

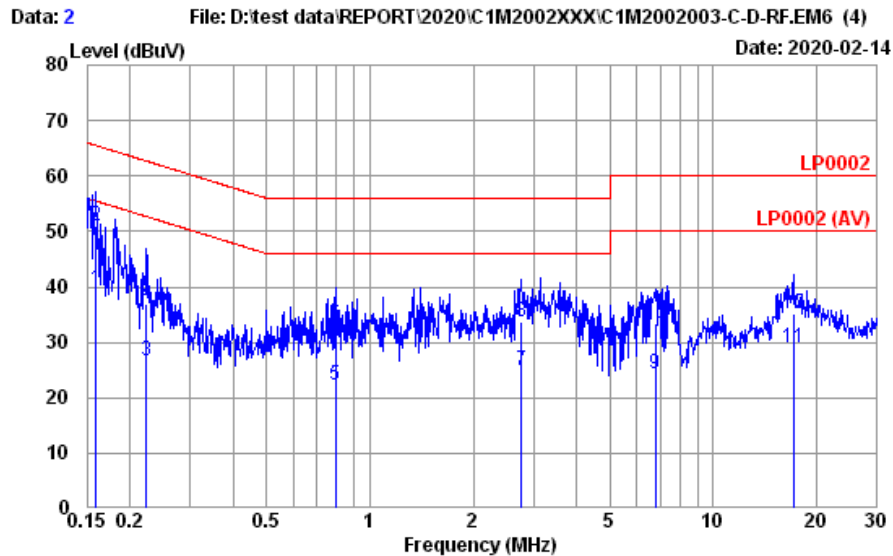
附錄一

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	2020/02/14	環境溫/濕度	24°C/62%
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)		



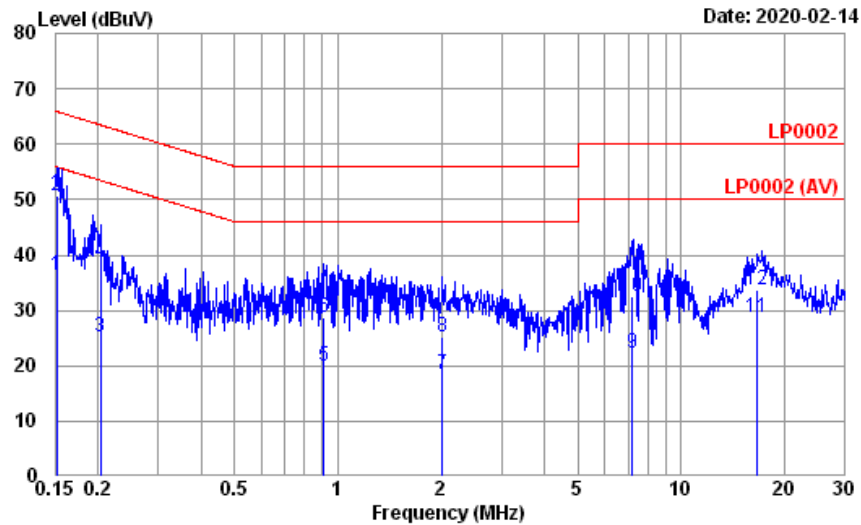
Site no. : No.8 Shielded Room Data no. : 2
Condition : ENV4200 (169) (A) LISN Phase : NEUTRAL
Limit : LP0002
Env. / Ins. : 24°C / 62% ESR3 (774) Engineer : Chucky Chiu
EUT : NW-W5623
Power Rating : DC 5V
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.159	10.72	0.04	9.86	19.00	39.62	55.52	15.90	Average
2	0.159	10.72	0.04	9.86	30.48	51.10	65.52	14.42	QP
3	0.223	10.63	0.04	9.86	6.22	26.75	52.70	25.95	Average
4	0.223	10.63	0.04	9.86	16.26	36.79	62.70	25.91	QP
5	0.792	10.51	0.05	9.86	1.89	22.31	46.00	23.69	Average
6	0.792	10.51	0.05	9.86	12.94	33.36	56.00	22.64	QP
7	2.765	10.61	0.08	9.87	4.38	24.94	46.00	21.06	Average
8	2.765	10.61	0.08	9.87	13.26	33.82	56.00	22.18	QP
9	6.769	11.11	0.12	9.88	3.16	24.27	50.00	25.73	Average
10	6.769	11.11	0.12	9.88	12.32	33.43	60.00	26.57	QP
11	17.109	13.13	0.17	9.93	5.88	29.11	50.00	20.89	Average
12	17.109	13.13	0.17	9.93	11.79	35.02	60.00	24.98	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	2020/02/14	環境溫/濕度	24°C/62%
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)		

Data: 1 File: D:\test data\REPORT\2020\C1M2002XXX\C1M2002003-C-D-RF-EM6 (4)



Site no. : No.8 Shielded Room Data no. : 1
Condition : ENV4200 (169) (A) LISN Phase : LINE
Limit : LP0002
Env. / Ins. : 24°C / 62% ESR3 (774) Engineer : Chucky Chiu
EUT : NW-WS623
Power Rating : DC 5V
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	0.152	10.68	0.04	9.86	15.66	36.24	55.91	19.67	Average
2	0.152	10.68	0.04	9.86	29.97	50.55	65.91	15.36	QP
3	0.204	10.61	0.04	9.86	4.60	25.11	53.45	28.34	Average
4	0.204	10.61	0.04	9.86	18.08	38.59	63.45	24.86	QP
5	0.909	10.47	0.05	9.86	-0.44	19.94	46.00	26.06	Average
6	0.909	10.47	0.05	9.86	8.34	28.72	56.00	27.28	QP
7	2.012	10.51	0.07	9.86	-1.91	18.53	46.00	27.47	Average
8	2.012	10.51	0.07	9.86	4.69	25.13	56.00	30.87	QP
9	7.213	11.00	0.12	9.88	1.27	22.27	50.00	27.73	Average
10	7.213	11.00	0.12	9.88	11.61	32.61	60.00	27.39	QP
11	16.661	12.69	0.17	9.93	5.79	28.58	50.00	21.42	Average
12	16.661	12.69	0.17	9.93	10.91	33.70	60.00	26.30	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

本裝置有兩種電源供應模式分別為電池(DC 3.7V)、充電傳輸底座(DC 5V)，實驗室以單機(電池供電)搭配平放、站立、側立三軸及經充電傳輸底座進行評估，**最後選取最大場強值的擺設方式-經充電傳輸底座(DC 5V)以低、中、高頻率來進行量測，並將下列測試模式之測試數據隨案件所附，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
BLE	發射	2402MHz(CH37)*	30-1000MHz
			1000-25000MHz
	發射	2440MHz (CH17)	1000-25000MHz
	發射	2480MHz(CH39)	1000-25000MHz
	接收	2440MHz (CH17)	30-1000MHz
			1000-25000MHz

註：*: 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 2.3。

模式	動作狀態	基本頻率	量測頻率範圍
BLE	發射	2402MHz (CH37)	2310-2430MHz
		2480MHz (CH39)	2450-2900MHz

測試日期	2020/02/12	環境溫/濕度	20 ~ 21°C/55 ~ 61%
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)	測試人員	Sean Wang

2.1. 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
31.940	24.34	1.23	1.31	26.88	40.00	13.12	Peak
203.630	16.47	3.46	14.50	34.43	43.50	9.07	Peak
250.190	18.82	3.94	9.31	32.07	46.00	13.93	Peak
830.250	26.75	8.07	3.84	38.66	46.00	7.34	Peak
895.240	27.26	8.43	3.09	38.78	46.00	7.22	Peak
976.720	27.89	8.91	1.55	38.35	54.00	15.65	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
32.910	23.73	1.25	10.67	35.65	40.00	4.35	Peak
203.630	16.47	3.46	8.38	28.31	43.50	15.19	Peak
526.640	24.01	6.79	1.79	32.59	46.00	13.41	Peak
709.000	25.55	7.41	0.59	33.55	46.00	12.45	Peak
922.400	27.49	8.59	1.26	37.34	46.00	8.66	Peak
968.960	27.84	8.86	1.06	37.76	54.00	16.24	Peak

Mode	---	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
32.910	23.73	1.25	1.02	26.00	40.00	14.00	Peak
203.630	16.47	3.46	15.00	34.93	43.50	8.57	Peak
346.220	21.06	5.15	5.35	31.56	46.00	14.44	Peak
830.250	26.75	8.07	3.98	38.80	46.00	7.20	Peak
911.730	27.41	8.52	4.34	40.27	46.00	5.73	Peak
997.090	28.04	9.02	3.02	40.08	54.00	13.92	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
31.940	24.34	1.23	10.91	36.48	40.00	3.52	Peak
167.740	16.05	3.10	8.07	27.22	43.50	16.28	Peak
523.730	23.99	6.78	0.87	31.64	46.00	14.36	Peak
640.130	25.05	7.08	1.40	33.53	46.00	12.47	Peak
827.340	26.72	8.06	1.43	36.21	46.00	9.79	Peak
968.960	27.84	8.86	0.98	37.68	54.00	16.32	Peak

2.2. 1000MHz 以上頻率範圍，其他不必要發射量測

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。

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
4804.000	33.92	10.22	-0.60	43.54	54.00	10.46	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
4804.000	33.92	10.22	-1.81	42.33	54.00	11.67	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
4880.000	34.34	10.24	-2.61	41.97	54.00	12.03	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
4880.000	34.34	10.24	-2.46	42.12	54.00	11.88	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
4960.000	34.32	10.27	-3.04	41.55	54.00	12.45	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
4960.000	34.32	10.27	-1.78	42.81	54.00	11.19	Peak

Mode	---	Frequency	RX2440MHz
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Antenna at Horizontal Polarization

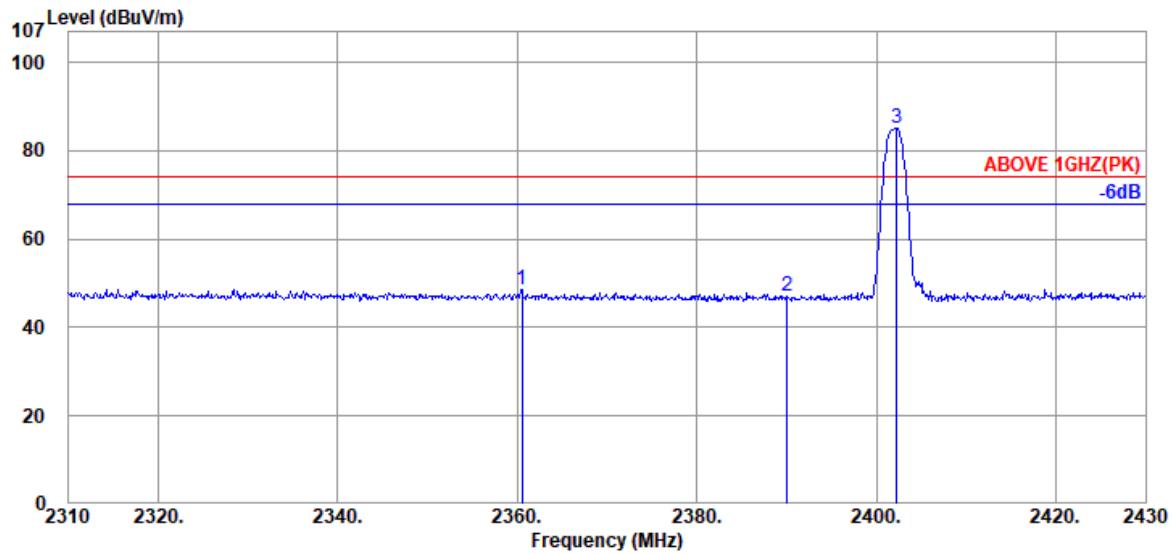
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.000	34.34	10.24	-3.47	41.11	54.00	12.89	Peak

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
4880.000	34.34	10.24	-1.96	42.62	54.00	11.38	Peak

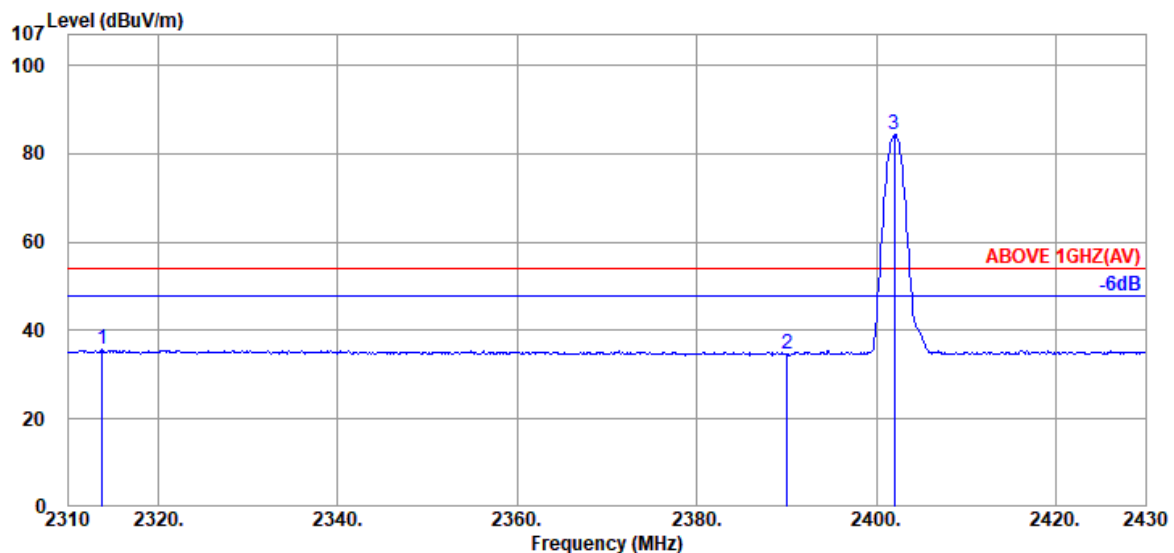
2.4. 禁用頻帶量測結果 (其他不必要發射)

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
2360.520	32.00	8.49	8.10	48.59	74.00	25.41	Peak
2390.040	32.00	8.52	6.44	46.96	74.00	27.04	Peak
@ 2402.280	32.03	8.52	44.48	85.03	---	---	Peak

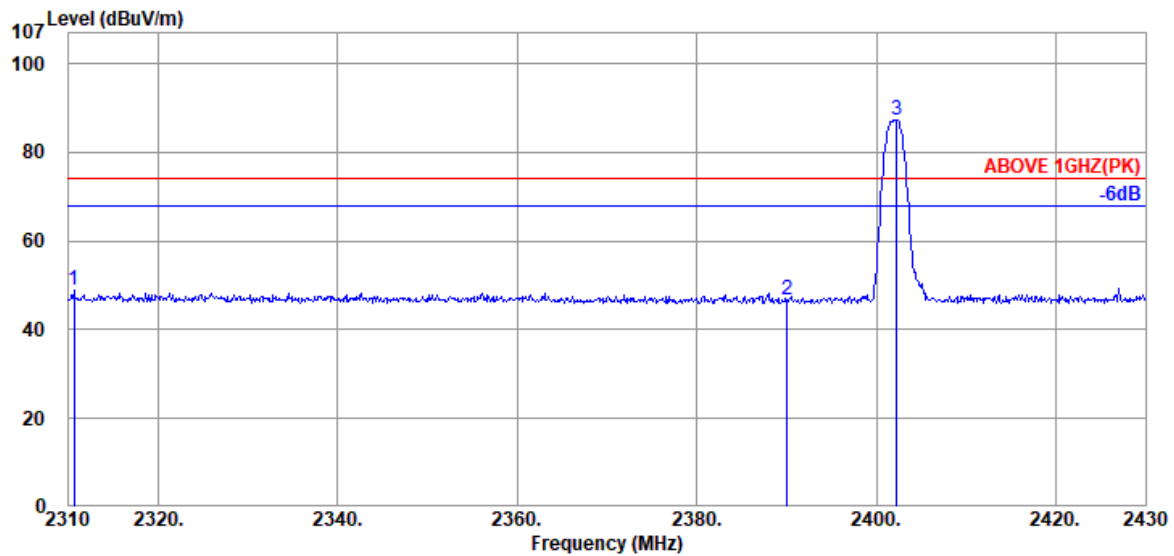


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2313.720	32.00	8.46	-4.73	35.73	54.00	18.27	Average
2390.040	32.00	8.52	-5.68	34.84	54.00	19.16	Average
@ 2402.040	32.03	8.52	43.69	84.24	---	---	Average

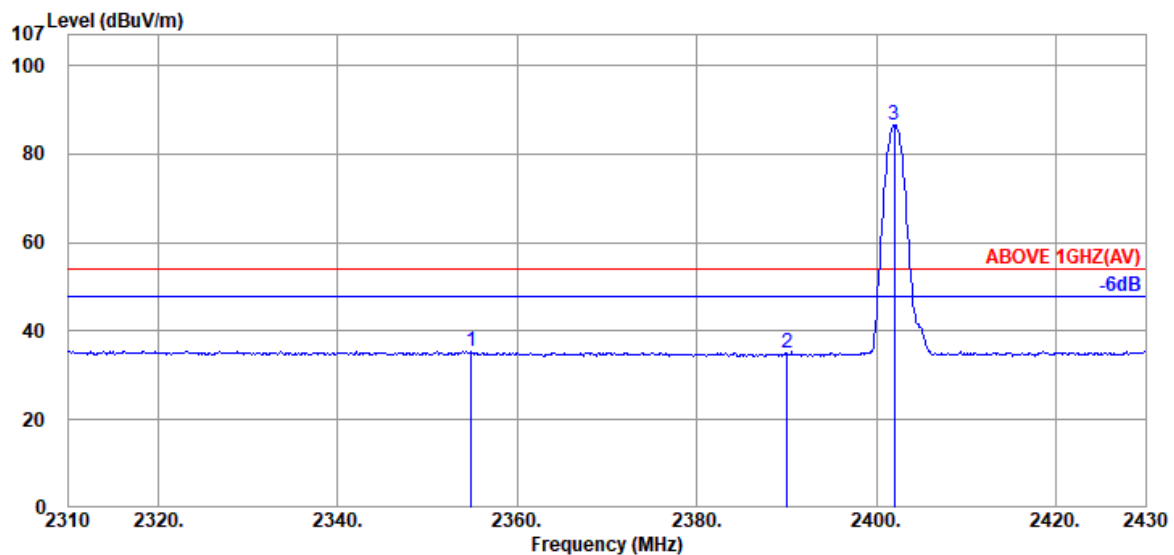
備註：“@”為主波，在此章節是不予以判定。

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
2310.600	32.00	8.46	8.62	49.08	74.00	24.92	Peak
2390.040	32.00	8.52	6.24	46.76	74.00	27.24	Peak
@ 2402.280	32.03	8.52	46.83	87.38	---	---	Peak

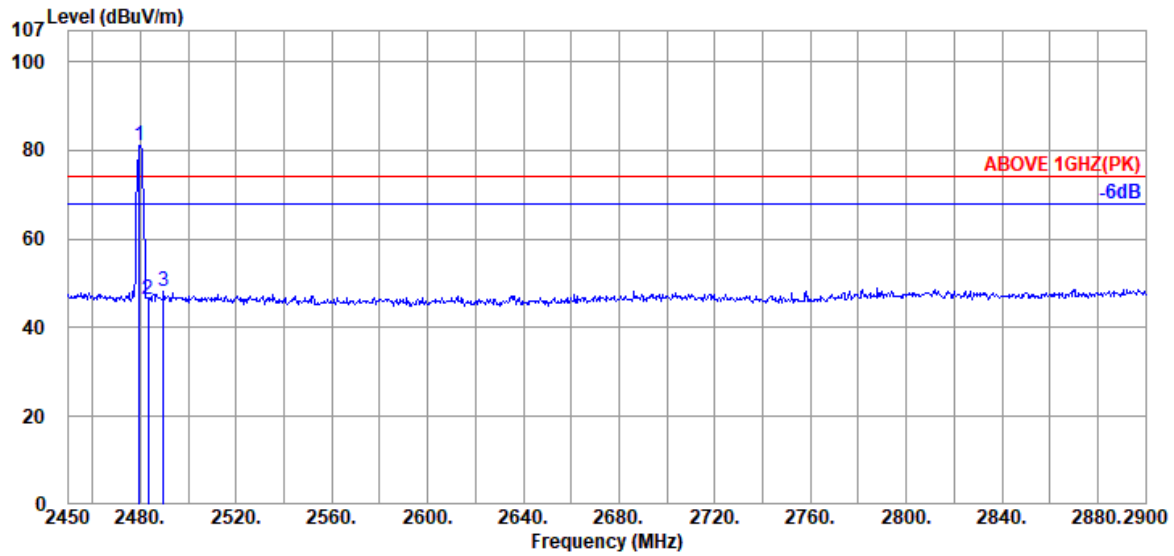


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2354.880	32.00	8.49	-4.96	35.53	54.00	18.47	Average
2390.040	32.00	8.52	-5.60	34.92	54.00	19.08	Average
@ 2402.040	32.03	8.52	46.04	86.59	---	---	Average

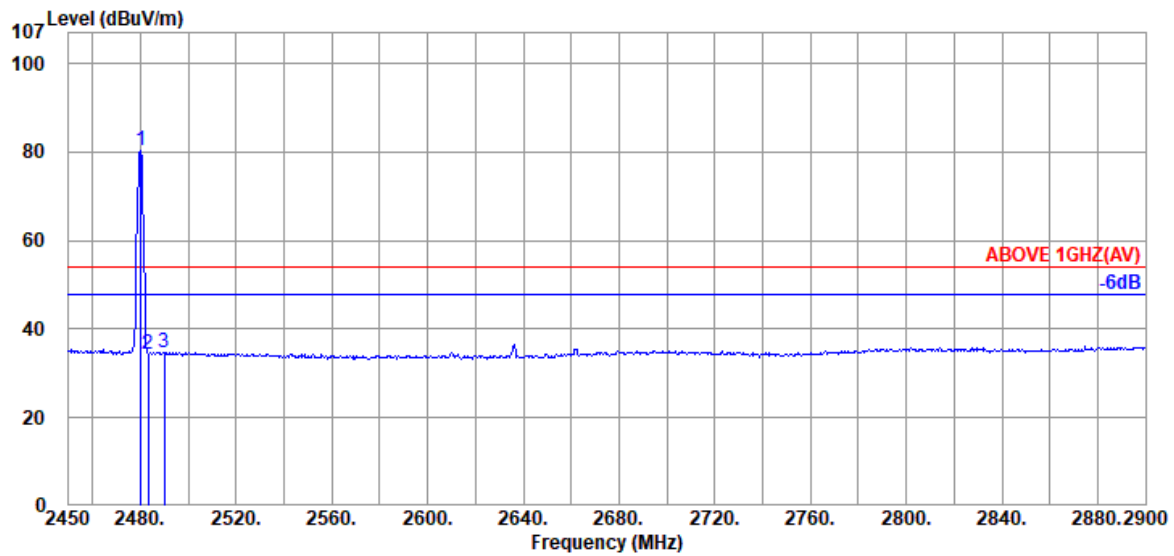
備註：“@”為主波，在此章節是不予以判定。

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
@	2479.700	32.58	8.58	39.99	81.15	---	---	Peak
	2483.300	32.57	8.58	5.29	46.44	74.00	27.56	Peak
	2489.600	32.54	8.59	6.90	48.03	74.00	25.97	Peak

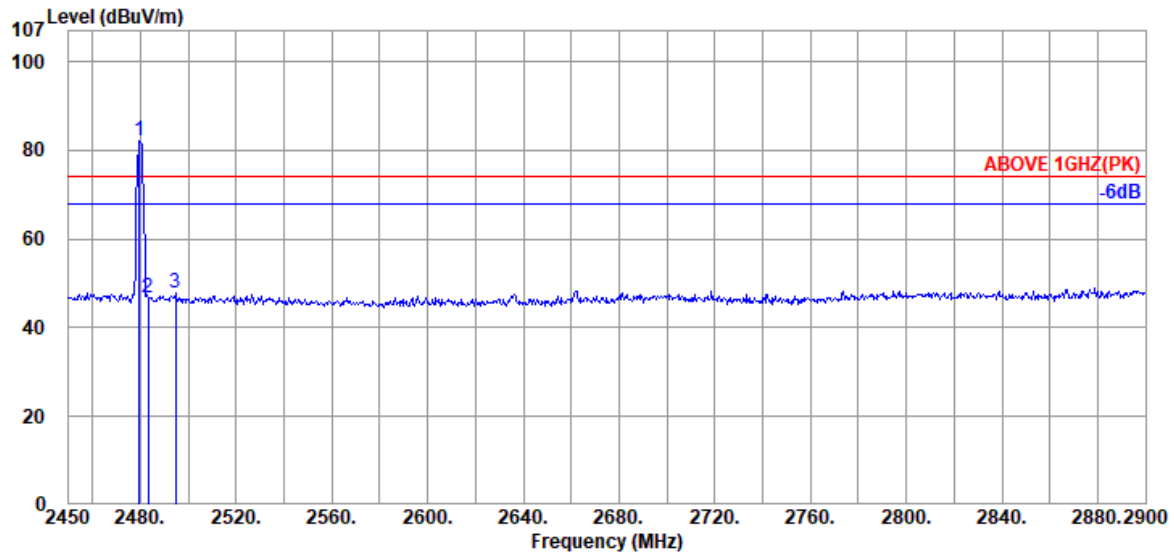


Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2480.150	32.58	8.58	39.09	80.25	---	---	Average
	2483.300	32.57	8.58	-6.85	34.30	54.00	19.70	Average
	2490.050	32.54	8.59	-6.28	34.85	54.00	19.15	Average

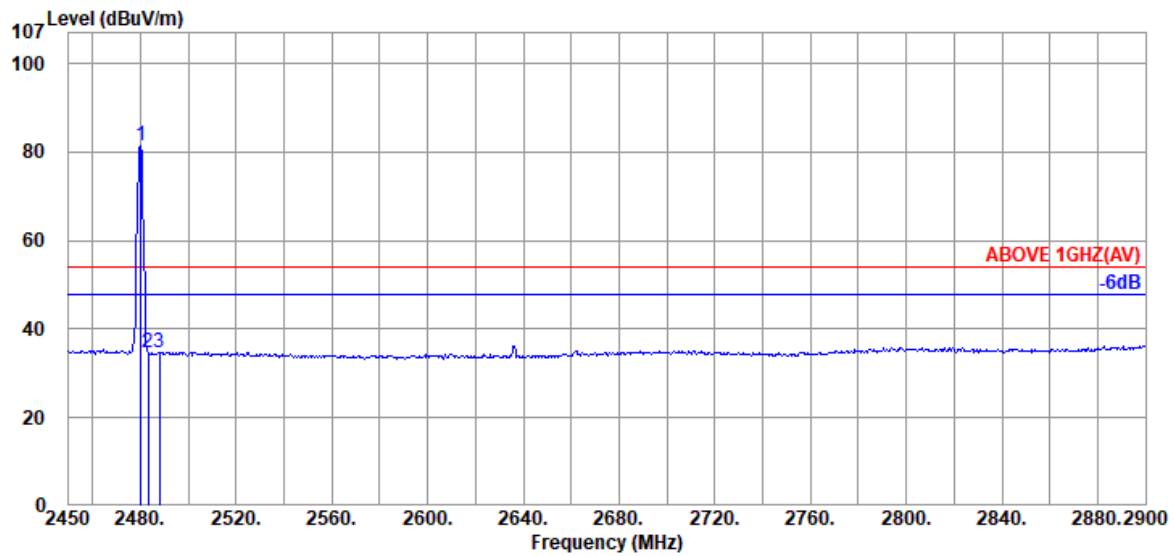
備註：“@”為主波，在此章節是不予以判定。

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
@	2479.700	32.58	8.58	40.96	82.12	---	---	Peak
	2483.300	32.57	8.58	5.64	46.79	74.00	27.21	Peak
	2494.550	32.52	8.59	6.68	47.79	74.00	26.21	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
@	2480.150	32.58	8.58	40.14	81.30	---	---	Average
	2483.300	32.57	8.58	-6.61	34.54	54.00	19.46	Average
	2487.800	32.55	8.59	-6.36	34.78	54.00	19.22	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	2020/02/26	環境溫/濕度	21°C/59%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)		

3.1. 發射頻寬

模式 (Mode)	測試頻率 (MHz)	6dB 頻寬 (MHz)	限制值 (kHz)
BLE	2402	0.7004	>500
	2440	0.6974	
	2480	0.7029	

3.2. 發射頻寬之量測圖



4. 峰值輸出功率之量測

測試日期	2020/02/11	環境溫/濕度	22°C/56%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)		

4.1. 峰值輸出功率

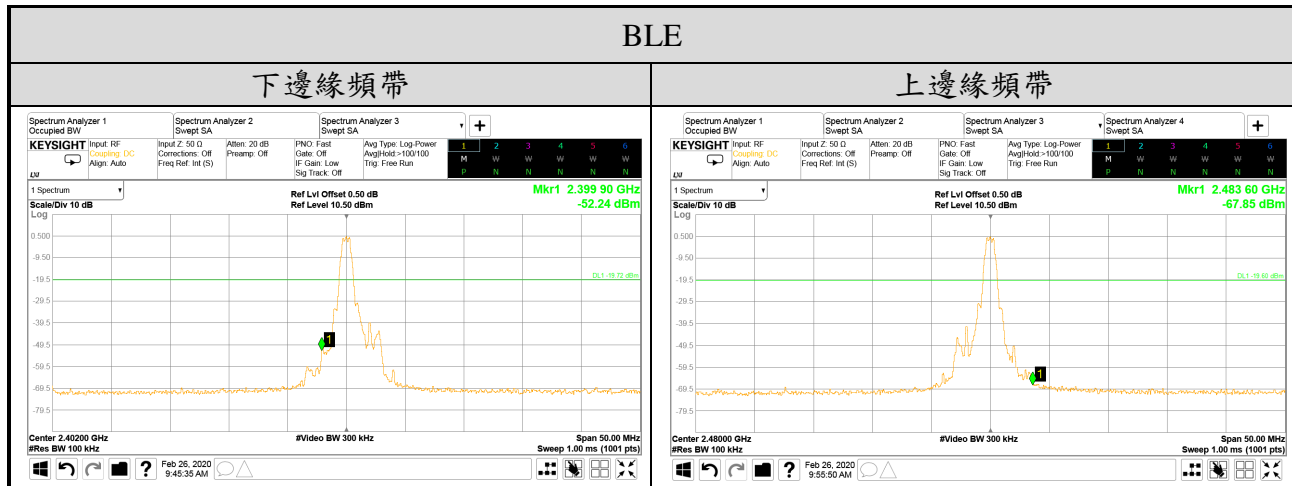
模式 (Mode)	測試頻率 (MHz)	最大輸出功率(dBm)	限制值 (dBm)
BLE	2402	1.00	30
	2440	0.99	
	2480	0.83	

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	2020/02/26	環境溫/濕度	21°C/59%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)		

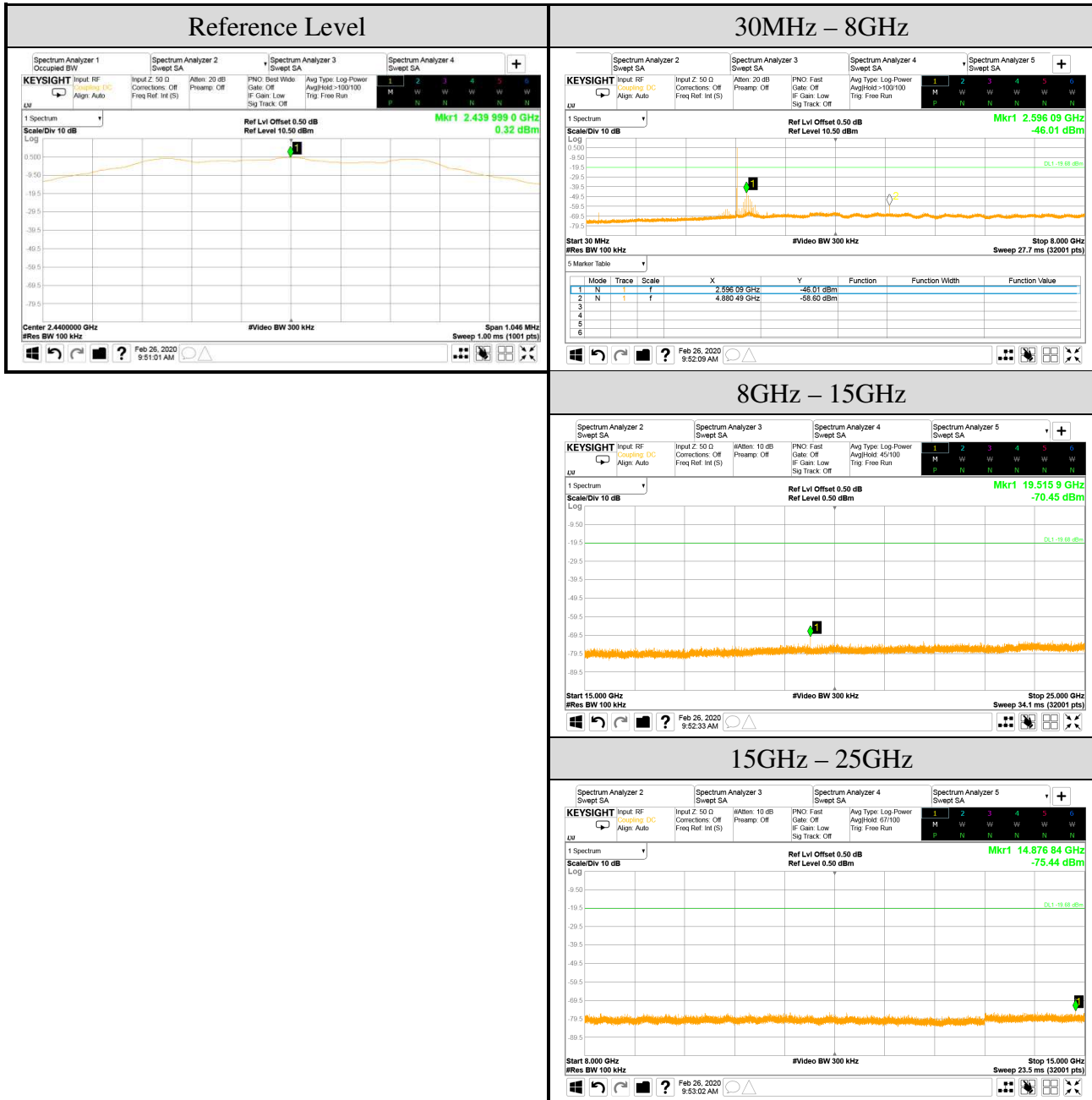


6. 混附發射之 RF 傳導發射之量測

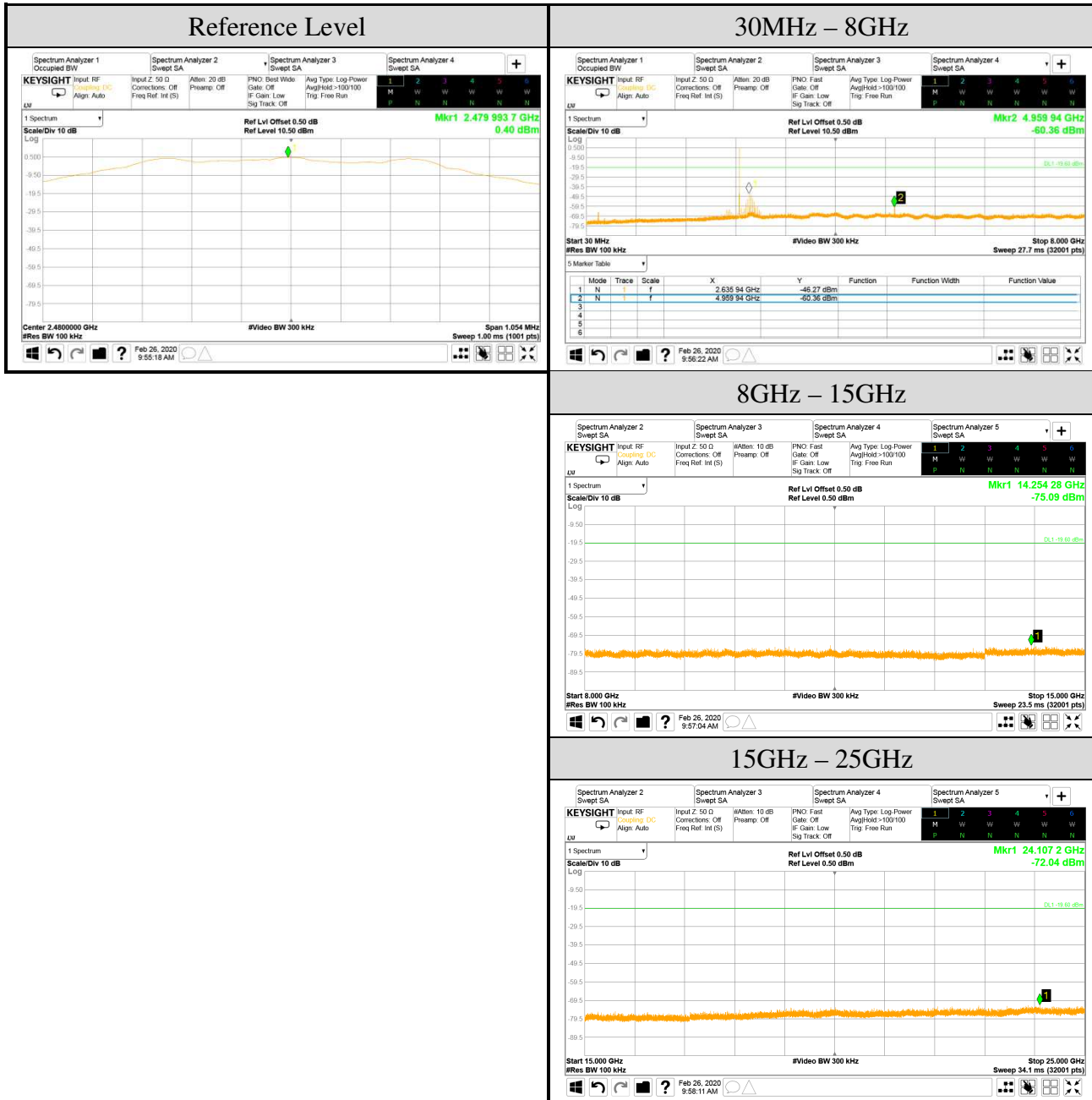
測試日期	2020/02/26	環境溫/濕度	21°C/59%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)	測試頻率	2402MHz



測試日期	2020/02/26	環境溫/濕度	21°C/59%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)	測試頻率	2440MHz



測試日期	2020/02/26	環境溫/濕度	21°C/59%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)	測試頻率	2480MHz



7. 功率密度之量測

測試日期	2020/02/26	環境溫/濕度	21°C/59%
電纜損失	0.5dB	測試人員	Sean Wang
測試電壓	DC 5V (透過 USB 由筆記型電腦供電)		

7.1. 功率密度

模式 (Mode)	測試頻率 (MHz)	功率密度(dBm)	限制值 (dBm)
BLE	2402	0.28	8
	2440	0.32	
	2480	0.40	

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

7.2. 功率密度之量測圖

