

MPE REPORT

Report No.: SRTC2024-9004(F)-24031202(I)
Product Name: Auto EQ Bluetooth Audio Transmitter
Model Name: OTM-A01
Applicant: ALPINE ELECTRONICS MARKETING, INC.
1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo, Japan
Keisuke Kitamoto
Manufacturer: ALPINE ELECTRONICS MARKETING, INC.
1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo, Japan
Keisuke Kitamoto
FCC ID: 2A38M-OTMA01

Reference Specification
FCC Part §1.1310

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30, Shixing Street, Shijingshan District,

Beijing, P.R.China

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1 GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC). The test results relate only to individual items of the samples which have been tested. The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Test Site 1:	15th Building, No.30 Shixing Street, Shijingshan District
Test Site 2:	No.80, Zhaojiachang, Beizang, Daxing District
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liu Jia
Tel:	+86 10 57996183
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Email:	liujiaf@srtc.org.cn
Designation Number:	CN1267
Registration number:	239125

1.3 Applicant's details

Company:	ALPINE ELECTRONICS MARKETING, INC.
Address:	1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo, Japan
City:	Tokyo
Country or Region:	Japan
Contacted person:	Keisuke Kitamoto
Email:	k-kitamoto@aoja.alpine.co.jp

1.4 Manufacturer's details

Company:	ALPINE ELECTRONICS MARKETING, INC.
Address:	1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo, Japan
City:	Tokyo
Country or Region:	Japan
Contacted person:	Keisuke Kitamoto
Email:	k-kitamoto@aoja.alpine.co.jp

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2024/4/3
Testing Start Date:	2024/4/4
Testing End Date:	2024/5/17

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40

Normal Supply Voltage (V d.c.):	5.0
Maximum Extreme Supply Voltage (V d.c.):	5.5
Minimum Extreme Supply Voltage (V d.c.):	4.5

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	79
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Duplex Mode:	TDD
Channel Spacing:	1MHz
Data Rate:	1Mbps, 2 Mbps, 3 Mbps
Power Supply:	DC supply
Software Revision:	1.0
Hardware Revision:	1.0
IMEI/SN:	W40400044A
Antenna type:	PCB Antenna
Antenna gain:	ANT0:3.92dBi ANT1:4.63dBi

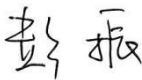
Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	40
Modulation Type:	GFSK
Equipment Class:	DTS
Channel Spacing:	2MHz
Data Rate:	LE 1Mbps/2Mbps
Power Supply:	DC supply
Software Revision:	1.0
Hardware Revision:	1.0
IMEI:	W40400044A
Antenna type:	PCB Antenna
Antenna gain:	ANT0:3.92dBi ANT1:4.63dBi

3 REFERENCE SPECIFICATION

Specification	Version	Title
Part 1.1310	Latest	Radio frequency radiation exposure limits.

4 RESULT SUMMARY

Case	Verdict
MPE	Pass

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Mr. Li Bin 
Tested by: Mr. Huang Yubin 	Issued date: 20240524

5.CALCULATION RESULT

5.1 Maximum permissible exposure (MPE)

Limit:

(A) Limits for Occupational/Controlled Exposure ☐

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure ☒

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Result:

According to §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

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:

The $S = PG / (4\pi R^2)$

Where S = power density in mW/cm²

P = transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

Standalone Transmission Result

Band	Freq. (MHz)	Maximum Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP(mW)	Power Density (mW/cm ²)	Power Density/ Limit
BT ANT0	2480	0.58	3.92	4.50	2.818	0.001	0.001
BT ANT1	2441	0.77	4.63	5.40	3.467	0.001	0.001
BLE ANT0	2440	0.30	3.92	4.22	2.642	0.001	0.001
BLE ANT1	2402	0.06	4.63	4.69	2.944	0.001	0.001

Simultaneous Transmission Result

Power Density1 / Limit	Power Density2 / Limit	Σ(Power Density / Limit)
0.001(BT ANT0)	0.001(BT ANT1)	0.002

Note: Simultaneous Transmission Limit = Power Density_1 / Limit_1 + Power Density_2 / Limit_2

---End of Test Report---