

TEST REPORT

Reference No. : WTS18S07118739-3W
FCC ID..... : 2ADDH-MP34710
Applicant : Monoprice, Inc.
Address : 1 Pointe Dr Suite# 400, Brea, California, United States

Manufacturer : AJS Electronics Limited
Address : AJS industrial park , Xinqiao 3rd industrial Zone, Baoan, Shenzhen, China

Product : SOUNDBAR
Model(s)..... : SB-100, 34710
Standards : FCC CFR47 Part 15 Section 15.247:2017
Date of Receipt sample : 2018-07-21
Date of Test : 2018-07-21 to 2018-07-30
Date of Issue : 2018-08-01
Test Result : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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1 Laboratories Introduction

Waltek Services (Shenzhen) Co., Ltd is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation) of USA, Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CEC(California energy efficiency), IC(Industry Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek(ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.



Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test. ElectroMagnetic Compatibility(EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

1.1 Test Facility

A. Accreditations for Conformity Assessment (International)

Accreditation for Conformity Assessment (International)			
Country/Region	Accreditation Body	Scope	Note
USA	International Services	FCC ID \ DOC \ VOC	1
Canada		IC ID \ VOC	2
Japan		MIC-T \ MIC-R	-
Europe		EMCD \ RED	-
Taiwan		NCC	-
Hong Kong		OFCA	-
Australia		RCM	-
India		WPC	-
Thailand		NTC	-
Singapore		IDA	-
Note:			
1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476.			
2. IC Canada Registration No.: 7760A			

B.TCBs and Notify Bodies Recognized Testing Laboratory.

Recognized Testing Laboratory of ...	Notify body number
TUV Rheinland	Optional.
Intertek	
TUV SUD	
SGS	
Phoenix Testlab GmbH	0700
Element Materials Technology Warwick Ltd	0891
Timco Engineering, Inc.	1177
Eurofins Product Service GmbH	0681

2 Contents

	Page
COVER PAGE.....	1
1 LABORATORIES INTRODUCTION.....	2
1.1 TEST FACILITY.....	3
2 CONTENTS	4
3 REVISION HISTORY	5
4 GENERAL INFORMATION.....	6
4.1 GENERAL DESCRIPTION OF E.U.T	6
4.2 DETAILS OF E.U.T.....	7
5 FCC ID: 2ADDH-MP34710 RF EXPOSURE REPORT	8
5.1 REQUIREMENTS.....	8
5.2 THE PROCEDURES / LIMIT.....	8
5.3 RESULT: COMPLIANCE	8

3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS18S07118739-3W	2018-07-21	2018-07-21 to 2018-07-30	2018-08-01	original	-	Valid

4 General Information

4.1 General Description of E.U.T

Product	: SOUNDBAR
Model(s)	: SB-100, 34710
Model difference	: Only the model name is different. The test sample is model FS68C-2.1
Operation Frequency	: 2402-2480MHz, 79(EDR) Channels in total
Antenna installation	: PCB Printed Antenna
Antenna Gain	: 0dBi
Type of Modulation	: GFSK, $\pi/4$ DQPSK, 8DPSK

Frequency hopping systems (FHS):

This transmitter device is frequency hopping device, and complies with FCC Part15.247 Requirements.

This device uses Bluetooth radio which operates in 2400-2483.5 MHz band. Bluetooth uses a radio technology called frequency-hopping spread spectrum, which chops up the data being sent and transmits chunks of it on up to 79 bands (1 MHz each; centred from 2402 to 2480 MHz) in the range 2,400-2,483.5MHz. The transmitter switches hop frequencies 1,600 times per second to assure a high degree of data security. The average time of occupancy on any channel is less than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels (79 channels) employed.

All Bluetooth devices participating in a given piconet are synchronized to the frequency-hopping channel for the piconet. The frequency hopping sequence is determined by the master's device address and the phase of the hopping sequence (the frequency to hop at a specific time) is determined by the master's internal clock. Therefore, all slaves in a piconet must know the master's device address and must synchronize their clocks with the master's clock.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way for a Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wireless devices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. The AFH-enabled Bluetooth device will then communicate with other devices within its piconet to share details of any identified bad channels. The devices will then switch to alternative available "good" channels, away from the areas of interference, thus having no impact on the bandwidth used.

This device was tested with an Bluetooth system receiver to check that the device maintained hopping synchronization, and the device complied with these requirements for FCC Part15.247.

Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 05, 41, 54, 20, 77, 04, 35, 72, 27, 09, 00, 58, 42, 31, 24, 40, 01, 78, 61, 70, 50, 76, 36, 48, 45, 51, 02, 55, 59, 34, 28, 30, 22, 64, 52, 39, 74, 19, 68, 29, 33, 26, 13, 71, 79, 56, 65, 15, 10, 63, 08, 25, 21, 53, 07, 67, 14, 44, 69, 17, 32, 60, 23, 43, 73, 57, 46, 38, 75, 11, 06, 16, 37, 03, 12, 47, 18, 62, 66 etc.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

4.2 Details of E.U.T

Ratings

Input AC 110-240V~, 50/60Hz

5 FCC ID: 2ADDH-MP34710 RF Exposure Report

Test Requirement: FCC Part 1.1307

Evaluation Method FCC Part2.1093 & KDB 447498 D01 General RF Exposure Guidance v06

5.1 Requirements

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR where

1. $f(\text{GHz})$ is the RF channel transmit frequency in GHz
2. Power and distance are rounded to the nearest mW and mm before calculation
3. The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

5.2 The procedures / limit

Conducted Peak power(dBm)	Conducted Peak power(mW)	Source-based time-averaged maximum conducted output power(mW)	Minimum test separation distance required for the exposure conditions (mm)	SAR Test Exclusion Thresholds Calculation Value	SAR Test Exclusion Thresholds Limit	Result
0.74	1.19	1.19	5	0.375	3.0	Compliance

Remark: Max. duty factor is 100%

Low Chanel: $f=2402\text{MHz}=2.402\text{GHz}$, so $\sqrt{f(\text{GHz})}=1.550$

High Chanel: $f=2480\text{MHz}=2.480\text{GHz}$, so $\sqrt{f(\text{GHz})}=1.575$

5.3 Result: Compliance

No SAR measurement is required.

=====End of Report=====