FCC Test Report

Report No: FCS202311124H01

Issued for

Applicant:	DongGuan LDARC Technology Co., Ltd.
Address:	JinTianDa Logistics Park, No.180-104 DongShen Rd, YanTian, FengGang, DongGuan, GuangDong, China
Product Name:	X43 and CT01 Combo
Brand Name:	N/A
Model Name:	X43 BNR, X43 RTR, X43 RTR-PRO
FCC ID:	2BAKS-CX43
Test Standard:	FCC 47CFR §2.1091

Issued By: Flux Compliance Service Laboratory
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TEST RESULT CERTIFICATION

Applicant's Name..... :	DongGuan LDARC Technology Co., Ltd.
Address ..... :	JinTianDa Logistics Park, No.180-104 DongShen Rd, YanTian, FengGang, DongGuan, GuangDong, China
Manufacture's Name..... :	DongGuan LDARC Technology Co., Ltd.
Address ..... :	JinTianDa Logistics Park, No.180-104 DongShen Rd, YanTian, FengGang, DongGuan, GuangDong, China

Product Description

Product Name ..... :	X43 and CT01 Combo
Brand Name ..... :	N/A
Model Name ..... :	X43 BNR
Series Model ..... :	X43 RTR, X43 RTR-PRO
Test Standards ..... :	FCC 47CFR §2.1091 447498 D04 Interim General RF Exposure Guidance v01

This device described above has been tested by Flux Compliance Service Laboratory, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test.....:	
Date (s) of performance of tests.:	Nov.10, 2023 ~ Nov.13, 2023
Date of Issue.....:	Nov.13, 2023
Test Result .....:	Pass

Tested by : Scott shen

(Scott Shen)

Reviewed by : Duke Qian

(Duke Qian)

Approved by : Jack Wang

(Jack Wang)

TABLE OF CONTENTS

Revision History

Rev.	Issue Date	Contents
00	Nov.13, 2023	Initial Issue

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	X43 and CT01 Combo
Brand	N/A
Model Number	X43 BNR
Series Model(s)	X43 RTR, X43 RTR-PRO
Model Difference	Only different in model name.
Product Description	The EUT is X43 and CT01 Combo Operation Frequency: BLE: 2402~2480MHz Modulation Type: GFSK Antenna gain: BLE: 0 dBi Antenna Designation: PCB Antenna
Power Supply	Input: DC 5V
Battery	Rated Voltage: DC 3.7V Capacity: 230mAh
Hardware Version	N/A
Software Version	N/A

1.2 TEST FACTORY

Company Name:	Flux Compliance Service Laboratory
Address:	Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan
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FCC Test Firm Registration Number: 514908
Designation number: CN0127
A2LA accreditation number：5545.01
ISED Number：25801
CAB ID ：CN0097

Organization	CAB identifier	Scope / Recognition Date (yyyy-mm-dd)	Expiration (yyyy-mm-dd)
FLUX COMPLIANCE SERVICE LABORATORY Baohao Technology Building 1 No. 15 Gongye West Road Hi-Tech Industrial Park Songsham Lake Dongguan, Guangdong. 523808 PRC. **ISED#: 25801** Contact: Andy Yue andv-vue@fcs-lab.com	CN0097	RSS-102(RFExp) (2020-01-09) RSS-GEN (2020-01-09) RSS-210 (2020-01-09) RSS-247 (2020-01-09)	**RECOGNIZED UNTIL: 2023-12-31** A2LA ISO/IEC 17025: 2017 Expires: 2023-12-31

2. FCC 47CFR §2.1093 REQUIREMENT

2.1 TEST STANDARDS

Follow the maximum permissible exposure (MPE) limits specified in 447498 D04 Interim General Radio Frequency Exposure Guidelines v01. The gain of the antenna used in the product was extracted from the supplied antenna data sheet and the maximum total power input to the antenna was also measured. Calculate the distance from the product to the MPE limit by the formula.

2.2 LIMIT

For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of Part 1.1307. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\,cm}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\,cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\,cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

(C) Or using below table and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF Source frequency (MHz)	Threshold ERP(watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of Part 1.1307. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of Part 1.1307 for Pth, including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of Part 1.1307 for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

Pi = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

Pth,i = the exemption threshold power (Pth) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

ERPj = the ERP of fixed, mobile, or portable RF source j.

ERPth,j = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least λ/2π according to the applicable formula of paragraph (b)(3)(i)(C) of Part 1.1307.

Evaluatedk = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limitk = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from § 1.1310.

2.3 TEST RESULT

Turn up

Mode	Detector	Turn up Power
BLE	AV	-5±1dBm

Protocol	Fre. (GHz)	Separation distance (cm)	Max Turn up power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max EIRP (mW)	Limit (mW)	Result
BLE	2.480	20	-4	0	-4	0.398	2.788	Pass

Multiple transmission:

Note: 1. The Maxinum power is less than the limit, complies with the exemption requirements.

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