

低功率射頻器材試驗報告



申請廠商	英大貿易股份有限公司 臺南市南區彰南里新愛路15號1樓
製造廠商	Harman International Industries, Incorporated
產品名稱	WIRELESS SPEAKER
廠牌	JBL
型號	L75ms
型號差異	N/A
報告號碼	ER/2021/C0042
試驗件收樣日期	本試驗報告引用試驗報告(ER/2021/C0038~41)僅執行計算，未實際執行測試，故未有收樣日期。
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報告發行日期	民國111年3月3日

Approved By:

楊景嵐

待測裝置已於台灣檢驗科技股份有限公司射頻實驗中心，依據國家通訊傳播委員會於中華民國一百零九年七月頒佈之低功率射頻器材技術規範。

台灣檢驗科技股份有限公司根據此條文規範項目測試，測試各項數據皆能符合此規範規定之限度值。

報告中所描述之測試結果和待測設備的架構組合，均根據實際量測情況作詳實的記錄，且本測試報告僅對上述待測設備樣品負責。

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
ER/2021/C0042	00	Original.	民國 111 年 2 月 21 日	張嘉芳	-
ER/2021/C0042	01	修正部分數據 呈現	民國 111 年 3 月 3 日	張嘉芳	*

Note:

1、標註「*」為報告尚未正式取證前，因認證機構意見修改之版本。

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1 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 3702

認證有效期間： 110年06月14日起至113年06月13日止

測試場地： 新北市新北產業園區五工路134號

實驗室名稱： 台灣檢驗科技股份有限公司射頻實驗中心

實驗室地址： 新北市新北產業園區五工路134號

電話： 886-2-22993939

傳真： 886-2-22982698

2 實驗室之量測不確定度

量測項目	量測不確定度 (擴充不確定度)
輸出功率	LP0002 ± 1 dB

附註: 1. K=2 即代表測試結果具有95%的量測可信度。

2. 本報告中的符合性判定僅依據試驗結果，不考慮其試驗結果的量測不確定度。

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3 一般資料

3.1 產品描述

產品名稱	WIRELESS SPEAKER
廠牌	JBL
型號	L75ms
型號差異	N/A
使用電源	110 Vac from AC adapter

3.2 射頻特性

3.2.1 BT

發射頻帶	2402MHz – 2480MHz
輸出功率	3.39 dBm (Peak)
調變方式	BT BR(GFSK)+EDR($\pi/4$ DQPSK, 8DPSK)
頻道數	79

3.2.2 BLE

Radio Technology:	BLE
Frequency Range:	2402 – 2480MHz
Channel number:	40 channels
Modulation type:	GFSK
Transmit Power:	BLE 1M: 4.89 dBm BLE 2M: 5.03 dBm

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3.2.3 WLAN 2.4GHz

WLAN 2.4GHz

Wi-Fi	Frequency Range	Channels	Rated Power in dBm (Peak)	Modulation Technology
802.11b	2412~2462	11	21.97	DSSS
802.11g	2412~2462	11	25.18	OFDM
802.11n20	2412~2462	11	27.01	OFDM
Modulation type:		CCK, DQPSK, DBPSK for DSSS		
		64QAM, 16QAM, QPSK, BPSK for OFDM		
Data Rate:		802.11 b: 1/2/5.5/11 Mbps		
		802.11 g: 6/9/12/18/24/36/48/54 Mbps		
		802.11 n_20MHz:6.5 - 144.4Mbps		

3.2.4 WLAN 5GHz

Wi-Fi	Frequency Range	Channels	Rated Power(Avg) (dBm) (Worst Case)	Modulation Technology
a/ n_HT/ ac_VHT 20M	5180~5240	4	14.65 dBm	OFDM
	5260~5320	4	14.79 dBm	OFDM
	5500~5700	11	14.79 dBm	OFDM
	5745-5825	5	14.62 dBm	OFDM
n_HT/ ac_VHT 40M	5190~5230	2	11.98 dBm	OFDM
	5270~5310	2	16.75 dBm	OFDM
	5510~5670	5	16.86 dBm	OFDM
	5755-5795	2	16.74 dBm	OFDM
ac_VHT 80M	5210	1	7.86 dBm	OFDM
	5290	1	11.68 dBm	OFDM
	5530~5610	2	16.60 dBm	OFDM
	5775	1	15.54 dBm	OFDM

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3.3 天線型式/天線增益

3.3.1 BT

Antenna Type	Brand	Antenna No.	Antenna Model No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Dipole	M.gear	ANT 1	EAN00235	2400-2500	5
Note: Antenna information is provided by the applicant.					

3.3.2 BLE

Antenna Type	Brand	Antenna No.	Antenna Model No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Dipole	M.gear	ANT 1	EAN00235	2400~2500	5
Note: Antenna information is provided by the applicant.					

3.3.3 WLAN 2.4GHz

Antenna Type	Brand	Antenna No.	Antenna Model No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Direction Gain (dBi)
Dipole	M.gear	ANT 1	EAN00235	2400~2500	5	8.01
		ANT 2			5	8.01
Note: Antenna information is provided by the applicant.						

3.3.4 WLAN 5GHz

Antenna Type	Brand	Antenna No.	Antenna Model No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Directional Gain (dBi)
Dipole	M.gear	ANT 1	EAN00235	5150~5250	7	10.01
				5250~5350	7	10.01
				5470~5725	7	10.01
				5725~5850	7	10.01
		ANT 2		5150~5250	7	10.01
				5250~5350	7	10.01
				5470~5725	7	10.01
				5725~5850	7	10.01
Note: Antenna information is provided by the applicant.						

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4 測試方法之依據

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(LP0002, 109.7.1版本)。

項次	評估項目	適用規範
☑	最大暴露量允許值	LP0002 低功率射頻器材技術規範6.20.2.2節

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5 適用規範

5.1 LP0002 規範要求

依據 NCC 低功率射頻電機技術規範之 6.20.2，其發射機距離人體 20 公分以上者，需證明其符合電波暴露量之要求，限制值如下：

5.1.1 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)。

5.1.2 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)。

此待測物，為一般市面上販售，固適用表 2) 之限制值

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6 最大暴露允許值 (MAXIMUM PERMISSIBLE EXPOSURE, MPE)

6.1 LP0002 最大暴露允許值之評估

僅以最差模式進行評估。

導入之公式: page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

S = 功率密度 P = 傳導功率 G = 天線增益值 R = 人體與天線之距離

NCC LP0002

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail
BT	2441	20	2.81	5.00	6.04	0.0012	1.000	Pass
BLE	2402	20	4.98	5.00	9.95	0.002	1.000	Pass
WLAN 2.4G	2437	20	19.06	8.01	509.33	0.101	1.000	Pass
WLAN 5G	5550	20	16.86	10.01	486.41	0.097	1.000	Pass

~ End of Report ~

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