

# FCC TEST REPORT

## (PART 22)

**REPORT NO.:** RF140612C13  
**MODEL NO.:** F-08F  
**FCC ID:** VQK-F08F  
**RECEIVED:** Jul. 03, 2014  
**TESTED:** Jul. 08 ~ Jul. 25, 2014  
**ISSUED:** Jul. 31, 2014

**APPLICANT:** FUJITSU LIMITED

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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## TABLE OF CONTENTS

RELEASE CONTROL RECORD .....	4
1 CERTIFICATION .....	5
2 SUMMARY OF TEST RESULTS .....	6
2.1 MEASUREMENT UNCERTAINTY .....	6
2.2 TEST SITE AND INSTRUMENTS .....	7
3 GENERAL INFORMATION .....	8
3.1 GENERAL DESCRIPTION OF EUT .....	8
3.2 CONFIGURATION OF SYSTEM UNDER TEST .....	9
3.3 DESCRIPTION OF SUPPORT UNITS .....	9
3.4 TEST ITEM AND TEST CONFIGURATION .....	10
3.5 EUT OPERATING CONDITIONS .....	11
3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS .....	11
4 TEST TYPES AND RESULTS .....	12
4.1 OUTPUT POWER MEASUREMENT .....	12
4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT .....	12
4.1.2 TEST PROCEDURES .....	12
4.1.3 TEST SETUP .....	13
4.1.4 TEST RESULTS .....	14
4.2 FREQUENCY STABILITY MEASUREMENT .....	15
4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT .....	15
4.2.2 TEST PROCEDURE .....	15
4.2.3 TEST SETUP .....	15
4.2.4 TEST RESULTS .....	16
4.3 OCCUPIED BANDWIDTH MEASUREMENT .....	17
4.3.1 TEST PROCEDURES .....	17
4.3.2 TEST SETUP .....	17
4.3.3 TEST RESULTS .....	18
4.4 BAND EDGE MEASUREMENT .....	19
4.4.1 LIMITS OF BAND EDGE MEASUREMENT .....	19
4.4.2 TEST SETUP .....	19
4.4.3 TEST PROCEDURES .....	19
4.4.4 TEST RESULTS .....	20
4.5 CONDUCTED SPURIOUS EMISSIONS .....	21
4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT .....	21
4.5.2 TEST PROCEDURE .....	21
4.5.3 TEST SETUP .....	21
4.5.4 TEST RESULTS .....	22
4.6 RADIATED EMISSION MEASUREMENT .....	28
4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT .....	28



4.6.2	TEST PROCEDURES.....	28
4.6.3	DEVIATION FROM TEST STANDARD.....	28
4.6.4	TEST SETUP .....	29
4.6.5	TEST RESULTS.....	30
5	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	34
6	INFORMATION ON THE TESTING LABORATORIES .....	35
7	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....	36



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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140612C13	Original release	Jul. 31, 2014



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## 1 CERTIFICATION

**PRODUCT:** Mobile Phone

**MODEL:** F-08F

**BRAND:** FUJITSU

**APPLICANT:** FUJITSU LIMITED

**TESTED:** Jul. 08 ~ Jul. 25, 2014

**TEST SAMPLE:** ENGINEERING SAMPLE

**STANDARDS:** FCC PART 22, Subpart H

The above equipment (model: F-08F) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** : Polly Chien , **DATE** : Jul. 31, 2014  
Polly Chien / Specialist

**APPROVED BY** : Bruce Chen , **DATE** : Jul. 31, 2014  
Bruce Chen / Project Engineer

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 22.913 (a)	Effective radiated power	PASS	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	PASS	Meet the requirement of limit.
2.1049	Occupied Bandwidth	PASS	Meet the requirement of limit.
22.917	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -19.18dB at 881.66MHz.

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



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## 2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Sep. 09, 2013	Sep. 08, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Dec. 18, 2013	Dec. 17, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 26, 2014	Feb. 25, 2015
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2014	Jan. 04, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 17, 2014	Feb. 16, 2015
Preamplifier Agilent	8449B	3008A01961	Oct. 28, 2013	Oct. 27, 2014
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 26, 2013	Aug. 25, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021704	NA	NA
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Sep. 09, 2013	Sep. 08, 2014
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Mobile Phone
<b>MODEL NO.</b>	F-08F
<b>POWER SUPPLY</b>	3.7Vdc (Battery) 5.4Vdc (Adapter or cradle) 5.0Vdc (Host equipment)
<b>MODULATION TYPE</b>	BPSK
<b>FREQUENCY RANGE</b>	826.4MHz ~ 846.6MHz
<b>MAX. ERP POWER</b>	200.909mW (23.03dBm)
<b>WCDMA RELEASE VERSION</b>	8
<b>ANTENNA TYPE</b>	Internal ( $\lambda/4$ Monopole)antenna with -1.4dBi gain
<b>I/O PORTS</b>	Refer to users' manual
<b>DATA CABLE</b>	N/A
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. The EUT contains the following accessories.

PRODUCT	BRAND	MODEL	DESCRIPTION
Battery	Fujitsu Limited	F17	3.7Vdc, 800mA
Cradle	Fujitsu Limited	F33	Input:5.4Vdc, 700mA Output: 5.4Vdc, 700mA

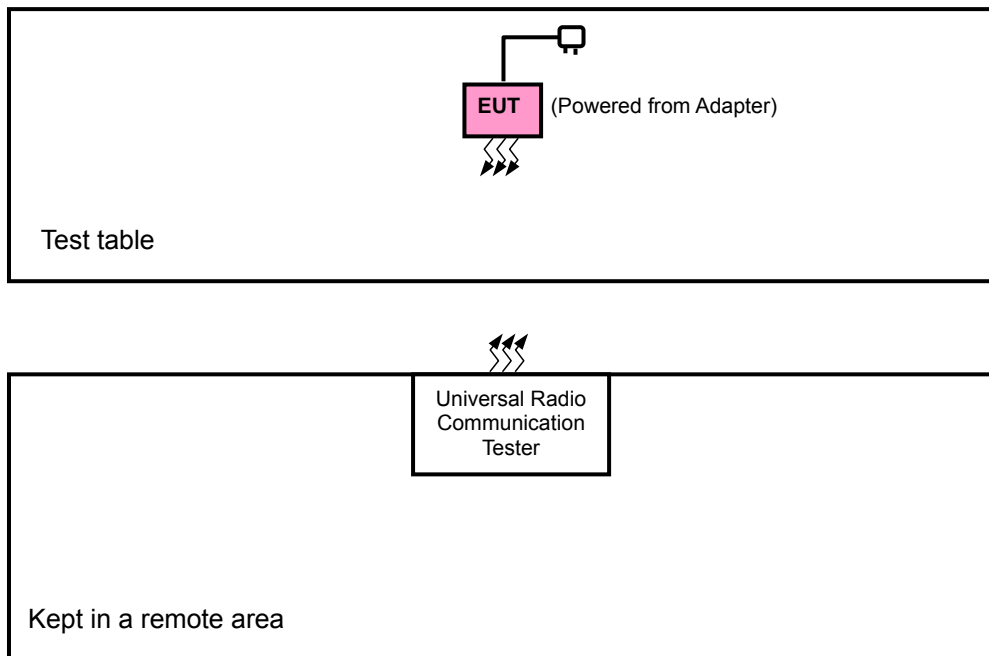
2. The following adapter is supports only.

PRODUCT	BRAND	MODEL	DESCRIPTION
Adapter	NTT docomo	AC Adaptor 02	Input: 100-240Vac, 0.12A, 50-60Hz Output: 5.4Vdc, 700mA Power line: 1.5m cable without core attached on adapter

3. SW version is V00R06A.
4. HW version is V2.1.0.
5. IMEI Code: 354026060007280.
6. The above EUT information is declared by manufacturer and for more detailed feature description, please refer to the manufacturer's specifications or User's Manual.



### 3.2 CONFIGURATION OF SYSTEM UNDER TEST



### 3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	UNIVERSAL RADIO COMMUNICATION TESTER	R&S	CMU200	117260	NA
2	ADAPTER	NTT docomo	AC Adaptor 02	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

#### NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 acted as a communication partner to transfer data.
3. Item 2 is provided by the client.

### 3.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on X-plane. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
-	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
-	FREQUENCY STABILITY	4132 to 4233	4182	WCDMA
-	OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA
-	BAND EDGE	4132 to 4233	4132, 4233	WCDMA, HSDPA
-	CONDCUETED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA
-	RADIATED EMISSION BELOW 1GHz	4132 to 4233	4132	WCDMA
-	RADIATED EMISSION ABOVE 1GHz	4132 to 4233	4132, 4182, 4233	WCDMA

#### TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	25deg. C, 64%RH	120Vac, 60Hz	Alan Wu
FREQUENCY STABILITY	24deg. C, 64%RH	3.7Vdc	Match Tsui
OCCUPIED BANDWIDTH	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
BAND EDGE	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
CONDCUETED EMISSION	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
RADIATED EMISSION BELOW 1GHz	25deg. C, 66%RH	120Vac, 60Hz	Brad Tung
RADIATED EMISSION ABOVE 1GHz	25deg. C, 66%RH	120Vac, 60Hz	Alan Wu

### **3.5 EUT OPERATING CONDITIONS**

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

### **3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 22**

**ANSI/TIA/EIA-603-C 2004**

**NOTE:** All test items have been performed and recorded as per the above standards.

## 4 TEST TYPES AND RESULTS

### 4.1 OUTPUT POWER MEASUREMENT

#### 4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

#### 4.1.2 TEST PROCEDURES

##### EIRP / ERP MEASUREMENT:

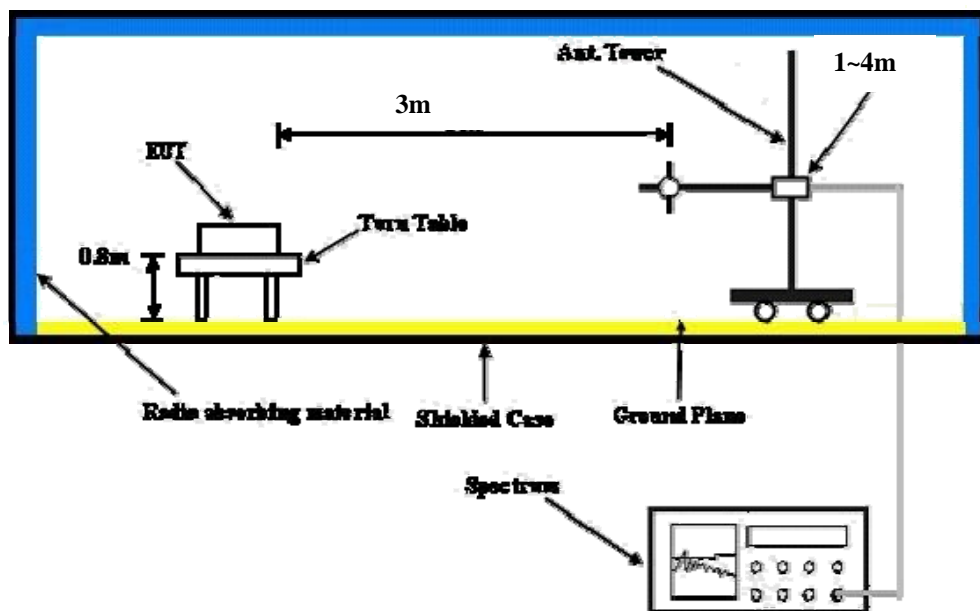
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM and 5MHz for WCDMA mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G
- d.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ . E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15\text{dBi}$ .

##### CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with GSM & WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

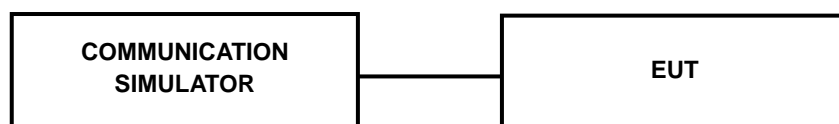
### 4.1.3 TEST SETUP

#### EIRP / ERP MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

## 4.1.4 TEST RESULTS

### CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	22.97	23.75	22.64
HSDPA Subtest-1	22.03	22.81	21.90
HSDPA Subtest-2	22.05	22.83	21.92
HSDPA Subtest-3	21.65	22.43	21.52
HSDPA Subtest-4	21.62	22.40	21.49

### ERP POWER (dBm)

MODE		TX channel 4132					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-7.23	22.97	0.06	23.03	38.45	-15.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-11.23	17.87	0.06	17.93	38.45	-20.52

MODE		TX channel 4182					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.40	-7.98	21.33	0.29	21.62	38.45	-16.83
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.40	-12.10	17.35	0.29	17.64	38.45	-20.81

MODE		TX channel 4233					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.60	-8.14	21.03	0.47	21.50	38.45	-16.95
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.60	-12.05	17.38	0.47	17.85	38.45	-20.60

**NOTE:** ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

## 4.2 FREQUENCY STABILITY MEASUREMENT

### 4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

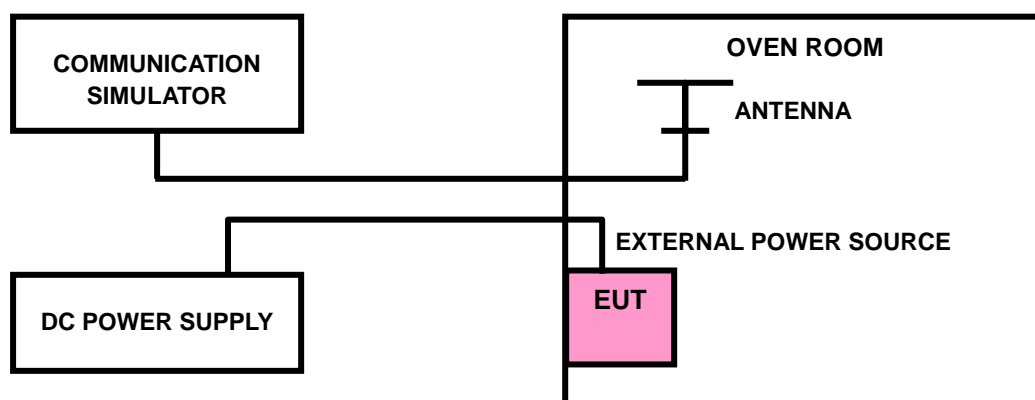
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

### 4.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

### 4.2.3 TEST SETUP





#### 4.2.4 TEST RESULTS

##### FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
4.07	-0.025	2.5
3.7	-0.019	2.5
3.33	-0.023	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.33Vdc to 4.07Vdc.

##### FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
50	-0.030	2.5
40	-0.029	2.5
30	-0.023	2.5
20	-0.019	2.5
10	-0.025	2.5
0	-0.035	2.5
-10	-0.041	2.5
-20	-0.048	2.5

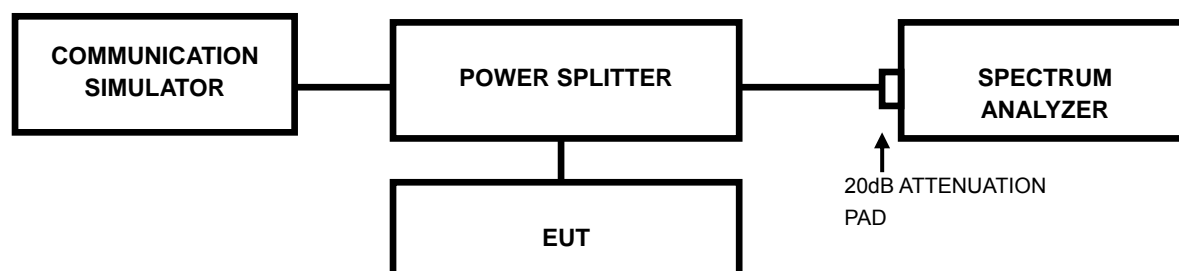


## 4.3 OCCUPIED BANDWIDTH MEASUREMENT

### 4.3.1 TEST PROCEDURES

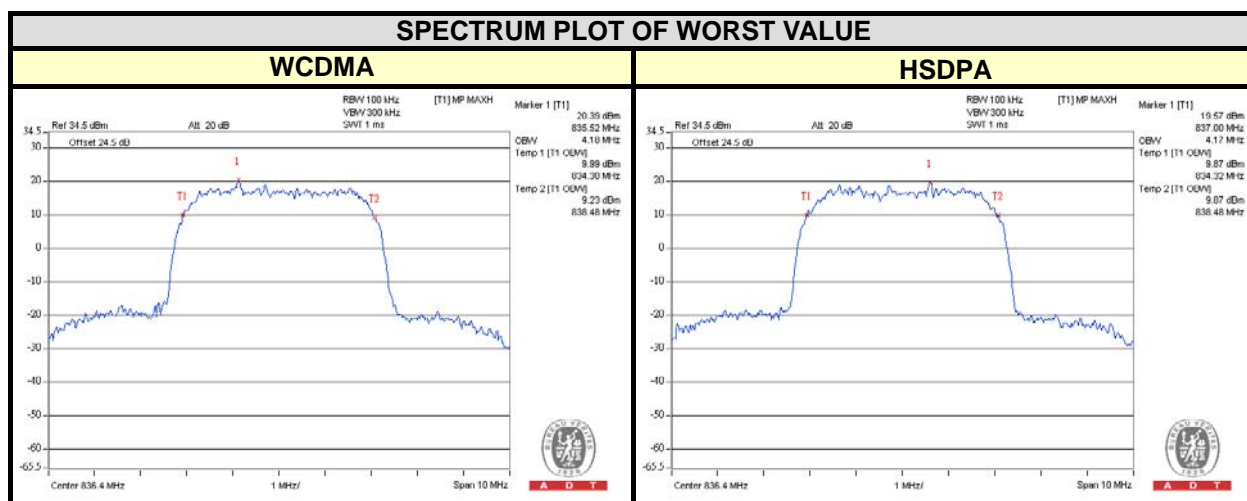
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

### 4.3.2 TEST SETUP



### 4.3.3 TEST RESULTS

CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		WCDMA	HSDPA
4132	826.4	4.15	4.15
4182	836.4	4.18	4.17
4233	846.6	4.17	4.15

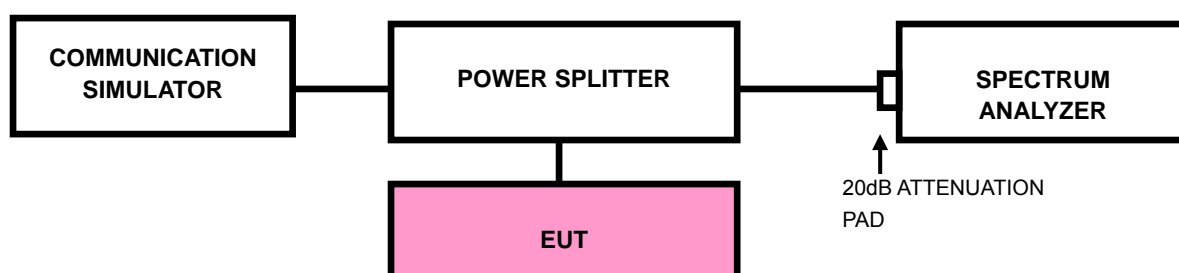


## 4.4 BAND EDGE MEASUREMENT

### 4.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

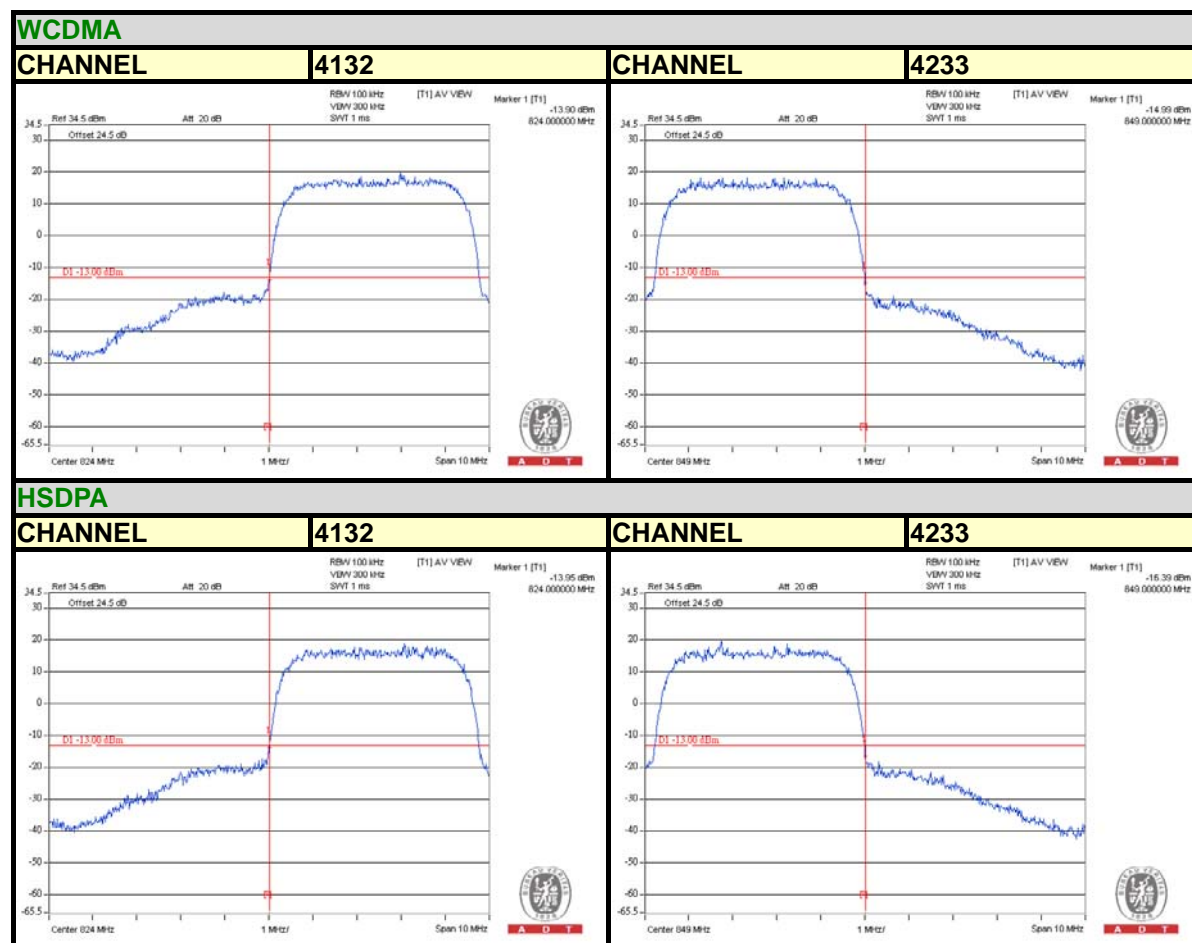
### 4.4.2 TEST SETUP



### 4.4.3 TEST PROCEDURES

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 10MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA/HSDPA).
- Record the max trace plot into the test report.

## 4.4.4 TEST RESULTS



## 4.5 CONDUCTED SPURIOUS EMISSIONS

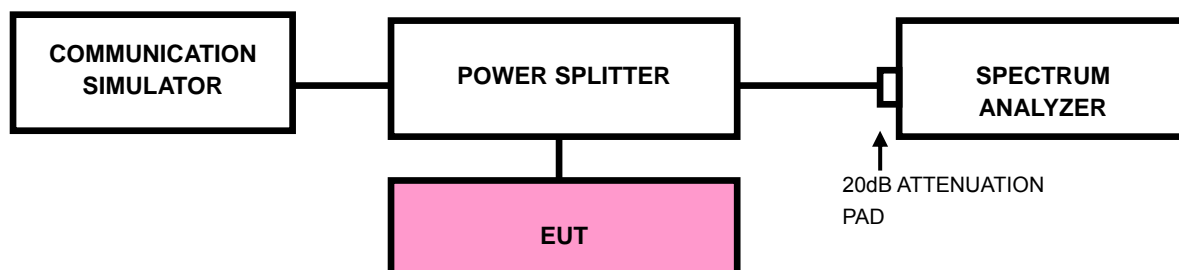
### 4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to  $-13\text{dBm}$ .

### 4.5.2 TEST PROCEDURE

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 9GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

### 4.5.3 TEST SETUP

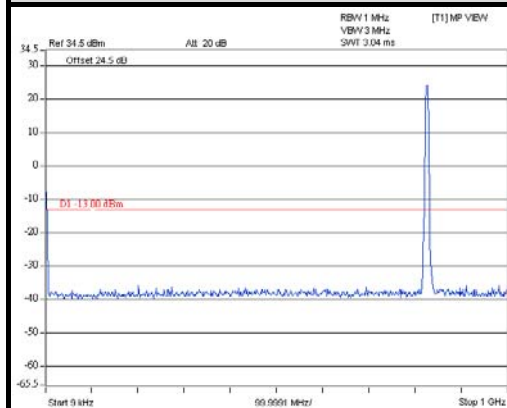


## 4.5.4 TEST RESULTS

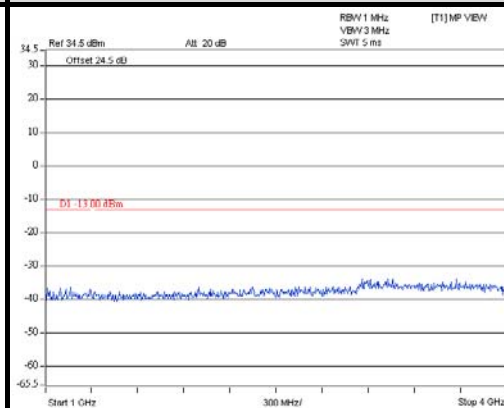
### WCDMA

#### CHANNEL 4132

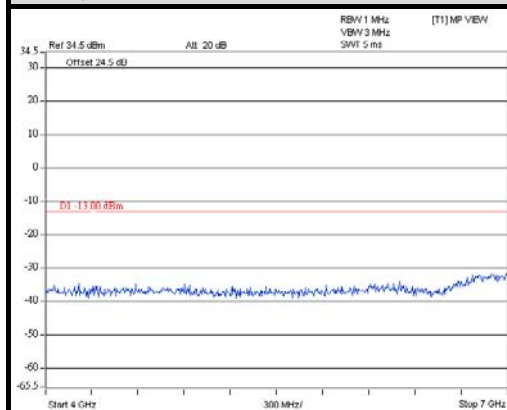
##### FREQUENCY RANGE : 9kHz~1GHz



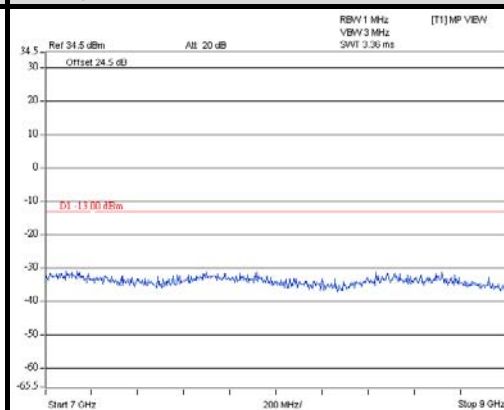
##### FREQUENCY RANGE : 1GHz~4GHz



##### FREQUENCY RANGE : 4GHz~7GHz



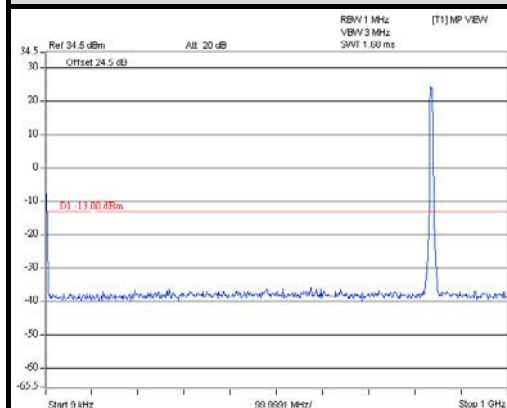
##### FREQUENCY RANGE : 7GHz~9GHz



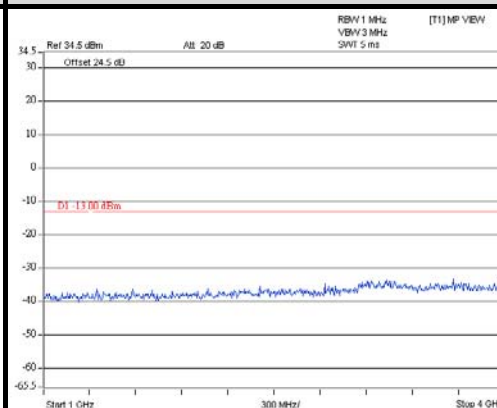
# WCDMA

## CHANNEL 4182

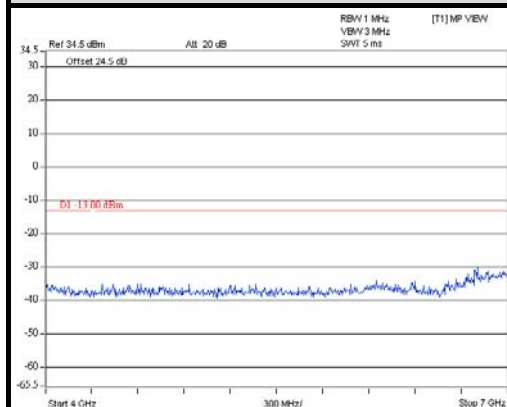
### FREQUENCY RANGE : 9kHz~1GHz



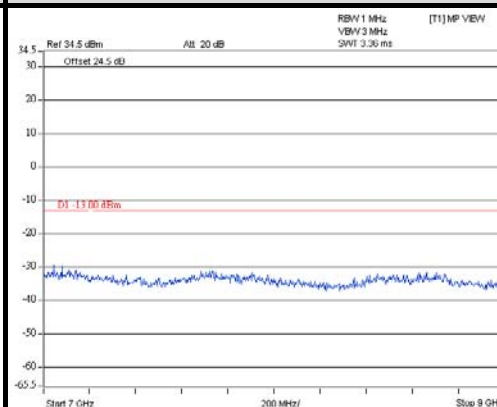
### FREQUENCY RANGE : 1GHz~4GHz



### FREQUENCY RANGE : 4GHz~7GHz



### FREQUENCY RANGE : 7GHz~9GHz



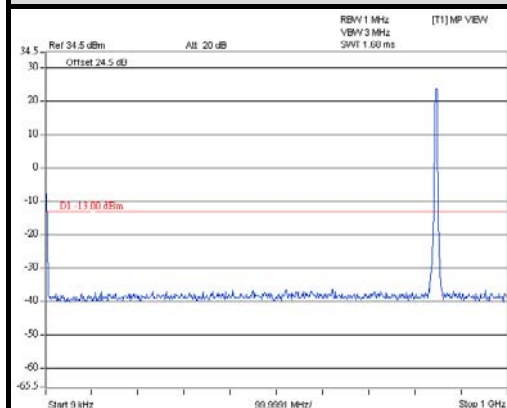


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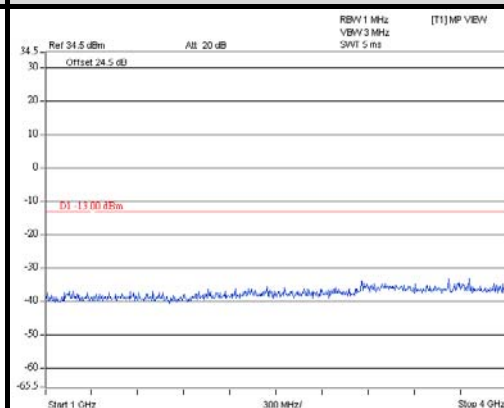
## WCDMA

### CHANNEL 4233

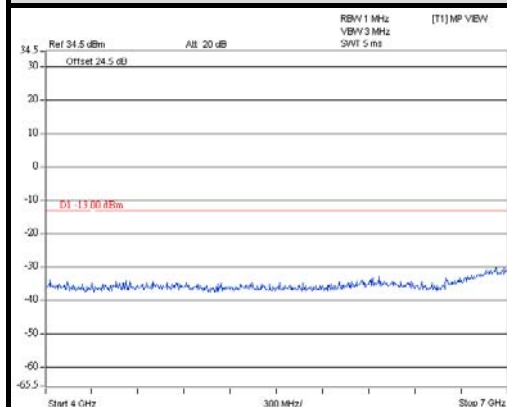
#### FREQUENCY RANGE : 9kHz~1GHz



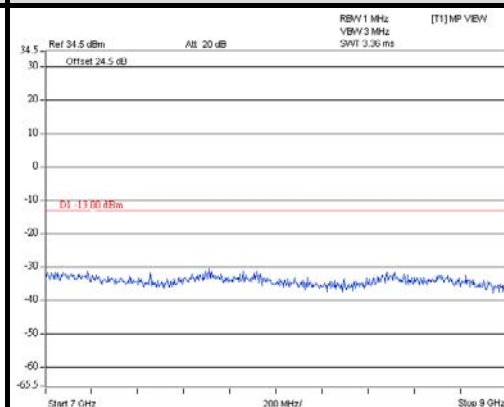
#### FREQUENCY RANGE : 1GHz~4GHz



#### FREQUENCY RANGE : 4GHz~7GHz



#### FREQUENCY RANGE : 7GHz~9GHz

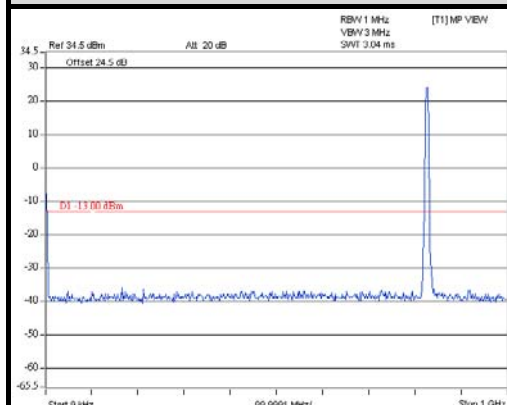




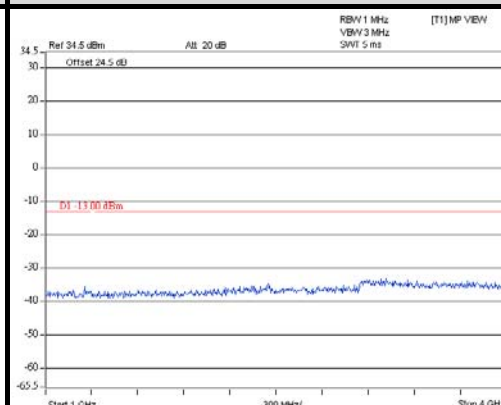
# HSDPA

## CHANNEL 4132

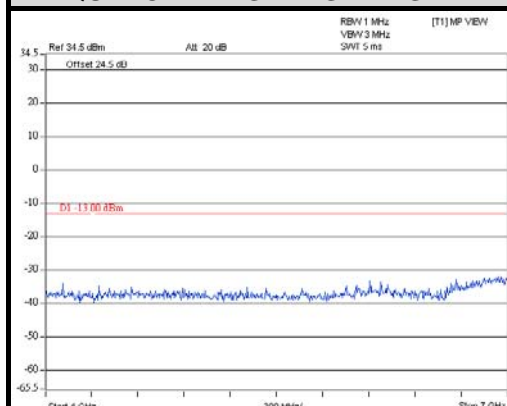
### FREQUENCY RANGE : 9kHz~1GHz



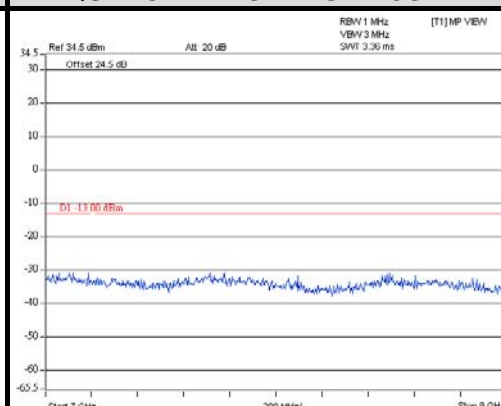
### FREQUENCY RANGE : 1GHz~4GHz



### FREQUENCY RANGE : 4GHz~7GHz



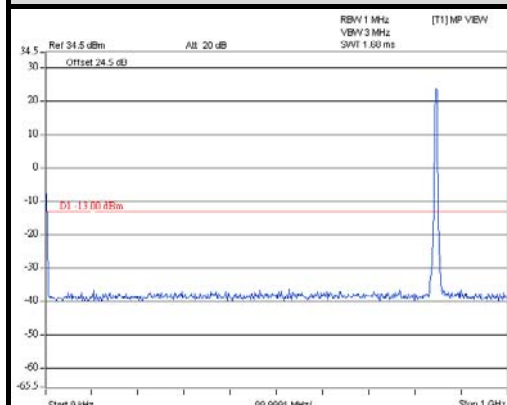
### FREQUENCY RANGE : 7GHz~9GHz



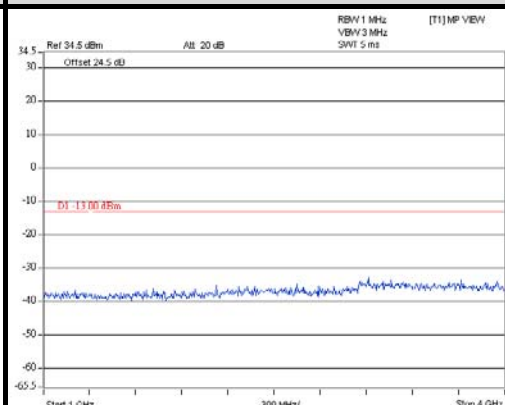
# HSDPA

## CHANNEL 4182

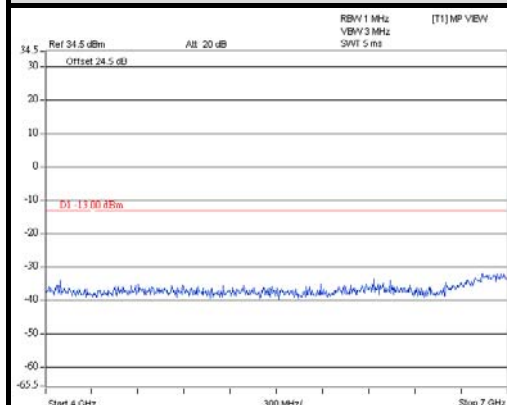
### FREQUENCY RANGE : 9kHz~1GHz



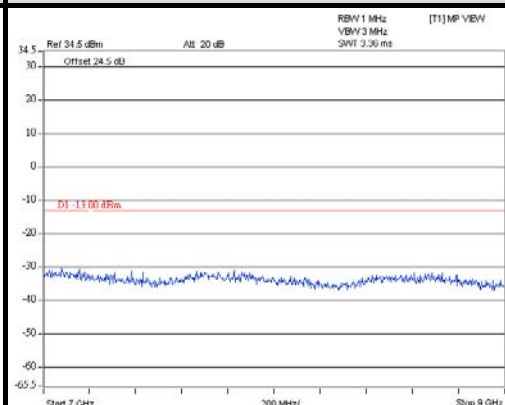
### FREQUENCY RANGE : 1GHz~4GHz



### FREQUENCY RANGE : 4GHz~7GHz



### FREQUENCY RANGE : 7GHz~9GHz



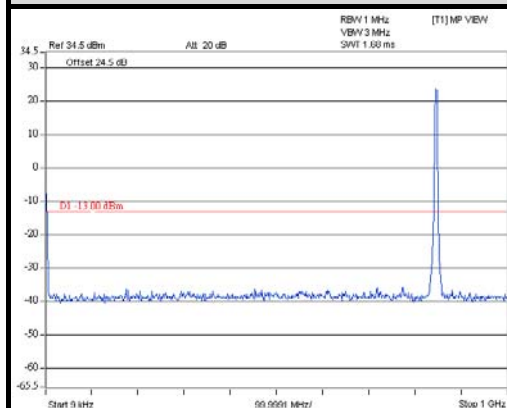


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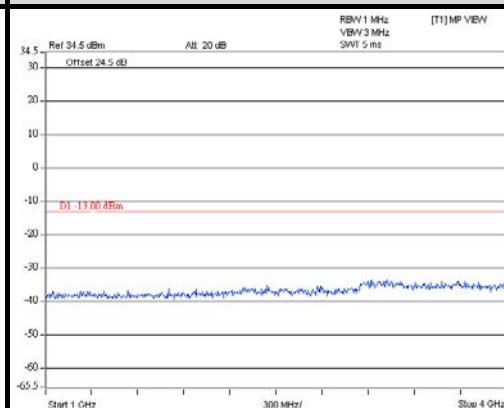
## HSDPA

### CHANNEL 4233

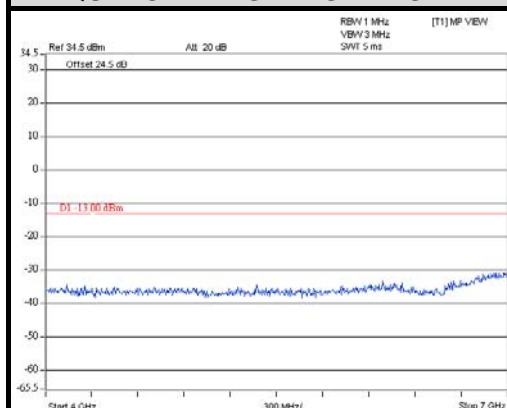
#### FREQUENCY RANGE : 9kHz~1GHz



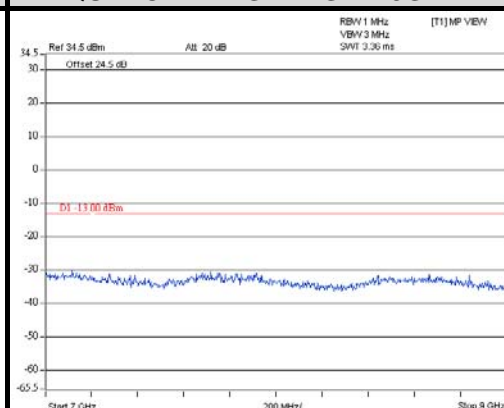
#### FREQUENCY RANGE : 1GHz~4GHz



#### FREQUENCY RANGE : 4GHz~7GHz



#### FREQUENCY RANGE : 7GHz~9GHz



## 4.6 RADIATED EMISSION MEASUREMENT

### 4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to  $-13\text{dBm}$ .

### 4.6.2 TEST PROCEDURES

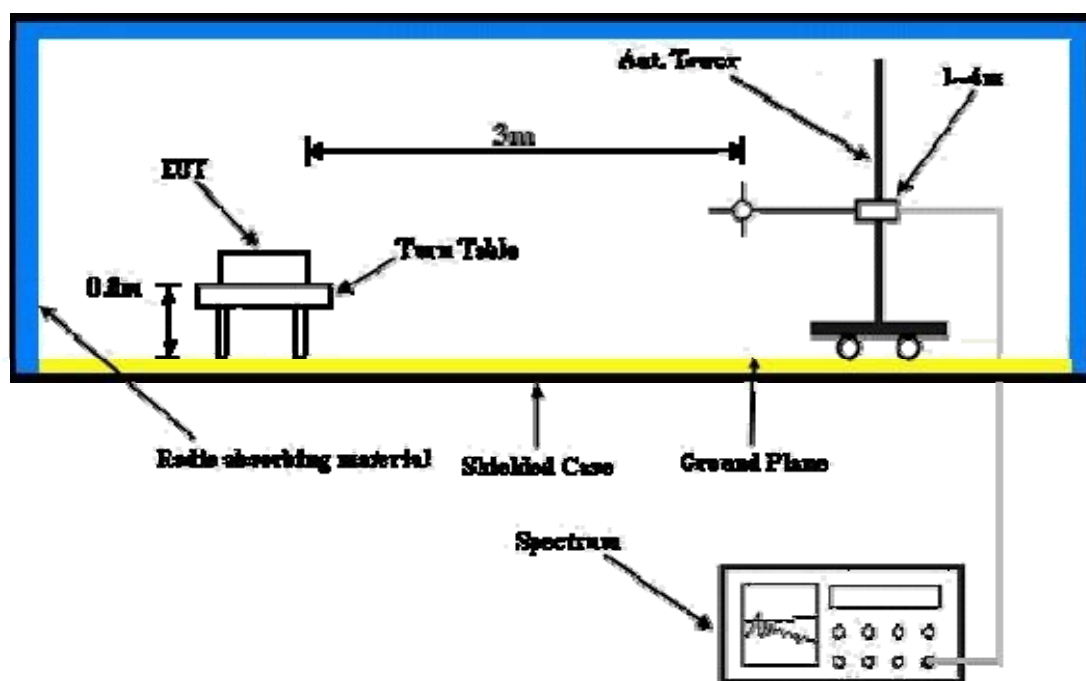
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  
 $\text{E.R.P power} = \text{E.I.R.P power} - 2.15\text{dBi}$ .

**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 4.6.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.6.4 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).



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#### 4.6.5 TEST RESULTS

##### BELOW 1GHz WORST-CASE DATA:

MODE	TX channel 4132	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Brad Tung		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	43.58	-45.19	-33.94	-10.30	-44.24	-13.00	-31.24
2	57.16	-50.08	-45.21	-8.21	-53.42	-13.00	-40.42
3	144.46	-57.19	-63.06	-0.25	-63.31	-13.00	-50.31
4	200.72	-54.36	-67.84	5.47	-62.37	-13.00	-49.37
5	788.54	-47.55	-47.69	4.17	-43.52	-13.00	-30.52
6	881.66	-37.73	-36.11	3.93	-32.18	-13.00	-19.18
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	49.40	-30.35	-27.70	-9.85	-37.55	-13.00	-24.55
2	72.68	-38.18	-42.14	-4.10	-46.24	-13.00	-33.24
3	123.12	-45.09	-50.58	0.01	-50.57	-13.00	-37.57
4	208.48	-55.19	-65.28	5.46	-59.82	-13.00	-46.82
5	792.42	-63.56	-60.68	4.12	-56.56	-13.00	-43.56
6	881.66	-41.11	-36.40	3.93	-32.47	-13.00	-19.47

##### REMARKS:

1.  $ERP(dBm) = S.G \text{ Power Value (dBm)} + \text{Correction Factor (dB)}$ .
2. Correction Factor = gain of substitution antenna + cable loss



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## ABOVE 1GHz

MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Alan Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-45.33	-44.16	5.49	-38.67	-13.00	-25.67
2	2479.20	-55.40	-52.76	6.44	-46.32	-13.00	-33.32
3	3305.60	-53.32	-47.84	6.88	-40.96	-13.00	-27.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-48.76	-50.73	5.49	-45.24	-13.00	-32.24
2	2479.20	-59.94	-56.85	6.44	-50.41	-13.00	-37.41
3	3305.60	-55.65	-50.90	6.88	-44.02	-13.00	-31.02

## REMARKS:

1.  $ERP(dBm) = S.G \text{ Power Value } (dBm) + \text{Correction Factor } (dB)$ .
2. Correction Factor = gain of substitution antenna + cable loss



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MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Alan Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1672.80	-44.94	-43.83	5.54	-38.29	-13.00	-25.29
2	2509.20	-54.09	-51.53	6.45	-45.08	-13.00	-32.08
3	3345.60	-52.74	-47.23	6.94	-40.29	-13.00	-27.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1672.80	-48.19	-50.11	5.54	-44.57	-13.00	-31.57
2	2509.20	-59.71	-56.53	6.45	-50.08	-13.00	-37.08
3	3345.60	-55.80	-50.91	6.94	-43.97	-13.00	-30.97

**REMARKS:**

1.  $ERP(dBm) = S.G \text{ Power Value (dBm)} + \text{Correction Factor (dB)}$ .
2.  $\text{Correction Factor} = \text{gain of substitution antenna} + \text{cable loss}$





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MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Alan Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.20	-45.61	-44.56	5.59	-38.97	-13.00	-25.97
2	2539.80	-54.69	-51.93	6.43	-45.50	-13.00	-32.50
3	3386.40	-52.42	-46.88	7.01	-39.87	-13.00	-26.87
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.20	-49.43	-51.30	5.59	-45.71	-13.00	-32.71
2	2539.80	-60.84	-57.55	6.43	-51.12	-13.00	-38.12
3	3386.40	-56.25	-51.22	7.01	-44.21	-13.00	-31.21

**REMARKS:**

1.  $ERP(dBm) = S.G \text{ Power Value (dBm)} + \text{Correction Factor (dB)}$ .
2.  $\text{Correction Factor} = \text{gain of substitution antenna} + \text{cable loss}$



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## 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

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## 6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab:**

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Fax: 886-3-5935342

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.



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## **7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications are made to the EUT by the lab during the test.

---END---