	0 bits
Range	*DECT*: –479 through +479 bits *EDGE and GSM:* –155 through +155 bits *NADC, PDC:* –323 through +323 bits *PHS:* –239 through +239 bits *TETRA:* –509 through +509 bits
Location	See *Key and Data Field Menu Maps* guide: Pages 77, 116, 131, 147, 163, 179, 195, 211
Remarks	The **Data Format Pattern Framed** softkey must be set to Pattern to enable this softkey. This softkey is grayed out (not accessible) in Custom.

Sync Source BCH TCH/PDCH

Supported	All with Option 300

This softkey enables you to select the synchronization source for the GSM bit error rate loopback test.

BCH   This choice selects the broadcast channel (BCH) as the synchronization source. The test equipment can use a BCH signal from the BTS to determine the required transmit timeslot, frame and multiframe timing. The BCH signal is always transmitted in timeslot 0 and contains multiframe information.

TCH/PDCH   This choice selects a traffic channel (TCH) or a packet data channel (PDCH) as the synchronization source.

TCH synchronization relies on the BTS to supply a TCH training

sequence to which the receiver can synchronize. However, the receiver must be told which timeslot is being received, since it has no absolute reference (unlike a BCH, which is always transmitted in timeslot 0).

PDCH synchronization relies on the BTS to monitor the delay of the access bursts and update the timing advance values in the next downlink signalling message following the access burst.

PDCH synchronization is used when one of the GSM channels CS1, CS4, or MCS1 is selected.

Preset   BCH

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   None

Sync Source SFN FClk ESG

Supported   All with Option 400

This softkey sets the uplink synchronization signal to system frame number reset signal or to the frame clock signal.

   SFN   Selects the system frame number reset signal as the synchronization source.

   FClk   The synchronization source is the frame clock signal.

   ESG   The synchronization source is a primary signal generator.

Preset   FClk

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 262, 263, 272

Remarks   None

Synchronize to BCH/TCH/PDCH

Supported   All with Option 300

This softkey releases the current synchronization with the base transceiver station (BTS) and immediately tries to synchronize to the sync source that is selected. This softkey also stops the measurement.

Preset   BCH

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 8
Remarks	This softkey is active when the **GSM BERT Off On** softkey is set to On.

Synchronize to BCH/PDCH

Supported	All with Option 300

This softkey releases the current synchronization with the base transceiver station (BTS) and immediately tries to synchronize to the sync source that is selected. This softkey also stops the measurement.

Preset	BCH
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 8
Remarks	None

System ID

Supported	All with Option 401

This field displays the current system identification value. Changing the system identification value enables the signal generator to identify itself as another signal generator when used as a replacement. To change the system identification, highlight the System ID field, press the **Edit Item** softkey and enter a new hexadecimal value.

Preset	0007
Range	0000–7FFF
Location	See *Key and Data Field Menu Maps* guide: Page 53
Remarks	None

T

T1

Supported   All with Option 402

Use this softkey to edit the 9-bit tail fields in the normal burst timeslot. Use hexadecimal to enter the value; the signal generator will convert it to binary.

Preset   1FF

Range   0–1FF

Location   See *Key and Data Field Menu Maps* guide: Page 117

Remarks   None

T2

Supported   All with Option 402

Use this softkey to edit the 9-bit tail fields in the normal burst timeslot. Use hexadecimal to enter the value; the signal generator will convert it to binary.

Preset   1FF

Range   0–1FF

Location   See *Key and Data Field Menu Maps* guide: Page 117

Remarks   None

Target %

Supported   All with Option 300

This softkey enables you to set the target bit error rate (BER) or residual bit error rate (RBER) in percent (the percent of allowable errors) for the GSM BER sensitivity search.

Preset   2%

Range   0–100%

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   None

Target BER %

Supported   All with Option 300

This softkey enables you to set the target bit error rate (BER) in percent (the percent of allowable errors) for the EDGE uncoded channel BER sensitivity search.

Preset   2%

Range   0–100%

Location   See *Key and Data Field Menu Maps* guide: Page 11

Remarks   None

Target BLER %

Supported   All with Option 300

This softkey enables you to set the target block error rate (BLER) in percent (the percent of allowable errors) for the EDGE downlink MCS5 or MCS9 channel BER sensitivity search.

Preset   2%

Range   0–100%

Location   See *Key and Data Field Menu Maps* guide: Page 8

Remarks   None

TCH

Supported   All with Option 402

This softkey appears in two locations.

In the Timeslot Type Menu

In this menu, this softkey selects traffic channel as the timeslot type for the active timeslot. When you select **TCH** for a timeslot, the visual representation of the timeslot pattern on the display immediately updates to show the configuration.

In the Configure TCH Menu

In this menu, this softkey accesses a menu of choices for internal data generation (PN sequences, fixed, 4-bit repeating sequences, set patterns of ones and zeroes) or you can choose to supply your own data (download a binary file or input data using the

DATA INPUT connector) for configuring the timeslot TCH fields.

Preset	PN23
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 164, 180
Remarks	None

TCH/FS

Supported   All with Option 402

Use this softkey to select a full rate speech traffic channel as the timeslot type for the active timeslot in the GSM personality.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 134
Remarks	None

TCH All

Supported   All with Option 402

Use this softkey to select traffic channel as the timeslot type for all timeslots in either the uplink or the downlink channel, depending on which is active.

When you select **Up TCH All**, the visual representation of the timeslot pattern on the display immediately updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 180
Remarks	None

tDPCH Offset

Supported   All with Option 400

This field displays the timing offset for the DPCH and Chip ARB. Each numeric value entered is equivalent to 256 chips or 1/10 of a timeslot offset. The timing offset affects the crest factor of the signal. By varying the timing offset, the probability of all DPCH's

adding in phase and producing a high peak-to-average ratio or crest factor is minimized. Base stations vary the timing between DPCHs so that amplifiers can be run at the most efficient level. The signal generator duplicates this behavior.

Preset	N/A
Range	0–149
Location	See *Key and Data Field Menu Maps* guide: Pages 248, 257
Remarks	None

Test Models

Supported   All with Option 400

Use this softkey to display a menu of pre-configured Test Model setups for the W-CDMA downlink channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 244
Remarks	None

Test Model 1 W/ 16 DPCH

Supported   All with Option 400

This softkey selects Test Model 1 with 16 DPCHs for the W-CDMA downlink channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 1 W/ 32 DPCH

Supported   All with Option 400

This softkey selects Test Model 1 with 32 DPCHs for the W-CDMA downlink channel setup.

Preset	N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 1 W/ 64 DPCH

Supported   All with Option 400

This softkey selects Test Model 1 with 64 DPCHs for the W-CDMA downlink channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 2

Supported   All with Option 400

This softkey selects Test Model 2 for the W-CDMA downlink channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 3 W/ 16 DPCH

Supported   All with Option 400

This softkey selects Test Model 3 with 16 DPCHs for the W-CDMA downlink channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 3 W/ 32 DPCH

Supported   All with Option 400

This softkey selects Test Model 3 with 32 DPCHs for the W-CDMA downlink channel
setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 4

Supported   All with Option 400

This softkey selects Test Model 4 for the W-CDMA downlink channel setup.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 5 w/2HSPDSCH

Supported   All with Option 400

This softkey selects Test Model 5 with 6 dedicated physical channels (DPCH) and 2 high
speed physical downlink shared channels (HS-PDSCH).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 5 w/4HSPDSCH

Supported   All with Option 400

This softkey selects Test Model 5 with 14 dedicated physical channels (DPCH) and 4
high speed physical downlink shared channels (HS-PDSCH).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Model 5 w/8HSPDSCH

Supported   All with Option 400

This softkey selects Test Model 5 with 30 dedicated physical channels (DPCH) and 8 high speed physical downlink shared channels (HS-PDSCH).

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 245
Remarks	None

Test Setup

Supported   All with Option 400

This softkey accesses a menu of pre-defined test setups. The tests are in compliance with 3G TS 25.101 specifications.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

TETRA

Supported   All with Option 001 or 002

This softkey appears in two different situations, to either select a predefined personality for a custom digital modulation format, or to access a menu from which you can configure a digital modulation.

Selecting TETRA for Custom Digital Modulations

Use this softkey to select a predefined Trans European Trunked Radio (TETRA)

personality for the digital modulation format.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 65

Remarks   None

Accessing the TETRA Menu

Supported   All with Option 402

Use this softkey to display a menu of softkeys where you can generate a data pattern formatted into either a framed structure (where the data bits are located in fields defined by the TETRA protocol) or a sequence that can be output one or more times.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 115, 211

Remarks   None

TETRA Bands

Supported   All

Use this softkey to access a menu from which you can select the frequency bands for TETRA. The output frequency depends on both frequency band and channel selections.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 97, 98

Remarks   None

TETRA Base 390/400

Supported   All

This softkey selects Base 390–400 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset   *Channel*: 3600

                  Frequency: 390.000 MHz

Range	*Channels*: 3600–4000
	Frequency: 390.000–400.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

TETRA Base 420/430

Supported   All

This softkey selects Base 420-430 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset	*Channel*: 800
	Frequency: 420.000 MHz
Range	*Channels*: 800–1200
	Frequency: 420.000–430.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

TETRA Base 460/470

Supported   All

This softkey selects Base 460-470 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset	*Channel*: 2400
	Frequency: 460.000 MHz
Range	*Channels*: 2400–2800
	Frequency: 460.000–470.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

TETRA Base 915/921

Supported   All

This softkey selects Base 915-921 as the frequency band for TETRA. The output

frequency depends on both frequency band and channel selections.

Preset	*Channel*: 600
	Frequency: 915.000 MHz
Range	*Channels*: 600–840
	Frequency: 915.000–921.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 97
Remarks	None

TETRA Mobile 380/390

Supported   All

This softkey selects Mobile 380–390 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset	*Channel*: 3600
	Frequency: 380.000 MHz
Range	*Channels*: 3600–4000
	Frequency: 380.000–390.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

TETRA Mobile 410/420

Supported   All

This softkey selects Mobile 410-420 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset	*Channel*: 800
	Frequency: 410.000 MHz
Range	*Channels*: 800–1200
	Frequency: 410.000–420.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

TETRA Mobile 450/460

Supported   All

This softkey selects Mobile 450-460 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset	*Channel*: 2400
	Frequency: 450.000 MHz
Range	*Channels*: 2400–2800
	Frequency: 450.000–460.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

TETRA Mobile 870/876

Supported   All

This softkey selects Mobile 870–876 as the frequency band for TETRA. The output frequency depends on both frequency band and channel selections.

Preset	*Channel*: 600
	Frequency: 870.000 MHz
Range	*Channels*: 600–840
	Frequency: 870.000–876.000 MHz
Location	See *Key and Data Field Menu Maps* guide: Page 98
Remarks	None

TETRA Off On

Supported   All with Option 402

This softkey enables you to select the operating state of the Trans European Trunked Radio (TETRA) communications format.

Off   When you select Off, the TETRA format is turned off.

On   When you select On, this sets up the internal hardware to generate the structure that follows the TETRA format. The internal I/Q modulator generates π/4DQPSK digital modulation, and the TETRA and I/Q annunciators appear in the display. Although the digital modulation is

enabled with this softkey, the RF carrier is modulated by the enabled modulation only when you have also set **Mod On/Off** to On.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 211
Remarks	Setting the **TETRA Off On** softkey to On presets the following softkeys in the I/Q and MUX menus: **I/Q Off On** softkey is set to On and the **Source 1** and **I/Q Out** softkeys are set to BBG 1. You can override these selections in the I/Q and MUX menus.

TFCI

Supported   All with Option 400

This field displays the TFCI code.

Preset	0
Range	0 – 1023
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	The number of TFCI bits sent to each timeslot are determined by the slot format.

TFCI Field Off On

Supported   All with Option 400

Use this softkey to set the transport format combination indicator (TFCI) field on or off for all the channels in the Edit Channel Setup table editor.

Off	The TFCI field displays a grayed-out N/A.
On	On selects TFCI for insertion in the selected channel.

This is an optional bit pattern that describes and gives information on what services are available; for example, data and video. It allows the user equipment (UE) or the base station (BTS) to determine the active service and bit rates in each service.

Preset	On
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 248

Remarks   The TFCI field applies to every DPCH channel in downlink. The TFCI only applies to the DPCCH channel in uplink as this channel carries the control information for all of the DPDCH channels present.

TFCI Pat

Supported   All with Option 400

This field displays the transport format combination indicator (TFCI) bits. This is a 10-bit pattern that describes the services in use so that blind rate detection does not have to be performed.

Preset   0

Range   0–1023 (decimal)

Location   See *Key and Data Field Menu Maps* guide: Page 257

Remarks   This softkey is available for downlink. The TFCI is optional and describes the services in use (for example, voice and data).

TFCI Pattern

Supported   All with Option 400

This field, in the uplink configuration, displays the transport format combination indicator (TFCI) bit pattern set in the **PhyCH Setup** menu for a physical channel. Press the **Edit Item** softkey to enter in a desired bit pattern. See "Slot Format" on page 560 for more information.

The TFCI is an optional field describing what services are in use (for example, data and video). Fixed rate service does not include TFCI.

Preset   0000

Range   0000–03FF (hexadecimal)

Location   See *Key and Data Field Menu Maps* guide: Pages 266, 270

Remarks   None

TFCI Power dB

Supported   All with Option 400

This field displays the total power, in dB, for the TFCI bits in the selected channel.

Preset   0.00 dB

Range	– 20 dB to 20 dB
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	This field is only available for downlink.

TFCI State

Supported	All with Option 400

This field displays the on/off status for the transport format combination indicator (TFCI) bits. If the field indicates on, then the TFCI bits are included in the dedicated physical control channel (DPCCH). The TFCI is coupled to the Slot Format field. Refer to "Slot Format" on page 560 for more information.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 266, 270
Remarks	None

Tfirst

Supported	All with Option 400

This field displays the first transmission slot at which a gap appears. The entry in this field, sets the starting position of the first DTX slot from the compressed frame boundary.

Preset	N/A
Range	0–7
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

TGCFN

Supported	All with Option 400

This field displays the transmission gap connection frame number (TGCFN). This is the connection frame number (CFN) of the first radio frame of the first pattern (pattern 1) within the transmission gap pattern sequence. Refer to "Gap1 1st" on page 310 for more information.

Preset

Range	0–255
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This field is displayed for the uplink configuration in the Compressed Mode Setup table editor.

TGD

Supported	All with Option 400

This field displays the transmission gap start distance (TGD) or, if only one transmission gap is used, "Undefined". The TGD is the duration between the starting slots of two consecutive transmission gaps within a transmission gap pattern, expressed in number of slots. Refer to "Gap1 1st" on page 310 for more information.

Selecting the **Undefined** softkey for this field, designates only one transmission gap is to be used.

The position of the second transmission gap within a radio frame(s) complies with the limitations established in the 3GPP standard.

Preset	Undefined
Range	15–269
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This field is displayed in the Compressed Mode Setup table editor for the uplink configuration.

Tgl

Supported	All with Option 400

This field displays the transmission gap length (Tgl) in the compressed frames. The Tgl is the number of consecutive idle slots during the compressed mode transmission gap. The Tgl field is available for the downlink compressed mode configuration.

Preset	N/A
Range	1–7
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	This field is displayed for downlink.

TGL1

Supported All with Option 400

This field displays the transmission gap length 1 (TGL1). This is the duration of the first transmission gap, expressed in slots, within the transmission gap pattern.

Preset   7

Range   3, 4, 5, 7, 10, or 14 slots

Location See *Key and Data Field Menu Maps* guide: Page 266

Remarks This field is displayed in the Compressed Mode Setup table editor for the uplink configuration. See ”TGPL2” for more information.

TGL2

Supported All with Option 400

This field displays the transmission gap length 2. This is the duration of the second transmission gap, expressed in slots, within the transmission gap pattern. When Omitted is specified as the parameter, then TGL2 = TGL1. The transmission gap pattern length 1 and 2 can have one or two transmission gaps. Refer to 3 GPP TS25.215 version 4.1.0 Release 4 for more information.

Preset   Omitted

Range   3, 4, 5, 7, 10, 14 or Omitted

Location See *Key and Data Field Menu Maps* guide: Page 266

Remarks This field is displayed in the Compressed Mode Setup table editor for the uplink configuration.

TGPL1

Supported All with Option 400

This field displays the duration of the transmission gap pattern length 1 (TGPL1). The duration is expressed in number of frames used for the TGPL1.

Preset   2 frames

Range   1–144

Location See *Key and Data Field Menu Maps* guide: Page 266

Remarks This field is displayed in the Compressed Mode Setup table editor for the uplink configuration.

TGPL2

Supported   All with Option 400

This field displays the duration of the transmission gap pattern length 2 (TGPL2). The duration is expressed in the number of frames used for the TGPL2. If this parameter is set to omitted , then TGPL2 = TGPL1.

Preset	Omitted
Range	1–144
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This field is displayed in the Compressed Mode Setup table editor for the uplink configuration.

TGPRC

Supported   All with Option 400

This field displays the transmission gap pattern repetition count (TGPRC) number. This is the number of transmission gap patterns within the transmission gap pattern sequence. Use the Edit Item softkey to select a repetition to use.

Preset	1
Range	1–511 or Infinity
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	When Infinity is selected, the compressed mode patterns are continuously transmitted. For counts 1–511, the compressed mode patterns will end after the specified repetition number.

TGPS

Supported   All with Option 400

This field indicates the active/inactive state for the transmission gap pattern sequence (TGPS).

Preset	Inactive
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This field is displayed for the DPCCH and the DPDCH in the Compressed Mode Setup table editor

TGPS Inactive Active

Supported   All with Option 400

This softkey enables the transmission of the compressed frame sequence. Compressed frame sequence will not be transmitted until the front panel or external trigger is received.

Inactive   Compressed mode is disabled.

Active   Compressed mode is enabled.

Preset   Inactive

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 266

Remarks   None

TGPSI

Supported   All with Option 400

The transmission gap pattern sequence indicator (TGPSI) is a parameter that references the compressed mode pattern sequence. You can change the TGPSI number by rotating the control knob or by entering a value using the keypad.

Preset   TGPSI 1

Range   *Downlink:* 1

              Uplink: 1–6

Location   See *Key and Data Field Menu Maps* guide: Pages 257, 266

Remarks   This softkey is displayed in the Compressed Mode Setup menu.

TGSN

Supported   All with Option 400

This field displays the transmission gap starting slot number (TGSN). The transmission gap pattern begins in a radio frame (called the first radio frame of the transmission gap pattern) and contains at least one transmission gap slot. The TGSN is the slot number of the first transmission gap slot within the first radio frame of the transmission gap pattern.

Preset   0

Range	0–14
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This field is displayed for the DPCCH and the DPDCH in the uplink configuration.

Threshold

Supported	All with Option UN7

This softkey accesses a menu that enables you to select the input level of the BER CLK IN, BER DATA IN, and BER GATE IN rear panel connectors.

Preset	1.4 V
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

Threshold # of Events to Stop

Supported	All with Option UN7

This softkey accesses a menu that enables you to select the parameters of the events-to-stop function. If no stop criteria is specified, the measurement continues until the number of frames to measure is met.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 9, 10, 11
Remarks	None

Through

Supported	All

Use this softkey to enable a path selection that bypasses all filters. This is useful for using external filters at frequencies different to those supplied internally.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 21, 29, 41, 73, 91,

100, 106, 247

Remarks   None

Time

Supported   All with Option 401

This field displays the current system time value. To change the system time, highlight the Time field, press the **Edit Item** softkey and enter a new hexadecimal value.

Preset   000000000

Range   000000000–FFFFFFFFF

Location   See *Key and Data Field Menu Maps* guide: Page 53

Remarks   None

Time/Date

Supported   All

Use this softkey to access a menu from which you can set the time and date functions of the clock display.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 233

Remarks   None

Time/Date Off On

Supported   All

Use this softkey to set the state of the display clock.

Off   When you select Off, the display clock is off.

On   When you select On, the display clock is turned on.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 236

Remarks   None

Timeslot

Supported   All with Option 402

This softkey enables you to select a timeslot to be configured. Choose any of the available timeslots in the active channel.

Preset   *NADC, PHS, TETRA*: 1

Other Formats: 0

Range   0–7

Location   See *Key and Data Field Menu Maps* guide: Pages 8, 8, 117, 132, 148, 164, 180, 196, 212

Remarks   None

Timeslot Ampl Main Delta

Supported   All with Option 402

Use this softkey to set the selected timeslot RF output power source.

Main   This choice selects the current RF output as the power level.

Delta   This choice selects an alternate power level (Delta) that is determined by the difference between the current amplitude and the amplitude that is selected with the Alternate Amplitude menu. To accesses this menu, press **Amplitude** > **More (1 of 2)** > **Alternate Amplitude**. This menu enables you to configure the alternate amplitude.

Preset   Main

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212

Remarks   None

Timeslot Off On

Supported   All with Option 402

Use this softkey to set the operating state of the selected timeslot. The visual representation of the timeslot pattern reflects the timeslot status in the active channel.

Off   This selection turns the timeslot off.

On   This selection turns the timeslot on.

Preset	*DECT, EDGE, GSM, and PDC*: On (timeslot 0)
	NADC and PHS: On (timeslot 1)
	TETRA: On (timeslot 1), Off (timeslots 2 through 4)
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212
Remarks	None

Timeslot Offset

Supported   All with Option 400

This softkey, in the DPCH and PRACH Trigger Delay menu, enables you to set the number of slots to be delayed from the uplink synchronization source.

The range for the PRACH is affected by the Tp-a value that is set using the **Base Delay Tp-a** softkey.

Preset	0			
Range	*DPCH*: 0 – 119	*PRACH*:	*Tp-a Setting*	*Timeslot Offset*
			0	-14 to 119
			7680	-11 to 119
			12800	-9 to 119
Location	See *Key and Data Field Menu Maps* guide: Pages 263, 272			
Remarks	The actual timing offset is defined as: (Timeslot Offset + Timing Offset $\times$ 2560) – (Tp–a) [chips]			

Timeslot Type

Supported   All with Option 402

This softkey accesses a menu from which you can set the timeslot type for the active timeslot.

The visual representation of the timeslot pattern on the display is updated to show the current selection.

Preset	*DECT*: Traffic Bearer (timeslot 0)
	EDGE and GSM: Normal (timeslot 0)
	NADC: Up TCH (timeslot 1)

        PDC: Up TCH (timeslot 0)

        PHS: TCH (downlink 1)

        TETRA: Uplink Normal (all timeslots)

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 117, 132, 148, 164, 180, 196, 212
Remarks	None

Timing Offset (numeric value) chip

Supported   All with Option 400

This softkey, available in the PRACH Trigger Delay Setup and DPCH Trigger Delay Setup, enables you to specify the number of chips to be delayed in addition to the slot delay between the downlink frame clock and uplink frame timing signals. The actual delay time is the sum of 1024 chips, the slot delay, and the timing offset.

Preset	0
Range	*PRACH, DPCH*: −512 to 2560
Location	See *Key and Data Field Menu Maps* guide: Pages 263, 272
Remarks	A minus value means a negative delay. The actual timing offset

$$DPCH = \text{Timeslot Delay} + \text{Timing Offset } (T0) \times 2560 - T0 \text{ (chips)}$$

$$PRACH = \text{Timeslot Delay} + \text{Timing Offset } (T0) \times 2560 - Tp\text{-}a \text{ (chips)}$$

where $T0 = 1024$ chips.

This is the standard timing offset between downlink and uplink.

`Timing Offset`

Supported   All with Option 400

This field displays the timing offset for the arb multicarrier waveform.

Preset	0
Range	0–149
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

`tOCNS Offset`

Supported   All with Option 400

This field displays the timing offset for the orthogonal channel noise simulator (OCNS). The timing offset affects the crest factor of the signal. By varying the timing offset, the probability of all OCNS's adding in phase and producing a high peak-to-average ratio or crest factor is minimized. Base stations vary the timing between OCNSs so that amplifiers can be run at the most efficient level. The signal generator duplicates this behavior.

Preset	N/A
Range	0–149
Location	See *Key and Data Field Menu Maps* guide: Page 257
Remarks	None

Toggle Marker 1

Supported   All with Option 001 or 002

This softkey enables or disables marker1 for the selected segment of a waveform sequence.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 90
Remarks	None

Toggle Marker 2

Supported   All with Option 001 or 002

This softkey enables or disables marker 2 for the selected segment of a waveform sequence.

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 90
Remarks	None

Toggle Marker 3

Supported   All with Option 001 or 002

This softkey enables or disables marker 3 for the selected segment of a waveform sequence.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 90

Remarks   None

Toggle Marker 4

Supported   All with Option 001 or 002

This softkey enables or disables marker 4 for the selected segment of a waveform sequence.

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 90

Remarks   None

Toggle Markers

Supported   All with Option 001 or 002

This softkey accesses a menu from which you can toggle markers 1 and 2 to enable or disable markers for selected segments of a sequence.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 90

Remarks   None

Toggle State

Supported   All with Option 001 or 002

In the multitone editor, this key enables you to turn the individually selected tone on and

off. This determines whether or not a particular tone is generated.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 103
Remarks	None

Total Bits

Supported	All with Option UN7

Use this softkey to specify the total number of bits to be measured for one measurement cycle.

Preset	10,000
Range	100–4294967295
Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

Total Bits

Supported	All with Option 400

This field displays the actual number of total bits after the error bits are inserted into the current data of each transport channel.

Preset	0
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 267, 271
Remarks	This data field is on the second page of the table editor.

Total Blocks

Supported	All with Option 400

This field displays the actual number of total blocks after the error blocks are inserted into the current data of each transport channel.

Preset	0
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 267, 271
Remarks	This data field is on the second page of the table editor.

TotalPwr

Supported	All with Option 400

This field displays the total in-channel power with a 3.84 MHz bandwidth. This power is a sum of the carrier power (`C Power`) and in-channel noise power (`N Power`). A change in amplitude, carrier to noise, and noise related parameters will cause a recalculation of this value.

Preset	−138.91
Range	−138.91 to 20
Location	See *Key and Data Field Menu Maps* guide: Pages 268, 271
Remarks	The maximum value depends on the power option installed in the signal generator.

Tp–m

Supported	All with Option 400

This field displays the time period, in access slots, between the physical random access channel (PRACH) preamble and message for single and multiple PRACH modes.

Preset	3 access slots
Range	1–15 access slots
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	None

Tp-p

Supported	All with Option 400

This field displays the time period between the one preamble and another preamble before the message part for single and multiple physical random access channel (PRACH) modes.

Preset	3 access slots
Range	1–60 access slots

Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	None

TPC

Supported	All with Option 400

This data field displays the hexadecimal transmit power control (TPC) values for the selected channel in the Edit Channel Setup table editor. The binary conversion of this hex number will consist of 15 values which are transmitted during one frame. For more information refer to the *Users Guide*.

Preset	555
Range	0000–7FFF
Location	See *Key and Data Field Menu Maps* guide: Page 248
Remarks	TCP values determine how the transmit power of the base station and user equipment (UE) will vary.

TPC Pat Steps

Supported	All with Option 400

This field displays the number of successive down and up commands for the transport power control (TPC) pattern, when the TPC Pattern field is set to Up/Down or Down/Up.

In uplink, the power of the base station (BTS) will decrease or increase by 1 dB on a slot-by-slot basis for every down or up command.

The TPC pattern has a number of different formats See "TPC Pattern" on page 622 for more information.

Preset	1
Range	1–80
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	None

TPC Pat Trig Polarity Neg Pos

Supported	All with Option 400

This softkey sets the pattern trigger polarity for transmit power control (TPC) for the uplink dedicated physical control channel (DPCCH). The choices are negative or positive.

| Pos | The signal generator responds to a rising edge trigger transition. |
| Neg | The signal generator responds to a falling edge trigger transition. |

Preset   Positive

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 263

Remarks   None

TPC Pattern

Supported   All with Option 400

This field displays the transmit power control (TPC) pattern command format in use. The TPC Pattern is used to change the base station (BS) power level. To change the current selection, highlight the TPC Pattern field, press the **Edit Item** softkey and make a choice from the menu that appears.

Preset   Up/Down

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 266

Remarks   None

TPC Power dB

Supported   All with Option 400

This data field displays the power for the transmit power control (TPC) bits.

Preset   0.00 dB

Range   – 20 dB to 20 dB

Location   See *Key and Data Field Menu Maps* guide: Page 248

Remarks   This field is only available for downlink.

TPC UserFile Trig

Supported   All with Option 400

This field selects the operating state for transmit power control (TPC) pattern trigger. The field is available for the uplink dedicated physical control channel (DPCCH).

| Off | When you select Off, the operating state is turned off. |
| On | When you select On, the operating state is turned on. |

Preset	Off
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	None

Traffic

Supported   All with Option 401

This softkey appears in two places, enabling you to either insert a traffic channel into the current CDMA Channel Setup table, or select a menu from which you can define and insert one or more fundamental traffic channels into the current CDMA2000 Channel Setup table.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 22, 35, 46
Remarks	None

Traffic Bearer

Supported   All with Option 402

Use this softkey to select traffic bearer as the timeslot type for the active timeslot. When you have selected **Traffic Bearer** for a timeslot, the visual representation of the timeslot type on the display immediately updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 196
Remarks	None

Traffic Bearer with Z Field

Supported   All with Option 402

Use this softkey to select traffic bearer with Z field as the timeslot type for the active

timeslot. When you have selected **Traffic Bearer with Z Field** for a timeslot, the visual representation of the timeslot type on the display immediately updates.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 196

Remarks   None

Transmit Link RFP PP

Supported   All with Option 402

Use this softkey to select the operating state of the frame.

RFP   When you select RFP, the timeslot number, type and configuration settings are applied to the twelve radio fixed part (RFP) timeslots.

PP   When you select PP, the timeslot number, type and configuration settings are applied to the twelve portable part (PP) timeslots.

Preset   RFP

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 196

Remarks   RFP and PP timeslots can be active concurrently.

Transmit Power Control Setup

Supported   All with Option 400

This softkey accesses the dedicated physical channel (DPCH) Transmit Power Control Setup configuration screen.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 273

Remarks   This softkey appears only when DPCH **Power Mode Norm TPC** softkey is set to **TPC** (TPC is highlighted).

Transmit Settings

Supported   All with Option 300

This softkey accesses the GSM or EDGE menu of softkeys used for selecting framed data, configuring timeslots, and selecting frequency channels.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 8, 8
Remarks	None

Transp Chan A

Supported   All with Option 400

Use this softkey to select transport channel A as the data input to the currently selected physical channel.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the Data Type field. Refer to "Data Type" on page 180 for more information.
Remarks	None

Transp Chan B

Supported   All with Option 400

Use this softkey to select transport channel B as the data input to the currently selected physical channel.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the Data Type field. Refer to "Data Type" on page 180 for more information.
Remarks	None

Transp Group A B

Supported   All with Option 400

Use this softkey to select the transport channel data for the selected physical channel.

A   This softkey selects transport channel A as the data for the selected physical channel.

B   This softkey selects transport channel B as the data for the selected physical channel.

Preset: A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 259

Remarks   There are two transport layer definitions and either one can be applied to either DPCH. This can be used to test multiple transport layer scenarios, RMC 12.2 and AMR for example, without having to lose synchronization with the mobile. The mobile is only required to change OVSF codes thus saving time.

Transport Setup

Supported   All with Option 400

Use this softkey to access a menu from which you can configure the transport channels.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 257, 263, 270

Remarks   None

Transp Position Flexible Fixed

Supported   All with Option 400

This softkey selects a coupling mode for the downlink transport type and determines the method of transport channel multiplexing (TrCH MUX) used to form the coded composite transport channel.

Flexible   This selection sets the block set size (BSSize) and tracks the block size.

Fixed   This selection allows the BSSize and block size to be edited. The values are limited to two values; equal to BSSize or 0. An error message is generated if a value other than these is enter and the setting will default to the BSSize.

Preset	Fixed
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 259
Remarks	See "Blk Size" on page 104 for more information.

Transport CH

Supported	All with Option 400

This softkey selects the data generated from the transport channel setup as the data source for the currently selected physical channel message data part.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 270
Remarks	You can access this softkey by highlighting the `Msg-Data Data` data field in the uplink physical channel setup table editor.

TrCH BER

Supported	All with Option 400

This field displays the error rate for the dedicated physical data channel (DPDCH). These errors are inserted between the second inter-leaver in the transport layer and the spreading and scrambling in the physical layer. The error ratio or BER is set with the `TrCH BER Cycle` and `TrCH BER ErrLen` fields and is calculated by using the following formula: `TrCH BER ErrLen/TrCH BER Cycle`.

Preset	0
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	None

TrCH BER Cycle

Supported	All with Option 400

The `TrCH BER Cycle` field is used with the `TrCH BER ErrLen` field to set the BER of the dedicated physical data channel (DPDCH) stream between the transport layer and physical layer. The ratio, `TrCH BER ErrLen/TrCH BER Cycle` sets the TrCH bit error

rate. For example, if `TrCH BER ErrLen` is equal to 25 and the `TrCH BER Cycle` is 100, then there will be 25 bit errors in every 100 bits or a bit error rate of 0.25.

Preset	0 bit cycle
Range	0–65535
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	None

TrCH BER ErrLen

Supported   All with Option 400

This field displays the error length, in bits, of the transport channel bit errors (TrCH BER) for the uplink dedicated physical data channel (DPDCH). The error length value must be smaller than or equal to the TrCH BER Cycle length. Refer to "TrCH BER Cycle" on page 627.

Preset	0 bit cycle
Range	0–4095
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	None

TrCH BlkSize 168

Supported   All with Option 400

This softkey selects a channel configuration as defined in 3GPP Standard TS25.104. This softkey is available in the Uplink Physical Type:PRACH Preamble menu. Parameters are defined for a transport block size of 168.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 271
Remarks	None

TrCH BlkSize 360

Supported   All with Option 400

This softkey selects a channel configuration as defined in the 3GPP Standard

TS25.104.This softkey is available in the Uplink Physical Type:PRACH Preamble menu. Parameters are defined for a transport block size of 360.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 271
Remarks	None

TrCH Setup

Supported	All with Option 400

This softkey accesses a menu in which you can edit transport channel (TrCH) data. This softkey is active with physical channel type DPCH for downlink and physical channel type DPDCH for uplink configurations.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 259, 267, 271
Remarks	The default setting for the transport channel is DCH 1 and is available for both uplink and downlink configurations.

TrCH State Off On

Supported	All with Option 400

This softkey turns the selected transport channel off or on. Select transport channel #2, #3, #4, #5, or #6 to active this key. These transport channels can also be turned on or off with this softkey. Channels must be turned on in sequence. For example, channel 3 must be on before channel 4 can be turned on.

Preset	Transport channel #1 is always in the active state after an instrument preset.
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 259, 267, 271
Remarks	None

Triangle

Supported	All

This softkey selects a triangle wave as the modulation.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101
Remarks	The modulation applies only to the path configuration you have currently selected.

Trigger

Supported	All with Option 001 or 002

Use this softkey to access a menu from which you can choose between the continuous, single or gated triggering modes. The menu also contains a **Trigger Setup** softkey that enables you to adjust the trigger source, the continuous mode, the retrigger mode and the gate active polarity.

Preset	Continuous
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 26, 39, 65, 88
Remarks	None

Trigger Advance

Supported	All with Option 401

This field displays the current number of chips that the trigger is advanced. The trigger advance is referenced to the ESG even second clock and is used to synchronize the ESG with the base station. The base station's timing signal is input at the PATT TRG IN rear panel connector. To change the trigger advance, highlight the Trigger Advance field, press the **Edit Item** softkey and enter a new value.

Preset	28
Range	0–2457599
Location	See *Key and Data Field Menu Maps* guide: Page 57
Remarks	The trigger advance value automatically adjusts to compensate for additional delays introduced when noise is turned on (Option 403).
	Changing the trigger advance value may cause the signal generator to lose synchronization with the base station signal.

Trigger & Run

Supported   All with Option 001 or 002

Use this softkey to select the Trigger & Run mode for continuous triggering. When this mode is selected, the waveform generator plays a sequence or segment continuously upon triggering. The waveform generator does not respond to further triggers.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 67, 83, 88, 118, 133, 149, 165, 181, 197, 213, 247
Remarks	None

`Trigger Edge`

Supported   All with Option 401

This field indicates whether the ESG will trigger on the rising or the falling edge of the base station trigger signal. To change the field selection, highlight the `Trigger Edge` field, press the **Edit Item** softkey and make a choice from the menu that appears.

Preset	Falling
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 57
Remarks	None

Trigger In Polarity Neg Pos

Supported   All

This softkey toggles the polarity of the TTL trigger signal at the TRIGGER IN connector.

Pos	The swept-sine sweep will start on the rising edge of a positive (+5.0 V) input trigger signal and stop with the falling edge of the trigger signal.
Neg	The swept-sine sweep will start on the falling edge of the negative (+5.0 V) input trigger signal and stop with the rising edge of the trigger signal.

Preset	Pos
Range	N/A

Location See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101, 117, 132, 148, 164, 180, 196, 212, 230, 233

Remarks This key is coupled to the **Trigger In Polarity Neg Pos** key for swept-sine FM, ΦM, and LF Out, and the Sweep/List menu. When the polarity is changed in any one of these menus, it is changed in all the menus. In the LF Out menu this key appears after selecting the internal source to operate as a function generator and selecting Ext as the LF Out sweep trigger.

Trigger Key

Supported All

Use this softkey to enable the front panel **Trigger** hardkey to trigger an event.

Pressing the **Trigger Key** softkey in the appropriate menu will enable the front panel **Trigger** hardkey to immediately do one of the following:

- Sweep trigger– Initiate a step or list sweep.

- Point trigger– Cause the sweep to step point-by-point in a step or list sweep.

- AM, FM, or ΦM– Initiate a single sweep of swept-sine amplitude, frequency, or phase modulation.

- Swept-sine LF output– Initiate a swept-sine low frequency output.

- Digital modulation formats– Initiate a burst to output a frame or data sequence. For framed transmissions, you can toggle between the primary and/or secondary framed data. For patterned transmissions, you can trigger a single output of modulated data that is not framed.

- Bit error rate test (BERT)– Initiate a bit error rate test.

Preset N/A

Range N/A

Location See *Key and Data Field Menu Maps* guide: Pages 2, 6, 8, 8, 19, 30, 42, 67, 83, 88, 95, 96, 101, 117, 118, 132, 133, 148, 149, 164, 165, 180, 181, 196, 197, 212, 213, 230, 247

Remarks The **Trigger** hardkey has autorepeat capability. Hold it down and you will repeatedly trigger until you release the key.

    Pattern Trigger functions are not available if you use either a PN data sequence or an external data source.

Trigger Out Polarity Neg Pos

Supported   All

This softkey toggles the polarity of the TTL signal at the rear panel TRIGGER OUT connector.

Pos	The trigger out signal is asserted high (+5.0 V) at the start of the swept-sine modulation sweep and low (0.0 V) when the sweep is concluded.
Neg	Neg reverses the polarity, so that the trigger out signal is low (0.0V) at the start of the swept-sine modulation sweep and high (5.0V) when the sweep ends.

Preset   Pos

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 2, 95, 96, 101, 230, 236

Remarks   This key is coupled to the **Trigger Out Polarity Neg Pos** key for swept-sine FM, ΦM, and LF Out, and the Sweep/List menu. When the polarity is changed in any one of these menus, it is changed in all the menus.

In the LF Out menu this key is available after selecting the internal source to operate as a function generator.

Trigger Polarity Setup

In the Real Time W-CDMA Uplink PRACH Menu

Supported   All with Option 400

Use this softkey to access a menu from which you can set the physical random access channel (PRACH) and the acquisition indicator channel (AICH) trigger polarity

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 272

Remarks   None

In the Real Time W-CDMA Uplink DPCH Menu

Supported   All with Option 400

Use this softkey to access a menu from which you can set the Compressed Mode Start Trigger Polarity, Compressed Mode Stop Trigger Polarity, TPC Pattern Trigger Polarity, TPC Bit Signal Polarity, and the Power Control Signal Polarity.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 263

Remarks   None

In the Real Time W-CDMA Downlink Menu

Supported   All with Option 400

Use this softkey to access a menu from which you can set the Compressed Mode Start Trigger Polarity, Compressed Mode Stop Trigger Polarity, and DPCH1 DTX-Gate Trigger Polarity.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 261

Remarks   None

Trigger Setup

Supported   All with Option 001 or 002

This softkey accesses the trigger setup menu. This menu enables you to adjust the trigger source, the continuous mode, the retrigger mode (not available for real-time waveform generation), and the gate active polarity.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 19, 30, 42, 65, 88, 118, 133, 149, 165, 181, 197, 213

Remarks   None

In the W-CDMA Menu

Supported   All with Option 400

This softkey accesses a menu from which you can select parameters to configure uplink synchronization. Timing offset, slot delay, signal setup, and sync trigger mode are available selections.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 247

Remarks   None

Trigger Source

Supported   All with Option 001 or 002

This softkey accesses the trigger source menu. This menu enables you to adjust the trigger source between the front panel **Trigger** hardkey, a trigger command sent over the GPIB bus or LAN, or an external trigger applied to the PATT TRIG IN or AUX I/O connectors.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 19, 30, 39, 42, 67, 77, 88, 118, 133, 149, 165, 181, 197, 213, 247

Remarks   None

Trigger Sync Reply (RPS7)

Supported   All with Option 400

This softkey assigns the trigger sync reply to the selected rear panel AUX I/O output connector or BNC.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 267, 273

Remarks   The trigger sync reply can be assigned to several different output connectors. The **(RPS7)** designator refers to the remote SCPI command that corresponds to this softkey

Truncated PN9

Supported   All with Option 406

This softkey enters a truncated PN9 pattern in a Bluetooth setup. The truncated PN9 places the first 216 bits of a PN9 sequence into one packet of a single-packet waveform.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 239

Remarks   None

TS

Supported   All with Option 402

Use this softkey to select the training sequence (TS) as the active function. The preset hexadecimal value (when normal preset is selected) for TS reflects the current format, and appears in the TS field near the bottom of the text area of the display.

In the Enhanced Data Rates for GSM Evolution (EDGE) and Global System for Mobile Communications (GSM) formats, **TS** is also located in the Configure Dummy and Configure Sync menus.

In the Trans European Trunked Radio (TETRA) format, **TS** is also located in the uplink configure control 1 and control 2 menus, and in the downlink configure normal continuous and discontinuous menus.

Preset   *EDGE*: TSC0

                  GSM: TSC0 (Normal and Dummy), B962040F2D45761B (Sync)

                  TETRA: 343A74 (uplink normal, downlink normal continuous and
                              discontinuous)
                  2743A743 (uplink control 1 and 2)

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 117, 132, 212

Remarks   None

TSC0–TSC7

Supported   All with Option 402

Use these softkeys to select a training sequence code for EDGE or GSM. The hexadecimal values for each training sequence code are shown in Table 8.

Table 8

Training Sequence Code	EDGE Hexadecimal Value	GSM Hexadecimal Value
TSC0	3F3F9E49FFF3FF3F9E49	0970897
TSC1	3F3C9E49E493FF3C9E49	0B778B7
TSC2	39FFF24F24F3F9FFF24F	10EE90E
TSC3	39FF924F279FF9FF924F	11ED11E
TSC4	3FE4F3C93F9FFFE4F3C9	06B906B
TSC5	39FC93CF27FFF9FC93CF	13AC13A
TSC6	0F3F9249E4FFCF3F9249	29F629F
TSC7	093C927FE7F3C93C927F	3BC4BBC

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 120, 135

Remarks   None

TTI

Supported All with Option 400

This field displays the transport channel transmission time interval (TTI). TTI is the time interval for the product of BLK size and NBlock (BLKsize*NBlock) of data to be transmitted. The field is displayed for uplink and downlink configurations. The TTI indicates over how many consecutive frames the transport layer data is distributed. For example, if set to 40 msecs it indicates that the data is distributed over 4 frames.

Changing the value of this field will change the Bit Rate field value.

Preset   *Uplink DPCH*:   40ms

                   PRACH: 20ms

	Downlink: 10ms (all)
Range	10, 20, 40, or 80 msecs
Location	See *Key and Data Field Menu Maps* guide: Pages 259, 267, 271
Remarks	None

TTI Frame Pulse (RPS9)

Supported	All with Option 400

This softkey assigns the transmission time interval (TTI) frame pulse to the selected rear panel AUX I/O output connector or BNC.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 267
Remarks	The TTI frame pulse can be assigned to several different output connectors. The **(RPS9)** designator refers to the remote SCPI command that corresponds to this softkey.

Turbo

Supported	All with Option 400

Use this softkey to select turbo coding to be used for transport channel error protection coding. Turbo coding has better error rate performance than convolutional encoding.

Preset	N/A
Range	N/A
Location	This key is accessed by editing the Coding field. Refer to "Coding" on page 138 for more information.
Remarks	None

Turbo Coding

Supported	All with Option 401

This field indicates whether turbo coding is turned off or on. To toggle the current turbo coding operating state, highlight the Turbo Coding field and press the **Edit Item** softkey.

Turbo coding is available with the channel, radio configuration (RC), frame length (FL) and bit rate combinations shown in Table 9 on page 639:

Table 9

	Forward Link	Reverse Link	
Channel Type	**F-SCH1 F-SCH2**	**R-SCH1 R-SCH2**	
Valid Bit Rates	*RC 3:* 19.2 kbps 38.4 kbps 76.8 kbps *RC 4:* 19.2 kbps 38.4 kbps 76.8 kbps 153.6 kbps *RC 5:* 28.8 kbps 57.6 kbps 115.2 kbps	*FL 20, RC 3:* 19.2 kbps 38.4 kbps 76.8 kbps 153.6 kbps *FL 20, RC 4:* 28.8 kbps 57.6 kbps 115.2 kbps *FL 40, RC 3:* 19.2 kbps 38.4 kbps 76.8 kbps 153.6 kbps *FL 40, RC 4:* 14.4 kbps 28.8 kbps 57.6 kbps 115.2 kbps *FL 80, RC 3:* 19.2 kbps 38.4 kbps 76.8 kbps *FL 80, RC 4:* 7.2 kbps 14.4 kbps 28.8 kbps 57.6 kbps	

Preset   Off

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 259, 53, 59

Remarks   None

Tx Diversity

Supported   All with Option 400

Edit this data field to display a menu of Transmit Diversity types.

Preset   None

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 256

Remarks   None

Type

Supported   All with Option 400

This softkey accesses a menu enabling you to select the type of channel for insertion into the Edit Channel Setup table editor. The selection can be multiplied by the number set using the **Channels** softkey. Press **Done** to insert the information into the Edit Channel Setup table editor.

Preset   DPCH

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 253

Remarks   None

Type

Supported   All with Option 400

This data field displays the channel type for each channel in the Edit Channel Setup table editor. This field is displayed for both uplink and downlink setups.

Preset   DPCH for downlink and DPCCH for uplink.

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 21, 31, 43, 47, 104, 248

Remarks   None

U

UDI 64 kbps

Supported   All with Option 400

This softkey selects the unrestricted digital information (UDI) 64 kbps reference test setup as described in the 3GPP Technical Specification (TS 25.944 v3.5).

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 263

Remarks   This selection is one of several reference configurations available.

UDI ISDN (25.944 v4.1)

Supported   All with Option 400

This softkey configures the downlink DPCH to an unrestricted digital information (UDI) integrated services digital network (ISDN) reference measurement channel as per 3G TS25.944 v3.5 specifications.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 257

Remarks   This selection will affect the channel slot format.

                When this softkey is pressed, the value for the Data Type field in the highlighted row will change to ISDN.

UE Setup

Supported   All with Option 400

This softkey accesses the uplink table editor from which you can select and modify user equipment (UE) parameters. Highlight the data field you want to change and press the **Edit Item** key. Press a softkey, use the numeric keypad, or front panel knob to change values displayed in the table. Press the appropriate softkey to terminate the entry.

Preset   N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 262
Remarks	None

UN3/4 GSM Gaussian

Supported	All with Option 001 or 002

Use this softkey to select an Option UN3/4 delay-compatible GSM filter in the Select filter menu. This is a Gaussian filter with a fixed BbT of 0.300.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 17, 32, 44, 52, 58, 68, 78, 109, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264
Remarks	Options UN3 and UN4 are obsolete options that were offered for previous models of ESG. This filter remains in the current ESG firmware for backward compatibility.

Uncoded

Supported	All with Option 402

Use this softkey to select an uncoded channel which is a normal EDGE burst that carries only PN9 or PN15 bits.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 119
Remarks	None

Undefined

Supported	All with Option 400

This field entry, in the Compressed Mode Setup menu, indicates there is only one transmission gap within the transmission gap start distance (TGD).

Preset	N/A
Range	N/A

Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This selection is used with the TGD.

Undefined

Supported	All with Option 400

This softkey selects one transmission gap within the transmission gap pattern. The transmission gap start distance (TGD) field, in the Compressed Mode Setup menu, displays the selection.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 266
Remarks	This selection is one of several reference configurations available.

Up Control 1

Supported	All with Option 402

Use this softkey to select the uplink control subslot 1 as the timeslot type for the active timeslot.

You cannot mix uplink and downlink timeslots. If a timeslot is designated as downlink, it changes to uplink if you designate any other timeslot as uplink. The following table shows the timeslot type interchange to a frame designated as downlink when uplink is selected.

From Continuous Downlink Timeslot	**From Discontinuous Downlink Timeslot**	**To Uplink Timeslot**
Dn Custom Cont	Dn Custom Disc	Up Custom
Dn Normal Cont	Dn Normal Disc	Up Normal
Dn Sync Cont	Dn Sync Disc	Up Custom

When you select **Up Control 1** for a timeslot, the visual representation of the timeslot pattern updates.

Preset	N/A
Range	N/A

Location   See *Key and Data Field Menu Maps* guide: Page 212

Remarks   None

Up Control 2

Supported   All with Option 402

Use this softkey to select uplink control subslot 2 as the timeslot type for the active timeslot.

You cannot mix uplink and downlink timeslots. If a timeslot is designated as downlink, it changes to uplink if you designate any other timeslot as uplink. The following table shows the timeslot type interchange to a frame designated as downlink when uplink is selected.

From Continuous Downlink Timeslot	From Discontinuous Downlink Timeslot	To Uplink Timeslot
Dn Custom Cont	Dn Custom Disc	Up Custom
Dn Normal Cont	Dn Normal Disc	Up Normal
Dn Sync Cont	Dn Sync Disc	Up Custom

When you select **Up Control 2** for a timeslot, the visual representation of the timeslot pattern updates.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 212

Remarks   None

Up Custom

Supported   All with Option 402

Use this softkey to select an uplink custom timeslot type for the active timeslot. A custom timeslot is configured using an internally generated data pattern, a downloaded sequence of bits stored in a user file, or by supplying external data. Uplink timeslots cannot be mixed with downlink timeslots. If you already have any timeslots designated as downlink, they will be changed to uplink when any other timeslot is designated as

uplink. The custom timeslot is provided for users' flexibility; it is not a standard timeslot type.

From Continuous Downlink Timeslot	From Discontinuous Downlink Timeslot	To Uplink Timeslot
Dn Custom Cont	Dn Custom Disc	Up Custom
Dn Normal Cont	Dn Normal Disc	Up Normal
Dn Sync Cont	Dn Sync Disc	Up Custom

When you select **Up Custom** for a timeslot, the displayed representation of the timeslot pattern updates.

Preset

Range

Location   See *Key and Data Field Menu Maps* guide: Pages 148, 164, 212

Remarks

Up Normal

Supported   All with Option 402

Press this softkey to select uplink normal as the timeslot type for the active timeslot.

You cannot mix uplink and downlink timeslots. If a timeslot is designated as downlink, it changes to uplink if you designate any other timeslot as uplink. The following table shows the timeslot type interchange to a frame designated as downlink when uplink is selected.

From Continuous Downlink Timeslot	From Discontinuous Downlink Timeslot	To Uplink Timeslot
Dn Custom Cont	Dn Custom Disc	Up Custom
Dn Normal Cont	Dn Normal Disc	Up Normal
Dn Sync Cont	Dn Sync Disc	Up Custom

When you select **Up Normal** for a timeslot, the visual representation of the timeslot pattern updates.

Preset   N/A

Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 212
Remarks	None

Upper Case Off On

Supported	All with Option 400

This softkey toggles between upper and lower case letters.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 21, 50, 66, 70, 73, 106, 246
Remarks	N/A

Up TCH

Supported	All with Option 402

Use this softkey to select uplink traffic channel (mobile to base station) as the timeslot type for the active timeslot. Uplink timeslots cannot be mixed with downlink timeslots. If you already have any timeslots designated as downlink, they will be changed to uplink when any other timeslot is designated as uplink.

When you select **Up TCH** for a timeslot, the visual representation of the timeslot pattern updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 148, 164
Remarks	None

Up TCH All

Supported	All with Option 402

Use this softkey to select uplink traffic channel (mobile to base station) as the timeslot type for all timeslots. When you select **Up TCH**, the frame pattern is bursted with RF power turning off during off timeslots.

When you select **Up TCH All**, the visual representation of the timeslot pattern updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 148, 164
Remarks	None

Up VOX

Supported	All with Option 402

Use this softkey to select uplink voice activated transmission channel as the timeslot type for the active timeslot.

When you select **Up VOX** for a timeslot, the visual representation of the timeslot pattern updates.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 164
Remarks	None

Update Display Cycle End Cont

Supported	All with Option UN7

Use this softkey to set the display update mode for BER measurement results.

Cycle End	This selection displays the results of the measurement when the cycle is completed.
Cont	This selection displays the intermediate results of the measurement in addition to results when the cycle is completed.

Preset	Cont
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 6
Remarks	None

Update in Remote Off On

Supported   All

This softkey turns display updating on and off. The signal generator's display updates and displays the results of remote commands when this softkey is set to on. However, command processing time is faster when the softkey is set to off.

On	When on, remote commands update the signal generator's display.
Off	When off, remote commands will not update the display.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   This key is not affected by a preset. However, it resets to off when the power is cycled. This mode affects the signal generator when it is in remote mode.

Up/Down

Supported   All with Option 400

This softkey sets the transport power control (TPC) pattern to repeatedly send consecutive up and consecutive down commands. The number of successive down and up commands is defined in the TPC Pat Steps field of the **PhyCH Setup** menu.

Preset   N/A

Range   N/A

Location   This key is accessed by editing the TPC Pat field. Refer to "TPC Pattern" on page 622 for more information.

Remarks   None

Uplink MCS-1

Supported   All with Option 402

Use this softkey to select an uplink packet data traffic channel with block type 5 that is in compliance with GSM 05.03.

Preset   N/A

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Page 134
Remarks	None

Uplink MCS-5

Supported	All with Option 402

Use this softkey to select an uplink packet data traffic channel with block type 9 that is in compliance with GSM 05.03. The MCS5 radio block contains a single RLC data block of 448 bits with a code rate of 0.37. This ensures that the maximum amount of Forward Error Correction (FEC) has been applied to the data.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 119
Remarks	None

Uplink MCS-9

Supported	All with Option 402

Use this softkey to select a uplink packet data traffic channel with block type 13 that is in compliance with GSM 05.03. The MCS9 radio block contains two RLC data blocks of 592 bits with a code rate of 1.0. No Forward Error Correction (FEC) has been applied to the data, thus reducing the overhead and enabling the fastest data rate transmission.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 119
Remarks	None

Uplink Timing Advance

Supported	All with Option 300

This softkey enables you to set the uplink timing advance. Setting the uplink timing advance allows you to compensate for the insertion of equipment, such as fading simulators, into the uplink RF path.

Preset	0
Range	*GSM*: –500 to 10000 bits

EDGE: −500 to 10000 symbols

Location   See *Key and Data Field Menu Maps* guide: Page 8, 8

Remarks   None

User File

Supported   All with Option 001 or 002

Use this softkey to display the catalog of binary/bit files stored in the signal generator's memory. You can select a custom file from this catalog for the data pattern or burst shape.

User files should exactly fill the data fields in a framed transmission (create the files to fill an integer number of frames). If the end of a user file does not coincide with the end of a frame, data is truncated. For more information, see the *User's Guide*.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 74, 76, 109, 116, 119, 122, 131, 134, 137, 147, 150, 153, 163, 166, 169, 179, 182, 185, 195, 198, 201, 211, 214, 217

Remarks   None

User FIR

Supported   All with Option 001 or 002

Use this softkey to display the catalog of user-defined FIR filter files stored in the signal generator's memory, and to access a menu for selecting a file.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 52, 58, 68, 78, 109, 120, 135, 151, 167, 183, 199, 215, 249, 256, 264

Remarks   None

User Flatness

Supported   All

This softkey enables you to specify that only user flatness correction files be listed in the

catalog of files currently displayed.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 3, 234
Remarks	None

User FSK

Supported   All with Option 001 or 002

Use this softkey to display the catalog of frequency shift keying (FSK) files stored in the signal generator's memory. You can select a custom file from this catalog for an FSK modulation by scrolling through the listed files, highlighting the desired file, and pressing the **Select File** softkey.

The selected file name and type is displayed under the **Select** softkey.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 75, 121, 136, 152, 168, 184, 200, 216
Remarks	None

User I/Q

Supported   All with Option 001 or 002

Use this softkey to display the catalog of I/Q files stored in the signal generator's memory. You can select a custom file from this catalog for an I/Q modulation by scrolling through the listed files, highlighting the desired file, and pressing the **Select File** softkey.

The selected file name and type is displayed under the **Select** softkey.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 75, 121, 136, 152, 168, 184, 200, 216
Remarks	None

Utility

Supported   All

Use this softkey to access a menu of choices that enables you to view and erase error messages, access the GPIB/RS-232 LAN menu, adjust the display, access a menu of adjustments for the signal generator, set the help mode and power on state, and access the memory catalog menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   None

UW

Supported   All with Option 400

Use this softkey to select the unique word (UW) as the active function. The preset hexadecimal value (when normal preset is selected) for UW reflects the PHS format, and the current value for UW is displayed in the UW field near the bottom of the text area of the display.

Preset   *TCH (downlink)*: 3D4C

               TCH (uplink): E149

               SYNC (downlink): 050EF2993

               SYNC (uplink): 6B899AF0

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 180

Remarks   **UW** is also located in the uplink Configure TCH menu and in the downlink and uplink Configure SYNC menus.

UWCDMA

Supported   All

Press this softkey to set the current catalog type to uplink W-CDMA (UWCDMA) and display the catalog of UWCDMA files.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 237

Remarks   None

V

View Different Header

Supported   All with Option 001 or 002

This softkey accesses a menu from which you can select another header file to view.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 93

Remarks   N/A

View Details

Supported   All

This softkey enables you to view detailed information about the highlighted test. Refer to the troubleshooting section in the service guide for more information.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   This is intended for use by service personnel.

View Next Error Message

Supported   All

Use this softkey to display the next error message in the queue. (The first error message is the oldest error.) There may be more than one error message in the queue; the number of error messages is displayed along with the first message. Press any key to exit the Error Info menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   None

View Previous Error Message

Supported   All

Use this softkey to display the newest error message first. Continue pressing this key to view additional error messages in order of newest to oldest. Press any key to exit the Error Info menu.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   None

View Test Info

Supported   All

Use this softkey to display details of the self tests. Refer to the calibration guide for more information.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 235

Remarks   This is intended for use by service personnel.

W

Walsh

Supported   All with Option 401

This field displays the current Walsh code (orthogonal code) for the selected channel. To change the Walsh code, highlight the Walsh field, press the **Edit Item** softkey and enter a new code number. If the text is grayed out in this field, you cannot change the Walsh code.

Table 10 lists the CDMA2000 Walsh code ranges and preset values by channel type, radio configuration (RC) and bit rate.

Table 10

Channel Type	Walsh Code		Comment
	Preset	**Range**	
Forward Link			
F-PICH	0	–	Not editable
F-SYNCH	32	0–63	
F-FCH	10	RC 1,2,3,5: 0–63 RC 4: 0–127	
OCNS	61	0–63	
F-PCH	1	0–63	

Table 10

Channel Type	Walsh Code		Comment
	Preset	**Range**	
F-SCH1	12	RC3 19.2 kbps: 0–31 38.4 kbps: 0–15 76.8 kbps: 0–7 153.6 kbps: 0–3 RC4 19.2 kbps: 0–63 38.4 kbps: 0–31 76.8 kbps: 0–15 153.6 kbps: 0–7 307.2 kbps: 0–3 RC5 28.8 kbps: 0–31 57.6 kbps: 0–15 115.2 kbps: 0–7 230.4 kbps: 0–3	
F-SCH2	14	RC3 19.2 kbps: 0–31 38.4 kbps: 0–15 76.8 kbps: 0–7 153.6 kbps: 0–3 RC4 19.2 kbps: 0–63 38.4 kbps: 0–31 76.8 kbps: 0–15 153.6 kbps: 0–7 307.2 kbps: 0–3 RC5 28.8 kbps: 0–31 57.6 kbps: 0–15 115.2 kbps: 0–7 230.4 kbps: 0–3	
F-QPCH	80	0–127	

Table 10

Channel Type	Walsh Code		Comment
	Preset	**Range**	
Reverse Link			
R-PICH	0	–	Not editable
R-DCCH	8	–	Not editable
R-FCH	4	–	Not editable
R-SCH1	1	1, 2	
R-SCH2	2	2, 6	
R-CCCH	2	–	Not editable
R-EACH	2	–	Not editable

Preset   Refer to Table 10

Range   Refer to Table 10

Location   See *Key and Data Field Menu Maps* guide: Pages 21, 31, 47, 53, 59

Remarks   None

Walsh Code

Supported   All with Option 401

This softkey selects the Walsh code as a column by which the table will be sorted.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 22, 25, 31, 43

Remarks   None

Waveform Catalog Types

Supported   All

This softkey accesses a menu from which you can select an ARB waveform file type.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 237
Remarks	None

Waveform Length

Supported   All with Option 403

This softkey opens a menu of waveform length choices. The longer the waveform, the more accurate the statistics (at the expense of memory usage and time taken to generate the waveform).

Preset	524288 points
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 12
Remarks	The current waveform length is displayed under the **Waveform Length** softkey.

Waveform Length *n* Short Codes

Supported   All with Option 401

This softkey adjusts the waveform length for CDMA modulation. The upper limit is adjusted based on the oversample ratio to fit the signal within the available memory.

Preset	1 short code
Range	1–16 short codes (depends on oversample ratio and available memory)
Location	See *Key and Data Field Menu Maps* guide: Page 17
Remarks	None

Waveform Runtime Scaling

Supported   All with Option 001 or 002

This softkey enables you to set the scaling value to be applied to the waveform while it is playing. Scaling can be used to get the best dynamic range without overflowing the I and Q digital to analog converters.

Preset	70.00 %

Range   1.00–100.00%

Location   See *Key and Data Field Menu Maps* guide: Page 91

Remarks   This scaling function does not change the data in the waveform file.

Waveform Segments

Supported   All with Option 001 or 002

This softkey accesses a menu and table editor from which you can store and load
waveform segments to or from the non-volatile waveform memory (NVWFM) and
perform various waveform utilities such as markers, scaling, and clipping.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 88, 89

Remarks   None

Waveform Sequences

Supported   All with Option 001 or 002

This softkey accesses a menu and table editor from which you can build waveform
sequences, edit existing sequences, and/or delete sequences.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 88

Remarks   The **Edit Selected Waveform Sequence** and
                   Show Waveform Sequence Contents softkeys are active only when a
                   sequence is highlighted.

Waveform Statistics

Supported   All with Option 001 or 002

Use this softkey to access a menu for viewing the available statistics for the selected
waveform.

Preset   N/A

Range   N/A

Location	See *Key and Data Field Menu Maps* guide: Pages 12, 13, 29, 39, 41, 65, 91, 103, 244, 246
Remarks	To activate the softkey, make sure that the selected dual arbitrary waveform (Dual Arb) generator option (such as, AWGN, Multitone, Digital Modulation, and so on) is turned on.

Waveform Utilities

Supported	All with Option 001 or 002

This softkey accesses a menu of operations that can be applied to the selected waveform segment. Waveform utilities include: scaling, clipping, and view waveform statistics.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 16, 29, 41, 65, 91, 103, 246
Remarks	Viewing waveform statistics is not available for all modulation formats.

W-CDMA

Supported	All with Option 400

This softkey appears in more than one location.

Selecting the WCDMA Filter

This softkey selects the WCDMA pre-modulation filter in the Select (filter) menu. Pressing the **WCDMA** softkey selects this FIR filter and returns you to the Filter menu.

Preset	WCDMA
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 17, 28, 40, 68, 249
Remarks	If the **I/Q Mod Filter Manual Auto** softkey is set to 2.1 MHz, the WCDMA filter will include compensation for droop and phase of the 2.1 MHz hardware filter. If the **I/Q Mod Filter Manual Auto** softkey is set to 40.0 MHz or Through, the compensation is removed, and the WCDMA filter becomes identical to a root-raised cosine filter with an alpha of 0.22.

In the Catalog of Files

Press this softkey to set the current catalog type to WCDMA and display the catalog of WCDMA files.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 238
Remarks	Catalog type selection is not affected by a preset or by a power cycle.

W-CDMA

Supported	All with Option 400

Use this softkey to select a menu of W-CDMA personalities.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Page 102, 243
Remarks	None

W-CDMA Define

Supported	All with Option 400

This softkey displays the W-CDMA Define menu for the uplink or downlink. This menu allows you to define a W-CDMA signal. With the **Multicarrier Off On** softkey set to On, this softkey is replaced with the **Multicarrier Define** softkey.

Preset	
Range	
Location	See *Key and Data Field Menu Maps* guide: Page 244
Remarks	Refer to "Multicarrier Define" on page 404 for more information.

W-CDMA Off On

Supported	All with Option 400

This softkey selects the operating state of the wideband CDMA (W-CDMA) waveform generator.

Off	This selection turns off the W-CDMA waveform generator.
On	This selection turns on the W-CDMA waveform generator and a waveform based on the current settings is generated. This waveform resides in volatile memory.

Preset   Off

Range   N/A

Location See *Key and Data Field Menu Maps* guide: Page 244, 256, 245

Remarks N/A

W-CDMA Select

Supported All with Option 400

This softkey accesses a menu of channel selections that can be used to configure the signal generator for W-CDMA. The menu will change, depending on whether uplink or downlink has been selected. In downlink, 1 DPCH channel is the default selection. The **Multicarrier Off On** softkey will change the menu selections for downlink. In uplink, a DPPCH channel is the default selection.

NOTE	The **Multicarrier Off On** softkey and related functions are accessed only when using the W-CDMA downlink setup.

Preset   1 DPCH

Range   N/A

Location See *Key and Data Field Menu Maps* guide: Page 244

Remarks Refer to "Multicarrier Define" on page 404 for more information.

Multicarrier Off

Supported All with Option 400

The **W-CDMA Select** softkey menu displays selections for a pre-defined channel setup, stored custom state or test models.

Preset   1 DPCH

Range   N/A

Location See *Key and Data Field Menu Maps* guide: Page 244

Remarks This is the default condition when downlink is selected.

Multicarrier On

Supported   All with Option 400

Displays the multicarrier W-CDMA Select menu, where you can select a 2, 3, or 4 multicarrier setup or a stored custom W-CDMA multicarrier setup.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 244

Remarks   With multicarrier on, the W-CDMA Select softkey will automatically show **2 Carriers** as the selection.

WFM1

Supported   All with Option 001,002

Press this softkey to specify that only ARB waveform files be listed in the catalog of files.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Pages 93, 237

Remarks   Catalog type selection is not affected by a preset or by a power cycle.

White Pixels Screen Test

Supported   All

This softkey enables you to set all of the pixels on the display to white. Press the **Local** hardkey to return the display to normal operation.

Preset   N/A

Range   N/A

Location   See *Key and Data Field Menu Maps* guide: Page 232

Remarks   This key is provided for factory use in testing the display.

Window

Supported   All with Option 001 or 002

Use this softkey to access a menu for applying a windowing function to the selected filter.

The default is to use no windowing which optimizes the passband response (EVM). Several windowing selections are provided in this menu which can be applied to smooth the filter's transition to zero. Windowing improves out of band performance (ACP) but simultaneously degrades EVM.

The selected window type is displayed under the **Window** softkey.

Preset	None
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 24, 38, 48, 55, 61, 71, 87, 114, 129, 145, 161, 177, 193, 209, 225, 254, 260, 269
Remarks	None

Wireless Networking

Supported	All with Option 406

This softkey enables you to access a menu of installed wireless LAN standards.

Preset	N/A
Range	N/A
Location	See *Key and Data Field Menu Maps* guide: Pages 102, 239
Remarks	None