

FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 2

CERTIFICATION TEST REPORT

For

WIFI+BT module

MODEL NUMBER: WCT0LR2201J

FCC ID: 2AC23-WCT0LR2201J IC: 12290A-WCT0LR2201J

REPORT NUMBER: 4788426874-2

ISSUE DATE: May 7, 2018

Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
	5/7/2018	Initial Issue	

Summary of Test Results					
Clause	Test Items	FCC/IC Rules	Test Results		
1	Peak Conducted Output Power	FCC 15.247 (b) (1) RSS-247 Clause 5.1 (b)	Complied		
2	Radiated Bandedge and Spurious	FCC 15.247 (d) FCC 15.209 FCC 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9 RSS-GEN Clause 8.10	Complied		
3	Antenna Requirement	FCC 15.203 RSS-GEN Clause 8.3	Complied		

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1. ATTESTATION OF TESCT RESULTS

Applicant Information

Company Name: Hui Zhou Gaoshengda Technology Co.,LTD

Address: HuaXing RD,NO 2,ZhongKai High Technology Development

Area, Huizhou, Guangdong, China

Manufacturer Information

Company Name: Hui Zhou Gaoshengda Technology Co.,LTD

Address: HuaXing RD,NO 2,ZhongKai High Technology Development

Area, Huizhou, Guangdong, China

EUT Description

Product Name WIFI+BT module

Brand Name GSD

Model Name WCT0LR2201J

Sample ID 1220986 Sample Status Good

Sample Received date April 16, 2018

Date Tested May 2~May 4, 2018

APPLICABLE STANDARDS

STANDARD TEST RESULTS PASS CFR 47 Part 15 Subpart C ISED RSS-247 Issue 2 PASS ISED RSS-GEN Issue 4 **PASS**

Tested By:	Checked By:
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Kebo Zhang Shawn Wen

Engineer Laboratory Leader

Approved By:

Stephen Guo

Laboratory Manager

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with DA 00-705, KDB414788 D01 Radiated Test Site v01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 4, and RSS-247 Issue 2.

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3. FACILITIES AND ACCREDITATION

Test Location	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Address	Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
Accreditation Certificate	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. The Certificate Registration Number is 4102.01. UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The Designation Number is CN1187. UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.

Note: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites.

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.90dB
Uncertainty for Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	2.2dB
Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.52dB
Uncertainty for Radiation Emission test	5.04dB(1-6GHz)
(1GHz to 26GHz)(include Fundamental	5.30dB (6GHz-18Gz)
emission)	5.23dB (18GHz-26Gz)

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Equipment	WIFI+BT module			
Model Name	WCT0LR2201J			
	Operation Frequency 2402 MHz		z ~ 2480 MHz	
Product	Modulation Type		Data Rate	
Description	GFSK		1Mbps	
(Bluetooth)	∏/4-DQPSK		2Mbps	
	8DPSK		3Mbps	
Power Supply	AC120V/60Hz			
Bluetooth Version	BT 4.2+EDR			
Hardware Version	V1.0			
Software Version	V1.27			

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5.2. MAXIMUM OUTPUT POWER

Bluetooth Mode	etooth Mode Frequency (MHz)		Max Output Power (dBm)	EIRP (dBm)
GFSK	2402-2480	0-78[79]	2.098	5.338
8DPSK	2402-2480	0-78[79]	3.332	6.672

5.3. PACKET TYPE CONFIGURATION

Test Mode	Packet Type	Setting(Packet Length)
	DH1	27
GFSK	DH3	183
	DH5	339
	2-DH1	54
∏/4-DQPSK	2-DH3	367
	2-DH5	679
	3-DH1	83
8DPSK	3-DH3	552
	3-DH5	1021

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5.4. CHANNEL LIST

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

5.5. TEST CHANNEL CONFIGURATION

Test Mode Test Channel Number		Test Channel	
GFSK	CH 00, CH 39, CH 78	Low, Middle, High	
8DPSK	CH 00, CH 39, CH 78	Low, Middle, High	

5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band						
Test S	oftware	RELBTAPP				
Modulation Type Transmit Antenna		Test Channel				
Woddiation Type	Number	CH 00	CH 39	CH 78		
GFSK	1	6 6 6				
8DPSK	1	6 6 6				

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5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
2	2402-2480	External Antenna	3.24

Note: There are two antenna in the EUT, only antenna 2 support BT mode.

Test Mode	Transmit and Receive Mode	Description
GFSK	1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
8DPSK	1TX, 1RX	Chain 1 can be used as transmitting/receiving anctenna.

5.8. WORST-CASE CONFIGURATIONS

Bluetooth Mode	Modulation Technology	Modulation Type	Data Rate (Mbps)
BR	FHSS	GFSK	1Mbit/s
EDR	FHSS	8DPSK	3Mbit/s

Note: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

5.9. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests				
Relative Humidity	55 ~ 65%				
Atmospheric Pressure:	1025Pa				
Temperature	TN	23 ~ 28 °C			
	VL	N/A			
Voltage :	VN	AC 120V 60Hz			
	VH	N/A			

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage.

VH= Upper Extreme Test Voltage

TN= Normal Temperature

5.10. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	PC	Dell	Vostro 3902	8KNDDB2
2	USB TO RS232	N/A	N/A	N/A

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	N/A	N/A	N/A	N/A	N/A

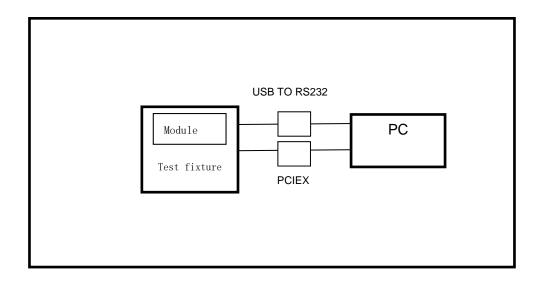
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

TEST SETUP

The EUT can work in an engineer mode with a software through a PC.

SETUP DIAGRAM FOR TESTS



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5.11. MEASURING INSTRUMENT AND SOFTWARE USED

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5.11. MEASURING INSTRUMENT AND SOFTWARE USED											
		Con	ducted E	missio	ns						
Used	Equipment	Manufacturer	Mode	l No.	Serial N	No.	Last Cal.	Next Cal.			
V	EMI Test Receiver	R&S	ESF	ESR3		61	Dec.12, 2017	Dec.11, 2018			
$\overline{\checkmark}$	Two-Line V-Network	R&S	ENV	216	10198	33	Dec.12, 2017	Dec.11, 2018			
V	Artificial Mains Networks	Schwarzbeck	NSLK	8126	81264	65	Dec.12, 2017	Dec.11, 2018			
	Software										
Used	Des	scription		Manı	ufacturer		Name	Version			
V	Test Software for 0	Conducted disturb	ance		UL		Antenna port	Ver. 7.2			
		Rad	diated Er	nissior	าร						
Used	Equipment	Manufacturer	Mode	l No.	Serial N	No.	Last Cal.	Next Cal.			
V	MXE EMI Receiver	KESIGHT	N903	38A	MY5640 36	000	Dec.12, 2017	Dec.11, 2018			
V	Hybrid Log Periodic Antenna	TDK	HLP-3	003C	13096		Dec.12, 2017	Dec.11, 2018			
V	Preamplifier	HP	844	7D	2944A0909 9		Dec.12, 2017	Dec.11, 2018			
V	EMI Measurement Receiver	R&S	ESR	26	10137	7	Dec.12, 2017	Dec.11, 2018			
\checkmark	Horn Antenna	TDK	HRN-	0118	13093	39	Jan. 09, 2016	Jan. 09, 2019			
V	High Gain Horn Antenna	Schwarzbeck	BBHA-	-9170	691		Jan.06, 2016	Jan.06, 2019			
V	Preamplifier	TDK	PA-02-	-0118	TRS-30	6	Dec.12, 2017	Dec.11, 2018			
V	Preamplifier	TDK	PA-0)2-2	TRS-30		Dec.12, 2017	Dec.11, 2018			
\checkmark	Loop antenna	Schwarzbeck	151		0000	8	Mar. 26, 2016	Mar. 26, 2019			
	Band Reject Filter	Wainwright	WRC 2350-2 2483.5-2 408	2400- 2533.5-	4		Dec.12, 2017	Dec.11, 2018			
			Softwa	are							
Used	Descr	ription	Ma	anufact	urer		Name	Version			
V	Test Software for Radiated disturband			Farad	l		EZ-EMC	Ver. UL-3A1			
Other instruments											
Used	Equipment	Manufacturer	Mode	l No.	Serial N		Last Cal.	Next Cal.			
V	Spectrum Analyzer	Keysight	N9030A		MY554 ⁻ 12		Dec.12, 2017	Dec.11, 2018			
V	Power Meter	Keysight	N903	31A	MY554 ⁻ 24		Dec.12, 2017	Dec.11, 2018			
V	Power Sensor	Keysight	N932	23A	MY5544 13	400	Dec.12, 2017	Dec.11, 2018			

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6. ANTENNA PORT TEST RESULTS

6.1. ON TIME AND DUTY CYCLE

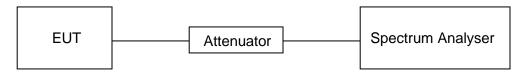
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



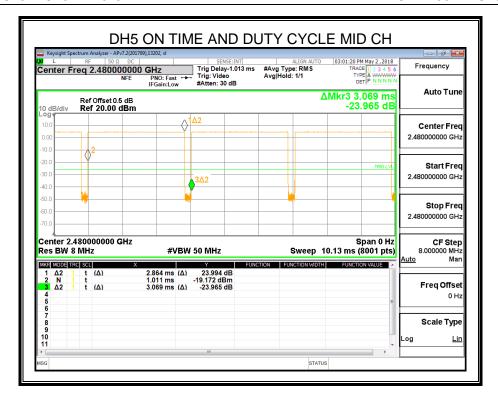
RESULTS

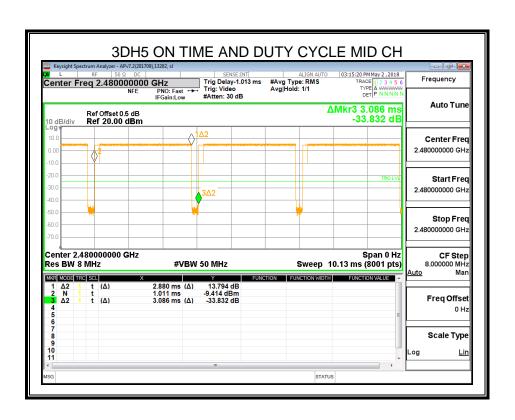
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)
GFSK	2.864	3.069	0.933	93	0.325	0.350
8DPSK	2.880	3.086	0.933	93	0.325	0.350

Note: Duty Cycle Correction Factor= $10\log(1/x)$.

Where: x is Duty Cycle(Linear)

Where: T is On Time (transmit duration)





6.2. PEAK CONDUCTED OUTPUT POWER

LIMITS

FCC Part15 (15.247) , Subpart C RSS-247 ISSUE 2						
Section	Limit	Frequency Range (MHz)				
FCC 15.247 (b) (1) RSS-247 Clause 5.4 (b)	Peak Conducted Output Power	1 watt or 30dBm	2400-2483.5			

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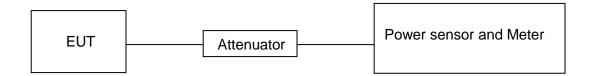
TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

Measure peak power each channel.

TEST SETUP



RESULTS

6.2.1. GFSK MODE

Channel	Frequency	Maximum Conducted Output Power(PK)	EIRP	Result
	(MHz)	(dBm)	(dBm)	
Low	2402	2.081	5.321	Pass
Middle	2441	2.098	5.338	Pass
High	2480	2.036	5.280	Pass

Note: EIRP= Maximum Conducted Output Power + Antenna Gain

6.2.2. 8DPSK MODE

Channel	Frequency	Maximum Conducted Output Power(PK)	EIRP	Result
	(MHz)	(dBm)	(dBm)	
Low	2402	3.332	6.672	Pass
Middle	2441	3.309	6.549	Pass
High	2480	3.201	6.441	Pass

Note: EIRP= Maximum Conducted Output Power + Antenna Gain

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7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

Please refer to FCC §15.205 and §15.209

Please refer to SS-GEN Clause 8.9 and Clause 8.10

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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
960~1000	500	3

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Note: 1) 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).

(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). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

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Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)		
Frequency (Miriz)	Peak	Average	
Above 1000	74	54	

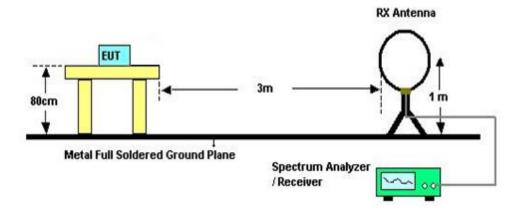
Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

Note: ¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. ²Above 38.6c

TEST SETUP AND PROCEDURE

Below 30MHz



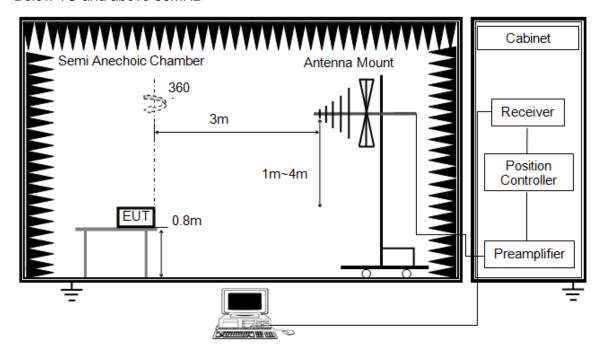
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The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Trace	Max hold

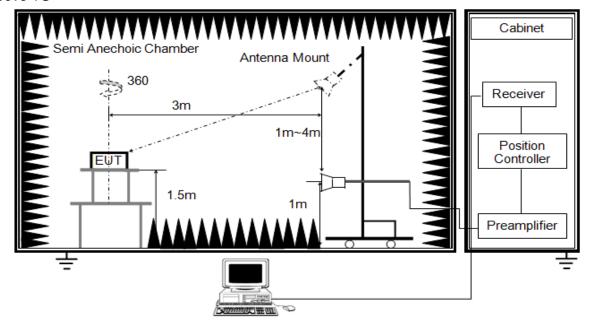
- 1. The testing follows the guidelines in ANSI C63.10-2013
- 2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80cm meter above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
- 6. For measurement below 1GHz, 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. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- 7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)
- 8. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Trace	Max hold

- 1. The testing follows the guidelines in ANSI C63.10-2013.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement below 1GHz, 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. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- 6. For the actual test configuration, please refer to the related item in this test report.



RBW	1M
IVBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

- 1. The testing follows the guidelines in ANSI C63.10-2013.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
- 6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector. For the Duty Cycle please refer to clause 6.1.ON TIME AND DUTY CYCLE.

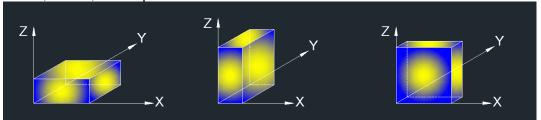
If that calculated VBW is not available on the analyzer then the next higher value should be used.

In this case 500Hz should be used.

7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

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X axis, Y axis, Z axis positions:

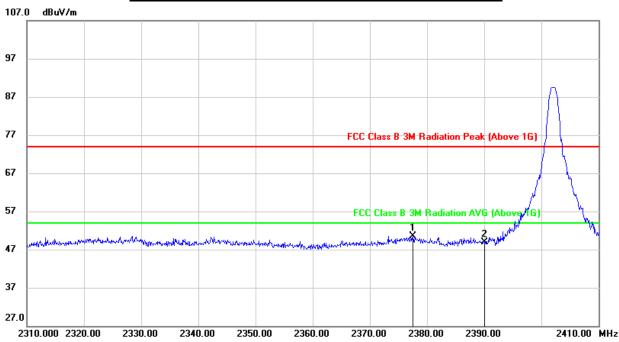


Note: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

7.2. RESTRICTED BANDEDGE

7.2.1. GFSK MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



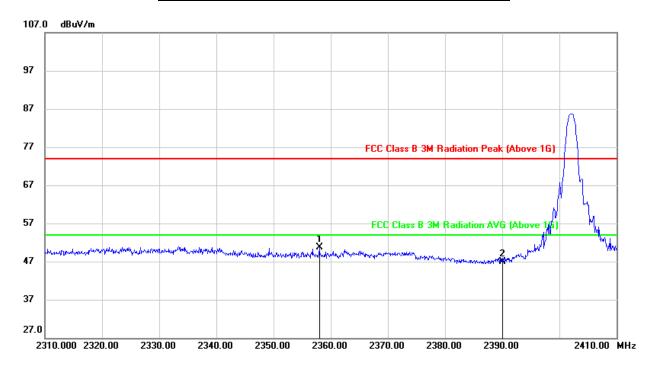
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2377.500	17.31	33.23	50.54	74.00	-23.46	peak
2	2390.000	15.68	33.14	48.82	74.00	-25.18	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

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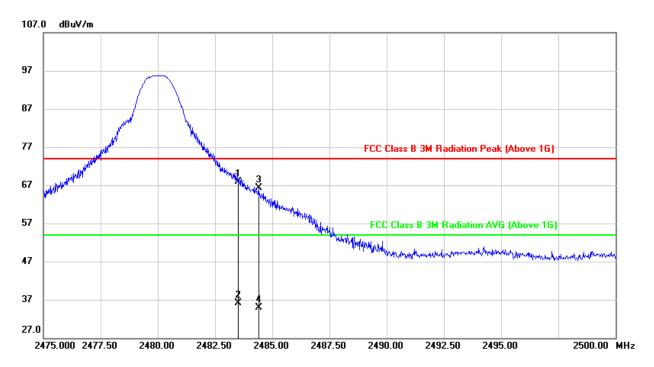
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2358.000	17.17	33.48	50.65	74.00	-23.35	peak
2	2390.000	13.73	33.24	46.97	74.00	-27.03	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

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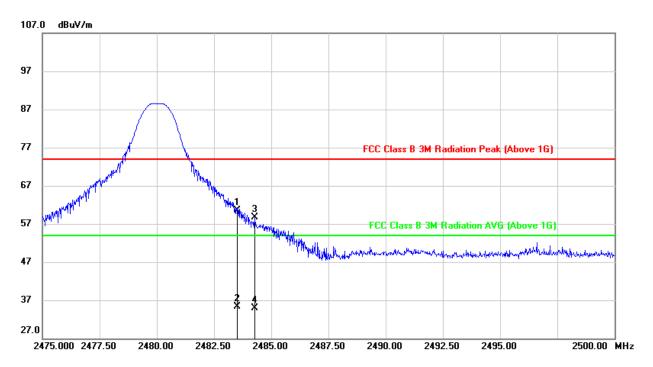
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	35.18	32.78	67.96	74.00	-6.04	peak
2	2483.500	3.34	32.78	36.12	54.00	-17.88	AVG
3	2484.400	33.53	32.78	66.31	74.00	-7.69	peak
4	2484.400	2.20	32.78	34.98	54.00	-19.02	AVG

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

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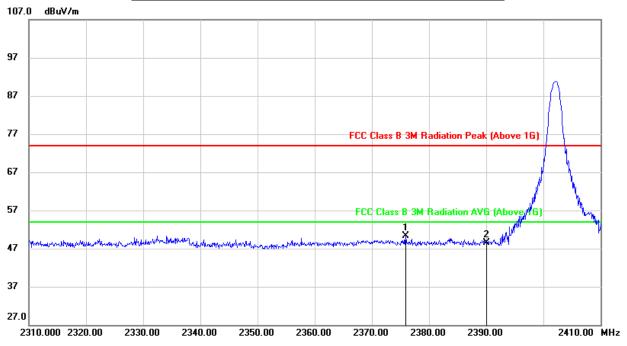
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	27.63	32.88	60.51	74.00	-13.49	peak
2	2483.500	2.44	32.88	35.32	54.00	-18.68	AVG
3	2484.275	25.78	32.88	58.66	74.00	-15.34	peak
4	2484.275	2.06	32.88	34.94	54.00	-19.06	AVG

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

7.2.2. 8DPSK MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

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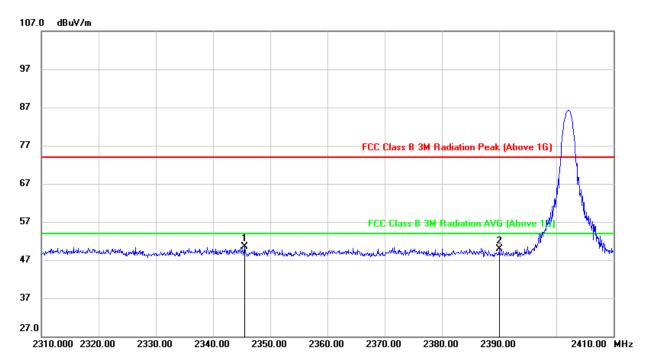
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2375.900	16.98	33.24	50.22	74.00	-23.78	peak
2	2390.000	15.31	33.14	48.45	74.00	-25.55	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

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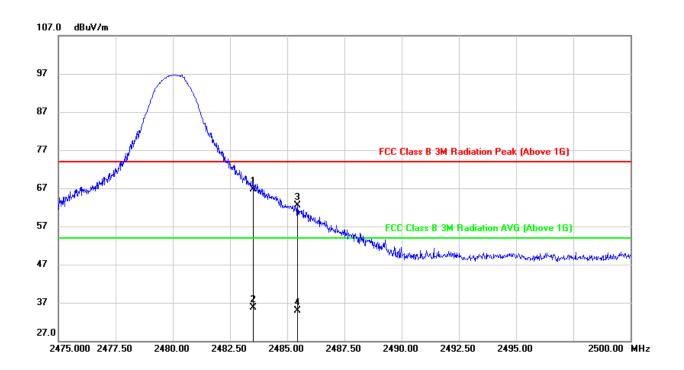
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2345.500	16.90	33.57	50.47	74.00	-23.53	peak
2	2390.000	16.69	33.24	49.93	74.00	-24.07	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

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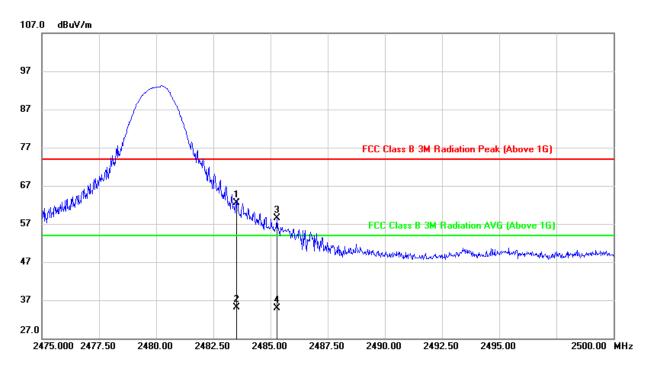
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	34.01	32.78	66.79	74.00	-7.21	peak
2	2483.500	2.87	32.78	35.65	54.00	-18.35	AVG
3	2485.450	29.73	32.79	62.52	74.00	-11.48	peak
4	2485.450	2.03	32.79	34.82	54.00	-19.18	AVG

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

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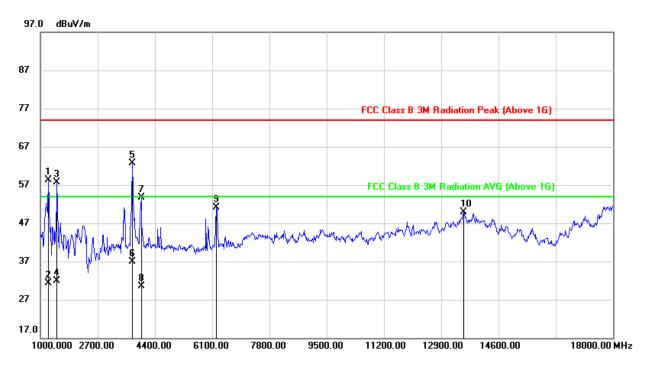
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	29.60	32.88	62.48	74.00	-11.52	peak
2	2483.500	2.24	32.88	35.12	54.00	-18.88	AVG
3	2485.275	25.52	32.89	58.41	74.00	-15.59	peak
4	2485.275	1.99	32.89	34.88	54.00	-19.12	AVG

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.
- 6. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

7.3. SPURIOUS EMISSIONS (1~18GHz)

7.3.1. GFSK MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



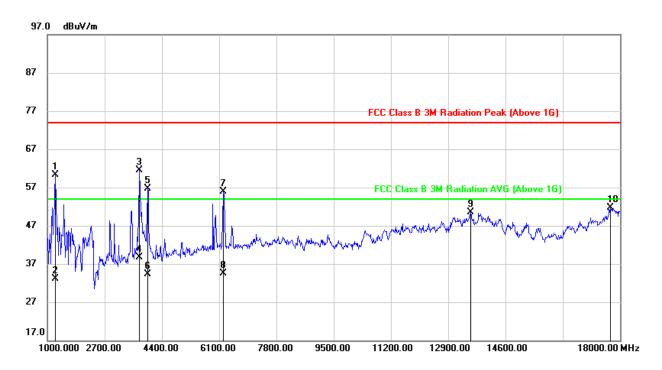
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	71.53	-13.27	58.26	74.00	-15.74	peak
2	1238.000	44.48	-13.27	31.21	54.00	-22.79	AVG
3	1493.000	70.44	-12.68	57.76	74.00	-16.24	peak
4	1493.000	44.66	-12.68	31.98	54.00	-22.02	AVG
5	3737.000	67.44	-4.83	62.61	74.00	-11.39	peak
6	3737.000	41.81	-4.83	36.98	54.00	-17.02	AVG
7	3992.000	58.20	-4.42	53.78	74.00	-20.22	peak
8	3992.000	34.98	-4.42	30.56	54.00	-23.44	AVG
9	6219.000	48.26	2.79	51.05	74.00	-22.95	peak
10	13563.000	31.13	18.86	49.99	74.00	-24.01	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

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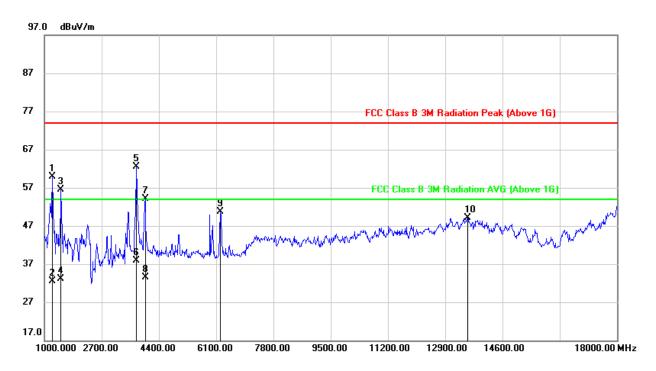
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	73.45	-13.22	60.23	74.00	-13.77	peak
2	1238.000	46.34	-13.22	33.12	54.00	-20.88	AVG
3	3737.000	66.28	-4.81	61.47	74.00	-12.53	peak
4	3737.000	43.59	-4.81	38.78	54.00	-15.22	AVG
5	3975.000	61.09	-4.42	56.67	74.00	-17.33	peak
6	3975.000	38.74	-4.42	34.32	54.00	-19.68	AVG
7	6219.000	53.13	2.83	55.96	74.00	-18.04	peak
8	6219.000	31.73	2.83	34.56	54.00	-19.44	AVG
9	13563.000	31.31	19.25	50.56	74.00	-23.44	peak
10	17711.000	26.73	25.04	51.77	74.00	-22.23	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

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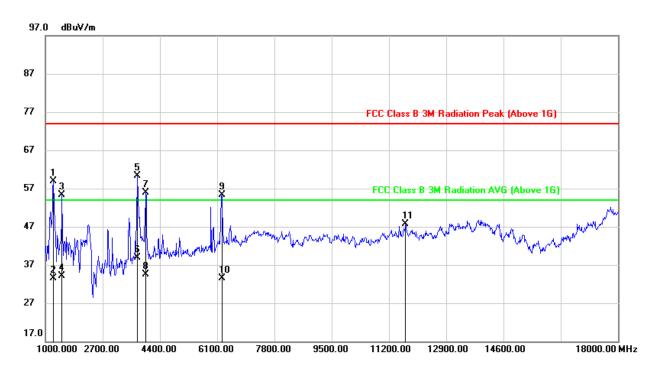
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	73.11	-13.27	59.84	74.00	-14.16	peak
2	1238.000	45.72	-13.27	32.45	54.00	-21.55	AVG
3	1493.000	69.26	-12.68	56.58	74.00	-17.42	peak
4	1493.000	45.80	-12.68	33.12	54.00	-20.88	AVG
5	3737.000	67.31	-4.83	62.48	74.00	-11.52	peak
6	3737.000	42.81	-4.83	37.98	54.00	-16.02	AVG
7	3992.000	58.43	-4.42	54.01	74.00	-19.99	peak
8	3992.000	37.87	-4.42	33.45	54.00	-20.55	AVG
9	6219.000	47.94	2.79	50.73	74.00	-23.27	peak
10	13563.000	30.18	18.86	49.04	74.00	-24.96	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

DATE: May 7, 2018

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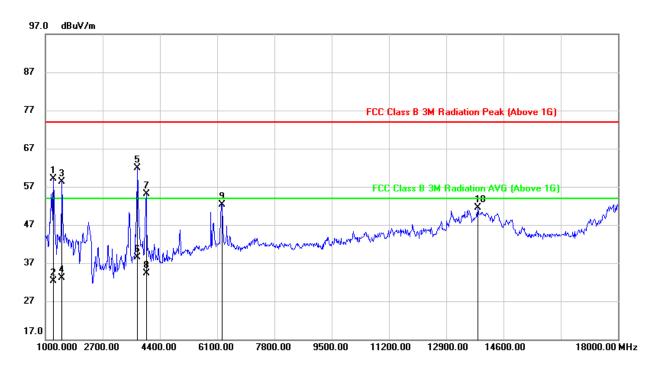
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	72.13	-13.22	58.91	74.00	-15.09	peak
2	1238.000	46.64	-13.22	33.42	54.00	-20.58	AVG
3	1493.000	68.07	-12.77	55.30	74.00	-18.70	peak
4	1493.000	46.89	-12.77	34.12	54.00	-19.88	AVG
5	3737.000	65.17	-4.81	60.36	74.00	-13.64	peak
6	3737.000	43.70	-4.81	38.89	54.00	-15.11	AVG
7	3975.000	60.41	-4.42	55.99	74.00	-18.01	peak
8	3975.000	38.98	-4.42	34.56	54.00	-19.44	AVG
9	6236.000	52.41	2.89	55.30	74.00	-18.70	peak
10	6236.000	30.56	2.89	33.45	54.00	-20.55	AVG
11	11693.000	32.54	15.07	47.61	74.00	-26.39	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

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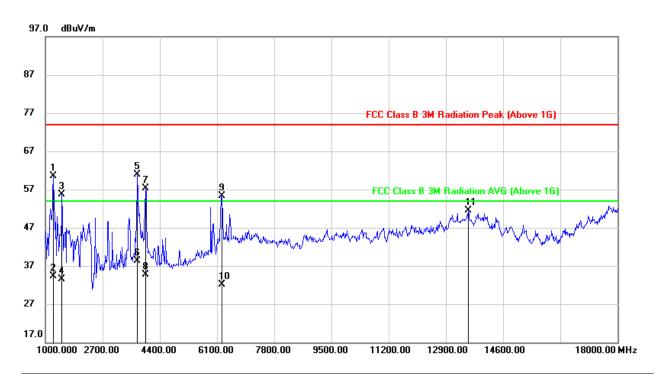
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	72.34	-13.27	59.07	74.00	-14.93	peak
2	1238.000	45.62	-13.27	32.35	54.00	-21.65	AVG
3	1493.000	71.00	-12.68	58.32	74.00	-15.68	peak
4	1493.000	45.80	-12.68	33.12	54.00	-20.88	AVG
5	3737.000	66.76	-4.83	61.93	74.00	-12.07	peak
6	3737.000	43.30	-4.83	38.47	54.00	-15.53	AVG
7	3992.000	59.43	-4.42	55.01	74.00	-18.99	peak
8	3992.000	38.68	-4.42	34.26	54.00	-19.74	AVG
9	6236.000	49.56	2.82	52.38	74.00	-21.62	peak
10	13835.000	32.55	19.01	51.56	74.00	-22.44	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

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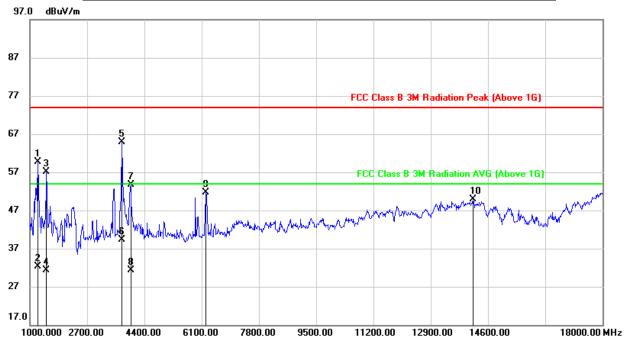


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	73.78	-13.22	60.56	74.00	-13.44	peak
2	1238.000	47.45	-13.22	34.23	54.00	-19.77	AVG
3	1493.000	68.54	-12.77	55.77	74.00	-18.23	peak
4	1493.000	46.33	-12.77	33.56	54.00	-20.44	AVG
5	3737.000	65.64	-4.81	60.83	74.00	-13.17	peak
6	3737.000	43.04	-4.81	38.23	54.00	-15.77	AVG
7	3975.000	61.74	-4.42	57.32	74.00	-16.68	peak
8	3975.000	39.04	-4.42	34.62	54.00	-19.38	AVG
9	6253.000	52.29	2.96	55.25	74.00	-18.75	peak
10	6253.000	29.16	2.96	32.12	54.00	-21.88	AVG
11	13563.000	32.16	19.25	51.41	74.00	-22.59	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

7.3.2. 8DPSK MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



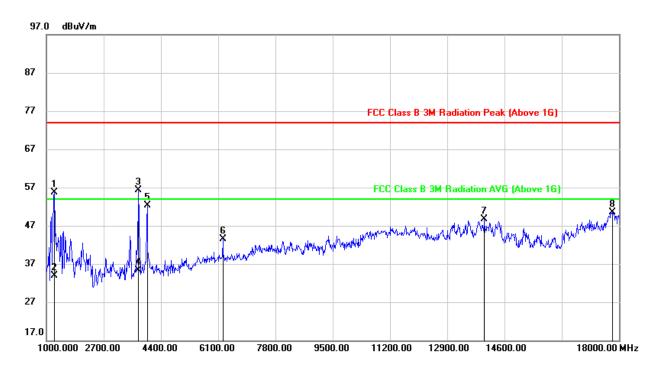
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	72.98	-13.27	59.71	74.00	-14.29	peak
2	1238.000	45.59	-13.27	32.32	54.00	-21.68	AVG
3	1493.000	69.80	-12.68	57.12	74.00	-16.88	peak
4	1493.000	44.02	-12.68	31.34	54.00	-22.66	AVG
5	3720.000	69.77	-4.89	64.88	74.00	-9.12	peak
6	3720.000	44.17	-4.89	39.28	54.00	-14.72	AVG
7	3992.000	58.14	-4.42	53.72	74.00	-20.28	peak
8	3992.000	35.66	-4.42	31.24	54.00	-22.76	AVG
9	6219.000	48.86	2.79	51.65	74.00	-22.35	peak
10	14158.000	31.34	18.56	49.90	74.00	-24.10	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

DATE: May 7, 2018

IC: 12290A-WCT0LR2201J



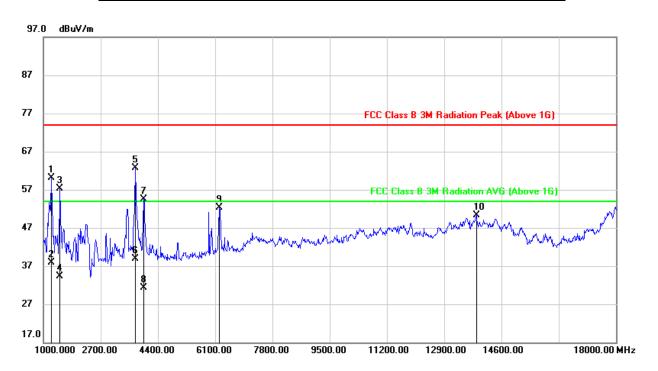
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	68.85	-13.22	55.63	74.00	-18.37	peak
2	1238.000	47.08	-13.22	33.86	54.00	-20.14	AVG
3	3737.000	61.11	-4.81	56.30	74.00	-17.70	peak
4	3737.000	40.16	-4.81	35.35	54.00	-18.65	AVG
5	3992.000	56.81	-4.42	52.39	74.00	-21.61	peak
6	6236.000	40.65	2.89	43.54	74.00	-30.46	peak
7	14005.000	29.76	18.95	48.71	74.00	-25.29	peak
8	17796.000	24.34	26.24	50.58	74.00	-23.42	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

DATE: May 7, 2018

IC: 12290A-WCT0LR2201J



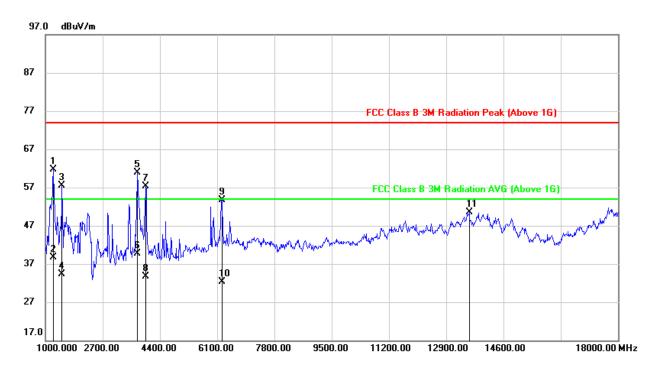
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	73.33	-13.27	60.06	74.00	-13.94	peak
2	1238.000	51.26	-13.27	37.99	54.00	-16.01	AVG
3	1493.000	70.06	-12.68	57.38	74.00	-16.62	peak
4	1493.000	46.91	-12.68	34.23	54.00	-19.77	AVG
5	3720.000	67.54	-4.89	62.65	74.00	-11.35	peak
6	3720.000	43.86	-4.89	38.97	54.00	-15.03	AVG
7	3975.000	58.90	-4.42	54.48	74.00	-19.52	peak
8	3975.000	35.63	-4.42	31.21	54.00	-22.79	AVG
9	6219.000	49.47	2.79	52.26	74.00	-21.74	peak
10	13852.000	31.38	19.02	50.40	74.00	-23.60	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

DATE: May 7, 2018

IC: 12290A-WCT0LR2201J



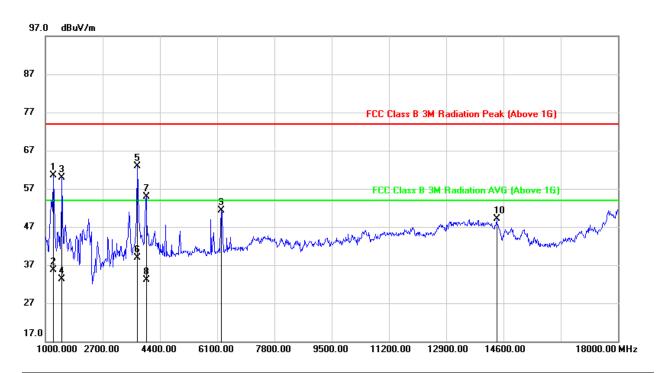
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	74.93	-13.22	61.71	74.00	-12.29	peak
2	1238.000	51.96	-13.22	38.74	54.00	-15.26	AVG
3	1493.000	70.18	-12.77	57.41	74.00	-16.59	peak
4	1493.000	47.00	-12.77	34.23	54.00	-19.77	AVG
5	3737.000	65.63	-4.81	60.82	74.00	-13.18	peak
6	3737.000	44.59	-4.81	39.78	54.00	-14.22	AVG
7	3975.000	61.63	-4.42	57.21	74.00	-16.79	peak
8	3975.000	38.07	-4.42	33.65	54.00	-20.35	AVG
9	6236.000	50.90	2.89	53.79	74.00	-20.21	peak
10	6236.000	29.46	2.89	32.35	54.00	-21.65	AVG
11	13580.000	31.39	19.06	50.45	74.00	-23.55	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

DATE: May 7, 2018

IC: 12290A-WCT0LR2201J



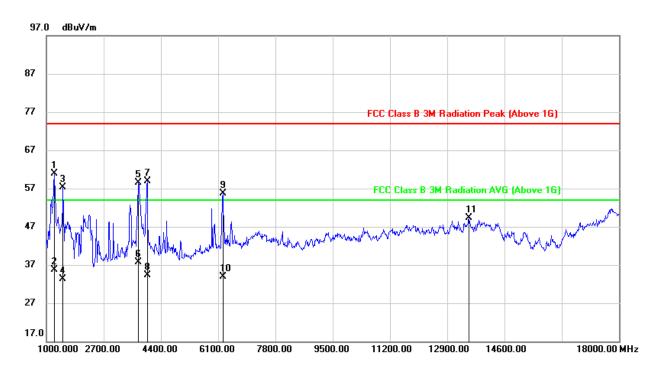
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	73.85	-13.27	60.58	74.00	-13.42	peak
2	1238.000	48.92	-13.27	35.65	54.00	-18.35	AVG
3	1493.000	72.61	-12.68	59.93	74.00	-14.07	peak
4	1493.000	45.91	-12.68	33.23	54.00	-20.77	AVG
5	3737.000	67.65	-4.83	62.82	74.00	-11.18	peak
6	3737.000	43.82	-4.83	38.99	54.00	-15.01	AVG
7	3992.000	59.30	-4.42	54.88	74.00	-19.12	peak
8	3992.000	37.54	-4.42	33.12	54.00	-20.88	AVG
9	6219.000	48.53	2.79	51.32	74.00	-22.68	peak
10	14396.000	30.84	18.20	49.04	74.00	-24.96	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

DATE: May 7, 2018

IC: 12290A-WCT0LR2201J



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	1238.000	74.08	-13.22	60.86	74.00	-13.14	peak
2	1238.000	48.85	-13.22	35.63	54.00	-18.37	AVG
3	1493.000	70.15	-12.77	57.38	74.00	-16.62	peak
4	1493.000	45.98	-12.77	33.21	54.00	-20.79	AVG
5	3720.000	63.36	-4.83	58.53	74.00	-15.47	peak
6	3720.000	42.51	-4.83	37.68	54.00	-16.32	AVG
7	3992.000	63.23	-4.42	58.81	74.00	-15.19	peak
8	3992.000	38.74	-4.42	34.32	54.00	-19.68	AVG
9	6236.000	52.76	2.89	55.65	74.00	-18.35	peak
10	6236.000	31.09	2.89	33.98	54.00	-20.02	AVG
11	13546.000	29.85	19.38	49.23	74.00	-24.77	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton where: ton is transmit duration.
- 5. For transmit duration, please refer to clause 6.1.

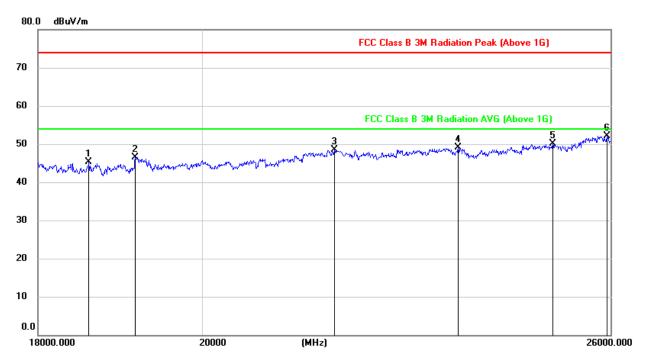
7.4. SPURIOUS EMISSIONS 18G ~ 26GHz

7.4.1. GFSK MODE

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

DATE: May 7, 2018

IC: 12290A-WCT0LR2201J



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	18598.841	50.55	-5.32	45.23	74.00	-28.77	peak
2	19161.153	52.03	-5.45	46.58	74.00	-27.42	peak
3	21776.975	52.84	-4.35	48.49	74.00	-25.51	peak
4	23577.238	52.19	-3.16	49.03	74.00	-24.97	peak
5	25052.067	52.21	-2.01	50.20	74.00	-23.80	peak
6	25942.698	53.00	-0.96	52.04	74.00	-21.96	peak

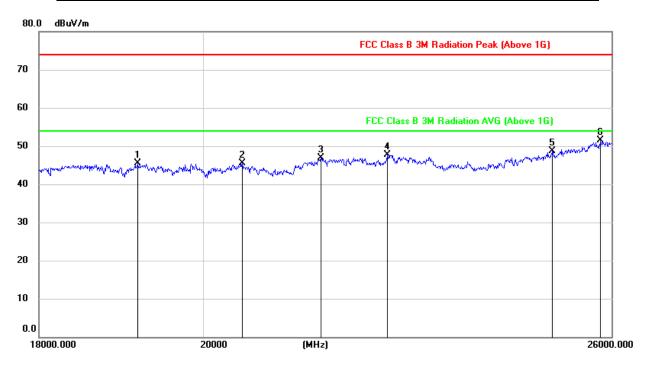
Note: 1. Peak Result= Reading Level + Correct Factor.

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. All the modes had been tested, but only the worst data were recorded in the report.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

DATE: May 7, 2018

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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	19182.303	51.08	-5.49	45.59	74.00	-28.41	peak
2	20510.030	50.86	-5.35	45.51	74.00	-28.49	peak
3	21569.760	51.46	-4.59	46.87	74.00	-27.13	peak
4	22518.026	51.55	-3.87	47.68	74.00	-26.32	peak
5	25033.649	50.82	-2.04	48.78	74.00	-25.22	peak
6	25818.977	52.23	-0.74	51.49	74.00	-22.51	peak

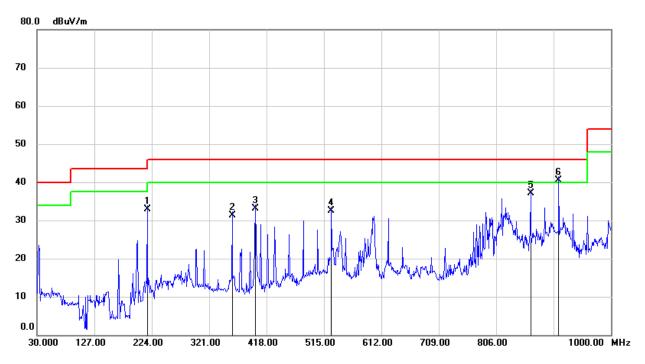
Note: 1. Peak Result = Reading Level + Correct Factor.

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. All the modes had been tested, but only the worst data were recorded in the report.

7.5. SPURIOUS EMISSIONS 30M ~ 1 GHz

7.5.1. GFSK MODE

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

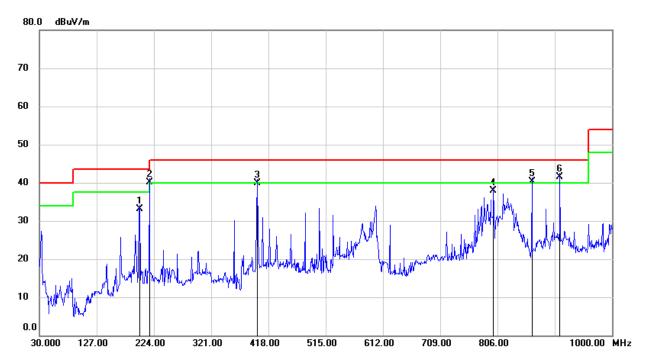


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	216.2400	61.30	-28.45	32.85	46.00	-13.15	QP
2	359.8000	57.39	-26.17	31.22	46.00	-14.78	QP
3	398.6000	58.19	-25.15	33.04	46.00	-12.96	QP
4	527.6100	54.06	-21.55	32.51	46.00	-13.49	QP
5	864.2000	54.28	-17.13	37.15	46.00	-8.85	QP
6	911.7300	56.64	-16.20	40.44	46.00	-5.56	QP

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

- 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	199.7500	61.29	-28.12	33.17	43.50	-10.33	QP
2	216.2400	68.60	-28.45	40.15	46.00	-5.85	QP
3	399.5700	65.10	-25.15	39.95	46.00	-6.05	QP
4	799.2100	57.51	-19.60	37.91	46.00	-8.09	QP
5	864.2000	57.47	-17.13	40.34	46.00	-5.66	QP
6	911.7300	57.76	-16.20	41.56	46.00	-4.44	QP

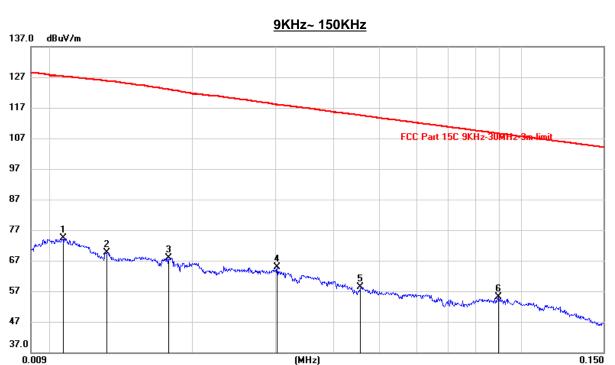
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

- 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

7.6. SPURIOUS EMISSIONS BELOW 30M

7.6.1. GFSK MODE

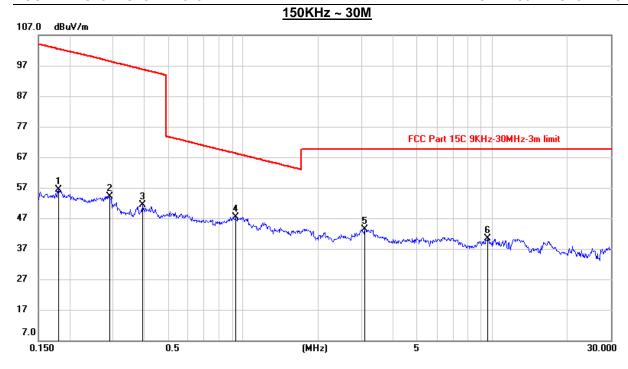
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(KHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0106	54.04	20.22	74.26	127.24	-52.98	peak
2	0.0131	49.46	20.24	69.70	125.73	-56.03	peak
3	0.0177	47.71	20.29	68.00	122.96	-54.96	peak
4	0.0302	44.46	20.31	64.77	118.01	-53.24	peak
5	0.0454	38.09	20.31	58.40	114.51	-56.11	peak
6	0.0893	34.95	20.25	55.20	108.59	-53.39	peak

- 2. All the modes had been tested, but only the worst data were recorded in the report.
- 3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

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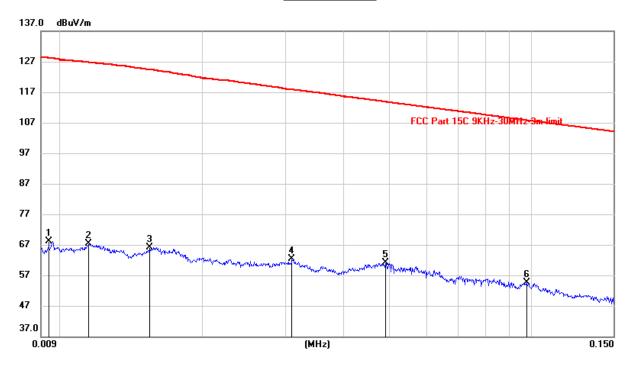


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1806	35.95	20.39	56.34	102.47	-46.13	peak
2	0.2893	33.86	20.31	54.17	98.44	-44.27	peak
3	0.3934	30.99	20.27	51.26	95.73	-44.47	peak
4	0.9282	27.00	20.37	47.37	68.26	-20.89	peak
5	3.0737	22.52	20.91	43.43	69.54	-26.11	peak
6	9.5518	19.31	21.04	40.35	69.54	-29.19	peak

- 2. All the modes had been tested, but only the worst data were recorded in the report.
- 3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

9KHz~ 150KHz



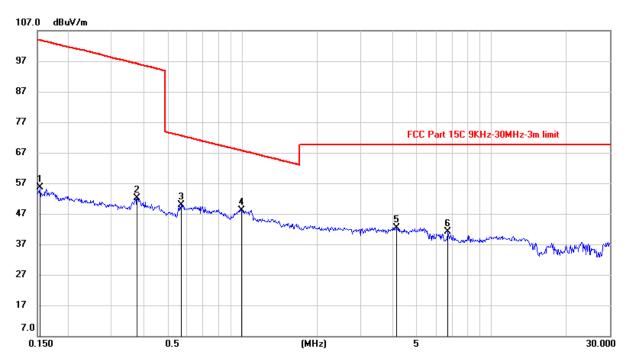
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(KHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0094	47.90	20.26	68.16	128.06	-59.90	peak
2	0.0114	47.19	20.22	67.41	126.76	-59.35	peak
3	0.0154	45.87	20.26	66.13	124.35	-58.22	peak
4	0.0309	42.11	20.31	62.42	117.84	-55.42	peak
5	0.0490	40.78	20.31	61.09	113.81	-52.72	peak
6	0.0976	34.42	20.23	54.65	107.82	-53.17	peak

- 2. All the modes had been tested, but only the worst data were recorded in the report.
- 3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

150KHz ~ 30M

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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1539	35.32	20.42	55.74	103.86	-48.12	peak
2	0.3770	31.85	20.28	52.13	96.14	-44.01	peak
3	0.5671	29.55	20.27	49.82	72.57	-22.75	peak
4	0.9889	27.85	20.37	48.22	67.70	-19.48	peak
5	4.1573	21.40	21.02	42.42	69.54	-27.12	peak
6	6.6977	20.21	20.90	41.11	69.54	-28.43	peak

- 2. All the modes had been tested, but only the worst data were recorded in the report.
- 3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

REPORT NO: 4788426874-2 DATE: May 7, 2018 FCC ID: 2AC23-WCT0LR2201J IC: 12290A-WCT0LR2201J

8. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

ANTENNA CONNECTOR

EUT has an external antenna with antenna connector, it will be installed in a specific environment and users cannot change the antenna.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.

END OF REPORT