

低功率射頻電機測試報告

申請廠商 : Shure Incorporated
地址 : 5800 Touhy Avenue, Niles, IL 60714 USA
器材名稱 : Wireless Microphone System
廠牌 : SHURE
型號 : SVX2 G17 (Handheld Transmitter),
SVX88 (Receiver)



財團法人台灣電子檢驗中心電磁相容試驗二部

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報告號碼: 17-04-RBF-027

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受理日期 : 106 年 04 月 13 日
 完成日期 : 106 年 05 月 23 日
 報告號碼 : 17-04-RBF-027
 實驗室名稱 : 財團法人台灣電子檢驗中心電磁相容試驗二部
 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
 認可編號及範圍 : 2628 (9KHz- 40GHz)
 認可證書有效期限 : 107 年 10 月 08 日
 申請廠商 : Shure Incorporated
 申請廠商地址 : 5800 Touhy Avenue, Niles, IL 60714 USA
 製造廠商 : Shure Incorporated
 器材名稱 : Wireless Microphone System
 廠牌 : SHURE
 型號 : SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)
 發射功率(電場強度) : 6.08dBm (4.055 mW)
 工作頻率及調變方式 : 517~529MHz ; FM 調變
 天線規格 : 固定式天線

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 105 年 08 月 23 日。

項次	測試項目	適用規範章節	測試結果	量測設備	判定
1	主波發射功率與混附發射	低功率射頻電機技術規範4.6.3節、4.6.6節、4.6.7節	請參閱4.4節	請參閱4.3節	合格
2	電源線傳導干擾	低功率射頻電機技術規範2.3節	請參閱5.4節	請參閱5.6節	合格
3	天線之要求	低功率射頻電機技術規範4.6.8節	請參閱6.2節	----	合格
4	必需頻帶寬度之要求	低功率射頻電機技術規範4.6.2節	請參閱7.3節	請參閱7.2節	合格
5	頻移量之要求	低功率射頻電機技術規範4.6.4節	請參閱8.3節	請參閱8.2節	合格
6	頻率穩定度	低功率射頻電機技術規範4.6.5節	請參閱9.3節	請參閱9.2節	合格
	以下空白				

報告簽署人：

張子娟

量測員：

黃義傑



1 一般資料

1.1 產品描述

- a) 產品型態 : Wireless Microphone System
- b) 商 標 : SHURE
- c) 產品型號 : SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)
- d) 供應電源 : 發射機 :
DC3V, Battery 1.5V*2
接收機 :
Power From Adapter (Model:PS24TW) DC12V 0.4A

1.2 產品特性

此設備為Wireless Microphone System，發射頻率落於517~529MHz，採FM調變，實測之主波發射功率為頻率為6.08dBm (4.055 mW)。

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電機技術規範以及參考EIA 603、ANSI、FCC/47CFR/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電機技術規範2.3節之規定，以市電為電源之低功率射頻電機，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) 主波發射功率(ERP)之要求

依據低功率射頻電機技術規範之4.6.3節之要求，低功率無線電麥克風主波發射功率之限制要求如下：

4.6.3.1 操作於227.1 MHz~227.4 MHz，229.4 MHz~230.0 MHz，231.0 MHz~231.9 MHz者：

頻道寬度	主波發射限制值
50kHz(含)以下	10mW(含)以下
50kHz(不含)~200kHz	5mW(含)以下

4.6.3.2 操作於510.0 MHz~530.0 MHz 者：50 mW 以下。

4.6.3.3 操作於748.0 MHz~758.0 MHz 者：10 mW 以下。

4.6.3.4 操作於803.0 MHz~806.0 MHz 者：10 mW 以下。

4.6.3.5 操作於1790.0 MHz~1805.0 MHz 者：10 mW 以下。

(3) 天線之要求

4.6.8 傳輸發射訊號之天線不可與機體分離。

(4) 必需頻帶寬度之要求

依據低功率射頻電機技術規範4.6.2節之要求。

4.6.2.1 操作頻率(f_c)小於1 GHz 之系統，其必需頻帶寬度應小於或等於200 kHz，並符合下列二表之遮罩標準。

偏移量 Δf	類比式系統					
	限制值 Limit (dBc)	RBW	VBW	檢波器 Detector	追蹤 Trace	掃描 頻率寬度 Span
$\pm (0 \leq \Delta f \leq 0.35B)$	0 ~ -20(註 1)	1kHz	1kHz	RMS	Max Hold	$f_c \pm 1\text{MHz}$
$\pm (0.35B \leq \Delta f \leq 0.5B)$	-20 ~ -60(註 1)	1kHz	1kHz	RMS	Max Hold	$f_c \pm 1\text{MHz}$
$\pm (0.5B \leq \Delta f \leq B)$	-60 ~ -80(註 1)	1kHz	1kHz	RMS	Max Hold	$f_c \pm 1\text{MHz}$
$\pm (B \leq \Delta f \leq 1\text{MHz})$	-80 ~ -90(註 1)	1kHz	1kHz	RMS	Average	$f_c \pm 1\text{MHz}$

註: 1.以線性插補法 (linear interpolations) 計算對應之限制值，詳圖 1。
 2.各頻段重疊處,以較嚴格之限制值為準。
 3. B 指廠商宣稱之頻帶寬度。

偏移量 Δf	數位式系統(<1GHz)						
	限制值 (dBc)	RBW	VBW	檢波器 Detector	追蹤 Trace	掃描頻率寬度 Span	掃描時間 Sweep Time
$\pm (0 \leq \Delta f < 0.5B)$	0	1kHz	1kHz	RMS	Max Hold	$\geq 5 \times B$	≥ 2 秒
$\pm (0.5B \leq \Delta f \leq 1.75B)$	-30 ~ -80 (註 1)	1kHz	1kHz	RMS	Max Hold	$\geq 5 \times B$	≥ 2 秒
$\pm (1.75B \leq \Delta f \leq 5B)$	-80 ~ -90 (註 1)	1kHz	1kHz	RMS	Average	$\pm (1.75B \leq \Delta f \leq 5B)$	2 秒 Per 200 kHz

註: 1.以線性插補法 (linear interpolations) 計算對應之限制值，詳圖 2。
 2.各頻段重疊處,以較嚴格之限制值為準。
 3. B 指廠商宣稱之頻帶寬度。

4.6.2.2 操作頻率(f_c)大於1 GHz 之系統，其必需頻帶寬度應小於或等於600 kHz，並符合下表之遮罩標準。

偏移量 Δf	數位式系統(>1GHz)						
	限制值 (dBc)	RBW	VBW	檢波器 Detector	追蹤 Trace	掃描頻率寬度 Span	掃描時間 Sweep Time
$\pm (0 \leq \Delta f < 0.5B)$	0	1kHz	1kHz	RMS	Max Hold	$\geq 5 \times B$	≥ 2 秒
$\pm (0.5B \leq \Delta f \leq B)$	-40 ~ -60 (註 1)	1kHz	1kHz	RMS	Max Hold	$\geq 5 \times B$	≥ 2 秒
$\pm (B \leq \Delta f \leq 1\text{MHz})$	-60	1kHz	1kHz	RMS	Average	$\pm (B \leq \Delta f \leq 1\text{MHz})$	2 秒 per 200 kHz

註:1.以線性插補法 (linear interpolations) 計算對應之限制值，詳圖 3。
 2.各頻段重疊處,以較嚴格之限制值為準。
 3. B 指廠商宣稱之頻帶寬度。

(5) 頻移量之要求

4.6.4 頻移量 (frequency deviation) : 小於或等於 ± 75 kHz, 僅適用類比系統。

(6) 頻率穩定度之要求

依據低功率射頻電機技術規範4.6.5節之要求。

4.6.5.1 操作頻率小於1 GHz 之系統:20 ppm

4.6.5.2 操作頻率大於1 GHz 之系統:15 ppm

(7) 混附發射之要求

4.6.6 混附發射 (spurious emissions) (ERP) :

	頻率範圍		
	47 MHz~74 MHz、 87.5 MHz~137 MHz、 174 MHz~230 MHz、 470 MHz~862 MHz	< 1 GHz	> 1 GHz
操作狀態	4 nW 以下	250 nW 以下	1 uW 以下
待機狀態	2 nW 以下	2 nW 以下	20 nW 以下

4.6.7 接收機 (receiver) 之混附發射 (spurious emissions) (ERP) : 2 nW(含)以下。

(8) 使用頻率

4.6.1 使用頻率範圍 (frequency range) : 227.1 MHz~227.4 MHz、229.4 MHz~230.0 MHz、231.0 MHz~231.9 MHz、510 MHz~530 MHz、748 MHz~758 MHz、803 MHz~806MHz、1790 MHz~1805 MHz

2.2 限制使用之頻帶

頻率(MHz)	頻率(MHz)
0.090~0.110	1660.0~1770.0
0.490~0.510	1805.0~1865.0
2.172~2.198	1885.0~1900.0
3.013~3.033	1905.0~1985.0
4.115~4.198	2015.0~2025.0
5.670~5.690	2125.0~2165.0
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	

3 受測裝置之系統說明

裝置名稱	製造者/代理商	型號	纜線說明
Wireless Microphone System *	Shure Incorporated / Shure Incorporated	SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)	Tx: --- Rx: 1.0m Unshielded Audio Cable*4

標記“*”表欲申請之受測物。

4 主波發射功率與混附發射之量測

4.1 適用標準

A. 主波發射功率(ERP)之要求

依據低功率射頻電機技術規範之4.6.3節之要求，低功率無線電麥克風主波發射功率之限制要求如下：

4.6.3.1 操作於227.1 MHz～227.4 MHz，229.4 MHz～230.0 MHz，231.0 MHz～231.9 MHz者：

頻道寬度	主波發射限制值
50kHz(含)以下	10mW(含)以下
50kHz(不含)~200kHz	5mW(含)以下

4.6.3.2 操作於510.0 MHz～530.0 MHz 者：50 mW 以下。

4.6.3.3 操作於748.0 MHz～758.0 MHz 者：10 mW 以下。

4.6.3.4 操作於803.0 MHz～806.0 MHz 者：10 mW 以下。

4.6.3.5 操作於1790.0 MHz～1805.0 MHz 者：10 mW 以下。

4.6.6 混附發射（spurious emissions）(ERP)：

	頻率範圍		
	47 MHz～74 MHz、 87.5 MHz～137 MHz、 174 MHz～230 MHz、 470 MHz～862 MHz	< 1 GHz	> 1 GHz
操作狀態	4 nW 以下	250 nW 以下	1 uW 以下
待機狀態	2 nW 以下	2 nW 以下	20 nW 以下

4.6.7 接收機（receiver）之混附發射（spurious emissions）(ERP)：2 nW(含)以下。

4.2 量測方法

將待測物置於0.8米高的非金屬桌面，使其在工作狀態，接收天線置於3米外相同的高度。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，接收天線置於水平、垂直極向各執行測試一次。以標準信號產生器取代受測物，測得對應受測物頻率之相同強度以得有效輻射功率。

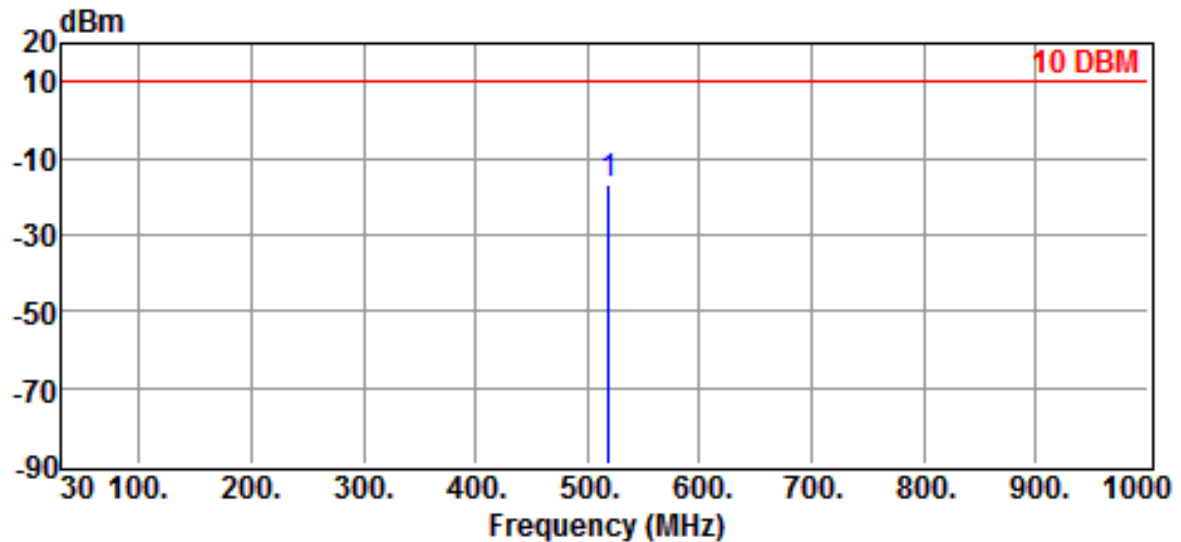
4.3 量測儀器

儀器名稱	製造者	型號	本次校驗日期	下次校驗日期
Test Receiver	Rohde & Schwarz	ESVS30	2016/06/02	2017/06/02
Bi-Log Antenna	ETC	MCTD 2786	2016/07/15	2017/07/14
Log-periodic Antenna	EMCO	3146	2016/07/05	2017/07/04
Biconical Antenna	EMCO	3110B	2016/07/05	2017/07/04
Spectrum Analyzer	R&S	FSP3	2017/01/04	2018/01/03
Amplifier	HP	8447D	2016/12/05	2017/12/04
Double Ridged Antenna	EMCO	3115	2016/10/05	2017/10/04
Amplifier	HP	8449B	2016/10/14	2017/10/13
Amplifier	HP	83051A	2016/07/18	2017/07/17

4.4 量測結果

4.4.1 發射機

a. 主波

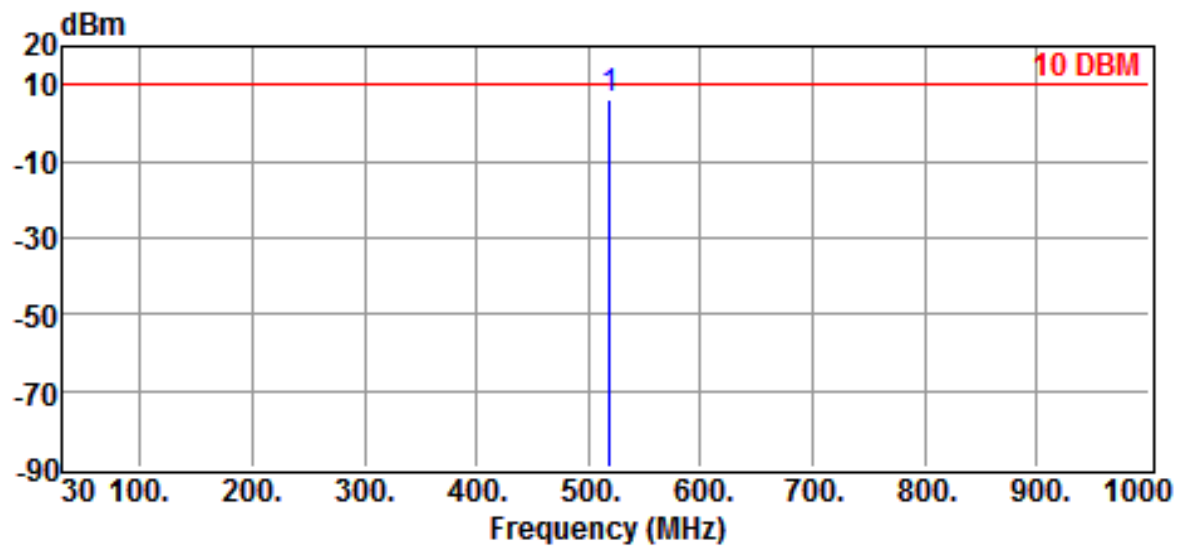


Site	:chamber#2	Date	:2017-05-10
Limit	:10 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:22 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:TX-518.825MHz		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dBμV	Factor	dBm	dBm	dB	
518.8250	84.92	-101.94	-17.02	10.00	-27.02	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m
Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

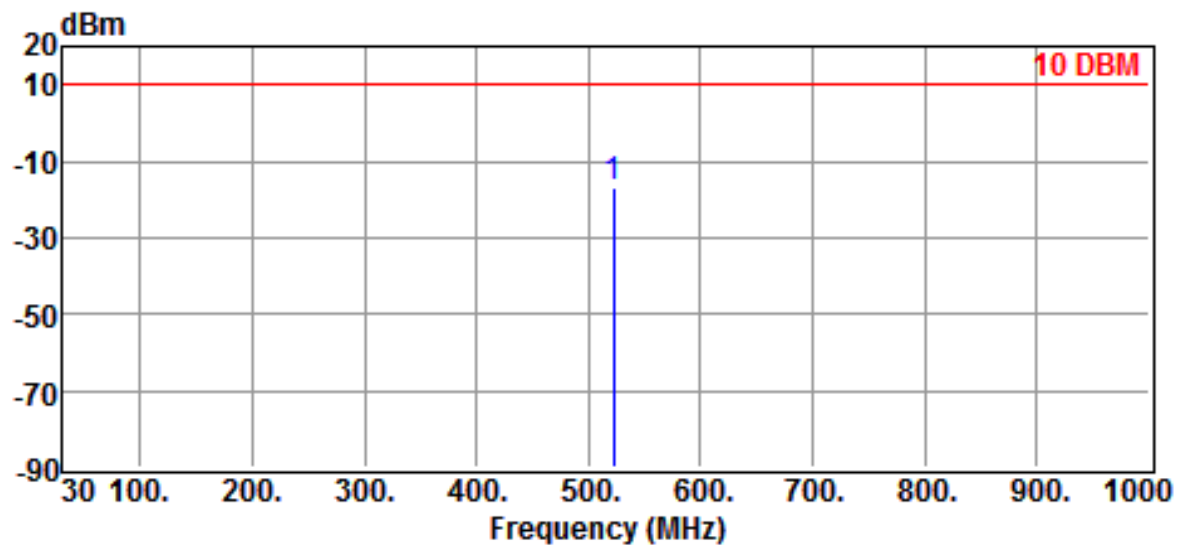


Site	:chamber#2	Date	:2017-05-10
Limit	:10 DBM	Ant. Pol.	:VERTICAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:22°C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:TX-518.825MHz		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dBμV	Factor	dBm	dBm	dB	
518.8250	108.02	-101.94	6.08	10.00	-3.92	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m
Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

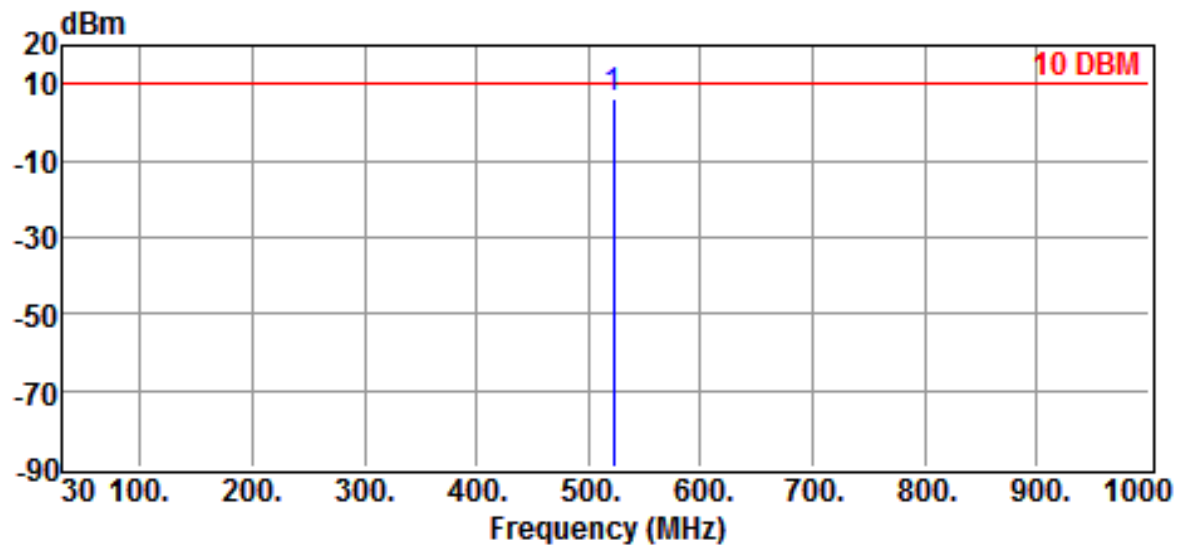


Site	:chamber#2	Date	:2017-05-10
Limit	:10 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:22 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:TX-521.850MHz		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dB μ V	Factor dB	dBm	dBm	dB	
521.8500	85.31	-101.91	-16.60	10.00	-26.60	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m
Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

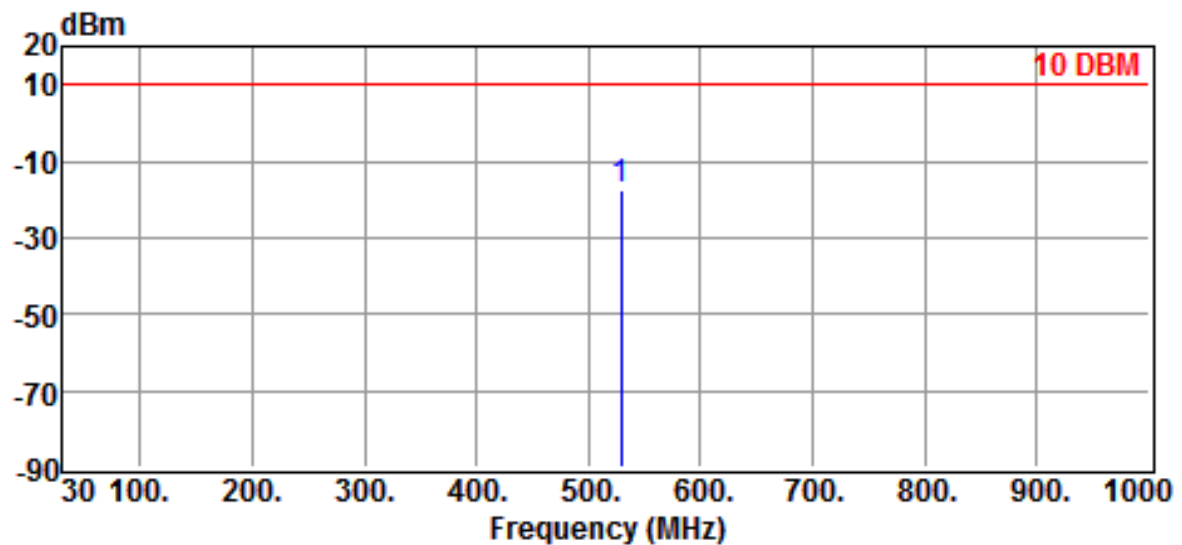


Site	:chamber#2	Date	:2017-05-10
Limit	:10 DBM	Ant. Pol.	:VERTICAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:22 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:TX-521.850MHz		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dB μ V	Factor dB	dBm	dBm	dB	
521.8500	107.92	-101.91	6.01	10.00	-3.99	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m
Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

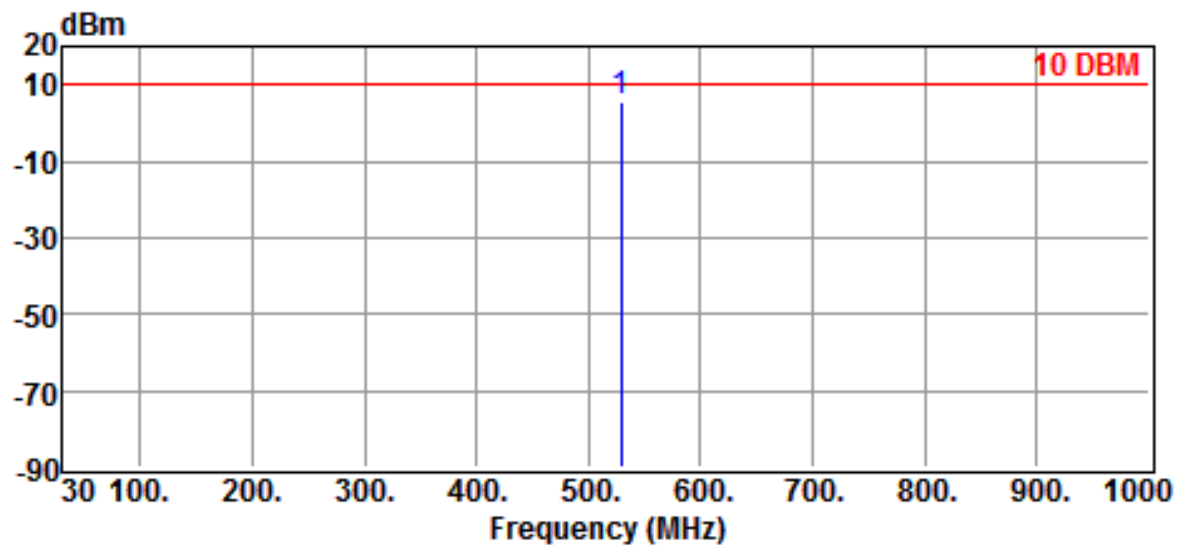


Site	:chamber#2	Date	:2017-05-10
Limit	:10 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:22 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:TX-528.850MHz		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dB μ V	Factor dB	dBm	dBm	dB	
528.8500	84.40	-101.85	-17.45	10.00	-27.45	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.



Site	:chamber#2	Date	:2017-05-10
Limit	:10 DBM	Ant. Pol.	:VERTICAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:22 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:TX-528.850MHz		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dB μ V	Factor dB	dBm	dBm	dB	
528.8500	107.32	-101.85	5.47	10.00	-4.53	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m
Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

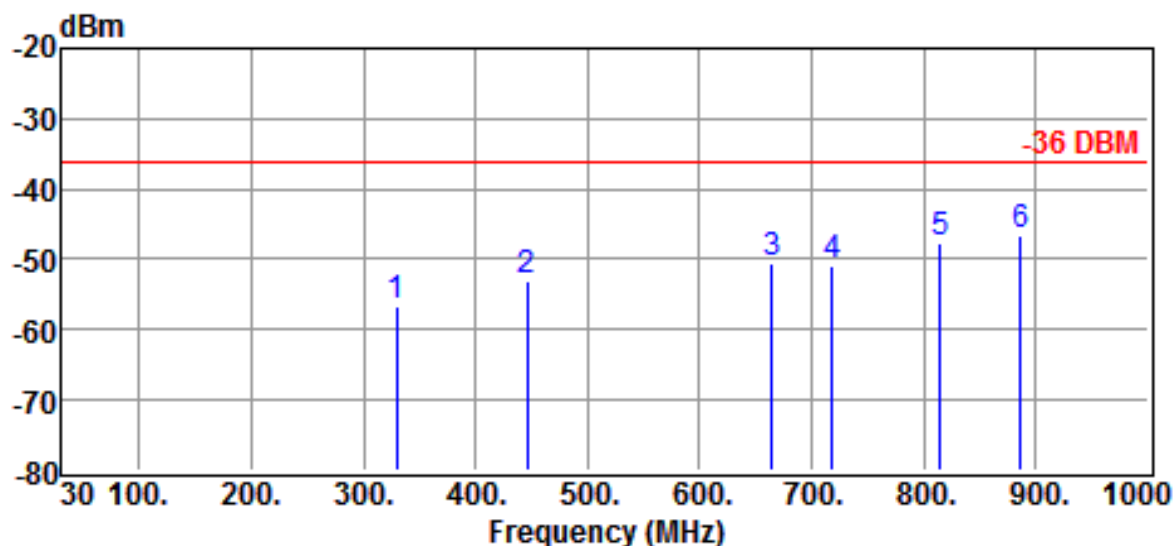
b. 混附發射

(1GHz以下)

操作模式 : TX

測試日期 : May 10, 2017 環境溫度 : 22 °C 環境溼度 : 53 %

測試結果 : 合格 測試者 : 黃義傑

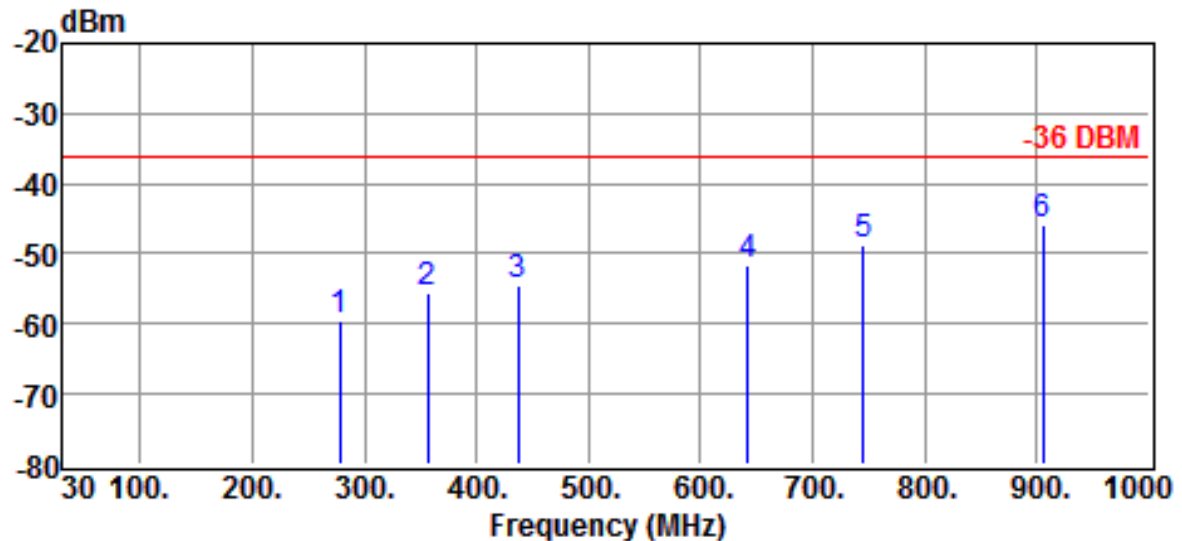


Site	:chamber#2	Date	:2017-05-10
Limit	: -36 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERT 3V	Temp.	:22 °C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-518.825MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
329.7300	48.22	-104.95	-56.73	-36.00	-20.73	Peak
446.1300	49.97	-103.15	-53.18	-36.00	-17.18	Peak
664.3800	49.12	-99.75	-50.63	-36.00	-14.63	Peak
718.7000	48.05	-99.00	-50.95	-36.00	-14.95	Peak
814.7300	49.60	-97.37	-47.77	-36.00	-11.77	Peak
886.5100	49.35	-96.07	-46.72	-36.00	-10.72	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

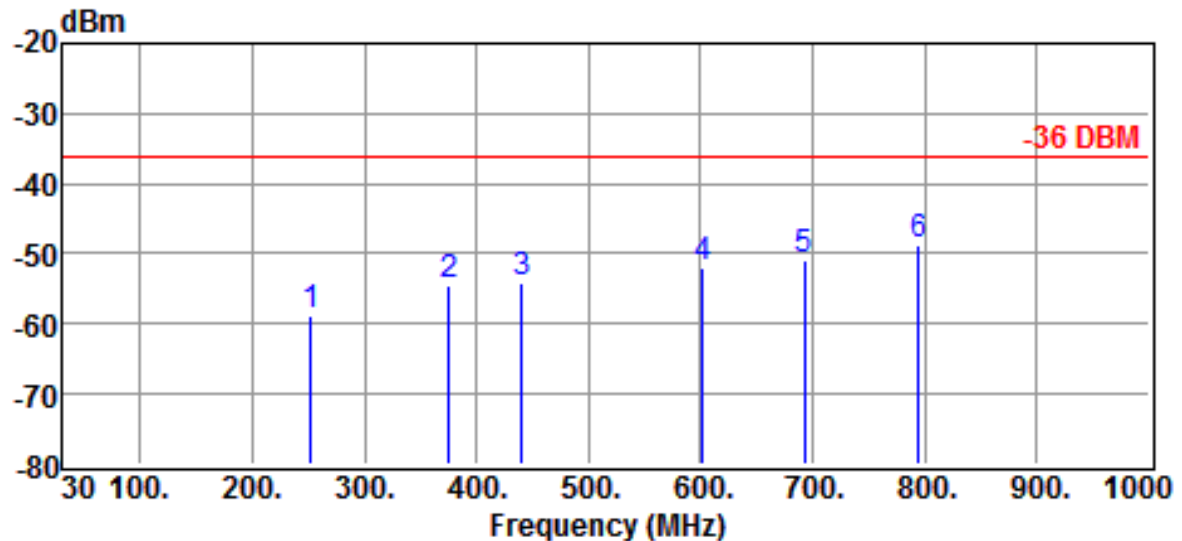


Site	:chamber#2	Date	:2017-05-10
Limit	: -36 DBM	Ant. Pol.	: VERTICAL
EUT	: Wireless Microphone System	Model	: SVX2 G17
Power Rating	: BATTERT 3V	Temp.	: 22 °C
Engineer	: Brian Huang	Humi.	: 53 %
Test Mode	: TX-518.825MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
278.3200	47.10	-106.58	-59.48	-36.00	-23.48	Peak
356.8900	48.73	-104.46	-55.73	-36.00	-19.73	Peak
437.4000	48.67	-103.20	-54.53	-36.00	-18.53	Peak
642.0700	48.65	-100.14	-51.49	-36.00	-15.49	Peak
744.8900	50.12	-98.87	-48.75	-36.00	-12.75	Peak
904.9400	49.66	-95.61	-45.95	-36.00	-9.95	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

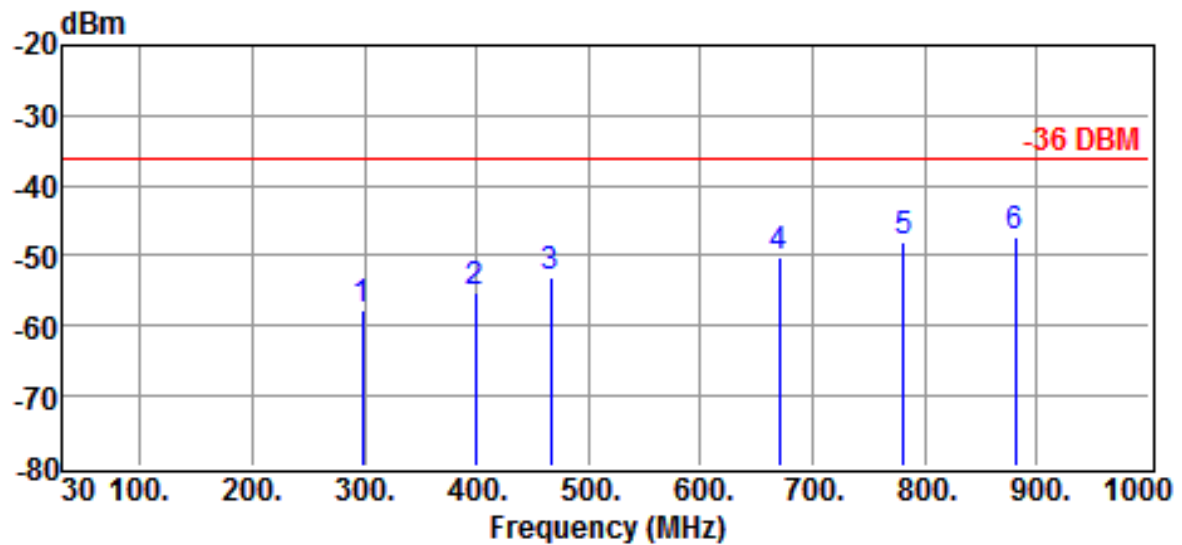


Site	:chamber#2	Date	:2017-05-10
Limit	: -36 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERT 3V	Temp.	:22°C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-521.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
252.1300	48.53	-107.16	-58.63	-36.00	-22.63	Peak
375.3200	49.56	-104.02	-54.46	-36.00	-18.46	Peak
440.3100	49.18	-103.21	-54.03	-36.00	-18.03	Peak
602.3000	48.75	-100.87	-52.12	-36.00	-16.12	Peak
692.5100	48.54	-99.27	-50.73	-36.00	-14.73	Peak
794.3600	49.00	-97.64	-48.64	-36.00	-12.64	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

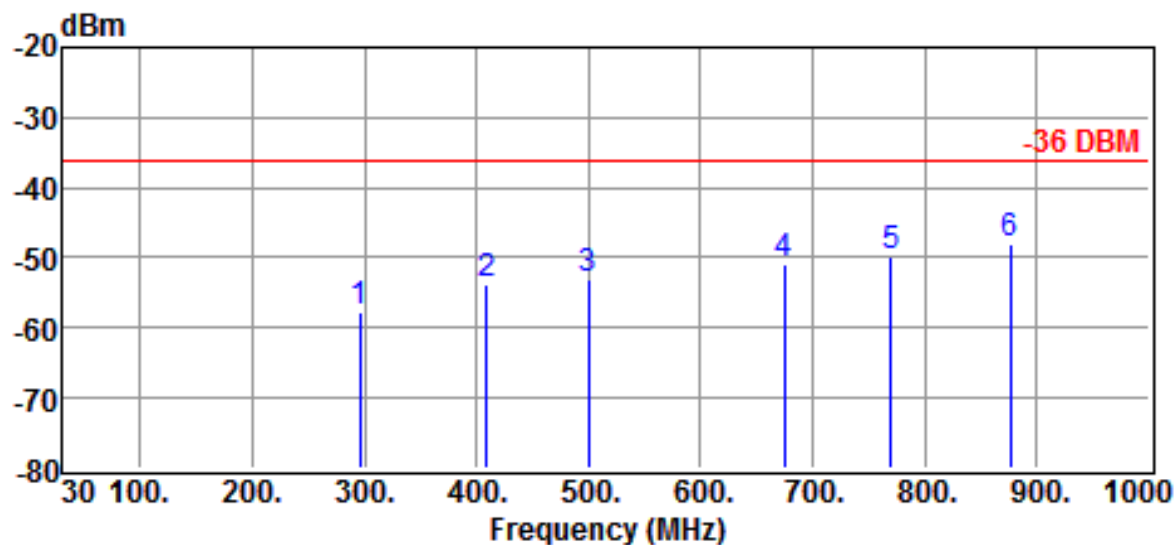


Site	:chamber#2	Date	:2017-05-10
Limit	: -36 DBM	Ant. Pol.	:VERTICAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERT 3V	Temp.	:22°C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-521.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
298.6900	47.68	-105.53	-57.85	-36.00	-21.85	Peak
399.5700	48.32	-103.48	-55.16	-36.00	-19.16	Peak
466.5000	49.89	-102.82	-52.93	-36.00	-16.93	Peak
670.2000	49.51	-99.64	-50.13	-36.00	-14.13	Peak
780.7800	50.01	-97.99	-47.98	-36.00	-11.98	Peak
880.6900	48.77	-96.23	-47.46	-36.00	-11.46	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

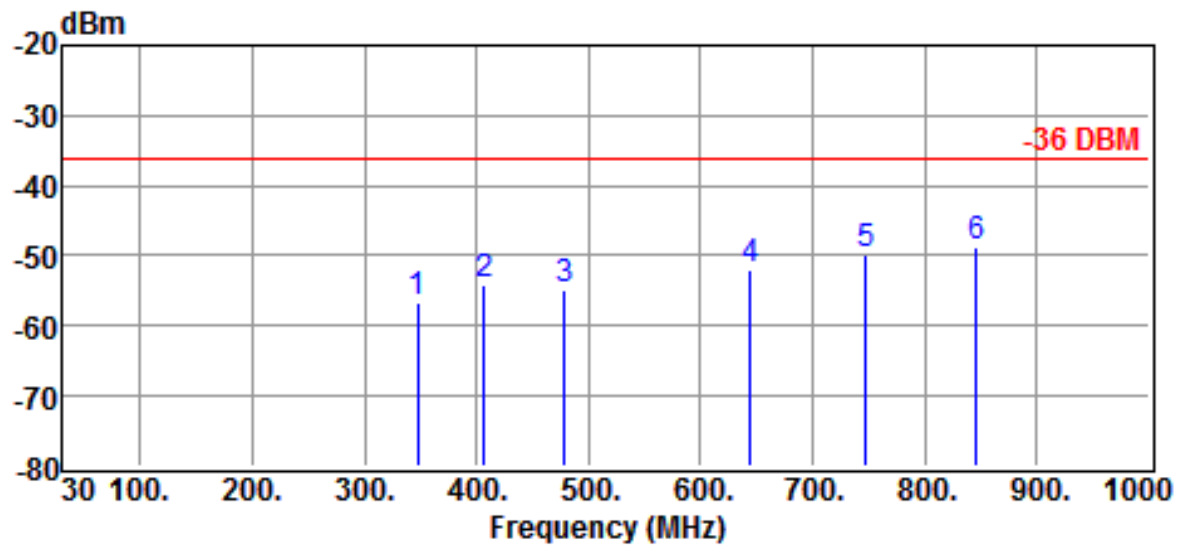


Site	:chamber#2	Date	:2017-05-10
Limit	: -36 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERT 3V	Temp.	:22°C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-528.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
295.7800	47.87	-105.65	-57.78	-36.00	-21.78	Peak
409.2700	49.50	-103.41	-53.91	-36.00	-17.91	Peak
499.4800	49.02	-102.19	-53.17	-36.00	-17.17	Peak
675.0500	48.66	-99.57	-50.91	-36.00	-14.91	Peak
770.1100	48.64	-98.29	-49.65	-36.00	-13.65	Peak
875.8400	48.36	-96.35	-47.99	-36.00	-11.99	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.



Site	:chamber#2	Date	:2017-05-10
Limit	: -36 DBM	Ant. Pol.	: VERTICAL
EUT	: Wireless Microphone System	Model	: SVX2 G17
Power Rating	: BATTERT 3V	Temp.	: 22 °C
Engineer	: Brian Huang	Humi.	: 53 %
Test Mode	: TX-528.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
347.1900	47.85	-104.65	-56.80	-36.00	-20.80	Peak
406.3600	49.24	-103.44	-54.20	-36.00	-18.20	Peak
479.1100	47.85	-102.55	-54.70	-36.00	-18.70	Peak
644.0100	48.00	-100.11	-52.11	-36.00	-16.11	Peak
747.8000	49.05	-98.86	-49.81	-36.00	-13.81	Peak
845.7700	48.39	-97.09	-48.70	-36.00	-12.70	Peak

Note :

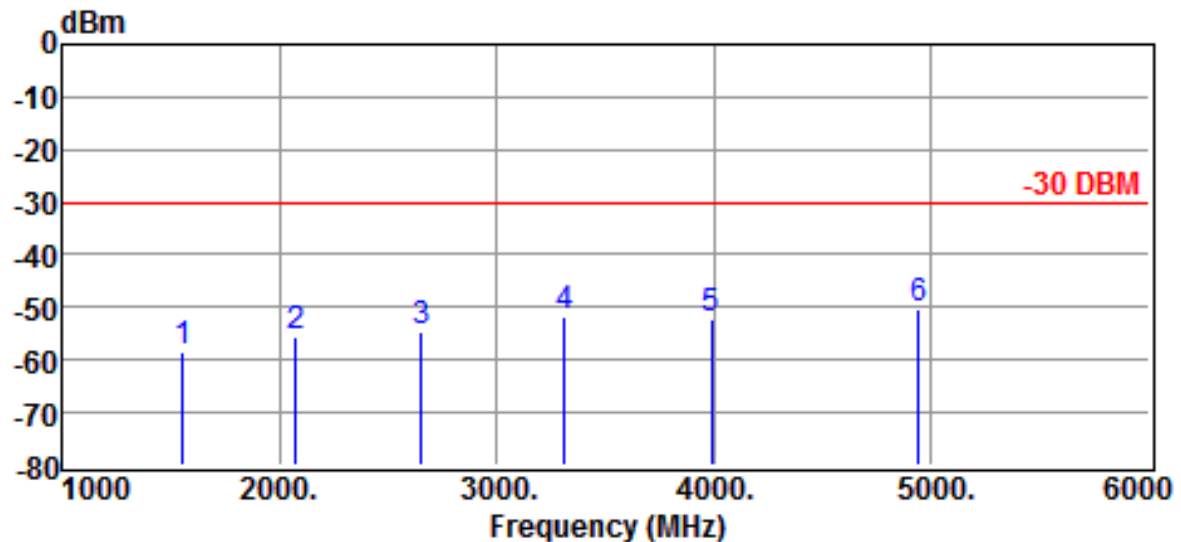
1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

(1GHz以上)

操作模式 : TX

測試日期 : May 10, 2017 環境溫度 : 24 °C 環境溼度 : 53 %

測試結果 : 合格 測試者 : 黃義傑

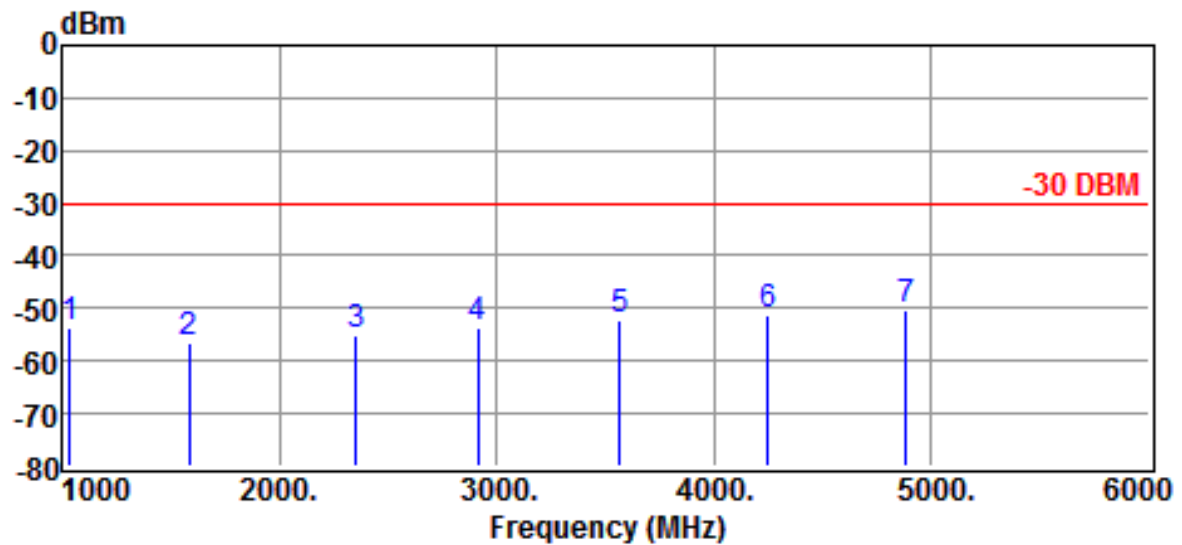


Site	:chamber#2	Date	:2017-05-10
Limit	: -30 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:24 °C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-518.825MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1560.0000	48.28	-106.72	-58.44	-30.00	-28.44	Peak
2075.0000	48.37	-103.70	-55.33	-30.00	-25.33	Peak
2655.0000	47.45	-102.15	-54.70	-30.00	-24.70	Peak
3315.0000	48.11	-99.80	-51.69	-30.00	-21.69	Peak
3990.0000	45.36	-97.47	-52.11	-30.00	-22.11	Peak
4940.0000	45.11	-95.65	-50.54	-30.00	-20.54	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

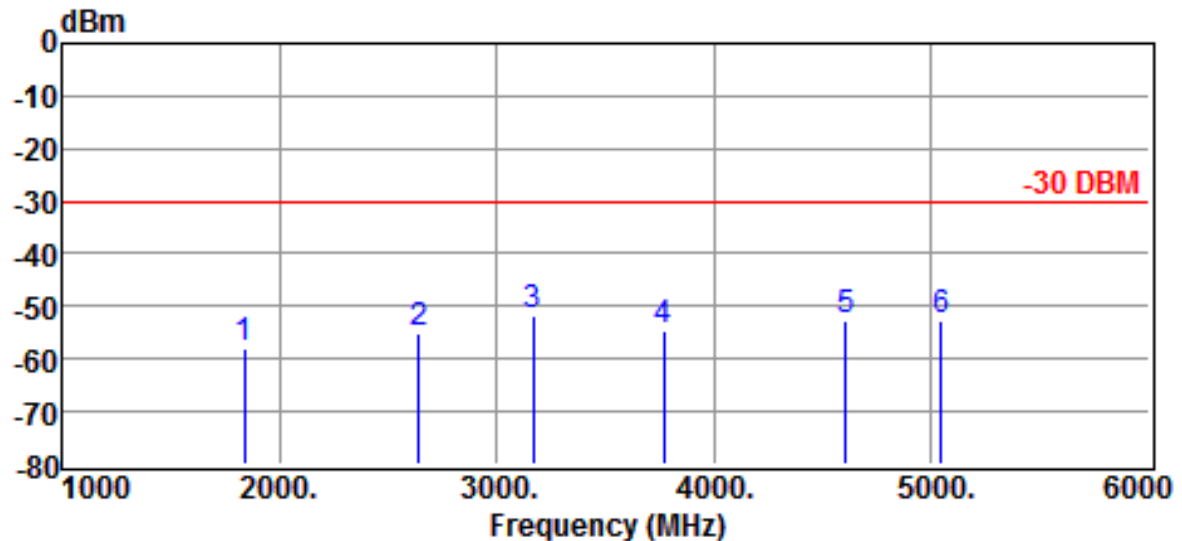


Site	:chamber#2	Date	:2017-05-10
Limit	: -30 DBM	Ant. Pol.	: VERTICAL
EUT	: Wireless Microphone System	Model	: SVX2 G17
Power Rating	: BATTERY 3V	Temp.	: 24 °C
Engineer	: Brian Huang	Humi.	: 53 %
Test Mode	: TX-518.825MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1037.6500	54.92	-108.51	-53.59	-30.00	-23.59	Peak
1585.0000	49.96	-106.59	-56.63	-30.00	-26.63	Peak
2355.0000	48.07	-103.02	-54.95	-30.00	-24.95	Peak
2915.0000	47.58	-101.16	-53.58	-30.00	-23.58	Peak
3565.0000	46.92	-98.93	-52.01	-30.00	-22.01	Peak
4245.0000	46.22	-97.29	-51.07	-30.00	-21.07	Peak
4880.0000	45.82	-95.88	-50.06	-30.00	-20.06	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

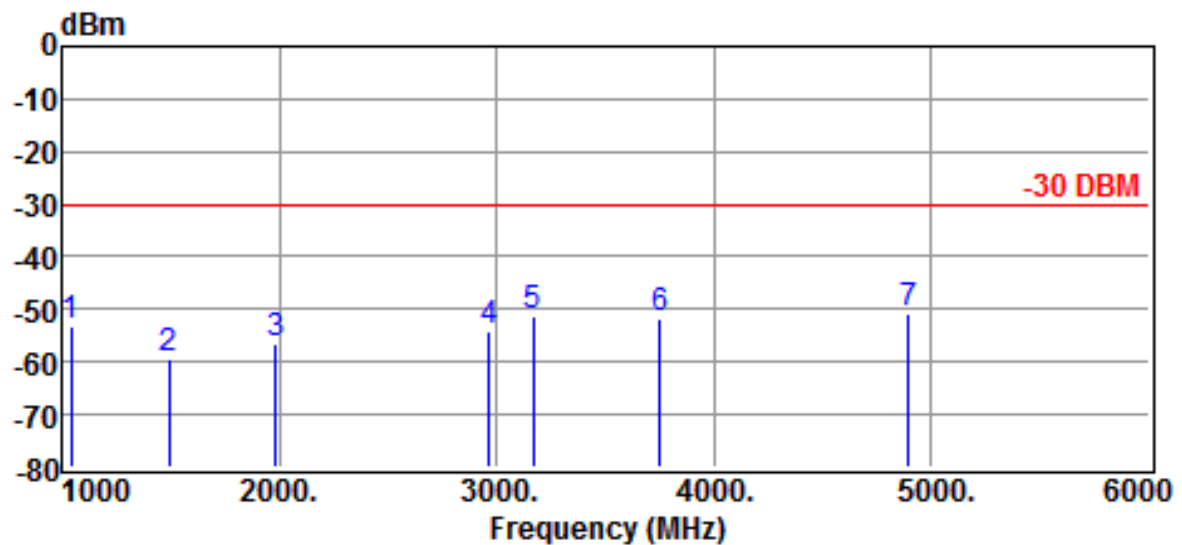


Site	:chamber#2	Date	:2017-05-10
Limit	: -30 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:24 °C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-521.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1840.0000	47.14	-104.94	-57.80	-30.00	-27.80	Peak
2645.0000	47.15	-102.15	-55.00	-30.00	-25.00	Peak
3170.0000	48.50	-100.28	-51.78	-30.00	-21.78	Peak
3770.0000	43.46	-98.23	-54.77	-30.00	-24.77	Peak
4605.0000	44.19	-96.77	-52.58	-30.00	-22.58	Peak
5045.0000	42.56	-95.37	-52.81	-30.00	-22.81	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

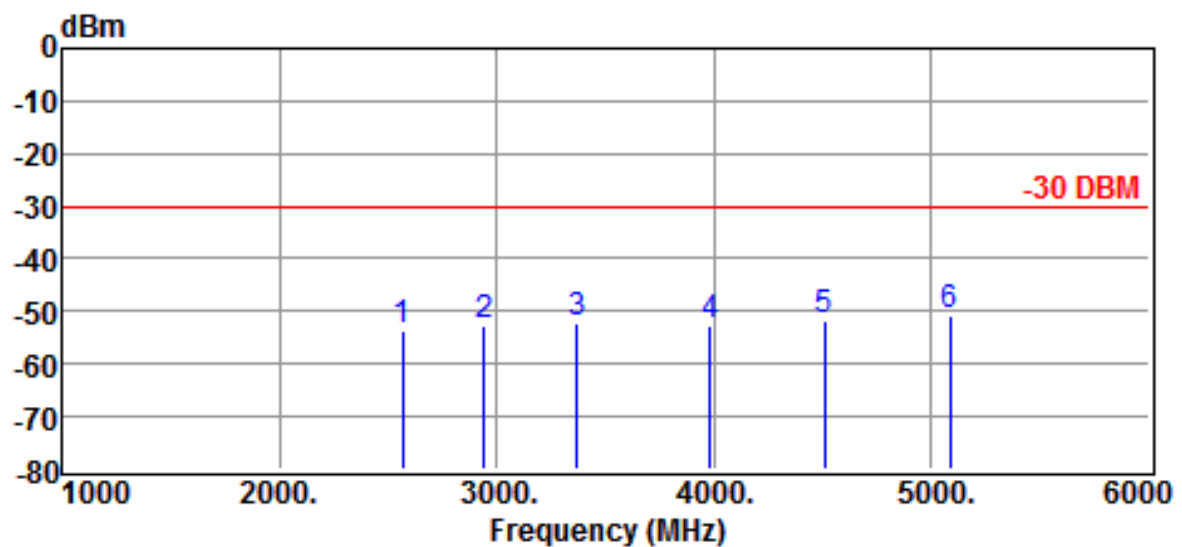


Site	:chamber#2	Date	:2017-05-10
Limit	: -30 DBM	Ant. Pol.	: VERTICAL
EUT	: Wireless Microphone System	Model	: SVX2 G17
Power Rating	: BATTERY 3V	Temp.	: 24 °C
Engineer	: Brian Huang	Humi.	: 53 %
Test Mode	: TX-521.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1043.7000	55.08	-108.44	-53.36	-30.00	-23.36	Peak
1495.0000	47.89	-107.20	-59.31	-30.00	-29.31	Peak
1985.0000	47.41	-103.95	-56.54	-30.00	-26.54	Peak
2965.0000	46.90	-100.98	-54.08	-30.00	-24.08	Peak
3170.0000	49.23	-100.28	-51.05	-30.00	-21.05	Peak
3750.0000	46.63	-98.30	-51.67	-30.00	-21.67	Peak
4895.0000	45.20	-95.81	-50.61	-30.00	-20.61	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

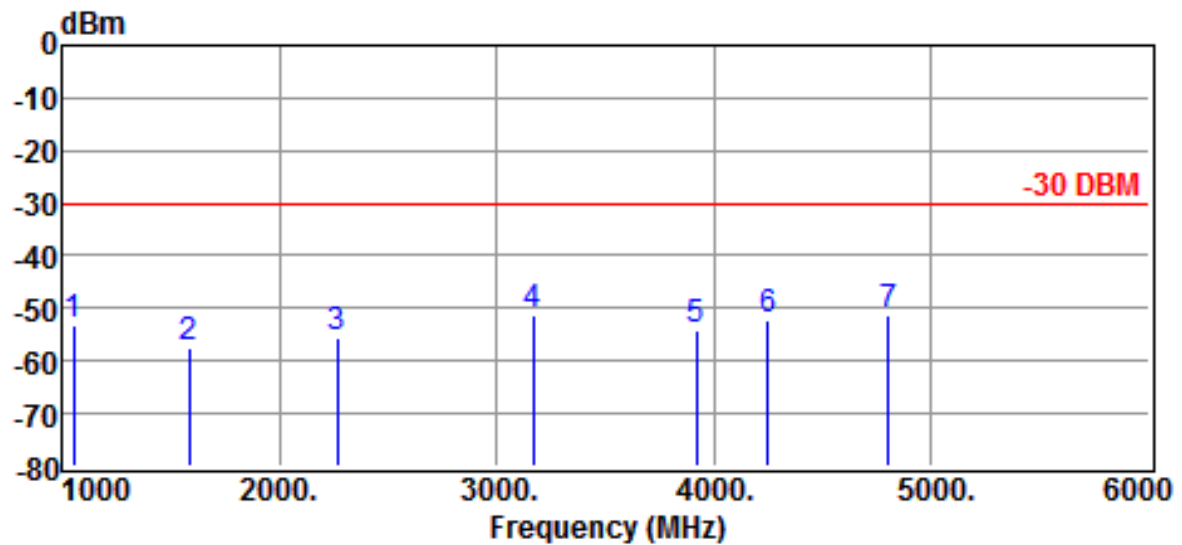


Site	:chamber#2	Date	:2017-05-10
Limit	: -30 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:24 °C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-528.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
2570.0000	49.06	-102.47	-53.41	-30.00	-23.41	Peak
2940.0000	48.53	-101.10	-52.57	-30.00	-22.57	Peak
3370.0000	47.44	-99.62	-52.18	-30.00	-22.18	Peak
3980.0000	44.62	-97.52	-52.90	-30.00	-22.90	Peak
4510.0000	45.24	-97.09	-51.85	-30.00	-21.85	Peak
5085.0000	44.46	-95.31	-50.85	-30.00	-20.85	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.



Site	:chamber#2	Date	:2017-05-10
Limit	: -30 DBM	Ant. Pol.	:VERTICAL
EUT	:Wireless Microphone System	Model	:SVX2 G17
Power Rating	:BATTERY 3V	Temp.	:24 °C
Engineer	:Brian Huang	Humi.	:53 %
Test Mode	:TX-528.850MHz		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1057.7000	55.17	-108.44	-53.27	-30.00	-23.27	Peak
1585.0000	49.18	-106.59	-57.41	-30.00	-27.41	Peak
2265.0000	47.54	-103.27	-55.73	-30.00	-25.73	Peak
3170.0000	49.15	-100.28	-51.13	-30.00	-21.13	Peak
3920.0000	43.74	-97.70	-53.96	-30.00	-23.96	Peak
4245.0000	44.99	-97.29	-52.30	-30.00	-22.30	Peak
4800.0000	44.95	-96.10	-51.15	-30.00	-21.15	Peak

Note :

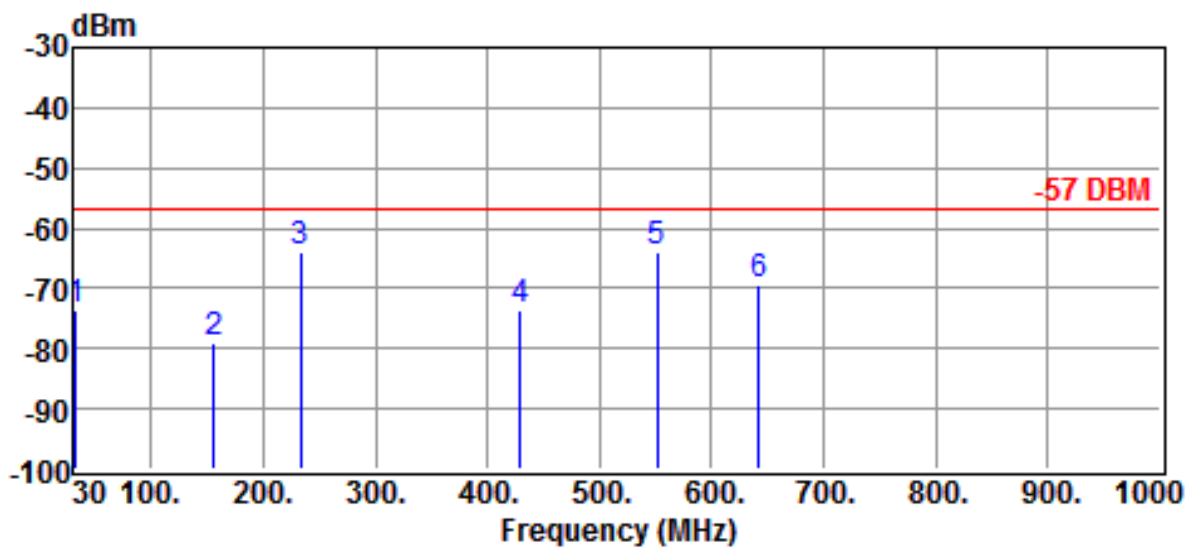
1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

d. 待機狀態之混附發射

註：由於此發射機不具待機功能，故無實施此項測試。

4.4.2 接收機

a. 1GHz以下

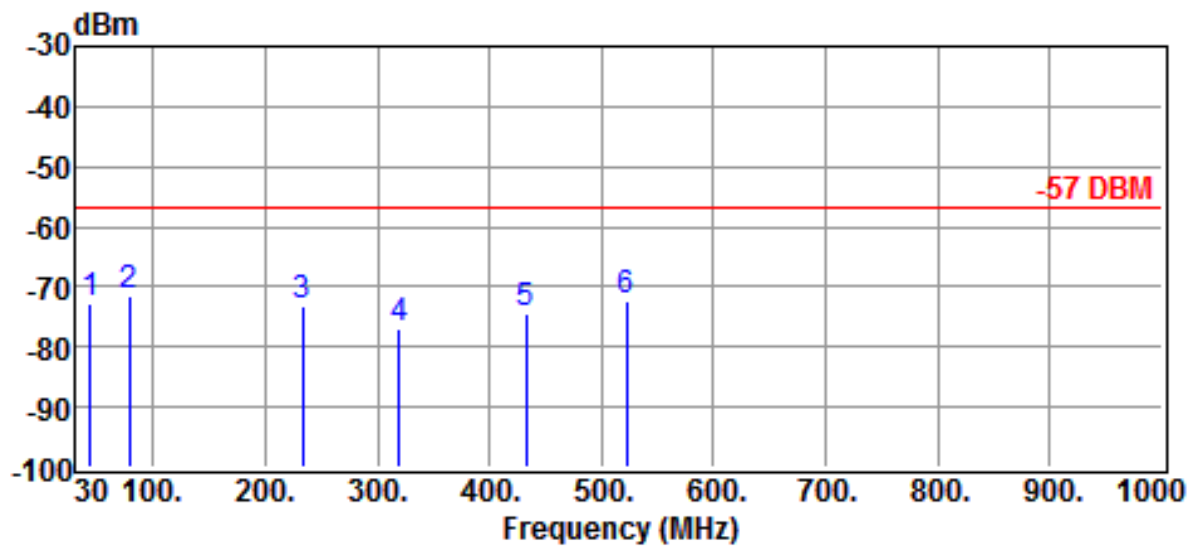


Site	:chamber#2	Date	:2017-05-10
Limit	: -57 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX88
Power Rating	:AC 110V60Hz	Temp.	:24 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:RX		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
32.9100	31.88	-105.67	-73.79	-57.00	-16.79	Peak
156.1000	30.60	-109.73	-79.13	-57.00	-22.13	Peak
233.7000	45.30	-109.28	-63.98	-57.00	-6.98	Peak
429.6400	29.48	-103.27	-73.79	-57.00	-16.79	Peak
550.8900	37.56	-101.58	-64.02	-57.00	-7.02	Peak
642.0700	30.76	-100.14	-69.38	-57.00	-12.38	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.



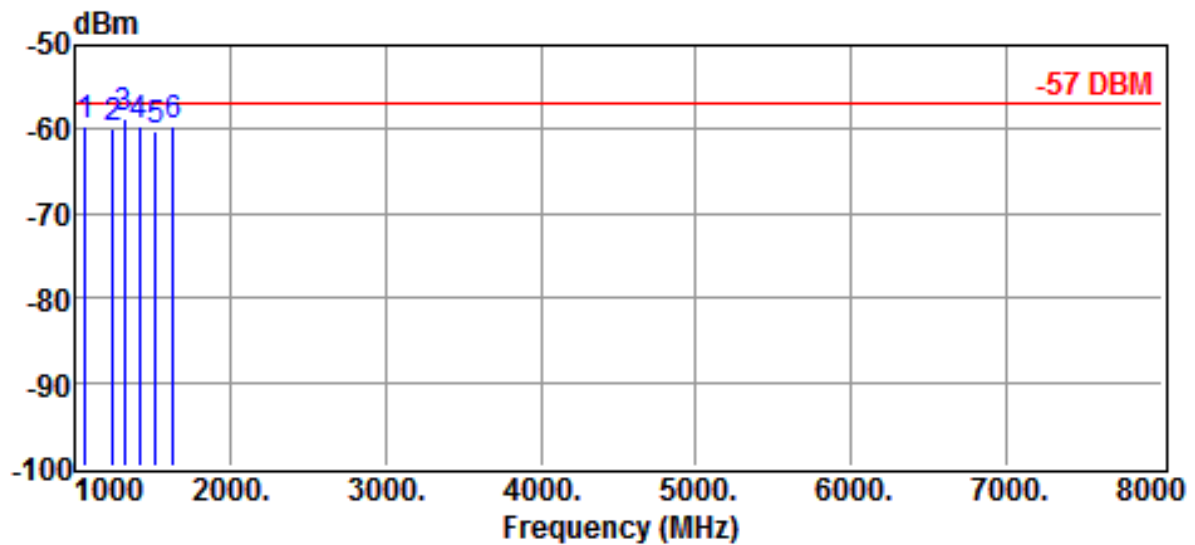
Site	:chamber#2	Date	:2017-05-10
Limit	: -57 DBM	Ant. Pol.	: VERTICAL
EUT	: Wireless Microphone System	Model	: SVX88
Power Rating	: AC 110V60Hz	Temp.	: 24 °C
Engineer	: Brian Huang	Humi.	: 52 %
Test Mode	: RX		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
44.5500	36.27	-109.06	-72.79	-57.00	-15.79	Peak
78.5000	43.50	-114.94	-71.44	-57.00	-14.44	Peak
233.7000	36.02	-109.28	-73.26	-57.00	-16.26	Peak
319.0600	28.16	-105.13	-76.97	-57.00	-19.97	Peak
432.5500	29.00	-103.25	-74.25	-57.00	-17.25	Peak
522.7600	29.75	-101.91	-72.16	-57.00	-15.16	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 99.9 (d=3m
Conversion Factor incld ground plane reflection) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit - Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

b. 1GHz 以上

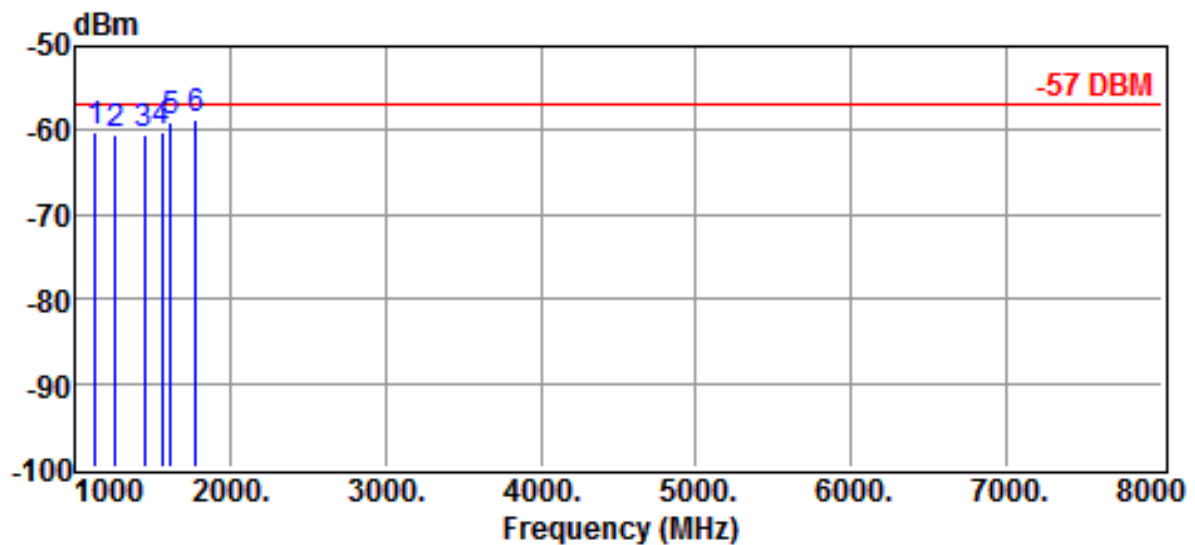


Site	:chamber#2	Date	:2017-05-10
Limit	: -57 DBM	Ant. Pol.	:HORIZONTAL
EUT	:Wireless Microphone System	Model	:SVX88
Power Rating	:AC 110V60Hz	Temp.	:24 °C
Engineer	:Brian Huang	Humi.	:52 %
Test Mode	:RX		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1070.0000	48.75	-108.38	-59.63	-57.00	-2.63	Peak
1245.0000	47.91	-107.87	-59.96	-57.00	-2.96	Peak
1322.0000	48.84	-107.64	-58.80	-57.00	-1.80	Peak
1413.0000	47.74	-107.43	-59.69	-57.00	-2.69	Peak
1525.0000	46.75	-106.92	-60.17	-57.00	-3.17	Peak
1637.0000	46.72	-106.26	-59.54	-57.00	-2.54	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.



Site	:chamber#2	Date	:2017-05-10
Limit	: -57 DBM	Ant. Pol.	: VERTICAL
EUT	: Wireless Microphone System	Model	: SVX88
Power Rating	: AC 110V60Hz	Temp.	: 24 °C
Engineer	: Brian Huang	Humi.	: 52 %
Test Mode	: RX		

Freq MHz	Reading dBμV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1133.0000	48.01	-108.23	-60.22	-57.00	-3.22	Peak
1266.0000	47.35	-107.85	-60.50	-57.00	-3.50	Peak
1448.0000	46.90	-107.29	-60.39	-57.00	-3.39	Peak
1560.0000	46.62	-106.72	-60.10	-57.00	-3.10	Peak
1616.0000	47.27	-106.39	-59.12	-57.00	-2.12	Peak
1777.0000	46.76	-105.30	-58.54	-57.00	-1.54	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any) - 95.2 (d=3m Conversion Factor) - 2.15dB (EIRP to ERP conversion factor)
3. The margin value=Limit – Result
4. Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.

4.5 測試配置

圖 1：量測頻率低於1GHz之測試配置

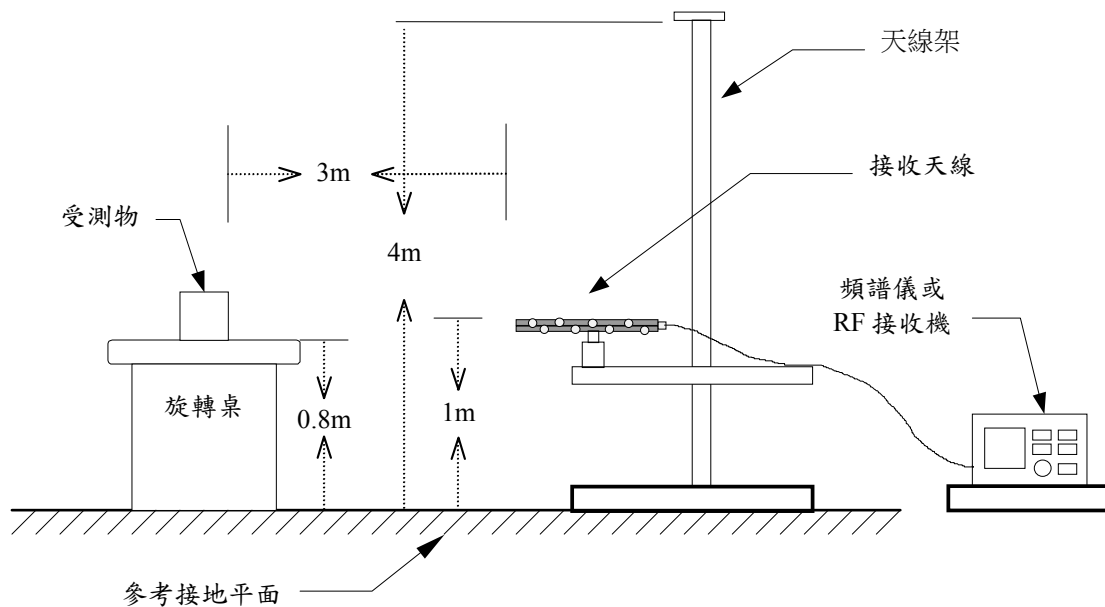
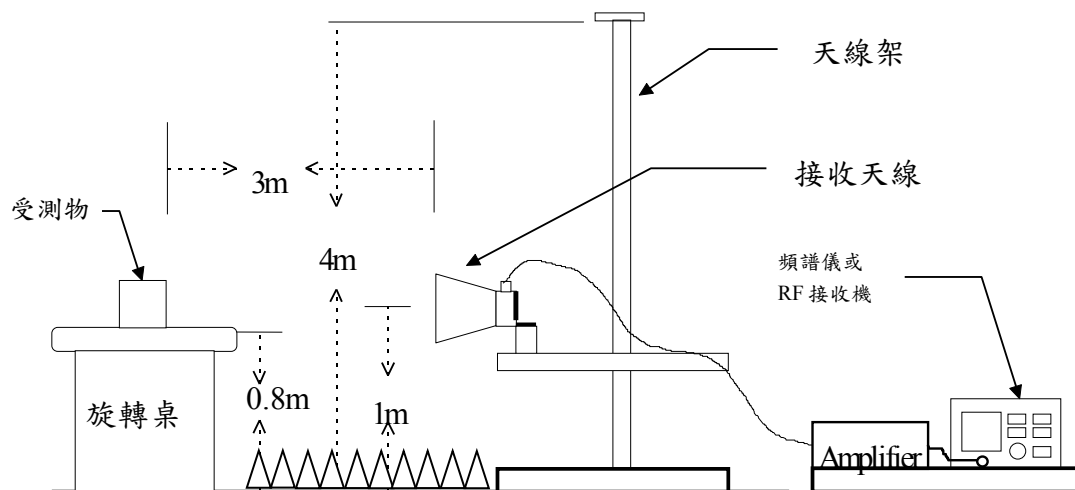


圖2：量測頻率高於1GHz之測試配置



4.6 配置照片

4.6.1 發射機

1G以下



1G以上

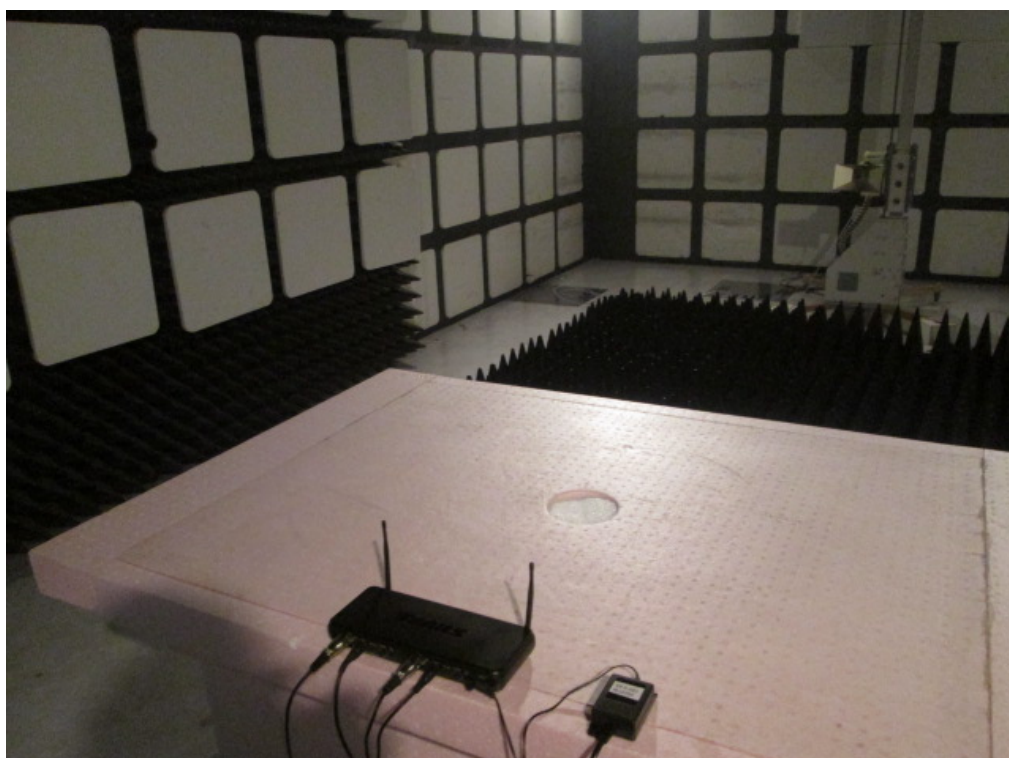
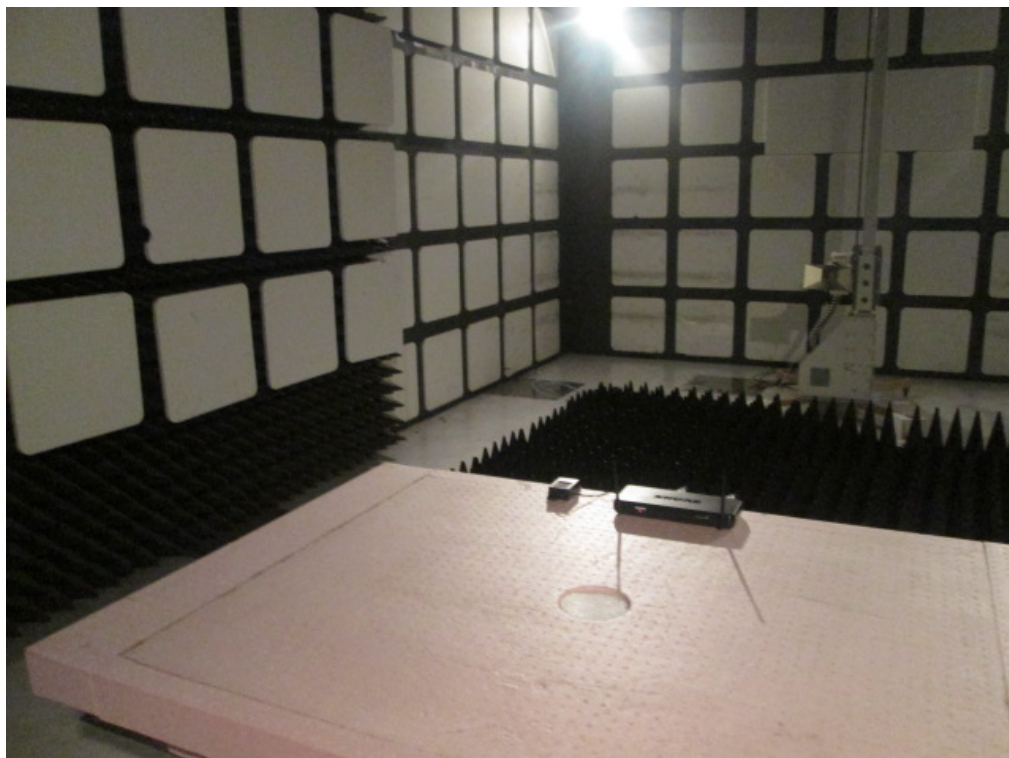


4.6.2 接收機

1G以下



1G以上



5 電源線傳導干擾之量測

5.1 適用標準

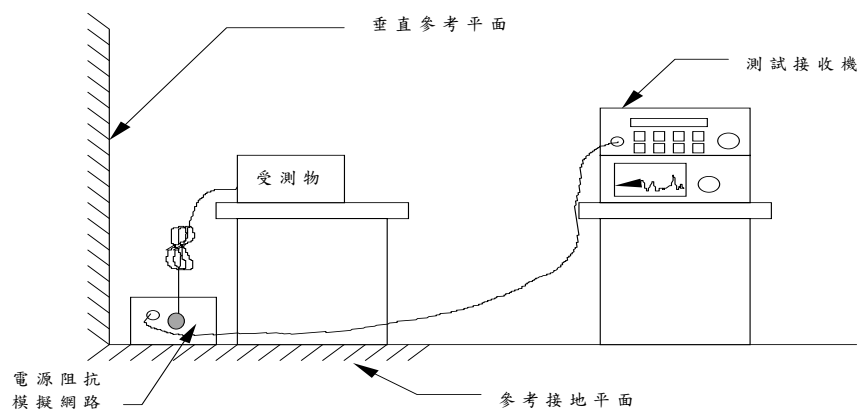
依據低功率射頻電機技術規範2.3節之要求。

5.2 測試方法

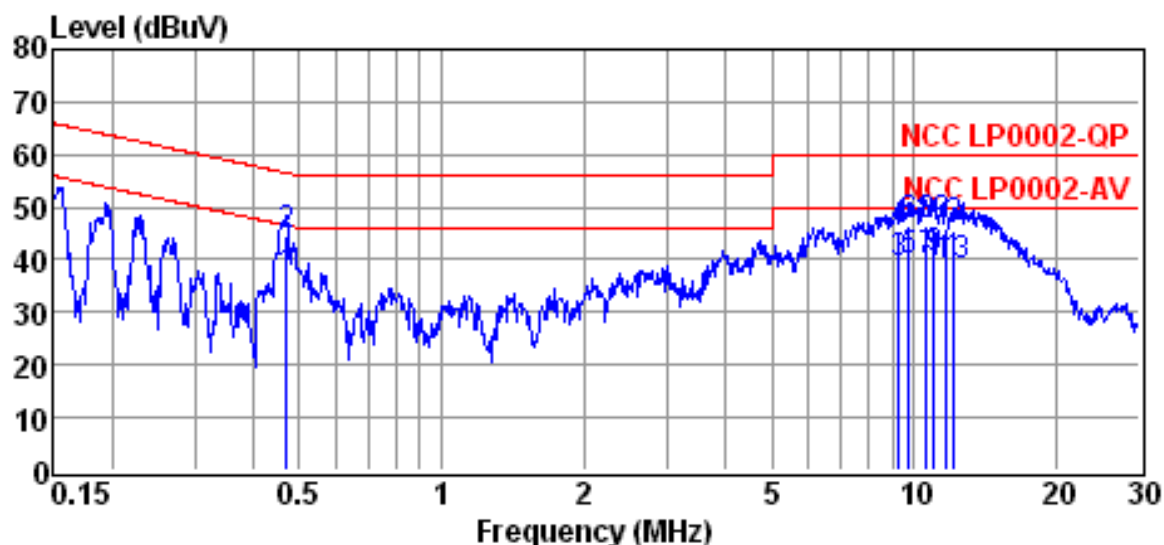
將待測物置於0.8米高的非金屬桌面，使其在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由 0.15MHz 至 30MHz 之間之電源線傳導放射強度。

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

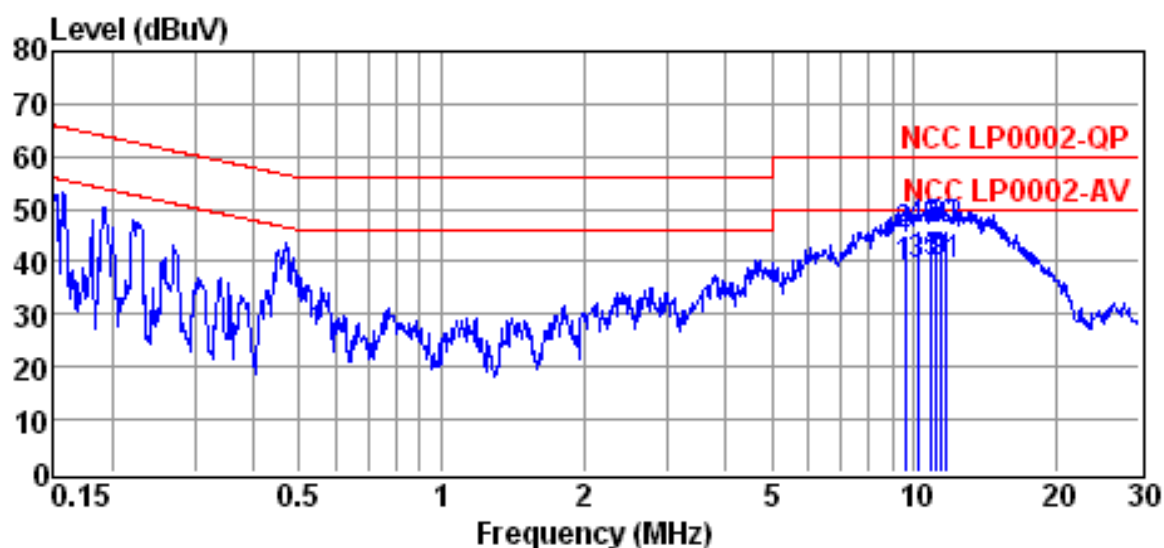


Site	: conducted #1	Date	: 05-04-2017
Condition	: NCC LP0002-QP	LISN	: NEUTRAL
Tem / Hum	: 22 °C / 56%	Test Mode	: Operation Mode
EUT	: Wireless Microphone System	Power Rating	: AC 110V60Hz
Memo	:	Memo	:

Freq (MHz)	Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Remark
0.4686	26.38	10.19	36.57	46.54	-9.97	Average
0.4686	34.50	10.19	44.69	56.54	-11.85	QP
9.3020	28.51	10.58	39.09	50.00	-10.91	Average
9.3020	35.04	10.58	45.62	60.00	-14.38	QP
9.7570	29.13	10.59	39.72	50.00	-10.28	Average
9.7570	35.94	10.59	46.53	60.00	-13.47	QP
10.6200	29.32	10.65	39.97	50.00	-10.03	Average
10.6200	35.64	10.65	46.29	60.00	-13.71	QP
11.0210	29.40	10.68	40.08	50.00	-9.92	Average
11.0210	35.63	10.68	46.31	60.00	-13.69	QP
11.6830	28.66	10.73	39.39	50.00	-10.61	Average
11.6830	35.12	10.73	45.85	60.00	-14.15	QP
12.1240	28.15	10.75	38.90	50.00	-11.10	Average
12.1240	34.43	10.75	45.18	60.00	-14.82	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss



Site	: conducted #1	Date	: 05-04-2017
Condition	: NCC LP0002-QP	LISN	: LINE
Tem / Hum	: 22 °C / 56%	Test Mode	: Operation Mode
EUT	: Wireless Microphone System	Power Rating	: AC 110V60Hz
Memo	:	Memo	:

Freq (MHz)	Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Remark
9.6030	28.20	10.63	38.83	50.00	-11.17	Average
9.6030	34.39	10.63	45.02	60.00	-14.98	QP
10.1790	28.81	10.65	39.46	50.00	-10.54	Average
10.1790	35.22	10.65	45.87	60.00	-14.13	QP
10.9050	29.19	10.71	39.90	50.00	-10.10	Average
10.9050	35.44	10.71	46.15	60.00	-13.85	QP
11.1390	29.03	10.73	39.76	50.00	-10.24	Average
11.1390	35.42	10.73	46.15	60.00	-13.85	QP
11.3770	28.92	10.75	39.67	50.00	-10.33	Average
11.3770	35.07	10.75	45.82	60.00	-14.18	QP
11.7450	28.74	10.78	39.52	50.00	-10.48	Average
11.7450	35.06	10.78	45.84	60.00	-14.16	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

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：

$$\text{饋線損失} + \text{電源阻抗模擬網路損失}$$

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
Test Receiver	Rohde & Schwarz	ESCI	2016/12/05	2017/12/05
LISN	Rohde & Schwarz	ESH2-Z5	2017/04/01	2018/03/31
LISN	Shibasoku	563	2016/05/16	2017/05/15
Monitor	IBM	E54	N.C.R.	N.C.R.
Printer	HP	LaserJet 1000	N.C.R.	N.C.R.
Shielded Room	Riken	---	N.C.R.	N.C.R.
Computer	Acer	Veriton	N.C.R.	N.C.R.

5.7 傳導量測之配置照片



6 天線之要求

6.1 適用標準

4.6.8 傳輸發射訊號之天線不可與機體分離。

6.2 天線樣式

本產品發射天線為固定式天線。

7 必需頻帶寬度之要求

7.1 適用標準

依據低功率射頻電機技術規範4.6.2節之要求。

4.6.2.1 操作頻率(f_c)小於1 GHz 之系統，其必需頻帶寬度應小於或等於200 kHz，並符合下列二表之遮罩標準。

4.6.2.2 操作頻率(f_c)大於1 GHz 之系統，其必需頻帶寬度應小於或等於600 kHz，並符合下表之遮罩標準。

7.2 測試儀器

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	ESU 40	2016/11/10	2017/11/09

7.3 測試結果

測試日期 : May 10, 2017 環境溫度 : 24 °C 環境溼度 : 53 %
測試結果 : 合格 測試者 : 黃義傑

518.825 MHz：符合規定

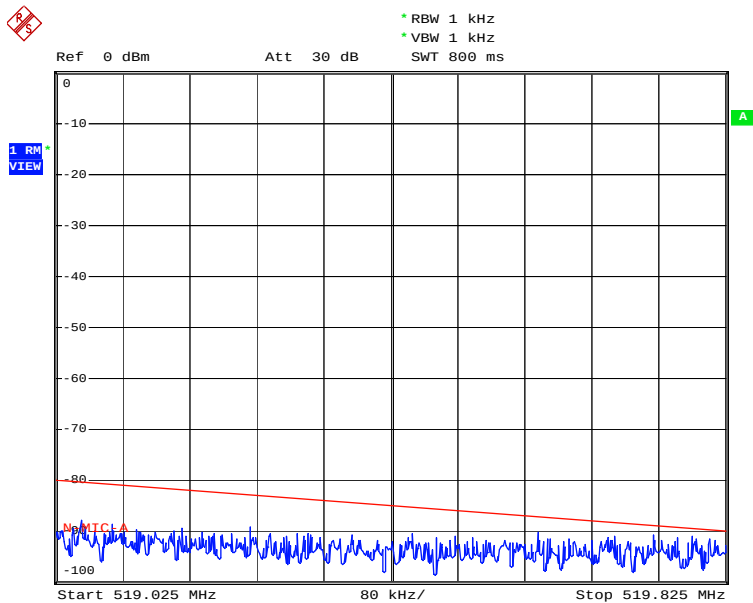
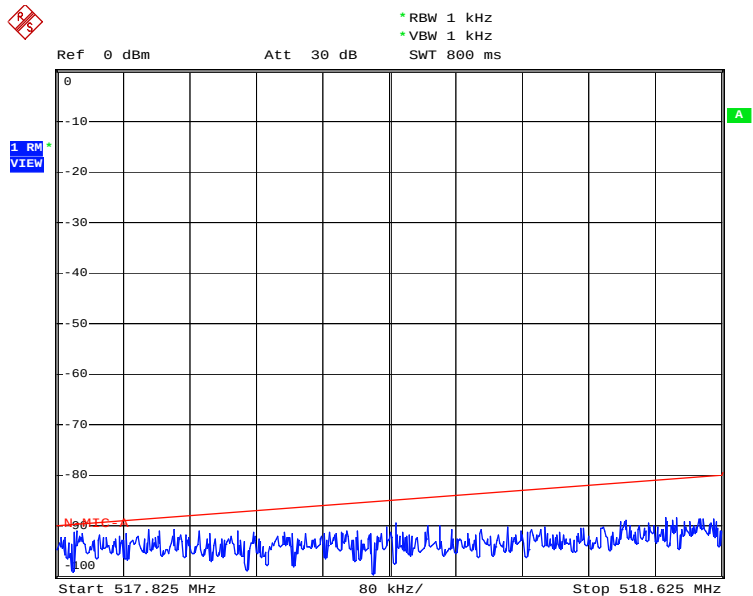
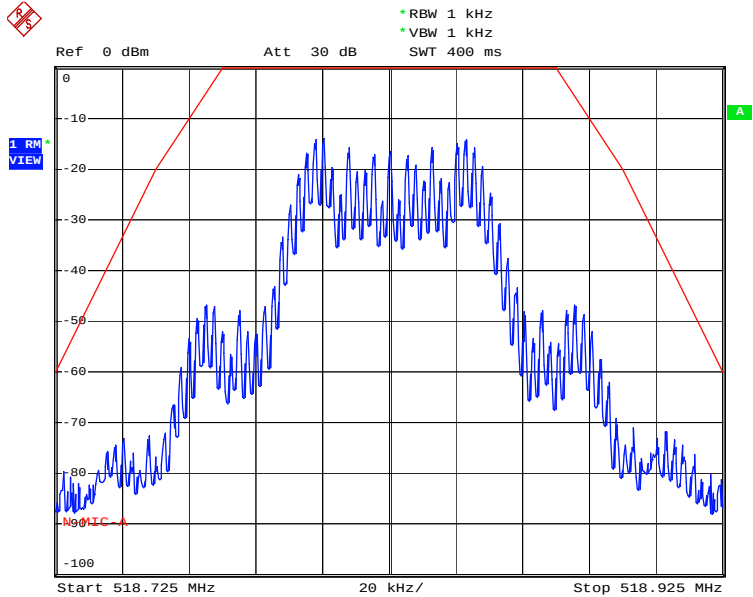
521.850 MHz：符合規定

528.850 MHz：符合規定

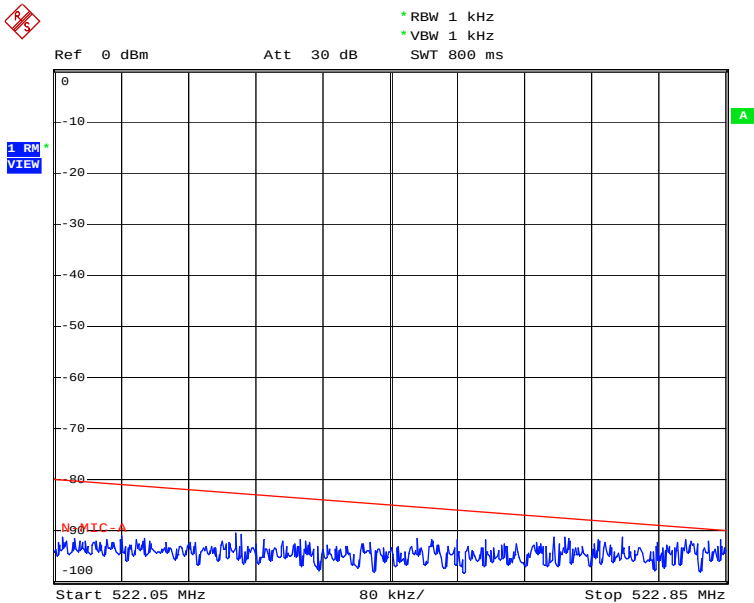
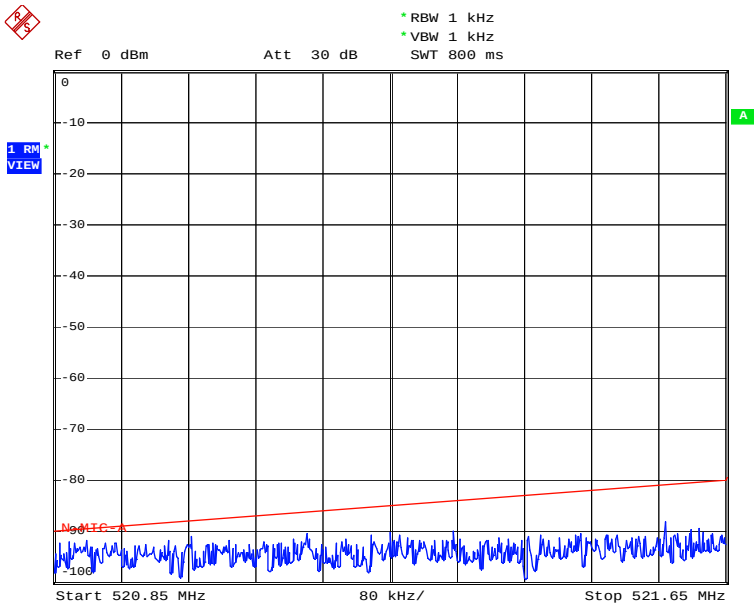
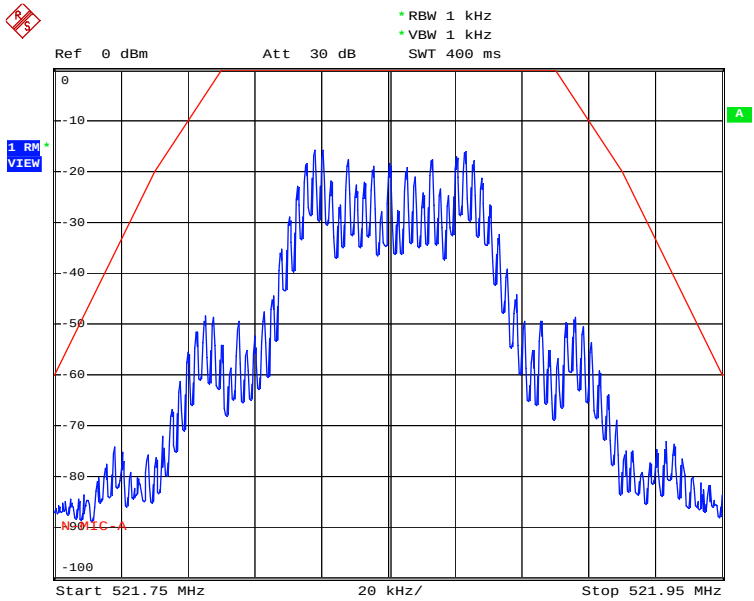
註：

1. 本實驗室頻帶寬度檢驗之擴充不確定度 $\pm 500\text{Hz}$ 。
2. 繪圖資料請參考下頁。

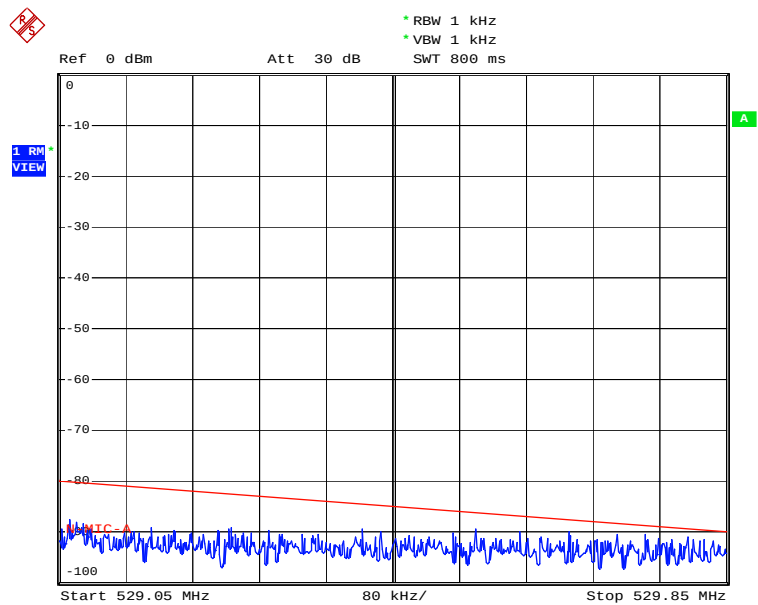
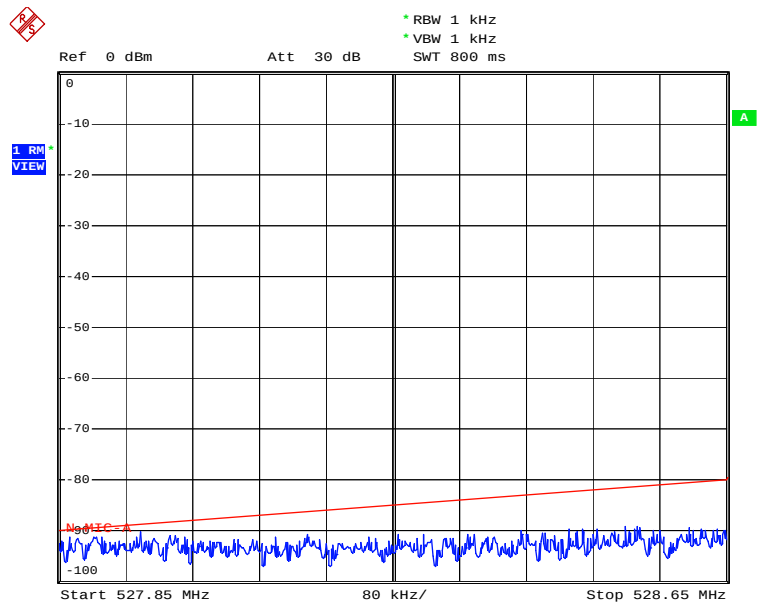
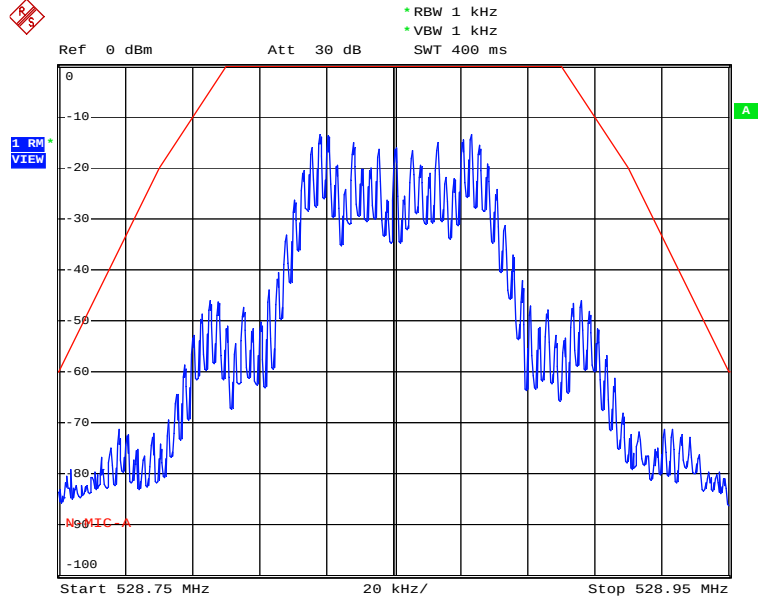
Frequency: 518.825MHz



Frequency: 521.850MHz



Frequency: 528.850MHz



8 頻移量之要求

8.1 適用標準

4.6.4 頻移量 (frequency deviation) : 小於或等於 ± 75 kHz, 僅適用類比系統。

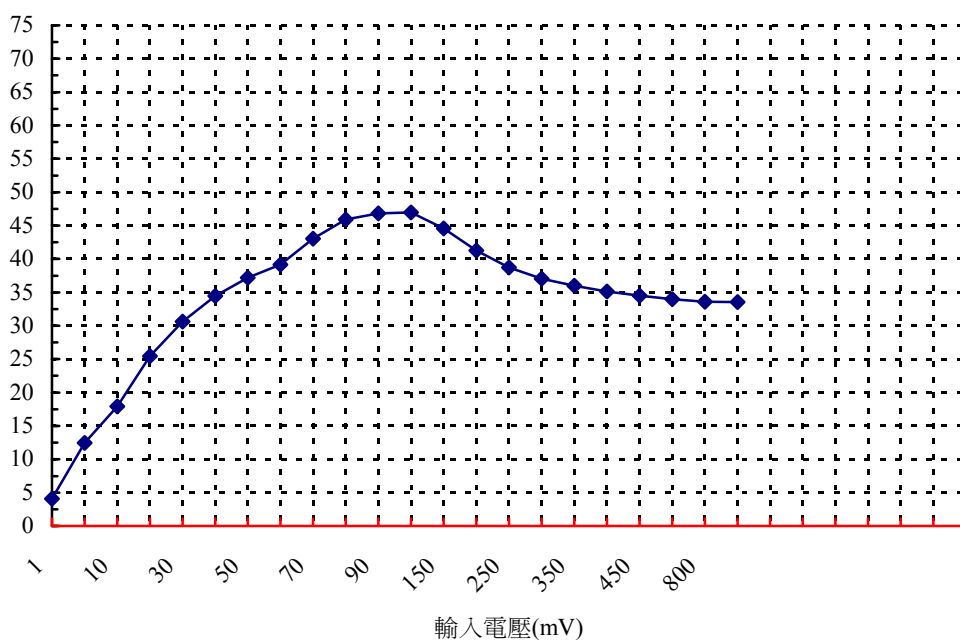
8.2 測試儀器

儀器名稱	製造者	型號	本次校驗日期	下次校驗日期
Radio Communications Test Set	IFR	2945B	2017/01/09	2018/01/08
Spectrum Analyzer	Rohde & Schwarz	FSP 40	2016/10/03	2017/10/02

8.3 測試結果

測試日期 : May 10, 2017 環境溫度 : 24 °C 環境溼度 : 53 %
 測試結果 : 合格 測試者 : 黃義傑

Frequency: 518.825MHz



註：本實驗室尖峰頻率檢驗之擴充不確定度 ± 10 Hz。

9 頻率穩定度

9.1 適用標準

依據低功率射頻電機技術規範4.6.5節之要求。

4.6.5.1 操作頻率小於1 GHz 之系統:20 ppm

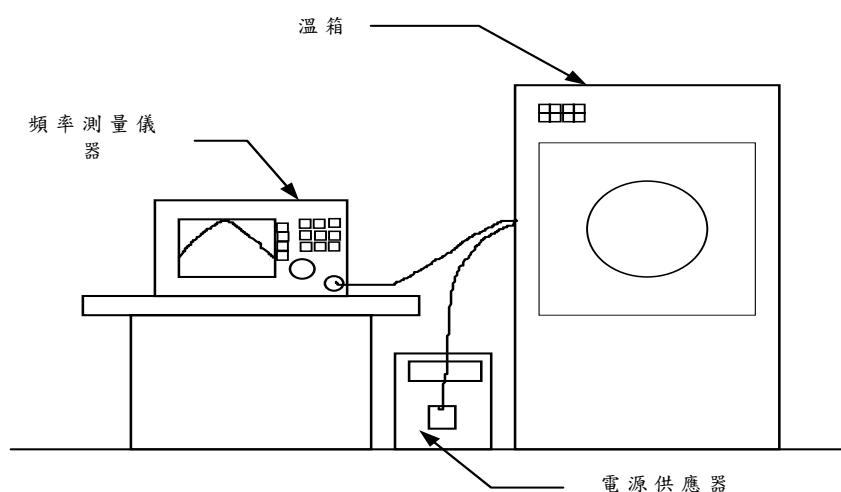
4.6.5.2 操作頻率大於1 GHz 之系統:15 ppm

9.2 測量方法

將待測物置於溫度櫃中，其輸出信號線接至溫度櫃外，設定溫度櫃溫度從-20℃到50℃變化，每一溫度間距為10℃。(參考頻率即發射機置於室溫20℃，電壓供應為其額定值，所測得之頻率。)

9.3 測試配置

圖5. 頻率穩定度之測量配置圖



9.4 測試儀器

儀器名稱	製造者	型號	本次校驗日期	下次校驗日期
Spectrum Analyzer	Rohde & Schwarz	FSP 40	2016/10/03	2017/10/02
Temperature Chamber	Mallier	MCT-2X-M	2016/12/15	2017/12/14

9.5 測試結果

測試日期 : May 10, 2017 環境溫度 : 24 °C 環境溼度 : 53 %
 測試結果 : 合格 測試者 : 黃義傑

Frequency: 518.825 MHz

參考頻率 : 518.825 MHz 限制值 : $\pm 20\text{ppm}$ ($\pm 0.002\%$)							
環境溫度 (°C)	供應電源 (Vdc)	頻率隨時間之讀值(MHz)與偏移率(%)					
		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	3.0 Vdc	518.8202	-0.00093	518.8202	-0.00093	518.8201	-0.00094
40		518.8216	-0.00066	518.8216	-0.00066	518.8216	-0.00066
30		518.8236	-0.00027	518.8236	-0.00027	518.8236	-0.00027
20		518.8244	-0.00012	518.8243	-0.00013	518.8243	-0.00013
10		518.8252	0.00004	518.8251	0.00002	518.8251	0.00002
0		518.8261	0.00021	518.8261	0.00021	518.8261	0.00021
-10		518.8274	0.00046	518.8274	0.00046	518.8274	0.00046
-20		518.8285	0.00067	518.8285	0.00067	518.8285	0.00067

參考頻率 : 518.825 MHz 限制值 : $\pm 20\text{ppm}$ ($\pm 0.002\%$)							
環境溫度 (°C)	供應電源 (Vdc)	頻率隨時間之讀值(MHz)與偏移率(%)					
		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
20	3.45	518.8244	-0.00012	518.8244	-0.00012	518.8244	-0.00012
	3.0	518.8244	-0.00012	518.8243	-0.00013	518.8243	-0.00013
	2.55	518.8244	-0.00012	518.8243	-0.00013	518.8243	-0.00013

註：本實驗室頻率容許差度檢驗之擴充不確定度 $\pm 100\text{Hz}$ 。

廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機外觀照



發射機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機外觀照



發射機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機外觀照



發射機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機外觀照



發射機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機外觀照



發射機外觀照



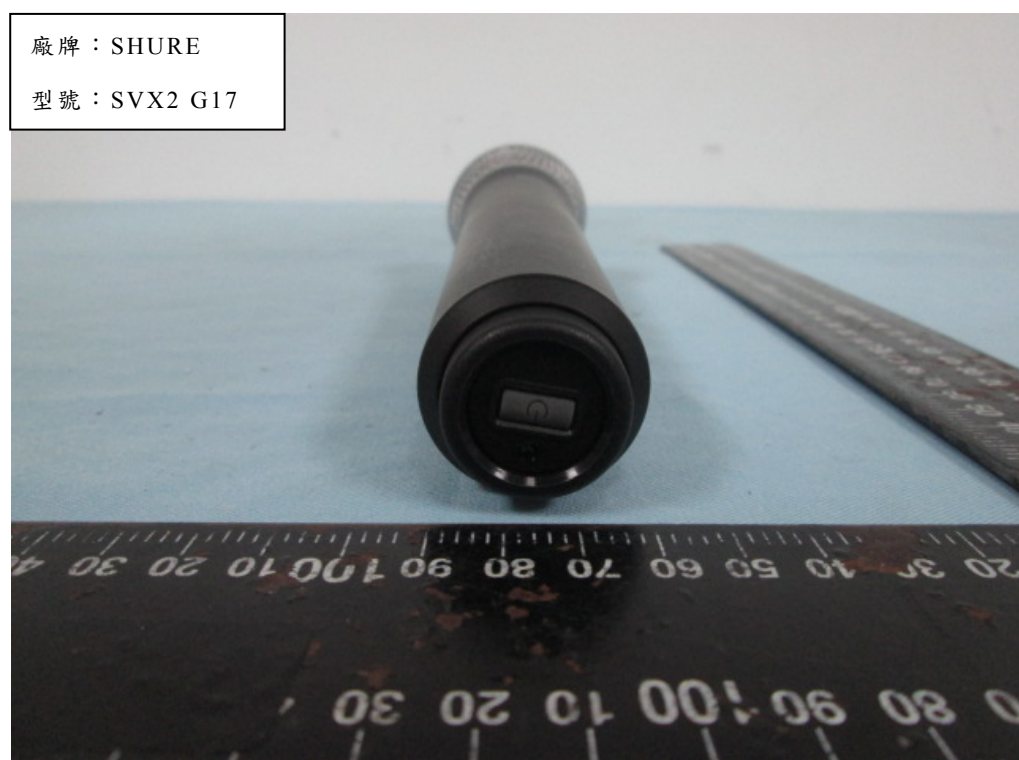
廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機外觀照



發射機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

合格標籤位置照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機內部照



發射機內部照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

發射機內部照



發射機內部照



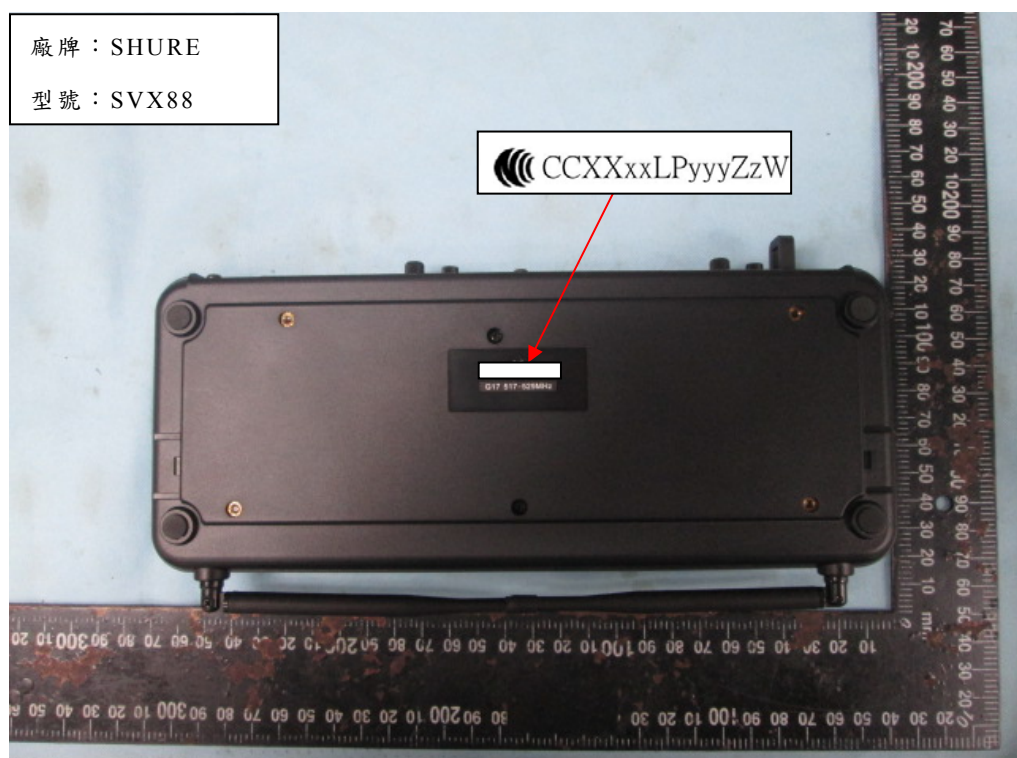
廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

接收機外觀照



接收機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

接收機外觀照



接收機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

接收機外觀照



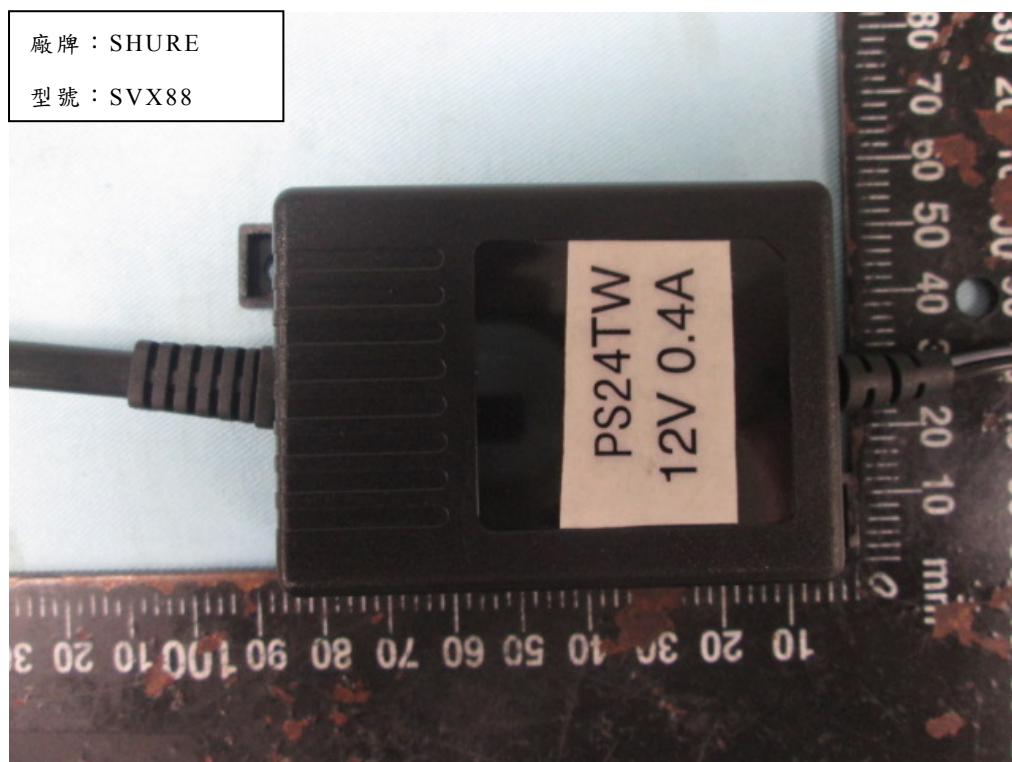
接收機外觀照



廠牌：SHURE

型號：SVX2 G17 (Handheld Transmitter), SVX88 (Receiver)

接收機之電源供應器照



接收機之電源供應器照

