

附錄 一

受測裝置之測試結果

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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)，實驗室先行評估平放、站立、側立三軸，其中平放為最差模式，以低、中、高頻率來進行量測，並將所有模式之掃頻圖隨案件所附。所得讀值資料請見章節 1.1 ~ 1.2：

模式	動作狀態	基本頻率	量測頻率範圍
1	發射	2402MHz* (CH37)	30-1000MHz
2			1000-3000MHz
3			3000-8000MHz
4			8000-18000MHz
5			18000-25000MHz
6		2440MHz (CH17)	1000-3000MHz
7			3000-8000MHz
8			8000-18000MHz
9			18000-25000MHz
10		2480MHz (CH39)	1000-3000MHz
11			3000-8000MHz
12			8000-18000MHz
13			18000-25000MHz
14	接收	2440MHz (CH17)	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。

模式	動作狀態	基本頻率	量測頻率範圍
1	發射	2402MHz (CH37)	2310-2430MHz
2		2480MHz (CH39)	2430-2530MHz

測試日期	2019/02/19	環境溫/濕度	21°C/48%
測試電壓	DC 3V (經電池供電)		

1.1. 30-1000MHz 頻率範圍，其他不必要發射量測

Mode	BLE	Frequency	TX 2402MHz
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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
93.05	16.24	2.52	5.35	24.11	43.50	19.39	Peak
101.78	17.60	2.72	2.93	23.25	43.50	20.25	Peak
153.19	16.90	3.37	2.76	23.03	43.50	20.47	Peak
340.40	20.99	4.95	2.39	28.33	46.00	17.67	Peak
595.51	24.91	6.49	1.96	33.36	46.00	12.64	Peak
863.23	26.94	7.90	1.86	36.70	46.00	9.30	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
101.78	17.60	2.72	4.20	24.52	43.50	18.98	Peak
117.30	18.67	2.94	4.19	25.80	43.50	17.70	Peak
247.28	19.24	3.96	3.95	27.15	46.00	18.85	Peak
324.88	20.54	4.72	5.02	30.28	46.00	15.72	Peak
689.60	25.24	7.03	1.88	34.15	46.00	11.85	Peak
878.75	27.05	7.98	2.13	37.16	46.00	8.84	Peak

Mode	BLE	Frequency	RX 2440MHz
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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
93.05	16.24	2.52	5.30	24.06	43.50	19.44	Peak
101.78	17.60	2.72	3.91	24.23	43.50	19.27	Peak
416.06	22.67	5.84	1.61	30.12	46.00	15.88	Peak
456.80	23.20	5.94	1.81	30.95	46.00	15.05	Peak
768.17	26.14	7.41	2.77	36.32	46.00	9.68	Peak
900.09	27.19	8.10	1.92	37.21	46.00	8.79	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
101.78	17.60	2.72	4.67	24.99	43.50	18.51	Peak
117.30	18.67	2.94	4.05	25.66	43.50	17.84	Peak
244.37	19.02	3.94	4.16	27.12	46.00	18.88	Peak
323.91	20.54	4.72	4.11	29.37	46.00	16.63	Peak
696.39	25.26	7.07	1.91	34.24	46.00	11.76	Peak
860.32	26.92	7.89	2.05	36.86	46.00	9.14	Peak

1.2. 1000MHz 以上頻率範圍，其他不必要發射量測

Mode	BLE	Frequency	TX 2402MHz
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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
4804.00	34.22	11.42	0.28	45.92	54.00	8.08	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
4804.00	34.22	11.42	-1.49	44.15	54.00	9.85	Peak

Mode	BLE	Frequency	TX 2440MHz
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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	13.00	-2.04	45.21	54.00	8.79	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
4880.00	34.25	13.00	-0.95	46.30	54.00	7.70	Peak

Mode	BLE	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

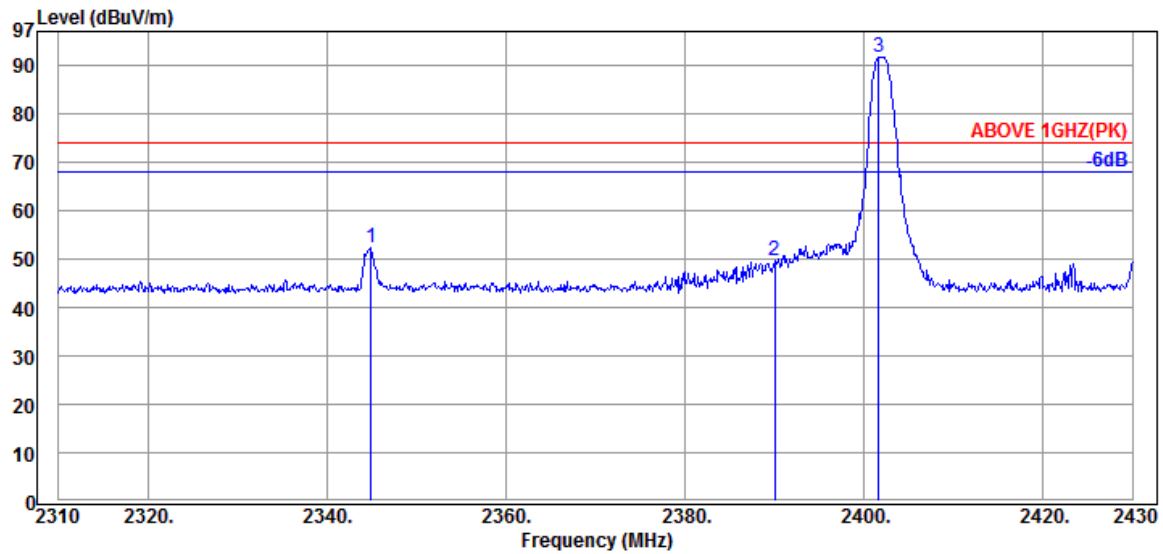
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	13.21	-3.12	44.38	54.00	9.62	Peak

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
4960.00	34.29	13.21	-2.14	45.36	54.00	8.64	Peak

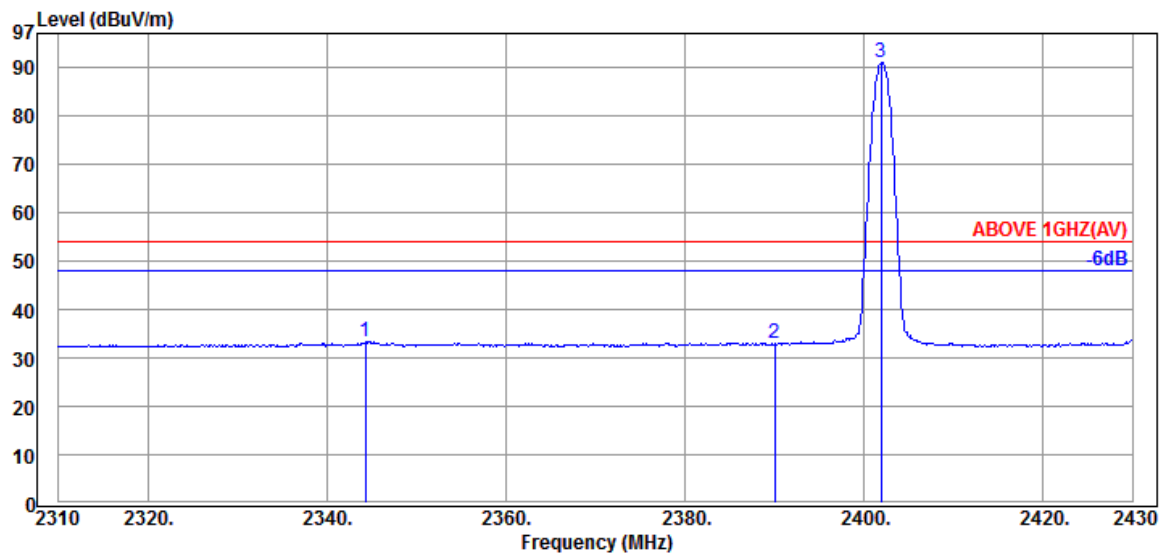
1.3. 禁用頻帶量測結果 (其他不必要發射)

Mode	BLE	Frequency	TX 2402MHz
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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
2344.92	32.08	7.82	12.58	52.48	74.00	21.52	Peak
2390.04	32.16	7.92	9.61	49.69	74.00	24.31	Peak
@ 2401.68	32.16	7.92	51.62	91.70	---	---	Peak

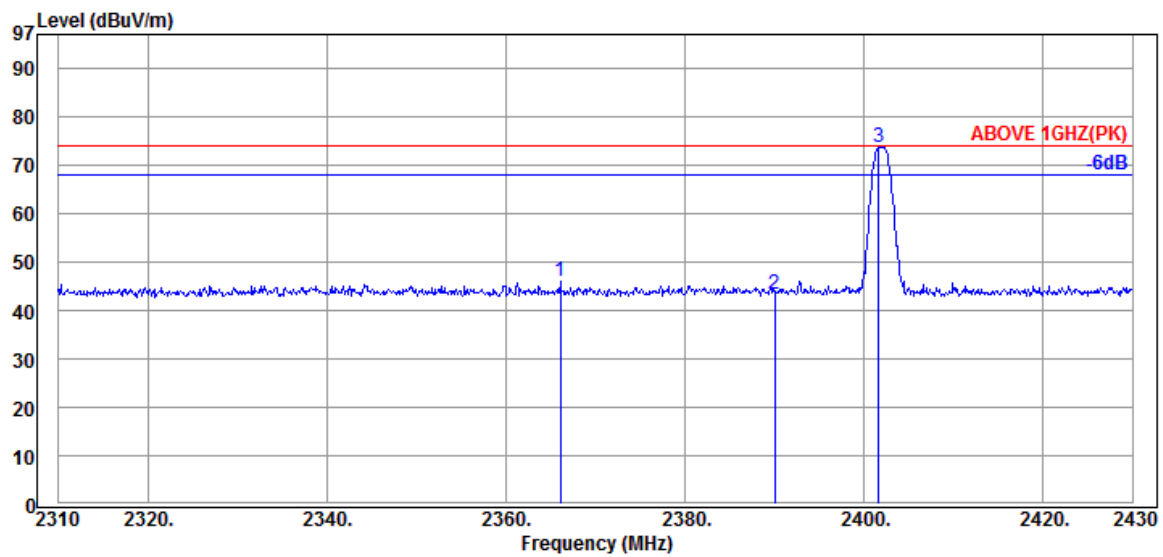


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2344.32	32.08	7.82	-6.57	33.33	54.00	20.67	Average
2390.04	32.16	7.92	-7.06	33.02	54.00	20.98	Average
@ 2401.92	32.16	7.92	51.07	91.15	---	---	Average

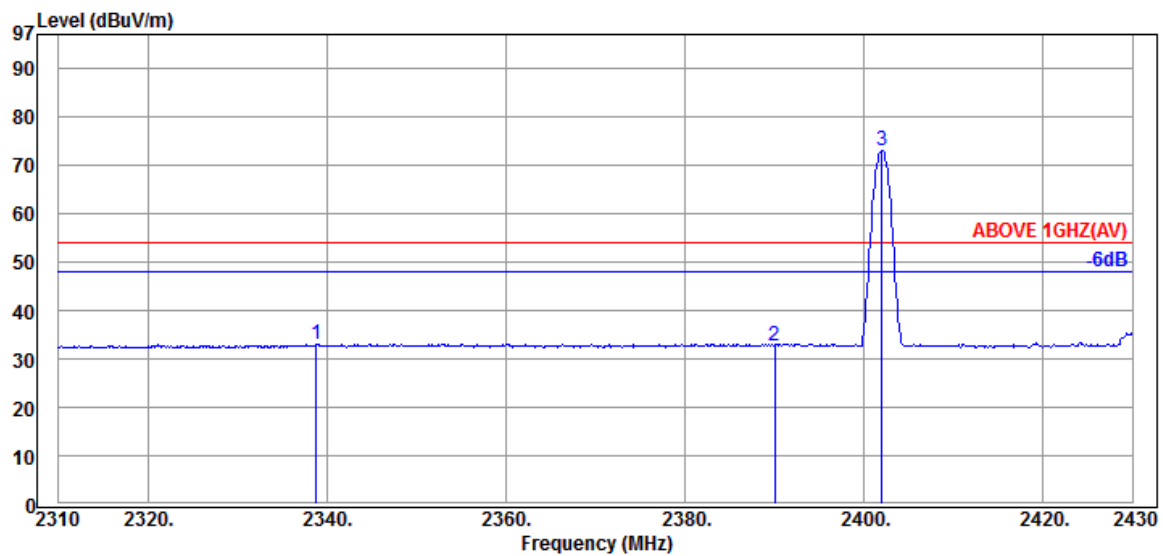
備註: “@”為主波，在此章節是不予以判定。

Mode	BLE	Frequency	TX 2402MHz
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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
2366.04	32.11	7.86	5.95	45.92	74.00	28.08	Peak
2390.04	32.16	7.92	3.33	43.41	74.00	30.59	Peak
@ 2401.68	32.16	7.92	33.60	73.68	---	---	Peak

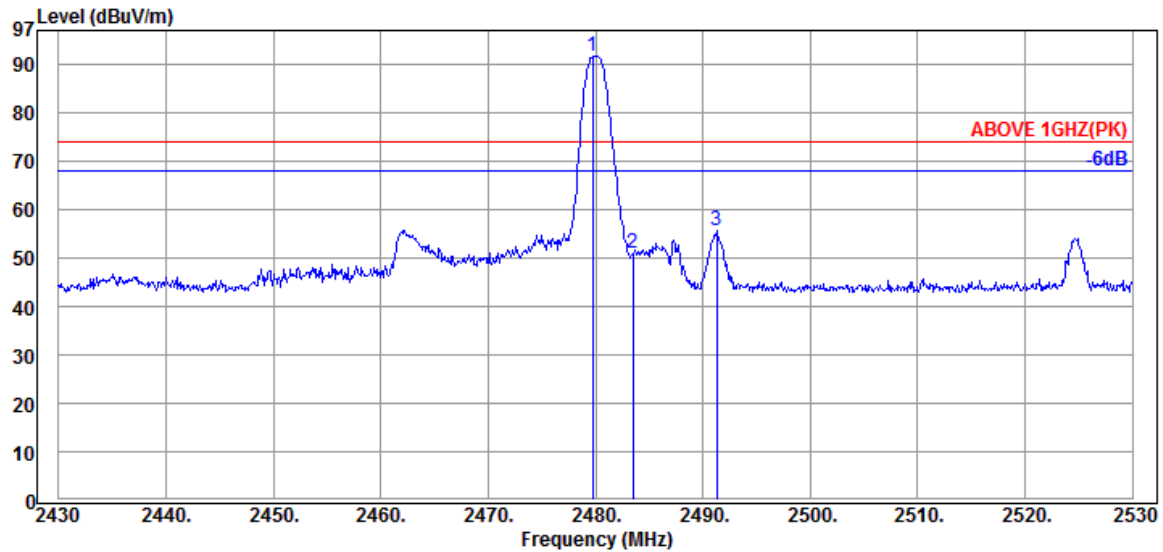


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2338.80	32.08	7.82	-6.80	33.10	54.00	20.90	Average
2390.04	32.16	7.92	-7.27	32.81	54.00	21.19	Average
@ 2402.04	32.16	7.92	32.91	72.99	---	---	Average

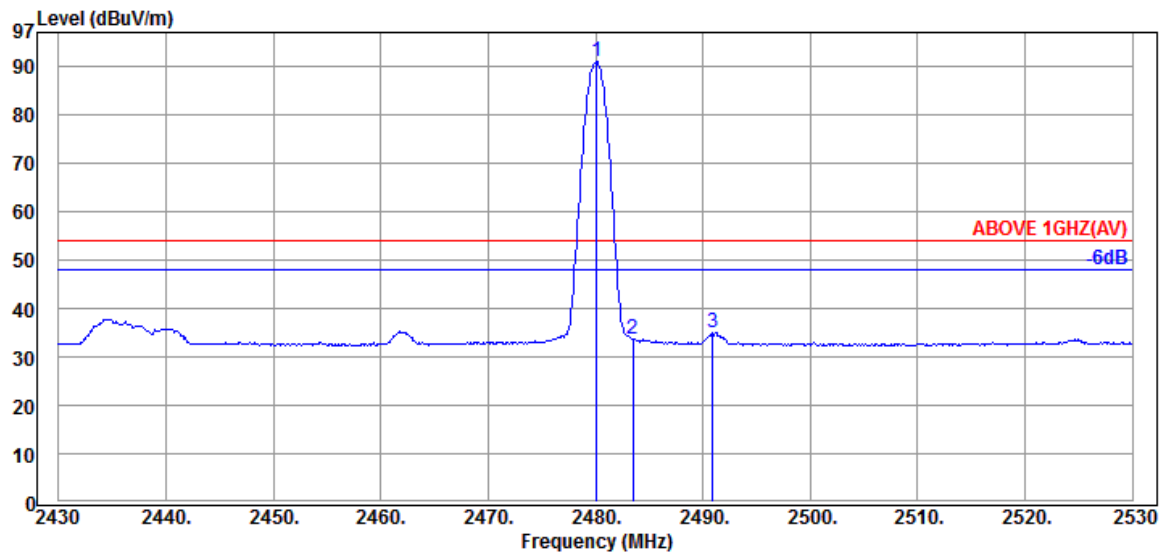
備註：“@”為主波，在此章節是不予以判定。

Mode	BLE	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector
@	2479.70	32.28	7.90	51.41	91.59	---	---	Peak
	2483.50	32.28	7.90	10.75	50.93	74.00	23.07	Peak
	2491.30	32.30	7.90	15.47	55.67	74.00	18.33	Peak

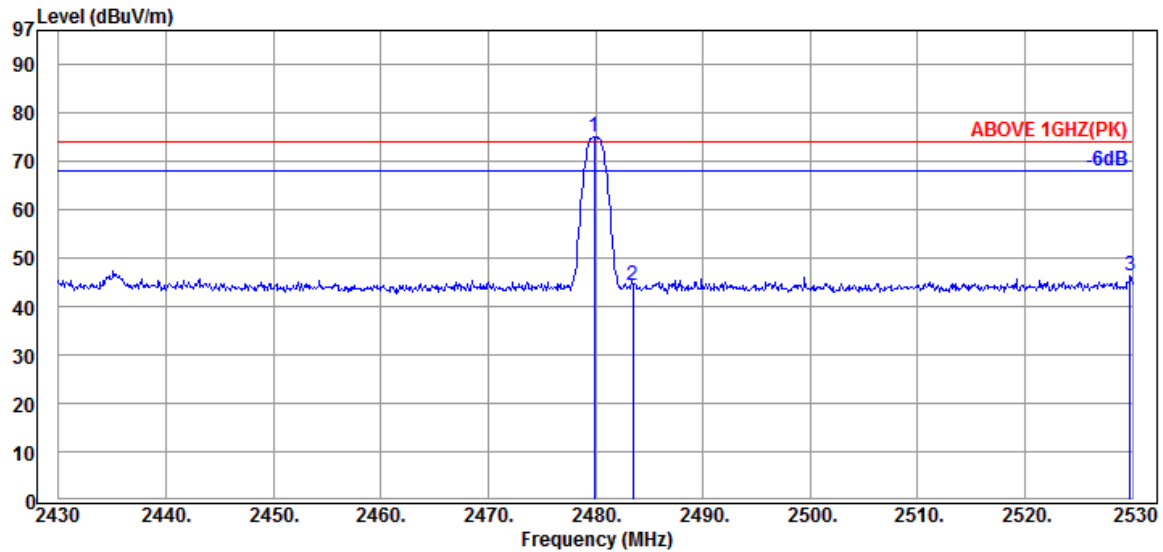


Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector
@	2480.10	32.28	7.90	50.77	90.95	---	---	Average
	2483.50	32.28	7.90	-6.60	33.58	54.00	20.42	Average
	2490.90	32.30	7.90	-5.07	35.13	54.00	18.87	Average

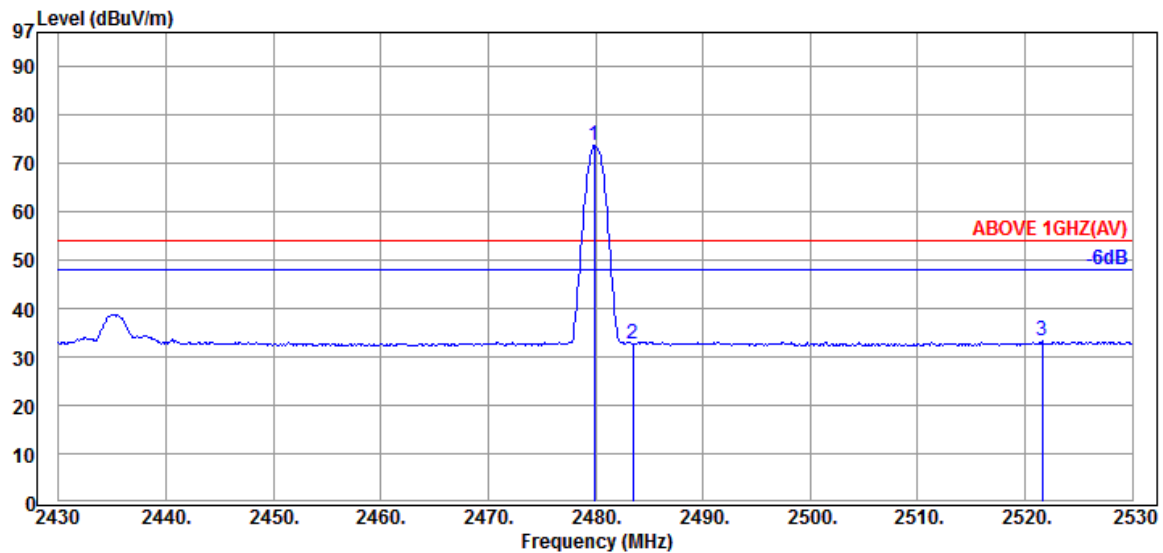
備註：“@”為主波，在此章節是不予以判定。

Mode	BLE	Frequency	TX 2480MHz
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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
@	2479.90	32.28	7.90	34.70	74.88	---	---	Peak
	2483.50	32.28	7.90	4.08	44.26	74.00	29.74	Peak
	2529.80	32.34	7.98	6.00	46.32	74.00	27.68	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
@	2479.90	32.28	7.90	33.55	73.73	---	---	Average
	2483.50	32.28	7.90	-7.45	32.73	54.00	21.27	Average
	2521.60	32.34	7.98	-7.08	33.24	54.00	20.76	Average

備註：“@”為主波，在此章節是不予以判定。

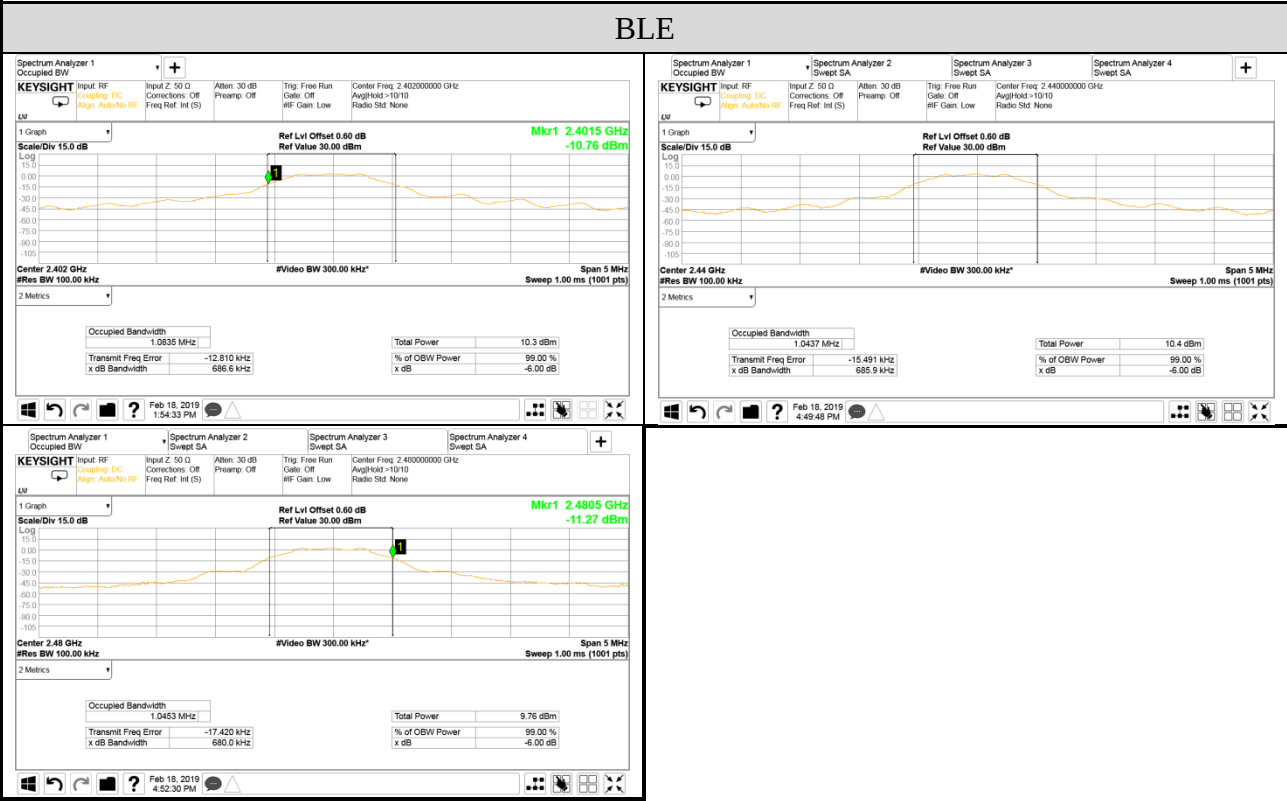
2. 發射頻寬之量測

測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (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	0.6866	>500
	2440	0.6859	
	2480	0.6800	

2.2. 發射頻寬之量測圖



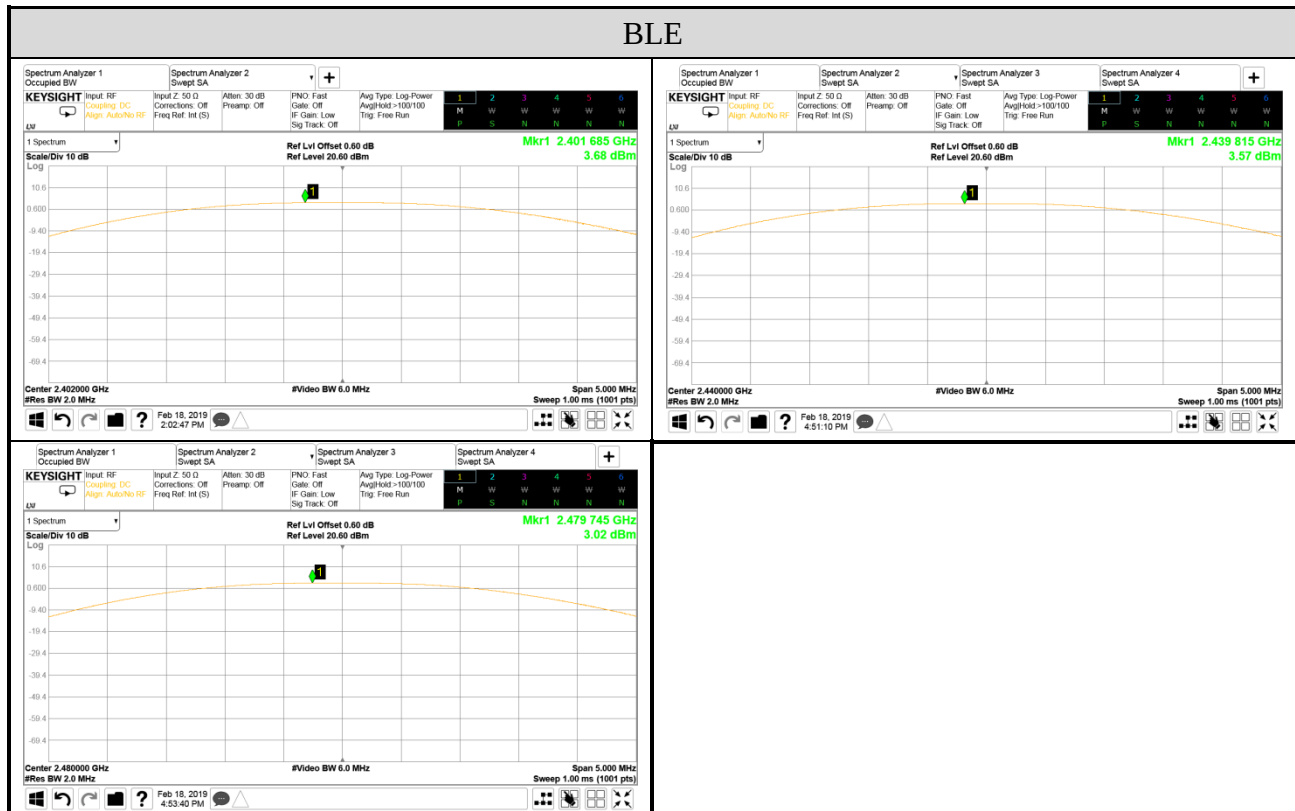
3. 峰值輸出功率之量測

測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (經電池供電)		

3.1. 峰值輸出功率

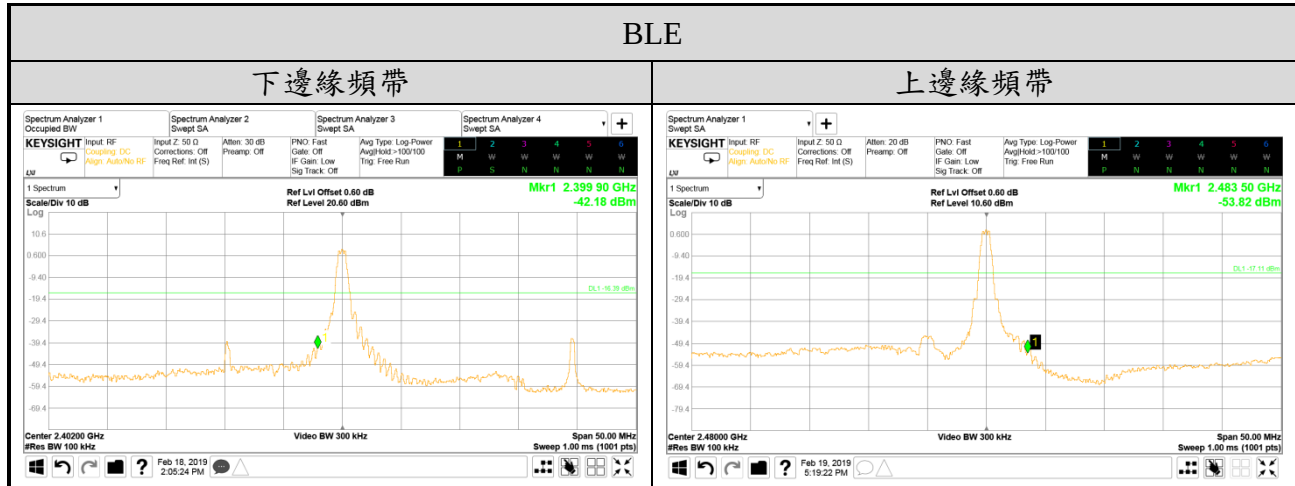
模式 (Mode)	測試頻率 (MHz)	最大輸出功率 (dBm)	限制值 (dBm)
BLE	2402	3.68	30
	2440	3.57	
	2480	3.02	

3.2. 峰值輸出功率之量測圖



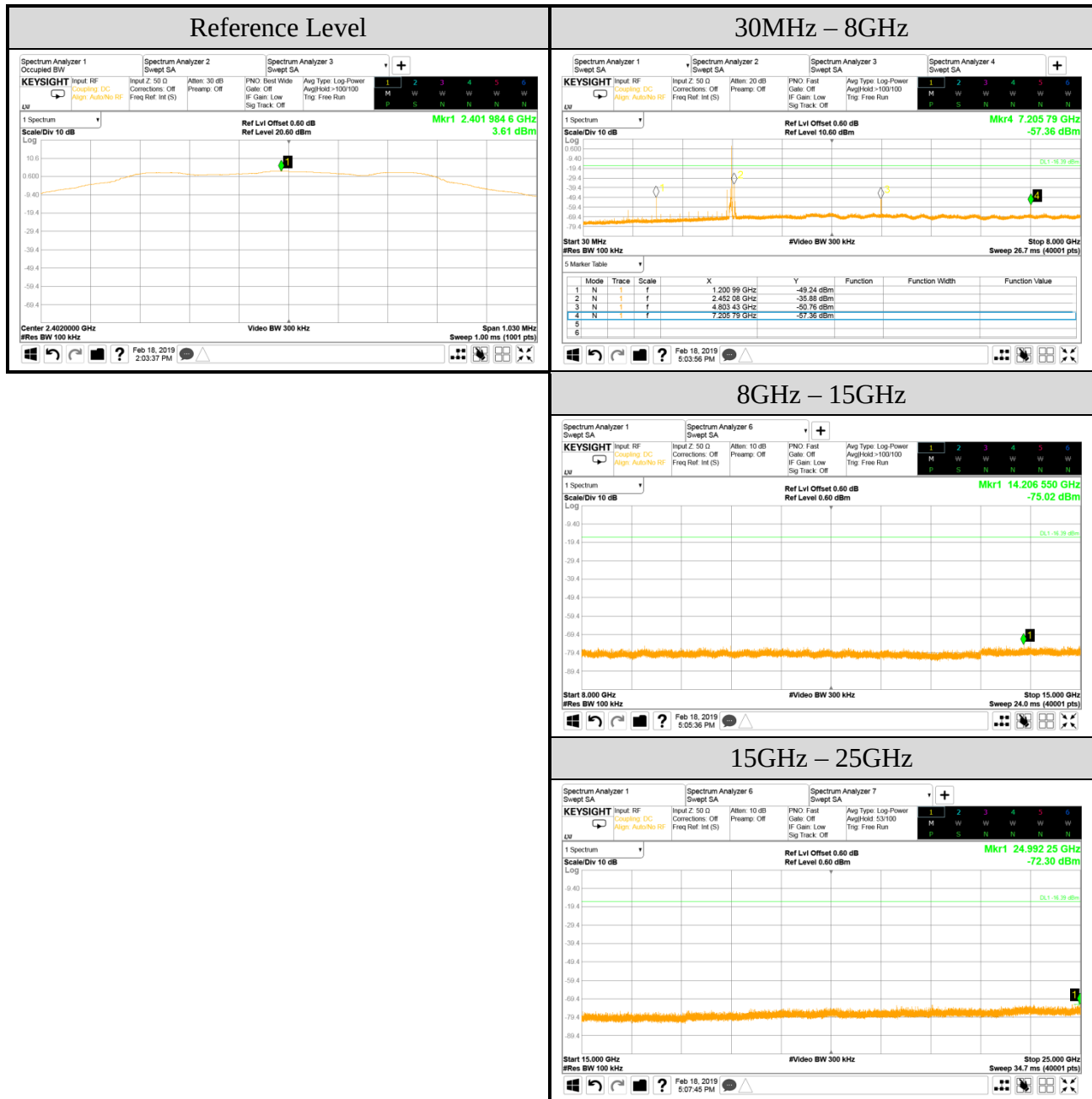
4. 頻帶邊緣之 RF 傳導發射之量測

測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (經電池供電)		

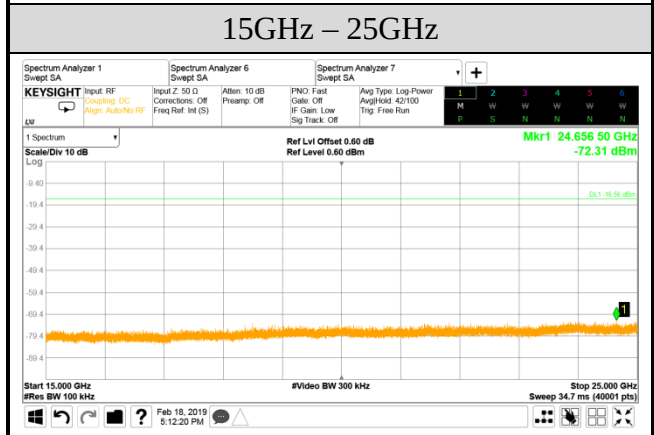
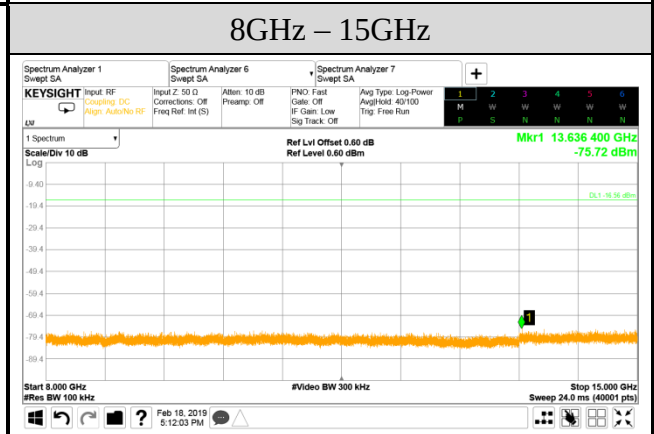
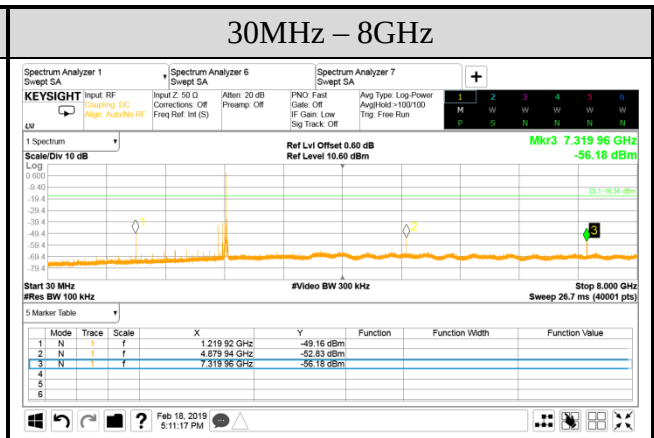
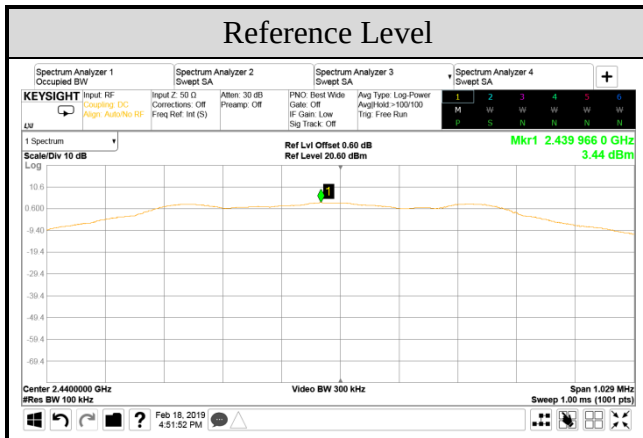


5. 混附發射之 RF 傳導發射之量測

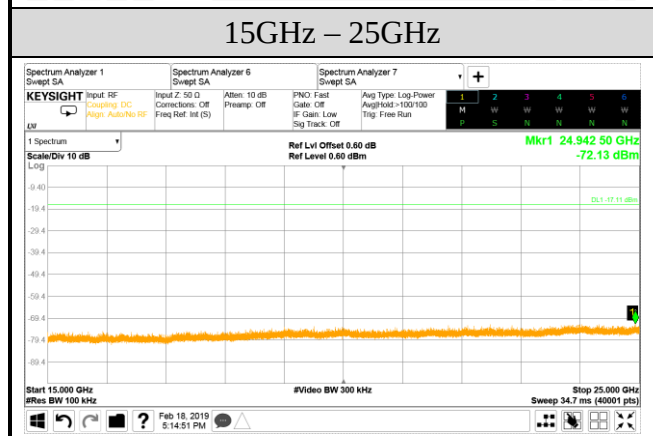
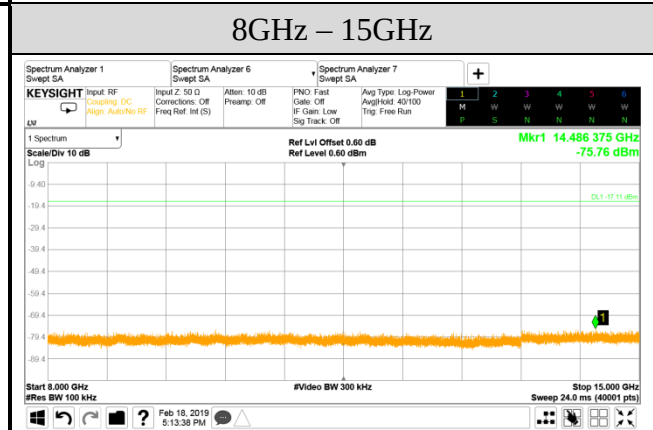
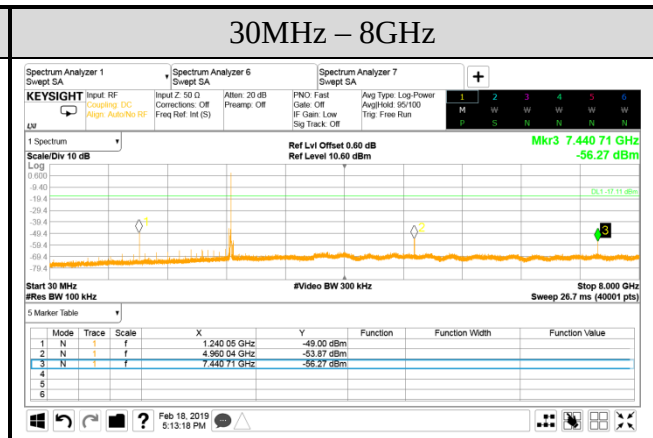
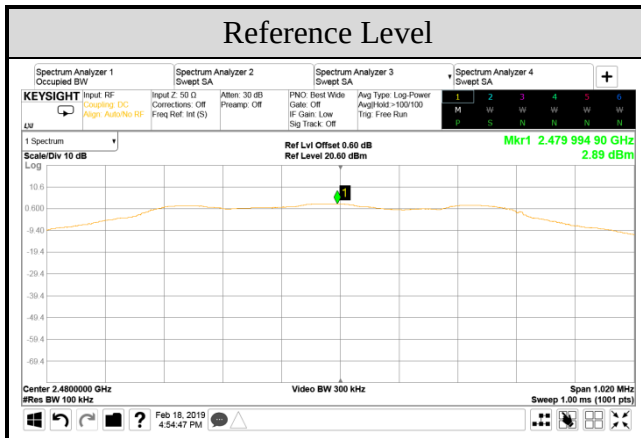
測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (經電池供電)	模式	BLE
		測試頻率	2402MHz



測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (經電池供電)	模式	BLE
		測試頻率	2440MHz



測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (經電池供電)	模式	BLE
		測試頻率	2480MHz



6. 功率密度之量測

測試日期	2018/02/18	環境溫/濕度	23°C/46%
測試電壓	DC 3V (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	3.61	8
	2440	3.44	
	2480	2.89	

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

