APPENDIX Tune up Procedure

1. PN Offset Checking Method

To check the feature of CDMA with measurement equipment, PN OFFEST value of BTS should be given. The following describes the prcedure for this. You can check PN OFFSET value through ECPA.

When you input DISPLD on ECPA, various MENUs will appear as follows;

ECP NW R3.0.0> displd

*** PLD Data Display Options ***
<< LGT MDR VERSION >>
0. PLD Data Address Display.
1. BTS Data Display.
2. Sector Data Display.
3. CDMA Channel Data Display.
4. Extended System Parametrs Display.
5. System Parameter Display.
6. Neighbor List Display.
7. BTS Configuration Display.
8. TIC Data Display.
9. TXMS Paramter Display.
10. Power Management Paramter Display.
11. Access Channel Configuration Display.
12. Access Parameter Display.
13. Paging Channel Configuration Display.
14. Global Redirection Message Display.
15. Pilot/Sync Channel Configuration Display.
16. Tcparam Configuration Display.
17. OCNS Paramter Display.
18. Tx Timing Display.

Among the MENUs above, select the second item to check PN OFFSET value.

Enter the number : 2

PN OFFSET of each sector appears as follows;

** Sector Configuration Display **

Sector #2 Configured : TRUE
Pilot_pn_offset : 200
num_of_cdma_ch : 1
sector_cai_rev : 1
sector_cai_min_rev : 1

Sector #2 Configured : TRUE
Pilot_pn_offset : 204
num_of_cdma_ch : 1
sector_cai_rev : 1
sector_cai_min_rev : 1

Sector #2 Configured : TRUE
Pilot_pn_offset : 208
num_of_cdma_ch : 1
sector_cai_rev : 1
sector_cai_min_rev : 1

You can check PN OFFSET from the value displayed above. This value is used in the equipment measuring MODULATION CHARACTERISTIC among test items.

2. CDMA Code Channel Gain Adjusting Method

The following describes how to set the distribution of CDMA signal that is displayed through BTS as the following table.

Type	Number of Channels	Fraction of Power(linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

The Power Level of each channel can be changed through ECPA and you can adjust Level by changing GAIN value of CODE. The proceudure is as follows;

ECP NW R3.0.0>3383

---------- PN-3383 SUPPORTING FUNCTION ----------
1. Access Probe Acquisition Test
2. BTS Test Call(Termination)
3. Sector TX Gain Change
4. FER Display Request
5. Automatic Release Mode Set

Select the third menu to change Power distribution of Pilot, Paging and Sync Channel.

Select the menu? 3
---- SECTOR TX Gain Change Function ----
1. Pilot Ch Gain
2. Pilot/Sync Ch Gain
3. Paging Ch Gain
4. Nominal TC Gain
5. Total Gain Display
6. Quit

Select 2 to change Pilot and Power Level of Sync Channel.

Select the menu? 2

> Enter the Sector(0,1,2) ? 0 - **Enter 0 to select Alpha sector. (Beta : 1, Gamma : 2)**
> Enter the CDMA channel ? 0 -
> Enter the pilot gain(108) ? 80 - **Change Gain from 108 (Default Value) to 80**.
> Enter the sync gain(34) ? 105 - - **Change Gain from 34 (Default Value) to 105**.
> Do you want to change gain(y/n)? y
Changed ok !

Input corresponding values as follows to change Power Level of Paging Channel.

---- SECTOR TX Gain Change Function ----
1. Pilot Ch Gain
2. Pilot/Sync Ch Gain
3. Paging Ch Gain
4. Nominal TC Gain
5. Total Gain Display
6. Quit
Select the menu? 3

> Enter the Sector(0,1,2) ? 0
> Enter the CDMA channel ? 0
> Enter the PC id ?
> Enter the PC gain(65) ? 77
> Do you want to change gain(y/n)? y
Changed ok !

To change Power Level for the virtual call, do the followings.

---- SECTOR TX Gain Change Function ----
1. Pilot Ch Gain
2. Pilot/Sync Ch Gain
3. Paging Ch Gain

```
  4. Nominal TC Gain
  5. Total Gain Display
  6. Quit
Select the menu? 4

>  Enter the Sector(0,1,2) ? 0
>  Enter the CDMA channel ? 0
>  Enter the nominal tc gain(100) ? 53
>  Do you want to change 100 to 53 (y/n)? y
   Changed ok !
```

To check the changed value, select the fifth MENU and confirm if the work is properly done.

```
---- SECTOR TX Gain Change Function ----
  1. Pilot Ch Gain
  2. Pilot/Sync Ch Gain
  3. Paging Ch Gain
  4. Nominal TC Gain
  5. Total Gain Display
  6. Quit
Select the menu? 5

----------- Sector [0] Gain Config -------------
          PILOT     SYNC    PAGING   TRAFFIC
 FA[0]      80       105      77       53
-----------------------------------------------------

----------- Sector [1] Gain Config -------------
          PILOT     SYNC    PAGING   TRAFFIC
 FA[0]      108      34       65       100
-----------------------------------------------------

----------- Sector [2] Gain Config -------------
          PILOT     SYNC    PAGING   TRAFFIC
 FA[0]      108      34       65       100
-----------------------------------------------------
```

As seen above, only Gain of Alpha Sector is changed into new value.
Lastly, select Menu No. 6 and finish.

```
---- SECTOR TX Gain Change Function ----
  1. Pilot Ch Gain
  2. Pilot/Sync Ch Gain
  3. Paging Ch Gain
  4. Nominal TC Gain
  5. Total Gain Display
  6. Quit
Select the menu? 6

ECP NW R3.0.0>
```

3. CDMA Test Call Setting Method

To make the distribution of CDMA that is displayed through BTS as the table suggested in APPENDIX 2, the following describes how to set virtual calls necessary for this job. The setting could be done through ECPA.

ECP NW R3.0.0>3383

---------- PN-3383 SUPPORTING FUNCTION ----------

1. Access Probe Acquisition Test
2. BTS Test Call(Termination)
3. Sector TX Gain Change
4. FER Display Request
5. Automatic Release Mode Set

Select the menu? 2

>> Test Start ? ('1'), Set mobile informations ? ('2')2 ¿
> Enter the Sector [0/1/2/fe(all sector)] ? 0 ¿
> Enter the CDMA channel [0~7/fe(all cdma ch)] ? 0 ¿
> Enter the PC id [0~6] ? ¿
> Enter the slot cycle index [0~7] ? 2 ¿
> Enter the Call Type [0(Normal)/1(Markov)/2(Loopback)/3(BTU)/4(Null)/7(OCNS)] ? 4 ¿
> Enter the Service Option [2(Loopback)/9(Loopback_13K)] ? 9 ¿
> Enter the Test Data [0(Blank)/1(Eigth)/2(Quarter)/3(Half)/4(Full)/5(Variable)] ? 4 ¿
> Enter the MCC [0x15d] ? 15d ¿
> Enter the imsi_11_12 [0x63] ? 63 ¿
> Enter the Personal Station Number [(019) 100-0000] ? (019) 200-0000 ¿
> Enter the call times ? 6 ¿
> Enter the Call Period(0 sec) ? 1 ¿

You can check if traffic is set through CODE DOMAIN ANALYZER of CELL SITE TEST equipment.

4. Carrier Frequency Setting Method

The following describes how to set CENTER FREQUENCY of CEMA CARRIER that is displayed through BTS. The frequency is changed through RCPA, and RCPA uses following COMMAND FORMAT.

[RCPA: T1.0.0][6]$ rfcbud

Display BUDA Commands & Status

usage: rfcbud [Options]
-t #fa #sector: Change Tx Atten
-i #fa #sector: Change Tx IF Atten
-r #fa #sector: Change Rx Atten
-c #fa #sector: Change Channel Number
-R : Reset High/Low
-s #fa #sector: SBUS Test

As seen above, you should use RFCBUD for changing work. For the changing work, choose proper option and perform the work.

To change the frequency, do the following procedure.

[RCPA: T1.0.0][3]$ rfcbud -c 0 0

OPTION –C is used to change the frequency. The first digit number 0 after –C is used to identify CARRIER No., and the second digit number is used to identify SECTOR.

*********** RCP[0] Channel Information For FA: 0, SECTOR: 0 **********
Current Channel Number : 25
Current Tx Frequency : 1931250KHz
Current Rx Frequency : 1851250KHz
Current Channel PLL Frequency : 1781250KHz
Want to Change the Channel Number ?(0: No 1: Yes)
>> 1
Enter Channel Number : 25
chNum[0][0] : 25
Want to re-PLL the IF ?(0: No 1: Yes)
>> 1
BUDA[0][0] PLL lock .. OK
[RCPA: T1.0.0][4]$

The frequency should be changed by the above procedure.

5. Tx Power Output Level Control

The following describe how to set CENTER FREQUENCY of CDMA CARRIER that is displayed through BTS. The frequency is changed through RCPA, and RCPA uses following COMMAND FORMAT.

[RCPA: T1.0.0][6]$ rfcbud

Display BUDA Commands & Status

usage: rfcbud [Options]
-t #fa #sector: Change Tx Atten
-i #fa #sector: Change Tx IF Atten
-r #fa #sector: Change Rx Atten
-c #fa #sector: Change Channel Number
-R : Reset High/Low
-s #fa #sector: SBUS Test

As seen above, you should use RFCBUD for changing. For changing, choose proper option and perform the work.

Use Change Tx ATTEN. among OPTIONs to change frequency, and do the following procedure.

[RCPA: T1.0.0][4]$ rfcbud -t 0 0
Current Tx Attenuation Value : 0xc00
Want to Change ?(0: No 1: Yes)
>> 1
Enter Tx Attenuation Value(Ex. b0) : 0xc0
Reading Tx Attenuation Value : 0xd5

The above example shows how to change attenuator of Tx path into c0. `

Transmitter Test and Measurement Results

Section 2.985 Measurement of Radio Frequency Power Output

Test Method

1) The modulation scheme is configured as per the Table below for the power output measurement. As recommended by PN3383 (refer to PN3383 Table 6.5.2-1. Base Station Test Model, Nominal).

Type	**Number of Channels**	**Fraction of Power(linear)**	**Fraction of Power (dB)**	**Comments**
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

2) Set *Test Frequency* to 1931.25MHz(CH#25).

- *Refer to APPENDIX 1.(Frequency setting)*

2) Set *Digital Gain* of each channel to make the modulation scheme, which is configured as above table.

- *Refer to APPENDIX 3. (Digital Gain Setting)*

Pilot Gain	***= 80***
Sync Gain	***= 105***
Paging Gain	***= 77***
Traffic Gain	***= 53***

4) Set up *6 Traffic Calls* using PN3383 command at ECPA.

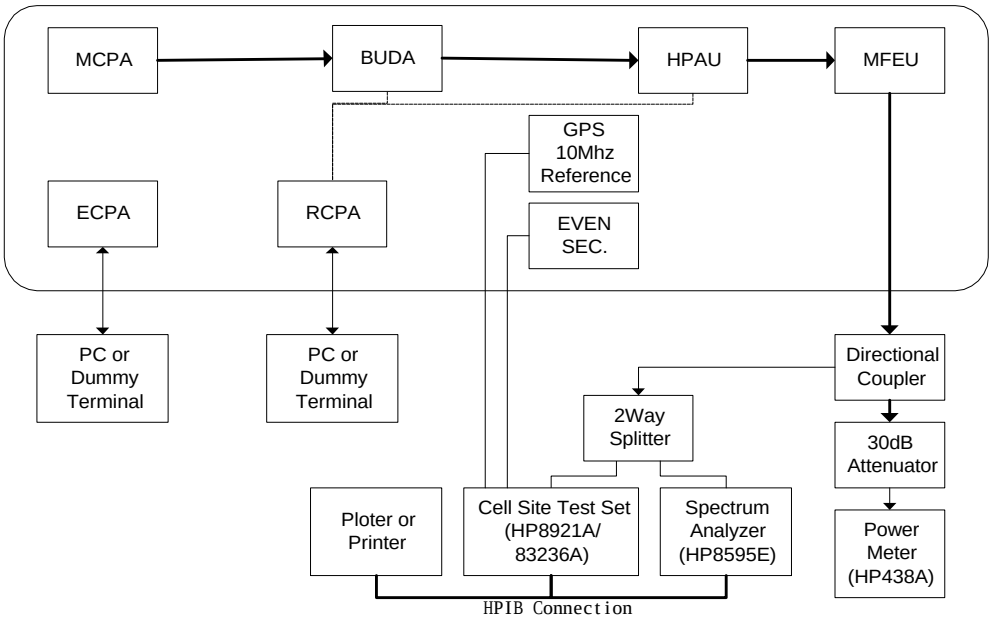
- *Refer to APPENDIX 4. (6 Call Setting)*

5) Measure the RF Output Power at MFEU using a calibrated Power Meter.
Adjust BUDA TX ATTEN with ***RFCBUD_-T Command at RCPA*** to be 40dBm at MFEU Tx output port.

- R***efer to APPENDIX 2.(BUDA Gain Setting)***

6) Repeat step 2) through Step 5) to measure RF power output at 1960MHz and 1988.75MHz.

Test Setup Configuration



MCPA ： Multi Channel Processing Board Assembly

BUDA ： Base Station Up-Down Conversion Board Assembly

HPAU ： High Power Amplifier Unit

MFEU ： Micro Base Station Frond End Unit

ECPA ： Enhanced Control Processor circuit board Assembly

RCPA ：Radio & Channel Processing Board Assembly

Test Equipment

- Spectrum Analyzer(HP8595E or similar equipment)
- Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
- PC or Dummy Terminal
- Printer or Plotter
- Power Meter (HP438A)
- 30dB Attenuator
- Directional Coupler
- 2Way Splitter

Minimum Standard

The Power output shall not exceed 10Watt(40dBm) at MFEU output port.

Test Results

The Maximum power output is 10Watts.

Section 2.987 Measurement of Modulation Characteristics

Test Method

1) Set up *Test Frequency* to 1951.25MHz(CH#425).

- *Refer to APPENDIX 1. (Frequency setting)*

2) Configure the base station to transmit the Pilot Channel only. So set Digital Gain of each channel as followed table.

- R***efer to*** *APPENDIX 3.(Digital Gain Setting).*

Pilot Gain	***= 80***
Sync Gain	***= 0***
Paging Gain	***= 0***
Traffic Gain	***= 0***

3) Set BUDA TX ATTEN to E0 with ***RFCBUD –T command in RCPA*** .

- R***efer to APPENDIX 2.(BUDA Gain Setting)***

4) Confirm the PN offset value.

- *Refer to APPENDIX 7.(PN Offset confirmation Procedure)*

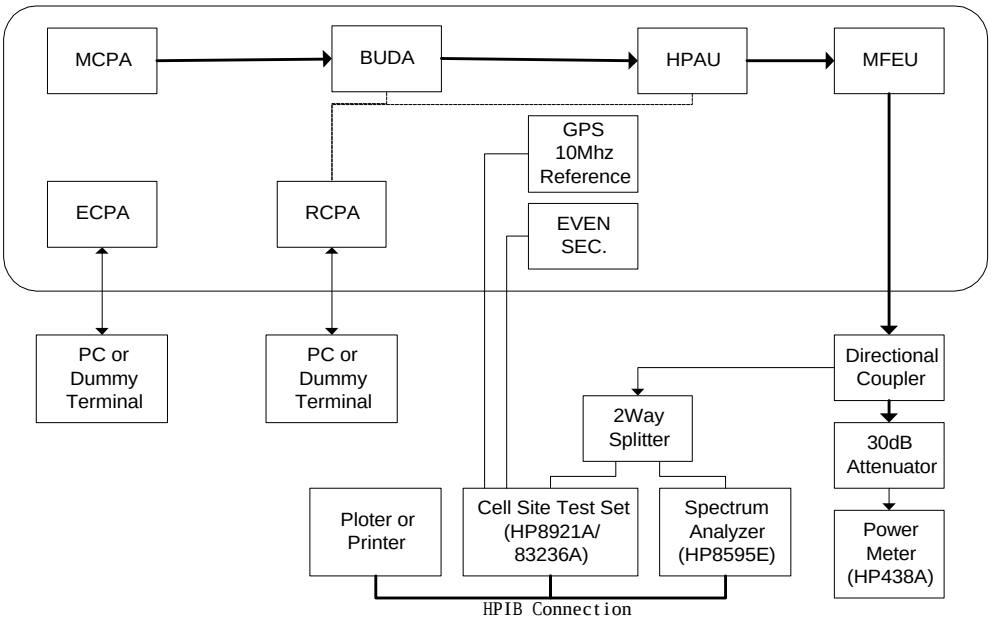
5) Measure the Waveform quality factor (Rho, ρ) using HP Cell Site Test Set.

6) Repeat step 2) through Step 5) to measure RF power output at 1960MHz and 1988.75MHz.

Test Equipment

7) Spectrum Analyzer(HP8595E or similar equipment)
8) Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
9) PC or Dummy Terminal
10) Printer or Plotter
11) Power Meter (HP438A)
12) 30dB Attenuator
13) Directional Coupler
14) 2Way Splitter

Test Configuration



Test Setup for Measurement of Modulation Characterisics

Minimum Standard

The normalized cross correlation coefficient, "ρ" shall be greater than 0.912 (excess power < 0.4dB) .

Test Results

The normalized cross correlation coefficient, "ρ" is greater than 0.912. Please refer to test results.

Section 2.989 Measurement of Occupied Bandwidth

Test Method

1) The modulation scheme is configured as per the Table below for the power output measurement. As recommended by PN3383 (refer to PN3383 Table 6.5.2-1. Base Station Test Model, Nominal).

Type	**Number of Channels**	**Fraction of Power(linear)**	**Fraction of Power (dB)**	**Comments**
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

2) Set *Test Frequency* to 1931.25MHz(CH#25).

- *Refer to APPENDIX 1.(Frequency setting)*

3) Set *Digital Gain* of each channel to make the modulation scheme, which is configured as above table.

- *Refer to APPENDIX 3. (Digital Gain Setting)*

Pilot Gain	***= 80***
Sync Gain	***= 105***
Paging Gain	***= 77***
Traffic Gain	***= 53***

4) Set up *6 Traffic Calls* using PN3383 command at ECPA.

- *Refer to APPENDIX 4. (6 Call Setting)*

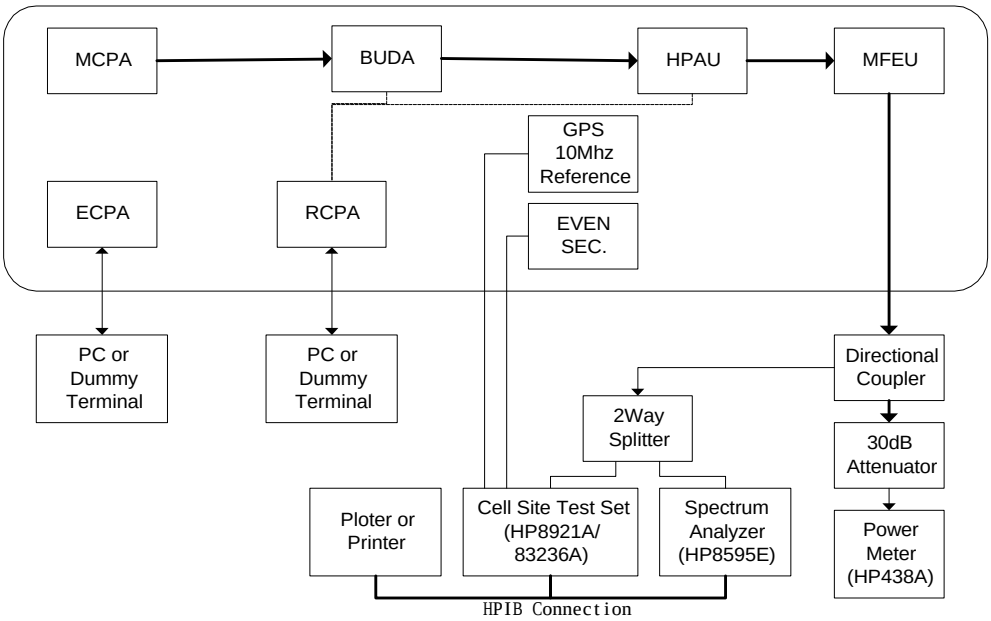
5) Measure the RF Output Power at MFEU using a calibrated Power Meter.
Adjust BUDA TX ATTEN with ***RFCBUD_-T Command at RCPA*** to be 40dBm at MFEU Tx output port.

- R***efer to APPENDIX 2.(BUDA Gain Setting)***

Test Equipment

15) Spectrum Analyzer(HP8595E or similar equipment)
16) Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
17) PC or Dummy Terminal
18) Printer or Plotter
19) Power Meter (HP438A)
20) 30dB Attenuator
21) Directional Coupler
22) 2Way Splitter

Test Configuration



Test Setup for Measurement of Modulation Characterisics

Minimum Standard

The transmit occupied bandwidth for a spread spectrum CDMA signal must be below the mean power by 45dB, when measured in any 30kHz resolution bandwidth greater than 885kHz offset, per PN3383 § 4.5.1.3.1 specification.

Test Results

The Spectrum Analyzer output plot shows the peak of the CDMA channel signal 16.1dB below the zero line of the Spectrum Analyzer for the following reason. For the CDMA system there is no carrier without modulation. This relationship was used to provide the correct level an unmodulated carrier vs. the modulated signal.

10 Log (Transmit Bandwidth / Resolution Bandwidth)

10 Log (1.23MHz/ 30kHz) = 16.1dB

ex) IF Marker to Marker is 29dBc at RBW 30kHz, actual Value is 45dBc at RBW 1.23MHz

Section 2.991 Measurement of Spurious & Harmonic Emissions at Antenna Terminals

Test Method

1) The modulation scheme is configured as per the Table below for the power output measurement
As recommended by PN3383 (refer to PN3383 Table 6.5.2-1. Base Station Test Model, Nominal).

	Number of Channels	**Fraction of Power(linear)**	**Fraction of Power (dB)**	**Comments**
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

- Set Digital Gain of each channel as follows

Pilot Gain	***= 80***
Sync Gain	***= 105***
Paging Gain	***= 77***
Traffic Gain	***= 53***

2) Set up *6 Traffic Calls.*

3) Measure the RF Output Power at MFEU output using Calibrated Power Meter.
Adjust BUDA TX ATTEN with ***RFCBUD -T Command at RCPA*** to be 40dBm at MFEU Tx output port.

- R***efer to APPENDIX 2.(BUDA Gain Setting)***

4) Measure the Out of Band Emission using Spectrum Analyzer**(at Channel Power mode).**

Case 1) Fc -1.25MHz

Ref Level Offset Value	***:***	***Same as Power Meter display value***
Log Scale	***:***	***10dB***
RBW	***:***	***300Hz***
VBW	***:***	***3KHz***
Span	***:***	***25kHz***
AVG	***:***	***25***
Channel Spacing	***:***	***1.25MHz***
Channel B.W	***:***	***12.5kHz***
Center Freq.	***:***	***1929.99375MHz*** *(at CH# 25)*

Case 2) Fc +1.25MHz

Ref Level Offset Value	***:***	***Same as P.M. display value***
Log Scale	***:***	***10dB***
RBW	***:***	***300Hz***
VBW	***:***	***3KHz***
Span	***:***	***25kHz***
AVG	***:***	***25***
Channel Spacing	***:***	***1.25MHz***

Channel B.W : 12.5kHz
Center Freq. : 1932.50625MHz *(at CH# 25)*

5) Measure the Spurious of Center Frequency +/- 2.25MHz at Coupling Port of Directional Coupler(or RFEU-BW) using Spectrum Analyzer**(at Channel Power mode).**

Case 1) Fc -2.25MHz

Ref Level Offset Value : Same as P.M. display value
Log Scale : 10dB
RBW : 30KHz
VBW : 300KHz
Span : 2MHz
AVG : 25
Channel Spacing : 1.25MHz
Channel B.W : 1MHz
Center Freq. : 1928.500MHz *(at CH# 25)*

Case 2) Fc +2.25MHz

Ref Level Offset Value : Same as P.M. display value
Log Scale : 10dB
RBW : 30KHz
VBW : 300KHz
Span : 2MHz
AVG : 25
Channel Spacing : 1.25MHz
Channel B.W : 1MHz
Center Freq. : 1934MHz *(at CH# 25)*

6) For 1960MHz, Repeat step 2) through Step 5). Center Frequency of Spectrum Analyzer are as follows.

Center	Fc -1.25MHz	Fc + 1.25MHz	Fc-2.25MHz	Fc+2.25MHz
Frequency	1958.74375MHz	1961.25625MHz	1957.250MHz	1962.75MHz

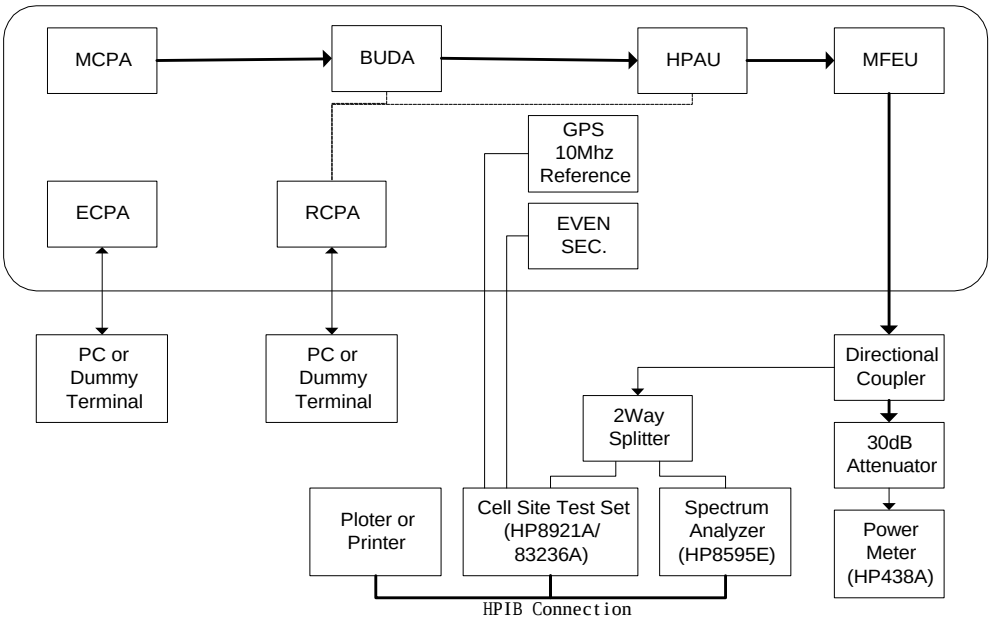
7) For 1988.75MHz, Repeat step 2) through Step 5). Center Frequency of Spectrum Analyzer are as follows.

Center	Fc -1.25MHz	Fc + 1.25MHz	Fc-2.25MHz	Fc+2.25MHz
Frequency	1987.49375MHz	1990.00625MHz	1986.000MHz	1991.500MHz

Test Equipment

6) Spectrum Analyzer(HP8595E or similar equipment)
7) Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
8) PC or Dummy Terminal
9) Printer or Plotter
10) Power Meter (HP438A)
11) 30dB Attenuator
12) Directional Coupler
13) 2Way Splitter

Test Configuration



Test Setup for Measurement of Occupied Bandwidth

Minimum Standard

Per PN3383, the minimum standards for Transmit Port Conducted Spurious Emissions are as follows:

Transmit Conducted Spurious

Outside the band, spurious emissions shall not exceed -13dBm or -80dBc, whichever is the larger power, when measured in a resolution bandwidth that is at least 1 percent of the emission bandwidth of the fundamental (12.5kHz) at offsets between 1.25MHz and 2.25MHz, and when measured in a 1 MHz resolution bandwidth at offsets greater than 2.25MHz(measurement centered at 2.75MHz offset and beyond).

Test Results

Section 2.993 Measurement of Field Strength of Spurious Radiation

3. Stand Alone Test Configuration

3.1 Application/OS Loading Procedure

1) Use No. "3" menu of the "rcmd" command at OS Prompt of ECP to dump Application/OS Code loaded in the Flash Memory in ECP into DRAM of ECP.
(Use "Escape key" for the Prompt conversion of OS mode and Application mode.)
2) ECP decompresses the compressed Code and restarts it after Code Dump.

```
STAREX:USER >
<-ver_req (2)
->Timeout !!
STAREX:USER >ls↵
    ls        pr        rcmd      ver
STAREX:USER > rcmd↵
 --- Booter Commands ; Select number.
 1.Signal Print(0)
 2.Flash Information Display
 3.Offline Mode   3↵
 You wanna setup BTS without Loading?[y/N]   y↵
 Wait ...
STAREX:USER >
(OS)   Mine: T1.0.0   RCVD:
(APP) Mine: T1.0.0   RCVD:
Version Changed !
 RAM Info Copying -
 OS Decompress Start ..... End
 APP Decompress Start ..... End
 >>> HERE WE GO !!!
```

Figure 3.1 Application / OS Loading Procedure

3.2 PLD Loading Procedure

1) After Application/OS Code Download and Decompress, if ECP is restarted, it performs Block Version Request from CCP. At this time, use No. "3" menu of the "load" command to dump PLD loaded in the Flash Memory in ECP into DRAM of ECP.
2) ECP decompresses PLD after PLD Dump and then decompresses the detailed Application of ECP by block to create Task.
3) ECP performs Activation on all Tasks in ECP after PLD Loading and initializes BTS lower processor (RCP, MCP).
4) It takes about 2 minutes for all the processors of BTS to be initialized and activated.

```
ECP >
<- BLK_VER_REQ_SIG to CCP
->BLK_TBL_TMO_SIG(1)
ECP >ls↵
    ls      pr      his     dtst    load    nvm
ECP >load↵
* Load State Change Command *
 1. Loader Info. and DB Addr. Display.
 2. User Table Info. Display (nvm_info/ram_info & ecp_table)
 3. Stand-Alone Mode(Internal PLD Configuration Without Loading)
 4. BSP User Block Loading Test
 5. Set dis_loader flag(cur: 0)
 6. Set clean_tmp_area option(cur: 1)
 7. dbg_prt On/Off(cur:0)
 8. sleep_interval set(cur:20)
 9. unit_prt set(cur:0)
10. Checksum Check
11. Set Daisy_chain Field(cur:255)
12. See block_info

Enter the number : 3↵

* BTS Stand-alone Mode *
```

```
ECP >
 strt_addr[c60000] len[a5c0] sig[d40]
 Decompressing PLD ..... End
->PLDLoadEnd
 ## Block 0 Ver : Mine[T1.0.0], CCP's[T1.0.0]
 ## Block 1 Ver : Mine[T1.0.0], CCP's[T1.0.0] -> Version Same
 ## BKLD_REQ_MSG -> Version Same
 Decompressing EOM block..... End
 Decompressing ECF block..... End
 Decompressing EST block..... End
 Decompressing ECM block..... End
 Decompressing EPM block..... End
 .....
ECP NW R3.0.0>
```

Figure 3.2 PLD Loading Procedure

3.3 Overhead Channel Unblock Procedure

1) After each processor such as ECP, MCP, and ECP, etc. is activated and the initialization of the related Device is completed, confirm the BTS status. Use the "onblk" command to confirm whether there is a Block of the Overhead Channel and the Block Reason.
2) As there is no higher processor on Stand Alone Mode, Overhead Channel is blocked by IPC Fail. At this time, use the "blkctr" command to release the Block of the corresponding Sector/FA.

```
ECP NW R3.0.0>onblk↵
*----------> On-line Block Status Display <--------
    FA    |  Sector  |  Block?  |  Reason(s)
-------------------------------------------------------------
    0     |    0     |     ?    |  IPC
    0     |    1     |     ?    |  IPC
    0     |    2     |     ?    |  IPC
ECP NW R3.0.0>blkctr↵
Caution! This will halt/resume Online block process.
Current Online block process status    :
          |  Alpha  |  Beta   |  Gamma
  0 FA    |   On    |   On    |   On
  1 FA    |   On    |   On    |   On
  2 FA    |   On    |   On    |   On
  3 FA    |   On    |   On    |   On
  4 FA    |   On    |   On    |   On
  5 FA    |   On    |   On    |   On
  6 FA    |   On    |   On    |   On
  7 FA    |   On    |   On    |   On
Enter sector (9 for all)   : 9↵
Enter FA (9 for all)       : 0↵
Now choose action ('a' for activate, 'd' for deactivate)   : d↵
ECP NW R3.0.0>
```

Figure 3.3 Overhead Channel Unblock Procedure

4. Stand Alone Test Function

4.1 No CCP Mode

To set up Voice / Markov / Loop back Call by Mobile Station on BTS Stand Alone Mode, convert Call Control Mode of BTS into No CCP Mode. No CCP Mode should be enabled to simulate Call Setup procedures BSC performs in BTS itself.

```
ECP NW R3.0.0>noccp↵
Do you need a CCP(y/n) ? n↵
ECP:NO_CCP>
```

Figure 4.1 No CCP Mode

4.2 Stand Alone Mode BTS Call

As there is no BSC, Call Control controlled by BSC is simulated by ECP, and the Traffic Data is processed by Traffic Channel Element in the Loop back procedure. Therefore, Voice / Markov / Loop back Call on Stand Alone Mode must be performed on No CCP Mode (see 4.1). Use the "trace" command to trace Call Setup Procedure.

```
ECP:NO_CCP>trace all↵
 - all ---- ON
ECP:NO_CCP>
ACE->BSP : MOB_ORIG (S:0 FA:0 PC:0 rtd:396[396]) (019) 200-2200
[ERM] CDMA_CH[0] Normal Alloc. idle_tch[53]
PCE<-BSP :(J0) SND_MOB_ORDER(ord[10],ordq[00]) ADDR[8810121:237]
CCP<-BSP :(J0) MOB_ORIG_IND (timer 640)
CCP->BSP :(J0) assign_req (foi 255)
 RSC Alloc Tch Success (cdmach[0]dcp[0]chc[1]tc[0]f.o[1])
CCP<-BSP :(J0) ASSIGN_RSPS W/ NO_CCP (addr:9810121 tc:0 fo:1)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
CCP->BSP :(J0) assign_ack
TCE<-BSP :(J0) TC_MOB_ASSIGN addr[9810121 138] Path_id[0]   (timer 1500)
TCE->BSP :(J0) tc_assign_ack
```

```
PCE<-BSP :(J0) PC_CH_ASSIGN (timer 3000)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
TCE->BSP :(J0) sel_link_on w/ mob_acq (542ms)
```

Figure 4.2 Origination Call in Stand Alone Mode

4.3 Null Traffic Test Call

As to Null Traffic Test Call, BTS creates Virtual Call without Mobile Station. It may be set up through the use of the "3383" command, and Traffic Rate, Service Option, Sector/FA, and Number of Calls, etc. may be designated, based on the Parameter input.

```
ECP NW R3.0.0>3383↵
---------- PN-3383 SUPPORTING FUNCTION ----------
            1. Access Probe Acquisition Test
            2. BTS Test Call(Termination)
            3. Sector TX Gain Change
            4. FER Display Request
            5. Automatic Release Mode Set
Select the menu? 2↵
>> Test Start ? ('1'), Set mobile informations ? ('2') 2↵
>  Enter the Sector [0/1/2/fe(all sector)] ? 0↵
>  Enter the CDMA channel [0~7/fe(all cdma ch)] ? 0↵
>  Enter the PC id [0~6] ? 0↵
>  Enter the slot cycle index [0~7] ? 2↵
>  Enter the Call Type
   [0(Normal)/1(Markov)/2(Loopback)/3(BTU)/4(Null)/7(OCNS)] ? 4↵
>  Enter the Service Option [2(Loopback)/9(Loopback_13K)] ? 9↵
>  Enter the Test Data
   [0(Blank)/1(Eigth)/2(Quarter)/3(Half)/4(Full)/5(Variable)] ? 4↵
>  Enter the MCC [0x15d] ? 15d↵
>  Enter the imsi_11_12 [0x63] ? 63↵
>  Enter the Personal Station Number [(019) 100-0000] ? (019) 200-0000↵
>  Enter the call times ? 1↵
>  Enter the Call Period(0 sec) ? 1↵
```

```
CCP->BSP : general_page (019) 200-0000
PCE<-BSP :(J0) GENPAGE_CAI(S0,FA0) [8810121 237](J0:timer 12120)

ACE->BSP : page_response (S:0 FA:0 PC:0 rtd:41216[41216]) (019) 200-0000
[ERM] CDMA_CH[0] Normal Alloc. idle_tch[53]
PCE<-BSP :(J0) SND_MOB_ORDER(ord[10],ordq[00]) ADDR[8810121:237]
CCP<-BSP :(J0) PAGE_RSP_IND(NORMAL) W/ BTS_ONLY_CALL (timer 640)
CCP->BSP :(J0) assign_req (foi 255)
 RSC Alloc Tch Success (cdmach[0]dcp[0]chc[1]tc[0]f.o[1])
CCP<-BSP :(J0) ASSIGN_RSPS W/ NO_CCP (addr:9810121 tc:0 fo:1)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
CCP->BSP :(J0) assign_ack
TCE<-BSP :(J0) TC_MOB_ASSIGN addr[9810121 138] Path_id[0]   (timer 1500)
TCE->BSP :(J0) tc_assign_ack
PCE<-BSP :(J0) PC_CH_ASSIGN (timer 3000)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
TCE->BSP :(J0) sel_link_on w/ mob_acq (542ms)

ECP NW R3.0.0>call all↵
-------------------------------------------------------------------------------------------------
JOB SCT  FA  FO  WAL  CH_TC  ESN      IMSI_S2_S1  TYP  STS  PHONE
  0   0   0   1    8    1_  0  c9000000  38c-31ebe7   TC   aa  (019) 200-0000
-------------------------------------------------------------------------------------------------
 JOB : TOTAL(1), TC( 1/ 0/ 0), ORD( 0/ 0/ 0), BURST(0) OTHER(0)
-------------------------------------------------------------------------------------------------
ECP NW R3.0.0>
```

Figure 4.3 Null Traffic Call in Stand Alone Mode