FCC TEST REPORT

FCC ID: 2BFG4-M51HV

Product	:	MDVR
Model Name	:	M51HV.TGWE-A-A
Additional models	:	M15Hv.SGNE-A, M16Hv.DGWE1-A, M20Cv.DGWE-A, M32Hv.TGWE1-A, M51Hv.DGWE1-A, M52Hv.DGWE1-A, M71Hv.SGWE-A, M91Hv.DGWE-A, M16Hv.DGWE2-A, M20Cv.DGWE-A-A, M32Hv.TGWE2-A, M51Hv.DGWE2-A, M52Hv.DGWE2-A, M16Hv.DGNE1-A-A, M18Ev.DGWE-A, M32Hv.TGWE1-A-A, M51Hv.DGWE1-A-A, M52Hv.DGWE1-A-A, M16Hv.DGWE1-A-A, M18Ev.DGWE-A-A, M32Hv.TGWE2-A-A, M51Hv.DGWE2-A-A, M52Hv.DGWE2-A-A, 20Ev.SGWC-A, 18Ev.SGWC-A
Brand	:	CITOPS
Report No.	:	PTC24022912301E-FC04

Prepared for

Shenzhen Citops Systems Co., Ltd.

11/F. Block A. Delux Sci-Tech Park,No.5 Guanle Road, Longhua New District, Shenzhen, China

Prepared by

Precise Testing & Certification Co., Ltd.

Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

TEST RESULT CERTIFICATION

Applicant's name	:	Shenzhen Citops Systems Co., Ltd.
Address	:	11/F. Block A. Delux Sci-Tech Park,No.5 Guanle Road, Longhua New District, Shenzhen, China
Manufacture's name	:	Shenzhen Citops Systems Co., Ltd.
Address	:	11/F. Block A. Delux Sci-Tech Park,No.5 Guanle Road, Longhua New District, Shenzhen, China
Product name	:	MDVR
Model name	:	M51HV.TGWE-A-A, M15Hv.SGNE-A, M16Hv.DGWE1-A, M20Cv.DGWE-A, M32Hv.TGWE1-A, M51Hv.DGWE1-A, M52Hv.DGWE1-A, M71Hv.SGWE-A, M91Hv.DGWE-A, M16Hv.DGWE2-A, M20Cv.DGWE-A-A, M32Hv.TGWE2-A, M51Hv.DGWE2-A, M52Hv.DGWE2-A, M16Hv.DGNE1-A-A, M18Ev.DGWE-A, M32Hv.TGWE1-A-A, M51Hv.DGWE1-A-A, M52Hv.DGWE1-A-A, M16Hv.DGWE1-A-A, M18Ev.DGWE-A-A, M32Hv.TGWE2-A-A, M51Hv.DGWE2-A-A, M52Hv.DGWE2-A-A, 20Ev.SGWC-A, 18Ev.SGWC-A
Test procedure	:	FCC CFR47 Part 1.1307(b)(1)
Test Date	:	Mar. 07, 2024 to Apr. 01, 2024
Date of Issue	:	Jun. 07, 2024
Test Result	:	PASS

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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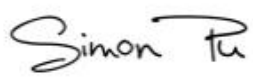
Test Engineer:

Jack zhou / Engineer

Technical Manager:



Simon Pu / Manager

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2 Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	15.247 (i)	PASS
Remark:		
N/A: Not Applicable		

3 General Information

3.1 General Description of E.U.T.

Product Name	:	MDVR
Model Name	:	M51HV.TGWE-A-A
Additional model	:	M16Hv.DGWE1-A,M20Cv.DGWE-A,M32Hv.TGWE1-A,M51Hv.DGWE1-A, M52Hv.DGWE1-A,M71Hv.SGWE-A,M91Hv.DGWE-A,M15Hv.SGNE-A, M16Hv.DGWE2-A,M20Cv.DGWE-A-A,M32Hv.TGWE2-A,M51Hv.DGWE2-A, M52Hv.DGWE2-A,M16Hv.DGNE1-A-A,M18Ev.DGWE-A,M32Hv.TGWE1-A-A, M51Hv.DGWE1-A-A,M52Hv.DGWE1-A-A,M16Hv.DGWE1-A-A, M18Ev.DGWE-A-A,M32Hv.TGWE2-A-A,M51Hv.DGWE2-A-A, M52Hv.DGWE2-A-A, 20Ev.SGWC-A, 18Ev.SGWC-A
Specification	:	802.11b/g/n HT20/HT40 802.11n HT20/HT40 WCADM band II WCADM band IV WCADM band V E-UTRA Band 2 E-UTRA Band 4 E-UTRA Band 5 E-UTRA Band 12
Operation Frequency	:	2412-2462MHz for 802.11b/g/ n(HT20) 2422-2452MHz for 802.11 n(HT40) WCADM band II: 1852.4 MHz -1907.6 MHz WCADM band IV: 1712.4 MHz -1752.6 MHz WCADM band V: 826.4 MHz - 846.6 MHz E-UTRA Band 2: Tx:1850 MHZ-1910 MHz;Rx:1930 MHz-1990 MHZ E-UTRA Band 4: Tx:1710 MHz-1755 MHz;Rx:2110 MHz-2155 MHZ E-UTRA Band 5: Tx: 824 MHz-849 MHz;Rx:869 MHz-894 MHZ E-UTRA Band 12: Tx:699MHz-716 MHz;Rx:729 MHz-746 MHz
Number of Channel	:	11 channels for 802.11b/g/ n(HT20) 7 channels for 802.11n(HT40)
Type of Modulation	:	GFSK, Π/4-DQPSK,8DPSK For DSS GFSK, For DTS DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n; 1QPSK 116QAM 164QAM(Downlink Only)(LTE)
Antenna installation	:	External Antenna
Antenna Gain	:	2.4GWiFi:1.82 dBi WCADM band II:-3.46 dBi WCADM band IV:-0.35 dBi WCADM band V:-1.19 dBi E-UTRA Band 2: -3.46 dBi E-UTRA Band 4: -0.35 dBi E-UTRA Band 5: -1.19 dBi E-UTRA Band 12: 0.90 dBi

Power supply	:	Input: 12V/24V 50/60HZ, 20W Output: 12V 12W
Hardware Version	:	V1.2
Software Version	:	13.2

4 RF Exposure

Test Requirement : 15.247 (i)

Evaluation Method : FCC Part 2.1091

4.1 Requirements

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

4.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	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

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

4.3 MPE Calculation Method

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: Pd (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

4.4 Test Result

Item	Test Frequency(MHz)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Tune up tolerance (dBm)	Max Tune Up Power (mW)	Power Density (mW/cm^2)	Limit of Power Density (mW/cm^2)	Result
Wi-Fi	2412	1.52	19.48	19.48±1	111.686325	0.033785	1	Pass
WCADM band II	1907.6	0.45	23.37	23.37±1	273.526873	0.024532	1	Pass
WCADM band IV	1732.6	0.92	23.22	23.22±1	264.240876	0.048499	1	Pass
WCADM band V	846.6	0.76	24.00	24.00±1	242.661010	0.036705	0.5644	Pass
E-UTRA Band 2	1909.3	0.45	22.77	22.77±1	238.231947	0.021366	1	Pass
E-UTRA Band 4	1745	0.92	23.02	23.02±1	252.348077	0.046316	1	Pass
E-UTRA Band 5	824.7	0.76	23.38	23.38±1	217.770977	0.032940	0.5498	Pass
E-UTRA Band 12	699.7	1.23	24.05	24.05±1	254.097271	0.062191	0.4665	Pass

Note:1. Output power (Peak) including turn-up tolerance;

2. MPE evaluate distance is 20cm from user manual provide by manufacturer.

5 simultaneous MPE Result

2.4GWi-Fi MPE ratio	E-UTRA Band 12 MPE ratio	simultaneous MPE ratio	MPE Limits ratio	Test result
0.049743	0.133314	0.183057	1	PASS

Note: The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

******THE END REPORT******