



Test report No:
22C0154R-RF-US-P06V01

FCC TEST REPORT

Product Name	KEY ASM-DR LK & IGN LK
Trademark	SGMW
Model and /or type reference	WS068E-7000
FCC ID	2AVYXWS068E7000
Applicant's name / address	SAIC GM WULING AUTOMOBILE COMPANY LIMITED 18th,Hexi Road,Liuzhou City, Guangxi Zhuang Autonomous Region, China
Test method requested, standard	CFR 47, FCC Part 15 C ANSI C63.10: 2013
Verdict Summary	IN COMPLIANCE
Testedby (name / position & signature)	Tim Cao/ Project Engineer 
Approved by (name / position & signature)	Jack Zhang/ Manager 
Date of issue	2023-07-19
Report Version	V1.2
Report template No	Template_FCC 15.231-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Dec. 08, 2022
Date (start test)	Dec. 20, 2022
Date (finish test)	Feb. 25, 2023

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
T_x	: Transmitter
R_x	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
22C0154R-RF-US-P06V01	V1.0	Initial issue of report.	2023-05-31
22C0154R-RF-US-P06V01	V1.1	Modify section 4.3.2/4.4.2 test setup diagram, and modify harmonic limits, V1.0 has expired.	2023-07-03
22C0154R-RF-US-P06V01	V1.2	Modify the test data for Page 28&29 and the test limits. V1.1 has expired.	2023-07-19

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with CFR 47, FCC Part 15 C, ANSI C63.10:2013.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1.1 General Description of the Item(s);
 - Chapter 1.2 Antenna Information
 - Chapter 1.3 Channel List.

USED EQUIPMENT

Radiated Emission(30MHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2022.09.17	2023.09.16
Loop Antenna	R&S	HFH2-Z2	833799/003	2022.04.15	2023.04.14
Bilog Antenna	Teseq GmbH	CBL6112D	27613	2022.08.28	2023.08.27
Temperature/Humidity Meter	RTS	RTS-8S	AC3-TH	2022.07.07	2023.07.06
Coaxial Cable	Huber+Suhner	RG 214	AC3-C	2022.03.31	2023.03.30
Dekra test software	Dekra	-	-	-	-

Radiated Emission(1GHz-40GHz) / AC5

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Keysight	N9010A	MY48030494	2022.12.08	2023.12.07
Pre-Amplifier	SKET	LNPA_0118G-45	SK2021090101	2022.07.15	2023.07.14
Preamplifier	CHENGYI	EMC184045SE	980263	2022.05.21	2023.05.20
DRG Horn	ETS-Lindgren	3117	00167055	2022.08.29	2023.08.28
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2022.05.19	2023.05.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2022.04.15	2023.04.14
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2022.07.07	2023.07.06
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2022.03.31	2023.03.30
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2022.03.31	2023.03.30
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2022.03.31	2023.03.30
Dekra test software	Dekra	-	-	-	-

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%. The Uncertainties is comply with standard required as below.

Test item	Uncertainty
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.50 dB 300MHz~1GHz: 3.60 dB Vertical: 30MHz~200MHz: 3.60 dB 300MHz~1GHz: 3.50 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.00 dB Vertical: 1GHz~18GHz: 4.80 dB
Occupied Bandwidth	± 1 kHz
Time	N/A

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name..... :	KEY ASM-DR LK & IGN LK
Model No. :	WS068E-7000
FCC ID :	2AVYXWS068E7000
Software Version..... :	F21103D0
Hardware Version :	F03H00F022
Manufacturer..... :	ZHEJIANG WANCHAO ELECTRIC CO.,LTD
Manufacturer Address..... :	No. 79, Quren Road,Nanpian Industrial Park, Quxi Town, Ouhai District, Wenzhou City, Zhejiang Province,P.R.China
Factory :	ZHEJIANG WANCHAO ELECTRIC CO.,LTD
Factory Address..... :	No. 79, Quren Road,Nanpian Industrial Park, Quxi Town, Ouhai District, Wenzhou City, Zhejiang Province,P.R.China

Wireless specification..... :	N/A
Operating frequency range(s)..... :	433.9MHz
Type of Modulation..... :	FSK
Number of channel..... :	1

Rated power supply	Voltage and Frequency	
	<input type="checkbox"/>	AC: 220 - 240 V, 50/60 Hz
	<input type="checkbox"/>	AC: 100 - 240 V, 50/60 Hz
	<input type="checkbox"/>	DC: 3 Vdc
	<input checked="" type="checkbox"/>	Battery: 3 V
	<input type="checkbox"/>	Adapter:
Brand of adapter	N/A	
Adapter model	N/A	
Mounting position	<input type="checkbox"/>	Table top equipment
	<input type="checkbox"/>	Wall/Ceiling mounted equipment
	<input type="checkbox"/>	Floor standing equipment
	<input type="checkbox"/>	Hand-held equipment
	<input checked="" type="checkbox"/>	Other:Vehicle-Munted quipent

1.2 Antenna Information

Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX		
	<input type="checkbox"/>	2TX + 2RX		
	<input type="checkbox"/>	Others:.....		
Antenna technology.....	<input checked="" type="checkbox"/>	SISO		
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	CDD
			<input type="checkbox"/>	Beam-forming
Antenna Type.....	<input type="checkbox"/>	External	<input type="checkbox"/>	Dipole
			<input type="checkbox"/>	Sectorized
			<input checked="" type="checkbox"/>	Internal
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/>	FPC
			<input checked="" type="checkbox"/>	PCB
			<input type="checkbox"/>	Metal Monopole Antenna
			<input type="checkbox"/>	Ceramic chip
<input type="checkbox"/>	Others.....			

1.3 Channel List

SRD Working Frequency							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	433.9 MHz	--	--	--	--	--	--

Note: The general description of the Item(s) and channel list in clause 1 are provided and confirmed by the client.

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

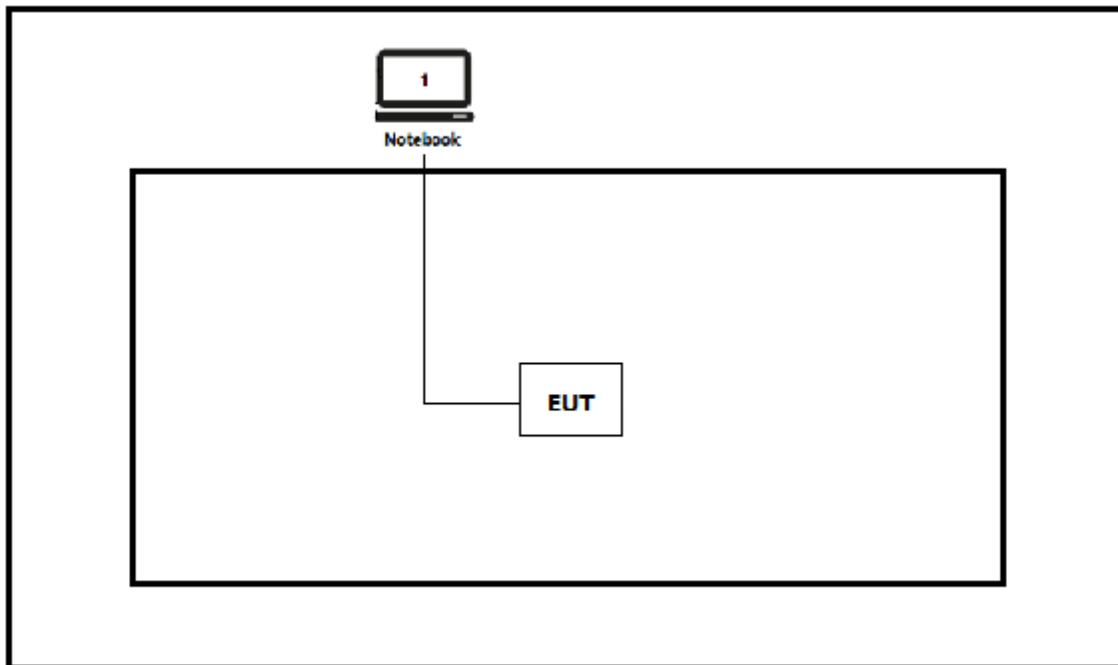
Test Mode	Mode1: Transmit
-----------	-----------------

2.2 Auxiliary equipment / Test software for the EUT

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Key Fob Test Bench	N/A	UAES	N/A
Computer	N/A	Lenovo	N/A
Software	Type / Version	Manufacturer	Supplied by
EMC-PKE	N/A	UAES	N/A

2.3 Test Configuration / Block diagram used for tests

Test setup Diagram- Radiated Emission



2.4 Testing process

1	Setup the EUT shown in Section 2.3.
2	Execute the [EMC-PKE] on the notebook.
3	Configure the test mode, the test channel, and the data rate.
4	Verify that the EUT works properly.

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC CFR Title 47 Part 15 Subpart C Section 15.231	2021	Periodic operation in the band 40.66-40.70 MHz and above 70 MHz.
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Overview of results

Requirement – Test case	Basic standard(s)	Verdict	Remark
Field strength of fundamental	FCC 15.231(b)(1)	PASS	Test data please refer to Appendix A
Field strength of spurious emissions	FCC 15.231(b)(1)(2), FCC 15.209	PASS	Test data please refer to Appendix B
20dB Bandwidth	FCC 15.231(c)	PASS	Test data please refer to Appendix C
Duration Time	FCC 15.231(a)(1)	PASS	Test data please refer to Appendix D

3.4 Test Facility

USA : FCC Designation Number: CN1199

4 TEST RESULTS

4.1 Field strength of fundamental

VERDICT: PASS

4.1.1 Limit

Standard FCC Part 15 Subpart C Paragraph 15.231

Restricted Bands of operation for FCC

Fundamental frequency (MHz)	Field strength of fundamental (μ V/m)	Field strength of fundamental (dB μ V/m)
40.66-40.70	2250	67.04
70-130	1250	61.93
130-174	1250-3750	61.93-71.48 ¹⁾
174-260	3750	71.48
260-470	3750-12500	71.48-81.93 ¹⁾
Above 470	12500	81.93

 Note ¹⁾: Linear interpolations

The field intensity in micro-volts per meter can then be determined by the following equation: $FI(V/m) = 10FI(dBV/m) / 20$ The FCC specified emission limits were calculated according the EUT operating frequency and obtained by following linear interpolation equations:

For fundamental frequency:

 f_{EUT} : EUT Operating Frequency Emission Limit (V/m)

$$= [f_{EUT}(MHz) - 260(MHz)] \times \{ [12500(V/m) - 3750(V/m)] / [470(MHz) - 260(MHz)] \} + 3750(V/m)$$

Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209 limit in the table below has to be followed.

Note:

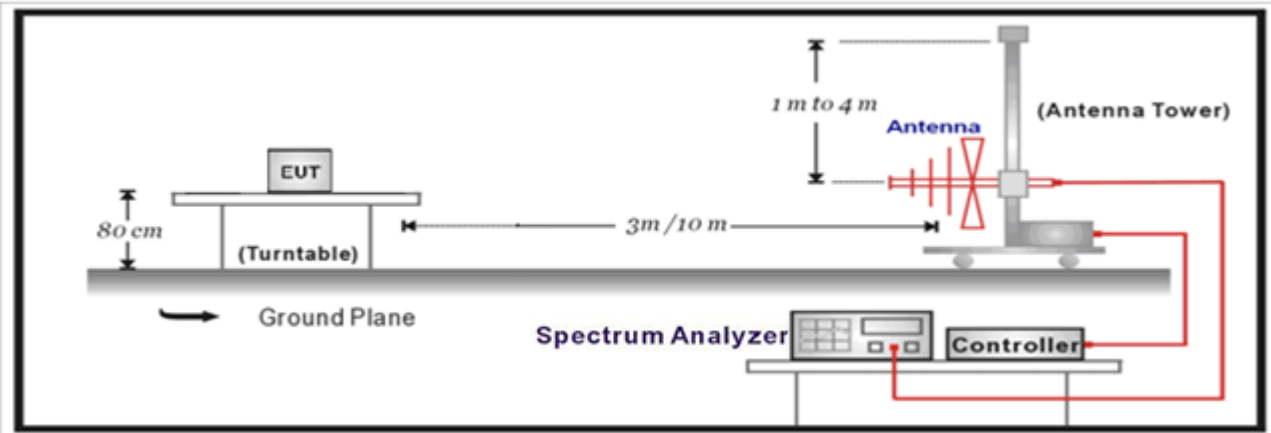
(1) The tighter limit applies at the band edges.

(2) Emission level (dBuV/m)=20log Emission level (uV/m)

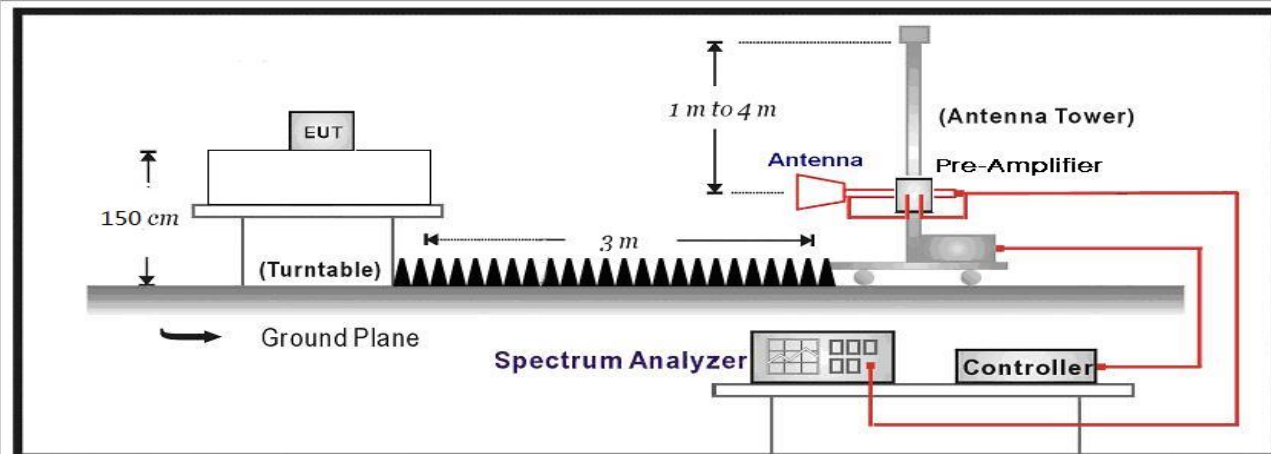
Fundamental frequency	Field strength of Fundamental
433.9 MHz	AV: 80.83 dBuV/m at 3m distance
	PK:100.83 dBuV/m at 3m distance

4.1.2 Test Setup

30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.1.3 Test Procedure

	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.2 Field strength of spurious emissions	VERDICT: PASS
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4.2.1 Limit

Standard	FCC 15.231(b)(1)(2), FCC 15.209
-----------------	---------------------------------

FCC 15.231

Fundamental frequency (MHz)	Field strength of spurious emission (μ V/m)	Field strength of spurious emission (dB μ V/m)
40.66-40.70	225	47.04
70-130	125	41.93
130-174	125-375	41.93-51.48 ^(Note 1)
174-260	375	51.48
260-470	375-1250	51.48-61.93 ^(Note 1)
Above 470	1250	61.93

Note 1: Linear interpolations

The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

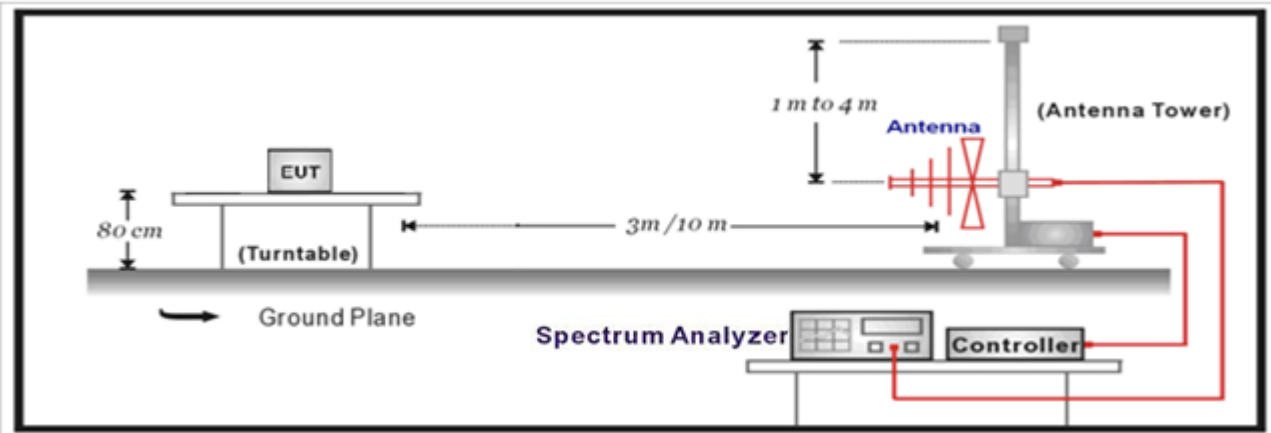
FCC 15.209			
Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 ^(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 ^(Note 1)
1.705 - 30	30	29.5	30 ^(Note 1)
30 -88	100	40	3 ^(Note 2)
88-216	150	43.5	3 ^(Note 2)
216 - 960	200	46	3 ^(Note 2)
Above 960	500	54	3 ^(Note 2)

Note 2: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

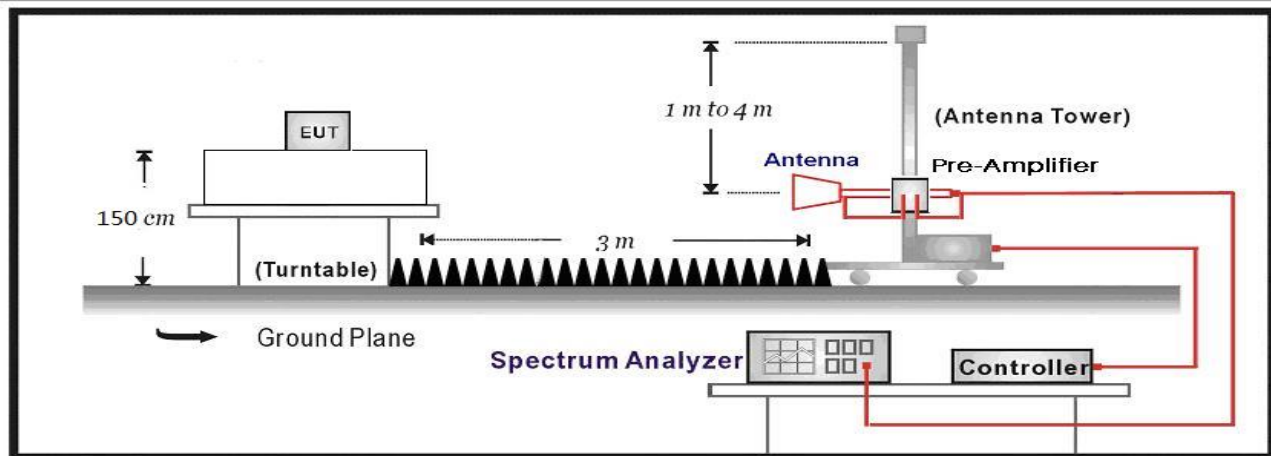
Note 3: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.2.2 Test Setup

30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.2.3 Test Procedure

	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

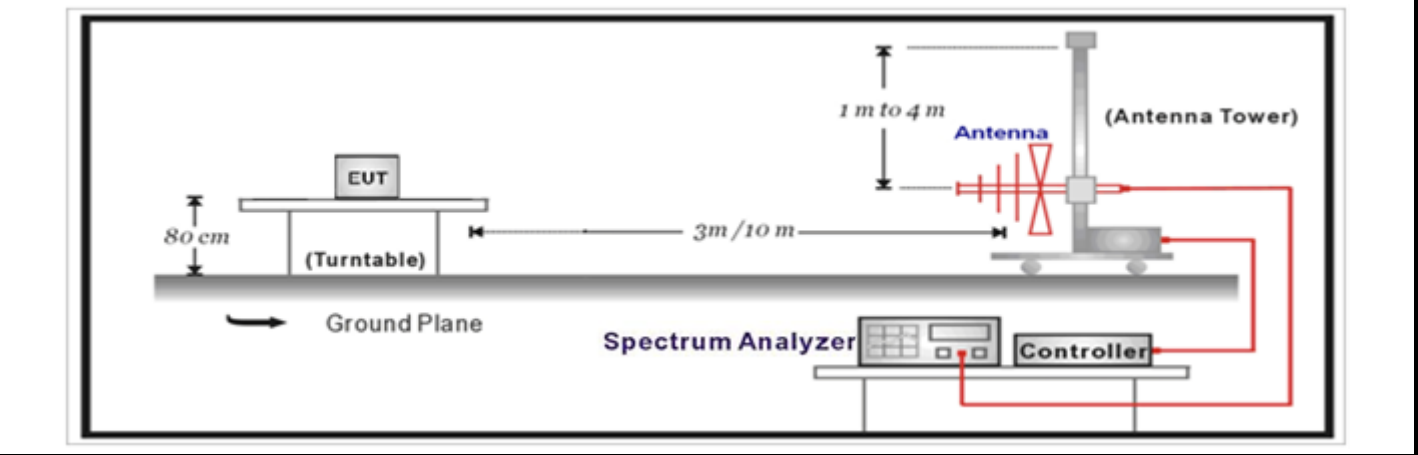
4.3 DTS Bandwidth	VERDICT: PASS
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4.3.1 Limit

Standard	FCC 15.231(c)
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The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

4.3.2 Test Setup



4.3.3 Test Procedure

	Reference Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	6.9	Occupied bandwidth tests
<input checked="" type="checkbox"/>	ANSI C63.10	6.9.2	Occupied bandwidth—relative measurement procedure
<input type="checkbox"/>	ANSI C63.10	6.9.3	Occupied bandwidth—power bandwidth (99%) measurement procedure

4.4 Duration Time

VERDICT: PASS

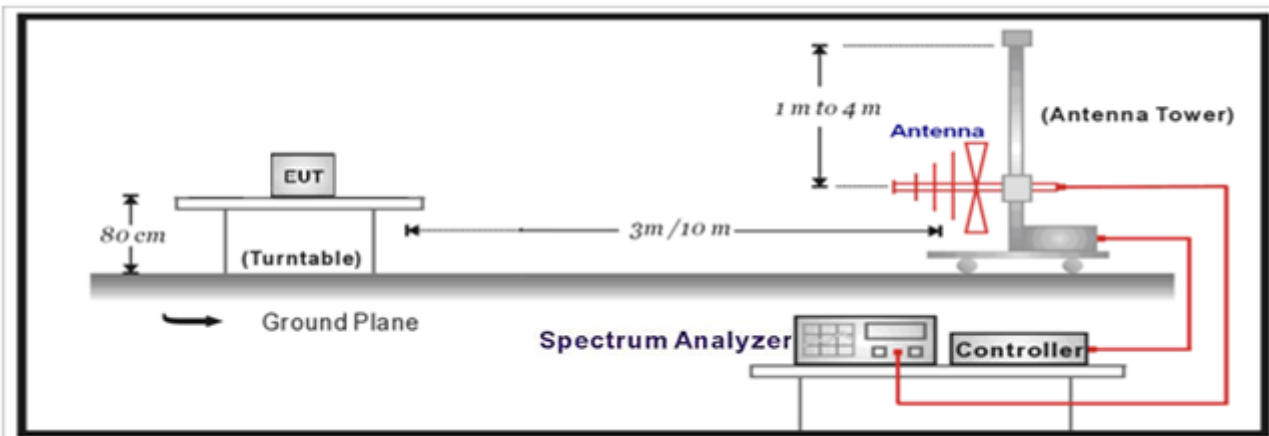
4.4.1 Limit

Standard

FCC Part 15 Subpart C Paragraph 15.247 (b)(3)

(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

4.4.2 Test Setup



4.4.3 Test Procedure

1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.
2. Set the EUT to proper test channel.
3. Single scan the transmission, and read the transmission time.

5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

6 APPENDIX A-TEST DATA: FIELD STRENGTH OF FUNDAMENTAL

Frequency (MHz)	Measure Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Type
433.9(X Axis)	78.954	100.83	-21.88	Horizontal	PK
433.9(X Axis)	71.151	100.83	-29.68	Vertical	PK

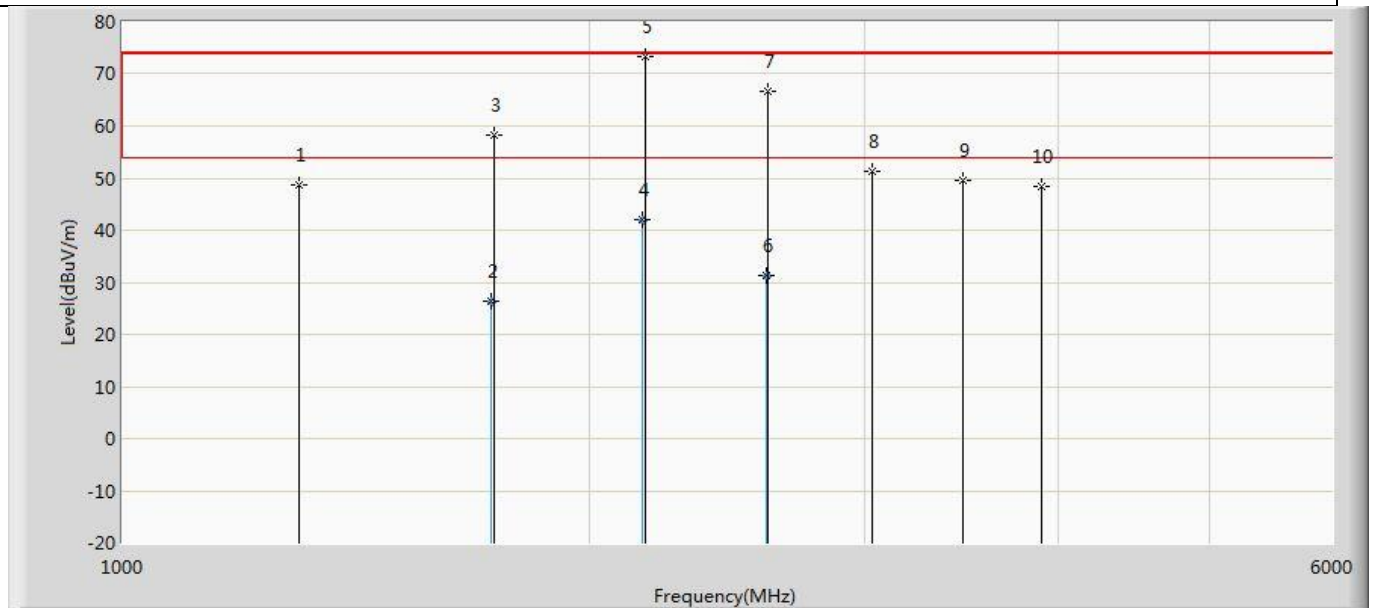
Frequency (MHz)	Measure Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Type
433.9(X Axis)	78.954	80.83	-1.88	Horizontal	AV
433.9(X Axis)	71.151	80.83	-9.68	Vertical	AV

Note 1:

We have evaluated three orthogonal positions (X, Y, Z) and the position with the highest emission level (X Axis) was recorded and shown in the report.

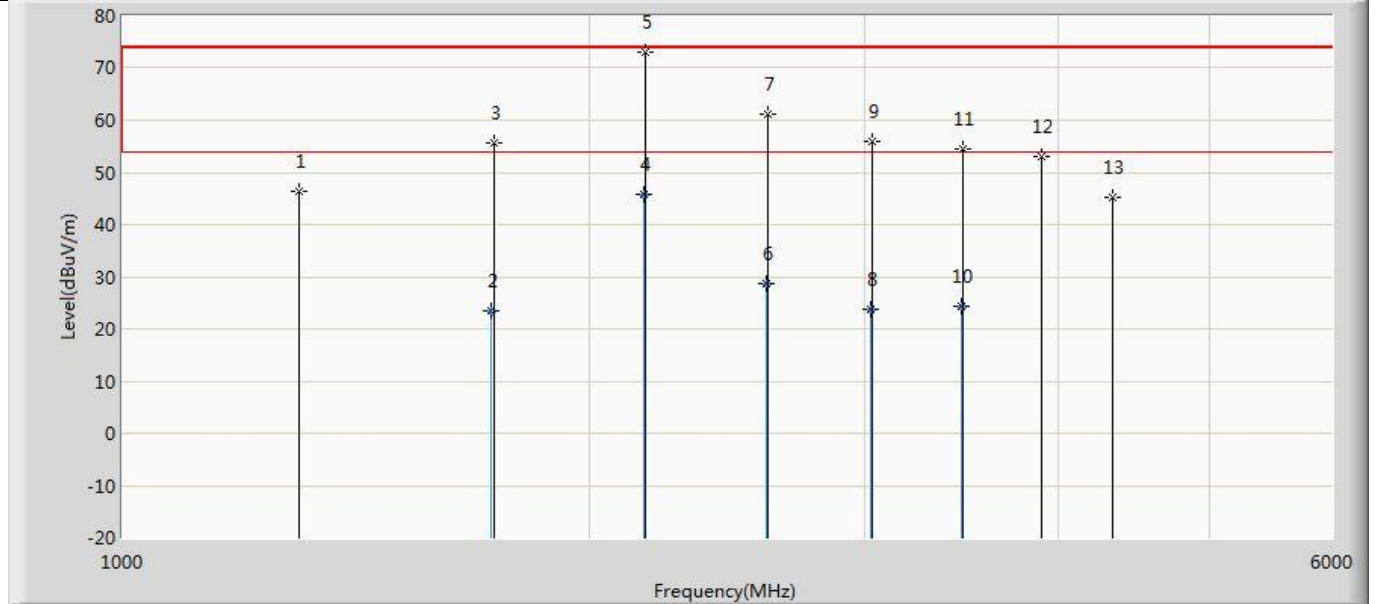
7 APPENDIX B-TEST DATA: FIELD STRENGTH OF SPURIOUS EMISSIONS

Profile: 22C0154R	Page No.: 1
Engineer: Yuliu	
Site: AC5	Time: 2023/03/21 - 19:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: KEY ASM-DR LK & IGN LK	Power: AC 120V/60Hz
Note: Mode 1 : Transmit at 433MHz	



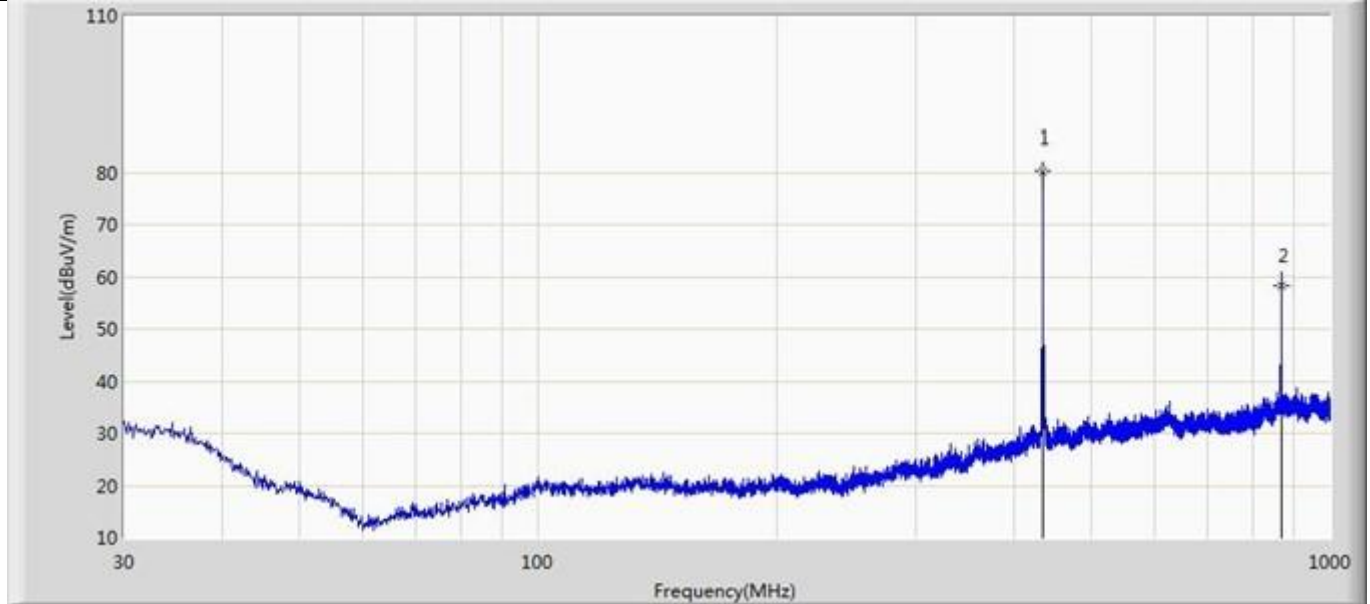
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1300.000	48.676	69.863	-25.324	74.000	-21.187	PK
2		1728.200	26.382	46.670	-27.618	54.000	-20.288	AV
3		1735.000	58.296	78.493	-15.704	74.000	-20.197	PK
4		2162.440	42.092	60.650	-11.908	54.000	-18.558	AV
5	*	2170.000	73.357	91.898	-0.643	74.000	-18.540	PK
6		2596.200	31.449	48.810	-22.551	54.000	-17.361	AV
7		2605.000	66.616	83.916	-7.384	74.000	-17.299	PK
8		3040.000	51.290	68.195	-22.710	74.000	-16.905	PK
9		3470.000	49.658	66.704	-24.342	74.000	-17.045	PK
10		3905.000	48.349	64.880	-25.651	74.000	-16.531	PK

Profile: 22C0154R	Page No.: 2
Engineer: Yuliu	
Site: AC5	Time: 2023/03/21 - 19:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: KEY ASM-DR LK & IGN LK	Power: Battery: 3 V
Note: Mode 1 : Transmit at 433MHz	



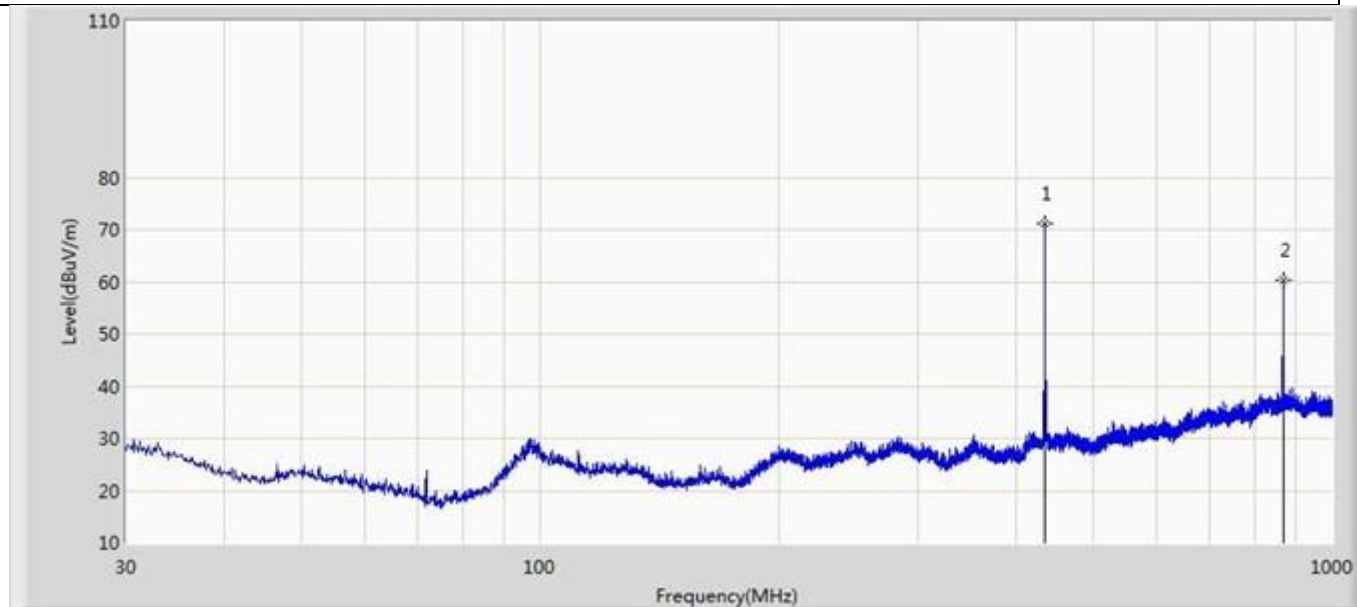
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1300.000	46.284	67.435	-27.716	74.000	-21.151	PK
2		1728.200	23.442	43.730	-30.558	54.000	-20.288	AV
3		1735.000	55.709	75.906	-18.291	74.000	-20.197	PK
4		2166.120	45.810	64.360	-8.190	54.000	-18.550	AV
5	*	2170.000	72.901	91.442	-1.099	74.000	-18.540	PK
6		2596.120	28.620	45.980	-25.380	54.000	-17.361	AV
7		2605.000	61.142	78.442	-12.858	74.000	-17.299	PK
8		3030.160	23.885	40.930	-30.115	54.000	-17.045	AV
9		3040.000	55.996	72.901	-18.004	74.000	-16.905	PK
10		3463.880	24.205	41.210	-29.795	54.000	-17.005	AV
11		3470.000	54.399	71.445	-19.601	74.000	-17.045	PK
12		3905.000	53.080	69.611	-20.920	74.000	-16.531	PK
13		4340.000	45.309	61.124	-28.691	74.000	-15.815	PK

Profile: 22C0154R	Page No.: 1
Engineer: Yuliu	
Site: AC2	Time: 2023/03/25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: KEY ASM-DR LK & IGN LK	Power: Battery: 3 V
Note: Mode 1 : Transmit at 433MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		433.920	78.954	52.699	-1.88	80.83	26.255	QP
2		867.959	57.341	24.365	-3.49	60.83	32.976	QP

Profile: 22C0154R	Page No.: 2
Engineer: Yuliu	
Site: AC2	Time: 2023/03/25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: KEY ASM-DR LK & IGN LK	Power: Battery: 3 V
Note: Mode 1 : Transmit at 433MHz	



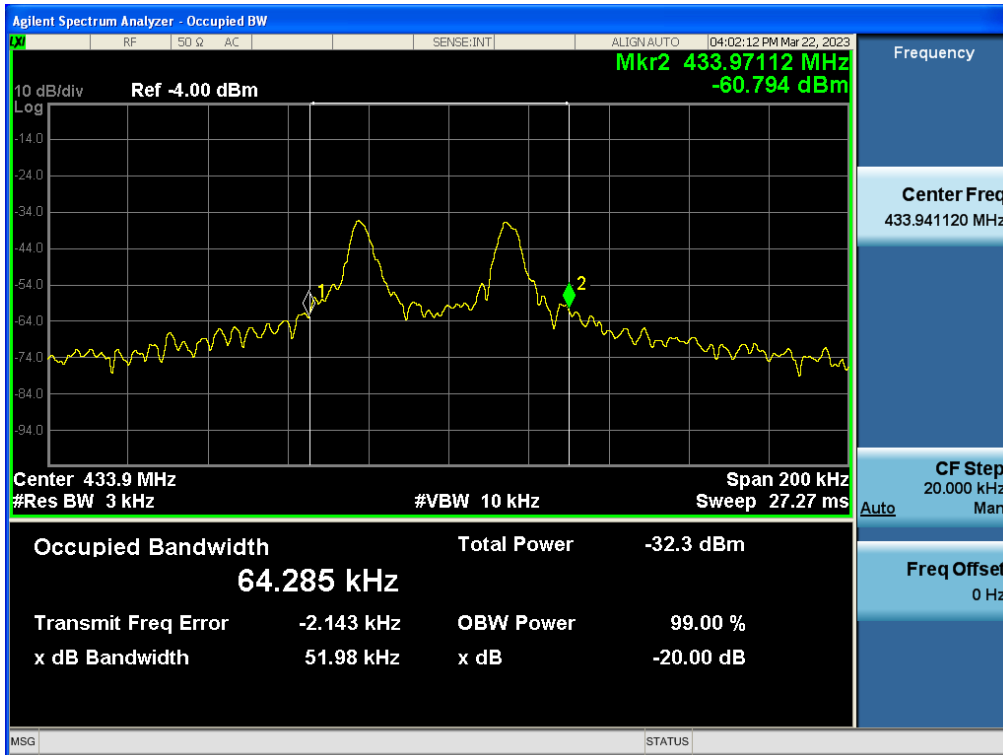
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		434.005	71.151	45.031	-9.679	80.83	26.120	QP
2		867.959	59.223	26.247	-1.607	60.83	32.976	QP

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.
5. We have evluaed three orthogonal positions (X , Y , Z) and the position with the highest emission level(X Axis) was recorded and shown in the report.

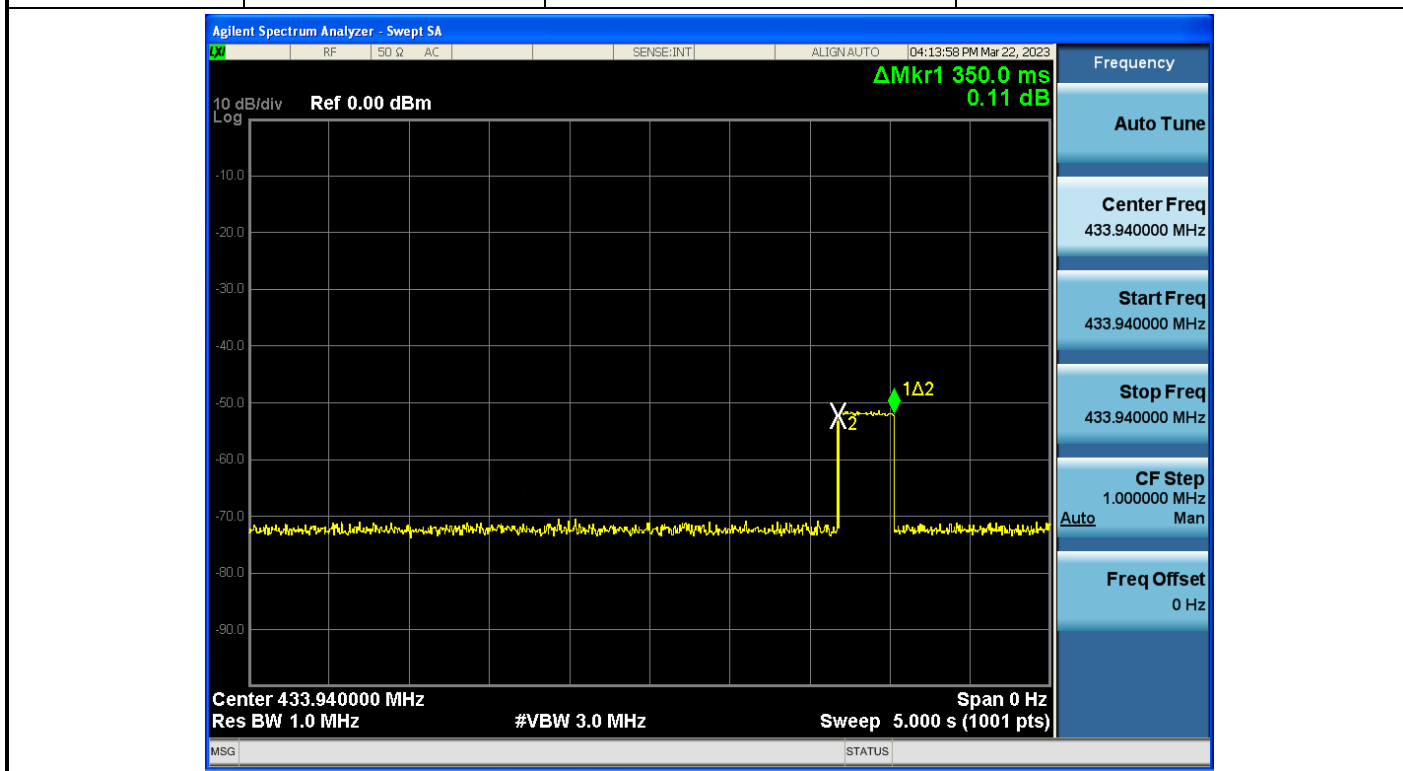
8 APPENDIX C-TEST DATA: 20DB BANDWIDTH

Mode	CH.	Test Freq. (MHz)	20dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
1	00	433.9	51.98	Within band	Pass



9 APPENDIX D-TEST DATA: DURATION TIME

Frequency (MHz)	Duration Time (S)	Limit (S)	Result
433.9	0.350	< 5.0	Pass



The End