

TEST REPORT

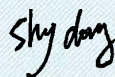
Report No..... : KS2306S3130E05
FCC ID..... : 2A639-P1000-R
Applicant..... : AUO Display Plus Corporation
Address..... : No. 1, Gongye E. 3rd Rd., East Dist., Hsinchu Science Park, Hsinchu City, Taiwan
Manufacturer..... : AUO Display Plus Corporation
Address..... : No. 1, Gongye E. 3rd Rd., East Dist., Hsinchu Science Park, Hsinchu City, Taiwan
Product Name..... : Panel PC
Model/Type reference..... : PA1000-R, PA1000-X(X is A-Z)
Standard..... : 47 CFR Part 15C
Date of Receipt..... : June 14, 2023
Date of Test Date..... : June 14, 2023 to February 1, 2024
Date of issue..... : February 19, 2024
Test result..... : Pass

Conclusion..... : When determining of test conclusion, measurement uncertainty of tests have been considered.

Prepared by:
(Printed name + Signature) Pai Zheng



Approved by:
(Printed name + Signature) Tom Chen



Testing Laboratory Name.... : KSIGN(Guangdong) Testing Co., Ltd.

Address..... : West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

47 CFR Part 15C: Radiated emission limits; general requirements

ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.2. Report Version

Revised No.	Date of issue	Description
01	February 19, 2024	Original

1.3. Test Description

Test Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15C	47 CFR Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15C	47 CFR Part 15.207(a)	Pass
Emissions in frequency bands (below 30MHz)	47 CFR Part 15C	47 CFR Part 15.209	Pass
Emissions in frequency bands (30MHz - 1GHz)	47 CFR Part 15C	47 CFR Part 15.209	Pass

1.4. Test Facility

KSIGN(Guangdong) Testing Co., Ltd.

West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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

CNAS-Lab Code: L13261

KSIGN(Guangdong) Testing 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.: 5457.01

KSIGN(Guangdong) Testing 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

ISED#: 25693 CAB identifier.: CN0096

KSIGN(Guangdong) Testing Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

FCC-Registration No.: 294912 Designation Number: CN1328

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

1.5. Measurement Uncertainty

Test Items	Measurement Uncertainty
Conducted Emission (150k-30MHz)	$\pm 3.34\text{dB}$
RSE (30-1000MHz)	$\pm 5.7\text{dB}$

The reported uncertainty of measurement $y \pm U$, 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 %.

2. GENERAL INFORMATION

2.1. General Description Of EUT

Test Sample Number:	1-1(Normal Sample), 1-2(Engineering Sample)
Product Name:	Panel PC
Model / Type reference:	PA1000-R, PA1000-X(X is A-Z)
Model Difference:	The difference product models are model names and software APP. Different model names are available to meet market demands. Other power supply methods, appearance, internal structures, circuits and key components are the same, and do not affect safety and electromagnetic compatibility performance.
Power Supply:	DC 12V from adapter/POE
Operation Frequency:	125KHz
Number of Channels:	1
Modulation Type:	ASK
Antenna Type:	Coil
Antenna Gain:	0dBi
Hardware Version:	YKT-MP-M-C-V230
Software Version:	V7.3

Note:Antenna gain provided by the applicant Can affect the validity of results

2.2. Accessory Equipment Information

The EUT was tested as an independent device.

2.3. Description of Test Modes

No.	Title	Description of Mode
Test Mode1	HID	keep EUT in HID mode

2.4. Operation channel list

Channel	Frequency (MHz)
01	0.125

2.5. Measurement Instruments List

Conducted Emission at AC power line				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
LISN	R&S	ENV432	1326.6105.02	2025-01-19
EMI Test Receiver	R&S	ESR	102524	2025-01-19
Manual RF Switch	JS TOYO	/	MSW-01/002	2025-01-19
ISN CAT6	Schwarzbeck	CAT5 8158	227	2025-01-19
Color Signal Generator	Philips	PM5418	672926	2025-01-19
Power Absorbing Clamp	R&S	MDS-21	100925	2025-01-19

Emissions in frequency bands (below 30MHz)				
Emissions in frequency bands (30MHz - 1GHz)				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Color Signal Generator	Philips	PM5418	672926	2025-01-19
Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	1230	2025-02-18
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2025-01-19
Broadcast Television Signal Generator	R&S	SFE100	141038	2025-01-19
Analog Signal Generator	Agilent	8648A	3847M00445	2025-01-19
EMI Test Receiver	R&S	ESR	102525	2025-01-19
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2025-01-19
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2026-02-19
Pre-Amplifier	EMCI	EMC051835SE	980662	2025-01-19
Spectrum Analyzer	Keysight	N9020A	MY46471971	2025-01-19

TRF RF_R1

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3. Evaluation Results (Evaluation)

3.1. Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
Conclusion:	The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.

4. Radio Spectrum Matter Test Results (RF)

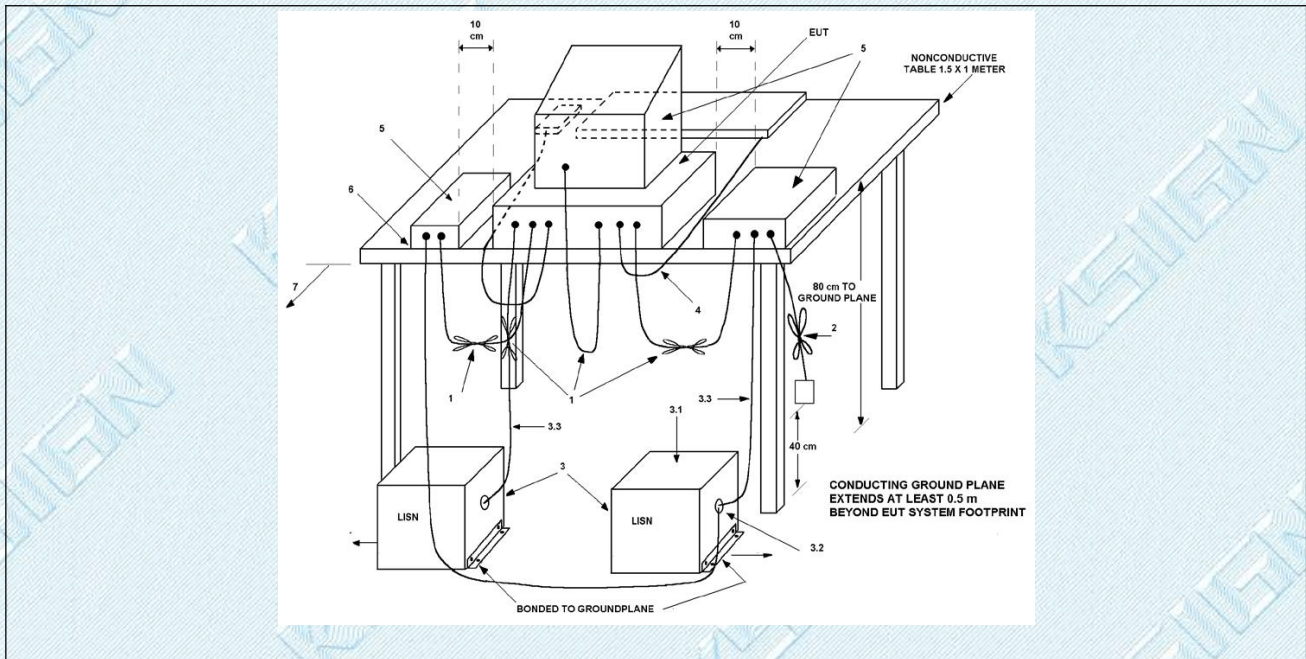
4.1. Conducted Emission at AC power line

Test Requirement:	Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.10-2013 section 6.2		
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

4.1.1. E.U.T. Operation:

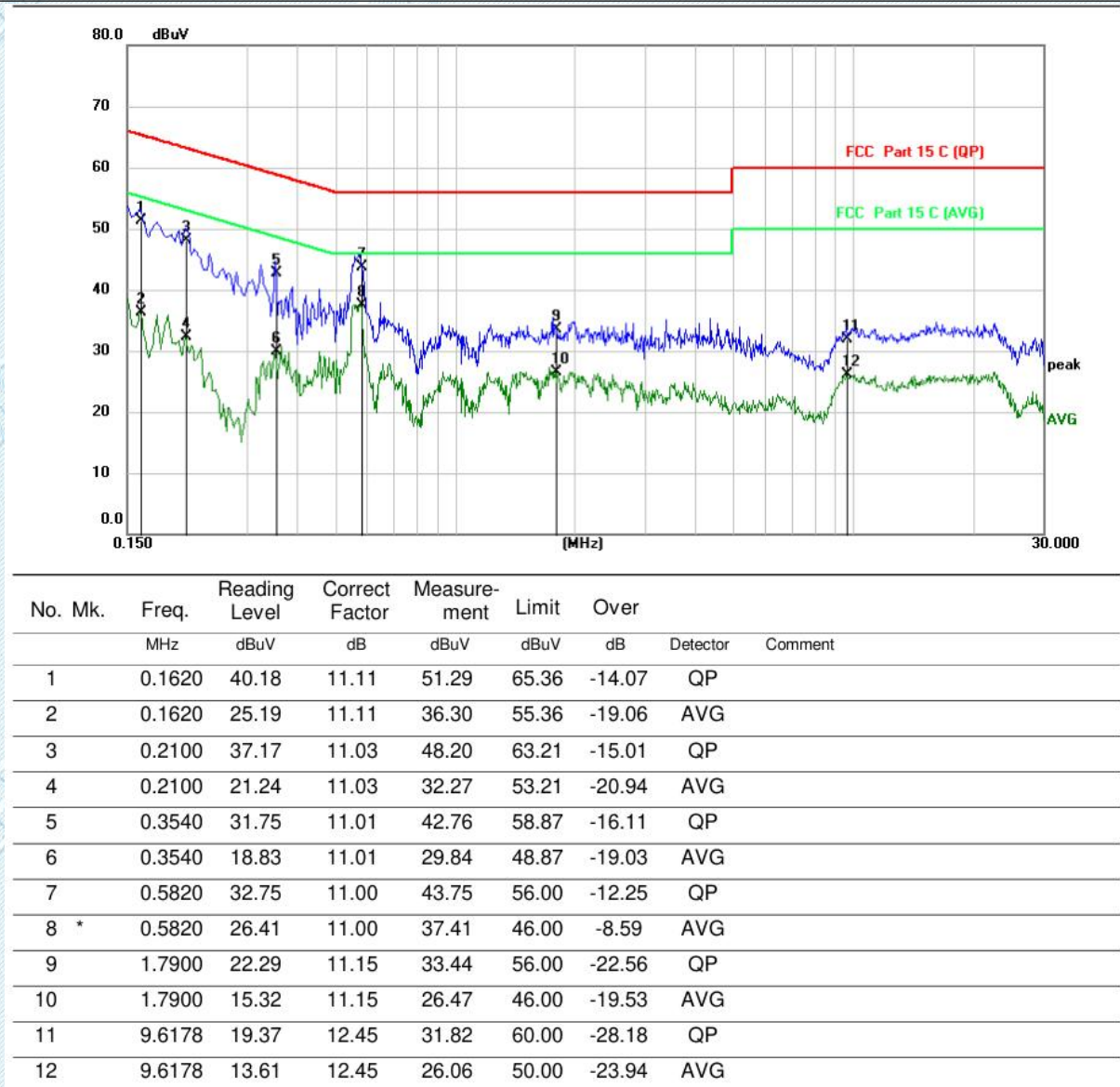
Operating Environment:	
Temperature:	24.3 °C
Humidity:	47.8 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode 1

4.1.2. Test Setup Diagram:



4.1.3. Test Data:

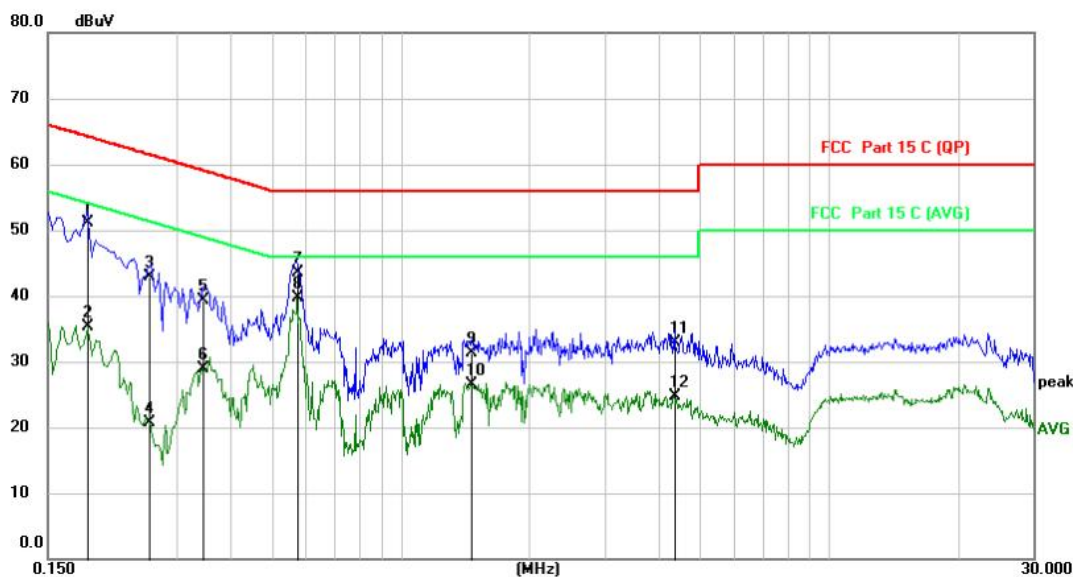
Test Mode1 / Line: Line



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Test Mode1 / Line: Neutral


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1860	40.03	11.06	51.09	64.21	-13.12	QP	
2	0.1860	24.19	11.06	35.25	54.21	-18.96	AVG	
3	0.2587	31.92	11.03	42.95	61.47	-18.52	QP	
4	0.2587	9.67	11.03	20.70	51.47	-30.77	AVG	
5	0.3460	28.38	10.99	39.37	59.06	-19.69	QP	
6	0.3460	17.91	10.99	28.90	49.06	-20.16	AVG	
7	0.5740	32.58	11.01	43.59	56.00	-12.41	QP	
8 *	0.5740	28.65	11.01	39.66	46.00	-6.34	AVG	
9	1.4580	20.20	11.12	31.32	56.00	-24.68	QP	
10	1.4580	15.48	11.12	26.60	46.00	-19.40	AVG	
11	4.3578	21.39	11.46	32.85	56.00	-23.15	QP	
12	4.3578	13.30	11.46	24.76	46.00	-21.24	AVG	

Remark:

1.Both 120 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below.

2.Measurement = Reading Level+ Correct Factor

3.Over = Measurement -Limit

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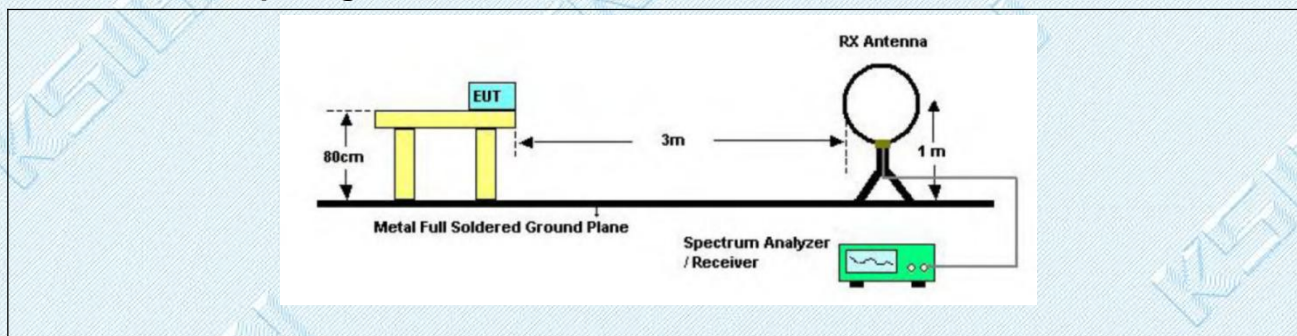
4.2. Emissions in frequency bands (below 30MHz)

Test Requirement:	47 CFR Part 15.209		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.			
Test Method:	ANSI C63.10-2013 section 6.4		
Procedure:	ANSI C63.10-2013 section 6.4		

4.2.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.3 °C
Humidity:	47.8 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.2.2. Test Setup Diagram:



4.2.3. Test Data:

Test Mode1 / Polarization: Horizontal

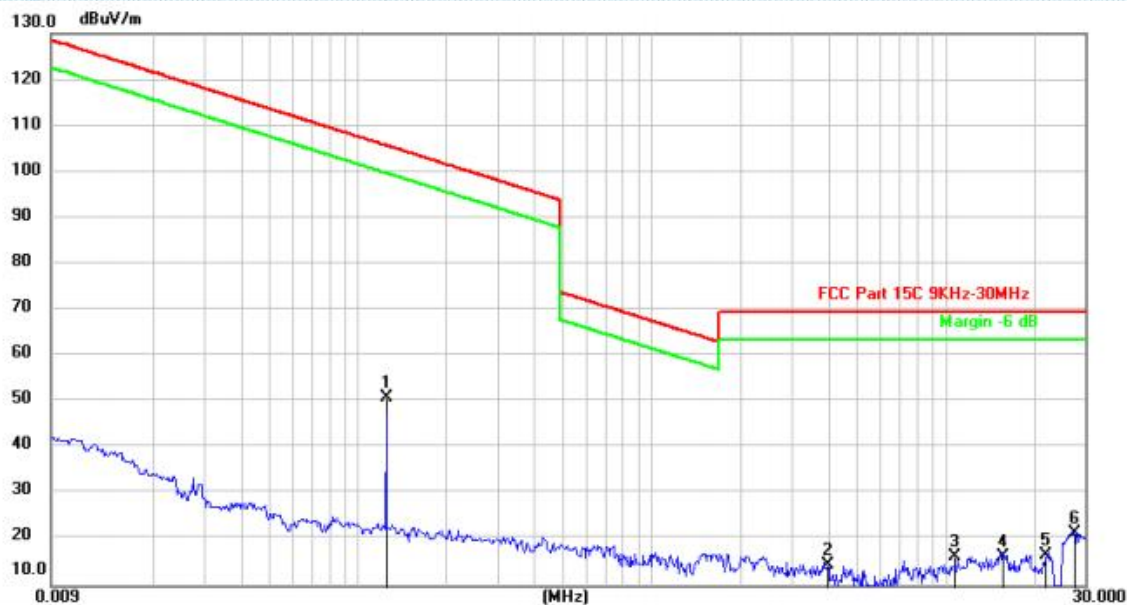


No. Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1	0.1246	80.45	-29.27	51.18	105.69	-54.51	peak
2	4.1009	48.28	-30.58	17.70	69.54	-51.84	peak
3	9.8974	46.60	-29.33	17.27	69.54	-52.27	peak
4	14.3211	47.86	-29.34	18.52	69.54	-51.02	peak
5	19.9681	48.61	-29.40	19.21	69.54	-50.33	peak
6 *	26.1296	41.22	-18.69	22.53	69.54	-47.01	peak

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Test Mode1 / Polarization: Vertical


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1246	80.10	-29.27	50.83	105.69	-54.86	peak
2		3.9693	45.31	-30.54	14.77	69.54	-54.77	peak
3		10.7797	45.78	-29.31	16.47	69.54	-53.07	peak
4		15.7029	45.75	-29.36	16.39	69.54	-53.15	peak
5		21.9093	46.27	-29.40	16.87	69.54	-52.67	peak
6	*	27.6100	40.10	-18.54	21.56	69.54	-47.98	peak

Note:

1. Measurement = Reading level + Correct Factor
2. Correct Factor = Antenna Factor + Cable Loss - Preamplifier Factor

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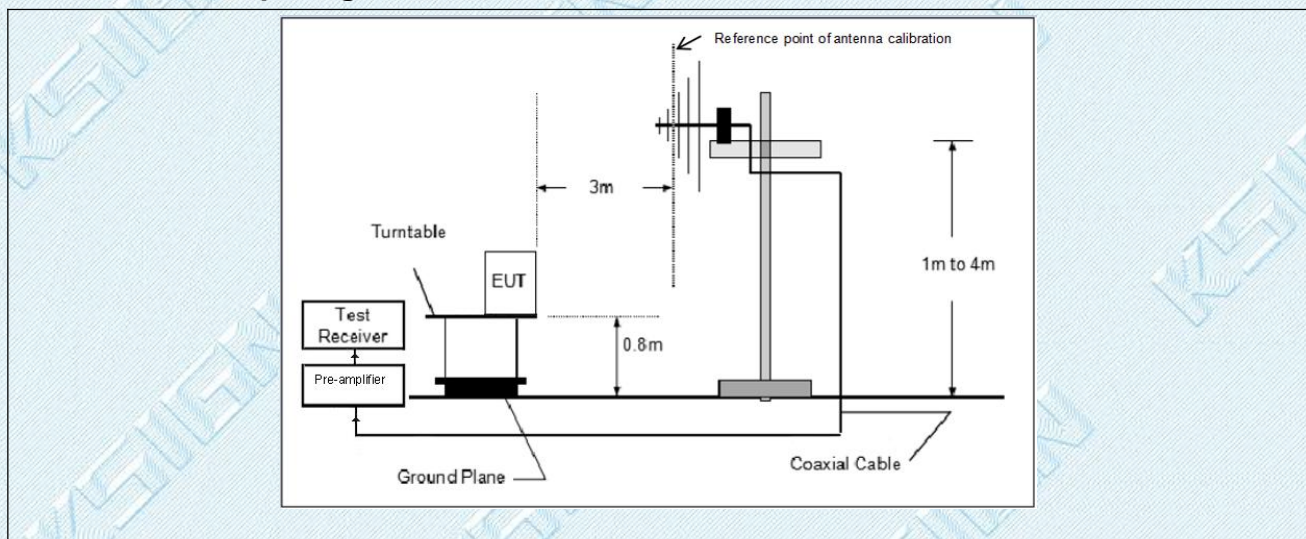
4.3. Emissions in frequency bands (30MHz - 1GHz)

Test Requirement:	47 CFR Part 15.209		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.			
Test Method:	ANSI C63.10-2013 section 6.5		
Procedure:	ANSI C63.10-2013 section 6.5		

4.3.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.3 °C
Humidity:	47.8 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.3.2. Test Setup Diagram:



4.3.3. Test Data:

Test Mode1 / Polarization: Horizontal

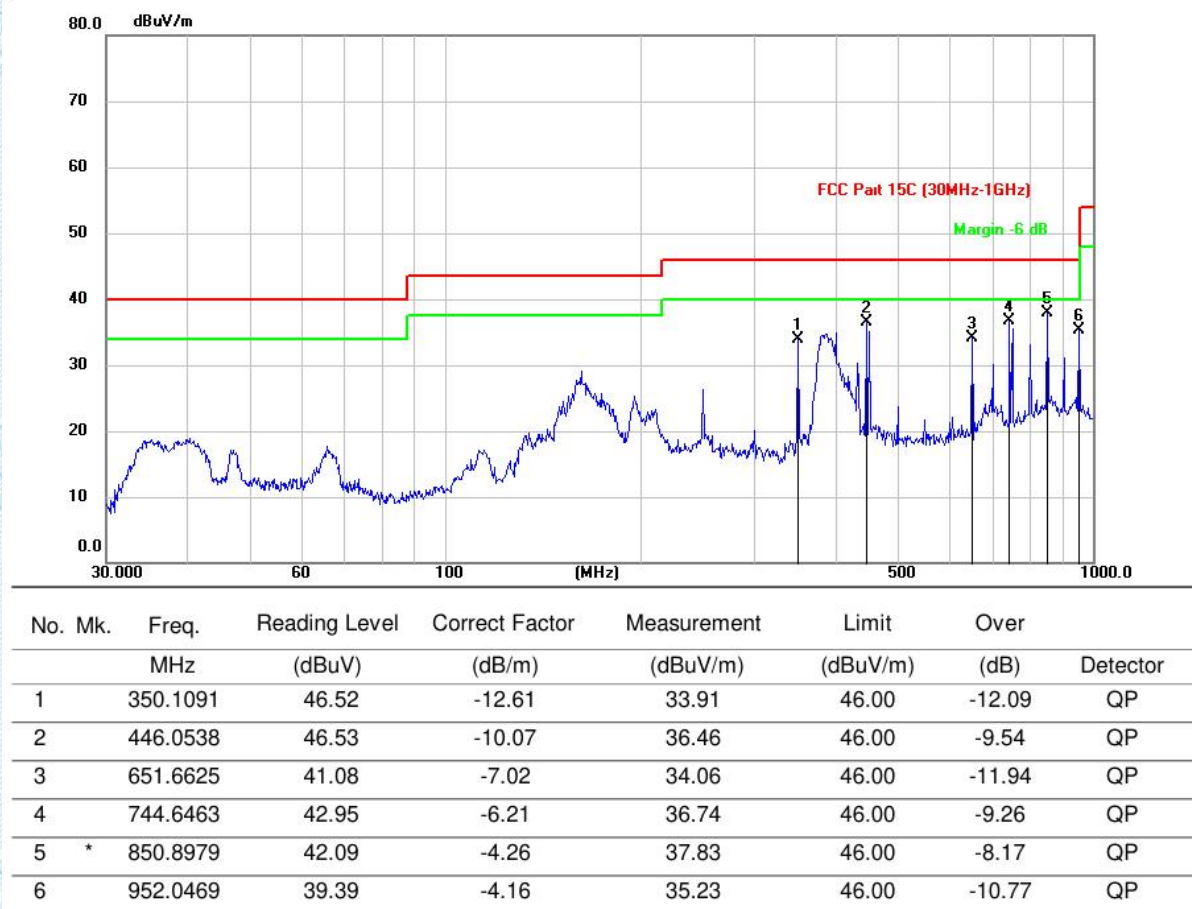


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1	*	34.6507	50.92	-17.74	33.18	40.00	-6.82	QP
2		450.7755	42.80	-10.04	32.76	46.00	-13.24	QP
3		550.6191	38.94	-9.30	29.64	46.00	-16.36	QP
4		651.6625	41.53	-7.02	34.51	46.00	-11.49	QP
5		752.5290	41.67	-6.12	35.55	46.00	-10.45	QP
6		952.0469	37.74	-4.16	33.58	46.00	-12.42	QP

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Test Mode1 / Polarization: Vertical


Note:

1. Measurement = Reading level + Correct Factor

2. Correct Factor = Antenna Factor + Cable Loss - Preamplifier Factor

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5. EUT TEST PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 30MHz)



Emissions in frequency bands (30MHz - 1GHz)

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6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Refer to Appendix - EUT Photos for KS2306S3130E.

--THE END--

Important Notice

1.	The results are valid only for the samples submitted.
2.	The report is invalid without the "APPROVED" and the "seal for riding".
3.	The test report is invalid without the signatures of Approver, Reviewer and Testing engineer.
4.	The test report can not be partially copied unless prior written approval is issued from our lab.
5.	If the report is not stamped with the CMA seal, it indicates that the report does not have the role of proof for society.
6.	Product information, customer information and sample sources are provided by the client, and we are not responsible for their authenticity;
7.	The test basis or test items marked ★ are not within the scope of CNAS accreditation and CMA accreditation of our laboratory.
8.	The report is invalid when anything of following happens – illegal transfer, reproduce, embezzlement, imposture, modification or tampering in any media form.
9.	If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of.
10.	For cases where compliance is determined based on test values, when relevant specifications, standards, documents, and customers have no relevant requirements and no other special instructions, the test report issued by this laboratory is carried out in full value and adopts ILAC-G8:09 /2019 "Simple Acceptance Rule" for judgment.