

附錄一

受測裝置之測試結果

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1. 場強輻射之量測

【經實驗室評估量測後，以最差之調變方式 GFSK 進行本章節之測試】

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，實驗室先將發射機分別以三種不同的擺設方式(站立、平放、側立)進行量試評估，最後選取最大場強值的擺設方式(側立)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。最後，選擇較差模式進行讀值之測量，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
BT (GFSK)	發射	2402MHz*	30-1000MHz
			1000-25000MHz
	發射	2441MHz	1000-25000MHz
	發射	2480MHz	1000-25000MHz
	接收	2441MHz	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 1.3。

模式	動作狀態	基本頻率	量測頻率範圍
BT (GFSK)	發射	2402MHz	2310-2430MHz
		2480MHz	2430-2900MHz
BT (8-DPSK)	發射	2402MHz	2310-2430MHz
		2480MHz	2430-2900MHz

測試日期	2020/05/19~20	環境溫/濕度	24°C/42~45%
測試電壓	DC 5V(經 USB 電源供電)	測試人員	Brian Hsieh

1.1. 30-1000MHz 頻率範圍，其他不必要發射量測

Mode	BT (GFSK)	Frequency	TX 2402MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
62.980	12.53	1.89	26.44	39.58	27.56	40.00	12.44	Peak
136.700	18.17	2.90	26.12	36.31	31.26	43.50	12.24	Peak
205.570	15.75	3.60	25.86	36.16	29.65	43.50	13.85	Peak
240.490	18.12	3.93	25.79	43.96	40.22	46.00	5.78	Peak
317.120	19.74	4.81	25.86	32.36	31.05	46.00	14.95	Peak
722.580	25.25	7.73	27.48	36.36	41.86	46.00	4.14	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
54.250	13.69	1.72	26.48	39.23	28.16	40.00	11.84	Peak
107.600	17.53	2.53	26.27	38.92	32.71	43.50	10.79	Peak
158.040	16.65	3.15	26.02	35.62	29.40	43.50	14.10	Peak
237.580	17.91	3.90	25.79	37.44	33.46	46.00	12.54	Peak
540.220	24.04	6.97	27.33	31.00	34.68	46.00	11.32	Peak
827.340	26.31	8.29	27.34	29.75	37.01	46.00	8.99	Peak

Mode	BT	Frequency	RX 2441MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
62.980	12.53	1.89	26.44	35.95	23.93	40.00	16.07	Peak
144.460	17.71	2.99	26.08	32.87	27.49	43.50	16.01	Peak
239.520	18.02	3.92	25.79	42.65	38.80	46.00	7.20	Peak
397.630	21.79	5.99	26.52	33.23	34.49	46.00	11.51	Peak
582.900	24.60	7.01	27.44	30.24	34.41	46.00	11.59	Peak
728.400	25.33	7.76	27.47	34.55	40.17	46.00	5.83	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
33.880	22.55	1.32	26.52	36.62	33.97	40.00	6.03	Peak
120.210	18.71	2.68	26.20	31.31	26.50	43.50	17.00	Peak
158.040	16.65	3.15	26.02	34.87	28.65	43.50	14.85	Peak
239.520	18.02	3.92	25.79	38.54	34.69	46.00	11.31	Peak
473.290	23.09	6.68	27.05	30.29	33.01	46.00	12.99	Peak
597.450	24.77	7.03	27.48	30.84	35.16	46.00	10.84	Peak

1.2. 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	BT (GFSK)	Frequency	TX 2402MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4804.000	34.10	10.22	34.47	48.67	58.52	74.00	15.48	Peak
7208.000	35.60	12.05	34.60	46.58	59.63	74.00	14.37	Peak
9610.000	36.80	14.36	35.19	41.86	57.83	74.00	16.17	Peak
12010.000	38.70	15.85	34.66	41.32	61.21	74.00	12.79	Peak
14410.000	39.30	17.36	33.54	38.09	61.21	74.00	12.79	Peak
Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
4804.000	58.52	-30.75		27.77	54.00	26.23	Average	
7208.000	59.63	-30.75		28.88	54.00	25.12	Average	
9610.000	57.83	-30.75		27.08	54.00	26.92	Average	
12010.000	61.21	-30.75		30.46	54.00	23.54	Average	
14410.000	61.21	-30.75		30.46	54.00	23.54	Average	

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4804.000	34.10	10.22	34.47	49.13	58.98	74.00	15.02	Peak
7205.000	35.60	12.05	34.60	49.45	62.50	74.00	11.50	Peak
9610.000	36.80	14.36	35.19	43.71	59.68	74.00	14.32	Peak
12010.000	38.70	15.85	34.66	42.85	62.74	74.00	11.26	Peak
14410.000	39.30	17.36	33.54	37.47	60.59	74.00	13.41	Peak

Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
4804.000	58.98	-30.75	28.23	54.00	25.77	Average
7205.000	62.50	-30.75	31.75	54.00	22.25	Average
9610.000	59.68	-30.75	28.93	54.00	25.07	Average
12010.000	62.74	-30.75	31.99	54.00	22.01	Average
14410.000	60.59	-30.75	29.84	54.00	24.16	Average

Mode	BT (GFSK)			Frequency	TX 2441MHz			
Antenna at Horizontal Polarization								
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4882.000	34.03	10.24	34.45	47.20	57.02	74.00	16.98	Peak
7322.000	35.60	12.12	34.70	50.66	63.68	74.00	10.32	Peak
9760.000	37.10	14.43	35.18	37.96	54.31	74.00	19.69	Peak
12210.000	38.97	15.98	34.50	44.68	65.13	74.00	8.87	Peak
14650.000	39.55	17.49	33.75	40.36	63.65	74.00	10.35	Peak
Frequency (MHz)		Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
4882.000		57.02	-30.75		26.27	54.00	27.73	Average
7322.000		63.68	-30.75		32.93	54.00	21.07	Average
9760.000		54.31	-30.75		23.56	54.00	30.44	Average
12210.000		65.13	-30.75		34.38	54.00	19.62	Average
14650.000		63.65	-30.75		32.90	54.00	21.10	Average
Antenna at Vertical Polarization								
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4882.000	34.03	10.24	34.45	47.91	57.73	74.00	16.27	Peak
7322.000	35.60	12.12	34.70	53.17	66.19	74.00	7.81	Peak
9760.000	37.10	14.43	35.18	37.56	53.91	74.00	20.09	Peak
12200.000	39.00	15.98	34.53	48.79	69.24	74.00	4.76	Peak
14650.000	39.55	17.49	33.75	38.29	61.58	74.00	12.42	Peak
Frequency (MHz)		Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
4882.000		57.73	-30.75		26.98	54.00	27.02	Average
7322.000		66.19	-30.75		35.44	54.00	18.56	Average
9760.000		53.91	-30.75		23.16	54.00	30.84	Average
12200.000		69.24	-30.75		38.49	54.00	15.51	Average
14650.000		61.58	-30.75		30.83	54.00	23.17	Average

Mode	BT (GFSK)			Frequency	TX 2480MHz			
Antenna at Horizontal Polarization								
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.000	34.10	10.27	34.44	47.53	57.46	74.00	16.54	Peak
7439.000	35.63	12.18	34.78	50.49	63.52	74.00	10.48	Peak
9920.000	37.30	14.50	35.18	39.91	56.53	74.00	17.47	Peak
12400.000	38.90	16.12	34.37	44.60	65.25	74.00	8.75	Peak
14880.000	39.70	17.61	33.96	41.92	65.27	74.00	8.73	Peak
Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
4960.000	57.46	-30.75		26.71	54.00	27.29	Average	
7439.000	63.52	-30.75		32.77	54.00	21.23	Average	
9920.000	56.53	-30.75		25.78	54.00	28.22	Average	
12400.000	65.25	-30.75		34.50	54.00	19.50	Average	
14880.000	65.27	-30.75		34.52	54.00	19.48	Average	
Antenna at Vertical Polarization								
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.000	34.10	10.27	34.44	48.50	58.43	74.00	15.57	Peak
7439.000	35.63	12.18	34.78	53.20	66.23	74.00	7.77	Peak
9920.000	37.30	14.50	35.18	44.21	60.83	74.00	13.17	Peak
12400.000	38.90	16.12	34.37	45.38	66.03	74.00	7.97	Peak
14880.000	39.70	17.61	33.96	42.12	65.47	74.00	8.53	Peak
Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
4960.000	58.43	-30.75		27.68	54.00	26.32	Average	
7439.000	66.23	-30.75		35.48	54.00	18.52	Average	
9920.000	60.83	-30.75		30.08	54.00	23.92	Average	
12400.000	66.03	-30.75		35.28	54.00	18.72	Average	
14880.000	65.47	-30.75		34.72	54.00	19.28	Average	

Mode	BT			Frequency	RX 2441MHz			
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Antenna at Horizontal Polarization

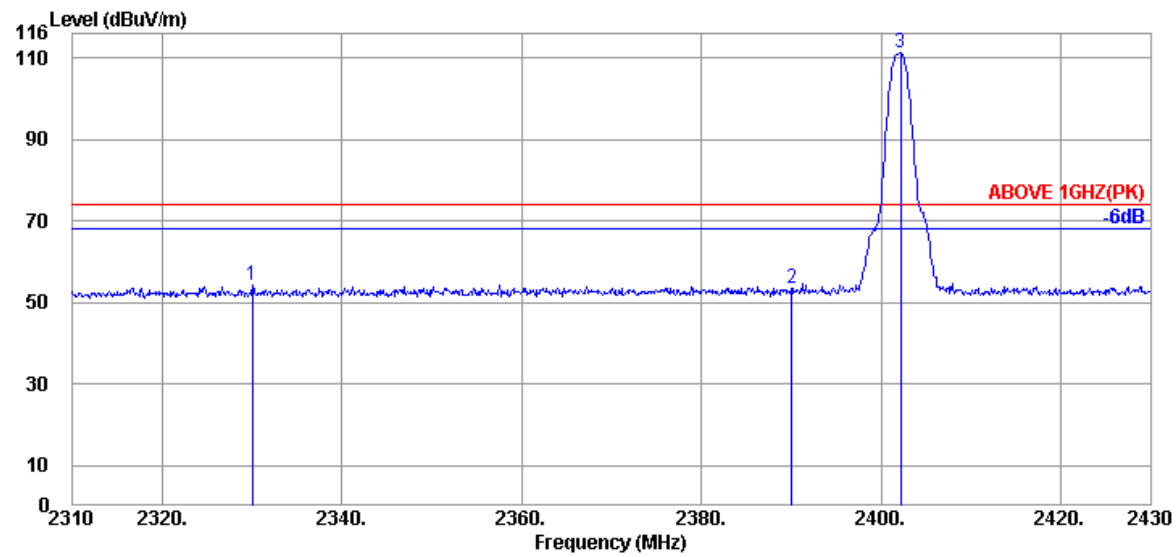
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4882.000	34.03	10.24	34.45	30.93	40.75	54.00	13.25	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4882.000	34.03	10.24	34.45	30.71	40.53	54.00	13.47	Peak

1.3. 禁用頻帶量測結果 (其他不必要發射)

Mode	BT (GFSK)	Frequency	TX 2402MHz
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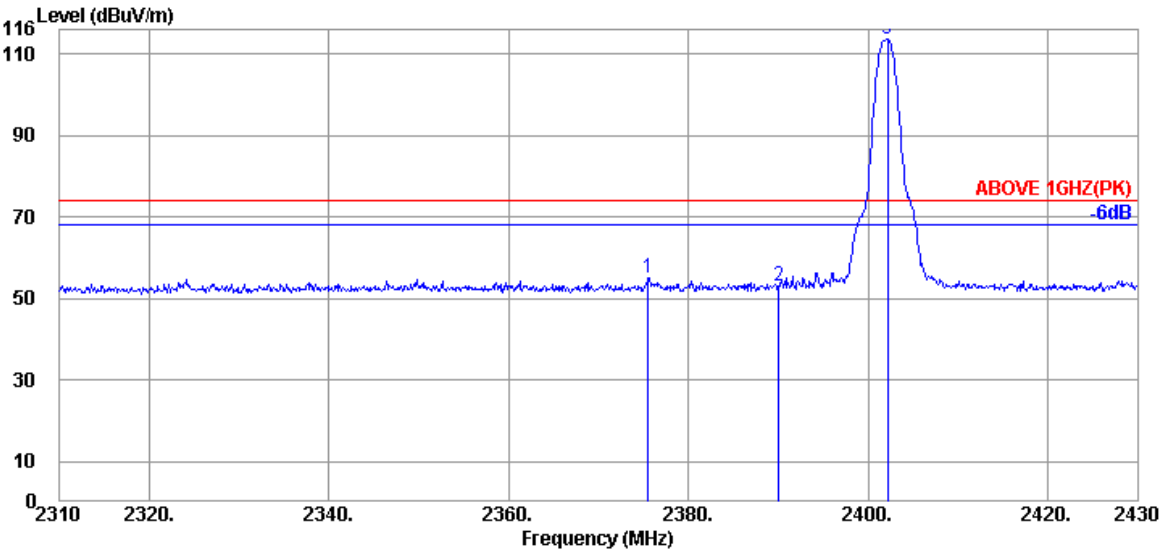
Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2330.040	32.11	8.47	34.57	48.32	54.33	74.00	19.67	Peak
2390.040	32.44	8.52	34.58	47.16	53.54	74.00	20.46	Peak
@ 2402.160	32.50	8.52	34.59	104.70	111.13	---	---	Peak

Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
2330.040	54.33	-30.75	23.58	54.00	30.42	Average
2390.040	53.54	-30.75	22.79	54.00	31.21	Average

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (GFSK)	Frequency	TX 2402MHz
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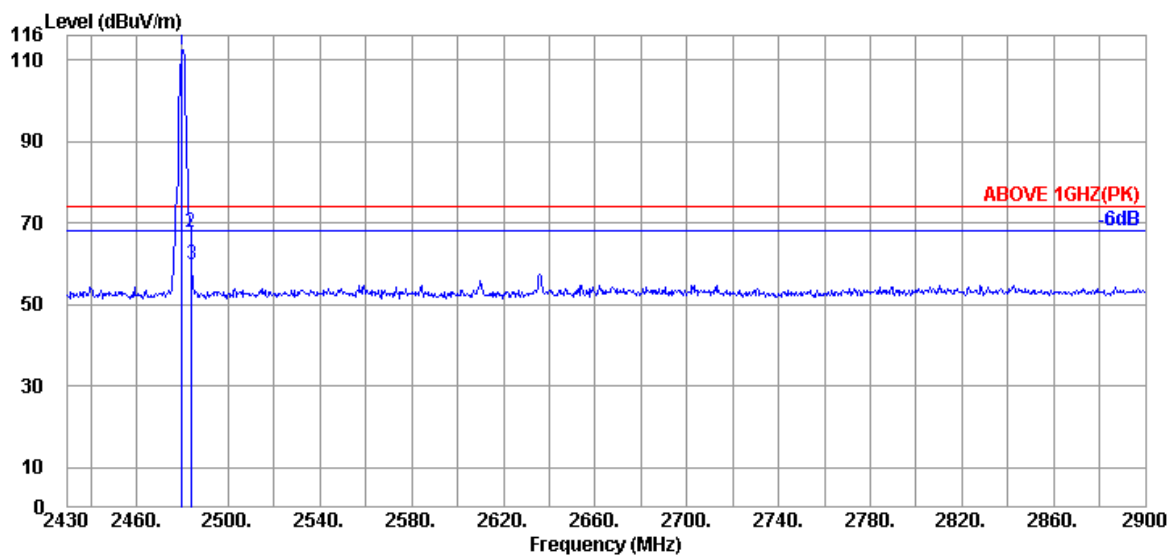


Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2375.520	32.39	8.51	34.58	48.85	55.17	74.00	18.83	Peak
	2390.040	32.44	8.52	34.58	46.58	52.96	74.00	21.04	Peak
	2402.160	32.50	8.52	34.59	107.08	113.51	---	---	Peak
	Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
	2375.520	55.17	-30.75		24.42	54.00	29.58	Average	
	2390.040	52.96	-30.75		22.21	54.00	31.79	Average	

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (GFSK)	Frequency	TX 2480MHz
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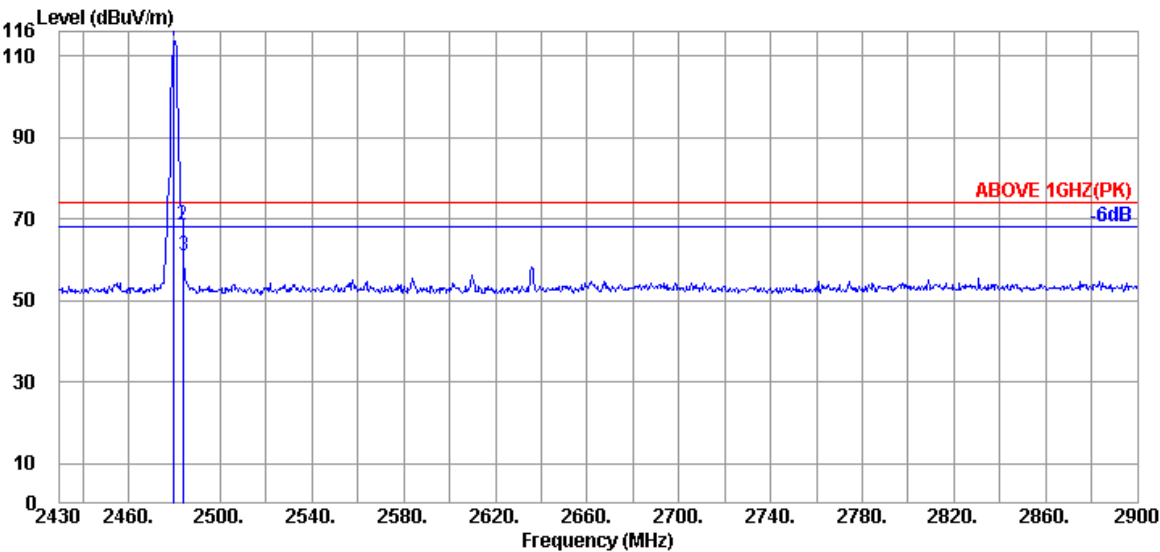


Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2479.820	32.11	8.58	34.60	106.31	112.40	---	---	Peak
	2483.580	32.14	8.58	34.61	61.73	67.84	74.00	6.16	Peak
	2484.050	32.14	8.58	34.61	53.73	59.84	74.00	14.16	Peak
	Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
	2483.580	67.84	-30.75		37.09	54.00	16.91	Average	
	2484.050	59.84	-30.75		29.09	54.00	24.91	Average	

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (GFSK)	Frequency	TX 2480MHz
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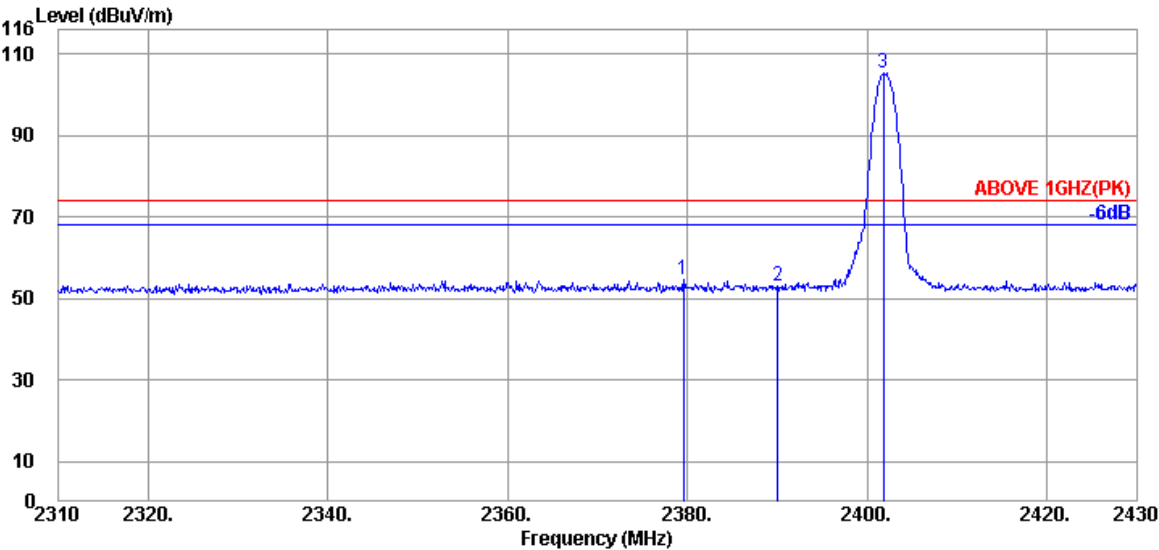


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2479.820	32.11	8.58	34.60	107.45	113.54	---	---	Peak
2483.580	32.14	8.58	34.61	62.48	68.59	74.00	5.41	Peak
2484.050	32.14	8.58	34.61	54.70	60.81	74.00	13.19	Peak
Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
2483.580	68.59	-30.75		37.84	54.00	16.16	Average	
2484.050	60.81	-30.75		30.06	54.00	23.94	Average	

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (8-DPSK)	Frequency	TX 2402MHz
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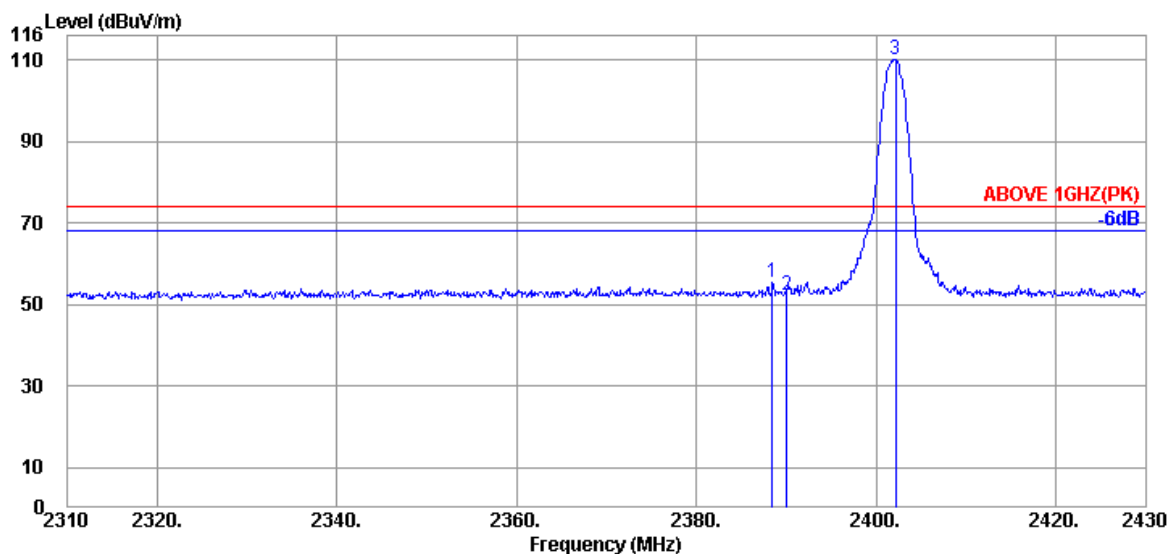


Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2379.600	32.41	8.51	34.58	48.23	54.57	74.00	19.43	Peak
	2390.040	32.44	8.52	34.58	46.50	52.88	74.00	21.12	Peak
	2401.800	32.50	8.52	34.59	98.89	105.32	---	---	Peak
	Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
	2379.600	54.57	-30.72		23.85	54.00	30.15	Average	
	2390.040	52.88	-30.72		22.16	54.00	31.84	Average	

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (8-DPSK)	Frequency	TX 2402MHz
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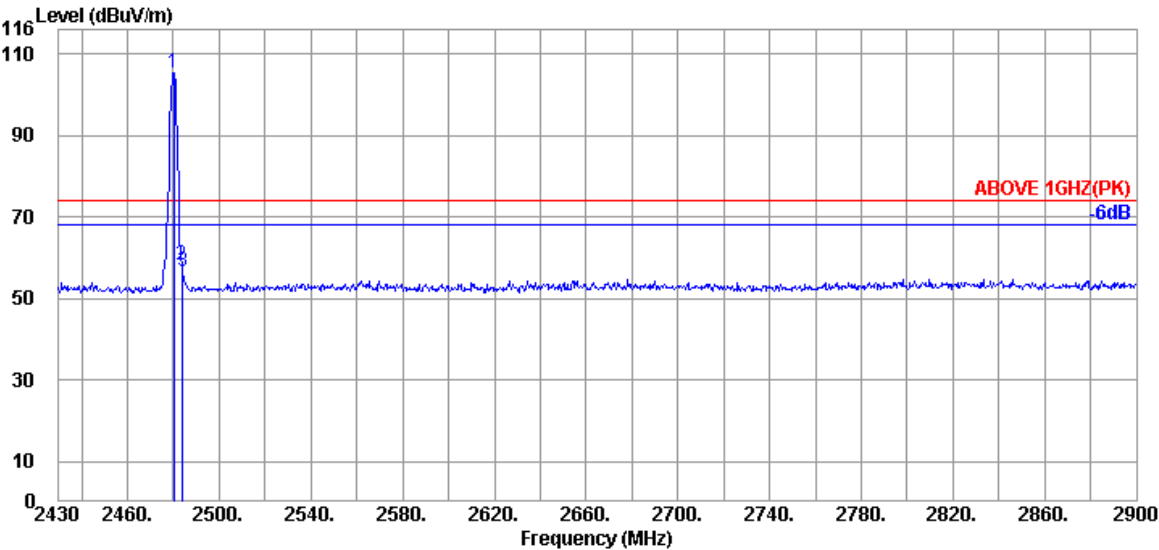
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.480	32.44	8.52	34.58	49.15	55.53	74.00	18.47	Peak
2390.040	32.44	8.52	34.58	46.02	52.40	74.00	21.60	Peak
@ 2402.160	32.50	8.52	34.59	103.63	110.06	---	---	Peak

Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
2388.480	55.53	-30.72	24.81	54.00	29.19	Average
2390.040	52.40	-30.72	21.68	54.00	32.32	Average

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (8-DPSK)	Frequency	TX 2480MHz
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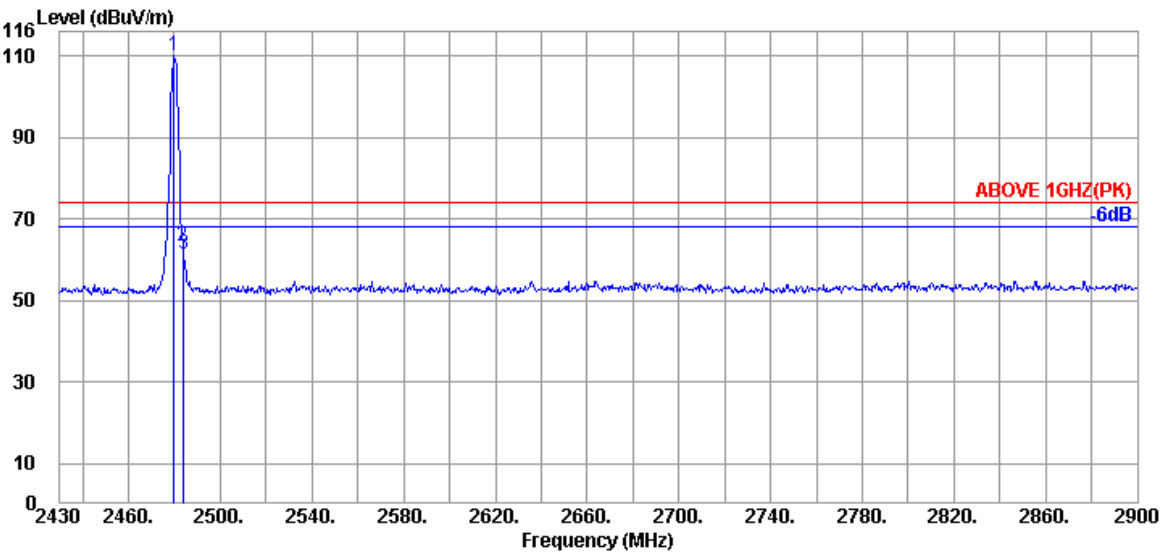


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.290	32.11	8.58	34.60	99.38	105.47	---	---	Peak
2483.580	32.14	8.58	34.61	51.96	58.07	74.00	15.93	Peak
2484.050	32.14	8.58	34.61	50.65	56.76	74.00	17.24	Peak
Frequency (MHz)	Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
2483.580	58.07	-30.72		27.35	54.00	26.65	Average	
2484.050	56.76	-30.72		26.04	54.00	27.96	Average	

備註：“@”為主波，在此章節是不予以判定。

Mode	BT (8-DPSK)	Frequency	TX 2480MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)		Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2479.820	32.11	8.58	34.60	103.84	109.93	---	---	Peak
	2483.580	32.14	8.58	34.61	57.09	63.20	74.00	10.80	Peak
	2484.050	32.14	8.58	34.61	55.28	61.39	74.00	12.61	Peak
Frequency (MHz)		Peak Value (dBμV/m)	Duty Cycle Correction Factor (dB)		Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	
	2483.580	63.20			32.48	54.00	21.52	Average	
	2484.050	61.39			30.67	54.00	23.33	Average	

備註：“@”為主波，在此章節是不予以判定。

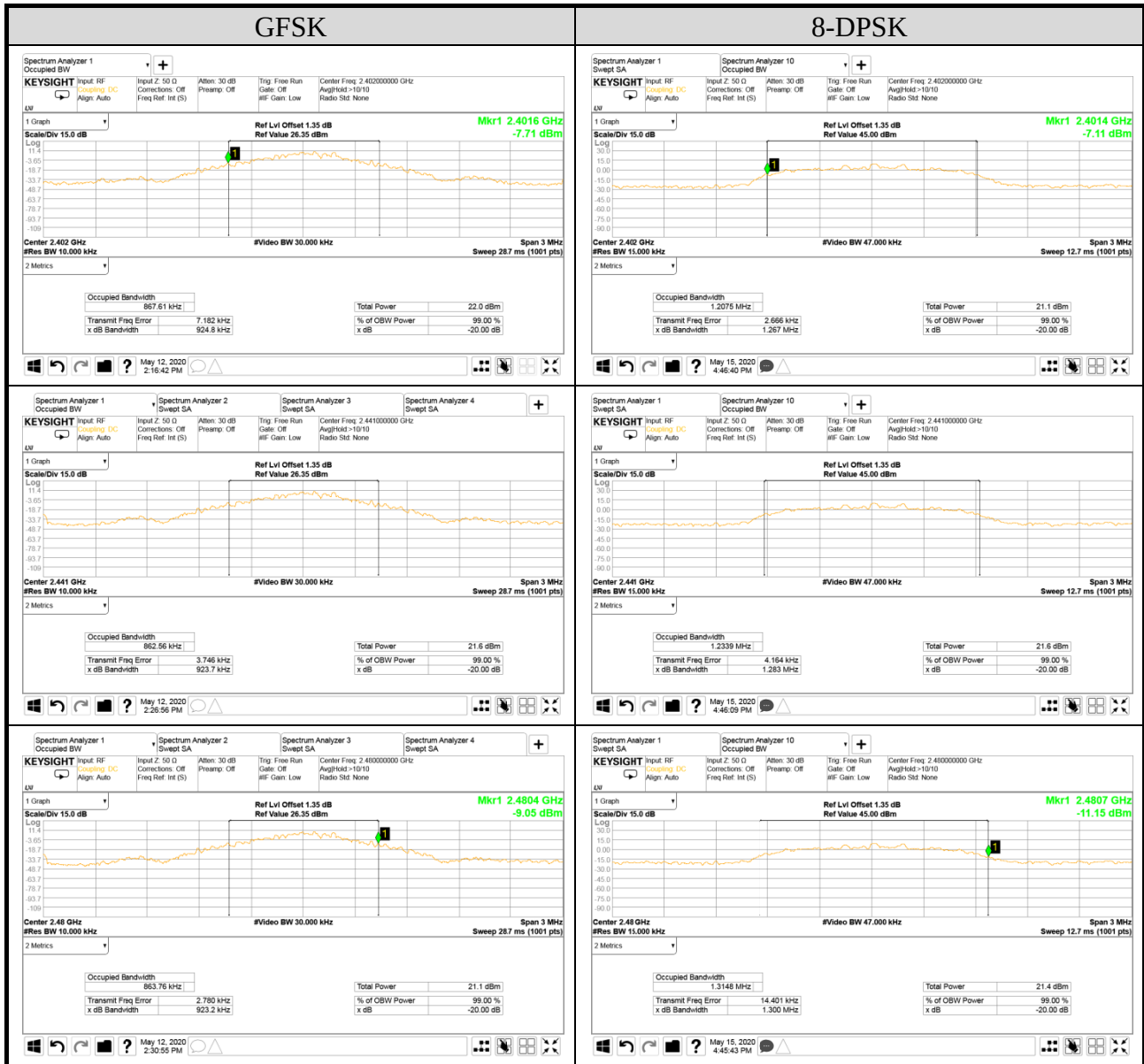
2. 20dB 頻寬之量測

測試日期	2020/05/12	環境溫/濕度	24°C/53%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		

2.1. 20dB 頻寬

模式	測試頻率 (MHz)	20dB 頻寬 (MHz)	頻道間隔參考限制值 2/3 (20dB 頻寬) (MHz)
GFSK	2402	0.9248	0.617
	2441	0.9237	0.616
	2480	0.9232	0.615
8-DPSK	2402	1.267	0.845
	2441	1.283	0.855
	2480	1.300	0.867

2.2. 20dB 頻寬之量測圖



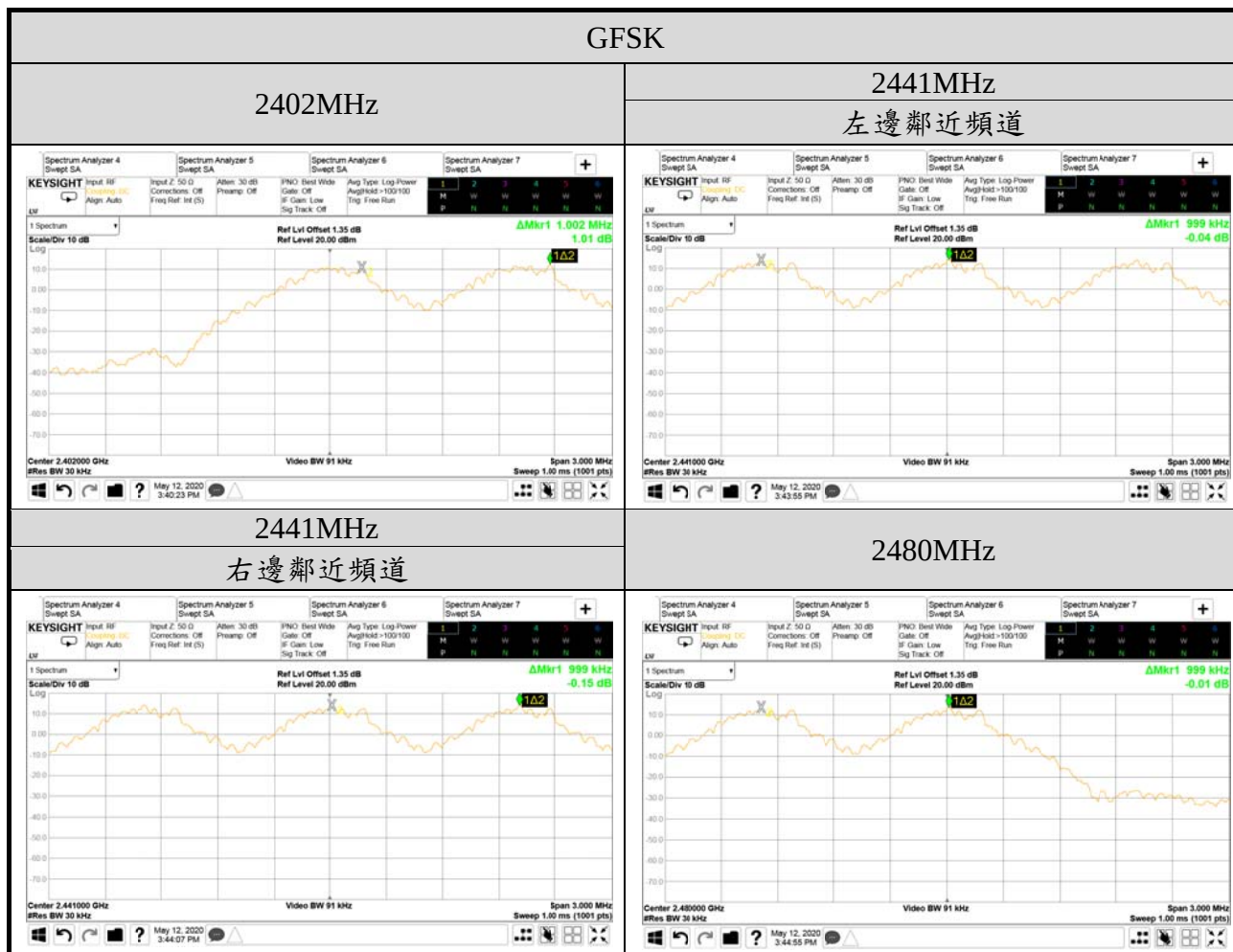
3. 載波頻率間隔之量測

測試日期	2020/05/12	環境溫/濕度	24°C/53%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		

3.1. 載波頻率間隔

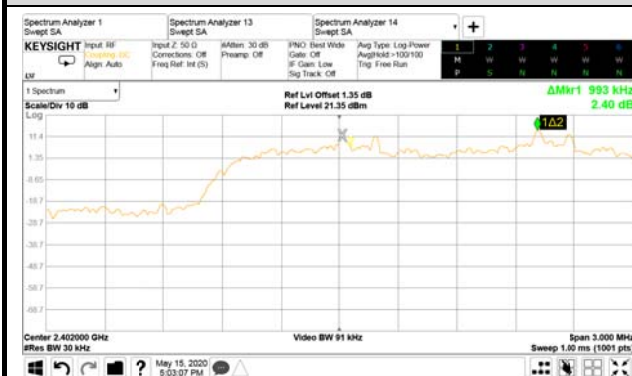
模式 (Mode)	測試頻率 (MHz)	頻道間隔(MHz)	頻道間隔參考限制值 2/3 (20dB 頻寬) (MHz)
GFSK	2402	1.002	> 0.615
	2441 (左邊鄰近頻道)	0.999	
	2441 (右邊鄰近頻道)	0.999	
	2480	0.999	
8-DPSK	2402	0.993	> 0.845
	2441 (左邊鄰近頻道)	1.002	
	2441 (右邊鄰近頻道)	1.002	
	2480	0.999	

3.2. 載波頻率間隔之量測圖



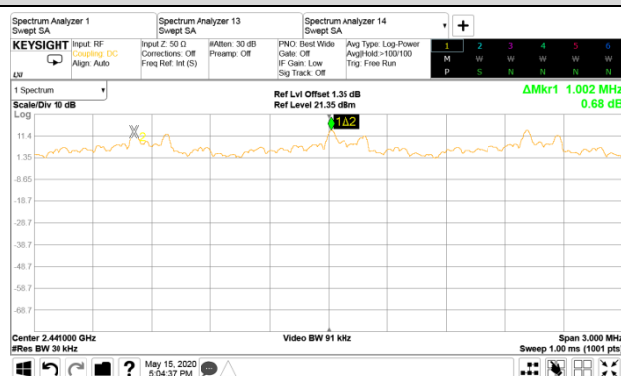
8-DPSK

2402MHz



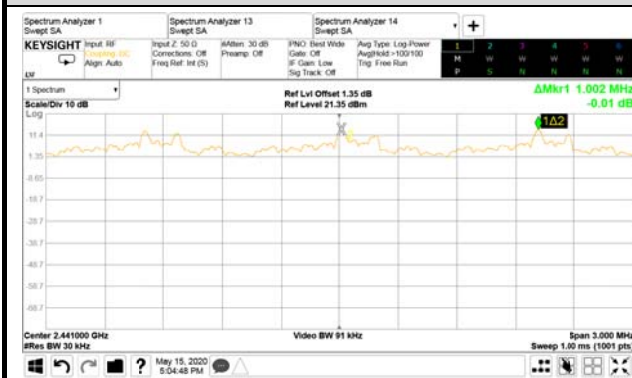
2441MHz

左邊鄰近頻道



2441MHz

右邊鄰近頻道

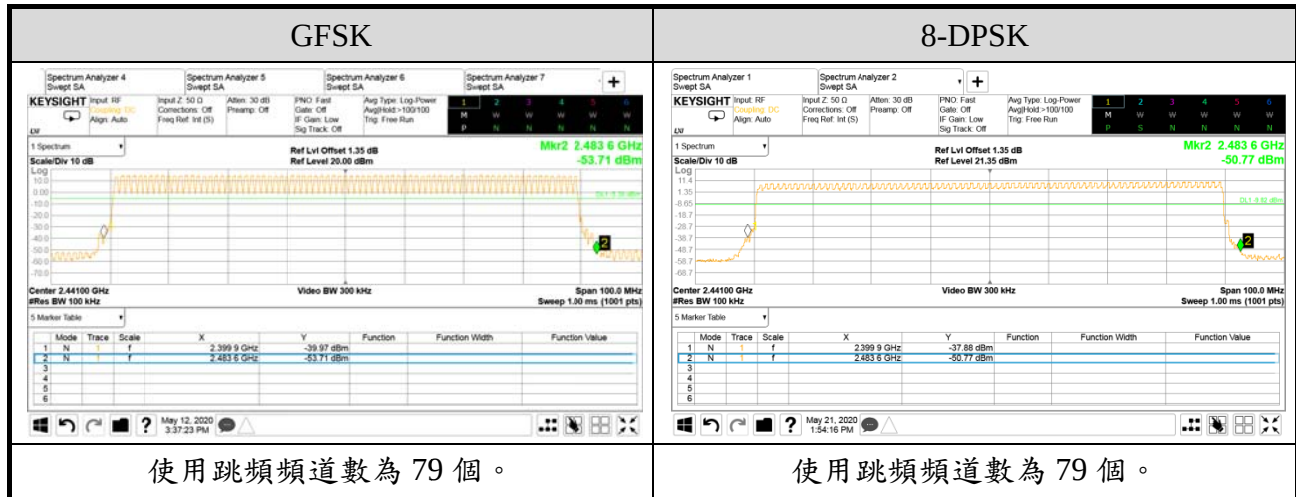


2480MHz



4. 跳頻頻率數目之量測

測試日期	2020/05/12 ~ 21	環境溫/濕度	24°C/53~26%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		



5. 佔用時間(停留時間)之量測

測試日期	2020/05/12 ~ 15	環境溫/濕度	24~25°C/48~53%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		

5.1. 佔用時間(停留時間)

模式	測試頻率 (MHz)	封包	每秒出現 頻道數	佔用時間 (ms)	佔用時間加總 (ms)	限制值 (ms)
GFSK	2402	DH1	10	0.390	123.240	<400
		DH3	5	1.650	260.700	<400
		DH5	3	2.900	274.920	<400

週期之計算: $79 \text{ 頻道數} * 0.4 \text{ 秒} = 31.6 \text{ 秒}$

封包模式: DH1

以每1秒出現 10 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$10 \text{ 頻道數} * 31.6 \text{ 秒} * 0.390 \text{ ms} = 123.240 \text{ ms} (<400\text{ms})$$

封包模式: DH3

以每1秒出現 5 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

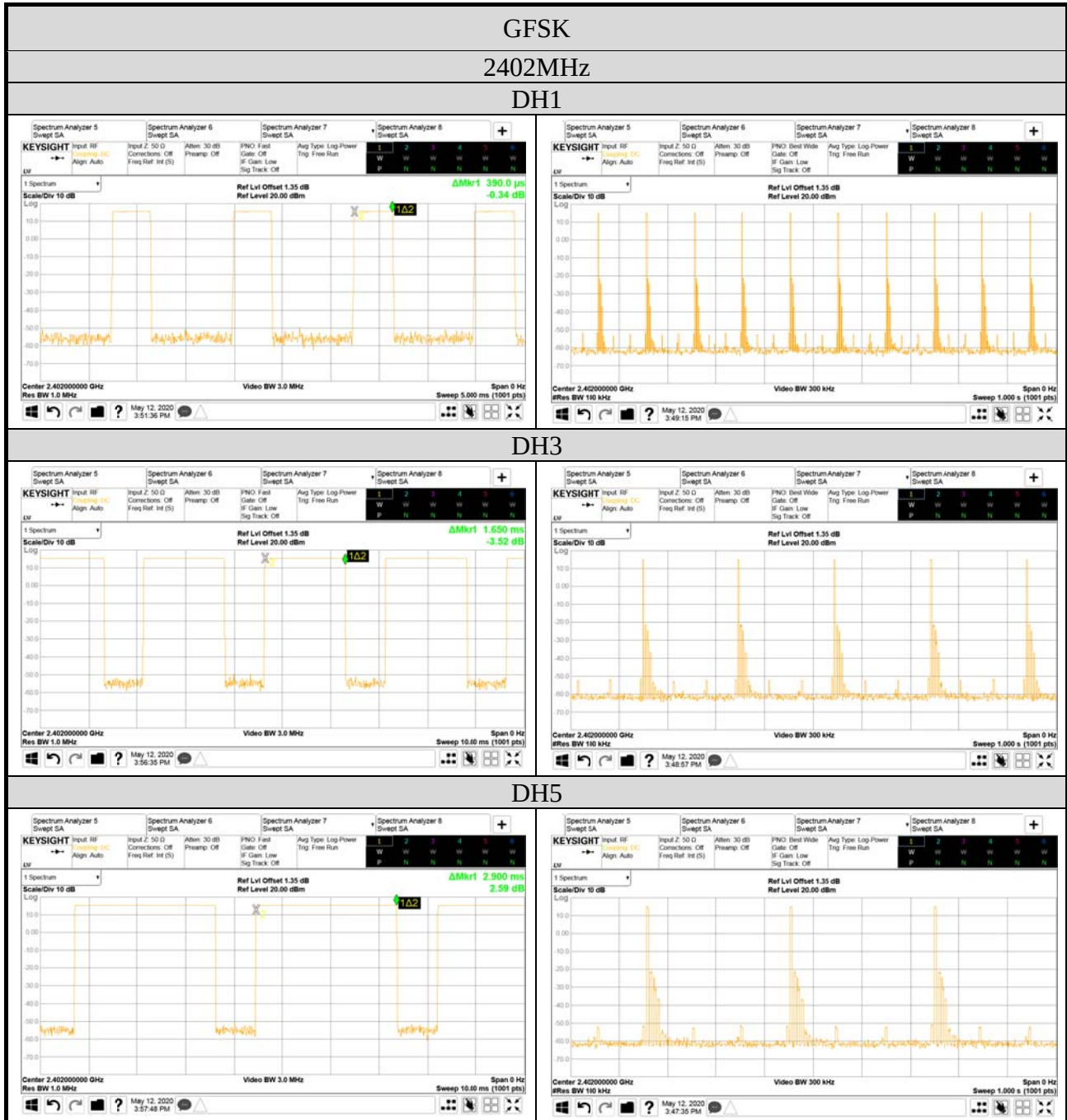
$$5 \text{ 頻道數} * 31.6 \text{ 秒} * 1.650 \text{ ms} = 260.700 \text{ ms} (<400\text{ms})$$

封包模式: DH5

以每1秒出現 3 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$3 \text{ 頻道數} * 31.6 \text{ 秒} * 2.900 \text{ ms} = 274.920 \text{ ms} (<400\text{ms})$$

● 佔用時間(停留時間)之量測圖



模式	測試頻率 (MHz)	封包	每秒出現 頻道數	佔用時間 (ms)	佔用時間加總 (ms)	限制值 (ms)
GFSK	2441	DH1	10	0.390	123.240	<400
		DH3	5	1.650	260.700	<400
		DH5	3	2.900	274.920	<400

週期之計算: $79 \text{ 頻道數} * 0.4 \text{ 秒} = 31.6 \text{ 秒}$

封包模式: DH1

以每1秒出現 10 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$10 \text{ 頻道數} * 31.6 \text{ 秒} * 0.390 \text{ ms} = 123.240 \text{ ms} (<400\text{ms})$$

封包模式: DH3

以每1秒出現 5 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

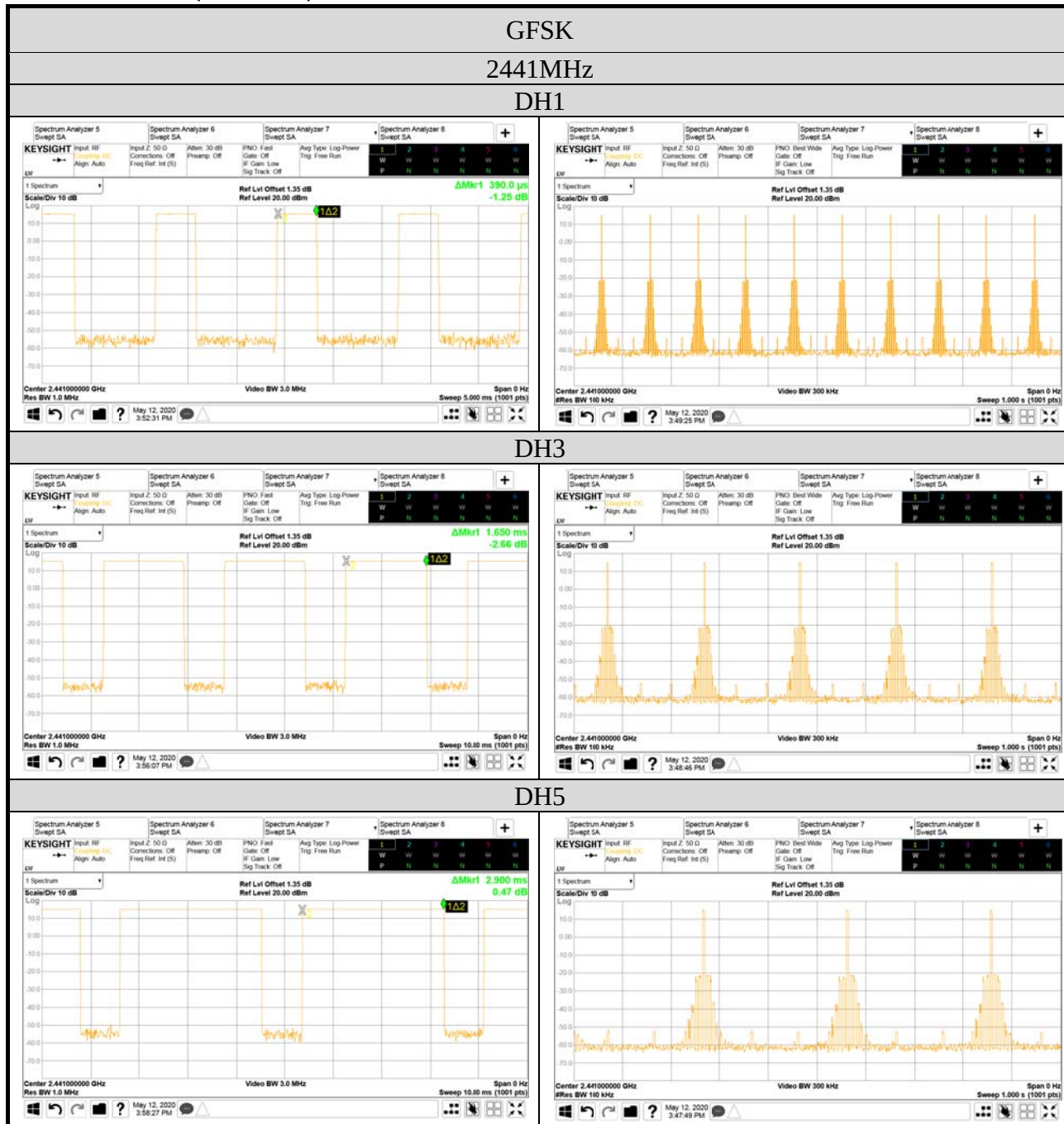
$$5 \text{ 頻道數} * 31.6 \text{ 秒} * 1.650 \text{ ms} = 260.700 \text{ ms} (<400\text{ms})$$

封包模式: DH5

以每1秒出現 3 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$3 \text{ 頻道數} * 31.6 \text{ 秒} * 2.900 \text{ ms} = 274.920 \text{ ms} (<400\text{ms})$$

● 佔用時間(停留時間)之量測圖



模式	測試頻率 (MHz)	封包	每秒出現 頻道數	佔用時間 (ms)	佔用時間加總 (ms)	限制值 (ms)
GFSK	2480	DH1	10	0.390	123.240	<400
		DH3	5	1.650	260.700	<400
		DH5	3	2.900	274.920	<400

週期之計算: $79 \text{ 頻道數} * 0.4 \text{ 秒} = 31.6 \text{ 秒}$

封包模式: DH1

以每1秒出現 10 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$10 \text{ 頻道數} * 31.6 \text{ 秒} * 0.390 \text{ ms} = 123.240 \text{ ms} (<400\text{ms})$$

封包模式: DH3

以每1秒出現 5 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

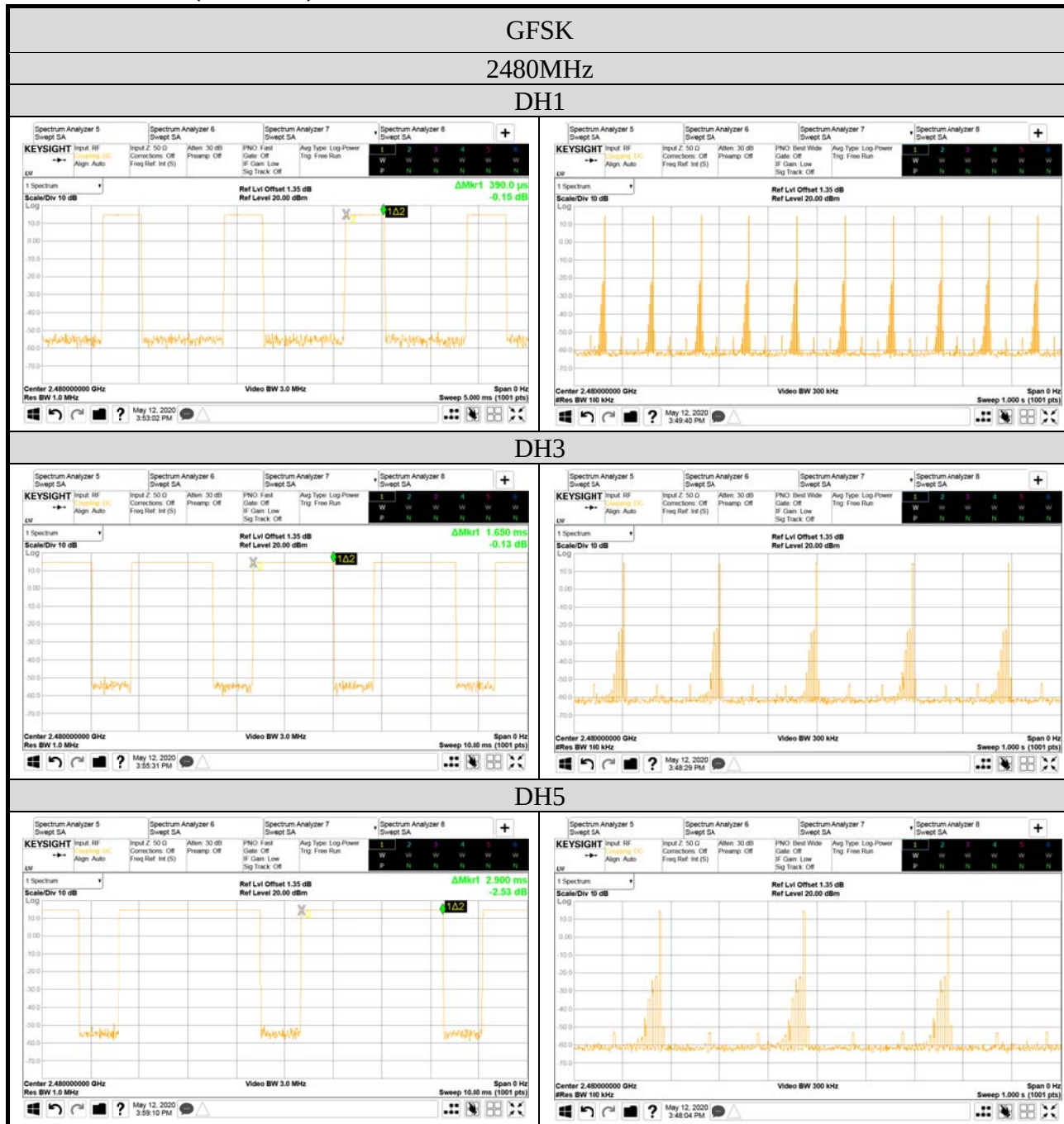
$$5 \text{ 頻道數} * 31.6 \text{ 秒} * 1.650 \text{ ms} = 260.700 \text{ ms} (<400\text{ms})$$

封包模式: DH5

以每1秒出現 3 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$3 \text{ 頻道數} * 31.6 \text{ 秒} * 2.900 \text{ ms} = 274.920 \text{ ms} (<400\text{ms})$$

● 佔用時間(停留時間)之量測圖



模式	測試頻率 (MHz)	封包	每秒出現 頻道數	佔用時間 (ms)	佔用時間加總 (ms)	限制值 (ms)
8-DPSK	2402	3-DH1	10	0.410	129.560	<400
		3-DH3	5	1.650	260.700	<400
		3-DH5	3	2.910	275.868	<400

週期之計算: $79 \text{ 頻道數} * 0.4 \text{ 秒} = 31.6 \text{ 秒}$

封包模式: 3-DH1

以每1秒出現 10 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$10 \text{ 頻道數} * 31.6 \text{ 秒} * 0.410 \text{ ms} = 129.560 \text{ ms} (<400\text{ms})$$

封包模式: 3-DH3

以每1秒出現 5 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$5 \text{ 頻道數} * 31.6 \text{ 秒} * 1.650 \text{ ms} = 260.700 \text{ ms} (<400\text{ms})$$

封包模式: 3-DH5

以每1秒出現 3 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

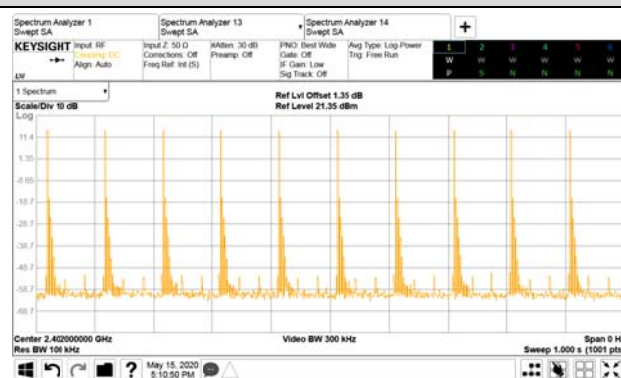
$$3 \text{ 頻道數} * 31.6 \text{ 秒} * 2.910 \text{ ms} = 275.868 \text{ ms} (<400\text{ms})$$

● 佔用時間(停留時間)之量測圖

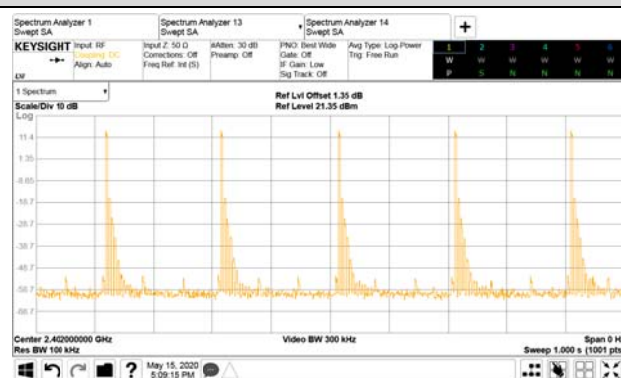
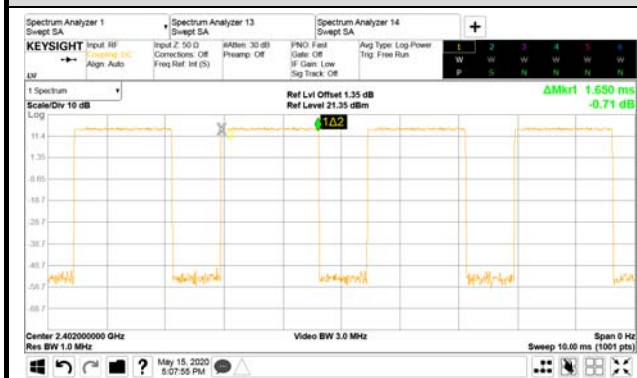
8-DPSK

2402MHz

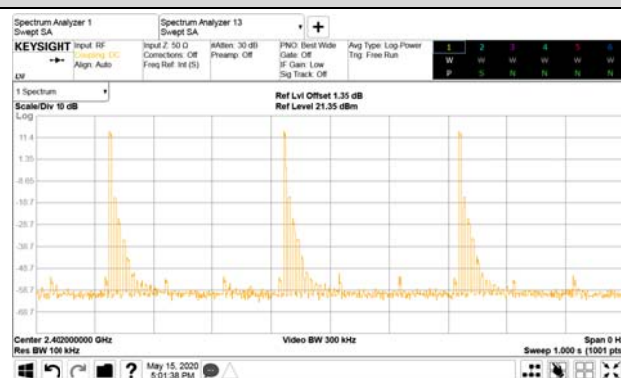
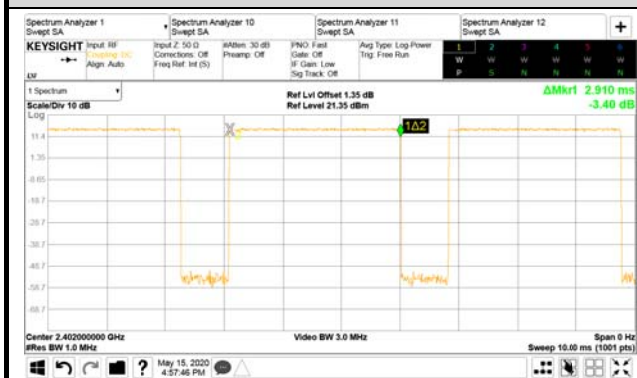
3-DH1



3-DH3



3-DH5



模式	測試頻率 (MHz)	封包	每秒出現 頻道數	佔用時間 (ms)	佔用時間加總 (ms)	限制值 (ms)
8-DPSK	2441	3-DH1	10	0.410	129.560	<400
		3-DH3	5	1.650	260.700	<400
		3-DH5	3	2.910	275.868	<400

週期之計算: $79 \text{ 頻道數} * 0.4 \text{ 秒} = 31.6 \text{ 秒}$

封包模式: 3-DH1

以每1秒出現 10 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$10 \text{ 頻道數} * 31.6 \text{ 秒} * 0.410 \text{ ms} = 129.560 \text{ ms} (<400\text{ms})$$

封包模式: 3-DH3

以每1秒出現 5 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$5 \text{ 頻道數} * 31.6 \text{ 秒} * 1.650 \text{ ms} = 260.700 \text{ ms} (<400\text{ms})$$

封包模式: 3-DH5

以每1秒出現 3 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

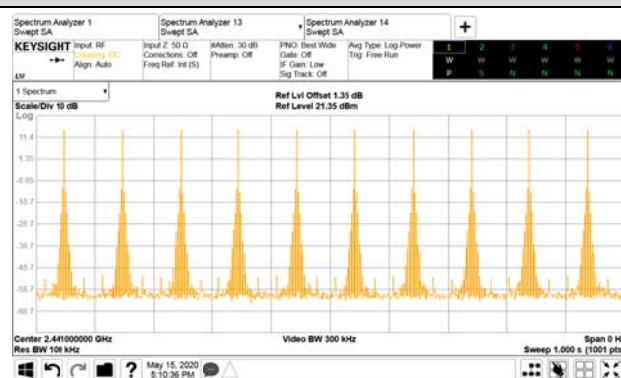
$$3 \text{ 頻道數} * 31.6 \text{ 秒} * 2.910 \text{ ms} = 275.868 \text{ ms} (<400\text{ms})$$

● 佔用時間(停留時間)之量測圖

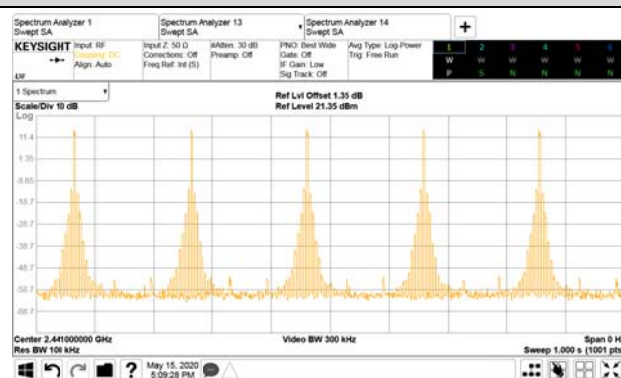
8-DPSK

2441MHz

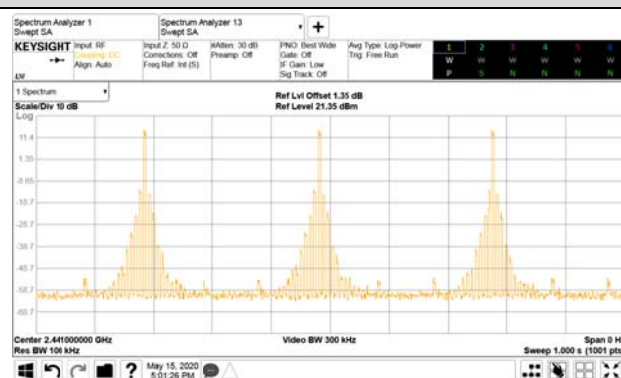
3-DH1



3-DH3



3-DH5



模式	測試頻率 (MHz)	封包	每秒出現 頻道數	佔用時間 (ms)	佔用時間加總 (ms)	限制值 (ms)
8-DPSK	2480	3-DH1	10	0.400	126.400	<400
		3-DH3	5	1.650	260.700	<400
		3-DH5	3	2.910	275.868	<400

週期之計算: $79 \text{ 頻道數} * 0.4 \text{ 秒} = 31.6 \text{ 秒}$

封包模式: 3-DH1

以每1秒出現 10 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$10 \text{ 頻道數} * 31.6 \text{ 秒} * 0.400 \text{ ms} = 126.400 \text{ ms} (<400\text{ms})$$

封包模式: 3-DH3

以每1秒出現 5 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

$$5 \text{ 頻道數} * 31.6 \text{ 秒} * 1.650 \text{ ms} = 260.700 \text{ ms} (<400\text{ms})$$

封包模式: 3-DH5

以每1秒出現 3 個頻道數為例, 每 31.6 秒內之最長佔用時間為:

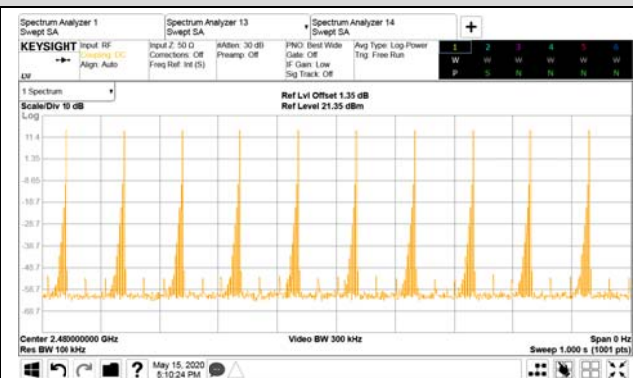
$$3 \text{ 頻道數} * 31.6 \text{ 秒} * 2.910 \text{ ms} = 275.868 \text{ ms} (<400\text{ms})$$

● 佔用時間(停留時間)之量測圖

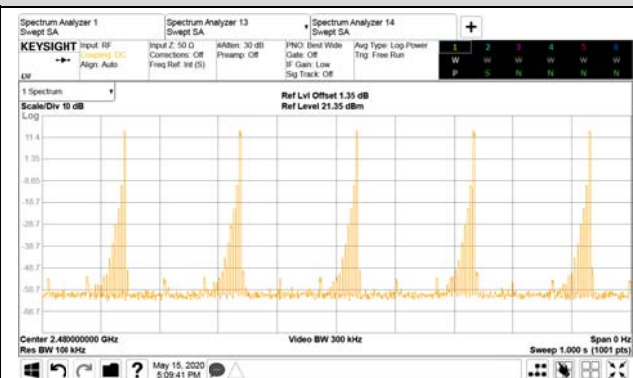
8-DPSK

2480MHz

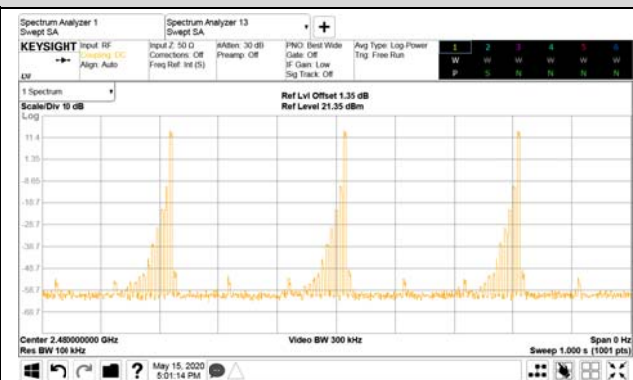
3-DH1



3-DH3



3-DH5



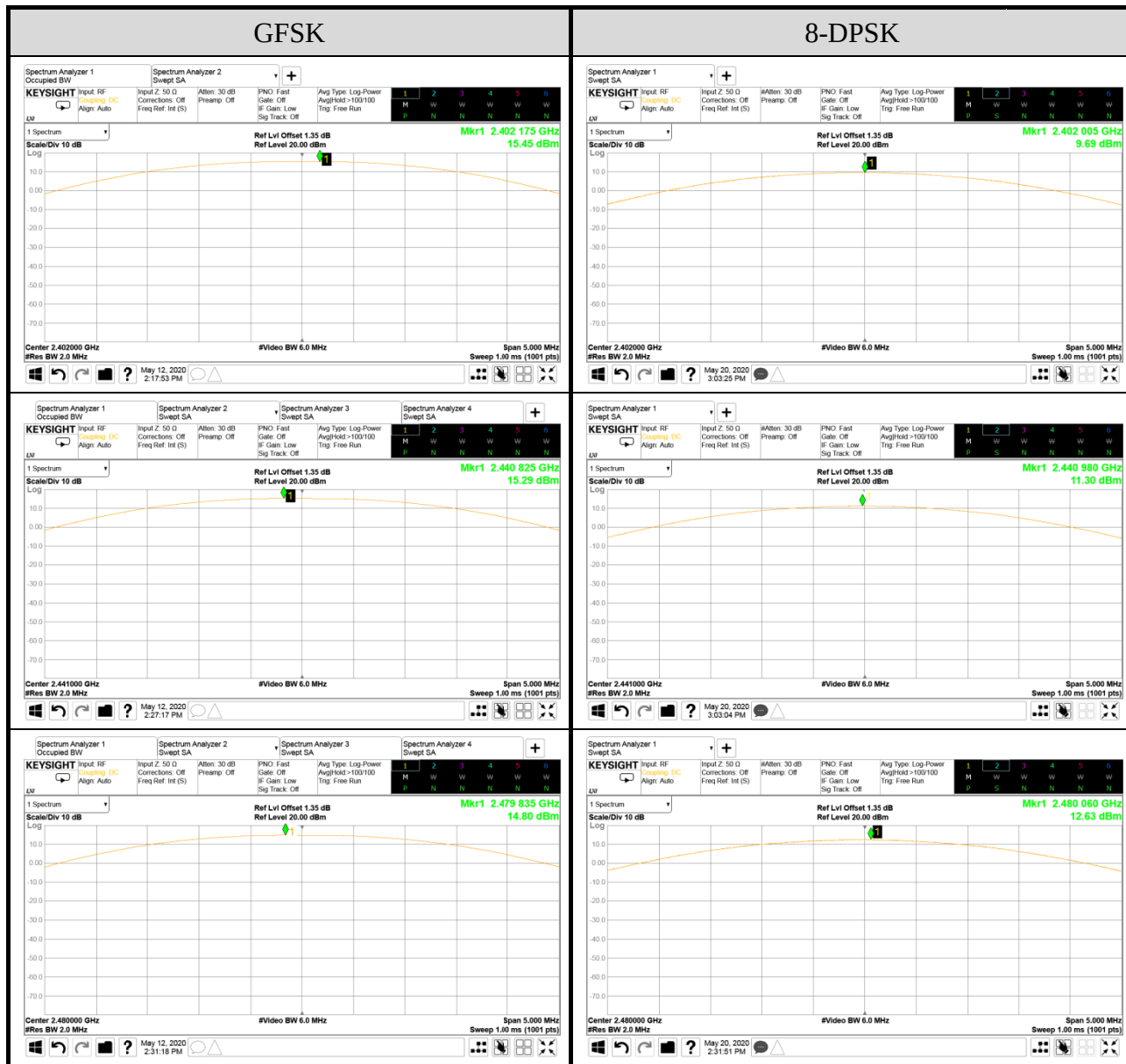
6. 峰值輸出功率之量測

測試日期	2020/05/12 ~ 20	環境溫/濕度	22~24°C/53~55%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		

6.1. 峰值輸出功率

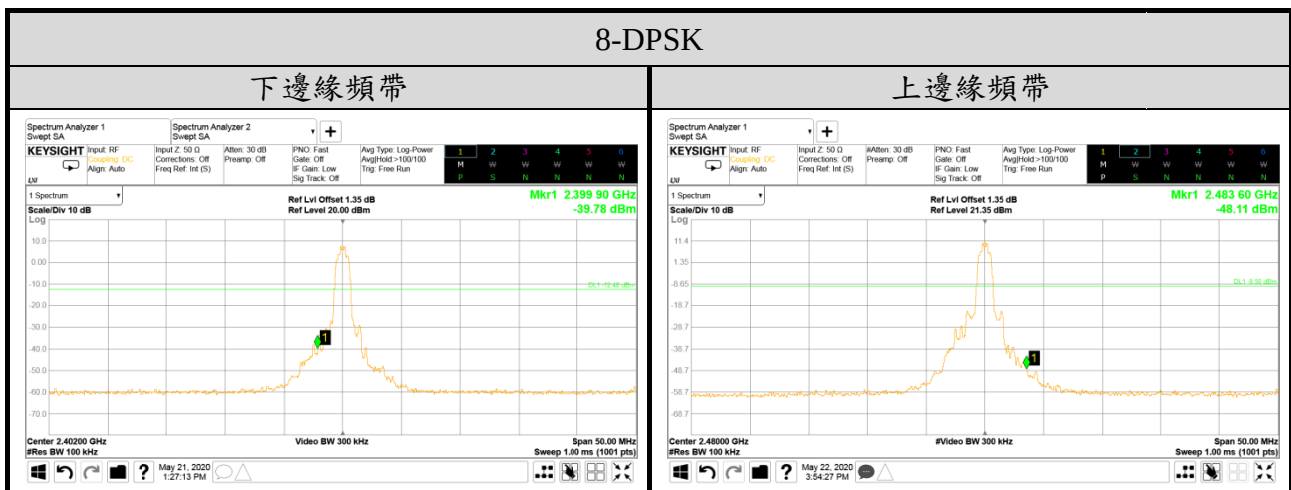
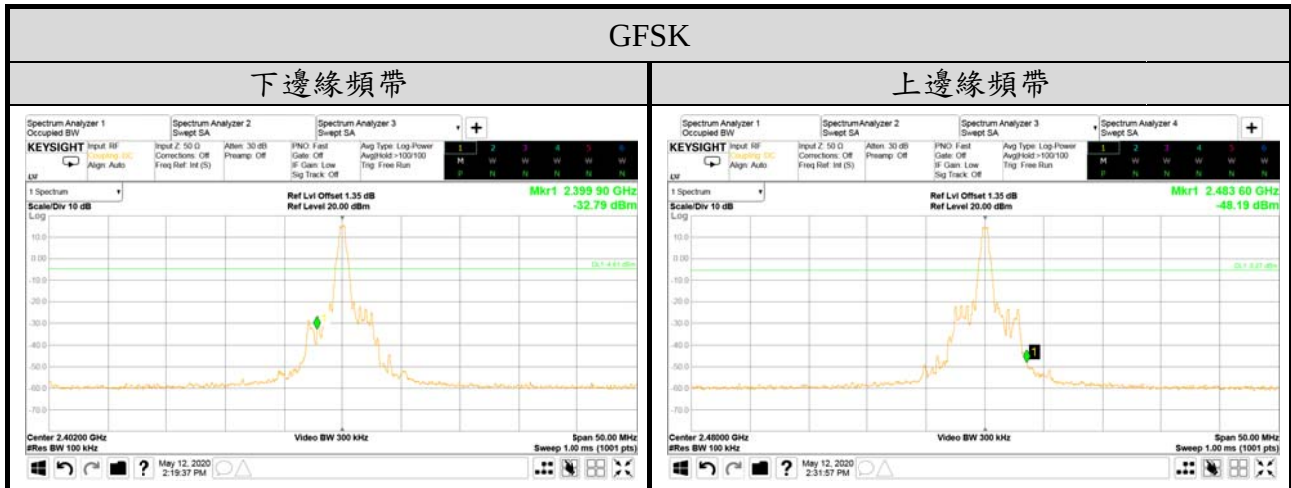
模式	測試頻率 (MHz)	峰值輸出功率(dBm)
GFSK	2402	15.45
	2441	15.29
	2480	14.80
8-DPSK	2402	9.69
	2441	11.30
	2480	12.63

6.2. 峰值輸出功率之量測圖



7. 頻帶邊緣之 RF 傳導發射之量測

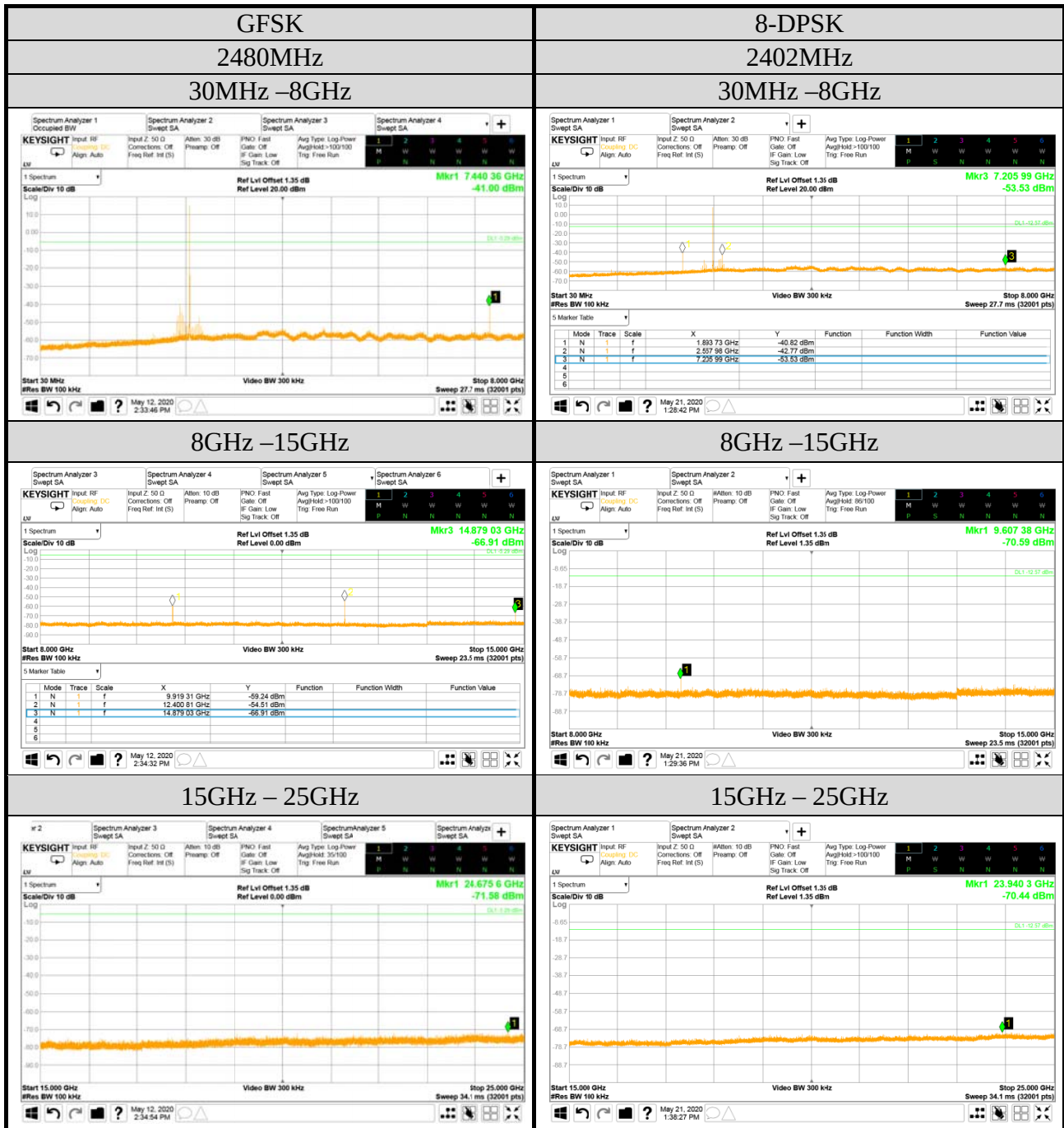
測試日期	2020/05/12 ~ 22	環境溫/濕度	23~24°C/53~56%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		



8. 混附發射之 RF 傳導發射之量測

測試日期	2020/05/12 ~ 21	環境溫/濕度	24°C/53~56%
電纜損失	1.35dB	測試人員	Brian Hsieh
測試電壓	DC 5V(經 USB 電源供電)		

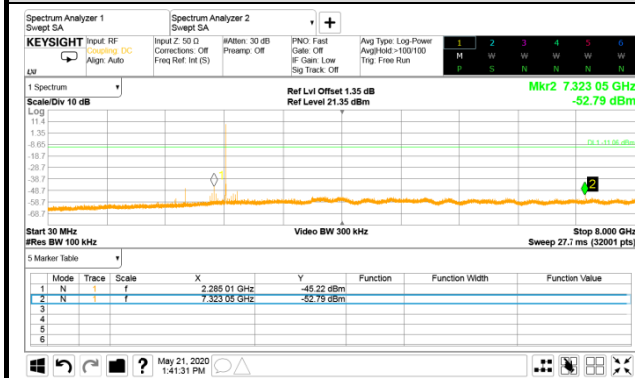




8-DPSK

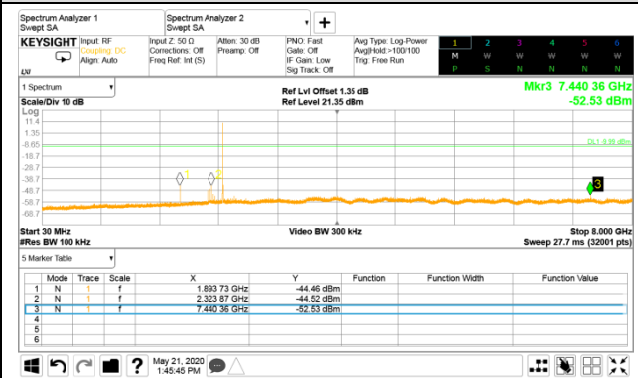
2441MHz

30MHz -8GHz

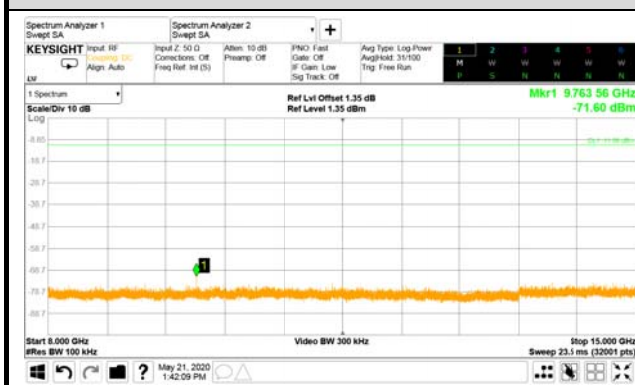


2480MHz

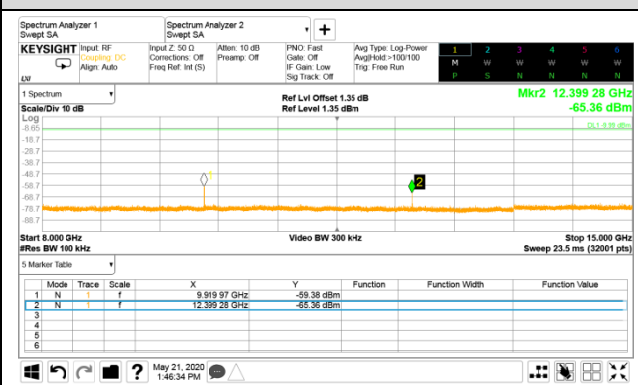
30MHz -8GHz



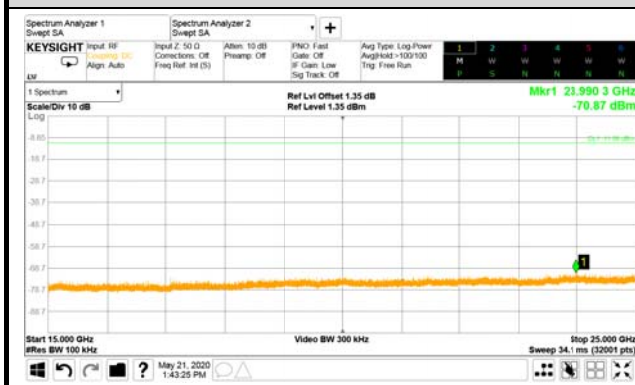
8GHz -15GHz



8GHz -15GHz



15GHz -25GHz



15GHz -25GHz

