

低功率射頻電機試驗報告

申請者	CRESTRON ELECTRONICS, INC.
申請地址	15 VOLVO DRIVE, ROCKLEIGH, NJ 07647, USA
製造廠商	CRESTRON ELECTRONICS, INC.
產品名稱	WIRELESS PRESENTATION SYSTEM
主 型 號	M202018001
系列型號	N/A
該產品樣品試驗 依據之試驗標準	低功率射頻電機技術規範 LP0002 109年版
試驗結果	合格

試驗室名稱:倍科檢驗科技有限公司(新北實驗室)

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報告發行紀錄:

版次	案號	報告號碼	發行日期	說明	修訂人員
0.0	RXZ210924001	RXZ210924001RF03	2021.10.28	報告發行	陳夔綦

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1. 一般描述

產品名稱	WIRELESS PRESENTATION SYSTEM
主 型 號	M202018001
系列型號	N/A
廠 牌	CRESTRON
申 請 者	CRESTRON ELECTRONICS, INC.
地 址	15 VOLVO DRIVE, ROCKLEIGH, NJ 07647, USA
製造廠商	CRESTRON ELECTRONICS, INC.
製造廠址	15 VOLVO DRIVE, ROCKLEIGH, NJ 07647, USA
使用頻率	2402~2480MHz
使用頻道數	79 Channels
傳輸速率	BT(GFSK) Mode: 1 Mbps EDR($\pi/4$ -DQPSK) Mode: 2Mbps EDR(8DPSK) Mode: 3 Mbps
調變方式	BT Mode: GFSK EDR Mode: $\pi/4$ -DQPSK, 8DPSK
EUT供電方式	24V from DC adapter, 48V from POE
備註	無。

2. 測試規範

2.1 符合性聲明

本測試報告之所有項目皆依據國家通訊傳播委員會 LP0002 低功率射頻電機技術規範適用規範及條文

2.2 適用規範及條文

低功率射頻電機技術規範4.10節

項次	測試項目	低功率射頻電機技術規範	測試結果
1.	電源線傳導干擾	3.3節	符合規範
2.	場強輻射	3.5節 3.6節	符合規範
3.	天線增益之要求	4.10.1.3	符合規範
4.	發射頻寬	4.10.1.6(1)	符合規範
5.	輸出峰值功率	4.10.1.2	符合規範
6.	開放頻帶邊緣之發射	4.10.1.5	符合規範
7.	載波頻率間隔	4.10.1.6(1)	符合規範
8.	載波頻率之佔用週期	4.10.1.6(1)	符合規範
9.	跳頻頻道數	4.10.1.6(1)	符合規範
10.	電波曝露量	6.20.2.2節	符合規範

報 告 簽 署 人 (徐士珩) : 徐士珩

測 試 者 (李宥陞) : 李宥陞

報 告 製 作 員 (陳婁蓁) : 陳婁蓁

2.3 限制使用之頻帶

根據低功率射頻電機技術規範，任何低功率射頻電機之主波皆不得使用下表所列各頻帶內之頻率；低功率射頻電機落於下表所列頻帶內之混附發射，其電場強度必須符合限制規定。

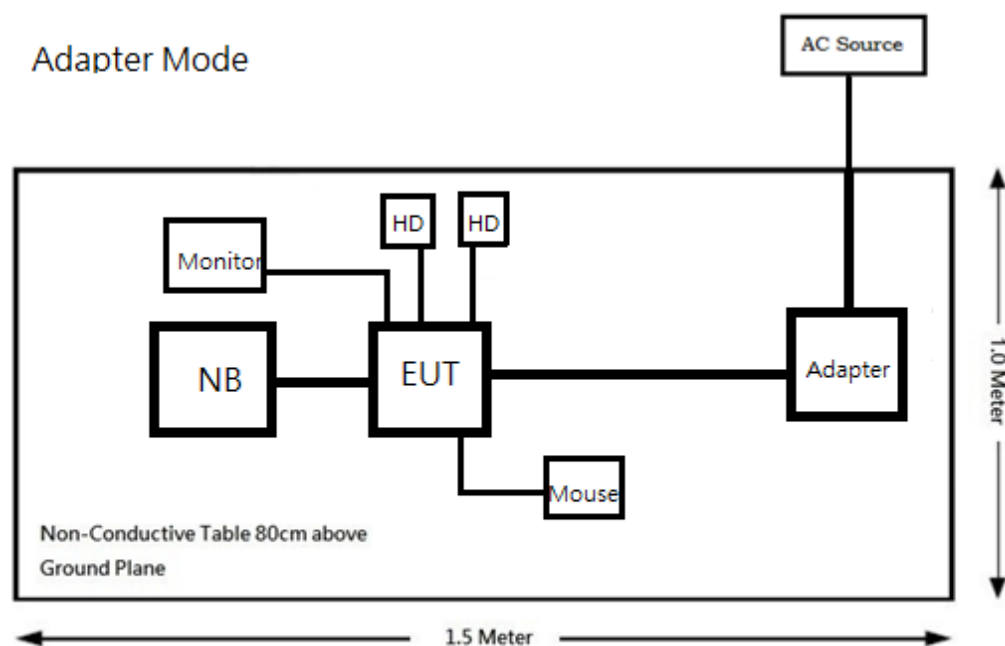
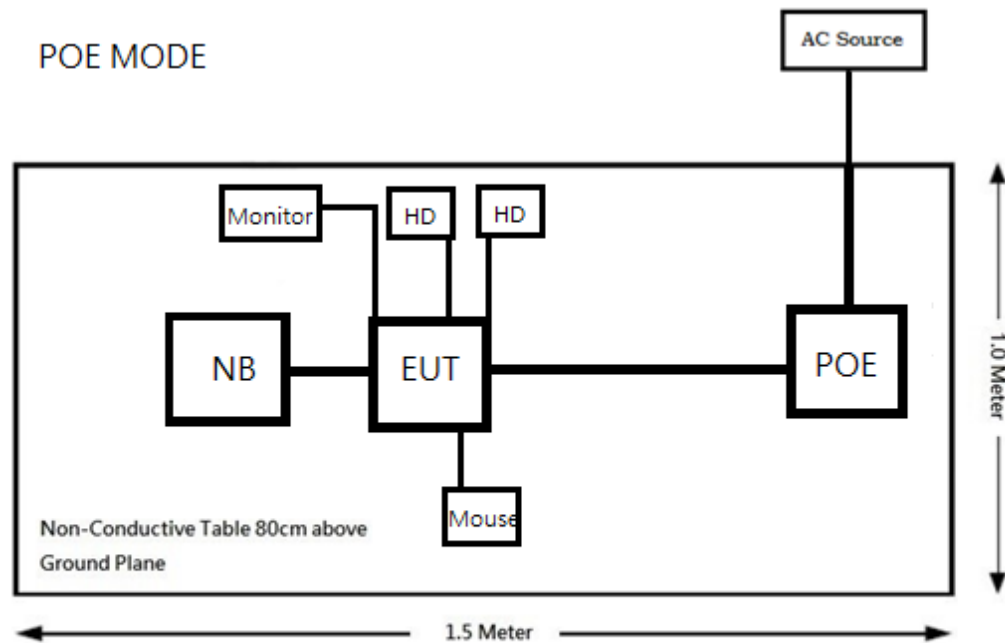
頻率 (MHz)	頻率 (MHz)	頻率 (MHz)
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
6.200 - 6.300	758.00 - 803.00	7250.0 - 7750.0
8.230 - 8.400	825.00 - 915.00	8025.0 - 8500.0
12.265 - 12.600	930.00 - 1240.0	9000.0 - 9200.0
13.340 - 13.430	1300.0 - 1427.0	9300.0 - 9500.0
14.965 - 15.020	1435.0 - 1626.5	10600 - 12700
16.700 - 16.755	1660.0 - 1785.0	13250 - 13400
19.965 - 20.020	1805.0 - 1880.0	14470 - 14500
25.500 - 25.700	1885.0 - 1900.0	15350 - 16200
37.475 - 38.275	1905.0 - 1985.0	17700 - 21400
73.500 - 75.400	2010.0 - 2025.0	22010 - 23120
108.00 - 138.00	2110.0 - 2170.0	23600 - 24000
149.90 - 150.05	2200.0 - 2300.0	31200 - 31800
156.70 - 156.90	2310.0 - 2390.0	36430 - 36500
162.01 - 167.17	2483.5 - 2900.0	38600 以上

3. 受測裝置之系統說明

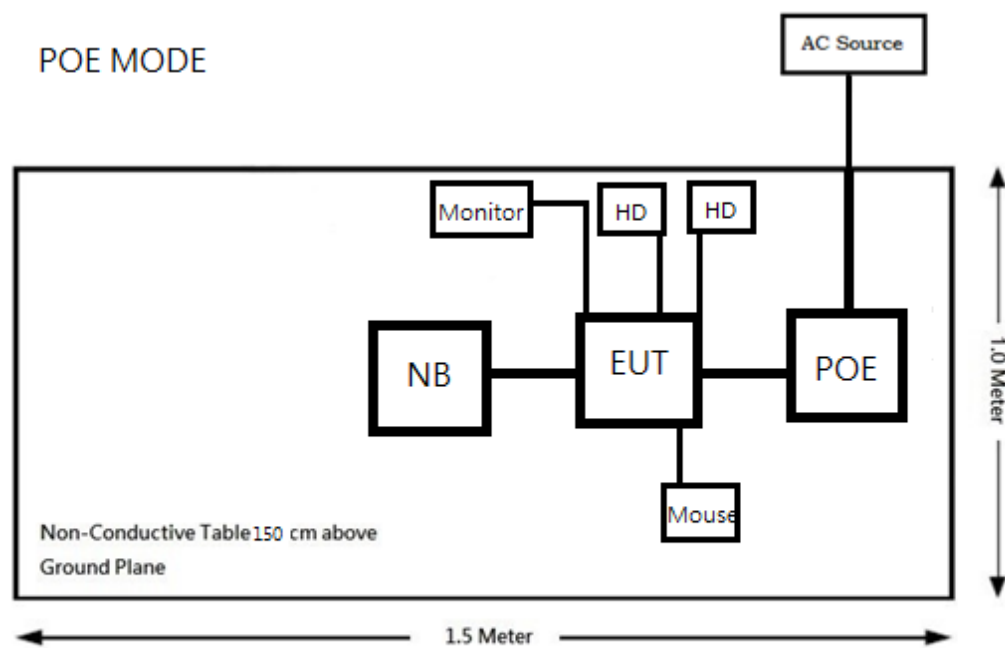
3.1 待測物與測試設備系統圖

Radiation:

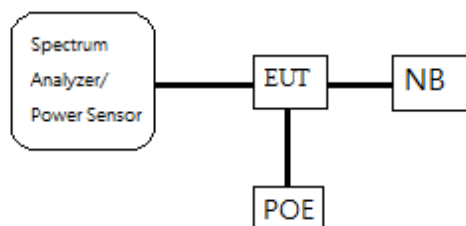
Below 1GHz



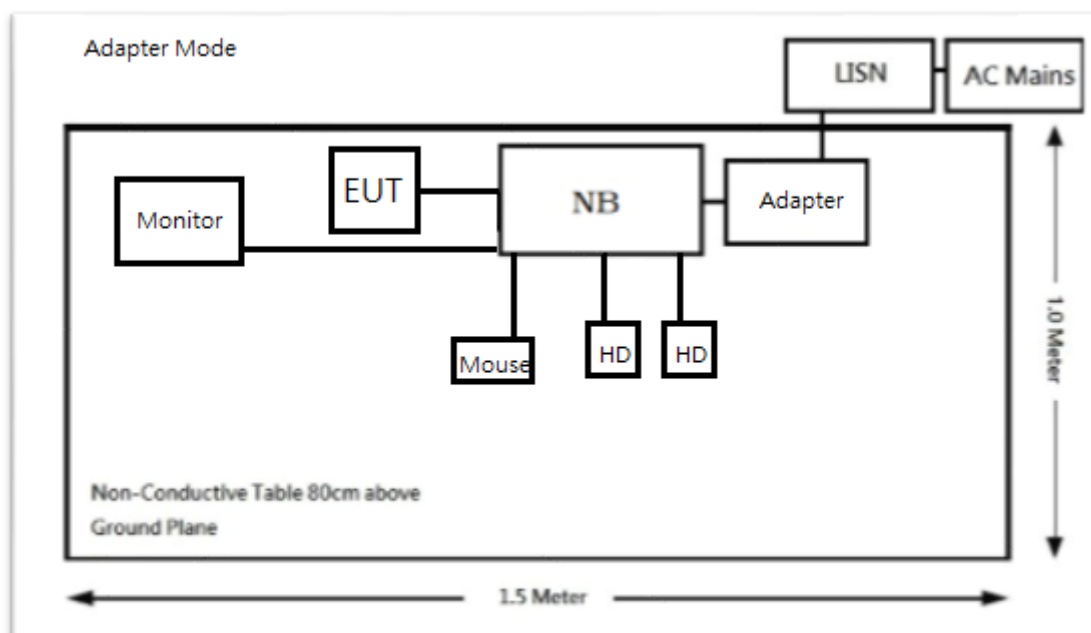
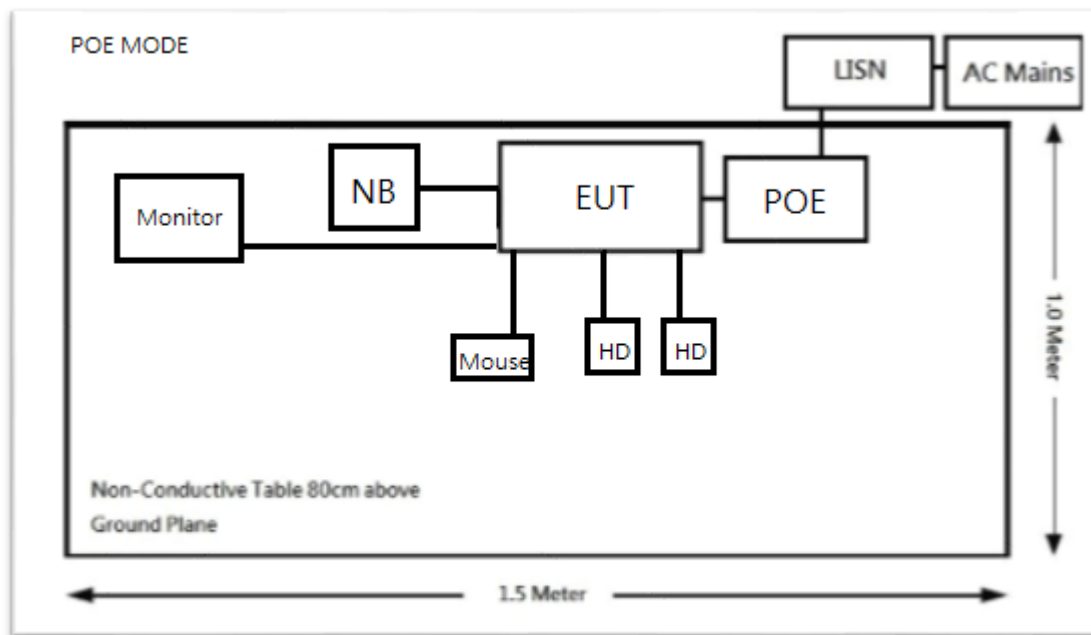
Above 1GHz:



Conducted:



Conduction:



3.2 測試模式

Pre-Scan

Mode 1: Full System (model: M202018001) +POE mode for all test item.

Mode 2: Full System (Adapter mode) for AC Line Conducted Emissions & Radiation below 1G.

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available.

Final Test

Mode 1: The worst are BT (GFSK) mode and EDR (8DPSK) mode for test item.

The worst case and test report is based on mode 1 to make it.

The system was configured for testing in engineering mode, which was provided by manufacturer.

3.3 測試軟件

The test software was used "Telnet v1.0"

Test Frequency		2402MHz	2441MHz	2480MHz
Power Level Setting	GFSK	Default	Default	Default
	$\pi/4$ -DQPSK	Default	Default	Default
	8DPSK	Default	Default	Default

3.4 隨貨附賣週邊設備名稱描述

序號	設備名稱	廠牌	型號
1	N/A	N/A	N/A

3.5 未隨貨附賣，輔助測試週邊設備名稱描述(實驗室或廠商提供)

序號	設備名稱	廠牌	型號
1	POE	SHENZHEN GOSPELL DIGITAL TECHNOLOGY	G0720-480-050
2	LAN Cable	DEHAO	3.6m
3	LAN Cable	DEHAO	3.6m
4	USB Cable	SURE-FIRE	1.8m
5	NB	DELL	E6410
6	Monitor	DELL	SE2216Hf
7	Adapter	ASTEC	SA45-3129
8	HD	WD	NL-2132
9	HD	HP	1TB
10	MICRO SD Card	RIDATA	8GB
11	MOUSE	ASUS	MOBTUOA
12	HDMI Cable	POLYWELL	1.5m

3.6 測試描述

1.將 EUT 連接到 POE 在連接到筆電之 LAN Port

2.開啟 Telnet 192.168.0.160

3.依照對應的頻率與調製下指令

hcidmd 03 0c 00

hcidmd 51 fc 10 00 00 88 c0 ff ee 01 00 04 01 04 1b 00 09 00 00	2402 1DH1)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 26 04 01 04 1b 00 09 00 00	2440 1DH1)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 4E 04 01 04 1b 00 09 00 00	2480 1DH1)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 00 04 01 0B B7 00 09 00 00	2402 1DH3)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 26 04 01 0A 1b 00 09 00 00	2440 1DH3)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 4E 04 01 0B B7 00 09 00 00	2480 1DH3)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 00 04 01 0F 53 01 09 00 00	2402 1DH5)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 27 04 01 0F 53 01 09 00 00	2441 1DH5)
hcidmd 51 fc 10 00 00 88 c0 ff ee 01 4E 04 01 0F 53 01 09 00 00	2480 1DH5)

1DH 04 01 ,2DH 04 00, 3DH 04 08

HOPPING:

hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 01 04 1b 00 09 00 00	1DH1
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 01 0B B7 00 09 00 00	1DH3
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 01 0B 53 01 09 00 00	2DH1
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 00 04 36 00 09 00 00	2DH1
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 00 0A 6F 01 09 00 00	2DH3
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 00 0E A7 02 09 00 00	2DH5
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 00 08 53 00 09 00 00	3DH1
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 00 0B 28 02 09 00 00	3DH3
hcidmd 51 fc 10 00 00 88 c0 ff ee 00 00 04 00 0F FD 03 09 00 00	3DH5

3.7 占空比評估

Duty cycle = Tx on(ms)/(Tx on+off(ms))

Duty factor = 10*log(1/TXon)

	DH5	2-DH5	3-DH5
Duty cycle	0.77	0.77	0.77
Duty factor	1.14	1.14	1.14

4. 電源線傳導干擾之量測

4.1 適用標準

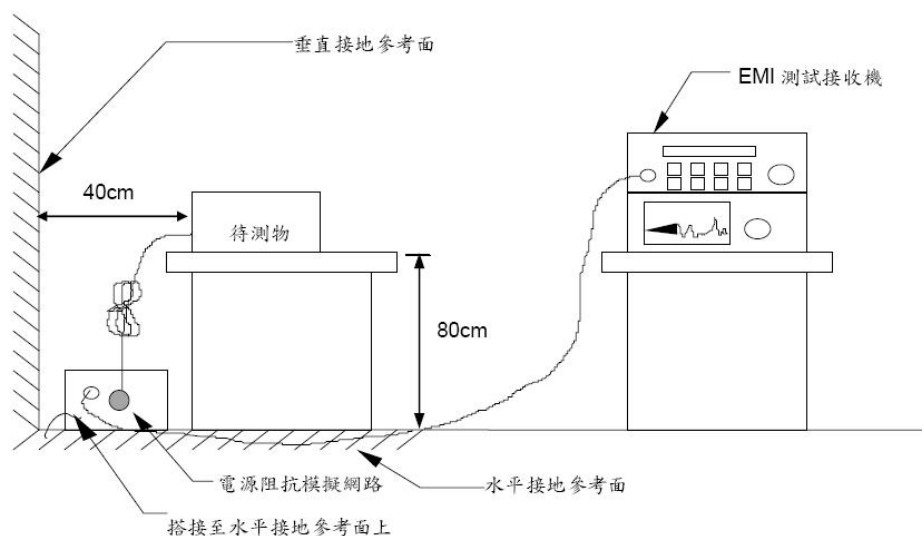
依據國家通訊傳播委員會低功率射頻電機技術規範之3.3節，電源傳導干擾之限制要求如下：

頻率 (MHz)	傳導限制值 (dBμV)	
	準峰值 (Quasi – peak)	平均值(Average)
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5	56	46
5 – 30	60	50

4.2 測試方法

將待測物置於0.8米高的非金屬桌面，使其在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

4.3 測試配置



4.4 干擾值之計算

電源傳導干擾電壓之計算公式如下

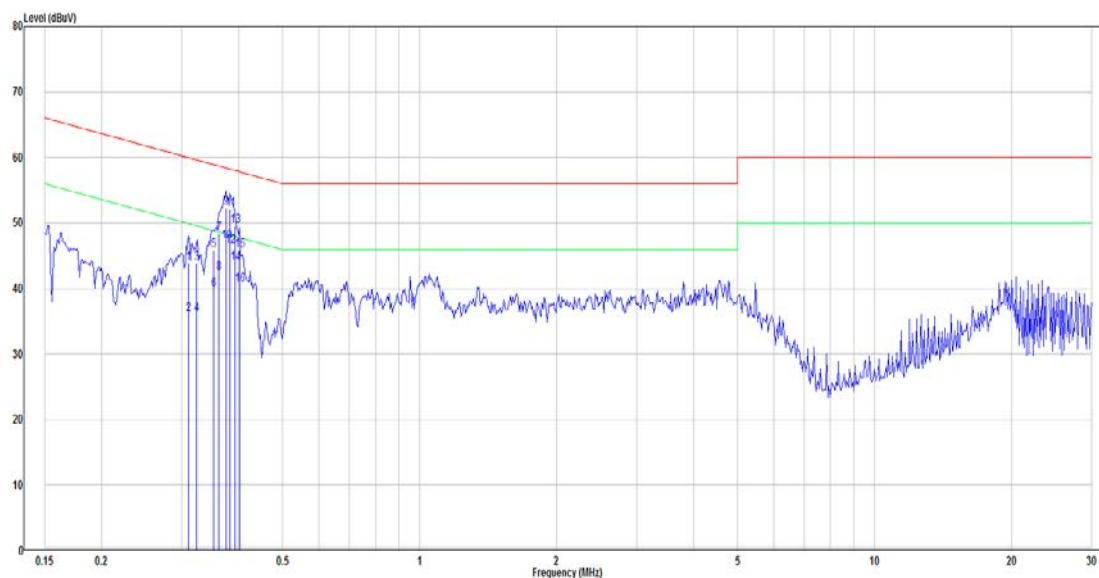
$$\text{干擾值} = \text{讀值} + \text{校正因子}$$

其中校正因子為：饋線損失 + 電源阻抗模擬網路損失

4.5 傳導干擾之量測結果

Job No.:	RXZ210924001	Phase.:	Line
Standard:	limit\RF\NCC LP0002-QP.csv	Power:	AC 110V/60Hz
Test item:	Conduction Test	Test By:	Jason
Temp.(°C)/Hum.(%RH):	26°C/44%		
Description:	BT(POE)		

2021-10-04 11:07:56



No.	Frequency (MHz)	Reading (dBμV)	Correct Factor(dB)	Result (dBμV)	Limit (dBμV)	Over limit (dB)	Remark
1	0.310	24.18	19.58	43.76	59.97	-16.21	QP
2	0.310	16.37	19.58	35.95	49.97	-14.02	Average
3	0.323	24.18	19.58	43.77	59.62	-15.85	QP
4	0.323	16.44	19.58	36.02	49.62	-13.60	Average
5	0.352	26.20	19.58	45.79	58.91	-13.13	QP
6	0.352	20.24	19.58	39.82	48.91	-9.09	Average
7	0.361	28.71	19.58	48.30	58.69	-10.40	QP
8	0.361	22.76	19.58	42.34	48.69	-6.36	Average
9	0.375	32.66	19.58	52.24	58.39	-6.14	QP
10	0.375	27.59	19.58	47.18	48.39	-1.21	Average
11	0.383	32.49	19.58	52.07	58.21	-6.14	QP
12	0.383	26.84	19.58	46.42	48.21	-1.79	Average
13	0.393	29.89	19.58	49.48	57.99	-8.51	QP
14	0.393	24.28	19.58	43.86	47.99	-4.13	Average
15	0.402	26.14	19.58	45.72	57.81	-12.10	QP
16	0.402	20.94	19.58	40.52	47.81	-7.29	Average

Note:

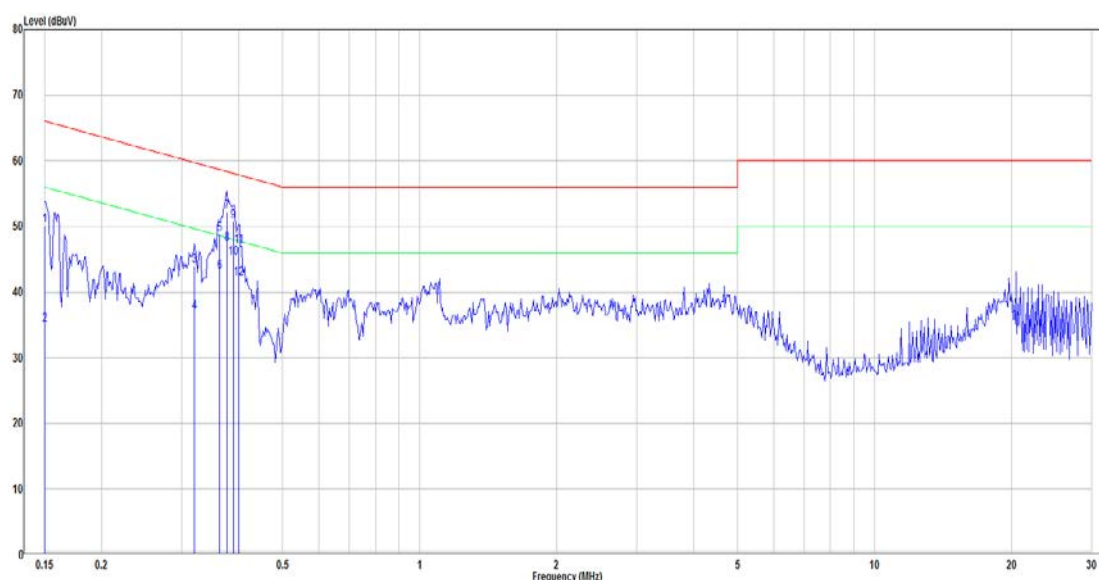
Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Job No.:	RXZ210924001	Phase.:	Neutral
Standard:	limit\RF\NCC LP0002-QP.csv	Power:	AC 110V/60Hz
Test item:	Conduction Test	Test By:	Jason
Temp.(°C)/Hum.(%RH):	26°C/44%		
Description:	BT(POE)		

2021-10-04 11:01:19



No.	Frequency (MHz)	Reading (dBμV)	Correct Factor(dB)	Result (dBμV)	Limit (dBμV)	Over limit (dB)	Remark
1	0.154	34.19	19.44	53.63	65.79	-12.17	QP
2	0.154	16.90	19.44	36.34	55.79	-19.45	Average
3	0.309	22.01	19.46	41.47	60.00	-18.52	QP
4	0.309	9.42	19.46	28.88	50.00	-21.11	Average
5	0.373	15.30	19.46	34.76	58.42	-23.67	QP
6	0.373	2.49	19.46	21.95	48.42	-26.48	Average
7	0.643	17.59	19.47	37.06	56.00	-18.94	QP
8	0.643	4.89	19.47	24.36	46.00	-21.64	Average
9	0.676	13.92	19.47	33.39	56.00	-22.61	QP
10	0.676	5.89	19.47	25.37	46.00	-20.63	Average
11	0.725	11.96	19.48	31.43	56.00	-24.57	QP
12	0.725	2.33	19.48	21.80	46.00	-24.20	Average

Note:

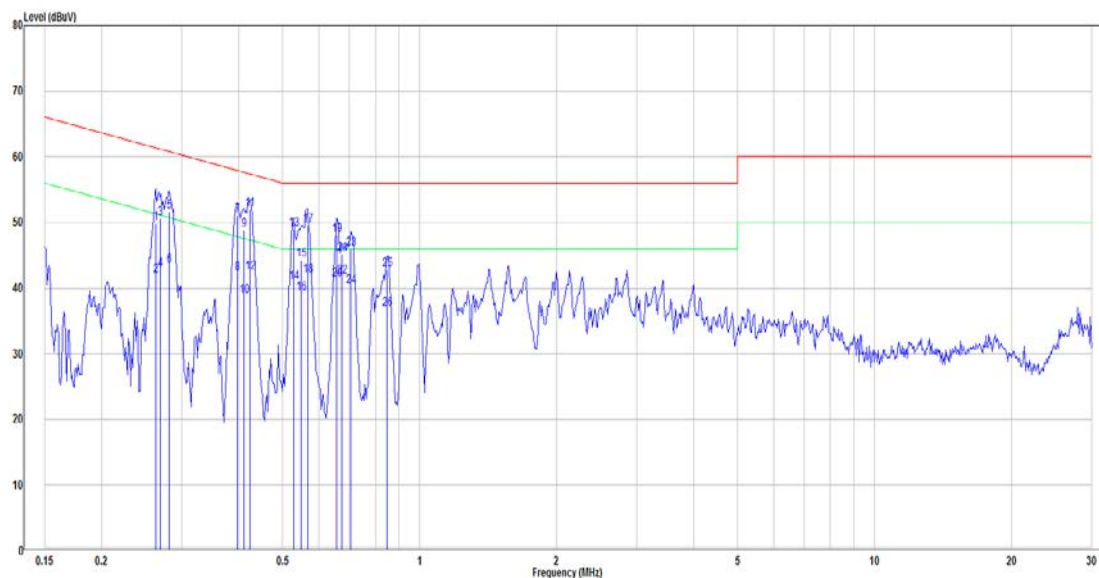
Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Job No.:	RXZ210924001	Phase.:	Line
Standard:	limit\RF\NCC LP0002-QP.csv	Power:	AC 110V/60Hz
Test item:	Conduction Test	Test By:	Jason
Temp.(°C)/Hum.(%RH):	26°C/44%		
Description:	BT(POWER)		

2021-10-04 10:19:53



No.	Frequency (MHz)	Reading (dBμV)	Correct Factor(dB)	Result (dBμV)	Limit (dBμV)	Over limit (dB)	Remark
1	0.263	30.26	19.58	49.85	61.34	-11.49	QP
2	0.263	22.30	19.58	41.88	51.34	-9.46	Average
3	0.269	30.99	19.58	50.58	61.16	-10.58	QP
4	0.269	23.23	19.58	42.81	51.16	-8.35	Average
5	0.282	32.07	19.58	51.65	60.76	-9.11	QP
6	0.282	23.85	19.58	43.43	50.76	-7.33	Average
7	0.398	31.47	19.58	51.06	57.90	-6.85	QP
8	0.398	22.59	19.58	42.17	47.90	-5.73	Average
9	0.410	29.18	19.58	48.77	57.64	-8.87	QP
10	0.410	19.16	19.58	38.74	47.64	-8.90	Average
11	0.424	32.39	19.59	51.98	57.37	-5.40	QP
12	0.424	22.71	19.59	42.30	47.37	-5.08	Average
13	0.529	29.38	19.59	48.97	56.00	-7.03	QP
14	0.529	21.19	19.59	40.79	46.00	-5.21	Average
15	0.549	24.69	19.59	44.29	56.00	-11.71	QP
16	0.549	19.64	19.59	39.24	46.00	-6.76	Average
17	0.567	29.97	19.59	49.57	56.00	-6.43	QP

18	0.567	22.24	19.59	41.84	46.00	-4.16	Average
19	0.658	28.46	19.60	48.05	56.00	-7.95	QP
20	0.658	21.63	19.60	41.23	46.00	-4.77	Average
21	0.675	25.56	19.60	45.15	56.00	-10.85	QP
22	0.675	22.12	19.60	41.72	46.00	-4.28	Average
23	0.705	26.29	19.60	45.89	56.00	-10.11	QP
24	0.705	20.69	19.60	40.29	46.00	-5.71	Average
25	0.848	23.10	19.60	42.70	56.00	-13.30	QP
26	0.848	17.14	19.60	36.74	46.00	-9.26	Average

Note:

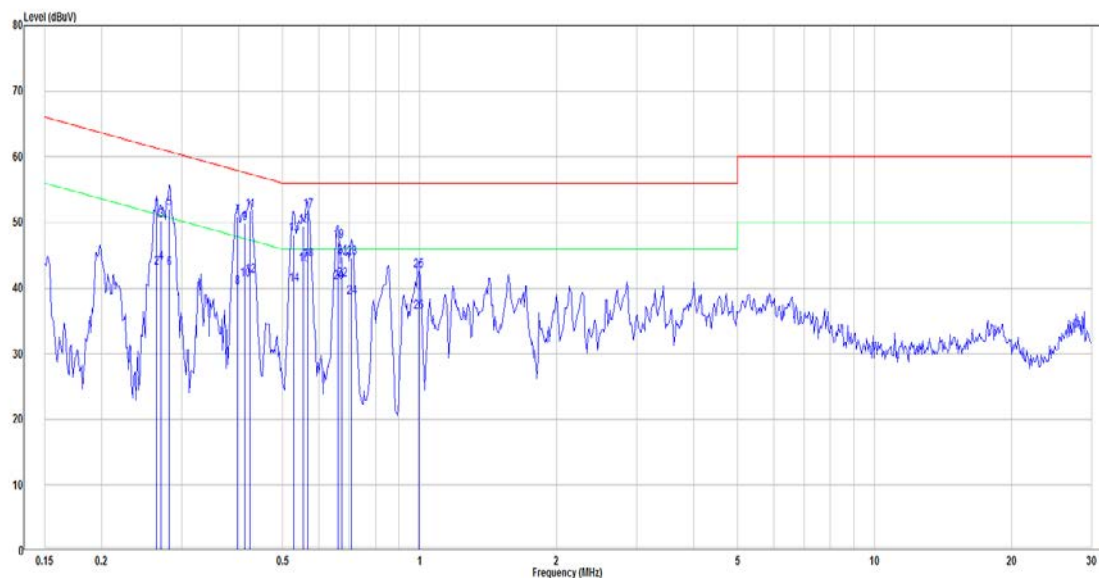
Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Job No.:	RXZ210924001	Phase.:	Neutral
Standard:	limit\RF\NCC LP0002-QP.csv	Power:	AC 110V/60Hz
Test item:	Conduction Test	Test By:	Jason
Temp.(°C)/Hum.(%RH):	26°C/44%		
Description:	BT(POWER)		

2021-10-04 10:23:52



No.	Frequency (MHz)	Reading dBuV	Correct Factor(dB)	Result dBuV	Limit dBuV	Over limit (dB)	Remark
1	0.264	32.22	19.58	51.80	61.29	-9.49	QP
2	0.264	23.44	19.58	43.03	51.29	-8.27	Average
3	0.270	30.75	19.58	50.33	61.12	-10.79	QP
4	0.270	24.18	19.58	43.76	51.12	-7.35	Average
5	0.282	32.52	19.58	52.10	60.76	-8.66	QP
6	0.282	23.30	19.58	42.88	50.76	-7.89	Average
7	0.398	31.33	19.58	50.91	57.90	-6.99	QP
8	0.398	20.57	19.58	40.15	47.90	-7.75	Average
9	0.413	30.22	19.58	49.81	57.59	-7.79	QP
10	0.413	21.69	19.58	41.28	47.59	-6.32	Average
11	0.424	32.16	19.58	51.75	57.37	-5.63	QP
12	0.424	22.29	19.58	41.87	47.37	-5.50	Average
13	0.529	28.55	19.59	48.14	56.00	-7.86	QP
14	0.529	21.01	19.59	40.60	46.00	-5.40	Average
15	0.555	29.81	19.59	49.40	56.00	-6.60	QP
16	0.555	23.91	19.59	43.50	46.00	-2.50	Average
17	0.567	32.25	19.59	51.84	56.00	-4.16	QP

18	0.567	24.65	19.59	44.24	46.00	-1.76	Average
19	0.661	27.54	19.59	47.14	56.00	-8.86	QP
20	0.661	21.24	19.59	40.83	46.00	-5.17	Average
21	0.675	25.12	19.59	44.71	56.00	-11.29	QP
22	0.675	21.64	19.59	41.23	46.00	-4.77	Average
23	0.708	25.04	19.59	44.63	56.00	-11.37	QP
24	0.708	18.98	19.59	38.58	46.00	-7.42	Average
25	0.994	23.08	19.60	42.68	56.00	-13.32	QP
26	0.994	16.68	19.60	36.28	46.00	-9.72	Average

Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

5. 場強輻射之量測

5.1 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3.5之要求，其他開放頻帶外不必要之輻射干擾需符合3.6節之一般限制要求。

頻率 (MHz)	測試距離 (m)	干擾限制 ($\mu\text{V/m}$)	干擾限制 (dB $\mu\text{V/m}$)
0.009 – 0.490 (含)	300	2,400/頻率(千赫)	128.5-93.8(註1)
0.490 (不含) – 1.705 (含)	30	24,000 /頻率(千赫)	73.8-63(註2)
1.705 (不含) – 30 (不含)	30	30	69.5(註3)
30 (含) – 88 (含)	3	100	40.0
88 (不含) – 216 (含)	3	150	43.5
216 (不含) – 960 (含)	3	200	46.0
960 (不含)以上	3	500	54.0

註 1: 其干擾限制值 = $20 \cdot \text{LOG}(2400/F) + 40 \cdot \text{LOG}(300/\text{量測距離})$

註 2: 其干擾限制值 = $20 \cdot \text{LOG}(24000/F) + 40 \cdot \text{LOG}(30/\text{量測距離})$

註 3: 其干擾限制值 = $20 \cdot \text{LOG}(30) + 40 \cdot \text{LOG}(30/\text{量測距離})$

5.2 測試方法

將待測物置於0.8 or 1.5米高的非金屬桌面，使其在工作狀態，接收天線置於3米外相同的高度。待測物分別要垂直或水平放置，而且桌面要360度旋轉，另外接收天線也要從1.0米至4.0米升降變化，以找出最大的輻射電場強度，接收天線置於水平、垂直極向各執行測試一次。若量測頻率低於30兆赫(MHz)時，得於所規定距離以內進行測試，但應盡量避免於近場做測試。當測試距離較規定距離為近時，測試結果應以插補系數換算至規定距離之值：對同一輻射方向最少兩個距離作量測以決定適當的插補系數或線性距離平方反比(40dB/10倍距離)。

5.3 測試擺設圖

輻射架構圖

圖 1:量測頻率9kHz~ 30MHz之測試配置

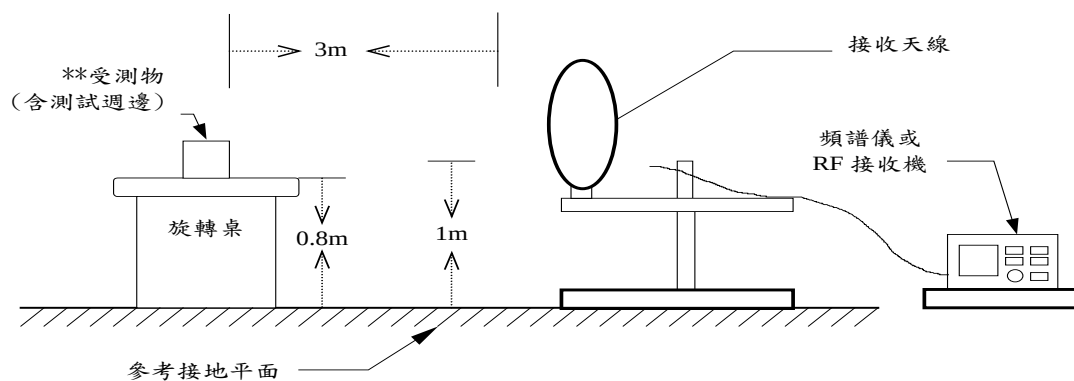


圖 2:量測頻率30MHz~1GHz之測試配置

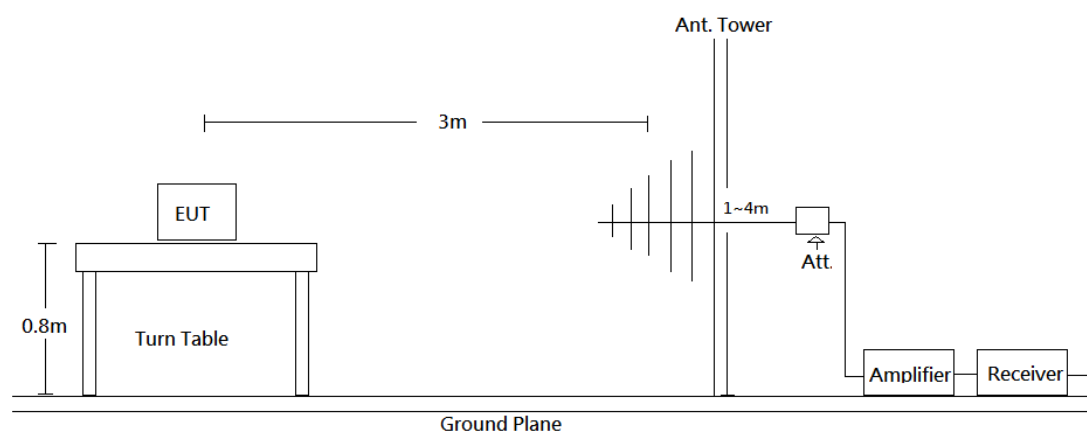
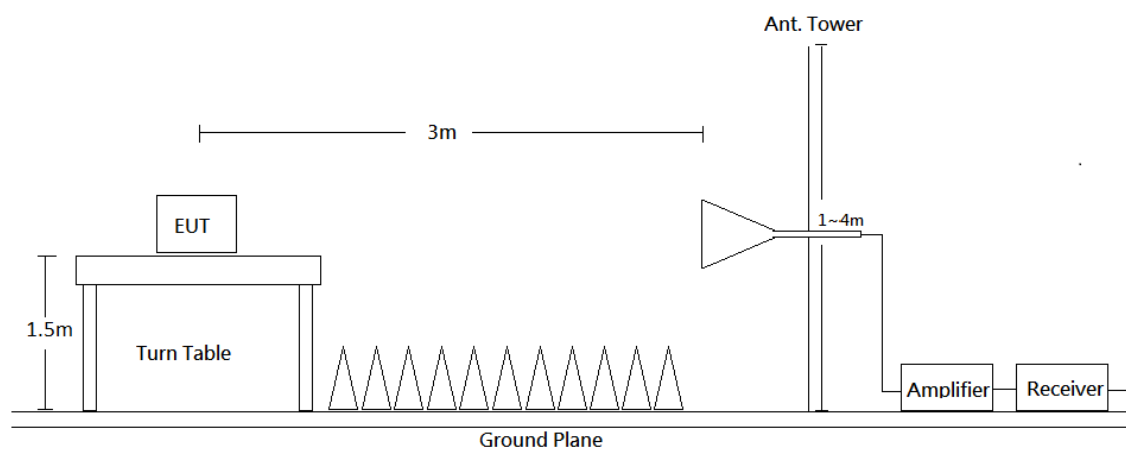


圖 3: 量測頻率1GHz以上之測試配置



5.4 量測設定

1GHz以下:

頻譜分析儀設定: Quasi-Peak: RBW = VBW: 120kHz

1GHz以上:

頻譜分析儀設定: Peak: RBW: 1MHz; VBW: 1MHz /

Average: RBW: 1MHz; VBW: 10Hz

5.5 場強度之計算

場強之計算公式如

干擾值 = 讀值 + 校正因子

其中校正因子為:

天線因子 + 饋線損失 + 濾波器損失 (若有使用) - 放大器增益 (若有使用)。

5.6 場強輻射之量測結果

發射機 / 接收機 其它不必要之訊號 (9kHz ~ 30MHz)

此頻率之干擾值低於限制值20dB以下，被考量為背景雜訊值並不予記錄。

發射機 / 接收機 其它不必要之訊號 (30MHz ~ 1GHz)

此案件測試模式分別為CH Low、Mid、High，經驗證後最差模式為BT (GFSK)-2480MHz。此產品經3軸X、Y、Z，評估X軸為最差。

發射機 其它不必要之訊號 (1GHz ~ 26.5GHz)

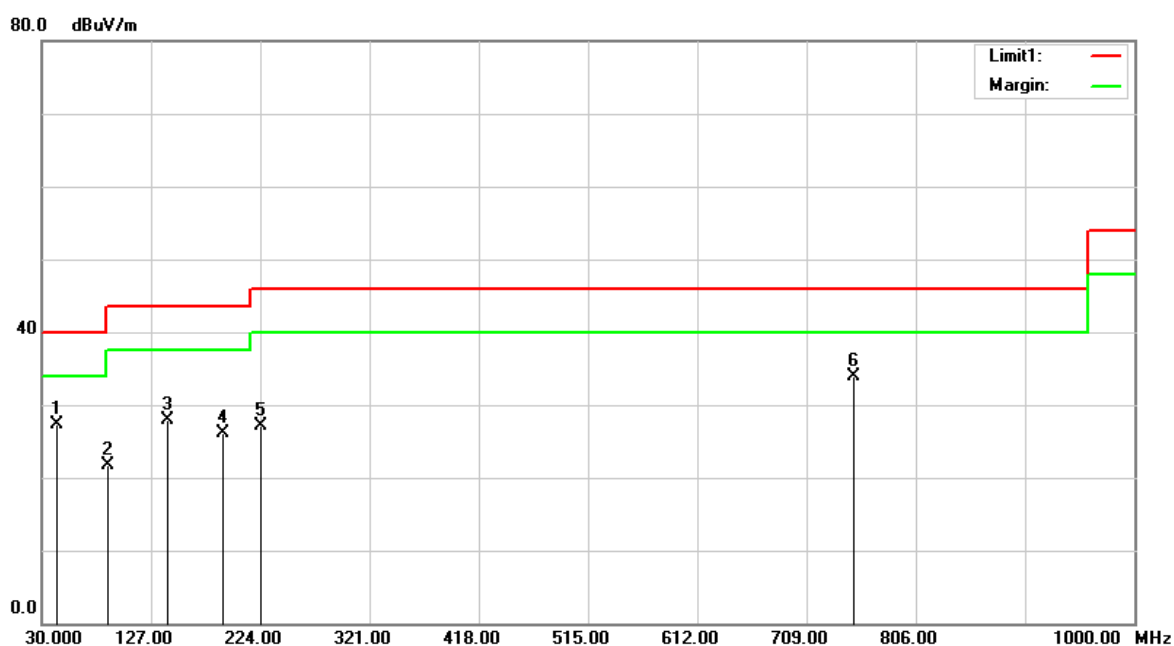
此案件測試模式分別為CH Low、Mid、High。經驗證後BT, EDR(8DQPSK)為最差模式，此產品經3軸X、Y、Z，評估X軸為最差。

接收機 其它不必要之訊號 (1GHz ~ 26.5GHz)

此案件測試模式分別為CH Low、Mid、High，經驗證後BT (GFSK)-2480MHz為最差模式，CH High為Worse。此產品經3軸X、Y、Z，評估X軸為最差。

場強輻射之量測值 (TX / 1GHz 以下)

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 _ 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.9(°C)/64%RH	Date:2021/9/27	Time:下午 08:28:52
		Test By:	Ken
Description:	1DH5-TX-2480		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
43.5800	40.34	-12.98	27.36	40.00	-12.64	100	81	peak
88.2000	38.37	-16.73	21.64	43.50	-21.86	100	238	peak
141.5500	38.86	-10.86	28.00	43.50	-15.50	100	291	peak
191.0200	38.73	-12.58	26.15	43.50	-17.35	100	289	peak
224.9700	39.90	-12.87	27.03	46.00	-18.97	100	85	peak
750.7100	36.14	-2.28	33.86	46.00	-12.14	100	127	peak

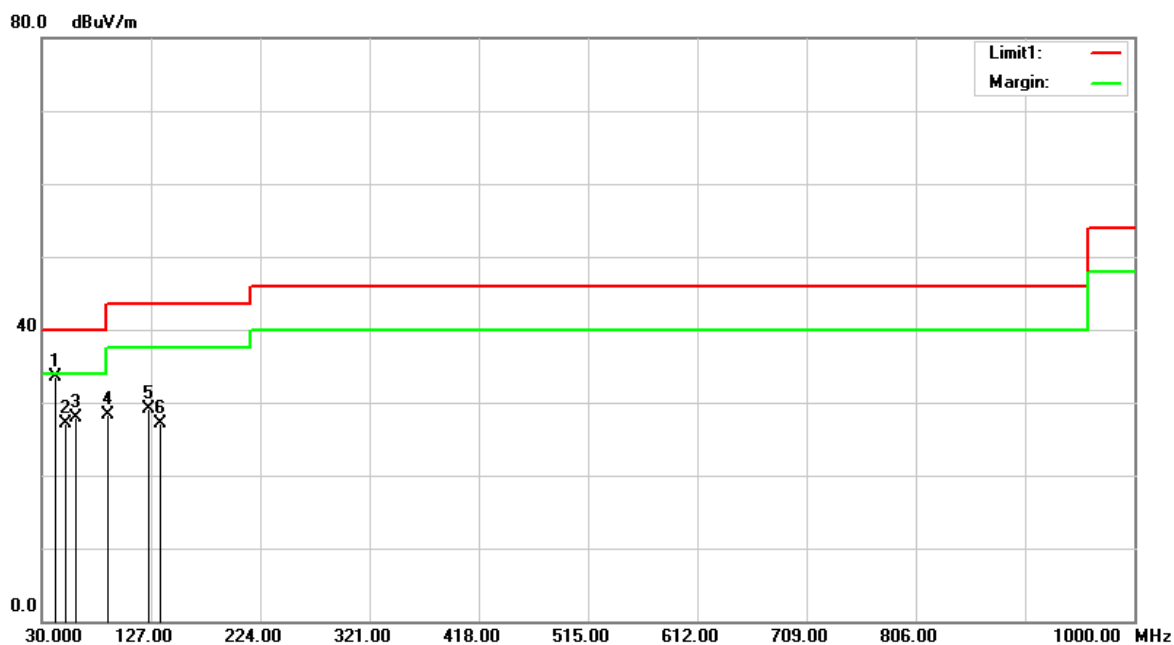
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 _ 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.9(°C)/64%RH	Date:2021/9/27	Time:下午 08:31:25
		Test By:	Ken
Description:	1DH5-TX-2480		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
42.6100	45.62	-12.07	33.55	40.00	-6.45	100	259	peak
51.3400	43.68	-16.60	27.08	40.00	-12.92	100	16	peak
60.0700	45.10	-17.10	28.00	40.00	-12.00	100	0	peak
88.2000	45.04	-16.73	28.31	43.50	-15.19	100	324	peak
125.0600	39.26	-10.17	29.09	43.50	-14.41	100	283	peak
134.7600	37.47	-10.44	27.03	43.50	-16.47	100	105	peak

Note:

Result = Reading + Correct Factor

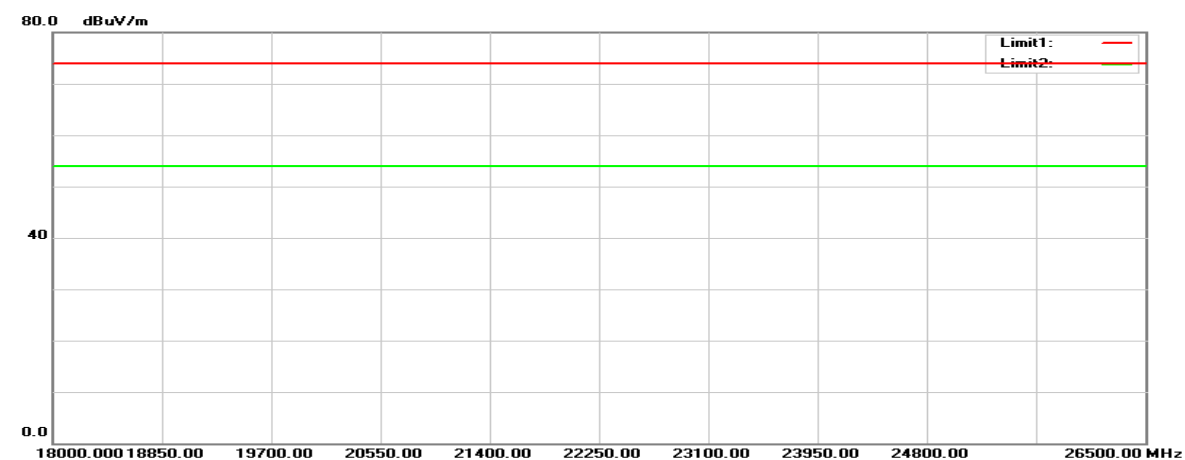
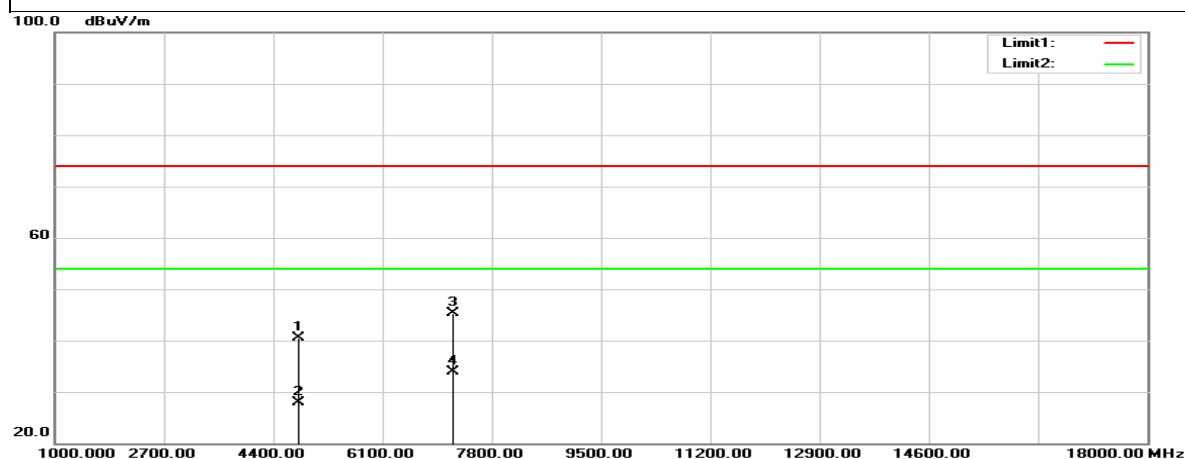
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

發射機其它不必要之訊號 (TX / 1GHz 以上)

場強輻射之量測值

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 10:57:16
		Test By:	D.L
Description:	1DH5-TX-2402-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4804.000	43.83	-3.28	40.55	74.00	-33.45	150	321	peak
4804.000	31.26	-3.28	27.98	54.00	-26.02	150	321	AVG
7206.000	42.27	3.10	45.37	74.00	-28.63	142	55	peak
7206.000	30.80	3.10	33.90	54.00	-20.10	142	55	AVG

Note:

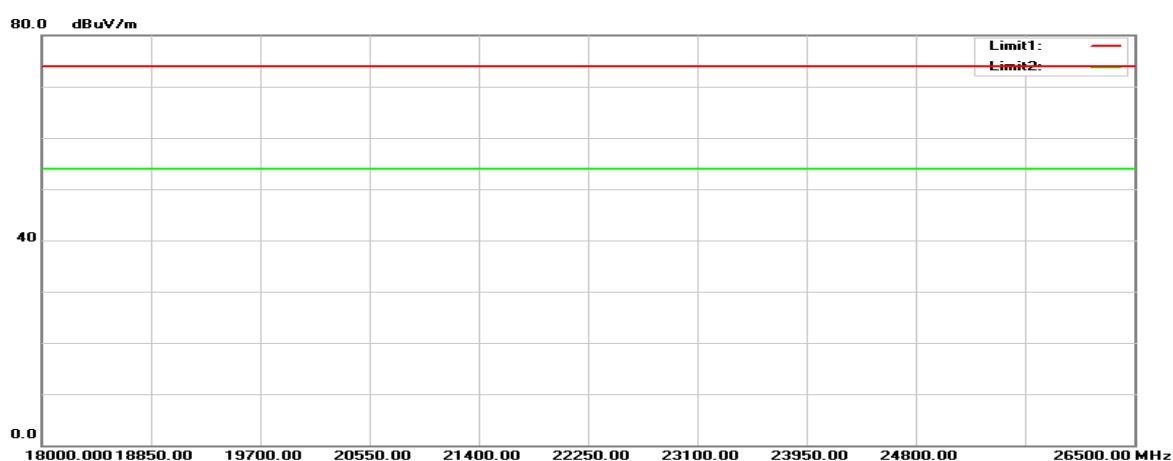
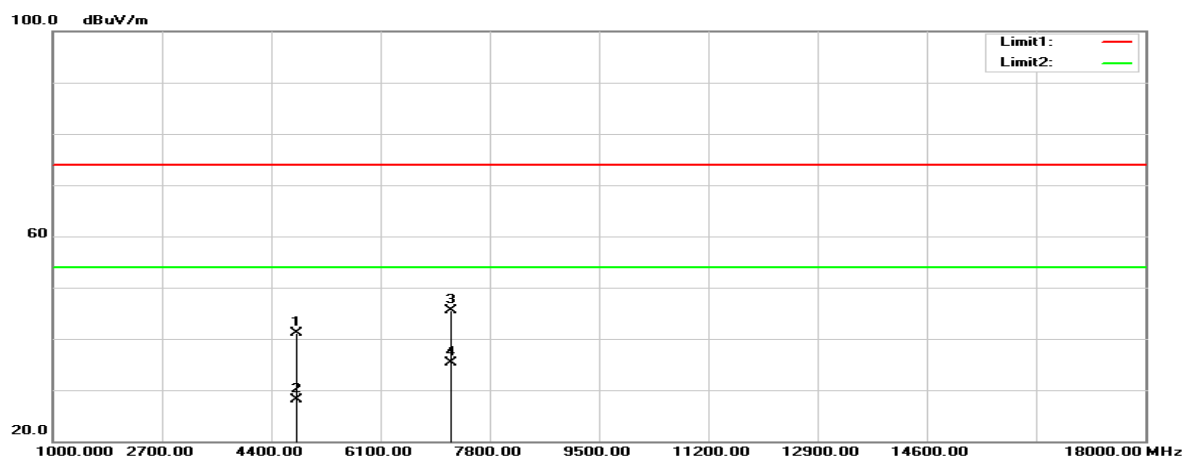
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:12:22
		Test By:	D.L
Description:	DH5-TX-2402-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4804.000	44.42	-3.28	41.14	74.00	-32.86	128	320	peak
4804.000	31.33	-3.28	28.05	54.00	-25.95	128	320	AVG
7206.000	42.39	3.10	45.49	74.00	-28.51	147	258	peak
7206.000	32.20	3.10	35.30	54.00	-18.70	147	258	AVG

Note:

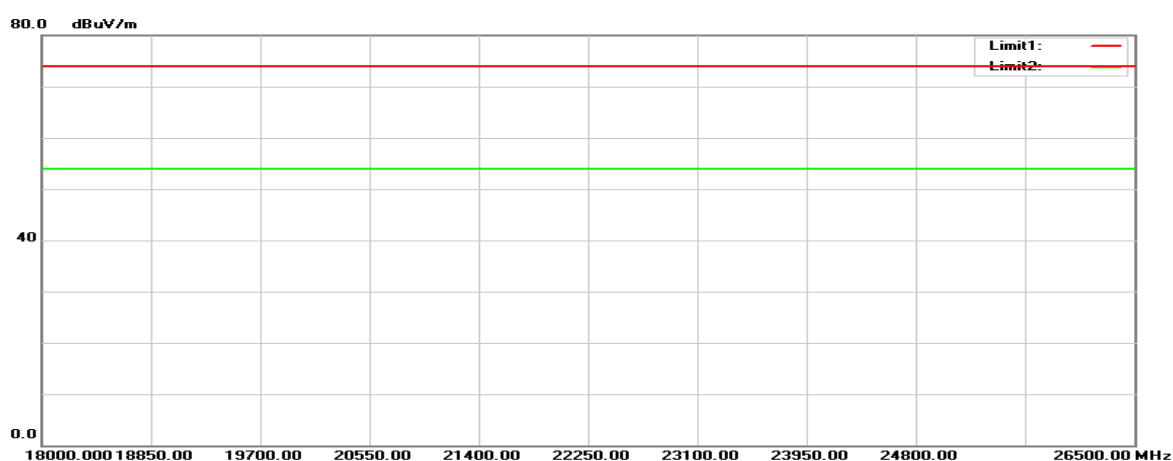
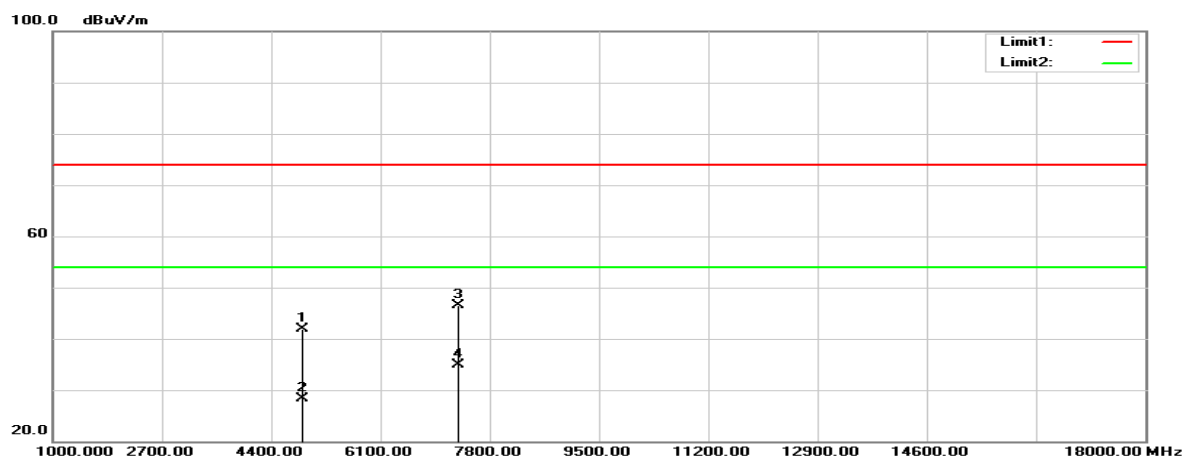
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:26:28
		Test By:	D.L
Description:	DH5-TX-2441-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4882.000	44.97	-3.02	41.95	74.00	-32.05	125	320	peak
4882.000	31.26	-3.02	28.24	54.00	-25.76	125	320	AVG
7323.000	42.50	4.08	46.58	74.00	-27.42	122	222	peak
7323.000	30.89	4.08	34.97	54.00	-19.03	122	222	AVG

Note:

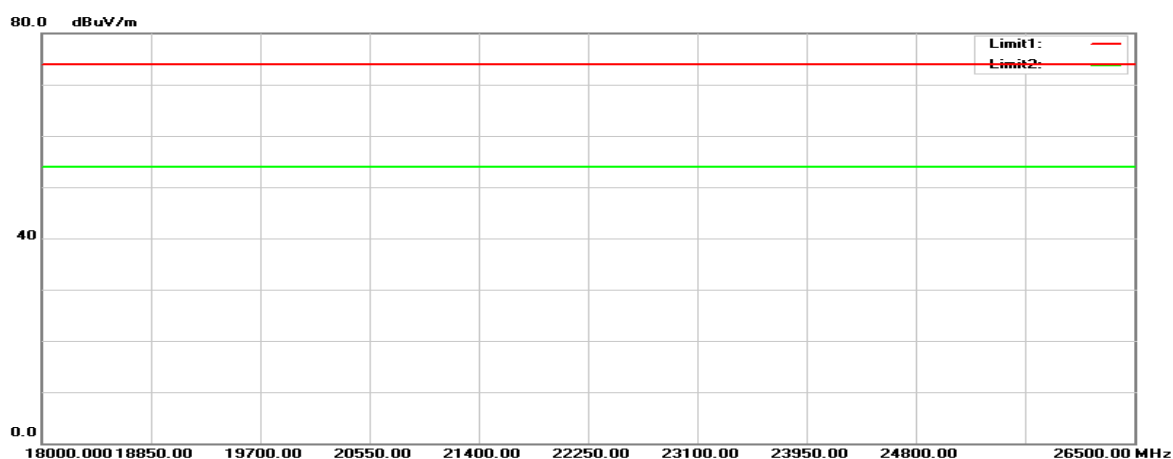
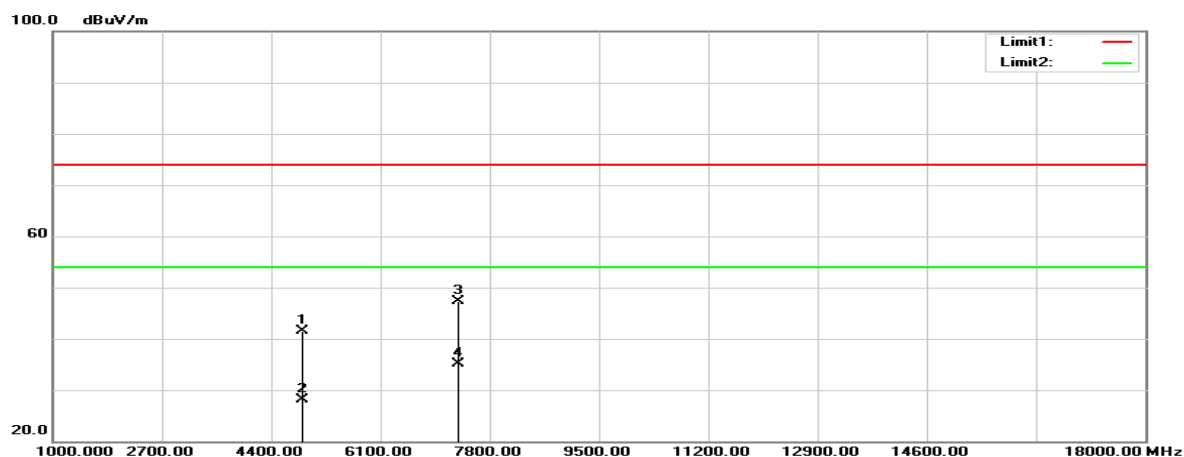
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:14:52
		Test By:	D.L
Description:	DH5-TX-2441-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4882.000	44.46	-3.02	41.44	74.00	-32.56	155	321	peak
4882.000	31.12	-3.02	28.10	54.00	-25.90	155	321	AVG
7323.000	43.28	4.08	47.36	74.00	-26.64	150	114	peak
7323.000	30.95	4.08	35.03	54.00	-18.97	150	114	AVG

Note:

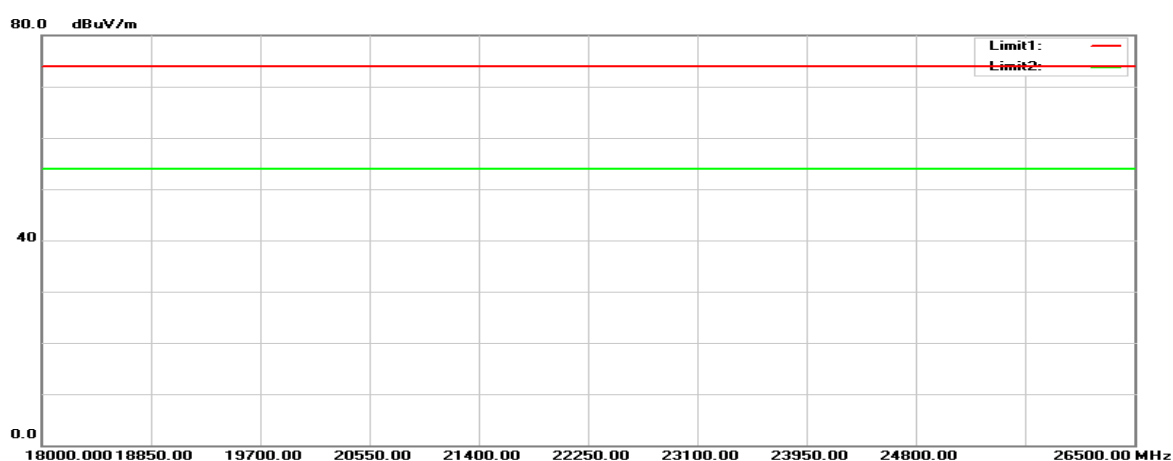
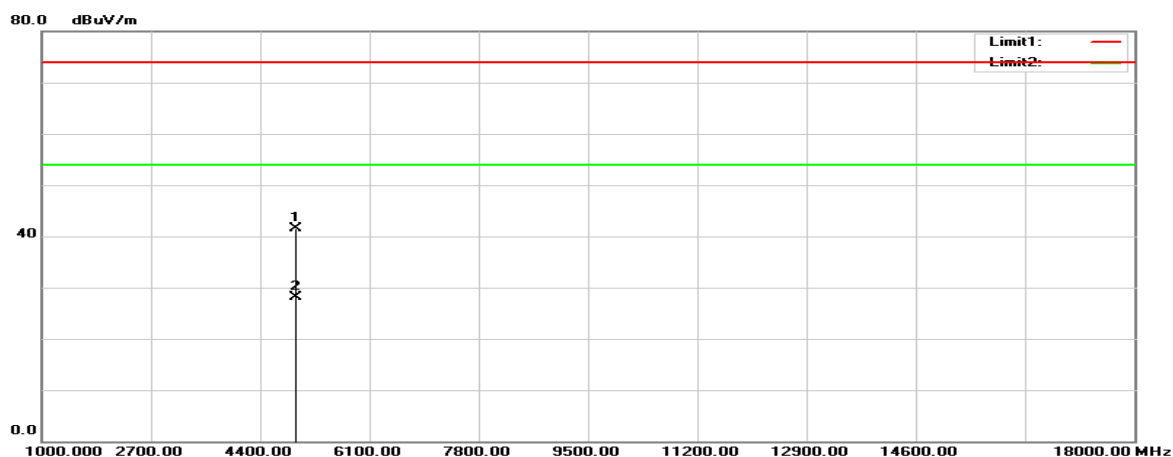
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:28:52
		Test By:	D.L
Description:	DH5-TX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4960.000	45.53	-2.69	42.84	74.00	-31.16	125	320	peak
4960.000	31.23	-2.69	28.54	54.00	-25.46	125	320	AVG
7440.000	42.59	4.25	46.84	74.00	-27.16	114	258	peak
7440.000	31.04	4.25	35.29	54.00	-18.71	114	258	AVG

Note:

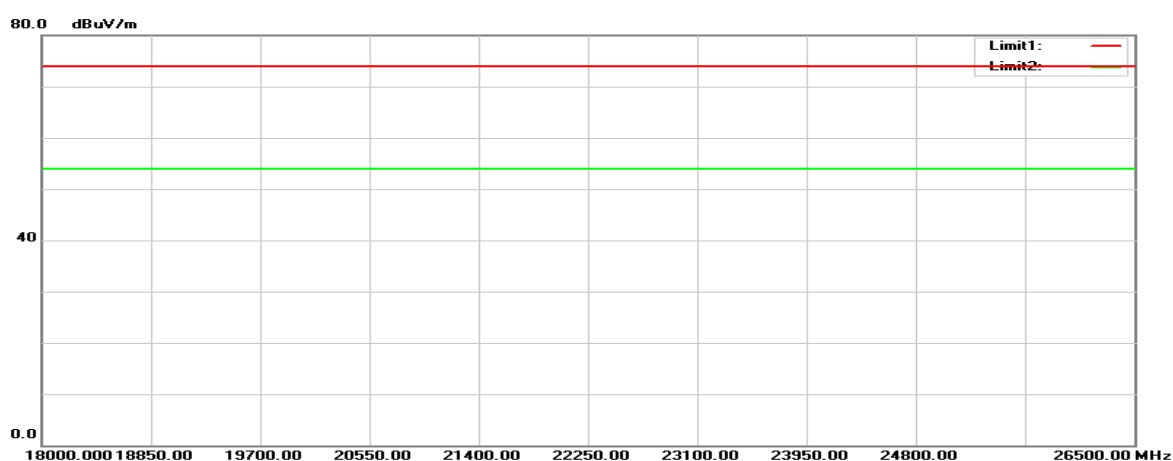
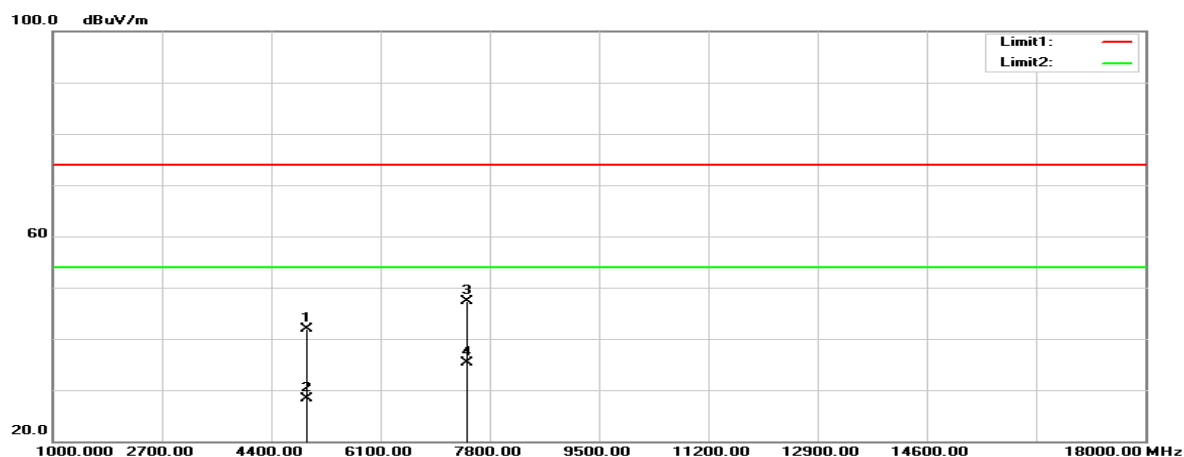
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:38:43
		Test By:	D.L
Description:	DH5-TX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4960.000	44.66	-2.69	41.97	74.00	-32.03	112	258	peak
4960.000	31.08	-2.69	28.39	54.00	-25.61	112	258	AVG
7440.000	43.03	4.25	47.28	74.00	-26.72	141	111	peak
7440.000	31.02	4.25	35.27	54.00	-18.73	141	111	AVG

Note:

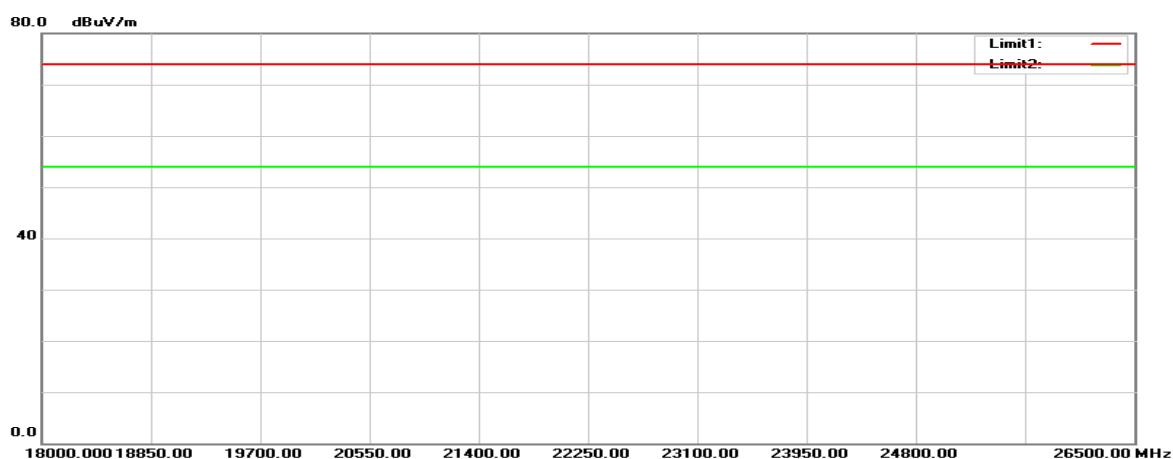
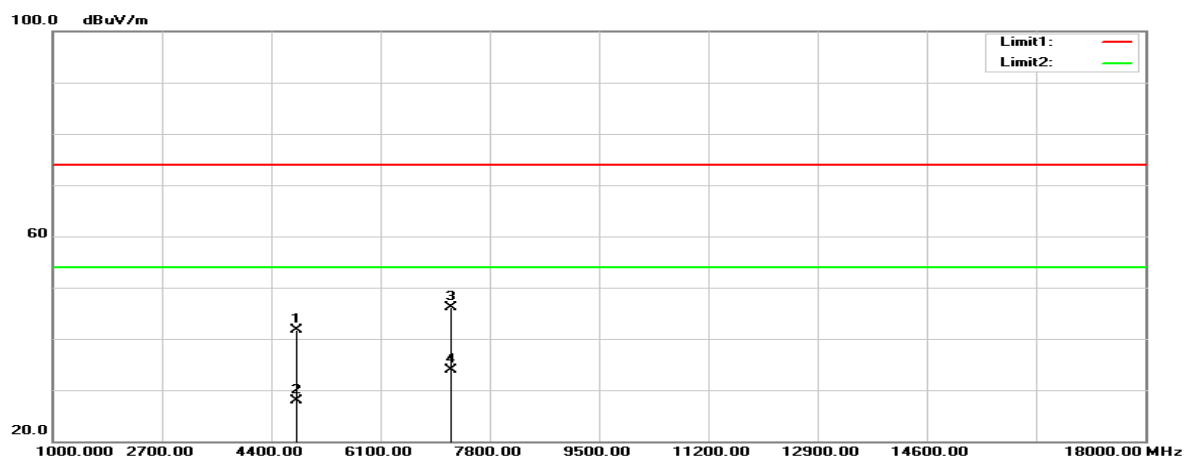
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:04:37
		Test By:	D.L
Description:	3DH5-TX-2402-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
4804.000	44.89	-3.28	41.61	74.00	-32.39	152	320	peak
4804.000	31.22	-3.28	27.94	54.00	-26.06	152	320	AVG
7206.000	42.93	3.10	46.03	74.00	-27.97	144	333	peak
7206.000	30.82	3.10	33.92	54.00	-20.08	144	333	AVG

Note:

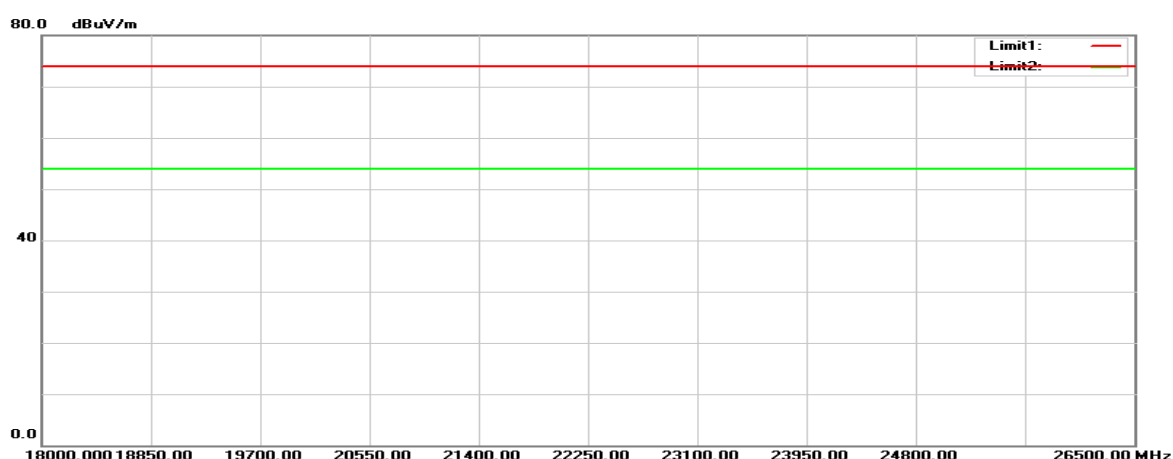
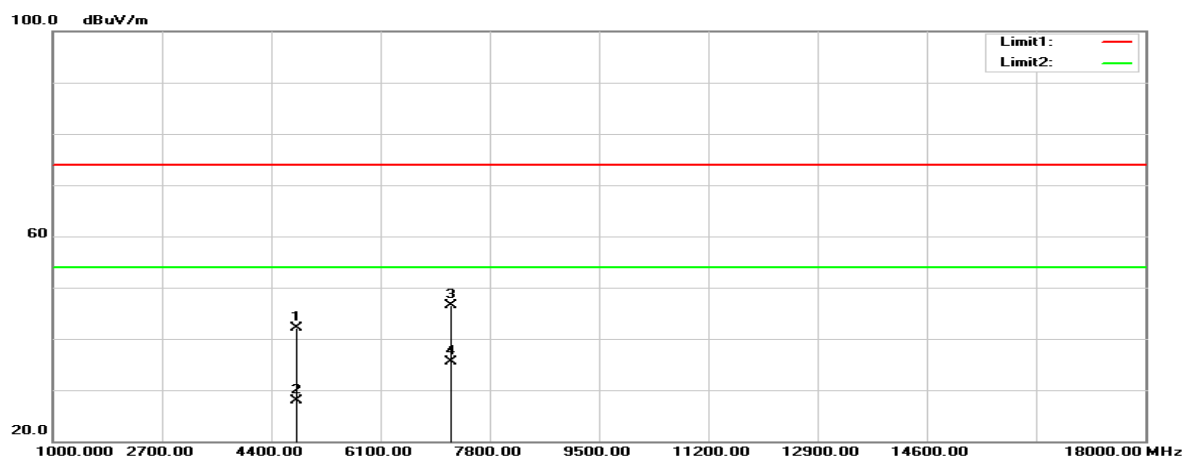
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:07:57
		Test By:	D.L
Description:	3DH5-TX-2402-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4804.000	45.34	-3.28	42.06	74.00	-31.94	125	320	peak
4804.000	31.28	-3.28	28.00	54.00	-26.00	125	320	AVG
7206.000	43.35	3.10	46.45	74.00	-27.55	114	125	peak
7206.000	32.31	3.10	35.41	54.00	-18.59	114	125	AVG

Note:

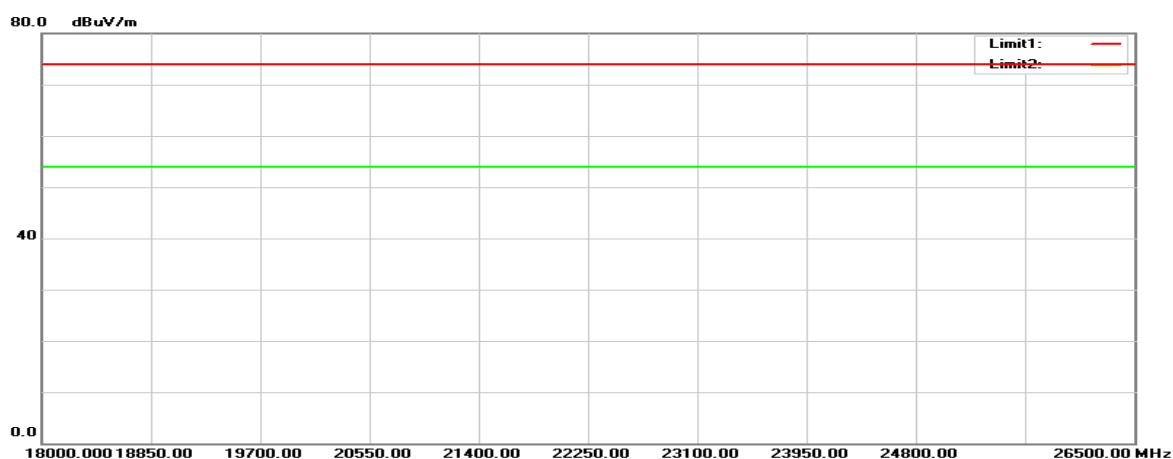
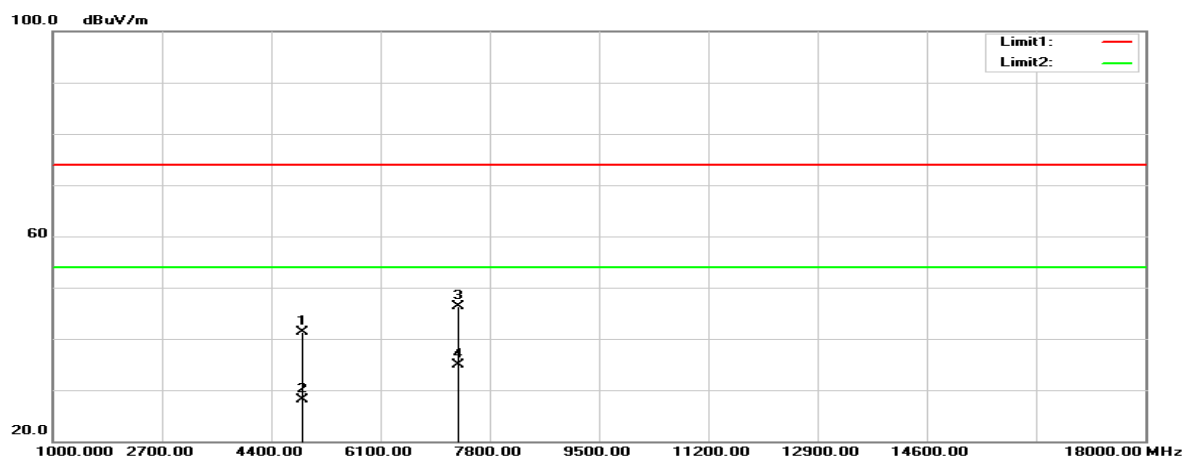
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:22:17
		Test By:	D.L
Description:	3DH5-TX-2441-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4882.000	44.25	-3.02	41.23	74.00	-32.77	133	254	peak
4882.000	31.12	-3.02	28.10	54.00	-25.90	133	254	AVG
7323.000	42.25	4.08	46.33	74.00	-27.67	125	333	peak
7323.000	30.75	4.08	34.83	54.00	-19.17	125	333	AVG

Note:

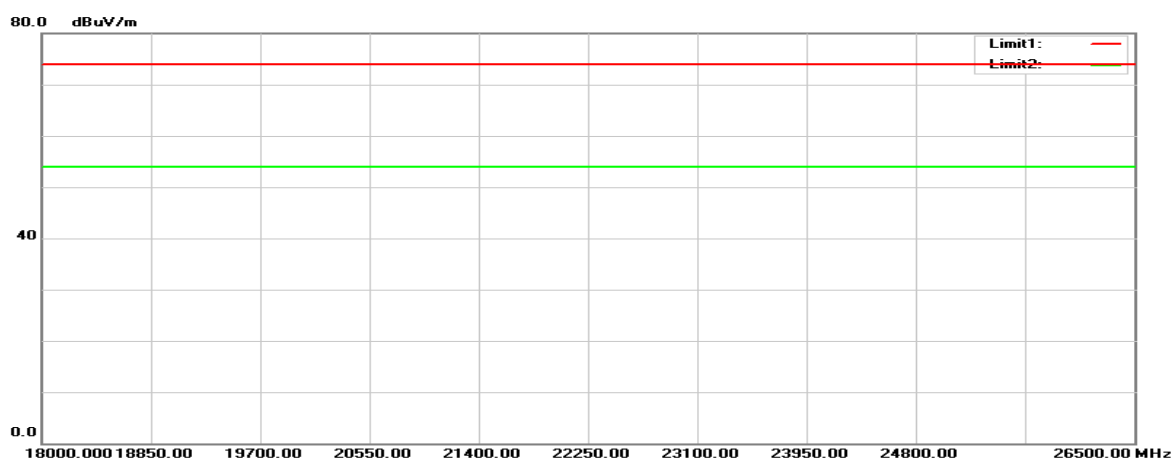
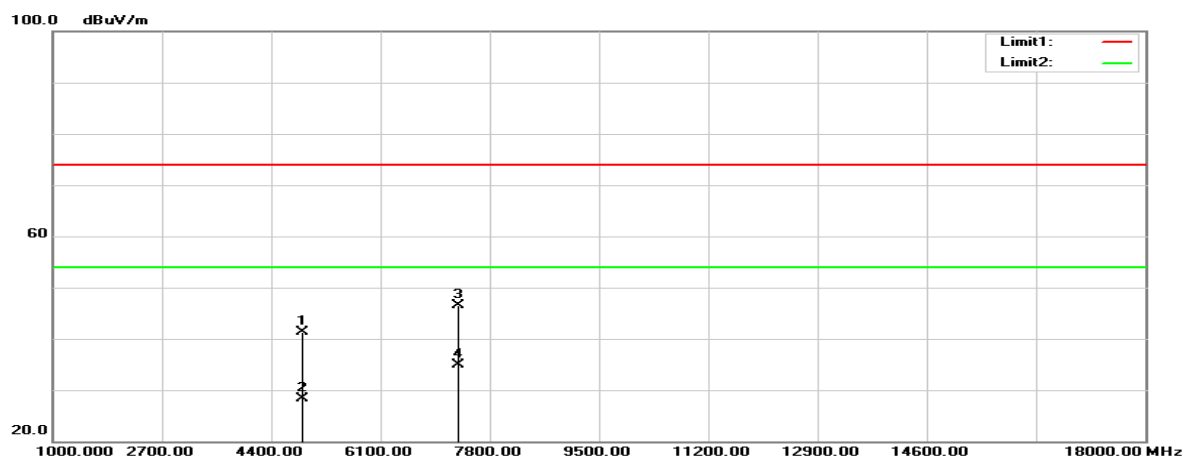
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:20:03
		Test By:	D.L
Description:	3DH5-TX-2441-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4882.000	44.37	-3.02	41.35	74.00	-32.65	128	320	peak
4882.000	31.26	-3.02	28.24	54.00	-25.76	128	320	AVG
7323.000	42.45	4.08	46.53	74.00	-27.47	144	125	peak
7323.000	30.80	4.08	34.88	54.00	-19.12	144	125	AVG

Note:

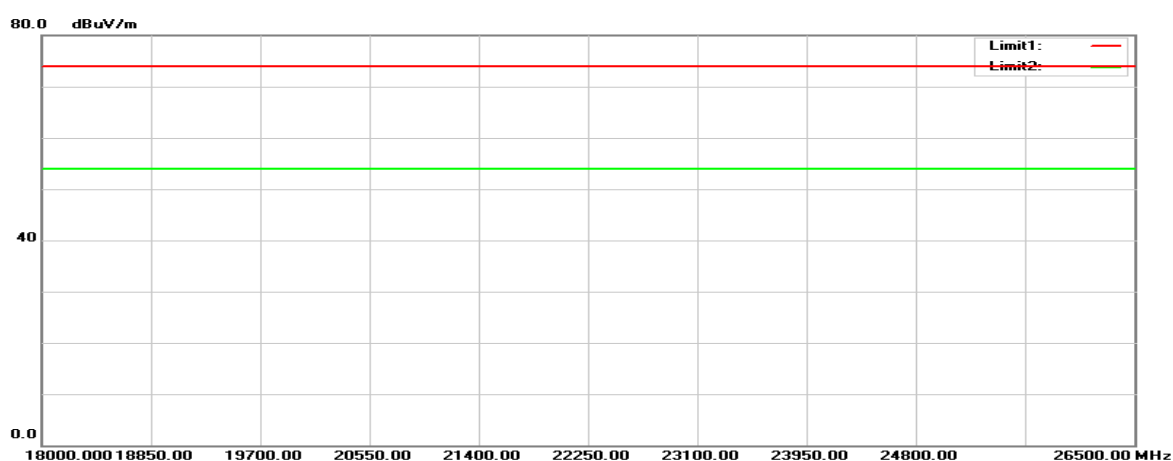
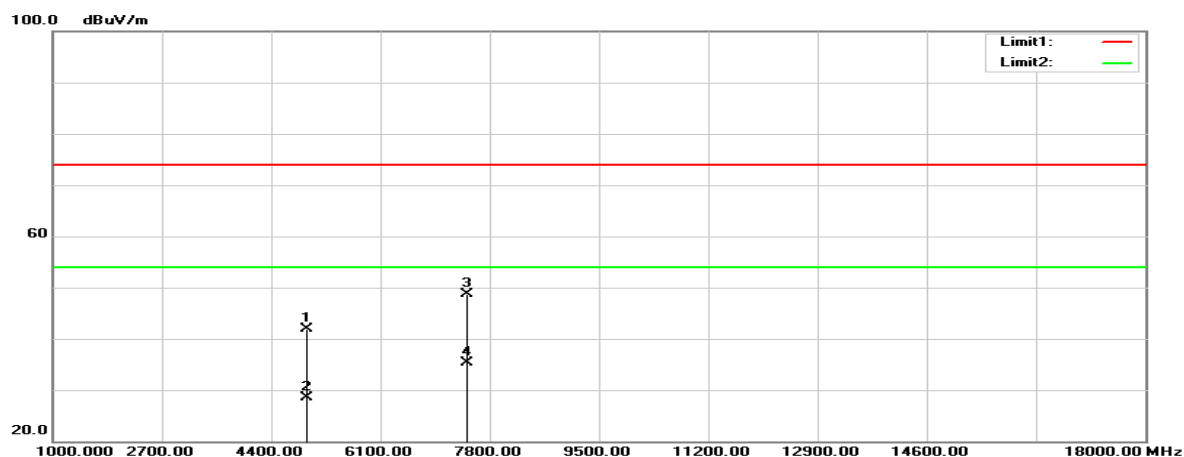
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:33:03
		Test By:	D.L
Description:	3DH5-TX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4960.000	44.63	-2.69	41.94	74.00	-32.06	122	330	peak
4960.000	31.19	-2.69	28.50	54.00	-25.50	122	330	AVG
7440.000	44.54	4.25	48.79	74.00	-25.21	111	120	peak
7440.000	31.15	4.25	35.40	54.00	-18.60	111	120	AVG

Note:

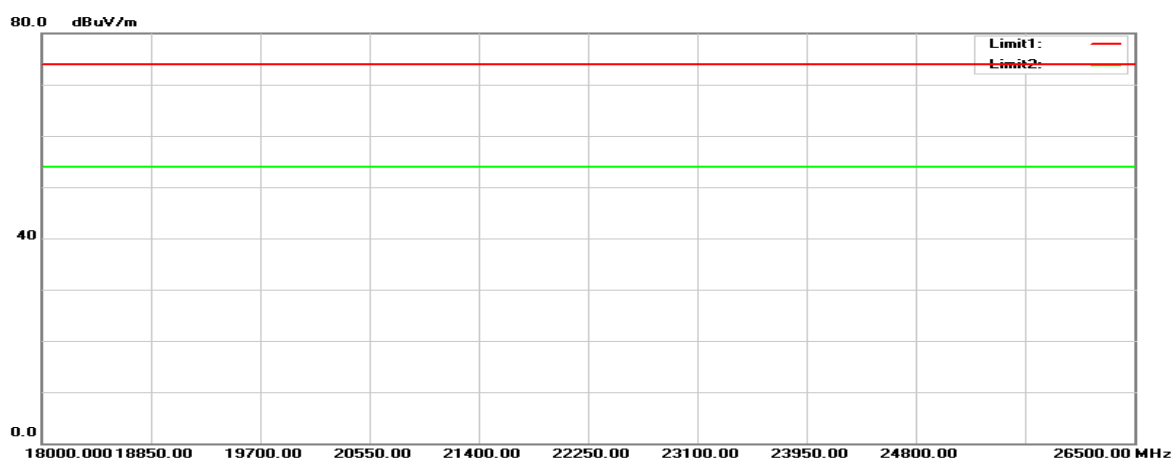
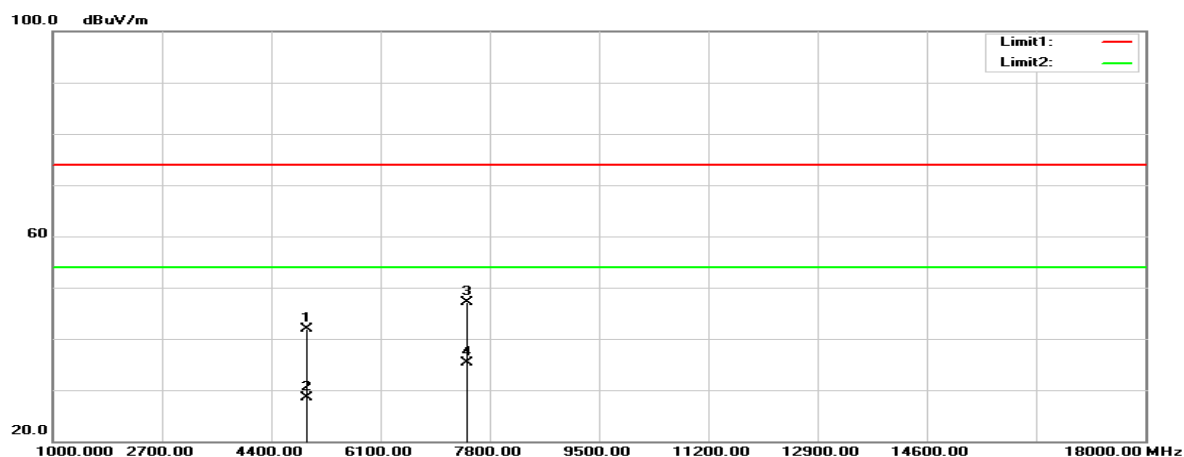
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:上午 11:35:08
		Test By:	D.L
Description:	3DH5-TX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4960.000	44.63	-2.69	41.94	74.00	-32.06	125	258	peak
4960.000	31.16	-2.69	28.47	54.00	-25.53	125	258	AVG
7440.000	42.86	4.25	47.11	74.00	-26.89	114	222	peak
7440.000	31.00	4.25	35.25	54.00	-18.75	114	222	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

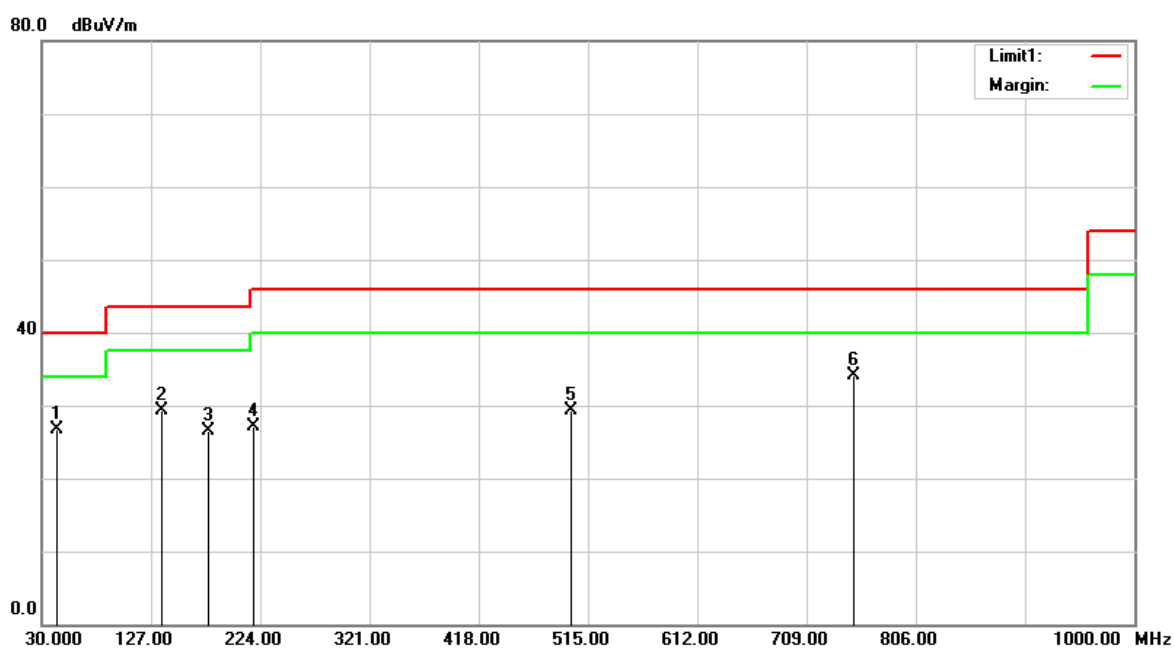
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

接收機其它不必要之訊號 (RX / 1GHz 以下)

場強輻射之量測值

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 _ 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.9(°C)/64%RH	Date:2021/9/27	Time:下午 08:35:18
		Test By:	Ken
Description:	1DH5-RX-2480		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
43.5800	39.73	-12.98	26.75	40.00	-13.25	100	168	peak
136.7000	39.97	-10.66	29.31	43.50	-14.19	100	304	peak
178.4100	39.43	-12.83	26.60	43.50	-16.90	100	313	peak
218.1800	40.13	-13.12	27.01	46.00	-18.99	100	54	peak
500.4500	34.99	-5.71	29.28	46.00	-16.72	100	72	peak
750.7100	36.37	-2.28	34.09	46.00	-11.91	100	120	peak

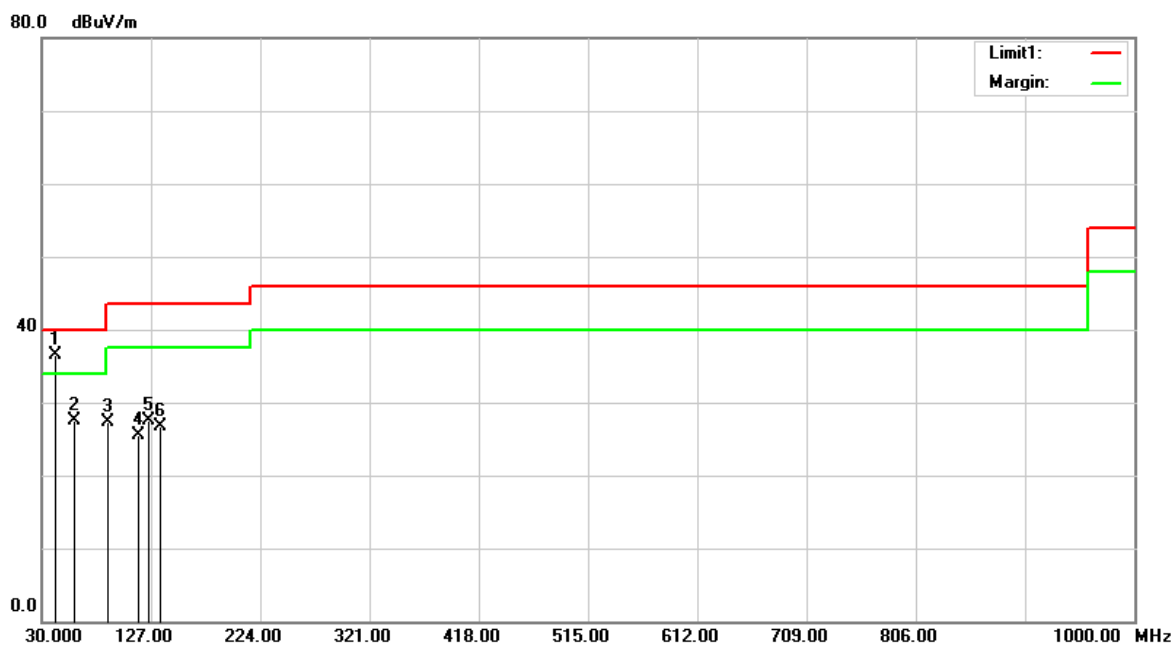
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 _ 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.9(°C)/64%RH	Date:2021/9/27	Time:下午 08:39:02
		Test By:	Ken
Description:	1DH5-RX-2480		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
42.6100	48.61	-12.07	36.54	40.00	-3.46	100	269	QP
59.1000	44.80	-17.29	27.51	40.00	-12.49	100	47	peak
88.2000	44.01	-16.73	27.28	43.50	-16.22	100	204	peak
115.3600	36.41	-10.90	25.51	43.50	-17.99	100	77	peak
125.0600	37.65	-10.17	27.48	43.50	-16.02	100	149	peak
135.7300	37.17	-10.49	26.68	43.50	-16.82	100	214	peak

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

場強輻射之量測值 (RX / 1GHz 以上)

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:下午 12:38:41
		Test By:	D.L
Description:	1DH5-RX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4804.000	45.12	-3.28	41.84	74.00	-32.16	128	220	peak
4804.000	31.51	-3.28	28.23	54.00	-25.77	128	220	AVG
7206.000	42.60	3.10	45.70	74.00	-28.30	114	177	peak
7206.000	31.24	3.10	34.34	54.00	-19.66	114	177	AVG

Note:

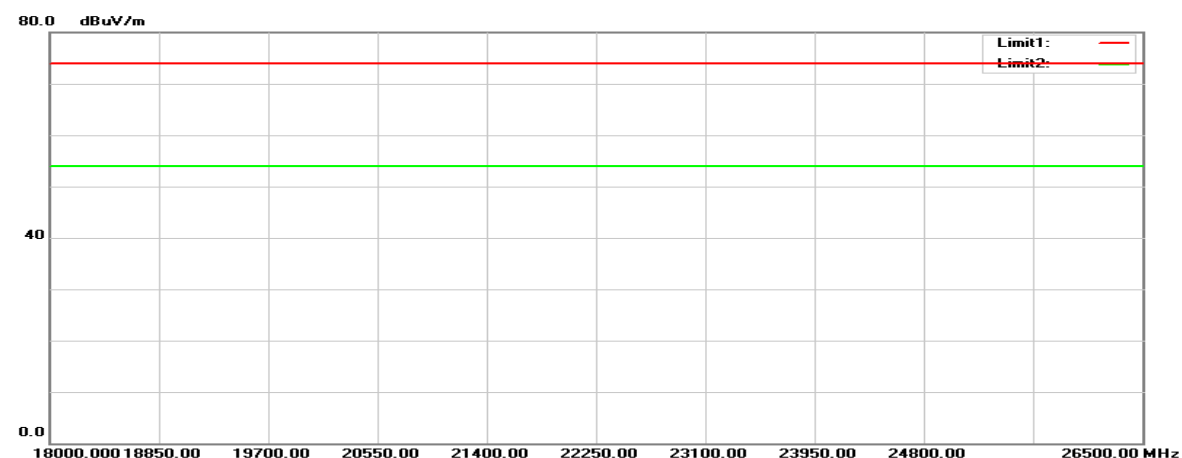
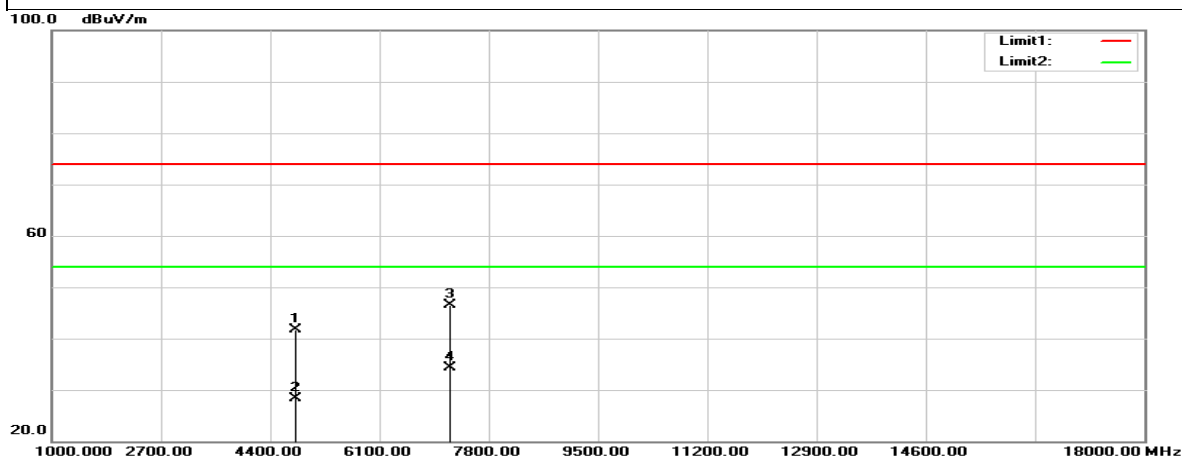
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	25.8(°C)/63%RH	Date:2021/9/30	Time:下午 12:35:20
		Test By:	D.L
Description:	1DH5-RX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4804.000	44.91	-3.28	41.63	74.00	-32.37	128	251	peak
4804.000	31.50	-3.28	28.22	54.00	-25.78	128	251	AVG
7206.000	43.45	3.10	46.55	74.00	-27.45	150	147	peak
7206.000	31.23	3.10	34.33	54.00	-19.67	150	147	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

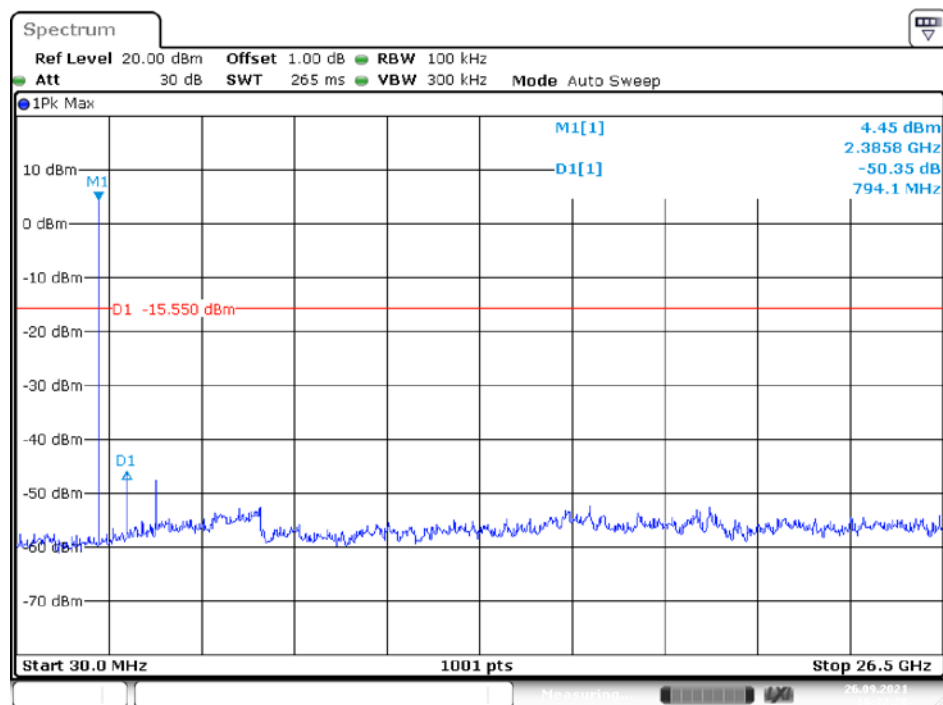
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Conducted Spurious Emissions:

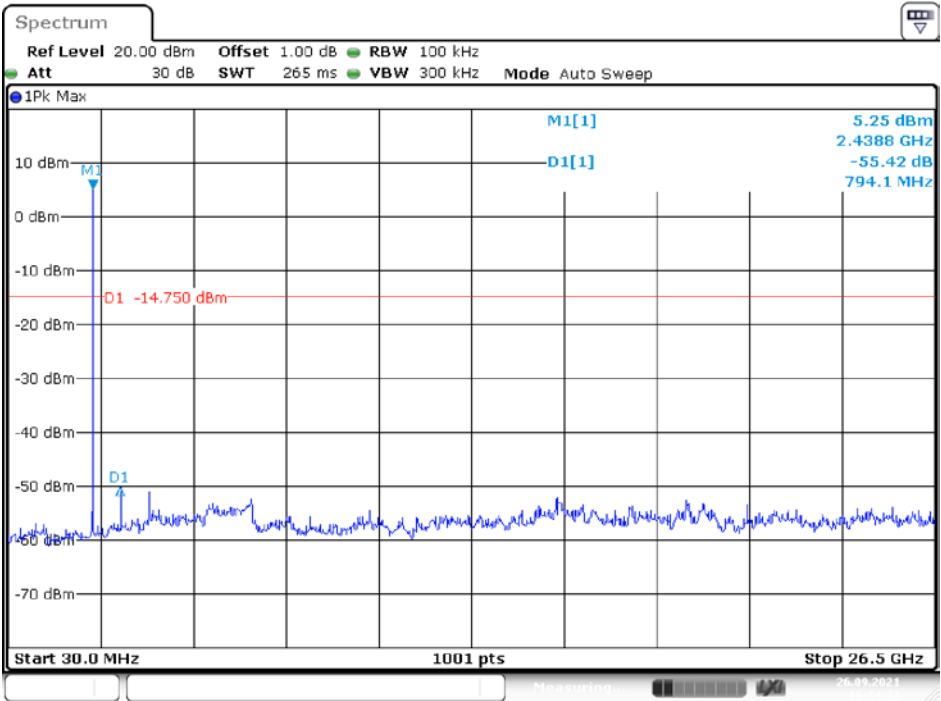
環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
BT mode				
Low	2402	50.35	≥ 20	PASS
Mid	2441	55.42	≥ 20	PASS
High	2480	55.74	≥ 20	PASS
EDR mode - 3M				
Low	2402	47.76	≥ 20	PASS
Mid	2441	48.53	≥ 20	PASS
High	2480	52.14	≥ 20	PASS

BT Mode Low Channel

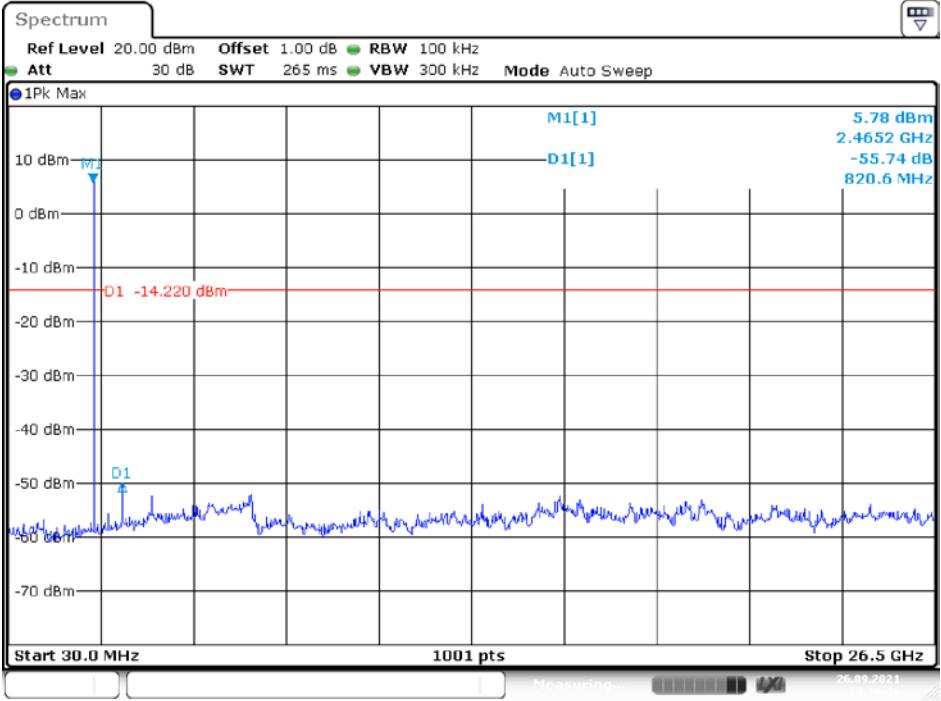
Date: 26.SEP.2021 16:32:20

BT Mode Middle Channel



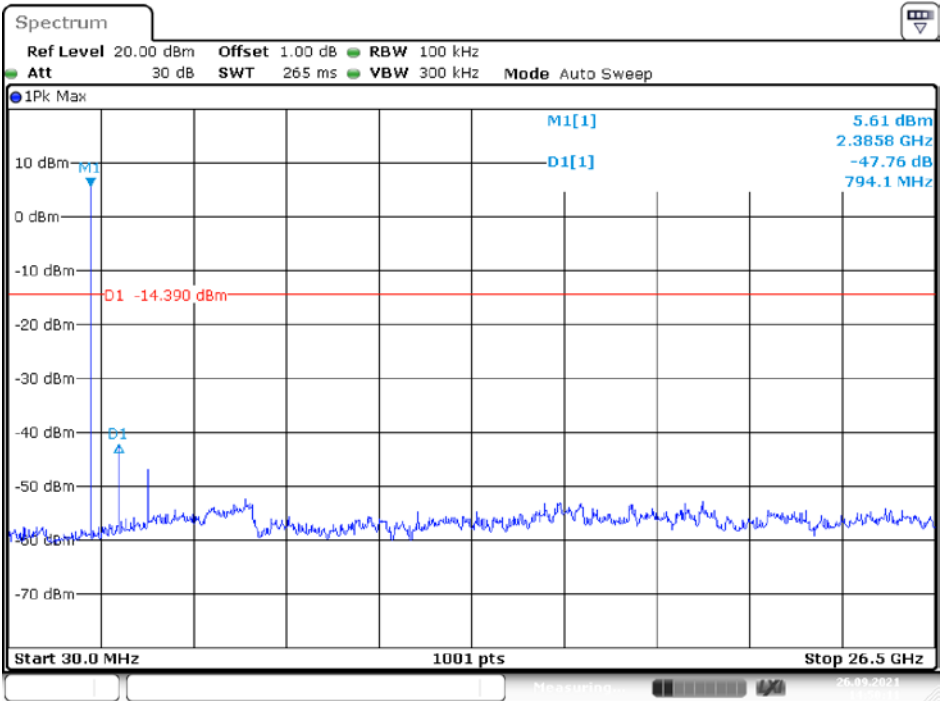
Date: 26.SEP.2021 16:34:33

BT Mode High Channel



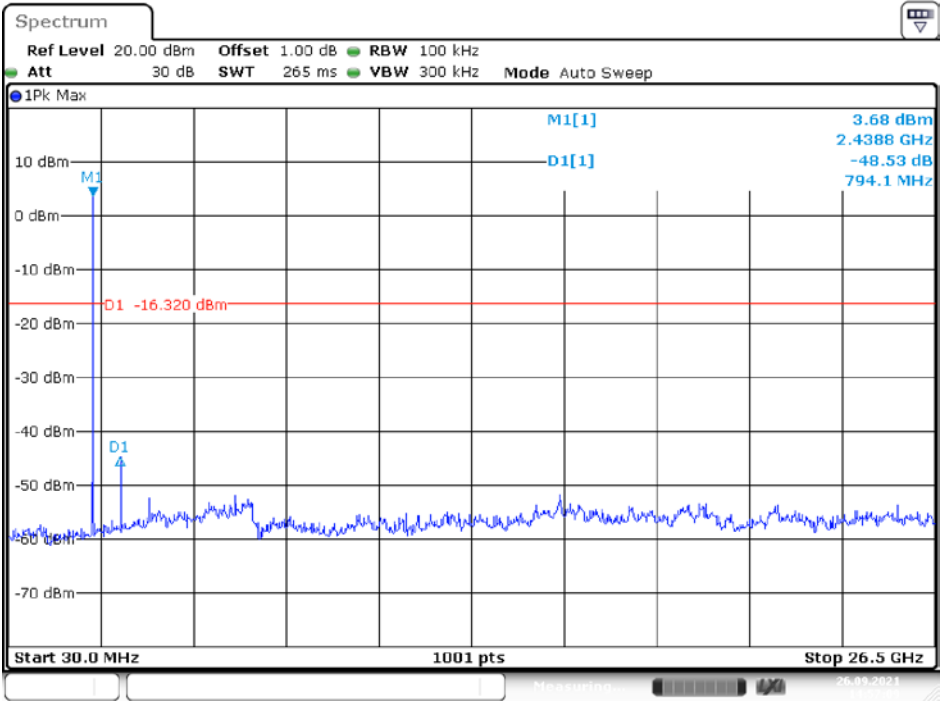
Date: 26.SEP.2021 14:30:30

EDR Mode-3M Low Channel



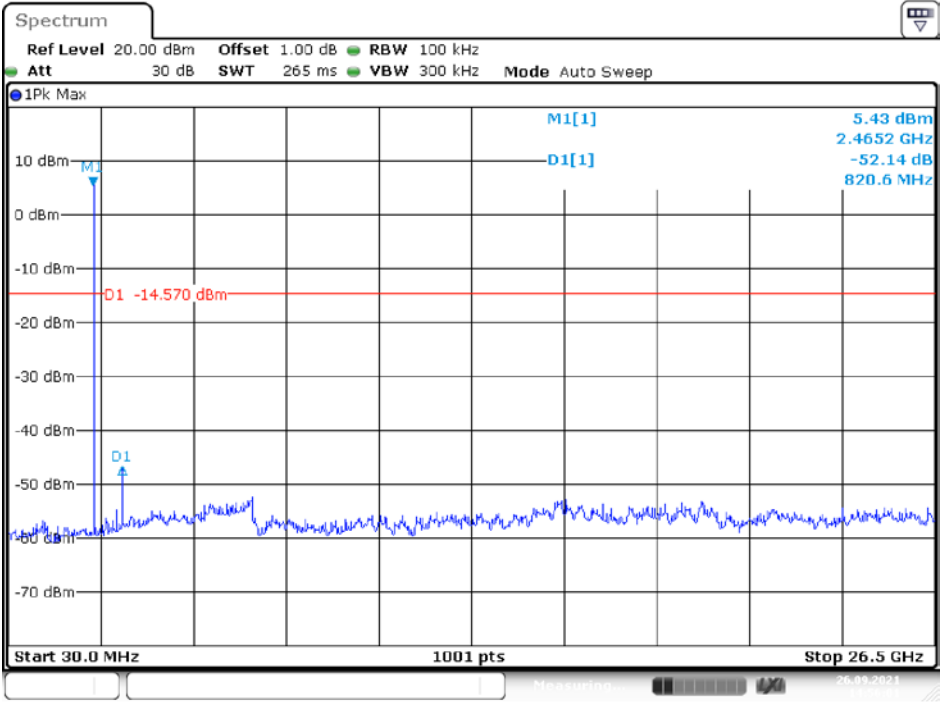
Date: 26.SEP.2021 14:50:12

EDR Mode-3M Middle Channel



Date: 26.SEP.2021 14:57:10

EDR Mode-3M High Channel



Date: 26.SEP.2021 14:56:02

6. 天線增益之要求

6.1 適用標準

依據低功率射頻電機技術規範之規定，應符合下列敘述其中之一：

進行固定式點對點操作時，其發射天線之方向性增益超過6 dBi，每超過3 dBi，最大傳導輸出功率限制值應降低1 dB。

操作頻率為5725 MHz ~ 5850 MHz且進行固定式點對點操作時，其發射天線之方向性增益超過6 dBi，不需降低最大傳導輸出功率。

使用超過6 dBi方向增益之發射天線時，應依超過6 dBi天線方向增益的dBi總量，等量減少最大傳導輸出功率限制值。

6.2 天線增益

此裝置使用的天線明細如下：

天線型態	廠牌	型號	Gain
Dipole Antenna	ELECTRIC CONNECTOR TECHNOLOGY	81800U610	4.42dBi

** 其詳細規格資料，請參見：天線規格。

判定結果: 符合規範

7. 發射頻寬之要求

7.1 適用標準

對使用跳頻系統之低功率發射機依據低功率射頻電機技術規範規定，跳頻系統之載波頻率頻道間隔應大於或等於25 kHz或跳頻頻道之20 dB頻寬，兩者取較寬者。但操作頻率為2400 MHz ~ 2483.5 MHz頻段且輸出功率應小於或等於125 mW跳頻系統，其載波頻率頻道間隔不得小於25 kHz或跳頻頻道20 dB頻寬之三分之二，兩者取較寬者。系統之跳頻頻道應依虛擬亂數排列，在各頻率之跳頻頻道上跳躍。每一發射機必須均等的使用每一頻率。系統接收機應具有與發射機跳躍頻道頻寬相匹配之輸入頻寬，且應隨所發射之訊號同步偏移接收頻率。

對使用數位調變技術之低功率發射機，6dB之頻寬至少應有500kHz。

7.2 測試方法

測量時，頻譜分析儀之解析頻寬為100kHz，視訊頻寬不小於解析頻寬。為求得精確測量，頻率掃描範圍(Span)遠大於解析頻寬。

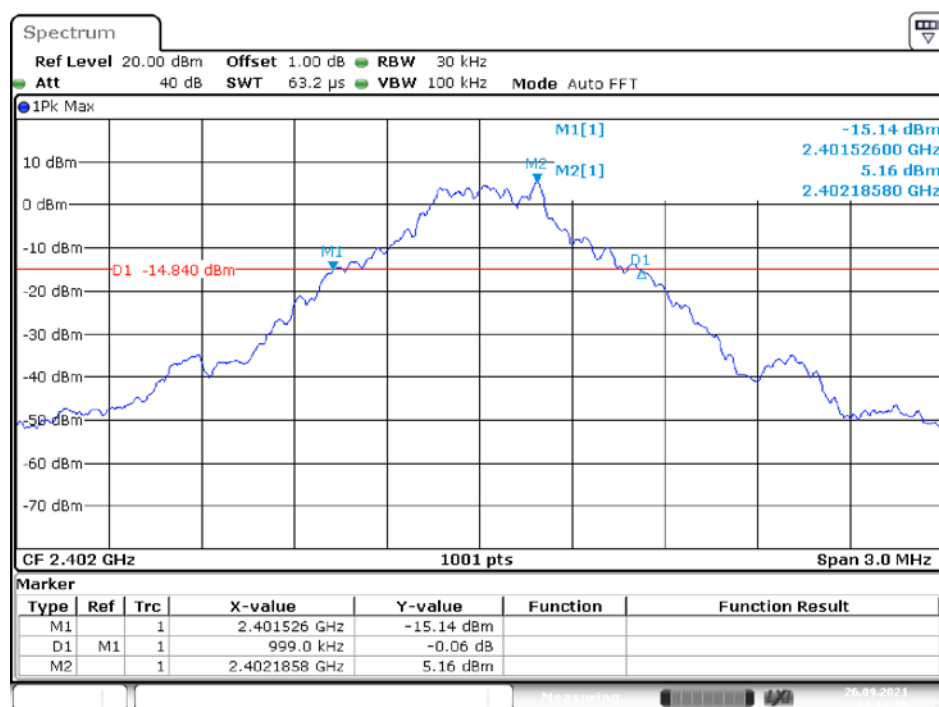
7.3 發射頻寬之量測結果

環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

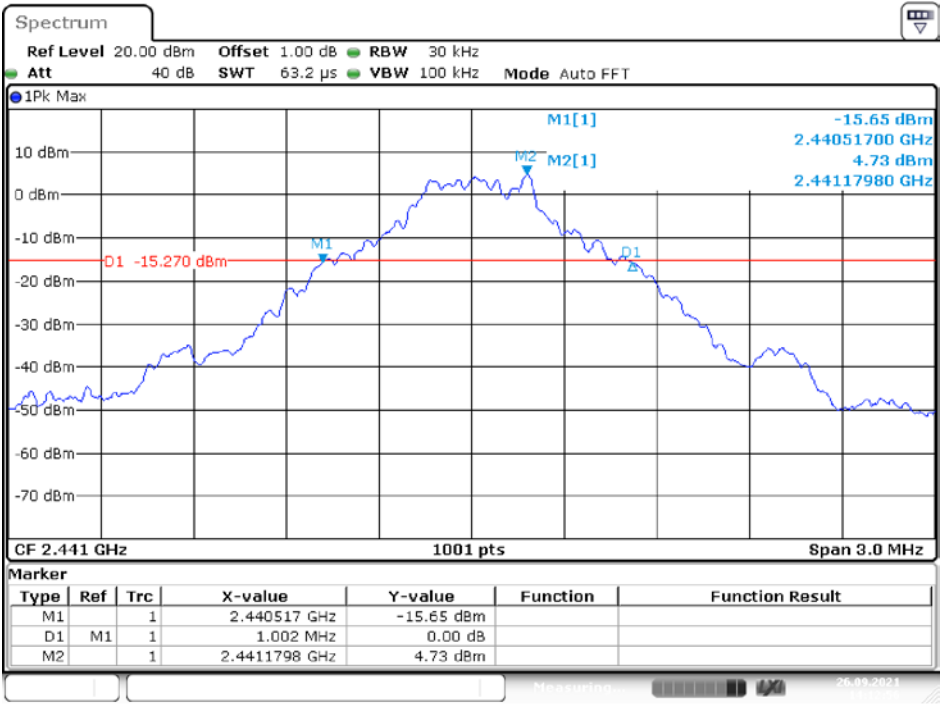
Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)	Result
BT Mode			
Low	2402	1.00	PASS
Mid	2441	1.00	PASS
High	2480	1.00	PASS
EDR Mode - 3M			
Low	2402	1.31	PASS
Mid	2441	1.32	PASS
High	2480	1.32	PASS

20 dB Emission Bandwidth

BT Mode Low Channel

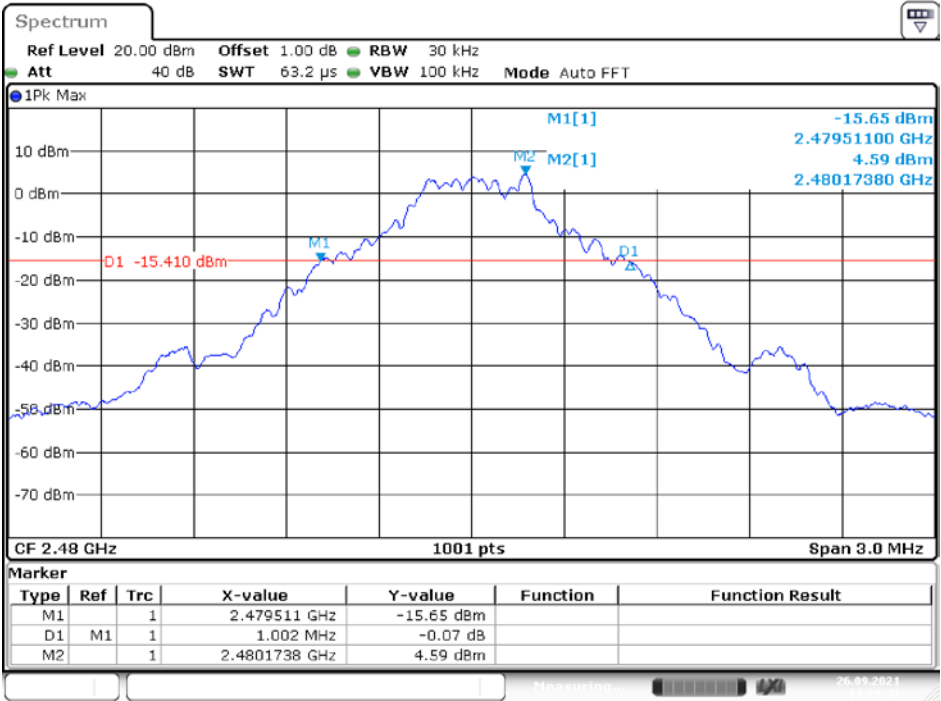


BT Mode Middle Channel



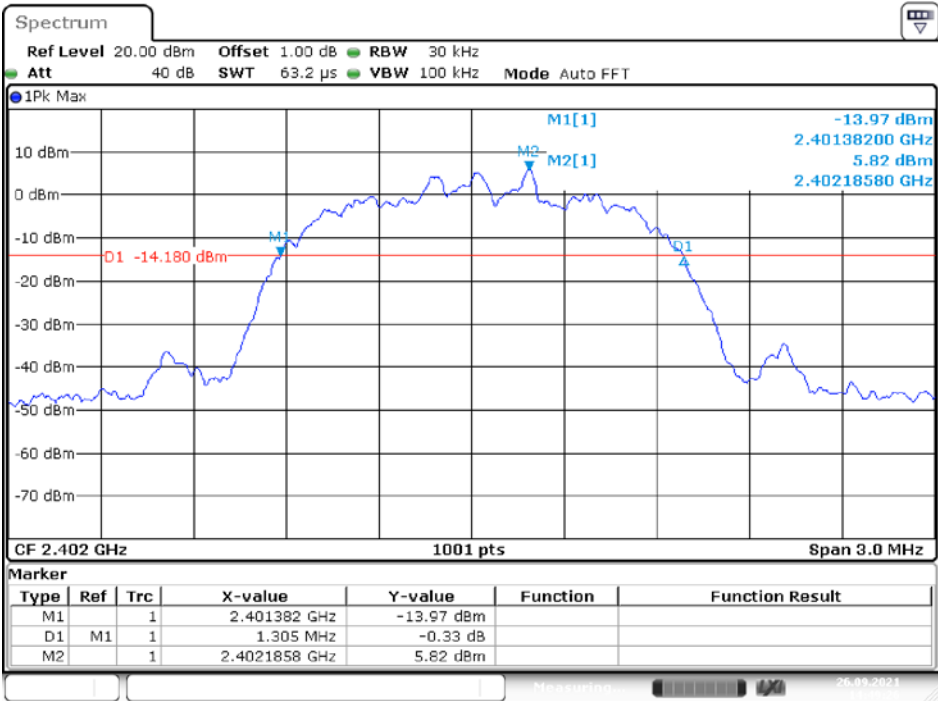
Date: 26.SEP.2021 14:12:56

BT Mode High Channel



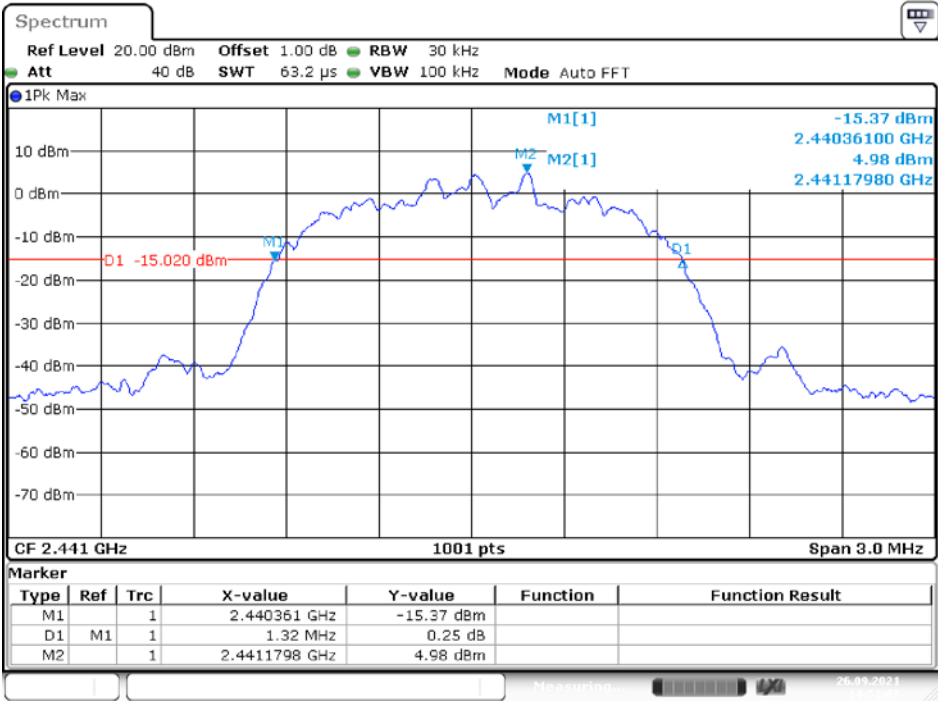
Date: 26.SEP.2021 14:29:44

EDR Mode-3M Low Channel



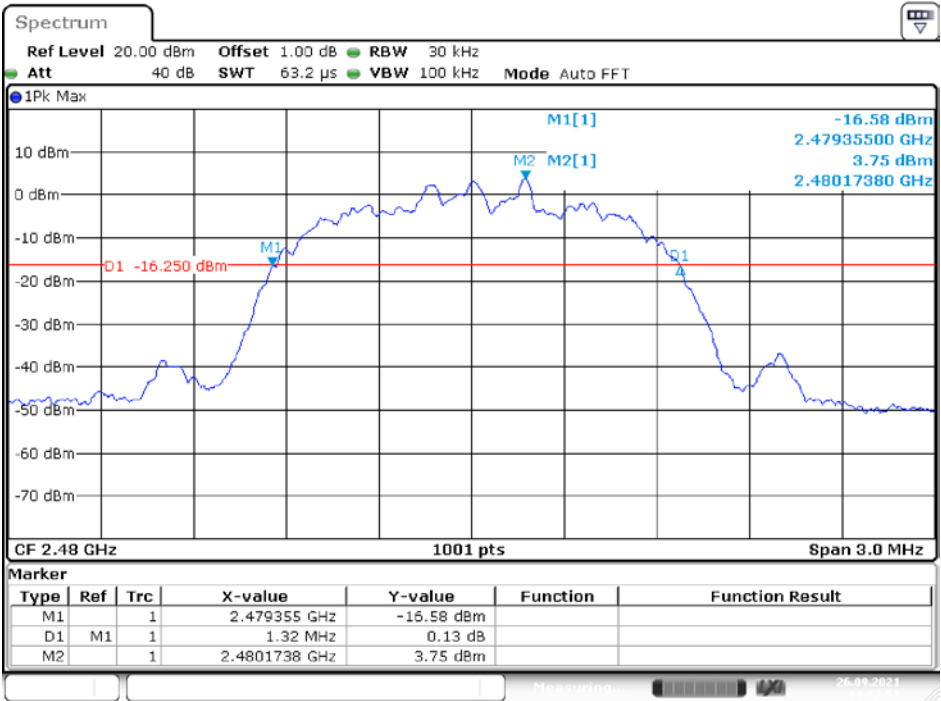
Date: 26.SEP.2021 14:49:26

EDR Mode-3M Middle Channel



Date: 26.SEP.2021 14:51:07

EDR Mode-3M High Channel



Date: 26.SEP.2021 14:52:57

8. 輸出峰值功率之量測

8.1 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4.10.1.2節(1)(A)之規定，跳頻系統至少使用75個跳頻頻道：1 W(含)以下。

依據國家通訊傳播委員會低功率射頻電機技術規範4.10.1.2節(1)(B)之規定，跳頻系統除4.10.1.2節(1)(A)外，依4.10.1.6(1)(A)(a)：0.125 W(含)以下。

依據國家通訊傳播委員會低功率射頻電機技術規範4.10.1.2節(1)(C)之規定，數位調變技術系統：1 W(含)以下。

8.2 測試方法

1. 將受測物的RF埠經由一條50歐姆纜線連接至功率分析儀。
2. 設定量測頻率為量測頻道。
3. 紀錄最大峰值輸出功率。

上述之測試步驟應注意外接之衰減與纜線損失。

8.3 輸出功率之量測結果

環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

Peak Power

Channel	Frequency (MHz)	Peak Output Power (dBm)	Output Power (W)	Limit (W)	Result
BT mode					
Low	2402	7.02	0.005	0.125	PASS
Mid	2441	6.55	0.005		PASS
High	2480	6.44	0.004		PASS
EDR mode – 2M					
Low	2402	9.91	0.010	0.125	PASS
Mid	2441	9.12	0.008		PASS
High	2480	7.81	0.006		PASS
EDR mode – 3M					
Low	2402	10.35	0.011	0.125	PASS
Mid	2441	9.59	0.009		PASS
High	2480	8.35	0.007		PASS

9. 開放頻帶邊緣 100kHz 頻寬內之限制

9.1 適用標準

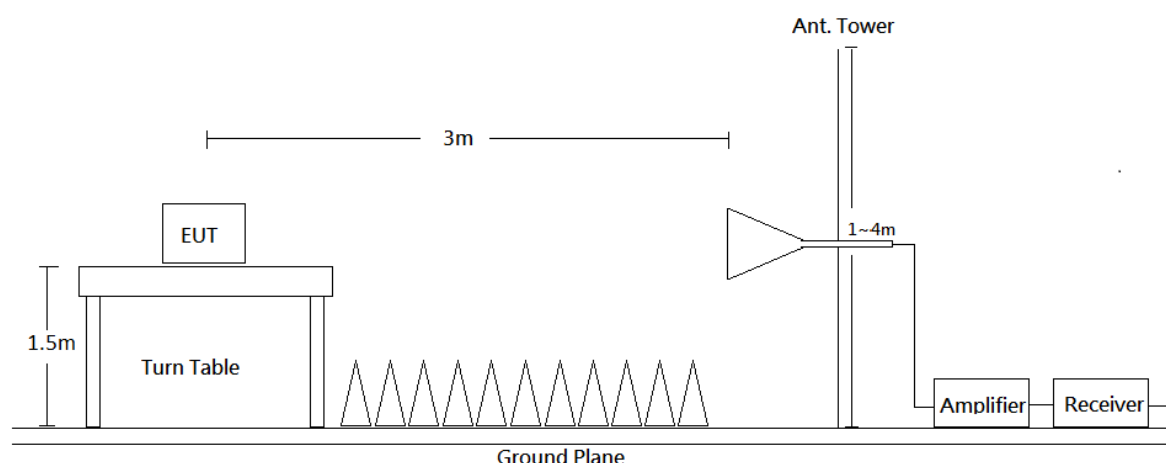
依據國家通訊傳播委員會低功率射頻電機技術規範4.10.1.5節之規定，使用頻帶範圍外之任意100kHz內，發射器所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之100kHz內的射頻功率，峰值輸出功率方式測量者須衰減20分貝(dB)，以射頻傳導或輻射方式測量。最大傳導輸出功率測量方式者，至少須衰減30dB。此外，落於第3.5節禁用頻段之輻射發射，應符合第3.6節之規定。

9.2 測試方法

1. 頻率掃描範圍足以涵蓋操作在最靠近頻帶邊緣之頻道的發射波峰位準以及任何落於許可頻帶外之調變產物。
2. 解析頻寬大於1%頻率掃描範圍寬度，視訊頻寬不小於解析頻寬。掃描時間為自動，檢波功能為峰值，訊號軌跡為最大保留(Max Hold)。
3. 將標記設定於在頻帶邊緣上的發射，或將標記設定於最大之頻帶外調變產物上若其位準大於頻帶邊緣上的發射。啟動標記差值之功能，利用標記至波峰功能(Marker to Peak)功能以標記頻帶內發射之波峰，所顯示之標記差值必須符合指定之限制值。以上述相同的步驟決定由跳頻功能所產生的任何混附波是否亦符合規定之限制值。

9.3 測試配置

輻射配置圖



依據 ANSI C63.10:2020 架設

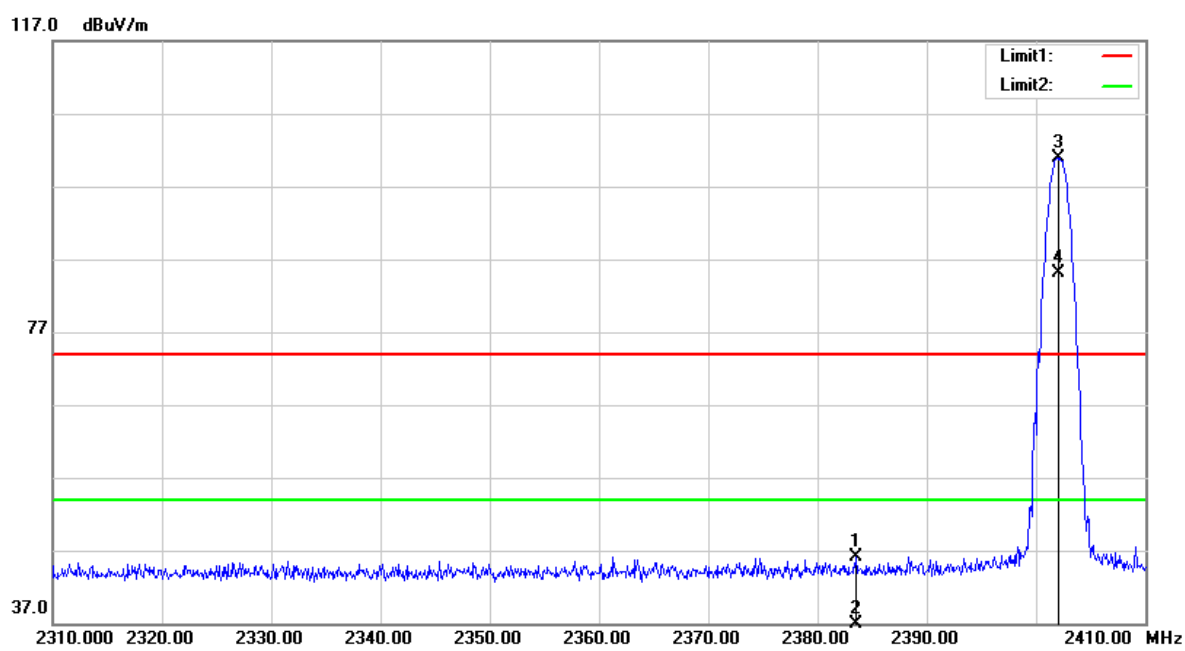
9.4 開放頻帶邊緣之量測結果

請參考附圖

判定結果: 符合規範

發射限制測試 BT Mode / CH Low

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 05:39:56
		Test By:	Ken
Description:	1DH5-TX-2402-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
2383.500	56.44	-10.28	46.16	74.00	-27.84	138	202	peak
2383.500	42.45	-10.28	32.17	54.00	-21.83	138	202	AVG
2402.000	111.04	-10.14	100.90	N/A	N/A	138	202	peak
2402.000	95.22	-10.14	85.08	N/A	N/A	138	202	AVG

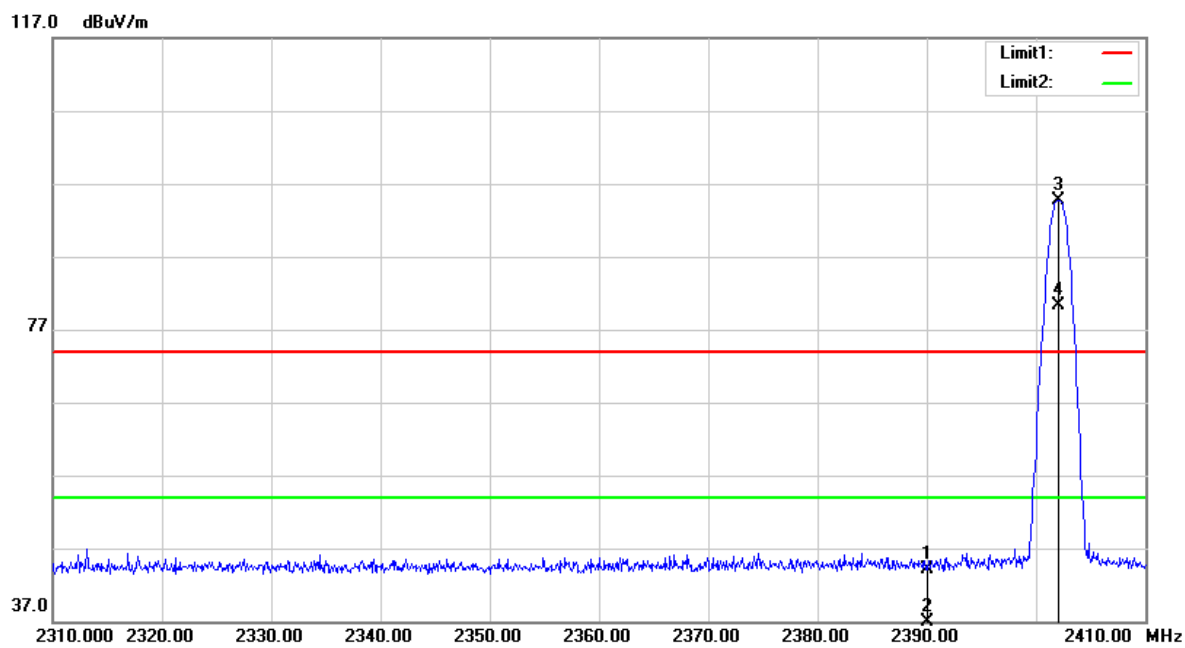
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 05:33:26
		Test By:	Ken
Description:	1DH5-TX-2402-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
2390.000	54.37	-10.23	44.14	74.00	-29.86	148	217	peak
2390.000	43.48	-10.23	33.25	54.00	-20.75	148	217	AVG
2402.000	104.84	-10.14	94.70	N/A	N/A	148	217	peak
2402.000	90.43	-10.14	80.29	N/A	N/A	148	217	AVG

Note:

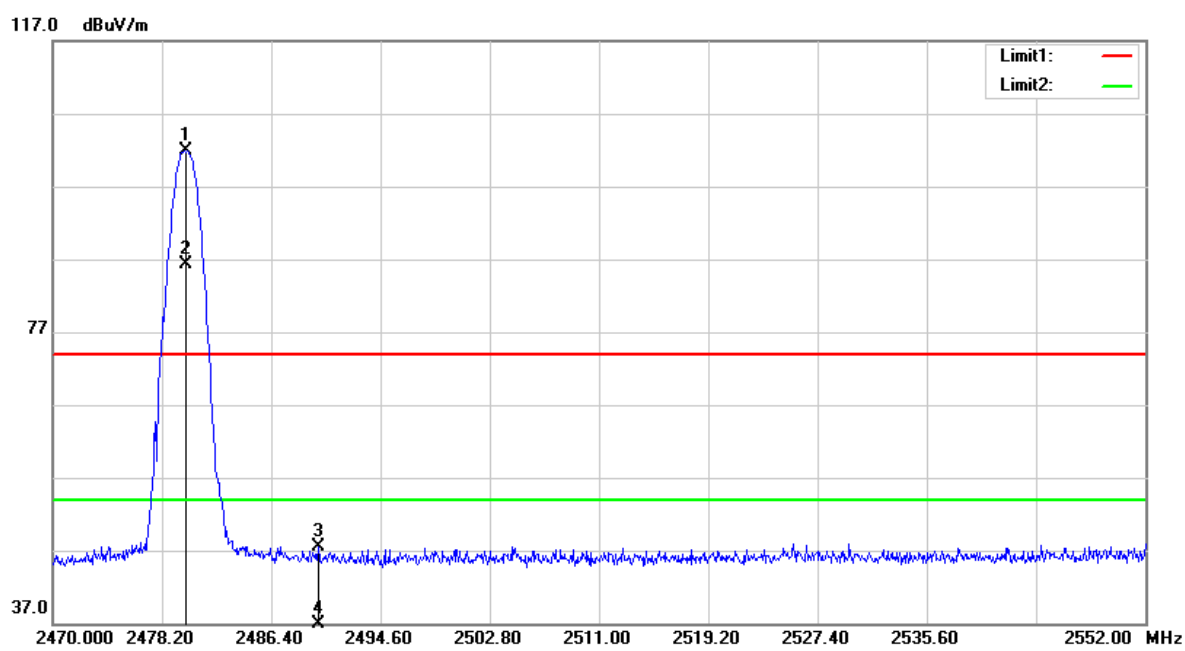
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

發射限制測試 BT Mode / CH High

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 05:57:57
		Test By:	D.L
Description:	1DH5-TX-2480-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
2480.000	111.23	-9.31	101.92	N/A	N/A	139	222	peak
2480.000	95.59	-9.31	86.28	N/A	N/A	139	222	AVG
2489.926	56.75	-9.17	47.58	74.00	-26.42	139	222	peak
2489.926	44.67	-9.17	35.50	54.00	-18.50	139	222	AVG

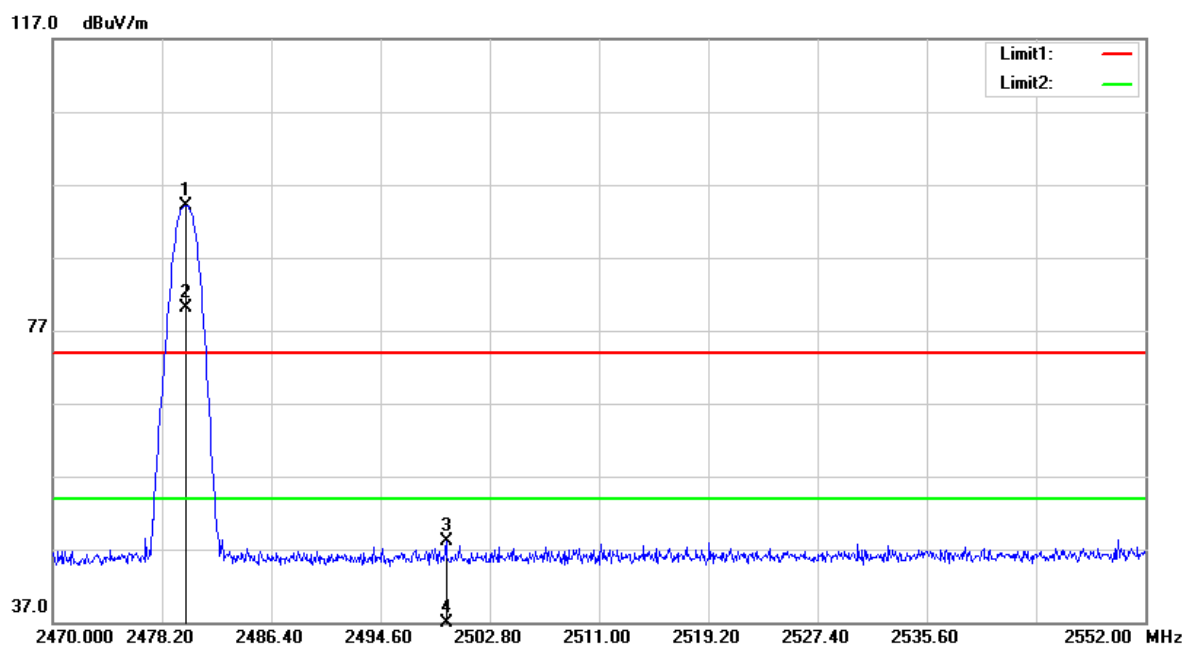
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 05:53:25
		Test By:	D.L
Description:	1DH5-TX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
2480.000	103.47	-9.31	94.16	N/A	N/A	150	221	peak
2480.000	89.40	-9.31	80.09	N/A	N/A	150	221	AVG
2499.520	57.10	-9.03	48.07	74.00	-25.93	150	221	peak
2499.520	43.28	-9.03	34.25	54.00	-19.75	150	221	AVG

Note:

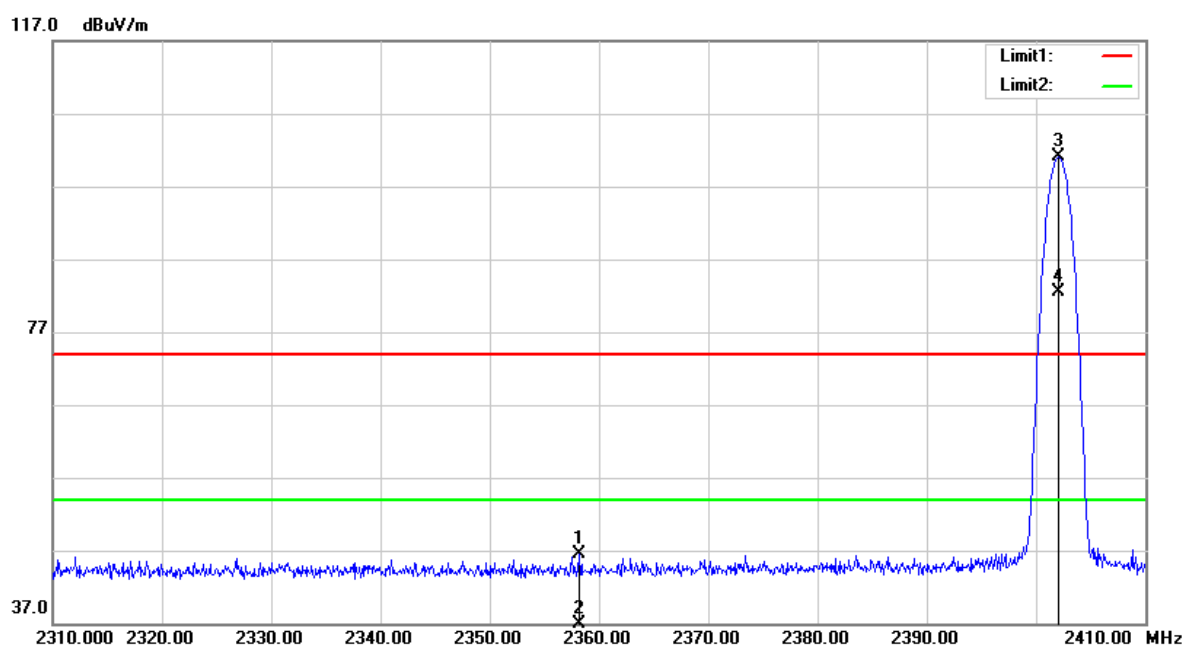
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

發射限制測試 EDR Mode-3M / CH Low

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 07:01:43
		Test By:	D.L
Description:	3DH5-TX-2402-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
2358.200	56.97	-10.48	46.49	74.00	-27.51	151	228	peak
2358.200	42.53	-10.48	32.05	54.00	-21.95	151	228	AVG
2402.000	111.22	-10.14	101.08	N/A	N/A	151	228	peak
2402.000	92.69	-10.14	82.55	N/A	N/A	151	228	AVG

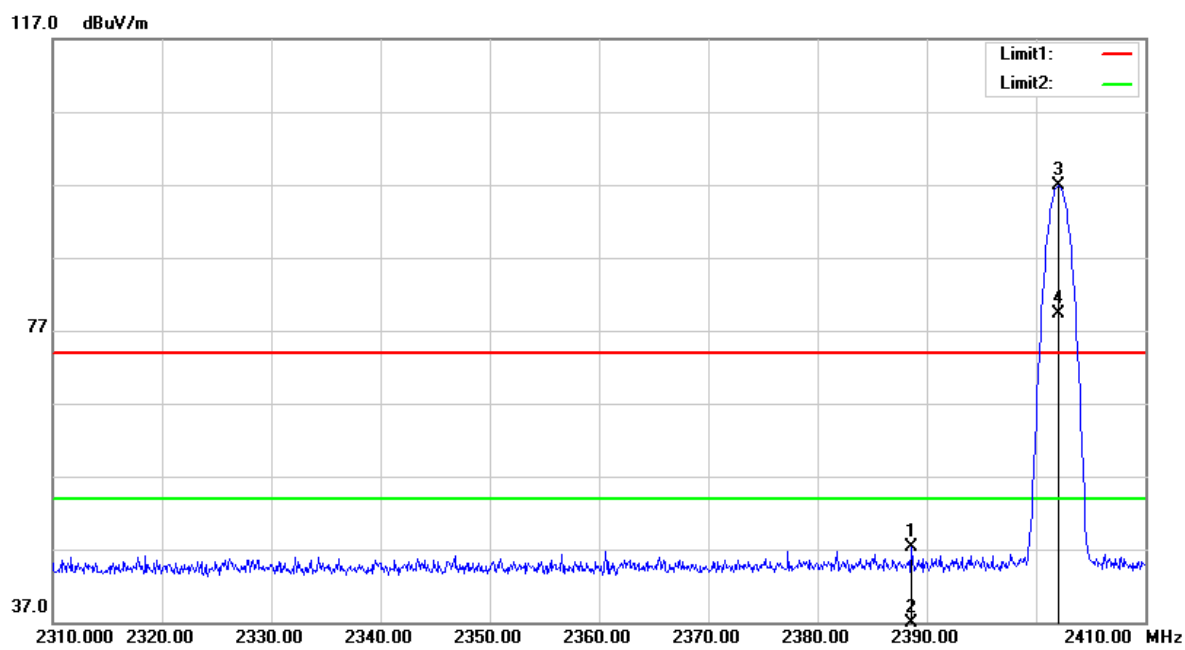
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 07:04:12
		Test By:	D.L
Description:	3DH5-TX-2402-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
2388.600	57.46	-10.24	47.22	74.00	-26.78	146	231	peak
2388.600	42.46	-10.24	32.22	54.00	-21.78	146	231	AVG
2402.100	107.03	-10.13	96.90	N/A	N/A	146	231	peak
2402.100	89.47	-10.13	79.34	N/A	N/A	146	231	AVG

Note:

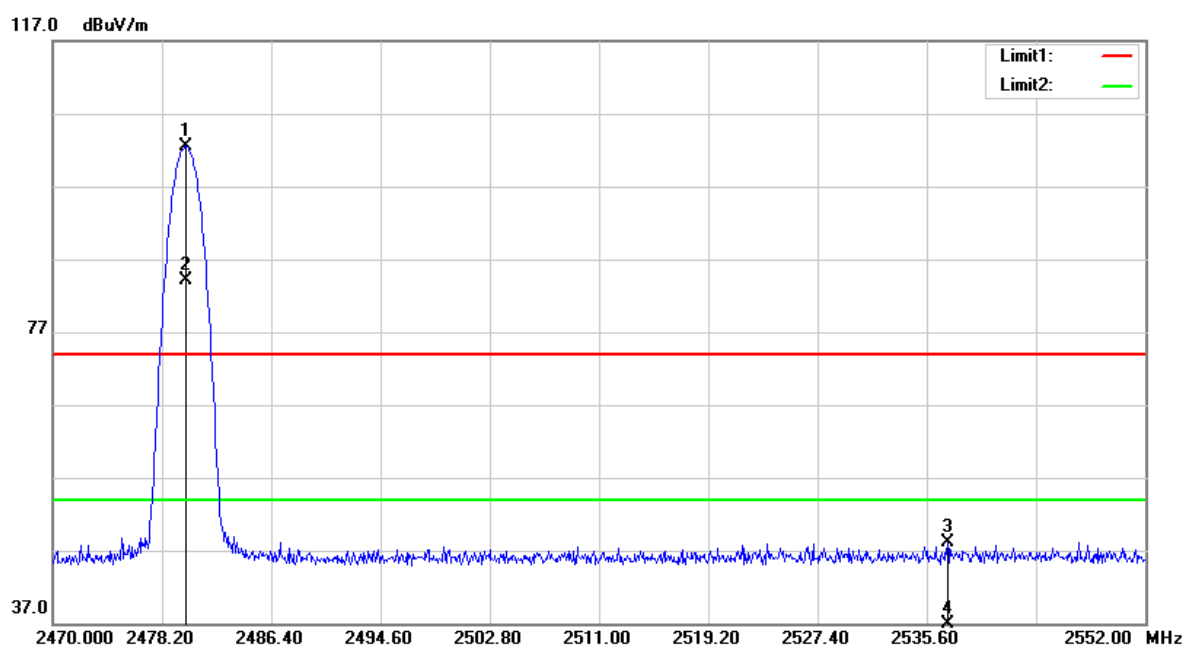
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

發射限制測試 EDR Mode-3M / CH High

Job No.:	RXZ210924001	Ant.Polar.:	Horizontal
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 07:15:32
		Test By:	D.L
Description:	3DH5-TX-2480-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
2480.000	111.80	-9.31	102.49	N/A	N/A	136	228	peak
2480.000	93.40	-9.31	84.09	N/A	N/A	136	228	AVG
2537.158	56.87	-8.76	48.11	74.00	-25.89	136	228	peak
2537.158	44.31	-8.76	35.55	54.00	-18.45	136	228	AVG

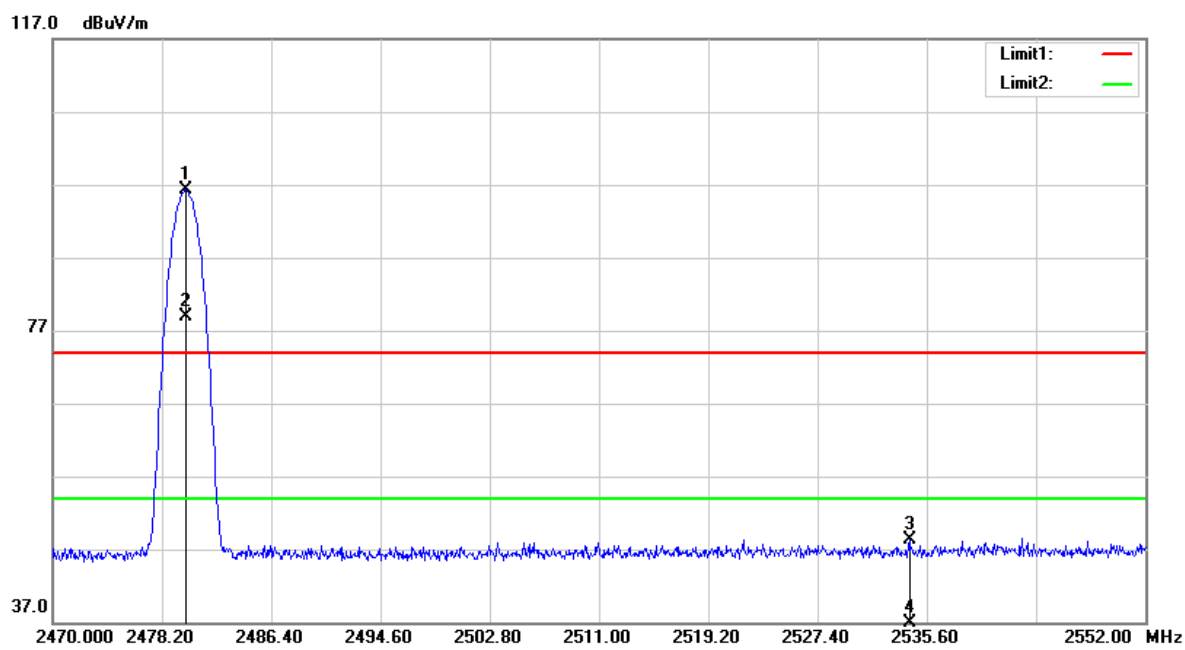
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ210924001	Ant.Polar.:	Vertical
Standard:	NCC LP0002 4.10.1 Peak 3m	Test Distance:	3m
Test item:	Radiation Test	Power:	AC 110V/60Hz
Temp.(°C)/Hum.(%RH):	24.8(°C)/67%RH	Date:2021/9/29	Time:下午 07:22:48
		Test By:	D.L
Description:	3DH5-TX-2480-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
2480.004	105.53	-9.31	96.22	N/A	N/A	149	228	peak
2480.004	88.14	-9.31	78.83	N/A	N/A	149	228	AVG
2534.288	57.11	-8.79	48.32	74.00	-25.68	149	228	peak
2534.288	43.40	-8.79	34.61	54.00	-19.39	149	228	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

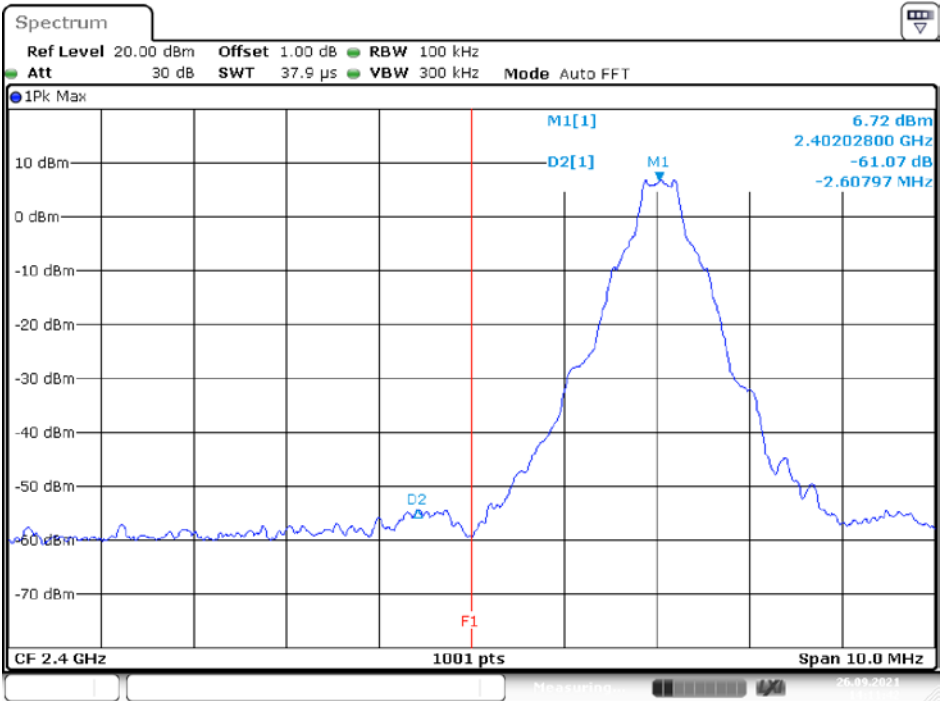
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Conducted Bandedge

環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

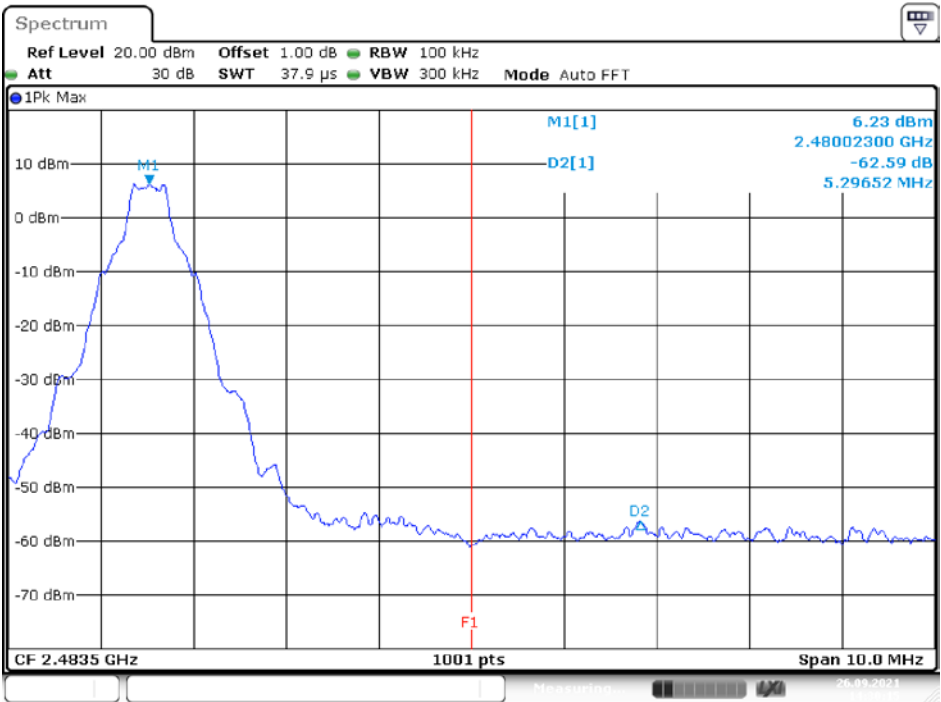
Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
BT mode				
Low	2402	61.07	≥ 20	PASS
High	2480	62.59	≥ 20	PASS
BT mode (Hopping)				
Low	2402	62.65	≥ 20	PASS
High	2480	63.02	≥ 20	PASS
EDR mode-3M				
Low	2402	60.67	≥ 20	PASS
High	2480	62.53	≥ 20	PASS
EDR mode-3M (Hopping)				
Low	2402	61.25	≥ 20	PASS
High	2480	62.77	≥ 20	PASS

Conducted Band Edges (BT mode / CH Low)



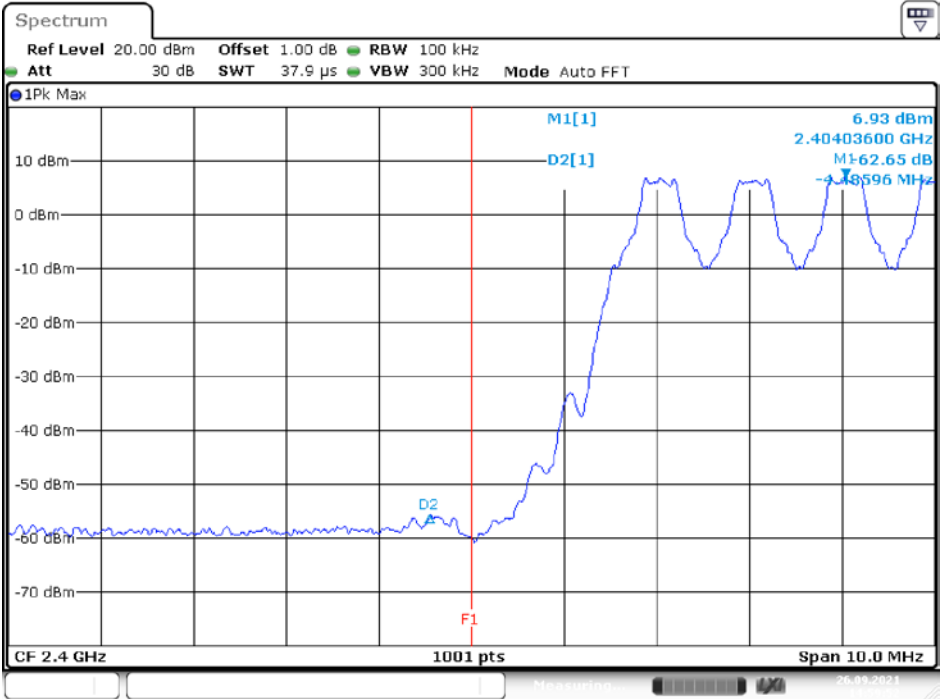
Date: 26.SEP.2021 14:11:42

Conducted Band Edges (BT mode / CH High)



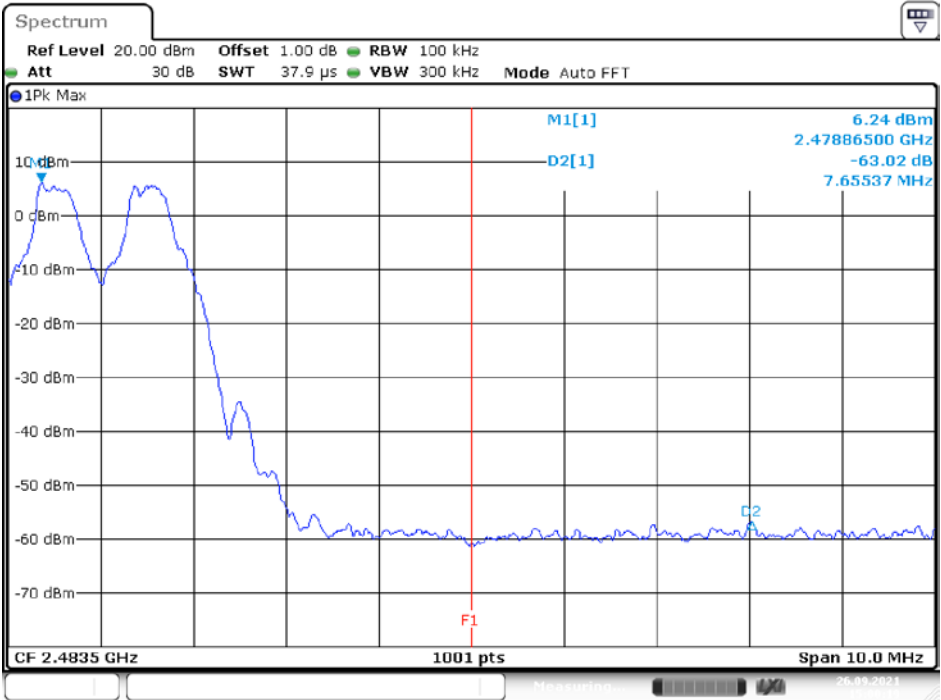
Date: 26.SEP.2021 14:30:15

Conducted Band Edges (BT mode - Hopping / CH Low)



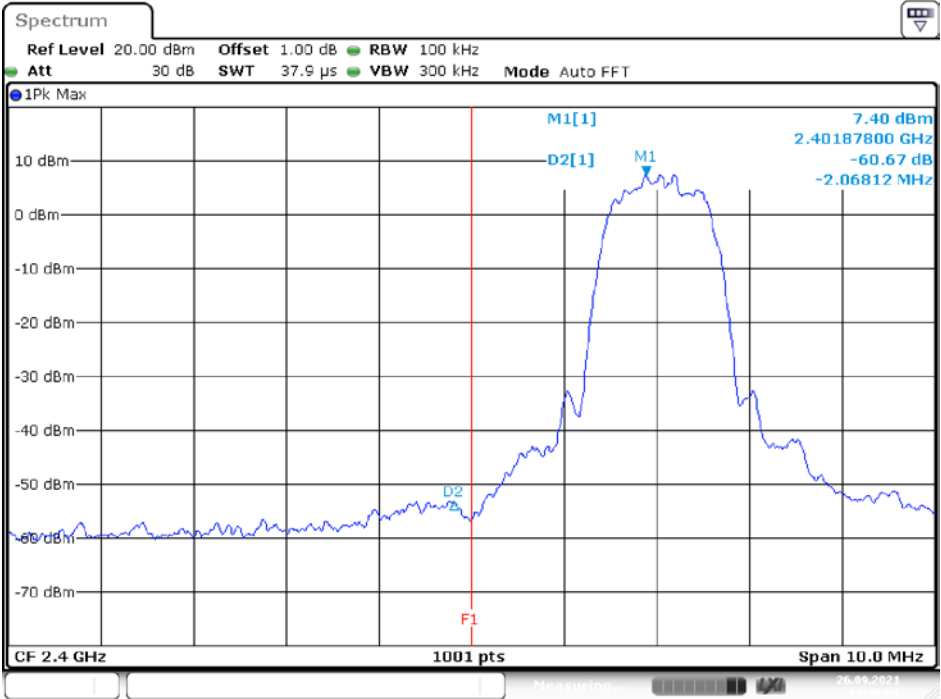
Date: 26.SEP.2021 14:59:53

Conducted Band Edges (BT mode - Hopping / CH High)



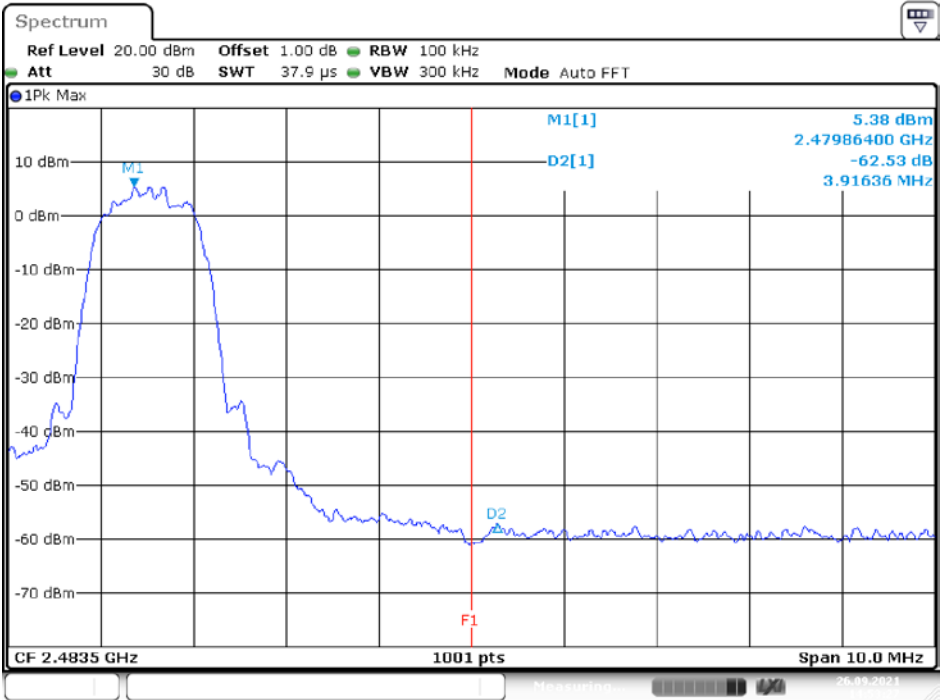
Date: 26.SEP.2021 15:00:19

Conducted Band Edges (EDR mode-3M / CH Low)



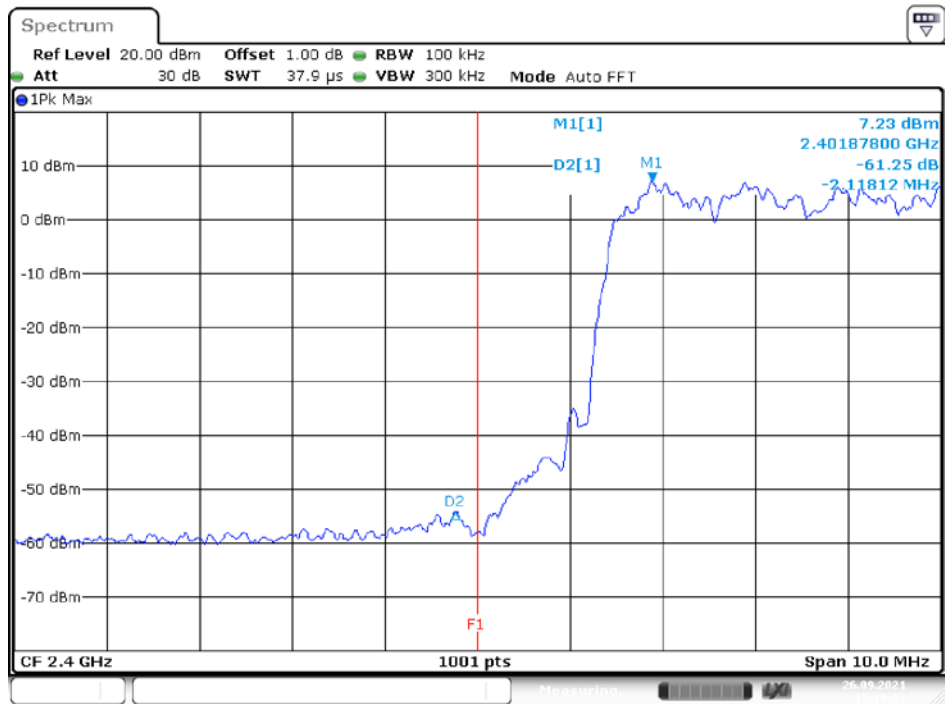
Date: 26.SEP.2021 14:49:57

Conducted Band Edges (EDR mode-3M / CH High)



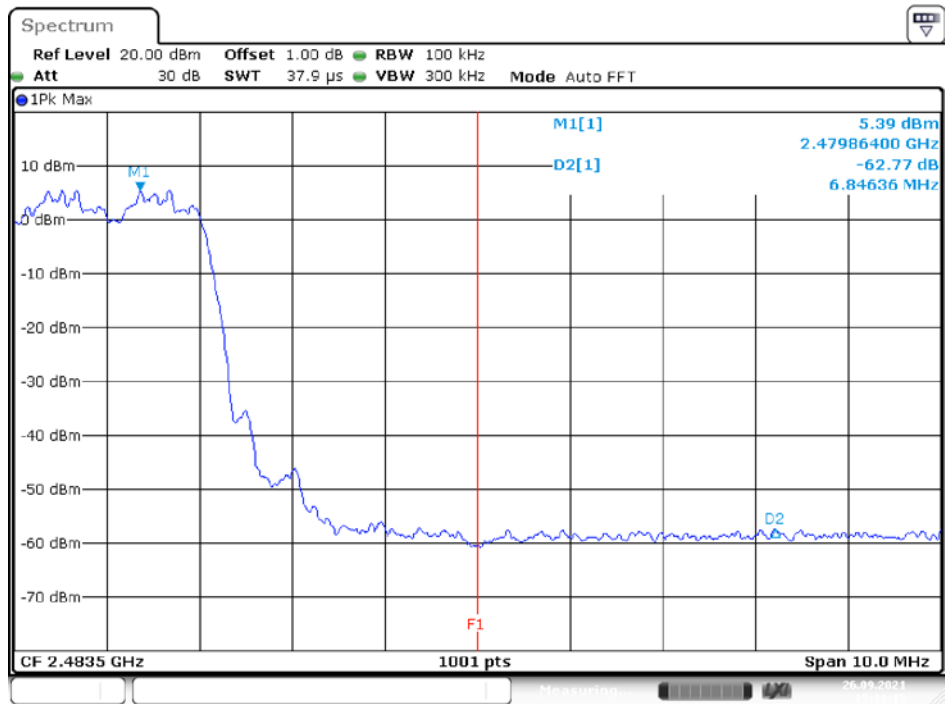
Date: 26.SEP.2021 14:53:28

Conducted Band Edges (EDR mode-3M - Hopping / CH Low)



Date: 26.SEP.2021 15:10:03

Conducted Band Edges (EDR mode-3M - Hopping / CH High)



Date: 26.SEP.2021 15:11:15

10. 載波頻率間隔之量測

10.1 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4.10.1.6節(1)(A)之規定，跳頻系統之載波頻率頻道間隔不得低於25千赫(kHz)或跳頻頻道之20dB頻寬，兩者取較寬者。但操作頻率為2400-2483.5兆赫(MHz)頻帶且輸出功率不大於125毫瓦(mW)跳頻系統，其載波頻率頻道間隔不得小於25千赫 (kHz)或跳頻頻道20dB頻寬之三分之二，兩者取較寬者。系統之跳頻頻道應依虛擬亂數排列，在各頻率之跳頻頻道上跳躍。每一發射機必須均等的使用每一頻率。系統接收機應具有與發射機跳躍頻道頻寬相匹配之輸入頻寬，且應隨所發射之信號同步偏移接收頻率。

10.2 測試方法

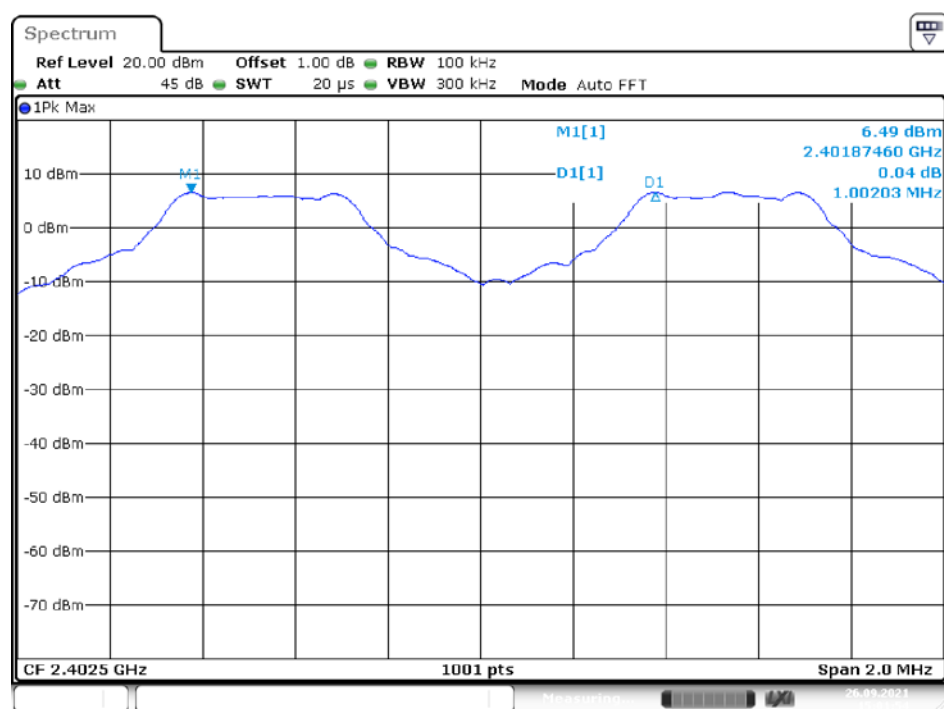
1. 啟動受測物之跳頻功能。頻率掃描範圍寬度足以測得兩鄰近頻道之波峰，解析頻寬不小於 1%的頻率掃描範圍，視訊頻寬不小於解析頻寬。
2. 掃描時間為自動，檢波功能為峰值，訊號軌跡為最大保留 (Max Hold)。
3. 利用差值記號功能以決定兩鄰近頻道波峰之間隔。
4. 設定值: The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz

10.3 載波頻率間隔之量測結果

環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

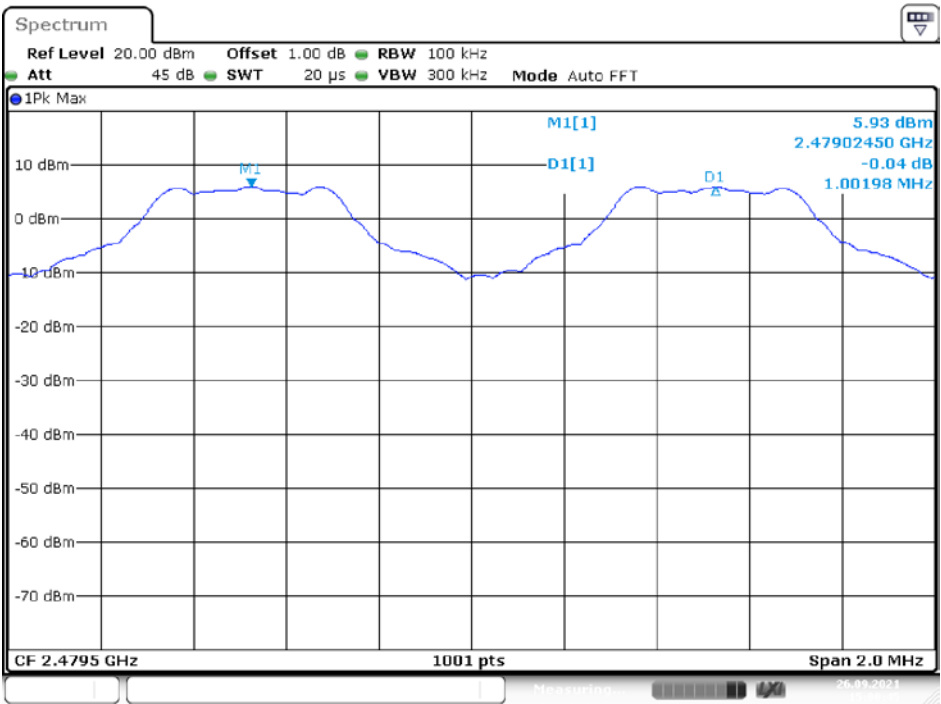
Mode	Channel Separation (MHz)	20 dB bandwidth (MHz)	Two-thirds of the 20 dB bandwidth (MHz)	Channel Separation (Limit)	Result
GFSK	1.00	1.00	0.668	> two-thirds of the 20 dB bandwidth	PASS
8DPSK	1.00	1.32	0.880	> two-thirds of the 20 dB bandwidth	PASS

BT mode



Date: 26.SEP.2021 15:01:54

EDR mode-3M



Date: 26.SEP.2021 15:00:45

11. 載波頻率佔用週期之量測

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 4.10.1.6 節(1)(A)(a)之規定，
(a) 操作於 2400MHz ~ 2483.5MHz 之展頻跳頻系統，須使用至少 15 個無重疊的頻道，在 0.4 秒乘以跳頻頻道數之週期內，任一頻率占用之平均時間應小於或等於 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 測試方法

1. 啟動受測物之跳頻功能。頻率掃描範圍為零，中心頻率為跳頻頻道，解析頻寬為 1MHz，視訊頻寬不小於解析頻寬。
2. 掃描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，訊號軌跡為最大保留(Max Hold)。
3. 利用差值記號功能以決定停留時間。若該值會因不同操作模式而異，對不同模式重複此測試。
4. 本項載波頻率測試值 DH1 / 3 / 5 之測試軟體是由客戶提供。
5. 設定值: The resolution bandwidth is set to 1000 kHz. The video bandwidth is set to 1000 kHz

11.3 載波頻率佔用週期之量測結果

環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

Test mode:BT mode / 2402 ~ 2480MHz

Mode	Pulse Time (ms)	Hopping Number (s)	Period Time (s)	Total of Dwell (ms)	Limit (ms)	Result
DH1	0.38	320	31.6	121.60	<400	PASS
DH3	1.636	150	31.6	245.40	<400	PASS
DH5	2.882	90	31.6	259.38	<400	PASS

A period time = $0.4 * 79 = 31.6$ (s)

Total of Dwell= Pulse Time * Hopping Number

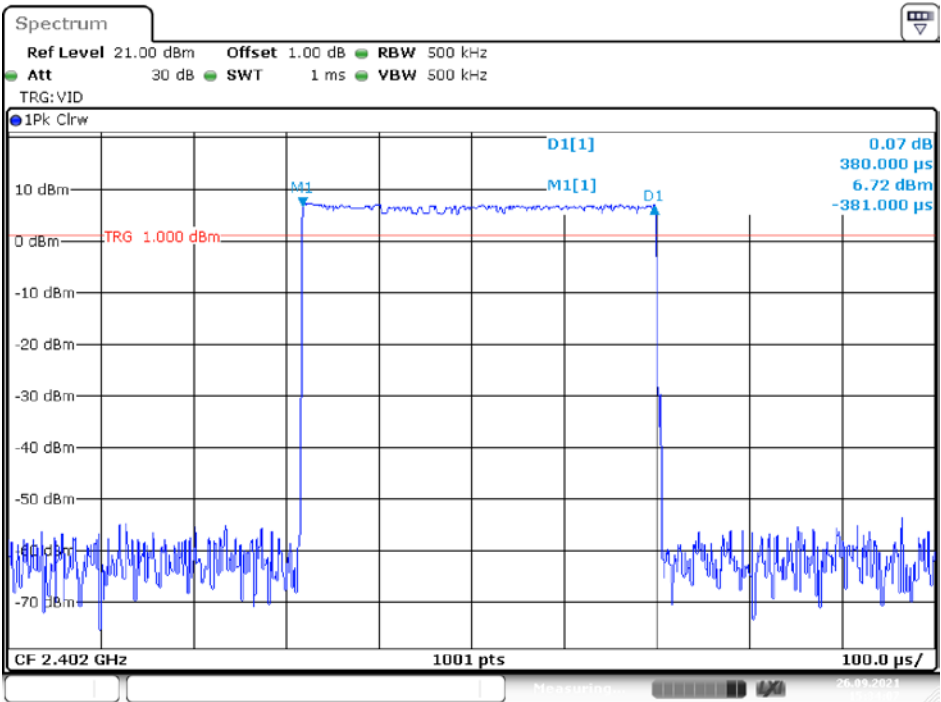
Test mode:EDR mode-3M / 2402 ~ 2480MHz

Mode	Pulse Time (ms)	Hopping Number (s)	Period Time (s)	Total of Dwell (ms)	Limit (ms)	Result
DH1	0.386	310	31.6	119.66	<400	PASS
DH3	1.637	130	31.6	212.81	<400	PASS
DH5	2.885	110	31.6	317.35	<400	PASS

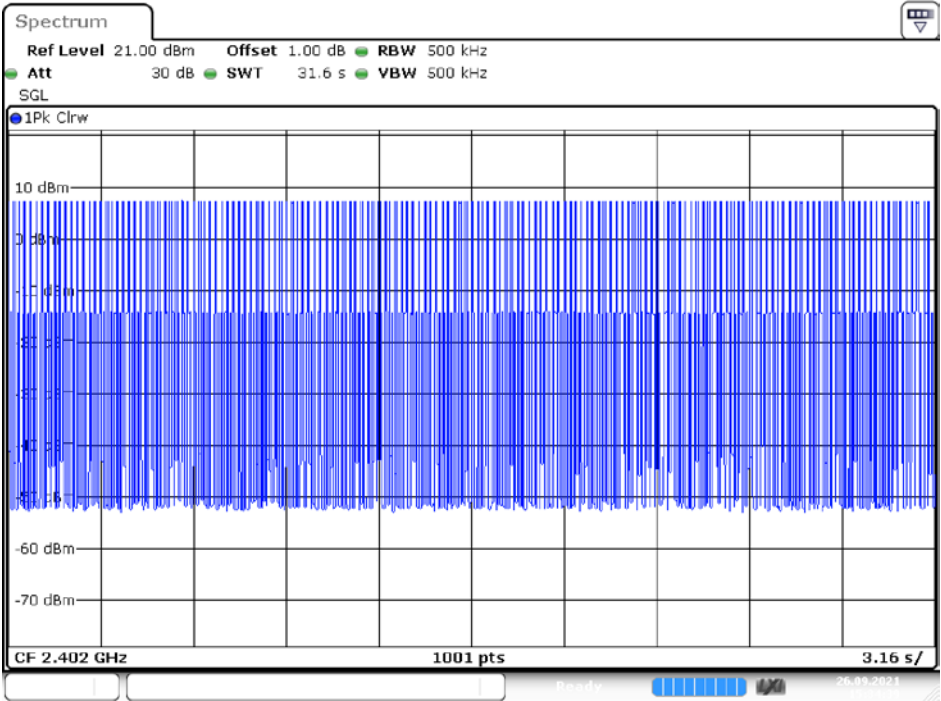
A period time = $0.4 * 79 = 31.6$ (s)

Total of Dwell= Pulse Time * Hopping Number

Dwell Time
BT Mode
DH1

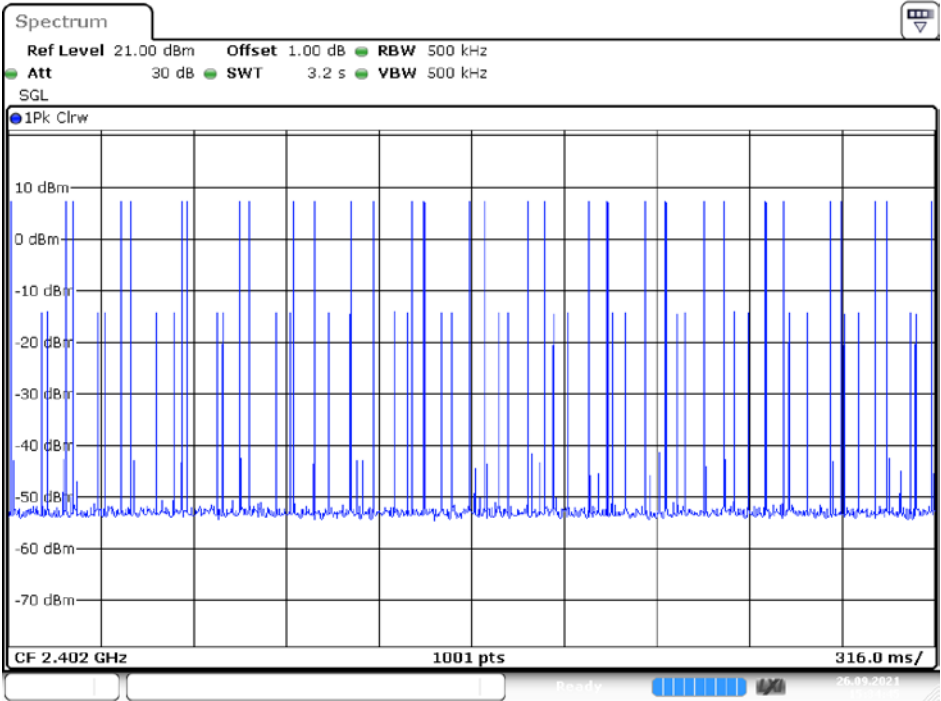


Date: 26.SEP.2021 15:34:07



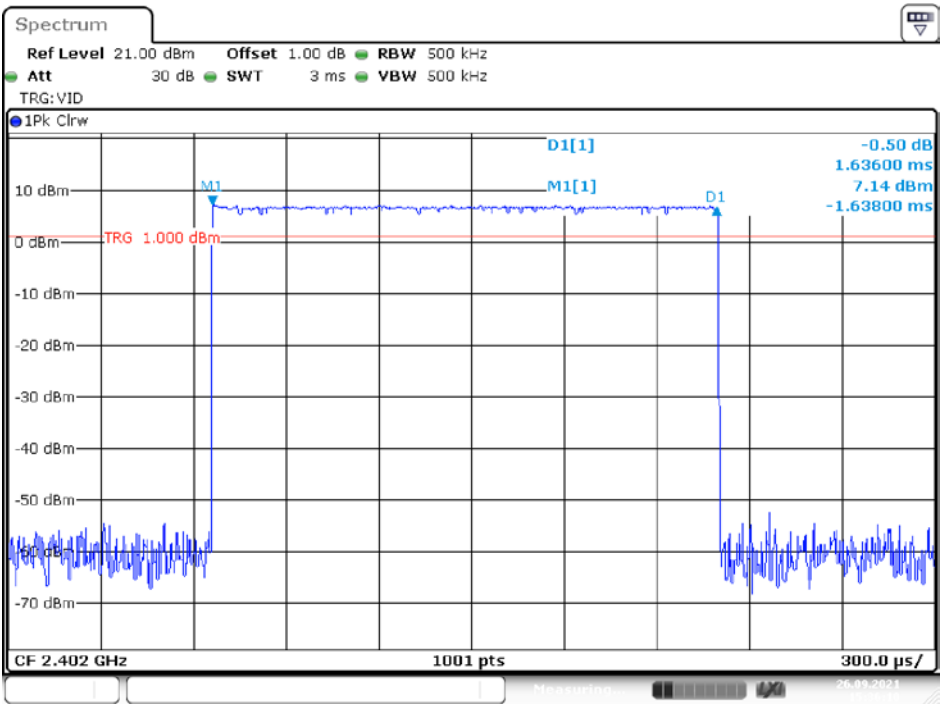
Date: 26.SEP.2021 15:34:39

SWEEP TIME/10
hopping numbers = 32*10=320

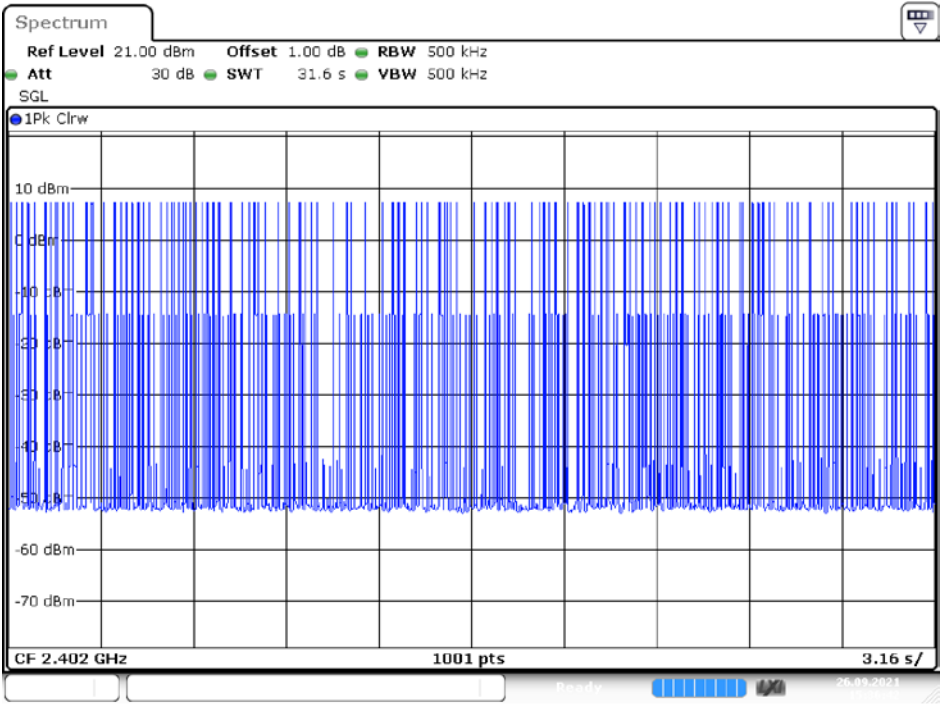


Date: 26.SEP.2021 15:34:46

DH3

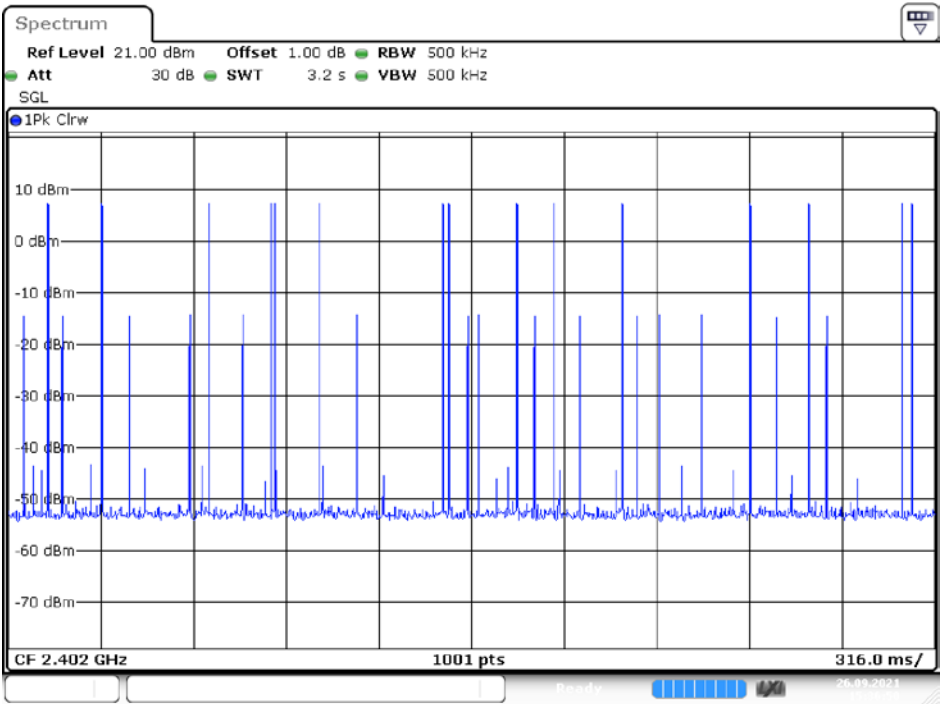


Date: 26.SEP.2021 15:36:10



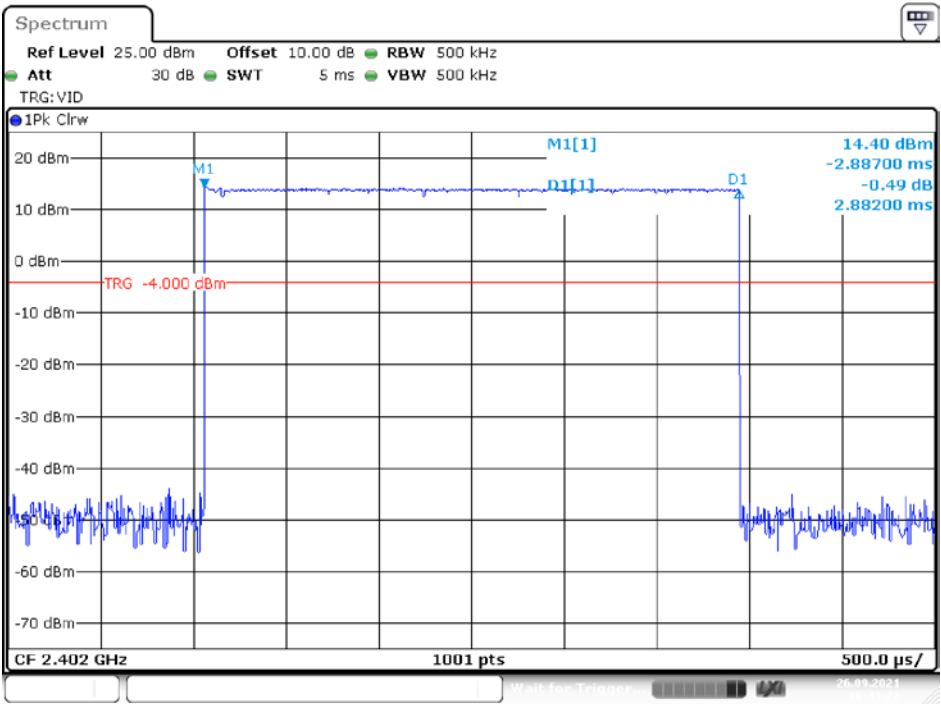
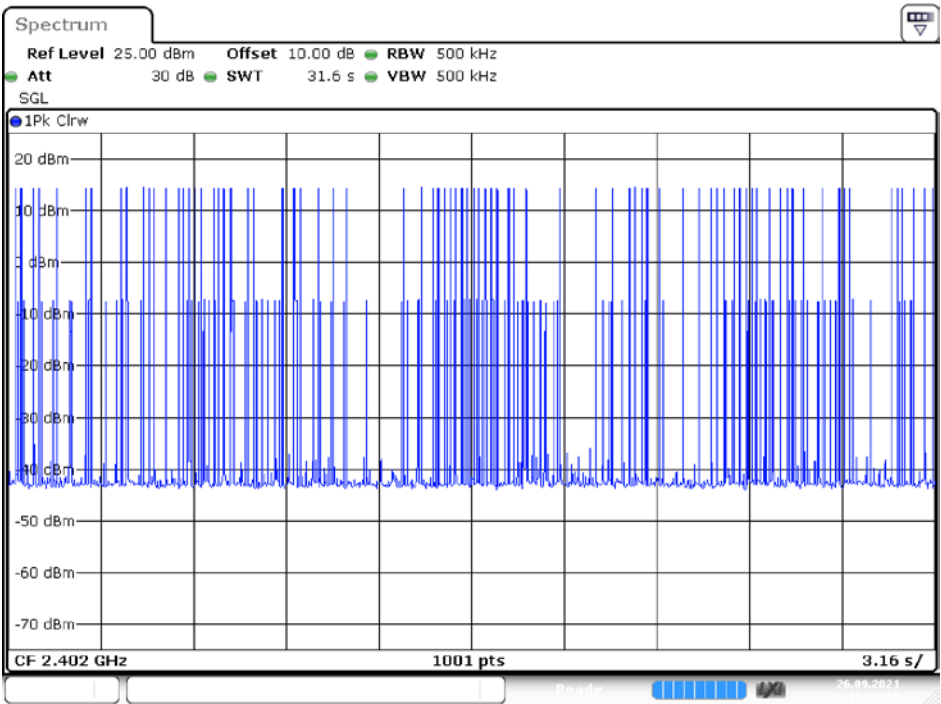
Date: 26.SEP.2021 15:36:43

SWEEP TIME/10
hopping numbers =15*10=150



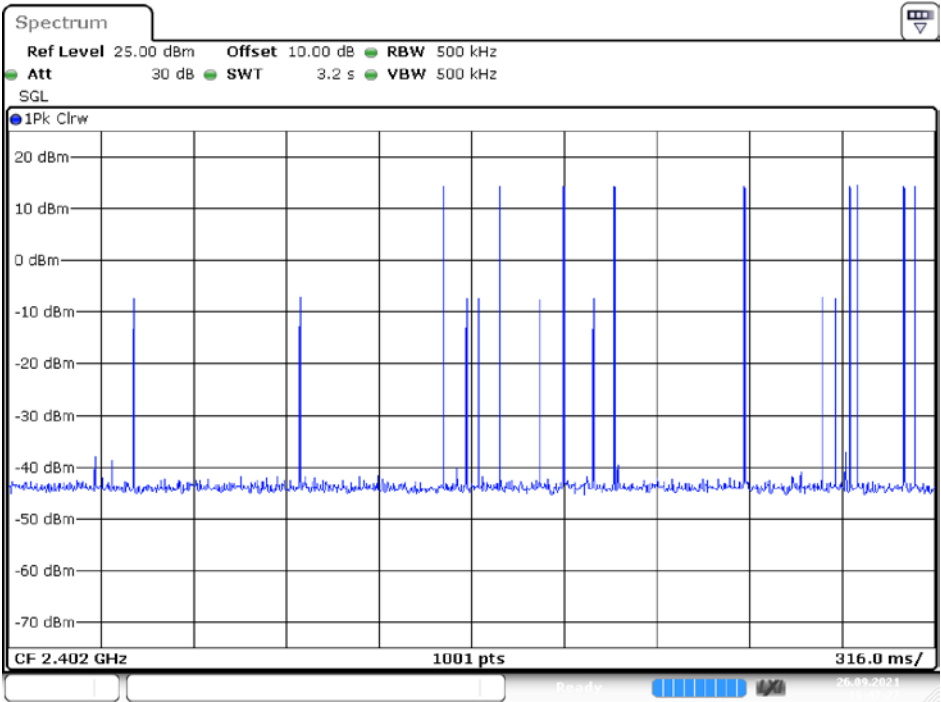
Date: 26.SEP.2021 15:36:51

DH5



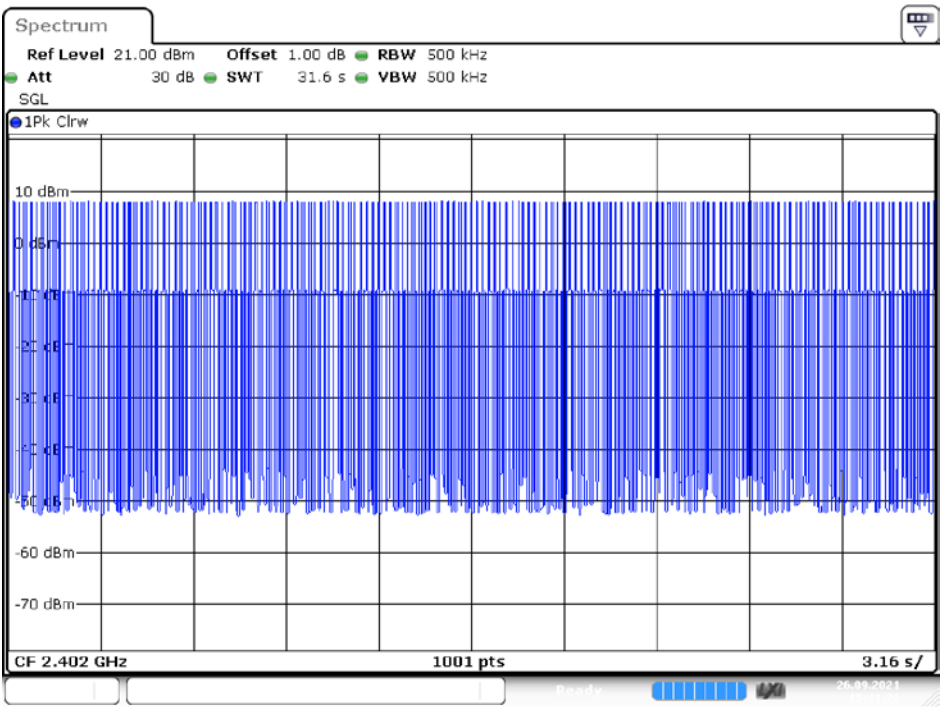
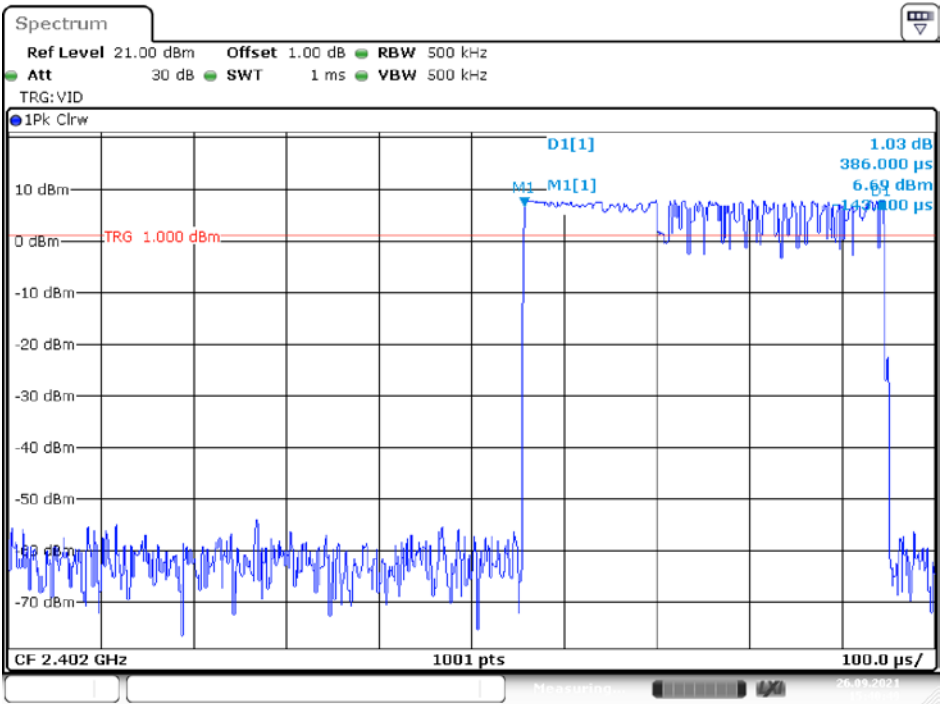
SWEEP TIME/10

hopping numbers = $9 \times 10 = 90$



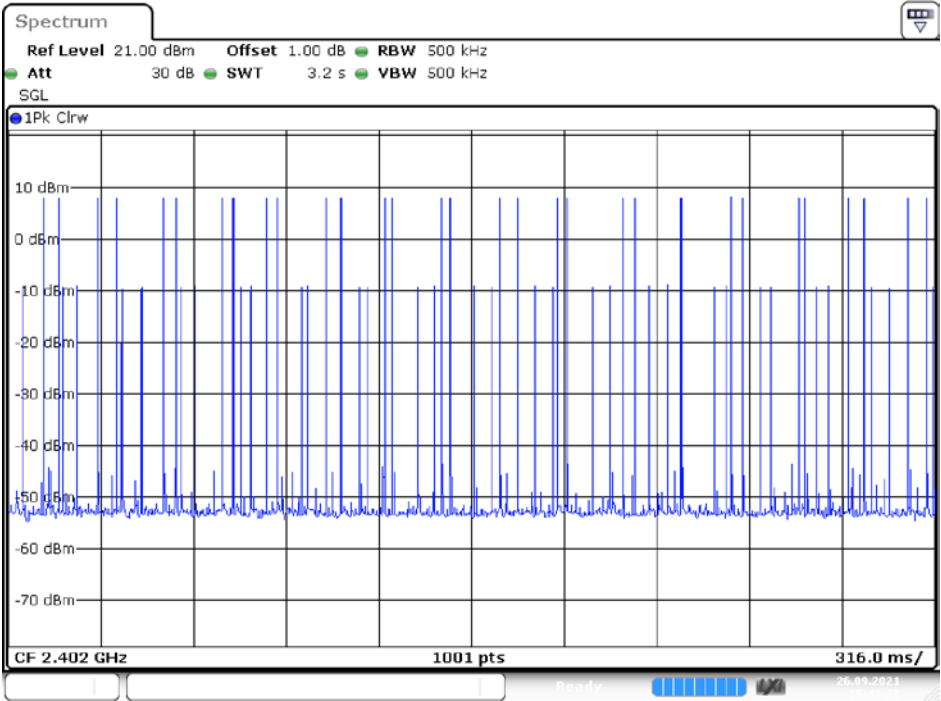
Date: 26.SEP.2021 16:47:27

EDR Mode-3M
3DH1



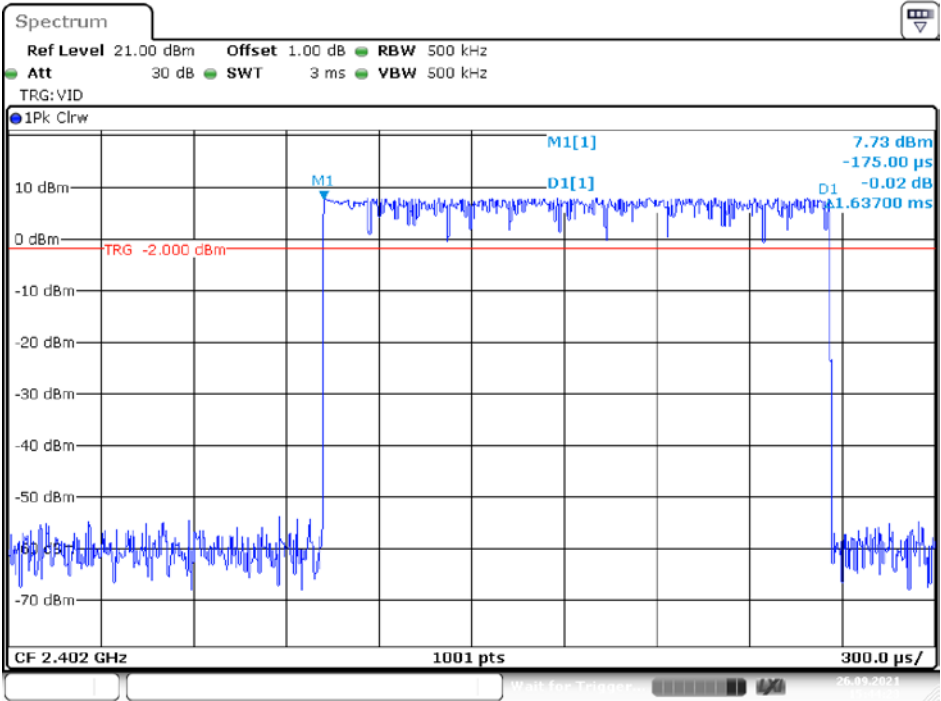
SWEEP TIME/10

hopping numbers = $31 \times 10 = 310$

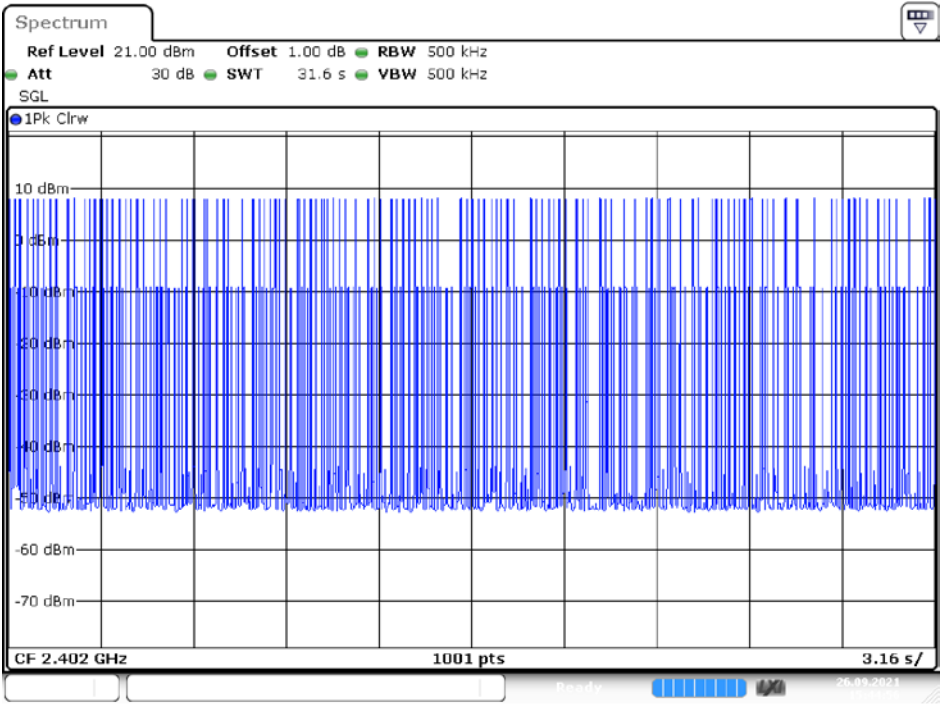


Date: 26.SEP.2021 15:41:29

3DH3

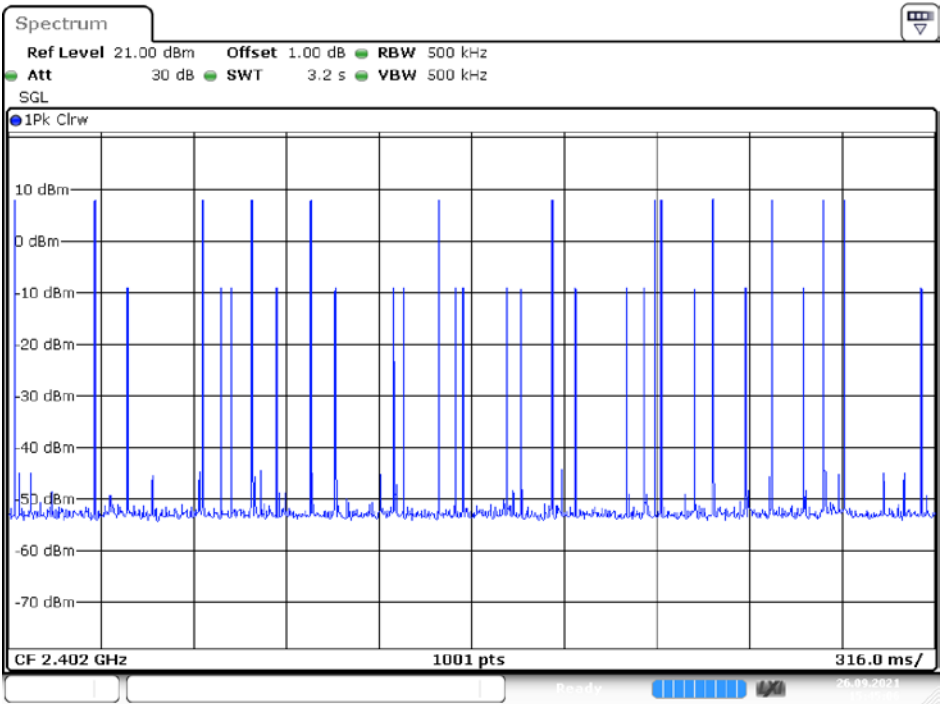


Date: 26.SEP.2021 15:44:24



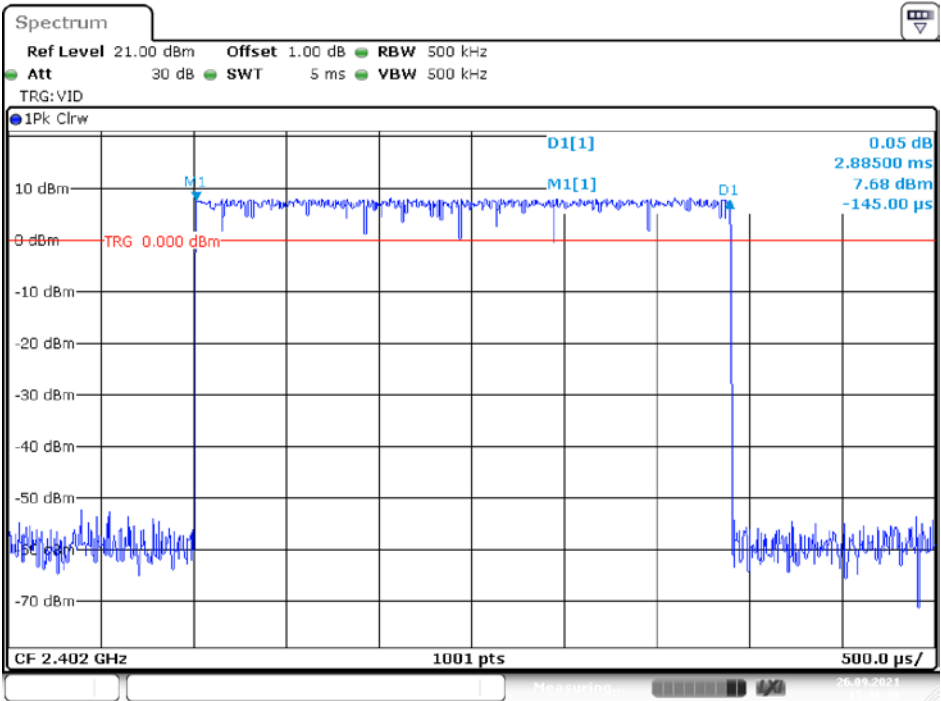
Date: 26.SEP.2021 15:44:56

SWEEP TIME/10
hopping numbers =13*10=130

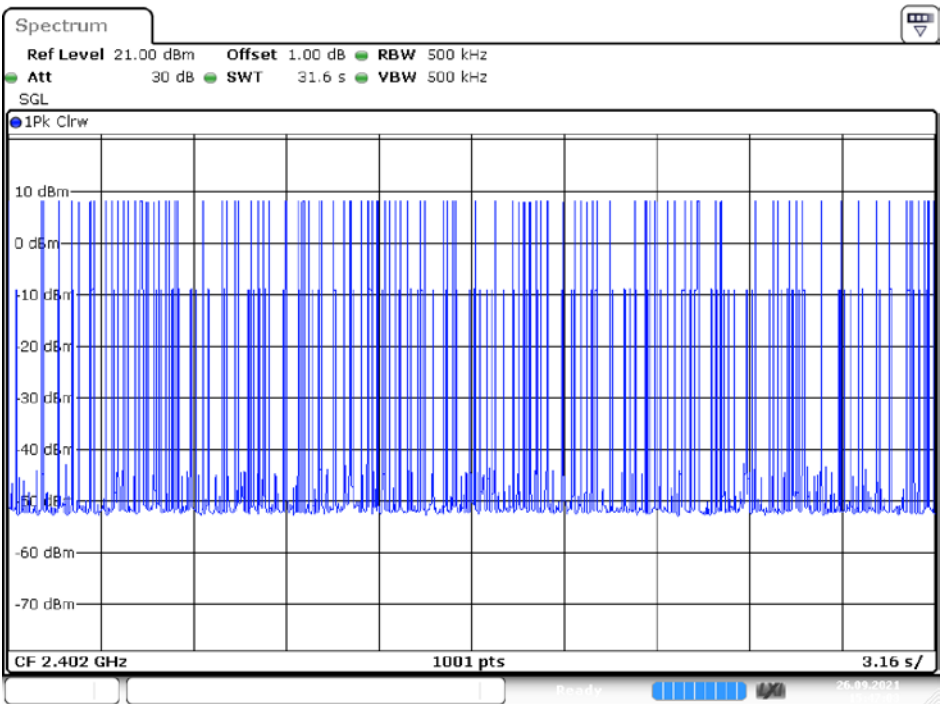


Date: 26.SEP.2021 15:45:07

3DH5

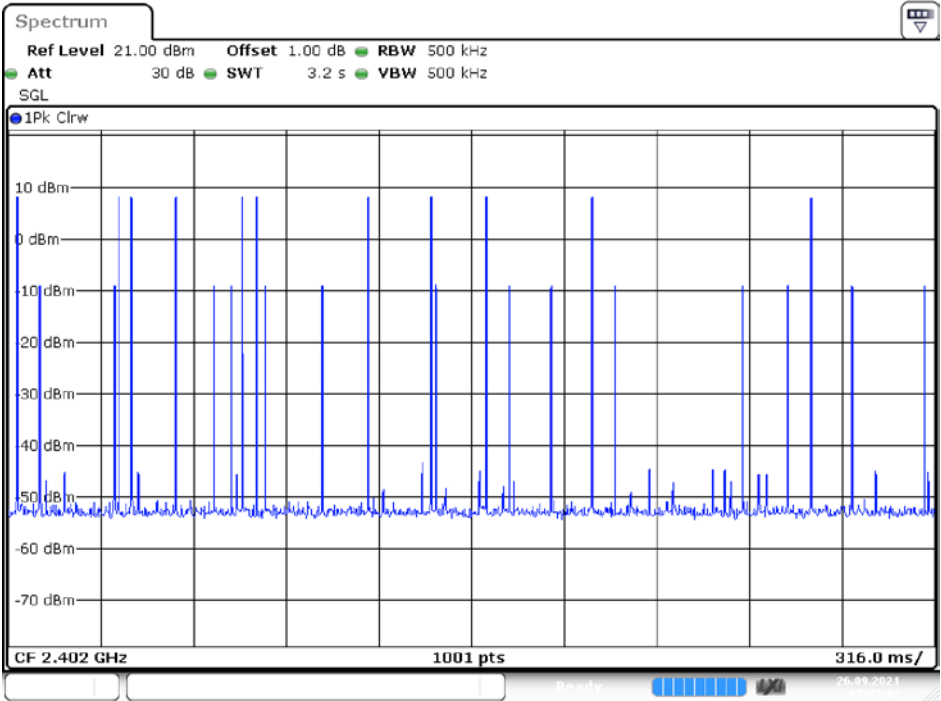


Date: 26.SEP.2021 15:46:30



Date: 26.SEP.2021 15:47:03

SWEEP TIME/10
hopping numbers =11*10=110



Date: 26.SEP.2021 15:47:12

12. 跳頻頻道數之量測

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4.10.1.6節(1)(A)(a)之規定，(a)操作於2400MHz ~ 2483.5MHz之展頻跳頻系統，須使用至少15個無重疊的頻道，在0.4秒乘以跳頻頻道數之週期內，任一頻率占用之平均時間應小於或等於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。

12.2 測試方法

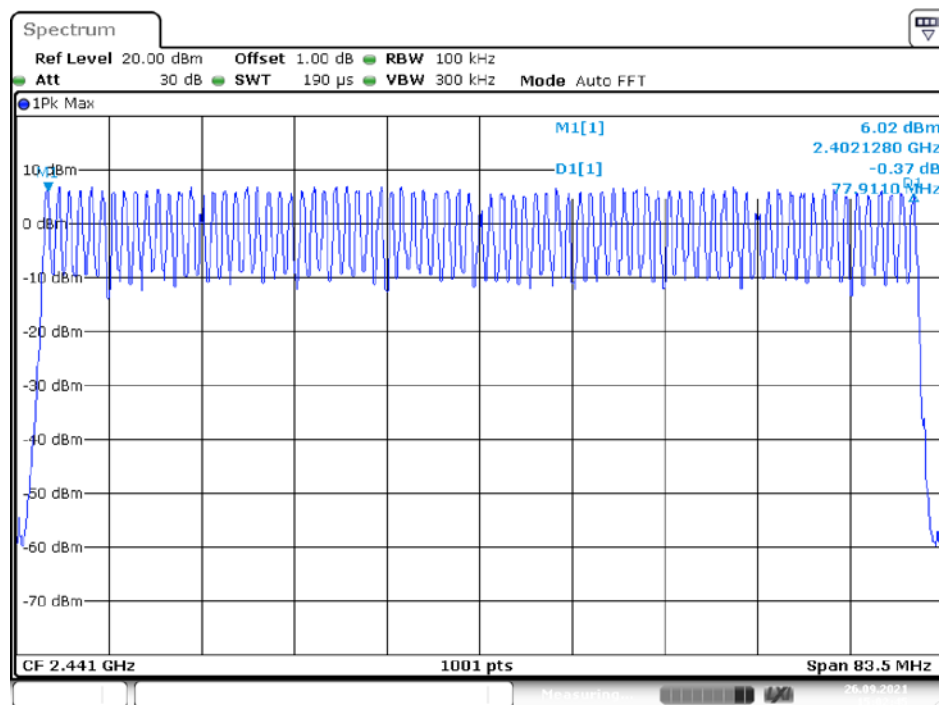
1. 發射機設定在發射狀態頻譜分析儀設定在 Start Freq. = 2400, Stop Freq. = 2483.5 RBW=100 kHz, VBW=300 kHz, Detector=max peak。
2. 量測發射機在 Hopping on 由頻譜分析儀量測其 Number of hopping frequency。
3. 將頻譜分析儀上量測之頻道數 Plots out 讀出其圖形。
4. 由 Plots out 之圖形計算其 Number of hopping frequency。啟動受測物之跳頻功能。頻率掃描範圍為受測物之操作頻帶。

12.3 跳頻頻道數之量測結果

環境溫度	26°C	測試日期	2021-09-26
環境濕度	47%	測試人員	李宥陞

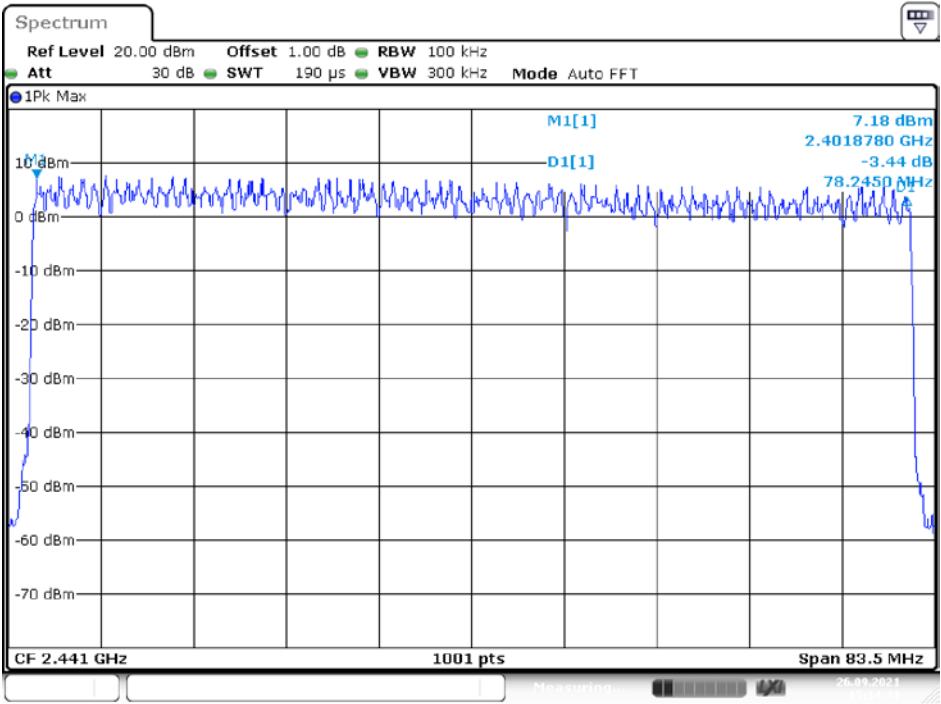
Mode	Result (No. of CH)	Limit (No. of CH)	Result
GFSK	79	>15	PASS
8DPSK	79	>15	PASS

Hopping Number BT Mode



Date: 26.SEP.2021 15:02:45

EDR Mode-3M



Date: 26.SEP.2021 15:14:41

13. 電波曝露量之評估

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6.20.2.2節之規定，若受測物於正常操作模式下，其發射機距離人體 20 公分以上者，可測試最大曝露允許值(Maximum Permissible Exposure，MPE)以證明其符合電波曝露量之要求。

限制值

5.20.2.2 一般人/不可控制之曝露

頻率範圍 (MHz)	電場強度 (V/m)	磁場強度 (A/m)	功率密度 (mW/cm ²)	平均時間 (分)
0.3~1.34	614	1.63	*100	30
1.34~30	824/f	2.19/f	*180/f ²	30
30~300	27.5	0.073	0.2	30
300~1,500	-----	-----	f/1500	30
1,500~100,000	-----	-----	1.0	30

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

13.2 電波曝露量之結果

Test mode: BT+EDR mode

Frequency (MHz)	Tunp-up Power		Antenna Gain		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBm)	(mW)	(dBi)	(numeric.)			
2402~2480	10.35	10.839	4.42	2.77	20	0.00597	1

電磁波曝露量 MPE 標準值

1mW/cm²，送測產品實測值為： 0.00597 mW/cm²

14. 量測儀器一覽表

儀器名稱	廠商	型號	序號	校驗日期	下次校驗日期
AC Line Conduction Room (CON-A)					
LISN	Rohde & Schwarz	ENV216	101612	2020/12/30	2021/12/29
LISN	Rohde & Schwarz	ENV216	101248	2021/6/8	2022/6/7
LISN	COM-POWER	LI-550A	211726	2020/12/30	2021/12/29
LISN	COM-POWER	LI-550A	211727	2020/12/30	2021/12/29
DC LISN	COM-POWER	LIN-115	241113	2020/11/17	2021/11/16
EMI Test Receiver	Rohde & Schwarz	ESR3	102099	2021/6/9	2022/6/8
Pulse Limiter	Rohde & Schwarz	ESH3Z2	TXZEM104	2021/7/29	2022/7/29
RF Cable	EMEC	EM-CB5D	1	2021/6/11	2022/6/11
Software	AUDIX	E3	V9.150826k	N.C.R	N.C.R
Radiation 3M Room (966-A)					
Active Loop Antenna	ETS-Lindgren	6502	35796	2021/3/16	2022/3/15
Bilog Antenna with 6 dB Attenuator	SUNOL SCIENCES & MINI-CIRCUITS	JB6/UNAT-6+	A050115/155 42_01	2021/1/19	2022/1/18
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2020/11/12	2021/11/11
Horn Antenna	EMCO	SAS-571	1020	2021/4/23	2022/4/22
Horn Antenna	ETS-Lindgren	3116	62638	2021/8/11	2022/8/10
Preamplifier	Sonoma	310N	130602	2021/6/8	2022/6/7
Preamplifier	A.H. system Inc.	PAM-0118P	466	2020/11/5	2021/11/4
Microwave Preamplifier	EM Electronics Corporation	EM18G40G	60656	2020/12/30	2021/12/29

Spectrum Analyzer	Rohde & Schwarz	FSV40	101435	2021/1/7	2022/1/6
Micro flex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2021/2/1	2022/1/31
Coaxial Cable	COMMATE	PEWC	8Dr	2020/12/25	2021/12/24
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2021/2/1	2022/1/31
Coaxial Cable	JUNFLON	J12J102248-00-B-5	AUG-07-15-044	2020/12/25	2021/12/24
Cable	EMC	EMC105-SM-SM-10000	201003	2021/2/3	2022/2/2
Software	Farad	EZ_EMCC	BACL-03A1	N.C.R	N.C.R
Conducted Room					
Spectrum Analyzer	Rohde & Schwarz	FSV40	101140	2021/1/7	2022/1/6
Cable	UTIFLEX	UFA210A	9435	2020/10/8	2021/10/7
Power Sensor	KEYSIGHT	U2021XA	MY54080018	2021/1/28	2022/1/27
Attenuator	MINI-CIRCUITS	BW-S10W5+	1419	2021/1/28	2022/1/27

***Statement of Traceability:** BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to the SI System of Units via the R.O.C. Center for Measurement Standards of the Electronics Testing Center, Taiwan (ETC) or to another internationally recognized National Metrology Institute (NMI), and were compliant with the current Taiwan Accreditation Foundation (TAF) requirements.

15. 試驗室之測試不確定度

測試項目	測試場地 / 測試頻率	不確定度
傳導干擾電壓量測	AC Line Conduction	± 3.82 (dB)
輻射干擾場強量測 (測試距離: 3m)	3M Chamber / 30~1000MHz	± 5.46 (dB)
	3M Chamber / 1~6GHz	± 5.24 (dB)
	3M Chamber / 6~18GHz	± 5.62 (dB)
	3M Chamber / 18~40GHz	± 5.86 (dB)
佔用頻寬	Conducted	± 0.35 (MHz)
輸出功率	Conducted	± 0.93 (dB)
直量雜散	Conducted	± 1.69 (dB)
功率密度	Conducted	± 0.93 (dBm/kHz)

- a) 必要為試驗結果作解釋時，依 ISO/IEC 17025 第 7.8.3.1 要求，實驗室得決定是否在測試報告上包含量測不確定度評估結果。
- b) 測試證書/報告中提供量測不確定度資訊時，通常應使用 “ $y \pm U$ (y 和 U 的單位)” 或類似的表述方式；量測結果的數值與其量測不確定度亦可以列表方式表達。視需要，擴充不確定度也可以用相對擴充不確定度 $U / |y|$ 的方式表達，如指數或百分比。應在證書/報告中註明不確定度的涵蓋因子及涵蓋機率(或信賴水準)，可以使用以下文字描述：
- 「本報告的擴充不確定度，係以組合標準不確定度乘以涵蓋因子 k ($k=2$) 來表示，相應之涵蓋機率(或信賴水準)約為 95 %。」

***** END OF REPORT *****