On your side

고 객 비 밀
CUSTOMER SECRET

TEST REPORT

FCC SAR Exclusion Report for LFFA23JOS900NN0 Certification

APPLICANT
ELCOMTEC CO., LTD.

REPORT NO.
HCT-SR-2303-FC001

DATE OF ISSUE
March 06, 2023

Technical Manager
Yun Jeang Heo (signature)

Accredited by KOLAS, Republic of KOREA

HCT CO., LTD.
BongJai Huh / CEO

HCT Co., Ltd.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Tel. +82 31 645 6300 F ax. +82 31 645 6401

고 객 비 밀
CUSTOMER SECRET

HCT Co., Ltd.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Tel. +82 31 634 6300 Fax. +82 31 645 6401

TEST REPORT

FCC BT LE Test for LFFA23JOS900NN0

REPORT NO.
HCT-SR-2303-FC001

DATE OF ISSUE
March 06, 2023

Applicant	**ELCOMTEC CO., LTD.** 231, Dongbu-daero, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Republic of Korea
EUT Type Model Name	LESSERAFIM OFFICIAL LIGHT STICK LFFA23JOS900NN0
FCC ID	2A9BA-LFFA23JO
Max. RF Output Power	-10.5 dBm (EIRP)
Modulation type	GFSK
FCC Classification	Digital Transmission System(DTS)
FCC Rule Part(s)	47CFR §2.1093

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	March 06, 2023	Initial Release

Engineering Statement:
The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

This laboratory is not accredited for the test results marked *.
The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 AND KOLAS (Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr

CONTENTS

1. EUT DESCRIPTION 5
2. TEST METHODOLOGY 6
2.1 FCC 6

1. EUT DESCRIPTION

Model Name	LFFA23JOS900NN0
EUT Type	LESSERAFIM OFFICIAL LIGHT STICK
Power Supply	DC 4.5 V
Frequency Range	2 402 ㎒ – 2 480 ㎒
Max. RF Output Power (EIRP)	-10.5 dBm
Modulation Type	GFSK
Bluetooth Version	5.1
Number of Channels	40 Channels
Antenna Specification	Antenna type: PCB PATTERN Antenna Peak Gain: 3.104 dBi
EUT serial numbers	Radiated: LE-000002 Conducted: LE-00003
Manufacturer Name Address	ELCOMTEC CO., LTD. 231, Dongbu-daero, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Republic of Korea
Factory Name Address	ELCOMTEC CO., LTD. 231, Dongbu-daero, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Republic of Korea

2. TEST METHODOLOGY

2.1 FCC

Limb SAR Test Exclusions Applied _Bluetooth 5.1 LE
Since this product is a remote control product, it is used by most users in the hand, so Limb SAR standard is applied.

According to the FCC KDB 447498 D01 v06 section 4.3.1, for 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

$$:\frac{Max\ Power\ of\ Channel(mW)}{Test\ \ Separation\ Distance\ (mm)} * \sqrt{Frequency(GHz)} \leq\ 3.0\ \text{For 1g SAR},\ 7.5.\ \text{for 10g SAR}$$

where
- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Calculation Result:

Tx frequency range: 2 402 MHz ~ 2 480 MHz
Limb SAR Consideration Min. test separation distance: 5 mm
Maximum Output Power: 0.09 mW
The Highest RF channel frequency: 2 480 MHz

For Limb SAR exclusion

Mode	Frequency [MHz]	Maximum Allowed Power [mW]	Separation Distance [mm]	≤ 7.5 for 10 g SAR
Bluetooth 5.1 LE	2 480	0.09	5	0.03

Based on the maximum output power of Bluetooth 5.1 LE and antenna to use separation distance, Bluetooth 5.1 LE Limb SAR were not required.

*Note: "SAR Exemption threshold was calculated with worst case EIRP which is more conservative than conducted power."