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EMI TEST REPORT

On Model Name: Wireless Communication Station

Model Number: BS-1000, BS-2000, BS-6000

Brand Name: BlueCard

Prepared for Bluecard Technologies Corp.

FCC ID Number: 2AIASBS-1000

FCC Classification: FCC Part 15 Class B Computing Device Peripheral (JBP)

According to FCC 47 CFR Part 15, Subpart B

Test Report #: SHE-1604-11487-FCC

Prepared by: Nancy _____ *ECMG*
Nancy Han /Assistant *Company Name*

Reviewed by: _____ *ECMG*
Jawen Yin/ Senior Engineer *Company Name*

QC Manager: Swall Zhang _____ *ECMG*
Swall Zhang/QC Manager *Company Name*

Test Report Released by: Swall Zhang _____ *May 28th, 2016*
Swall Zhang *Date*

Verdict

Test Result :	*Pass**

**:In the configuration, the EUT complied with the standard specified above.*

Revision History

Rev.	Issue date	Revision	Revised by
A	05/28/2016	Initial review	Jawen Yin
/	/	/	/

Test Location

Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room.

Test Site Location: *Shenzhen General Testing & Inspection Technology Co., Ltd.*

1F, 2 Block,Jiaquan Building, Guanlan High-tech Park Baoan District, Shenzhen, Guangdong, China.

Tel: *(86)-755- 27559792*

Fax: *(86)-755- 86116468*

Accreditation Bodies

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

IC Registration No.: 9783A

The 3m alternate test site of Shenzhen GTI Technology Co., Ltd.EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.:9783A on Aug, 2011.

FCC-Registration No.: 214666

Shenzhen GTI Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 214666, Sep 19, 2011

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List Attached Files

Exhibit Type	File Description	File Name
Test Report	Test Report	2AIASBS-1000 _Test Report.pdf
Operation Description	Technical Description	2AIASBS-1000_Operation description.pdf
External Photos	External Photos	2AIASBS-1000 _External Photos
Internal Photos	Internal Photos	2AIASBS-1000 _Internal Photos
Block Diagram	Block Diagram	2AIASBS-1000 _Block Diagram.pdf
Schematics	Circuit Diagram	2AIASBS-1000_Schematics.pdf
ID Label/Location	Label and Location	2AIASBS-1000_Label & Location.pdf
User Manual	User Manual	2AIASBS-1000_User Manual.pdf
Test setup photos	Test set-up photos	2AIASBS-1000_Test Set-up Photos

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Opinions and Interpretations

This test report relates to the abovementioned equipment under test (EUT).Without the permission of ECMG Electronic Technical Testing Corp (Shenzhen) Test Lab this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products. The manufacturer has sole responsibility of continued compliance of the device.

Statement of Measurement Uncertainty

The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

Administrative Data

Test Sample	*: Wireless Communication Station*
Model Numbers	*: BS-1000,BS-2000,BS-6000*
Model Tested	*: BS-1000*
Date of Receipt	*: May 8th, 2016*
Date Tested	*: May 14th to 16th,2016*
Applicant	*: Bluecard Technologies Corp.*
Address	*A.A306.Information Center. Zhongguancun Software Park 1#.No8 Northeast Prosperous West Road. Beijing. China.*
Telephone	*: (86)-10-58741880*
Fax	*: (86)-10-58741927*
Manufacturer	*: Bluecard Technologies Corp.*
Address	*A.A306.Information Center. Zhongguancun Software Park 1#.No8 Northeast Prosperous West Road. Beijing. China.*
Telephone	*: (86)-10-58741880*
Fax	*: (86)-10-58741927*
Factory	*: Bluecard Technologies Corp.*
Address	*A.A306.Information Center. Zhongguancun Software Park 1#.No8 Northeast Prosperous West Road. Beijing. China.*
Telephone	*: (86)-10-58741880*
Fax	*: (86)-10-58741927*

EUT Description

Bluecard Technologies Corp. Model Tested BS-1000 (referred to as the EUT in this report) is an Wireless Communication Station.

Rating(s) of EUT: *DC 5V by USB*

Note :For other informations &features please refer to user's manual of EUT.

E.U.T Model Difference

Model BS-2000,BS-6000 is electrically identical to BS-1000 except for appearance, model BS-1000 was selected for final testing.
Product just appearance different, the function, principle, the structure is the same.

Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4:Uncertainty in EMC Measurements and is documented in the Shenzhen General Testing &Inspection Technology Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.
The manufacturer has the sole responsibility of continued compliance of the device.

Test	Range	Measurement Uncertainty	Notes
Conducted Emission	0.15 to 30MHz	3.2 dB	(1)
Radiated Emission	9KHz to 30MHz	3.6 dB	(1)
Radiated Emission	30 to 1000MHz	4.7 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

Frequency Range Of Radiated Measurements

(b) For unintentional radiators:

(1) Except as otherwise indicated in paragraphs (b)(2) or (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	***Upper frequency of measurement range (MHz)***
Below 1.705	*30.*
1.705-108	*1000.*
108-500	*2000.*
500-1000	*5000.*
Above 1000	*5th harmonic of the highest frequency or 40 GHz, whichever is lower.*

Note: Since the highest frequency operated of the EUT is 3.6864MHz, so upper frequency of radiated emission test is up to 1000MHz as per §15.33(b)(1).

Test Summary

The Electromagnetic Compatibility requirements on model BS-1000 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests				
Specifications	***Description***	***Test Results***	***Test Point***	***Remark***
FCC Part 15.107 ANSI C63.4 -2014	*Conducted Emission*	*Passed*	*AC Input Port*	*Attachment 1*
FCC Part 15.109 ANSI C63.4 -2014	*Radiated Emission*	*Passed*	*Enclosure*	*Attachment 2*

Test Mode Justification

Pre-Scan has been conducted to determine the worst-case from all possible combination between available operation mode .Following mode(s) was (were) selected for the final test as listed below:

Pre-Test Mode	
EMI Test Mode	***Mode 1:*** *Keep EUT Communication with PC*
	/
	/
Final Test Mode	
EMI Test Mode	***Mode 1:*** *Keep EUT Communication with PC*
	/
	/

EUT Exercise Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

Equipment Modification

Any modifications installed previous to testing by Bluecard Technologies Corp. will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen).

EUT Sample Photos

EUT Model: BS-1000

EUT- Front View

EUT- Rear View

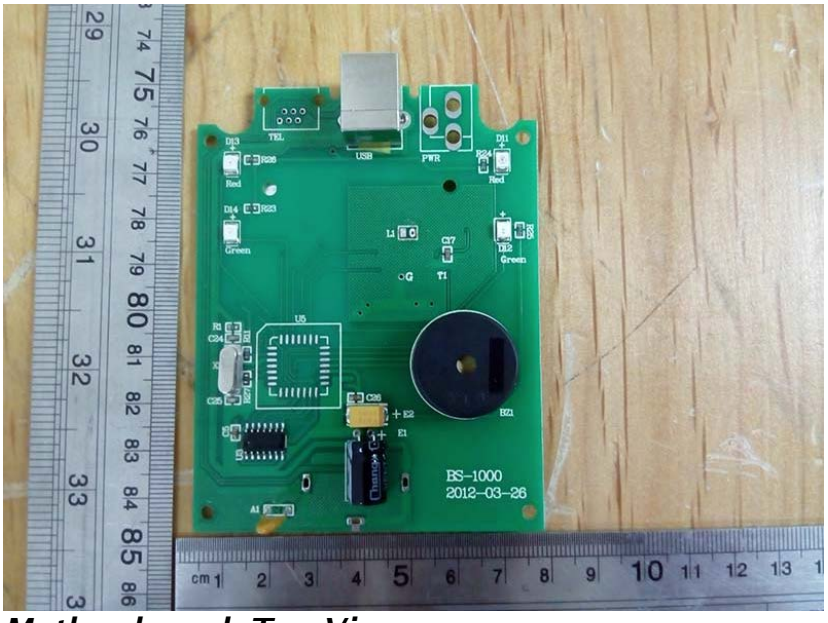
EUT- Bottom View

EUT- Top View

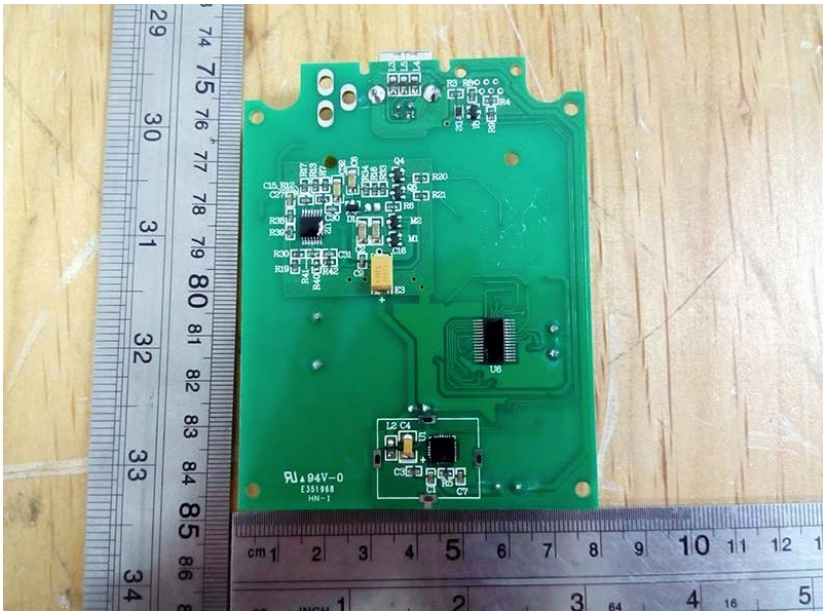
EUT- Left Side View

EUT- Right Side View

EUT-Uncovered View #1



Mother board- Top View



Mother board- Bottom View

Test System Details

EUT	
Model Number:	BS-1000/BS-2000/BS-6000
Description:	Wireless Communication Station
Manufacturer:	Bluecard Technologies Corp.
Input Voltage:	DC 5.0V

Support Equipment

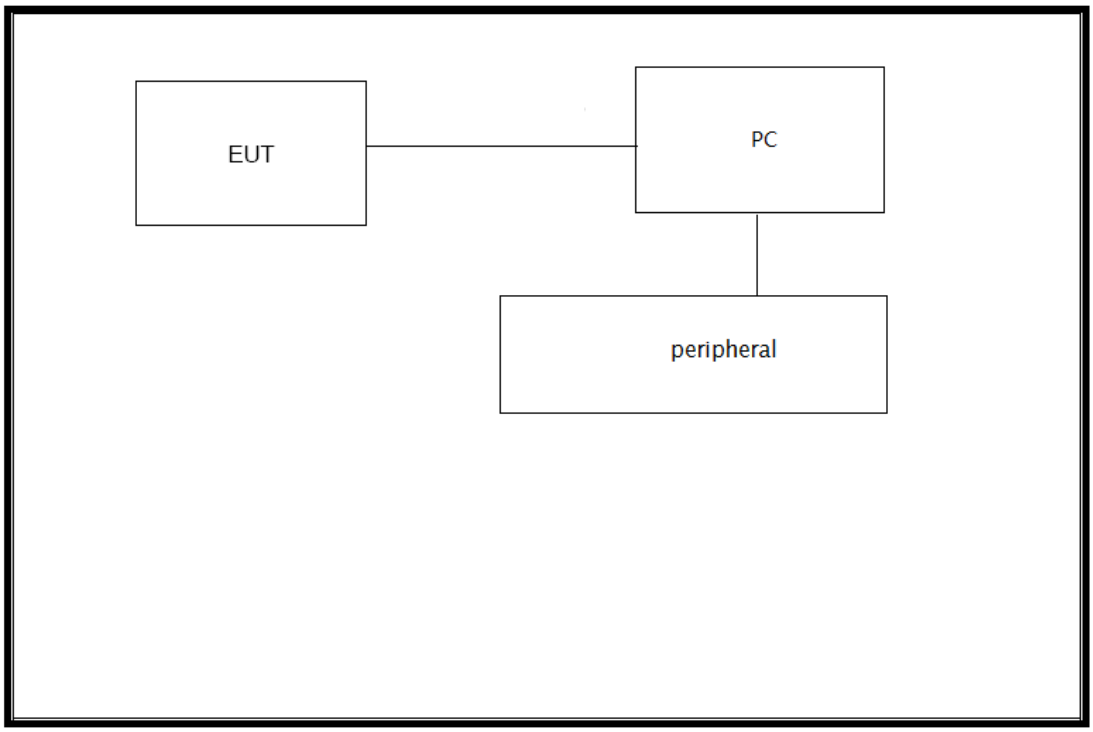
Description	Model Number	Serial Number	Certificate	Manufacturer
PC	H435	/	DoC	Lenovo
Printer	PJ1008	/	DoC	HP
Display	U2142M	/	DoC	DELL
Mouse	N889	/	DoC	DELL
Keyboard	SK-8185	/	DoC	DELL

Cable Description

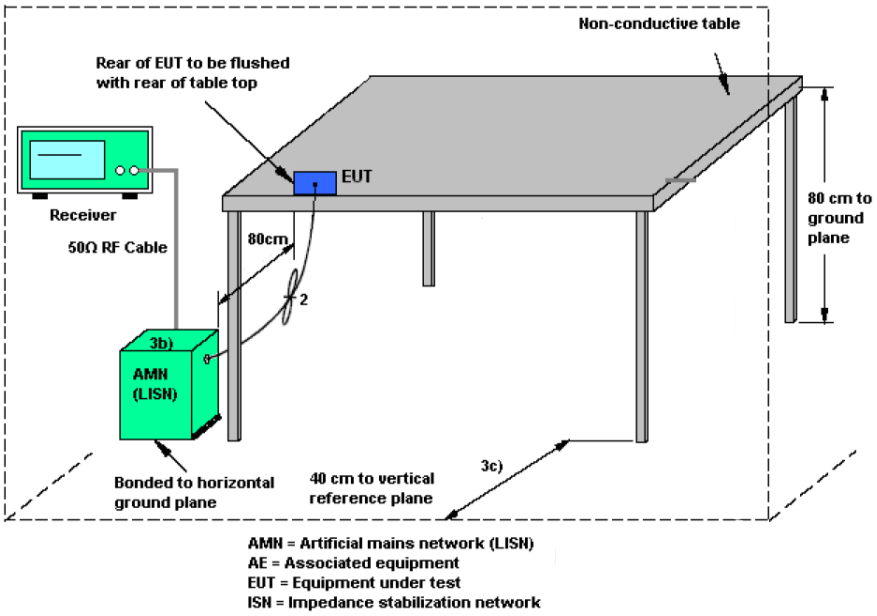
Cable No.	Type of Cable	From	To	Length (Meters)	Shielded (Y/N)	Ferrite (Y/N)
1	USB Cable	PC	EUT	1.2	N	Y
2	VGA	PC	Display	1.2	Y	Y
3	Mouse cable	PC	Mouse	1.2	N	N
4	Keyboard cable	PC	Keyboard	1.2	N	N

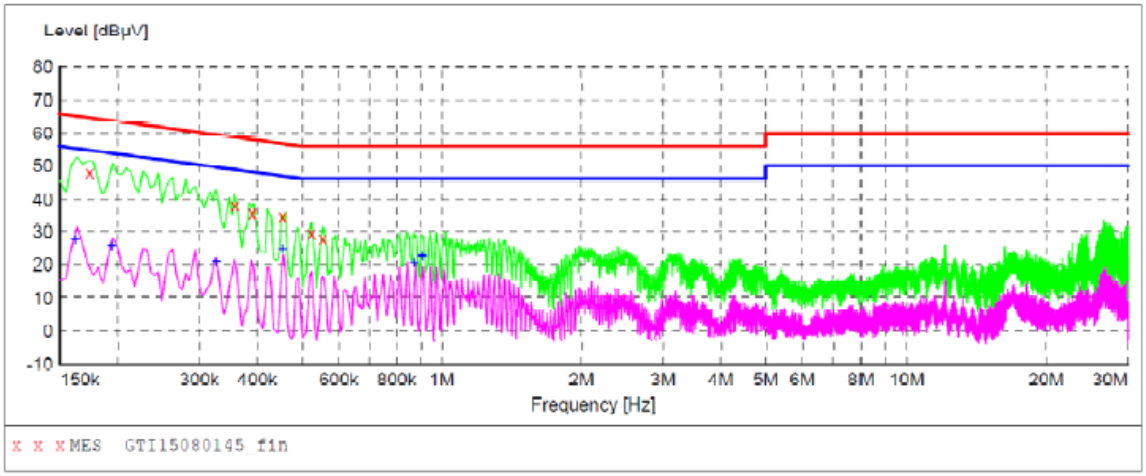
Note: *The EUT has been tested as an independent unit together with other necessary accessories or support units.the above support units or accessories were used to form a representative test configuration during the test tests.*

Configuration of Tested System

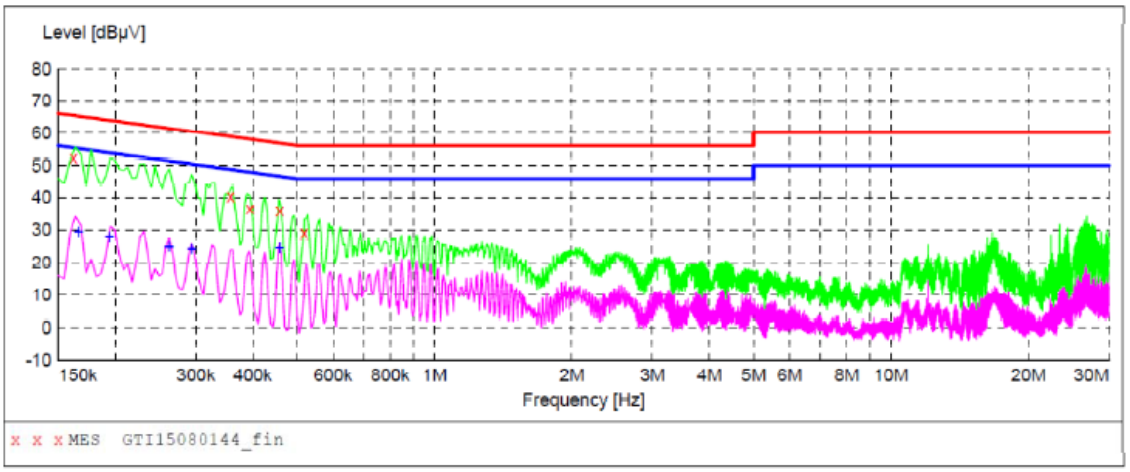


ATTACHMENT 1 - CONDUCTED EMISSION TEST RESULTS

CLIENT:	Bluecard Technologies Corp.	**TEST STANDERD:**	Section 15.107
MODEL NUMBERS:	BS-1000,BS-2000,BS-6000	**PRODUCT:**	Wireless Communication Station
MODEL TESTED:	BS-1000	**EUT DESIGNATION:**	Home or Office
TEMPERATURE:	22°C	**HUMIDITY:**	48%
ATM PRESSURE:	103kPa	**GROUNDING:**	None
TESTED BY:	Alex Yu	**DATE OF TEST:**	May 14th, 2016
TEST REFERENCE:	ANSI C63.4- 2014		
TEST PROCEDURE:	The EUT was set up according to the guidelines of ANSI C63.4: 2014 for conducted emissions. The measurement was using a AMN on each line and an EMI receiver peak scan was made at the frequency measurement range. The six highest significant peaks were then marked, and these signals were then quasi-peaked and averaged.The frequency range investigated was from 150KHz to 30MHz.		
TEST MODE:	Mode 1		
TEST SET UP:			
TESTED RANGE:	150kHz to 30MHz		
TEST VOLTAGE:	AC 120V/60Hz		
RESULTS:	The EUT meets the requirements of test reference for Conducted Emissions. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp(Shenzhen) test personnel.		



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Test Data:

Lines	*Frequency (MHz)*	*Corrected QP Level (dBuV)*	*Limits QP (dBuV)*	*Over Limit QP (dB)*	*Frequency (MHz)*	*Corrected AVE Level (dBuV)*	*Limits AVE (dBuV)*	*Over Limt AVE (dB)*
L	*0.174*	*49.2*	*65*	*-15.8*	*0.454*	*35.8*	*47*	*-11.2*
L	*0.358*	*39.0*	*59*	*-20.0*	*0.872*	*21.6*	*46*	*-24.4*
L	*0.390*	*36.6*	*58*	*-221.4*	*0.908*	*21.7*	*46*	*-24.3*
/	*/*	*/*	*/*	*/*	*/*	*/*	*/*	*/*
/	*/*	*/*	*/*	*/*	*/*	*/*	*/*	
/	*/*	*/*	*/*	*/*	*/*	*/*	*/*	*/*
N	*0.162*	*53.3*	*65*	*-11.7*	*0.166*	*30.5*	*55*	*-24.5*
N	*0.350*	*40.1*	*59*	*-18.9*	*0.194*	*27.9*	*54*	*-26.1*
N	*0.394*	*36.7*	*58*	*-21.3*	*0.262*	*25.8*	*51*	*-25.2*
/	*/*	*/*	*/*	*/*	*/*	*/*	*/*	*/*
/	*/*	*/*	*/*	*/*	*/*	*/*	*/*	
/	*/*	*/*	*/*	*/*	*/*	*/*	*/*	*/*

Note:

1) All readings are using a bandwidth of 9 kHz, with a 500 ms sweep time. A video filter was not used.

2) Other emission levels are too low against official limit that are not reported.

Test Equipment List:

Test Equipment	*Model No.*	*Manufacturer*	*Serial No.*	*Last Cal.*	*Cal. Interval*
EMI Test Receiver	*ECSI*	*R&S*	*100920*	*2016.01.05*	*2017.01.04*
Line impedance stabilization network	*ENV216*	*R&S*	*101112*	*2016.01.05*	*2017.01.04*
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

TESTED BY: _____ ***REVIEWED BY:*** _____

ENGINEER ***SENIOR ENGINEER***

Conducted Emission Test Set-up –Front view

ATTACHMENT 2 – RADIATED EMISSION MEASUREMENT

CLIENT:	Bluecard Technologies Corp.	**TEST STANDERD:**	Section 15.109
MODEL NUMBERS:	BS-1000,BS-2000,BS-6000	**PRODUCT:**	Wireless Communication Station
EUT MODEL:	BS-1000	**EUT DESIGNATION:**	Home or Office
TEMPERATURE:	22°C	**HUMIDITY:**	47%RH
ATM PRESSURE:	103.0kPa	**GROUNDING:**	None
TESTED BY:	Alex Yu	**DATE OF TEST:**	May 16th , 2016
TEST REFERENCE:	ANSI C63.4: 2014		
TEST PROCEDURE:	The EUT was set up according to the guidelines of ANSI C63.4: 2014 for radiated emissions. An EMI receiver peak scan was made at the frequency measurement range (pre-scan) in an Anechoic chamber.signal discrimination was then performed and the significant peaks marked.these peaks were then quasi-peaked in the frequency range of 30 MHz to 1GHz. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor are given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain		
TEST MODE:	Mode 1		
TESTED RANGE:	30- 1000MHz		
TEST VOLTAGE:	DC 5V		
RESULTS:	The EUT meet the requirements of test reference for radiated emissions.The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen). Test personnel.		

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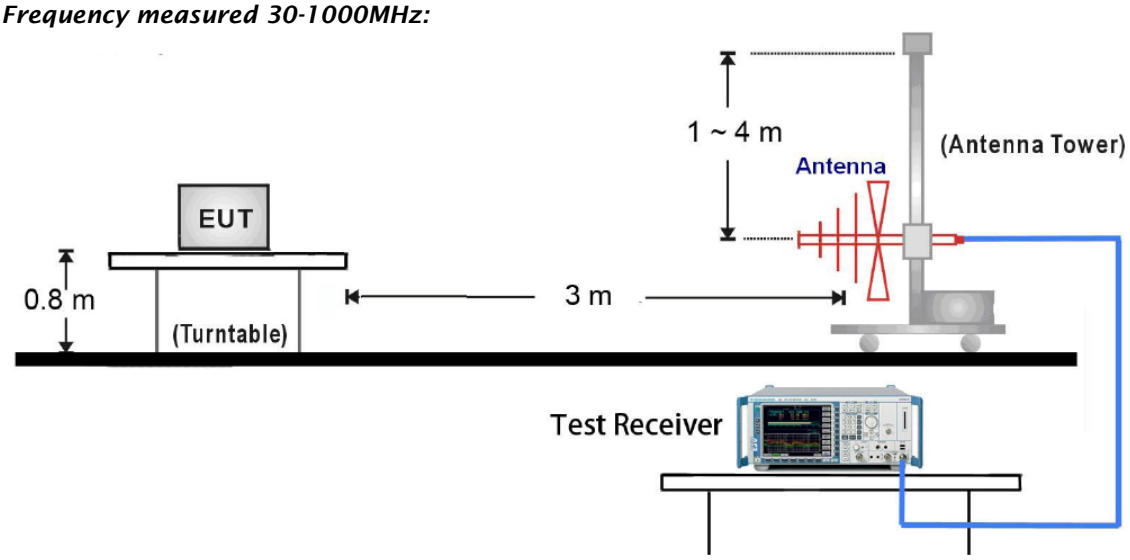
Frequency measured 30-1000MHz:



Receiver Set-up:

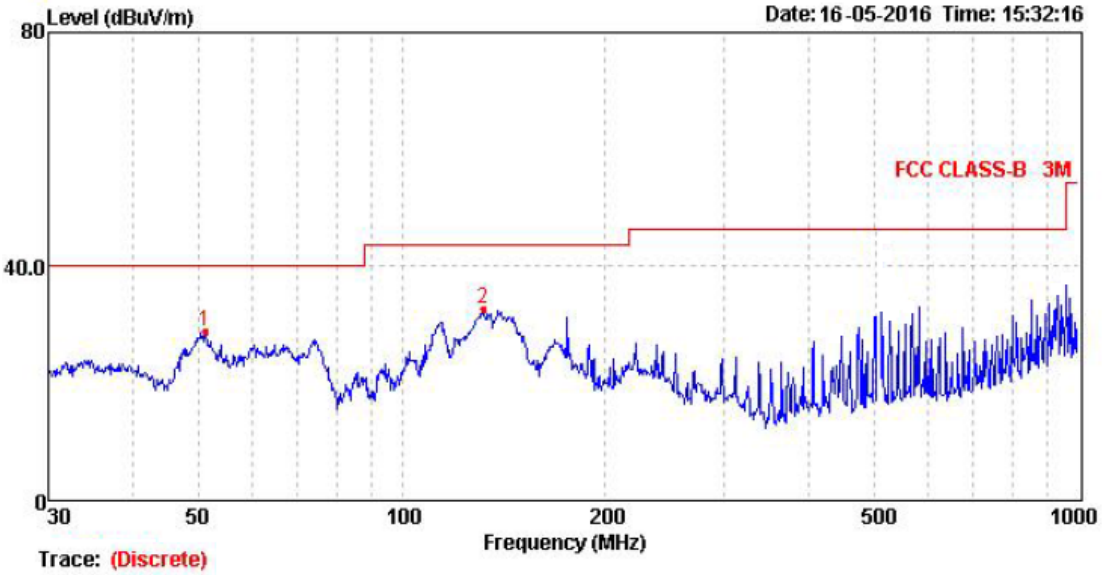
Frequency [MHz]	*RBW*	*VBW*	*Detector*
30-1000	*120KHz*	*300KHz*	*Quasi-peak*

Note : *The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.*

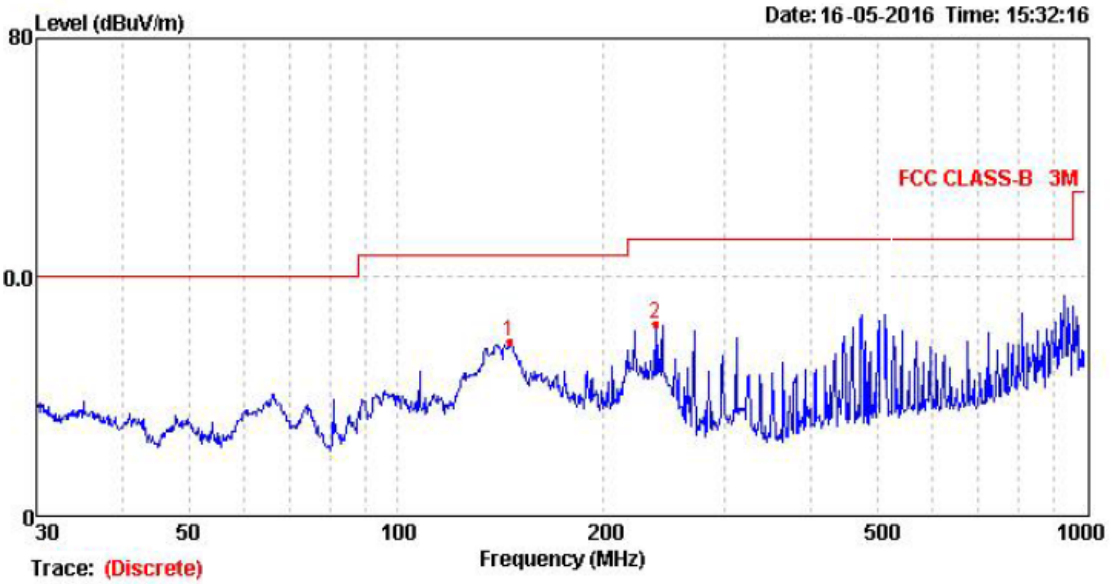
Radiated Emission Limit:

FCC Part 15 Subpart C Paragraph 15.109		
Frequency [MHz]	*Field strength [V/m]*	*Distance [Meters]*
0.009-0.490	*2400/F(KHz)*	*300*
0.490-1.705	*24000/F(KHz)*	*30*
1.705-30	*30*	*30*
30-88	*100*	*3*
88-216	*150*	*3*
216-960	*200*	*3*
Above 960	*500*	*3*

Note: *The lower limit shall apply at the transition frequencies.*



Horizontal: Radiated Emission Test Plot(30-1000MHz)



Vertical: Radiated Emission Test Plot(30-1000MHz)

Radiated Emission Test Data:

Frequency (MHz)	Polarization(H/V)	Factor (dB)	Reading Level QP (dBuV/m)	Emission Level QP (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)
51.12	H	-15.77	44.37	28.60	40	-11.40
131.76	H	-18.84	51.25	32.41	43.5	-11.09
/	/	/	/	/	/	/
145.86	V	-19.47	48.31	28.84	43.5	-14.66
237.48	V	-17.66	49.36	31.70	46	-14.30
/	/	/	/	/	/	/

Note:

1. *All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 60 s sweep time. A video filter was not used.*
2. *The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Emission Level =Reading Level + Antenna Factor + Cable Loss –Preamplifier Factor.*
3. *The other emission levels are 20dB below the official limits that are not reported.*

Test Equipment List:

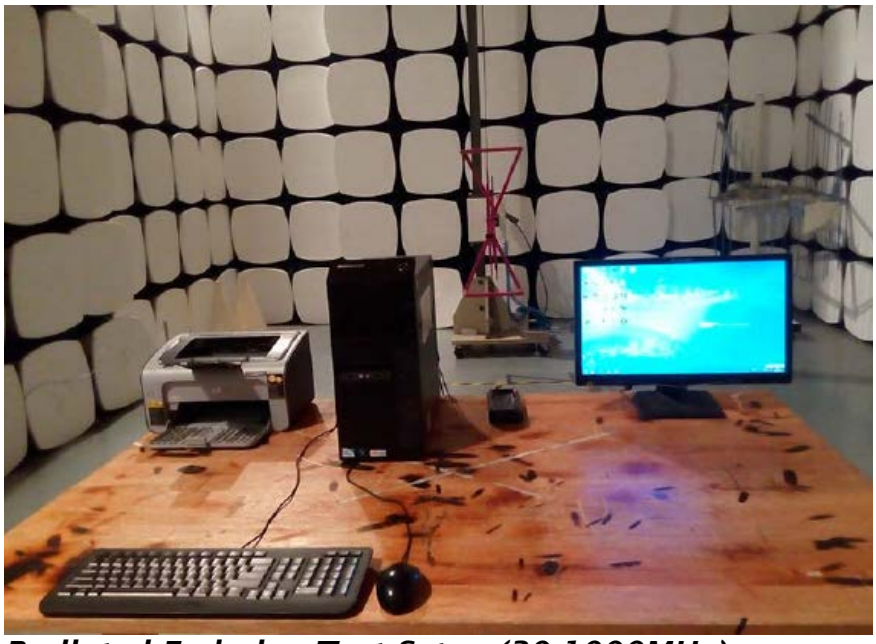
No. #	Test Equipment	Manufacturer	Model	Cal. Interval	Serial No.	Cal. Due Date
01	EMI Test Receiver	R&S	ESCI7	1 year	100967	2017.01.04
02	Bilog Antenna	Schwarzbeck	CBL6141A	1 year	4180	2017.01.07
03	Horn Antenna	Schwarzbeck	BBHA 9120D	1 year	647	2017.01.04
04	Low Noise Pre-Amplifier	HP	8447D	1 year	1937A03050	2017.01.04
05	Low Noise Pre-Amplifier	EMCI	EMC051835	1 year	980075	2017.01.04
06	Loop Antenna	Schwarzbeck	FMZB1519	1 year	1519-037	2017.01.07

TESTED BY: _____ **REVIEWED BY:** _____

ENGINEER **SENIOR ENGINEER**

Radiated Emission Test Set-up :

9KHz to 30MHz



Radiated Emission Test Set-up(30-1000MHz)

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