

FCCTEST REPORT

Report Number : **60/790.14.025.01** Date of Issue: November 12, 2014

Model : **Hercules Universal DJ**

Product type : **Wireless DJ Controller**

FCC ID : **NAM5061920**

Applicant : **GUILLEMOT CORPORATION S.A.**

Address : **Place Du Granier - B.P. 97143,35571 CHANTEPIE CEDEX, FRANCE**

Production Facility : **--**

Address : **--**

Test Result : ☒ **Positive** ☐ **Negative** Total Pages: 17

Prepared by:



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Reviewed by:



Edmond FUNG

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1 General Information

1.1 Summary of Test Result

FCC Rules	IC Rules	Description of Test	Result	Remark
FCC § 15.107	ICES-003 § 6.1	AC Line Conducted Emissions	PASS	Meet Class B limit
FCC § 15.109	ICES-003 § 6.2	Radiated Emission	PASS	Meet Class B limit

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2 Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

1.3 Measurement Uncertainty

Details about the Test Laboratory

Test site 1

Company name: TÜV SÜD HONG KONG LTD.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin
HK.

Telephone: 852 2776 1323

Fax: 852 2776 1372

Test site 2

Company name: Shenzhen Academy of Metrology and Quality Inspection
No.4 TongFa Road, Xili TownNanshan District, Shenzhen, China
Test Firm FCC Registration number:994606

National Digital Electronic Product Test
No.4 TongFa Road, Xili TownNanshan District, Shenzhen, China

2 EUT Description

Product	Wireless DJ Controller
Model Number	Hercules Universal DJ
Applicant	GUILLEMOT CORPORATION S,A. Place Du Granier– B.P.97143. 35571 CHANTEPIE CEDEX, FRANCE
Power Supply	DC 5V By USB Cable From PC

I/O Port Description :

I/O Port Types	Q'TY	Test Description
1). USB	1	Connected to Charger
2). Mix OUT	1	Audio output
3). Aux In	1	Audio In
4). Headphone output port	1	Headphone
5). --	--	--

Assistant Equipment Used in Test :

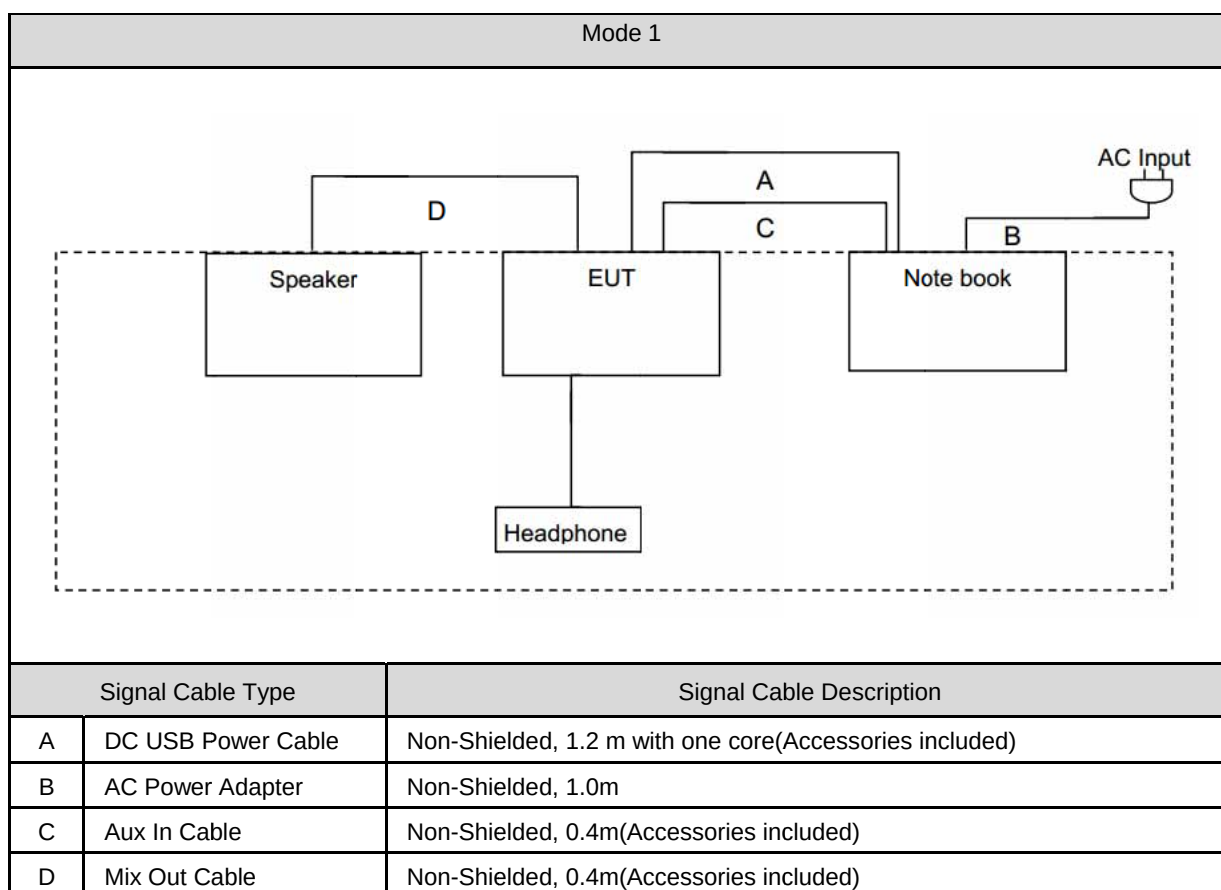
Assistant Equipment	Brand	Model
Notebook	Lenovo	B490
speaker	--	K20403
Headphone	Sony	MDR-XB70AP

3 Test Methodology

3.1 Decision of Test Mode

Pre-Test Mode	
EMC	Mode 1:Data transmitting with PC

3.2 Configuration of Test System Details



3.3 Test Site Environment

Items	Test Item	Actual
Temperature (°C)	Conducted Emission	25
Humidity (%RH)		66
Barometric pressure (mbar)		1006
Temperature (°C)	Radiated Emission	25
Humidity (%RH)		62
Barometric pressure (mbar)		1006

4 Emission Test

4.1 Conducted Emission Measurement

4.1.1 Limit

A.C. Mains Conducted Interference Limit

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

4.1.2 Test Instruments

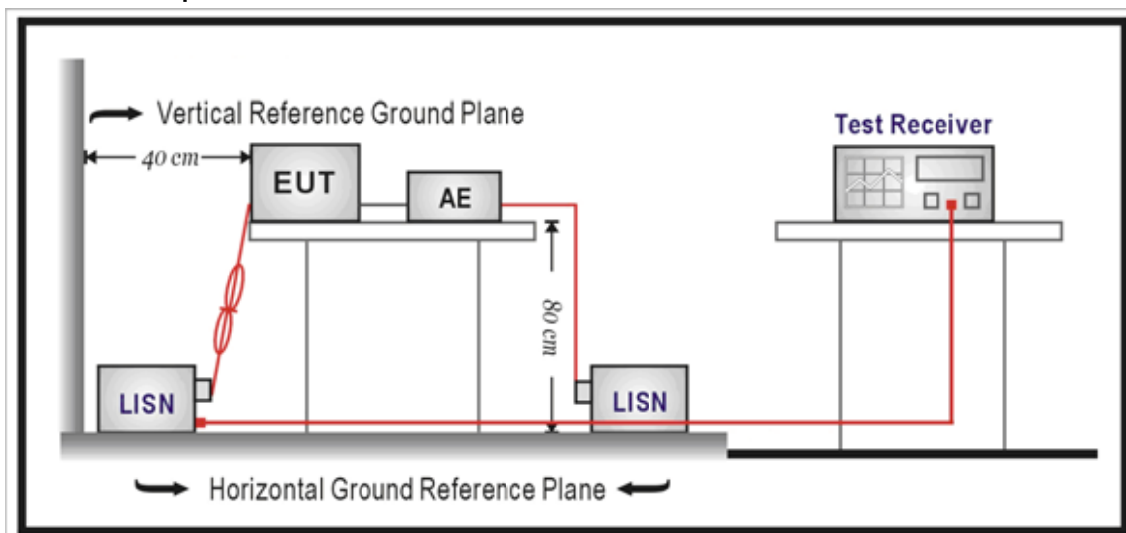
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/18/2014	(1)
LISN	R&S	ENV216	101040	03/07/2014	(1)
LISN	R&S	ENV216	101041	03/07/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
4.5M RF Cable	R&S	--	436910	03/07/2014	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

4.1.3 Test Setup

A.C. mains setup



4.1.4 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.

The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN.

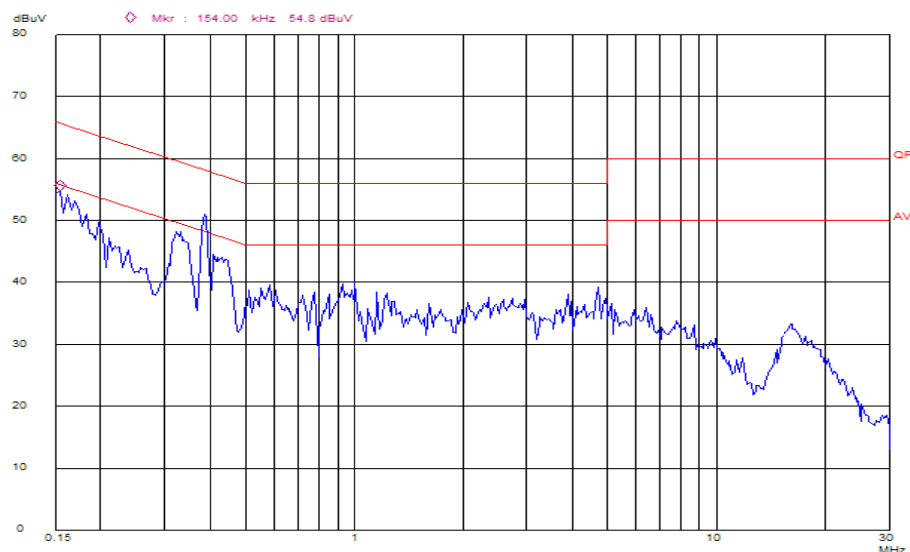
For A.C. mains conducted interference, measured both sides of A.C. lines and carried out using quasi-peak and average detector receivers of maximum conducted interference.

Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz. The equipment under test (EUT) shall meet the limits in section 4.1.2, as applicable, including the average limit and the quasi-peak limit when using respectively (A.C. mains and telecommunication port), an average detector and quasi-peak detector measured in accordance with the methods described of related standard. Either the voltage limits or the current limits shall be met. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.

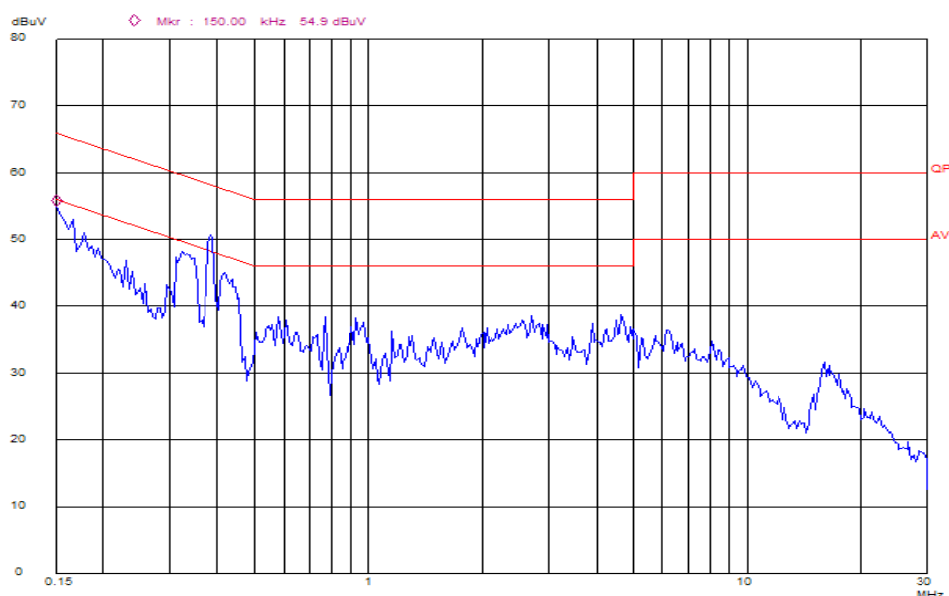
4.1.5 Test Result

Standard:	FCC 15.107	Line:	L
Test item:	Conducted Emission	Power:	AC120V 60Hz
Model Number:	Hercules Universal DJ	Date:	2014/11/12
Mode:	1	Test By:	
Description:			



	Frequency (MHz)	Quasi-Peak		Average	
		Emission Level (dBμV)	Limits (dBμV)	Emission Level (dBμV)	Limits (dBμV)
Line	0.156	46.8	64.3	35.1	54.3
	0.324	45.3	59.3	34.4	49.3
	0.391	49.4	58.2	41.6	48.2
	/	/	/	/	/
	/	/	/	/	/
	/	/	/	/	/

Standard:	FCC 15.107	Line:	N
Test item:	Conducted Emission	Power:	AC120V 60Hz
Model Number:	Hercules Universal DJ	Date:	2014/11/12
Mode:	1	Test By:	
Description:			



	Frequency (MHz)	Quasi-Peak		Average	
		Emission Level (dB μ V)	Limits (dB μ V)	Emission Level (dB μ V)	Limits (dB μ V)
Neutral	0.150	45.2	66	36.2	56
	0.341	43.1	56.6	31.3	46.6
	0.389	47.5	57.2	44.5	47.2
	/	/	/	/	/
	/	/	/	/	/
	/	/	/	/	/

4.1.6 Test Photograph

Test Mode: Mode 1

Description: Front View of Conducted Test



Test Mode: Mode 1

Description: Back View of Conducted Test



4.2 Radiated Interference Measurement

4.2.1 Limit

Under 1GHz test shall not exceed following value

FCC 47 CFR PART 15 SUBPART B				
Frequency range (MHz)	Class A		Class B	
	Distance(m)	dBuV/m	Distance(m)	dBuV/m
30 to 88	10	39	3	40
88 to 216	10	43.5	3	43.5
216 to 960	10	46.4	3	46
Above 960	10	49.5	3	54

Remark:1. The tighter limit shall apply at the edge between two frequency bands.

2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

4. Peak detector limit is corresponding to 20 dB above the maximum permitted average limit.

According to FCC Part 15.33 (b), 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 in which the device operated or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.75	30
1.75-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower

4.2.2 Test Instruments

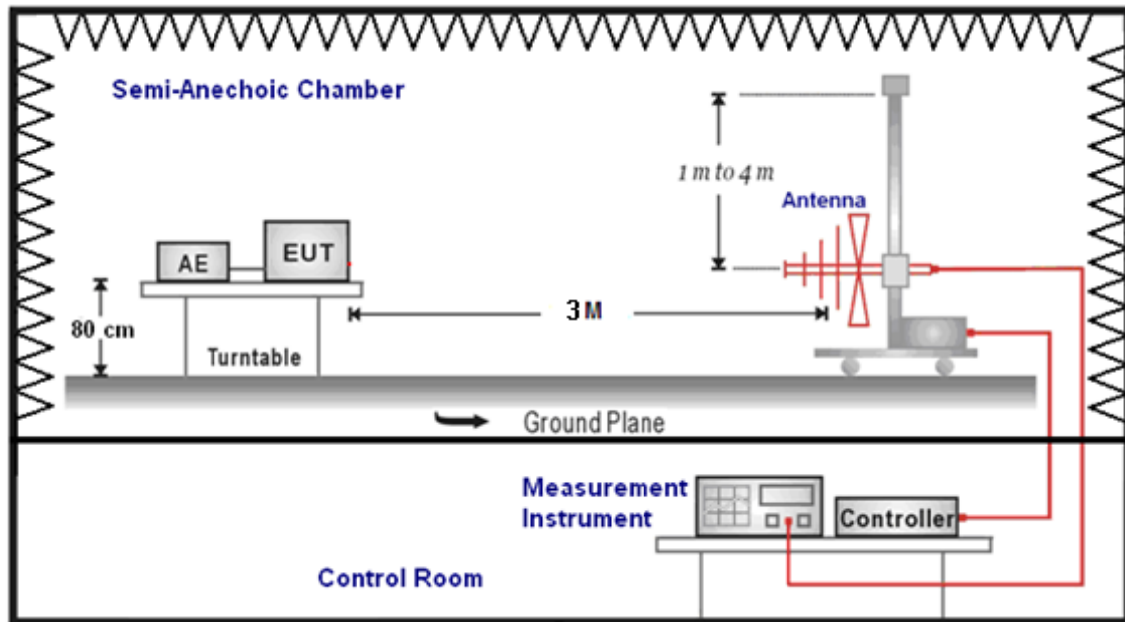
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Pre Amplifier	Agilent	8447D	2944A11120	01/10/2014	(1)
Pre Amplifier	Agilent	8447D	2944A11119	01/10/2014	(1)
Test Receiver	R&S	ESCI	100722	10/18/2014	(1)
Test Receiver	R&S	ESCI	101000	10/18/2014	(1)
Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB 9160	9160-3268	06/06/2014	(1)
Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB 9160	9160-3273	12/13/2014	(1)
Horn Antenna (1~18GHz)	ETS-Lindgren	3117	00128055	08/09/2014	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/21/2014	(1)
4.5M RF Cable	Agilent	--	2366170	06/23/2014	(1)
5.5M RF Cable	Agilent	--	2366580	06/23/2014	(1)
0.5M RF Cable	Agilent	--	4332560	06/23/2014	(1)

Remark: ⁽¹⁾Calibration period 1 year. ⁽²⁾Calibration period 2 years.

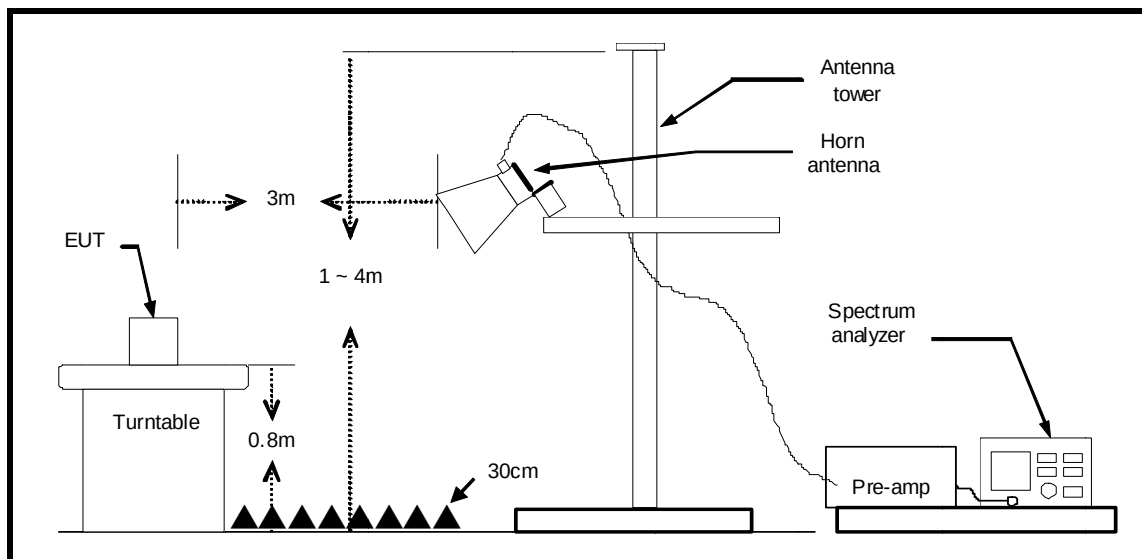
Note: N.C.R. = No Calibration Request.

4.2.3 Setup

Below 1GHz



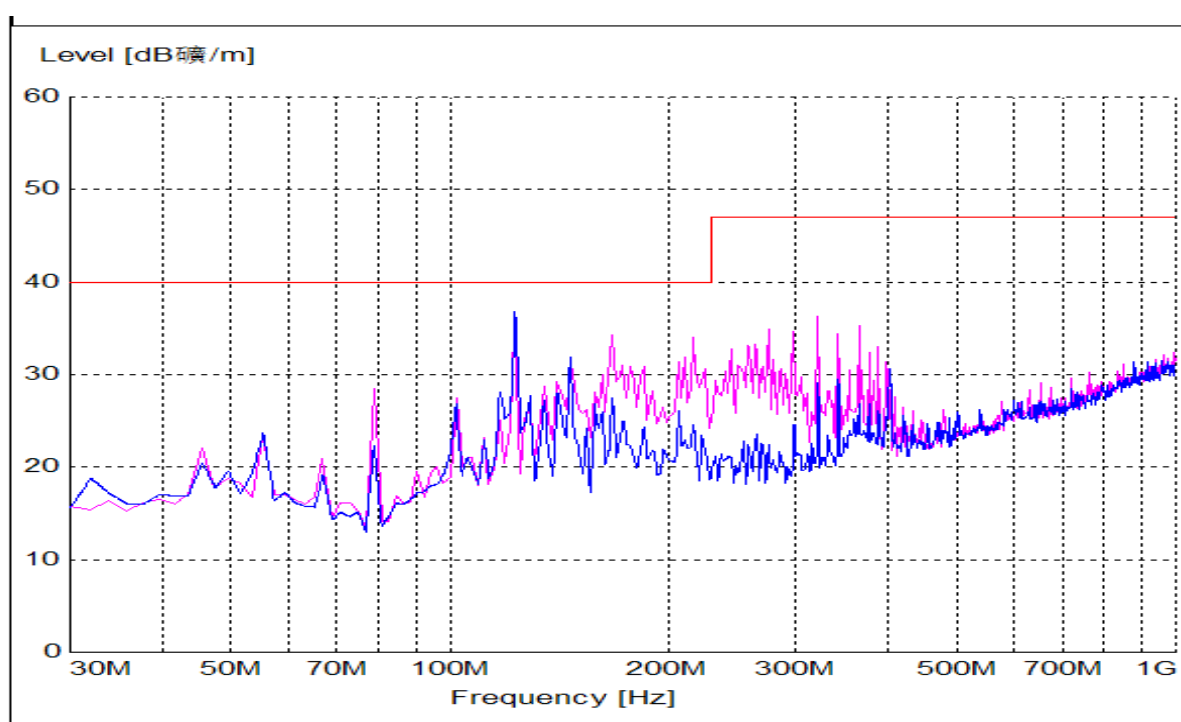
Above 1GHz



4.2.4 Test Result

30MHz-1GHz

Standard:	FCC 15.109	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Hercules Universal DJ	Temp.(°C)/Hum.(%RH):	22(°C)/54%RH
Mode:	1	Date:	2014/11/12
Ant.Polar.:	Horizontal(9kHz-1GHz)		



Frequency (MHz)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
--	--	--	--	--	QP	H
--	--	--	--	--	QP	H
--	--	--	--	--	QP	H
--	--	--	--	--	QP	H
--	--	--	--	--	QP	H
--	--	--	--	--	QP	H
--	--	--	--	--	QP	V
--	--	--	--	--	QP	V
--	--	--	--	--	QP	V
--	--	--	--	--	QP	V
--	--	--	--	--	QP	V
--	--	--	--	--	QP	V

1GHz-18GHz

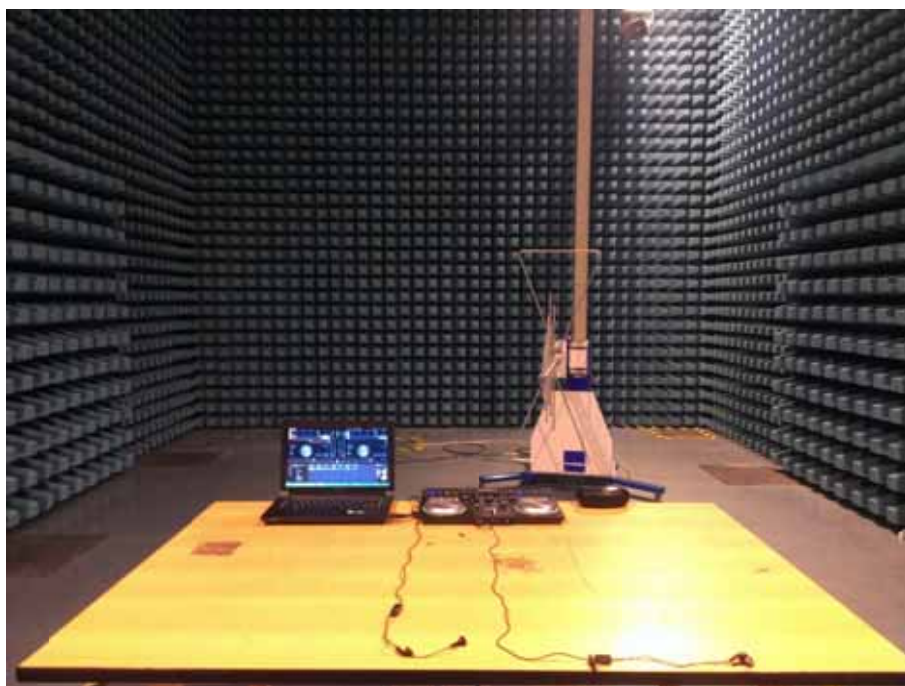
Standard:	FCC 15.109	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Hercules Universal DJ	Temp.(°C)/Hum.(%RH):	22(°C)/54%RH
Mode:	1	Date:	2014/11/12
Ant.Polar.:	Vertical(Above 1 GHz)		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Ant. Polar. H / V
17043	42.3	12.4	54.7	74	19.3	Peak	H
17043	30.5	12.4	42.9	54	11.1	AV	H
17043	41.6	12.4	54	74	20	Peak	V
17043	27.1	12.4	39.5	54	14.5	AV	V
15992	39.8	11.9	51.7	74	22.3	Peak	H
15992	28.4	11.9	40.3	54	13.7	AV	H
15992	38.5	11.9	50.4	74	23.6	Peak	V
15992	25.4	11.9	37.3	54	16.7	AV	V
15025	35.6	10.6	46.2	74	27.8	Peak	H
15025	24.4	10.6	35	54	19	AV	H
15025	36.9	10.6	47.5	74	26.5	Peak	V
15025	22.3	10.6	32.9	54	21.1	AV	V

Test Photograph

Test Mode: Mode 1

Description: View of Radiated Emission Test (30MH-1GHz)



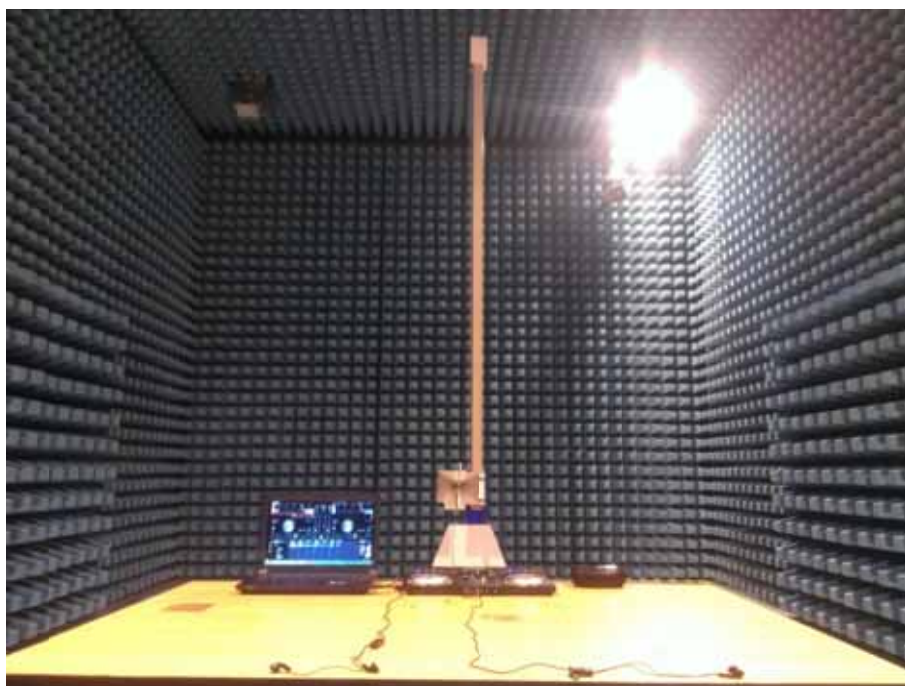
Test Mode: Mode 1

Description: View of Radiated Emission Test (30MHz-1GHz)



Test Mode: Mode 1

Description: View of Radiated Emission Test (Above 1 GHz)



Test Mode: Mode 1

Description: View of Radiated Emission Test (1GHz-18GHz)



--END OF REPORT--