

# FCC PART 15.247 TEST REPORT

For

# Zhongshan K-mate General Electronics Co., Ltd.

NO.2,5th Xinsheng Street, Gangkou Town, Zhongshan City, Guangdong, China

FCC ID: WAD-BTC008L

Report Type: Product Type: Bluetooth FM Transmitter Original Report **Test Engineer:** Dean Liu Report Number: RDG150427002-00B **Report Date:** 2015-05-27 Sula Huang Reviewed By: RF Leader **Test Laboratory:** Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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# **GENERAL INFORMATION**

### **Product Description for Equipment under Test (EUT)**

The Zhongshan K-mate General Electronics Co., Ltd.'s product, model BTC008L (FCC ID: WAD-BTC008L) (the "EUT") in this report is a Bluetooth FM Transmitter, which was measured approximately: 17.5 cm (L) x 8.4 cm (W) x 4.6 cm (H), rated input voltage: DC12V-24V from car cigarette socket.

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All measurement and test data in this report was gathered from production sample serial number: 150427002 (Assigned by BACL, Dongguan). The EUT was received on 2015-04-28.

### **Objective**

This report is prepared on behalf of *Zhongshan K-mate General Electronics Co., Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

### **Related Submittal(s)/Grant(s)**

FCC Part15C DSS submissions with FCC ID: WAD-BTC008L FCC Part15C DXX submissions with FCC ID: WAD-BTC008L

## **Test Methodology**

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

### **Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

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# **SYSTEM TEST CONFIGURATION**

# **Description of Test Configuration**

The system was configured for testing in an engineering mode.

For Bluetooth LE mode, 40 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404		•••
•••	•••	•••	•••
		38	2478
19	2440	39	2480

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EUT was tested with channel 0, 19 and 39.

# **EUT Exercise Software**

The software "CSR Bluetest 3" was used.

# **Equipment Modifications**

No modification was made to the EUT.

# **Local Support Equipment List and Details**

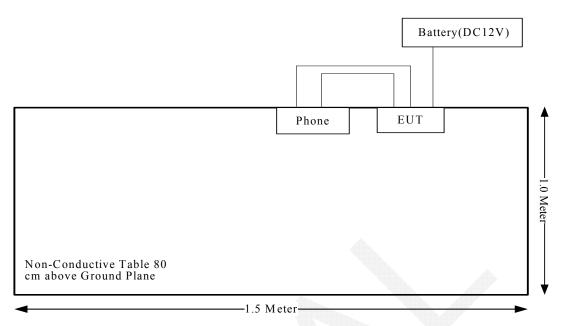
Manufacturer Description		Model	Serial Number
Meizu	Mobile phone	N460	750BBKS22SF3

# **Support Cable List and Details**

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	То
USB Cable	no	no	0.6	EUT	Mobile Phone
Audio Cable	no	no	1.2	EUT	Mobile Phone

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# **Block Diagram of Test Setup**



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# SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF EXPOSURE Compli	
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Not Applicable
§15.247(d)	Spurious Emissions at Antenna Port	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

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Not Applicable: The EUT is battery operated equipment.

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# FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

# **Applicable Standard**

According to §15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

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According to KDB447498 D01 General RF Exposure Guidance v05r02:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq$  50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,

mm)]  $\cdot [\sqrt{f(GHz)}] \le 3.0$  for 1-g SAR and  $\le 7.5$  for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $\leq 5$  mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

#### **Measurement Result**

The maximum conducted output power= 9.04 dBm(8.02mW) at 2480 MHz [(max. power of channel, mW)/(min. test separation distance, mm)][ $\sqrt{f(GHz)}$ ] =  $8.02/5*(\sqrt{2.48}) = 2.53 < 3.0$ 

So the stand-alone SAR evaluation is not necessary.

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# FCC §15.203 - ANTENNA REQUIREMENT

# **Applicable Standard**

According to § 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

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- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.
  Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

### **Antenna Connector Construction**

The EUT has one integral antenna arrangement for BT, which was permanently attached and the antenna gain is 0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

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# FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

### **Applicable Standard**

FCC §15.247 (d); §15.209; §15.205;

### **Measurement Uncertainty**

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

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If  $U_{\text{lab}}$  is less than or equal to  $U_{\text{cispr}}$  of Table 2, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit. If  $U_{\text{lab}}$  is greater than  $U_{\text{cispr}}$  of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} U_{cispr})$ , exceeds the disturbance limit;
- non compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} U_{cispr})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

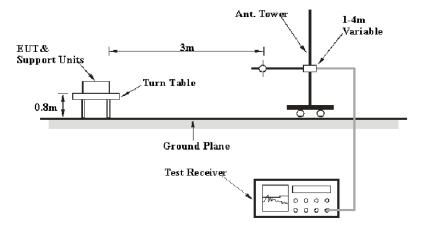
30M~200MHz: 5.0 dB 200M~1GHz: 6.2 dB 1G~6GHz: 4.45 dB 6G~18GHz: 5.23 dB

Table 2 – Values of  $U_{\text{cispr}}$ 

Measurement					
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB				
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB				
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB				

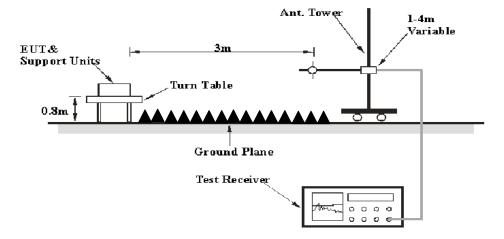
### **EUT Setup**

### **Below 1GHz:**



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#### **Above 1GHz:**



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The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209, and FCC 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

# **EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW Video B/W		equency Range RBW Video B/W IF B/W		Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP	
Above 1 GHz	1MHz	3 MHz	/	PK	
Above I GHZ	1MHz	10 Hz	/	Ave.	

### **Test Procedure**

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

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## **Corrected Amplitude & Margin Calculation**

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

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Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

### **Test Equipment List and Details**

Manufacturer	Manufacturer Description Model Serial Number			Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2014-05-09	2015-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
Agilent	Agilent Spectrum Analyzer E4440A SC		SG43360054	2014-12-04	2015-12-04
ETS-Lindgren	ETS-Lindgren Horn Antenna 3115 000 527 35		000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
R&S	R&S Spectrum Analyzer FSF		100478	2014-05-09	2015-05-09
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW- 18405536-JO	15964001001	2014-09-06	2015-09-06

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

### **Test Results Summary**

According to the recorded data in following table, the EUT complied with the <u>FCC Title 47, Part 15, Section 15.205, 15.209 and 15.247</u>, with the worst margin reading of:

### 16.27 dB at 7440 MHz in the Vertical polarization

### **Test Data**

### **Environmental Conditions**

Temperature:	25.3 °C
Relative Humidity:	54 %
ATM Pressure:	100.2 kPa

<sup>\*</sup> The testing was performed by Dean Liu on 2015-05-04.

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es Corp. (Dongguan) Report No.: RDG150427002-00B

Test	Mode:	Transi	mitting

Frequency	Moae: 1ra Re	eceiver	Rx A	ntenna	Cable	Amplifier	Corrected	FCC 1	5.247
(MII-)	Reading	Detector	Polar	Factor	loss	Gain	Amplitude	Limit	Margin
(MHz)	(dBµV)	(PK/QP/AV)	(H/V)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
				ow Channe					
2402	90.47	PK	Н	25.65	3.66	27.32	92.46	N/A	N/A
2402	83.42	AV	Н	25.65	3.66	27.32	85.41	N/A	N/A
2402	95.36	PK	V	25.65	3.66	27.32	97.35	N/A	N/A
2402	88.12	AV	V	25.65	3.66	27.32	90.11	N/A	N/A
2390	35.23	PK	V	25.61	3.63	27.32	37.15	74.00	36.85
2390	23.28	AV	V	25.61	3.63	27.32	25.20	54.00	28.80
4804	38.16	PK	V	30.59	5.06	27.41	46.40	74.00	27.60
4804	28.58	AV	V	30.59	5.06	27.41	36.82	54.00	17.18
7206	32.94	PK	V	34.09	6.61	25.91	47.73	74.00	26.27
7206	20.95	AV	V	34.09	6.61	25.91	35.74	54.00	18.26
9608	29.05	PK	V	35.96	8.53	27.55	45.99	74.00	28.01
9608	16	AV	V	35.96	8.53	27.55	32.94	54.00	21.06
1063	39	PK		22.46	3.00	26.59	37.87	74.00	36.13
1063 251	23.7 27.9	AV QP	V	22.46 12.15	3.00 1.91	26.59 21.49	22.57 20.47	54.00 46.00	31.43 25.53
231	21.9	QP		iddle Chan			20.47	40.00	23.33
2440	91.08	PK	H	25.74	3.76	27.34	93.24	N/A	N/A
2440	84.42	AV	H	25.74	3.76	27.34	86.58	N/A	N/A
2440	96.2	PK	V	25.74	3.76	27.34	98.36	N/A	N/A
2440	88.88	AV	V	25.74	3.76	27.34	91.04	N/A	N/A
4880	36.47	PK	V	30.79	5.18	27.42	45.02	74.00	28.98
4880	27.65	AV	V	30.79	5.18	27.42	36.20	54.00	17.80
7320	33.45	PK	V	34.37	6.75	25.88	48.69	74.00	25.31
7320	21.46	AV	V	34.37	6.75	25.88	36.70	54.00	17.30
9760	29.79	PK	V	36.32	8.62	27.21	47.52	74.00	26.48
9760	16.73	AV	V	36.32	8.62	27.21	34.46	54.00	19.54
1063	39.71	PK	V	22.46	3.00	26.59	38.58	74.00	35.42
1063	24.26	AV	V	22.46	3.00	26.59	23.13	54.00	30.87
2239	35.26	PK	V	25.22	3.41	27.30	36.59	74.00	37.41
2239	20.39	AV	V	25.22	3.41	27.30	21.72	54.00	32.28
251	28	QP	V	12.15	1.91	21.49	20.57	46.00	25.43
	4			ligh Chann			T	<del>,</del>	
2480	91.94	PK	Н	25.85	3.68	27.36	94.11	N/A	N/A
2480	85.24	AV	Н	25.85	3.68	27.36	87.41	N/A	N/A
2480	97.25	PK	V	25.85	3.68	27.36	99.42	N/A	N/A
2480	90.66	AV	V	25.85	3.68	27.36	92.83	N/A	N/A
2483.5	35.26	PK	V	25.86	3.67	27.36	37.43	74.00	36.57
2483.5	22.17	AV	V	25.86	3.67	27.36	24.34	54.00	29.66
4960	36.99	PK	V	31.00	5.34	27.43	45.90	74.00	28.10
4960	26.28	AV	V	31.00	5.34	27.43	35.19	54.00	18.81
7440	34.2	PK	V	34.66	6.89	25.97	49.78	74.00	24.22
7440	22.15	AV	V	34.66	6.89	25.97	37.73	54.00	16.27
9920	30.48	PK	V	36.71	8.71	26.66	49.24	74.00	24.76
9920	17.36	AV	V	36.71 22.46	8.71	26.66	36.12	54.00	17.88
1063 1063	40.23 25.03	PK AV	V	22.46	3.00	26.59 26.59	39.10 23.90	74.00 54.00	34.90 30.10
251	28.1		V	12.15	1.91				25.33
231	20.1	QP	V	14.13	1.91	21.49	20.67	46.00	43.33

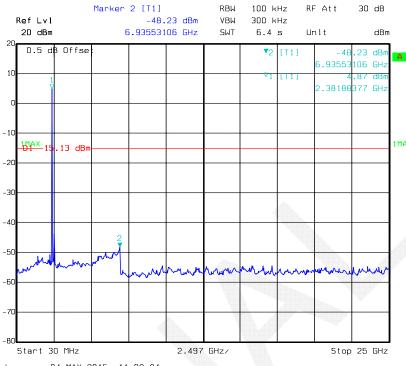
 $<sup>*</sup>Within\ measurement\ uncertainty!$ 

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# **Conducted Spurious Emissions at Antenna Port**

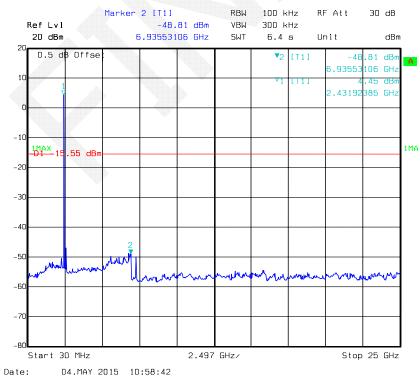
Report No.: RDG150427002-00B

#### Low Channel



#### Date: 04.MAY 2015 11:02:24

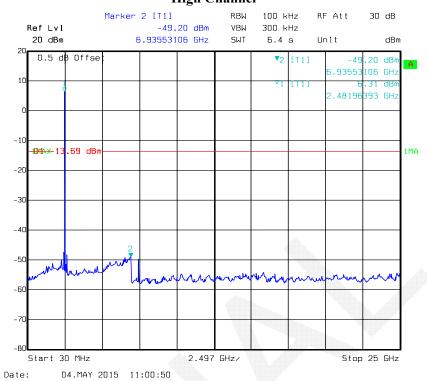
#### **Middle Channel**



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# High Channel

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# FCC $\S15.247(a)$ (2) – 6 dB EMISSION BANDWIDTH

# **Applicable Standard**

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

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#### **Test Procedure**

According to KDB 558074 D01 DTS Meas Guidance v03r02

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times RBW$ .
- c) Detector = Peak.
- d) Trace mode =  $\max$  hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Data**

#### **Environmental Conditions**

Temperature:	25.3 °C
Relative Humidity:	54 %
ATM Pressure:	100.2 kPa

<sup>\*</sup> The testing was performed by Dean Liu on 2015-05-23.

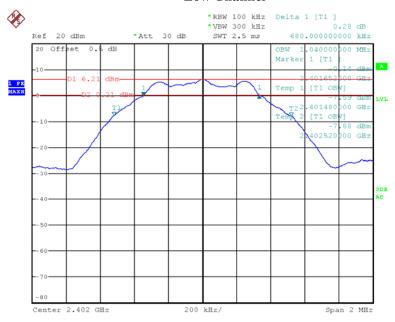
Test Result: Pass.

Please refer to the following tables and plots.

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Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)
Low	2402	680	≥500
Middle	2440	684	≥500
High	2480	684	≥500

# **Low Channel**

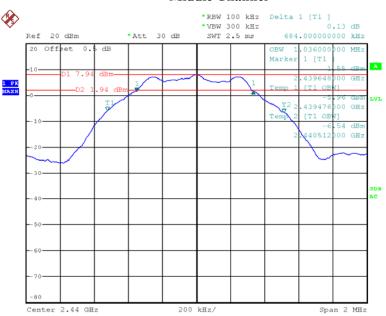


Date: 23.MAY.2015 18:59:16

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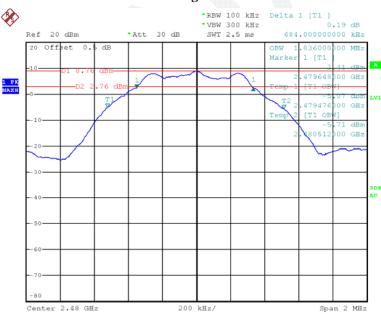
### **Middle Channel**

Report No.: RDG150427002-00B



Date: 23.MAY.2015 19:01:31

# **High Channel**



Date: 23.MAY.2015 19:03:50

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# FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

### **Applicable Standard**

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

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#### **Test Procedure**

According to KDB 558074 D01 DTS Meas Guidance v03r02

- a) Set the RBW  $\geq$  DTS bandwidth.
- b) Set VBW  $\geq 3 \times RBW$ .
- c) Set span  $\geq 3 \times RBW$
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize. h) Use peak marker function to determine the peak amplitude level.



### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

### **Test Data**

#### **Environmental Conditions**

Temperature:	25.3 °C
Relative Humidity:	54 %
ATM Pressure:	100.2 kPa

<sup>\*</sup> The testing was performed by Dean Liu on 2015-05-23.

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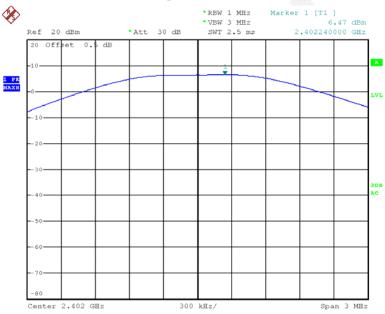
Test Mode: Transmitting

Channel	Frequency	Max Peak Conducted Cutput Power		Result	
	(MHz)	(dBm)	(dBm)		
Low	2402	6.47	30	PASS	
Middle	2440	8.23	30	PASS	
High	2480	9.04	30	PASS	

Report No.: RDG150427002-00B

Please refer to the following plots

# RF Output Power, Low Channel

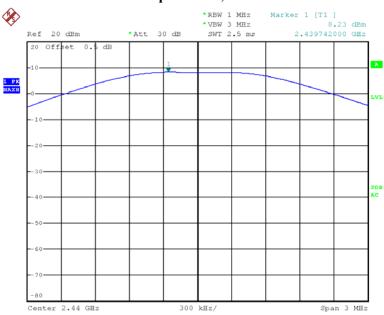


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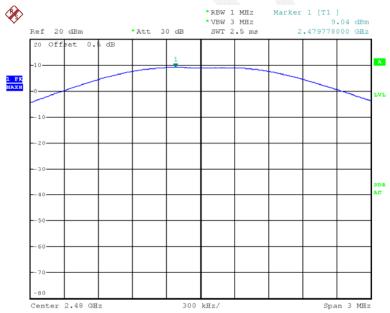
# **RF Output Power, Middle Channel**

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Date: 23.MAY.2015 19:01:54

# **RF Output Power, High Channel**



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# FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Report No.: RDG150427002-00B

### **Applicable Standard**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

#### **Test Procedure**

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- 5. Repeat above procedures until all measured frequencies were complete.

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Data**

### **Environmental Conditions**

Temperature:	25.3 °C
Relative Humidity:	54 %
ATM Pressure:	100.2 kPa

<sup>\*</sup> The testing was performed by Dean Liu on 2015-05-23.

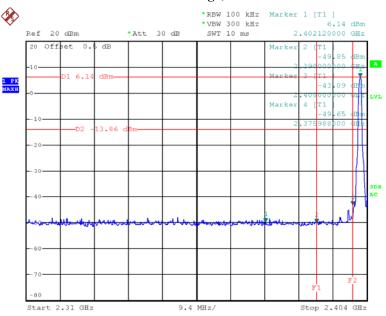
**Test Result:** Compliance

Please refer to following plots.

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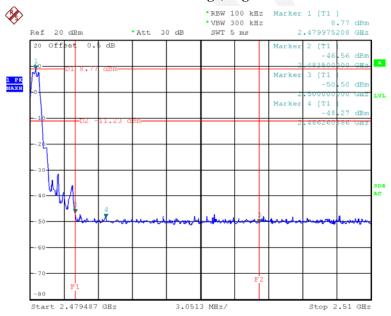
# Band Edge, Left Side

Report No.: RDG150427002-00B



Date: 23.MAY.2015 19:06:46

### Band Edge, Right Side



Date: 23.MAY.2015 19:05:51

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# FCC §15.247(e) - POWER SPECTRAL DENSITY

### **Applicable Standard**

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Report No.: RDG150427002-00B

### **Test Procedure**

According to KDB 558074 D01 DTS Meas Guidance v03r02

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to:  $3 \text{ kHz} \le \text{RBW} \le 100 \text{ kHz}$ .
- d) Set the VBW  $\geq 3 \times RBW$ .
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

### **Test Data**

### **Environmental Conditions**

Temperature:	25.1~25.3 °C
Relative Humidity:	54~57 %
ATM Pressure:	100.2~100.4 kPa

<sup>\*</sup> The testing was performed by Dean Liu on 2015-05-06 and 2015-05-23.

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Test Mode: Transmitting

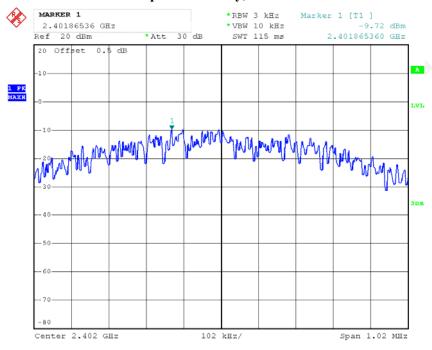
**Test Result:** Pass

Channel	Frequency MHz	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2402	-9.72	≪8	PASS
Middle	2440	-7.76	≪8	PASS
High	2480	-6.86	≪8	PASS

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Please refer to the following plots

# **Power Spectral Density, Low Channel**

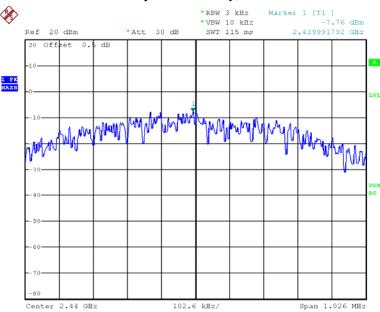


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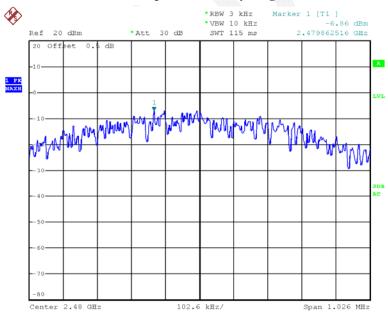
# **Power Spectral Density, Middle Channel**

Report No.: RDG150427002-00B



Date: 23.MAY.2015 19:02:42

# **Power Spectral Density, High Channel**



Date: 23.MAY.2015 19:04:27

\*\*\*\*\* END OF REPORT \*\*\*\*\*

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