



低功率射頻器材測試報告

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地址 : 台北市信義區松仁路 107 號 12 樓

工廠 : Ubiquiti Inc.

地址 : 685 Third Avenue, 27th Floor New York,
New York 10017 USA

產品名稱 : 影像延伸器

產品型號 : UP-Viewport

廠牌 : UBIQUITI

受理日期 : 108 年 07 月 15 日

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實驗室名稱：世騰電子科技股份有限公司測試實驗室

實驗室地址：桃園市蘆竹區聯福街 2 巷 10 號

實驗室認可證書有效期限：112 年 07 月 08 日

實驗室認可編號及範圍：1439 (9 kHz to 40 GHz)

實驗室認證資格





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修訂記錄

報告號碼.	發行日期	描述
TENQ2007264	Mar. 26, 2021	Original



證 明 書

申請廠商	:	香港商優比快科技有限公司台灣分公司
地址	:	台北市信義區松仁路 107 號 12 樓
工廠	:	Ubiquiti Inc.
地址	:	685 Third Avenue, 27th Floor New York, New York 10017 USA
產品名稱	:	影像延伸器
產品型號	:	UP-Viewport
廠牌	:	UBIQUITI
該產品樣品試驗 依據之試驗標準	:	國家通訊傳播委員會低功率射頻器材技術規範(LP0002)。 規範修訂日期 109 年 07 月 01 日。
發射功率 (電場強度)	:	4.18 dBm

茲在此鄭重聲明：

本試驗報告所列之待測設備樣品已於民國 110 年 03 月 22 日在本公司的標準測試場地完成詳細及完整之量測。本試驗報告所列之量測皆依據低功率射頻器材技術規範之規定來執行。並判斷此待測設備樣品確實符合低功率射頻器材技術規範規定。

備註：本測試報告僅對受測之樣品負責。非經本公司同意，測試報告不得摘錄複印使用。(全部複製除外)。

項次	測試項目	低功率射頻器材技術 規範	量測設備	測試結果	結果判定
1	天線增益之要求	4.10.1.3 節	---	請參閱 2.2 節	---
2	電源線傳導干擾之要求	3.3 節	請參閱 2 章	請參閱 4.4 節	合格
3	場強輻射之要求	4.10.1.5 節	請參閱 2 章	請參閱 5.4 節 及 5.5 節	合格
4	發射頻寬之要求	4.10.1.6 節(2).(A)	請參閱 2 章	請參閱 6.4 節	合格
5	峰值輸出功率之要求	4.10.1.2 節(1)(C)	請參閱 2 章	請參閱 7.4 節	合格
6	混附波發射限制之要求	4.10.1.5 節	請參閱 2 章	請參閱 8.4 節	合格
7	功率密度之要求	4.10.1.6 節(2)(B)	請參閱 2 章	請參閱 9.4 節	合格

本實驗室已依據合約內的標準，降低儀器、環境、人員等不確定因素。因此測試結果將直接依照標準要求判定之。

報告簽署人：



1. 一般描述

1.1. 產品規格

Frequency Range	2402-2480MHz
Modulation Type	GFSK
Modulation Technology	DTS
Data Rate	GFSK: 1Mbps / 2Mbps / 125kps / 500kps
Antenna Type	Dipole Antenna
Antenna Gain	2.2dBi
HDMI Cable	Brand: UBIQUITI Model: 680-00129

Note: For more details, please refer to the User's manual of the EUT.

1.2. 差異說明

無。

1.3. 無線界面規格及頻道對應頻率

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
*00	2402	14	2430	28	2458
01	2404	15	2432	29	2460
02	2406	16	2434	30	2462
03	2408	17	2436	31	2464
04	2410	18	2438	32	2466
05	2412	*19	2440	33	2468
06	2414	20	2442	34	2470
07	2416	21	2444	35	2472
08	2418	22	2446	36	2474
09	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	*39	2480
12	2426	26	2454	--	--
13	2428	27	2456	--	--

*為量測之頻率



1.4. 測試模式之描述

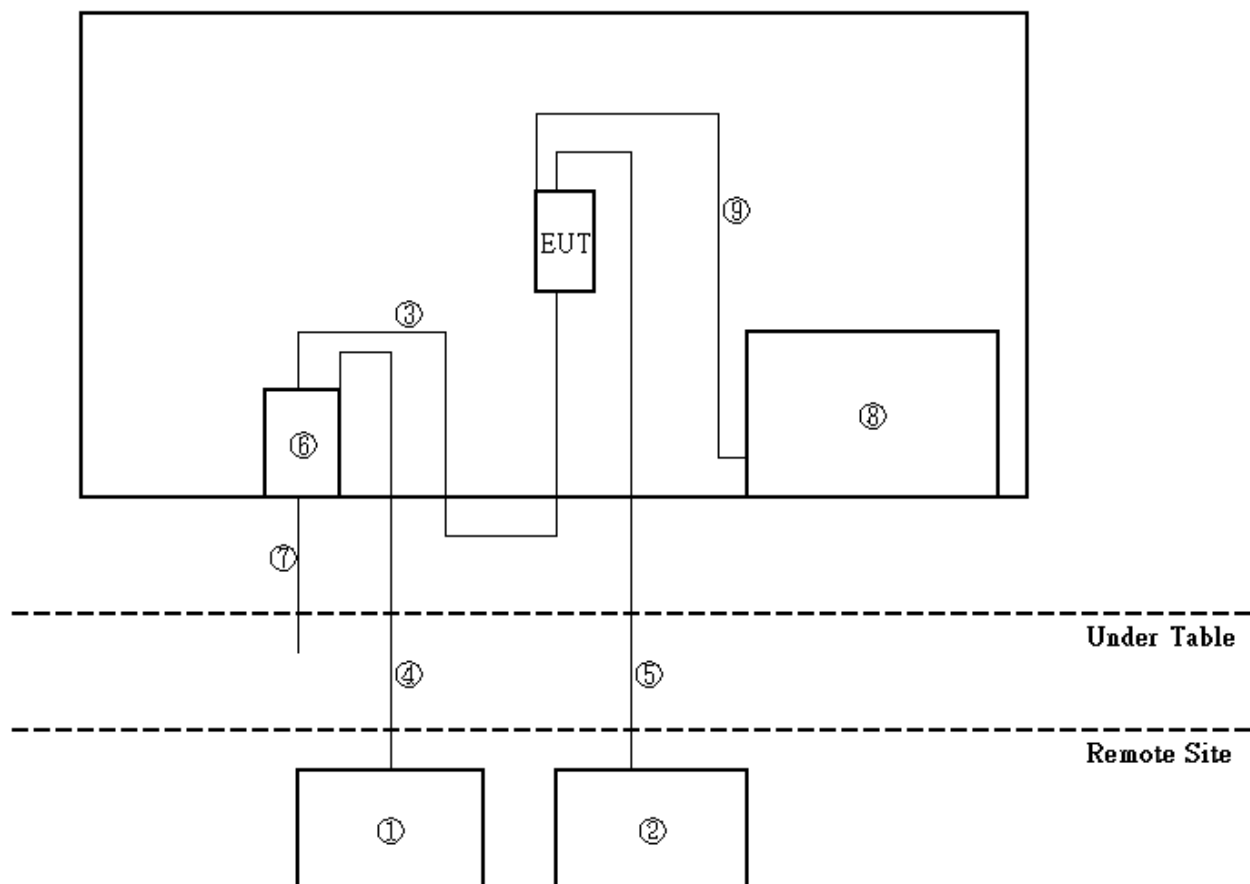
- 電源傳導及輻射測試之測試軟體如下:
 1. 將量測系統之全部電源打開。
 2. 於測試進行的同時，在 Windows OS system 作業系統下，待測物執行"QRCT ver.4.0.00129"傳送及接收訊號。
- 執行以下測試模式如下：

Conducted Emissions from the AC mains power ports	
Test Mode	Operating Description
1	GFSK (1Mbps) , Transmitter Mode
2	GFSK (2Mbps) , Transmitter Mode
3	GFSK (125kps) , Transmitter Mode
4	GFSK (500kps) , Transmitter Mode
5	GFSK (1Mbps) , Receiver Mode
6	GFSK (2Mbps) , Receiver Mode
7	GFSK (125kps) , Receiver Mode
8	GFSK (500kps) , Receiver Mode
caused "Test Mode 2, 6" generated the worst case, it was reported as the final data.	
Radiation Emissions (Below 1GHz)	
Test Mode	Operating Description
1	GFSK (1Mbps) , Transmitter Mode
2	GFSK (2Mbps) , Transmitter Mode
3	GFSK (125kps) , Transmitter Mode
4	GFSK (500kps) , Transmitter Mode
5	GFSK (1Mbps) , Receiver Mode
6	GFSK (2Mbps) , Receiver Mode
7	GFSK (125kps) , Receiver Mode
8	GFSK (500kps) , Receiver Mode
caused "Test Mode 2, 6" generated the worst case, it was reported as the final data.	
Radiation Emissions (Above 1GHz)	
Test Mode	Operating Description
1	GFSK (1Mbps) , Transmitter Mode
2	GFSK (2Mbps) , Transmitter Mode
3	GFSK (125kps) , Transmitter Mode
4	GFSK (500kps) , Transmitter Mode
5	GFSK (1Mbps) , Receiver Mode
6	GFSK (2Mbps) , Receiver Mode
7	GFSK (125kps) , Receiver Mode
8	GFSK (500kps) , Receiver Mode
caused "Test Mode 1, 2, 6" generated the worst case, it was reported as the final data.	

Modulation Type	TX CONFIGURATION
GFSK	1TX



1.5. 受測裝置之系統說明



- ①Notebook
- ②Notebook
- ③RJ45 Cable
- ④RJ45 Cable
- ⑤RJ45 Cable
- ⑥PoE
- ⑦Power Cord
- ⑧LCD Display
- ⑨HDMI Cable (隨貨配件)



「本案經申請者切結器材不提供隨貨配件，配件由實驗室提供併同檢驗」，及其廠牌型號資訊如下：

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
POE	UBIQUITI	GP-H480-050G	N/A	N/A
Power Cord	Cerpass	P2	0.9m / NS	N/A
Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
Notebook	DELL	Latitude E5450	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A
POE	UBIQUITI	GP-H480-050G	N/A	N/A
Power Cord	Cerpass	P2	0.9m / NS	N/A
LCD Display	ViewSonic	VS16071	N/A	Adapter / 1.5m / NS
AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
Notebook	DELL	Latitude E5450	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A
POE	UBIQUITI	GP-H480-050G	N/A	N/A
Power Cord	Cerpass	P2	0.9m / NS	N/A
LCD Display	ViewSonic	VS16071	N/A	Adapter / 1.5m / NS



1.6. 測試場地

測試場地：	世騰電子科技股份有限公司測試實驗室 338 桃園市蘆竹區聯福街 2 巷 10 號
測試電壓：	AC 110V / 60Hz
適用規範：	本測試報告之所有項目皆依據國家通訊傳播委員會低功率射頻器材技術規範以及參考 ANSI、FCC/47CFR/2.1046、2.1047、2.1049、2.1051、2.1053 及 2.1055 之檢驗法。
測試頻率：	電源傳導：從 150 kHz 到 30 MHz。 場強輻射：從 30 MHz 到 25000 MHz。
測試天線的距離：	場強輻射之測試距離為 3 M。

Test Item	Test Site	Tested Date	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2019/07/19	22°C / 63%	Leon Huang
Radiated Emissions, For TX Mode above 1GHz.	3M02-NK	2019/07/17	26°C / 51%	Nick Guan

Test Item	Test Site	Test period	Environmental Conditions	Tested By
Radiated Emissions, for TX & RX Mode below 1GHz and RX Mode above 1GHz.	3M02-NK	2021/03/09	22°C / 46%	Nick Guan
AC Power Line Conducted Emission	CON01-NK	2021/03/22	19°C / 52%	Leon Huang



1.7. 量測不確定度

For RF Conducted and Radiated Emissions, TX Mode above 1GHz.

Measurement Item	Uncertainty
Radiated Spurious Emission(1GHz~25GHz)	$\pm 5.918\text{dB}$
Conducted Spurious Emission	$\pm 2.156\text{dB}$
6dB Bandwidth	$\pm 4.401\%$
20dB Bandwidth	$\pm 4.40\%$
Occupied Bandwidth	$\pm 4.41\%$
Peak Output Power(Conducted Power Meter)	$\pm 1.31\text{dB}$
Dwell Time	$\pm 0.11\%$
Power Spectral Density	$\pm 2.146\text{dB}$
Duty Cycle	$\pm 0.17\%$

For AC Power Line Conducted Emission.

Radiated Emissions, TX & RX Mode below 1GHz and RX Mode above 1GHz.

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	$\pm 3.63\text{dB}$
Radiated Spurious Emission(9KHz~30MHz)	$\pm 3.404\text{dB}$
Radiated Spurious Emission(30MHz~1GHz)	$\pm 5.686\text{dB}$
Radiated Spurious Emission(1GHz~25GHz),	$\pm 6.597\text{dB}$



2. 測試儀器

Test Item	Radiated Emissions, For TX Mode above 1GHz.				
Test Site	Semi Anechoic Room(3M02-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Schwarzbeck	VULB9168	275	2018/09/17	2019/09/16
Active Loop Antenna	EMCO	6507	40855	2019/05/24	2020/05/23
Horn Antenna	EMCO	3115	31589	2019/04/01	2020/03/31
Horn Antenna	EMCO	3116	31974	2018/09/07	2019/09/06
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2019/05/14	2020/05/13
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100047	2019/03/28	2020/03/27
Preamplifier	EM Electronics corp.	EM330	60660	2019/03/11	2020/03/10
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2018/09/18	2019/09/17
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2019/04/07	2020/04/06
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1316	2018/09/12	2019/09/11
Cable-0.5m(1G-40G)	Rapidtek	40GHZ 50CM	38MS-38MS50314	2019/04/09	2020/04/08
Cable-3m(1G-40G)	Rapidtek	40GHZ 300CM	38MS-38MS300314	2019/04/09	2020/04/08
Cable-8m(1G-40G)	Rapidtek	40GHZ 800CM	38MS-38MS800314	2019/04/10	2020/04/09
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA

Test Item	Radiated Emissions, for TX & RX Mode below 1GHz and RX Mode above 1GHz.				
Test Site	Semi Anechoic Room(3M02-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Schwarzbeck	VULB9168	369	2020/04/10	2021/04/09
Active Loop Antenna	EMCO	6507	40855	2020/05/21	2021/05/20
Horn Antenna	EMCO	3115	31601	2020/10/16	2021/10/15
Horn Antenna	EMCO	3116	31970	2020/03/26	2021/03/25
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2020/06/23	2021/06/22
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	102151	2020/08/03	2021/08/02
Preamplifier	EM Electronics corp.	EM330	60660	2020/03/16	2021/03/15
Preamplifier	Agilent	8449B	3008A01954	2020/03/16	2021/03/15
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2020/11/06	2021/11/05
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2020/04/07	2021/04/06
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1315	2020/04/09	2021/04/08
Cable-0.5m(1G-18G)	HUBER SUHNER	SUCOFLEX 104	805443/4	2020/05/27	2021/05/26
Cable-3m(1G-18G)	HUBER SUHNER	SUCOFLEX 104	805796/4	2020/05/27	2021/05/26
Cable-8m(1G-18G)	HUBER SUHNER	SUCOFLEX 104	805795/4	2020/05/27	2021/05/26
Cable-0.5m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	28420/2	2020/04/01	2021/03/31
Cable-3m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	MY2608/2	2020/04/01	2021/03/31
Cable-0.5m(1G-40G)	Rapidtek	40GHZ 50CM	38MS-38MS50314	2020/04/09	2021/04/08
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130605	2020/09/18	2021/09/17
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA



Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100047	2019/03/28	2020/03/27
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2019/04/07	2020/04/06
Attenuator	KEYSIGHT	8491B	MY39250705	2018/09/04	2019/09/03
TEMP & HUMID CHAMBER	T-MACHINE	TMJ-9712	T-12-040111	2018/08/30	2019/08/29
Power Sensor	Anritsu	MA2411B	1207295	2019/04/11	2020/04/10

Test Item	AC Power Line Conducted Emission				
Test Site	CON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESCI	100443	2020/05/25	2021/05/24
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127-516	2020/09/26	2021/09/25
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	101933	2020/09/17	2021/09/16
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130605	2020/09/18	2021/09/17
E3	AUDIX	v8.2014-8-6	RK-000531	NA	NA



3. 天線增益之要求

天線規格不受國家通訊傳播委員會低功率射頻器材技術規範(3.2)節規定之限制，其發射天線之方向性增益超過 6dBi 時，應依其所超過之 dB 數等量降低峰值輸出功率。如用於固定式點對點操作時，應符合下列情形之一：

操作於 2400-2483.5 兆赫(MHz)者，其發射天線之方向性增益超過 6dBi，應於每超過 3dB 降低 1dB 之峰值輸出功率。

操作於 5725-5850 兆赫(MHz)者，其發射天線之方向性增益超過 6dBi，不需降低峰值輸出功率。

3.1. 天線型式及其增益

1.1 Brand :	UBIQUITI
1.2 Model :	117-02946
1.3 Antenna type :	Dipole Antenna
1.4 Frequency Rang :	2402-2480MHz
1.5 Gain(peak) :	2.2dBi
(參照天線規格資料)	

3.2. 結果判定

其發射天線之方向性增益低於 6dBi，因此無需降低峰值輸出功率。

4. 電源線傳導干擾之量測規定

4.1. 適用標準

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

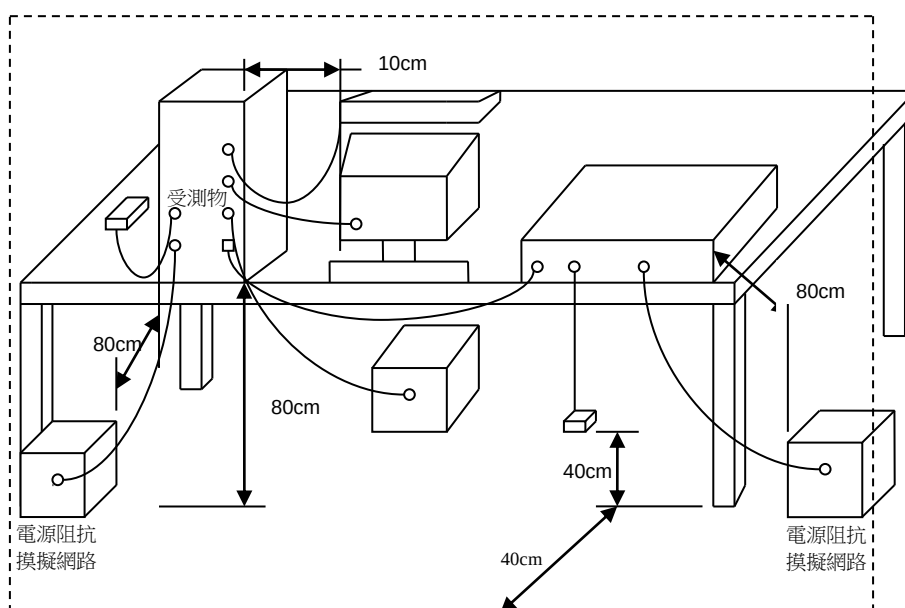
頻率範圍(MHz)	傳導限制值 (dB μ V)	
	準峰值(Quasi-peak)	平均值(Average)
0.15 ~ 0.5	66-56 (註)	56-46 (註)
0.5 ~ 5	56	46
5 ~ 30	60	50

註：隨頻率之對數遞減

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接至電源阻抗穩定網路上，從測試接收機記錄頻率由 0.15MHz 至 30MHz 之間之電源線導放射強度。

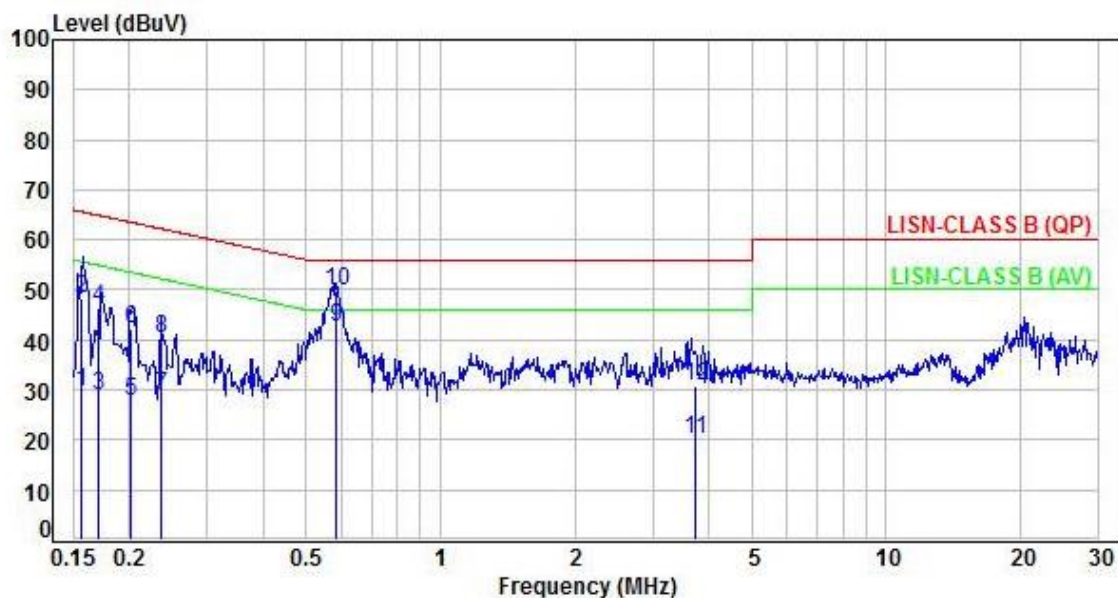
4.3. 傳導干擾之擺設





4.4. 傳導干擾之測試結果及數據

Power	: AC 110V / 60Hz	Pol/Phase	: LINE
Test Mode	: Mode 2		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.16	9.96	19.58	29.54	55.67	-26.13	Average	P
2	0.16	9.96	38.24	48.20	65.67	-17.47	QP	P
3	0.17	9.96	18.87	28.83	54.95	-26.12	Average	P
4	0.17	9.96	36.30	46.26	64.95	-18.69	QP	P
5	0.20	9.96	17.80	27.76	53.52	-25.76	Average	P
6	0.20	9.96	32.14	42.10	63.52	-21.42	QP	P
7	0.24	9.96	18.79	28.75	52.25	-23.50	Average	P
8	0.24	9.96	30.49	40.45	62.25	-21.80	QP	P
9	0.59	9.99	32.50	42.49	46.00	-3.51	Average	P
10	0.59	9.99	39.98	49.97	56.00	-6.03	QP	P
11	3.74	10.22	9.76	19.98	46.00	-26.02	Average	P
12	3.74	10.22	20.46	30.68	56.00	-25.32	QP	P

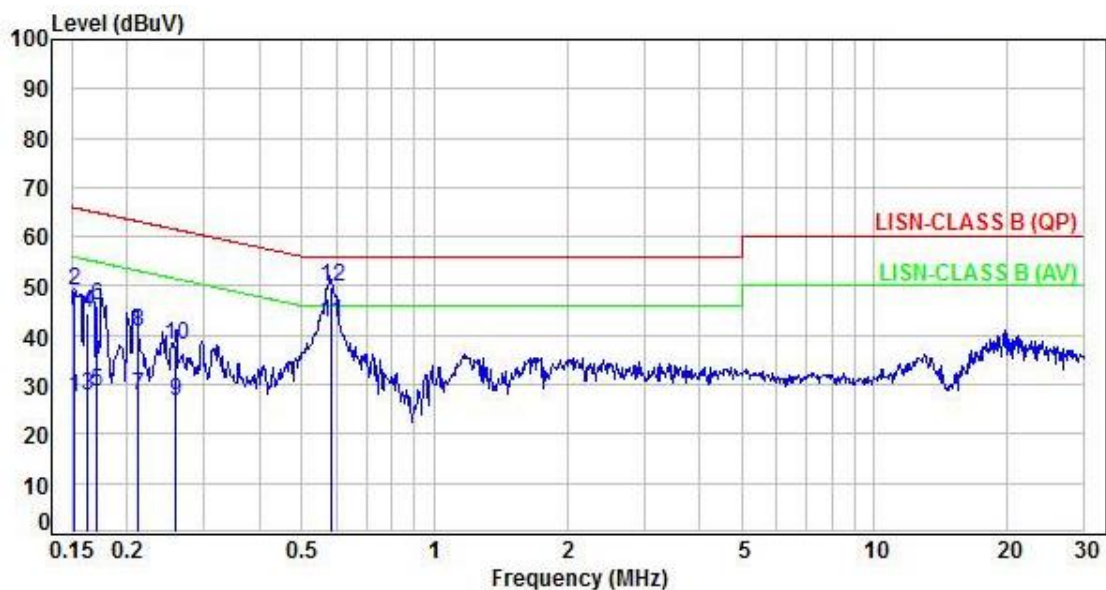
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



Power	: AC 110V / 60Hz	Pol/Phase	: NEUTRAL
Test Mode	: Mode 2		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	9.97	17.30	27.27	55.90	-28.63	Average	P
2	0.15	9.97	39.08	49.05	65.90	-16.85	QP	P
3	0.16	9.97	17.78	27.75	55.36	-27.61	Average	P
4	0.16	9.97	34.66	44.63	65.36	-20.73	QP	P
5	0.17	9.97	18.66	28.63	54.94	-26.31	Average	P
6	0.17	9.97	36.02	45.99	64.94	-18.95	QP	P
7	0.21	9.97	17.67	27.64	53.13	-25.49	Average	P
8	0.21	9.97	30.64	40.61	63.13	-22.52	QP	P
9	0.26	9.97	16.64	26.61	51.51	-24.90	Average	P
10	0.26	9.97	28.12	38.09	61.51	-23.42	QP	P
11	0.58	10.00	32.46	42.46	46.00	-3.54	Average	P
12	0.58	10.00	39.95	49.95	56.00	-6.05	QP	P

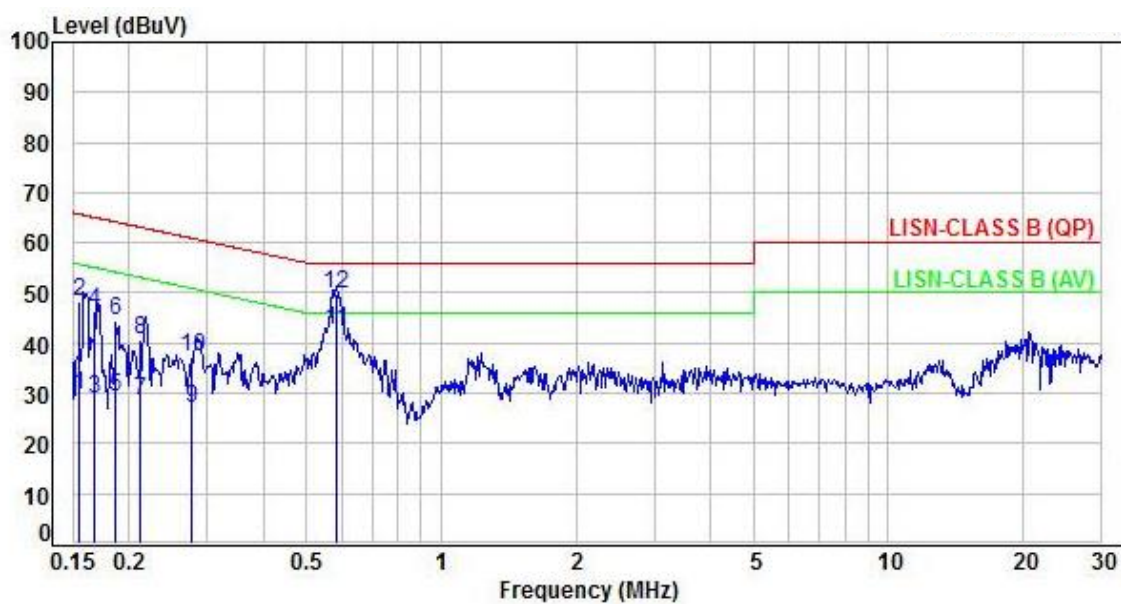
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



Power	: AC 110V / 60Hz	Pol/Phase	: LINE
Test Mode	: Mode 6		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Detector	P/F
1	0.15	9.96	19.62	29.58	55.75	-26.17	Average	P
2	0.15	9.96	38.37	48.33	65.75	-17.42	QP	P
3	0.17	9.96	19.10	29.06	55.06	-26.00	Average	P
4	0.17	9.96	36.51	46.47	65.06	-18.59	QP	P
5	0.19	9.96	19.45	29.41	54.16	-24.75	Average	P
6	0.19	9.96	34.51	44.47	64.16	-19.69	QP	P
7	0.21	9.96	18.70	28.66	53.15	-24.49	Average	P
8	0.21	9.96	30.91	40.87	63.15	-22.28	QP	P
9	0.28	9.96	17.11	27.07	50.93	-23.86	Average	P
10	0.28	9.96	27.41	37.37	60.93	-23.56	QP	P
11	0.58	9.99	32.54	42.53	46.00	-3.47	Average	P
12	0.58	9.99	39.82	49.81	56.00	-6.19	QP	P

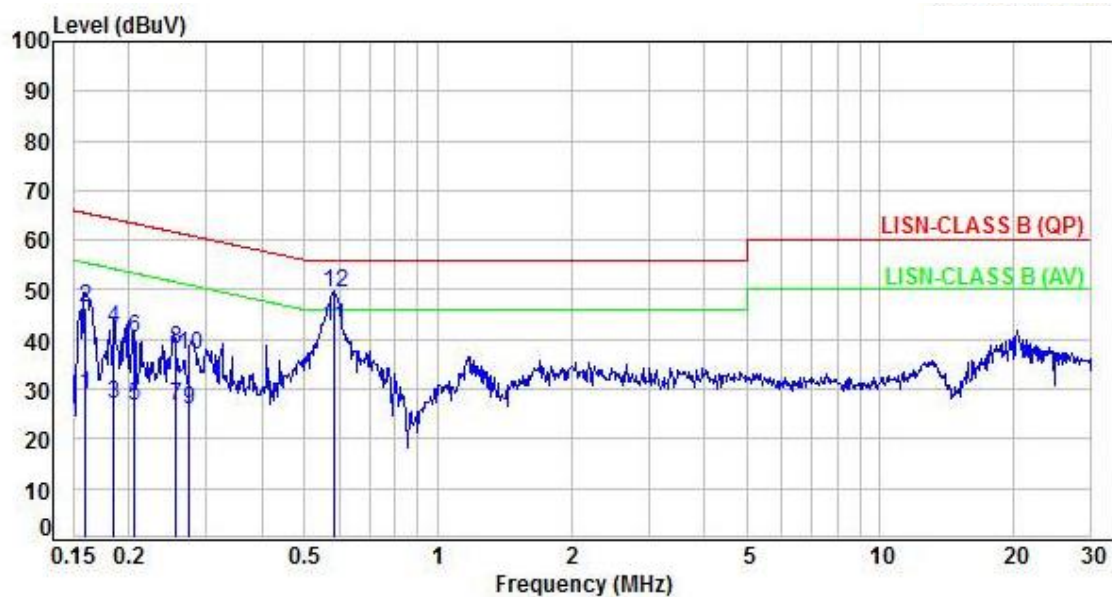
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



Power	: AC 110V / 60Hz	Pol/Phase	: NEUTRAL
Test Mode	: Mode 6		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.16	9.97	18.98	28.95	55.52	-26.57	Average	P
2	0.16	9.97	36.47	46.44	65.52	-19.08	QP	P
3	0.19	9.97	17.13	27.10	54.25	-27.15	Average	P
4	0.19	9.97	32.07	42.04	64.25	-22.21	QP	P
5	0.21	9.97	16.81	26.78	53.39	-26.61	Average	P
6	0.21	9.97	30.42	40.39	63.39	-23.00	QP	P
7	0.25	9.97	16.56	26.53	51.60	-25.07	Average	P
8	0.25	9.97	27.99	37.96	61.60	-23.64	QP	P
9	0.27	9.97	15.80	25.77	51.02	-25.25	Average	P
10	0.27	9.97	26.86	36.83	61.02	-24.19	QP	P
11	0.58	10.00	32.50	42.50	46.00	-3.50	Average	P
12	0.58	10.00	39.56	49.56	56.00	-6.44	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



5. 輻射之量測規定

5.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.5 節之要求，落於 3.5 節禁用頻段之輻射干擾需符合 3.6 節之一般限制要求：

頻率(MHz)	測試距離(m)	限制值(dB μ V)	限制值(μ V/m)
0.009 – 0.490 (含)	300	67.6 / f(kHz)	2400 / f(kHz)
0.490 (不含) – 1.705 (含)	30	87.6 / f(kHz)	24000 / f(kHz)
1.705(不含) – 30(不含)	30	29.5	30
30 (含) – 88 (含)	3	40.0	100
88(不含) – 216 (含)	3	43.5	150
216(不含) – 960 (含)	3	46.0	200
960(不含)以上	3	54.0	500

5.2. 測試方法

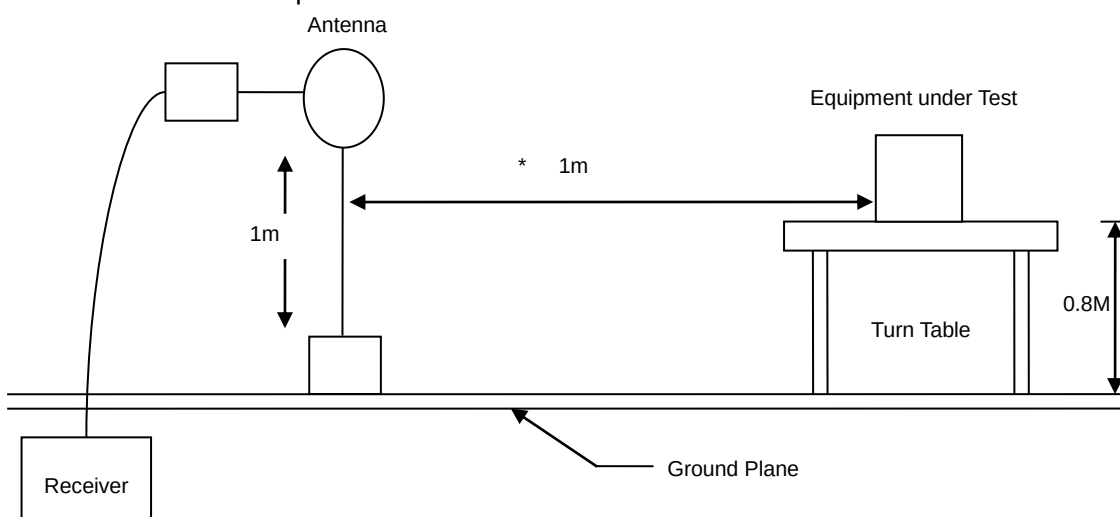
將待測物置於 0.8 米(Below 1G) & 1.5 米(Above 1G)高的非金屬桌面，使其在測試模式狀態，且設定為高、中、低各頻道產生最高峰值輸出功率的傳輸速率，接收天線置於 3 米外，且桌面要 360 度旋轉，另外接收天線也要從 1 米至 4 米升降變化，接收天線置於水平、垂直極向各執行測試一次。如待測物可以三軸相放置，並分別測試以找出最大輻射電場強度(最差的結果為 X 軸)。

備註：

For Below 1G 若待測物之輻射峰值低於限制值 3dB 以上，則將終止測試，並以峰值之讀值作為報告之記錄;反之，若無 3dB 餘裕範圍之輻射，則每一訊號皆以準峰值之測試方法量測，並記錄於報告之中

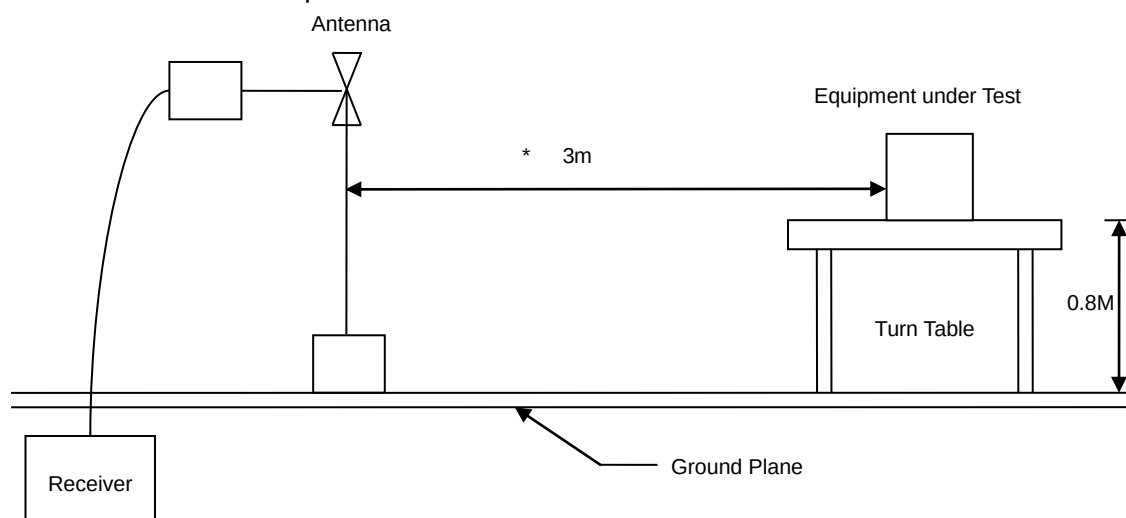
5.3. 輻射場地之擺設

Below 30MHz test setup

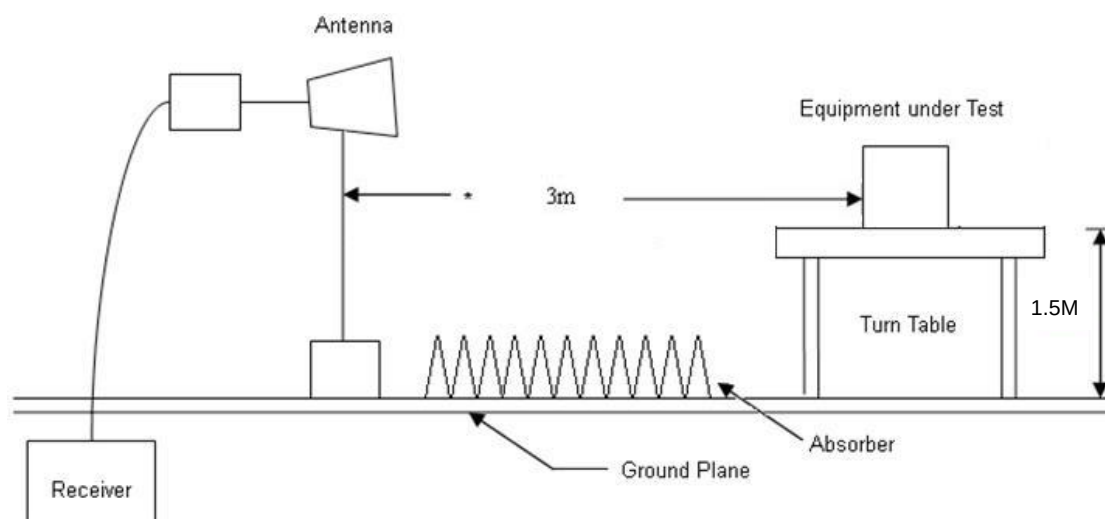




30MHz- 1GHz Test Setup



Above 1GHz Test Setup



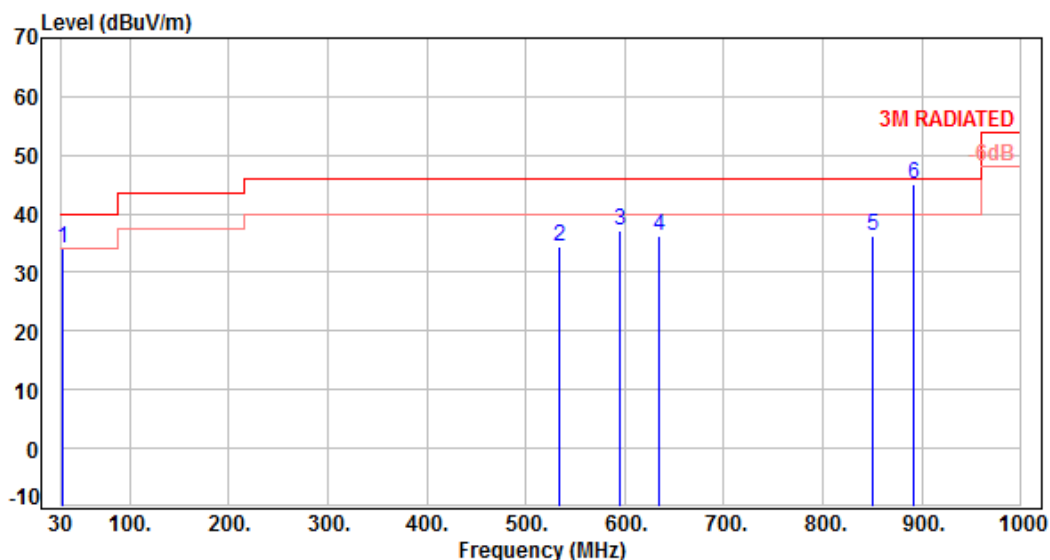


5.4. 輻射之測試結果及數據 (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

5.5. 輻射之測試結果及數據 (30MHz ~ 1GHz)

Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	31.98	-10.39	44.51	34.12	40.00	-5.88	Peak	400	360	P
2	534.45	-3.09	37.57	34.48	46.00	-11.52	Peak	400	360	P
3	594.62	-1.57	38.86	37.29	46.00	-8.71	Peak	400	360	P
4	635.34	-0.82	36.92	36.10	46.00	-9.90	Peak	400	360	P
5	850.68	2.48	33.89	36.37	46.00	-9.63	Peak	400	360	P
6	891.45	3.01	42.19	45.20	46.00	-0.80	QP	100	112	P

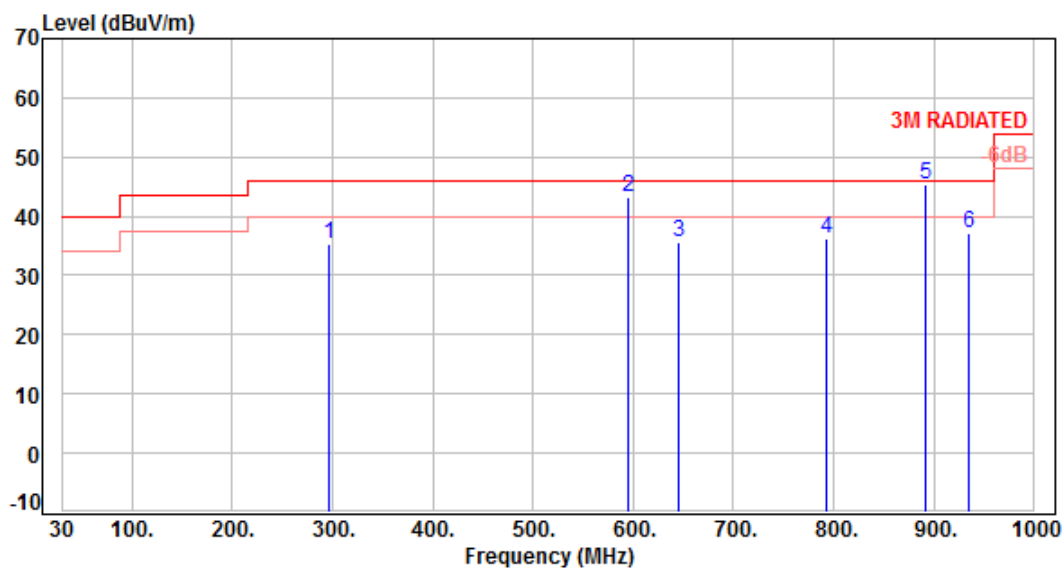
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	295.85	-8.63	43.81	35.18	46.00	-10.82	Peak	400	360	P
2	594.62	-1.57	44.84	43.27	46.00	-2.73	QP	100	162	P
3	644.95	-0.79	36.27	35.48	46.00	-10.52	Peak	400	360	P
4	792.48	1.73	34.46	36.19	46.00	-9.81	Peak	400	360	P
5	891.36	3.01	42.28	45.29	46.00	-0.71	QP	100	112	P
6	934.12	3.82	33.33	37.15	46.00	-8.85	Peak	400	360	P

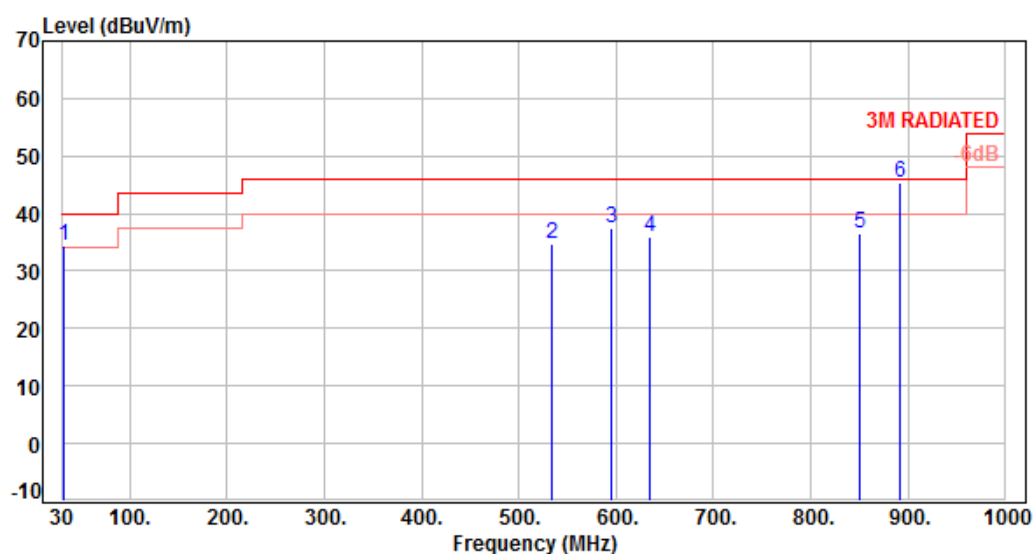
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 6		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	31.95	-10.39	44.74	34.35	40.00	-5.65	Peak	400	360	P
2	534.58	-3.09	37.73	34.64	46.00	-11.36	Peak	400	360	P
3	594.75	-1.56	38.97	37.41	46.00	-8.59	Peak	400	360	P
4	635.46	-0.82	36.85	36.03	46.00	-9.97	Peak	400	360	P
5	850.48	2.47	33.99	36.46	46.00	-9.54	Peak	400	360	P
6	891.56	3.01	42.28	45.29	46.00	-0.71	QP	100	109	P

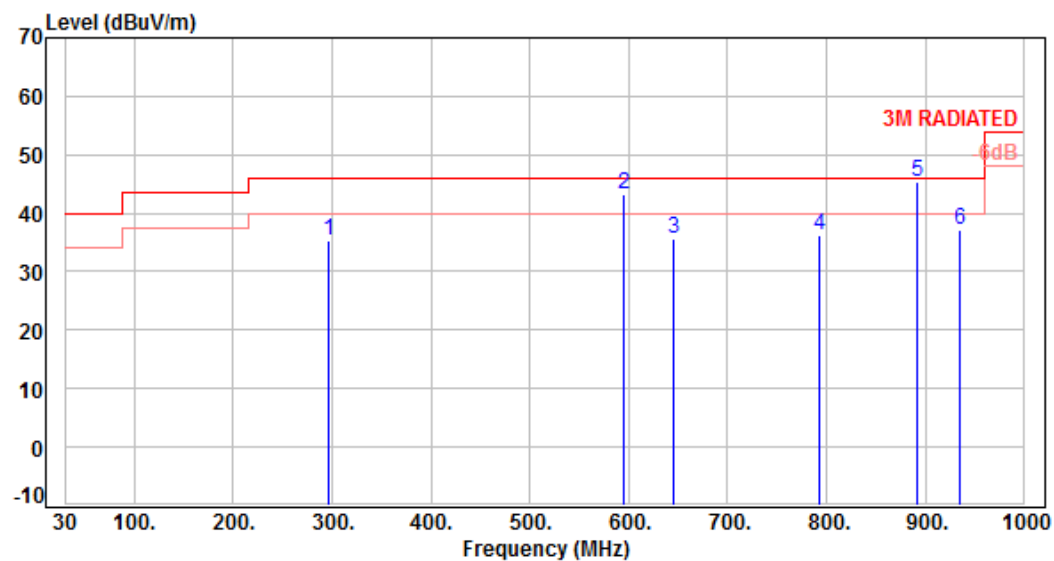
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	295.92	-8.63	43.94	35.31	46.00	-10.69	Peak	400	360	P
2	594.78	-1.56	44.92	43.36	46.00	-2.64	QP	100	157	P
3	644.88	-0.79	36.39	35.60	46.00	-10.40	Peak	400	360	P
4	792.57	1.74	34.60	36.34	46.00	-9.66	Peak	400	360	P
5	891.47	3.01	42.29	45.30	46.00	-0.70	QP	100	115	P
6	934.24	3.82	33.18	37.00	46.00	-9.00	Peak	400	360	P

Note: Level=Reading+Factor

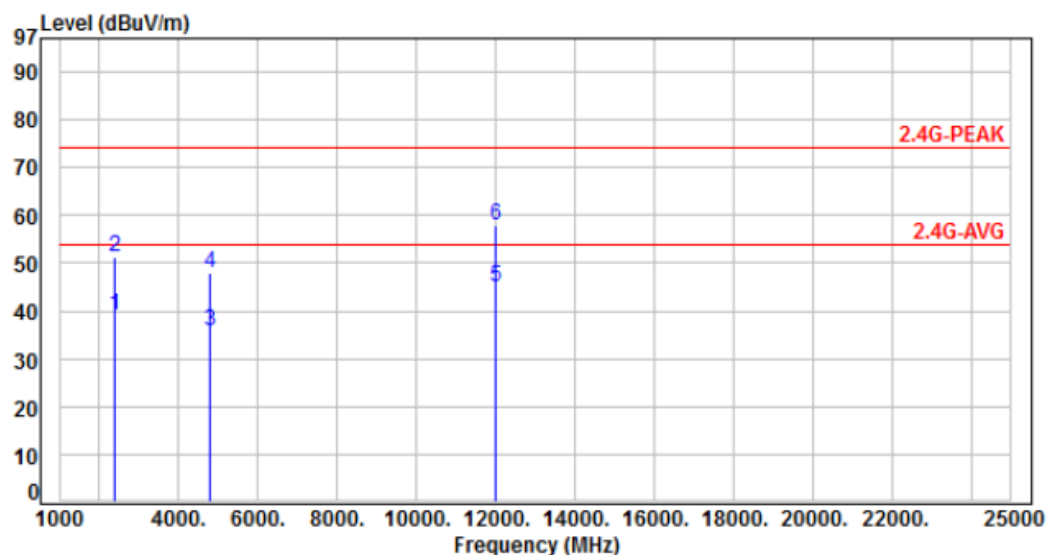
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



5.6. 輻射之測試結果及數據 (1GHz ~ 25GHz)

Power	:	AC 110V / 60Hz	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH00		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.67	39.03	54.00	-14.97	Average	100	59	P
2	2390.00	-3.64	54.74	51.10	74.00	-22.90	Peak	100	59	P
3	4804.00	3.65	32.19	35.84	54.00	-18.16	Average	164	224	P
4	4804.00	3.65	44.40	48.05	74.00	-25.95	Peak	164	224	P
5	12010.00	13.50	31.68	45.18	54.00	-8.82	Average	100	236	P
6	12010.00	13.50	44.50	58.00	74.00	-16.00	Peak	100	236	P

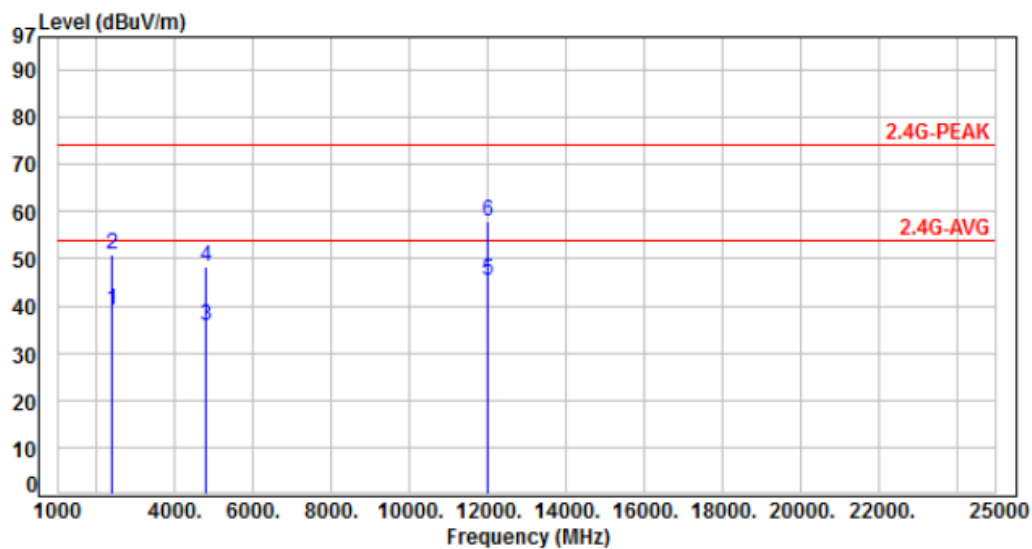
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH00		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.86	39.22	54.00	-14.78	Average	217	83	P
2	2390.00	-3.64	54.46	50.82	74.00	-23.18	Peak	217	83	P
3	4804.00	3.65	32.18	35.83	54.00	-18.17	Average	100	312	P
4	4804.00	3.65	44.57	48.22	74.00	-25.78	Peak	100	312	P
5	12010.00	13.50	31.90	45.40	54.00	-8.60	Average	100	298	P
6	12010.00	13.50	44.30	57.80	74.00	-16.20	Peak	100	298	P

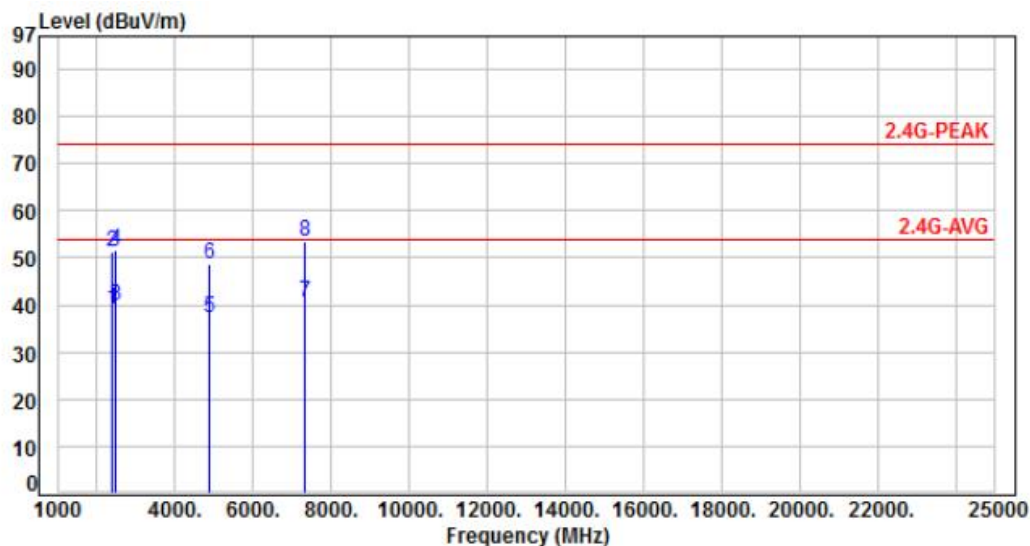
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH19		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.72	39.08	54.00	-14.92	Average	100	63	P
2	2390.00	-3.64	54.86	51.22	74.00	-22.78	Peak	100	63	P
3	2483.50	-3.30	43.07	39.77	54.00	-14.23	Average	100	63	P
4	2483.50	-3.30	55.09	51.79	74.00	-22.21	Peak	100	63	P
5	4880.00	3.97	33.20	37.17	54.00	-16.83	Average	113	212	P
6	4880.00	3.97	44.65	48.62	74.00	-25.38	Peak	113	212	P
7	7320.00	8.83	31.85	40.68	54.00	-13.32	Average	100	233	P
8	7320.00	8.83	44.67	53.50	74.00	-20.50	Peak	100	233	P

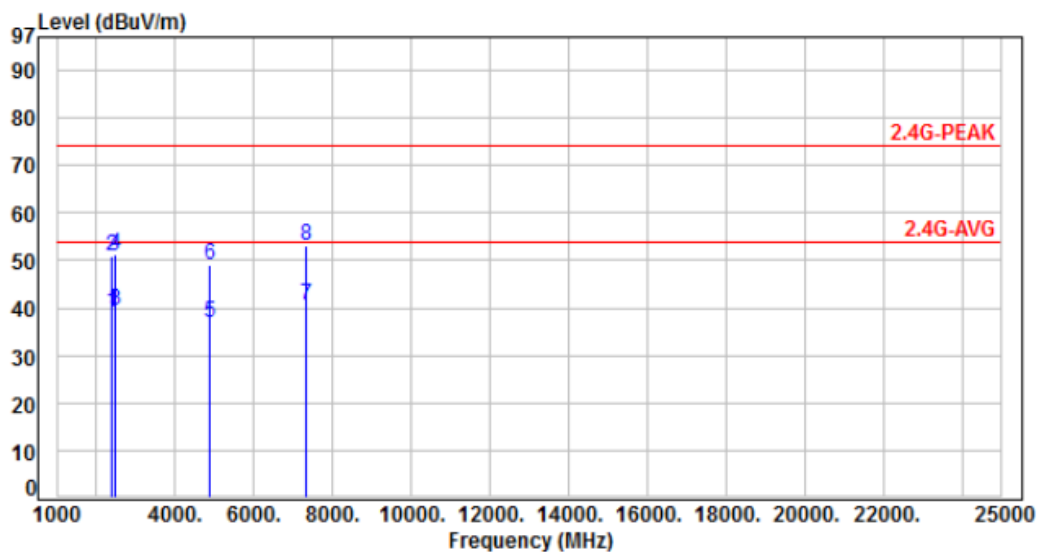
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH19		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.78	39.14	54.00	-14.86	Average	212	94	P
2	2390.00	-3.64	54.35	50.71	74.00	-23.29	Peak	212	94	P
3	2483.50	-3.30	42.92	39.62	54.00	-14.38	Average	212	94	P
4	2483.50	-3.30	54.66	51.36	74.00	-22.64	Peak	212	94	P
5	4880.00	3.97	32.75	36.72	54.00	-17.28	Average	134	280	P
6	4880.00	3.97	45.19	49.16	74.00	-24.84	Peak	134	280	P
7	7320.00	8.83	31.79	40.62	54.00	-13.38	Average	100	286	P
8	7320.00	8.83	44.16	52.99	74.00	-21.01	Peak	100	286	P

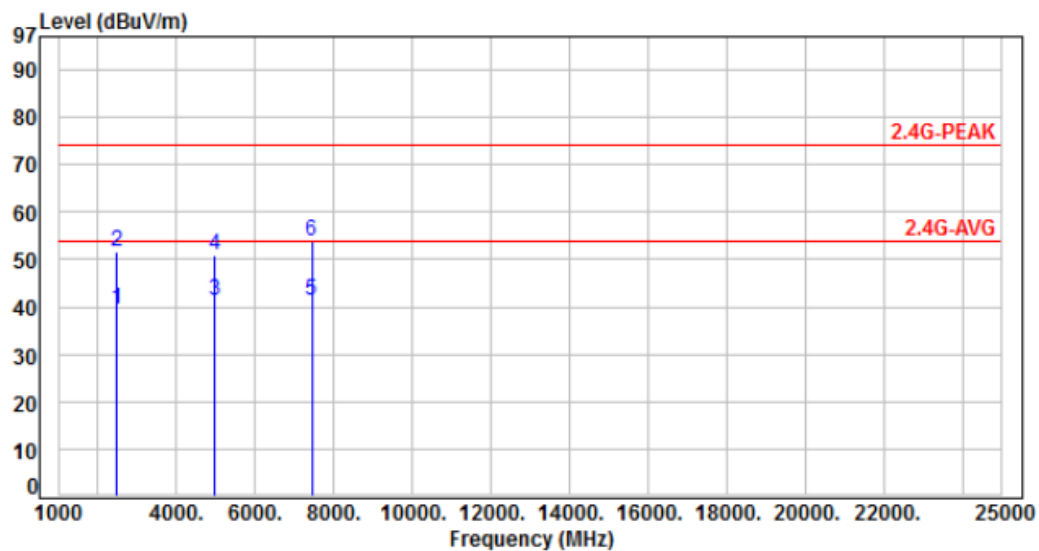
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH39		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-3.30	42.74	39.44	54.00	-14.56	Average	100	68	P
2	2483.50	-3.30	54.83	51.53	74.00	-22.47	Peak	100	68	P
3	4960.00	4.21	37.22	41.43	54.00	-12.57	Average	102	347	P
4	4960.00	4.21	46.52	50.73	74.00	-23.27	Peak	102	347	P
5	7440.00	8.98	32.15	41.13	54.00	-12.87	Average	100	249	P
6	7440.00	8.98	44.85	53.83	74.00	-20.17	Peak	100	249	P

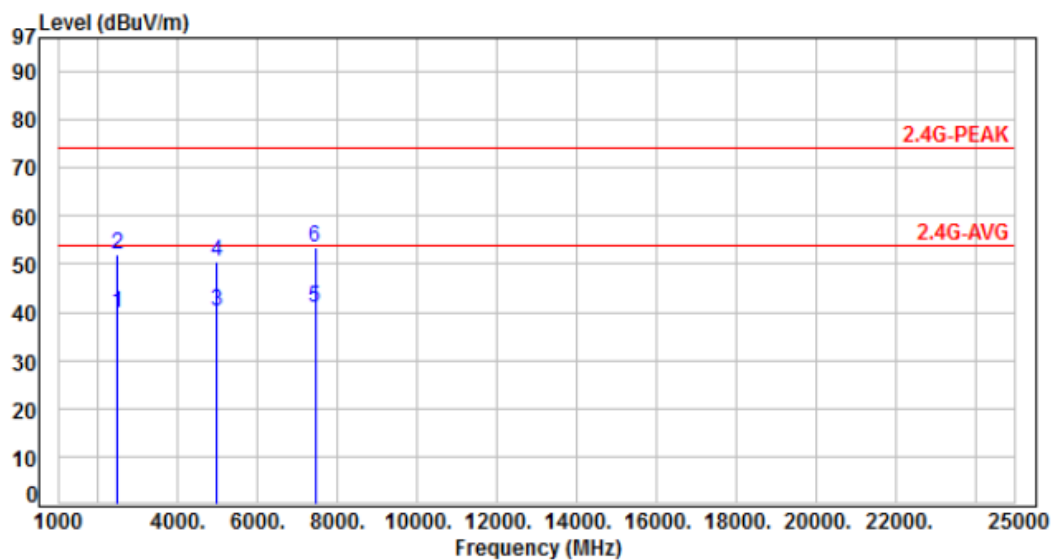
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH39		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-3.30	43.27	39.97	54.00	-14.03	Average	118	81	P
2	2483.50	-3.30	55.15	51.85	74.00	-22.15	Peak	118	81	P
3	4960.00	4.21	35.97	40.18	54.00	-13.82	Average	100	280	P
4	4960.00	4.21	46.31	50.52	74.00	-23.48	Peak	100	280	P
5	7440.00	8.98	32.14	41.12	54.00	-12.88	Average	100	292	P
6	7440.00	8.98	44.62	53.60	74.00	-20.40	Peak	100	292	P

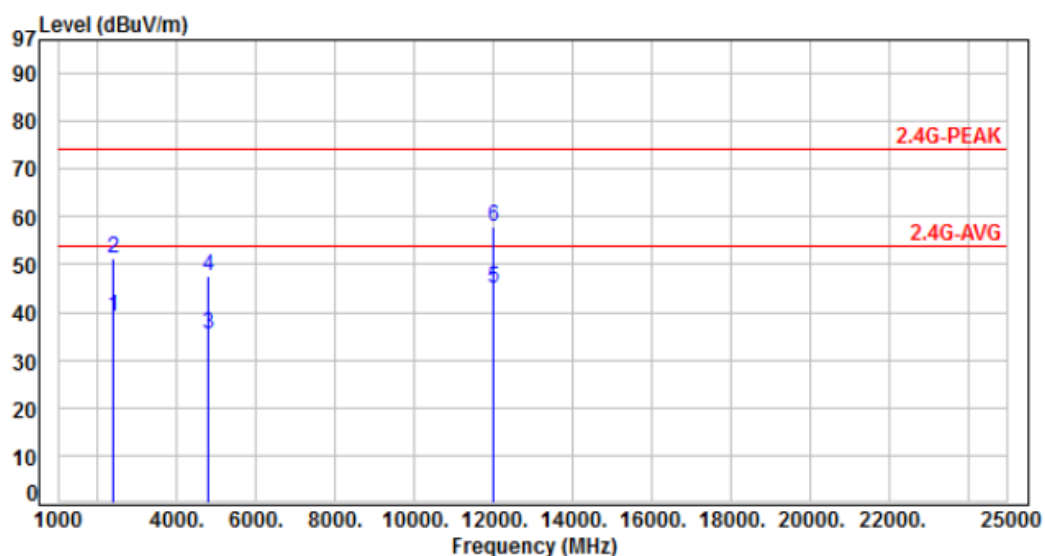
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH00		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.73	39.09	54.00	-14.91	Average	100	62	P
2	2390.00	-3.64	54.85	51.21	74.00	-22.79	Peak	100	62	P
3	4804.00	3.65	31.73	35.38	54.00	-18.62	Average	161	226	P
4	4804.00	3.65	43.97	47.62	74.00	-26.38	Peak	161	226	P
5	12010.00	13.50	31.59	45.09	54.00	-8.91	Average	100	241	P
6	12010.00	13.50	44.38	57.88	74.00	-16.12	Peak	100	241	P

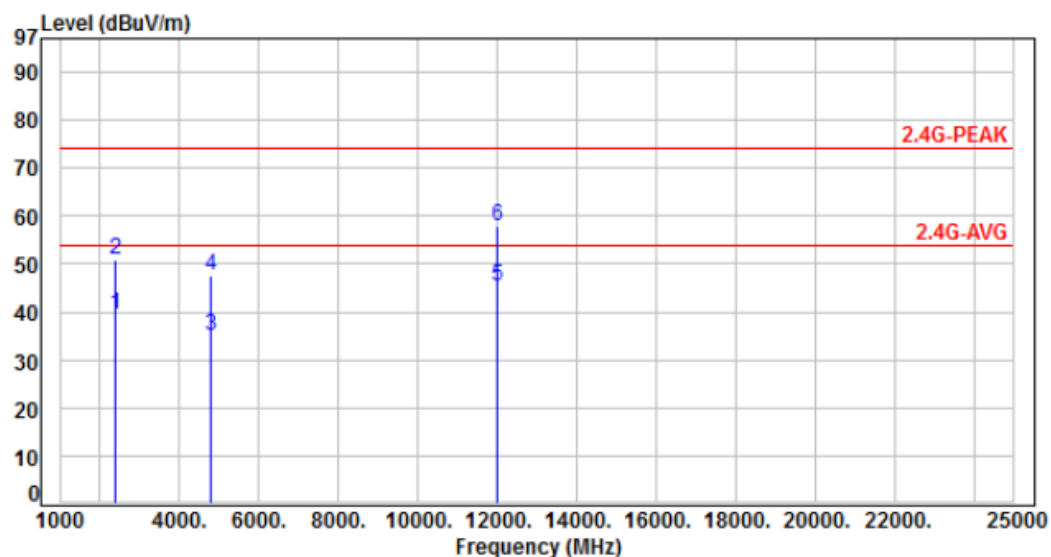
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH00		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.94	39.30	54.00	-14.70	Average	213	86	P
2	2390.00	-3.64	54.61	50.97	74.00	-23.03	Peak	213	86	P
3	4804.00	3.65	31.21	34.86	54.00	-19.14	Average	100	308	P
4	4804.00	3.65	43.79	47.44	74.00	-26.56	Peak	100	308	P
5	12010.00	13.50	31.84	45.34	54.00	-8.66	Average	100	296	P
6	12010.00	13.50	44.23	57.73	74.00	-16.27	Peak	100	296	P

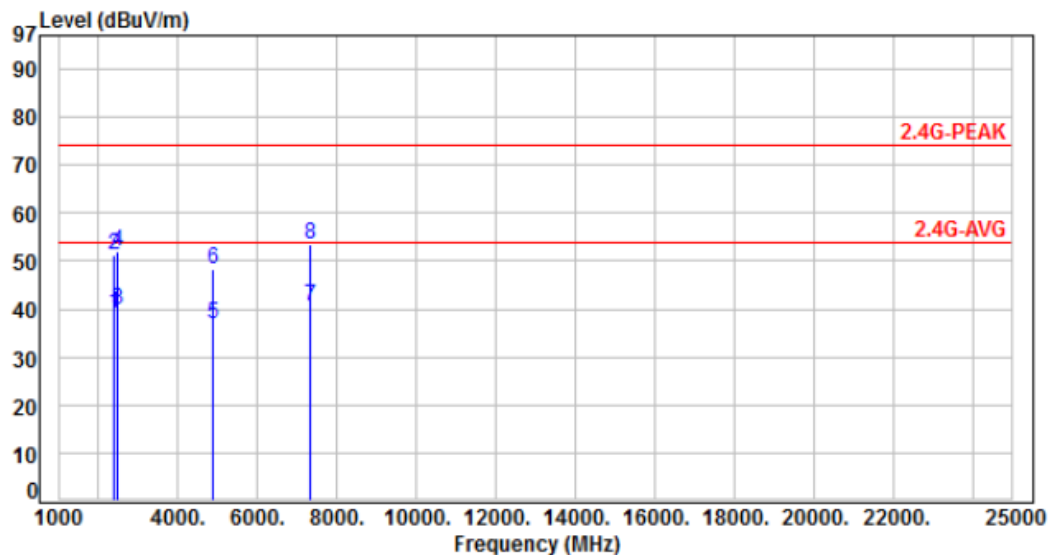
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH19		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.76	39.12	54.00	-14.88	Average	100	66	P
2	2390.00	-3.64	54.93	51.29	74.00	-22.71	Peak	100	66	P
3	2483.50	-3.30	43.13	39.83	54.00	-14.17	Average	100	66	P
4	2483.50	-3.30	55.20	51.90	74.00	-22.10	Peak	100	66	P
5	4880.00	3.97	32.85	36.82	54.00	-17.18	Average	111	208	P
6	4880.00	3.97	44.21	48.18	74.00	-25.82	Peak	111	208	P
7	7320.00	8.83	31.77	40.60	54.00	-13.40	Average	100	229	P
8	7320.00	8.83	44.54	53.37	74.00	-20.63	Peak	100	229	P

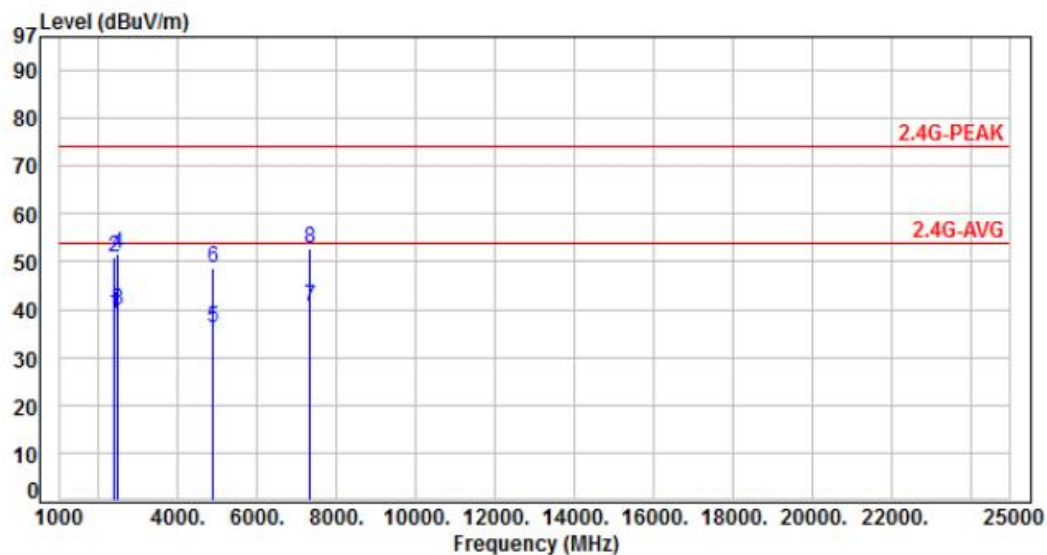
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH19		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.64	42.83	39.19	54.00	-14.81	Average	208	96	P
2	2390.00	-3.64	54.47	50.83	74.00	-23.17	Peak	208	96	P
3	2483.50	-3.30	43.01	39.71	54.00	-14.29	Average	208	96	P
4	2483.50	-3.30	54.78	51.48	74.00	-22.52	Peak	208	96	P
5	4880.00	3.97	32.31	36.28	54.00	-17.72	Average	128	279	P
6	4880.00	3.97	44.83	48.80	74.00	-25.20	Peak	128	279	P
7	7320.00	8.83	31.74	40.57	54.00	-13.43	Average	100	282	P
8	7320.00	8.83	44.05	52.88	74.00	-21.12	Peak	100	282	P

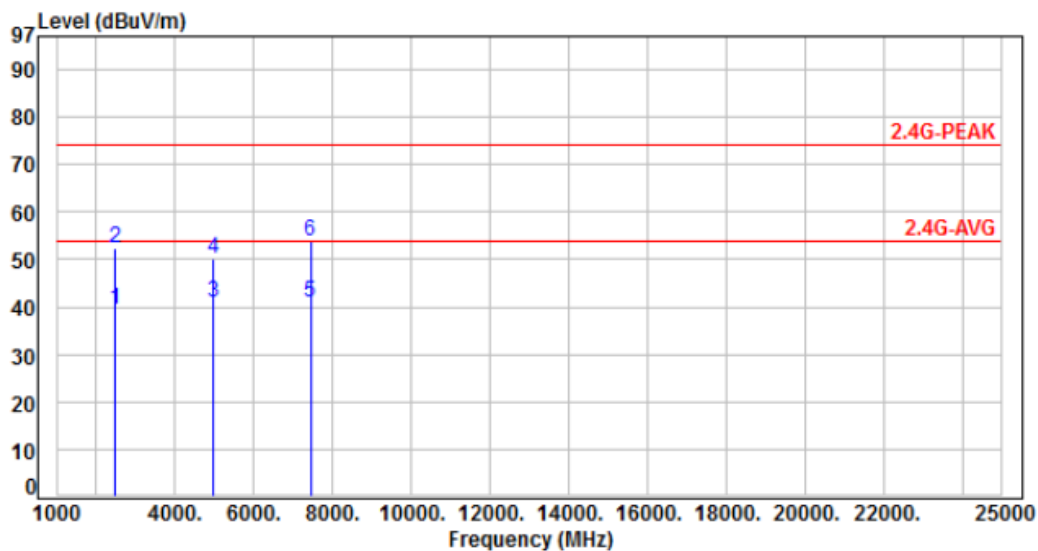
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH39		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-3.30	42.81	39.51	54.00	-14.49	Average	101	70	P
2	2483.50	-3.30	55.81	52.51	74.00	-21.49	Peak	101	70	P
3	4960.00	4.21	36.89	41.10	54.00	-12.90	Average	100	345	P
4	4960.00	4.21	46.11	50.32	74.00	-23.68	Peak	100	345	P
5	7440.00	8.98	32.05	41.03	54.00	-12.97	Average	100	252	P
6	7440.00	8.98	44.74	53.72	74.00	-20.28	Peak	100	252	P

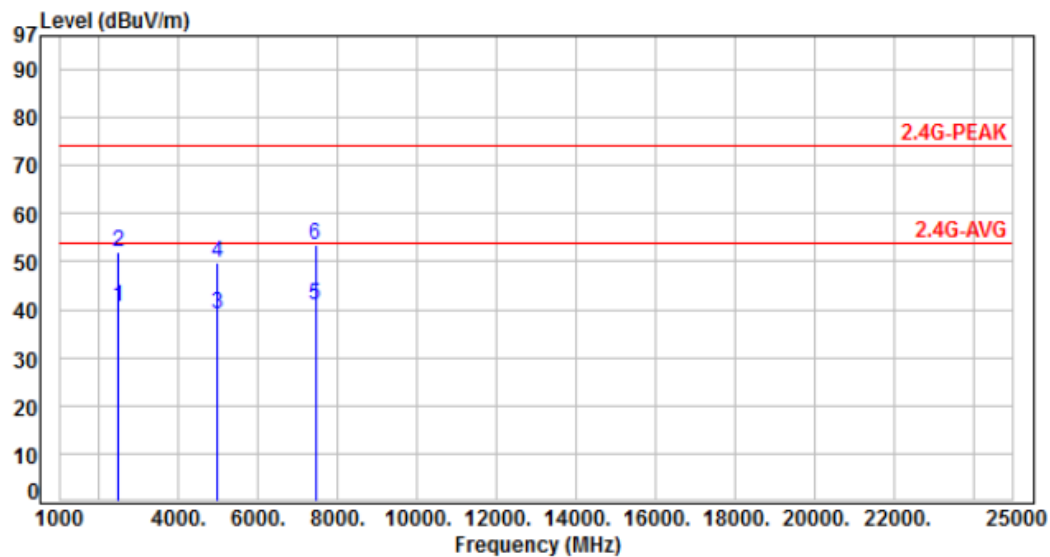
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH39		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-3.30	43.97	40.67	54.00	-13.33	Average	119	85	P
2	2483.50	-3.30	55.38	52.08	74.00	-21.92	Peak	119	85	P
3	4960.00	4.21	34.78	38.99	54.00	-15.01	Average	100	280	P
4	4960.00	4.21	45.51	49.72	74.00	-24.28	Peak	100	280	P
5	7440.00	8.98	32.09	41.07	54.00	-12.93	Average	100	295	P
6	7440.00	8.98	44.53	53.51	74.00	-20.49	Peak	100	295	P

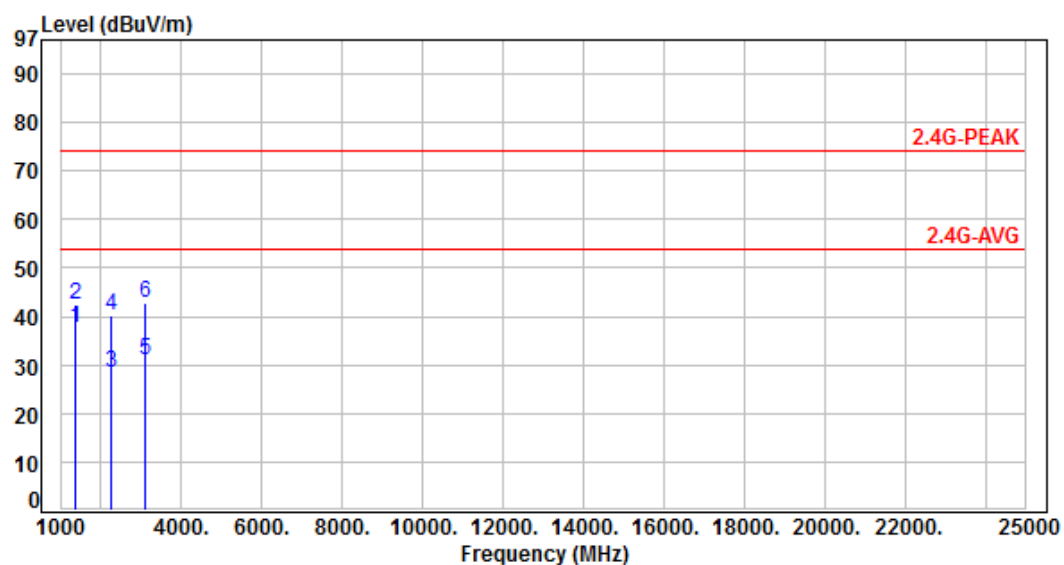
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH00		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1375.00	-7.76	45.25	37.49	54.00	-16.51	Average	400	218	P
2	1375.00	-7.76	50.23	42.47	74.00	-31.53	Peak	400	218	P
3	2250.00	-3.55	31.83	28.28	54.00	-25.72	Average	100	105	P
4	2250.00	-3.55	43.66	40.11	74.00	-33.89	Peak	100	105	P
5	3099.00	0.10	30.98	31.08	54.00	-22.92	Average	100	272	P
6	3099.00	0.10	42.57	42.67	74.00	-31.33	Peak	100	272	P

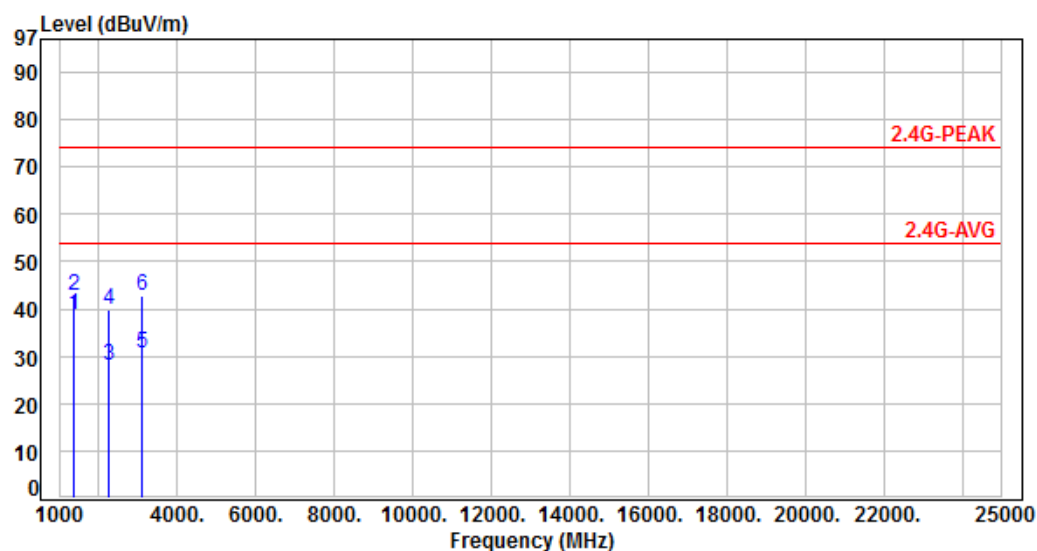
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60HZ	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH00		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1375.00	-7.76	46.64	38.88	54.00	-15.12	Average	182	73	P
2	1375.00	-7.76	50.57	42.81	74.00	-31.19	Peak	182	73	P
3	2250.00	-3.55	31.54	27.99	54.00	-26.01	Average	100	182	P
4	2250.00	-3.55	43.38	39.83	74.00	-34.17	Peak	100	182	P
5	3099.00	0.10	30.67	30.77	54.00	-23.23	Average	102	348	P
6	3099.00	0.10	42.54	42.64	74.00	-31.36	Peak	102	348	P

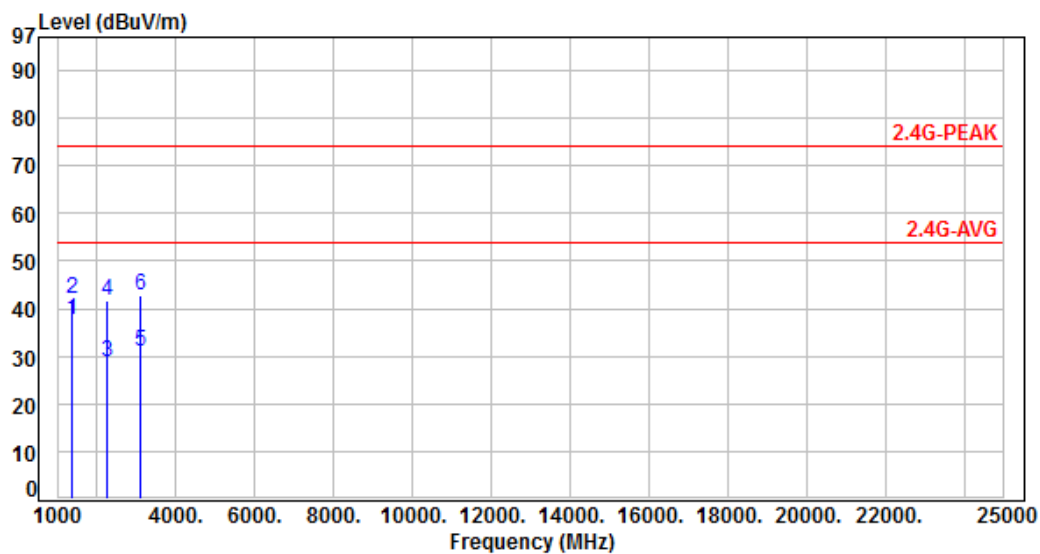
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60HZ	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH19		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1375.00	-7.76	45.52	37.76	54.00	-16.24	Average	400	225	P
2	1375.00	-7.76	49.91	42.15	74.00	-31.85	Peak	400	225	P
3	2250.00	-3.55	32.38	28.83	54.00	-25.17	Average	100	116	P
4	2250.00	-3.55	45.36	41.81	74.00	-32.19	Peak	100	116	P
5	3099.00	0.10	30.82	30.92	54.00	-23.08	Average	100	27	P
6	3099.00	0.10	42.52	42.62	74.00	-31.38	Peak	100	27	P

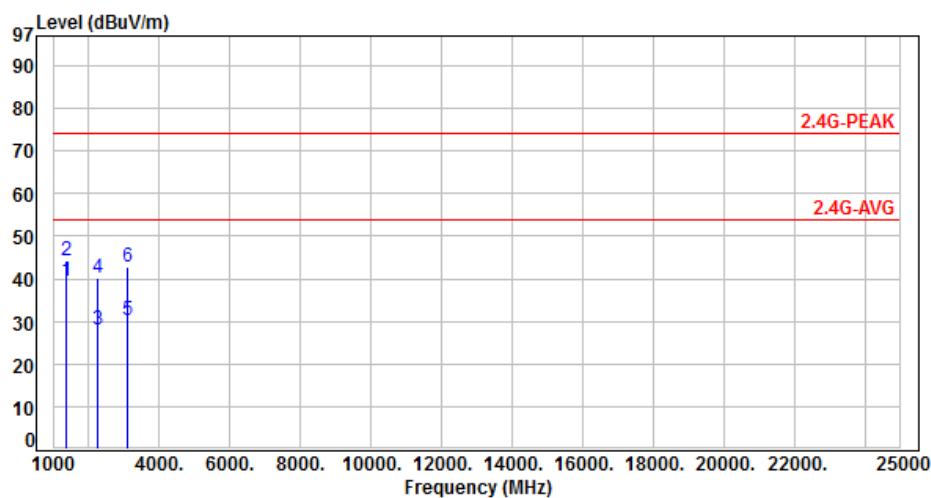
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60HZ	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH19		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1375.00	-7.76	47.29	39.53	54.00	-14.47	Average	181	74	P
2	1375.00	-7.76	51.90	44.14	74.00	-29.86	Peak	181	74	P
3	2250.00	-3.55	31.68	28.13	54.00	-25.87	Average	100	228	P
4	2250.00	-3.55	43.84	40.29	74.00	-33.71	Peak	100	228	P
5	3099.00	0.10	30.31	30.41	54.00	-23.59	Average	100	312	P
6	3099.00	0.10	42.77	42.87	74.00	-31.13	Peak	100	312	P

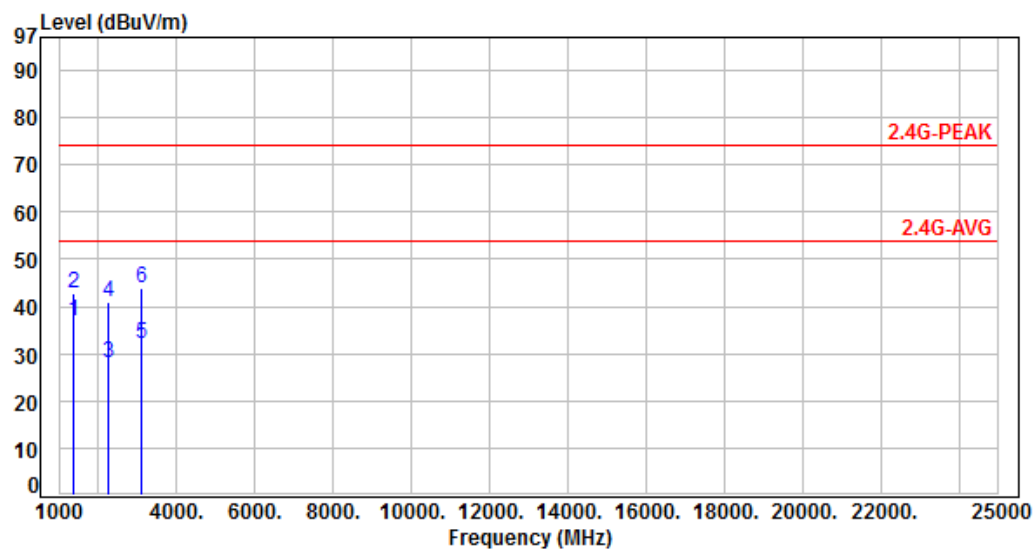
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60HZ	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH39		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1375.00	-7.76	44.58	36.82	54.00	-17.18	Average	400	221	P
2	1375.00	-7.76	50.59	42.83	74.00	-31.17	Peak	400	221	P
3	2250.00	-3.55	31.45	27.90	54.00	-26.10	Average	100	62	P
4	2250.00	-3.55	44.36	40.81	74.00	-33.19	Peak	100	62	P
5	3099.00	0.10	31.86	31.96	54.00	-22.04	Average	100	152	P
6	3099.00	0.10	43.73	43.83	74.00	-30.17	Peak	100	152	P

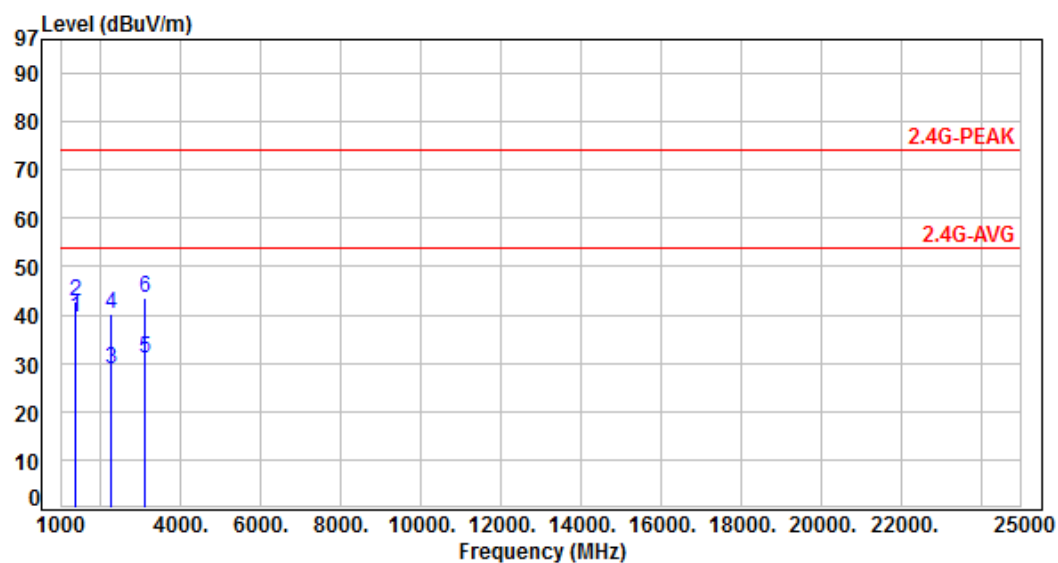
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 110V / 60HZ	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH39		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1375.00	-7.76	47.34	39.58	54.00	-14.42	Average	183	69	P
2	1375.00	-7.76	50.44	42.68	74.00	-31.32	Peak	183	69	P
3	2250.00	-3.55	32.28	28.73	54.00	-25.27	Average	100	152	P
4	2250.00	-3.55	43.68	40.13	74.00	-33.87	Peak	100	152	P
5	3099.00	0.10	30.97	31.07	54.00	-22.93	Average	100	113	P
6	3099.00	0.10	43.34	43.44	74.00	-30.56	Peak	100	113	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



6. On Time, Duty Cycle and Measurement methods

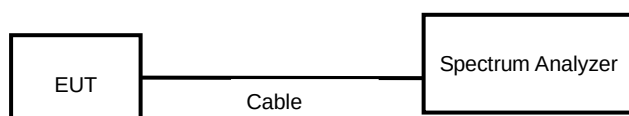
6.1. 適用標準

None; for reporting purposes only.

6.2. 測試方法

ANSI 63.10 第11.6節 Duty cycle zero-span mode Method.

6.3. 測試配置



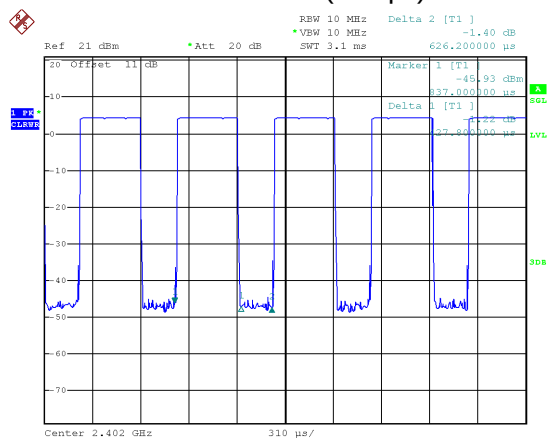
6.4. 測試結果及數據

Modulation Mode	On Time (ms)	Period Time (ms)	Duty Cycle (%)
GFSK(1M)	0.43	0.63	68.32%
GFSK(2M)	0.24	0.63	38.61%
GFSK(125K)	3.16	3.76	84.18%
GFSK(500K)	1.15	1.89	60.82%

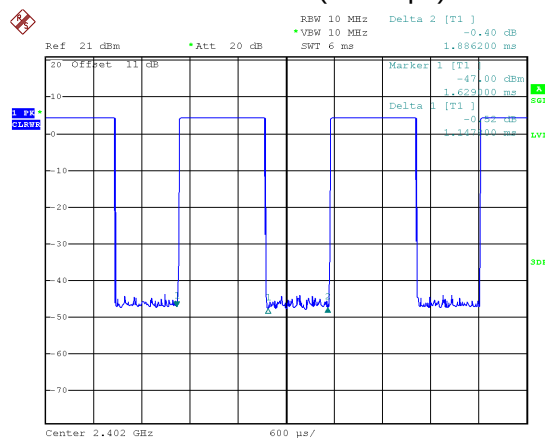
備註：繪圖資料請參考下頁。



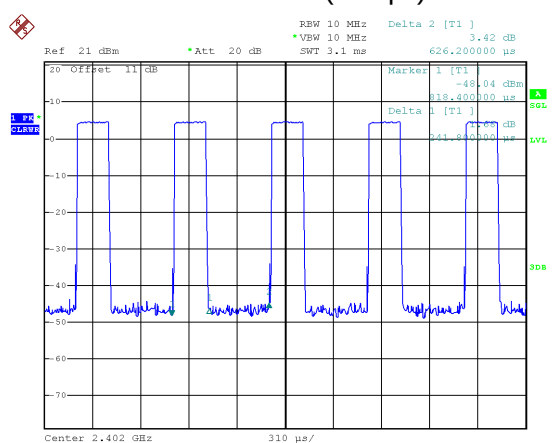
Modulation Mode: GFSK(1Mbps)



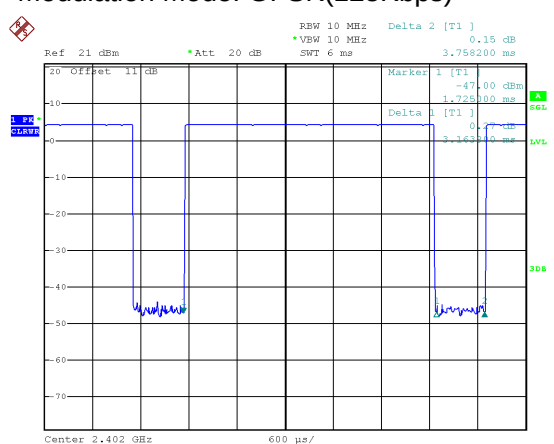
Modulation Mode: GFSK(500Kbps)



Modulation Mode: GFSK(2Mbps)



Modulation Mode: GFSK(125Kbps)





7. 6dB 頻寬之規定

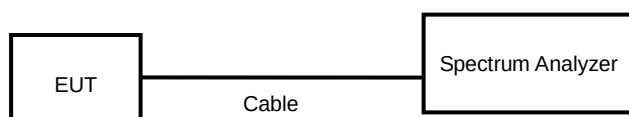
7.1. 適用標準

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器材技術規範 4.10.1.6 節之(2)(A)規定，6dB 頻寬至少應有 500 kHz。

7.2. 測試方法

- 將待測物和儀器相連接。
- 設定儀器解析頻寬 100KHz 和視訊頻寬為 300KHz。
- 量測峰值減去 6 dB 之頻寬並記錄於報告中。

7.3. 測試配置





7.4. 6dB 頻寬之測試結果及數據

Modulation Mode	Channel	Frequency (MHz)	6dB Bandwidth (KHz)	Limit (KHz)
GFSK(1Mbps)	00	2402	684.00	500
	19	2440	684.00	500
	39	2480	678.00	500

Modulation Mode	Channel	Frequency (MHz)	6dB Bandwidth (KHz)	Limit (KHz)
GFSK(2Mbps)	0	2402	1150.00	500
	19	2440	1160.00	500
	39	2480	1160.00	500

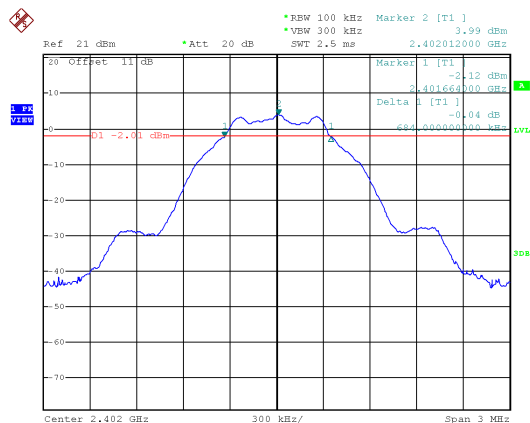
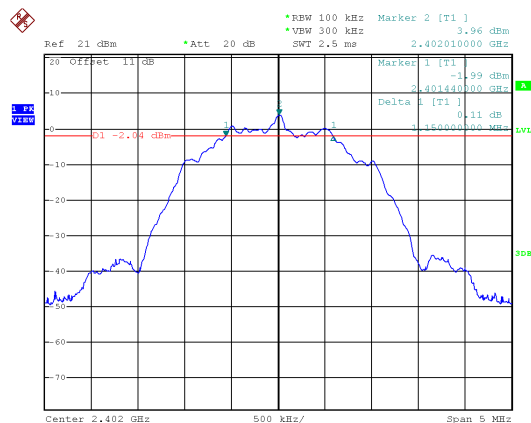
Modulation Mode	Channel	Frequency (MHz)	6dB Bandwidth (KHz)	Limit (KHz)
GFSK(125Kbps)	0	2402	612.00	500
	19	2440	612.00	500
	39	2480	606.00	500

Modulation Mode	Channel	Frequency (MHz)	6dB Bandwidth (KHz)	Limit (KHz)
GFSK(500Kbps)	0	2402	678.00	500
	19	2440	660.00	500
	39	2480	666.00	500

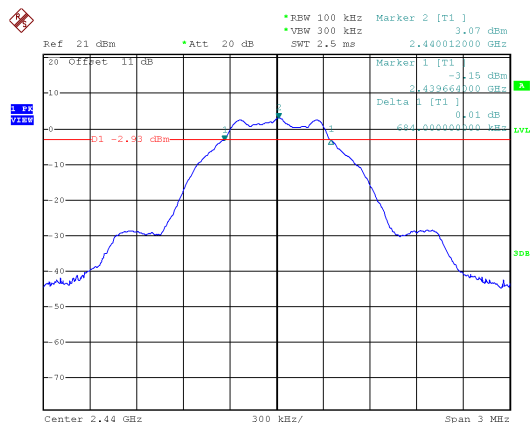
備註：繪圖資料請參考下頁。

7.5. 結果判定

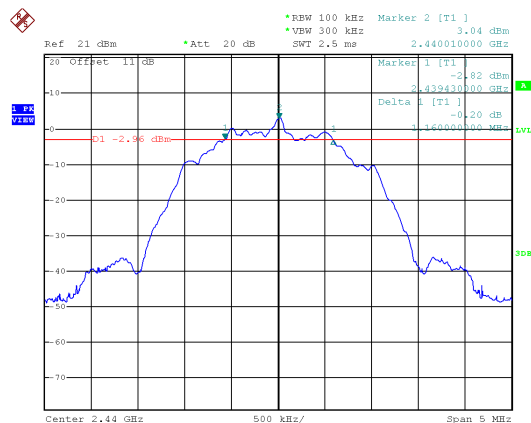
高、中、低頻段的 6dB 頻寬皆大於 500 KHz，合乎標準規定。

Modulation Mode: GFSK(1Mbps)
CH00Modulation Mode: GFSK(2Mbps)
CH00

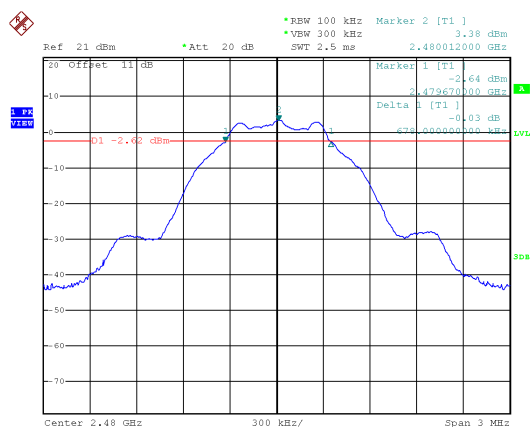
CH19



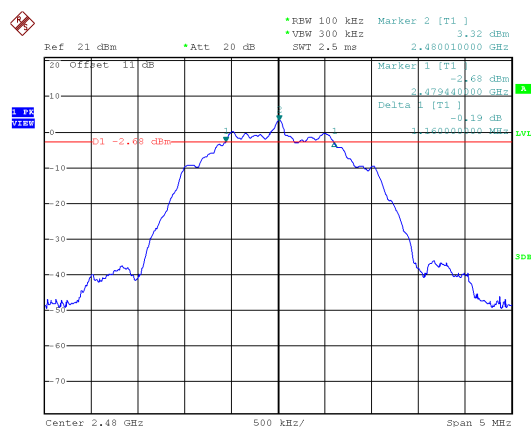
CH19

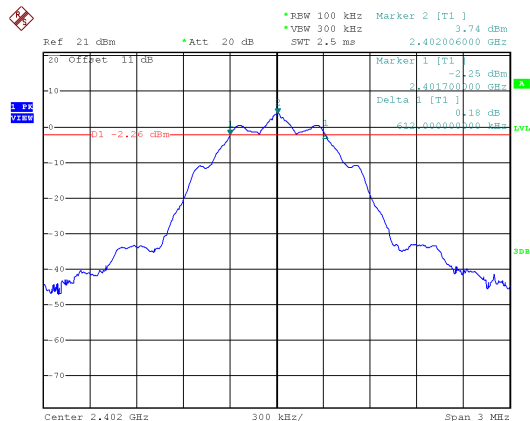
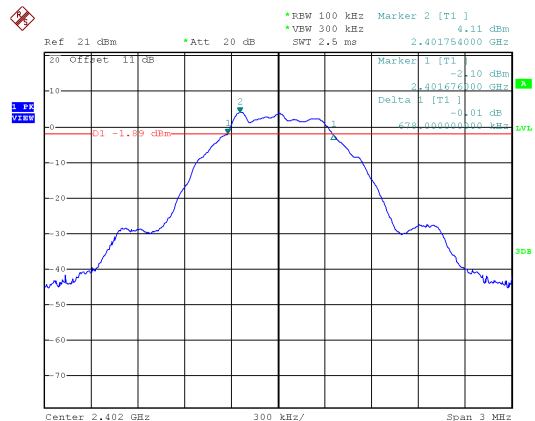


CH39

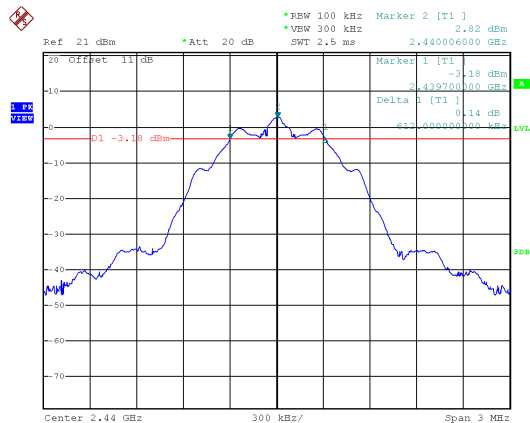


CH39

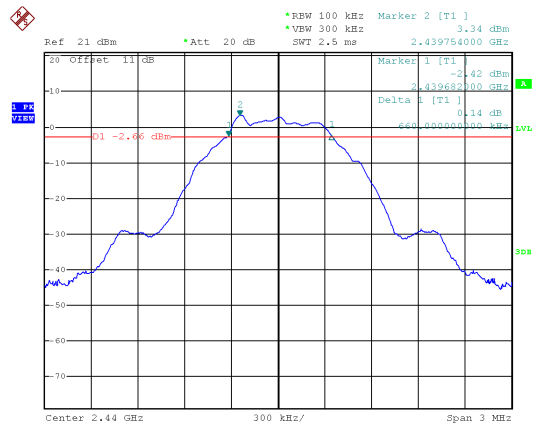


Modulation Mode: GFSK(125Kbps)
CH00Modulation Mode: GFSK(500Kbps)
CH00

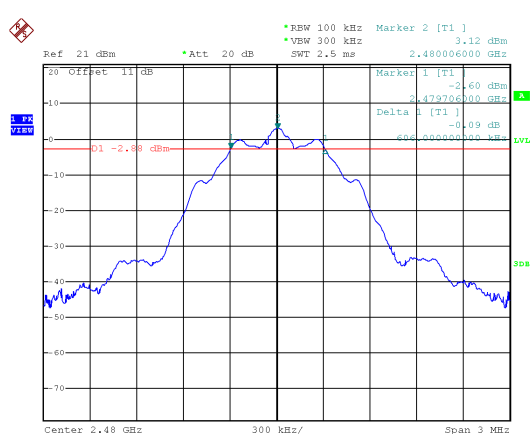
CH19



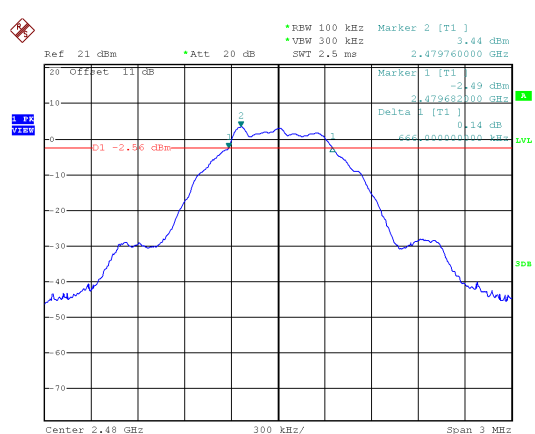
CH19



CH39



CH39





8. 峰值輸出功率之規定

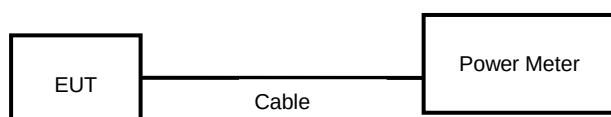
8.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.2 節(1)(C)之規定，對使用數位調變技術之低功率發射機，其輸出峰值功率不得大於 1 Watt，且其所使用天線之增益不可大於 6dBi，若使用大於 6dBi 增益之天線，則其輸出峰值功率相對需衰減天線增益所增加之量(單位為 dB)。放寬之條件請參考天線增益之要求。

8.2. 測試方法

- a. 將待測物和儀器相連接。
- b. 量測輸出功率並記錄於報告中。

8.3. 測試配置





8.4. 峰值輸出功率之測試結果及數據

BT5(1M bps)

Modulation Mode	Channel	Frequency (MHz)	Power Output (dBm)		Peak Power Output (mW)	
			Peak	Average	Peak	Average
GFSK	00	2402	3.94	3.81	2.477	2.404
	19	2440	3.1	2.95	2.042	1.972
	39	2480	3.4	3.23	2.188	2.104

*Average Power is for reference only

BT5(2M bps)

Modulation Mode	Channel	Frequency (MHz)	Power Output (dBm)		Peak Power Output (mW)	
			Peak	Average	Peak	Average
GFSK	00	2402	4.18	3.72	2.618	2.355
	19	2440	3.31	2.9	2.143	1.950
	39	2480	3.67	3.18	2.328	2.080

*Average Power is for reference only

BT5(125K bps)

Modulation Mode	Channel	Frequency (MHz)	Power Output (dBm)		Peak Power Output (mW)	
			Peak	Average	Peak	Average
GFSK	00	2402	3.96	3.8	2.489	2.399
	19	2440	3.1	2.94	2.042	1.968
	39	2480	3.4	3.23	2.188	2.104

*Average Power is for reference only

BT5(500K bps)

Modulation Mode	Channel	Frequency (MHz)	Power Output (dBm)		Peak Power Output (mW)	
			Peak	Average	Peak	Average
GFSK	00	2402	3.94	3.81	2.477	2.404
	19	2440	3.12	2.95	2.051	1.972
	39	2480	3.41	3.24	2.193	2.109

*Average Power is for reference only

8.5. 結果判定

高、中、低頻段的峰值輸出功率皆低於 30 dBm，合乎標準規定。



9. 混附波發射限制之規定

9.1. 適用方法

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.5 節之規定，使用頻帶範圍外之任意 100 千赫(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 千赫(kHz)內的射頻功率，其衰減值限制如下：

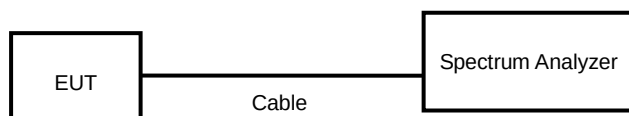
- (1) 輸出功率以峰值輸出功率方式量測者，至少需衰減 20dB，可使用射頻傳導或輻射方式測量。
- (2) 輸出功率以 4.10.1.2(1)(C)之最大傳導輸出功率測量方式者，至少需衰減 30dB，可使用射頻傳導或輻射方式測量。

此外，落於第 3.5 節禁用頻段之輻射發射，應符合第 3.6 節之規定。

9.2. 測試方法

1. 將待測物和儀器相連接。
2. 設定儀器解析頻寬為 100 kHz 和視訊頻寬為 300 kHz。
3. 將頻寬展開至 100 MHz。
4. 量測並記錄於報告中。

9.3. 測試配置

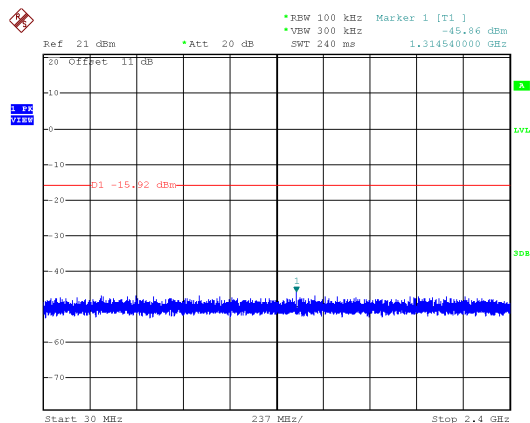
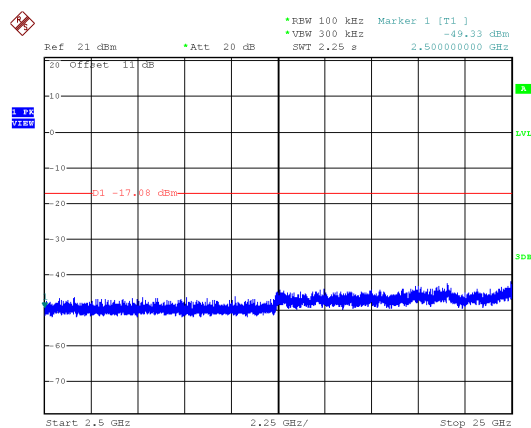
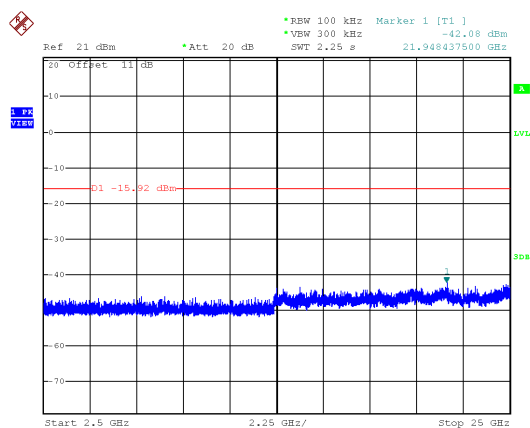
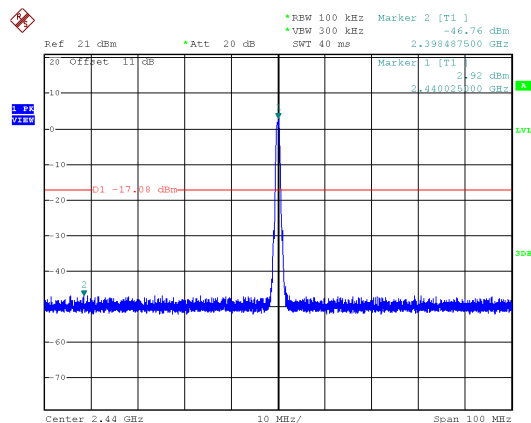
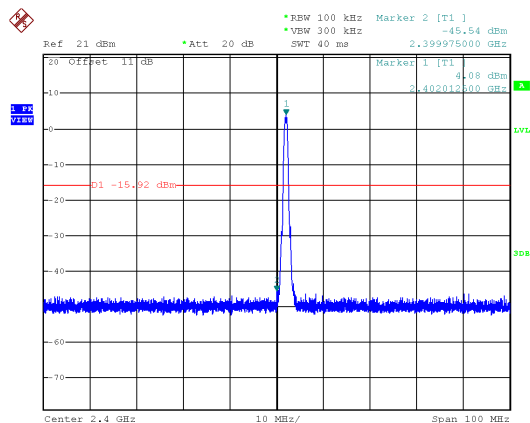
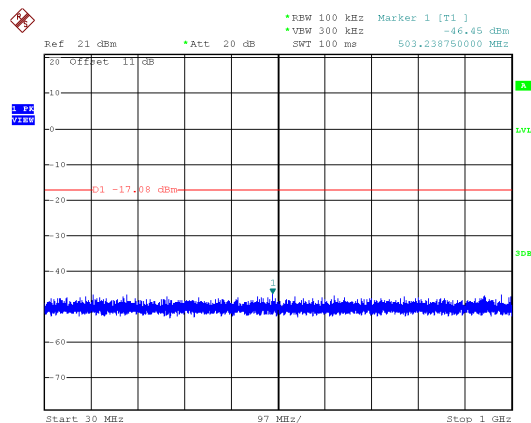


9.4. 結果判定

7.6.1 下邊緣頻帶：距下頻帶邊緣 40MHz 內最大混附波比主波低 20dB 以上，合乎標準規定。

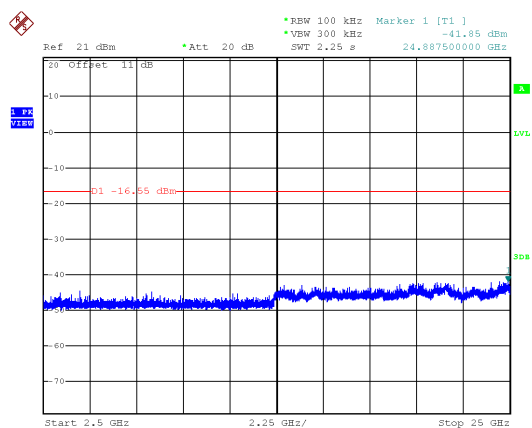
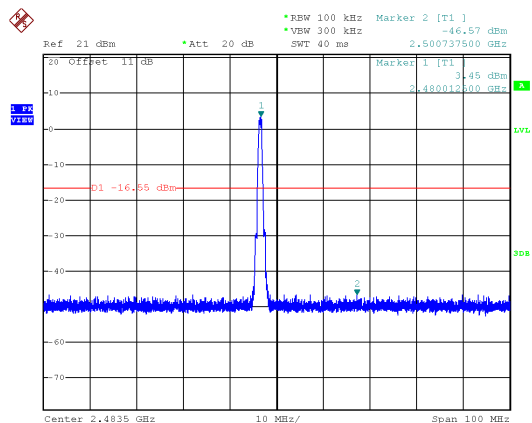
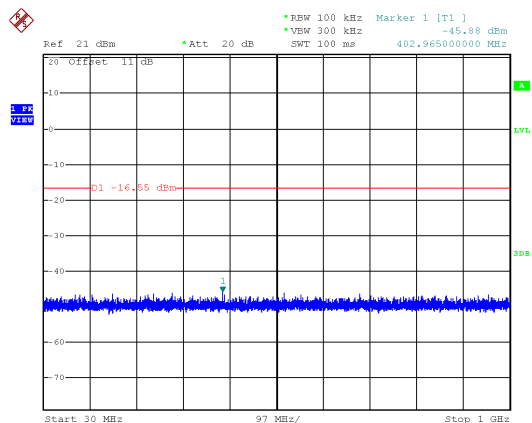
7.6.2 上邊緣頻帶：距上頻帶邊緣 40MHz 內最大混附波比主波低 20dB 以上，合乎標準規定。

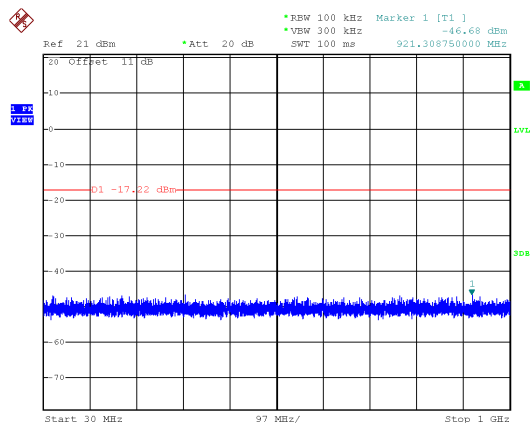
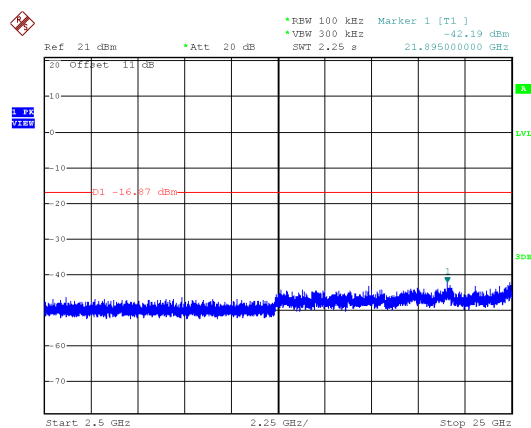
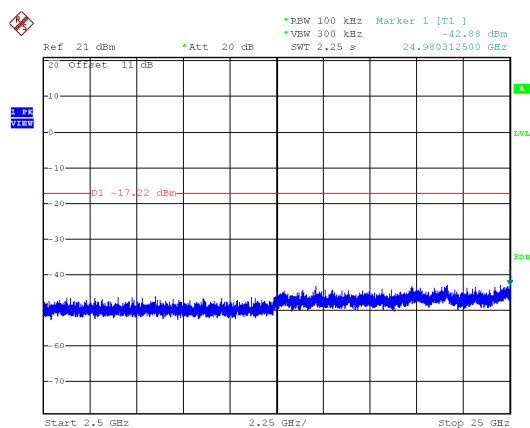
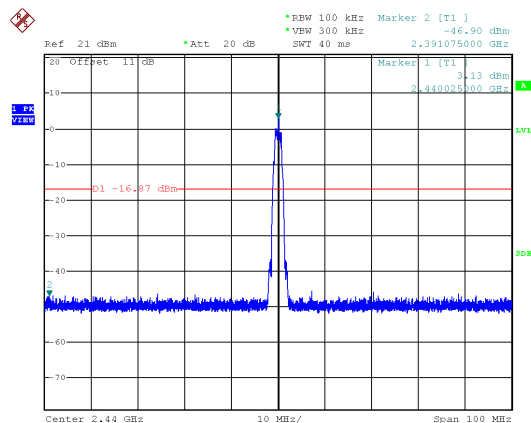
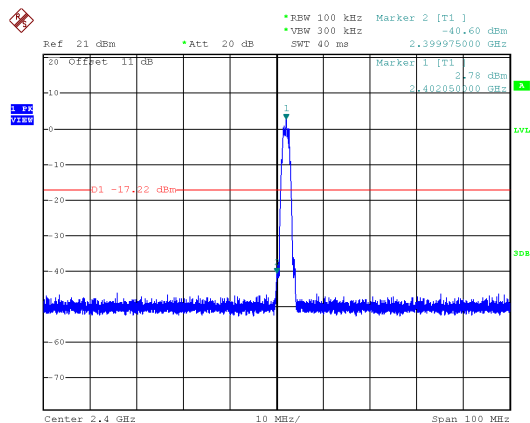
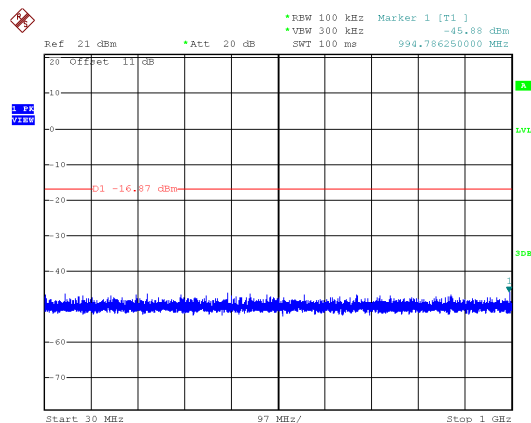
備註：繪圖資料請參考下頁。

Modulation Mode: GFSK(1Mbps)
CH00Modulation Mode: GFSK(1Mbps)
CH19



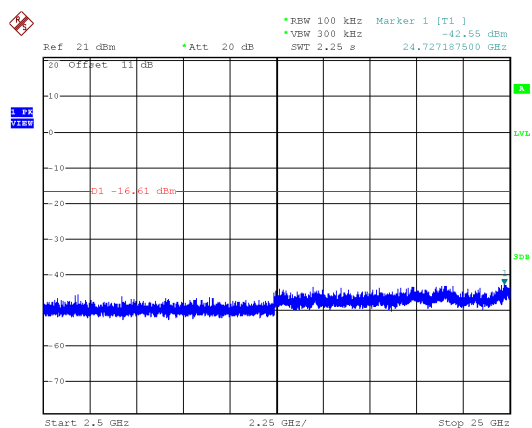
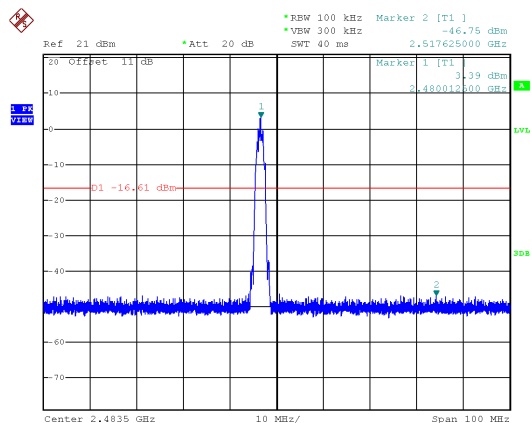
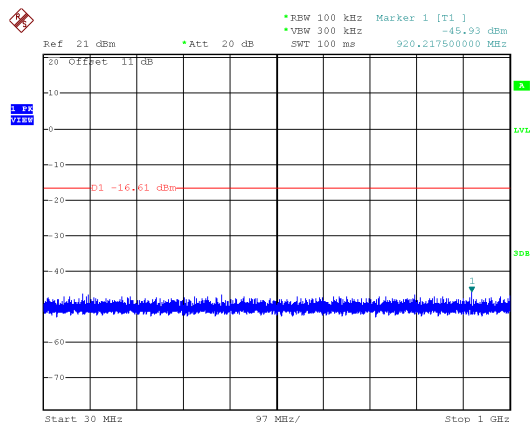
Modulation Mode: GFSK(1Mbps) CH39

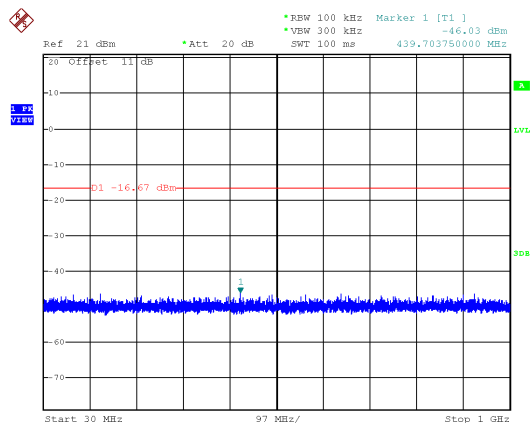
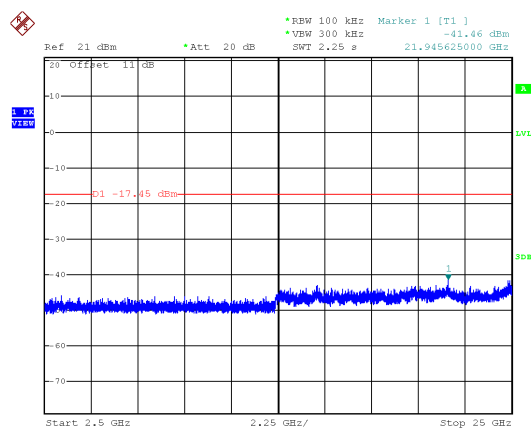
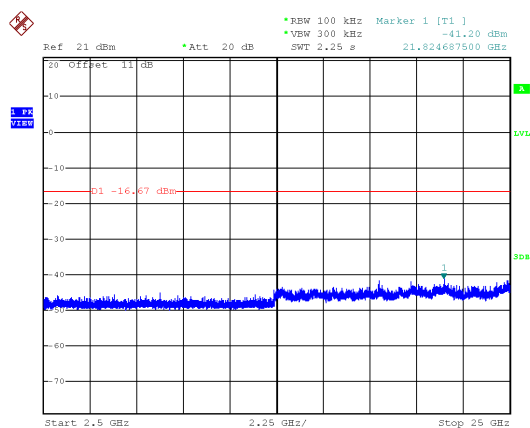
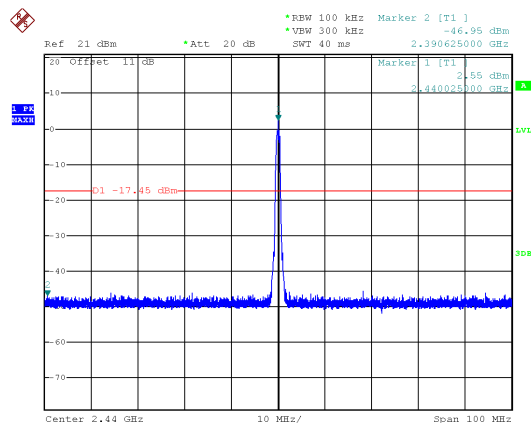
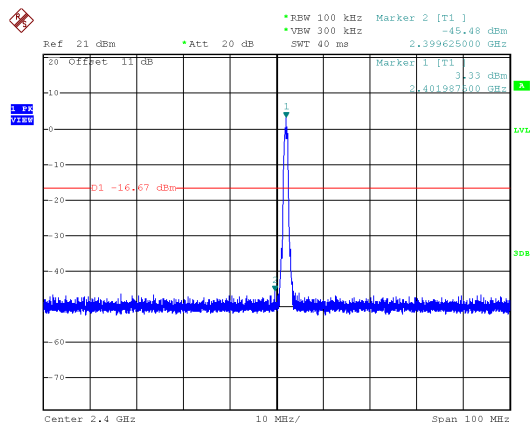
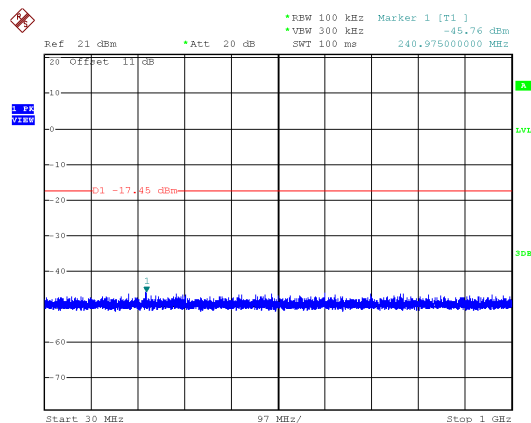


Modulation Mode: GFSK(2Mbps)
CH00Modulation Mode: GFSK(2Mbps)
CH19



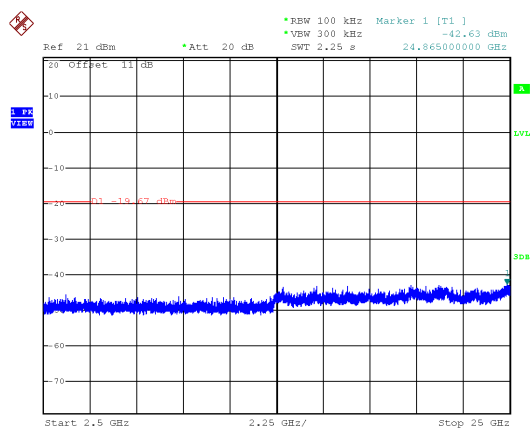
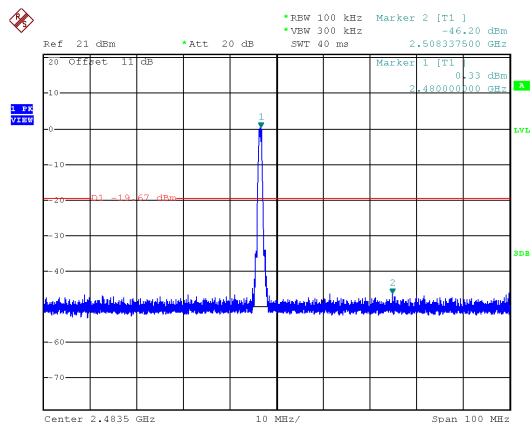
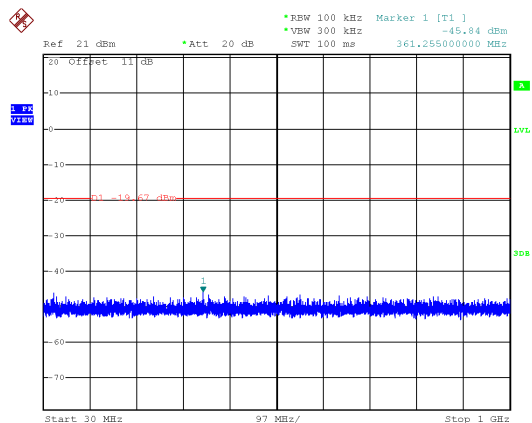
Modulation Mode: GFSK(2Mbps) CH39

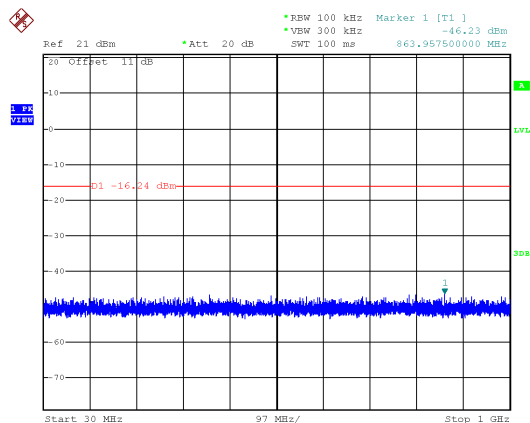
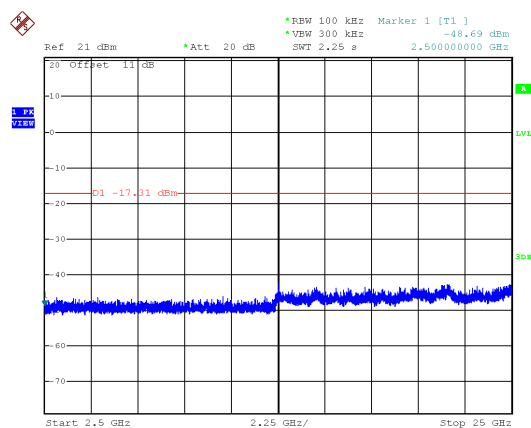
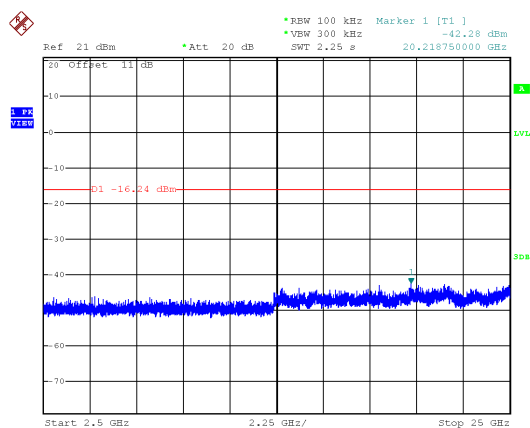
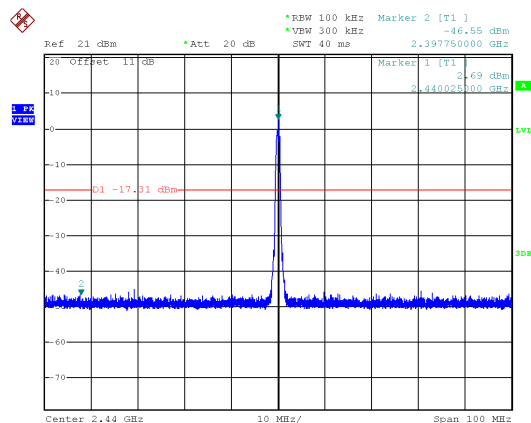
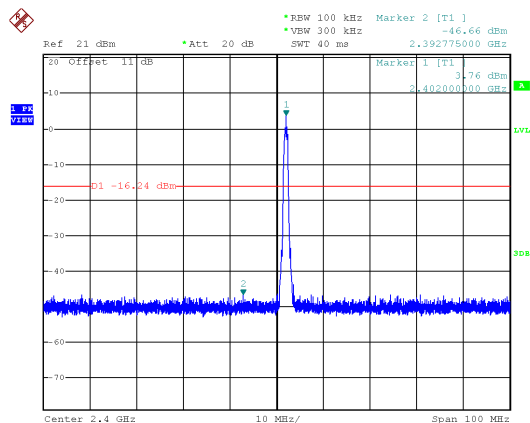
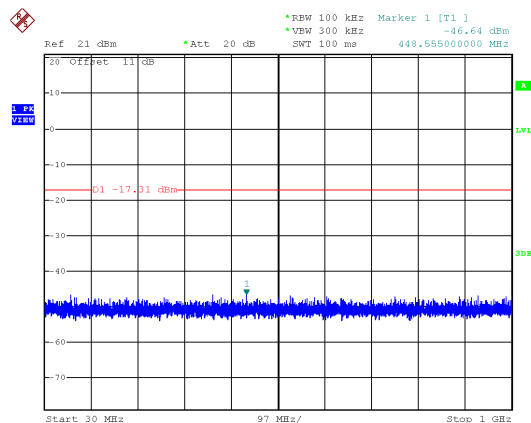


Modulation Mode: GFSK(125Kbps)
CH00Modulation Mode: GFSK(125Kbps)
CH19



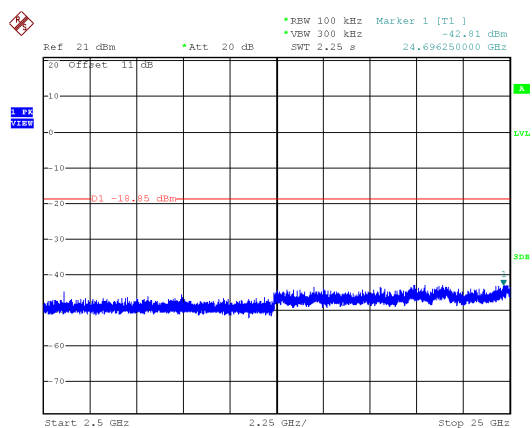
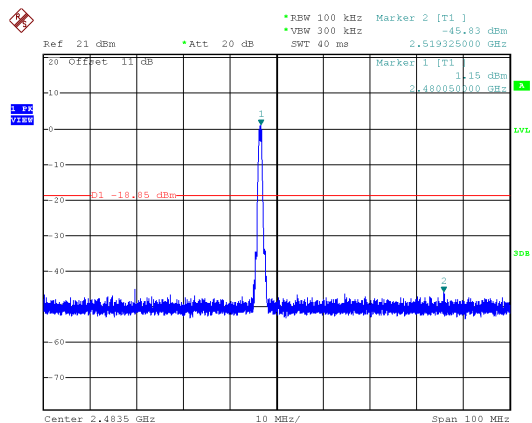
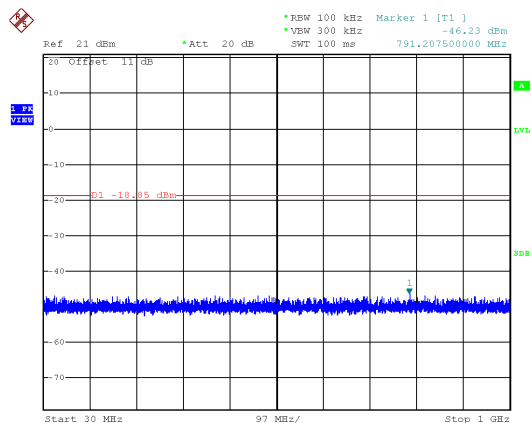
Modulation Mode: GFSK(125Kbps) CH39



Modulation Mode: GFSK(500Kbps)
CH00Modulation Mode: GFSK(500Kbps)
CH19



Modulation Mode: GFSK(500Kbps) CH39





10. 功率密度之規定

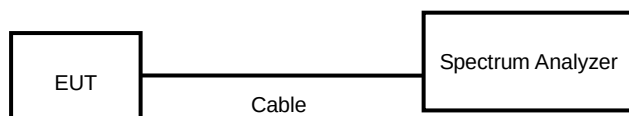
10.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範 4.10.1.6 節之(2)(B)規定，對數位調變技術系統，在使用任意 3 kHz 之頻寬內，由發射機傳導至天線之峰值發射電功率密度在任意期間內，皆不得大於 8dBm，且應依 4.10.1.3 之方式降低功率頻譜密度限制值。

10.2. 測試方法

1. 將待測物和儀器相連接。
2. 設定儀器解析頻寬為 3kHz、視訊頻寬為 10 kHz。
3. 量測並記錄於報告中。

10.3. 測試配置





10.4. 功率密度之量測結果及數據

Modulation Mode	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)	Limit
GFSK(1Mbps)	0	2402	-10.66	8.00
	19	2440	-11.61	8.00
	39	2480	-11.31	8.00

Modulation Mode	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)	Limit
GFSK(2Mbps)	0	2402	-14.2	8.00
	19	2440	-15.04	8.00
	39	2480	-14.87	8.00

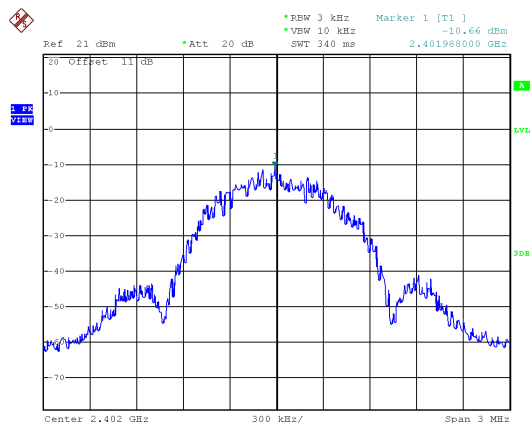
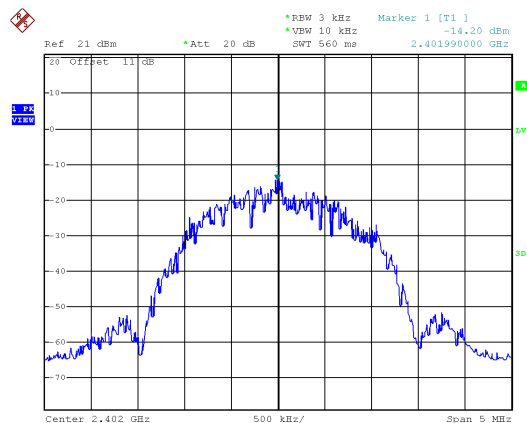
Modulation Mode	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)	Limit
GFSK(125Kbps)	0	2402	-1.78	8.00
	19	2440	-2.67	8.00
	39	2480	-2.39	8.00

Modulation Mode	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)	Limit
GFSK(500Kbps)	0	2402	-1.94	8.00
	19	2440	-2.76	8.00
	39	2480	-2.55	8.00

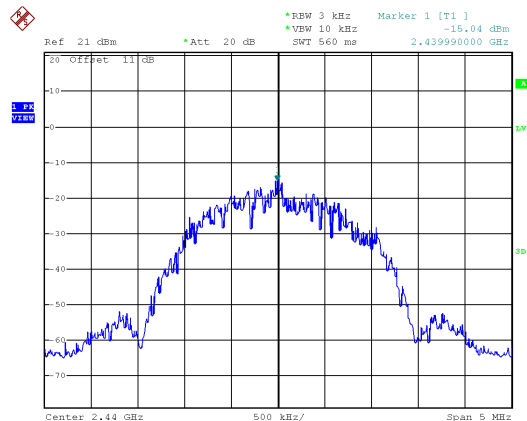
備註：繪圖資料請參考下頁。

10.5. 結果判定

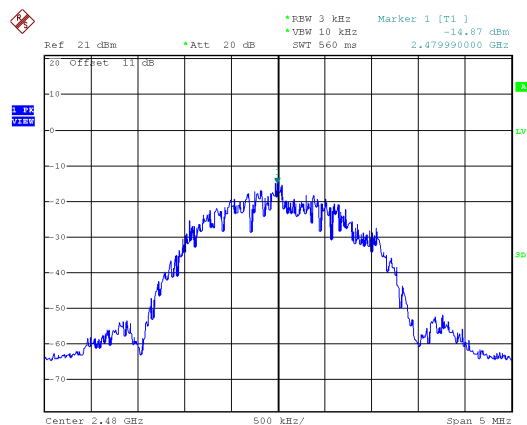
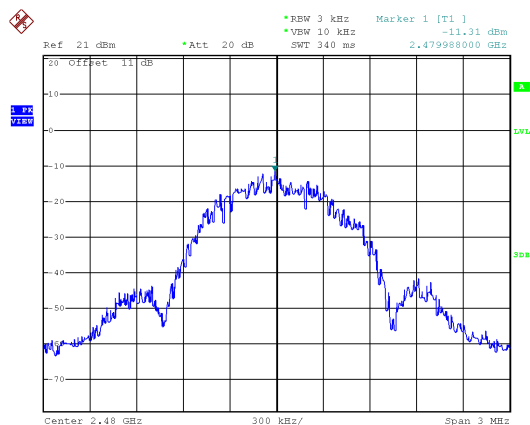
高、中、低頻段的3 kHz功率密度皆低於 8 dBm，合乎標準規定。

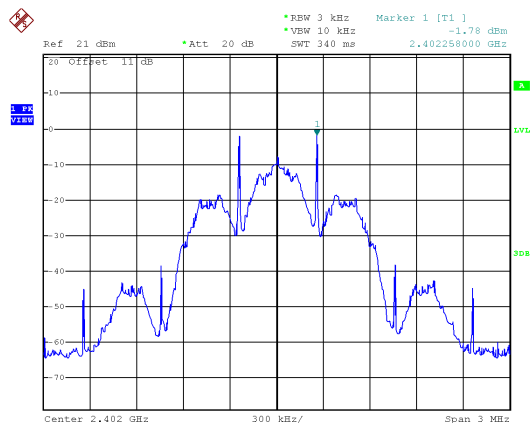
Modulation Mode: GFSK(1Mbps)
CH00Modulation Mode: GFSK(2Mbps)
CH00

CH19

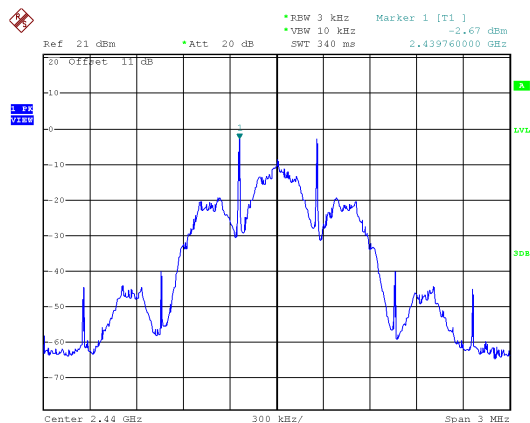


CH39

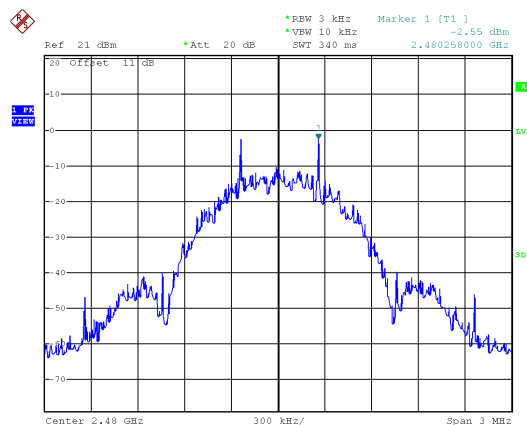
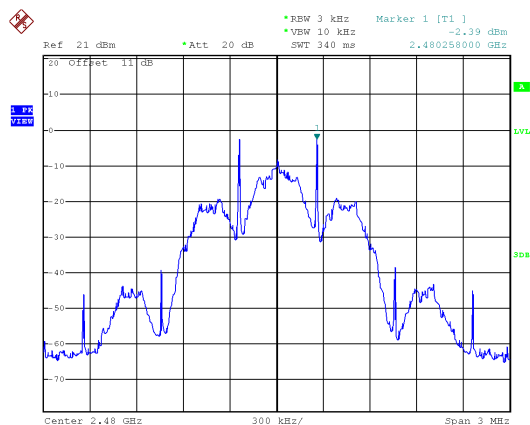


Modulation Mode: GFSK(125Kbps)
CH00Modulation Mode: GFSK(500Kbps)
CH00

CH19



CH39





11. 電波暴露量之評估

11.1. 適用標準

依據國家通訊傳播委員會低功率射頻器材技術規範 6.20 節之(6.20.2)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，可測試最大暴露允許值(Maximum Permissible Exposure, MPE)以證明其符電波暴露量之要求。限制值如下：

(1) 職業性/可控制之暴露

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 (minutes)
0.3-3.0	614	1.63	*100	6
3-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500	-----	-----	f/300	6
1,500-100,000	-----	-----	5.0	6

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：百萬赫(MHz)。

(2) 一般人/不可控制之暴露

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 (minutes)
0.3-3.0	614	1.63	*100	30
3-30	1842/f	4.89/f	*180/f ²	30
30-300	27.5	0.073	1.0	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：百萬赫(MHz)。



11.2. 電波暴露量之評估結果及數據

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	4.18	5.68	2.2	20	0.001	1

11.3. 結果判定

高、中、低頻段的電波暴露量皆低於限制值，合乎標準規定。



12. 限制使用之頻帶

Only spurious emissions are permitted in any of the frequency bands listed below:

頻率(兆赫)	頻率(兆赫)	頻率(兆赫)
0.090 - 0.110	240.00 - 285.00	3332.0 - 3339.0
0.490 - 0.510	322.00 - 335.40	3345.8 - 3358.0
2.172 - 2.198	399.90 - 410.00	3500.0 - 4400.0
3.013 - 3.033	485.00 - 510.00	4500.0 - 5250.0
4.115 - 4.198	608.00 - 614.00	5350.0 - 5460.0
5.670 - 5.690	703.00 - 748.00	7250.0 - 7750.0
6.200 - 6.300	758.00 - 803.00	8025.0 - 8500.0
8.230 - 8.400	825.00 - 915.00	9000.0 - 9200.0
12.265 - 12.600	930.00 - 1240.0	9300.0 - 9500.0
13.340 - 13.430	1300.0 - 1427.0	10600 - 12700
14.965 - 15.020	1435.0 - 1626.5	13250 - 13400
16.700 - 16.755	1660.0 - 1785.0	14470 - 14500
19.965 - 20.020	1805.0 - 1880.0	15350 - 16200
25.500 - 25.700	1885.0 - 1900.0	17700 - 21400
37.475 - 38.275	1905.0 - 1985.0	22010 - 23120
73.500 - 75.400	2010.0 - 2025.0	23600 - 24000
108.00 - 138.00	2110.0 - 2170.0	31200 - 31800
149.90 - 150.05	2200.0 - 2300.0	36430 - 36500
156.70 - 156.90	2310.0 - 2390.0	38600 以上
162.01 - 167.17	2483.5 - 2900.0	
167.72 - 173.20	3260.0 - 3267.0	

-----THE END OF REPORT-----