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RADIO TEST REPORT

Report No: STS2107090H03

Issued for

Shanghai Lianchong Intelligent Technology Co., Ltd

Room221, Kehai Building, No.800 Naxian road, Pudong,
Shanghai, China

| | |
|-----------------------|---|
| Product Name: | CATLINK AI Feeder - One |
| Brand Name: | N/A |
| Model Name: | CL-F-01 |
| Series Model: | CL-F-02,CL-F-03,CL-F-04,CL-F-05, CL-F-06,CL-F-07,CL-F-08,CL-F-09 |
| FCC ID: | 2A2JT-CL-F-01 |
| Test Standard: | FCC 47CFR §2.1093 |

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Test Report Certification

Applicant's Name..... : Shanghai Lianchong Intelligent Technology Co., Ltd
Address : Room221, Kehai Building, No.800 Naxian road, Pudong, Shanghai, China
Manufacturer's Name : Shanghai Lianchong Intelligent Technology Co., Ltd
Address : Room221, Kehai Building, No.800 Naxian road, Pudong, Shanghai, China

Product Description

Product Name..... : CATLINK AI Feeder - One
Brand Name : N/A
Model Name : CL-F-01
Series Model..... : CL-F-02, CL-F-03, CL-F-04, CL-F-05, CL-F-06, CL-F-07, CL-F-08, CL-F-09

Standards..... : FCC 47CFR §2.1093

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Date of Test

Date of receipt of test item..... : 12 July 2021
Date (s) of performance of tests..... : 12 July 2021 ~ 26 July 2021
Date of Issue..... : 26 July 2021
Test Result..... : **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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**Revision History**

| Rev. | Issue Date | Report No. | Effect Page | Contents |
|------|--------------|---------------|-------------|---------------|
| 00 | 26 July 2021 | STS2107090H03 | ALL | Initial Issue |
| | | | | |





1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

| | | |
|-------------------------|---|---|
| Product Name | CATLINK AI Feeder - One | |
| Brand Name | N/A | |
| Model Name | CL-F-01 | |
| Series Model | CL-F-02,CL-F-03,CL-F-04,CL-F-05,CL-F-06,CL-F-07,CL-F-08,CL-F-09 | |
| Model Difference | Only the appearance and model are different | |
| Product Description | The EUT is CATLINK AI Feeder - One | |
| | Operation Frequency: | WLAN: 802.11b/g/n(20MHz): 2412~2462MHz RFID: 125 KHz |
| | Modulation Type: | WLAN: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM RFID: FSK |
| | Antenna gain: | 2dBi |
| | Antenna Designation: | WLAN: PCB Antenna RFID: Coil Antenna |
| Rating | Input: Rated Voltage: 5Vdc 1A, Rated power: 1.5W | |
| Hardware Version Number | V1.1 | |
| Software Version Number | 1.7.4.0 | |

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

1.3 TEST EQUIPMENT

| Kind of Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until |
|--|--------------|----------|------------|------------------|------------------|
| Electric and Magnetic field Probe - Analyzer | Narda | EHP 200A | 180ZX10220 | 2021.07.22 | 2022.07.21 |



2. FCC 47CFR §2.1093 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in KDB 447498 D01 General RF Exposure Guidance v06 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

| MHz | 5 | 10 | 15 | 20 | 25 | mm |
|------|-----|-----|-----|-----|-----|---|
| 150 | 39 | 77 | 116 | 155 | 194 | SAR Test Exclusion Threshold (mW) |
| 300 | 27 | 55 | 82 | 110 | 137 | |
| 450 | 22 | 45 | 67 | 89 | 112 | |
| 835 | 16 | 33 | 49 | 66 | 82 | |
| 900 | 16 | 32 | 47 | 63 | 79 | |
| 1500 | 12 | 24 | 37 | 49 | 61 | |
| 1900 | 11 | 22 | 33 | 44 | 54 | |
| 2450 | 10 | 19 | 29 | 38 | 48 | |
| 3600 | 8 | 16 | 24 | 32 | 40 | |
| 5200 | 7 | 13 | 20 | 26 | 33 | |
| 5400 | 6 | 13 | 19 | 26 | 32 | |
| 5800 | 6 | 12 | 19 | 25 | 31 | |
| MHz | 30 | 35 | 40 | 45 | 50 | mm |
| 150 | 232 | 271 | 310 | 349 | 387 | SAR Test Exclusion Threshold (mW) |
| 300 | 164 | 192 | 219 | 246 | 274 | |
| 450 | 134 | 157 | 179 | 201 | 224 | |
| 835 | 98 | 115 | 131 | 148 | 164 | |
| 900 | 95 | 111 | 126 | 142 | 158 | |
| 1500 | 73 | 86 | 98 | 110 | 122 | |
| 1900 | 65 | 76 | 87 | 98 | 109 | |
| 2450 | 57 | 67 | 77 | 86 | 96 | |
| 3600 | 47 | 55 | 63 | 71 | 79 | |
| 5200 | 39 | 46 | 53 | 59 | 66 | |
| 5400 | 39 | 45 | 52 | 58 | 65 | |
| 5800 | 37 | 44 | 50 | 56 | 62 | |



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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where } f(\text{GHz}) \text{ is the RF channel transmit frequency in GHz.}$$

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

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.





2.3 TEST RESULT

Maximum measured transmitter power.

WIFI The Worst Case

| Mode | frequency | Maximum AV Output Power | Tune up tolerance | Max Tune up |
|---------|-----------|-------------------------|-------------------|-------------|
| | GHz | dBm | dBm | dBm |
| 802.11b | 2.412 | 9.1 | 8.5±1 | 9.5 |

Remark: The worst case gain of the antenna is 2dBi.

2dBi logarithmic terms convert to numeric result is nearly 1.585.

Maximum Tune up Power₍₂₄₁₂₎= 8.913mw

$$[(\text{GFSK power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = 8.913/5 \cdot \sqrt{2.412} = 2.768 \leq 3.0$$

Threshold at which no SAR required is $2.768 \leq 3.0$ for 1-g SAR, Separation distance $\leq 5\text{mm}$.

※※※※※END OF THE REPORT※※※※※