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NVLAP
NVLAP Lab code: 200068-0
ISO/IEC 17025:1999, ISO 9002:1994

EMI Test Report

On Model Name: TCP/IP Remote Communication Station
Model Number: BS-6000/ BS-2000/BS-1000
Trade Mark: Bluecard

Prepared for Bluecard Software Technology Co. Ltd.

According to FCC Part 15 Subpart C

Test Report #:	*BLU-0703-6135-FCC*
Prepared by:	*Sensia Zhai*
Reviewed by:	*Victor Geng*
QC Manager:	*Paul Chen*

Test Report Released by: Paul J. Chen

Paul Chen *2007, April 13*

Date

Test Location

Tests performed at EMC Compliance Management Group (China) in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

Test Site Location:	*Chinese Electronics Standardization Institute 1 An Ding Men East Street, 100007, P.R. China*
Tel:	*86-10-84029067*
Fax:	*86-10-64063595*
Registration Number:	*96792*

Accreditation Bodies

EMC Compliance Management Group is a fully accredited Test Laboratory for ITE, ISM, MIL-STD and Telecommunications Products.

In compliance with the site registration requirements of Section 2.948 of the FCC Rules to perform EMI measurements for the general public. FCC Registration #: 894293.

Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code # 200068-0.

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Administrative Data

Test Sample : TCP/IP Remote Communication Station

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

Model Tested : BS-6000

Trade Mark : Bluecard

Date Tested : 2007, April 13th

Applicant : Bluecard Software Technology Co. Ltd.
D-801 Shangdi Science Building, No.8 Shangdi West Road,Haidian District , Beijing ,China

Telephone : 86-10-62606666

Fax : 86-10-82607775

Manufacturer : Bluecard Software Technology Co. Ltd.
D-801 Shangdi Science Building, No.8 Shangdi West Road,Haidian District , Beijing ,China

EUT Description

Bluecard Software Technology Co. Ltd., model BS-6000/ BS-2000/BS-1000 (referred to as the EUT in this report) are TCP/IP Remote Communication Station.

Derive of EUT

Compared with BS-6000, BS-2000 doesn't have network function. Compared with BS-6000, BS-1000 can't save information when it loses power, and it doesn't have network function. BS-1000 can't be powered by battery.

So BS-6000 was choose during tests.

Test Summary

The Electromagnetic Compatibility requirements on model BS-6000 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, Section 15.207	*Conducted Emission*	*Passed by 17.6 dB of QP* *Passed by 10.85 dB of AVE*	*AC Input Port*	*Attachment 1*
FCC Part 15, Section 15.209	*Radiated Emission*	*9kHz to 1,000MHz* *Passed by 4.02 dB of QP*	*Enclosure*	*Attachment 2*

Test Mode Justification

This device complies with Part 15 of the FCC rules. Operations is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

EUT Exercise Software

On Reading Mode, the software was supplied by the manufacturer.

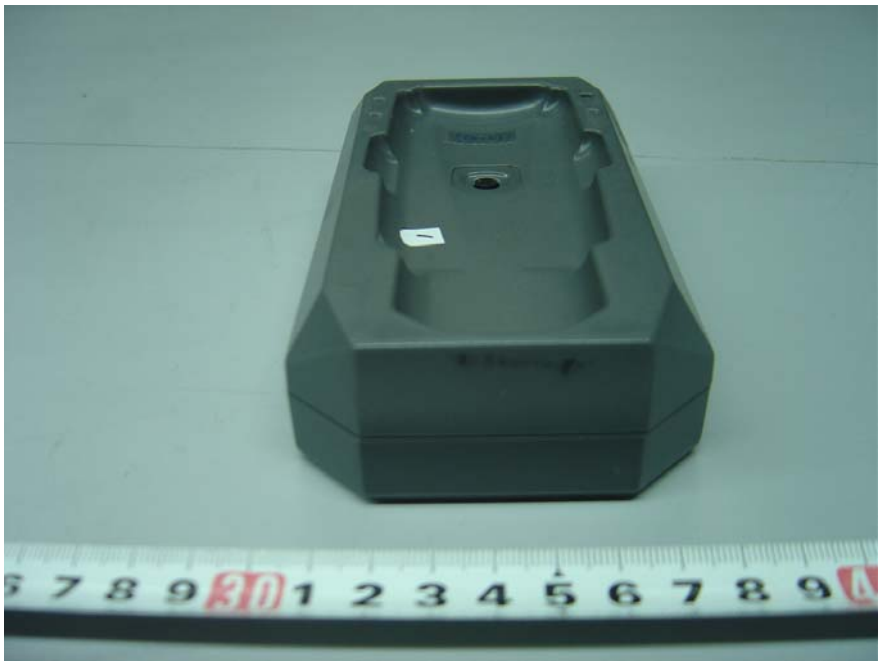
Equipment Modification

Any modifications installed previous to testing by Bluecard Software Technology Co. Ltd. will be incorporated in each production model sold or leased in United States.

There were no modifications installed by EMC Compliance Management Group (China) test personnel.

EUT Photos

Front View

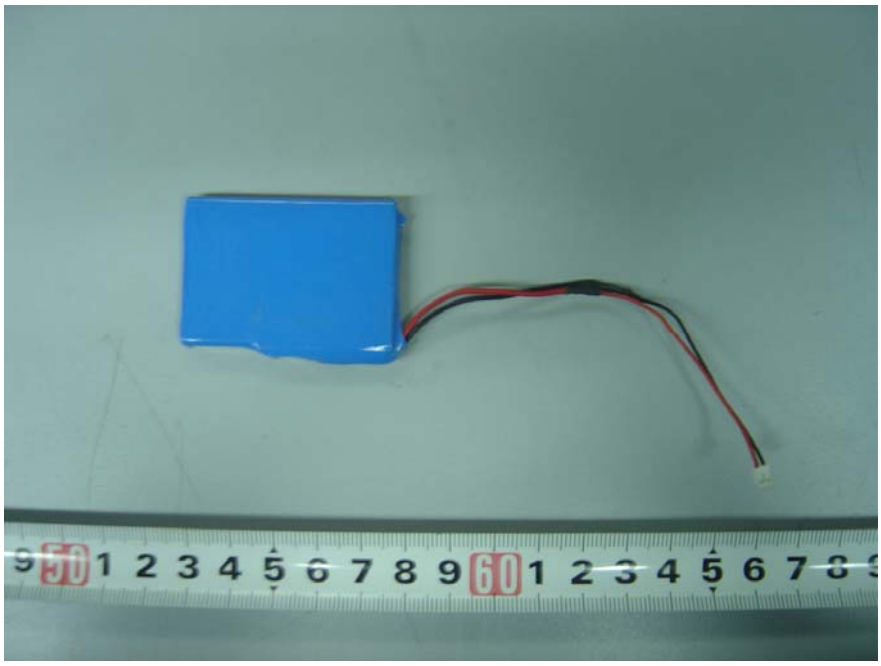


Top View

Bottom View

Left View

Right View



Battery View

Inside View #1

Inside View #2

USB cable

Test System Details

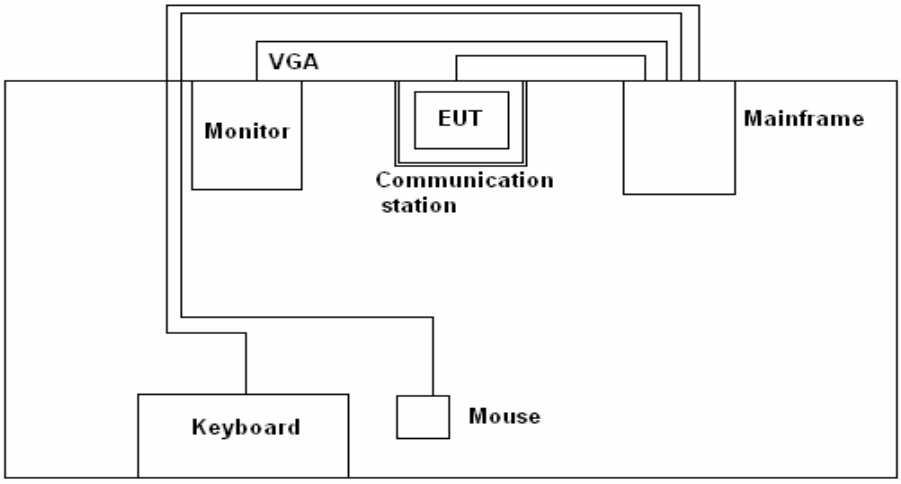
EUT	
Model Number:	**BS-6000/ BS-2000/BS-1000**
Model Tested:	**BS-6000**
Trademark:	**Bluecard**
Description:	**TCP/IP Remote Communication Station**
Manufacturer:	**Bluecard Software Technology Co. Ltd.**

Power Supply			
Description	**Model Number**	**Serial Number**	**Manufacturer**
N/A			

Support Equipment			
Description	**Model Number**	**Serial Number**	**Manufacturer**
Monitor	F1523	N/A	HP
Keyboard	SK-8110	N/A	Dell
mouse	Mo71kc	501098067	Dell
Communication station	bs-1000	N/A	BLUECARD

Cable Description					
Description	**From**	**To**	**Length (Meters)**	**Shielded (Y/N)**	**Ferrite (Y/N)**
Power cable	Mainframe	AC power	1.5	N	N
Power cable	Monitor	AC power	1.5	N	Y
VGA cable	Mainframe	Monitor	0.8	N	Y
USB cable	Mainframe	Communication station	1.8	N	Y

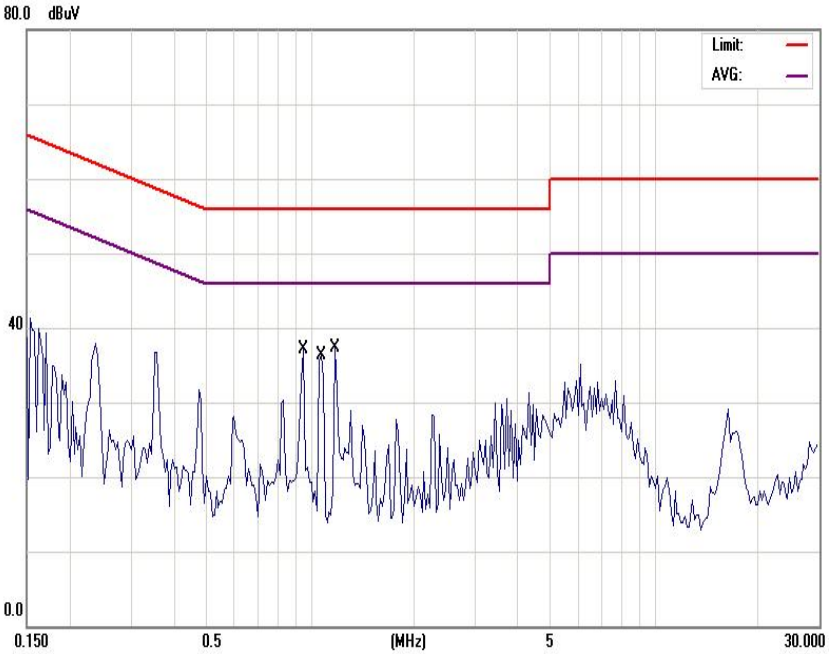
Configuration of Tested System



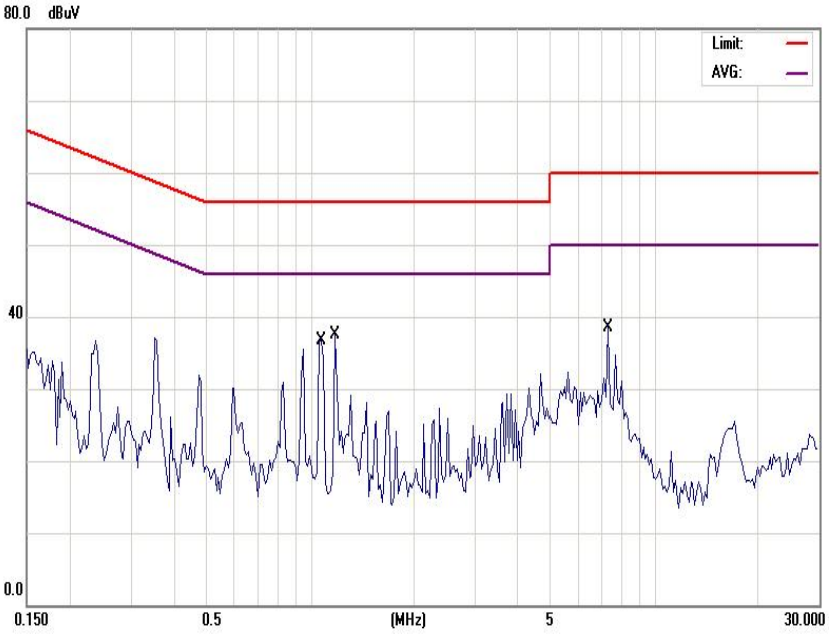
Communication mode

ATTACHMENT 1 – CONDUCTED EMISSION TEST RESULTS

CLIENT:	Bluecard Software Technology Co. Ltd.	**TEST STANDARD:**	FCC Part 15 (2006), ANSI C63.4: 2003
EUT MODELS:	BS-6000	**PRODUCT:**	TCP/IP Remote Communication Station
MODEL TESTED:	Engineering Sample	**EUT DESIGNATION:**	I.T. Equipment
TEMPERATURE:	29.1° C	**HUMIDITY:**	40%
ATM PRESSURE:	101kPa	**GROUNDING:**	NO Grounding
TESTED BY:	Cary Hu	**DATE OF TEST:**	2007,April 13
TEST REFERENCE:	ANSI C63.4: 2003, CISPR 16-1: 2003		
TEST PROCEDURE:	a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface. b. Connect EUT to the power mains through a line impedance stabilization network (LISN) c. The LISN provides 50ohm coupling impedance for the measuring instrument d. Both sides of AC line were checked for maximum conduced interference. e. The frequency range from 150KHz to 30MHz was searched.. f. Set the test-receiver system to Peak Detect Function and Specified bandwidth. g. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.		
TESTED RANGE:	150kHz to 30MHz		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	The EUT meets the requirements of test reference for Conducted Emissions on line L2 by 17.6 dB of Quasi-Peak detector and 10.85 dB of Average Detector. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by EMC Compliance Management Group (China) test personnel.		
M. UNCERTAINTY:	Freq. $\pm$ $2x10^{-7}$ x Center Freq., Amp $\pm$ 2.6 dB		



Line 1 Conducted Emission Graph



Line 2 Conducted Emission Graph

Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
L1	0.967	35.22	56	-20.78	0.967	33.29	46	-12.71
L1	1.0865	37.03	56	-18.97	1.0865	34.4	46	-11.6
L1	1.2067	37.87	56	-18.13	1.2067	34.29	46	-11.71
L2	1.086	37.44	56	-18.56	1.086	35.04	46	-10.96
L2	1.2072	38.4	56	-17.6	1.2072	35.15	46	-10.85
L2	7.3625	28.31	60	-31.69	7.3625	22.22	50	-27.78
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

Test Equipment	Model	Manufacturer	Serial No.	Last Cal.	Cal. Due
EMI receiver	85422E	HP	3440A00103	02/28/07	02/27/08
LISN 1#	3825/2	EMCO	1393	02/28/07	02/27/08
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY: _____ **REVIEWED BY:** _____

ENGINEER **SENIOR ENGINEER**

EUT Model: BS-6000

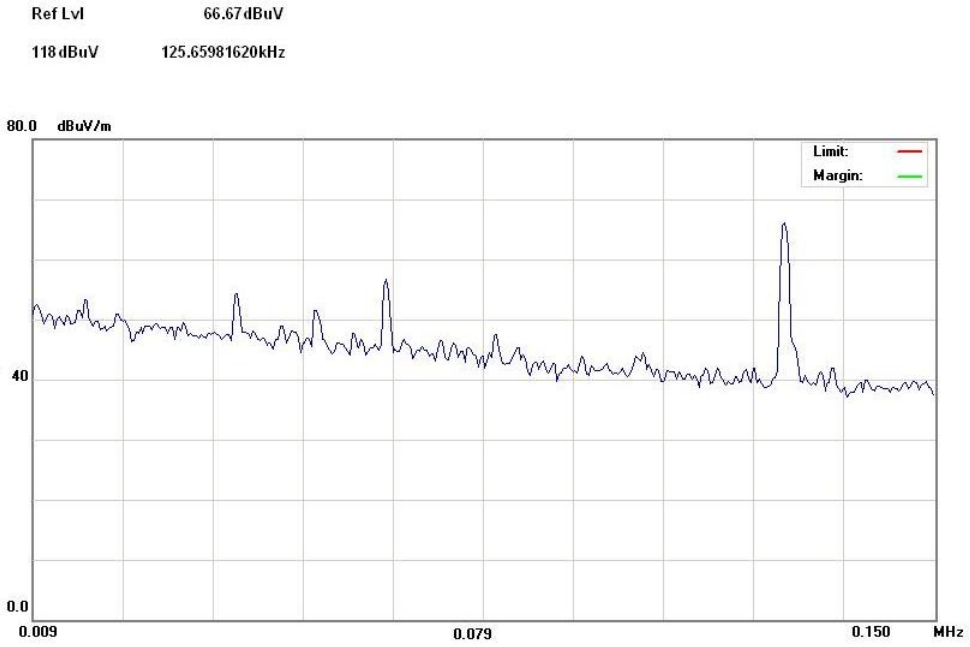
Conducted Emission Test Set-up

ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS

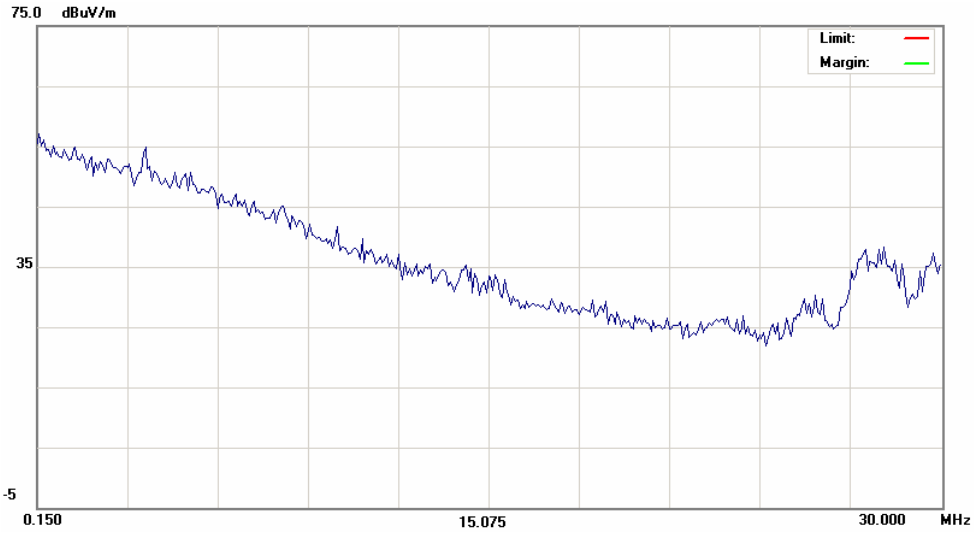
CLIENT:	Bluecard Software Technology Co. Ltd.	**TEST STANDARD:**	FCC Part 15 (2006), ANSI C63.4: 2003
EUT MODELS:	BS-6000	**PRODUCT:**	TCP/IP Remote Communication Station
MODEL TESTED:	Engineering Sample	**EUT DESIGNATION:**	I.T. Equipment
TEMPERATURE:	29.1° C	**HUMIDITY:**	40%
ATM PRESSURE:	101kPa	**GROUNDING:**	NO Grounding
TESTED BY:	Cary Hu	**DATE OF TEST:**	2007,April 13

TEST REFERENCE:	FCC Part 15, section 15.209, ANSI C63.4: 2003, CISPR 16-1:2003
TEST PROCEDURE:	The EUT was set up according to the guidelines of ANSI C63.4: 2003 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 9kHz to 1GHz at an Anechoic chamber. 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
TESTED RANGE:	9kHz to 1,000MHz
TEST VOLTAGE:	120VAC / 60Hz
RESULTS:	The EUT meets the requirements of Test Reference for Radiated Emissions on vertical polarization by 4.02dB at 143.94 MHz. **Note:** the test from 9 kHz to 30 MHz, the test distance is 3m the test from 30MHz to 1GHz, the test distance is 3m The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by EMC Compliance Management Group (China) test personnel.
M. UNCERTAINTY:	Freq. ± 2x10-7 x Center Freq., Amp ± 2.6 dB

Communication Mode



9 kHz ~ 150 kHz



150 kHz ~ 30 MHz

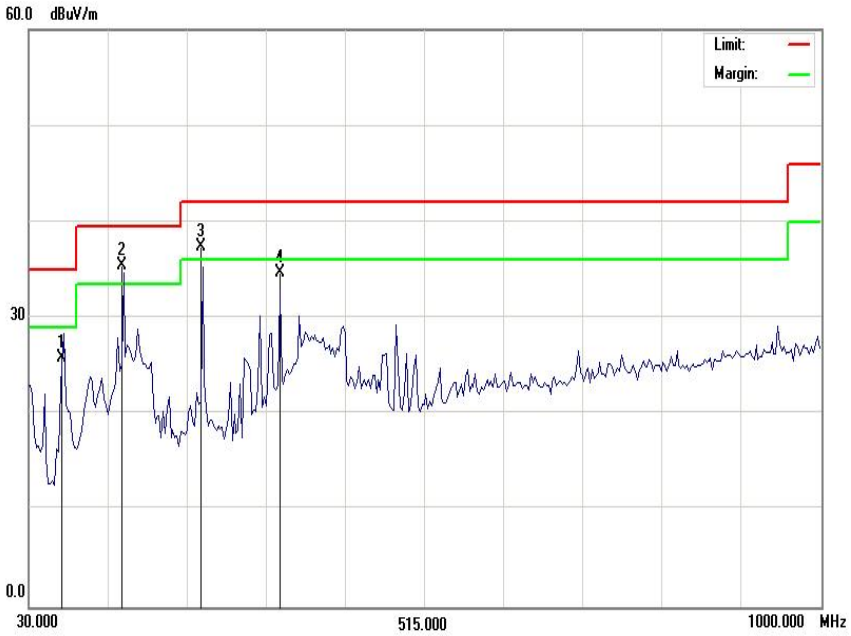
For 125.65 kHz

Test Results (9 kHz~30 MHz)

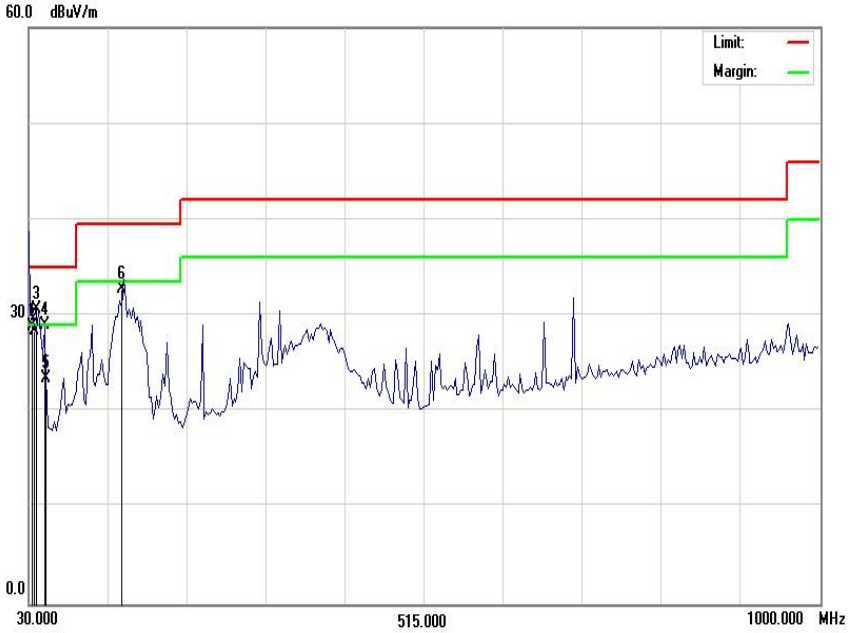
Maximum Frequency (kHz)	**Spurious Emission Level (dBμV)**	**3 Meters Limit (dBμV)**	**Margin (dB)**
125.65	66.67	105.67	39.00
Note: There is no spurious emissions during the test, so need not mark and read the data.			
Note: For 0.009 MHz~0.15 MHz, the readings are using a bandwidth of 200Hz and for 0.15 MHz~30 MHz, the readings are using a bandwidth of 10kHz, with a 30 ms sweep time. A video filter was not used.			

Note: For measuring equipment calibrated in dBμV/m, the reading should be reduced by 51.5 dB to be converted to in dBμA/m.

30M-1GHz



Radiated Emission Plot –Horizontal Polarization
(Peak, Max Hold Mode)



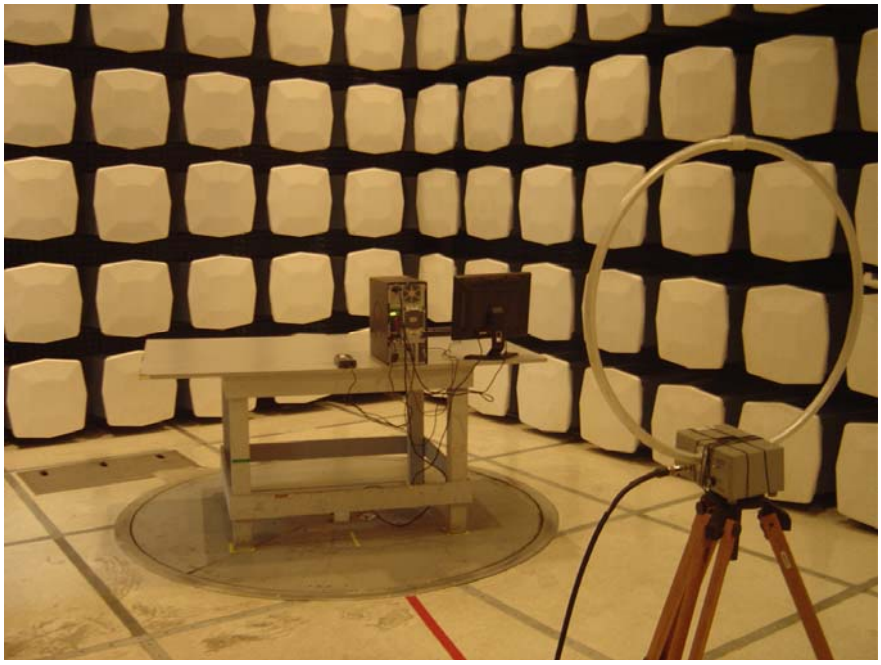
Radiated Emission Plot –Vertical Polarization
(Peak, Max Hold Mode)

Frequency [MHz]	Antenna Polarization [V/H]	Correction Factors [dB/m]	Corrected Reading [dBµV/m]	5 Meters Limits [dBµV/m]	Delta, QP [dB]	Angle of Turner (degree)	Height of Tower (cm)
70.26	H	-12.76	25.84	35	-9.16	400	95
143.94	H	-10.84	35.48	39.5	-4.02	330	270
239.865	H	-7.84	37.45	42	-4.55	230	275
335.8075	H	-4.91	34.66	42	-7.34	100	105
32.7775	V	-1.77	28.85	35	-6.15	100	50
34.995	V	-3.58	28.38	35	-6.62	100	50
39.3725	V	-7.26	30.67	35	-4.33	100	100
47.9925	V	-12.34	29.01	35	-5.99	100	270
50.0125	V	-13.3	23.49	35	-11.51	100	360
143.96	V	-10.56	32.71	39.5	-6.79	100	265
Comments: None							
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.							

Test Equipment	/Model	Manufacturer	Serial No.	Last Cal.	Cal. Due
EMI receiver	ESCS30	RS	847793/028	05/07/07	06/05/08
Antenna	3115	EMCO	9202-3790	09/08/06	09/07/07
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).					

SIGNED BY: Cary Hu _____ **REVIEWED BY:** Clit Grey _____

ENGINEER **SENIOR ENGINEER**



Maximized Radiated Emission Test Set-up(9KHz-30MHz)

Maximized Radiated Emission Test Set-up