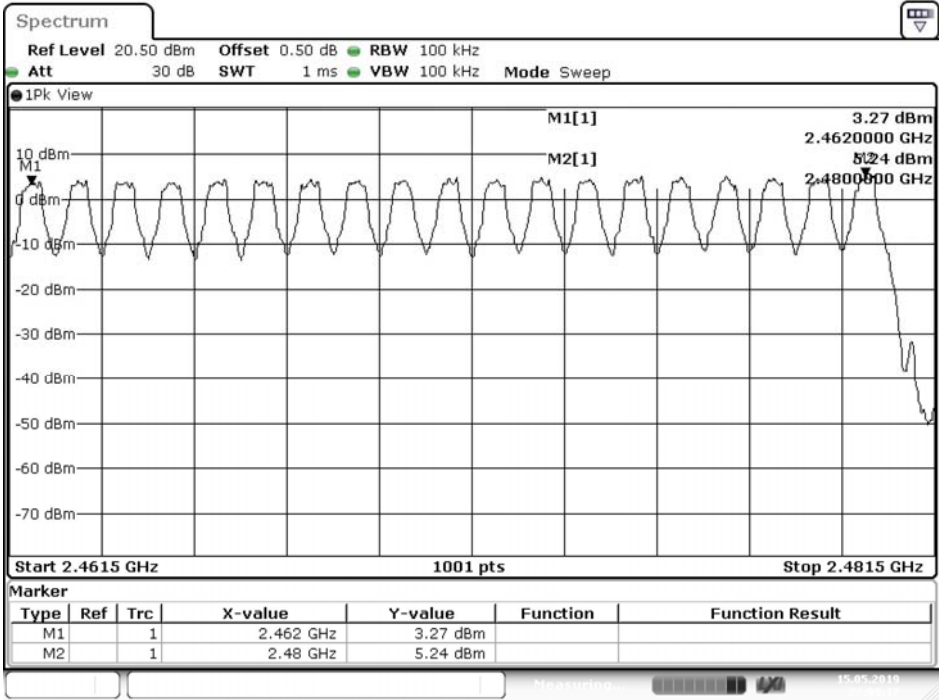


2462-2480MHz



Date: 15.MAY.2019 22:09:17

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 00-78

測試項目：跳頻頻率數目

6 dB 頻寬：100kHz

測試模式：Mode 1: 發射器 - 3Mbps

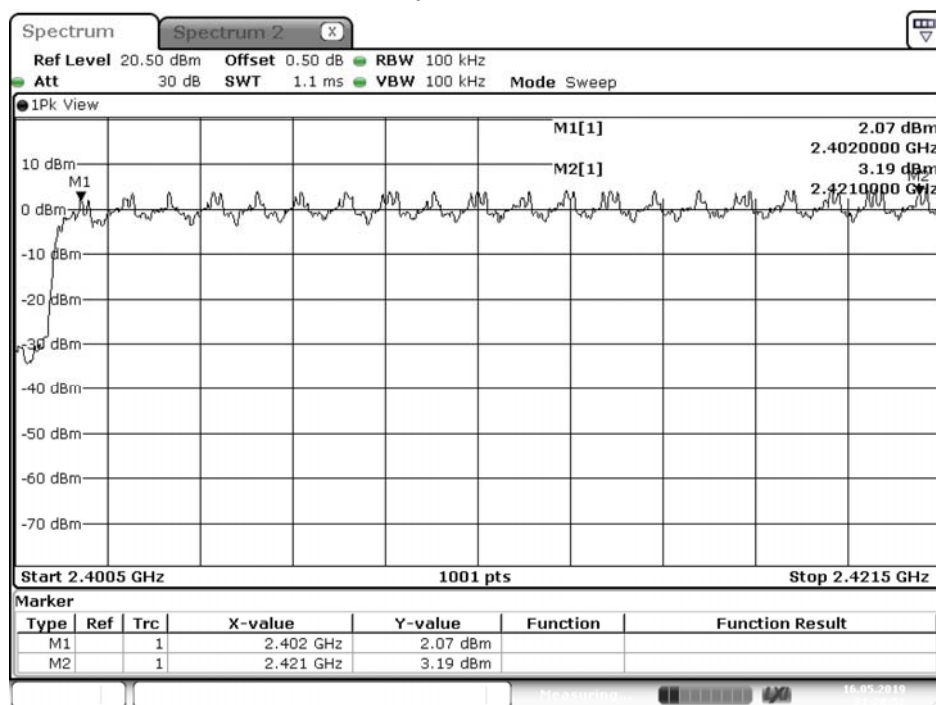
檢測器：峰值

視頻頻寬：100kHz

測試日期：108 年 05 月 15 日

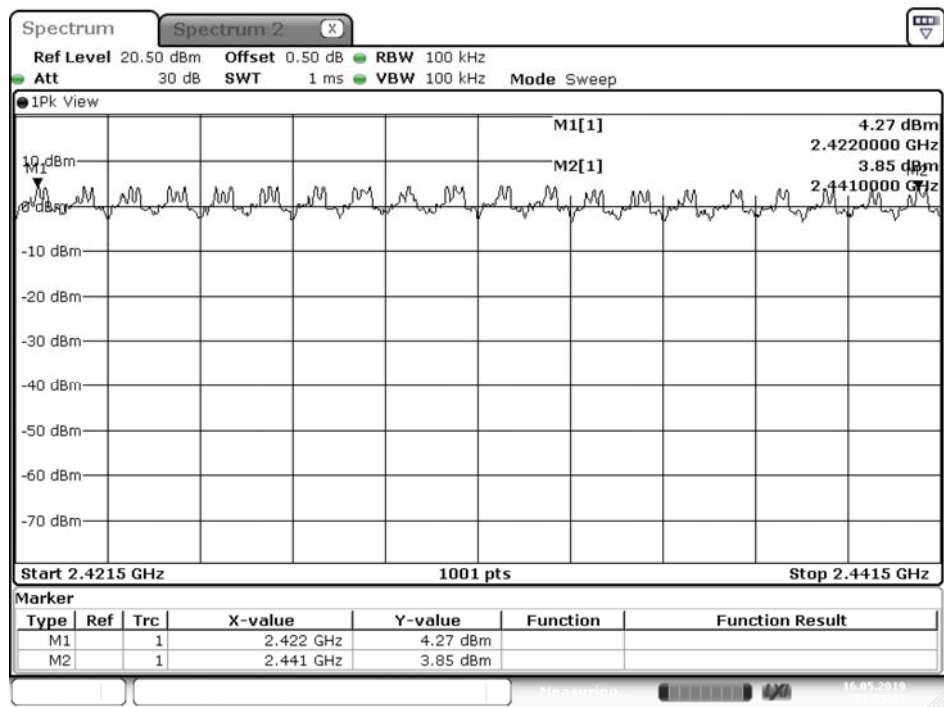
Measure Level (Channel)	Limit (Channel)	Result
79	> 75	Pass

2402-2421MHz



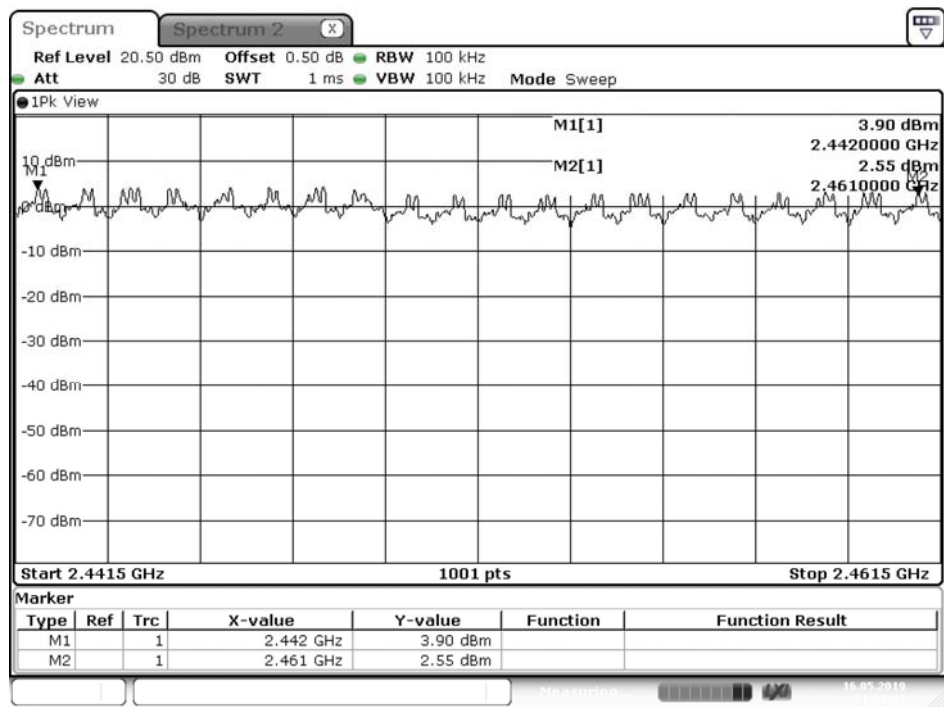
Date: 16.MAY.2019 21:20:51

2422-2441MHz



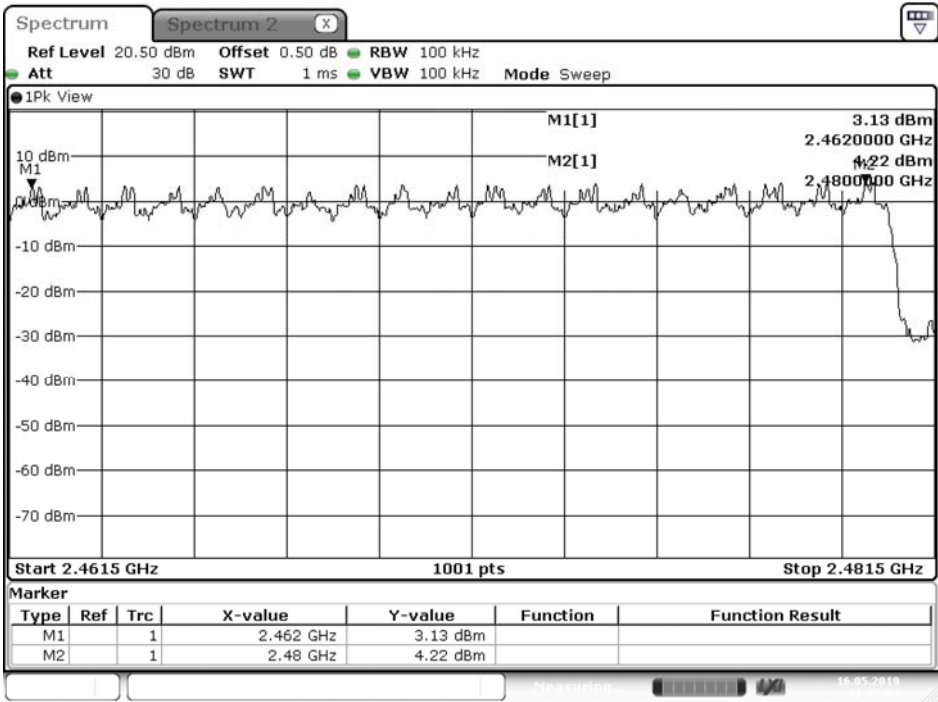
Date: 16.MAY.2019 21:25:43

2442-2461MHz



Date: 16.MAY.2019 21:29:33

2462-2480MHz



Date: 16.MAY.2019 21:32:03

11. 停留時間

11.1. 適用標準

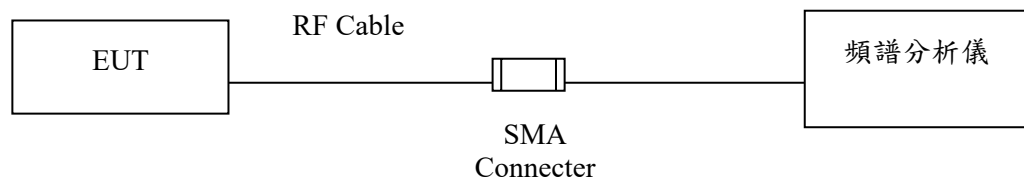
依據國家通訊傳播委員會低功率射頻電機技術規範之3.10.1.6，操作於2400-2483.5 MHz之展頻跳頻系統，在0.4秒乘以跳頻頻道數之週期內，任一頻率佔用之平均時間不得超過0.4秒。應使用智慧型跳頻技術，以避免占用於特定跳頻頻道。

11.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，啟動待測物之跳頻功能。設定頻譜分析儀之解析度頻寬為 1MHz，視訊頻寬不小於解析度頻寬，頻率掃瞄範圍為零，中心頻率為跳頻頻道，掃瞄時間為足以測得每一個跳頻頻道之所有停留時間，檢波功能為峰值，利用差值記號功能以決定停留時間。

待測物應在正常發射狀態下量測。

11.3. 測試架構圖



11.4. 量測不確定度

此項測試之量測不確定度為 $\pm 2.31\text{msec}$

11.5. 停留時間量測結果

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 00, CH39, CH78

測試項目：停留時間

6 dB 頻寬：1MHz

測試模式：Mode 1: 發射器 - 1Mbps-DH5

檢測器：峰值

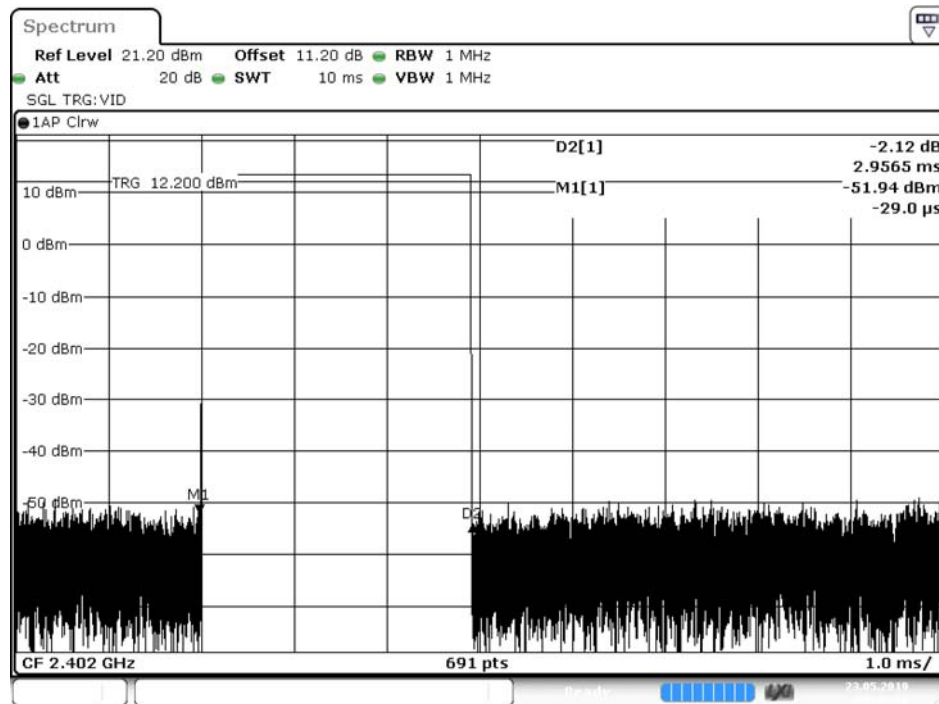
視頻頻寬：1MHz

測試日期：108 年 05 月 23 日

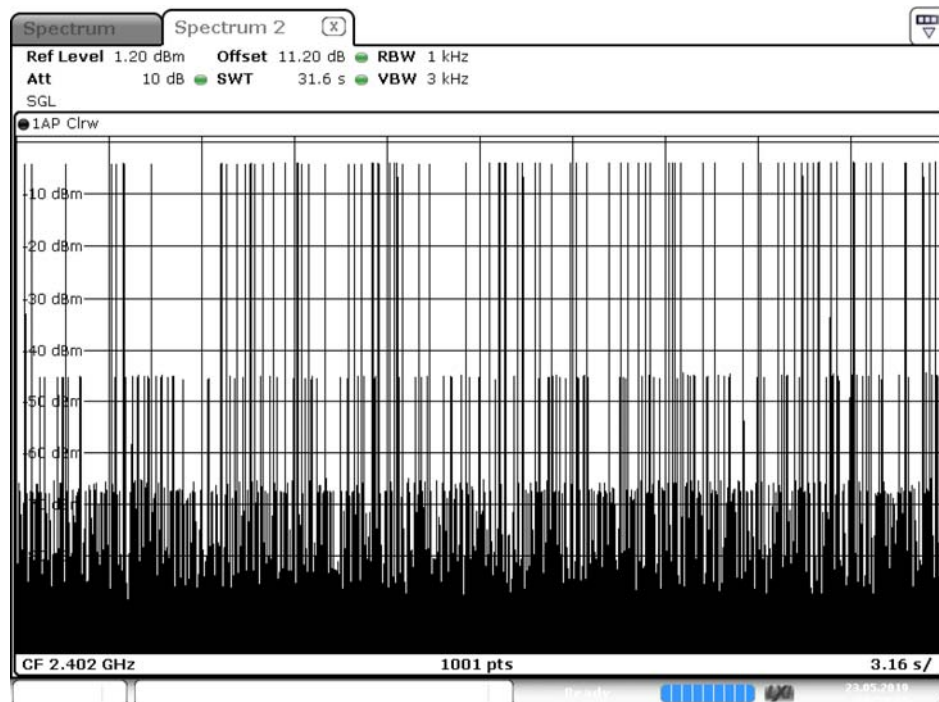
Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.957	98	31600	289.737	400	Pass
2441	2.957	103	31600	304.520	400	Pass
2480	2.971	101	31600	300.071	400	Pass

Note: Dwell time = Time slot length * Hopping of Number

CH00 Hopping of Number and CH 00 Time slot length

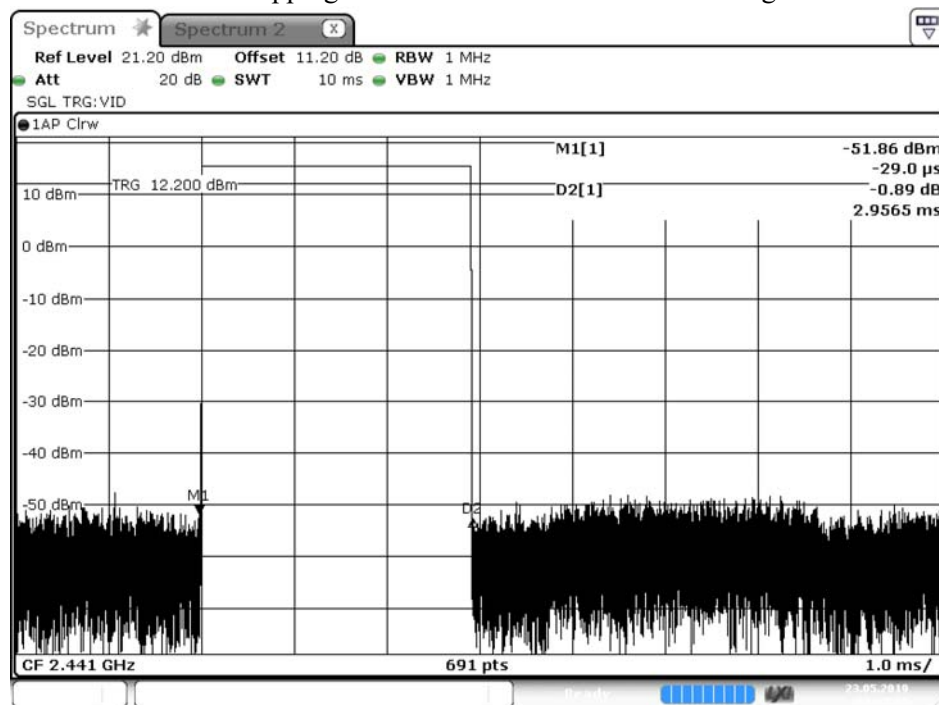


Date: 23.MAY.2019 20:46:32

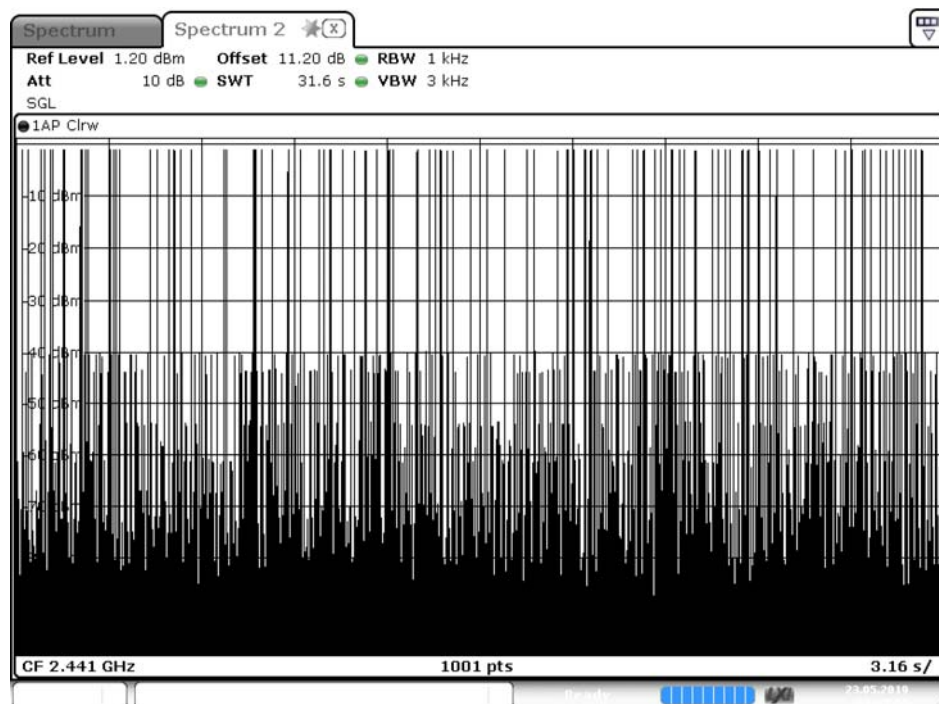


Date: 23.MAY.2019 20:58:15

CH39 Hopping of Number and CH39 Time slot length

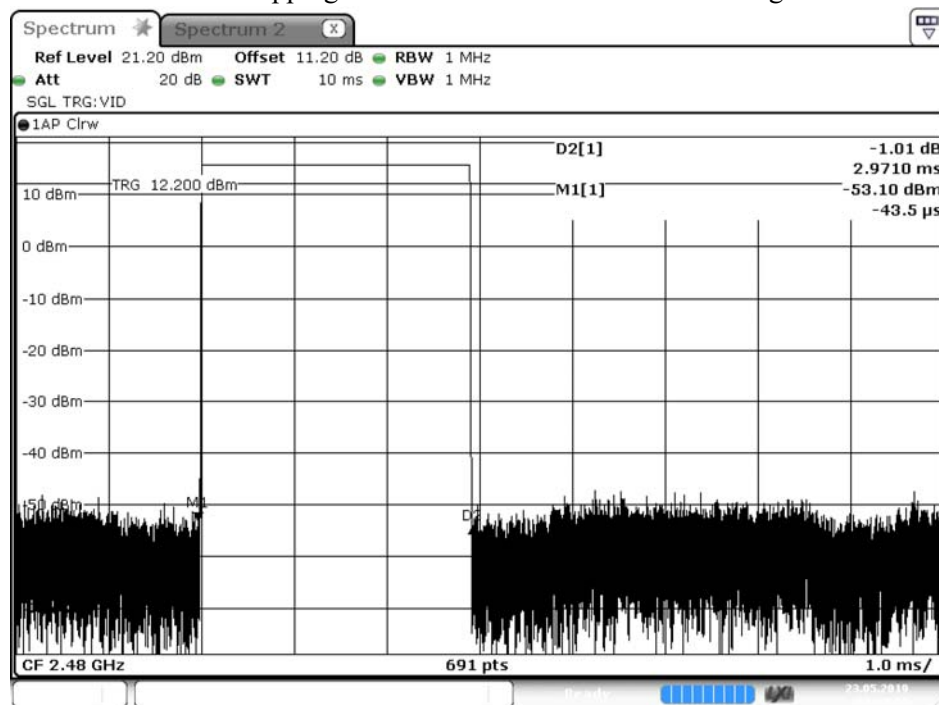


Date: 23.MAY.2019 21:03:26

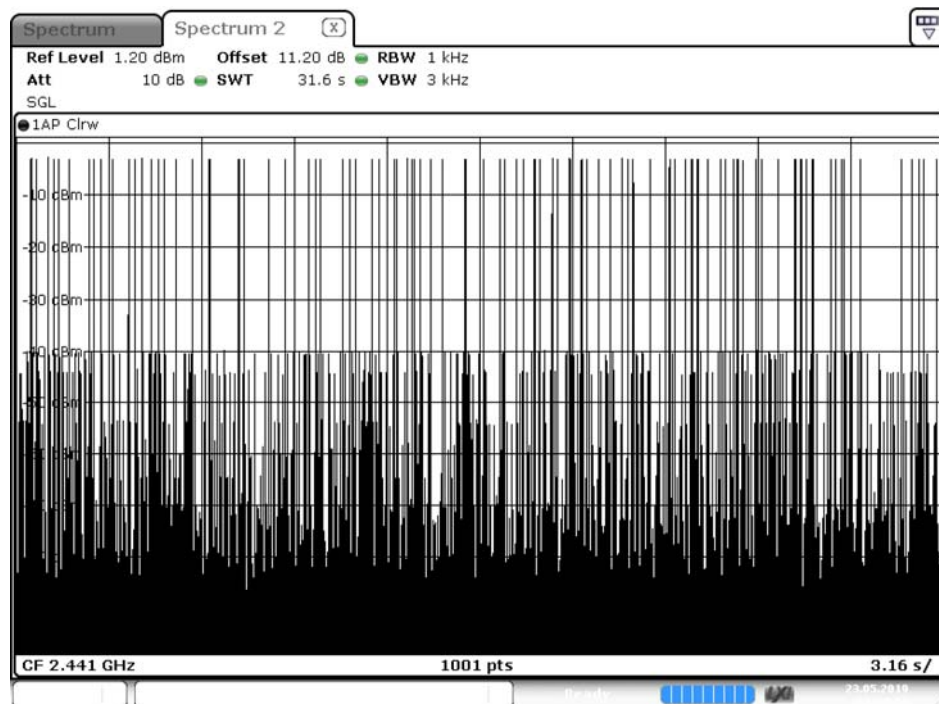


Date: 23.MAY.2019 21:01:18

CH 78 Hopping of Number and CH 78 Time slot length



Date: 23.MAY.2019 21:08:11



Date: 23.MAY.2019 21:10:13

Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 00, CH39, CH78

測試項目：停留時間

6 dB 頻寬：1MHz

測試模式：Mode 1: 發射器 - 3Mbps-DH5

檢測器：峰值

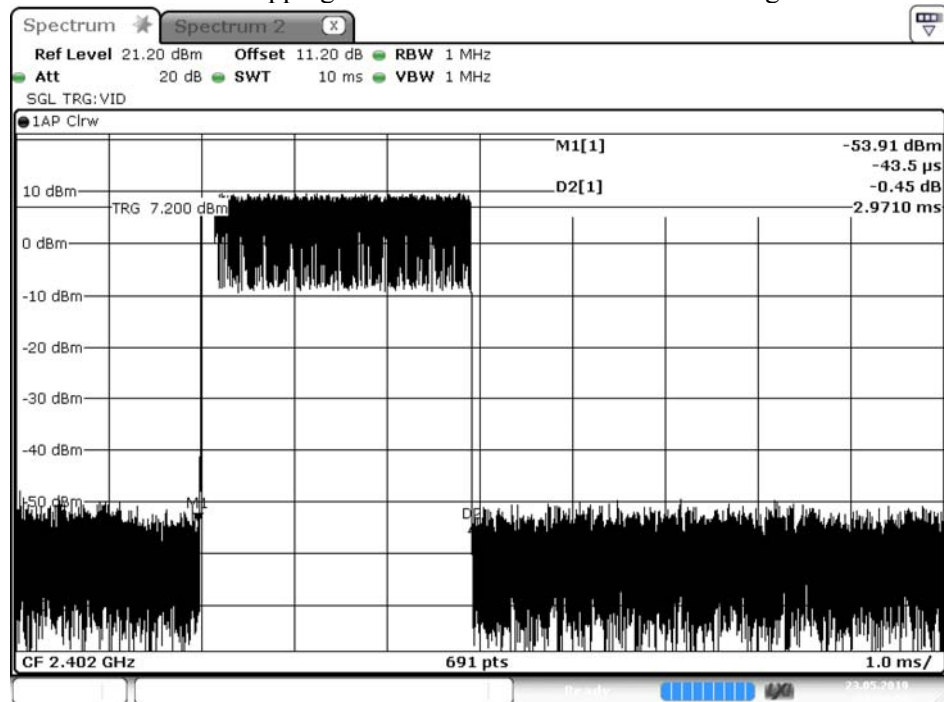
視頻頻寬：1MHz

測試日期：108 年 05 月 23 日

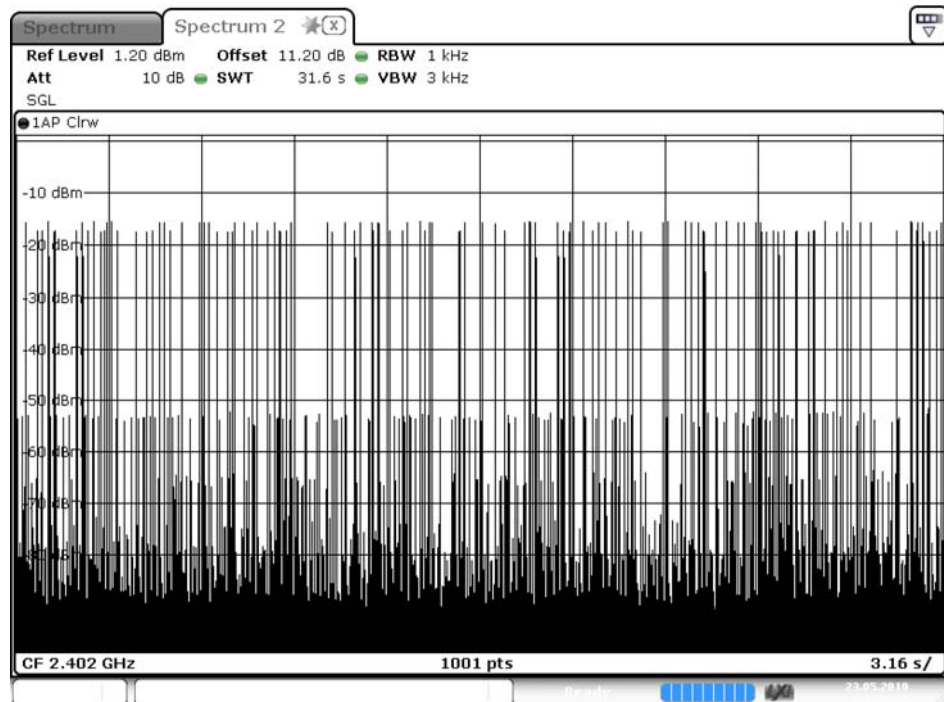
Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.971	105	31600	311.955	400	Pass
2441	2.971	99	31600	294.129	400	Pass
2480	2.971	106	31600	314.926	400	Pass

Note: Dwell time = Time slot length * Hopping of Number

CH00 Hopping of Number and CH 00 Time slot length

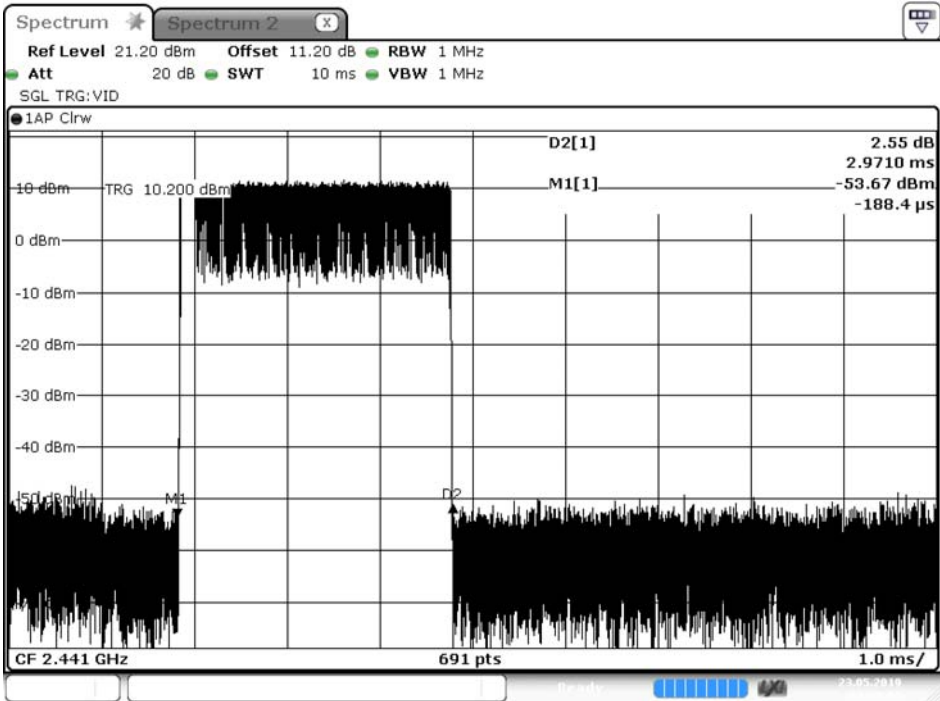


Date: 23.MAY.2019 21:24:53

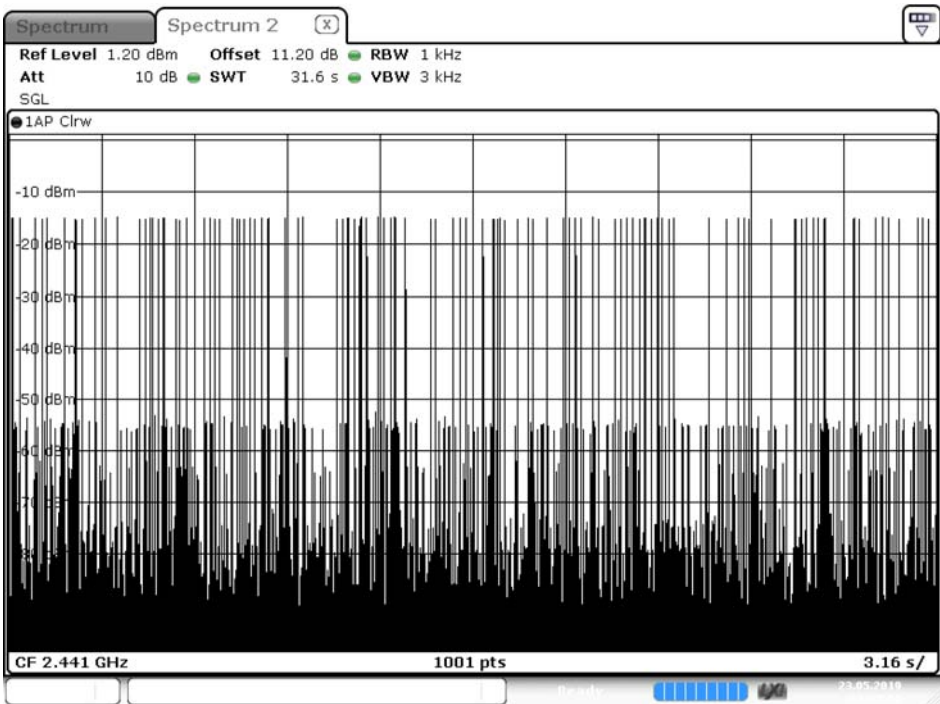


Date: 23.MAY.2019 21:22:43

CH39 Hopping of Number and CH39 Time slot length

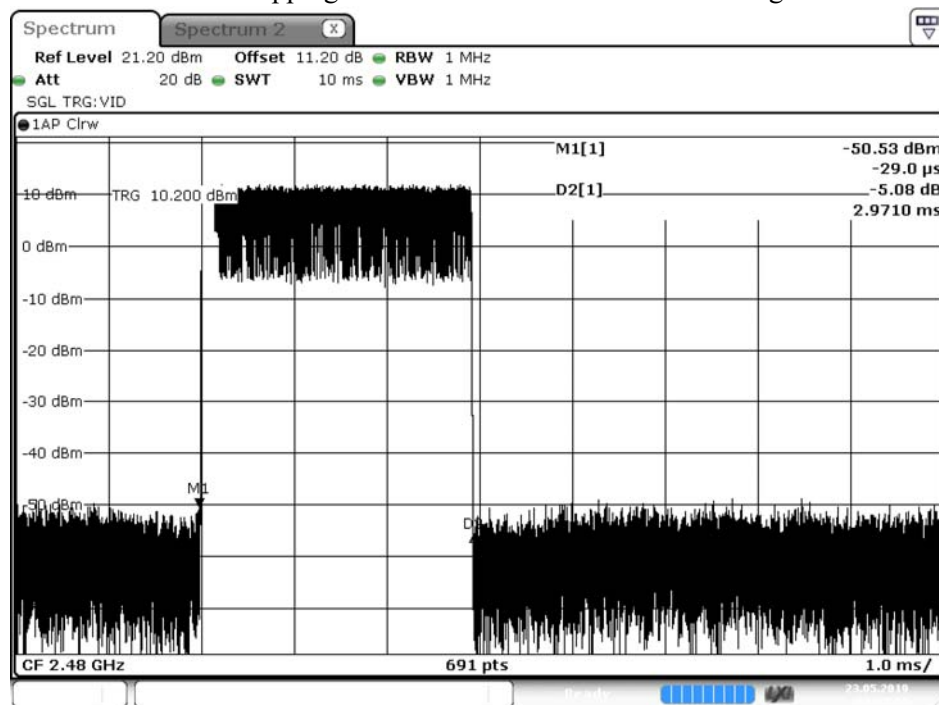


Date: 23.MAY.2019 21:16:07

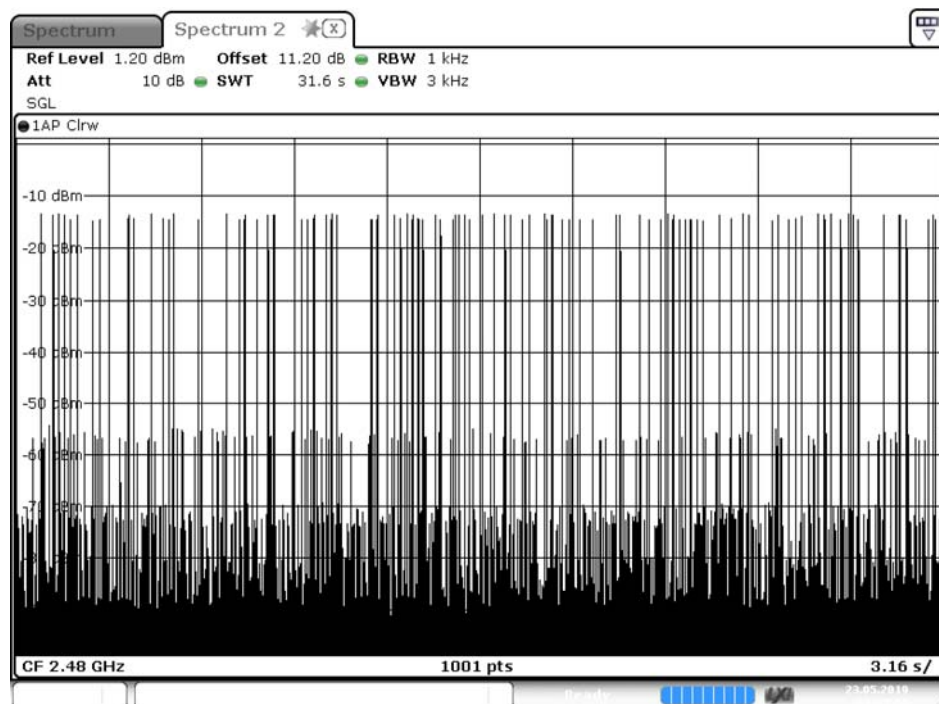


Date: 23.MAY.2019 21:12:58

CH 78 Hopping of Number and CH 78 Time slot length



Date: 23.MAY.2019 21:13:52



Date: 23.MAY.2019 21:21:17

Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

12. 佔用頻道寬度

12.1. 適用標準

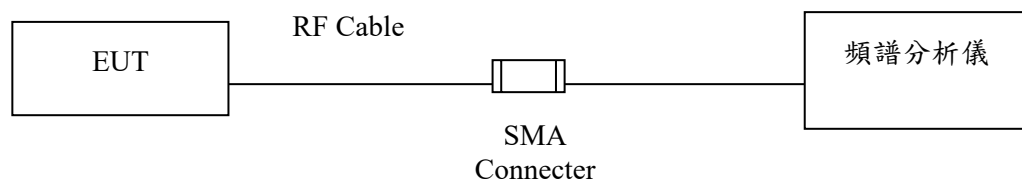
依據國家通訊傳播委員會低功率射頻電機技術規範之第3.10.1.6節之要求，6dB寬至少應有500千赫(kHz)。

12.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端，設定頻譜分析儀之解析度頻寬為 300kHz，視訊頻寬不小於解析度頻寬，頻率掃瞄範圍(SPAN)遠大於解析度頻寬。

待測物應在正常發射狀態下量測。

12.3. 測試架構圖



12.4. 量測不確定度

此項測試之量測不確定度為 $\pm 279.2\text{Hz}$

12.5. 佔用頻帶寬度測試結果

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 00 (2402MHz)

測試項目：佔用頻帶寬度

6 dB 頻寬：100kHz

測試模式：Mode 1: 發射器 - BLE

量測天線：--

視頻頻寬：300kHz

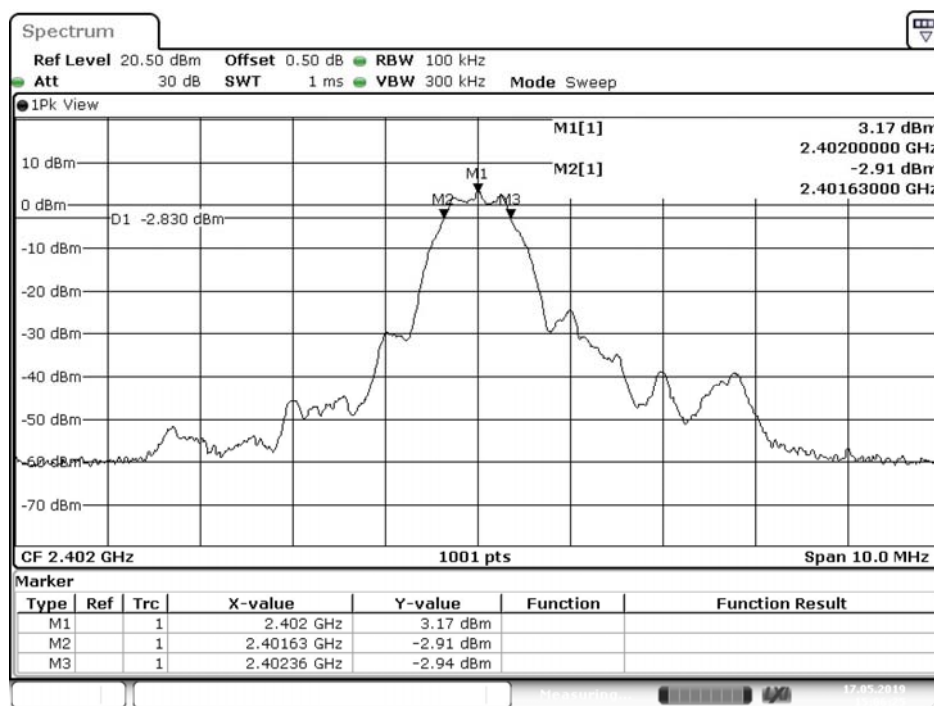
檢測器：峰值

測試距離：Conducted

測試日期：108 年 05 月 17 日

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
00	2402.00	730.0	>500	Pass

Figure Channel 00:



待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 19 (2440MHz)

測試項目：佔用頻帶寬度

6 dB 頻寬：100kHz

測試模式：Mode 1: 發射器 - BLE

量測天線：--

視頻頻寬：300kHz

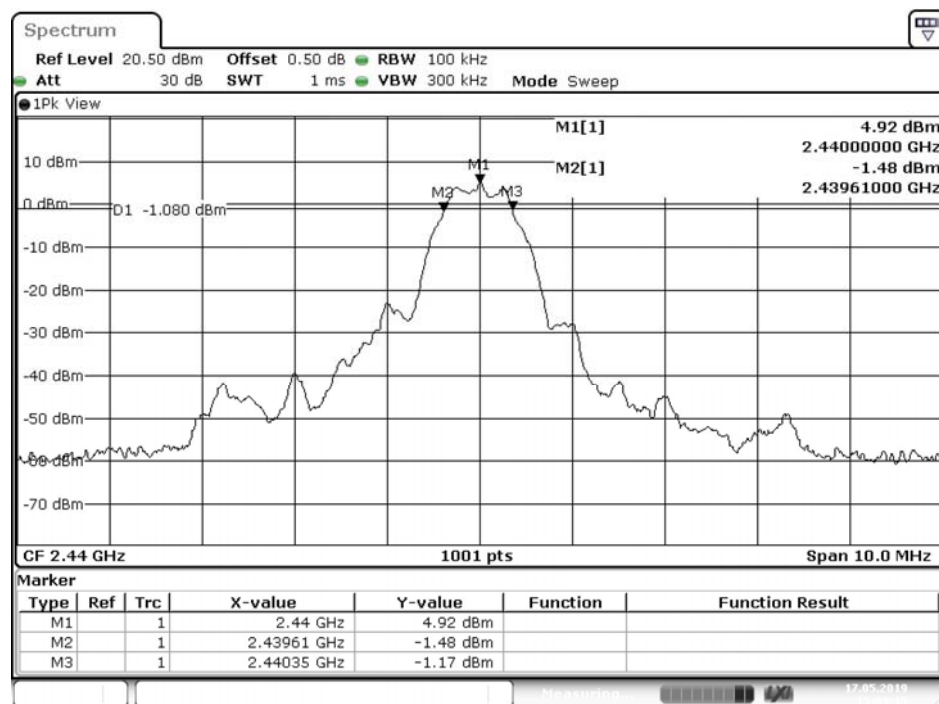
檢測器：峰值

測試距離：Conducted

測試日期：108 年 05 月 17 日

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
19	2440.00	740.0	>500	Pass

Figure Channel 19:



Date: 17.MAY.2019 15:09:15

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 39 (2480MHz)

測試項目：佔用頻帶寬度

6 dB 頻寬：100kHz

測試模式：Mode 1: 發射器 - BLE

量測天線：--

視頻頻寬：300kHz

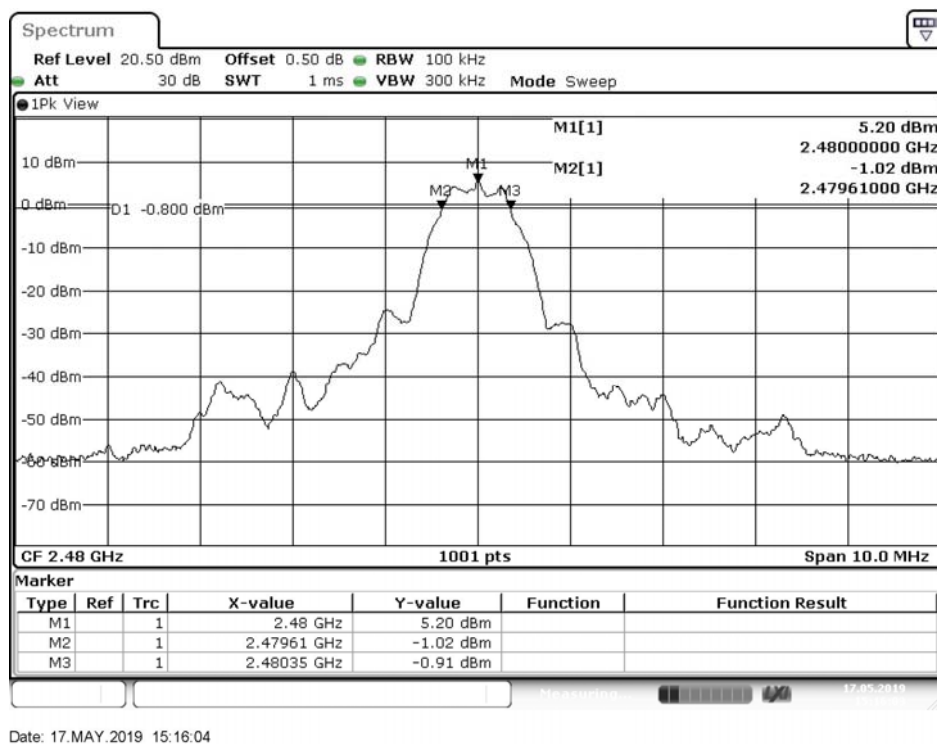
檢測器：峰值

測試距離：Conducted

測試日期：108 年 05 月 17 日

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
39	2480.00	740.0	>500	Pass

Figure Channel 39:



佔用頻道寬度測試結果:

PASS

13. 發射電功率密度

13.1. 適用標準

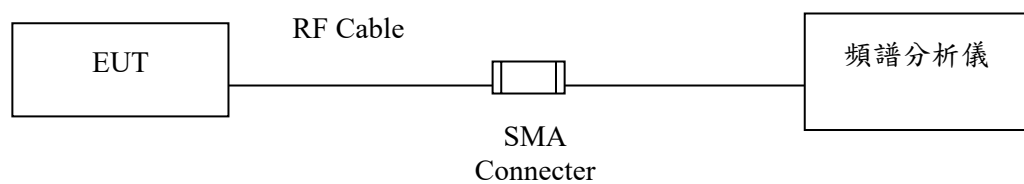
依據國家通訊傳播委員會低功率射頻電機技術規範之第 3.10.1.6 節，在使用頻率範圍之任意 3 千赫(kHz)頻寬內，由發射機傳導至天線之峰值發射電功率密度在任意期間內，皆不得大於 8dBm，且應依 3.10.1.3 之方式降低功率頻譜密度限制值。

13.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀 RF 輸入端。找出發射峰值並擴展於通帶內，設定頻譜分析儀之解析度頻寬為 3kHz，視訊頻寬大於解析度頻寬，掃瞄時間為頻率掃瞄範圍除以 100kHz。(SWEEP TIME=SPAN/3kHz)。

待測物應在正常發射狀態下量測。

13.3. 測試架構圖



13.4. 量測不確定度

此項測試之量測不確定度為 $\pm 1.23\text{dB}$ 。

13.5. 功率密度量測結果

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 00 (2402MHz)

測試項目：功率密度

量測天線：--

測試模式：Mode 1: 發射器 - BLE

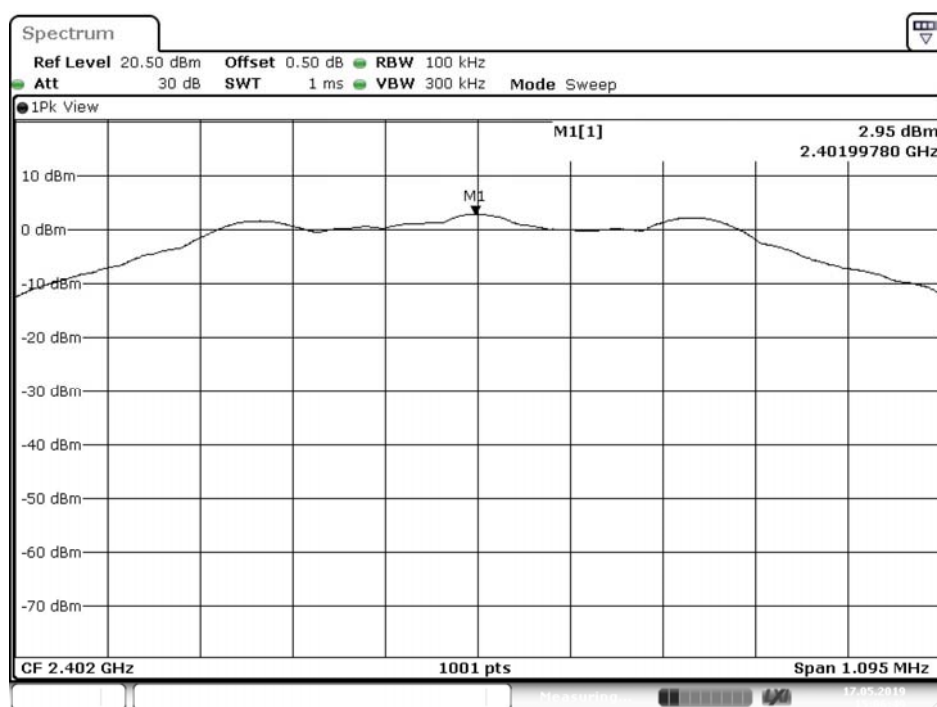
檢測器：峰值

測試距離：Conducted

測試日期：108 年 05 月 17 日

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402.00	2.95	≤8dBm	Pass

Figure Channel 00:



Date: 17.MAY.2019 15:06:49

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 19 (2440MHz)

測試項目：功率密度

量測天線：--

測試模式：Mode 1: 發射器 - BLE

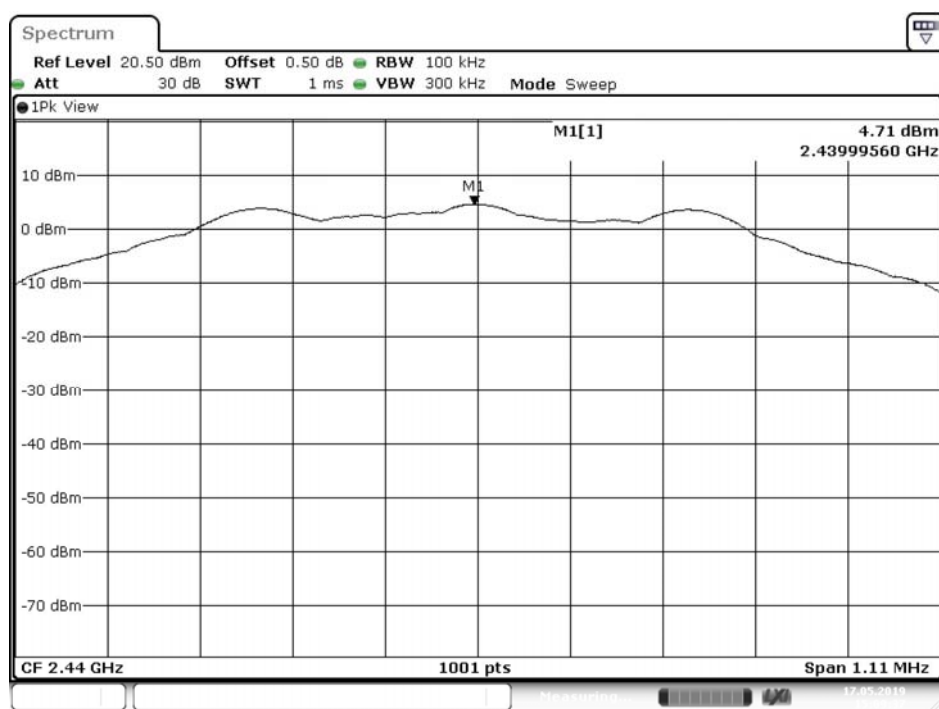
檢測器：峰值

測試距離：Conducted

測試日期：108年05月17日

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
19	2440.000	4.71	≤8dBm	Pass

Figure Channel 19:



待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：CH 39 (2480MHz)

測試項目：功率密度

量測天線：--

測試模式：Mode 1: 發射器 - BLE

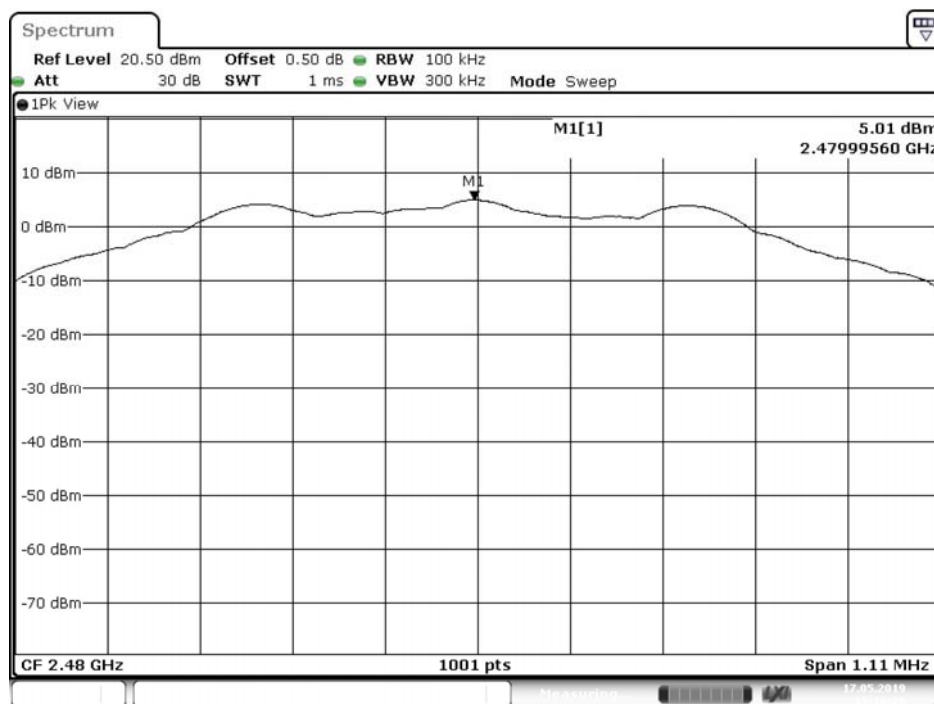
檢測器：峰值

測試距離：Conducted

測試日期：108 年 05 月 17 日

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2480.00	5.01	≤8dBm	Pass

Figure Channel 39:



Date: 17.MAY.2019 15:16:27

功率密度測試結果:

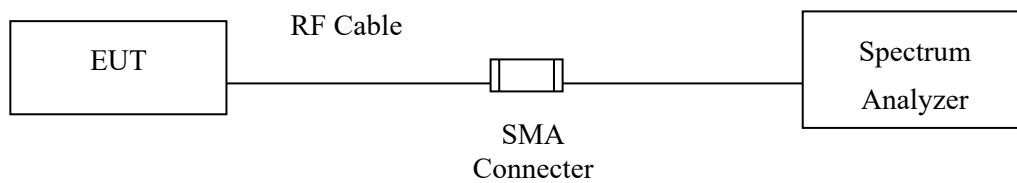
PASS

14. Duty Cycle

14.1. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀RF輸入端，
待測物應在正常發射狀態下量測。

14.2. 測試架構圖



14.3. 量測不確定度

此項測試之量測不確定度為 $\pm 2.31\text{msec}$

14.4. Duty Cycle 測試結果

待測物名稱：Bluetooth Base

待測物型號：CB4222 CD, CB5232 CD, CB4222 D, CB5232 D, CB4222-M CD, CB5232-M CD, CB4242 CD, CB4242-M CD, CB7222 CD, CB7222 D, CB7222-M CD

測試頻道：--

測試項目：Duty Cycle

量測天線：--

測試模式：--

檢測器：峰值

測試距離：Conducted

測試日期：108 年 05 月 22 日

Formula:

Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
BLE	0.4638	0.6377	72.73	1.38

BLE

