






**Gakkiku Compliance Company Limited**

Room 1501, 15/F., SPA Centre,  
 53-55 Lockhart Road,  
 Wanchai,  
 Hong Kong  
 Tel: (852) 8211 2659  
 Email: info@gakkiku.com

## Test Report

<b>Applicant</b>	Best Link (USA) Corp. Ltd.
<b>Address</b>	Room 702, 7/F., Block B, Wing Kut Industrial Building, No. 608 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong
<b>Tested Brand Name(s)</b>	None
<b>Tested Model Number/ Item Number</b>	MHP170215BLCTUHH
<b>FCC ID Number</b>	FCC ID: 2AI8L170215BLCTUH
<b>Product Description</b>	4 PORT USB HUB
<b>Operating Frequency</b>	Nil
<b>Rules/Standards</b>	Part 15.109 of the FCC Rules, ICES-003 Issue 6 and RSS-Gen Issue 4 of Innovation, Science and Economic Development Canada (ISED)
<b>Received Date</b>	30th January, 2018
<b>Tested Date</b>	31th January, 2018
<b>Tested by</b>	 June Zheng (Engineer of Shenzhen SEM Test Technology Co. Ltd)
<b>Reviewed by</b>	 Silin Chen (EMC Manager of Shenzhen SEM Test Technology Co. Ltd)
<b>Signed by</b>	 Jandy So (Manager of Shenzhen SEM Test Technology Co. Ltd)
<b>Approved by</b>	Gilbert Lui (Marketing Manager of Gakkiku Compliance Company Limited)
<b>Report Number</b>	GCCL201801300B
<b>Test Results</b>	<input checked="" type="checkbox"/> PASSED <input type="checkbox"/> FAILED

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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Best Link (USA) Corp. Ltd.  
 Address of applicant: Room 702, 7/F., Block B, Wing Kut Industrial Building,  
 No. 608 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong

Manufacturer: Best Link (USA) Corp. Ltd.  
 Address of manufacturer: Room 702, 7/F., Block B, Wing Kut Industrial Building,  
 No. 608 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong

General Description of EUT	
Product Description:	4 PORT USB HUB
FCC Procedure:	Certification
Tested Brand Name(s):	None
Tested Model Number/ Item Number:	MHP170215BLCTUHH
Adding Model Number(s)/ Item Number(s):	Nil [All Adding Brand Name(s) and Model Number(s)/Item Number(s) are same electrically identical as Tested Brand Name and Model Number/Item Number]
<p><i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of adding model number(s)/item number(s) listed in the report is different from above mentioned tested model number/item number, but the circuit and the electronic construction do not change, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
Power Source:	USB DC 5V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	/
Highest Internal Frequency:	/
Classification of ITE:	/

## 1.2 Test Standards

The following report is prepared on behalf of the mentioned applicant in accordance with Part 2 Subpart J & Part 15 Subparts A and B of the FCC Rules and ICES-003 Issue 6 & RSS-Gen Issue 4 of Innovation, Science and Economic Development Canada (ISED).

The objective is to determine compliance with Part 15.109 of the FCC Rules and ICES-003 Issue 6 & RSS-Gen Issue 4 of Innovation, Science and Economic Development Canada (ISED).

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

## 1.4 Test Facility

### **FCC - Test Firm Registration Number: 125990**

Shenzhen SEM Test Technology Co. Ltd, EMC Laboratory has been notified by National Voluntary Laboratory Accreditation Program that Shenzhen SEM Test Technology Co. Ltd has been accredited as a testing laboratory and fully described in a report filed with the (FCC) Federal Communications Commission. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, 518101, China. The acceptance letter from the FCC is maintained in our files, Designation Number: CN5010 and the Test Firm Registration Number: 125990.

### **Innovation, Science and Economic Development Canada (ISED) - Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co. Ltd. has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada (ISED) for radio equipment testing with Registration No.: 11464A.

## 1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Power on	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/ Unshielded	With Core/ Without Core
/	/	/	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	lenovo	TYPE 2545-A22 PRODUCT ID: 2545A22	LR-63C8R
4 units of 8 GB USB Memory	hp	v220w	N/A

Special Cable List and Details

Cable Description	Length (M)	Shielded/ Unshielded	With Core/ Without Core
/	/	/	/

## 1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	±2.88dB
Transmitter Spurious Emissions	Radiated	±5.1dB

**1.7 Test Equipment List and Details**

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2017-06-12	2018-06-11
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2017-06-12	2018-06-11
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2017-06-12	2018-06-11
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2017-06-12	2018-06-11
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2017-06-12	2018-06-11
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-08	2018-06-07
SEMT-1042	Horn Antenna	ETS	3117	00086197	2017-06-08	2018-06-07
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-08	2018-06-07
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2017-06-12	2018-06-11
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2017-06-12	2018-06-11
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2017-06-12	2018-06-11

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**2. SUMMARY OF TEST RESULTS**

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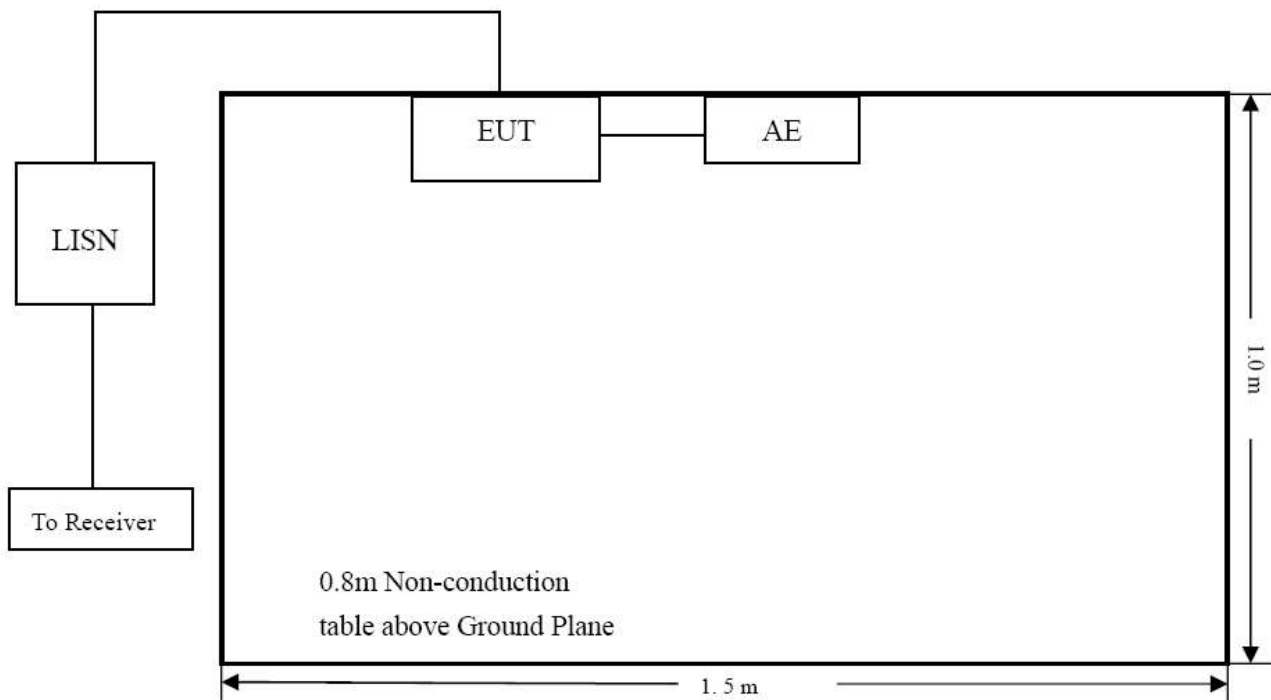
<b>FCC Rules/ Innovation, Science and Economic Development Canada (ISED)</b>	<b>Description of Test Item</b>	<b>Result</b>
Part 15.107(a)/15.207(a)	Conducted Emissions	Compliant
Part 15.109(a), ICES-003 Issue 6	Radiated Emissions	Compliant

### 3. Conducted Emissions

#### 3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

#### 3.2 Basic Test Setup Block Diagram



#### 3.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

#### 3.4 Summary of Test Results/Plots

According to the data in section 3.5, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

**-10.98 dB at 0.6940 MHz in the Line, QP detector, 0.15-30MHz**



### 3.5 Conducted Emissions Test Data

#### Plot of Conducted Emissions Test Data

Product Description: 4 PORT USB HUB

Tested

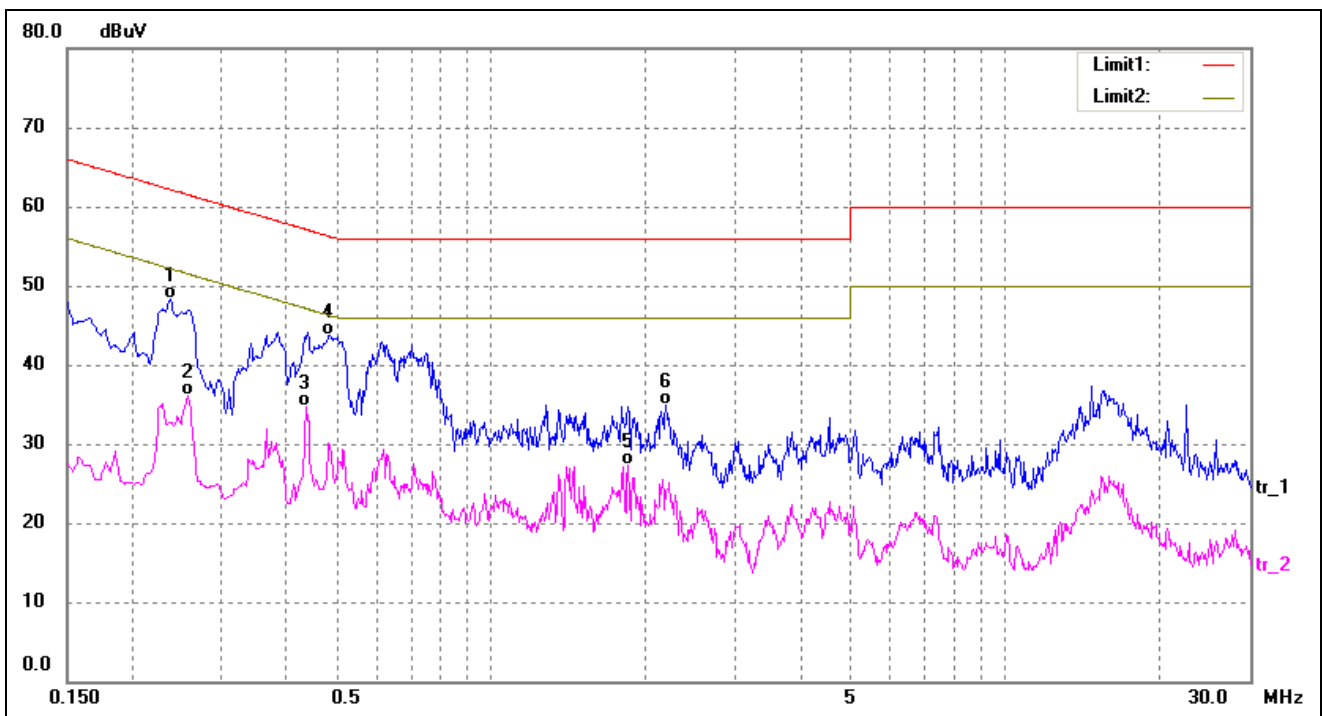
Model Number/ MHP170215BLCTUHH

Item Number:

Operating Condition: Power on

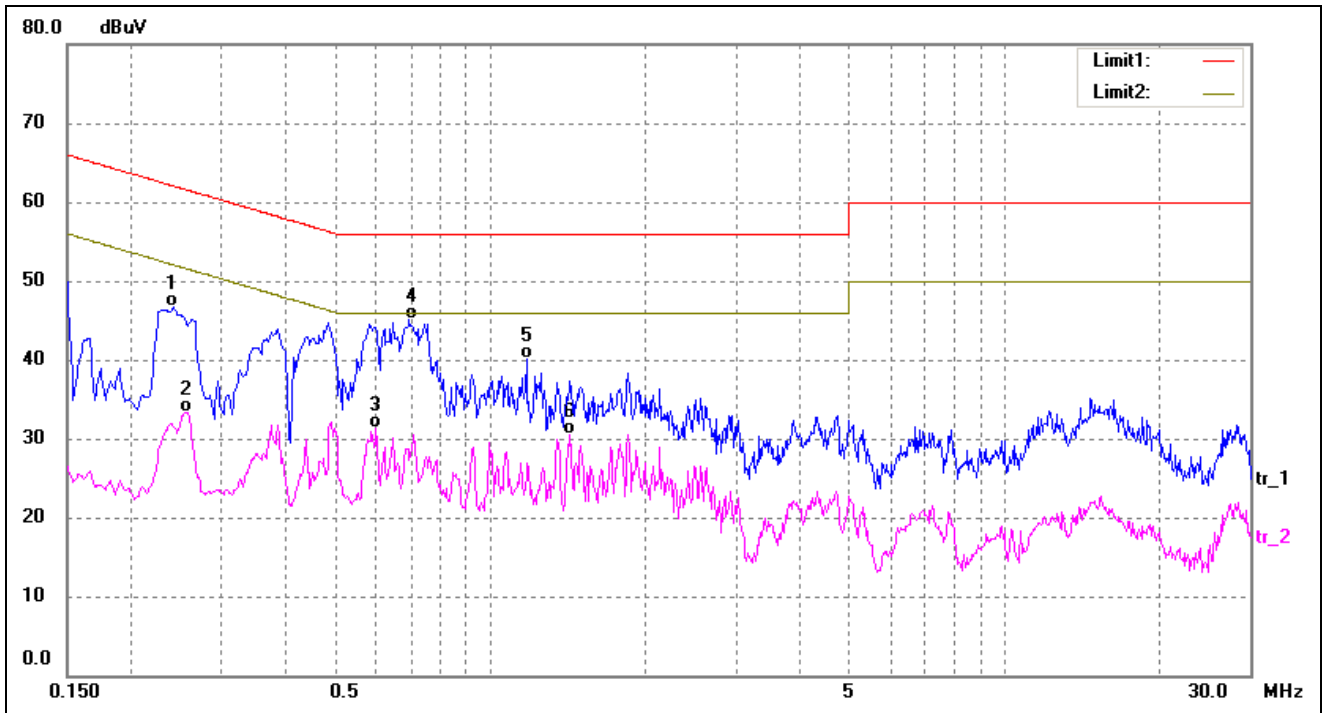
Power Source: AC 120V/60Hz; USB DC 5V

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2380	38.49	9.80	48.29	62.16	-13.87	QP
2	0.2580	26.28	9.80	36.08	51.49	-15.41	AVG
3*	0.4380	24.87	9.80	34.67	47.10	-12.43	AVG
4	0.4860	33.97	9.80	43.77	56.24	-12.47	QP
5	1.8500	17.54	9.74	27.28	46.00	-18.72	AVG
6	2.1940	25.14	9.73	34.87	56.00	-21.13	QP

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2420	36.84	9.80	46.64	62.02	-15.38	QP
2	0.2580	23.56	9.80	33.36	51.49	-18.13	AVG
3	0.5980	21.48	9.79	31.27	46.00	-14.73	AVG
4*	0.6940	35.24	9.78	45.02	56.00	-10.98	QP
5	1.1780	30.35	9.76	40.11	56.00	-15.89	QP
6	1.4260	20.85	9.75	30.60	46.00	-15.40	AVG

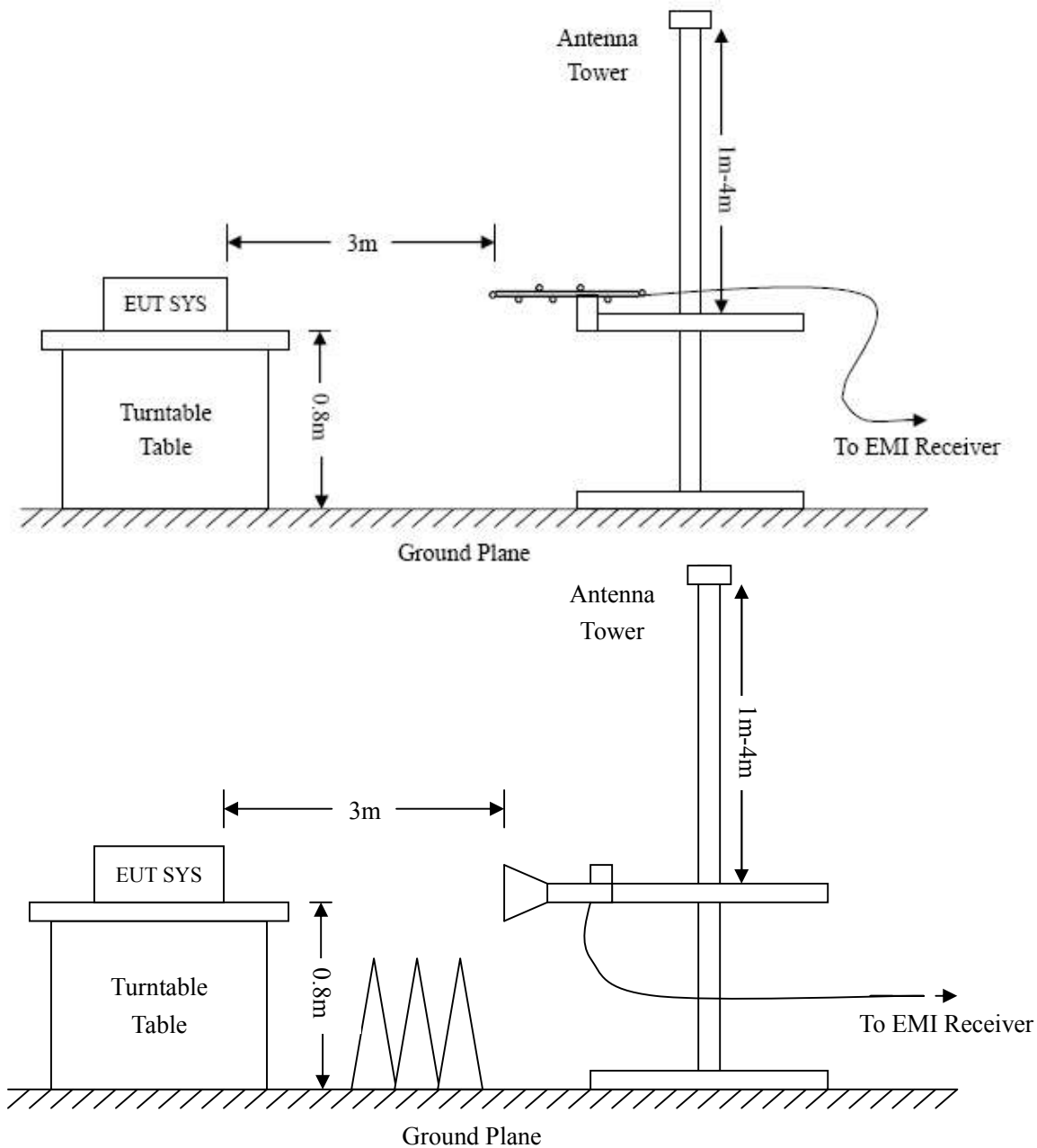
## 4. Part 15.109(a) & ICES-003 Issue 6 - Radiated Emissions

### 4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



### 4.2 Test Receiver Setup

Frequency:9kHz-30MHz	Frequency:30MHz-1GHz	Frequency:Above 1GHz
RBW=10kHz	RBW=120kHz	RBW=1MHz
VBW=30kHz	VBW=300kHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time=Auto	Sweep time=Auto	Sweep time=Auto
Trace =Max hold	Trace=Max hold	Trace=Max hold
Detector function=Peak	Detector function=Peak, QP	Detector function=Peak, AV

### 4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB $\mu$ V means the emission is 6dB $\mu$ V below the maximum limit for a device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit of Part 15 (ICES-003 Issue 6)}$$

### 4.4 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

### 4.5 Summary of Test Results/Plots

According to the data, the EUT is complied with the standards under Part 15.109 of the FCC Rules and ICES-003 Issue 6 of Innovation, Science and Economic Development Canada (ISED), and had the worst margin of:

**-3.17 dB at 721.7259 MHz in the Vertical polarization, 30 MHz to 1 GHz, 3 Meters**

*Note: This EUT was tested in 3 orthogonal positions and the worst case position data was reported.*

**Plot of Radiated Emissions Test Data**

Product Description: 4 PORT USB HUB

Tested

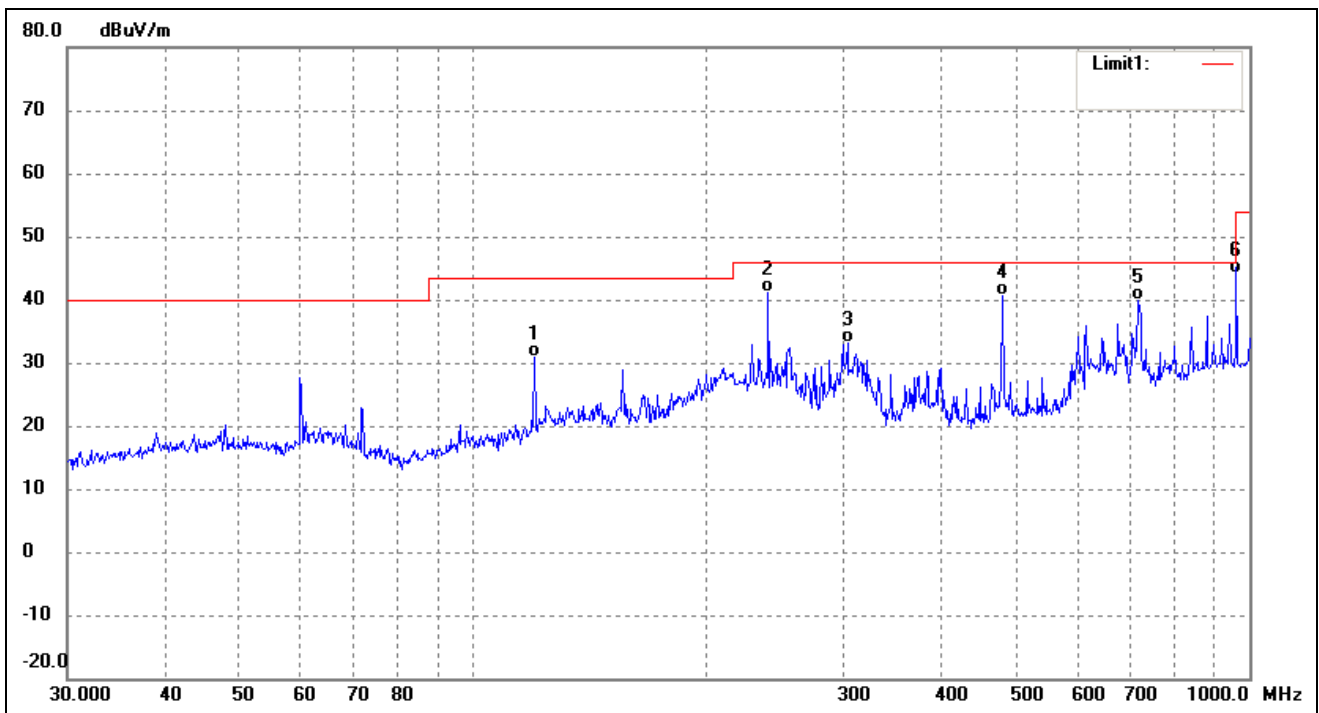
Model Number/ MHP170215BLCTUHH

Item Number:

Operating Condition: Power on

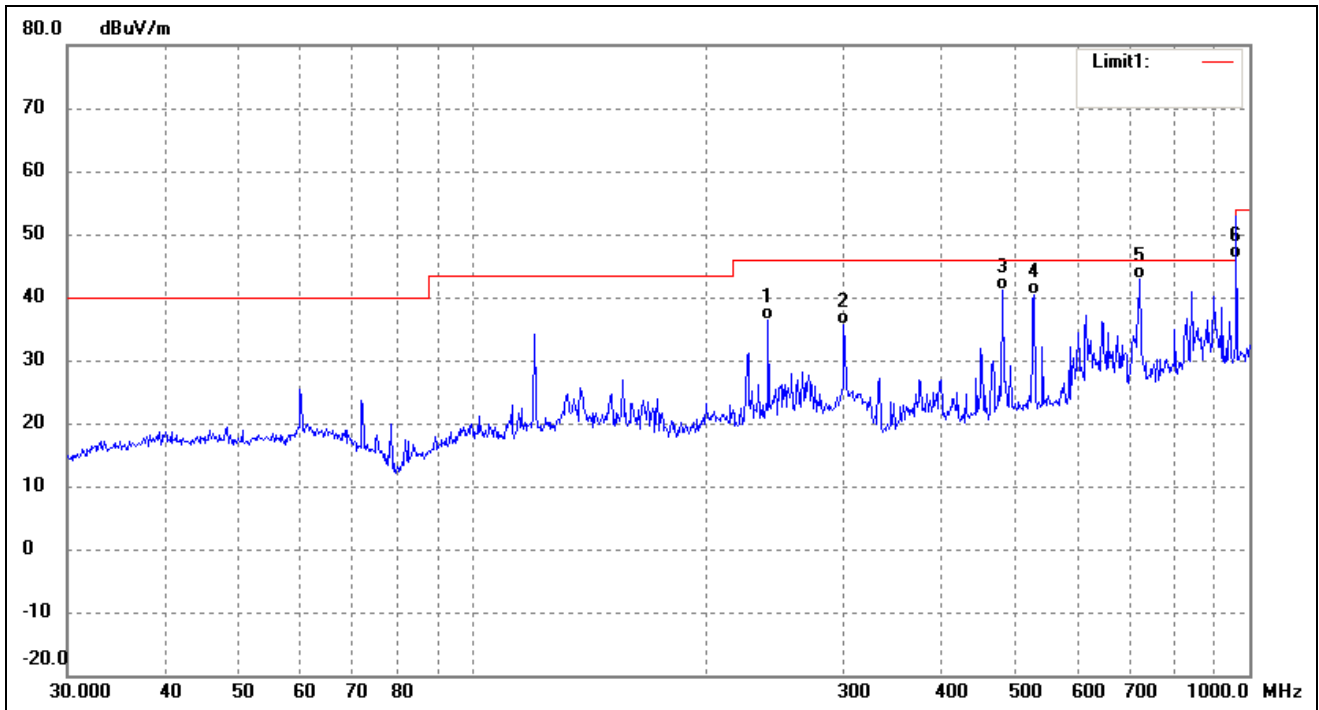
Power Source: USB DC 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (·)	Height (cm)	Remark
1	119.8556	44.64	-13.68	30.96	43.50	-12.54	214	100	QP
2	239.9874	52.14	-10.96	41.18	46.00	-4.82	15	100	QP
3	303.5437	42.96	-9.73	33.23	46.00	-12.77	320	100	QP
4	480.5276	45.99	-5.36	40.63	46.00	-5.37	105	100	QP
5	719.1995	42.14	-2.38	39.76	46.00	-6.24	285	100	QP
6	962.1623	42.51	1.59	44.10	54.00	-9.90	301	100	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (·)	Height (cm)	Remark
1	239.9874	47.42	-10.96	36.46	46.00	-9.54	66	100	QP
2	300.3672	45.44	-9.75	35.69	46.00	-10.31	225	100	QP
3	480.5276	46.48	-5.36	41.12	46.00	-4.88	188	100	QP
4	528.2458	46.19	-5.90	40.29	46.00	-5.71	321	100	QP
5	721.7259	45.06	-2.23	42.83	46.00	-3.17	206	100	QP
6	962.1623	44.62	1.59	46.21	54.00	-7.79	111	100	QP

\*\*\*\*\* END OF REPORT \*\*\*\*\*