

低功率射頻器材試驗報告

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 Media Transmitter
主 型 號	M202018002
系列型號	N/A
該產品樣品試驗 依據之試驗標準	低功率射頻器材技術規範 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) 試驗室地址:新北市汐止區大同路二段 169 巷 70 號 電話:02-2647-6898 / 傳真:02-2647-6895 報告編號:RXZ211216001RF01 案件受理日期:110 年 12 月 17 日 樣品接收日期: 110 年 12 月 17 日 測試日期: 111 年 01 月 04 日~111 年 02 月 09 日 報告發行日期: 111 年 03 月 09 日 附註: 1. 未經本實驗室書面許可, 不得部份複製本報告內容。 2. 未經授權不得對本報告的內容或外觀進行任何更改, 違者將受到法律追訴。 3. 本報告僅對檢送樣品負責, 且分離使用無效。 4. 本報告有本實驗室報告簽屬人簽名始生效。 5. 測試結果之判定, 無需考量量測不確定度符合性, 除非經由顧客約定、法規或標準文件規範才需要評估。 6. 本實驗室不對申請者所提供之影響測試結果的訊息真實性負責。	

報告發行紀錄:

版次	案號	報告號碼	發行日期	說明	文件人員
0.0	RXZ211216001	RXZ211216001RF01	2022.03.09	報告發行	徐靖雯

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1. 一般描述

產品名稱	Wireless Media Transmitter
主 型 號	M202018002
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	IEEE 802.11b/g / IEEE 802.11n HT20 Mode: 2412 ~ 2462 MHz IEEE 802.11ax 20: 2412~2462MHz
使用頻道數	IEEE 802.11b/g / IEEE 802.11n HT20 Mode: 11 Channels IEEE 802.11ax 20: 11 channels
傳輸速率	IEEE 802.11b Mode: 1 - 11 Mbps IEEE 802.11g Mode: 6 - 54Mbps IEEE 802.11n HT 20 Mode: MCS 0~7 IEEE 802.11ax 20 Mode: MCS 0~11
調變方式	IEEE 802.11b Mode: DSSS IEEE 802.11g Mode: OFDM IEEE 802.11n HT20 Mode: OFDM IEEE 802.11ax 20 Mode: OFDMA
EUT供電方式	5V from USB
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 低功率射頻器材技術規範適用規範及條文。

2.2 適用規範及條文

低功率射頻器材技術規範4.10節(DTS)

項次	測試項目	低功率射頻器材技術規範	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節	符合規範
4	發射頻寬	4.10.1.6節	符合規範
5	輸出峰值功率	4.10.1.2節	符合規範
6	開放頻帶邊緣之發射	4.10.1.5節	符合規範
7	功率密度	4.10.1.6(2)(B)節	符合規範
8	電波曝露量	6.20.2.2節	符合規範

報 告 簽 署 人： 徐士珩



測 試 者： 高士傑

報 告 製 作 員： 徐靖雯

2.3 限制使用之頻帶

根據低功率射頻器材技術規範，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。

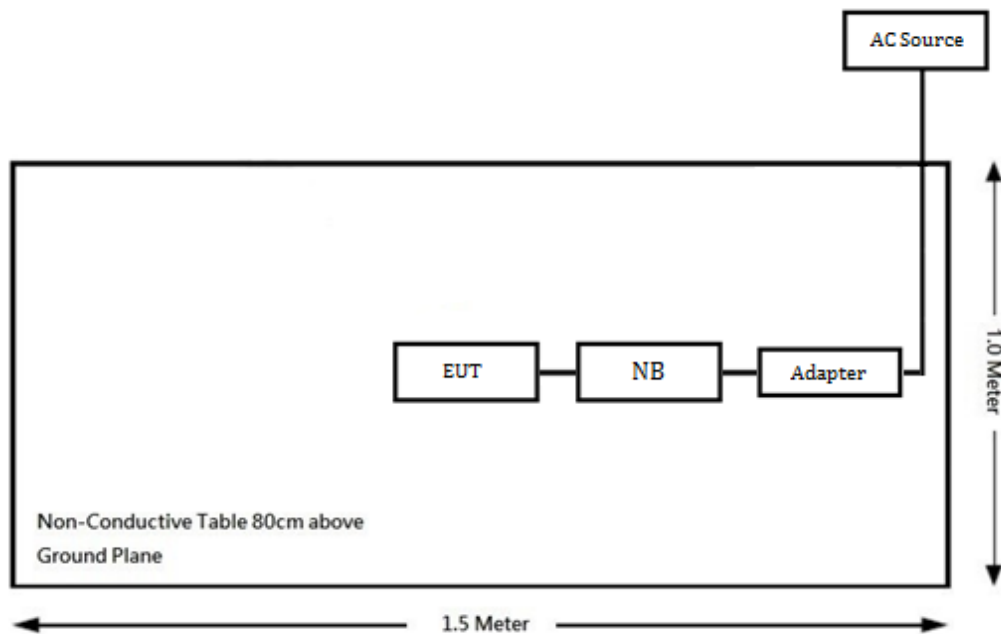
頻率 (MHz)	頻率 (MHz)	頻率 (MHz)
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
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

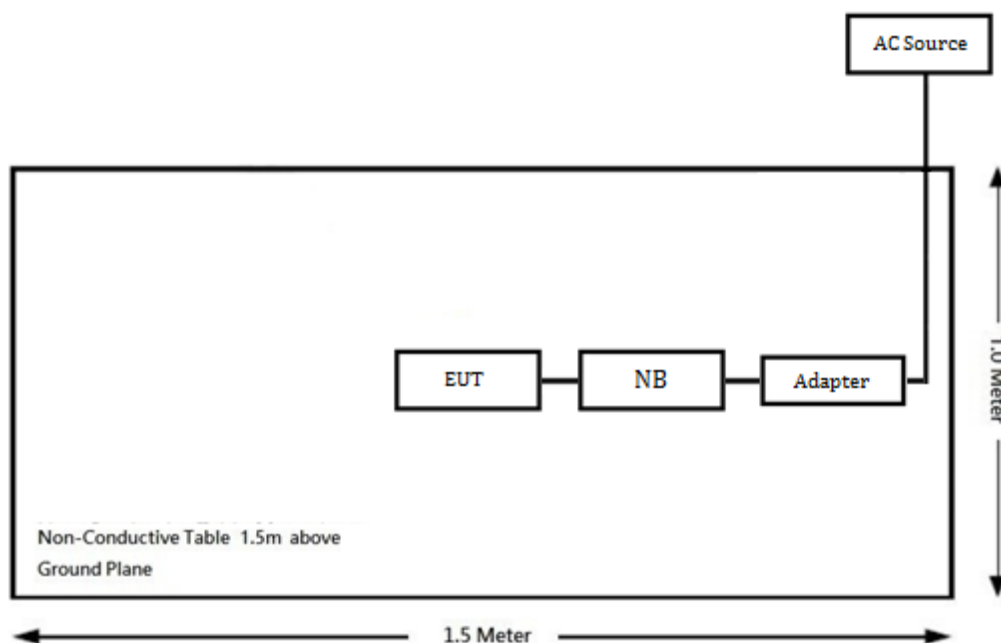
3.1 待測物與測試設備系統圖

Radiation:

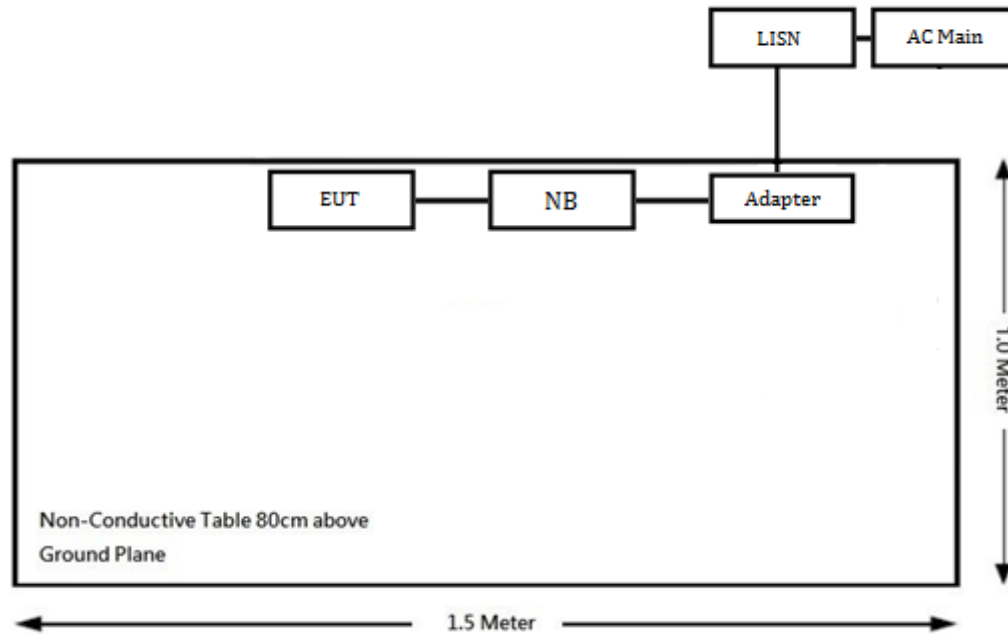
Below 1GHz



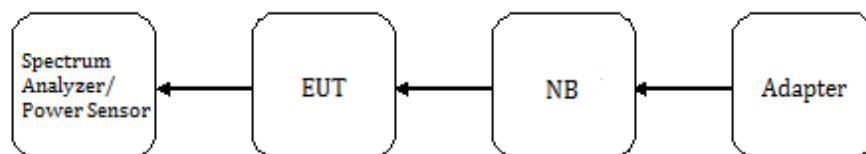
Above 1GHz:



Conduction:



Conducted:



3.2 測試模式

Pre-Scan

Mode 1: Full System (model: M202018002) for all test item.

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

Final Test

Mode 1: Full System (model: M202018002) for all test item.

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

3.3 測試軟件

Used "adb.exe V1.0" software.

Test Frequency		Low	Mid	High
Power Level Setting	B Mode	12	12	12
	G Mode	12	12	12
	N20 Mode	13	13	13
	AX 20 Mode	12	12	12

3.4 未隨貨附賣，輔助測試週邊設備名稱描述

序號	設備名稱	廠牌	型號
1	NB	DELL	E6410

3.5 測試描述

1. 將 EUT 接到筆電
2. 打開 adb.exe 測試軟體
3. 輸入 adb shell
4. 貼上客戶提供的指令檔 並確認對應的頻道與調變模式
5. 確認訊號發射，開始測試

3.6 占空比評估

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

Duty factor = $10 \cdot \log(1/TXon)$

	B Mode	G Mode	HT20 Mode	AX20 Mode
Duty cycle	0.99	0.93	0.93	0.91
Duty factor	0.04	0.32	0.32	0.41

4. 電源線傳導干擾之量測

4.1 適用標準

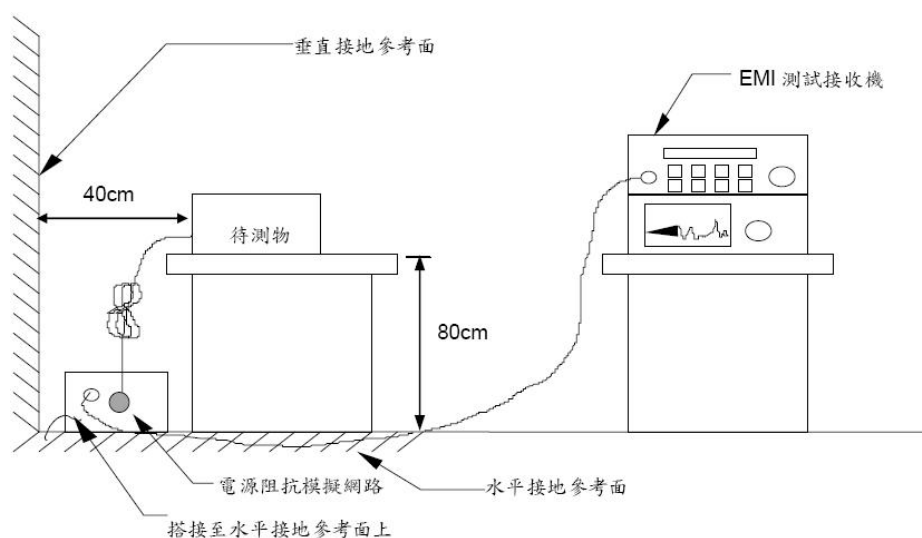
依據低功率射頻器材技術規範，電源傳導干擾之限制要求如下：

頻率 (MHz)	傳導限制值 (dB μ V)	
	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0.15 MHz至30 MHz之間之電源線傳導放射強度。

4.3 測試場地配置圖



4.4 干擾值之計算

電源傳導干擾電壓之計算公式如下

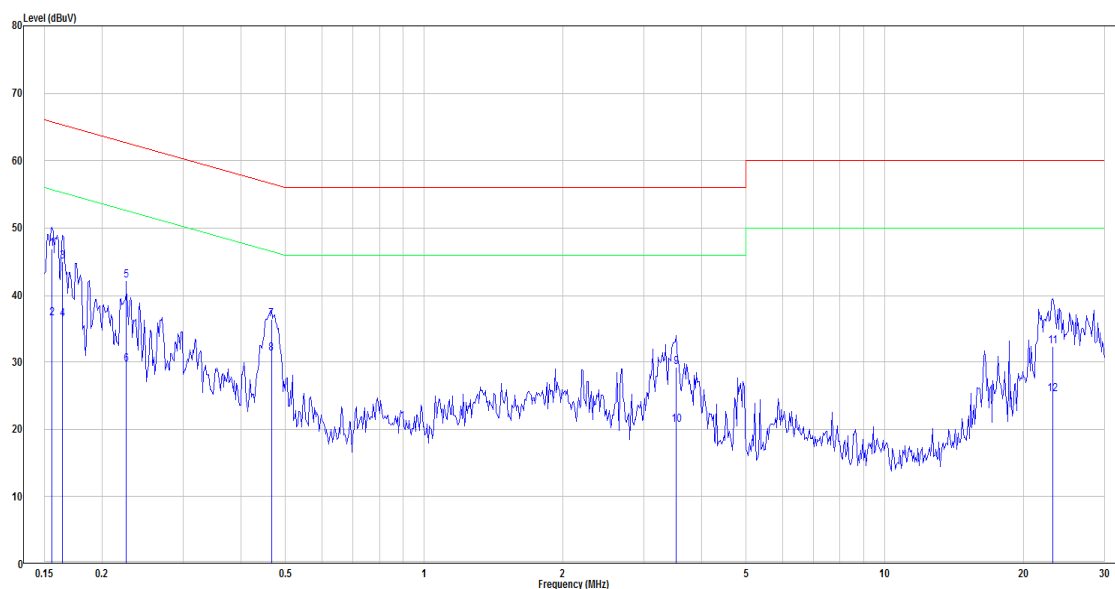
$$\text{干擾值} = \text{讀值} + \text{校正因子}$$

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.:	RXZ211216001	Phase.:	Line
Standard:	limit\RF\NCC LP0002-QP.csv	Power:	AC 110V/60Hz
Test item:	Conduction Test	Test By:	Boris
Temp.(°C)/Hum.(%RH):	22.1°C/59%		
Description:	WiFi 2.4G		

2022-02-09 19:10:48



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Over limit (dB)	Remark
1	0.156	27.41	19.50	46.91	65.69	-18.78	QP
2	0.156	16.89	19.50	36.39	55.69	-19.30	Average
3	0.164	25.50	19.50	45.00	65.25	-20.25	QP
4	0.164	16.78	19.50	36.29	55.25	-18.97	Average
5	0.226	22.65	19.50	42.15	62.61	-20.46	QP
6	0.226	10.17	19.50	29.67	52.61	-22.94	Average
7	0.466	16.85	19.52	36.37	56.58	-20.21	QP
8	0.466	11.66	19.52	31.18	46.58	-15.40	Average
9	3.528	9.64	19.62	29.26	56.00	-26.74	QP
10	3.528	1.03	19.62	20.65	46.00	-25.35	Average
11	23.140	12.47	19.88	32.35	60.00	-27.65	QP
12	23.140	5.28	19.88	25.16	50.00	-24.84	Average

Note:

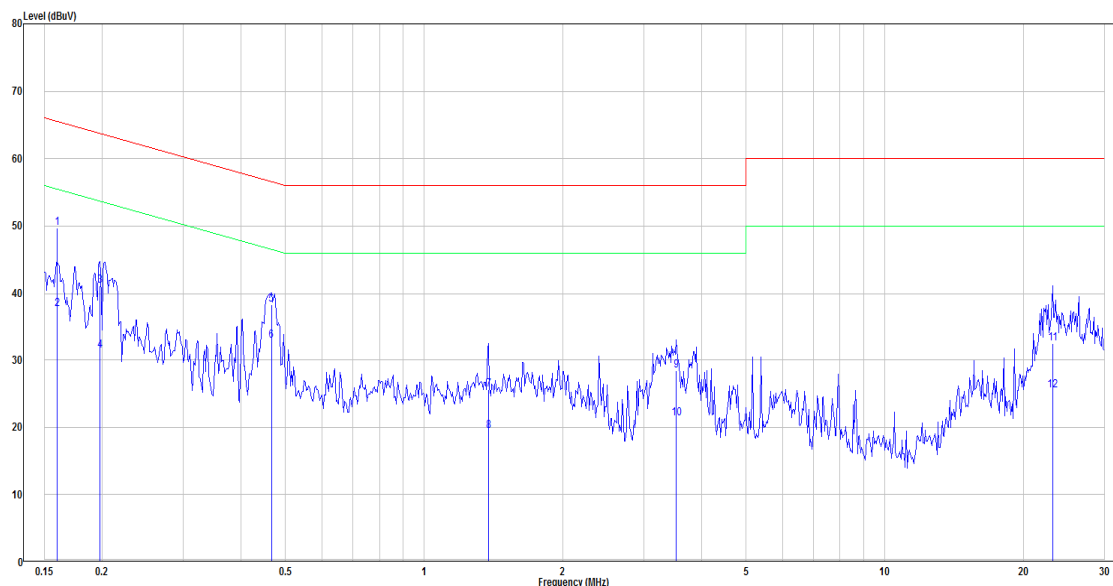
Level = Read Level + Factor

Over Limit = Level – Limit Line

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

Job No.:	RXZ211216001	Phase.:	Neutral
Standard:	limit\RF\NCC LP0002-QP.csv	Power:	AC 110V/60Hz
Test item:	Conduction Test	Test By:	Boris
Temp.(°C)/Hum.(%RH):	22.1°C/59%		
Description:	WiFi 2.4G		

2022-02-09 19:12:35



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Over limit (dB)	Remark
1	0.160	30.21	19.50	49.72	65.47	-15.76	QP
2	0.160	17.98	19.50	37.49	55.47	-17.99	Average
3	0.198	21.69	19.49	41.18	63.71	-22.54	QP
4	0.198	11.81	19.49	31.30	53.71	-22.41	Average
5	0.466	18.63	19.52	38.15	56.58	-18.43	QP
6	0.466	13.35	19.52	32.87	46.58	-13.71	Average
7	1.381	5.98	19.55	25.53	56.00	-30.47	QP
8	1.381	-0.12	19.55	19.42	46.00	-26.58	Average
9	3.528	8.83	19.62	28.45	56.00	-27.55	QP
10	3.528	1.70	19.62	21.31	46.00	-24.69	Average
11	23.140	12.52	19.95	32.46	60.00	-27.54	QP
12	23.140	5.54	19.95	25.48	50.00	-24.52	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

依據低功率射頻器材技術規範，其他開放頻帶外不必要之輻射干擾需符合限制要求。

頻率 (MHz)	測試距離 (m)	干擾限制 ($\mu\text{V}/\text{m}$)	干擾限制 (dB $\mu\text{V}/\text{m}$)
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 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(40 dB/10倍距離)。

5.3 測試場地配置圖

圖 1 :量測頻率9kHz~ 30MHz之測試配置

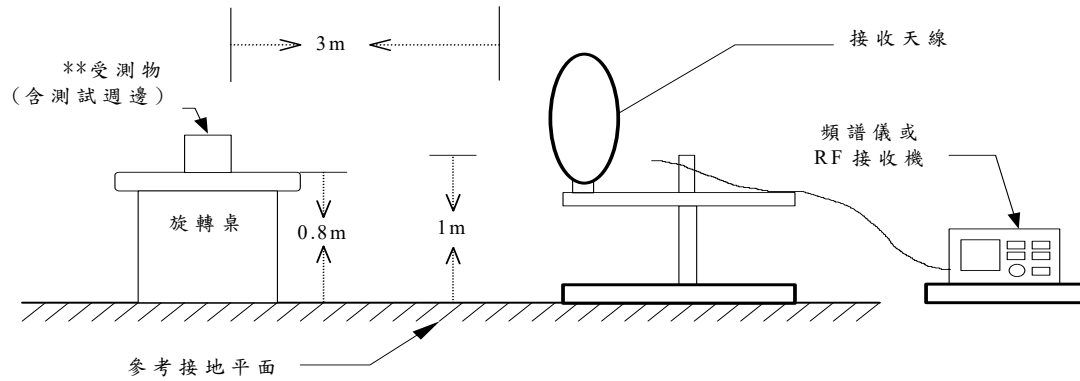


圖 2 :量測頻率30 MHz~ 1 GHz之測試配置

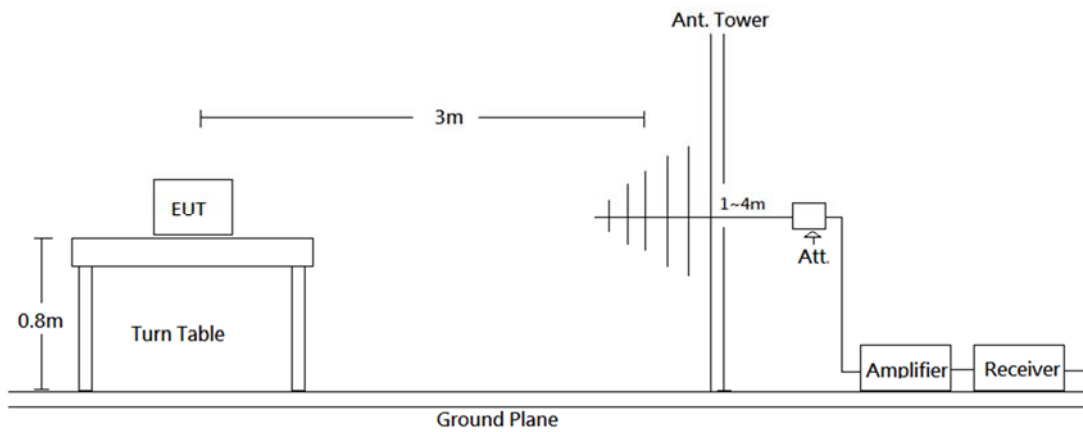
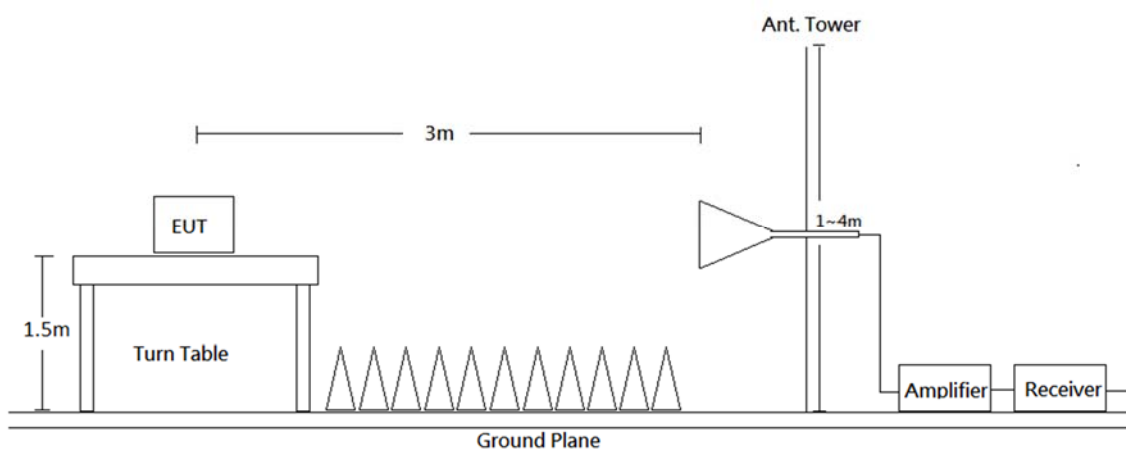


圖 3 : 量測頻率1 GHz以上之測試配置



5.4 量測設定

1 GHz以下:

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

1 GHz以上:

頻譜分析儀設定: Peak: RBW: 1 MHz; VBW: 1 MHz

Average: RBW: 1 MHz; VBW: 10 Hz

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 (9 kHz ~ 30 MHz)

此頻率之干擾值低於限制值20 dB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 (30 MHz ~ 1 GHz)

此案件測試模式分別為Worst Power。

發射機 其它不必要之訊號 (1 GHz ~ 26.5 GHz)

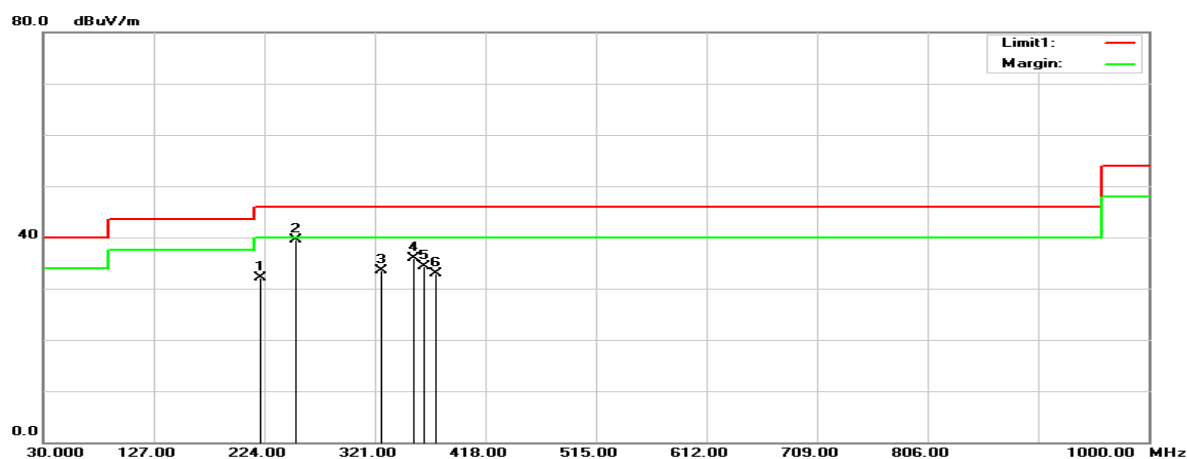
此案件測試模式分別為CH Low、Mid、High。

接收機 其它不必要之訊號 (1 GHz ~ 26.5 GHz)

此案件測試模式為Receiver模式。

場強輻射之量測值 (TX / 1 GHz 以下)

Job No.:	RXZ211216001	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):	21.2(°C)/70%RH	Date:2022/1/11	Time:上午 08:25:44
		Test By:	Aaron
Description:	TX		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
220.1200	45.18	-13.07	32.11	46.00	-13.89	100	331	peak
251.1600	51.81	-12.31	39.50	46.00	-6.50	100	208	peak
326.8200	42.98	-9.50	33.48	46.00	-12.52	100	209	peak
354.9500	45.02	-9.05	35.97	46.00	-10.03	100	208	peak
363.6800	43.12	-8.82	34.30	46.00	-11.70	100	209	peak
374.3500	41.43	-8.56	32.87	46.00	-13.13	100	209	peak

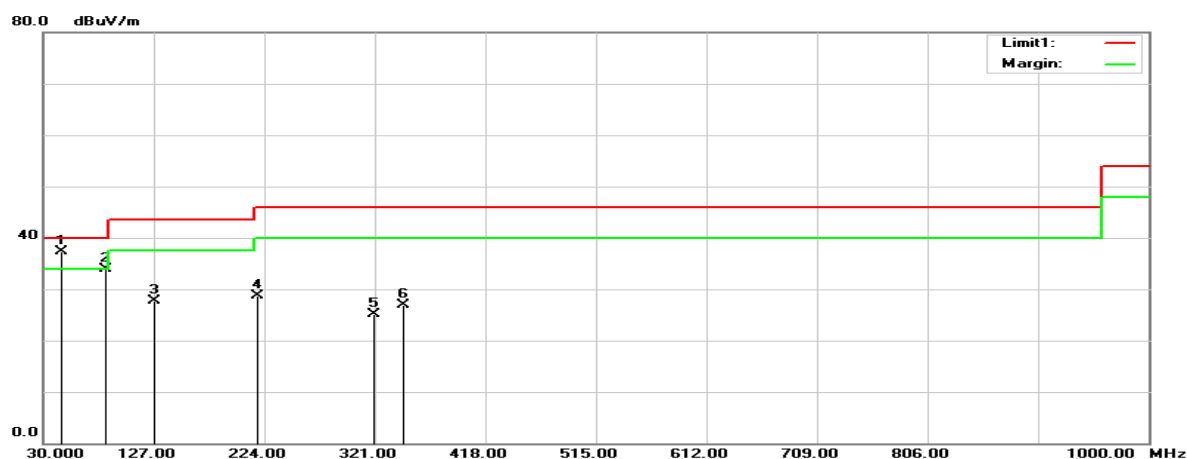
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ211216001	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):	21.2(°C)/70%RH	Date:2022/1/11	Time:上午 08:27:55
		Test By:	Aaron
Description:	TX		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
46.4900	51.87	-14.62	37.25	40.00	-2.75	100	166	QP
85.2900	50.75	-16.75	34.00	40.00	-6.00	100	318	peak
127.0000	37.91	-10.14	27.77	43.50	-15.73	100	67	peak
218.1800	41.91	-13.12	28.79	46.00	-17.21	100	256	peak
320.0300	34.81	-9.63	25.18	46.00	-20.82	100	330	peak
346.2200	36.21	-9.37	26.84	46.00	-19.16	100	1	peak

Note:

Result = Reading + Correct Factor

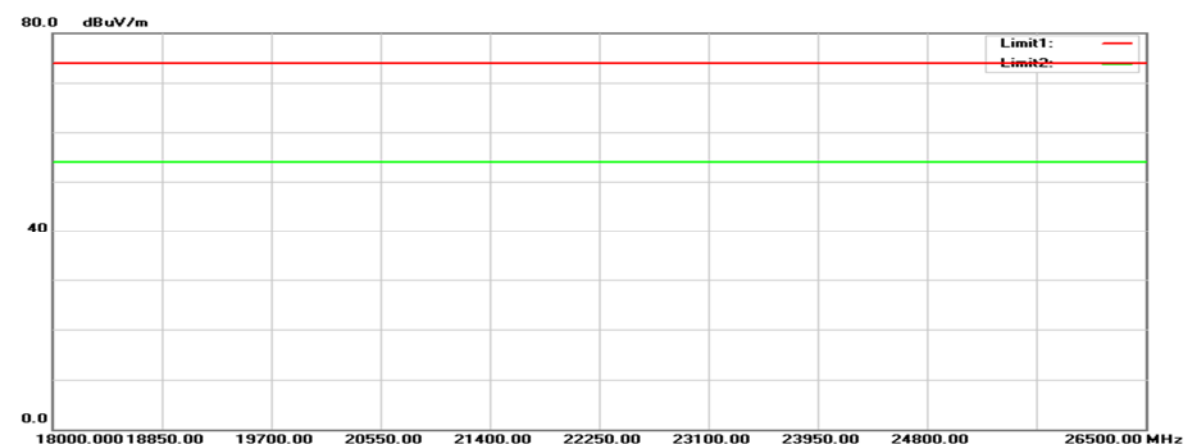
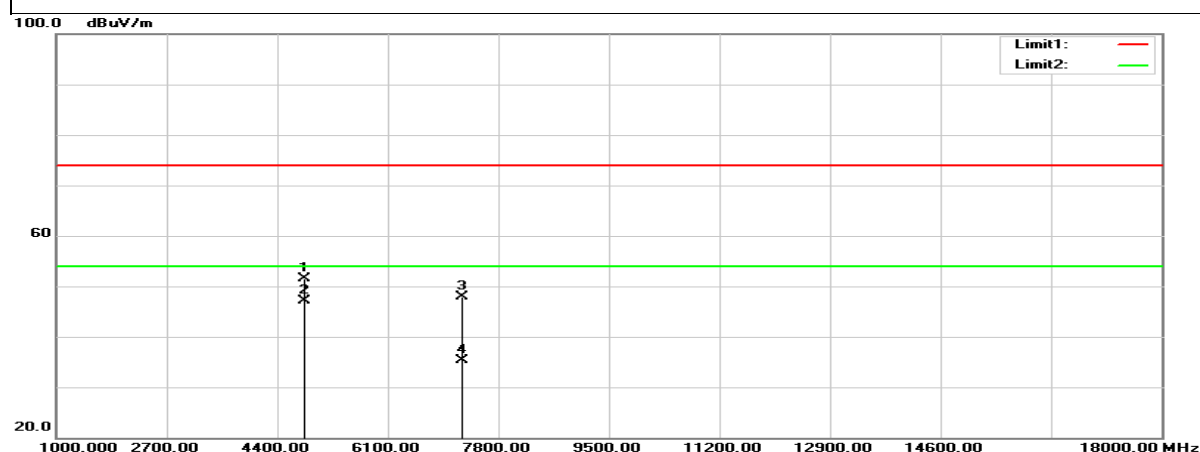
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

發射機其它不必要之訊號 (TX / 1 GHz 以上)

場強輻射之量測值

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 06:19:46
		Test By:	Aaron
Description:	B-TX-2412-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	53.68	-2.14	51.54	74.00	-22.46	154	167	peak
4824.000	49.32	-2.14	47.18	54.00	-6.82	154	167	AVG
7236.000	43.33	4.55	47.88	74.00	-26.12	140	238	peak
7236.000	30.70	4.55	35.25	54.00	-18.75	140	238	AVG

Note:

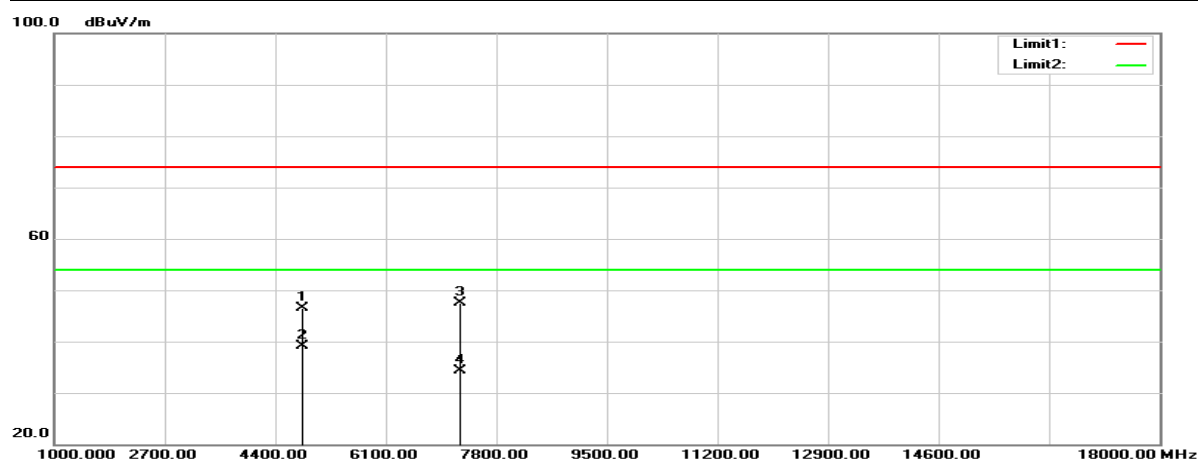
Result = Reading + Correct Factor

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 report.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 06:27:34
		Test By:	Aaron
Description:	B-TX-2412-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
4824.000	48.67	-2.14	46.53	74.00	-27.47	126	281	peak
4824.000	41.15	-2.14	39.01	54.00	-14.99	126	281	AVG
7236.000	43.00	4.55	47.55	74.00	-26.45	156	22	peak
7236.000	29.70	4.55	34.25	54.00	-19.75	156	22	AVG

Note:

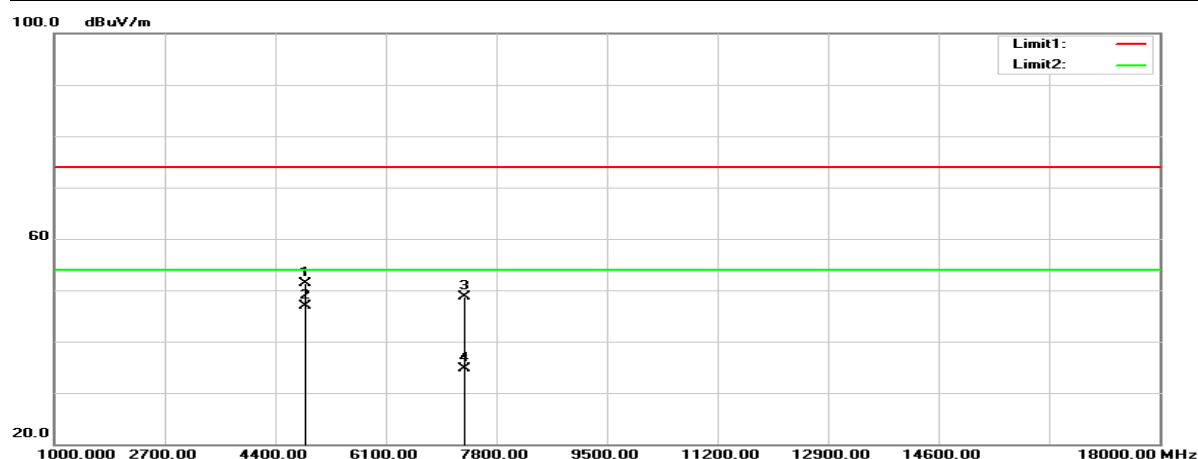
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 06:43:56
		Test By:	Aaron
Description:	B-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	53.13	-1.92	51.21	74.00	-22.79	128	167	peak
4874.000	48.73	-1.92	46.81	54.00	-7.19	128	167	AVG
7311.000	43.55	5.08	48.63	74.00	-25.37	159	181	peak
7311.000	29.67	5.08	34.75	54.00	-19.25	159	181	AVG

Note:

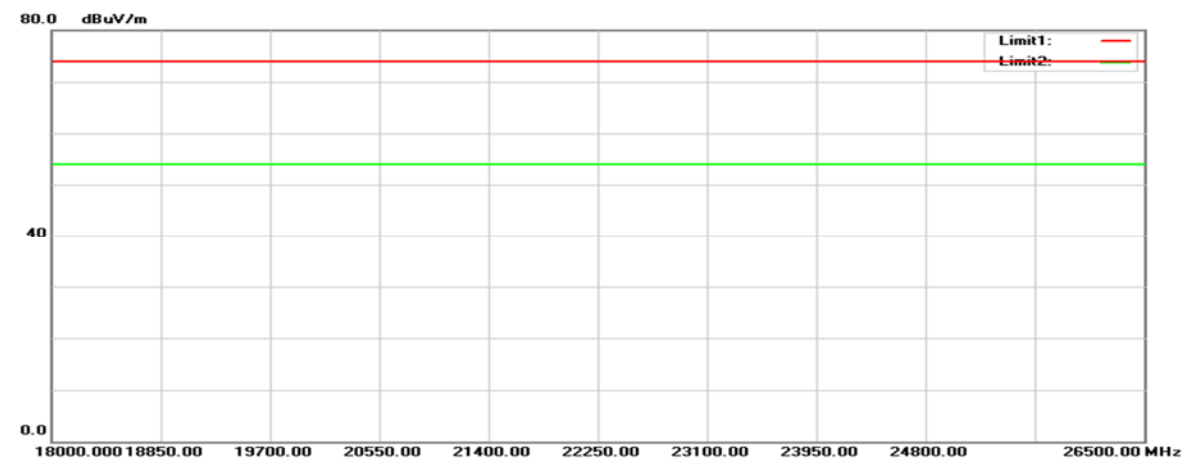
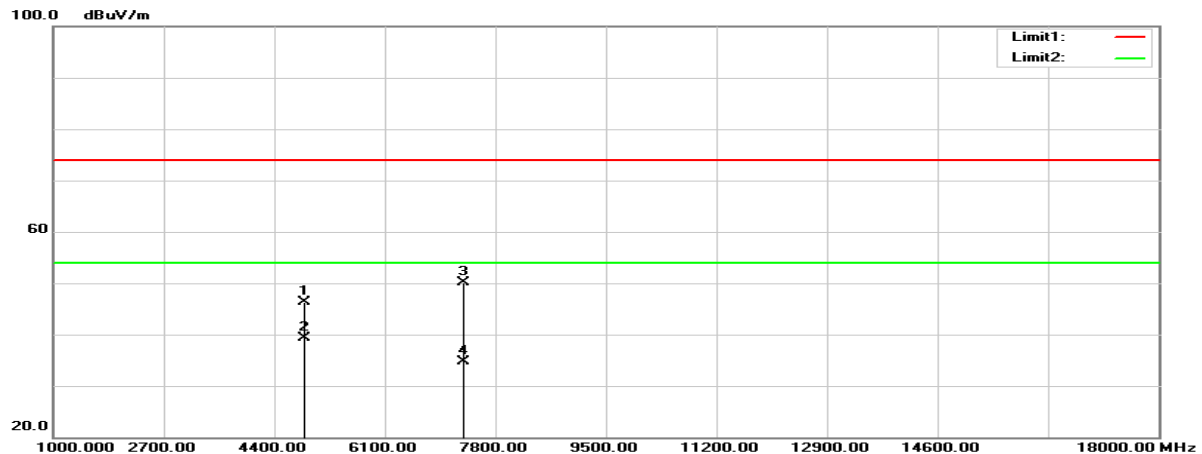
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 06:33:59
		Test By:	Aaron
Description:	B-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	48.24	-1.92	46.32	74.00	-27.68	155	186	peak
4874.000	41.28	-1.92	39.36	54.00	-14.64	155	186	AVG
7311.000	44.97	5.08	50.05	74.00	-23.95	150	98	peak
7311.000	29.63	5.08	34.71	54.00	-19.29	150	98	AVG

Note:

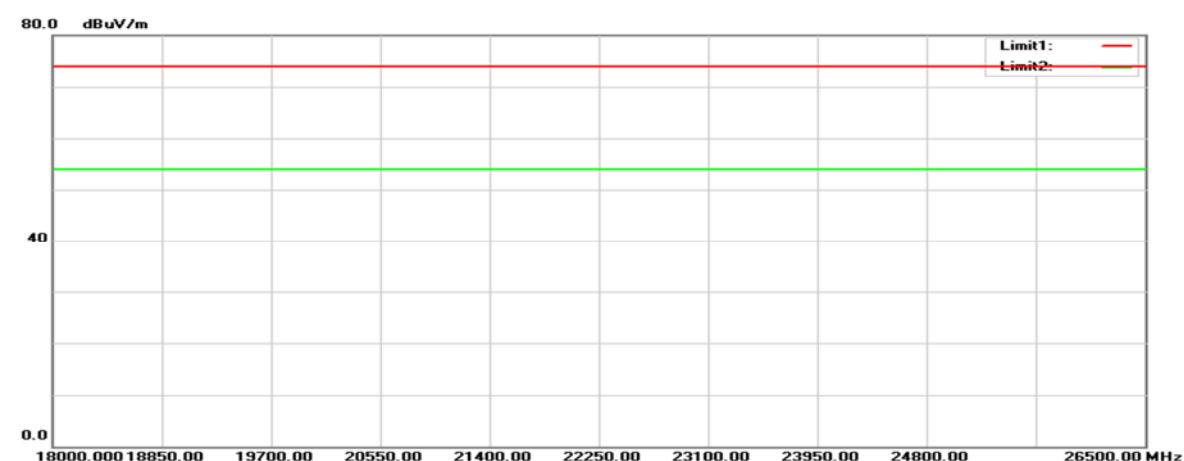
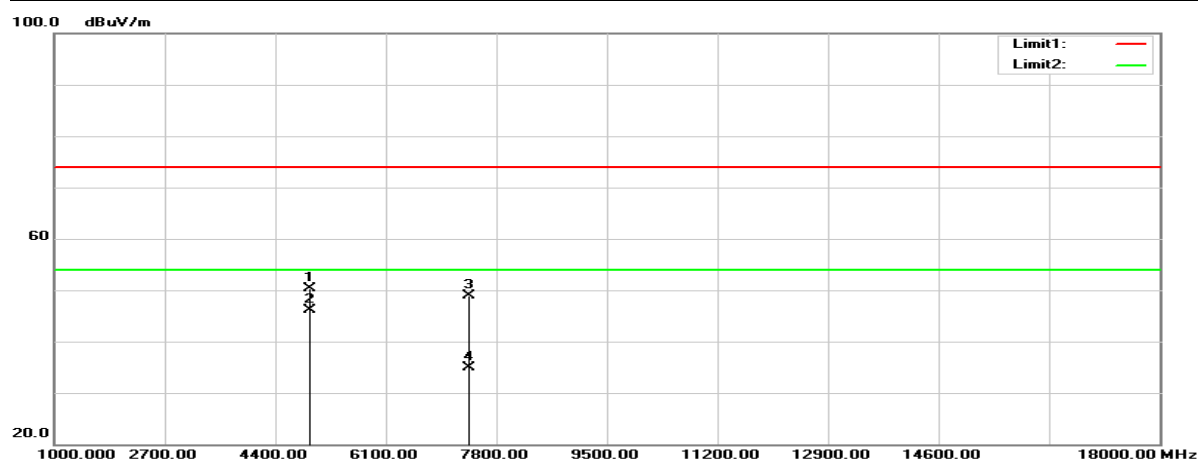
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 06:50:19
		Test By:	Aaron
Description:	B-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	52.03	-1.63	50.40	74.00	-23.60	137	23	peak
4924.000	47.66	-1.63	46.03	54.00	-7.97	137	23	AVG
7386.000	43.75	5.20	48.95	74.00	-25.05	142	297	peak
7386.000	29.74	5.20	34.94	54.00	-19.06	142	297	AVG

Note:

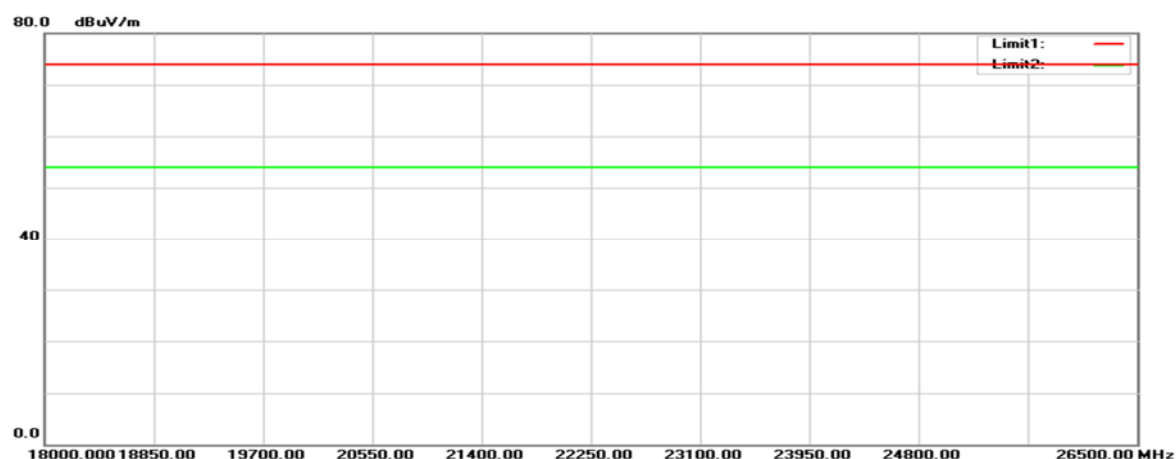
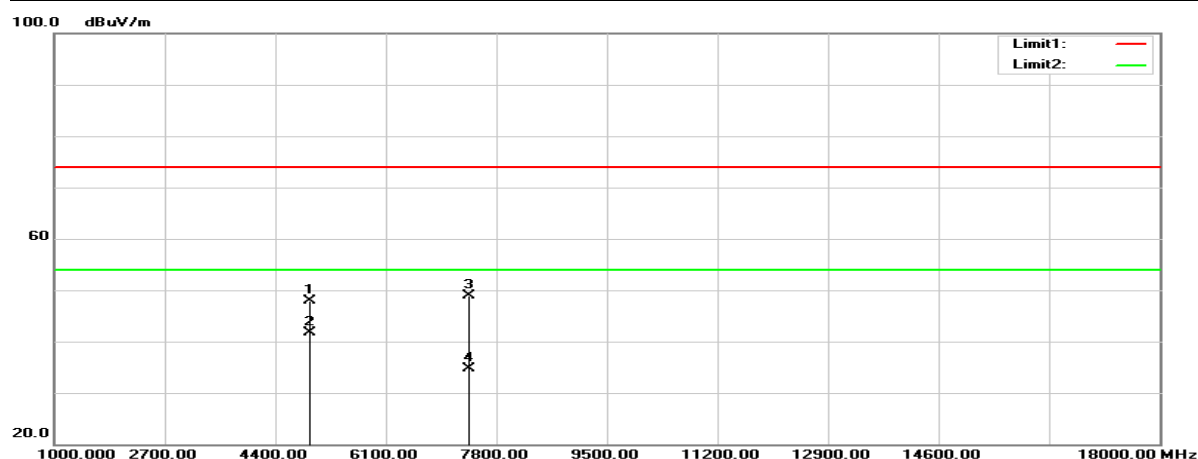
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 06:55:35
		Test By:	Aaron
Description:	B-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	49.53	-1.63	47.90	74.00	-26.10	124	96	peak
4924.000	43.26	-1.63	41.63	54.00	-12.37	124	96	AVG
7386.000	43.75	5.20	48.95	74.00	-25.05	147	270	peak
7386.000	29.59	5.20	34.79	54.00	-19.21	147	270	AVG

Note:

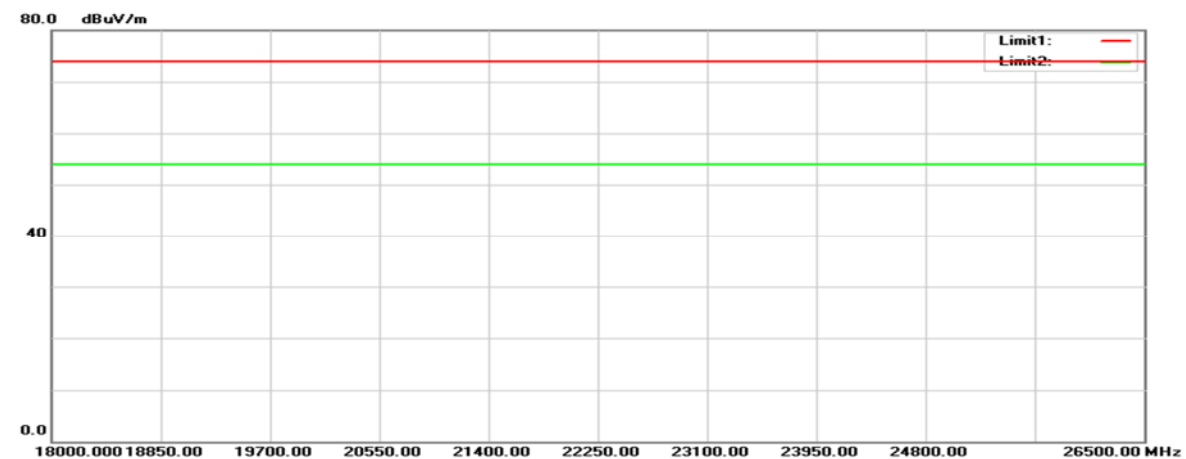
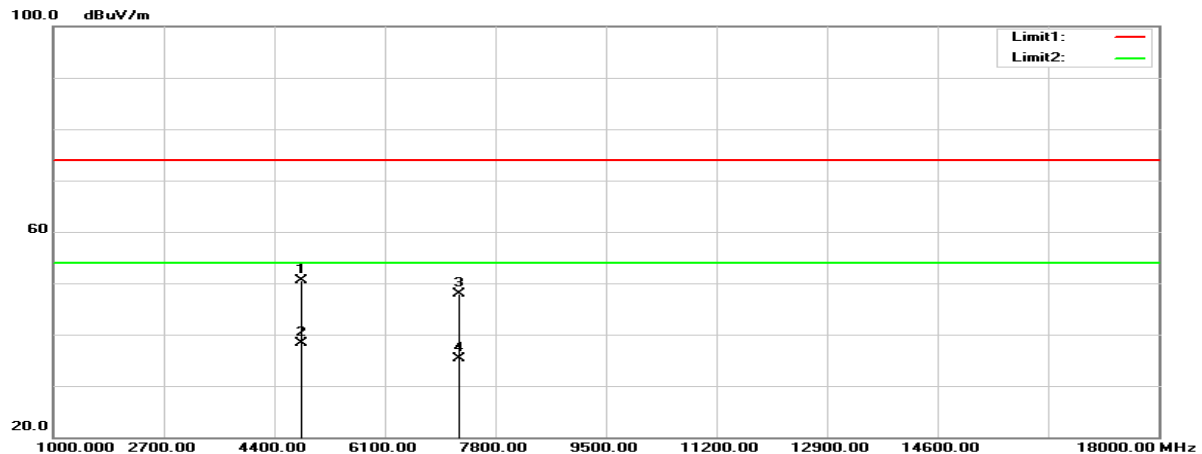
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:07:16
		Test By:	Aaron
Description:	G-TX-2412-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	52.72	-2.15	50.57	74.00	-23.43	108	101	peak
4824.000	40.42	-2.15	38.27	54.00	-15.73	108	101	AVG
7236.000	43.30	4.55	47.85	74.00	-26.15	145	153	peak
7236.000	30.74	4.55	35.29	54.00	-18.71	145	153	AVG

Note:

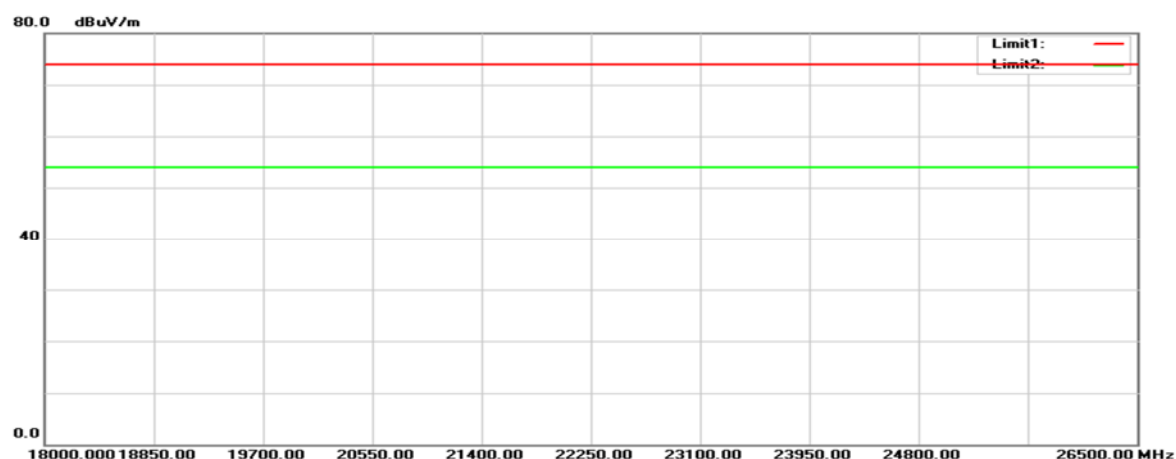
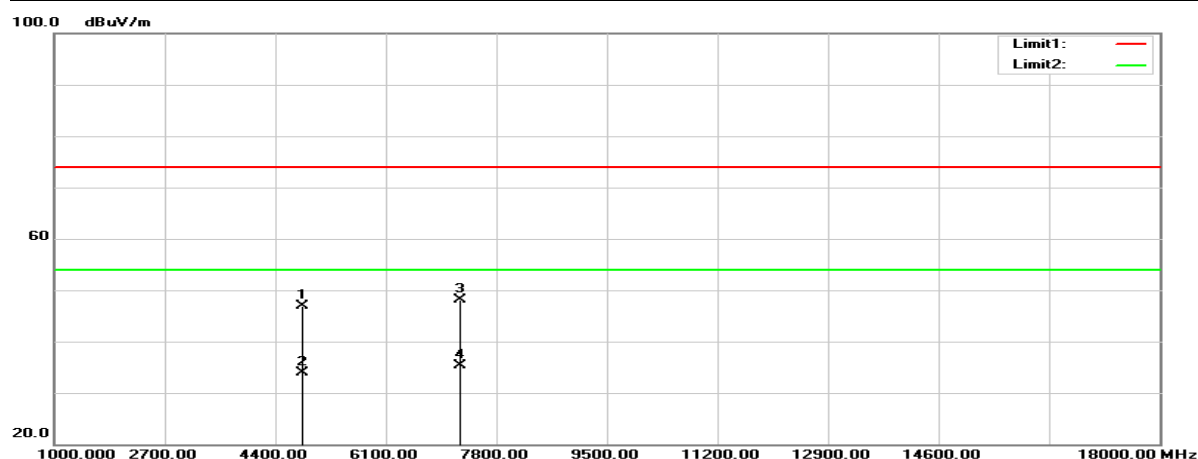
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:01:00
		Test By:	Aaron
Description:	G-TX-2412-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	49.03	-2.15	46.88	74.00	-27.12	123	172	peak
4824.000	36.05	-2.15	33.90	54.00	-20.10	123	172	AVG
7236.000	43.57	4.55	48.12	74.00	-25.88	149	359	peak
7236.000	30.68	4.55	35.23	54.00	-18.77	149	359	AVG

Note:

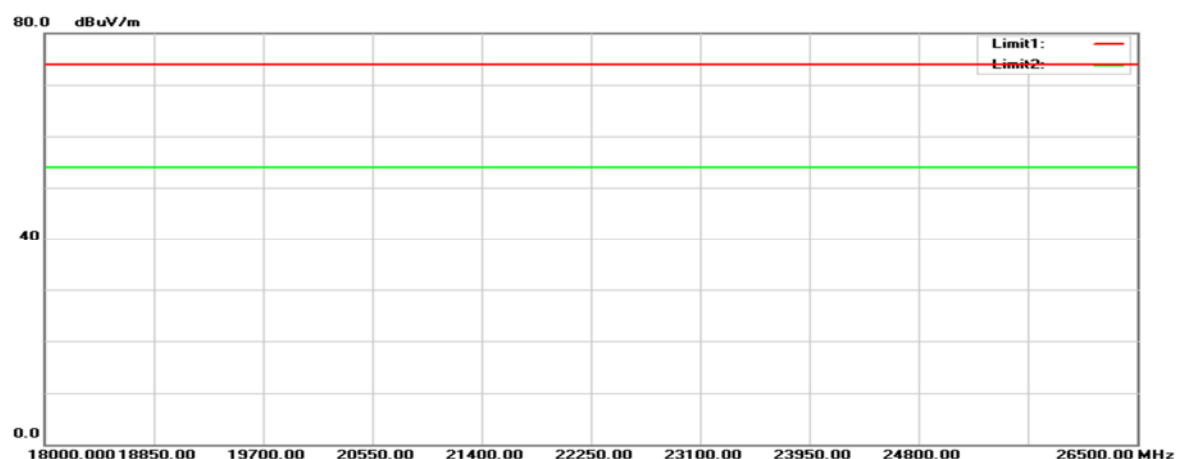
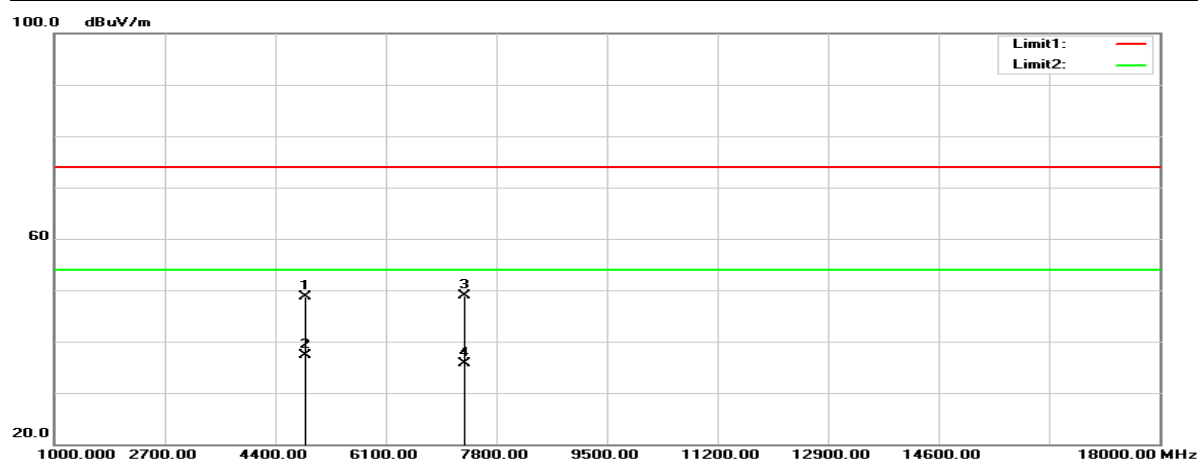
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:11:57
		Test By:	Aaron
Description:	G-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	50.53	-1.92	48.61	74.00	-25.39	104	100	peak
4874.000	39.20	-1.92	37.28	54.00	-16.72	104	100	AVG
7311.000	43.73	5.08	48.81	74.00	-25.19	150	140	peak
7311.000	30.53	5.08	35.61	54.00	-18.39	150	140	AVG

Note:

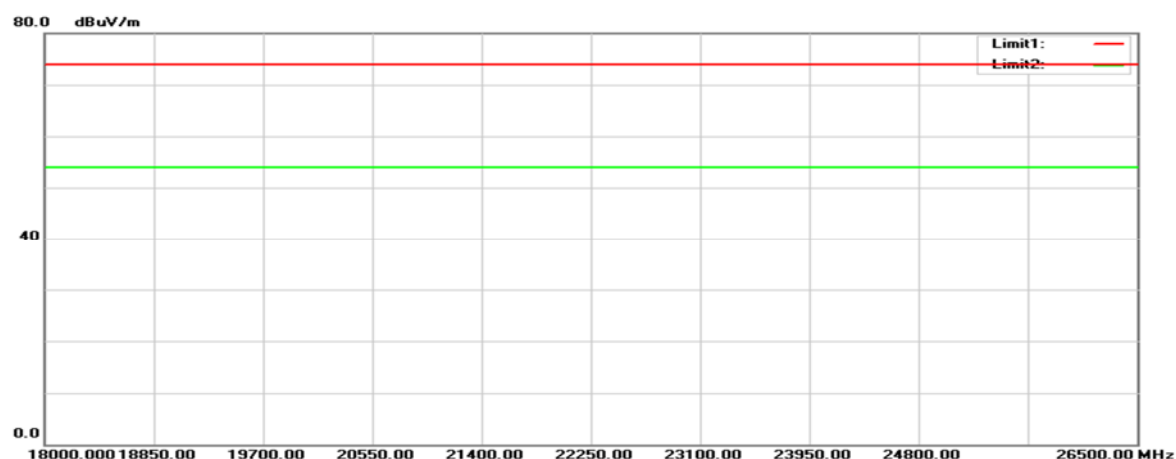
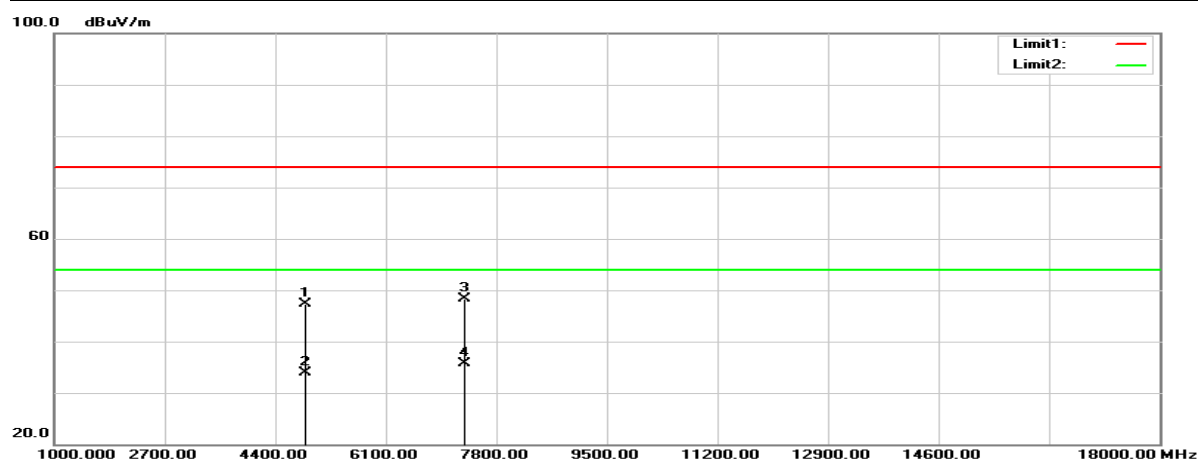
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:16:30
		Test By:	Aaron
Description:	G-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	49.16	-1.92	47.24	74.00	-26.76	120	176	peak
4874.000	35.81	-1.92	33.89	54.00	-20.11	120	176	AVG
7311.000	43.29	5.08	48.37	74.00	-25.63	152	163	peak
7311.000	30.59	5.08	35.67	54.00	-18.33	152	163	AVG

Note:

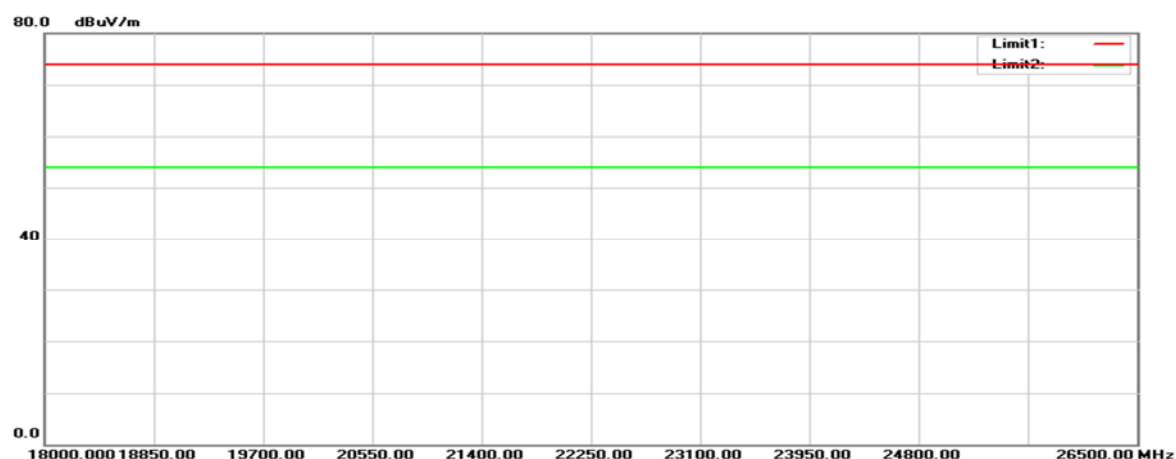
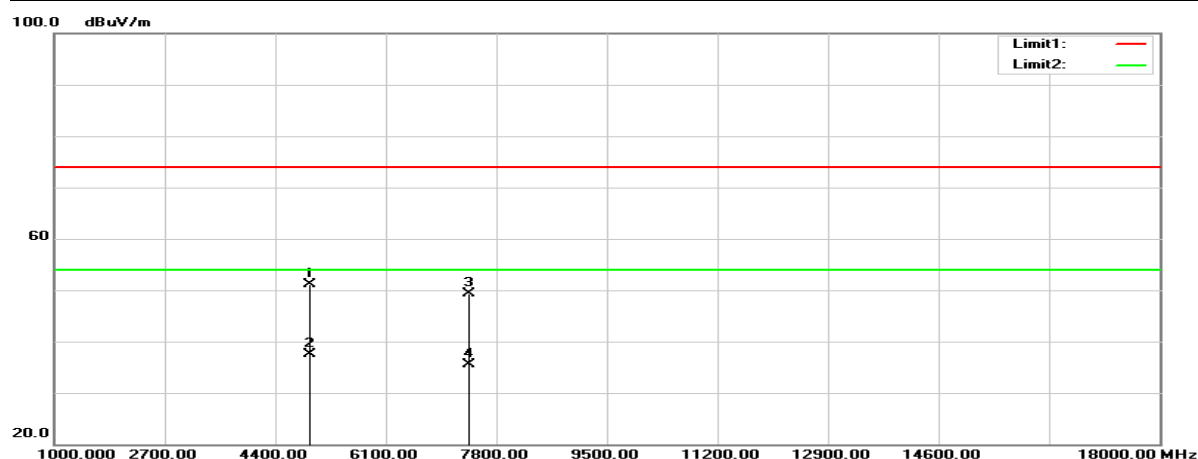
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:27:06
		Test By:	Aaron
Description:	G-TX-2462-X_Axis		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
4924.000	52.70	-1.63	51.07	74.00	-22.93	103	94	peak
4924.000	39.07	-1.63	37.44	54.00	-16.56	103	94	AVG
7386.000	44.03	5.20	49.23	74.00	-24.77	142	208	peak
7386.000	30.21	5.20	35.41	54.00	-18.59	142	208	AVG

Note:

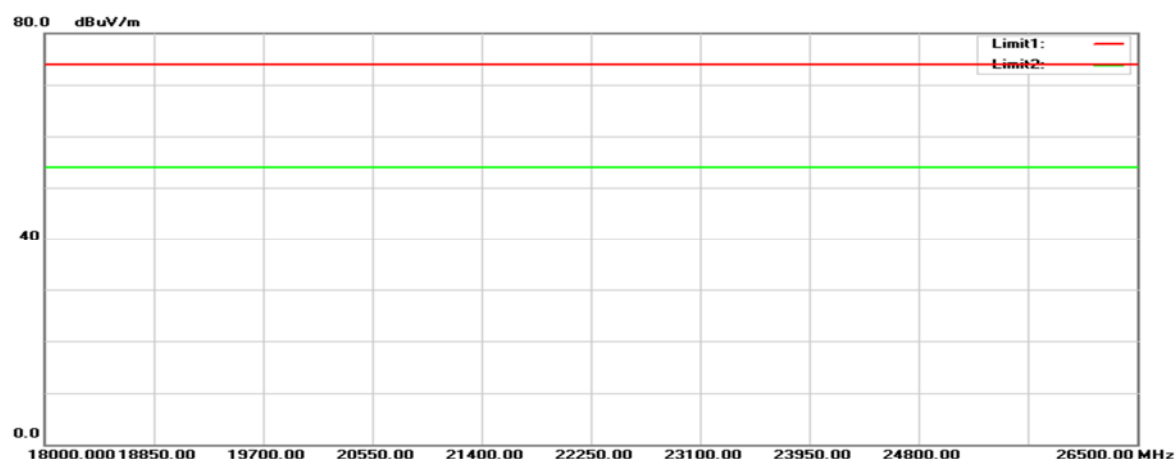
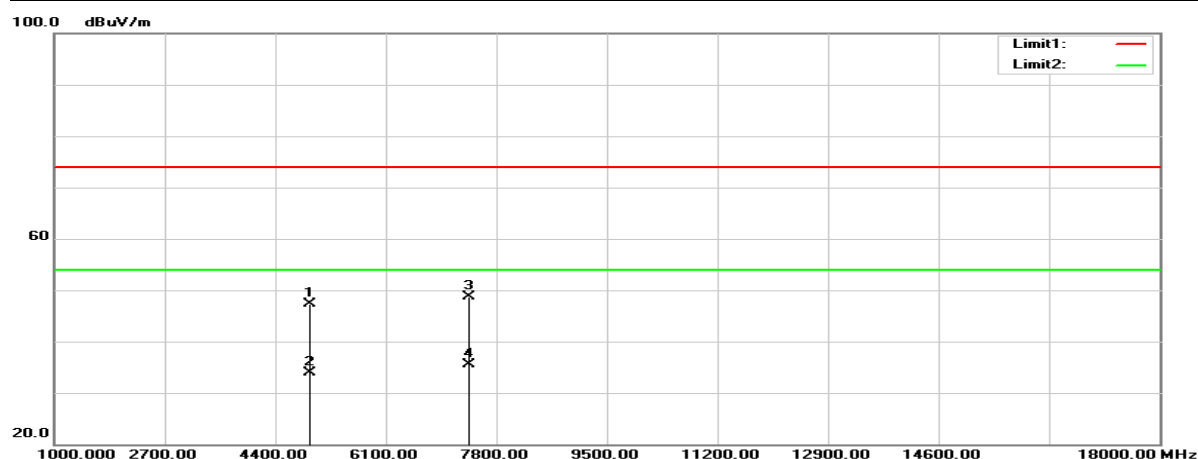
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:22:48
		Test By:	Aaron
Description:	G-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	49.01	-1.63	47.38	74.00	-26.62	143	179	peak
4924.000	35.54	-1.63	33.91	54.00	-20.09	143	179	AVG
7386.000	43.43	5.20	48.63	74.00	-25.37	148	198	peak
7386.000	30.29	5.20	35.49	54.00	-18.51	148	198	AVG

Note:

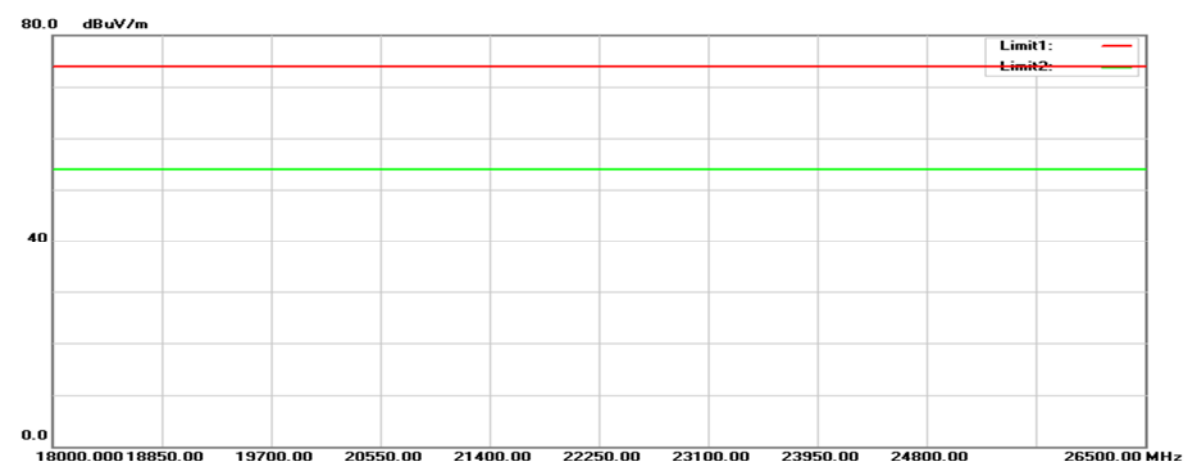
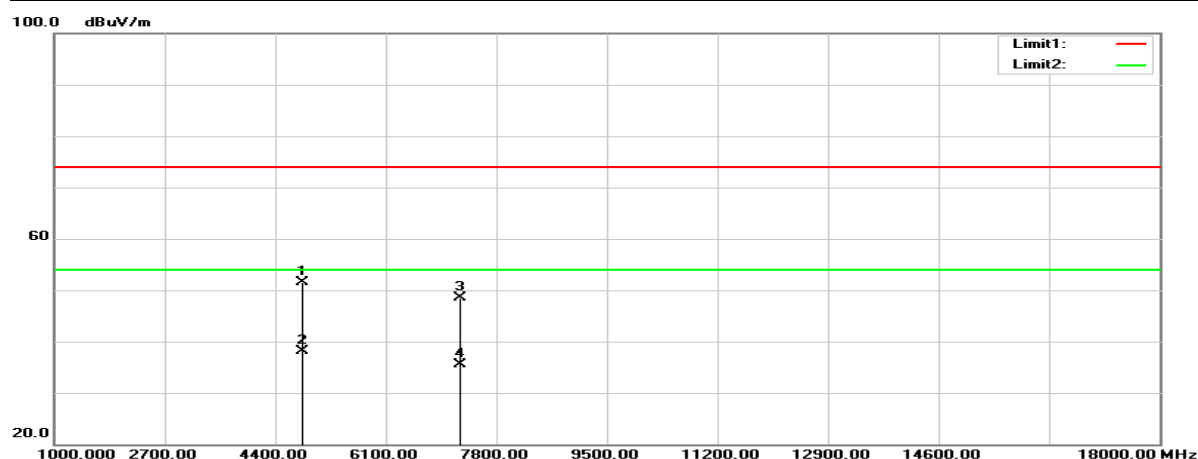
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:32:27
		Test By:	Aaron
Description:	N20-TX-2412-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	53.66	-2.15	51.51	74.00	-22.49	102	94	peak
4824.000	40.33	-2.15	38.18	54.00	-15.82	102	94	AVG
7236.000	44.02	4.55	48.57	74.00	-25.43	153	330	peak
7236.000	30.90	4.55	35.45	54.00	-18.55	153	330	AVG

Note:

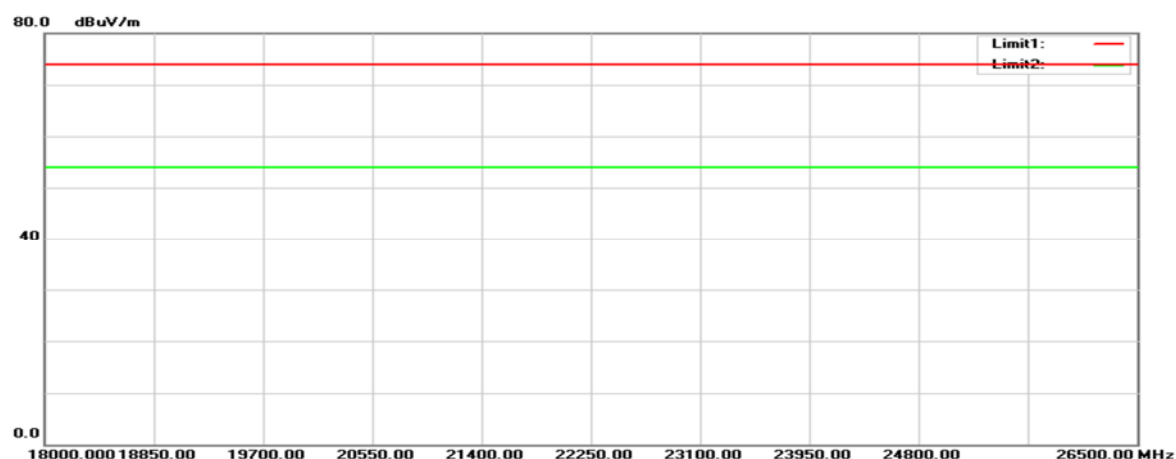
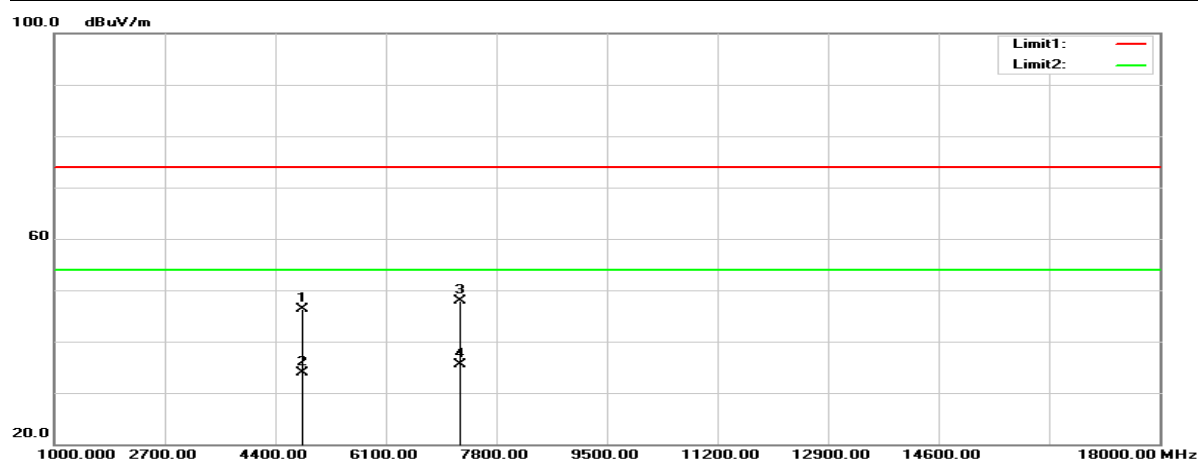
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:37:31
		Test By:	Aaron
Description:	N20-TX-2412-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	48.41	-2.15	46.26	74.00	-27.74	127	172	peak
4824.000	36.02	-2.15	33.87	54.00	-20.13	127	172	AVG
7236.000	43.33	4.55	47.88	74.00	-26.12	155	66	peak
7236.000	31.00	4.55	35.55	54.00	-18.45	155	66	AVG

Note:

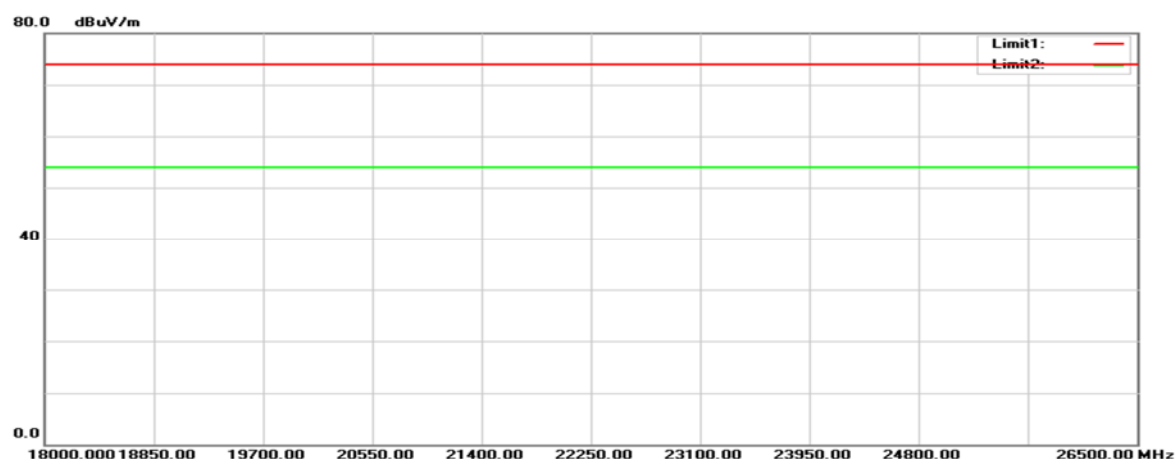
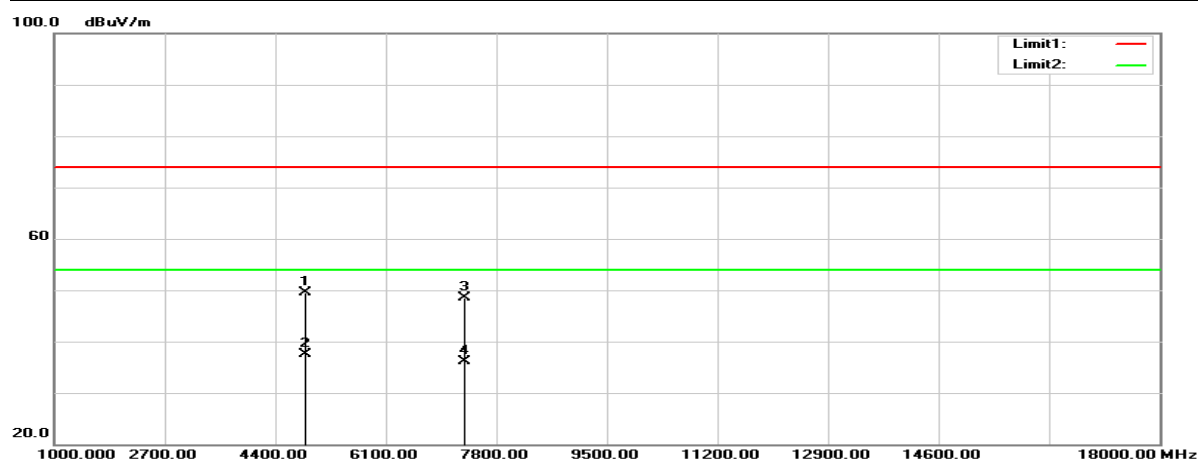
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:48:59
		Test By:	Aaron
Description:	N20-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	51.45	-1.92	49.53	74.00	-24.47	111	156	peak
4874.000	39.36	-1.92	37.44	54.00	-16.56	111	156	AVG
7311.000	43.50	5.08	48.58	74.00	-25.42	144	252	peak
7311.000	31.00	5.08	36.08	54.00	-17.92	144	252	AVG

Note:

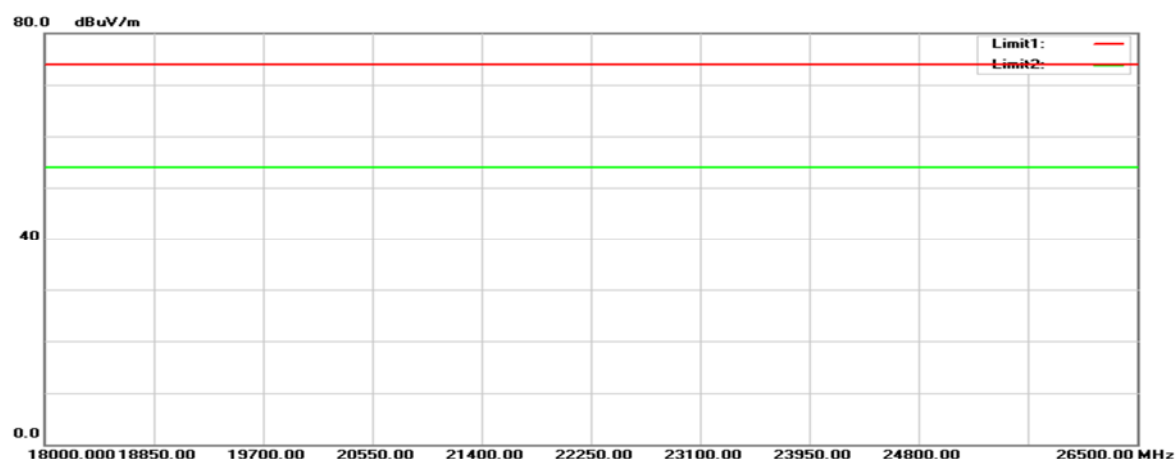
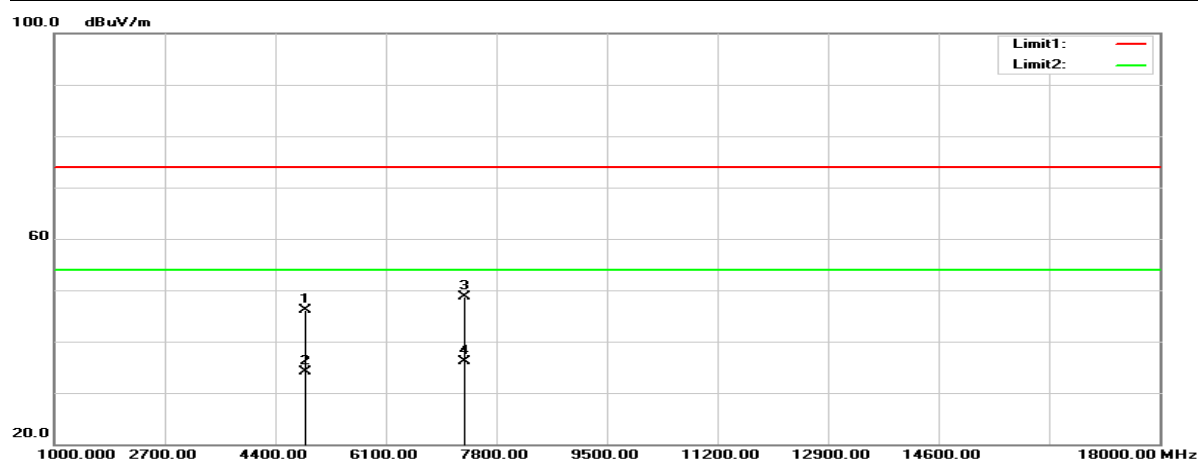
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:42:58
		Test By:	Aaron
Description:	N20-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	47.99	-1.92	46.07	74.00	-27.93	131	179	peak
4874.000	35.96	-1.92	34.04	54.00	-19.96	131	179	AVG
7311.000	43.56	5.08	48.64	74.00	-25.36	150	1	peak
7311.000	30.94	5.08	36.02	54.00	-17.98	150	1	AVG

Note:

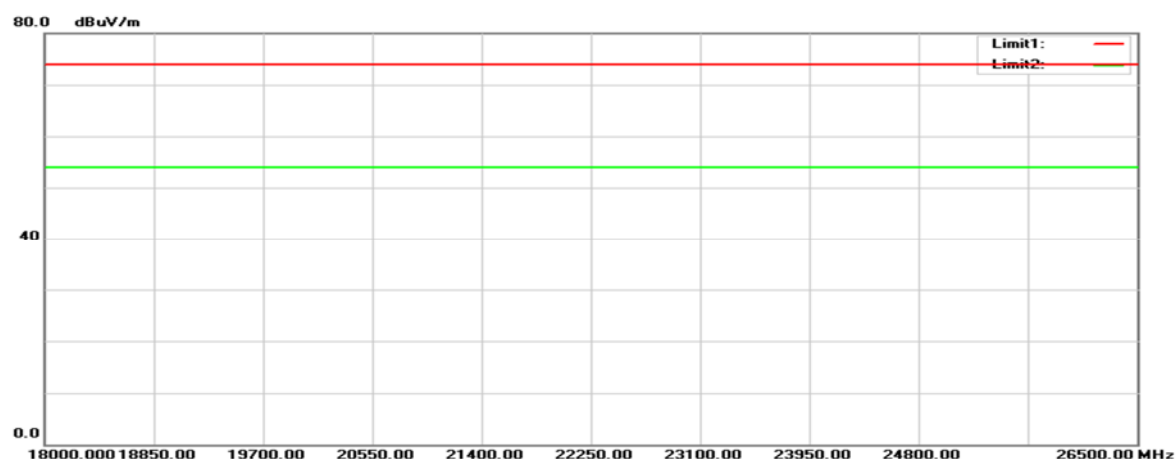
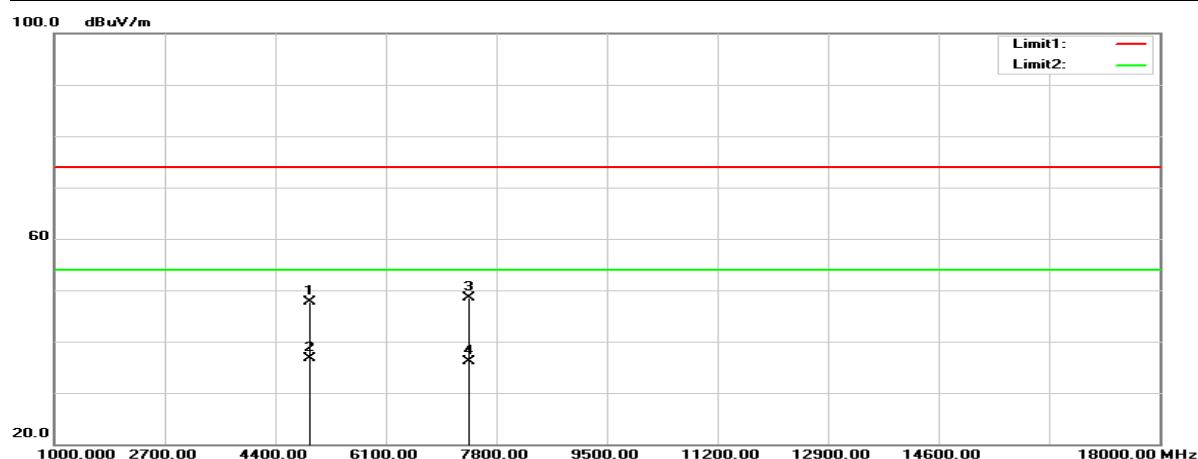
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:54:24
		Test By:	Aaron
Description:	N20-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	49.24	-1.63	47.61	74.00	-26.39	115	101	peak
4924.000	38.42	-1.63	36.79	54.00	-17.21	115	101	AVG
7386.000	43.39	5.20	48.59	74.00	-25.41	142	341	peak
7386.000	30.90	5.20	36.10	54.00	-17.90	142	341	AVG

Note:

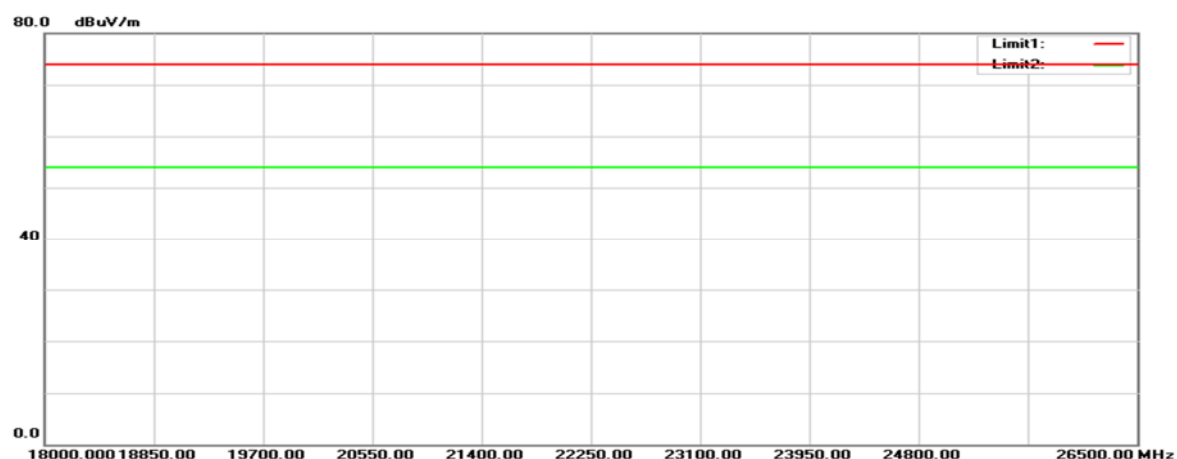
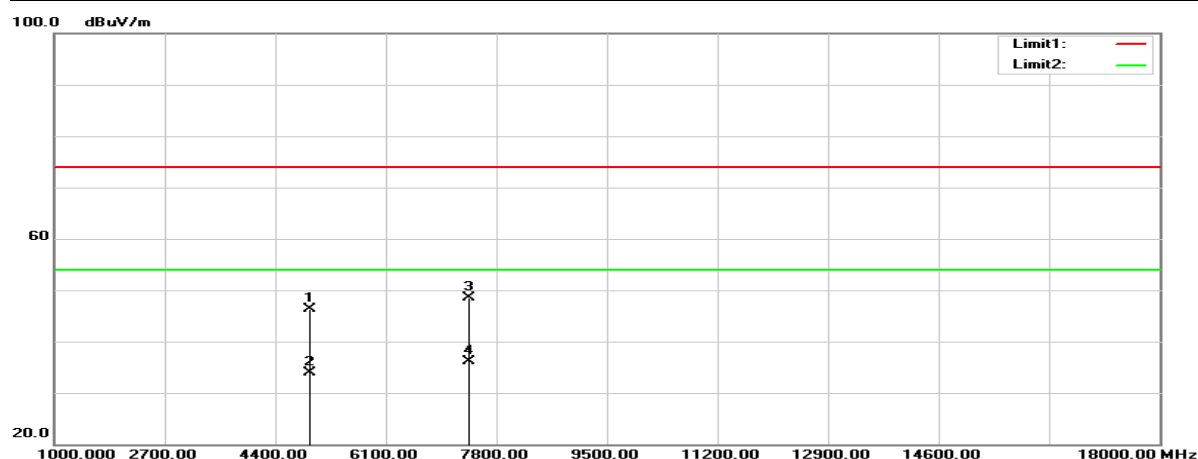
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 07:59:44
		Test By:	Aaron
Description:	N20-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	47.86	-1.63	46.23	74.00	-27.77	134	178	peak
4924.000	35.51	-1.63	33.88	54.00	-20.12	134	178	AVG
7386.000	43.33	5.20	48.53	74.00	-25.47	154	13	peak
7386.000	30.99	5.20	36.19	54.00	-17.81	154	13	AVG

Note:

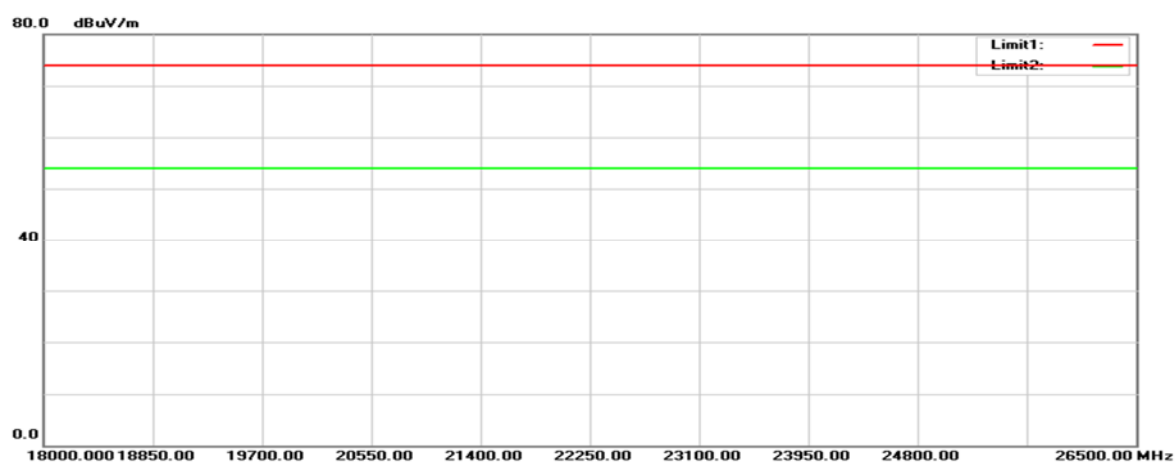
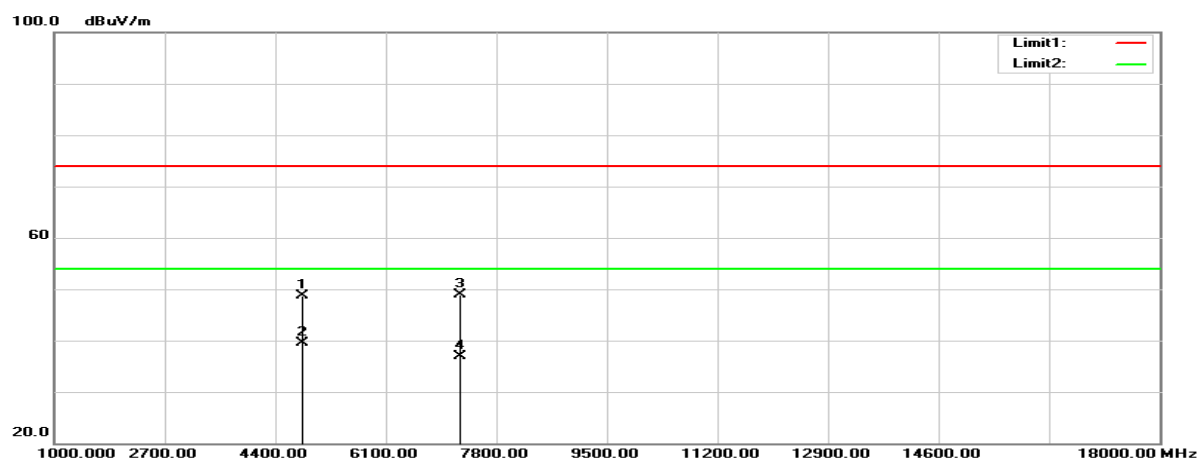
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 08:13:11
		Test By:	Aaron
Description:		AX20-TX-2412-X_Axis	



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	50.92	-2.15	48.77	74.00	-25.23	102	85	peak
4824.000	41.72	-2.15	39.57	54.00	-14.43	102	85	AVG
7236.000	44.43	4.55	48.98	74.00	-25.02	145	349	peak
7236.000	32.36	4.55	36.91	54.00	-17.09	145	349	AVG

Note:

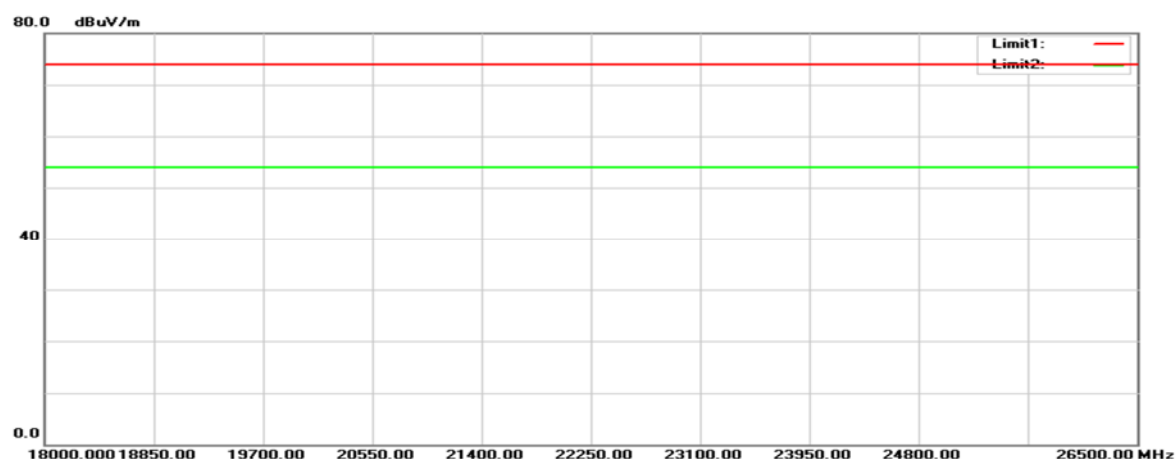
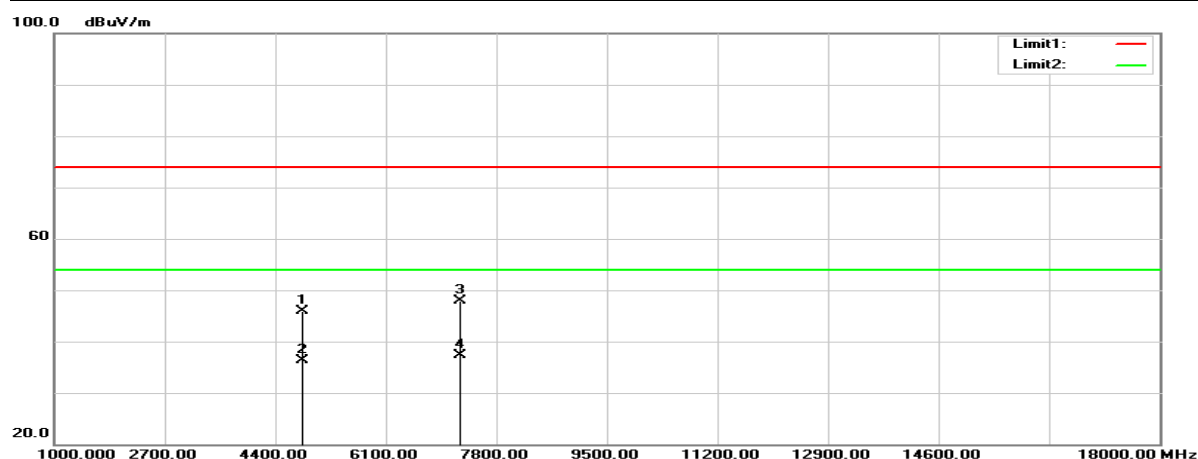
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 08:08:13
		Test By:	Aaron
Description:	AX20-TX-2412-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4824.000	48.04	-2.15	45.89	74.00	-28.11	141	168	peak
4824.000	38.44	-2.15	36.29	54.00	-17.71	141	168	AVG
7236.000	43.26	4.55	47.81	74.00	-26.19	148	210	peak
7236.000	32.81	4.55	37.36	54.00	-16.64	148	210	AVG

Note:

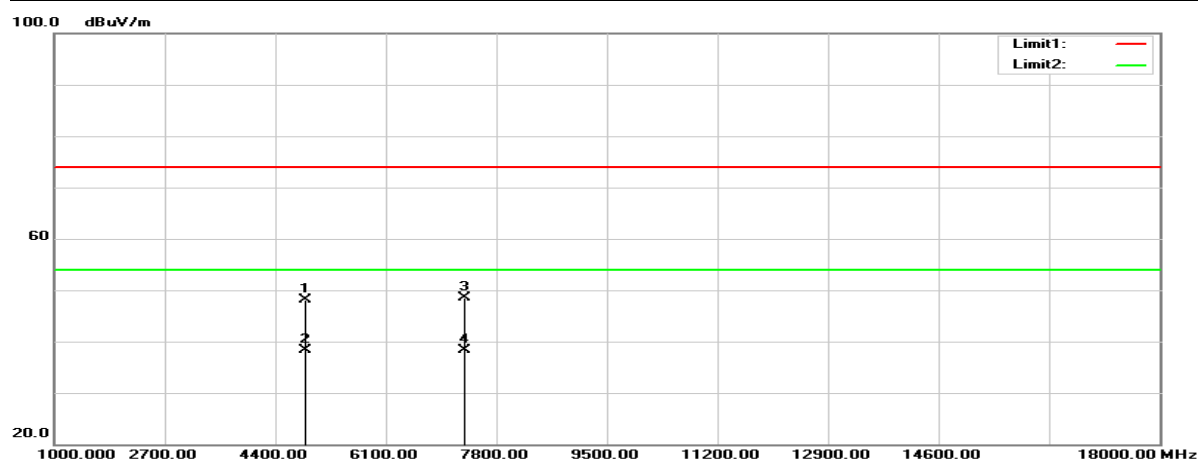
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 08:18:38
		Test By:	Aaron
Description:	AX20-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	49.97	-1.92	48.05	74.00	-25.95	113	83	peak
4874.000	40.17	-1.92	38.25	54.00	-15.75	113	83	AVG
7311.000	43.46	5.08	48.54	74.00	-25.46	150	263	peak
7311.000	33.24	5.08	38.32	54.00	-15.68	150	263	AVG

Note:

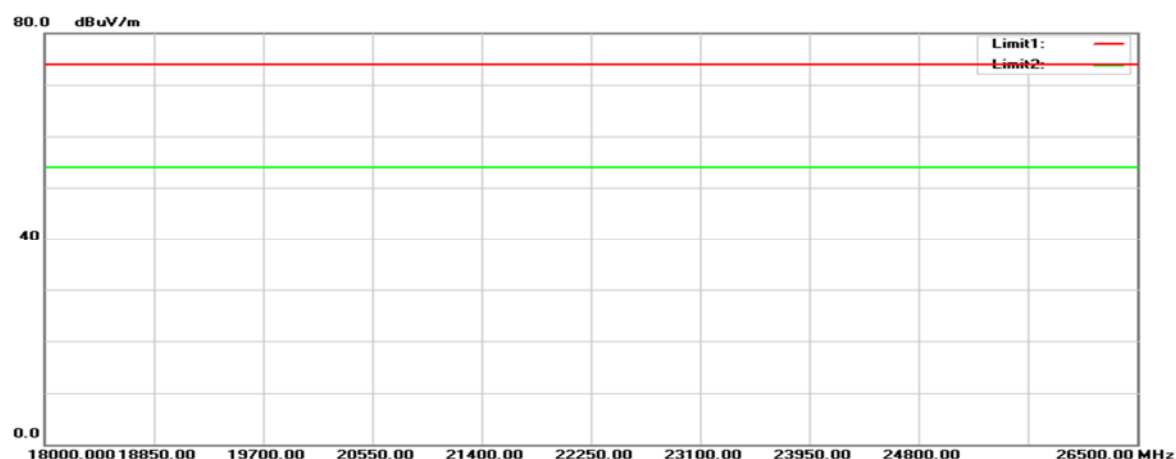
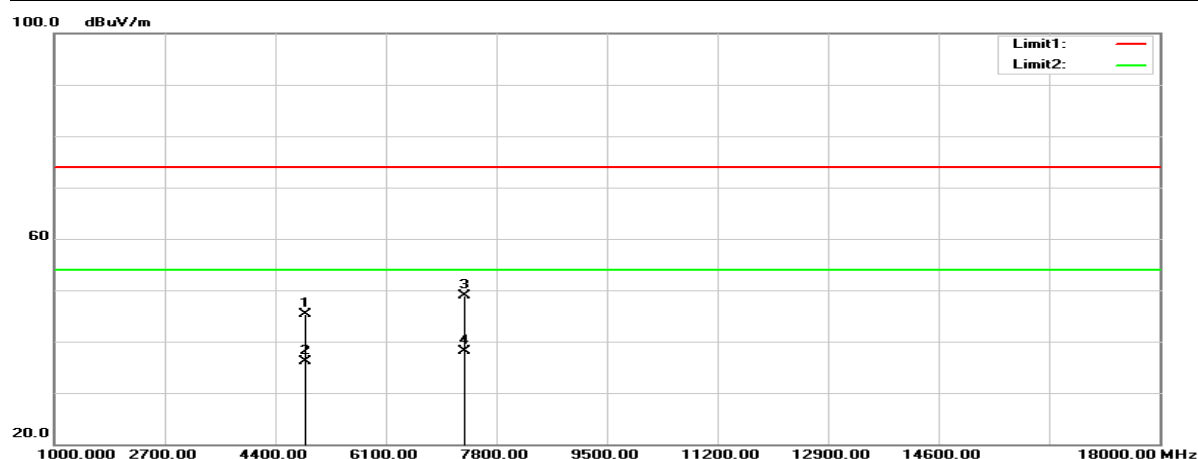
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 08:22:57
		Test By:	Aaron
Description:	AX20-TX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	47.31	-1.92	45.39	74.00	-28.61	149	116	peak
4874.000	37.99	-1.92	36.07	54.00	-17.93	149	116	AVG
7311.000	43.85	5.08	48.93	74.00	-25.07	144	299	peak
7311.000	32.97	5.08	38.05	54.00	-15.95	144	299	AVG

Note:

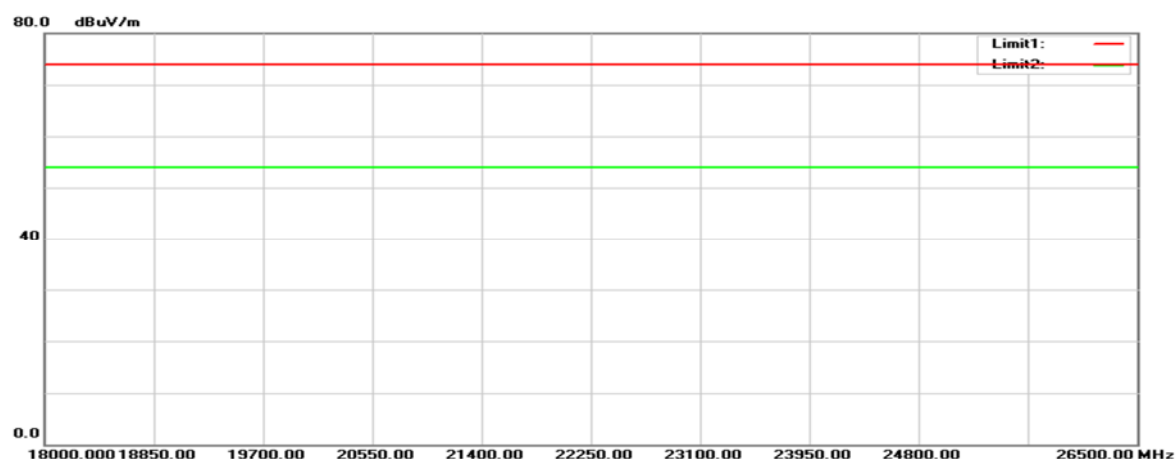
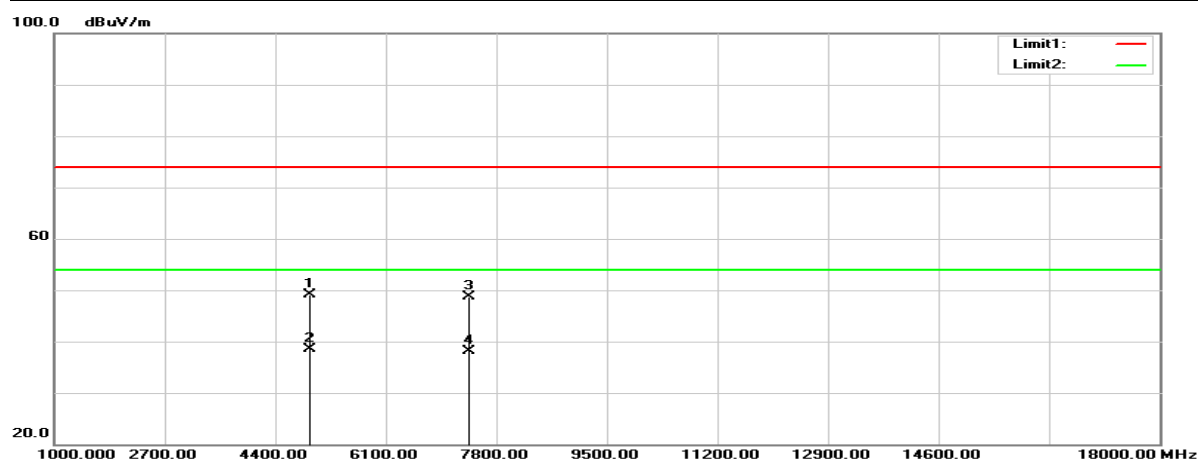
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 08:31:35
		Test By:	Aaron
Description:	AX20-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	50.70	-1.63	49.07	74.00	-24.93	121	89	peak
4924.000	40.13	-1.63	38.50	54.00	-15.50	121	89	AVG
7386.000	43.59	5.20	48.79	74.00	-25.21	148	283	peak
7386.000	32.89	5.20	38.09	54.00	-15.91	148	283	AVG

Note:

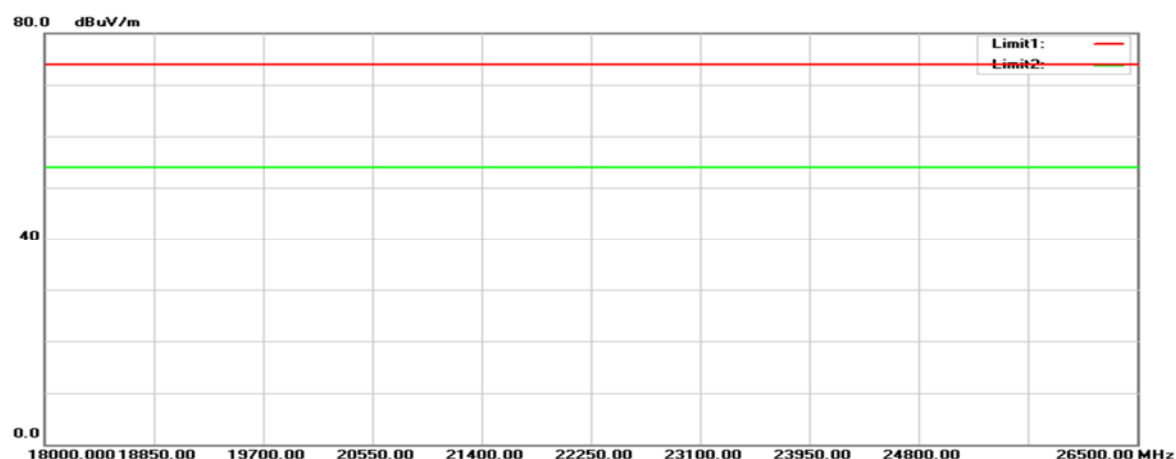
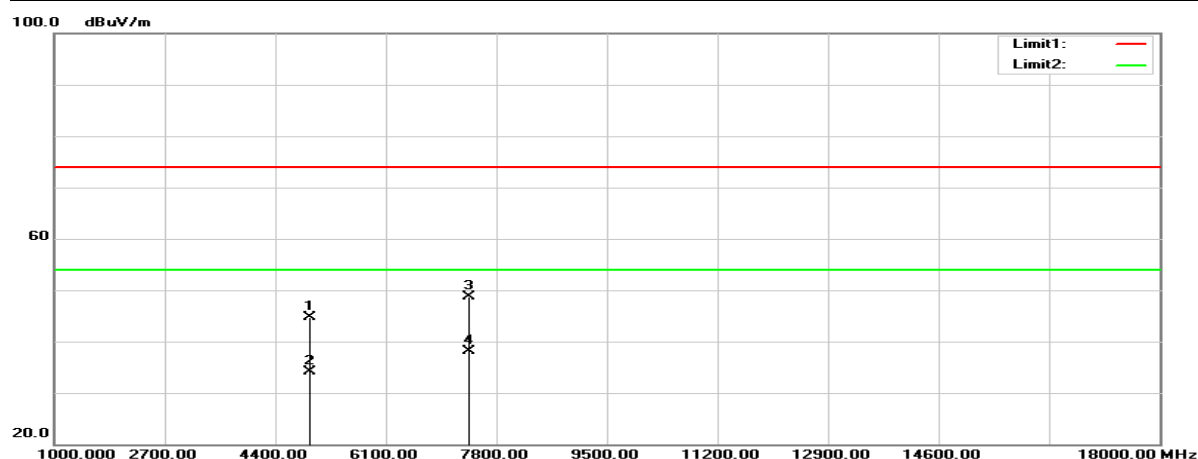
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 08:28:18
		Test By:	Aaron
Description:	AX20-TX-2462-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4924.000	46.29	-1.63	44.66	74.00	-29.34	142	336	peak
4924.000	35.78	-1.63	34.15	54.00	-19.85	142	336	AVG
7386.000	43.48	5.20	48.68	74.00	-25.32	153	162	peak
7386.000	32.95	5.20	38.15	54.00	-15.85	153	162	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

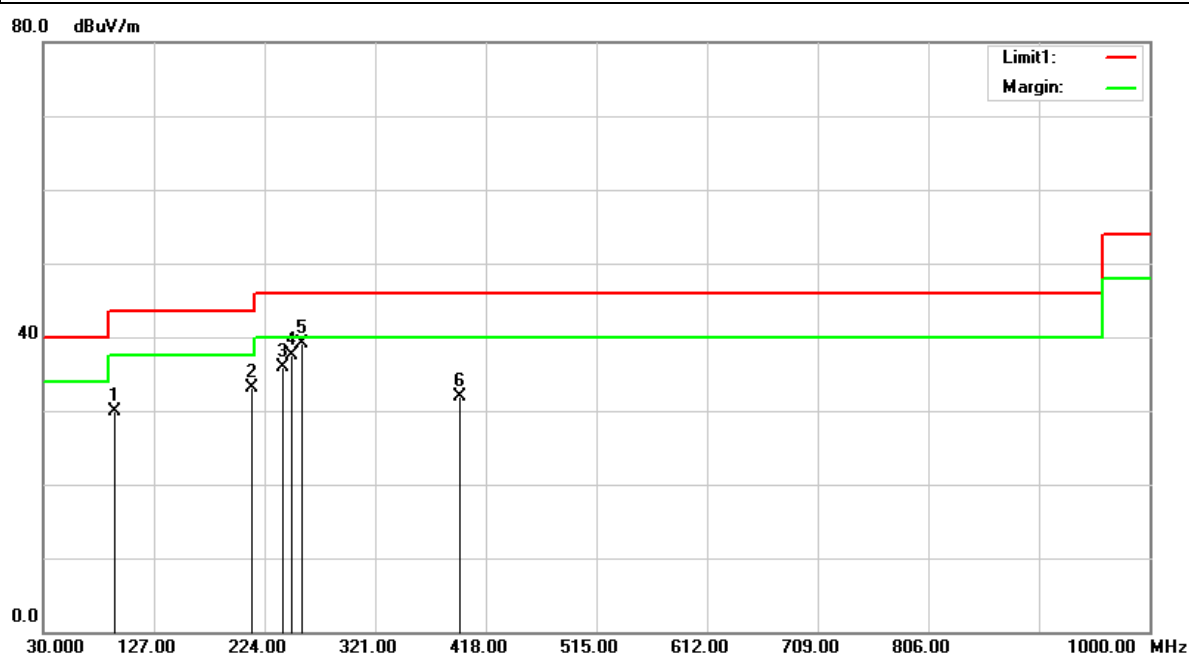
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

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.:	RXZ211216001	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):	21.2(°C)/70%RH	Date:2022/1/11	Time:上午 08:29:32
		Test By:	Aaron
Description:	RX		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
92.0800	46.10	-16.27	29.83	43.50	-13.67	100	334	peak
212.3600	46.29	-13.26	33.03	43.50	-10.47	100	360	peak
240.4900	48.18	-12.23	35.95	46.00	-10.05	100	183	peak
247.2800	49.76	-12.28	37.48	46.00	-8.52	100	18	peak
256.9800	51.09	-12.00	39.09	46.00	-6.91	100	18	peak
395.6900	39.81	-7.86	31.95	46.00	-14.05	100	183	peak

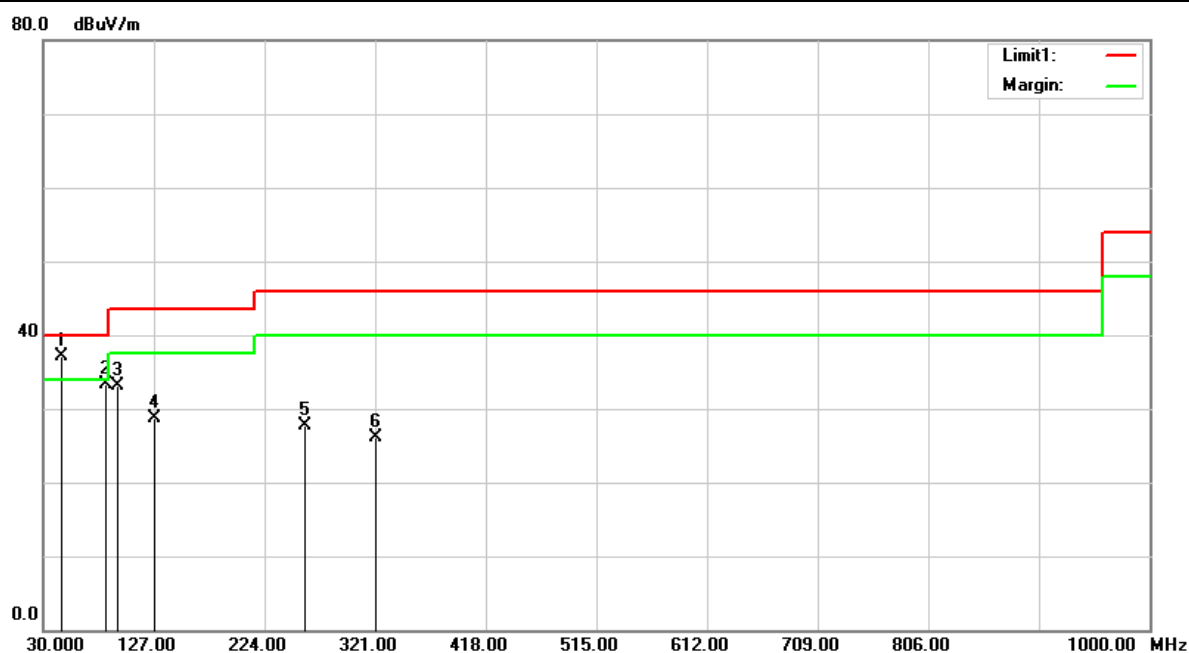
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Job No.:	RXZ211216001	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):	21.2(°C)/70%RH	Date:2022/1/11	Time:上午 08:31:14
Company:	Crestron Electronics	Test By:	Aaron
Model:	M202018002		
Description:	RX		



Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
46.4900	51.75	-14.62	37.13	40.00	-2.87	100	184	QP
85.2900	50.03	-16.75	33.28	40.00	-6.72	100	209	peak
94.9900	48.74	-15.55	33.19	43.50	-10.31	100	15	peak
127.9700	38.89	-10.23	28.66	43.50	-14.84	100	246	peak
258.9200	39.57	-11.80	27.77	46.00	-18.23	100	244	peak
321.0000	35.67	-9.62	26.05	46.00	-19.95	100	325	peak

Note:

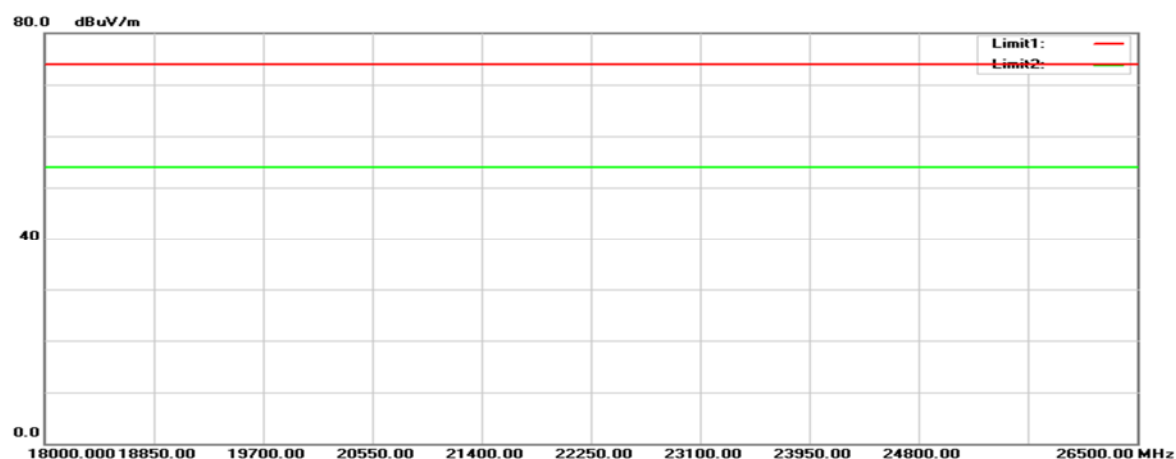
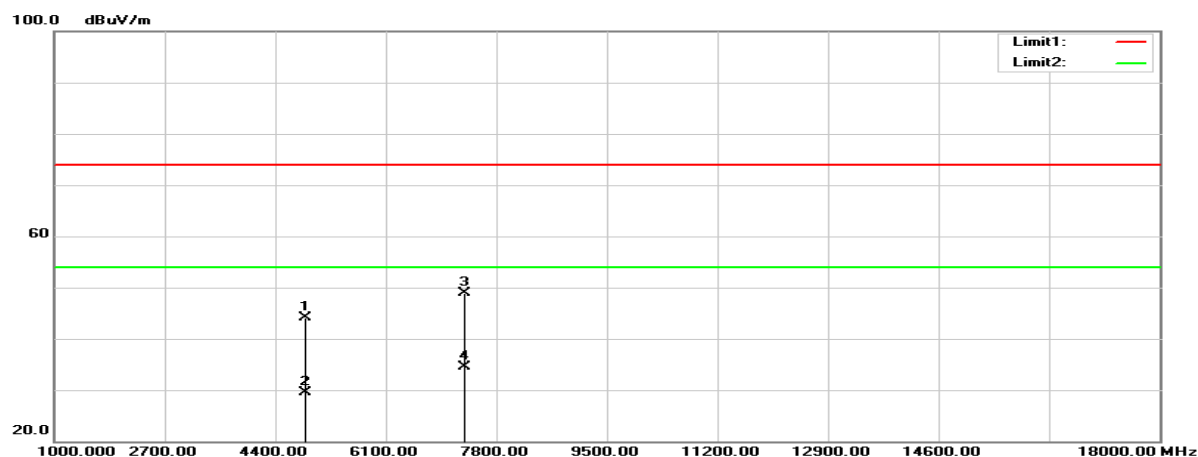
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	22.2(°C)/71%RH	Date:2022/1/5	Time:上午 01:39:50
		Test By:	Aaron
Description:	B-RX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	46.02	-1.92	44.10	74.00	-29.90	150	274	peak
4874.000	31.40	-1.92	29.48	54.00	-24.52	150	274	AVG
7311.000	43.77	5.08	48.85	74.00	-25.15	150	172	peak
7311.000	29.38	5.08	34.46	54.00	-19.54	150	172	AVG

Note:

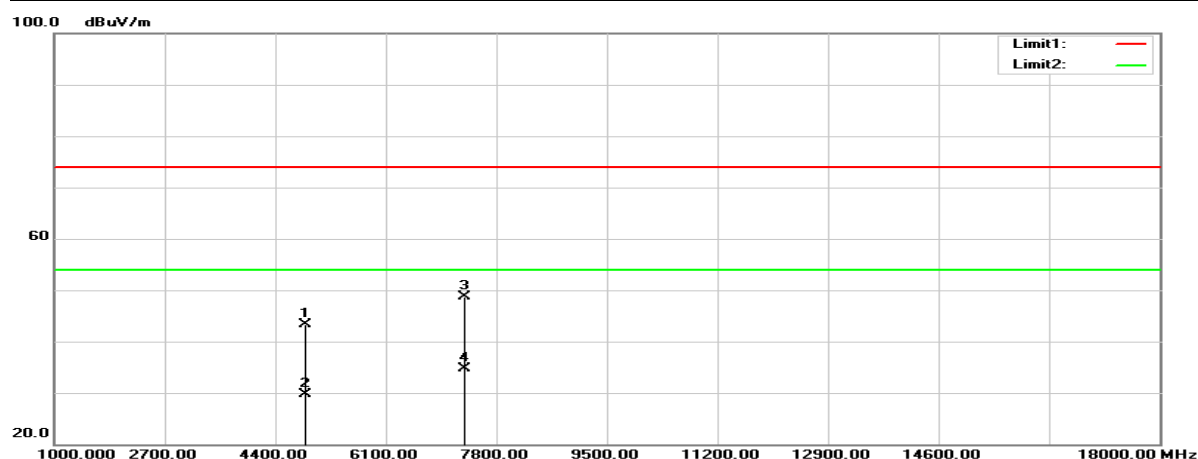
Result = Reading + Correct Factor

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.:	RXZ211216001	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):	22.2(°C)/71%RH	Date:2022/1/5	Time:上午 01:34:21
		Test By:	Aaron
Description:	B-RX-2437-X_Axis		



Frequency (MHz)	Reading (dBμV)	Correct Factor(dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
4874.000	45.22	-1.92	43.30	74.00	-30.70	150	232	peak
4874.000	31.67	-1.92	29.75	54.00	-24.25	150	232	AVG
7311.000	43.57	5.08	48.65	74.00	-25.35	150	1	peak
7311.000	29.71	5.08	34.79	54.00	-19.21	150	1	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

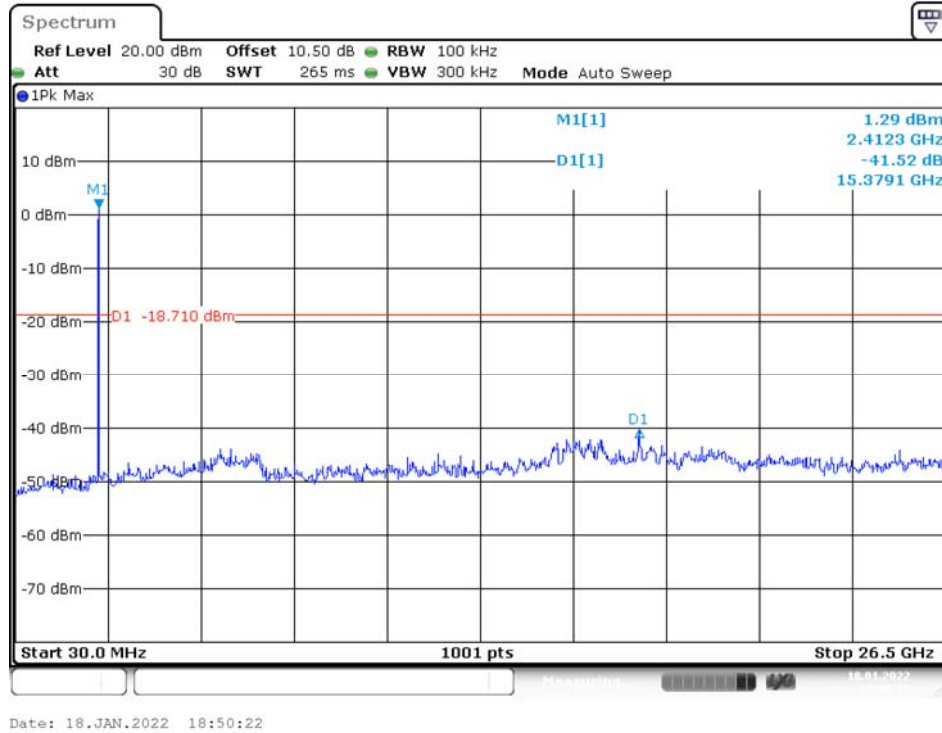
Other emissions from 18GHz~26.5GHz are 20 dB below the limits. No recording in the test.

Conducted Spurious Emissions:

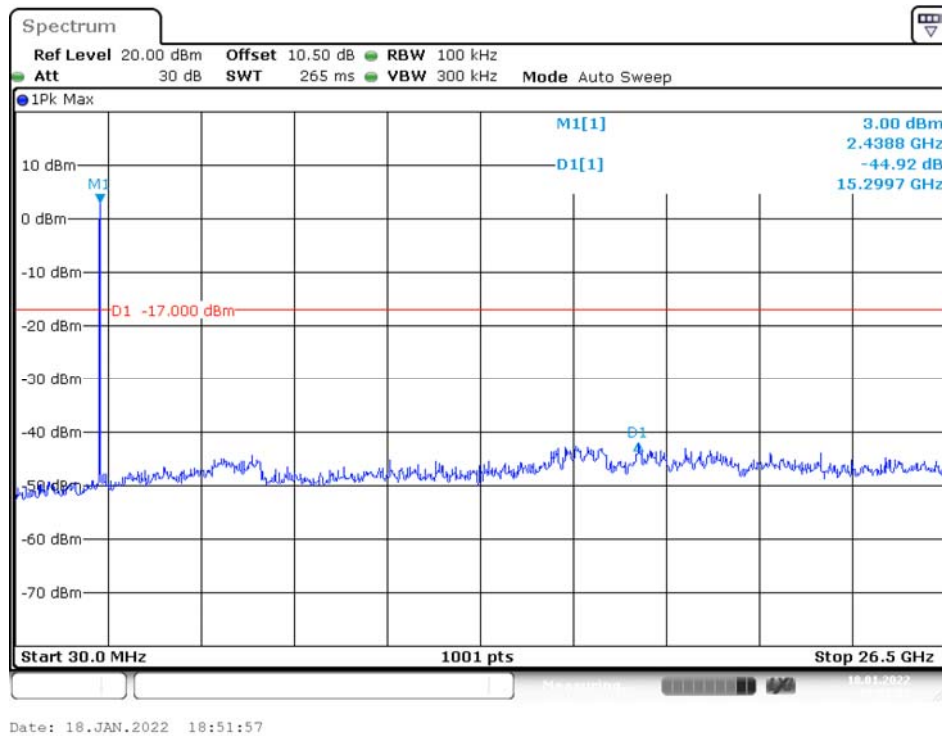
環境溫度	23.5°C	測試日期	2022 年 1 月 18 日
環境濕度	59%	測試人員	Aaron

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)		Limit (dBc)	Result
		Chain 0	Chain 1		
B mode					
Low	2412	41.52	41.55	≥ 20	PASS
Mid	2437	44.92	43.46	≥ 20	PASS
High	2462	42.74	42.46	≥ 20	PASS
G mode					
Low	2412	38.62	39.51	≥ 20	PASS
Mid	2437	37.54	39.58	≥ 20	PASS
High	2462	38.74	39.04	≥ 20	PASS
N20 mode					
Low	2412	42.07	42.18	≥ 20	PASS
Mid	2437	31.36	39.80	≥ 20	PASS
High	2462	35.99	41.35	≥ 20	PASS
AX20 mode					
Low	2422	40.36	36.61	≥ 20	PASS
Mid	2437	40.30	38.85	≥ 20	PASS
High	2452	38.49	40.50	≥ 20	PASS

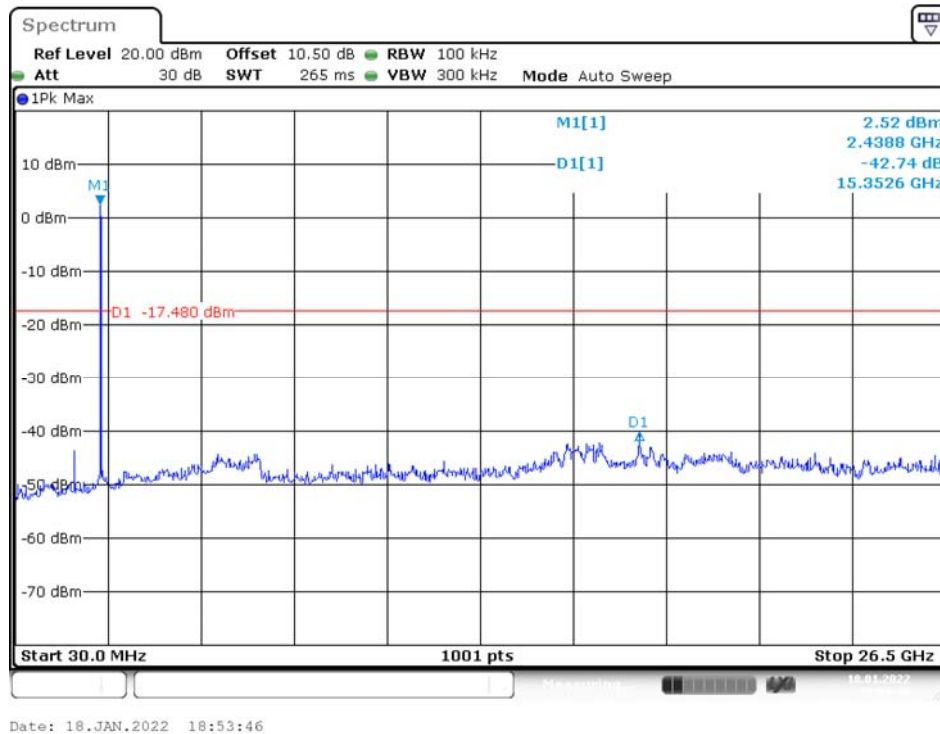
B Mode Low Channel (Chain 0)



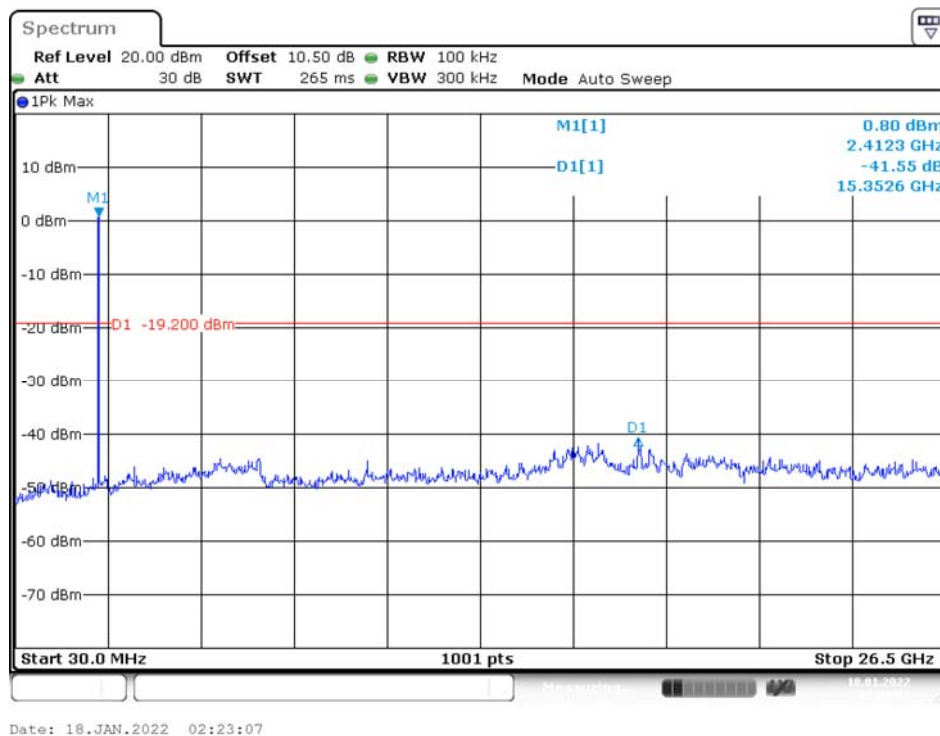
B Mode Middle Channel(Chain 0)



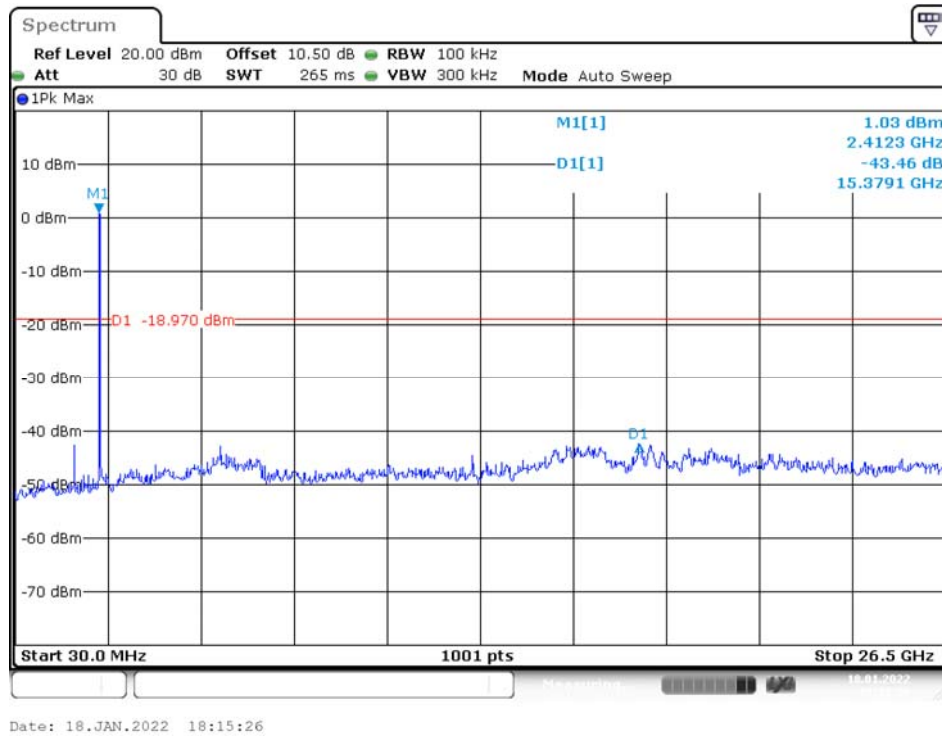
B Mode High Channel(Chain 0)



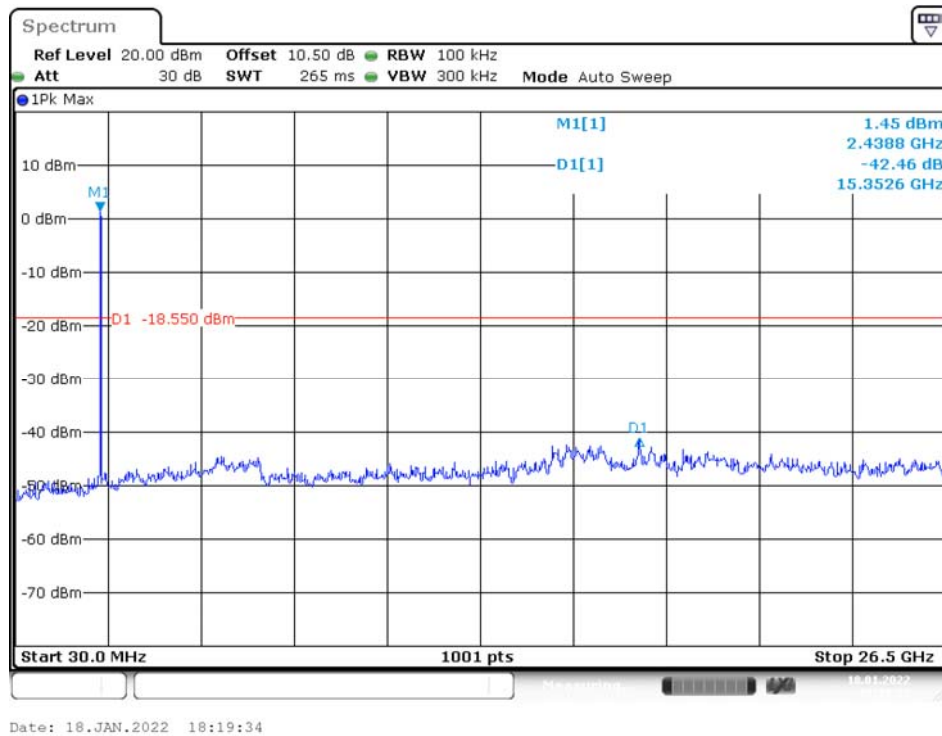
B Mode Low Channel (Chain 1)

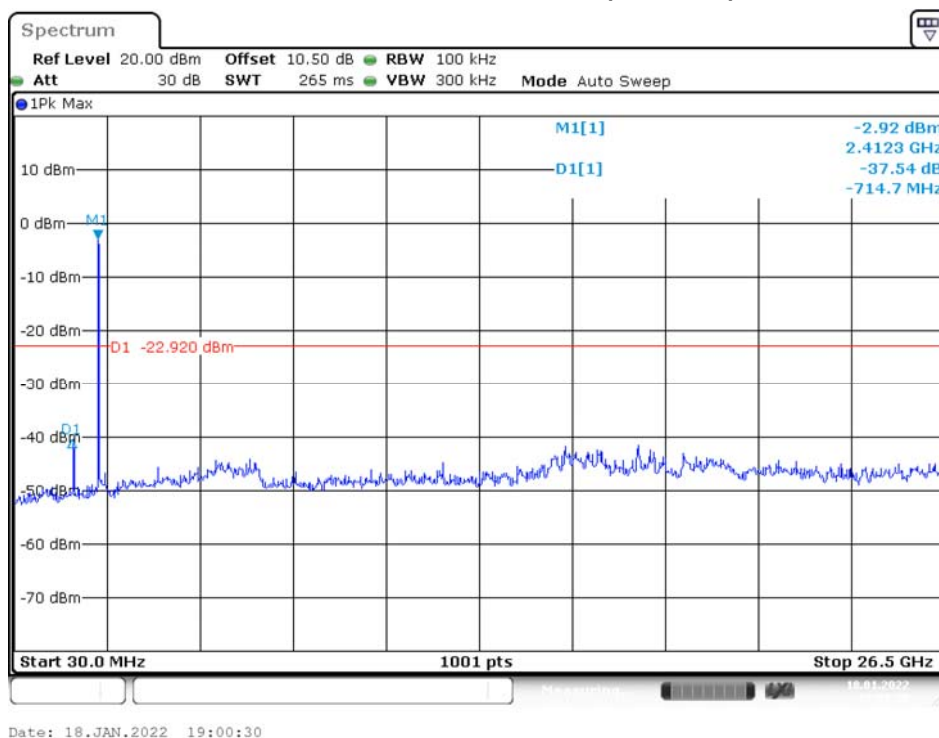
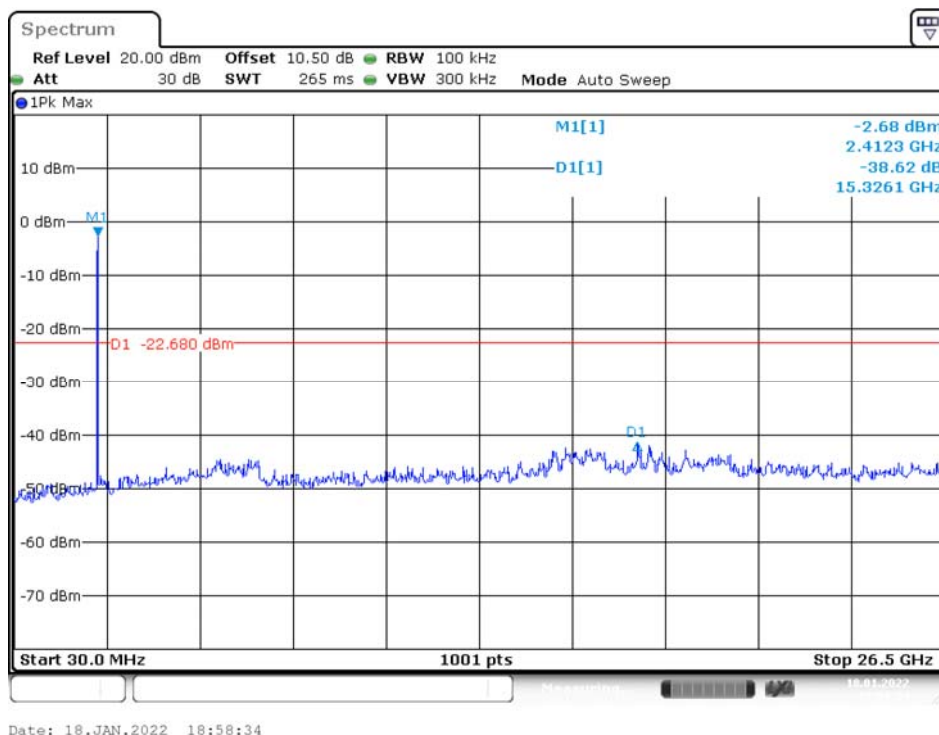


B Mode Middle Channel (Chain 1)

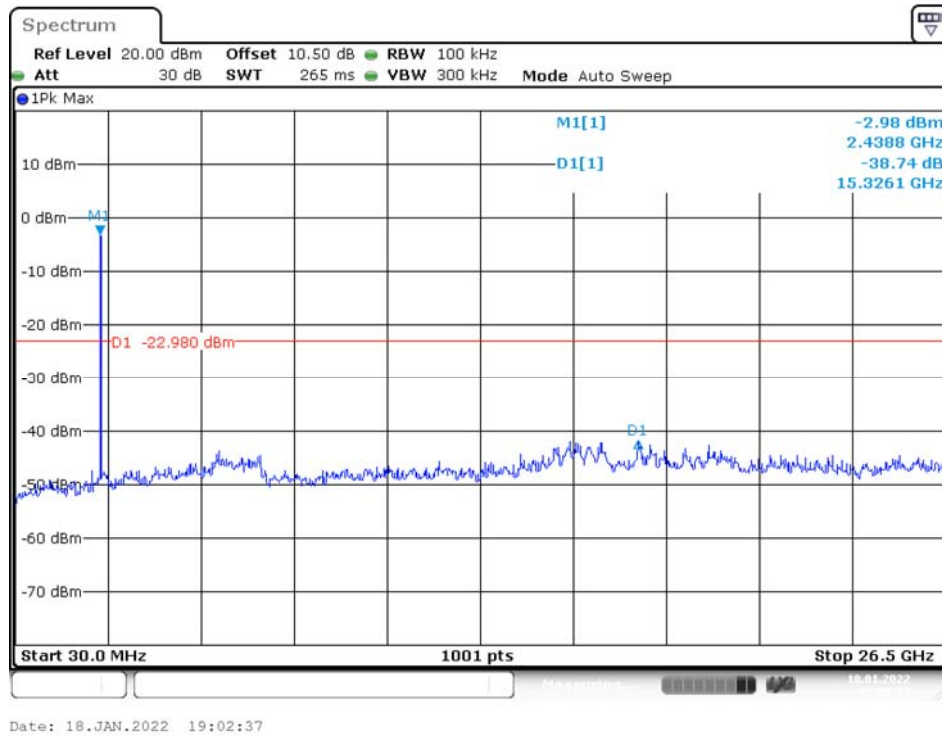


B Mode High Channel (Chain 1)

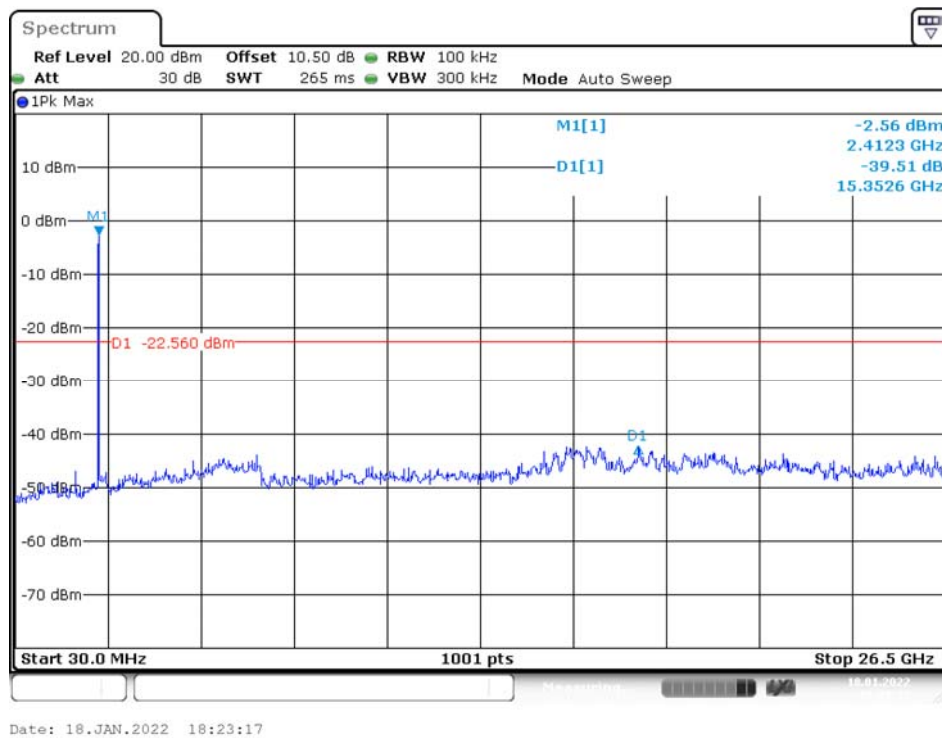




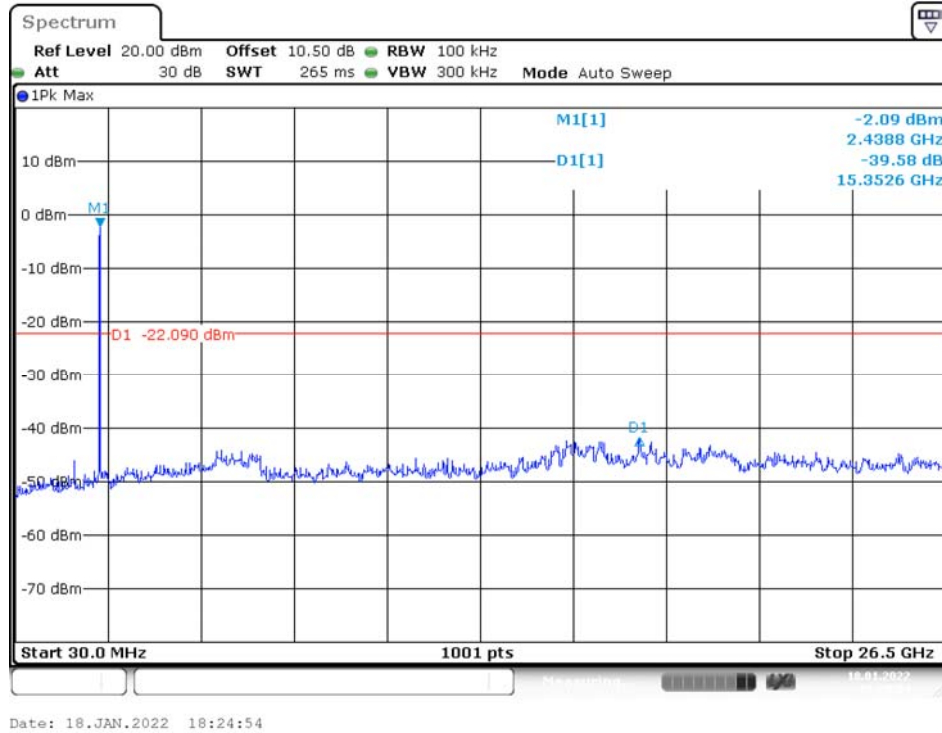
G Mode High Channel(Chain 0)



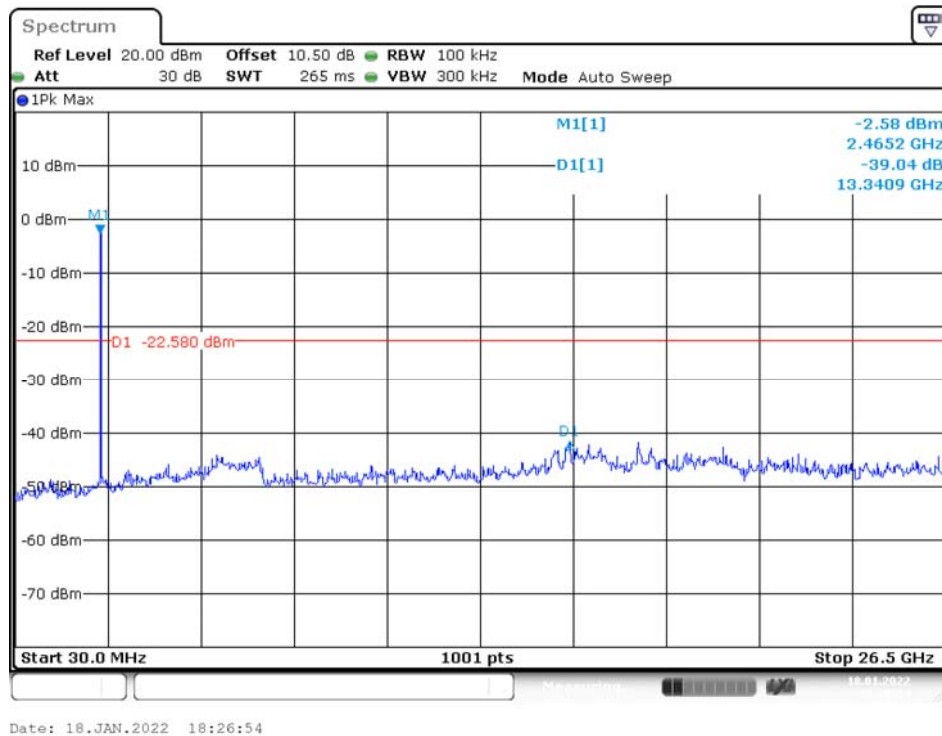
G Mode Low Channel (Chain 1)



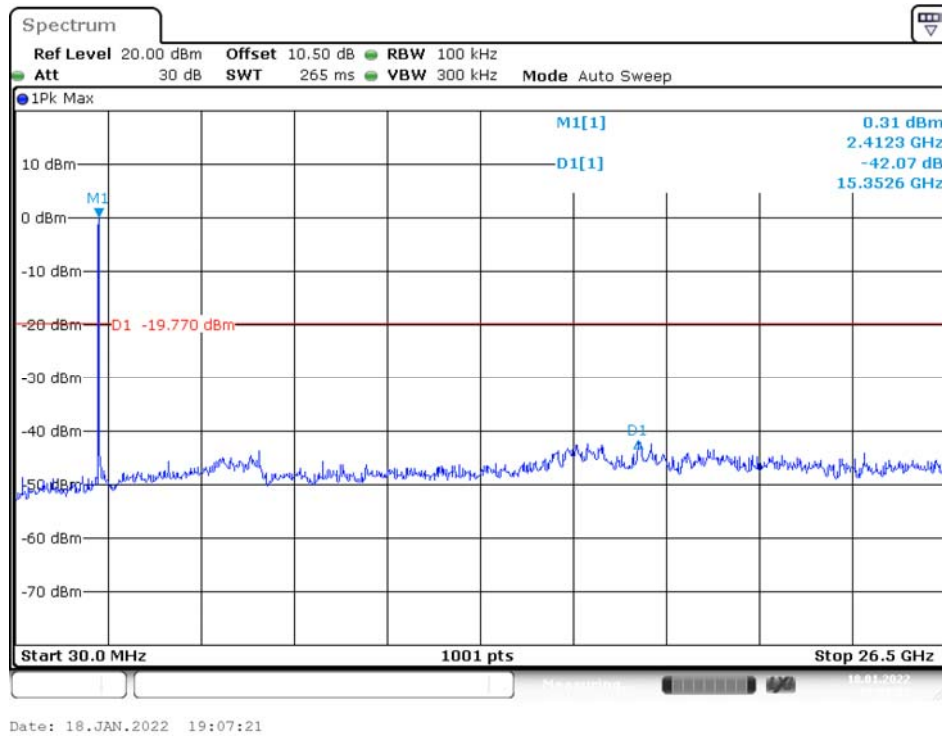
G Mode Middle Channel (Chain 1)



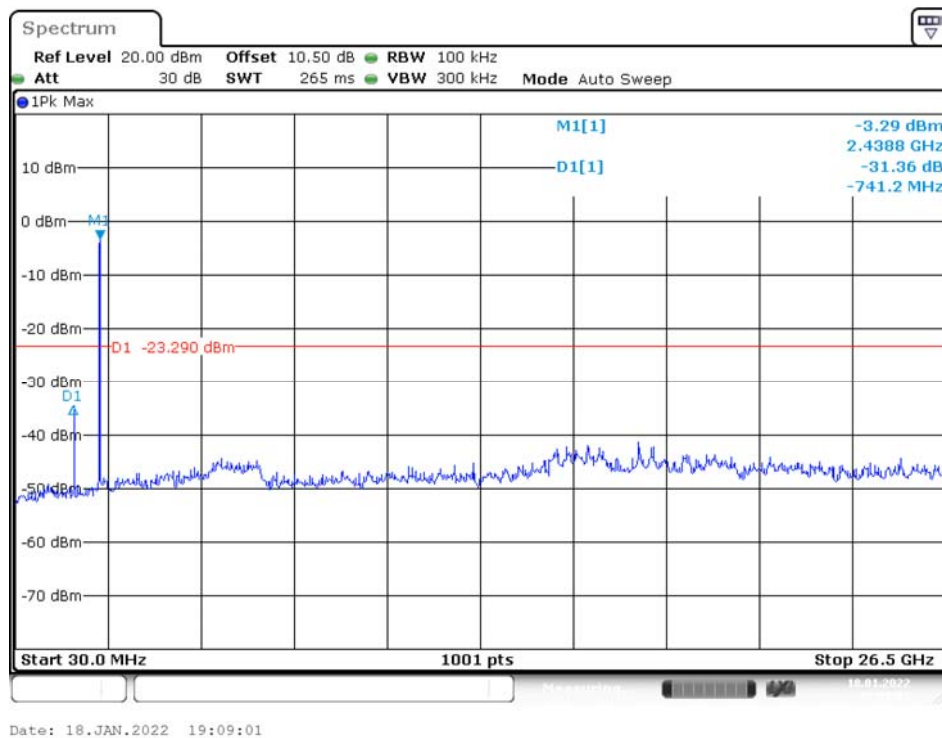
G Mode High Channel (Chain 1)



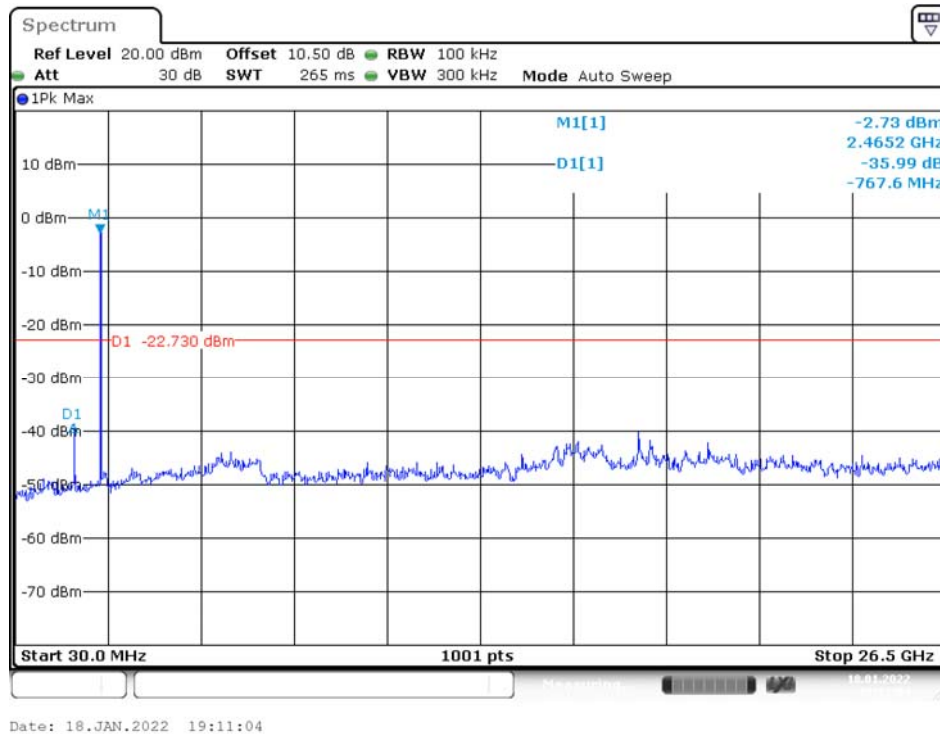
N20 Mode Low Channel (Chain 0)



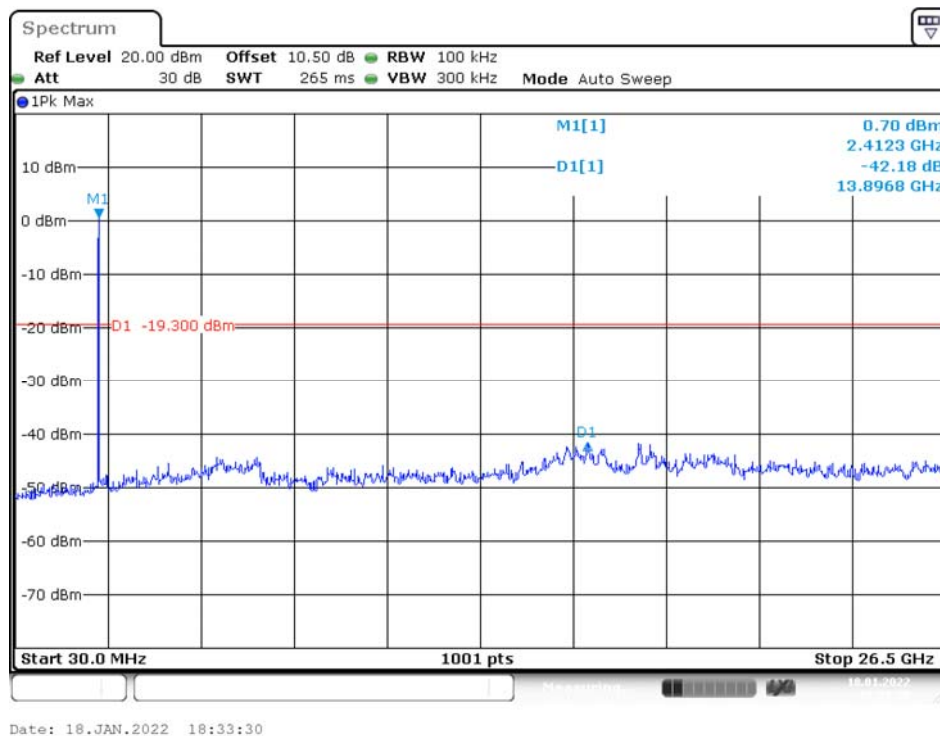
N20 Mode Middle Channel (Chain 0)



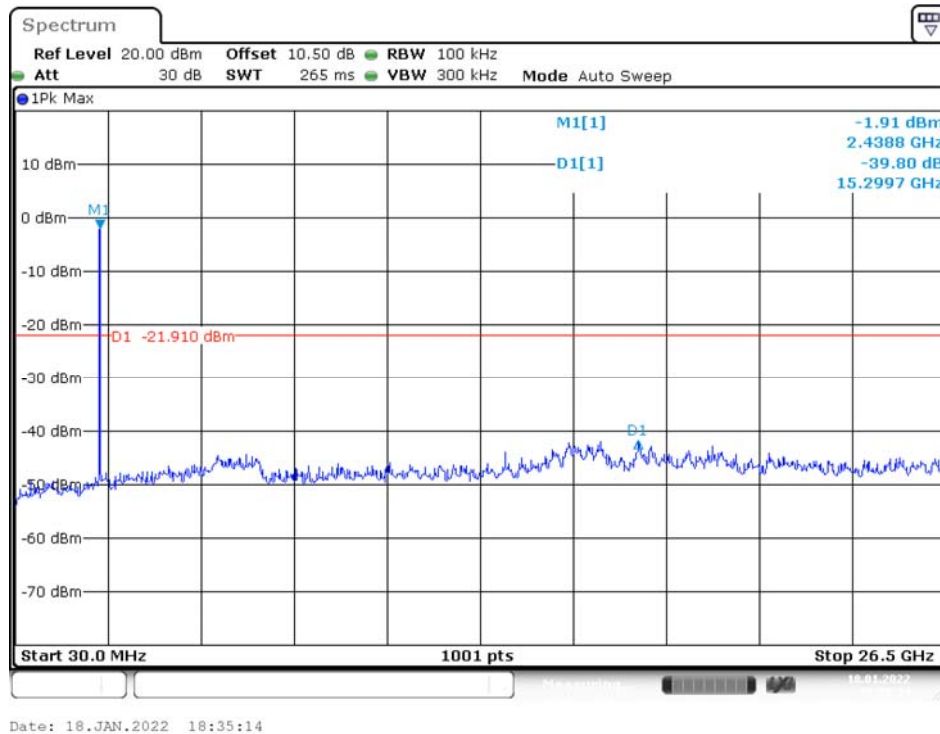
N20 Mode High Channel (Chain 0)



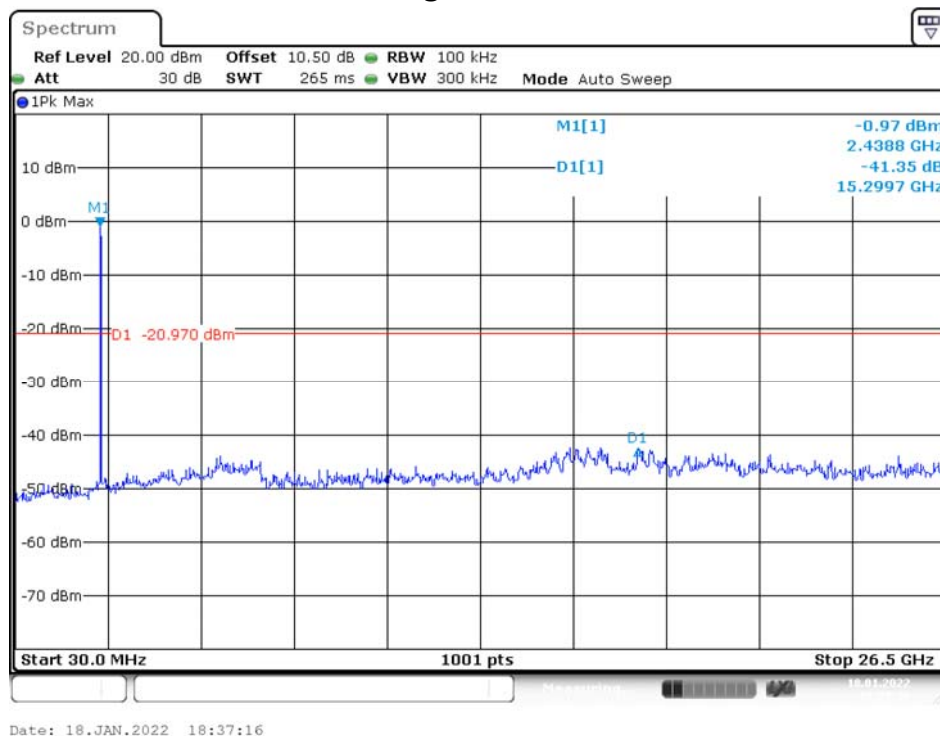
N20 Mode Low Channel (Chain 1)



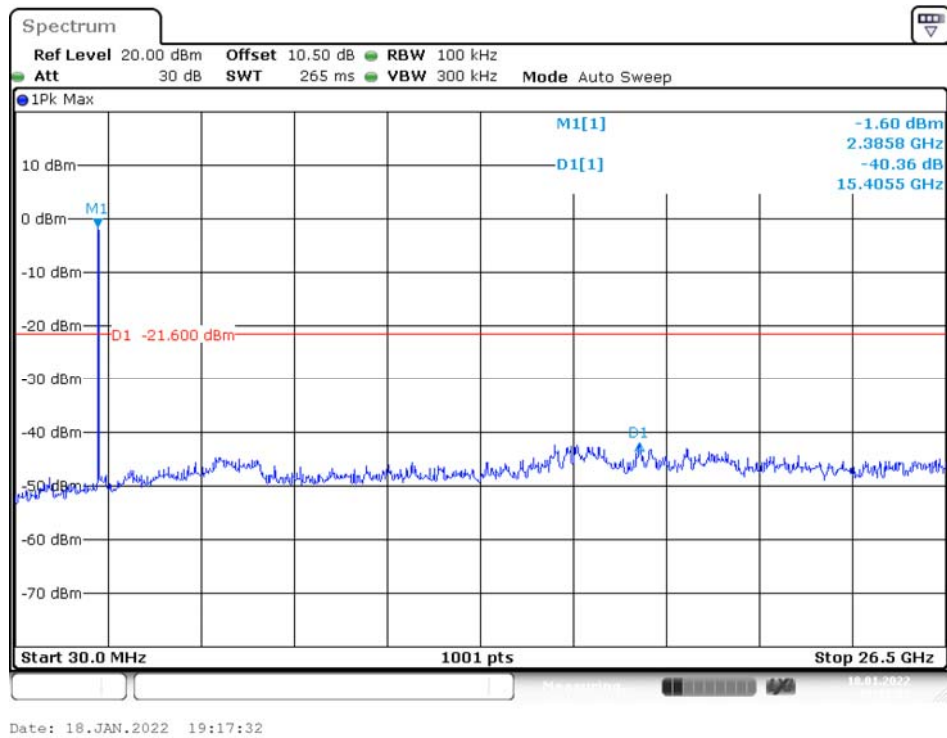
N20 Mode Middle Channel (Chain 1)



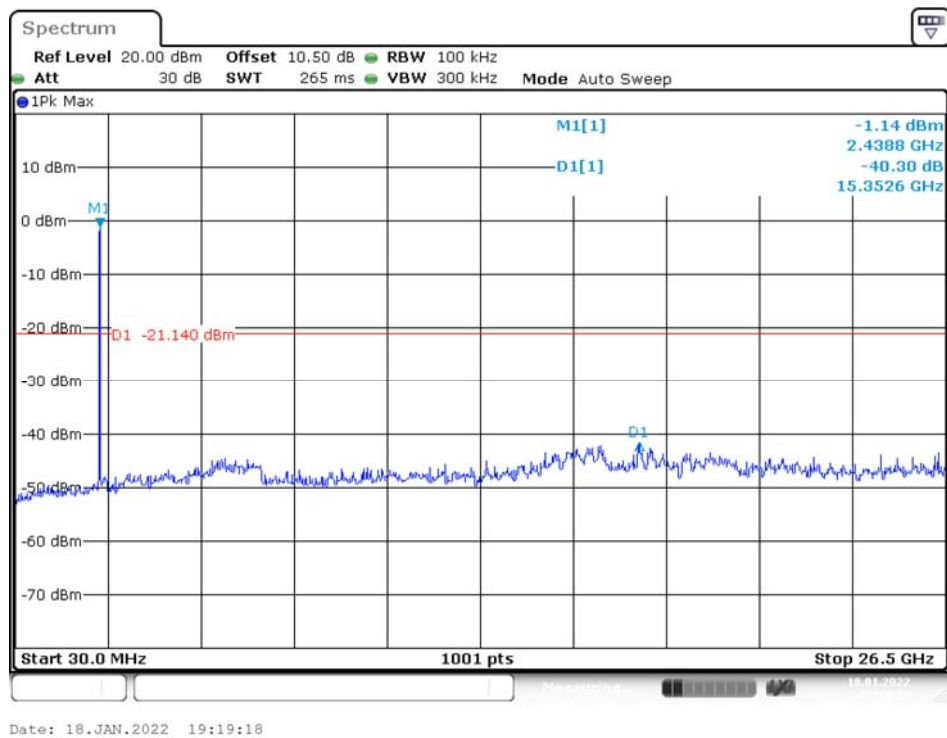
N20 Mode High Channel (Chain 1)



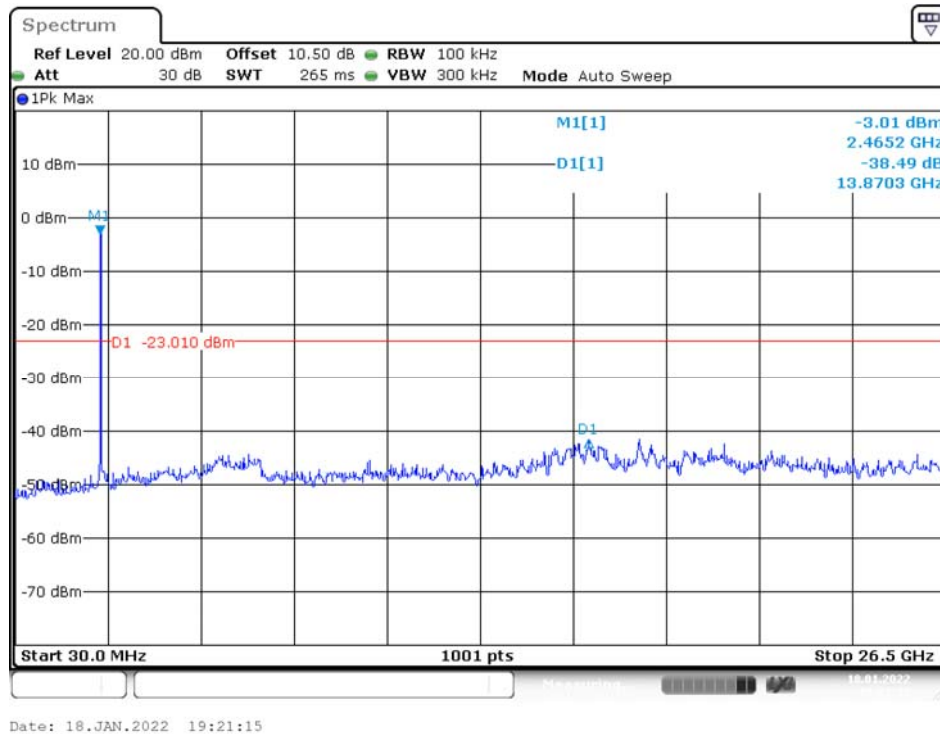
Ax20 Mode Low Channel(Chain 0)



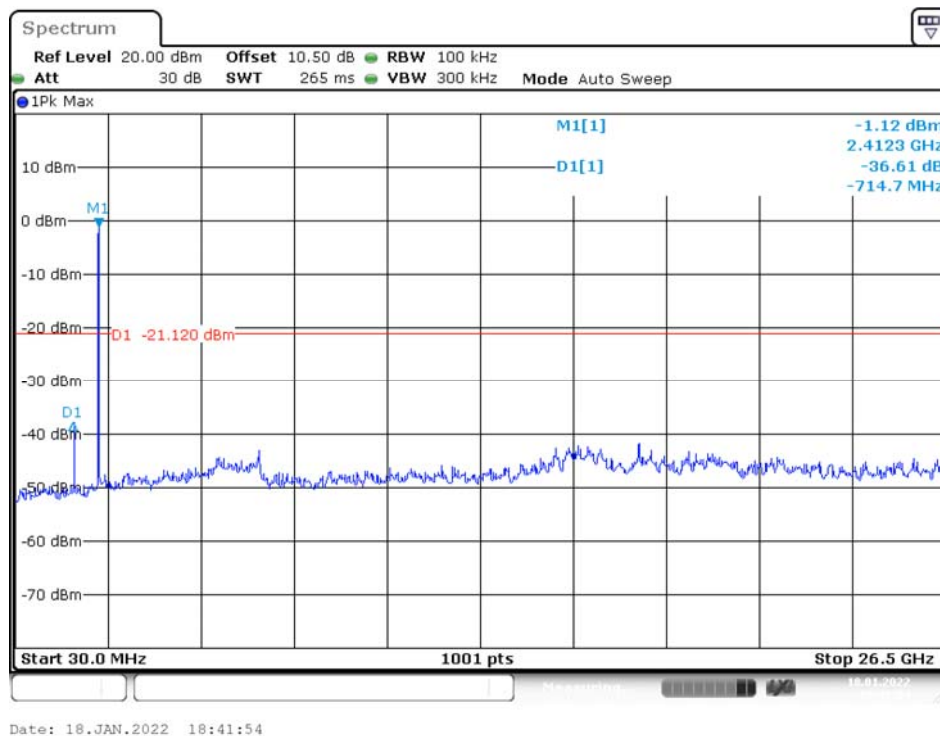
Ax20 Mode Middle Channel(Chain 0)



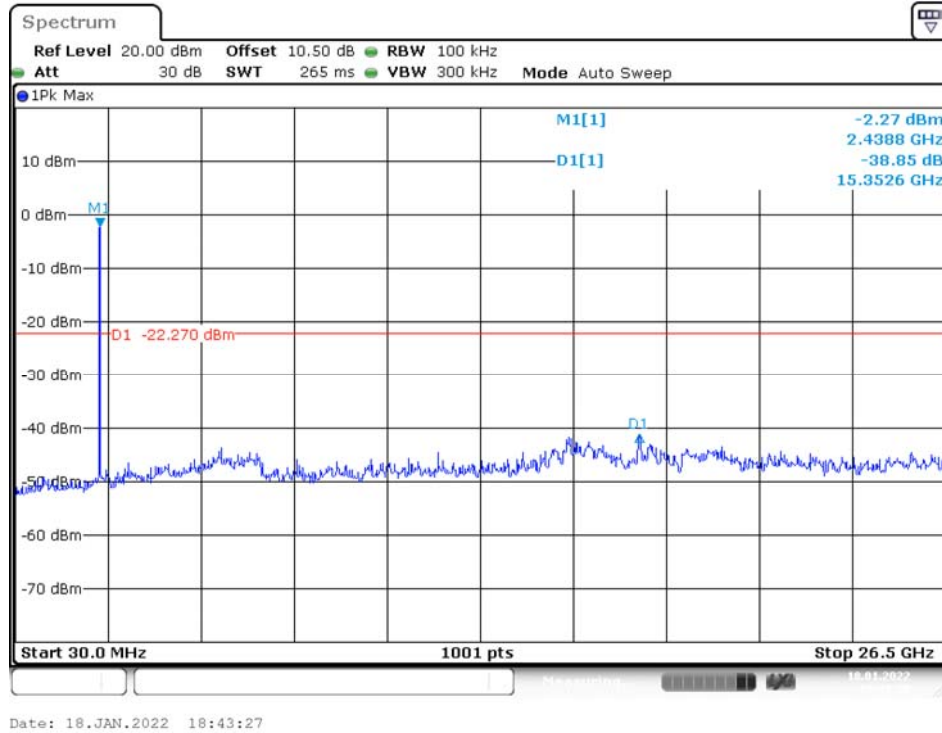
Ax20 Mode High Channel(Chain 0)



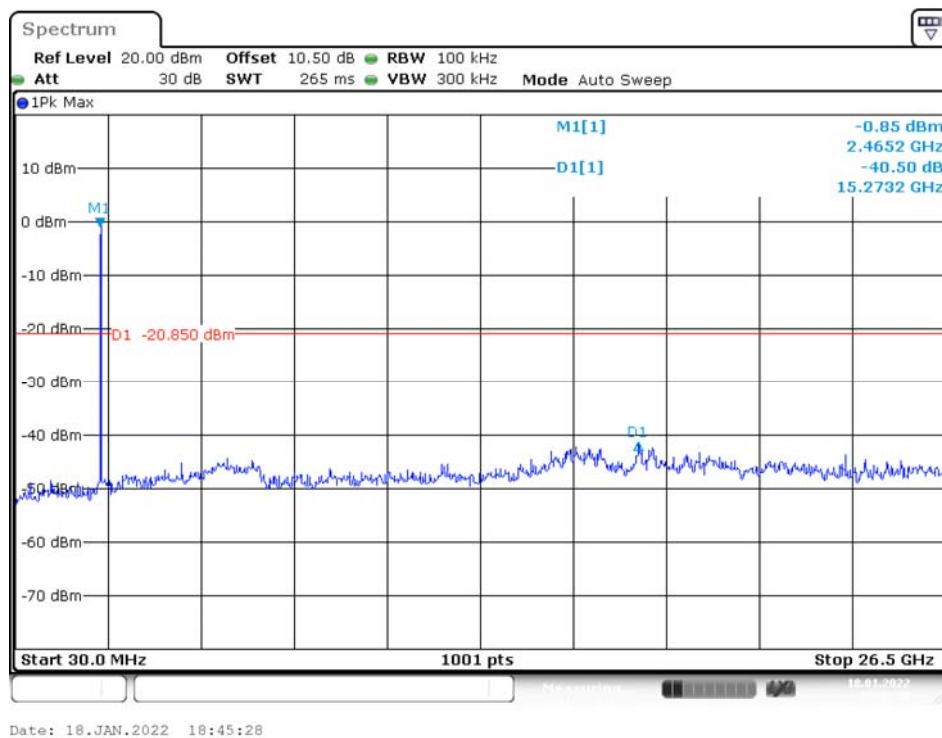
Ax20 Mode Low Channel (Chain 1)



Ax20 Mode Middle Channel (Chain 1)



Ax20 Mode High Channel (Chain 1)



6. 天線增益之要求

6.1 適用標準

依據低功率射頻器材技術規範之規定，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：

For 2.4GHz

No.	天線型態	廠牌	型號	Gain
Antenna 1	PIFA Antenna	RenFeng	110-01398-01	2.0
Antenna 2				2.0

** 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器材技術規範之規定，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，依據低功率射頻器材技術規範之規定，6 dB之頻寬至少應有500 kHz。

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。

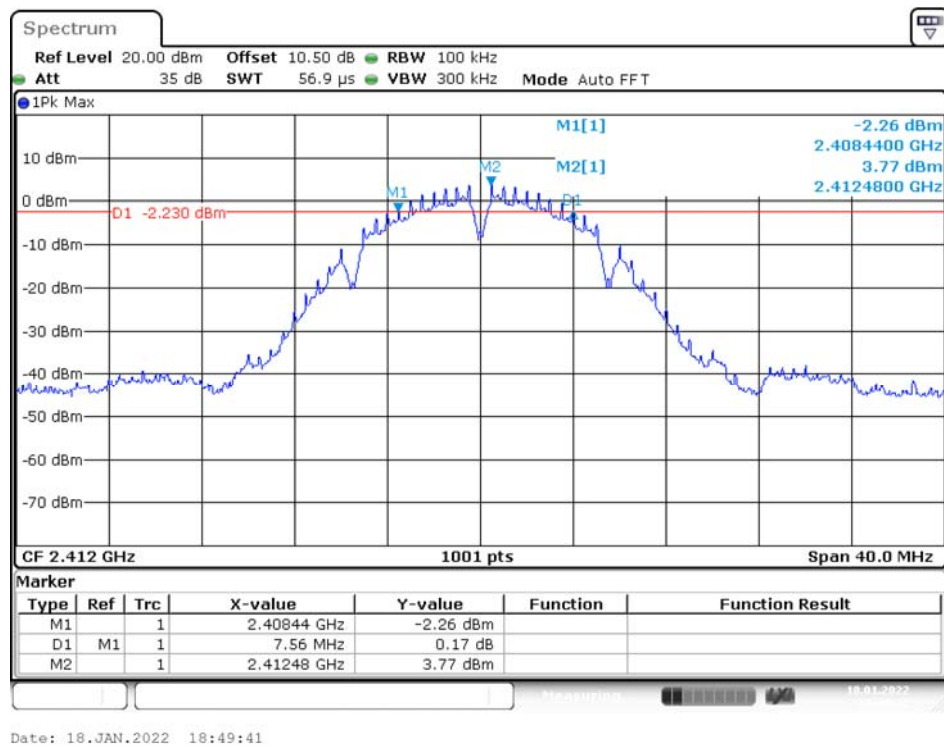
7.3 發射頻寬之量測結果

環境溫度	23.5°C	測試日期	2022 年 1 月 18 日
環境濕度	59%	測試人員	Aaron

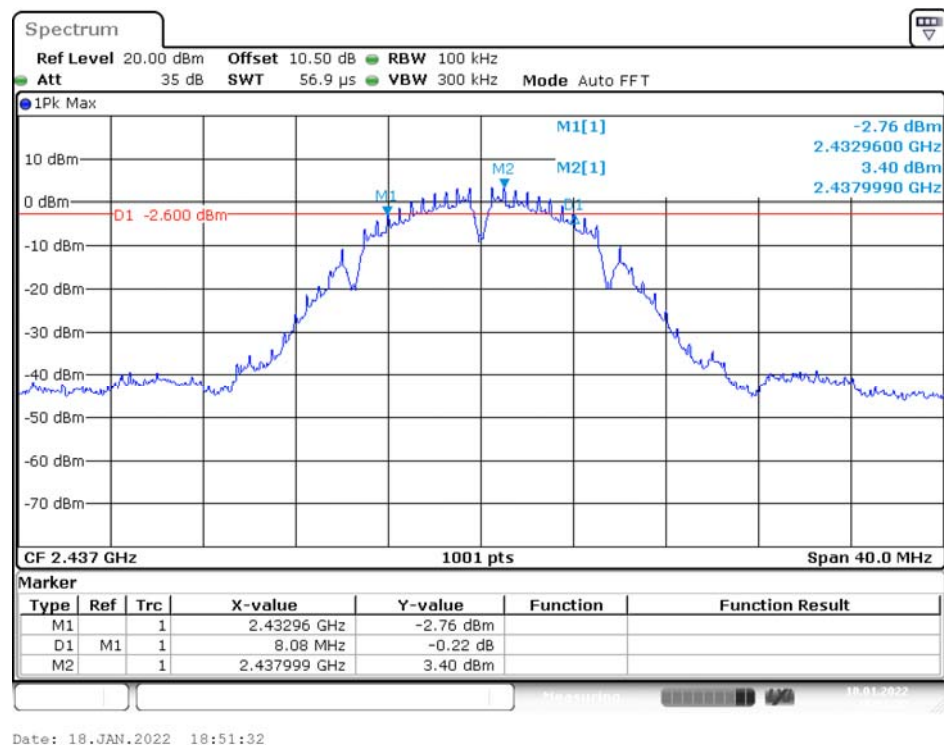
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)		Limit (kHz)	Result
		Chain 0	Chain 1		
B mode					
Low	2412	7.56	8.04	>500	PASS
Mid	2437	8.08	8.08		PASS
High	2462	8.04	7.56		PASS
G mode					
Low	2412	16.32	16.32	>500	PASS
Mid	2437	16.32	16.32		PASS
High	2462	16.32	16.32		PASS
N20 mode					
Low	2412	17.60	17.60	>500	PASS
Mid	2437	17.60	17.60		PASS
High	2462	17.60	17.60		PASS
AX20 mode					
Low	2422	19.12	19.12	>500	PASS
Mid	2437	19.12	19.12		PASS
High	2452	19.12	19.12		PASS

6 dB Emission Bandwidth

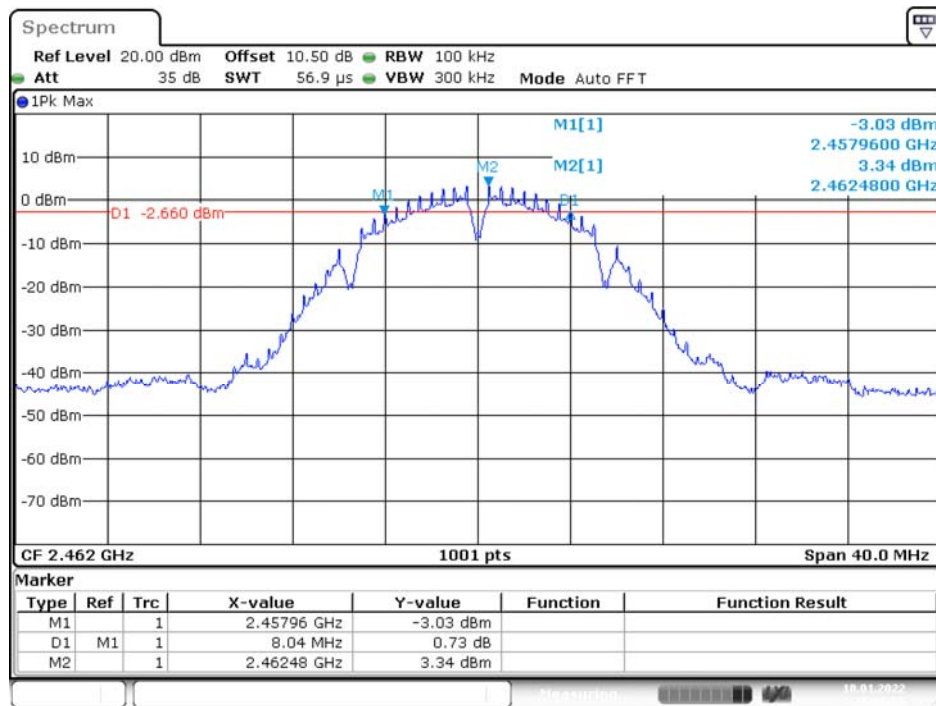
B Mode Low Channel(Chain 0)



B Mode Middle Channel(Chain 0)

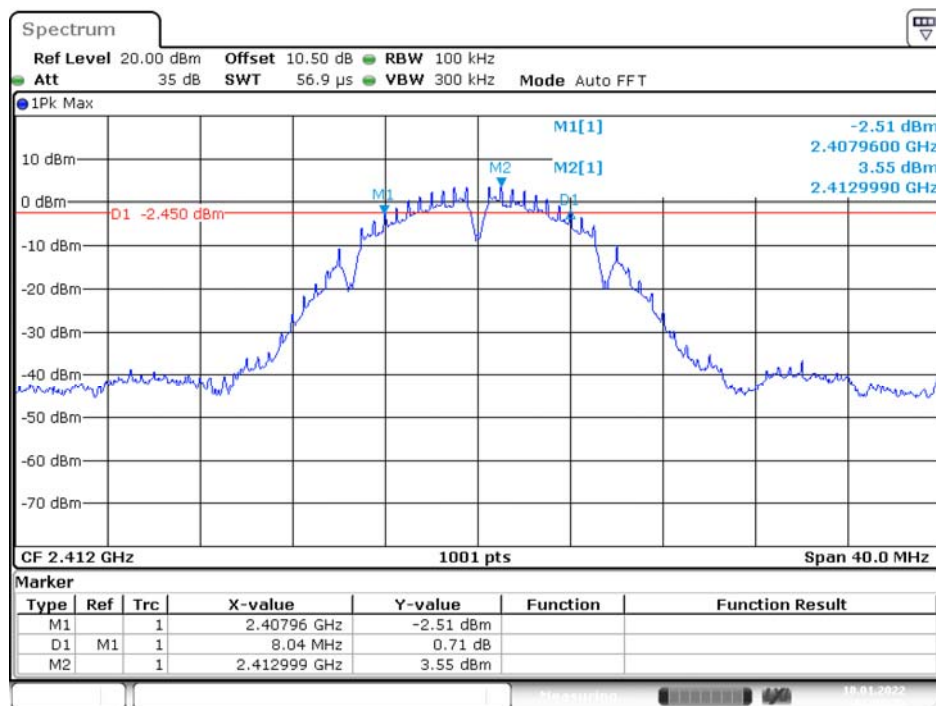


B Mode High Channel(Chain 0)



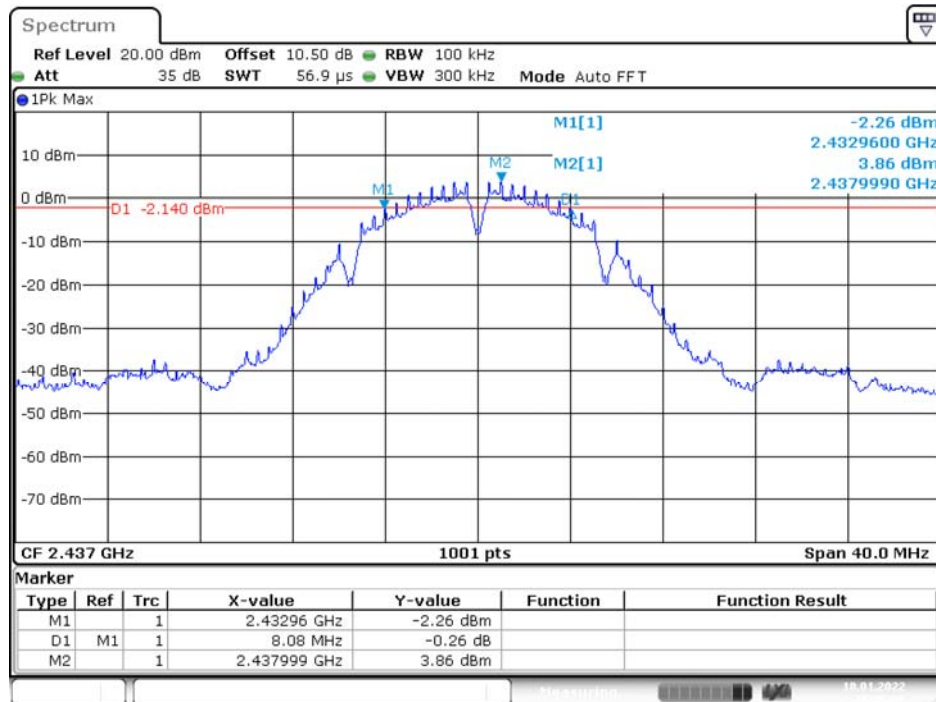
Date: 18.JAN.2022 18:53:05

B Mode Low Channel (Chain 1)



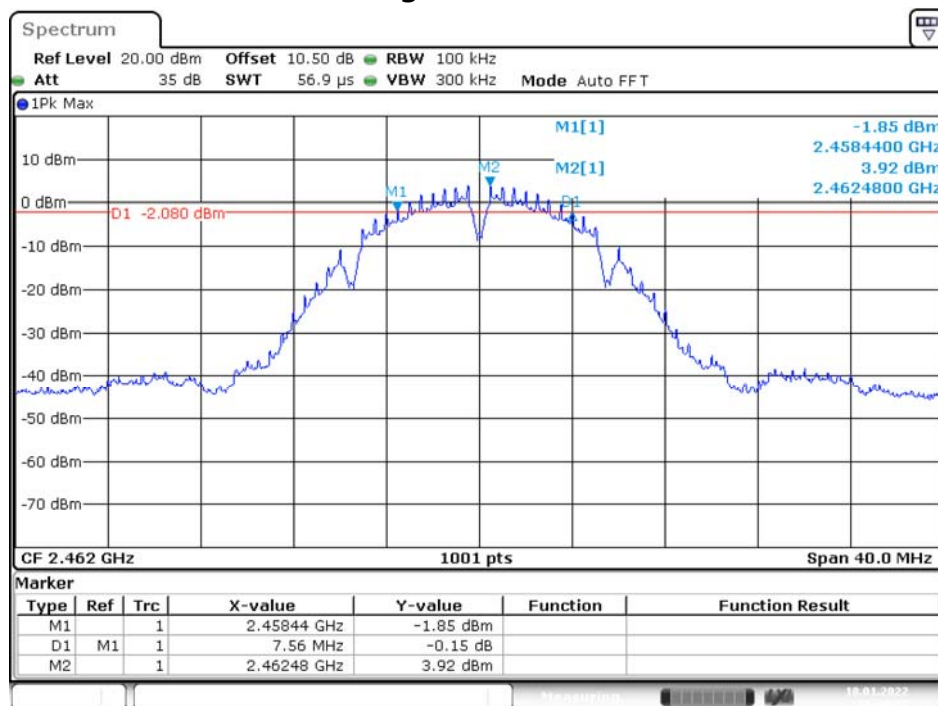
Date: 18.JAN.2022 02:22:26

B Mode Middle Channel (Chain 1)



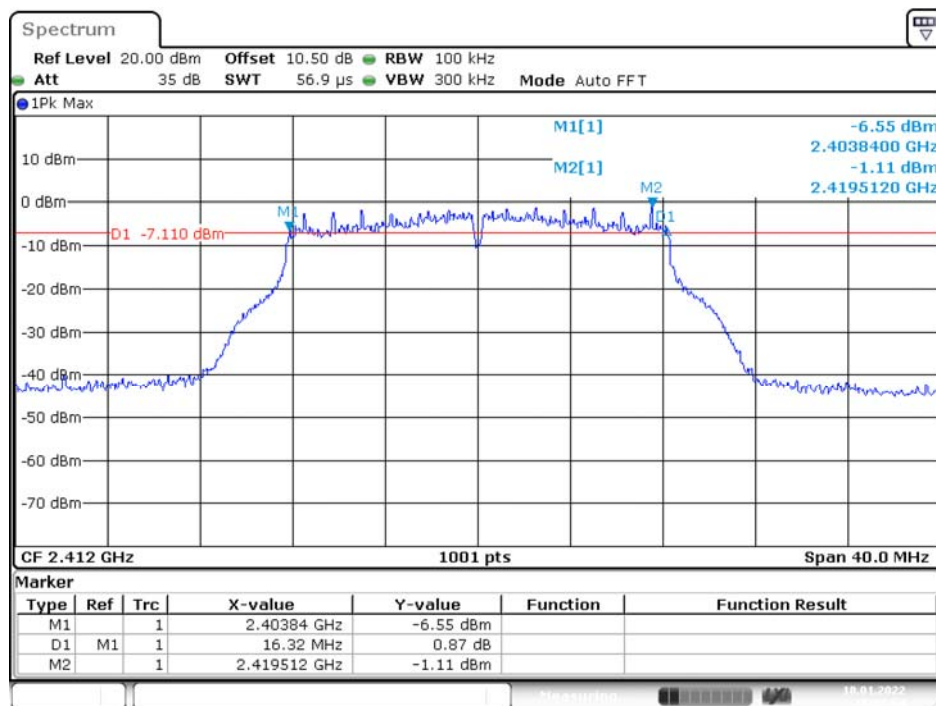
Date: 18.JAN.2022 18:15:02

B Mode High Channel (Chain 1)



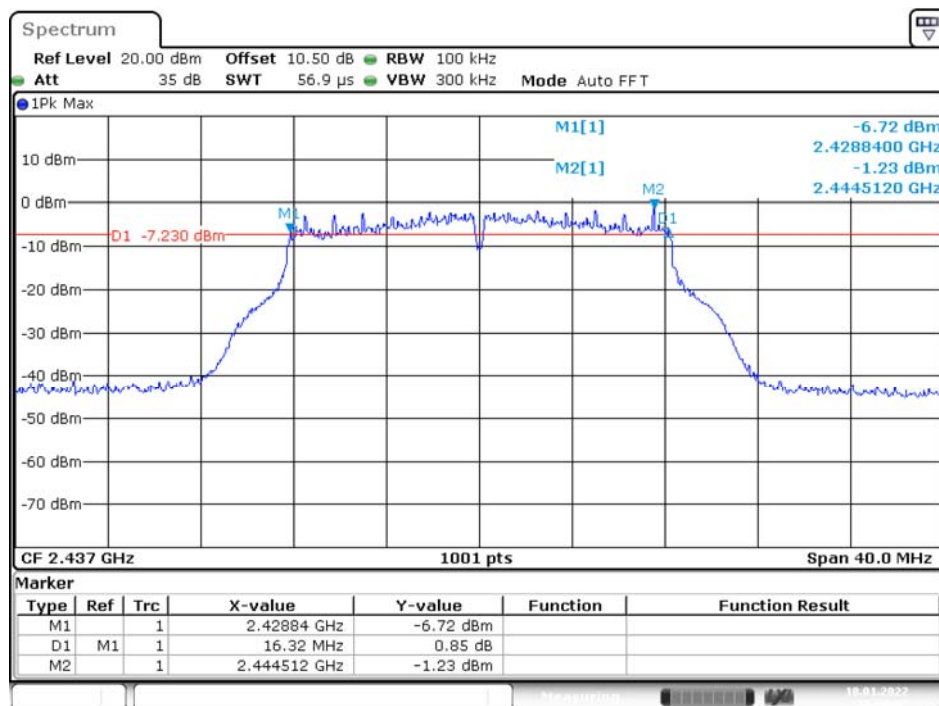
Date: 18.JAN.2022 18:18:53

G Mode Low Channel(Chain 0)



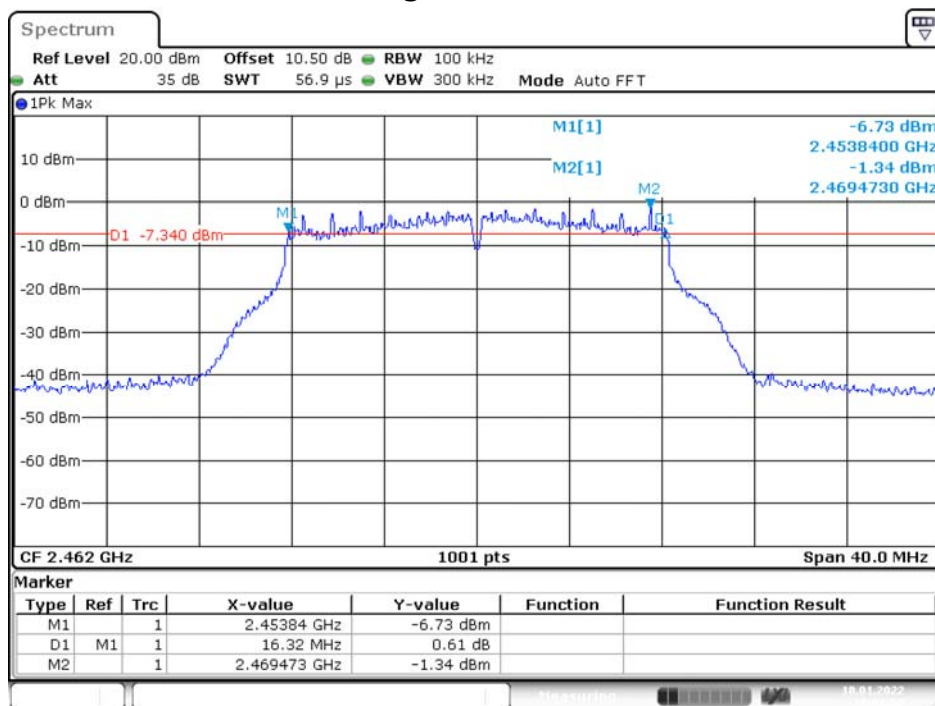
Date: 18.JAN.2022 18:57:54

G Mode Middle Channel(Chain 0)



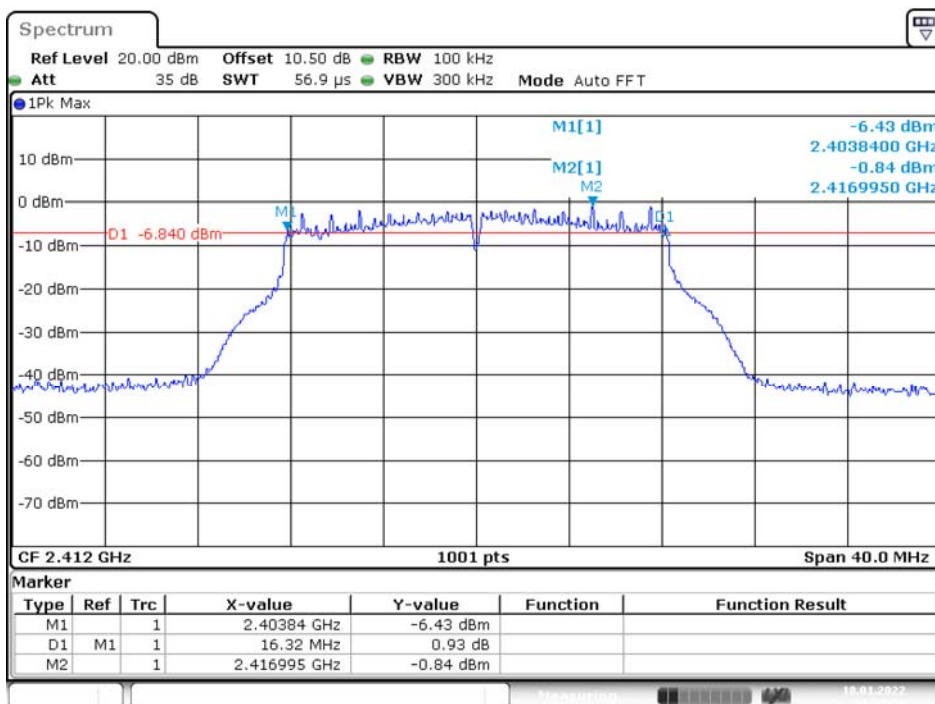
Date: 18.JAN.2022 19:00:05

G Mode High Channel(Chain 0)



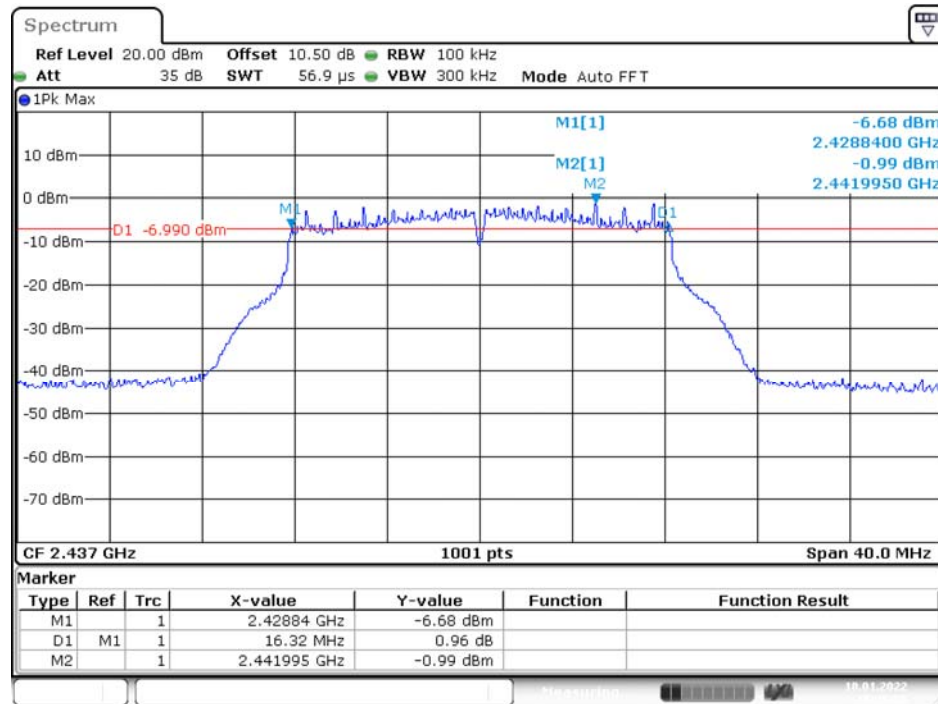
Date: 18.JAN.2022 19:01:57

G Mode Low Channel (Chain 1)



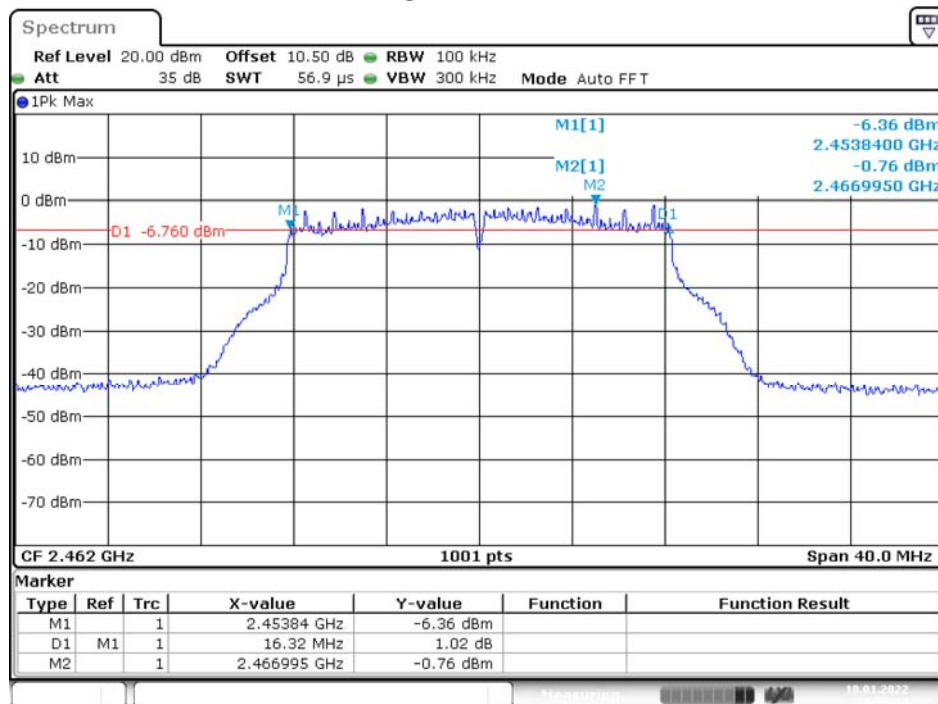
Date: 18.JAN.2022 18:22:36

G Mode Middle Channel (Chain 1)



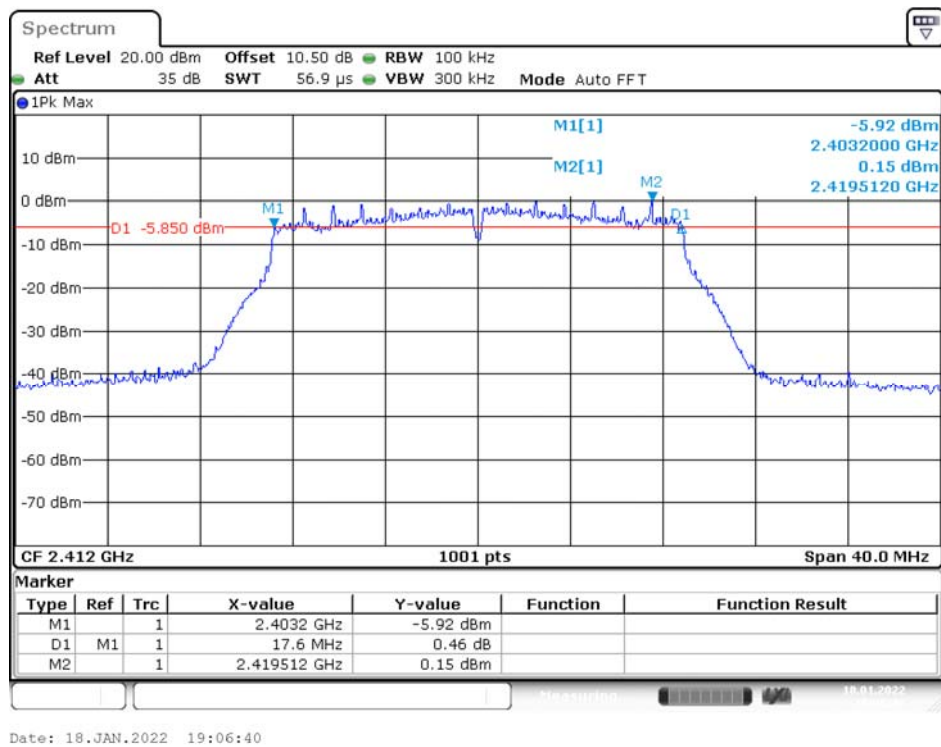
Date: 18.JAN.2022 18:29:05

G Mode High Channel (Chain 1)

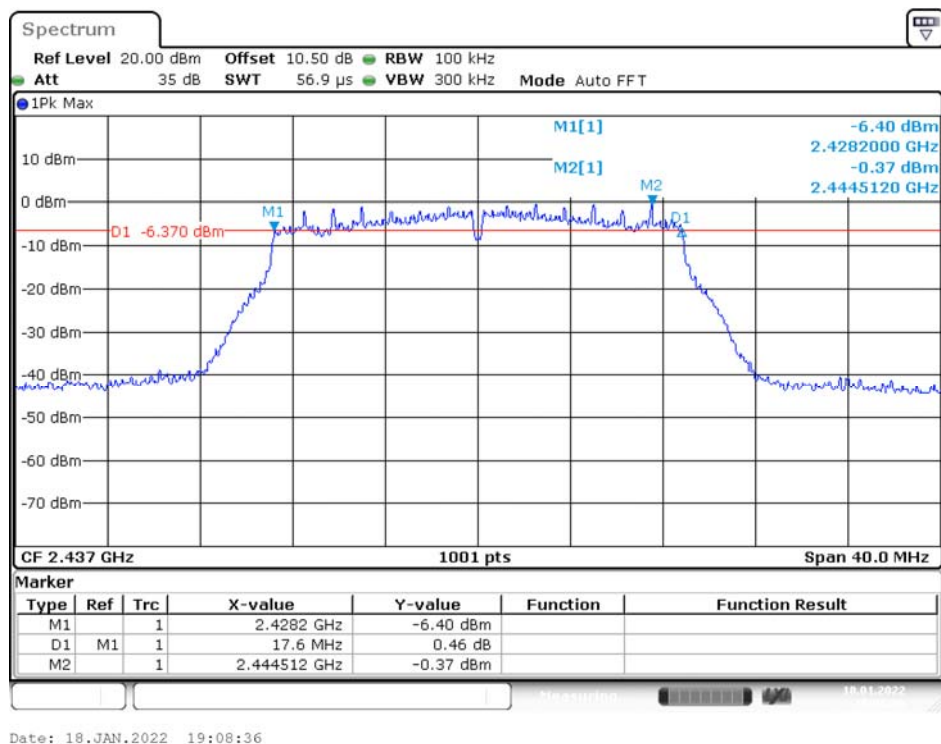


Date: 18.JAN.2022 18:26:14

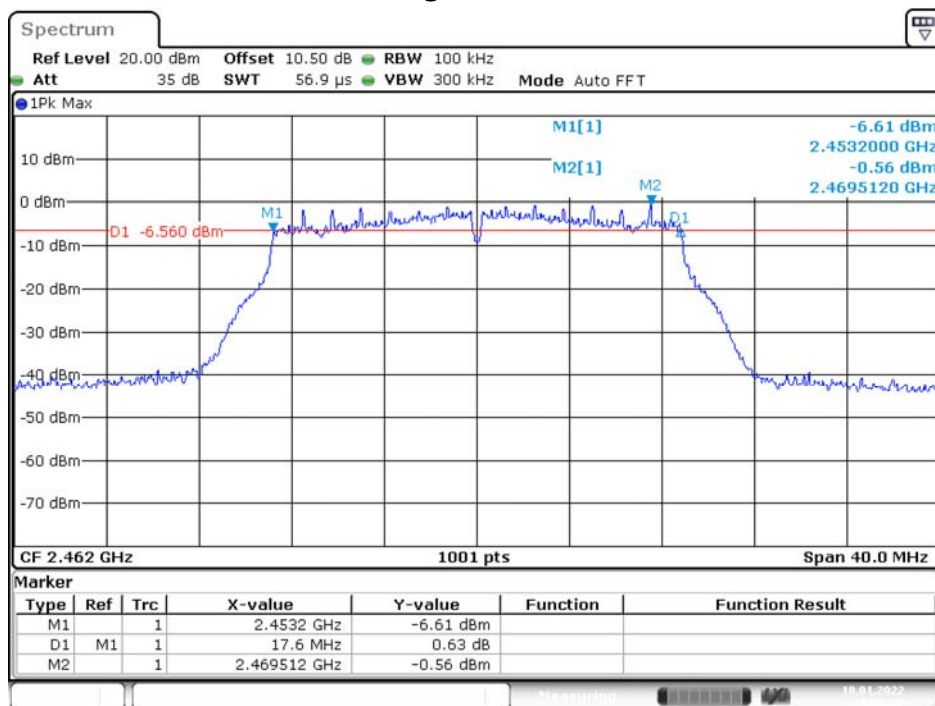
N20 Mode Low Channel(Chain 0)



N20 Mode Middle Channel(Chain 0)

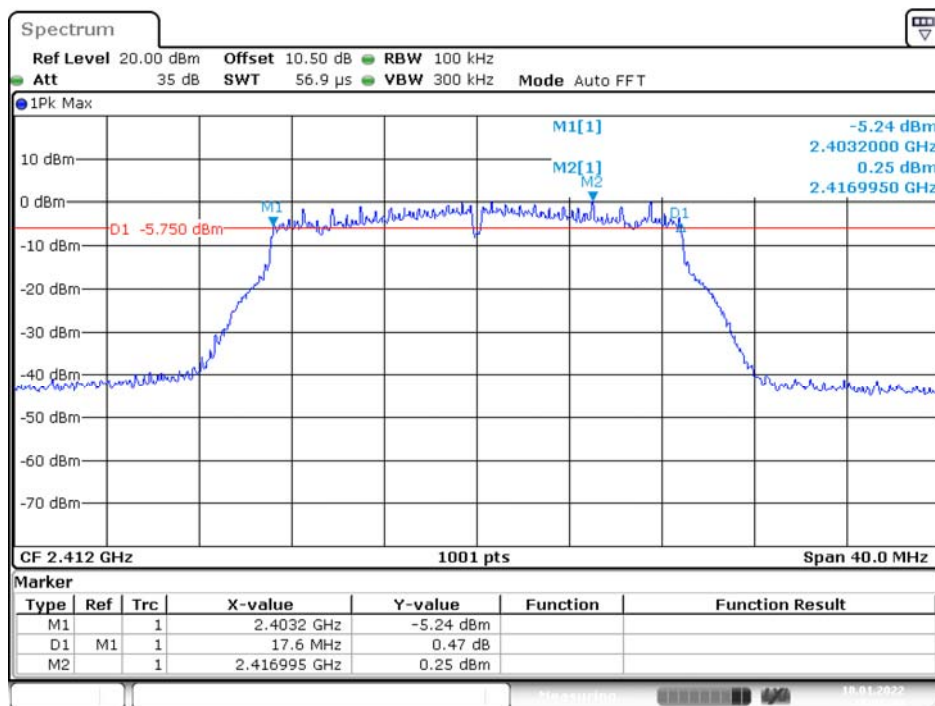


N20 Mode High Channel(Chain 0)



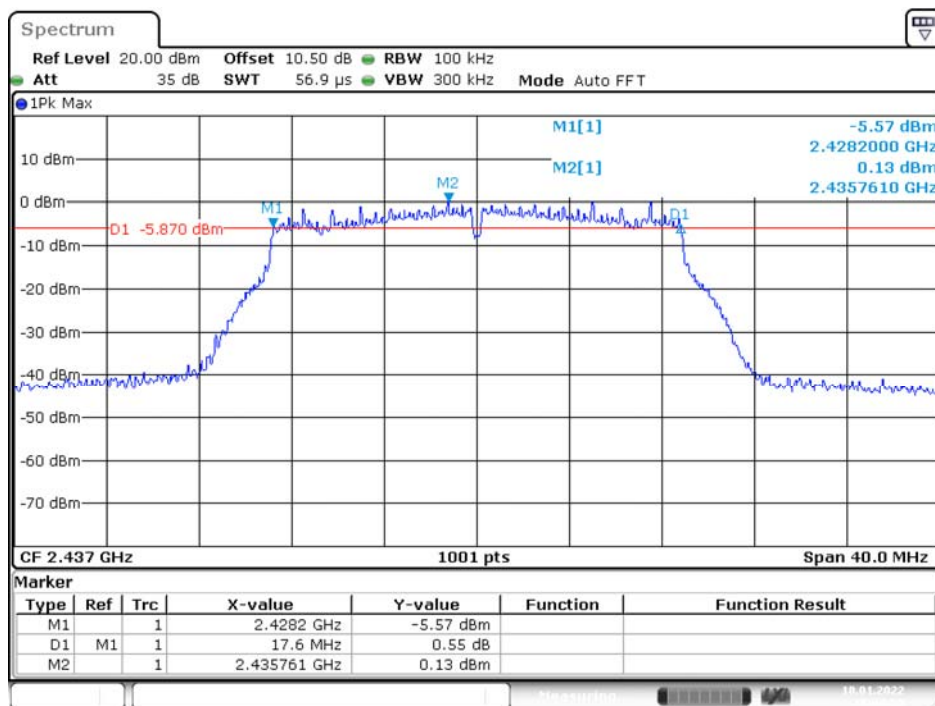
Date: 18.JAN.2022 19:10:23

N20 Mode Low Channel (Chain 1)

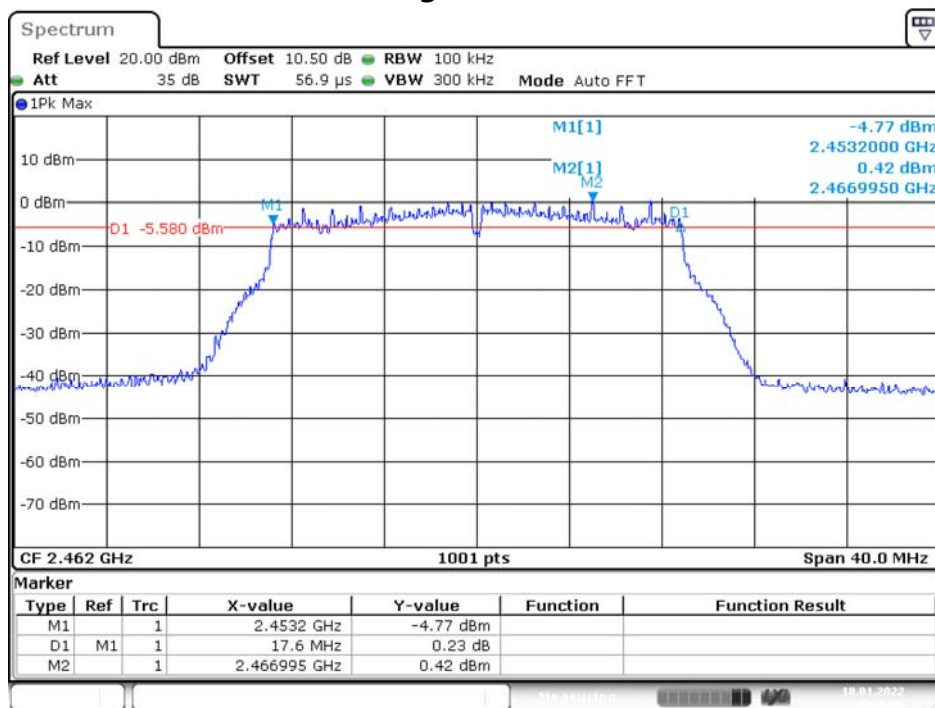


Date: 18.JAN.2022 18:32:49

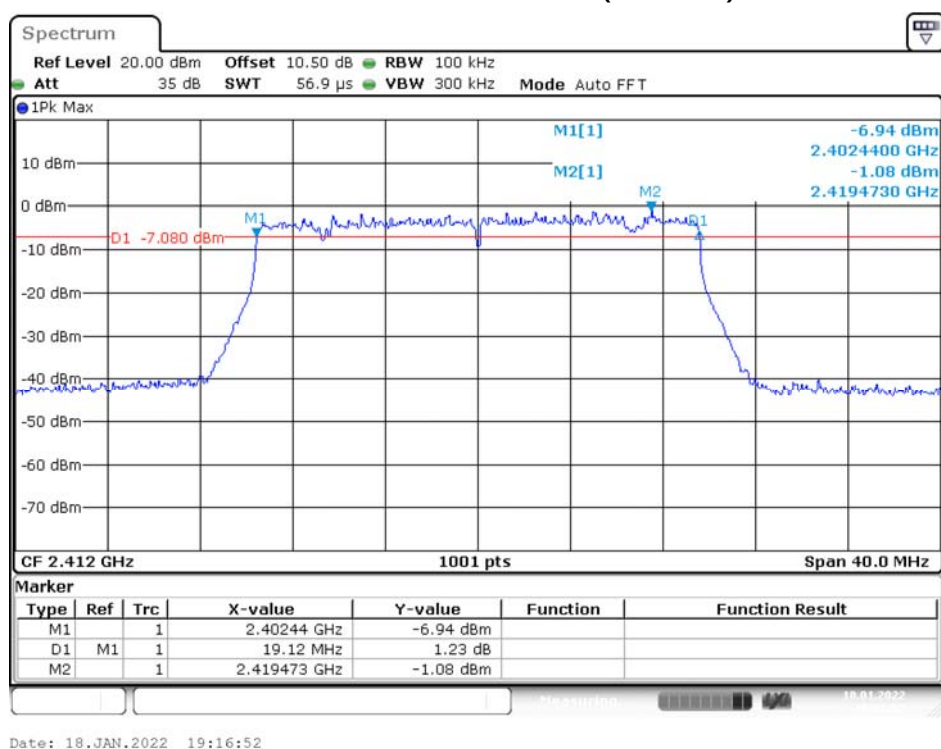
N20 Mode Middle Channel (Chain 1)



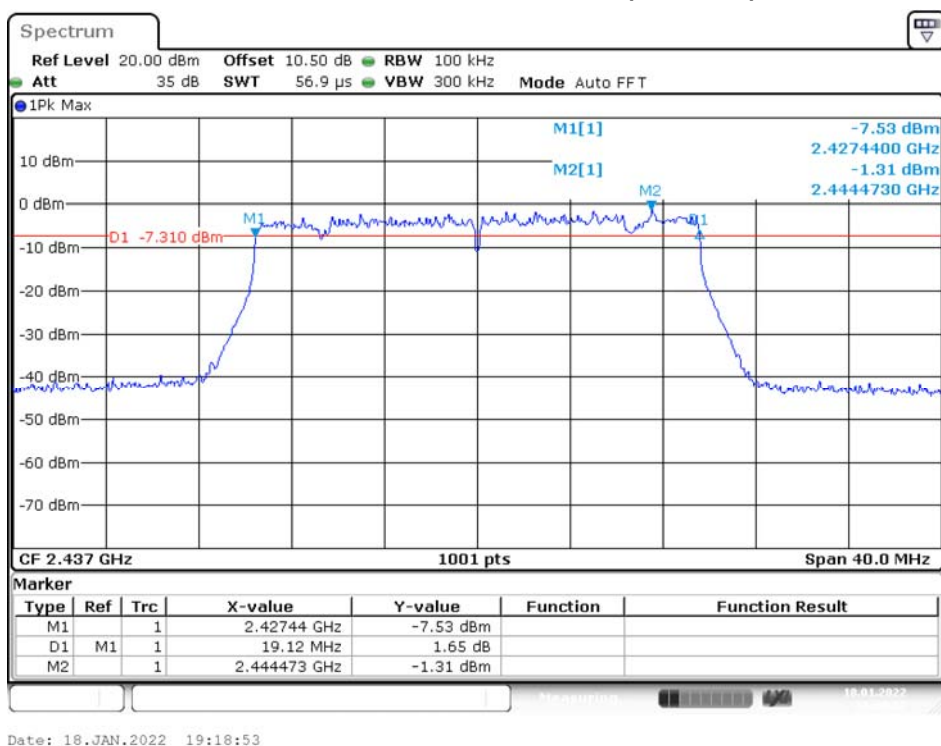
N20 Mode High Channel (Chain 1)



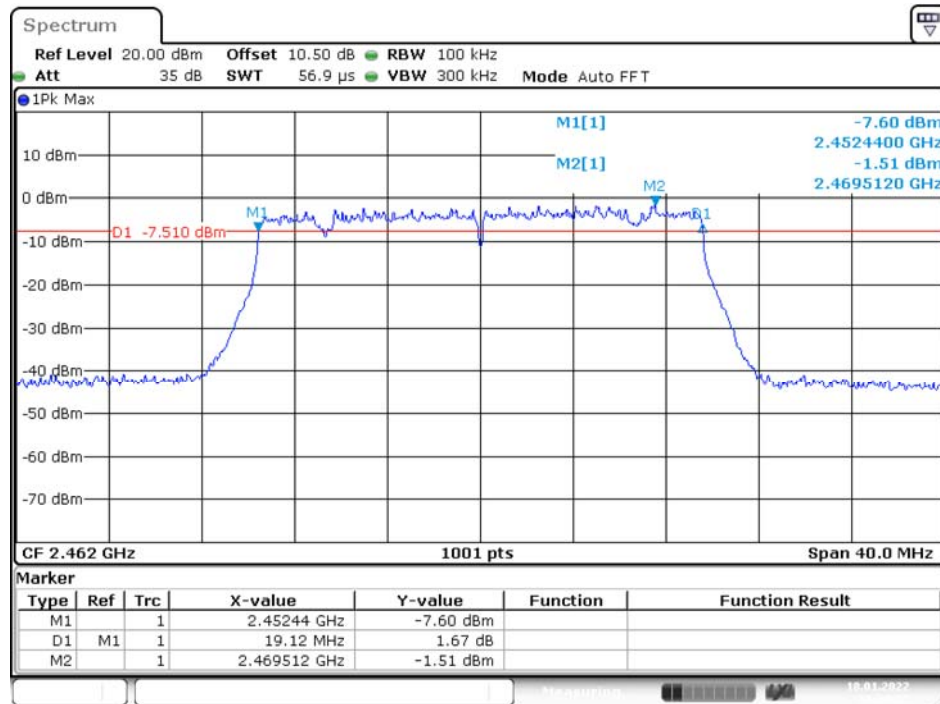
Ax20 Mode Low Channel(Chain 0)



Ax20 Mode Middle Channel(Chain 0)

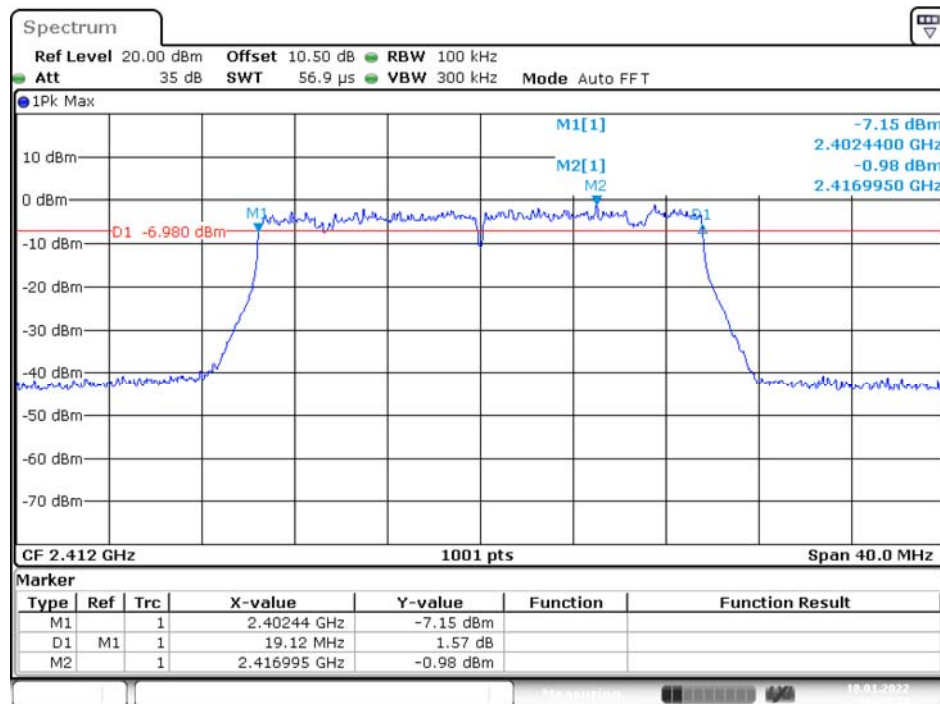


Ax20 Mode High Channel(Chain 0)



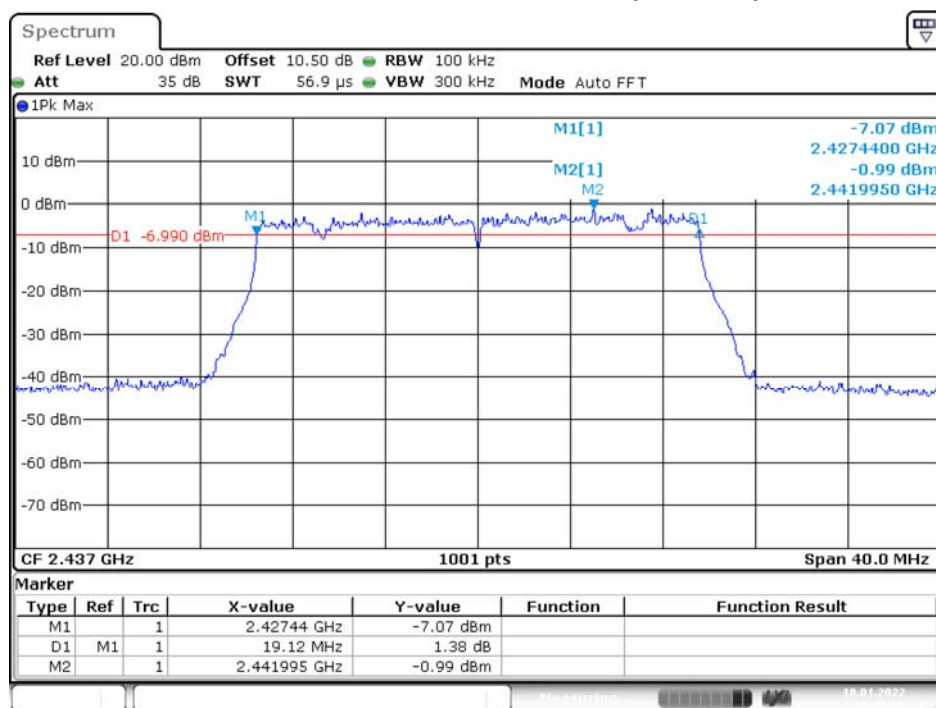
Date: 18.JAN.2022 19:20:35

Ax20 Mode Low Channel (Chain 1)

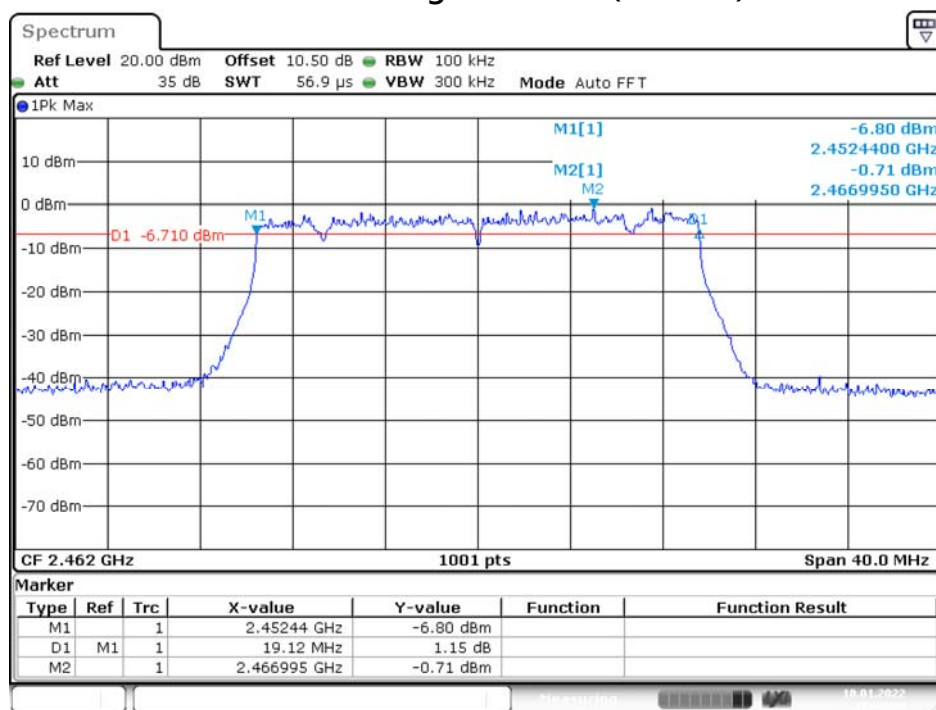


Date: 18.JAN.2022 18:41:13

Ax20 Mode Middle Channel (Chain 1)



Ax20 Mode High Channel (Chain 1)



8. 輸出峰值功率之量測

8.1 適用標準

依據低功率射頻器材技術規範之規定，跳頻系統至少使用75個跳頻頻道：1 W(含)以下；跳頻系統依規定操作於2400 MHz ~ 2483.5 MHz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：0.125 W(含)以下；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	23.5°C	測試日期	2022 年 1 月 18 日
環境濕度	59%	測試人員	Aaron

Peak Power

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)	Limit (dBm)	Result
		Chain 0	Chain 1	Total			
B mode							
Low	2412	14.24	14.47	17.37	0.055	30.00	PASS
Mid	2437	14.36	14.67	17.53	0.057	30.00	PASS
High	2462	14.07	14.78	17.45	0.056	30.00	PASS
G mode							
Low	2412	19.88	20.65	23.29	0.213	30.00	PASS
Mid	2437	20.24	20.49	23.38	0.218	30.00	PASS
High	2462	19.79	20.36	23.09	0.204	30.00	PASS
N20 mode							
Low	2412	21.38	21.78	24.59	0.288	30.00	PASS
Mid	2437	21.49	21.49	24.50	0.282	30.00	PASS
High	2462	21.32	21.86	24.61	0.289	30.00	PASS
AX20 mode							
Low	2422	20.87	20.96	23.93	0.247	30.00	PASS
Mid	2437	21.37	20.97	24.18	0.262	30.00	PASS
High	2452	21.14	21.23	24.20	0.263	30.00	PASS

9. 開放頻帶邊緣 100 kHz 頻寬內之限制

9.1 適用標準

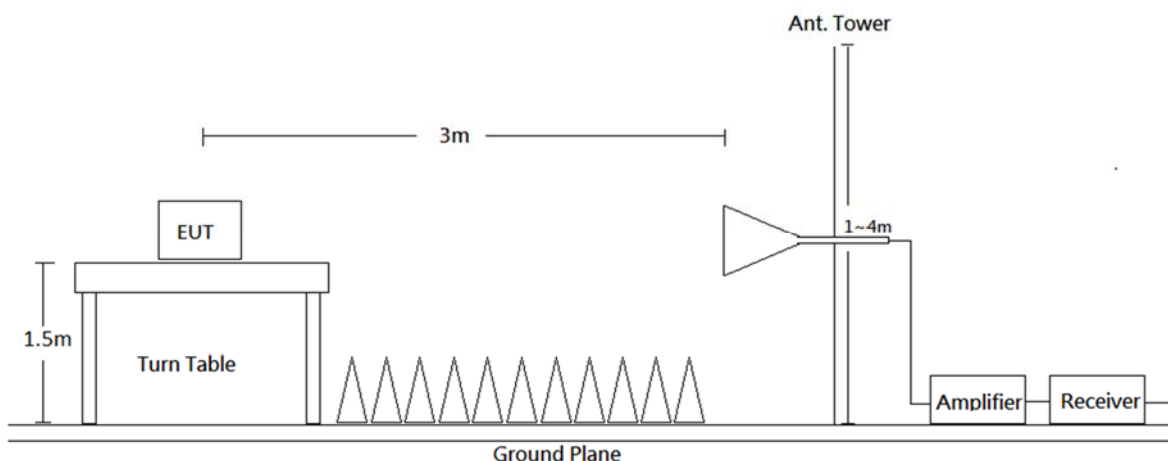
依據低功率射頻器材技術規範之規定，使用頻帶範圍外之任意100 kHz內，發射器所產生的射頻功率相較於使用頻帶範圍中包含最高所需功率之100 kHz內的射頻功率，峰值輸出功率方式測量者須衰減20分貝(dB)，以射頻傳導或輻射方式測量。最大傳導輸出功率測量方式者，至少須衰減30 dB。此外，落於禁用頻段之輻射發射，應符合規定。

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 測試場地配置圖



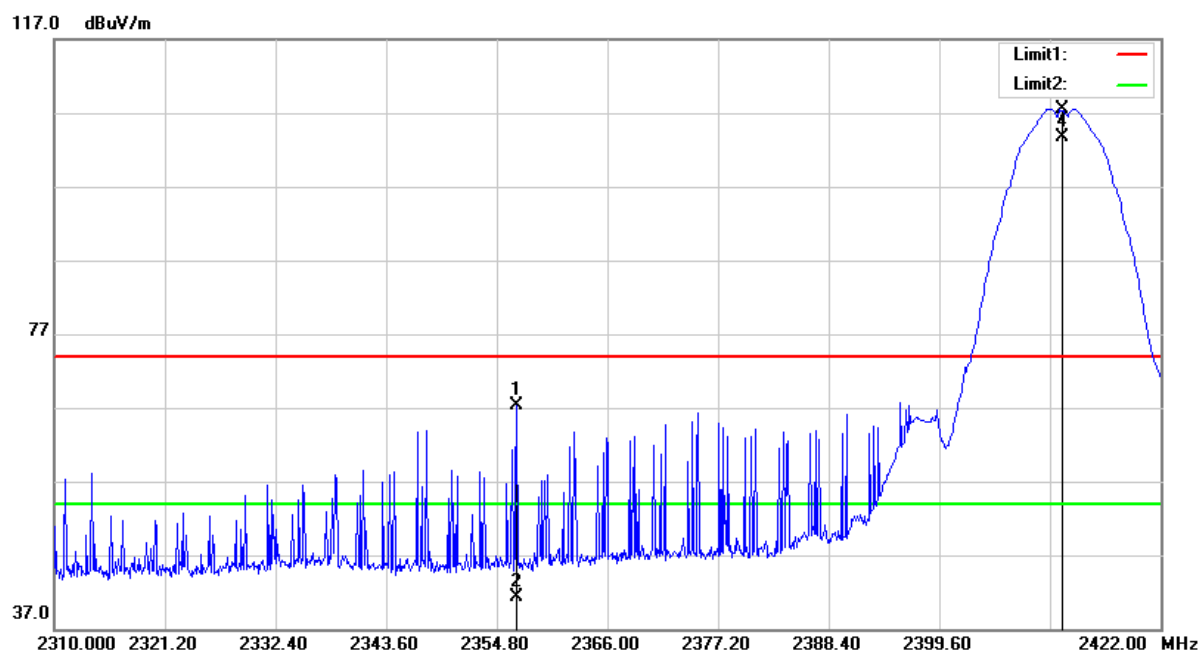
9.4 開放頻帶邊緣之量測結果

請參考附圖

判定結果: 符合規範

發射限制測試 B Mode / CH Low

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 02:44:36
		Test By:	Aaron
Description:	B-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2356.816	76.98	-9.74	67.24	74.00	-6.76	147	101	peak
2	2356.816	51.05	-9.74	41.31	54.00	-12.69	147	101	AVG
3	2412.000	116.85	-9.28	107.57			147	101	peak
4	2412.000	112.96	-9.28	103.68			147	101	AVG

Note:

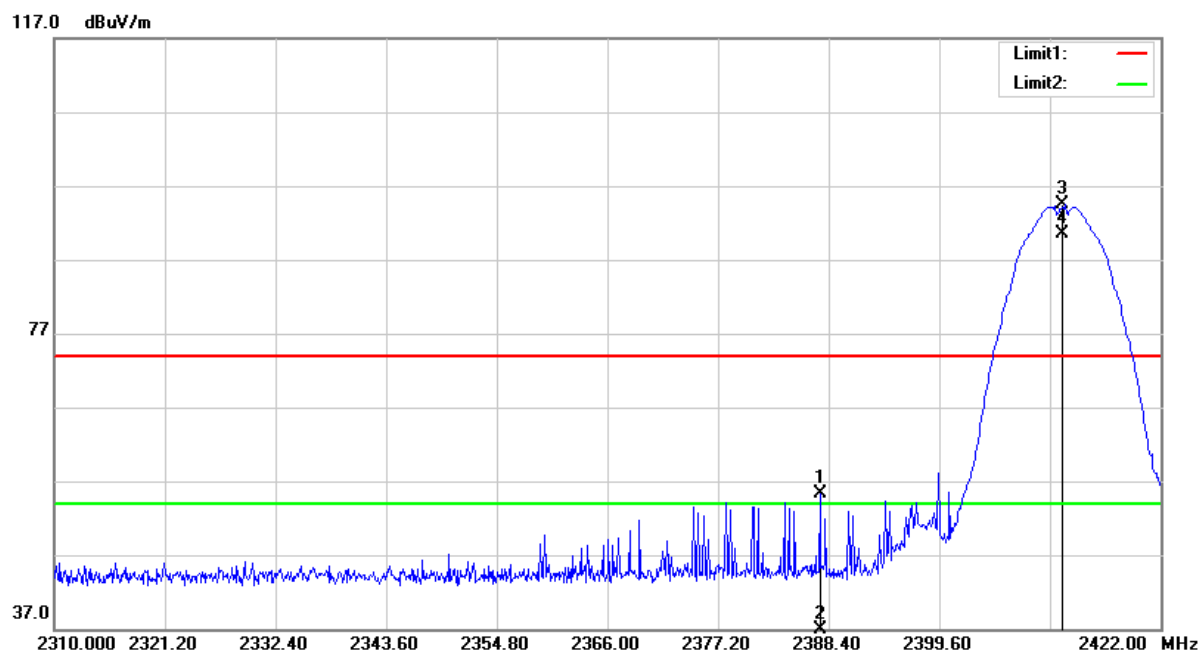
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 02:49:40
		Test By:	Aaron
Description:	B-TX-2412-X_Axis		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1	2387.504	64.75	-9.48	55.27	74.00	-18.73	154	189	peak
2	2387.504	43.03	-9.48	33.55	54.00	-20.45	154	189	AVG
3	2412.000	103.81	-9.28	94.53			154	189	peak
4	2412.000	99.72	-9.28	90.44			154	189	AVG

Note:

Result = Reading + Correct Factor

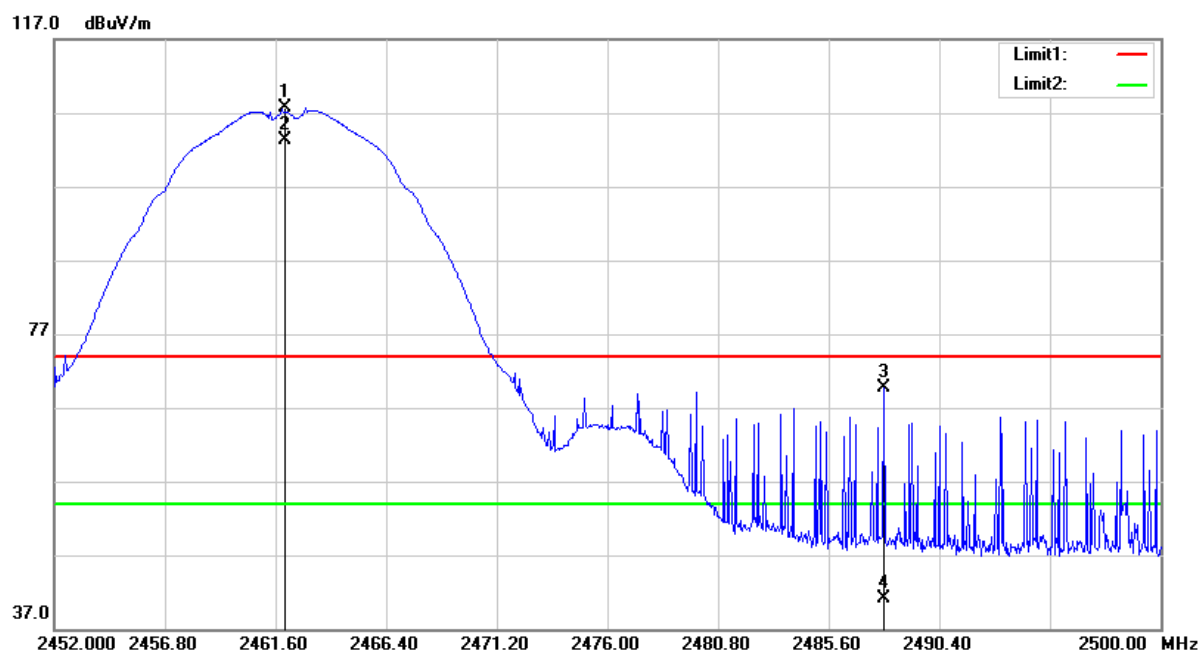
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

發射限制測試 B Mode / CH High

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:06:13
		Test By:	Aaron
Description:	B-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	116.41	-8.77	107.64			118	154	peak
2	2462.000	112.12	-8.77	103.35			118	154	AVG
3	2488.000	78.10	-8.38	69.72	74.00	-4.28	118	154	peak
4	2488.000	49.55	-8.38	41.17	54.00	-12.83	118	154	AVG

Note:

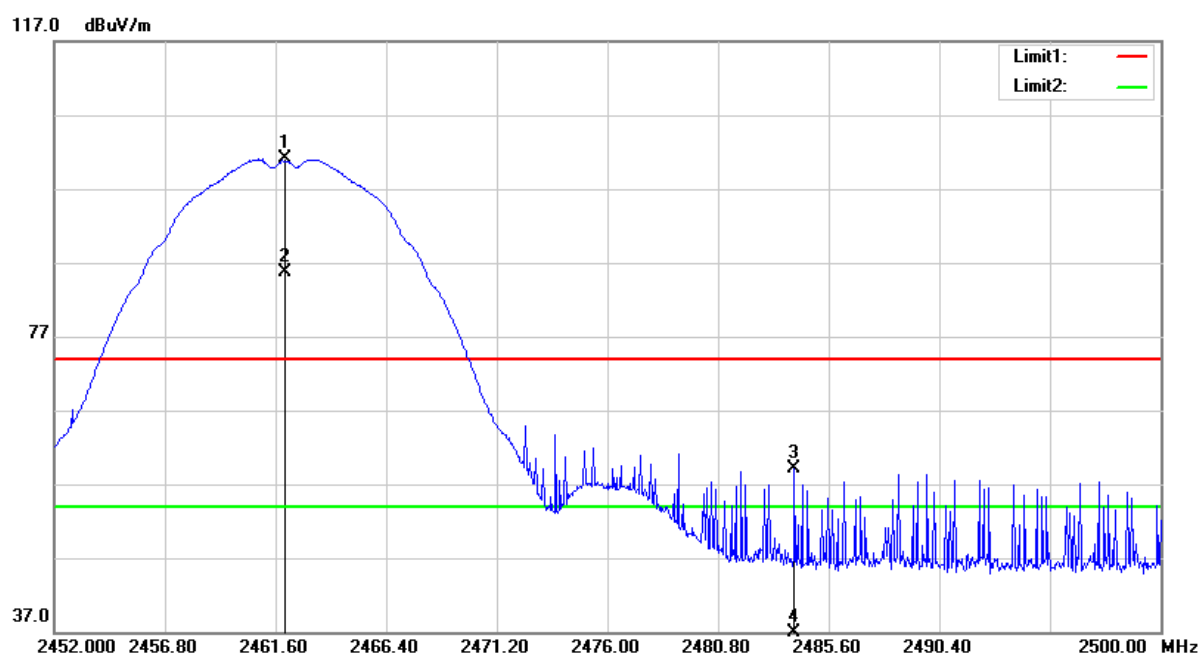
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:12:05
		Test By:	Aaron
Description:	B-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	109.90	-8.77	101.13			125	286	peak
2	2462.000	94.43	-8.77	85.66			125	286	AVG
3	2484.112	67.48	-8.44	59.04	74.00	-14.96	125	286	peak
4	2484.112	44.57	-8.44	36.13	54.00	-17.87	125	286	AVG

Note:

Result = Reading + Correct Factor

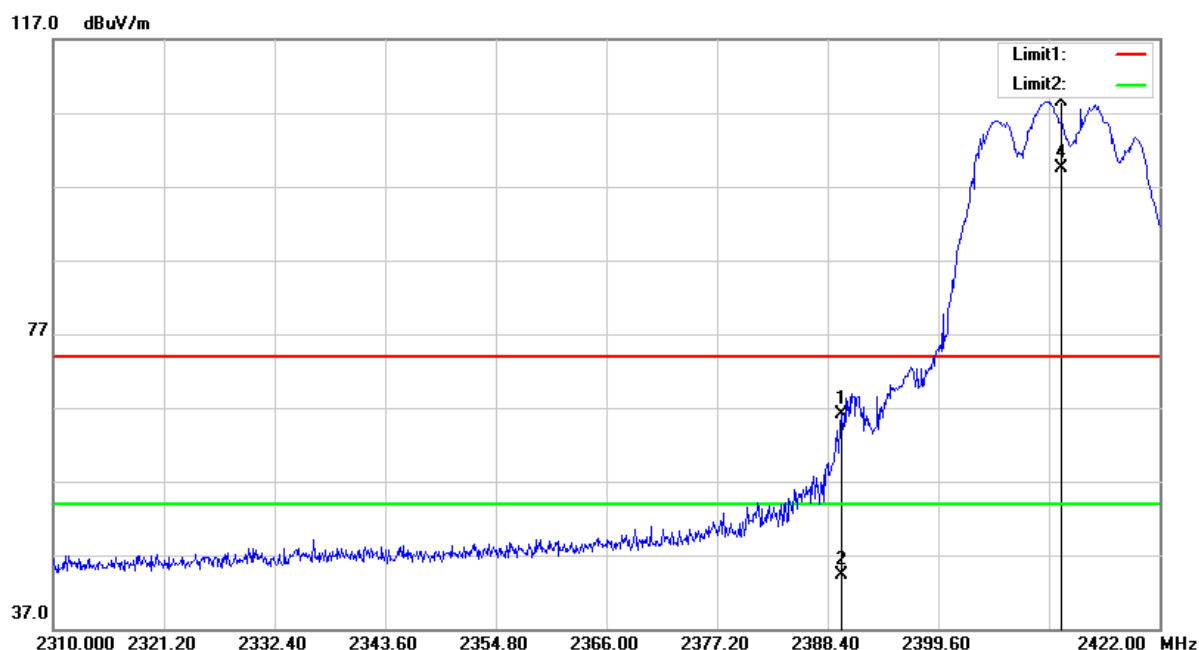
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

發射限制測試 G Mode / CH Low

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:24:17
		Test By:	Aaron
Description:	G-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2389.744	75.53	-9.46	66.07	74.00	-7.93	126	108	peak
2	2389.744	53.85	-9.46	44.39	54.00	-9.61	126	108	AVG
3	2412.000	117.86	-9.28	108.58			126	108	peak
4	2412.000	108.88	-9.28	99.60			126	108	AVG

Note:

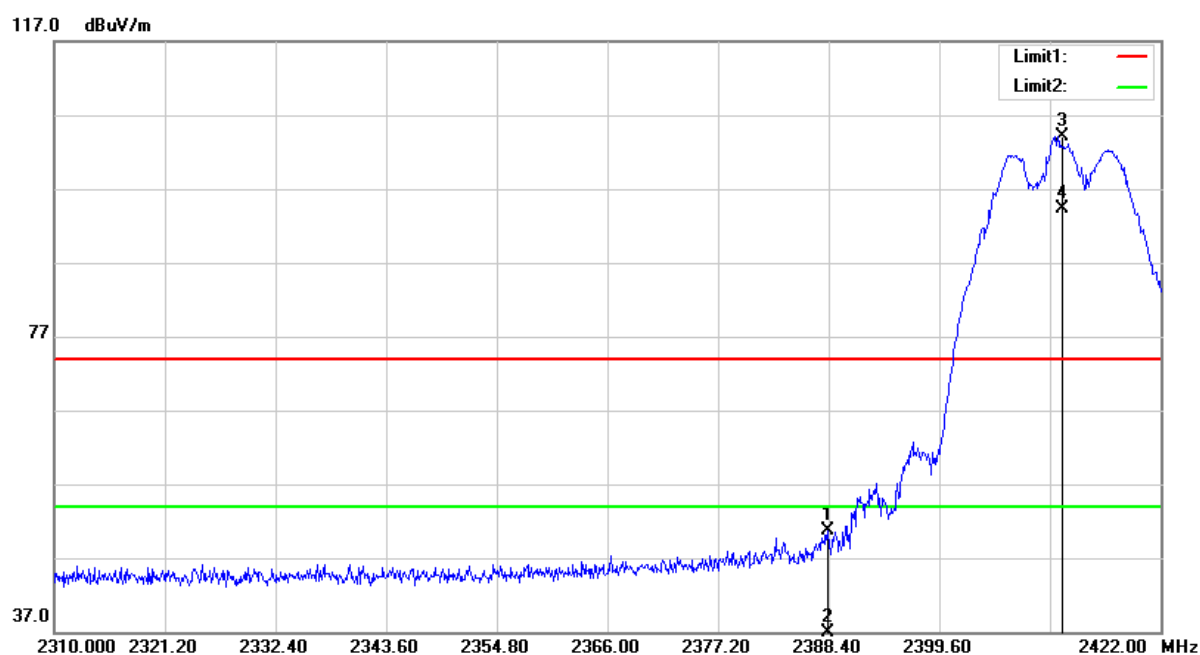
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:19:17
		Test By:	Aaron
Description:	G-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2388.288	60.26	-9.47	50.79	74.00	-23.21	136	285	peak
2	2388.288	45.72	-9.47	36.25	54.00	-17.75	136	285	AVG
3	2412.000	113.45	-9.28	104.17			136	285	peak
4	2412.000	103.66	-9.28	94.38			136	285	AVG

Note:

Result = Reading + Correct Factor

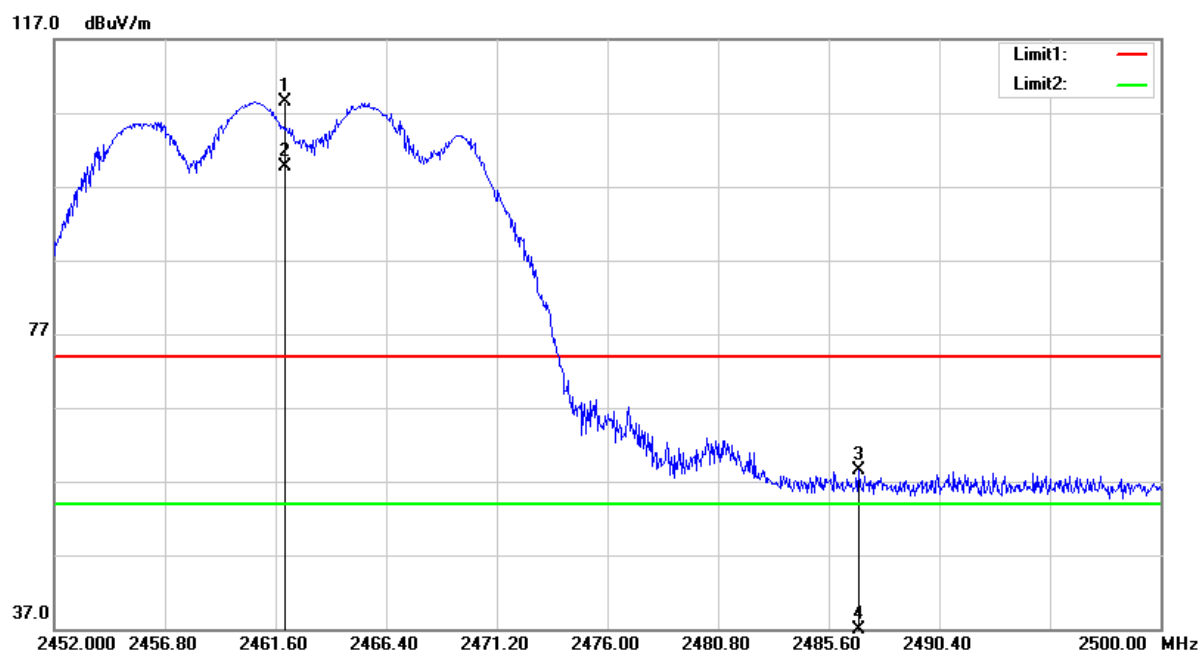
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

發射限制測試 G Mode / CH High

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:47:20
		Test By:	Aaron
Description:	G-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	117.26	-8.77	108.49			150	116	peak
2	2462.000	108.49	-8.77	99.72			150	116	AVG
3	2486.896	66.92	-8.40	58.52	74.00	-15.48	150	116	peak
4	2486.896	43.94	-8.40	35.54	54.00	-18.46	150	116	AVG

Note:

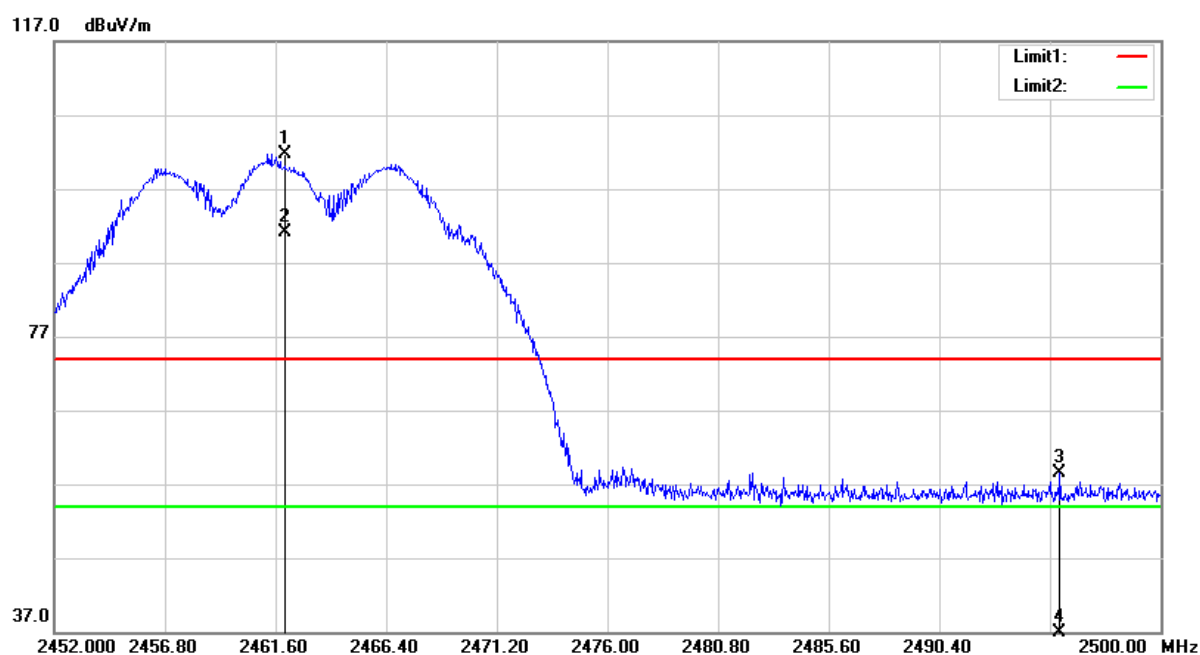
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:43:17
		Test By:	Aaron
Description:	G-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	110.56	-8.77	101.79			122	278	peak
2	2462.000	99.84	-8.77	91.07			122	278	AVG
3	2495.632	66.79	-8.27	58.52	74.00	-15.48	122	278	peak
4	2495.632	42.78	-8.27	34.51	54.00	-19.49	122	278	AVG

Note:

Result = Reading + Correct Factor

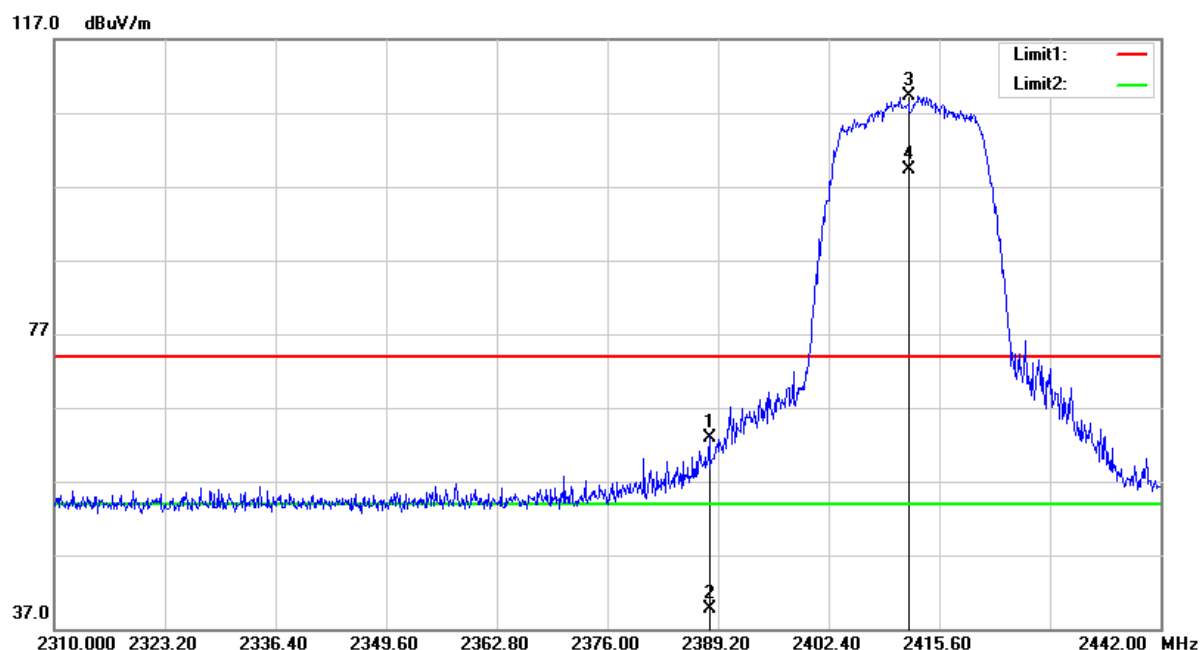
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

發射限制測試 N20 Mode / CH Low

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 03:55:11
		Test By:	Aaron
Description:	N20-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2388.144	72.47	-9.47	63.00	74.00	-11.00	126	149	peak
2	2388.144	49.22	-9.47	39.75	54.00	-14.25	126	149	AVG
3	2412.000	118.49	-9.28	109.21			126	149	peak
4	2412.000	108.53	-9.28	99.25			126	149	AVG

Note:

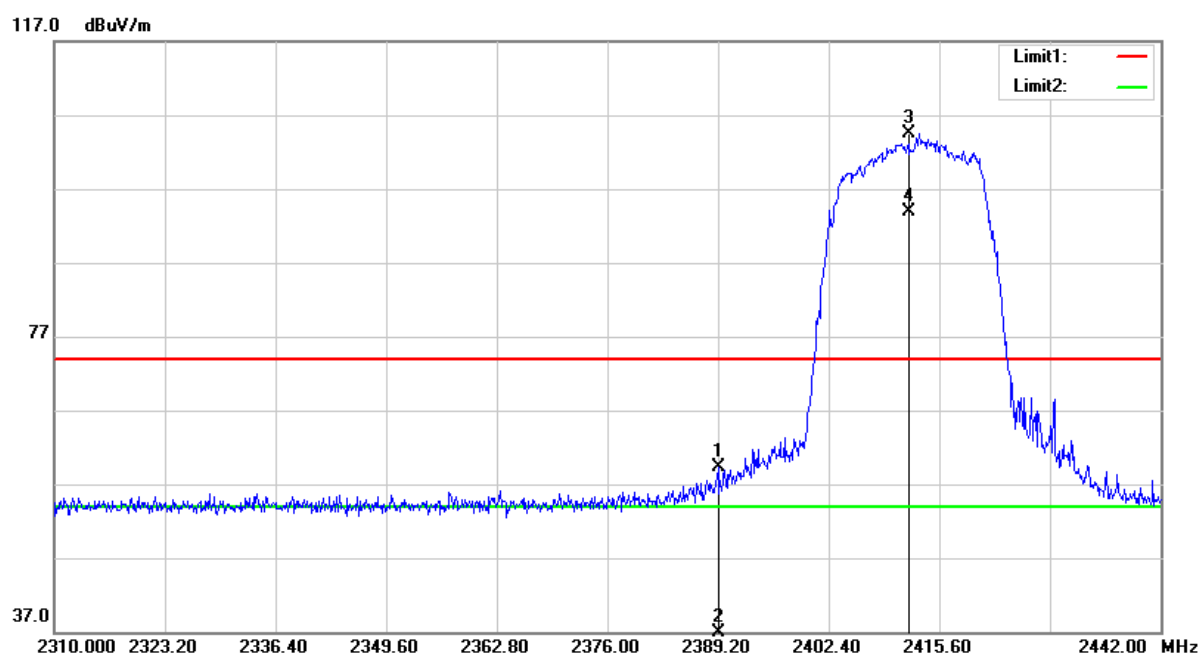
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 04:05:24
		Test By:	Aaron
Description:	N20-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2389.200	68.69	-9.47	59.22	74.00	-14.78	138	298	peak
2	2389.200	45.42	-9.47	35.95	54.00	-18.05	138	298	AVG
3	2412.000	113.77	-9.28	104.49			138	298	peak
4	2412.000	103.28	-9.28	94.00			138	298	AVG

Note:

Result = Reading + Correct Factor

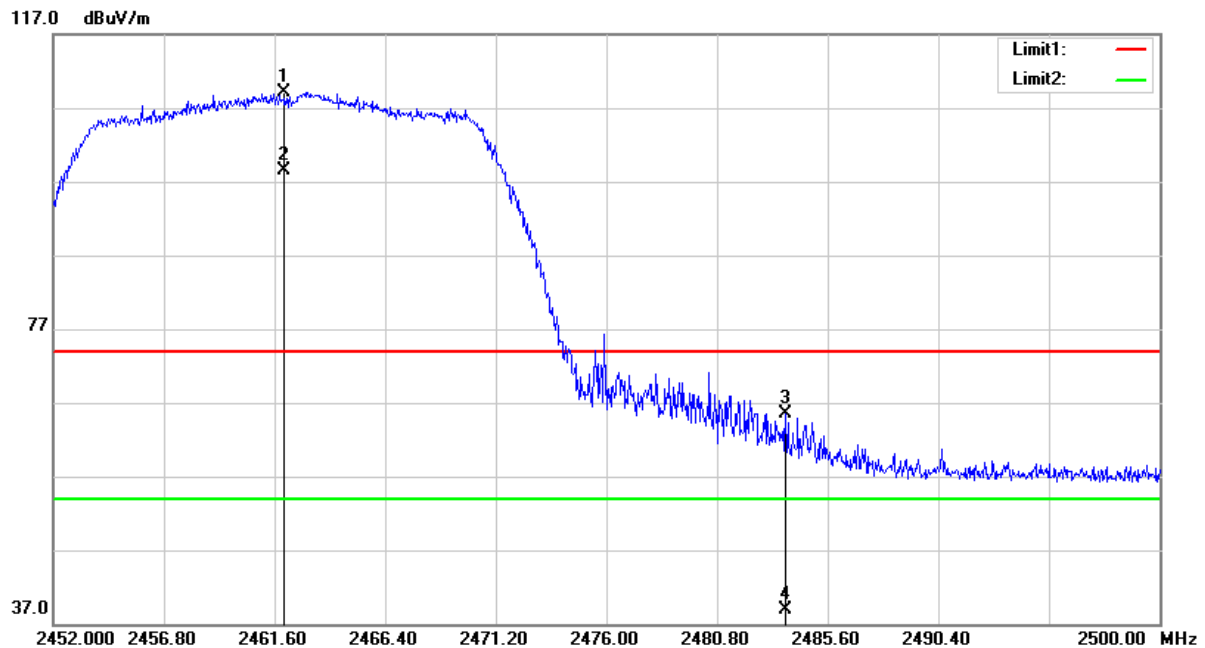
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

發射限制測試 N20 Mode / CH High

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 04:20:12
		Test By:	Aaron
Description:	N20-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	117.90	-8.77	109.13			121	115	peak
2	2462.000	107.20	-8.77	98.43			121	115	AVG
3	2483.776	73.89	-8.44	65.45	74.00	-8.55	121	115	peak
4	2483.776	47.26	-8.44	38.82	54.00	-15.18	121	115	AVG

Note:

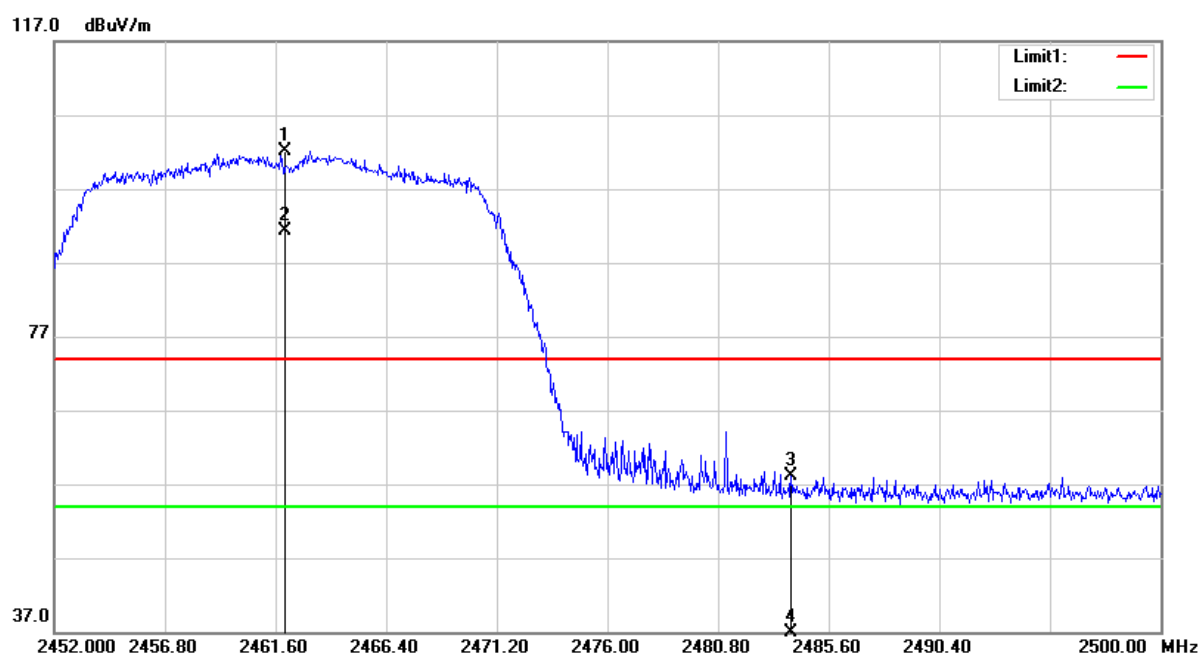
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 04:24:29
		Test By:	Aaron
Description:	N20-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	110.96	-8.77	102.19			122	282	peak
2	2462.000	100.16	-8.77	91.39			122	282	AVG
3	2483.968	66.49	-8.44	58.05	74.00	-15.95	122	282	peak
4	2483.968	44.14	-8.44	35.70	54.00	-18.30	122	282	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

發射限制測試 Ax20 Mode / CH Low

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 04:40:40
		Test By:	Aaron
Description:	AX20-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2388.400	74.26	-9.47	64.79	74.00	-9.21	125	148	peak
2	2388.400	51.42	-9.47	41.95	54.00	-12.05	125	148	AVG
3	2412.000	118.98	-9.28	109.70			125	148	peak
4	2412.000	108.38	-9.28	99.10			125	148	AVG

Note:

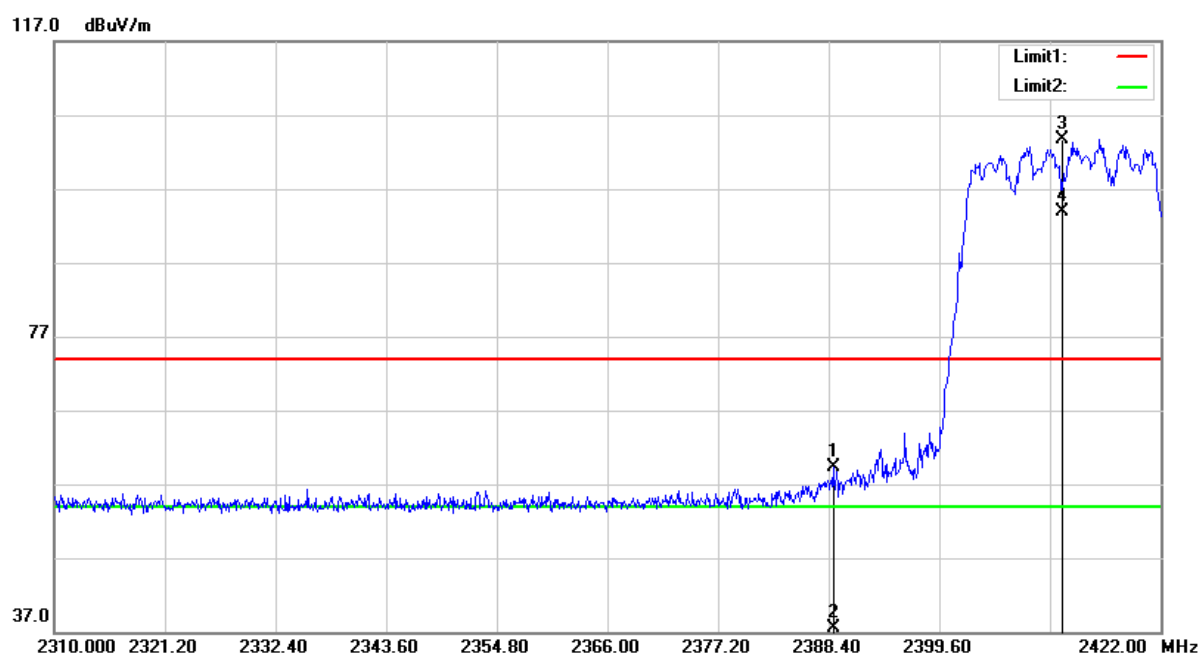
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 04:32:13
		Test By:	Aaron
Description:	AX20-TX-2412-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2388.848	68.68	-9.47	59.21	74.00	-14.79	137	304	peak
2	2388.848	47.01	-9.47	37.54	54.00	-16.46	137	304	AVG
3	2412.000	113.02	-9.28	103.74			137	304	peak
4	2412.000	103.18	-9.28	93.90			137	304	AVG

Note:

Result = Reading + Correct Factor

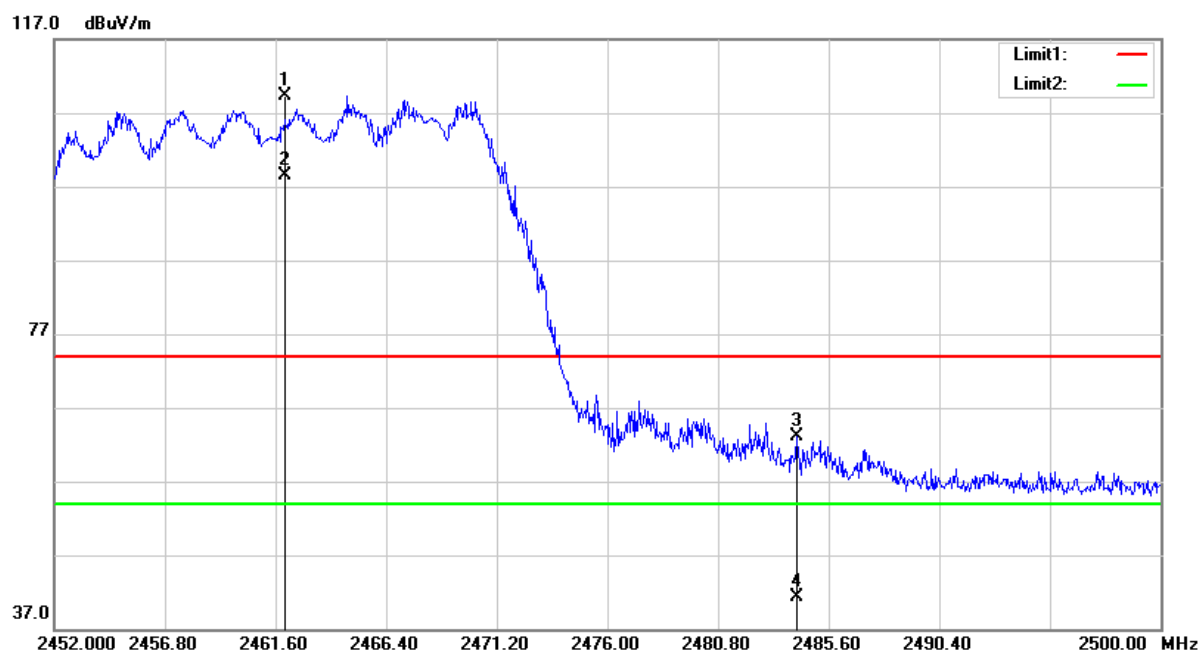
Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.3, 4 are the fundamental frequency, no limit value.

發射限制測試 Ax20 Mode / CH High

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 05:00:24
		Test By:	Aaron
Description:	AX20-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	118.05	-8.77	109.28			145	111	peak
2	2462.000	107.28	-8.77	98.51			145	111	AVG
3	2484.208	71.46	-8.44	63.02	74.00	-10.98	145	111	peak
4	2484.208	49.72	-8.44	41.28	54.00	-12.72	145	111	AVG

Note:

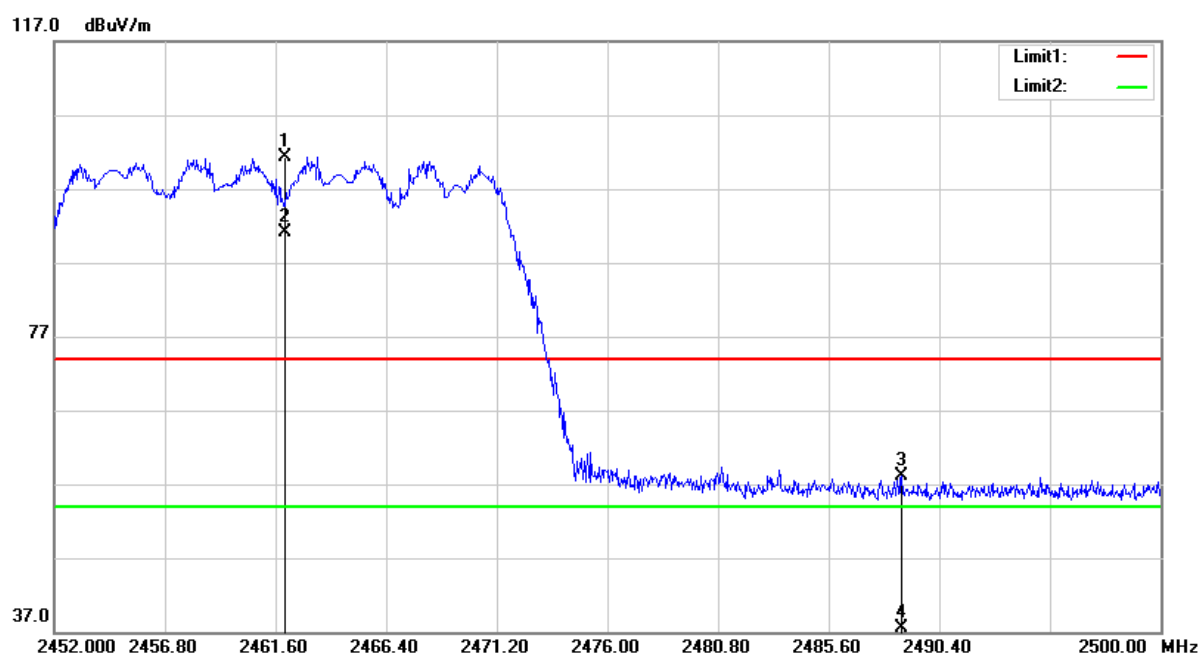
Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

Job No.:	RXZ211216001	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):	23.4(°C)/61%RH	Date:2022/1/4	Time:上午 04:56:30
		Test By:	Aaron
Description:	AX20-TX-2462-X_Axis		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	2462.000	110.14	-8.77	101.37			122	278	peak
2	2462.000	99.80	-8.77	91.03			122	278	AVG
3	2488.768	66.46	-8.37	58.09	74.00	-15.91	122	278	peak
4	2488.768	45.91	-8.37	37.54	54.00	-16.46	122	278	AVG

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

No.1, 2 are the fundamental frequency, no limit value.

Conducted Bandedge

環境溫度	23.5°C	測試日期	2022 年 1 月 18 日
環境濕度	59%	測試人員	Aaron

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)		Limit (dBc)	Result
		Chain 0	Chain 1		
B mode					
Low	2412	42.48	42.69	≥ 20	PASS
High	2462	45.62	45.97	≥ 20	PASS
G mode					
Low	2412	38.77	40.36	≥ 20	PASS
High	2462	39.33	40.74	≥ 20	PASS
N20 mode					
Low	2412	38.22	40.53	≥ 20	PASS
High	2462	40.71	41.82	≥ 20	PASS
AX20 mode					
Low	2422	39.34	40.62	≥ 20	PASS
High	2452	40.54	41.20	≥ 20	PASS

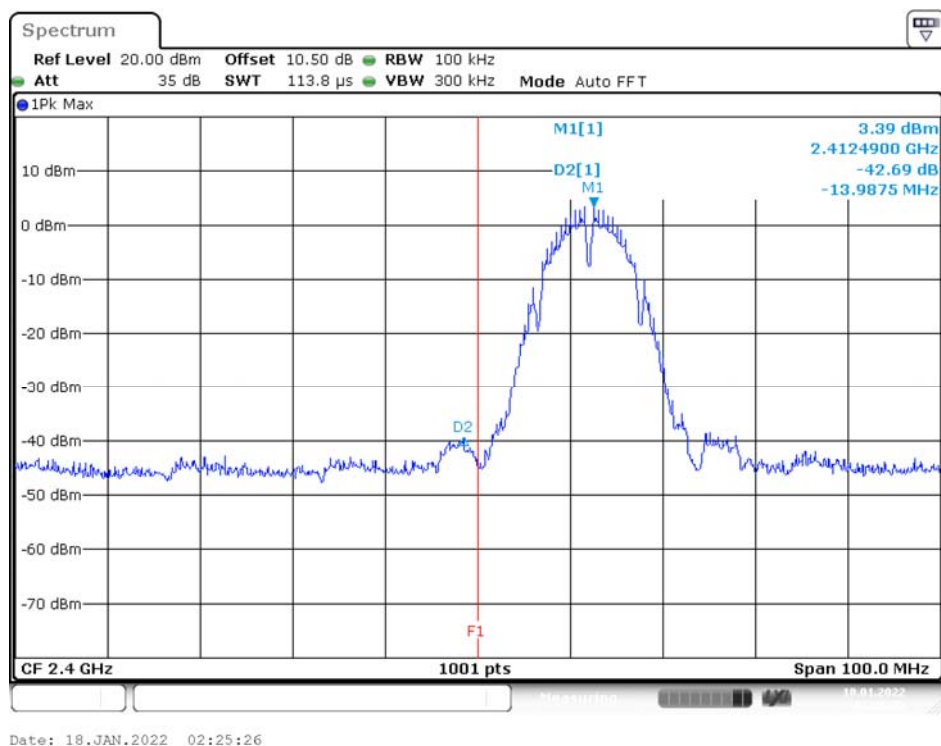
B Mode Low Channel(Chain 0)



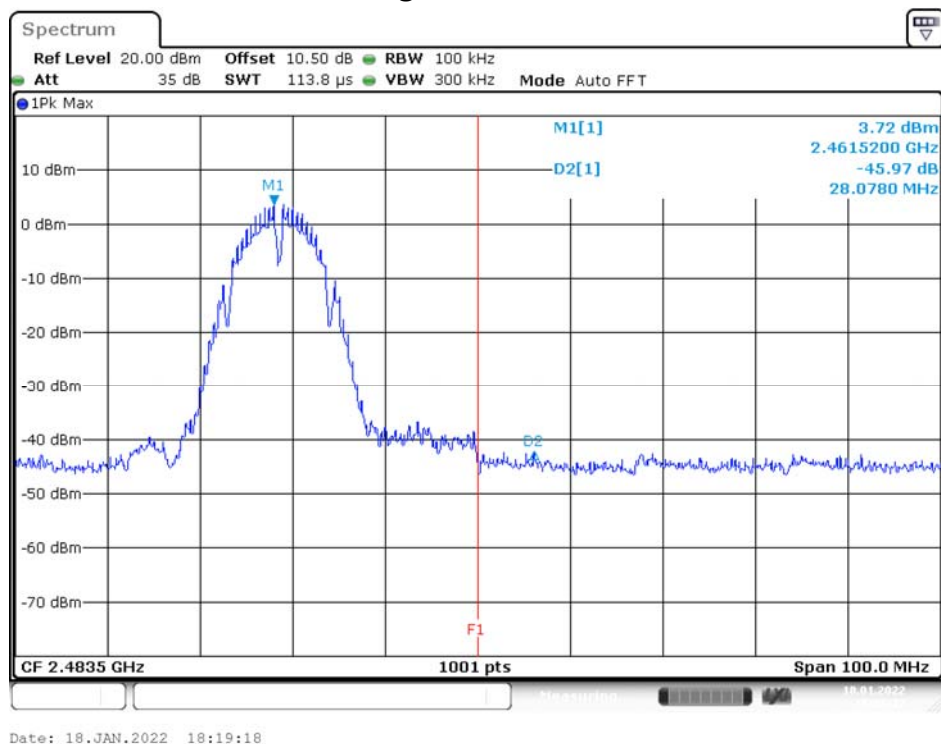
B Mode High Channel (Chain 0)



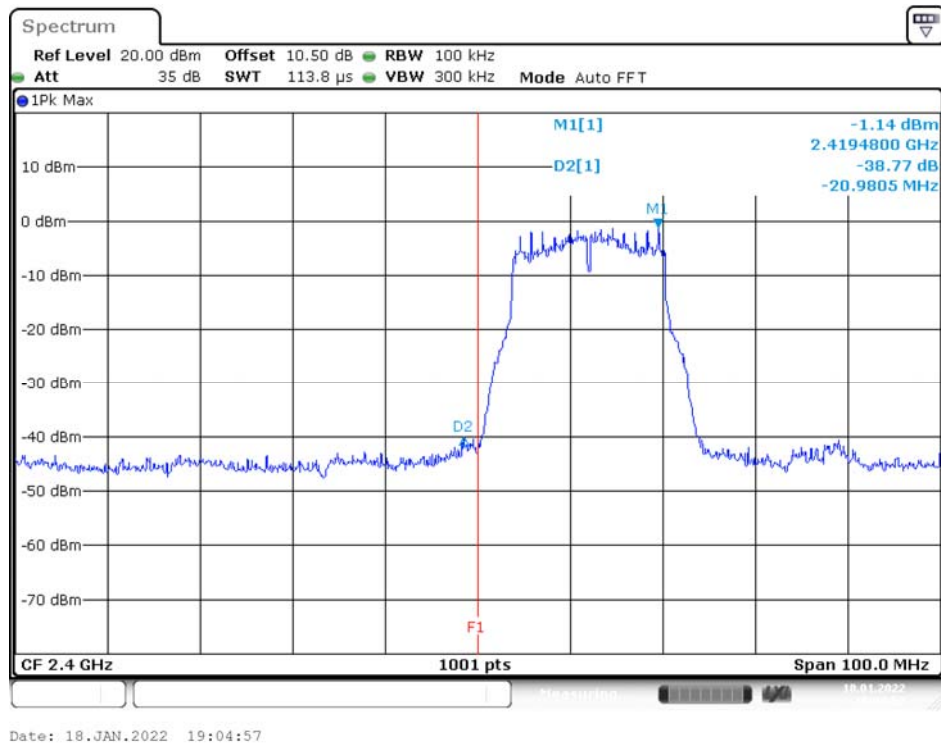
B Mode Low Channel (Chain 1)



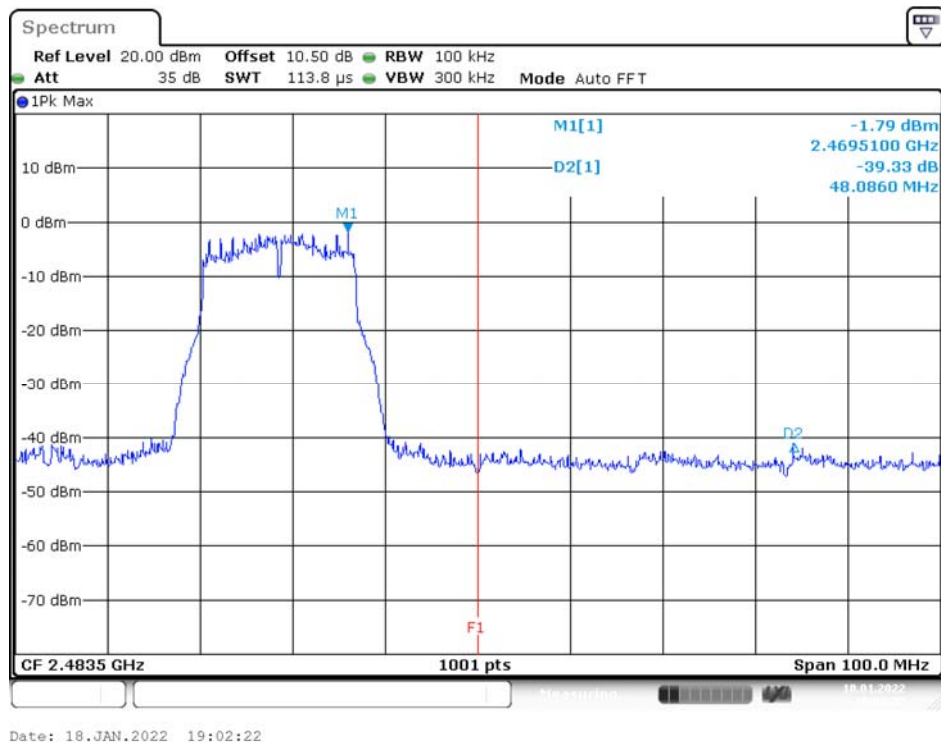
B Mode High Channel (Chain 1)



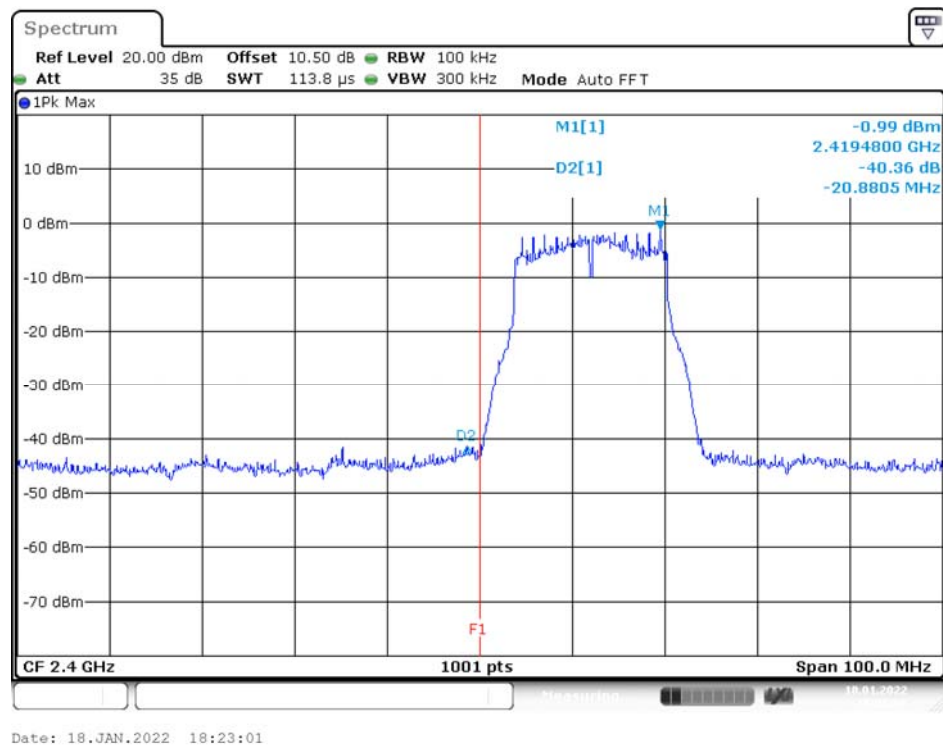
G Mode Low Channel(Chain 0)



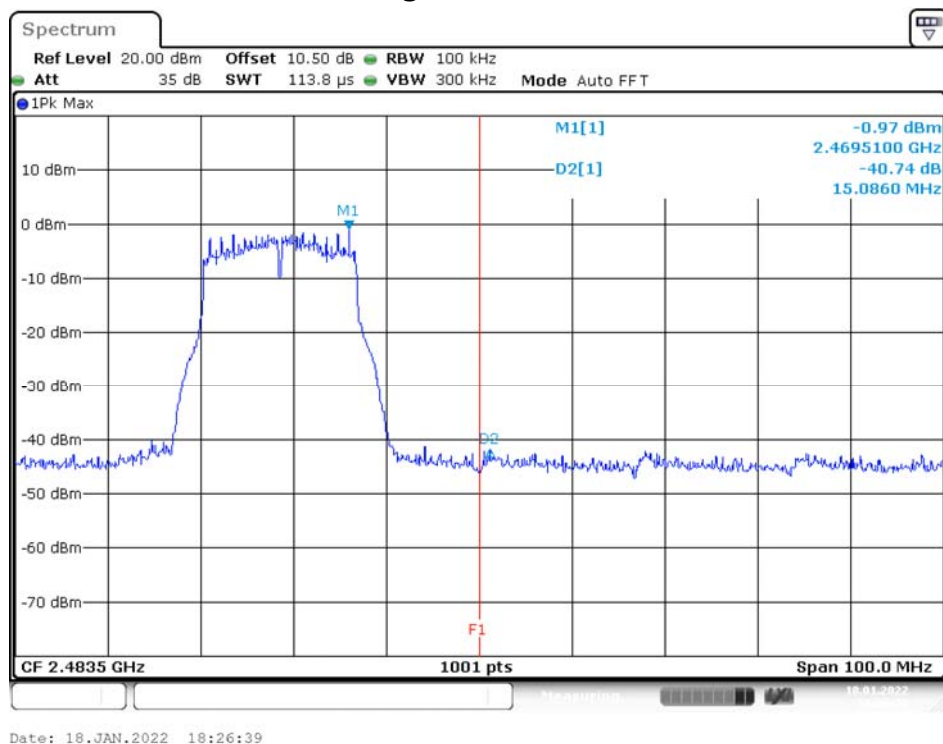
G Mode High Channel (Chain 0)



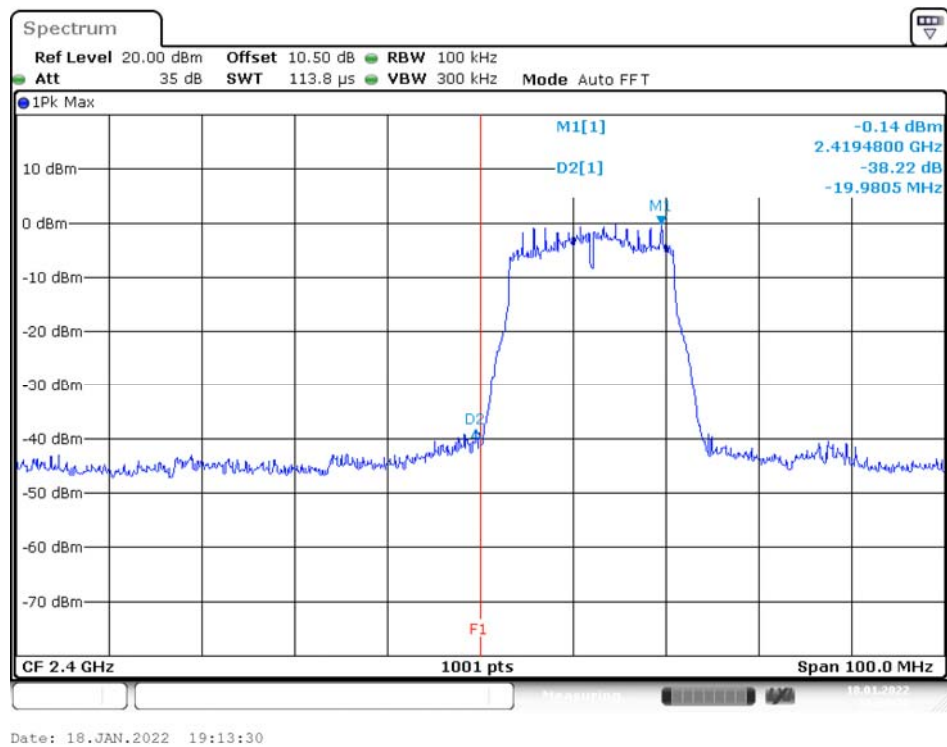
G Mode Low Channel (Chain 1)



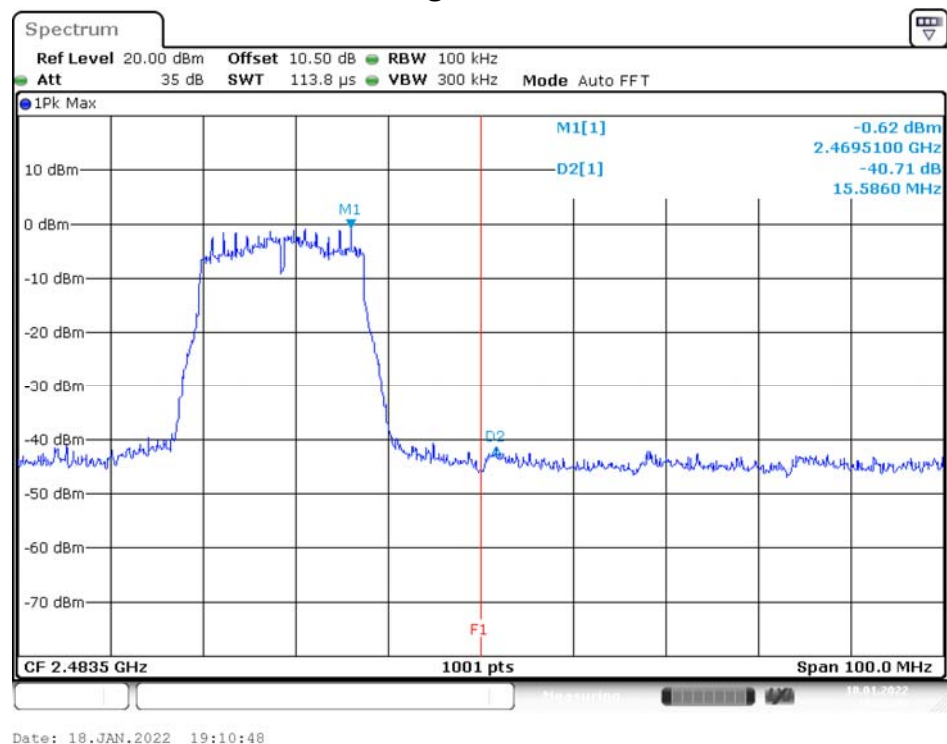
G Mode High Channel (Chain 1)



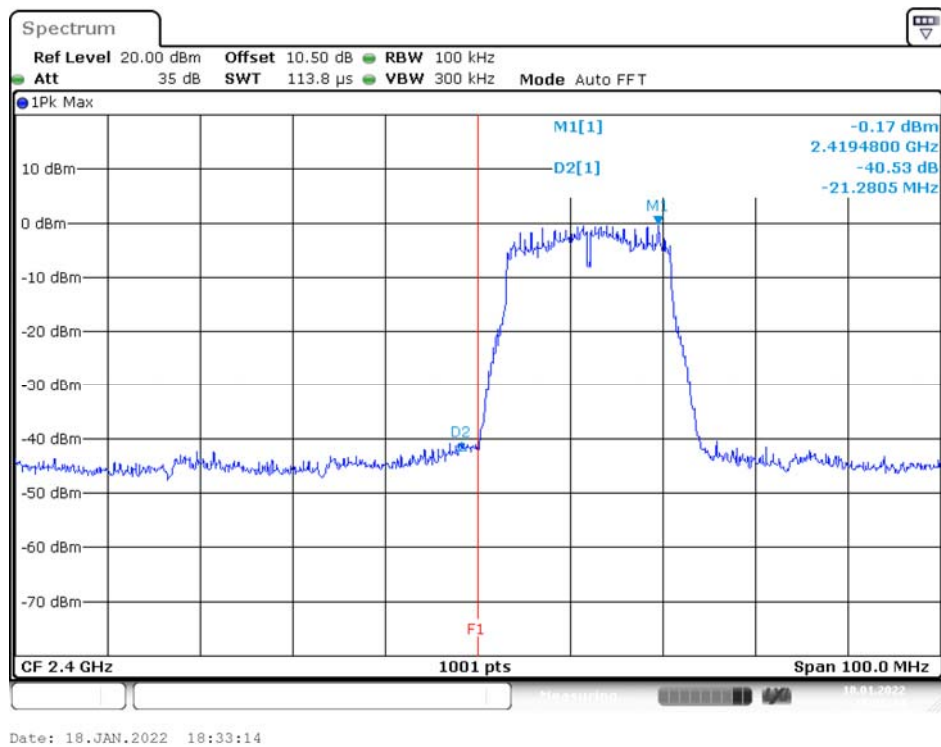
N20 Mode Low Channel(Chain 0)



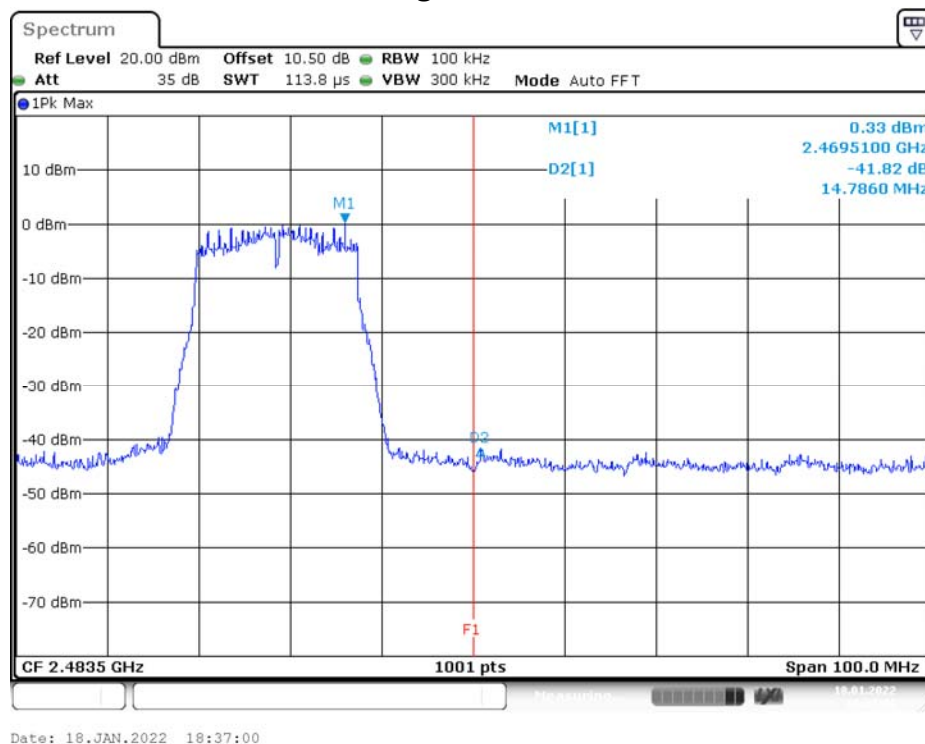
N20 Mode High Channel(Chain 0)



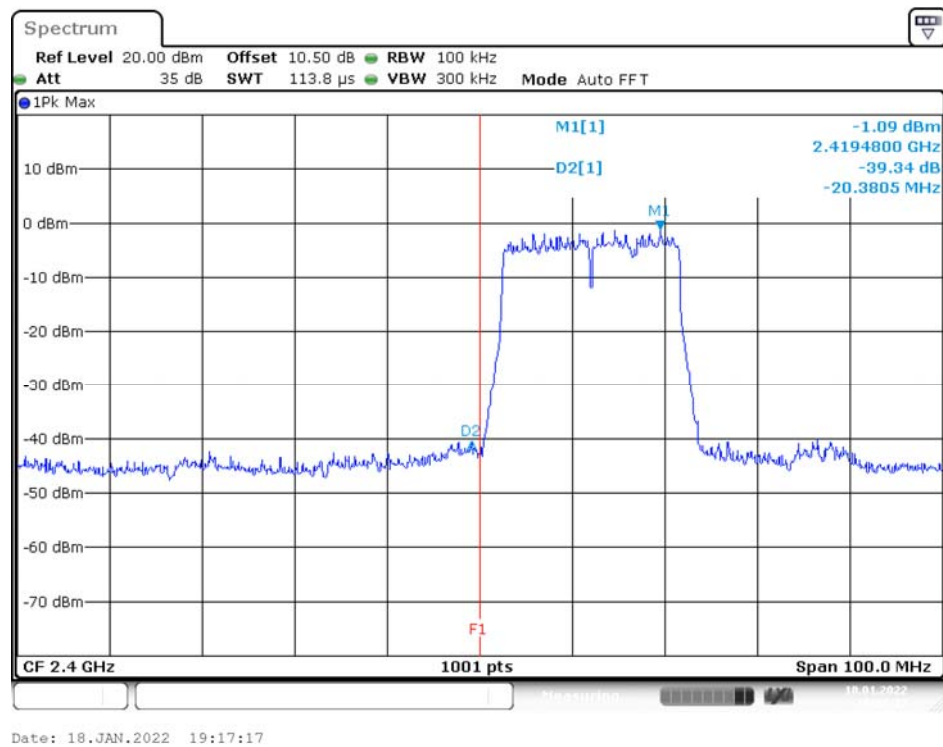
N20 Mode Low Channel (Chain 1)



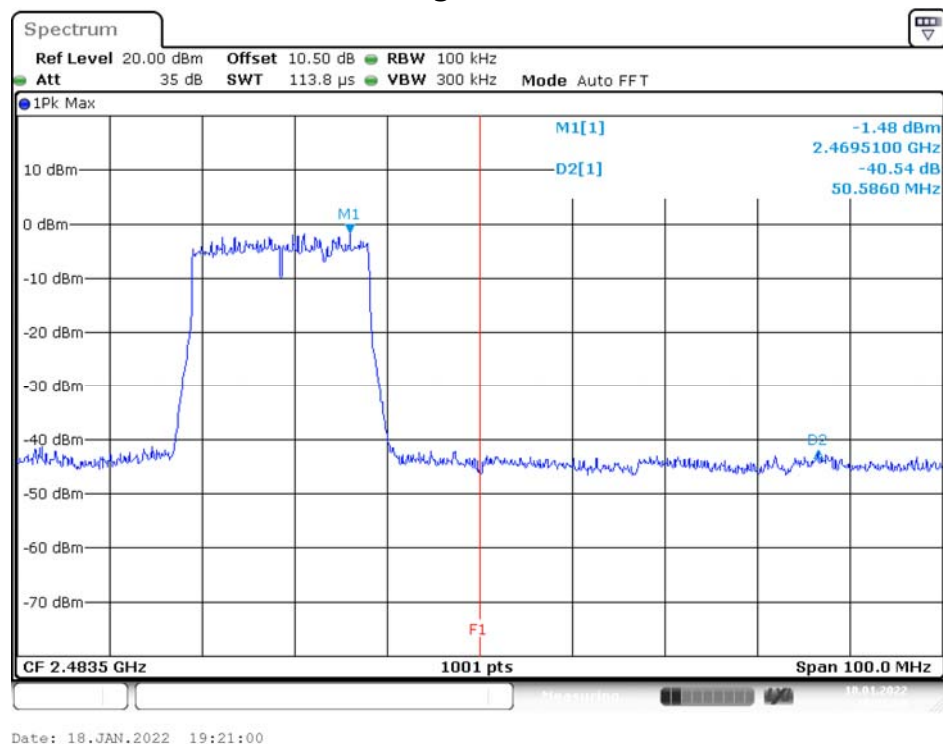
N20 Mode High Channel (Chain 1)



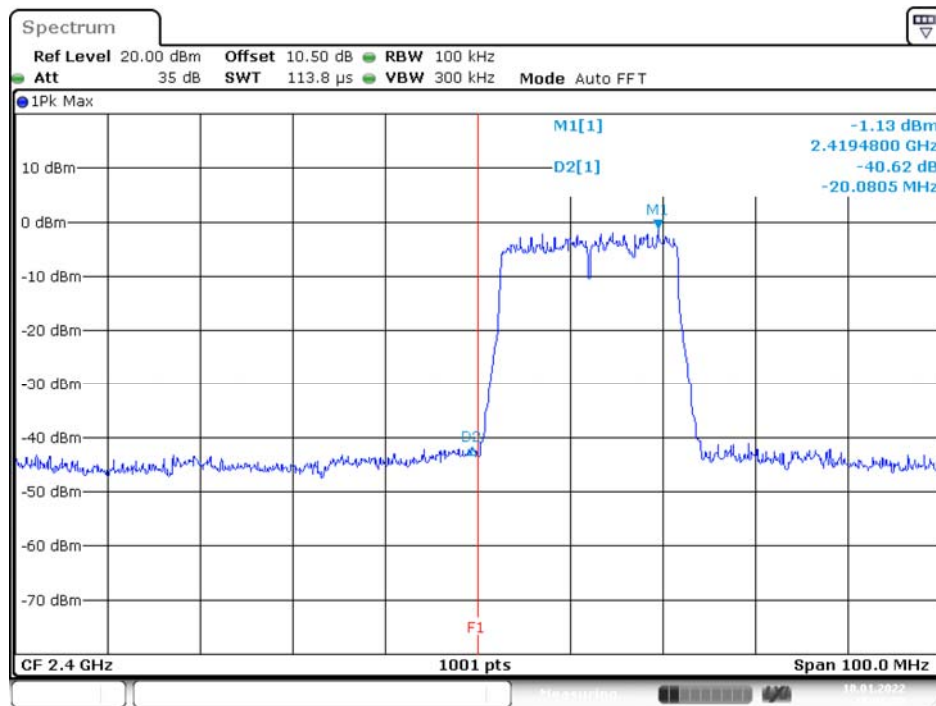
Ax20 Mode Low Channel(Chain 0)



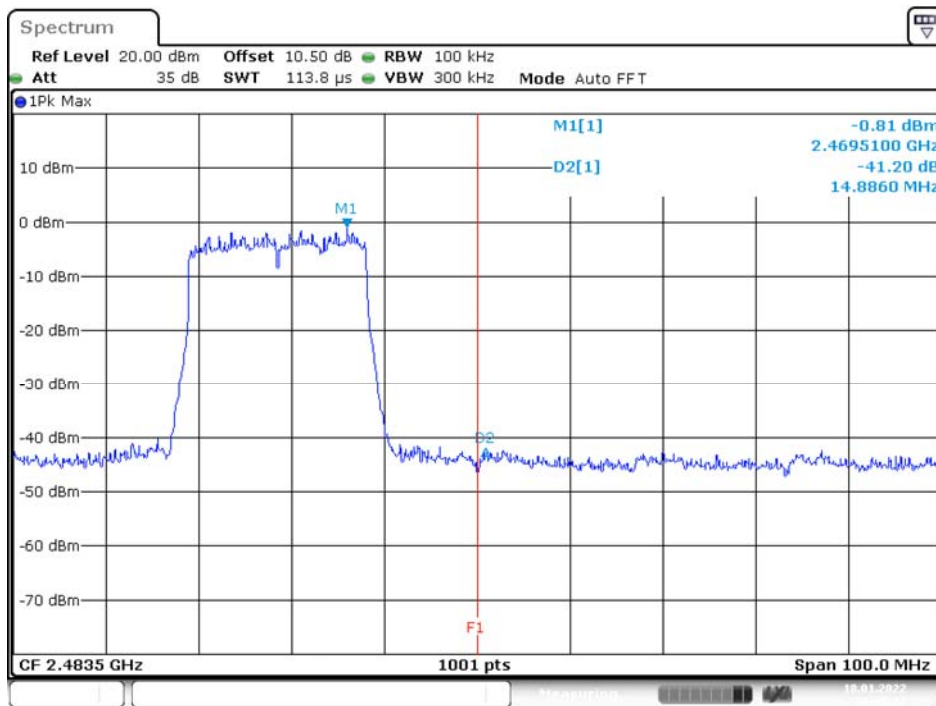
Ax20 Mode High Channel(Chain 0)



Ax20 Mode Low Channel (Chain 1)



Ax20 Mode High Channel (Chain 1)



10. 功率密度之量測

10.1 適用標準

依據低功率射頻器材技術規範規定，在使用頻率範圍之任一 3kHz頻寬內，由發射機傳導至天線之功率頻譜密度在任意傳輸期間內，皆小於或等於8毫分貝(dBm)，且應依規定方式降低功率頻譜密度限制值。

10.2 測試方法

1. 將發射機之天線埠經由適當之衰減直接連至測試儀器。找出發射峰值並擴展於通帶內，設定解析頻寬為3 kHz，視訊頻寬大於解析頻寬，掃描時間為頻率掃描範圍除以3 kHz。所測得之峰值位準必須應小於或等於8dBm。
2. 若受測裝置之頻譜線間隔小於3 kHz，測量時應將解析頻寬降低以使頻譜線間隔大於3 kHz，所測得之數據再藉加總3 kHz頻帶內所有個別頻譜線之功率(即標準化至3 kHz)以決定是否符合規定。

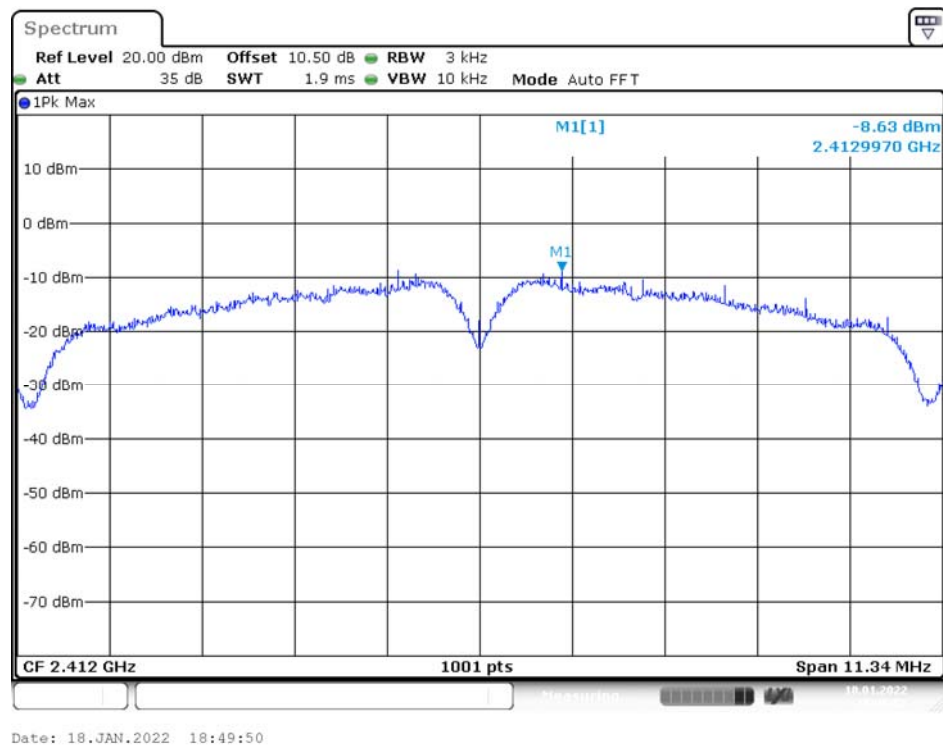
10.3 功率密度之量測結果

環境溫度	23.5°C	測試日期	2022 年 1 月 18 日
環境濕度	59%	測試人員	Aaron

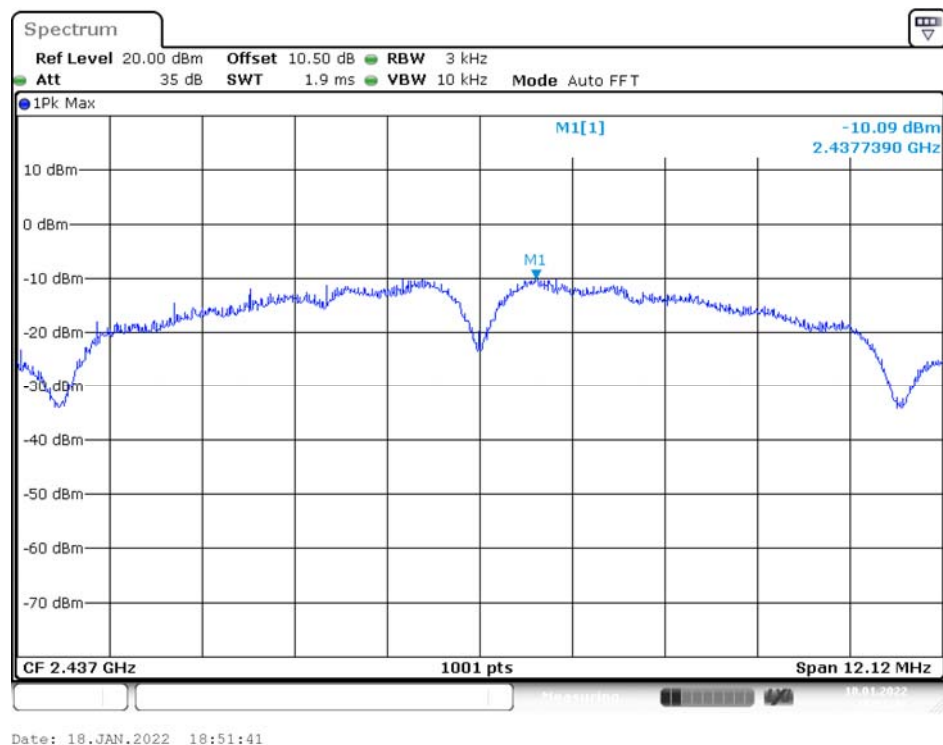
Channel	Frequency (MHz)	PPSD (dBm)			Limit (dBm)	Result
		Chain 0	Chain 1	Total		
B mode						
Low	2412	-8.63	-8.94	-5.77	8.00	PASS
Mid	2437	-10.09	-8.37	-6.14		PASS
High	2462	-8.79	-8.33	-5.54		PASS
G mode						
Low	2412	-12.94	-13.00	-9.96	8.00	PASS
Mid	2437	-13.07	-13.15	-10.10		PASS
High	2462	-13.39	-12.79	-10.07		PASS
N20 mode						
Low	2412	-11.95	-11.72	-8.82	8.00	PASS
Mid	2437	-11.73	-12.13	-8.92		PASS
High	2462	-12.09	-11.83	-8.95		PASS
Ax20 mode						
Low	2422	-15.41	-15.37	-12.38	8.00	PASS
Mid	2437	-16.13	-16.03	-13.07		PASS
High	2452	-16.33	-15.48	-12.87		PASS

PSD

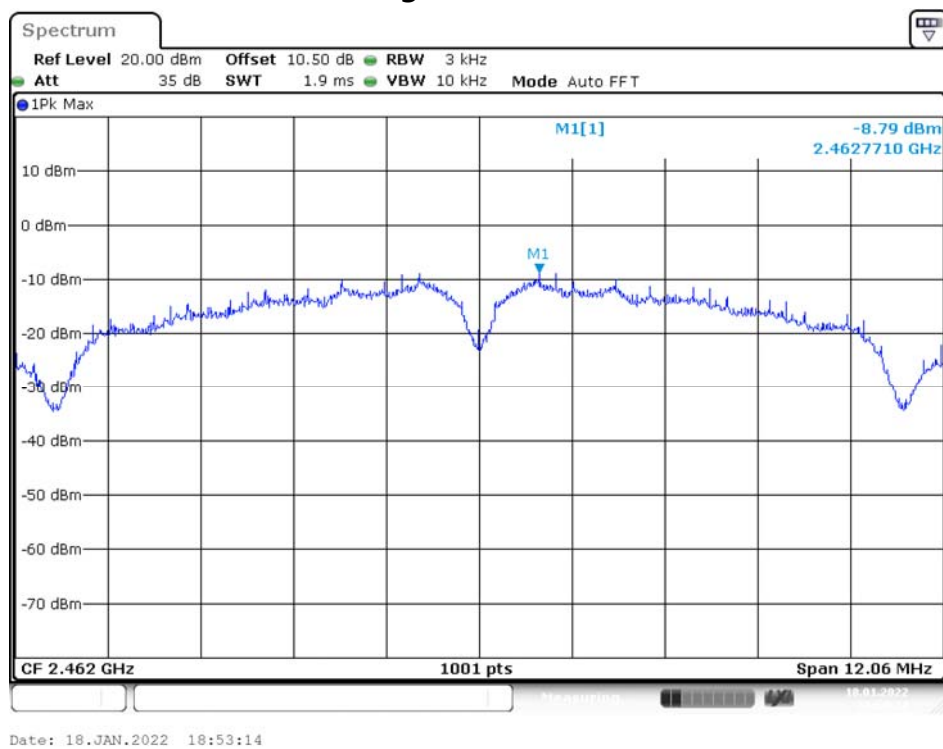
B Mode Low Channel (Chain 0)



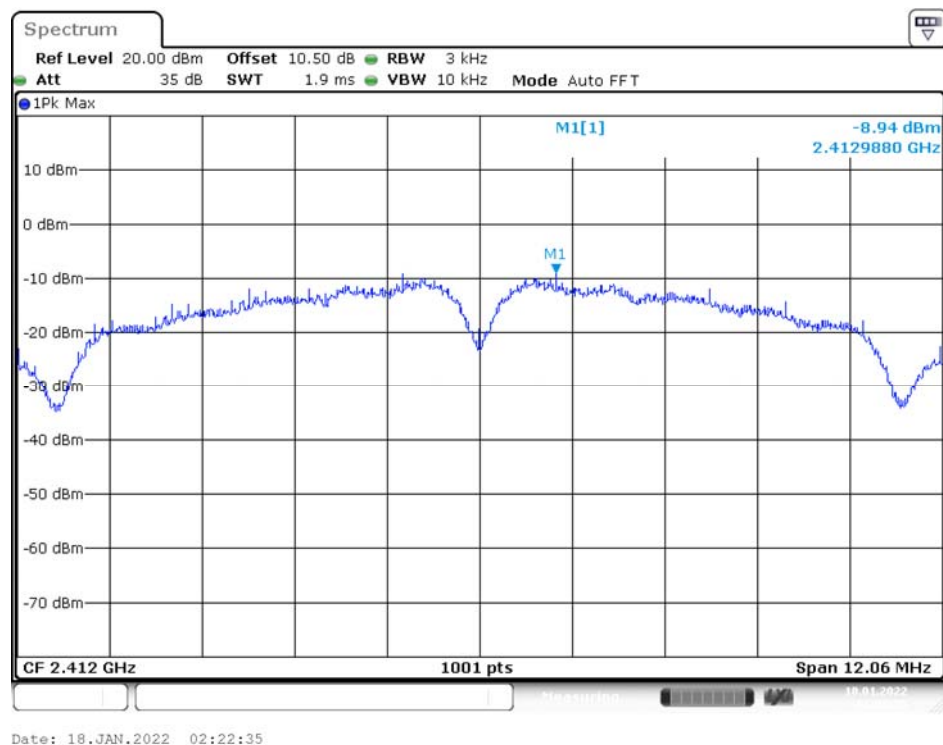
B Mode Middle Channel (Chain 0)



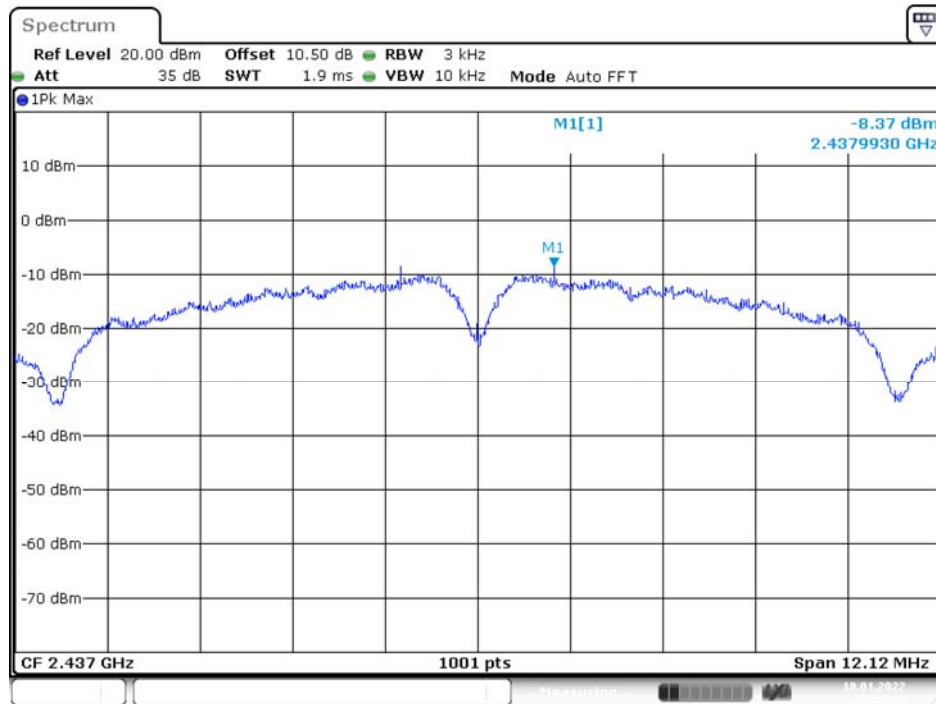
B Mode High Channel (Chain 0)



B Mode Low Channel (Chain 1)

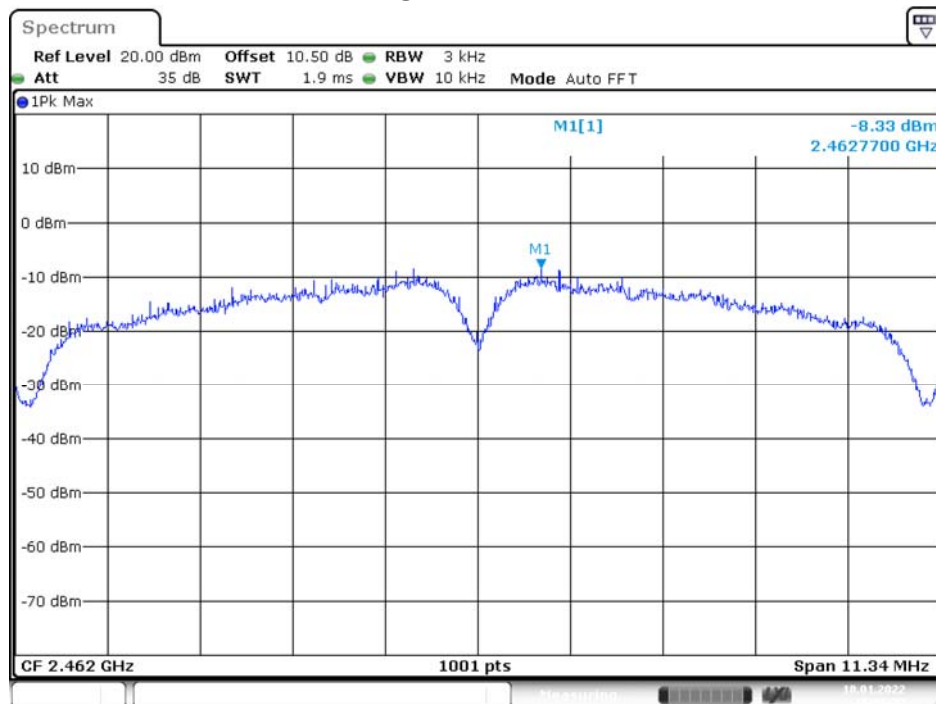


B Mode Middle Channel (Chain 1)



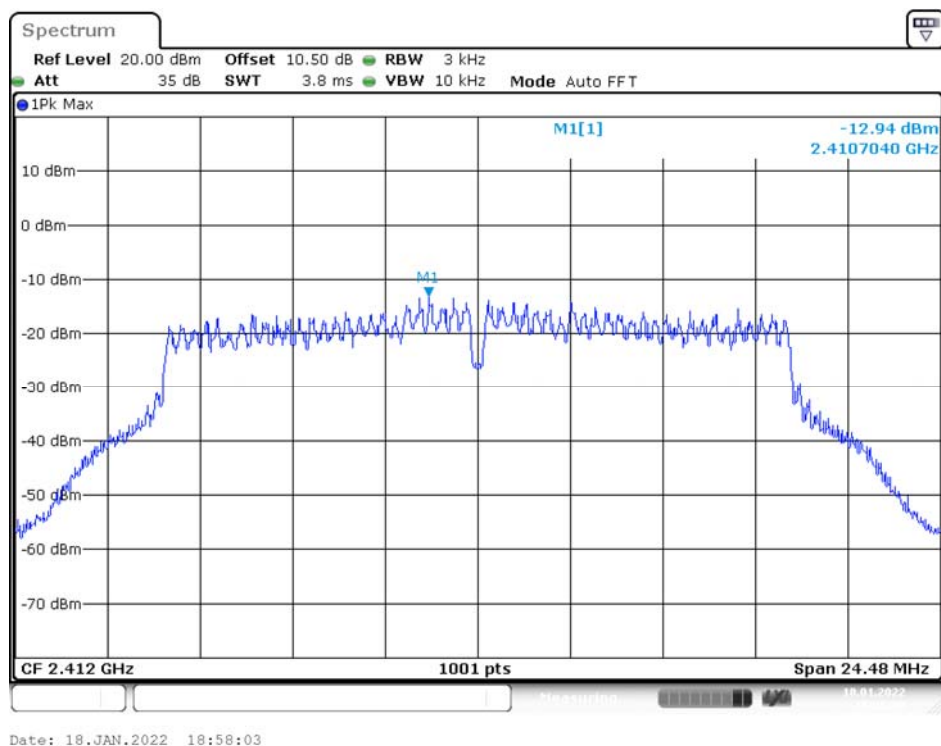
Date: 18.JAN.2022 18:15:11

B Mode High Channel (Chain 1)

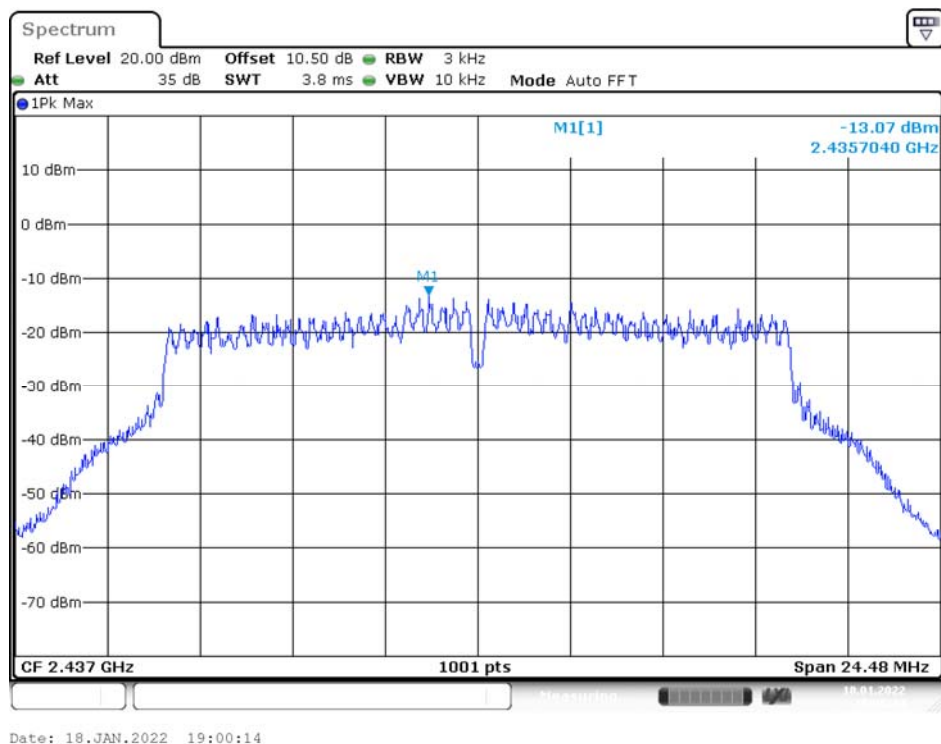


Date: 18.JAN.2022 18:19:02

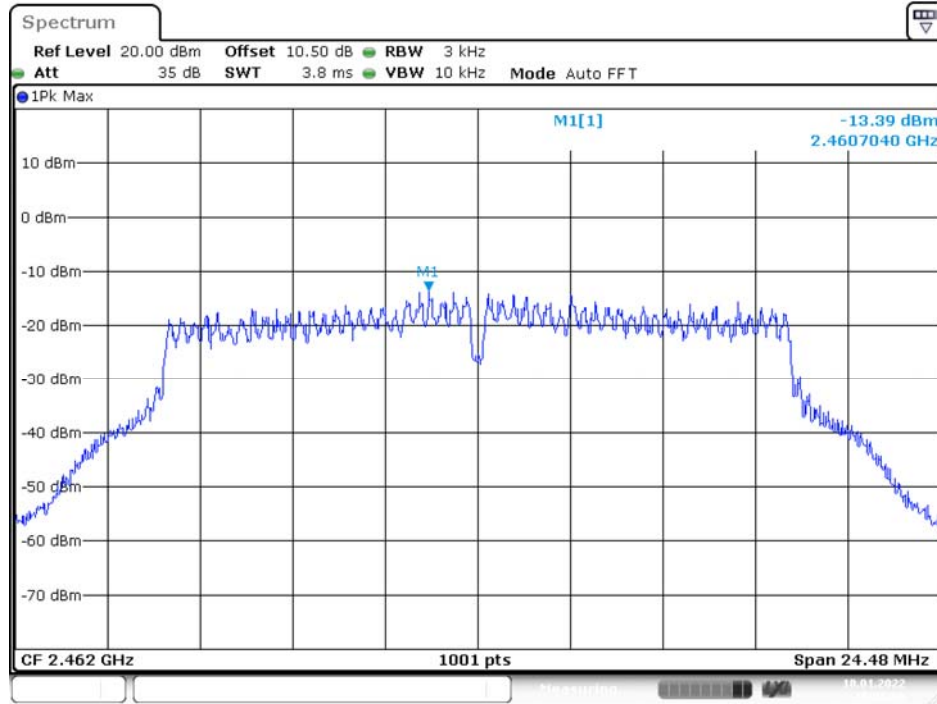
G Mode Low Channel(Chain 0)



G Mode Middle Channel(Chain 0)

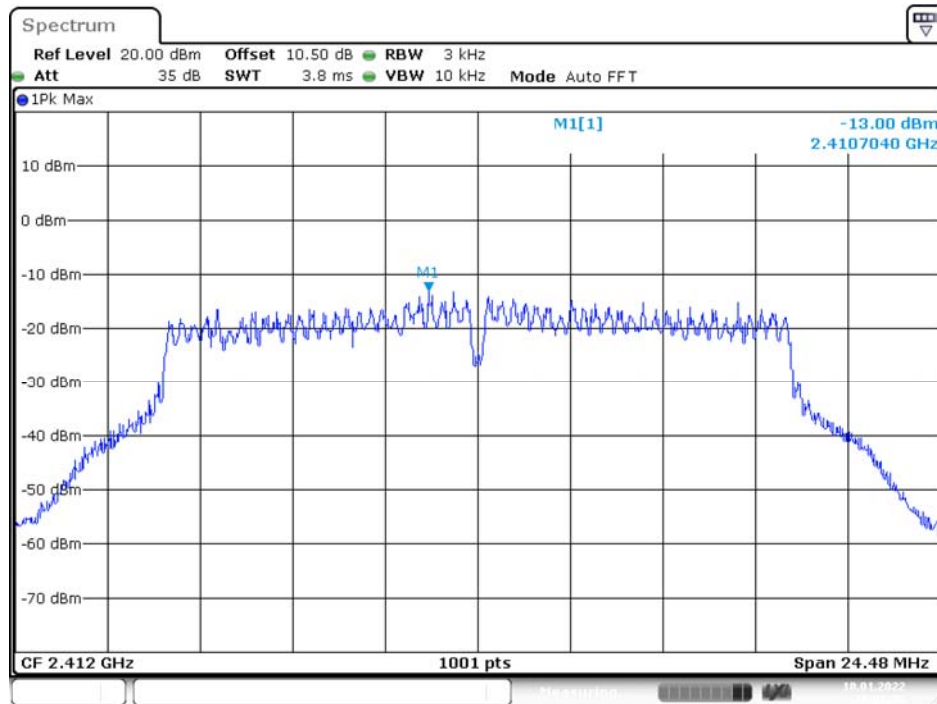


G Mode High Channel(Chain 0)



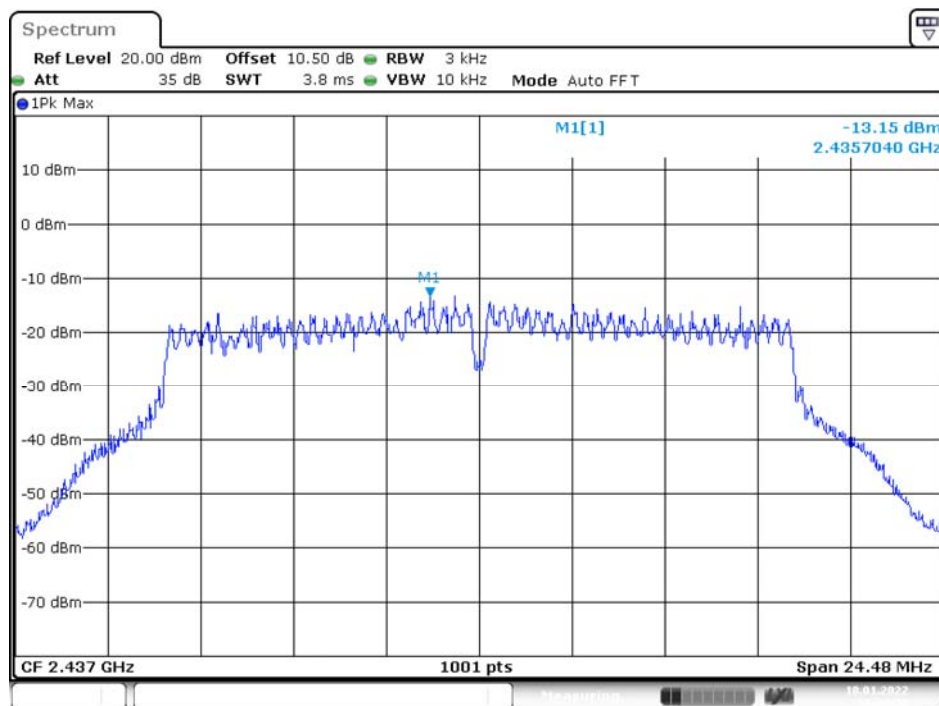
Date: 18, JAN, 2022 19:02:06

G Mode Low Channel (Chain 1)



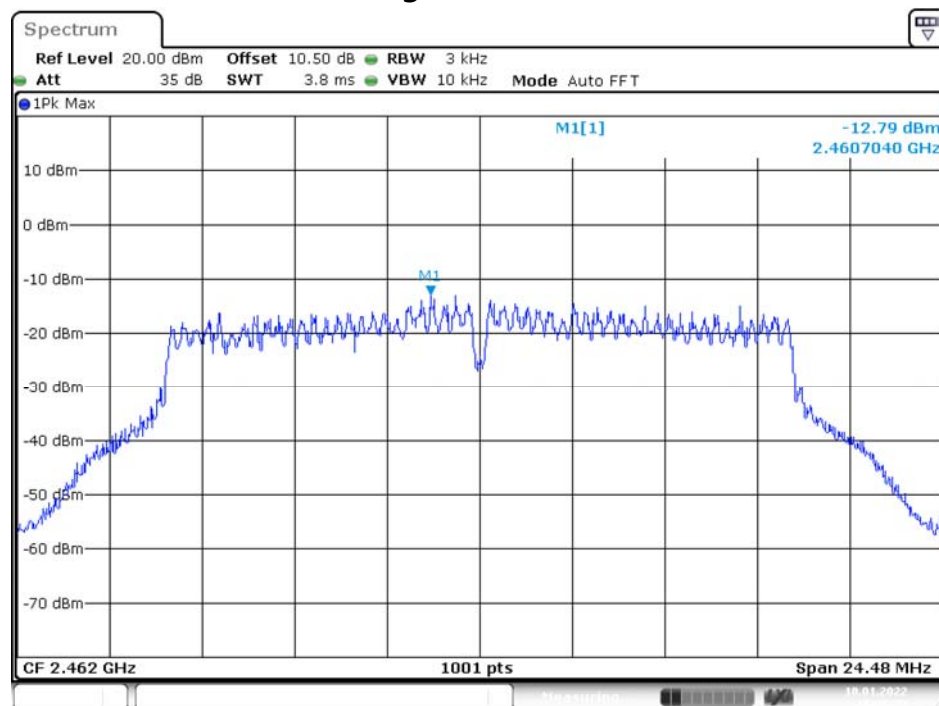
Date: 18, JAN, 2022 18:22:45

G Mode Middle Channel (Chain 1)



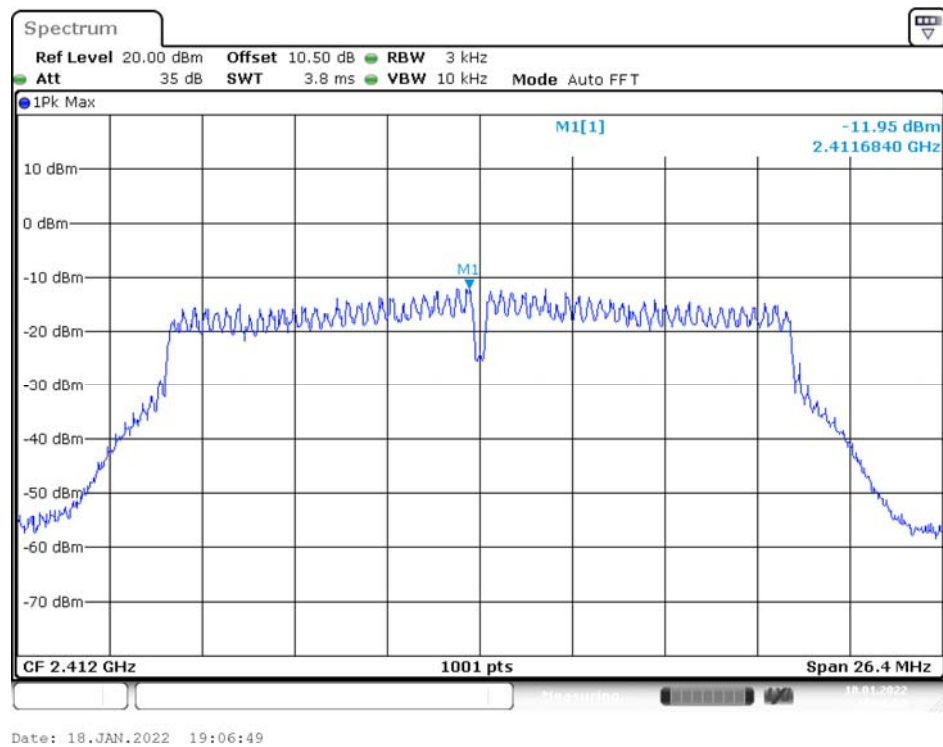
Date: 18.JAN.2022 18:24:38

G Mode High Channel (Chain 1)

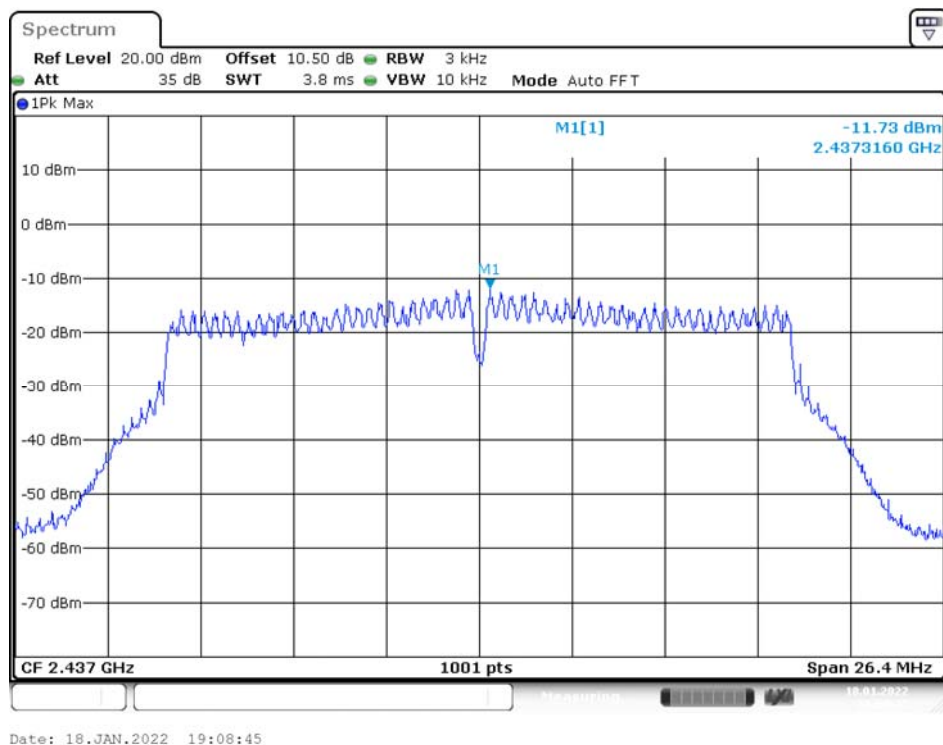


Date: 18.JAN.2022 18:26:23

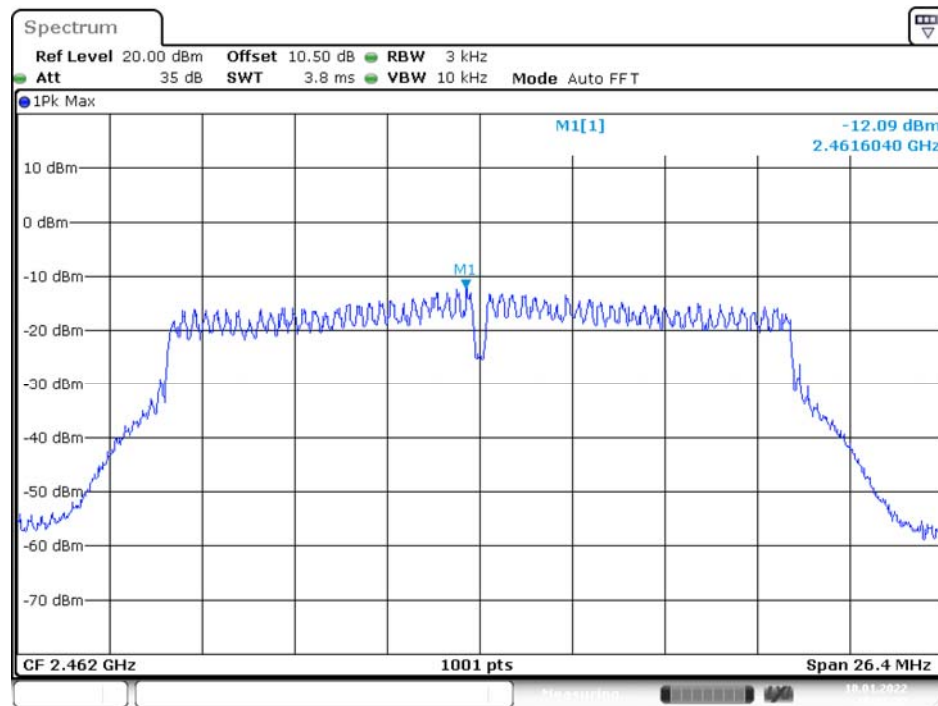
N20 Mode Low Channel(Chain 0)



N20 Mode Middle Channel(Chain 0)

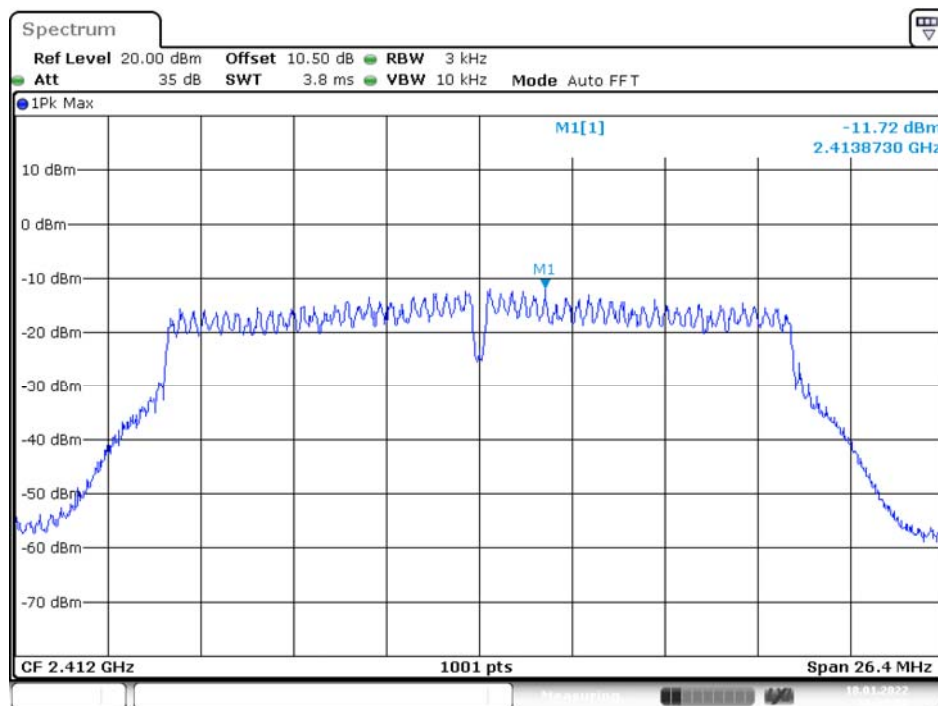


N20 Mode High Channel(Chain 0)



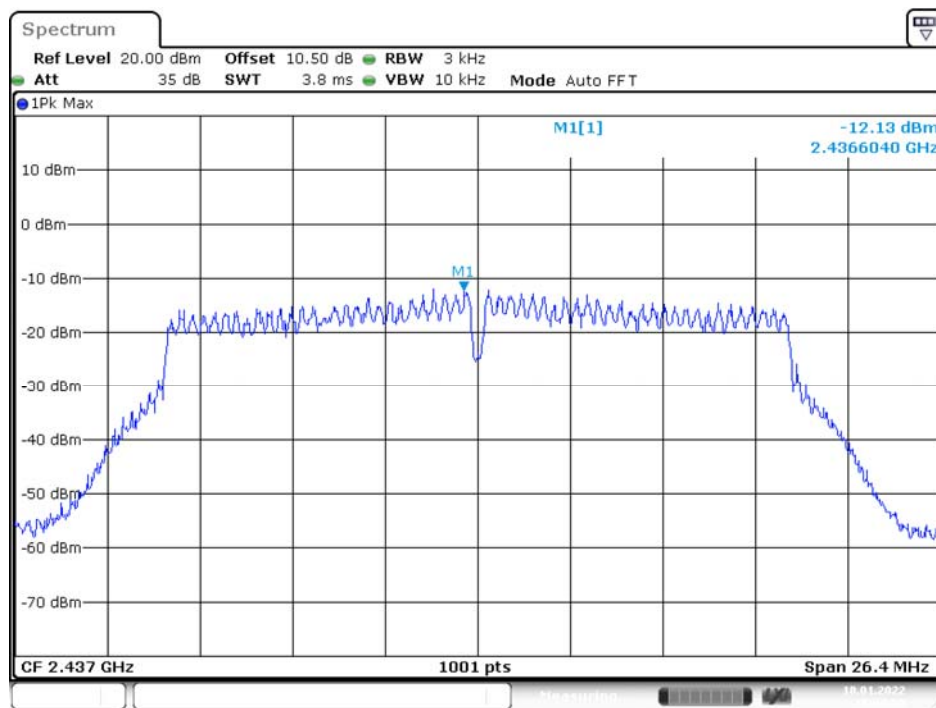
Date: 18.JAN.2022 19:10:32

N20 Mode Low Channel (Chain 1)

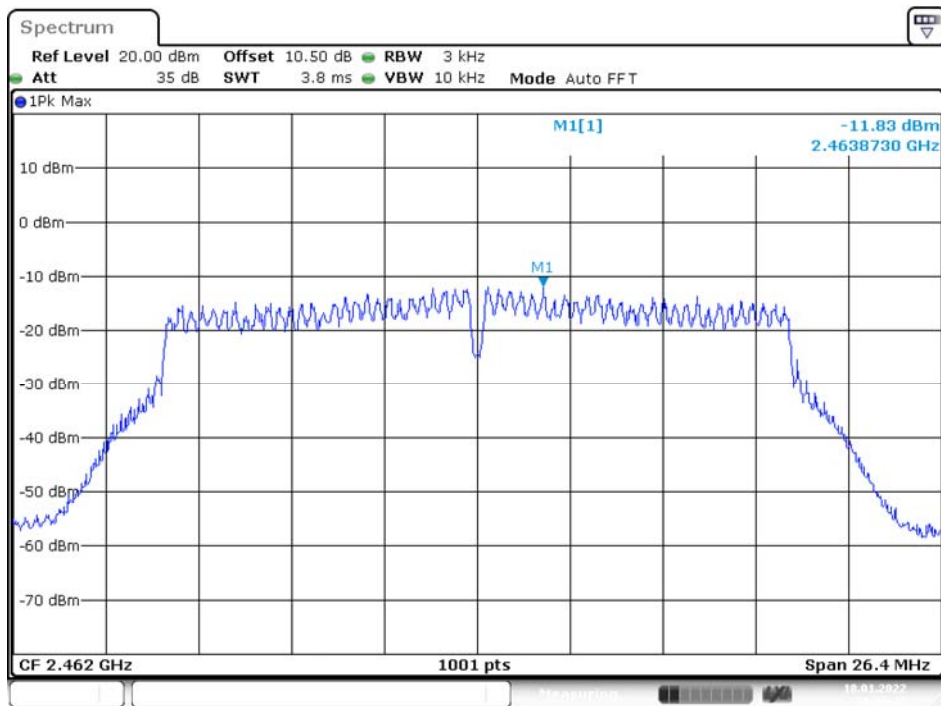


Date: 18.JAN.2022 18:32:58

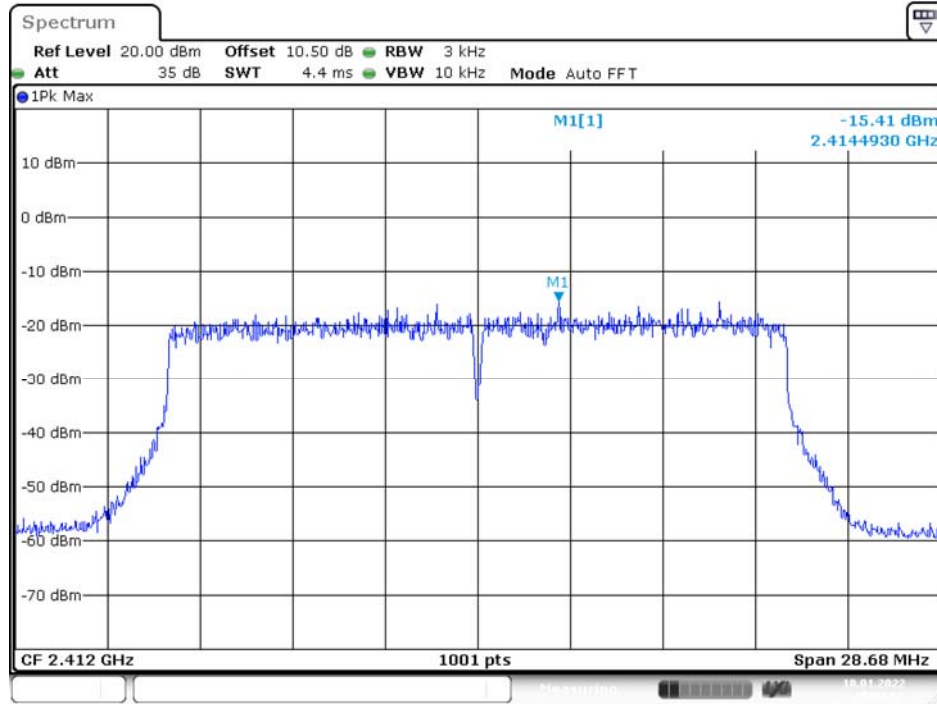
N20 Mode Middle Channel (Chain 1)



N20 Mode High Channel (Chain 1)

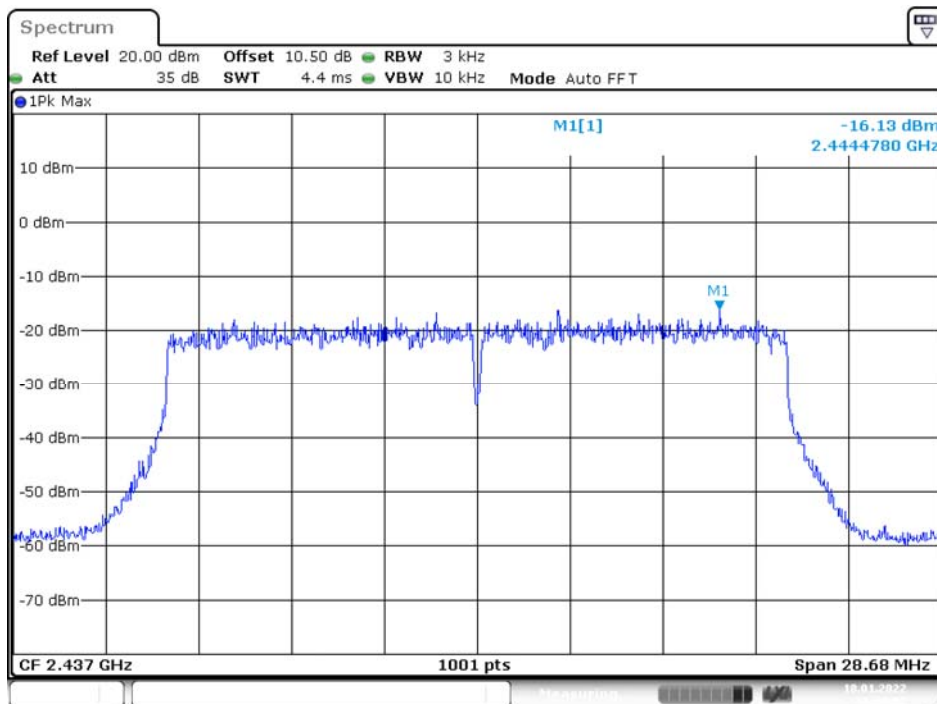


Ax20 Mode Low Channel (Chain 0)



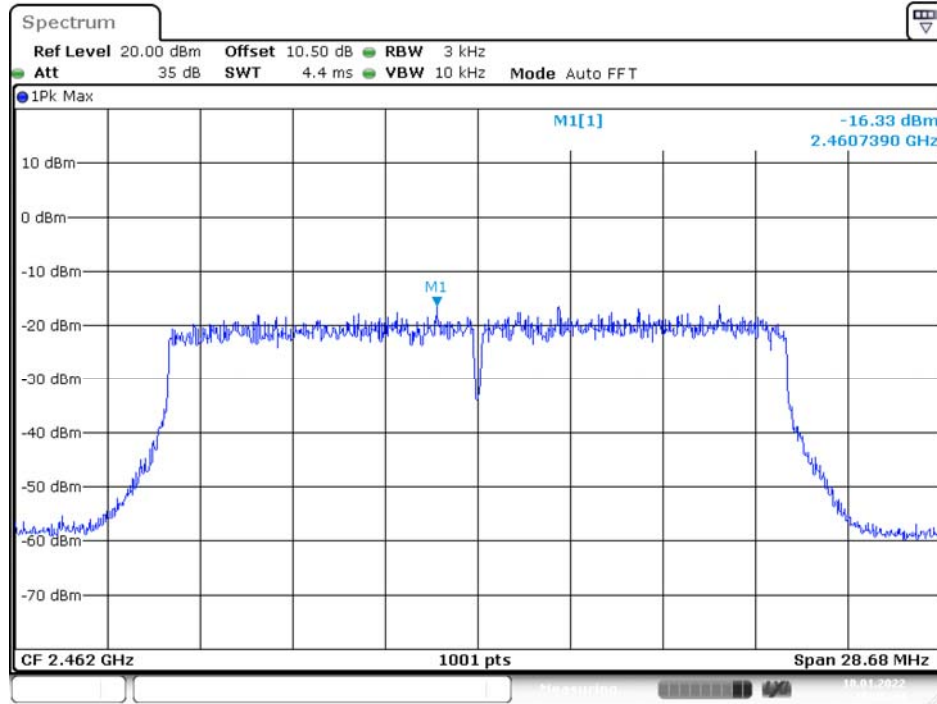
Date: 18.JAN.2022 19:17:01

Ax20 Mode Middle Channel (Chain 0)



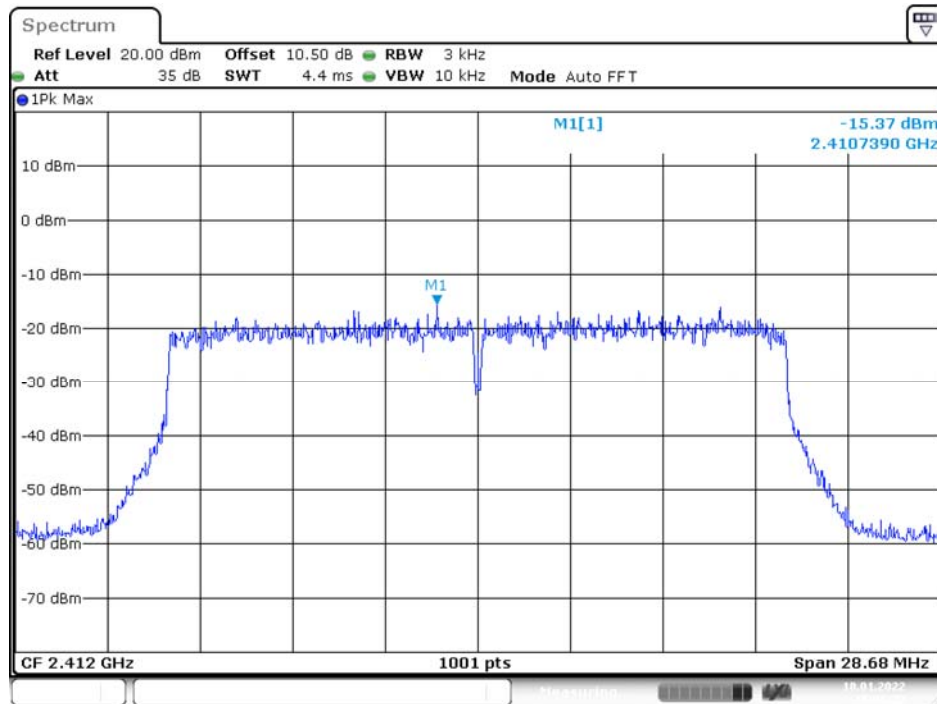
Date: 18.JAN.2022 19:19:02

Ax20 Mode High Channel (Chain 0)



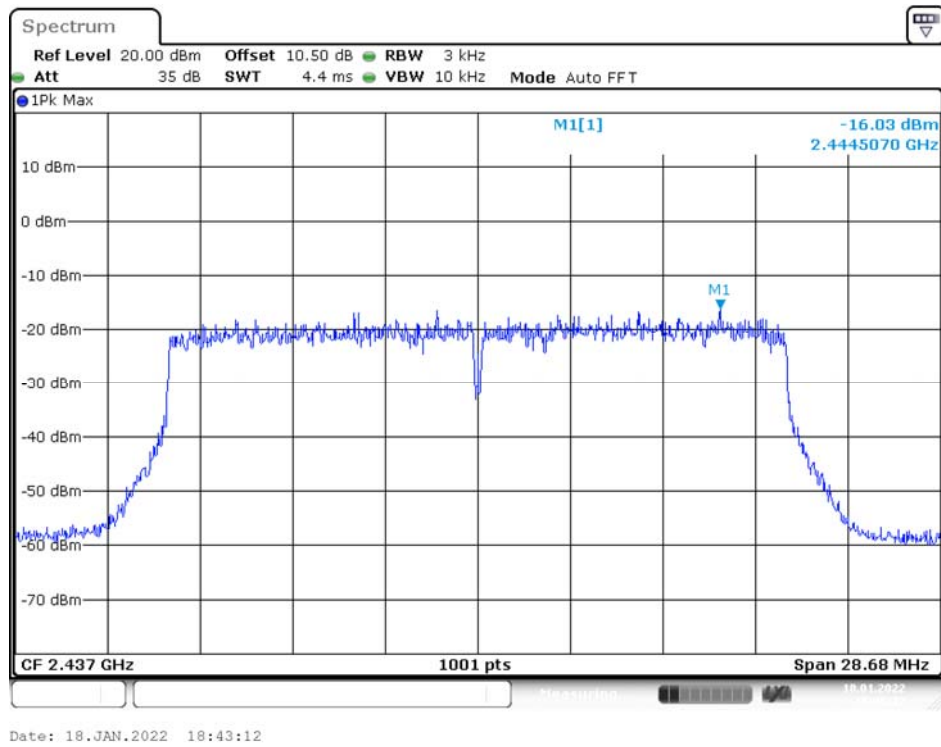
Date: 18.JAN.2022 19:20:44

Ax20 Mode Low Channel (Chain 1)

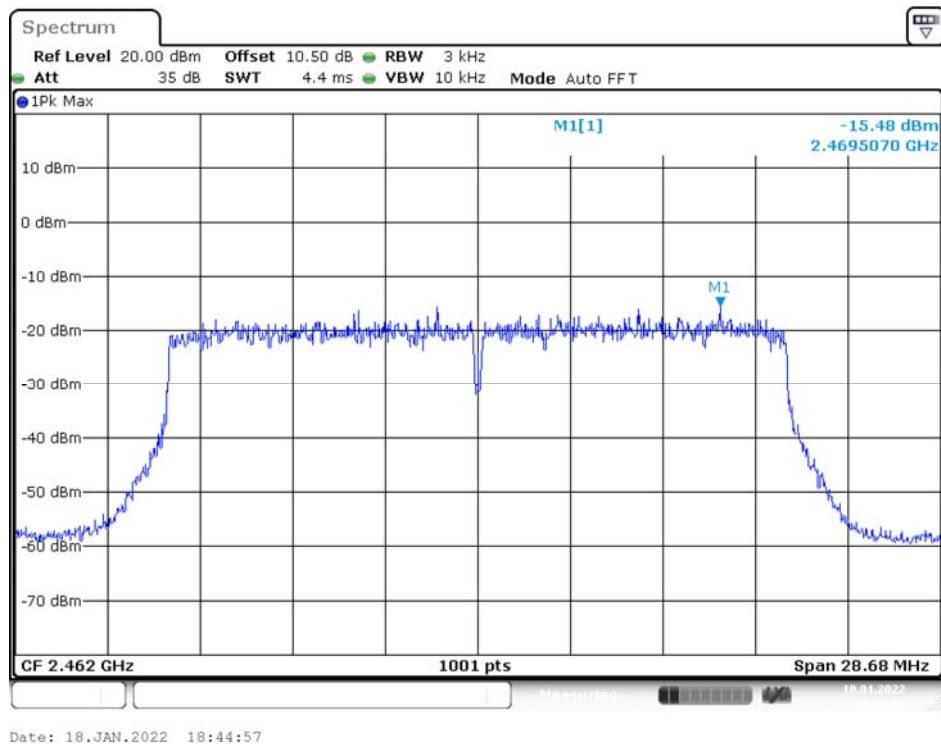


Date: 18.JAN.2022 18:41:22

Ax20 Mode Middle Channel (Chain 1)



Ax20 Mode High Channel (Chain 1)



11. 電波曝露量之評估

11.1 適用標準

依據低功率射頻器材技術規範之規定，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。

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:

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

11.2 電波曝露量之結果

Test mode: WLAN 2.4G mode

Frequency (MHz)	Power		Antenna Gain		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBm)	(mW)	(dB i)	(numeric.)			
2412~2472	24.61	289.068	2.0	1.585	20	0.0911	1

電磁波曝露量 MPE 標準值

1mW/cm²，送測產品實測值為：**0.0911** mW/cm²

12. 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
AC Line Conduction Room (CON-A)					
LISN	Rohde & Schwarz	ENV216	101612	2022/01/14	2023/01/13
LISN	COM-POWER	LI-550A	211726	2022/01/14	2023/01/13
DC LISN	COM-POWER	LIN-115	241113	2021/11/25	2022/11/24
EMI Test Receiver	Rohde & Schwarz	ESR3	102099	2021/6/9	2022/6/8
Pulse Limiter	Rohde & Schwarz	ESH3Z2	TXZEM104	2021/7/29	2022/7/28
RF Cable	EMEC	EM-CB5D	1	2021/6/11	2022/6/10
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+	A050115/15542_01	2021/1/19	2022/1/18
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2021/11/9	2022/11/8
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	2021/11/4	2022/11/3
Microwave Preamplifier	EM Electronics Corporation	EM18G40G	60656	2021/12/27	2022/12/26
Spectrum Analyzer	Rohde & Schwarz	FSV40	101435	2021/12/27	2022/12/26
Micro flex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2021/2/1	2022/1/31
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2021/2/1	2022/1/31
Cable	EMC	EMC105-SM-SM-10000	201003	2021/2/3	2022/2/2
Preamplifier	A.H. system Inc.	PAM-0118P	470	2021/3/15	2022/3/14
Software	Farad	EZ_EM	BACL-03A1	N.C.R	N.C.R

Conducted Room					
Spectrum Analyzer	Rohde & Schwarz	FSU26	200268	2021/7/14	2022/7/13
Cable	UTIFLEX	UFA210A	9435	2021/10/5	2022/10/4
Power Sensor	KEYSIGHT	U2021XA	MY54080018	2021/1/28	2022/1/27
Attenuator	MINI-CIRCUITS	BW-S10W5+	1419	2021/1/28	2022/1/27
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	149170	2021/5/5	2022/5/4
Universal Radio Communication Tester	Rohde & Schwarz	CMU-200	106868	2021/4/7	2022/4/6
Power Splitter	Mini-Circuits	ZFRSC-183-S+	S F448201614	2021/6/23	2022/6/22

***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.

13. 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	± 2.36 (dB)
輻射干擾場強量測 (測試距離: 3m)	3M Chamber / 30~1000MHz(H)	± 3.88 (dB)
	3M Chamber / 30~1000MHz(V)	± 5.22 (dB)
	3M Chamber / 1~18GHz(H)	± 5.60 (dB)
	3M Chamber / 1~18GHz(V)	± 6.12 (dB)
	3M Chamber / 18~40GHz(H)	± 4.97 (dB)
	3M Chamber / 18~40GHz(V)	± 4.99 (dB)
佔用頻寬	Conducted	± 0.35 (MHz)
輸出功率	Conducted	± 0.93 (dB)
功率密度	Conducted	± 0.92 (dBm/MHz)
DFS_Level	Conducted	± 2.92 (dB)
DFS_Time	Conducted	± 0.42 (ms)
佔用頻寬	Conducted	± 0.35 (MHz)

- 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 *****