

RF Exposure Evaluation Report

APPLICANT : 70mai Co., Ltd.
EQUIPMENT : 70mai 4G Hardwire Kit
BRAND NAME : 70mai
MODEL NAME : Midrive UP05
FCC ID : 2AOK9-MDUP5
STANDARD : 47 CFR Part 2.1091
FCC KDB 447498 D01 v06

The product evaluation date was started from Jan. 04, 2024 and completed on Jan. 04, 2024. We, Sporton International Inc. (Kunshan), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.



Approved by: Si Zhang

Sporton International Inc. (Kunshan)

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People's Republic of China



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA3N2317	Rev. 01	Initial issue of report.	Jan. 09, 2024



1. Administration Data

1.1. Testing Laboratory

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR01-KS	CN1257	314309

Applicant	
Company Name	70mai Co.,Ltd.
Address	Room 2220, building 2, No. 588, Zixing road, MinHang District, Shanghai.CHINA

Manufacturer	
Company Name	70mai Co.,Ltd.
Address	Room 2220, building 2, No. 588, Zixing road, MinHang District, Shanghai.CHINA

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	70mai 4G Hardwire Kit
Brand Name	70mai
Model Name	Midrive UP05
FCC ID	2AOK9-MDUP5
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz
Mode	RMC/AMR 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM
Antenna Gain	WCDMA Band II: 3.61 dBi WCDMA Band IV: 3.5 dBi WCDMA Band V: 1.81 dBi LTE Band 2 : 3.61 dBi LTE Band 4 : 3.5 dBi LTE Band 5 : 1.81 dBi LTE Band 12 : 1.96 dBi LTE Band 13 : 1.88 dBi LTE Band 14 : 1.88 dBi LTE Band 66: 3.5 dBi LTE Band 71: 1.13 dBi
Antenna Type	Monopole Antenna
HW Version	LGDM0009
SW Version	1.0.6
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Comments and Explanations:

1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.
2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

**3. Maximum RF average output tune up power among production units****<WCDMA>**

Mode		Maximum Average power(dBm)
WCDMA	Band II	25.0
	Band IV	25.0
	Band II	25.0

<LTE>

Mode		Maximum Average power(dBm)
LTE	Band 2	25.0
	Band 4	25.0
	Band 5	25.0
	Band 12	25.0
	Band 13	25.0
	Band 14	25.0
	Band 66	25.0
	Band 71	25.0

4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
WCDMA Band 2	1852.4	3.61	25.00	28.610	726.106	0.145	1.000
WCDMA Band 4	1712.4	3.50	25.00	28.500	707.946	0.141	1.000
WCDMA Band 5	826.4	1.81	25.00	26.810	479.733	0.095	0.551
LTE Band 2	1850.7	3.61	25.00	28.610	726.106	0.145	1.000
LTE Band 4	1710.7	3.50	25.00	28.500	707.946	0.141	1.000
LTE Band 5	824.7	1.81	25.00	26.810	479.733	0.095	0.550
LTE Band 12	699.7	1.96	25.00	26.960	496.592	0.099	0.466
LTE Band 13	779.5	1.88	25.00	26.880	487.528	0.097	0.520
LTE Band 14	790.5	1.88	25.00	26.880	487.528	0.097	0.527
LTE Band 66	1710.7	3.50	25.00	28.500	707.946	0.141	1.000
LTE Band 71	665.5	1.13	25.00	26.130	410.204	0.082	0.444

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----