



FCC TEST REPORT

Test report
On Behalf of
The Art of Utility AB

For

TRUE WIRELESS EARBUDS WITH POWERBANK
Model No.: Defunc TRUE

FCC ID: 2AKFED026

Prepared for: The Art of Utility AB

Danderydsgatan 28, 114 26, STOCKHOLM, Sweden

Prepared By: Shenzhen HUAK Testing Technology Co., Ltd.

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Bao'an District, Shenzhen City, China

Date of Test: Jul. 05, 2018 ~ Jul. 12, 2018

Date of Report: Jul. 12, 2018
Report Number: HK180702359-E



TEST RESULT CERTIFICATION

Applicant's name:	The Art of Utility AB								
Address:	Danderyo	lsgatan 28, 114 26, STOCKHOLM, Sweden							
Manufacture's Name:	Donggua	Dongguan City Kingyou Electronics Co., Ltd.							
Address:	No. 27,Sa	an Jiang Industrial Park,HengLi Twon,DongGuan							
Product description	3,								
Trade Mark:	defunc								
Product name:	TRUE WI	RELESS EARBUDS WITH POWERBANK							
Model and/or type reference :	Defunc T	RUE							
Standards:	FCC Rule	es and Regulations Part 15 Subpart C Section 15.249							
source of the material. Shenzhe	en HUAK for dama lacement	Jul. 05, 2018 ~ Jul. 12, 2018 Jul. 12, 2018							
Testing Engine	eer :	Good Diane							
Technical Mar	nager :	(Gary Qian) Edan Hu							
		(Eden Hu)							

(Jason Zhou)

Authorized Signatory:

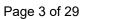
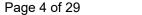




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1. TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

DESCRIPTION OF TEST	RESULT
CONDUCTED EMISSIONS TEST	COMPLIANT
RADIATED EMISSION TEST	COMPLIANT
BAND EDGE	COMPLIANT
OCCUPIED BANDWIDTH MEASUREMENT	COMPLIANT
ANTENNA REQUIREMENT	COMPLIANT

1.2 TEST FACILITY

Test Firm : Shenzhen HUAK Testing Technology Co., Ltd.

Address 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai

Street, Bao'an District, Shenzhen City, China

1.3 MEASUREMENT UNCERTAINTY

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2
Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2
Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2
Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	TRUE WIRELESS EARBUDS WITH POWERBANK
Model Name	Defunc TRUE
Serial No	N/A
Model Difference	N/A
FCC ID	2AKFED026
Antenna Type	Internal Antenna
Antenna Gain	2dBi
BT Operation frequency	2402-2480MHz
Number of Channels	79CH
Modulation Type	GFSK, π/4DQPSK, 8DPSK
Power Source	DC3.7V From Battery or DC5V 0.5A From Micro USB
Power Rating	DC3.7V From Battery or DC5V 0.5A From Micro USB





2.1.1 Carrier Frequency of Channels

Channel List								
Channel	Frequency (MHz)	Channel	Frequency	Channel	Frequency (MHz)			
00	2402	27	(MHz) 2429	54	2456			
01	2403	28	2430	55	2457			
02	2404	29	2431	56	2458			
03	2405	30	2432	57	2459			
04	2406	31	2433	58	2460			
05	2407	32	2434	59	2461			
06	2408	33	2435	60	2462			
07	2409	34	2436	61	2463			
08	2410	35	2437	62	2464			
09	2411	36	2438	63	2465			
10	2412	37	2439	64	2466			
11	2413	38	2440	65	2467			
12	2414	39	2441	66	2468			
13	2415	40	2442	67	2469			
14	2416	41	2443	68	2470			
15	2417	42	2444	69	2471			
16	2418	43	2445	70	2472			
17	2419	44	2446	71	2473			
18	2420	45	2447	72	2474			
19	2421	46	2448	73	2475			
20	2422	47	2449	74	2476			
21	2423	48	2450	75	2477			
22	2424	49	2451	76	2478			
23	2425	50	2452	77	2479			
24	2426	51	2453	78	2480			
25	2427	52	2454					
26	2428	53	2455					

2.2 Operation of EUT during testing

Operating Mode The mode is used: **Transmitting mode**

Low Channel: 2402MHz Middle Channel: 2441MHz High Channel: 2480MHz

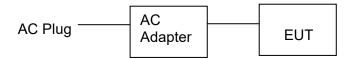




2.3 DESCRIPTION OF TEST SETUP

O C CEUT I C I C I C

Operation of EUT during conducted testing:



Operation of EUT during Radiation and Above1GHz Radiation testing:

EUT

Adapter information

Model: HW-050500DFQ

Input: 100-240V~, 50/60Hz, 0.5A

Output: 5VDC, 0.5A



2.4 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.
1.	L.I.S.N. Artificial Mains Network	R&S	ENV216	HKE-002	Dec. 28, 2017	1 Year
2.	Receiver	R&S	ESCI 7	HKE-010	Dec. 28, 2017	1 Year
3.	RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 28, 2017	1 Year
4.	Spectrum analyzer	R&S	FSP40	HKE-025	Dec. 28, 2017	1 Year
5.	Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 28, 2017	1 Year
6.	Preamplifier	Schwarzbeck	BBV 9743	HKE-006	Dec. 28, 2017	1 Year
7.	EMI Test Receiver	Rohde & Schwarz	ESCI 7	HKE-010	Dec. 28, 2017	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	HKE-012	Dec. 28, 2017	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 28, 2017	1 Year
10.	Horn Antenna	Schewarzbeck	9120D	HKE-013	Dec. 28, 2017	1 Year
11.	Pre-amplifier	EMCI	EMC051845 SE	HKE-015	Dec. 28, 2017	1 Year
12.	Pre-amplifier	Agilent	83051A	HKE-016	Dec. 28, 2017	1 Year
13.	EMI Test Software EZ-EMC	Tonscend	JS1120-B Version	HKE-083	Dec. 28, 2017	N/A
14.	Power Sensor	Agilent	E9300A	HKE-086	Dec. 28, 2017	1 Year
15.	Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 28, 2017	1 Year
16.	Signal generator	Agilent	N5182A	HKE-029	Dec. 28, 2017	1 Year
17.	Signal Generator	Agilent	83630A	HKE-028	Dec. 28, 2017	1 Year
18.	Shielded room	Shiel Hong	4*3*3	HKE-039	Dec. 28, 2017	3 Year





CONDUCTED EMISSIONS TEST

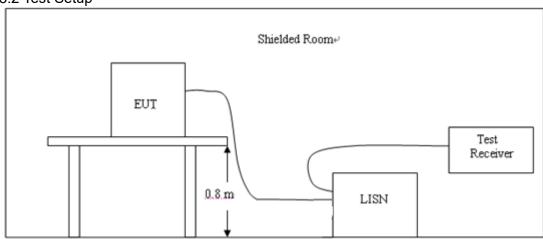
3.1 Conducted Power Line Emission Limit

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following

Frequency (MHz)	М	Maximum RF Line Voltage (dBμV)						
	CLAS	SS A	CLASS B					
(11112)	Q.P.	Ave.	Q.P.	Ave.				
0.15 - 0.50	79	66	66-56*	56-46*				
0.50 - 5.00	73	60	56	46				
5.00 - 30.0	73	60	60	50				

^{*} Decreasing linearly with the logarithm of the frequency
For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.2 Test Setup



3.3 Test Procedure

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.1 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

3.4 Test Result

PASS

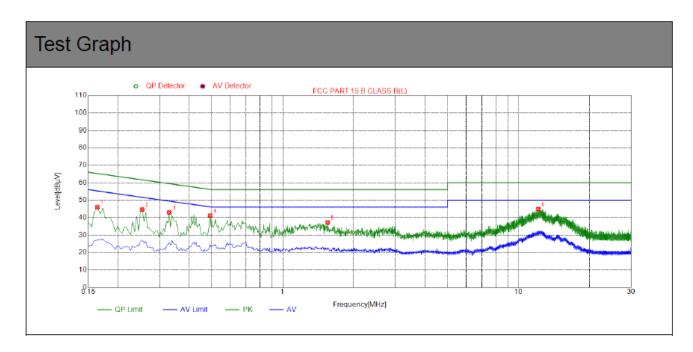
All the test modes completed for test. only the worst result of 8DPSK High Channel was reported as below:





Remark: We tested three Channels in AC 120V/60Hz and AC 240V/60Hz, the worst case was recorded.

Test Specification: Line

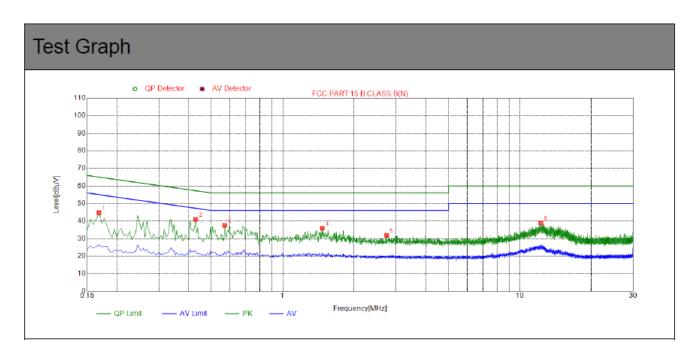


NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµ√]	Margin [dB]	Detector
1	0.1635	45.97	9.98	65.29	19.32	PK
2	0.2535	44.58	10.04	61.64	17.06	PK
3	0.3300	43.03	10.04	59.45	16.42	PK
4	0.4920	41.22	10.04	56.14	14.92	PK
5	1.5495	37.18	10.11	56.00	18.82	PK
6	12.1155	44.84	9.99	60.00	15.16	PK

Remark: Transd = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level

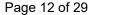


Test Specification: Neutral



NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Detector
1	0.1680	44.70	10.01	65.06	20.36	PK
2	0.4290	40.95	10.05	57.27	16.32	PK
3	0.5685	37.49	10.05	56.00	18.51	PK
4	1.4685	35.88	10.10	56.00	20.12	PK
5	2.7375	31.87	10.21	56.00	24.13	PK
6	12.2550	38.88	9.98	60.00	21.12	PK

Remark: Transd = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level





4 RADIATED EMISSION TEST

4.1 Radiation Limit

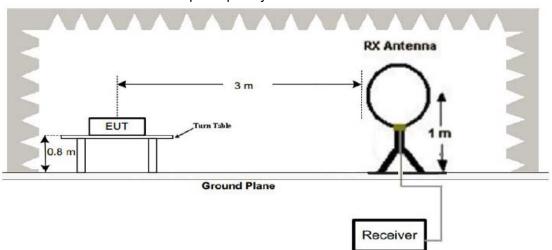
For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dBµV/m)	Radiated (µV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

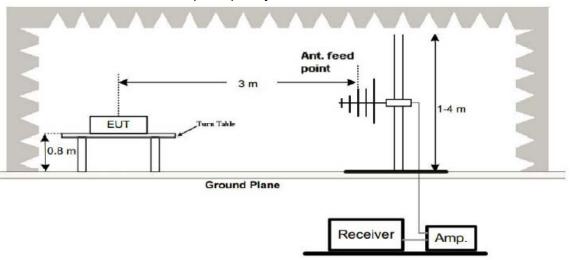
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

4.2 Test Setup

(1) Radiated Emission Test-Up Frequency Below 30MHz

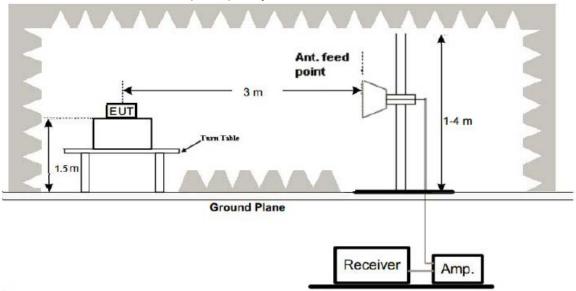


(2) Radiated Emission Test-Up Frequency 30MHz~1GHz





(3) Radiated Emission Test-Up Frequency Above 1GHz



4.3 Test Procedure

- 1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.
- 7. The test frequency range from 9KHz to 25GHz per FCC PART 15.33(a).

Note

For battery operated equipment, the equipment tests shall be performed using a new battery.

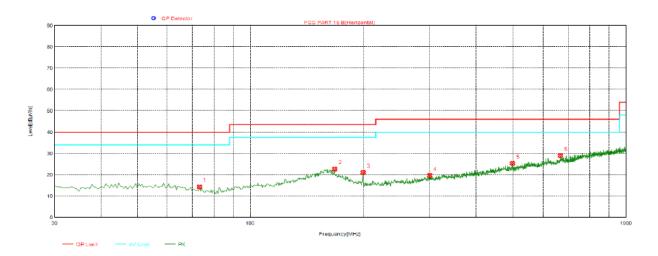
4.4 Test Result

PASS

All the test modes completed for test. only the worst result of 8DPSK Low Channel was reported as below:



Below 1GHz Test Results: Antenna polarity: H

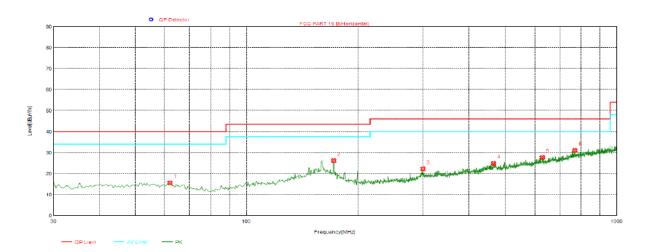


NO.	Freq.	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity
1	73.1650	14.30	-18.24	40.00	25.70	PK	100	242	Horizontal
2	167.7400	22.65	-10.50	43.50	20.85	PK	100	160	Horizontal
3	199.7500	21.06	-15.53	43.50	22.44	PK	100	237	Horizontal
4	300.6300	19.68	-13.13	46.00	26.32	PK	100	315	Horizontal
5	499.9650	25.32	-8.20	46.00	20.68	PK	100	139	Horizontal
6	668.2600	28.97	-4.26	46.00	17.03	PK	100	357	Horizontal

Remark: Transd = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level



Antenna polarity: V



NO.	Freq.	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity
1	62.0100	15.59	-16.56	40.00	24.41	PK	100	106	Horizontal
2	172.1050	26.12	-11.37	43.50	17.38	PK	100	84	Horizontal
3	300.1450	22.27	-13.13	46.00	23.73	PK	100	274	Horizontal
4	465.5300	24.88	-8.49	46.00	21.12	PK	100	20	Horizontal
5	628.9750	27.66	-5.31	46.00	18.34	PK	100	82	Horizontal
6	770.1100	31.05	-2.44	46.00	14.95	PK	100	86	Horizontal

Remark: Transd = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level

Remark:

- (1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.



Above 1 GHz Test Results:

CH Low (2402MHz)

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
2402	112.28	-5.81	106.47	114.00	-7.53	peak		
2402	86.55	-5.81	80.74	94.00	-13.26	AVG		
4804	56.43	-3.65	52.78	74.00	-21.22	peak		
4804	46.47	-3.65	42.82	54.00	-11.18	AVG		
7206	56.39	-0.95	55.44	74.00	-18.56	peak		
7206	41.72	-0.95	40.77	54.00	-13.23	AVG		
Remark: Facto	temark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Datastan		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
2402	111.87	-5.81	106.06	114.00	-7.94	peak		
2402	86.25	-5.81	80.44	94.00	-13.56	AVG		
4804	56.19	-3.65	52.54	74.00	-21.46	peak		
4804	46.24	-3.65	42.59	54.00	-11.41	AVG		
7206	56.08	-0.95	55.13	74.00	-18.87	peak		
7206	41.35	-0.95	40.40	54.00	-13.60	AVG		
Remark: Facto	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



CH Middle (2441MHz)

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Datastan		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
2441.00	111.41	-5.73	105.68	114.00	-8.32	peak		
2441.00	85.93	-5.73	80.20	94.00	-13.80	AVG		
4882.00	56.36	-3.54	52.82	74.00	-21.18	peak		
4882.00	45.79	-3.54	42.25	54.00	-11.75	AVG		
7323.00	55.82	-0.81	55.01	74.00	-18.99	peak		
7323.00	41.05	-0.81	40.24	54.00	-13.76	AVG		
Remark: Fact	temark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2441.00	110.94	-5.73	105.21	114.00	-8.79	peak
2441.00	85.66	-5.73	79.93	94.00	-14.07	AVG
4882.00	55.83	-3.54	52.29	74.00	-21.71	peak
4882.00	45.58	-3.54	42.04	54.00	-11.96	AVG
7323.00	55.45	-0.81	54.64	74.00	-19.36	peak
7323.00	40.79	-0.81	39.98	54.00	-14.02	AVG
Remark: Facto	or = Antenna Fac	tor + Cable Lo	ss – Pre-amplifier.			





CH High (2480MHz)

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2480	110.56	-5.63	104.93	114.00	-9.07	peak
2480	85.32	-5.63	79.69	94.00	-14.31	AVG
4960	55.47	-3.43	52.04	74.00	-21.96	peak
4960	45.29	-3.44	41.85	54.00	-12.15	AVG
7440	55.13	-0.77	54.36	74.00	-19.64	peak
7440	40.05	-0.77	39.28	54.00	-14.72	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	D ()
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2480	109.95	-5.63	104.32	114.00	-9.68	peak
2480	84.78	-5.63	79.15	94.00	-14.85	AVG
4960	55.16	-3.43	51.73	74.00	-22.27	peak
4960	44.82	-3.44	41.38	54.00	-12.62	AVG
7440	54.29	-0.77	53.52	74.00	-20.48	peak
7440	39.64	-0.77	38.87	54.00	-15.13	AVG

Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) 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.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak
- detection at frequency above 1GHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.
- (7)All modes of operation were investigated and the worst-case emissions are reported.





5 BAND EDGE

5.1 Limits

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

5.2 Test Procedure

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 100KHz and VBM to 300KHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength. The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW to 100 KHz and VBW to 300 KHz, to measure the conducted peak band edge.

5.3 Test Result

PASS

All the test modes completed for test. The worst case of Band Edge is GFSK; the test data of this mode was reported.

Radiated Band Edge Test:

Operation Mode: TX CH Low (2402MHz)

Horizontal (Worst case)

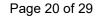
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2390	56.18	-5.81	50.37	74	-23.63	peak
2390	1	-5.81	1	54	1	AVG
2400	53.92	-5.84	48.08	74	-25.92	peak
2400	1	-5.84	1	54	1	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2390	55.22	-5.81	49.41	74	-24.59	peak
2390	1	-5.81	1	54	1	AVG
2400	53.61	-5.84	47.77	74	-26.23	peak
2400	/	-5.84	1	54	1	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.





Operation Mode: TX CH High (2480MHz)

Horizontal (Worst case)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2483.5	55.79	-5.65	50.14	74	-23.86	peak
2483.5	1	-5.65	1	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2483.5	53.45	-5.65	47.8	74	-26.2	peak
2483.5	/	-5.65	1	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.



6 OCCUPIED BANDWIDTH MEASUREMENT

6.1 Test Setup

Same as Radiated Emission Measurement

6.2 Test Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Set EUT as normal operation.
- 3. Based on ANSI C63.10 section 6.9.2: RBW= 100KHz. VBW= 300 KHz, Span=2MHz.
- 4. The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector.

6.3 Measurement Equipment Used

Same as Radiated Emission Measurement

6.4 Test Result

PASS

Test Mode	Frequency	20dB Bandwidth (MHz)	Result
	2402 MHz	1.098	PASS
GFSK	2441 MHz	1.106	PASS
	2480 MHz	1.103	PASS
	2402 MHz	1.274	PASS
π/4DQPSK	2441 MHz	1.281	PASS
	2480 MHz	1.278	PASS
	2402 MHz	1.266	PASS
8DPSK	2441 MHz	1.269	PASS
	2480 MHz	1.273	PASS



of 29 Report No.: HK180702359-E

Test Mode: GFSK

CH: 2402MHz



CH: 2441MHz





CH: 2480MHz



Test Mode: π/4DQPSK

CH: 2402MHz





CH: 2441MHz



CH: 2480MHz





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Test Mode: 8DPSK

CH: 2402MHz



CH: 2441MHz





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7 ANTENNA REQUIREMENT

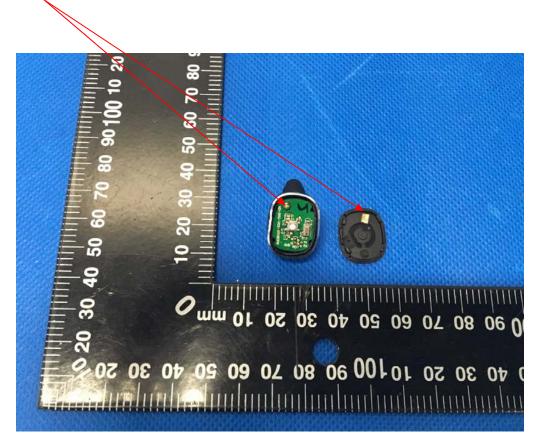
Standard Applicable

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.249, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Antenna Connected Construction

The antenna used in this product is a Internal Antenna, The directional gains of antenna used for transmitting is 2dBi.

ANTENNA

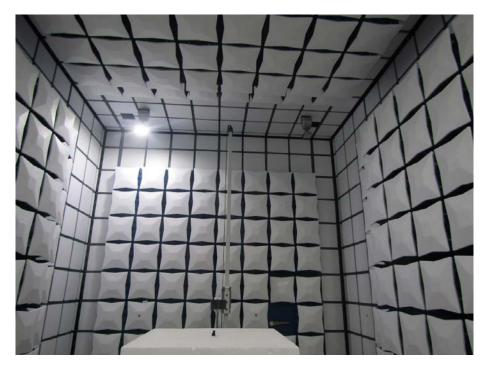




8 PHOTOGRAPH OF TEST

8.1 Radiated Emission







8.2 Conducted Emission

