

FCC Test Report

Report No.: AGC02762230802FE01

FCC ID : 2AL26-KS4-US

APPLICATION PURPOSE: Original Equipment

PRODUCT DESIGNATION: Body Worn Camera

BRAND NAME : Reveal Media

MODEL NAME : KS4

APPLICANT : Reveal Media Limited

DATE OF ISSUE : Dec. 20, 2023

STANDARD(S) : FCC Part 15 Subpart B

REPORT VERSION: V1.0

Attestation of Global Chicago (Shenzhen) Co., Ltd



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 20, 2023	Valid	Initial Release

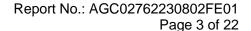




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1. General Information

Applicant	Reveal Media Limited	
Address	Riverview House, 20 Old Bridge Street, Hampton Wick, KT1 4BU, United Kingdom	
Manufacturer	Reveal Media Hong Kong Ltd.	
Address	6/F., Luk Kwok Centre, 72 Gloucester Road, Wan Chai, HongKong	
Factory	Reveal Media Hong Kong Ltd.	
Address	6/F., Luk Kwok Centre, 72 Gloucester Road, Wan Chai, HongKong	
Product Designation	Body Worn Camera	
Brand Name	Reveal Media	
Test Model	KS4	
Date of receipt of test item	Aug. 03, 2023	
Date of Test	Aug. 03, 2023~ Dec. 20, 2023	
Deviation from Standard	No any deviation from the test method	
Condition of Test Sample	Normal	
Test Result	Pass	
Test Report Form No	AGCTR-ER-FCC-SDOC V1.0	

Prepared By	Bibo Zhang	
	Bibo Zhang (Project Engineer)	Dec. 20, 2023
Reviewed By	Calin Lin	
,	Calvin Liu (Reviewer)	Dec. 20, 2023
Approved By	Max Zhang	
_	Max Zhang Authorized Officer	Dec. 20, 2023



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2. Product Information

2.1 Product Technical Description

Housing Type	Plastic and metal
Highest Operating Frequency	Greater than 108MHz
Equipment Type	Table-Top
Hardware Version	EP-VRM05RFB-02
Software Version	V1.0
Power Supply	DC 3.8V 1000mAh by battery

I/O Port Information (⊠Applicable ☐Not Applicable)

I/O Port of EUT			
I/O Port Type	Q'TY	Cable	Tested with
USB-C Port	1	1.0m unshielded	1
SIM Card Port	1	-	1

2.2 Auxiliary Surrounding Description

The Following Peripheral Devices and Interface Cables Were Connected During The Measurement:

☐ Test Accessories Come From The Laboratory

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	Huawei adapter	HW-200325CP0	huawei	Input: AC 100-240V 50/60Hz, 1.8A Output: DC 5V 2A	1.0m unshielded

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	Battery	ICR011GB	ICON ENERGY SYSTEM (SHENZHEN) CO.,LTD	DC 3.8V 1000mAh	



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2.2 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 15	Radio Frequency Devices
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

2.3 Definition of Device Classification

Unintentional radiator:

A device which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:

A digital device which is marketed for use in commercial or business environment.

Class B Digital Device:

A digital device which is marketed for use by the general public or in a residential environment.

Note:

A manufacturer may also qualify a device intended to be marketed in a commercial, business or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

2.3 Description of Test Modes

No.	Test Mode
1	Data transmission mode (connect computer for data transmitting)



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3. Test Environment

3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



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3.3 Environmental Conditions

	Normal Conditions
Temperature range (℃)	15 - 35
Relative humidity range	20 % - 75 %
Pressure range (kPa)	86 - 106

3.4 Measurement Uncertainty

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

Item	Measurement Uncertainty
Uncertainty of Conducted Emission	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$



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3.5 List of Equipment Used

• R	Radiated Emission										
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)				
\boxtimes	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2023/02/18	2024/02/17				
\boxtimes	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2023/06/03	2024/06/02				
\boxtimes	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023/05/11	2025/05/10				
\boxtimes	AGC-EM-E029	Horn Antenna	ETS	3117	00034609	2023/03/23	2024/03/22				
\boxtimes	AGC-EM-E096	Pre-amplifier	ETS	3117-PA	00246148	2022/08/04	2024/08/03				
\boxtimes	AGC-EM-S003	Test Software	FARA	V.RA-03A	N/A	N/A	N/A				
\boxtimes	AGC-EM-S004	Test Software	Tonscend	4.0.0.0	N/A	N/A	N/A				

• Co	Conducted Emission									
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)			
\boxtimes	AGC-EM-E045	EMI Test Receiver	R&S	ESPI	101206	2023/06/03	2024/06/02			
\boxtimes	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2023/06/03	2024/06/02			
	AGC-EM-S001	Test Software	R&S	ES-K1 (Ver.V1.71)	N/A	N/A	N/A			



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4. Summary Of Test Results

Item	FCC Rules	Description Of Test	Class/Severity	Result
1	Section 15.107	Radiated Emission	Class B	Pass
2	Section 15.109	Conducted Emission	Class B	Pass



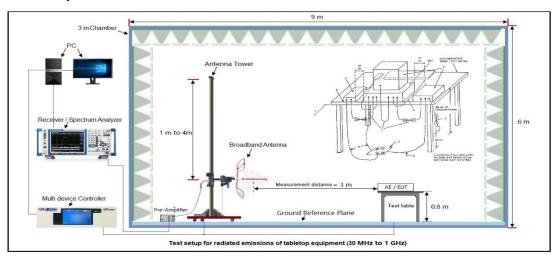
5. Radiated Emission Measurements

5.1 Provisions Applicable

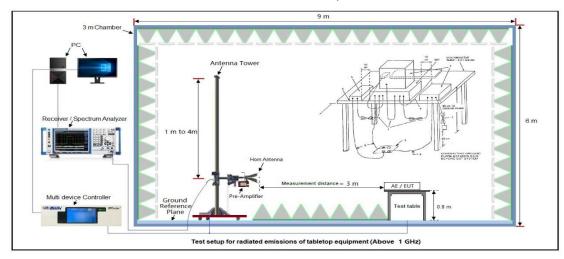
FCC CFR Title 47 Part 15 Subpart B Section 15.109:

Frequency Range	Class B Limit (dBuV/m @3m)	Class A Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	50.00	Quasi-peak
88MHz-216MHz	43.50	53.50	Quasi-peak
216MHz-960MHz	46.00	56.00	Quasi-peak
960MHz-1GHz	54.00	64.00	Quasi-peak
Above 1GHz	54.00	60.00	Average
ADOVE IGHZ	74.00	80.00	Peak

5.2 Measurement Setup



Radiated Emission Measurements Test Setup for 30MHz to 1GHz



Radiated Emission Measurements Test Setup for above 1GHz



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5.3 Measurement Procedure

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.

- 2. Support equipment, if needed, was placed as per ANSI C63.4.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4. The EUT received power by AC 120V/60Hz.
- 5. The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- 6. The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7. The test mode(s) were scanned during the test:
- 8. Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented. For emissions below 1GHz, use 120KHz RBW and VBW>=3RBW for QP reading.
- For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
- 10. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 11. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 12. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 13. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.
- 14. The test data of the worst case condition (mode 1) was reported on the following Data page.



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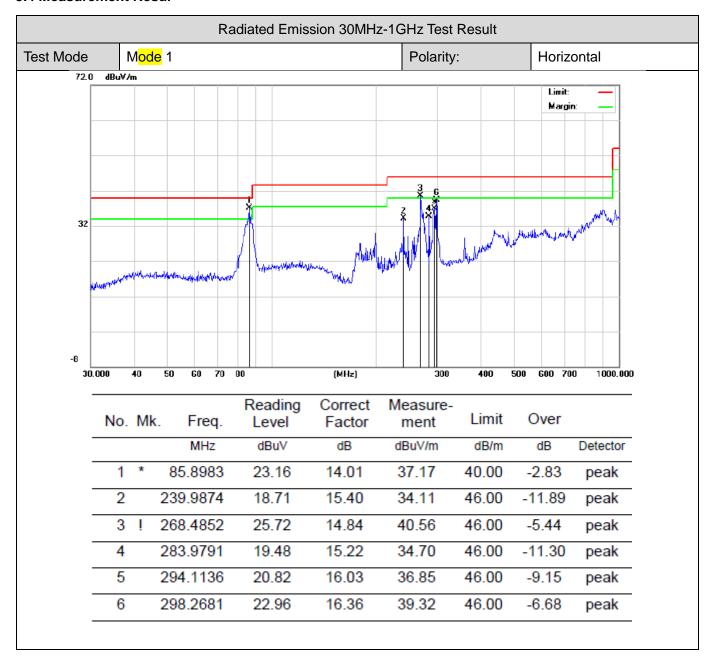
Emi Test Receiver Setup:

During the radiated emission test, the EMI test receiver was set with the following configurations:

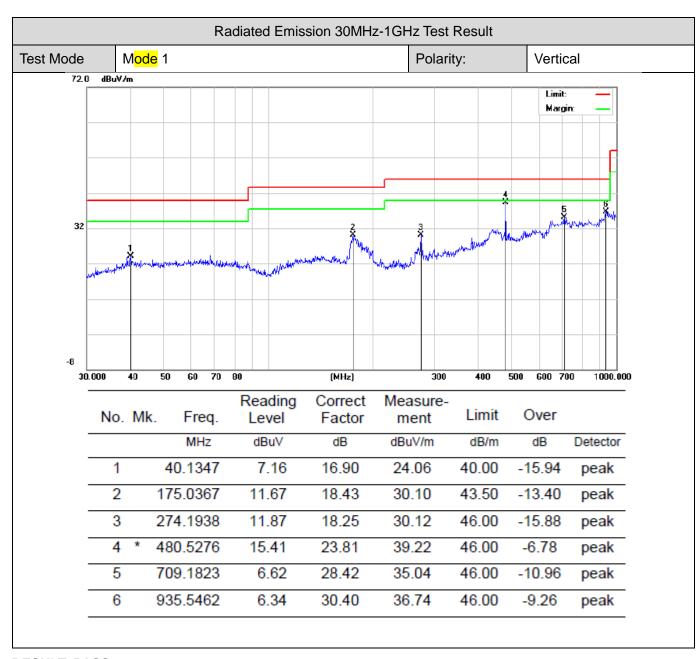
Frequency Range	RBW	Video B/W	IF B/W	Measurment
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
Above I GHZ	1MHz	10 Hz	/	Ave.



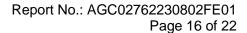
5.4 Measurement Resul



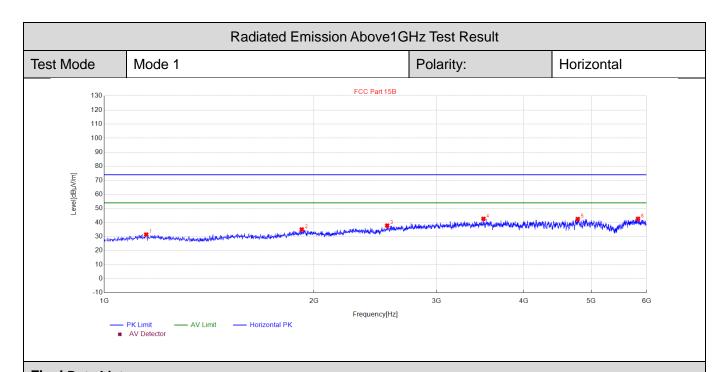




RESULT: PASS

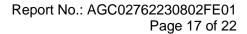




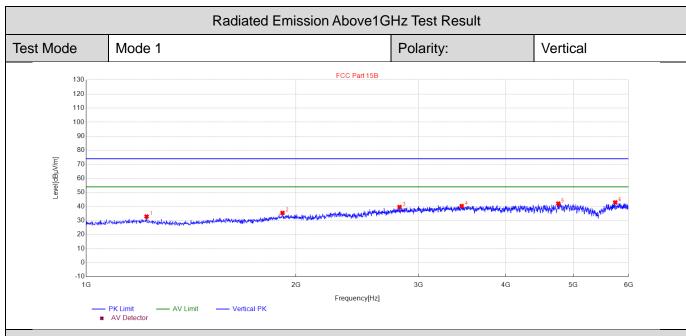


Final	Final Data List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	1149.0298	31.44	-19.87	74.00	42.56	100	80	Horizontal			
2	1921.1842	35.08	-16.64	74.00	38.92	100	90	Horizontal			
3	2547.3095	37.81	-12.94	74.00	36.19	100	130	Horizontal			
4	3501.5003	42.63	-9.70	74.00	31.37	100	170	Horizontal			
5	4780.7562	42.49	-6.84	74.00	31.51	100	40	Horizontal			
6	5833.9668	42.66	-5.45	74.00	31.34	100	30	Horizontal			

RESULT: PASS







Final	Final Data List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	1221.0442	32.86	-19.88	74.00	41.14	100	0	Vertical			
2	1913.1826	35.41	-16.70	74.00	38.59	100	280	Vertical			
3	2816.3633	39.62	-11.92	74.00	34.38	100	90	Vertical			
4	3458.4917	40.32	-9.83	74.00	33.68	100	140	Vertical			
5	4757.7516	42.05	-6.89	74.00	31.95	100	120	Vertical			
6	5742.9486	42.91	-5.76	74.00	31.09	100	240	Vertical			

RESULT: PASS

Note:

- 1. Factor=Antenna Factor + Cable loss Amplifier gain, Margin= Limit-Measurement.
- 2. The "Factor" value can be calculated automatically by software of measurement system.



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6. Conducted Emission Measurements

6.1 PROVISIONS APPLICABLE

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

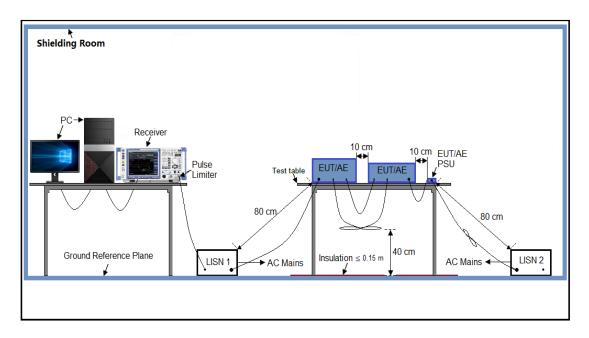
For Class B Limits:

Fraguency	Maximum RF Line Voltage				
Frequency	Q.P. (dBµV)	Average (dBµV)			
150kHz~500kHz	66-56	56-46			
500kHz~5MHz	56	46			
5MHz~30MHz	60	50			

For Class A Limits:

Fraguency	Maximum RF Line Voltage				
Frequency	Q.P. (dBµV)	Average (dBµV)			
150kHz~500kHz	79	66			
500kHz~30MHz	73	60			

6.2 MEASUREMENT SETUP





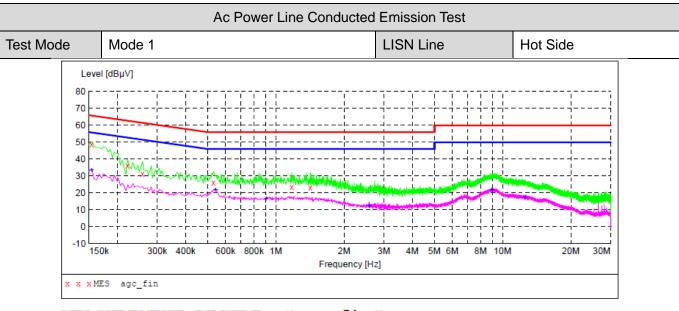
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6.3 MEASUREMENT PROCEDURE

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.4.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4. The EUT received AC 120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5. All support equipments received AC power from a second LISN, if any.
- 6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.



6.4 Measurement Result



MEASUREMENT RESULT: "agc_fin"

2023/9/11 18	:46					
Frequency MHz				Margin dB	Detector	Line
0.154000	48.50	6.1	66	17.3	QP	L1
0.222000	36.10	6.1	63	26.6	QP	L1
0.258000	31.20	6.1	62	30.3	QP	L1
0.530000	26.10	6.2	56	29.9	QP	L1
1.174000	23.70	6.2	56	32.3	QP	L1
1.418000	23.30	6.2	56	32.7	OP	T.1

MEASUREMENT RESULT: "agc fin2"

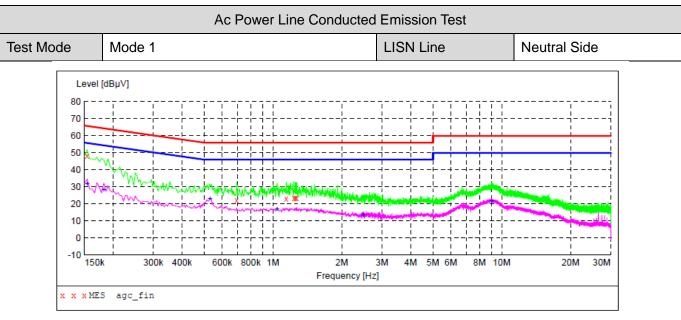
2023/9	/11 18:4	6					
Fre	quency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0	154000	33.30	6.1	56	22.5	7.57	L1
	542000	21.70	6.2	46	24.3		L1
	906000	16.70	6.2	46	29.3		L1
	574000	12.30	6.3	46	33.7		L1
	946000	21.60	6.6	50		AV	L1
	546000	17.60	6.8	50	32.4	AV	L1

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/





MEASUREMENT RESULT: "agc fin"

$\circ \circ \circ \circ$	10111	4 0	4 0
2023/	4/11	18:	7 U

2023/3/1	10.	40					
Frequ	nency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.15	54000	48.30	6.1	66	17.5	QP	N
0.69	94000	22.40	6.2	56	33.6	QP	N
1.14	12000	23.30	6.2	56	32.7	QP	N
1.23	34000	23.50	6.2	56	32.5	QP	N
1.25	4000	23.60	6.2	56	32.4	QP	N
1.27	70000	23.40	6.2	56	32.6	QP	N

MEASUREMENT RESULT: "agc_fin2"

2023/9/11 18:49

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.154000	32.00	6.1	56	23.8	AV	N
0.182000	28.40	6.1	54	26.0	AV	N
0.530000	22.90	6.2	46	23.1	AV	N
1.042000	16.90	6.2	46	29.1	AV	N
2.478000	13.40	6.3	46	32.6	AV	N
9.030000	21.90	6.6	50	28.1	AV	N

RESULT: PASS

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Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/



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Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC02762230802AP03

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC02762230802AP04

----END OF REPORT----



Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.