

低功率射頻器材測試報告

申請廠商：台音貿易有限公司
地址：臺中市南屯區新生里龍富路三段655號1樓
器材名稱：無線組合音響(喇叭)
廠牌：MISSION
型號：LX CONNECT



財團法人台灣商品檢測驗證中心電磁相容試驗二部

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報告號碼: 21-08-RBF-028-03

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低功率射頻器材測試報告



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 完成日期 : 110 年 10 月 04 日
 報告號碼 : 21-08-RBF-028-03
 實驗室名稱 : 林口實驗室
 實驗室地址 : 新北市林口區頂福里 5 鄰 34 號
 實驗室電話 : 02-26023052
 實驗室認可編號及範圍 : 2628 (9KHz- 40GHz)
 TAF 證書有效期限 : 111 年 02 月 08 日
 申請廠商 : 台音貿易有限公司
 申請廠商地址 : 臺中市南屯區新生里龍富路三段 655 號 1 樓
 製造廠商 : IAG Group Ltd.
 器材名稱 : 無線組合音響(喇叭)
 廠牌 : MISSION
 型號 : LX CONNECT
 發射功率(電場強度) : 102.74 dB μ V/m @3m Peak(電場強度)
 工作頻率及調變方式 : 5736 - 5814 MHz (QPSK ; 3CH)
 天線規格 : 固定式 PCB 天線

備註 : 1. 本測試報告僅對受測之樣品負責。

2. 非經本中心同意，測試報告不得摘錄複印使用。(全部複製除外)

3. 本產品所適用之規範修訂日期 109 年 07 月 01 日。

項次	測試項目	適用規範	測試結果	量測設備	備註
1	場強輻射	低功率射頻器材技術規範 4.10.2.2節、3.6節	請參閱4.5 節	請參閱4.3 節	合格
2	電源線傳導干擾	低功率射頻器材技術規範 3.3節	請參閱5.4 節	請參閱5.3 節	合格
3	天線之要求	低功率射頻器材技術規範 3.2節	請參閱6.2 節	----	合格
4	開放頻帶邊緣之發 射	低功率射頻器材技術規範 4.10.2.4、3.6節	請參閱7.4 節	請參閱7.3 節	合格
	以下空白				

報告簽署人：

周良源

量測員：

李志宏



1 一般資料

1.1 產品描述

- a) 產品型態 : 無線組合音響(喇叭)
- b) 廠 牌 : MISSION
- c) 產品型號 : LX CONNECT
- d) 供應電源 : 110V 60Hz

1.2 產品特性

此裝置為無線組合音響（喇叭），內建5.8GHz功能。其發射頻率落於5736MHz至5814 MHz共3個頻道，採用QPSK調變技術。

1.3 測試方法之依據

本測試報告之所有項目皆依據低功率射頻器材技術規範以及參考EIA 603、ANSI、FCC/47 CFR/2.1046、2.1047、2.1049、2.1051、2.1053及2.1055之檢驗法。

2 適用規範

2.1 規範要求

(1) 傳導之規定

依據國家通訊傳播委員會低功率射頻器材技術規範3.3節之規定，以市電為電源之低功率射頻器材，其傳導回電源線上頻率自150 kHz~30百萬赫(MHz)之射頻電壓(在電源端子每一電源線對接地點)應小於或等於下表所列之限制值。測量時應經過50微亨利(uH)及50歐姆(Ω)之電源線阻抗穩定網路(Line Impedance Stabilization Network；LISN)。頻率重疊處，以較低限制值為準。電源傳導干擾之限制要求如下：

頻率(MHz)	傳導限制值(dB μ V)	
	準峰值(Quasi-peak)	平均值(Average)
0.15-0.5	66 – 56 _(註)	56 – 46 _(註)
0.5-5	56	46
5-30	60	50

註：隨頻率之對數遞減。

(2) 輻射之規定

依據低功率射頻器材技術規範4.10.2.2節之要求，主波與諧波發射：除4.10.2.3 外，發射之電場強度應小於或等於下表限制值：

主波頻率 (MHz)	主波電場強度 (mV/m)	諧波電場強度 (μ V/m)
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

4.10.2.4 除諧波外，指定頻帶外之發射應比主波低50 dB以上或依3.6之發射限制，兩者取其較鬆者。

接收機依據低功率射頻器材技術規範之要求，其任何輻射場強需符合3.6節之一般限制要求：

頻率 MHz	測試距離 m	限制值 dB μ V/m	限制值 μ V/m
0.009 - 0.490	300	48.5 ~ 13.8	2400/kHz
0.490 - 1.705	30	33.8 ~ 22.97	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
960以上	3	54.0	500

(3) 天線之要求

依據低功率射頻器材技術規範3.2節之規定，低功率射頻器材之發射機或收發信機所使用之天線，除本規範章節中另有規定外，應為全固定、半固定式或以獨特之耦合(unique coupling)方式連接機體。製造者可設計供使用者因損壞而替換之天線，但不得設計或使用原認證以外之天線或可供引接各類電纜之標準天線插座或電氣連接頭，如：BNC、F type、N type、M type、UG type、RCA、SMA、SMB...等及其他各類工業或通訊標準接頭。

2.2 限制使用之頻帶

頻率(MHz)	頻率(MHz)
0.090~0.110	1660.0~1785.0
0.490~0.510	1805.0~1880.0
2.172~2.198	1885.0~1900.0
3.013~3.033	1905.0~1985.0
4.115~4.198	2010.0~2025.0
5.670~5.690	2110.0~2170.0
6.200~6.300	2200.0~2300.0
8.230~8.400	2310.0~2390.0
12.265~12.600	2483.5~2900.0
13.340~13.430	3260.0~3267.0
14.965~15.020	3332.0~3339.0
16.700~16.755	3345.8~3358.0
19.965~20.020	3500.0~4400.0
25.500~25.700	4500.0~5250.0
37.475~38.275	5350.0~5460.0
73.500~75.400	7250.0~7750.0
108.00~138.00	8025.0~8500.0
149.90~150.05	9000.0~9200.0
156.70~156.90	9300.0~9500.0
162.01~167.17	10600~12700
167.72~173.20	13250~13400
240.00~285.00	14470~14500
322.00~335.40	15350~16200
399.90~410.00	17700~21400
485.00~510.00	22010~23120
608.00~614.00	23600~24000
703.00~748.00	31200~31800
758.00~803.00	36430~36500
825.00~915.00	38600 以上
930.00~1240.0	
1300.0~1427.0	
1435.0~1626.5	

2.3 量測不確定度資訊

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz ~ 30MHz	$\pm 3.34\text{dB}$ (Mains)(LISN)
Radiated emissions	9kHz ~ 30MHz	$\pm 4.22\text{dB}$
Radiated emissions	30MHz ~ 1GHz	$\pm 4.2\text{dB}$ ($30\text{MHz} \leq f \leq 300\text{MHz}$)
		$\pm 4.44\text{dB}$ ($300\text{MHz} < f \leq 1\text{GHz}$)
	Above 1GHz	$\pm 4.44\text{dB}$ ($1\text{GHz} \leq f \leq 18\text{GHz}$)
		$\pm 3.02\text{dB}$ ($18\text{GHz} \leq f \leq 40\text{GHz}$)

此量測不確定數值係以95%區間,k=2之擴充不確定度表示。

本實驗室依據之測試方法或標準若已有限制值或判斷基準，測試結果將依據測試方法或標準作為符合性判定，量測不確定度將依據測試標準之方法或規範執行。

3 受測裝置之系統說明

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The RF radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (Z axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

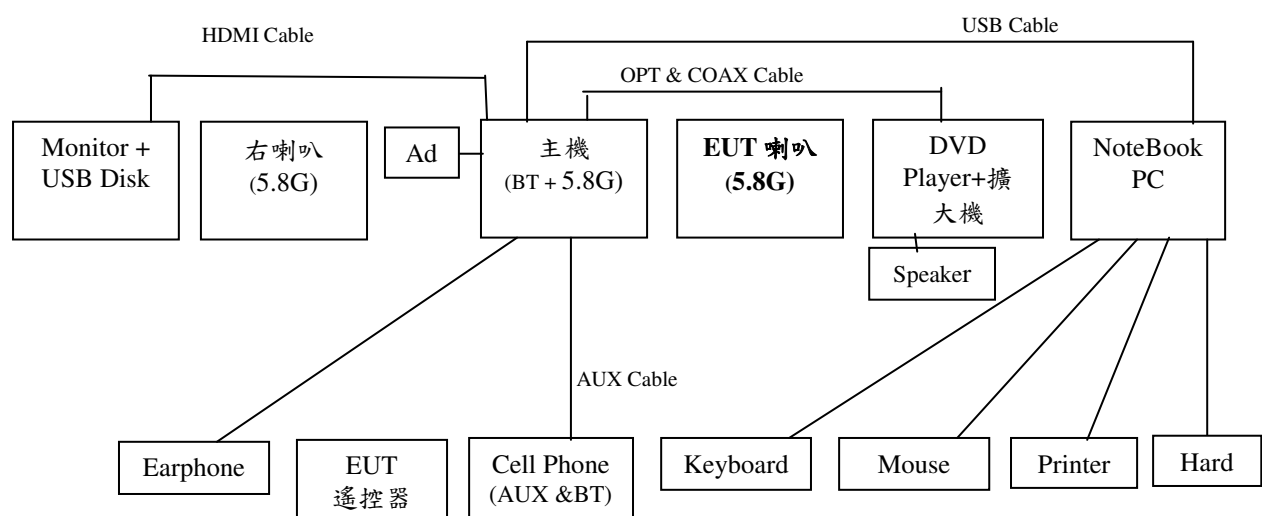
Worst-case RF Mode are shown as following table.

Mode
5.8GHz

3.1測試接續圖(一般正常使用)

模式評估說明：以模式一模式下進行檢測並記錄其讀值。

測試模式	
一	5.8GHz 播放模式下



3.1.1 待測物之主要配備

裝置名稱	廠牌	型號	纜線說明/規格
*無線組合音響(喇叭)	MISSION	LX CONNECT	----
電源線組	台灣豪利士股份有限公司	TW15CS3+V1625	1.8m Unshielded AC Power Core

*表示待測物

3.1.2. 外接週邊設備

裝置名稱	廠牌	型號	纜線說明/規格
主機	MISSION	LX CONNECT	---
主機 Adapter	泰碁	GQ12-120100-HU	1.8m Unshielded AC Adapter
Cell Phone	NOKIA	301	---
3.5mm To RCA Cable	Probest	305RCA	0.8m Unshielded RCA Cable
USB 4-Port Hub	Transcend	TS-HUB2K	0.2m Unshielded Cable
Keyboard	Dell	KB4021	0.6m Unshielded Cable
Mouse	Dell	MS111-L	0.6m Unshielded Cable
Printer	HP	deskjet 948c	1.5m Unshielded AC Cable 0.6m Unshielded Cable
Hard Disk	SONY	HD-B1	0.3m Unshielded Cable
Notebook	DELL	P130G	1.8m Unshielded AC Adapter 1.8m Unshielded USB Cable
Monitor	SONY	KDL-22EX420	1.8m Unshielded AC Adapter
HDMI Cable	敏希	28378	1.8m Unshielded HDMI Cable
USB Disk	SONY	16GB	---
DVD Player	SONY	DVP-NS530	1.5m Unshielded AC Cable
光纖線	---	---	0.8m Unshielded OPT Cable
RCA 同軸線	Probest	Coa	0.8m Unshielded COAX Cable
擴大機	YAMAHA	RX-V383	1.5m Unshielded AC Cable
RCA 信號線	Probest	2RCA	0.8m Unshielded RCA Cable
Speaker Load	---	---	0.8m Unshielded Cable
Earphone	PHILIPS	SBC HL140	0.8m Unshielded Cable
USB 延長線	CE-Link	2485	0.3m Unshielded Cable
USB 延長線	UGREEN	10368	1.0m Unshielded Cable
USB 延長線	UGREEN	10368	1.0m Unshielded Cable

3.2測試接續圖(測試模式使用)

使用遙控器按壓音量+、-鍵，調整 EUT 喇叭的 RF 使用頻道



3.2.1.測試治具、測試軟體名稱、測試軟體版本

裝置名稱	廠牌/供應商/製造者	型號/料號	纜線說明/規格
--	--	--	---
--	--	--	--

測試軟體名稱	--
測試軟體版本	--

3.2.2.測試模式之最大發射功率、頻率、頻寬、調變技術等設定值

模式	頻率	設定值
5.8GHz	5736MHz、5762MHz、 5814MHz	EUT 喇叭(5.8G)設定為定頻模式，依程式預設值

3.2.3 測試治具應具 4x6 吋以上具尺規之彩色照片。

無

4 場強輻射之量測

4.1 適用標準

依據低功率射頻器材技術規範4.10.2.2節之要求，主波與諧波發射：除4.10.2.3外，發射之電場強度應小於或等於下表限制值：

主波頻率 (MHz)	主波電場強度 (mV/m)	諧波電場強度 (uV/m)
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

4.10.2.4 除諧波外，指定頻帶外之發射應比主波低50 dB以上或依3.6之發射限制，兩者取其較鬆者。

4.2 量測方法

30MHz ~ 1GHz：將待測物置於0.8米高的非金屬桌面，使其在工作狀態，接收天線置於3米外1米高相同的高度。待測物分別要垂直或水平放置，而且桌面要360度旋轉，另外接收天線也要從1米至4米升降變化，以找出最大的輻射電場強度，接收天線置於水平、垂直極向各執行測試一次。

1GHz以上：將待測物置於1.5米或0.8米高(依待測物為發射機或接收機)的非金屬桌面，使其在工作狀態，接收指向性天線置於3米外高度1米高(依待測物為發射機或接收機)。待測物分別要垂直或水平放置，而且桌面要360度旋轉，另外接收指向性天線也要從1米至4米升降變化，以找出最大的輻射電場強度，接收指向性天線置於水平、垂直極向各執行測試一次。

4.3 量測場強輻射之儀器

儀器名稱	製造者	型號	本次校驗日期	下次校驗日期
EMI Test Receiver	Rohde & Schwarz	ESU40 (13054416-001)	2021/03/25	2022/03/24
Bi-Log Antenna	ETC & JYE BAO	MCTD 2786B & FAT-NM5NF5T3G2W5	2021/07/08	2022/07/07
Amplifier	HP	8447D (13040711-001)	2020/10/6	2021/10/5
Horn Antenna	EMCO	3116 (13058801-001)	2020/8/19	2021/8/18
Horn Antenna	ETS-Lindgren	3117 (13059211-002)	2021/03/16	2022/03/15
Amplifier	HP	8449B (13052901-001)	2020/10/06	2021/10/05
Amplifier	Keysight	83051A (13052926-001 & 13032683-001)	2021/08/27	2022/08/26

4.4 場強度之計算

場強之計算公式如下

$$\text{結果值} = \text{讀值} + \text{校正因子} + \text{週期因子}$$

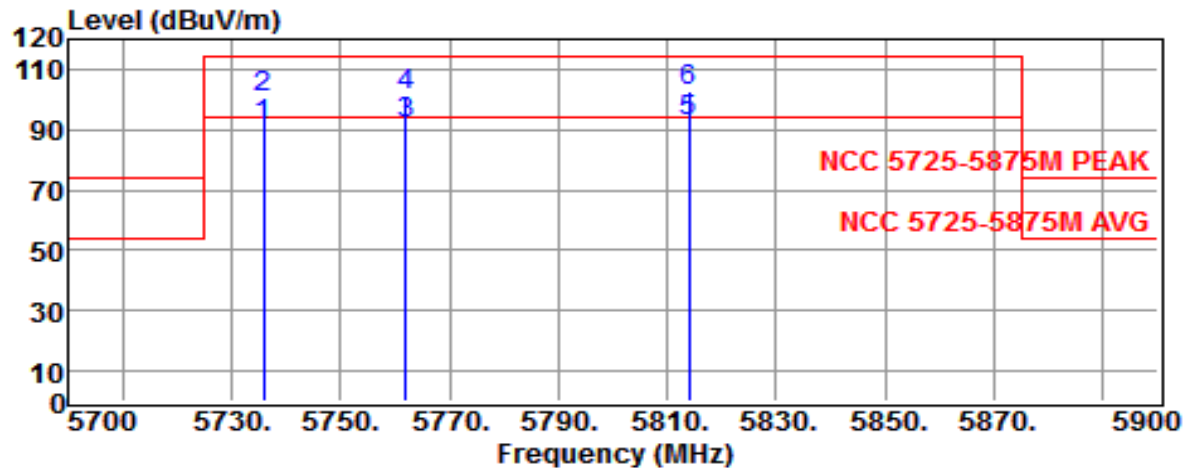
其中校正因子為：

$$\text{天線因子} + \text{饋線損失} + \text{濾波器損失 (若有使用)} - \text{放大器增益 (若有使用)}$$

4.5 場強輻射之量測結果

4.5.1 發射主波、諧波及本地震盪

A：發射(主波)



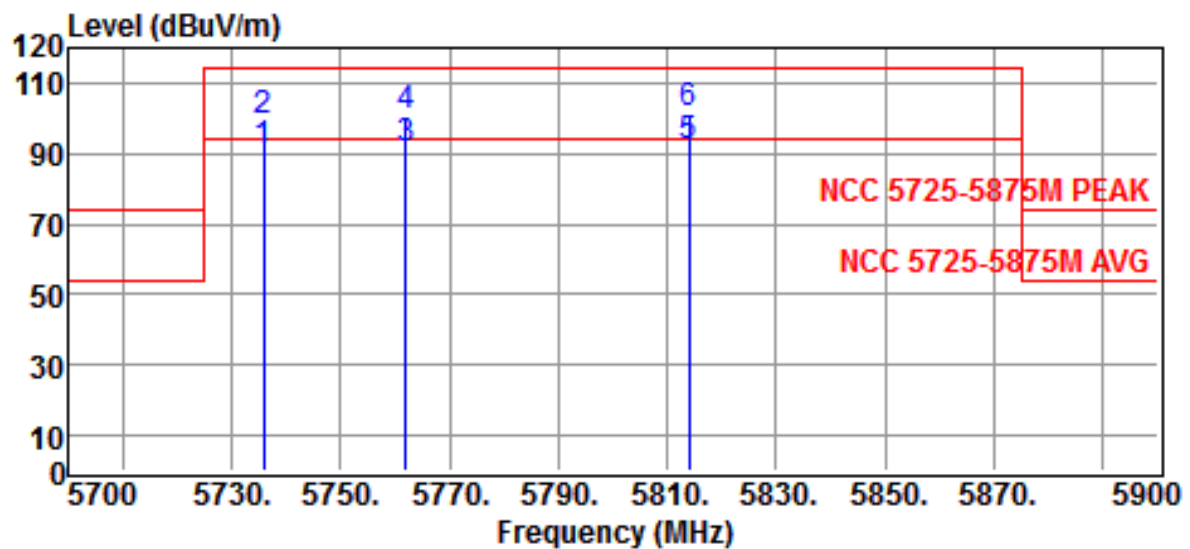
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT A

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5736.0000	85.50	6.07	91.57	94.00	-2.43	Average
	5736.0000	94.40	6.07	100.47	114.00	-13.53	Peak
	5762.0000	86.11	6.10	92.21	94.00	-1.79	Average
	5762.0000	95.11	6.10	101.21	114.00	-12.79	Peak
*	5814.0000	86.69	6.25	92.94	94.00	-1.06	Average
	5814.0000	96.49	6.25	102.74	114.00	-11.26	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



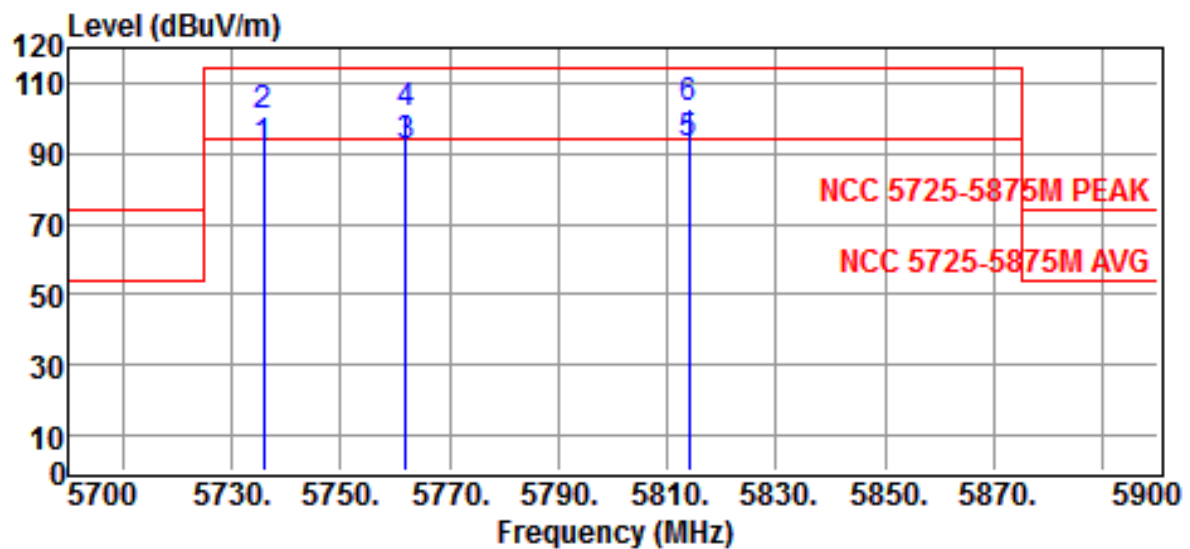
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT A

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5736.0000	84.20	6.07	90.27	94.00	-3.73	Average
	5736.0000	93.40	6.07	99.47	114.00	-14.53	Peak
	5762.0000	85.11	6.10	91.21	94.00	-2.79	Average
	5762.0000	94.41	6.10	100.51	114.00	-13.49	Peak
*	5814.0000	85.89	6.25	92.14	94.00	-1.86	Average
	5814.0000	95.19	6.25	101.44	114.00	-12.56	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



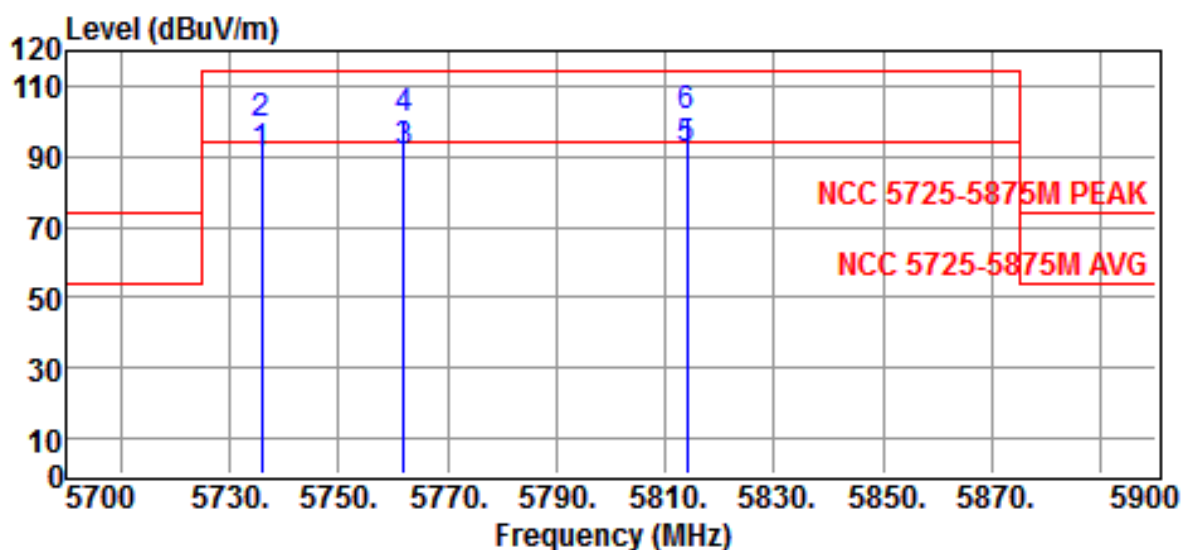
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT B

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5736.0000	85.45	6.07	91.52	94.00	-2.48	Average
	5736.0000	94.28	6.07	100.35	114.00	-13.65	Peak
	5762.0000	85.88	6.10	91.98	94.00	-2.02	Average
	5762.0000	94.28	6.10	100.38	114.00	-13.62	Peak
*	5814.0000	86.41	6.25	92.66	94.00	-1.34	Average
	5814.0000	95.19	6.25	101.44	114.00	-12.56	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



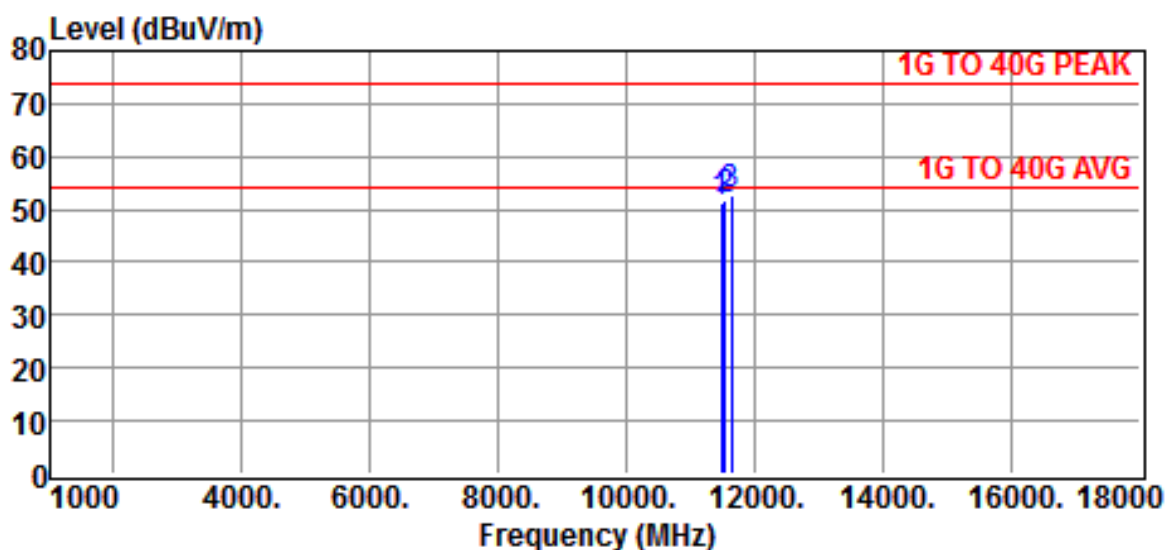
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT B

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5736.0000	84.12	6.07	90.19	94.00	-3.81	Average
	5736.0000	92.98	6.07	99.05	114.00	-14.95	Peak
	5762.0000	85.01	6.10	91.11	94.00	-2.89	Average
	5762.0000	94.18	6.10	100.28	114.00	-13.72	Peak
*	5814.0000	85.41	6.25	91.66	94.00	-2.34	Average
	5814.0000	95.04	6.25	101.29	114.00	-12.71	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.

B：發射(諧波)

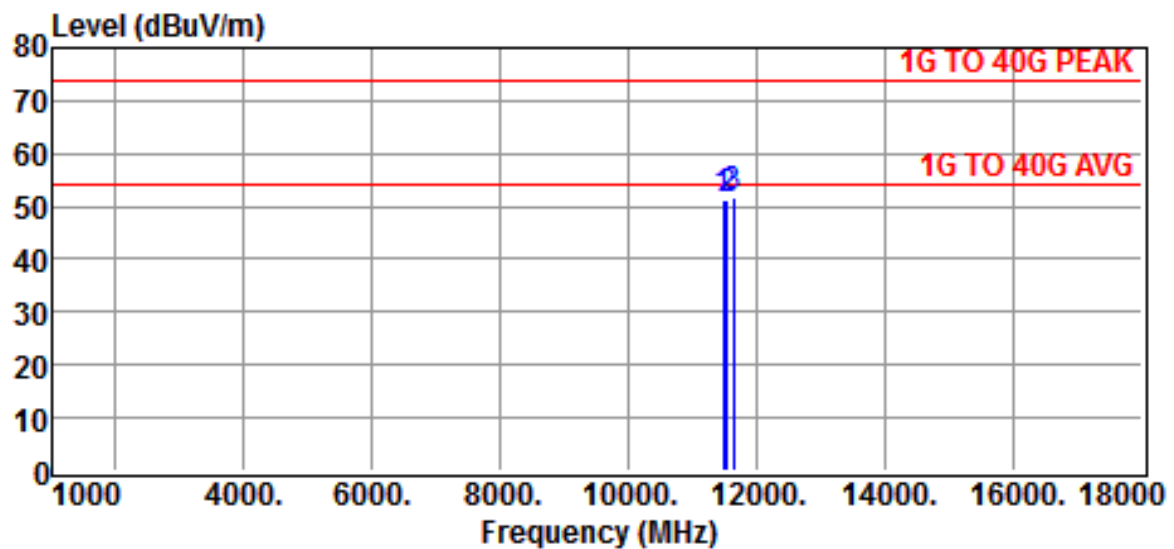
Site	:Chamber #2	Date	:2021-08-18
Limit	:1G TO 40G PEAK	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT A

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	11472.0000	39.48	11.82	51.30	74.00	-22.70	Peak
	11524.0000	39.95	11.85	51.80	74.00	-22.20	Peak
*	11628.0000	40.54	11.96	52.50	74.00	-21.50	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



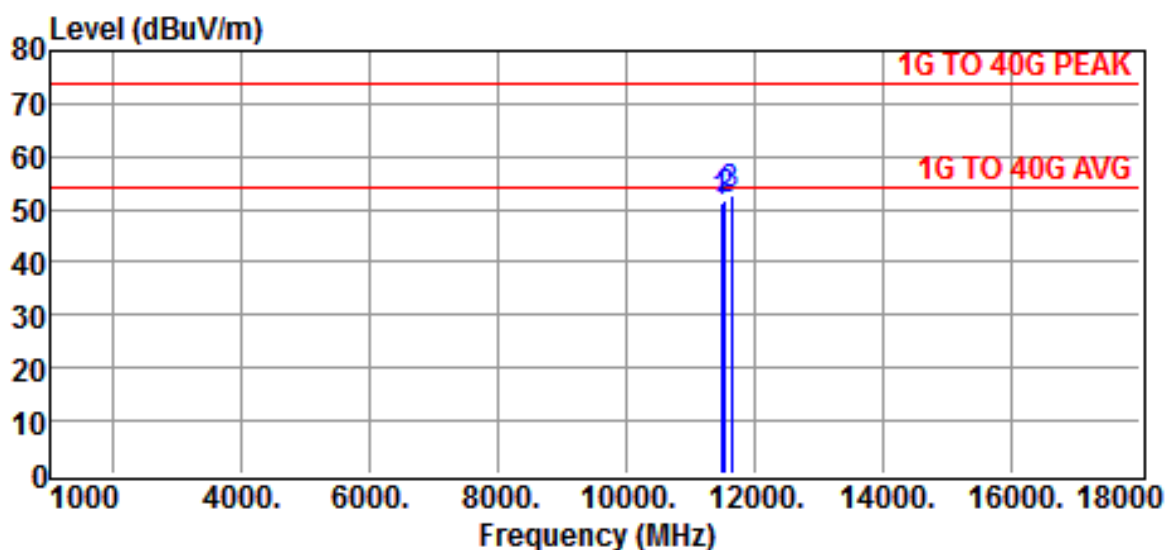
Site	:Chamber #2	Date	:2021-08-18
Limit	:1G TO 40G PEAK	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT A

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	11472.0000	39.38	11.82	51.20	74.00	-22.80	Peak
	11524.0000	39.45	11.85	51.30	74.00	-22.70	Peak
*	11628.0000	39.84	11.96	51.80	74.00	-22.20	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



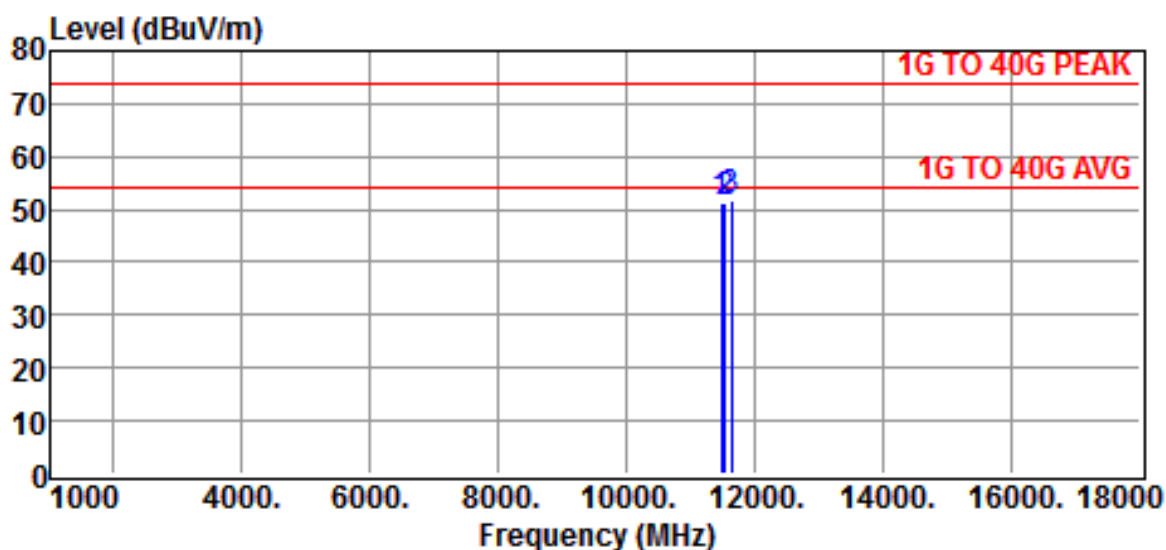
Site	:Chamber #2	Date	:2021-08-18
Limit	:1G TO 40G PEAK	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT B

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	11472.0000	39.38	11.82	51.20	74.00	-22.80	Peak
	11524.0000	39.15	11.85	51.00	74.00	-23.00	Peak
*	11628.0000	40.22	11.96	52.18	74.00	-21.82	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



Site	:Chamber #2	Date	:2021-08-18
Limit	:1G TO 40G PEAK	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:TX RX - LO 5736 - MI 5762 - HI 5814MHz		

ANT B

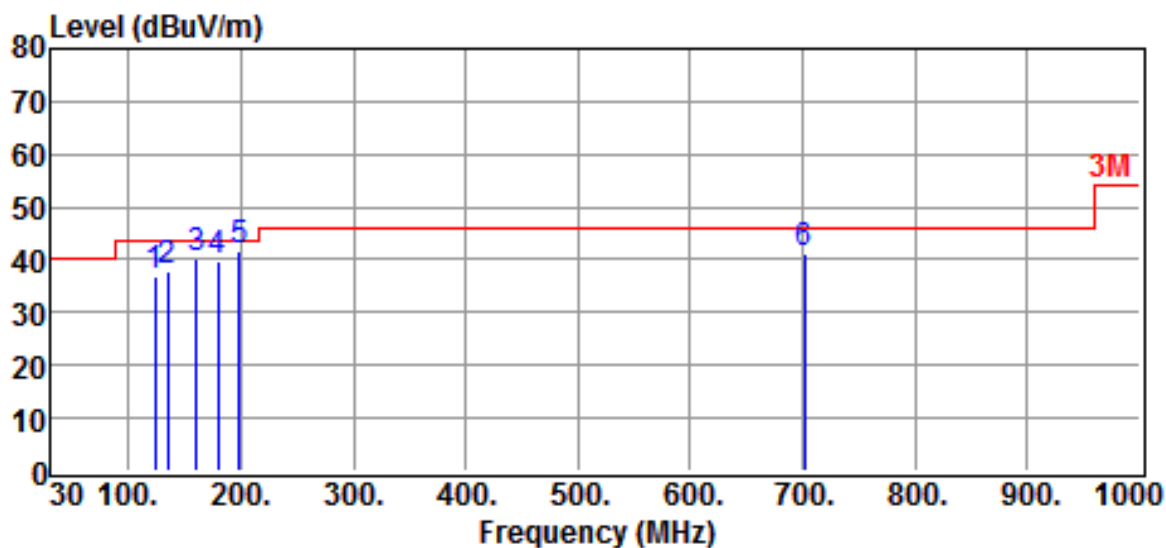
	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	11472.0000	39.12	11.82	50.94	74.00	-23.06	Peak
	11524.0000	39.18	11.85	51.03	74.00	-22.97	Peak
*	11628.0000	39.71	11.96	51.67	74.00	-22.33	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.

4.5.2 其它不必要之訊號

A : 1GHz以下

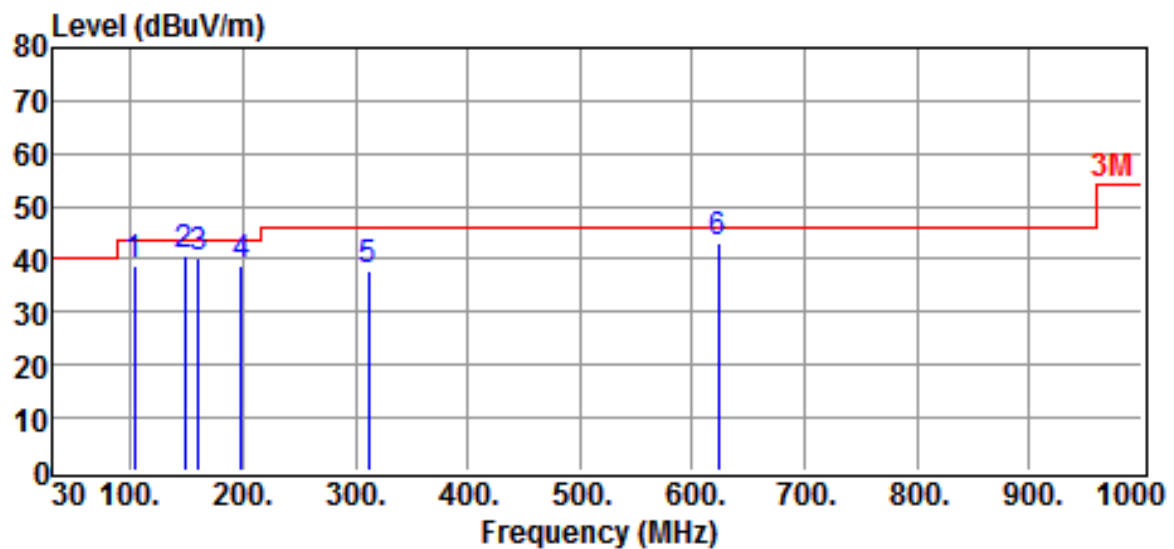


Site	:Chamber #2	Date	:2021-09-01
Limit	:3M	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:55 %
Test Mode	:BT & 5.8G MODE		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	123.1200	41.88	-4.83	37.05	43.50	-6.45	QP
	134.7600	42.59	-4.97	37.62	43.50	-5.88	QP
	159.9800	48.16	-8.03	40.13	43.50	-3.37	QP
	179.3800	50.08	-10.43	39.65	43.50	-3.85	QP
*	198.7800	51.05	-9.49	41.56	43.50	-1.94	QP
	701.2400	39.25	1.82	41.07	46.00	-4.93	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



Site	:Chamber #2	Date	:2021-09-01
Limit	:3M	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:55 %
Test Mode	:BT & 5.8G MODE		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	103.7200	45.84	-6.97	38.87	43.50	-4.63	QP
*	148.3400	47.17	-6.35	40.82	43.50	-2.68	QP
	159.9800	48.24	-8.03	40.21	43.50	-3.29	QP
	198.7800	48.41	-9.49	38.92	43.50	-4.58	QP
	311.3000	42.70	-4.80	37.90	46.00	-8.10	QP
	623.6400	42.70	0.45	43.15	46.00	-2.85	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.

4.6 輻射之測試配置

圖 1：量測頻率低於1GHz之測試配置

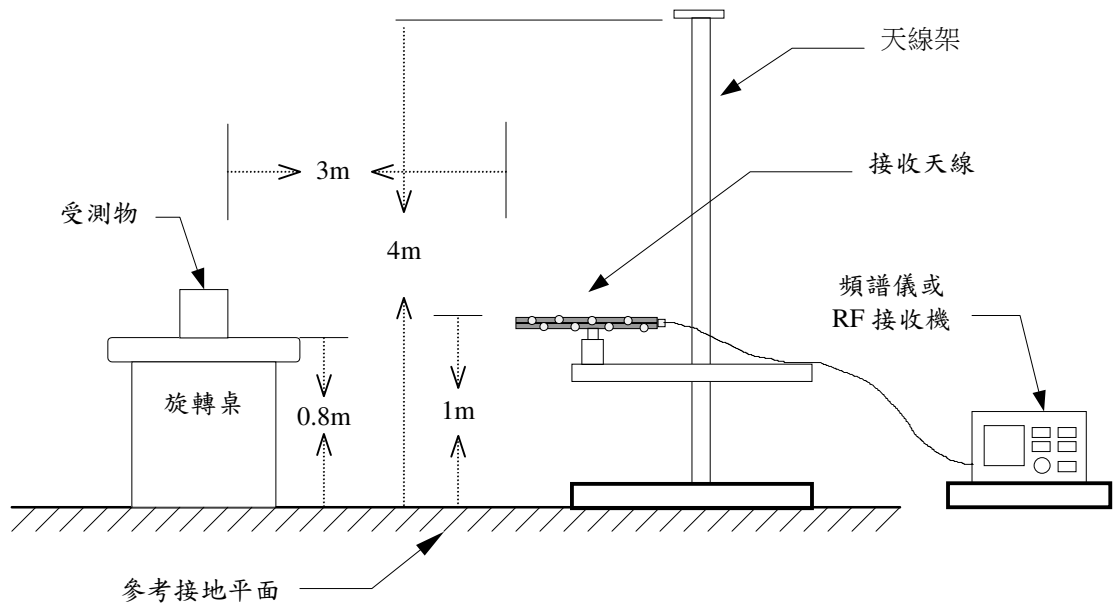
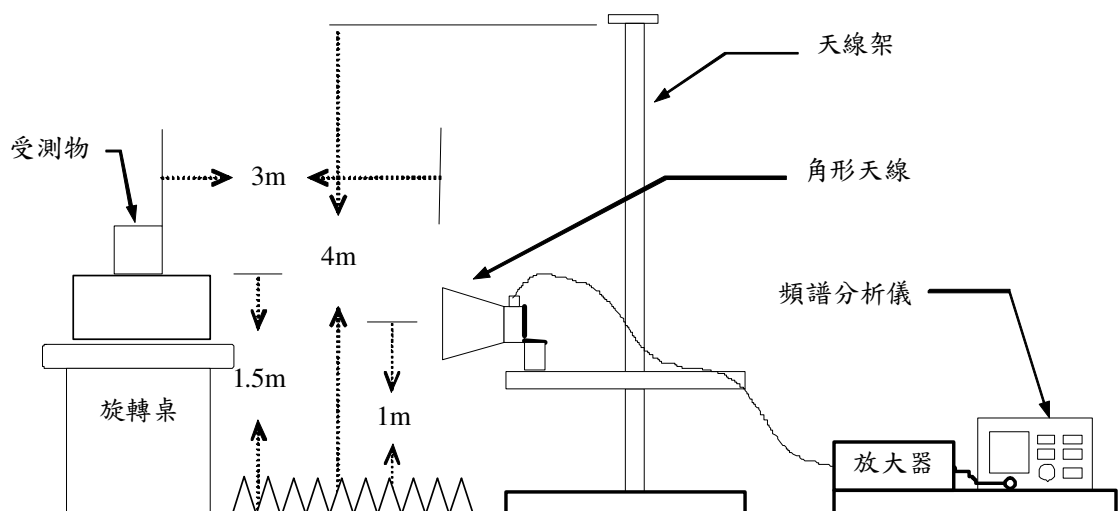


圖 2：量測頻率高於1GHz之測試配置

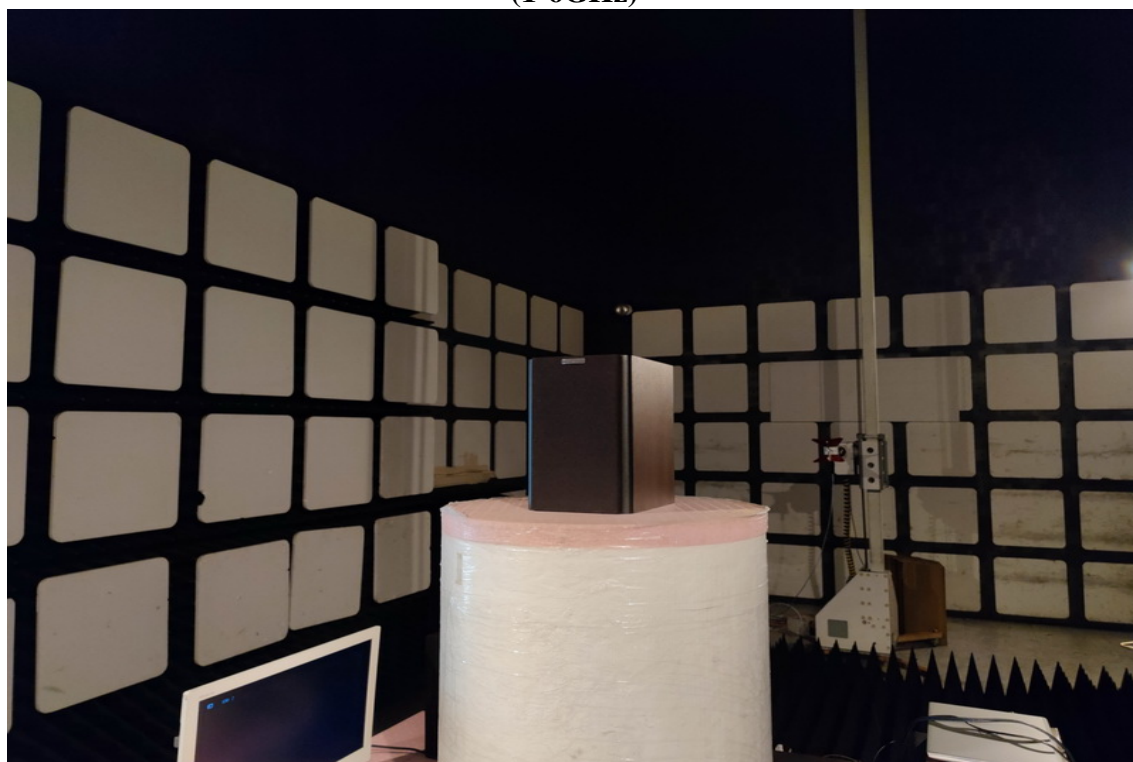


4.7 輻射量測之配置照片

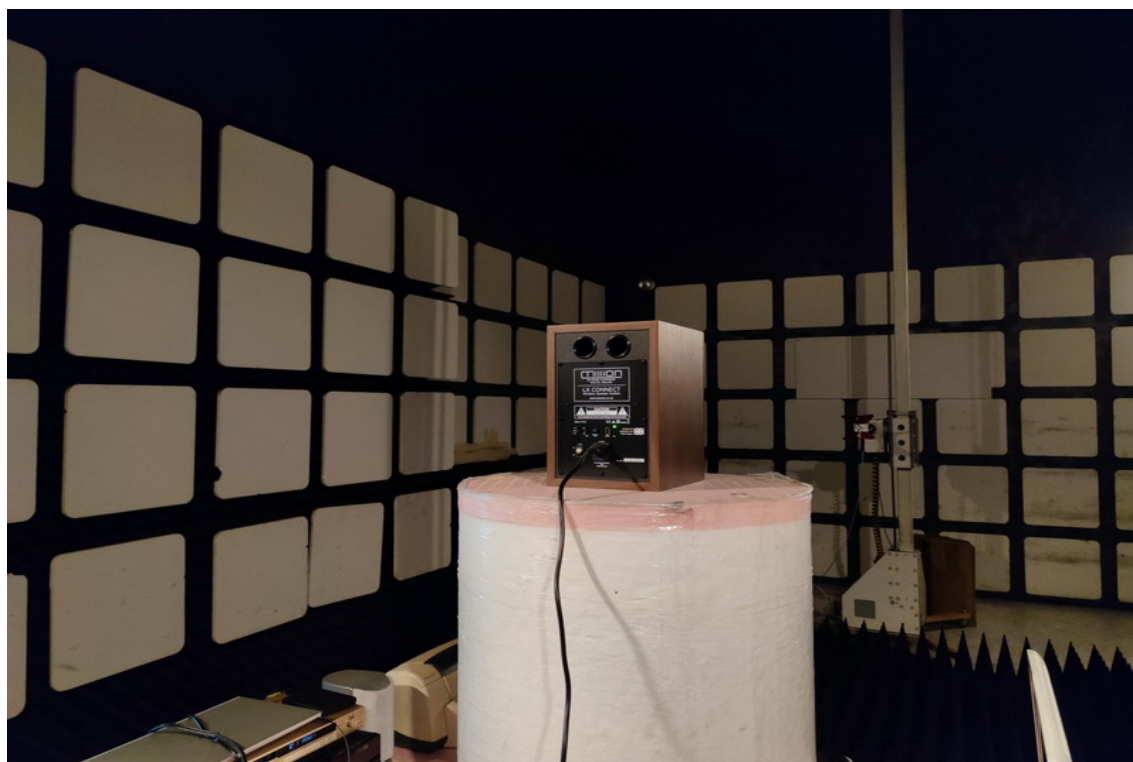
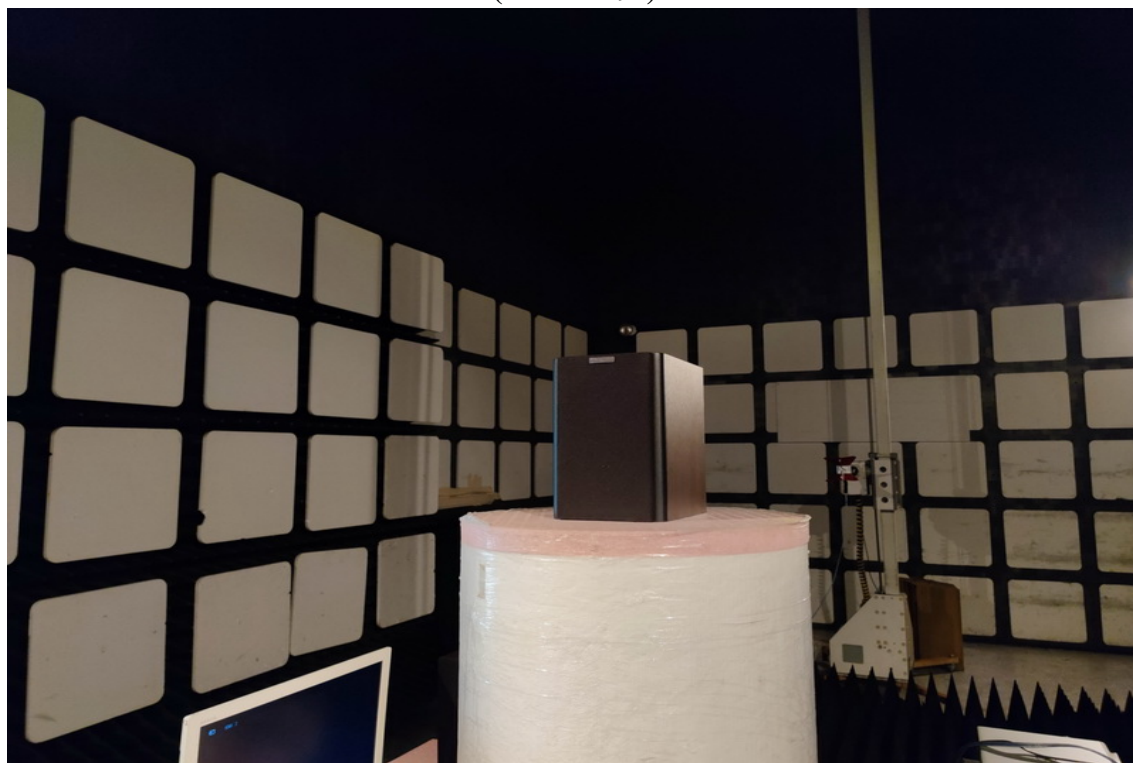
(30MHz~1000MHz)



(1-6GHz)



(6GHz以上)



5 電源線傳導干擾之量測

5.1 適用標準

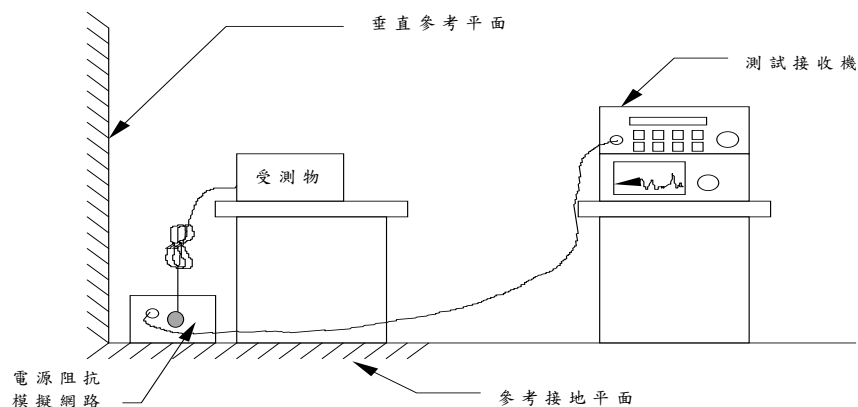
依據低功率射頻器材技術規範3.3節之要求。

5.2 測試方法

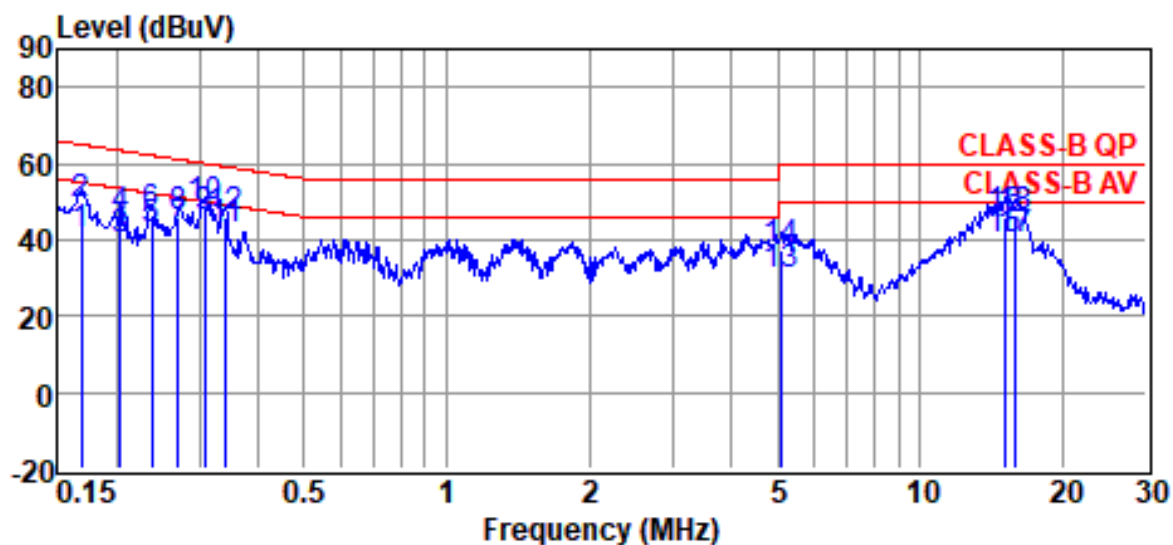
將待測物置於0.8米高的非金屬桌面，使其在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由 0.15MHz 至 30MHz 之間之電源線傳導放射強度。

5.3 測試配置

圖 3：傳導干擾之量測配置



5.4 傳導干擾之量測結果



Site : conducted #1
 Condition : CLASS-B QP
 Tem / Hum : 22 °C / 60%
 Test Mode : BT & 5.8G MODE
 EUT : 無線組合音響(喇叭)
 Engineer : KEVIN LEE
 Model : LX CONNECT

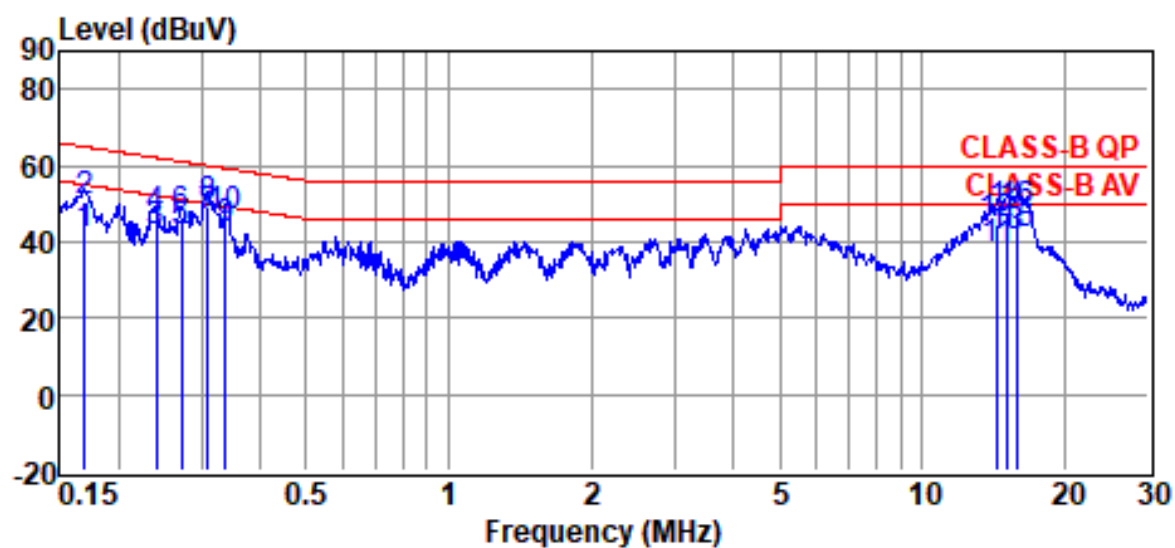
Date : 2021-09-02
 LISN : NEUTRAL
 Power Rating : 110V / 60Hz

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1694	30.87	10.09	40.96	54.99	-14.03	Average
	0.1694	39.19	10.09	49.28	64.99	-15.71	QP
	0.2040	29.85	10.08	39.93	53.45	-13.52	Average
	0.2040	35.63	10.08	45.71	63.45	-17.74	QP
	0.2378	32.42	10.08	42.50	52.17	-9.67	Average
	0.2378	36.18	10.08	46.26	62.17	-15.91	QP
	0.2715	32.24	10.08	42.32	51.07	-8.75	Average
	0.2715	35.90	10.08	45.98	61.07	-15.09	QP
*	0.3083	36.11	10.08	46.19	50.02	-3.83	Average
	0.3083	38.65	10.08	48.73	60.02	-11.29	QP
	0.3410	32.80	10.09	42.89	49.18	-6.29	Average
	0.3410	36.09	10.09	46.18	59.18	-13.00	QP

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	5.1120	20.64	10.23	30.87	50.00	-19.13	Average
	5.1120	26.91	10.23	37.14	60.00	-22.86	QP
	15.1460	29.74	10.34	40.08	50.00	-9.92	Average
	15.1460	35.83	10.34	46.17	60.00	-13.83	QP
	15.8010	29.44	10.34	39.78	50.00	-10.22	Average
	15.8010	35.40	10.34	45.74	60.00	-14.26	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level



Site : conducted #1
 Condition : CLASS-B QP
 Tem / Hum : 22 °C / 60%
 Test Mode : BT & 5.8G MODE
 EUT : 無線組合音響(喇叭)
 Engineer : KEVIN LEE
 Model : LX CONNECT

Date : 2021-09-02
 LISN : LINE
 Power Rating : 110V / 60Hz

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1703	31.55	10.09	41.64	54.94	-13.30	Average
	0.1703	40.10	10.09	50.19	64.94	-14.75	QP
	0.2404	32.63	10.08	42.71	52.08	-9.37	Average
	0.2404	36.60	10.08	46.68	62.08	-15.40	QP
	0.2730	32.47	10.08	42.55	51.03	-8.48	Average
	0.2730	36.40	10.08	46.48	61.03	-14.55	QP
*	0.3100	36.68	10.07	46.75	49.97	-3.22	Average
	0.3100	39.39	10.07	49.46	59.97	-10.51	QP
	0.3374	32.84	10.08	42.92	49.27	-6.35	Average
	0.3374	36.31	10.08	46.39	59.27	-12.88	QP
	14.4400	27.51	10.33	37.84	50.00	-12.16	Average

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	14.4400	34.07	10.33	44.40	60.00	-15.60	QP
	15.1460	30.91	10.34	41.25	50.00	-8.75	Average
	15.1460	37.20	10.34	47.54	60.00	-12.46	QP
	15.9700	31.83	10.35	42.18	50.00	-7.82	Average
	15.9700	37.73	10.35	48.08	60.00	-11.92	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. " * " mean this data is the worst emission level

5.5 干擾值之計算

電源傳導干擾電壓之計算公式如下

$$\text{結果值} = \text{儀器讀值} + \text{校正因子}$$

其中校正因子為：

饋線損失 + 電源阻抗模擬網路損失

5.6 傳導干擾之量測儀器

儀器名稱	製造者	型號	本次校驗日期	下次校驗日期
EMI Test Receiver	Rohde & Schwarz	ESCI (13054412-003)	2020/10/14	2021/10/13
LISN	Schwarzbeck	NSLK 8127 PLC (13057743-001)	2020/12/22	2021/12/21
LISN	Shibasoku	563 (13044902-001)	2020/11/10	2021/11/9
PLUSE LIMITER (10dB)	Schwarzbeck	VTSD 9561 F-N (13056701-003)	2021/04/29	2022/04/28

5.7 傳導量測之配置照片



6 天線之要求

6.1 適用標準

依據低功率射頻器材技術規範3.2節之規定，低功率射頻器材之發射機或收發信機所使用之天線，除本規範章節中另有規定外，應為全固定、半固定式或以獨特之耦合(unique coupling)方式連接機體。製造者可設計供使用者因損壞而替換之天線，但不得設計或使用原認證以外之天線或可供引接各類電纜之標準天線插座或電氣連接頭，如：BNC、F type、N type、M type、UG type、RCA、SMA、SMB...等及其他各類工業或通訊標準接頭。

6.2 天線增益

此裝置使用固定式PCB天線(Ant A / Ant B)，其天線增益未超過6dBi之規定值，不需降低峰值發射功率以及峰值功率頻譜密度。

7 開放頻帶邊緣之量測

7.1 適用標準

4.10.2.4 除諧波外，指定頻帶外之發射應比主波低50 dB以上或依3.6之發射限制，兩者取其較鬆者。

7.2 開放頻帶邊緣之測試配置

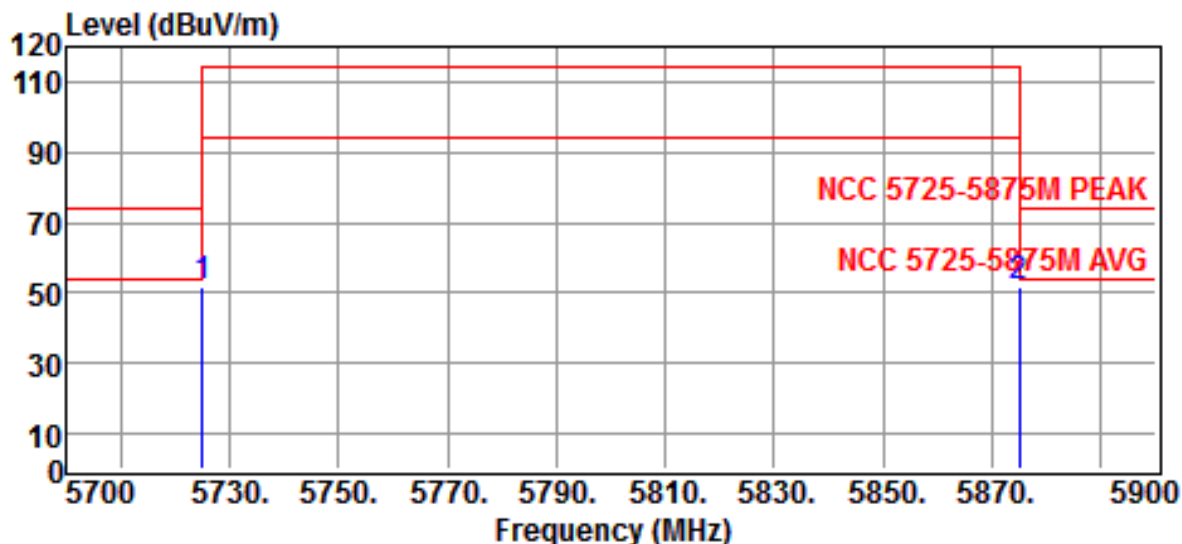
如圖2所示。

7.3 量測開放頻帶邊緣之儀器

儀器名稱	製造者	型號	本次校驗日期	下次校驗日期
EMI Test Receiver	Rohde & Schwarz	ESU40 (13054416-001)	2021/03/25	2022/03/24
Horn Antenna	ETS-Lindgren	3117	2021/03/16	2022/03/15
Amplifier	HP	8449B (13052901-001)	2020/10/06	2021/10/05

7.4 開放頻帶邊緣之量測結果

A：發射(帶外發射)



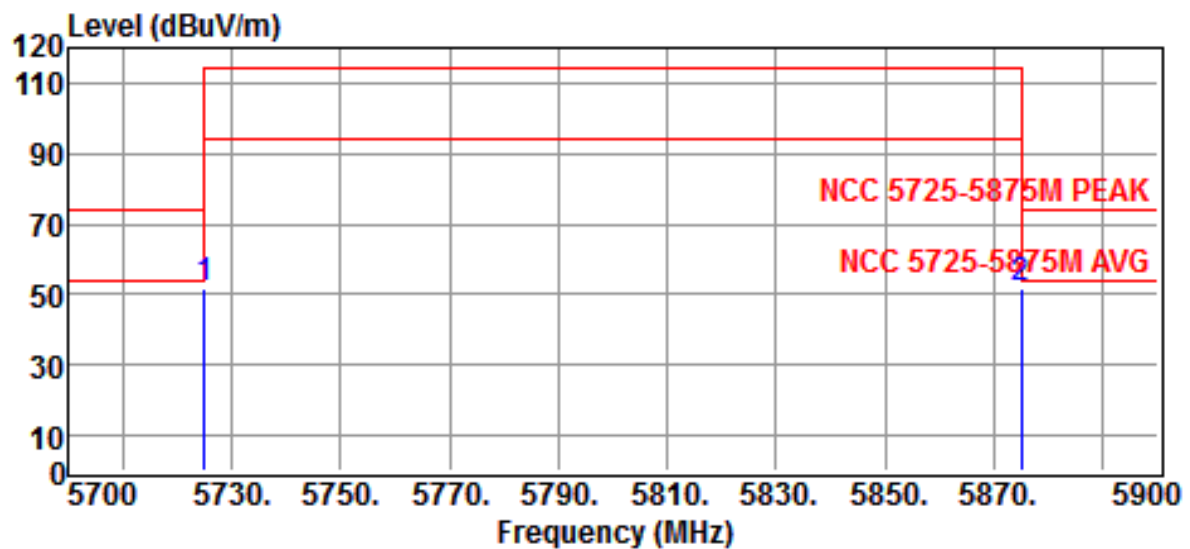
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:CH LO & HI - BANDEDGE		

ANT A

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5725.0000	45.39	6.11	51.50	74.00	-22.50	Peak
*	5875.0000	45.30	6.50	51.80	74.00	-22.20	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



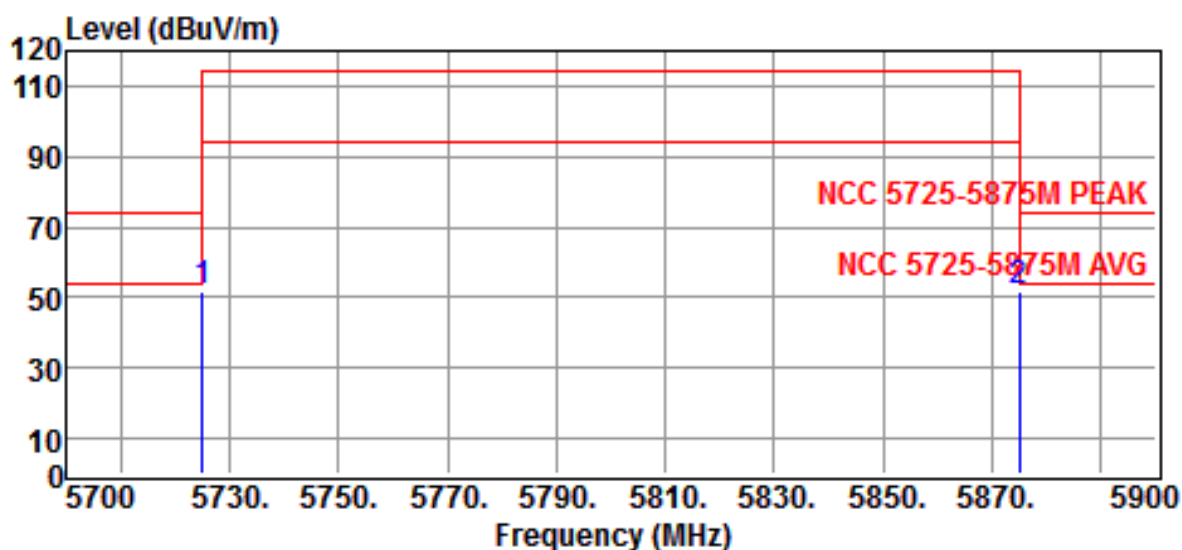
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:CH LO & HI - BANDEDGE		

ANT A

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5725.0000	45.69	6.11	51.80	74.00	-22.20	Peak
*	5875.0000	45.50	6.50	52.00	74.00	-22.00	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



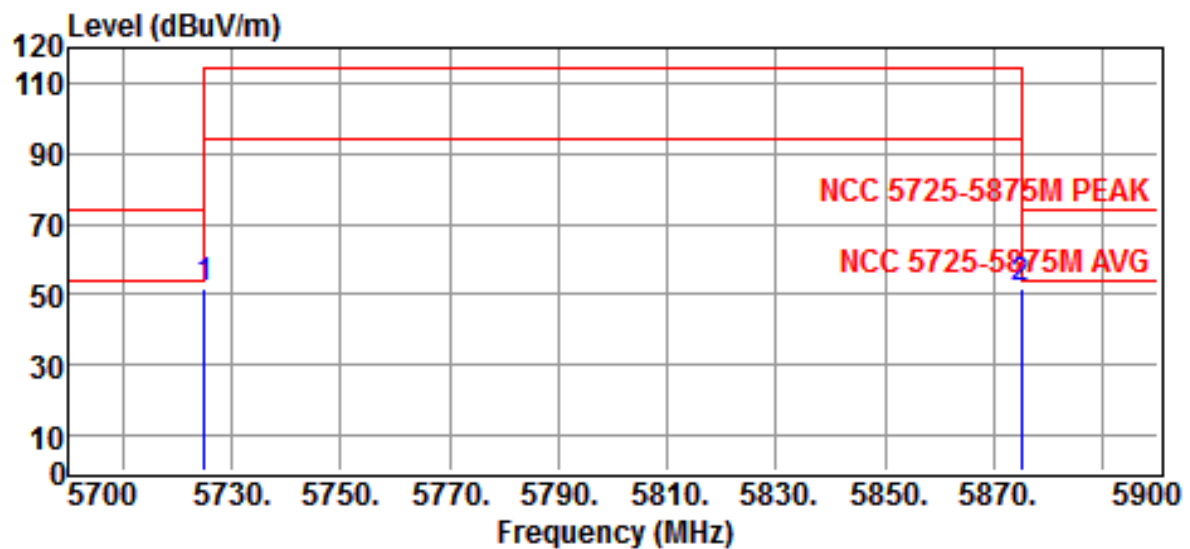
Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:HORIZONTAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:CH LO & HI - BANDEDGE		

ANT B

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5725.0000	45.29	6.11	51.40	74.00	-22.60	Peak
*	5875.0000	45.24	6.50	51.74	74.00	-22.26	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.



Site	:Chamber #2	Date	:2021-08-18
Limit	:NCC 5725-5875M PEAK	Ant. Pol.	:VERTICAL
EUT	:無線組合音響(喇叭)	Model	:LX CONNECT
Power Rating	:110V / 60Hz	Temp.	:24 °C
Engineer	:KEVIN LEE	Humi.	:58 %
Test Mode	:CH LO & HI - BANDEDGE		

ANT B

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	5725.0000	45.57	6.11	51.68	74.00	-22.32	Peak
*	5875.0000	45.42	6.50	51.92	74.00	-22.08	Peak

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ()
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. " * " mean this data is the worst emission level.