



RF Exposure Evaluation

FCC ID: ZHZLHT65S-E3

Applicant: Dragino Technology Co., Limited

Address: Room 202, Block B, BCT Incubation Bases, No.8 CaiYunRoad LongCheng Street, LongGang District ; Shenzhen 518116,China

Manufacturer: Dragino Technology Co., Limited

Address: Room 202, Block B, BCT Incubation Bases, No.8 CaiYunRoad LongCheng Street, LongGang District ; Shenzhen 518116,China

EUT: Temperature & Humidity Sensor

Trade Mark: Dragino

Model Number: LHT65S-E3, LHT65S, LHT65S-NE117, LHT65S-E5, LHT65S-PIR, LHT65S-E31F, LHT65N, LHT65N-NE117, LHT65N-E3, LHT65N-E5, LHT65N-PIR, LHT65N-E31F,

Date of Receipt: Apr. 07, 2025

Test Date: Apr. 07, 2025 - Apr. 23, 2025

Date of Report: Apr. 24, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Applicable Standards: 47CFR§1.1310, 47CFR§1.1307
FCC CFR 47 part2 2.1091
KDB 447498 D01 General RF Exposure Guidance v06

Test Result: Pass

Report Number: DLE-250429009R-1

Prepared (Test Engineer): Ken Tan

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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1. Product Information

Product Name:	Temperature & Humidity Sensor
Trademark	Dragino
Test Model	LHT65S-E3
Model No.:	LHT65S-E3, LHT65S, LHT65S-NE117, LHT65S-E5, LHT65S-PIR, LHT65S-E31F, LHT65N, LHT65N-NE117, LHT65N-E3, LHT65N-E5, LHT65N-PIR, LHT65N-E31F
Model Difference :	All the model are the same circuit and RF module. The only difference is the external sensor.
Operation Frequency:	902.3MHz~914.9MHz for 125KHz bandwidth 903.0MHz~914.2MHz for 500KHz bandwidth
Channel numbers:	64 for 125KHz bandwidth 8 for 500KHz bandwidth
Channel separation:	200KHz for 125KHz bandwidth 1.6MHz for 500KHz bandwidth
Modulation technology:	125KHz bandwidth:FHSS 500KHz bandwidth:DTS
Antenna Type:	External Antenna
Antenna gain:	2.0 dBi
Power supply:	DC 3V by Lithium Battery

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.The EUT's all information provided by client.



2. Test laboratory information

Test Lab: Shenzhen DL Testing Technology Co., Ltd.
101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong
Address: Industrial Zone, Baolong Street, Longgang District, Shenzhen,
Guangdong, China
FCC Test Firm Registration Number: 854456
Designation Number: CN1307
IC Registered No.: 27485
CAB ID.: CN0118

3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	6dB Bandwidth	$\pm 0.2\text{MHz}$
9	Power Spectral Density	$\pm 2.45\text{dBm}$



4. METHOD OF MEASUREMENT

4.1 APPLICABLE STANDARD

ANSI C95.1 – 1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

FCC CFR 47 part1 1.1310: Radio frequency radiation exposure limits

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices

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)

4.2 LIMITS

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm², P_{out} = 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

P_d is the limit of MPE, 1 mW/cm². 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.

**Test Procedure**

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

EVALUATION RESULTS**Tune-up Power**

Mode	Frequency	Output power to antenna (dBm)	Output power to antenna (mW)	Max Tune-up Power(dBm) ± 1	Max Tune-up Power(dBm)
125KHz	902.3	14.615	28.94	15	16
500KHz	909.4	12.024	15.94	12	13

Mode	Max Output power to antenna (dBm)	Max Output power to antenna (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
125KHz	16	39.811	0.01255	0.61	PASS
500KHz	13	19.953	0.00629	0.61	PASS

Remark: antenna gain=2.00dBi

Conclusion:

Meets FCC Part 2.1091 requirements

****END OF REPORT****