Shenzhen Most Technology Service Co., Ltd.
East A, 1 floor of New Aolin Factory buiding, Langshan Erlu, North District,
Hi-tech Industry Park, Nanshan,Shenzhen,Guangdong,China

RF Exposure Evaluation Report

Report Reference No..... :	**MTEB25010004-H**
FCC ID..... :	**2A397-HS330R**
Compiled by (position+printed name+signature).. :	File administrators Alisa Luo
Supervised by (position+printed name+signature).. :	Test Engineer Sunny Deng
Approved by (position+printed name+signature).. :	Manager Yvette Zhou
Date of issue..... :	**Jan.02,2025**
Representative Laboratory Name. :	**Shenzhen Most Technology Service Co., Ltd.**
Address..... :	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.
Applicant's name..... :	**QINGDAO HISTONE INTELLIGENT COMMERCIAL SYSTEM CO., LTD.**
Address..... :	Wisdom Valley, No.8 Shengshui Road, Laoshan District, Qingdao City, China
Test specification/ Standard.....**:**	**47 CFR Part 1.1307;47 CFR Part 1.1310** **KDB447498D01 General RF Exposure Guidance v06**
TRF Originator..... :	Shenzhen Most Technology Service Co., Ltd.

Test item description.....:	Self-Checkout Terminal
Trade Mark..... :	HiStone
Model/Type reference..... :	HS330R
Listed Models ..... :	N/A
Modulation Type..... :	b:DSSS; g/n:OFDM GFSK, π/4DQPSK, 8DPSK
Operation Frequency..... :	From 2412MHz~2462MHz 2402MHz to 2480MHz
Hardware Version.....	3288
Software Version.....	HS330R
Rating..... :	100-240VAC，2.5A，50/60Hz
Result..... :	**PASS**

T E S T R E P O R T

Equipment under Test	:	Self-Checkout Terminal
Model /Type	:	HS330R
Listed Models	:	N/A
Remark		N/A
Applicant	:	QINGDAO HISTONE INTELLIGENT COMMERCIAL SYSTEM CO., LTD.
Address	:	Wisdom Valley, No.8 Shengshui Road, Laoshan District, Qingdao City, China
Manufacturer	:	QINGDAO HISTONE INTELLIGENT COMMERCIAL SYSTEM CO., LTD.
Address	:	Wisdom Valley, No.8 Shengshui Road, Laoshan District, Qingdao City, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2025.01.02	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 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.

2.1.2 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

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 Formula
Friis transmission formula: Pd = (Pout*G)/(4* Pi * R 2) Where
Pd = power density in mW/cm2
Pout = 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
Pd id 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.

2.1.3 EUT RF Exposure

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402 MHz)	7.212	7.212±1	8.212
Middle(2440MHz)	7.792	7.792±1	8.792
Highest(2480MHz)	8.227	8.227±1	9.227

BLE

Worst case: GFSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2480MHz)	9.227	8.37	4.23	0.0044	1.0	Pass

Note: 1) Refer to report MTEB25010004-R1 for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(8.37*2.65)/(4*3.1416*20^2)=0.0044

WIFI 2.4G

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	16.50	16.50±1	17.5
Middle(2437MHz)	16.57	16.57±1	17.57
Highest(2462MHz)	16.10	16.10±1	17.1

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	14.67	14.67±1	15.67
Middle(2437MHz)	14.66	14.66±1	15.66
Highest(2462MHz)	14.48	14.48±1	15.48

802.11n(H20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	13.23	13.23±1	14.23
Middle(2437MHz)	13.24	13.24±1	14.24
Highest(2462MHz)	12.94	12.94±1	13.94

WIFI 2.4G

Worst case: 802.11b						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Middle(2437MHz)	17.57	57.15	4.23	0.0301	1.0	Pass

Note: 1) Refer to report MTEB25010004-R2 for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(57.15*2.65)/(4*3.1416*20^2)=0.0301

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	4.670	4.670±1	5.67
Middle(2441MHz)	4.150	4.150±1	5.15
Highest(2480MHz)	3.542	3.542±1	4.542

π /4DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	5.505	5.505±1	6.505
Middle(2441MHz)	4.994	4.994±1	5.994
Highest(2480MHz)	4.376	4.376±1	5.376

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	5.840	5.840±1	6.84
Middle(2441MHz)	5.385	5.385±1	6.385
Highest(2480MHz)	4.764	4.764±1	5.764

Worst case: 8DPSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Lowest(2402MHz)	6.84	4.83	4.23	0.0025	1.0	Pass

Note: 1) Refer to report MTEB25010004-R for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(4.83*2.65)/(4*3.1416*202)=0.0025
Note: 3)EUT's Bluetooth module is more than 20cm away from the human body.

.....THE END OF REPORT.....