DDM Brands LLC

GSM Mobile Phone

Model: Clasico YZ300S

Serial Model: Clasico YZ300R ,Clasico YZ300G, Clasico YZ300B

14 December, 2011
Report No.: 11070166-FCC-RF-GSM
(This report supersedes NONE)

Modifications made to the product : None

This Test Report is Issued Under the Authority of:	
Peter Cai	Alex Liu
Peter Cai **Test Engineer**	**Alex Liu** **Technical Manager**

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All Test Data Presented in this report is only applicable to presented Test sample.

RF Test Report

To: FCC Part 22(H), 24(E):2011

SIEMIC, INC.
Accessing global markets

Laboratory Introduction

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Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom
EU	NB, NIST	EMC,RF,Safety,Telecom

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CONTENTS

1 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the DDM Brands LLC , GSM Mobile Phone , and model: Clasico YZ300S against the current Stipulated Standards. The GSM Mobile Phone has demonstrated compliance with the FCC Part 22(H), 24(E):2011
The test has demonstrated that this unit complies with stipulated standards.

EUT Information

EUT Description	:	GSM Mobile Phone
Model No	:	Clasico YZ300S
Serial Model	:	Clasico YZ300R ,Clasico YZ300G, Clasico YZ300B
Input Power	:	Powered by Power Adapter: Trade Name :YEZZ Model No.: YW15 Input: AC110-240V, 50/60Hz, 0.15A MAX Output: DC5V, 500 mA Li-ion Battery: Trade Name :YEZZ Model No.: YB100 Rating: 3.7V Capacity: 800 mAh
Maximum Conducted Peak Power to Antenna	:	GSM850: 31.38 dBm GSM850(GPRS) (Class 8) : 31.15 dBm PCS1900: 30.37 dBm PCS1900(GPRS) (Class 8) : 30.06 dBm
Maximum Radiated ERP/EIRP	:	GSM850: 27.94 dBm) / ERP PCS1900: 26.42 dBm) / EIRP
Classification Per Stipulated Test Standard	:	FCC Part 22(H), 24(E):2011

2 TECHNICAL DETAILS

Purpose	Compliance testing of GSM Mobile Phone model Clasico YZ300S with stipulated standard
Applicant / Client	DDM Brands LLC 1612 NW, 84TH Ave. Miami, Florida, U.S.A 33126
Manufacturer	DDM Brands LLC 1612 NW, 84TH Ave. Miami, Florida, U.S.A 33126
Laboratory performing the tests	SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com
Test report reference number	11070166-FCC-RF-GSM
Date EUT received	5 December, 2011
Standard applied	FCC Part 22(H), 24(E):2011
Dates of test	From 10 December,2011 to 13 December,2011
No of Units:	#1
Equipment Category:	PCE
Trade Name:	B mobile
Model Name:	Clasico YZ300S
RF Operating Frequency (ies)	Bluetooth: 2402MHz-2480MHz GSM850 TX : 824.2 ~ 848.8 MHz RX :869.2 ~ 893.8 MHz PCS1900 TX : 1850.2 ~ 1909.8 MHz RX :1930.2 ~ 1989.8 MHz
Number of Channels:	Bluetooth:79 300 (PCS1900) and 125 (PCS850)
Modulation:	Bluetooth: GFSK GSM / GPRS : GMSK
GPRS Multi-slot class	8/10/12
FCC ID:	A4JCLASICYZ300

3 MODIFICATION

NONE

4 TEST SUMMARY

The product was tested in accordance with the following specifications. All testing has been performed according to below product classification:

Test Results Summary

FCC Rules	Description of Test	Result
§1.1307, §2.1093	RF Exposure (SAR)	Compliance*
§2.1046; § 22.913 (a); § 24.232 (c)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	N/A
§ 2.1049; § 22.905 § 22.917; § 24.238	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053 § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance
§ 2.1055 § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different.

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 §1.1307, §2.1093- RF Exposure (SAR)

Test Result

Compliance

The EUT is a portable device, thus requires SAR evaluation; please refer to SIEMIC SAR Report: 11070166-FCC (SAR).

5.2 §2.1046 ;§ 22.913 (a); § 24.232 (c)- RF Output Power

1. Conducted Measurement
   EUT was set for low , mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
3. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

4. Test date : :10 December, 2011
   Tested By : Peter Cai

Procedures:

For Conducted Power:

1. The transmitter output port was connected to base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different test mode.

For ERP/EIRP:

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. Measurement was made at a distance of 3 m.
3. The measuring antenna was set to 1 meter away from the ground plain.
4. Maximization of the emissions was carried out by rotating the EUT, and adjusting the antenna azimuth.
5. The test was done in both horizontal and vertical antenna polarizations.
6. The measurement shall be made with the transmitter set to the lowest operating frequency and with the transmitter set to the highest operating frequency.
7. Sample Calculation: Corrected Amplitude = Raw Amplitude (dBμV/m) + ACF(dB) + Cable Loss(dB)

Test Result: Pass

Remark:
Conducted Burst Average power for reporting purposes only.

Conducted Power

GSM Mode:

Burst Average Power (dBm)								
Band	GSM850				GSM1900			
Channel	128	190	251	Tune up Power tolerant	512	661	810	Tune up Power tolerant
Frequency (MHz)	824.2	836.6	848.8	/	1850.2	1880	1909.8	/
GSM Voice (1 uplink)	31.28	31.33	31.48	33±2	30.37	30.24	30.19	30±2
GPRS Multi-Slot Class 8 (1 uplink)	31.08	31.10	31.15	33±2	30.06	29.89	29.83	30±2
GPRS Multi-Slot Class 10 (2 uplink)	30.61	30.69	30.82	31±2	29.55	29.40	29.32	28±2
GPRS Multi-Slot Class 12 (4 uplink)	28.85	28.92	29.05	29±2	26.80	26.72	26.64	26±2
Remark : GPRS, CS1 coding scheme. Multi-Slot Class 8 , Support Max 4 downlink, 1 uplink , 5 working link Multi-Slot Class 10 , Support Max 4 downlink, 2 uplink , 5 working link Multi-Slot Class 12 , Support Max 4 downlink, 4 uplink , 5 working link								

Note: Since GSM mode has higher power, so the test items below were not performed to GPRS mode.

ERP & EIRP

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Factors (dB)	Absolute Level (dBm)	Limit (dBm)
824.20	29.04	V	-1.20	27.84	38.45
824.20	26.44	H	-1.20	25.24	38.45
836.60	29.00	V	-1.20	27.80	38.45
836.60	26.40	H	-1.20	25.20	38.45
848.80	29.14	V	-1.20	27.94	38.45
848.80	26.51	H	-1.20	25.31	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Factors (dB)	Absolute Level (dBm)	Limit (dBm)
1850.20	20.12	V	6.30	26.42	33.00
1850.20	17.90	H	6.30	24.20	33.00
1880.00	20.09	V	6.30	26.39	33.00
1880.00	17.83	H	6.30	24.13	33.00
1909.80	19.83	V	6.30	26.13	33.00
1909.80	17.77	H	6.30	24.07	33.00

Note: *Factors= Antenna Gain Correction-Cable Loss*

5.3 §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

5.4 §2.1049, §22.917, §22.905 & §24.238 - OCCUPIED BANDWIDTH

1. Conducted Measurement
   EUT was set for low , mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Environmental Conditions — Temperature 23°C; Relative Humidity 50%; Atmospheric Pressure 1019mbar
3. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
4. Test date : :10 December, 2011
   Tested By : Peter Cai

Procedures:

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.

2. The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers

Results: Pass

GMSK:

Cellular Band (Part 22H)

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
190	836.6	250.0000	337.0000

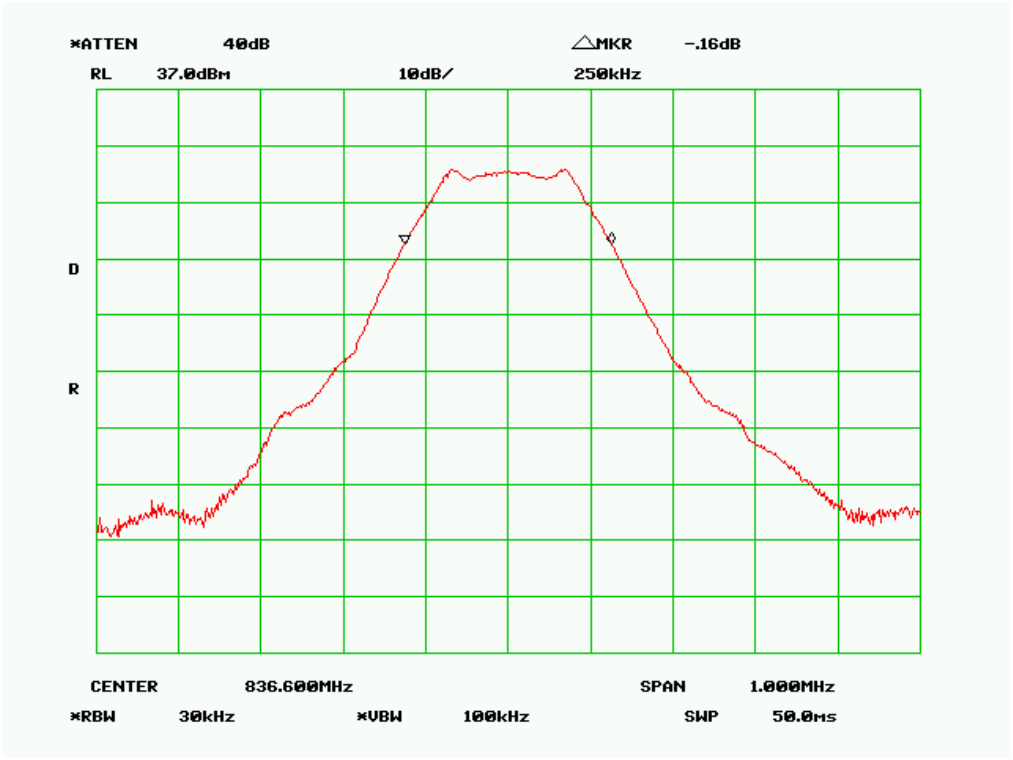
PCS Band (Part 24E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
661	1880.0	255.0000	345.0000

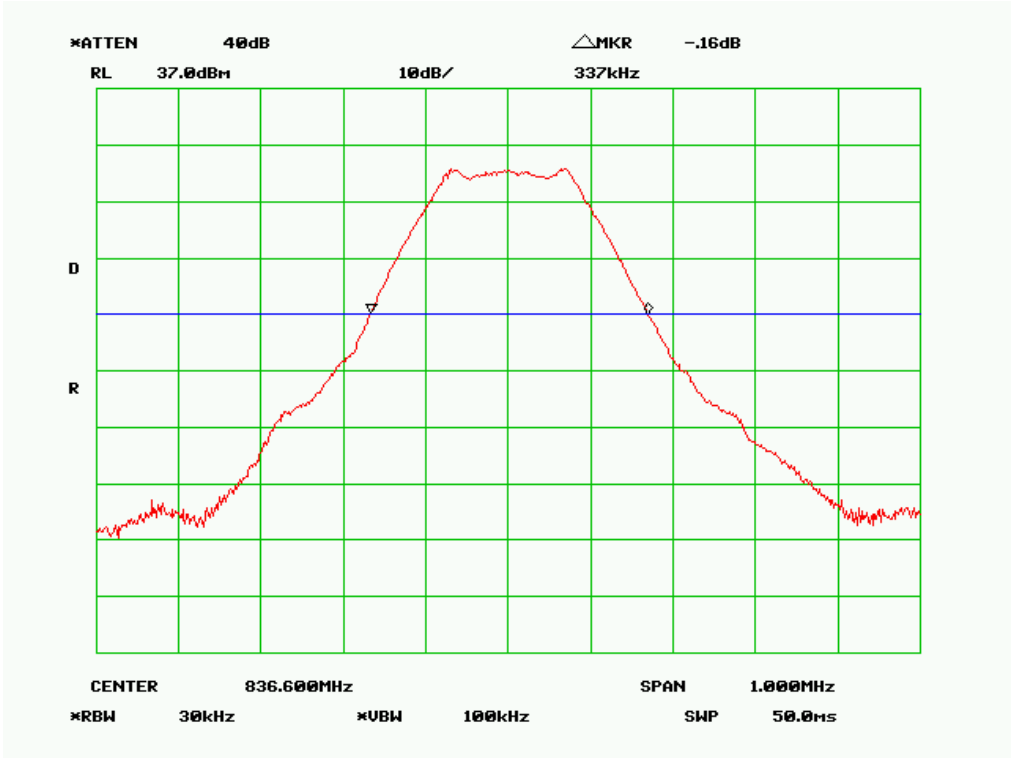
Please refer to the following plots.

Cellular Band (Part 22H)

99% Occupied Bandwidth

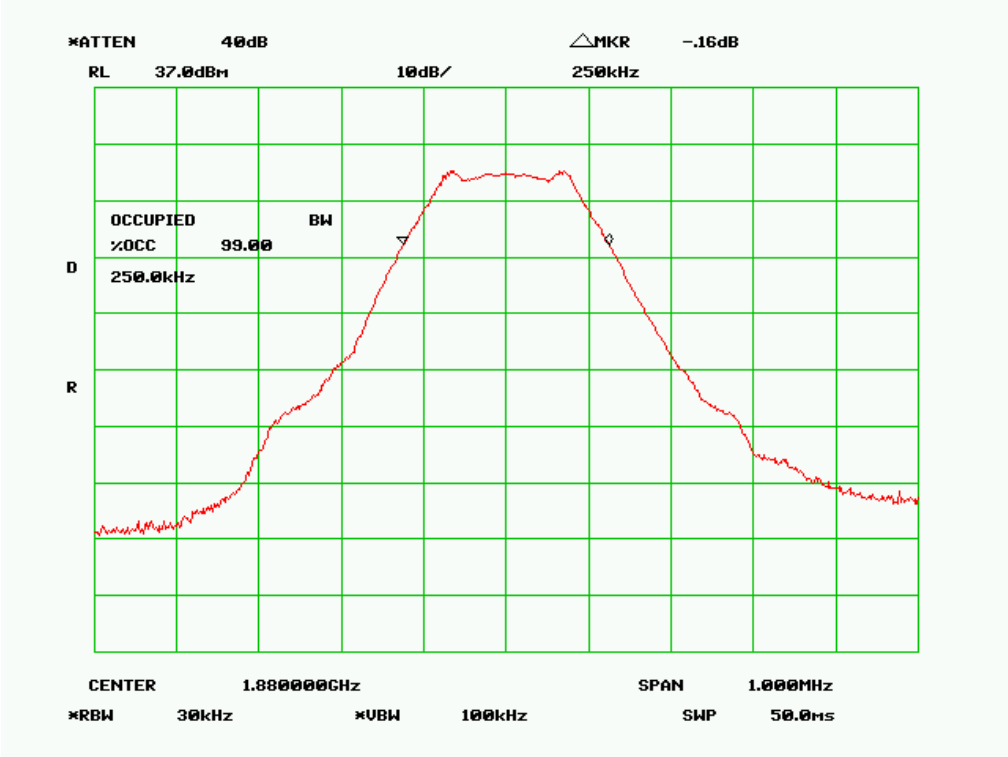


26 dB Bandwidth

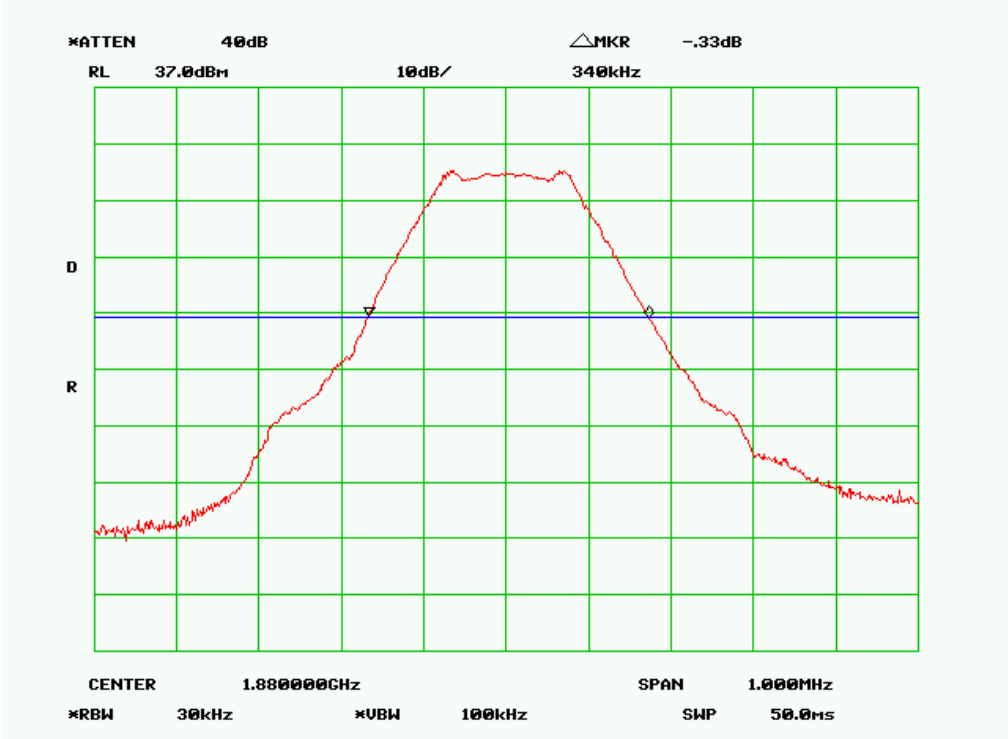


PCS Band (Part 24E)

99% Occupied Bandwidth



26 dB Bandwidth



5.5 §2.1051, §22.917(a) & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

1. Conducted Measurement
   EUT was set for low , mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
3. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

4. Test date : :10 December, 2011
   Tested By : Peter Cai

The power of any emission outside of the authorized operating frequency ranges must be lower thanthe transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

Procedures:

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The Band Edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.

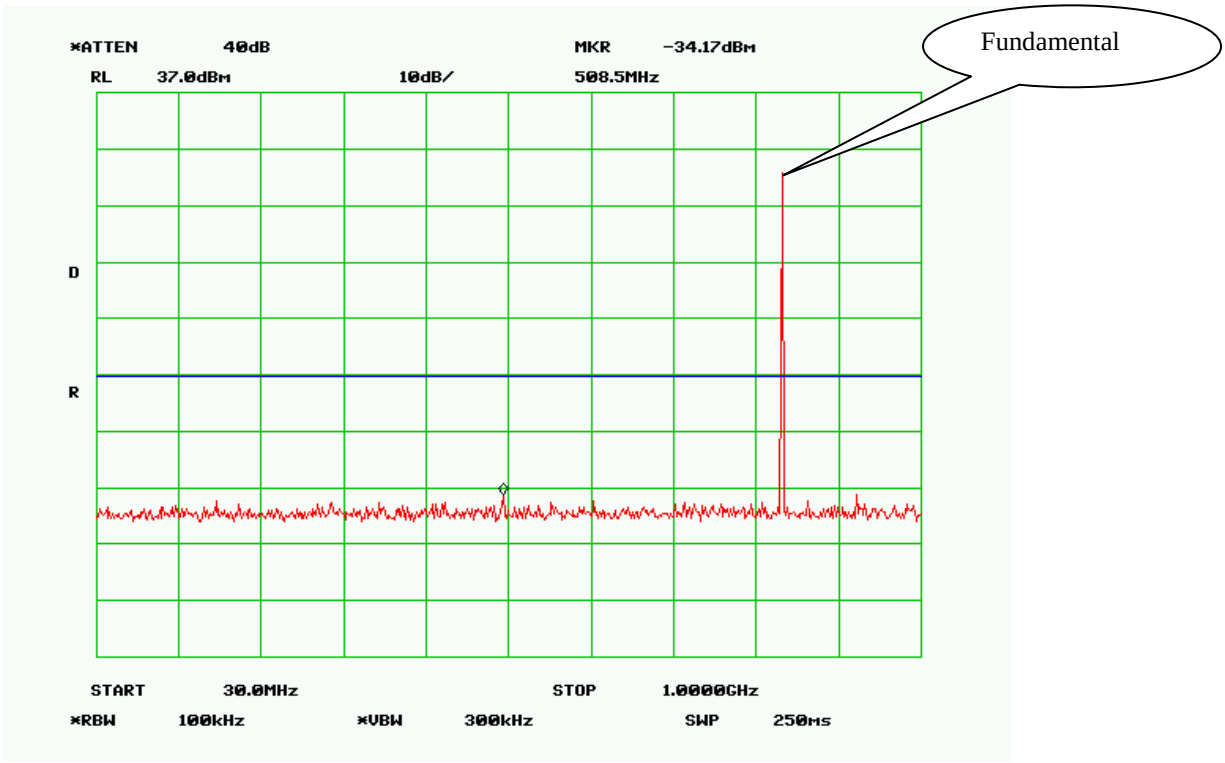
Test Result: Pass

Refer to the attached plots.

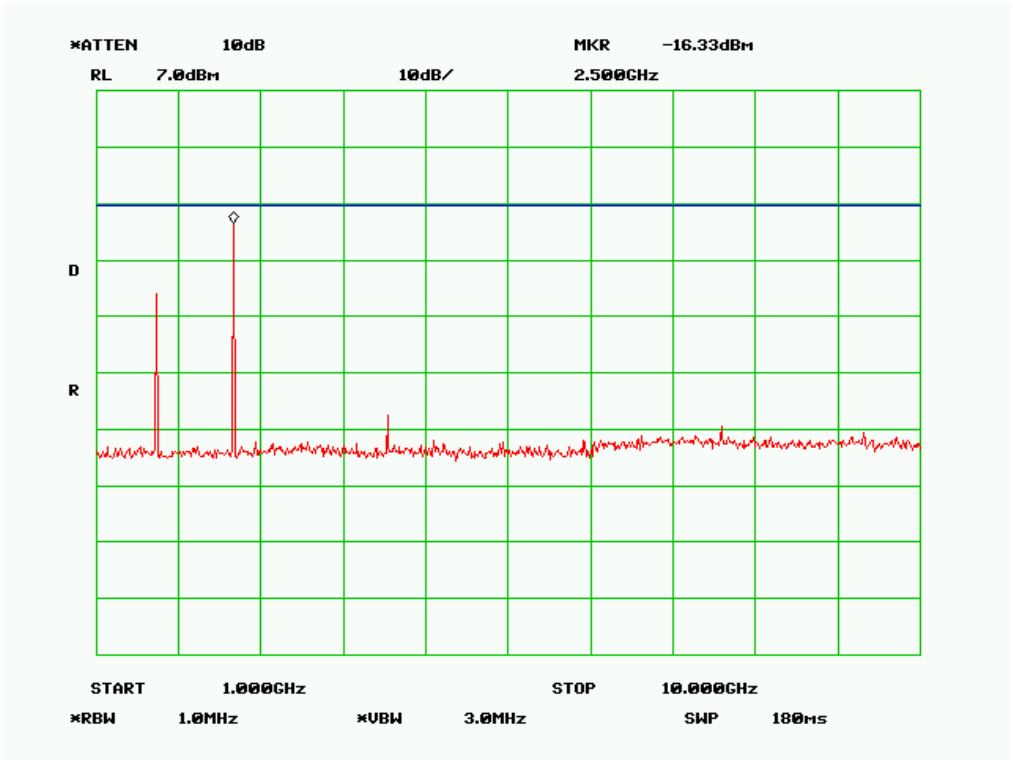
Worst Case:

Cellular Band (Part 22H)

30 MHz-1 GHz – GSM850 Middle Channel

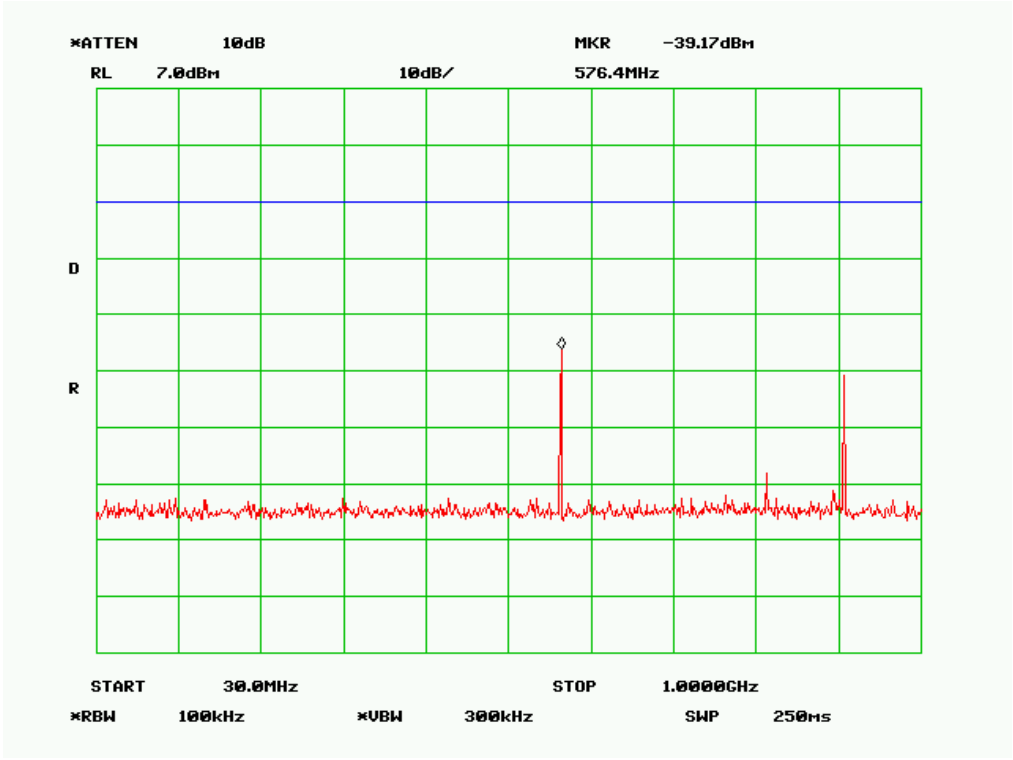


1 GHz-10 GHz – GSM850 Middle Channel

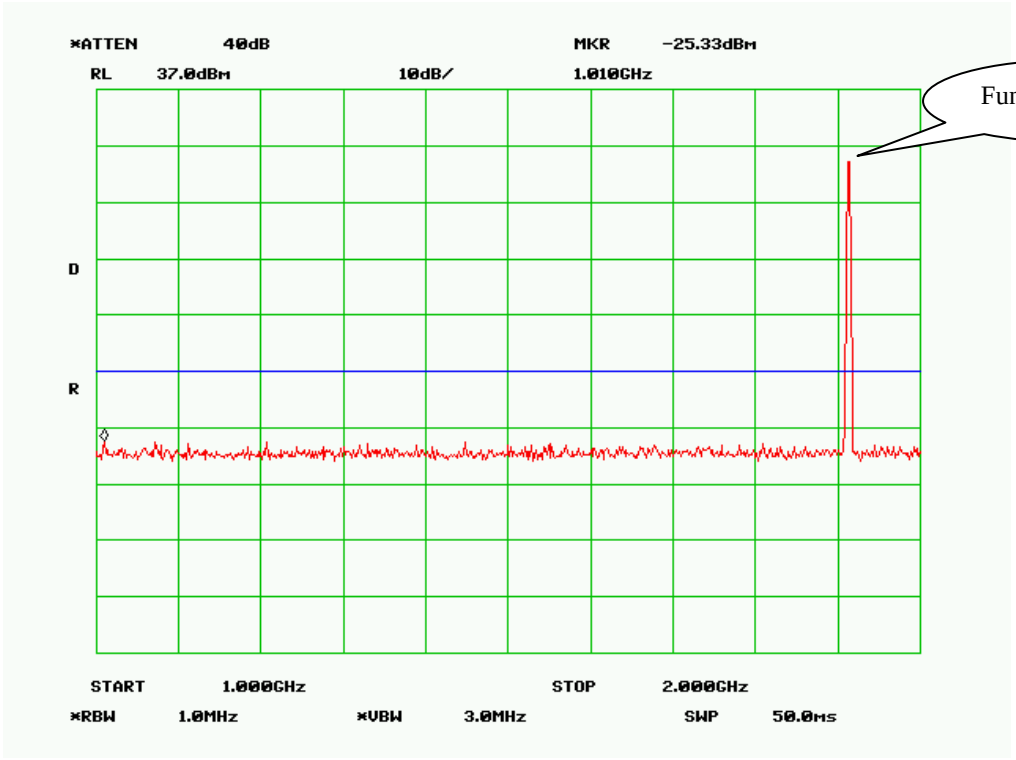


PCS Band (Part24E)

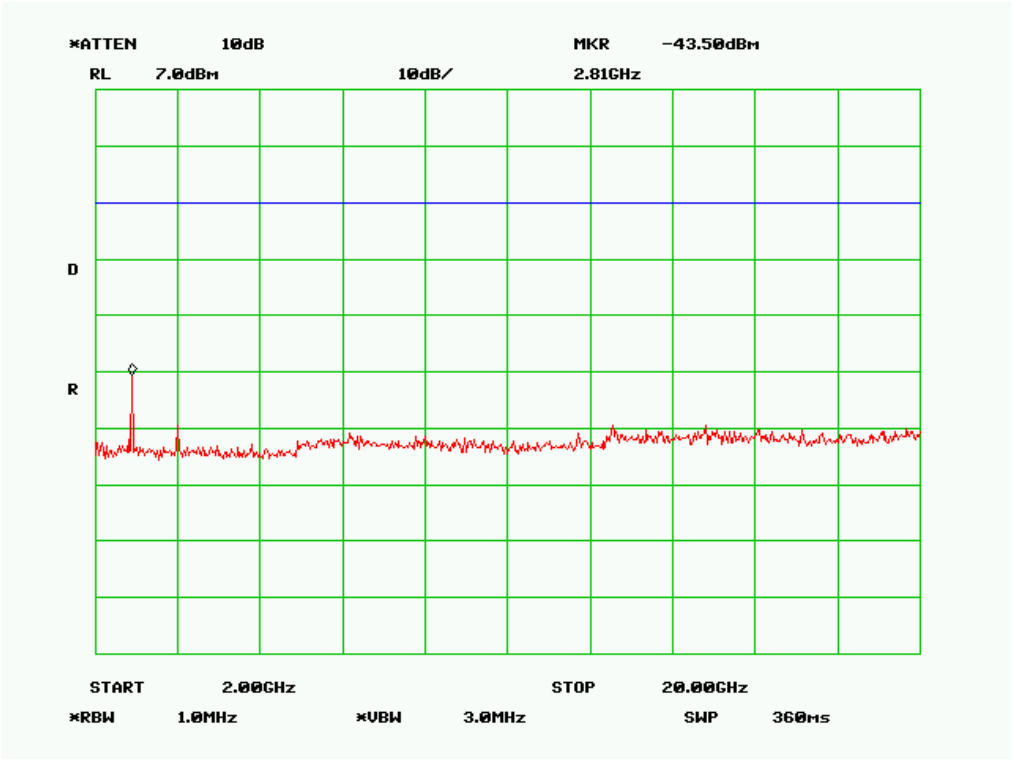
30 MHz-1 GHz – PCS1900 Middle Channel



1 GHz-2 GHz – PCS1900 Middle Channel



2 GHz-20 GHz – PCS1900 Middle Channel



5.6 §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Radiated Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 1GHz – 40GH is +6.0dB (for EUTs < 0.5m X 0.5m X 0.5m).
4. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

Test date : :10 December, 2011
Tested By : Peter Cai

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.

Procedures: Equipment was setup in a semi-anechoic chamber. For measurements above 1 GHz an average measurement was taken with a 10Hz video bandwidth. The EUT was tested at low, mid and high with the highest output power. An emission was scan up to 10th harmonic of the operating frequency.

Sample Calculation:

EUT Field Strength = Raw Amplitude (dBµV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)

Test Result: Pass

Cellular Band (Part 22H)

Low channel

Frequency (GHz)	Substituted level (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
540.22	-56.12	31	1.2	V	0	0.52	0	-56.64	-13	-43.64
720.64	-58.32	11	1.2	H	0	0.61	0	-58.93	-13	-45.93
1648.4	-33.62	21	1	V	6.2	0.84	0	-28.26	-13	-15.26
1648.4	-35.37	15	1.1	H	6.2	0.84	0	-30.01	-13	-17.01

Middle channel

Frequency (GHz)	Substituted level (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
148.78	-55.35	32	1.2	V	0	0.26	0	-55.61	-13	-42.61
221.24	-57.31	79	1.1	H	0	0.31	0	-57.62	-13	-44.62
1673.2	-35.62	41	1.3	V	6.2	0.84	0	-29.76	-13	-17.26
1673.2	-34.37	6	1.1	H	6.2	0.84	0	-31.39	-13	-16.01

High channel

Frequency (GHz)	Substituted level (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
148.78	-54.24	22	1.2	V	0	0.26	0	-54.50	-13	-41.50
197.62	-57.68	31	1.3	H	0	0.30	0	-57.98	-13	-44.98
1697.6	-35.31	2	1.1	V	6.2	0.84	0	-29.95	-13	-16.95
1697.6	-37.63	67	1.2	H	6.2	0.84	0	-32.27	-13	-19.27

PCS Band (Part24E)

Low channel

Frequency (GHz)	Substituted level (dBm	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
541.16	-55.71	69	1.2	V	0	0.52	0	-56.23	-13	-43.23
906.88	-57.53	21	1.0	H	0	0.74	0	-58.27	-13	-45.27
3700.4	-35.35	78	1.1	V	6.9	1.36	0	-29.81	-13	-16.81
3700.4	-42.63	18	1.1	H	6.9	1.36	0	-37.09	-13	-24.09

Middle channel

Frequency (GHz)	Substituted level (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
187.68	-56.87	36	1.1	V	0	0.30	0	-57.17	-13	-44.17
226.14	-59.15	19	1.2	H	0	0.31	0	-59.46	-13	-46.46
3760	-35.31	21	1.1	V	6.9	1.36	0	-29.77	-13	-16.77
3760	-37.06	334	1.1	H	6.9	1.36	0	-31.52	-13	-18.52

High channel

Frequency (GHz)	Substituted level (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
87.98	-56.87	88	1.2	V	0	0.24	0	-57.11	-13	-44.11
164.75	-58.59	8	1.1	H	0	0.28	0	-58.87	-13	-45.87
3819.6	-35.33	11	1	V	6.9	1.36	0	-29.79	-13	-16.79
3819.6	-37.12	76	1	H	6.9	1.36	0	-31.58	-13	-18.58

5.7 §22.917(a) & §24.238(a) - BAND EDGES

1. Conducted Measurement
   EUT was set for low , mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
3. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

4. Test date : :10 December, 2011
   Tested By : Peter Cai

Standard Requirement: 47 CFR § 22.917(a), § 24.238(a);

The power of any emission outside of the authorized operating frequency ranges must be lower thanthe transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

Procedures:

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The Band Edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.

Test Result: Pass

Refer to the attached plots.

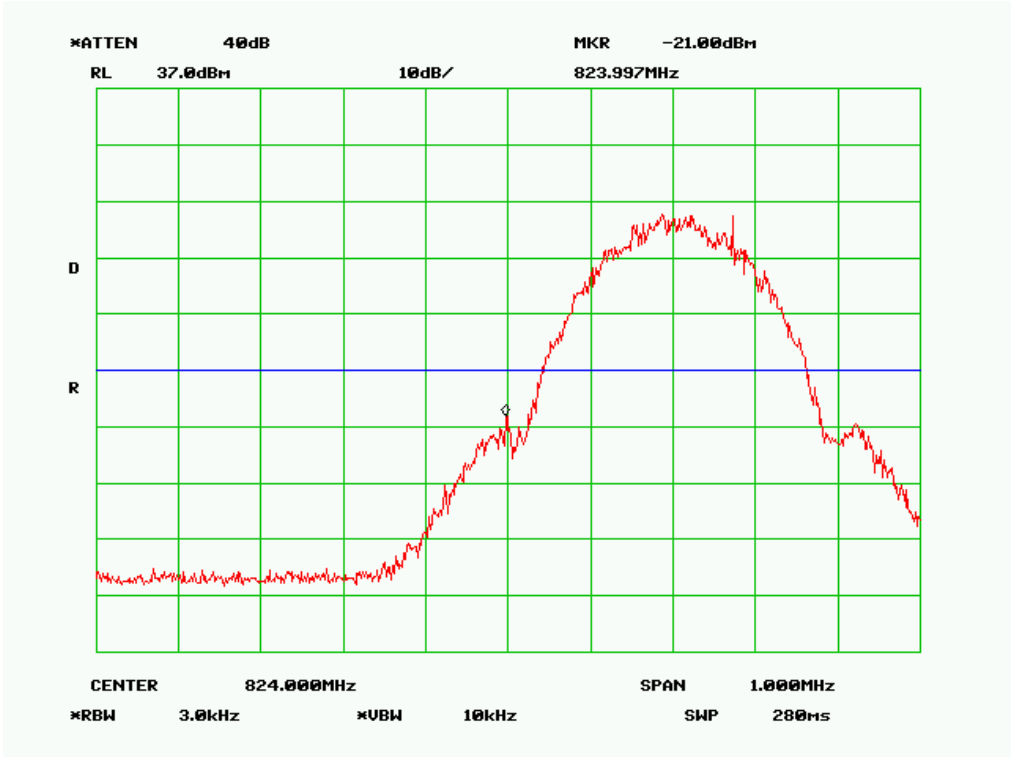
Cellular Band (Part 22H)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.997	-21.00	-13
849.020	-22.50	-13

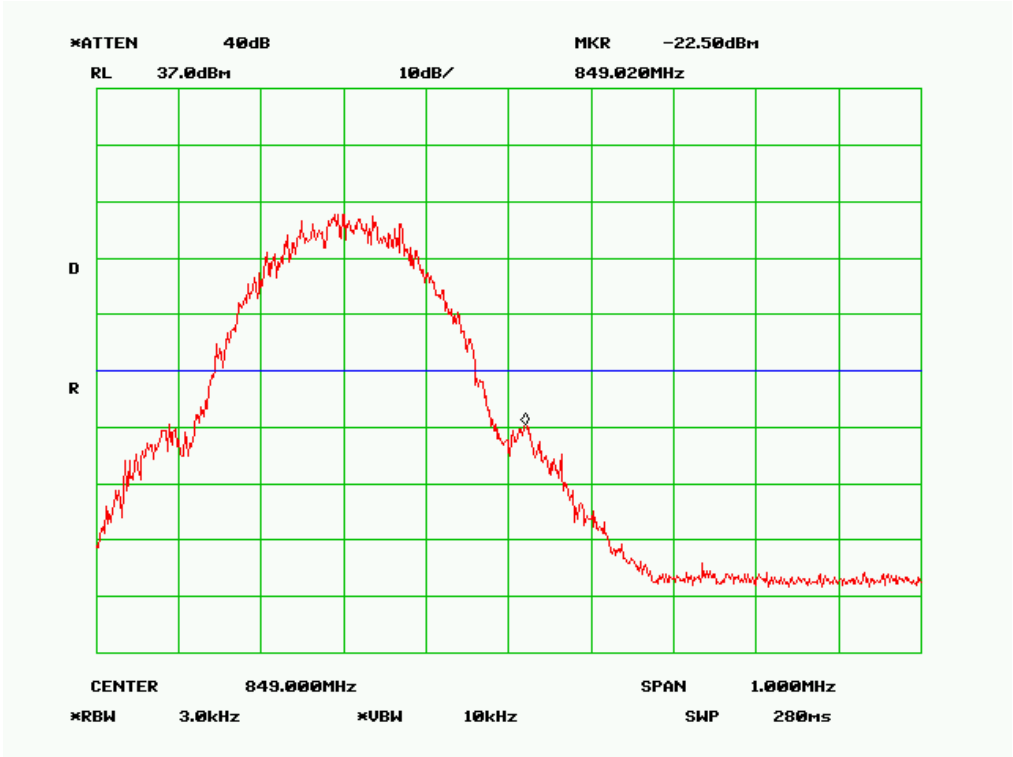
PCS Band (Part 24E)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.983	-26.17	-13
1910.025	-19.50	-13

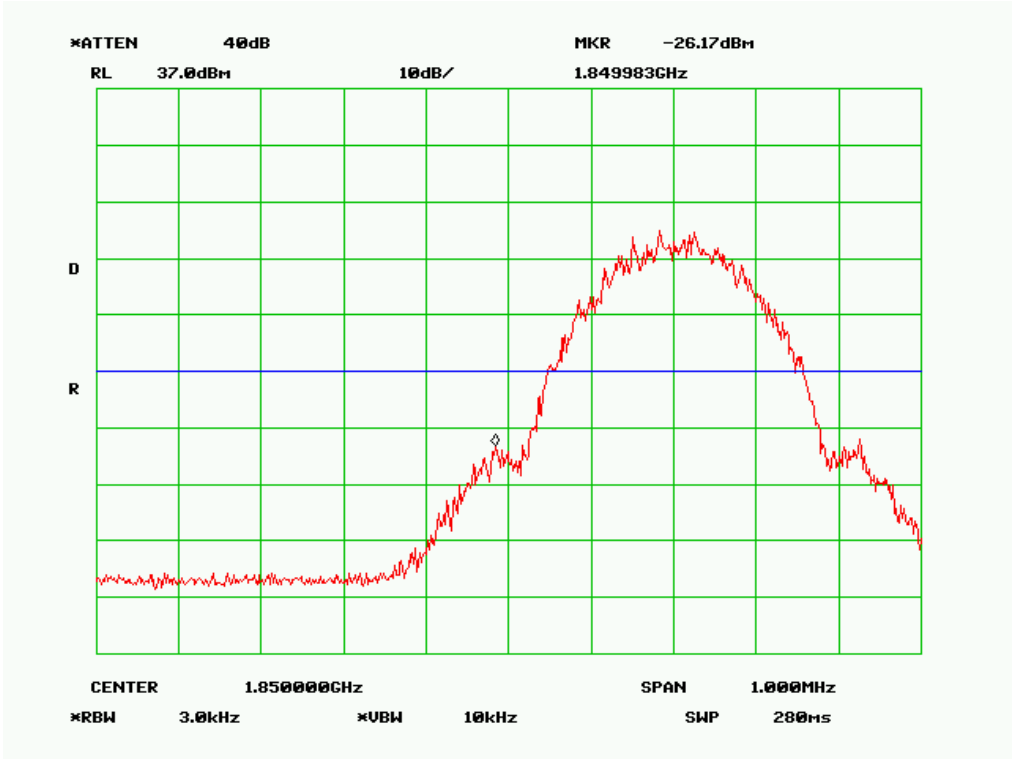
Cellular Band, Lowest Channel



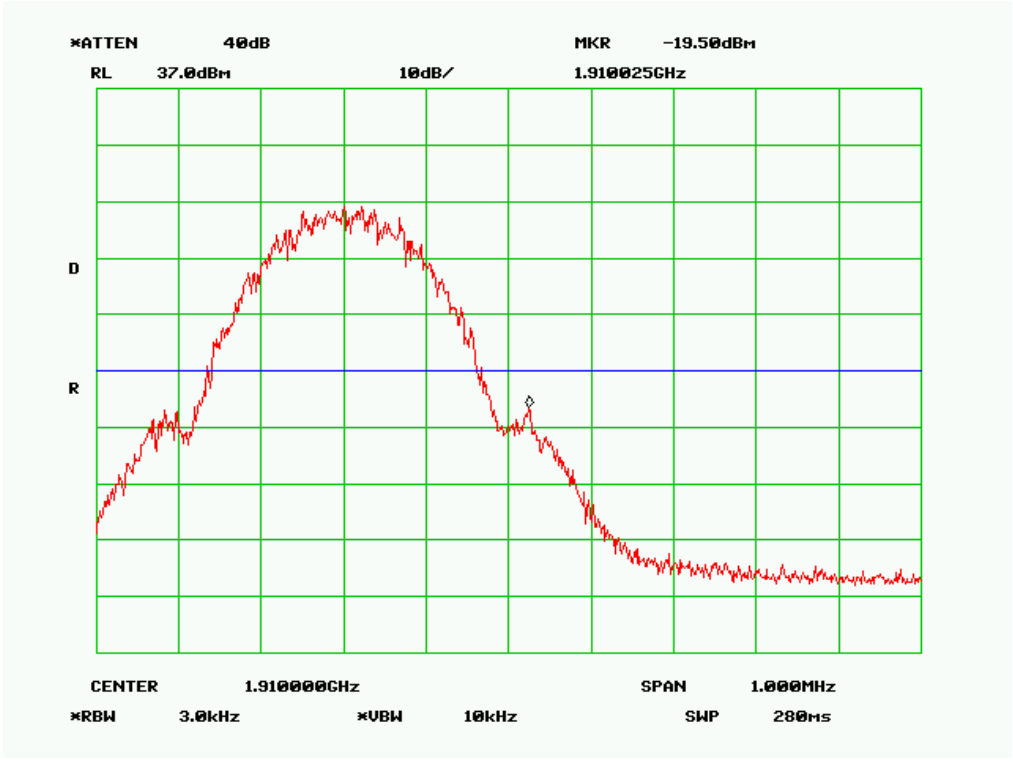
Cellular Band, Highest Channel



PCS Band, Lowest Channel



PCS Band, Highest Channel



5.8 §2.1055, §22.355 & §24.235 - FREQUENCY STABILITY

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.Procedures:

A communication link was established between EUT and base station. The frequency error was monitored and measured by base station under variation of ambient temperature and variation of primary supply voltage..

Limit: The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

Environmental Conditions	Temperature	-10 ~ 50°C
	Relative Humidity	50%
	Atmospheric Pressure	1019mbar

Test date : :13 December, 2011
Tested By : Peter Cai

Results: Pass

Frequency Stability versus Temperature: The Frequency tolerance of the carrier signal shall be maintained within 2.5ppm of the operating frequency over a temperature variation of -10ºC to +55ºC at normal supply voltage.

Cellular Band (Part 22H)

Middle Channel, f_o = 836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-10	3.7	19	0.0227	2.5
0		17	0.0203	2.5
10		18	0.0215	2.5
20		21	0.0251	2.5
30		18	0.0215	2.5
40		17	0.0203	2.5
50		16	0.0191	2.5
55		18	0.0215	2.5
25	4.2	19	0.0227	2.5
	3.5	17	0.0203	2.5

PCS Band (Part 24E)

Middle Channel, f_o = 1880 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-10	3.7	25	0.0133	Compliance
0		27	0.0144	Compliance
10		22	0.0117	Compliance
20		25	0.0133	Compliance
30		27	0.0144	Compliance
40		22	0.0117	Compliance
50		27	0.0144	Compliance
55		25	0.0133	Compliance
25	4.2	25	0.0133	Compliance
	3.5	27	0.0144	Compliance

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Model	Calibration Date	Calibration Due Date
AC Conducted Emissions			
R&S EMI Test Receiver	ESPI3	05/25/2011	05/25/2012
R&S LISN	LI-115	05/25/2011	05/25/2012
R&S LISN	LI-115	05/25/2011	05/25/2012
Universal Radio Communication Tester	CMU200	02/22/2011	02/22/2012
Radiated Emissions			
Spectrum Analyzer	8563E	01/10/2011	01/10/2012
EMI Receiver	ESPI3	05/18/2011	05/18/2012
Antenna(1 ~18GHz)	3115	6/2/2011	6/2/2012
Antenna (30MHz~2GHz)	JB1	05/25/2011	05/25/2012
Chamber	3m	4/13/2011	4/13/2012
Pre-Amplifier(1 ~ 18GHz)	AMF-7D-00101800-30-10P	5/25/2011	5/25/2012
Horn Antenna (18~40GHz)	AH-840	7/23/2011	7/23/2013
Microwave Pre-Amp (18~40GHz)	PA-840	Every 2000 Hours	
Universal Radio Communication Tester	CMU200	02/22/2011	02/22/2012
Signal Analyzer	8665B	1/21/2011	1/21/2012
Temperature/Humidity Chamber	1007H	06/08/2011	06/08/2012

Note: Functional Verification

Annex A. ii RADIATED EMISSIONS TEST DESCRIPTION

EUT Characterisation

EUT characterisation, over the frequency range from 30MHz to 1GHz (for FCC tests, until the 10th harmonic for operating frequencies ≥ 108MHz),, was done in order to minimise radiated emissions testing time while still maintaining high confidence in the test results.

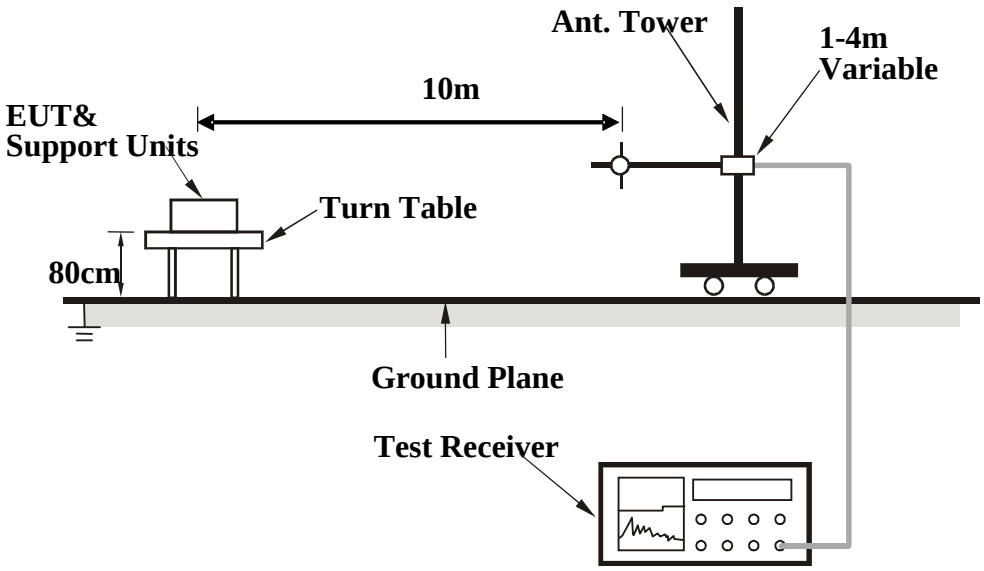
The EUT was placed in the chamber, at a height of about 0.8m on a turntable. Its radiated emissions frequency profile was observed, using a spectrum analyzer /receiver with the appropriate broadband antenna placed 3m or 10m away from the EUT. Radiated emissions from the EUT were maximised by rotating the turntable manually, changing the antenna polarisation and manipulating the EUT cables while observing the frequency profile on the spectrum analyzer / receiver. Frequency points at which maximum emissions occurred, clock frequencies and operating frequencies were then noted for the formal radiated emissions test at the Open Area Test Site (OATS) or EMC 10m chamber.

Test Set-up

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m X 1.0m X 0.8m high, non-metallic table.

2. The filtered power supply for the EUT and supporting equipment were tapped from the appropriate power sockets located on the turntable.

3. The relevant broadband antenna was set at the required test distance away from the EUT and supporting equipment boundary.



Test Method

The following procedure was performed to determine the maximum emission axis of EUT:
1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

Final Radiated Emission Measurement
1. Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site or EMC 10m chamber. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ◦ to 360 ◦ with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.
5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Peak	100 kHz	100 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Description of Radiated Emission Program

This EMC Measurement software run LabView automation software and offers a common user interface for electromagnetic interference (EMI) measurements. This software is a modern and powerful tool for controlling and monitoring EMI test receivers and EMC test systems. It guarantees reliable collection, evaluation, and documentation of measurement results. Basically, this program will run a pre-scan measurement before it proceeds with the final measurement. The pre-scan routine will run the scan on four different antenna heights, 2 antenna polarity, and 360 degrees table rotation. For example, the program was set to run 30 MHz to 1 GHz scan; the program will first start from a meter antenna height and divide the 30 MHz to 1 GHz into 10 separate parts of maximum hold sweeps. Each parts of maximum hold sweep, the program will collect the data from 0 degree to 360 degrees table rotation. After the program complete the 1m scan, the antenna continues to rise to 2m and continue the scan. The step will repeated for all specified antenna height and polarity. This program will perform the Quasi Peak measurement after the signal maximization process and pre-scan routine. The final measurement will be base on the pre-scan data reduction result.

Sample Calculation Example

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. For the limit is employed average value, therefore the peak value can be transferred to average value by subtracting the duty factor. The basic equation with a sample calculation is as follows:

Peak = Reading + Corrected Factor

where
Corr. Factor = Antenna Factor + Cable Factor - Amplifier Gain (if any)
And the average value is

Average = Peak Value + Duty Factor or
Set RBW = 1MHz, VBW = 10Hz.

Note :
If the measured frequencies are fall in the restricted frequency band, the limit employed must be quasi peak value when frequencies are below or equal to 1 GHz. And the measuring instrument is set to quasi peak detector function.

Annex B EUT AND TEST SETUP PHOTOGRAPHS

Please see the attachment

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

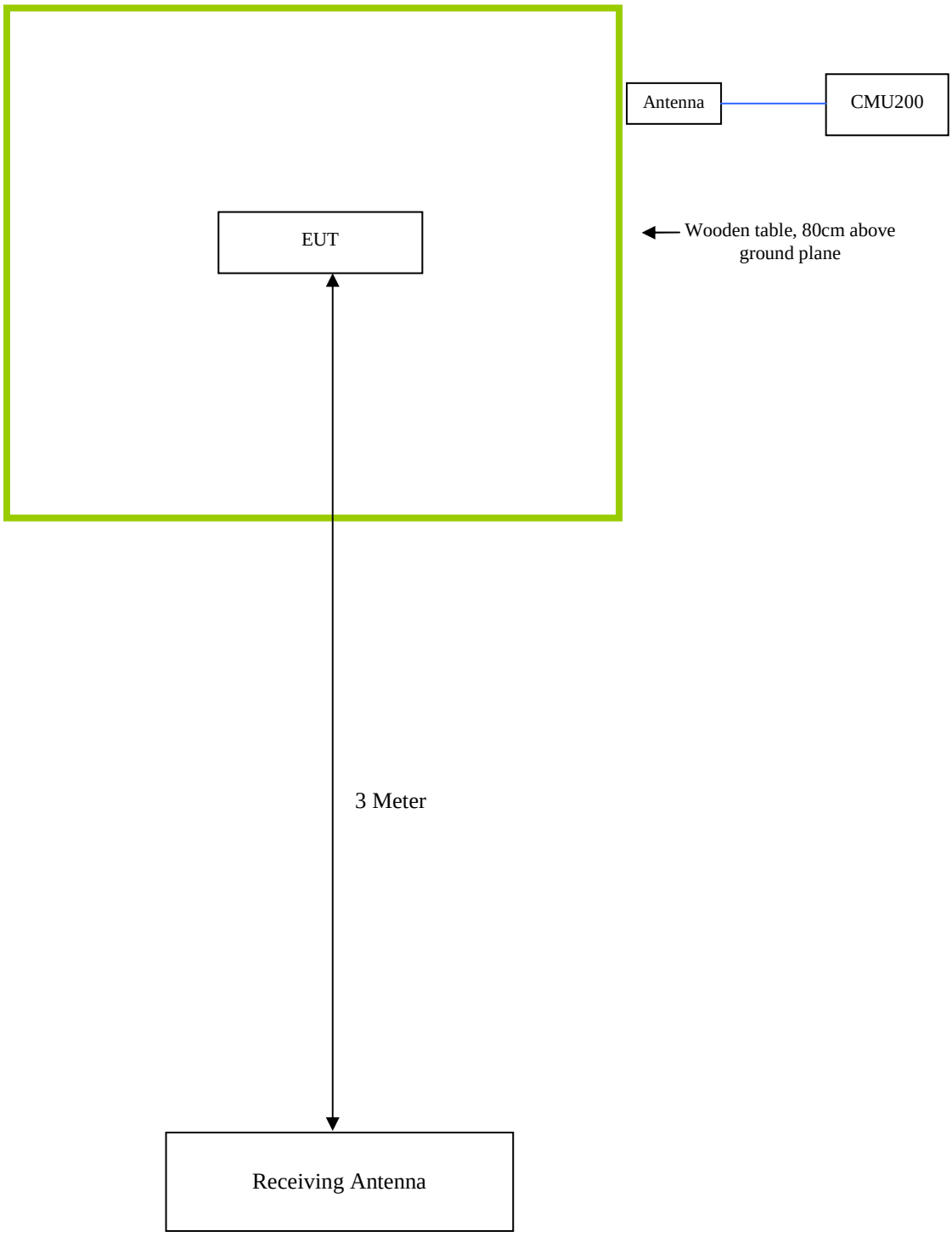
EUT TEST CONDITIONS

Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Manufacturer	Equipment Description (Including Brand Name)	Model & Serial Number	Calibration Date	Calibration Date
A.H. System	Horn Antenna	SAS-200/571	01/10/2011	01/10/2012
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	05/18/2011	05/18/2012

Block Configuration Diagram for Radiated Emission



Annex C.ii. EUT OPERATING CONDITIONS

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
Emissions Testing	The EUT was communicating with base station and set to work at maximum output power.
Others Testing	The EUT was communicating with base station and set to work at maximum output power.

Annex D User Manual, Block Diagram, Circuit Diagram

Please see attachment

Annex E SIEMIC ACCREDITATION

SIEMIC ACREDITATION DETAILS: FCC Test Site Registration No. 986914

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

April 19, 2011

Registration Number: 986914

SIEMIC Nanjing (China) Laboratories
2-1 Longcang Avenue,
Yuhua Economic and Technology Development Park,
Nanjing, 210039
China

Attention: Leslie Bai,

Re: Measurement facility located at 2-1 Longcang Avenue, Nanjing, China
Anechoic chamber (3 meters) and 3&10 meter OATS
Date of Renewal: April 19, 2011

Dear Sir or Madam:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website www.fcc.gov under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Phyllis Parrish
Industry Analyst

SIEMIC ACREDITATION DETAILS: Industry of Canada Test Site Registration No. 4842B

Industry Canada / Industrie Canada

January 25, 2011

OUR FILE: 46405-4842
Submission No: 145222

Siemic Nanjing (China) Laboratories
2-1 Longcang Avenue
Yuhua Economic & Technology Dev. Park, Nanjing
China

Attention: Leslie Bai

Dear Sir/Madame:

The Bureau has received your application for the registration of a 3/10m OATS. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought (Site# 4842B-2). Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please keep for your records the following information:

- The company address code associated to the site(s) located at the above address is: 4842B

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 or later shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 metre OATS or 3 metre chamber). If the test facility is not accredited to ANSI C63.4-2003 or later, the test facility shall submit test data demonstrating full compliance with the ANSI standard. The Bureau will evaluate the filing to determine if recognition shall be granted.

The frequency for re-validation of the test site and the information that is required to be filed or retained by the testing party shall comply with the requirements established by the accrediting organization. However, in all cases, test site re-validation shall occur on an interval not to exceed three years. There is no fee or form associated with an OATS filing. OATS submissions are encouraged to be submitted electronically to the Bureau using the following URL;
http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h_sf00012e.html.

If you have any questions, you may contact the Bureau by e-mail at certification.bureau@ic.gc.ca Please reference our file and submission number above for all correspondence.

Yours sincerely,

Dalwinder Gill
For: Wireless Laboratory Manager
Certification and Engineering Bureau
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