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Report Template Version: V04 Report Template Revision Date: 2018-07-06

Test Report

Report No.:	CQASZ20210300297E-01
Applicant:	Shenzhen Times Innovation Technology Co., Ltd
Address of Applicant:	5th Floor, Building B, Baseus Intelligence Park, No.2008,Xuegang Rd, Gangtou Community, Bantian Street, Longgang District, Shenzhen.
Equipment Under Test (E	UT):
EUT Name:	Baseus Orange Dot Wireless Presenter (Red Laser)(Charging)
Model No.:	ACFYB-E0G
Test Model No.:	ACFYB-E0G
Brand Name:	Baseus
FCC ID:	2AY37-ACFYB-E0G
Standards:	47 CFR Part 15, Subpart C
Date of Receipt:	2021-03-17
Date of Test:	2021-03-17 to 2021-03-31
Date of Issue:	2021-03-31
Test Result:	PASS*

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

Tested By:	Juh Li
, _	(Jun Li)
Reviewed By:	Ann lin
	(Ares Liu)
Approved By:	Sheek, Luo
	(Sheek Luo)

TESTING TECHNING TEC

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210300297E-01	Rev.01	Initial report	2021-03-31



2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203	ANSI C63.10 (2013)	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 (2013)	PASS
Field Strength of the Fundamental Signal	47 CFR Part 15, Subpart C Section 15.249 (a)	ANSI C63.10 (2013)	PASS
Spurious Emissions	47 CFR Part 15, Subpart C Section 15.249 (a)/15.209	ANSI C63.10 (2013)	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.249(a)/15.205	ANSI C63.10 (2013)	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.215 (c)	ANSI C63.10 (2013)	PASS



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4 General Information

4.1 Client Information

Applicant:	Shenzhen Times Innovation Technology Co., Ltd
Address of Applicant:	5th Floor, Building B, Baseus Intelligence Park, No.2008,Xuegang Rd, Gangtou Community, Bantian Street, Longgang District, Shenzhen.
Manufacturer:	Shenzhen Times Innovation Technology Co., Ltd
Address of Manufacturer:	5th Floor, Building B, Baseus Intelligence Park, No.2008,Xuegang Rd, Gangtou Community, Bantian Street, Longgang District, Shenzhen.
Factory:	Dongguan Huda Electronic Co., Ltd
Address of Factory:	Xinchun Building 6/F, Shangsha community, ChangAn Town, Dongguan, Guangdong, China

4.2 General Description of EUT

Product Name:	Baseus Orange Dot Wireless Presenter (Red Laser)(Charging)
Model No.:	ACFYB-E0G
Test Model No.:	ACFYB-E0G
Trade Mark:	Baseus
Hardware Version:	V1.0
Software Version:	V1.0
Frequency Range:	2416MHz ~ 2468MHz
Modulation Type:	GFSK
Number of Channels:	3 (declared by the client)
Sample Type:	□ Mobile
Test Software of EUT:	RF test (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery:DC3.7V, 250mAh, Charge by DC5.0V



Operation Frequency each of channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2416MHz	2	2440MHz	3	2468MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel(CH1)	2416MHz
The Middle channel(CH2)	2440MHz
The Highest channel(CH3)	2468MHz



4.3 Test Environment and Mode

Operating Environment	:
Radiated Emissions:	
Temperature:	25.5 °C
Humidity:	53% RH
Atmospheric Pressure:	1009mbar
Conducted Emission:	
Temperature:	24.6 °C
Humidity:	59% RH
Atmospheric Pressure:	1009mbar
Radio conducted item to	est (RF Conducted test room):
Temperature:	25.3 °C
Humidity:	55% RH
Atmospheric Pressure:	1009mbar
Test mode:	
Transmitting mode:	Use test software (RF test) to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Adapter	HUAWEI	LPL-C010050200Z	DOC	CQA
2) Cable				

2) Cable	

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/



4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Test	Range	Uncertainty	Notes
Radiated Emission	Below 1GHz	5.12dB	(1)
Radiated Emission	Above 1GHz	4.60dB	(1)
Conducted Disturbance	0.15~30MHz	3.34dB	(1)

Hereafter the best measurement capability for **CQA** laboratory is reported:

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



4.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.,

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.7 Test Facility

• A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen 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. Registration No.:522263

4.8 Deviation from Standards

None.

4.9 Abnormalities from Standard Conditions

None.

4.10 Other Information Requested by the Customer

None.



4.11 Equipment List

			Instrument	Calibration	Calibration
Test Equipment	Manufacturer	Model No.	No.	Date	Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2020/10/24	2021/10/23
Spectrum analyzer	R&S	FSU26	CQA-038	2020/10/24	2021/10/23
		AMF-6D-02001800-29-			
Preamplifier	MITEQ	20P	CQA-036	2020/10/24	2021/10/23
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2020/10/20	2021/10/19
Bilog Antenna	R&S	HL562	CQA-011	2020/9/25	2021/9/24
Horn Antenna	R&S	HF906	CQA-012	2020/9/25	2021/9/24
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2020/9/24	2021/9/23
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2020/9/25	2021/9/24
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2020/9/25	2021/9/24
Antenna Connector	CQA	RFC-01	CQA-080	2020/9/25	2021/9/24
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2020/9/25	2021/9/24
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2020/9/25	2021/9/24
EMI Test Receiver	R&S	ESR7	CQA-005	2020/10/24	2021/10/23
LISN	R&S	ENV216	CQA-003	2020/10/22	2021/10/21
Coaxial cable	CQA	N/A	CQA-C009	2020/9/25	2021/9/24
DC power	KEYSIGHT	E3631A	CQA-028	2020/9/25	2021/9/24



5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203							
15.203 requirement:								
An intentional radiator shall	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the							
responsible party shall be us	sed with the device. The use of a permanently attached antenna or of an							
antenna that uses a unique	coupling to the intentional radiator, the manufacturer may design the unit							
so that a broken antenna ca	in be replaced by the user, but the use of a standard antenna jack or							
electrical connector is prohil	bited.							
EUT Antenna:								
The antenna is PCB antenna	a. The best case gain of the antenna is 0dBi.							



5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	150kHz to 30MHz				
Limit:	_	Limit (dBuV)			
	Frequency range (MHz)	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	n of the frequency.			
Test Procedure:	 The mains terminal disturbance voltage test was conducted in a shielded room. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50µH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to 				
Test Setup:	Shielding Room	AE B B B C C C C C C C C C C C C C	Test Receiver		

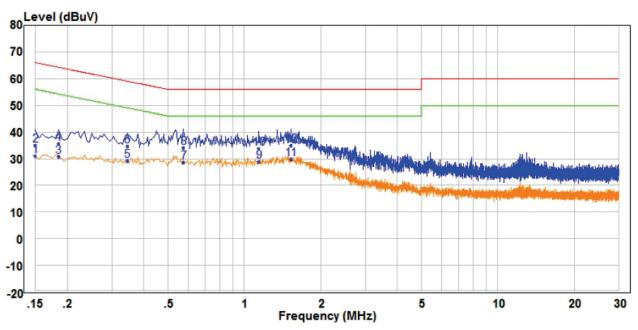


Report No.: CQASZ20210300297E-01

Test Mode:	Charge +Transmitting mode.
Test Results:	Pass

Measurement Data

Live line:



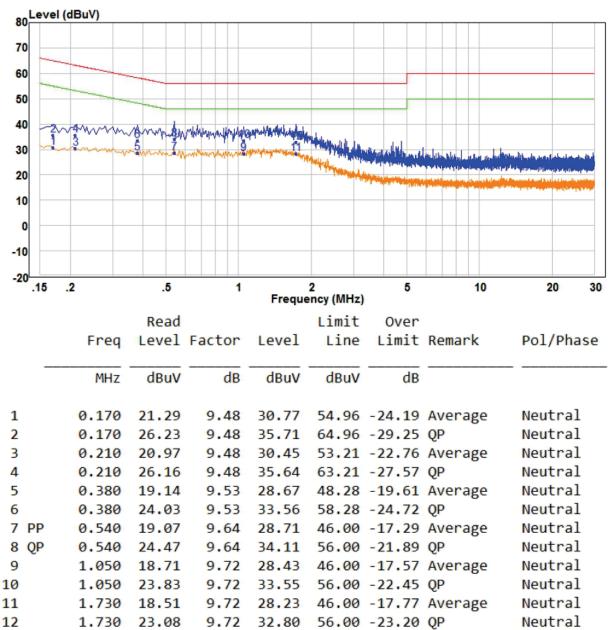
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	3 <u></u>	
1	0.150	21.60	9.48	31.08	56.00	-24.92	Average	Neutral
2	0.150	25.62	9.48	35.10	66.00	-30.90	QP	Neutral
3	0.185	21.37	9.48	30.85	54.26	-23.41	Average	Neutral
4	0.185	26.27	9.48	35.75	64.26	-28.51	QP	Neutral
5	0.345	19.70	9.51	29.21	49.08	-19.87	Average	Neutral
6	0.345	25.20	9.51	34.71	59.08	-24.37	QP	Neutral
7	0.575	19.04	9.69	28.73	46.00	-17.27	Average	Neutral
8	0.575	24.40	9.69	34.09	56.00	-21.91	QP	Neutral
9	1.140	19.18	9.72	28.90	46.00	-17.10	Average	Neutral
10	1.140	24.05	9.72	33.77	56.00	-22.23	QP	Neutral
11 P	P 1.525	20.11	9.72	29.83	46.00	-16.17	Average	Neutral
12 Q	P 1.525	25.25	9.72	34.97	56.00	-21.03	QP	Neutral

Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.



Neutral line:



Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

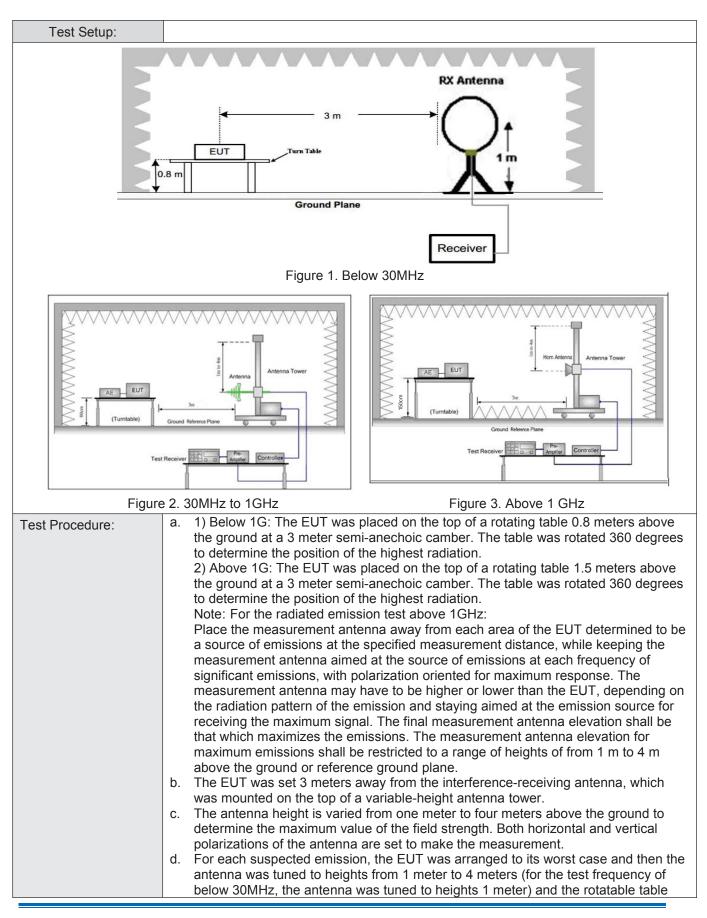
3. If the Peak value under Average limit, the Average value is not recorded in the report.



5.3 Radiated Emission

Test Requirement:	47 CFR Part 15C Section 15.249 and 15.209 and 15.205								
Test Method:	ANSI C63.10: 2013								
Test Site:	Measurement Distance:	3m (Semi-Anechoi	ic Chamber)						
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark				
	0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak				
	0.009MHz-0.090MHz	Average	10kHz	30KHz	Average				
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak				
	0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak				
	0.110MHz-0.490MHz	Average	10kHz	30KHz	Average				
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak				
	30MHz-1GHz	Quasi-peak	100 kHz	300KHz	Quasi-peak				
		Peak	1MHz	3MHz	Peak				
	Above 1GHz	Peak	1MHz	10Hz	Average				
	Note: For fundamental value, RMS detec	frequency, RBW=8 tor is for Average v		5MHz, Peak o	detector is for	PK			
Limit: (Spurious Emissions	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark		Measurement distance (m)			
and band edge)	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300				
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30				
	1.705MHz-30MHz	30	-	-	30				
	30MHz-88MHz	100	40.0	Quasi-peak	3				
	88MHz-216MHz	150	43.5	Quasi-peak	3				
	216MHz-960MHz	200	46.0	Quasi-peak	3				
	960MHz-1GHz	500	54.0	Quasi-peak	3				
	Above 1GHz	500	54.0	Average	3				
 Note: 1) 15.35(b), Unless otherwise specified, the limit on peak radio emissions is 20dB above the maximum permitted average emapplicable to the equipment under test. This peak limit applies to the emission level radiated by the device. 2) Emissions radiated outside of the specified frequency bands, excert harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.2 whichever is the lesser attenuation. 						limit			
Limit:	Frequency	Limit (dBuV	//m @3m)	Ren	nark	1			
(Field strength of the		94.	<u> </u>	Average		1			
fundamental signal)	2400MHz-2483.5MH	z 114	.0	Peak	Value	1			





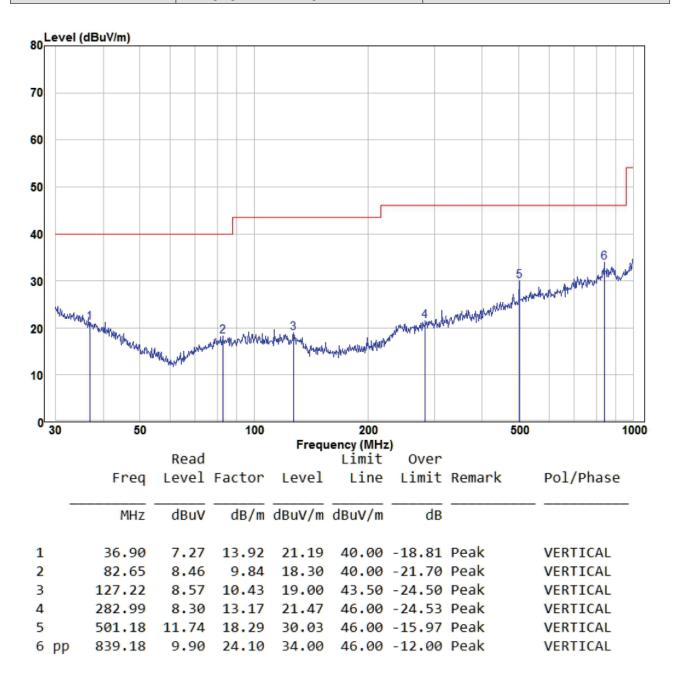


	 was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
	f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be retested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
	 g. Test the EUT in the lowest channel,the middle channel,the Highest channel h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Charge + Transmitting mode.
Test Results:	Pass

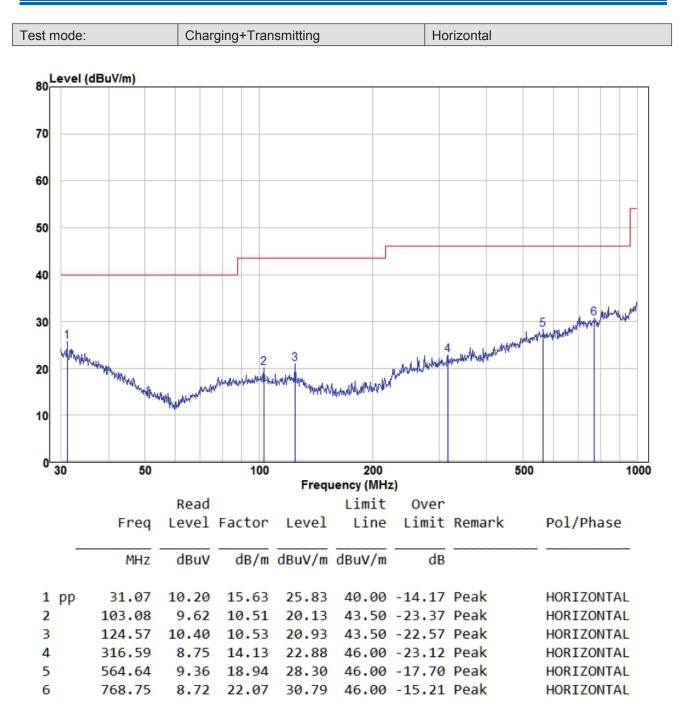


Measurement Data

30MHz~1GHz		
Test mode:	Charging+Transmitting	Vertical









Above 1GHz							
Test mode:		Transmitti	ng	Test chann	nel:	Lowest	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	H/V
2390	55.42	-9.2	46.22	74	-27.78	Peak	Н
2390	45.28	-9.2	36.08	54	-17.92	AVG	н
2400	62.77	-9.39	53.38	74	-20.62	Peak	Н
2400	48.43	-9.39	39.04	54	-14.96	AVG	Н
2416	96.42	-9.35	87.07	114	-26.93	peak	н
2416	93.28	-9.35	83.93	94	-10.07	AVG	н
4832	53.11	-4.27	48.84	74	-25.16	peak	н
4832	48.97	-4.27	44.7	54	-9.3	AVG	н
7248	52.46	1.12	53.58	74	-20.42	peak	н
7248	41.32	1.12	42.44	54	-11.56	AVG	н
2390	54.33	-9.2	45.13	74	-28.87	peak	V
2390	46.21	-9.2	37.01	54	-16.99	AVG	V
2400	53.77	-9.39	44.38	74	-29.62	peak	V
2400	45.28	-9.39	35.89	54	-18.11	AVG	V
2416	94.21	-9.35	84.86	114	-29.14	peak	V
2416	91.02	-9.35	81.67	94	-12.33	AVG	V
4832	50.11	-4.27	45.84	74	-28.16	peak	V
4832	47.21	-4.27	42.94	54	-11.06	AVG	V
7248	50.14	1.12	51.26	74	-22.74	peak	V
7248	45.22	1.12	46.34	54	-7.66	AVG	V



Test mode:		Transmitti	ng	Test channel:		Middle	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	H/V
2440	94.22	-9.46	84.76	114	-29.24	peak	Н
2440	92.1	-9.46	82.64	94	-11.36	AVG	н
4880	60.03	-4.12	55.91	74	-18.09	peak	Н
4880	42.87	-4.12	38.75	54	-15.25	AVG	н
7320	59.97	1.46	61.43	74	-12.57	peak	Н
7320	43.07	1.46	44.53	54	-9.47	AVG	Н
2440	93.22	-9.46	83.76	114	-30.24	peak	V
2440	92.54	-9.46	83.08	94	-10.92	AVG	V
4880	59.98	-4.12	55.86	74	-18.14	peak	V
4880	45.22	-4.12	41.1	54	-12.9	AVG	V
7320	60.01	1.46	61.47	74	-12.53	peak	V
7320	44.88	1.46	46.34	54	-7.66	AVG	V



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Test mode:		Transmitting		Test channel:		Highest	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	H/V
2468	95.27	-9.23	86.04	114	-27.96	peak	н
2468	93.11	-9.23	83.88	94	-10.12	AVG	н
2483.5	60.24	-9.29	50.95	74	-23.05	Peak	н
2483.5	44.98	-9.29	35.69	54	-18.31	AVG	н
4936	60.37	-4.04	56.33	74	-17.67	peak	н
4936	45.88	-4.04	41.84	54	-12.16	AVG	н
7404	58.87	1.65	60.52	74	-13.48	peak	н
7404	45.92	1.65	47.57	54	-6.43	AVG	н
2468	95.03	-9.23	85.8	114	-28.2	peak	V
2468	92.71	-9.23	83.48	94	-10.52	AVG	V
2483.5	60.07	-9.29	50.78	74	-23.22	peak	V
2483.5	44.93	-9.29	35.64	54	-18.36	AVG	V
4936	59.28	-4.04	55.24	74	-18.76	peak	V
4936	45.44	-4.04	41.4	54	-12.6	AVG	V
7404	59.77	1.65	61.42	74	-12.58	peak	V
7404	43.67	1.65	45.32	54	-8.68	AVG	V

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Scan from 9kHz to 25GHz, The disturbance above 10GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.



5.4 20dB Bandwidth

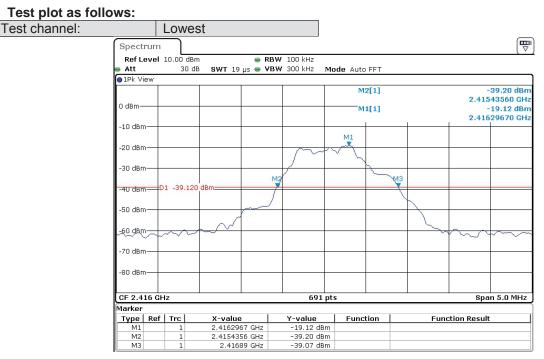
Test Requirement:	47 CFR Part 15C Section 15.215		
Test Method:	ANSI C63.10:2013		
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Mode:	Transmitting with GFSK modulation.		
Limit:	N/A		
Test Results:	Pass		

Measurement Data

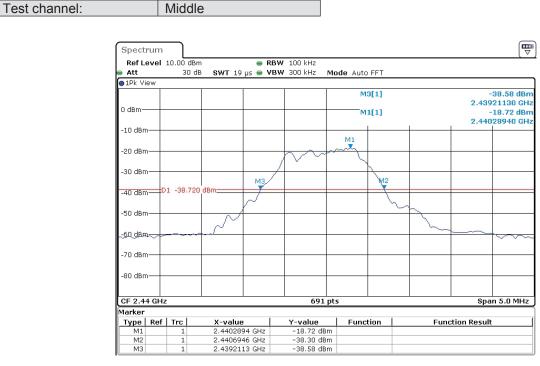
Test channel	20dB bandwidth (MHz)	Results
Lowest	1.4544	Pass
Middle	1.4833	Pass
Highest	1.4183	Pass



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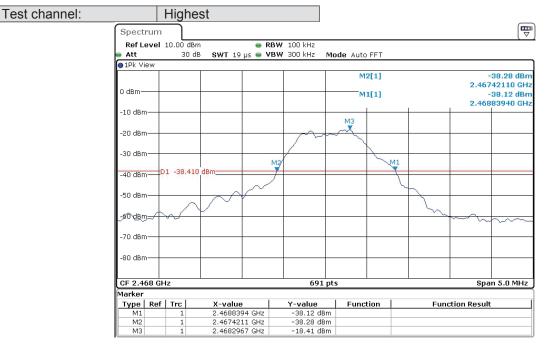
Date:25 M AR 2021 09:14:14



Date: 25 M AR 2021 09:17:50



Report No.: CQASZ20210300297E-01



Date: 25 M AR 2021 09:19:40



6 Photographs

6.1 Radiated Emission Test Setup

9kHz~30MHz









6.2 Conducted Emission Test Setup





6.3 EUT Constructional Details

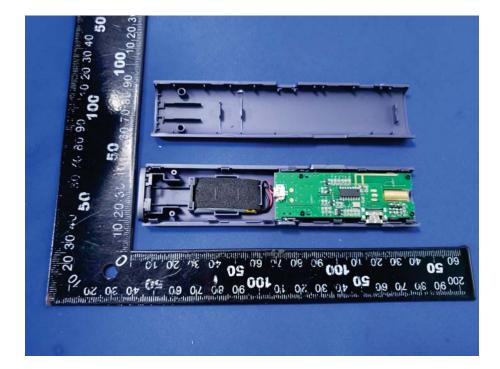
Test Model No.: ACFYB-E0G



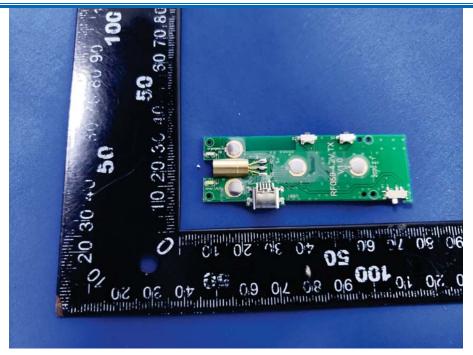


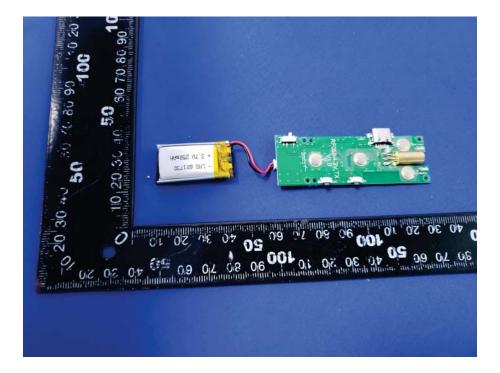






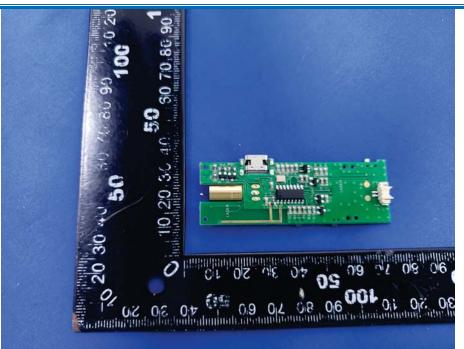


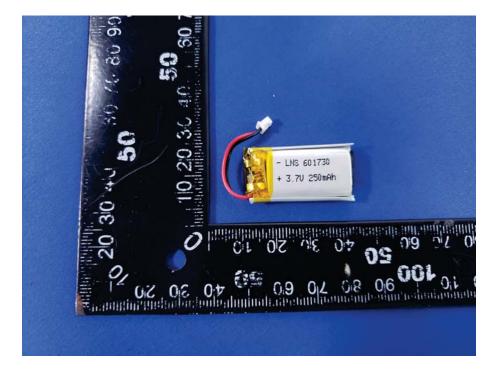






Report No.: CQASZ20210300297E-01





The End