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RF Exposure Evaluation Report

Report No.:	CQASZ20230300400E-02
Applicant:	Star Seeds Co., Ltd.
Address of Applicant:	No.5, Lu-Kung South 2 Road, Chang-Pin Industrial Park Lu-kang, Changhua 50544, Taiwan
Equipment Under Test (EUT):	
EUT Name:	Remote control
Model No.:	E604R
Test Model No.:	E604R
Brand Name:	N/A
FCC ID:	2A2GC-E604R
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2023-03-23
Date of Test:	2023-03-23 to 2023-04-21
Date of Issue:	2023-05-09
Test Result:	**PASS***

***In the configuration tested, the EUT complied with the standards specified above**

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Timo Lei

(Timo Lei)

Approved By:

(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20230300400E-02	Rev.01	Initial report	2023-05-09

2 Contents

3 General Information

3.1 Client Information

Applicant:	Star Seeds Co., Ltd.
Address of Applicant:	No.5, Lu-Kung South 2 Road, Chang-Pin Industrial Park Lu-kang, Changhua 50544, Taiwan
Manufacturer:	Star Seeds Co., Ltd.
Address of Manufacturer:	No.5, Lu-Kung South 2 Road, Chang-Pin Industrial Park Lu-kang, Changhua 50544, Taiwan

3.2 General Description of EUT

Product Name:	Remote control
Model No.:	E604R
Test Model No.:	E604R
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Sample Type:	☐ Mobile ☒ Portable
Operation Frequency:	2435MHz-2455MHz
Channel Numbers:	3
Modulation Type:	GFSK
Antenna Type:	PCB antenna
Antenna Gain:	2.6dBi
Power Supply:	2*AAA DC 3V battery

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

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:

[(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

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
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

4.1.3 EUT RF Exposure

eirp = pt x gt = $(E \times d)^2/30$
where:
pt = transmitter output power in watts,
gt = numeric gain of the transmitting antenna (unitless),
E = electric field strength in V/m, ---$10^{((dB\mu V/m)/20)}/10^6$,
d = measurement distance in meters (m)---3m,
So pt = $(E \times d)^2/30$ / gt

The worst case (refer to report CQASZ20230300400E-01) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
2435	91.76	Peak
2435	89.17	Average

Antenna polarization: Vertical		
Frequency (MHz)	Level (dBuV/m)	Polarization
2435	87.47	Peak
2435	81.63	Average

For 2435MHz wireless:
Field strength = 91.76dBμV/m @3m
Ant. gain 2.6dBi; so Ant numeric gain=1.819
So pt={$[10^{(91.76/20)}/10^6 x3]^2/30$ /1.819}x1000mW =0.247mW
So (0.247mW/5mm)x √0.3142GHz = 0.139,

0.139<3.0 for 1-g SAR

So the SAR report is not required.