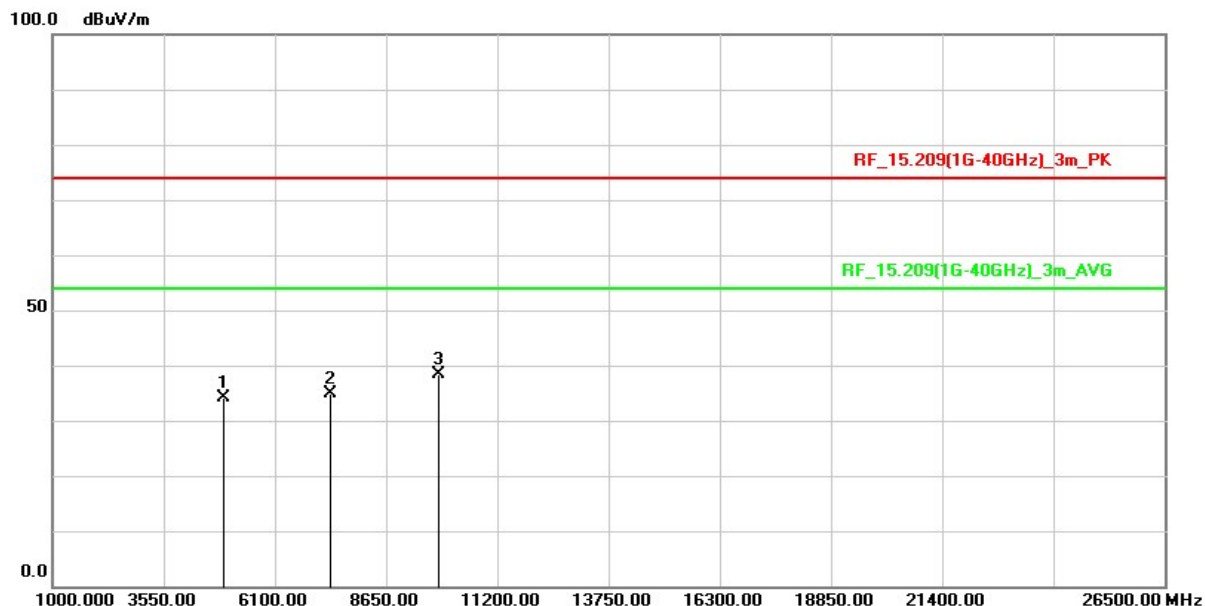


Test Mode :	Mode 3 : Transmit(802.11n HT20)	Test Date :	110 年 04 月 13 日
Test Channel :	CH11(2462MHz)	Temperature :	25.9 °C
Polarization :	Horizontal	Relative Humidity :	45 %

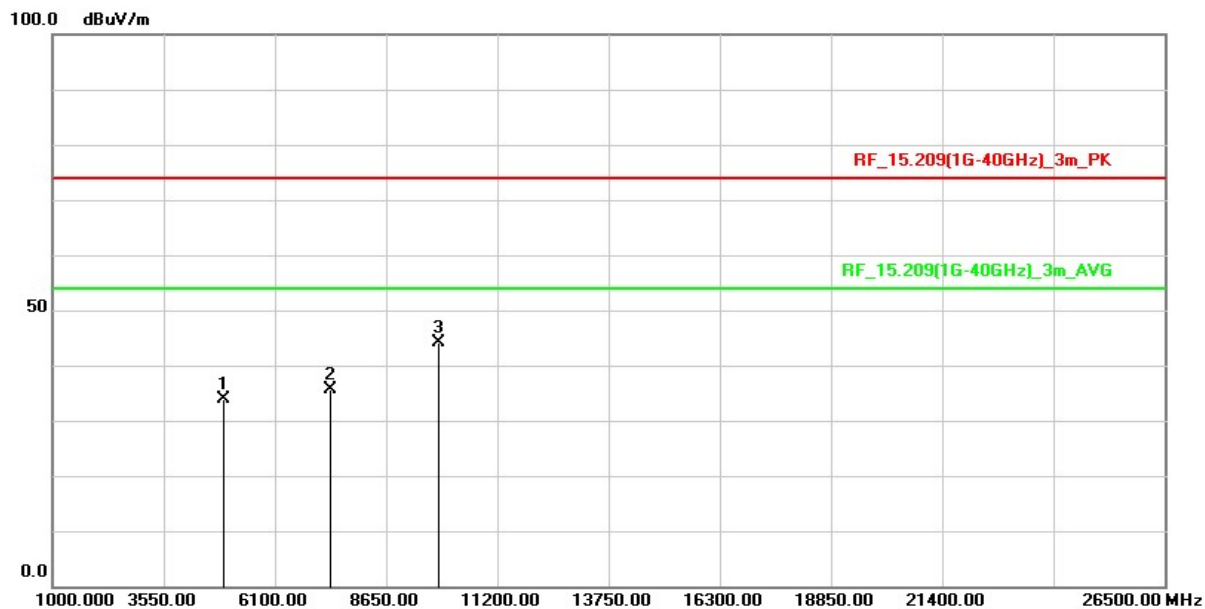


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	54.33	-20.30	34.03	74.00	-39.97	peak
2	7386.000	48.80	-14.03	34.77	74.00	-39.23	peak
3	9848.000	48.72	-10.27	38.45	74.00	-35.55	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Mode 3 : Transmit(802.11n HT20)	Test Date :	110 年 04 月 13 日
Test Channel :	CH11(2462MHz)	Temperature :	25.9 °C
Polarization :	Vertical	Relative Humidity :	45 %

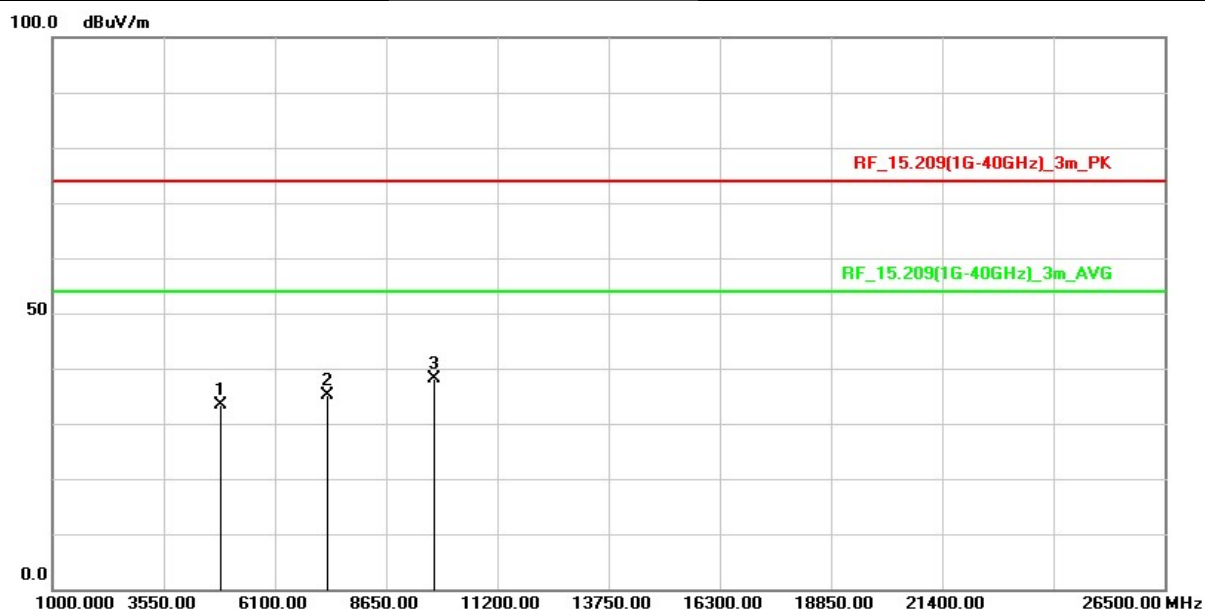


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	54.20	-20.30	33.90	74.00	-40.10	peak
2	7386.000	49.74	-14.03	35.71	74.00	-38.29	peak
3	9848.000	54.34	-10.27	44.07	74.00	-29.93	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Mode 4 ; Receiver (802.11b)	Test Date :	110 年 04 月 13 日
Test Channel :	CH06(2437MHz)	Temperature :	25.9 °C
Polarization :	Horizontal	Relative Humidity :	45 %

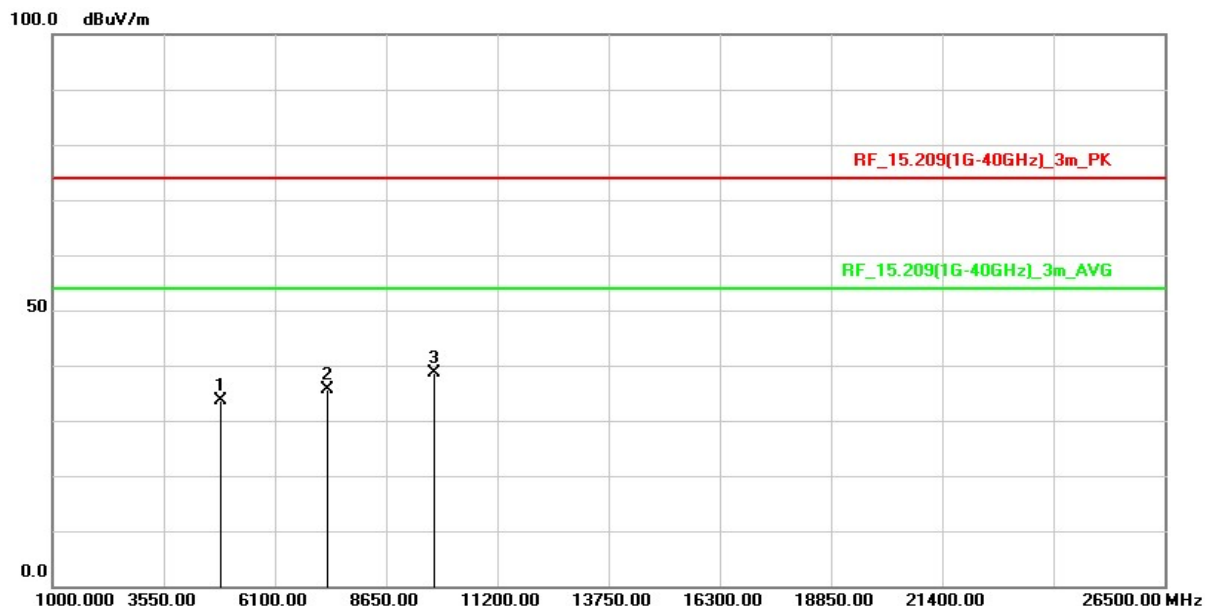


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	53.78	-20.28	33.50	74.00	-40.50	peak
2	7311.000	49.24	-14.13	35.11	74.00	-38.89	peak
3	9748.000	48.40	-10.27	38.13	74.00	-35.87	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Mode 4 ; Receiver (802.11b)	Test Date :	110 年 04 月 13 日
Test Channel :	CH06(2437MHz)	Temperature :	25.9 °C
Polarization :	Vertical	Relative Humidity :	45 %



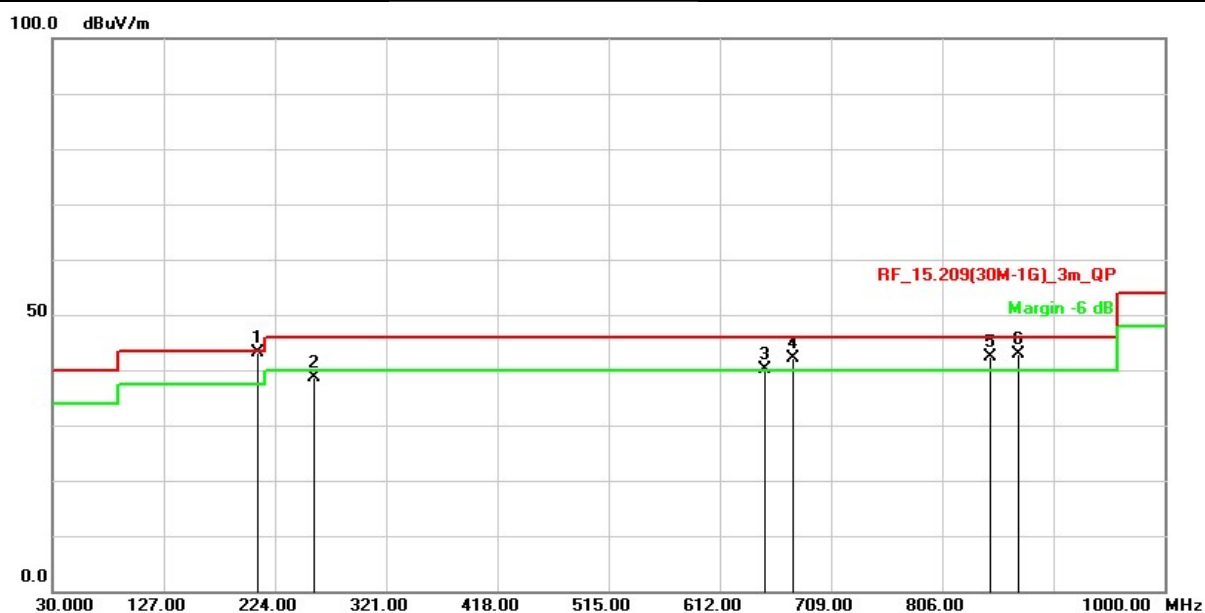
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	54.00	-20.28	33.72	74.00	-40.28	peak
2	7311.000	49.64	-14.13	35.51	74.00	-38.49	peak
3	9748.000	48.80	-10.27	38.53	74.00	-35.47	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Below 1GHz Data

Test Mode :	Mode 1 : Transmit(802.11b)	Test Date :	110 年 04 月 12 日
Test Channel :	CH06(2437MHz)	Temperature :	25.9 °C
Polarization :	Horizontal	Relative Humidity :	45 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	208.8984	56.80	-13.67	43.13	43.50	-0.37	QP
2	257.9500	50.63	-11.88	38.75	46.00	-7.25	QP
3	650.8000	42.88	-2.64	40.24	46.00	-5.76	QP
4	676.0200	44.48	-2.28	42.20	46.00	-3.80	QP
5	847.7100	41.82	0.45	42.27	46.00	-3.73	QP
6	872.9300	42.10	0.81	42.91	46.00	-3.09	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Mode 1 : Transmit(802.11b)	Test Date :	110 年 04 月 12 日
Test Channel :	CH06(2437MHz)	Temperature :	25.9 °C
Polarization :	Vertical	Relative Humidity :	45 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.5800	48.79	-10.88	37.91	40.00	-2.09	QP
2	107.6000	52.11	-14.62	37.49	43.50	-6.01	QP
3	159.9800	47.99	-10.95	37.04	43.50	-6.46	QP
4	208.4800	51.32	-13.68	37.64	43.50	-5.86	QP
5	650.8000	41.69	-2.64	39.05	46.00	-6.95	QP
6	921.4300	36.41	1.86	38.27	46.00	-7.73	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Mode 4 ; Receiver (802.11b)	Test Date :	110 年 04 月 12 日
Test Channel :	CH06(2437MHz)	Temperature :	25.9 °C
Polarization :	Horizontal	Relative Humidity :	45 %

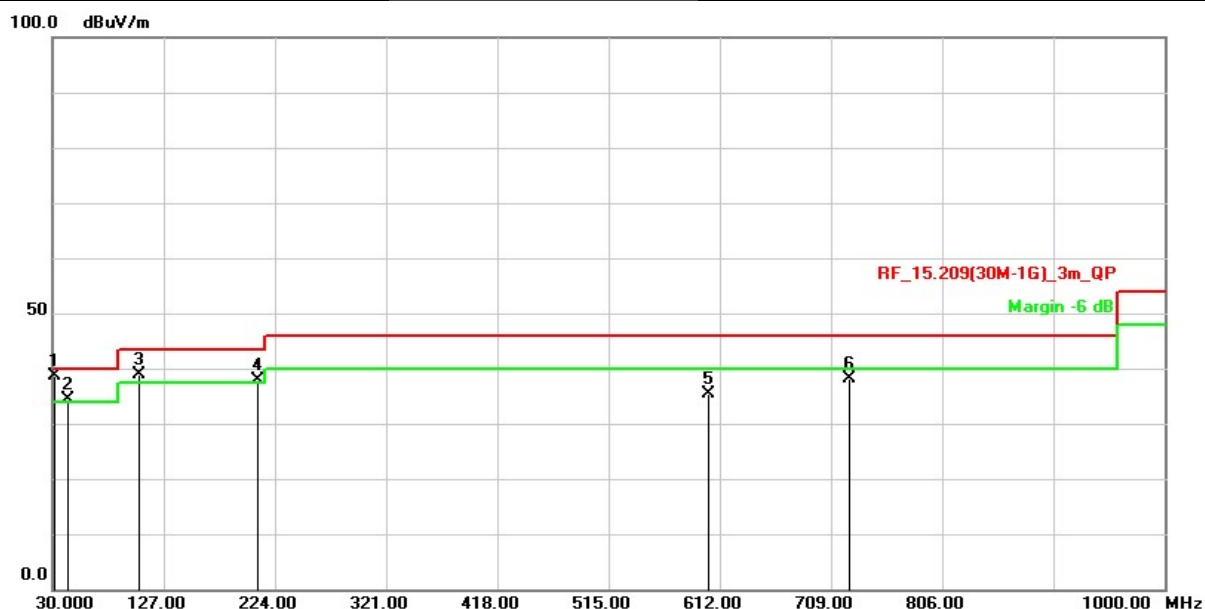


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	208.4800	53.76	-13.68	40.08	43.50	-3.42	QP
2	381.1400	44.74	-8.09	36.65	46.00	-9.35	QP
3	602.3000	37.59	-3.02	34.57	46.00	-11.43	QP
4	676.0200	43.97	-2.28	41.69	46.00	-4.31	QP
5	724.5200	43.03	-1.31	41.72	46.00	-4.28	QP
6	749.7400	41.54	-0.70	40.84	46.00	-5.16	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Mode 4 ; Receiver (802.11b)	Test Date :	110 年 04 月 12 日
Test Channel :	CH06(2437MHz)	Temperature :	25.9 °C
Polarization :	Vertical	Relative Humidity :	45 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	50.77	-12.08	38.69	40.00	-1.31	QP
2	44.0800	45.16	-10.90	34.26	40.00	-5.74	QP
3	105.6600	53.64	-14.79	38.85	43.50	-4.65	QP
4	208.4800	51.52	-13.68	37.84	43.50	-5.66	QP
5	602.3000	38.42	-3.02	35.40	46.00	-10.60	QP
6	725.4900	39.38	-1.28	38.10	46.00	-7.90	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

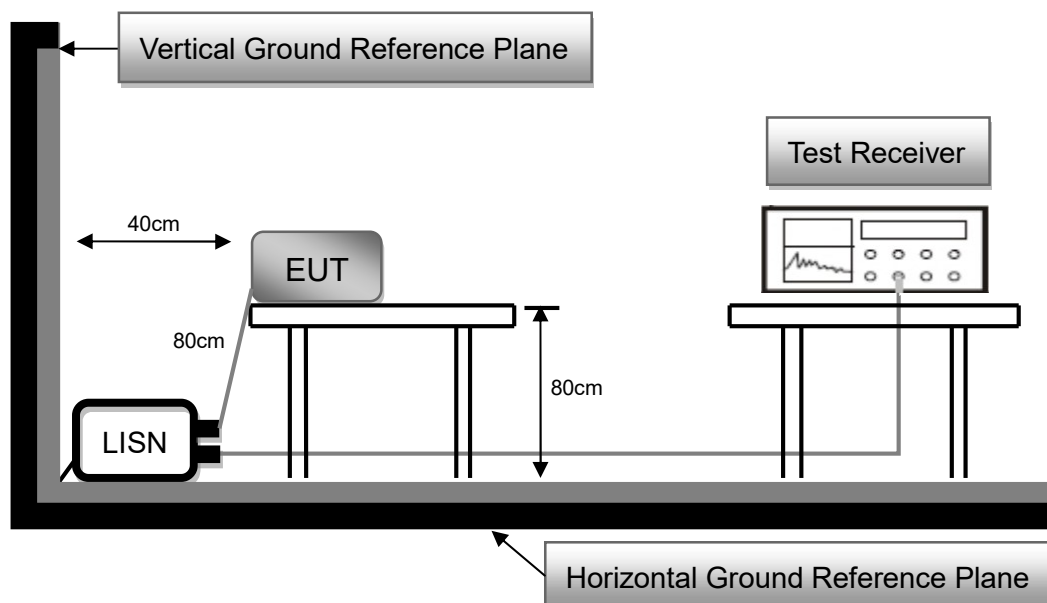
2.7 電源線傳導干擾

2.7.1 限制值

Frequency (MHz)	NCC LP0002 3.3 Limit	
	Quasi-peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50

*隨頻率之對數遞減

2.7.2 測試架構

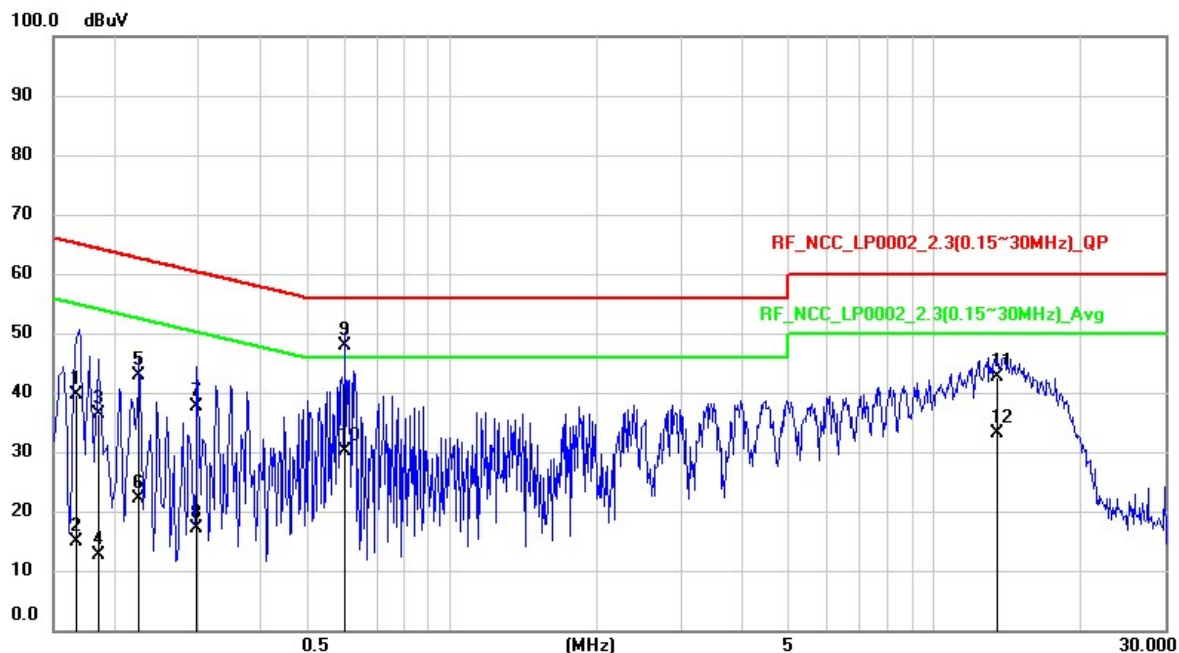


2.7.3 測試流程

1. 待測物從水平地平面放置 0.8 米高的木桌，待測物通過線路阻抗穩定網絡（LISN）連接到電源。 LISN 距離最近的待測物底盤至少 80 厘米。
2. 線路阻抗穩定網絡（LISN）為測量儀器提供 50 歐姆/ 50uH 的耦合阻抗。其他設備均由額外的 LISN 提供動力。
3. 懸掛在離地平面 40 厘米以內的相互關聯的電纜應在中心前後折疊形成一束。所有未連接到外圍設備的 I/O 電纜應在中心捆綁。如果需要，可以使用正確的終端阻抗終止電纜的末端。總長度不得超過 1 米。
4. EMI 測試接收器連接到 LISN 為待測物供電。實際測試配置請參考待測物測試照片。
5. 接收器在 150kHz 至 30MHz 範圍內掃描每種測試模式的發射。掃描兩條電源線，Line 和 Neutral，記錄至少六個最高排放。
6. 記錄上述最高排放水平的待測物和電纜配置。記錄了最差情況的測試數據。

2.7.4 測試結果

Test Voltage :	110Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Mode 5 : Normal Link	6dB Bandwidth :	9 kHz
Test Date :	110年04月20日	Phase :	L
Temperature :	25°C	Humidity :	65 %

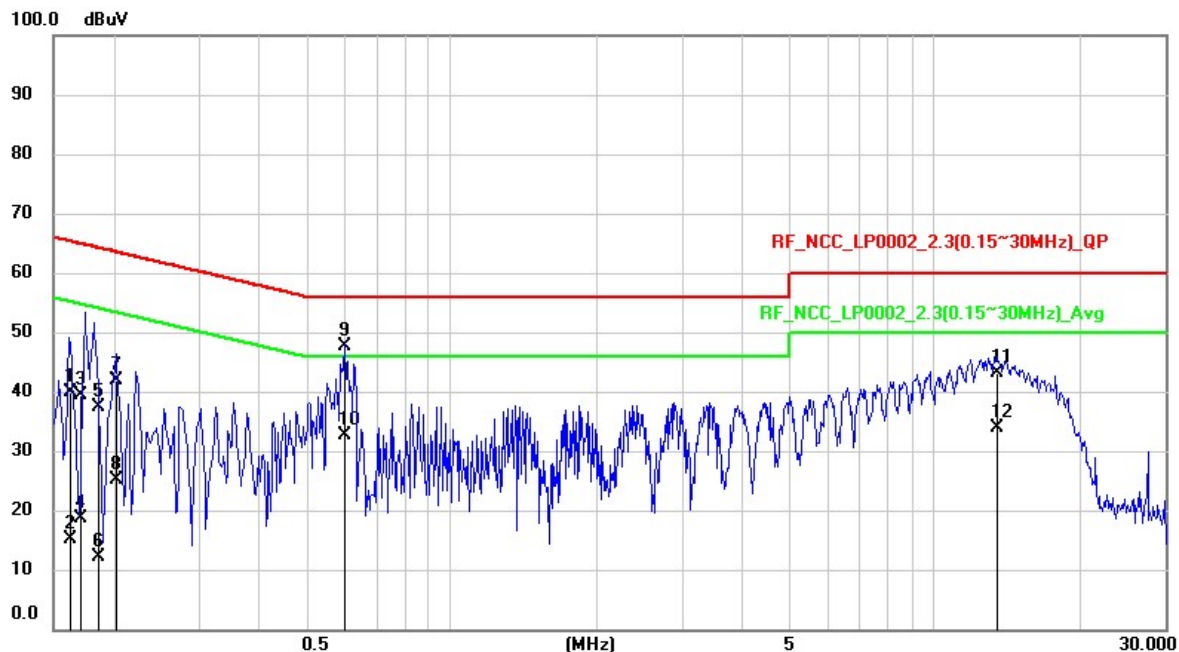


No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1671	29.93	9.69	39.62	65.1	-25.48	QP
2	0.1671	5.13	9.69	14.82	55.1	-40.28	AVG
3	0.186	26.81	9.68	36.49	64.21	-27.72	QP
4	0.186	2.93	9.68	12.61	54.21	-41.6	AVG
5	0.2262	33.19	9.68	42.87	62.59	-19.72	QP
6	0.2262	12.39	9.68	22.07	52.59	-30.52	AVG
7	0.2982	27.98	9.68	37.66	60.29	-22.63	QP
8	0.2982	7.52	9.68	17.2	50.29	-33.09	AVG
9	0.6035	38.29	9.68	47.97	56	-8.03	QP
10	0.6035	20.44	9.68	30.12	46	-15.88	AVG
11	13.4979	32.74	9.95	42.69	60	-17.31	QP
12	13.4979	23.11	9.95	33.06	50	-16.94	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value - Limit Value

Test Voltage :	110Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Mode 5 : Normal Link	6dB Bandwidth :	9 kHz
Test Date :	110年04月20日	Phase :	N
Temperature :	25°C	Humidity :	65 %



No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1627	30.3	9.7	40	65.32	-25.32	QP
2	0.1627	5.39	9.7	15.09	55.32	-40.23	AVG
3	0.1709	29.8	9.7	39.5	64.92	-25.42	QP
4	0.1709	8.86	9.7	18.56	54.92	-36.36	AVG
5	0.1867	27.74	9.69	37.43	64.18	-26.75	QP
6	0.1867	2.44	9.69	12.13	54.18	-42.05	AVG
7	0.2016	32.18	9.69	41.87	63.54	-21.67	QP
8	0.2016	15.39	9.69	25.08	53.54	-28.46	AVG
9	0.6039	37.84	9.69	47.53	56	-8.47	QP
10	0.6039	22.97	9.69	32.66	46	-13.34	AVG
11	13.4466	33.23	9.98	43.21	60	-16.79	QP
12	13.4466	23.78	9.98	33.76	50	-16.24	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value – Limit Value

2.8 電波暴露量之評估

2.8.1 限制值

依據低功率射頻器材技術規範第 6.20.2 章節要求:

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)。

Estimation of the expected exposure in power density can be made with the following equation:

$$S = \frac{P \times G}{4\pi \times R^2} = \frac{\text{EIRP}}{4\pi \times R^2}$$

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.

EIRP: Effective Isotropic Radiated Power

2.8.2 測試結果

Mode	Max. Power (E.I.R.P)		Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
	dBm	mW				
LE	6.87	4.86	20	0.00097	1	Pass
WLAN 2.4G	21.96	157.04	20	0.03124	1	Pass
Zigbee 2.4G	11.12	12.94	20	0.00257	1	Pass

Note:

- * The Numeric Gain calculated by $10^{(dBi/10)}$.
- * Each Function of the max power which perform MPE of any configurations.
- * The total power of WLAN 2.4G and LE, Zigbee 2.4G transmission at the same time is the largest.
- * The frequency (range) used by the radio frequency function is 1.5GHz~100GHz, the exemption limit is e.i.r.p. less than or equal to 1mW.
- * The limit is equal to the minimum value.
- * The Max total MPE = LE + WLAN 2.4G + Zigbee 2.4G = 0.03478 (mW/cm²)

--- END ---