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**ADVANTEST**<sup>®</sup>  
ADVANTEST CORPORATION

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***R3267 Series OPT08***

***Rx Control Option***

***Operation Manual***

**MANUAL NUMBER FOE-8370665C00**

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***Applicable models***

***R3264***

***R3267***

***R3273***

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## Safety Summary

To ensure thorough understanding of all functions and to ensure efficient use of this instrument, please read the manual carefully before using. Note that Advantest bears absolutely no responsibility for the result of operations caused due to incorrect or inappropriate use of this instrument.

If the equipment is used in a manner not specified by Advantest, the protection provided by the equipment may be impaired.

- **Warning Labels**

Warning labels are applied to Advantest products in locations where specific dangers exist. Pay careful attention to these labels during handling. Do not remove or tear these labels. If you have any questions regarding warning labels, please ask your nearest Advantest dealer. Our address and phone number are listed at the end of this manual.

Symbols of those warning labels are shown below together with their meaning.

**DANGER:** Indicates an imminently hazardous situation which will result in death or serious personal injury.

**WARNING:** Indicates a potentially hazardous situation which will result in death or serious personal injury.

**CAUTION:** Indicates a potentially hazardous situation which will result in personal injury or a damage to property including the product.

- **Basic Precautions**

Please observe the following precautions to prevent fire, burn, electric shock, and personal injury.

- Use a power cable rated for the voltage in question. Be sure however to use a power cable conforming to safety standards of your nation when using a product overseas.
- When inserting the plug into the electrical outlet, first turn the power switch OFF and then insert the plug as far as it will go.
- When removing the plug from the electrical outlet, first turn the power switch OFF and then pull it out by gripping the plug. Do not pull on the power cable itself. Make sure your hands are dry at this time.
- Before turning on the power, be sure to check that the supply voltage matches the voltage requirements of the instrument.
- Be sure to plug the power cable into an electrical outlet which has a safety ground terminal. Grounding will be defeated if you use an extension cord which does not include a safety ground terminal.
- Be sure to use fuses rated for the voltage in question.
- Do not use this instrument with the case open.
- Do not place objects on top of this product. Also, do not place flower pots or other containers containing liquid such as chemicals near this product.

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## Safety Summary

- When the product has ventilation outlets, do not stick or drop metal or easily flammable objects into the ventilation outlets.
- When using the product on a cart, fix it with belts to avoid its drop.
- When connecting the product to peripheral equipment, turn the power off.

- **Caution Symbols Used Within this Manual**

Symbols indicating items requiring caution which are used in this manual are shown below together with their meaning.

**DANGER:** Indicates an item where there is a danger of serious personal injury (death or serious injury).

**WARNING:** Indicates an item relating to personal safety or health.

**CAUTION:** Indicates an item relating to possible damage to the product or instrument or relating to a restriction on operation.

- **Safety Marks on the Product**

The following safety marks can be found on Advantest products.



: ATTENTION - Refer to manual.



: Protective ground (earth) terminal.



: DANGER - High voltage.



: CAUTION - Risk of electric shock.

- **Replacing Parts with Limited Life**

The following parts used in the instrument are main parts with limited life.

Replace the parts listed below after their expected lifespan has expired.

Note that the estimated lifespan for the parts listed below may be shortened by factors such as the environment where the instrument is stored or used, and how often the instrument is used.

The parts inside are not user-replaceable. For a part replacement, please contact the Advantest sales office for servicing.

There is a possibility that each product uses different parts with limited life. For more information, refer to Chapter 1.

Main Parts with Limited Life

Part name	Life
Unit power supply	5 years
Fan motor	5 years
Electrolytic capacitor	5 years
LCD display	6 years
LCD backlight	2.5 years
Floppy disk drive	5 years

- **Hard Disk Mounted Products**

The operational warnings are listed below.

- Do not move, shock and vibrate the product while the power is turned on. Reading or writing data in the hard disk unit is performed with the memory disk turning at a high speed. It is a very delicate process.
- Store and operate the products under the following environmental conditions.
  - An area with no sudden temperature changes.
  - An area away from shock or vibrations.
  - An area free from moisture, dirt, or dust.
  - An area away from magnets or an instrument which generates a magnetic field.
- Make back-ups of important data. The data stored in the disk may become damaged if the product is mishandled. The hard disc has a limited life span which depends on the operational conditions. Note that there is no guarantee for any loss of data.

- **Precautions when Disposing of this Instrument**

When disposing of harmful substances, be sure dispose of them properly with abiding by the state-provided law.

- Harmful substances:
- (1) PCB (polycarbon biphenyl)
  - (2) Mercury
  - (3) Ni-Cd (nickel cadmium)
  - (4) Other
    - Items possessing cyan, organic phosphorous and hexadic chromium and items which may leak cadmium or arsenic (excluding lead in solder).

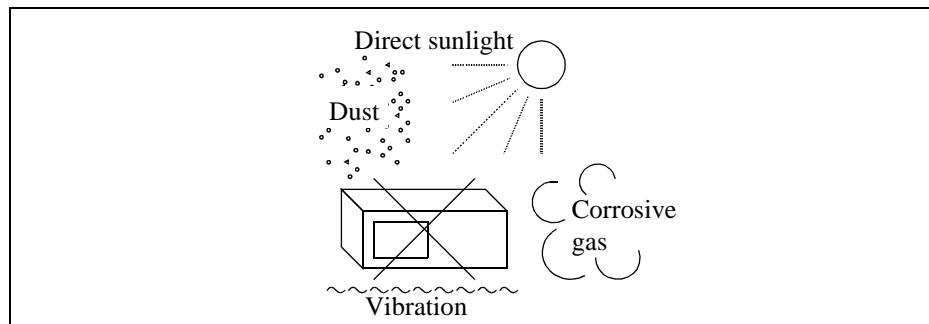
Example: fluorescent tubes, batteries

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# Environmental Conditions

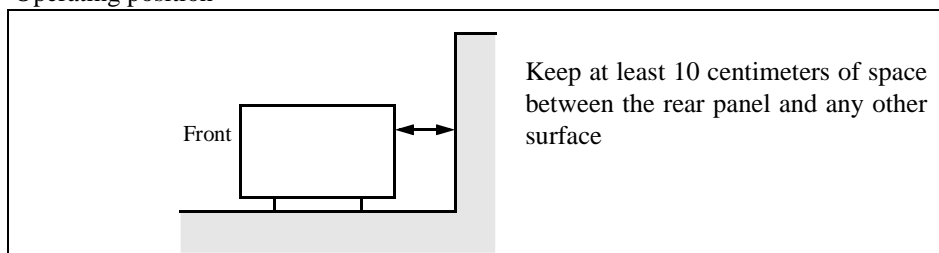
This instrument should be only be used in an area which satisfies the following conditions:

- An area free from corrosive gas
- An area away from direct sunlight
- A dust-free area
- An area free from vibrations



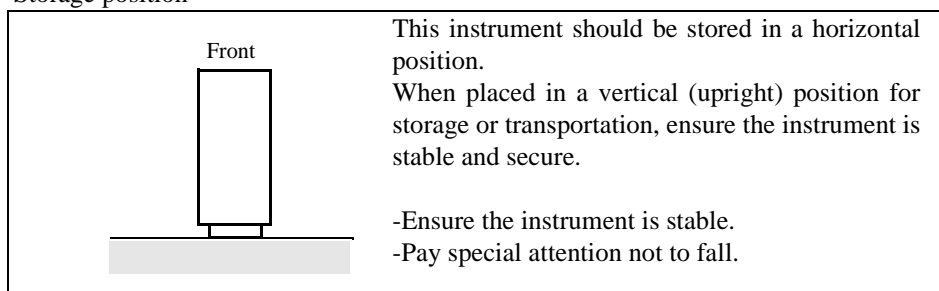
**Figure-1 Environmental Conditions**

- Operating position



**Figure-2 Operating Position**

- Storage position



**Figure-3 Storage Position**

This instrument can be used safely under the following conditions:

- Altitude of up to 2000 m
- Installation Categories II
- Pollution Degree 2

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# 1 OUTLINE OF THE PRODUCT

This chapter has summarized the option.

## 1.1 Outline

When the spectrum analyzer R3267 Series is connected to test a receiver using the R3560, R3561 or R3562, this option enables you to set up the R3560, R3561 or R3562 from the panel on the R3267 Series in order to measure the receiver from the panel on the R3267 Series.

<Features>

- (1) Various settings of R3560, R3561 or R3562 can be performed from the front panel of R3267 Series.  
Parameters that can be set:  
Frequency, level, modulation type, etc.
- (2) Measurement of R3560, R3561 or R3562 can be performed from the front panel of R3267 Series.  
Also, the measurement results can be shown on the display of R3267 Series.

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**CAUTION:**

1. ***R3560, R3561 or R3562 GPIB code is not supported in this option. Also, this option does not provide special GPIB commands. Therefore, R3560, R3561 or R3562 cannot be controlled by using R3560, R3561 or R3562 GPIB command from GPIB port of R3267 Series, and also the function of this option cannot be controlled from GPIB.***  
***When you control R3267 Series and R3560, R3561 or R3562 from GPIB by using external personal computer, connect the external computer to both GPIB ports and control them individually.***
  2. ***Some functions may not be supported depending on the version of the R3560 main unit. Before using, contact the nearest ADVANTEST Field Office or representative.***
-

## 2 BEFORE STARTING

This chapter provides a description of the confirmation of accessories and the connection to R3560, R3561 or R3562.

### 2.1 Confirmation of the accessories

Check the quantity and rating of standard accessories to assure their conformance with Table 2-1.

**Table 2-1 Standard accessories**

Items	Specification (Type)	Quantity	Remarks
R3560 interface cable	A01274	1	
R3267 Series OPT08 Operation Manual	ER3267/73OPT08	1	English

*Note: Please inform ADVANTEST the type when you order additional accessories.*

2.2 How to connect to R3560, R3561 or R3562

2.2 How to connect to R3560, R3561 or R3562

2.2.1 Connecting the R3267 Series to R3560

- (1) Connections on the rear panel

Connect the cable (see note \*1) from the serial I/O connector on the R3267 Series to the serial I/O connector on the R3560 as shown in Figure 2-1.

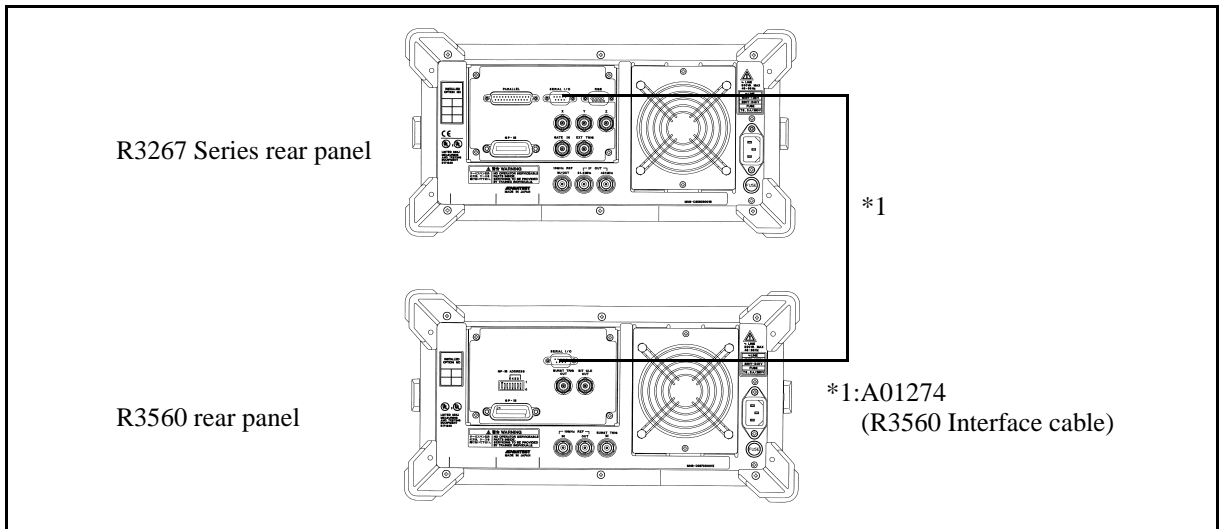


Figure 2-1 Connection between R3267 Series and R3560 (Rear panel)

- (2) Connections on the front panel

Connect the cable (see note \*2) from the INPUT 50W on the R3267 Series to the TO ANALYZER 50W on the R3560 as shown in Figure 2-2.

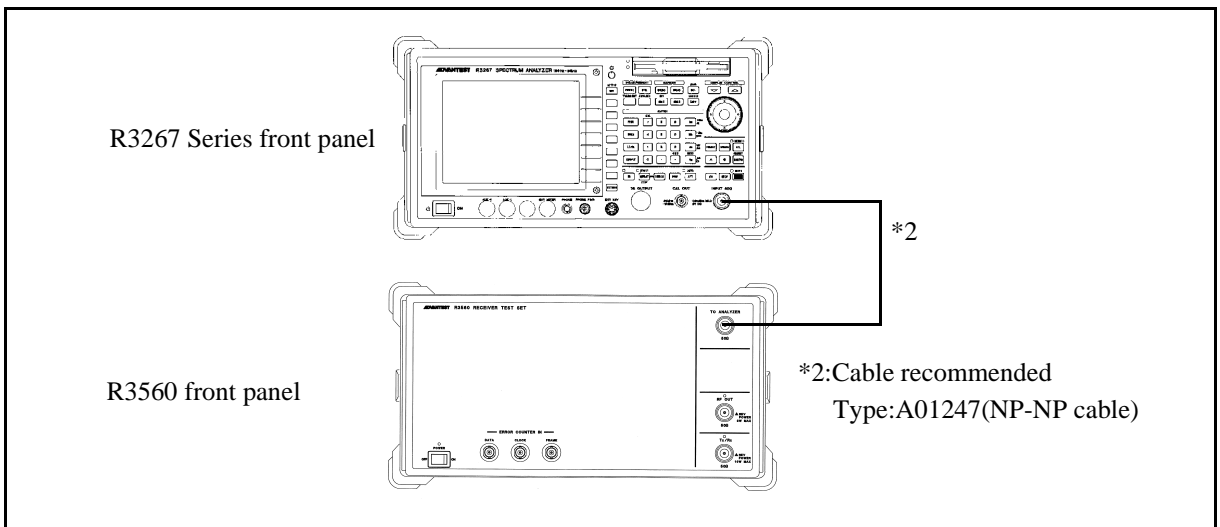


Figure 2-2 Connection between R3267 Series and R3560 (Front panel)

### 2.2.2 Connecting the R3267 Series to R3561 or R3562

Connections on the rear panels.

Connect the cable (see note \*1) from the serial I/O connector on the R3267 Series to the serial I/O connector on the R3561 or R3562 as shown in Figure 2-3 which shows the R3267 Series and R3561 rear panels.

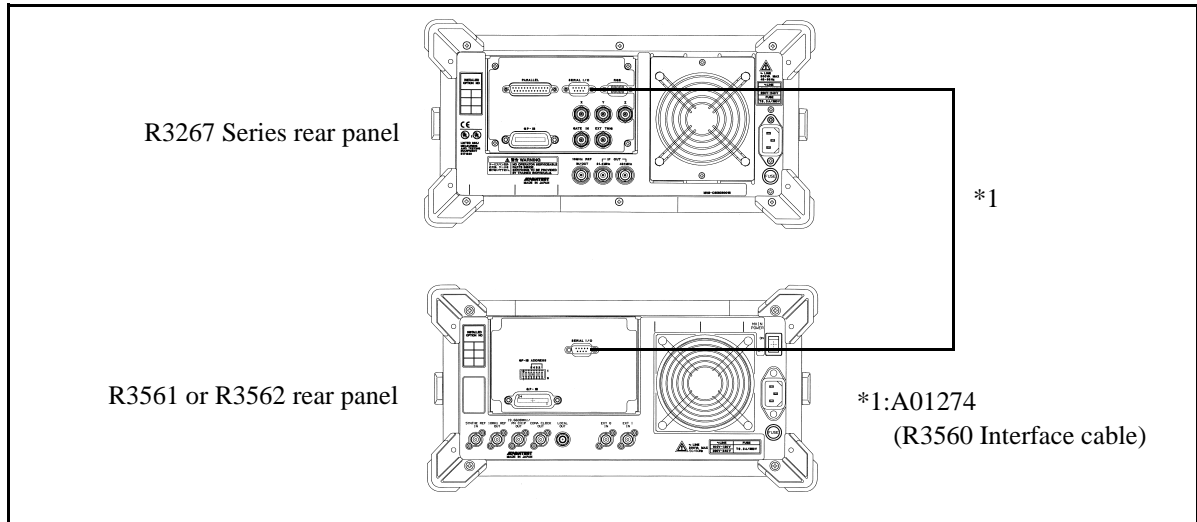


Figure 2-3 Connection between R3267 Series and R3561 or R3562 (Rear panel)

2.3 Serial port setting

2.3 Serial port setting

Pressing **CONFIG** and **RS232** displays the serial port setting menu.

Before using OPT08, check that Rx Control is selected. If a mode other than Rx Control is selected, change the mode to Rx Control.

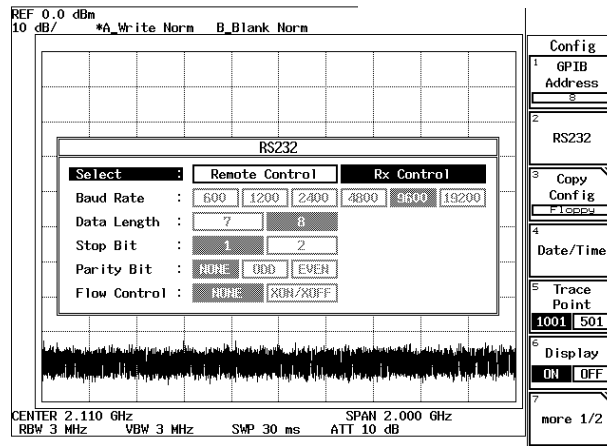


Figure 2-4 Serial port selection screen



### 3 HOW TO OPERATE THE R3560

This chapter describes all key functions of the R3560.

#### 3.1 Outline

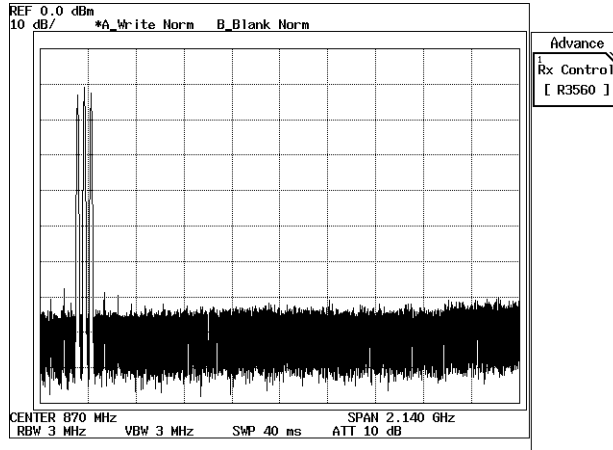


Figure 3-1 Initial screen

The operation menu of R3560 is placed under the **ADVANCE**.

Press **ADVANCE** and **Rx Control [R3560]**, R3267 Series becomes R3560 control mode and displays Initial screen shown in Figure 3-2 to set and measure R3560.

In this mode, operation with only soft-key or dialog box becomes effective except **FREQ** and **LEVEL**. The operation with **SPAN** and so on which can be used in ordinary operation mode cannot be performed. In order to return to the ordinary operation mode, press **POWER**, **UTIL**, **TRANSIENT** or **Quit**.

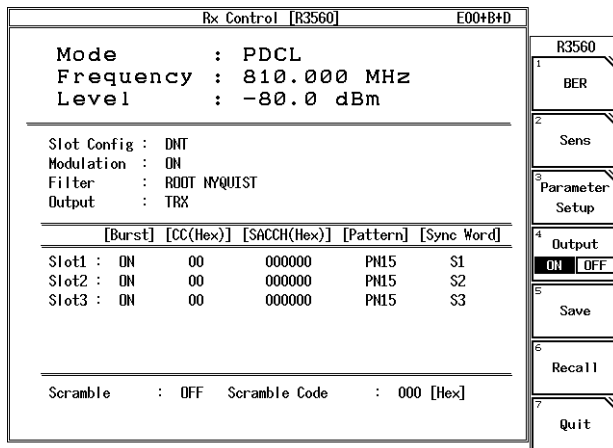


Figure 3-2 Initial screen (R3560 mode)

## 3.2 Reference

**3.2 Reference**

This section describes the functions of all panel and soft keys.

- Menu Index: Use this index as a key index to Chapter 3.
- Menu Map: Shows a list of hierarchical menus on a panel key basis.
- Functional Description: Explains the functions of the panel and soft keys.

The panel keys are arranged in alphabetical order.

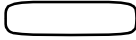
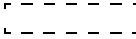
**3.2.1 Menu Index**

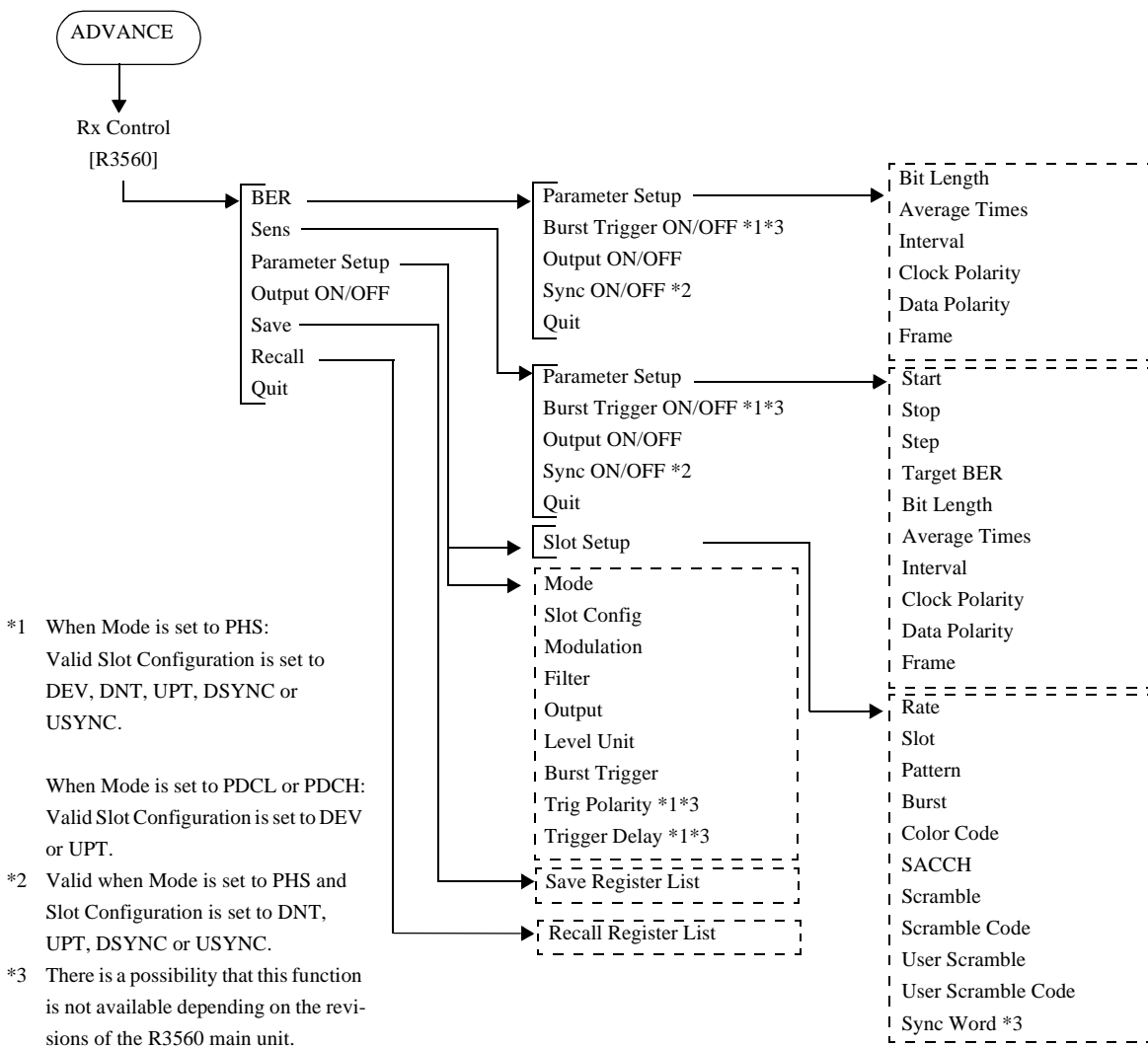
This menu index is used to easily find the keys described in Chapter 3.

<u>Operation Key</u>	<u>Pages</u>	<u>Operation Key</u>	<u>Pages</u>
Average Times .....	3-3, 3-6, 3-8	Rx Control [R3560] .....	3-3
BER .....	3-3, 3-5	SACCH .....	3-3, 3-13
Bit Length .....	3-3, 3-6, 3-8	Save .....	3-3, 3-16
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Frame .....	3-3, 3-6, 3-8	Step .....	3-3, 3-8
FREQ .....	3-4	Stop .....	3-3, 3-8
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LEVEL .....	3-4	Sync Word .....	3-3, 3-15
Level Unit .....	3-3, 3-10	Target BER .....	3-3, 3-8
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Output ON/OFF .....	3-3, 3-6, 3-8, 3-15	User Scramble Code .....	3-3, 3-14
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Recall .....	3-3, 3-17		
Recall Register List .....	3-3		

### 3.2.2 Menu Map

All R3560 soft menus, which are under the **ADVANCE** key, are shown below.

**NOTE:**  Represents a panel key.  
 Represents a dialog box.  
 Unless otherwise noted, the soft menus are shown.



## 3.2 Reference

**3.2.3 Functional Description**

- (1) Output frequency setting

**FREQ**

Sets output frequency.

The frequencies which can be set are different depending on the system mode.

PDCL: PDC 800 MHz band

PDCH: PDC 1.5 GHz band

DNT: Downlink traffic channel

UPT: Uplink traffic channel

PHS: 1.9GHz band

- (2) Output level setting

**LEVEL**

Sets output level.

Maximum output levels are different depending on RF terminal or Tx/Rx terminal.

Terminal	Maximum output	Minimum output	Output step
Tx/Rx	-7dBm	-125Bm	0.1dB
RF	+6dBm	-125 Bm	0.1dB

## (3) BER measurement

Press **SINGLE** or **REPEAT(START/STOP)** to start the measurement. Press **REPEAT(START/STOP)** to stop the current measurement.

**BER**

Enters into BER (Bit Error Rate) measurement mode.

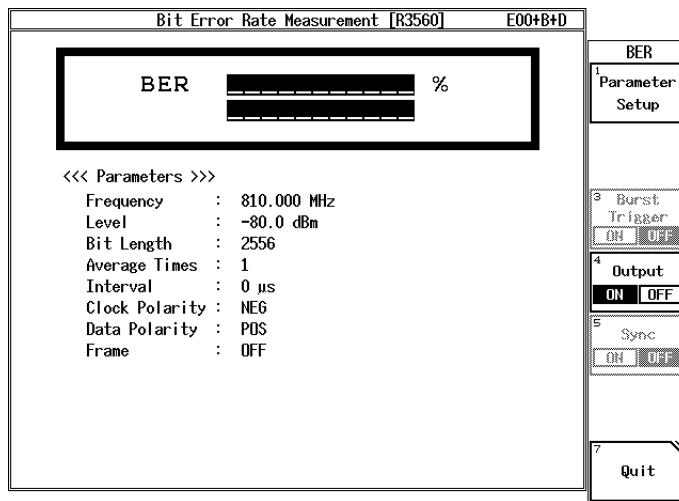


Figure 3-3 BER measurement screen

**Parameter Setup**

Dialog box for BER measurement parameter setting is displayed to set bit length or average number of times, etc.

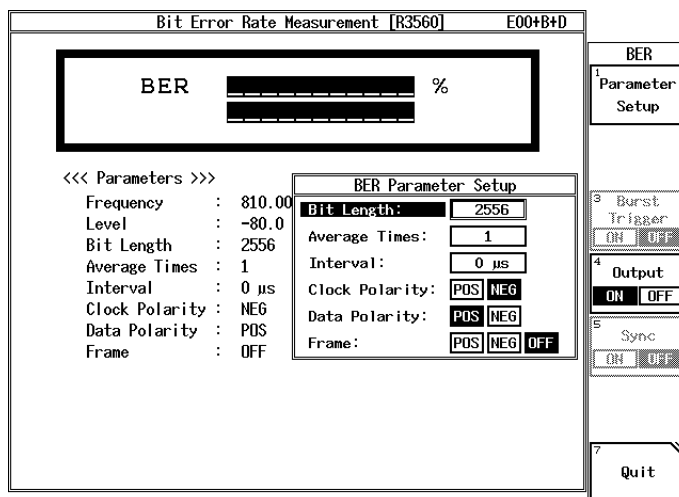


Figure 3-4 Dialog box for BER measurement screen

### 3.2 Reference

#### ***Bit Length***

Set BER measurement time with the bit length.  
The setting range of the bit length is 1000 to 1000000 bits.

#### ***Average Times***

Set measurement averaging count.  
The setting range of the averaging count is 1 to 32 times.

#### ***Interval***

Set interval time between receipt of measurement start from R3560 and actual measurement start.  
When average measurement is specified, it also can be used as the interval time between the end of the measurement and the start of the next measurement. Refer to R3560 operation manual for details.  
The setting range of the interval time is 0.00 to 1.00 second which has steps of 0.01 second (10 ms.).

#### ***Clock Polarity***

Select from which edge you get data, the rising edge of the signal from BER clock terminal or the falling edge.  
POS: Rising  
NEG: Falling

#### ***Data Polarity***

Select if you invert BER DATA terminal data or not.  
POS: Positive logic (not invert)  
NEG: Negative logic (invert)

***Frame*** Perform the timing control of TCH frame. If you use the TCH frame timing signal that is entered from the FRAME terminal for BER measurement, specify a logic of the TCH frame timing.  
OFF: Not use.  
POS: Positive logic  
NEG: Negative logic

#### ***Burst Trigger ON/OFF***

Select ON or OFF to make the Burst Trigger function enabled or disabled.

#### ***Output ON/OFF***

Switches the signal of the output terminal to ON/OFF.

#### ***Sync ON/OFF***

Switch the synchronization burst output of PHS to ON/OFF.  
This is available only on conditions that the system mode is PHS and that the slot pattern is DNT/UPT.  
When ON is selected, the synchronization burst frame is output. When OFF is selected, the output of the synchronization burst frame is stopped.

#### ***Quit***

Quits BER measurement mode.

## (4) Receiver sensitivity (Sens) measurement

Press SINGLE or REPEAT(START/STOP) to start the measurement. Press REPEAT(START/STOP) to stop the current measurement.

*Sens*

Enters into the receiver sensitivity measurement mode.

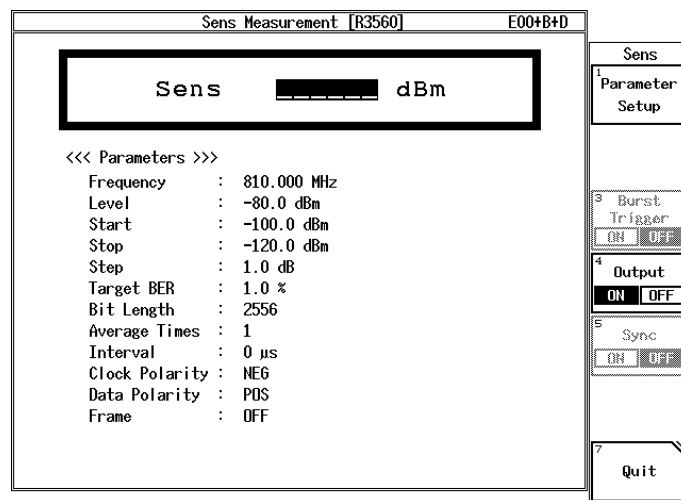


Figure 3-5 Sens measurement screen

*Parameter Setup*

Displays a dialog box to set the receiver sensitivity measurement parameter and sets output level, etc to start the receiver sensitivity measurement.

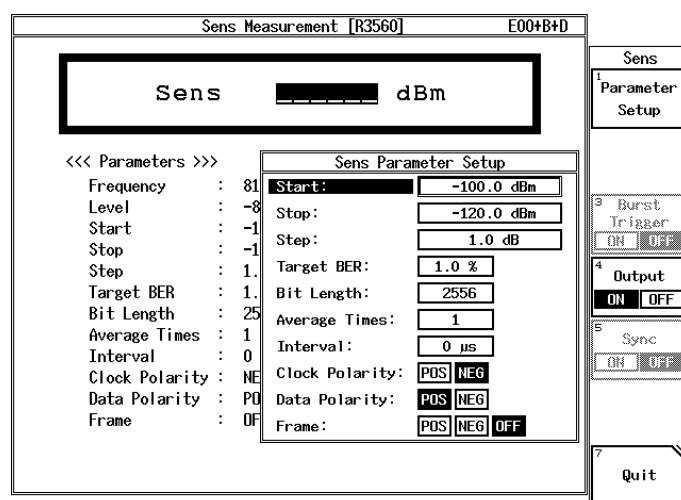


Figure 3-6 Dialog box screen for Sens Parameter setting

### 3.2 Reference

**Start** Set output level (the search upper limit value) to start sensitivity measurement.

The relationship between the search upper limit value and the search lower limit value should be;  
Search upper limit value > Search lower limit value.

**Stop** Set output level (the search lower limit value) to end sensitivity measurement.

**Step** Set the width of output level change.

**Target BER**

Specify BER point to search. The setting range of the search points is 0% to 5% which has steps of 0.1%.

**Bit Length**

Set the time for BER measurement with bit length.  
The setting range is 1000 to 1000000 bits.

**Average Times**

Set the averaging times for BER measurement.  
The setting of averaging times is between 1 and 32 times.

**Interval**

Set R3560 interval time for BER measurement.  
The setting range is 0.00 to 1.00 s. which has steps of 0.01s. (10 ms.).

**Clock Polarity**

Select at which edge you get the data for BER measurement, the rising edge of the signal from BER clock terminal or the falling edge.

POS: Rising

NEG: Falling

**Data Polarity**

Select to invert or not to invert BER DATA terminal data for BER measurement.

POS: Positive logic (not invert)

NEG: Negative logic (invert)

**Frame** Control the timing of TCH frame for BER measurement.

If you use the TCH frame timing signal that is entered from the FRAME terminal for BER measurement, specify a logic of the TCH frame timing.

OFF: Not use.

POS: Positive logic

NEG: Negative logic

**Burst Trigger ON/OFF**

Select ON or OFF to make the Burst Trigger function enabled or disabled.

**Output ON/OFF**

Switches the signal of the output terminal to ON/OFF.



**Sync ON/OFF**

Switch the synchronization burst output of PHS to ON/OFF.

This is available only on conditions that the system mode is PHS and that the slot pattern is DNT/UPT.

When ON is selected, the synchronization burst frame is output.

When OFF is selected, the output of the synchronization burst frame is stopped.

**Quit**

Quits the receiver sensitivity measurement mode.

(5) **System mode and slot setting**

Sets R3560 system mode and slot configuration, etc.

**Parameter Setup**

The dialog box is displayed on the screen to set the system mode and the slot configuration, etc.

\* How to operate the dialog-box

The operation to select the set items and set parameters is performed using the data knob and step keys in the same manner as the standard dialog-box in the R3267 Series.

[Burst]	[CC(Hex)]	[SACCH(Hex)]	[Pattern]	[Sync Word]
Slot1 : ON	00	000000	PN15	S1
Slot2 : ON	00	000000	PN15	S2
Slot3 : ON	00	000000	PN15	S3

Scramble : OFF Scramble Code : 000 [Hex]

**Figure 3-7 SETUP setting screen**

**Mode** Set R3560 system mode.  
 PDCL: PDC system 800 MHz band  
 PDCH: PDC system 1.5 GHz band  
 PHS: PHS system

## 3.2 Reference

### **Slot Config**

Sets slot pattern.

FIL: FILL pattern

DEV: Frame for device evaluation

DNT: Downlink traffic channel

UPT: Uplink traffic channel

DSYNC:

Downlink synchronization burst frame (PHS only)

USYNC:

Uplink synchronization burst frame (PHS only)

### **Modulation**

Switches modulation and non-modulation of the output.

ON: Modulation signal ( $\pi/4$  DQPSK)

OFF: Non-modulation signal (cw)

### **Filter** Switches the base band filter.

ROOT NYQUIST:

Root Nyquist filter

NYQUIST:

Nyquist filter

### **Output** Switches the signal output terminal.

TRX: Tx/Rx terminal

RF: RF terminal

### **Level Unit**

Selects the setting of signal level and the display unit.

dBm: Sets the level unit to dBm.

dB $\mu$ Vemf: Sets the level unit to dB $\mu$ Vemf.

### **Burst Trigger** (\*1)

Selects ON or OFF to make the Burst Trigger function enabled or disabled. This setting can be made from the SoftKey menu in the BER/SENS measurement screen.

ON: Enables the Burst Trigger function.

OFF: Disables the Burst Trigger function.

### **Trig Polarity**

Selects POS or NEG to make the rising edge or the falling edge of the input signal of the R3560 Burst Trigger in terminal enabled.

POS: Selects the rising edge.

NEG: Selects the falling edge.

- \*1: The timing to output the R3560 RF signal is controlled by synchronizing with the input signal of R3560 Burst Trigger in terminal. This function takes effect when the modulation is in the ON state and settings of the system mode and the slot configuration are as shown in Table 3-2 Conditions.

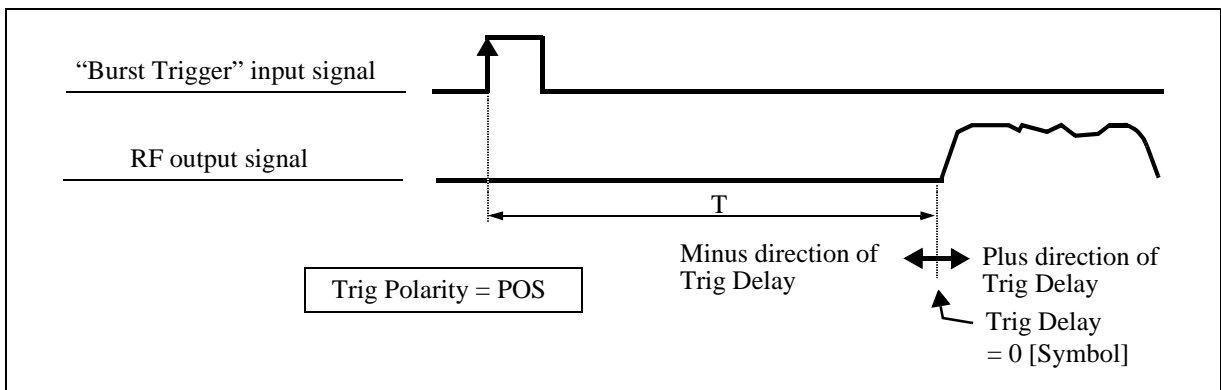
**Trigger Delay**

Sets the delay from the input signal of the R3560 Burst Trigger in terminal in symbols.

When a signal effective to the Burst Trigger in terminal is gotten, delay can be changed within  $\pm 10$  symbols (resolution of 0.1 symbols) based on the time "T" (see Table 3-1 and Figure 3-8) defined according to the system mode and the rate.

**Table 3-1 Time defined according to the system mode and the rate**

System mode	Rate	Time "T" defined according to the system mode
PDCL/PDCH	FULL	20[ms]
	HALF	40[ms]
PHS		5[ms]

**Figure 3-8 Timing of RF signal output vs the Burst Trigger input signal****Table 3-2 Effective setting condition in Burst Trigger functions**

System mode	Slot configuration					
	FIL	DEV	DNT	UPT	DSYNC	USYNC
PDCL	×	○	×	○	Not set	
PDCH			○			
PHS			○		○	○

○ : Effective    × : Ineffective

## 3.2 Reference

*Slot Setup*

The dialog box to set modulation pattern and communication rate in the slot is displayed.

Slot	Rate	Pattern	Burst	Color Code	SACCH	Scramble	Scramble Code	Sync Word
Slot1	ON	00	000000	PN15	S1			
Slot2	ON	00	000000	PN15	S2			
Slot3	ON	00	000000	PN15	S3			

Scramble : OFF Scramble Code : 000 [Hex]

**Figure 3-9 SLOT setting screen**

- Rate** Switch the communication rate.  
The setting can be performed only when the system mode is PDCL/PDCH.  
FULL: Full rate  
HALF: Half rate
- Slot** Specify to which slot the Pattern, Burst, Color Code, and SACCH are set.
- Pattern** Select a pattern of the user information transmitting channel of traffic channel for PDC, information channel I of traffic channel for PHS, and pseudo random pattern (frame for device evaluation or continuous pseudo random pattern).  
PN9: PN9 pattern  
PN15: PN15 pattern  
ALL0: ALL 0 pattern  
ALL1: ALL 1 pattern

**Burst** (\*1)

Switch ON/OFF of the current slot which was selected at Slot.

ON: Sets the slot to ON.

OFF: Sets the slot to OFF.

**Color Code** (\*1, \*2)

Set the color code in the slot.

The setting can be performed only when the system mode is PDCL/PDCH.

The setting range is 0 to FF in hexadecimal.

**SACCH** (\*2)

Set slow associated control channel.

The setting can be performed only when the slot configuration is DNT/UPT.

The setting range is as Table 3-3 with hexadecimal.

**Table 3-3 SACCH settable range**

System mode	Slot configuration	Setting range of SACCH	
		Minimum value	Maximum value
PDCL/PDCH	Downlink traffic channel: DNT Uplink traffic channel: UPT	0 (Hexadecimal) 0 (Hexadecimal)	1FFFFF (Hexadecimal) 7FFF (Hexadecimal)
PHS	Downlink traffic channel: DNT Uplink traffic channel: UPT	0 (Hexadecimal) 0 (Hexadecimal)	FFFF (Hexadecimal) FFFF (Hexadecimal)

**Scramble** (\*1)

The setting to perform or not to perform scramble control to traffic channel for PDC communication, traffic channel, and synchronization burst for PHS communication.

The ranges of the scramble are different depending on the communication system, uplink/downlink, and so on. Refer to R3560 operation manual for details.

ON: The scramble control is performed.

OFF: The scramble control is not performed.

\*1: The setting may be limited depending on the state of the slot configuration. Refer to R3560 Operation Manual Slot Configuration for details.

\*2: The input is performed in hexadecimal. The input of A to F in hexadecimal is performed as follows with the shift key.

Input value Operation

A: Shift→0

B: Shift→1

C: Shift→2

D: Shift→3

E: Shift→4

F: Shift→5

**Scramble Code (\*2)**

Set scramble pattern.

The setting ranges are different depending on the system mode.

**Table 3-4 Scramble pattern setting range**

System mode	Setting range	
	Minimum value	Maximum value
PDCL/PDCH	0 (Hexadecimal)	1FF (Hexadecimal)
PHS	0 (Hexadecimal)	3FF (Hexadecimal)

**User Scramble**

Set to do user scramble or not to do user scramble to the physical slot for communication.

The setting can be performed only when the system mode is PHS.

ON: The user scramble is performed.

OFF: The user scramble is not performed.

**User Scramble Code (\*2)**

Set user scramble pattern to the traffic channel.

The setting range of the user scramble pattern is 0 to FFFF in hexadecimal.

**PS (\*2) Calling identification pattern is set.**

The setting can be performed only when the system mode is PHS and the slot configuration is USYNC/DSYNC.

The setting range is 0 to FFFFFFFF in hexadecimal.

**CS (\*2) Called identification pattern is set.**

The setting can be performed only when the system mode is PHS and the slot configuration is USYNC/DSYNC.

The setting range is 0 to 3FFFFFFFFF in hexadecimal.

\*2: The input is performed in hexadecimal. The input of A to F in hexadecimal is performed as follows with the shift key.

Input value	Operation
A:	Shift → 0
B:	Shift → 1
C:	Shift → 2
D:	Shift → 3
E:	Shift → 4
F:	Shift → 5

**Sync Word**

Specify the slot and change the synchronization word.  
 This command can be set when the system mode is PDCL or PDCH and the slot configuration is UPT or DNT.  
 Setting value of the synchronization word is shown in Table 3-5.

**Table 3-5 Setting value of the synchronization word**

Sync word No.	20-bit synchronization word pattern (hexadecimal)	
	DNT	UPT
S1	87A4B	785B4
S2	9D236	62DC9
S3	81D75	7E28A
S4	A94EA	56B15
S5	5164C	AE9B3
S6	4D9DE	B2621
S7	31BAF	CE450
S8	1E56F	E1A90
S9	E712C	18ED3
S10	FBC1F	043E0
S11	8279E	7D861
S12	98908	676F7

*Note: S1 to S12 in the table correspond to the 20-bit synchronization word pattern numbers of STD-27.*

- (6) Output ON/OFF setting

**Output ON/OFF**

Switches the signal of the output terminal to ON/OFF.

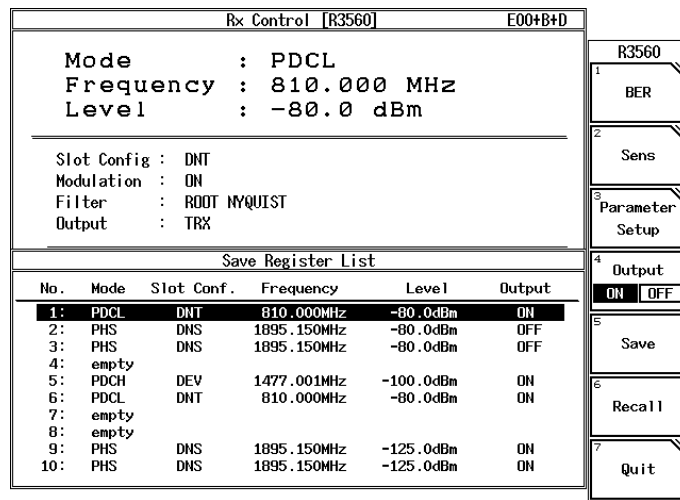
3.2 Reference

(7) Saving

Saves all currently-set conditions to the R3560 backup memory according to the specified memory number.

**Save**

The save operation screen is displayed. To select the memory number and to execute data saving, use a knob.



**Figure 3-10 Save operation screen**

In the save operation screen, the major settings inside the R3560 backup memory are displayed.

Details on the settings are explained below.

- No:** The memory number is displayed.
- Mode:** The set system mode is displayed.
- Slot conf:** The set pattern of the slot is displayed.
- Frequency:** The set output frequency is displayed. (The unit is fixed to MHz.)
- Level:** The set output level is displayed. (The unit is fixed to dBm.)
- Output:** The set condition (ON or OFF) of the data output is displayed.

---

**NOTE:** When empty is displayed after the column of No., it shows that no condition is saved to that memory number.

---



## (8) Recalling

Re-sets all set conditions of the memory according to the specified memory number of the R3560 backup memory.

**Recall**

The recall operation screen is displayed. To select the memory number and to execute data recalling, use a knob.

The explanation of the recall operation screen is the same as that of the save operation screen. Refer to the explanation in the above (a).

## (9) Measurement error message displaying function

With this function, measurement error messages in the Bit Error Rate measurement (hereafter called BER measurement) and the receiver sensitivity measurement (hereafter called SENS measurement) are displayed.

The cause that the BER or the SENS measurement was not properly executed is displayed. The measurement error messages and details on errors are as follows.

## 1. Sync error

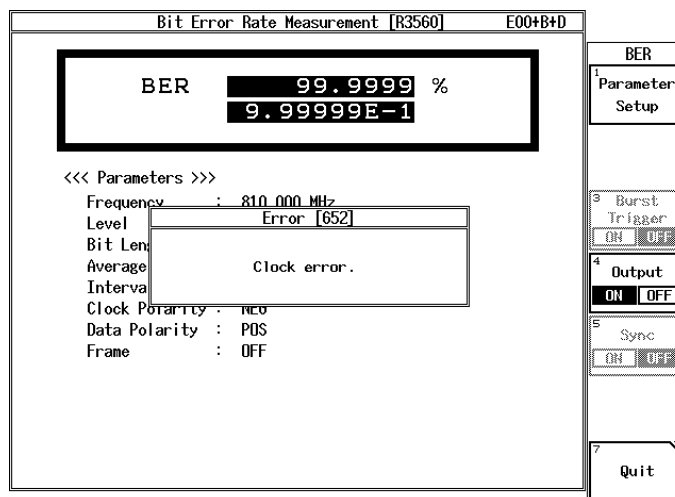
Synchronization cannot be taken with the data input from the DATA terminal of the BER measurement.

## 2. Clock error

A clock is not input to the clock terminal of the BER measurement.

## 3. SensPoint is not found

The point of BER (Target BER) specified in the Sens measurement is not found. (This message is output only in the Sens measurement.)

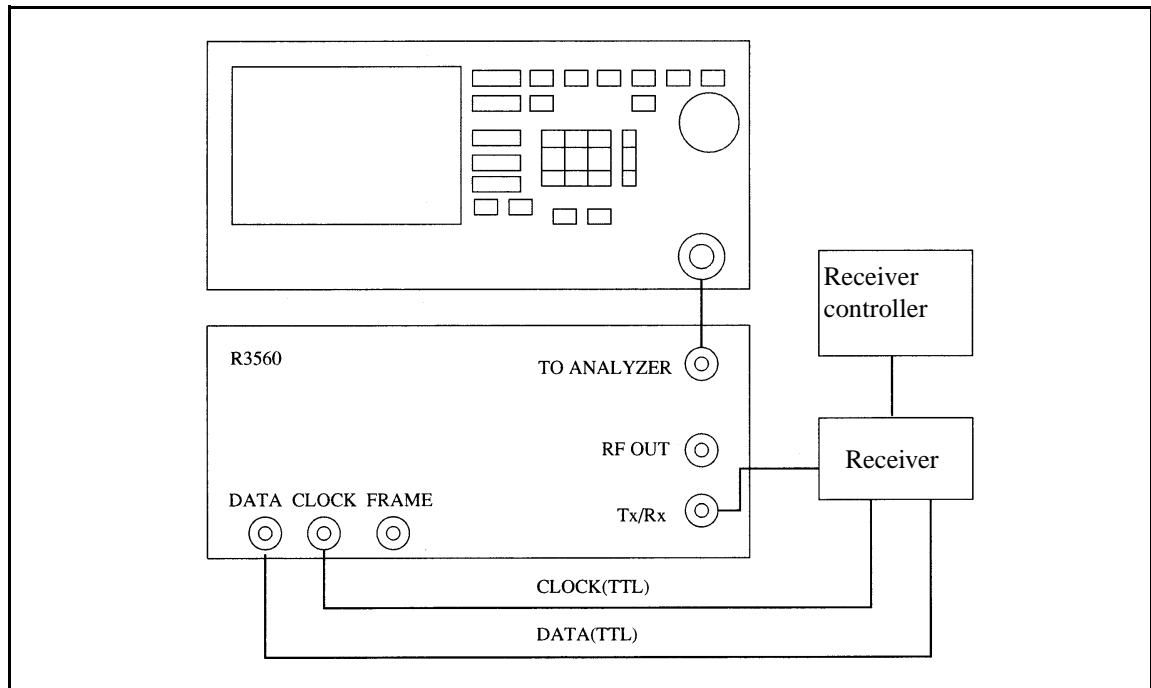


**Figure 3-11 BER measurement screen (in occurrence of Sync error)**

## 3.3 Example of the measurement (BER measurement)

## 3.3 Example of the measurement (BER measurement)

Here explains the outline of the operation with a measurement example of a receiver which has a control mode to receive physical channel for down communication.



**Figure 3-12 BER measurement connection**

Follow the procedure below

1. Connect as shown in Figure 3-12.
2. Pressing **SETUP** displays dialog box for system mode and slot configuration setting.  
In this box, the selection of each parameter setting value with the data knob and the movement between parameters with the step key can be performed.  
After selecting 1 parameter with the data knob, in order to define the setting, press the data knob or **HZ**.  
Set system mode by using this dialog box. Set slot configuration in downlink traffic channel (DNT) as well.
3. Pressing **SLOT** displays dialog box for the setting in the slot.  
By operating this dialog box, slot No., slot TCH pattern, PN 9 pattern, etc. for the measurement are set. Set SACCH, scramble, etc. as needed.  
After the setting in the slot, press **return** twice and return the menu to the top step of **Rx Test** menu.
4. Press **FREQ** and set the frequency to test R3560 frequency.

3.3 Example of the measurement (BER measurement)

5. Press **LEVEL** and set R3560 output level to a suitable level for the receiver.
6. Set the receiver in a receivable mode using the receiving controller.
7. Pressing **BER** and **BER Param** displays dialog box for BER counter setting. Set demodulation data, polarity of demodulation clock, average times, interval, etc.
8. Pressing **REPEAT** or **SINGLE** starts the measurement.

## 4 HOW TO OPERATE THE R3561

This chapter describes all key functions of the R3561.

### 4.1 Outline

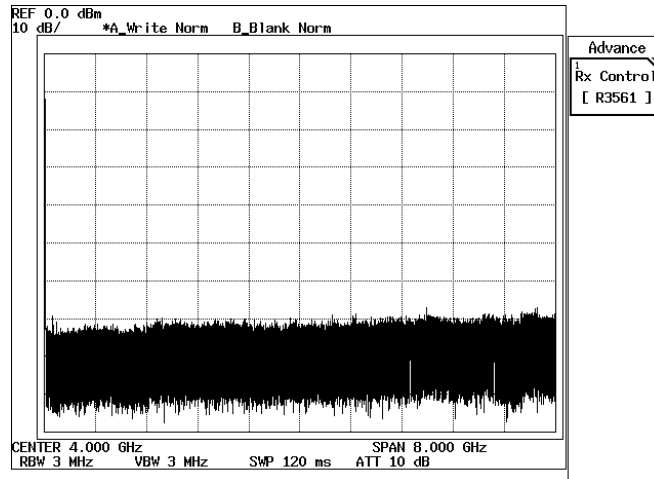


Figure 4-1 Initial screen

The operation menu of R3561 is placed under the **ADVANCE**.

Press **ADVANCE** and **Rx Control [R3561]**, R3267 Series becomes R3561 control mode and displays Initial screen shown in Figure 4-2 to set and measure R3561.

In this mode, operation with only soft-key or dialog box becomes effective except **FREQ** and **LEVEL**. The operation with **SPAN** and so on which can be used in ordinary operation mode cannot be performed. In order to return to the ordinary operation mode, press **POWER**, **UTIL**, **TRANSIENT** or **Quit**.

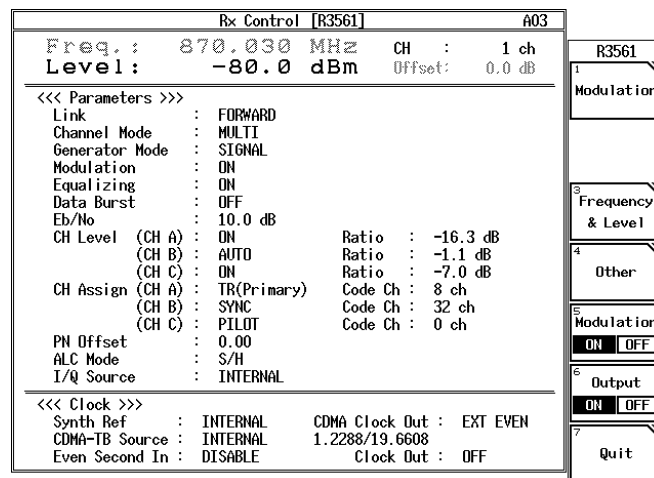


Figure 4-2 Initial Screen (R3561 mode)

## 4.2 Reference

**4.2 Reference**

This section describes the functions of all panel and soft keys.

- Menu Index: Use this index as a key index to Chapter 4.
- Menu Map: Shows a list of hierarchical menus on a panel key basis.
- Functional Description: Explains the functions of the panel and soft keys.

The panel keys are arranged in alphabetical order.

**4.2.1 Menu Index**

This menu index is used to easily find the keys described in Chapter 4.

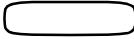
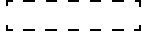
<u>Operation Key</u>	<u>Pages</u>	<u>Operation Key</u>	<u>Pages</u>
1.2288/19.6608 Clock Out .....	4-5	Generator Mode .....	4-4, 4-5,
10MHz Ref Adj.....	4-5		4-7
ALC Mode .....	4-5, 4-12	I/Q Source .....	4-4, 4-5,
AWGN .....	4-5, 4-15		4-8
AWGN Cal Corr ON/OFF .....	4-5, 4-15	LEVEL.....	4-6
Cal/Test.....	4-5, 4-14	Level Offset .....	4-5, 4-12
CDMA Clock Out .....	4-5	Level Ratio.....	4-4, 4-5,
CDMA-TB Source .....	4-5		4-7
CH A .....	4-4, 4-5,	Level Setup .....	4-5, 4-11
	4-7	Link .....	4-4, 4-5,
CH B .....	4-4, 4-5,		4-6
	4-7	Menu Assistant ON/OFF .....	4-4, 4-9
CH C .....	4-4, 4-5,	Menu Assistant Setup .....	4-4, 4-9
	4-7	Modulation .....	4-4, 4-6,
CH Start Freq. ....	4-5, 4-11		4-12
CH Start No.....	4-5, 4-11	Modulation ON/OFF.....	4-4, 4-5,
CH Step Freq.....	4-5, 4-11		4-10, 4-12,
Channel Assign.....	4-4, 4-8		4-16
Channel Mode .....	4-4, 4-5,	Modulator.....	4-5, 4-15
	4-7	Modulator Cal Corr ON/OFF.....	4-5, 4-15
Clock Setup.....	4-5, 4-13	Offset Value .....	4-5, 4-12
Code Channel.....	4-4, 4-9	Other .....	4-4, 4-13
Data Burst .....	4-4, 4-5,	Output ON/OFF .....	4-4, 4-5,
	4-7		4-10, 4-12,
Data Rate.....	4-4, 4-9		4-17
Eb/No [CH A/No] .....	4-4, 4-5,	PN Offset .....	4-4, 4-5,
	4-7		4-8
Equalizing .....	4-4, 4-5,	Preset.....	4-5, 4-16
	4-7	Quit .....	4-4
Even Second In .....	4-5	Recall .....	4-5, 4-16
Frame A Setup .....	4-4, 4-8	Recall Register List.....	4-5
Frame B Setup.....	4-4, 4-8	Rx Control [R3561] .....	4-4
FREQ .....	4-6	Save.....	4-5, 4-16
Freq Input.....	4-5, 4-11	Save Register List .....	4-5
Frequency & Level.....	4-4, 4-11	Self Test .....	4-5, 4-15
Frequency Setup.....	4-5, 4-11	Step Size.....	4-5, 4-11,
General Setup.....	4-4, 4-6		4-12

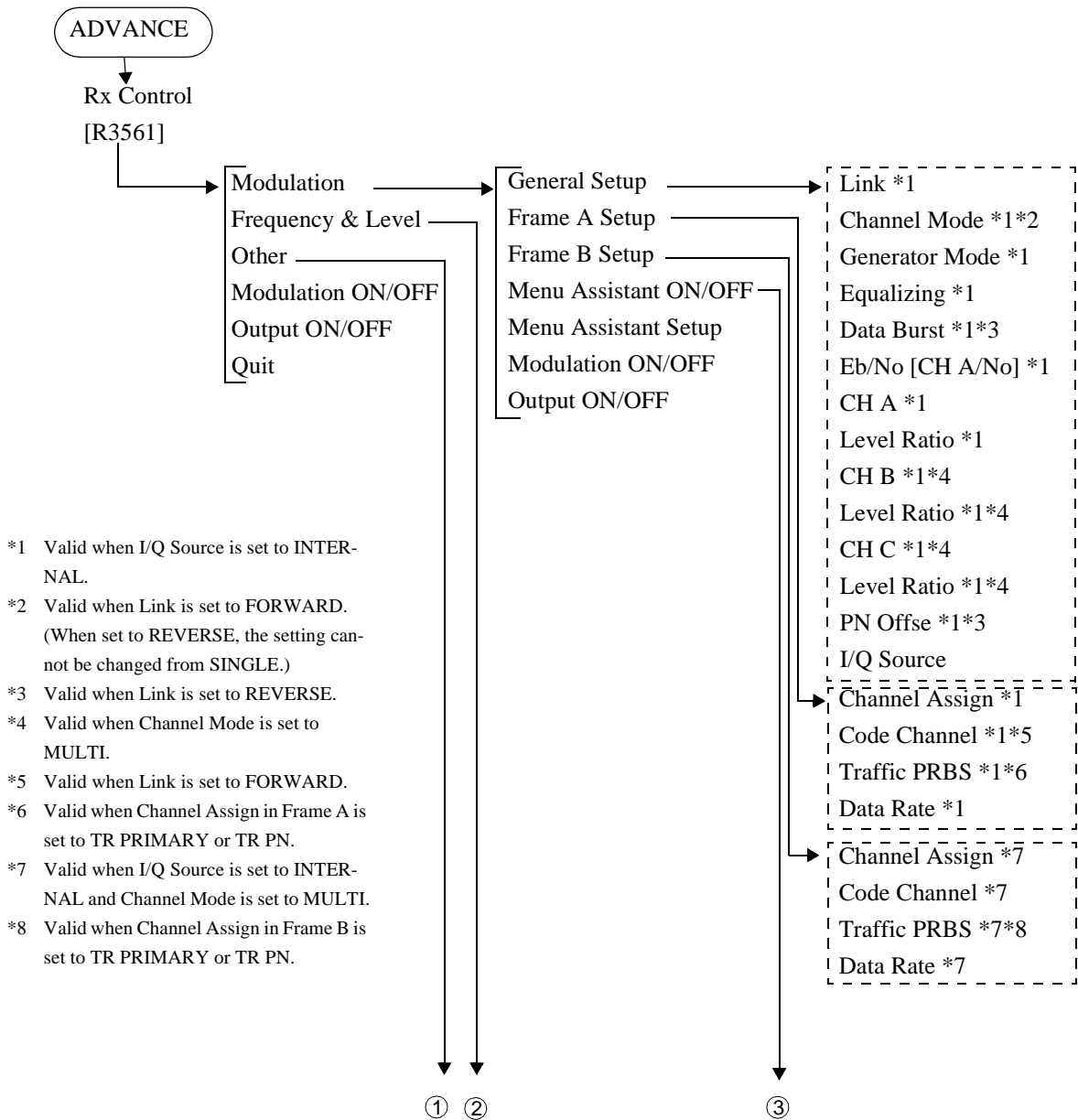
Synth Ref .....	4-5
Traffic PRBS .....	4-4, 4-9
Unit .....	4-5, 4-12
Upper Limit .....	4-5, 4-12

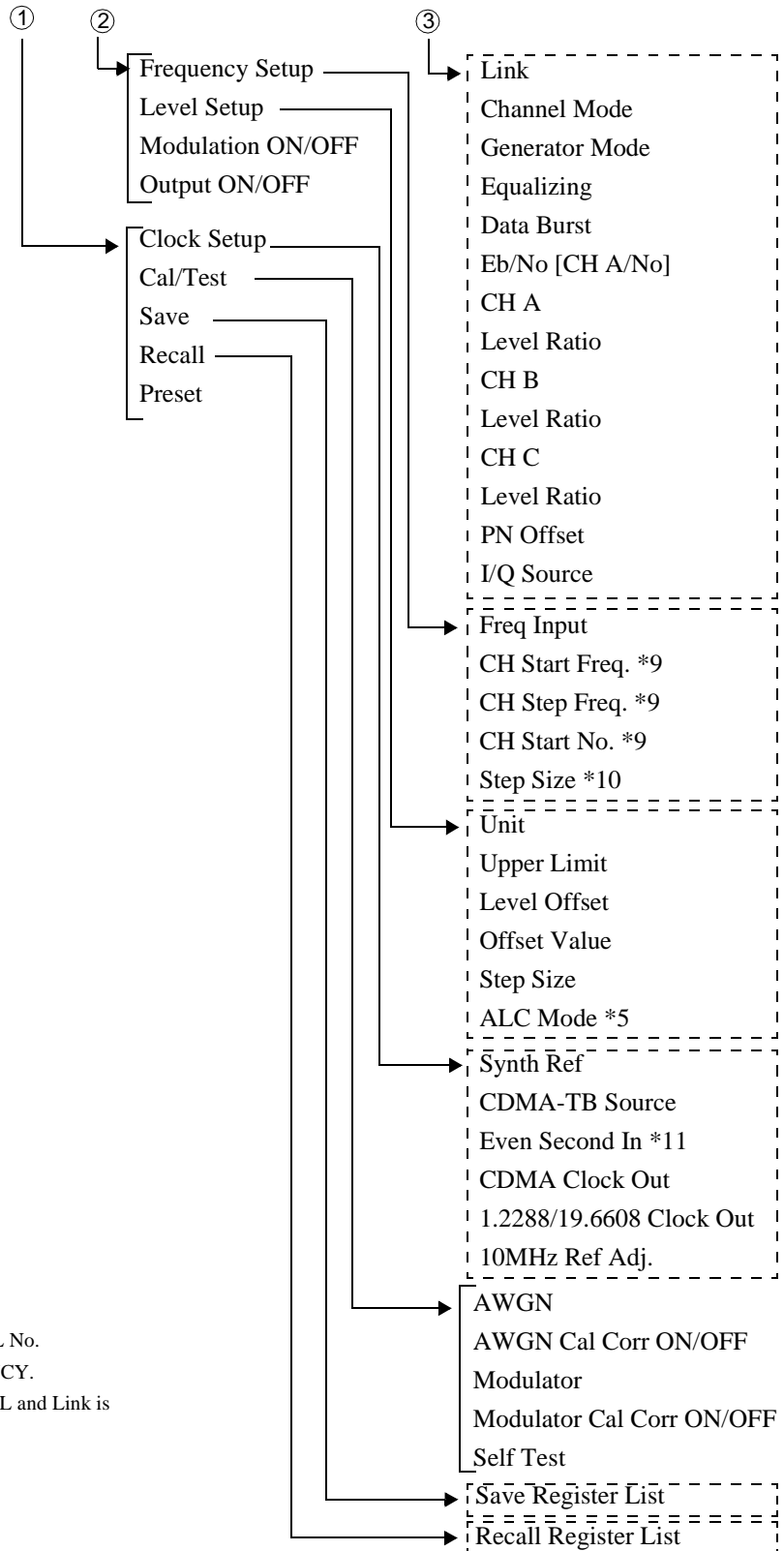
4.2 Reference

4.2.2 Menu Map

A list of soft menus, which are under the **ADVANCE** key, used with the R3561 are shown below.

**NOTE:**  Represents a panel key.  
 Represents a dialog box.  
 Unless otherwise noted, the soft menus are shown.





\*9 Valid when Freq Input is set to CHANNEL No.  
 \*10 Valid when Freq Input is set to FREQUENCY.  
 \*11 Valid when I/Q Source is set to INTERNAL and Link is set to REVERSE.



### 4.2.3 Functional Description

- (1) Setting the output frequency

**FREQ**

A window prompting numeric values is displayed.  
 Sets the output frequency.  
 Use the up or down keys, the data knob and the numeric keys to enter data.

- (2) Setting the output level

**LEVEL**

A window prompting numeric values is displayed.  
 Used to set the output level.  
 Use the up or down keys, the data knob and the numeric keys to enter data.

- (3) Setting the modulation

**Modulation**

Displays the menu used with the modulation function.  
 When *return* is pressed, the screen display returns to the initial screen.

**General Setup**

The display box used to set general items such as Link and Channel mode is displayed on the screen.

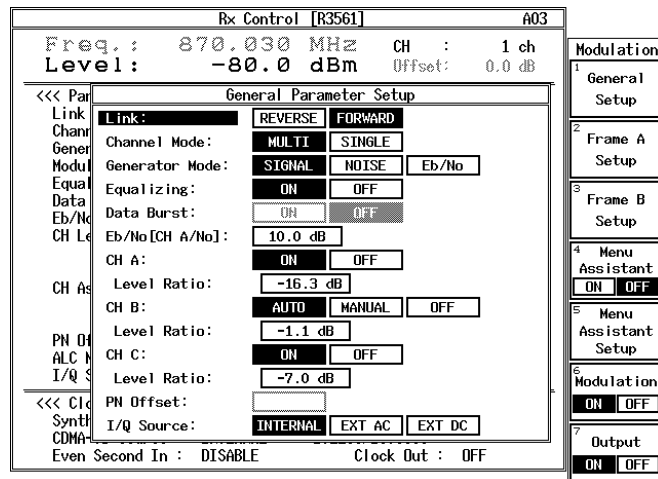


Figure 4-3 General Dialog Screen

**Link**

Specifies the Link-Direction of the signals used in the R3561.

**REVERSE:**

Sends signals from the Mobil station to the Base station. The modulation method is OQPSK.

**FORWARD:**

Sends signals from the Base station to the Mobil station. The modulation method is OQPSK.

- Channel Mode** Selects the base band channel multiplexing.  
When in the Reverse link, only SINGLE mode can be used.  
MULT: Multiplexed output from channels A, B and C is obtained.  
SINGLE: Outputs channel A only.
- Generator Mode**  
Selects the signal input to the I Q-Modulator in the MOD/CONV block.  
SIGNAL: Selects CDMA signals.  
NOISE: Selects an AWGN output with a bandwidth of 2 MHz.  
Eb/Nt (No) :  
Selects CDMA signal superimposed on AWGN signal.  
The ratio of channel A signal to the AWGN output level can be changed by Eb/NO [CH A/No].

---

**NOTE:** *AWGN calibration must be performed to select the generator mode Eb/Nt(No).  
When an IQ Sequence is set to EXTAC or EXTDC, only SIGNAL is selected for the generator mode.*

---

- Equalizing** Toggles the Equalizing Filter on or off. This setting is automatically toggled when the setting for Link is changed.
- Data Burst** Toggles the Data burst on or off.
- Eb/No [CH A/No]**  
Sets the value of Eb/Nt(No) for channel A. This setting is valid when the Generator mode is set to Eb/Nt(No).
- CH A**
- CH B**
- CH C** This setting is valid when the Channel mode is set to MULTI, and channels A and C can set this function on or off. Channel B can select AUTO, MANUAL or OFF. When set to AUTO, channel B level is automatically set so that the sum of the levels (of channels A, B and C) is 0 (dB).  
When set to MANUAL, an arbitrary value can be specified by the Channel Level Ratio.
- Level Ratio** This setting is valid when the channel mode is set to MULTI. Each channel level is set in relation to the sum of the levels (of channels A, B and C).

---

**NOTE:** *A ratio is obtained when channel B is set to AUTO for the Channel ON/OFF.*

---

4.2 Reference

- PN Offset** Sets the PN sequence offset value.  
1PN Offset = 64 chips
- I/Q Source** Selects the signal to be input to the IQ-Modulator.  
INTERNAL: Connects the internal base band IQ signal.  
EXT AC: Couples the external IQ signal with an AC coupling.  
EXT DC: Couples the external IQ signal with a DC coupling.

**CAUTION:**An alarm will sound when the IQ Source is selected to EXT DC and its input level exceeds the upper limit. Lower the input level below the upper limit immediately

**WARNING:**There is a possibility that this instrument will be damaged if an input level at the EXTERNAL IQ input terminal l exceeds the upper limit. Be sure to use within the specified range.

**Frame A Setup**  
**Frame B Setup**

Sets frame details for channels A and B.

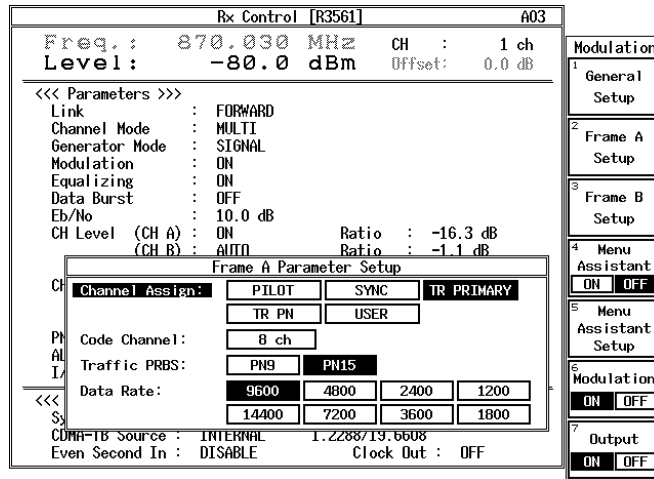


Figure 4-4 Frame A Dialog Box Screen

**Channel Assign** Selects channel signals for channels A and B.

**Table 4-1 Channel Signals**

Channel Signal Type	Description
PILOT	When LINK is set to FORWARD, this becomes the PILOT channel based on the TIA/EAI IS95 standards.
ZEROS (ZEROES)	When LINK is set to REVERSE, the data pattern is DATA ALL0.
SYNC	This is enabled only when the LINK is set to FORWARD. This becomes the SYNC channel based on the TIA/EAI IS95 standard.
TR PRIMARY (TRAFFIC PRI- MARY)	Selects the frame which inserts PRBS into the Primary Traffic section within Information bits in the Traffic channel frame.
TR PN (TRAFFIC PN)	Selects the frame which inserts PRBS into all of the Information bits in the Traffic channel frame.
USER	Downloads data from the outside into the User Defined Buffer in this instrument, and outputs this data. For detailed information on how to use USER, refer to User Define Buffer Functions in the R3561 Operation manual.

**Code Channel** This function selects the type of code channel for channels A and B. Orthogonal code spreading is performed for each channel using the Walsh function corresponding to the selected code channel.

The code channel is always set to 0 (zero) when the channel assignment is set to PILOT. When set to SYNC, the code channel is set to 32.

**Traffic PRBS** This function selects the PRBS inserted into Information Bits in the Traffic channel frame.

PN9: Pattern based on ITU-T V5.2

PN15: Pattern based on ITU-T 0.151

**Data Rate** Selects the data rate for channels A and B.

**Menu Assistant ON/OFF**

When this key is turned on, set items for the general dialog box are edited by Edit Menu.

**Menu Assistant Setup**

Displays the screen where set items used in the General dialog box are edited.

4.2 Reference

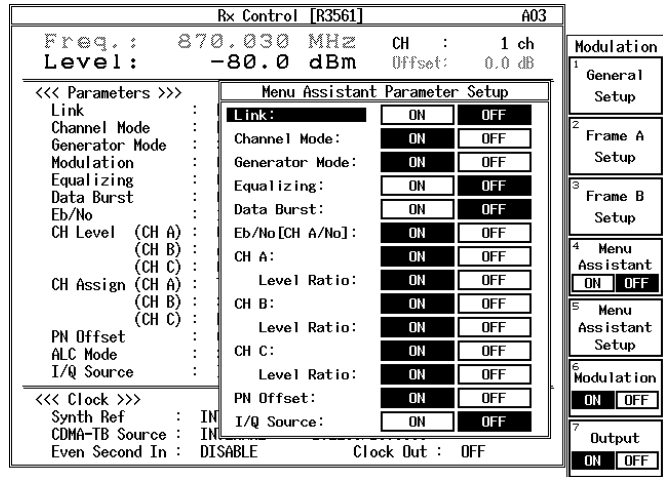


Figure 4-5 Edit Menu Dialog Box Screen

The items you set to ON (on this screen) can be changed on the general dialog box screen shown in Figure 4-3. If you set unnecessary items to OFF, these items will be skipped when operating the step keys. It is possible to simplify the operation using this method for specific applications. **Menu Ass. ON/OFF**, however, must be turned on to enable the Edit menu.

**Modulation ON/OFF**

Toggles the modulation on or off.

**Output ON/OFF**

Toggles the output signal on or off.

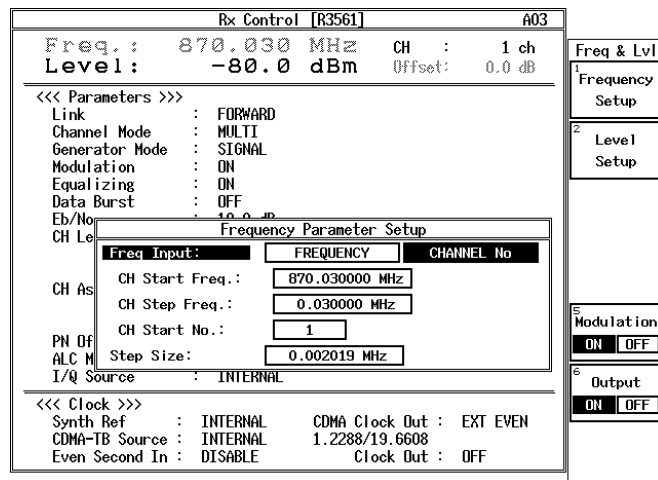
- (4) Setting the output frequency and output level

### **Frequency & Level**

A dialog box related to frequency and level settings will be displayed.

#### **Frequency Setup**

A dialog box related to frequency parameter settings will be displayed.



**Figure 4-6 Freq Para. Dialog Screen**

- Freq Input** Selects the frequency entry mode.  
**FREQUENCY:**  
 Directly enters a frequency value.  
**CHANNEL No:**  
 Enters a channel number.
- CH Start Freq.** Sets the channel start frequency.  
**CH Step Freq.** Sets the channel spacing.  
**CH Start No.** Sets the channel start number.  
**Step Size** Sets a step value of the up or down keys.

When **return** is pressed, the screen display returns to the initial screen.

#### **Level Setup**

A dialog box to set parameters associated with the output level is displayed.

4.2 Reference

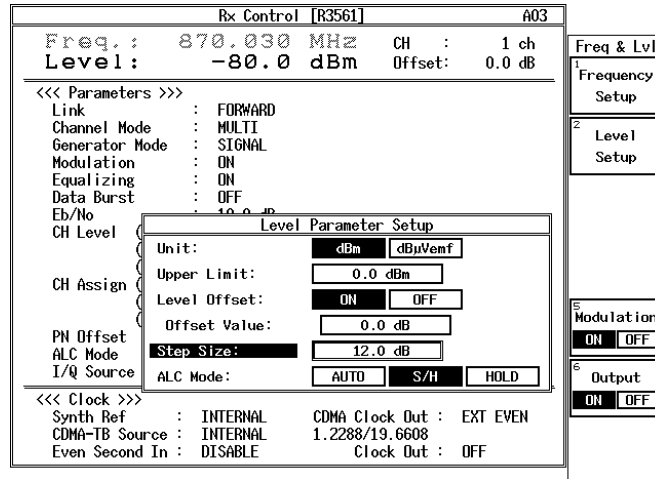


Figure 4-7 Level Para. Dialog Screen

- Unit** Selects the unit to display or enter the data.
- Upper Limit** Sets the upper limit.
- Level Offset** Toggles the level offset addition function on or off.
- Offset Value** Sets the level offset value.
- Step Size** Sets the up or down keys step value.
- ALC Mode** Selects the ALC operating mode.  
Automatically selects the optimum operating mode depending on the R3561 settings. (For details, refer to the R3561 Operation manual.)  
AUTO: Normal ALC  
S/H: Sample and hold using the reference modulation pattern.  
HOLD: ALC voltage hold when the reference modulation pattern is used.

**CAUTION:** When not set to the optimum operation mode, the output from the RF OUT terminal may deviate from the target value.

**Modulation ON/OFF**  
Toggles the modulation on or off.

**Output ON/OFF**  
Toggles the output signal on or off.

When **return** is pressed, the screen display returns to the initial screen.

\* How to operate the dialog-box

The operation to select the set items and set parameters is performed using the data knob and step keys in the same manner as the standard dialog-box in the R3267 Series.

## (5) Others

Using this screen, other functions can be set.

**Other**

Furthermore, **Preset**, **Clock Setup** and so on are displayed.

When **return** is pressed, the screen display returns to the initial screen.

Rx Control [R3561]		A03	
Freq. :	870.030 MHz	CH :	1 ch
Level :	-80.0 dBm	Offset:	0.0 dB
<<< Parameters >>>			
Link :	FORWARD		
Channel Mode :	MULTI		
Generator Mode :	SIGNAL		
Modulation :	ON		
Equalizing :	ON		
Data Burst :	OFF		
Eb/No :	10.0 dB		
CH Level (CH A) :	ON	Ratio :	-16.3 dB
(CH B) :	AUTO	Ratio :	-1.1 dB
(CH C) :	ON	Ratio :	-7.0 dB
CH Assign (CH A) :	TR(Primary)	Code Ch :	8 ch
(CH B) :	SYNC	Code Ch :	32 ch
(CH C) :	PILOT	Code Ch :	0 ch
PN Offset :	0.00		
ALC Mode :	S/H		
I/Q Source :	INTERNAL		
<<< Clock >>>			
Synth Ref :	INTERNAL	CDMA Clock Out :	EXT EVEN
CDMA-TB Source :	INTERNAL	1.2288/19.6608	
Even Second In :	DISABLE	Clock Out : OFF	

Other

1 Clock Setup

3 Cal/Test

5 Save

6 Recall

7 Preset

Figure 4-8 Other Screen

**Clock Setup**

The dialog box which sets various clock signals is displayed.

Rx Control [R3561]		A03			
Freq. :	870.030 MHz	CH :	1 ch		
Level :	-80.0 dBm	Offset:	0.0 dB		
Clock Parameter Setup					
Synth Ref : [MHz]	1	1.2288	2	2.4576	4.9152
	5	9.8304	10	15	19.6608
CDMA-TB Source : [MHz]	INTERNAL				
	1	1.2288	2	2.4576	4.9152
	5	9.8304	10	15	19.6608
Even Second In :	ENABLE DISABLE				
CDMA Clock Out :	EXT EVEN	20mSec	26.6mSec	80mSec	2Sec
1.2288/19.6608 : Clock Out	OFF	1.2288	19.6608		
10MHz Ref Adj. :	-2000				
I/Q Source :	INTERNAL				
<<< Clock >>>					
Synth Ref :	INTERNAL		CDMA Clock Out : EXT EVEN		
CDMA-TB Source :	INTERNAL		1.2288/19.6608		
Even Second In :	DISABLE		Clock Out : OFF		

Other

1 Clock Setup

3 Cal/Test

5 Save

6 Recall

7 Preset

Figure 4-9 Clock Dialog Box Screen



4.2 Reference

**Synth Ref** Selects the reference frequency of the signal which is output from the SYNTHE REF IN terminal and input to the RF synthesizer reference circuit. When INTERNAL is selected, however, the internal reference oscillator signal is input to the RF synthesizer reference circuit.

**CDMA-TB Source** Selects the reference frequency of the signal which is output from the CDMA TIMEBASE IN terminal and input to the CDMA TIMEBASE reference circuit. When INTERNAL is selected, however, the internal reference oscillator signal is input to the CDMA TIMEBASE reference circuit.

**EvenSecond In** Specifies whether or not the R3561 base band block functions in sync with the signal from EVENSEC/SYNC IN connector on the front panel.

**CDMA Clock Out** Selects the CDMA frame clock signal to be output from the CDMA CLOCK OUT terminal.

**Table 4-2 Types of CDMA Frame Clock**

CDMA Frame Clock	Description
EVEN SECOND IN	Outputs the signal that is input to the EVEN SEC/ SYNC IN terminal. This output is obtained only when the input signal is applied to the EVEN SEC/ SYNC IN terminal.
2 s 80 ms 26.6 ms 20 ms	Outputs the clock signal in the base band block of this instrument.

**1.2288/19.6608 Clock Out** Selects the signal to be output from the PN CHIP OUT terminal.

**10 MHz Ref Adj.** Sets a frequency of the internal reference oscillator and corrects the frequency deviation due to the variation of time. The factory-shipped setting is 0, and its range is between -2000 and +2000. These values represent the variable range, but not the frequency range.

**Cal/Test**

Switches the screen display to set or select each function of the R3561 calibration and self-test.

When **return** is pressed, the screen display returns to the initial screen.

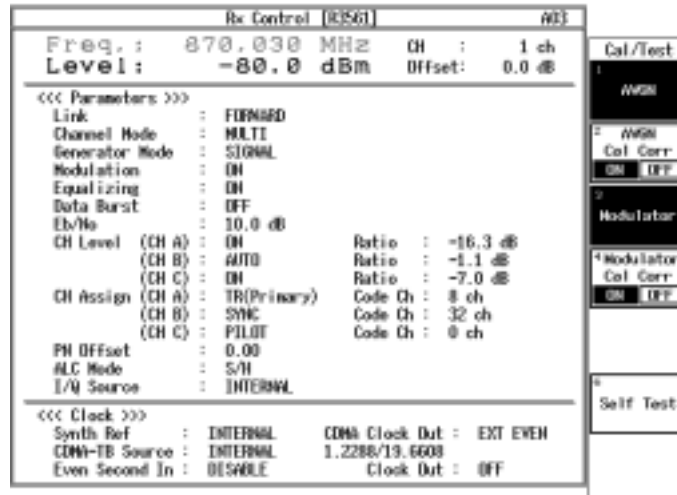


Figure 4-10 Cal/Self Test Screen

**AWGN**

Calibrates the AWGN level and CDMA signal level.

When the generator mode is selected to "Eb/Nt(Eb/No)", a calibration is required.

---

**CAUTION:**It takes 10 to 30 seconds to perform the calibration.

*When an abnormal condition is detected during calibration, an error message will be displayed and the calibration will be terminated.*

---

**AWGN Cal Corr ON/OFF**

Specifies whether or not to use the correction data obtained in the AWGN calibration.

**Modulator**

The IQ-Modulator balance is calibrated.

---

**CAUTION:**It takes 10 to 30 seconds to perform the calibration.

*When an abnormal condition is detected during calibration, an error message will be displayed and the calibration will be terminated.*

---

**Modulator Cal Corr ON/OFF**

Specifies whether or not to use the correction data obtained in the Modulator calibration.

**Self Test**

This function performs a self-test for each block of this instrument. The POWER, REMOTE and SYNTH UNLOCK lamps are turned on during the test. An alarm will sound when the self-test is complete.

When the self-test is finished, the instrument will revert to its initial state.

4.2 Reference

When the self-test detects an error, an error message and the corresponding error code will be displayed with the POWER, REMOTE and SYNTH UNLOCK lights lit at the same time (for more detailed information on error codes, refer to the R3561 Operation manual). Contact the nearest ADVANTEST Field Office or representative.

**Save**

Saves the currently set value in the R3561 back-up memory. Pressing this key displays the contents of the R3561 back-up memory (see Figure 4-11 ). To save the current setting in the back-up memory, press the data knob or the **ENTER** after selecting the file number using the data knob. A maximum of 10 settings can be saved in the back-up memory. Pressing **RETURN** returns the screen display to the Other screen.

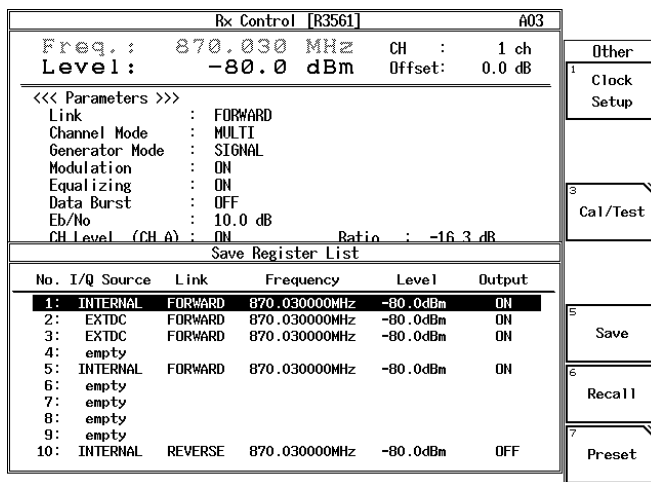


Figure 4-11 Save/Recall Display Screen

**Recall**

This key is used to read a value saved in the R3561 back-up memory and to set the instrument using this value. Pressing this key displays the contents of the R3561 back-up memory (see Figure 4-9). To read and reset the contents of the back-up memory, press the data knob or the **ENTER** after selecting the file number using the data knob. Pressing **RETURN** returns the screen display to the Other screen.

**Preset**

Initialize the following sections of the R3561: the frequency, RF level, modulation, frame and input/output blocks. The settings of the other sections will not be reset to the factory defaults. Table 4-3 shows set or selected values after the preset.

(6) Setting the Modulation

**Modulation ON/OFF**

Toggles the modulation on or off.

- (7) Setting the Output level

***Output ON/OFF***

Toggles the output signal on or off

**4.2.4 Preset Values****Table 4-3 Set Values when Preset (1 of 4)**

Section	Item to Be Set	Channel	Set value/Selected value
Output frequency	Frequency input mode		Direct input mode
	Output frequency		870.03 MHz
	Output channel		1
	Channel start number		1
	Channel spacing		30 kHz
	Start frequency		870.03 MHz
RF level	Output level		-80.0 dBm
	Output level upper limit value		0.0 dBm
	Output level offset ON/OFF		OFF
	Output level offset value		0.0 dB
	Output ON/OFF		ON
	ALC mode		SAMPLE&HOLD

Table 4-3 Set Values when Preset (2 of 4)

Section	Item to Be Set	Channel	Set value/Selected value	
Modulation	Modulation ON/OFF		ON	
	Link		FORWARD	
	Channel mode		MULTI	
	Generator mode		SIGNAL ONLY	
	Equalizing Filter ON/OFF		ON	
	Data burst		OFF	
	Eb/No (Eb/Nt) value		10.0 dB	
	Channel ON/OFF		A	ON
			B	AUTO
			C	ON
	Channel level		A	-16.3 dB
			B	-1.1 dB
			C	-7.0 dB
	PN Offset value		0.00	
	IQ source value		INTERNAL	

Table 4-3 Set Values when Preset (3 of 4)

Section	Item to Be Set	Channel	Set value/Selected value	
Frame	Channel assignment	A	TRAFFIC PRIMARY	
		B	SYNC	
		C	PILOT	
	Channel code	A	8	
		B	32	
		C	0	
	Traffic PRBS	A	PN15	
		B	PN15	
		C		
	Data rate	A	9600bps	
		B	1200bps	
		C	***	
	Start frame number specification*1	A	1	
		B		
		C		
	Repetitive frame number specification*1	A	600	
		B		
		C		
		Frame number specification		***
		Frame data		***

## 4.2 Reference

Table 4-3 Set Values when Preset (4 of 4)

Section	Item to Be Set	Channel	Set value/Selected value
Input/Output	EVEN SEC/SYNC IN		DISABLE
	CDMA CLOCK OUT		EVEN SECOND IN
	CDMA TIMEBASE OUT		OFF
	Synthe Reference IN		INTERNAL
	CDMA TIMEBASE IN		INTERNAL

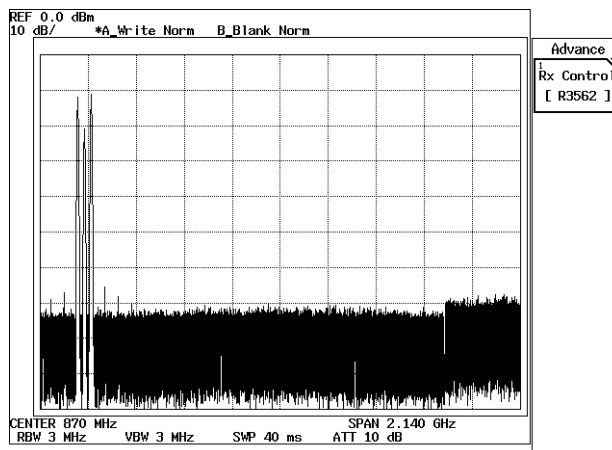
\*1 : Factory-shipped set value. This value is not set even if the preset is performed after changing the set value.

\*\*\* : Cannot be set or this value is pending.

## 5 HOW TO OPERATE THE R3562

This chapter describes all key functions of the R3562.

### 5.1 Outline



**Figure 5-1 Initial Screen (For the R3562 Standard Configuration)**

The operation menu of R3562 is placed under the **ADVANCE**.

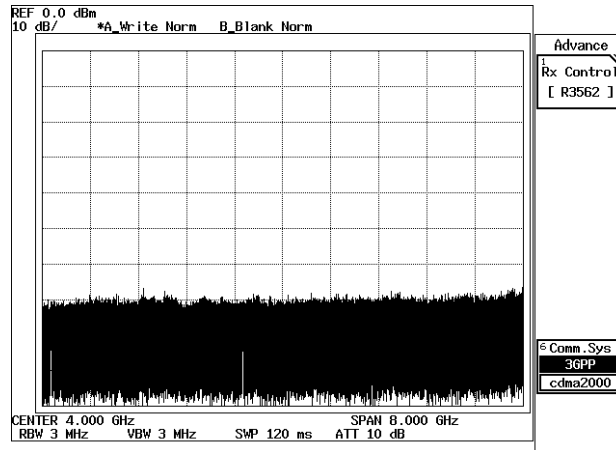
Press **ADVANCE** and **Rx Control [R3562]**, R3267 Series becomes R3562 control mode and displays the screen shown in Figure 5-3 to set and measure R3562.

In this mode, operation with only soft-key or dialog box becomes effective except **FREQ** and **LEVEL**. The operation with **SPAN** and so on which can be used in ordinary operation mode cannot be performed. In order to return to the ordinary operation mode, press **POWER**, **UTIL**, **TRANSIENT** or **Quit**.



5.1 Outline

[Setting up the communication system]



**Figure 5-2 Initial Screen (with the R3562 OPT 65 Installed)**

If OPT65 is installed in the R3562, the R3562 communication system must always be set to the 3GPP mode. When the Comm.sys key on the Initial screen is set to cdma2000 (highlighted) (Figure 5-2), a mode is not set correctly.

Use the procedure shown below to switch the communication system:

1. Press the Comm.sys key to set 3GPP (highlighted).
2. Turn the R3562 power switch off, and then on again.

---

**NOTE:** Always perform steps 1 and 2 to change the communication system (performing step 1 only does not complete the operation).

---

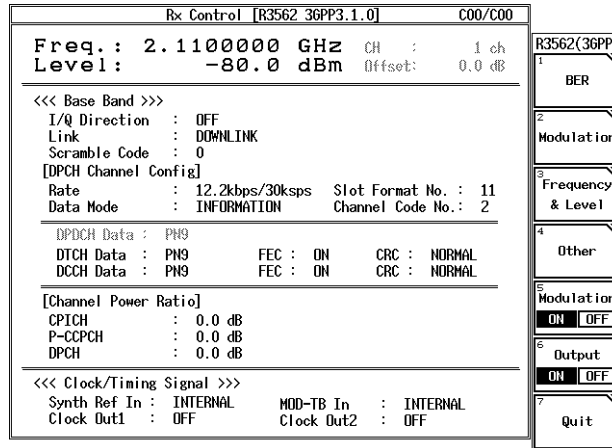


Figure 5-3 R3562 Control Main Screen (3GPP)

## 5.2 Reference

## 5.2 Reference

This chapter describes the functions of all panel and soft keys.

- Menu Index: Use this index as a key index to Chapter 5.
- Menu Map: Shows a list of hierarchical menus on a panel key basis.
- Functional Description: Explains the functions of the panel and soft keys.

The panel keys are arranged in alphabetical order.

### 5.2.1 Menu Index

This menu index is used to easily find the keys described in Chapter 5.

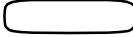

<u>Operation Key</u>	<u>Pages</u>	<u>Operation Key</u>	<u>Pages</u>
[Channel Power Ratio].....	5-6, 5-13	Direction .....	5-7, 5-17, 5-19
[DCCH].....	5-7, 5-18, 5-20	DPCCH Gain Code .....	5-6, 5-15
[DTCH].....	5-7, 5-17, 5-20	DPCCH Power Ratio .....	5-6, 5-15
[Gain Parameter].....	5-6, 5-15	DPCCH Setup .....	5-7, 5-16, 5-19
[I/Q Input] .....	5-8, 5-25	DPCCH Slot Format .....	5-6, 5-14
[I/Q Output].....	5-8, 5-25	DPCH .....	5-6
[TPC Insert].....	5-7, 5-17, 5-19	DPCH Channel Config. ....	5-6, 5-12
10MHz Ref Adj.....	5-6, 5-8, 5-10, 5-24	DPCH Channel. Code .....	5-6, 5-13
ALC Mode .....	5-8, 5-23	DPDCH Channel Conf.....	5-6, 5-13
BER .....	5-6, 5-9	DPDCH Data .....	5-6, 5-13, 5-14
Bit Length .....	5-6, 5-9	DPDCH Gain Code.....	5-6, 5-15
CAL.....	5-8, 5-25	DPDCH Power Ratio .....	5-6, 5-15
Cal Corr ON/OFF.....	5-8, 5-25	DTCH/DCCH Setup .....	5-7, 5-17, 5-19
Cal/Test.....	5-8, 5-25	Ext I/Q Setup.....	5-8, 5-24
CH Start Freq. ....	5-8, 5-22	Ext Trigger .....	5-7, 5-21
CH Start No.....	5-8, 5-22	Ext Trigger Setup.....	5-7, 5-21
CH Step Freq.....	5-8, 5-22	FBI Pattern .....	5-7, 5-19
Clock & Timing Setup .....	5-6, 5-8, 5-10, 5-23	FEC .....	5-7, 5-18, 5-20, 5-21
Clock Edge.....	5-6, 5-9	FREQ .....	5-9
Clock Out 1 .....	5-6, 5-8, 5-10, 5-24	Freq Input.....	5-8, 5-22
Clock Out 2 .....	5-6, 5-8, 5-10, 5-24	Frequency & Level .....	5-6, 5-22
Count.....	5-7, 5-17, 5-19	Frequency Setup.....	5-8, 5-22
CPICH.....	5-6	General Setup.....	5-6, 5-11
CRC.....	5-7, 5-18, 5-20, 5-21	I Gain .....	5-8, 5-25
Data .....	5-6, 5-7, 5-9, 5-17, 5-18, 5-20	I/Q Direction .....	5-6, 5-8, 5-16, 5-24
Data Polarity .....	5-6, 5-9	I/Q Phase Adj.....	5-8, 5-25
		LEVEL .....	5-9
		Level Offset .....	5-8, 5-22
		Level Setup .....	5-8, 5-22
		Link .....	5-6, 5-16
		MOD-TB In .....	5-6, 5-8,

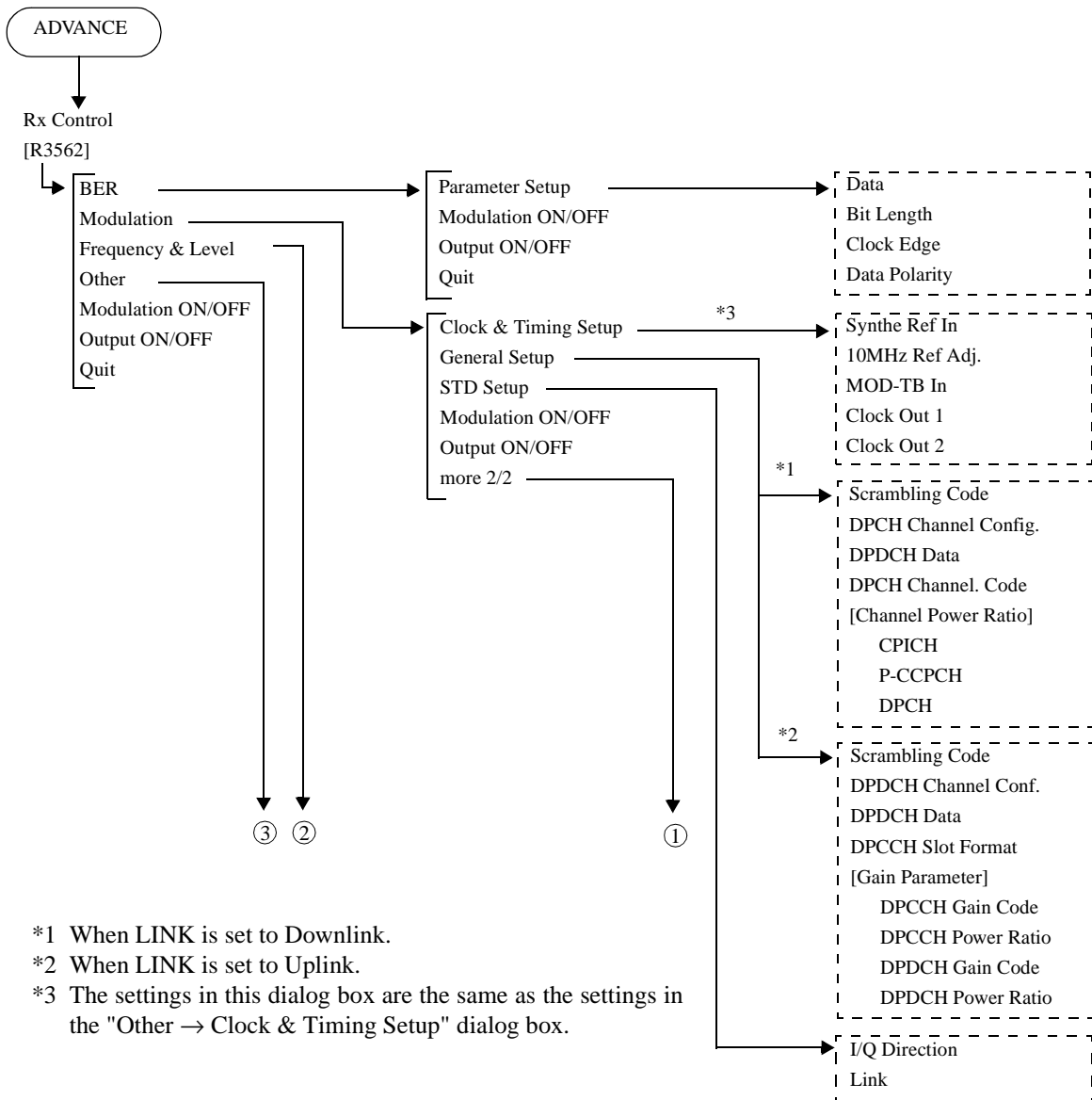
	5-10, 5-24
Modulation.....	5-6, 5-10
Modulation ON/OFF .....	5-6, 5-8, 5-9, 5-16, 5-23, 5-26
Offset Value.....	5-8, 5-22
Other .....	5-6, 5-23
Output ON/OFF .....	5-6, 5-8, 5-10, 5-16, 5-23, 5-26
Parameter Setup .....	5-6, 5-9
P-CCPCH.....	5-6
Preset.....	5-8, 5-26
Q Gain.....	5-8, 5-25
Quit .....	5-6, 5-10, 5-26
Recall .....	5-8, 5-26
Recall Register List.....	5-8
REPEAT .....	5-9
Rx Control [R3562] .....	5-6
Save.....	5-8, 5-25
Save Register List.....	5-8
Scrambling Code .....	5-6, 5-11, 5-13
Self Test.....	5-8, 5-25
SINGLE .....	5-9
START.....	5-9
STD Setup.....	5-6, 5-15
Step Size .....	5-8, 5-22, 5-23
STOP.....	5-9
Synthe Ref In .....	5-6, 5-8, 5-10, 5-23
TFCI.....	5-7, 5-17, 5-19
TPC Insert.....	5-7, 5-16, 5-19
TPC Repeat Count .....	5-7, 5-17, 5-19
Trig Polarity.....	5-7, 5-21
Trigger Delay.....	5-7, 5-21
Unit .....	5-8, 5-22
Upper Limit .....	5-8, 5-22

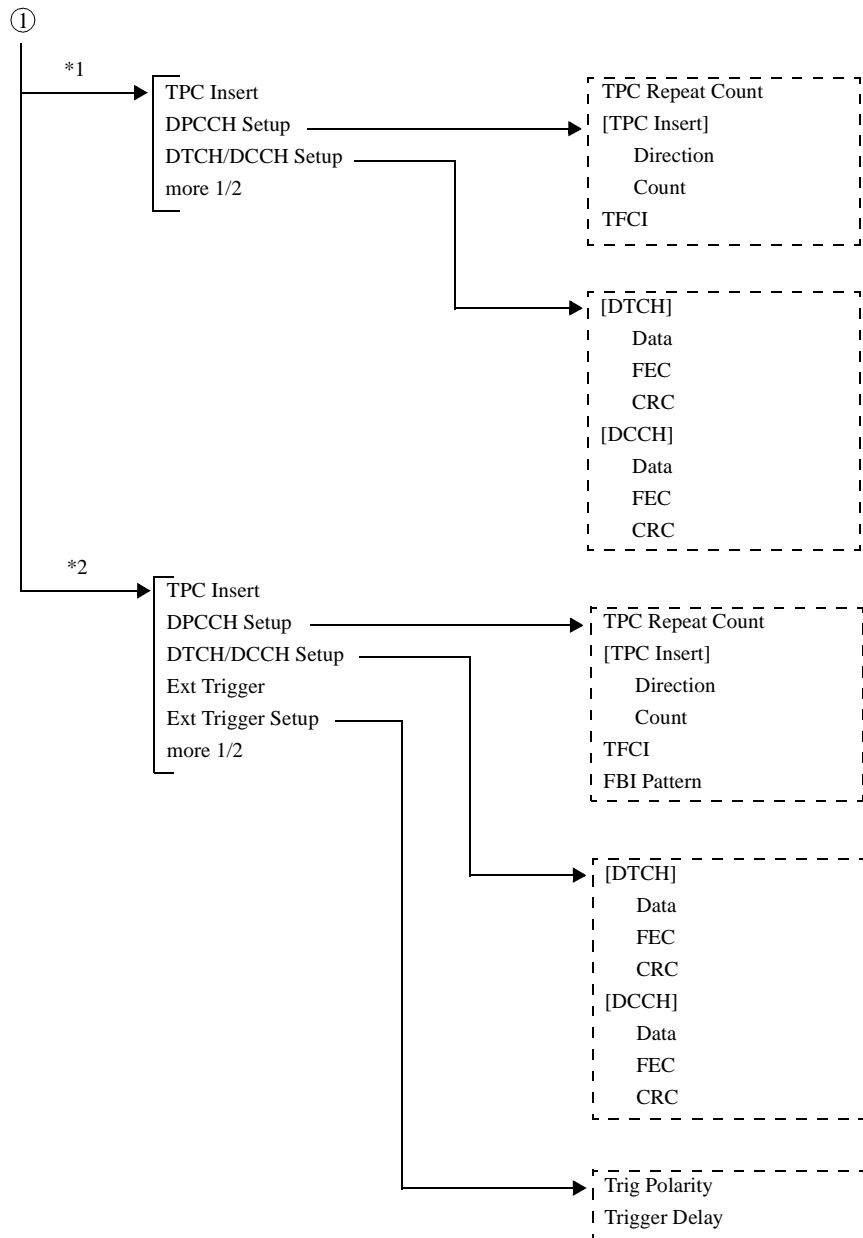
5.2 Reference

5.2.2 Menu Map

A list of soft menus, which are under the ADVANCE key, used with the R3562 are shown below.

**NOTE:**  Represents a panel key.  
 Represents a dialog box.  
 Unless otherwise noted, the soft menus are shown.

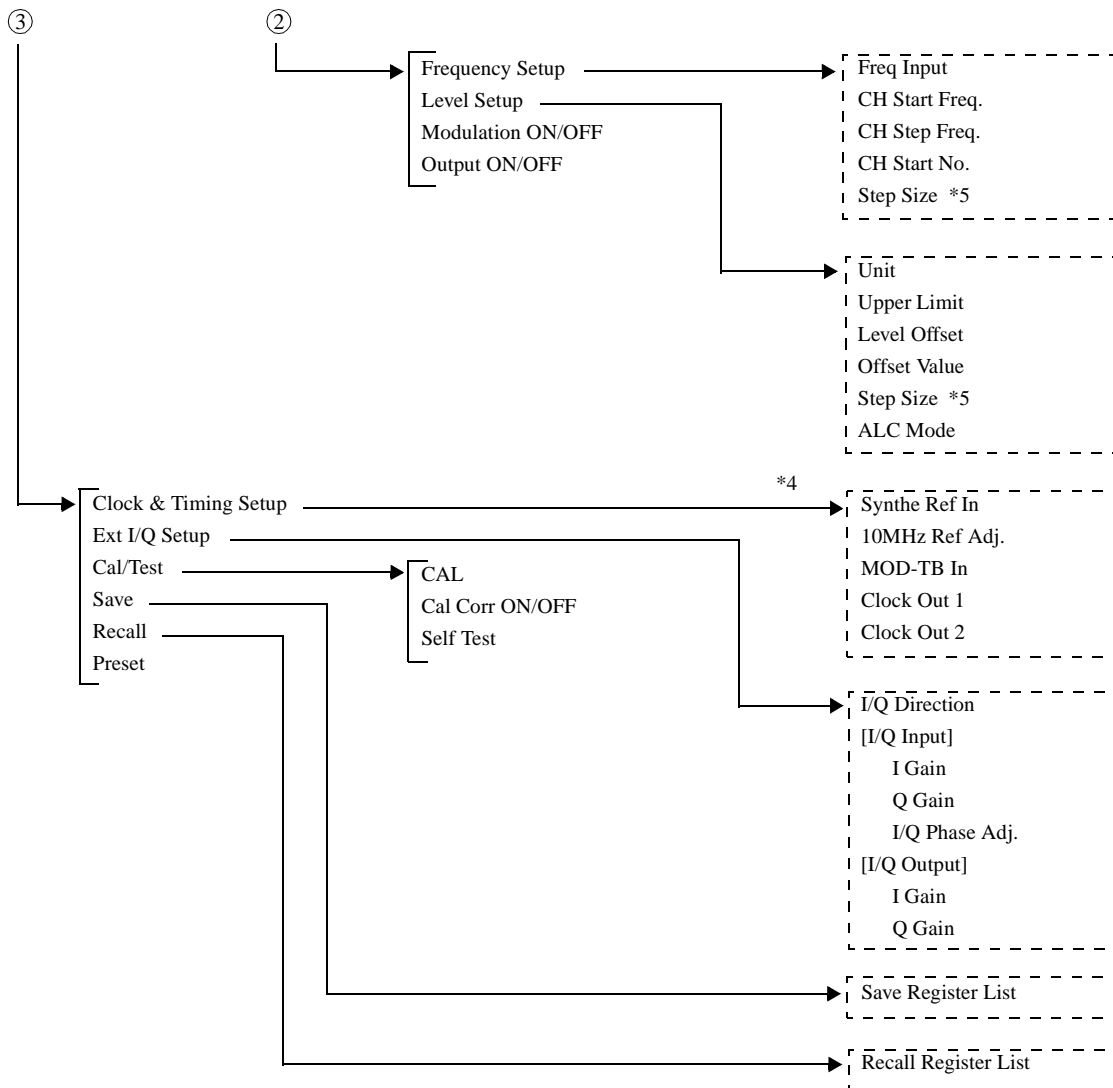




\*1 When LINK is set to Downlink.

\*2 When LINK is set to Uplink.

5.2 Reference



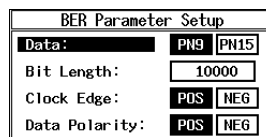
\*4 The settings in this dialog box are the same as the settings in the "Modulation → Clock & Timing Setup dialog box."

\*5 Sets the step size for the step keys(data knob) on the R3267 Series.

### 5.2.3 Functional Description

This section describes the front panel keys and the soft menus associated with them.

<b>FREQ</b>	A window prompting numeric values is displayed. Sets the output frequency. Use the up or down keys, the data knob and the numeric keys to enter data.
<b>LEVEL</b>	A window prompting numeric values is displayed. Used to set the output level. Use the up or down keys, the data knob and the numeric keys to enter data.
<b>SINGLE</b>	Makes one BER measurement.
<b>REPEAT (START/STOP)</b>	Makes repeated BER measurements, or stops the current BER measurement.
<b>BER</b>	Displays the BER Measurement Mode menu.
<b><i>Parameter Setup</i></b>	Displays the BER Parameter Setup dialog box.



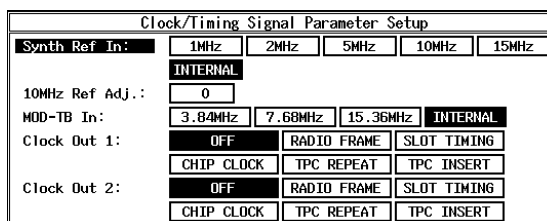
**Figure 5-4 BER Parameter Setup Dialog Box**

<b><i>Data</i></b>	Selects test data type. PN9: Selects PN9. PN15: Selects PN15.
<b><i>Bit Length</i></b>	Set BER measurement time with the bit length. The setting range of the bit length is 1000 to 10000000 bits.
<b><i>Clock Polarity</i></b>	Select from which edge you get data, the rising edge of the signal from BER clock terminal or the falling edge. POS: Rising NEG: Falling
<b><i>Data Polarity</i></b>	Select if you invert BER DATA terminal data or not. POS: Positive logic (not invert) NEG: Negative logic (invert)
<b><i>Modulation ON/OFF</i></b>	Turns the RF output modulation function on or off. ON: Modulates the RF output using transmission data.



5.2 Reference

<b>Output ON/OFF</b>	<p>OFF: Does not modulate the RF output.</p> <p>Turns the RF output on or off.</p> <p>ON: Turns the RF signal on.</p> <p>OFF: Turns the RF signal off.</p>
<b>Quit</b>	Exits from BER Measurement Mode.
<b>Modulation</b>	Displays the modulation 1/2 menu.
<b>Clock &amp; Timing Setup</b>	Displays the Clock/Timing Signal Parameter Setup dialog box.



**Figure 5-5 Clock/Timing Signal Parameter Setup Dialog Box**

<b>Synthe Ref In</b>	<p>Selects the reference signal from the synthesizer.</p> <p>1 MHz: Uses an external signal of 1 MHz.</p> <p>2 MHz: Uses an external signal of 2 MHz.</p> <p>5 MHz: Uses an external signal of 5 MHz.</p> <p>10 MHz: Uses an external signal of 10 MHz.</p> <p>15 MHz: Uses an external signal of 15 MHz.</p> <p>INTERNAL: Uses the internal reference signal.</p>
<b>10MHz Ref Adj.</b>	Sets internal reference signal's frequency difference to be corrected.
<b>MOD-TB In</b>	<p>Selects the reference signal used for the modulation.</p> <p>3.84 MHz: Uses an external signal of 3.84 MHz.</p> <p>7.68 MHz: Uses an external signal of 7.68 MHz.</p> <p>15.36 MHz: Uses an external signal of 15.36 MHz.</p> <p>INTERNAL: Uses the internal reference signal.</p>
<b>Clock Out 1/Clock Out 2</b>	<p>Outputs the modulation timing signals to the CLOCK OUT1 and CLOCK OUT2 connectors.</p> <p>OFF: Turns the output signal off.</p> <p>RADIO FRAME: Outputs the timing for the radio frame.</p>

**SLOT TIMING:**

Outputs the slot timing.

**CHIP CLOCK:**

Outputs the CHIP clock.

**TPC REPEAT:**

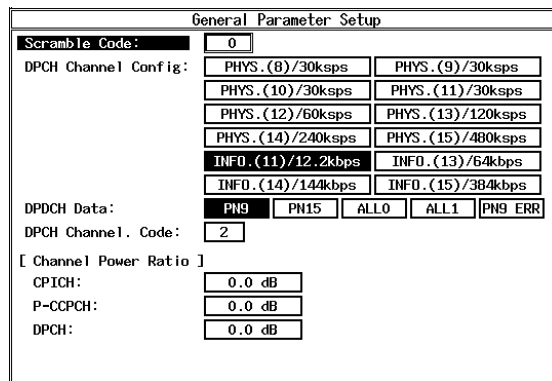
Outputs the first slot timing used for the TPC command sequence during Repeat operation.

**TPC INSERT:**

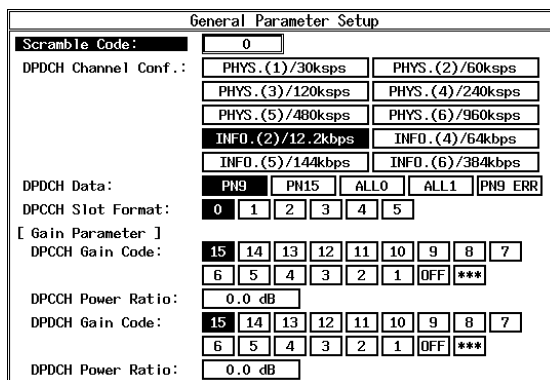
Outputs the first slot timing used for the TPC command sequence during the Insert operation.

**General Setup**

Displays the General Parameter setup dialog box.



**Figure 5-6 General Parameter Setup Dialog box (For the Downlink)**



**Figure 5-7 General Parameter Setup Dialog box (For the Uplink)**

<When set to Downlink>

**Scrambling Code** Sets the scrambling code number.

***DPCH Channel Config.***

Select the channel configuration from the following list.

PHYS.(8)/30ksps:  
Assigns Physical Data Mode with a slot format number of 8 and a channel symbol rate of 30 [ksps].

PHYS.(9)/30ksps:  
Assigns Physical Data Mode with a slot format number of 9 and a channel symbol rate of 30 [ksps].

PHYS.(10)/30ksps:  
Assigns Physical Data Mode with a slot format number of 10 and a channel symbol rate of 30 [ksps].

PHYS.(11)/30ksps:  
Assigns Physical Data Mode with a slot format number of 11 and a channel symbol rate of 30 [ksps].

PHYS.(12)/60ksps:  
Assigns Physical Data Mode with a slot format number of 12 and a channel symbol rate of 60 [ksps].

PHYS.(13)/120ksps:  
Assigns Physical Data Mode with a slot format number of 13 and a channel symbol rate of 120 [ksps].

PHYS.(14)/240ksps:  
Assigns Physical Data Mode with a slot format number of 14 and a channel symbol rate of 240 [ksps].

PHYS.(15)/480ksps:  
Assigns Physical Data Mode with a slot format number of 15 and a channel symbol rate of 480 [ksps].

INFO.(11)/12.2kbps:  
Assigns Information Data Mode with a slot format number of 11, an information bit rate of 12.2 [kbps] and a channel symbol rate of 30 [ksps].

INFO.(13)/64kbps:  
Assigns Information Data Mode with a slot format number of 13, an information bit rate of 64 [kbps] and a channel symbol rate of 120 [ksps].

INFO.(14)/144kbps:  
Assigns Information Data Mode with a slot format number of 14, an information bit rate of 144 [kbps] and a channel symbol rate of 240 [ksps].

INFO.(15)/384kbps:  
Assigns Information Data Mode with a slot format

number of 15, an information bit rate of 384 [kbps] and a channel symbol rate of 480 [ksps].

***DPDCH Data*** Selects the data to be input to the DPDCH when DPCH Channel Config is set to Physical Data Mode.

PN9: Selects PN9.

PN15: Selects PN15.

ALL0: Selects all zero data.

ALL1: Selects all one data.

PN9 ERR: Selects PN9 with an error of 1%.

***DPCH Channel. Code***

Sets the channelization code number.

***[Channel Power Ratio]***

Sets the power ratios for the following physical channels.

CPICH: Sets a power ratio for CPICH.

P-CCPCH: Sets a power ratio for P-CCPCH and SCH.

DPCH: Sets a power ratio for DPCH.

---

***NOTE:*** *When a channel power ratio of -99.9 dB is specified, the specified channel power is turned off.*

---

<When set to Uplink>

***Scrambling Code*** Sets the scrambling code number.

***DPDCH Channel Conf.***

Select the channel configuration from the following list.

PHYS.(1)/30ksps:

Assigns Physical Data Mode with a slot format number of 1 and a channel symbol rate of 30 [ksps].

PHYS.(2)/60ksps:

Assigns Physical Data Mode with a slot format number of 2 and a channel symbol rate of 60 [ksps].

PHYS.(3)/120ksps:

Assigns Physical Data Mode with a slot format number of 3 and a channel symbol rate of 120 [ksps].

PHYS.(4)/240ksps:

Assigns Physical Data Mode with a slot format number of 4 and a channel symbol rate of 240 [ksps].

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- PHYS.(5)/480ksps:  
Assigns Physical Data Mode with a slot format number of 5 and a channel symbol rate of 480 [ksps].
- PHYS.(6)/960ksps:  
Assigns Physical Data Mode with a slot format number of 6 and a channel symbol rate of 960 [ksps].
- INFO.(2)/12.2kbps:  
Assigns Information Data Mode with a slot format number of 2, an information bit rate of 12.2 [kbps] and a channel symbol rate of 60 [ksps].
- INFO.(4)/64kbps:  
Assigns Information Data Mode with a slot format number of 4, an information bit rate of 64 [kbps] and a channel symbol rate of 240 [ksps].
- INFO.(5)/144kbps:  
Assigns Information Data Mode with a slot format number of 5, an information bit rate of 144 [kbps] and a channel symbol rate of 480 [ksps].
- INFO.(6)/384kbps:  
Assigns Information Data Mode with a slot format number of 6, an information bit rate of 384 [kbps] and a channel symbol rate of 960 [ksps].

***DPDCH Data***

Selects the data to be input to the DPDCH when DPDCH Channel Config is set to Physical Data Mode.

- PN9: Selects PN9.
- PN15: Selects PN15.
- ALL0: Selects all zero data.
- ALL1: Selects all one data.
- PN9 ERR: Selects PN9 code with an error of 1%.

***DPCCH Slot Format***

Selects a slot format from the following list.

- 0: Uses the bit configuration for the slot format number 0.
- 1: Uses the bit configuration for the slot format number 1.
- 2: Uses the bit configuration for the slot format number 2.
- 3: Uses the bit configuration for the slot format number 3.
- 4: Uses the bit configuration for the slot format number 4.

- 5: Uses the bit configuration for the slot format number 5.

**[Gain Parameter]** Sets the gain (power) ratio for a DPCCH to a DPDCH. There are four possible combinations.

#### **DPCCH Gain Code**

Sets the ratio for DPCCH gain to  $\beta_c$ , using the gain parameter code if DPDCH gain to  $\beta_d$  is 1.

- 1 thru 15: The gain ratio complies with the 3GPP standard.  
 OFF: Turns the DPCCH power off.  
 \*\*\*: Displays the situation under which an incorrect value for the gain power code was used to set a DPCCH power ratio.

#### **DPCCH Power Ratio**

Sets the ratio for the DPCCH power to  $P_c$  [dB] if the ratio of DPDCH to  $P_d$  is 0 [dB].

---

**NOTE:** *The DPDCH power is turned off if -99.9 dB is specified.*

---

#### **DPDCH Gain Code**

Sets the ratio for DPDCH gain to  $\beta_d$ , using the gain parameter code if DPCCH gain to  $\beta_c$  is 1.

- 1 thru 15: The gain ratio complies with the 3GPP standard.  
 OFF: Turns the DPDCH power off.  
 \*\*\*: Displays the situation under which an incorrect value for the gain power code was used to set a DPDCH power ratio.

#### **DPDCH Power Ratio**

Sets the ratio for the DPDCH power to  $P_d$  [dB] if the ratio of DPCCH to  $P_c$  is 0 [dB].

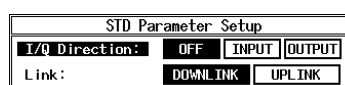
---

**NOTE:** *The DPCCH power is turned off if -99.9 dB is specified.*

---

#### **STD Setup**

Displays the STD Parameter setup dialog box.



**Figure 5-8 STD Parameter Setup Dialog box**

5.2 Reference

***I/Q Direction***

Exchanges the external IQ terminals between the input and output and selects the IQ signal paths to the IQ modulator.

OFF: Turns off the IQ output, and inputs the internal baseband signal to the IQ modulator.

INPUT: Inputs the IQ signal from the outside to the IQ modulator.

OUTPUT: Turns on the IQ output, and inputs the internal baseband signal to the IQ modulator.

---

**NOTE:** *The level and modulation accuracy of the RF output cannot be guaranteed while in the OUTPUT mode.*

---

***Link***

Selects the link direction.

DOWNLINK: Outputs the Downlink signal.

UPLINK: Outputs the Uplink signal.

***Modulation ON/OFF***

Turns the RF output modulation function on or off.

ON: Modulates the RF output using transmission data.

OFF: Does not modulate the RF output.

***Output ON/OFF***

Turns the RF output on or off.

ON: Turns the RF signal on.

OFF: Turns the RF signal off.

***more 2/2***

Displays the modulation 2/2 menu.

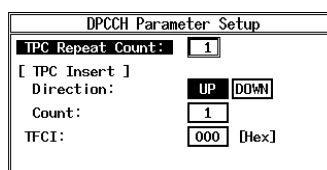
<When set to Downlink>

***TPC Insert***

The TPC command is inserted during Repeat operation. The direction and slot length of the TPC command you want to insert can be specified in the TPC Insert item in the DPCCH Parameter dialog box.

***DPCCH Setup***

Displays the DPCCH Parameter Setup dialog box.



**Figure 5-9 DPCCH Parameter Setup Dialog box (For the Downlink)**

**TPC Repeat Count**

Sets the TPC slot length for the Repeat operation.

**[TPC Insert]**

Inserts TPC commands of 1 or 0 into consecutive slots as specified by the TPC insertion slot length during the Repeat operation.

**Direction**

Selects the direction (Up or Down) during the Insert operation.

UP: Inserts TPC commands of 1 into consecutive slots.

DOWN: Inserts TPC commands of 0 into consecutive slots.

**Count**

Sets the TPC insertion slot length used during Insert operation.

**TFCI**

Sets a TFCI consisting of one frame in hexadecimal. The TFCI is specified using 10 TFCI bits, which are input to the TFCI coder.

Input value	Operation
-------------	-----------

A:	Shift → 0
----	-----------

B:	Shift → 1
----	-----------

C:	Shift → 2
----	-----------

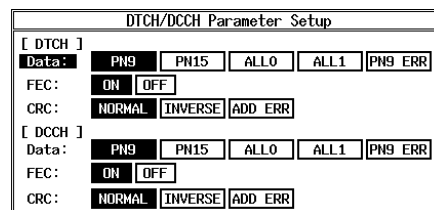
D:	Shift → 3
----	-----------

E:	Shift → 4
----	-----------

F:	Shift → 5
----	-----------

**DTCH/DCCH Setup**

Displays the DTCH/DCCH Parameter setup dialog box.



**Figure 5-10 DTCH/DCCH Parameter Setup Dialog box  
(For the Downlink)**

**[DTCH]**

The DTCH value set when the data mode for the channel configuration settings is set to Information Data Mode is valid.

**Data**

Selects the data used for Information data.

PN9: Selects PN9.

PN15: Selects PN15.

ALL0: Selects all zero data.

ALL1: Selects all one data.

PN9 ERR: Selects PN9 with an error of 1%.



5.2 Reference

<b><i>FEC</i></b>	<p>Sets whether or not FEC (Convolutional or Turbo Coding) processing is performed.</p> <p>ON:           FEC processing is performed.</p> <p>OFF:          FEC processing is not performed.</p>
<b><i>CRC</i></b>	<p>Sets the mode used to generate CRC data which is based on the calculated CRC value.</p> <p>NORMAL:    The calculated CRC value is used as CRC data (correct CRC data is output).</p> <p>INVERSE:   The value obtained by logically inverting the CRC is used as CRC data (incorrect CRC data is output).</p> <p>ADD ERR:    A block containing an error of 1% is generated using the NORMAL operation linked with the INVERSE operation.</p>
<b><i>[DCCH]</i></b>	<p>The DCCH value set when the data mode for the channel configuration settings is set to Information Data Mode is valid.</p>
<b><i>Data</i></b>	<p>Selects the data used for Information data.</p> <p>PN9:           Selects PN9.</p> <p>PN15:          Selects PN15.</p> <p>ALL0:          Selects all zero data.</p> <p>ALL1:          Selects all one data.</p> <p>PN9 ERR:      Selects PN9 with an error of 1%.</p>
<b><i>FEC</i></b>	<p>Sets whether or not FEC (Convolutional or Turbo Coding) processing is performed.</p> <p>ON:           FEC processing is performed.</p> <p>OFF:          FEC processing is not performed.</p>
<b><i>CRC</i></b>	<p>Sets the mode used to generate CRC data which is based on the calculated CRC value.</p> <p>NORMAL:    The calculated CRC value is used as CRC data (correct CRC data is output).</p> <p>INVERSE:   The value obtained by logically inverting the CRC is used as CRC data (incorrect CRC data is output).</p> <p>ADD ERR:    A block containing an error of 1% is generated using the NORMAL operation linked with the INVERSE operation.</p>
<b><i>more 1/2</i></b>	<p>Displays the modulation 1/2 menu.</p>

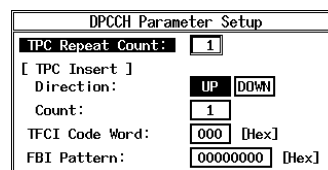
<When set to Uplink>

**TPC Insert**

The TPC command is inserted during Repeat operation. The direction and slot length of the TPC command you want to insert can be specified in the TPC Insert item in the DPCCH Parameter dialog box.

**DPCCH Setup**

Displays the DPCCH Parameter Setup dialog box.



**Figure 5-11 DPCCH Parameter Setup Dialog box  
(For the Uplink)**

**TPC Repeat Count**

Sets the TPC slot length for the Repeat operation.

**[TPC Insert]**

Inserts TPC commands of 1 or 0 into consecutive slots as specified by the TPC insertion slot length during the Repeat operation.

**Direction**

Selects the direction (Up or Down) during the Insert operation.

UP: Inserts TPC commands of 1 into consecutive slots.

DOWN: Inserts TPC commands of 0 into consecutive slots.

**Count**

Sets the TPC insertion slot length used during Insert operation.

**TFCI**

Sets a TFCI consisting of one frame in hexadecimal. The TFCI is specified using 10 TFCI bits, which are input to the TFCI coder.

Input value	Operation
A:	Shift→ 0
B:	Shift→ 1
C:	Shift→ 2
D:	Shift→ 3
E:	Shift→ 4
F:	Shift→ 5

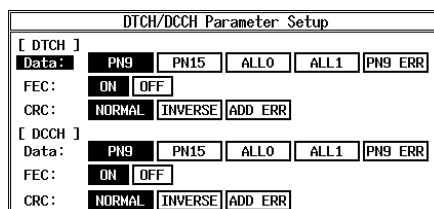
**FBI Pattern**

Sets a FBI bit pattern consisting of one frame in hexadecimal. The number of FBI bits per slot is determined by the DPCCH channel configuration settings: if the number is not 0, the value in the FBI bit pattern setting is valid.

**DTCH/DCCH Setup**

Displays the DTCH/DCCH Parameter setup dialog box.

5.2 Reference



**Figure 5-12 DTCH/DCCH Parameter Setup Dialog box (For the Downlink)**

**[DTCH]**

The DTCH value set when the data mode for the channel configuration settings is set to Information Data Mode is valid.

**Data**

Selects the data used for Information data.

- PN9: Selects PN9.
- PN15: Selects PN15.
- ALL0: Selects all zero data.
- ALL1: Selects all one data.
- PN9 ERR: Selects PN9 with an error of 1%.

**FEC**

Sets whether or not FEC (Convolutional or Turbo Coding) processing is performed.

- ON: FEC processing is performed.
- OFF: FEC processing is not performed.

**CRC**

Sets the mode used to generate CRC data which is based on the calculated CRC value.

- NORMAL: The calculated CRC value is used as CRC data (correct CRC data is output).
- INVERSE: The value obtained by logically inverting the CRC is used as CRC data (incorrect CRC data is output).
- ADD ERR: A block containing an error of 1% is generated using the NORMAL operation linked with the INVERSE operation.

**[DCCH]**

The DCCH value set when the data mode for the channel configuration settings is set to Information Data Mode is valid.

**Data**

Selects the data used for Information data.

- PN9: Selects PN9.
- PN15: Selects PN15.
- ALL0: Selects all zero data.
- ALL1: Selects all one data.

PN9 ERR: Selects PN9 with an error of 1%.

**FEC** Sets whether or not FEC (Convolutional or Turbo Coding) processing is performed.

ON: FEC processing is performed.

OFF: FEC processing is not performed.

**CRC** Sets the mode used to generate CRC data which is based on the calculated CRC value.

NORMAL: The calculated CRC value is used as CRC data (correct CRC data is output).

INVERSE: The value obtained by logically inverting the CRC is used as CRC data (incorrect CRC data is output).

ADD ERR: A block containing an error of 1% is generated using the NORMAL operation linked with the INVERSE operation.

### **Ext Trigger**

Synchronizes the baseband block (of this instrument) to the EXT TRIG IN signal. When this command is entered, the baseband block of this instrument is ready to receive the trigger signal from the EXT TRIG IN terminal.

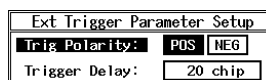
---

**NOTE:** *This function is enabled only when LINK is set to Uplink (UE→BS).*

---

### **Ext Trigger Setup**

Displays the Ext Trigger Parameter setup dialog box.



**Figure 5-13 Ext Trigger Parameter Setup Dialog box**

### **Trig Polarity**

Sets which edge of the signal input to the EXT TRIG IN terminal is used to synchronize the baseband block in this instrument.

POS: The rising edge is used to synchronize the baseband block.

NEG: The falling edge is used to synchronize the baseband block.

### **Trigger Delay**

Sets the delay time (chips) from when the trigger signal is input to when the baseband block is synchronized.

A time delay of "Setting value + 1024 (a UL-DL Timing offset which is compliant with the 3GPP standard)" is obtained.

### **more 1/2**

Displays the modulation 1/2 menu.

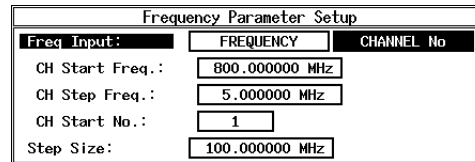
5.2 Reference

*Frequency & Level*

Displays the Frequency & Level menu.

*Frequency Setup*

Displays the Frequency Parameter Setup dialog box.



**Figure 5-14 Frequency Parameter Setup Dialog Box**

*Freq Input*

Selects the frequency entry mode.

**FREQUENCY:**

Directly enters a frequency value.

**CHANNEL No:**

Enters a channel number.

*CH Start Freq.*

Sets the channel start frequency.

*CH Step Freq.*

Sets the channel spacing.

*CH Start No.*

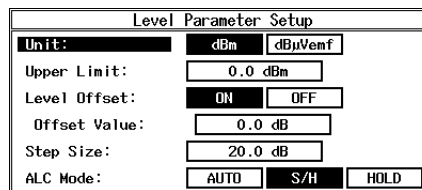
Sets the channel start number.

*Step Size*

Sets the step value of the step keys and data knob.

*Level Setup*

Displays the Level Parameter Setup dialog box.



**Figure 5-15 Level Parameter Setup Dialog Box**

*Unit*

Selects the unit to display or enter the data.

**dBm:** Sets a level-related unit to dBm.

**dBµVemf:** Sets a level-related unit to dBµVemf.

*Upper Limit*

Sets the upper limit.

*Level Offset*

Toggles the level offset function on or off.

**ON:** Turns the level offset function on.

**OFF:** Turns the level offset function off.

*Offset Value*

Sets the level offset value.

<b>Step Size</b>	Sets the step value of the step keys.
<b>ALC Mode</b>	<p>Selects the ALC operating mode. Automatically selects the optimum operating mode depending on the R3562 settings. (For details, refer to the R3562 Operation manual.)</p> <p>AUTO: Normal ALC</p> <p>S/H: Sample and hold using the reference modulation pattern.</p> <p>HOLD: ALC voltage hold when the reference modulation pattern is used.</p>

---

**NOTE:** When not set to the optimum operation mode, the output from the RF OUT terminal may deviate from the target value.

---

**Modulation ON/OFF**

Turns the RF output modulation function on or off.

ON: Modulates the RF output using transmission data.

OFF: Does not modulate the RF output.

**Output ON/OFF**

Turns the RF output on or off.

ON: Turns the RF signal on.

OFF: Turns the RF signal off.

**Other**

Displays the Other menu.

**Clock & Timing Setup**

Displays the Clock/Timing Signal Parameter Setup dialog box.

Clock/Timing Signal Parameter Setup					
Synth Ref In:	1MHz	2MHz	5MHz	10MHz	15MHz
	INTERNAL				
10MHz Ref Adj.:	0				
MOD-TB In:	3.84MHz	7.68MHz	15.36MHz	INTERNAL	
Clock Out 1:	OFF	RADIO FRAME	SLOT TIMING		
	CHIP CLOCK	TPC REPEAT	TPC INSERT		
Clock Out 2:	OFF	RADIO FRAME	SLOT TIMING		
	CHIP CLOCK	TPC REPEAT	TPC INSERT		

**Figure 5-16 Clock/Timing Signal Parameter Setup Dialog Box**

**Synthe Ref In**

Selects the reference signal from the synthesizer.

1 MHz: Uses an external signal of 1 MHz.

2 MHz: Uses an external signal of 2 MHz.

5 MHz: Uses an external signal of 5 MHz.

10 MHz: Uses an external signal of 10 MHz.

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15 MHz: Uses an external signal of 15 MHz.

INTERNAL: Uses the internal reference signal.

**10MHz Ref Adj.** Sets internal reference signal's frequency difference to be corrected.

**MOD-TB In** Selects the reference signal used for the modulation.

3.84 MHz: Uses an external signal of 3.84 MHz.

7.68 MHz: Uses an external signal of 7.68 MHz.

15.36 MHz: Uses an external signal of 15.36 MHz.

INTERNAL: Uses the internal reference signal.

**Clock Out 1/Clock Out 2**

Outputs the modulation timing signals to the CLOCK OUT1 and CLOCK OUT2 connectors.

OFF: Turns the output signal off.

RADIO FRAME:  
Outputs the timing for the radio frame.

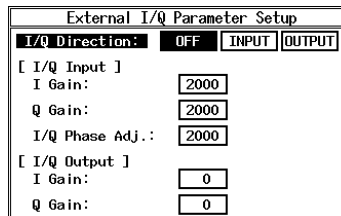
SLOT TIMING:  
Outputs the slot timing.

CHIP CLOCK:  
Outputs the CHIP clock.

TPC REPEAT:  
Outputs the first slot timing used for the TPC command sequence during Repeat operation.

TPC INSERT:  
Outputs the first slot timing used for the TPC command sequence during the Insert operation.

**Ext I/Q Setup** Displays the External I/Q Parameter Setup dialog box.



**Figure 5-17 External I/Q Parameter Setup Dialog Box**

**I/Q Direction** Exchanges the external IQ terminals between the input and output and selects the IQ signal paths to the IQ modulator.

OFF: Turns off the IQ output, and inputs the internal baseband signal to the IQ modulator.

**INPUT:** Inputs the IQ signal from the outside to the IQ modulator.

**OUTPUT:** Turns on the IQ output, and inputs the internal baseband signal to the IQ modulator.

---

**NOTE:** *The level and modulation accuracy of the RF output cannot be guaranteed while in the OUTPUT mode.*

---

**[I/Q Input]** Sets the parameter if I/Q Direction is set to Input.

**I Gain** Sets the gain of the amplifier that inputs the I signal.

**Q Gain** Sets the gain of the amplifier that inputs the Q signal.

**I/Q Phase Adj.**

Sets the phase difference to be corrected

**[I/Q Output]** Sets the parameter if I/Q Direction is set to Output.

**I Gain** Sets the gain of the amplifier that outputs the I signal.

**Q Gain** Sets the gain of the amplifier that outputs the Q signal.

**Cal/Test** Displays the Cal/Test menu.

**CAL** Performs a calibration. When the calibration is completed, the correction value obtained from the calibration can be used.

**Cal Corr ON/OFF**

Selects the calibration correction mode on or off.

**ON:** Makes the correction value obtained from the calibration be used.

**OFF:** Does not perform the correction.

**Self Test** The self-test is run.

**Save** Displays the Save Register List dialog box. Save is performed when the **ENTER** is pressed after the register has been selected.

Save Register List						
No.	I/Q Dir.	Link	Frequency	Level	Output	
1:	INPUT	UPLINK	2110.000000MHz	-80.0dBm	ON	
2:	OUTPUT	DOWNLINK	1000.000000MHz	-80.0dBm	ON	
3:	empty					

**Figure 5-18 Save Register List Dialog Box**



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***Recall***

Displays the Recall Register List dialog box. Recall is performed when the **ENTER** is pressed after the register has been selected.

Recall Register List					
No.	I/Q Dir.	Link	Frequency	Level	Output
1:	INPUT	UPLINK	2110.000000MHz	-80.0dBm	ON
2:	OUTPUT	DOWNLINK	1000.000000MHz	-80.0dBm	ON
3:	empty				

**Figure 5-19 Recall Register List Dialog Box**

***Preset***

Initializes the settings.

***Modulation ON/OFF***

Turns the RF output modulation function on or off.

ON: Modulates the RF output using transmission data.

OFF: Does not modulate the RF output.

***Output ON/OFF***

Turns the RF output on or off.

ON: Turns the RF signal on.

OFF: Turns the RF signal off.

***Quit***

Exits from the Rx Control option.

### 5.3 Measurement Example

This example shows the BER measurement of channel used in the Downlink.

Measurement conditions: The items to be measured are shown below. Set the measurement conditions to be suitable for the targeted measurement.

#### Output signal

Frequency:	2110 MHz
Output level:	-80 dBm
Link:	DOWNLINK
DPCH channel configuration:	Information mode Slot format number=11, Information bit rate=12.2kbps
Scrambling Code:	0
DPCH Channelization Code:	2
DTCH data:	PN9

#### BER counter

Measurement data pattern:	PN9
Measurement data length:	10000 bits
Input clock polarity:	NEG (trailing edge)
Input data polarity:	POS (noninverting)

#### Setup

1. Connect the instrument as shown below.

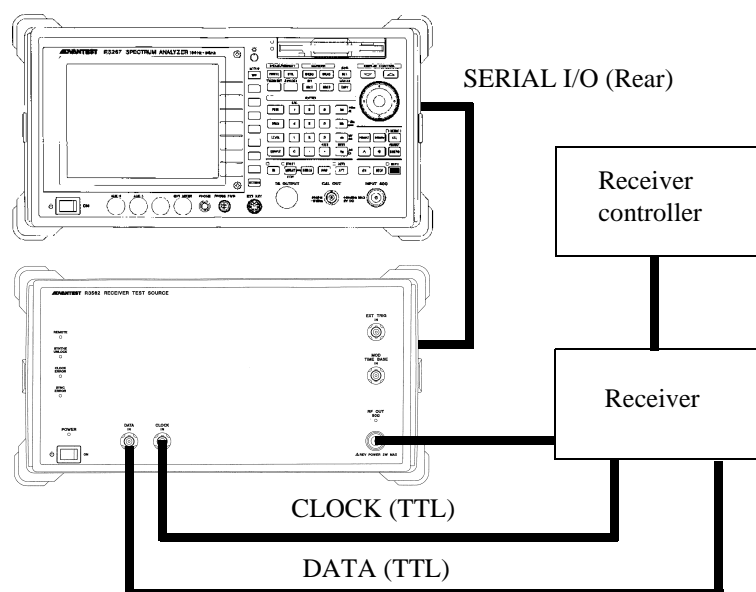


Figure 5-20 Connecting the DUT

5.3 Measurement Example

Setting up the unit under test

2. The measurement conditions are set according to the specifications of the unit under test.

Initialization

3. Press **ADVANCE**, **Rx Control[R3562]**, **Other** and **Preset**.

Setting the output signal

4. Press **FREQ**, **2, 1, 1, 0** and **MHz**.
5. Press **Level**, **-, 8, 0** and **GHz(dBm)**.
6. Press **Modulation** and **STD Setup**.  
The STD Parameter Setup dialog box is displayed.

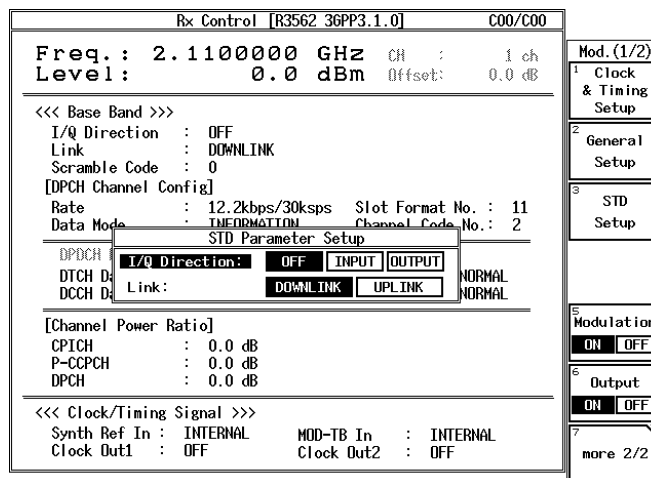


Figure 5-21 STD Parameter Setup Dialog Box

7. Set the following items.  
I/Q direction:OFF  
Link:Downlink
8. Press **General Setup**.  
The General Parameter Setup dialog box is displayed.

Rx Control [R3562 36PP3.1.0] C00/C00			
Freq.:	2.1100000 GHz	CH :	1 ch
Level:	0.0 dBm	Offset:	0.0 dB
General Parameter Setup			
Scramble Code:	0		
DPCH Channel Config:	PHYS.(8)/30ksps	PHYS.(9)/30ksps	
	PHYS.(10)/30ksps	PHYS.(11)/30ksps	
	PHYS.(12)/60ksps	PHYS.(13)/120ksps	
	PHYS.(14)/240ksps	PHYS.(15)/480ksps	
	INFO.(11)/12.2kbps	INFO.(13)/64kbps	
	INFO.(14)/144kbps	INFO.(15)/384kbps	
DPDCH Data:	PN9	PN15	ALLO ALL1 PN9 ERR
DPCH Channel. Code:	2		
[ Channel Power Ratio ]			
CPICH:	0.0 dB		
P-CCPCH:	0.0 dB		
DPCH:	0.0 dB		
<div style="float: right;">           Mod. (1/2)            1 Clock &amp; Timing Setup            2 General Setup            3 STD Setup            5 Modulation ON OFF            6 Output ON OFF            7 more 2/2         </div>			

Figure 5-22 General Parameter Setup Dialog Box

9. Set the following items.

Scrambling Code:0

DPCH Channel Config:

INFO.(11)/12.2kbps

DPDCH DATA:PN9

DPCH Channel. Code:

2

[Channel Power Ratio]

CPICH: 0dB

P-CCPCH: 0dB

DPCH: 0dB

10. Press *more 2/2* and *DTCH/DCCH Setup*.  
The DTCH/DCCH Parameter Setup dialog box is displayed.

5.3 Measurement Example

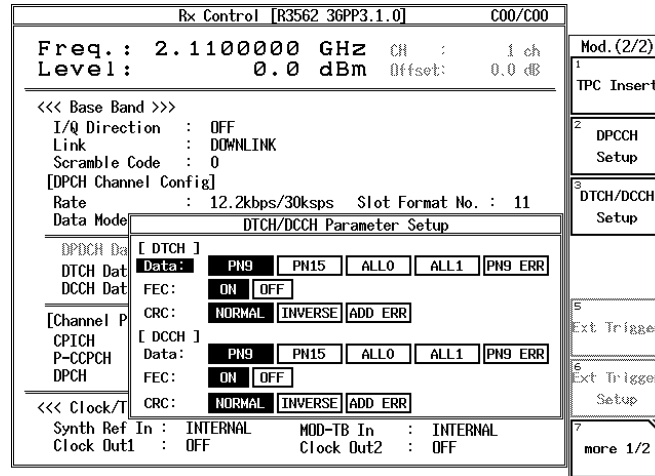


Figure 5-23 DTCH/DCCH Parameter Setup Dialog Box

- Set the following items for DTCH and DCCH.

Data:PN9

FEC:ON

CRC:NORMAL

- Press **Return**.

Setting the BER counter

- Press **BER** and **Parameter Setup**.

The BER Parameter Setup dialog box is displayed.

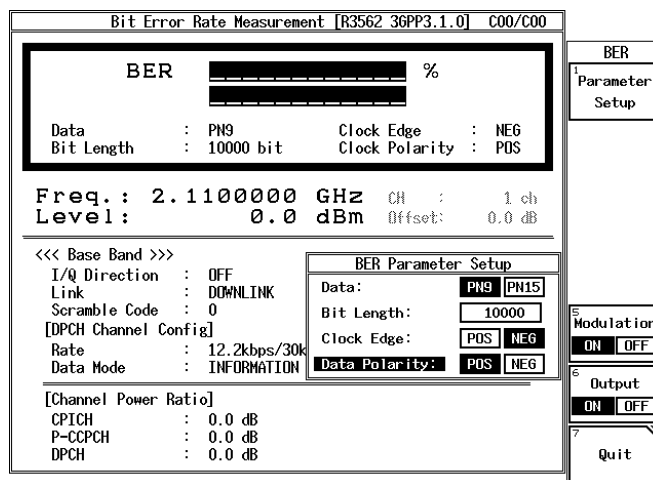


Figure 5-24 BER Parameter Setup Dialog Box

14. Set the following items.

Data:PN9

Bit Length:10000

Clock Edge:NEG

Data Polarity:POS

Starting the measurement

15. Press **REPEAT**.  
The bit error rate is displayed.

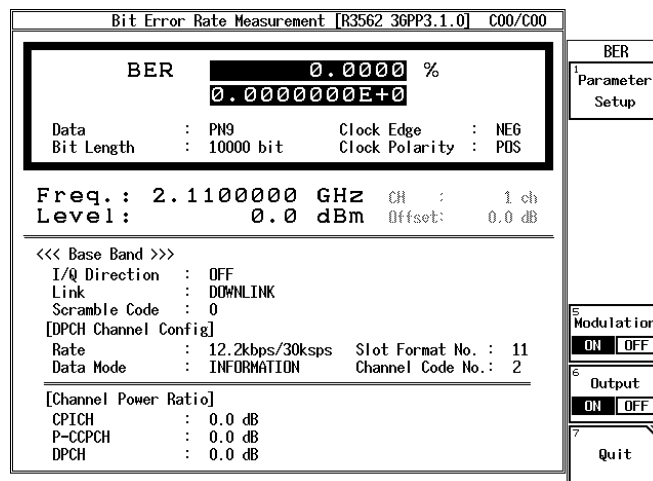


Figure 5-25 Measurement Result on the Bit Error Rate

## 6 HOW TO OPERATE THE R3562 OPT65

This chapter describes all key functions of the R3562 OPT65 cdma2000 option.

### 6.1 Outline

The operation menu of R3562 is placed under the **ADVANCE**.

Press **ADVANCE** and **Rx Control [R3562]**, R3267 Series becomes R3562 control mode and displays the screen shown in Figure 6-2 to set and measure R3562.

In this mode, operation with only soft-key or dialog box becomes effective except **FREQ** and **LEVEL**. The operation with **SPAN** and so on which can be used in ordinary operation mode cannot be performed. In order to return to the ordinary operation mode, press **POWER**, **UTIL**, **TRANSIENT** or **Quit**.

[Setting up the communication system]

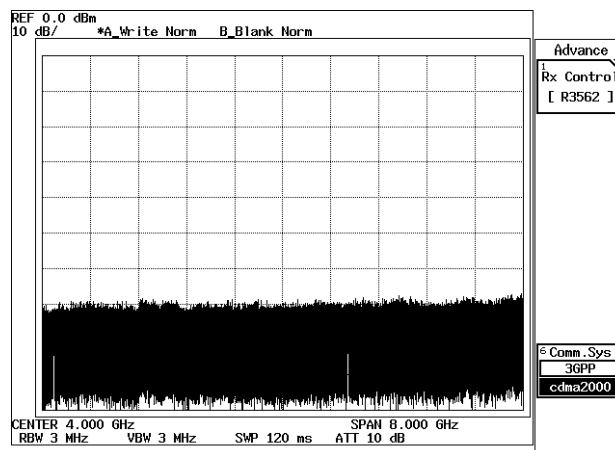


Figure 6-1 Initial Screen

To control the OPT65 (cdma2000) of R3562 using this option, the R3562 communication system must be set to the cdma2000 mode. When the Comm.sys key on the Initial screen is set to 3GPP (highlighted) (Figure 6-1), a mode is not set correctly.

Use the procedure below to change the communication system:

1. Press the Comm.sys key to set cdma2000 (highlighted).
2. Turn the R3562 power switch off, and then on again.

---

**NOTE:** Always perform steps 1 and 2 to change the communication system (performing step 1 only does not complete the operation).

---

6.1 Outline

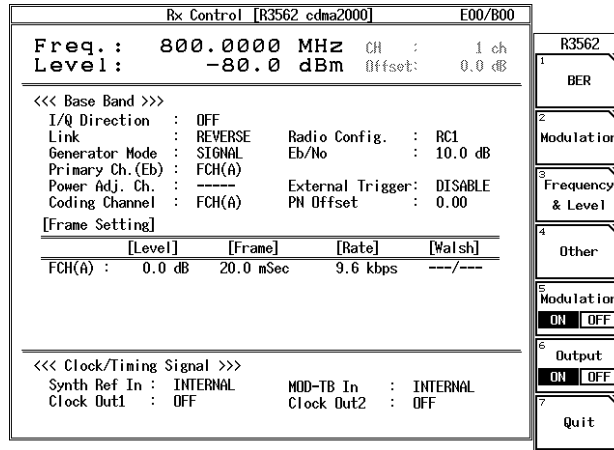


Figure 6-2 R3562 Control Main Screen (cdma2000)



## 6.2 Reference

This chapter describes the functions of all panel and soft keys.

- Menu Index: Use this index as a key index to Chapter 6.
- Menu Map: Shows a list of hierarchical menus on a panel key basis.
- Functional Description: Explains the functions of the panel and soft keys.

The panel keys are arranged in alphabetical order.

### 6.2.1 Menu Index

This menu index is used to easily find the keys described in Chapter 6.

<u>Operation Key</u>	<u>Pages</u>	<u>Operation Key</u>	<u>Pages</u>
[DCCH].....	6-6, 6-8, 6-17, 6-26	AWGN Cal Corr .....	6-44
[FCH(A)].....	6-7, 6-8, 6-20, 6-25, 6-28	AWGN Cal Corr ON/OFF .....	6-10
[FCH(B)].....	6-6, 6-7, 6-8, 6-17, 6-20, 6-22, 6-26, 6-28, 6-30	BER.....	6-6, 6-11
[FCH(C)].....	6-7, 6-20, 6-28	Bit Length .....	6-6, 6-11
[I/Q Input] .....	6-10, 6-44	Block Interleaver.....	6-9, 6-32, 6-33, 6-34, 6-35, 6-36, 6-37, 6-38, 6-39, 6-40
[I/Q Output].....	6-10, 6-44	Burst.....	6-6, 6-14
[PICH].....	6-6, 6-7, 6-17, 6-19, 6-22	Cal/Test.....	6-10, 6-44
[SCH(A)].....	6-7, 6-22, 6-30	CH Start Freq. ....	6-10, 6-41
[SCH(C)].....	6-7, 6-8, 6-22, 6-30	CH Start No.....	6-10, 6-41
[SCH1(C)].....	6-6, 6-17, 6-26	CH Step Freq.....	6-10, 6-41
[SCH2(A)].....	6-6, 6-8, 6-17, 6-26	Clock & Timing Setup.....	6-6, 6-10, 6-12, 6-42
[SYNCH] .....	6-7, 6-20, 6-22	Clock Edge.....	6-6, 6-11
10MHz Ref Adj.....	6-6, 6-10, 6-12, 6-43	Clock Out 1 .....	6-6, 6-10, 6-13, 6-43
Add. Bit Error .....	6-9, 6-32, 6-33, 6-34, 6-35, 6-36, 6-37, 6-38, 6-39, 6-40	Clock Out 2 .....	6-6, 6-10, 6-13, 6-43
ALC Mode .....	6-10, 6-42	Coding Channel .....	6-8, 6-24, 6-26, 6-27, 6-30
AWCN .....	6-44	CRC.....	6-9, 6-31, 6-33, 6-34, 6-35, 6-36, 6-37, 6-38, 6-39, 6-40
AWGN .....	6-10	DATA .....	6-31, 6-33, 6-34, 6-35, 6-36, 6-37, 6-38, 6-39, 6-40
		Data .....	6-6, 6-9, 6-11
		Data Polarity .....	6-6, 6-11

## 6.2 Reference

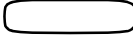

DCCH Setup .....	6-9, 6-32		
Eb/No .....	6-6, 6-7, 6-15, 6-16, 6-19, 6-22	Modulator.....	6-10, 6-45
Entry Mode .....	6-9, 6-32	Modulator Cal Corr.....	6-45
Equalizing .....	6-19, 6-21	Modulator Cal Corr ON/OFF.....	6-10
Equalizing Filter.....	6-7	Offset Value .....	6-10, 6-41
Error Ratio.....	6-9, 6-32, 6-33, 6-34, 6-35, 6-36, 6-37, 6-38, 6-39, 6-40	Other .....	6-6, 6-42
Ext I/Q Setup.....	6-10, 6-43	Output ON/OFF .....	6-6, 6-10, 6-12, 6-31, 6-45
EXT Trigger.....	6-14, 6-15	Parameter Setup .....	6-6, 6-11
External Trigger .....	6-6	PICH Setup .....	6-9, 6-32
FCH(TRCH A) Setup.....	6-9, 6-31, 6-36	PN Offset .....	6-6, 6-14, 6-16
FCH(TRCH B) Setup.....	6-9, 6-34, 6-36, 6-39	Power Adjustment Ch. ....	6-6, 6-7, 6-16, 6-19, 6-22
FCH(TRCH C) Setup.....	6-9, 6-37	Power Control Pattern.....	6-9, 6-32
FEC .....	6-25, 6-27, 6-28, 6-30	Preset.....	6-10, 6-45
Frame .....	6-25, 6-26, 6-28, 6-30	Primary Ch.(Eb).....	6-6, 6-7, 6-15, 6-16, 6-19, 6-22
Frame Setup .....	6-24, 6-25, 6-27, 6-28	Q Gain.....	6-10, 6-44
FREQ .....	6-11	QOF.....	6-31
Freq Input.....	6-10, 6-41	Quit .....	6-6, 6-12, 6-45
Frequency & Level.....	6-6, 6-40	Radio Configuration.....	6-7, 6-24
Frequency Setup.....	6-10, 6-40	Rate .....	6-25, 6-26, 6-28, 6-30
Gating .....	6-9, 6-32	Recall .....	6-10, 6-45
Gating Rate .....	6-9, 6-32	Recall Register List.....	6-10
General Setup.....	6-6, 6-13, 6-15, 6-18, 6-21	Rep. Pattern.....	6-31, 6-33, 6-34, 6-35, 6-36, 6-37, 6-38, 6-39, 6-40
Generator Mode .....	6-6, 6-7, 6-14, 6-16, 6-19, 6-21	REPEAT .....	6-11
I Gain.....	6-10, 6-44	Repeat Pattern .....	6-9
I/Q Direction .....	6-7, 6-10, 6-24, 6-44	Rx Control [R3562] .....	6-6
I/Q Phase Adj. ....	6-10, 6-44	Save.....	6-10, 6-45
LEVEL .....	6-11	Save Register List .....	6-10
Level Offset.....	6-10, 6-41	SCH(TRCH A) Setup .....	6-9, 6-38
Level Setup .....	6-10, 6-41	SCH(TRCH C) Setup.....	6-9, 6-40
Link .....	6-7, 6-24	SCH1(TRCH C) Setup.....	6-9
MOD-TB In.....	6-6, 6-10, 6-12, 6-43	SCH2(TRCH A) Setup .....	6-9, 6-33
Modulation .....	6-6, 6-12	Self Test .....	6-10, 6-45
Modulation ON/OFF.....	6-6, 6-10, 6-11, 6-31,	SINGLE .....	6-11
		START.....	6-11
		STD Setup.....	6-6, 6-24
		Step Size.....	6-10, 6-41
		STOP.....	6-11
		Synthe Ref In .....	6-6, 6-10,

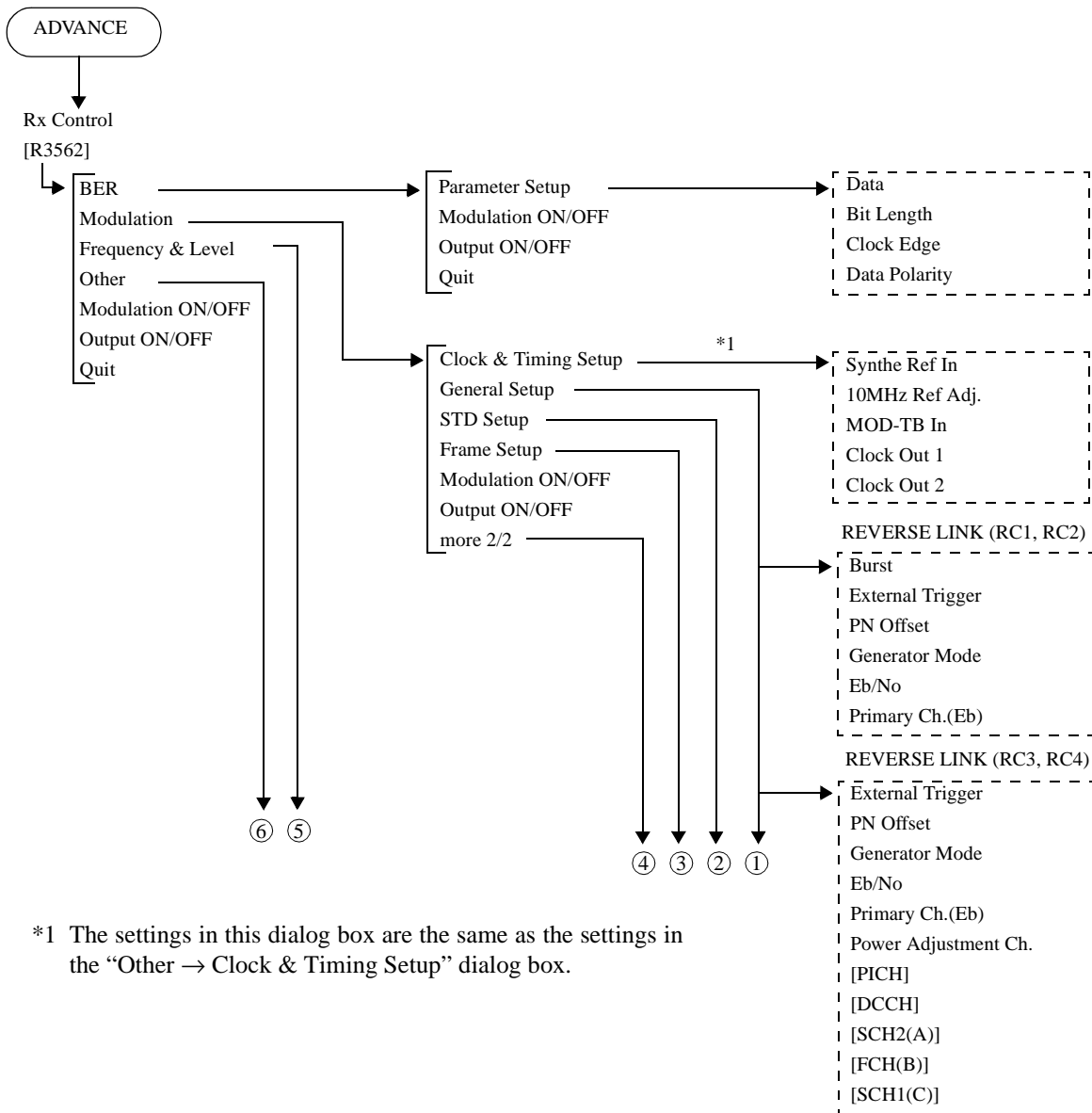
	6-12, 6-42
Unit .....	6-10, 6-41
Upper Limit .....	6-10, 6-41
Walsh Len.....	6-26, 6-28, 6-30
Walsh No. ....	6-26, 6-28, 6-30

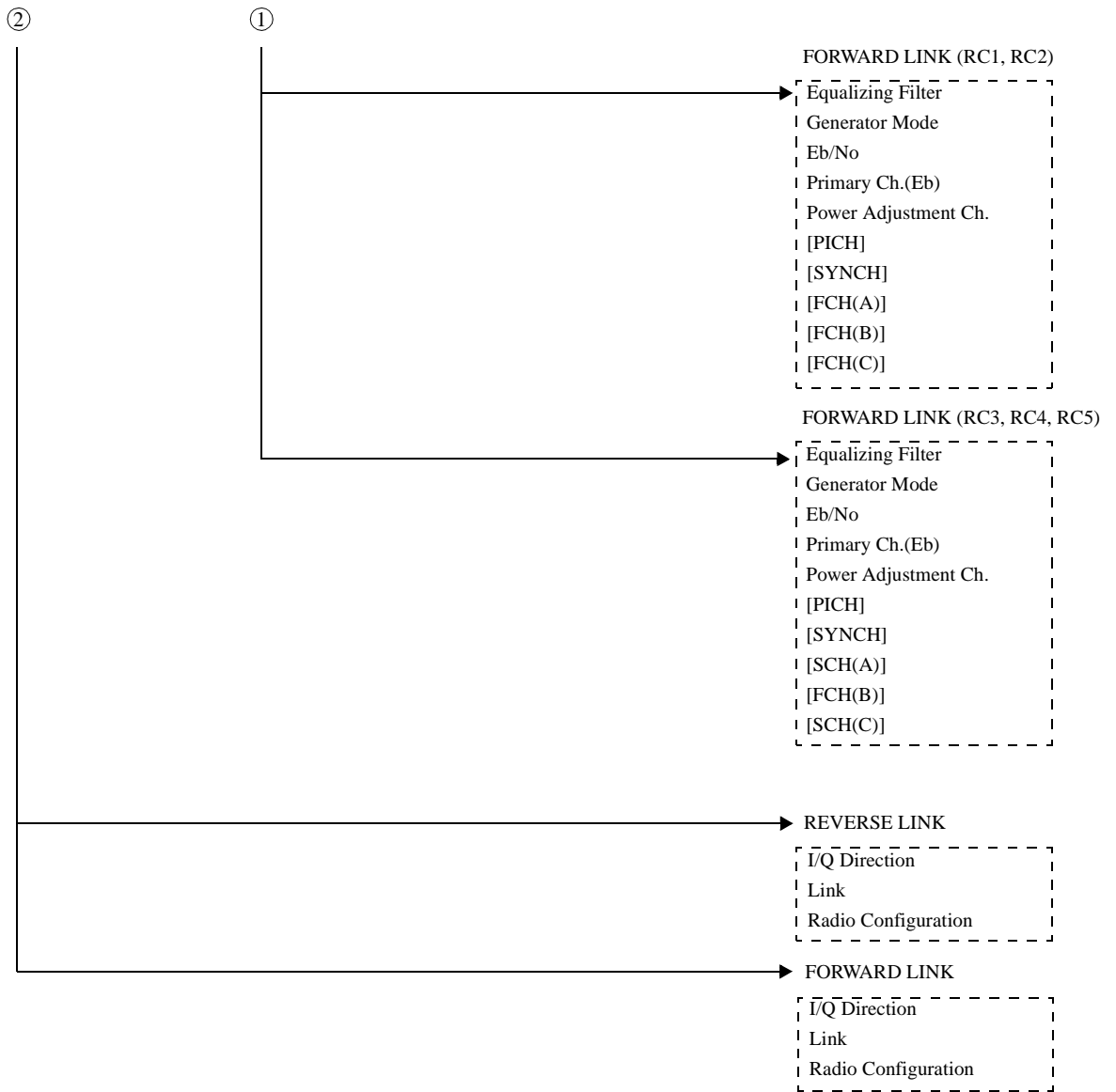
6.2 Reference

6.2.2 Menu Map

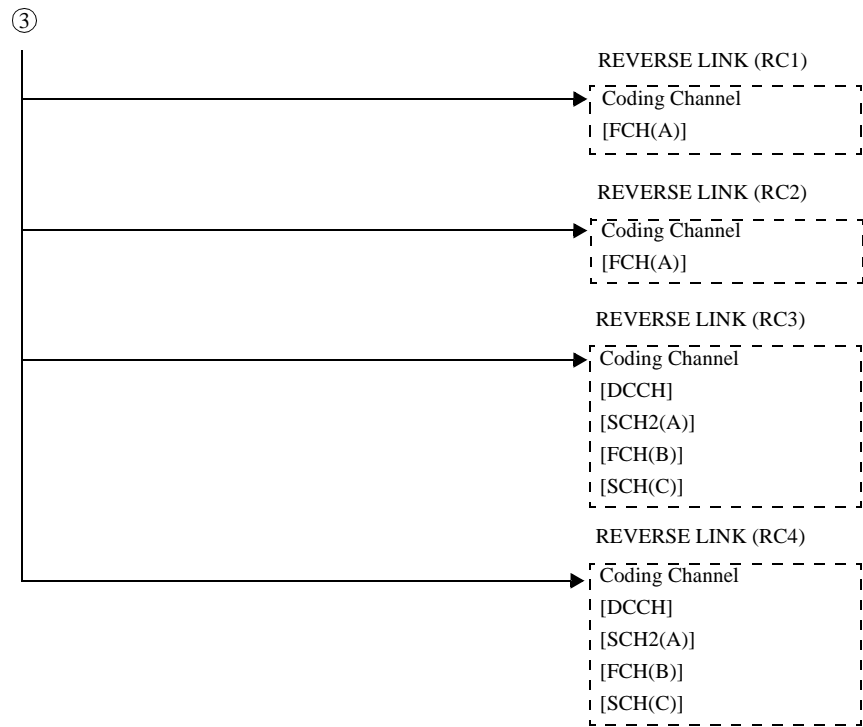
A list of soft menus, which are under the ADVANCE key, used with the R3562 are shown below.

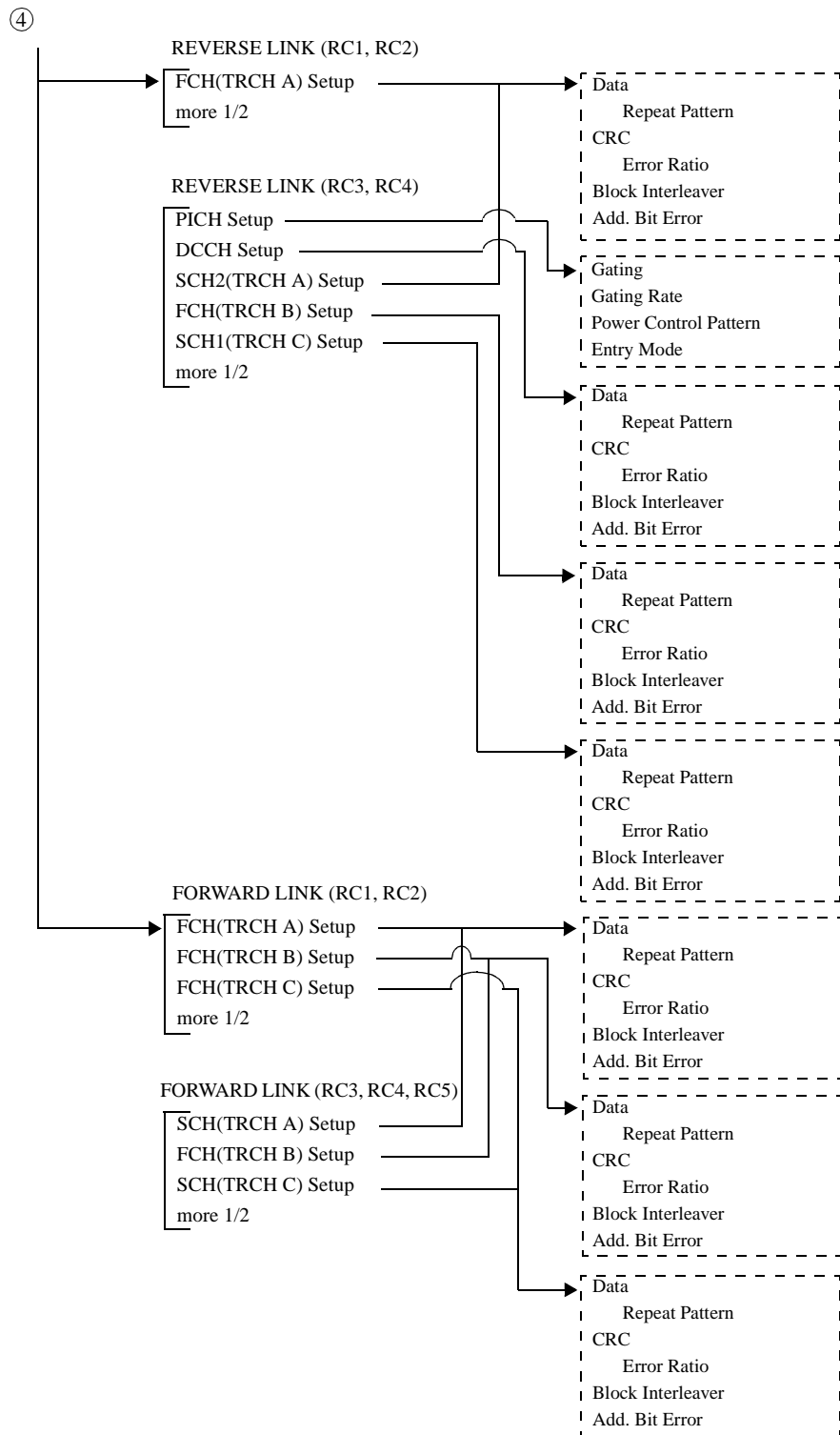
**NOTE:**  Represents a panel key.  
 Represents a dialog box.  
 Unless otherwise noted, the soft menus are shown.



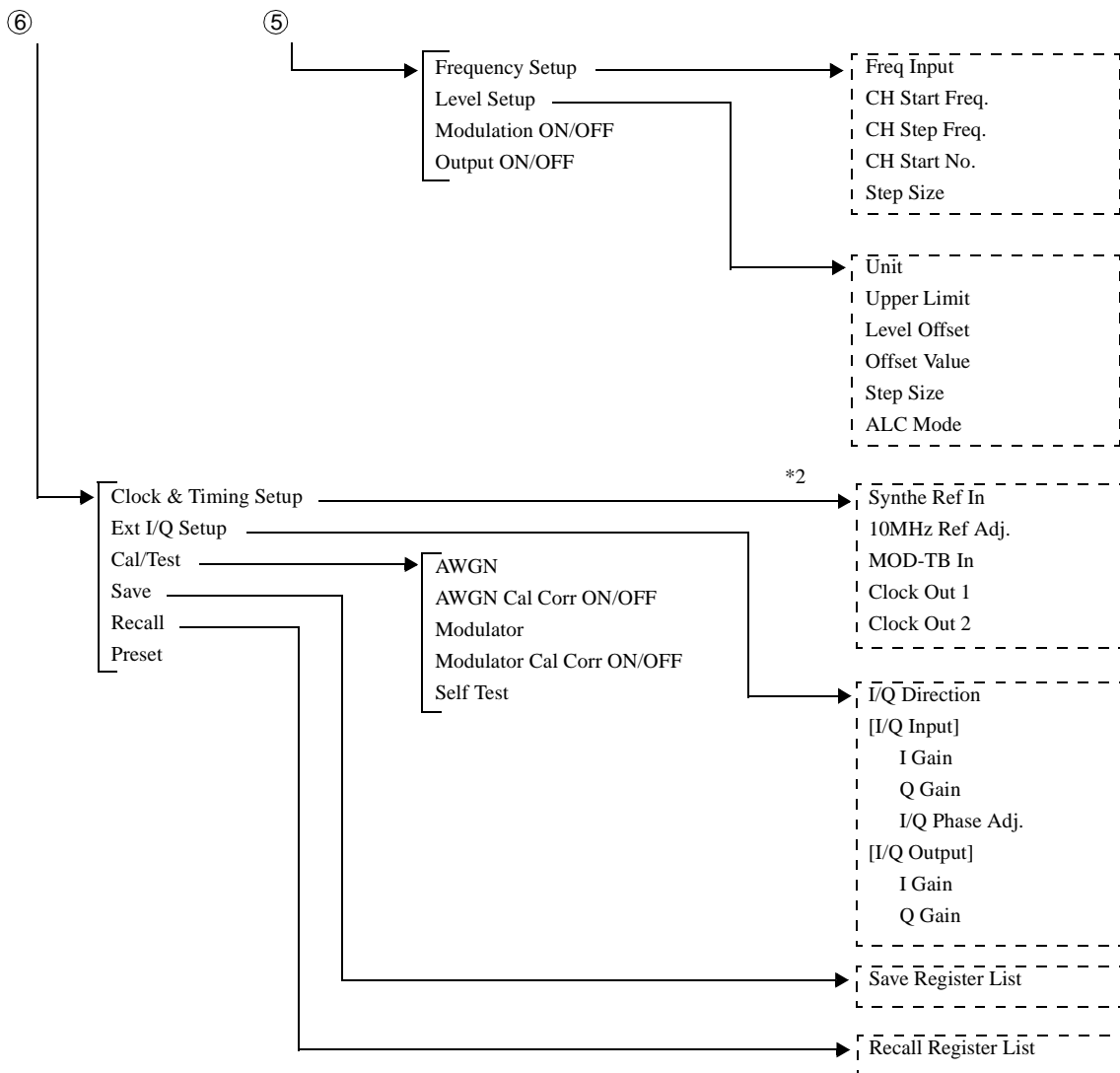


6.2 Reference





6.2 Reference



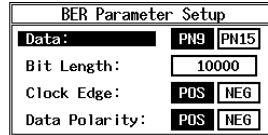
\*2 The settings in this dialog box are the same as the settings in the “Modulation → Clock & Timing Setup” dialog box.



### 6.2.3 Functional Description

This section describes the front panel keys and the soft menus associated with them.

<b>FREQ</b>	A window prompting numeric values is displayed. Sets the output frequency. Use the up or down keys, the data knob and the numeric keys to enter data.
<b>LEVEL</b>	A window prompting numeric values is displayed. Used to set the output level. Use the up or down keys, the data knob and the numeric keys to enter data.
<b>SINGLE</b>	Makes one BER measurement.
<b>REPEAT (START/STOP)</b>	Makes repeated BER measurements, or stops the current BER measurement.
<b>BER</b>	Displays the BER Measurement Mode menu.
<b><i>Parameter Setup</i></b>	Displays the BER Parameter Setup dialog box.



**Figure 6-3 BER Parameter Setup Dialog Box**

<b><i>Data</i></b>	Selects test data type. PN9: Selects PN9. PN15: Selects PN15.
<b><i>Bit Length</i></b>	Set BER measurement time with the bit length. The setting range of the bit length is 1000 to 10000000 bits.
<b><i>Clock Polarity</i></b>	Select from which edge you get data, the rising edge of the signal from BER clock terminal or the falling edge. POS: Rising NEG: Falling
<b><i>Data Polarity</i></b>	Select if you invert BER DATA terminal data or not. POS: Positive logic (not invert) NEG: Negative logic (invert)
<b><i>Modulation ON/OFF</i></b>	Turns the RF output modulation function on or off. ON: Modulates the RF output.

6.2 Reference

- Output ON/OFF**
  - OFF: Does not modulate the RF output.
  - Turns the RF output on or off.
  - ON: Turns the RF signal on.
  - OFF: Turns the RF signal off.
- Quit**
  - Exits from BER Measurement Mode.
- Modulation**
  - Displays the Mod. 1/2 menu.
- Clock & Timing Setup**
  - Displays the Clock/Timing Signal Parameter Setup dialog box.

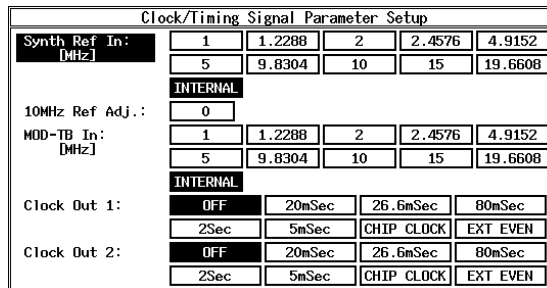


Figure 6-4 Clock/Timing Signal Parameter Setup Dialog Box

- Synthe Ref In**
  - Selects the reference signal from the synthesizer.
  - 1 MHz: Uses an external signal of 1 MHz.
  - 1.2288 MHz: Uses an external signal of 1.2288 MHz.
  - 2 MHz: Uses an external signal of 2 MHz.
  - 2.4576 MHz: Uses an external signal of 2.4576 MHz.
  - 4.9152 MHz: Uses an external signal of 4.9152 MHz.
  - 5 MHz: Uses an external signal of 5 MHz.
  - 9.8304 MHz: Uses an external signal of 9.8304 MHz.
  - 10 MHz: Uses an external signal of 10 MHz.
  - 15 MHz: Uses an external signal of 15 MHz.
  - 19.6608 MHz: Uses an external signal of 19.6608 MHz.
  - INTERNAL: Uses the internal reference signal.
- 10MHz Ref Adj.**
  - Sets internal reference signal's frequency difference to be corrected.
- MOD-TB In**
  - Selects the reference signal used for the modulation.
  - 1 MHz: Uses an external signal of 1 MHz.
  - 1.2288 MHz: Uses an external signal of 1.2288 MHz.

- 2 MHz: Uses an external signal of 2 MHz.  
 2.4576 MHz: Uses an external signal of 2.4576 MHz.  
 4.9152 MHz: Uses an external signal of 4.9152 MHz.  
 5 MHz: Uses an external signal of 5 MHz.  
 9.8304 MHz: Uses an external signal of 9.8304 MHz.  
 10 MHz: Uses an external signal of 10 MHz.  
 15 MHz: Uses an external signal of 15 MHz.  
 19.6608 MHz:  
     Uses an external signal of 19.6608 MHz.  
 INTERNAL: Uses the internal reference signal.

***Clock Out 1/Clock Out 2***

Outputs the modulation timing signals to the CLOCK OUT1 and CLOCK OUT2 connectors.

- OFF: Turns the output signal off.  
 20 msec: Outputs the signals for the Traffic Channel frame period.  
 26.6 msec: Outputs the signals for the Sync Channel frame period.  
 80 msec: Outputs the signals for the Sync Channel super frame period.  
 2 sec: Outputs the even-second signal in the base band block.  
 5 msec: Outputs the signals for both the FCH and DCCH Channel frame periods.  
 CHIP CLOCK:  
     Outputs a chip clock of 1.2288 MHz.  
 EXT EVEN: Outputs an even-second signal which is input to the EXT TRIG terminal.

<When Reverse Is Set to RC1 or RC2>

***General Setup***

The General Parameter Setup <Reverse: RC1/RC2> dialog box is displayed if Reverse RC1 or RC2 is selected in the STD Parameter Setup dialog box shown in Figure 6-9.

General Parameter Setup <Reverse:RC1/RC2>	
Burst:	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF
Ext Trigger:	<input checked="" type="checkbox"/> ENABLE <input type="checkbox"/> DISABLE
PN Offset:	<input type="text" value="0.00"/>
Generator Mode:	<input checked="" type="checkbox"/> SIGNAL <input type="checkbox"/> NOISE <input type="checkbox"/> Eb/No
Eb/No:	<input type="text" value="10.0 dB"/>
Primary Ch. (Eb):	<input checked="" type="checkbox"/> FCH(A)

**Figure 6-5 General Parameter Setup Dialog Box  
 <When Reverse Is Set to RC 1 or RC 2>**

6.2 Reference

<b><i>Burst</i></b>	<p>Toggles the Fundamental Channel burst on or off.</p> <p>ON: Turns the burst on.</p> <p>OFF: Turns the burst off.</p> <hr/> <p><b>NOTE:</b> <i>The burst is automatically turned off when Radio Configuration is set to 3 or 4.</i></p> <hr/>
<b><i>EXT Trigger</i></b>	<p>Sets whether or not the baseband block of this instrument is synchronized with the even-second signal input to the EXT TRIG IN terminal on the front panel.</p> <p>ENABLE: The baseband block is synchronized with the even-second signal input to the EXT TRIG IN terminal.</p> <p>DISABLE: The baseband block is not synchronized with the even-second signal input to the EXT TRIG IN terminal.</p> <hr/> <p><b>NOTE:</b> <i>No signal is output from the RF OUT connector if the EXT Trigger is set to ENABLE but the even-second signal is not input to the EXT TRIG IN connector. In addition, the R3562 may not be synchronized with the base station unless the frequency synchronization between the two is maintained using MOD TIME BASE IN or SYN-THE REF IN.</i></p> <hr/>
<b><i>PN Offset</i></b>	<p>Sets a PN offset value for the even-second signal if EXT Trigger is set to ENABLE and the instrument is synchronized with the even-second signal.</p> <p>One PN offset is 64 chips. As a result, the relationship between the chip quantity and the PN offset setting value is as shown below:</p> <p>OFFSET [in chips] = Round-off (64 × PN OFFSET)</p> <p>OFFSET [in chips]: Quantity (in chips) set to this instrument.</p> <p>PN OFFSET: Setting value for the PN offset</p> <p>Round-off: Rounded off at the first decimal place.</p>
<b><i>Generator Mode</i></b>	<p>Selects a signal input to the IQ modulator.</p> <p>SIGNAL: Selects a CDMA signal.</p> <p>NOISE: Selects an AWGN signal with a bandpass of 2 MHz.</p> <p>Eb/No: Selects a CDMA signal combined with the AWGN output signal. A ratio of the primary channel signal level to the AWGN output level is set.</p>

---

**NOTE:** First perform an AWGN calibration before setting the generator mode to Eb/No.

---

**Eb/No** Sets an Eb/No(Nt) value for the primary channel.

**Primary Ch.(Eb)** The primary channel is fixed for Radio Configuration 1 or 2.

<When Reverse Is Set to RC3 or RC4>

### General Setup

The General Parameter Setup <Reverse: RC3/RC4> dialog box is displayed if Reverse RC3 or RC4 is selected in the STD Parameter Setup dialog box shown in Figure 6-9.

General Parameter Setup <Reverse: RC3/RC4>			
Ext Trigger:	<input checked="" type="checkbox"/> ENABLE <input type="checkbox"/> DISABLE		
PN Offset:	0.00		
Generator Mode:	<input checked="" type="checkbox"/> SIGNAL <input type="checkbox"/> NOISE <input type="checkbox"/> Eb/No		
Eb/No:	10.0 dB		
Primary Ch.(Eb):	<input checked="" type="checkbox"/> DCCH <input type="checkbox"/> SCH2(A) <input type="checkbox"/> FCH(B) <input type="checkbox"/> SCH1(C)		
Power Adj. Ch.:	<input type="checkbox"/> PICH <input checked="" type="checkbox"/> DCCH <input type="checkbox"/> SCH2(A) <input type="checkbox"/> FCH(B) <input type="checkbox"/> SCH1(C)		
	<input type="checkbox"/> OFF		
[ PICH ]	Output:	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF	Power Ratio: -7.0 dB
[ DCCH ]	Output:	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF	Power Ratio: -1.1 dB
[ SCH2(A) ]	Output:	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF	Power Ratio: -20.0 dB
[ FCH (B) ]	Output:	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF	Power Ratio: -15.6 dB
[ SCH1(C) ]	Output:	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF	Power Ratio: -20.0 dB

**Figure 6-6 General Parameter Setup Dialog Box**  
<When Reverse Is Set to RC 3 or RC 4>

### EXT Trigger

Sets whether or not the baseband block of this instrument is synchronized with the even-second signal input to the EXT TRIG IN terminal on the front panel.

**ENABLE:** The baseband block is synchronized with the even-second signal input to the EXT TRIG IN terminal.

**DISABLE:** The baseband block is not synchronized with the even-second signal input to the EXT TRIG IN terminal.

---

**NOTE:** No signal is output from the RF OUT connector if the EXT Trigger is set to ENABLE but the even-second signal is not input to the EXT TRIG IN connector. In addition, the R3562 may not be synchronized with the base station unless the frequency synchronization between the two is maintained using MOD TIME BASE IN or SYN-  
THE REF IN.

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## 6.2 Reference

<b><i>PN Offset</i></b>	<p>Sets a PN offset value for the even-second signal if EXT Trigger is set to ENABLE and the instrument is synchronized with the even-second signal.</p> <p>One PN offset is 64 chips. As a result, the relationship between the chip quantity and the PN offset setting value is as shown below:</p> $\text{OFFSET [in chips]} = \text{Round-off (64} \times \text{PN OFFSET)}$ <p>OFFSET [in chips]: Quantity (in chips) set to this instrument.</p> <p>PN OFFSET:        Setting value for the PN offset</p> <p>Round-off:         Rounded off at the first decimal place.</p>
<b><i>Generator Mode</i></b>	<p>Selects a signal input to the IQ modulator.</p> <p>SIGNAL:        Selects a CDMA signal.</p> <p>NOISE:         Selects an AWGN signal with a bandpass of 2 MHz.</p> <p>Eb/No:         Selects a CDMA signal combined with the AWGN output signal. A ratio of the primary channel signal level to the AWGN output level is set.</p> <hr/> <p><b><i>NOTE:</i></b>        <i>First perform an AWGN calibration before setting the generator mode to Eb/No.</i></p> <hr/>
<b><i>Eb/No</i></b>	<p>Sets an Eb/No(Nt) value for the primary channel.</p>
<b><i>Primary Ch.(Eb)</i></b>	<p>Sets the primary channel to Control Channel, Traffic Channel A, Traffic Channel B or Traffic Channel C whose output is turned on. The selected channel is used as the target channel of Eb/No(Nt).</p> <p>DCCH:         Selects Dedicated Control Channel as the primary channel.</p> <p>SCH2(A):       Selects Supplemental Channel 2 as the primary channel.</p> <p>FCH(B):        Selects Fundamental Channel as the primary channel.</p> <p>SCH1(C):       Selects Supplemental Channel 1 as the primary channel.</p>
<b><i>Power Adjustment Ch.</i></b>	<p>Selects the output supplemental channel from the channels whose outputs are turned on. The output of the selected channel is automatically adjusted so that the sum total of all output channels is 0 dB.</p>

PICH:	Selects Pilot Channel as the output supplemental channel.
DCCH:	Selects Dedicated Control Channel as the output supplemental channel.
SCH2(A):	Selects Supplemental Channel 2 as the output supplemental channel.
FCH(B):	Selects Fundamental Channel as the output supplemental channel.
SCH1(C):	Selects Supplemental Channel 1 as the output supplemental channel.
OFF	Turns the output level supplemental channel off.
<b>[PICH]</b>	Turns the Pilot Channel output on or off, and sets Power Ratio.
<b>[DCCH]</b>	Turns the Dedicated Control Channel output on or off, and sets Power Ratio.
<b>[SCH2(A)]</b>	Turns Supplemental Channel 2 output on or off, and sets Power Ratio.
<b>[FCH(B)]</b>	Turns the Fundamental Channel output on or off, and sets Power Ratio.
<b>[SCH1(C)]</b>	Turns the Supplemental Channel 1 output on or off, and sets Power Ratio.

**NOTE:**

- 1. The output of the channel selected as the primary channel cannot be turned off.***
- 2. The output of the channel selected as the output level supplemental channel cannot be turned off.***
- 3. After the output level supplemental channel has been selected, a channel level setting cannot be changed if the sum total of all the output channels exceeds 0 dB, and any channel whose output is currently turned off cannot be turned on.***
- 4. If PICH, DCCH, SCH2(A), FCH(B) or SCH1(C) is selected as an output level supplemental channel, the output setting value for each channel is a value relative to the sum total of all channel levels.***  
***If the output level supplemental channel is not selected (or off), the output setting value for each channel is a value relative to a specific channel.***  
***Example:***  
***If the output level supplemental channel is not selected (or off)***  
***All channels have the same output level for Cases “a” and “b” in Table 6-1.***

6.2 Reference

**Table 6-1 Example 1 showing when the Output Level Supplemental Channel is OFF**

Channel	Case a	Case b
Pilot Channel	-5dB	-10dB
Dedicated Control Channel	-5dB	-10dB
Supplemental Channel 2(A)	-5dB	-10dB

5. *If the output level supplemental channel is not selected (or off), any channel level that is 20 dB or more than the sum total channel power cannot be set.*

*Example:*

*Table 6-2 shows the channel level limit values.*

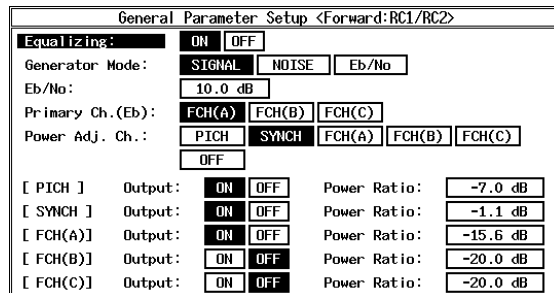
**Table 6-2 Example 2 showing when the Output Level Supplemental Channel is OFF**

Channel	Setting level	Limit value
Pilot Channel	-1.9dB	Upper limit value
Dedicated Control Channel	-2.0dB	Upper limit value
Supplemental Channel 2(A)	-18.9dB	Lower limit value

<When Forward Is Set to RC1 or RC2>

**General Setup**

The General Parameter Setup <Forward: RC1/RC2> dialog box is displayed if Forward RC1 or RC2 is selected in the STD Parameter Setup dialog box shown in Figure 6-9.



**Figure 6-7 General Parameter Setup Dialog Box <When Forward Is Set to RC 1 or RC 2>**



<b><i>Equalizing</i></b>	Turns Equalizing Filter on or off.
<b><i>Generator Mode</i></b>	Selects a signal input to the IQ modulator.
SIGNAL:	Selects a CDMA signal.
NOISE:	Selects an AWGN signal with a bandpass of 2 MHz.
Eb/No:	Selects a CDMA signal combined with the AWGN output signal. A ratio of the primary channel signal level to the AWGN output level is set.

---

**NOTE:** *First perform an AWGN calibration before setting the generator mode to Eb/No.*

---

<b><i>Eb/No</i></b>	Sets an Eb/No(Nt) value for the primary channel.
<b><i>Primary Ch.(Eb)</i></b>	Selects the primary channel from the Traffic channels A, B and C with the outputs turned on. The selected channel is used as the target channel of Eb/No(Nt).
FCH(A):	Selects Fundamental Channel(A) as the primary channel.
FCH(B):	Selects Fundamental Channel(B) as the primary channel.
FCH(C):	Selects Fundamental Channel(C) as the primary channel.

***Power Adjustment Ch.***

Selects the output supplemental channel from the channels whose outputs are turned on. The output of the selected channel is automatically adjusted so that the sum total of all output channels is 0 dB.

PICH:	Selects Pilot Channel as the output supplemental channel.
SYNCH:	Selects Sync Channel as the output supplemental channel.
FCH(A):	Selects Fundamental Channel(A) as the output supplemental channel.
FCH(B):	Selects Fundamental Channel(B) as the output supplemental channel.
FCH(C):	Selects Fundamental Channel(C) as the output supplemental channel.
OFF	Turns the output level supplemental channel off.

***[PICH]*** Turns the Pilot Channel output on or off, and sets Power Ratio.

6.2 Reference

<i>[SYNCH]</i>	Turns the Sync Channel output on or off, and sets Power Ratio.
<i>[FCH(A)]</i>	Turns the Fundamental Channel(A) output on or off, and sets Power Ratio.
<i>[FCH(B)]</i>	Turns the Fundamental Channel(B) output on or off, and sets Power Ratio.
<i>[FCH(C)]</i>	Turns the Fundamental Channel(C) output on or off, and sets Power Ratio.

---

**NOTE:**

1. *The output of the channel selected as the primary channel cannot be turned off.*
2. *The output of the channel selected as the output level supplemental channel cannot be turned off.*
3. *After the output level supplemental channel has been selected, a channel level setting cannot be changed if the sum total of all the output channels exceeds 0 dB, and any channel whose output is currently turned off cannot be turned on.*
4. *If PICH, SYNCH, FCH(A), FCH(B) or FCH(C) is selected as an output level supplemental channel, the output setting value for each channel is a value relative to the sum total of all channel levels.*

*If the output level supplemental channel is not selected (or off), the output setting value for each channel is a value relative to a specific channel.*

**Example:**

*If the output level supplemental channel is not selected (or off) All channels have the same output level for Cases “a” and “b” in Table 6-3.*

**Table 6-3 Example 1 showing when the Output Level Supplemental Channel is OFF**

Channel	Case a	Case b
Pilot Channel	-5dB	-10dB
Sync Channel	-5dB	-10dB
Fundamental Channel(A)	-5dB	-10dB

5. *If the output level supplemental channel is not selected (or off), any channel level that is 20 dB or more than the sum total channel power cannot be set.*

**Example:**

*Table 6-4 shows the channel level limit values.*

**Table 6-4 Example 2 showing when the Output Level Supplemental Channel is OFF**

Channel	Setting level	Limit value
Pilot Channel	-1.9dB	Upper limit value
Sync Channel	-2.0dB	Upper limit value
Fundamental Channel(A)	-18.9dB	Lower limit value

<When Forward Is Set to RC3, RC4 or RC5>

### General Setup

The General Parameter Setup <Forward: RC3/RC4/RC5> dialog box is displayed if Forward RC3, RC4 or RC5 is selected in the STD Parameter Setup dialog box shown in Figure 6-9.

General Parameter Setup <Forward: RC3/RC4/RC5>

Equalizing:  ON  OFF

Generator Mode:  SIGNAL  NOISE  Eb/No

Eb/No: 10.0 dB

Primary Ch. (Eb):  SCH(A)  FCH(B)  SCH(C)

Power Adj. Ch.:  PICH  SYNCH  SCH(A)  FCH(B)  SCH(C)

OFF

[ PICH ] Output:  ON  OFF Power Ratio: -7.0 dB

[ SYNCH ] Output:  ON  OFF Power Ratio: -1.1 dB

[ SCH(A) ] Output:  ON  OFF Power Ratio: -20.0 dB

[ FCH(B) ] Output:  ON  OFF Power Ratio: -15.6 dB

[ SCH(C) ] Output:  ON  OFF Power Ratio: -20.0 dB

**Figure 6-8 General Parameter Setup Dialog Box**  
 <When Forward Is Set to RC 3, RC4 or RC5>

### Equalizing

Turns Equalizing Filter on or off.

### Generator Mode

Selects a signal input to the IQ modulator.

SIGNAL: Selects a CDMA signal.

NOISE: Selects an AWGN signal with a bandpass of 2 MHz.

Eb/No: Selects a CDMA signal combined with the AWGN output signal.

A ratio of the primary channel signal level to the AWGN output level is set.

**NOTE:** First perform an AWGN calibration before setting the generator mode to Eb/No.

## 6.2 Reference

<i><b>Eb/No</b></i>	Sets an Eb/No(Nt) value for the primary channel.
<i><b>Primary Ch.(Eb)</b></i>	Selects the primary channel from the Traffic channels A, B and C with the outputs turned on. The selected channel is used as the target channel of Eb/No(Nt). SCH(A): Selects Supplemental Channel(A) as the primary channel. FCH(B): Selects Fundamental Channel(B) as the primary channel. SCH(C): Selects Supplemental Channel(C) as the primary channel.
<i><b>Power Adjustment Ch.</b></i>	Selects the output supplemental channel from the channels whose outputs are turned on. The output of the selected channel is automatically adjusted so that the sum total of all output channels is 0 dB. PICH: Selects Pilot Channel as the output supplemental channel. SYNCH: Selects Sync Channel as the output supplemental channel. SCH(A): Selects Supplemental Channel(A) as the output supplemental channel. FCH(B): Selects Fundamental Channel(B) as the output supplemental channel. SCH(C): Selects Supplemental Channel(C) as the output supplemental channel. OFF Turns the output level supplemental channel off.
<i><b>[PICH]</b></i>	Turns the Pilot Channel output on or off, and sets Power Ratio.
<i><b>[SYNCH]</b></i>	Turns the Sync Channel output on or off, and sets Power Ratio.
<i><b>[SCH(A)]</b></i>	Turns the Supplemental Channel(A) output on or off, and sets Power Ratio.
<i><b>[FCH(B)]</b></i>	Turns the Fundamental Channel(B) output on or off, and sets Power Ratio.
<i><b>[SCH(C)]</b></i>	Turns the Supplemental Channel(C) output on or off, and sets Power Ratio.

**NOTE:**

1. *The output of the channel selected as the primary channel cannot be turned off.*

2. *The output of the channel selected as the output level supplemental channel cannot be turned off.*
3. *After the output level supplemental channel has been selected, a channel level setting cannot be changed if the sum total of all the output channels exceeds 0 dB, and any channel whose output is currently turned off cannot be turned on.*
4. *If PICH, SYNCH, SCH(A), FCH(B) or SCH(C) is selected as an output level supplemental channel, the output setting value for each channel is a value relative to the sum total of all channel levels.*  
*If the output level supplemental channel is not selected (or off), the output setting value for each channel is a value relative to a specific channel.*

*Example:*

*If the output level supplemental channel is not selected (or off) All channels have the same output level for Cases "a" and "b" in Table 6-5.*

**Table 6-5 Example 1 showing when the Output Level Supplemental Channel is OFF**

Channel	Case a	Case b
Pilot Channel	-5dB	-10dB
Sync Channel	-5dB	-10dB
Supplemental Channel(A)	-5dB	-10dB

5. *If the output level supplemental channel is not selected (or off), any channel level that is 20 dB or more than the sum total channel power cannot be set.*

*Example:*

*Table 6-6 shows the channel level limit values.*

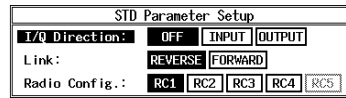
**Table 6-6 Example 2 showing when the Output Level Supplemental Channel is OFF**

Channel	Setting level	Limit value
Pilot Channel	-1.9dB	Upper limit value
Sync Channel	-2.0dB	Upper limit value
Supplemental Channel(A)	-18.9dB	Lower limit value

6.2 Reference

**STD Setup**

Displays the STD Parameter setup dialog box.



**Figure 6-9 STD Parameter Setup Dialog box**

**I/Q Direction**

Exchanges the external IQ terminals between the input and output and selects the IQ signal paths to the IQ modulator.

OFF: Turns off the IQ output, and inputs the internal baseband signal to the IQ modulator.

INPUT: The IQ signal coming from the outside is input to the IQ modulator.

OUTPUT: Turns on the IQ output to be sent to the outside.

**Link**

Selects the link direction.

REVERSE: Outputs the Reverse Link signal.

FORWARD: Outputs the Forward Link signal.

**Radio Configuration**

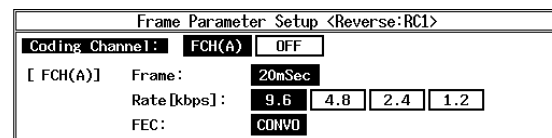
Specifies the Radio Configuration numbers prescribed by IS2000.

<When Reverse Is Set to RC1 or RC2>

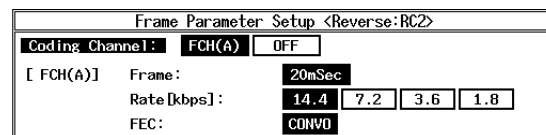
**Frame Setup**

Refer to the STD Parameter Setup dialog box shown in Figure 6-9. If Reverse RC1 is selected the Frame Parameter Setup <Reverse: RC1> dialog box is displayed.

If Reverse RC2 is selected the Frame Parameter Setup <Reverse: RC2> dialog box is displayed.



**Figure 6-10 Frame Parameter Setup Dialog Box <When Reverse Is Set to RC 1>**



**Figure 6-11 Frame Parameter Setup Dialog Box <When Reverse Is Set to RC 2>**

**Coding Channel**

Selects whether realtime coding is performed on FCH or not.

*[FCH(A)]*

<b>Frame</b>	The frame length is fixed at 20 msec for RC1 or RC2.
<b>Rate</b>	Selects Data Rate.
<b>FEC</b>	Fixed at Convolutional for RC1 or RC2.

---

**NOTE:** *The selection range for each parameter complies with the associated standards. Refer to Section 2.3, “cdma Function” and Section 3.2, “Channel Setup” of R3562 OPT65 OPERATION MANUAL.*

---

<When Reverse Is Set to RC3 or RC4>

**Frame Setup**

Refer to the STD Parameter Setup dialog box shown in Figure 6-9. If Reverse RC3 is selected the Frame Parameter Setup <Reverse: RC3> dialog box is displayed.

If Reverse RC4 is selected the Frame Parameter Setup <Reverse: RC4> dialog box is displayed.

Coding Channel:		DCCH	SCH2(A)	FCH(B)	SCH1(C)	OFF
[ DCCH ]	Frame:	5mSec	20mSec			
76.8 kbps	Rate [kbps]:	9.6				
	Walsh Len.:	16		Walsh No.:	8	
	FEC:	CONVO				
[ SCH2(A) ]	Frame:	20mSec	40mSec	80mSec		
76.8 kbps	Rate [kbps]:	76.8	38.4	19.2	9.6	4.8
		2.7	1.5			
	Walsh Len.:	4	8		Walsh No.:	2
	FEC:	CONVO	TURBO			
[ FCH(B) ]	Frame:	5mSec	20mSec			
76.8 kbps	Rate [kbps]:	9.6	4.8	2.7	1.5	
	Walsh Len.:	16			Walsh No.:	4
	FEC:	CONVO				
[ SCH1(C) ]	Frame:	20mSec	40mSec	80mSec		
76.8 kbps	Rate [kbps]:	307.2	153.6	76.8	38.4	19.2
		9.6	4.8	2.7	1.5	
	Walsh Len.:	2	4		Walsh No.:	1
	FEC:	CONVO	TURBO			

**Figure 6-12 Frame Parameter Setup Dialog Box  
<When Reverse Is Set to RC 3>**

6.2 Reference

Frame Parameter Setup <Reverse:RC4>						
<b>Coding Channel:</b>	DCCH	SCH2(A)	FCH(B)	SCH1(C)	OFF	
[ DCCH ]	Frame:	5mSec	20mSec			
76.8 kbps	Rate[kbps]:	9.6				
	Walsh Len.:	16		Walsh No.:	8	
	FEC:	CONVO				
[ SCH2(A) ]	Frame:	20mSec	40mSec	80mSec		
76.8 kbps	Rate[kbps]:	115.2	57.6	28.8	14.4	7.2
		3.6	1.8			
	Walsh Len.:	4	8		Walsh No.:	2
	FEC:	CONVO	TURBO			
[ FCH(B) ]	Frame:	5mSec	20mSec			
76.8 kbps	Rate[kbps]:	14.4	9.6	7.2	3.6	1.8
	Walsh Len.:	16			Walsh No.:	4
	FEC:	CONVO				
[ SCH1(C) ]	Frame:	20mSec	40mSec	80mSec		
76.8 kbps	Rate[kbps]:	230.4	115.2	57.6	28.8	14.4
		7.2	3.6	1.8		
	Walsh Len.:	2	4		Walsh No.:	1
	FEC:	CONVO	TURBO			

**Figure 6-13 Frame Parameter Setup Dialog Box  
<When Reverse Is Set to RC 4>**

- Coding Channel** Selects a channel on which realtime coding is performed.
- DCCH: Performs realtime coding for Dedicated Control Channel.
  - SCH2(A): Performs realtime coding for Supplemental 2 Channel.
  - FCH(B): Performs realtime coding for Fundamental Channel.
  - SCH1(C): Performs realtime coding for Supplemental 1 Channel.
  - OFF: Turns realtime coding function off for each channel.

---

**NOTE:** *Realtime coding is performed on one channel at a time. As a previously selected channel is removed from the target, only the currently selected channel is targeted for realtime coding.*

---

*[DCCH], [SCH2(A)], [FCH(B)] and [SCH1(C)]*

- Frame** Selects Frame Length.
- Rate** Selects Data Rate.
- Walsh Len** Selects the Walsh length.
- Walsh No.** Selects the Walsh number.



**FEC** Selects either Turbo Coding or Convolutional Coding.

**NOTE:** *The range for each parameter is prescribed by the standard. For more information, refer to Section 2.3, “cdma2000 Function” and Section 3.2, “Channel Setup” in “R3562 OPT65 OPERATING MANUAL.”*

<When Forward Is Set to RC1 or RC2>

**Frame Setup**

Refer to the STD Parameter Setup dialog box shown in Figure 6-9. If Forward RC1 is selected the Frame Parameter Setup <Forward: RC1> dialog box is displayed.

If Forward RC2 is selected the Frame Parameter Setup <Forward: RC2> dialog box is displayed.

Coding Channel:		FCH(A)	FCH(B)	FCH(C)	OFF
[ FCH(A) ]	Frame:	20mSec			
	Rate[kbps]:	9.6	4.8	2.4	1.2
	Walsh Len.:	64		Walsh No.:	8
	FEC:	CONVO			
[ FCH(B) ]	Frame:	20mSec			
	Rate[kbps]:	9.6	4.8	2.4	1.2
	Walsh Len.:	64		Walsh No.:	62
	FEC:	CONVO			
[ FCH(C) ]	Frame:	20mSec			
	Rate[kbps]:	9.6	4.8	2.4	1.2
	Walsh Len.:	64		Walsh No.:	63
	FEC:	CONVO			

**Figure 6-14** Frame Parameter Setup Dialog Box <When Forward Is Set to RC 1>

Coding Channel:		FCH(A)	FCH(B)	FCH(C)	OFF
[ FCH(A) ]	Frame:	20mSec			
	Rate[kbps]:	14.4	7.2	3.6	1.8
	Walsh Len.:	64		Walsh No.:	8
	FEC:	CONVO			
[ FCH(B) ]	Frame:	20mSec			
	Rate[kbps]:	14.4	7.2	3.6	1.8
	Walsh Len.:	64		Walsh No.:	62
	FEC:	CONVO			
[ FCH(C) ]	Frame:	20mSec			
	Rate[kbps]:	14.4	7.2	3.6	1.8
	Walsh Len.:	64		Walsh No.:	63
	FEC:	CONVO			

**Figure 6-15** Frame Parameter Setup Dialog Box <When Forward Is Set to RC2>

**Coding Channel** Selects a channel on which realtime coding is performed.

6.2 Reference

FCH(A):	Performs realtime coding for Fundamental Channel(A).
FCH(B):	Performs realtime coding for Fundamental Channel(B).
FCH(C):	Performs realtime coding for Fundamental Channel(C).
OFF:	Turns realtime coding function off for each channel.

---

**NOTE:** *Realtime coding is performed on one channel at a time. As a previously selected channel is removed from the target, only the currently selected channel is targeted for realtime coding.*

---

*[FCH(A)], [FCH(B)], [FCH(C)]*

<b>Frame</b>	Selects Frame Length.
<b>Rate</b>	Selects Data Rate.
<b>Walsh Len</b>	Selects Walsh Length.
<b>Walsh No.</b>	Selects Walsh Number.
<b>FEC</b>	RC1 and RC2 are fixed at Convolutional.

---

**NOTE:** *The selection range for each parameter complies with the associated standards. Refer to Section 2.3, “cdma Function” and Section 3.2, “Channel Setup” of R3562 OPT65 OPERATION MANUAL.*

---

<When Forward Is Set to RC3, RC4 or RC5>

**Frame Setup**

Refer to the STD Parameter Setup dialog box shown in Figure 6-9. If Forward RC3 is selected the Frame Parameter Setup <Forward: RC3> dialog box is displayed.  
 If Forward RC4 is selected the Frame Parameter Setup <Forward: RC4> dialog box is displayed.  
 If Forward RC5 is selected the Frame Parameter Setup <Forward: RC5> dialog box is displayed.

Coding Channel:		SCH(A)	FCH(B)	SCH(C)	OFF
[ SCH(A) ]	Frame:	20mSec	40mSec	80mSec	
38.4 kbps	Rate[kbps]:	153.6	76.8	38.4	19.2
		4.8	2.7	1.5	
	Walsh Len.:	64			Walsh No.:
					62
	FEC:	CONVO	TURBO		
	QDF:	0	1	2	3
[ FCH(B) ]	Frame:	5mSec	20mSec		
38.4 kbps	Rate[kbps]:	9.6	4.8	2.7	1.5
	Walsh Len.:	64			Walsh No.:
					8
	FEC:	CONVO			
	QDF:	0	1	2	3
[ SCH(C) ]	Frame:	20mSec	40mSec	80mSec	
38.4 kbps	Rate[kbps]:	153.6	76.8	38.4	19.2
		4.8	2.7	1.5	
	Walsh Len.:	64			Walsh No.:
					63
	FEC:	CONVO	TURBO		
	QDF:	0	1	2	3

Figure 6-16 Frame Parameter Setup Dialog Box  
<When Forward Is Set to RC3>

Coding Channel:		SCH(A)	FCH(B)	SCH(C)	OFF
[ SCH(A) ]	Frame:	20mSec	40mSec	80mSec	
19.2 kbps	Rate[kbps]:	307.2	153.6	76.8	38.4
		9.6	4.8	2.7	1.5
	Walsh Len.:	128			Walsh No.:
					126
	FEC:	CONVO	TURBO		
	QDF:	0	1	2	3
[ FCH(B) ]	Frame:	5mSec	20mSec		
19.2 kbps	Rate[kbps]:	9.6	4.8	2.7	1.5
	Walsh Len.:	128			Walsh No.:
					8
	FEC:	CONVO			
	QDF:	0	1	2	3
[ SCH(C) ]	Frame:	20mSec	40mSec	80mSec	
19.2 kbps	Rate[kbps]:	307.2	153.6	76.8	38.4
		9.6	4.8	2.7	1.5
	Walsh Len.:	128			Walsh No.:
					127
	FEC:	CONVO	TURBO		
	QDF:	0	1	2	3

Figure 6-17 Frame Parameter Setup Dialog Box  
<When Forward Is Set to RC4>

6.2 Reference

Coding Channel:		SCH(A)	FCH(B)	SCH(C)	OFF
[ SCH(A) ]	Frame:	20mSec	40mSec	80mSec	
38.4 ksps	Rate[kbps]:	230.4	115.2	57.6	28.8 14.4
		7.2	3.6	1.8	
	Walsh Len.:	64			Walsh No. : 62
	FEC:	CONVO	TURBO		
	QOF:	0	1	2	3
[ FCH(B) ]	Frame:	5mSec	20mSec		
38.4 ksps	Rate[kbps]:	14.4	9.6	7.2	3.6 1.8
	Walsh Len.:	64			Walsh No. : 8
	FEC:	CONVO			
	QOF:	0	1	2	3
[ SCH(C) ]	Frame:	20mSec	40mSec	80mSec	
38.4 ksps	Rate[kbps]:	230.4	115.2	57.6	28.8 14.4
		7.2	3.6	1.8	
	Walsh Len.:	64			Walsh No. : 63
	FEC:	CONVO	TURBO		
	QOF:	0	1	2	3

**Figure 6-18 Frame Parameter Setup Dialog Box  
<When Forward Is Set to RC5>**

- Coding Channel** Selects a channel on which realtime coding is performed.
- SCH(A): Performs realtime coding for Supplemental Channel(A).
  - FCH(B): Performs realtime coding for Fundamental Channel(B).
  - SCH(C): Performs realtime coding for Supplemental Channel(C).
  - OFF: Turns realtime coding function off for each channel.

---

**NOTE:** *Realtime coding is performed on one channel at a time. As a previously selected channel is removed from the target, only the currently selected channel is targeted for realtime coding.*

---

**[SCH(A)], [FCH(B)], [SCH(C)]**

- Frame** Selects Frame Length.
- Rate** Selects Data Rate.
- Walsh Len** Selects Walsh Length.
- Walsh No.** Selects Walsh Number.
- FEC** Selects either Turbo or Convolutional Coding.

**QOF** Quasi Orthogonal Spreading can be performed using Forward Link RC3, RC4 or RC5. Select Functions 0 thru 3 which conform to the associated standards.

---

**NOTE:** *The selection range for each parameter complies with the associated standards. Refer to Section 2.3, "cdma Function" and Section 3.2, "Channel Setup" of R3562 OPT65 OPERATION MANUAL.*

---

**Modulation ON/OFF** Turns the RF output modulation function on or off.

ON: Modulates the RF output.

OFF: Does not modulate the RF output.

**Output ON/OFF** Turns the RF output on or off.

ON: Turns the RF signal on.

OFF: Turns the RF signal off.

**more 2/2** Displays Mod. (2/2) Menu.  
The menus for Link and Radio Configuration differ.

<When Reverse Is Set to RC1 or RC2>

**FCH(TRCH A) Setup** Displays the Traffic Channel A Parameter Setup dialog box.

**Figure 6-19 Traffic Channel A Parameter Setup Dialog Box**

**DATA** Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).

PN9: Selects a 9-stage PN code data pattern.

PN15: Selects a 15-stage PN code data pattern.

ALL0: Selects all zero data.

ALL1: Selects all one data.

REP.: Selects a data pattern consisting of the arbitrarily set four bits.

**Rep. Pattern** Specifies a value [in hexadecimal] for the arbitrarily set four bits.

**CRC** Selects a type of CRC to be added to the channel data.

6.2 Reference

ON: Sets each CRC value correctly.  
 OFF: Sets each CRC value to 0.  
 ADD ERR: Adds an error to each CRC.

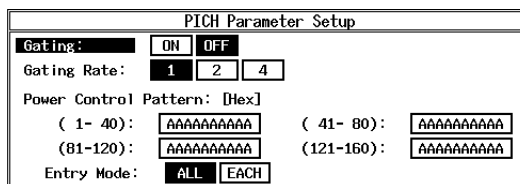
**Error Ratio** Selects an error ratio that is added to CRC.

**Block Interleaver** Toggles the Block Interleaving function on or off.

**Add. Bit Error** Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Reverse Is Set to RC3 or RC4>

**PICH Setup** Displays the PICH Parameter Setup Dialog Box.



**Figure 6-20 PICH Parameter Setup Dialog Box**

**Gating** Toggles the gating function for Reserve Pilot Channel on or off. When it is turned on, Power Control Channel is enabled, and Power Control Bit is inserted. When it is turned off, Power Control Channel is disabled, and Power Control Bit is always 0 (zero).

**Gating Rate** Sets the gating rate of Reverse Pilot Channel.

- 1: Sets Gating Rate to 1.
- 2: Sets Gating Rate to 1/2.
- 4: Sets Gating Rate to 1/4.

**Power Control Pattern** Specifies the bit pattern [in hexadecimal notation] of the Reverse Power Control Subchannel for Radio Configuration 3 or 4.

**Entry Mode** Selects the input mode for the power control pattern.

- ALL: Once you enter one character, all other characters are set to the same character.
- EACH: Up to 40 characters are entered.

<When Reverse Is Set to RC3 or RC4>

**DCCH Setup** Displays the DCCH Parameter Dialog Box.

DCCH Parameter Setup					
Data:	<b>PN9</b>	PN15	ALL0	ALL1	REPEAT
Repeat Pattern:	5 [Hex]				
CRC:	<b>ON</b>	OFF	ADD ERR		
Error Ratio:	2.0%	1.0%	0.5%	0.1%	
Block Interleaver:	<b>ON</b>	OFF			
Add. Bit Error:	<b>ON</b>	OFF			

Figure 6-21 DCCH Parameter Setup Dialog Box

**DATA**

Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).

PN9: Selects a 9-stage PN code data pattern.

PN15: Selects a 15-stage PN code data pattern.

ALL0: Selects all zero data.

ALL1: Selects all one data.

REP.: Selects a data pattern consisting of the arbitrarily set four bits.

**Rep. Pattern**

Specifies a value [in hexadecimal] for the arbitrarily set four bits.

**CRC**

Selects a type of CRC to be added to the channel data.

ON: Sets each CRC value correctly.

OFF: Sets each CRC value to 0.

ADD ERR: Adds an error to each CRC.

**Error Ratio**

Selects an error ratio that is added to CRC.

**Block Interleaver**

Toggles the Block Interleaving function on or off.

**Add. Bit Error**

Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Reverse Is Set to RC3 or RC4>

**SCH2(TRCH A) Setup**

Displays the Traffic Channel A Parameter Setup dialog box.

Traffic Channel A Parameter Setup					
Data:	<b>PN9</b>	PN15	ALL0	ALL1	REPEAT
Repeat Pattern:	5 [Hex]				
CRC:	<b>ON</b>	OFF	ADD ERR		
Error Ratio:	2.0%	1.0%	0.5%	0.1%	
Block Interleaver:	<b>ON</b>	OFF			
Add. Bit Error:	<b>ON</b>	OFF			

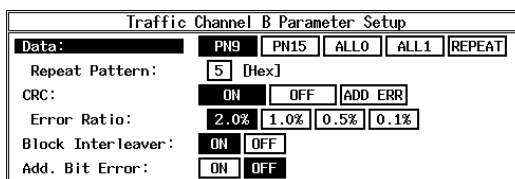
Figure 6-22 Traffic Channel A Parameter Setup Dialog Box

6.2 Reference

<b>DATA</b>	Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).
	PN9: Selects a 9-stage PN code data pattern.
	PN15: Selects a 15-stage PN code data pattern.
	ALL0: Selects all zero data.
	ALL1: Selects all one data.
	REP.: Selects a data pattern consisting of the arbitrarily set four bits.
<b>Rep. Pattern</b>	Specifies a value [in hexadecimal] for the arbitrarily set four bits.
<b>CRC</b>	Selects a type of CRC to be added to the channel data.
	ON: Sets each CRC value correctly.
	OFF: Sets each CRC value to 0.
	ADD ERR: Adds an error to each CRC.
<b>Error Ratio</b>	Selects an error ratio that is added to CRC.
<b>Block Interleaver</b>	Toggles the Block Interleaving function on or off.
<b>Add. Bit Error</b>	Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Reverse Is Set to RC3 or RC4>

**FCH(TRCH B) Setup** Displays the Traffic Channel B Parameter Setup dialog box.



**Figure 6-23 Traffic Channel B Parameter Setup Dialog Box**

<b>DATA</b>	Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).
	PN9: Selects a 9-stage PN code data pattern.
	PN15: Selects a 15-stage PN code data pattern.
	ALL0: Selects all zero data.
	ALL1: Selects all one data.
	REP.: Selects a data pattern consisting of the arbitrarily set four bits.



<b>Rep. Pattern</b>	Specifies a value [in hexadecimal] for the arbitrarily set four bits.
<b>CRC</b>	Selects a type of CRC to be added to the channel data. ON: Sets each CRC value correctly. OFF: Sets each CRC value to 0. ADD ERR: Adds an error to each CRC.
<b>Error Ratio</b>	Selects an error ratio that is added to CRC.
<b>Block Interleaver</b>	Toggles the Block Interleaving function on or off.
<b>Add. Bit Error</b>	Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Reverse Is Set to RC3 or RC4>

**SCH1(TRCH C) Setup** Displays the Traffic Channel C Parameter Setup dialog box.

**Figure 6-24 Traffic Channel C Parameter Setup Dialog Box**

<b>DATA</b>	Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data). PN9: Selects a 9-stage PN code data pattern. PN15: Selects a 15-stage PN code data pattern. ALL0: Selects all zero data. ALL1: Selects all one data. REP.: Selects a data pattern consisting of the arbitrarily set four bits.
-------------	---

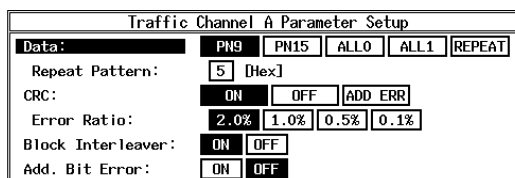
<b>Rep. Pattern</b>	Specifies a value [in hexadecimal] for the arbitrarily set four bits.
<b>CRC</b>	Selects a type of CRC to be added to the channel data. ON: Sets each CRC value correctly. OFF: Sets each CRC value to 0. ADD ERR: Adds an error to each CRC.
<b>Error Ratio</b>	Selects an error ratio that is added to CRC.
<b>Block Interleaver</b>	Toggles the Block Interleaving function on or off.

6.2 Reference

**Add. Bit Error** Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Forward Is Set to RC1 or RC2>

**FCH(TRCH A) Setup** Displays the Traffic Channel A Parameter Setup dialog box.



**Figure 6-25 Traffic Channel A Parameter Setup Dialog Box**

**DATA** Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).

- PN9: Selects a 9-stage PN code data pattern.
- PN15: Selects a 15-stage PN code data pattern.
- ALL0: Selects all zero data.
- ALL1: Selects all one data.
- REP.: Selects a data pattern consisting of the arbitrarily set four bits.

**Rep. Pattern** Specifies a value [in hexadecimal] for the arbitrarily set four bits.

**CRC** Selects a type of CRC to be added to the channel data.

- ON: Sets each CRC value correctly.
- OFF: Sets each CRC value to 0.
- ADD ERR: Adds an error to each CRC.

**Error Ratio** Selects an error ratio that is added to CRC.

**Block Interleaver** Toggles the Block Interleaving function on or off.

**Add. Bit Error** Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Forward Is Set to RC1 or RC2>

**FCH(TRCH B) Setup** Displays the Traffic Channel B Parameter Setup dialog box.

Traffic Channel B Parameter Setup					
Data:	<input checked="" type="radio"/> PN9	<input type="radio"/> PN15	<input type="radio"/> ALL0	<input type="radio"/> ALL1	<input type="radio"/> REPEAT
Repeat Pattern:	<input type="text" value="5"/> [Hex]				
CRC:	<input checked="" type="radio"/> ON	<input type="radio"/> OFF	<input type="button" value="ADD ERR"/>		
Error Ratio:	<input checked="" type="radio"/> 2.0%	<input type="radio"/> 1.0%	<input type="radio"/> 0.5%	<input type="radio"/> 0.1%	
Block Interleaver:	<input checked="" type="radio"/> ON	<input type="radio"/> OFF			
Add. Bit Error:	<input checked="" type="radio"/> ON	<input type="radio"/> OFF			

Figure 6-26 Traffic Channel B Parameter Setup Dialog Box

**DATA**

Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).

PN9: Selects a 9-stage PN code data pattern.

PN15: Selects a 15-stage PN code data pattern.

ALL0: Selects all zero data.

ALL1: Selects all one data.

REP.: Selects a data pattern consisting of the arbitrarily set four bits.

**Rep. Pattern**

Specifies a value [in hexadecimal] for the arbitrarily set four bits.

**CRC**

Selects a type of CRC to be added to the channel data.

ON: Sets each CRC value correctly.

OFF: Sets each CRC value to 0.

ADD ERR: Adds an error to each CRC.

**Error Ratio**

Selects an error ratio that is added to CRC.

**Block Interleaver**

Toggles the Block Interleaving function on or off.

**Add. Bit Error**

Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Forward Is Set to RC1 or RC2>

**FCH(TRCH C) Setup**

Displays the Traffic Channel C Parameter Setup dialog box.

Traffic Channel C Parameter Setup					
Data:	<input checked="" type="radio"/> PN9	<input type="radio"/> PN15	<input type="radio"/> ALL0	<input type="radio"/> ALL1	<input type="radio"/> REPEAT
Repeat Pattern:	<input type="text" value="5"/> [Hex]				
CRC:	<input checked="" type="radio"/> ON	<input type="radio"/> OFF	<input type="button" value="ADD ERR"/>		
Error Ratio:	<input checked="" type="radio"/> 2.0%	<input type="radio"/> 1.0%	<input type="radio"/> 0.5%	<input type="radio"/> 0.1%	
Block Interleaver:	<input checked="" type="radio"/> ON	<input type="radio"/> OFF			
Add. Bit Error:	<input checked="" type="radio"/> ON	<input type="radio"/> OFF			

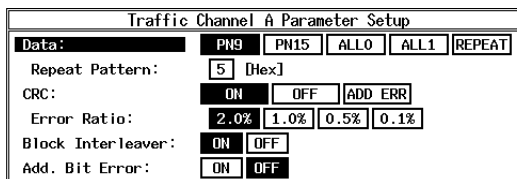
Figure 6-27 Traffic Channel C Parameter Setup Dialog Box

6.2 Reference

<b>DATA</b>	Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).
	PN9: Selects a 9-stage PN code data pattern.
	PN15: Selects a 15-stage PN code data pattern.
	ALL0: Selects all zero data.
	ALL1: Selects all one data.
	REP.: Selects a data pattern consisting of the arbitrarily set four bits.
<b>Rep. Pattern</b>	Specifies a value [in hexadecimal] for the arbitrarily set four bits.
<b>CRC</b>	Selects a type of CRC to be added to the channel data.
	ON: Sets each CRC value correctly.
	OFF: Sets each CRC value to 0.
	ADD ERR: Adds an error to each CRC.
<b>Error Ratio</b>	Selects an error ratio that is added to CRC.
<b>Block Interleaver</b>	Toggles the Block Interleaving function on or off.
<b>Add. Bit Error</b>	Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Forward Is Set to RC3, RC4 or RC5>

**SCH(TRCH A) Setup** Displays the Traffic Channel A Parameter Setup dialog box.



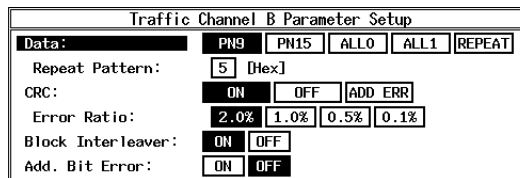
**Figure 6-28 Traffic Channel A Parameter Setup Dialog Box**

<b>DATA</b>	Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).
	PN9: Selects a 9-stage PN code data pattern.
	PN15: Selects a 15-stage PN code data pattern.
	ALL0: Selects all zero data.
	ALL1: Selects all one data.
	REP.: Selects a data pattern consisting of the arbitrarily set four bits.

<b>Rep. Pattern</b>	Specifies a value [in hexadecimal] for the arbitrarily set four bits.
<b>CRC</b>	Selects a type of CRC to be added to the channel data. ON: Sets each CRC value correctly. OFF: Sets each CRC value to 0. ADD ERR: Adds an error to each CRC.
<b>Error Ratio</b>	Selects an error ratio that is added to CRC.
<b>Block Interleaver</b>	Toggles the Block Interleaving function on or off.
<b>Add. Bit Error</b>	Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Forward Is Set to RC3, RC4 or RC5>

**FCH(TRCH B) Setup** Displays the Traffic Channel B Parameter Setup dialog box.



**Figure 6-29 Traffic Channel B Parameter Setup Dialog Box**

<b>DATA</b>	Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data). PN9: Selects a 9-stage PN code data pattern. PN15: Selects a 15-stage PN code data pattern. ALL0: Selects all zero data. ALL1: Selects all one data. REP.: Selects a data pattern consisting of the arbitrarily set four bits.
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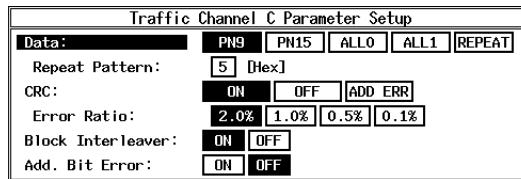
<b>Rep. Pattern</b>	Specifies a value [in hexadecimal] for the arbitrarily set four bits.
<b>CRC</b>	Selects a type of CRC to be added to the channel data. ON: Sets each CRC value correctly. OFF: Sets each CRC value to 0. ADD ERR: Adds an error to each CRC.
<b>Error Ratio</b>	Selects an error ratio that is added to CRC.
<b>Block Interleaver</b>	Toggles the Block Interleaving function on or off.

6.2 Reference

**Add. Bit Error** Selects whether or not an error of 1% is added to the Information or Physical data pattern.

<When Forward Is Set to RC3, RC4 or RC5>

**SCH(TRCH C) Setup** Displays the Traffic Channel C Parameter Setup dialog box.



**Figure 6-30 Traffic Channel C Parameter Setup Dialog Box**

**DATA** Selects the data pattern input to the realtime coder (Information data) or the data pattern input to the spreading section (Physical data).

- PN9: Selects a 9-stage PN code data pattern.
- PN15: Selects a 15-stage PN code data pattern.
- ALL0: Selects all zero data.
- ALL1: Selects all one data.
- REP.: Selects a data pattern consisting of the arbitrarily set four bits.

**Rep. Pattern** Specifies a value [in hexadecimal] for the arbitrarily set four bits.

**CRC** Selects a type of CRC to be added to the channel data.

- ON: Sets each CRC value correctly.
- OFF: Sets each CRC value to 0.
- ADD ERR: Adds an error to each CRC.

**Error Ratio** Selects an error ratio that is added to CRC.

**Block Interleaver** Toggles the Block Interleaving function on or off.

**Add. Bit Error** Selects whether or not an error of 1% is added to the Information or Physical data pattern.

**more 1/2** Displays Mod. (1/2) Menu.

**Frequency & Level** Displays the Frequency & Level menu.

**Frequency Setup** Displays the Frequency Parameter Setup dialog box.

Frequency Parameter Setup		
<b>Freq Input:</b>	<input type="text" value="FREQUENCY"/>	<input type="text" value="CHANNEL No"/>
CH Start Freq.:	<input type="text" value="800.0000 MHz"/>	
CH Step Freq.:	<input type="text" value="0.0300 MHz"/>	
CH Start No.:	<input type="text" value="1"/>	
Step Size:	<input type="text"/>	

**Figure 6-31 Frequency Parameter Setup Dialog Box**

- Freq Input*** Selects the frequency entry mode.  
**FREQUENCY:** Directly enters a frequency value.  
**CHANNEL No:** Enters a channel number.
- CH Start Freq.*** Sets the channel start frequency.
- CH Step Freq.*** Sets the channel spacing.
- CH Start No.*** Sets the channel start number.
- Step Size*** Sets the step value of the step keys and data knob.
- Level Setup*** Displays the Level Parameter Setup dialog box.

Level Parameter Setup		
<b>Unit:</b>	<input type="text" value="dBm"/>	<input type="text" value="dBμVemf"/>
Upper Limit:	<input type="text" value="0.0 dBm"/>	
Level Offset:	<input type="text" value="ON"/> <input type="text" value="OFF"/>	
Offset Value:	<input type="text"/>	
<b>Step Size:</b>	<input type="text" value="5.0 dB"/>	
ALC Mode:	<input type="text" value="AUTO"/>	<input type="text" value="S/H"/> <input type="text" value="HOLD"/>

**Figure 6-32 Level Parameter Setup Dialog Box**

- Unit*** Selects the unit to display or enter the data.  
**dBm:** Sets a level-related unit to dBm.  
**dBμVemf:** Sets a level-related unit to dBμVemf.
- Upper Limit*** Sets the upper limit.
- Level Offset*** Toggles the level offset function on or off.  
**ON:** Turns the level offset function on.  
**OFF:** Turns the level offset function off.
- Offset Value*** Sets the level offset value.
- Step Size*** Sets the step value of the step keys.

6.2 Reference

**ALC Mode**

Selects the ALC operating mode.

Automatically selects the optimum operating mode depending on the R3562 settings. (For details, refer to the R3562 Operation manual.)

AUTO: Normal ALC

S/H: Sample and hold using the reference modulation pattern.

HOLD: ALC voltage hold when the reference modulation pattern is used.

**NOTE:** When not set to the optimum operation mode, the output from the RF OUT terminal may deviate from the target value.

**Other**

Displays the Other menu.

**Clock & Timing Setup**

Displays the Clock/Timing Signal Parameter Setup dialog box.

Clock/Timing Signal Parameter Setup					
Synth Ref In: [MHz]	1	1.2288	2	2.4576	4.9152
	5	9.8304	10	15	19.6608
	INTERNAL				
10MHz Ref Adj.:	0				
MOD-TB In: [MHz]	1	1.2288	2	2.4576	4.9152
	5	9.8304	10	15	19.6608
	INTERNAL				
Clock Out 1:	OFF	20mSec	26.6mSec	80mSec	
	2Sec	5mSec	CHIP CLOCK	EXT EVEN	
Clock Out 2:	OFF	20mSec	26.6mSec	80mSec	
	2Sec	5mSec	CHIP CLOCK	EXT EVEN	

**Figure 6-33 Clock/Timing Signal Parameter Setup Dialog Box**

**Synthe Ref In**

Selects the reference signal from the synthesizer.

1 MHz: Uses an external signal of 1 MHz.

1.2288 MHz: Uses an external signal of 1.2288 MHz.

2 MHz: Uses an external signal of 2 MHz.

2.4576 MHz: Uses an external signal of 2.4576 MHz.

4.9152 MHz: Uses an external signal of 4.9152 MHz.

5 MHz: Uses an external signal of 5 MHz.

9.8304 MHz: Uses an external signal of 9.8304 MHz.

10 MHz: Uses an external signal of 10 MHz.

15 MHz: Uses an external signal of 15 MHz.

19.6608 MHz: Uses an external signal of 19.6608 MHz.



INTERNAL: Uses the internal reference signal.

**10MHz Ref Adj.** Sets internal reference signal's frequency difference to be corrected.

**MOD-TB In** Selects the reference signal used for the modulation.

1 MHz: Uses an external signal of 1 MHz.

1.2288 MHz: Uses an external signal of 1.2288 MHz.

2 MHz: Uses an external signal of 2 MHz.

2.4576 MHz: Uses an external signal of 2.4576 MHz.

4.9152 MHz: Uses an external signal of 4.9152 MHz.

5 MHz: Uses an external signal of 5 MHz.

9.8304 MHz: Uses an external signal of 9.8304 MHz.

10 MHz: Uses an external signal of 10 MHz.

15 MHz: Uses an external signal of 15 MHz.

19.6608 MHz:  
Uses an external signal of 19.6608 MHz.

INTERNAL: Uses the internal reference signal.

**Clock Out 1/Clock Out 2**

Outputs the modulation timing signals to the CLOCK OUT1 and CLOCK OUT2 connectors.

OFF: Turns the output signal off.

20 msec: Outputs the signals for the Traffic Channel frame period.

26.6 msec: Outputs the signals for the Sync Channel frame period.

80 msec: Outputs the signals for the Sync Channel super frame period.

2 sec: Outputs the even-second signal in the base band block.

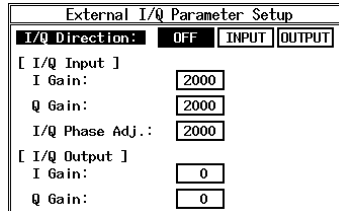
5 msec: Outputs the signals for both the FCH and DCCH Channel frame periods.

CHIP CLOCK:  
Outputs a chip clock of 1.2288 MHz.

EXT EVEN: Outputs an even-second signal which is input to the EXT TRIG terminal.

**Ext I/Q Setup** Displays the External I/Q Parameter Setup dialog box.

6.2 Reference



**Figure 6-34 External I/Q Parameter Setup Dialog Box**

***I/Q Direction***

Exchanges the external IQ terminals between the input and output and selects the IQ signal paths to the IQ modulator.

**OFF:** Turns off the IQ output, and inputs the internal baseband signal to the IQ modulator.

**INPUT:** Inputs the IQ signal from the outside to the IQ modulator.

**OUTPUT:** Turns on the IQ output, and inputs the internal baseband signal to the IQ modulator.

---

**NOTE:** *The level and modulation accuracy of the RF output cannot be guaranteed while in the OUTPUT mode.*

---

***[I/Q Input]***

Sets the parameter if I/Q Direction is set to Input.

***I Gain***

Sets the gain of the amplifier that inputs the I signal.

***Q Gain***

Sets the gain of the amplifier that inputs the Q signal.

***I/Q Phase Adj.***

Sets the phase difference to be corrected

***[I/Q Output]***

Sets the parameter if I/Q Direction is set to Output.

***I Gain***

Sets the gain of the amplifier that outputs the I signal.

***Q Gain***

Sets the gain of the amplifier that outputs the Q signal.

***Cal/Test***

Displays the Cal/Test menu.

***AWCN***

The calibrations for the AWGN level and CDMA signal level are conducted and the correction can be used when the calibrations have been completed.

***AWGN Cal Corr***

Toggles the AWGN calibration correction mode on or off.

**ON:** Allows the calibration correction to be performed using the acquired data.

OFF: Does not perform the calibration correction.

**Modulator**

The IQ-modulator balance calibration is conducted. The correction data obtained from the calibration is ready to be used when the calibration has been completed.

**Modulator Cal Corr**

Toggles the modulator calibration correction mode on or off.

ON: Allows the calibration correction to be performed using the acquired data.

OFF: Does not perform the calibration correction.

**Self Test**

Performs the self test.

**Save**

Displays the Save Register List dialog box. Save is performed when the **ENTER** is pressed after the register has been selected.

Save Register List					
No.	I/Q Dir.	Link	Frequency	Level	Output
1:	OFF	FORWARD	800.000000MHz	33.0dBmVemf	ON
2:	INPUT	REVERSE	1000.000000MHz	33.0dBmVemf	ON
3:	empty				

**Figure 6-35 Save Register List Dialog Box**

**Recall**

Displays the Recall Register List dialog box. Recall is performed when the **ENTER** is pressed after the register has been selected.

Recall Register List					
No.	I/Q Dir.	Link	Frequency	Level	Output
1:	OFF	FORWARD	800.000000MHz	33.0dBmVemf	ON
2:	INPUT	REVERSE	1000.000000MHz	33.0dBmVemf	ON
3:	empty				

**Figure 6-36 Recall Register List Dialog Box**

**Preset**

Initializes the settings.

**Modulation ON/OFF**

Turns the RF output modulation function on or off.

ON: Modulates the RF output using transmission data.

OFF: Does not modulate the RF output.

**Output ON/OFF**

Turns the RF output on or off.

ON: Turns the RF signal on.

OFF: Turns the RF signal off.

**Quit**

Exits from the Rx Control option.

6.3 Setup Example

**6.3 Setup Example**

In this example, the output signals from the R3562, which are used for Reverse Link channel's FER measurements, are set.

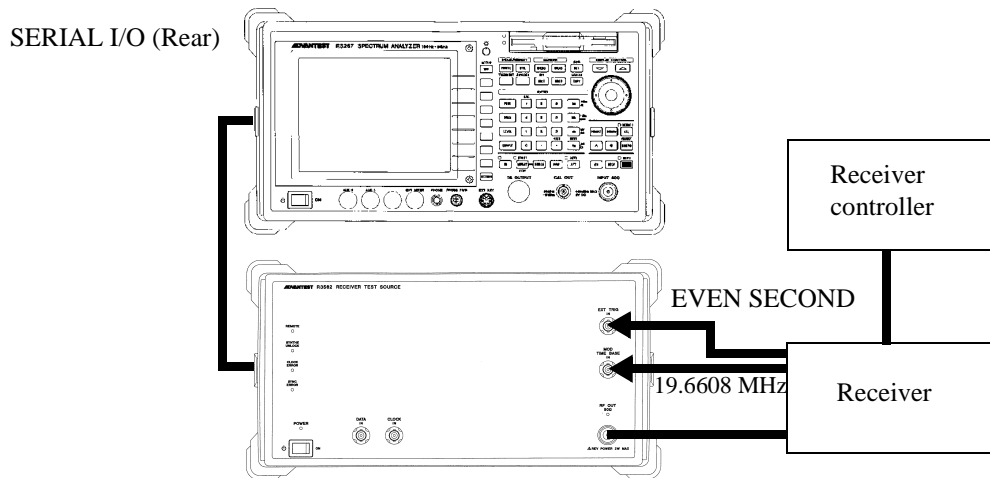
Measurement conditions: The items to be measured are shown below. Set appropriate values for each measurement.

Output signal

Frequency:	800 MHz
Output level:	-80 dBm
Link:	REVERSE
Radio Configuration:	RC1
Rate:	9.6kbps

Setup

1. Connect the instrument as shown below.



**Figure 6-37 Connecting the DUT**

Initialization

2. Press **ADVANCE**, **Rx Control[R3562]**, **Other** and **Preset**.

Setting the output signal

3. Press **FREQ**, **8, 0, 0** and **MHz**.
4. Press **Level**, **-, 8, 0** and **GHz(dBm)**.

5. Press **Modulation** and **STD Setup**.  
The STD Parameter Setup dialog box is displayed.

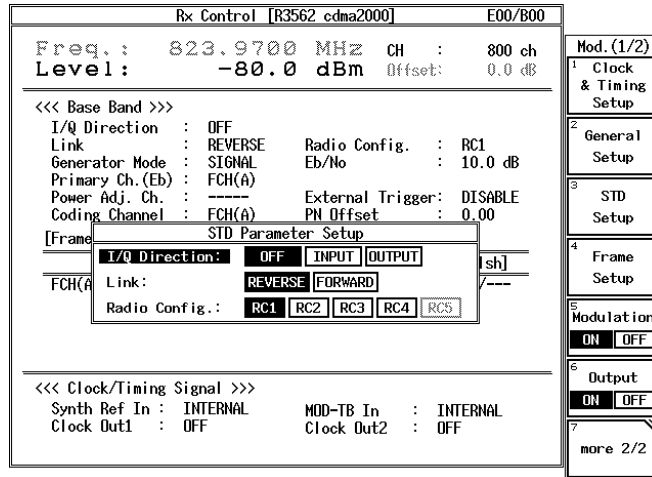


Figure 6-38 STD Parameter Setup Dialog Box

6. Set the following items.  
I/Q direction:OFF  
Link:REVERSE  
Radio Config:RC1
7. Press **Clock & Timing Setup**.  
The Clock/Timing Signal Parameter Setup dialog box is displayed.

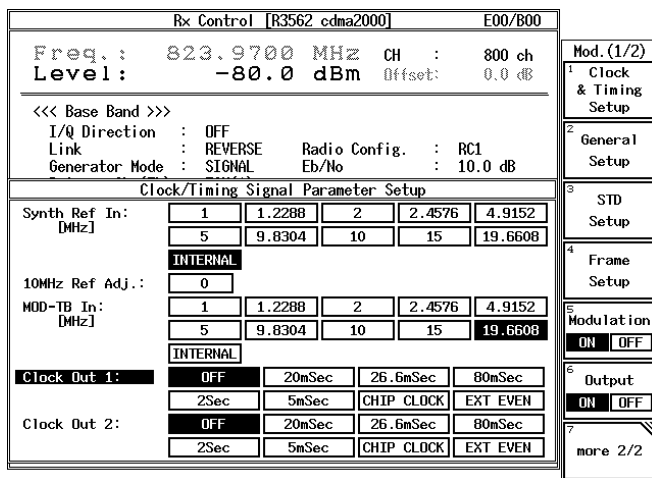


Figure 6-39 Clock/Timing Signal Parameter Setup Dialog Box

6.3 Setup Example

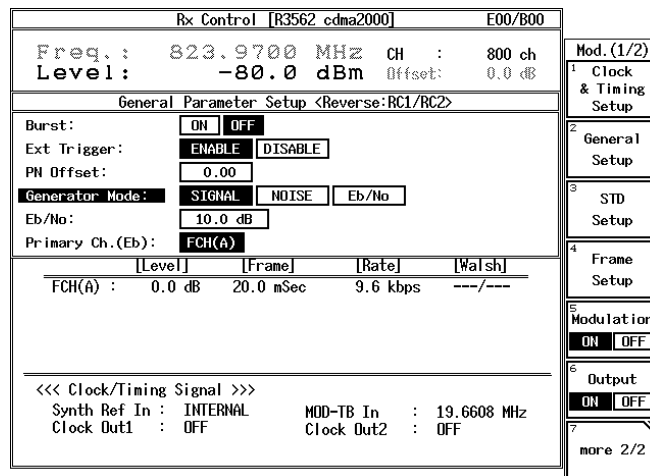
8. Set the following items.

Synthe Ref In:INTERNAL

MOD-TB In [MHz]:  
19.6608

9. Press **General Setup**.

The General Parameter Setup dialog box is displayed.



**Figure 6-40 General Parameter Setup Dialog Box**

10. Set the following items.

Burst:OFF

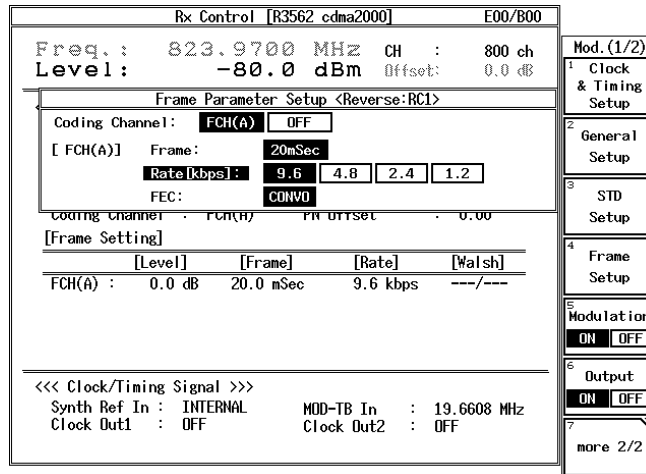
EXT Trigger:ENABLE

PN Offset:0

Generator Mode:SIGNAL

11. Press **Frame Setup**.

The Frame Parameter Setup dialog box is displayed.



**Figure 6-41 Frame Parameter Setup Dialog Box <Reverse: RC1>**

12. Set the following items.

Coding Channel:FCH(A)

[FCH(A)]:

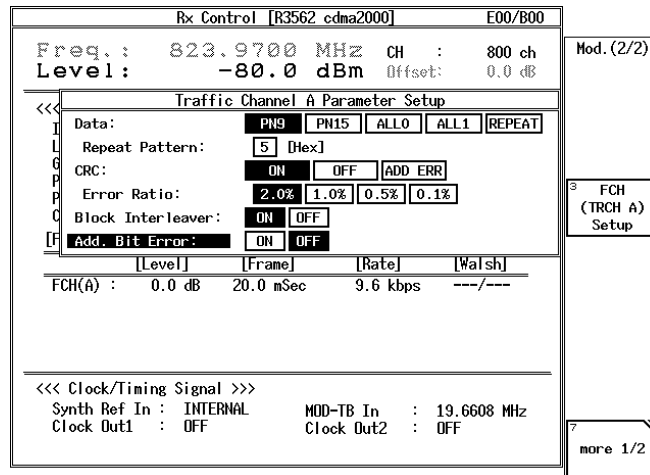
Frame: 20msec

Rate [kbps]: 9.6

FEC: CONVO

6.3 Setup Example

13. Press *more 2/2* and *FCH(TRCH A)*  
The Traffic Channel A Parameter Setup dialog box is displayed.



**Figure 6-42 Traffic Channel A Parameter Setup Dialog Box**

14. Set the following items.  
Data:PN9  
CRC:ON  
Block Inter lever:ON  
Add. Bit Error:OFF











- [S]**
- SACCH ..... 3-3, 3-13
- Save ..... 3-3, 3-16,  
4-5, 4-16,  
5-8, 5-25,  
6-10, 6-45
- Save Register List ..... 3-3, 4-5,  
5-8, 6-10
- SCH(TRCH A) Setup ..... 6-9, 6-38
- SCH(TRCH C) Setup ..... 6-9, 6-40
- SCH1(TRCH C) Setup ..... 6-9
- SCH2(TRCH A) Setup ..... 6-9, 6-33
- Scramble ..... 3-3, 3-13
- Scramble Code ..... 3-3, 3-14
- Scrambling Code ..... 5-6, 5-11,  
5-13
- Self Test ..... 4-5, 4-15,  
5-8, 5-25,  
6-10, 6-45
- Sens ..... 3-3, 3-7
- Serial port setting ..... 2-4
- Setup Example ..... 6-46
- SINGLE ..... 5-9, 6-11
- Slot ..... 3-3
- Slot Config ..... 3-3, 3-10
- Slot Setup ..... 3-3, 3-12
- START ..... 5-9, 6-11
- Start ..... 3-3, 3-8
- STD Setup ..... 5-6, 5-15,  
6-6, 6-24
- Step ..... 3-3, 3-8
- Step Size ..... 4-5, 4-11,  
4-12, 5-8,  
5-22, 5-23,  
6-10, 6-41
- STOP ..... 5-9, 6-11
- Stop ..... 3-3, 3-8
- Sync ON/OFF ..... 3-3, 3-6,  
3-9
- Sync Word ..... 3-3, 3-15
- Synth Ref ..... 4-5
- Synthe Ref In ..... 5-6, 5-8,  
5-10, 5-23,  
6-6, 6-10,  
6-12, 6-42
- [T]**
- Target BER ..... 3-3, 3-8
- TFCI ..... 5-7, 5-17,  
5-19
- TPC Insert ..... 5-7, 5-16,  
5-19
- TPC Repeat Count ..... 5-7, 5-17,  
5-19
- Traffic PRBS ..... 4-4, 4-9
- Trig Polarity ..... 3-3, 3-10,  
5-7, 5-21
- Trigger Delay ..... 3-3, 3-11,  
5-7, 5-21
- [U]**
- Unit ..... 4-5, 4-12,  
5-8, 5-22,  
6-10, 6-41
- Upper Limit ..... 4-5, 4-12,  
5-8, 5-22,  
6-10, 6-41
- User Scramble ..... 3-3, 3-14
- User Scramble Code ..... 3-3, 3-14
- [W]**
- Walsh Len ..... 6-26, 6-28,  
6-30
- Walsh No. .... 6-26, 6-28,  
6-30

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