



RF Exposure Evaluation Report

APPLICANT : MeeBoss Inc.

EQUIPMENT : MULTIMEDIA PLAYER

BRAND NAME : Meeboss

MODEL NAME : Mee-M100
Mee-M100 Series
Mee-M100X
M100
M100 Series
M100X
Mee-M100A
Mee-M100B
Mee-M10
Mee-M10 Series
Mee-M10X
M10
M10 Series
M10X

FCC ID : SB5-13100R1

FILING TYPE : Certification

STANDARD : OET Bulletin 65 Supplement C (Edition 01-01)

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with FCC OET Bulletin 65 Supplement C (Edition 01-01), and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Eric Huang

Reviewed by: Eric Huang / Vice Manager

Jones Tsai

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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Table of Contents

1. ADMINISTRATION DATA	5
1.1. Testing Laboratory	5
1.2. Applicant	5
1.3. Manufacturer.....	5
2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)	6
3. RF EXPOSURE LIMIT INTRODUCTION	7
4. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS	8
5. CONDUCTED RF OUTPUT POWER (UNIT: DBM).....	9
7. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION	11



Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA322731	Rev. 01	Initial issue of report	Apr. 18, 2013

1. Administration Data

1.1. Testing Laboratory

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978

1.2. Applicant

Company Name	MeeBoss INC.
Address	7F., No.189, Gangqian Rd., Neihu Dist., Taipei City 11494, Taiwan, R.O.C

1.3. Manufacturer

Company Name	MeeBoss Inc.
Address	7F., No.189, Gangqian Rd., Neihu Dist., Taipei City 11494, Taiwan, R.O.C

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	MULTIMEDIA PLAYER
Brand Name	Meeboss
Model Name	Mee-M100 Mee-M100 Series Mee-M100X M100 M100 Series M100X Mee-M100A Mee-M100B Mee-M10 Mee-M10 Series Mee-M10X M10 M10 Series M10X
FCC ID	SB5-13100R1
Tx Frequency	2412 MHz ~ 2462 MHz
Antenna Type	Dipole Antenna
Uplink Modulation	802.11b: DSSS (BPSK / QPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. RF Exposure Limit Introduction

The FCC categorizes the RF exposure limit based on the intended usage of the device and the user's awareness and ability to exercise control over his or her exposure. This is a consumer product to be used in the home, hence this device was evaluated by mobile device with general population/uncontrolled exposure condition. The definition of these category are shown as follows:

▪ **Mobile Devices:**

A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to be generally used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitters' radiating structures and the body of the user or nearby persons. Transmitters designed to be used by consumers or workers that can be easily re-located are considered mobile devices if they meet the 20 centimeter separation requirement. The FCC rules for evaluating mobile devices for RF compliance are found in 47 CFR 2.1091.

▪ **General Population/Uncontrolled Exposure:**

The general population / uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category and the general population/uncontrolled exposure limits apply to these devices.

Per OET Bulletin 65, the power density limit for General Population/Uncontrolled Exposure summary here:

Table: Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Power Density (S) (mW/cm ²)
0.3–1.34	*(100)
1.34–30	*(180/f ²)
30–300	0.2
300–1500	f/1500
1500–100,000	1.0

f = frequency in MHz

* = Plane-wave equivalent power density



4. Maximum RF average output power among production units

Mode / Band	IEEE 802.11			
	b	g	HT20	HT40
2.4 GHz WIFI	5	5	5	5

5. Conducted RF Output Power (Unit: dBm)

<WLAN 2.4GHz Conducted Power>

WLAN 2.4GHz 802.11b Average Power (dBm)						
Power vs. Channel			Power vs. Data Rate			
Channel	Frequency (MHz)	Data Rate (bps)	Channel	Data Rate (bps)		
		1M		2M	5.5M	11M
CH 1	2412	4.64	CH 1	4.16	4.15	4.24
CH 6	2437	3.52				
CH 11	2462	2.26				

WLAN 2.4GHz 802.11g Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate (bps)	Channel	Data Rate (bps)						
		6M		9M	12M	18M	24M	36M	48M	54M
CH 1	2412	1.50	CH 1	0.87	0.85	1.01	0.94	0.60	0.43	1.46
CH 6	2437	-0.62								
CH 11	2462	0.77								

WLAN 2.4GHz 802.11n-HT20 Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index	Channel	MCS Index						
		MCS0		MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 1	2412	1.98	CH 1	1.70	1.86	1.79	1.88	1.88	1.80	1.91
CH 6	2437	-0.48								
CH 11	2462	-1.58								



WLAN 2.4GHz 802.11n-HT40 Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index	Channel	MCS Index						
		MCS0		MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 3	2422	1.66	CH 3	1.54	1.39	1.51	1.49	1.58	1.53	1.48
CH 6	2437	1.44								
CH 9	2452	0.61								

7. Radio Frequency Radiation Exposure Evaluation

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

For this device, the calculation is as follows:

WLAN Operating Frequency > 1.5GHz

Function	Freq. (MHz)	Antenna Gain (dBi)	Source-Based Time-Average Power (dBm)	Source-Based Time-Average EIRP (mW)	Calculated RF Exposure (mW/cm ²)	Limit (mW/cm ²)
WiFi 2.4G 802.11b	2412.00	1.00	5.00	3.98	0.00	1.00
WiFi 2.4G 802.11g	2437.00	1.00	5.00	3.98	0.00	1.00
WiFi 2.4G 802.11n-HT20	2412.00	1.00	5.00	3.98	0.00	1.00
WiFi 2.4G 802.11n-HT40	2422.00	1.00	5.00	3.98	0.00	1.00

Conclusion:

Per part 2.1091(c), EUT source-based time-averaged ERP < 1.5W for RF operating frequency ≤ 1.5GHz, EUT source-based time-averaged EIRP < 3W for RF operating frequency > 1.5GHz, routine evaluation of MPE is not required; MPE calculation is sufficient to show compliance. The MPE calculation results indicate that the EUT complies with the RF exposure limit of FCC OET Bulletin 65 Supplement C (Edition 01-01).