

低功率射頻電機試驗報告

產品名稱	: H6D Camera
申請廠商	: Victor Hasselblad Aktiebolag
製造商	: Victor Hasselblad Aktiebolag
廠牌	: Hasselblad
主型號	: H6D-400c MS
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 (低功率 0002 (LP0002) 107.01.10版本)
試驗結果	: 合格

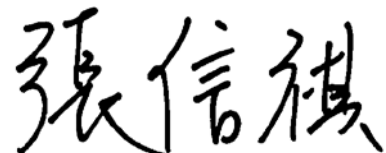
試驗機構:倍科檢驗科技有限公司

機構地址:新北市汐止區大同路二段 169 巷 70 號

案件受理日期:106 年 12 月 27 日

報告發行日期:107 年 01 月 26 日

報告編號:RXZ1801022-00A



張信祺簽章

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. 本報告僅對檢送樣品負責，且分離使用無效。
本報告需加本所負責人簽名始生效。

報告發行紀錄：

版次	案號	報告號碼	發行日期	說明	修訂人員
1.0	RXZ1801022	RXZ1801022-00A	2018.01.26	報告發行	Jane

目錄

1. 一般描述.....	5
1.1 待測設備樣品/特性.....	5
1.2 測試實驗室資料.....	7
1.3 試驗室之測試不確定度.....	7
2. 測試規範.....	8
2.1 適用規範及條文.....	8
2.2 限制使用之頻帶.....	9
3. 受測裝置之系統說明.....	10
3.1 受測裝置之系統說明.....	10
3.2 待測物與測試設備系統圖.....	10
3.3 輔助測試週邊設備名稱描述.....	10
3.4 占空比評估.....	10
3.5 測試描述.....	11
4. 電源線傳導干擾之量測.....	12
4.1 適用標準.....	12
4.2 測試方法.....	12
4.3 測試配置.....	12
4.4 干擾值之計算.....	13
4.5 傳導干擾之量測儀器.....	13
4.6 傳導干擾之量測結果.....	14
5. 場強輻射之量測.....	16
5.1 適用標準.....	16
5.2 測試方法.....	16
5.3 測試擺設圖.....	17
5.4 量測設定.....	18
5.5 場強度之計算.....	18
5.6 場強輻射之量測儀器.....	18
5.7 場強輻射之量測結果.....	20
6. 天線增益之要求.....	64
6.1 適用標準.....	64
6.2 天線增益.....	64
7. 發射頻寬之要求.....	65
7.1 適用標準.....	65
7.2 測試方法.....	65
7.3 測試配置.....	65
7.4 發射頻寬之量測儀器.....	66
7.5 測試不準確度評估.....	66
7.6 發射頻寬之量測結果.....	67
8. 輸出峰值功率之量測.....	80

8.1.	適用標準	80
8.2.	測試方法	80
8.3.	測試配置	80
8.4.	輸出功率之量測儀器	80
8.5.	測試不準確度評估	80
8.6.	輸出功率之量測結果	81
9.	開放頻帶邊緣 100kHz 頻寬內之限制	82
9.1.	適用標準	82
9.2.	測試方法	82
9.3.	測試配置	83
9.4.	開放頻帶邊緣之量測儀器	84
9.5.	測試不準確度評估	85
9.6.	開放頻帶邊緣之量測結果	85
10.	功率密度之量測	103
10.1.	適用標準	103
10.2.	測試方法	103
10.3.	測試配置	103
10.4.	功率密度之量測儀器	103
10.5.	測試不準確度評估	104
10.6.	功率密度之量測結果	104

1. 一般描述

1.1 待測設備樣品/特性

產品名稱 : H6D Camera
 產品型號 : H6D-400c MS
 廠 牌 : Hasselblad
 申 請 者 : Victor Hasselblad Aktiebolag
 地 址 : Utvecklingsgatan 2, 41756 Goteborg, Sweden
 製造廠商 : Victor Hasselblad Aktiebolag
 製造廠址 : Utvecklingsgatan 2, 41756 Goteborg, Sweden
 使用頻率 : IEEE 802.11b/g / IEEE 802.11n HT20 Mode: 2412 ~ 2462 MHz
 IEEE 802.11n HT40 Mode: 2422 ~ 2452 MHz
 使用頻道數 : IEEE 802.11b/g / IEEE 802.11n HT20 Mode: 11 Channels
 IEEE 802.11n HT40 Mode: 7 Channels
 使用頻道 : IEEE 802.11b/g / IEEE 802.11n HT20 / HT40 MHz:

頻率範圍 2412 MHz ~ 2462 MHz					
頻道	頻率	頻道	頻率	頻道	頻率
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

IEEE 802.11n HT40

頻率範圍 2412 MHz ~ 2462 MHz					
頻道	頻率	頻道	頻率	頻道	頻率
1	2422	4	2437	7	2452
2	2427	5	2442		
3	2432	6	2447		

頻道間隔 : IEEE 802.11b/g / IEEE 802.11n HT20 / HT40 Mode: 5 MHz
 發射頻寬 : IEEE 802.11b Mode: 9.138 MHz
 IEEE 802.11g Mode: 16.353 MHz
 IEEE 802.11n HT20 Mode: 17.555 MHz
 IEEE 802.11n HT40 Mode: 36.393 MHz
 輸出功率 : IEEE 802.11b Mode: 19.79dBm (0.095W)
 IEEE 802.11g Mode: 20.4dBm (0.110W)
 IEEE 802.11n HT20 Mode: 23.63dBm (0.231W)
 IEEE 802.11n HT40 Mode: 22.8dBm (0.191W)

傳輸速率 : IEEE 802.11b Mode: 1 - 11 Mbps
IEEE 802.11g Mode: 6 - 54Mbps
IEEE 802.11n HT 20 mode: 6.5 - 72.2 Mbps
IEEE 802.11n HT 40 mode: 13.5 - 150 Mbps

調變方式 : IEEE 802.11b: DSSS
IEEE 802.11g: OFDM
IEEE 802.11n HT20 MHz Mode: OFDM
IEEE 802.11n HT40 MHz Mode: OFDM

供應電源 : 7.2Vdc

天線型式 : For 2.4GHz

天線型態	廠牌	型號	Gain
Multilayer Dual-Band Chip Antenna	Würth Elektronik	7488912455	1 dBi

測試日期 : 107年01月08日至107年01月17日。

備註 : 無。

1.2 測試實驗室資料

實驗室認可登錄：中華民國實驗室認證體系
 認可編號：TAF: 3180，
 認證有效期間：105年03月23日至108年03月22日止
 認可頻率範圍9kHz ~ 40GHz。

測試場地：新北市汐止區大同路二段169巷70號
 實驗室名稱：倍科檢驗科技有限公司
 實驗室地址：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

1.3 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(dB)
傳導干擾電壓量測	Conducted Site 3	± 3.81
輻射干擾場強量測 (測試距離: 3m)	3M Chamber / 30~200MHz	± 4.21
	3M Chamber / 200~1000MHz	± 4.41
	3M Chamber / 1~8GHz	± 4.51
	3M Chamber / 8~18GHz	± 4.88
	3M Chamber / 18~26GHz	± 4.30
	3M Chamber / 26~40GHz	± 4.30

附註：K=2 即代表測試結果具有 95%的量測可信度。

2. 測試規範

2.1 適用規範及條文

Part I 低功率射頻電機技術規範3.10節 (DTS)

項次	測試項目	適用規範	測試結果	量測設備	備註
1.	電源線傳導干擾	低功率射頻電機技術規範2.3節	請參閱4.6節	請參閱4.5節	
2.	場強輻射	低功率射頻電機技術規範2.8節 低功率射頻電機技術規範2.7節	請參閱5.7節	請參閱5.6節	
3.	天線增益之要求	低功率射頻電機技術規範3.10.1.3	請參閱6.2節	-----	
4.	發射頻寬	低功率射頻電機技術規範3.10.1.6	請參閱7.6節	請參閱7.4節	
5.	輸出峰值功率	低功率射頻電機技術規範3.10.1.2	請參閱8.6節	請參閱8.4節	
6.	開放頻帶邊緣之發射	低功率射頻電機技術規範3.10.1.5	請參閱9.6節	請參閱9.4節	
7.	功率密度	低功率射頻電機技術規範3.10.1.6(2)(B)	請參閱10.6節	請參閱10.4節	
以下空白					

報告簽署人(張信祺):

張信祺

測試者(許嘉儒):

許嘉儒

報告製作員(李宜蓁):

李宜蓁

2.2 限制使用之頻帶

根據〈國家通訊傳播委員會低功率射頻電機技術規範〉第二章第2.7節(一般規定)，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第2.8節的限制規定。

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 受測裝置之系統說明

裝置名稱	申請者/製造者	廠牌 / 型號
H6D Camera	Victor Hasselblad Aktiebolag	Hasselblad / H6D-400c MS

3.2 待測物與測試設備系統圖

EUT & peripherals setup diagram is shown in appendix setup photos.

3.3 輔助測試週邊設備名稱描述

No.	Device Type	Model	Series No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook	E450	PF-0MRADG 16/08	N/A	Lenovo	N/A	N/A
2	Micro SD Card	400x	9181AA	N/A	Transcend	N/A	N/A
2	Mini USB Cable	N/A	N/A	N/A	N/A	1.0m	N/A

3.4 占空比評估

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

Duty factor = 10*log(1/ Duty cycle)

	B Mode	G Mode	HT20 Mode	HT40 Mode
Duty cycle	0.95	0.94	0.95	0.90
Duty factor	0.22	0.27	0.22	0.46

3.5 測試描述

1. EUT 接上 USB 連上 NB，點開測試軟體(MTool)
2. 依次點擊 Station→DUT setting→device scan→ok
3. 對應頻道為 1,6,11
對應調變為 CCK B MODE
OFDM G MODE
MCS N20 MODE
MCS N40 MODE
選擇 Bandwidth = 40， 進入 N40 MODE
對應 POWER B SETING 值 70
G SETING 值 67
N20 SETING 值 62
N40 SETING 值 53
5. 選定以上資訊，點擊 Start Test
6. 每次換 CHANNEL 或 MODE 都需要點擊 Stop Test 才可以進行下一步

4. 電源線傳導干擾之量測

4.1 適用標準

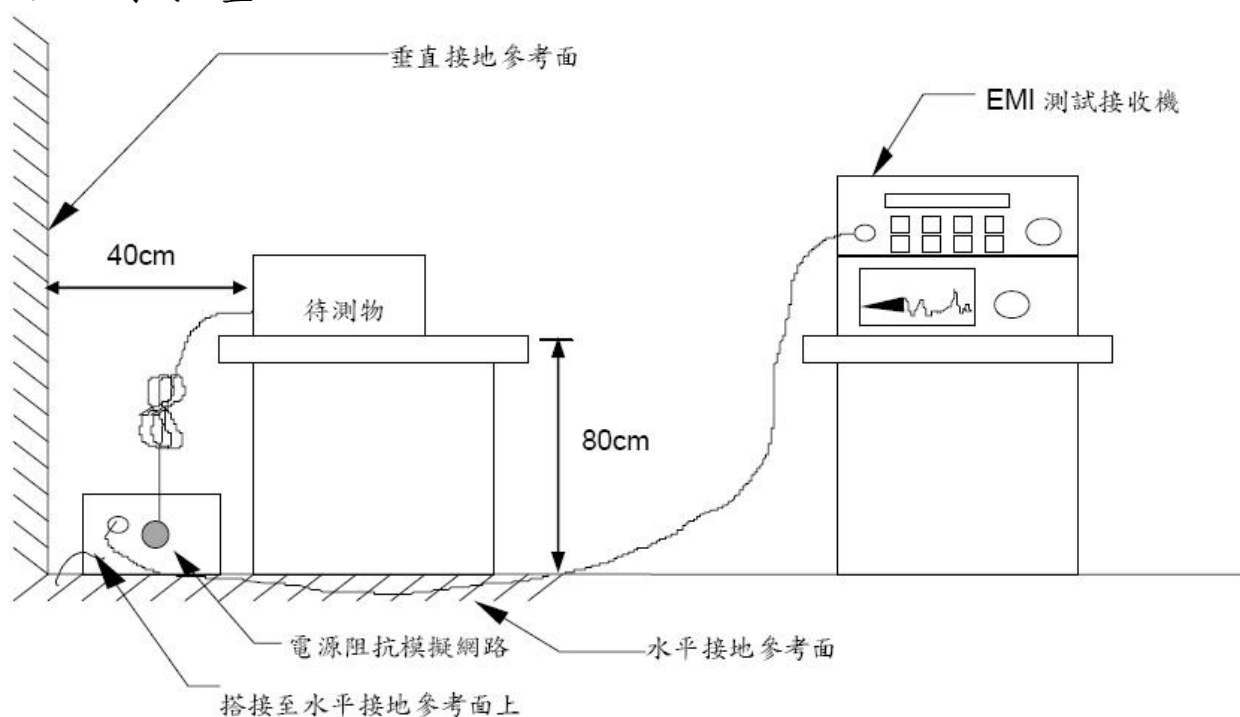
依據國家通訊傳播委員會低功率射頻電機技術規範之2.3節，電源傳導干擾之限制要求如下：

頻率 (MHz)	傳導限制值 (dBuV)	
	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



註：**請參照 3.2 節

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：

$$\text{饋線損失} + \text{電源阻抗模擬網路損失}$$

4.5 傳導干擾之量測儀器

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
LISN	Rohde & Schwarz	ENV216	101248	2017/07/20	2018/07/19
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2017/11/06	2018/11/05
Pulse Limiter	Rohde & Schwarz	ESH3Z2	TXZEM025	2017/08/11	2018/08/10
RF Cable	EMEC	EM-CB5D	001	2017/07/24	2018/07/23
Software	AUDIX	E3	V9.150826k	N.C.R	N.C.R

Remark: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6 傳導幹擾之量測結果

環境溫度: 20.8°C

測試日期: 2018-01-17

環境濕度: 41% RH

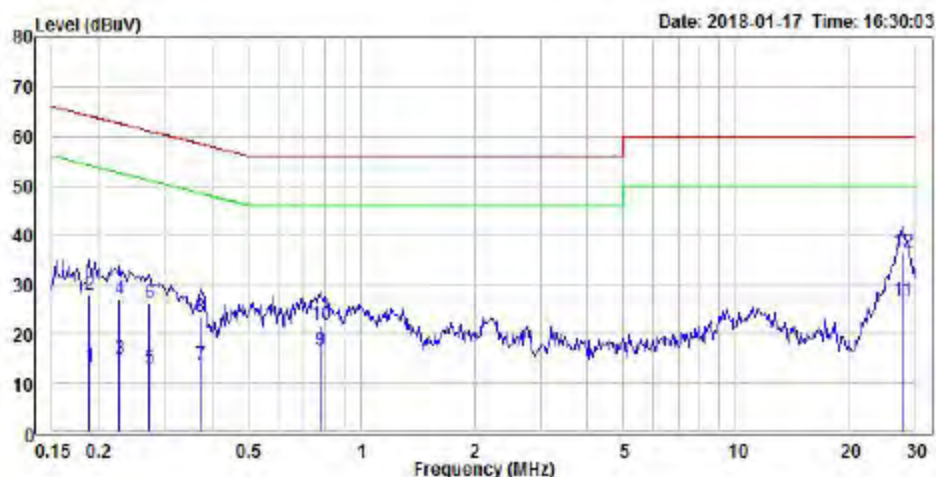
測試模式: Test mode

測試者: David Hsu

測試極性: Line



倍科德驗科技有限公司 Bay Area Compliance Labs Corp.



Condition: Neutral

EUT :

Model :

Note :

Power : 110V/60Hz

	Freq	Level	Limit	Over	Read			
	MHz	dBuV	Line	Limit	Factor	Level	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB	dB	dBuV		
1	0.187	13.51	54.15	-40.64	19.63	-6.12	Average	Neutral
2	0.187	27.85	64.15	-36.30	19.63	8.22	QP	Neutral
3	0.227	14.87	52.56	-37.69	19.63	-4.76	Average	Neutral
4	0.227	27.15	62.56	-35.41	19.63	7.52	QP	Neutral
5	0.273	13.10	51.04	-37.94	19.63	-6.53	Average	Neutral
6	0.273	26.13	61.04	-34.91	19.63	6.50	QP	Neutral
7	0.372	13.77	48.46	-34.69	19.64	-5.87	Average	Neutral
8	0.372	23.53	58.46	-34.93	19.64	3.89	QP	Neutral
9	0.780	16.81	46.00	-29.19	19.66	-2.85	Average	Neutral
10	0.780	21.78	56.00	-34.22	19.66	2.12	QP	Neutral
11	27.703	26.64	50.00	-23.36	20.13	6.51	Average	Neutral
12	27.703	36.43	60.00	-23.57	20.13	16.30	QP	Neutral

環境溫度: 20.8°C

測試日期: 2018-01-17

環境濕度: 41% RH

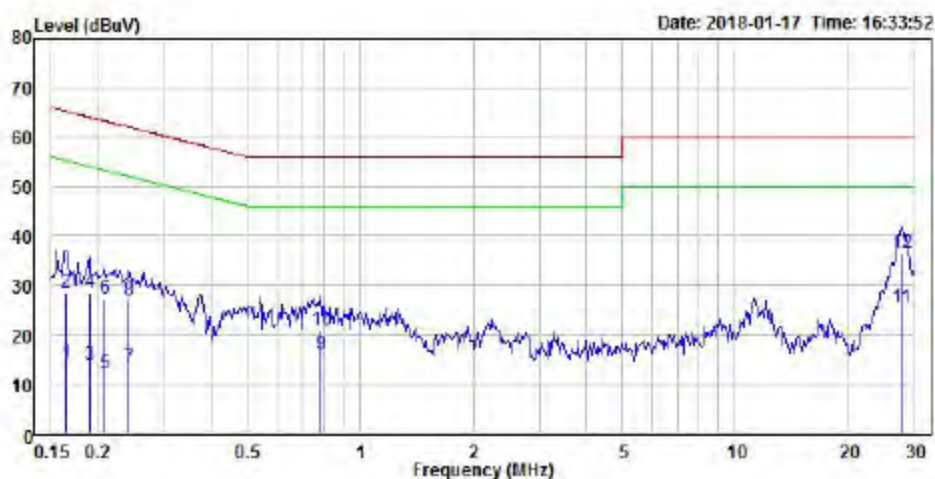
測試模式: Test mode

測試者: David Hsu

測試極性: Natural



倍科檢驗科技有限公司 Bay Area Compliance Labs Corp.



Condition: Line

EUT :

Model :

Note :

Power : 110V/60Hz

	Freq	Level	Limit	Over	Read			
	MHz	dBuV	Line	Limit	Factor	Level	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB	dB	dBuV		
1	0.164	14.40	55.27	-40.87	19.50	-5.10	Average	Line
2	0.164	28.73	65.27	-36.54	19.50	9.23	QP	Line
3	0.189	13.86	54.08	-40.22	19.50	-5.64	Average	Line
4	0.189	28.45	64.08	-35.63	19.50	8.95	QP	Line
5	0.208	12.28	53.29	-41.01	19.50	-7.22	Average	Line
6	0.208	27.40	63.29	-35.89	19.50	7.90	QP	Line
7	0.242	13.36	52.03	-38.67	19.50	-6.14	Average	Line
8	0.242	27.17	62.03	-34.86	19.50	7.67	QP	Line
9	0.787	16.15	46.00	-29.85	19.52	-3.37	Average	Line
10	0.787	20.97	56.00	-35.03	19.52	1.45	QP	Line
11	27.703	25.69	50.00	-24.31	19.88	5.81	Average	Line
12	27.703	36.65	60.00	-23.35	19.88	16.77	QP	Line

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2.8之要求，其他禁用頻帶之不必要之輻射干擾需符合2.7節之一般限制要求。

頻率 (MHz)	測試距離 (m)	干擾限制 (μ V/m)	干擾限制 (dB μ V/m)
0.009 – 0.490 (含)	300	2,400/頻率(千赫)	(註1)
0.490 (不含) – 1.705 (含)	30	24,000 / 頻率 (千赫)	(註1)
1.705 (不含) – 30 (不含)	30	30	29.5
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= $20 \times \text{LOG}(2400/F) + 40 \times \text{LOG}(300/\text{量測距離})$

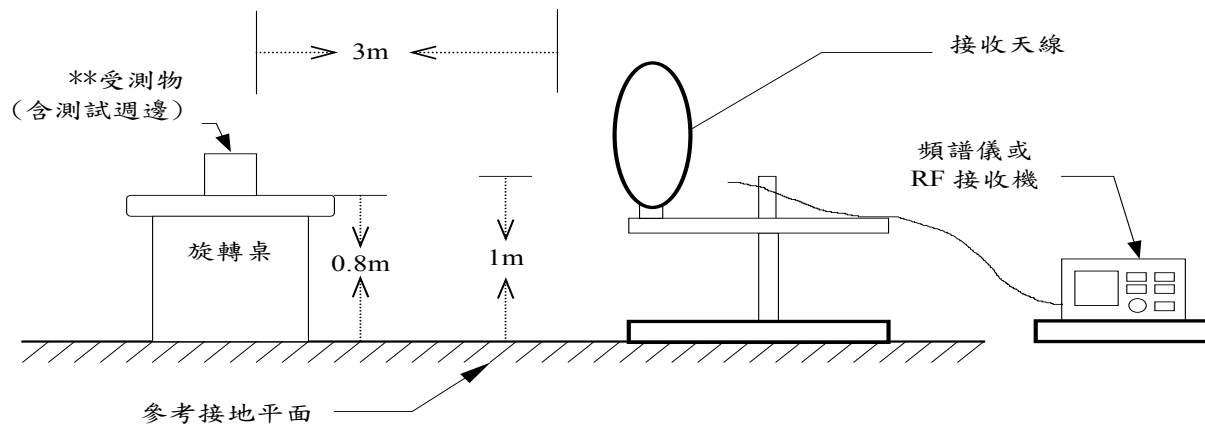
5.2 測試方法

將待測物置於 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

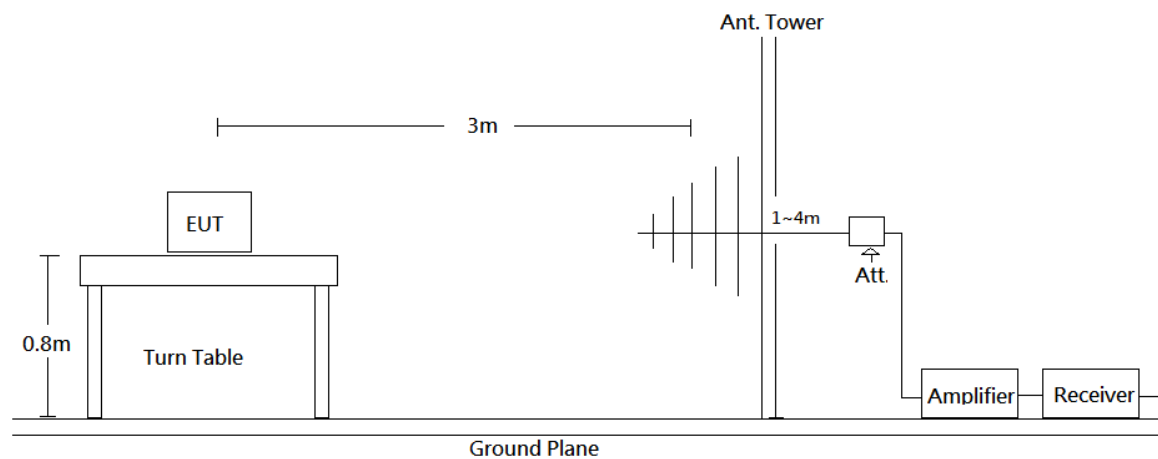
輻射架構圖

圖 1：量測頻率9kHz ~ 30MHz之測試配置



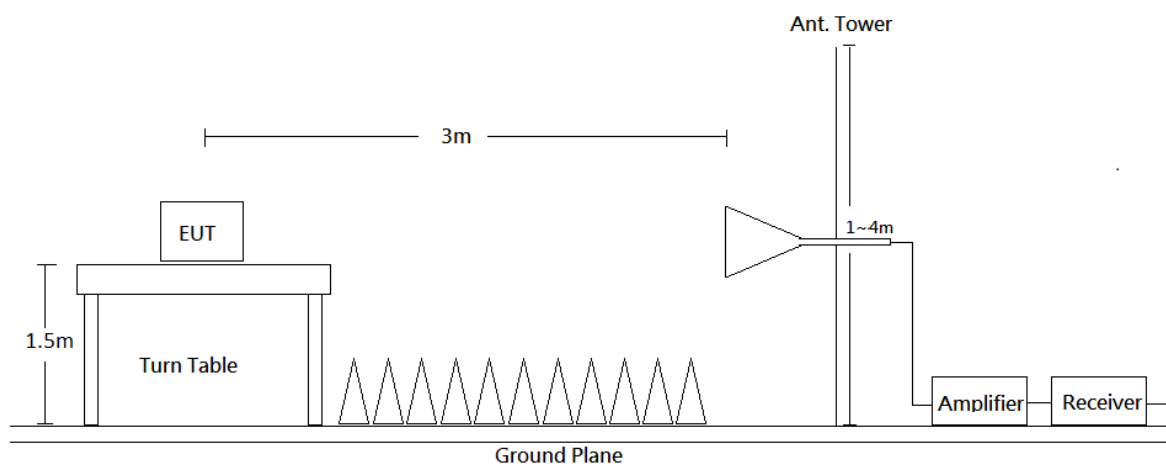
註：**請參照3.2節

圖2：量測頻率30MHz ~ 1GHz之測試配置



註：**請參照3.2節

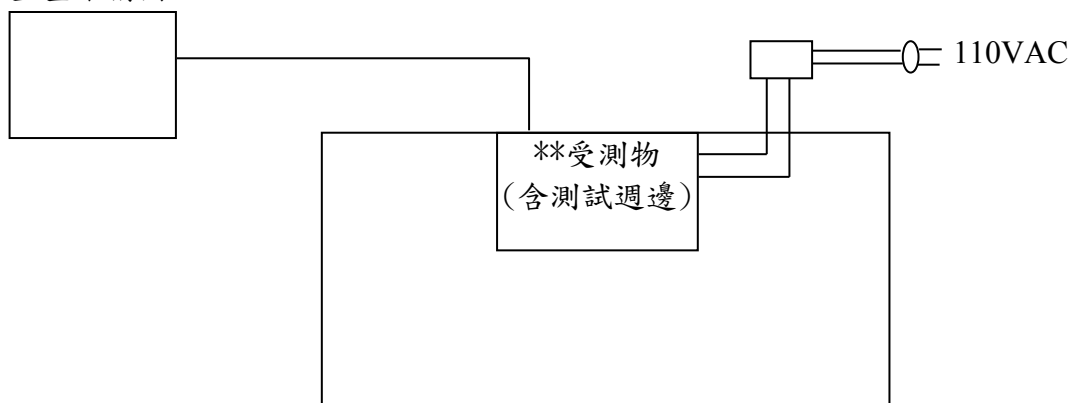
圖 3：量測頻率1GHz以上之測試配置



註：**請參照3.2節

量測參閱 ANSI C63.4:2014, ANSI C63.10:2013.

直量架構圖



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 場強輻射之量測儀器

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Active Loop Antenna	ETS-Lindgren	6502	00035796	2017/03/02	2018/03/01
Bilog Antenna	Sunol & Mini-Circuits	JB6/UNAT-6+	A050115/155 42 01	2017/12/20	2018/12/19
Horn Antenna	EMCO	3115	9311-4158	2017/05/31	2018/05/30
Horn Antenna	ETS-Lindgren	3116	62638	2017/09/04	2018/09/03
Preamplifier	Sonoma	310N	130602	2017/07/03	2018/07/02
Preamplifier	EMEC	EM01G18G	60697	2017/04/14	2018/04/13
Preamplifier	EMEC	EM18G40G	060656	2017/12/06	2018/12/05
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2017/11/06	2018/11/05
Spectrum Analyzer	Rohde & Schwarz	FSV40	101203	2017/07/13	2018/07/12
Microflex Cable	UTIFLEX	UFB311A-Q-14 40-300300	220490-006	2017/10/31	2018/10/30
Microflex Cable	UTIFLEX	UFA210A-1-314 9-300300	MFR64639 226389-001	2017/11/17	2018/11/09
Microflex Cable	ROSNOL	K1K50-UP0264- K1K50-450CM	160309-1	2017/03/24	2018/03/23
Microflex Cable	ROSNOL	K1K50-UP0264- K1K50-80CM	160309-2	2017/01/20	2018/01/19
Turn Table	Champro	TT-2000	060772-T	N.C.R	N.C.R
Antenna Tower	Champro	AM-BS-4500-B	060772-A	N.C.R	N.C.R
Controller	Champro	EM1000	60772	N.C.R	N.C.R
Software	Farad	EZ_EMC	BACL-03A1	N.C.R	N.C.R
NSA	BACL	966-A	N/A	2017/07/24	2018/07/23
VSWR	BACL	966-A	N/A	2017/07/25	2018/07/24
Spectrum Analyzer	Rohde & Schwarz	FSU26	200268	2017/05/08	2018/05/07
Attenuator	MINI-CIRCUITS	BW-S10W5+	N/A	2017/03/16	2018/03/15
Cable	WOKEN	SFL402	S02-160323- 07	2017/02/22	2018/02/21

Remark: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request

5.7 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 ~ 26.5GHz)

此案件測試模式分別為CH Low、Mid、High。

場強輻射之量測值 (1GHz 以下) (Worst case at antenna 1)

環境溫度: 21.9°C

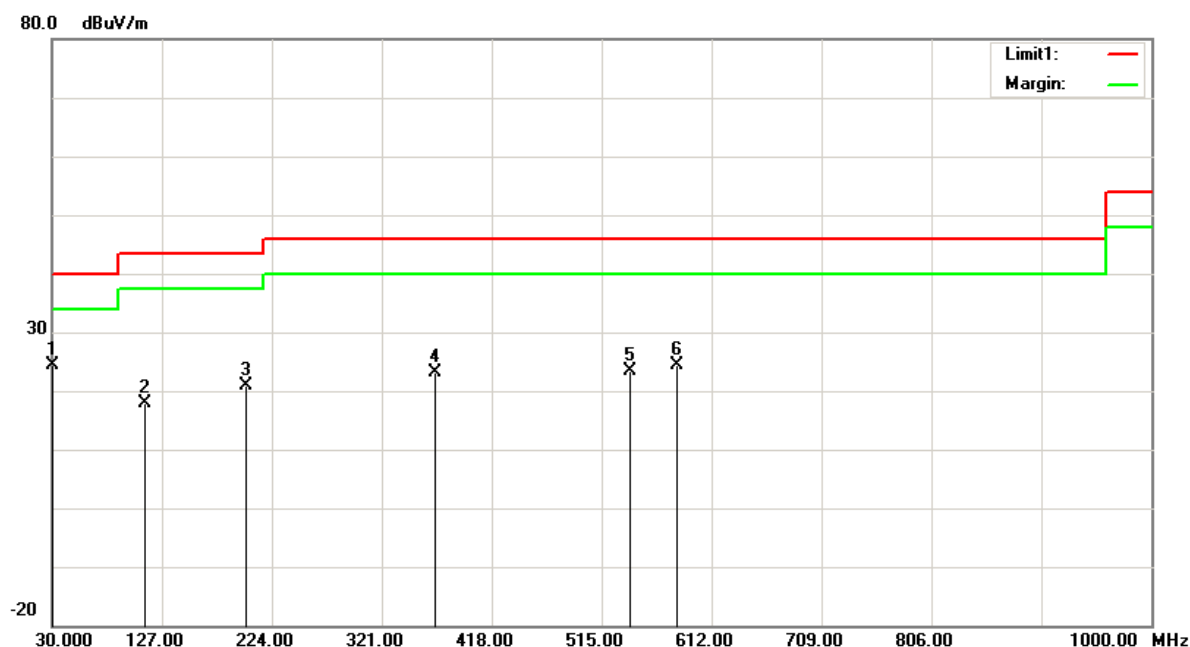
測試日期: 2018-01-08

環境濕度: 34% RH

測試模式: B Mode: Low Channel was the worst

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
30.0000	14.72	9.78	24.50	40.00	15.50	100	77	QP
112.4500	36.52	-18.72	17.80	43.50	25.70	100	91	QP
201.6900	39.06	-18.16	20.90	43.50	22.60	100	358	QP
367.5600	40.65	-17.55	23.10	46.00	22.90	100	21	QP
540.2200	41.95	-18.45	23.50	46.00	22.50	100	1	QP
581.9300	42.39	-18.09	24.30	46.00	21.70	100	233	QP

Note:

Result = Reading + Correct Factor

Margin = Limit - Result

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain

環境溫度: 21.9°C

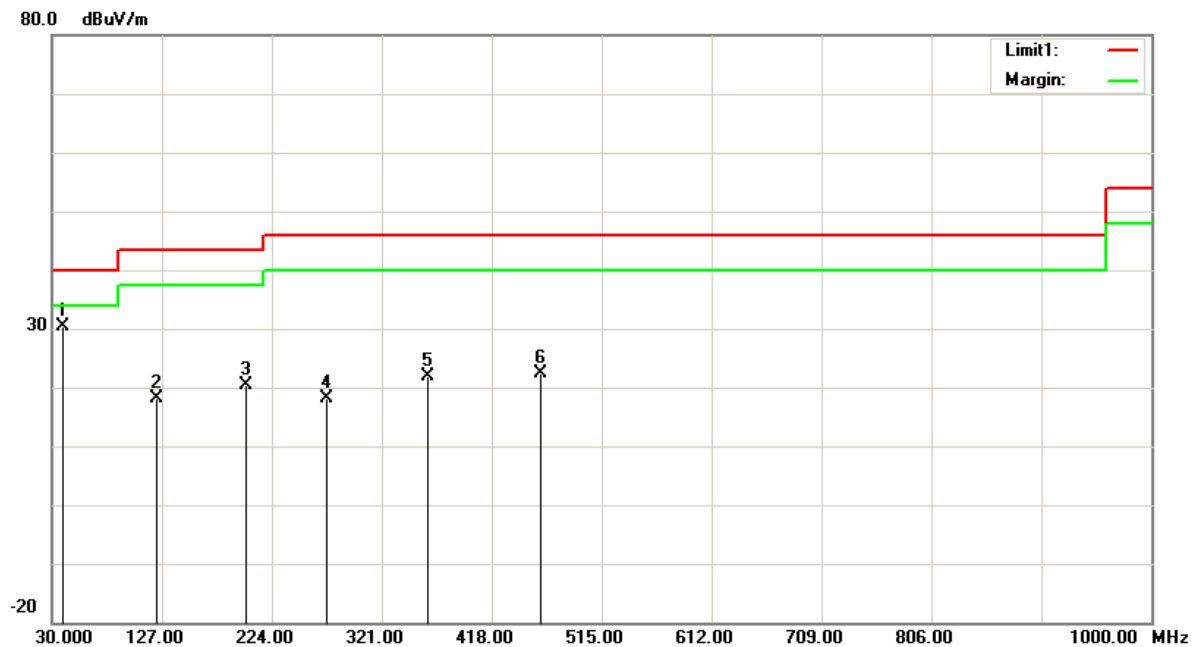
測試日期: 2018-01-08

環境濕度: 34% RH

測試模式: B Mode: Low Channel was the worst

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
39.7000	50.41	-20.11	30.30	40.00	9.70	100	50	QP
122.1500	36.99	-18.89	18.10	43.50	25.40	100	227	QP
201.6900	38.46	-18.16	20.30	43.50	23.20	100	358	QP
272.5000	35.13	-17.03	18.10	46.00	27.90	100	285	QP
361.7400	39.33	-17.53	21.80	46.00	24.20	100	237	QP
459.9100	40.33	-18.03	22.30	46.00	23.70	100	8	QP

Note:

Result = Reading + Correct Factor

Margin = Limit - Result

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain

發射機其它不必要之訊號 (1GHz 以上) (Worst case at antenna 1)

場強輻射之量測值 (TX B Mode/ CH Low)

環境溫度: 22°C

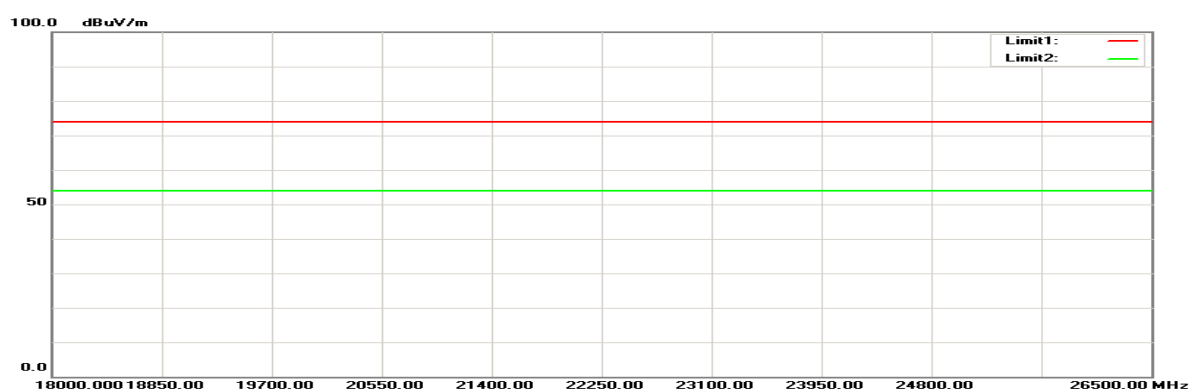
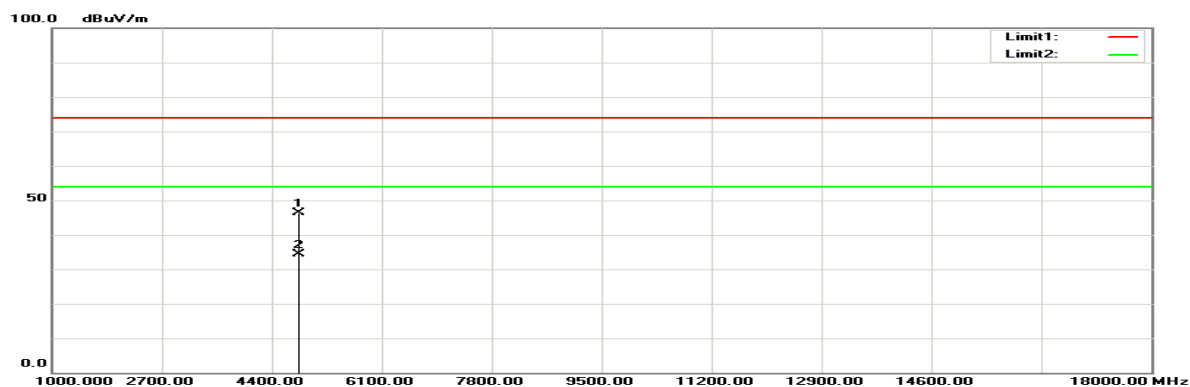
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: B Mode: Low Channel (2412MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4824.000	47.56	-1.06	46.50	74.00	27.50	219	86	peak
4824.000	35.37	-1.06	34.31	54.00	19.69	219	86	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

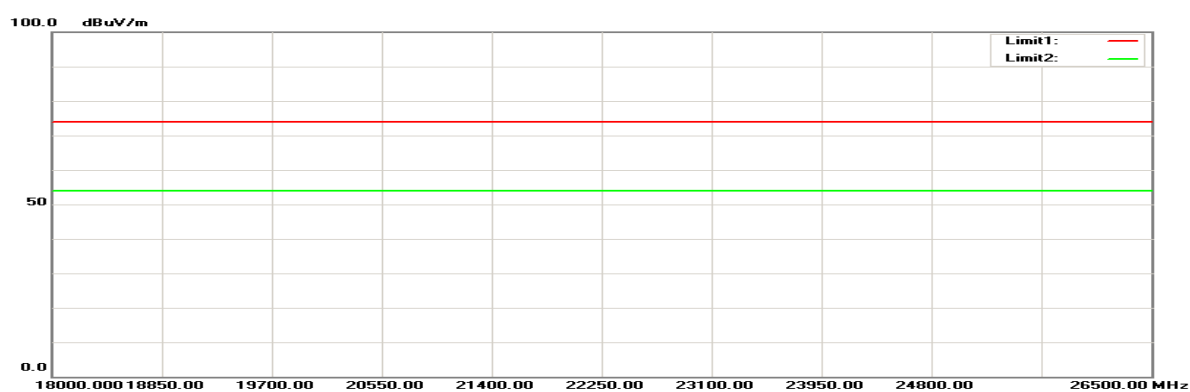
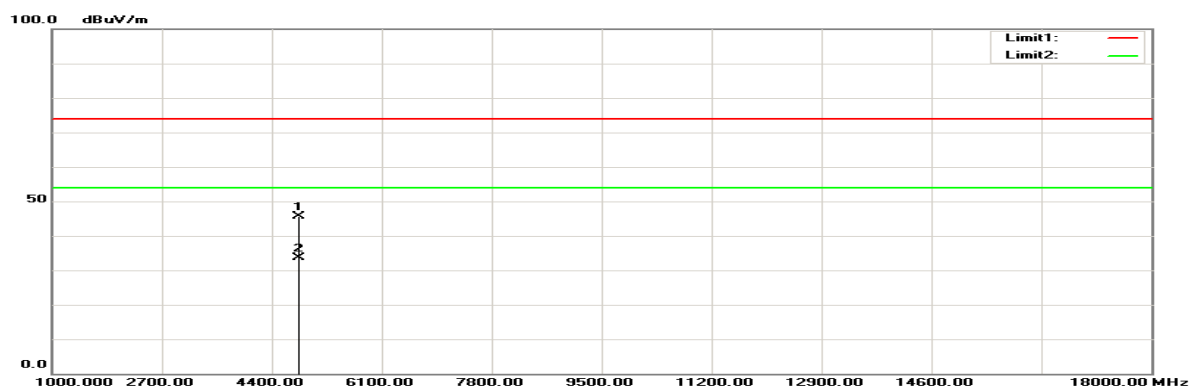
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: B Mode: Low Channel (2412MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4824.000	46.59	-1.06	45.53	74.00	28.47	100	89	peak
4824.000	34.62	-1.06	33.56	54.00	20.44	100	89	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

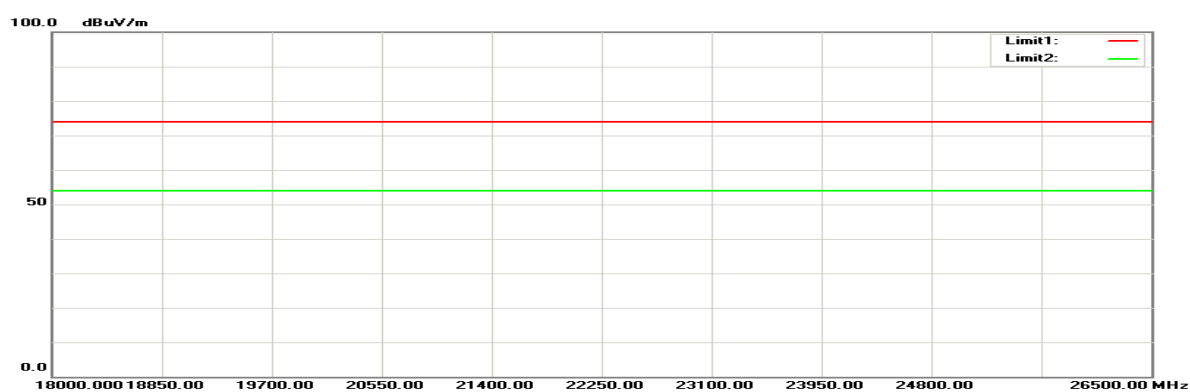
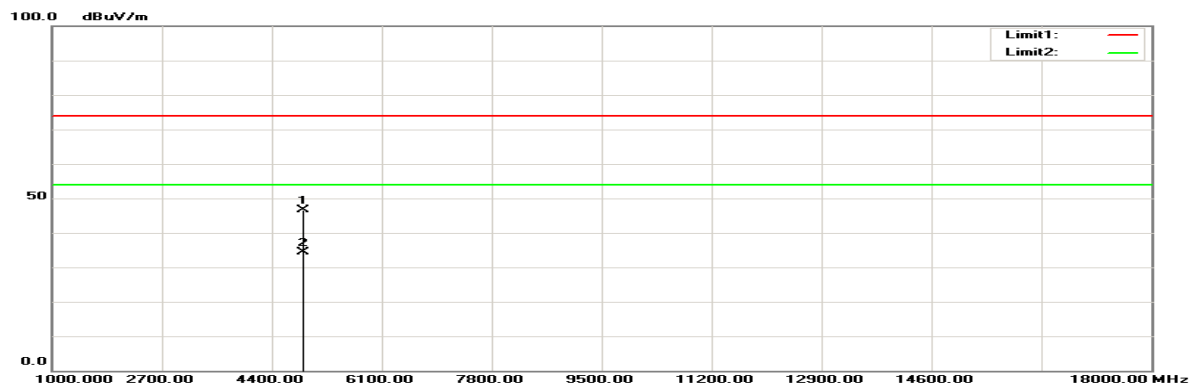
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: B Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	47.46	-0.90	46.56	74.00	27.44	227	89	peak
4874.000	35.21	-0.90	34.31	54.00	19.69	227	89	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

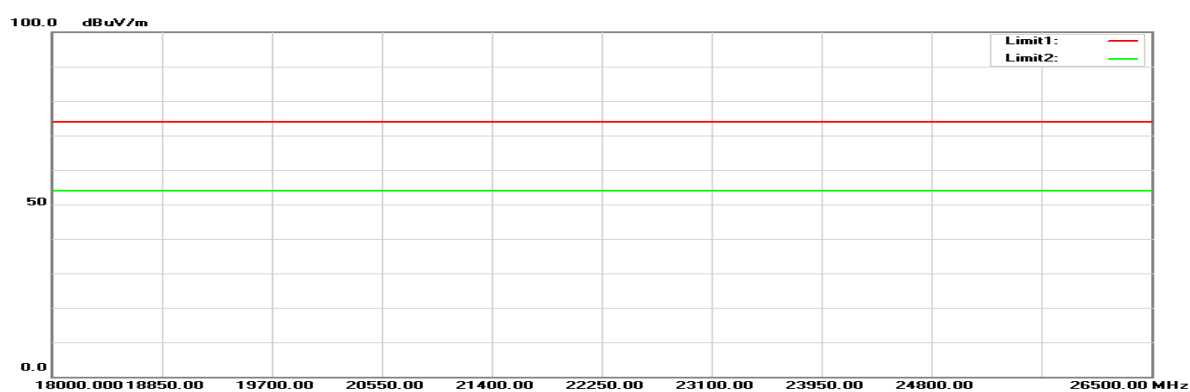
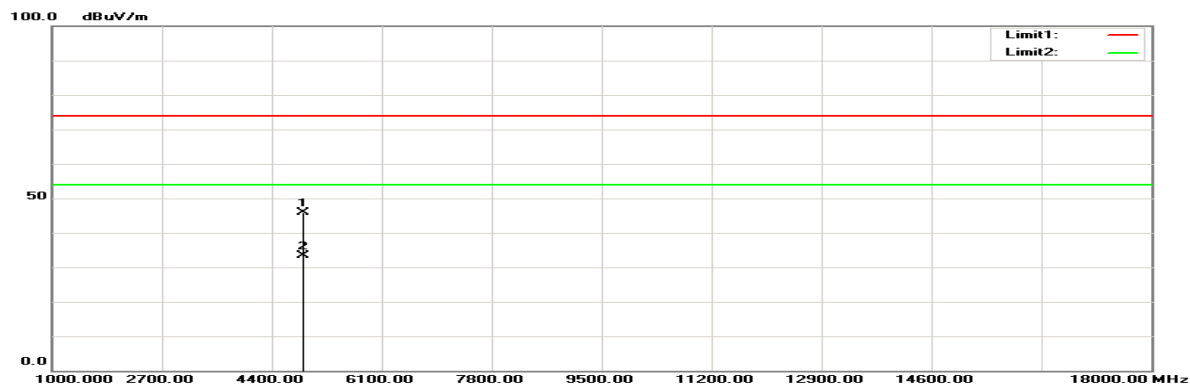
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: B Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	46.79	-0.90	45.89	74.00	28.11	100	95	peak
4874.000	34.38	-0.90	33.48	54.00	20.52	100	95	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

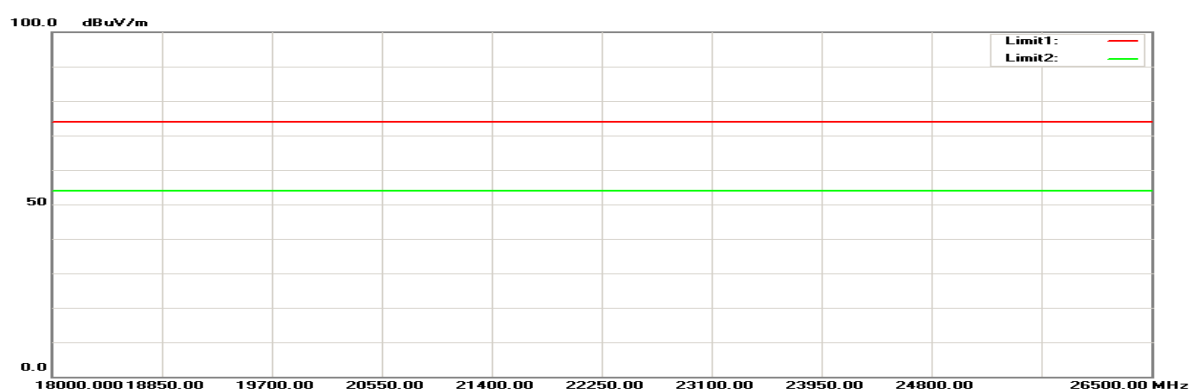
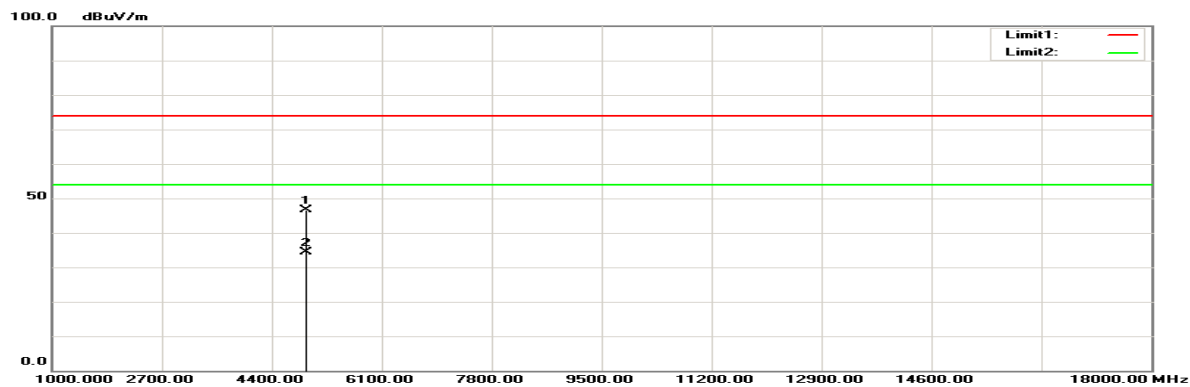
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: B Mode: High Channel (2462MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4924.000	47.48	-0.80	46.68	74.00	27.32	100	96	peak
4924.000	35.23	-0.80	34.43	54.00	19.57	100	96	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

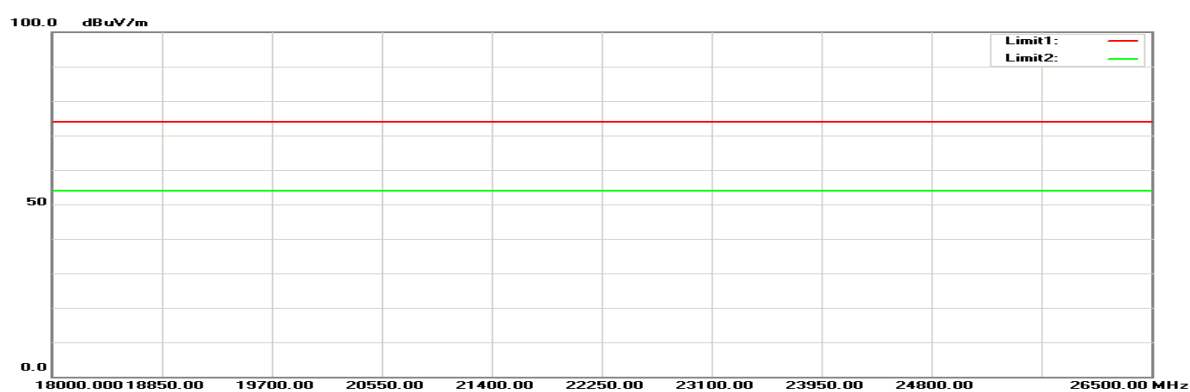
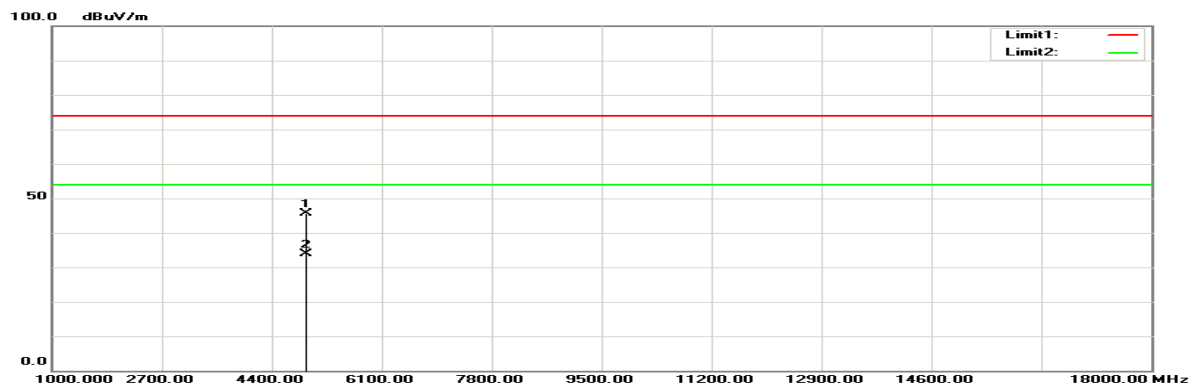
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: B Mode: High Channel (2462MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4924.000	46.52	-0.80	45.72	74.00	28.28	100	96	peak
4924.000	34.78	-0.80	33.98	54.00	20.02	100	96	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

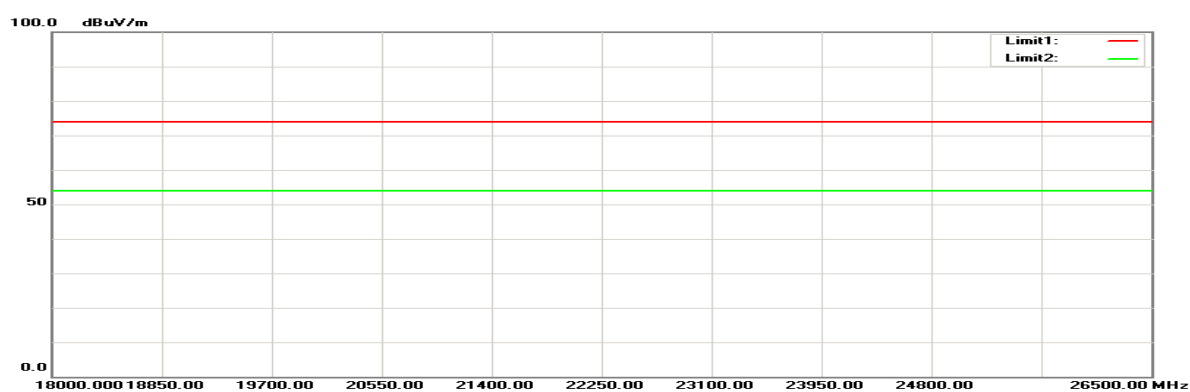
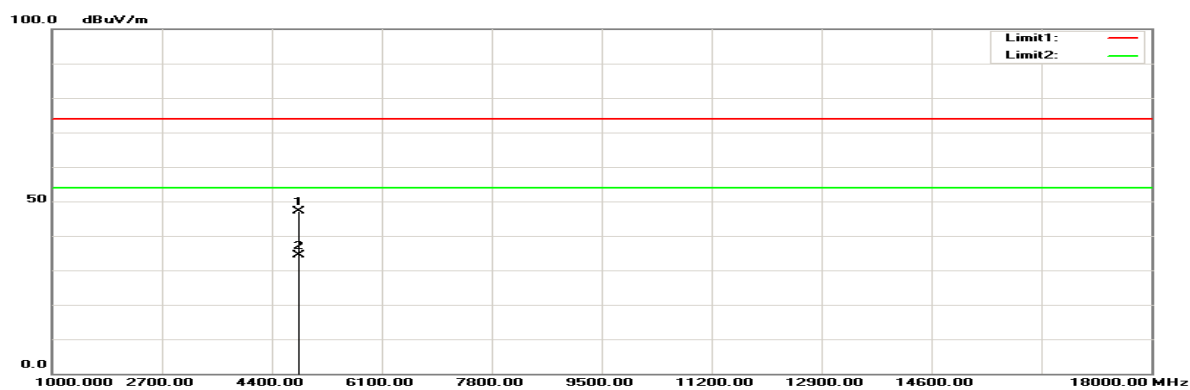
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: G Mode: Low Channel (2412MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4824.000	48.13	-1.06	47.07	74.00	26.93	148	94	peak
4824.000	35.42	-1.06	34.36	54.00	19.64	148	94	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

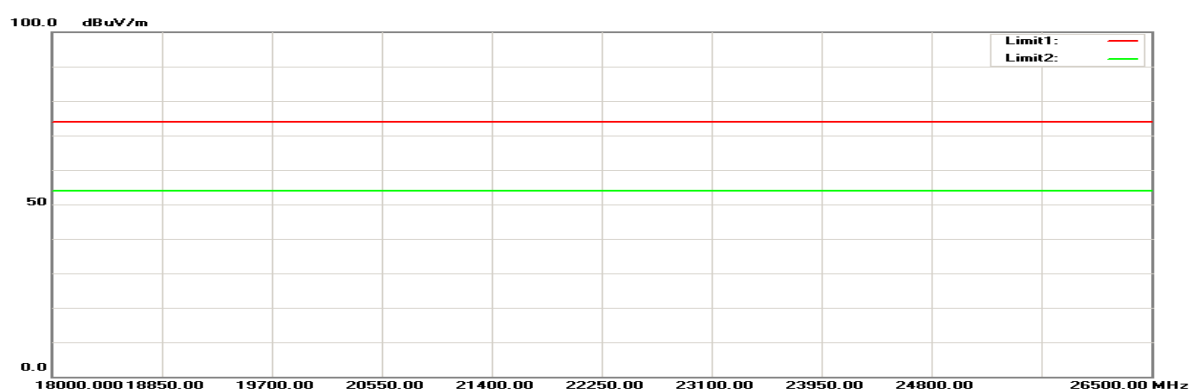
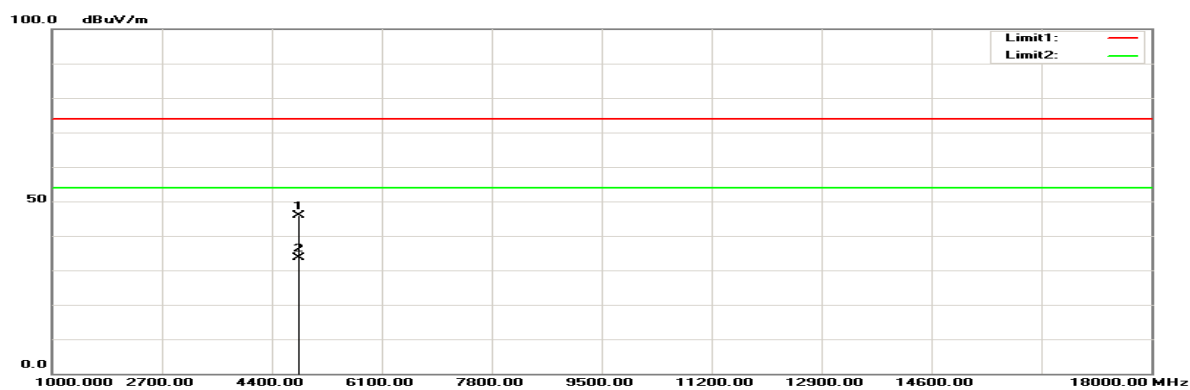
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: G Mode: Low Channel (2412MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4824.000	46.93	-1.06	45.87	74.00	28.13	167	334	peak
4824.000	34.58	-1.06	33.52	54.00	20.48	167	334	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

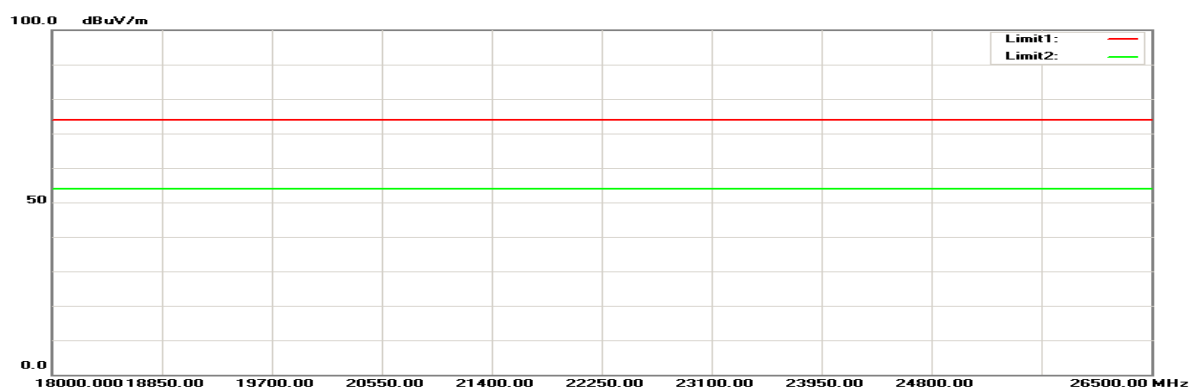
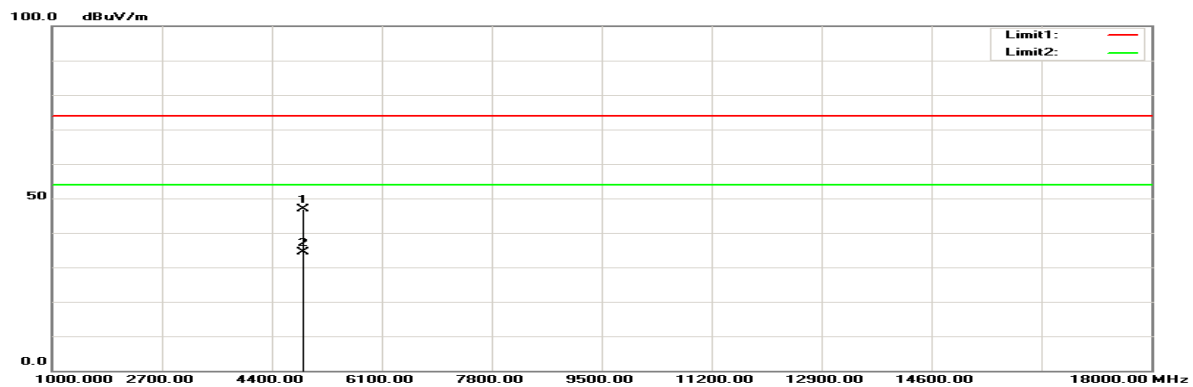
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: G Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	47.89	-0.90	46.99	74.00	27.01	100	42	peak
4874.000	35.16	-0.90	34.26	54.00	19.74	100	42	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

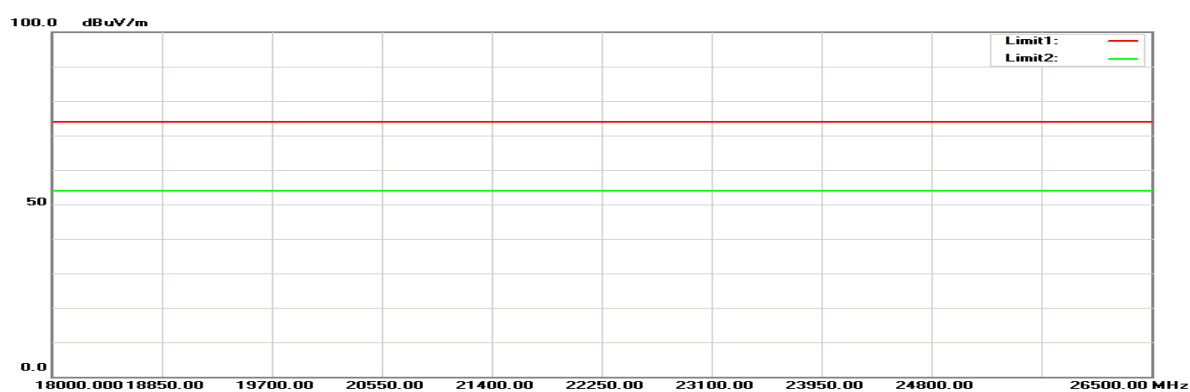
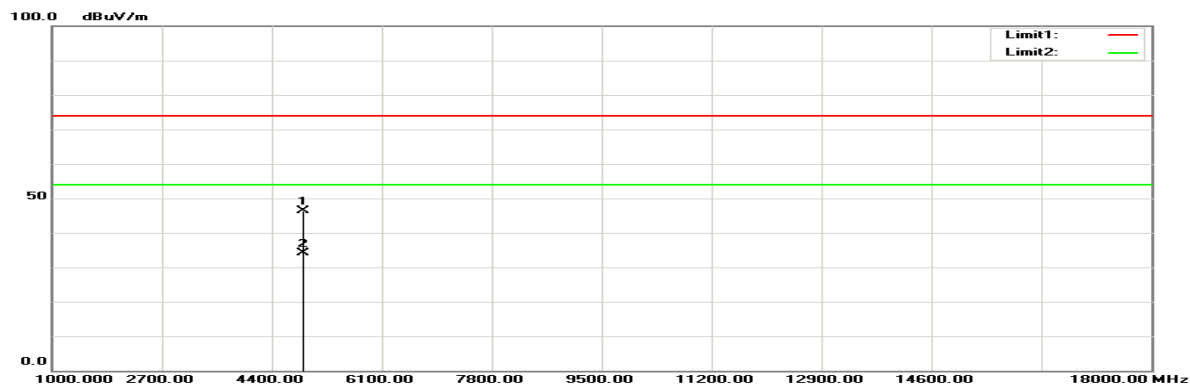
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: G Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	47.29	-0.90	46.39	74.00	27.61	144	327	peak
4874.000	35.11	-0.90	34.21	54.00	19.79	144	327	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: G Mode: High Channel (2462MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4924.000	47.75	-0.80	46.95	74.00	27.05	100	96	peak
4924.000	35.22	-0.80	34.42	54.00	19.58	100	96	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

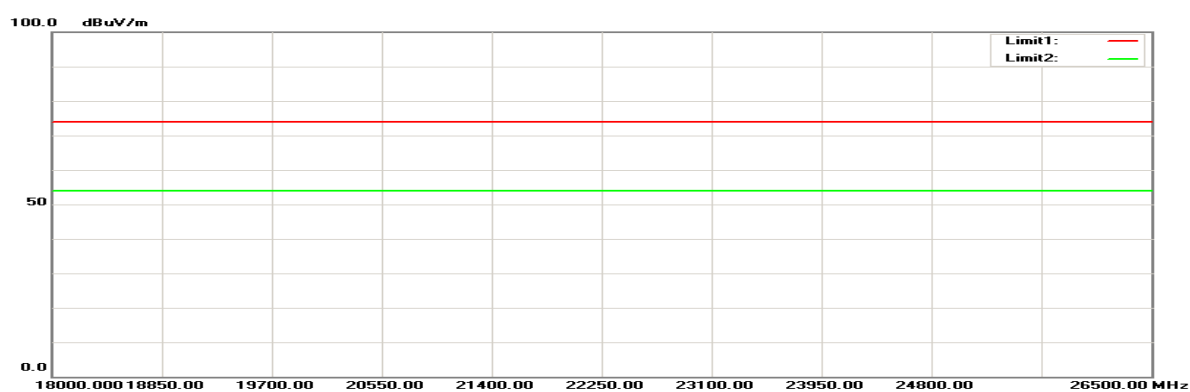
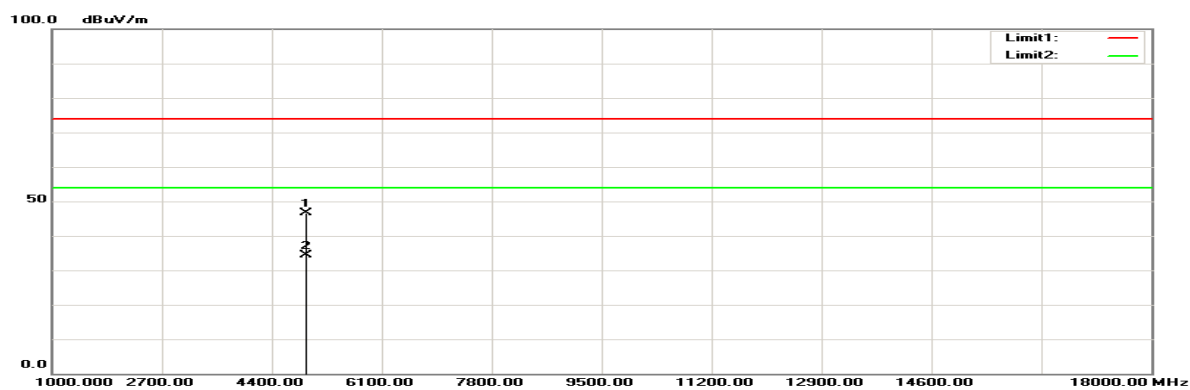
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: G Mode: High Channel (2462MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4924.000	47.55	-0.80	46.75	74.00	27.25	129	330	peak
4924.000	35.06	-0.80	34.26	54.00	19.74	129	330	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

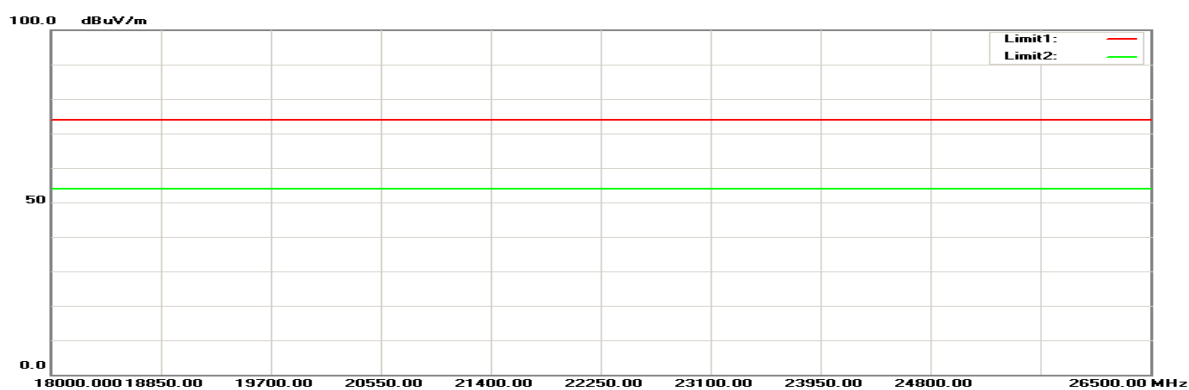
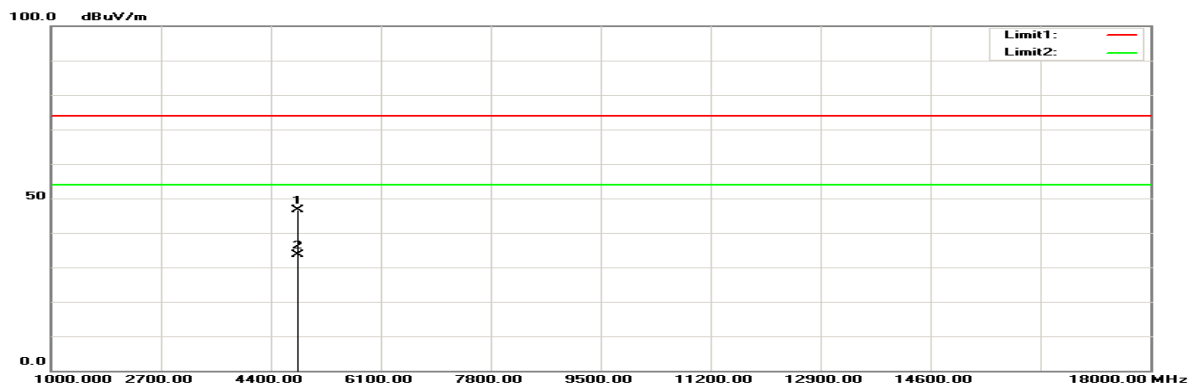
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N20 Mode: Low Channel (2412MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4824.000	47.69	-1.06	46.63	74.00	27.37	214	89	peak
4824.000	34.57	-1.06	33.51	54.00	20.49	214	89	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

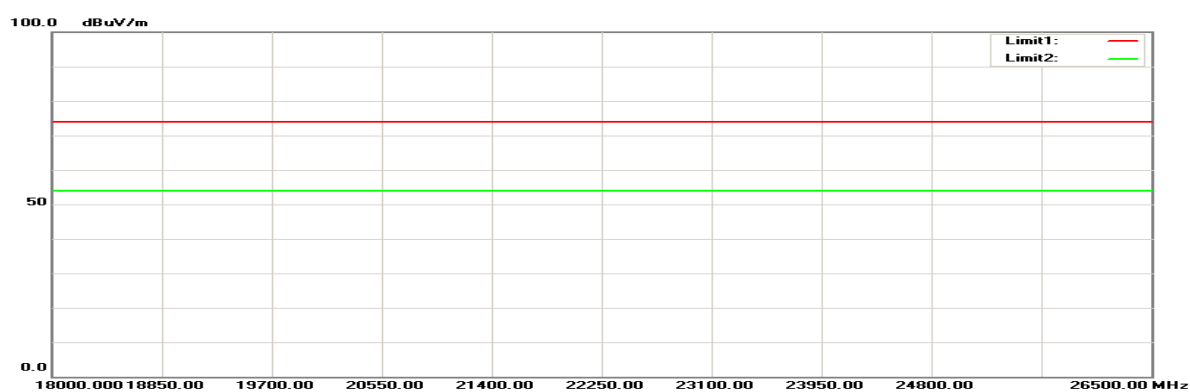
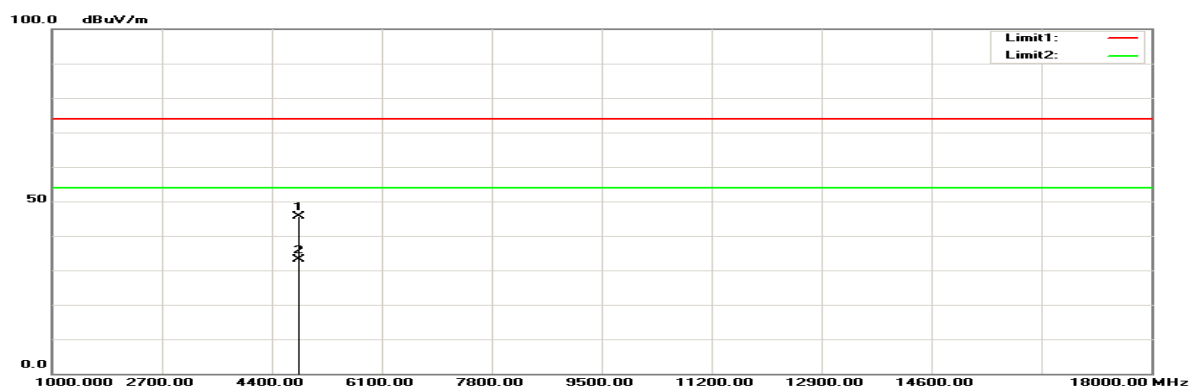
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N20 Mode: Low Channel (2412MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4824.000	46.67	-1.06	45.61	74.00	28.39	100	335	peak
4824.000	34.29	-1.06	33.23	54.00	20.77	100	335	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

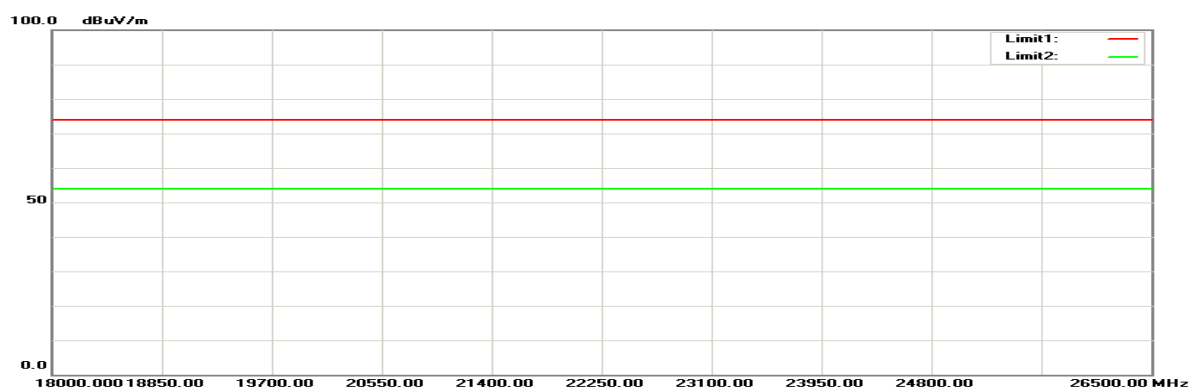
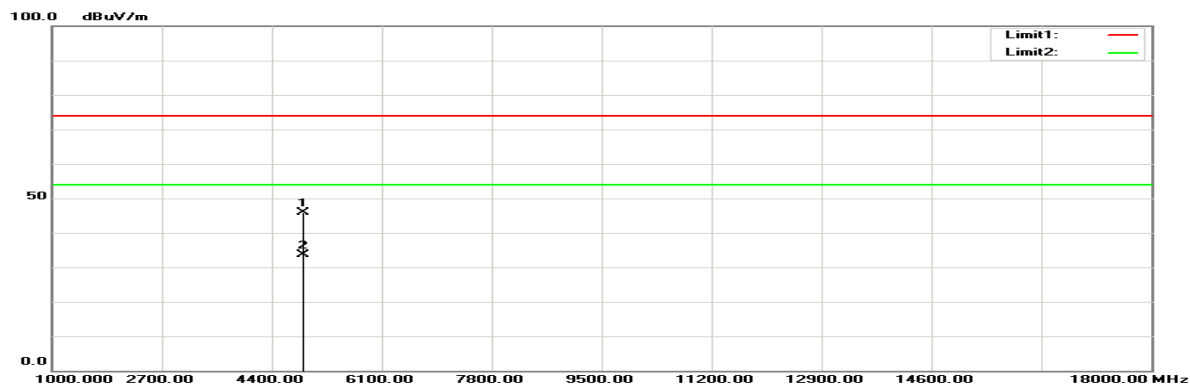
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N20 Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	46.73	-0.90	45.83	74.00	28.17	100	94	peak
4874.000	34.52	-0.90	33.62	54.00	20.38	100	94	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

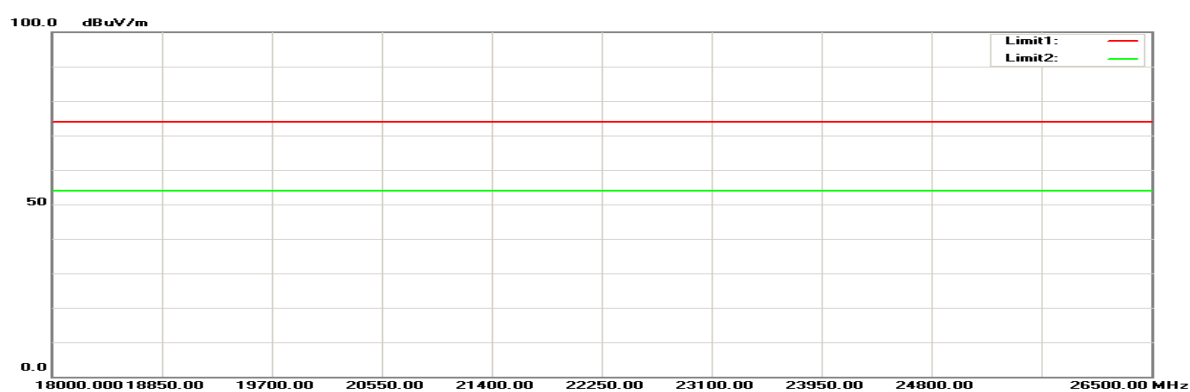
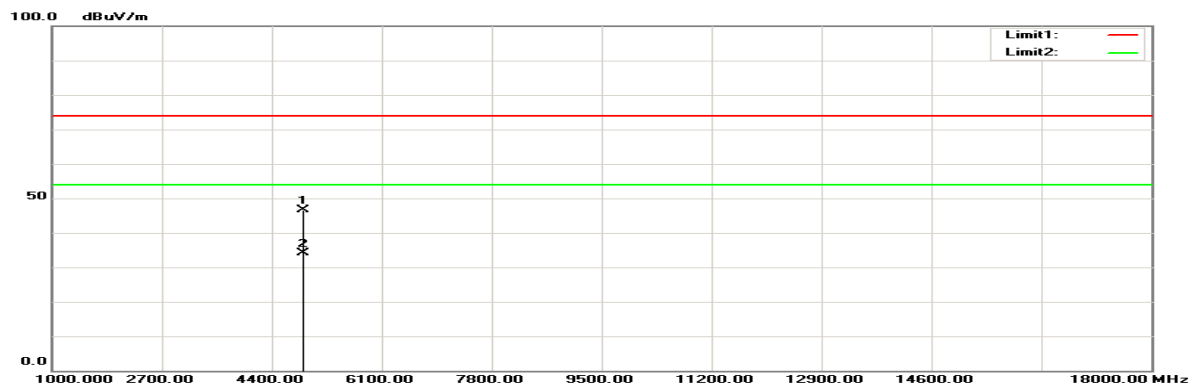
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N20 Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	47.45	-0.90	46.55	74.00	27.45	107	330	peak
4874.000	35.13	-0.90	34.23	54.00	19.77	107	330	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

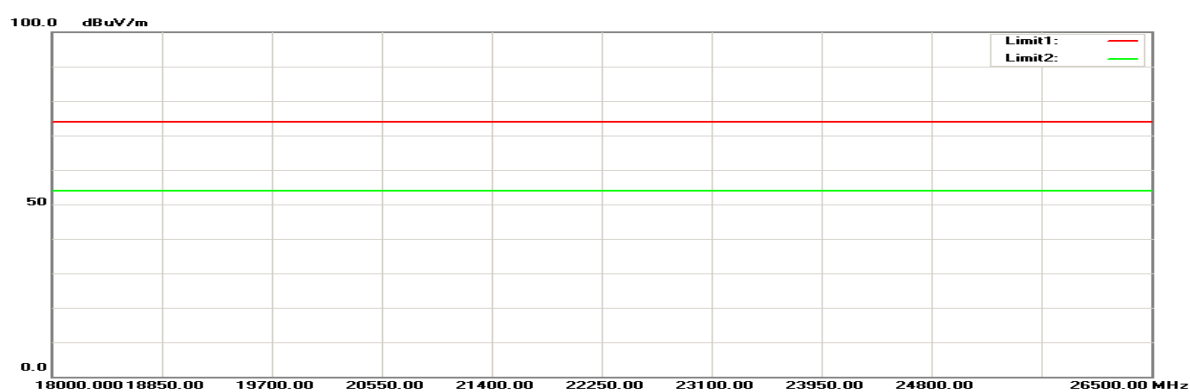
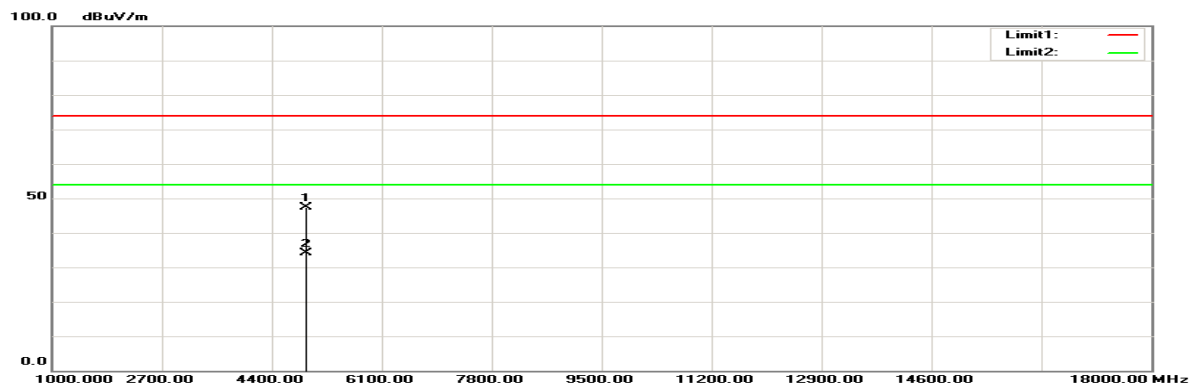
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N20 Mode: High Channel (2462MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4924.000	48.15	-0.80	47.35	74.00	26.65	100	94	peak
4924.000	34.88	-0.80	34.08	54.00	19.92	100	94	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

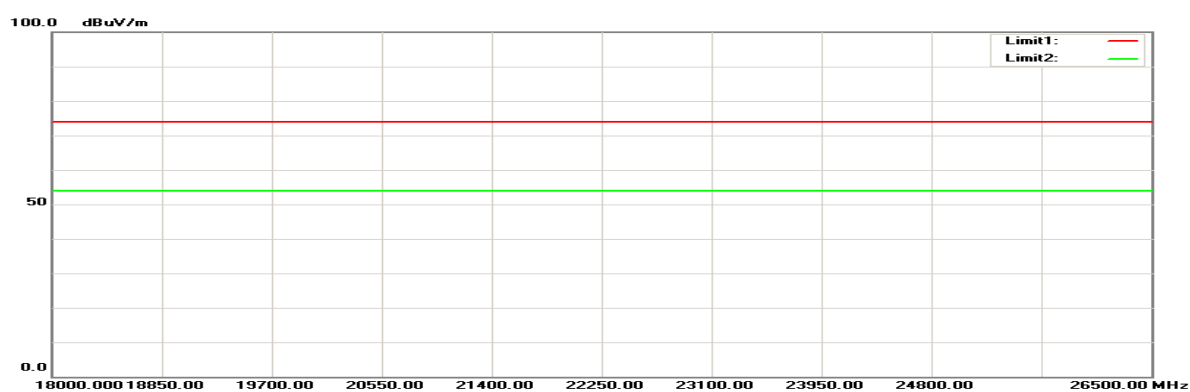
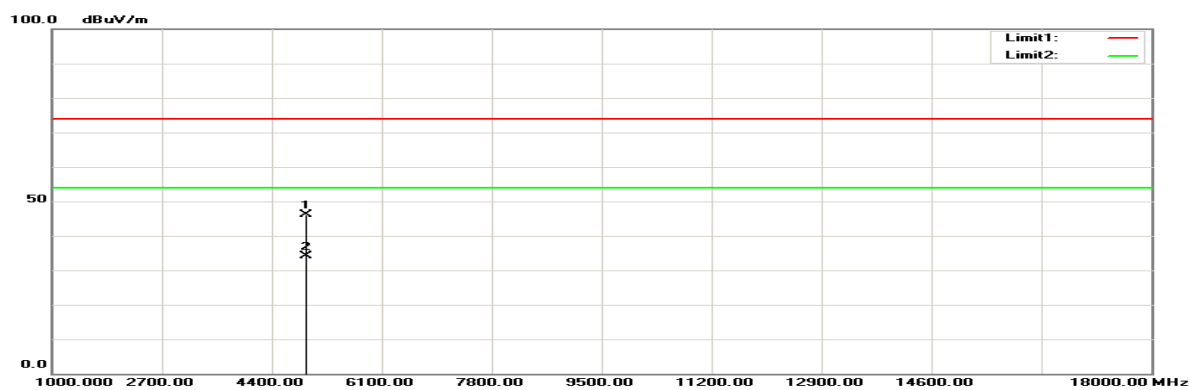
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N20 Mode: High Channel (2462MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4924.000	46.93	-0.80	46.13	74.00	27.87	100	329	peak
4924.000	34.82	-0.80	34.02	54.00	19.98	100	329	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

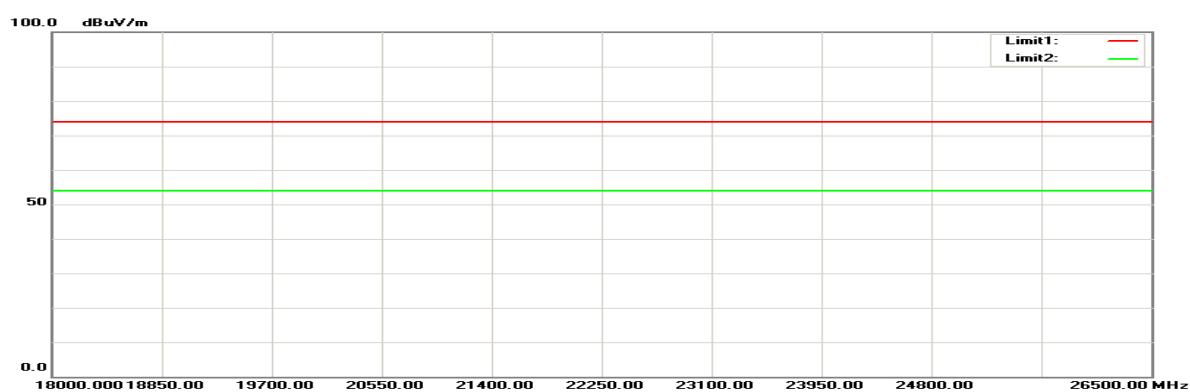
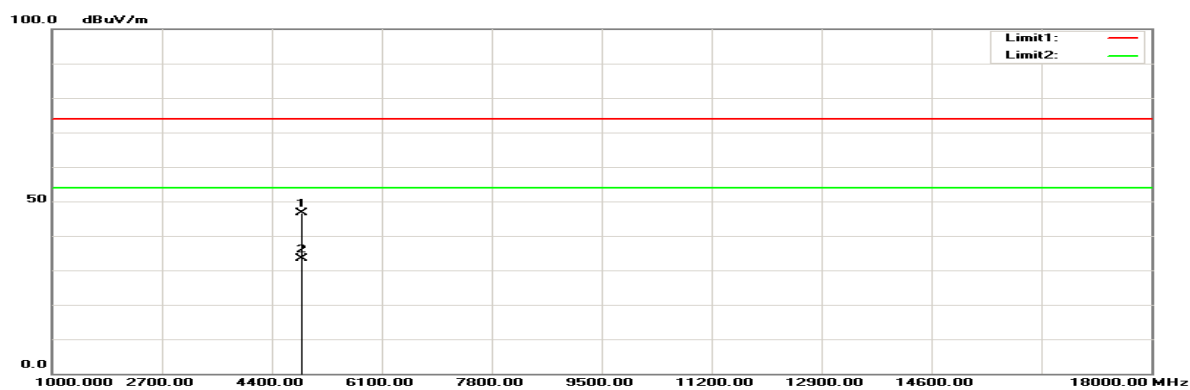
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N40 Mode: Low Channel (2422MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4844.000	47.55	-0.99	46.56	74.00	27.44	208	88	peak
4844.000	34.36	-0.99	33.37	54.00	20.63	208	88	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

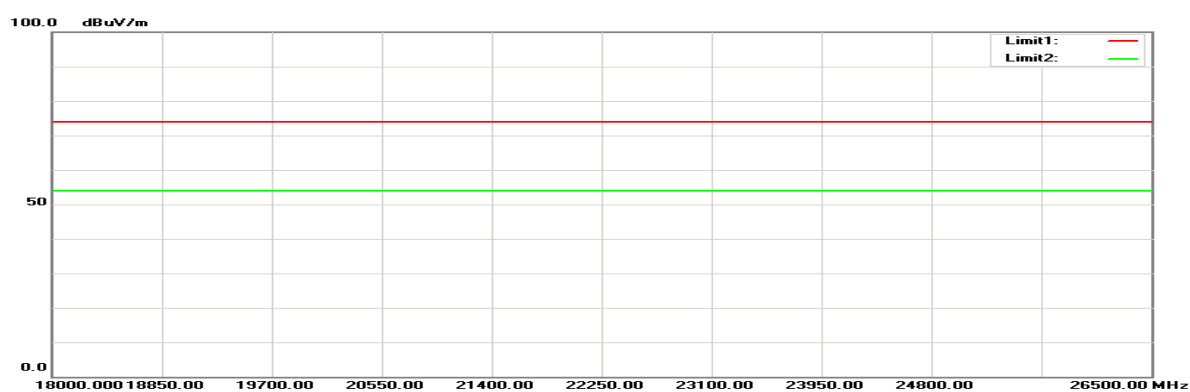
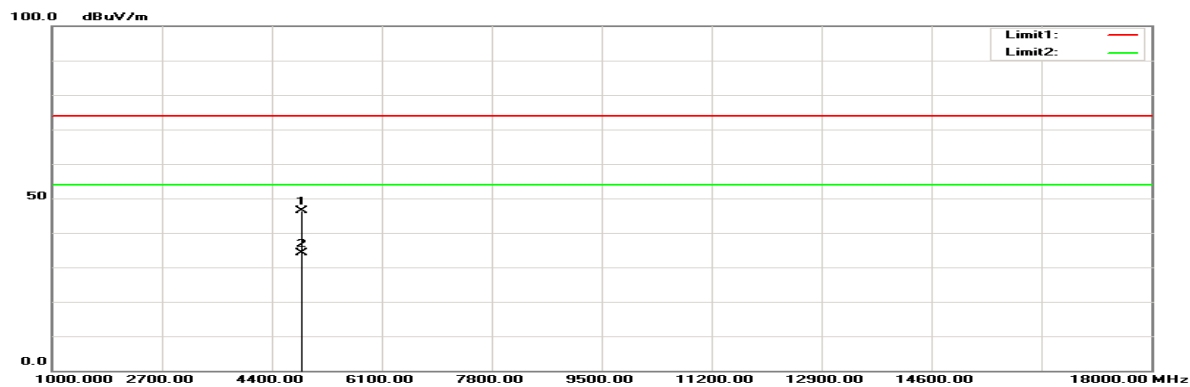
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N40 Mode: Low Channel (2422MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4844.000	47.26	-0.99	46.27	74.00	27.73	100	315	peak
4844.000	35.09	-0.99	34.10	54.00	19.90	100	315	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

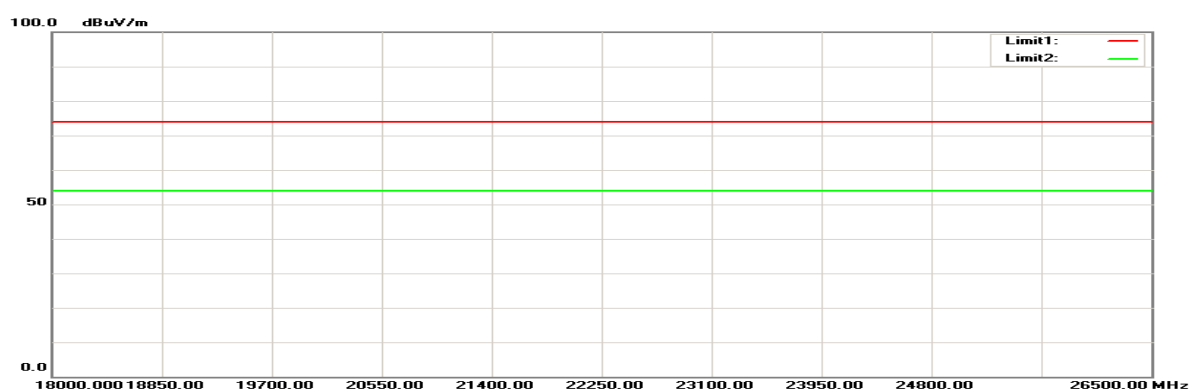
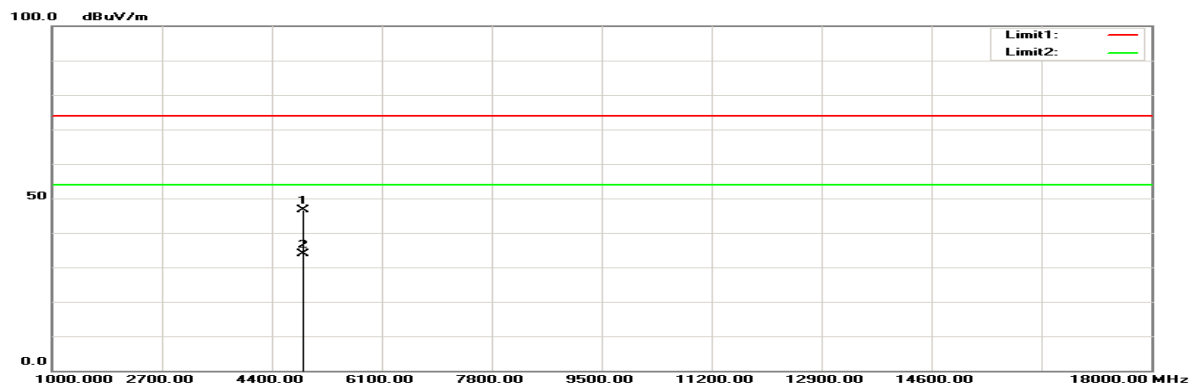
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N40 Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	47.46	-0.90	46.56	74.00	27.44	206	288	peak
4874.000	34.73	-0.90	33.83	54.00	20.17	206	288	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

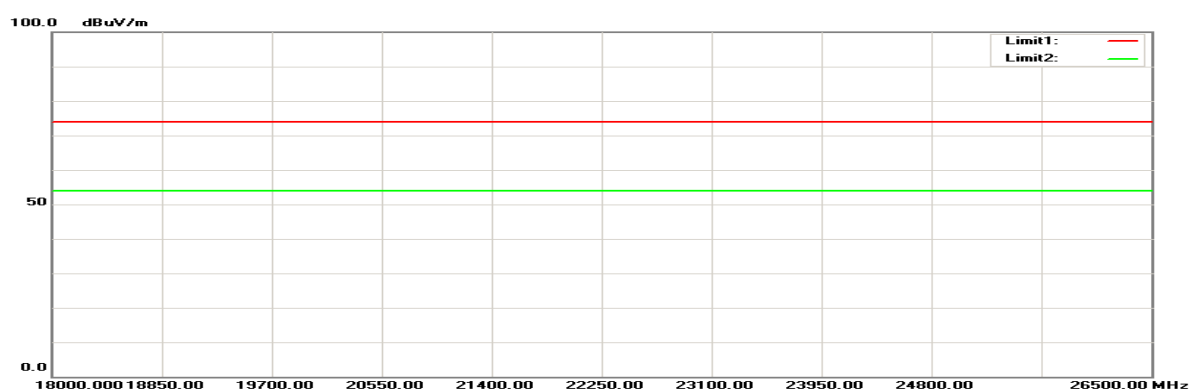
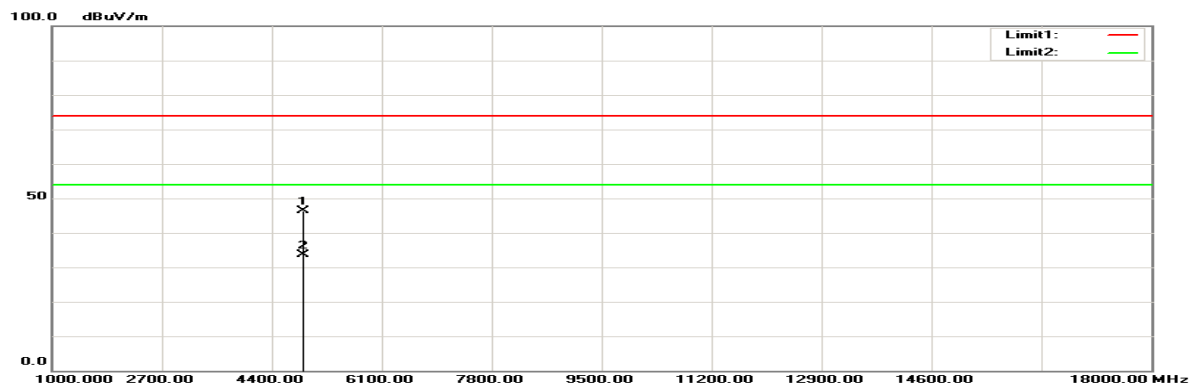
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N40 Mode: Middle Channel (2437MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4874.000	47.33	-0.90	46.43	74.00	27.57	100	94	peak
4874.000	34.62	-0.90	33.72	54.00	20.28	100	94	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

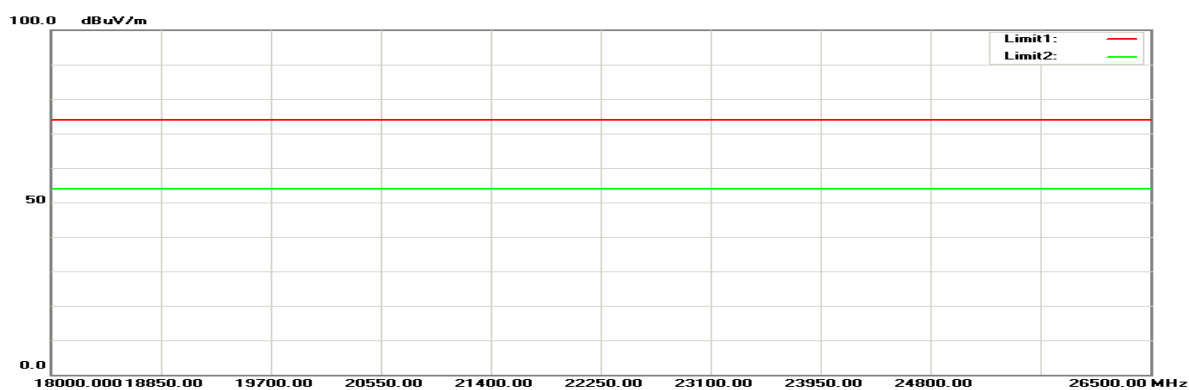
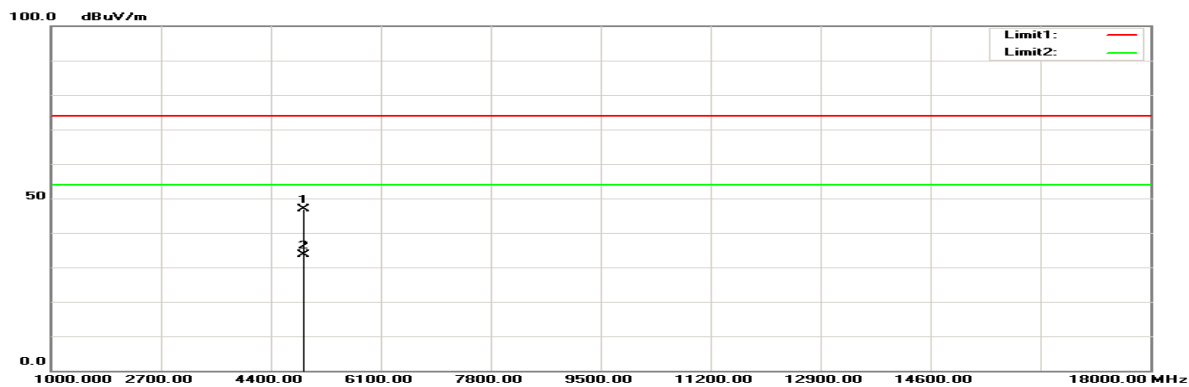
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N40 Mode: High Channel (2452MHz)

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4904.000	47.79	-0.80	46.99	74.00	27.01	124	98	peak
4904.000	34.44	-0.80	33.64	54.00	20.36	124	98	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22°C

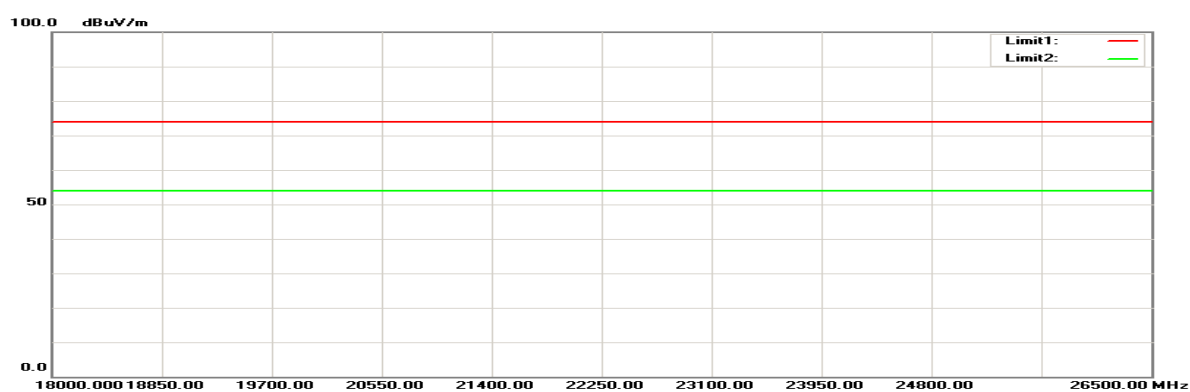
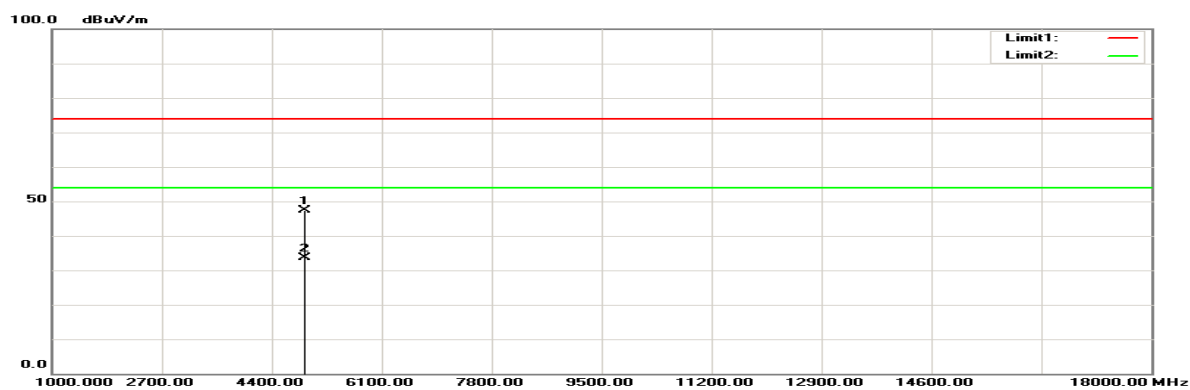
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: N40 Mode: High Channel (2452MHz)

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
4904.000	48.22	-0.80	47.42	74.00	26.58	126	36	peak
4904.000	34.48	-0.80	33.68	54.00	20.32	126	36	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit-Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

接收機其它不必要之訊號

場強輻射之量測值(RX / 1GHz 以下)

環境溫度: 21.9°C

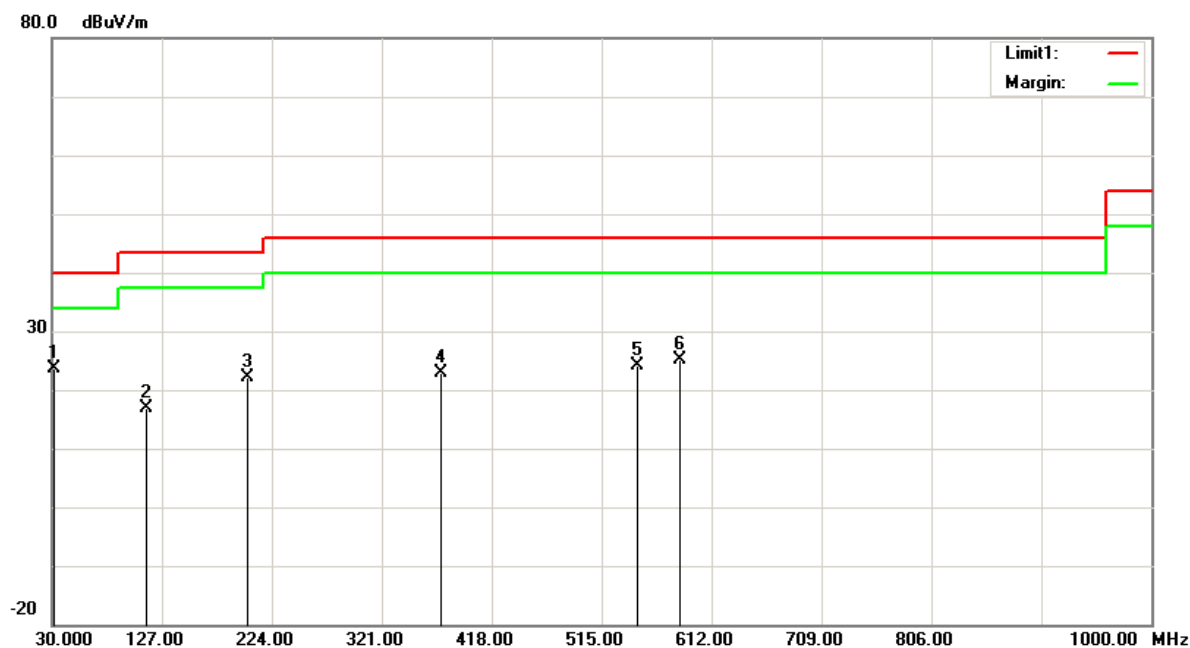
測試日期: 2018-01-08

環境濕度: 34% RH

測試模式: Receiving

測試者: Tom Hsu

測試極性: Horizontal



Frequency (MHz)	Reading (dBuV/m)	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
31.2000	43.90	-20.30	23.60	40.00	16.40	100	213	QP
113.4000	35.62	-18.72	16.90	43.50	26.60	100	34	QP
202.3000	40.24	-18.14	22.10	43.50	21.40	100	318	QP
372.5000	40.37	-17.57	22.80	46.00	23.20	100	146	QP
545.3000	42.56	-18.46	24.10	46.00	21.90	100	66	QP
583.1000	43.21	-18.11	25.10	46.00	20.90	100	194	QP

Note:

Result = Reading + Correct Factor

Margin = Limit - Result

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain

環境溫度: 21.9°C

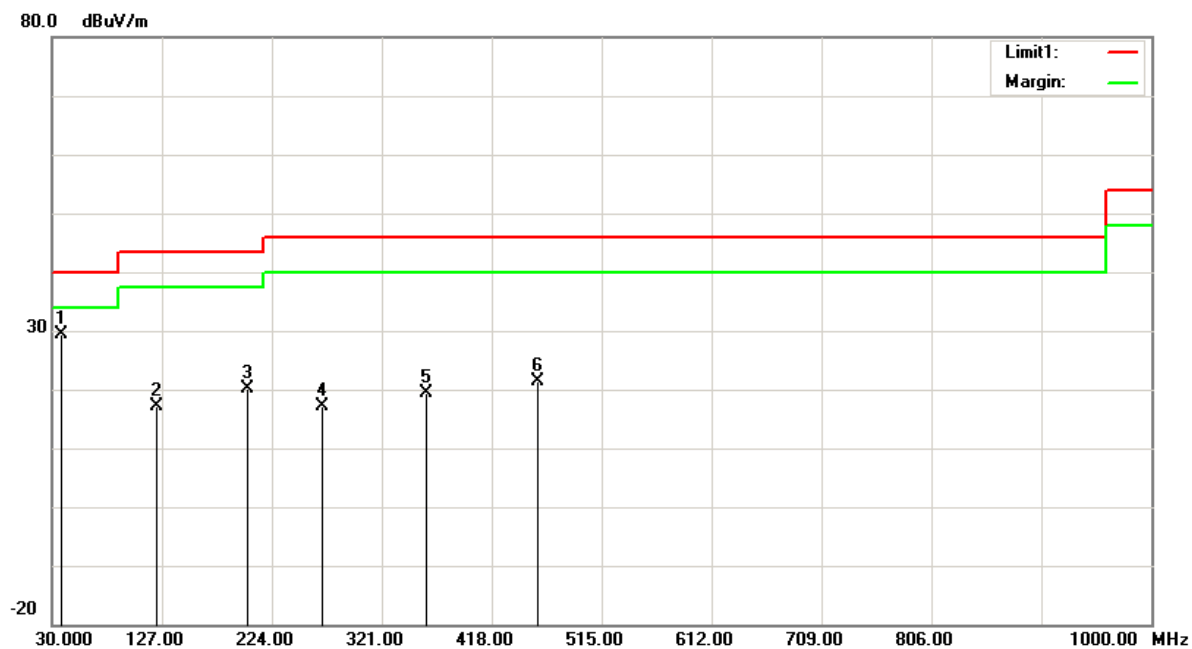
測試日期: 2018-01-08

環境濕度: 34% RH

測試模式: Receiving

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
38.5000	49.42	-20.12	29.30	40.00	10.70	100	118	QP
121.6000	35.98	-18.88	17.10	43.50	26.40	100	41	QP
202.1000	38.26	-18.16	20.10	43.50	23.40	100	144	QP
268.3000	34.38	-17.18	17.20	46.00	28.80	100	14	QP
359.1000	37.04	-17.54	19.50	46.00	26.50	100	282	QP
458.3000	39.35	-18.05	21.30	46.00	24.70	100	246	QP

Note:

Result = Reading + Correct Factor

Margin = Limit – Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

場強輻射之量測值 (RX / 1GHz 以上)

環境溫度: 22°C

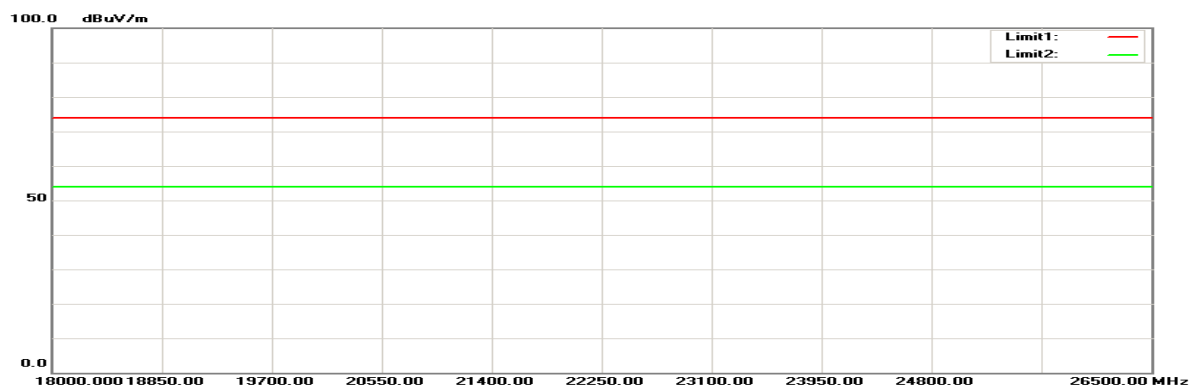
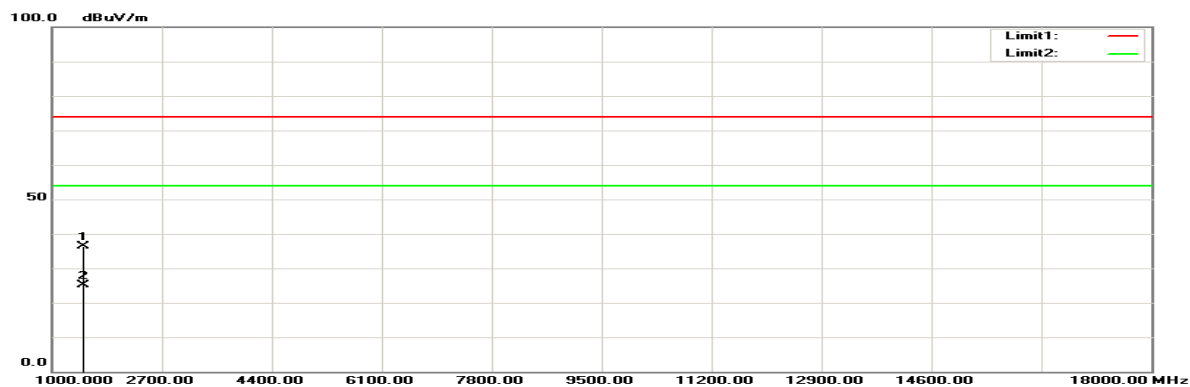
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: Receiving

測試者: Tom Hsu

測試極性: Horizontal



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1483.000	45.62	-9.19	36.43	74.00	37.57	100	178	peak
1483.000	34.29	-9.19	25.10	54.00	28.90	100	178	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit - Result

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain

環境溫度: 22°C

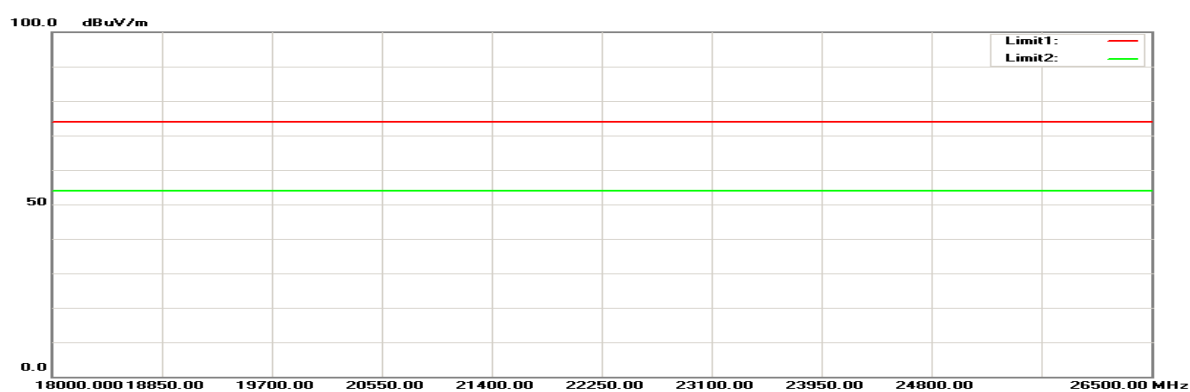
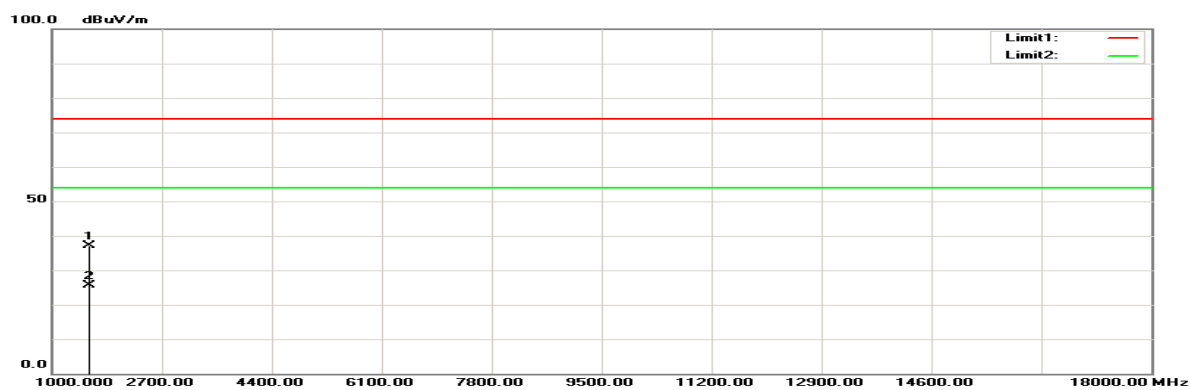
測試日期: 2018-01-20

環境濕度: 41% RH

測試模式: Receiving

測試者: Tom Hsu

測試極性: Vertical



Frequency	Reading	Corrected	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	
1569.000	45.87	-8.84	37.03	74.00	36.97	100	262	peak
1569.000	34.52	-8.84	25.68	54.00	28.32	100	262	AVG

Note:

Result = Reading + Correct Factor

Margin = Limit – Result

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

環境溫度: 22.4~25.4°C

測試日期: 2018-01-08~2018-01-09

環境濕度: 40~43% RH

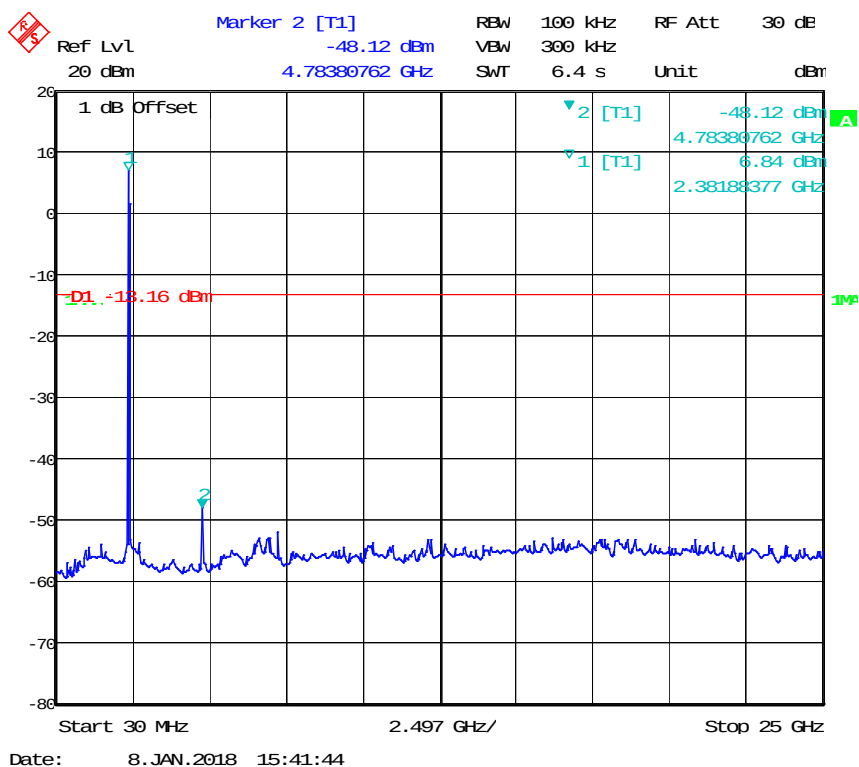
測試者: Tom Hsu

Conducted Spurious Emissions:

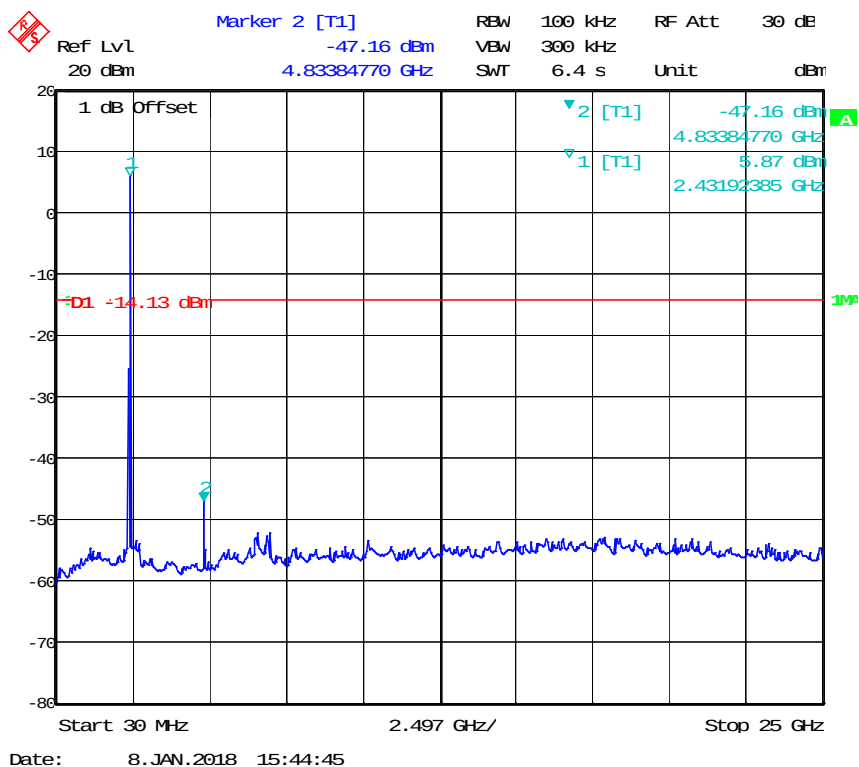
Channel	Frequency (MHz)	Delta Peak to Band Emission(dBc)			Limit (dBc)	Result
		Chain 0	Chain 1	Total		
B mode						
Low	2412	54.96	58.62	/	≥ 20	PASS
Mid	2437	53.03	57.75		≥ 20	PASS
High	2462	51.9	56.96	/	≥ 20	PASS
G mode						
Low	2412	55.69	54.1	/	≥ 20	PASS
Mid	2437	54.74	52.17	/	≥ 20	PASS
High	2462	54.91	51.57	/	≥ 20	PASS
N20 mode						
Low	2412	55.2	53.05	-49.04	≥ 20	PASS
Mid	2437	55.36	52.27	-49.2	≥ 20	PASS
High	2462	54.54	52.48	-48.71	≥ 20	PASS
N40 mode						
Low	2422	50.06	50.85	-48.89	≥ 20	PASS
Mid	2437	50.55	50.28	-49.27	≥ 20	PASS
High	2452	50.41	50.08	-49.5	≥ 20	PASS

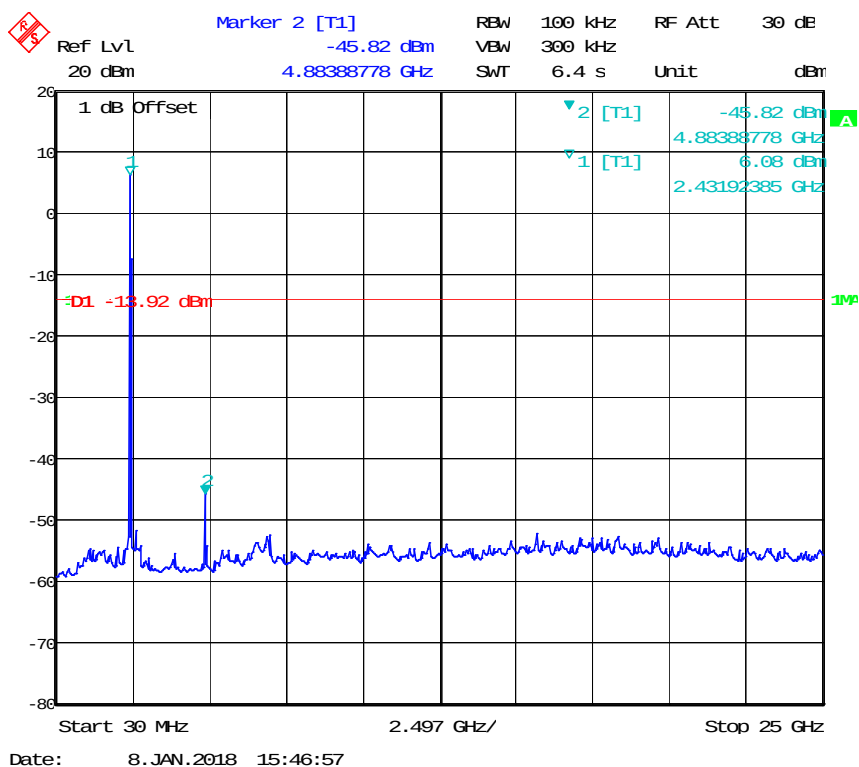
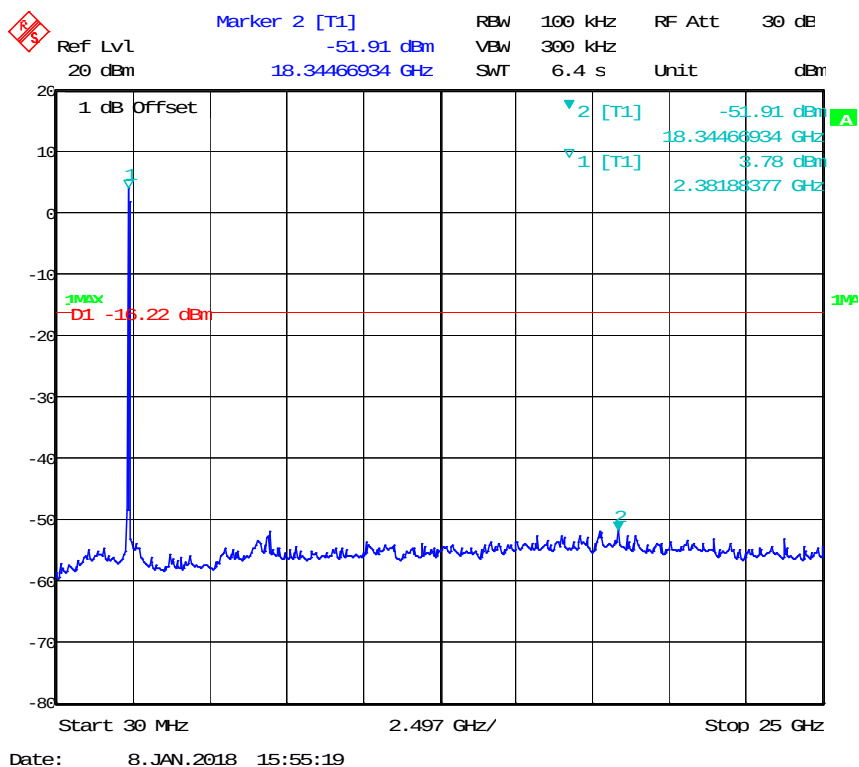
Chain0:

B Mode Low Channel

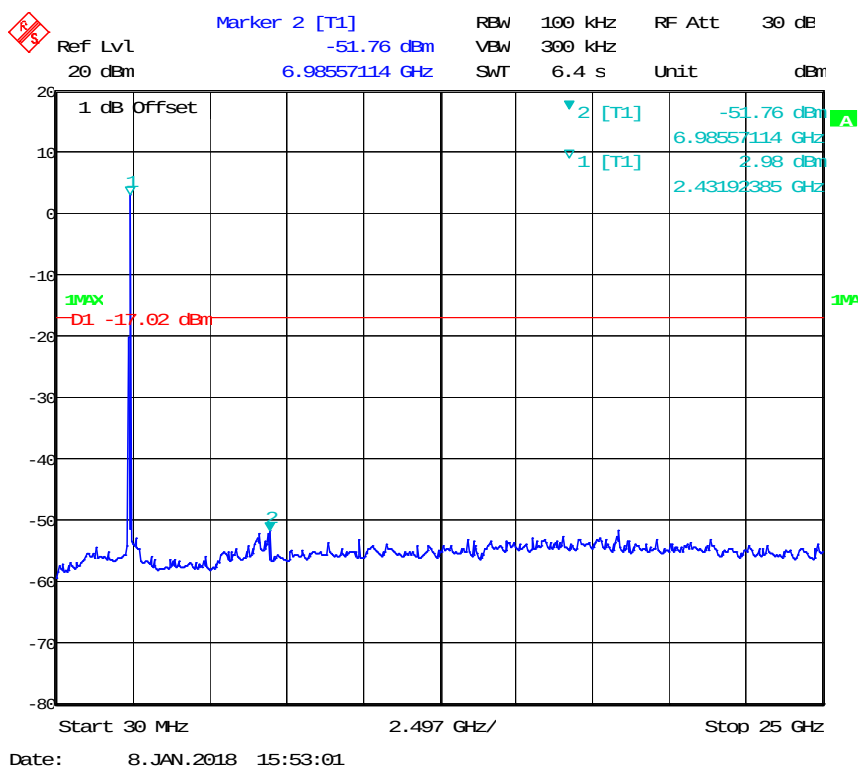


B Mode Middle Channel

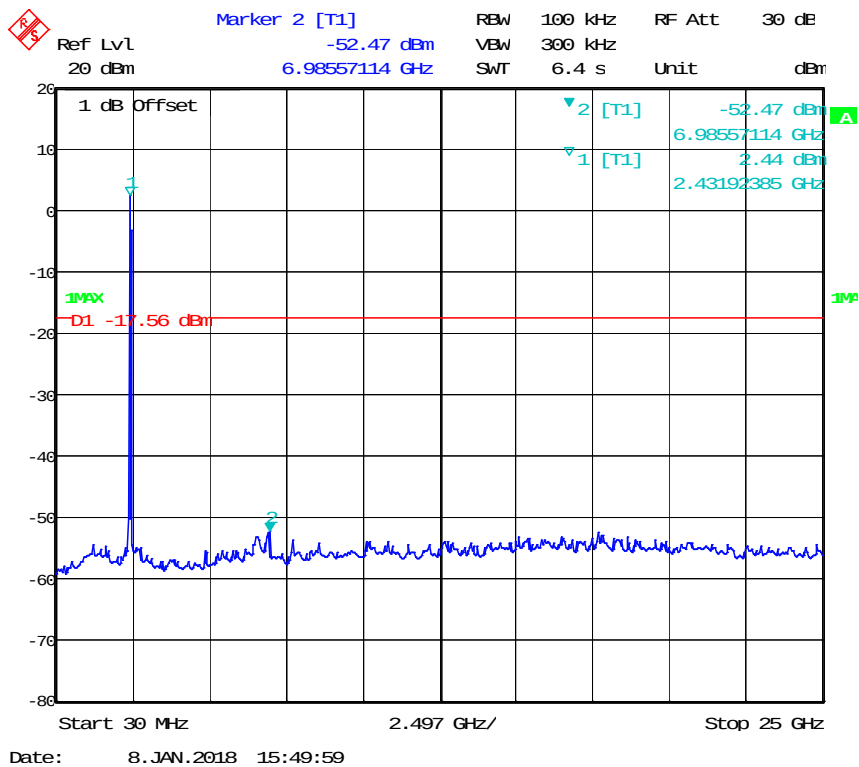


B Mode High Channel**G Mode Low Channel**

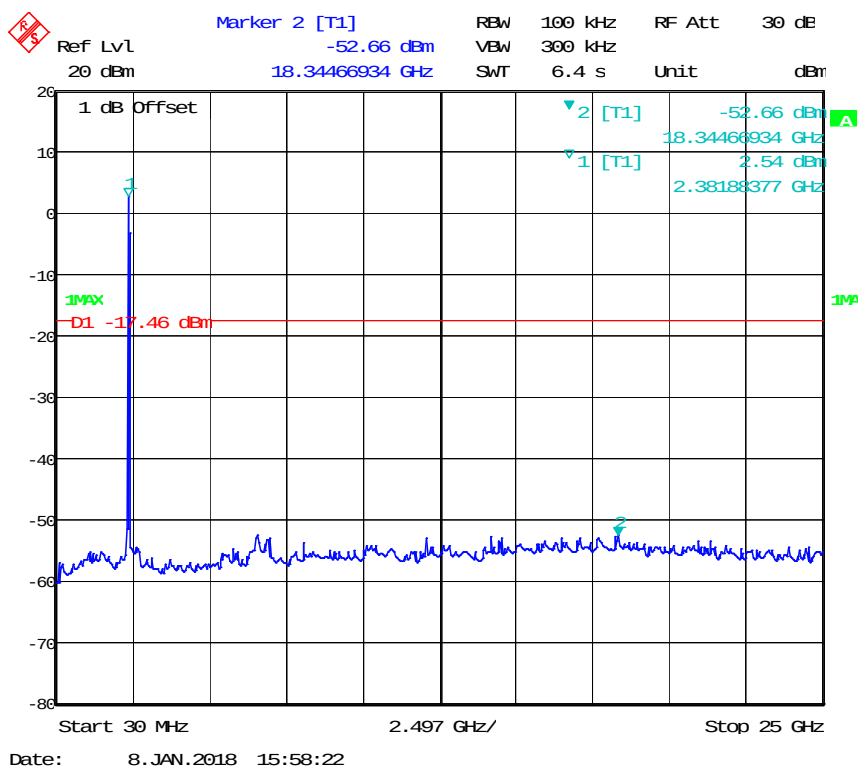
G Mode Middle Channel



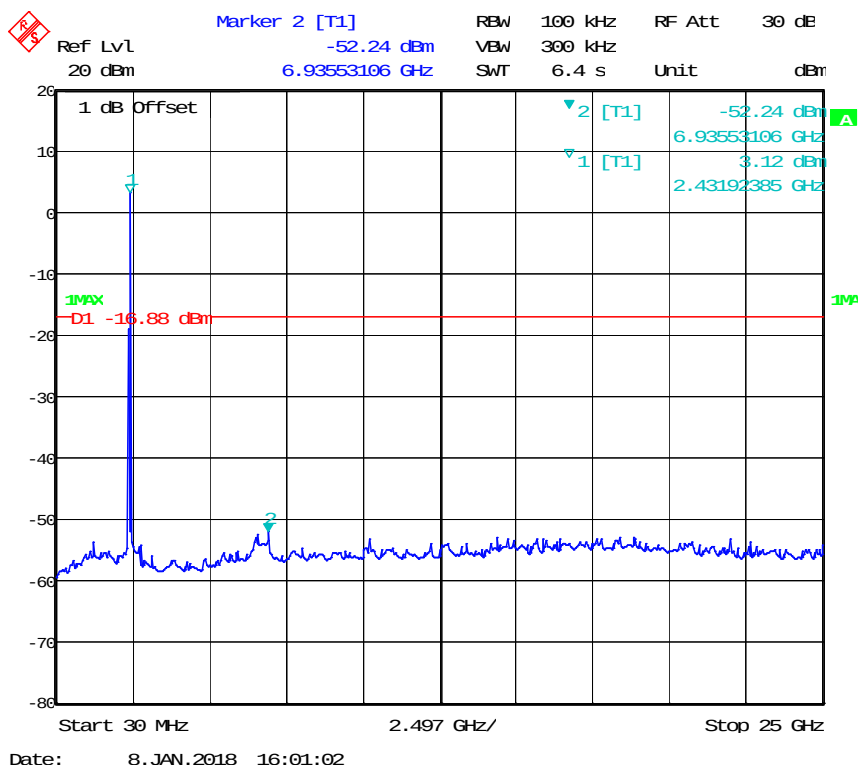
G Mode High Channel



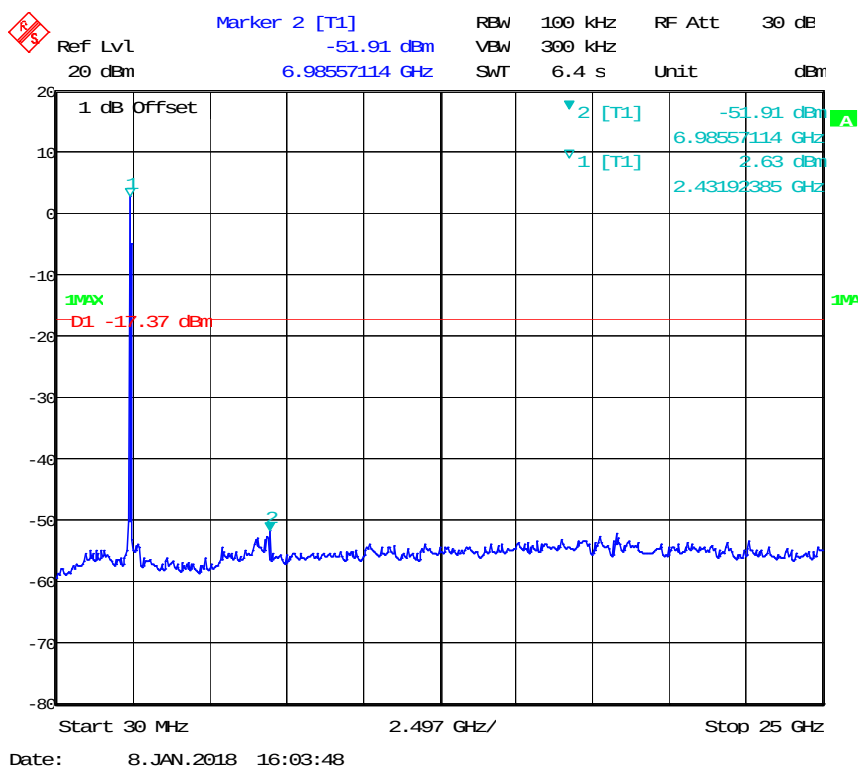
N20 Mode Low Channel



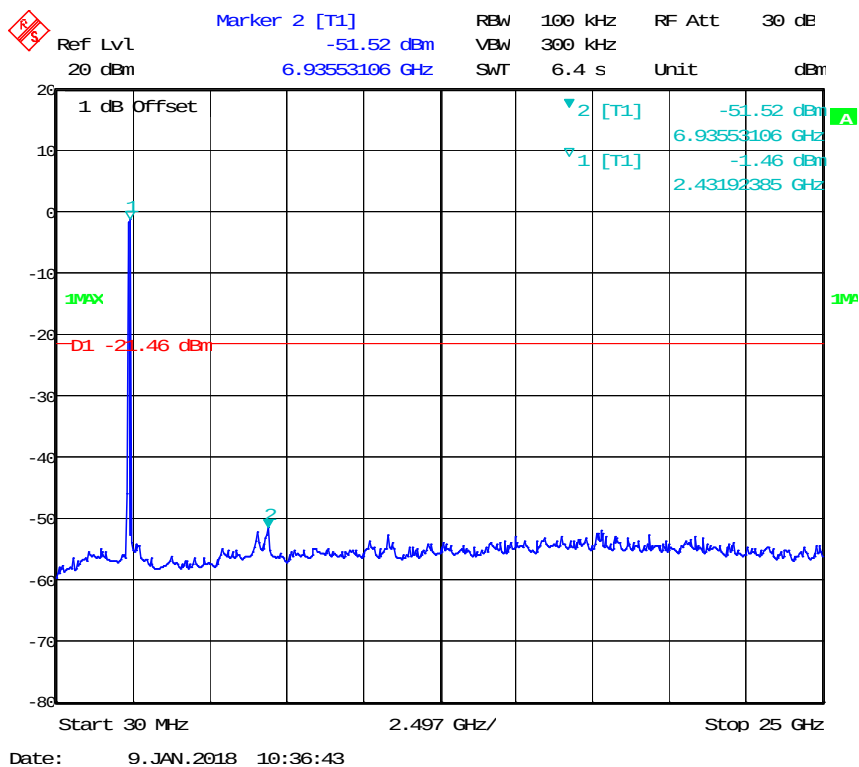
N20 Mode Middle Channel



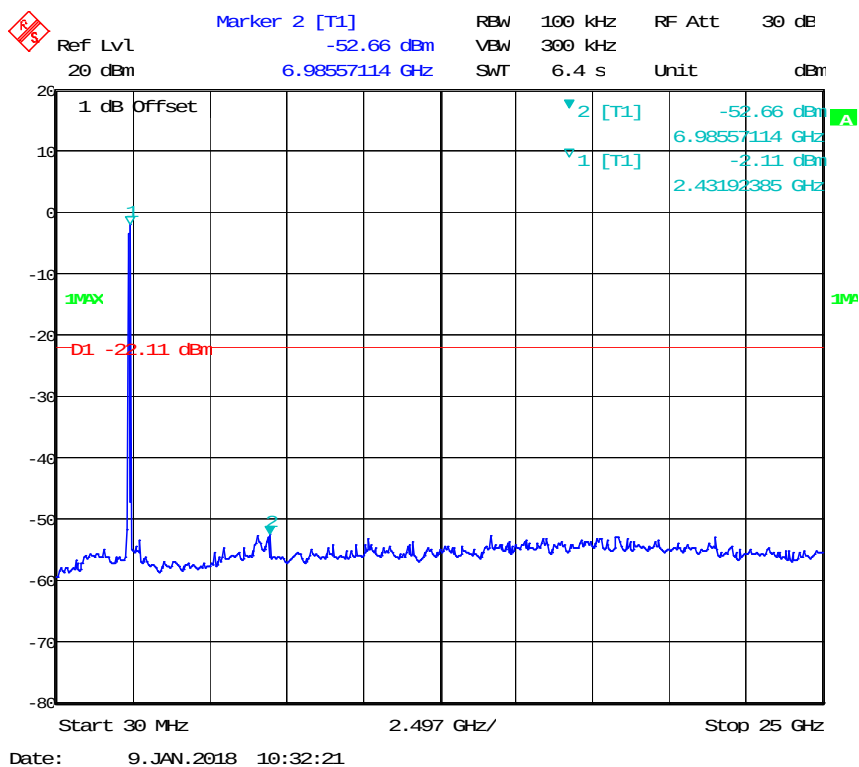
N20 Mode High Channel



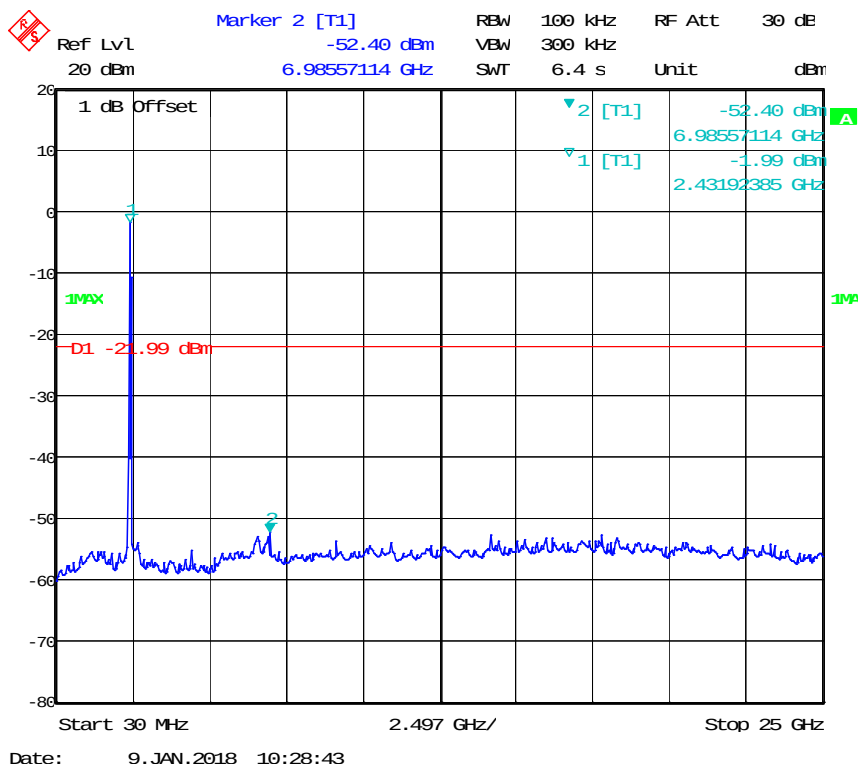
N40 Mode Low Channel



N40 Mode Middle Channel

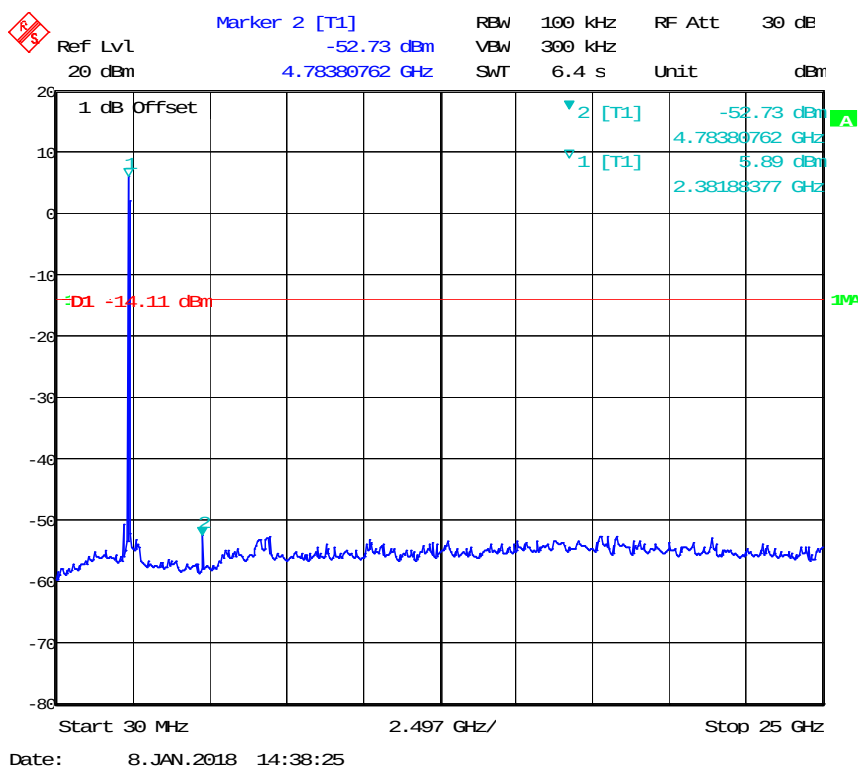


N40 Mode High Channel

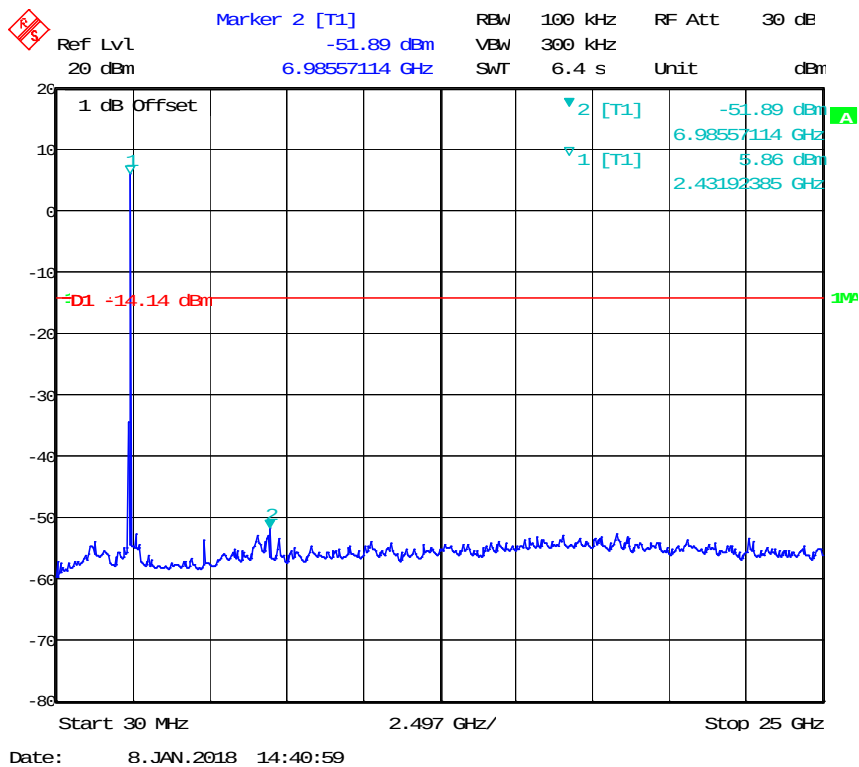


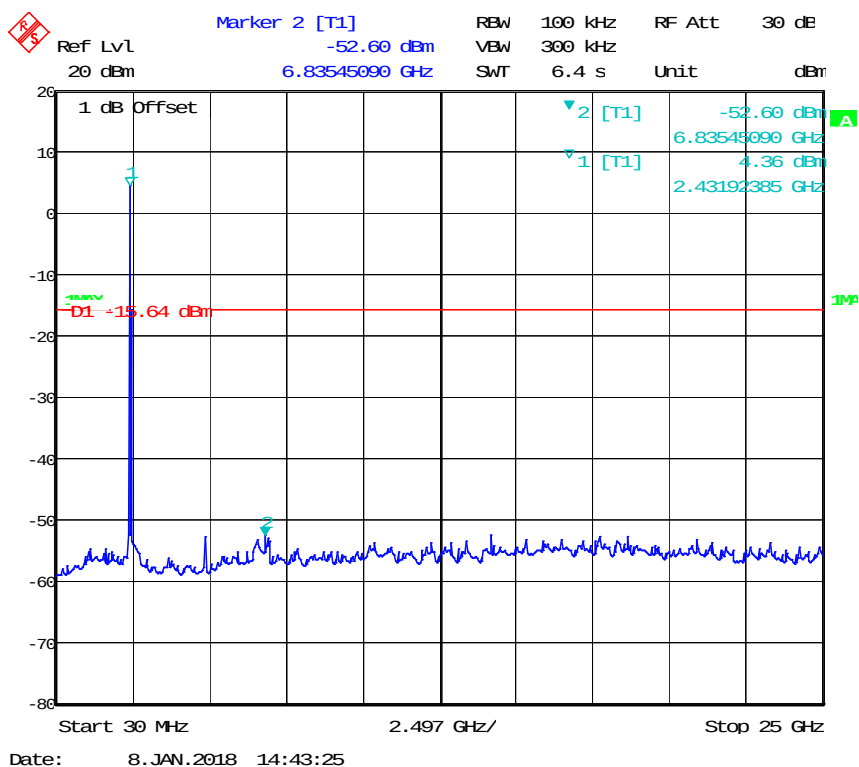
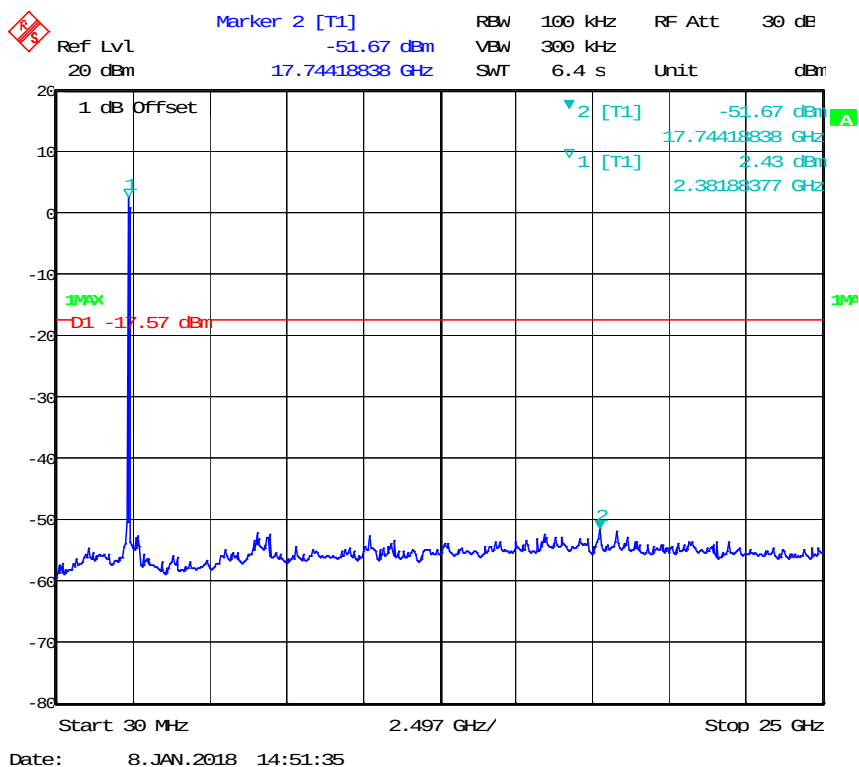
Chain1:

B Mode Low Channel

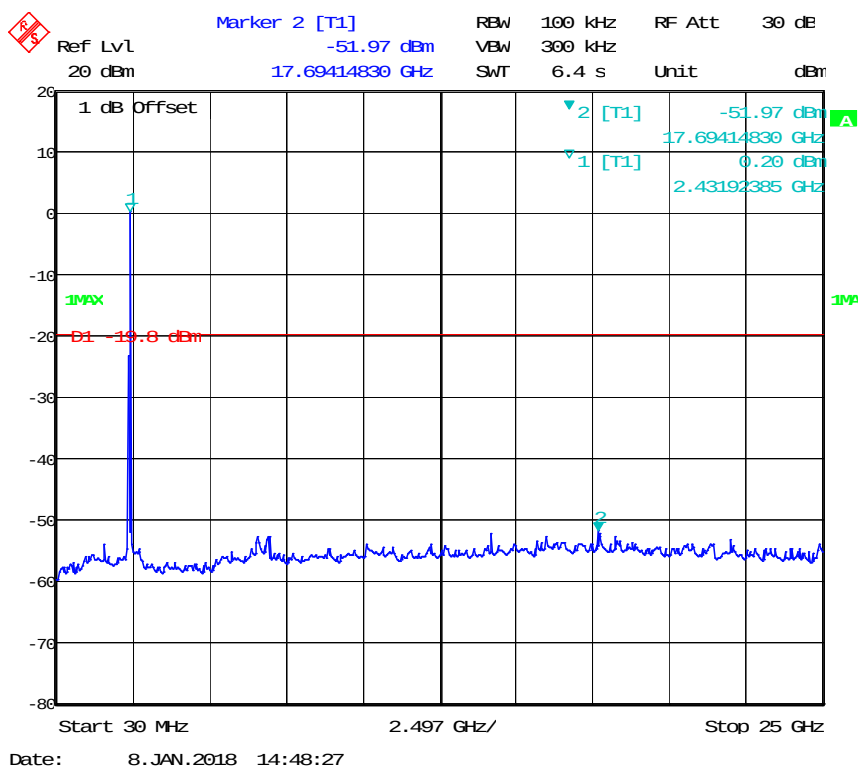


B Mode Middle Channel

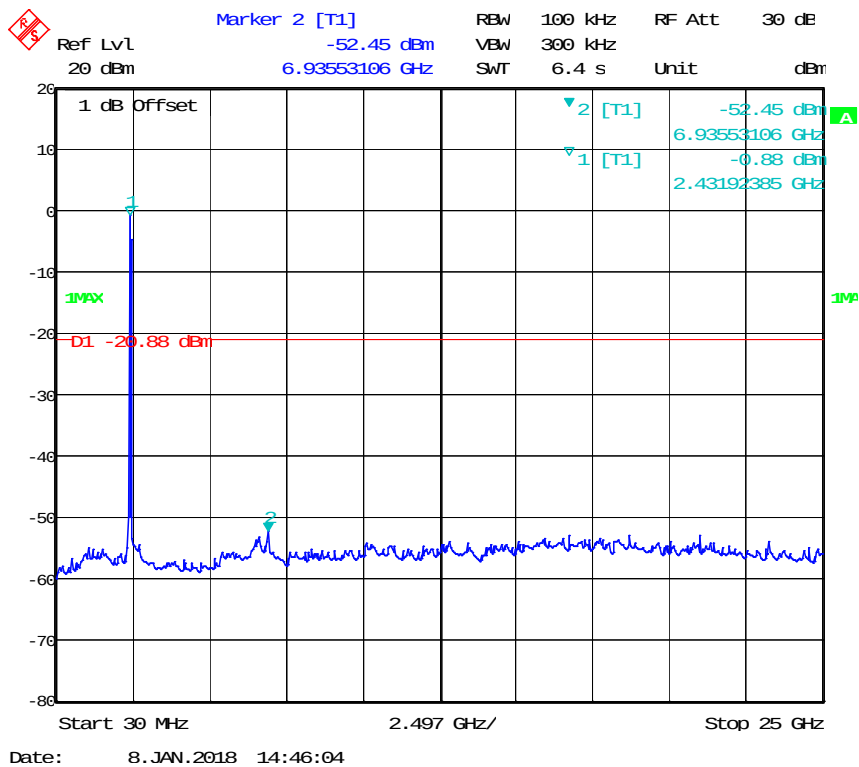


B Mode High Channel**G Mode Low Channel**

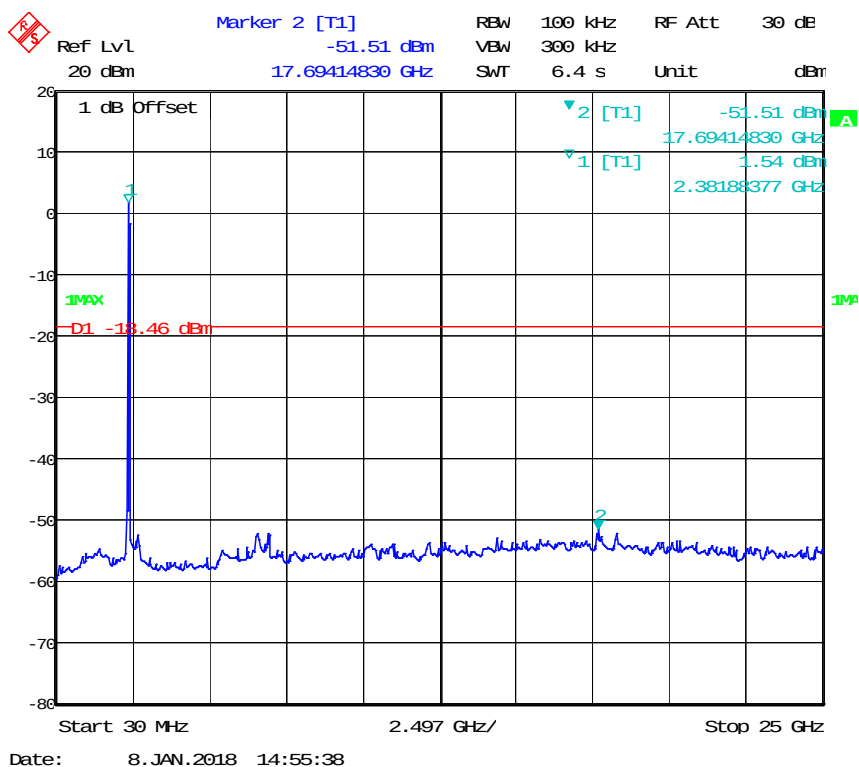
G Mode Middle Channel



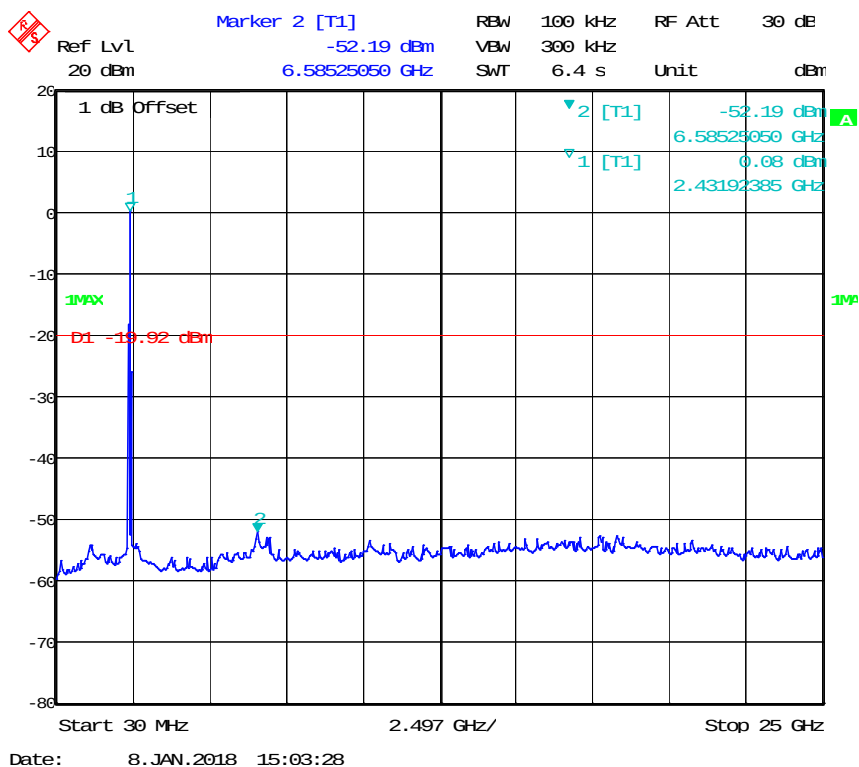
G Mode High Channel



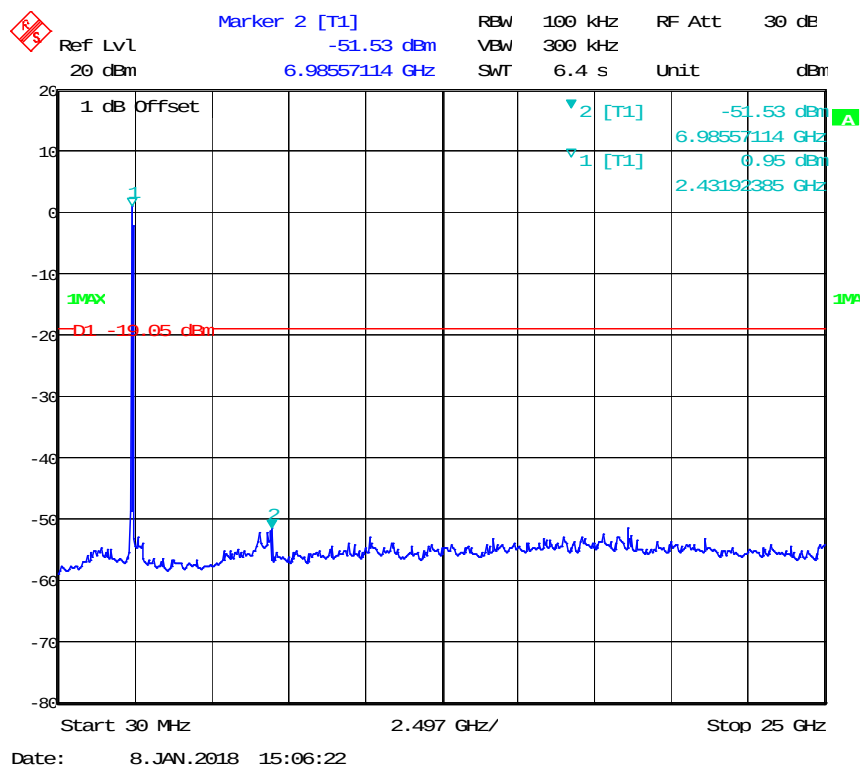
N20 Mode Low Channel



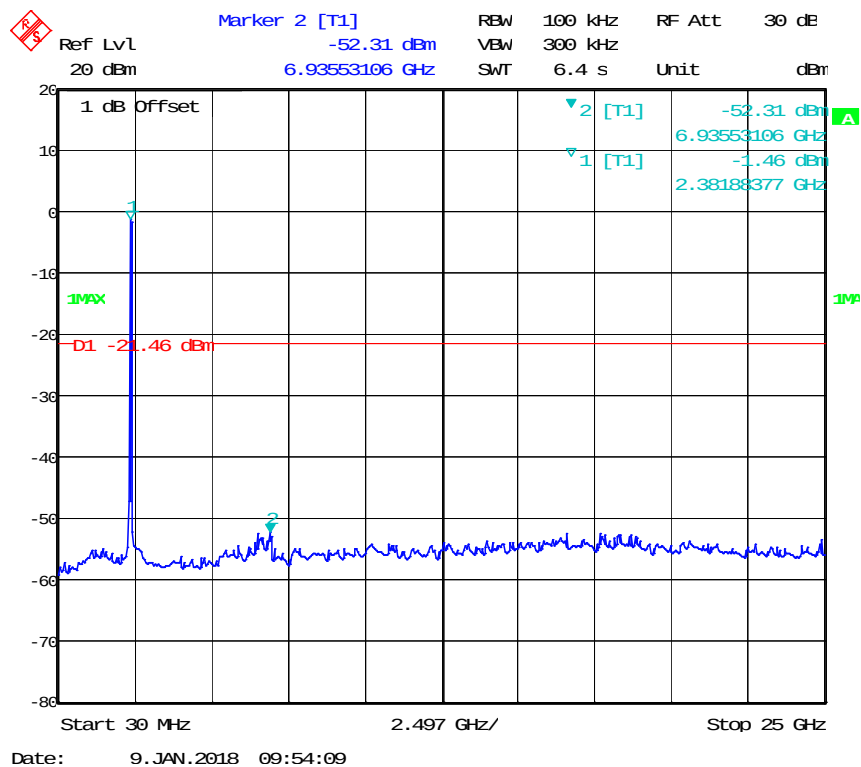
N20 Mode Middle Channel



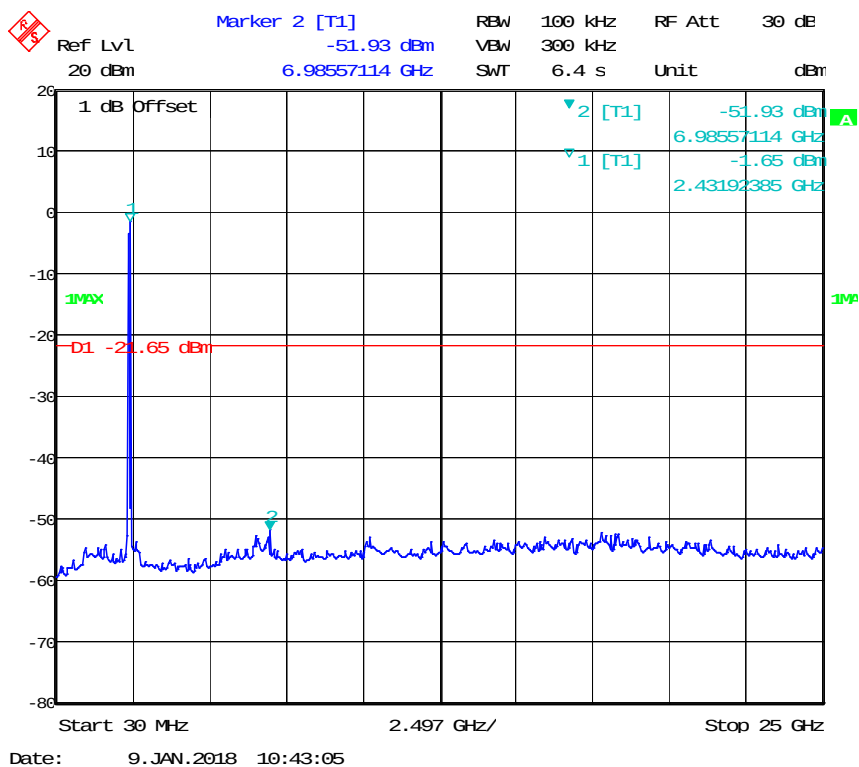
N20 Mode High Channel



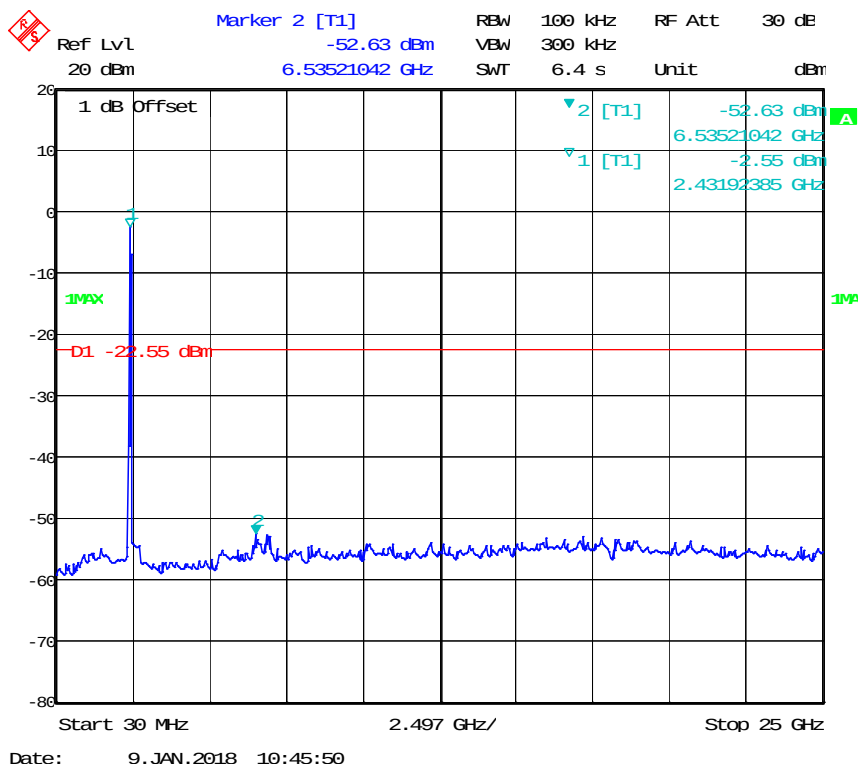
N40 Mode Low Channel



N40 Mode Middle Channel



N40 Mode High Channel



6. 天線增益之要求

6.1. 適用標準

低功率發射機，依據國家通訊傳播委員會低功率射頻電機技術規範3.10.1.3節之規定，應符合下列情現之一：

依據國家通訊傳播委員會低功率射頻電機技術規範3.10.1.3節(1)之規定，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。

依據國家通訊傳播委員會低功率射頻電機技術規範3.10.1.3節(2)之規定，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。

依據國家通訊傳播委員會低功率射頻電機技術規範3.10.1.3節(3)之規定，除(1)(2)外，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

天線型態	廠牌	型號	Gain
Multilayer Dual-Band Chip Antenna	Würth Elektronik	7488912455	1 dBi

** 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

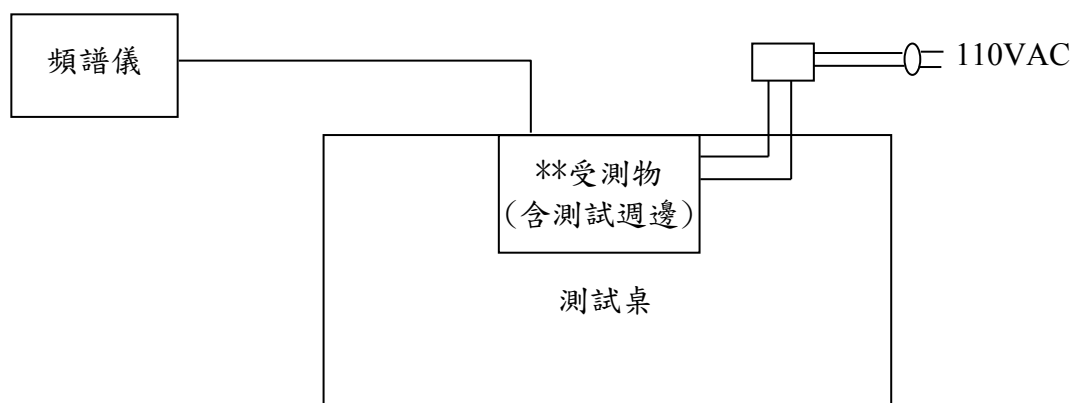
對使用跳頻系統之低功率發射機依據國家通訊傳播委員會低功率射頻電機技術規範 3.10.1.6 節(1)(A)之規定，跳頻系統之載波頻率頻道間隔應大於或等於25 kHz 或跳頻頻道之20 dB頻寬，兩者取較寬者。但操作頻率為2400 MHz~2483.5 MHz 頻段且輸出功率應小於或等於125 mW 跳頻系統，其載波頻率頻道間隔不得小於25 kHz 或跳頻頻道20 dB頻寬之三分之二，兩者取較寬者。系統之跳頻頻道應依虛擬亂數排列，在各頻率之跳頻頻道上跳躍。每一發射機必須均等的使用每一頻率。系統接收機應具有與發射機跳躍頻道頻寬相匹配之輸入頻寬，且應隨所發射之訊號同步偏移接收頻率。

對使用數位調變技術之低功率發射機，依據國家通訊傳播委員會低功率射頻電機技術規範3.10.1.6 節(2)(A)之規定，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. 測試配置



註：**請參照 3.2 節

7.4. 發射頻寬之量測儀器

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Spectrum Analyzer	Rohde & Schwarz	FSU26	200268	2017/05/08	2018/05/07
Attenuator	MINI-CIRCUITS	BW-S10W5+	N/A	2017/03/16	2018/03/15
Cable	WOKEN	SFL402	S02-160323-07	2017/02/22	2018/02/21

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

7.5. 測試不準確度評估

本測試不準確度為 0.48%

7.6. 發射頻寬之量測結果

環境溫度: 22.4~25.4°C

測試日期: 2018-01-08~2018-01-09

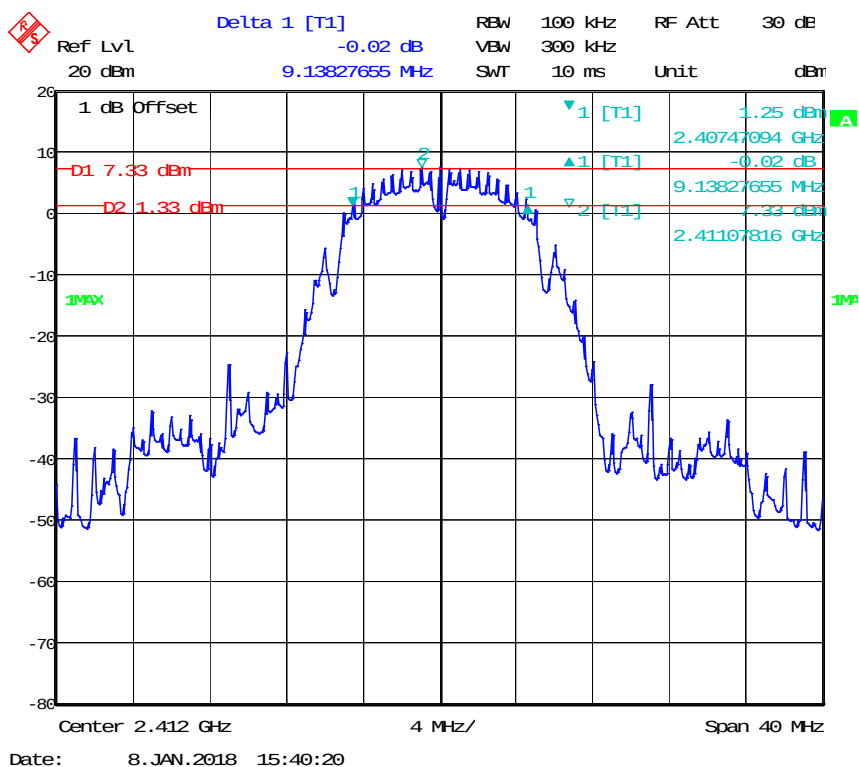
環境濕度: 40~43% RH

測試者: Tom Hsu

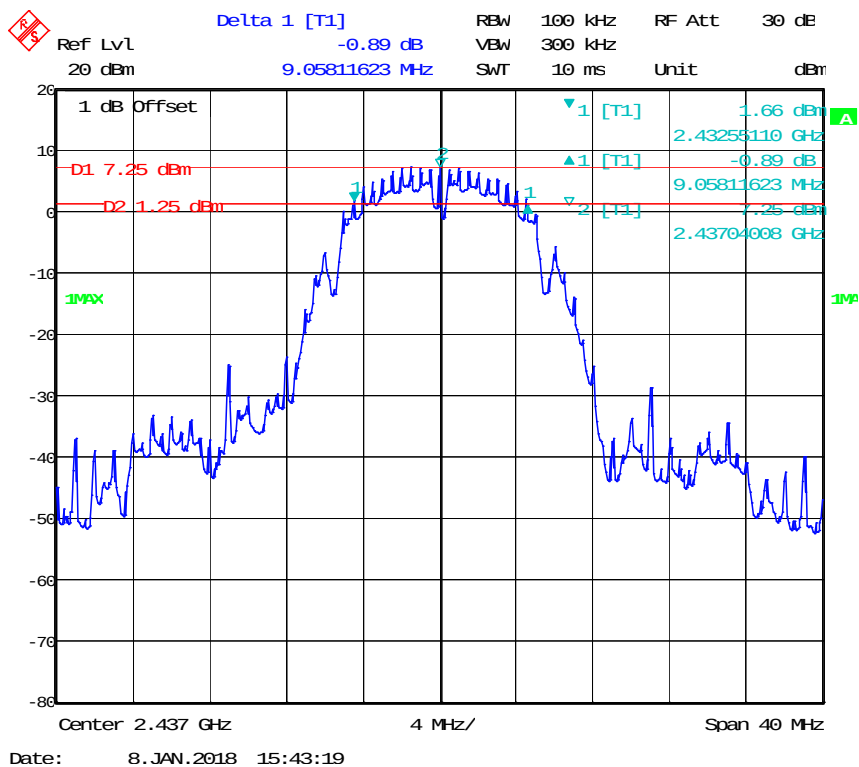
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (kHz)	Result
B mode					
Low	2412	9.138	11.784	>500	PASS
Mid	2437	9.058	11.623		PASS
High	2462	9.058	11.623		PASS
G mode					
Low	2412	16.353	17.154	>500	PASS
Mid	2437	16.353	17.154		PASS
High	2462	16.353	17.234		PASS
N20 mode					
Low	2412	17.635	18.116	>500	PASS
Mid	2437	16.834	18.116		PASS
High	2462	17.555	18.116		PASS
N40 mode					
Low	2422	36.393	36.874	>500	PASS
Mid	2437	36.393	36.874		PASS
High	2452	36.393	36.874		PASS

6 dB EmissionBandwidth

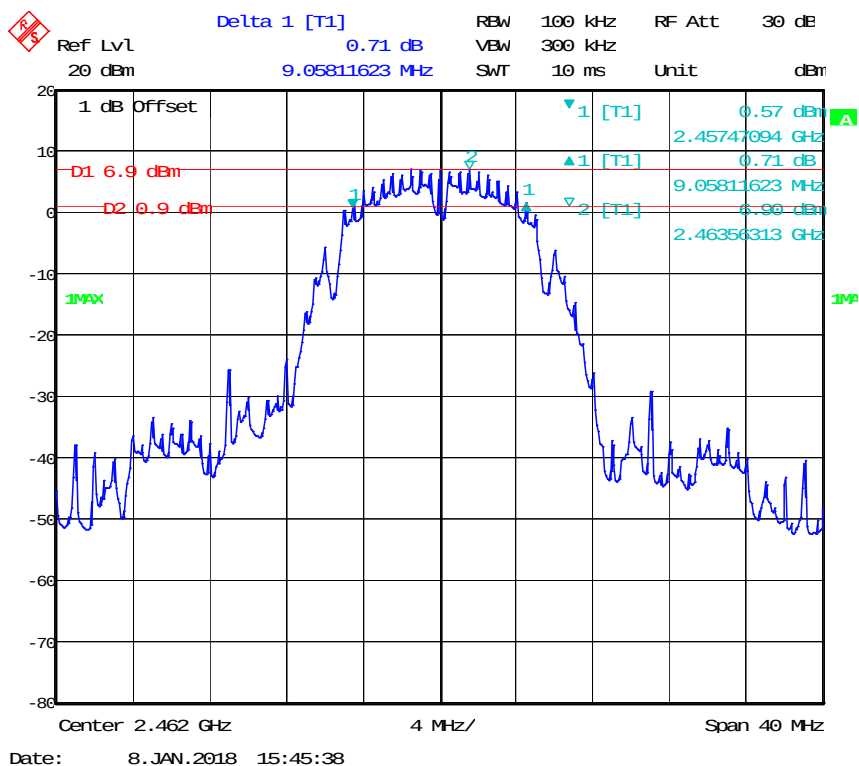
B Mode Low Channel



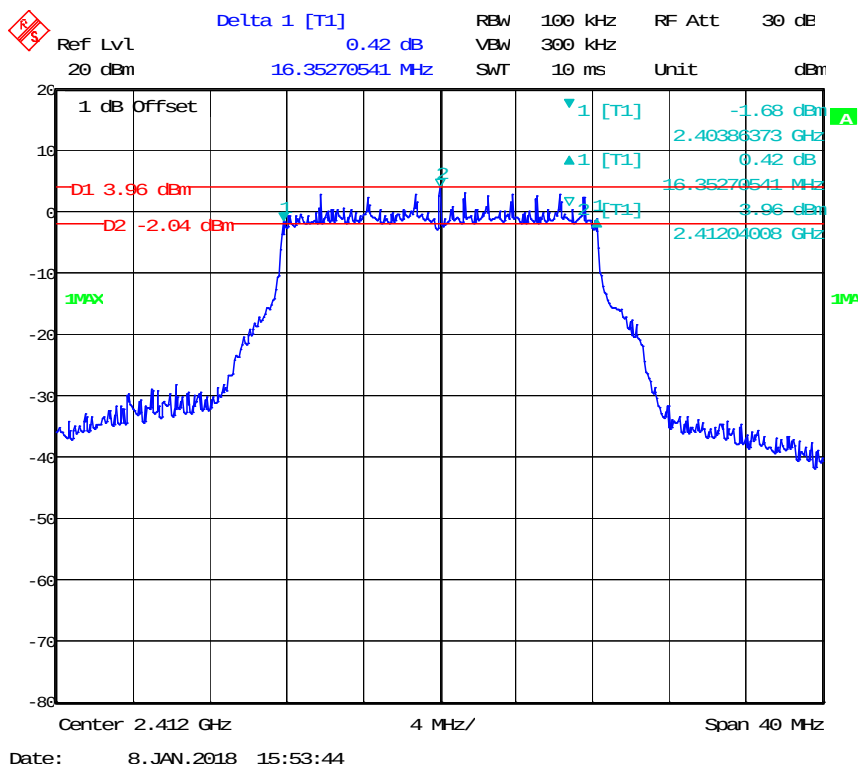
B Mode Middle Channel



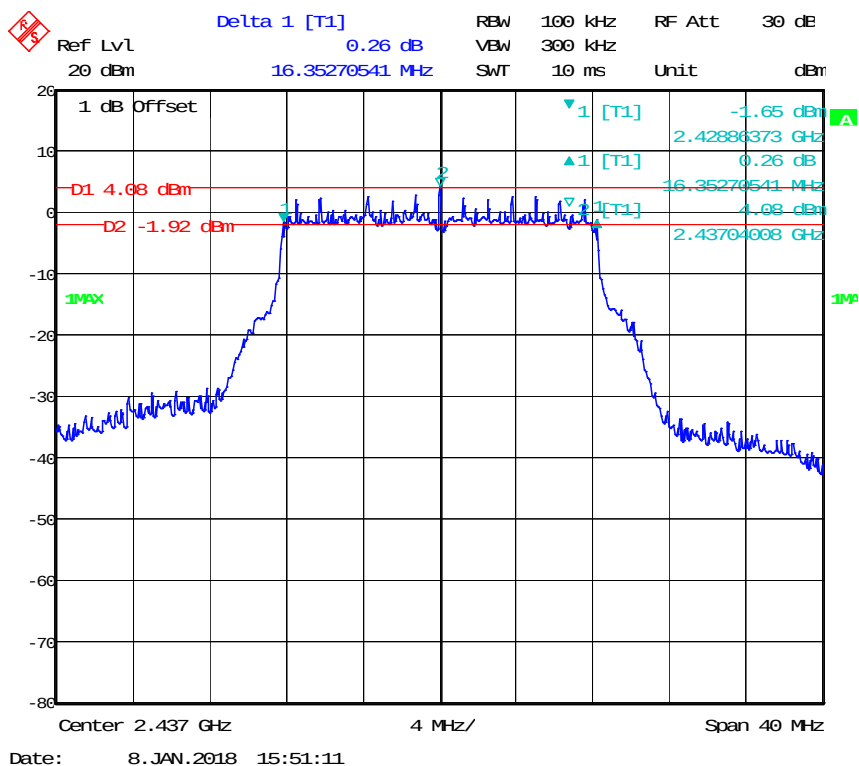
B Mode High Channel



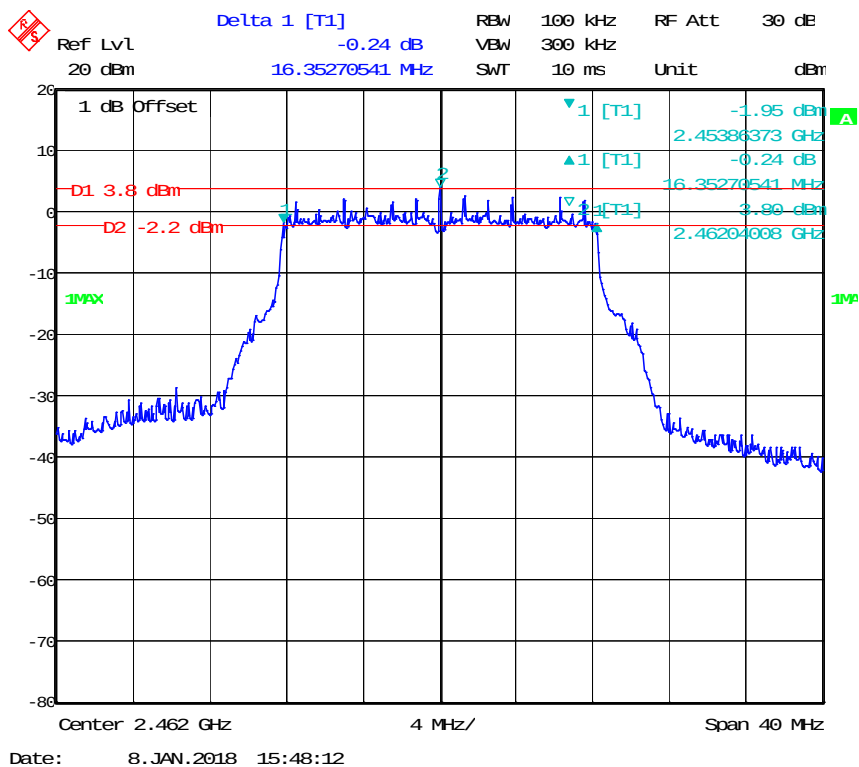
G Mode Low Channel



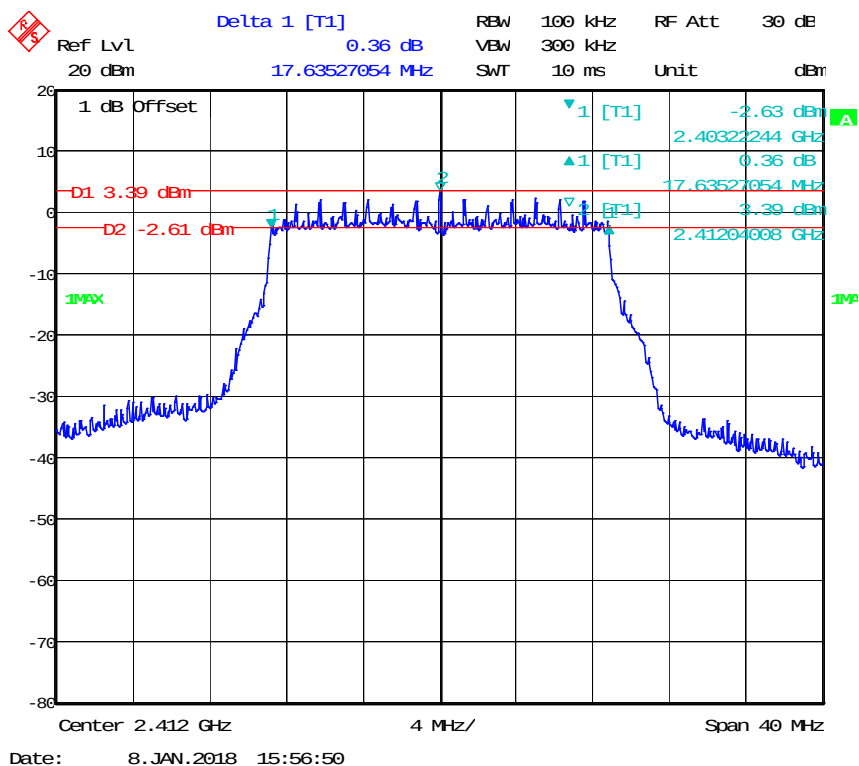
G Mode Middle Channel



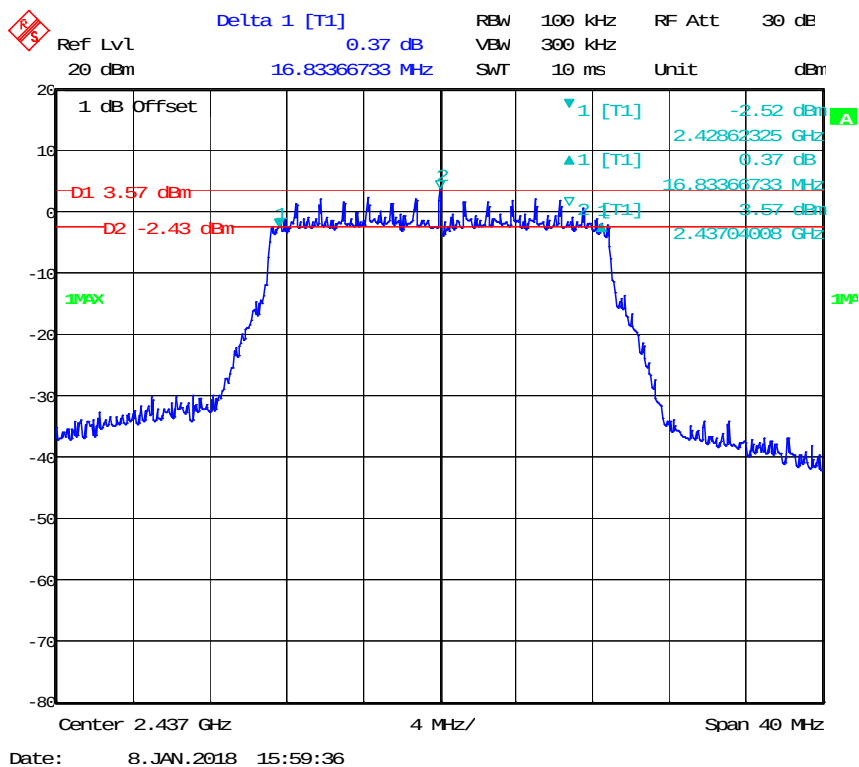
G Mode High Channel



N20 Mode Low Channel



N20 Mode Middle Channel



[illegible]

Delta 1 [T1]

Ref Lvl 0.30 dB

20 dBm 36.39278557 MHz

RBW 100 kHz

VBW 300 kHz

SWT 20 ms

Unit dBm

1 dB Offset

1 [T1] -6.53 dBm

2.40380361 GHz

0.30 dB

36.39278557 MHz

2 [T1] -0.88 dBm

2.42576754 GHz

D1 -0.88 dBm

D2 -6.88 dBm

1MAX

Center 2.422 GHz

8 MHz/

Span 80 MHz

Date: 9. JAN. 2018 10:33:25

Ref Lvl 20 dBm

Delta 1 [T1] -0.25 dBm

RBW 100 kHz

VBW 300 kHz

SWT 20 ms

RF Att 30 dB

Unit dBm

1 dB Offset

1 dB [T1] -5.84 dBm

2.41880361 GHz

-0.25 dBm

36.39278557 MHz

-0.77 dBm

2.43194990 GHz

D1 -0.77 dBm

D2 -6.77 dBm

1MAX

Center 2.437 GHz

8 MHz/

Span 80 MHz

Date: 9. JAN. 2018 10:30:09

Delta 1 [T1]

Ref Lvl 20 dBm

RBW 100 kHz

VBW 300 kHz

SWT 20 ms

RF Att 30 dB

Unit dBm

1 dB Offset

D1 -0.64 dBm

D2 -6.64 dBm

1MAX

1 [T1] -6.00 dBm

2 [T1] -0.50 dBm

2 [T1] -0.64 dBm

2.43380361 GHz

36.39278557 MHz

2.44694990 GHz

Center 2.452 GHz

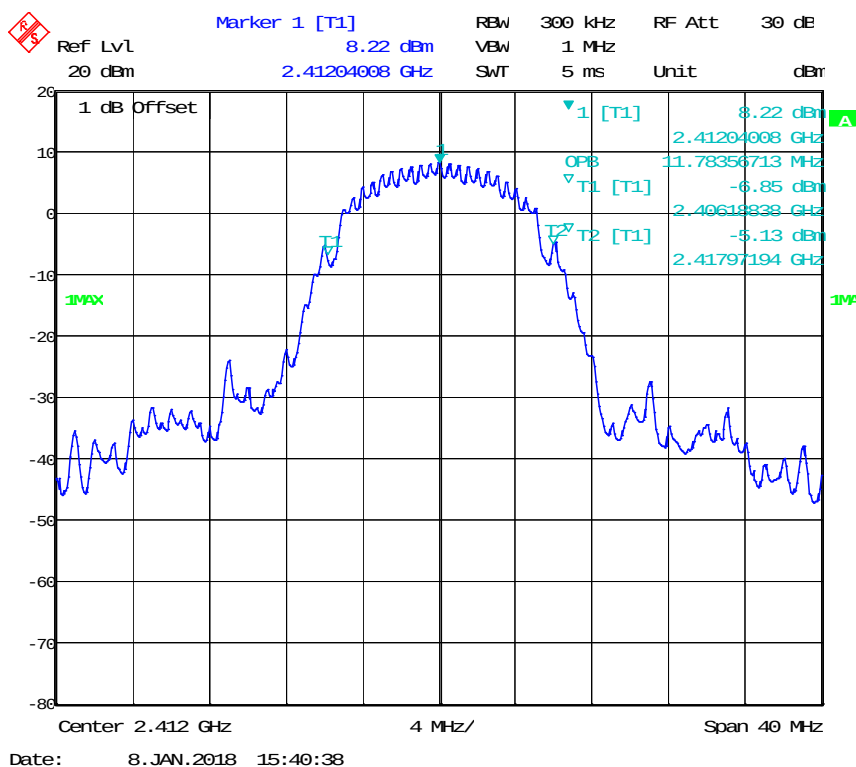
8 MHz/

Span 80 MHz

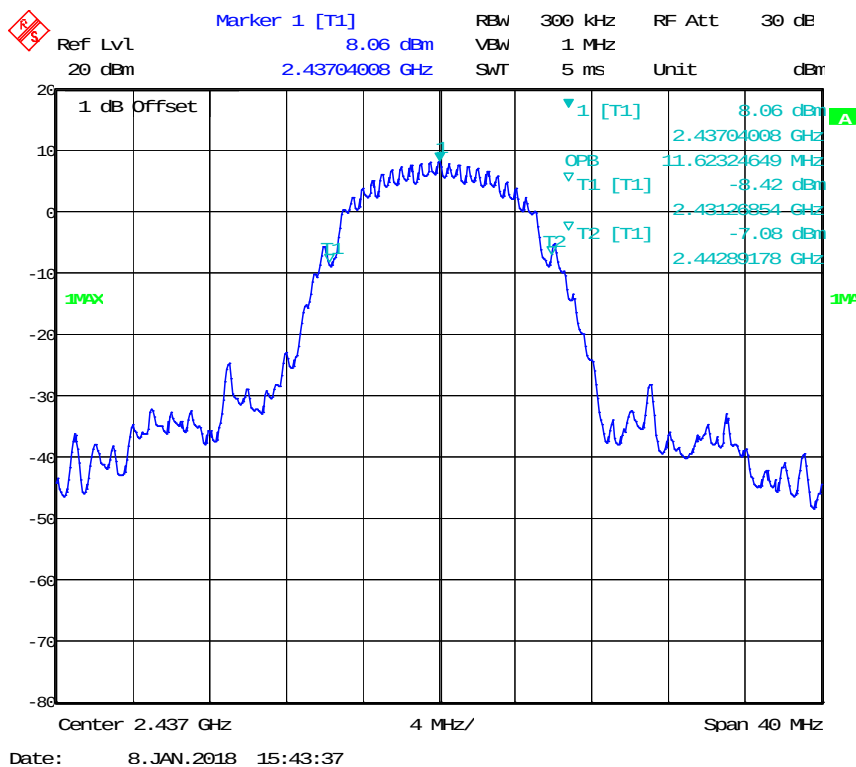
Date: 9. JAN. 2018 10:26:48

99% Bandwidth:

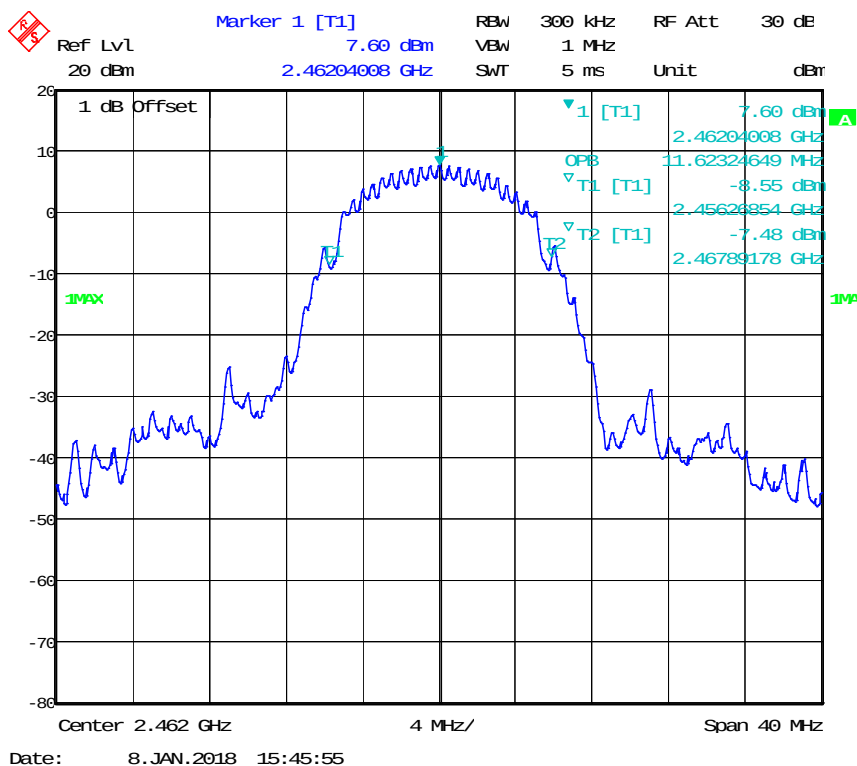
B Mode Low Channel



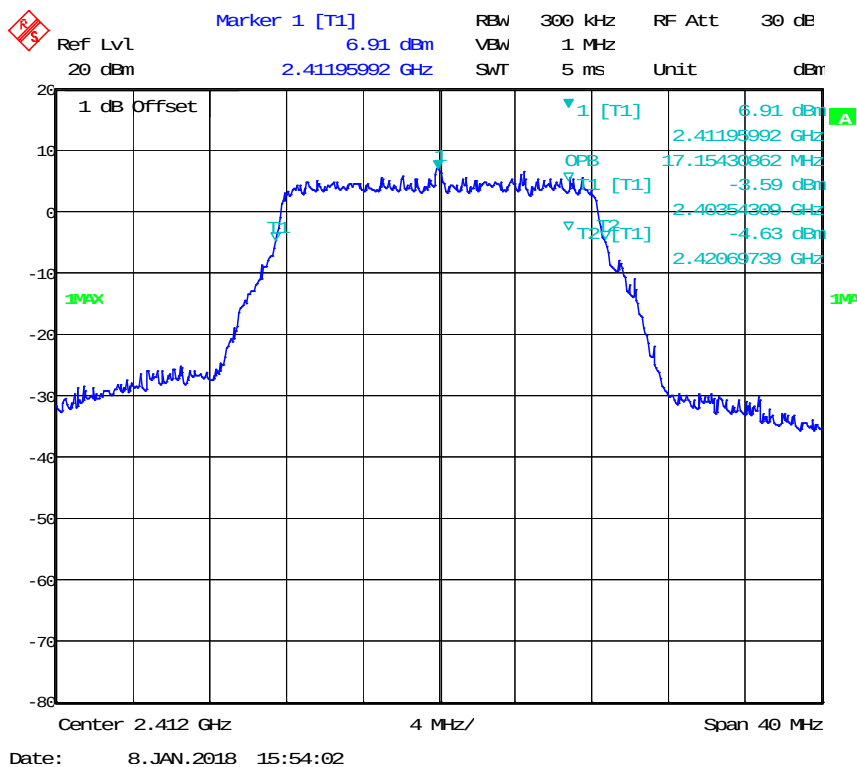
B Mode Middle Channel



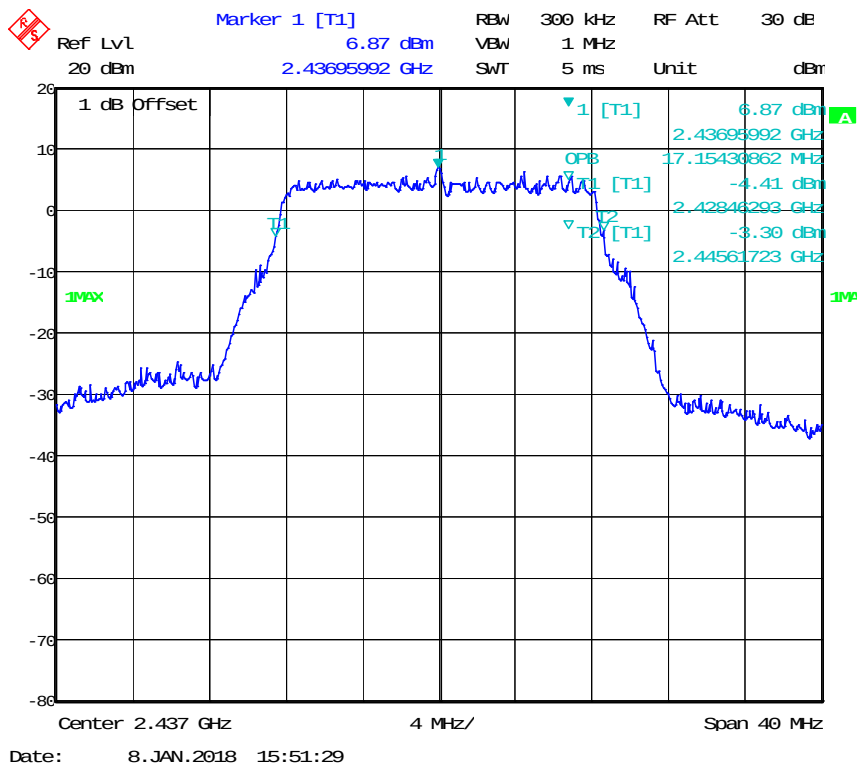
B Mode High Channel



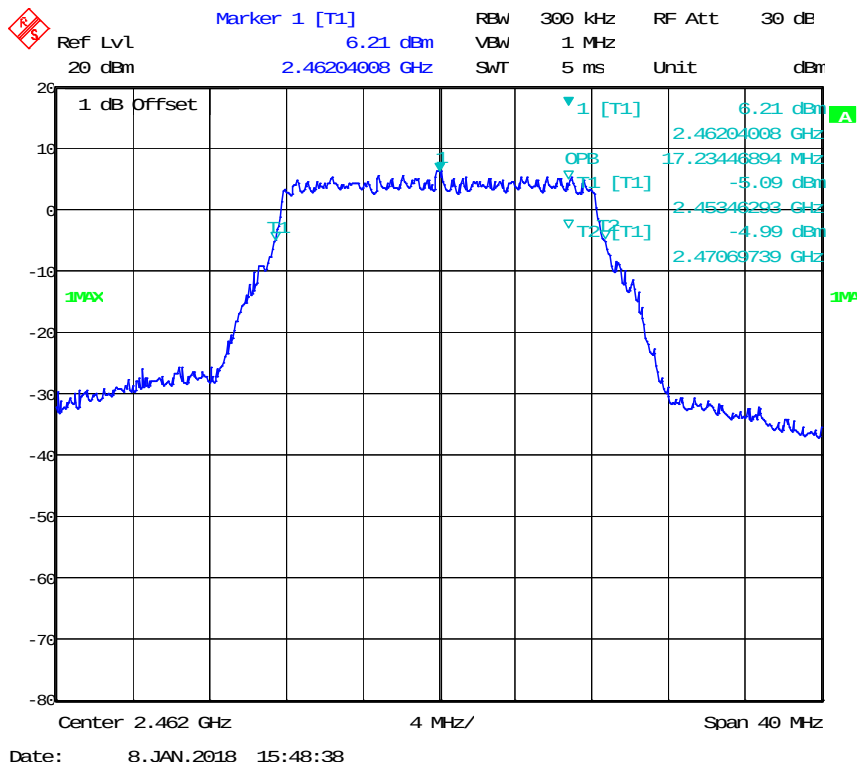
G Mode Low Channel



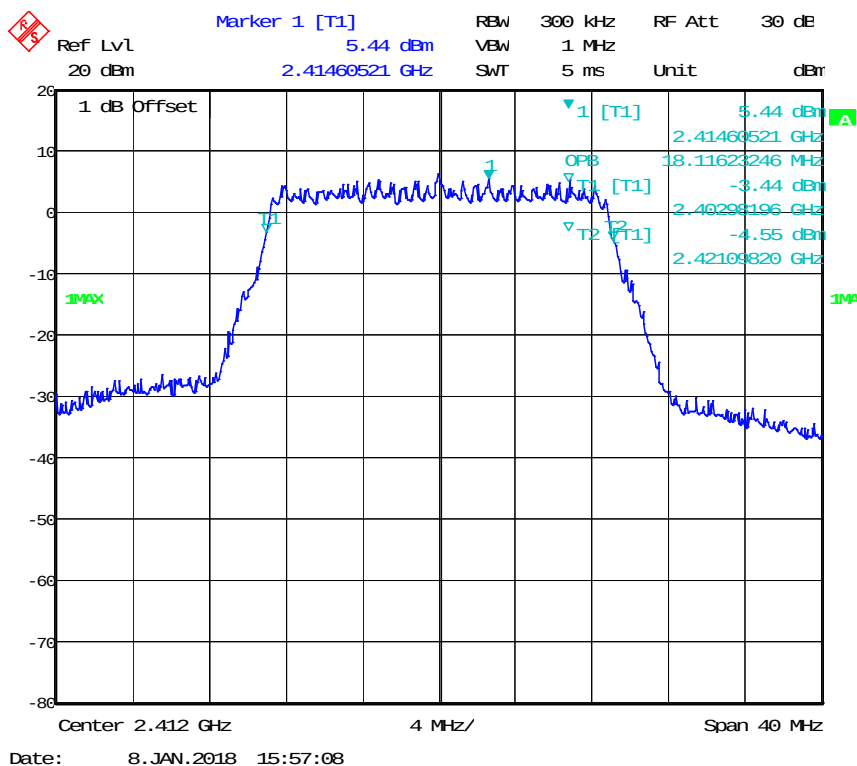
G Mode Middle Channel



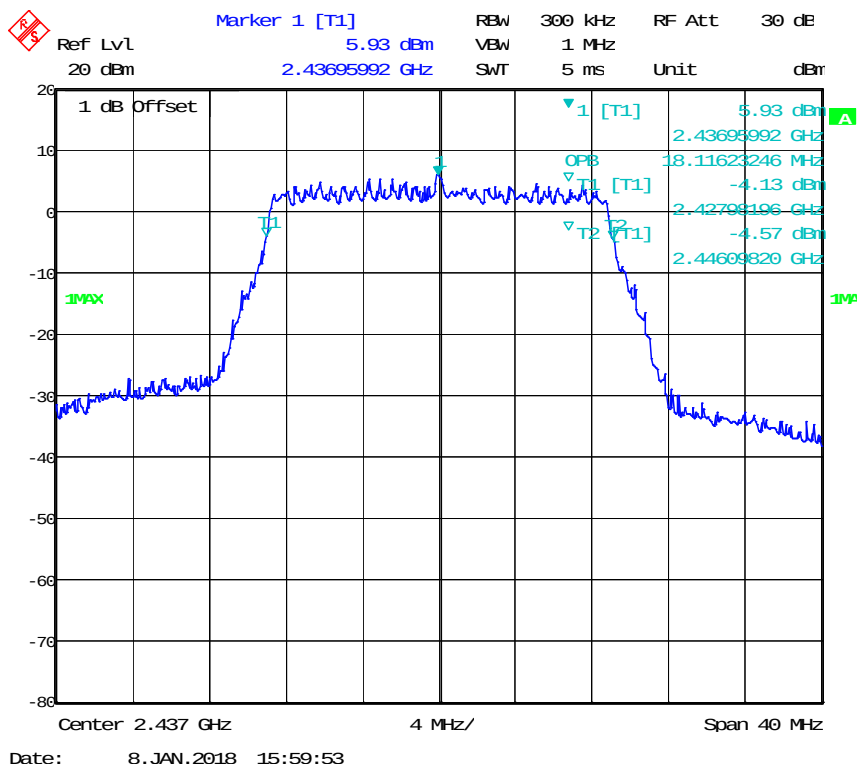
G Mode High Channel



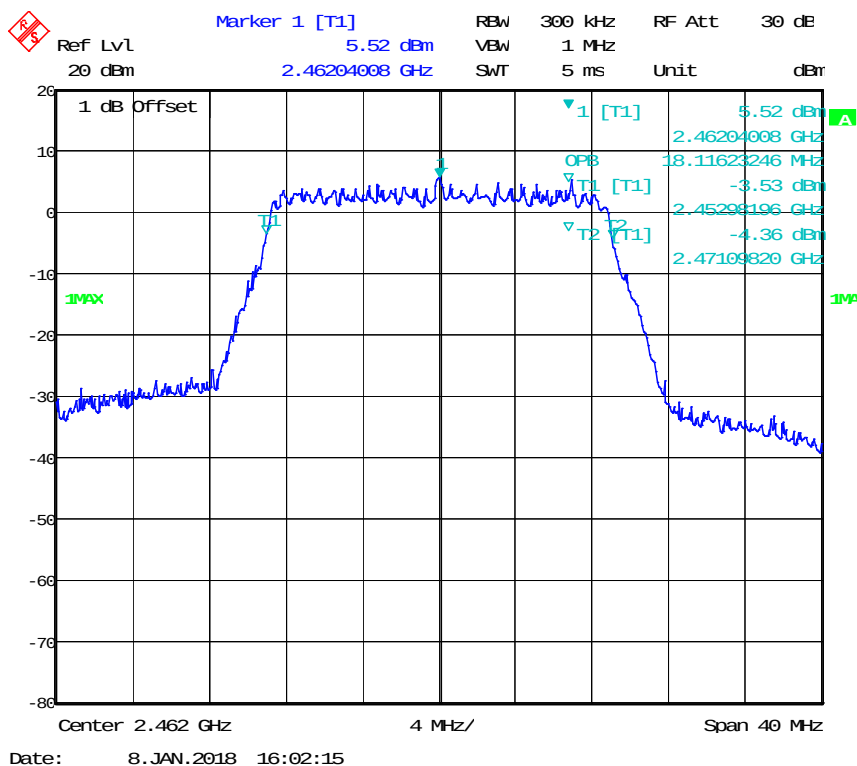
N20 Mode Low Channel



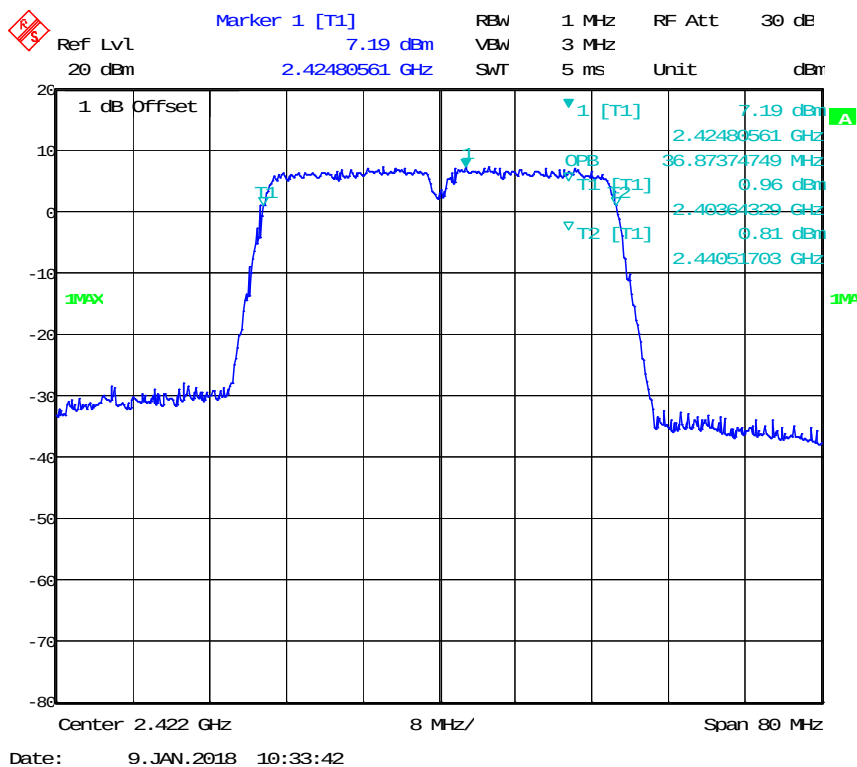
N20 Mode Middle Channel



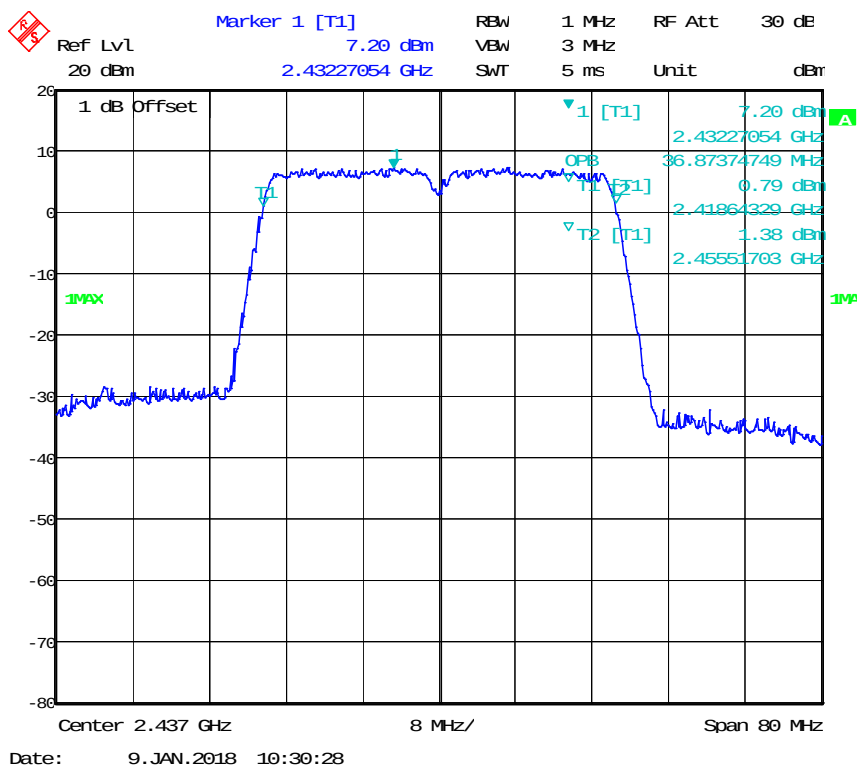
N20 Mode High Channel



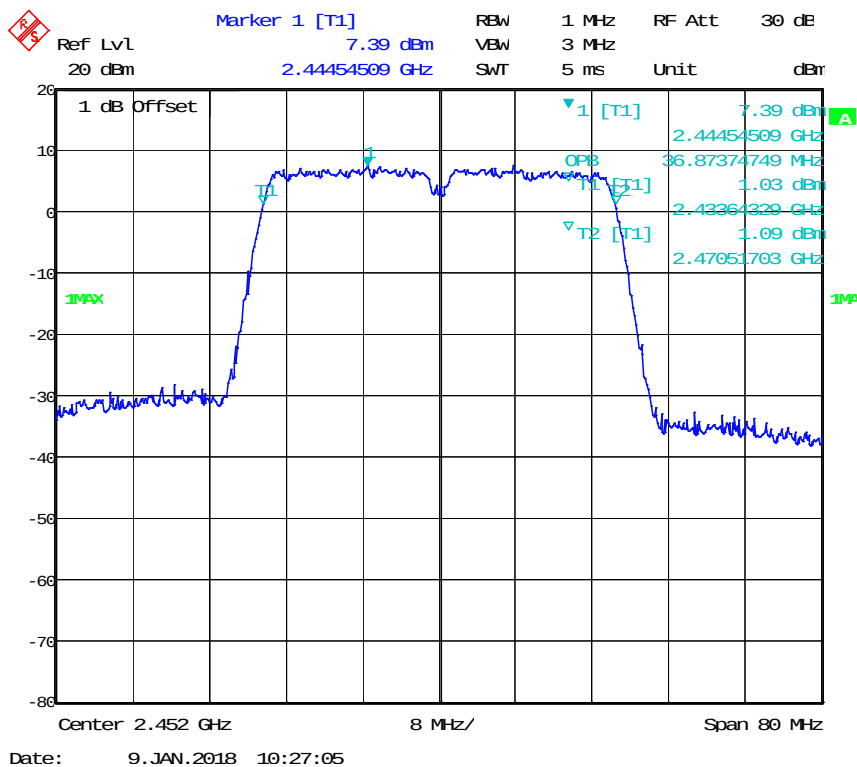
N40 Mode Low Channel



N40 Mode Middle Channel



N40 Mode High Channel



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 3.10.1.2 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 3.10.1.2 節(1)(B)之規定，跳頻系統除 3.10.1.2 節(1)(A)外，依 3.10.1.6(1)(A)(a)：0.125 W(含) 以下。

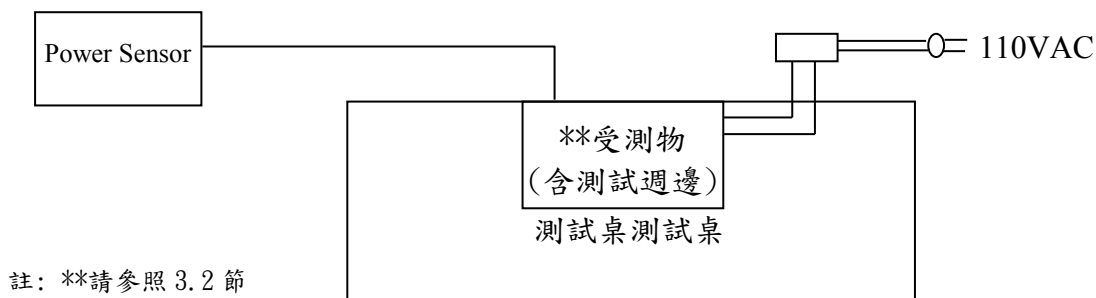
依據國家通訊傳播委員會低功率射頻電機技術規範 3.10.1.2 節(1)(C)之規定，數位調變技術系統：1 W(含) 以下。

8.2. 測試方法

1. 將受測物的 RF 埠經由一條 50 歐姆纜線連接至頻譜分析儀。
2. 設定儀器之解析頻寬大於6 dB 發射頻寬或使用峰值功率表。
3. 設定量測頻率為量測頻道。
4. 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. 測試配置



8.4. 輸出功率之量測儀器

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Power Sensor	KEYSIGHT	U2021XA	MY54080018	2017/03/21	2018/03/20
Attenuator	MINI-CIRCUITS	BW-S10W5+	N/A	2017/03/16	2018/03/15
Cable	WOKEN	SFL402	S02-160323-07	2017/02/22	2018/02/21

Remark: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

8.5. 測試不準確度評估

本測試不準確度為 ± 1.6730 dB

8.6. 輸出功率之量測結果

環境溫度: 22.4~25.4°C

測試日期: 2018-01-08~2018-01-09

環境濕度: 40~43% RH

測試者: Tom Hsu

Channel	Frequency (MHz)	Peak Output Power (dBm)			Limit (dBm)	Result
		Chain0	Chain1	Total		
B mode						
Low	2412	19.65	19.12	/	30.00	PASS
Mid	2437	19.79	19.07	/	30.00	PASS
High	2462	19.65	18.95	/	30.00	PASS
G mode						
Low	2412	20.33	20.22	/	30.00	PASS
Mid	2437	20.38	20.16	/	30.00	PASS
High	2462	20.4	20.02	/	30.00	PASS
N20 mode						
Low	2412	19.82	21.3	23.63	30.00	PASS
Mid	2437	19.68	21.27	23.56	30.00	PASS
High	2462	19.54	21.15	23.43	30.00	PASS
N40 mode						
Low	2422	19.43	19.95	22.71	30.00	PASS
Mid	2437	19.72	19.64	22.69	30.00	PASS
High	2452	19.6	19.98	22.8	30.00	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3.10.1.5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30 dB。此外，落於第2.7節禁用頻段之輻射發射，應符合第2.8節之規定。

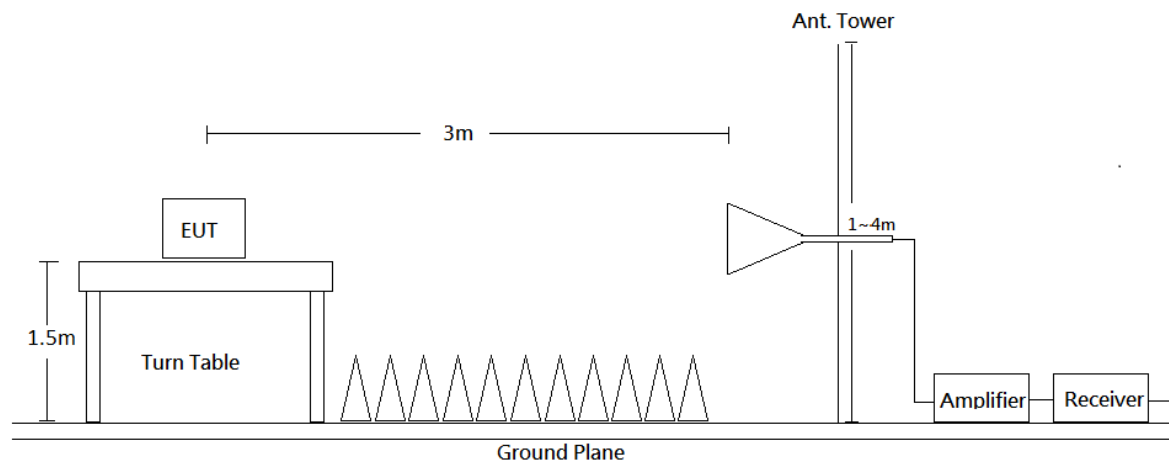
9.2. 測試方法

- 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

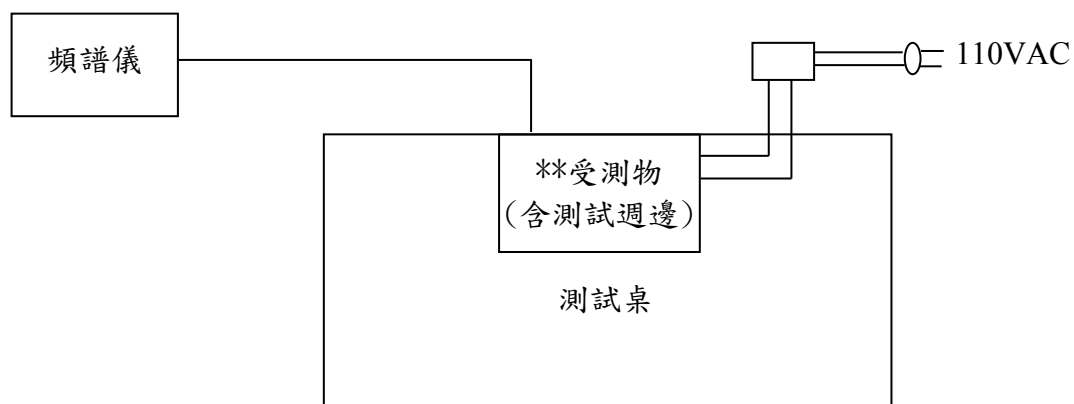
輻射配置圖



註: **請參照 3.2 節

依據 ANSI C63.10:2013 架設

直量配置圖



9.4. 開放頻帶邊緣之量測儀器

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Bilog Antenna	Sunol& Mini-Circuits	JB6/ UNAT-6+	A050115 / 15542_01	2017/11/10	2018/11/09
Horn Antenna	EMCO	3115	9311-4158	2017/05/31	2018/05/30
Horn Antenna	ETS-Lindgren	3116	00062638	2017/09/04	2018/09/03
Preamplifier	Sonoma	310N	130602	2017/07/03	2018/07/02
Preamplifier	EMEC	EM01G18G	060697	2017/04/14	2018/04/13
Spectrum Analyzer	Rohde & Schwarz	FSV40	101203	2017/07/13	2018/07/12
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2017/11/06	2018/11/05
Spectrum Analyzer	Rohde & Schwarz	FSV40	101203	2017/07/13	2018/07/12
Microflex Cable	UTIFLEX	UFB311A-Q-14 40-300300	220490-006	2017/10/31	2018/10/30
Microflex Cable	UTIFLEX	UFA210A-1-31 49-300300	MFR64639 226389-001	2017/11/10	2018/11/09
Microflex Cable	ROSNOL	K1K50-UP0264 -K1K50-450CM	160309-1	2017/03/24	2018/03/23
Microflex Cable	ROSNOL	K1K50-UP0264 -K1K50-80CM	160309-2	2017/01/20	2018/01/19
Turn Table	Champro	TT-2000	060772-T	N.C.R	N.C.R
Antenna Tower	Champro	AM-BS-4500-B	060772-A	N.C.R	N.C.R
Controller	Champro	EM1000	060772	N.C.R	N.C.R
Software	Farad	EZ_EMC	BACL-03A1	N.C.R	N.C.R
NSA	BACL	966-A	N/A	2017/07/24	2018/07/23
VSWR	BACL	966-A	N/A	2017/07/25	2018/07/24
Spectrum Analyzer	Rohde & Schwarz	FSU26	200268	2017/05/08	2018/05/07
Cable	WOKEN	SFL402	S02-160323-07	2017/02/22	2018/02/21
Attenuator	MINI-CIRCUITS	BW-S10W5+	N/A	2017/03/09	2018/03/08

Remark: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

9.5. 測試不準確度評估

本測試不準確度為 $\pm 0.48\text{dB}$

9.6. 開放頻帶邊緣之量測結果

請參考附圖

判定結果：符合規範

發射限制測試值 CH Low / CH High

B Mode

發射限制測試值 Low(下邊緣頻帶):

在下邊緣頻帶之 100kHz 頻寬內最大值為 54.67/43.83dBuV/m (Peak/Average)。

發射限制測試值 High(上邊緣頻帶):

在上邊緣頻帶之 100kHz 頻寬內最大值為 55.25/44.80dBuV/m (Peak/Average)。

G Mode

發射限制測試值 Low(下邊緣頻帶):

在下邊緣頻帶之 100kHz 頻寬內最大值為 54.79/44.52dBuV/m (Peak/Average)。

發射限制測試值 High(上邊緣頻帶):

在上邊緣頻帶之 100kHz 頻寬內最大值為 55.68/44.87dBuV/m (Peak/Average)。

N20 Mode

發射限制測試值 Low(下邊緣頻帶):

在下邊緣頻帶之 100kHz 頻寬內最大值為 55.26/44.50dBuV/m (Peak/Average)。

發射限制測試值 High(上邊緣頻帶):

在上邊緣頻帶之 100kHz 頻寬內最大值為 55.05/45.37dBuV/m (Peak/Average)。

N40 Mode

發射限制測試值 Low(下邊緣頻帶):

在下邊緣頻帶之 100kHz 頻寬內最大值為 54.13/44.46dBuV/m (Peak/Average)。

發射限制測試值 High(上邊緣頻帶):

在上邊緣頻帶之 100kHz 頻寬內最大值為 56.46/45.79dBuV/m (Peak/Average)。

由上述條件可以證明使用頻率在使用頻帶(2412~2462MHz)內，所以不用測試發射限制測試。

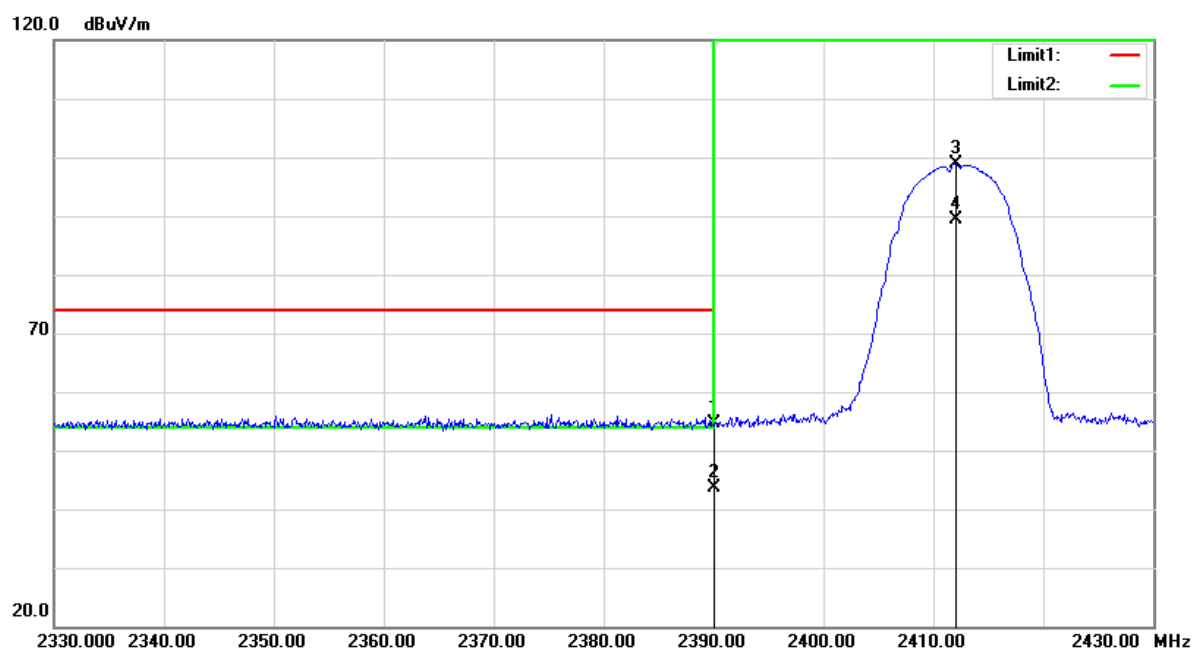
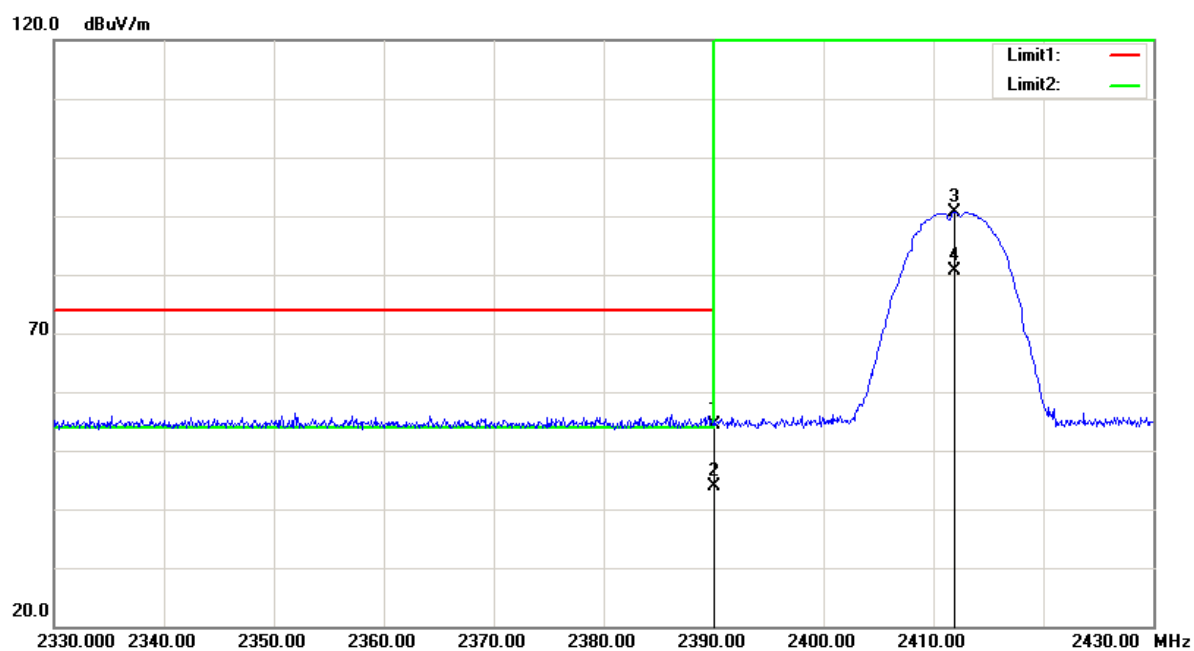
發射限制測試 B Mode / CH Low

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

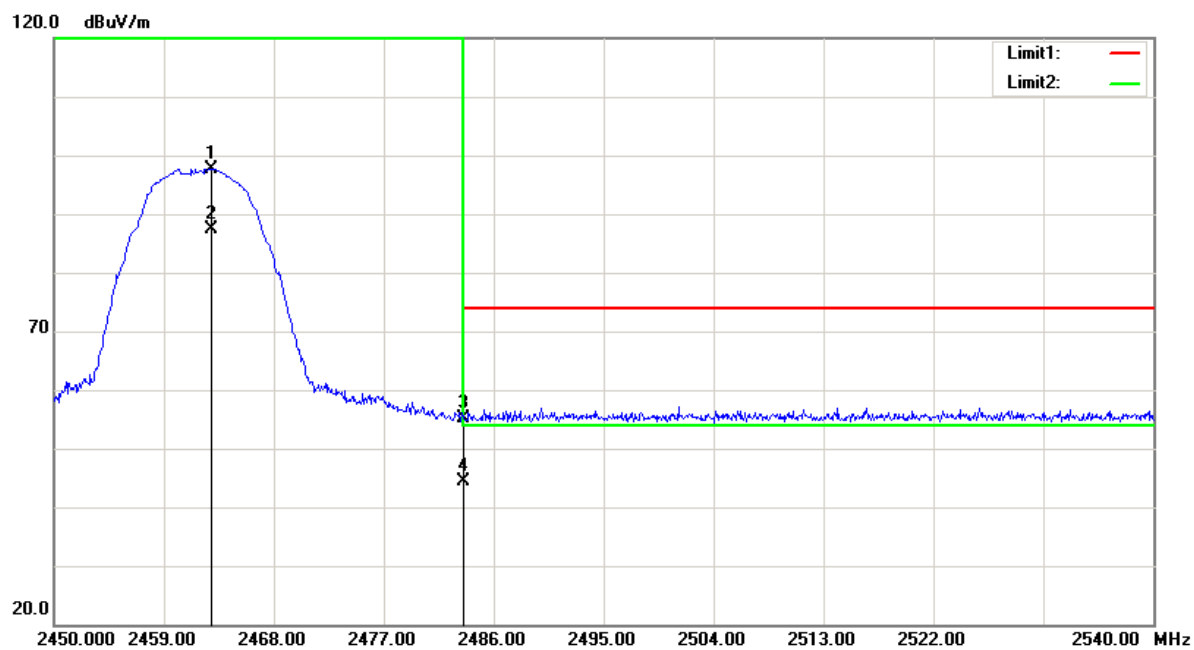
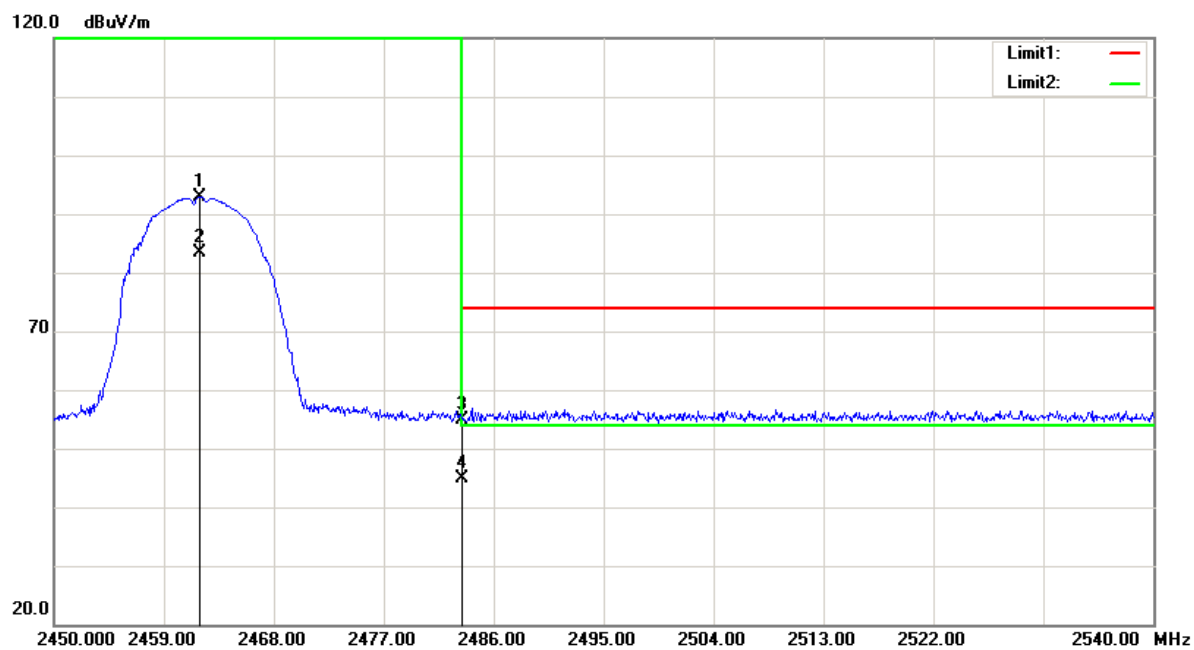
發射限制測試 B Mode / CH High

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

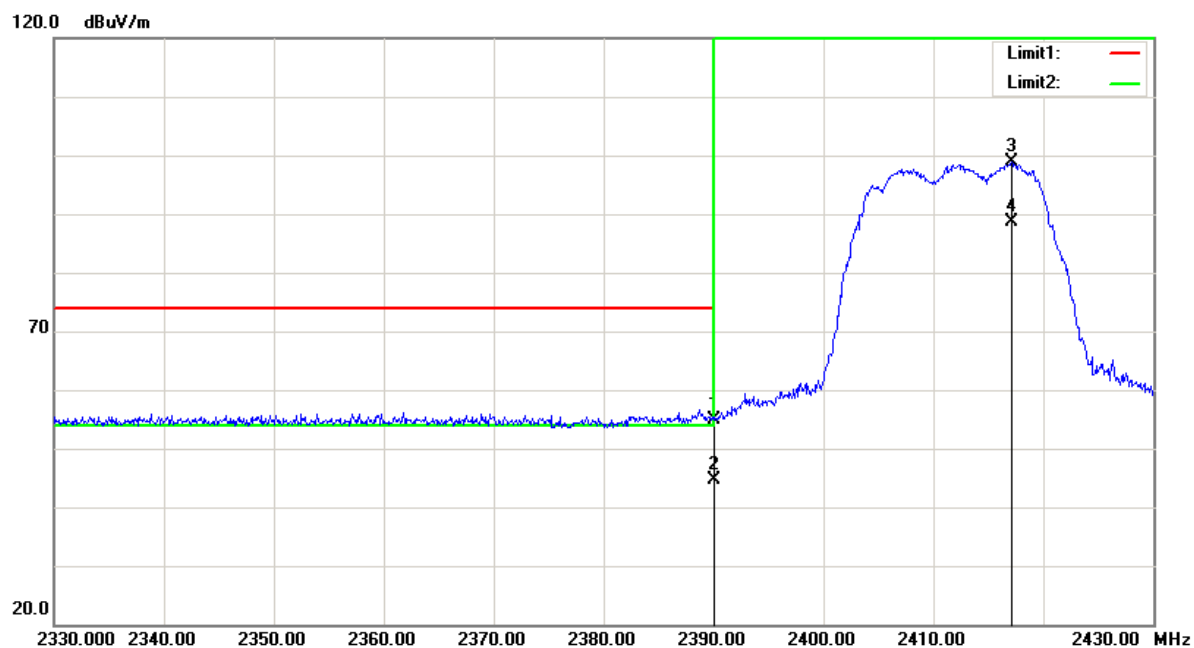
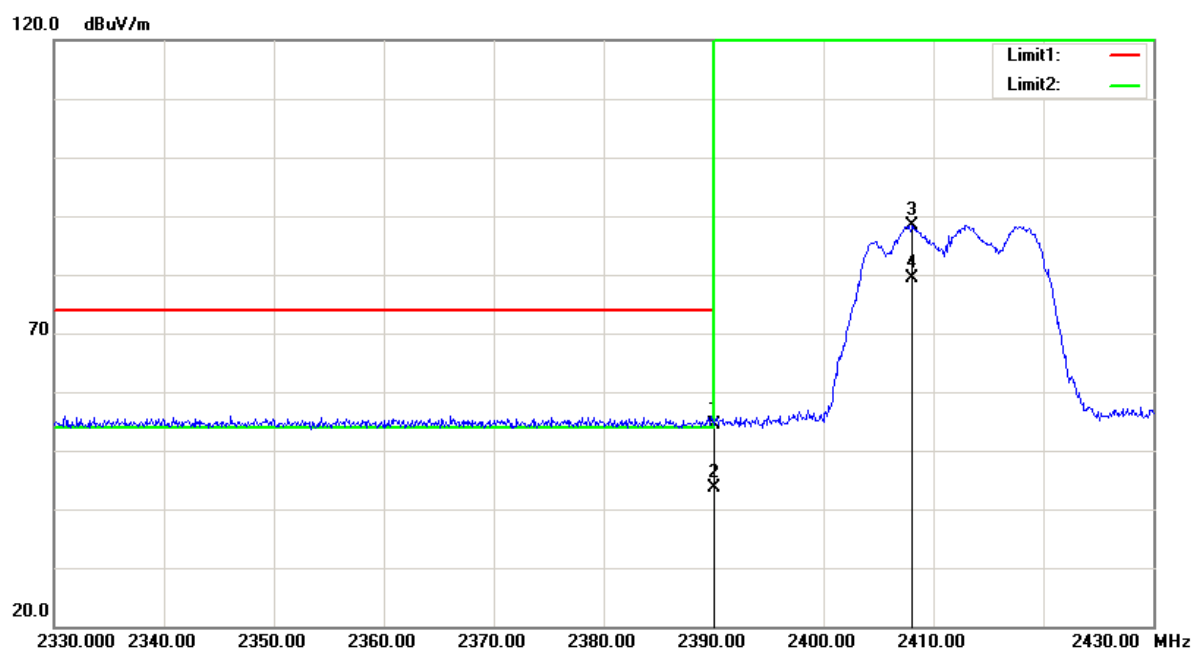
發射限制測試 G Mode / CH Low

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

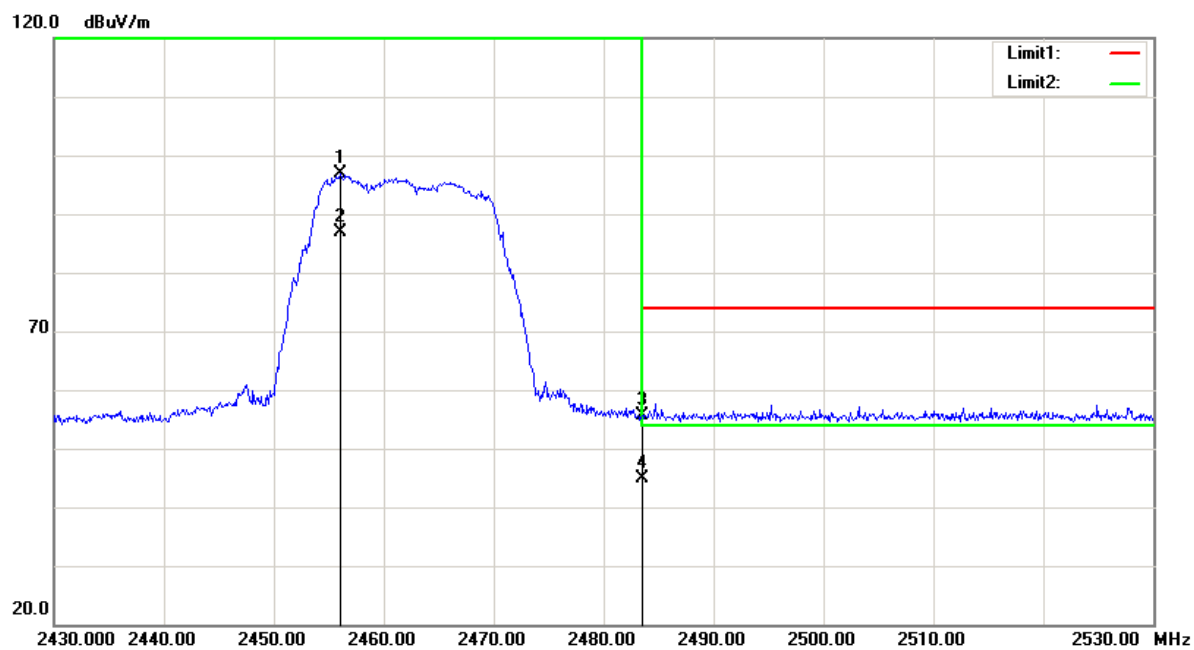
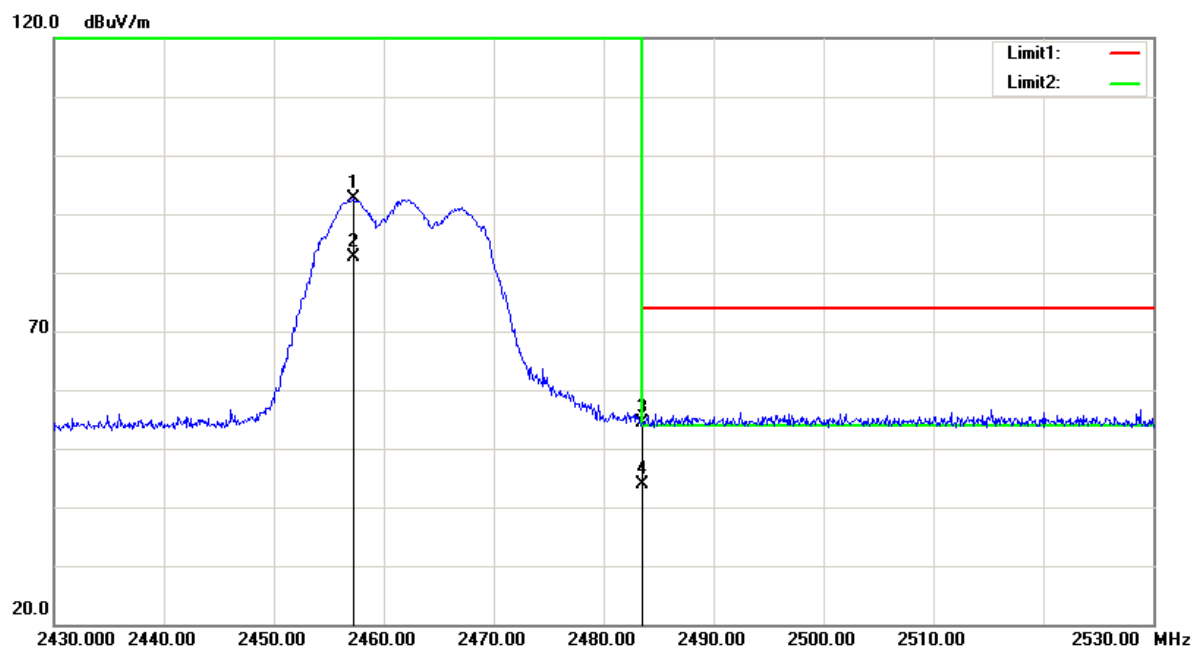
發射限制測試 G Mode / CH High

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

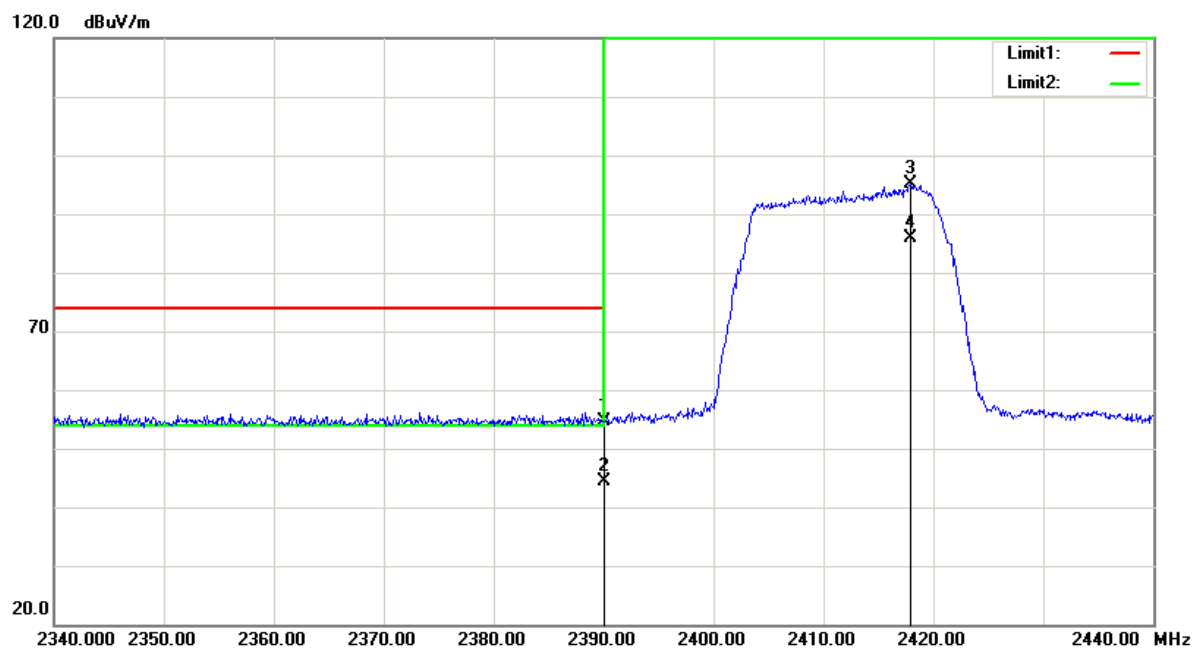
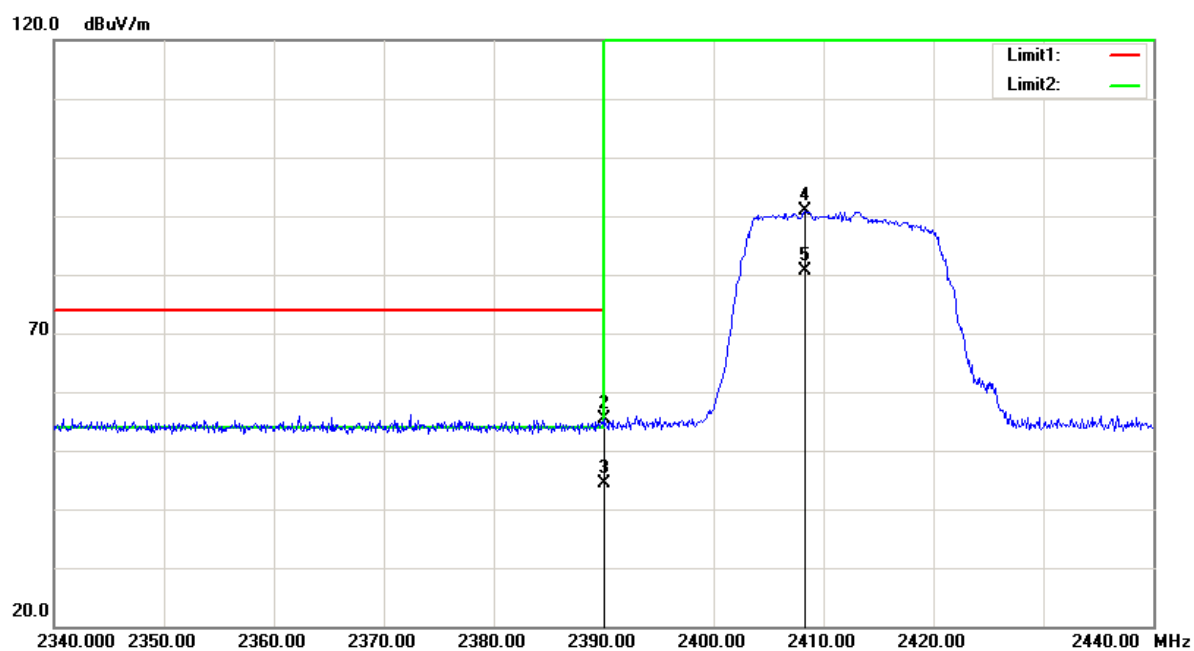
發射限制測試 N20 Mode / CH Low

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

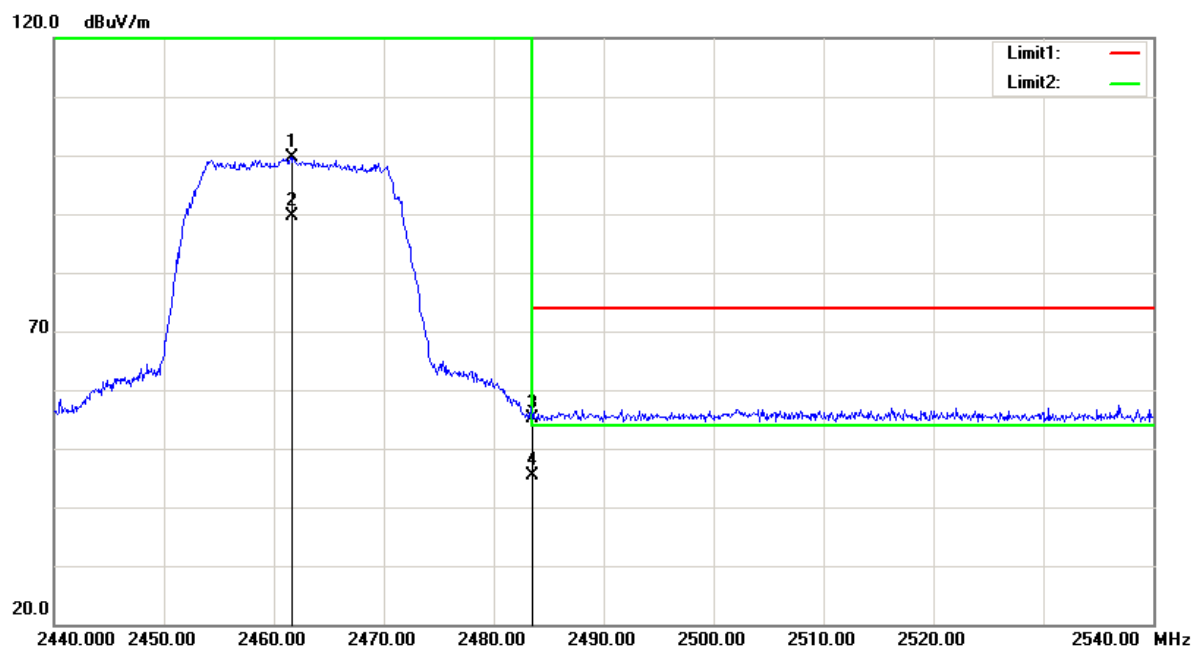
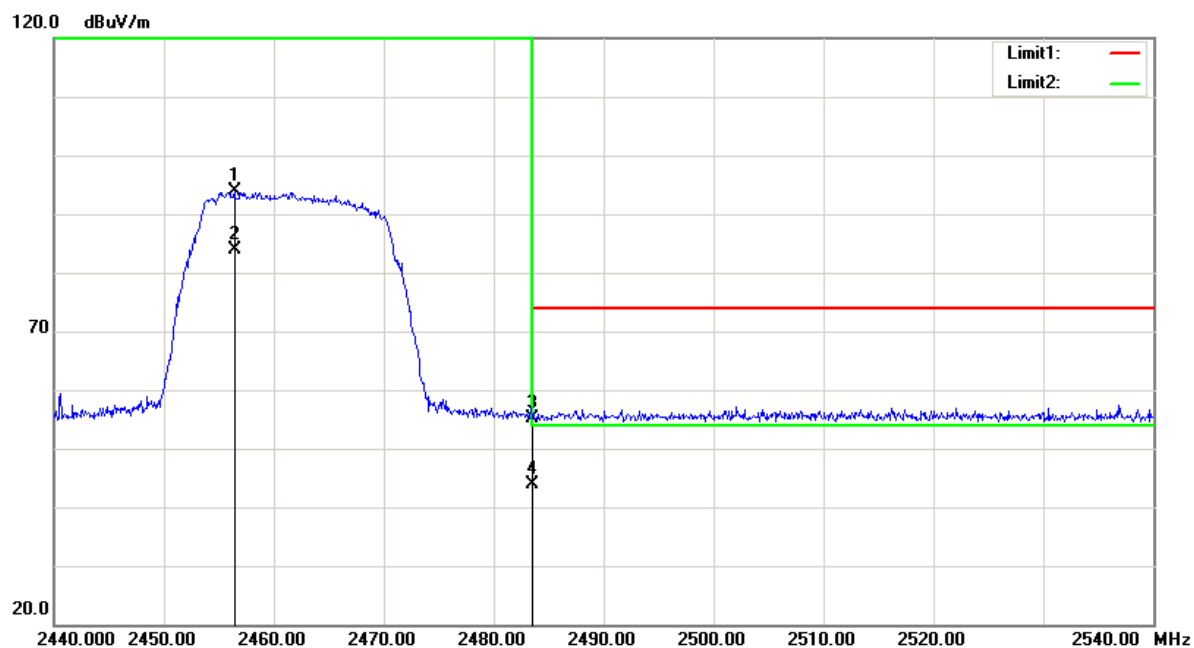
發射限制測試 N20 Mode / CH High

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

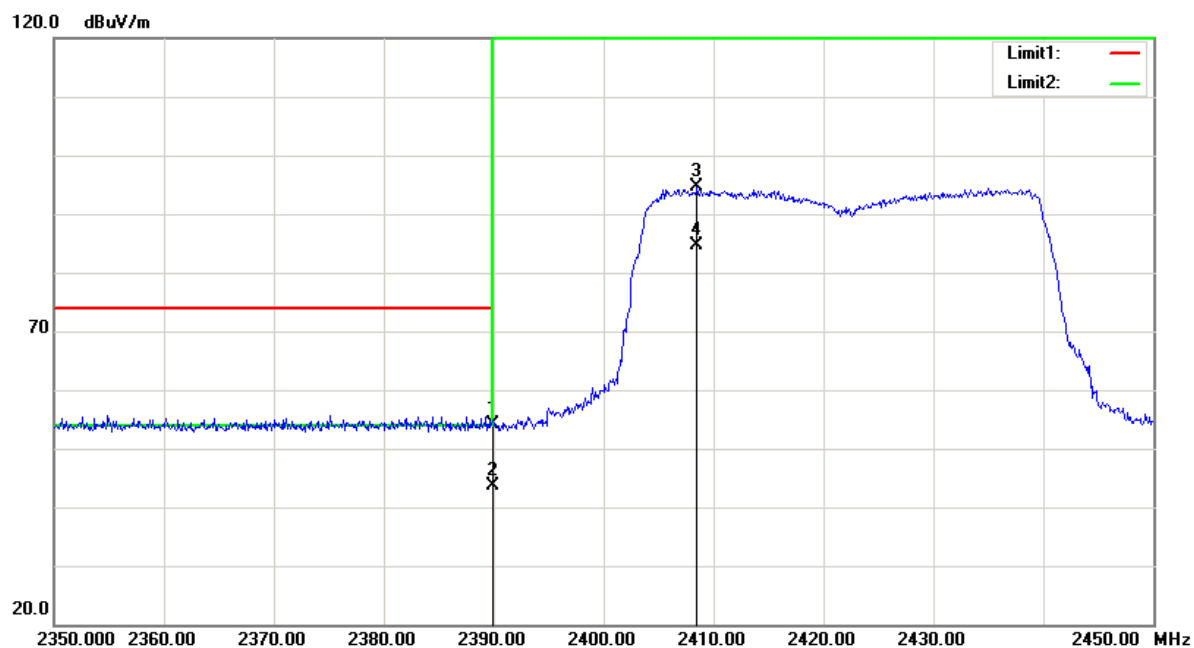
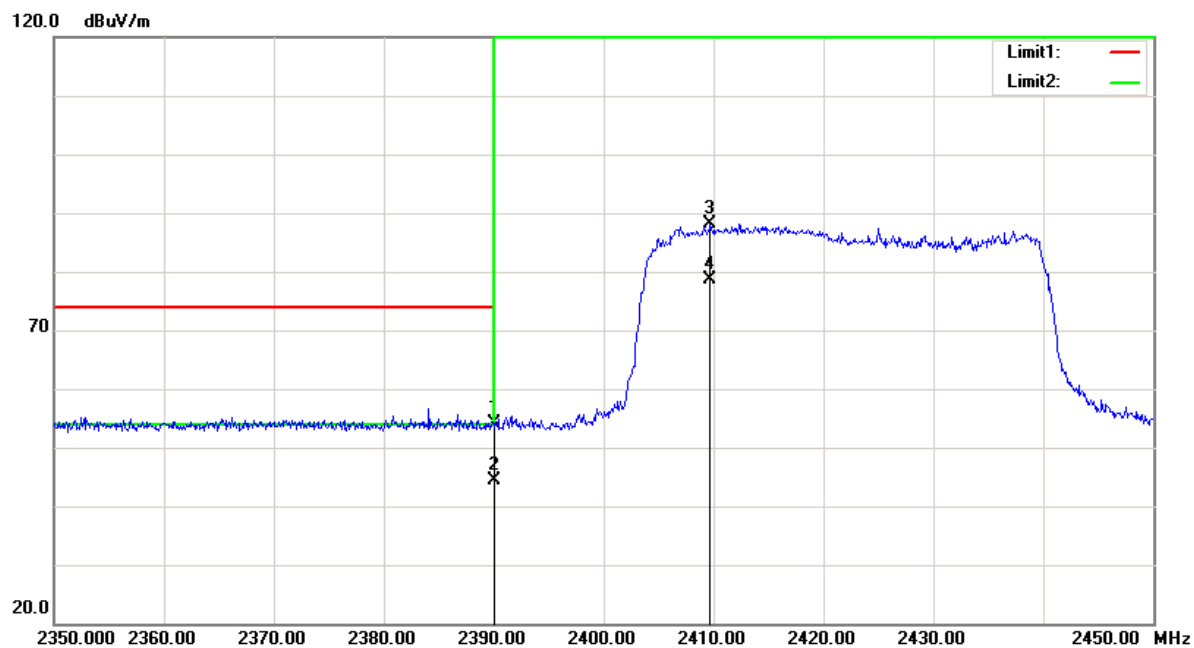
發射限制測試 N40 Mode / CH Low

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

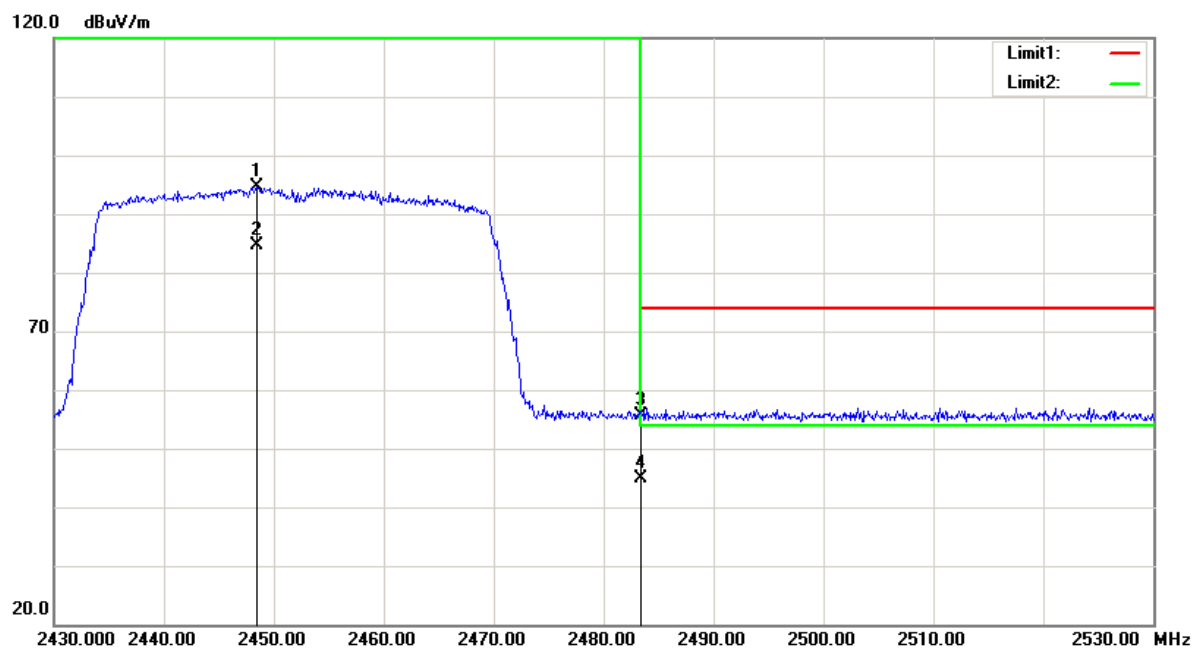
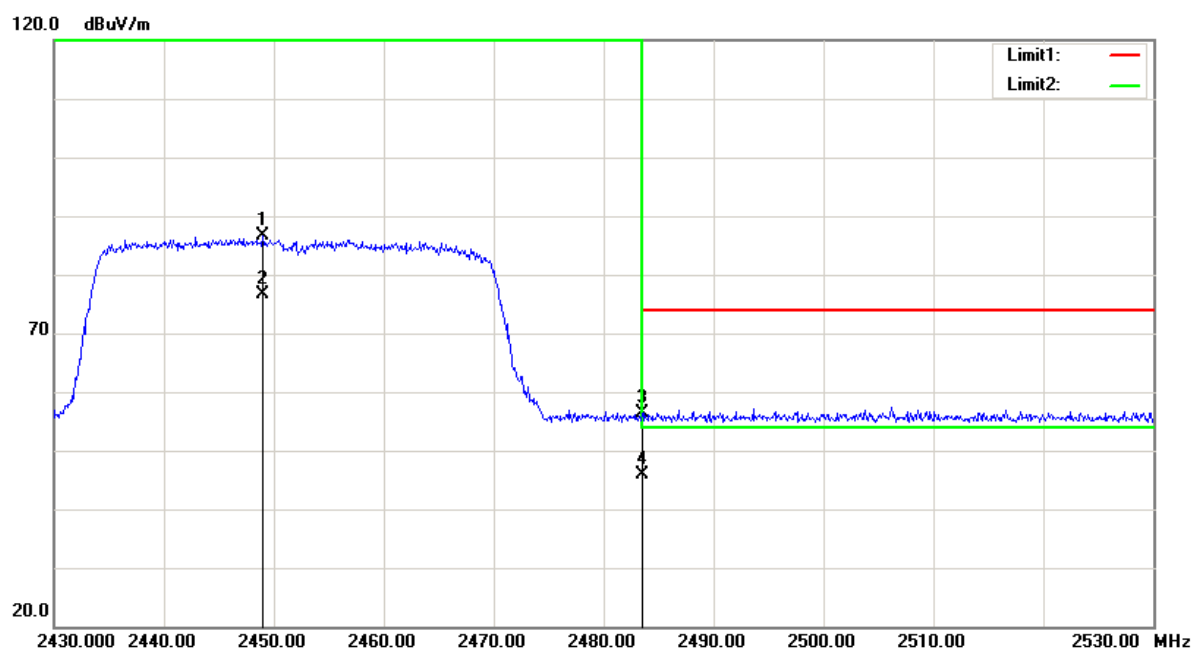
發射限制測試 N40 Mode / CH High

環境溫度: 22°C

測試日期: 2018-01-20

環境濕度: 41% RH

測試者: Tom Hsu

Horizontal**Vertical**

Conducted Bandedge

環境溫度: 22.4~25.4°C

測試日期: 2018-01-08~2018-01-09

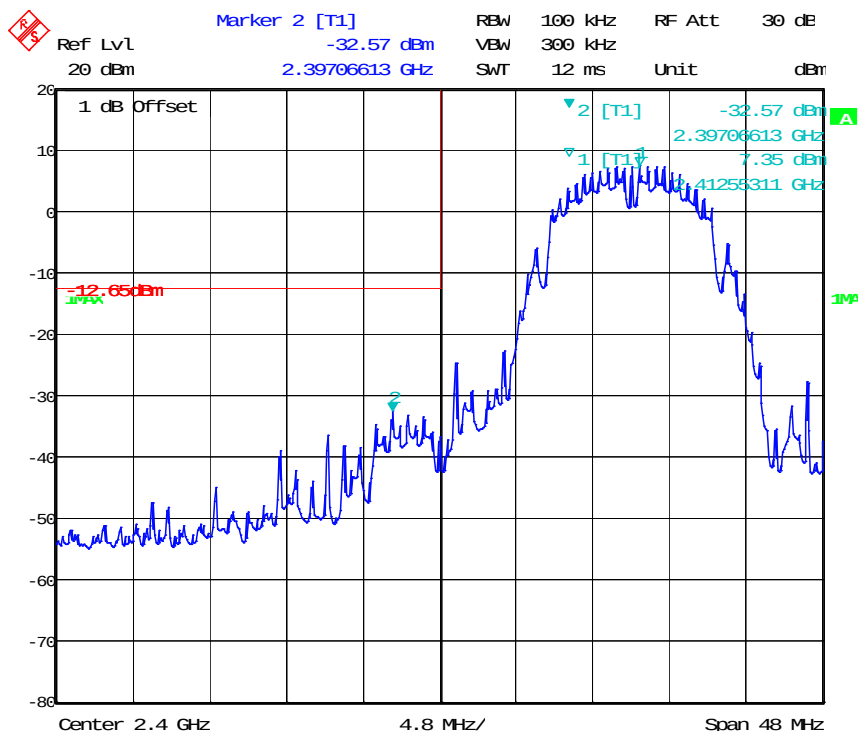
環境濕度: 40~43% RH

測試者: Tom Hsu

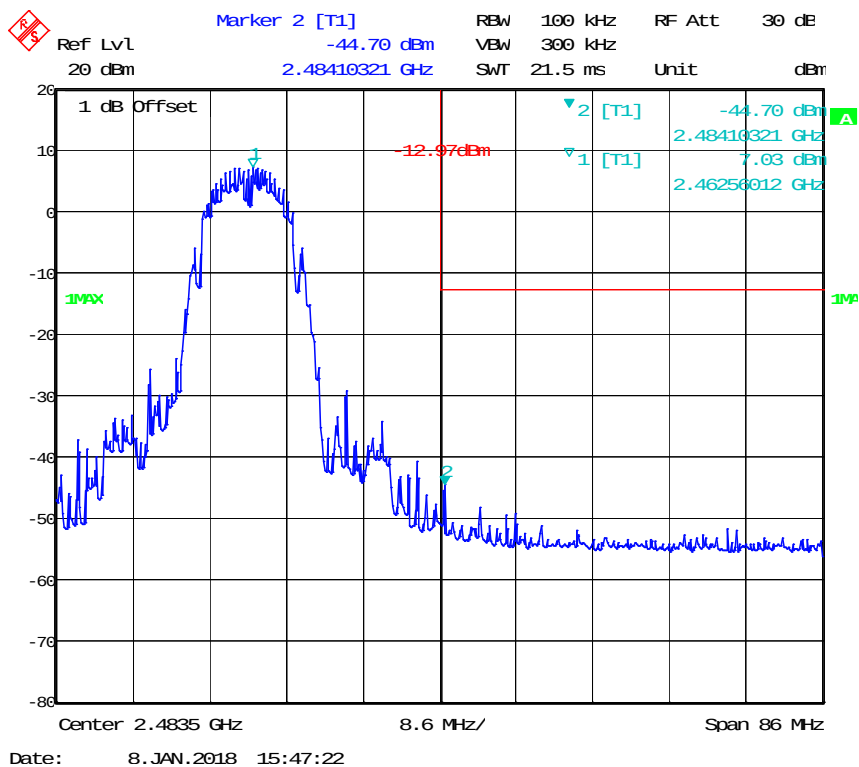
Channel	Frequency (MHz)	Delta Peak to Band Emission(dBc)		Limit (dBc)	Result
		Chain0	Chain1		
B mode					
Low	2412	39.92	40.32	≥ 20	PASS
High	2462	51.73	52.67	≥ 20	PASS
G mode					
Low	2412	33.21	33.22	≥ 20	PASS
High	2462	46.33	45.57	≥ 20	PASS
N20 mode					
Low	2412	32.94	32.64	≥ 20	PASS
High	2462	45.3	44.71	≥ 20	PASS
N40 mode					
Low	2422	34.57	35.51	≥ 20	PASS
High	2452	43.41	42.36	≥ 20	PASS

Chain0:

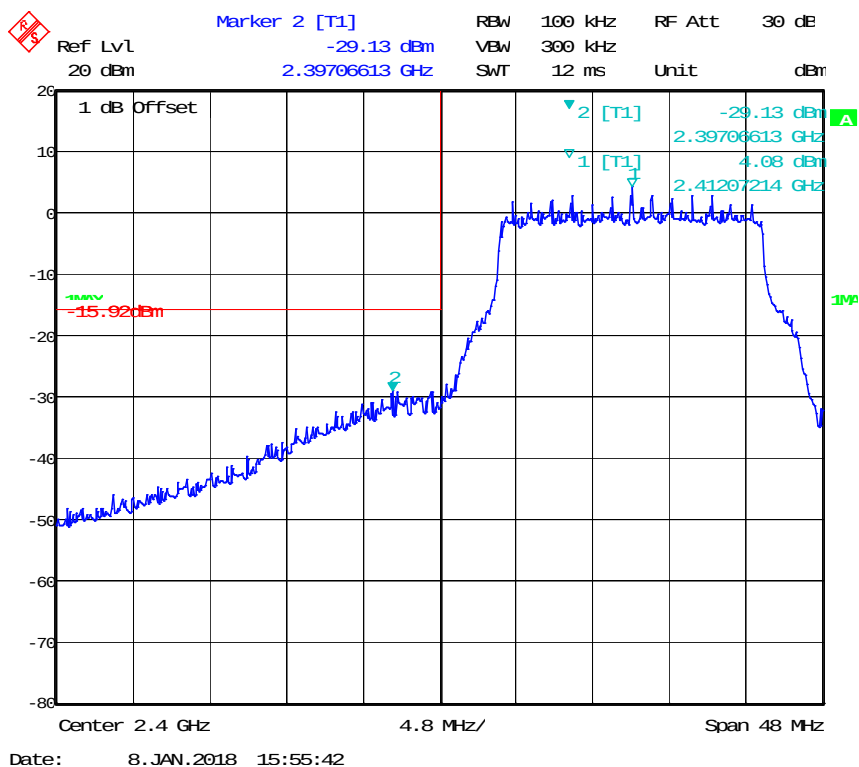
Conducted Band Edges (B mode / CH Low)



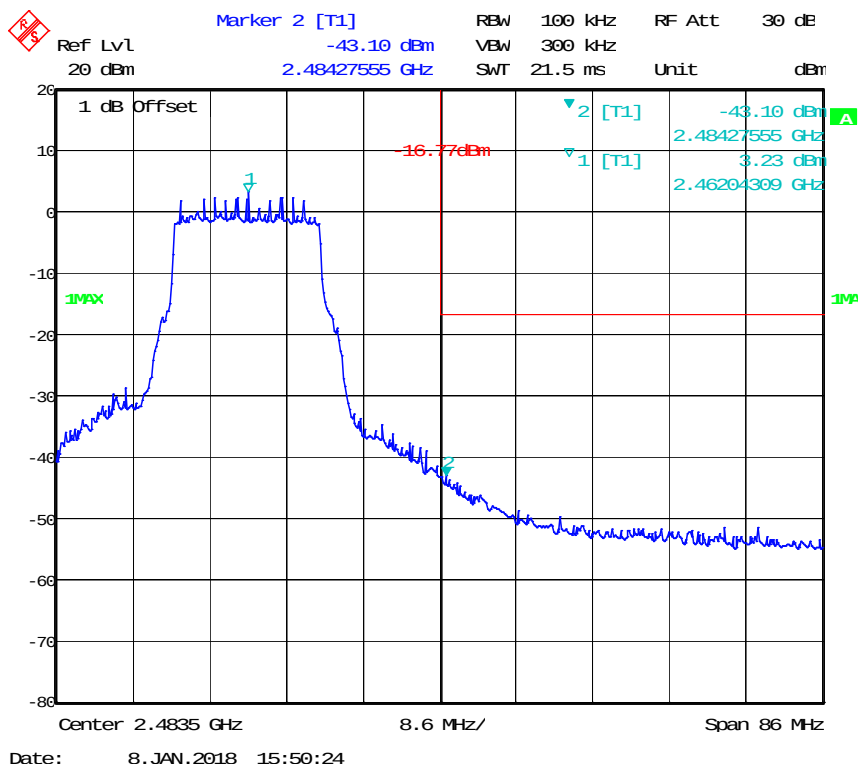
Conducted Band Edges (B mode / CH High)



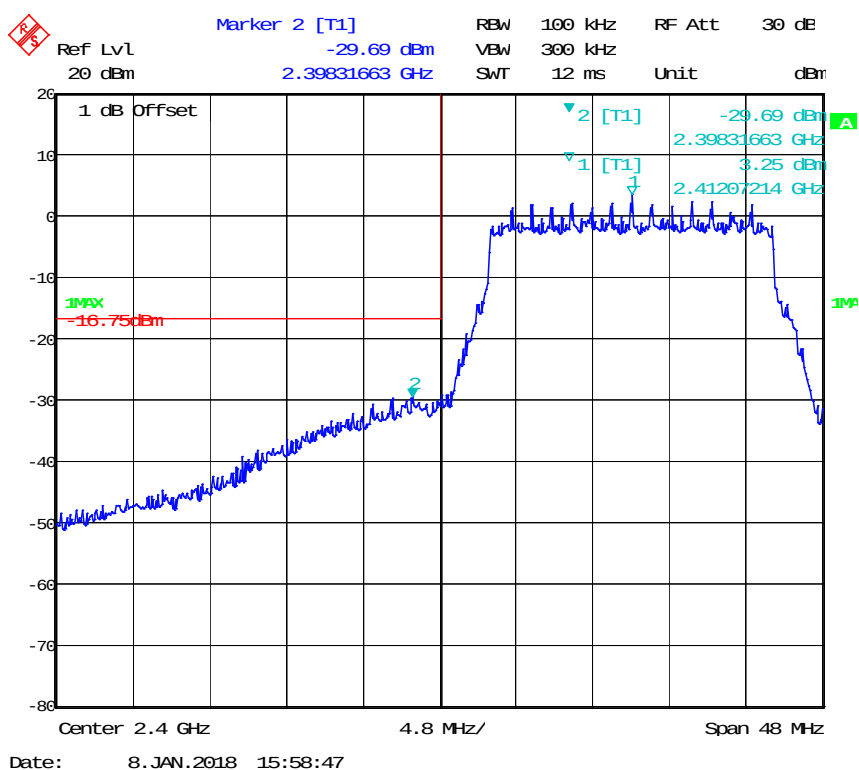
Conducted Band Edges (G mode / CH Low)



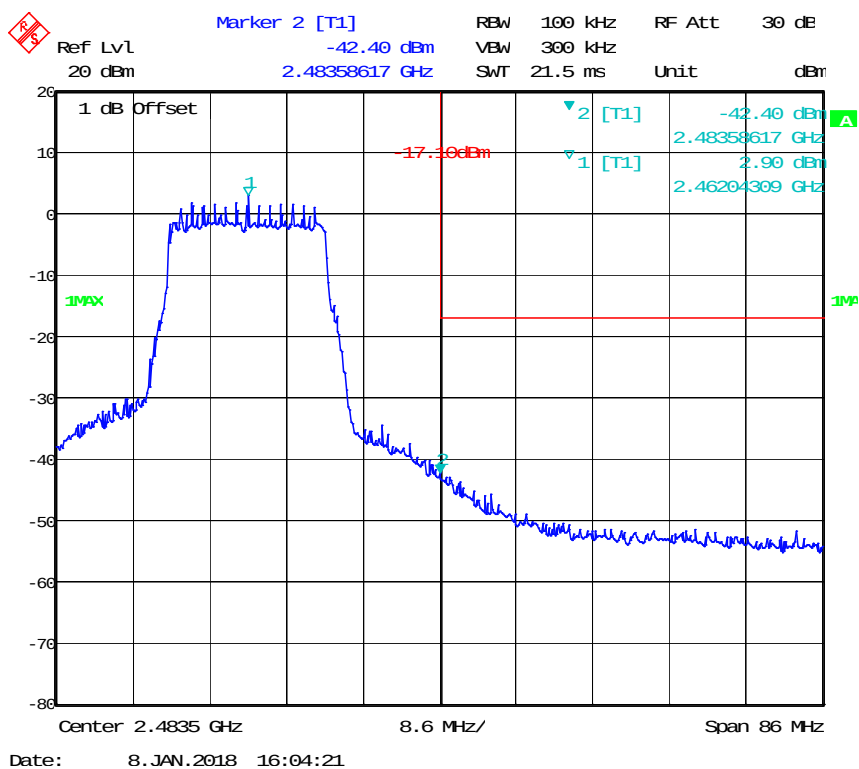
Conducted Band Edges (G mode / CH High)



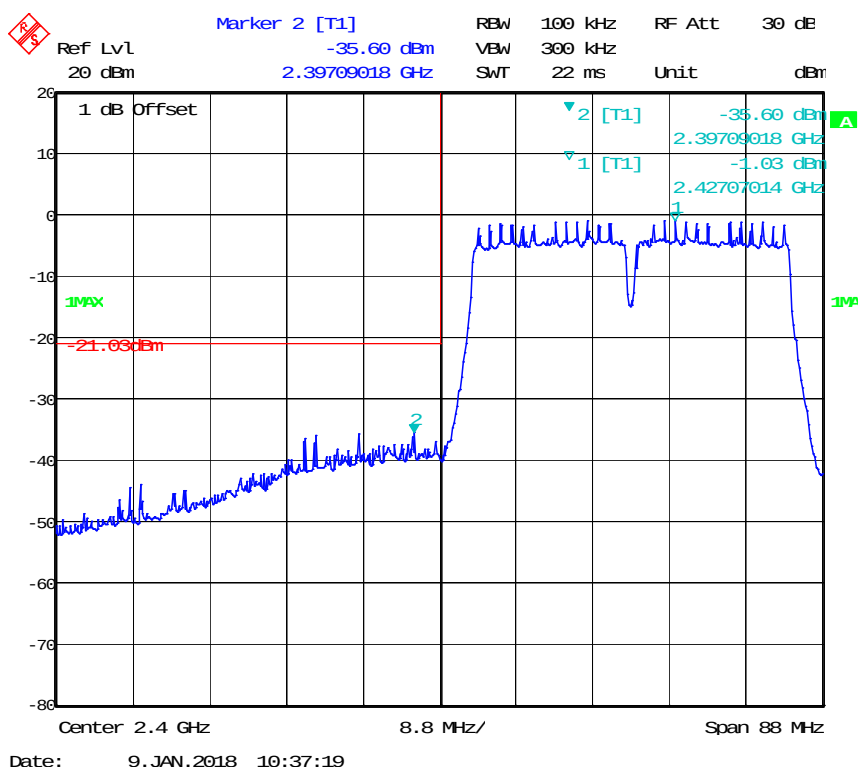
Conducted Band Edges (N20 mode / CH Low)



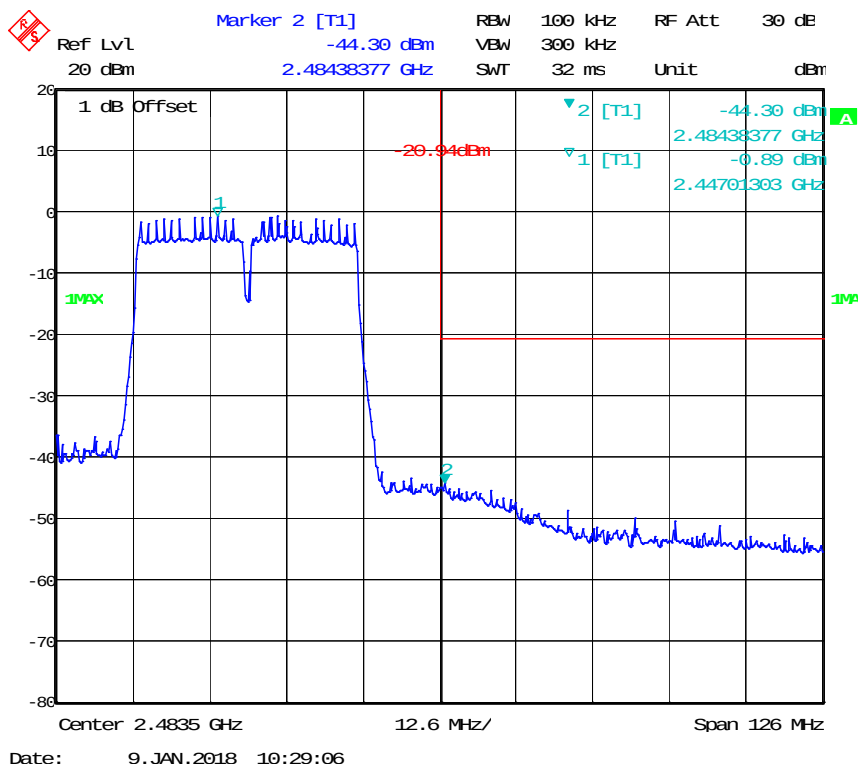
Conducted Band Edges (N20 mode / CH High)



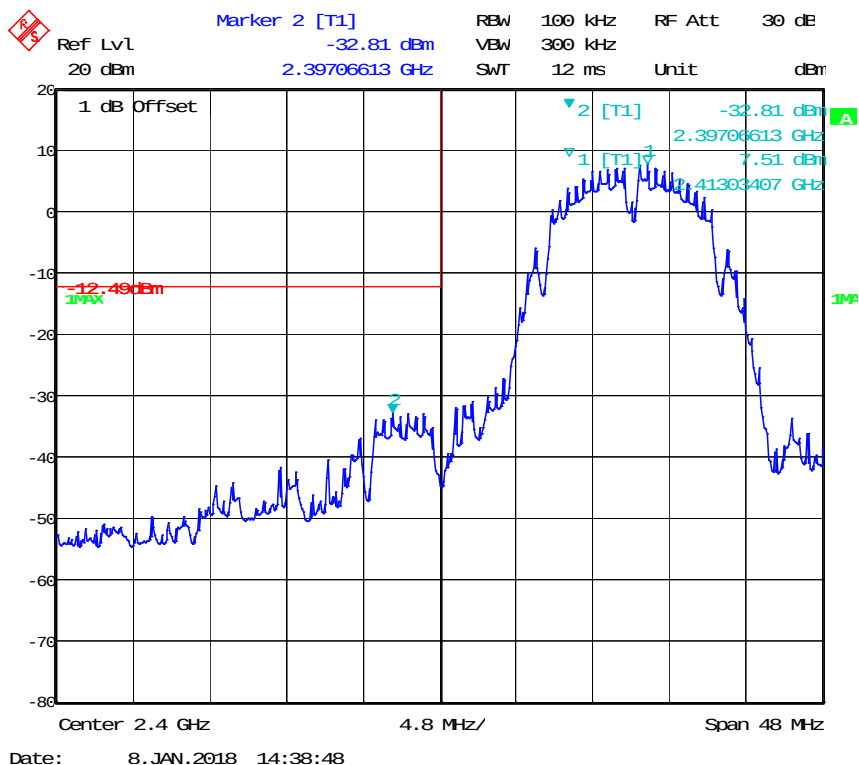
Conducted Band Edges (N40 mode / CH Low)



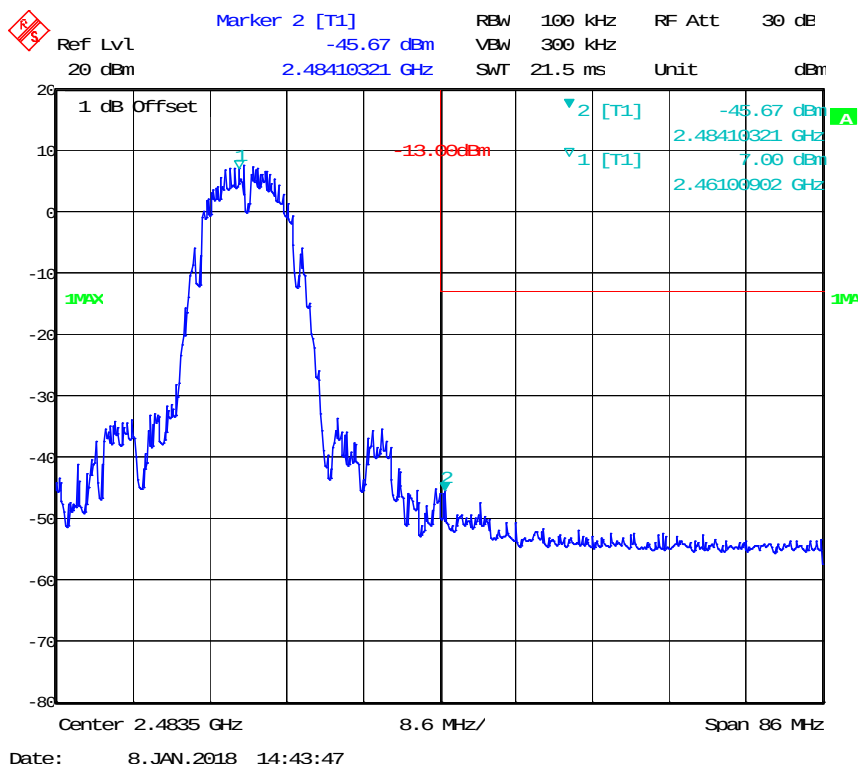
Conducted Band Edges (N40 mode / CH High)



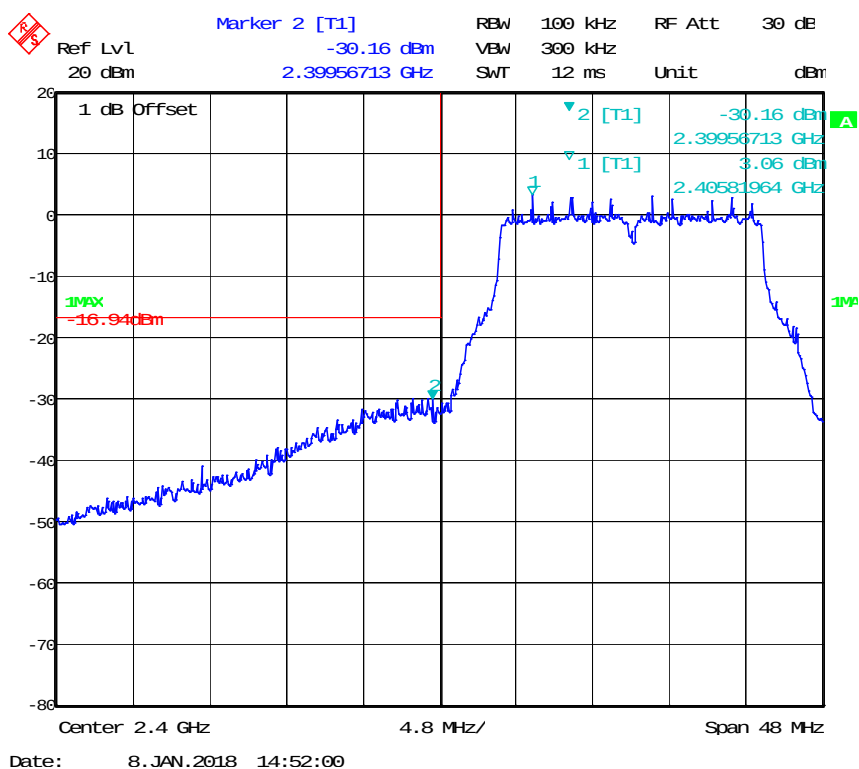
Chain1: Conducted Band Edges (B mode / CH Low)



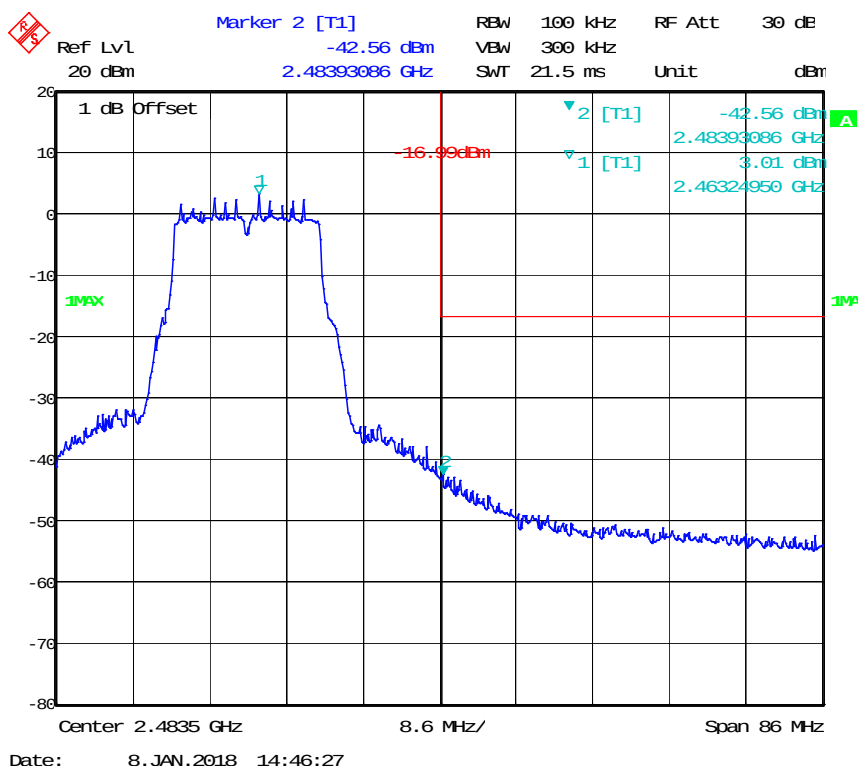
Conducted Band Edges (B mode / CH High)



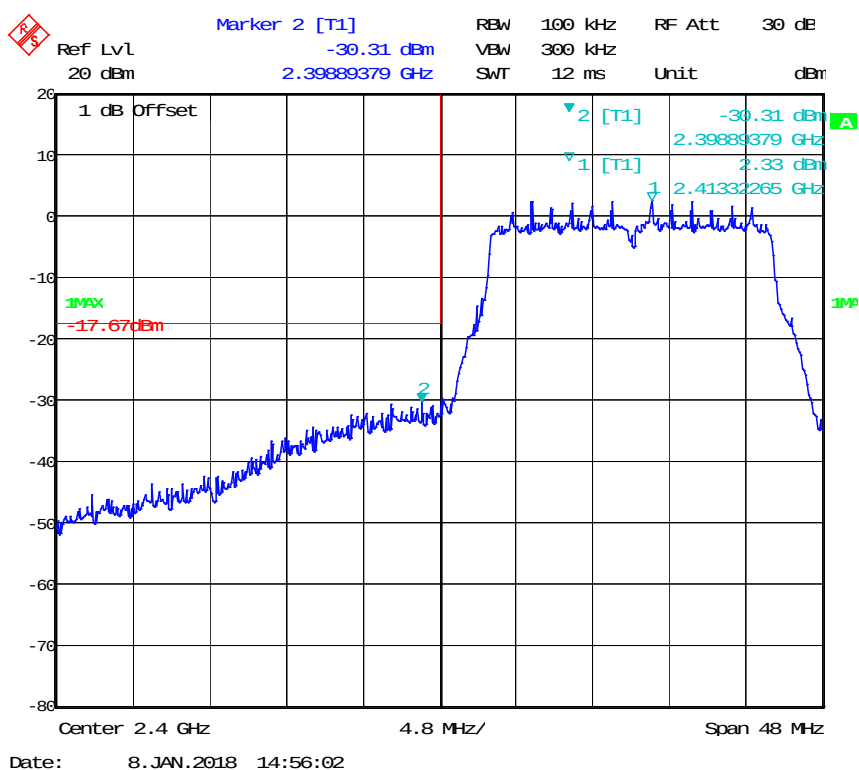
Conducted Band Edges (G mode / CH Low)



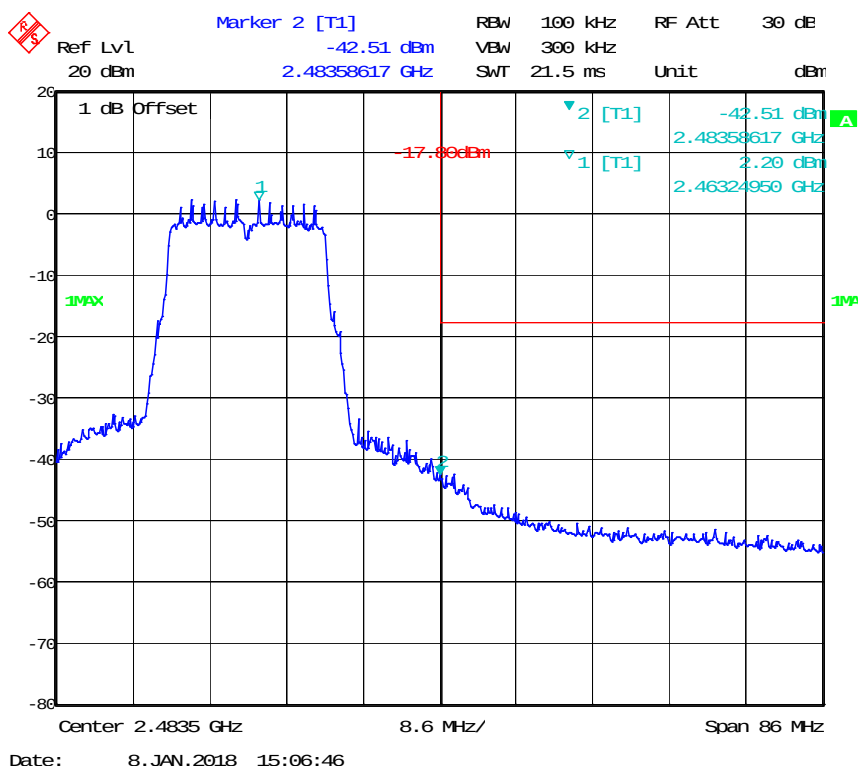
Conducted Band Edges (G mode / CH High)



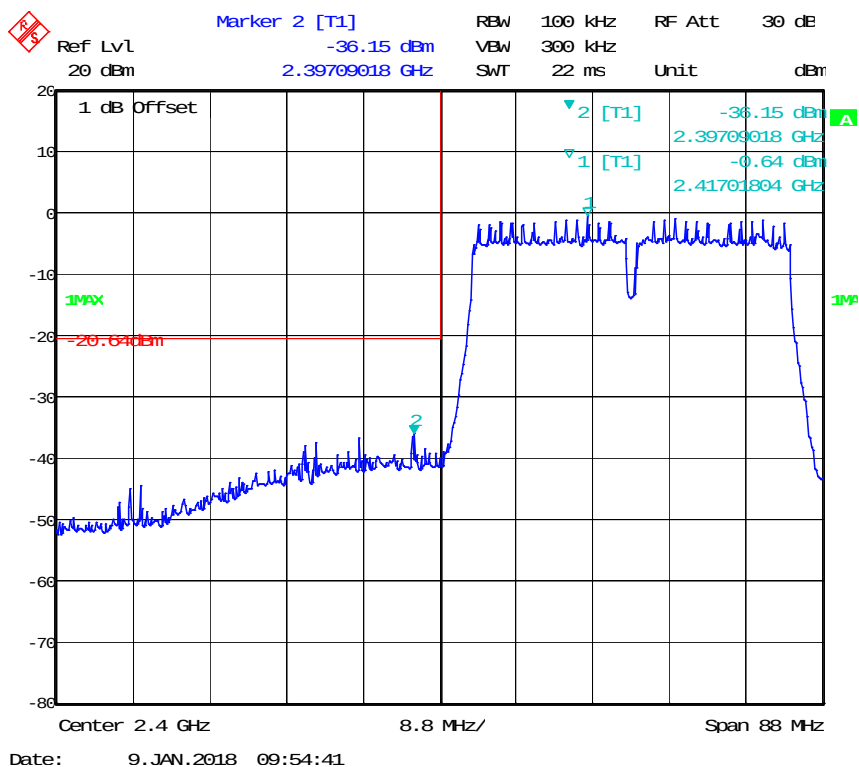
Conducted Band Edges (N20 mode / CH Low)



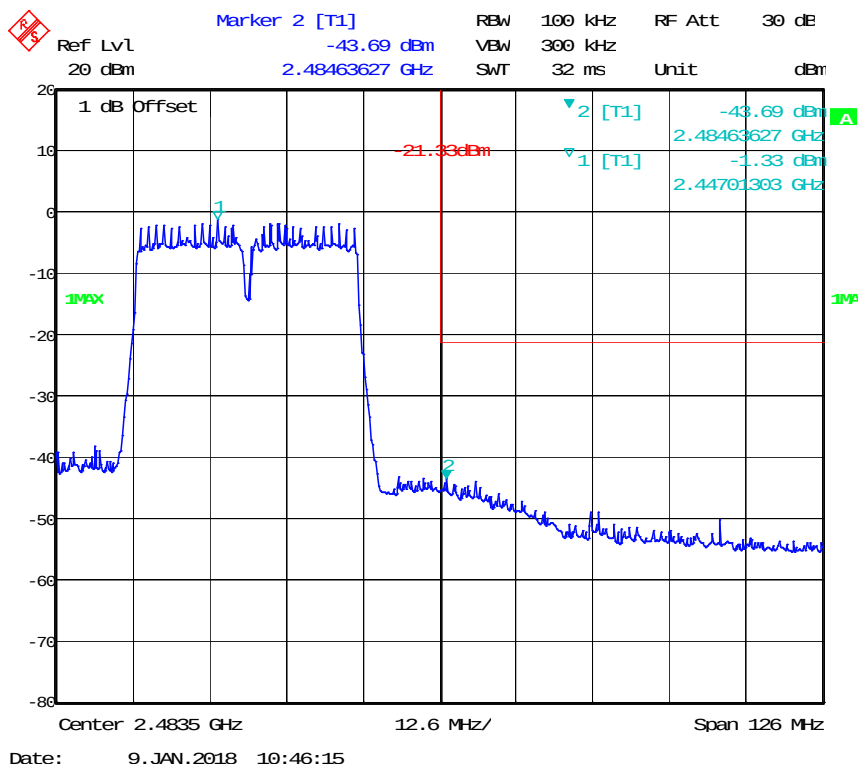
Conducted Band Edges (N20 mode / CH High)



Conducted Band Edges (N40 mode / CH Low)



Conducted Band Edges (N40 mode / CH High)



10. 功率密度之量測

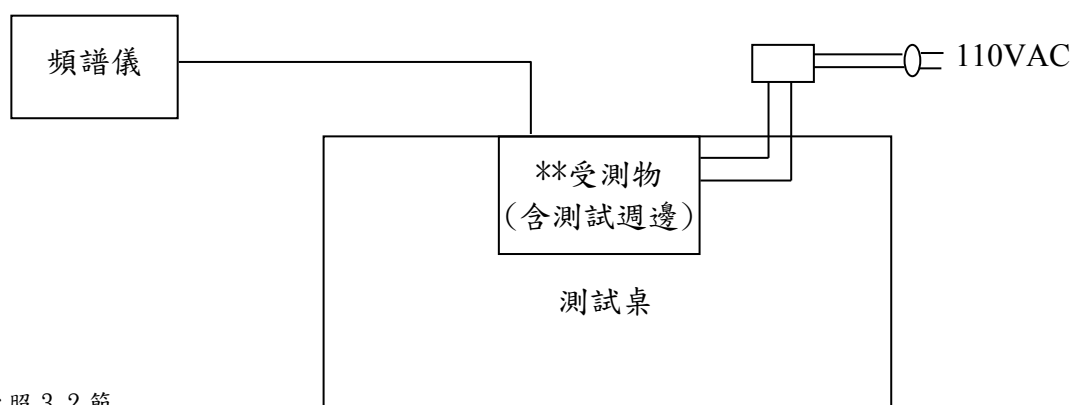
10.1. 適用標準

依據國家通訊傳播委員會低功率射頻電機技術規範3.10.1.6節之(2)(B)條規定，在使用頻率範圍之任一3 kHz 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3.10.1.3 之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8 dBm。
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3kHz，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. 測試配置



註：**請參照 3.2 節

10.4. 功率密度之量測儀器

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Spectrum Analyzer	Rohde & Schwarz	FSU26	200268	2017/05/08	2018/05/07
Attenuator	MINI-CIRCUITS	BW-S10W5+	N/A	2017/03/16	2018/03/15
Cable	WOKEN	SFL402	S02-160323-07	2017/02/22	2018/02/21

Remark: 1. The calibration interval of the above test instruments is 12 months and the calibrations

are traceable to NML/ROC and NIST/USA.

10.5. 測試不準確度評估

本測試不準確度為 1.74dB

10.6. 功率密度之量測結果

環境溫度: 24.8°C

測試日期: 2018-01-26

環境濕度: 46% RH

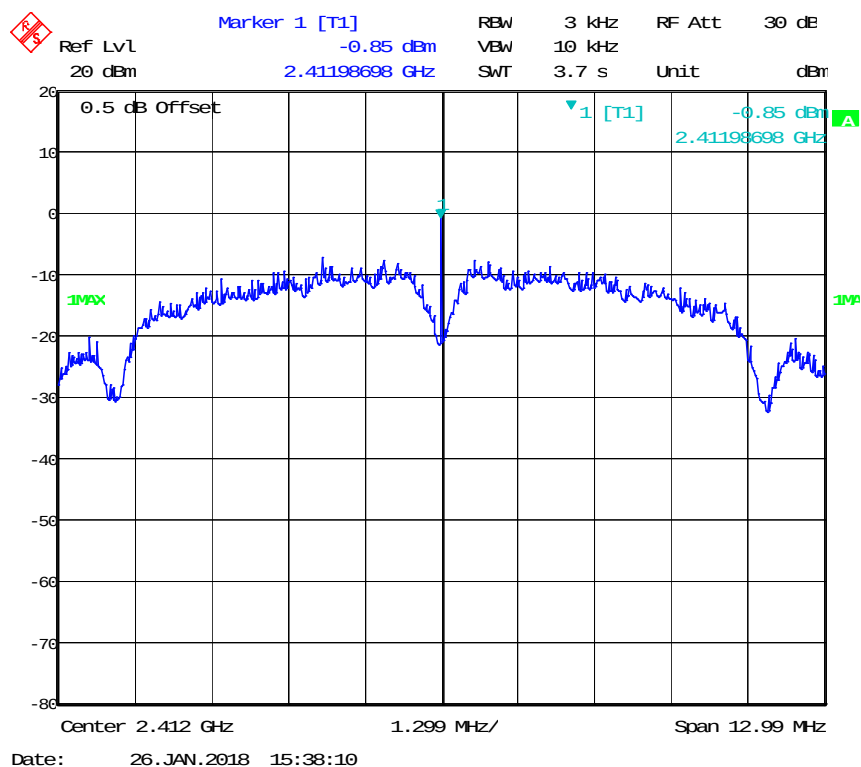
測試者: Tom Hsu

Channel	Frequency (MHz)	PPSD(dBm/3kHz)			Limit (dBm/3kH)	Result
		Chain0	Chain1	Total		
B mode						
Low	2412	-0.85	-0.88	/	8.00	PASS
Mid	2437	-0.62	-0.73	/		PASS
High	2462	-1.22	-0.99	/		PASS
G mode						
Low	2412	-2.45	-3.98	/	8.00	PASS
Mid	2437	-2.69	-3.36	/		PASS
High	2462	-2.83	-3.69	/		PASS
N20 mode						
Low	2412	-3.43	-3.48	-0.44	8.00	PASS
Mid	2437	-3.29	-3.82	-0.54		PASS
High	2462	-3.85	-4.48	-1.14		PASS
N40 mode						
Low	2422	-5.12	-4.45	-1.76	8.00	PASS
Mid	2437	-4.5	-4.29	-1.38		PASS
High	2452	-4.81	-4.47	-1.63		PASS

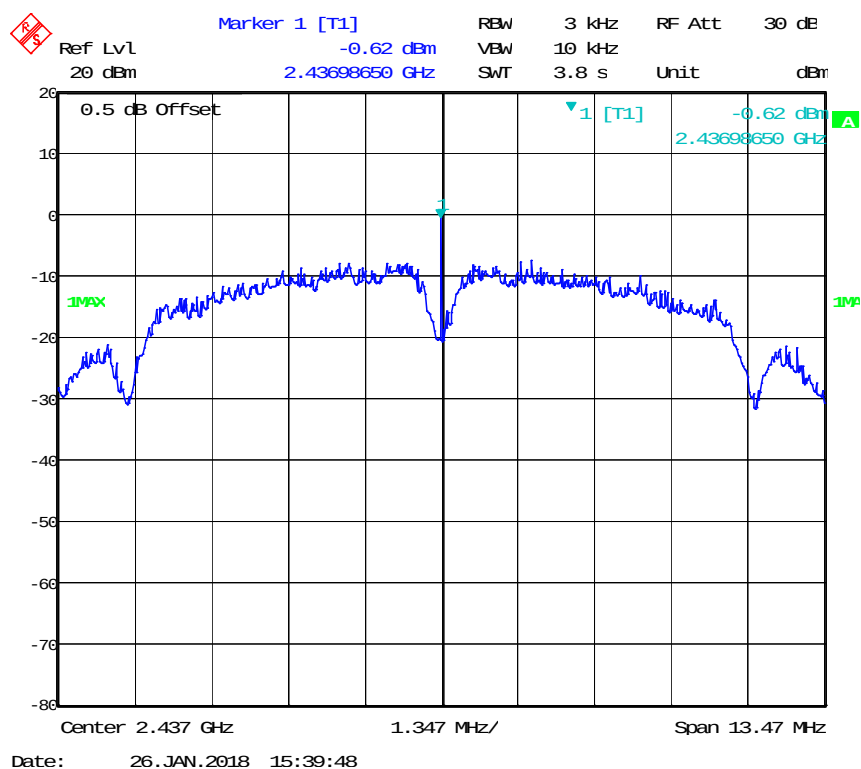
Chain0:

B mode

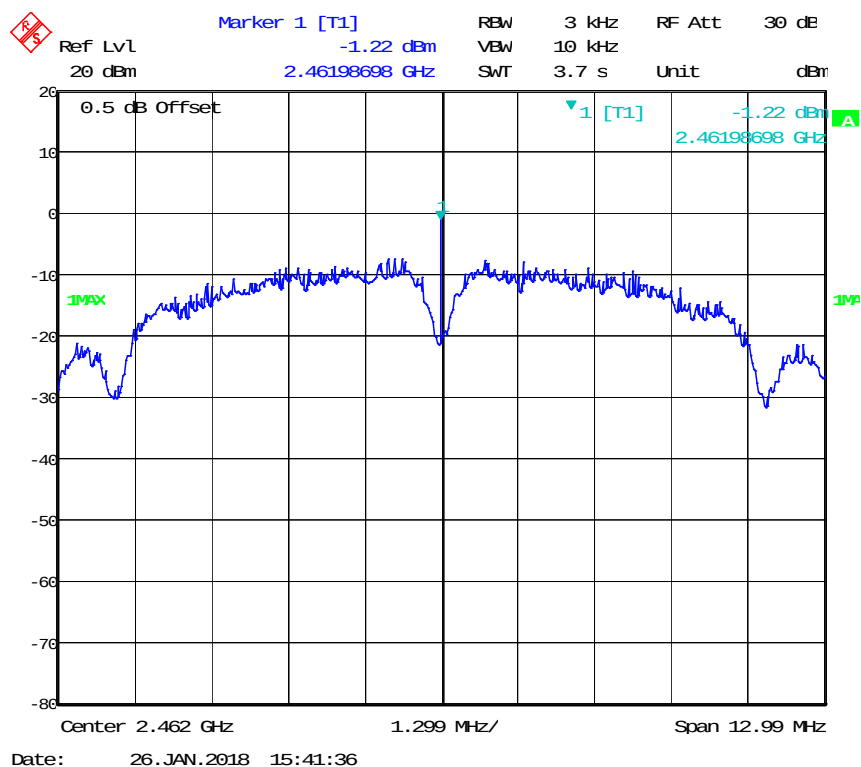
PPSD (CH Low)



PPSD (CH Mid)

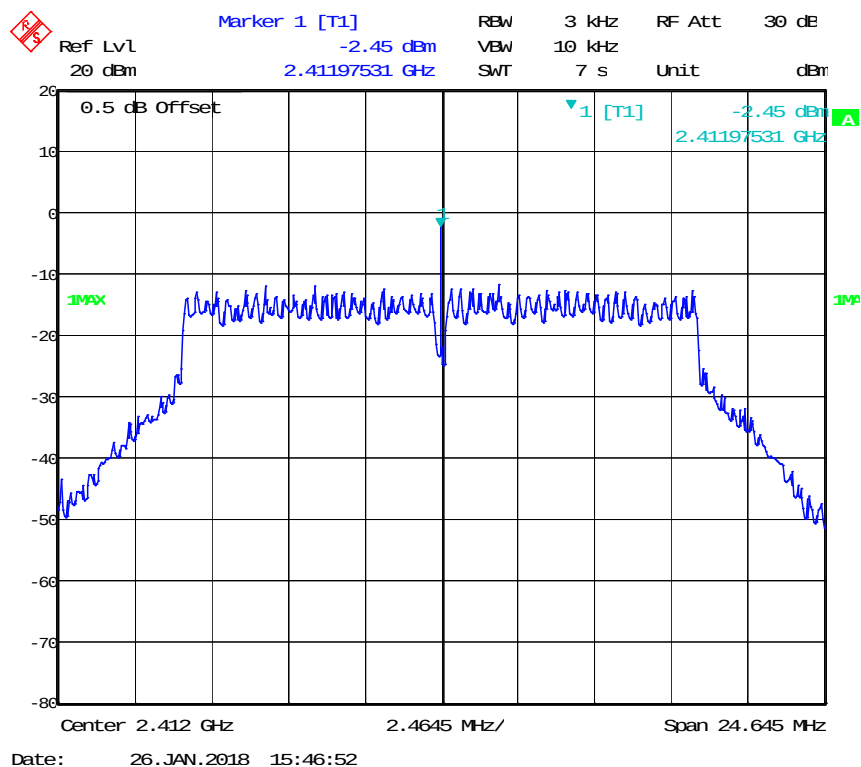


PPSD (CH High)

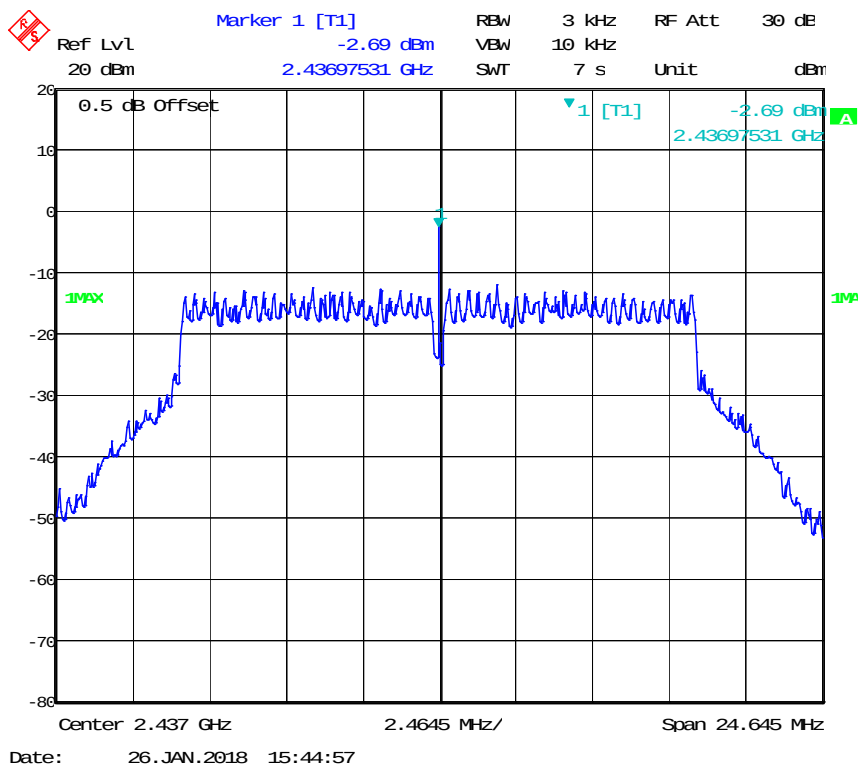


G mode

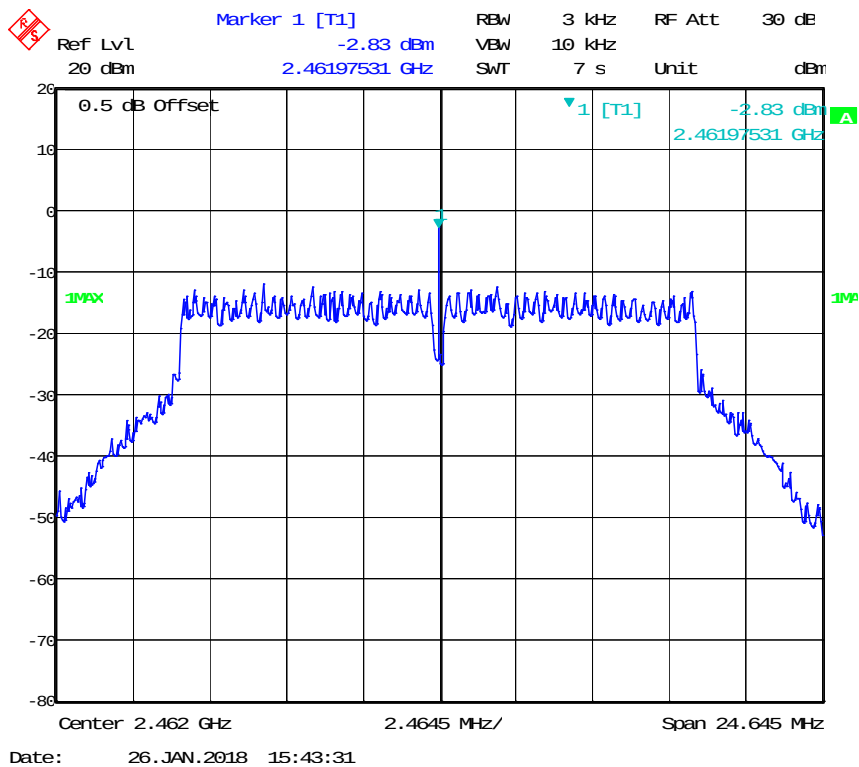
PPSD (CH Low)



PPSD (CH Mid)

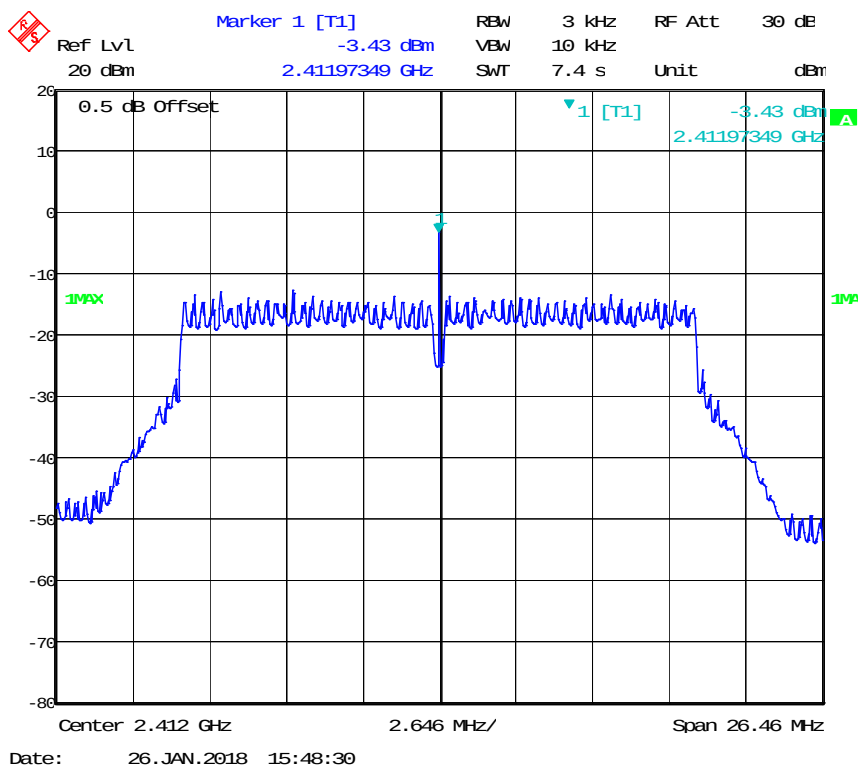


PPSD (CH High)

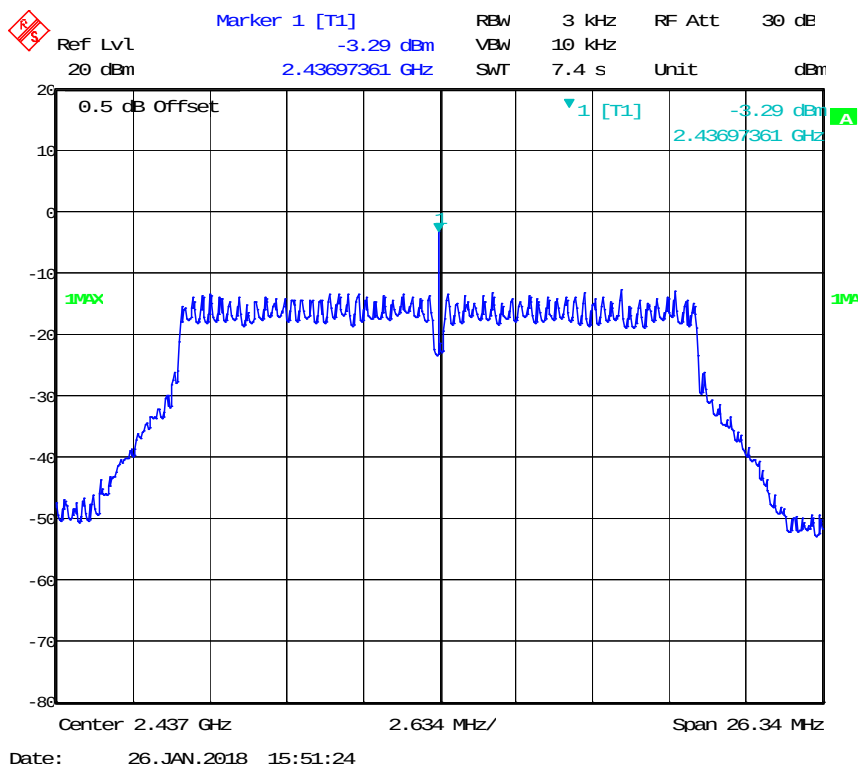


N20 mode

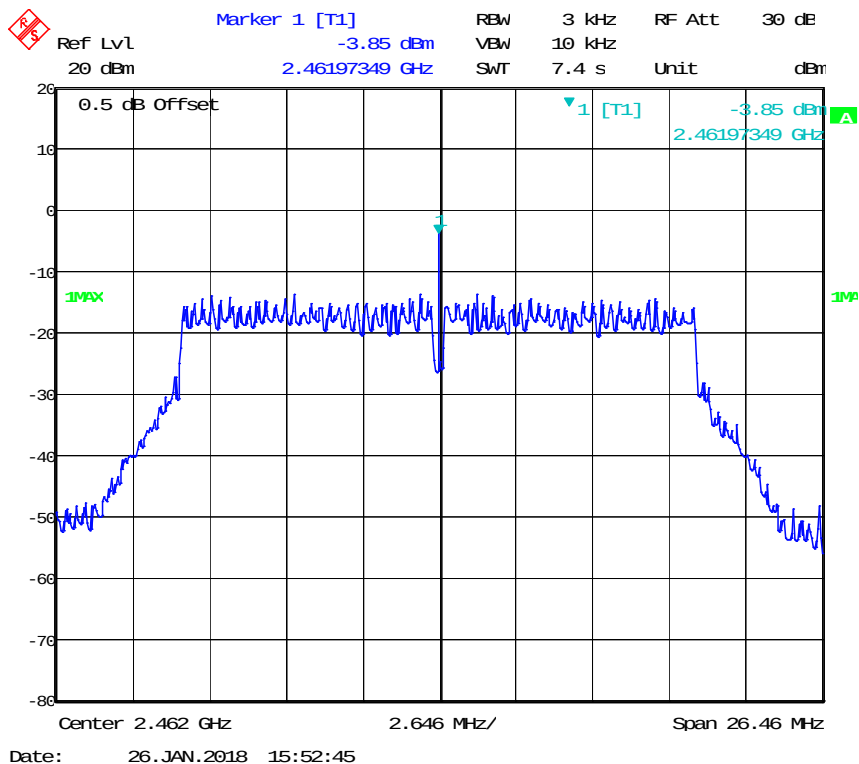
PPSD (CH Low)



PPSD (CH Mid)

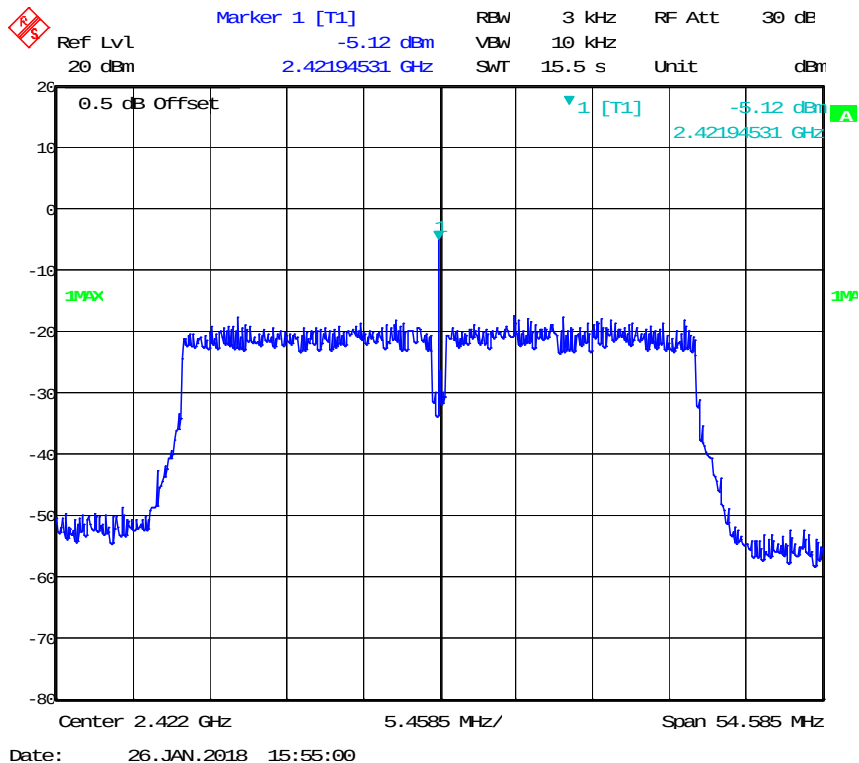


PPSD (CH High)

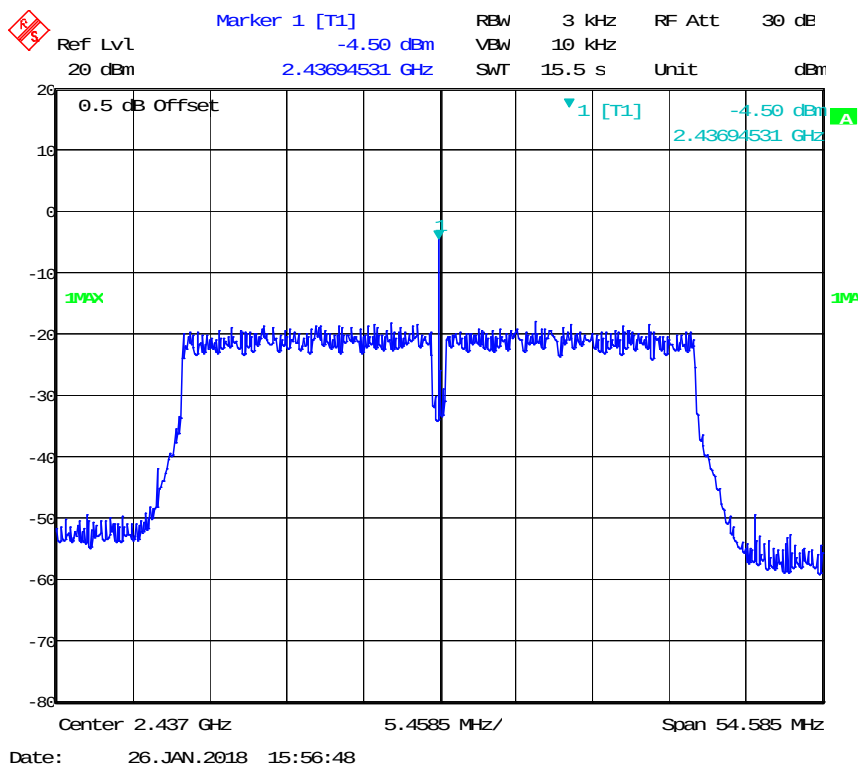


N40 mode

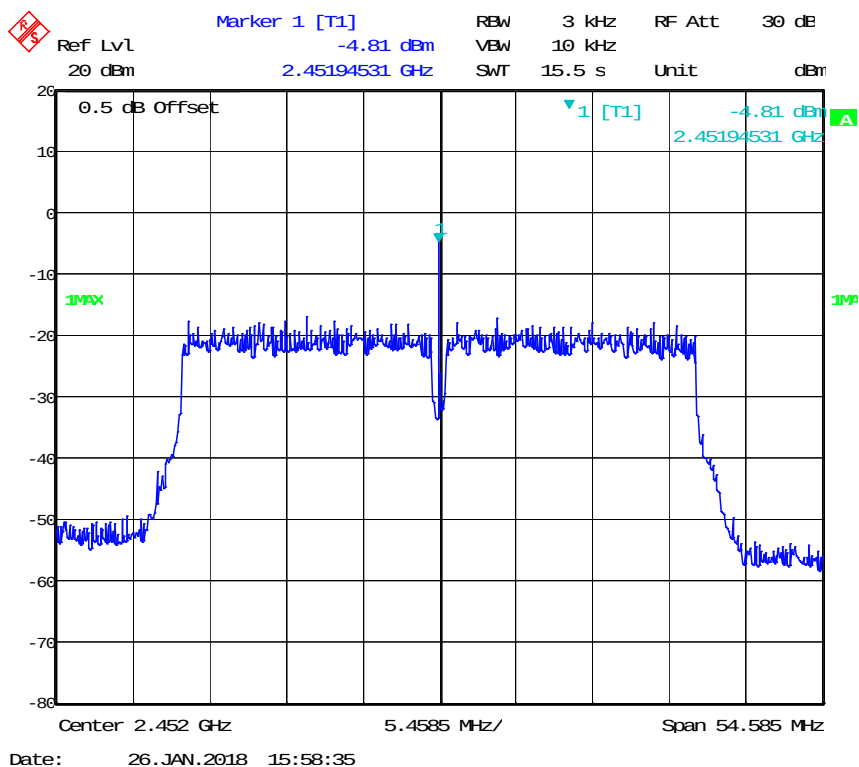
PPSD (CH Low)



PPSD (CH Mid)



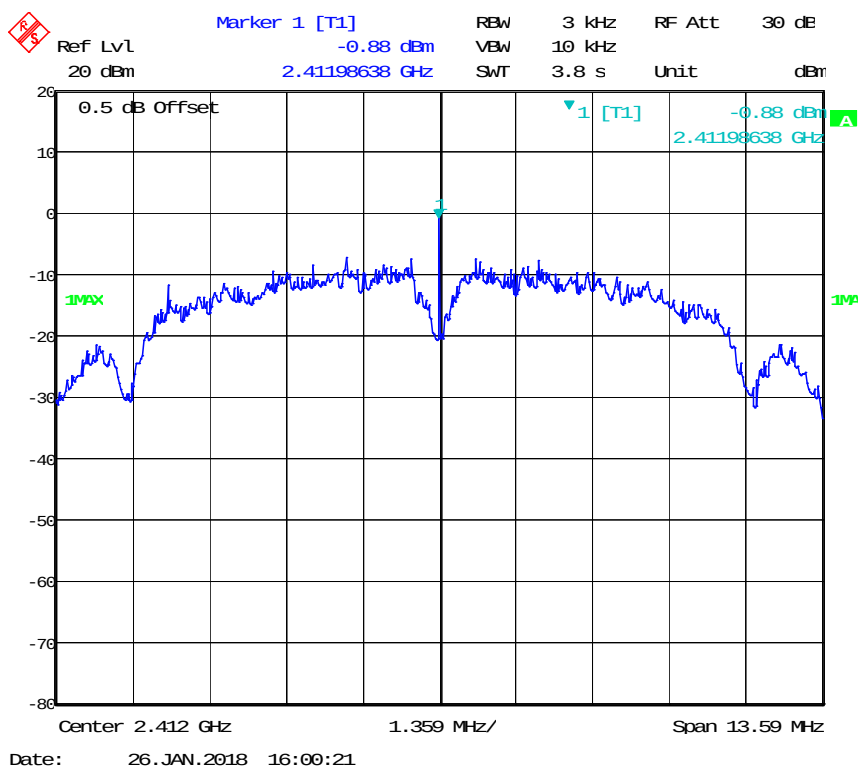
PPSD (CH High)



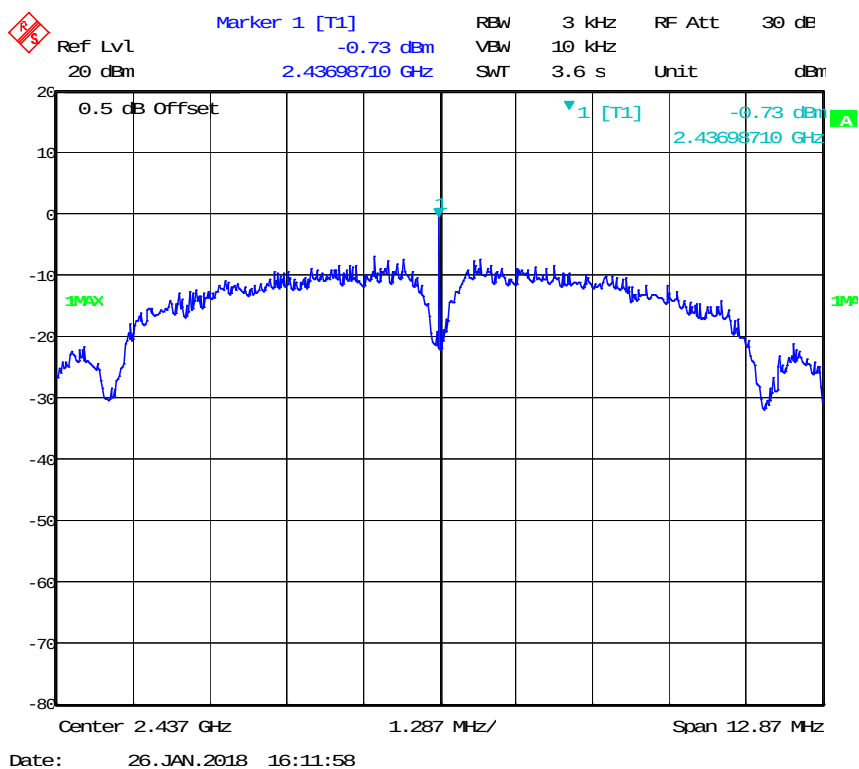
Chain1:

B mode

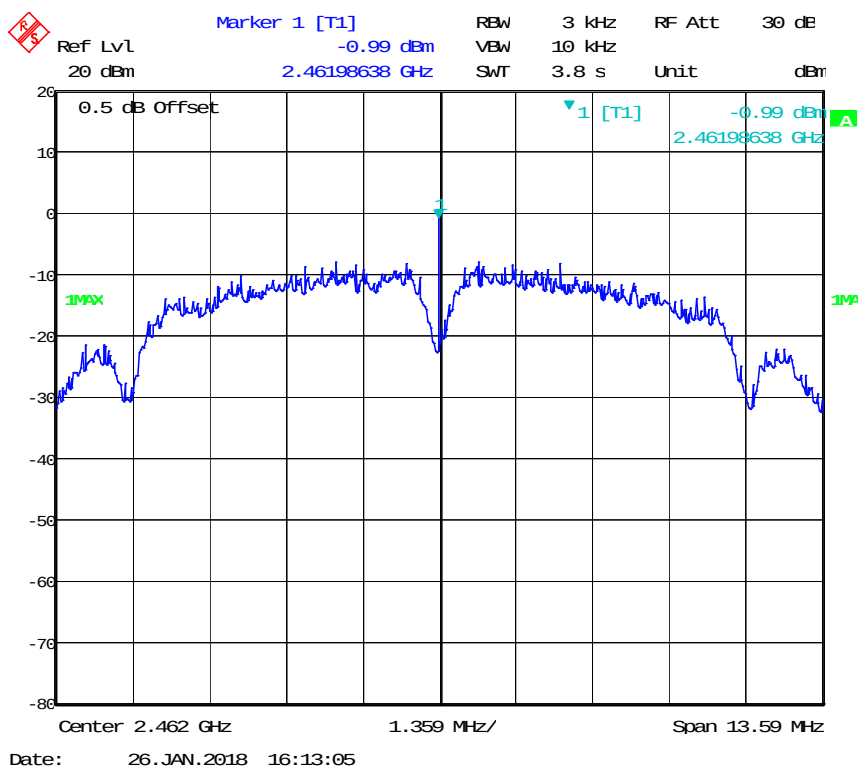
PPSD (CH Low)



PPSD (CH Mid)

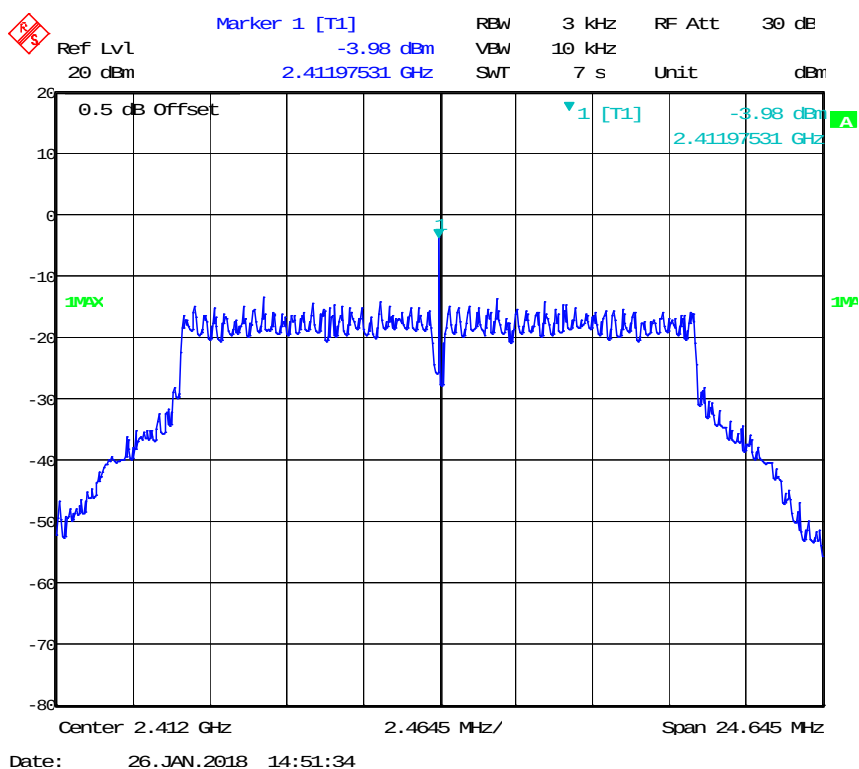


PPSD (CH High)

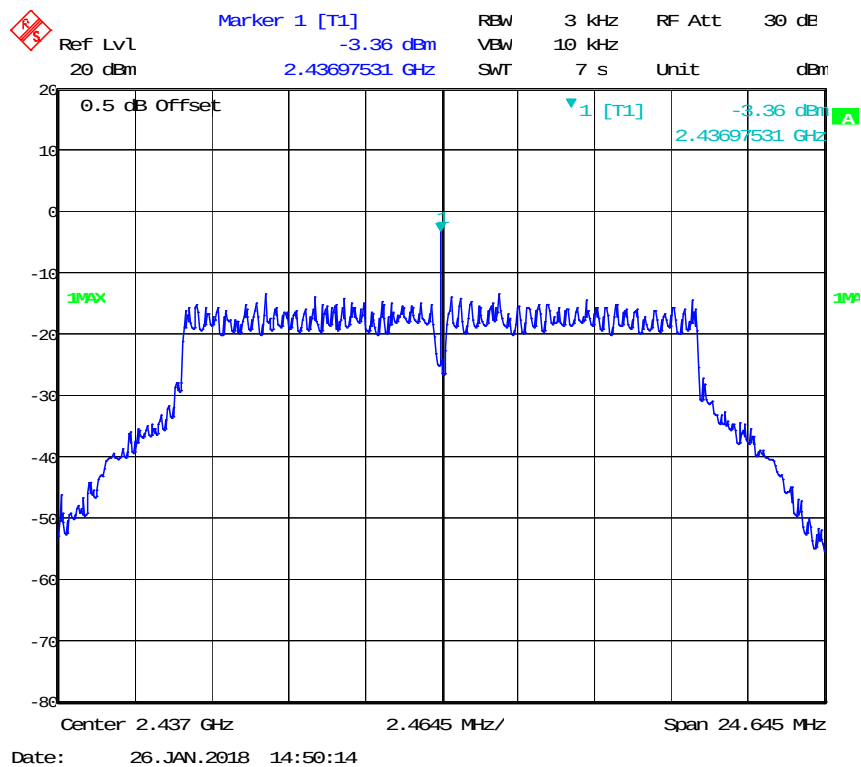


G mode

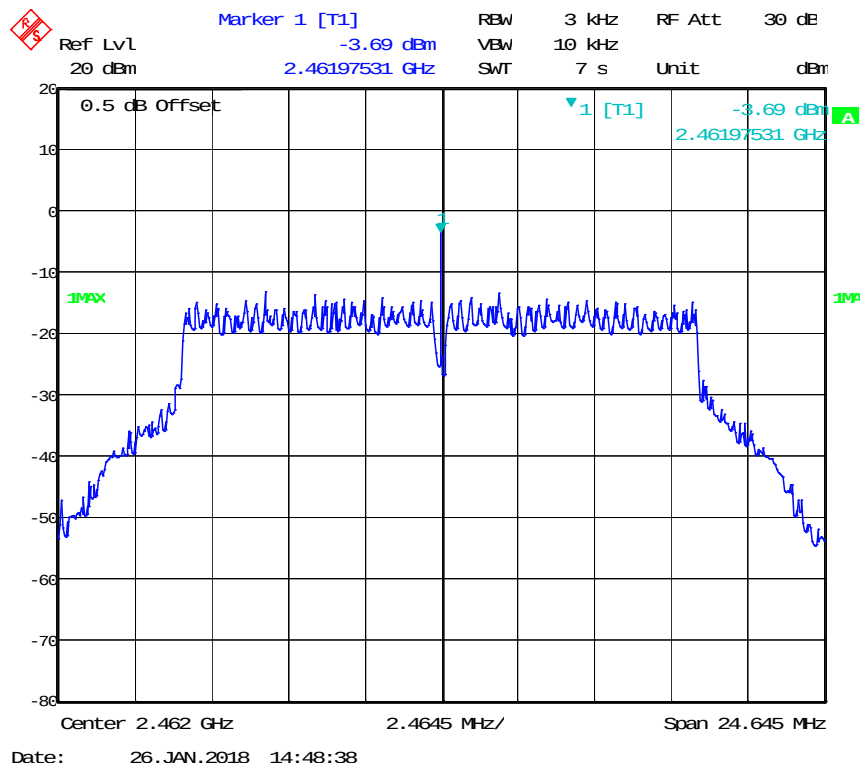
PPSD (CH Low)



PPSD (CH Mid)

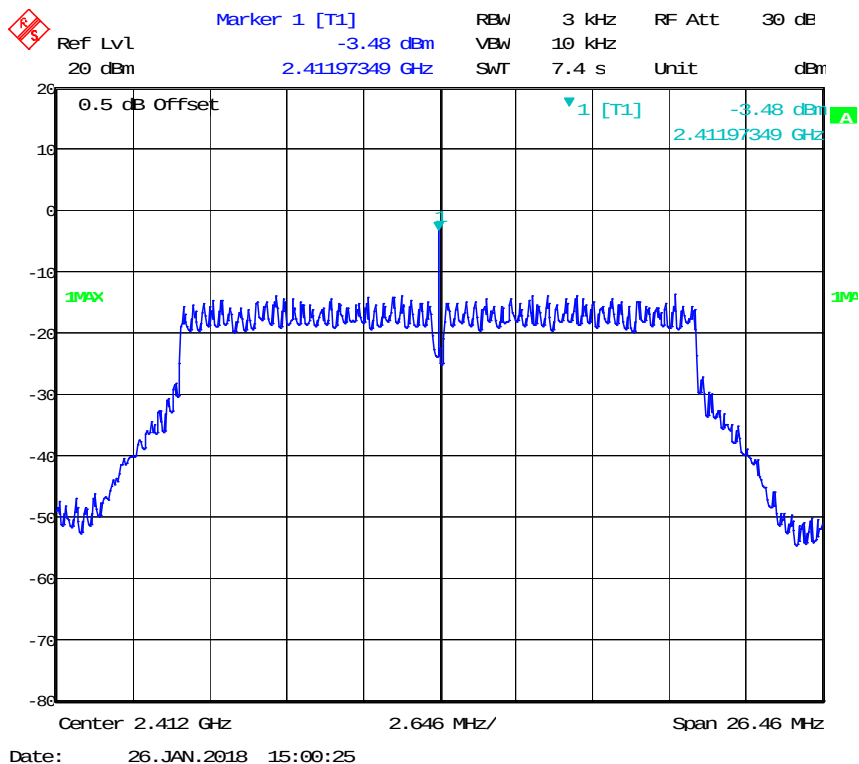


PPSD (CH High)

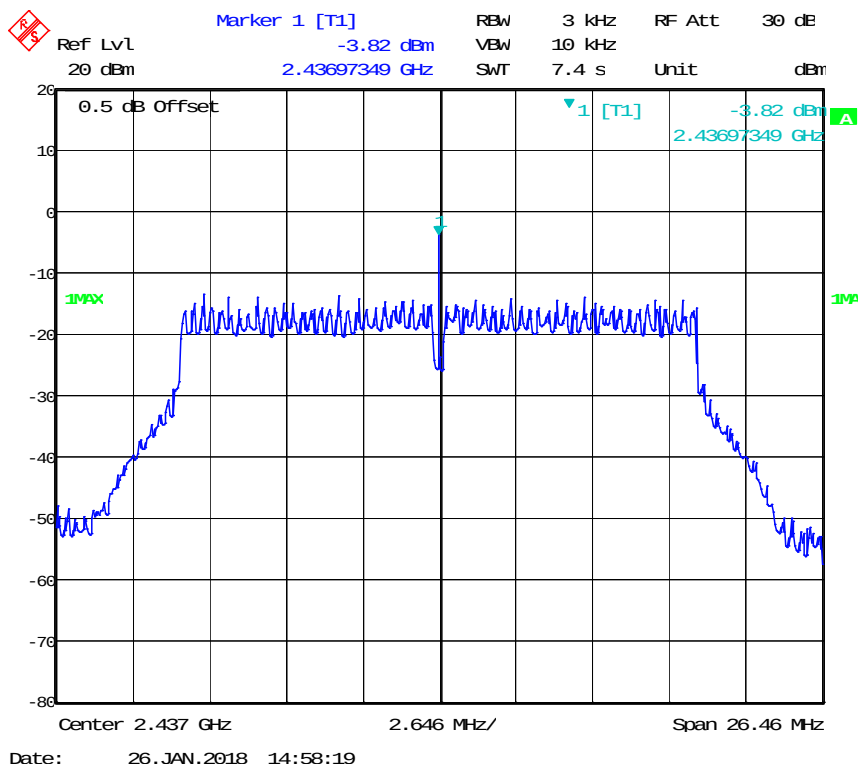


N20 mode

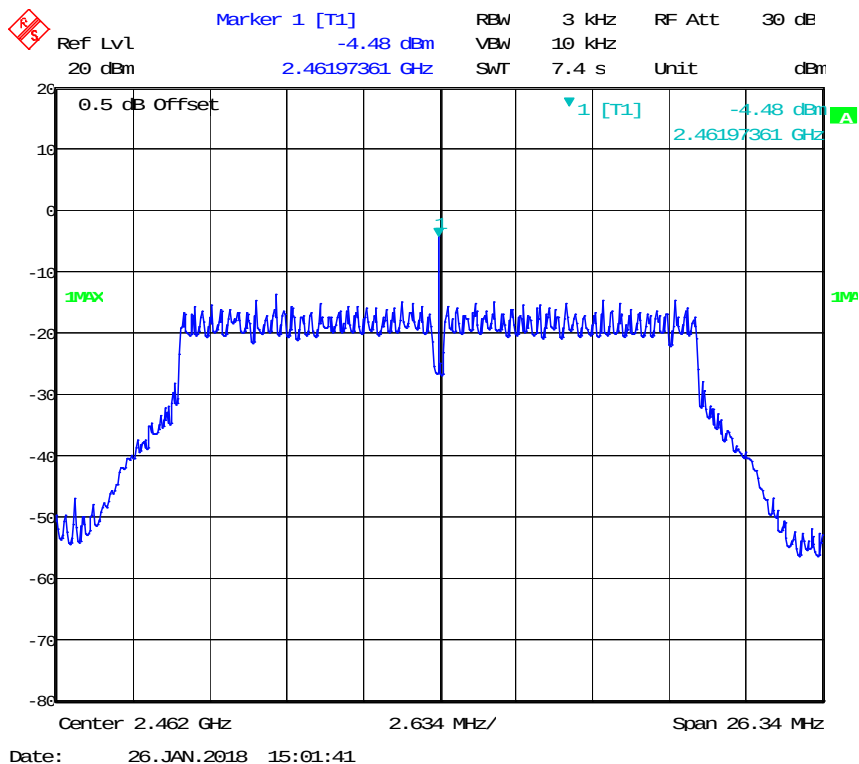
PPSD (CH Low)



PPSD (CH Mid)

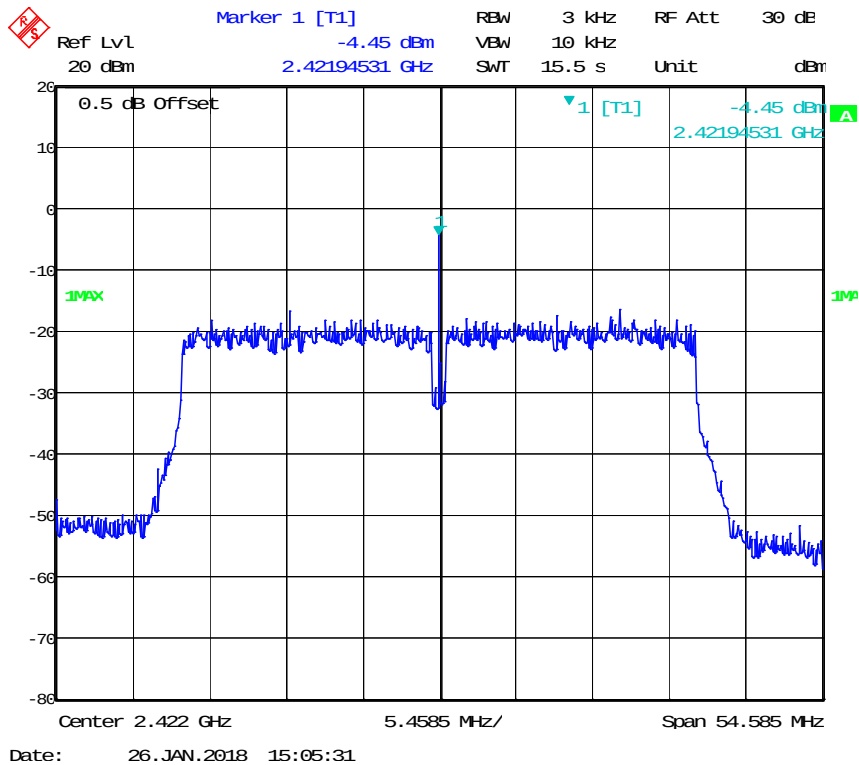


PPSD (CH High)

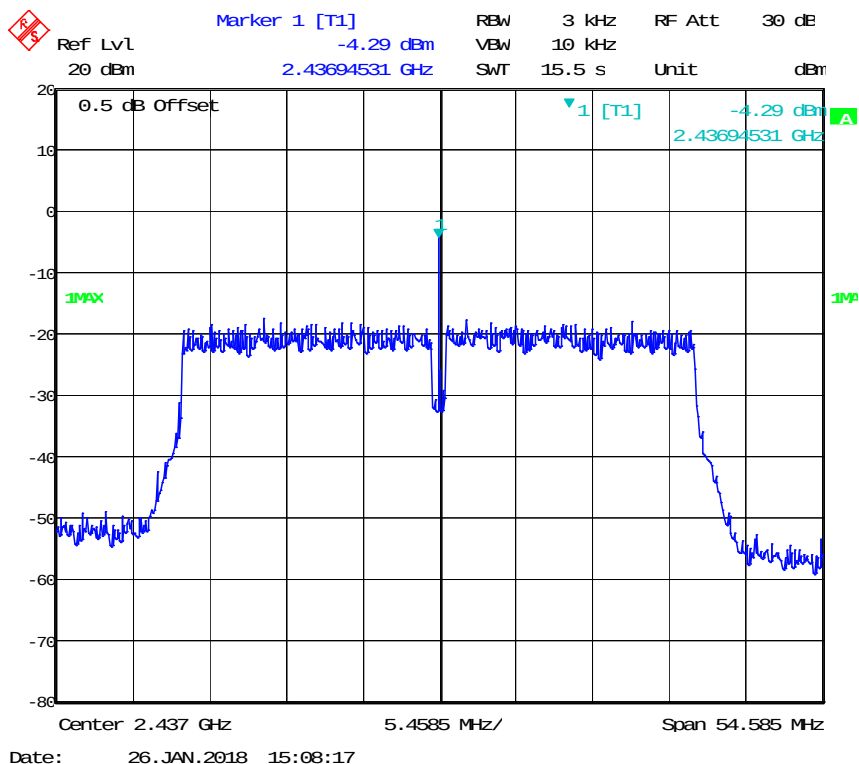


N40 mode

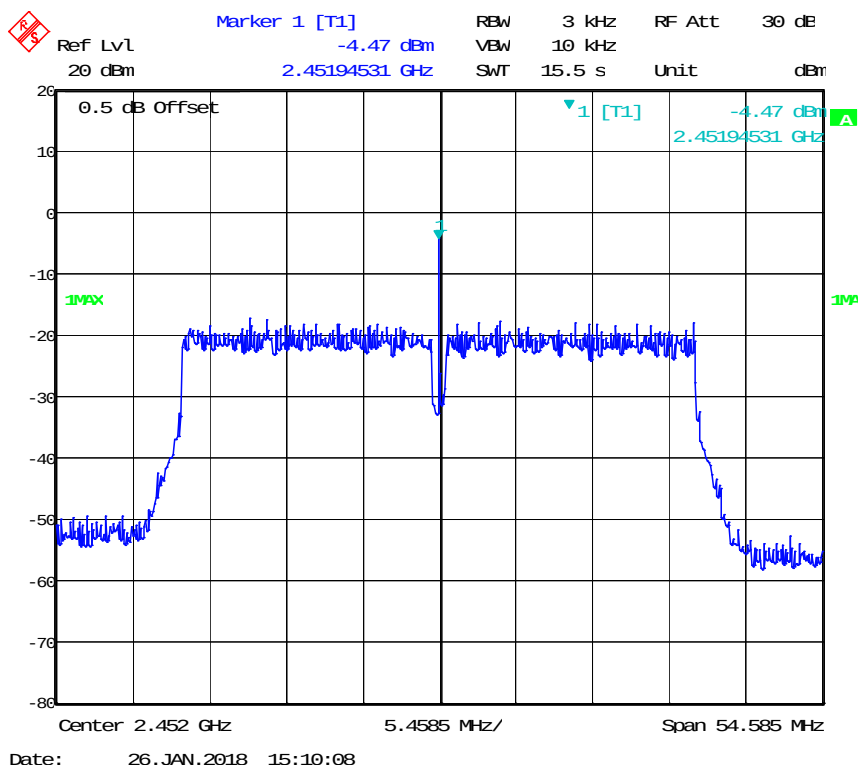
PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)



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