RF Exposure Evaluation Declaration

Report No.: S202312118689E16
Issue Date: 01-19-2024

Applicant:	BDStar Intelligent & Connected Vehicle Technology Co.,Ltd.
Address:	No. 2, Building 81, Tonggui Avenue, Yufengshan Town, Yubei District, Chongqing P.R. China
FCC ID:	2BAQL-CFDLMMI008
Product:	Motorcycle Media Players
Model No.:	CFDLMMI008
Trade Mark:	/
FCC Rule Part(s):	CFR 47, FCC Part 2.1091 Radio frequency radiation exposure evaluation: mobile devices.
Item Receipt date:	Nov 28, 2023
Test Date:	Dec 12~Dec 25, 2023

Compiled By Chuang Li
(Chuang Li)
Senior Test Engineer

Approved By Line Chen
(Line Chen)
Engineer Manager

FANGGUANG INSPECTION & TESTING CO.,LTD. APPROVED(02)

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

Revision History

Report No.	Version	Description	Issue Date
S202312118689E16	Rev. 01	/	01-19-2024

1. PRODUCT INFORMATION

1.1. Equipment Description

<table>
<tr><td>Product Name:</td><td>Motorcycle Media Players</td></tr>
<tr><td>Model Name:</td><td>CFDLMMI008</td></tr>
<tr><td>Additional Model:</td><td>CFDLMMI009,CFDLMMI010,CFDLMMI011,CFDLMMI012,CFDLMMI013, CFDLMMI014</td></tr>
<tr><td>Model Description:</td><td>They are have the same technical construction including circuit diagram, PCB LAYOUT, hardware version and software version identical. the difference refer the below table.
<table>
<tr><th>Model</th><th>Size</th><th>RG440: Wifi+BT</th><th>BE470:BT</th><th>FM/AM</th><th>GPS</th><th>USB</th></tr>
<tr><td>CFDLMMI008</td><td>8”</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>CFDLMMI009</td><td>8”</td><td>√</td><td>√</td><td>×</td><td>√</td><td>√</td></tr>
<tr><td>CFDLMMI010</td><td>8”</td><td>√</td><td>√</td><td>√</td><td>×</td><td>√</td></tr>
<tr><td>CFDLMMI011</td><td>8”</td><td>√</td><td>√</td><td>√</td><td>√</td><td>×</td></tr>
<tr><td>CFDLMMI012</td><td>8”</td><td>√</td><td>√</td><td>×</td><td>×</td><td>√</td></tr>
<tr><td>CFDLMMI013</td><td>8”</td><td>√</td><td>√</td><td>√</td><td>×</td><td>×</td></tr>
<tr><td>CFDLMMI014</td><td>8”</td><td>√</td><td>√</td><td>×</td><td>√</td><td>×</td></tr>
</table></td></tr>
<tr><td>Trade Mark:</td><td>/</td></tr>
<tr><td>Input Voltage Range:</td><td>DC 13.5V</td></tr>
</table>

1.2. Product Specification Subjective to this Report

Frequency Range:	Bluetooth: 2400 ~ 2483.5MHz 802.11a/n/ac-HT20: 5180 ~ 5320MHz, 5470 ~ 5725MHz,5745 ~ 5825MHz 802.11n/ac-HT40: 5190 ~ 5310MHz, 5510 ~ 5670MHz,5755 ~ 5795MHz 802.11ac-HT80: 5210MHz~5290MHz, 5530~5610MHz,5775MHz
Type of Modulation:	Bluetooth: GFSK, π /4-DQPSK,8-DPSK 802.11a/n/ac: CCK/OFDM/BPSK/QPSK/DBPSK/DQPSK/16QAM/64QAM/256QAM
Data Rate:	BLE:1Mbps BT:1Mbps(GFSK), 2Mbps(Π/4 DQPSK), 3Mbps (8DPSK) 802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Antenna Type:	PCB Antenna
Antenna Gain:	BT:RG440:1.5dBi,BE470:2.7dBi WIFI:5GHz:3.8dBi

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	Motorcycle Media Players
Test Item	RF Exposure Evaluation

For module GOC-RG440：

Mode	Frequency (MHz)	Maximum Conducted OutputPower (dBm)	Antenna Gain (dBi)	PG		MPE (mW/cm^2)	MPE Limits (mW/cm^2)
				(dBm)	(mW)		
U-NII	5260	14.98	3.8	18.78	75.5	0.015	1.00
BT	2441	4.57	1.5	6.07	4.0	0.0008	1.00
BLE	2480	3.28	1.5	4.78	3.0	0.0006	1.00

For module GOC-BE470：

Mode	Frequency (MHz)	Maximum Conducted OutputPower (dBm)	Antenna Gain (dBi)	PG		MPE (mW/cm^2)	MPE Limits (mW/cm^2)
				(dBm)	(mW)		
BT	2441	4.59	2.7	7.29	5.4	0.001	1.00
BLE	2402	6.98	2.7	9.68	9.3	0.002	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2.Use the maximum gain of all bands when evaluating

Remark: 3.BT and 5G wifi can’t transmit simultaneously.

CONCULISON:

The Max Power Density at R (20 cm) = 0.015mW/cm^2 < 1mW/cm^2.

So the EUT complies with the requirement.

The End