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FCC TEST REPORT

(PART 22)

REPORT NO.: RF121120C26

MODEL NO.: FPA16242T

(Refer to item 3.1 for the more details)

FCC ID: D6XFPA16242T

RECEIVED: Nov. 20, 2012

TESTED: Nov. 27 ~ Dec. 05, 2012

ISSUED: Dec. 11, 2012

APPLICANT: TECOM CO., LTD

ADDRESS: NO. 23, R&D ROAD 2, SCIENCE-BASED
INDUSTRIAL PARK HSINCHU, TAIWAN, R.O.C.

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 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 Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121120C26	Original release	Dec. 11, 2012



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1 CERTIFICATION

PRODUCT: 3G Small Cell

MODEL: FPA16242T (Refer to item 3.1 for the more details)

BRAND: NEC

APPLICANT: TECOM CO., LTD

TESTED: Nov. 27 ~ Dec. 05, 2012

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC PART 22, Subpart H

The above equipment (model: FPA16242T) 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 :  , **DATE** : Dec. 11, 2012
Pettie Chen / Senior Specialist

APPROVED BY :  , **DATE** : Dec. 11, 2012
Anderson Chiu / Senior 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 -29.38dB at 6971.2MHz.

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	3.34 dB
	200MHz ~1000MHz	3.35 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	ESIB7	100212	Aug. 06, 2012	Aug. 05, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Feb. 03, 2012	Feb. 02, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	9120D	209	Sep. 03, 2012	Sep. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Preamplifier Agilent	8447D	2944A10633	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8449B	3008A01964	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 28, 2012	Aug. 27, 2013
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100	TT93021703	NA	NA
Turn Table Controller ADT.	SC100	SC93021703	NA	NA
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Mar. 23, 2012	Mar. 22, 2013
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Communications Tester-Wireless	E5515C	MY50266653	Oct. 08, 2012	Oct. 27, 2013
Radio Communication Analyzer	MT8820C	6201127458	May 25, 2012	May 24, 2013

- 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 HP 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

EUT	3G Small Cell
MODEL NO.	FPA16242T (Refer to NOTE for the more details)
POWER SUPPLY	12Vdc (Adapter)
MODULATION TYPE	BPSK
FREQUENCY RANGE	UL: 824-849 MHz DL: 869-894 MHz
MAX. ERP POWER	191.426mW (22.82dBm)
WCDMA RELEASE VERSION	7
ANTENNA TYPE	Refer to Note
I/O PORTS	Refer to user's manual
DATA CABLE	1.8m non-shielded ether cable
ACCESSORY DEVICES	Adapter

NOTE:

1. All models are listed as below.

Brand	Model	NEC Naming	Branding	Description
NEC	FPA16242T	FPA16242T-01US	No Branding, US power adaptor	Tecom 24dBm band 2/5 FAP
		FPA16242T-02US	With Logo, US power adaptor	Tecom 24dBm band 2/5 FAP

2. The EUT with following antenna.

Item	Antenna Type	Antenna Connector	Antenna Gain (dBi)	
			824-849 MHz	1850-1910 MHz
1	PIFA	I-PEX	2.0	2.0
2	Dipole	SMA	3.0	3.5

*The dipole antenna (Model: TMGR-OD-03C) was supplied for optional accessory.

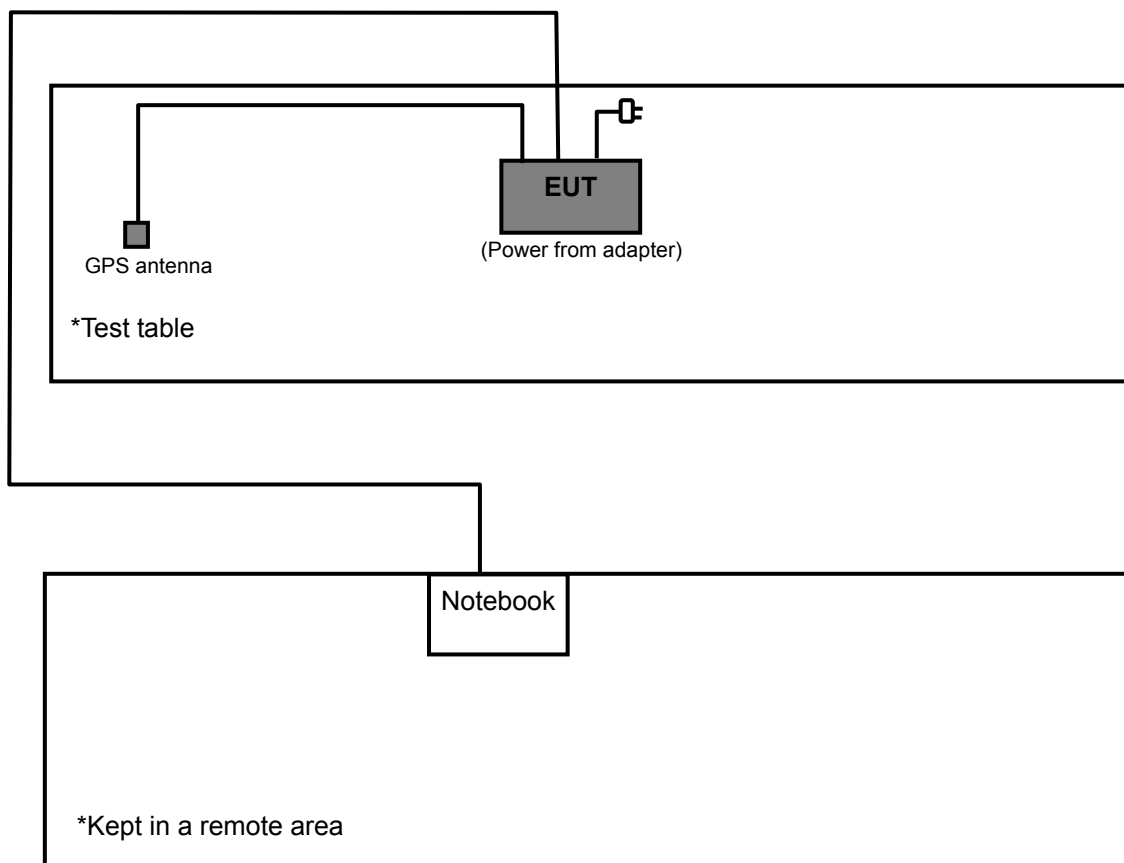
3. The EUT uses following adapter.

BRAND	LEADER ELECTRONICS INC.
MODEL	MU18-D120150-C5
INPUT POWER	100-240Vac, 50-60Hz, 0.6A
OUTPUT POWER	12Vdc, 1.5A
POWER LINE	1.5m non-shielded cable without core

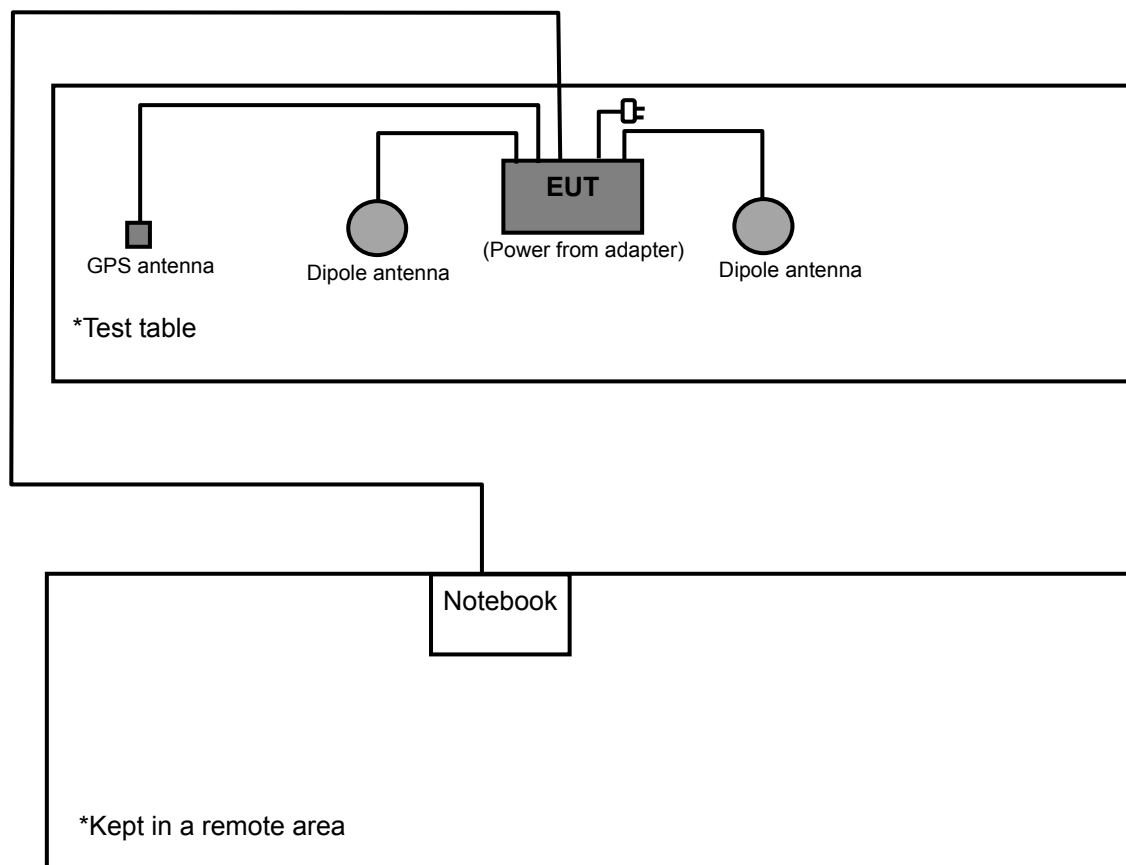
4. SW version is BV2.13.0.3A.
5. HW version is G3.5.1.
6. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST

Test Mode A



Test Mode B



3.3 DESCRIPTION OF SUPPORT UNITS

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020
2	GPS antenna	NA	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 cable without core
2	5m cable.

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 act as a communication partner to transfer data.
3. Item 2 was supplied for optional accessory.

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 for ERP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

Test results are presented in the report as below.

Test Mode	Test Condition
A	EUT with PIFA antenna
B	EUT with Dipole antenna

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A, B	ERP	4357 to 4458	4357, 4408, 4458	WCDMA
B	FREQUENCY STABILITY	4357 to 4458	4408	WCDMA
B	OCCUPIED BANDWIDTH	4357 to 4458	4357, 4408, 4458	WCDMA
B	BAND EDGE	4357 to 4458	4357, 4458	WCDMA
B	CONDCUDED EMISSION	4357 to 4458	4357, 4408, 4458	WCDMA
A, B	RADIATED EMISSION BELOW 1GHz	4357 to 4458	4357	WCDMA
A, B	RADIATED EMISSION ABOVE 1GHz	4357 to 4458	4357, 4408, 4458	WCDMA

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
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
CONDCUDED EMISSION	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
RADIATED EMISSION	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui



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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:

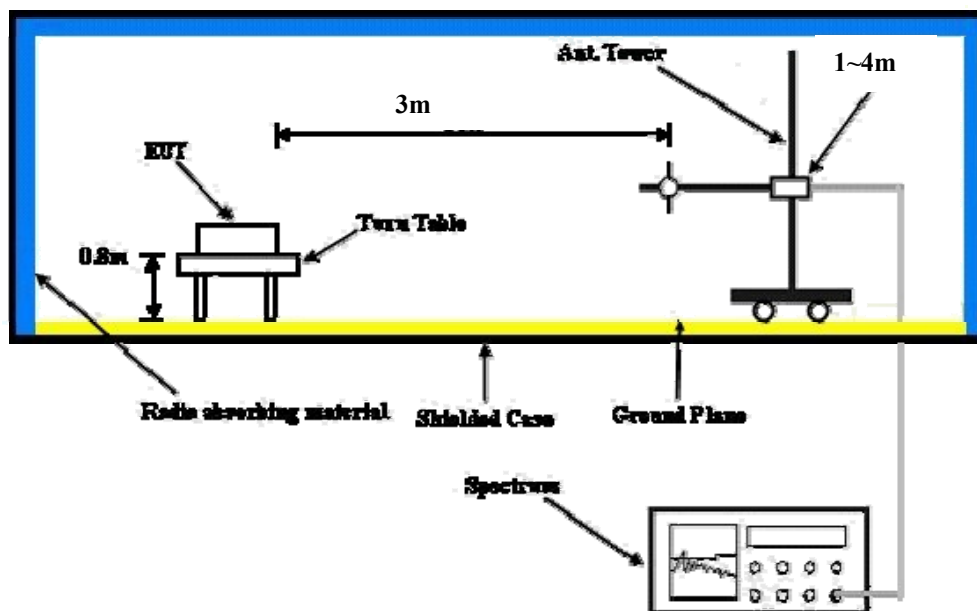
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 5MHz for WCDMA mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search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

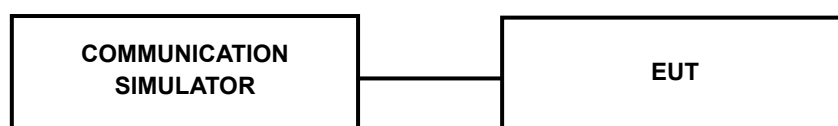
4.1.3 TEST SETUP

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

Band	WCDMA V		
Channel	4357	4408	4458
Frequency (MHz)	871.4	881.6	891.6
Power (dBm)	23.67	23.77	23.63

ERP POWER (dBm)

FOR WCDMA MODE:

MODE A

MODE		TX channel 4357					
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	871.40	-9.77	22.13	-0.57	21.56	38.45	-16.89
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	871.40	-15.55	15.83	-0.57	15.26	38.45	-23.19

MODE		TX channel 4408					
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	881.60	-11.15	20.78	-0.57	20.21	38.45	-18.24
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	831.60	-15.37	16.02	-0.55	15.47	38.45	-22.98

MODE		TX channel 4458					
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	891.60	-9.98	21.97	-0.57	21.40	38.45	-17.05
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	891.60	-14.56	16.90	-0.57	16.33	38.45	-22.12

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

MODE B

MODE		TX channel 4357					
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	871.40	-14.23	18.32	-0.57	15.60	38.45	-22.85
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	871.40	-7.24	25.54	-0.57	22.82	38.45	-15.63

MODE		TX channel 4408					
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	881.60	-15.00	17.63	-0.57	14.91	38.45	-23.54
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	831.60	-7.86	24.97	-0.57	22.25	38.45	-16.20

MODE		TX channel 4458					
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	891.60	-14.30	18.40	-0.57	15.68	38.45	-22.77
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	891.60	-7.53	25.36	-0.57	22.64	38.45	-15.81

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)-2.15dB.

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

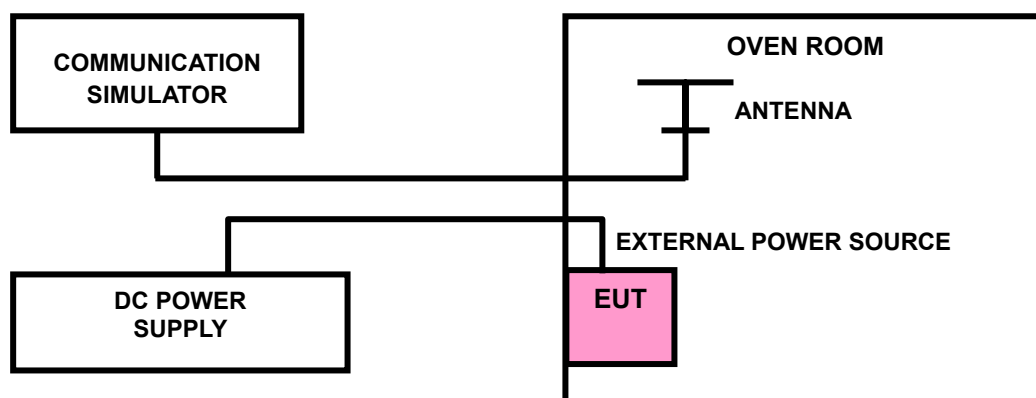
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

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)
	WCDMA	
126.5	-0.033	2.5
93.5	-0.027	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 93.5Vdc to 126.5Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

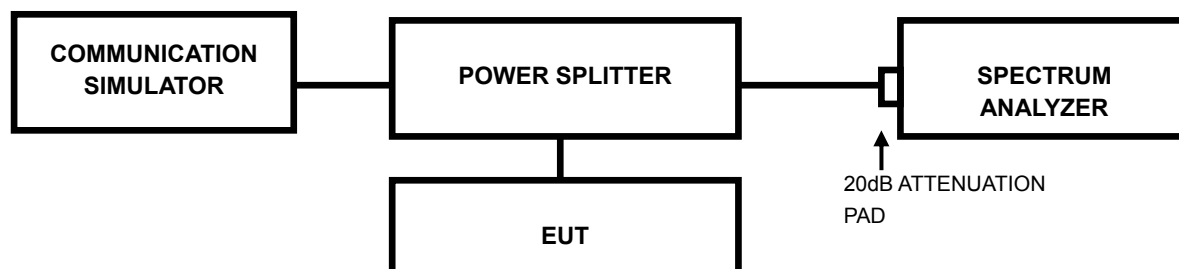
TEMP. (°C)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
	WCDMA	
50	-0.035	2.5
40	-0.042	2.5
30	-0.036	2.5
20	-0.033	2.5
10	-0.035	2.5
0	-0.039	2.5
-10	-0.044	2.5
-20	-0.044	2.5
-30	-0.039	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

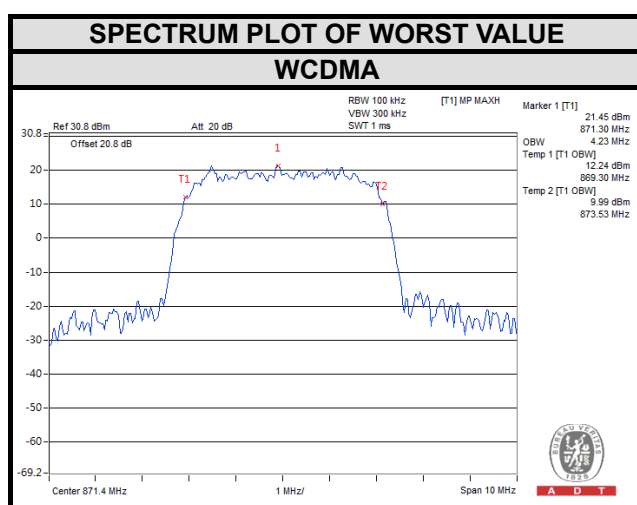
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function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

4.3.2 TEST SETUP



4.3.3 TEST RESULTS

CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
		WCDMA
4357	871.4	4.23
4408	881.6	4.20
4458	891.6	4.13

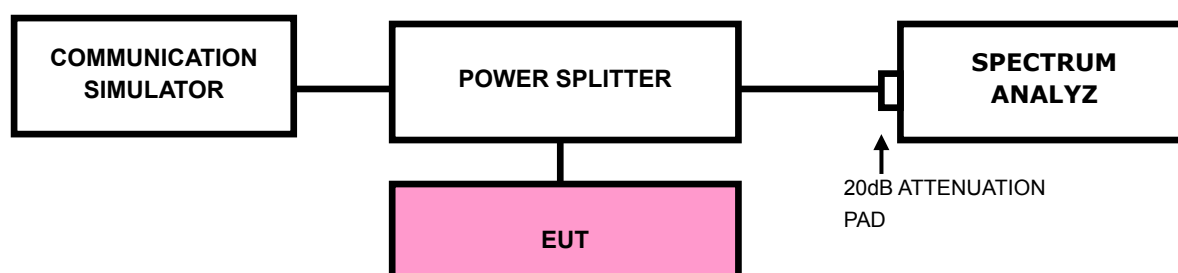


4.4 BAND EDGE MEASUREMENT

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.

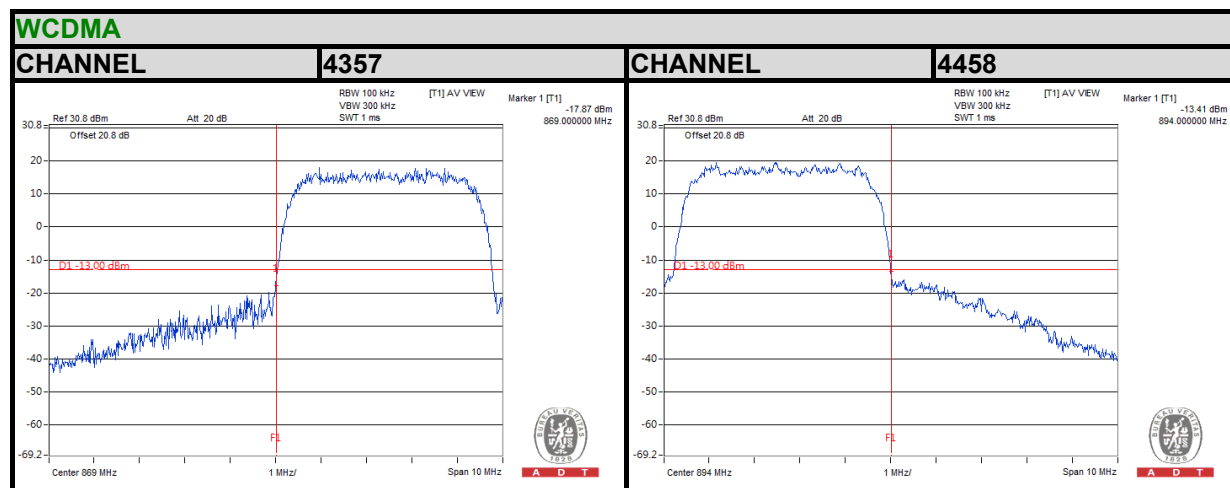
4.4.2 TEST SETUP



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).
- Record the max trace plot into the test report.

4.4.4 TEST RESULTS



4.5 CONDUCTED SPURIOUS EMISSIONS

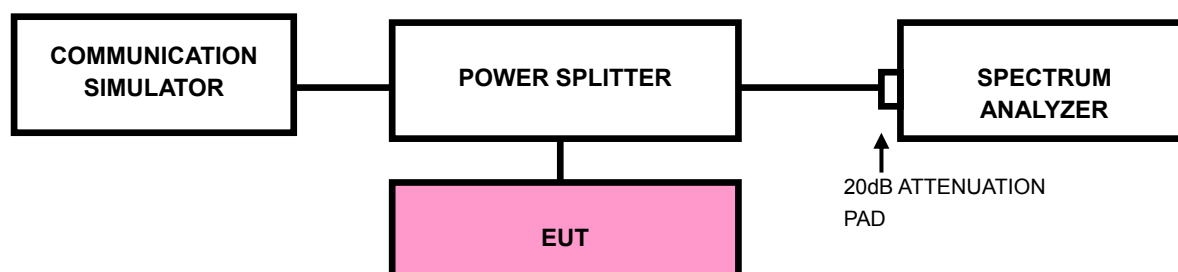
4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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 -13dBm .

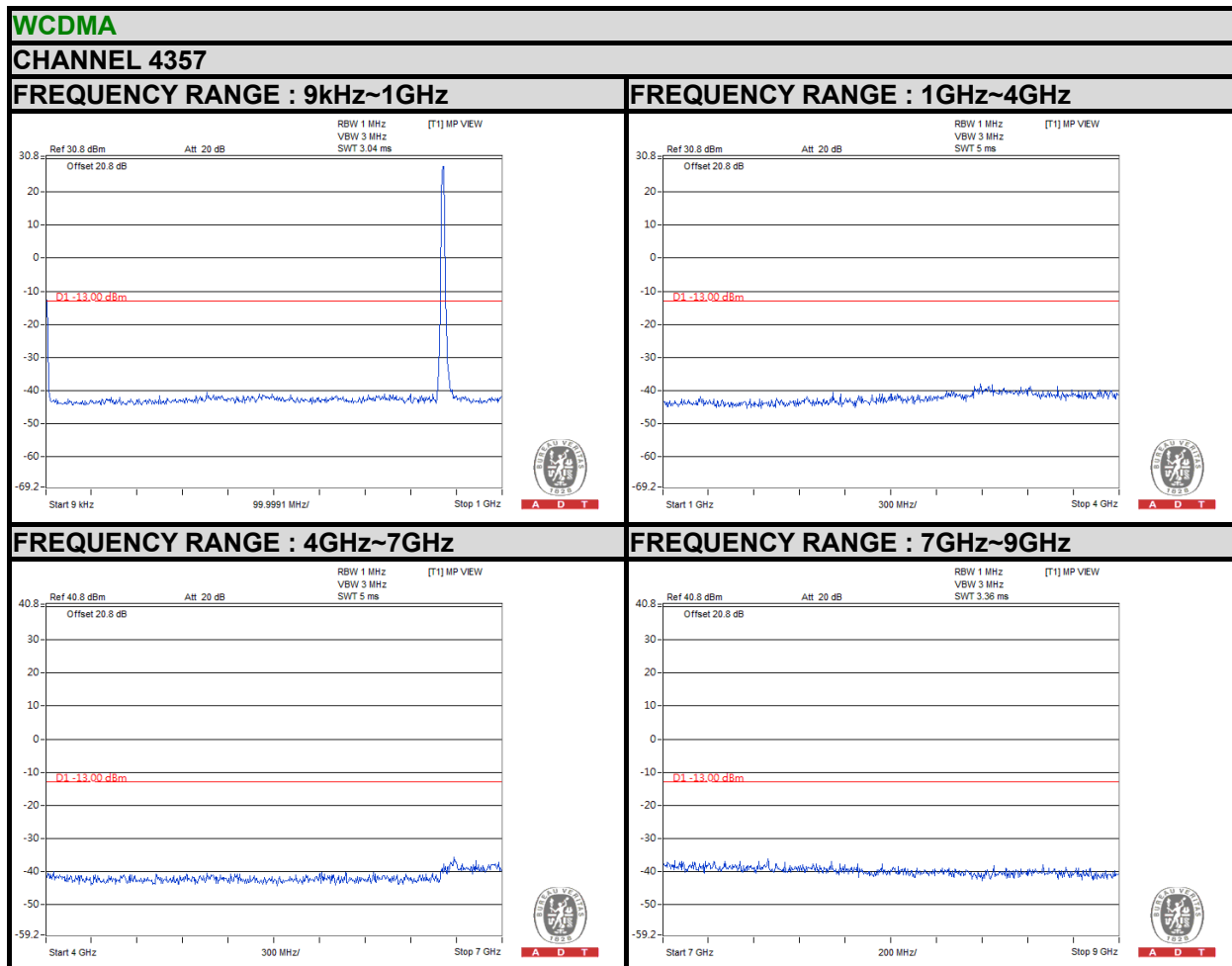
4.5.2 TEST PROCEDURE

- 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



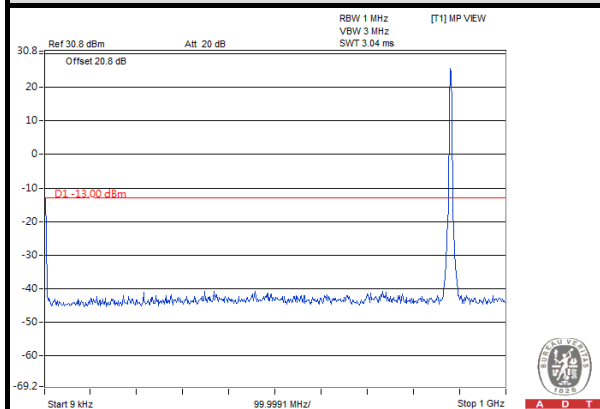
4.5.4 TEST RESULTS



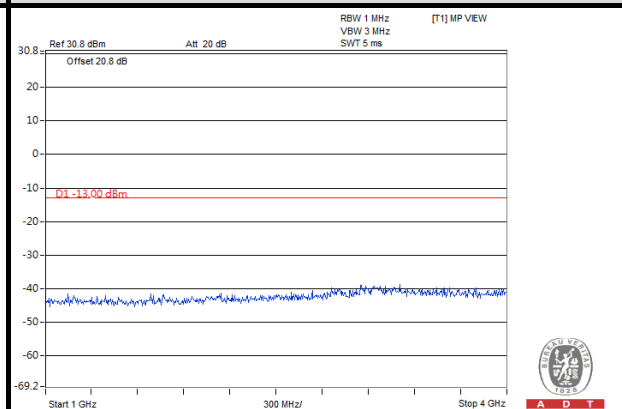
WCDMA

CHANNEL 4408

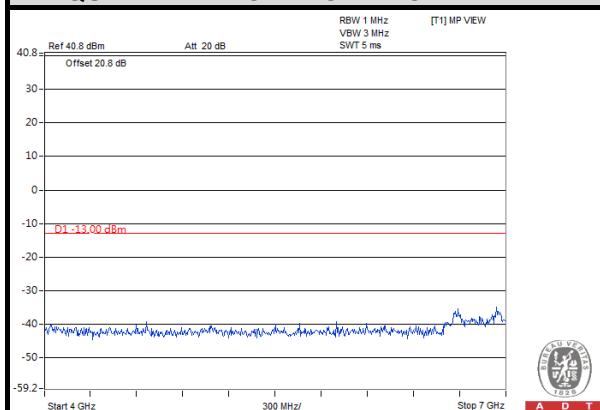
FREQUENCY RANGE : 9kHz~1GHz



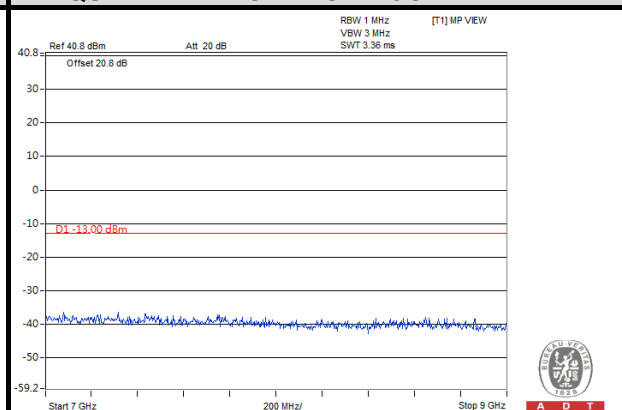
FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~7GHz



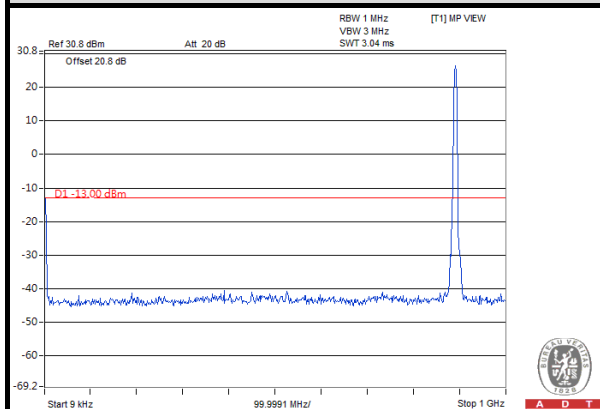
FREQUENCY RANGE : 7GHz~9GHz



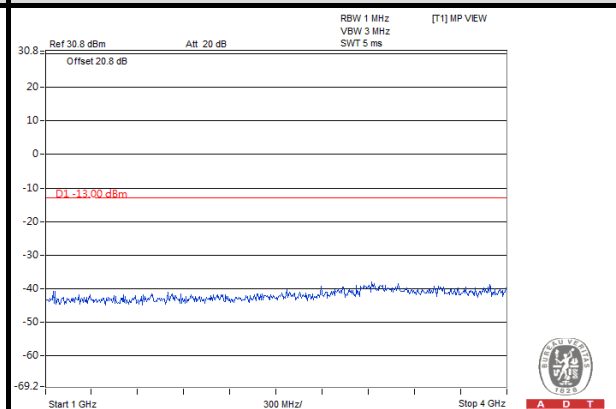
WCDMA

CHANNEL 4458

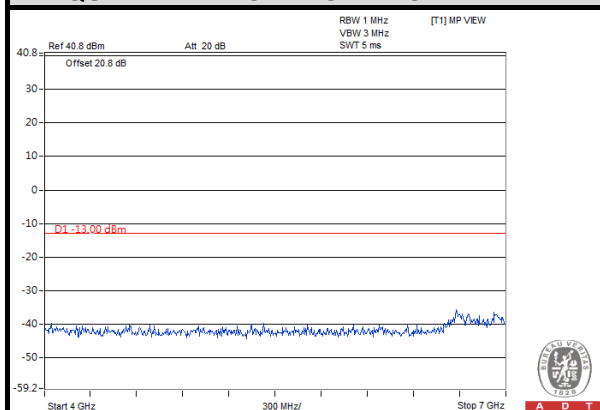
FREQUENCY RANGE : 9kHz~1GHz



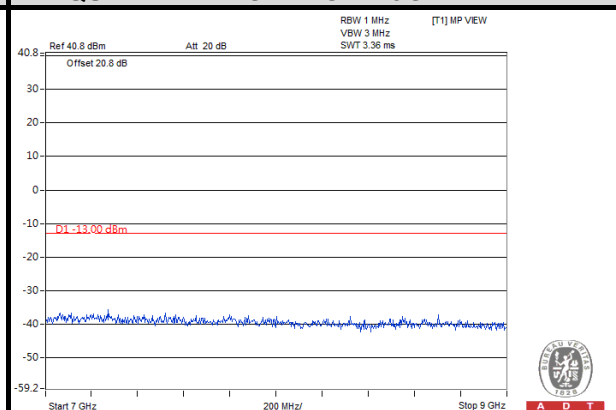
FREQUENCY RANGE : 1GHz~4GHz



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 -13dBm .

4.6.2 TEST PROCEDURES

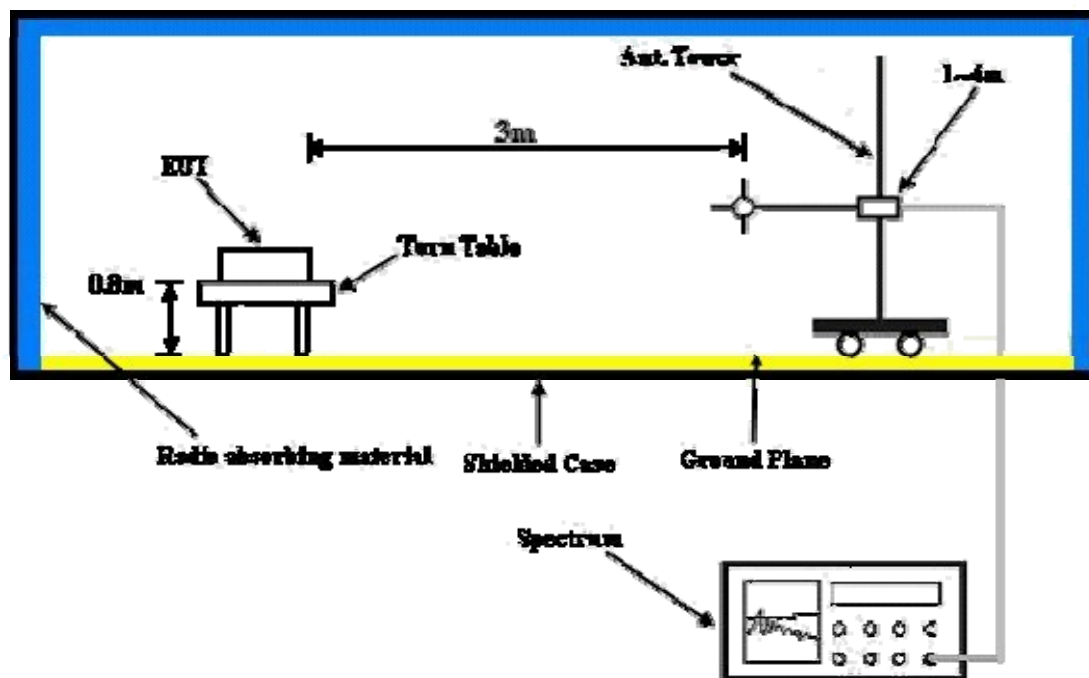
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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).

4.6.5 TEST RESULTS

Below 1GHz

WCDMA-RMC:

MODE	TX channel 4357	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	A	TESTED BY	Match Tsui

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	39.72	-79.37	-74.78	-0.48	-75.26	-13.00	-62.26
2	47.49	-80.38	-77.57	-0.51	-78.08	-13.00	-65.08
3	80.54	-74.93	-82.34	-0.66	-83.00	-13.00	-70.00
4	105.81	-70.98	-76.90	-0.76	-77.66	-13.00	-64.66
5	146.63	-72.44	-75.97	-0.89	-76.86	-13.00	-63.86
6	249.66	-77.74	-81.73	-1.16	-82.89	-13.00	-69.89
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	39.72	-72.72	-78.04	-0.48	-78.52	-13.00	-65.52
2	55.27	-71.41	-77.03	-0.55	-77.58	-13.00	-64.58
3	98.04	-70.55	-74.36	-0.73	-75.09	-13.00	-62.09
4	105.81	-71.3	-76.04	-0.76	-76.80	-13.00	-63.80
5	144.69	-73.96	-73.68	-0.88	-74.56	-13.00	-61.56
6	292.42	-80.56	-80.89	-1.25	-82.14	-13.00	-69.14

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 4357	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	B	TESTED BY	Match Tsui

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	39.72	-80.46	-75.87	-0.48	-76.35	-13.00	-63.35
2	55.27	-77.88	-78.19	-0.55	-78.74	-13.00	-65.74
3	105.81	-62.76	-68.68	-0.76	-69.44	-13.00	-56.44
4	146.63	-72.87	-76.40	-0.89	-77.29	-13.00	-64.29
5	179.68	-76.50	-81.02	-0.99	-82.01	-13.00	-69.01
6	249.66	-77.24	-81.23	-1.16	-82.39	-13.00	-69.39
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	31.94	-70.17	-76.78	-0.44	-77.22	-13.00	-64.22
2	55.27	-70.25	-75.87	-0.55	-76.42	-13.00	-63.42
3	98.04	-67.14	-70.95	-0.73	-71.68	-13.00	-58.68
4	148.58	-74.94	-74.11	-0.90	-75.01	-13.00	-62.01
5	249.66	-79.09	-80.70	-1.16	-81.86	-13.00	-68.86
6	325.47	-80.38	-80.03	-1.33	-81.36	-13.00	-68.36

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

WCDMA:

MODE	TX channel 4357	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	A	TESTED BY	Match Tsui

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	3485.6	-59.74	-46.86	-4.47	-51.33	-13.00	-38.33
2	6971.2	-61.78	-37.13	-6.46	-43.59	-13.00	-30.59
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	3485.6	-56.34	-43.3	-4.47	-47.77	-13.00	-34.77
2	6971.2	-60.34	-35.92	-6.46	-42.38	-13.00	-29.38

REMARKS:

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



A D T

MODE	TX channel 4408	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	A	TESTED BY	Match Tsui

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	3526.4	-58.33	-45.32	-4.51	-49.83	-13.00	-36.83
2	7052.8	-62.33	-37.49	-6.48	-43.97	-13.00	-30.97
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	3526.4	-56.13	-42.97	-4.51	-47.48	-13.00	-34.48
2	7052.8	-61.26	-36.71	-6.48	-43.19	-13.00	-30.19

REMARKS:

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



A D T

MODE	TX channel 4458	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	A	TESTED BY	Match Tsui

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	3566.4	-58.46	-45.27	-4.55	-49.82	-13.00	-36.82
2	7132.8	-62.58	-37.48	-6.52	-44.00	-13.00	-31.00
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	3566.4	-56.44	-43.19	-4.55	-47.74	-13.00	-34.74
2	7132.8	-61.39	-36.67	-6.52	-43.19	-13.00	-30.19

REMARKS:

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



A D T

MODE	TX channel 4357	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	B	TESTED BY	Match Tsui

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	3485.6	-60.92	-43.67	-4.47	-50.29	-13.00	-37.29
2	6971.2	-64.11	-36.21	-6.46	-44.82	-13.00	-31.82
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	3485.6	-57.06	-40.05	-4.47	-46.67	-13.00	-33.67
2	6971.2	-63.58	-36.72	-6.46	-45.33	-13.00	-32.33

REMARKS:

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



A D T

MODE	TX channel 4408	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	B	TESTED BY	Match Tsui

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	3526.4	-59.91	-42.55	-4.51	-49.21	-13.00	-36.21
2	7052.8	-64.64	-36.61	-6.48	-45.24	-13.00	-32.24
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	3526.4	-57.41	-40.25	-4.51	-46.91	-13.00	-33.91
2	7052.8	-63.21	-36.33	-6.48	-44.96	-13.00	-31.96

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 4458	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH	INPUT POWER	120Vac, 60 Hz
TEST MODE	B	TESTED BY	Match Tsui

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	3566.4	-59.27	-41.82	-4.55	-48.52	-13.00	-35.52
2	7132.8	-63.82	-35.68	-6.52	-44.35	-13.00	-31.35
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	3566.4	-57.79	-40.54	-4.55	-47.24	-13.00	-34.24
2	7132.8	-61.78	-34.85	-6.52	-43.52	-13.00	-30.52

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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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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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---