

## FCC Test Report

### (Part 24)

**Report No.:** RF161004D09-6

**FCC ID:** HFS-C401U

**Test Model:** C401U

**Received Date:** Oct. 04, 2016

**Test Date:** Dec. 16, 2016 ~ Jan. 18, 2017

**Issued Date:** Jan. 19, 2017

**Applicant:** QUANTA COMPUTER INC.

**Address:** 188, WEN HUA 2ND RD., GUISHAN DIST., TAO YUAN CITY 33377, TAIWAN

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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### Release Control Record

Issue No.	Description	Date Issued
RF161004D09-6	Original release	Jan. 19, 2017

## 1 Certificate of Conformity

**Product:** Clover Flex

**Brand:** clover

**Test Model:** C401U

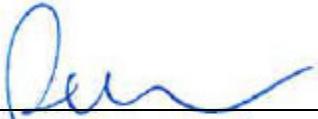
**Sample Status:** Engineering sample

**Applicant:** QUANTA COMPUTER INC.

**Test Date:** Dec. 16, 2016 ~ Jan. 18, 2017

**Standards:** FCC Part 24, Subpart E

The above equipment 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 :**   
Pettie Chen / Senior Specialist

, Date: Jan. 19, 2017

**Approved by :**   
Dylan Chiou / Project Engineer

, Date: Jan. 19, 2017

## 2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective radiated power	Pass	Meet the requirement of limit.
2.1046 24.232(d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -31.3dB at 3704.80MHz.

### 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	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

## 2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 18, 2016	Apr. 17, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 16, 2016	Nov. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-151	Dec. 16, 2016	Dec. 15, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 12, 2016	Dec. 13, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8447D	2944A10738	Aug. 22, 2016	Aug. 21, 2017
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2016	Aug. 21, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 08, 2016	Jun. 07, 2017
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Jun. 13, 2016	Jun. 12, 2017
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 3.  
 3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.  
 4. The FCC Site Registration No. is 988962.  
 5. The IC Site Registration No. is IC 7450F-3.

### 3 General Information

#### 3.1 General Description of EUT

Product	Clover Flex
Brand	clover
Test Model	C401U
Sample Status	Engineering sample
Power Supply Rating	7.6 Vdc (Battery) 12Vdc (Adapter)
Modulation Type	WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK
Operating Frequency	WCDMA: 1852.4MHz ~ 1907.6MHz
Max. EIRP Power	WCDMA: 251.189mW (24.0dBm)
Antenna Type	PIFA antenna with -1.9dBi gain
Antenna Connector	NA
Accessory Device	Charging Dock (Brand: Clover, Model: K400) Microhub (Brand: Clover, Model: H400)
Data Cable Supplied	0.8m shielded Type-C cable without core

Note:

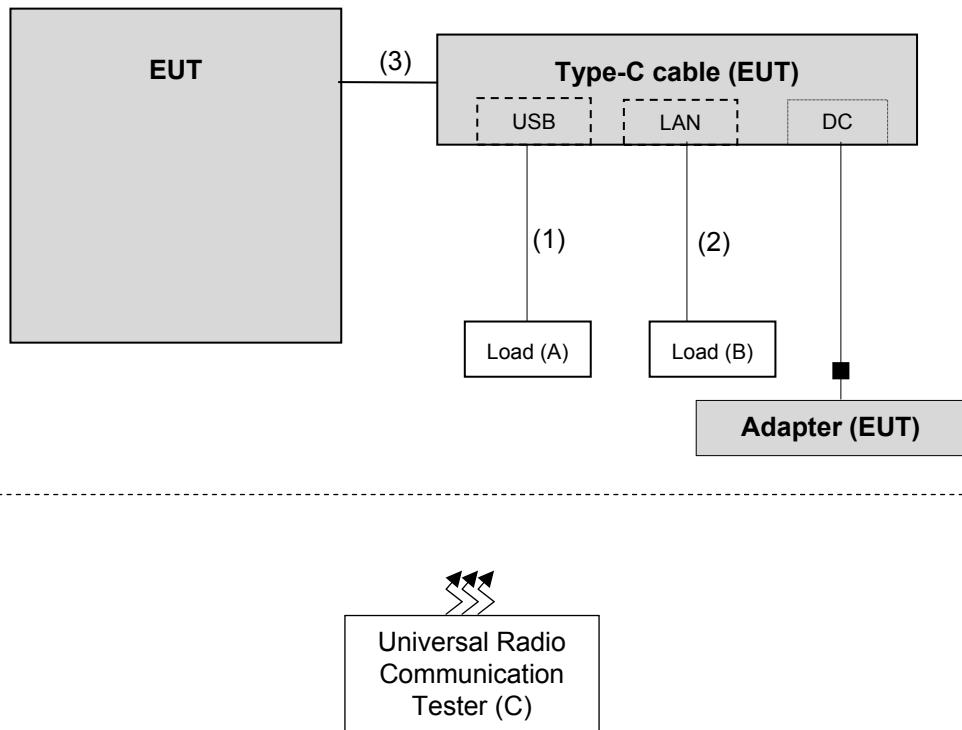
1. The EUT consumes power from the following battery and adapter.

Battery	
Brand	LG Chem, Ltd.
Model	MPPCLOYJ4
Rating	7.6Vdc, 2170mAh (Typ)

Adapter	
Brand	clover
Model	FSP040-RHBN2 A
Input Power	100-240Vac~, 1.5A,50-60Hz
Output Power	12.0Vdc / 3.33A
Power Line	1.2m shielded DC cable with one core

2. Spurious emission of the simultaneous operation (WLAN+WWAN+NFC or BT+WWAN+NFC) has been evaluated and no non-compliance was found.

### 3.2 Configuration of System Under Test



#### 3.2.1 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.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Load	N/A	N/A	N/A	N/A	-
B.	Load	N/A	N/A	N/A	N/A	-
C.	Universal Radio Communication Tester	R&S	CMU200	123112	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item C acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	1.8	N	0	-
2.	LAN cable	1	1.8	N	0	-
3.	Type-C cable	1	0.8	Y	0	Accessory of EUT

### 3.3 Test Mode Applicability and Tested Channel Detail

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:

#### WCDMA Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
-	Frequency Stability	9262 to 9538	9400	WCDMA
-	Occupied Bandwidth	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA, HSUPA
-	Band Edge	9262 to 9538	9262, 9538	WCDMA, HSDPA, HSUPA
-	Peak To Average Ratio	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA, HSUPA
-	Conducted Emission	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA, HSUPA
-	Radiated Emission Below 1GHz	9262 to 9538	9262	WCDMA
-	Radiated Emission Above 1GHz	9262 to 9538	9262, 9400, 9538	WCDMA

#### Test Condition:

Test Item	Environmental Conditions	Input Power (System)	Tested By
EIRP	20deg. C, 66%RH	120Vac, 60Hz	Jones Chang
Frequency Stability	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Occupied Bandwidth	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Band Edge	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Peak To Average Ratio	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Conducted Emission	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Radiated Emission	20deg. C, 66%RH	120Vac, 60Hz	Jones Chang

### **3.4 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

### **3.5 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 24**

**KDB 971168 D01 Power Meas License Digital Systems v02r02**

**ANSI/TIA/EIA-603-D 2010**

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

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.r.p.

#### 4.1.2 Test Procedures

##### **EIRP / ERP Measurement:**

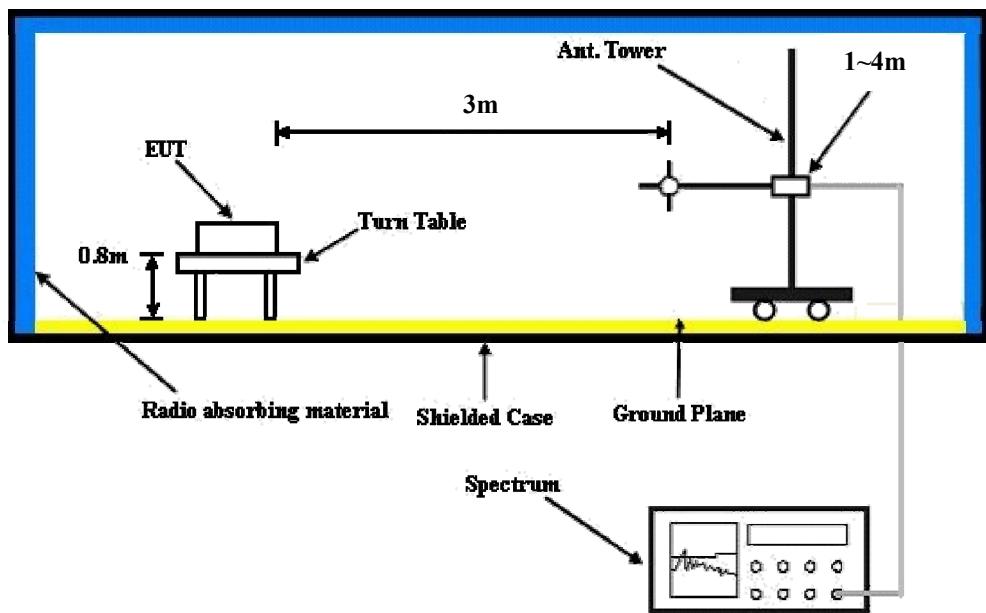
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 5MHz for WCDMA mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search 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 from E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

##### **Conducted Power Measurement:**

The EUT was set up for the maximum power with WCDMA, HSDPA, HSUPA 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 II		
Channel	9262	9400	9538
Frequency	1852.4	1880	1907.6
RMC 12.2K	22.39	<b>22.69</b>	22.61
HSDPA Subtest-1	22.34	22.65	22.59
HSDPA Subtest-2	22.17	22.46	22.37
HSDPA Subtest-3	21.97	22.23	22.12
HSDPA Subtest-4	21.67	21.94	21.83
HSUPA Subtest-1	22.32	22.61	22.57
HSUPA Subtest-2	20.33	20.59	20.47
HSUPA Subtest-3	21.17	21.50	21.35
HSUPA Subtest-4	20.50	20.79	20.7
HSUPA Subtest-5	22.22	22.54	22.50

EIRP Power (dBm)  
 WCDMA Mode

MODE		TX channel 9262					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1852.40	-19.4	19.5	1.0	20.5	33.0	-12.5

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1852.40	-16.2	22.2	1.0	23.2	33.0	-9.8

MODE		TX channel 9400					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-18.5	20.8	1.1	21.9	33.0	-11.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-15.5	22.9	1.1	24.0	33.0	-9.0

MODE		TX channel 9538					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1907.60	-21.0	18.7	1.1	19.8	33.0	-13.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1907.60	-16.5	22.0	1.1	23.1	33.0	-9.9

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

## 4.2 Frequency Stability Measurement

### 4.2.1 Limits of Frequency Stability Measurement

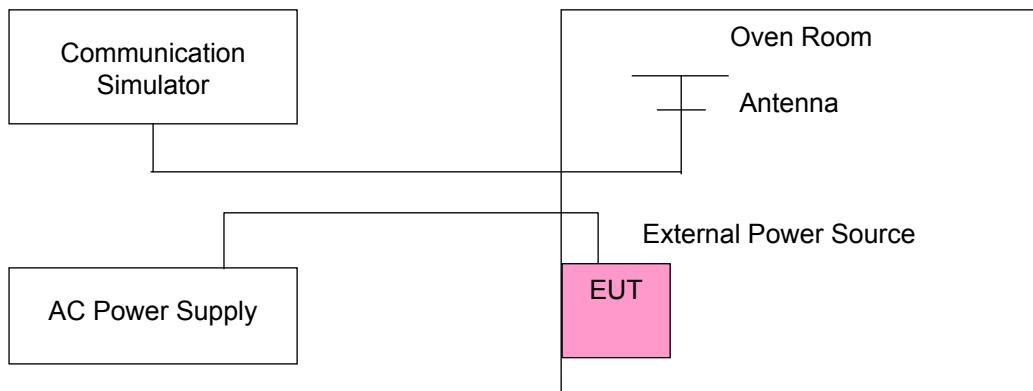
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

### 4.2.2 Test Procedure

- a. 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.
- b. EUT is connected the external power supply to control the AC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5$  °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)
	WCDMA	
132	-0.005	2.5
120	-0.005	2.5
108	-0.005	2.5

Note: The applicant defined the normal working voltage of the battery is from 108Vac to 132Vac.

##### Frequency Error vs. Temperature.

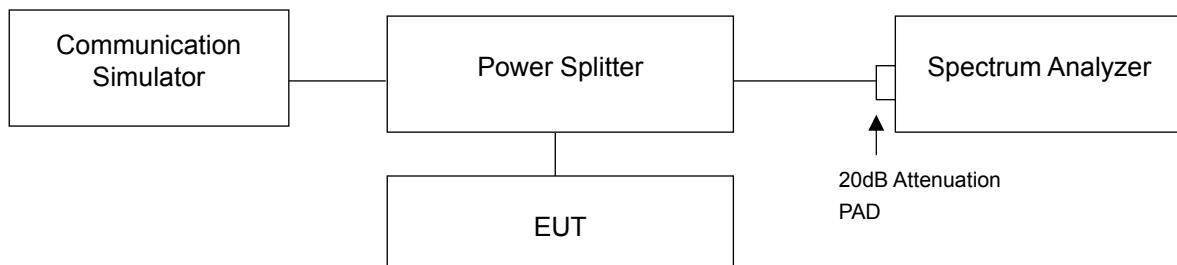
TEMP. (°C)	Frequency Error (ppm)	Limit (ppm)
	WCDMA	
50	-0.005	2.5
40	-0.004	2.5
30	-0.005	2.5
20	-0.005	2.5
10	-0.005	2.5
0	-0.007	2.5
-10	-0.007	2.5
-20	-0.007	2.5

## 4.3 Occupied Bandwidth Measurement

### 4.3.1 Test Procedure

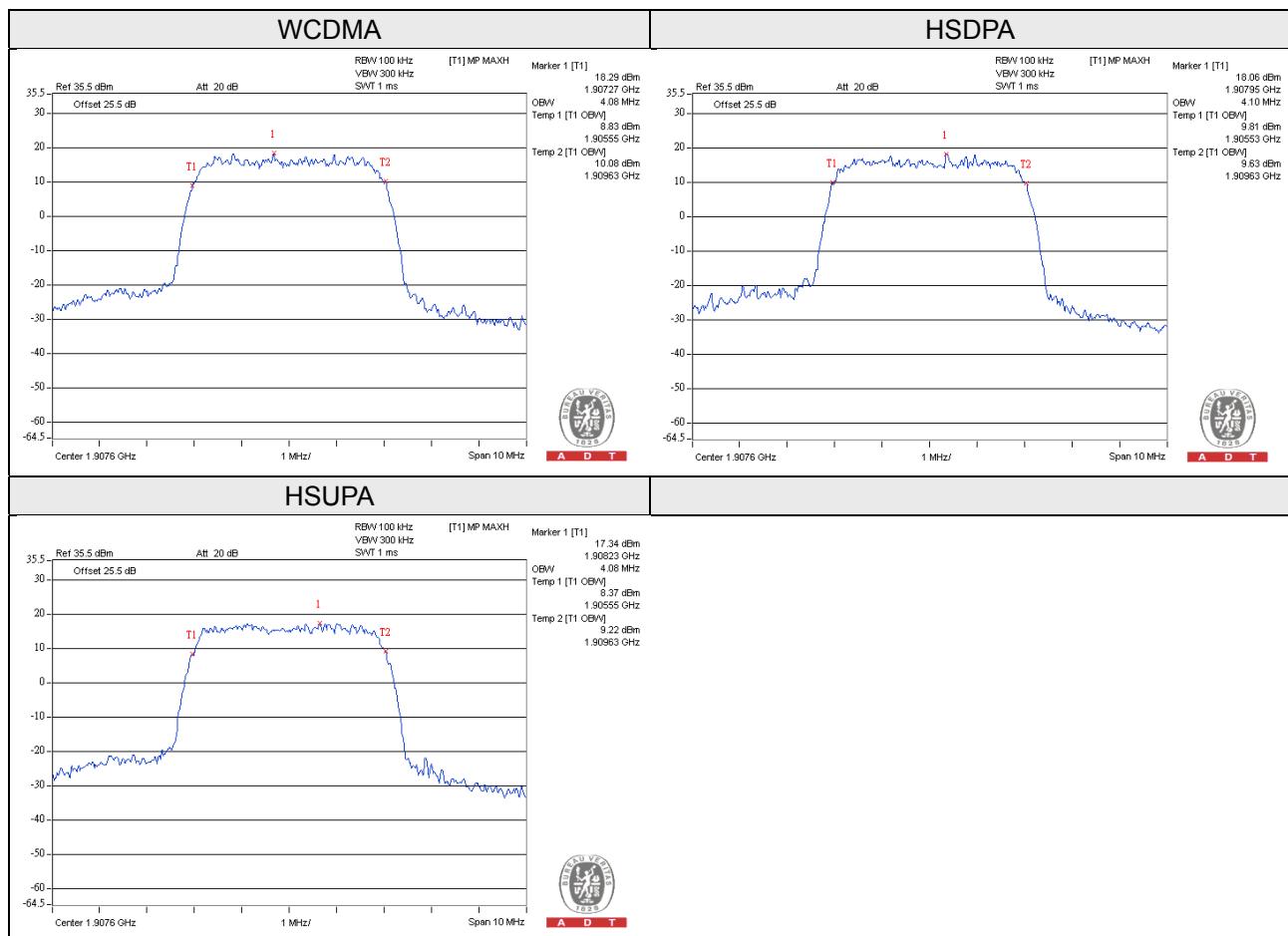
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function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

### 4.3.2 Test Setup



### 4.3.3 Test Result

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
9262	1852.4	4.07	4.05	4.05
9400	1880.0	4.08	4.07	4.08
9538	1907.6	4.08	4.10	4.08

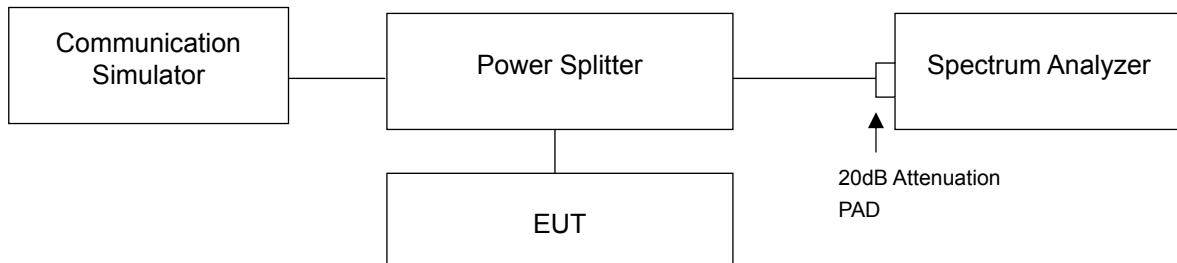


## 4.4 Band Edge Measurement

### 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

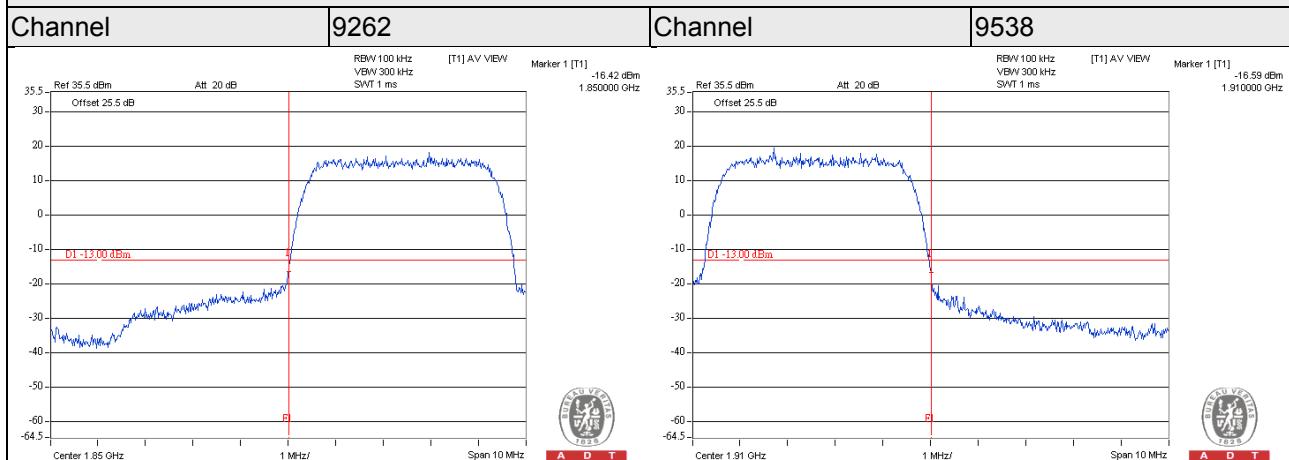


### 4.4.3 Test Procedures

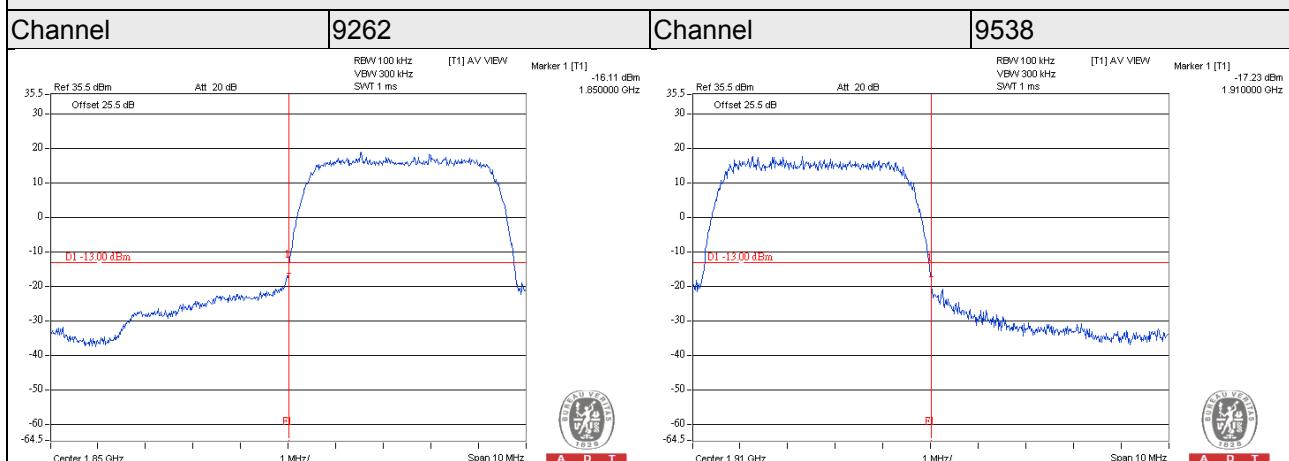
- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA / HSDPA / HSUPA).
- Record the max trace plot into the test report.

#### 4.4.4 Test Results

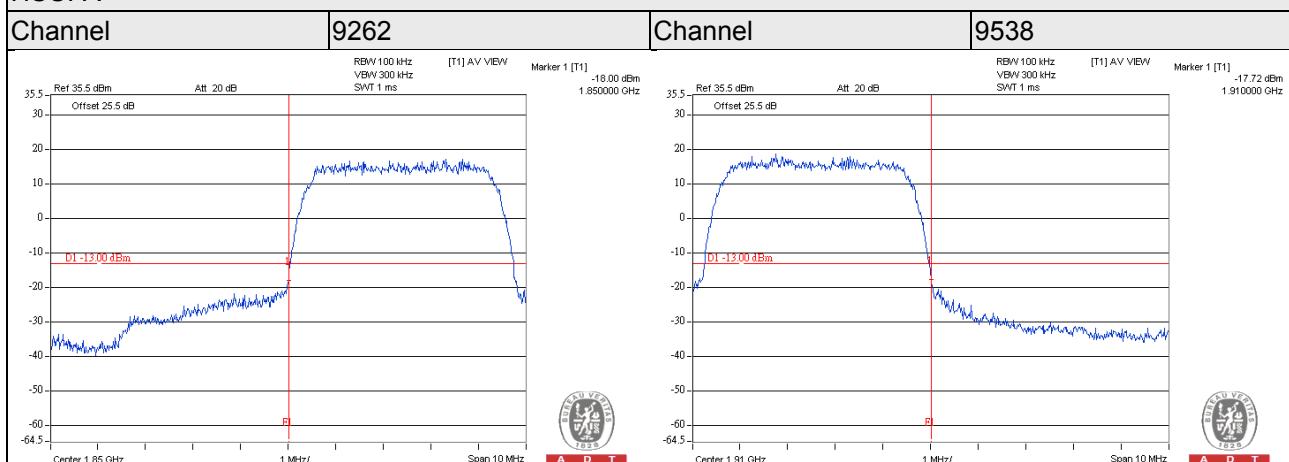
##### WCDMA



##### HSDPA



##### HSUPA

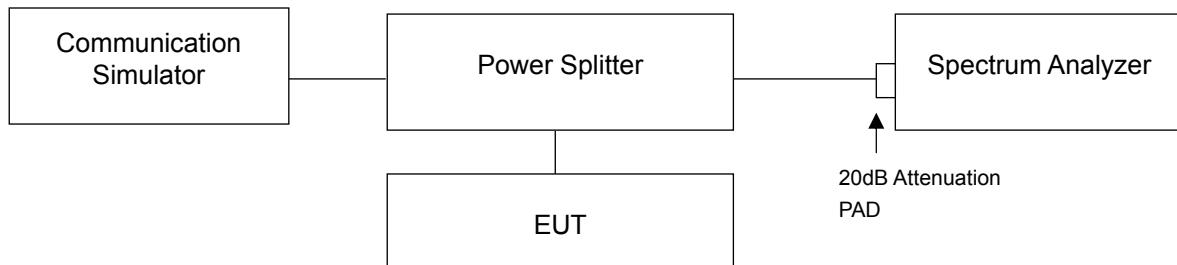


## 4.5 Peak to Average Ratio

### 4.5.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

### 4.5.2 Test Setup



### 4.5.3 Test Procedures

- a. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
- b. Set the number of counts to a value that stabilizes the measured CCDF curve;
- c. Record the maximum PAPR level associated with a probability of 0.1%.

#### 4.5.4 Test Results

Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		WCDMA	HSDPA	HSUPA
9262	1852.4	3.39	3.40	3.36
9400	1880.0	3.39	3.40	3.38
9538	1907.6	3.34	3.32	3.31

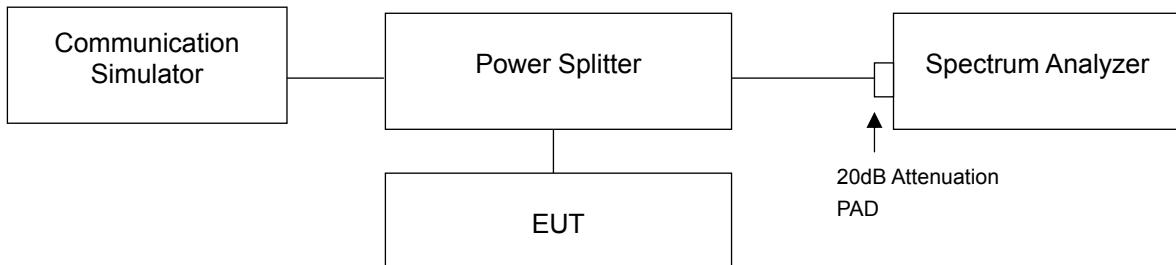


## 4.6 Conducted Spurious Emissions

### 4.6.1 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  $-13\text{dBm}$ .

### 4.6.2 Test Setup



### 4.6.3 Test Procedure

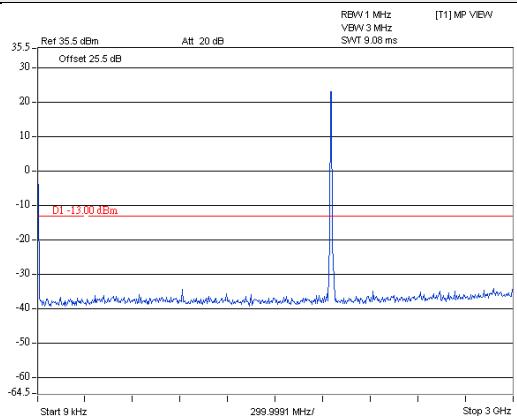
- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9 kHz to 20GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission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

#### 4.6.4 Test Results

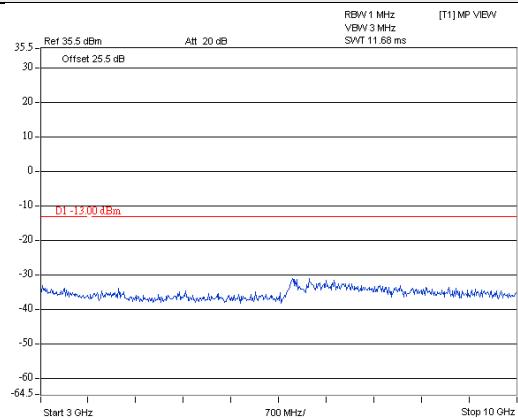
WCDMA

Channel 9262

Frequency Range : 9kHz~3GHz

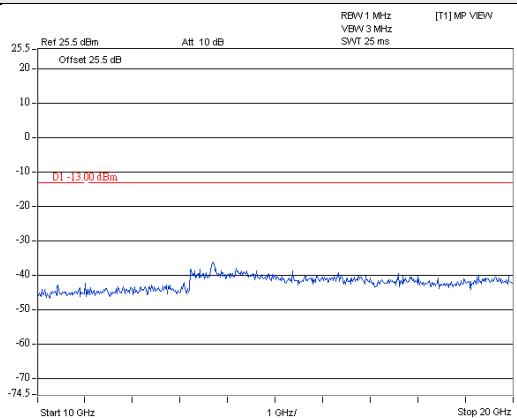


Frequency Range : 3GHz~10GHz



BUREAU  
VERITAS  
1828  
A D T

Frequency Range : 10GHz~20GHz



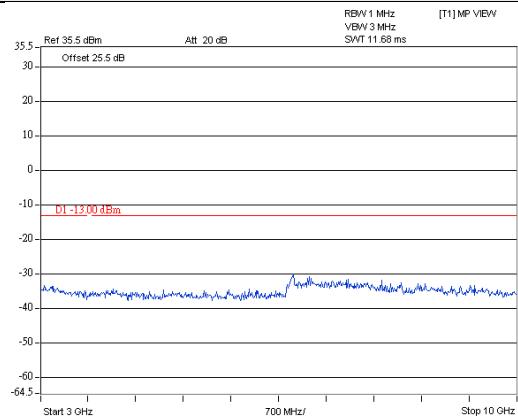
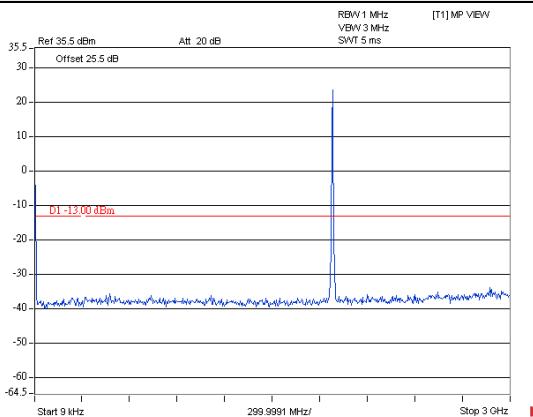
BUREAU  
VERITAS  
1828  
A D T

## WCDMA

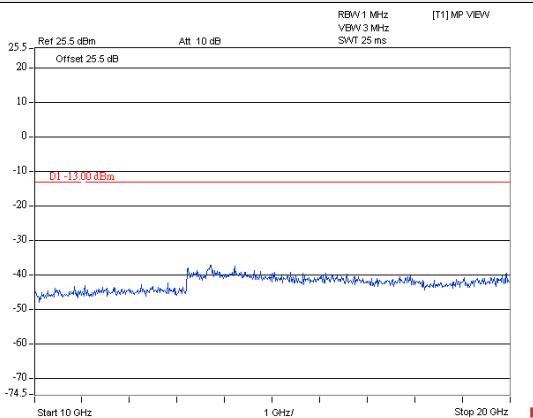
## Channel 9400

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

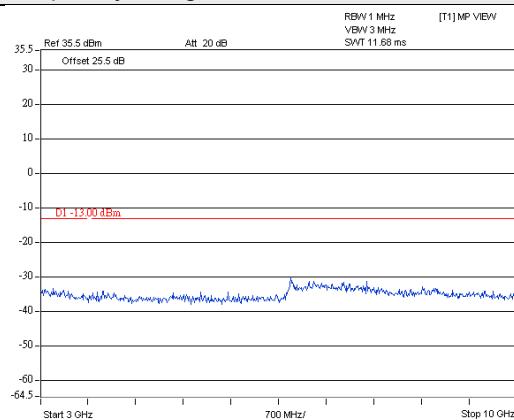
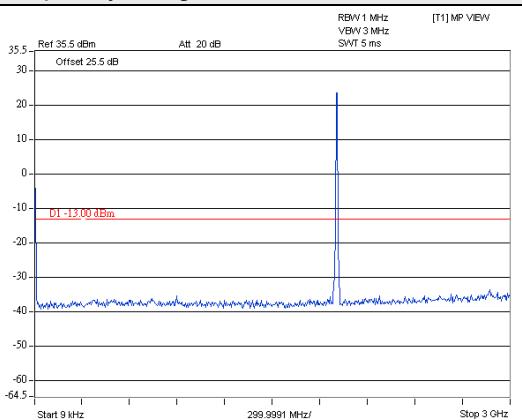


## WCDMA

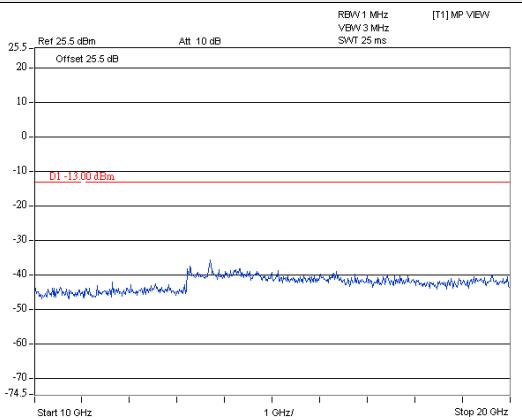
## Channel 9538

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

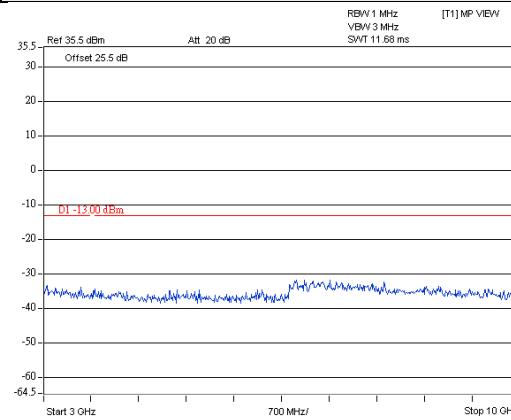
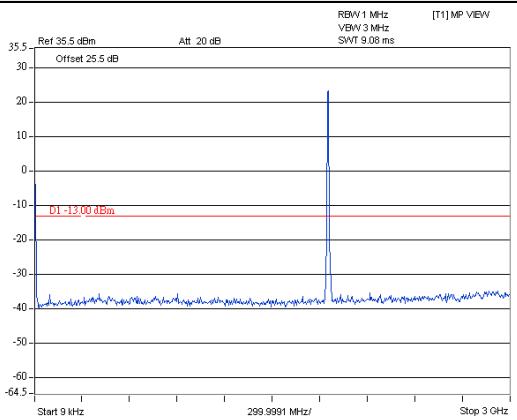


## HSDPA

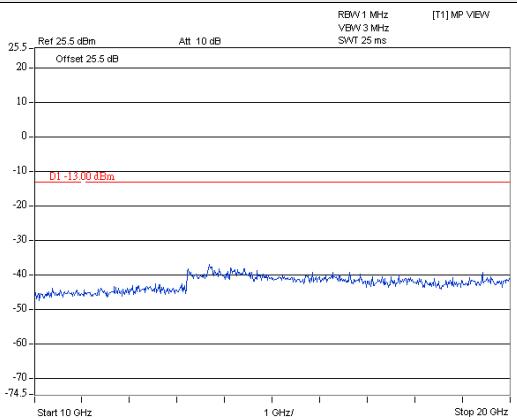
## Channel 9262

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

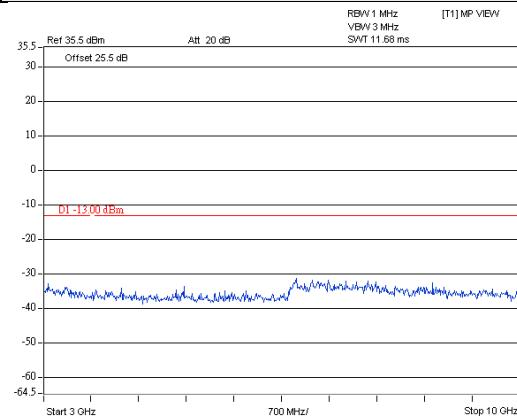
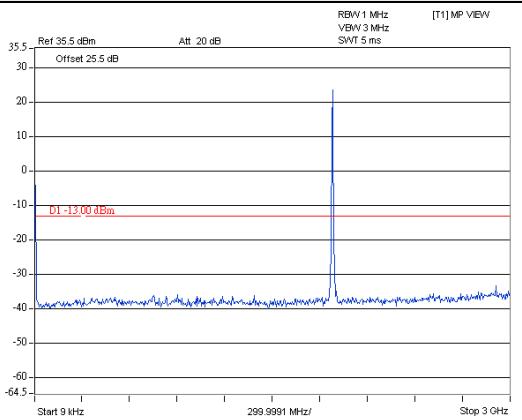


## HSDPA

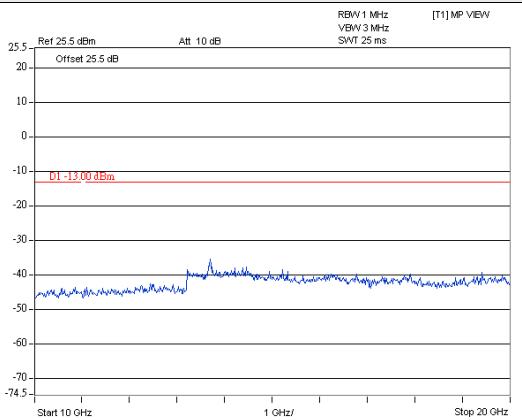
## Channel 9400

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

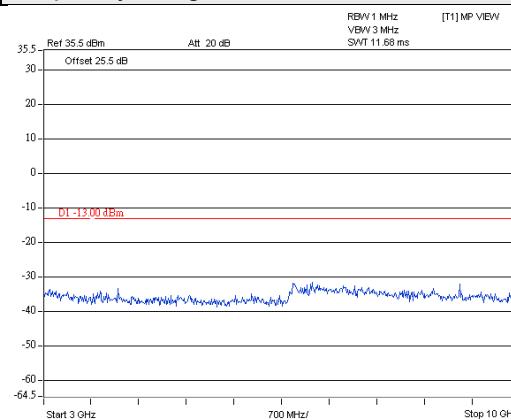
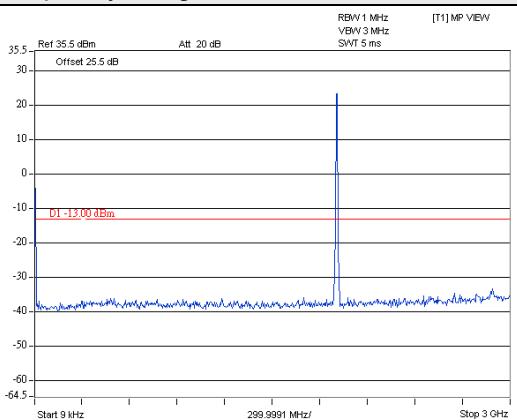


## HSDPA

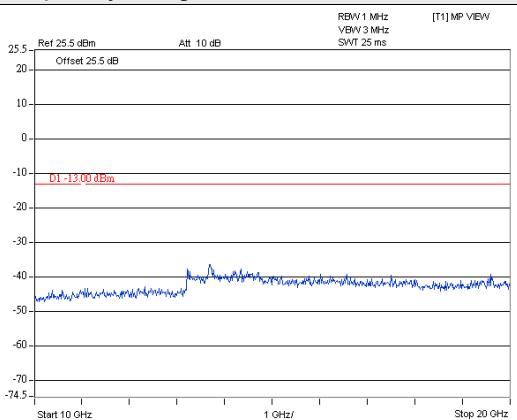
## Channel 9538

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

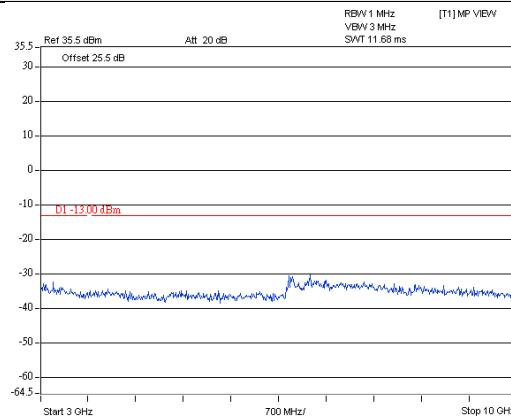
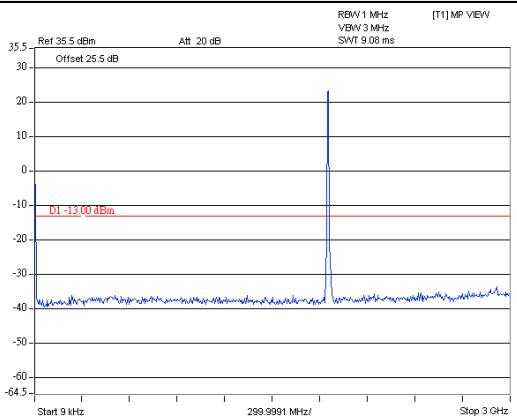


## HSUPA

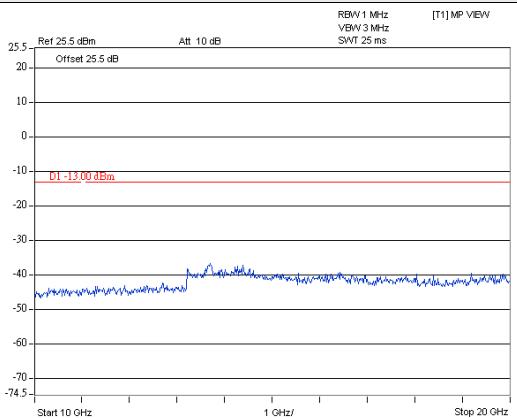
## Channel 9262

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

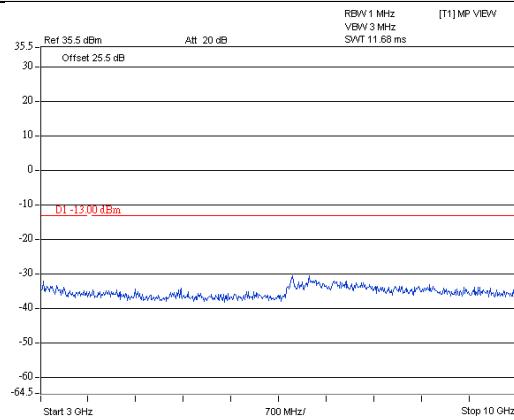
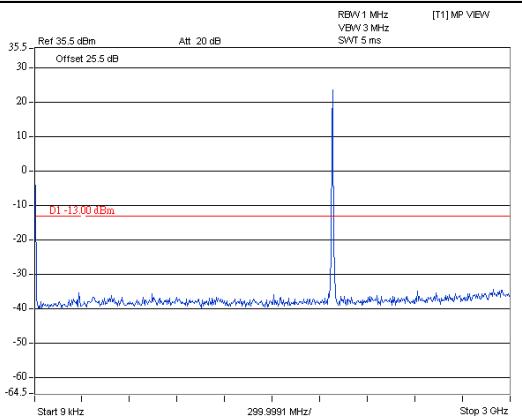


## HSUPA

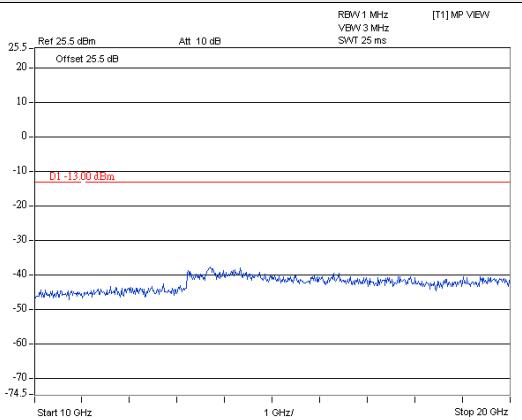
Channel 9400

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

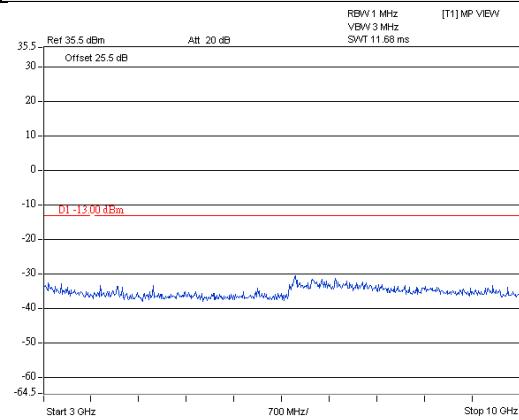
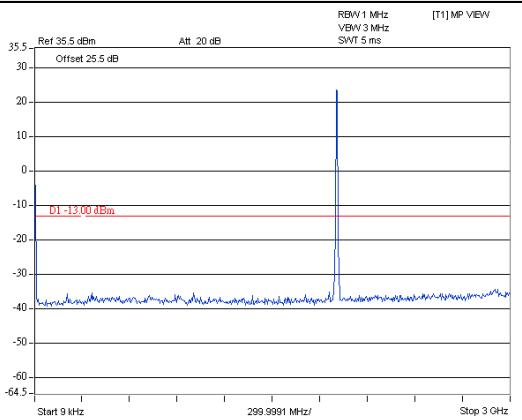


## HSUPA

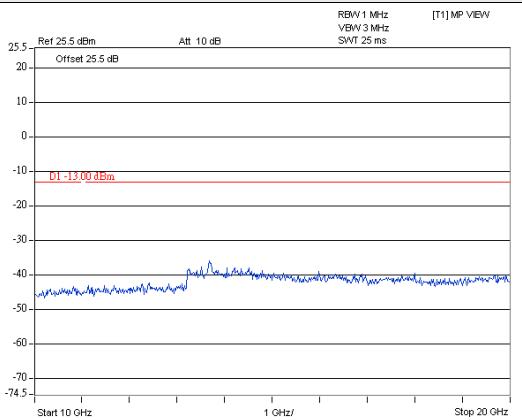
## Channel 9538

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz



## 4.7 Radiated Emission Measurement

### 4.7.1 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  $-13\text{dBm}$ .

### 4.7.2 Test Procedure

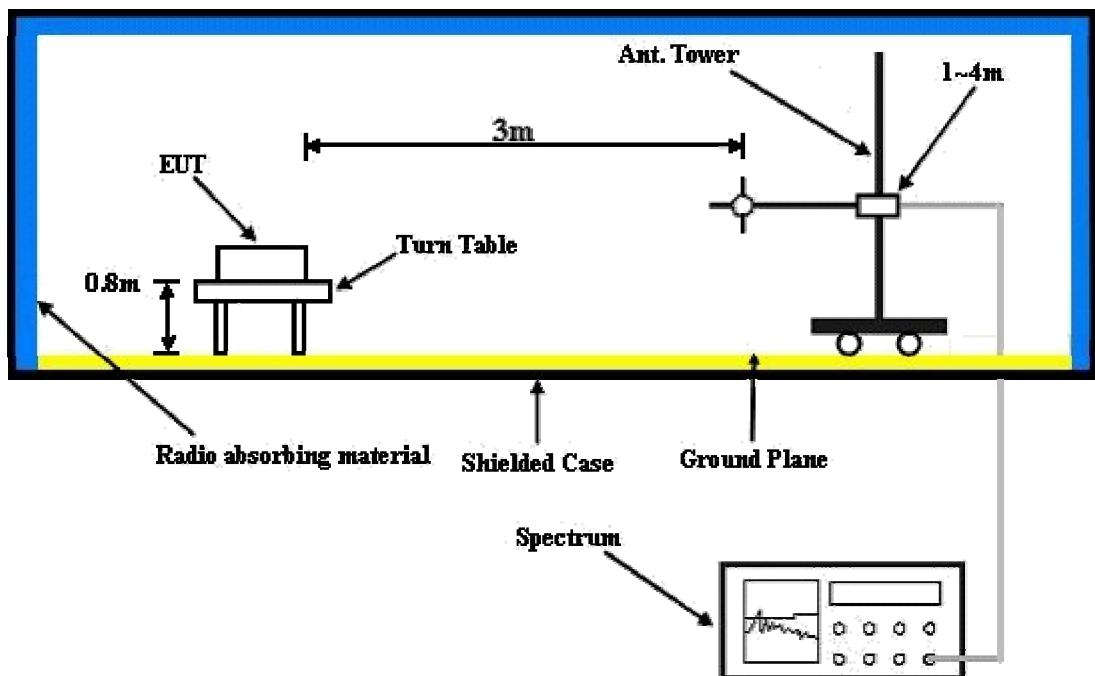
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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. EIRP = Output power level of S.G – TX cable loss + 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, E.R.P power = E.I.R.P power - 2.15dBi.

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

### 4.7.3 Deviation from Test Standard

No deviation.

#### 4.7.4 Test Setup



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

#### 4.7.5 Test Results

Below 1GHz

WCDMA Mode

Mode	TX channel 9262	Frequency Range	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	327.41	-62.2	-60.9	5.2	-55.7	-13.0	-42.7
2	364.35	-64.8	-63.4	5.2	-58.2	-13.0	-45.2
3	624.83	-54.4	-52.6	4.7	-47.9	-13.0	-34.9
4	655.93	-64.8	-62.9	4.9	-58.0	-13.0	-45.0
5	700.64	-67.5	-65.5	5.2	-60.3	-13.0	-47.3
6	823.11	-64.8	-62.7	4.0	-58.7	-13.0	-45.7

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	461.54	-59.7	-58.1	5.0	-53.1	-13.0	-40.1
2	504.31	-57.8	-56.2	4.9	-51.3	-13.0	-38.3
3	537.35	-61.8	-60.1	4.7	-55.4	-13.0	-42.4
4	632.61	-64.7	-62.8	4.7	-58.1	-13.0	-45.1
5	778.40	-57.8	-55.7	4.3	-51.4	-13.0	-38.4
6	836.71	-66.1	-64.0	4.0	-60.0	-13.0	-47.0

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Above 1GHz  
 WCDMA Mode

Mode	TX channel 9262	Frequency Range	Above 1000MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3704.80	-57.5	-51.4	7.1	-44.3	-13.0	-31.3
2	5557.20	-69.2	-57.2	6.8	-50.4	-13.0	-37.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3704.80	-67.9	-61.8	7.1	-54.7	-13.0	-41.7
2	5557.20	-65.0	-55.0	6.8	-48.2	-13.0	-35.2

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 9400	Frequency Range	Above 1000MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-58.7	-52.9	7.1	-45.8	-13.0	-32.8
2	5640.00	-68.0	-55.7	6.7	-49.0	-13.0	-36.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-69.6	-63.7	7.1	-56.6	-13.0	-43.6
2	5640.00	-63.0	-52.7	6.7	-46.0	-13.0	-33.0

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 9538	Frequency Range	Above 1000MHz
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## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.20	-70.6	-64.8	7.1	-57.7	-13.0	-44.7
2	5722.80	-64.2	-51.5	6.7	-44.8	-13.0	-31.8

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.20	-58.7	-52.8	7.1	-45.7	-13.0	-32.7
2	5722.80	-70.0	-58.7	6.7	-52.0	-13.0	-39.0

## Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## 5 Pictures of Test Arrangements

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

## Appendix – 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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**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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