



低功率射頻電機測試報告

Samsung SDS Co., Ltd.

器材名稱: Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)

廠牌: SAMSUNG

型號: SHP-DP728

申請廠商 : Samsung SDS Co., Ltd.
125, Olympic-ro 35-gil, Songpa-gu, Seoul,
Korea

測試實驗室 : 敦吉檢測科技股份有限公司電磁相容部
新北市林口區頂福里 53-11 號
電話: (02) 2609-9301~2, 2609-2133~5
傳真: (02) 2609-9303

受理日期 : 2018 年 02 月 07 日
案件編號 : C1M1802108
報告號碼 : EM-NC180025
測試日期 : 2018 年 02 月 12 日 ~ 03 月 05 日

目錄	頁次
測試報告記錄.....	1
1 一般資料.....	6
1.1 產品描述.....	6
1.2 產品特性.....	6
1.3 測試方法之依據.....	6
2 量測儀器.....	7
2.1 場強輻射量測儀器.....	7
2.2 RF Conducted 量測儀器.....	7
3 受測裝置之系統說明.....	8
3.1 申請之受測裝置.....	8
3.2 測試連接之週邊裝置.....	8
3.3 測試配置.....	9
4 電源線傳導干擾之量測.....	11
4.1 適用標準.....	11
4.2 電源線傳導干擾之量測結果.....	11
5 場強輻射之量測.....	12
5.1 適用標準.....	12
5.2 量測方法.....	13
5.3 量測時受測物之工作狀況.....	14
5.4 量測之不確定度.....	14
5.5 場強輻射之量測結果.....	14
6 發射頻寬之量測.....	15
6.1 適用標準.....	15
6.2 量測方法.....	15
6.3 量測時受測物之工作狀況.....	15
6.4 量測之不確定度.....	15
6.5 發射頻寬之量測結果.....	15
7 峰值輸出功率之量測.....	16
7.1 適用標準.....	16
7.2 量測方法.....	16
7.3 量測時受測物之工作狀況.....	16
7.4 量測之不確定度.....	16
7.5 峰值輸出功率之量測結果.....	16
8 頻帶邊緣之 RF 傳導發射之量測.....	17
8.1 適用標準.....	17
8.2 量測方法.....	17
8.3 量測時受測物之工作狀況.....	17
8.4 量測之不確定度.....	17
8.5 頻帶邊緣之 RF 傳導發射之量測結果.....	17
9 混附發射之 RF 傳導發射之量測.....	18
9.1 適用標準.....	18
9.2 量測方法.....	18
9.3 量測時受測物之工作狀況.....	18

9.4 量測之不確定度.....	18
9.5 混附發射之 RF 傳導發射之量測結果.....	18
10 功率密度之量測.....	19
10.1 適用標準.....	19
10.2 量測方法.....	19
10.3 量測時受測物之工作狀況.....	19
10.4 量測之不確定度.....	19
10.5 功率密度之量測結果.....	19

附錄一 受測裝置之測試結果

附錄二 輻射干擾場強量測之掃頻圖 (頻率範圍 30MHz~25000MHz)

附錄三 受測裝置之測試照片

附錄四 受測裝置之產品照片

低功率射頻電機測試報告

受理日期 : 2018年02月07日
 完成日期 : 2018年03月05日
 報告號碼 : EM-NC180025
 實驗室名稱 : 敦吉檢測科技股份有限公司電磁相容部
 實驗室地址 : 新北市林口區頂福里53-11號
 實驗室電話 : (02) 2609-9301, (02) 2609-2133
 認可編號及範圍 : TAF 1724 (9KHz ~ 40GHz)
 申請廠商 : Samsung SDS Co., Ltd.
 製造廠商 : Samsung SDS Co., Ltd.
 器材名稱 : Digital Doorlock (內含藍芽、RFID及Zigbee模組)
 廠牌 : SAMSUNG
 型號 : SHP-DP728
 場強或發射功率 :



無線技術	場強 或 發射功率
RFID	49.39 dBμV/m @3m
	9.39 dBμV/m @30m
Bluetooth Low Energy (BLE)	-1.983dBm
IEEE 802.15.4 Zigbee (Zigbee)	6.443dBm

工作頻率/頻道數及調變方式 :

無線技術	工作頻率(MHz)	頻道數	調變方式
RFID	13.56	1	ASK
Bluetooth Low Energy (BLE)	2402 - 2480	40	GFSK
IEEE 802.15.4 Zigbee (Zigbee)	2405 - 2480	16	DSSS (O-QPSK)

天線規格 : 此裝置使用固定式天線，其天線資料如下:

無線技術	天線類型	廠牌	型號	頻率	天線增益
RFID	Loop Antenna	---	---	---	---
BLE	Chip Antenna	partron	ODBTP3015	2400-2485MHz	-3.58dBi
Zigbee	Wire Antenna	Lisotek	---	2400-2480MHz	2.0dBi

註:天線已符合NCC低功率射頻電機技術規範2.2.節之規定

- 備註 :
1. 本測試報告僅對受測之樣品負責。
 2. 非經本公司同意，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 2018 年 01 月 10 日。
 4. 此份報告是針對 Zigbee 及 BLE 功能進行製作，
至於 RFID 功能報告於報告號碼(EM-NC180026)。

依低功率射頻電機技術規範 3.10.1 節，工作頻率為 2400-2483.5MHz，採用數位調變技術之發射器具。

項次	測試項目	適用規範章節	測試結果	量測設備	判定
1	電源傳導干擾電壓	低功率射頻電機技術規範 2.3 節	請參閱 4.2 節	無	不適用
2	場強輻射	低功率射頻電機技術規範 3.10.1.5 節、2.8 節	請參閱 5.5 節	請參閱 2.1 節	合格
3	發射頻寬	低功率射頻電機技術規範 3.10.1.6 節(2)(A)	請參閱 6.5 節	請參閱 2.2 節	合格
4	峰值輸出功率	低功率射頻電機技術規範 3.10.1.2 節(1)(C)	請參閱 7.5 節	請參閱 2.2 節	合格
5	頻帶邊緣之 RF 傳導發射	低功率射頻電機技術規範 3.10.1.5 節	請參閱 8.5 節	請參閱 2.2 節	合格
6	混附發射之 RF 傳導發射	低功率射頻電機技術規範 3.10.1.5 節(1)、2.8 節	請參閱 9.5 節	請參閱 2.2 節	合格
7	功率密度	低功率射頻電機技術規範 3.10.1.6 節(2)(B)	請參閱 10.5 節	請參閱 2.2 節	合格

單位主管：

劉李煌

(劉李煌/副總經理)

測試員：

薛舜誠

(薛舜誠/課長)

1 一般資料

1.1 產品描述

- a) 產品型態 : Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)
- b) 廠 牌 : SAMSUNG
- c) 產品型號 : SHP-DP728
- d) 供應電源 : DC 6V
- e) 測試電源 : DC 6V (經電池供電)

1.2 產品特性

- 1.2.1. 此裝置系統為 Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)，具 IEEE 802.15.4 Zigbee、Bluetooth Low Energy 及 RFID 功能。
- 1.2.2. Bluetooth Low Energy (BLE)工作頻率於 2402~2480MHz 共分 40 個頻道。
- 1.2.3. IEEE 802.15.4 Zigbee 工作頻率於 2405~2480MHz 共分 16 個頻道。
- 1.2.4. RFID 模組之無線裝置。其工作頻率為 13.56MHz。

1.3 測試方法之依據

本測試報告之所有項目皆依據 NCC 低功率射頻電機技術規範和一致性會議執行檢驗，未規範者依國家標準辦理，無國家標準可適用者，依 IEEE ANSI、歐盟 ETSI EN 與美國 EIA、FCC 47 CFR PART 2、KDB 及 ARIB STD-T67 等有關檢驗之規定。

2 量測儀器

2.1 場強輻射量測儀器

2.1.1. 頻率範圍 30MHz~1000MHz 量測使用儀器 (No. 1 3m Chamber)

儀器名稱	製造者	型號	序號	校正日期	校正周期
頻譜分析儀	Agilent	N9010A-526	MY53400071	2017. 09. 13	1 年
前置放大器	HP	8447D	2944A06305	2018. 02. 14	1 年
廣帶域天線	TESEQ	CBL6112D	33821	2018. 01. 21	1 年
同軸電纜	MIYAZAKI	5D2W	RE-11	2018. 02. 08	1 年
測試軟體	Audix	e3	V.6.110601	N.C.R.	N.C.R.

2.1.2. 頻率範圍 1GHz 以上量測使用儀器 (Fully 3m Chamber)

儀器名稱	製造者	型號	序號	校正日期	校正周期
頻譜分析儀	Agilent	N9010A-526	MY52220368	2017. 11. 18	1 年
前置放大器	HP	8449B	3008A02678	2017. 03. 06	1 年
2.4GHz陷波濾波器	K&L	7NSL10-2441.5 E130.5-00	1	2017. 07. 27	1 年
3GHz陷波濾波器	Microwave	H3G018G1	484798	2017. 08. 24	1 年
喇叭天線	ETS-Lindgren	3117	00135902	2017. 03. 08	1 年
喇叭天線	COM-POWER	AH-840	101092	2017. 05. 04	1 年
RF訊號線	HUBER+ SUHNER	SUCOFLEX 106	54602/6	2018. 02. 14	1 年
測試軟體	Audix	e3	V.6.110601	N.C.R.	N.C.R.

2.1.3. 儀器設定

量測頻率範圍	儀器名稱/使用功能	檢波值	解析頻寬	視訊頻寬	
30至1000MHz	頻譜分析儀	Peak	120kHz	1MHz	
1GHz以上	頻譜分析儀	Peak	1MHz	1MHz	
	頻譜分析儀	Average	1MHz	BLE	2.4kHz
				Zigbee	10Hz

2.2 RF Conducted 量測儀器

儀器名稱	製造者	型號	序號	校正日期	校正周期
頻譜分析儀	Agilent	N9030A-526	MY53310269	2018. 01. 04	1 年

3 受測裝置之系統說明

3.1 申請之受測裝置

裝置名稱	製造商	型 號	說明/纜線
Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)	Samsung SDS Co., Ltd.	SHP-DP728	---

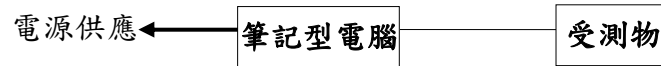
3.2 測試連接之週邊裝置

裝置名稱	廠牌	型 號	說明/纜線
筆記型電腦	acer	MS2362	USB 信號線： 可拆，金屬被覆，2.0 米長，外加 1 個鐵芯 LAN 信號線：(ZigBee 模式使用) 可拆，無金屬被覆，2.0 米長 電源供應器：Chicony, M/N CPA09-A065N1, DC 電源線： 不可拆，無金屬被覆，1.8 米長，外加 1 個鐵芯 AC 電源線： 可拆，無金屬被覆，1.8 米長
治具 (ZigBee模式使用)	N/A	N/A	Bus 信號線：可拆，無金屬被覆，0.3 米長

3.3 測試配置

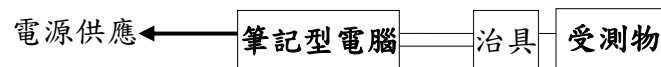
3.3.1. 輻射之測試配置

- 受測物裝置與連接週邊裝置之架構圖
[BLE 模式]



受測物: Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)

[Zigbee 模式]



受測物: Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)

- 量測場地擺設之架構圖

圖 1: 量測場地(No. 1 3m Chamber)量測頻率低於 1GHz 之測試配置

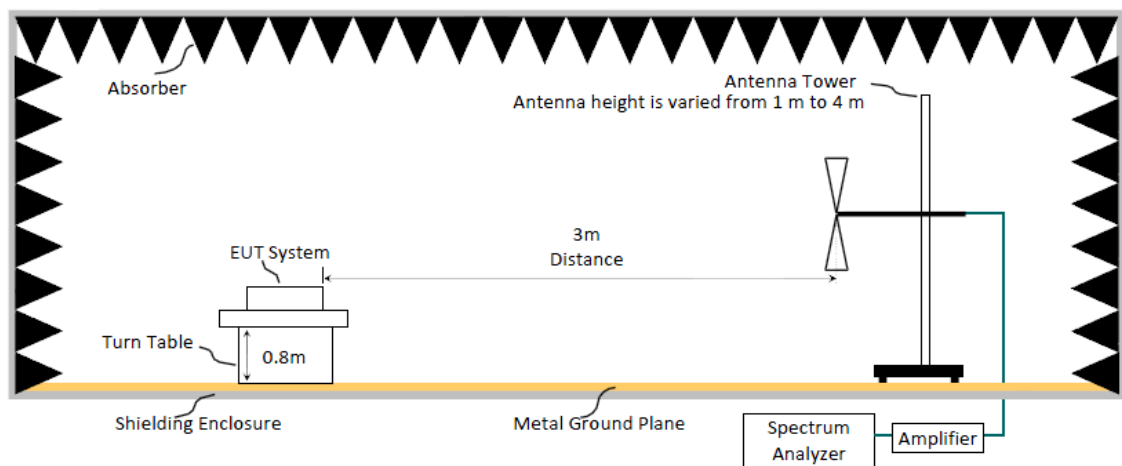
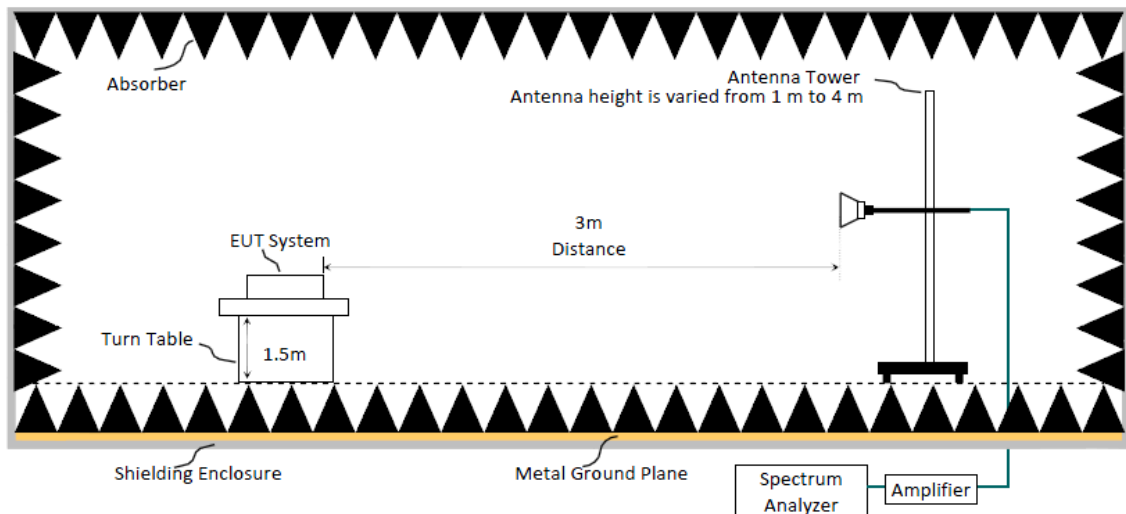
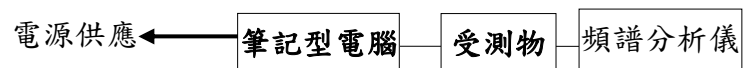


圖 2: 量測場地(Fully 3m Chamber)量測頻率高於 1GHz 之測試配置



3.3.2. RF Conducted 之測試配置



受測物: Digital Doorlock (內含藍芽、RFID 及 Zigbee 模組)

4 電源線傳導干擾之量測

4.1 適用標準

依據 NCC 低功率射頻電機技術規範之 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。

頻率範圍 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

4.2 電源線傳導干擾之量測結果

茲因待測裝置之電源供應為 DC 電池電源，並非市電供電電源，故無需做本章節之電源傳導干擾電壓量測。

5 場強輻射之量測

5.1 適用標準

依據 NCC 低功率射頻電機技術規範 3.10.1.5 節(1)之要求：操作頻帶範圍外之任意 100 kHz 內，發射機所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之 100 kHz 內的射頻功率，其衰減值限制如下：

- (1) 輸出功率以附件二之峰值輸出功率方式測量者，至少須衰減 20 dB，可使用射頻傳導或輻射方式測量。

此外，落於 2.7 禁用頻段之輻射發射，應符合 2.8 之規定。

依據 NCC 低功率射頻電機技術規範之 2.7 節之規定：

任何低功率射頻電機之主波皆不得使用下表所列各頻帶內之頻率。低功率射頻電機落於下表所列頻帶內之混附發射，其電場強度必須符合第 2.8.節的限制規定。

頻率(MHz)	頻率(MHz)	頻率(MHz)
0.090~0.110	240.00~285.00	3332.0~3339.0
0.490~0.510	322.00~335.40	3345.8~3358.0
2.172~2.198	399.90~410.00	3500.0~4400.0
3.013~3.033	485.00~510.00	4500.0~5250.0
4.115~4.198	608.00~614.00	5350.0~5460.0
5.670~5.690	703.00~748.00	7250.0~7750.0
6.200~6.300	758.00~803.00	8025.0~8500.0
8.230~8.400	825.00~915.00	9000.0~9200.0
12.265~12.600	935.00~1240.0	9300.0~9500.0
13.340~13.430	1300.0~1427.0	10600~12700
14.965~15.020	1435.0~1626.5	13250~13400
16.700~16.755	1660.0~1785.0	14470~14500
19.965~20.020	1805.0~1880.0	15350~16200
25.500~25.700	1885.0~1900.0	17700~21400
37.475~38.275	1905.0~1985.0	22010~23120
73.500~75.400	2010.0~2025.0	23600~24000
108.00~138.00	2110.0~2170.0	31200~31800
149.90~150.05	2200.0~2300.0	36430~36500
156.70~156.90	2310.0~2390.0	38600以上
162.01~167.17	2483.5~2900.0	
167.72~173.20	3260.0~3267.0	

依據 NCC 低功率射頻電機技術規範之(2.8)之規定：

低功率射頻電機，除本規範各章節另有放寬規定者外，其電場強度不得超過下表之限值，且其不必要之發射皆不得大於主波發射強度。各頻段重疊處，以較嚴格之限制值為準。

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(含)	300	67.6-20 log f(kHz)	2400/f kHz
0.490(不含) - 1.705(含)	30	87.6-20 log f(kHz)	24000/f kHz
1.705(不含) - 30(不含)	30	29.5	30
30(含) - 88(含)	3	40.0	100
88(不含) - 216(含)	3	43.5	150
216(不含) - 960(含)	3	46.0	200
960(不含)以上	3	54.0	500

5.2 量測方法

- 5.2.1. 輻射干擾場強量測時受測物與電波暗室場地擺設依 3.3.2 圖示。
- 5.2.2. 頻譜分析儀之頻寬設定為 120kHz，接收天線應使用偶極平衡天線或經校正的廣帶域天線如雙錐形天線與對數週期天線。
- 5.2.3. 受測物裝置放置於測試區地面 80 公分(量測頻率低於 1GHz)或 150 公分(量測頻率高於 1GHz)之非金屬桌上且可 360 度旋轉的轉盤上，而後調整轉盤角度並從接收機上量得受測物之最大場強。
- 5.2.4. 接收天線距受測物 3 公尺，操作天線升降機使接收天線在離地 1 公尺與 4 公尺間並從接收器量得受測物之最大場強。
- 5.2.5. 在測試頻率範圍內，重覆 5.2.3 及 5.2.4 之步驟，以量得受測物每一頻率點之輻射干擾最大場強。
- 5.2.6. 接收天線的水平極化偏波與垂直極化偏波需分別依上述程序進行量測。
- 5.2.7. 量測頻率低於 1GHz: 場強度之計算，公式如下：
場強結果值(Emission Level)=接收機讀值(Meter Reading)+ 校正因子。

其中校正因子為：

天線因數(Antenna Factor)+電纜損失(Cable Loss)+濾波器損失(若有使用)-放大器增益(若有使用)。

*若峰值已低於準峰值限制值，故不另檢附準峰值之讀值。

頻率範圍量測至主波發射的 10 倍諧波，其他未列在報告上乃因訊號太小無法量測。

5.2.8. 量測頻率高於 1GHz: 場強度之計算，公式如下：

■ 場強結果值(Emission Level)= 接收機讀值(Meter Reading)+ 校正因子。

其中校正因子為：

天線因數(Antenna Factor)+電纜損失(Cable Loss)+濾波器損失(若有使用)-放大器增益(若有使用)。

*若峰值之讀值小於平均值之限制值，故不再對平均值進行讀值。

■ 場強結果值(Average Emission Level)=
峰值場強結果值(Peak Emission Level)+DCCF。

Duty Cycle Correction Factor (DCCF)= $20\log(TX_{on}/TX_{on+off})$ 。

“TX_{on+off}” means the period of the pulse train or 100ms if the pulse train length is greater than 100ms

頻率範圍量測至主波發射的 10 倍諧波，其他未列在報告上乃因訊號太小無法量測。

5.3 量測時受測物之工作狀況

[BLE 模式]

由筆記型電腦執行測試程式“nRFgo Studio”來設定受測物，使受測物進行發射及接收動作量測，動作持續不斷直到測試結束。

[Zigbee 模式]

由筆記型電腦執行測試程式“Ember Desktop”來設定受測物，使受測物進行發射及接收動作量測，動作持續不斷直到測試結束。

5.4 量測之不確定度

測 試 項 目	頻率範圍	不確定度
輻射干擾場強量測 (測試距離: 3m)	30MHz~1000MHz	±4.68dB
	1GHz 以上	±5.98dB

5.5 場強輻射之量測結果

量測結果皆合乎標準規定，請參見附錄一。

6 發射頻寬之量測

6.1 適用標準

依據 NCC 低功率射頻電機技術規範 3.10.1.6 節(2)(A)之規定，6 dB 頻寬至少應有 500 kHz。

6.2 量測方法

將射頻輸出連接到頻譜分析儀，進行量測低、中、高的頻帶寬度。設定頻譜分析儀之解析頻寬為 100kHz，視訊頻寬不小於解析頻寬，量測利用差值記號以發射峰值下降 6dB 頻寬作為測試頻寬的基準。

6.3 量測時受測物之工作狀況

[BLE 模式]

由筆記型電腦執行測試程式“nRFgo Studio”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

[Zigbee 模式]

由筆記型電腦執行測試程式“Ember Desktop”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

6.4 量測之不確定度

實驗室 6dB 頻寬量測之不確定度為 $\pm 1\text{kHz}$ 。

6.5 發射頻寬之量測結果

量測結果，請參見附錄一。

7 峰值輸出功率之量測

7.1 適用標準

依據 NCC 低功率射頻電機技術規範 3.10.1.2 節(1)(C)之規定，操作 2400 MHz～2483.5 MHz 頻段者，數位調變技術系統：1 W(含) 以下，其發射天線之方向性增益超過 6 dBi，每超過 3 dBi，最大傳導輸出功率限制值應降低 1 dB。

7.2 量測方法

將天線發射端直接連接至頻譜分析儀量測。

7.3 量測時受測物之工作狀況

[BLE 模式]

由筆記型電腦執行測試程式“nRFgo Studio”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

[Zigbee 模式]

由筆記型電腦執行測試程式“Ember Desktop”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

7.4 量測之不確定度

實驗室峰值輸出功率量測之不確定度為 $\pm 0.52\text{dB}$ 。

7.5 峰值輸出功率之量測結果

量測結果，請參見附錄一。

8 頻帶邊緣之 RF 傳導發射之量測

8.1 適用標準

依據 NCC 低功率射頻電機技術規範 3.10.1.5 節之規定：操作頻帶範圍外之任意 100 kHz 內，發射機所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之 100 kHz 內的射頻功率，其衰減值限制如下：

- (1) 輸出功率以 NCC 低功率射頻電機技術規範附件二之峰值輸出功率方式測量者，至少須衰減 20 dB，可使用射頻傳導或輻射方式測量。
- (2) 輸出功率以 3.10.1.2(1)(C)之最大傳導輸出功率測量方式者，至少須衰減 30 dB。

此外，落於 2.7 禁用頻段之輻射發射，應符合 2.8 之規定。

8.2 量測方法

將射頻輸出連接到頻譜分析儀，設定頻譜分析儀之解析頻寬為 100kHz，視訊頻寬不小於解析頻寬，所有諧波/混附波必須比許可頻段中最高發射峰值至少低 20dB，並評估許可頻段之最高及最低的頻帶邊緣發射。

8.3 量測時受測物之工作狀況

[BLE 模式]

由筆記型電腦執行測試程式“nRFgo Studio”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

[Zigbee 模式]

由筆記型電腦執行測試程式“Ember Desktop”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

8.4 量測之不確定度

實驗室頻帶邊緣之 RF 傳導發射量測之不確定度為 $\pm 0.13\text{dB}$ 。

8.5 頻帶邊緣之 RF 傳導發射之量測結果

量測結果，請參見附錄一。

9 混附發射之 RF 傳導發射之量測

9.1 適用標準

依據 NCC 低功率射頻電機技術規範 3.10.1.5 節(1)之規定：操作頻帶範圍外之任意 100 kHz 內，發射機所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之 100 kHz 內的射頻功率，至少須衰減 20dB，可使用射頻傳導或輻射方式測量。

9.2 量測方法

將射頻輸出連接到頻譜分析儀，設定頻譜分析儀之解析頻寬為 100kHz，視訊頻寬不小於解析頻寬，掃描範圍為 30MHz~25GHz 之所有頻帶，其所有諧波/混附發射波須比許可頻帶中之最高峰值至少低 20dB，評估受測物之最高及最低頻帶的混附發射分佈。

9.3 量測時受測物之工作狀況

[BLE 模式]

由筆記型電腦執行測試程式“nRFgo Studio”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

[Zigbee 模式]

由筆記型電腦執行測試程式“Ember Desktop”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

9.4 量測之不確定度

實驗室混附發射之 RF 傳導發射量測之不確定度為 $\pm 0.13\text{dB}$ 。

9.5 混附發射之 RF 傳導發射之量測結果

量測結果，請參見附錄一。

10 功率密度之量測

10.1 適用標準

依據 NCC 低功率射頻電機技術規範 3.10.1.6 節(2)(B)之規定，在使用頻率範圍之任一 3 kHz 頻寬內，由發射機傳導至天線之功率頻譜密度在任意傳輸期間內，皆小於或等於 8 毫分貝(dBm)，且應依 3.10.1.3(節)之方式降低功率頻譜密度限制值。

10.2 量測方法

將射頻輸出連接到頻譜分析儀，設定頻譜分析儀之解析頻寬為 100kHz 但最小不得小於 3kHz，視訊頻寬大於解析頻寬，並量測其主波範圍內峰值位準，位準值不得大於 8dBm。

10.3 量測時受測物之工作狀況

[BLE 模式]

由筆記型電腦執行測試程式“nRFgo Studio”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

[Zigbee 模式]

由筆記型電腦執行測試程式“Ember Desktop”來設定受測物，使受測物進行發射動作量測，動作持續不斷直到測試結束。

10.4 量測之不確定度

實驗室功率密度量測之不確定度為 $\pm 0.33\text{dB}$ 。

10.5 功率密度之量測結果

量測結果，請參見附錄一。

附錄 一

受測裝置之測試結果

目錄	頁次
1. 場強輻射之量測.....	2
1.1. 30-1000MHz 頻率範圍，其他不必要發射量測	4
1.2. 1000MHz 以上頻率範圍，其他不必要發射量測	6
1.3. 禁用頻帶量測結果（其他不必要發射）.....	9
2. 發射頻寬之量測.....	18
2.1. 發射頻寬.....	18
2.2. 發射頻寬之量測圖.....	19
3. 峰值輸出功率之量測.....	20
3.1. 峰值輸出功率.....	20
3.2. 峰值輸出功率之量測圖.....	21
4. 頻帶邊緣之 RF 傳導發射之量測	22
5. 混附發射之 RF 傳導發射之量測	23
6. 功率密度之量測.....	29
6.1. 功率密度.....	29
6.2. 功率密度之量測圖.....	30

1. 場強輻射之量測

對受測物裝置之其他不必要之發射(測至本地振盪頻率之 10 次諧波)依下列測試模式分別於電波暗室內進行量測，選擇低、中、高頻率來進行量測，並將所有模式之掃頻圖檢附於附錄中。所得讀值資料請見章節 1.1 ~1.2：

BLE 模式			
模式	動作狀態	基本頻率	量測頻率範圍
1	發射	2402MHz*	30-1000MHz
2			1000-3000MHz
3			3000-8000MHz
4			8000-18000MHz
5			18000-25000MHz
6		2440MHz	1000-3000MHz
7			3000-8000MHz
8			8000-18000MHz
9			18000-25000MHz
10		2480MHz	1000-3000MHz
11			3000-8000MHz
12			8000-18000MHz
13			18000-25000MHz
14	接收	2440MHz	30-1000MHz
15			1000-3000MHz
16			3000-8000MHz
17			8000-18000MHz
18			18000-25000MHz
Zigbee 模式			
模式	動作狀態	基本頻率	量測頻率範圍
1	發射	2405MHz*	30-1000MHz
2			1000-3000MHz
3			3000-8000MHz
4			8000-18000MHz
5			18000-25000MHz
6		2440MHz	1000-3000MHz
7			3000-8000MHz
8			8000-18000MHz
9			18000-25000MHz
10		2480MHz	1000-3000MHz
11			3000-8000MHz
12			8000-18000MHz
13			18000-25000MHz
14	接收	2440MHz	30-1000MHz
15			1000-3000MHz
16			3000-8000MHz
17			8000-18000MHz
18			18000-25000MHz

註：1. 以上所有模式之掃頻圖是檢附於附錄中。

2.*: 經評估後，以最差頻率進行 30-1000MHz 量測。

對受測物裝置落於技術規範第 2.7 章節的禁用頻率之混附發射以下列測試模式依規定分別進行量測，所得量測資料請見章節 1.3。

BLE 模式			
模式	動作狀態	基本頻率	量測頻率範圍
1	發射	2402MHz	2310-2430MHz
2		2480MHz	2450-2530MHz
Zigbee 模式			
模式	動作狀態	基本頻率	量測頻率範圍
1	發射	2405MHz	2310-2430MHz
2		2480MHz	2450-2530MHz

測試日期	2018/02/23	環境溫/濕度	23°C/53%
測試電壓	DC 6V (經電池供電)		

1.1. 30-1000MHz 頻率範圍，其他不必要發射量測

• BLE 模式

Mode	BLE	Frequency	TX 2402MHz
------	-----	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
120.21	18.80	2.51	46.76	41.95	43.50	1.55	Peak
191.99	15.62	3.26	46.36	39.46	43.50	4.04	Peak
312.27	19.84	4.48	34.27	32.85	46.00	13.15	Peak
395.69	21.98	5.51	34.99	36.10	46.00	9.90	Peak
624.61	24.70	6.84	35.65	39.81	46.00	6.19	Peak
927.25	27.08	8.35	28.19	36.77	46.00	9.23	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
120.21	18.80	2.51	41.30	36.49	43.50	7.01	Peak
240.49	18.57	3.73	31.40	28.00	46.00	18.00	Peak
551.86	23.95	6.60	31.98	35.25	46.00	10.75	Peak
624.61	24.70	6.84	31.70	35.86	46.00	10.14	Peak
826.37	26.17	7.77	28.82	35.62	46.00	10.38	Peak
915.61	26.98	8.28	28.51	36.89	46.00	9.11	Peak

Mode	BLE	Frequency	RX 2440MHz
------	-----	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
120.21	18.80	2.51	46.74	41.93	43.50	1.57	Peak
240.49	18.57	3.73	40.18	36.78	46.00	9.22	Peak
395.69	21.98	5.51	33.75	34.86	46.00	11.14	Peak
601.33	24.65	6.76	35.43	39.45	46.00	6.55	Peak
685.72	24.84	7.03	33.35	37.85	46.00	8.15	Peak
866.14	26.52	7.99	28.72	36.21	46.00	9.79	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
120.21	18.80	2.51	41.41	36.60	43.50	6.90	Peak
216.24	16.92	3.50	33.33	28.02	46.00	17.98	Peak
396.66	21.98	5.51	30.51	31.60	46.00	14.40	Peak
551.86	23.95	6.60	33.20	36.47	46.00	9.53	Peak
636.25	24.73	6.88	31.33	35.56	46.00	10.44	Peak
962.17	27.46	8.59	28.32	37.62	54.00	16.38	Peak

• Zigbee 模式

Mode	Zigbee	Frequency	TX 2405MHz
------	--------	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
125.06	18.55	2.56	47.38	42.40	43.50	1.10	Peak
299.66	19.48	4.30	46.33	44.47	46.00	1.53	Peak
399.57	22.04	5.54	43.82	45.00	46.00	1.00	Peak
500.45	23.17	6.43	41.78	44.26	46.00	1.74	Peak
749.74	25.42	7.35	34.94	40.42	46.00	5.58	Peak
874.87	26.60	8.04	30.18	37.82	46.00	8.18	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
47.46	15.81	1.53	43.68	34.61	40.00	5.39	Peak
250.19	19.16	3.81	45.41	42.69	46.00	3.31	Peak
399.57	22.04	5.54	41.42	42.60	46.00	3.40	Peak
500.45	23.17	6.43	39.38	41.86	46.00	4.14	Peak
549.92	23.92	6.59	35.90	39.15	46.00	6.85	Peak
749.74	25.42	7.35	34.76	40.24	46.00	5.76	Peak

Mode	Zigbee	Frequency	RX 2440MHz
------	--------	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
125.06	18.55	2.56	43.65	38.67	43.50	4.83	Peak
250.19	19.16	3.81	47.04	44.32	46.00	1.68	Peak
399.57	22.04	5.54	42.96	44.14	46.00	1.86	Peak
500.45	23.17	6.43	42.51	44.99	46.00	1.01	Peak
549.92	23.92	6.59	35.21	38.46	46.00	7.54	Peak
986.42	27.69	8.74	28.52	38.27	54.00	15.73	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
113.42	18.40	2.43	38.41	33.08	43.50	10.42	Peak
250.19	19.16	3.81	45.73	43.01	46.00	2.99	Peak
399.57	22.04	5.54	42.28	43.46	46.00	2.54	Peak
500.45	23.17	6.43	39.71	42.19	46.00	3.81	Peak
549.92	23.92	6.59	35.79	39.04	46.00	6.96	Peak
749.74	25.42	7.35	33.89	39.37	46.00	6.63	Peak

1.2. 1000MHz 以上頻率範圍，其他不必要發射量測

• BLE 模式

Mode	BLE	Frequency	TX 2402MHz
------	-----	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4805.00	34.22	9.54	32.77	42.11	54.00	11.89	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4805.00	34.22	9.54	34.32	43.66	54.00	10.34	Peak

Mode	BLE	Frequency	TX 2440MHz
------	-----	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4880.00	34.25	9.56	34.85	44.25	54.00	9.75	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4880.00	34.25	9.56	32.38	41.78	54.00	12.22	Peak

Mode	BLE	Frequency	TX 2480MHz
------	-----	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4960.00	34.29	9.60	34.98	44.46	54.00	9.54	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4960.00	34.29	9.60	31.69	41.17	54.00	12.83	Peak

• Zigbee 模式

Mode	Zigbee	Frequency	TX 2405MHz
------	--------	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.00	34.22	9.54	48.36	57.70	74.00	16.30	Peak
4810.00	34.22	9.54	38.85	48.19	54.00	5.81	Average

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.00	34.22	9.54	50.47	59.81	74.00	14.19	Peak
4810.00	34.22	9.54	40.50	49.84	54.00	4.16	Average

Mode	Zigbee	Frequency	TX 2440MHz
------	--------	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.56	48.93	58.33	74.00	15.67	Peak
4880.00	34.25	9.56	39.28	48.68	54.00	5.32	Average
7320.00	35.80	11.92	40.03	53.04	74.00	20.96	Peak
7320.00	35.80	11.92	30.08	43.09	54.00	10.91	Average

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.56	47.34	56.74	74.00	17.26	Peak
4880.00	34.25	9.56	37.94	47.34	54.00	6.66	Average
7320.00	35.80	11.92	41.70	54.71	74.00	19.29	Peak
7320.00	35.80	11.92	32.84	45.85	54.00	8.15	Average

Mode	Zigbee	Frequency	TX 2480MHz
------	--------	-----------	------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.60	40.63	50.11	74.00	23.89	Peak
4960.00	34.29	9.60	30.89	40.37	54.00	13.63	Average
7440.00	35.80	12.04	44.27	57.36	74.00	16.64	Peak
7440.00	35.80	12.04	34.33	47.42	54.00	6.58	Average

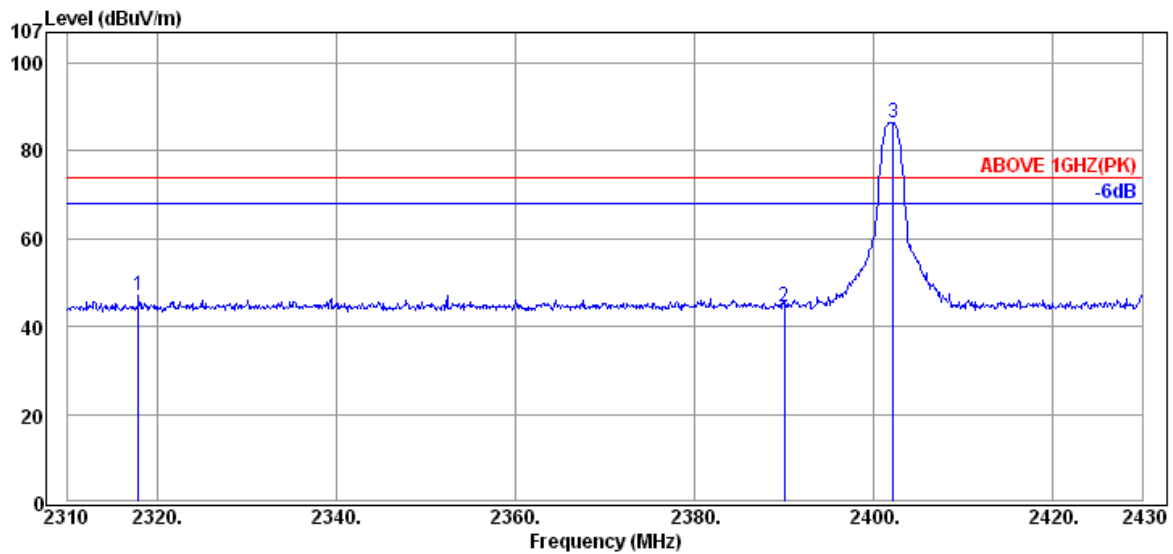
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.60	40.42	49.90	74.00	24.10	Peak
4960.00	34.29	9.60	30.74	40.22	54.00	13.78	Average
7440.00	35.80	12.04	42.85	55.94	74.00	18.06	Peak
7440.00	35.80	12.04	32.88	45.97	54.00	8.03	Average

1.3. 禁用頻帶量測結果 (其他不必要發射)

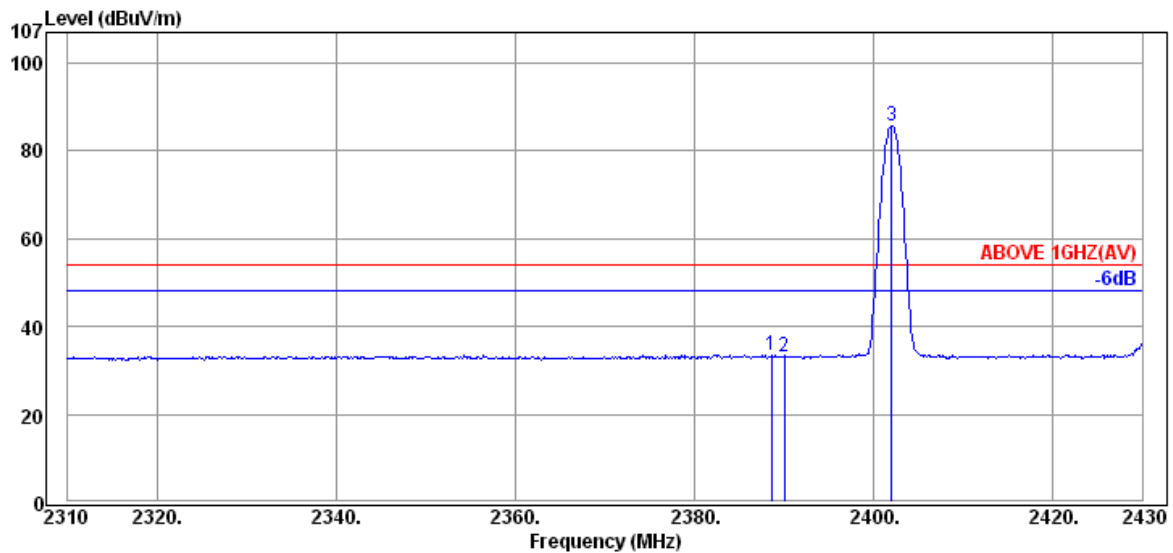
• BLE 模式

Mode	BLE	Frequency	TX 2402MHz
------	-----	-----------	------------



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2317.92	32.06	6.49	43.11	47.11	74.00	26.89	Peak
2390.04	32.16	6.57	40.41	44.57	74.00	29.43	Peak
@ 2402.16	32.16	6.57	82.13	86.29	---	---	Peak

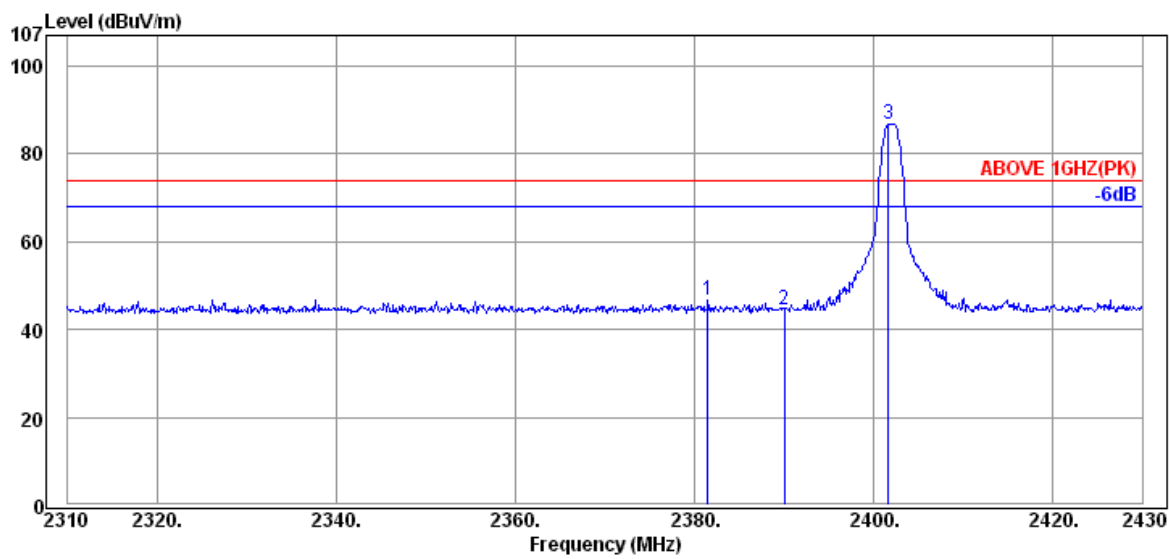


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.60	32.16	6.57	29.27	33.44	54.00	20.56	Average
2390.04	32.16	6.57	29.11	33.27	54.00	20.73	Average
@ 2402.04	32.16	6.57	81.44	85.60	---	---	Average

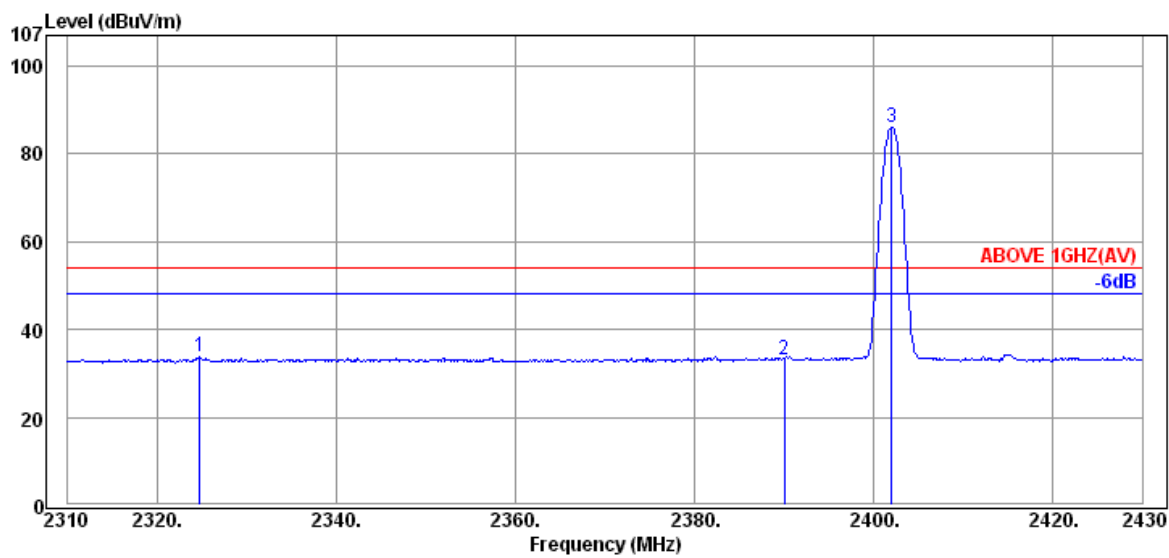
備註：“@”為主波，在此章節是不予以判定。

Mode	BLE	Frequency	TX 2402MHz
------	-----	-----------	------------



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2381.52	32.13	6.55	42.62	46.74	74.00	27.26	Peak
2390.04	32.16	6.57	40.42	44.58	74.00	29.42	Peak
@ 2401.68	32.16	6.57	82.62	86.78	---	---	Peak

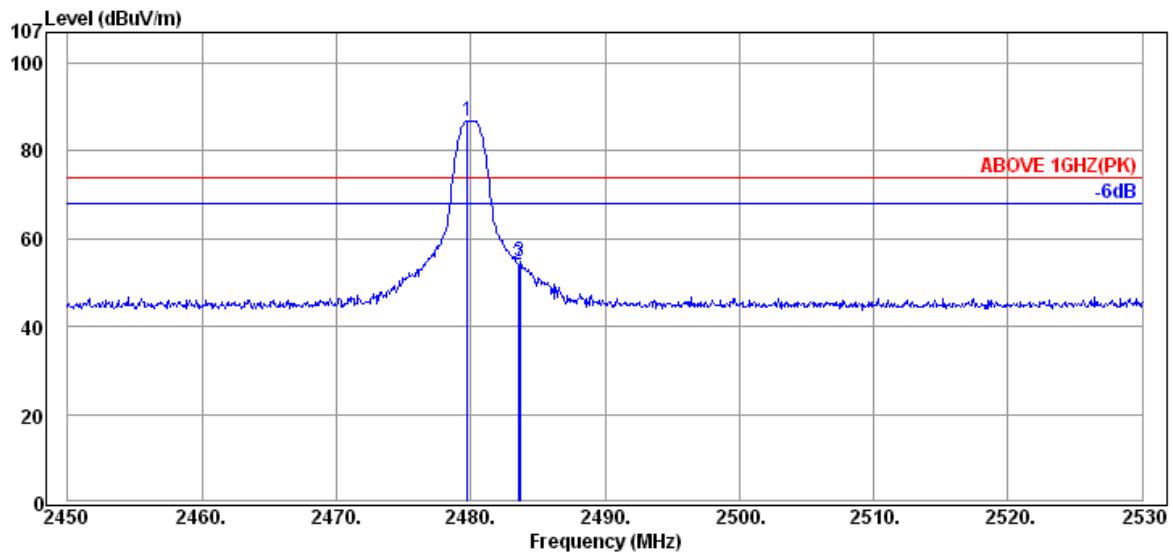


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2324.76	32.06	6.49	29.86	33.86	54.00	20.14	Average
2390.04	32.16	6.57	29.06	33.22	54.00	20.78	Average
@ 2402.04	32.16	6.57	81.79	85.95	---	---	Average

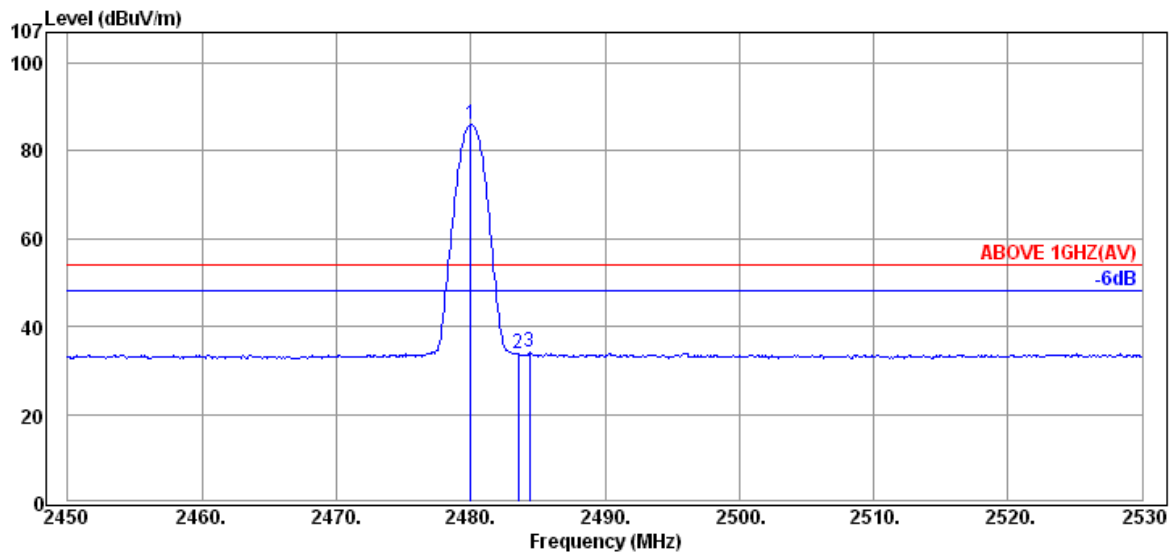
備註：“@”為主波，在此章節是不予以判定。

Mode	BLE	Frequency	TX 2480MHz
------	-----	-----------	------------



Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2479.76	32.28	6.67	82.37	86.74	---	---	Peak
	2483.52	32.28	6.67	49.80	54.17	74.00	19.83	Peak
	2483.68	32.28	6.67	50.28	54.65	74.00	19.35	Peak

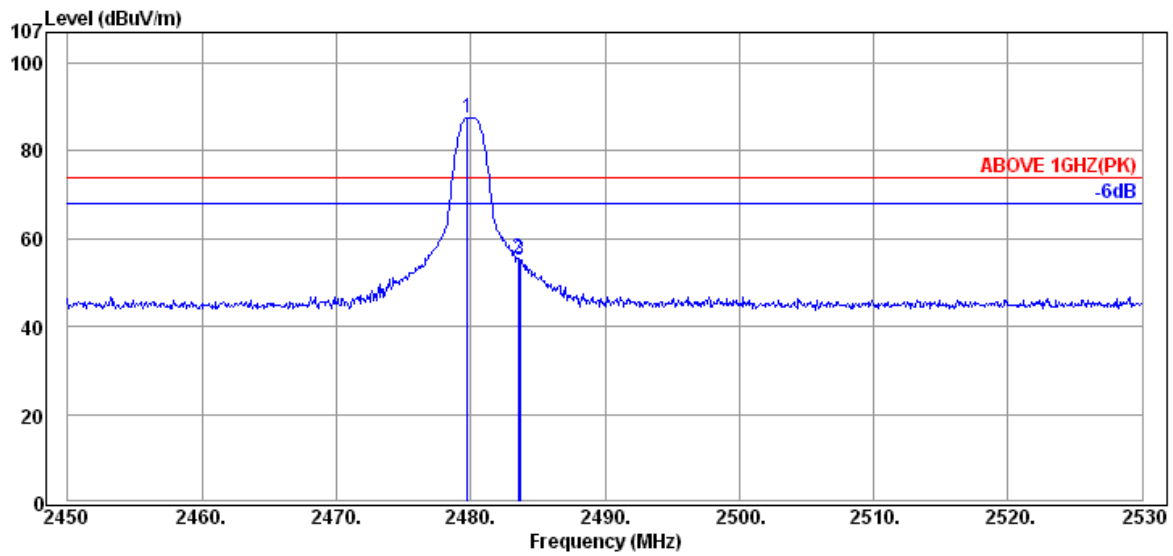


Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2480.00	32.28	6.67	81.65	86.02	---	---	Average
	2483.52	32.28	6.67	29.33	33.70	54.00	20.30	Average
	2484.40	32.28	6.67	29.65	34.02	54.00	19.98	Average

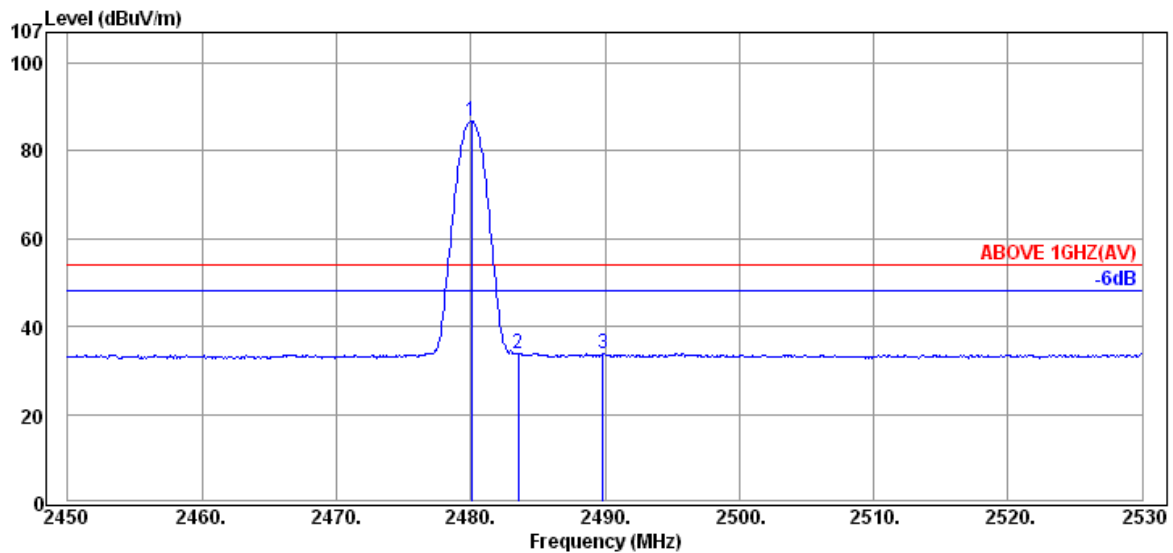
備註：“@”為主波，在此章節是不予以判定。

Mode	BLE	Frequency	TX 2480MHz
------	-----	-----------	------------



Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2479.76	32.28	6.67	83.10	87.47	---	---	Peak
	2483.52	32.28	6.67	50.99	55.36	74.00	18.64	Peak
	2483.68	32.28	6.67	50.94	55.31	74.00	18.69	Peak



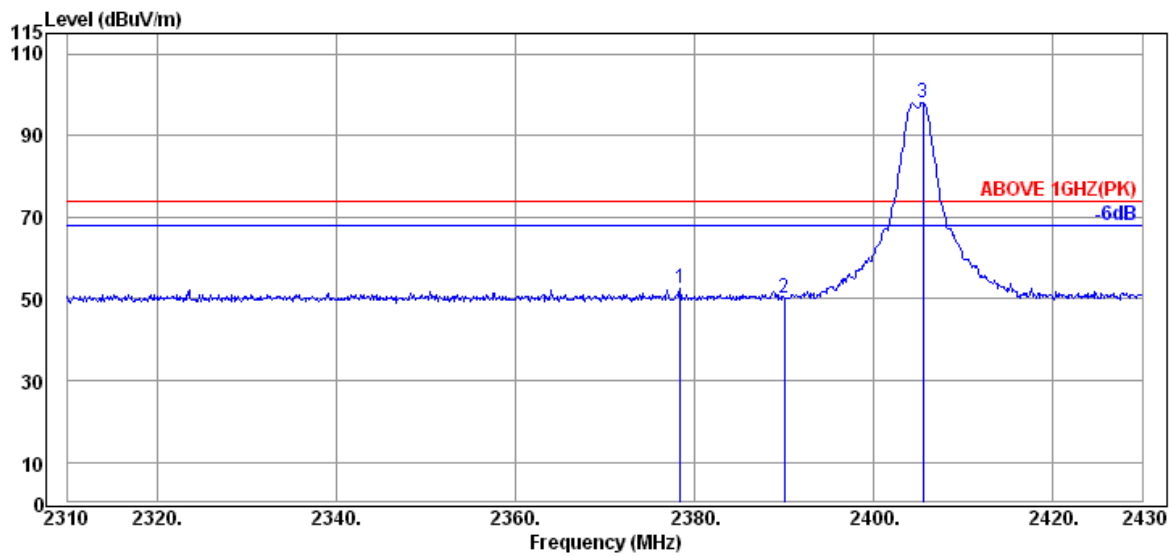
Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2480.08	32.28	6.67	82.40	86.77	---	---	Average
	2483.52	32.28	6.67	29.47	33.84	54.00	20.16	Average
	2489.84	32.30	6.69	29.57	33.98	54.00	20.02	Average

備註：“@”為主波，在此章節是不予以判定。

• Zigbee 模式

Mode	Zigbee	Frequency	TX 2405MHz
------	--------	-----------	------------



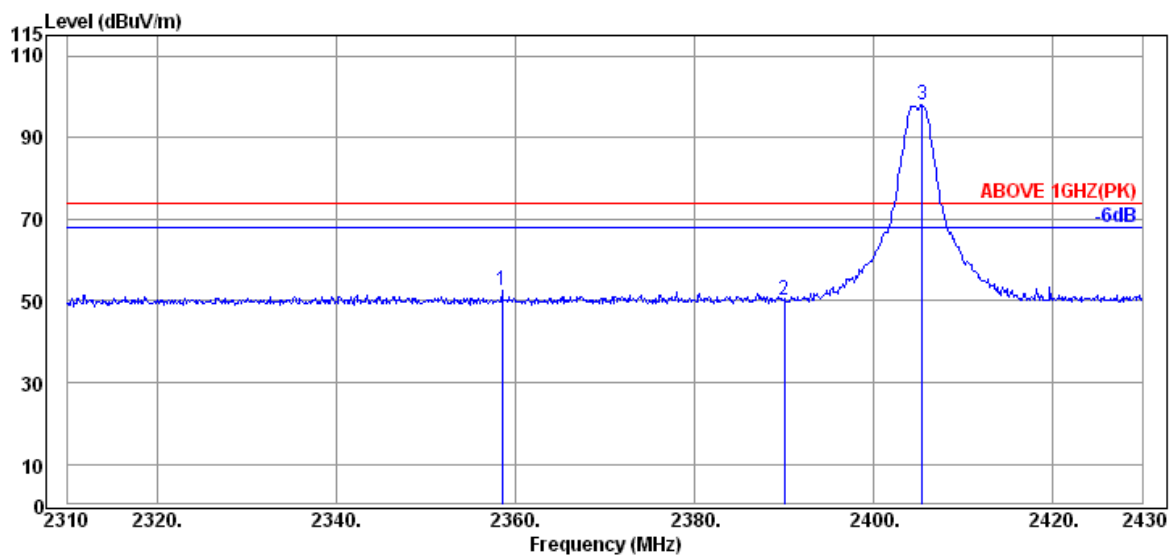
Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2378.40	32.13	6.55	48.45	52.57	74.00	21.43	Peak
2390.04	32.16	6.57	45.89	50.05	74.00	23.95	Peak
@ 2405.52	32.18	6.59	93.82	98.02	---	---	Peak

Emission Frequency (MHz)	Peak Emission Level (dBμV/m)	DCCF (dB)	Average Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
2378.40	52.57	-30.18	22.39	54.00	31.61	Average
2390.04	50.05	-30.18	19.87	54.00	34.13	Average

備註：“@”為主波，在此章節是不予以判定。

Mode	Zigbee	Frequency	TX 2405MHz
------	--------	-----------	------------



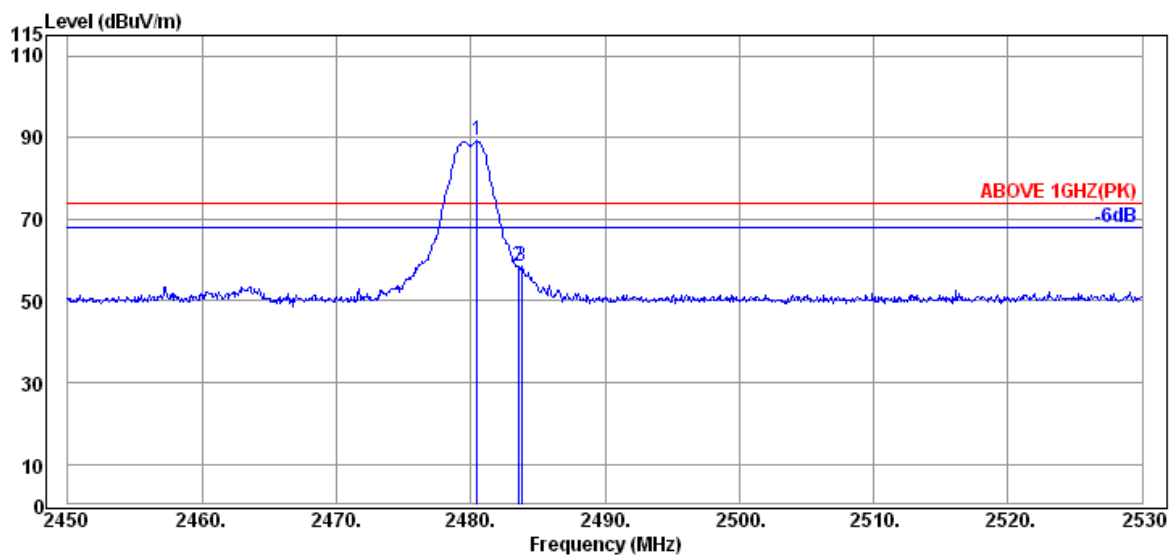
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2358.48	32.11	6.53	48.30	52.38	74.00	21.62	Peak
2390.04	32.16	6.57	45.92	50.08	74.00	23.92	Peak
@ 2405.40	32.18	6.59	93.75	97.95	---	---	Peak

Emission Frequency (MHz)	Peak Emission Level (dBμV/m)	DCCF (dB)	Average Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
2358.48	52.38	-30.18	22.20	54.00	31.80	Average
2390.04	50.08	-30.18	19.90	54.00	34.10	Average

備註：“@”為主波，在此章節是不予以判定。

Mode	Zigbee	Frequency	TX 2480MHz
------	--------	-----------	------------



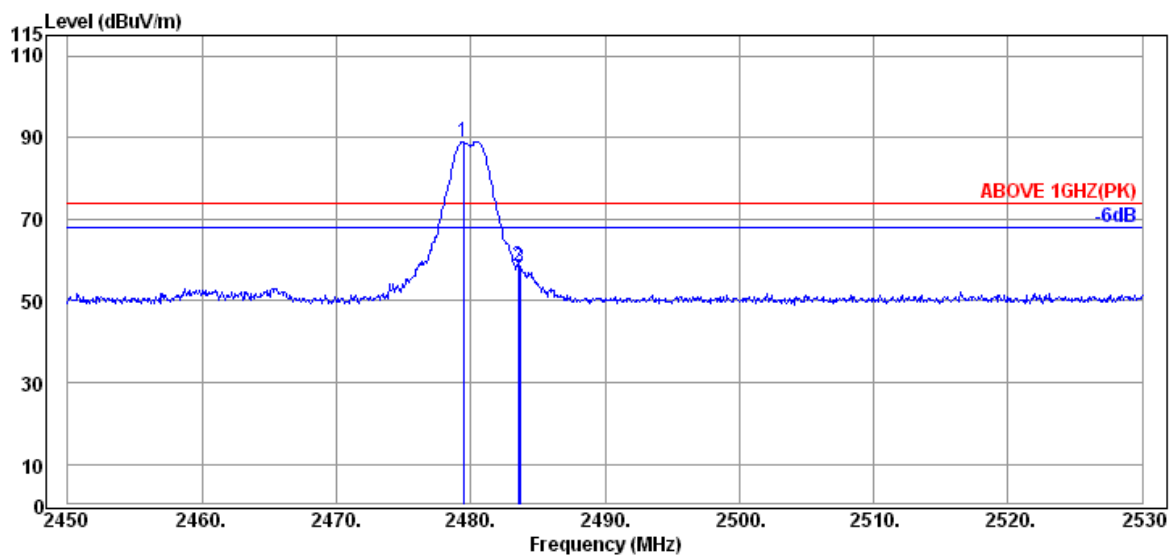
Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.48	32.28	6.67	84.82	89.19	---	---	Peak
2483.52	32.28	6.67	54.29	58.66	74.00	15.34	Peak
2483.76	32.28	6.67	54.05	58.42	74.00	15.58	Peak

Emission Frequency (MHz)	Peak Emission Level (dBμV/m)	DCCF (dB)	Average Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
2483.52	54.29	-30.18	24.11	54.00	29.89	Average
2483.76	54.05	-30.18	23.87	54.00	30.13	Average

備註：“@”為主波，在此章節是不予以判定。

Mode	Zigbee	Frequency	TX 2480MHz
------	--------	-----------	------------



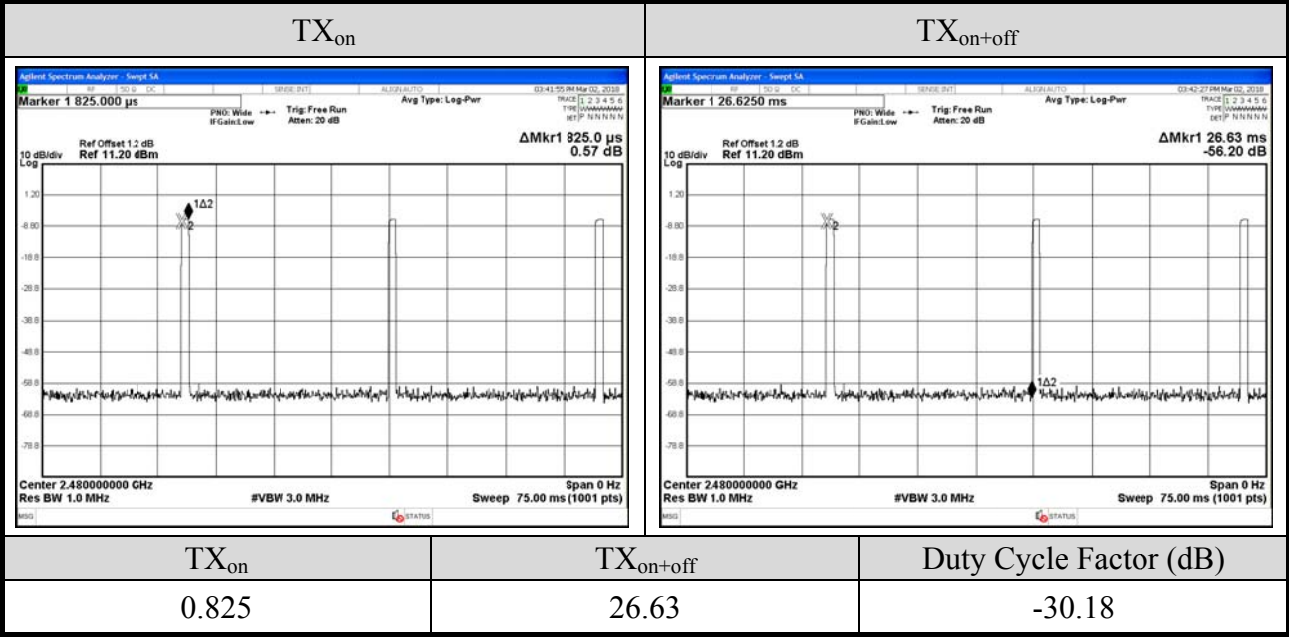
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2479.44	32.28	6.67	84.74	89.11	---	---	Peak
2483.52	32.28	6.67	54.16	58.53	74.00	15.47	Peak
2483.68	32.28	6.67	53.68	58.05	74.00	15.95	Peak

Emission Frequency (MHz)	Peak Emission Level (dBμV/m)	DCCF (dB)	Average Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
2483.52	54.16	-30.18	23.98	54.00	30.02	Average
2483.68	53.68	-30.18	23.50	54.00	30.50	Average

備註：“@”為主波，在此章節是不予以判定。

1.4. Duty Cycle Corporation Factor



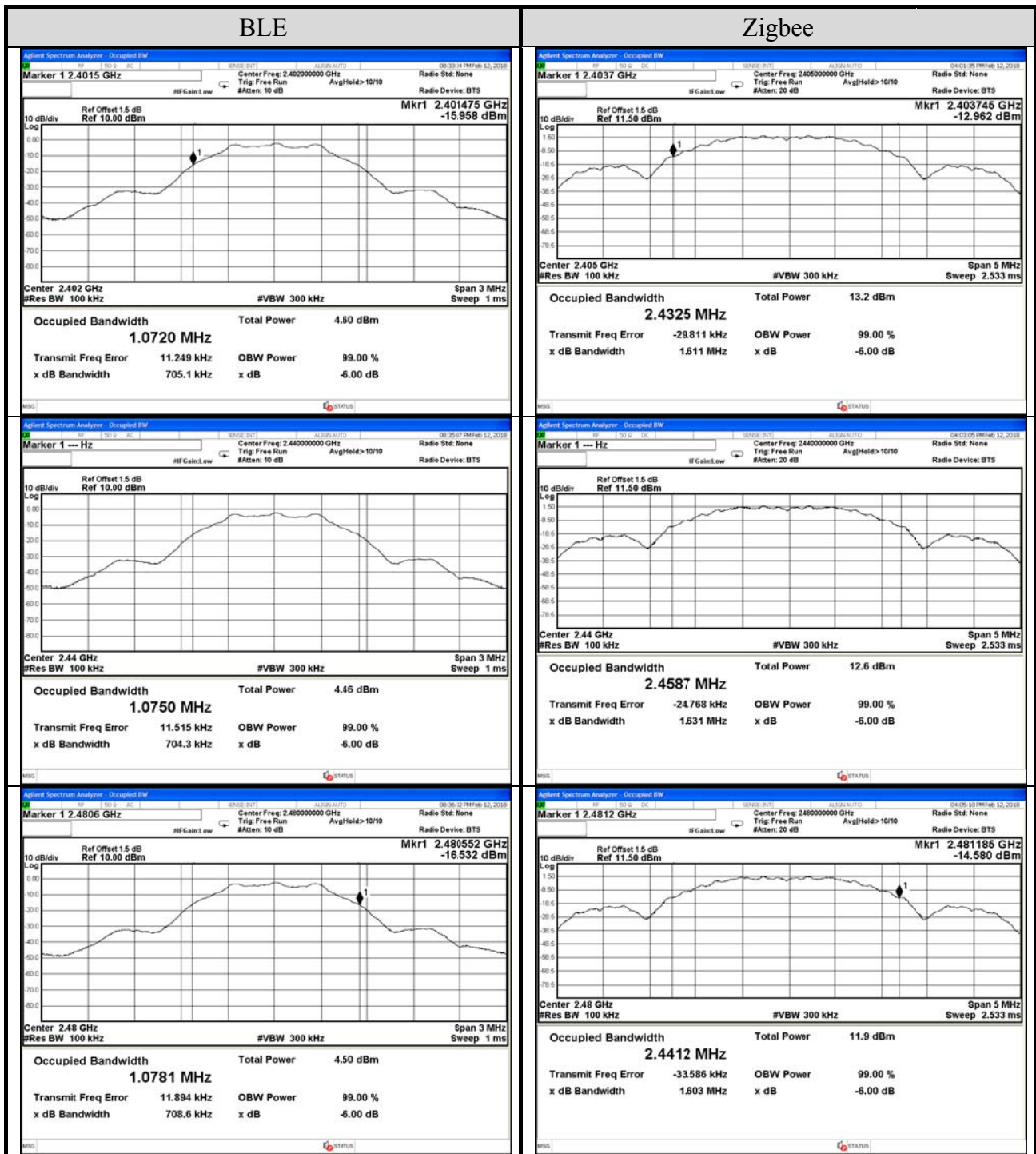
2. 發射頻寬之量測

測試日期	2018/02/12	環境溫/濕度	21℃/45%
測試電壓	DC 6V (經電池供電)		

2.1. 發射頻寬

模式 (Mode)	測試頻率 (MHz)	6dB 頻寬 (MHz)	限制值 (kHz)
BLE	2402	0.7051	>500
	2440	0.7043	
	2480	0.7086	
Zigbee	2405	1.611	
	2440	1.631	
	2480	1.603	

2.2. 發射頻寬之量測圖



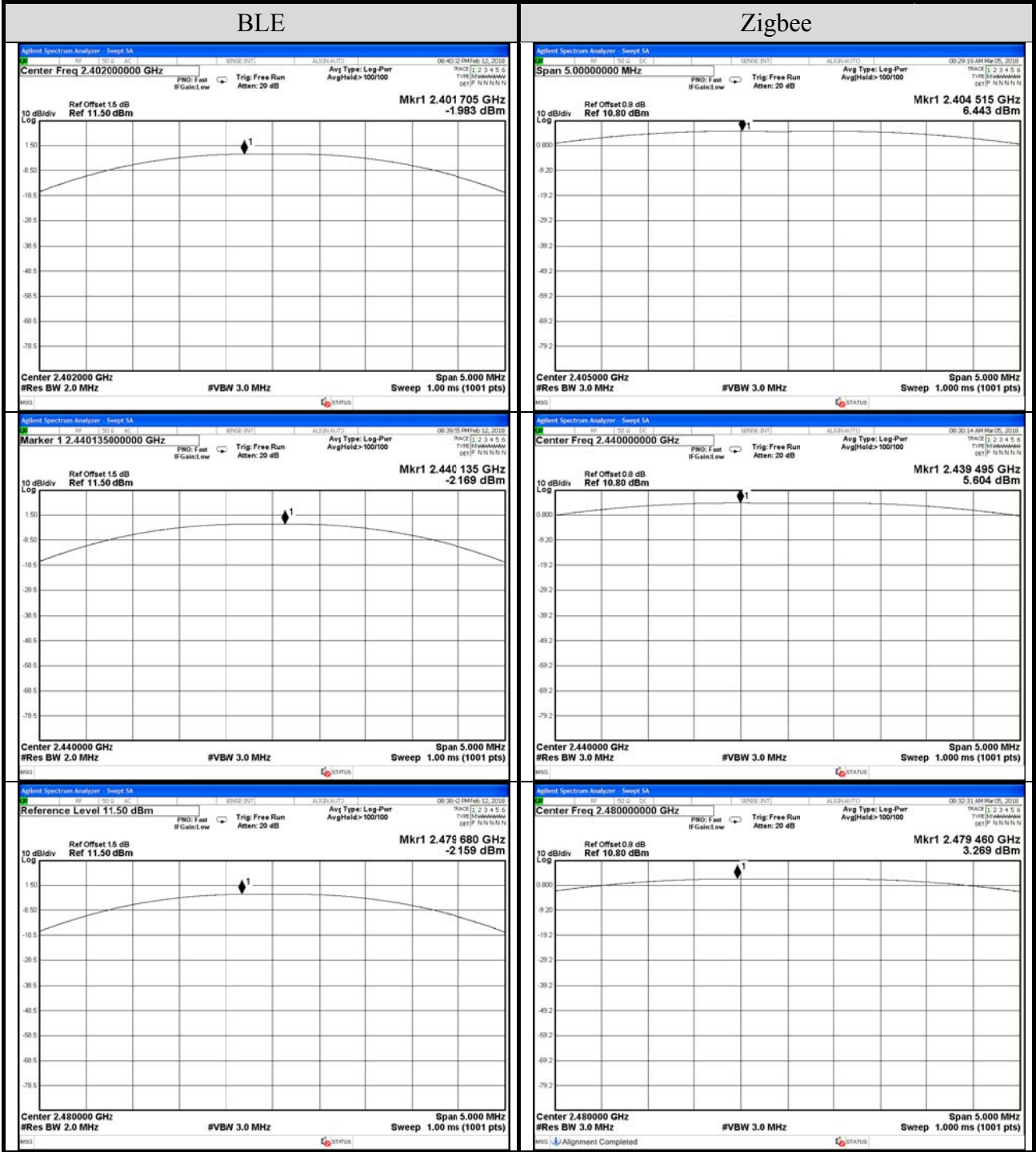
3. 峰值輸出功率之量測

測試日期	2018/02/12 ~ 2018/03/05	環境溫/濕度	21~25℃/45~52%
測試電壓	DC 6V (經電池供電)		

3.1. 峰值輸出功率

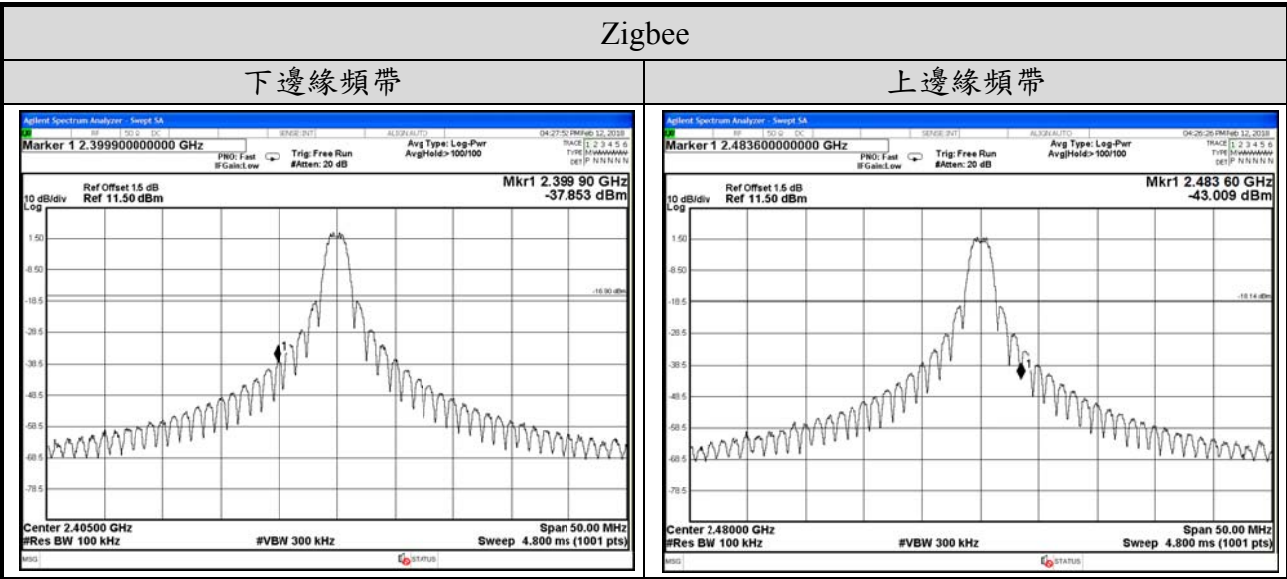
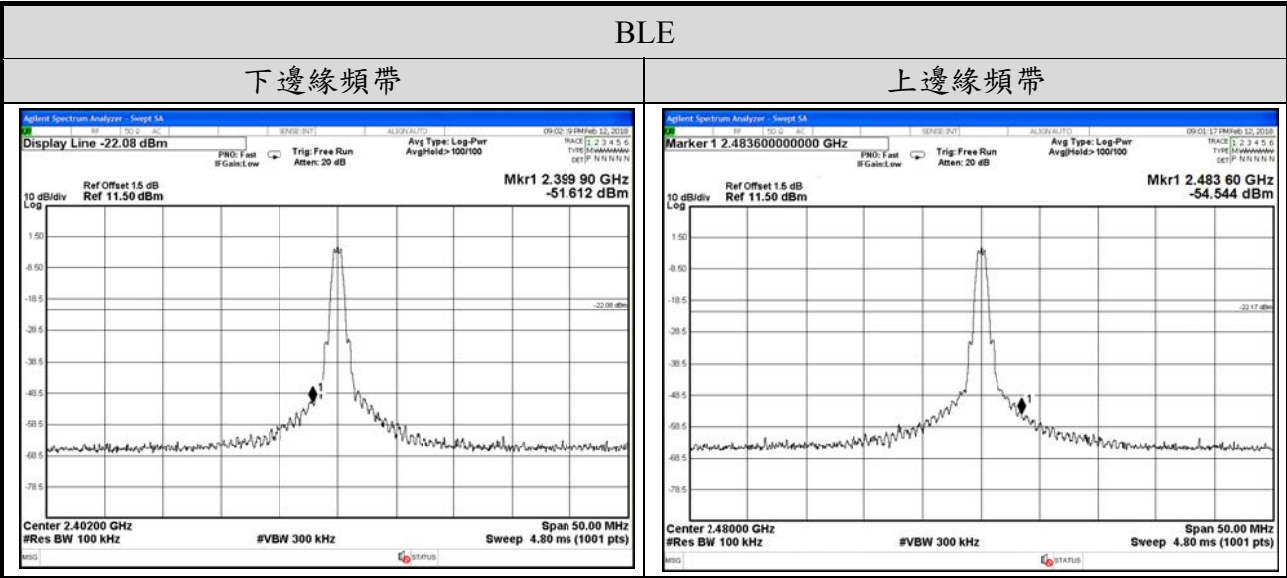
模式 (Mode)	測試頻率 (MHz)	最大輸出功率 (dBm)	限制值 (dBm)
BLE	2402	-1.983	30
	2440	-2.169	
	2480	-2.159	
Zigbee	2405	6.443	
	2440	5.604	
	2480	3.269	

3.2. 峰值輸出功率之量測圖



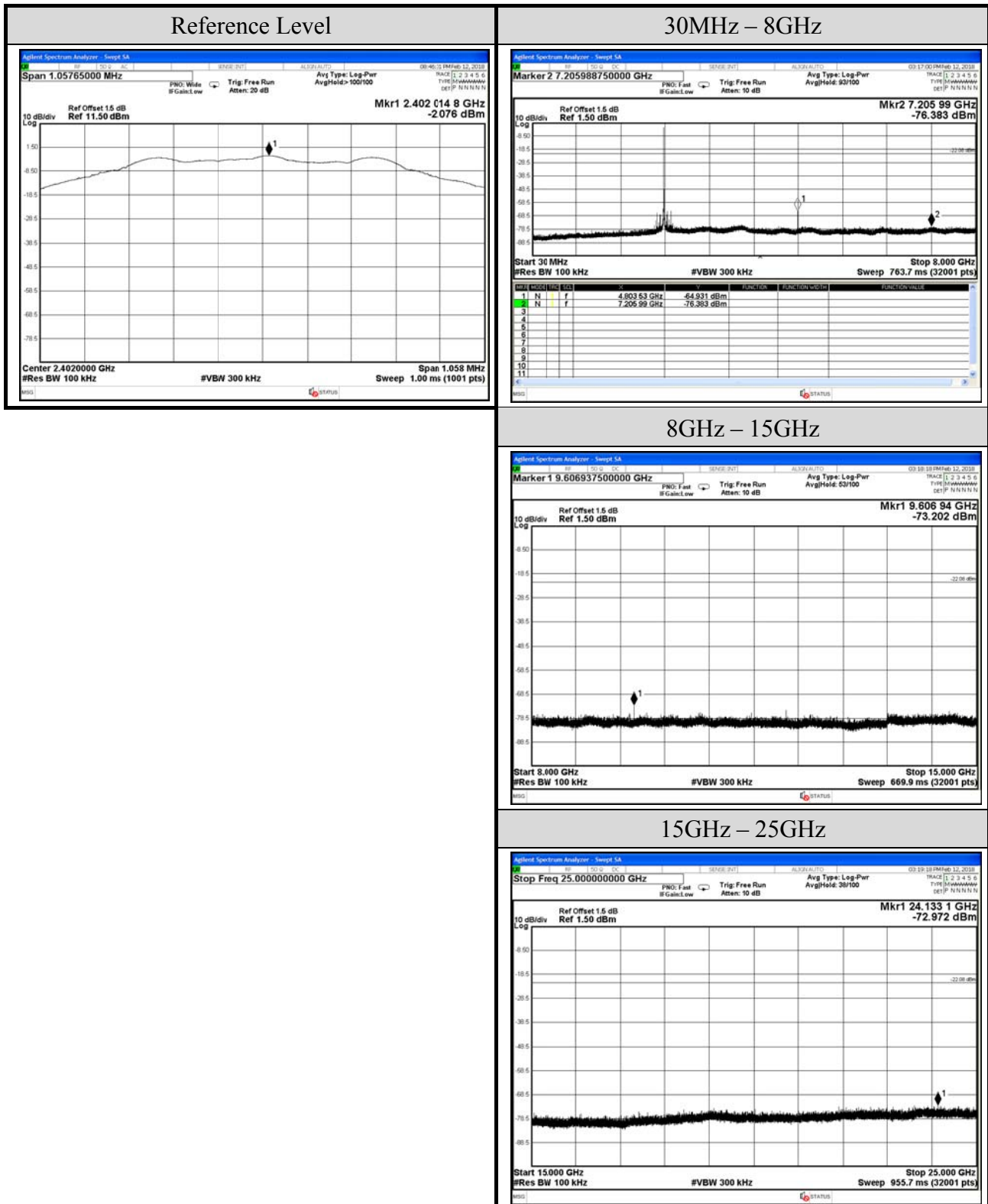
4. 頻帶邊緣之 RF 傳導發射之量測

測試日期	2018/02/12	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)		

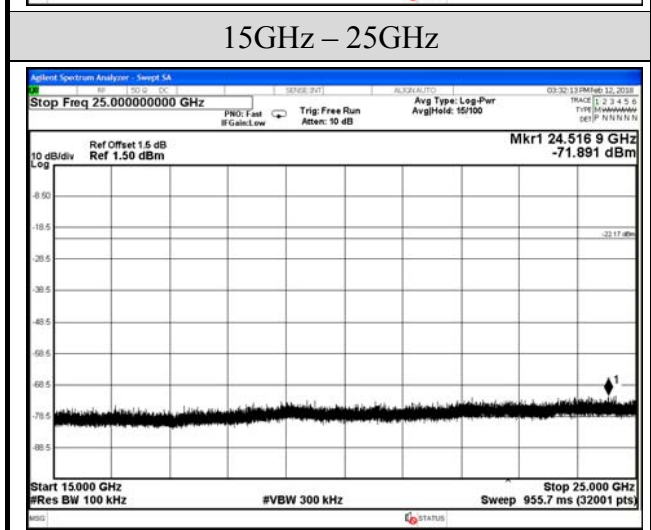
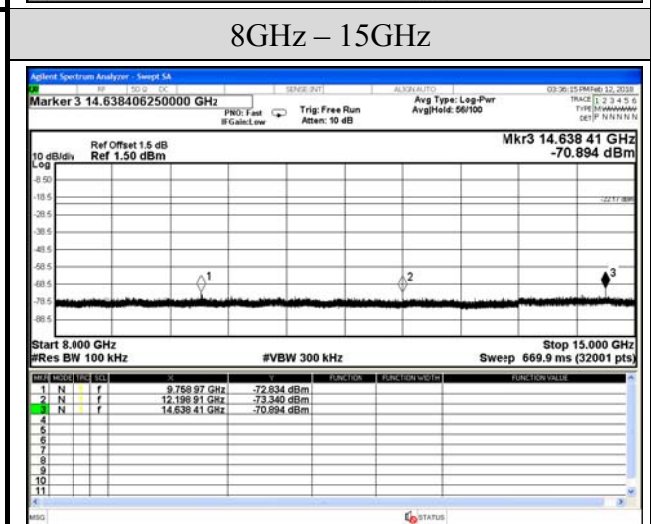
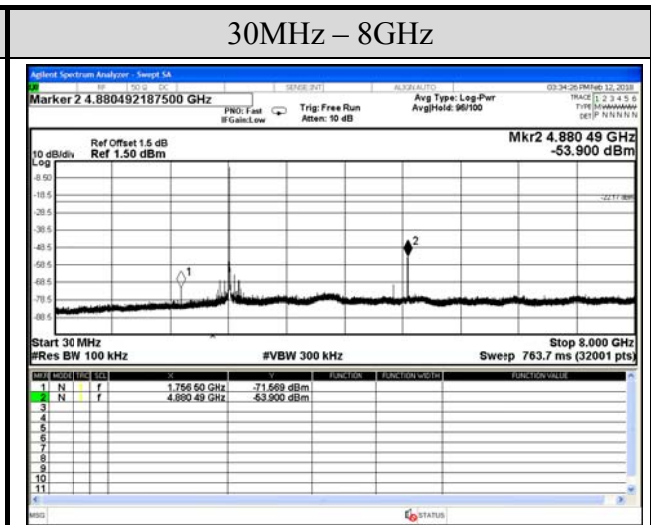
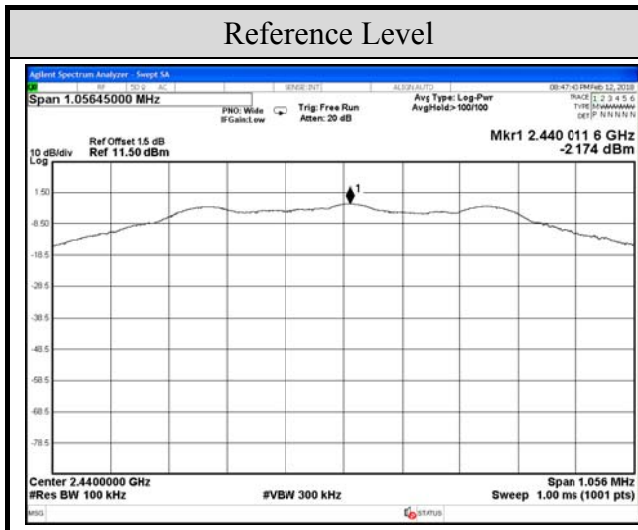


5. 混附發射之 RF 傳導發射之量測

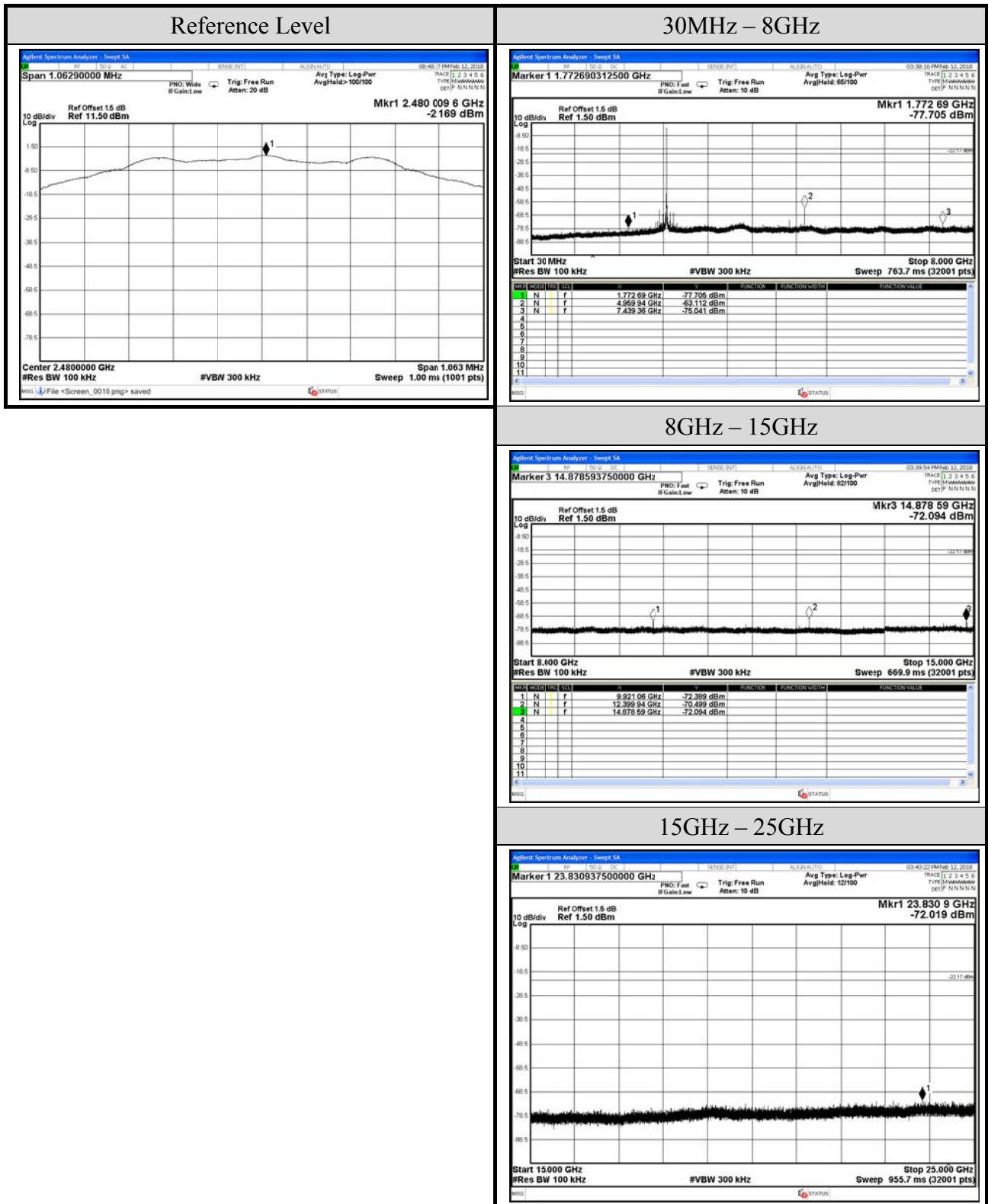
測試日期	2018/02/12	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)	模式	BLE
		測試頻率	2402MHz



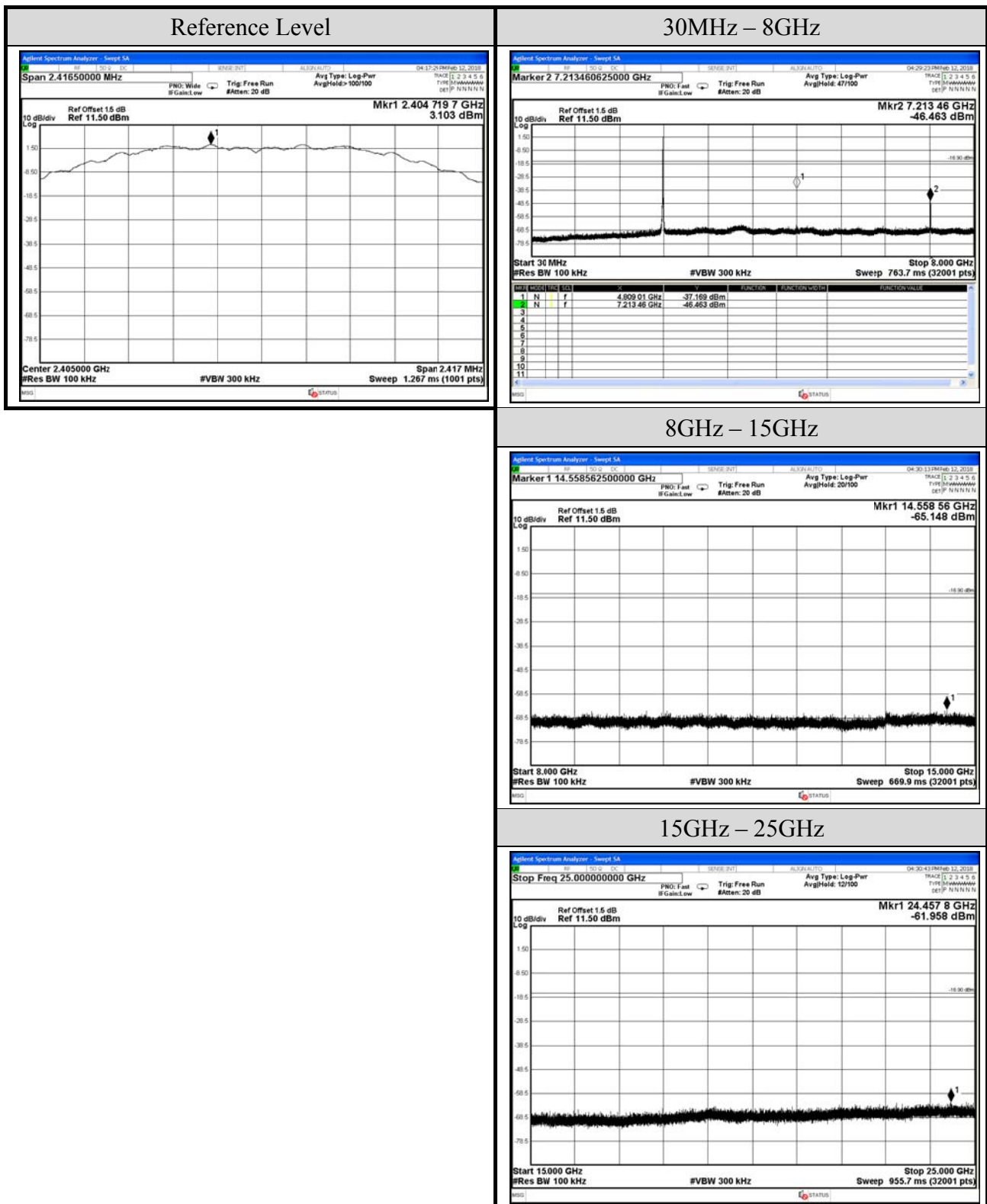
測試日期	2018/02/12~11	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)	模式	BLE
		測試頻率	2440MHz



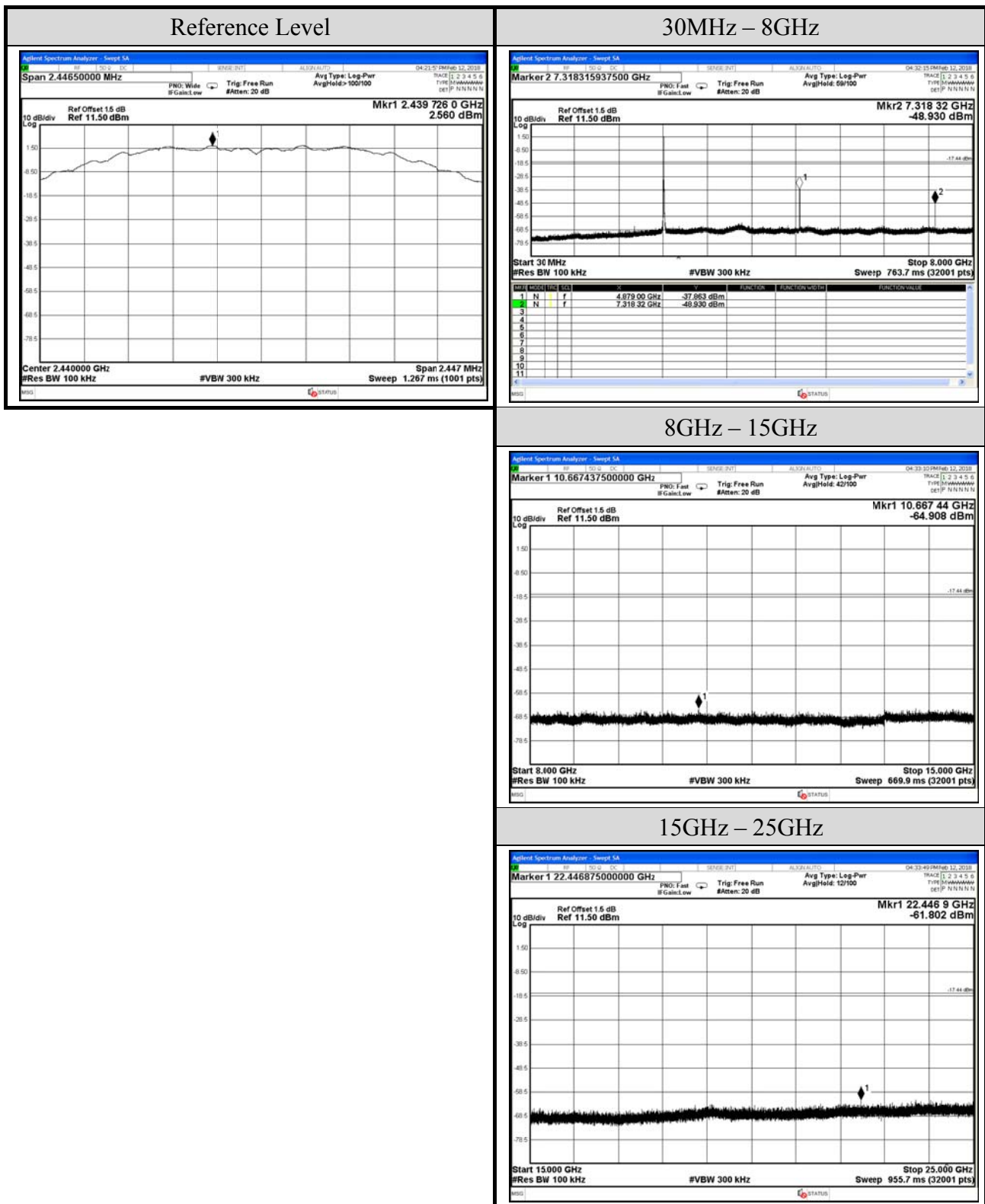
測試日期	2018/02/12 ~ 11	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)	模式	BLE
		測試頻率	2480MHz



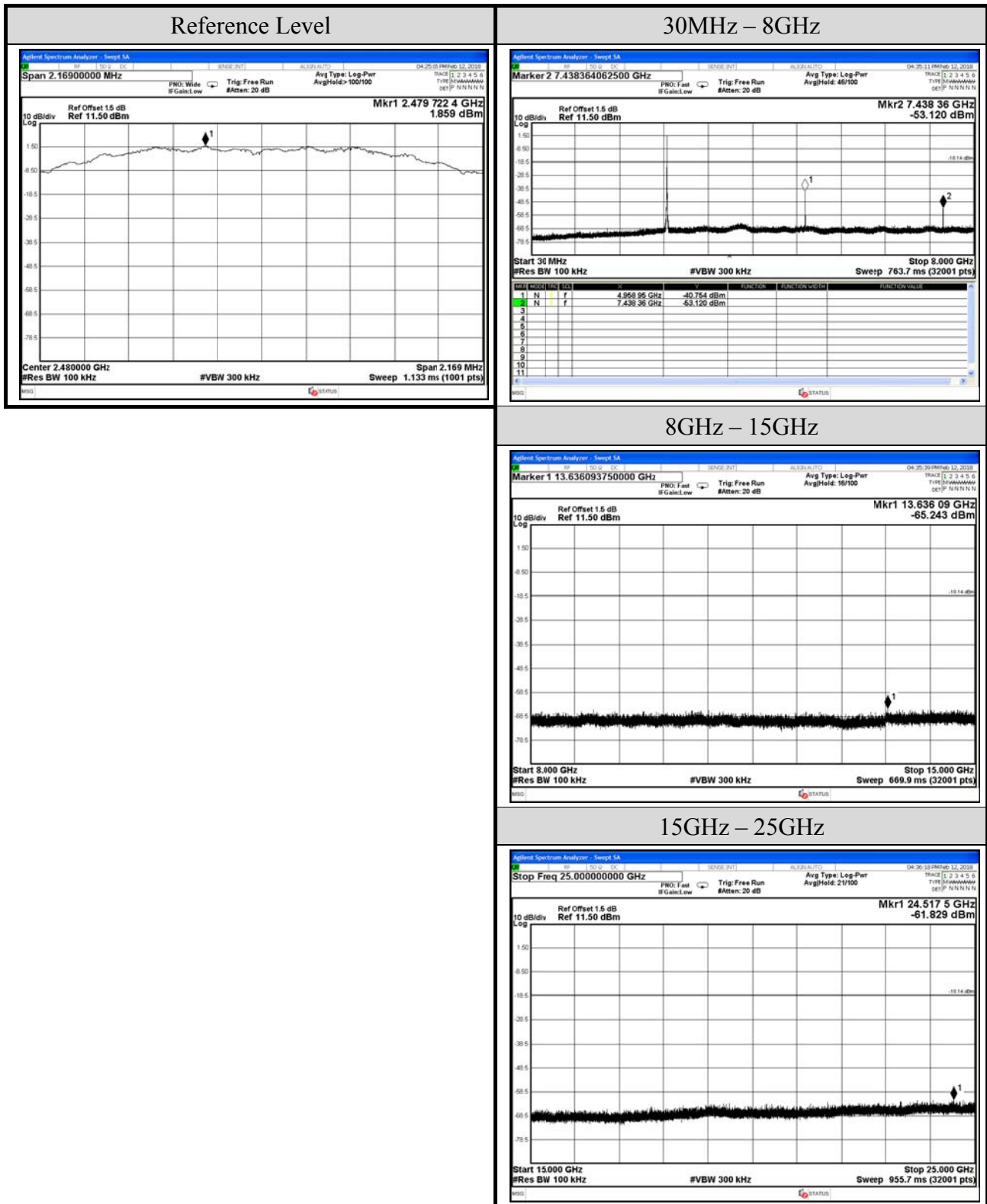
測試日期	2018/02/12	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)	模式	Zigbee
		測試頻率	2405MHz



測試日期	2018/02/12~11	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)	模式	Zigbee
		測試頻率	2440MHz



測試日期	2018/02/12 ~ 11	環境溫/濕度	21°C/45%
測試電壓	DC 6V (經電池供電)	模式	Zigbee
		測試頻率	2480MHz



6. 功率密度之量測

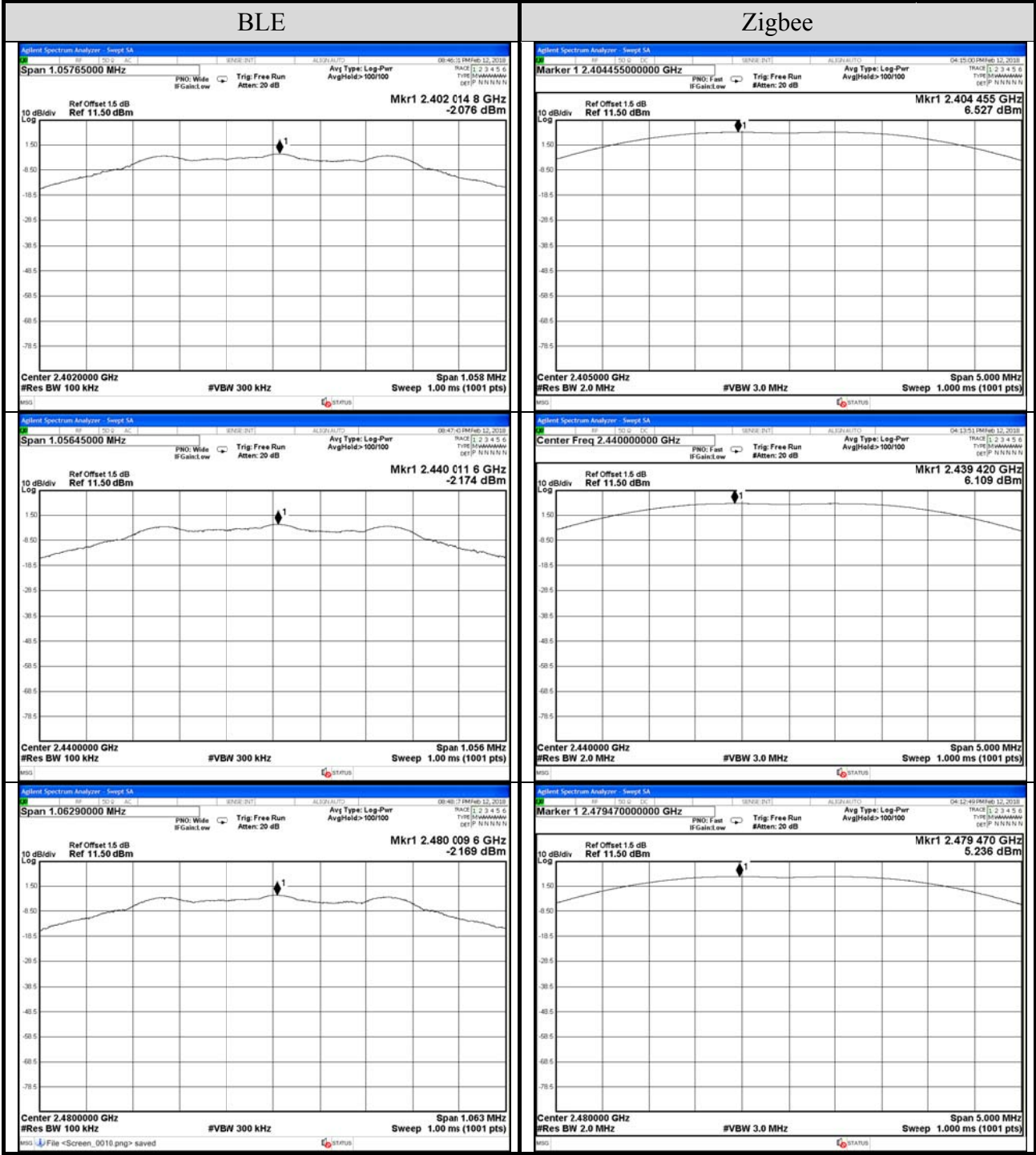
測試日期	2018/02/12	環境溫/濕度	21℃/45%
測試電壓	DC 6V (經電池供電)		

6.1. 功率密度

模式 (Mode)	測試頻率 (MHz)	功率密度 (dBm)	限制值 (dBm)
BLE	2402	-2.076	8
	2440	-2.174	
	2480	-2.169	
Zigbee	2405	6.527	
	2440	6.109	
	2480	5.236	

測試結果係依照 FCC 公告之 KDB558074 D01V04，且解析頻寬以 100kHz 量測其測試結果較 3kHz 嚴格

6.2. 功率密度之量測圖



附錄 二

輻射干擾場強量測掃頻圖資料 (頻率範圍 30MHz~25000MHz)

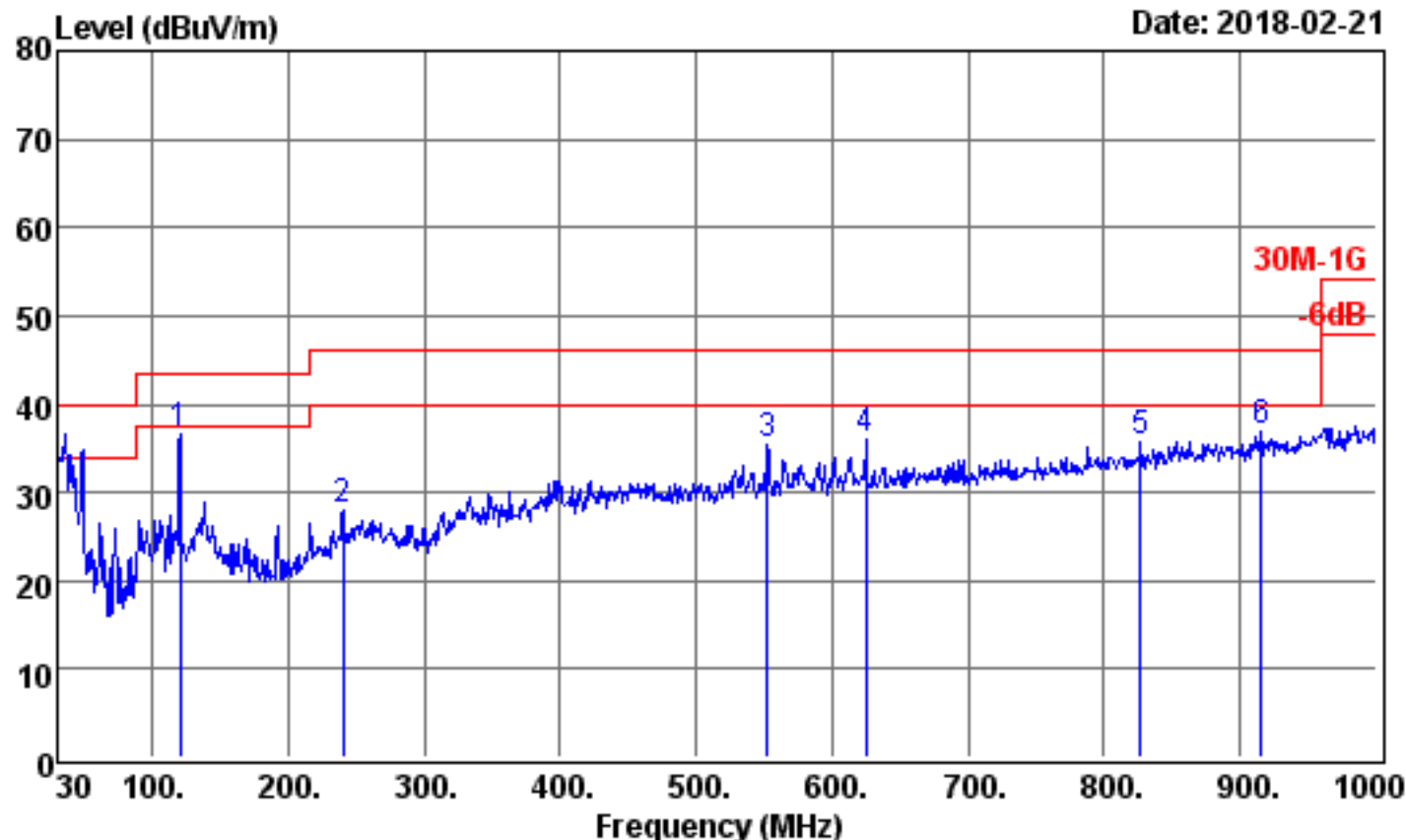
註：未標讀之訊號為筆記型電腦之雜訊，未予以判讀。



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : AUDIX No.1 3m Chamber
Dis. / Ant. : 3m CBL6112D 33821(PAD)
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : TX 2402MHz(BLE)

Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	120.21	18.80	2.51	41.30	36.49	43.50	7.01	Peak
2	240.49	18.57	3.73	31.40	28.00	46.00	18.00	Peak
3	551.86	23.95	6.60	31.98	35.25	46.00	10.75	Peak
4	624.61	24.70	6.84	31.70	35.86	46.00	10.14	Peak
5	826.37	26.17	7.77	28.82	35.62	46.00	10.38	Peak
6	915.61	26.98	8.28	28.51	36.89	46.00	9.11	Peak

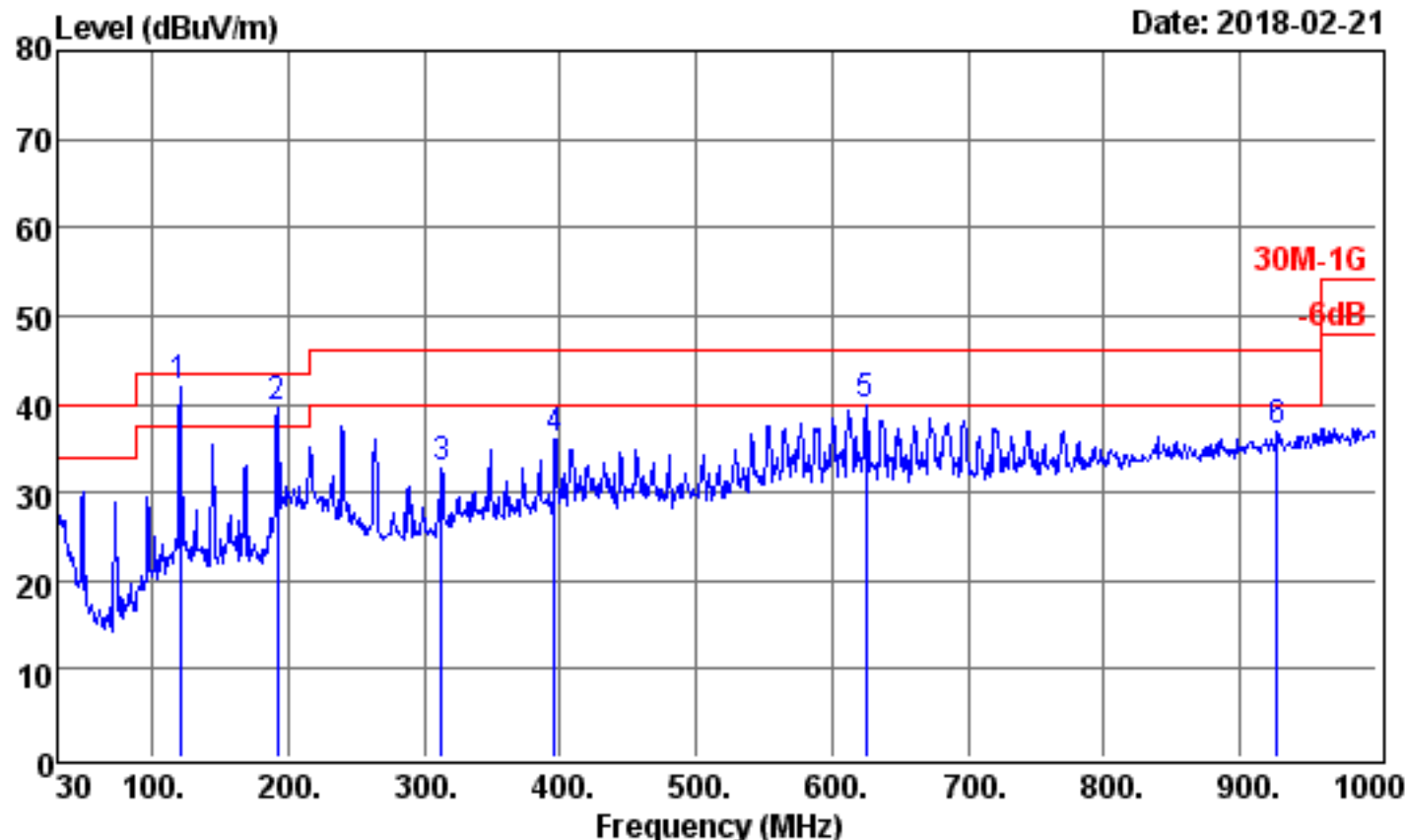
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : AUDIX No.1 3m Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821(PAD) Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A Engineer : Sean
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : TX 2402MHz(BLE)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	120.21	18.80	2.51	46.76	41.95	43.50	1.55	Peak
2	191.99	15.62	3.26	46.36	39.46	43.50	4.04	Peak
3	312.27	19.84	4.48	34.27	32.85	46.00	13.15	Peak
4	395.69	21.98	5.51	34.99	36.10	46.00	9.90	Peak
5	624.61	24.70	6.84	35.65	39.81	46.00	6.19	Peak
6	927.25	27.08	8.35	28.19	36.77	46.00	9.23	Peak

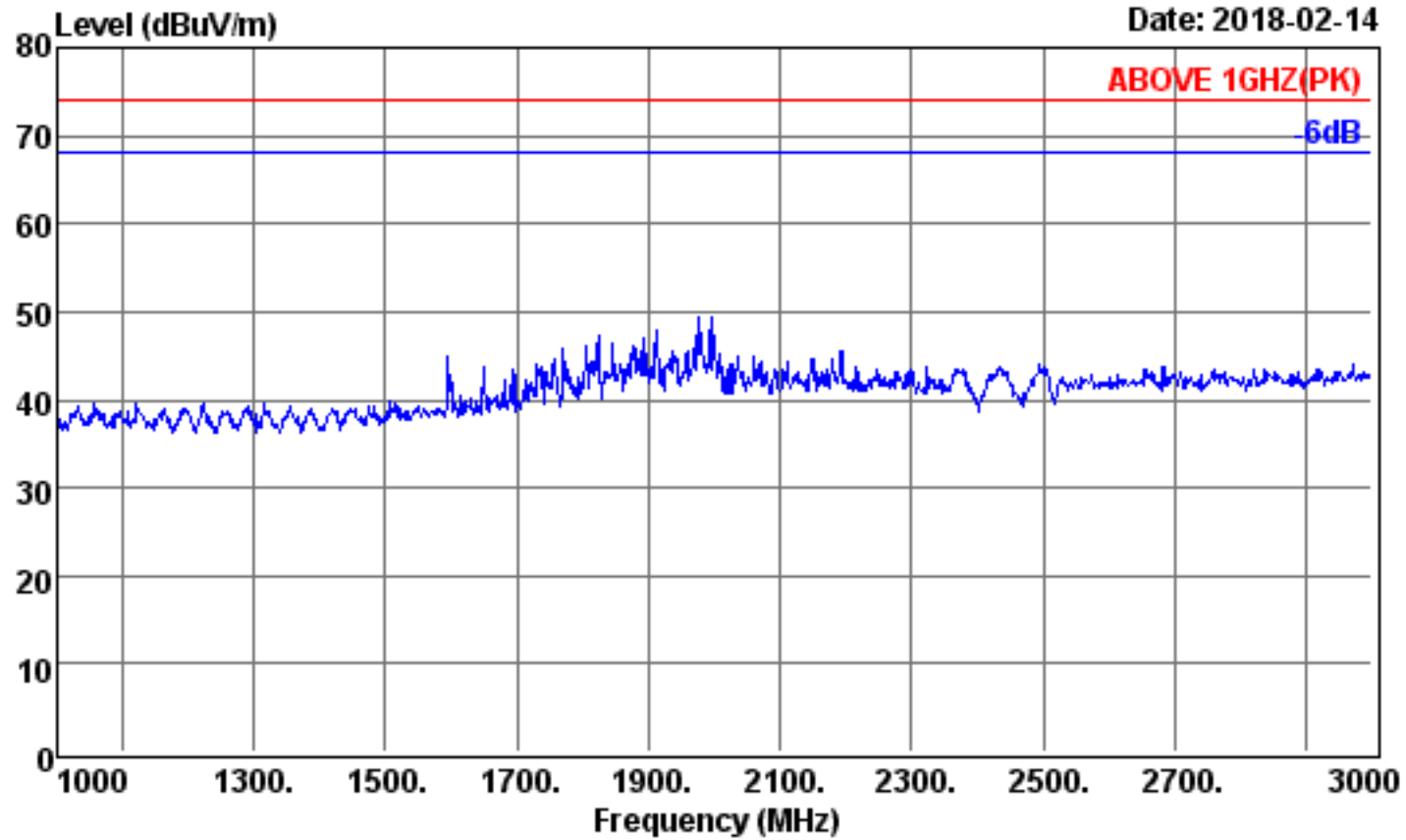
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-14



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

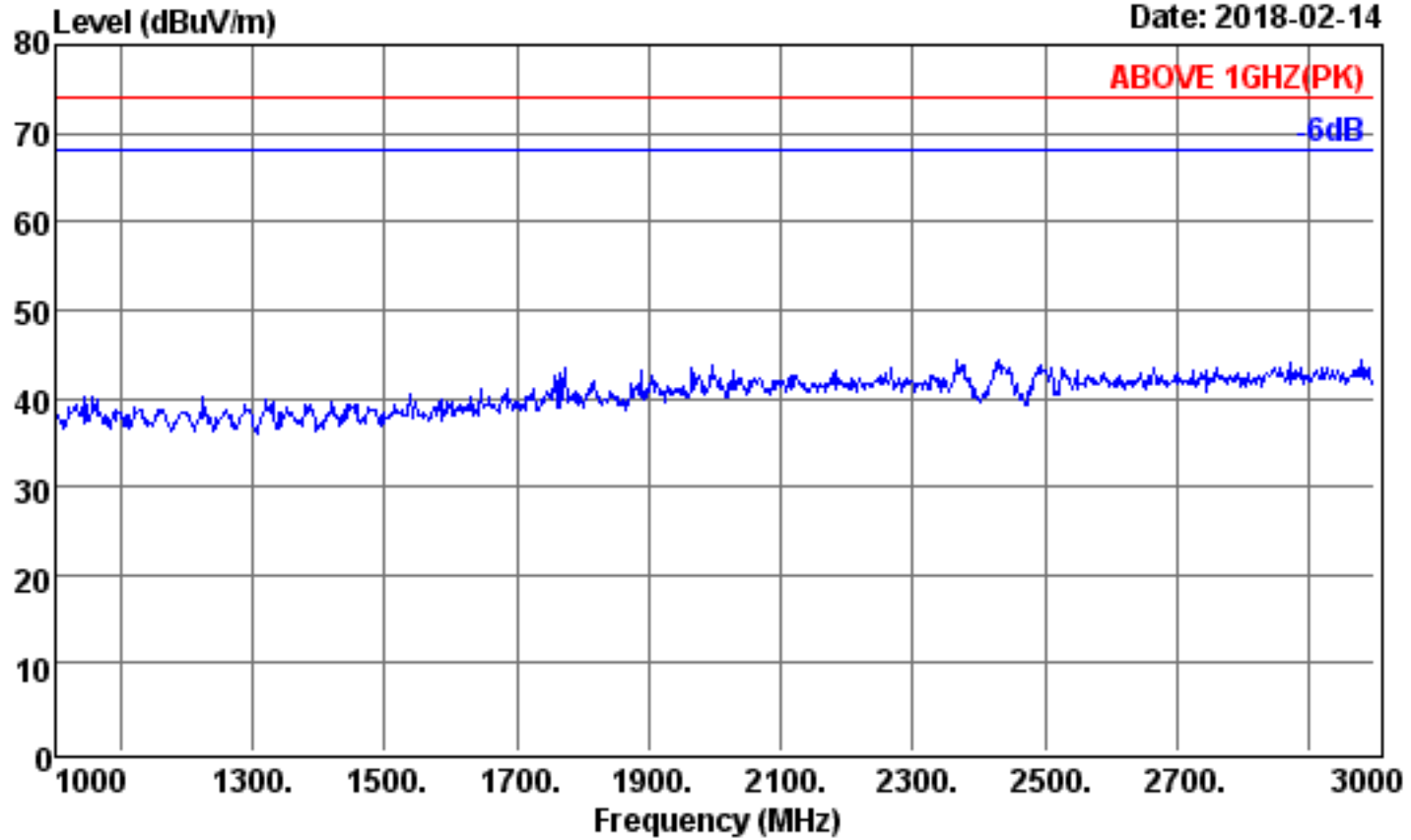
Data no. : 5
Ant. pol. : VERTICAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-14



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

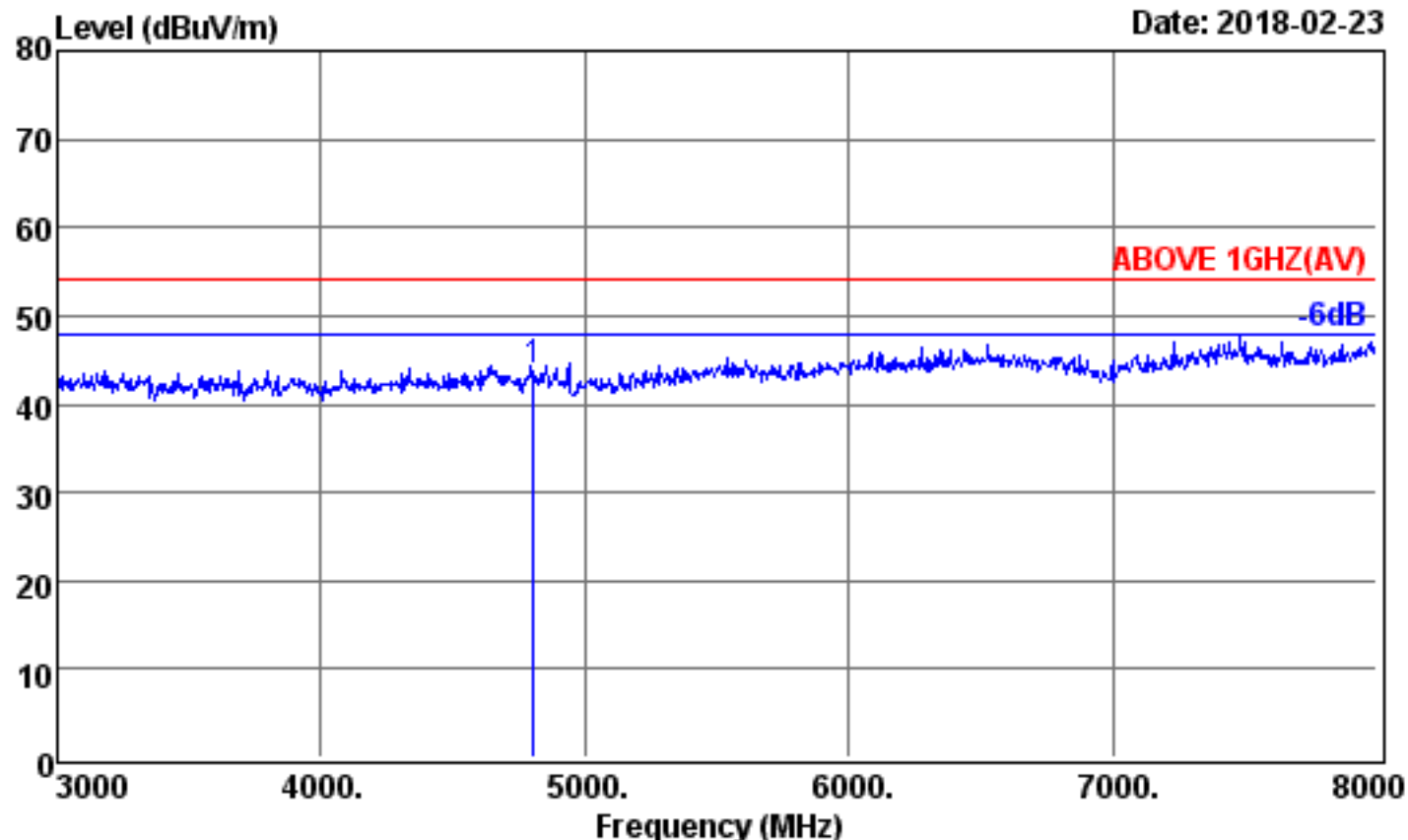
Data no. : 6
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-23



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4805.00	34.22	9.54	34.32	43.66	54.00	10.34	Peak

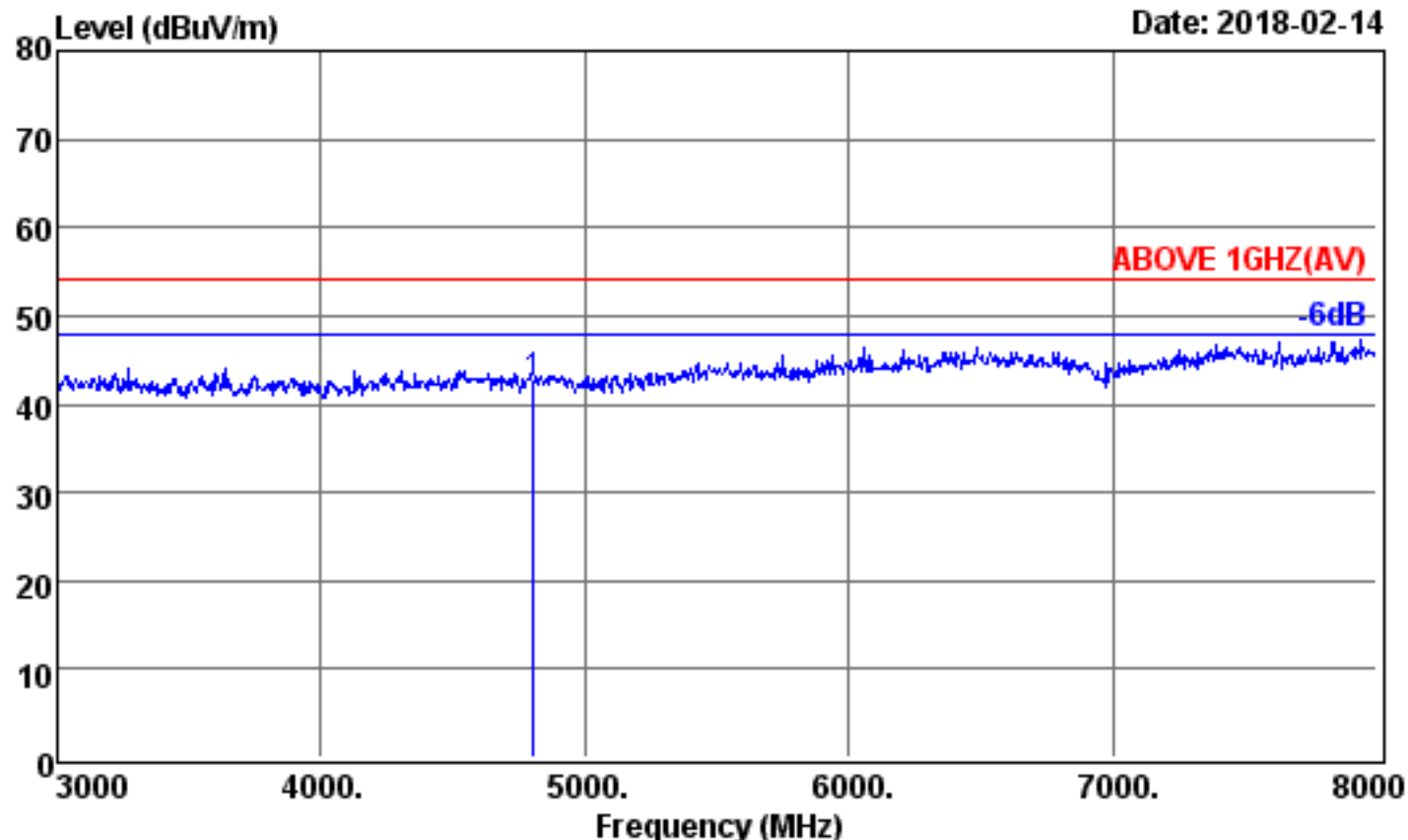
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-14



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

Data no. : 2
Ant. pol. : HORIZONTAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4805.00	34.22	9.54	32.77	42.11	54.00	11.89	Peak

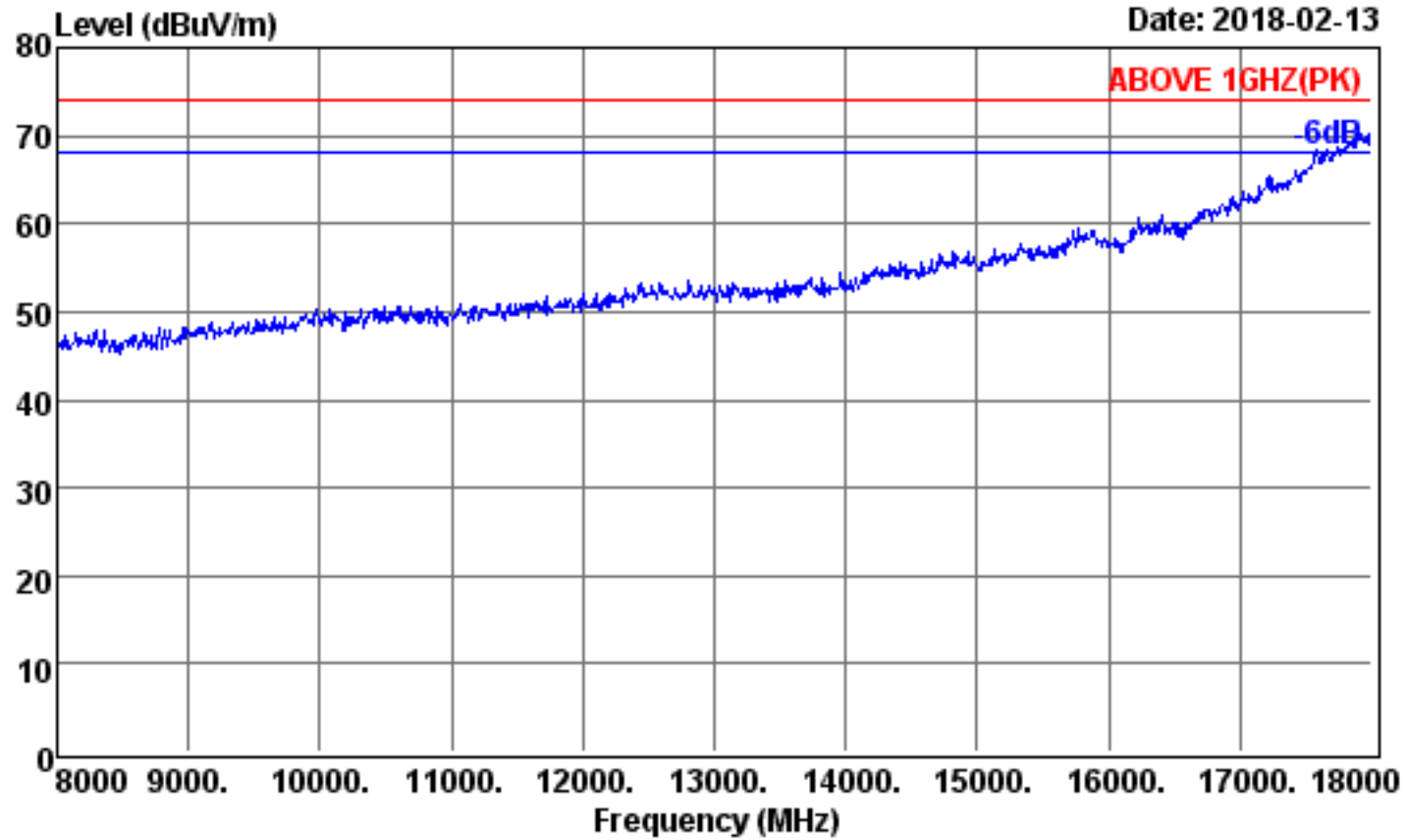
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

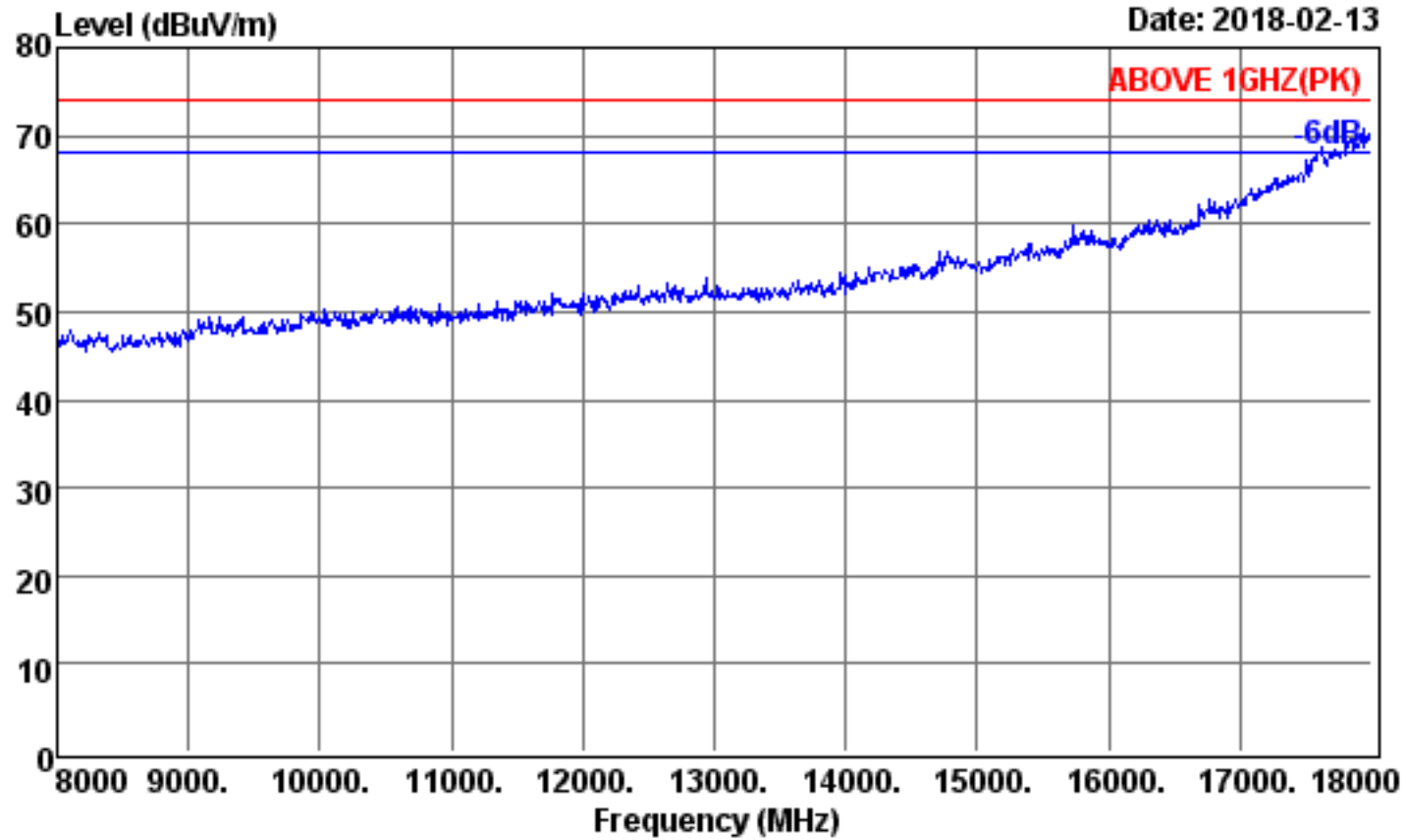
Data no. : 3
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

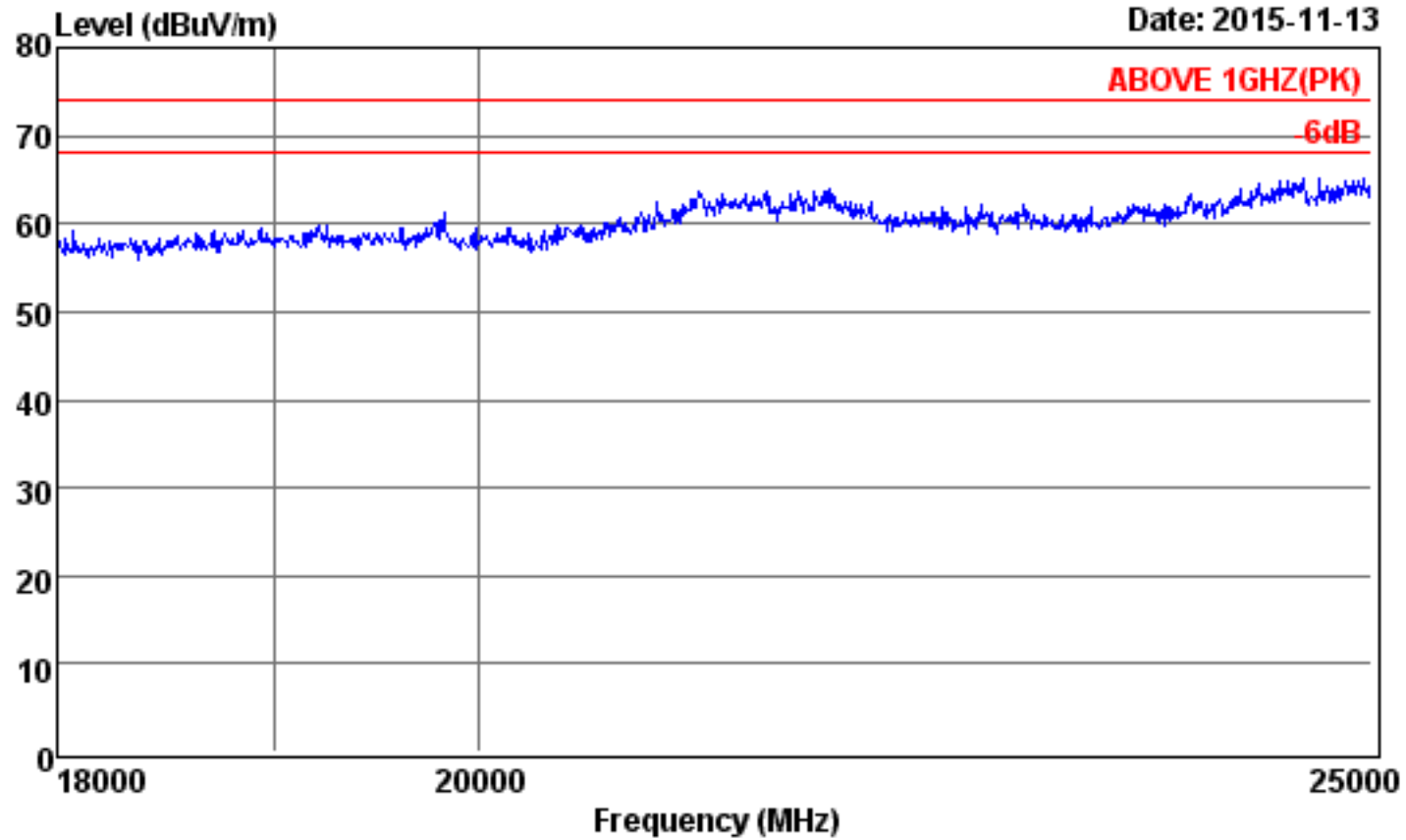
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

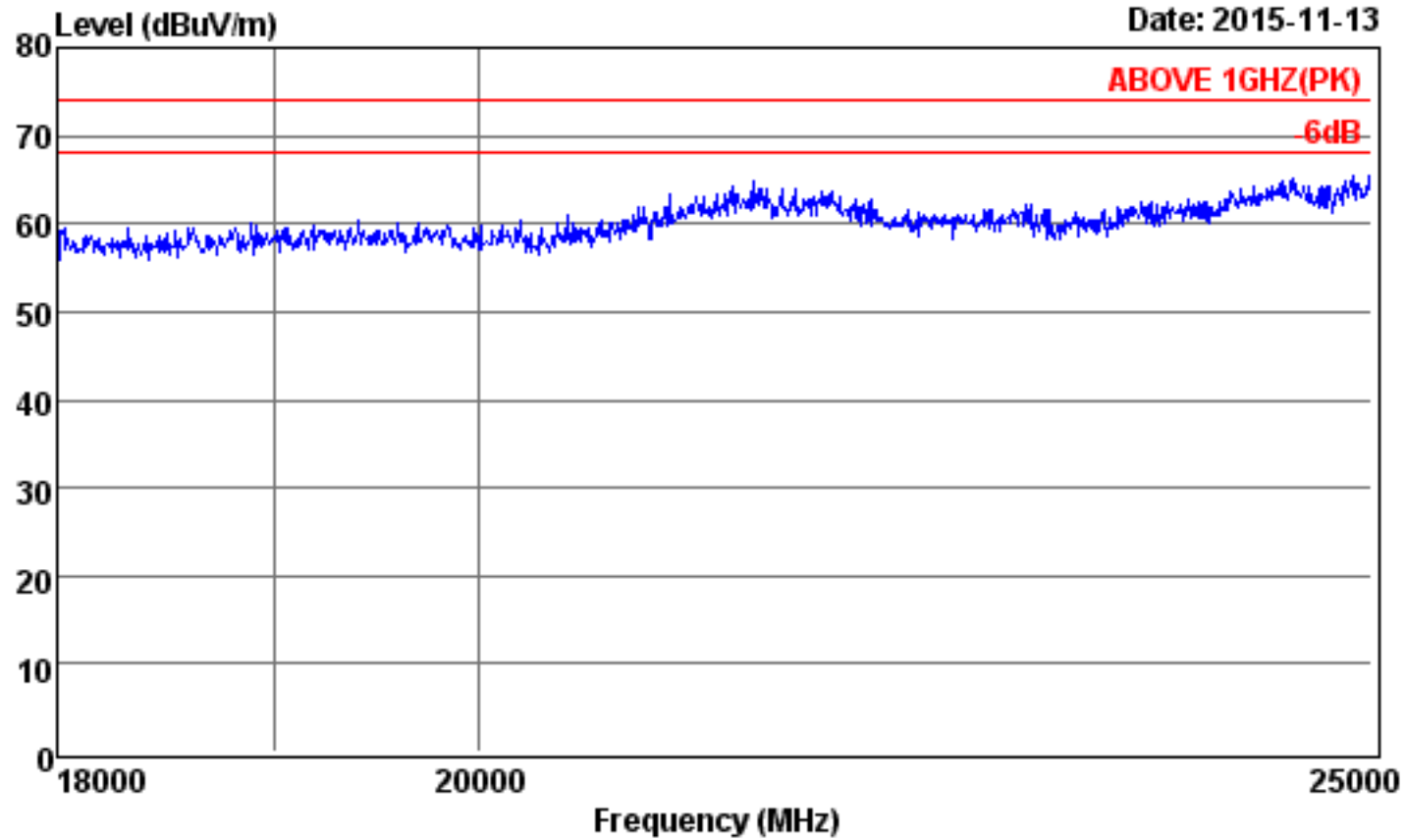
Data no. : 1
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2402MHz(BLE)

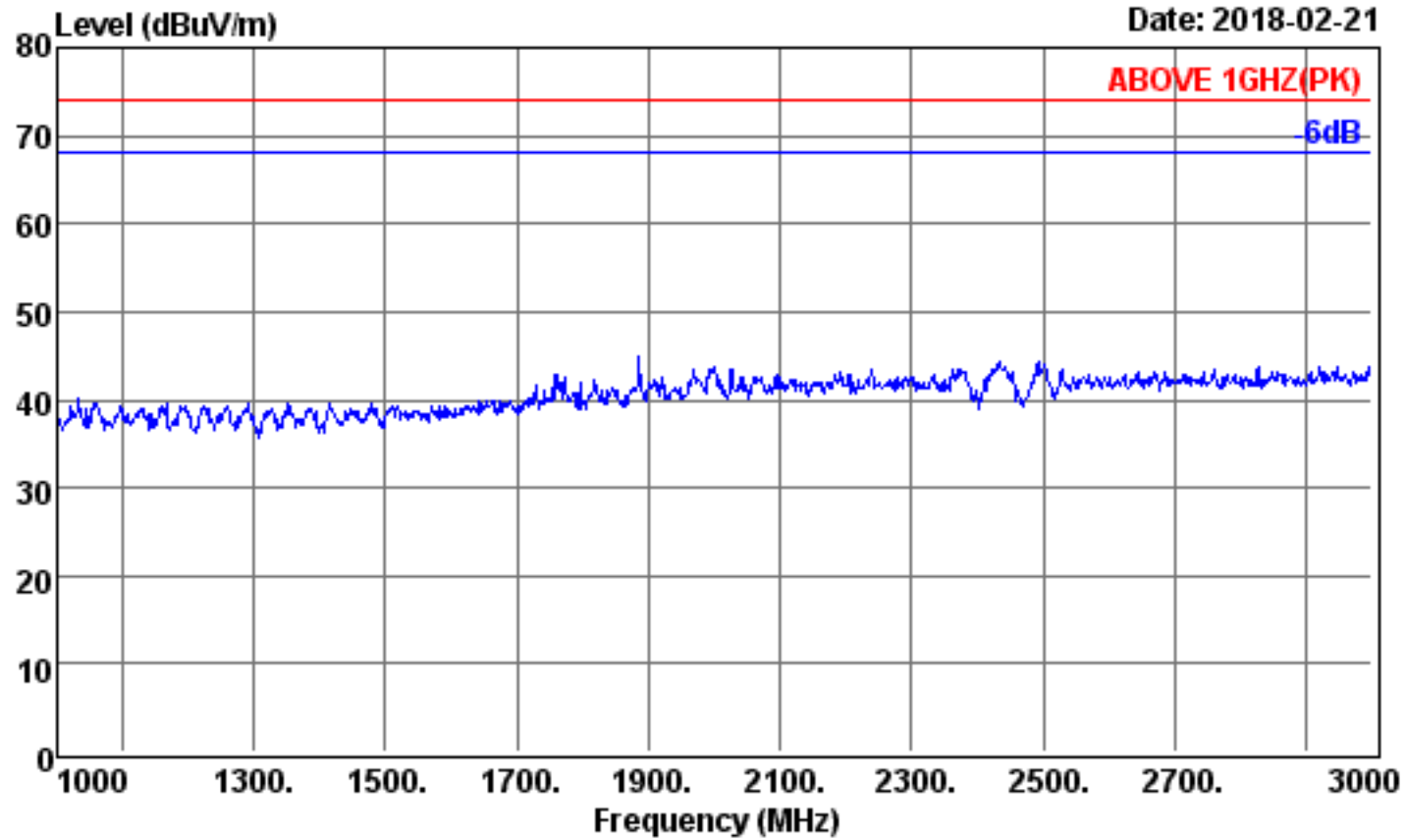
Data no. : 2
Ant. pol. : VERTICAL
Engineer : Sean



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

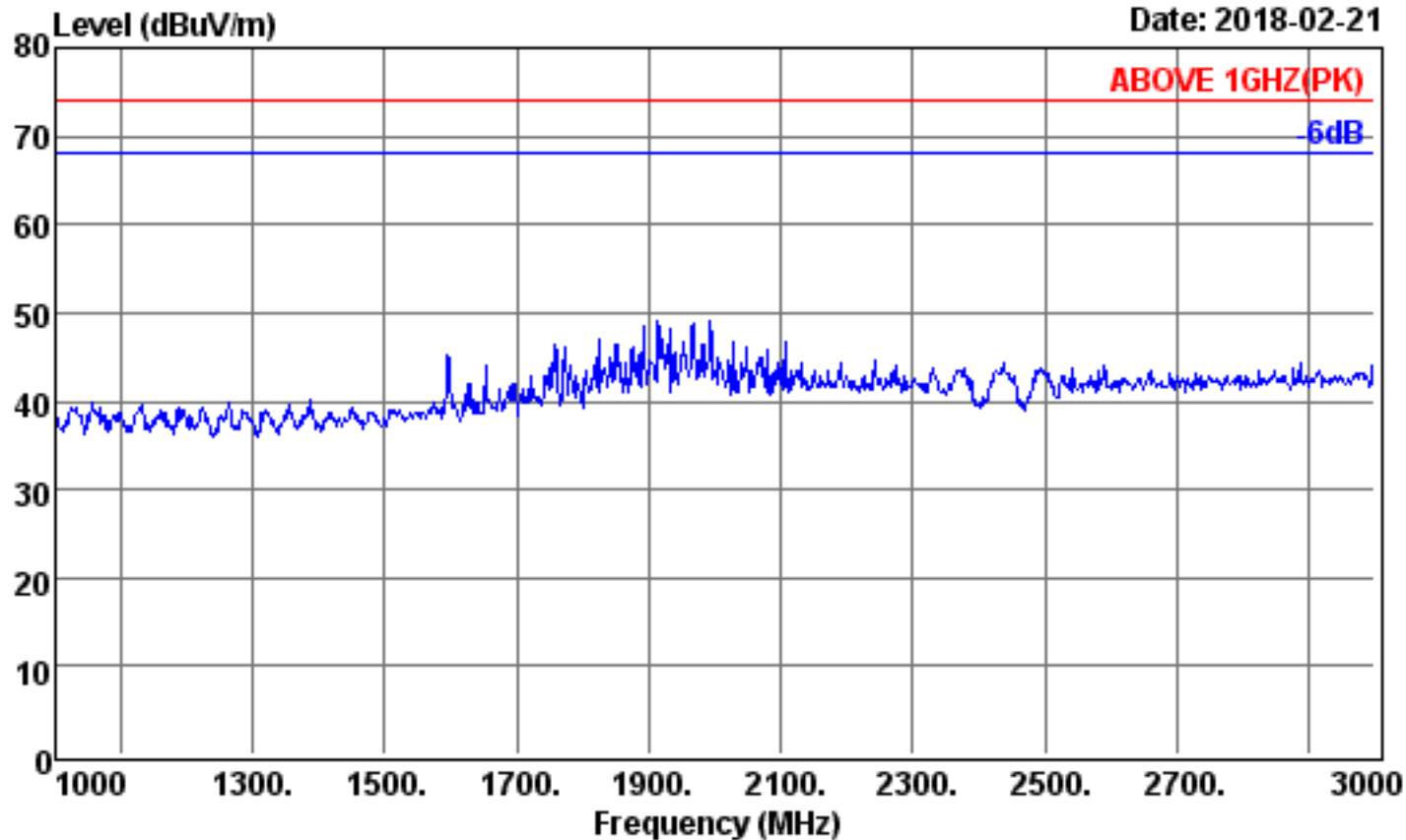
Data no. : 5
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

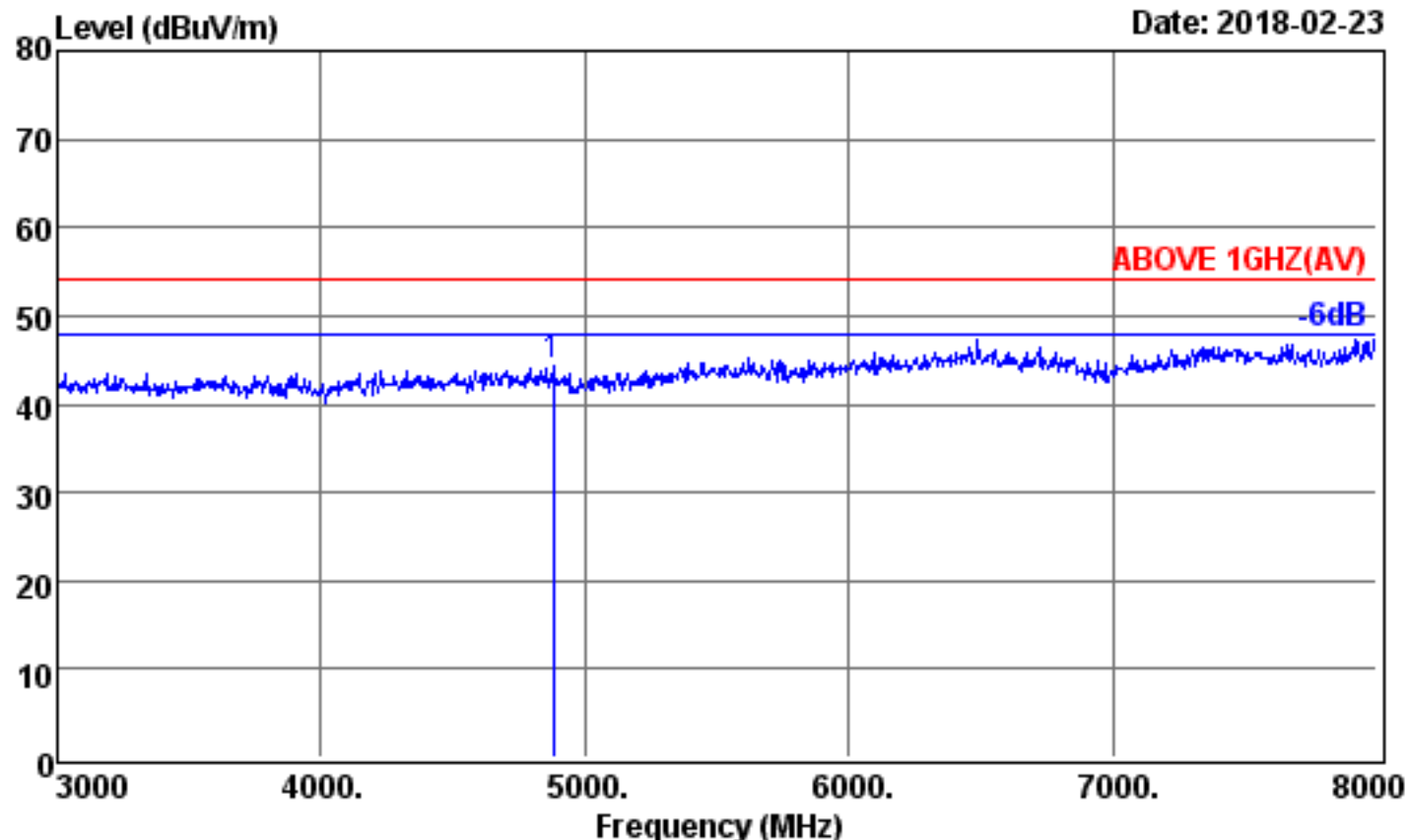
Data no. : 6
Ant. pol. : VERTICAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-23



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

Data no. : 1
Ant. pol. : HORIZONTAL
Engineer : Sean

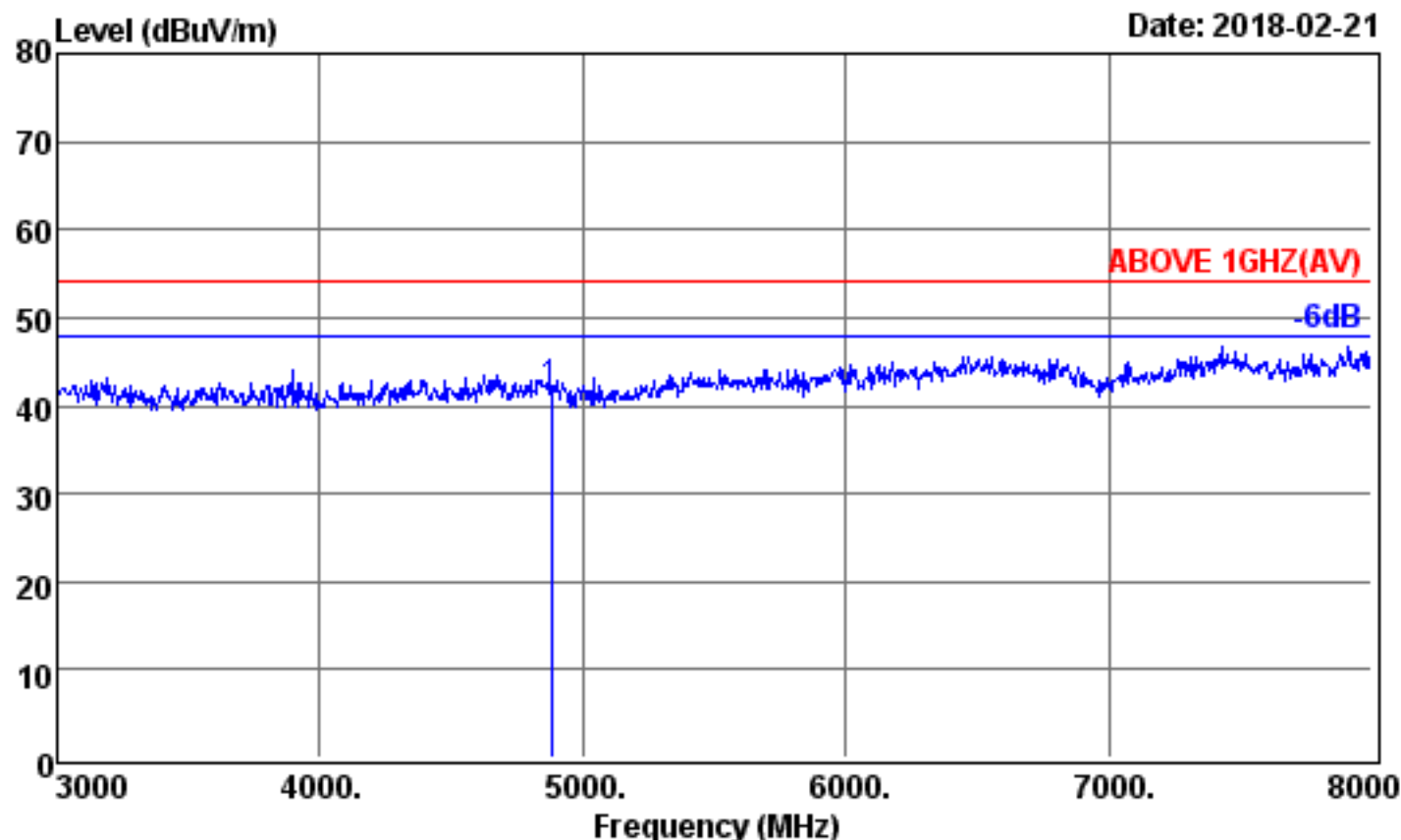
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4880.00	34.25	9.56	34.85	44.25	54.00	9.75	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

Data no. : 2
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4880.00	34.25	9.56	32.98	41.78	54.00	12.22	Peak

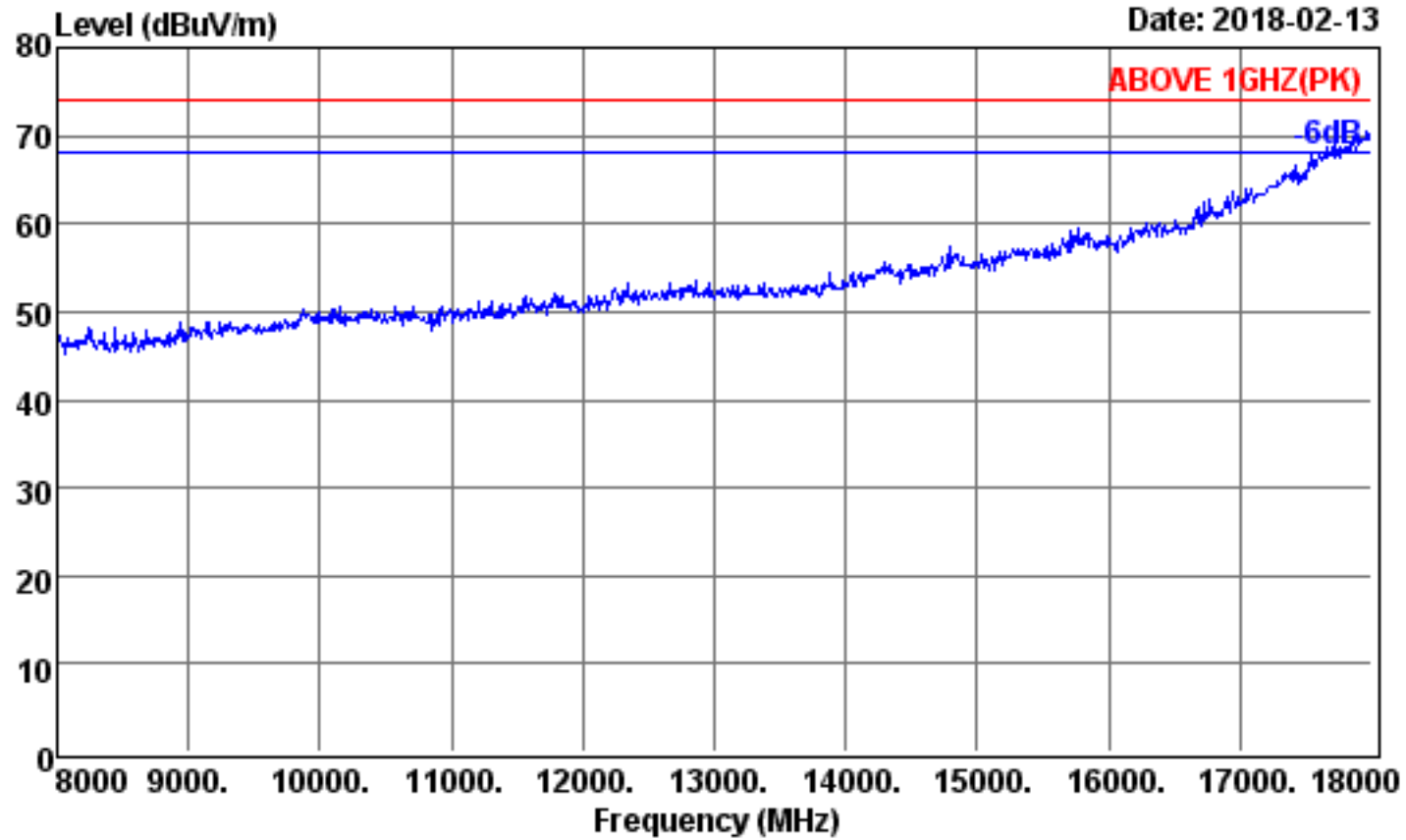
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

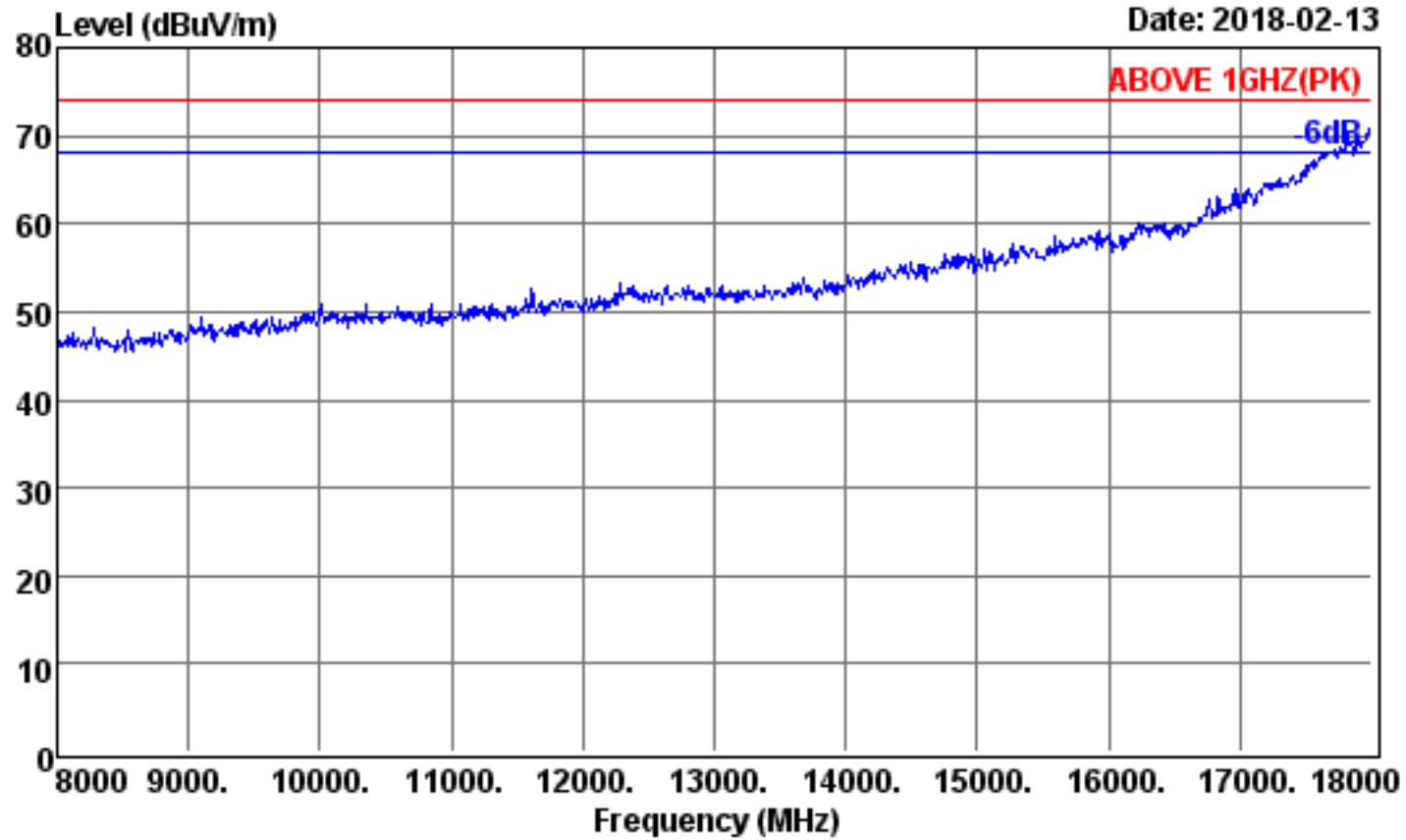
Data no. : 3
Ant. pol. : VERTICAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

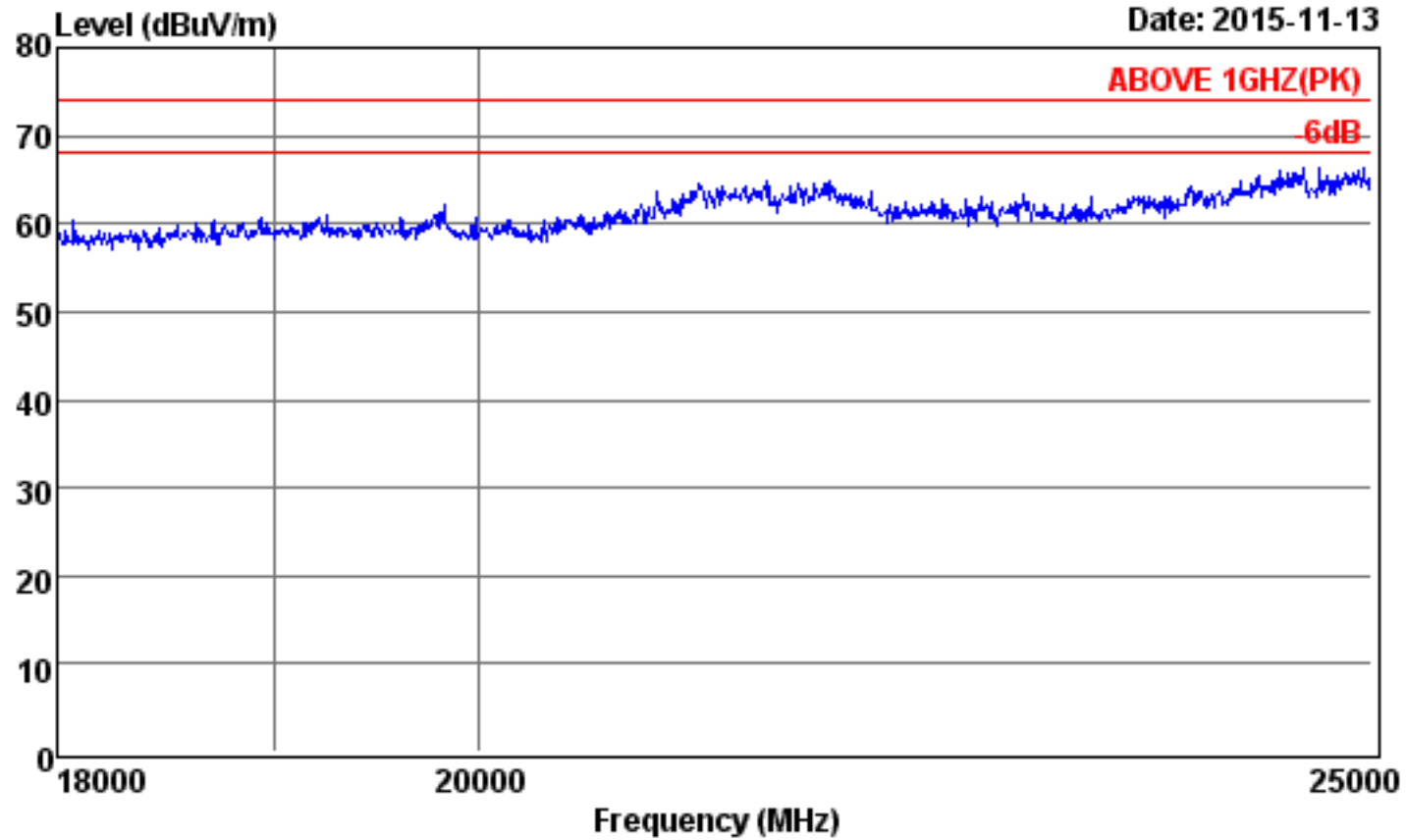
Data no. : 4
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

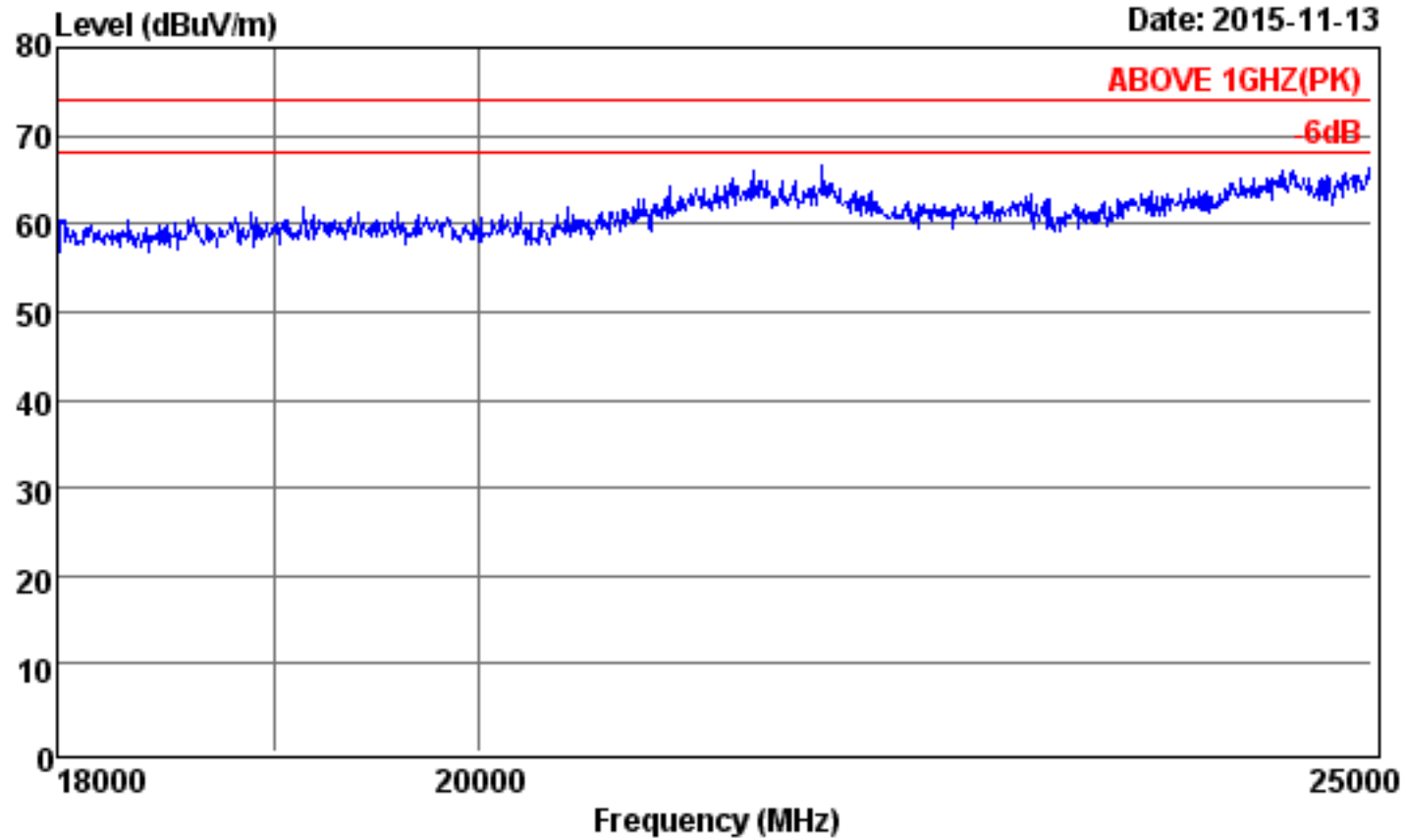
Data no. : 3
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(BLE)

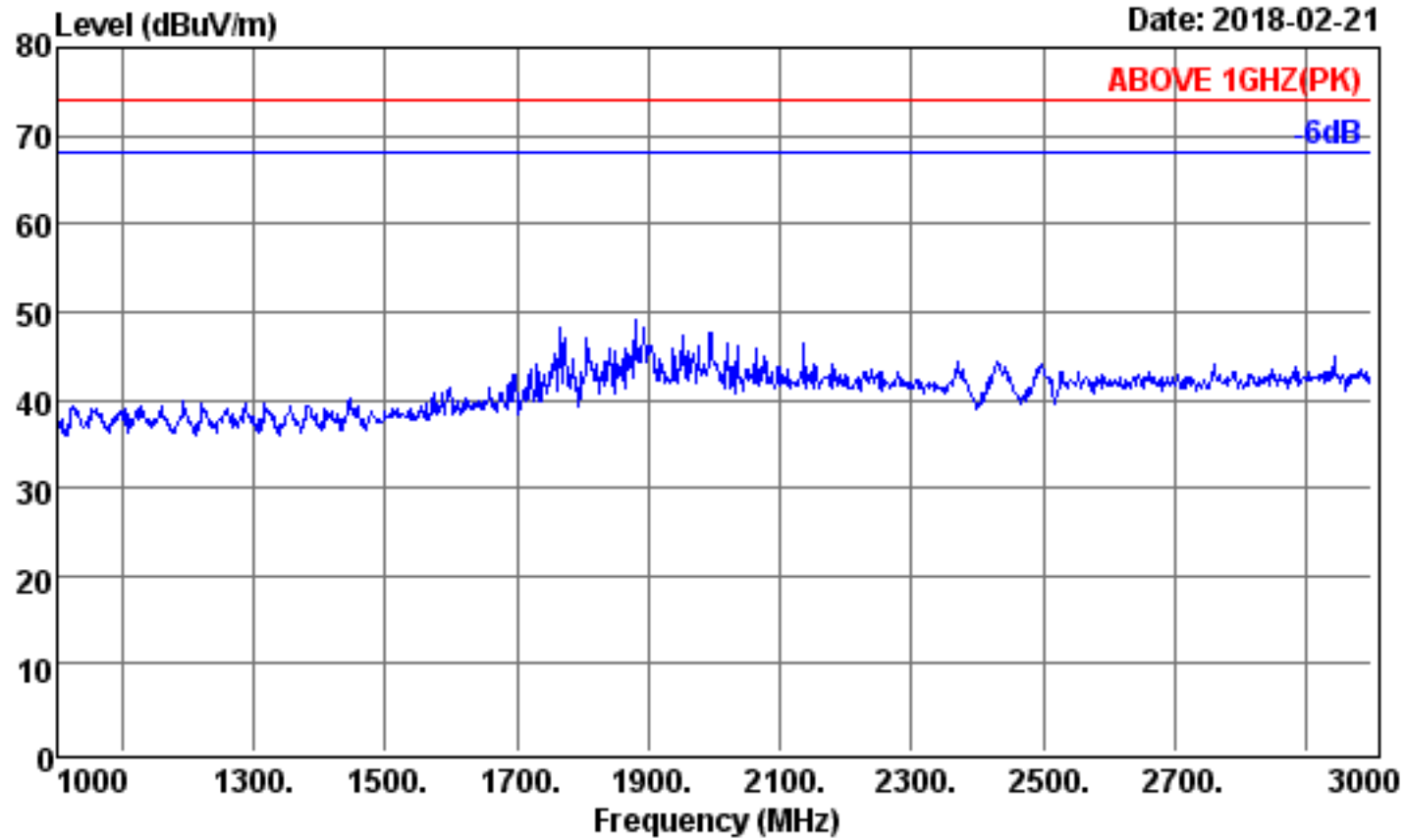
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Sean



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

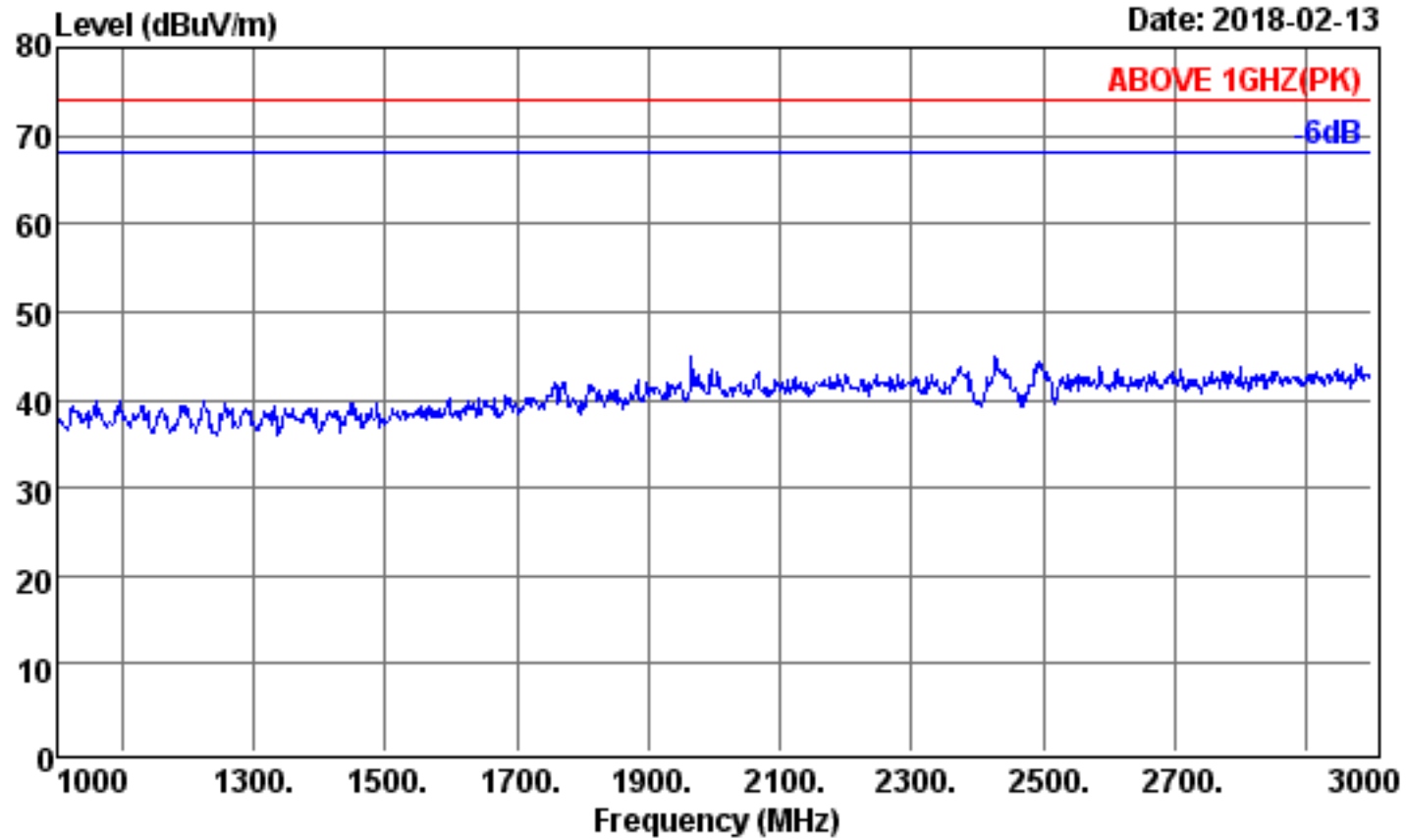
Data no. : 5
Ant. pol. : VERTICAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

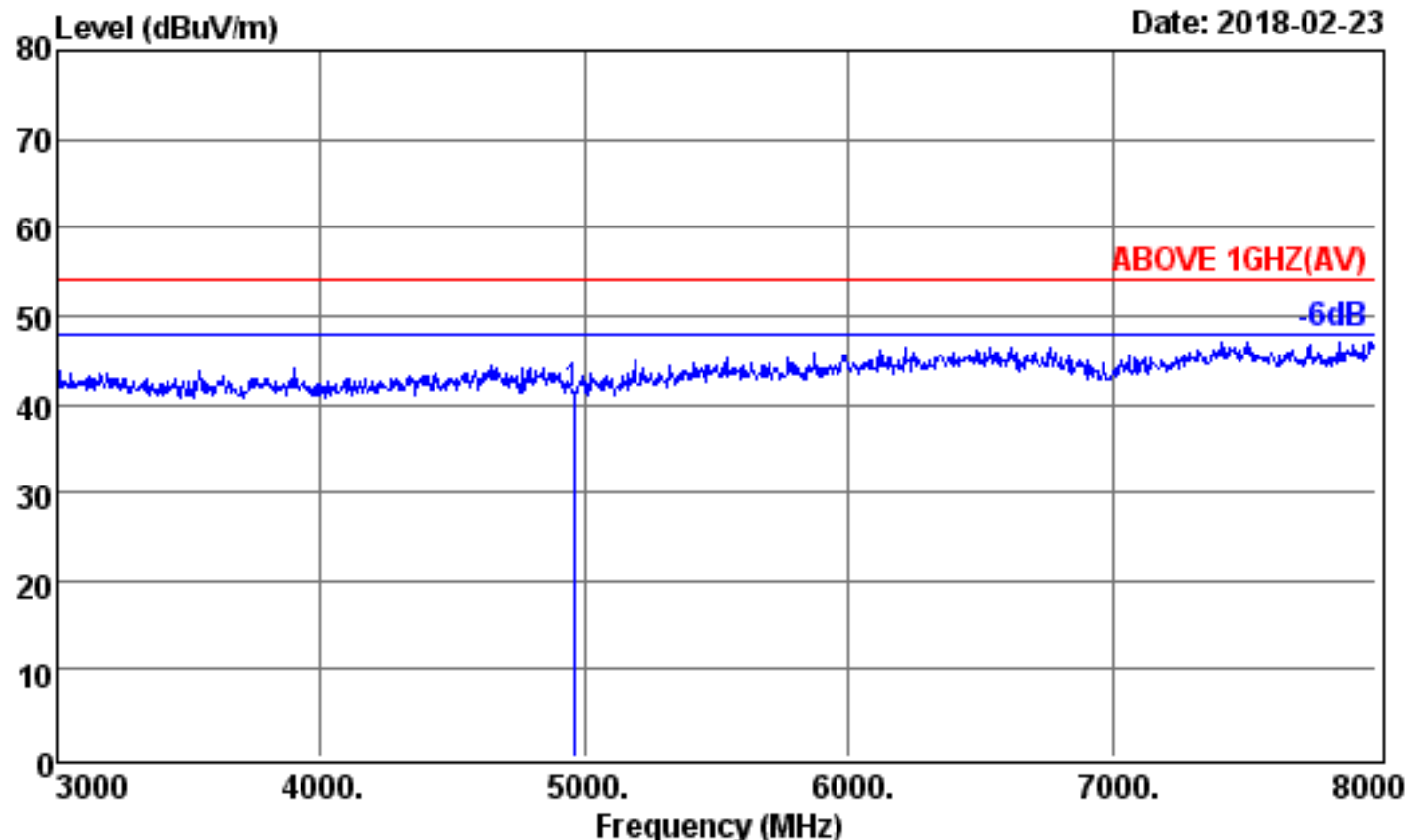
Data no. : 6
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-23



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sean

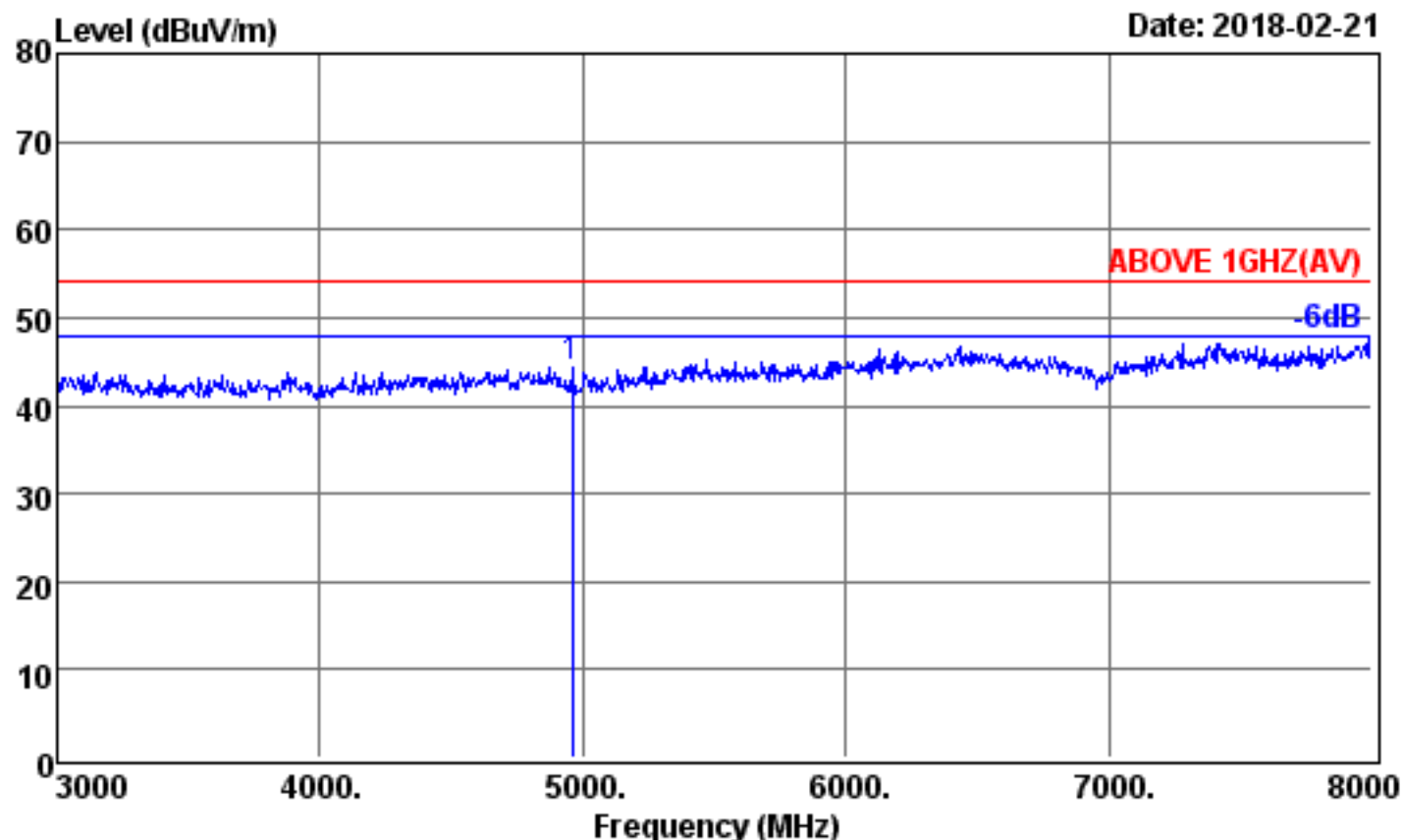
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4960.00	34.29	9.60	31.69	41.17	54.00	12.83	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

Data no. : 2
Ant. pol. : HORIZONTAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4960.00	34.29	9.60	34.98	44.46	54.00	9.54	Peak

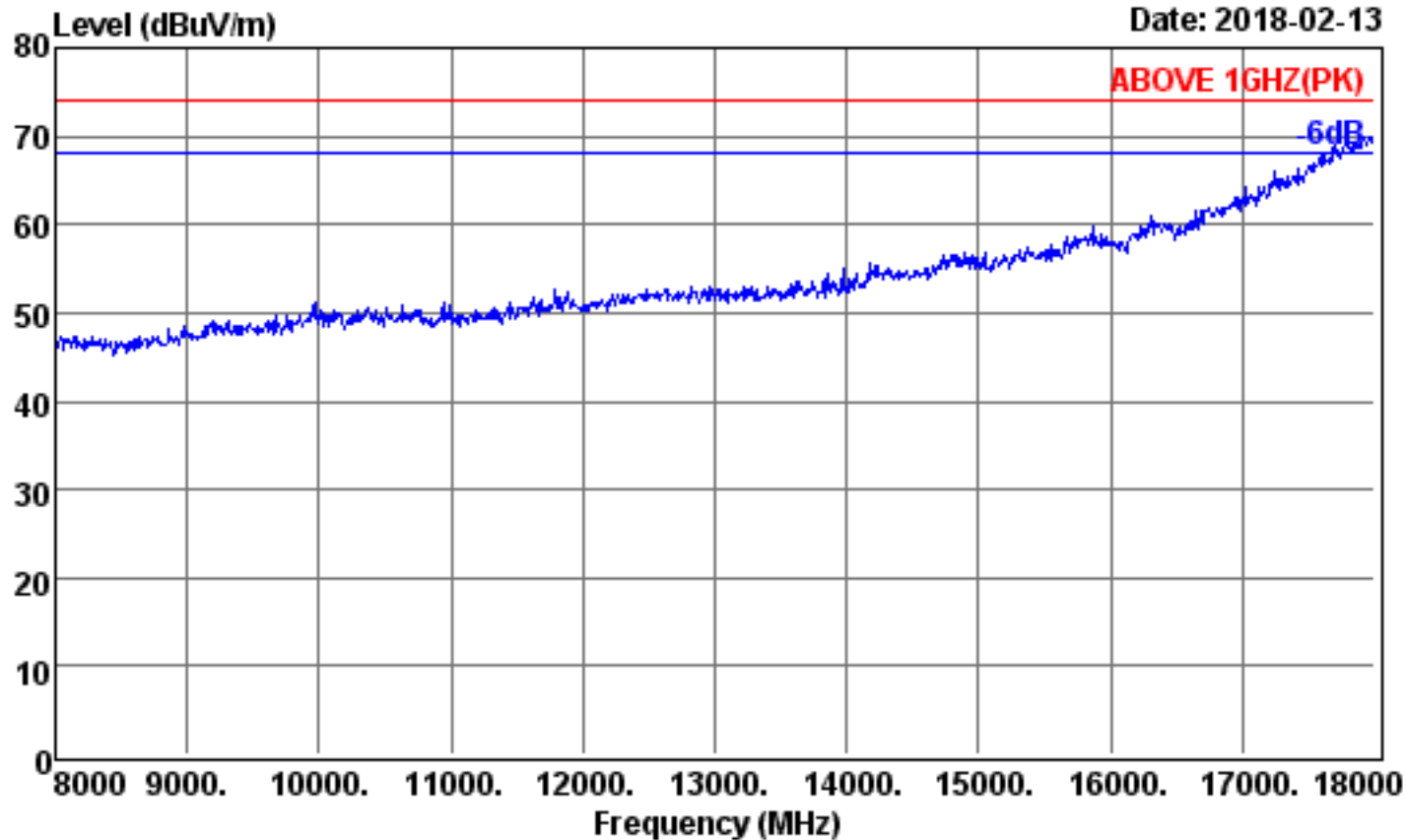
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

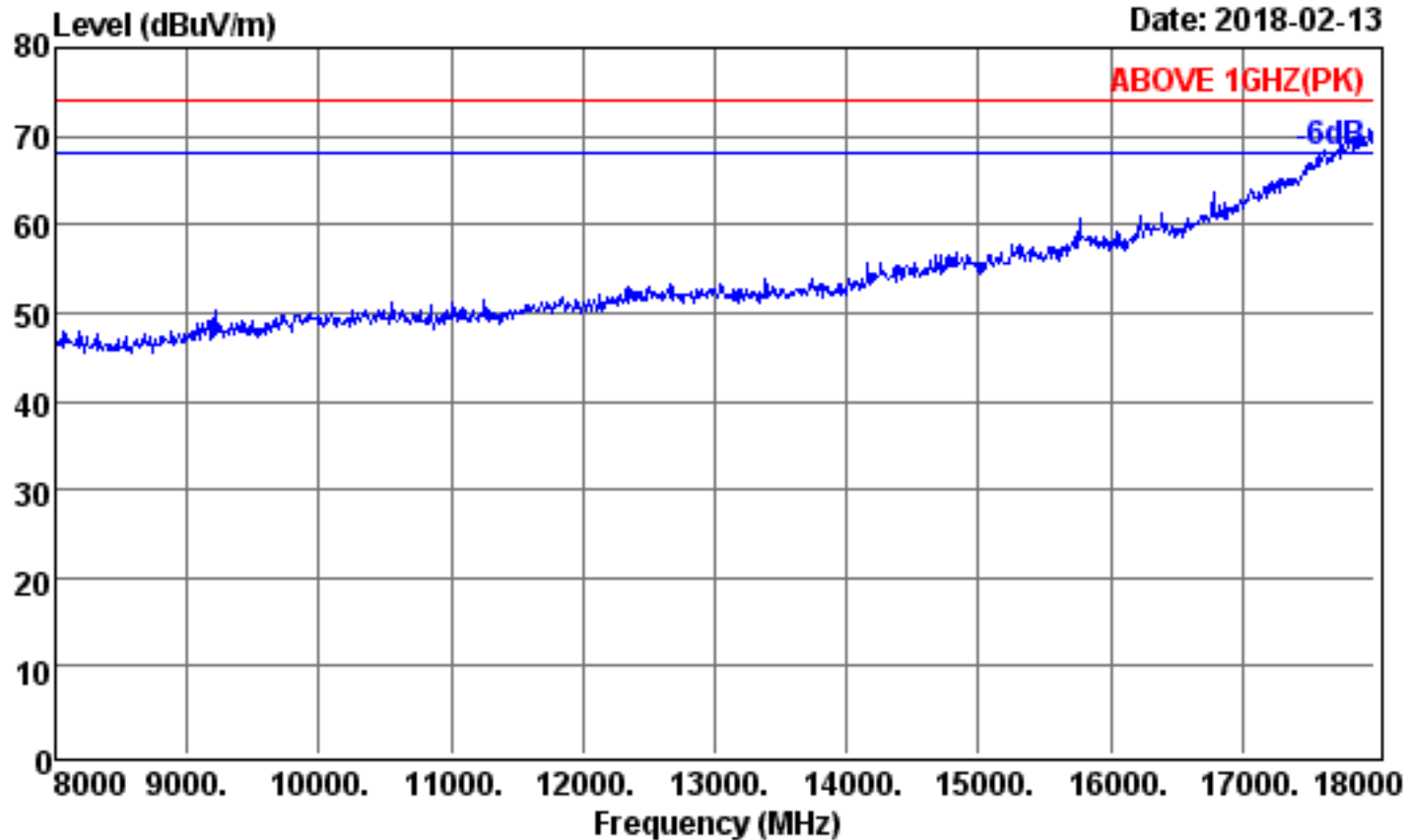
Data no. : 3
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

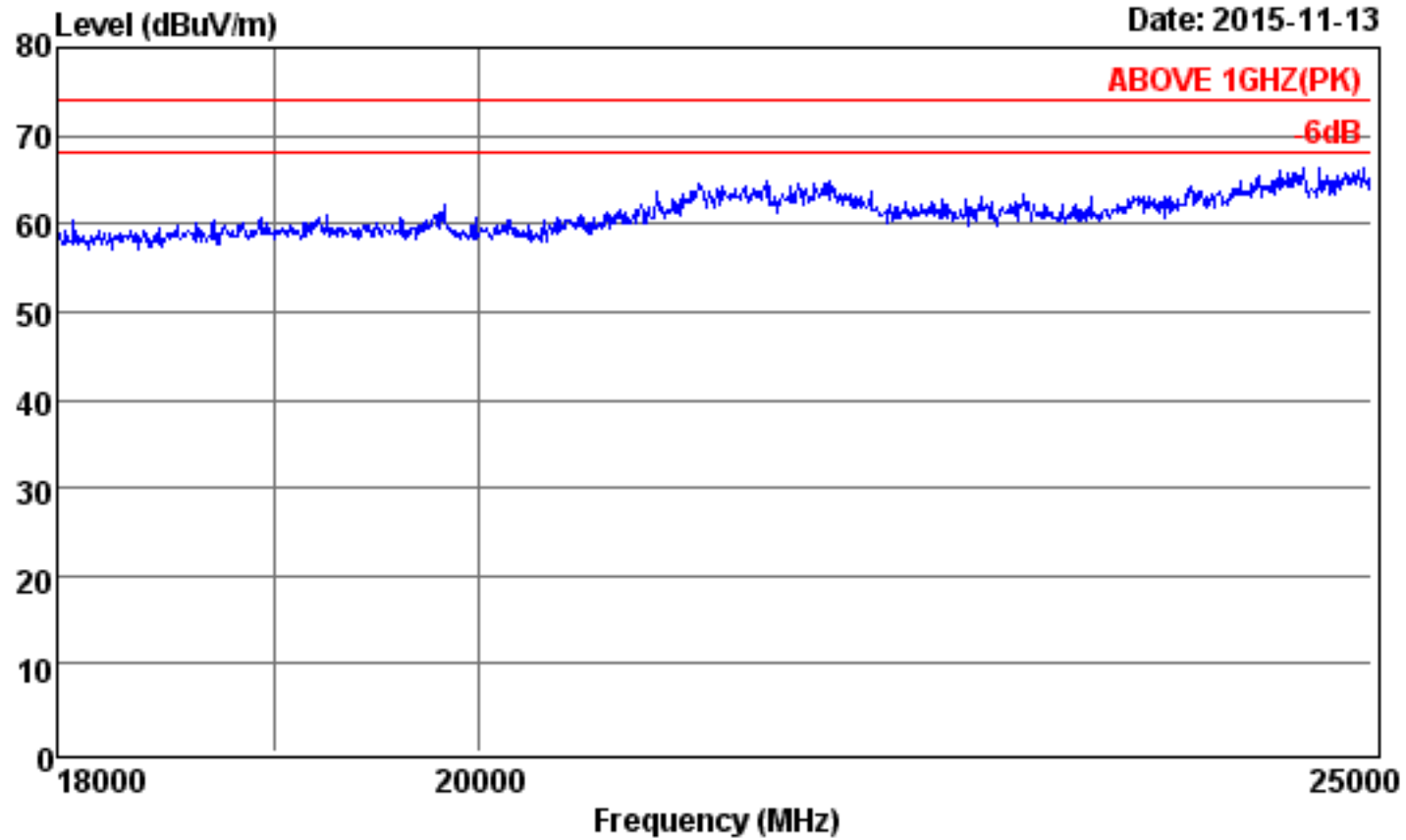
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Sean



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

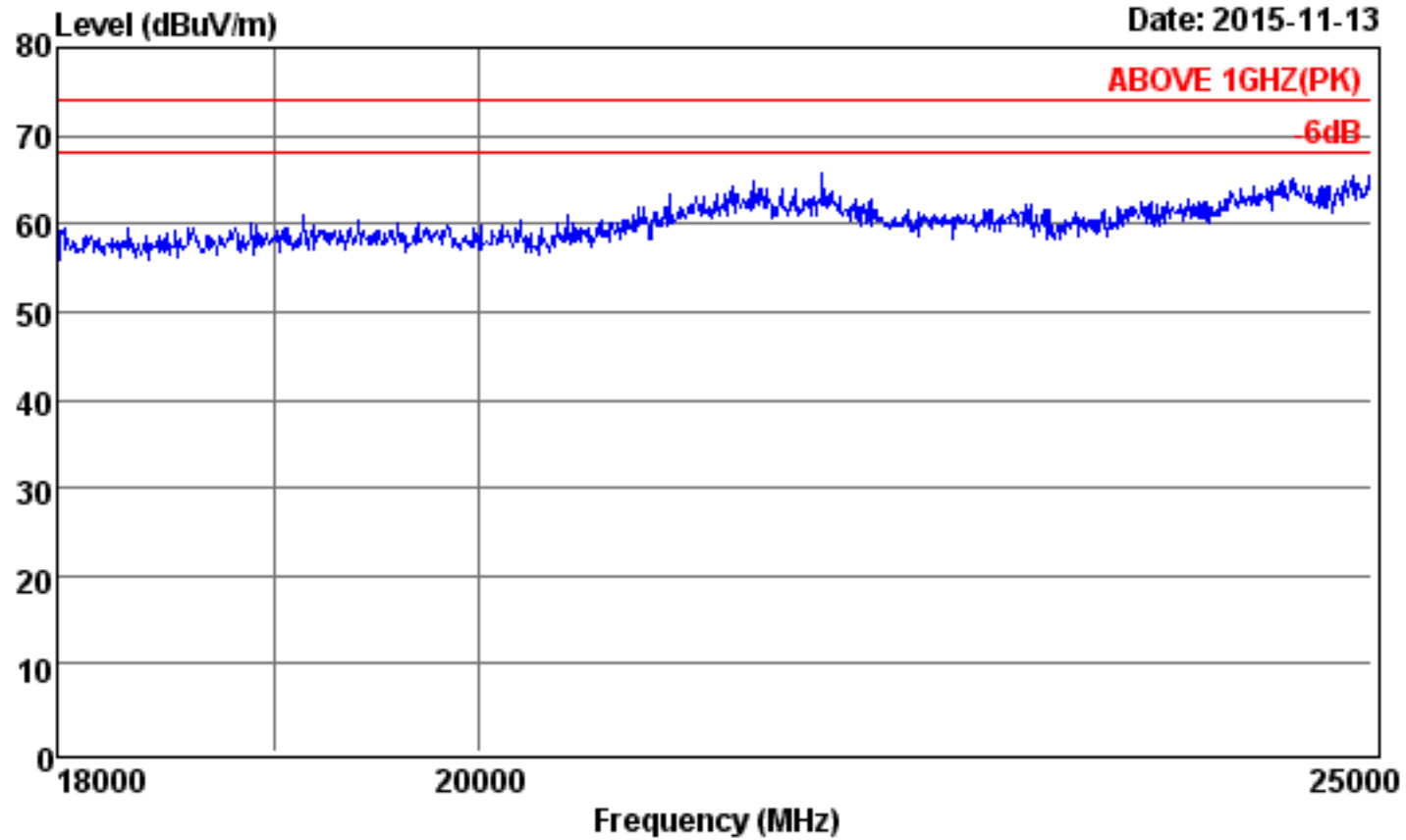
Data no. : 5
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(BLE)

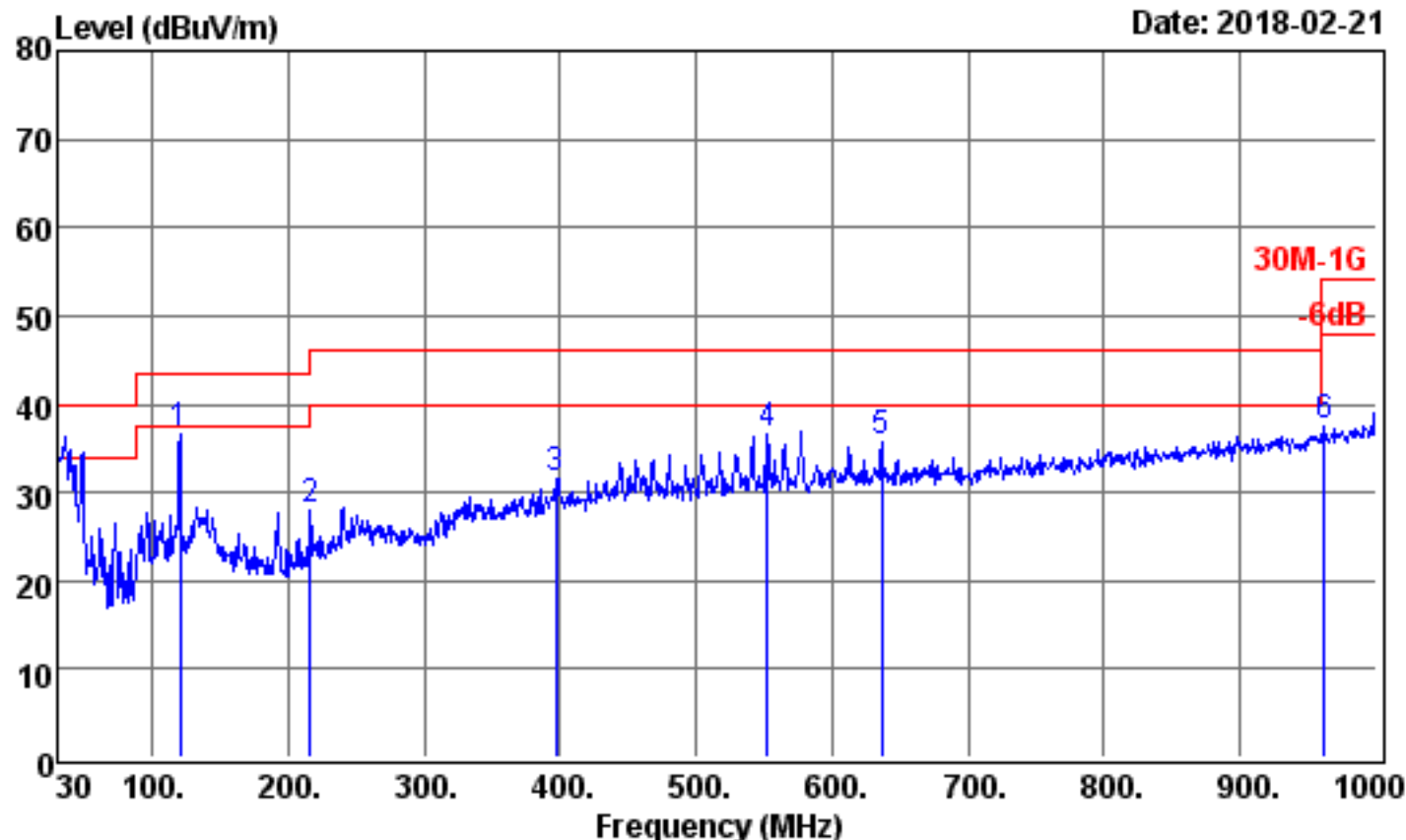
Data no. : 6
Ant. pol. : VERTICAL
Engineer : Sean



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : AUDIX No.1 3m Chamber Data no. : 3
Dis. / Ant. : 3m CBL6112D 33821(PAD) Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A Engineer : Sean
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : RX 2440MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	120.21	18.80	2.51	41.41	36.60	43.50	6.90	Peak
2	216.24	16.92	3.50	33.33	28.02	46.00	17.98	Peak
3	396.66	21.98	5.51	30.51	31.60	46.00	14.40	Peak
4	551.86	23.95	6.60	33.20	36.47	46.00	9.53	Peak
5	636.25	24.73	6.88	31.33	35.56	46.00	10.44	Peak
6	962.17	27.46	8.59	28.32	37.62	54.00	16.38	Peak

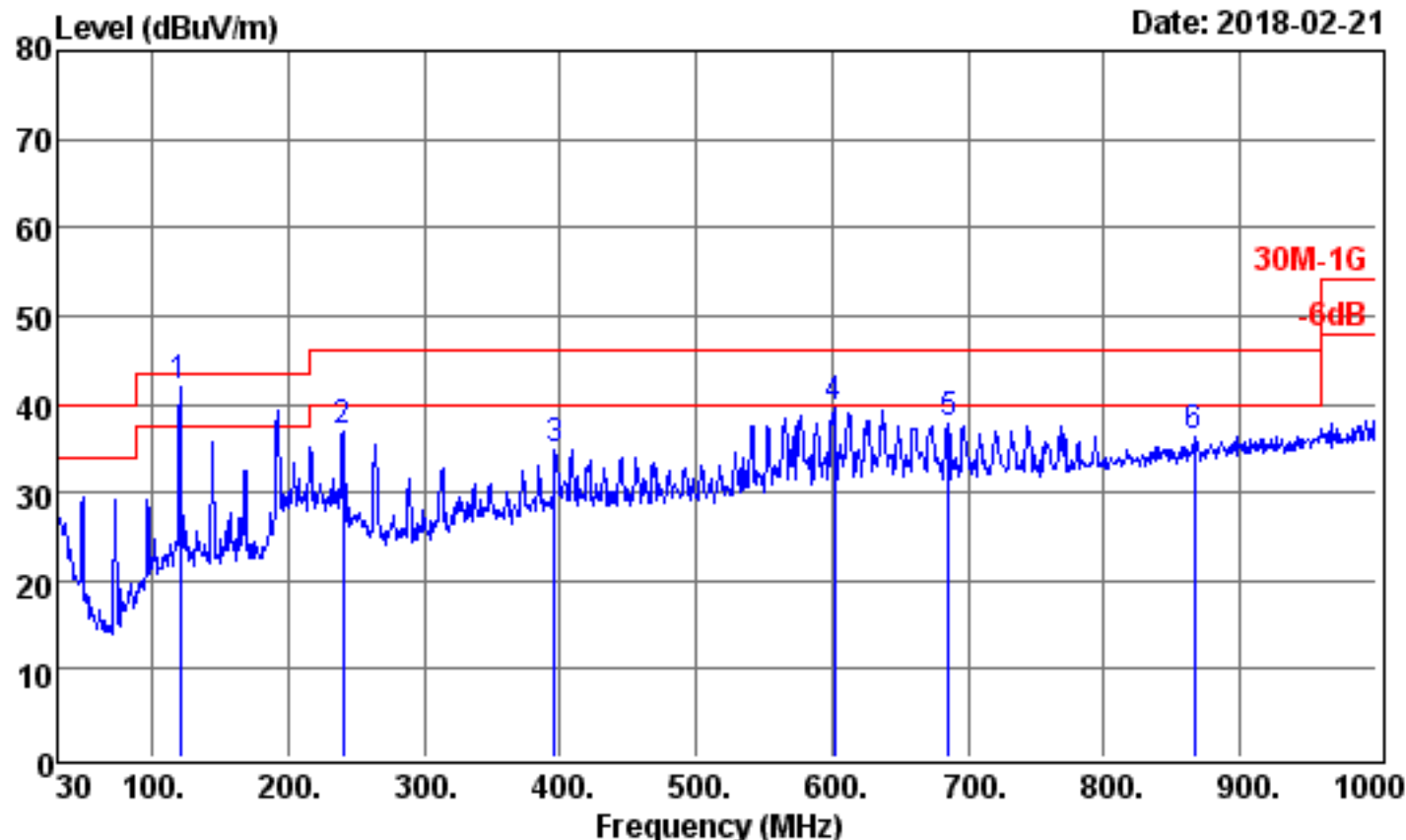
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : AUDIX No.1 3m Chamber Data no. : 4
Dis. / Ant. : 3m CBL6112D 33821(PAD) Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A Engineer : Sean
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : RX 2440MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	120.21	18.80	2.51	46.74	41.93	43.50	1.57	Peak
2	240.49	18.57	3.73	40.18	36.78	46.00	9.22	Peak
3	395.69	21.98	5.51	33.75	34.86	46.00	11.14	Peak
4	601.33	24.65	6.76	35.43	39.45	46.00	6.55	Peak
5	685.72	24.84	7.03	33.35	37.85	46.00	8.15	Peak
6	866.14	26.52	7.99	28.72	36.21	46.00	9.79	Peak

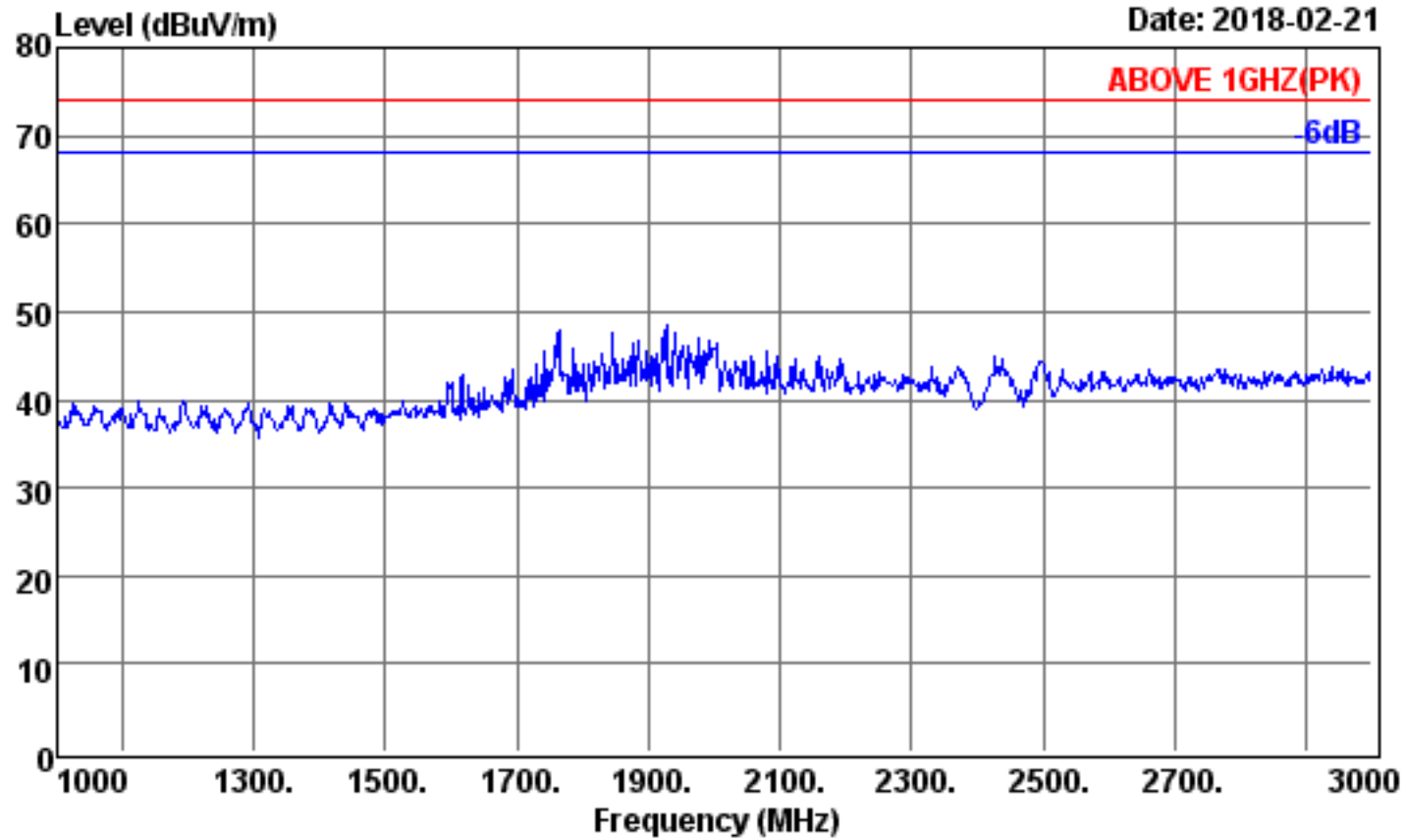
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

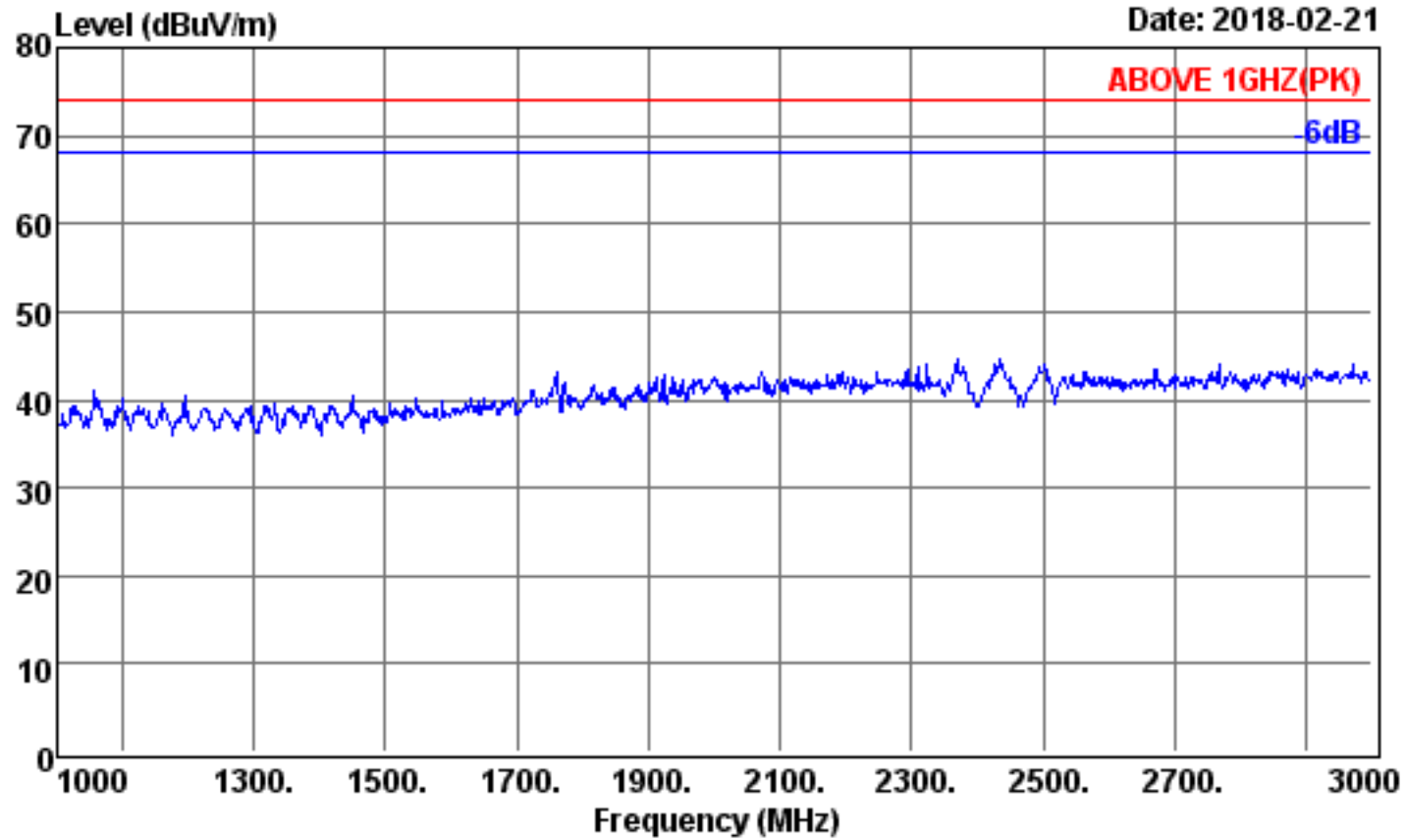
Data no. : 5
Ant. pol. : VERTICAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

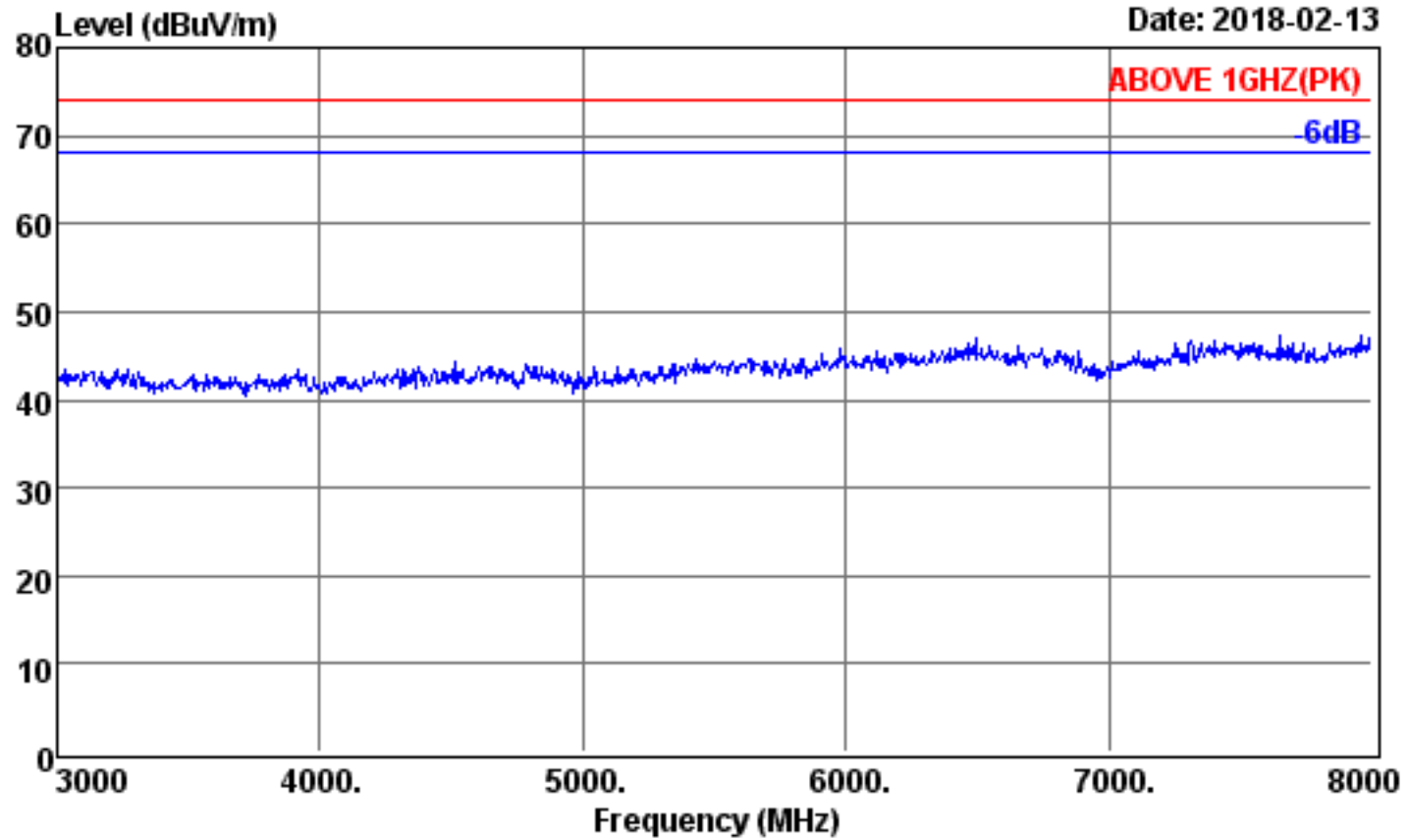
Data no. : 6
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

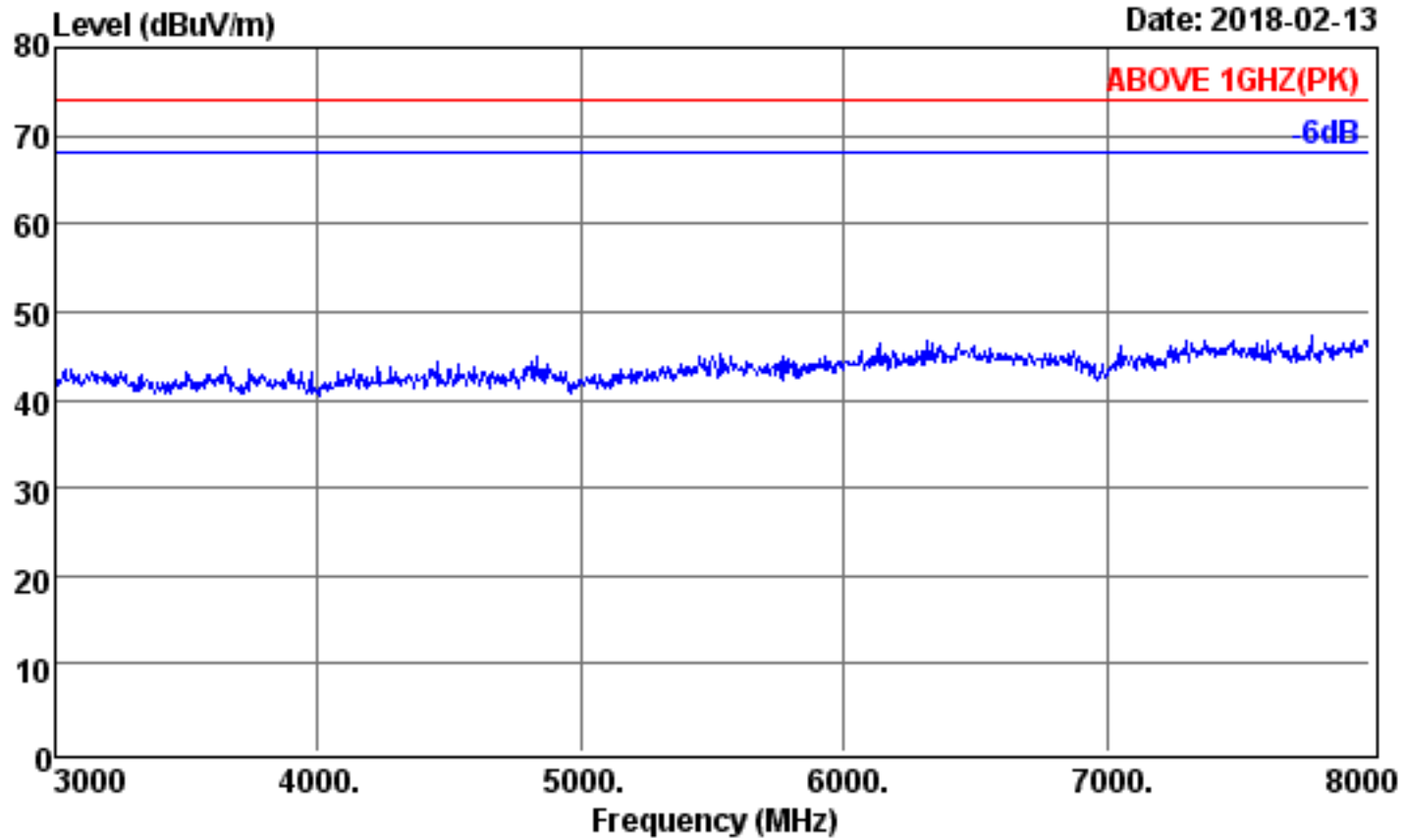
Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sean



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

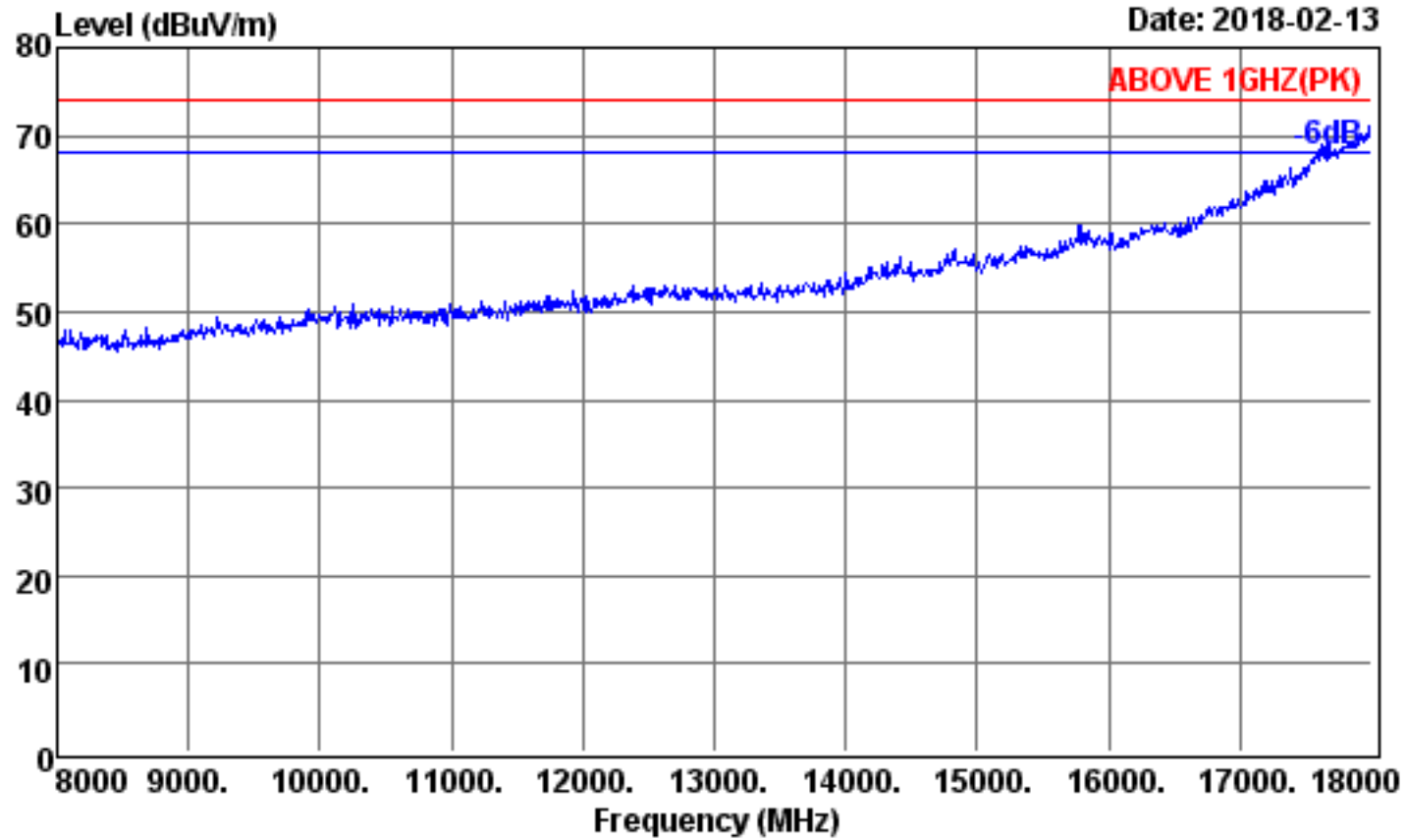
Data no. : 2
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

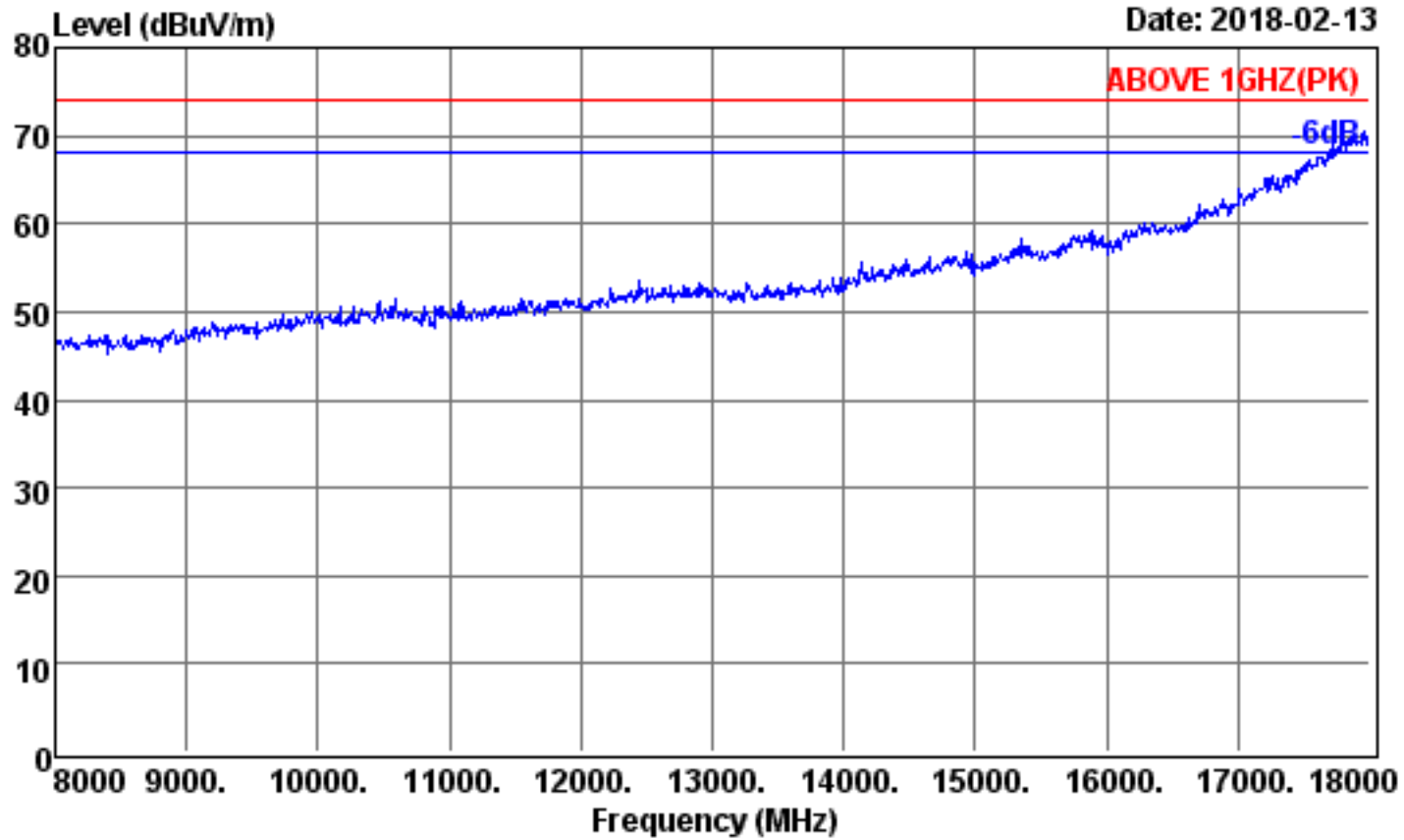
Data no. : 3
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

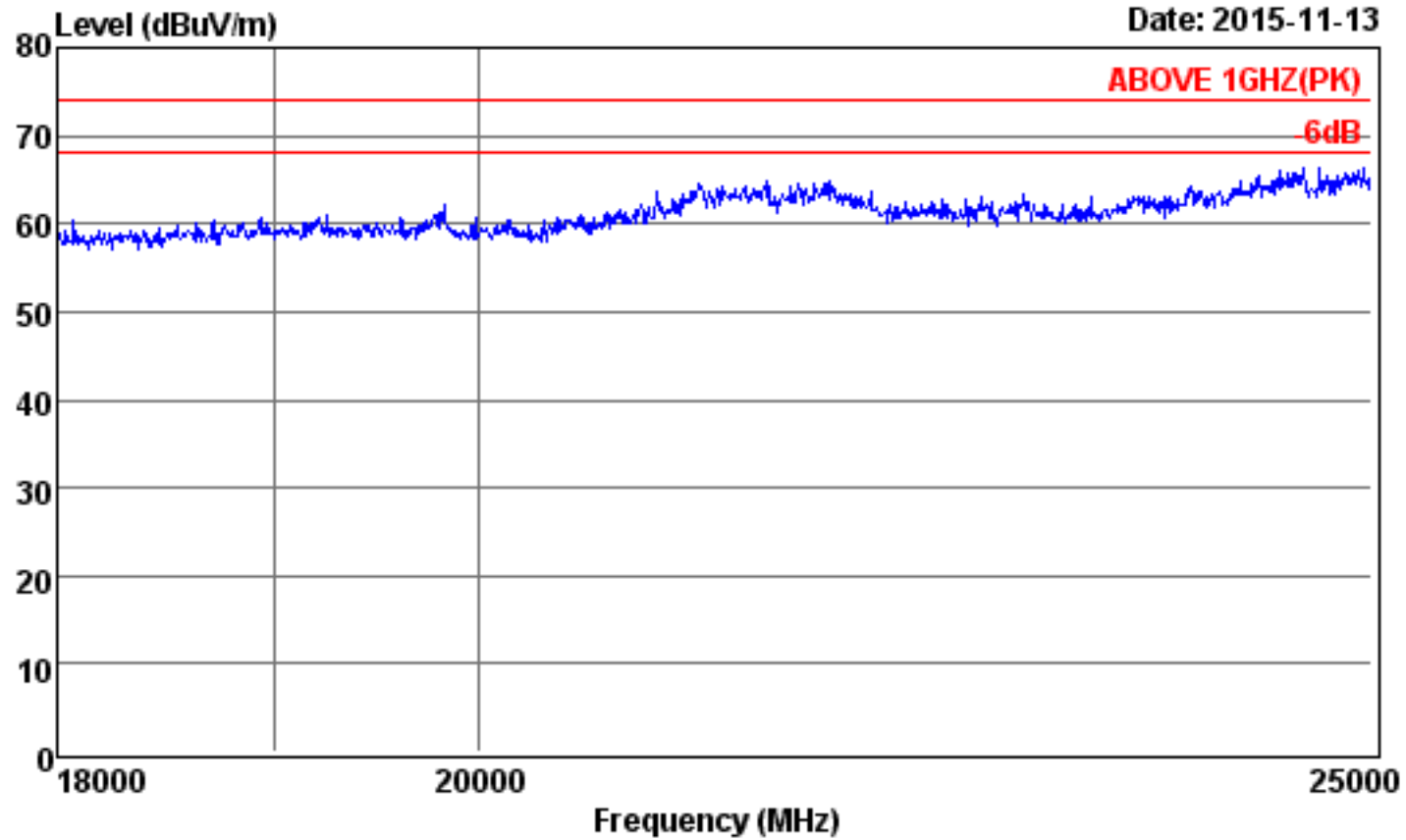
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Sean



Data: 7

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

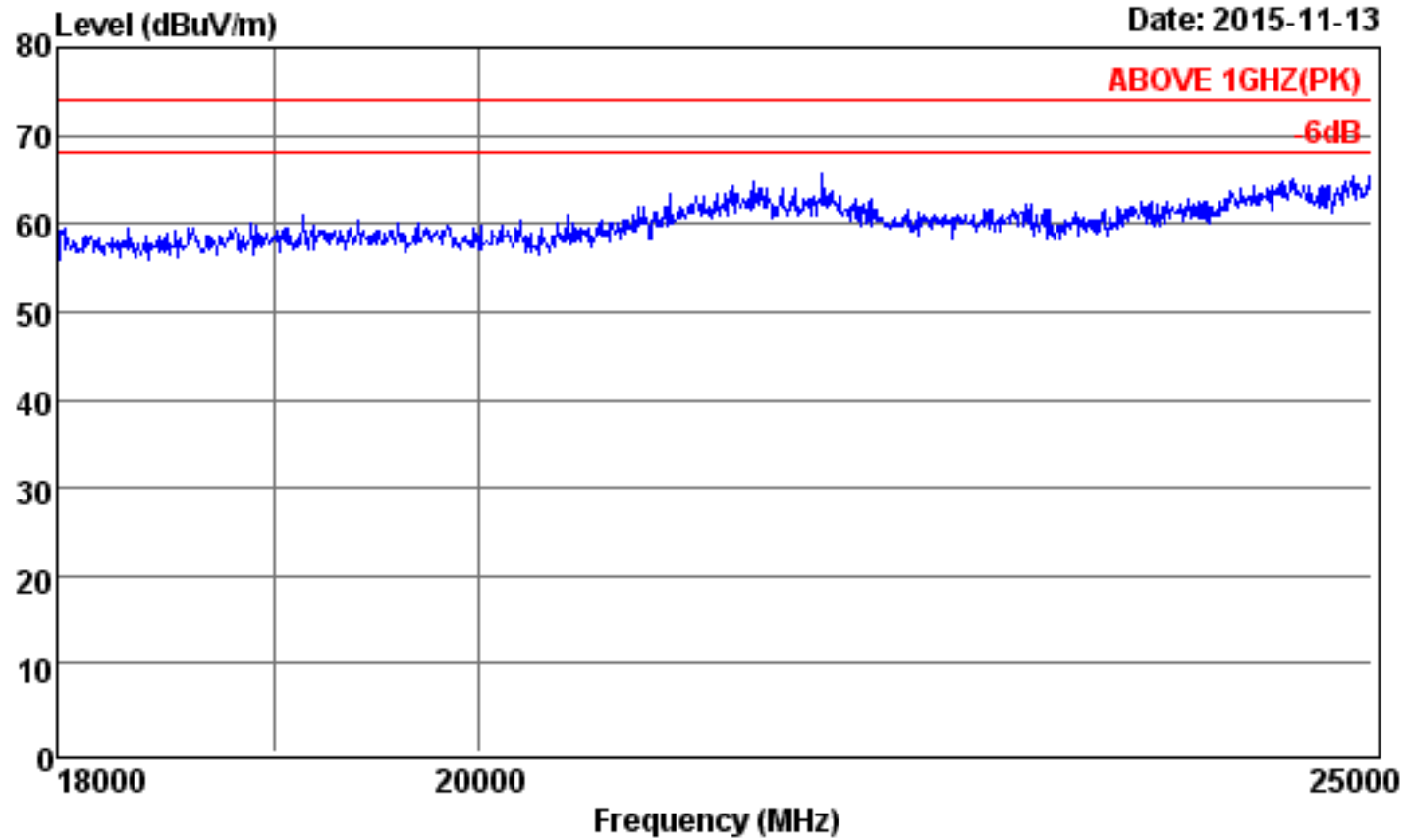
Data no. : 7
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 8

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

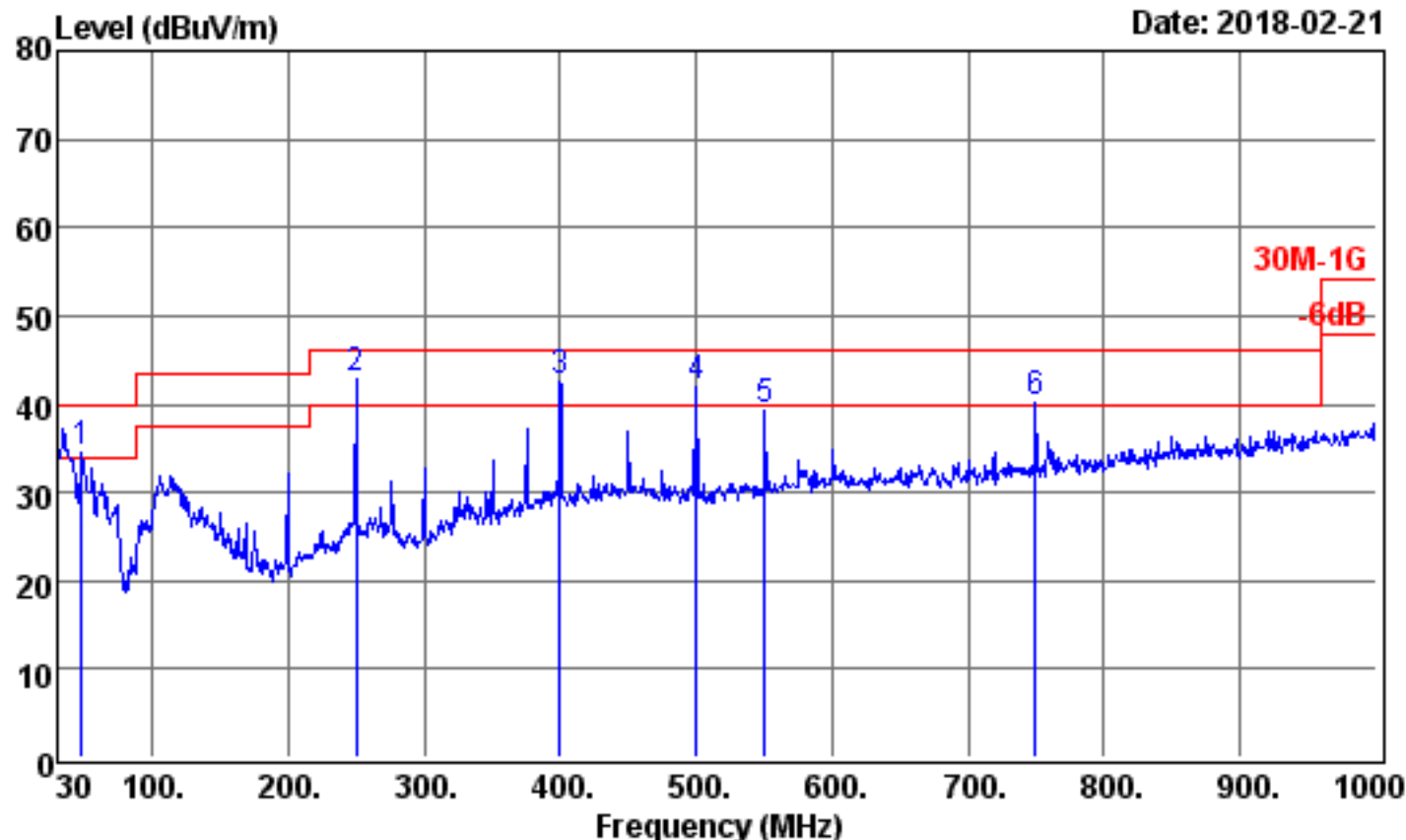
Data no. : 8
Ant. pol. : VERTICAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : AUDIX No.1 3m Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821(PAD) Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A Engineer : Sean
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : TX 2405MHz(Zigbee)

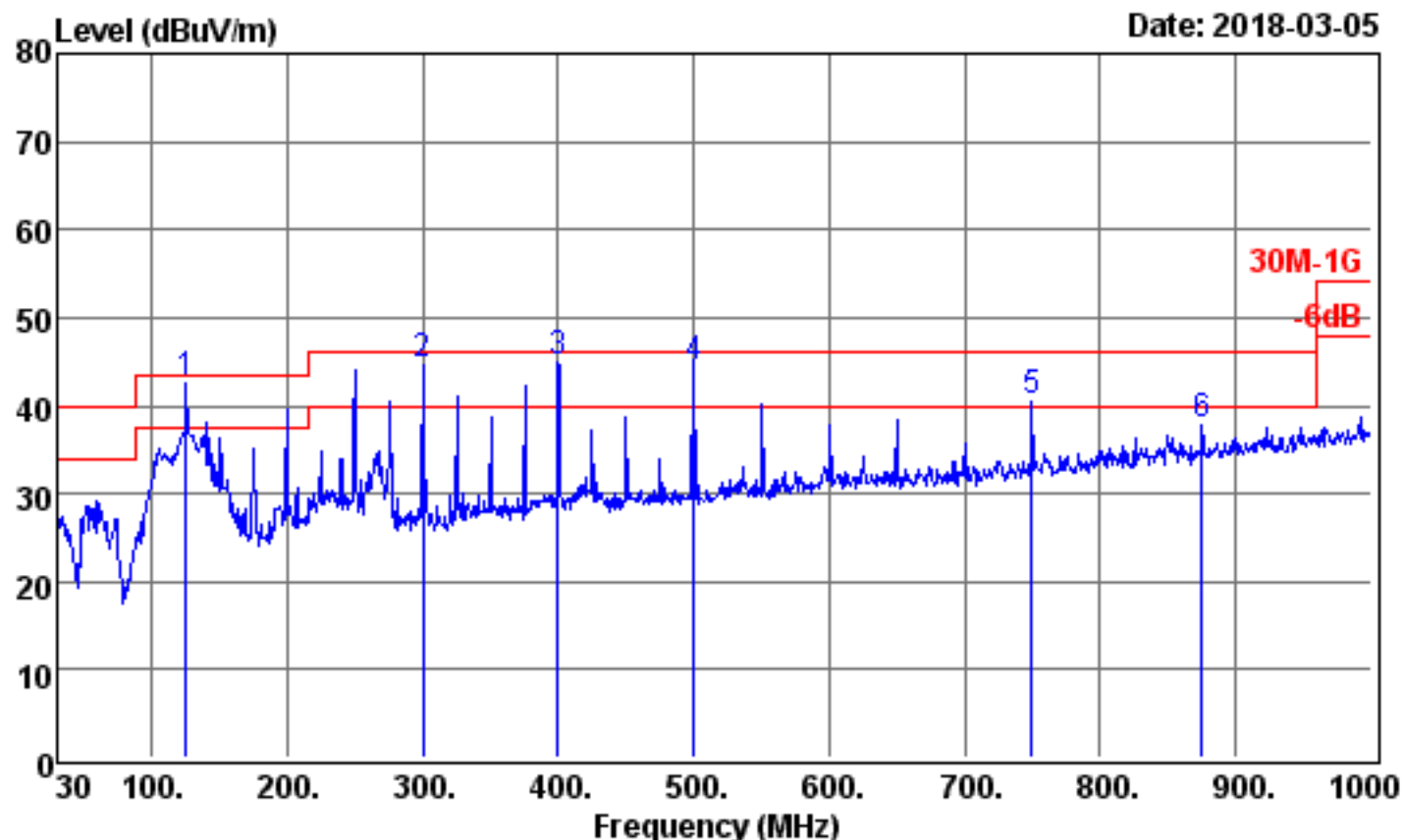
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	47.46	15.81	1.53	43.68	34.61	40.00	5.39	Peak
2	250.19	19.16	3.81	45.41	42.69	46.00	3.31	Peak
3	399.57	22.04	5.54	41.42	42.60	46.00	3.40	Peak
4	500.45	23.17	6.43	39.38	41.86	46.00	4.14	Peak
5	549.92	23.92	6.59	35.90	39.15	46.00	6.85	Peak
6	749.74	25.42	7.35	34.76	40.24	46.00	5.76	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee



Site no.	: AUDIX No.1 3m Chamber	Data no.	: 2
Dis. / Ant.	: 3m CBL6112D 33821(PAD)	Ant. pol.	: HORIZONTAL
Limit	: 30M-1G		
Env. / Ins.	: 23°C / 53% N9010A	Engineer	: Sean
EUT	: SHP-DP728		
Power Rating	: DC 6V		
Test Mode	: TX 2405MHz(Zigbee)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	125.06	18.55	2.56	47.98	42.40	43.50	1.10	Peak
2	299.66	19.48	4.30	46.99	44.47	46.00	1.53	Peak
3	399.57	22.04	5.54	43.82	45.00	46.00	1.00	Peak
4	500.45	23.17	6.43	41.78	44.26	46.00	1.74	Peak
5	749.74	25.42	7.35	34.94	40.42	46.00	5.58	Peak
6	874.87	26.60	8.04	30.18	37.82	46.00	8.18	Peak

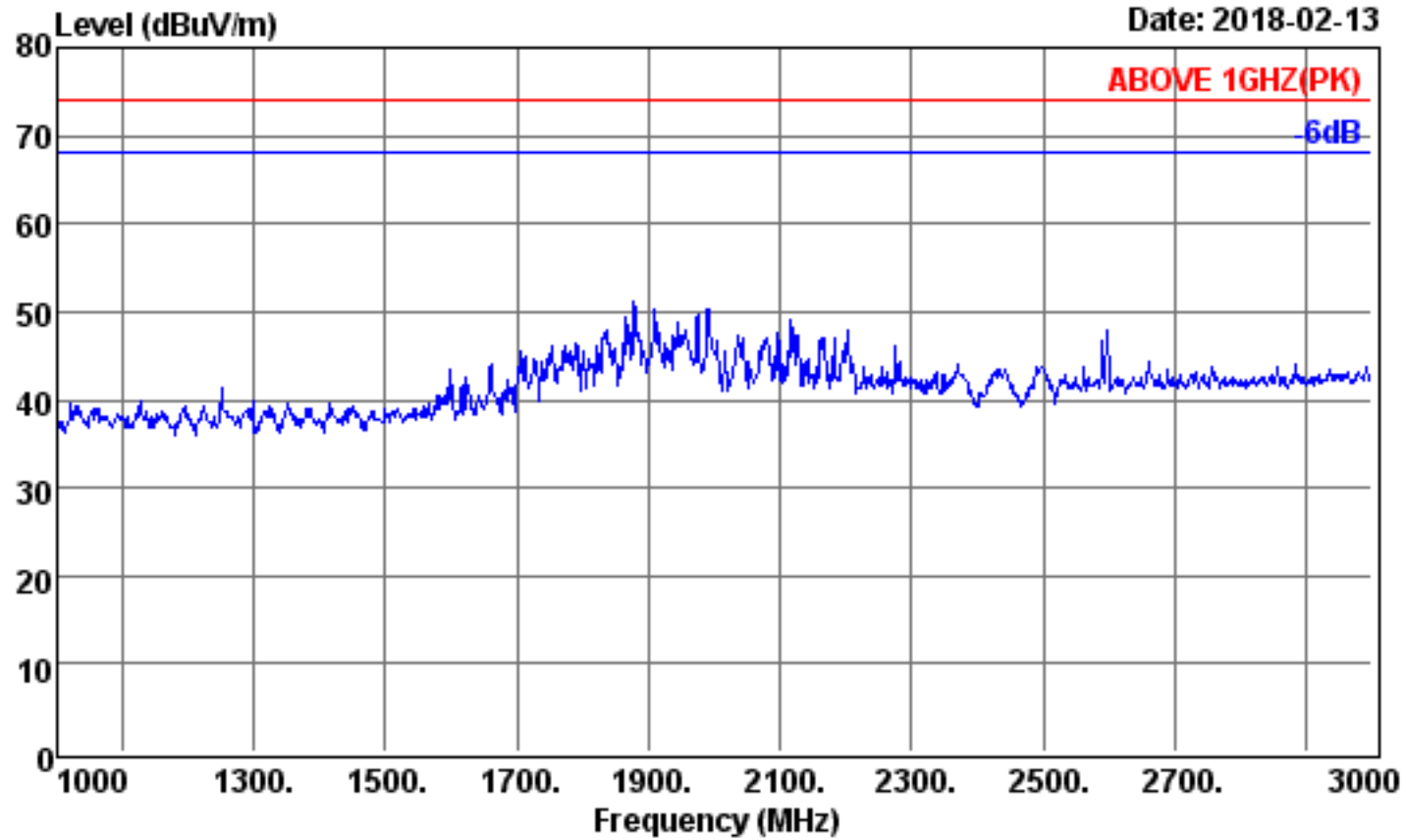
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

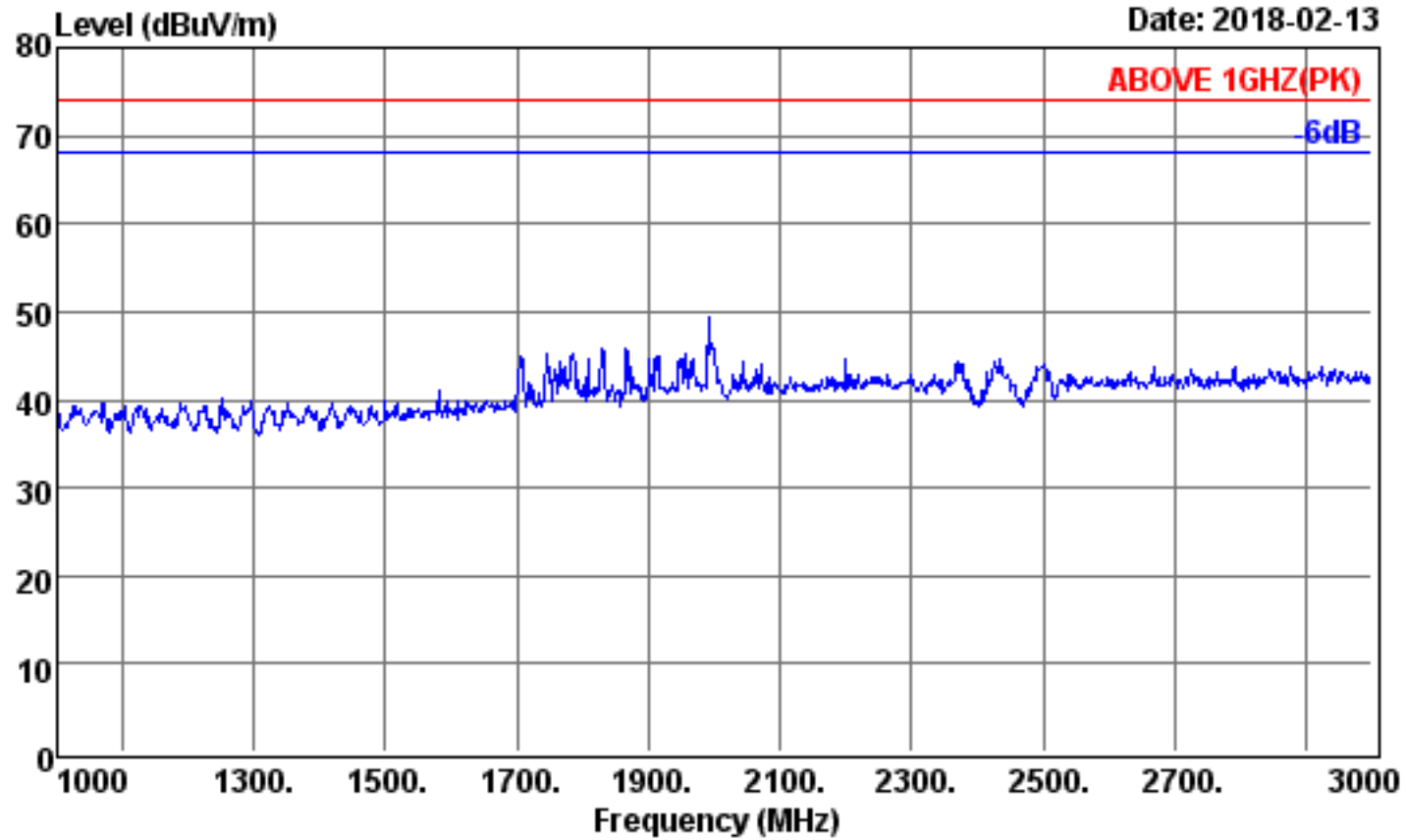
Data no. : 5
Ant. pol. : VERTICAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

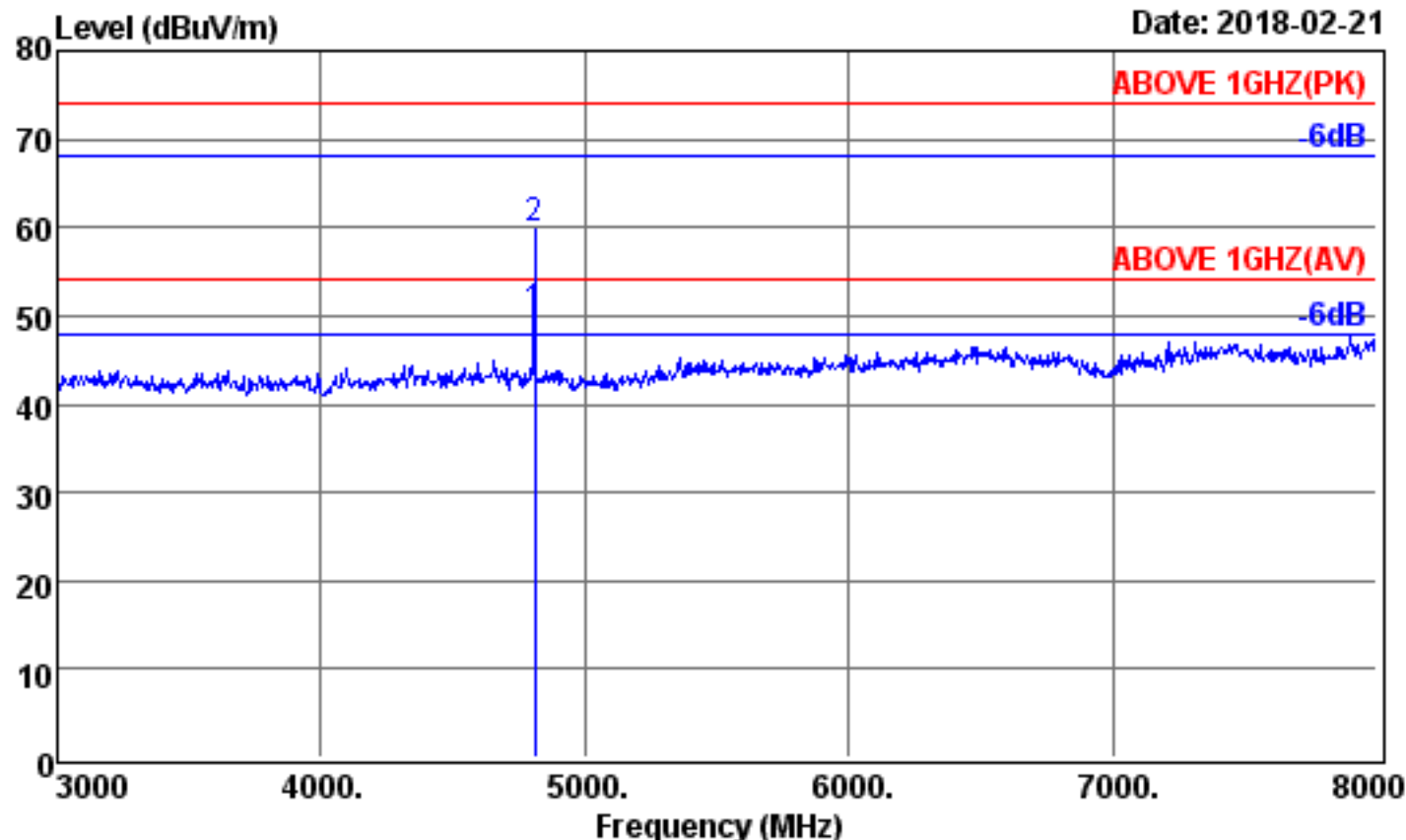
Data no. : 6
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4810.00	34.22	9.54	40.50	49.84	54.00	4.16	Average
2	4810.00	34.22	9.54	50.47	59.81	74.00	14.19	Peak

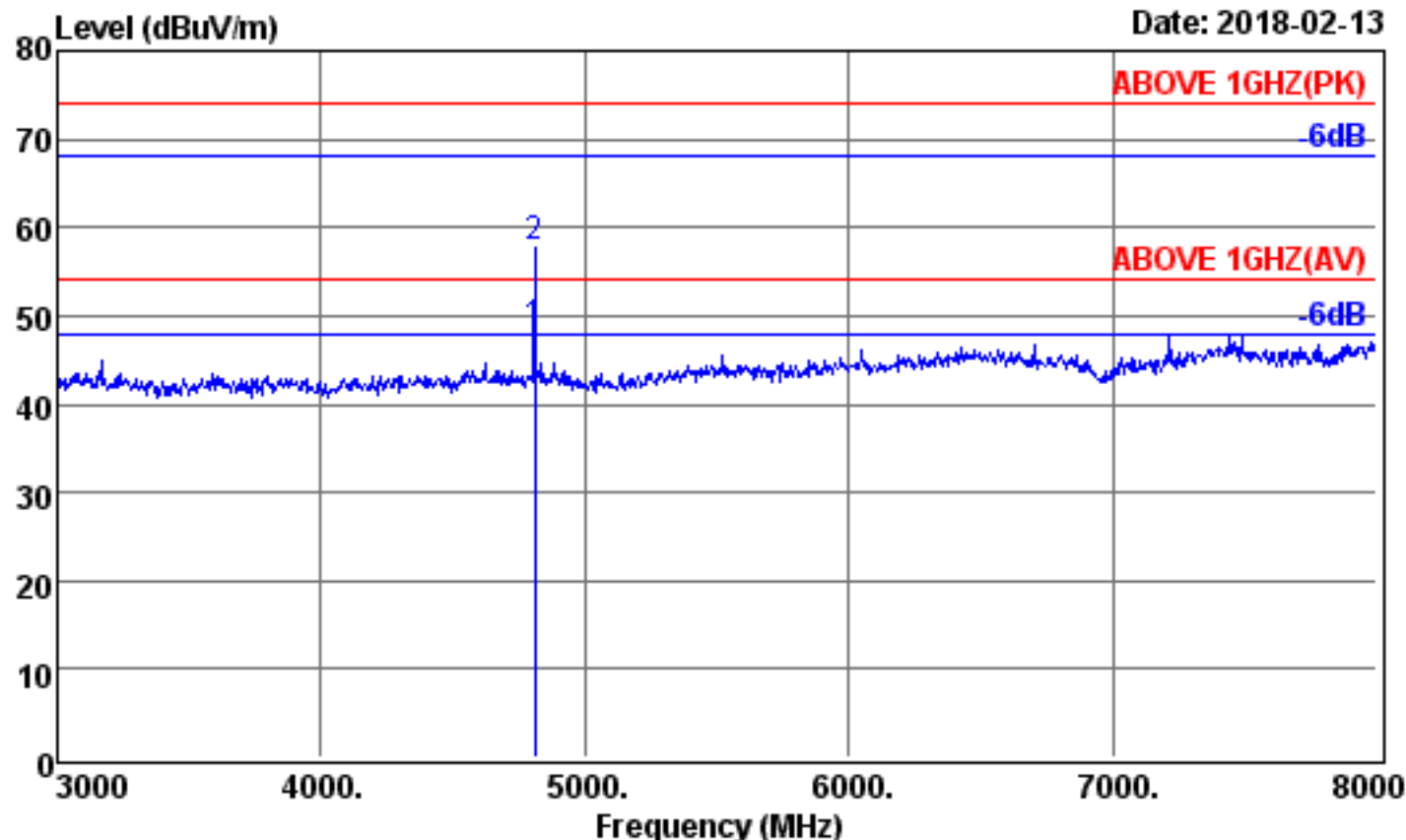
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

Data no. : 2
Ant. pol. : HORIZONTAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4810.00	34.22	9.54	38.85	48.19	54.00	5.81	Average
2	4810.00	34.22	9.54	48.96	57.70	74.00	16.30	Peak

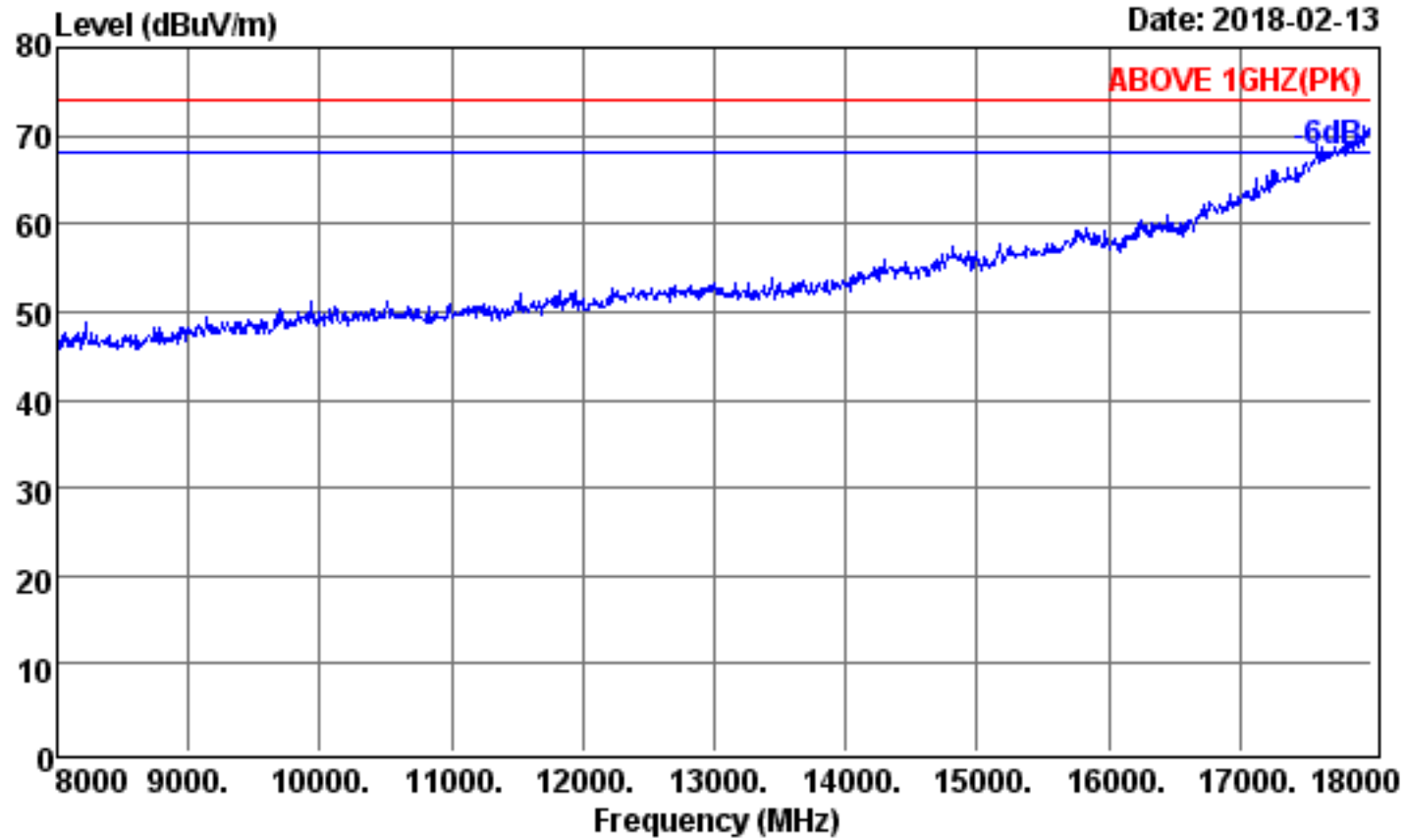
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



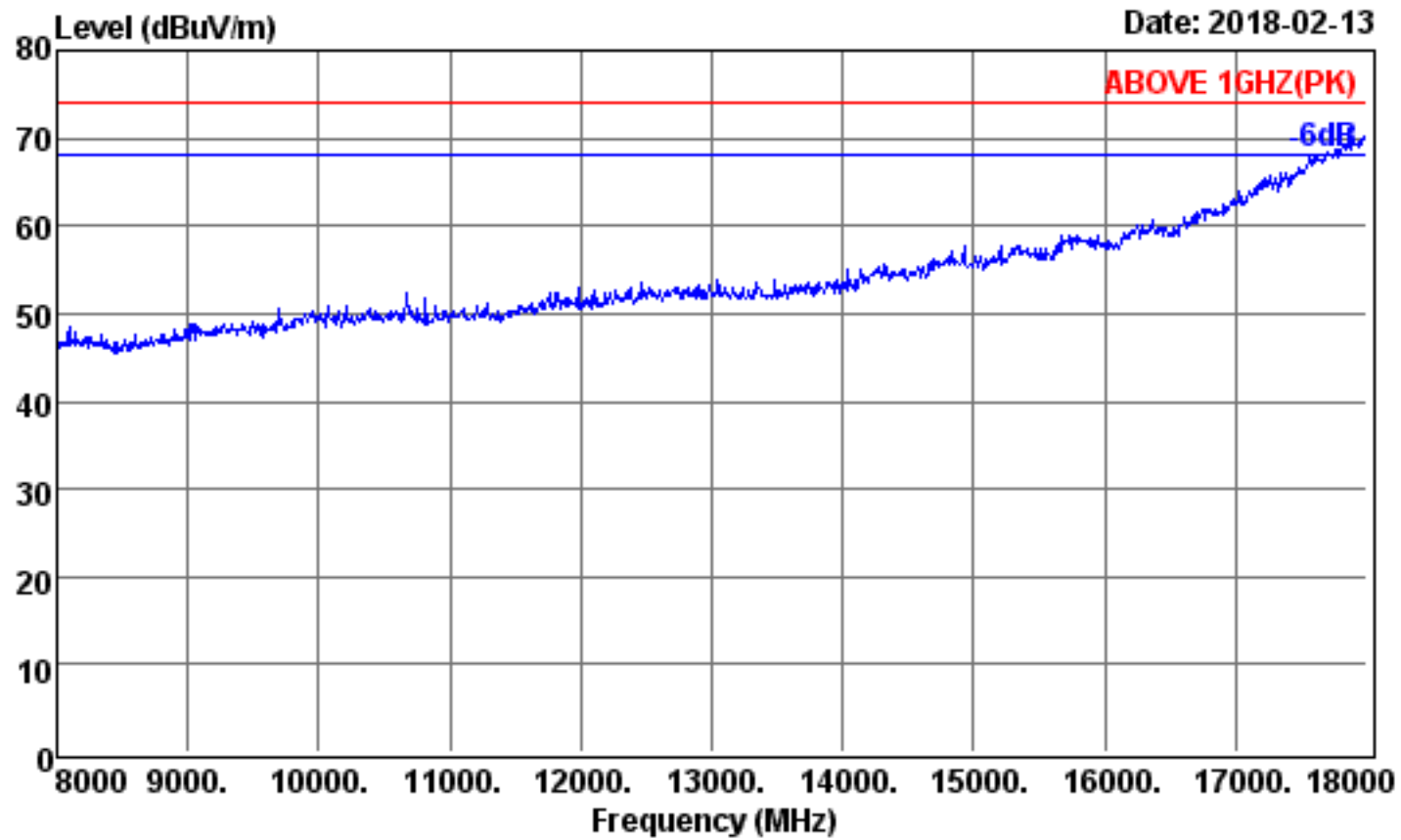
Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

Data no. : 3
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

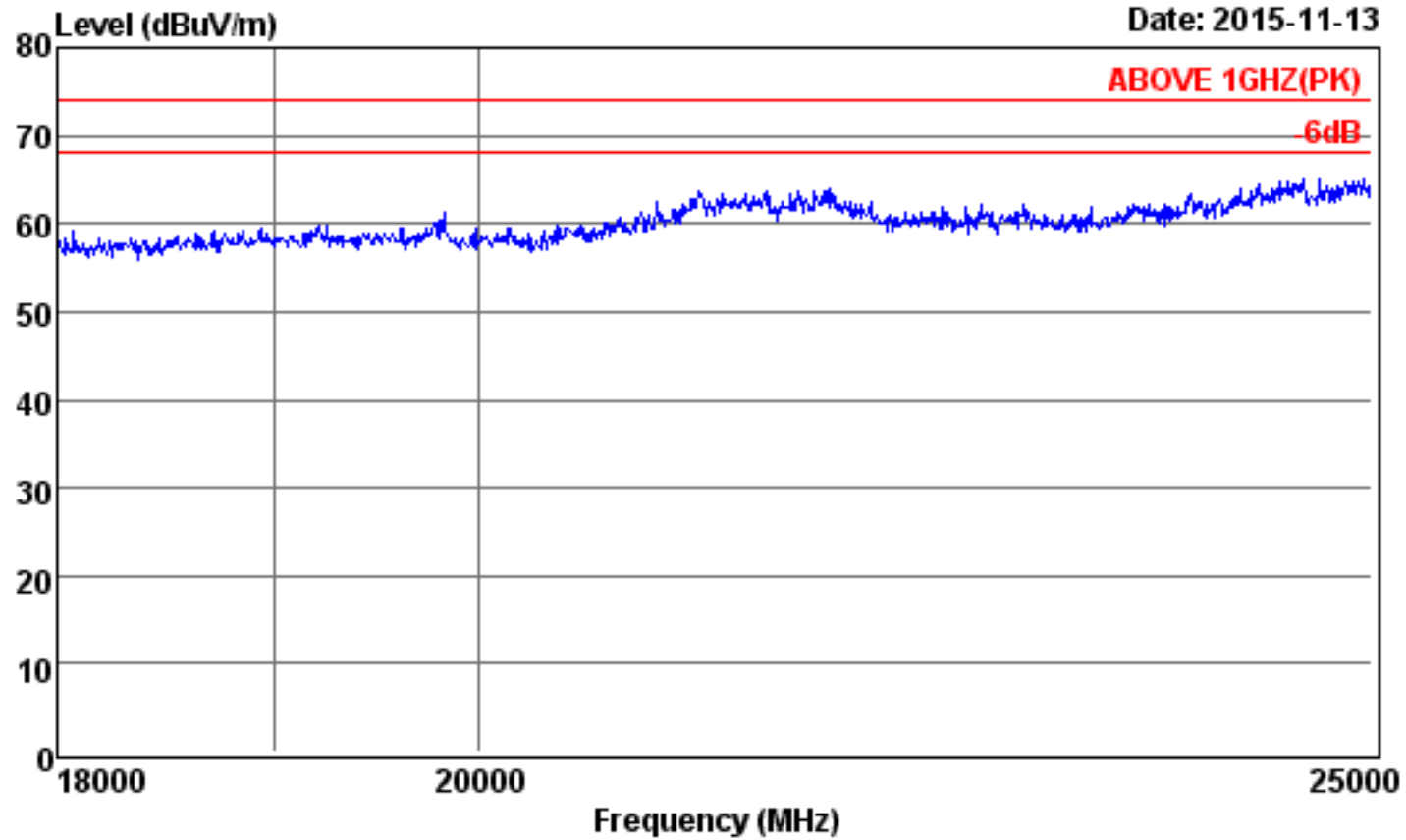
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Sean



Data: 9

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

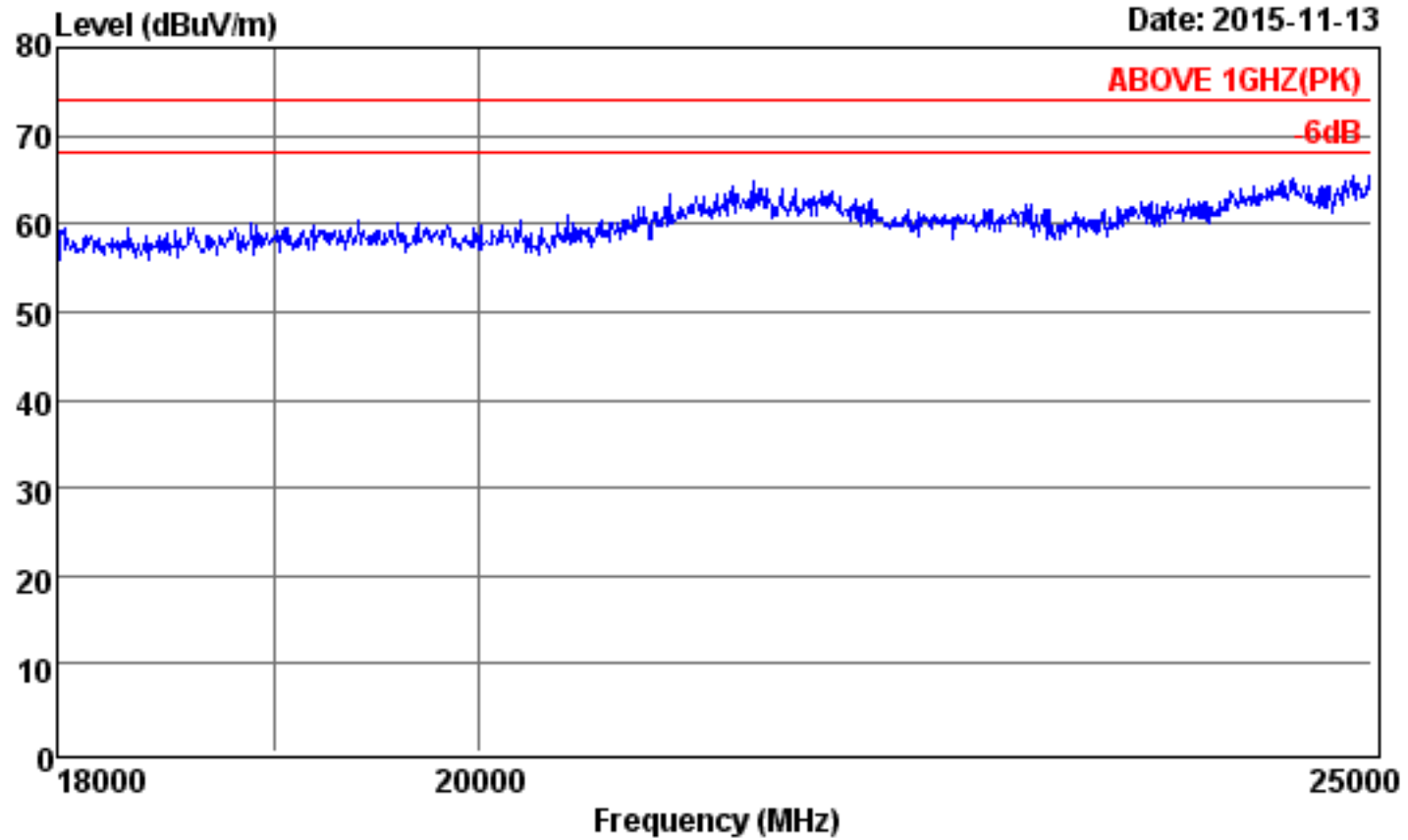
Data no. : 9
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 10

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2405MHz(Zigbee)

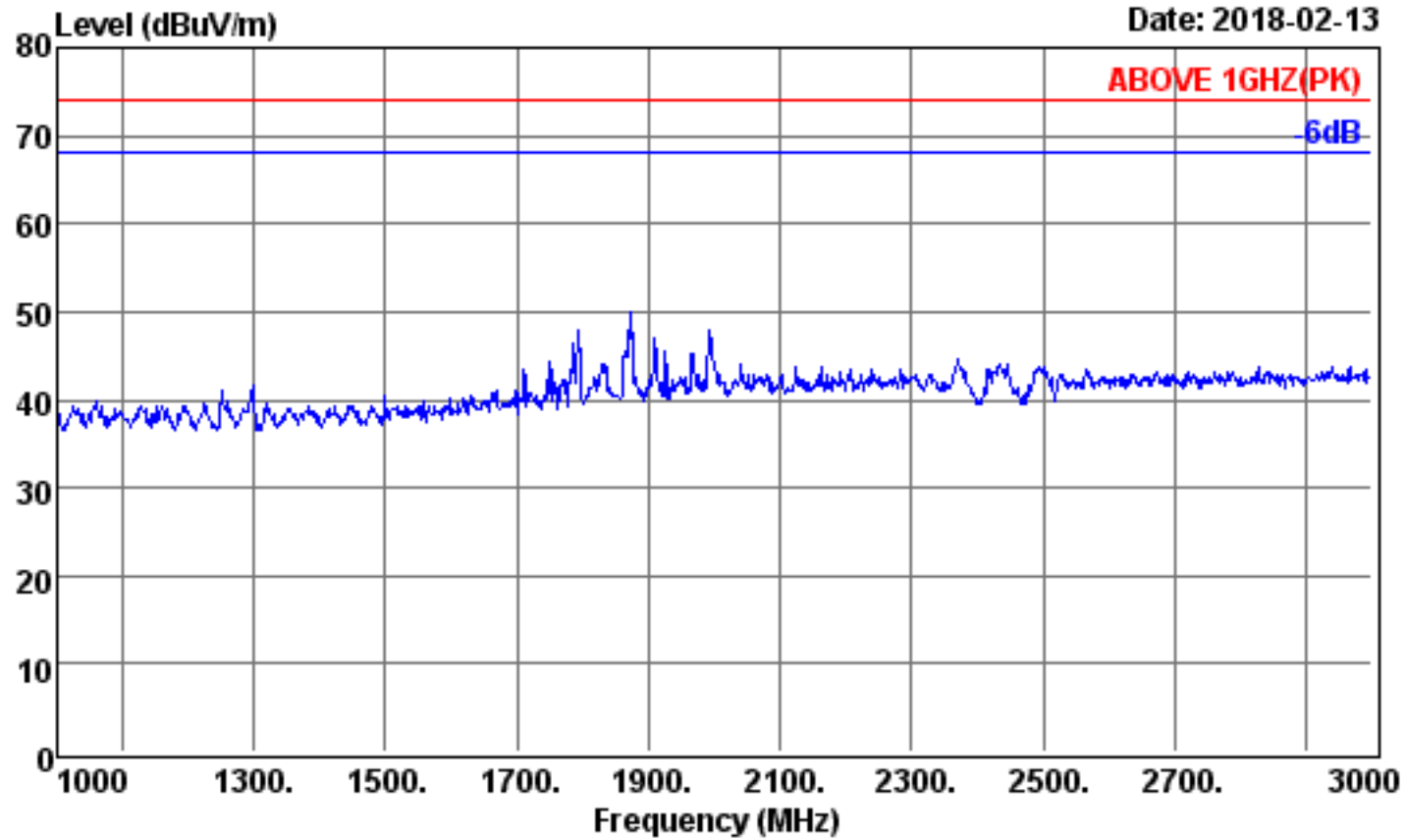
Data no. : 10
Ant. pol. : VERTICAL
Engineer : Sean



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

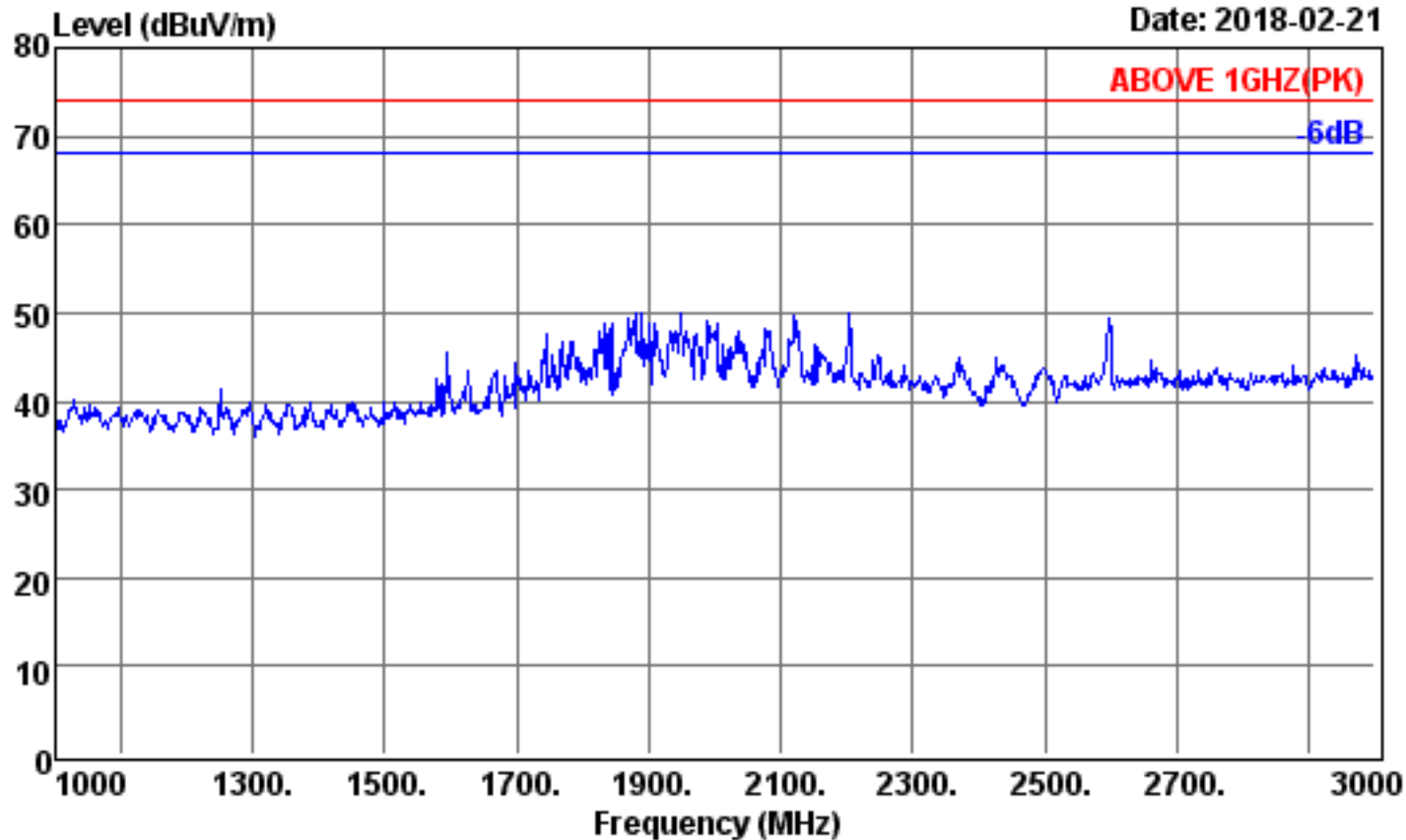
Data no. : 5
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

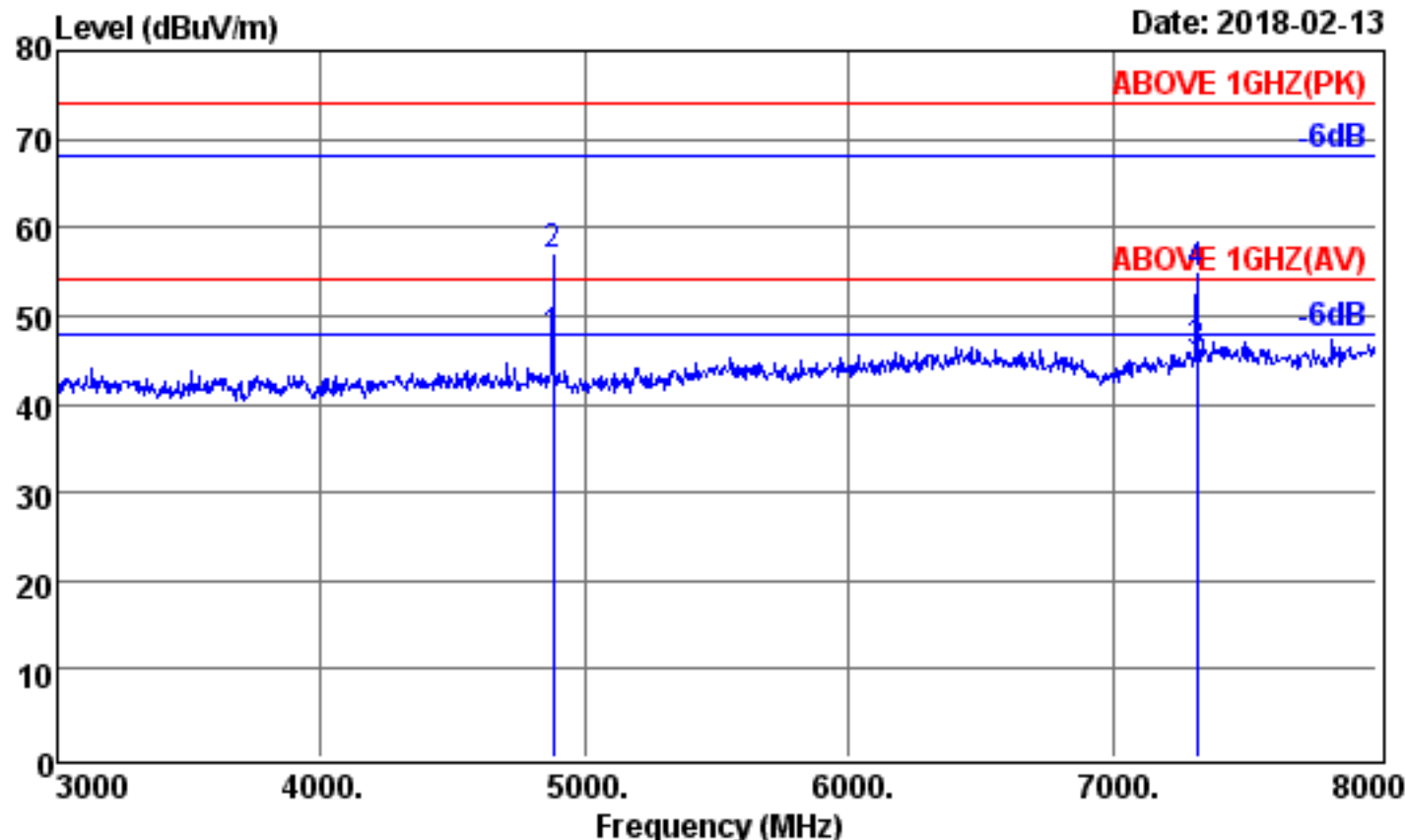
Data no. : 6
Ant. pol. : VERTICAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

Data no. : 1
Ant. pol. : HORIZONTAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4880.00	34.25	9.56	37.94	47.34	54.00	6.66	Average
2	4880.00	34.25	9.56	47.34	56.74	74.00	17.26	Peak
3	7320.00	35.80	11.92	32.84	45.85	54.00	8.15	Average
4	7320.00	35.80	11.92	41.70	54.71	74.00	19.29	Peak

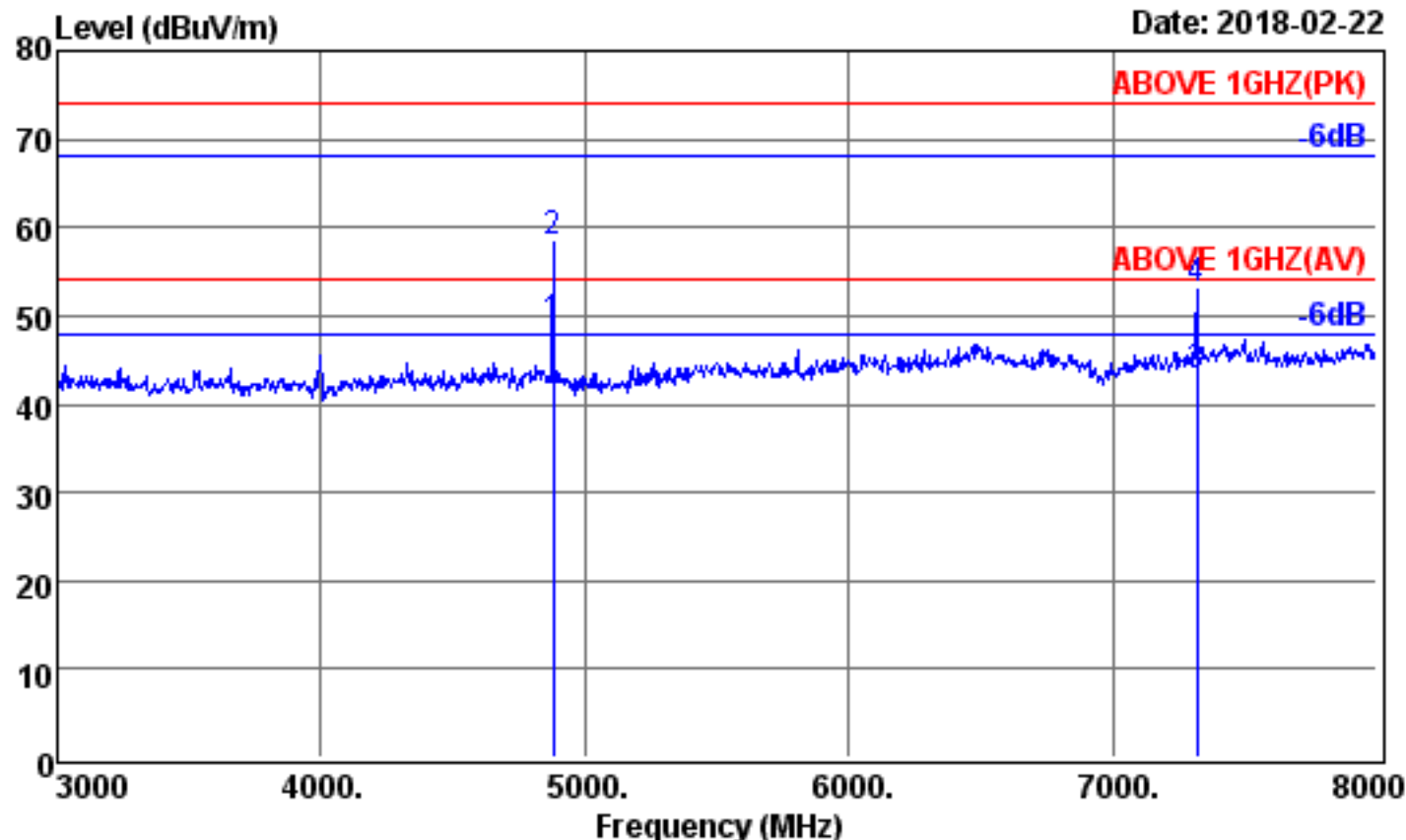
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-22



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

Data no. : 2
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4880.00	34.25	9.56	39.28	48.68	54.00	5.32	Average
2	4880.00	34.25	9.56	48.93	58.33	74.00	15.67	Peak
3	7320.00	35.80	11.92	30.08	43.09	54.00	10.91	Average
4	7320.00	35.80	11.92	40.03	53.04	74.00	20.96	Peak

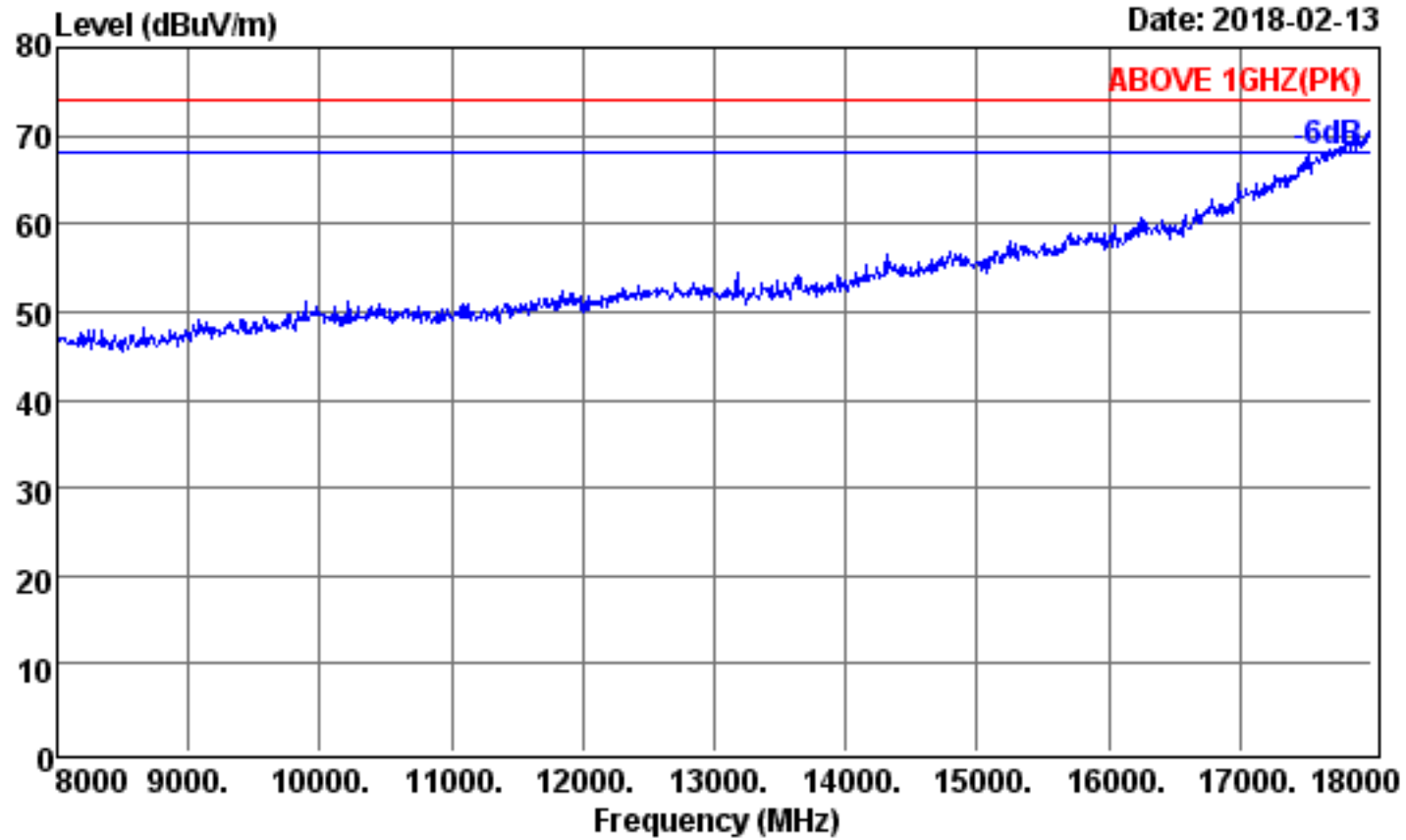
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

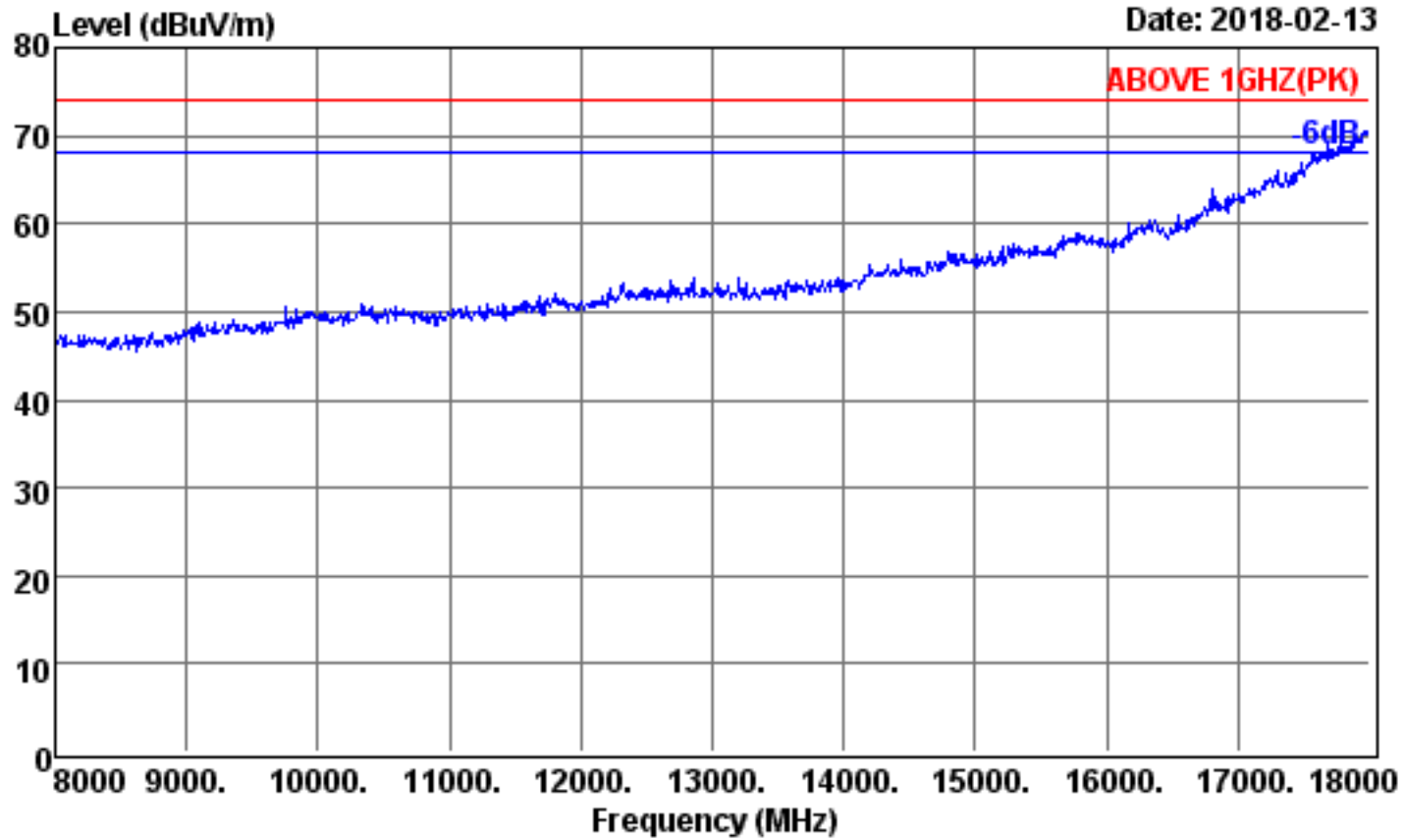
Data no. : 3
Ant. pol. : VERTICAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

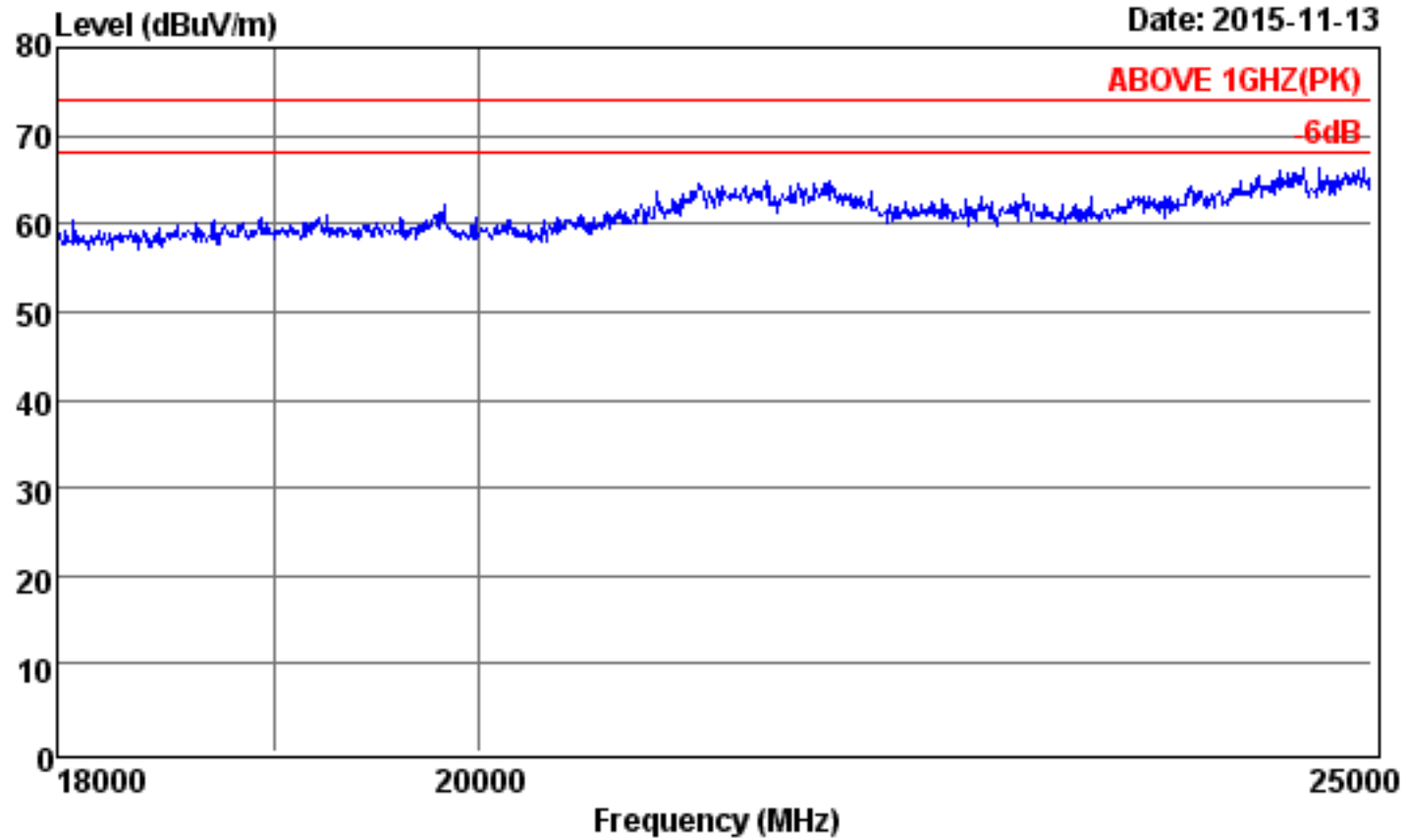
Data no. : 4
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 11

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

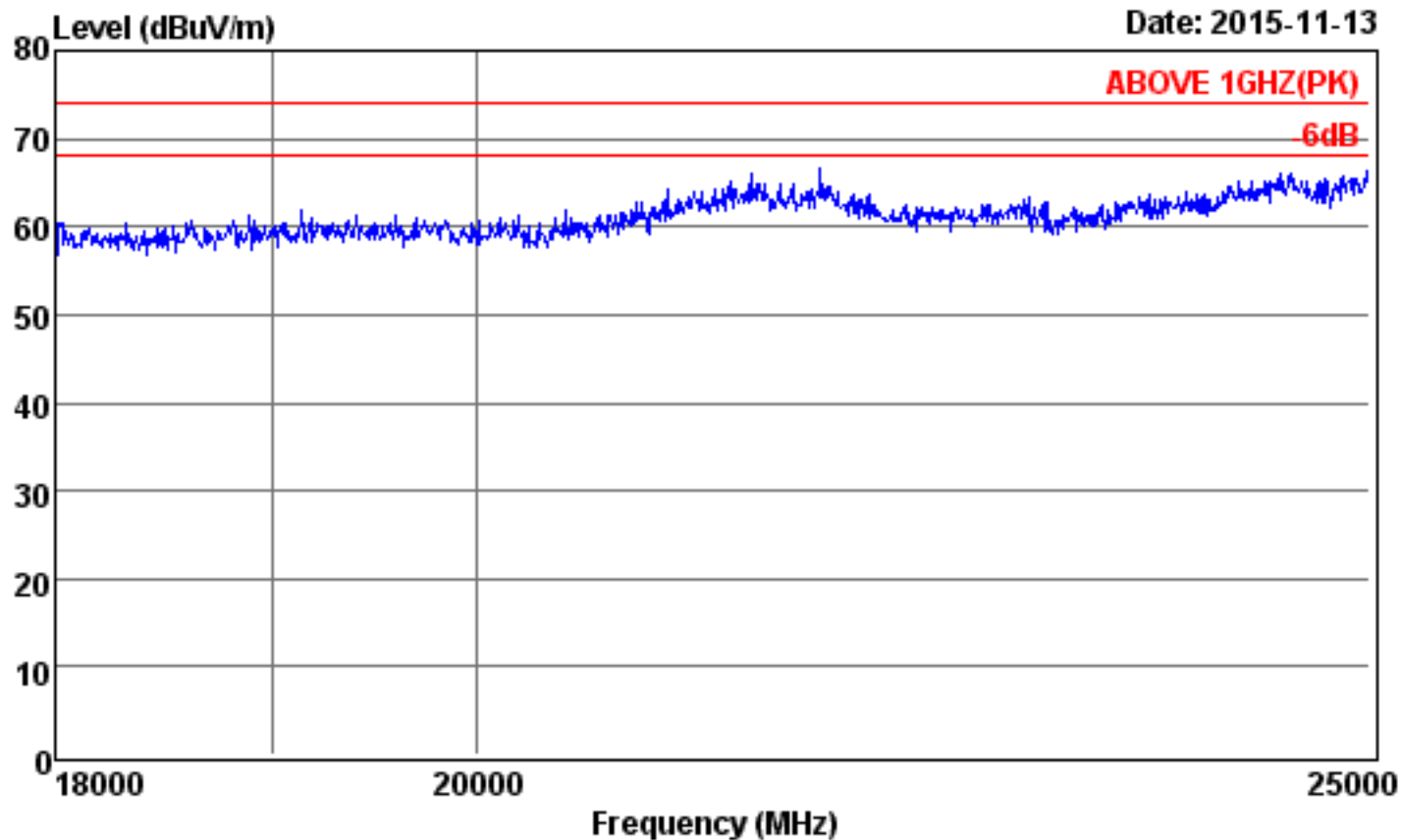
Data no. : 11
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 12

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2440MHz(Zigbee)

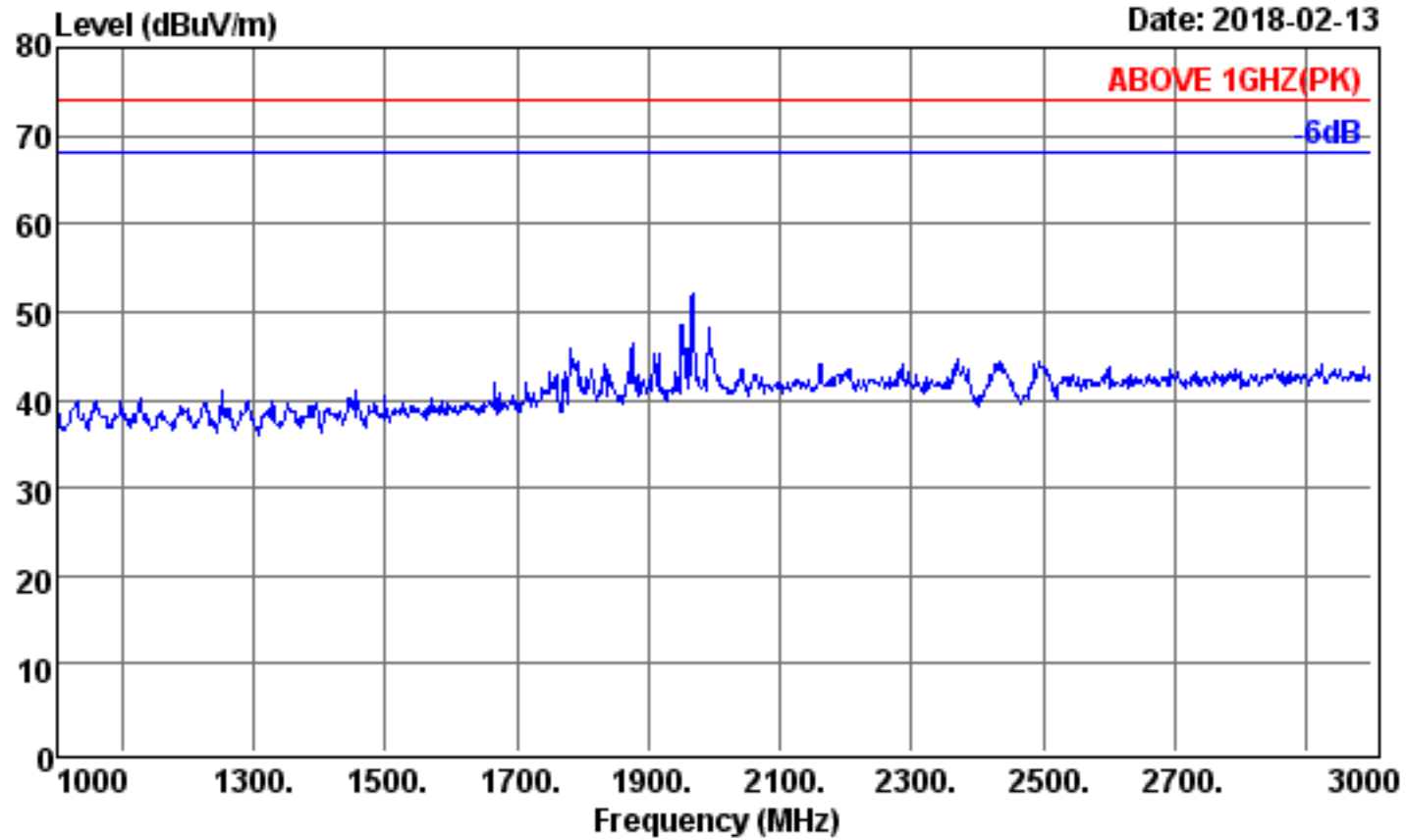
Data no. : 12
Ant. pol. : VERTICAL
Engineer : Sean



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

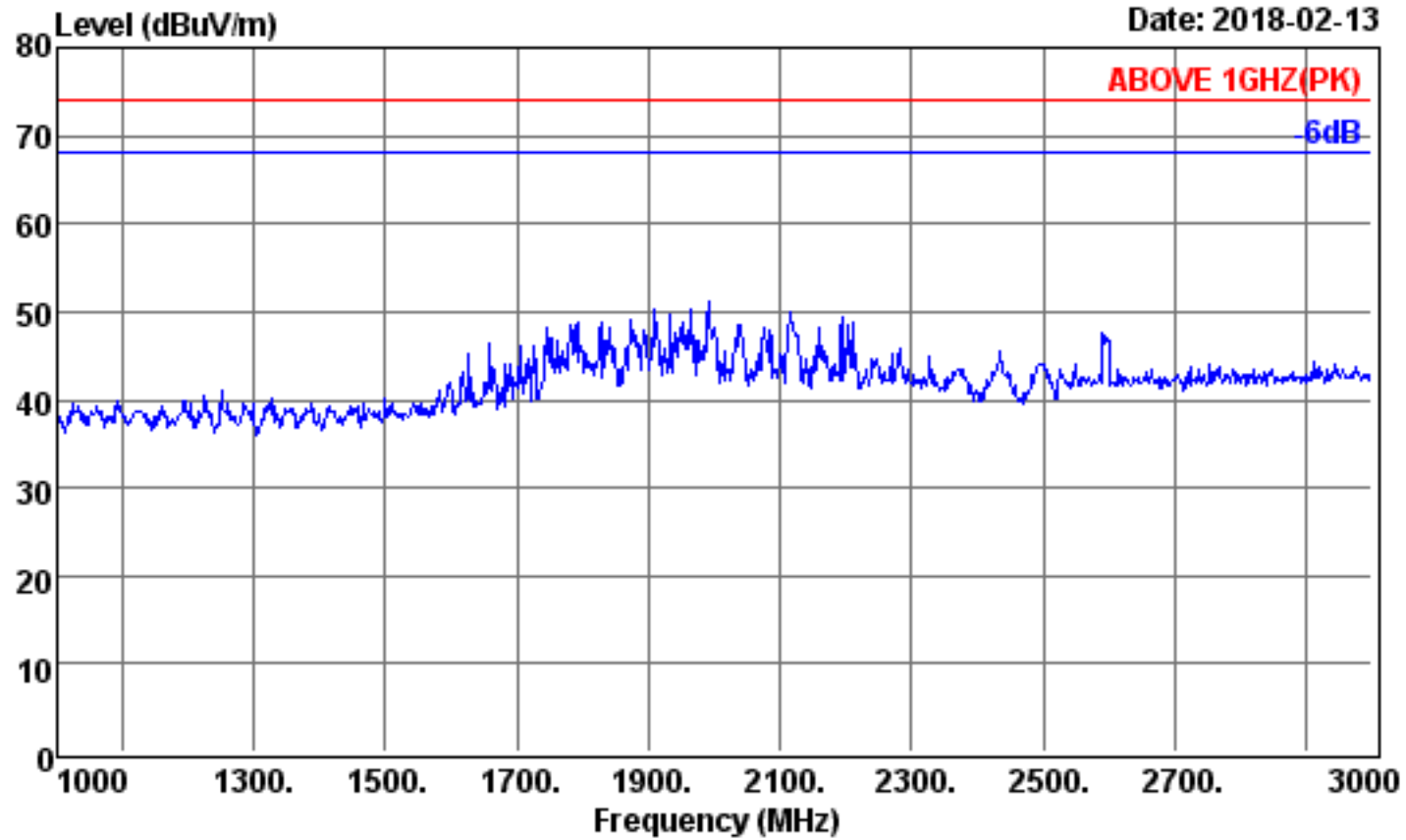
Data no. : 5
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

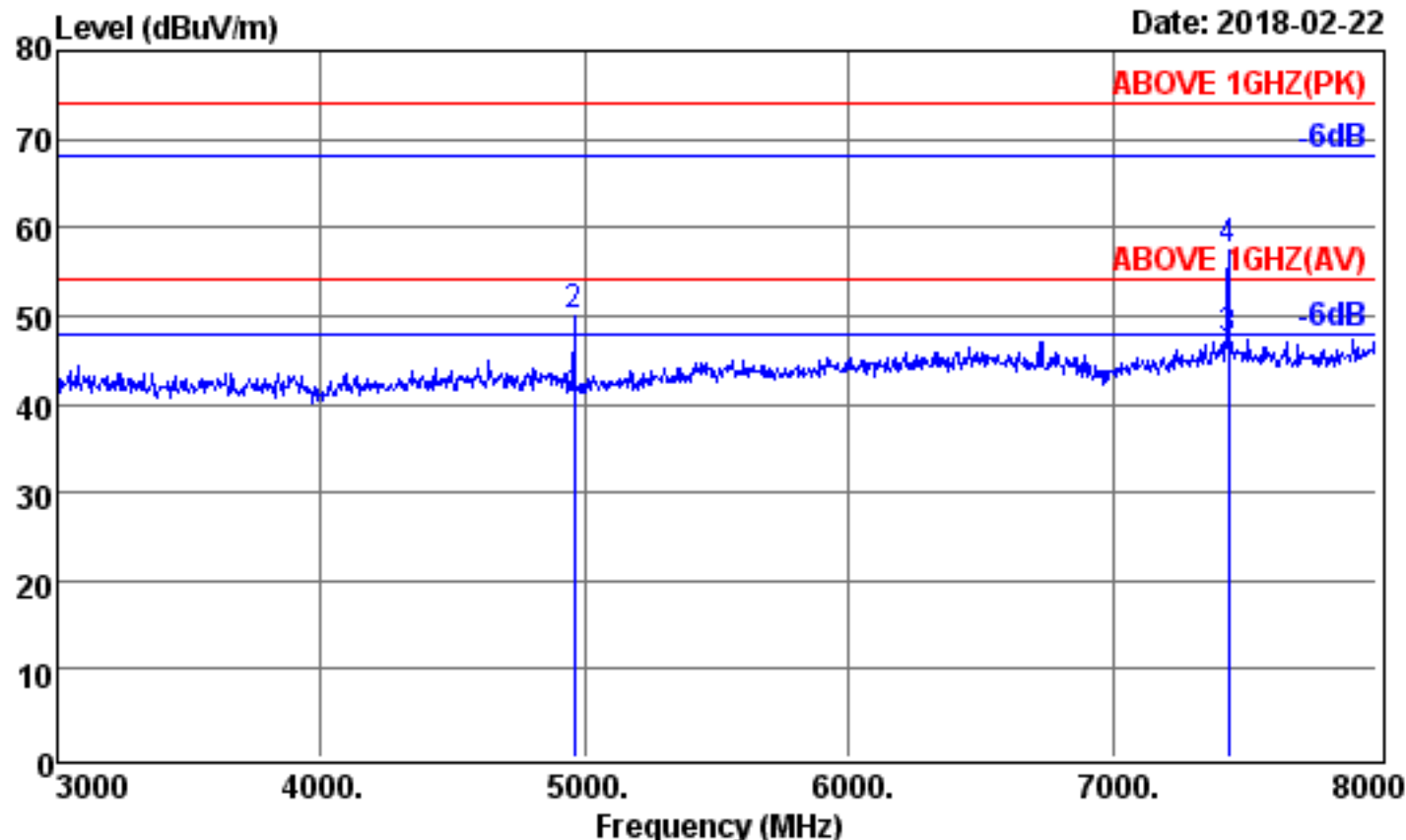
Data no. : 6
Ant. pol. : VERTICAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-22



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

Data no. : 1
Ant. pol. : HORIZONTAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4960.00	34.29	9.60	30.89	40.37	54.00	13.63	Average
2	4960.00	34.29	9.60	40.63	50.11	74.00	23.89	Peak
3	7440.00	35.80	12.04	34.33	47.42	54.00	6.58	Average
4	7440.00	35.80	12.04	44.27	57.36	74.00	16.64	Peak

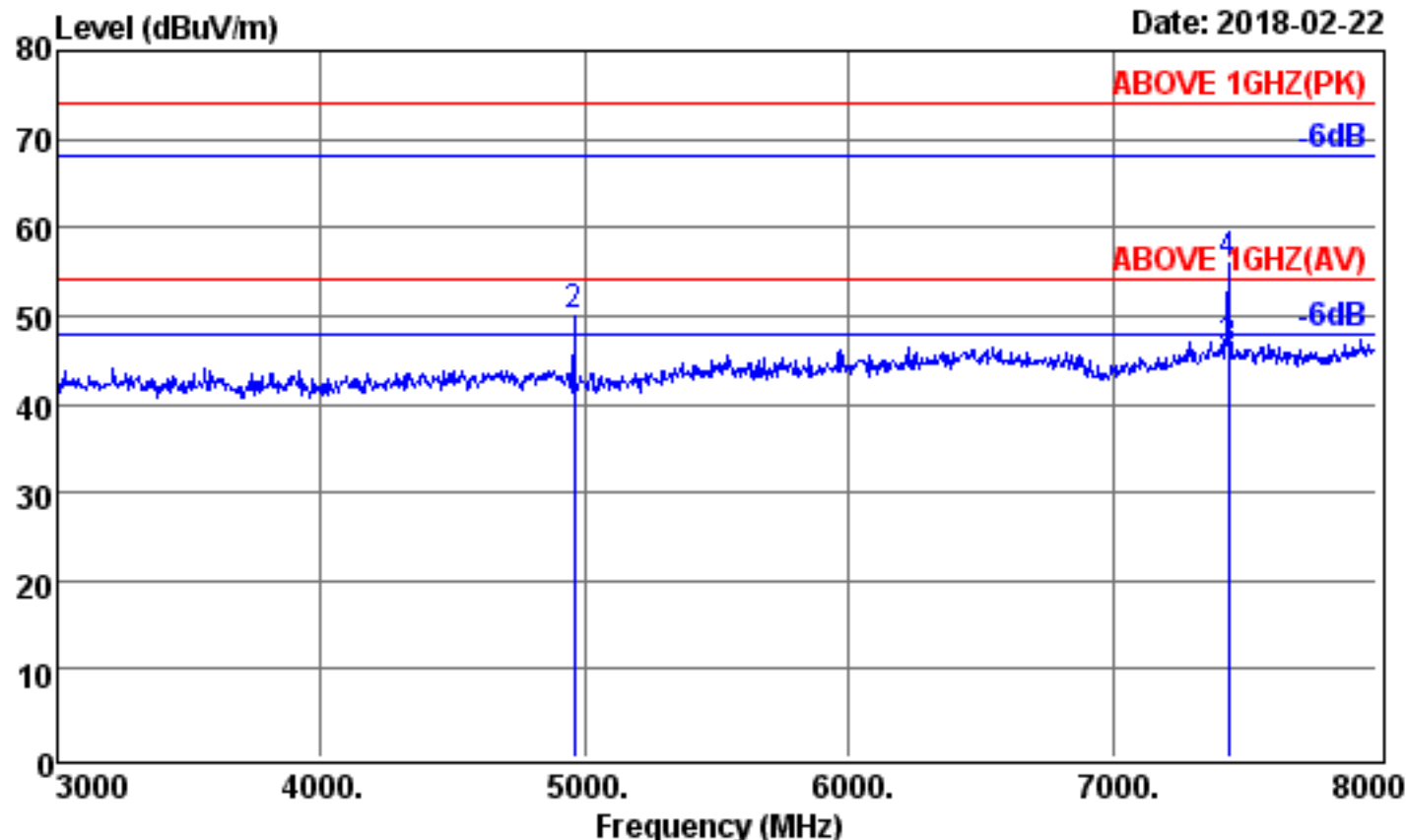
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-22



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

Data no. : 2
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	4960.00	34.29	9.60	30.74	40.22	54.00	13.78	Average
2	4960.00	34.29	9.60	40.42	49.90	74.00	24.10	Peak
3	7440.00	35.80	12.04	32.88	45.97	54.00	8.03	Average
4	7440.00	35.80	12.04	42.85	55.94	74.00	18.06	Peak

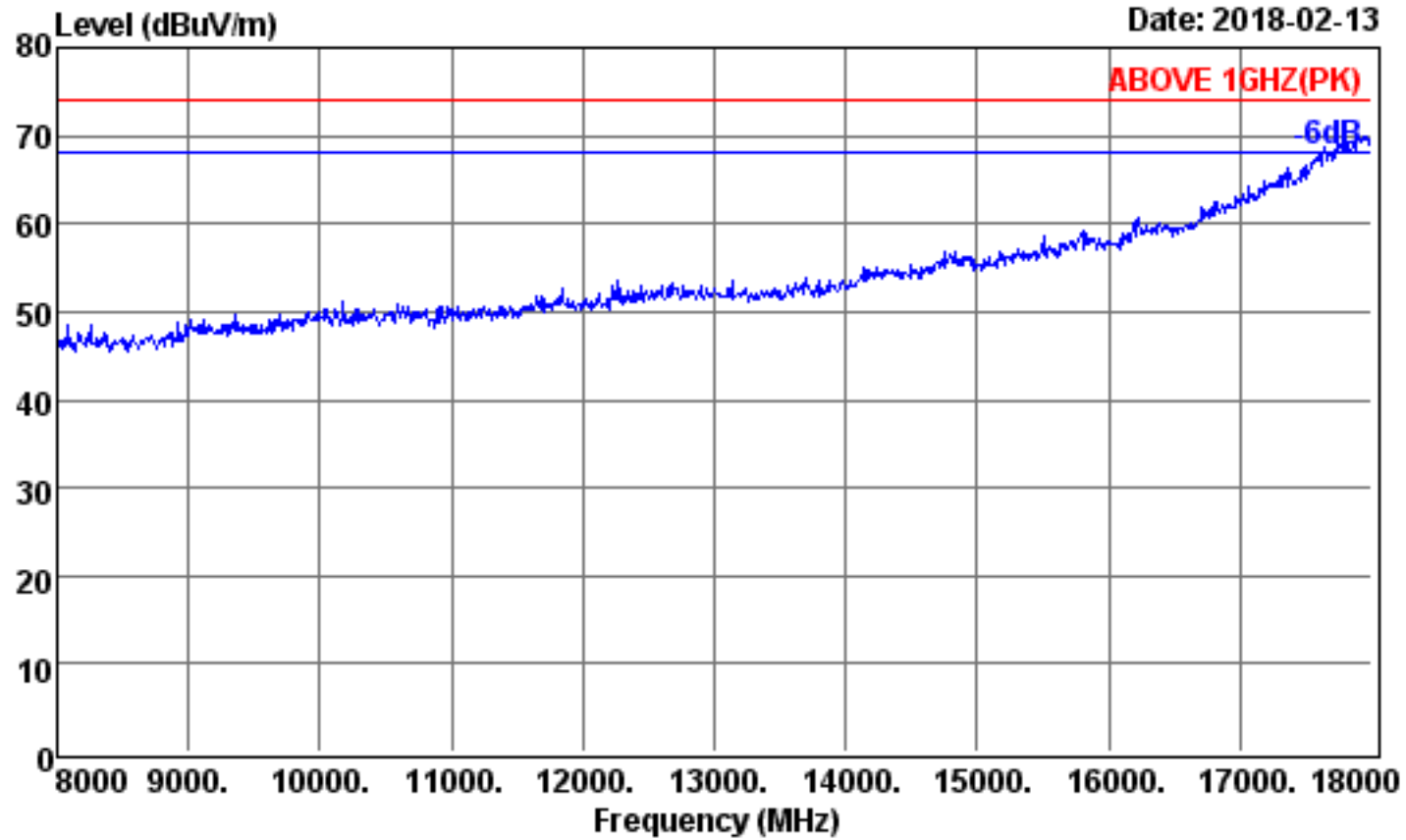
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

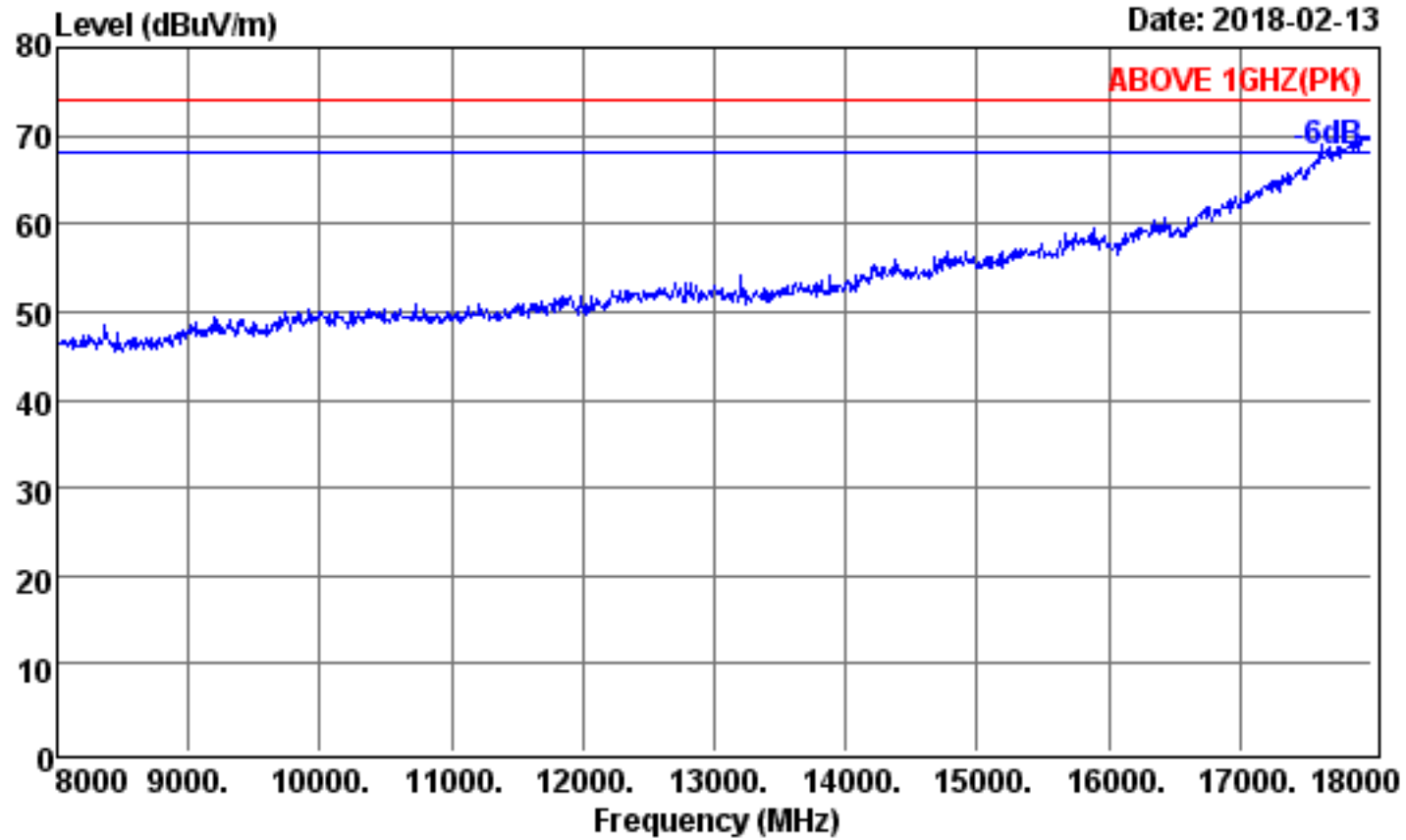
Data no. : 3
Ant. pol. : VERTICAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

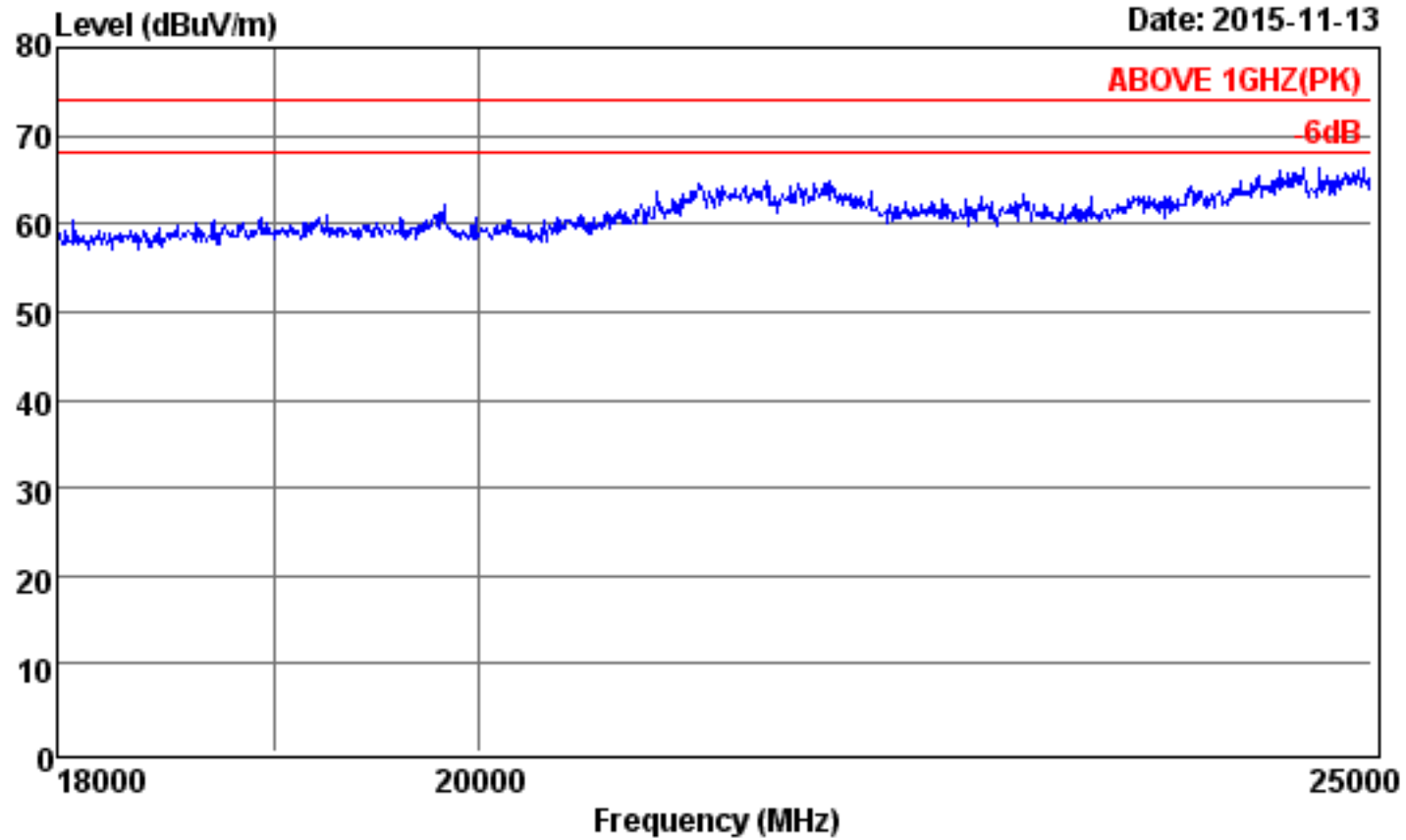
Data no. : 4
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 13

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

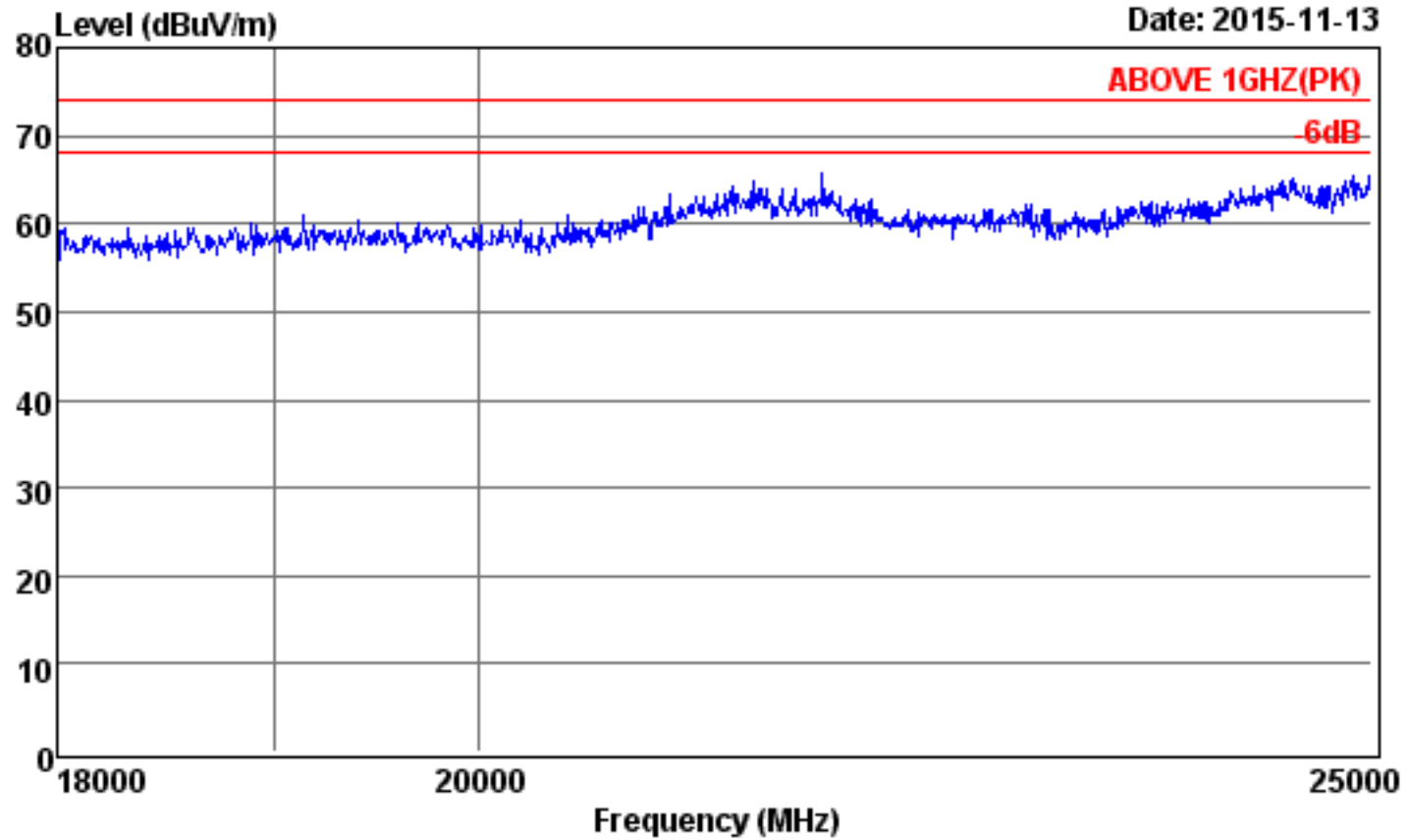
Data no. : 13
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 14

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Tx 2480MHz(Zigbee)

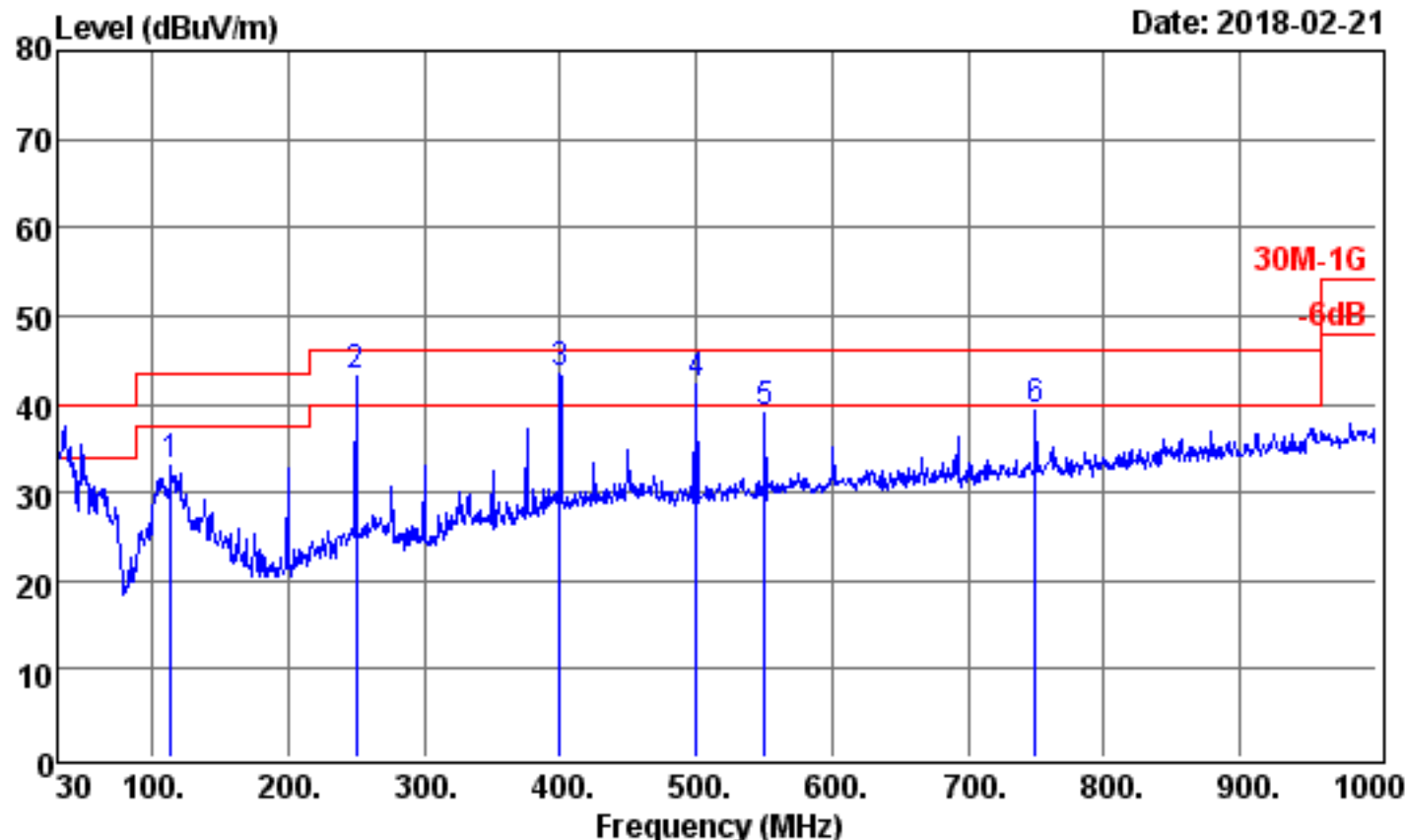
Data no. : 14
Ant. pol. : VERTICAL
Engineer : Sean



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : AUDIX No.1 3m Chamber
Dis. / Ant. : 3m CBL6112D 33821(PAD)
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : RX 2440MHz

Data no. : 3
Ant. pol. : VERTICAL
Engineer : Sean

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	113.42	18.40	2.43	38.41	39.08	49.50	10.42	Peak
2	250.19	19.16	3.81	45.73	43.01	46.00	2.99	Peak
3	399.57	22.04	5.54	42.28	43.46	46.00	2.54	Peak
4	500.45	23.17	6.43	39.71	42.19	46.00	3.81	Peak
5	549.92	23.92	6.59	35.79	39.04	46.00	6.96	Peak
6	749.74	25.42	7.35	33.89	39.37	46.00	6.63	Peak

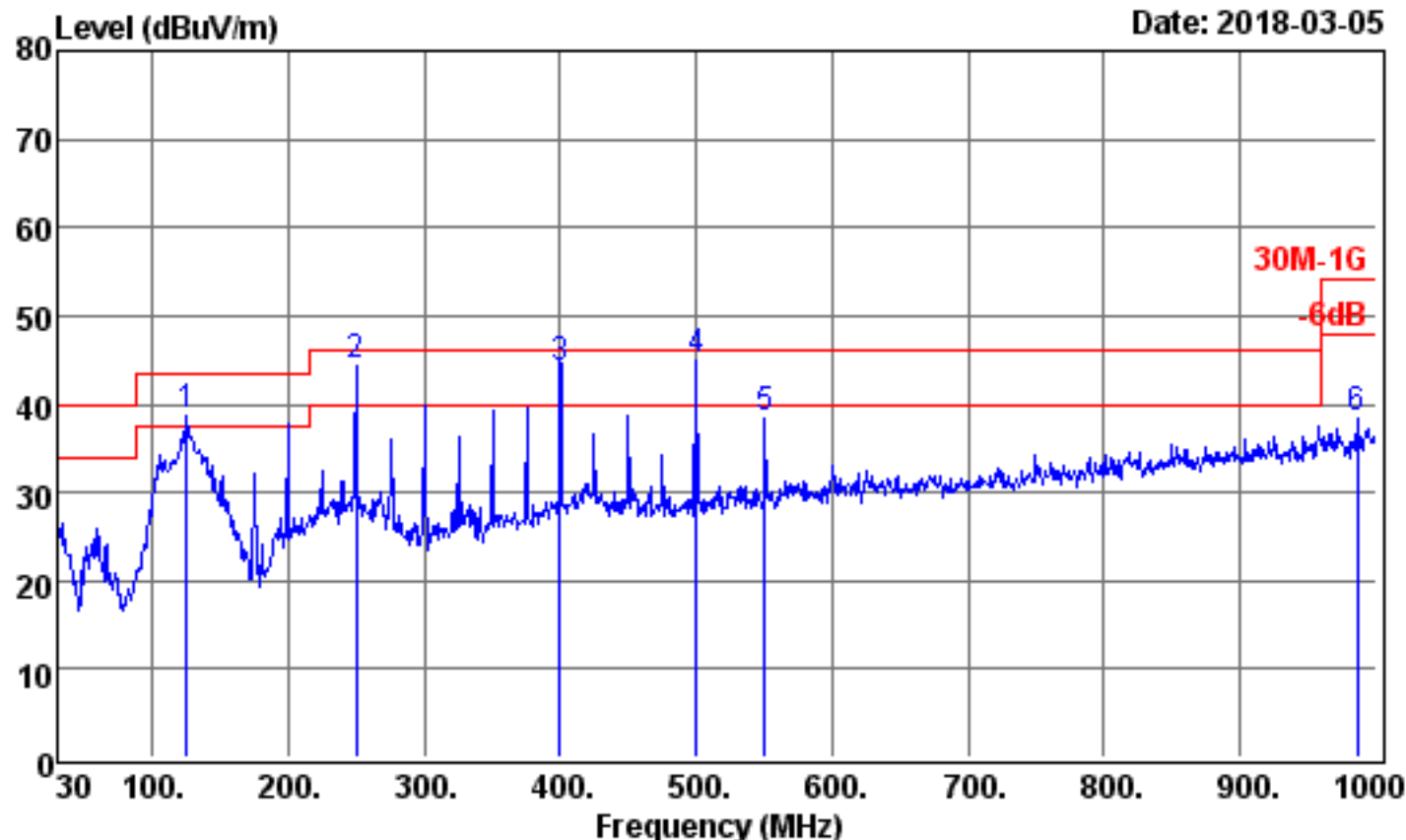
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-03-05



Site no. : AUDIX No.1 3m Chamber Data no. : 4
Dis. / Ant. : 3m CBL6112D 33821(PAD) Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 23°C / 53% N9010A Engineer : Sean
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : RX 2440MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	125.06	18.55	2.56	43.65	38.67	43.50	4.83	Peak
2	250.19	19.16	3.81	47.04	44.32	46.00	1.68	Peak
3	399.57	22.04	5.54	42.96	44.14	46.00	1.86	Peak
4	500.45	23.17	6.43	42.51	44.99	46.00	1.01	Peak
5	549.92	23.92	6.59	35.21	38.46	46.00	7.54	Peak
6	986.42	27.69	8.74	28.52	38.27	54.00	15.73	Peak

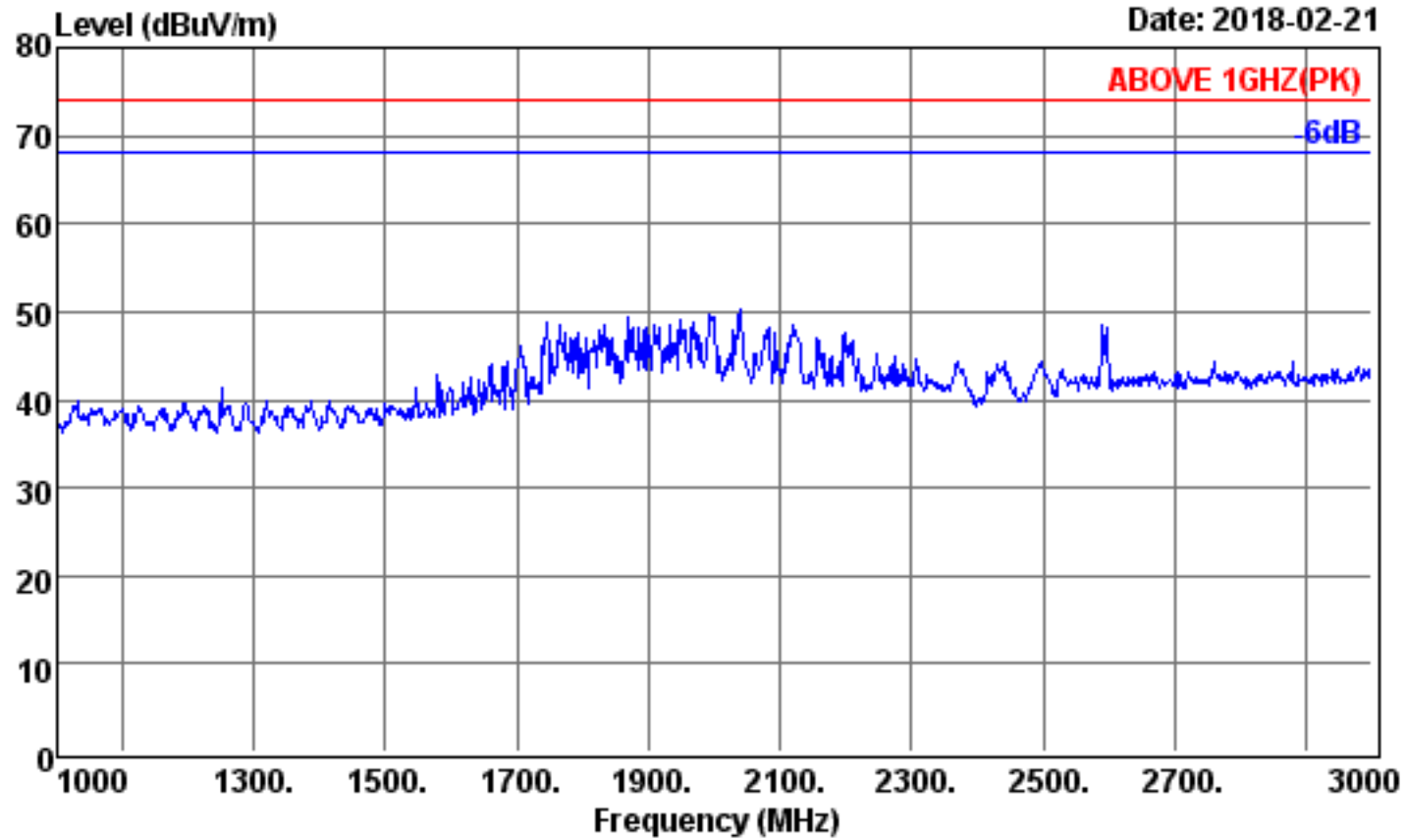
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emissions not reported are 20 dB lower than the specified limit.



Data: 5

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-21



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

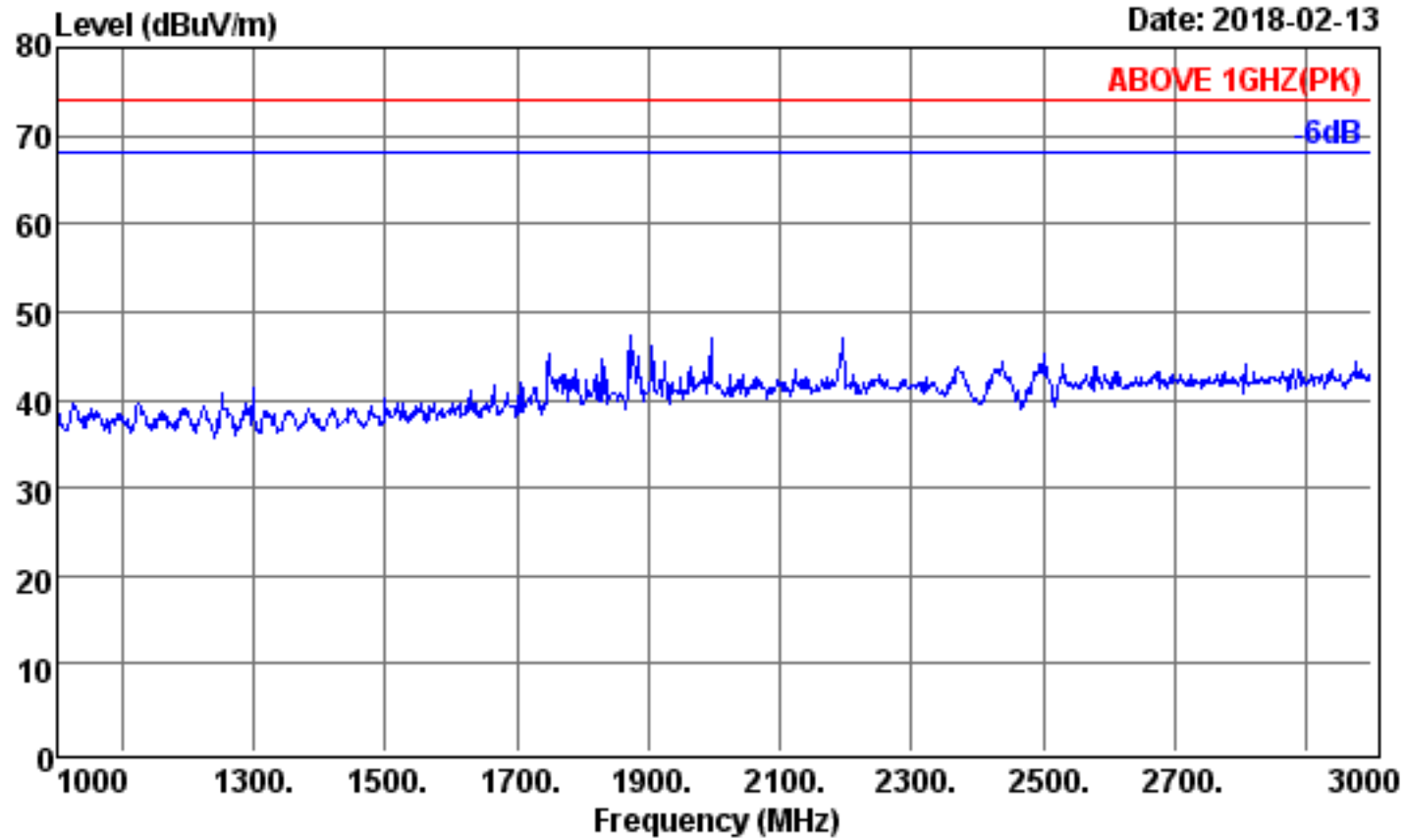
Data no. : 5
Ant. pol. : VERTICAL
Engineer : Sean



Data: 6

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

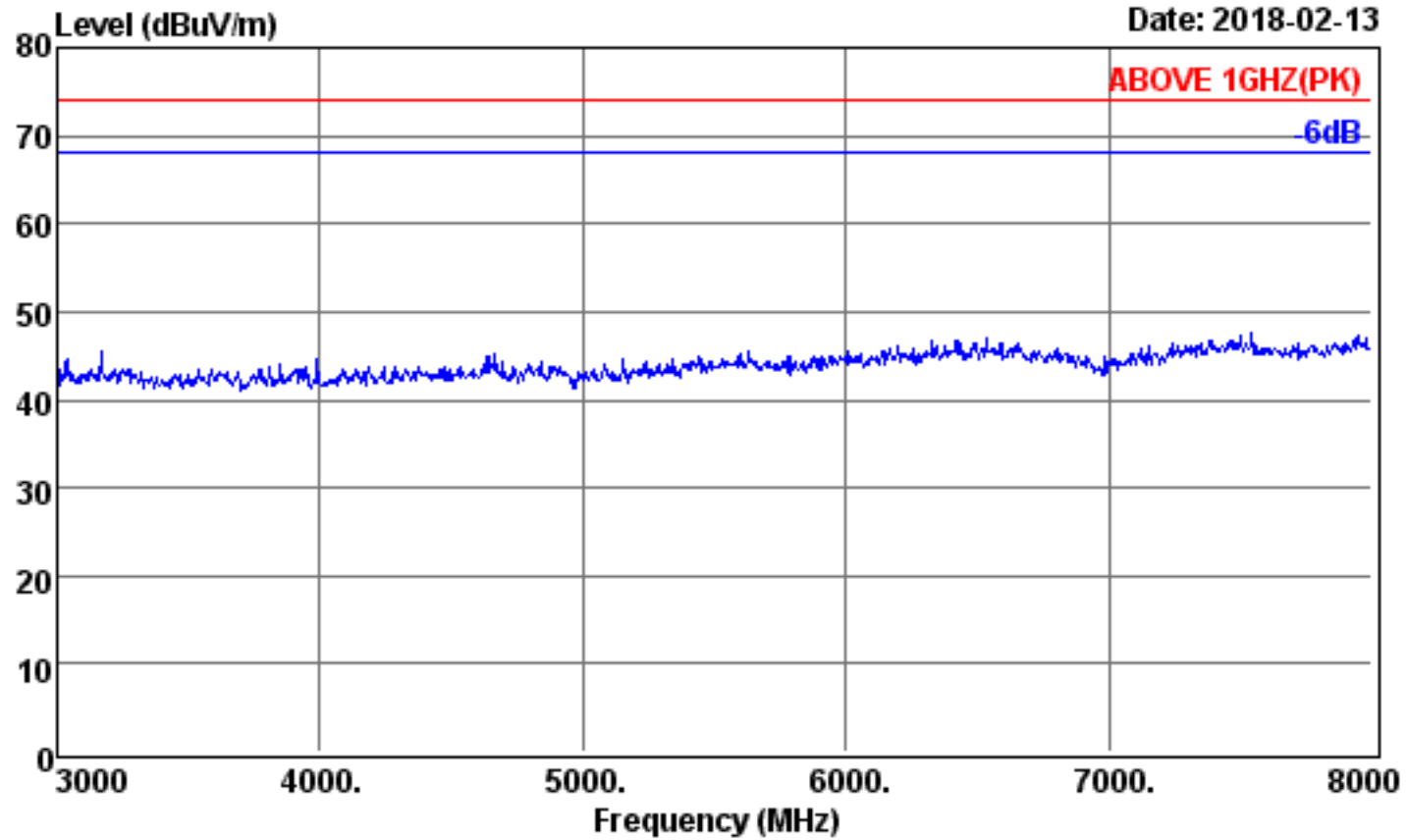
Data no. : 6
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 1

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



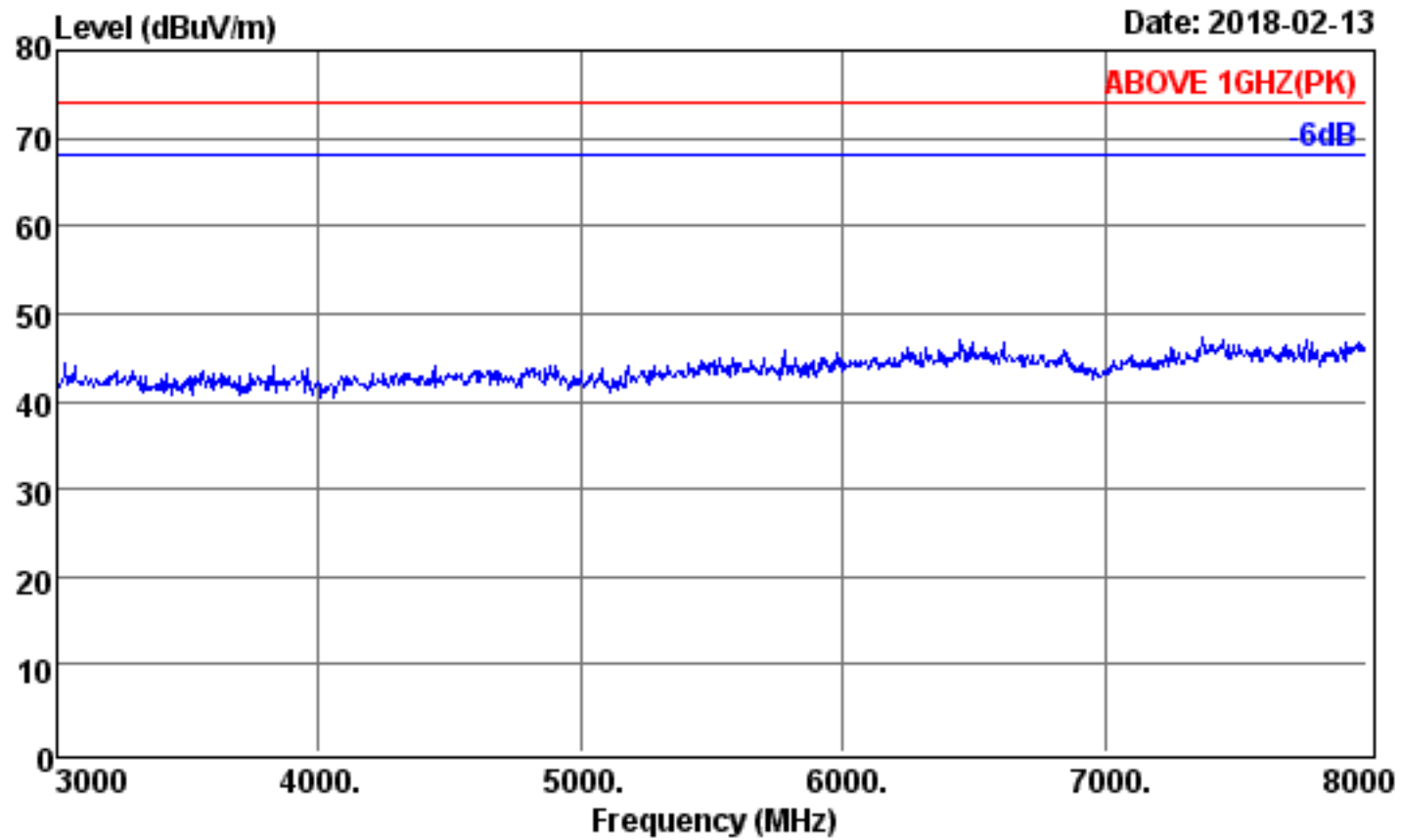
Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sean



Data: 2

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

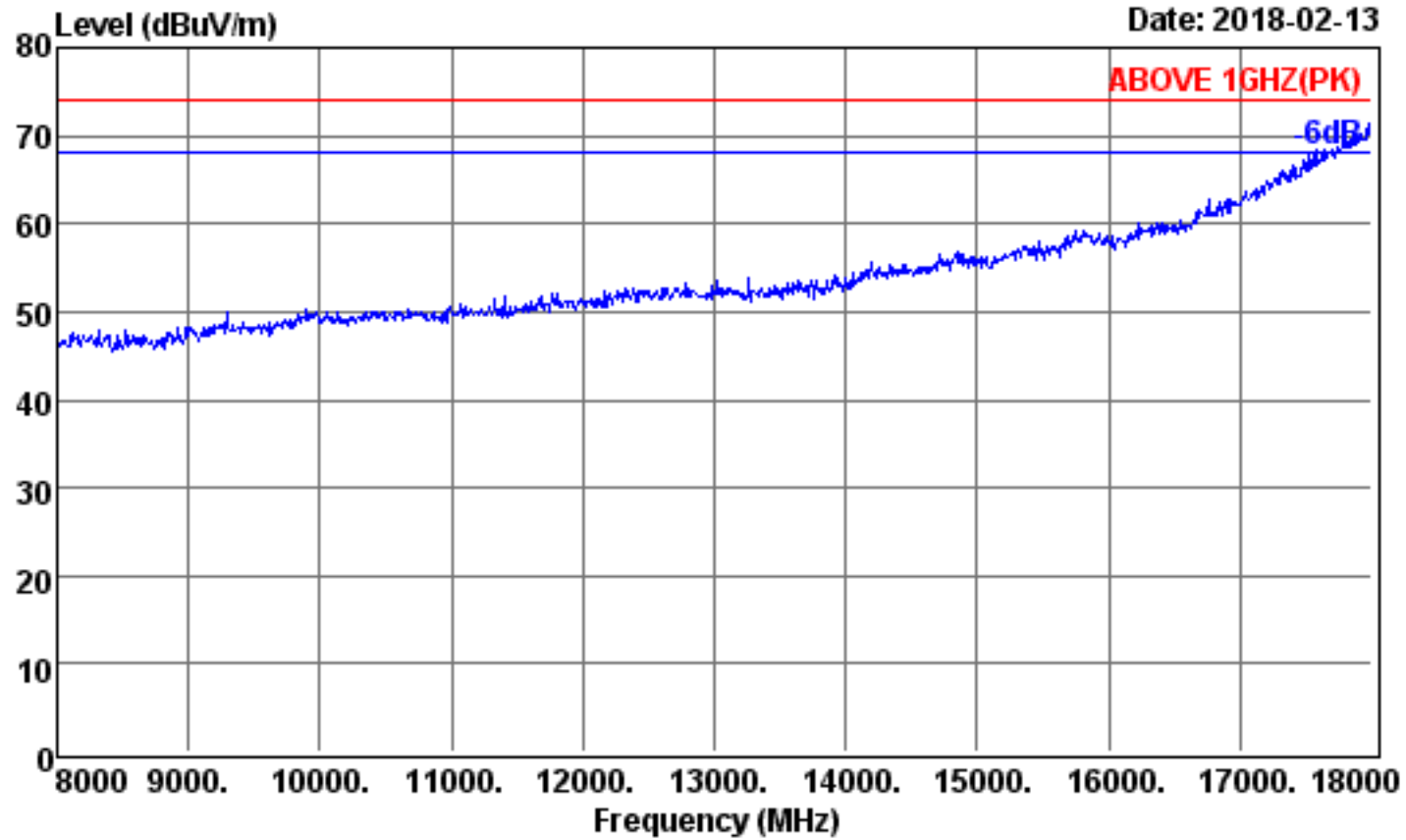
Data no. : 2
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 3

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

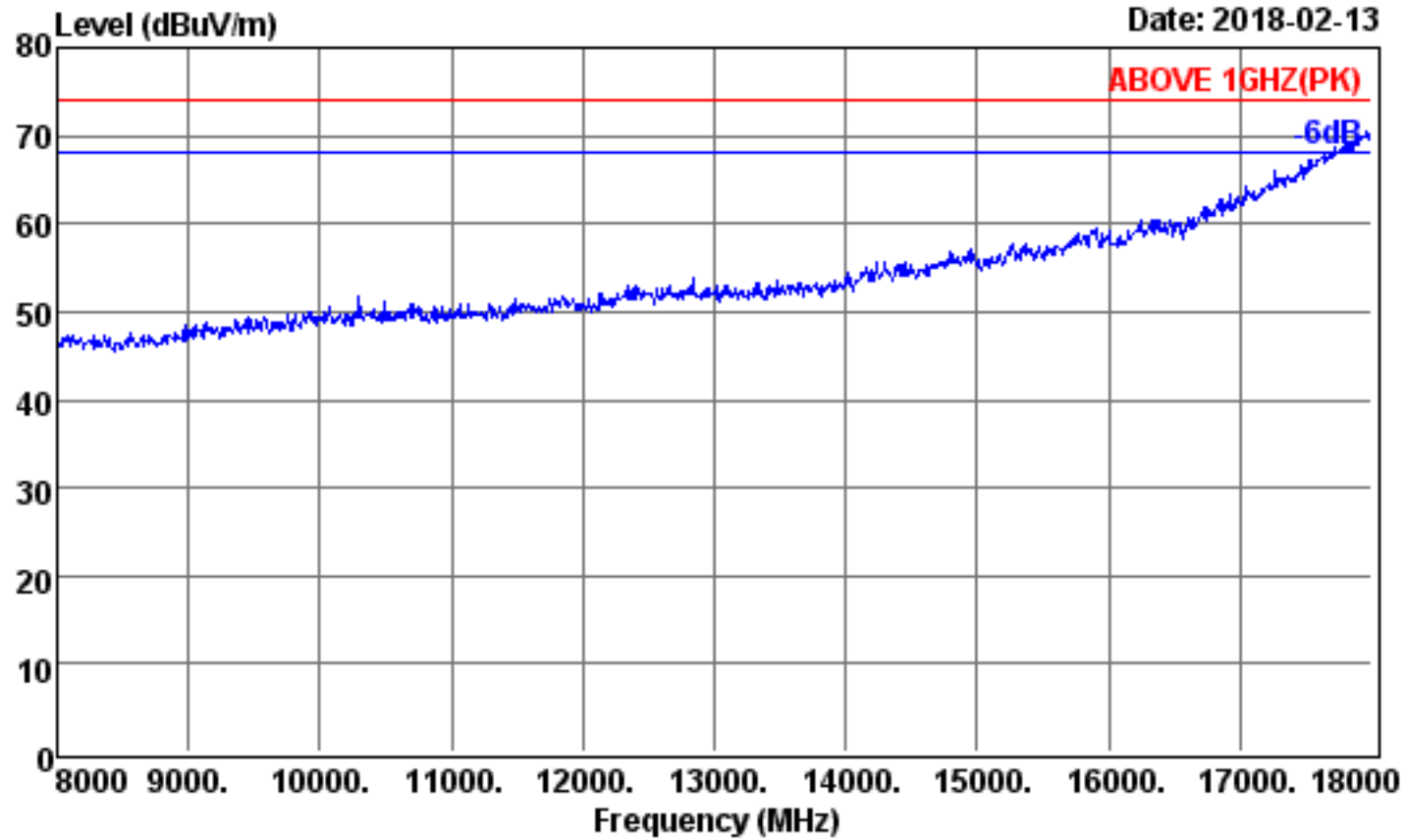
Data no. : 3
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 4

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2018-02-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m 3117(00135902)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

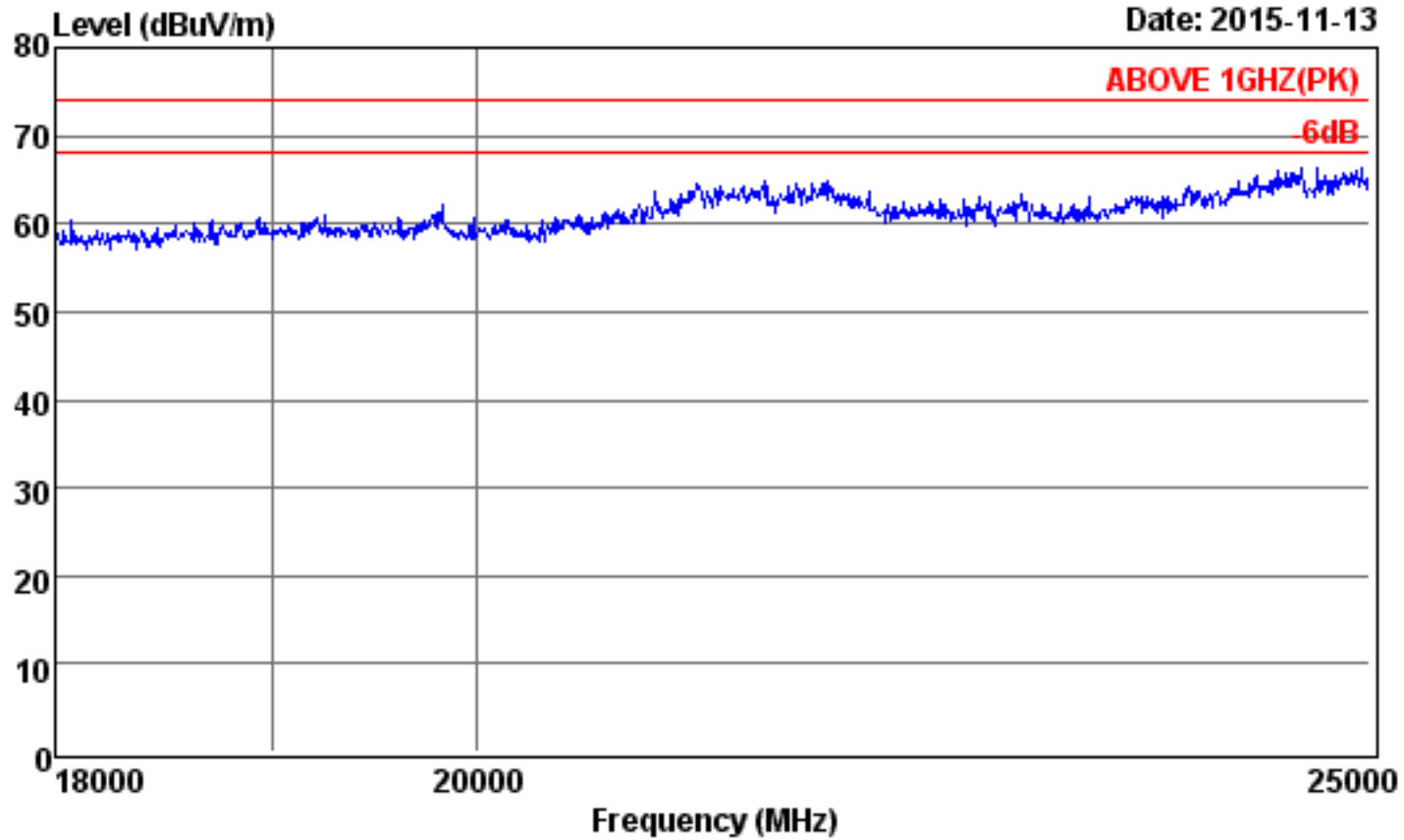
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Sean



Data: 15

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

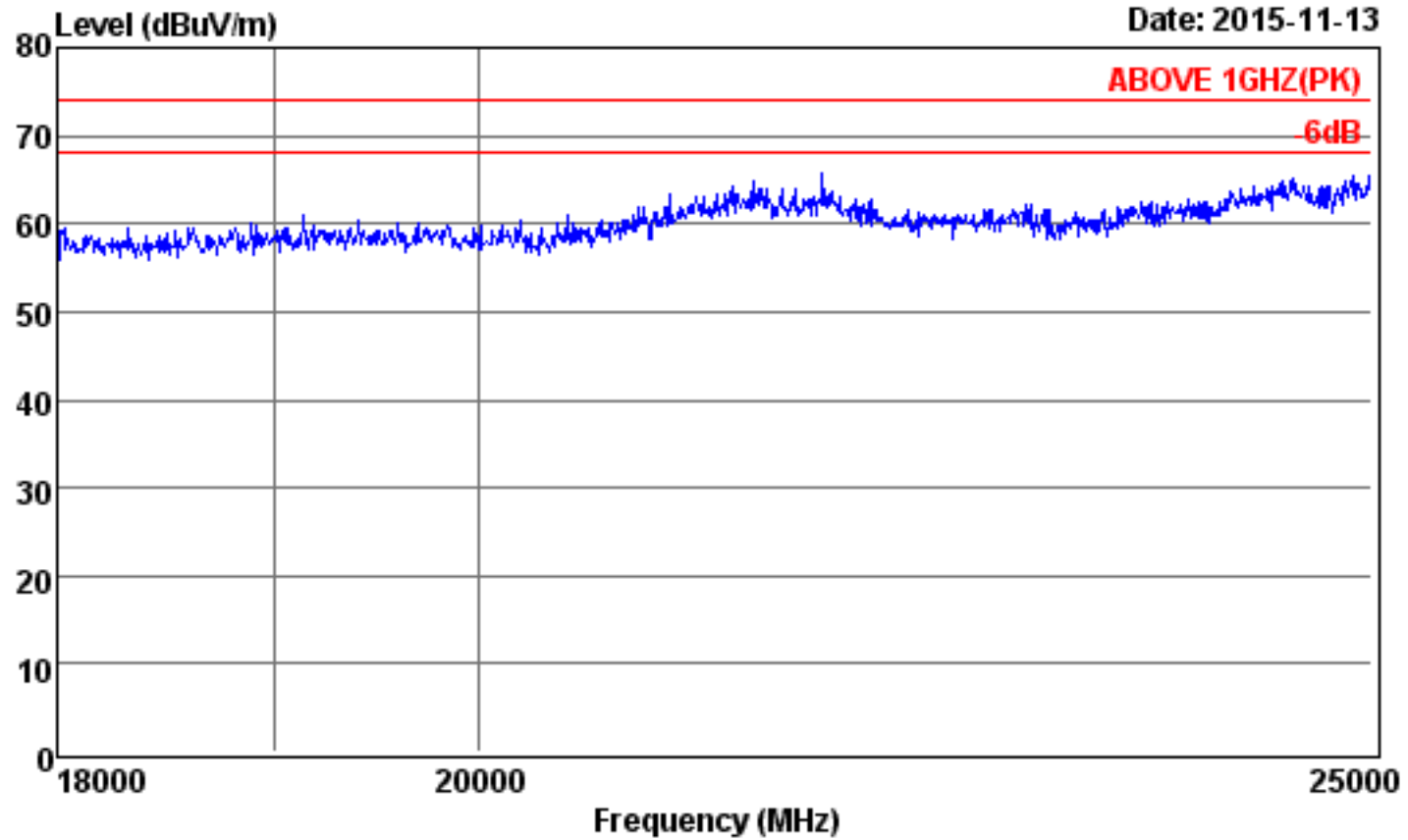
Data no. : 15
Ant. pol. : HORIZONTAL
Engineer : Sean



Data: 16

File: C:\Documents and Settings\sean_wang\桌面\Sean\C1M1802108 Samsung Zigbee

Date: 2015-11-13



Site no. : Audix Fully Chamber
Dis. / Ant. : 3m AH-840 (101092)
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 23°C / 53% N9030A
EUT : SHP-DP728
Power Rating : DC 6V
Test Mode : Rx 2440MHz

Data no. : 16
Ant. pol. : VERTICAL
Engineer : Sean