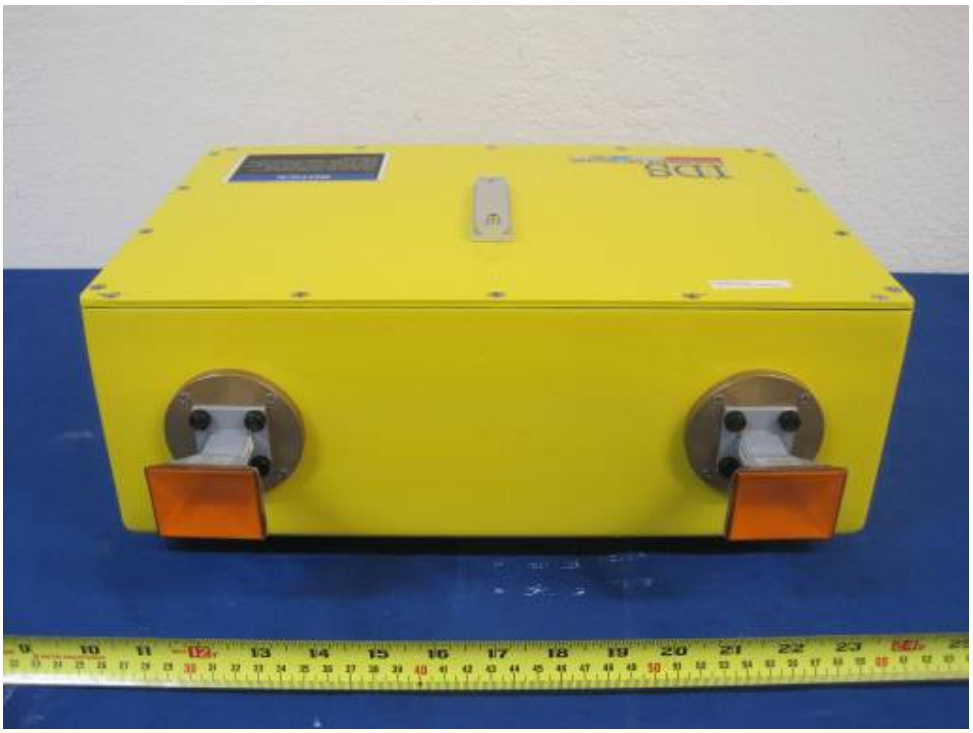
INGEGNERIA DEI SISTEMI S.P.A

IBIS SENSOR KU BAND

Model: IBIS-KU

June14th 2010
Report No.: SL10050401-IDS-001_FCC(IBIS Sensor Ku Band) Rev1.0
(This report supersedes SL10050401-IDS-001_FCC(IBIS Sensor Ku Band))



EMC Test Report
To: FCC Part 15B, 90F
SIEMIC, INC.
Accessing global markets

Modifications made to the product : None

This Test Report is Issued Under the Authority of:	
David Zhang	Bei
David Zhang Test Engineer	Leslie Bai Engineering Reviewer

Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management through out a project. Our extensive experience with China, Asia Pacific, North America, European, and international compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

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

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CONTENTS

1 EXECUTIVE SUMMARY & EUT INFORMATION 6

2 TECHNICAL DETAILS 7

3 MODIFICATION 8

4 TEST SUMMARY 9

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS 10

ANNEX A. TEST INSTRUMENT & METHOD 33

ANNEX B. TEST SETUP PHOTOGRAPHS 37

ANNEX B. I. EUT INTERNAL PHOTOGRAPHS 38

ANNEX B. II. EUT EXTERNAL PHOTOGRAPHS 39

ANNEX D USER MANUAL, BLOCK & CIRCUIT DIAGRAM 44

ANNEX E SIEMIC ACCREDITATION 45

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1 Executive Summary & EUT information

The purpose of this test programmed was to demonstrate compliance of the Ingegneria dei Sistemi S.P.A, Model: IBIS-KU against the current Stipulated Standards.

The equipment under test radio operating frequency is 17.1GHz-17.3GHz.

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

EUT Information

EUT Description	:	The IBIS sensor is the radio frequency emitting part of IBIS-L and IBIS-S system. Both IBIS-L and IBIS-S system is designed to remotely measure slow displacements with an accuracy as great as a tenth of a millimetre. The IBIS-L system is particularly suitable for terrain monitoring applications, with the aim of detecting quasi-static displacements over long time periods. The IBIS-S system particularly suitable for structure (bridge, tower and etc..) dynamic monitoring.
Model No	:	IBIS-KU
Serial No	:	N/A
Input Power	:	24 VDC
Classification Per Stipulated Test Standard	:	Class A

Note : IBIS Sensor can work with 6 different external antennas, only the test result with highest gain and lowest gain were shown in report, the model numbers of all antennas as below,

IBIS-ANT1-H38V18
IBIS-ANT2-H29V25
IBIS-ANT3-H17V15
IBIS-ANT4-H11V10
IBIS-ANT5-H12V39
IBIS-ANT6-H51V20

2 TECHNICAL DETAILS

Purpose	**Compliance testing of IBIS Sensor Ku band with stipulated standard**
Applicant / Client	**Ingegneria dei Sistemi S.P.A**
Manufacturer	**Ingegneria dei Sistemi S.P.A Via Livornese 1019 Pisa**
Laboratory performing the tests	**SIEMIC Laboratories**
Test report reference number	**SL10050401-IDS-001_FCC(IBIS Sensor Ku Band) Rev1.0**
Date EUT received	**June 9th 2010**
Standard applied	**FCC Part 15B:2009; Part 90F: 2009**
Dates of test (from – to)	**June 9-11 2010**
No of Units:	**1**
Equipment Category:	**Radiolocation Service**
Model :	**IBIS-KU**
RF Operating Frequency (ies)	**17.1GHz-17.3GHz(FCC)**
Number of Channels :	**Swept**
FCC ID :	**UFW-IBIS-KU**

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:

Class A

Test Results Summary

Test Standard	Description	Pass / Fail
FCC Part 15B:2009&Part 90F:2009		
15.203	Antenna Requirement	Pass
15.207(a)	AC Conducted Emissions Voltage	N/A
2.1046	RF Output Power	Pass
2.1049	Occupied Bandwidth	Pass
90.210 (c)	Spectrum Emission Mask	Pass
2.1051	Conducted Spurious Emissions	Pass
15.209; 2.1053	Radiated Spurious Emission	Pass
2.1055	Frequency Stability	Pass
ANSI C63.4: 2003 PS: All measurement uncertainties are not taken into consideration for all presented test result.		

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 Antenna Requirement

Requirement(s): 47 CFR §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna requirement must meet at least one of the following:

a) Antenna must be permanently attached to the device.
b) Antenna must use a unique type of connector to attach to the device.
c) Device must be professionally installed. Installer shall be responsible for ensuring that the correct antenna is employed with the device.

Note : Antenna use a wave guide port to attach to the device

Result : Pass

5.2 Conducted Emissions Voltage

Requirement(s): 47 CFR §15.207

Requirement:

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15–0.5	79	66
0.5–30	73	60

*Decreases with the logarithm of the frequency.

Procedures:

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR and Average 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. 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 9kHz – 30MHz (Average & Quasi-peak) is ±3.5dB.
4. Environmental Conditions

Temperature	28ºC
Relative Humidity	50%
Atmospheric Pressure	1019mbar

Test Date : N/A
Tested By : N/A

Results: N/A

Note : EUT was powered by battery.

5.2 Peak 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

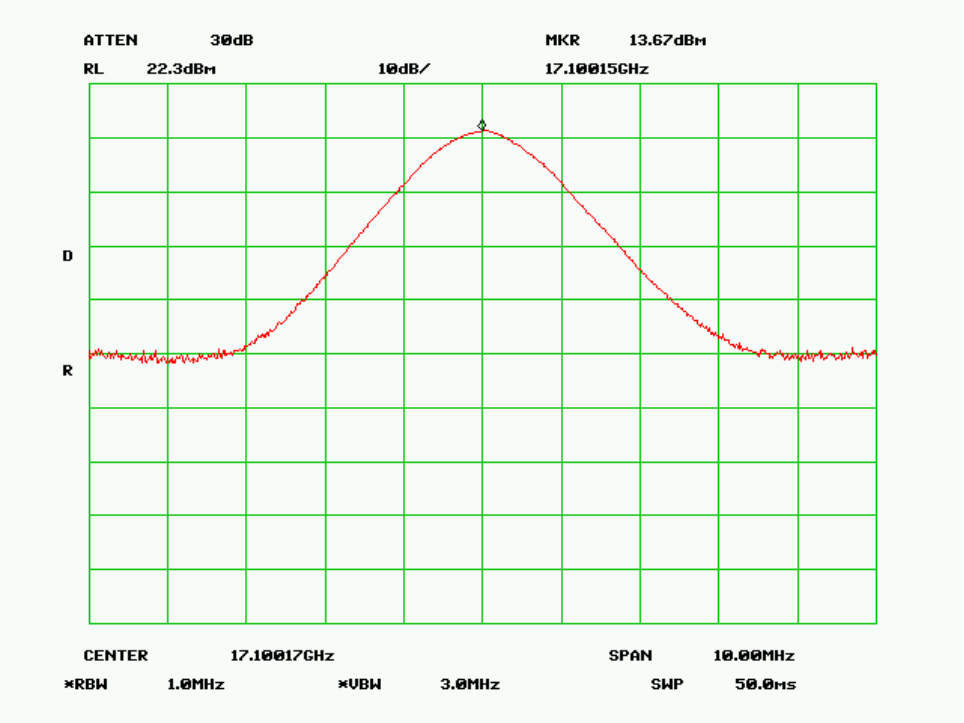
4. Test Date : June 9-11 2010
   Tested By :David Zhang

Standard Requirement: 47 CFR §2.1046

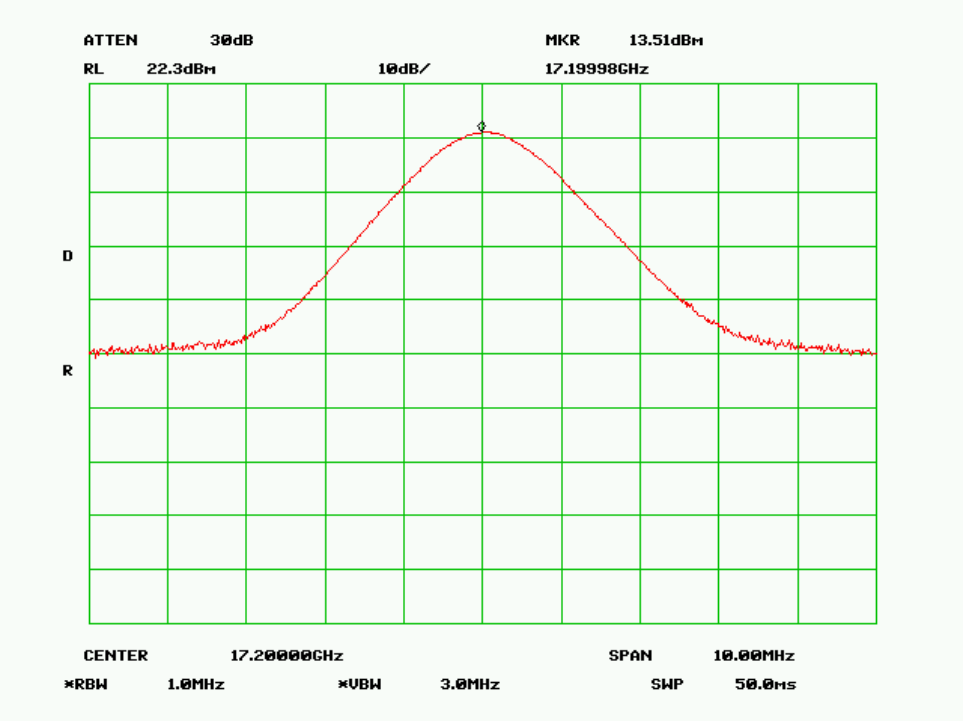
Procedures: The peak output power was measured conducted using a spectrum analyzer at low, mid, and hi channels. Peak detector was set to measure the power output. The power is converted from watt to dBm, therefore, 1 watt = 30 dBm. The lowest antenna gain is 15dBi, and highest antenna gain is 22 dBi.

Test Result: Pass

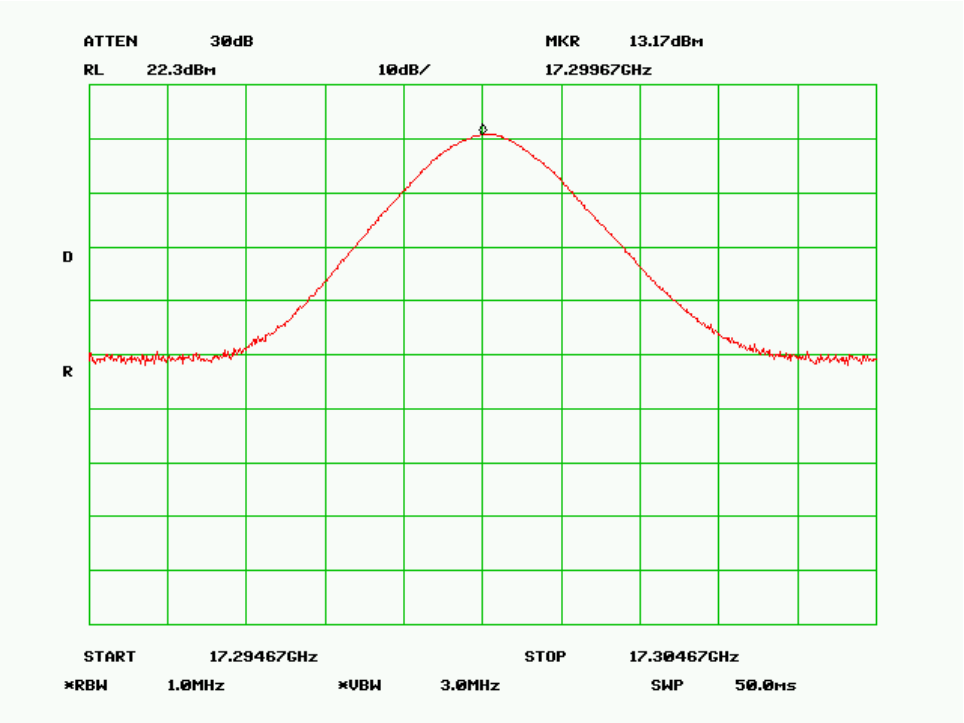
Antenna Gain	Channel	Channel Frequency (GHz)	Peak Output Power Limit (dBm)	Measured Output Power(dBm)	Pass/Fail
15dBi	Low	17.1	Not specified	13.67	Pass
15dBi	Mid	17.2	Not specified	13.51	Pass
15dBi	High	17.3	Not specified	13.17	Pass
22dBi	Low	17.1	Not specified	4.93	Pass
22dBi	Mid	17.2	Not specified	5.10	Pass
22dBi	High	17.3	Not specified	4.93	Pass



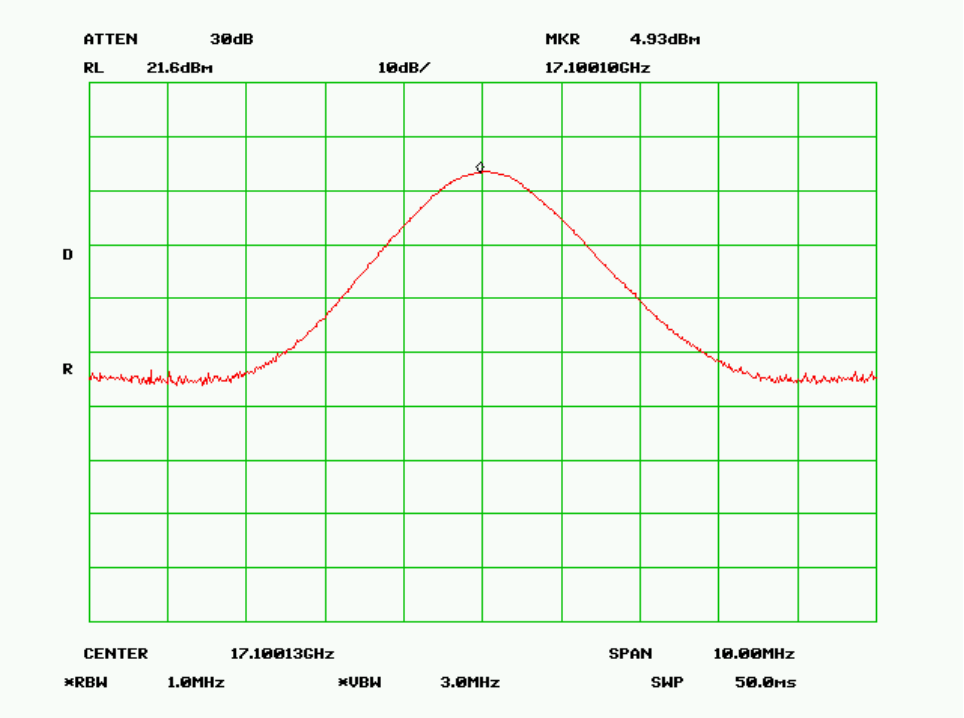
Output Power Low Channel (Antenna Gain 15dBi)



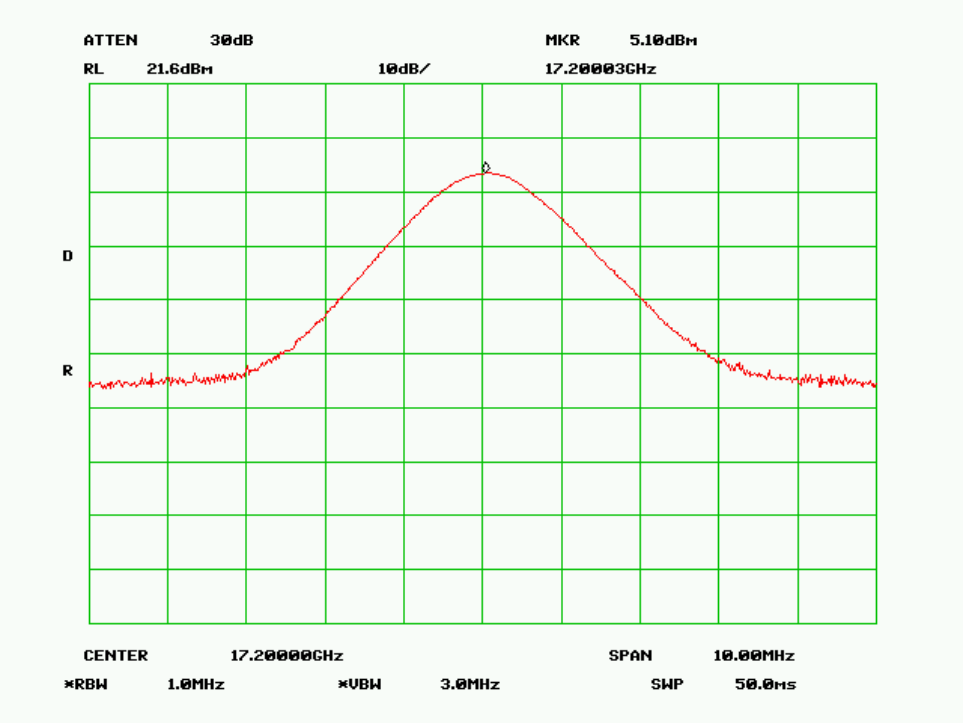
Output Power Middle Channel (Antenna Gain 15dBi)



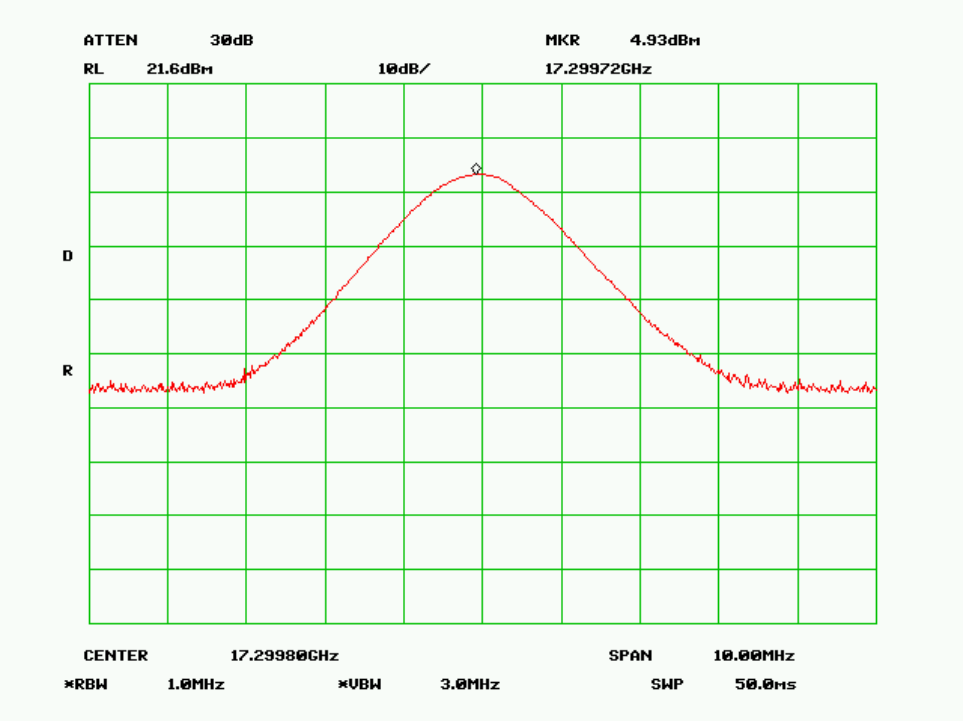
Output Power High Channel (Antenna Gain 15dBi)



Output Power Low Channel (Antenna Gain 22dBi)



Output Power Middle Channel (Antenna Gain 22dBi)



Output Power High Channel (Antenna Gain 22dBi)

5.3 99% 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 : June 9-11 2010
Tested By :David Zhang

Requirement(s): 47 CFR §2.1049

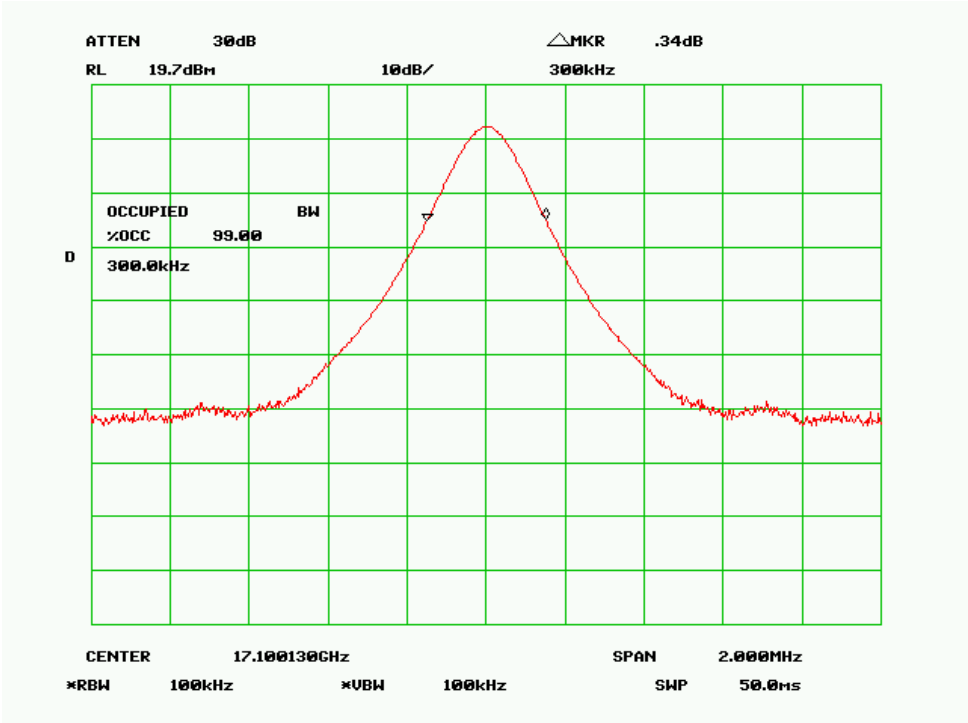
Procedures: The 99% bandwidths were measured conducted using a spectrum analyzer at low, mid, and hi channels.

Results: Pass

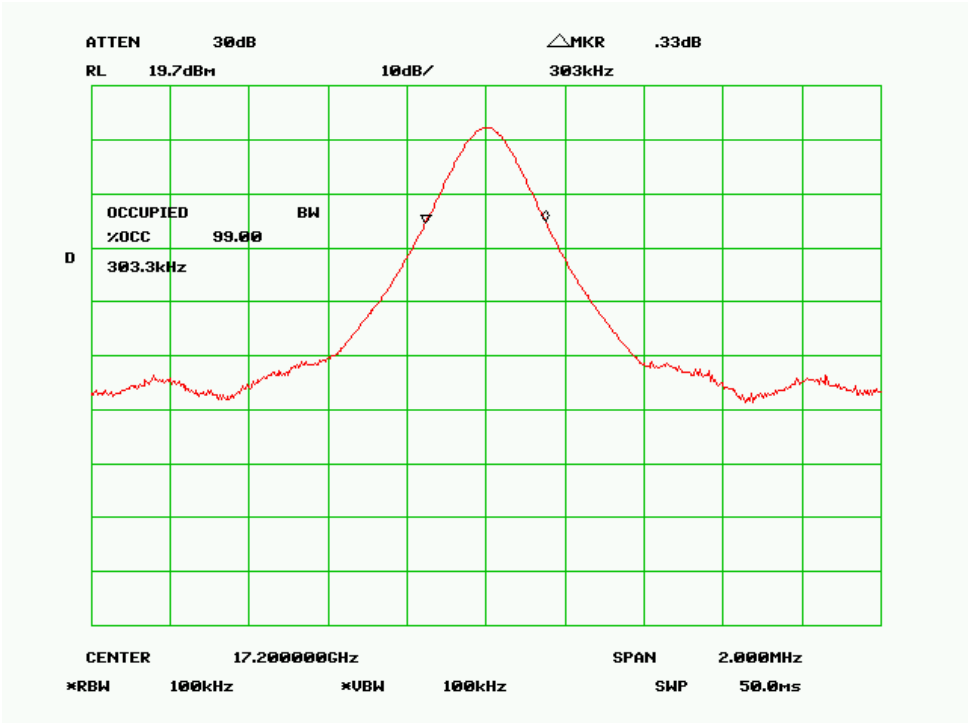
Channel	Channel Frequency (GHz)	99% Channel Bandwidth (KHz)	Occupied Bandwidth Limit (KHz)	Pass/Fail
Low	17.1	300	Not specified	Pass
Mid	17.2	303	Not specified	Pass
High	17.3	303	Not specified	Pass

Channel	Channel Frequency (GHz)	99% Channel Bandwidth (MHz)	Occupied Bandwidth Limit (MHz)	Pass/Fail
Full Band	N/A	198.3	200MHz	Pass

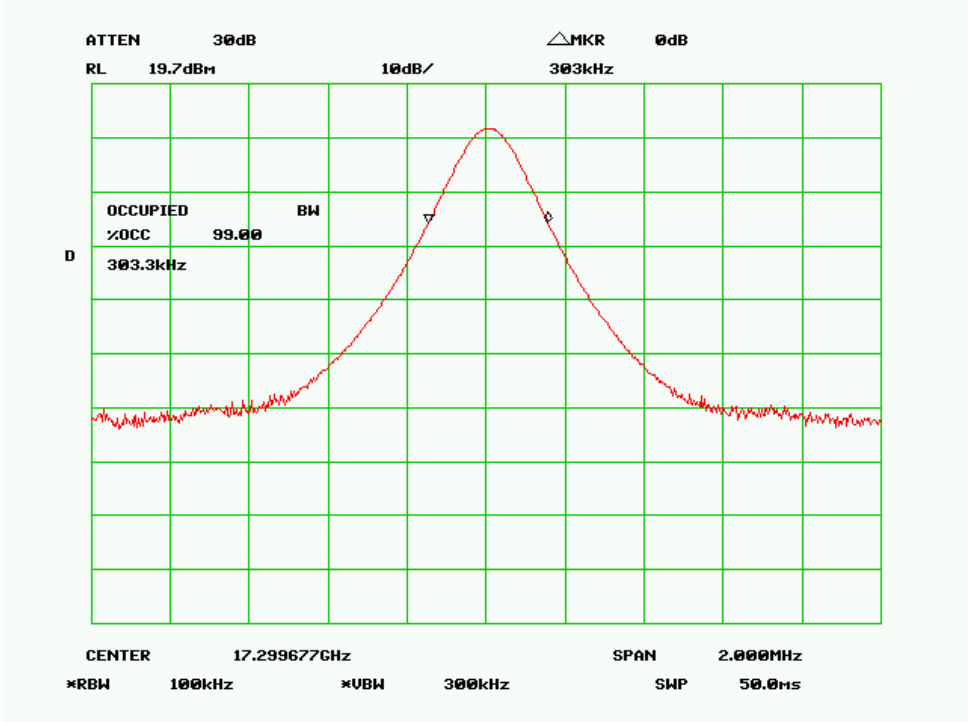
Refer to the attached plots.



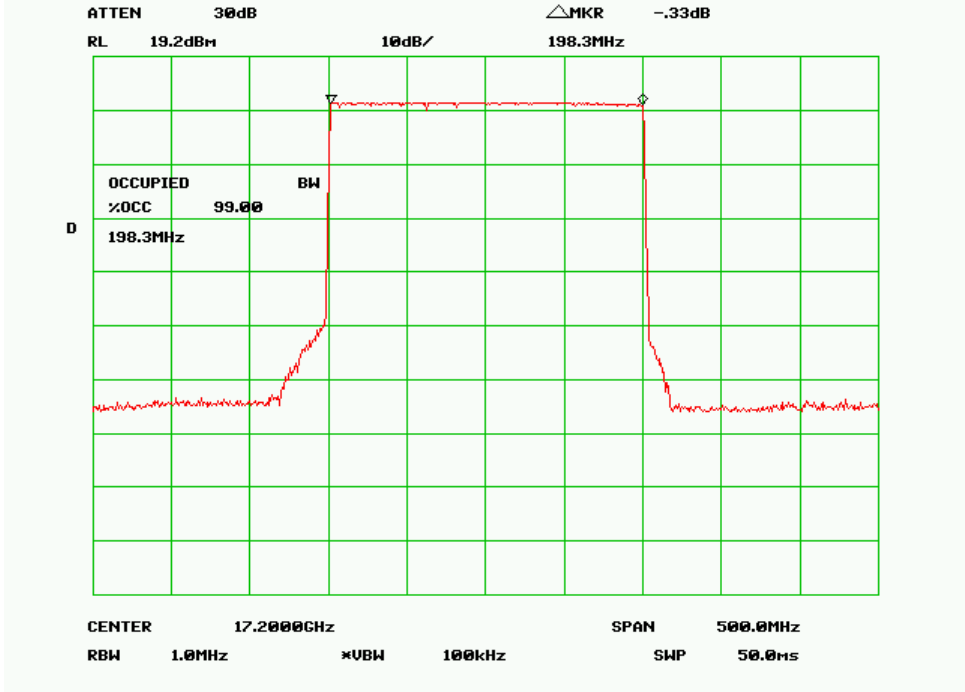
99% Bandwidth - Low Channel



99% Bandwidth - Mid Channel



99% Bandwidth - High Channel



99% Bandwidth (Full Spectrum Band)

5.4 Spectrum Emission Mask

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 : June 9-11 2010
   Tested By :David Zhang

Requirement(s): 47 CFR §90.210 (c)

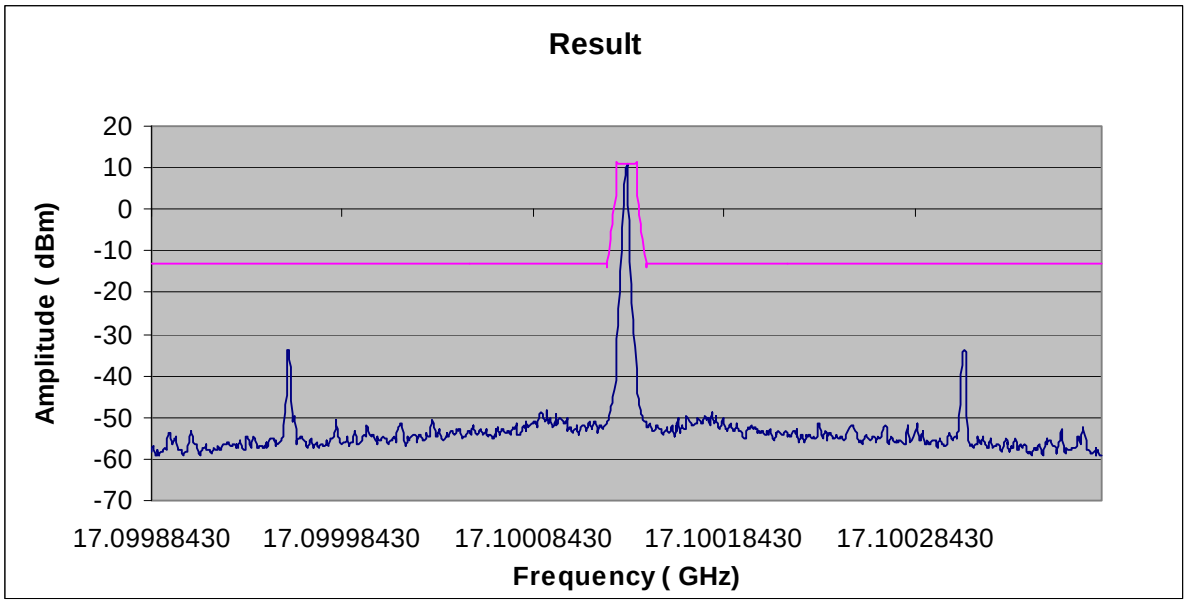
For transmitters that are not equipped with an audio low-pass filter , the powter of any emission must be attenuated below the unmodulated carrier output power (P) as follows:

1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) of more than 5 KHz, but not more than 10KHz : At least 83 log(fd/5) dB; (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth : At least 29 log (fd2/11) dB or 50 dB, whichever is the lesser attenuation; (3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth : At least 43+ 10log (P) dB.

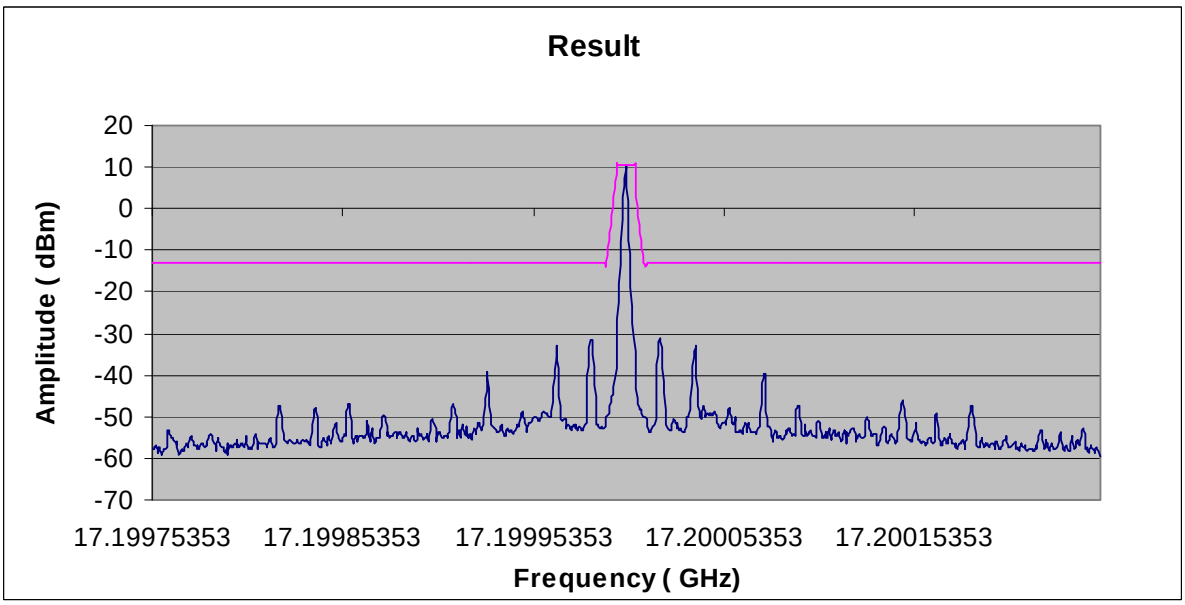
Procedures: The spectrum emission mask were measured conducted using a spectrum analyzer at low, mid, and hi channels.

Results: Pass

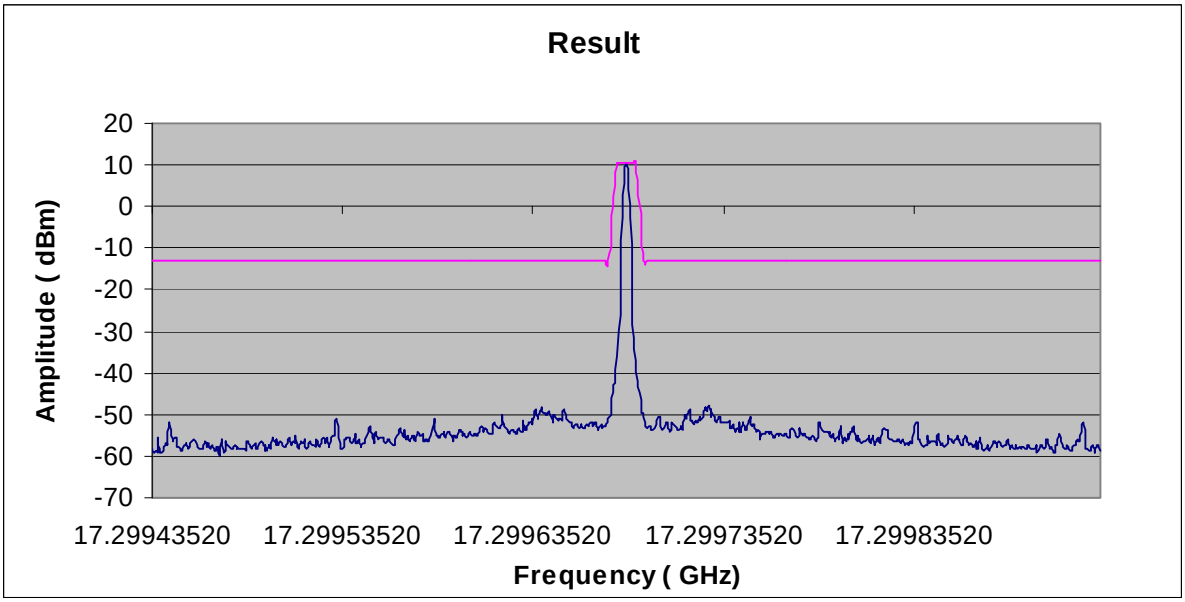
Test Plot



Spectrum Emission Mask (Low channel)



Spectrum Emission Mask (Mid channel)



Spectrum Emission Mask (High channel)

5.5 Conducted Spurious Emission at Antenna Port

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 : June 9-11 2010
   Tested By :David Zhang

Requirement(s): 47 CFR §2.1051

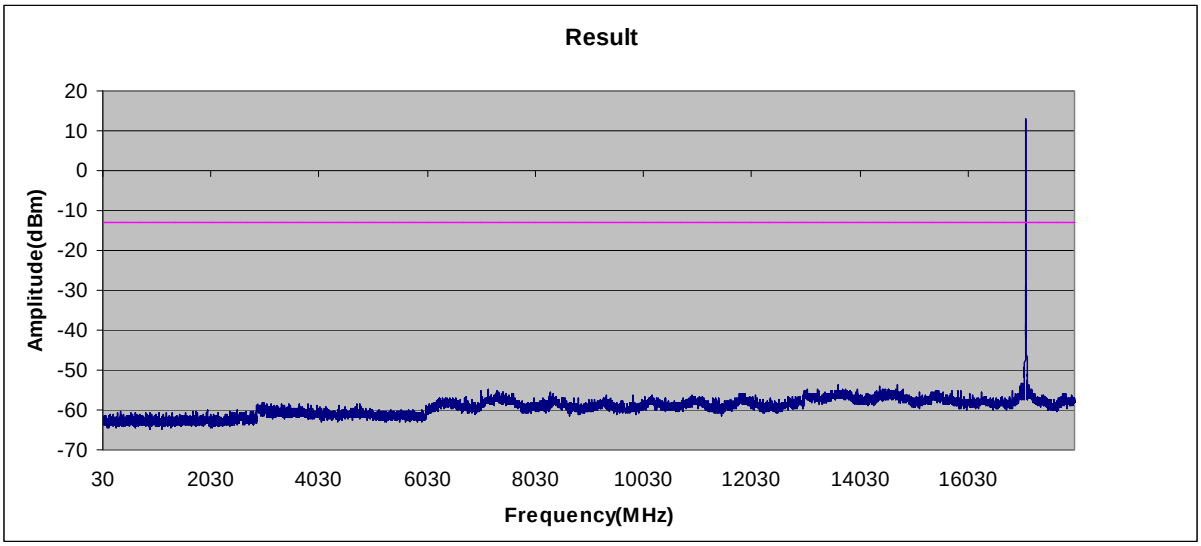
For transmitters that are not equipped with an audio low-pass filter , the powter of any emission must be attenuated below the unmodulated carrier output power (P) as follows:

1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) of more than 5 KHz, but not more than 10KHz : At least 83 log(fd/5) dB; (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth : At least 29 log (fd2/11) dB or 50 dB, whichever is the lesser attenuation; (3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth : At least 43+ 10log (P) dB.

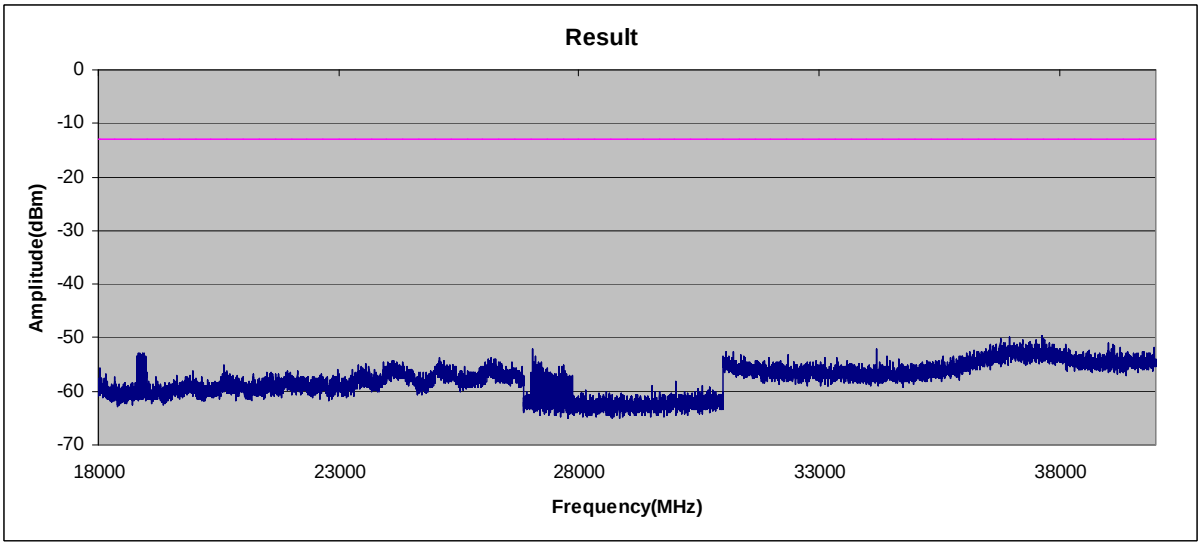
Procedures: The spectrum emission mask were measured conducted using a spectrum analyzer at low, mid, and hi channels. The emission outside of the allocated frequency band were then scanned from 30MHz up to the tenth harmonic of the carrier (173GHz)

Results: Pass

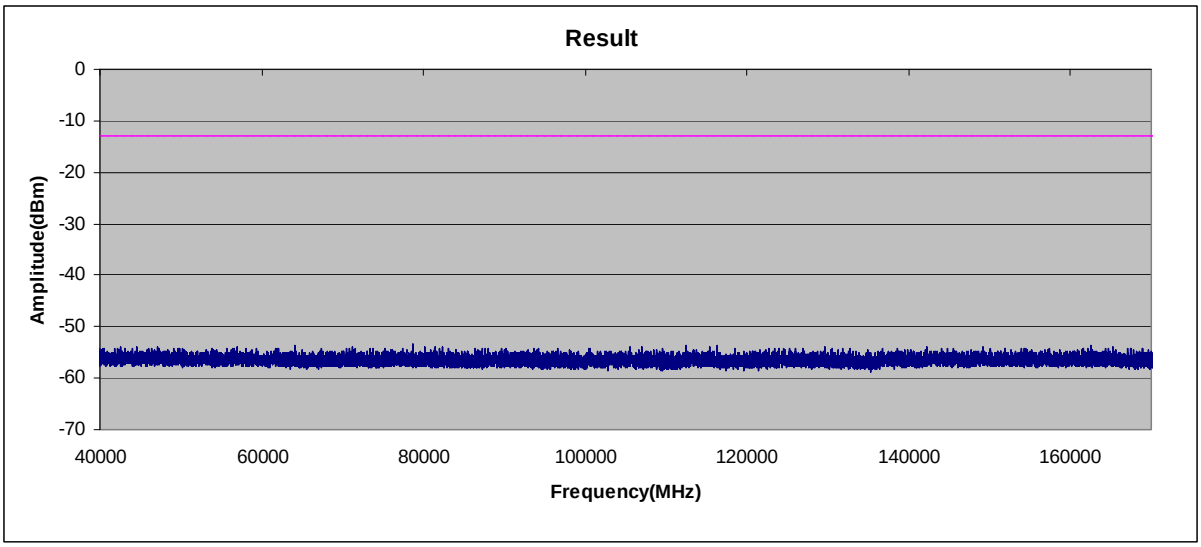
Test Plot



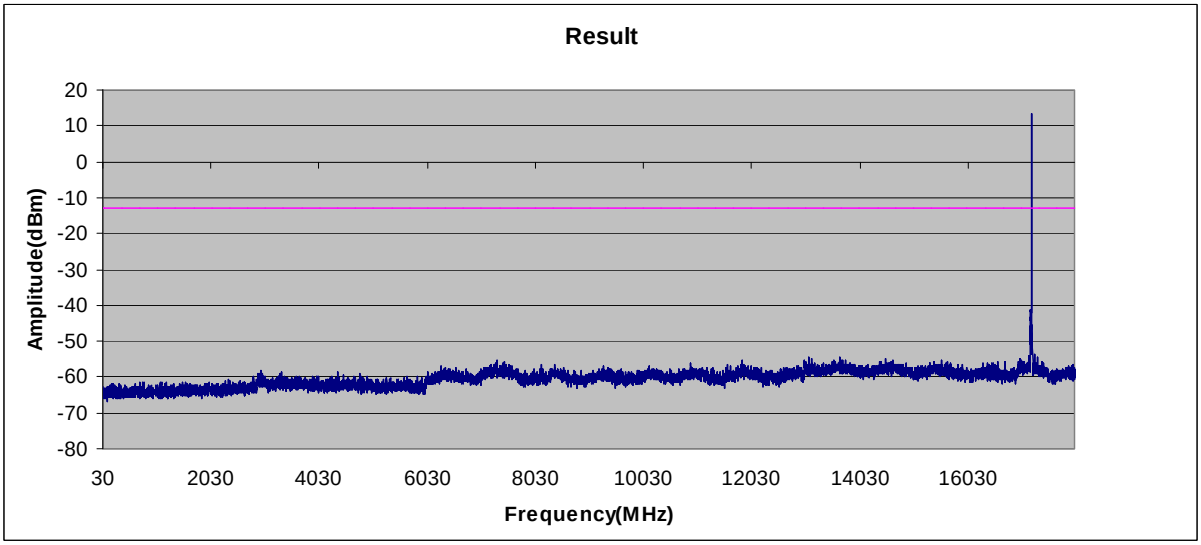
30MHz-18GHz (Low channel)



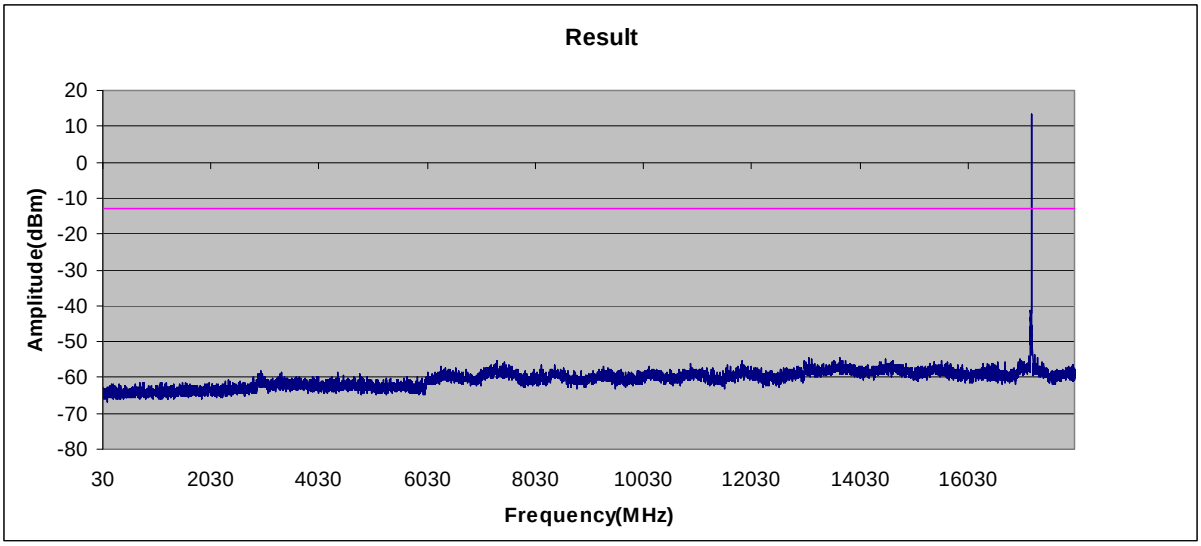
18GHz-40GHz (Low channel)



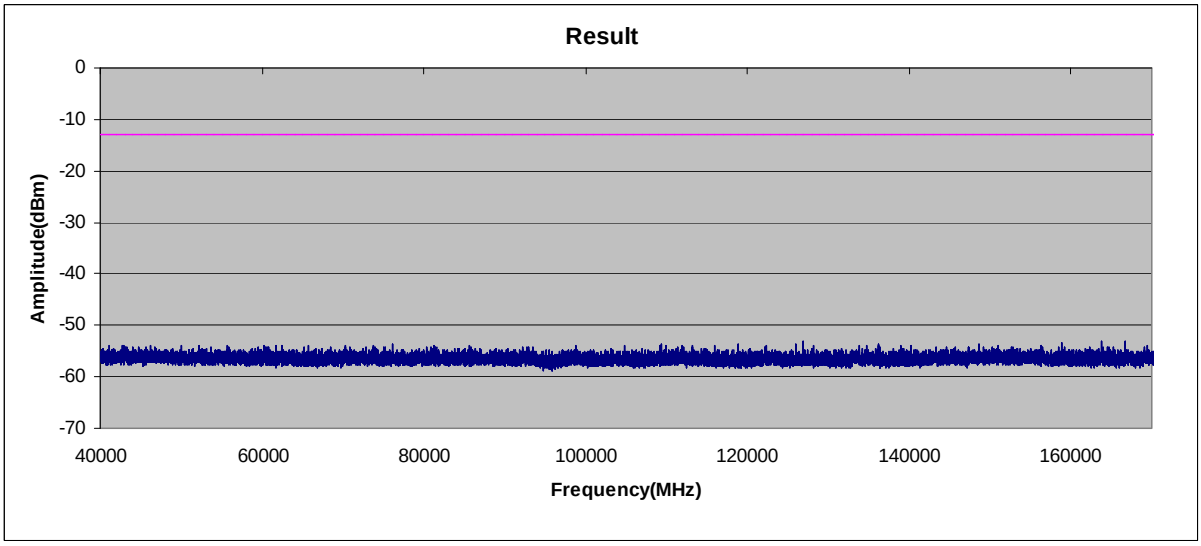
40GHz-173GHz (Low channel)



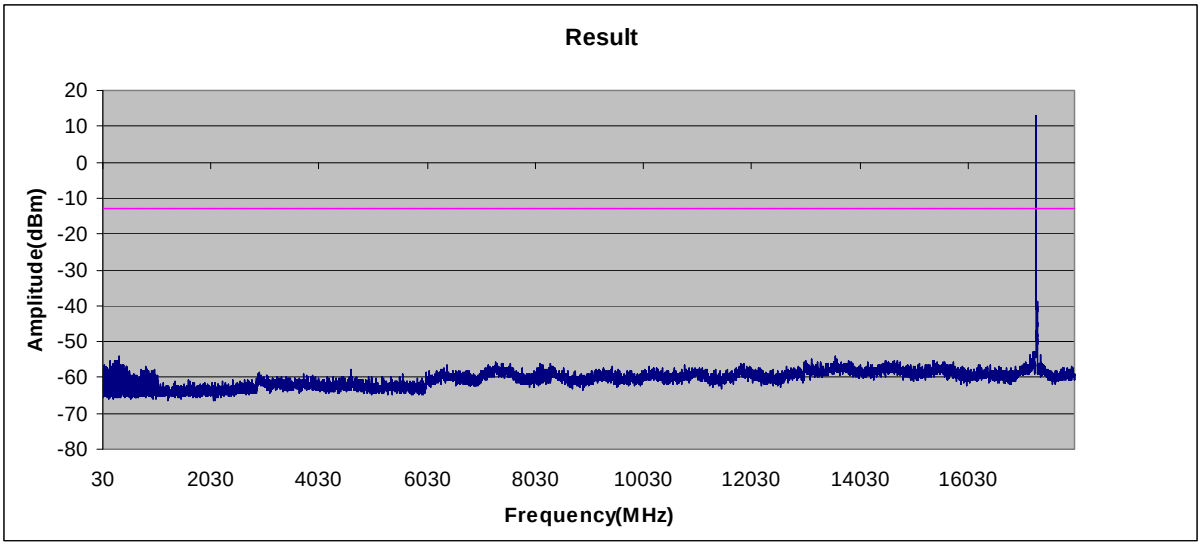
30MHz-18GHz (Mid channel)



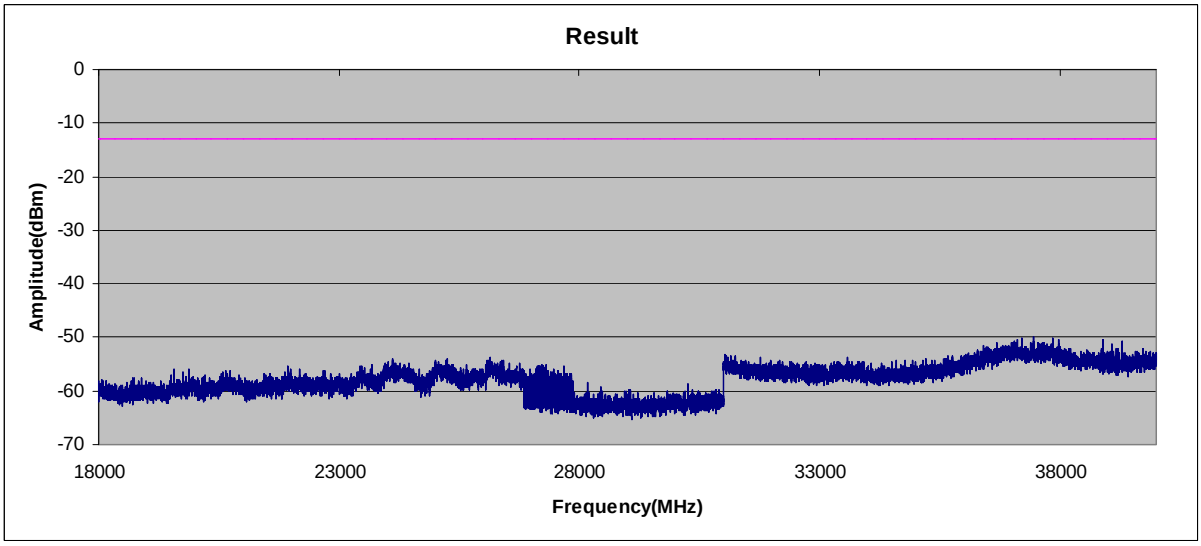
18GHz-40GHz (Mid channel)



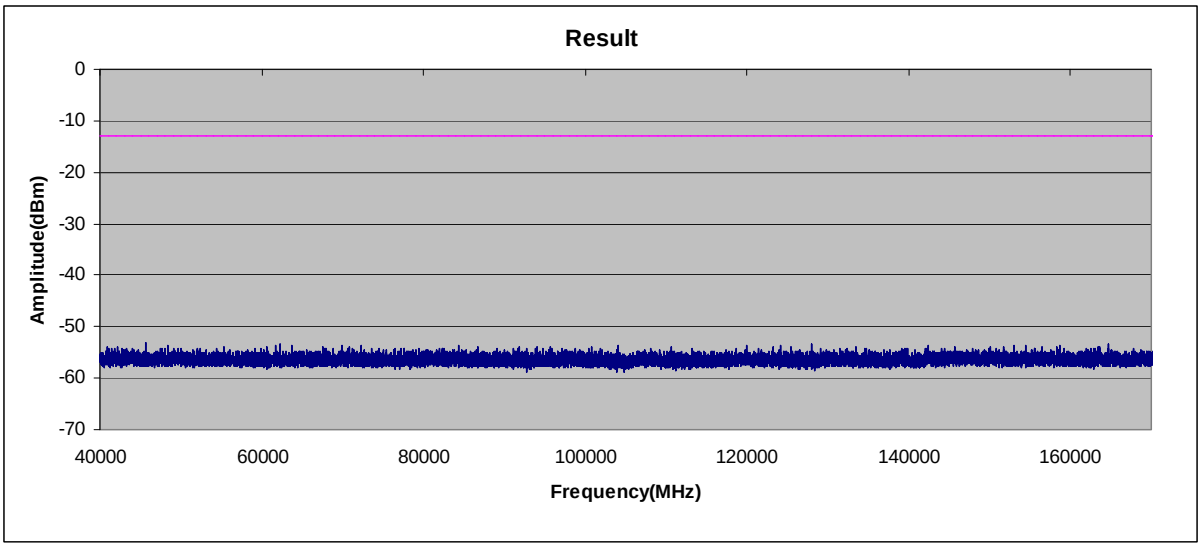
40GHz-173GHz(Mid channel)



30MHz-18GHz (High channel)



18GHz-40GHz(High channel)



40GHz-173GHz(High channel)

5.6 Radiated Spurious Emission

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 : June 9-11 2010
   Tested By :David Zhang

Standard Requirement: 47 CFR §2.1053

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

Antenna Gain 15dBi

Low Channel @ 17.1GHz @ 3 Meter

Frequency (MHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
32.22	10.89	146.00	100.00	H	20.04	0.97	0	31.90	82.3	-50.4	Peak
92.26	32.66	146.00	100.00	H	8.21	0.95	0	42.80	82.3	-39.5	Peak
100.38	21.41	163.00	134.00	V	10.91	1.06	0	37.32	82.3	-44.98	Peak
606.53	8.12	146.00	100.00	H	19.30	2.64	0	30.10	82.3	-52.2	Peak
686.17	13.83	163.00	134.00	V	20.02	2.78	0	36.62	82.3	-45.68	Peak
722.76	5.02	182.00	106.00	H	20.86	3.01	0	28.88	82.3	-53.42	Peak
1036.07	40.74	146.00	100.00	H	24.80	1.82	31.99	35.37	82.3	-46.93	Peak
1324.65	37.18	163.00	134.00	V	24.80	1.82	31.99	31.81	82.3	-50.49	Peak
2237.47	25.20	146.00	100.00	H	46.00	11.08	31.53	50.75	82.3	-31.55	Peak

Mid Channel @ 17.2GHz @ 3 Meter

Frequency (MHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
32.64	8.52	146.00	100.00	H	20.04	0.97	0	29.37	82.3	-52.93	Peak
60.49	25.65	146.00	100.00	H	7.65	1.14	0	34.43	82.3	-47.87	Peak
92.26	31.93	163.00	134.00	H	8.21	0.95	0	41.99	82.3	-40.31	Peak
602.60	12.04	163.00	134.00	H	19.30	2.64	0	33.63	82.3	-48.67	Peak
686.17	11.99	163.00	134.00	V	20.02	2.78	0	34.80	82.3	-47.5	Peak
722.76	4.15	182.00	106.00	H	20.86	3.01	0	28.01	82.3	-54.29	Peak
1000.00	51.96	146.00	100.00	H	48.40	1.82	31.99	46.59	82.3	-35.71	Peak
1324.65	35.63	163.00	134.00	V	35.10	1.82	31.99	31.81	82.3	-50.49	Peak
1400.00	37.33	146.00	100.00	H	55.00	1.82	31.99	31.96	82.3	-50.34	Peak

High Channel @ 17.3GHz @ 3 Meter

Frequency (MHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
32.43	10.79	104.00	112.00	H	20.04	0.97	0	31.79	82.3	-50.51	Peak
52.10	13.25	104.00	112.00	H	7.77	1.01	0	21.74	82.3	-60.56	Peak
92.26	32.94	174.00	114.00	V	8.21	0.95	0	43.02	82.3	-39.28	Peak
94.69	20.45	174.00	114.00	V	8.21	0.95	0	30.96	82.3	-51.34	Peak
913.10	5.37	273.00	100.00	H	22.90	3.42	0	31.35	82.3	-50.95	Peak
993.53	4.96	273.00	100.00	H	23.27	3.90	0	32.50	82.3	-49.8	Peak
1000.00	51.58	286.00	100.00	V	24.80	1.82	31.99	24.80	82.3	-57.5	Peak
1324.46	33.95	334.00	100.00	V	35.10	1.82	31.99	28.58	82.3	-53.72	Peak
2179.96	38.75	242.00	100.00	V	27.50	2.50	32.04	37.50	82.3	-44.8	Peak

Antenna Gain 22dBi

Low Channel @ 17.1GHz @ 3 Meter

Frequency (MHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
32.43	14.33	359.00	137.00	H	20.04	0.97	0	33.83	82.3	-48.47	Peak
92.26	31.58	359.00	137.00	H	8.21	0.95	0	41.64	82.3	-40.66	Peak
94.69	21.92	196.00	100.00	V	8.21	0.95	0	32.44	82.3	-49.86	Peak
125.19	8.25	196.00	100.00	V	14.20	1.21	0	24.05	82.3	-58.25	Peak
151.13	4.06	121.00	100.00	H	12.93	1.60	0	19.01	82.3	-63.29	Peak
260.75	14.54	121.00	100.00	H	12.88	1.61	0	22.10	82.3	-60.2	Peak
8472.95	27.07	82.00	100.00	V	36.60	5.55	32.16	37.06	82.3	-45.24	Peak
13831.66	27.07	82.00	100.00	V	43.90	8.60	31.55	48.03	82.3	-34.27	Peak
21617.23	26.49	69.00	100.00	V	46.00	11.08	31.53	52.03	82.3	-30.27	Peak

Mid Channel @ 17.2GHz @ 3 Meter

Frequency (MHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
32.86	6.62	359.00	192.00	H	20.04	0.97	0	27.31	82.3	-54.99	Peak
92.86	6.91	359.00	192.00	H	8.21	0.95	0	17.09	82.3	-65.21	Peak
94.69	19.69	177.00	100.00	V	8.21	0.95	0	30.21	82.3	-52.09	Peak
252.42	9.47	177.00	100.00	V	12.88	1.61	0	23.31	82.3	-58.99	Peak
796.70	5.31	105.00	125.00	H	21.77	3.26	0	30.34	82.3	-51.96	Peak
1000.00	5.73	105.00	125.00	H	23.80	3.91	0	33.44	82.3	-48.86	Peak
14743.4	26.37	146.00	100.00	H	48.40	9.49	31.59	52.67	82.3	-29.63	Peak
7224.4	27.07	163.00	134.00	V	35.10	5.22	32.39	53.37	82.3	-28.93	Peak
25194.3	26.72	146.00	100.00	H	55.00	11.57	31.27	53.02	82.3	-29.28	Peak

High Channel @ 17.3GHz @ 3 Meter

Frequency (MHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
32.86	18.51	360.00	141.00	H	20.04	0.97	0	39.05	82.3	-43.25	Peak
92.26	32.07	360.00	141.00	H	8.21	0.95	0	42.13	82.3	-40.17	Peak
121.19	21.64	177.00	100.00	V	14.20	1.21	0	37.14	82.3	-45.16	Peak
190.93	5.64	177.00	100.00	V	11.70	1.51	0	18.85	82.3	-63.45	Peak
602.60	8.15	359.00	169.00	H	18.95	2.63	0	30.13	82.3	-52.17	Peak
690.64	8.36	359.00	169.00	H	20.42	2.80	0	31.27	82.3	-51.03	Peak
10408.82	25.32	203.00	100.00	V	39.40	6.64	32.77	38.59	82.3	-43.71	Peak
13705.41	26.95	120.00	100.00	V	43.90	8.61	31.55	47.91	82.3	-34.39	Peak
19008.02	24.50	314.00	376.00	H	46.00	11.08	31.53	50.05	82.3	-32.25	Peak

5.7 Frequency Stability

Requirement(s): 47 CFR §2.1055

Procedures: Frequency Stability was measured according to 47 CFR §2.1055. Measurement was taken with spectrum analyzer. The spectrum analyzer bandwidth and span was set to read in hertz. A voltmeter was used to monitor when varying the voltage.

Limit: ±0.01% of 13.56 MHz = 1356 Hz, ±0.01% of 125 kHz = 125 Hz

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

Test Date : June 9-11 2010
Tested By : David Zhang

Results: Pass

Reference Frequency: 17200.0005MHz at 20°C

Temperature (ºC)	Measured Freq. (KHz)	Freq. Drift (KHz)	Freq. Deviation Limit	Pass/Fail
50	17200.0000	-0.5	Not Specified	Pass
40	17200.0000	-0.5	Not Specified	Pass
30	17200.0022	+1.7	Not Specified	Pass
20	Reference(MHz) 17200.0005			
10	17200.0002	-0.3	Not Specified	Pass
0	17200.0008	+0.3	Not Specified	Pass
-10	17200.0017	+1.2	Not Specified	Pass
-20	17200.0017	+1.2	Not Specified	Pass
-30	17200.0017	+1.2	Not Specified	Pass

Note: The EUT met the applicable requirement throughout the temperature range. Only the extremes are reported

Frequency Stability versus Input Voltage: The frequency of the transmitter was measured at 85% and at 115% of the rated power supply voltage at 20ºC environmental temperature.

Carrier Frequency:

Measured Voltage ±15% of nominal (DC)	Measured Freq. (MHz)	Freq. Drift (KHz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
20.40	17200.0008	+0.3	<0.01	Pass
24.00	17200.0005	0	<0.01	Pass
27.60	17200.0008	+0.3	<0.01	Pass

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Model	Serial #	Calibration Due
Conducted Emissions			
R & S Receiver	ESIB 40	100179	04/25/2011
R&S LISN	ESH2-Z5	861741/013	04/27/2011
CHASE LISN	MN2050B	1018	04/26/2011
Radiated Emissions			
Spectrum Analyzer	8564E	1937A01160	5/17/2011
R & S Receiver	ESIB 40	100179	04/25/2011
R&S LISN	ESH2-Z5	838979/005	5/18/2011
CHASE LISN	MN2050B	1018	5/18/2011
Antenna(1 ~18GHz)	3115	10SL0059	6/2/2011
Sunol Sciences, Inc. antenna (30MHz~2GHz)	JB1	A030702	6/1/2011
ETS-Lingren Loop Antenna	6512	00049120	05/13/2010
Pre-Amplifier(1 ~ 26GHz)	8449	3008A00715	5/17/2011
Horn Antenna (18~40GHz)	AH-840	101013	6/2/2011
Microwave Pre-Amp (18~40GHz)	PA-840	181251	Every 2000 Hours
DMM	Fluke	73III	05/01/2011
Variac	KRM	AEEC-2090	Functional verification
Environment Chamber	Test Equity	1007H	01/24/2011

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. **7.96 dB below limit**

Annex A. iii RADIATED EMISSIONS TEST DESCRIPTION

EUT Characterisation

EUT characterisation, over the frequency range from 100kHz – 1GHz to 10th Harmonic , was done in order to minimise radiated emissions testing time while still maintaining high confidence in the test results.

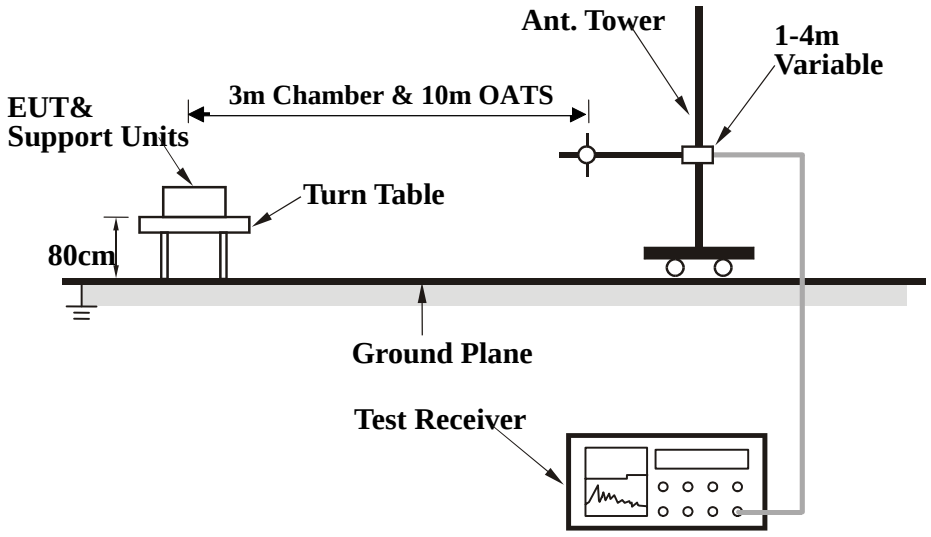
The EUT was placed in the chamber, at a height of about 0.8m on a turntable. Its radiated emissions frequency profile was observed, using a spectrum analyzer /receiver with the appropriate broadband antenna placed 3m away from the EUT. Radiated emissions from the EUT were maximised by rotating the turntable 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) at 10m distance.

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. 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 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. TEST SETUP PHOTOGRAPHS

Please See Attachment

Annex B. i. EUT INTERNAL PHOTOGRAPHS

Please see attachment

Annex B. ii. EUT EXTERNAL PHOTOGRAPHS

Please see attachment

Annex C. 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)
Laptop/Panasonic	CF-19	USB

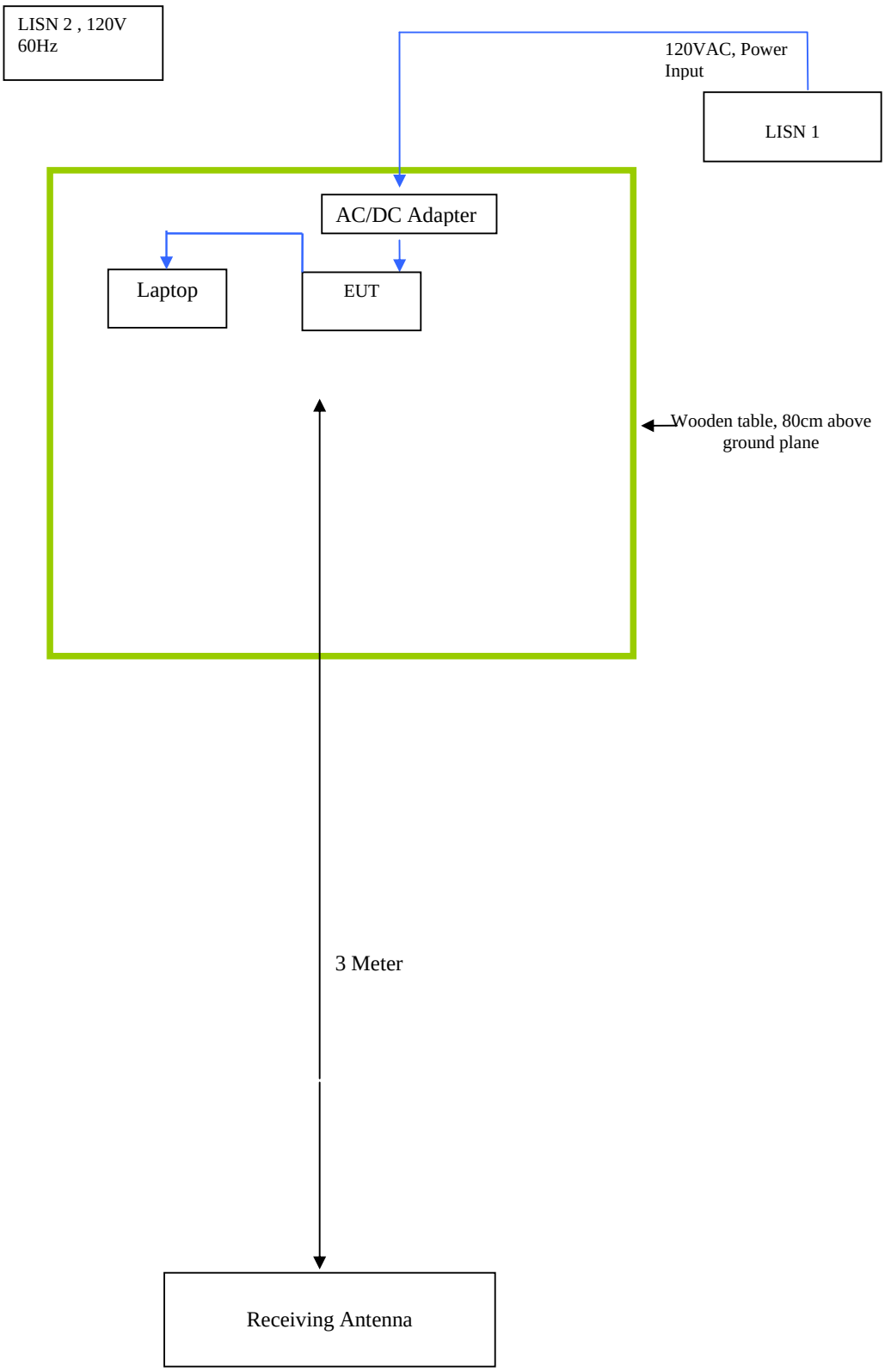
NOTE: No special supporting equipment are used or needed during testing to achieve compliance.

Block Configuration Diagram for Conducted Emission

N/A

Note: EUT was powered by battery.

Block Configuration Diagram for Radiated Emission



Annex C. 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 controlled by itself.
Others Testing	The EUT was controlled by itself.

Annex D USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

Annex E SIEMIC ACCREDITATION

SIEMIC ACCREDITATION DETAILS: A2LA 17025 & ISO Guide 65 : 2742.01 , 2742.2

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 9th 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.siemic.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*

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*

SIEMIC ACCREDITATION DETAILS: FCC Test Site Registration No. 783147

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

December 20, 2007

Registration Number: 783147

SIEMIC Laboratories
2206 Ringwood Avenue,
San Jose, CA 95131

Attention: Leslie Bai

Re: Measurement facility located at San Jose
3 & 10 meter site
Date of Renewal: December 20, 2007

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 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 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

Industry Canada Industrie Canada

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.

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
3701 Carling Ave., Building 94
P.O. Box 11490, Station "H"
Ottawa, Ontario K2H 8S2
Email: 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

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 if you have questions.

Sincerely,

David F. Alderman

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.

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 20899

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. LeslieBai
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.

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

CANIETI

CAMARA NACIONAL DE LA INDUSTRIA ELECTRONICA, DE TELECOMUNICACIONES E INFORMATICA

Laboratorio Valentín V. Rivero

México D.F. a 16 de octubre de 2006.

LESLIE BAI
DIRECTOR OF CERTIFICATION
SIEMIC LABORATORIES, INC.
ACCESSING GLOBAL MARKETS
P R E S E N T E

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 ingles y español prellenado de los cuales le pido sea revisado y en su caso corregido, para que si esta de acuerdo poder firmarlo para mandarlo con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.

Aprovecho este escrito para mencionarle que nuestro intermediario gestor será la empresa Isatel 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 gestoría de la certificación de cumplimiento con Normas Oficiales Mexicanas de producto en México.

Me despido de ustad enviándole un cordial saludo y esperando sus comentarios al Acuerdo que nos ocupa.

Atentamente:

Ing. Faustino Gómez González
Gerente Técnico del Laboratorio de
CANIETI.

Cuitlahuac 71
Hipódromo Condesa
06100 México, D.F.
Tel. 5264-0308 con 12 líneas
Fax 5264-0488
www.canieti.org

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.

Sincerely,

David F. Alderman

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

Enclosure

cc: Ramona Saar

NIST

SIEMIC ACCREDITATION DETAILS: VCCI Radiated Test Site Registration No. R-3083

VCCI Council

CERTIFICATE

Company: SIEMIC Inc.
<Member No. 3081 >

Facility: SIEMIC Inc.
(Radiation 3 meter site)

Location of Facility:
2206 Ringwood Avenue, 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.: R-3083
Date of Registration: June 12 , 2009
This Certificate is valid until September 30 , 2010

VCCI Council

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

VCCI Council

CERTIFICATE

Company: SIEMIC Inc.

<Member No. 3081 >

Facility: SIEMIC Inc.

(Main Ports Conducted Interference Measurement)

Location of Facility:

2206 Ringwood Avenue, 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: June 12 , 2009

This Certificate is valid until September 30 , 2010

VCCI Council

SIEMIC ACCREDITATION DETAILS: VCCI Conducted (Telecom Port) Test Site Registration No. T-1597

VCCI Council

CERTIFICATE

Company: SIEMIC Inc.

<Member No. 3081 >

Facility: SIEMIC Inc.

(Telecominication Ports Conducted Interference Measurement)

Location of Facility:

2206 Ringwood Avenue, 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.: T-1597

Date of Registration: June 12 , 2009

This Certificate is valid until September 30 , 2010

VCCI Council