



**SGS-CSTC Standards Technical
Services (Shanghai) Co., Ltd.**

588 West Jindu Road, Songjiang District, Shanghai, China

Telephone: +86 (0) 21 6191 5666

Fax: +86 (0) 21 6191 5655

ee.shanghai@sgs.com

Report No.: SHEM120100004904

Page: 1 of 19

TEST REPORT

Application No. : SHEM120100004904
Applicant: BLUE BAMBOO HK LIMITED
FCC ID: UWJP200
Fundamental Frequency : 13.56MHz
Equipment Under Test (EUT):
Product Name: Printer
Brand Name: BLUE BAMBOO
Model No.: P200
Standards: FCC PART 15 SUBPART C, Section 15.225
Date of Receipt: Jan. 19, 2012
Date of Test: Jan. 20, 2012 to Feb 28, 2012
Date of Issue: Feb 29, 2012
Test Result : **PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Jim Xu
E&E Section Head
SGS-CSTC(Shanghai) Co., Ltd.

Neil Zhang
E&E Project Engineer
SGS-CSTC(Shanghai) Co., Ltd.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only



2 Test Summary

TEST ITEM	FCC REFERENCE	RESULT
Field Strength of Fundamental and Radiated Emission	15.225(a)(b)(c)(d) & 15.209	Pass
Power Line Conducted Emission	15.207	Pass
Receiver Spurious Emission	-	Pass
Occupied Bandwidth	15.215(c)	Tested
Frequency Tolerance	15.225(e)	Pass
Antenna Requirement	15.203	Compliance

Noted: “-” means not require in the rules.



3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	2
3 CONTENTS	3
4 GENERAL INFORMATION	4
4.1 CLIENT INFORMATION	4
4.2 DETAILS OF E.U.T.	4
4.3 DESCRIPTION OF SUPPORT UNITS	4
4.4 TEST LOCATION	4
4.5 OTHER INFORMATION REQUESTED BY THE CUSTOMER	4
4.6 TEST FACILITY	5
4.7 TEST INSTRUMENTS	6
4.8 E.U.T. OPERATION	7
4.9 TEST PROCEDURE & MEASUREMENT DATA	8
4.9.1 <i>Field Strength of Fundamental and Radiated Spurious Emission</i>	8
4.9.2 <i>Conducted Emission Test</i>	14
4.9.3 <i>Occupied Bandwidth Test</i>	17
4.9.4 <i>Frequency Tolerance</i>	18
4.9.5 <i>Antenna Requirement</i>	19



4 General Information

4.1 Client Information

Applicant :	BLUE BAMBOO HK LIMITED
Applicant Address:	10/F COSCO TOWER GRAND MILLENNIUM PLAZA 183 QUEEN'S RAOD CENTRAL HK
Manufacturer:	BLUE BAMBOO HK LIMITED
Manufacturer Address:	10/F COSCO TOWER GRAND MILLENNIUM PLAZA 183 QUEEN'S RAOD CENTRAL HK

4.2 Details of E.U.T.

Product Name	Printer
Brand Name:	BLUE BAMBOO
Model:	P200
Antenna Type	Loop Antenna
AC Adaptor	Model: CYSB15-090100 (Input:100-240V~ 50/60 Hz, 0.5A, Output: 9.0 VDC, 1.0A) (Cable Length:1.3m)
Battery:	Li-ion Polymer Battery Model: P200-BM2-1820 7.4V/13.468WH[1820mAH]
Frequency	13.56MHz
Modulation Type:	ASK

4.3 Description of Support Units

Name	Model No.	Remark
N/A		

4.4 Test Location

Tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

No tests were sub-contracted.

4.5 Other Information Requested by the Customer

None.



4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.



Test Results

4.7 Test Instruments

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2011-6-4	2012-6-3
2	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2011-6-4	2012-6-3
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2011-3-12	2012-3-10
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2011-6-4	2012-6-3
5	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2011-10-8	2012-10-7
6	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY—2009P	--	2011-10-14	2012-10-15
7	CLAMP METER	FLUKE	316	86080010	2011-4-22	2012-4-20
8	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2011-10-14	2012-10-15
9	High-low temperature cabinet	Shanghai YuanZhen	GW2050	--	2011-6-17	2012-6-16
11	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800.0/2000.0-0.2/40-5SSK	11	2011-6-16	2012-6-15
12	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/80.0-0.2/40-5SSK	9	2011-5-7	2012-5-6
13	High pass Filter	FSCW	HP 12/2800-5AA2	19A45-02	2011-5-5	2012-5-4
14	Low noise amplifier	TESEQ	LNA6900	70133	2011-6-4	2012-6-3
15	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2011-4-8	2012-4-7



16	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2011-05-07	2012-05-06
17	Loop Antenna	Rohde & Schwarz	HFH2-Z2	--	2011-06-03	2012-06-03

Permitted frequency range

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
18	Spectrum Analyzer	Agilent	E7405	MY45106600	2011-03-22	2012-03-21
19	Temperature and Humidity Test Chamber	TECRCHY	MHU-150L	850811	2011-03-12	2012-03-11

4.8 E.U.T. Operation

Input voltage: 12V DC

Operating Environment:

Temperature: 25.0 °C

Humidity: 45 % RH

Atmospheric Pressure: 1010 mbar

EUT Operation:

The EUT has been tested under operating condition: connected with laptop with network cable, and use software: Honeywell EBI R410.2 installed at laptop to do the data transmitter.



4.9 Test Procedure & Measurement Data

4.9.1 Field Strength of Fundamental and Radiated Spurious Emission

Test Requirement: FCC §15.225 , §15.209

Test date: February. 15, 2012

Standard Applicable ANSI C63.10:2009

Test Procedures:

1. Test Procedures for emission from 9 kHz to 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.

c. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.

d. The test-receiver system was set to Peak and Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

2. Test Procedures for emission from 30 MHz to 1000 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower.

During performing radiated emission above 1 GHz, the EUT was set 1 meter away from the interference-receiving antenna.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

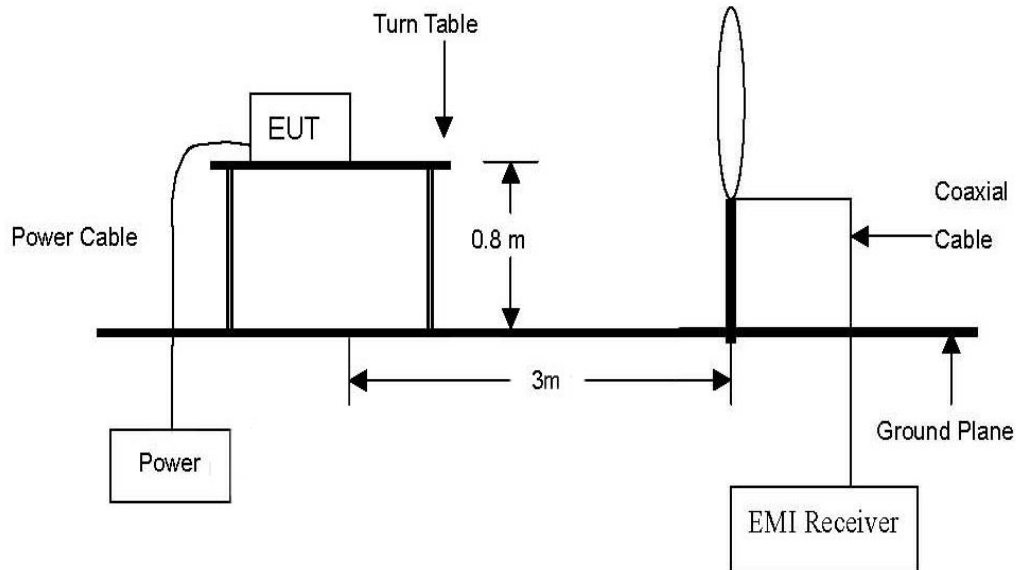
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

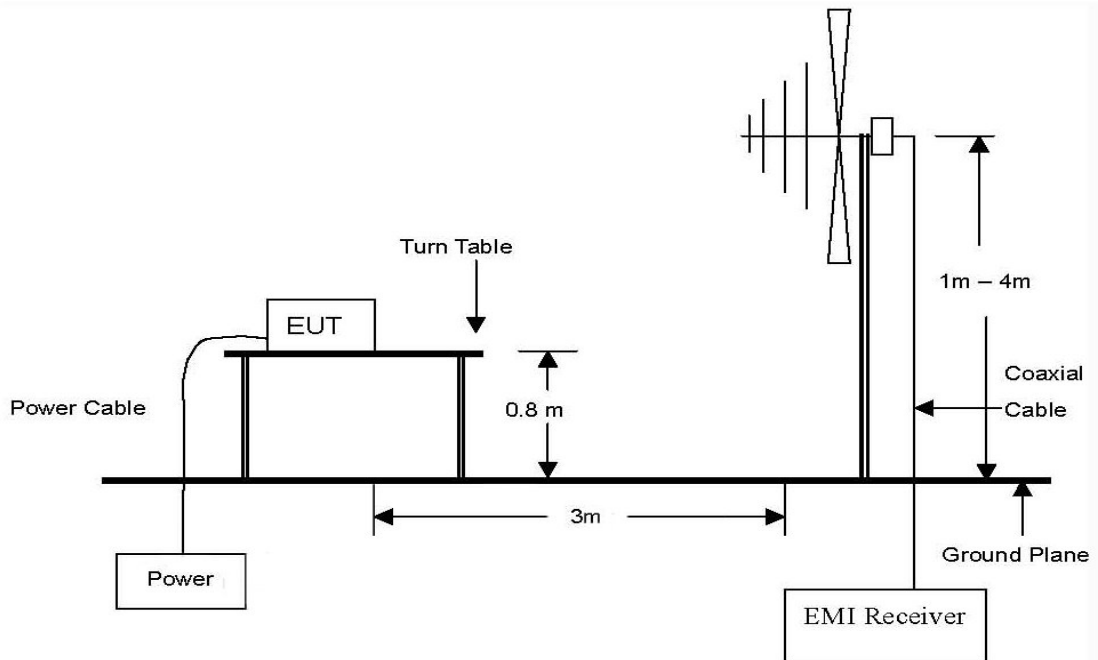
f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

EUT Setup:

The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30MHz Emissions.

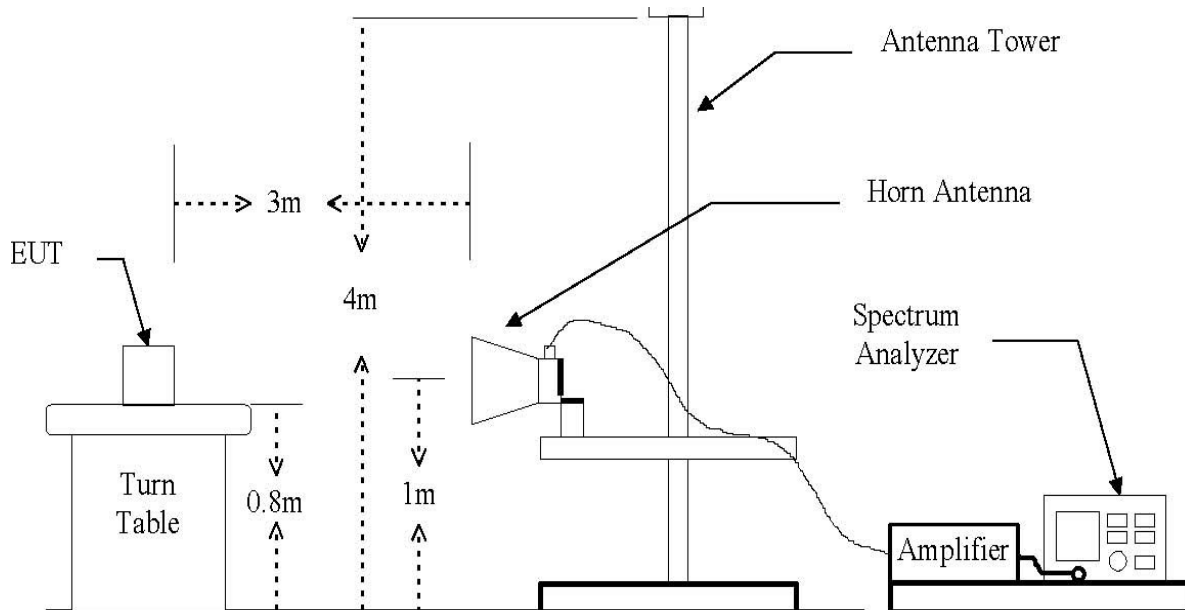


The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 18 GHz Emissions.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



Measurement Result

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Radiated Spurious Emissions Limits

Frequency (MHz)	Limit ($\mu\text{V/m}$)	Rule Part Reference
13.553 - 13.567	15,848 (@ 30m)	§15.225(a)
13.410 - 13.553	334 (@ 30m)	§15.225(b)
13.567 - 13.710	334 (@ 30m)	§15.225(b)
13.110 - 13.410	106 (@ 30m)	§15.225(c)
13.710 - 14.010	106 (@ 30m)	§15.225(c)
1.705 - 13.110 14.010 - 30.0	30 (@ 30m)	§15.225(d), §15.209
30.00 - 88.00	100 (@ 3m)	§15.225(d), §15.209
88.00 - 216.00	150 (@ 3m)	§15.225(d), §15.209
216.00 - 960.00	200 (@ 3m)	§15.225(d), §15.209
Above 960	500 (@ 3m)	§15.225(d), §15.209

Radiated Emission Test Data, Fundamental Frequency

15.225 Operation within the band 13.110 – 14.010 MHz.

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter (= 83.9 dBuV/m) at 30 meters.



Measurement Result

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Radiated Emissions			Correction Factors	Total	FCC Limit	
Frequency (MHz)	Reading (dBuV)	Detect Mode	Ant.(dB/m)	Emission Level (dBuV/m)	3M Limit (dBuV/m)	Margin (dB)
13.56	91.67	QP	-18.3	73.37	123.9	50.53

1. Correction Factors=Antenna Factor + Cable Factor –Preamplifier Factor

2. 3m QP Limit(dBuV/m) = $20\log(15848)+40\log(30/3)$

= $83.9+40\log(30/3)$

= $83.9+40$

= 123.9

Remark:

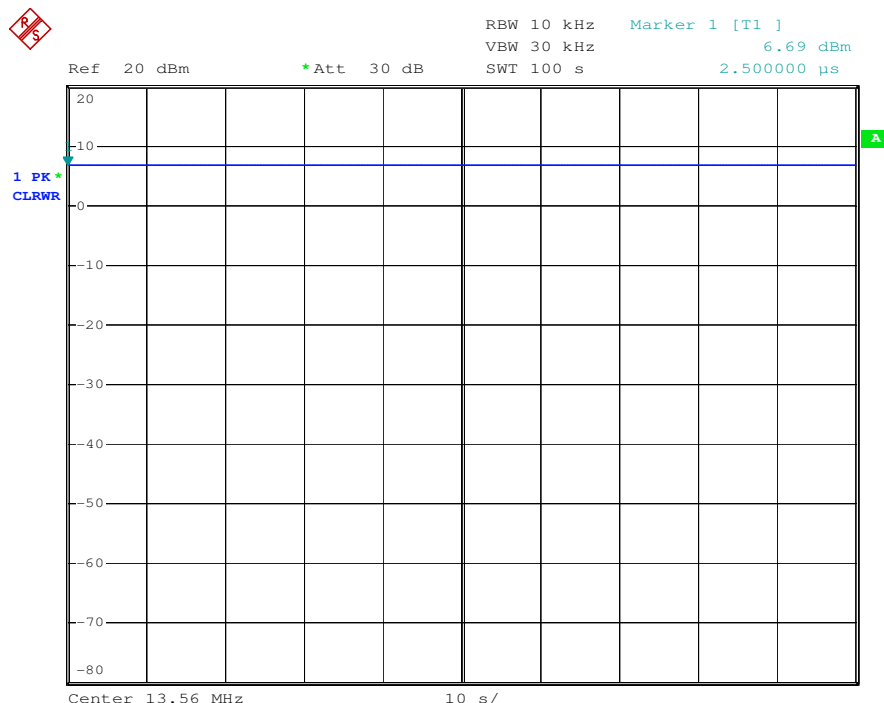
The EUT is a portable device, so three axes (X, Y, Z) were observed while the test receiver worked as “max hold” continuously and the highest reading among the whole test procedure was recorded.

Duty cycle

Measurement Result:

EUT test in the worst case continue transmit:

Factor = $20*\log(Ton/Tp) = 20*\log(1) = 0dB$





Radiated Emission

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter (=50.5dBuV/m) at 30 meters.

Radiated Emissions			Correction Factors	Total	FCC Limit	
Frequency (MHz)	Reading (dBuV)	Detect Mode	Ant.(dB/m)	Emission Level (dB V/m)	3M Limit (dBuV/m)	Margin (dB)
13.483	51.03	QP	-18.3	32.73	90.5	57.77
13.630	52.91	QP	-18.3	34.61	90.5	55.89

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter (=40.5 dBuV/m) at 30 meters.

Radiated Emissions			Correction Factors	Total	FCC Limit	
Frequency (MHz)	Reading (dBuV)	Detect Mode	Ant.(dB/m)	Emission Level (dB V/m)	3M Limit (dBuV/m)	Margin (dB)
13.368	47.03	QP	-18.3	28.73	80.5	51.77
13.820	48.44	QP	-18.3	30.14	80.5	50.36

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

9KHz~30MHz

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	0.012	20.93	0.06	12.61	33.60	86.34	52.74
2	0.063	20.32	0.06	6.25	26.63	71.65	45.02
3	0.123	19.60	0.06	1.06	20.72	65.76	45.04
4	1.344	19.52	0.13	9.95	29.60	45.06	15.46
5	9.105	20.39	0.55	15.40	36.34	49.50	13.16
6	24.836	21.25	0.76	14.53	36.54	49.50	12.96

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the official are not report.



30MHz~1GHz

Radiated Emissions			Ant	Correction Factors	Total	FCC Limit	
Frequency (MHz)	Reading (dBuV)	Detect Mode	Pol.	Ant.(dB/m)	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)
190.50	47.2	QP	H	-11.6	35.6	43.5	7.9
216.99	46.9	QP	H	-11.4	35.5	46.0	10.5
186.11	45.4	QP	V	-11.1	34.3	43.5	9.2
190.46	46.9	QP	V	-11.6	35.3	43.5	8.2

Correction Factors=Antenna Factor + Cable Factor –Preamplifier Factor

Remark:

The EUT is a portable device, so three axes (X, Y, Z) were observed while the test receiver worked as “max hold” continuously and the highest reading among the whole test procedure was recorded.

Note: 1. Other Spurious Emission Frequencies were not detected up to 1000 MHz.



4.9.2 Conducted Emission Test

Test Requirement: FCC Part15 15.207

Test date: February. 18, 2011

Standard Applicable According to section 15.207,frequency 150KHz to 30MHz shall not exceed the limit table as blew.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

EUT Setup

1.The conducted emission tests were performed in the test site,using the setup in accordance with the ANSI C63.10-2009.

2.EUT is charged with PC.The AC Power adaptor of PC was plug-in LISN.The rear of the EUT and periphearals were placed flushed with the rear of the tabletop.

3.The LISN was connected with 120V AC/60Hz power source.

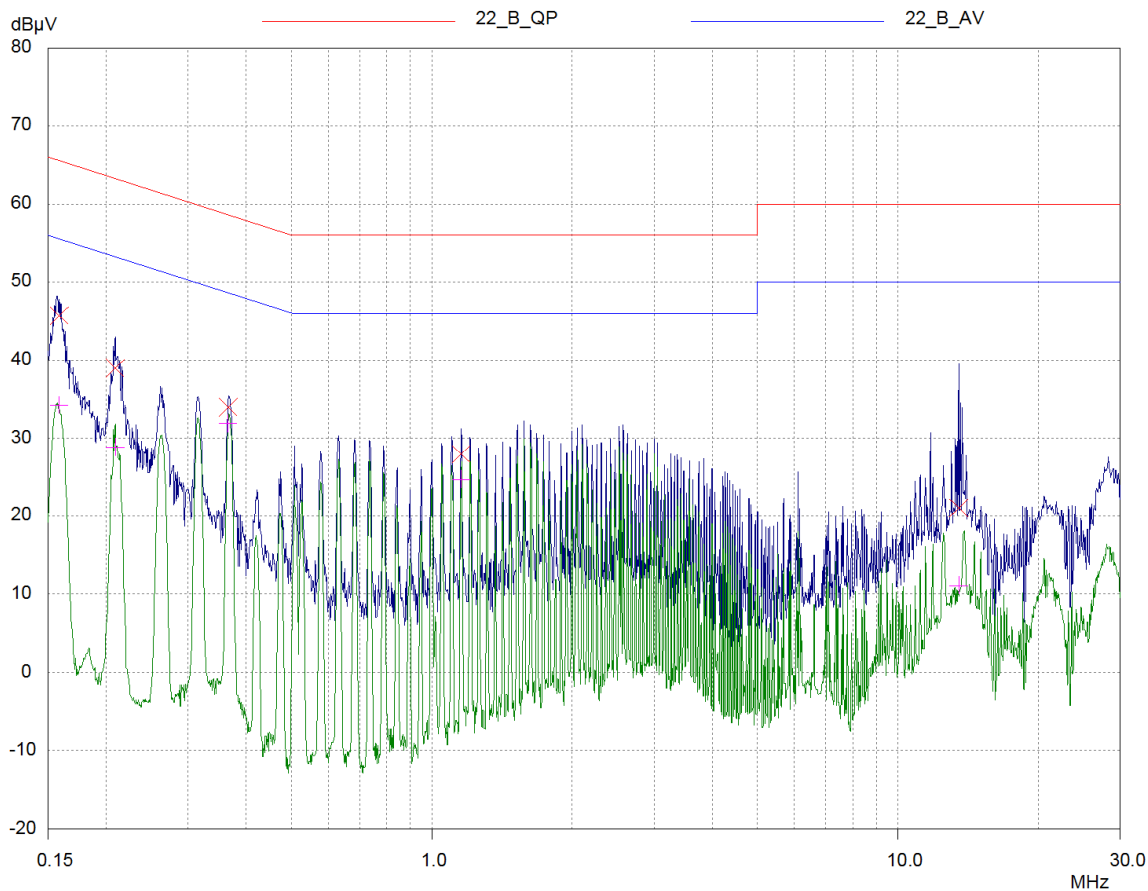
Measurement Result

Operation mode:RFID

Note:All test modes have been tested.



L line:



Final Measurement Results

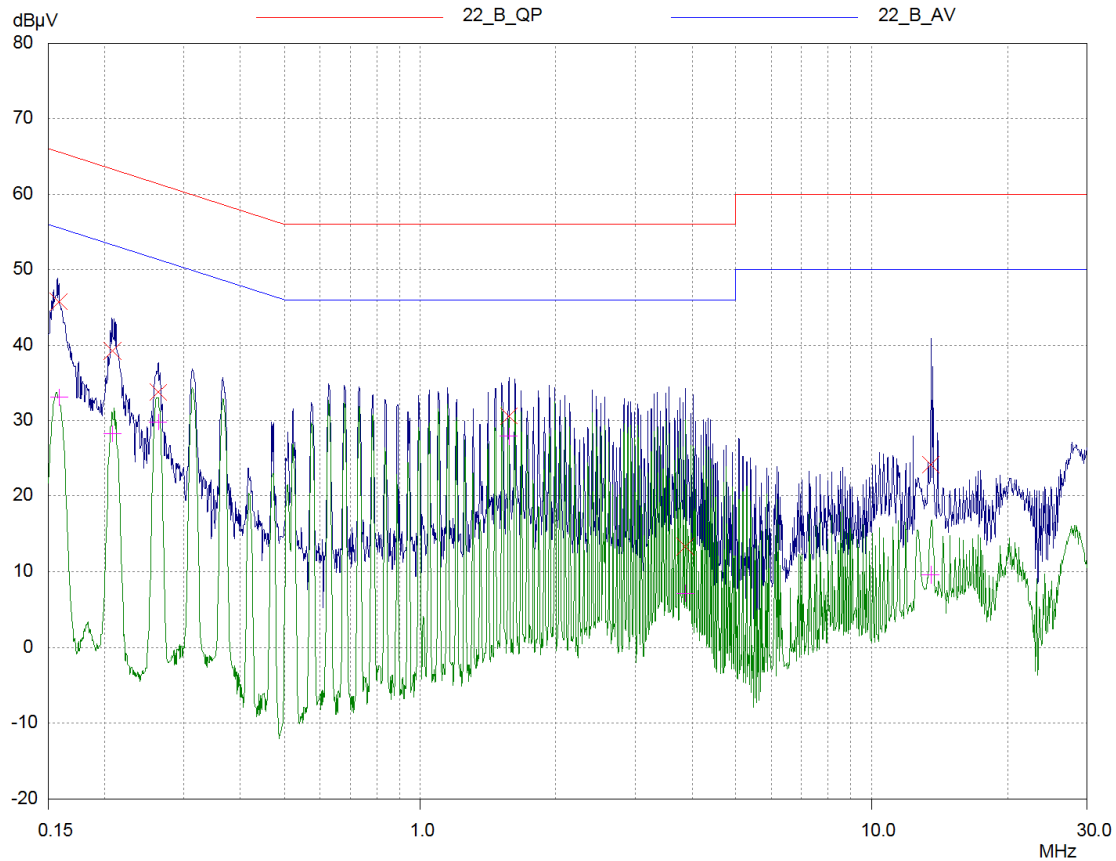
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.15862	45.67	65.54	19.87
0.20892	38.97	63.25	24.28
0.36535	34.01	58.61	24.60
1.1535	27.92	56.00	28.08
13.48918	20.97	60.00	39.03

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.15862	34.26	55.54	21.28
0.20892	28.84	53.25	24.41
0.36535	31.91	48.61	16.70
1.1535	24.67	46.00	21.33
13.48918	11.09	50.00	38.91

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only



N Line:



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.15798	45.75	65.57	19.82
0.20809	39.23	63.28	24.05
0.2623	33.81	61.36	27.55
1.5686	30.62	56.00	25.38
3.86663	13.33	56.00	42.67
13.54313	24.11	60.00	35.89

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.15798	33.09	55.57	22.48
0.20809	28.20	53.28	25.08
0.2623	29.84	51.36	21.52
1.5686	27.85	46.00	18.15
3.86663	7.09	46.00	38.91
13.54313	9.56	50.00	40.44

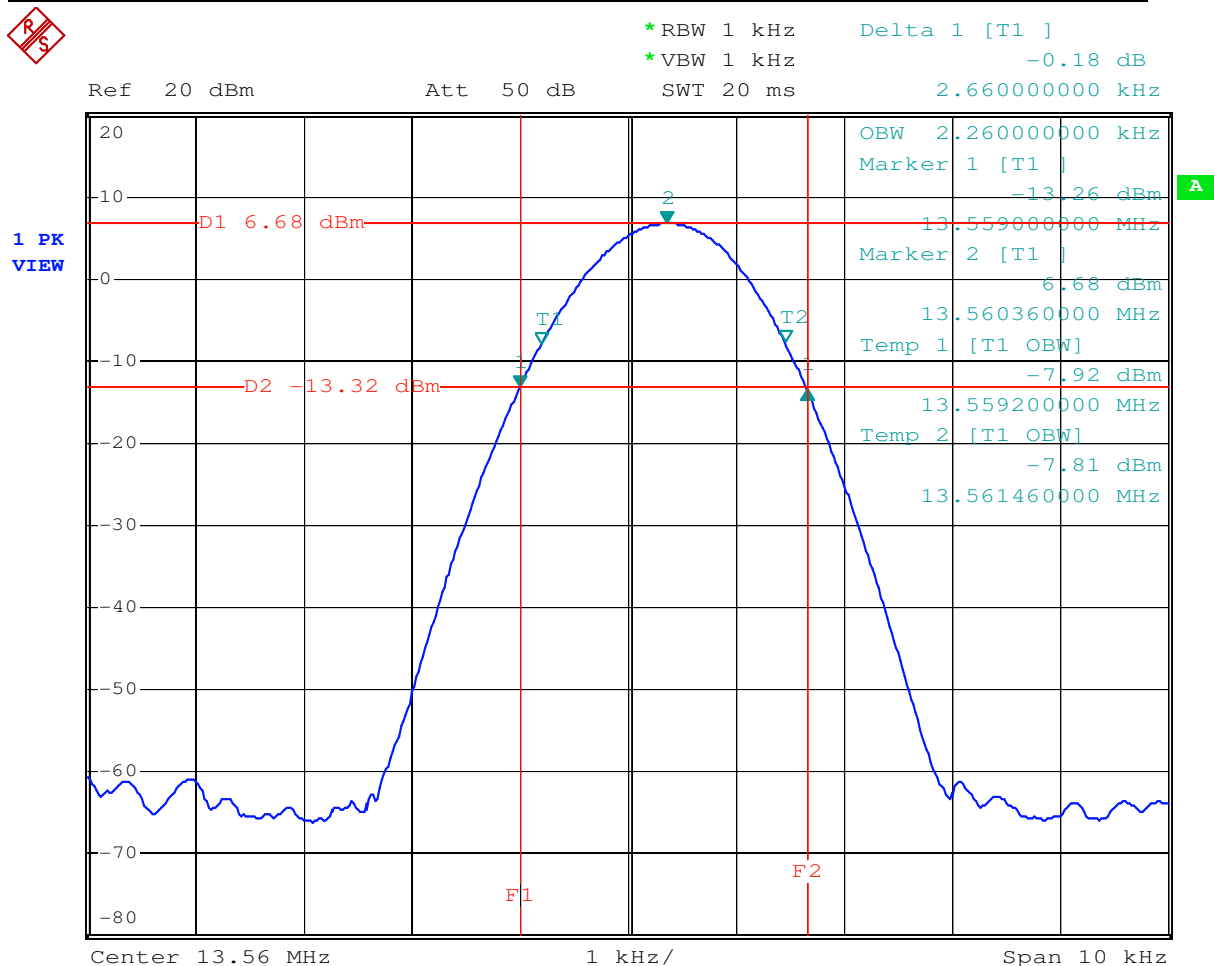


4.9.3 Occupied Bandwidth Test

Test Requirement:	FCC 15.215(c) & RSS-Gen Issue 3 Section 4.6.1
Test date:	February. 11, 2012
EUT Setup	<ol style="list-style-type: none">1. The transmitter output is connected to the spectrum analyzer.2. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using RBW=1 kHz, VBW=1 kHz and Span=10 kHz.3. The bandwidth of fundamental frequency was measured and recorded.

Measurement Result:

Carrier Frequency (MHz)	20dB Bandwidth (KHz)	99% Bandwidth (KHz)
13.5600	2.66	2.26





4.9.4 Frequency Tolerance

Test Requirement: FCC Part15 15.225e

Test date: February. 12, 2011

Standard Applicable ANSI C63.10:2009

EUT Setup

Limit

15.225 Operation within the band 13.110 – 14.010 MHz.

(e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Measurement Result:

Temp. (°C)	P/S Voltage (VAC)	Frequency (MHz)	Limit (±Hz)	Offset from the CF (Hz)	Limit (%)	Error (%)
Center Freq.		13.5600MHz				
20	7.4	13.56001	1356.00	10	0.01	0.00
20	6.8	13.56001		10		0.00
20	8.4	13.56001		10		0.00
-20	7.4	13.56003		30		0.00
55	7.4	13.56005		50		0.00



4.9.5 Antenna Requirement

Test Requirement: FCC Part15 15.203

5.3.7.1 Standard Requirement

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.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

5.3.7.2 Antenna Connected Construction

The antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

5.3.7.3 Result

The EUT antenna is integral Antenna. It comply with the standard requirement.

End of Report