

# SHANGHAI SAND INFORMATION TECHNOLOGY SYSTEM CO., LTD

## POS TERMINAL

Model: PS4000

May 16th 2011

Report No.: 1105012  
(This report supersedes N/A)



Modifications made to the product : None

This Test Report is Issued Under the Authority of:

<i>Eric Chen</i>	<i>Spring Zhou</i>
Eric Chen Compliance Engineer	Spring Zhou Director of Certification

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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)

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Country/Region	Accreditation Body	Scope
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Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
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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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# 1 Executive Summary & EUT information

The purpose of this test programmed was to demonstrate compliance of the Shanghai SAND Information Technology System Co., Ltd Model: PS4000 against the current Stipulated Standards. The POS Terminal have demonstrated compliance with the FCC 22(H):2010 , FCC 24(E):2010.

The test has demonstrated that this unit complies with stipulated standards.

## EUT Information

<b>EUT Description</b>	: POS Terminal
<b>Model No</b>	: PS4000
<b>Serial No</b>	: N/A
<b>Input Power</b>	: Input DC, internal positive and outside negative, voltage scope 9-12V。 PS4000 standard power adapter: 9.5V/4A。
<b>Maximum Conducted Output Power to Antenna</b>	: GSM850(GPRS) (Class 5 ) : 32.19 dBm : GSM1900(GPRS) (Class 0 ) : 30.12 dBm
<b>Maximum Radiated ERP/EIRP</b>	: GPRS850(Class 5 ) :1.74 W (32.40 dBm) / ERP : GPRS1900 (Class 0 ) :1.32 W (31.20 dBm) / EIRP
<b>Classification Per Stipulated Test Standard</b>	: FCC 22(H):2010 , FCC 24(E):2010

## 2 TECHNICAL DETAILS

Purpose	Compliance testing of POS Terminal model PS4000 with stipulated standard
Applicant / Client	Shanghai SAND Information Technology System Co., Ltd Building 22, Germs Park, NO.487 Tianlin Road Shanghai China
Manufacturer	Shanghai SAND Information Technology System Co., Ltd Building 22, Germs Park, NO.487 Tianlin Road Shanghai China
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	1105012
Date EUT received	May 10, 2011
Standard applied	See Page 9
Dates of test (from – to)	May 16, 2011
No of Units:	1
Equipment Category:	Portable Radio
Trade Name:	SAND
Model Name:	PS4000
RF Operating Frequency (ies)	GSM850 : 824.2 ~ 848.8 MHz(TX) / 869.2 ~ 893.8 MHz(RX) GSM1900 : 1850.2 ~ 1909.8 MHz(TX) / 1930.2 ~ 1989.8 MHz(RX)
Number of Channels:	300 (PCS1900) and 125 (PCS850)
Modulation:	GSM / GPRS : GMSK
FCC ID:	XLHPS4000-1103

### 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:

Mobile Device

### Test Results Summary

Test Standard	Description	Pass / Fail
FCC 22(H):2010 FCC 24(E):2010		
2.1046	Conducted Output Power	Pass
22.913(a)(2)	Effective Radiated Power	Pass
24.232(c)	Equivalent Isotropic Radiated Power	Pass
22.917(a) 24.238(a)	Occupied Bandwidth	Pass
22.917(a) 24.238(a)	Band Edge Measurement	Pass
22.917(a) 24.238(a)	Conducted Spurious Emission	Pass
22.917(a) 24.238(a)	Radiated Spurious Emission	Pass
22.355 24.235	Frequency Stability	Pass
N/A	Receiver Spurious Emissions	Pass
ANSI C63.4: 2003		
PS: All measurement uncertainties are not taken into consideration for all presented test result.		

*Note: Testing was perform by configuring EUT to maximum output power status, the declared output power class for diffent*

## 5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

### 5.1 Conducted 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  $\pm 1.5\text{dB}$ .
3. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
4. Test Date : May 16,2011  
Tested By :Eric Chen

Standard Requirement: 47 CFR §2.1046

#### Procedures:

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.

Test Result: Pass

## Conducted Output Power Test Result

### 5.1.1 GSM Mode

GPRS(GMSK) – MCS4

Frequency Band	Channel No.	Frequency	Conducted Average Power(dBm)
GSM850	Low(128)	824.2	32.19
	Mid(190)	836.4	31.83
	High(251)	848.8	31.74
GSM1900	Low(512)	1850.2	30.07
	Mid(661)	1880.0	30.12
	High(810)	1909.8	29.87

## 5.2 Effective Radiated Power and Effective Isotropic Radiated 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  $\pm 1.5\text{dB}$ .
3. Environmental Conditions
 

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
4. Test Date : May 16,2011  
Tested By :Eric Chen

**Standard Requirement:** 47 CFR § 22.913(a)(2), §24.232(c).

**Procedures:**

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.

Sample Calculation: Corrected Amplitude = Raw Amplitude (dB $\mu$ V/m) + ACF(dB) + Cable Loss(dB)

**Test Result:** Pass

### Cellular Band ERP Test Result

Test Mode / Frequency	Lower Channel Calculated EIRP (dBm)	Middle Channel Calculated EIRP (dBm)	High Channel Calculated EIRP (dBm)	Limit ERP (dBm)
GPRS850	32.4	32.2	32.1	39.00

### PCS Band EIRP Test Result

Test Conditions	Lower Channel Calculated EIRP (dBm)	Middle Channel Calculated EIRP (dBm)	High Channel Calculated EIRP (dBm)	Limit EIRP (dBm)
GPRS1900	30.9	31.2	30.8	33.00

## 5.3 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  $\pm 1.5\text{dB}$ .
4. Test Date : May 16,2011  
Tested By :Eric Chen

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

### Procedures:

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The 99% occupied bandwidth (BW) of the low, middle and high channels for the highest RF powers

Results: Pass

### Cellular Band Test Result

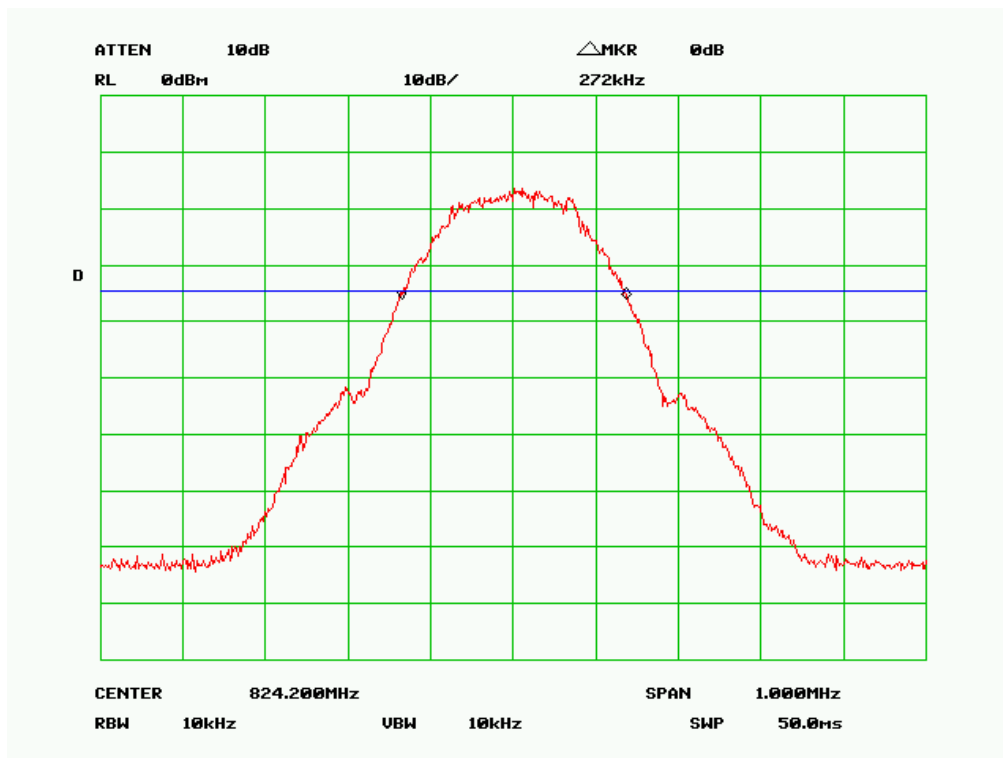
Test Mode	Channel	Occupied Bandwidth
GPRS850	Low(128)	272KHz
GPRS850	Mid(190)	275KHz
GPRS850	High(251)	275KHz

### PCS Band Test Result

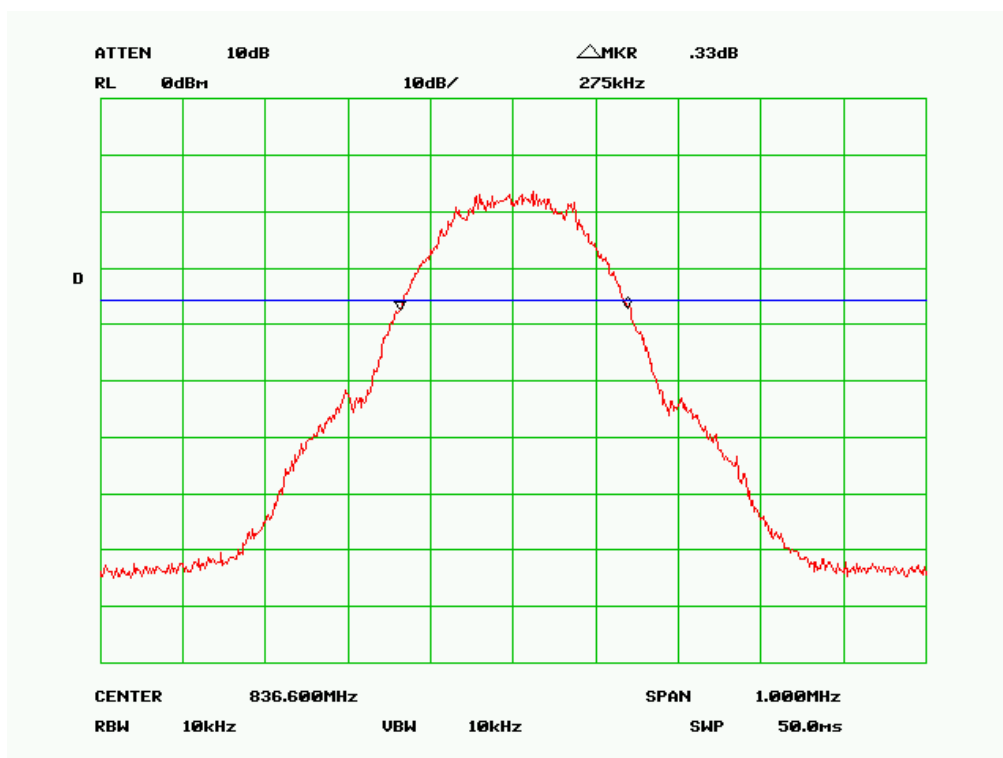
Test Mode	Channel	Occupied Bandwidth
GPRS1900	Low(512)	278KHz
GPRS1900	Mid(661)	263KHz
GPRS1900	High(810)	255KHz

Refer to the attached plots

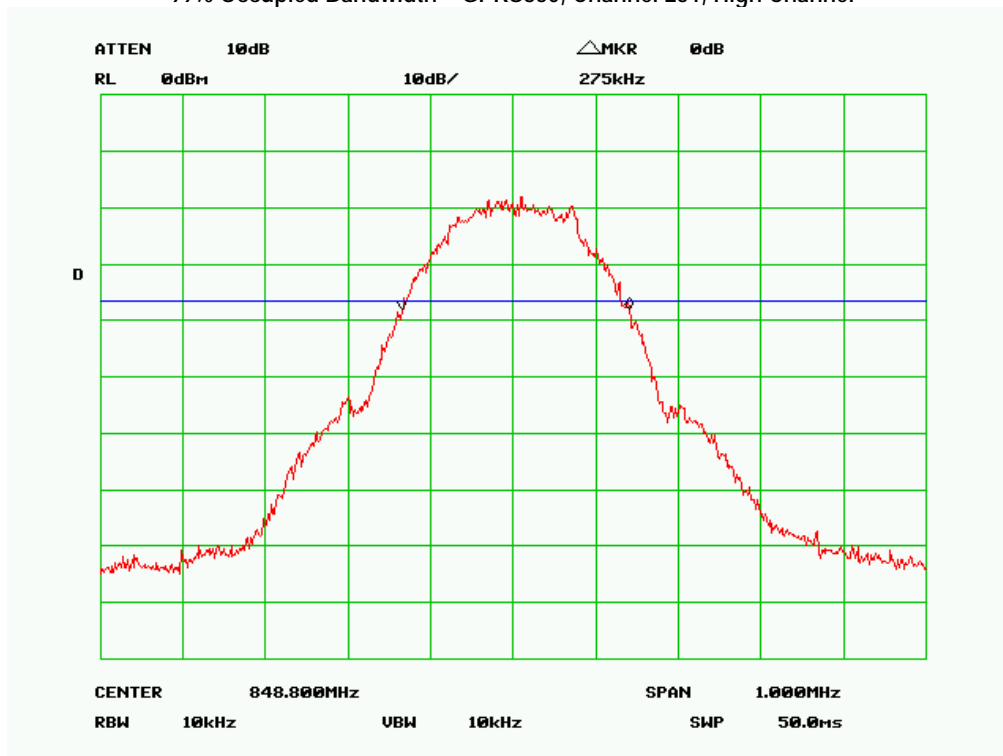
### 99% Occupied Bandwidth – GPRS850, Channel 128, Low Channel



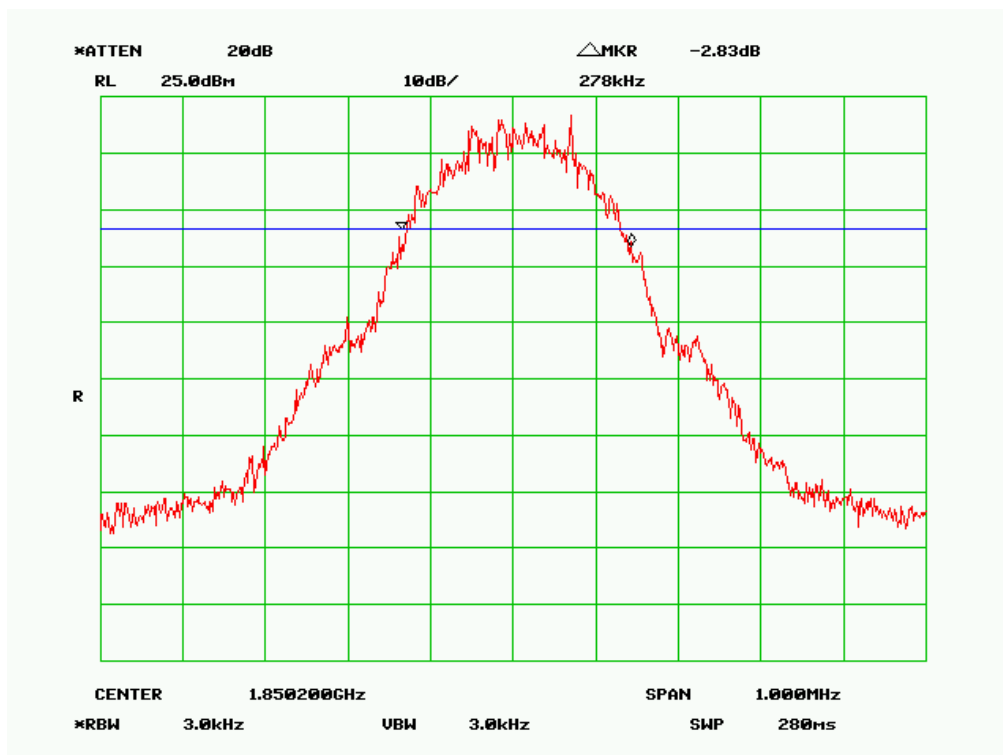
### 99% Occupied Bandwidth – GPRS850, Channel 190, Mid Channel



### 99% Occupied Bandwidth – GPRS850, Channel 251, High Channel

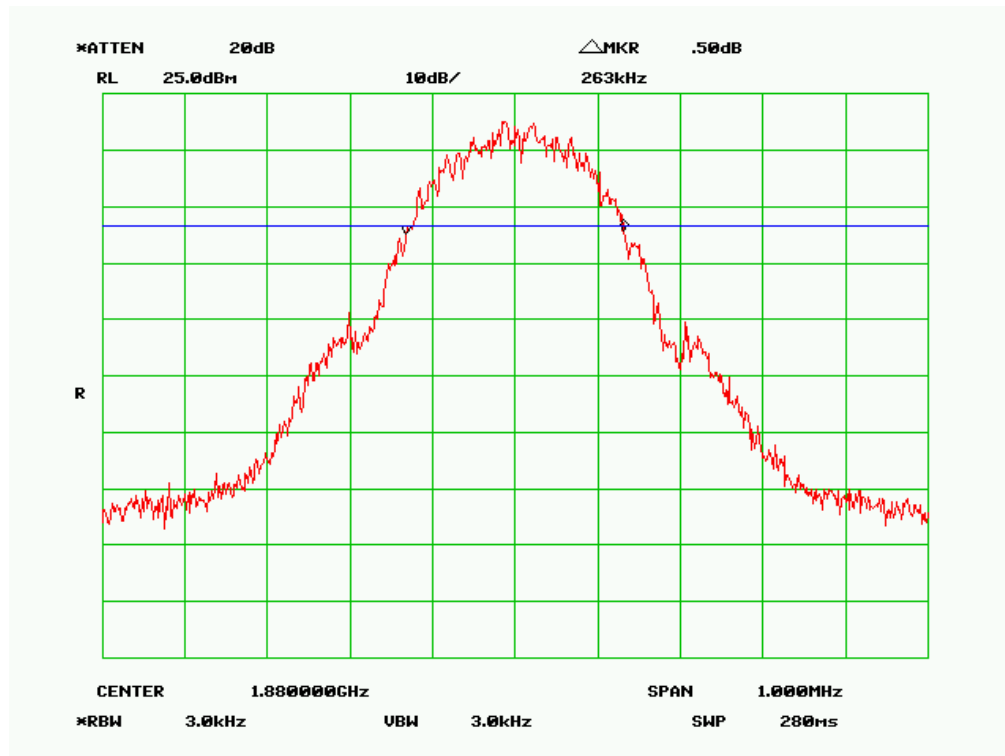


### 99% Occupied Bandwidth – GPRS1900, Channel 512, Low Channel

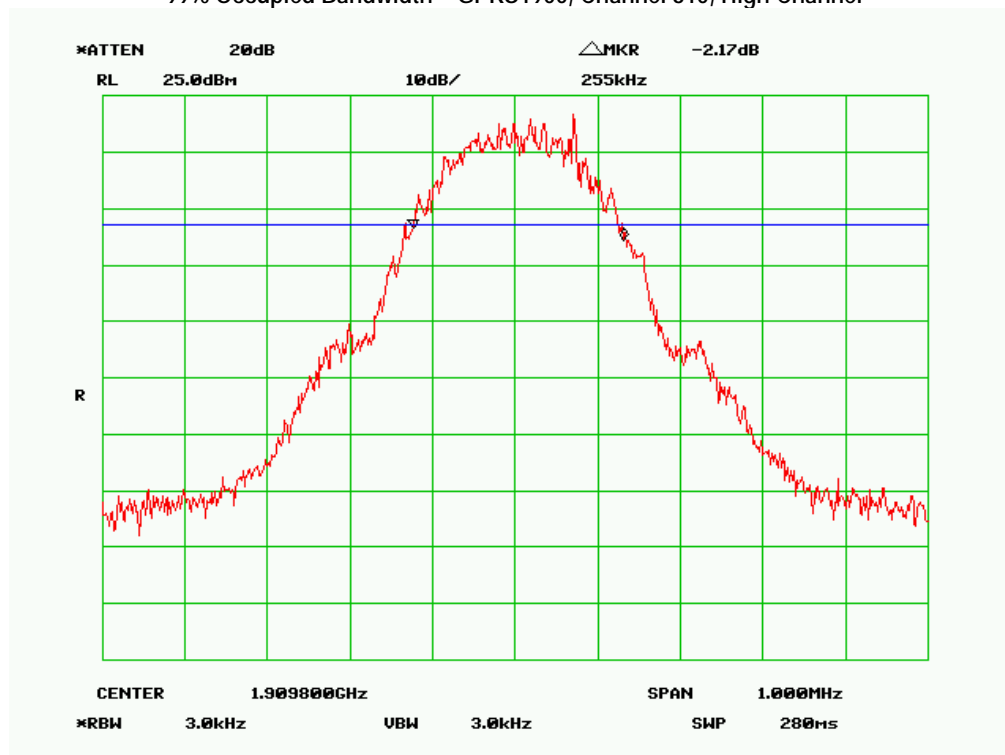




### 99% Occupied Bandwidth – GPRS1900, Channel 661, Mid Channel



### 99% Occupied Bandwidth – GPRS1900, Channel 810, High Channel



## 5.4 Band Edge Test Result

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  $\pm 1.5\text{dB}$ .
3. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
4. Test Date :May 16,2011  
Tested By :Eric Chen

**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 than the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

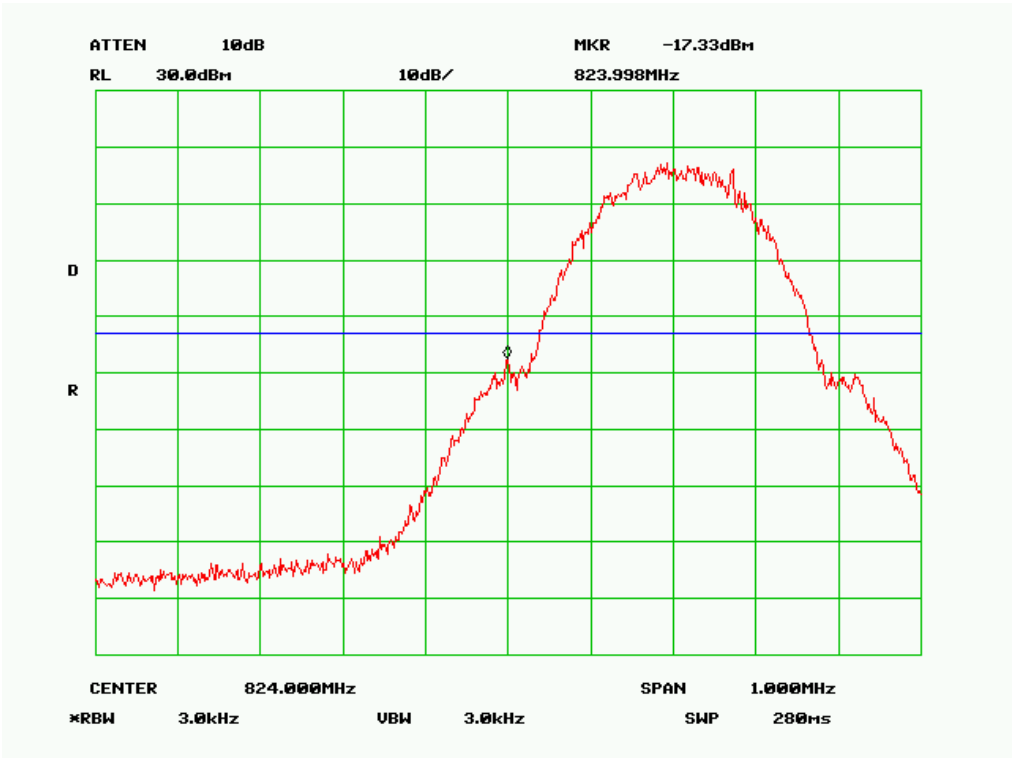
### Procedures:

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.

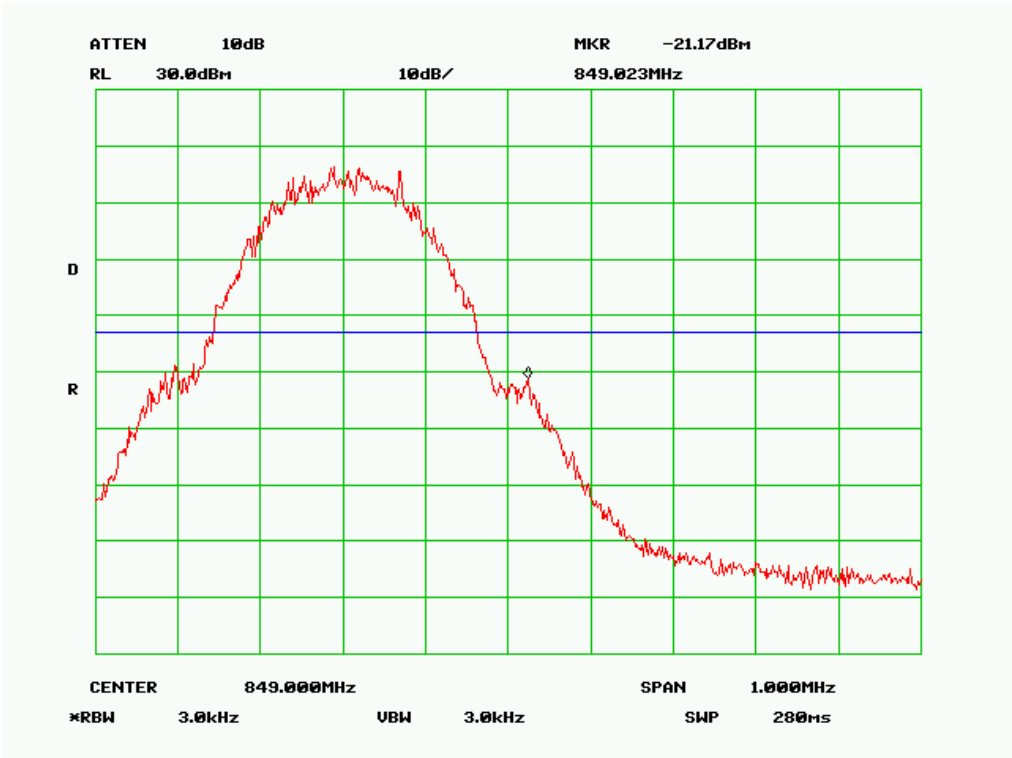
**Test Result:** Pass

Refer to the attached plots.

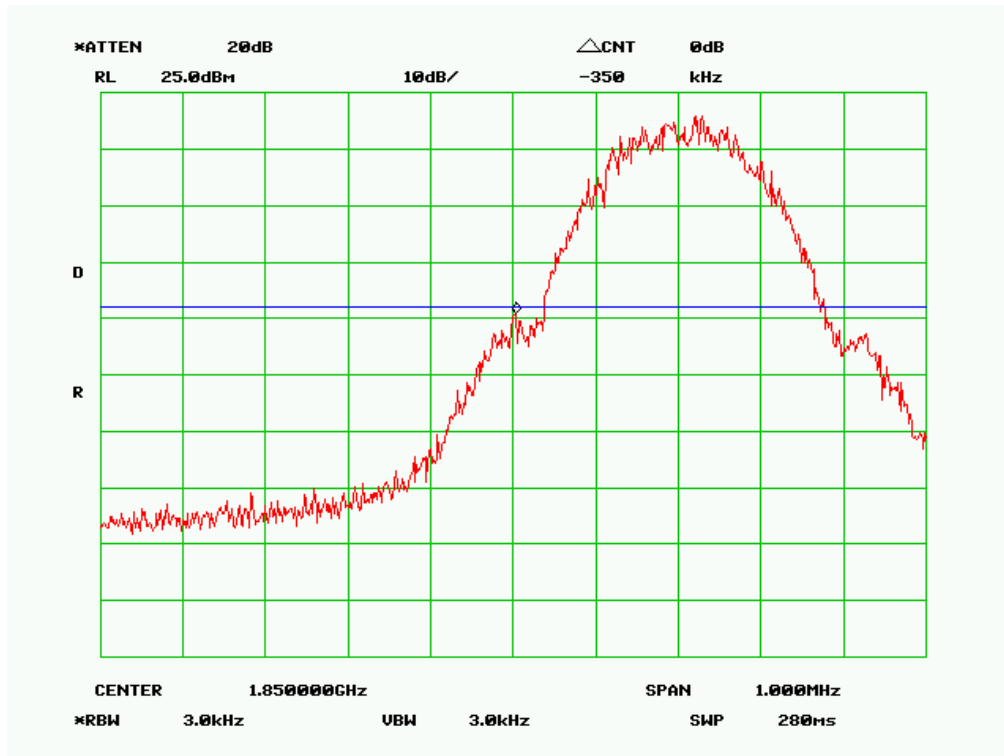
Lower Band Edge Plot – GPRS850, Channel 128, Low Channel



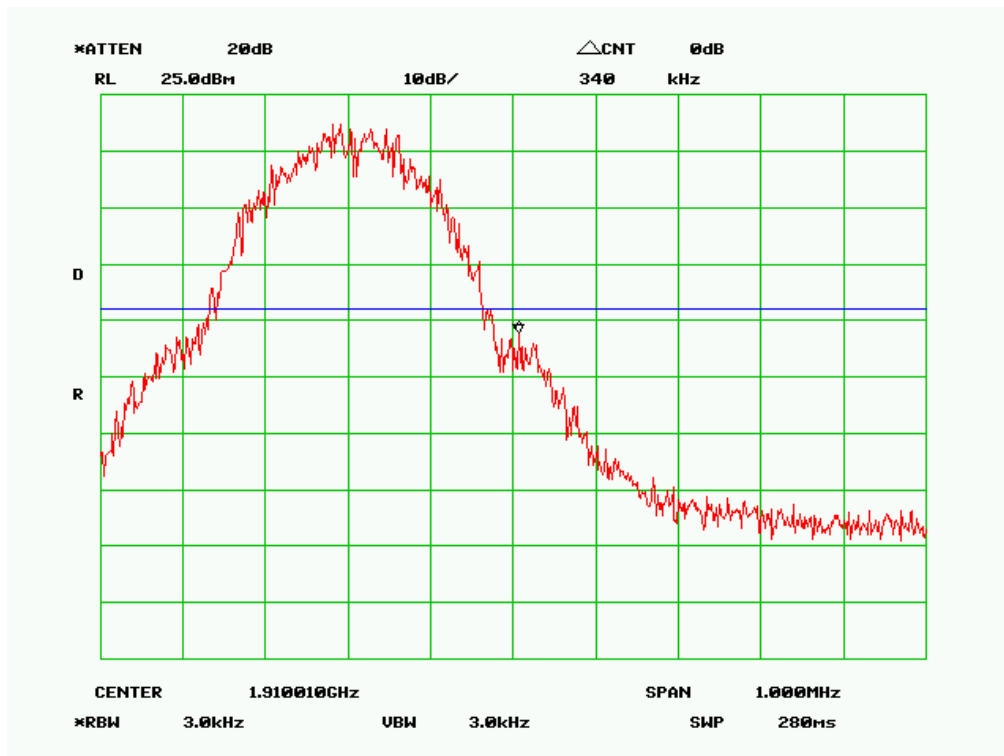
Higher Band Edge Plot – GPRS850, Channel 251, High Channel



### Lower Band Edge Plot – GPRS1900, Channel 512, Low Channel



### Higher Band Edge Plot – GPRS1900, Channel 810, High Channel



## 5.5 Antenna Port Emission

- 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.
- 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  $\pm 1.5\text{dB}$ .
- Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
- Test Date : May 16,2011  
Tested By :Eric Chen

**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 than the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

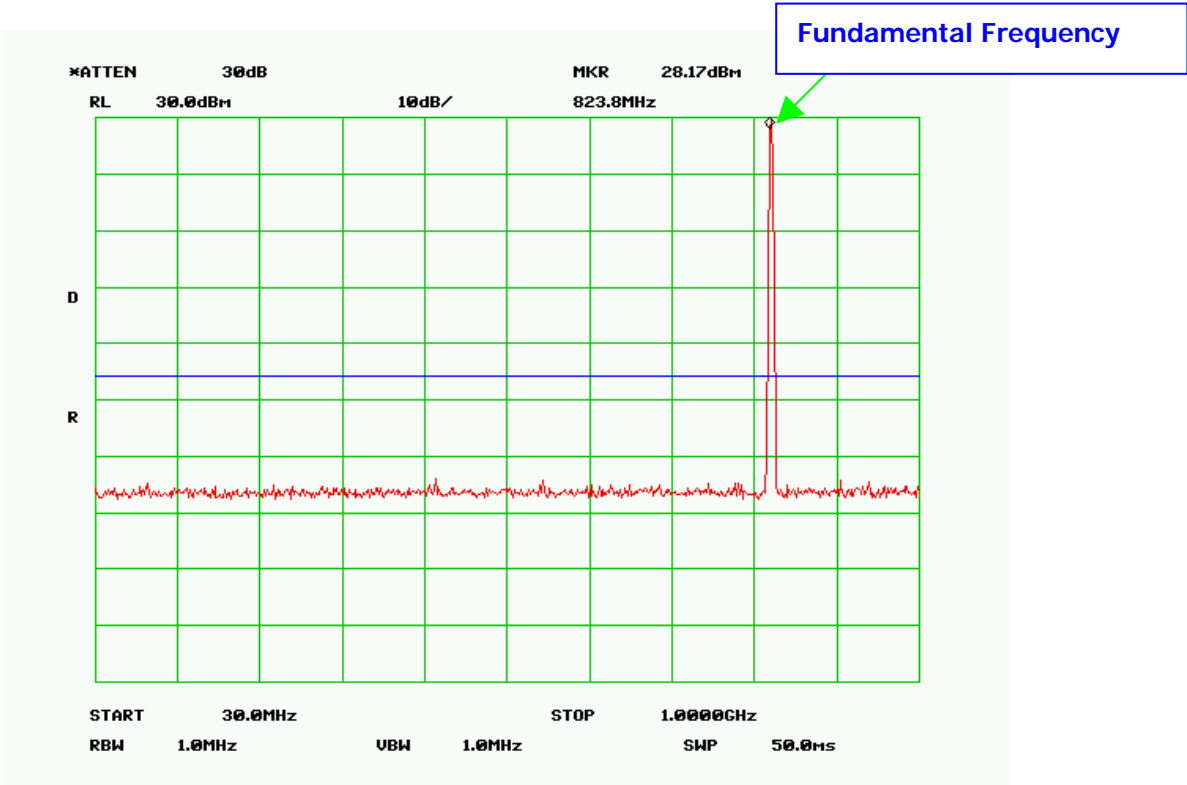
### **Procedures:**

- The EUT was connected to spectrum analyzer and base station via power divider.
- The middle channel for the highest RF power within the transmitting frequency was measured.
- The conducted spurious emission for the whole frequency range was taken.

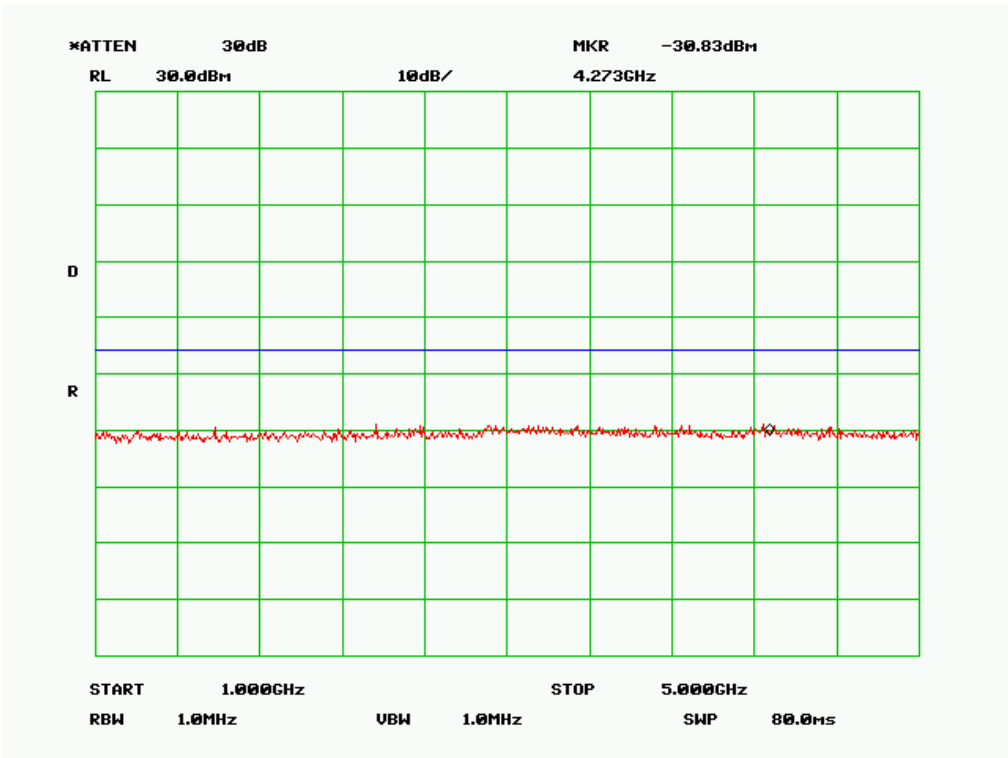
**Test Result:** Pass

Refer to the attached plots.

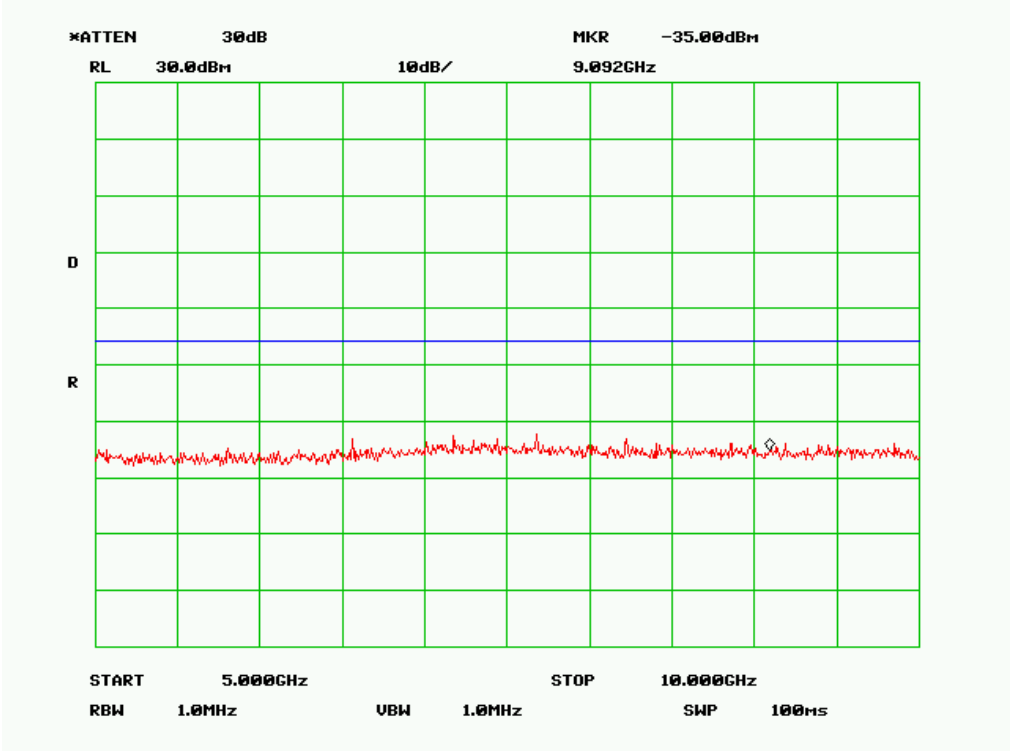
Configuration Mode: GPRS850 , Channel 128, Low channel



Plot-1

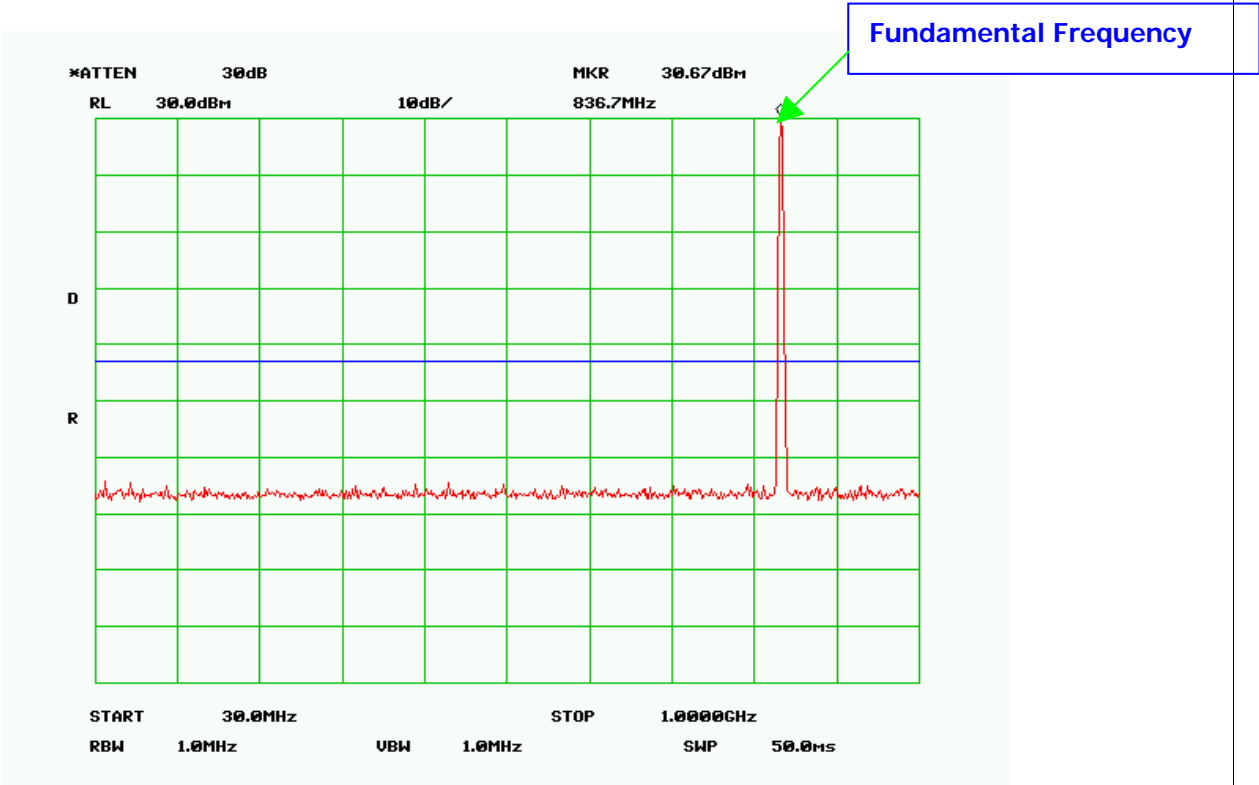


Plot-2

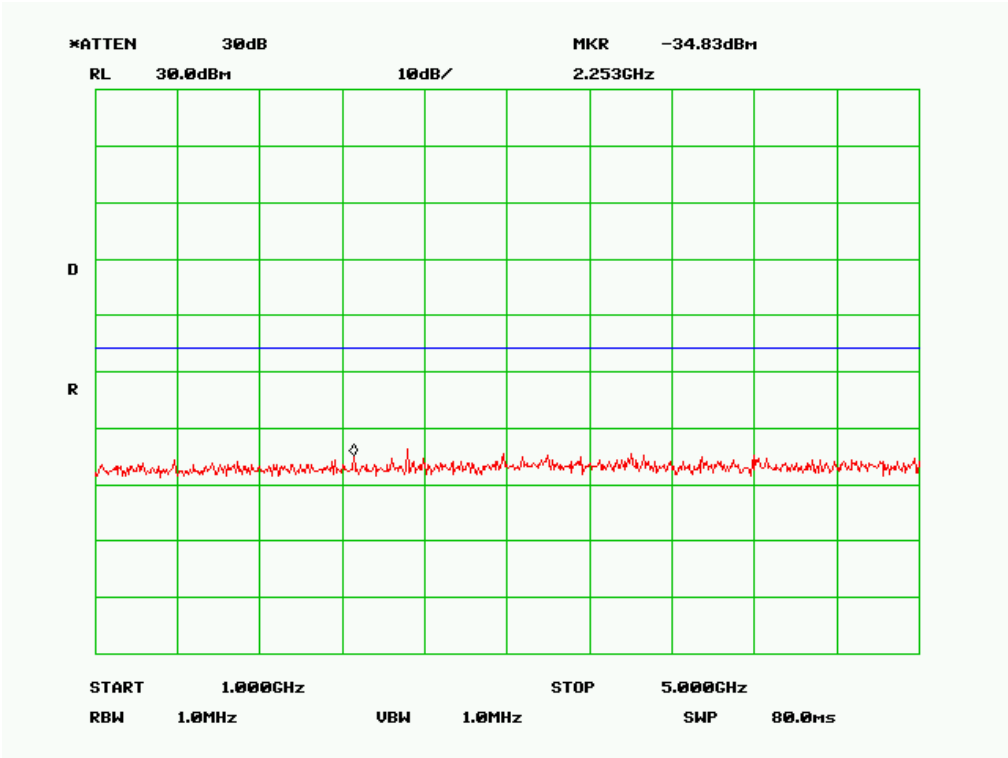


Plot-3

Configuration Mode: GPRS850 , Channel 190, Mid channel

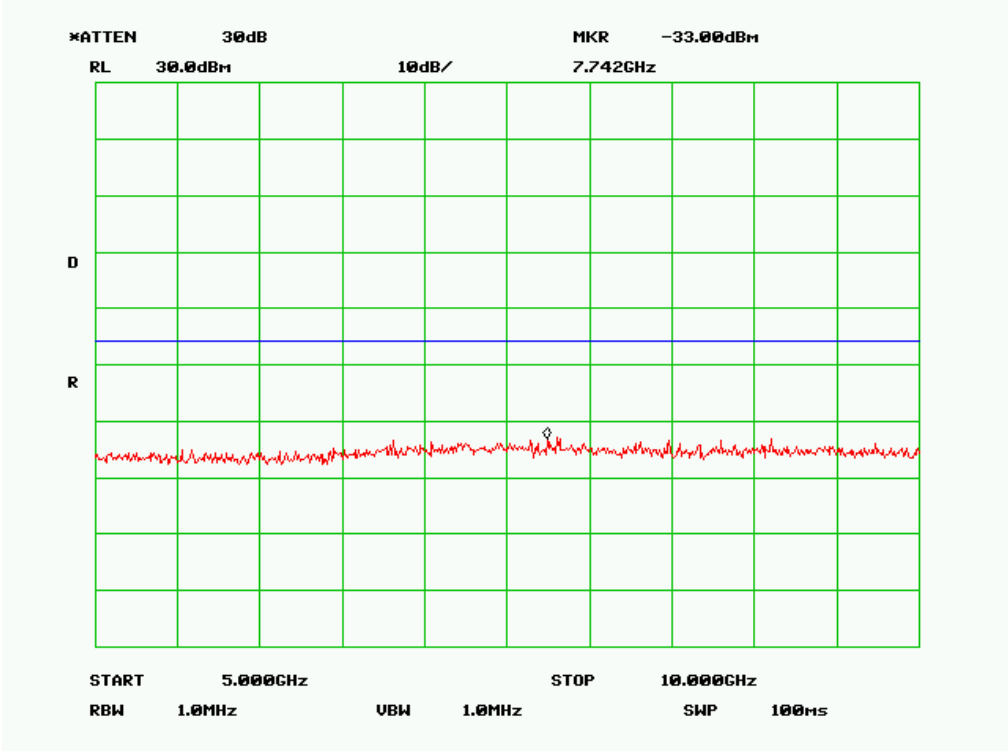


Plot-1



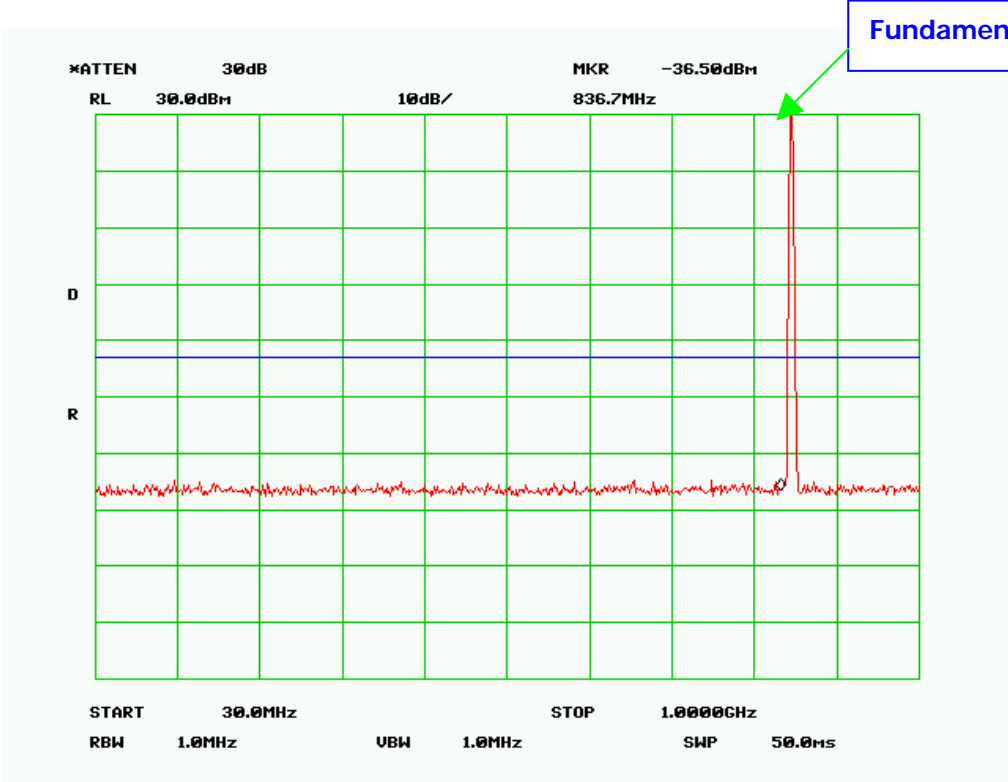
Plot-2



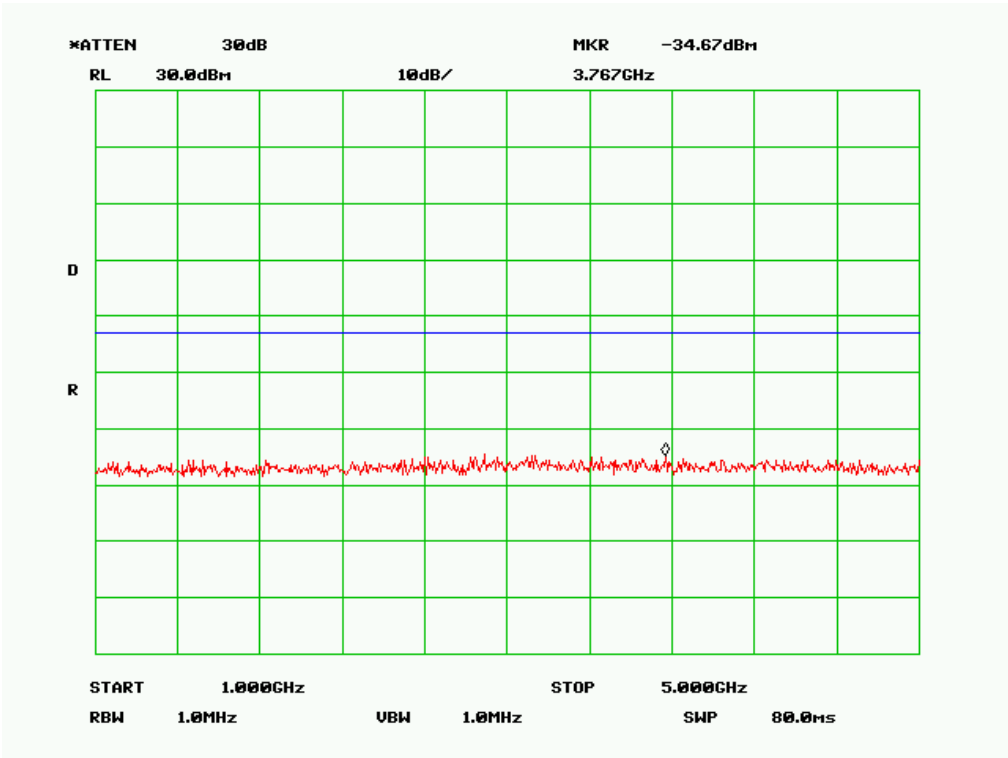


Plot-3

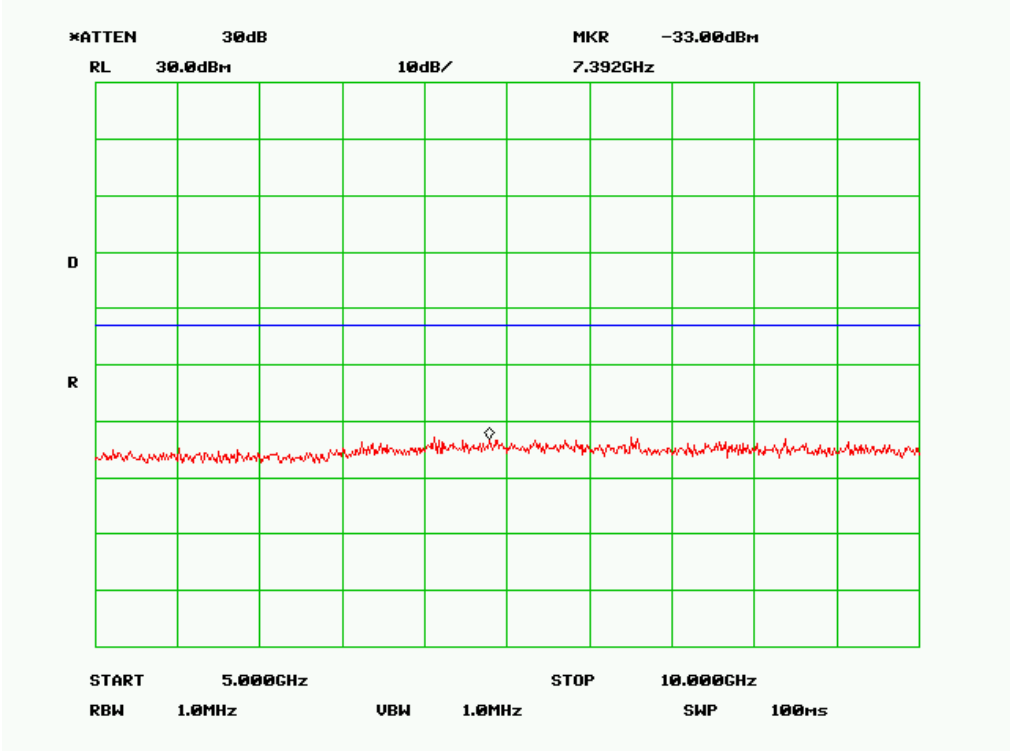
Configuration Mode: GPRS850 , Channel 251, High channel



Plot-1

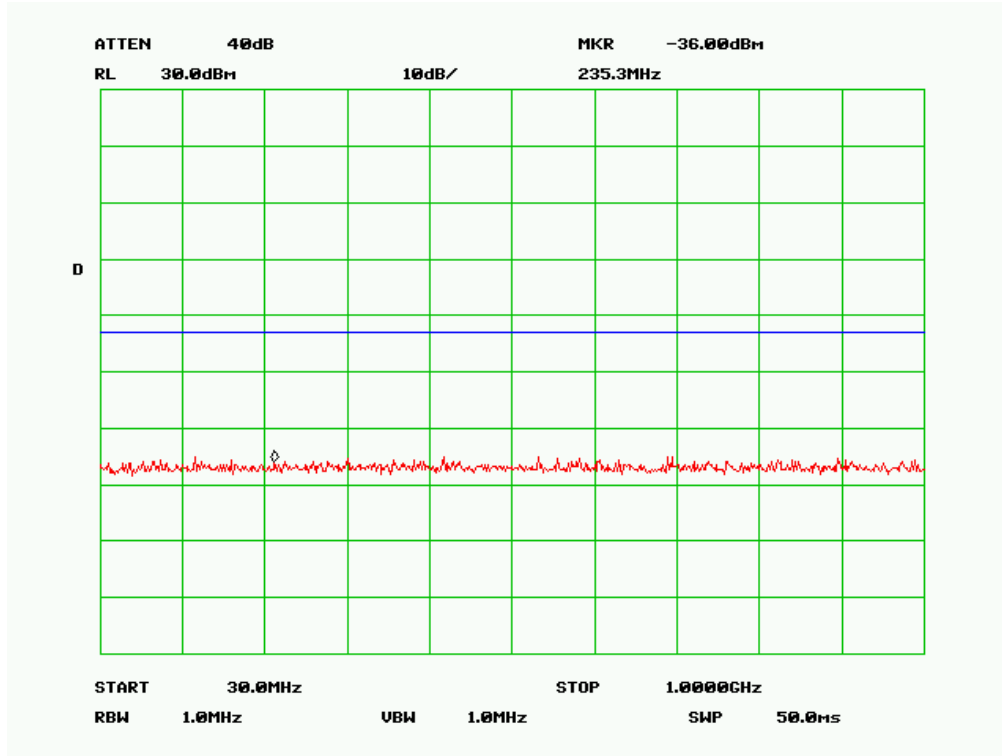


Plot-2

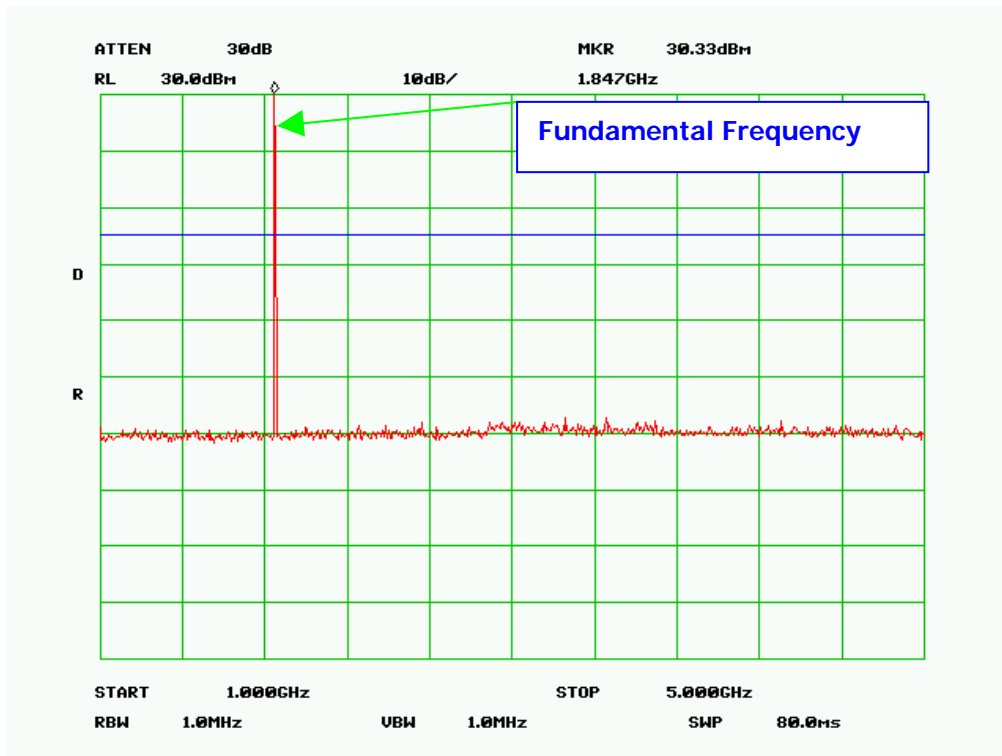


Plot-3

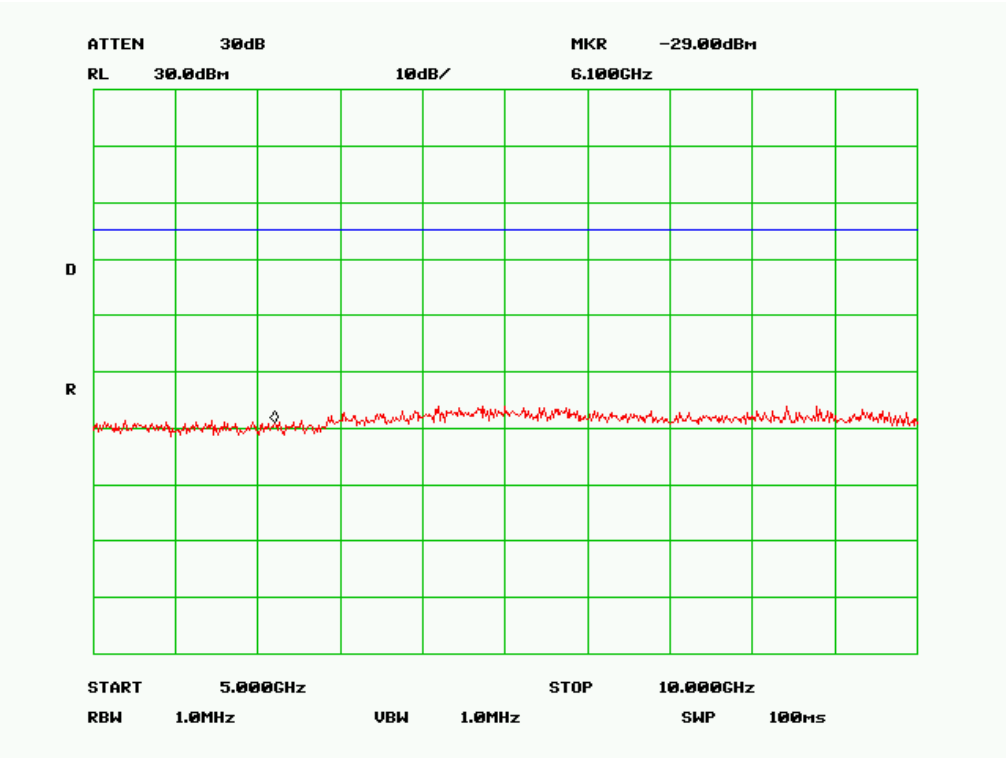
Configuration Mode: GPRS1900, Channel 512, Low channel



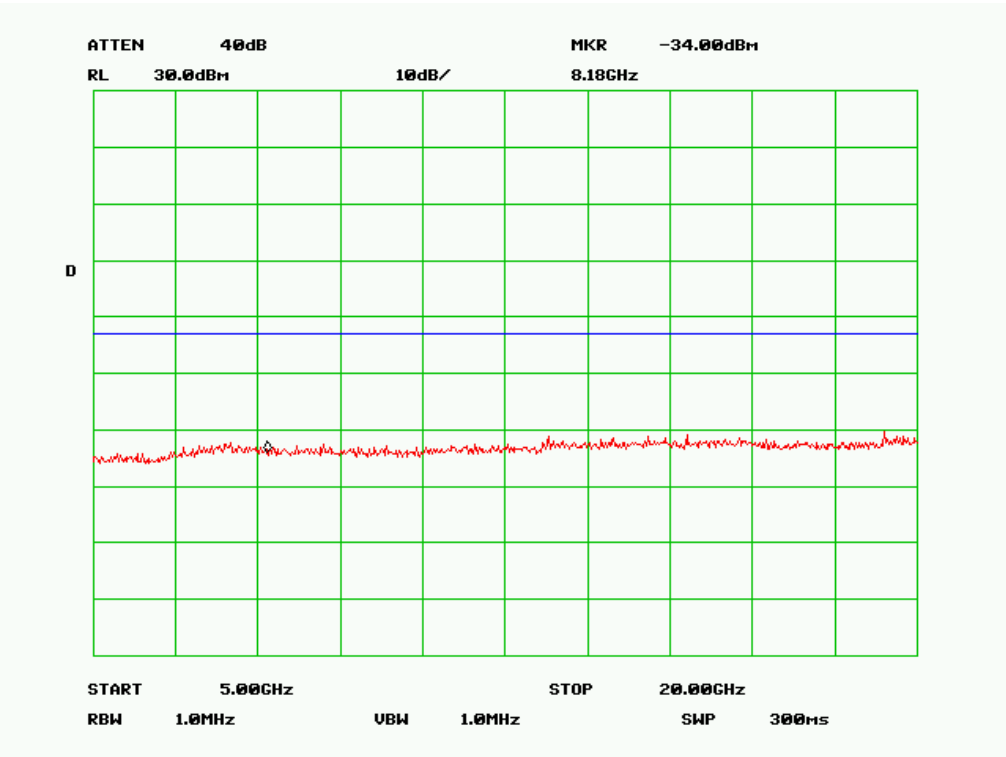
Plot-1



Plot-2

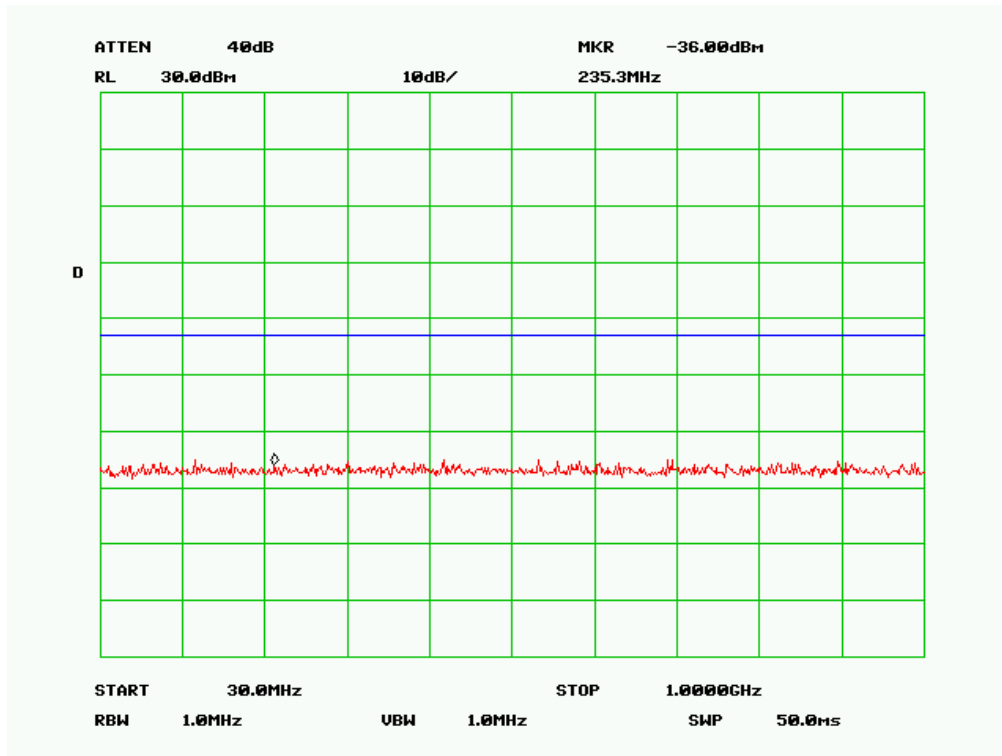


Plot-3

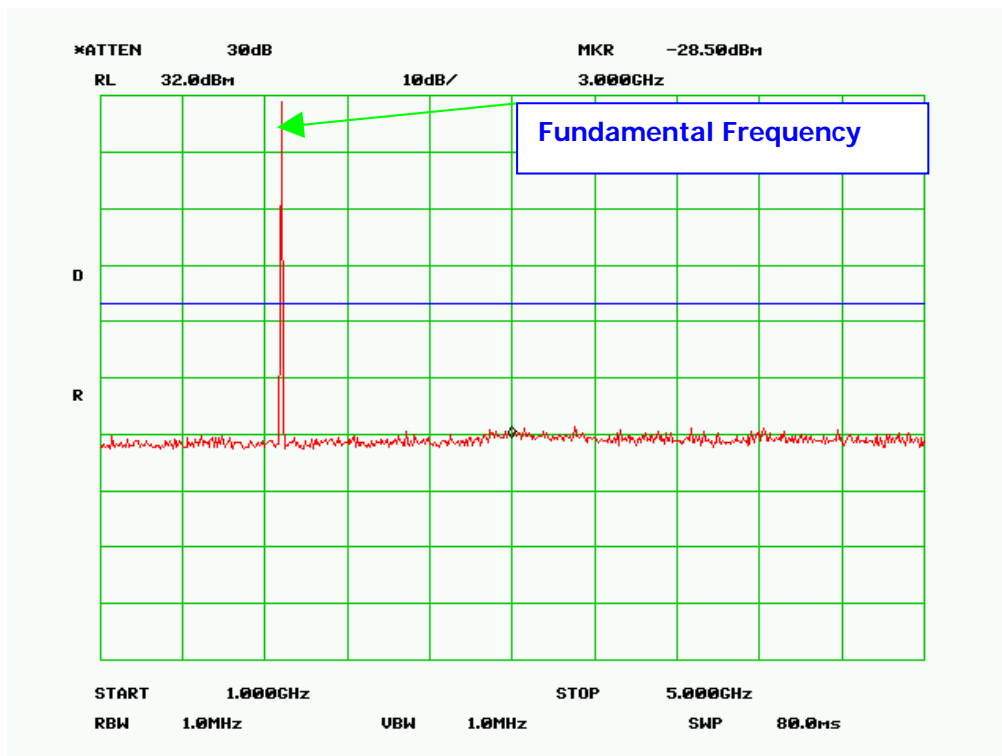


Plot-4

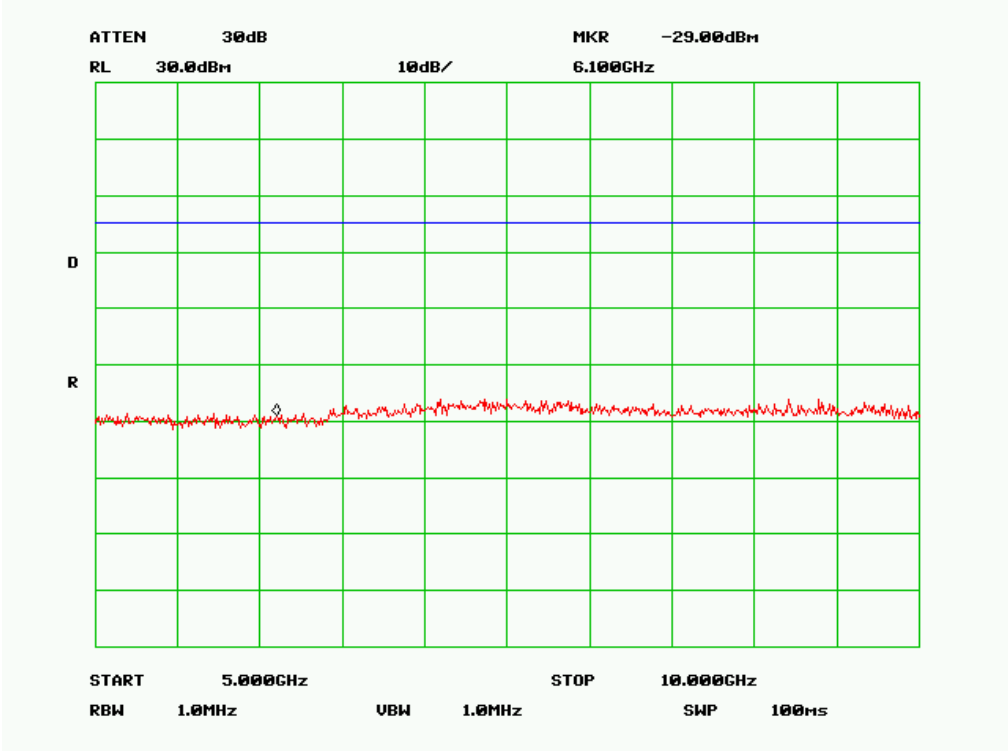
Configuration Mode: GPRS1900, Channel 661, Mid channel



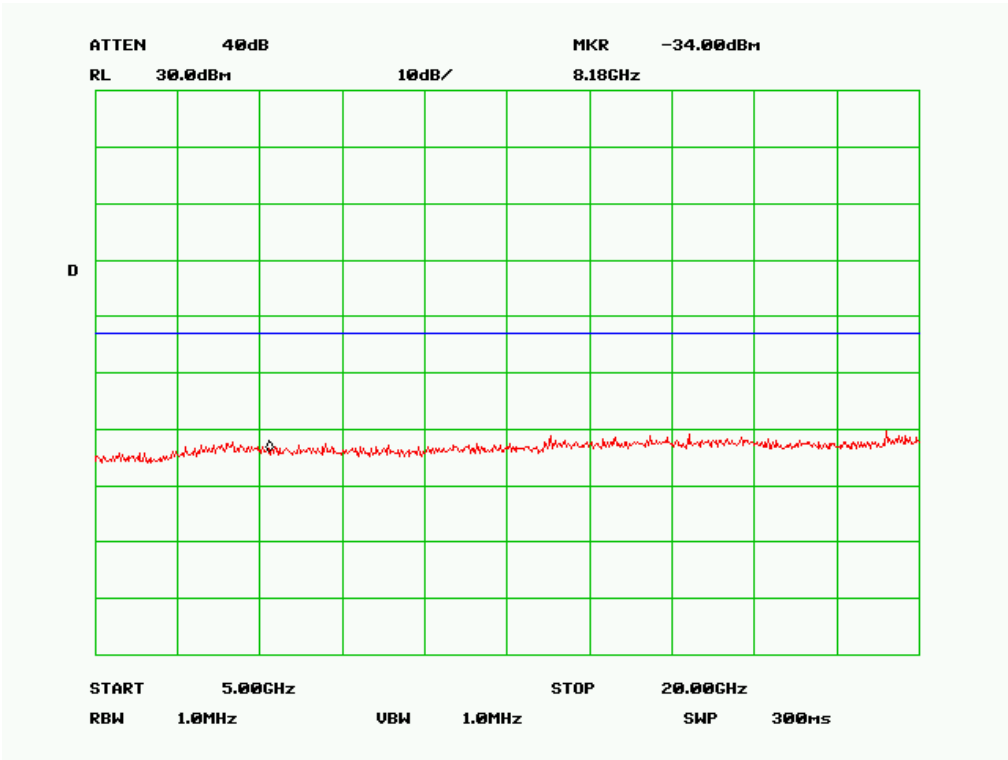
Plot-1



Plot-2

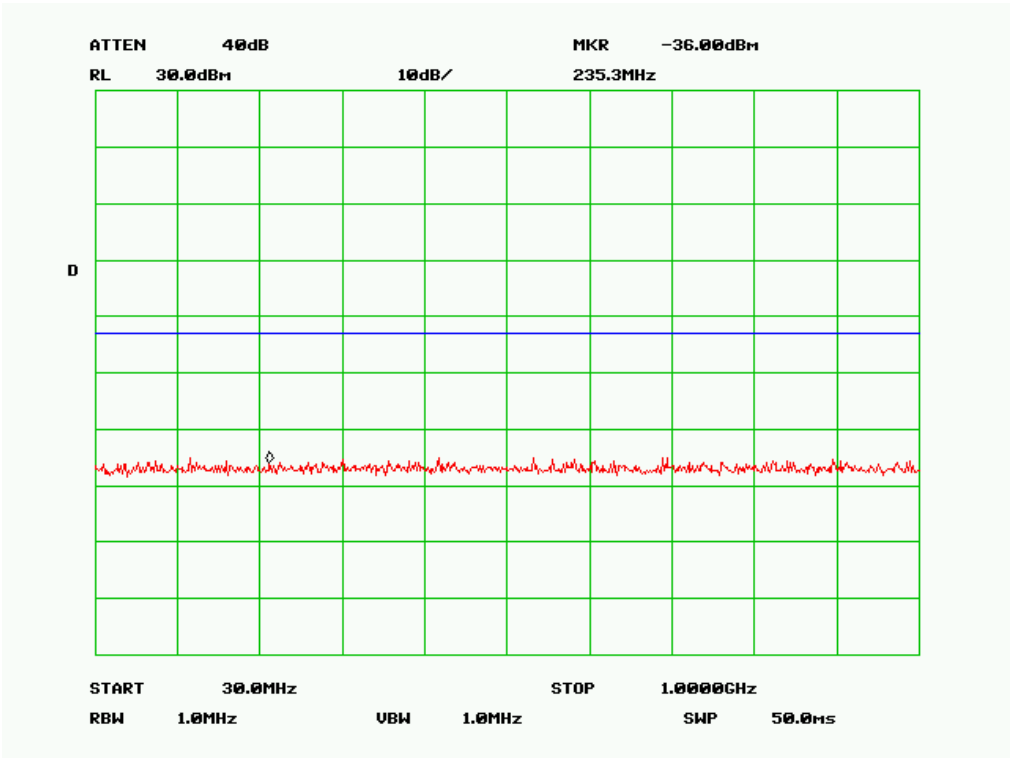


Plot-3

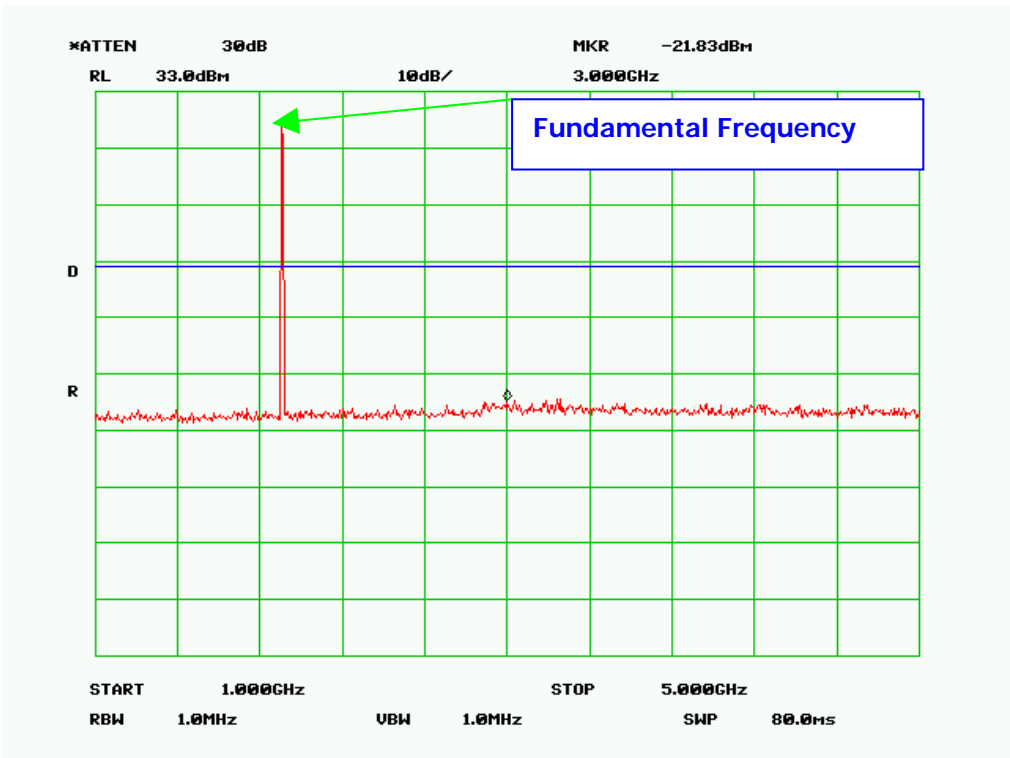


Plot-4

Configuration Mode: GPRS1900, Channel 810, High channel

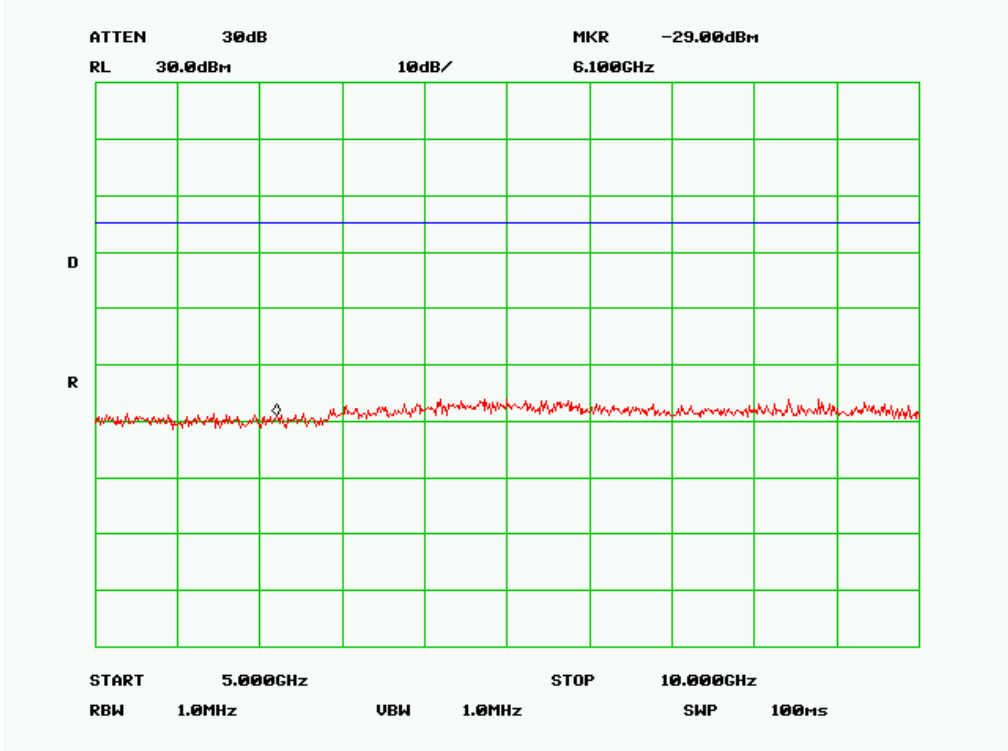


Plot-1

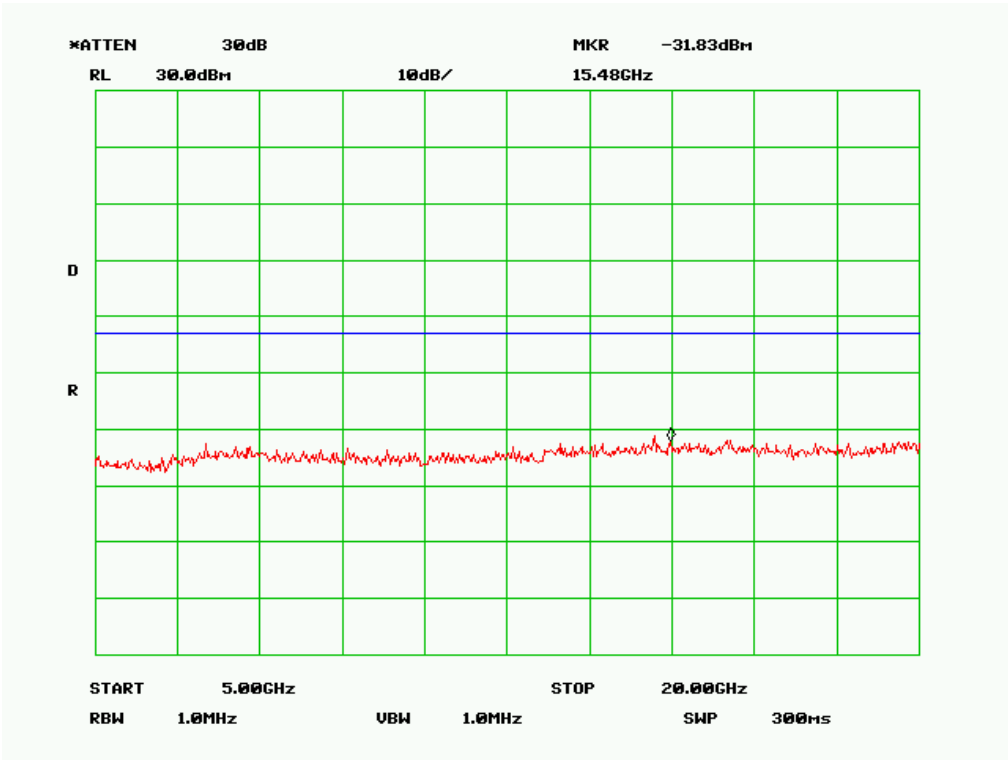


Plot-2





Plot-3



Plot-4

## 5.6 Radiated Spurious 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 : May 16,2011  
Tested By :Eric Chen

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

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 10<sup>th</sup> 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

### Configuration Mode: GPRS850, Channel 128, Low channel

Frequency (GHz)	Reading (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1.283	-76.62	131	1.0	H	25.70	2.52	0	-46.34	-13	-33.34
7.653	-74.06	119	1.0	H	34.50	6.19	0	-36.37	-13	-23.37
6.311	-73.89	215	1.0	H	35.10	6.18	0	-34.69	-13	-21.69
7.802	-74.93	157	1.1	V	37.80	6.54	0	-38.63	-13	-25.63

**Note:** Emission was scanned up to 9GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

### Configuration Mode: GPRS850, Channel 190,Mid channel

Frequency (GHz)	Reading (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1.648	-76.62	131	1.0	H	25.70	2.52	0	-48.40	-13	-35.40
6.663	-74.06	119	1.0	H	34.50	6.19	0	-33.37	-13	-20.37
7.131	-73.89	215	1.0	H	35.10	6.18	0	-32.61	-13	-19.61
8.802	-74.93	157	1.1	V	37.80	6.54	0	-30.59	-13	-17.59

**Note:** Emission was scanned up to 9GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

### Configuration Mode: GPRS850, Channel 251, High channel

Frequency (GHz)	Reading (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
2.648	-76.62	131	1.0	H	25.70	2.52	0	-43.56	-13	-30.56
5.663	-74.06	119	1.0	H	34.50	6.19	0	-35.37	-13	-22.37
7.131	-73.89	215	1.0	H	35.10	6.18	0	-36.61	-13	-23.61
6.802	-74.93	157	1.1	V	37.80	6.54	0	-29.46	-13	-16.46

**Note:** Emission was scanned up to 9GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

### Configuration Mode: GPRS1900, Channel 512, Low channel

Frequency (GHz)	Reading (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
2.864	-76.32	169	1.0	H	25.70	2.52	0	-48.10	-13	-35.10
6.636	-73.98	215	1.0	H	34.50	6.19	0	-35.36	-13	-22.36
8.439	-73.91	78	1.0	H	36.10	7.01	0	-33.79	-13	-20.79
5.601	-77.45	180	1.1	V	32.20	4.49	0	-39.32	-13	-26.32

**Note:** Emission was scanned up to 20GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

### Configuration Mode: GPRS1900, Channel 661, Mid channel

Frequency (GHz)	Reading (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1.648	-76.32	169	1.0	H	25.70	2.52	0	-48.10	-13	-35.10
6.663	-73.98	215	1.0	H	34.50	6.19	0	-33.29	-13	-20.29
7.939	-73.91	78	1.0	H	36.10	7.01	0	-30.80	-13	-17.80
4.919	-77.45	180	1.1	V	32.20	4.49	0	-40.76	-13	-27.76

**Note:** Emission was scanned up to 20GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

### Configuration Mode: GPRS1900, Channel 810, High channel

Frequency (GHz)	Reading (dBm)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1.986	-76.32	169	1.0	H	25.70	2.52	0	-49.58	-13	-36.58
5.892	-73.98	215	1.0	H	34.50	6.19	0	-36.55	-13	-23.55
4.856	-73.91	78	1.0	H	36.10	7.01	0	-37.11	-13	-24.11
5.940	-77.45	180	1.1	V	32.20	4.49	0	-39.76	-13	-26.76

**Note:** Emission was scanned up to 20GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

## 5.7 Frequency Stability

**Requirement(s):** 47 CFR §22.355, §22.235.

**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  $\pm 0.00025\%$  ( $\pm 2.5\text{ppm}$ ) of the center frequency.

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

Test Date : May 16,2011  
Tested By : Eric Chen

**Results:** Pass

**Frequency Stability versus Temperature:** The Frequency tolerance of the carrier signal shall be maintained within  $\pm 0.00025\%$  of the operating frequency over a temperature variation of  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at normal supply voltage.

**Test Result for GPRS850, Channel 190 (mid channel)**

Temperature ( $^{\circ}\text{C}$ )	Freq. Drift (Hz)	Freq. Deviation (Limit: ppm)	Pass/Fail
50	-6	<2.5	Pass
40	-3	<2.5	Pass
30	-3	<2.5	Pass
20	-5	<2.5	Pass
10	-3	<2.5	Pass
0	-5	<2.5	Pass
-10	-5	<2.5	Pass
-20	N/A	<2.5	N/A
-30	N/A	<2.5	N/A

Note : Manufacturer declares that operating temperature range of EUT is  $-10 \sim +50^{\circ}\text{C}$ .

**Frequency Stability versus Input Voltage:** The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.00025\%$  of the operating frequency, the frequency of the transmitter was measured at 85% and at 115% of the rated power supply voltage at  $20^{\circ}\text{C}$  environmental temperature.

Measured Voltage $\pm 15\%$ of nominal (DC)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
8.08	-5	<2.5	Pass
9.5	-4	<2.5	Pass
10.9	-4	<2.5	Pass

**Frequency Stability versus Temperature:** The Frequency tolerance of the carrier signal shall be maintained within  $\pm 0.00025\%$  of the operating frequency over a temperature variation of -10°C to +50°C at normal supply voltage.

#### Test Result for GPRS1900, Channel 661 (mid channel)

Temperature (°C)	Freq. Drift (Hz)	Freq. Deviation (Limit: ppm)	Pass/Fail
50	-15	<2.5	Pass
40	-16	<2.5	Pass
30	-12	<2.5	Pass
20	-14	<2.5	Pass
10	-6	<2.5	Pass
0	-14	<2.5	Pass
-10	-18	<2.5	Pass
-20	N/A	<2.5	N/A
-30	N/A	<2.5	N/A

Note : Manufacturer declares that operating temperature range of EUT is -10 ~ +50°C.

**Frequency Stability versus Input Voltage:** The Frequency tolerance of the carrier signal shall be maintained within  $\pm 0.00025\%$  of the operating frequency, the frequency of the transmitter was measured at 85% and at 115% of the rated power supply voltage at 20°C environmental temperature.

Measured Voltage $\pm 15\%$ of nominal (DC)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
8.08	-15	<2.5	Pass
9.5	-16	<2.5	Pass
10.9	-21	<2.5	Pass

## 5.8 Receiver Spurious Emissions

- 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.
- 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  $\pm 1.5\text{dB}$ .
- Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
- Test Date : May 16, 2011  
Tested By :Eric Chen

**Standard Requirement:** RSSGen(4.8)

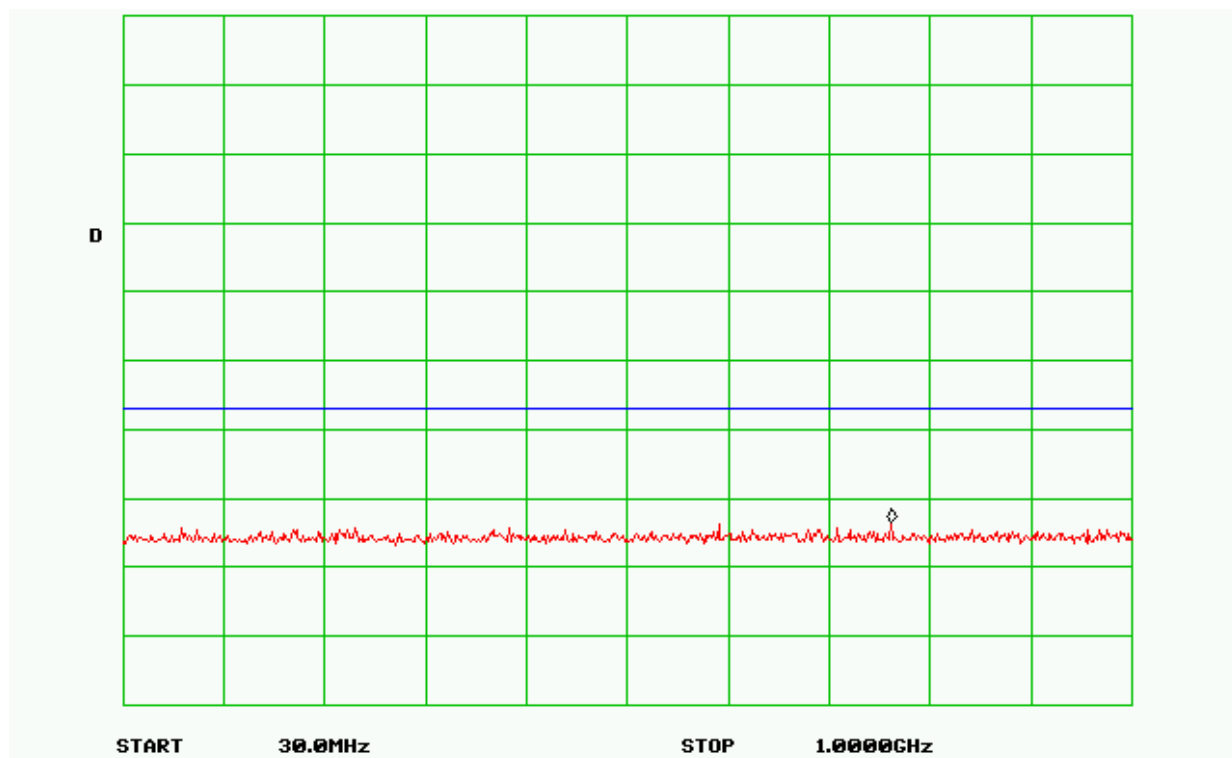
**Procedures:** The conducted spurious emissions were measured conducted using a spectrum analyzer at mid channels. the search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz. Receiver spurious emissions at any discrete frequency shall not exceed 2 nanowatts in the band 30-1000 MHz, or 5 nanowatts above 1 GHz..

**Test Result:** Pass

**Note :** All test modes were verified, but only the worst cast test results measured under GPRS850(mid channel) mode was shown.



Configuration mode: GPRS850, channel 190



Receiver Spurious Emission (GPRS850, channel 190) Plot- 1



Receiver Spurious Emission (GPRS850, channel 190) Plot- 2

## Annex A. TEST INSTRUMENT & METHOD

### Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Manufacturer	Model	CAL Due Date
Spectrum Analyzer	HP	8564 E	2012.03.21
EMI Receiver	Rohde & Schwarz	ESPI 3	2012.03.21
Wireless Communication Test Set	Rohde & Schwarz	CMU200	2012.02.19
Antenna (30MHz~2GHz)	Sunol Sciences	JB1	2011.11.18
Horn Antenna (1~18GHz)	A-INFOMW	JXTXLB-10180	2011.11.18
Horn Antenna (1~18GHz)	N/A	N/A	2011.10.04
Pre-Amplifier(0.01 ~ 1.3GHz)	HP	8447F	2012.03.21
Pre-Amplifier(0.1 ~ 18GHz)	MITEQ	AMF-7D-00101800-30-10P	2012.03.21
Horn Antenna (18~40GHz)	Com Power	AH-840	2012.03.21
Microwave Pre-Amp (18~40GHz)	Com Power	PA-840	2012.03.21

Note: Functional Verification

## Annex A.ii. CONDUCTED EMISSIONS TEST DESCRIPTION

### 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 1m x 0.8m high, non-metallic table, as shown in [Annex B](#).
2. The power supply for the EUT was fed through a 50Ω/50μH EUT LISN, connected to filtered mains.
3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
4. All other supporting equipments were powered separately from another main supply.

### Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.
3. High peaks, relative to the limit line, were then selected.
4. The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 KHz. For FCC tests, only Quasi-peak measurements were made; while for CISPR/EN tests, both Quasi-peak and Average measurements were made.
5. Steps 2 to 4 were then repeated for the LIVE line (for AC mains) or DC line (for DC power).

### Sample Calculation Example

At 20 MHz	limit = 250 μV = 47.96 dBμV
Transducer factor of LISN, pulse limiter & cable loss at 20 MHz = 11.20 dB	
Q-P reading obtained directly from EMI Receiver = 40.00 dBμV	
	(Calibrated for system losses)
Therefore, Q-P margin = 47.96 – 40.00 = 7.96	i.e. <b>7.96 dB below limit</b>

## Annex A. iii RADIATED EMISSIONS TEST DESCRIPTION

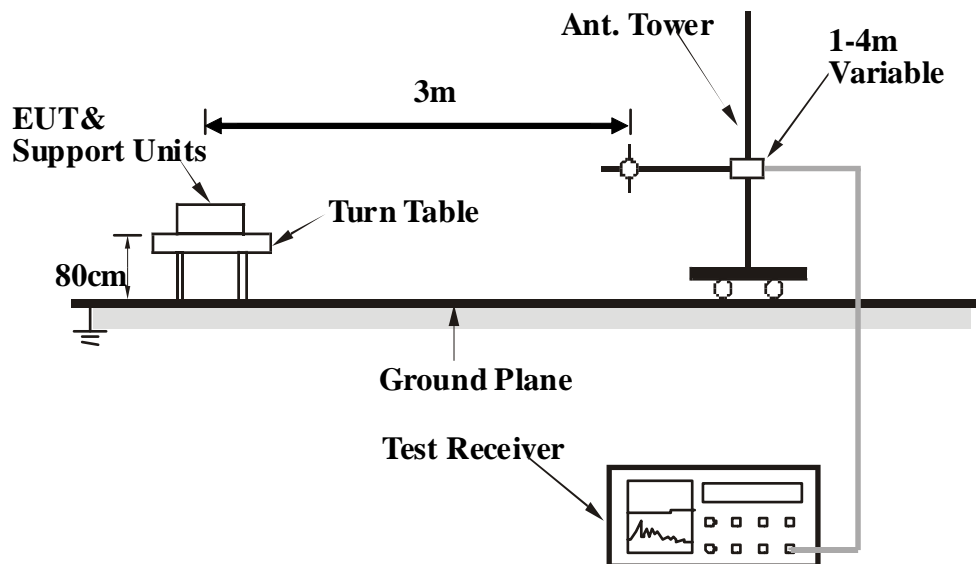
### EUT Characterisation

EUT characterisation, over the frequency range from 30MHz to 1GHz (for FCC tests, until the 5<sup>th</sup> harmonic for operating frequencies  $\geq$  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 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).

### 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 as shown in Annex B.
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. 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

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

### Annex B.i. Photograph1: EUT External Photo





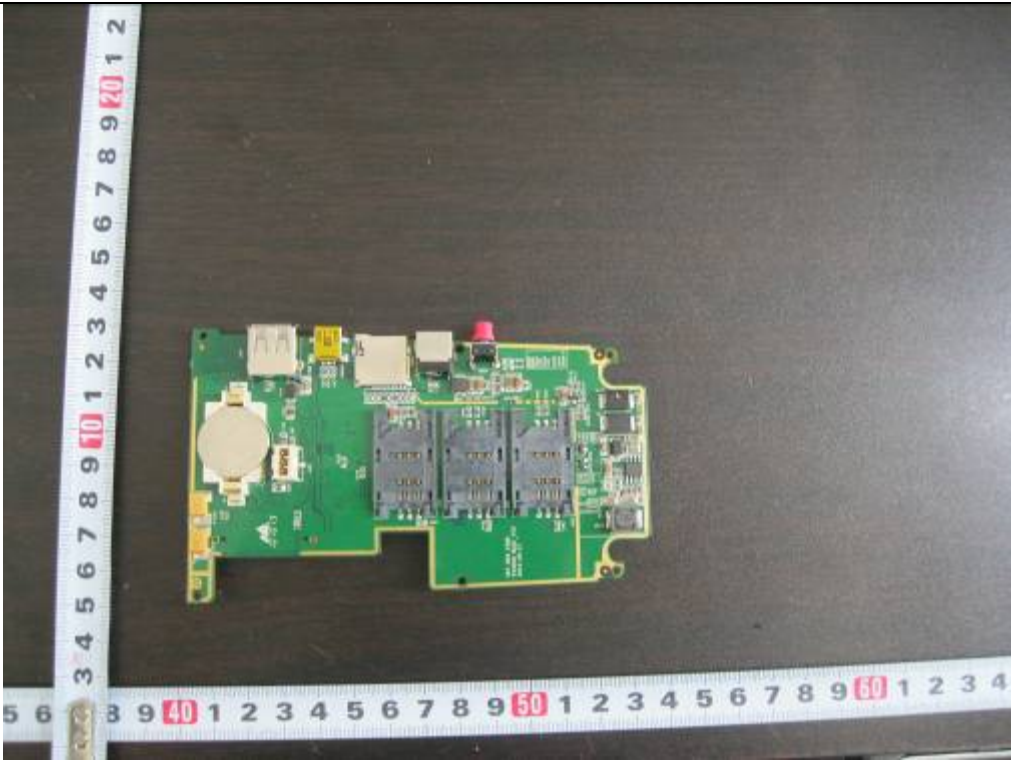


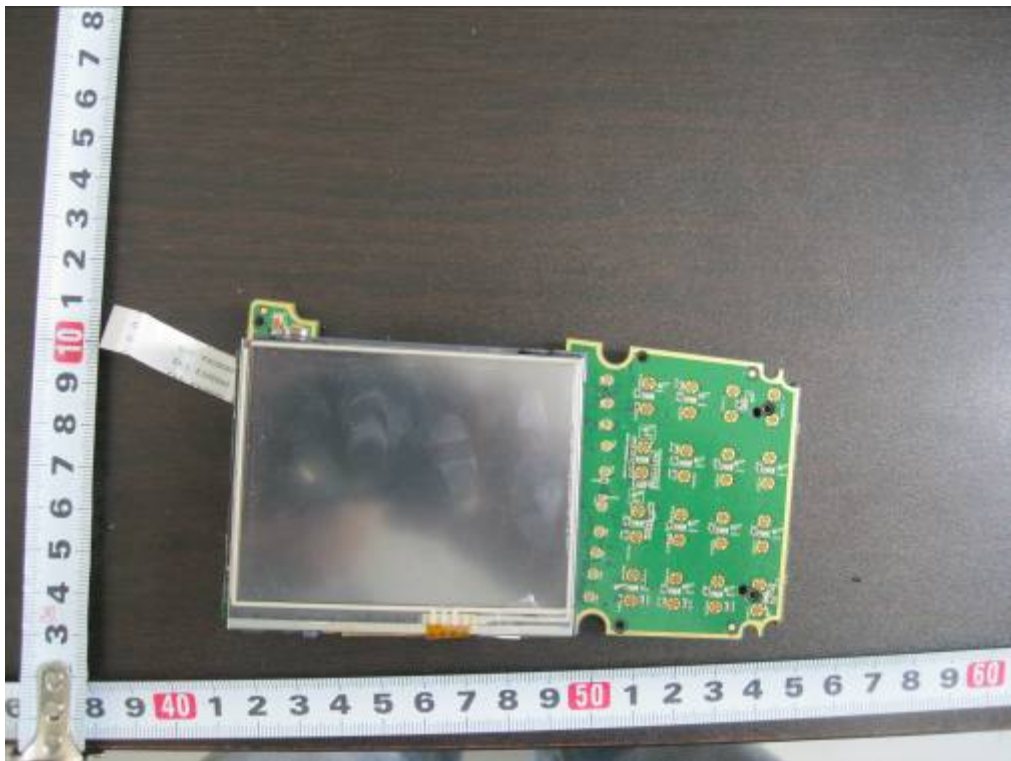
## Annex B.ii. Photograph 2: EUT Internal Photo



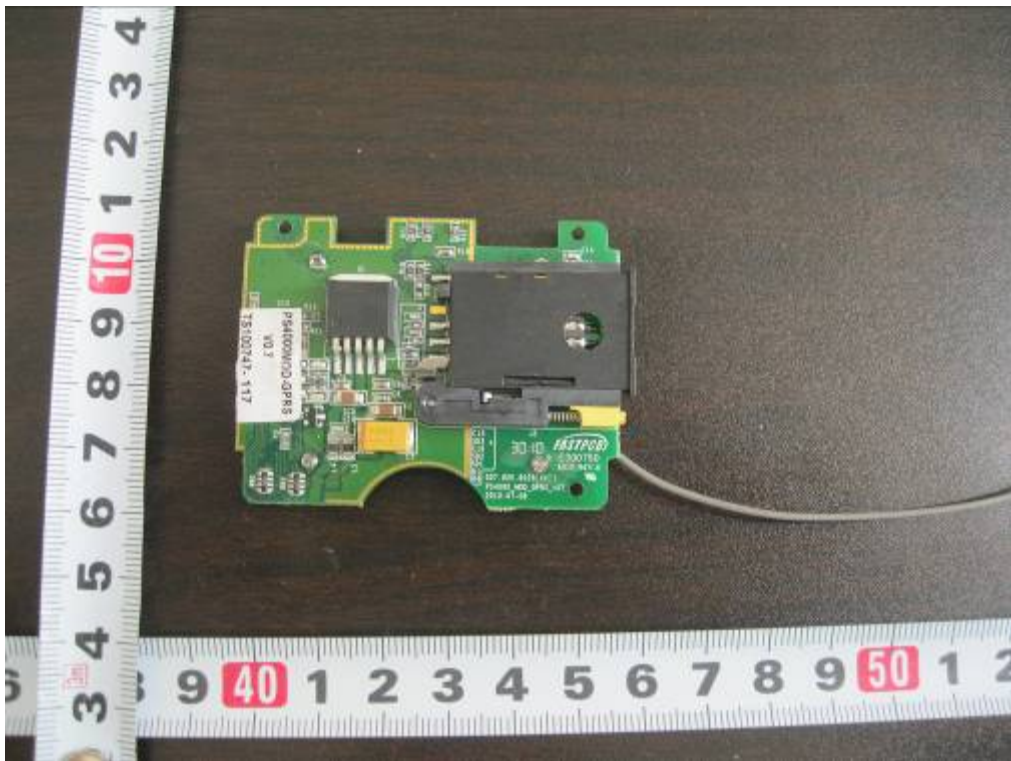
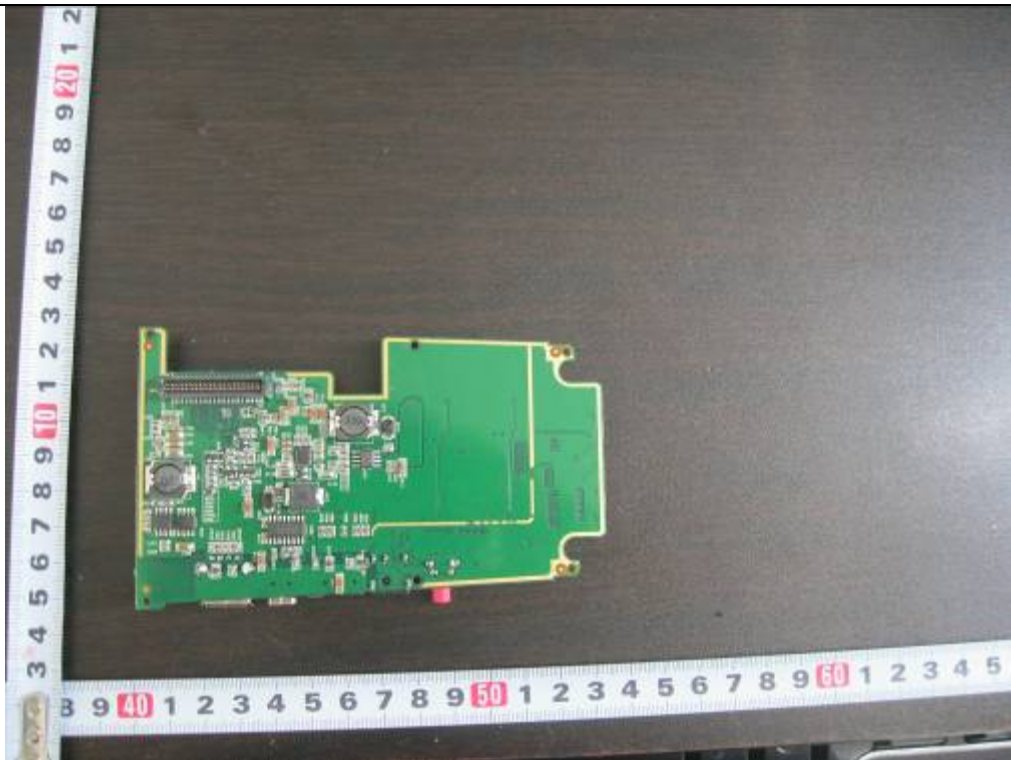


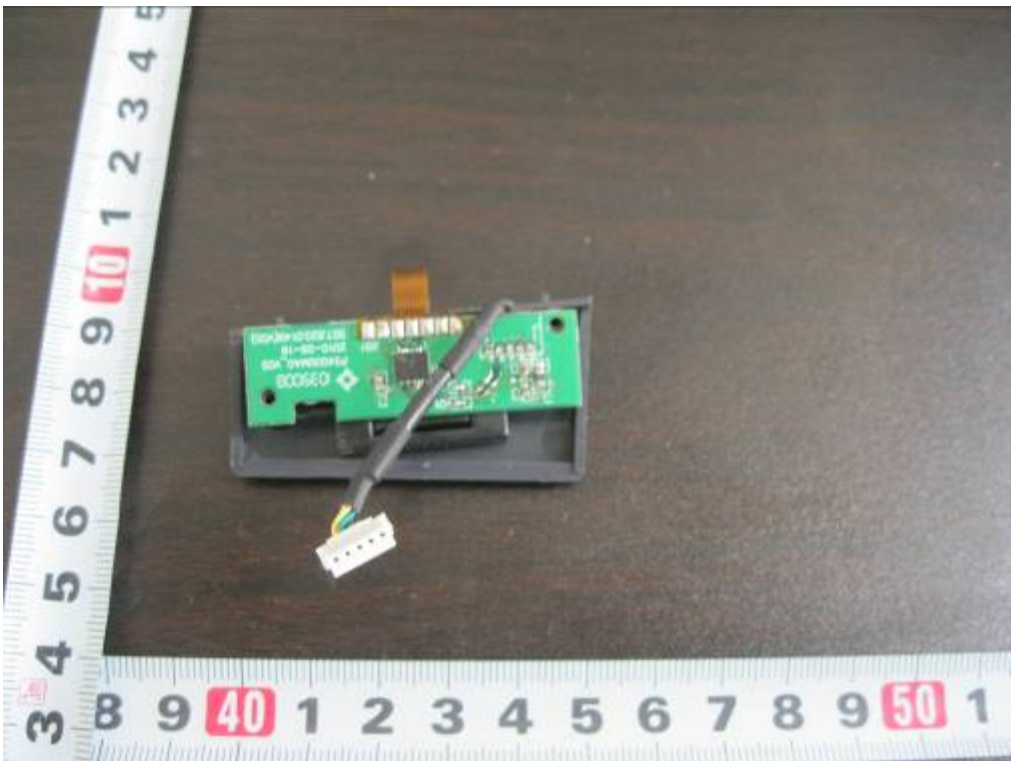
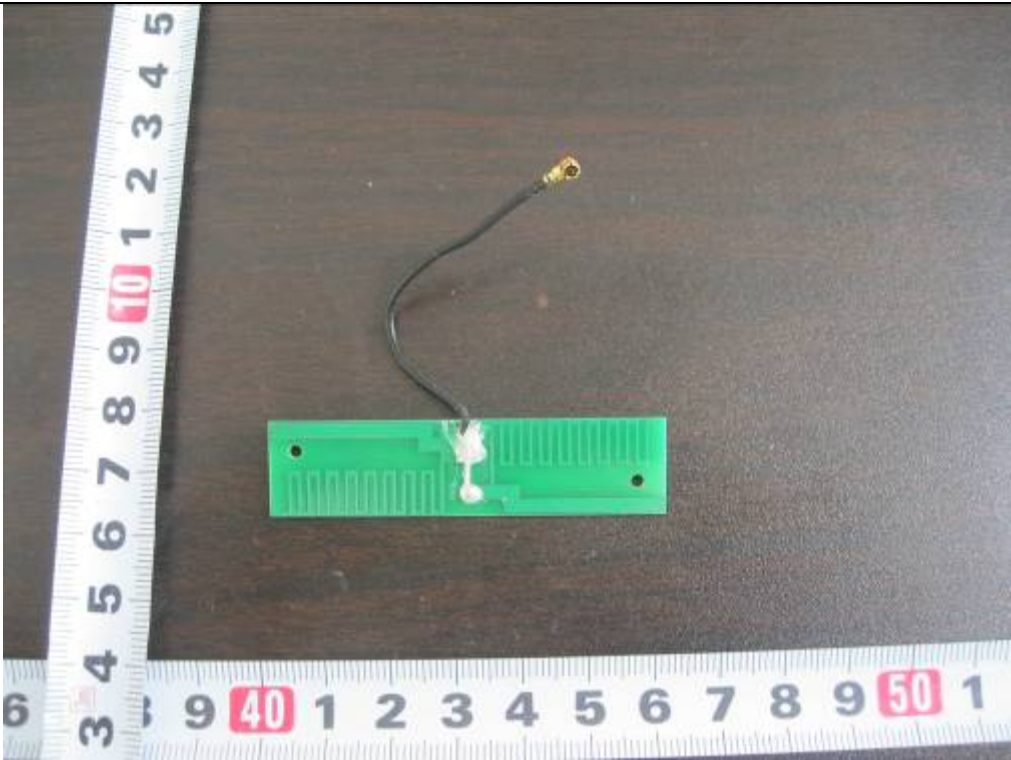




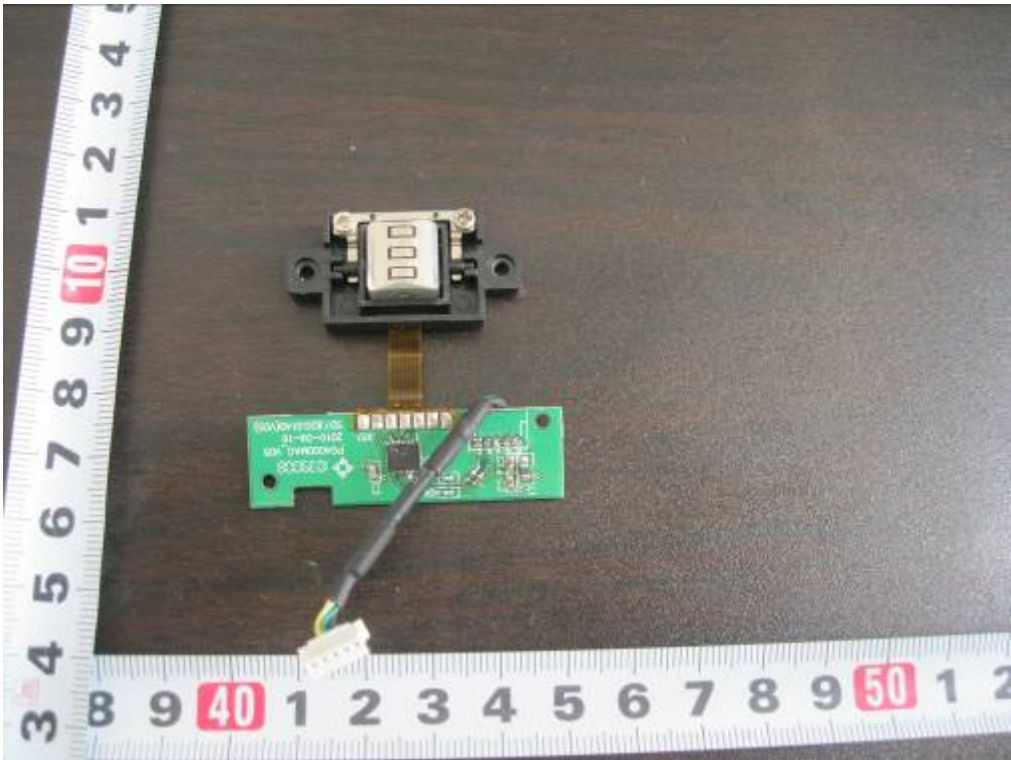


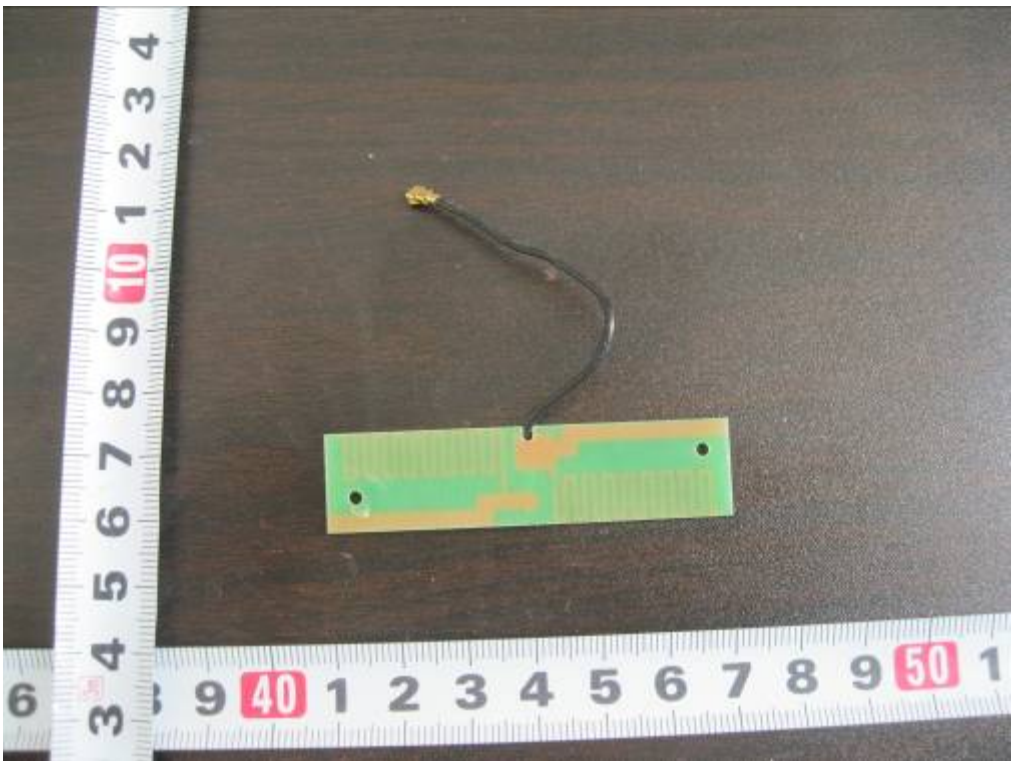
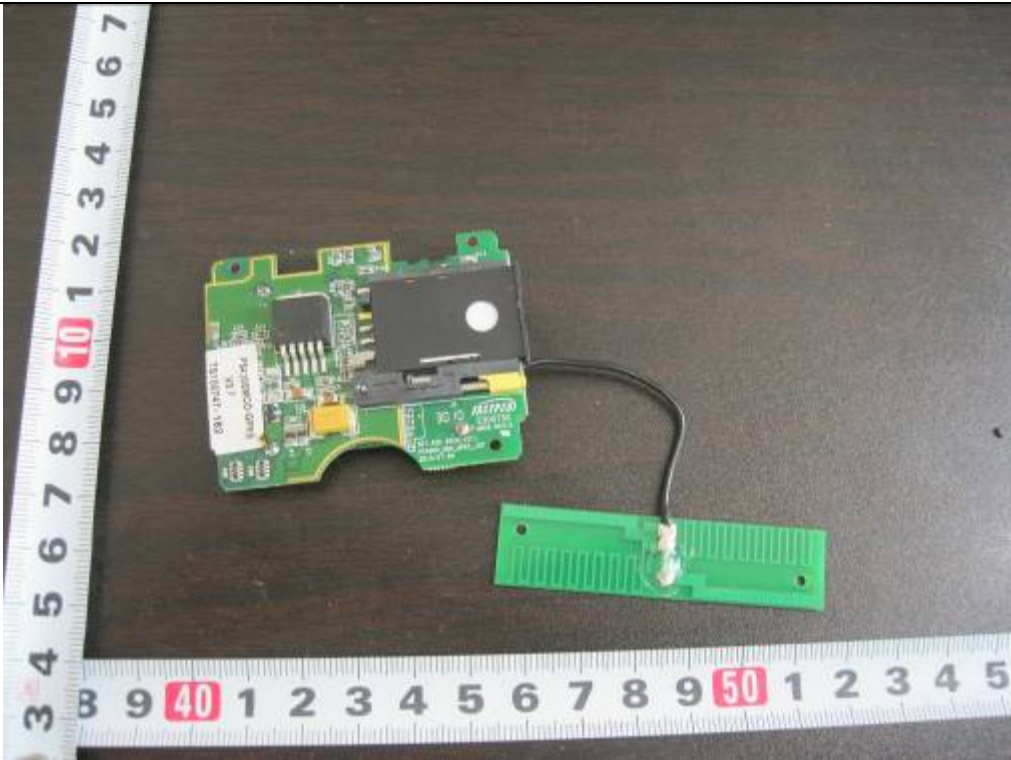








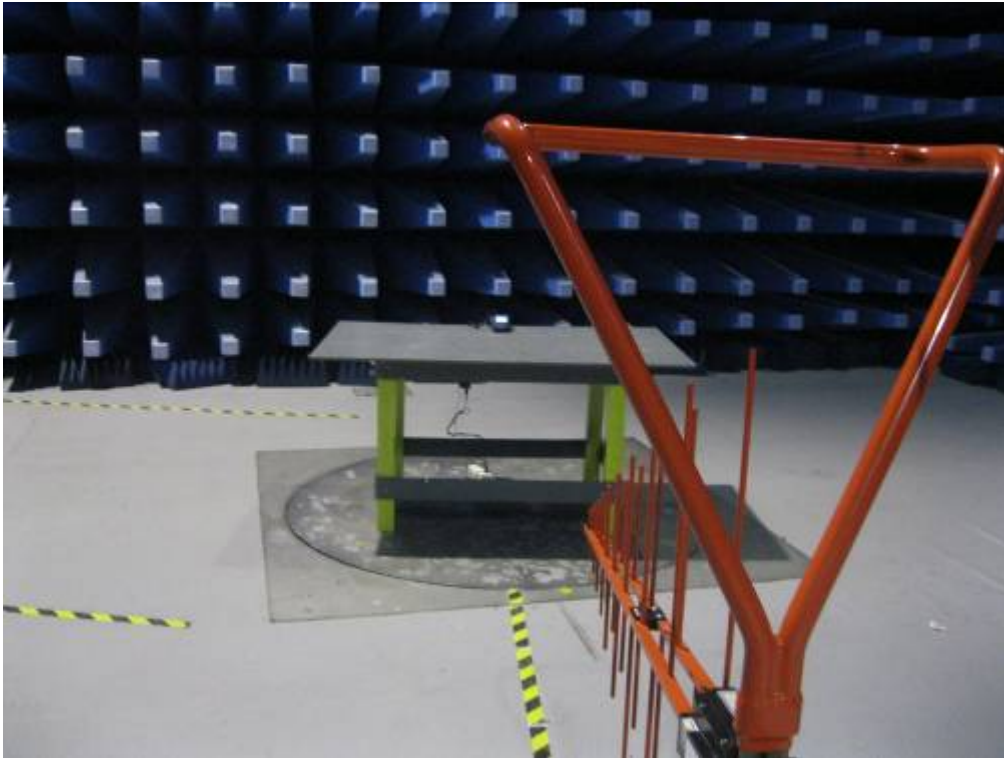




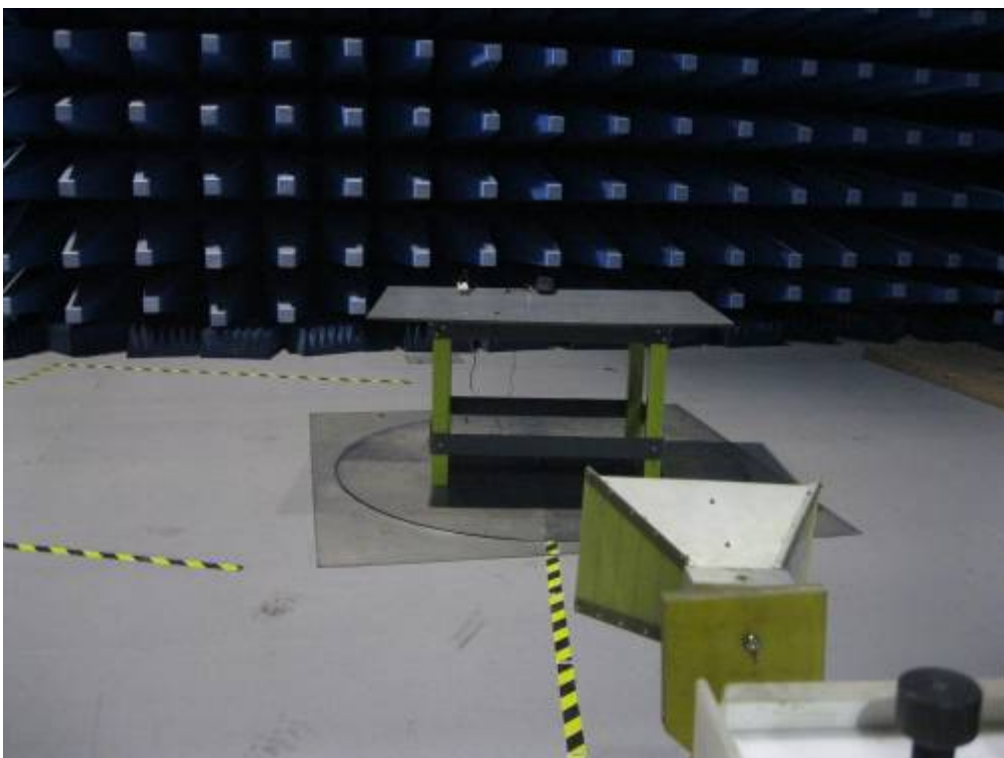




## **Annex B.ii. Photograph 2: Test setup Photo**



**Radiated Emission (30MHz - 1GHz) – Front View**



**Radiated Emission (> 1GHz) – Front View**

## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

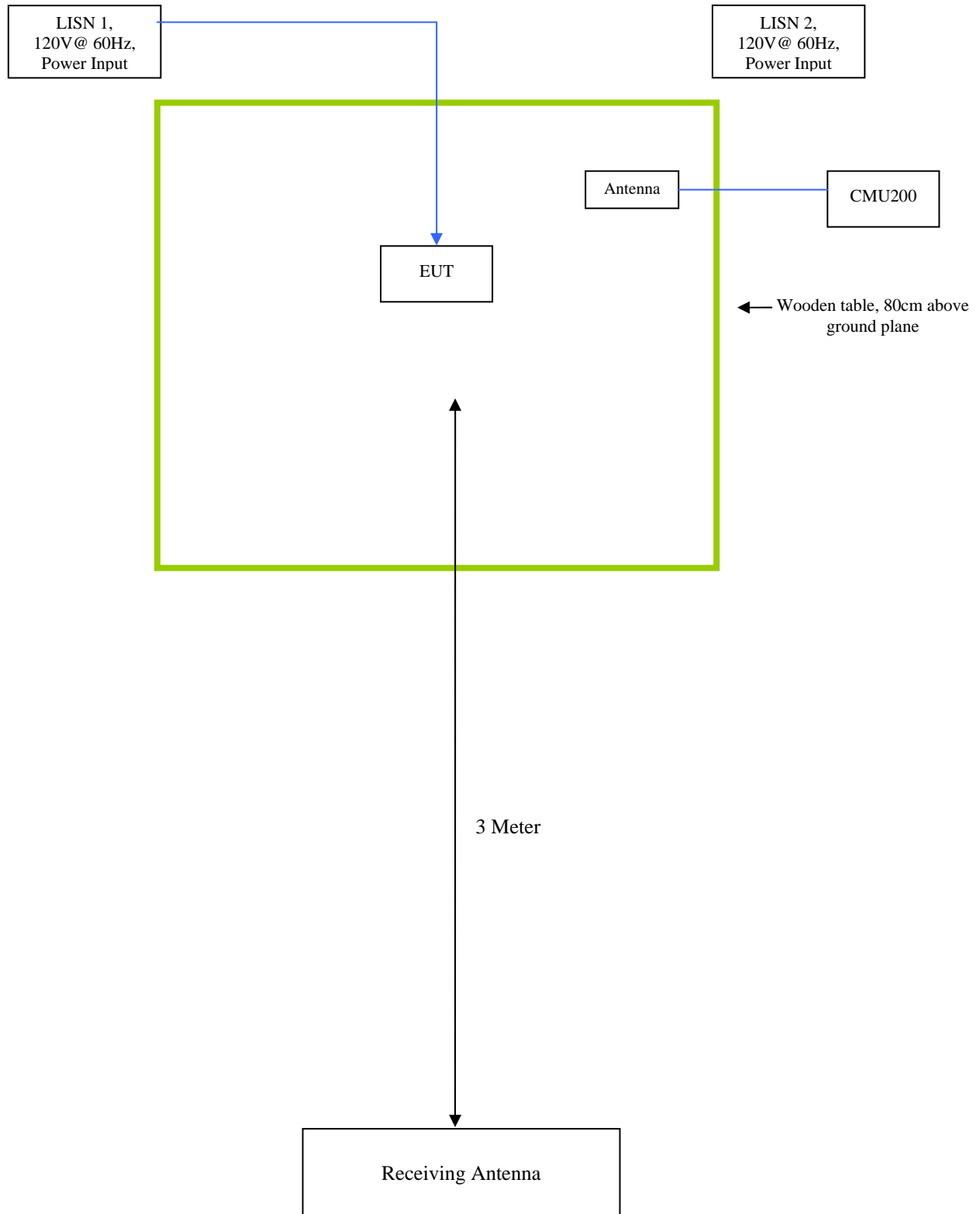
### EUT TEST CONDITIONS

#### Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

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

Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
N/A	N/A	N/A

## 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 CERTIFICATES**

**SIEMIC ACCREDITATION DETAILS: A2LA Certificate Number: 2742.01**




**THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION**

**ACCREDITED LABORATORY**

A2LA has accredited

**SIEMIC LABORATORIES**

**San Jose, CA**

for technical competence in the field of

**Electrical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 18 June 2005).



Presented this 11th day of July 2008.



President  
For the Accreditation Council  
Certificate Number 2742.01  
Valid to September 30, 2010

For the tests or types of tests to which this accreditation applies,  
please refer to the laboratory's Electrical Scope of Accreditation.



**THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION**

**ACCREDITED PRODUCT CERTIFICATION BODY**

A2LA has accredited

**SIEMIC INC.**

**San Jose, CA**

for technical competence as a

**Product Certification Body**

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC Guide 65:1996 *General requirements for bodies operating product certification systems*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system for a Telecommunications Certification Body (TCB) meeting FCC (U.S.), IDA (Singapore) and IC (Canada) requirements.



Presented this 9<sup>th</sup> day of January 2009.



President  
For the Accreditation Council  
Certificate Number: 2742.02  
Valid to: September 30, 2010

For the product certification schemes to which this accreditation applies,  
please refer to the certification body's Scope of Accreditation.

## SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 65:1996

SIEMIC INC.  
2206 Ringwood Ave.  
San Jose, CA 95131  
Mr. Snell Leong (Authorized Representative) Phone: 408 526 1188  
[www.sieminc.com](http://www.sieminc.com)

### PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

Valid to: September 30, 2010

Certificate Number: 2742.02

In recognition of the successful completion of the A2LA Certification Body Accreditation Program evaluation, including the US Federal Communications Commission (FCC), Industry Canada (IC) and Singapore (IDA) requirements for the indicated types of product certifications, accreditation is granted to this organization to perform the following product certification schemes:

#### Economy

#### Scope

#### **Federal Communication Commission - (FCC)**

Unlicensed Radio Frequency Devices	A1, A2, A3, A4
Licensed Radio Frequency Devices	B1, B2, B3, B4
Telephone Terminal Equipment	C

*\*Please refer to FCC TCB Program Roles and Responsibilities, v04, released February 14, 2008 detailing scopes, roles and responsibilities. <http://www.fcc.gov/oet/ea/FCC-Overview-TCB-Program.pdf>*

#### **Industry Canada - (IC)**

Radio	All Radio Standards Specifications (RSS) in Category I Equipment Standards List Radio
-------	--

*\*Please refer to Industry Canada (IC) website at: [http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/h\\_sf01342e.html](http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/h_sf01342e.html)*

#### **IDA – Singapore**

Line Terminal Equipment	All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2008, Annex 2
Radio-Communication Equipment	All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2008, Annex 2

*\*Please refer to Info-Communication Development Authority (IDA) Singapore website at:  
[http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies\\_and\\_Regulation\\_Level2/20060609145118/MRARecScheme.pdf](http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/20060609145118/MRARecScheme.pdf)*

**SIEMIC ACCREDITATION DETAILS: FCC Test Site Registration No. 783147**

**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](http://www.fcc.gov) under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Phyllis Parrish  
Industry Analyst



**SIEMIC ACCREDITATION DETAILS: Industry of Canada CAB ID : US0160**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899

March 4, 2009

Mr. Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by Industry Canada (IC), under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131 USA  
Identification No.: US0160  
Recognized Scope: CS-03 Part I, II, V, VI, VII and VIII

You may submit test data to IC to verify that the equipment to be imported into Canada satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. Please contact Ms. Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov) if you have any questions.

Sincerely,



David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: CAB Program Manager

**NIST**

**SIEMIC ACCREDITATION DETAILS: Industry of Canada Test Site Registration No. 4842-1**



May 27, 2010

OUR FILE: 46405-4842  
Submission No: 140856

**Siemic Inc.**  
2206 Ringwood Ave  
San Jose, CA, 95131  
USA

**Attention:** Snell Leong

Dear Sir/Madame:

The Bureau has received your application for the renewal of a 3m alternative test site. 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 ( **4842A-1** ). 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;

- Your primary code is: **4842**
- The company number associated to the site(s) located at the above address is: **4842A**

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 two 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\\_tt00052e.html](http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h_tt00052e.html).

If you have any questions, you may contact the Bureau by e-mail at [certification.bureau@ic.gc.ca](mailto: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  
3701 Carling Ave., Building 94  
P.O. Box 11490, Station "H"  
Ottawa, Ontario K2H 8S2  
Email: [dalwinder.gill@ic.gc.ca](mailto:dalwinder.gill@ic.gc.ca)  
Tel. No. (613) 998-8363  
Fax. No. (613) 990-4752

**SIEMIC ACCREDITATION DETAILS: FCC DOC CAB Recognition : US1109**

**FEDERAL COMMUNICATIONS COMMISSION**

**Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046**

August 28, 2008

Siemic Laboratories  
2206 Ringwood Ave.,  
San Jose, CA 95131

Attention: Leslie Bai

Re: Accreditation of Siemic Laboratories  
Designation Number: US1109  
Test Firm Registration #: 540430

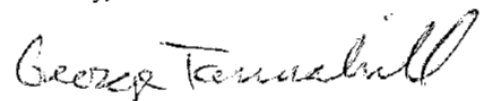
Dear Sir or Madam:

We have been notified by American Association for Laboratory Accreditation that Siemic Laboratories has been accredited as a Conformity Assessment Body (CAB).

At this time Siemic Laboratories is hereby designated to perform compliance testing on equipment subject to Declaration Of Conformity (DOC) and Certification under Parts 15 and 18 of the Commission's Rules.

This designation will expire upon expiration of the accreditation or notification of withdrawal of designation.

Sincerely,



George Tannahill  
Electronics Engineer

**SIEMIC ACCREDITATION DETAILS: Australia CAB ID : US0160**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899

November 20, 2008

Mr. Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Australian Communications and Media Authority (ACMA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: Siemic, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131  
Identification No.: US0160  
Recognized Scope: EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4  
Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771  
Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/NZS 60950.1

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. Please contact Ms. Ramona Saar, at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov) if you have questions.

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Snell Leong, Siemic, Inc.; Ramona Saar, NIST

**NIST**

**SIEMIC ACCREDITATION DETAILS: Korea CAB ID: US0160**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899-

October 1, 2008

Mr. Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Radio Research Agency (RRA) Korea Communications Commission (KCC) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131  
Identification No.: US0160  
Recognized Scope: **EMI:** KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI  
KN22: Test Method for EMI  
**EMS:** KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS  
KN24, KN-61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS  
**Wireless:** RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10,  
RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21,  
RRL Notice 2007-80, RRL Notice 2004-68  
**Wired:** President Notice 20664, RRL Notice 2007-30,  
RRL Notice 2008-7 with attachments 1, 3, 5, 6  
President Notice 20664, RRL Notice 2008-7 with attachment 4

You may submit test data to RRA/KCC to verify that the equipment to be imported into Korea satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. If you have any questions please contact Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov).

Sincerely,



David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Ramona Saar

**NIST**

**SIEMIC ACCREDITATION DETAILS: Taiwan BSMI Accreditation No. SL2-IN-E-1130R**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20885

May 3, 2006

Mr. Leslie Bai  
SIEMIC Laboratories  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

I am pleased to inform you that your laboratory has been recognized by the Chinese Taipei's Bureau of Standards, Metrology, and Inspection (BSMI) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. You may submit test data to BSMI to verify that the equipment to be imported into Chinese Taipei satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. The pertinent designation information is as follows:

- BSMI number: **SL2-IN-E-1130R** (Must be applied to the test reports)
- U.S. Identification No: **US0160**
- Scope of Designation: **CNS 13438**
- Authorized signatory: **Mr. Leslie Bai**

The names of all recognized CABs will be posted on the NIST website at <http://ts.nist.gov/mra>. If you have any questions, please contact Mr. Dhillon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group

cc: Jogindar Dhillon

**NIST**



**SIEMIC ACCREDITATION DETAILS: Taiwan NCC CAB ID: US0160**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899

November 25, 2008

Mr. Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the National Communications Commission (NCC) for the requested scope expansion under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131  
Identification No.: US0160  
Current Scope: LP0002  
Additional Scope: PSTN01, ADSL01, ID0002, IS6100 and CNS 14336

You may submit test data to NCC to verify that the equipment to be imported into China satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. If you have any questions please contact Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov).

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Ramona Saar

**NIST**

## SIEMIC ACCREDITATION DETAILS: Mexico NOM Recognition

 <p>CANIETI CAMARA NACIONAL DE LA INDUSTRIA ELECTRONICA, DE TELECOMUNICACIONES E INFORMATICA</p>	<h3>Laboratorio Valentín V. Rivero</h3>	<p>México D.F. a 18 de octubre de 2006.</p>
	<p><b>LESLIE BAI DIRECTOR OF CERTIFICATION SIEMIC LABORATORIES, INC. ACCESSING GLOBAL MARKETS P R E S E N T E</b></p>	
	<p>En contestación a su escrito de fecha 5 de septiembre del año en curso, le comento que estamos muy interesados en su intención de firmar un Acuerdo de Reconocimiento Mutuo, para lo cual adjunto a este escrito encontrara el Acuerdo en idioma inglés y español prellenado de los cuales le pido sea revisado y en su caso corregido, para que si está de acuerdo poder firmarlo para mandarlo con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.</p>	
	<p>Aprovecho este escrito para mencionarle que nuestro intermediario gestor será la empresa Isotel de México, S. A. de C. V., empresa que ha colaborado durante mucho tiempo con nosotros en lo relacionado a la evaluación de la conformidad y que cuenta con amplia experiencia en la gestión de la certificación de cumplimiento con Normas Oficiales Mexicanas de producto en México.</p>	
	<p>Me despido de usted enviándole un cordial saludo y esperando sus comentarios al Acuerdo que nos ocupa.</p>	
	<p>Atentamente:</p>	
	 <p><b>Ing. Faustino Sánchez González Gerente Técnico del Laboratorio de CANIETI</b></p>	
<p>Culiacán Tl Hederosa Condasa 06100 México, D.F. Tel. 5264-6938 con 12 líneas Fax 5264-0488 www.canietit.org</p>		



**SIEMIC ACCREDITATION DETAILS: Hong Kong OFTA CAB ID : US0160**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899-

December 8, 2008

Mr. Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Office of the Telecommunications Authority (OFTA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, California 95131 USA  
Identification No.: US0160  
Recognized Scope: **Radio:** HKTA 1002, 1007, 1008, 1010, 1015, 1016, 1020, 1022, 1026, 1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1039, 1041, 1042, 1043, 1044, 1046, 1047, 1048, 1049, 1051  
**Telecom:** HKTA 2011, 2012, 2013, 2014, 2017, 2018, 2022, 2024, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033

You may submit test data to OFTA to verify that the equipment to be imported into Hong Kong satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. If you have any questions please contact Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov).

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Ramona Saar

**NIST**

**SIEMIC ACCREDITATION DETAILS: Australia ACMA CAB ID: US0160**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899

November 20, 2008

Mr. Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Australian Communications and Media Authority (ACMA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: Siemic, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131  
Identification No.: US0160  
Recognized Scope: EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4  
Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771  
Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/NZS 60950.1

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. Please contact Ms. Ramona Saar, at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov) if you have questions.

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Snell Leong, Siemic, Inc.; Ramona Saar, NIST

**NIST**

## SIEMIC ACCREDITATION DETAILS: Australia NATA Recognition



Leslie Bai  
SIEMIC, Inc.  
2206 Ringwood Avenue  
San Jose, CA 95131

November 4, 2008

Under Australian government legislation, the Australian Communications and Media Authority (ACMA) has determined the National Association of Testing Authorities, Australia (NATA) as an accreditation body as per Section 409(1) of the Telecommunications Act 1997 (Cth). Pursuant to Section 409(2) of the Telecommunications Act 1997 (Cth), I am pleased to advise that your laboratory has been determined as a Recognised Testing Authority (RTA).

This determination has been made on the basis of your accreditation by A2LA accreditation no. 2742.01 and the Mutual Recognition Agreement between NATA and A2LA. It is effective from 11 July 2008. RTA status applies only to the following standards and is contingent upon their continued inclusion in your laboratory's scope of accreditation.

**AS/ACIF S002, AS/ACIF S003, AS/ACIF S004,  
AS/ACIF S006, AS/ACIF S016, AS/ACIF S031,  
AS/ACIF S038, AS/ACIF S041 and  
AS/ACIF S043.2**

As an RTA, your laboratory has the following obligations:

1. the laboratory shall continue to meet all of the accreditation criteria of A2LA;
2. the authorised representative of the laboratory shall notify NATA of changes to the staff or operations of the laboratory which would affect the performance of the tests for which the laboratory has been determined;
3. compliance of equipment shall be reported on test reports bearing the A2LA logo/endorsement.

Current information on the Australian Communications and Media Authority and regulatory requirements for telecommunications products within Australia can be obtained from the ACMA's web-site at "<http://www.acma.gov.au>". Further information about NATA may be gained by visiting "<http://www.nata.asn.au>".

Please note that AS/ACIF S040 and New Zealand standards do not form part of the RTA scheme.

Your RTA listing will appear on the NATA website shortly.

Kind Regards

Chris Norton,  
Senior Scientific Officer  
Measurement Science and Technology  
National Association of Testing Authorities (NATA)  
71-73 Flemington Road  
North Melbourne Vic 3051  
Australia  
Ph: +61 3 9329 1633 Fx: +61 3 9326 5148  
E-Mail: [Christopher.Norton@nata.asn.au](mailto:Christopher.Norton@nata.asn.au)  
Internet: [www.nata.asn.au](http://www.nata.asn.au)





**SIEMIC ACCREDITATION DETAILS: VCCI Conducted (Main Port) Test Site Registration No. C-3421**



VCCI Council

# CERTIFICATE

**Company: SIEMIC Laboratories**

**<Member No. 3081 >**

**Facility: SIEMIC Laboratories**

**(Main Ports Conducted Interference Measurement)**

**Location of Facility:**

**2206 Ringwood Ave San Jose, CA 95131, USA**

*This is to certify that the following measuring facility  
has been registered in accordance with the Rules  
for Voluntary Control Measures*

**Registration No.: C-3421**

**Date of Registration: October 01 , 2010**

**This Certificate is valid until September 30 , 2012**

**VCCI Council**



