

Shenzhen Toby Technology Co., Ltd.



Report No.: TBR-C-202209-0222-3

Page:

FCC Radio Test Report FCC ID:2AZI3-P861

Report No. : TBR-C-202209-0222-3

Applicant SHENZHEN KERUI SMART TECHNOLOGY CO., LTD

Equipment Under Test (EUT)

EUT Name : motion sensor alarm

Model No. P861

Series Model No. : M520+P861, DW5+P861X2, DF520+P861, DW5+P861

Brand Name : STECHRO, SECRUI

Sample ID : 202209-0222 01-01

Receipt Date : 2022-10-11

: 2022-10-11 to 2022-10-21 **Test Date**

Issue Date : 2022-10-21

: FCC Part 15, Subpart C (15.231(a)) **Standards**

Test Method : ANSI C63.10:2013

Conclusions : PASS

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC requirements

Test/Witness Engineer

Engineer Supervisor

IVAN SV Lay Lai. **Engineer Manager**



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0

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Revision History

Report No.	Version	Description	Issued Date
TBR-C-202209-0222-3	Rev.01	Initial issue of report	2022-10-21
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1. General Information about EUT

1.1 Client Information

Applicant : SHENZHEN KERUI SMART TECHNOLOGY CO., LTD			
Address : Room 1501, T2, Jinlitong Building, No. 1100, Xingye Roa Street, Bao'an District, Shenzhen, Guangdong, China		Room 1501, T2, Jinlitong Building, No. 1100, Xingye Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China	
Manufacturer		SHENZHEN KERUI SMART TECHNOLOGY CO., LTD	
Address		Room 1501, T2, Jinlitong Building, No. 1100, Xingye Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China	

1.2 General Description of EUT (Equipment Under Test)

EUT Name	••	motion sensor alarm			
Model(s)		P861, M520+P861, DW5+P861X2, DF520+P861, DW5+P861			
Model Difference	100	All PCB boards and circuit diagrams are the same, the only difference is that appearance color.			
		Operation Frequency:	433.92 MHz		
Product	: Ante	Output Power:	65.38 dBuV/m (PK Max.) 56.92 dBuV/m (AV Max.)		
Description		Antenna Type:	Spring Antenna		
		Antenna Gain:	-4.91dBi		
COUNTY OF		Modulation Type:	ООК		
Power Rating):	DC 3.0V by AA battery	*2		
Software Version		KR-P861-2237			
Hardware Version	6	KR-P861-V2.0			
Remark	-	The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.			

Note:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Antenna description

Brand	Model Name	Type	Antenna Gain(dBi)
N/A	N/A	PCB Ant.	-3

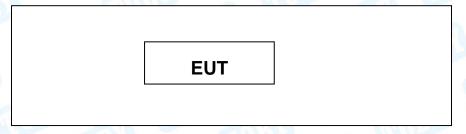




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1.3 Block Diagram Showing the Configuration of System Tested

TX Mode



1.4 Description of Support Units

The EUT has been test as an independent unit.

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

Test Items	Note
Conducted Emission	Continuously transmitting
Radiated Emission	Continuously transmitting
Bandwidth	Continuously transmitting
Duty Cycle	Continuously transmitting
Release Time	Normal Mode

Note

- (1) During the testing procedure, the continuously transmitting mode was programmed by the customer.
- (2) The EUT is considered a Mobile unit, and it was pre-tested on the positioned of each 3 axis: X axis, Y axis and Z axis. The worst case was found positioned on Z-plane. There for only the test data of this Z-plane were used for radiated emission measurement test.





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1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of transmitting mode.

RF Power Setting in Test SW: DEF

1.7 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U_{\tau}$ 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 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.20 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB



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1.8 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at: 1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351 Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A.

2. Test Summary

Standard Section FCC	Test Item	Judgment	Remark	
15.203	Antenna Requirement	PASS	N/A	
15.207	Conducted Emission	N/A	N/A	
	Release Time	PASS	N/A	
45.004	Radiation Emission	PASS	N/A	
15.231	20 dB Bandwidth	PASS	N/A	
THU:	Duty Cycle	PASS	N/A	

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE





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4. Test Equipment

Radiation Emission Test								
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date			
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 23, 2022	Jun. 22, 2023			
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jun. 23, 2022	Jun. 22, 2023			
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 202			
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Feb. 27, 2022	Feb.26, 2024			
Horn Antenna	ETS-LINDGREN	3117	00143207	Feb. 26, 2022	Feb.25, 2024			
Horn Antenna	ETS-LINDGREN	BBHA 9170	BBHA9170582	Feb. 26, 2022	Feb.25, 2024			
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Feb. 26, 2022	Feb.25, 2024			
Pre-amplifier	Sonoma	310N	185903	Feb. 26, 2022	Feb.25, 2023			
Pre-amplifier	HP	8449B	3008A00849	Feb. 26, 2022	Feb.25, 2023			
Pre-amplifier	SKET	LNPA_1840G-50	SK201904032	Feb. 26, 2022	Feb.25, 2023			
Cable	HUBER+SUHNER	100	SUCOFLEX	Feb. 26, 2022	Feb.25, 2023			
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A			
Antenna Conducted E	Emission							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date			
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 23, 2022	Jun. 22, 202			
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 202			
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 01, 2022	Aug. 31, 202			
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 01, 2022	Aug. 31, 202			
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 01, 2022	Aug. 31, 202			
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 01, 2022	Aug. 31, 202			
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 01, 2022	Aug. 31, 202			
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 01, 2022	Aug. 31, 202			
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 01, 2022	Aug. 31, 202			



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5. Conducted Emission Test

5.1 Test Standard and Limit

5.1.1Test Standard FCC 15.207

5.1.2 Test Limit

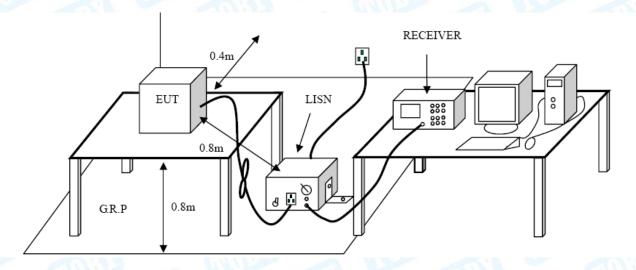
Conducted Emission Test Limit

The Property of the Parket of	Maximum RF Lin	e Voltage (dBμV)
Frequency	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.2 Test Setup







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5.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

The EUT must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

5.4 Deviation From Test Standard

No deviation

5.5 Test Data

N/A, no USB or AC charging port was provided, therefore, it's not applicable



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6. Radiated Emission Test

6.1 Test Standard and Limit

6.1.1 Test Standard FCC 15.231

6.1.2 Test Limit

According to FCC 15.231(a) requirement:

In addition to the provisions of Section 15.205, the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolt/meter) at 3m	Field Strength of Spurious Emissions (microvolt/meter) at 3m
40.66~40.70	2250	225
70~130	1250	125
130~174	1250 to 3750(**)	125 to 375(**)
174~260	3750	375
260~470	3750 to 12500(**)	375 to 1250(**)
Above 470	12500	1250

^{**} Linear interpolations, the formulas for calculating the maximum permitted fundamental field strengths are as follows:

- (1) for the band 130~174 MHz, uV/m at 3 meters= 56.81818(F)-6136.3636;
- (2) for the band 260~470 MHz, uV/m at 3 meter= 41.6667(F)-7083.3333.
- (3) The maximum permitted unwanted emissions level is 20 dB below the maximum permitted fundamental level. In addition field strength of any emissions which appear inside of the restriction band shall not exceed the general radiated emissions limits in FCC Part15.209.

Frequency (MHz)	Field Strength (microvolt/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





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Above 960	500	3
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Note:

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

(2) For above 30MHz:

Emission Level(dBuV/m)=20log Emission Level(uV/m)

For 0.009~0.490MHz:

Emission Level(dBuV/m)=20log Emission Level(uV/m) +40log(300/3)

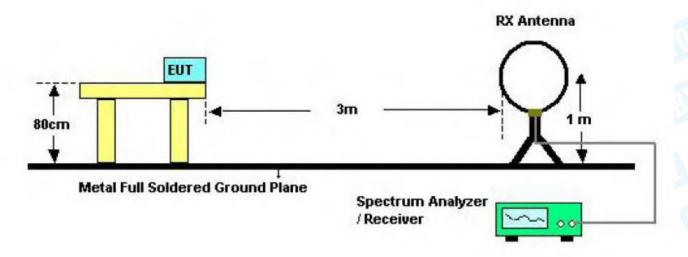
For 0.049~30MHz:

Emission Level(dBuV/m)=20log Emission Level(uV/m) +40log(30/3)

So the field strength of emission limits have been calculated in below table.

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolt/meter) at 3m
433.92 MHz	80.82 (Average)
433.92 MHz	100.82 (Peak)

6.2 Test Setup

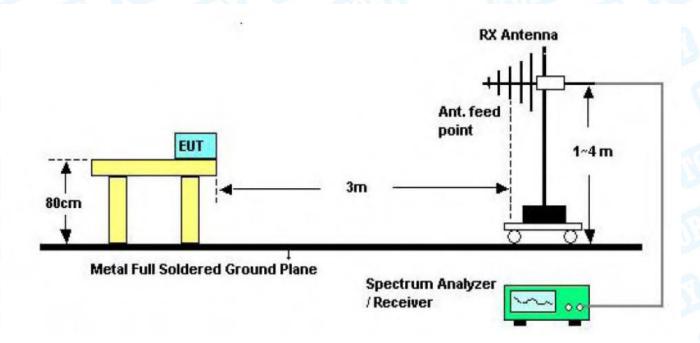


Below 30MHz Test Setup

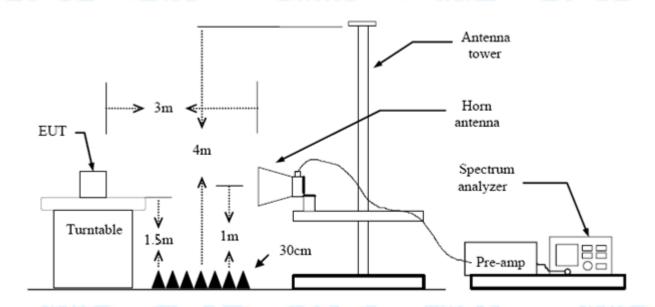




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Bellow 1000MHz Test Setup



Above 1GHz Test Setup





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6.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.

- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.6 Test Data

Please refer to the Attachment A.





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7. Bandwidth

7.1 Test Standard and Limit

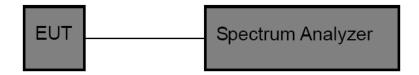
7.1.1 Test Standard FCC 15.231

7.1.2 Test Limit

The 99%bandwidth of the emissions shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. So the emission bandwidth limits have been calculated in below table.

Fundamental Frequency	20 dB Bandwidth Limits (MHz)
433.92MHz	1.0848

7.2 Test Setup



7.3 Test Procedure

- (1) Set Spectrum Analyzer Center Frequency= Fundamental Frequency, RBW=10 kHz, VBW= 30 kHz, Span= 1 MHz.
- (2) Measured the spectrum width with power higher than 20 dB below carrier.

7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Condition

The Equipment Under Test was Programmed to be in continuously transmitting mode.

7.6 Test Data

Please refer to the Attachment C.





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8. Release Time Measurement

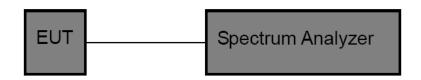
8.1 Test Standard and Limit

8.1.1 Test Standard FCC 15.231

8.1.2 Test Limit

According to FCC 15.231a, A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

8.2 Test Setup



8.3 Test Procedure

- (1) Setup the EUT as show in the block diagram above.
- (2) Set Spectrum Analyzer Centre Frequency= Fundamental Frequency, RBW=100 kHz, VBW= 300 kHz, Span= 0 Hz. Sweep Time= 5 Seconds.
- (3) Setup the EUT as normal operation and press Transmitter button.
- (4) Set Spectrum Analyzer View, Delta Mark time.

8.4 Deviation From Test Standard

No deviation

8.5 EUT Operating Condition

The EUT was set to work in transmitting mode.

8.6 Test Data

Please refer to the Attachment D.





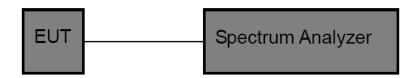
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9. Duty Cycle

9.1 Test Standard and Limit

9.1.1 Test Standard FCC 15.231

9.2 Test Setup



9.3 Test Procedure

- (1) The EUT was placed on a turntable which is 0.8m above ground plane.
- (2) Set EUT operating in continuous transmitting mode.
- (3) Set the Spectrum Analyzer to the transmitter carrier frequency, and set the spectrum analyzer resolution bandwidth (RBW) to 100 kHz and video bandwidth (VBW) to 300 kHz, Span was set to 0 Hz.
- (4) The Duty Cycle was measured and recorded.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Condition

The EUT was programmed to be in transmitting mode.

9.6 Test Data

Please refer to the Attachment E.





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10. Antenna Requirement

10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

10.1.2 Requirement

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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

10.1 Deviation From Test Standard

No deviation

10.2 Antenna Connected Construction

The gains of the antenna used for transmitting is -4.91dBi, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

The EUT antenna is an PCB Antenna. It complies with the standard requirement.

	Antenna Type
	▶ Permanent attached antenna
) Week	□ Unique connector antenna
4033	□ Professional installation antenna



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Attachment A-- Radiated Emission Test Data

9 KHz to 30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB

below the permissible value has no need to be reported.

30MHz-1GHz

cilibe	erature:	23.9	9℃			R	elativ	e Humid	lity: 4	4%
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0	Freque	60.00 ency z)	Read	ıV)	(MHz)	Level	m) (d	Limit	_	Detecto
10 20 30.000	Freque (MHz	60.00 ency z)	Read (dBu	IV) 32	(MHz) Factor (dB/m)	Level (dBuV/n	m) (d	Limit BuV/m)	(dB)	Detecto
10 20 30.000	Freque (MHz	ency z) 66	Read (dBu	32 24	Factor (dB/m) -22.56	Level (dBuV/n 15.76	m) (d	Limit BuV/m) 40.00	(dB) -24.24	Detector peak peak
No.	Freque (MHz 50.05 70.33	ency z) 66 65 379	Read (dBu 38.3 41.2	1V) 32 24 52	Factor (dB/m) -22.56 -24.39	Level (dBuV/n 15.76 16.85	m) (d	Limit BuV/m) 40.00 40.00	(dB) -24.24 -23.15	Detector peak peak peak peak
No. 1 2 3	Freque (MHz 50.05 70.33 111.73 161.47	60.00 ency z) 66 65 879	Read (dBu 38.3 41.2 41.5	32 24 52 67	Factor (dB/m) -22.56 -24.39 -24.10	Level (dBuV/n 15.76 16.85 17.42	n) (d	Limit BuV/m) 40.00 40.00 43.50	(dB) -24.24 -23.15 -26.08	Detector peak peak peak peak peak







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Fundamental and Harmonics Result								
Frequency (MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m) (see Attachment D)	Average Level (dBμV/m)	Limit(dB _µ V/m) (average)	Limit(dB _µ V/m) (Peak)	Conclusion		
434.0651	65.33	-8.46	56.87	80.80	100.80	PASS		
869.1302	49.23	-8.46	40.77	60.80	80.80	PASS		





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Temper	ature:	23.9	$^{\circ}\mathbb{C}$		Rela	ative Humid	ity: 44	1%
Test Vo	Itage:	DC:	3V					
Ant. Po	l.	Vert	ical		a v			
Test Mo	ode:	TX	Mode	QU.		a HILL		
Remark	« :		eport for the	e emission w	hich more t	han 10 dB b	elow the	Mr. B.
80.0 df	BuV/m							
70						5 X		
60						(RFJFCC 15C	3M Radiation	Š _
40						Margin -6 dB		
30							and the second	www.peak
20		more than	Named Liver and American Street Hos	J. L.	angan daway at salah daga ina jahun	May de la company de la compan	and the second	_{mw} u/ _m ww.peak
	ary and a second	man 2	Many before the second	La Company of the Com	makery and makery and all the second descriptions	marine Mayner	books to be a series of the se	www.peak
10	***************************************	marion 2	many who will and the second second	haland harman	الإيلام المستوارة الم	hagenester of the grander	des de la la companya de la companya	peak
10		60.00	Mary Laterant was a superior while	3 4 halfanden Anderson	sage, have produced a second a	koof Marie Marie	and the second second	1000.000
20 10 0 -10 -20	Freque (MH	60.00 ency	Reading (dBuV)		300.0	koof Marie Marie	Margin (dB)	1000.000
20		60.00 ency Z)	Reading	(MHz) Factor	300.0	DO Limit	Margin	
20 10 0 -10 -20 30.000	(MH	60.00 ency z)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	1000.000
20 10 0 -10 -20 30.000 No.	(MH: 49.18	60.00 ency z) 365	Reading (dBuV) 38.36	Factor (dB/m) -22.59	Level (dBuV/m) 15.77	Limit (dBuV/m) 40.00	Margin (dB)	Detector peak
20 10 0 -10 -20 30.000 No.	(MH: 49.18 66.49	60.00 ency z) 365 989	Reading (dBuV) 38.36 40.17	(MHz) Factor (dB/m) -22.59 -24.07	Level (dBuV/m) 15.77 16.10	Limit (dBuV/m) 40.00 40.00	Margin (dB) -24.23 -23.90	Detector peak peak
20 10 0 -10 -20 30.000 No.	(MH 49.18 66.49 136.93	60.00 ency z) 865 989 391 549	Reading (dBuV) 38.36 40.17 39.70	Factor (dB/m) -22.59 -24.07 -22.23	Level (dBuV/m) 15.77 16.10 17.47	Limit (dBuV/m) 40.00 40.00 43.50	Margin (dB) -24.23 -23.90 -26.03	Detector peak peak peak

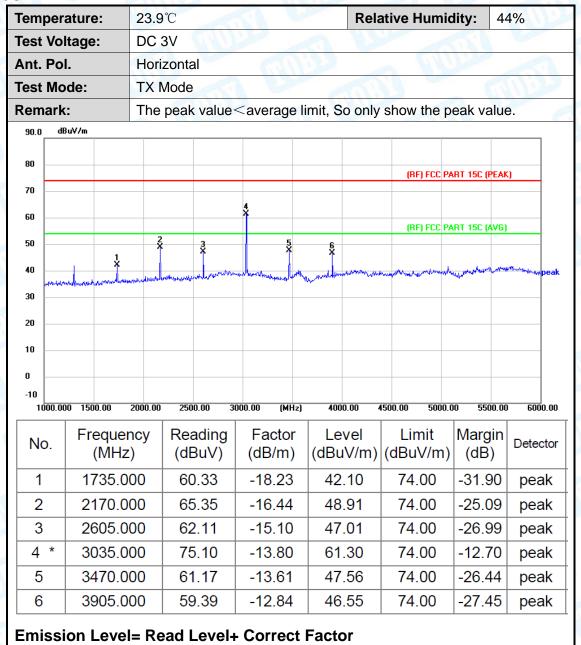
		Fundam	nental and Harmonics Re	esult		
Frequency (MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m) (see Attachment D)	Average Level (dBμV/m)	Limit(dBµV/m) (average)	Limit(dBμV/m) (Peak)	Conclusion
434.0651	65.38	-8.46	56.92	80.80	100.80	PASS
869.1302	62.06	-8.46	53.6	60.80	80.80	PASS

Emission Level= Read Level+ Correct Factor



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1GHz -6GHz







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A Residence						J. M. V. II.			
	Average Value								
Frequency (MHz)	Peak Level (dBuV/m)	AV Factor(dBμV/m) (see Attachment D)	Average value (dBuV/m)	Limit Line (dBuV/m)	Over limit (dB)	Conclusion			
1735.000	42.10	-8.46	33.64	54.00	-20.36	PASS			
2170.000	48.91	-8.46	40.45	54.00	-13.55	PASS			
2605.000	47.01	-8.46	38.55	54.00	-15.45	PASS			
3035.000	61.30	-8.46	52.84	54.00	-1.16	PASS			
3470.000	47.56	-8.46	39.1	54.00	-14.9	PASS			
3905.000	46.55	-8.46	38.09	54.00	-15.91	PASS			





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Temperature: 23.9°C			aW	Rela	ative Humidi	ity: 4	4%
Test Voltage:		DC 3V	DC 3V				
\nt. I	Pol.	Vertical					
est l	Mode:	TX Mode	CHILL		N. B.	A	18.8
Rema	ark:	The peak valu	ie <average l<="" td=""><td>imit, So only</td><td>show the pe</td><td>ak value</td><td>€.</td></average>	imit, So only	show the pe	ak value	€.
90.0	dBuV/m						
80							
70					(RF) FCC PAF	RT 15C (PEA)	9
60			ž		(RF) FCC PAF	RT 15C (AVG)	
50	1 2	3 X X		6			
40	* 2 * *	un marine marine marine	months and and the second and the se		ment and the constitution of the constitution	det met grant and the grant and	nd Amora pea
30	- Calara Lata Lata Lata Cara						
20							
10							
0							
-10							
100	0.000 1500.00	2000.00 2500.00	3000.00 (MHz)	4000.00	4500.00 5000.00	5500.00	6000.0
No.	Frequer (MHz)	, ,	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detecto
1	1300.00	00 60.82	-19.48	41.34	74.00	-32.66	peak
2	1740.00	00 58.99	-18.21	40.78	74.00	-33.22	peak
3	2170.00	00 64.07	-16.44	47.63	74.00	-26.37	peak
4	2605.00	00 59.42	-15.10	44.32	74.00	-29.68	peak
	3040.00	00 70.98	-13.80	57.18	74.00	-16.82	peak
5 '	00.0.0						





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	N A No.	10.2 May 7 Barrier				A STATE OF THE STA	
Average Value							
Frequency (MHz)	Peak Level (dBuV/m)	AV Factor(dBμV/m) (see Attachment D)	Average value (dBuV/m)	Limit Line (dBuV/m)	Over limit (dB)	Conclusion	
1300.000	41.34	-8.46	32.88	54.00	-21.12	PASS	
1740.000	40.78	-8.46	32.32	54.00	-21.68	PASS	
2170.000	47.63	-8.46	39.17	54.00	-14.83	PASS	
2605.000	44.32	-8.46	35.86	54.00	-18.14	PASS	
3040.000	57.18	-8.46	48.72	54.00	-5.28	PASS	
3905.000	42.94	-8.46	34.48	54.00	-19.52	PASS	

Other harmonics emissions are lower than 20dB below the allowable limit.

Note: (1) All Readings are Peak Value and AV. And AV is calculated by the following:

Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.

Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values.

Average Values=Peak Values+20log (Duty Cycle)

- (2) Emission Level= Reading Level + Probe Factor +Cable Loss
- (3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Pulse Desensitization Correction Factor

Note:

1)The Smallest Pulse Width (PW)= 0.400ms

(2) 2/PW=2/0.400(ms)= 5kHz<100 kHz

Because 2/PW<RBW, so the PDCF is not needed.



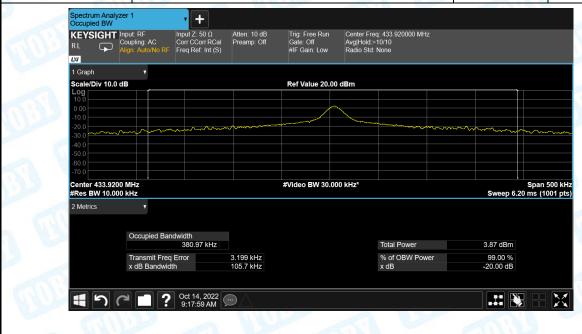


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Attachment C--Bandwidth Data

Eroguepov		20 dPa Pandwidth	l imit
Test Power	:	DC 3V	
Pressure		1010 hPa	
Relative Humidity		65 %	
Temperature	:	25℃	

Frequency (MHz)	•		Result	
433.92	105.7	1084.8	PASS	







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Attachment D-- Release Time Measurement Data

Temperature **25** ℃ Relative Humidity 65 % Pressure 1010 hPa DC₃V **Test Power** Release Time(s) Limit (s) Result 1.625 5 **PASS** Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF
RL Coupling: AC
Align: Auto/No Input Z: 50 Ω Corr CCorr RCal Freq Ref: Int (S) Avg Type: Log-Power Trig: Free Run 1 2 3 4 5 6 W W W W W W P N N N N N RL 1 Spectrum ΔMkr1 1.625 Scale/Div 10 dB Ref Level 20.00 dBm Center 433.920000 MHz Res BW 1.0 MHz Span 0 Hz Sweep 5.00 s (1001 pts)



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Attachment E--Duty Cycle Data

Please refer the following pages:

Plot 1: transmit once in 100ms, there are two kinds of pulse, the small pulses total 16, the large pulses total 9.

Plot 2: one small pulse in a time period of 0.39 ms **Plot 3:** one large pulse in a time period of 1.03 ms

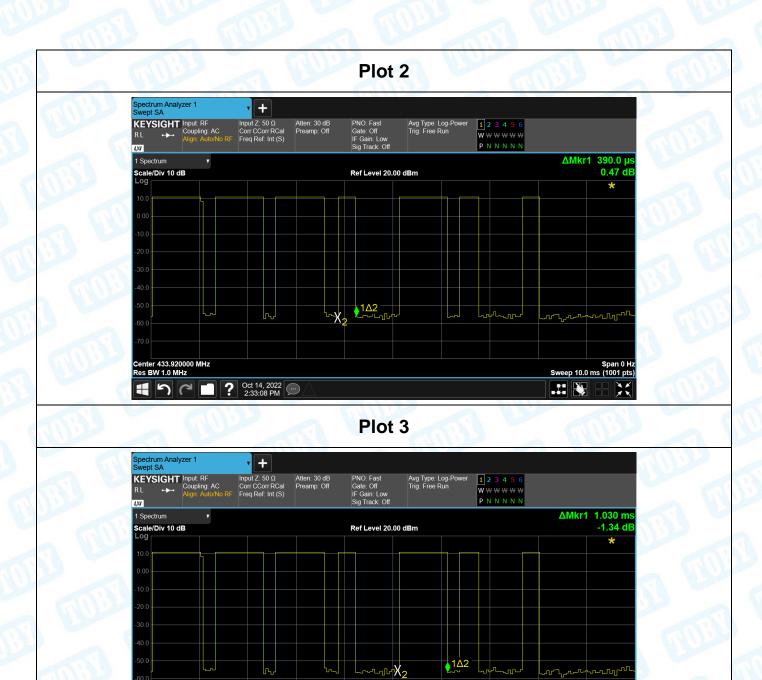
Duty Cycle=ON/Total= (0.39 *16+1.03*9)/41.1=37.73% 20log (Duty Cycle) =-8.46 Average=Peak Value+ 20log (Duty Cycle), AV=PK-8.46

Plot 1





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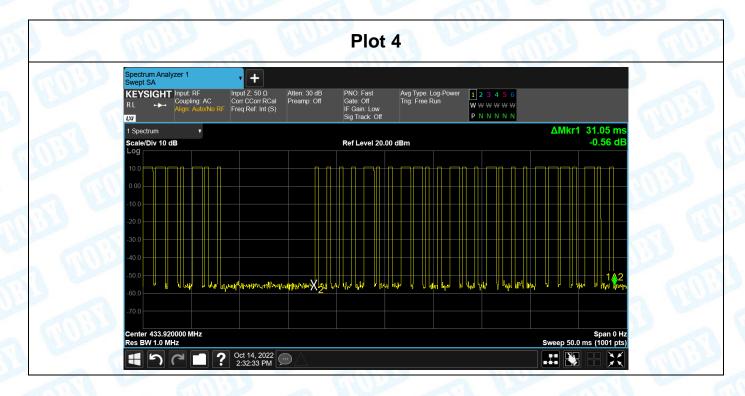
Center 433.920000 MHz Res BW 1.0 MHz

(C) Cot 14, 2022 (C) 2:33:29 PM

Span 0 Hz Sweep 10.0 ms (1001 pts)



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----END OF REPORT----

