

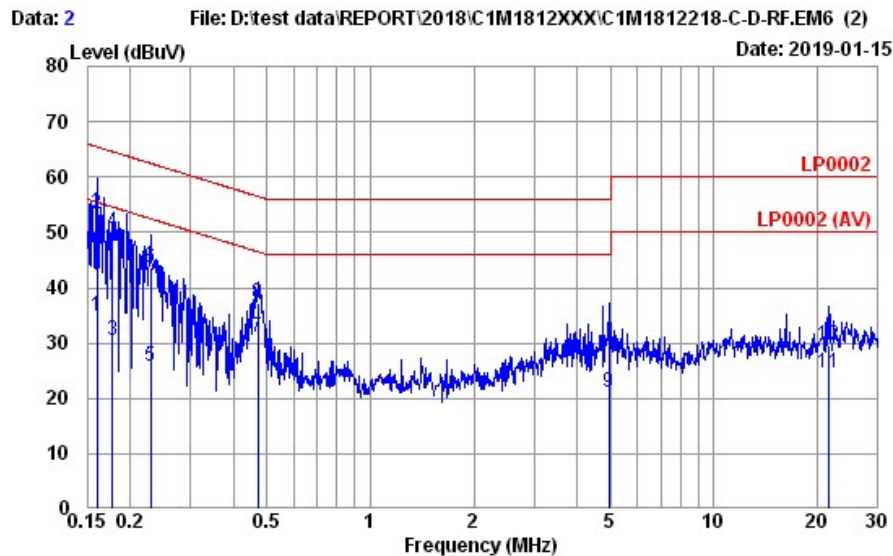
附錄一

受測裝置之測試結果

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1. 電源線傳導干擾之量測

測試日期	2019/01/15	環境溫/濕度	23°C/60%
測試電壓	DC 5V (USB 透過筆記型電腦供電)		

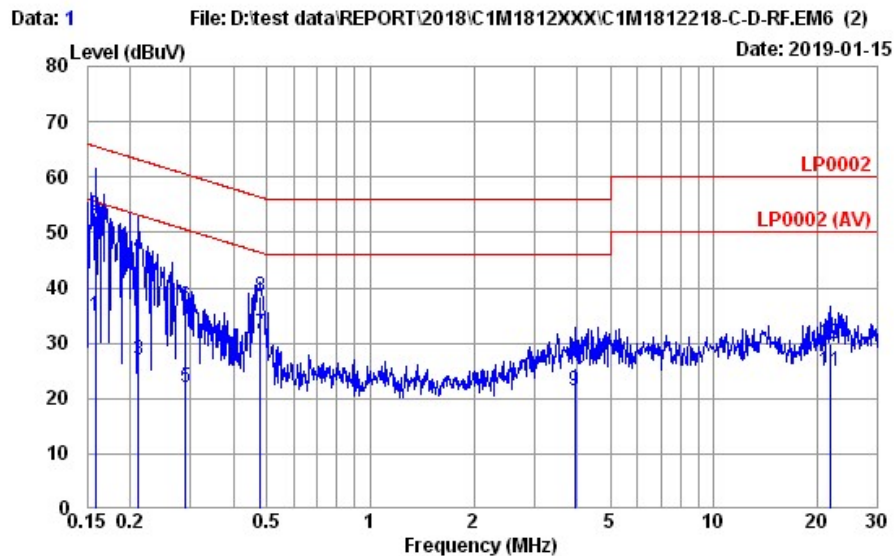


Site no. : No.8 Shielded Room Data no. : 2
 Condition : ENV4200 100169 LISN Phase : NEUTRAL
 Limit : LP0002
 Env. / Ins. : 23°C / 60% ESR3 (1774) Engineer : Jemy
 EUT : WI-C310
 Power Rating : DC 5.0V (Via USB)
 Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.160	10.56	0.03	9.98	14.19	34.76	55.47	20.71	Average
2	0.160	10.56	0.03	9.98	32.69	53.26	65.47	12.21	QP
3	0.178	10.54	0.03	9.98	10.04	30.59	54.59	24.00	Average
4	0.178	10.54	0.03	9.98	29.61	50.16	64.59	14.43	QP
5	0.229	10.50	0.03	9.98	5.24	25.75	52.48	26.73	Average
6	0.229	10.50	0.03	9.98	23.02	43.53	62.48	18.95	QP
7	0.471	10.43	0.04	9.98	10.49	30.94	46.49	15.55	Average
8	0.471	10.43	0.04	9.98	16.88	37.33	56.49	19.16	QP
9	4.952	10.75	0.13	10.00	0.23	21.11	46.00	24.89	Average
10	4.952	10.75	0.13	10.00	6.53	27.41	56.00	28.59	QP
11	21.600	14.04	0.28	10.07	0.11	24.50	50.00	25.50	Average
12	21.600	14.04	0.28	10.07	5.32	29.71	60.00	30.29	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
 2. If the average limit is met when using a quasi-peak detector,
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.

測試日期	2019/01/15	環境溫/濕度	23°C/60%
測試電壓	DC 5V (USB 透過筆記型電腦供電)		



Site no. : No.8 Shielded Room Data no. : 1
Condition : ENV4200 100169 LISN Phase : LINE
Limit : LP0002
Env. / Ins. : 23°C / 60% ESR3 (1774) Engineer : Jemy
EUT : WI-C310
Power Rating : DC 5.0V (Via USB)
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.158	10.62	0.03	9.98	14.21	34.84	55.56	20.72	Average
2	0.158	10.62	0.03	9.98	32.51	53.14	65.56	12.42	QP
3	0.212	10.55	0.03	9.98	6.30	26.86	53.14	26.28	Average
4	0.212	10.55	0.03	9.98	25.36	45.92	63.14	17.22	QP
5	0.289	10.50	0.04	9.98	1.51	22.03	50.54	28.51	Average
6	0.289	10.50	0.04	9.98	16.05	36.57	60.54	23.97	QP
7	0.479	10.45	0.04	9.98	11.15	31.62	46.36	14.74	Average
8	0.479	10.45	0.04	9.98	17.89	38.36	56.36	18.00	QP
9	3.943	10.59	0.11	10.00	0.74	21.44	46.00	24.56	Average
10	3.943	10.59	0.11	10.00	4.74	25.44	56.00	30.56	QP
11	21.830	14.17	0.28	10.07	0.51	25.03	50.00	24.97	Average
12	21.830	14.17	0.28	10.07	5.42	29.94	60.00	30.06	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

2. 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檢附於附錄中。所得讀值資料請見章節 2.1 ~ 2.2：

模式	動作狀態	基本頻率	量測頻率範圍
1	充電	---	1000-3000MHz
2	發射	2402MHz	1000-3000MHz
3			3000-5000MHz
4			5000-8000MHz
5			8000-18000MHz
6			18000-25000MHz
7		2440MHz	1000-3000MHz
8			3000-5000MHz
9			5000-8000MHz
10			8000-18000MHz
11			18000-25000MHz
12		2480MHz*	30-1000MHz
13			1000-3000MHz
14			3000-5000MHz
15			5000-8000MHz
16			8000-18000MHz
17			18000-25000MHz
18	接收	2440MHz	30-1000MHz
19			1000-3000MHz
20			3000-5000MHz
21			5000-8000MHz
22			8000-18000MHz
23			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。

3.BLE 以最大傳發射功率之模式 2M 進行量測。

對受測物裝置落於技術規範第 2.7 章節的禁用頻帶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 2.3。

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

註: BLE 以最大傳發射功率之模式 2M 進行量測。

測試日期	2019/01/14	環境溫/濕度	23°C/53%
測試電壓	(1)DC 5V (USB 透過筆記型電腦供電) (2)DC 3.7V (透過電池供電)		

2.1. 30-1000MHz 頻率範圍，其他不必要發射量測

Mode	充電	Frequency	---
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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
101.78	17.60	2.72	6.50	26.82	43.50	16.68	Peak
328.76	20.67	4.78	6.88	32.33	46.00	13.67	Peak
431.58	22.87	5.87	4.95	33.69	46.00	12.31	Peak
728.40	25.66	7.23	3.27	36.16	46.00	9.84	Peak
920.46	27.42	8.20	2.07	37.69	46.00	8.31	Peak
994.18	28.25	8.56	2.25	39.06	54.00	14.94	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
32.91	23.62	1.54	1.75	26.91	40.00	13.09	Peak
116.33	18.59	2.92	3.84	25.35	43.50	18.15	Peak
327.79	20.64	4.77	5.38	30.79	46.00	15.21	Peak
607.15	24.99	6.56	2.31	33.86	46.00	12.14	Peak
801.15	26.51	7.57	2.64	36.72	46.00	9.28	Peak
995.15	28.29	8.57	2.53	39.39	54.00	14.61	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
69.77	12.64	2.09	23.32	38.05	40.00	1.95	Peak
179.38	15.57	3.63	13.84	33.04	43.50	10.46	Peak
239.52	18.70	3.91	14.08	36.69	46.00	9.31	Peak
531.49	24.13	6.19	3.93	34.25	46.00	11.75	Peak
844.80	26.82	7.80	1.62	36.24	46.00	9.76	Peak
967.02	27.95	8.42	2.03	38.40	54.00	15.60	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
69.77	12.64	2.09	20.47	35.20	40.00	4.80	Peak
142.52	17.68	3.32	7.06	28.06	43.50	15.44	Peak
322.94	20.51	4.70	7.88	33.09	46.00	12.91	Peak
533.43	24.15	6.20	10.28	40.63	46.00	5.37	Peak
881.66	27.07	8.00	2.67	37.74	46.00	8.26	Peak
981.57	28.14	8.50	2.11	38.75	54.00	15.25	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 (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
69.77	12.64	2.09	23.33	38.06	40.00	1.94	Peak
122.15	18.72	3.01	12.58	34.31	43.50	9.19	Peak
235.64	18.48	3.89	12.95	35.32	46.00	10.68	Peak
745.86	25.85	7.30	3.11	36.26	46.00	9.74	Peak
885.54	27.09	8.02	2.59	37.70	46.00	8.30	Peak
988.36	28.22	8.54	0.90	37.66	54.00	16.34	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
70.74	12.72	2.10	18.68	33.50	40.00	6.50	Peak
213.33	16.91	3.75	8.74	29.40	43.50	14.10	Peak
328.76	20.67	4.78	7.11	32.56	46.00	13.44	Peak
533.43	24.15	6.20	8.03	38.38	46.00	7.62	Peak
813.76	26.59	7.63	1.39	35.61	46.00	10.39	Peak
955.38	27.84	8.37	1.90	38.11	46.00	7.89	Peak

2.2. 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
4806.00	34.22	11.42	5.57	51.21	54.00	2.79	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
4804.00	34.22	11.42	4.99	50.63	54.00	3.37	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	5.10	52.35	54.00	1.65	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	4.67	51.92	54.00	2.08	Peak

Mode	BLE	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

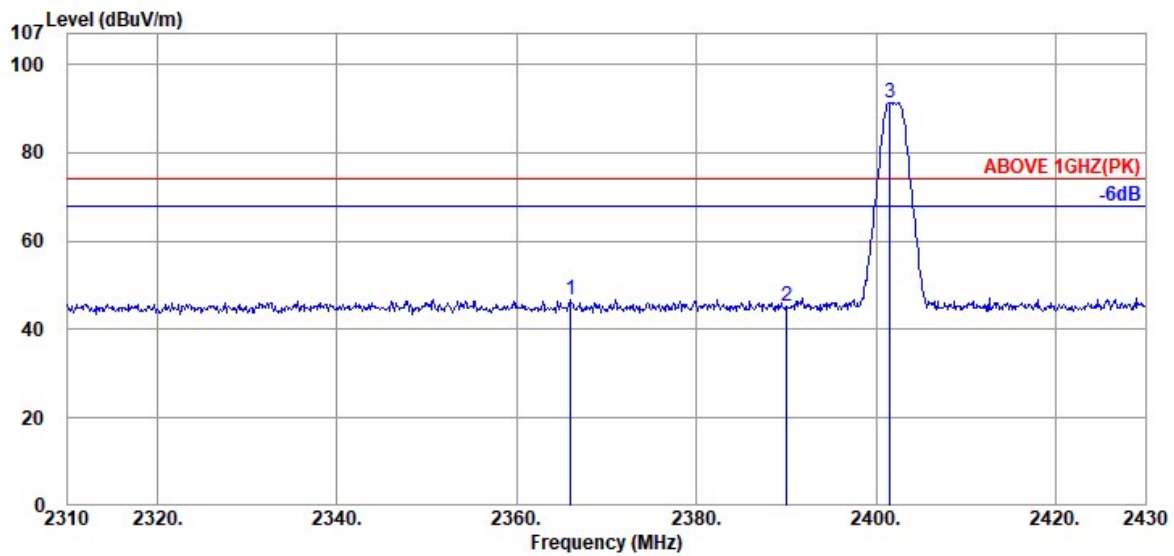
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	13.21	3.93	51.43	54.00	2.57	Peak

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
4962.00	34.29	13.21	1.32	48.82	54.00	5.18	Peak

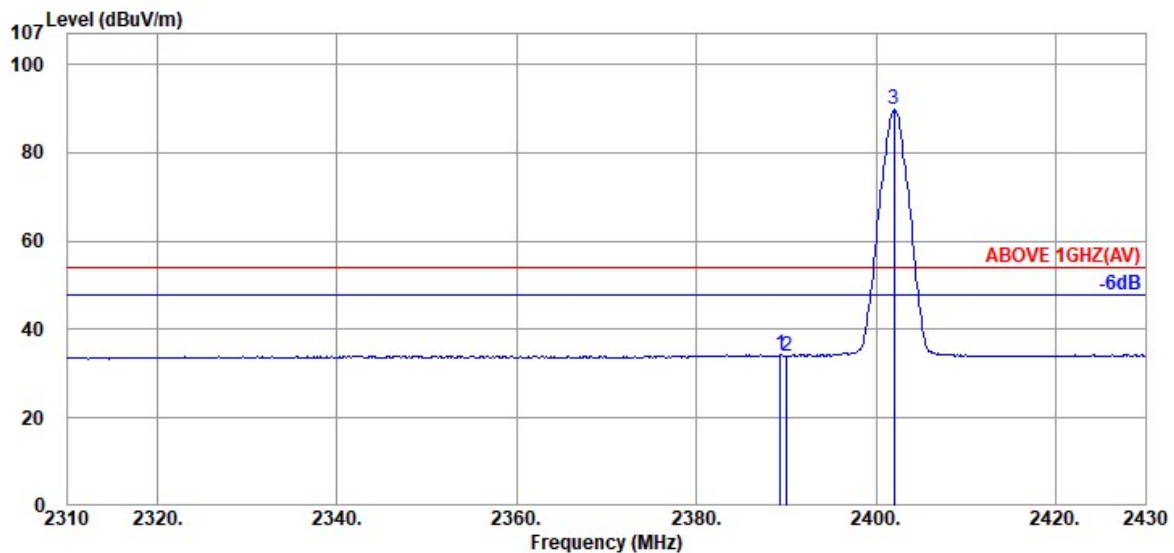
2.3. 禁用頻帶量測結果 (其他不必要發射)

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
2366.04	32.11	7.86	6.84	46.81	74.00	27.19	Peak
2390.04	32.16	7.92	5.19	45.27	74.00	28.73	Peak
@ 2401.56	32.16	7.92	51.29	91.37	---	---	Peak

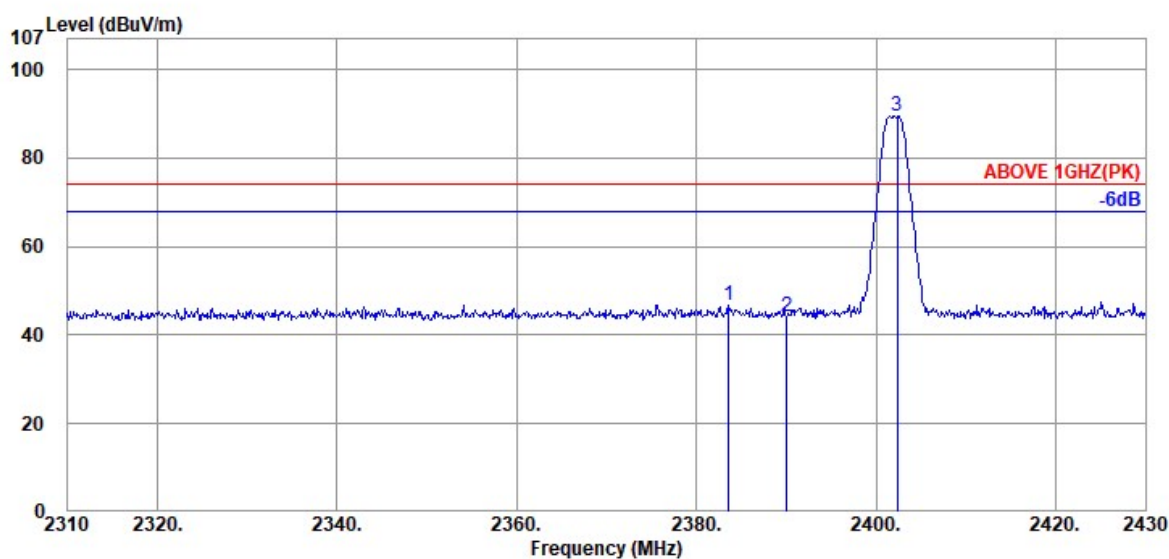


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.32	32.16	7.92	-5.70	34.38	54.00	19.62	Average
2390.04	32.16	7.92	-6.05	34.03	54.00	19.97	Average
@ 2402.04	32.16	7.92	49.60	89.68	---	---	Average

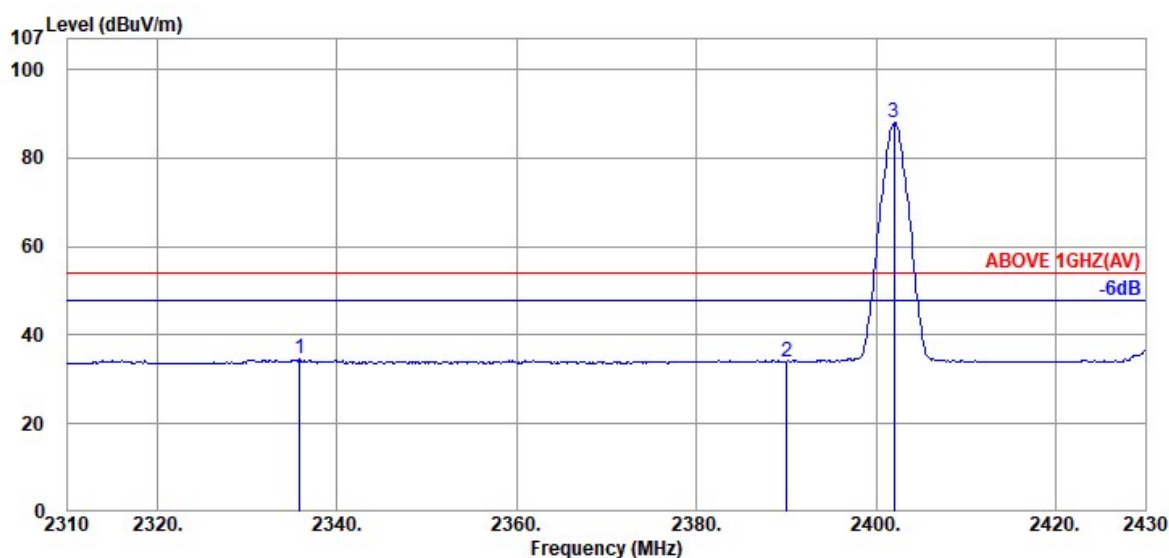
備註：“@”為主波，在此章節是不予以判定。

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
2383.56	32.13	7.89	6.89	46.91	74.00	27.09	Peak
2390.04	32.16	7.92	4.05	44.13	74.00	29.87	Peak
@ 2402.40	32.16	7.92	49.35	89.43	---	---	Peak

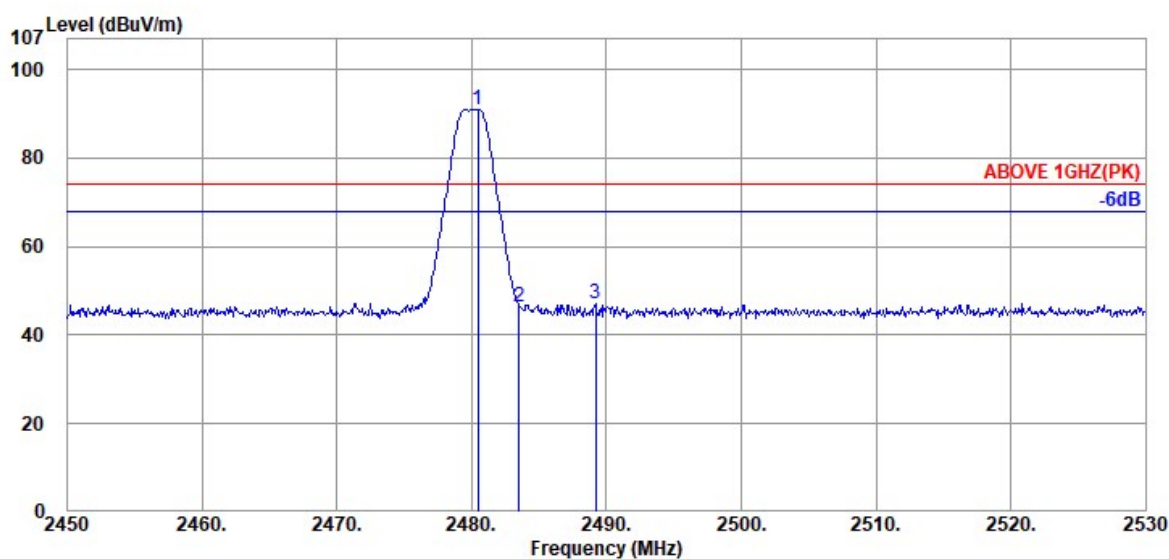


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2335.80	32.08	7.82	-5.34	34.56	54.00	19.44	Average
2390.04	32.16	7.92	-6.00	34.08	54.00	19.92	Average
@ 2402.04	32.16	7.92	47.87	87.95	---	---	Average

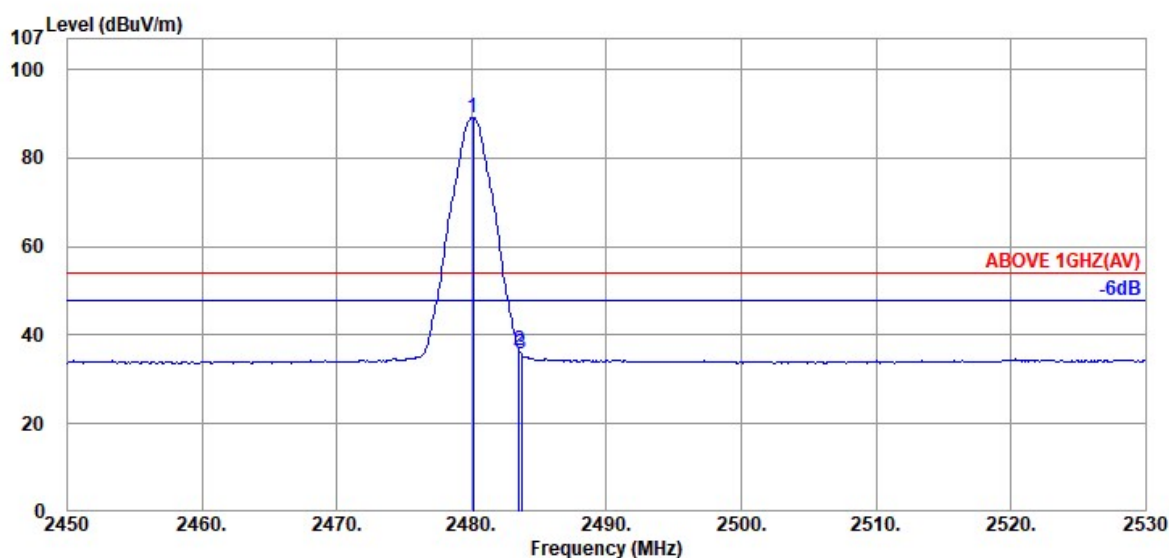
備註：“@”為主波，在此章節是不予以判定。

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 (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2480.48	32.28	7.90	50.81	90.99	---	---	Peak
	2483.52	32.28	7.90	6.35	46.53	74.00	27.47	Peak
	2489.20	32.30	7.90	6.75	46.95	74.00	27.05	Peak

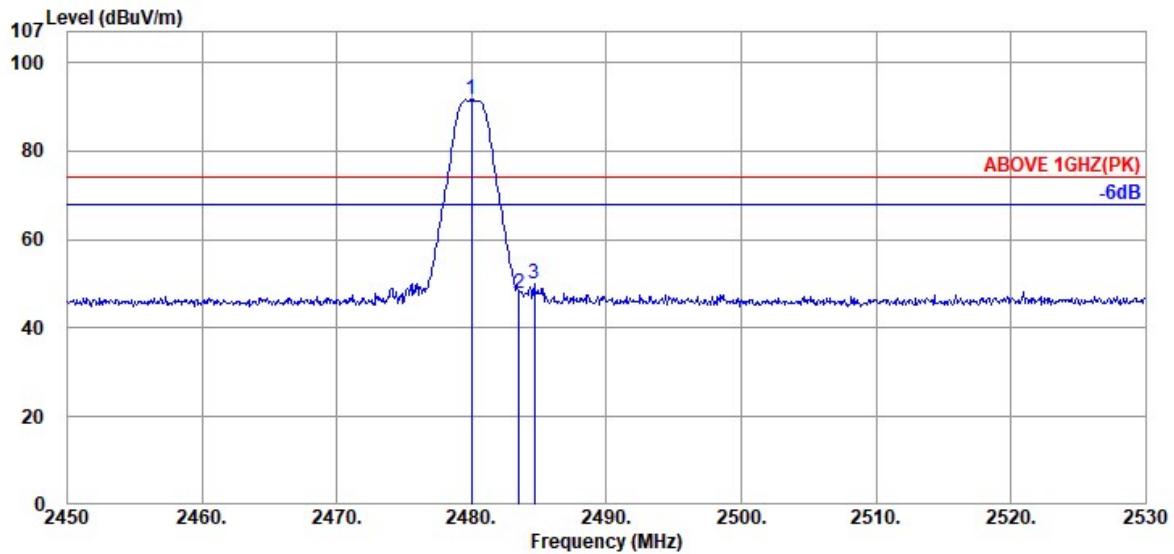


Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2480.08	32.28	7.90	49.07	89.25	---	---	Average
	2483.52	32.28	7.90	-3.69	36.49	54.00	17.51	Average
	2483.68	32.28	7.90	-4.44	35.74	54.00	18.26	Average

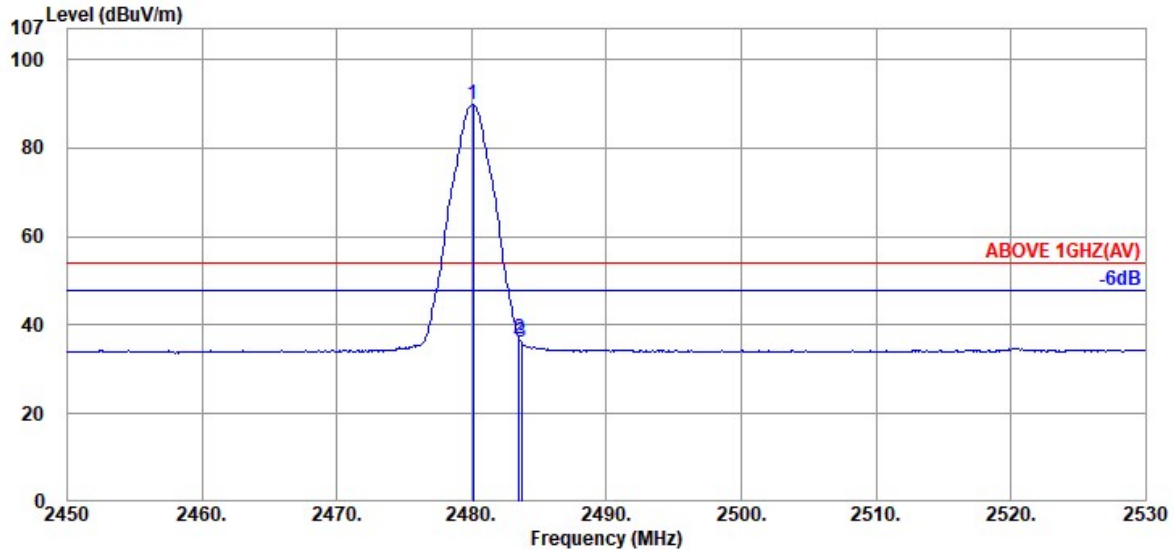
備註：“@”為主波，在此章節是不予以判定。

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
@	2480.00	32.28	7.90	51.31	91.49	---	---	Peak
	2483.52	32.28	7.90	7.49	47.67	74.00	26.33	Peak
	2484.64	32.28	7.90	9.79	49.97	74.00	24.03	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	7.90	49.57	89.75	---	---	Average
	2483.52	32.28	7.90	-3.20	36.98	54.00	17.02	Average
	2483.68	32.28	7.90	-4.13	36.05	54.00	17.95	Average

備註：“@”為主波，在此章節是不予以判定。

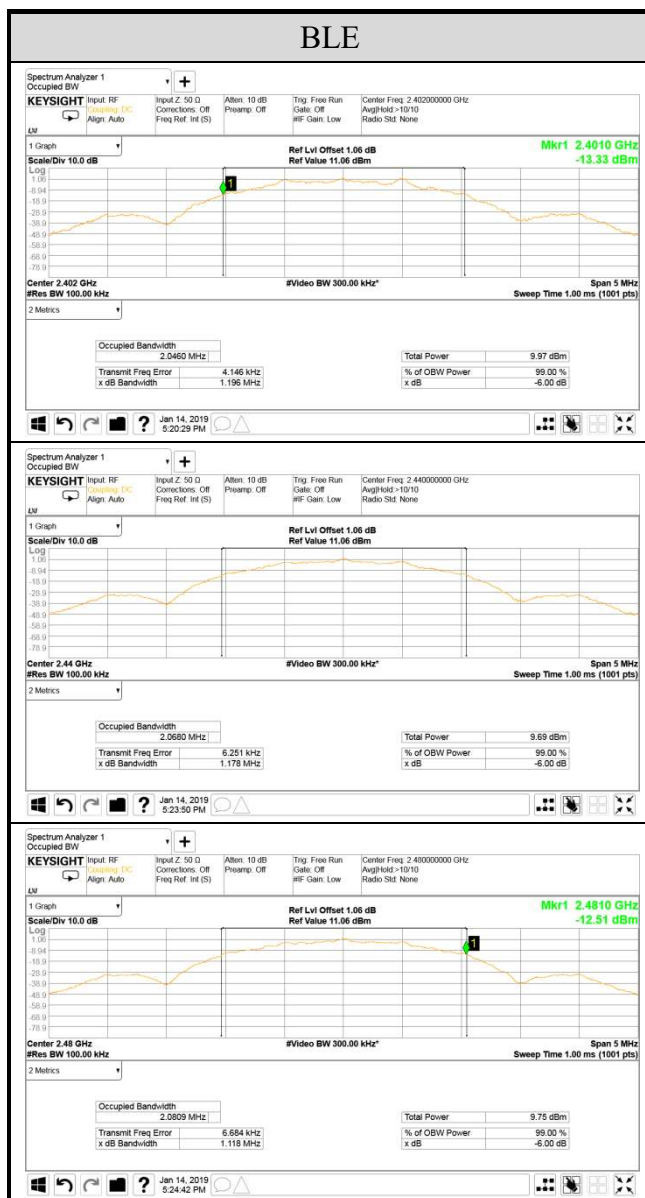
3. 發射頻寬之量測

測試日期	2019/01/14	環境溫/濕度	23°C/53%
測試電壓	DC 3.7V (透過電池供電)		

3.1. 發射頻寬

模式	測試頻率 (MHz)	6dB 頻寬 (MHz)	限制值 (kHz)
BLE	2402	1.196	>500
	2440	1.178	
	2480	1.118	

3.2. 發射頻寬之量測圖



註: BLE 以最大傳發射功率之模式 2M 進行量測。

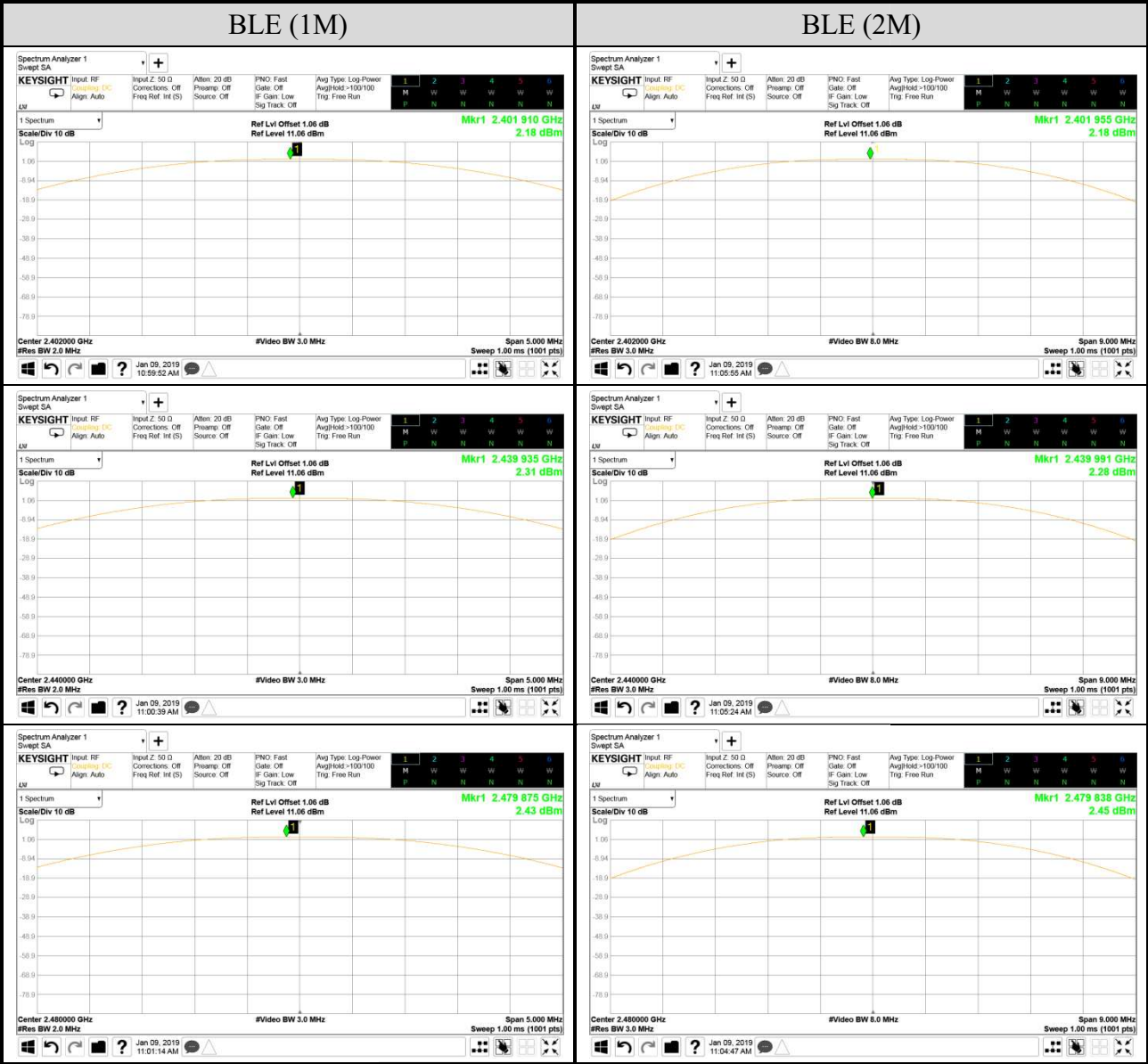
4. 峰值輸出功率之量測

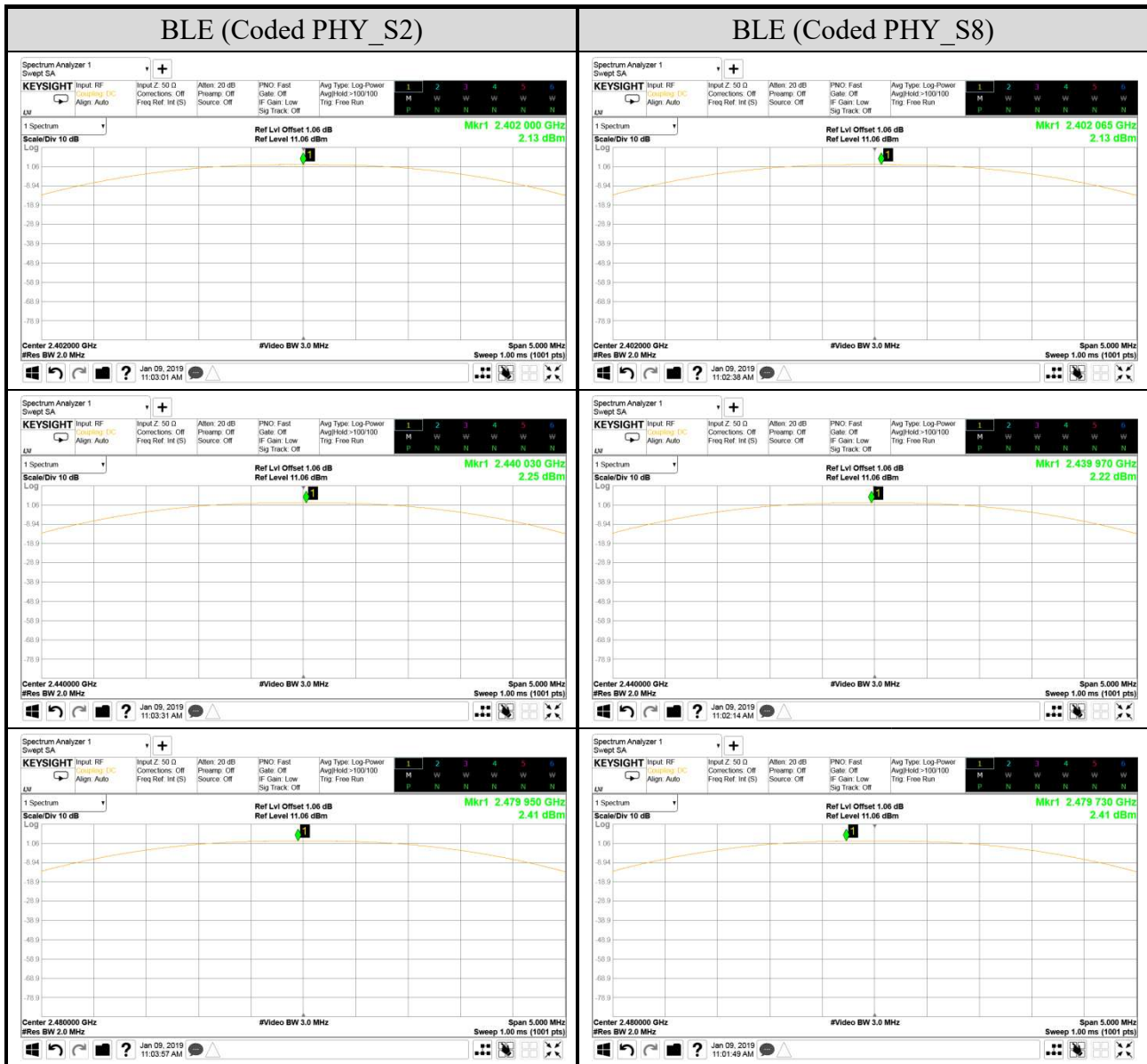
測試日期	2019/01/09	環境溫/濕度	21°C/52%
測試電壓	DC 3.7V (透過電池供電)		

4.1. 峰值輸出功率

模式	測試頻率 (MHz)	Peak 輸出功率(dBm)	限制值 (dBm)
BLE (1M)	2402	2.18	30
	2440	2.31	
	2480	2.43	
BLE (2M)	2402	2.18	
	2440	2.28	
	2480	2.45	
BLE (Coded PHY_S2)	2402	2.13	
	2440	2.25	
	2480	2.41	
BLE (Coded PHY_S8)	2402	2.13	
	2440	2.22	
	2480	2.41	

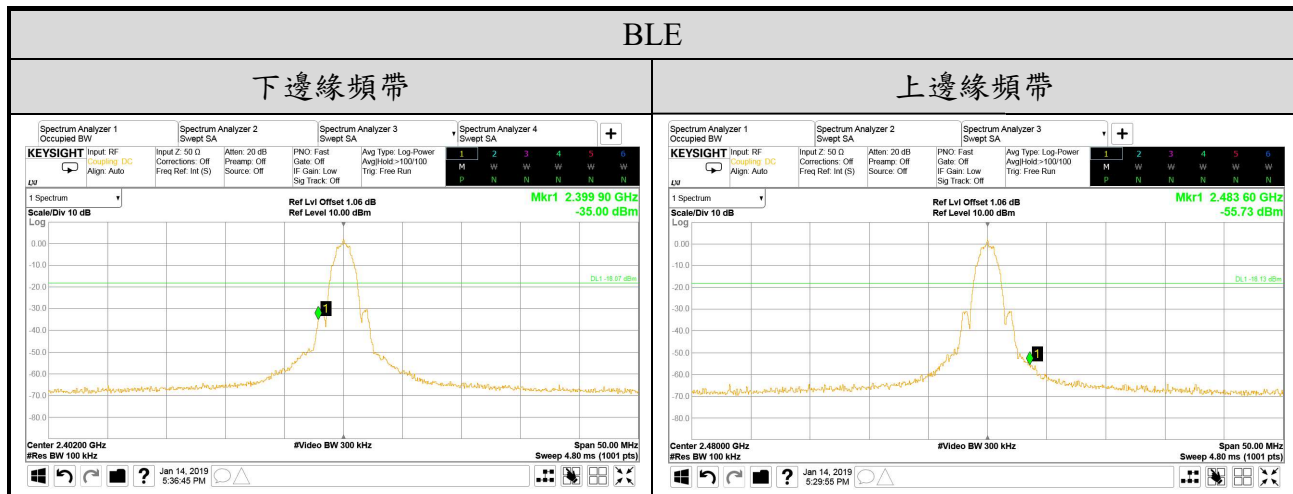
4.2. 峰值輸出功率之量測圖





5. 頻帶邊緣之 RF 傳導發射之量測

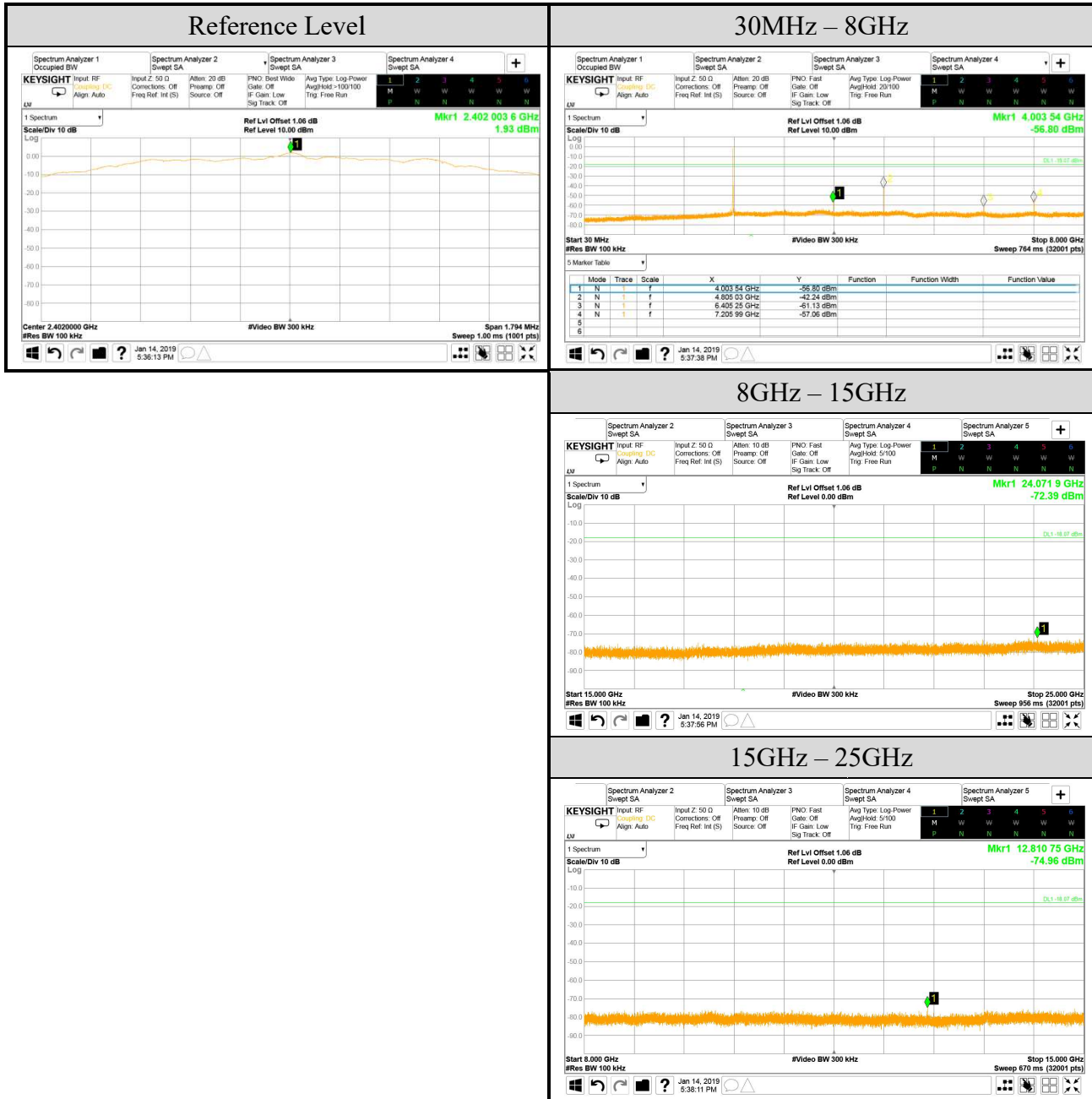
測試日期	2019/01/14	環境溫/濕度	23°C/53%
測試電壓	DC 3.7V (透過電池供電)		



註: BLE 以最大傳發射功率之模式 2M 進行量測。

6. 混附發射之 RF 傳導發射之量測

測試日期	2019/01/14	環境溫/濕度	23°C/53%
測試電壓	DC 3.7V (透過電池供電)	模式	BLE
		測試頻率	2402MHz



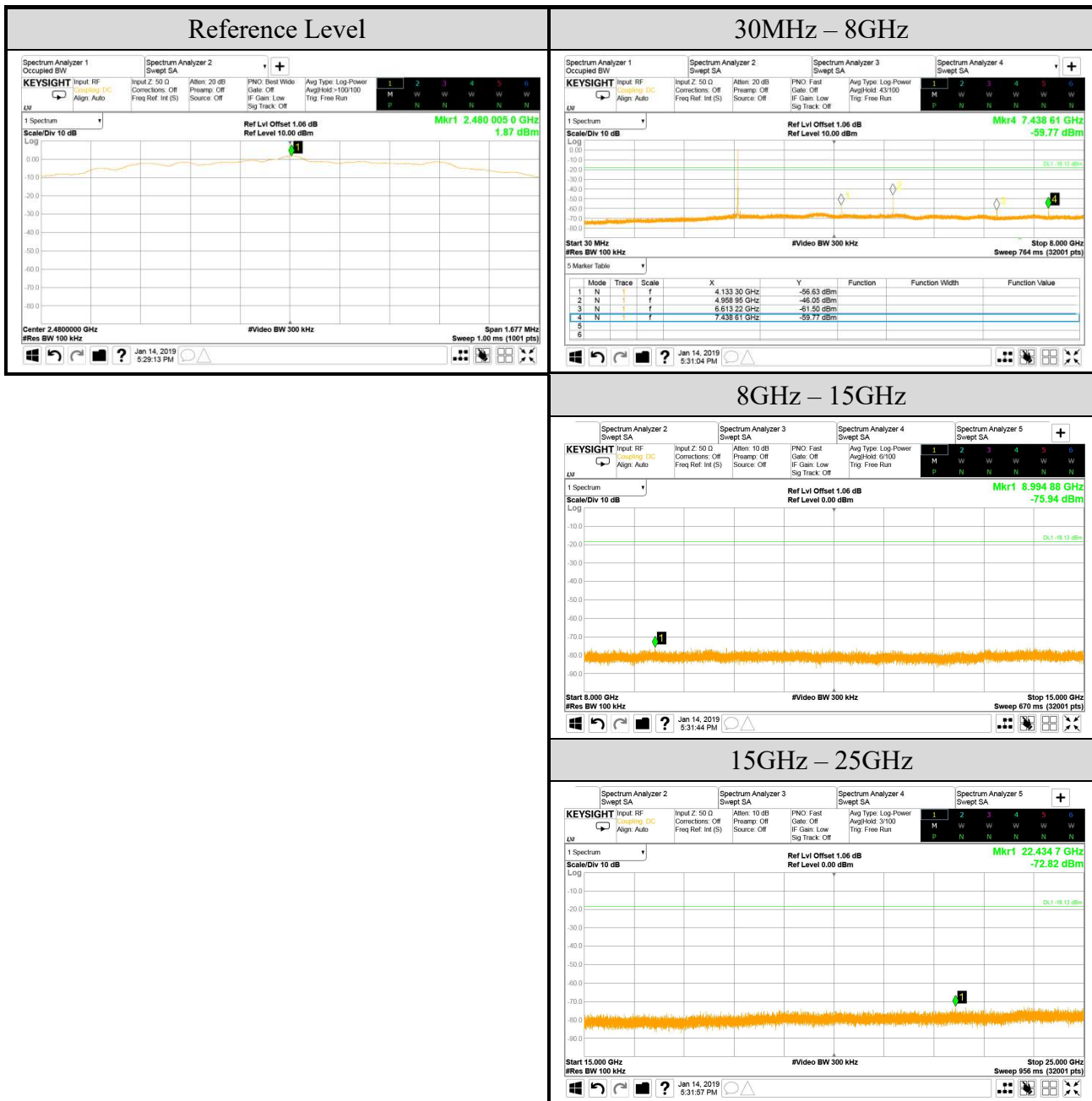
註: BLE 以最大傳發射功率之模式 2M 進行量測。

測試日期	2019/01/09 ~ 14	環境溫/濕度	21 ~ 23°C/52 ~ 53%
測試電壓	DC 3.7V (透過電池供電)	模式	BLE
		測試頻率	2440MHz



註: BLE 以最大傳發射功率之模式 2M 進行量測。

測試日期	2019/01/14	環境溫/濕度	23°C/53%
測試電壓	DC 3.7V (透過電池供電)	模式	BLE
		測試頻率	2480MHz



註: BLE 以最大傳發射功率之模式 2M 進行量測。

7. 功率密度之量測

測試日期	2019/01/14	環境溫/濕度	23°C/53%
測試電壓	DC 3.7V (透過電池供電)		

7.1. 功率密度

模式	測試頻率 (MHz)	功率密度 (dBm)	限制值 (dBm)
BLE	2402	1.93	8
	2440	1.97	
	2480	1.87	

註：測試結果係依照 FCC 公告之 KDB558074 D01V05，解析頻寬以 100kHz 量測其測試結果較 3kHz 嚴格

註：BLE 以最大傳發射功率之模式 2M 進行量測。

7.2. 功率密度之量測圖

