



FCC RF Test Report

APPLICANT : Wistron Corporation
EQUIPMENT : Tablet PC
BRAND NAME : Lenovo
MODEL NAME : TP00065A
FCC ID : PU5-TP00065AUC
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
CLASSIFICATION : PCS Licensed Transmitter (PCB)

The product was received on Jul. 22, 2014 and testing was completed on Sep. 11, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-C-2004 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG471416-02A	Rev. 01	Initial issue of report	Sep. 30, 2014



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-132 (5.4) RSS-133 (6.4) RSS-139 (6.4)	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(2)	RSS-132(5.4) SRSP-503(5.1.3)	Effective Radiated Power	< 7 Watts	PASS	-
	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
	§27.50(d)(4)	RSS-139 (6.4) SRSP-513(5.1.2)	Equivalent Isotropic Radiated Power	< 1 Watts	PASS	-
3.2	§2.1053 §22.917(a) §24.238(a) §27.53(h)	RSS-GEN(4.9) RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.5)	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	Under limit 15.18 dB at 2509.000 MHz

1 General Description

1.1 Applicant

Wistron Corporation

21F, No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Dist, New Taipei City 221, Taiwan R.O.C.

1.2 Manufacturer

Wistron Corporation

21F, No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Dist, New Taipei City 221, Taiwan R.O.C.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Tablet PC
Brand Name	Lenovo
Model Name	TP00065A
FCC ID	PU5-TP00065AUC
DUT Description	A tablet (PAD) computer, contain 802.11 a/b/g/n/ac, Bluetooth and LTE+UMTS+GSM transceiver (radio module)
Sample 1	EUT with HIGH-TEK Antenna
Sample 2	EUT with WNC Antenna
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

EM7345				2G	3G<E
Antenna 1 (US)	Manufacturer	HIGH-TEK HARNESS ENT	Peak gain	-7.43	-7.03
	P/N	025.9004O.0011	Type : PIFA		
Antenna 2 (US)	Manufacturer	WNC	Peak gain	-1.69	-0.35
	P/N	025.9004O.0001	Type : PIFA		

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 31.64 dBm GSM1900 : 29.14 dBm WCDMA Band V : 22.86 dBm WCDMA Band IV : 23.07 dBm WCDMA Band II : 23.21 dBm
Antenna Gain	Cellular Band: -2.02 dBi PCS Band: -1.76 dBi AWS Band: -0.95 dBi
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH02-HY	03CH07-HY

1.7 Maximum ERP/EIRP Power

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)
Part 22	GSM850 GPRS class 8	GMSK	0.56
Part 22	GSM850 EDGE class 8	8PSK	0.16
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.07
Part 24	GSM1900 GPRS class 8	GMSK	0.55
Part 24	GSM1900 EDGE class 8	8PSK	0.23
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.14
Part 27	WCDMA Band IV RMC 12.2Kbps	QPSK	0.16

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E), 27(L)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- FCC KDB 412172 D01 Determining ERP and ERIP v01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r01 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V.
2. 30 MHz to 19000 MHz for GSM1900 and WCDMA Band II.
3. 30 MHz to 18000 MHz for WCDMA Band IV.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes	
Band	Radiated TCs
GSM 850	■ GPRS class 8 Link ■ EDGE class 8 Link
GSM 1900	■ GPRS class 8 Link + Docking ■ EDGE class 8 Link + Docking
WCDMA Band V	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link + Docking
WCDMA Band IV	■ RMC 12.2Kbps Link + Docking

Note:

1. The maximum power levels are chosen to test as the worst case configuration as follows:
 GPRS multi-slot class 8 mode for GMSK modulation, EDGE multi-slot class 8 mode for 8PSK modulation, RMC 12.2Kbps mode for WCDMA band V, RMC 12.2Kbps mode for WCDMA band II, and RMC 12.2Kbps mode for WCDMA band IV, only these modes were used for all tests.
2. All the tests was performed for sample 2.



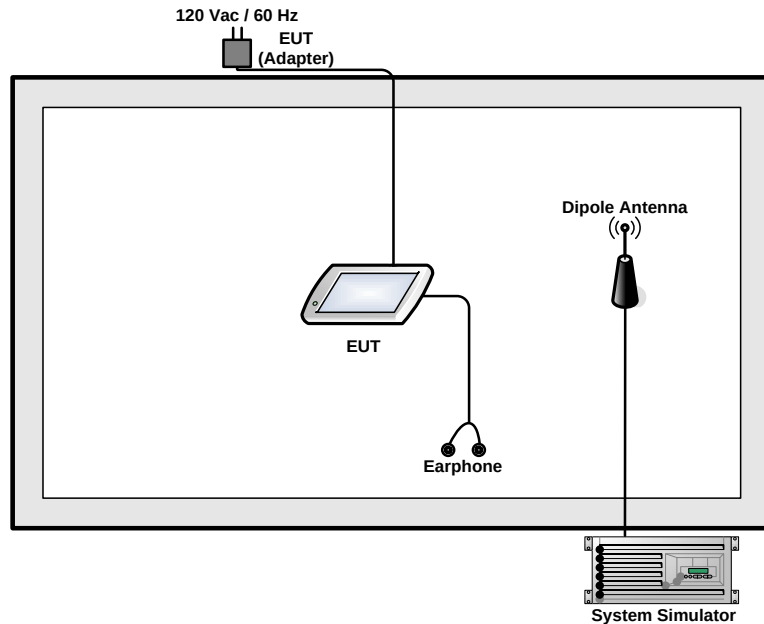
Conducted Power Measurement Results:

Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GPRS class 8	31.53	31.61	31.64	28.88	29.14	28.96
GPRS class 10	30.27	30.36	30.48	28.83	29.09	28.95
GPRS class 11	28.37	28.47	28.44	28.00	28.32	28.14
GPRS class 12	27.22	27.33	27.26	28.88	29.14	28.96
EGPRS class 8	26.22	26.25	26.14	25.24	25.31	25.36
EGPRS class 10	26.18	26.19	26.10	25.24	25.30	25.34
EGPRS class 11	25.39	25.33	25.87	24.55	24.63	24.68
EGPRS class 12	24.41	24.33	25.18	23.62	23.68	23.70

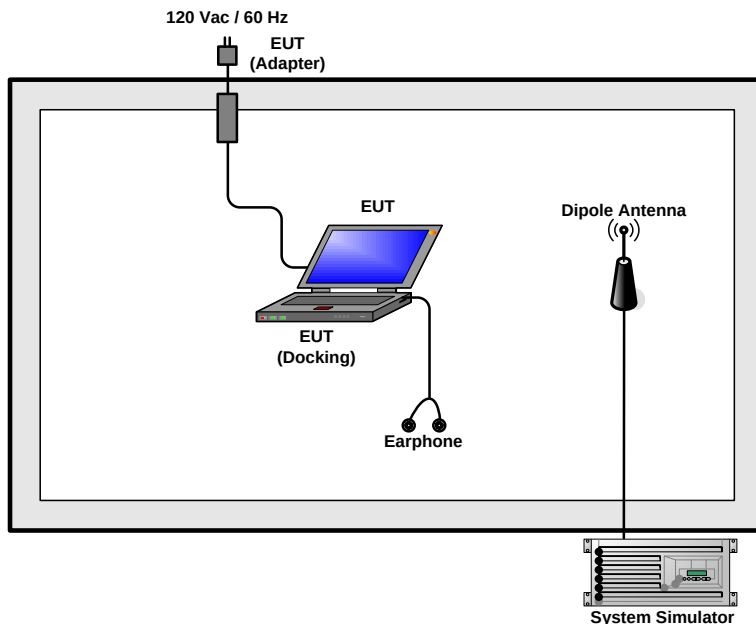
Conducted Power (*Unit: dBm)									
Band	WCDMA Band V			WCDMA Band II			WCDMA Band IV		
Channel	4132	4182	4233	9262	9400	9538	1312	1413	1513
Frequency	826.4	836.4	846.6	1852.4	1880	1907.6	1712.4	1732.6	1752.6
RMC 12.2K	22.58	22.52	22.86	22.97	23.21	23.06	22.96	23.07	23.06
HSDPA Subtest-1	22.56	22.52	22.78	22.95	23.18	23.01	22.95	23.05	23.04
HSDPA Subtest-2	22.51	22.53	22.76	22.93	23.16	23.02	22.94	23.04	23.02
HSDPA Subtest-3	22.19	22.20	22.41	22.68	22.66	22.84	22.48	22.56	22.51
HSDPA Subtest-4	22.21	22.17	22.38	22.47	22.43	22.63	22.52	22.60	22.50
HSUPA Subtest-1	22.55	22.51	22.69	22.94	23.20	23.04	22.94	23.04	23.03
HSUPA Subtest-2	20.68	20.61	20.70	20.81	21.17	21.01	20.99	21.05	21.03
HSUPA Subtest-3	21.61	21.58	21.71	21.77	22.20	22.05	22.01	22.04	22.01
HSUPA Subtest-4	21.34	21.36	21.38	21.42	21.88	21.85	21.47	21.56	21.41
HSUPA Subtest-5	22.52	22.51	22.70	22.93	23.19	23.02	22.91	23.00	22.99

2.2 Connection Diagram of Test System

<EUT with Adapter Mode>



<EUT with Adapter + Docking Mode>



Remark: The EUT is set in Tablet PC and Laptop PC configurations during test.



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

$$= 4.2 + 10 = 14.2 \text{ (dB)}$$

3 Test Result

3.1 Conducted Output Power and ERP/EIRP Measurement

3.1.1 Description of the Conducted Output Power and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts (Cellular Band) and the EIRP of mobile transmitters are limited to 2 Watts (PCS Band) and 1 Watts (AWS Band). According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

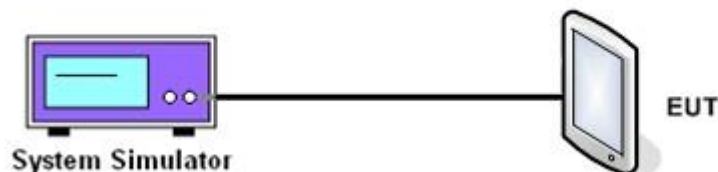
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band ($G_T - L_C = -2.02$ dB)									
Modes	GSM850 (GPRS class 8)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	31.53	31.61	31.64	26.22	26.25	26.14	22.58	22.52	22.86
Conducted Power (Watts)	1.42	1.45	1.46	0.42	0.42	0.41	0.18	0.18	0.19
ERP(dBm)	27.36	27.44	27.47	22.05	22.08	21.97	18.41	18.35	18.69
ERP(Watts)	0.545	0.555	0.558	0.160	0.161	0.157	0.069	0.068	0.074

PCS Band ($G_T - L_C = -1.76$ dB)									
Modes	GSM1900 (GPRS class 8)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	28.88	29.14	28.96	25.24	25.31	25.36	22.97	23.21	23.06
Conducted Power (Watts)	0.77	0.82	0.79	0.33	0.34	0.34	0.20	0.21	0.20
EIRP(dBm)	27.12	27.38	27.20	23.48	23.55	23.60	21.21	21.45	21.30
EIRP(Watts)	0.515	0.547	0.525	0.223	0.226	0.229	0.132	0.140	0.135

AWS Band ($G_T - L_C = -0.95$ dB)			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Conducted Power (dBm)	22.96	23.07	23.06
Conducted Power (Watts)	0.20	0.20	0.20
EIRP(dBm)	22.01	22.12	22.11
EIRP(Watts)	0.159	0.163	0.163

Note: maximum burst average power for GSM, and maximum average power for WCDMA.

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2 Field Strength of Spurious Radiation Measurement

3.2.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.2.2 Measuring Instruments

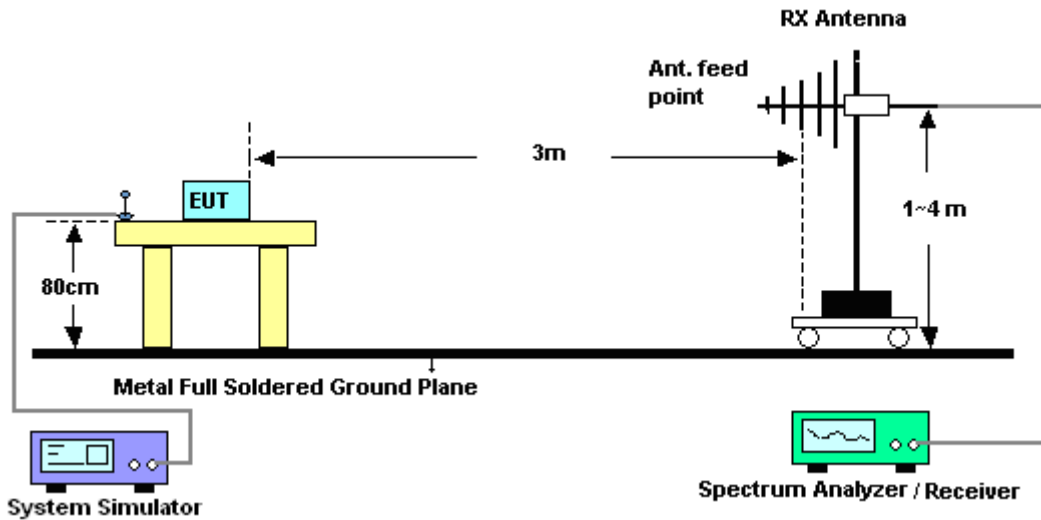
The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

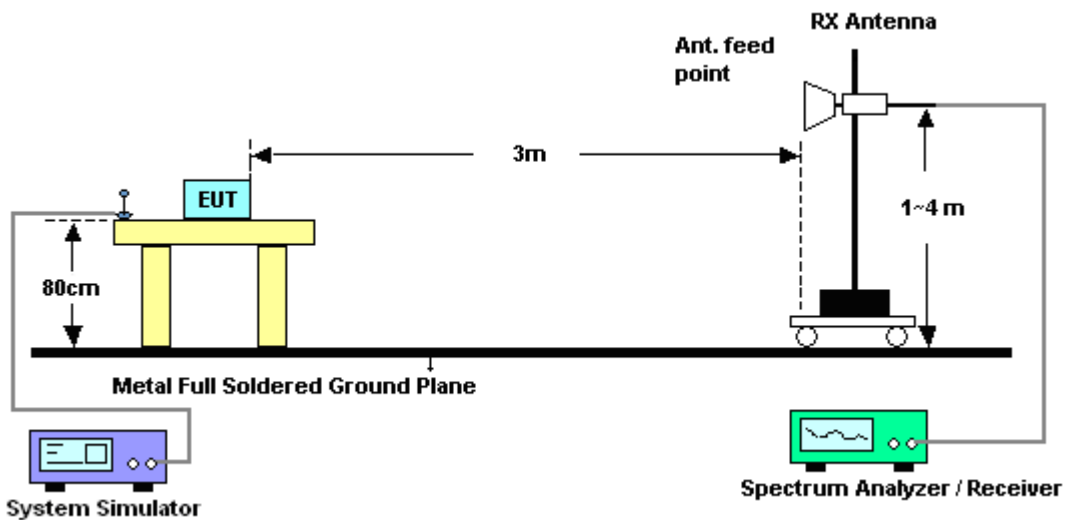
1. The testing follows FCC KDB 971168 v02r01 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
12. $ERP \text{ (dBm)} = EIRP - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.2.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.2.5 Test Result of Field Strength of Spurious Radiated

<Low Channel>

Band :	GSM850					Temperature :	23~25°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	46~48%		
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1648	-37.46	-13	-24.46	-45.5	-39.22	0.98	4.89	H	Pass
2472	-35.30	-13	-22.30	-47.66	-37.18	1.28	5.32	H	Pass
3298	-50.87	-13	-37.87	-64.41	-54.29	1.54	7.11	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-41.63	-13	-28.63	-52.3	-43.39	0.98	4.89	V	Pass
2472	-30.95	-13	-17.95	-43.74	-32.83	1.28	5.32	V	Pass
3298	-48.70	-13	-35.70	-63.96	-52.12	1.54	7.11	V	Pass

**<Middle Channel>**

Band :	GSM850					Temperature :	23~25°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	46~48%		
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-38.71	-13	-25.71	-47.43	-40.39	0.99	4.82	H	Pass
2512	-37.15	-13	-24.15	-50.04	-39.12	1.29	5.41	H	Pass
3344	-52.42	-13	-39.42	-65.92	-56.03	1.56	7.31	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1672	-43.99	-13	-30.99	-54.95	-45.67	0.99	4.82	V	Pass
2509	-28.18	-13	-15.18	-41.44	-30.14	1.29	5.41	V	Pass
3345	-49.35	-13	-36.35	-64.3	-52.96	1.56	7.32	V	Pass



<High Channel>

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-40.33	-13	-27.33	-48.89	-41.93	1.00	4.75	H	Pass
2544	-40.13	-13	-27.13	-53.2	-42.11	1.30	5.44	H	Pass
3393	-51.88	-13	-38.88	-65.93	-55.69	1.57	7.53	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-41.41	-13	-28.41	-52.05	-43.01	1.00	4.75	V	Pass
2544	-35.21	-13	-22.21	-48.75	-37.19	1.30	5.44	V	Pass
3392	-49.49	-13	-36.49	-64.62	-53.29	1.57	7.52	V	Pass



<Low Channel>

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1648	-49.56	-13	-36.56	-57.72	-51.32	0.98	4.89	H	Pass
2474	-37.74	-13	-24.74	-50.35	-39.63	1.28	5.32	H	Pass
3298	-52.79	-13	-39.79	-66.33	-56.21	1.54	7.11	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1648	-50.13	-13	-37.13	-60.58	-51.89	0.98	4.89	V	Pass
2474	-38.49	-13	-25.49	-50.98	-40.38	1.28	5.32	V	Pass
3298	-50.89	-13	-37.89	-65.79	-54.31	1.54	7.11	V	Pass



<Middle Channel>

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-49.53	-13	-36.53	-57.57	-51.21	0.99	4.82	H	Pass
2512	-40.86	-13	-27.86	-53.76	-42.83	1.29	5.41	H	Pass
3345	-51.78	-13	-38.78	-65.66	-55.39	1.56	7.32	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1672	-50.15	-13	-37.15	-60.76	-51.83	0.99	4.82	V	Pass
2509	-38.36	-13	-25.36	-51.66	-40.32	1.29	5.41	V	Pass
3345	-51.22	-13	-38.22	-66.13	-54.83	1.56	7.32	V	Pass

**<High Channel>**

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1696	-50.09	-13	-37.09	-58.85	-51.69	1.00	4.75	H	Pass
2544	-45.88	-13	-32.88	-59.06	-47.86	1.30	5.44	H	Pass
3393	-53.88	-13	-40.88	-66.71	-57.69	1.57	7.53	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1696	-49.68	-13	-36.68	-60.69	-51.28	1.00	4.75	V	Pass
2544	-41.13	-13	-28.13	-54.74	-45.26	1.30	5.44	V	Pass
3393	-50.48	-13	-37.48	-65.52	-56.44	1.57	7.53	V	Pass

**<Low Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3700	-44.63	-13	-31.63	-59.25	-51.2	1.67	8.24	H	Pass
5548	-44.63	-13	-31.63	-64.94	-51.7	2.65	9.72	H	Pass
7400	-39.86	-13	-26.86	-67.14	-49	2.46	11.60	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3700	-43.73	-13	-30.73	-59.77	-50.3	1.67	8.24	V	Pass
5548	-34.03	-13	-21.03	-54.12	-41.1	2.65	9.72	V	Pass
7401	-41.16	-13	-28.16	-67.97	-50.3	2.46	11.60	V	Pass



<Middle Channel>

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3756	-36.18	-13	-23.18	-51.5	-42.8	1.68	8.31	H	Pass
5639	-39.25	-13	-26.25	-59.81	-46.3	2.71	9.76	H	Pass
7522	-39.11	-13	-26.11	-66.26	-48.5	2.42	11.81	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dBm)	(dB)	(dBm)	(dBm)	(dBm)	(dB)	(dBi)		
3756	-39.98	-13	-26.98	-56.26	-46.6	1.68	8.31	V	Pass
5639	-40.05	-13	-27.05	-60.45	-47.1	2.71	9.76	V	Pass
7520	-40.21	-13	-27.21	-67.5	-49.6	2.42	11.81	V	Pass

**<High Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3819	-38.62	-13	-25.62	-54.39	-45.3	1.70	8.38	H	Pass
5730	-39.07	-13	-26.07	-60.31	-46.1	2.76	9.79	H	Pass
7641	-37.70	-13	-24.70	-64.51	-47.2	2.38	11.88	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3819	-37.52	-13	-24.52	-54.56	-44.2	1.70	8.38	V	Pass
5730	-37.47	-13	-24.47	-58.69	-44.5	2.76	9.79	V	Pass
7641	-40.10	-13	-27.10	-66.29	-49.6	2.38	11.88	V	Pass

**<Low Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3700	-48.63	-13	-35.63	-63.68	-55.2	1.67	8.24	H	Pass
5550	-46.43	-13	-33.43	-66.91	-53.5	2.65	9.72	H	Pass
7401	-40.66	-13	-27.66	-68.22	-49.8	2.46	11.60	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	Gain	(H/V)	
3700	-46.63	-13	-33.63	-62.92	-53.2	1.67	8.24	V	Pass
5548	-39.13	-13	-26.13	-59.9	-46.2	2.65	9.72	V	Pass
7401	-41.36	-13	-28.36	-68.33	-50.5	2.46	11.60	V	Pass

**<Middle Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3756	-45.18	-13	-32.18	-60.46	-51.8	1.68	8.31	H	Pass
5639	-43.05	-13	-30.05	-63.72	-50.1	2.71	9.76	H	Pass
7515	-39.72	-13	-26.72	-67.27	-49.1	2.42	11.81	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA Reading	S.G. Power	TX Cable loss	TX Antenna Gain	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3756	-44.18	-13	-31.18	-61.21	-50.8	1.68	8.31	V	Pass
5639	-41.35	-13	-28.35	-62.06	-48.4	2.71	9.76	V	Pass
7520	-41.11	-13	-28.11	-68.07	-50.5	2.42	11.81	V	Pass

**<High Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3819	-45.72	-13	-32.72	-61.46	-52.4	1.70	8.38	H	Pass
5730	-41.37	-13	-28.37	-62.33	-48.4	2.76	9.79	H	Pass
7640	-41.10	-13	-28.10	-67.2	-50.6	2.38	11.88	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3819	-44.52	-13	-31.52	-60.88	-51.2	1.70	8.38	V	Pass
5730	-37.67	-13	-24.67	-58.7	-44.7	2.76	9.79	V	Pass
7641	-40.70	-13	-27.70	-67.16	-50.2	2.38	11.88	V	Pass

**<Low Channel>**

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1656	-47.09	-13	-34.09	-55.01	-48.82	0.98	4.86	H	Pass
2480	-44.48	-13	-31.48	-57.19	-46.39	1.28	5.34	H	Pass
3305	-49.77	-13	-36.77	-64.09	-53.22	1.54	7.14	H	Pass

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1648	-47.62	-13	-34.62	-58.09	-49.38	0.98	4.89	V	Pass
2480	-42.48	-13	-29.48	-55.7	-44.39	1.28	5.34	V	Pass
3304	-46.88	-13	-33.88	-62.22	-50.32	1.54	7.14	V	Pass

**<Middle Channel>**

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1672.8	-47.15	-13	-34.15	-55.54	-48.83	0.99	4.82	H	Pass
2509.2	-43.73	-13	-30.73	-56.98	-45.69	1.29	5.41	H	Pass
3345.6	-50.83	-13	-37.83	-64.72	-54.44	1.56	7.32	H	Pass

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1672.8	-48.71	-13	-35.71	-59.46	-50.39	0.99	4.82	V	Pass
2509.2	-43.16	-13	-30.16	-56.2	-45.12	1.29	5.41	V	Pass
3345.6	-47.94	-13	-34.94	-62.98	-51.55	1.56	7.32	V	Pass

**<High Channel>**

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1696	-47.71	-13	-34.71	-56.34	-49.31	1.00	4.75	H	Pass
2539	-42.04	-13	-29.04	-54.83	-44.02	1.30	5.43	H	Pass
3385	-49.91	-13	-36.91	-63.7	-53.69	1.57	7.49	H	Pass

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1692.8	-49.67	-13	-36.67	-59.98	-51.29	1.00	4.76	V	Pass
2539.2	-43.29	-13	-30.29	-57.18	-45.27	1.30	5.43	V	Pass
3385.6	-46.90	-13	-33.90	-62.36	-50.68	1.57	7.49	V	Pass



<Low Channel>

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3427	-48.60	-13	-35.60	-62.87	-54.7	1.58	7.68	H	Pass
5137	-47.02	-13	-34.02	-65.64	-54.3	2.42	9.70	H	Pass
6849	-41.62	-13	-28.62	-67.18	-49.6	2.64	10.62	H	Pass

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3427	-45.40	-13	-32.40	-61.36	-51.5	1.58	7.68	V	Pass
5135	-45.01	-13	-32.01	-63.74	-52.3	2.41	9.70	V	Pass
6843	-42.03	-13	-29.03	-67	-50	2.64	10.61	V	Pass

**<Middle Channel>**

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	loss	Gain	(H/V)	
3462	-46.96	-13	-33.96	-61.86	-53.2	1.59	7.83	H	Pass
5191	-44.85	-13	-31.85	-63.72	-52.1	2.45	9.70	H	Pass
6930	-41.10	-13	-28.10	-67.57	-49.2	2.61	10.72	H	Pass

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3462	-45.86	-13	-32.86	-61.31	-52.1	1.59	7.83	V	Pass
5198	-44.25	-13	-31.25	-63.02	-51.5	2.45	9.70	V	Pass
6930	-42.20	-13	-29.20	-67.85	-50.3	2.61	10.72	V	Pass

**<High Channel>**

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3504	-49.00	-13	-36.00	-63.64	-55.4	1.61	8.00	H	Pass
5261	-46.89	-13	-33.89	-66.18	-54.1	2.49	9.70	H	Pass
7010	-40.87	-13	-27.87	-67.53	-49.1	2.59	10.82	H	Pass

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3504	-48.20	-13	-35.20	-63.98	-54.6	1.61	8.00	V	Pass
5254	-46.98	-13	-33.98	-66.12	-54.2	2.48	9.70	V	Pass
7010	-41.87	-13	-28.87	-67.64	-50.1	2.59	10.82	V	Pass

**<Low Channel>**

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-47.93	-13	-34.93	-63.24	-54.5	1.67	8.24	H	Pass
5555	-46.83	-13	-33.83	-67.43	-53.9	2.66	9.72	H	Pass
7410	-40.14	-13	-27.14	-67.5	-49.3	2.46	11.62	H	Pass

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-49.23	-13	-36.23	-65.38	-55.8	1.67	8.24	V	Pass
5555	-46.43	-13	-33.43	-66.79	-53.5	2.66	9.72	V	Pass
7403	-40.45	-13	-27.45	-67.5	-49.6	2.46	11.61	V	Pass

**<Middle Channel>**

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3756	-44.58	-13	-31.58	-60.3	-51.2	1.68	8.31	H	Pass
5639	-45.05	-13	-32.05	-65.93	-52.1	2.71	9.76	H	Pass
7520	-40.51	-13	-27.51	-67.8	-49.9	2.42	11.81	H	Pass

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3763	-48.07	-13	-35.07	-64.47	-54.7	1.69	8.32	V	Pass
5646	-45.05	-13	-32.05	-65.5	-52.1	2.71	9.76	V	Pass
7520	-40.01	-13	-27.01	-67.22	-49.4	2.42	11.81	V	Pass

**<High Channel>**

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	loss	Gain	(H/V)	
3812	-44.83	-13	-31.83	-60.42	-51.5	1.70	8.37	H	Pass
5723	-41.56	-13	-28.56	-62.64	-48.6	2.75	9.79	H	Pass
7634	-40.71	-13	-27.71	-67.2	-50.2	2.39	11.88	H	Pass

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	46~48%						
Test Engineer :	Eric Shih and Ken Wu and Derrk Chen	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3812	-43.03	-13	-30.03	-59.55	-49.7	1.70	8.37	V	Pass
5723	-44.86	-13	-31.86	-65.81	-51.9	2.75	9.79	V	Pass
7634	-41.11	-13	-28.11	-67.47	-50.6	2.39	11.88	V	Pass



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 09, 2014	Aug. 07, 2014	Jun. 08, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Sep. 11, 2014	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Sep. 11, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 19, 2014	Sep. 11, 2014	Aug. 18, 2015	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz	Mar. 17, 2014	Sep. 11, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Nov. 29, 2013	Sep. 11, 2014	Nov. 28, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Sep. 11, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Sep. 11, 2014	N/A	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Sep. 11, 2014	Oct. 02, 2014	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.50
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