



FCC TEST REPORT (Part 22)

REPORT NO.: RF120427C12-2 R1

MODEL NO.: 60012, 2258, IdeaTab S2110A-XXXX (X can be 0-9, A-Z, a-z or blank)

FCC ID: O57WESTLAKE3G

RECEIVED: Apr. 27, 2012

TESTED: May 15 to 17, 2012

ISSUED: June 22, 2012

APPLICANT: Lenovo (Shanghai) Electronics Technology Co., Ltd.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd.,
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120427C12-2	Original release	June 15, 2012
RF120427C12-2 R1	Modified the product name.	June 22, 2012



1 CERTIFICATION

PRODUCT : Tablet PC
BRAND NAME : Lenovo
MODEL NO.: 60012, 2258, IdeaTab S2110A-XXXX (X can be 0-9, A-Z, a-z or blank)
TEST SAMPLE : Production Unit
APPLICANT : Lenovo (Shanghai) Electronics Technology Co., Ltd.
TESTED : May 15 to 17, 2012
STANDARDS : FCC Part 22, Subpart H

The above equipment (model: 60012) 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 : Phoenix Huang , **DATE:** June 22, 2012
(Phoenix Huang, Specialist)

APPROVED BY : May Chen , **DATE:** June 22, 2012
(May Chen, Deputy Manager)

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 AND LIMIT	RESULT	REMARK
2.1046 22.913 (a)	Maximum Peak Output Power Limit: max. 7 watts e.r.p peak power	PASS	Meet the requirement of limit. Max. e.r.p is 35.4dBm at 848.8MHz
2.1055	Frequency Stability AFC Freq. Error vs. Voltage AFC Freq. Error vs. Temperature Limit: max. ± 2.5 ppm	PASS	Meet the requirement of limit.
2.1049 (h)	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 -18.9dB at 2546.30MHz.

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:

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

Measurement	Value
Radiated emissions (30MHz-1GHz)	5.59 dB
Radiated emissions (1GHz -6GHz)	3.56 dB
Radiated emissions (6GHz -18GHz)	4.10 dB
Radiated emissions (18GHz -40GHz)	4.24 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Tablet PC
MODEL NO.	60012, 2258, IdeaTab S2110A-XXXX (X can be 0-9, A-Z, a-z or blank)
POWER SUPPLY	DC 5.2V from adapter or DC 3.7V from battery
MODULATION TYPE	GMSK, 8PSK (for GPRS/ EDGE) BPSK (for WCDMA/ HSDPA/ HSUPA)
OPERATING FREQUENCY	824.2MHz ~ 848.8MHz (for GPRS/ EDGE) 826.4MHz ~ 846.6MHz (for WCDMA/ HSDPA/ HSUPA)
NUMBER OF CHANNEL	124 (for GPRS / EDGE) 102 (for WCDMA/ HSDPA/ HSUPA)
MAX. ERP POWER	GPRS Mode: 35.2dBm (3311.3mW) EDGE Mode: 35.4dBm (3467.4mW) WCDMA Mode: 22.6dBm (179.9mW)
ANTENNA TYPE	Please see NOTE
MAX. ANTENNA GAIN	Please see NOTE
DATA CABLE	USB cable (shielded, 1.0 m)
I/O PORTS	Refer to users' manual
ACCESSORY DEVICES	Adapter x 1, Battery x 1

NOTE:

1. There are WLAN, Bluetooth, GPRS, EDGE and WCDMA technology used for the EUT. and the functions of EUT listed as below table:

Function	Report No.
WLAN	RF120427C12 R1
Bluetooth	RF120427C12-1 R1
2G & 3G (Part 22)	RF120427C12-2 R1
2G & 3G (Part 24)	RF120427C12-3 R1

2. The EUT has three model names which are identical to each other in all aspects except for the following:

Brand	Model No.	Description
Lenovo	60012	1. For marketing requirement
	2258	
	S2110A-XXXX	1. For marketing requirement 2. The "X" in the model could be defined as 0-9, A-Z, a-z or blank for marketing differentiation.
From the above model names, Model No.60012 was selected for testing.		

3. There are antennas provided to this EUT, please refer to the following table:

WLAN / Bluetooth Antenna Spec.		
Antenna Type	Gain(dBi)	Frequency range (GHz)
Chip	3.16	2.4 ~ 2.4835
2G / 3G Antenna Spec.		
Antenna Type	Gain(dBi)	Frequency range (MHz)
Fixed Internal	3.6	824 ~ 849
	2.5	880 ~ 915
	2.85	1710 ~ 1785
	2.85	1850 ~ 1910
	1.67	1920 ~ 1980
	2.85	1710 ~ 1755

4. Radiated spurious emissions of the simultaneous operation has been evaluated and no non-compliance was found, please refer below table.

MODE	WLAN	BT	GSM (850&1900MHz)	WCDMA (850&1900MHz)
1	√	-	√	-
2	√	-	-	√
3	-	√	√	-
4	-	√	-	√

5. WLAN technology and Bluetooth technology cannot transmit at same time.

6. The communicated functions of EUT listed as below:

		GSM (850&1900MHz)	WCDMA (850&1900MHz)
2G	GPRS	√	
	EDGE	√	
3G	WCDMA		√
	Release 5 HSDPA		√
	Release 6 HSUPA		√

7. The EUT could be supplied with a power adapter and a battery, following five different adapter models could be chosen as following table:

Adapter			
No	Brand	Model No.	Spec.
1	lenovo	AD83650	Input: 100-240V, 50/60Hz, 0.3A Output: 5.2V, 2A
2	lenovo	ADP-10AW B	Input: 100-240V, 50/60Hz, 0.4A Output: 5.2V, 2A
3	lenovo	ADP-10AW C	Input: 100-240V, 50/60Hz, 0.4A Output: 5.2V, 2A
4	lenovo	ADP-10AW D	Input: 100-240V, 50/60Hz, 0.4A Output: 5.2V, 2A
5	lenovo	ADP-10AW H	Input: 100-240V, 50/60Hz, 0.4A Output: 5.2V, 2A
The adapters 3, 4, 5 are as same as Adapter 2; except for plug shape is different. From the above adapters, adapter 1, 2 were selected for testing.			
Battery			
No	Brand	Model No.	Spec.
1	lenovo	L11C2P32	Power Rating: 3.7V,6340mAh Type: Li-ion

8. The EUT was pre-tested under following test modes:

Mode	Description
Mode A	Headset + Adapter 1 + EUT on X-plane
Mode B	Headset + Adapter 2 + EUT on X-plane
Mode C	Headset + Adapter 2 + EUT on Y-plane
Mode D	Headset + Adapter 2 + EUT on Z-plane

For the above modes, the worse radiated emission was found in **Mode B**. Therefore only the test data of the modes were recorded in this report.

9. 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 DESCRIPTION OF TEST MODES

FOR GPRS & EDGE:

124 channels are provided to this EUT. Therefore, the low, middle and high channels are chosen for testing.

	CHANNEL	FREQUENCY	TX MODE
LOW	128	824.2 MHz	GPRS, EDGE
MIDDLE	190	836.6 MHz	GPRS, EDGE
HIGH	251	848.8 MHz	GPRS, EDGE

NOTE:

1. Below 1 GHz, the channel 128, 190, and 251 were tested individually.
2. Above 1 GHz, the channel 128, 190, and 251 were tested individually.
3. The worst case for final test is chosen when the power control level set 5.
4. The channel space is 0.2MHz.
5. The EUT is a GPRS/EDGE class 10 device, which provide 2 up-link. After pre-tested both functions, found up-link with 1 time slot is worse, therefore, test results of output power, frequency stability, occupied bandwidth and band edge tests came out from this.
6. The EUT has GPRS, EDGE functions. After pre-testing, EDGE function is the worst case for all the emission tests.

FOR WCDMA:

102 channels are provided to this EUT. Therefore, the low, middle and high channels are chosen for testing.

	CHANNEL	FREQUENCY	TX MODE
LOW	4132	826.4 MHz	WCDMA, HSDPA, HSUPA
MIDDLE	4182	836.4 MHz	WCDMA, HSDPA, HSUPA
HIGH	4233	846.6 MHz	WCDMA, HSDPA, HSUPA

NOTE:

1. Below 1 GHz, the channel 4132, 4182 and 4233 were tested individually.
2. Above 1 GHz, the channel 4132, 4182 and 4233 were tested individually.
3. The channel space is 0.2MHz.
4. The EUT has WCDMA-RMC, HSDPA-RMC, HSDPA & HSUPA functions. After pre-testing, WCDMA-RMC function is the worst case for all the emission tests.

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR GPRS EDGE:

EUT CONFIGURE MODE	APPLICABLE TO							DESCRIPTION
	OP	FS	OB	BE	CE	RE<1G	RE≥1G	
1	√	√	√	√	√	√	√	With Adapter 2
2	-	-	-	-	-	√	-	With Adapter 2 + Docking

Where **OP**: Output power **FS**: Frequency stability
OB: Occupied bandwidth **BE**: Band edge
CE: Conducted spurious emissions **RE<1G**: Radiated emission below 1GHz
RE≥1G: Radiated emission above 1GHz

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

OUTPUT POWER MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	128, 190, 251	GPRS, EDGE

FREQUENCY STABILITY MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	190	EDGE



OCCUPIED BANDWIDTH MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	128, 190, 251	GPRS, EDGE

BAND EDGE MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	128, 251	GPRS, EDGE

CONDUCTED SPURIOUS EMISSIONS MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	128, 190, 251	EDGE

RADIATED EMISSION MEASUREMENT (BELOW 1 GHz):

- 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 (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	128, 190, 251	EDGE

RADIATED EMISSION MEASUREMENT (ABOVE 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
128 to 251	128, 190, 251	EDGE

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
OP	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
FS	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
OB	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
EM	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
BE	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
CE	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
RE < 1G	22deg. C, 70%RH	120Vac, 60Hz	Evan Huang
	22deg. C, 70%RH	120Vac, 60Hz (SYSTEM)	Evan Huang
RE ≥ 1G	22deg. C, 69%RH	120Vac, 60Hz	Evan Huang



FOR WCDMA:

EUT CONFIGURE MODE	APPLICABLE TO							DESCRIPTION
	OP	FS	OB	BE	CE	RE<1G	RE≥1G	
1	√	√	√	√	√	√	√	With Adapter 2
2	-	-	-	-	-	√	-	With Adapter 2 + Docking

Where **OP:** Output power **FS:** Frequency stability
OB: Occupied bandwidth **BE:** Band edge
CE: Conducted spurious emissions **RE<1G:** Radiated emission below 1GHz
RE≥1G: Radiated emission above 1GHz

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

OUTPUT POWER MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA, HSUPA

FREQUENCY STABILITY MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4182	WCDMA

OCCUPIED BANDWIDTH MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA, HSUPA



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BAND EDGE MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4132, 4233	WCDMA

CONDUCTED SPURIOUS EMISSIONS MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4132, 4182, 4233	WCDMA

RADIATED EMISSION MEASUREMENT (BELOW 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4182	WCDMA

RADIATED EMISSION MEASUREMENT (ABOVE 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
4132 to 4233	4132, 4182, 4233	WCDMA



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
OP	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
FS	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
OB	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
EM	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
BE	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
CE	25deg. C, 63%RH	120Vac, 60Hz	Wen Yu
RE < 1G	22deg. C, 70%RH	120Vac, 60Hz	Evan Huang
	22deg. C, 70%RH	120Vac, 60Hz (SYSTEM)	Evan Huang
RE ≥ 1G	22deg. C, 69%RH	120Vac, 60Hz	Evan Huang



3.3 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

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.

3.4 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	Headset	Hawk	HKC920	H003	FCC DoC
2	Docking	lenovo	S2DK10	NA	NA
3	Universal Radio Communication Tester	R&S	CMU200	121040	NA

No.	Signal cable description
1	Headset cable (1.9m)
2	NA
3	NA

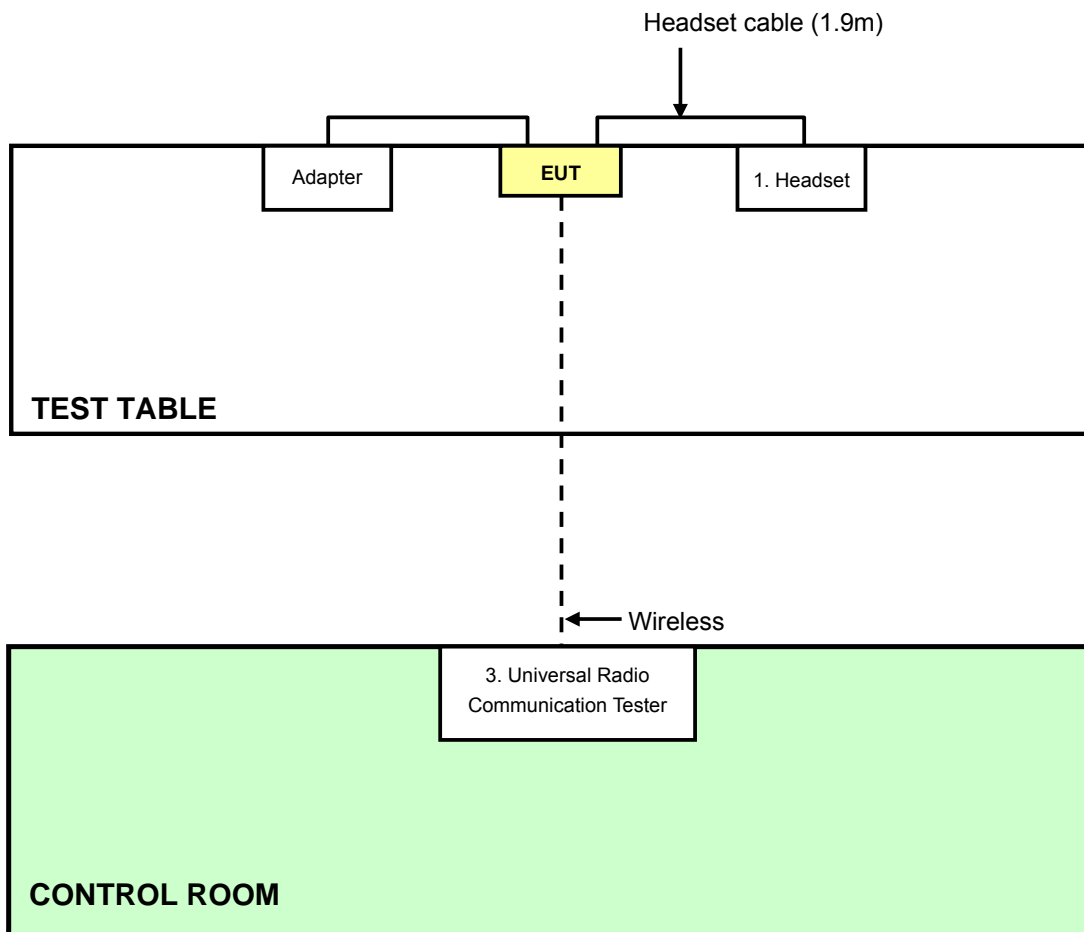
NOTE: All power cords of the above support units are non shielded (1.8m).



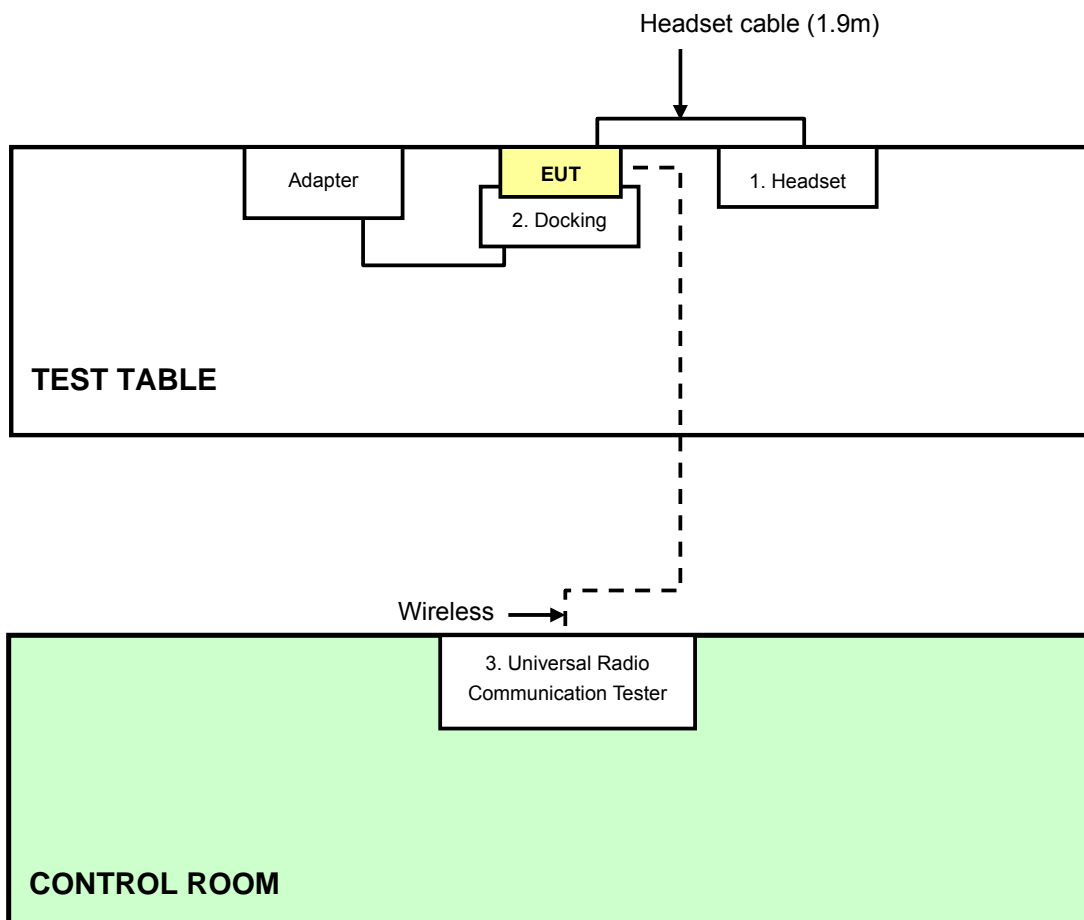
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3.5 CONFIGURATION OF SYSTEM UNDER TEST

For Mode 1:



For Mode 2:



4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The radiated peak output power shall be according to the specific rule Part 22.913 (a) that “Mobile / Portable station are limited to 7 watts e.r.p”.



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4.1.2 TEST INSTRUMENTS

EIRP POWER MEASUREMENT:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012
Agilent Pre-Selector	N9039A	MY46520311	July 12, 2011	July 11, 2012
Agilent Signal Generator	N5181A	MY49060517	July 12, 2011	July 11, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02578	July 04, 2011	July 03, 2012
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 09, 2012	Apr. 08, 2013
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 14, 2011	Nov. 13, 2012
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 26, 2011	Dec. 25, 2012
RF Cable	NA	CHGCAB_001	Oct. 07, 2011	Oct. 06, 2012
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
5. The VCCI Site Registration No. is G-137.
6. The CANADA Site Registration No. is IC 7450H-2.
7. The minimum 3dB beamwidth of antenna is 38 degrees for 1~6 GHz test.
8. Tested Date: May 17, 2012



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CONDUCTED POWER MEASUREMENT:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100060	May 09, 2012	May 08, 2013
OVEN	MHU-225AU	911033	Dec. 12, 2011	Dec. 11, 2012
AC POWER SOURCE	6205	1140503	NA	NA

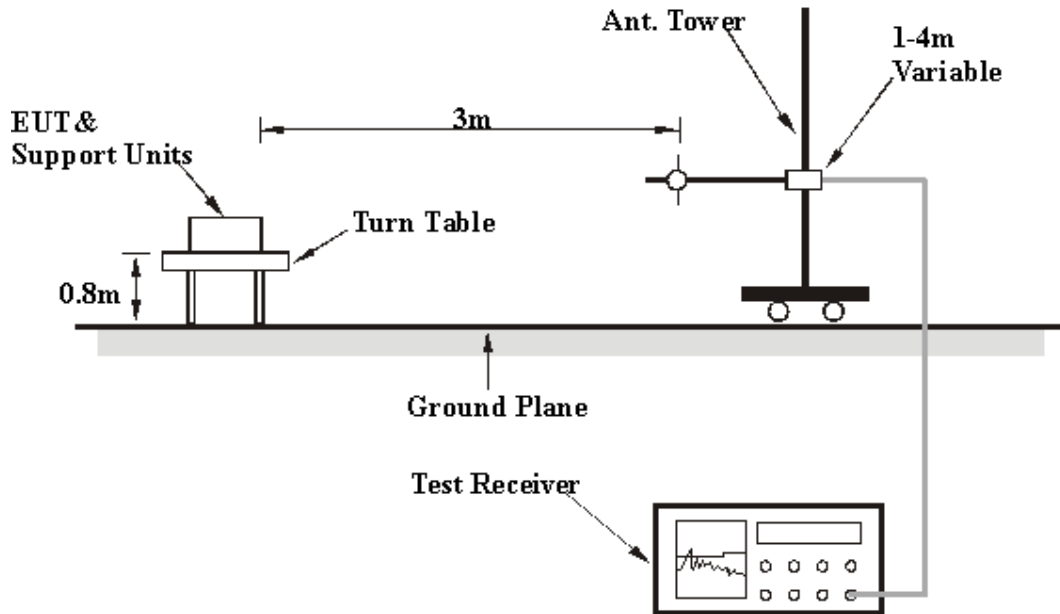
- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. Tested date: May 15, 2012

4.1.3 TEST PROCEDURES

- a. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels, 128, 190 and 251 (GPRS & EDGE) / 4132, 4182 and 4233 (WCDMA) (low, middle and high operational frequency range.)
- b. The conducted output power used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer. The path loss included the splitter loss, cable loss and 20dB pad loss. The spectrum set RB/VB 1MHz (GPRS & EDGE) and 5MHz (WCDMA), then read peak power value and record to the test. (All transmitted path loss shall be considered in the test report data.)
- c. Substitution method is used for EIRP 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.
- d. 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 c. Record the power level of S.G
- e. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- f. ERP power can be calculated form EIRP power by subtracting the gain of dipole, $ERP \text{ power} = EIRP \text{ power} - 2.15\text{dBi.}$

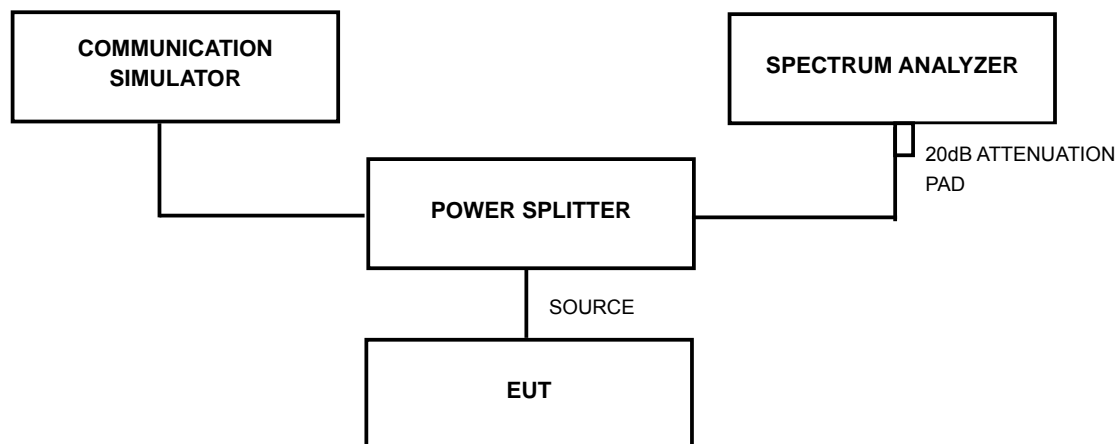
4.1.4 TEST SETUP

EIRP POWER 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 related item – Photographs of the Test Configuration.

4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 TEST RESULTS

FOR GPRS & EDGE:

GPRS MODE

CONDUCTED OUTPUT POWER					
CHANNEL NO.	FREQUENCY (MHz)	RAW VALUE (dBm)	CORRECTION FACTOR (dB)	OUTPUT POWER	
				dBm	mW
128	824.2	29.70	2.40	32.10	1621.8
190	836.6	29.50	2.40	31.90	1548.8
251	848.8	29.35	2.40	31.75	1496.2

EDGE MODE

CONDUCTED OUTPUT POWER					
CHANNEL NO.	FREQUENCY (MHz)	RAW VALUE (dBm)	CORRECTION FACTOR (dB)	OUTPUT POWER	
				dBm	mW
128	824.2	29.69	2.4	32.09	1618.1
190	836.6	29.80	2.4	32.20	1659.6
251	848.8	29.38	2.4	31.78	1506.6

- REMARKS:**
1. Peak Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
 2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Pad.



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GPRS MODE

ERP POWER					
CHANNEL NO.	FREQUENCY (MHz)	S.G VALUE (dBm)	CORRECTION FACTOR (dB)	OUTPUT POWER	
				dBm	mW
128	824.2	32.2	1.3	33.5	2238.7
190	836.6	33.3	1.2	34.5	2818.4
251	848.8	34.2	1.0	35.2	3311.3

EDGE MODE

ERP POWER					
CHANNEL NO.	FREQUENCY (MHz)	S.G VALUE (dBm)	CORRECTION FACTOR (dB)	PEAK OUTPUT POWER	
				dBm	mW
128	824.2	32.6	1.3	33.9	2454.7
190	836.6	33.3	1.2	34.5	2818.4
251	848.8	34.4	1.0	35.4	3467.4

REMARKS: 1. Peak Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = substitution Antenna Gain (dBi) + Cable Loss (dB) + Free Space Loss (dB).



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FOR WCDMA:

WCDMA-RMC MODE

CONDUCTED OUTPUT POWER					
CHANNEL NO.	FREQUENCY (MHz)	RAW VALUE (dBm)	CORRECTION FACTOR (dB)	OUTPUT POWER	
				dBm	mW
4132	826.4	21.13	2.4	23.53	225.4
4182	836.4	21.09	2.4	23.49	223.4
4233	846.6	21.15	2.4	23.55	226.5

REMARKS: 1. Peak Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Pad.

WCDMA-RMC MODE

ERP POWER					
CHANNEL NO.	FREQUENCY (MHz)	S.G VALUE (dBm)	CORRECTION FACTOR (dB)	OUTPUT POWER	
				dBm	mW
4132	826.4	21.3	1.3	22.6	179.9
4182	836.4	20.9	1.2	22.1	160.3
4233	846.6	21.4	1.0	22.4	171.8

REMARKS: 1. Peak Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = substitution Antenna Gain (dBi) + Cable Loss (dB) + Free Space Loss (dB).



4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

According to the FCC part 2.4235 shall be tested the frequency stability. The rule is defined that” The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.” The frequency error rate is according to the JTC standard that the frequency error rate shall be accurate to within 2.5ppm of the received frequency from the base station. The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with the 2.1055(a)(1) $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$.

4.2.2 TEST INSTRUMENTS

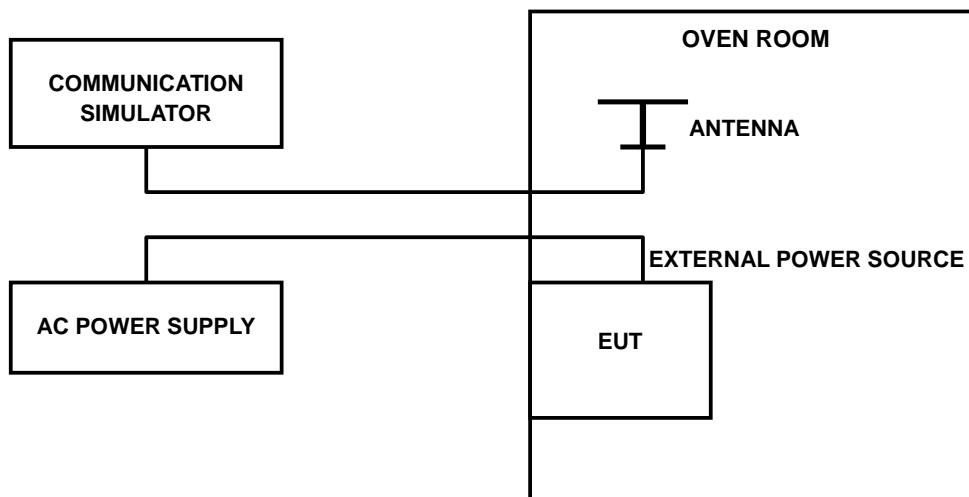
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	FSP 40	100060	May 09, 2012	May 08, 2013
Spectrum Analyzer	E4446A	MY48250113	Nov. 30, 2011	Nov. 29, 2012
Anritsu Power meter	ML2487B	0930006	Sep. 06, 2011	Sep. 05, 2012
Anritsu Power sensor	MA2491A	0845370	Sep. 06, 2011	Sep. 05, 2012
Electronics AC Power Source	6502	1140503	NA	NA
OVEN	MHU-225AU	911033	Dec. 12, 2011	Dec. 11, 2012
DC Power Supply	GPC - 3030D	7700087	NA	NA
ESG Vector signal generator	E4438C	MY47271330 506 602 UNJ	May 08, 2012	May 07, 2013

- NOTE:**
1. The test was performed in Oven room A.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested date: May 15, 2012

4.2.3 TEST PROCEDURE

- a. Because of the measure the carrier frequency under the condition of the AFC lock, it shall be used the mobile station in the GSM / WCDMA link mode. This is accomplished with the use of the R&S CMU200 / JRC NJZ-2000 simulator station. The oven room could control the temperatures and humidity. The GSM link channel is the 190 and the WCDMA link channel is the 4182.
- b. Power must be removed when changing from one temperature to another or one voltage to another voltage. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- c. EUT is connected the external power supply to control the AC input power. The various Volts from the minimum 102 Volts to 138 Volts. Each step shall be record the frequency error rate.
- d. 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.
- e. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

4.2.4 TEST SETUP





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4.2.5 TEST RESULTS

FOR EDGE:

AFC FREQUENCY ERROR vs. VOLTAGE			
VOLTAGE (Volts)	FREQUENCY ERROR (Hz)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
102	25	0.030	2.5
138	20	0.024	2.5

AFC FREQUENCY ERROR vs. TEMP.			
TEMP. (°C)	FREQUENCY ERROR (Hz)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
50	33	0.039	2.5
40	31	0.037	2.5
30	27	0.032	2.5
20	21	0.025	2.5
10	19	0.023	2.5
0	22	0.026	2.5
-10	26	0.031	2.5
-20	28	0.033	2.5
-30	31	0.037	2.5



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FOR WCDMA:

AFC FREQUENCY ERROR vs. VOLTAGE			
VOLTAGE (Volts)	FREQUENCY ERROR (Hz)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
102	32	0.038	2.5
138	31	0.037	2.5

AFC FREQUENCY ERROR vs. TEMP.			
TEMP. (°C)	FREQUENCY ERROR (Hz)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
50	36	0.043	2.5
40	34	0.041	2.5
30	32	0.038	2.5
20	32	0.038	2.5
10	31	0.037	2.5
0	34	0.041	2.5
-10	31	0.037	2.5
-20	35	0.042	2.5
-30	38	0.045	2.5



4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

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 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100060	May 09, 2012	May 08, 2013
OVEN	MHU-225AU	911033	Dec. 12, 2011	Dec. 11, 2012
AC POWER SOURCE	6205	1140503	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. Tested date: May 15, 2012

4.3.3 TEST SETUP

Same as Item 4.2.4 (Conducted Power Setup)

4.3.4 TEST PROCEDURES

- a. The EUT makes a call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels, 128, 190 and 251 (GPRS & EDGE) / 4132, 4182 and 4233 (WCDMA, HSDPA & HSUPA) (low, middle and high operational frequency range.)
- b. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. 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.

4.3.5 EUT OPERATING CONDITION

Same as Item 4.1.5

4.3.6 TEST RESULTS

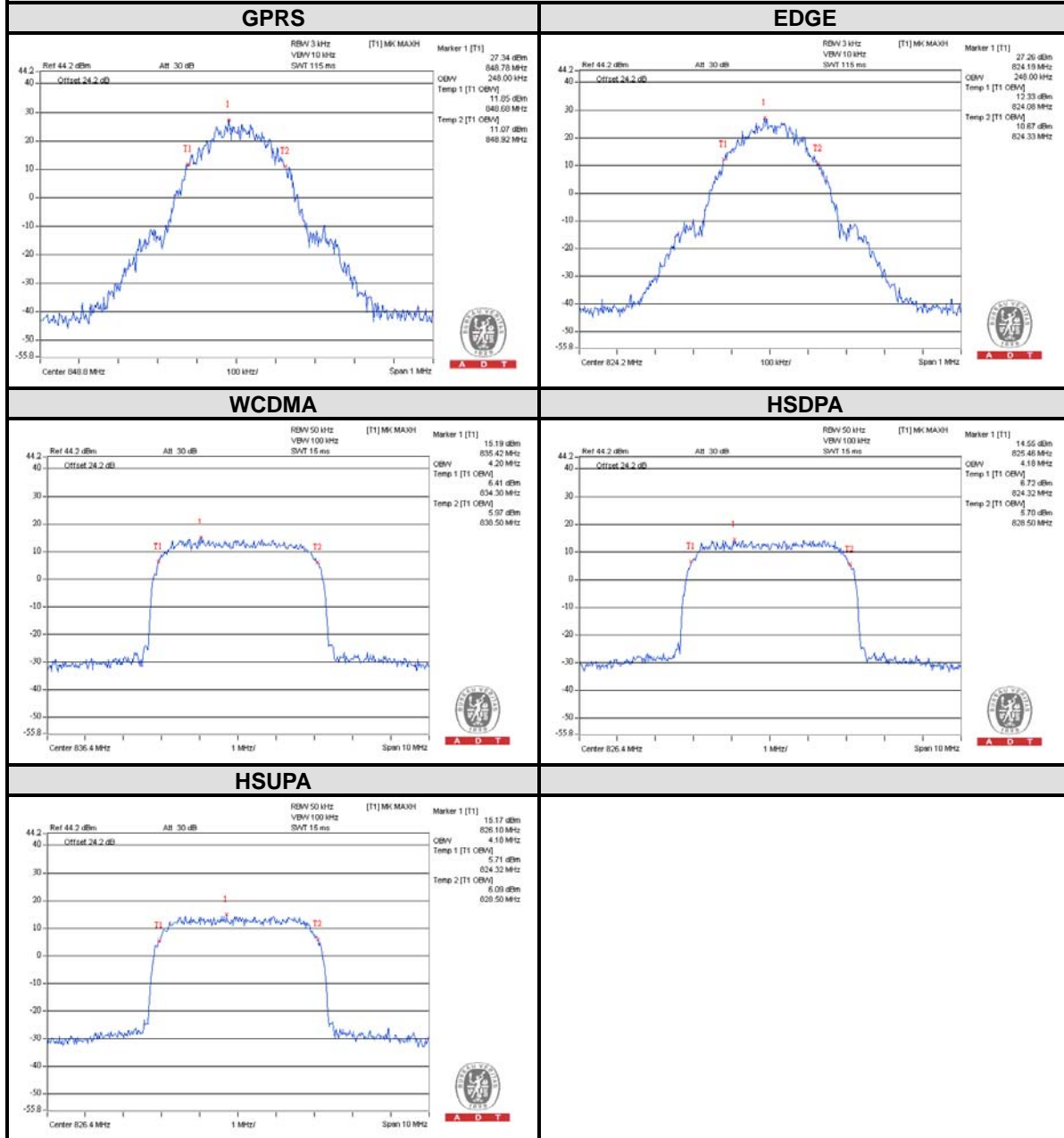
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (kHz)	
		GPRS	EDGE
128	824.2	244	248
190	836.6	242	242
251	848.8	248	246

CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		
		WCDMA	HSDPA	HSUPA
4132	826.4	4.18	4.18	4.18
4182	836.4	4.20	4.16	4.18
4233	846.6	4.18	4.14	4.16



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SPECTRUM PLOT OF WORST VALUE





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 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100060	May 09, 2012	May 08, 2013
OVEN	MHU-225AU	911033	Dec. 12, 2011	Dec. 11, 2012
AC POWER SOURCE	6205	1140503	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. Tested date: May 15, 2012

4.4.3 TEST SETUP

Same as Item 4.2.4 (Conducted Power Setup)

4.4.4 TEST PROCEDURES

- a. The EUT makes a call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels, 128 and 251 (GPRS & EDGE) / 4132 and 4233 (WCDMA, HSDPA & HSUPA) (low and high operational frequency range.)
- b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. The center frequency of spectrum is the band edge frequency and span is 1.5 MHz. RB of the spectrum is 3kHz and VB of the spectrum is 10kHz (GPRS/ EDGE).
- d. 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).
- e. Record the max trace plot into the test report.

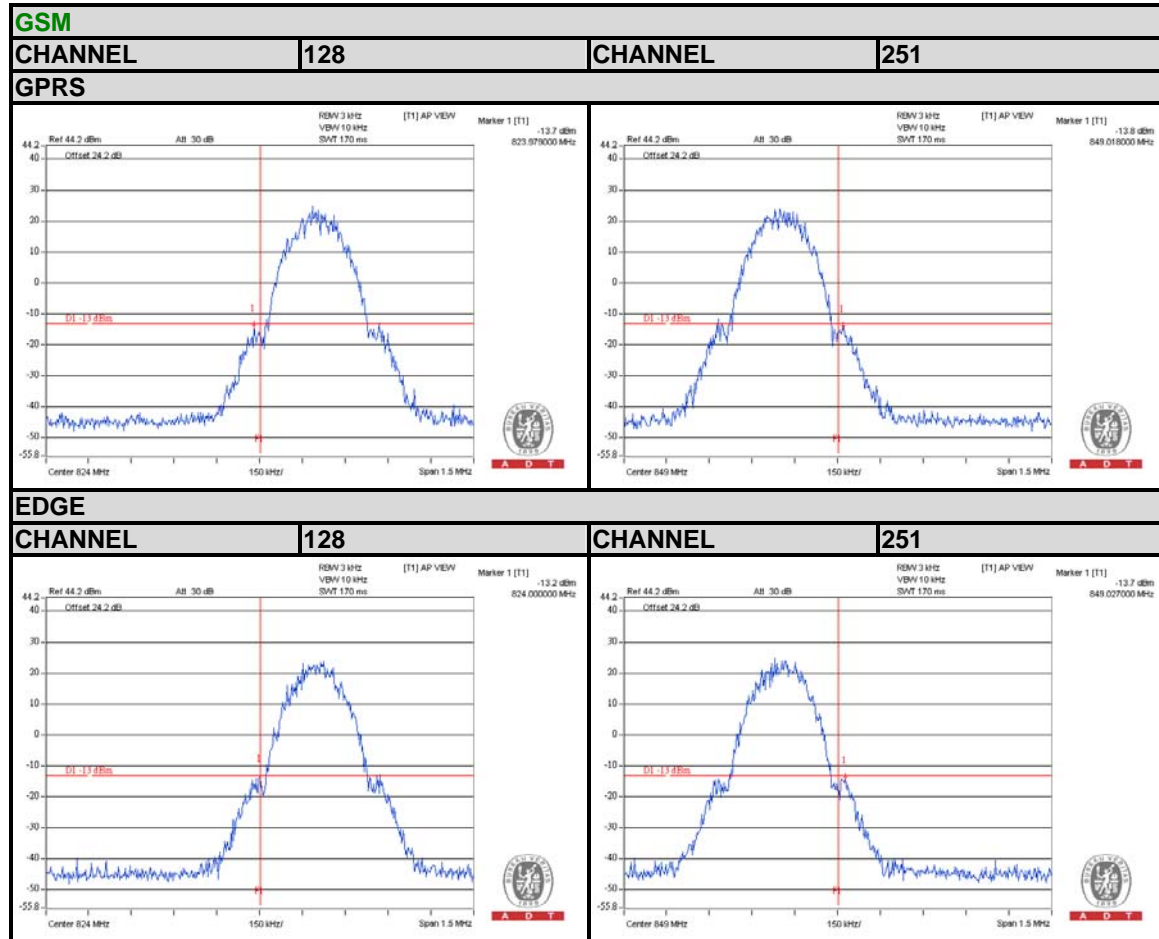
4.4.5 EUT OPERATING CONDITION

Same as Item 4.1.5



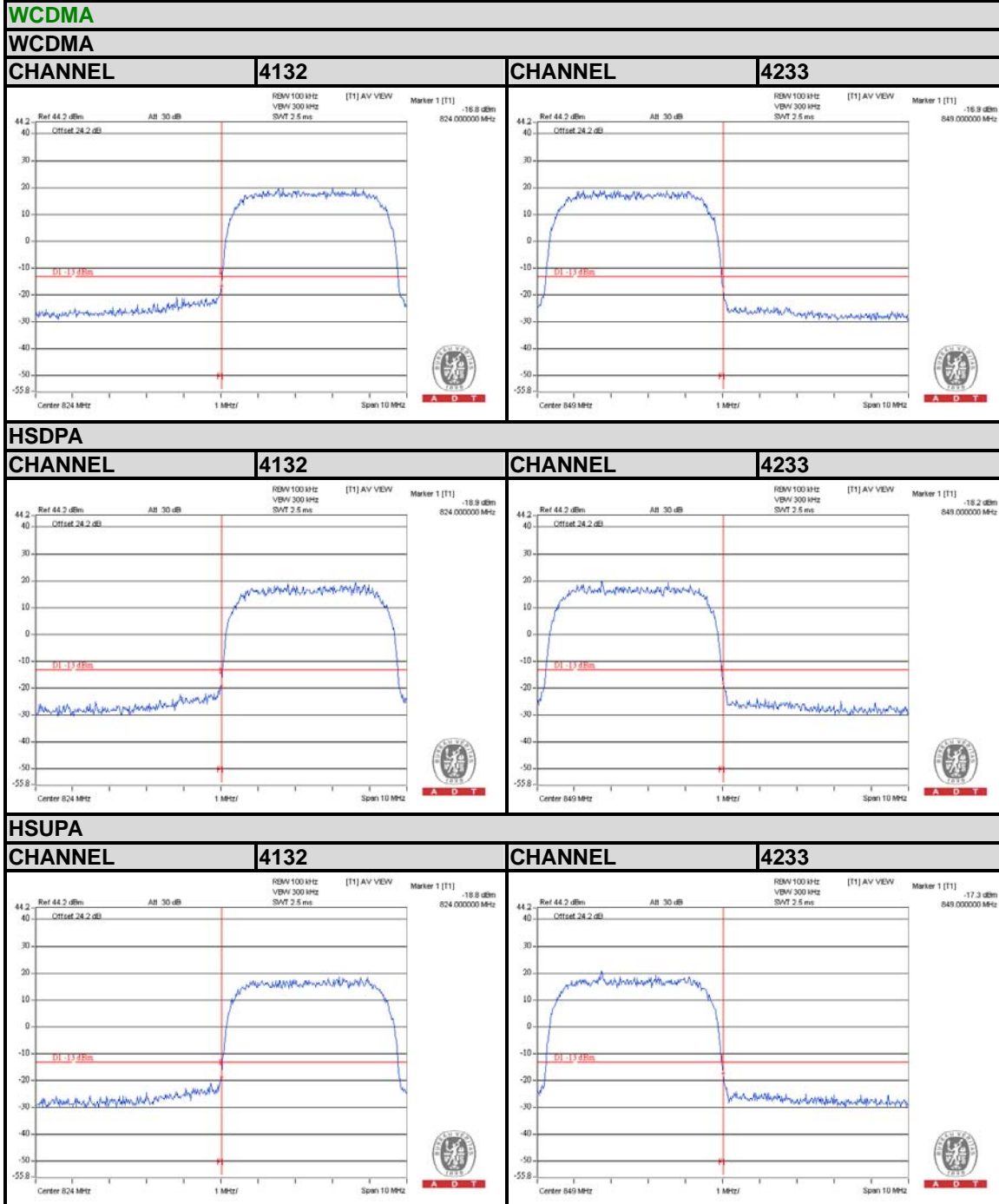
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4.4.6 TEST RESULTS





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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 INSTRUMENTS

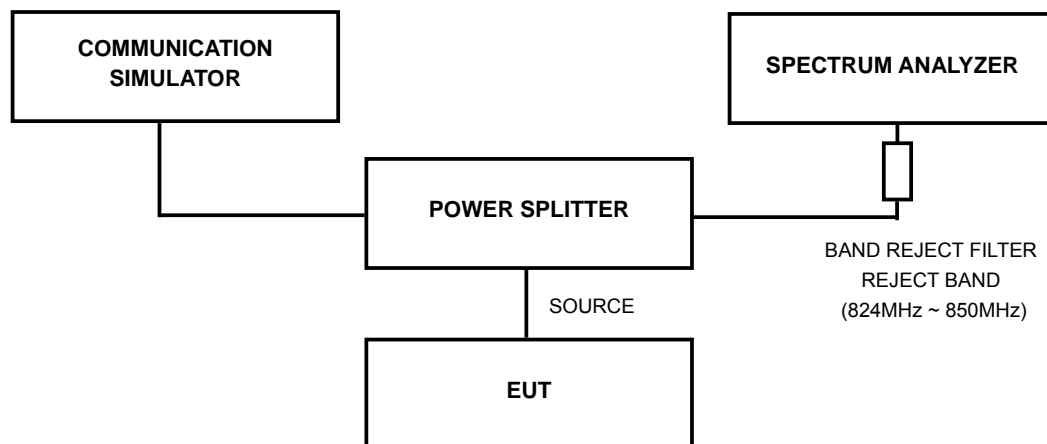
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100060	May 09, 2012	May 08, 2013
OVEN	MHU-225AU	911033	Dec. 12, 2011	Dec. 11, 2012
AC POWER SOURCE	6205	1140503	NA	NA
Wainwright Instruments Band Reject Filter	WRCG1850/191 0-1830/1930-60/ 10SS	SN1	NA	NA
* Wainwright Instruments High Pass Filter	WHK3.1/18G-10 SS	SN1	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. Tested date: May 15, 2012

4.5.3 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels, 128, 190 and 251 (EDGE) / 4132, 4182 and 4233 (WCDMA) (low, middle and high operational frequency range.)
- b. The conducted spurious emission used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. When the spectrum scanned from 9kHz to 1GHz, it shall be connected to the band reject filter attenuated the carried frequency. The spectrum set RB=1MHz, VB=3MHz.
- d. When the spectrum scanned from 1GHz to 9GHz, it shall be connected to the high pass filter attenuated the carried frequency. The spectrum set RB=1MHz, VB=3MHz.

4.5.4 TEST SETUP



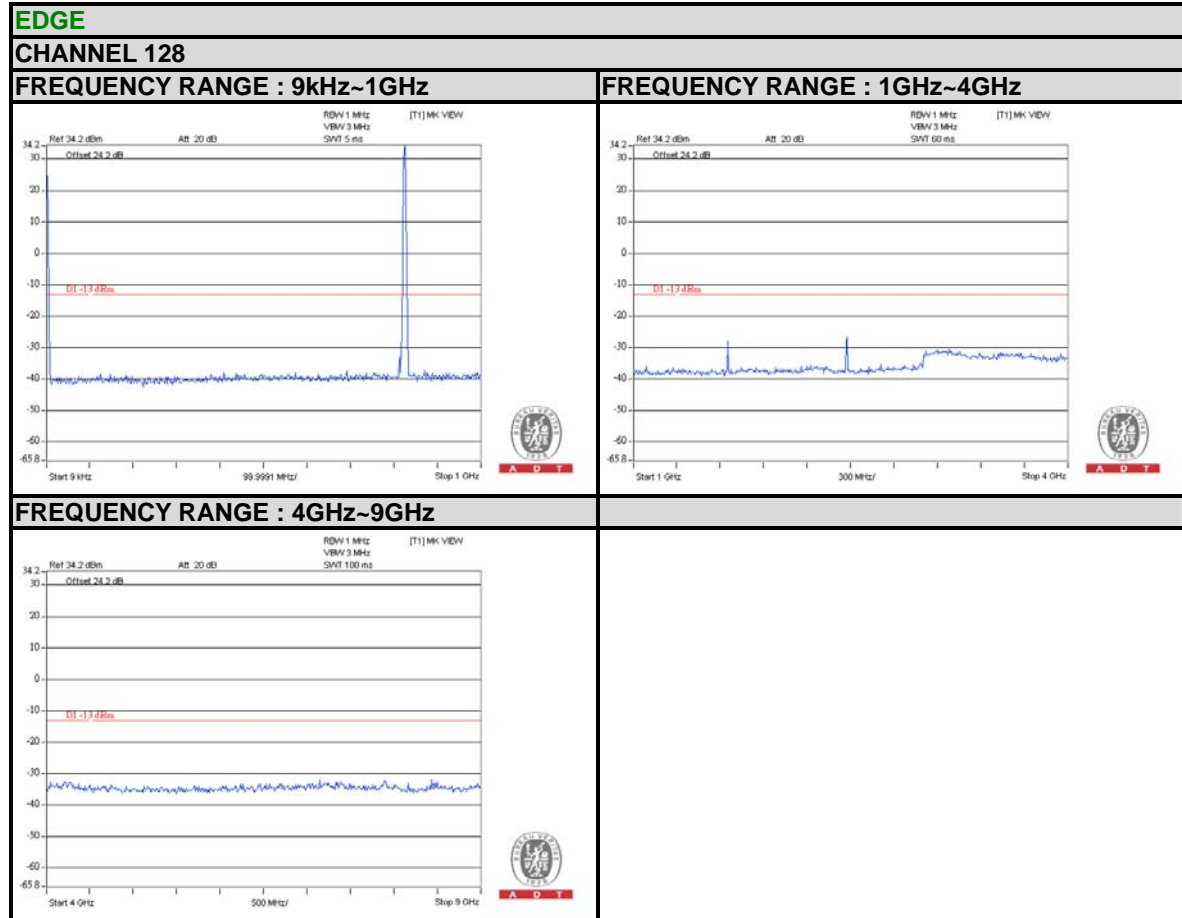
4.5.5 EUT OPERATING CONDITIONS

Same as Item 4.1.5



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4.5.6 TEST RESULTS



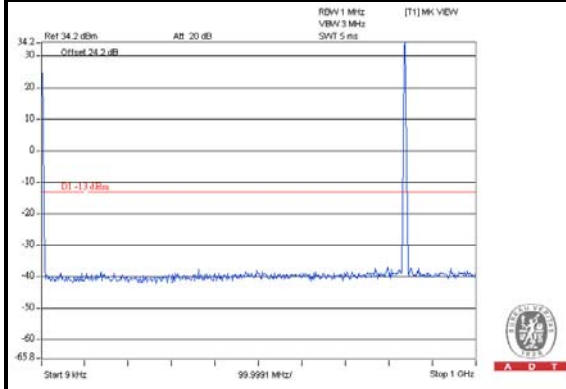


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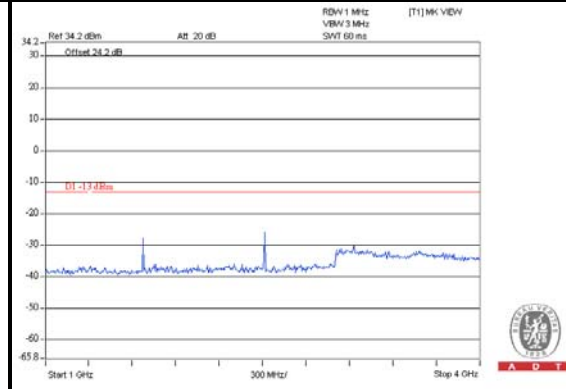
EDGE

CHANNEL 190

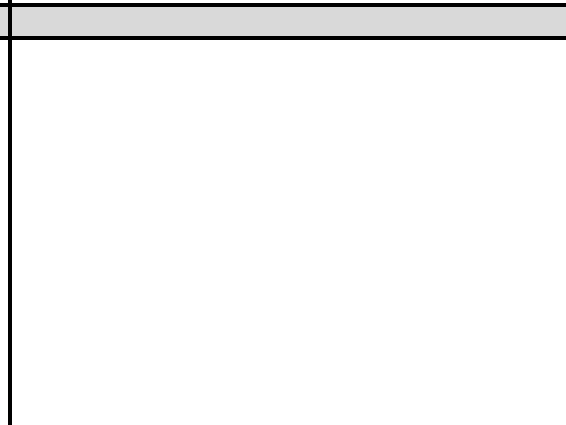
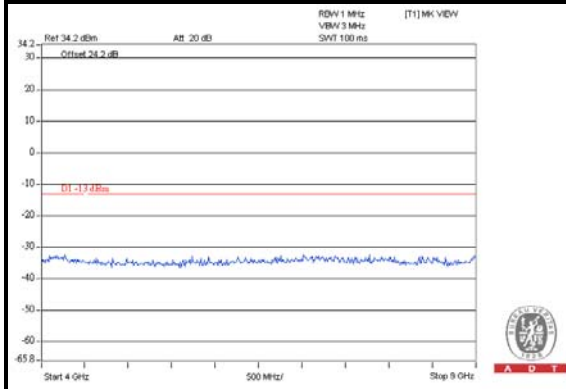
FREQUENCY RANGE : 9kHz~1GHz



FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~9GHz



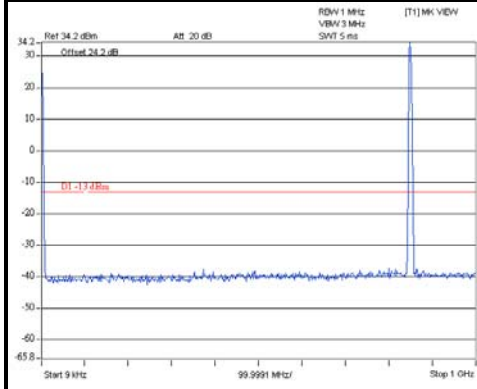


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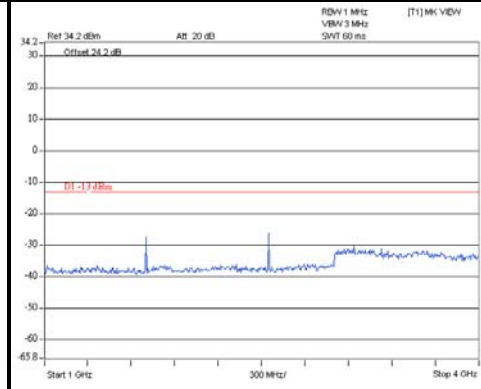
EDGE

CHANNEL 251

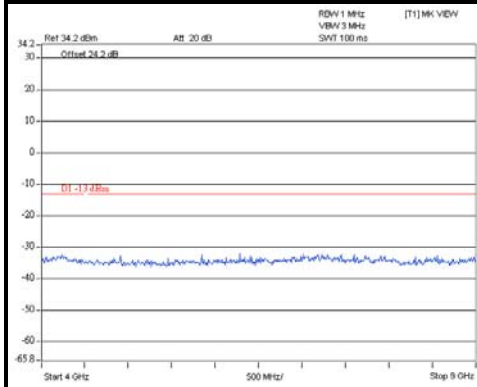
FREQUENCY RANGE : 9kHz~1GHz



FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~9GHz



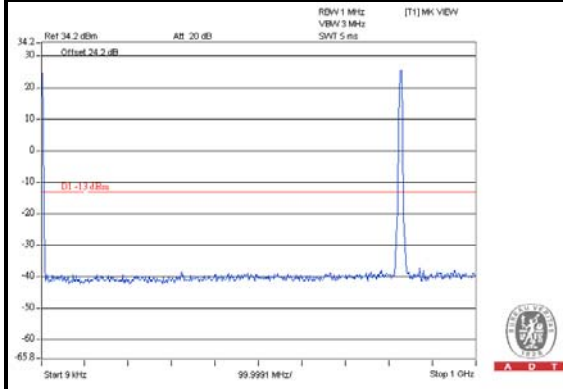


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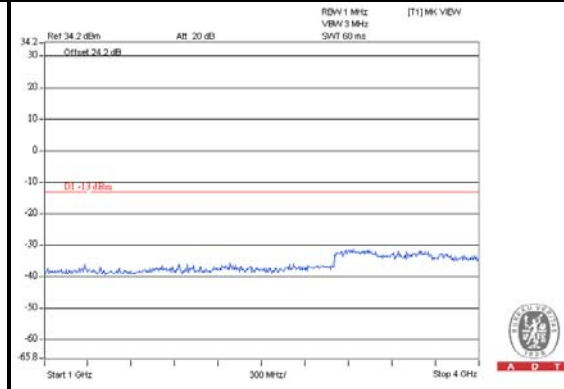
WCDMA

CHANNEL 4132

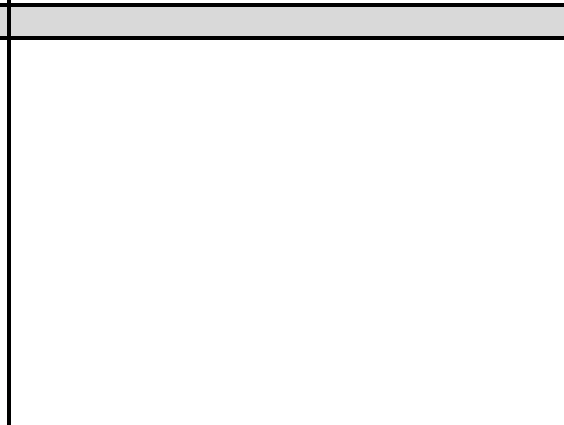
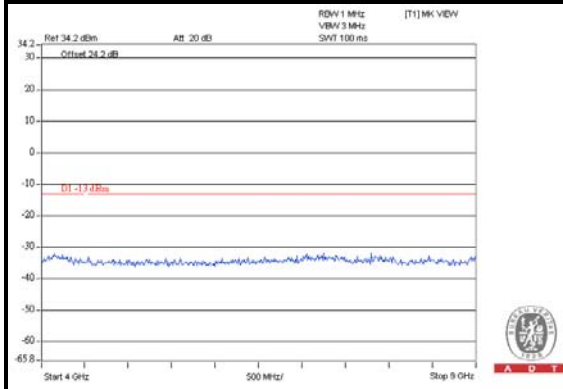
FREQUENCY RANGE : 9kHz~1GHz



FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~9GHz



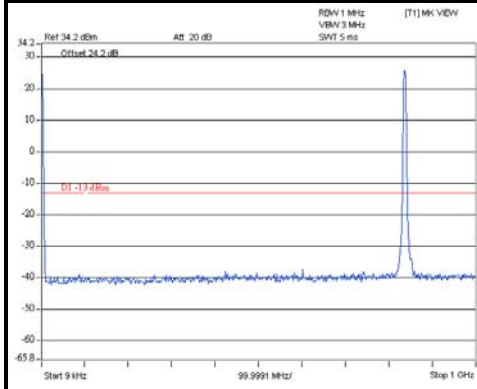


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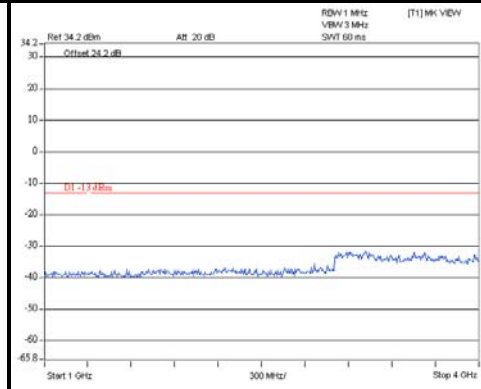
WCDMA

CHANNEL 4182

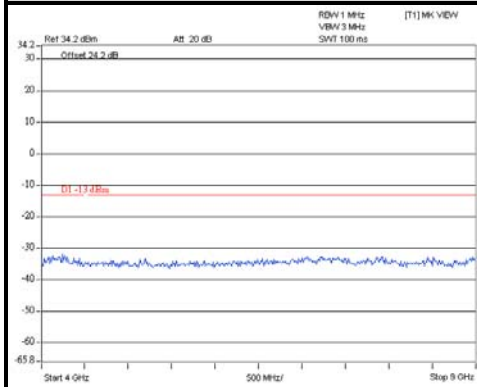
FREQUENCY RANGE : 9kHz~1GHz



FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~9GHz



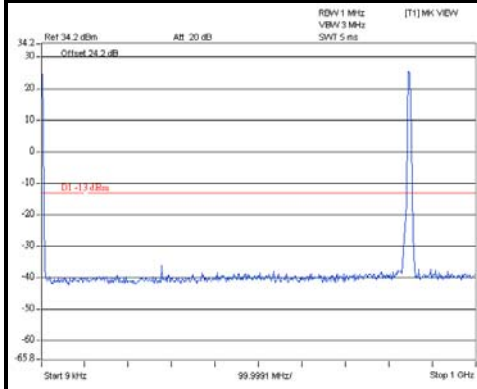


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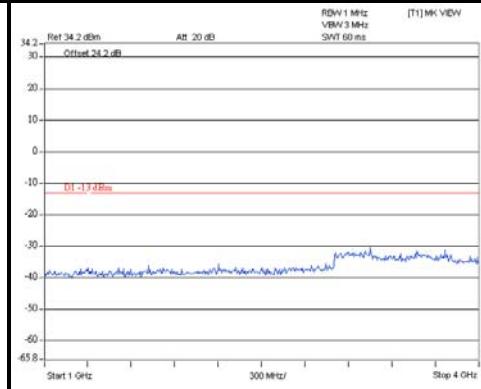
WCDMA

CHANNEL 4233

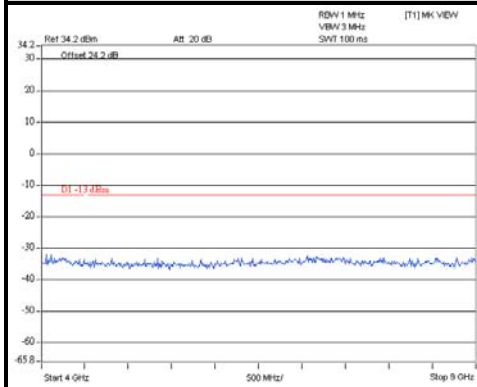
FREQUENCY RANGE : 9kHz~1GHz



FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~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 dBm.

LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBuV/m) (NOTE)
-13	82.22

NOTE: The following formula is used to convert the equipment radiated power to field strength.

$$E = [1000000\sqrt{(30P)}] / 3 \text{ uV/m, where P is Watts.}$$



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4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012
Agilent Pre-Selector	N9039A	MY46520311	July 12, 2011	July 11, 2012
Agilent Signal Generator	N5181A	MY49060517	July 12, 2011	July 11, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02578	July 04, 2011	July 03, 2012
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 09, 2012	Apr. 08, 2013
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 14, 2011	Nov. 13, 2012
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 26, 2011	Dec. 25, 2012
RF Cable	NA	CHGCAB_001	Oct. 07, 2011	Oct. 06, 2012
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
5. The VCCI Site Registration No. is G-137.
6. The CANADA Site Registration No. is IC 7450H-2.
7. Tested Date: May 17, 2012

4.6.3 TEST PROCEDURES

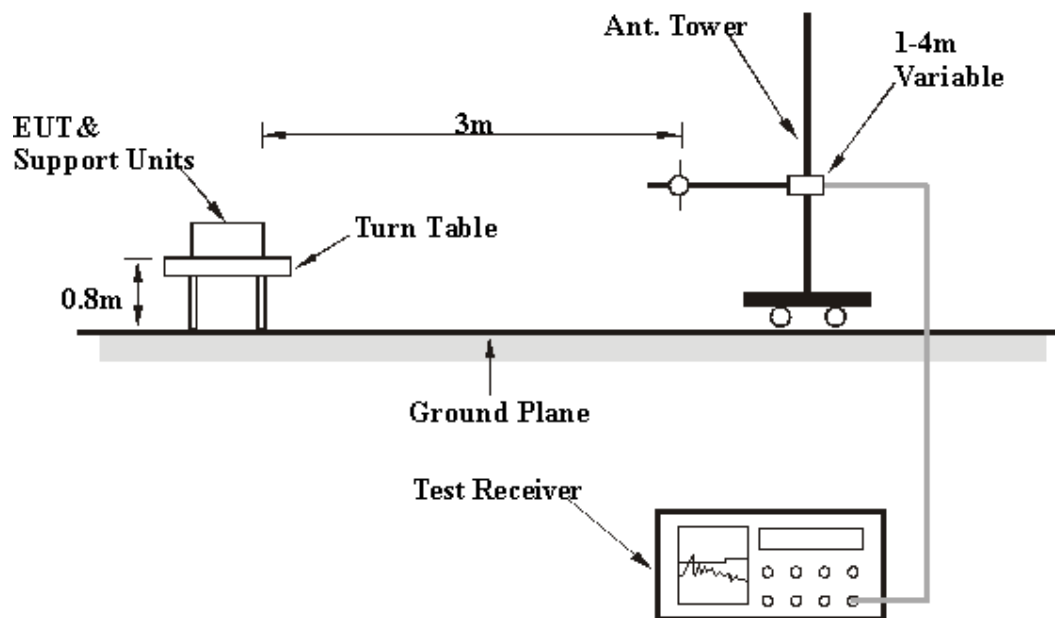
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



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

4.6.6 EUT OPERATING CONDITIONS

Same as Item 4.1.5



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4.6.7 TEST RESULTS (MODE 1)

BELOW 1GHz DATA

EDGE

CHANNEL	TX Channel 128	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	96.80	35.9	82.2	-46.3	1.42 H	25	26.41	9.47
2	177.40	43.1	82.2	-39.1	1.32 H	24	29.95	13.19
3	228.47	40.8	82.2	-41.4	1.65 H	24	28.39	12.41
4	286.54	39.2	82.2	-43.0	1.02 H	35	24.44	14.76
5	319.10	38.8	82.2	-43.4	1.15 H	24	22.99	15.78
6	712.47	32.5	82.2	-49.7	1.52 H	245	8.28	24.20

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.12	34.6	82.2	-47.6	1.15 V	24	21.77	12.80
2	69.14	31.1	82.2	-51.1	1.58 V	360	18.41	12.72
3	132.90	35.1	82.2	-47.1	1.35 V	254	21.69	13.45
4	175.57	38.6	82.2	-43.6	1.25 V	35	25.22	13.35
5	238.74	37.4	82.2	-44.9	1.54 V	254	24.49	12.86
6	708.47	32.3	82.2	-49.9	1.45 V	241	8.14	24.13

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 190	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	96.71	35.4	82.2	-46.8	1.24 H	24	25.95	9.46
2	176.54	42.3	82.2	-40.0	1.25 H	360	28.98	13.27
3	225.47	39.9	82.2	-42.3	1.54 H	245	27.59	12.28
4	285.54	38.8	82.2	-43.4	1.02 H	222	24.09	14.72
5	318.57	38.2	82.2	-44.0	1.03 H	360	22.42	15.77
6	711.59	32.3	82.2	-49.9	1.00 H	245	8.11	24.19

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.20	33.2	82.2	-49.0	1.33 V	245	20.31	12.93
2	69.87	31.3	82.2	-50.9	1.85 V	0	18.68	12.64
3	132.60	34.9	82.2	-47.3	1.25 V	245	21.44	13.43
4	174.22	37.4	82.2	-44.8	1.54 V	265	23.99	13.45
5	239.00	37.2	82.2	-45.0	2.35 V	265	24.30	12.87
6	710.24	31.7	82.2	-50.5	1.24 V	215	7.57	24.16

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 251	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	97.45	35.3	82.2	-46.9	1.45 H	25	25.71	9.55
2	174.00	42.1	82.2	-40.1	1.89 H	82	28.66	13.46
3	228.57	39.4	82.2	-42.8	1.65 H	52	27.03	12.41
4	285.20	39.1	82.2	-43.1	1.00 H	145	24.38	14.71
5	319.57	38.0	82.2	-44.2	1.00 H	360	22.22	15.79
6	711.30	32.1	82.2	-50.1	1.00 H	157	7.94	24.18

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.87	33.2	82.2	-49.0	1.32 V	245	20.18	12.98
2	69.57	31.0	82.2	-51.2	1.25 V	24	18.31	12.67
3	131.57	35.1	82.2	-47.1	1.33 V	245	21.73	13.36
4	173.58	36.6	82.2	-45.6	1.52 V	235	23.09	13.49
5	238.75	36.9	82.2	-45.3	1.65 V	24	24.01	12.86
6	706.58	31.5	82.2	-50.7	1.54 V	360	7.38	24.09

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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WCDMA Band V

CHANNEL	TX Channel 4132	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	91.80	37.5	82.2	-44.8	1.50 H	241	28.62	8.83
2	109.24	37.5	82.2	-44.7	1.25 H	221	26.37	11.12
3	174.60	44.5	82.2	-37.7	1.35 H	50	31.07	13.43
4	222.50	43.1	82.2	-39.1	1.00 H	87	30.99	12.15
5	287.60	41.2	82.2	-41.0	1.50 H	25	26.44	14.80
6	831.10	40.2	82.2	-42.0	2.00 H	360	13.81	26.43
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	32.12	35.8	82.2	-46.4	1.50 V	24	22.93	12.87
2	48.12	35.9	82.2	-46.3	1.25 V	24	21.77	14.13
3	70.12	36.9	82.2	-45.3	1.51 V	359	24.30	12.59
4	93.24	37.2	82.2	-45.1	1.00 V	258	28.14	9.01
5	174.25	43.5	82.2	-38.7	2.00 V	215	30.09	13.45
6	191.24	39.5	82.2	-42.7	1.53 V	325	27.59	11.95

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4182	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	91.50	35.4	82.2	-46.8	1.25 H	32	26.63	8.79
2	110.24	36.2	82.2	-46.0	1.15 H	210	24.98	11.26
3	173.98	44.2	82.2	-38.0	1.00 H	50	30.77	13.47
4	222.20	44.2	82.2	-38.1	1.24 H	87	32.02	12.13
5	286.54	41.2	82.2	-41.0	1.35 H	356	26.42	14.76
6	832.24	39.9	82.2	-42.3	1.65 H	234	13.42	26.45
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.21	36.2	82.2	-46.0	1.22 V	292	23.30	12.94
2	49.24	35.8	82.2	-46.5	1.50 V	200	21.64	14.11
3	69.54	37.3	82.2	-45.0	2.00 V	359	24.57	12.68
4	93.20	36.2	82.2	-46.0	1.32 V	300	27.23	9.01
5	174.00	42.2	82.2	-40.0	1.54 V	215	28.78	13.46
6	191.10	38.5	82.2	-43.7	1.24 V	228	26.58	11.96

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4233	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	91.20	36.2	82.2	-46.0	1.14 H	157	27.49	8.75
2	108.00	37.5	82.2	-44.7	1.24 H	325	26.58	10.96
3	173.91	45.2	82.2	-37.0	1.35 H	200	31.77	13.47
4	219.00	45.4	82.2	-36.9	1.33 H	258	33.36	11.99
5	286.20	41.2	82.2	-41.0	1.25 H	356	26.43	14.75
6	832.00	40.2	82.2	-42.0	1.00 H	125	13.79	26.45

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	34.24	35.2	82.2	-47.0	1.25 V	300	22.24	13.00
2	49.20	31.5	82.2	-50.7	1.35 V	128	17.43	14.11
3	68.54	38.5	82.2	-43.7	1.45 V	359	25.76	12.78
4	94.24	36.2	82.2	-46.0	1.11 V	258	27.05	9.14
5	172.00	42.1	82.2	-40.1	1.25 V	215	28.55	13.59
6	188.00	39.5	82.2	-42.7	1.00 V	25	27.30	12.24

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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ABOVE 1GHz DATA

EDGE

CHANNEL	TX Channel 128	FREQUENCY RANGE	1GHz ~ 9GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1648.29	49.4	82.2	-32.8	1.00 H	223	20.49	28.94
2	2472.56	43.0	82.2	-39.2	1.00 H	254	10.80	32.21
3	3297.08	43.4	82.2	-38.8	1.00 H	74	9.19	34.19

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1648.54	51.5	82.2	-30.7	1.00 V	123	22.55	28.94
2	2472.59	61.2	82.2	-21.0	1.00 V	261	28.98	32.21
3	3296.43	49.6	82.2	-32.6	1.00 V	349	15.41	34.19

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 190	FREQUENCY RANGE	1GHz ~ 9GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1673.17	51.2	82.2	-31.0	1.00 H	224	22.14	29.06
2	2509.79	45.2	82.2	-37.0	1.00 H	259	12.89	32.31
3	3345.84	46.1	82.2	-36.1	1.00 H	80	11.84	34.26
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1673.80	52.5	82.2	-29.7	1.00 V	125	23.48	29.06
2	2509.79	62.2	82.2	-20.0	1.00 V	261	29.89	32.31
3	3345.84	51.7	82.2	-30.5	1.00 V	348	17.44	34.26

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 251	FREQUENCY RANGE	1GHz ~ 9GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1693.00	52.1	82.2	-30.1	1.00 H	235	22.95	29.15
2	2546.00	46.1	82.2	-36.1	1.00 H	260	13.69	32.41
3	3395.80	47.7	82.2	-34.5	1.00 H	98	13.39	34.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1697.51	53.1	82.2	-29.1	1.00 V	135	23.93	29.17
2	2546.30	63.3	82.2	-18.9	1.00 V	249	30.89	32.41
3	3395.11	52.3	82.2	-29.9	1.00 V	339	17.99	34.31

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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WCDMA

CHANNEL	TX Channel 4132	FREQUENCY RANGE	1GHz ~ 9GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1651.40	50.5	82.2	-31.7	1.00 H	232	21.50	28.96
2	2482.63	61.2	82.2	-21.1	1.00 H	76	28.92	32.23
3	3301.03	41.2	82.2	-41.0	1.00 H	67	7.03	34.20

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1650.93	44.1	82.2	-38.2	1.00 V	83	15.10	28.95
2	2482.67	52.5	82.2	-29.8	1.00 V	158	20.22	32.23
3	3304.27	40.6	82.2	-41.6	1.00 V	61	6.36	34.21

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4182	FREQUENCY RANGE	1GHz ~ 9GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1673.24	51.2	82.2	-31.0	1.00 H	233	22.18	29.06
2	2509.50	62.2	82.2	-20.0	1.00 H	77	29.93	32.31
3	3346.24	41.3	82.2	-40.9	1.00 H	66	7.05	34.26

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1674.20	45.2	82.2	-37.0	1.00 V	82	16.14	29.06
2	2509.60	53.4	82.2	-28.8	1.00 V	155	21.13	32.31
3	3346.30	41.3	82.2	-41.0	1.00 V	56	6.99	34.26

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4233	FREQUENCY RANGE	1GHz ~ 9GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1692.70	52.2	82.2	-30.0	1.00 H	234	23.05	29.15
2	2539.40	63.2	82.2	-19.0	1.00 H	76	30.85	32.39
3	3386.20	41.9	82.2	-40.3	1.00 H	67	7.59	34.30

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1693.50	46.5	82.2	-35.7	1.00 V	83	17.35	29.15
2	2539.40	54.8	82.2	-27.4	1.00 V	156	22.41	32.39
3	3386.80	41.8	82.2	-40.4	1.00 V	58	7.50	34.30

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

4.6.8 TEST RESULTS (MODE 2)

BELOW 1GHz DATA

EDGE

CHANNEL	TX Channel 128	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	130.24	37.5	82.2	-44.7	1.25 H	360	24.27	13.27
2	177.20	42.5	82.2	-39.7	1.00 H	125	29.29	13.21
3	228.30	43.3	82.2	-39.0	1.12 H	58	30.85	12.40
4	369.00	35.6	82.2	-46.6	1.54 H	36	18.57	17.07
5	568.40	35.6	82.2	-46.6	1.32 H	154	13.67	21.96
6	599.88	35.2	82.2	-47.0	1.35 H	98	12.54	22.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	32.54	35.7	82.2	-46.6	1.47 V	360	22.76	12.89
2	73.87	32.5	82.2	-49.7	1.47 V	98	21.00	11.50
3	132.60	36.2	82.2	-46.0	1.87 V	360	22.81	13.43
4	186.47	42.2	82.2	-40.0	1.68 V	58	29.86	12.38
5	251.10	38.9	82.2	-43.3	1.50 V	99	25.51	13.39
6	709.50	33.0	82.2	-49.2	1.84 V	316	8.89	24.15

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 190	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	130.80	35.6	82.2	-46.6	1.85 H	300	22.28	13.30
2	181.24	41.5	82.2	-40.7	1.35 H	68	28.69	12.85
3	229.24	45.2	82.2	-37.0	1.65 H	40	32.80	12.44
4	356.24	35.5	82.2	-46.7	1.14 H	285	18.76	16.74
5	568.24	36.2	82.2	-46.0	1.65 H	28	14.28	21.96
6	589.57	34.3	82.2	-48.0	1.75 H	77	11.82	22.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.24	32.5	82.2	-49.7	1.22 V	54	19.60	12.94
2	73.10	33.2	82.2	-49.0	1.35 V	65	21.52	11.72
3	130.25	35.4	82.2	-46.8	1.02 V	360	22.13	13.27
4	186.30	43.3	82.2	-39.0	1.65 V	354	30.86	12.39
5	250.24	38.8	82.2	-43.4	1.45 V	23	25.40	13.36
6	708.24	33.0	82.2	-49.2	1.68 V	33	8.86	24.12

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 251	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	130.57	36.2	82.2	-46.0	1.42 H	25	22.95	13.29
2	181.20	38.5	82.2	-43.7	1.06 H	35	25.69	12.85
3	228.00	44.3	82.2	-38.0	1.12 H	40	31.86	12.39
4	356.10	34.2	82.2	-48.1	1.54 H	325	17.41	16.74
5	568.10	35.7	82.2	-46.5	1.84 H	39	13.72	21.96
6	589.50	33.9	82.2	-48.3	1.45 H	0	11.44	22.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.28	33.7	82.2	-48.5	1.33 V	360	20.74	12.94
2	73.50	34.2	82.2	-48.1	1.38 V	0	22.55	11.60
3	130.20	34.2	82.2	-48.0	1.14 V	360	20.98	13.26
4	186.10	42.6	82.2	-39.6	1.00 V	59	30.15	12.41
5	250.20	37.6	82.2	-44.6	1.24 V	35	24.21	13.36
6	708.20	34.0	82.2	-48.2	1.18 V	245	9.86	24.12

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4132	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.32	37.2	82.2	-45.0	1.25 H	245	28.46	8.78
2	111.54	37.6	82.2	-44.6	1.00 H	57	26.15	11.43
3	176.54	45.3	82.2	-37.0	1.50 H	360	31.98	13.27
4	225.35	46.0	82.2	-36.2	1.26 H	360	33.71	12.27
5	615.00	36.5	82.2	-45.7	1.54 H	347	13.69	22.85
6	829.24	36.8	82.2	-45.4	1.50 H	256	10.42	26.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.24	38.2	82.2	-44.0	1.36 V	56	24.11	14.13
2	131.24	36.5	82.2	-45.7	1.24 V	25	23.21	13.33
3	175.27	42.1	82.2	-40.1	1.54 V	25	28.72	13.38
4	236.03	44.3	82.2	-38.0	1.54 V	65	31.51	12.74
5	831.24	43.6	82.2	-38.6	1.54 V	360	17.14	26.44
6	893.00	42.5	82.2	-39.7	1.57 V	68	15.15	27.39

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4182	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.39	36.7	82.2	-45.5	1.32 H	235	27.92	8.78
2	111.40	38.1	82.2	-44.1	1.15 H	42	26.72	11.41
3	176.40	45.0	82.2	-37.2	1.24 H	25	31.68	13.28
4	225.90	45.7	82.2	-36.5	1.25 H	360	33.41	12.29
5	615.57	36.2	82.2	-46.0	1.33 H	347	13.38	22.86
6	829.10	37.4	82.2	-44.9	1.42 H	26	10.95	26.40

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.10	37.2	82.2	-45.0	1.45 V	245	23.11	14.13
2	131.10	37.2	82.2	-45.0	1.25 V	24	23.92	13.32
3	175.10	41.5	82.2	-40.8	1.35 V	26	28.06	13.39
4	235.89	44.2	82.2	-38.0	1.42 V	25	31.45	12.73
5	829.54	43.4	82.2	-38.8	1.33 V	65	17.03	26.41
6	893.54	42.6	82.2	-39.6	1.54 V	54	15.23	27.40

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	TX Channel 4233	FREQUENCY RANGE	Below 1GHz
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.70	36.6	82.2	-45.6	1.15 H	205	27.83	8.74
2	113.00	37.8	82.2	-44.4	1.45 H	0	26.19	11.63
3	175.89	44.8	82.2	-37.4	1.25 H	360	31.48	13.32
4	225.40	46.9	82.2	-35.3	1.03 H	254	34.60	12.27
5	616.59	37.5	82.2	-44.7	1.50 H	45	14.67	22.87
6	828.54	36.9	82.2	-45.3	1.50 H	105	10.49	26.39

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.29	39.5	82.2	-42.7	1.24 V	58	25.42	14.12
2	89.41	43.3	82.2	-39.0	1.22 V	328	34.59	8.66
3	131.10	37.5	82.2	-44.8	1.00 V	298	24.13	13.32
4	175.10	43.2	82.2	-39.0	1.00 V	338	29.85	13.39
5	237.54	45.3	82.2	-37.0	1.50 V	100	32.45	12.80
6	831.10	44.3	82.2	-38.0	1.50 V	257	17.82	26.43

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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.

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



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

No modifications were made to the EUT by the lab during the test.

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