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# ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20180935

Job No.: Igw2018 #1107

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2441MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

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10 0.0	Freq.	Reading	Factor			Margin	Detector	Height	Degree	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China Site: 2# Chamber

Report No.: ATE20180935

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Job No.: Igw2018 #1109

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

**ACTIVE SPEAKER SYSTEM** EUT:

Mode: TX 2480MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Horizontal Polarization:

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

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	30.000 40	50 60 70	80			30	0 400	500	600 70	00 1000.0	MHz
	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
	191.7450	47.75	-12.42	35.33	43.50	-8.17	QP				
	270.3747	45.21	-9.92	35.29	46.00	-10.71	QP				
	210.3141			1	I .						





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# ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 2# Chamber Tel:+86-0755-26503290

Job No.: Igw2018 #1110

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: **ACTIVE SPEAKER SYSTEM** 

Mode: TX 2480MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Fax:+86-0755-26503396

Vertical Polarization:

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

	.0 dBuV/m								limit1:	: <u>-</u>
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	30.000 40	50 60 70	80			30	0 400	500	600 70	00 1000.0 MHz
	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	73.6170	45.43	-16.53	28.90	40.00	-11.10	QP			
	100 00 10	45.17	-13.37	31.80	43.50	-11.70	QP			
	122.8340	45.17	10.07	01.00						



Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

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#### 1GHz-18GHz test data



## ACCURATE TECHNOLOGY CO., LTD.

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Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

Distance: 3m

Job No.: Igw2018 #1073

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

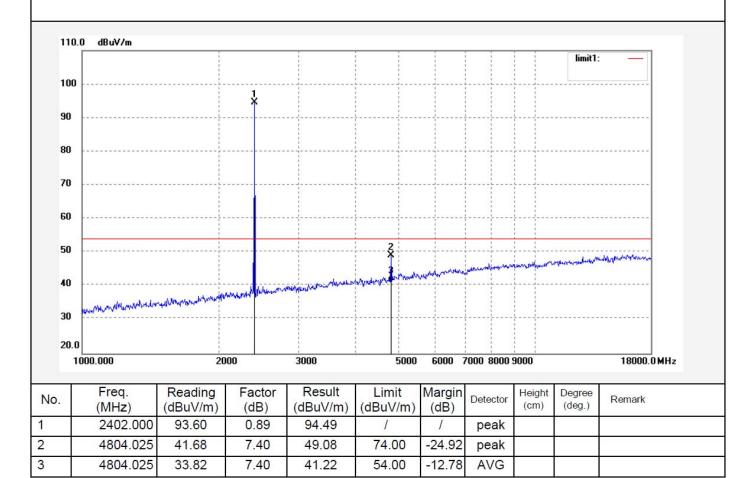
EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2402MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:







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Report No.: ATE20180935

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Job No.: Igw2018 #1074

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2402MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

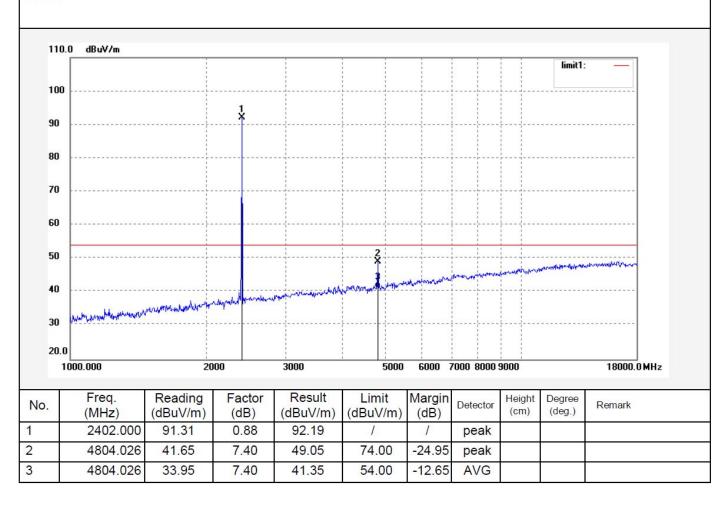
Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE







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Time:

Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20180935

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Job No.: Igw2018 #1077 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

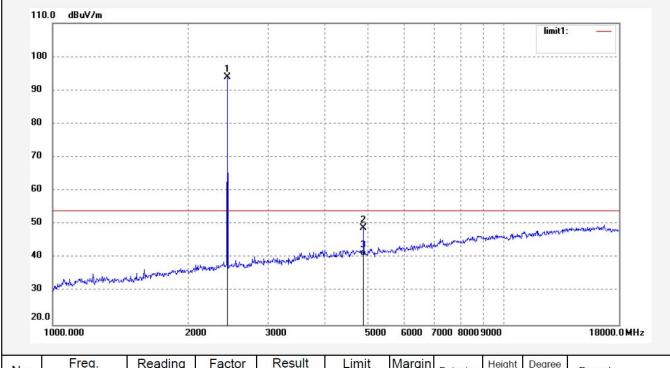
Temp.( C)/Hum.(%) 23 C / 48 % EUT: **ACTIVE SPEAKER SYSTEM** Engineer Signature: WADE

Mode: TX 2441MHz Distance: 3m

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	92.90	1.06	93.96	1	/	peak			
2	4882.027	40.81	8.11	48.92	74.00	-25.08	peak			
3	4882.027	32.46	8.11	40.57	54.00	-13.43	AVG			





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Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20180935

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Job No.: Igw2018 #1078

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2441MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

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	000.000	20	00	3000	5000	6000	7000 8000 9	9000		18000.0 MHz
1		Reading	Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	Freq. (MHz)	(dBuV/m)	(dB)	(4247111)						
.			1.06	91.46	1	/	peak			





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Report No.: ATE20180935

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Job No.: Igw2018 #1080 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

Temp.( C)/Hum.(%) 23 C / 48 % Time:

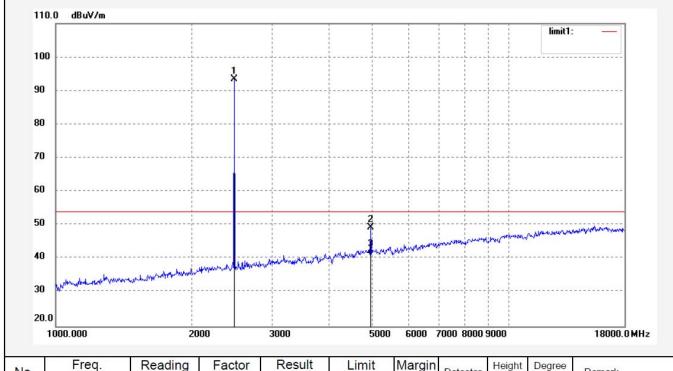
EUT: ACTIVE SPEAKER SYSTEM Engineer Signature: WADE

Mode: TX 2480MHz Distance: 3m

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	92.42	1.10	93.52	1	1	peak			
2	4960.028	40.85	8.60	49.45	74.00	-24.55	peak			
3	4960.028	32.67	8.60	41.27	54.00	-12.73	AVG			





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Site: 2# Chamber Tel:+86-0755-26503290

Job No.: Igw2018 #1079

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

**ACTIVE SPEAKER SYSTEM** EUT:

Mode: TX 2480MHz

A300 Model:

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Fax:+86-0755-26503396

Vertical Polarization:

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

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Freq. (MHz)	Reading (dBuV/m)			Result (dBuV/m)	Limit (dBuV/m	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
2480.000	91.37	1.1	0	92.47	/	1	peak			
4960.029	39.89	8.6	0	48.49	74.00	-25.51	peak			
	Freq. (MHz) 2480.000	Freq. Reading (MHz) (dBuV/m) 2480.000 91.37	000.000 2000  Freq. Reading Fact (MHz) (dBuV/m) (dB 2480.000 91.37 1.10	Freq. Reading Factor (MHz) (dBuV/m) (dB) 2480.000 91.37 1.10	100.000 2000 3000  Freq. Reading Factor Result (dBuV/m) (dB) (dBuV/m) 2480.000 91.37 1.10 92.47	100.000   2000   3000   500   500   Freq.   Reading   Factor   Result   Limit   (MHz)   (dBuV/m)   (dB)   (dBuV/m)   (dBuV/m)   2480.000   91.37   1.10   92.47   /	100.000   2000   3000   5000   6000	100.000   2000   3000   5000   6000   7000   8000	Freq. Reading (dBuV/m) (dB) (dBuV/m) (dB) (dBuV/m) (dB) (dBuV/m) (dB) (Detector (cm) (dB) (dBuV/m)	1   2   2   2   2   2   2   2   2   2



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#### 18GHz-26.5GHz test data



## ACCURATE TECHNOLOGY CO., LTD.

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Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Igw2018 #1084 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

Temp.( C)/Hum.(%) 23 C / 48 % Time:

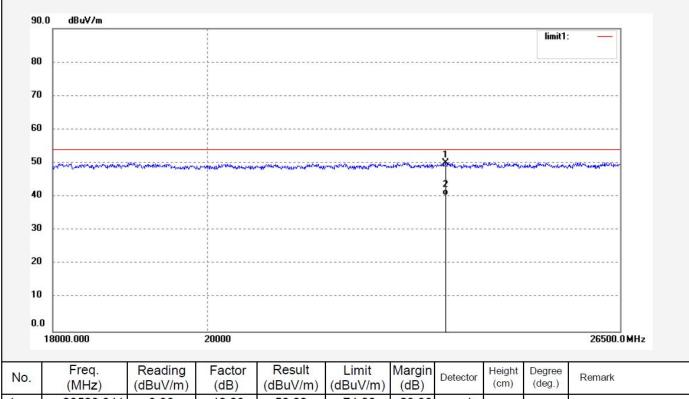
EUT: **ACTIVE SPEAKER SYSTEM** Engineer Signature: WADE

Mode: TX 2402MHz Distance: 3m

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	23523.941	9.96	40.06	50.02	74.00	-23.98	peak	5		
2	23523.941	0.29	40.06	40.35	54.00	-13.65	AVG			





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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China Site: 2# Chamber

Job No.: Igw2018 #1083

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

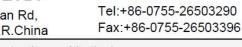
EUT: **ACTIVE SPEAKER SYSTEM** 

Mode: TX 2402MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:



Vertical Polarization:

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

	0 dBuV/m		-						limit1:	
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20										
10										
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	18000.000		20000							26500.0 MHz
П	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
.	,		39.81	49.93	74.00	-24.07	peak	<del>                                     </del>		





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Site: 2# Chamber Tel:+86-0755-26503290

Report No.: ATE20180935

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Job No.: Igw2018 #1085

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

**ACTIVE SPEAKER SYSTEM** EUT:

Mode: TX 2441MHz

A300 Model:

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Fax:+86-0755-26503396

Horizontal Polarization:

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

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18	8000.000		20000							26500.0 MHz
	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	23660.814	9.81	40.16	49.97	74.00	-24.03	peak			





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Report No.: ATE20180935

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Job No.: Igw2018 #1086 Polarization: Vertical

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

Temp.( C)/Hum.(%) 23 C / 48 % Time:

EUT: ACTIVE SPEAKER SYSTEM Engineer Signature: WADE

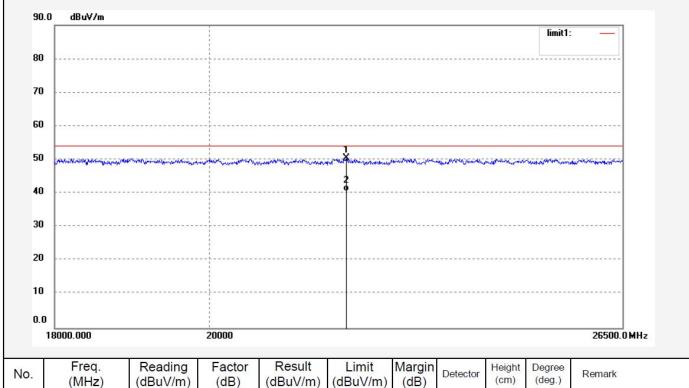
Mode: TX 2441MHz Distance: 3m

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Model:

A300



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21958.912	11.33	39.22	50.55	74.00	-23.45	peak			
2	21958.912	1.32	39.22	40.54	54.00	-13.46	AVG			





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Job No.: Igw2018 #1088

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2480MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

1 X 2480IVIF

Note:

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

90.0	dBuV/m		-1							
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1	8000.000		20000				**			26500.0 MHz
	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	23496.661	10.44	40.04	50.48	74.00	-23.52	peak			
1	23496.661	0.75	40.04	40.79	54.00	-13.21	AVG			





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Job No.: Igw2018 #1087

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2480MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

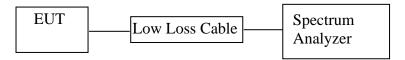
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0.0										
1	8000.000		20000							26500.0 MHz
.	Freq.	Reading	Factor	Result	Limit	Margin	Detector	Height	Degree	Remark
+	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		(cm)	(deg.)	
_	23396.907	10.74	39.71	50.45	74.00	-23.55	•			
	23396.907	0.54	39.71	40.25	54.00	-13.75	AVG			



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## 11.BAND EDGE COMPLIANCE TEST

## 11.1.Block Diagram of Test Setup



(EUT: ACTIVE SPEAKER SYSTEM)

## 11.2.The Requirement For Section 15.247(d)

Section 15.247(d): 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

# 11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

# 11.4. Operating Condition of EUT

- 11.4.1. Setup the EUT and simulator as shown as Section 11.1.
- 11.4.2. Turn on the power of all equipment.
- 11.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

shenzhen Accurate Technology Co., Ltd.



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## 11.5.Test Procedure

- 11.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 11.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.
- 11.5.3. The band edges was measured and recorded.

## 11.6.Test Result

Non-hopping mode

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
(WITZ)	BDR mode	(dDC)
	#	
2363.50	43.11	> 20dBc
2490.242	50.45	> 20dBc
	EDR mode	
2386.92	38.94	> 20dBc
2489.86	47.16	> 20dBc

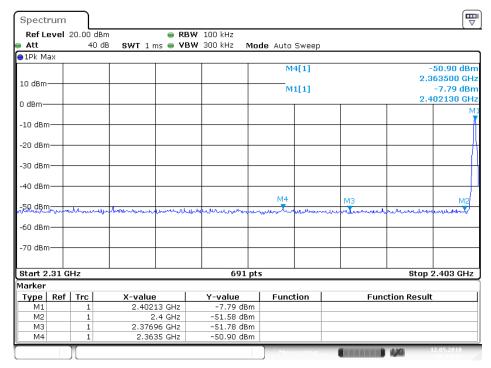
Hopping mode

Frequency	Result of Band Edge	Limit of Band Edge
(MHz)	(dBc)	(dBc)
	BDR mode	
2341.55	42.79	> 20dBc
2485.005	50.83	> 20dBc
	EDR mode	
2388.30	39.43	> 20dBc
2486.503	46.23	> 20dBc

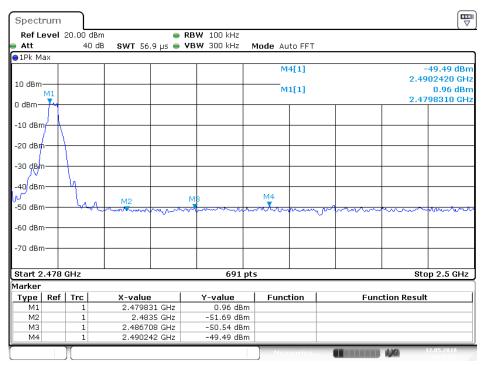


#### Non-hopping mode

#### BDR mode



Date: 12.MAY.2018 16:11:16

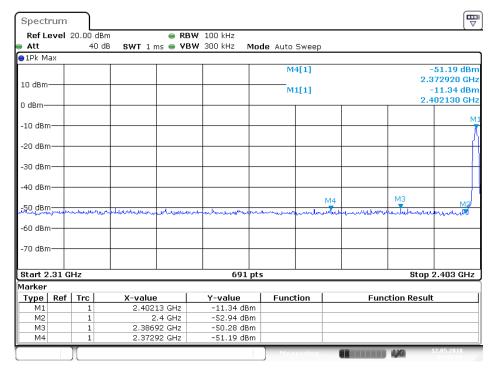


Date: 12.MAY.2018 16:12:54

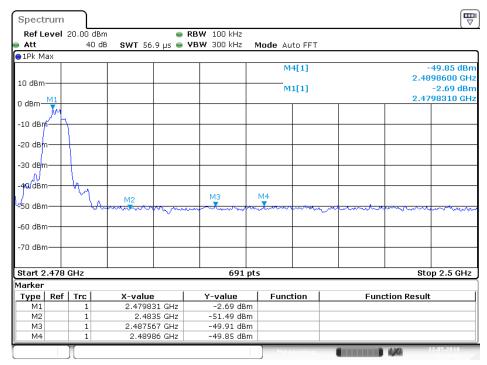
Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: +86-755-26503290 Fax: +86-755-26503396 E-mail: webmaster@atc-lab.com Http://www.atc-lab.com



#### EDR mode



Date: 12.MAY.2018 16:16:07

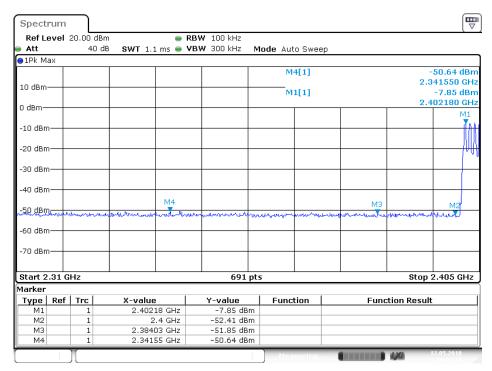


Date: 12.MAY.2018 16:14:45

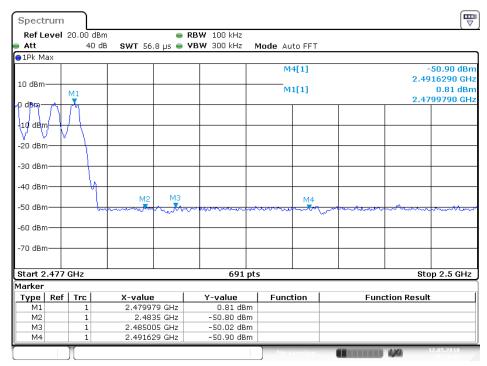


## hopping mode

#### BDR mode



Date: 12.MAY.2018 16:23:18

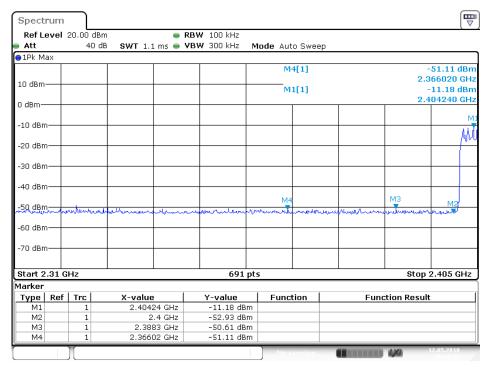


Date: 12.MAY.2018 16:21:48

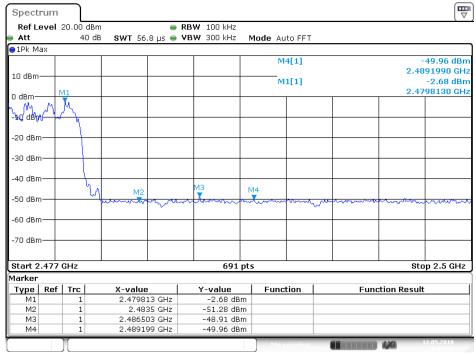
Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: +86-755-26503290 Fax: +86-755-26503396 E-mail: webmaster@atc-lab.com Http://www.atc-lab.com

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#### EDR mode



Date: 12.MAY.2018 16:18:25



Date: 12.MAY.2018 16:19:57



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#### **Radiated Band Edge Result**

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:
  - Result = Reading + Corrected Factor
- 3. Display the measurement of peak values.

#### Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX (Hopping off, Hopping on) modes measure it. We select 2402MHz, 2480MHz TX frequency to transmit(Hopping off mode). We select 2402-2480MHz TX frequency to transmit(Hopping on mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1. 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.
- 2. 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.
- 3.All modes of operation were investigated and the worst-case emissions are reported.



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# ACCURATE TECHNOLOGY CO., LTD.

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Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 18/05/12/

Time:

Engineer Signature: WADE

Distance: 3m

Job No.: Igw2018 #1076 Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

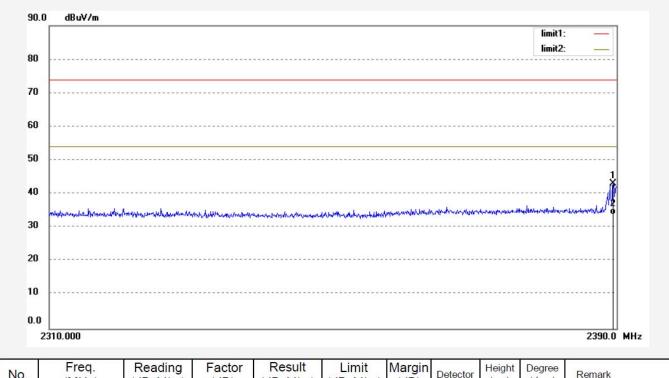
EUT: ACTIVE SPEAKER SYSTEM

Mode: TX 2402MHz

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2389.520	42.34	0.79	43.13	74.00	-30.87	peak			
2	2389.520	32.98	0.79	33.77	54.00	-20.23	AVG			





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Job No.: Igw2018 #1075 Polarization: Vertical

Standard: FCC (Band Edge) Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

Temp.( C)/Hum.(%) 23 C / 48 % Time:

EUT: ACTIVE SPEAKER SYSTEM Engineer Signature: WADE

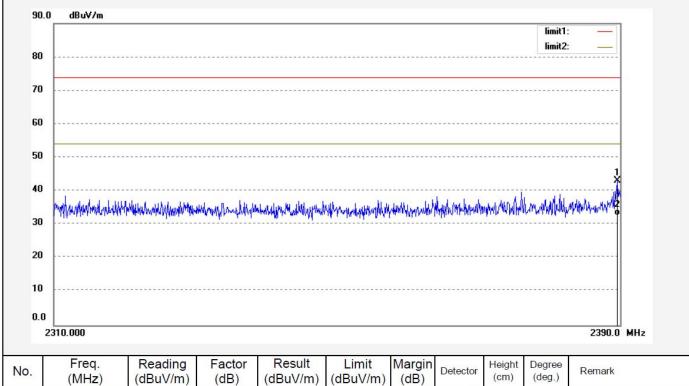
Mode: TX 2402MHz Distance: 3m

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:

Model:

A300



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2389.600	42.20	0.79	42.99	74.00	-31.01	peak			
2	2389.600	31.89	0.79	32.68	54.00	-21.32	AVG			





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Job No.: Igw2018 #1081 Polarization: Horizontal

Standard: FCC (Band Edge) Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

Temp.( C)/Hum.(%) 23 C / 48 % Time:

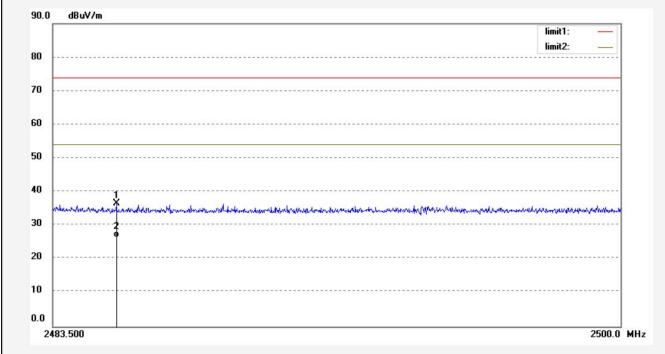
EUT: ACTIVE SPEAKER SYSTEM Engineer Signature: WADE

Mode: TX 2480MHz Distance: 3m

Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.





No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2485.348	35.36	1.10	36.46	74.00	-37.54	peak			
2	2485.348	25.24	1.10	26.34	54.00	-27.66	AVG			





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Job No.: Igw2018 #1082 Polarization: Vertical

Standard: FCC (Band Edge) Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 18/05/12/

Temp.( C)/Hum.(%) 23 C / 48 % Time:

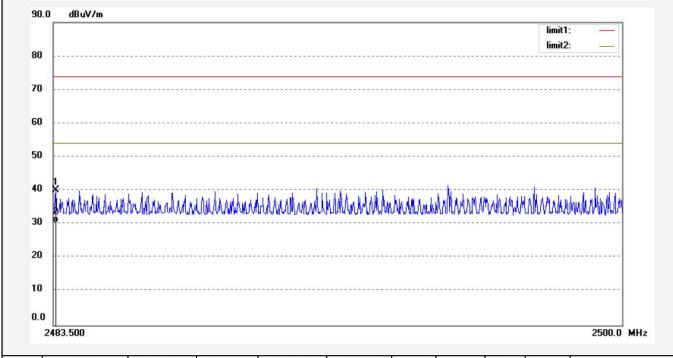
EUT: ACTIVE SPEAKER SYSTEM Engineer Signature: WADE

Mode: TX 2480MHz Distance: 3m

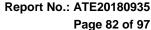
Model: A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.582	39.09	1.10	40.19	74.00	-33.81	peak			
2	2483.582	29.37	1.10	30.47	54.00	-23.53	AVG			

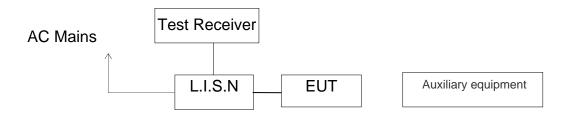




# 12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

# 15 SECTION 15.207(A)

# 12.1.Block Diagram of Test Setup



(EUT: ACTIVE SPEAKER SYSTEM)

#### 12.2. Power Line Conducted Emission Measurement Limits

Frequency	Limit d	B(μV)
(MHz)	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

NOTE1: The lower limit shall apply at the transition frequencies.

NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

## 12.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: +86-755-26503290 Fax: +86-755-26503396 E-mail: webmaster@atc-lab.com Http://www.atc-lab.com



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12.4. Operating Condition of EUT

- 12.4.1. Setup the EUT and simulator as shown as Section 12.1.
- 12.4.2. Turn on the power of all equipment.
- 12.4.3.Let the EUT work in test mode and measure it.

### 12.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 500hm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2014 on Conducted Emission Measurement.

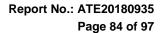
The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

#### 12.6. Power Line Conducted Emission Measurement Results

#### PASS.

The frequency range from 150kHz to 30MHz is checked.





Test mode : B	T Playing	(AC 120	)V/60Hz	z)			
MEASUREMENT	RESULT:	"TUV-	0518-1	_fin"			
5/18/2018 Frequency MHz	Level dBµV		Limit dBµV	_	Detector	Line	PE
0.190000 0.445000 1.960000 13.825000	38.10 32.50 38.90 38.90	10.5 10.7 11.0 11.4	64 57 56 60	24.5	QP QP	L1 L1 L1 L1	GND GND GND GND
MEASUREMENT	RESULT:	"TUV-	0518-1	_fin2"			
5/18/2018 Frequency MHz	Level dBµV		Limit dBµV	_	Detector	Line	PE
0.190000 0.445000 1.960000 13.825000	24.70 28.00 33.00 34.80	10.5 10.7 11.0 11.4	54 47 46 50	29.3 19.0 13.0 15.2	AV AV	L1 L1 L1 L1	GND GND GND GND
MEASUREMENT	RESULT:	"TUV-	0518-2	_fin"			
5/18/2018 Frequency MHz	Level dBµV		Limit dBµV		Detector	Line	PE
0.150000 0.445000 1.960000 13.825000	33.60 32.30 39.20 36.50	10.5 10.7 11.0 11.4			QP QP	N N N	GND GND GND GND
MEASUREMENT	RESULT:	"TUV-	0518-2	_fin2"			
5/18/2018 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	_	Detector	Line	PE
0.190000 0.765000 1.960000 13.825000	24.10 27.60 33.40 35.00	10.5 10.8 11.0 11.4	54 46 46 50			N N N	GND GND GND GND

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

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#### ACCURATE TECHNOLOGY CO., LTD

#### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: ACTIVE SPEAKER SYSTEM M/N:A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Operating Condition: Bluetooth playing Test Site: 1#Shielding Room

Operator: WADE
Test Specification: L 120V/60Hz
Comment: Mains port
Start of Test: 5/18/2018 /

#### SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70

Start Stop Step Detector Meas. IF Transducer

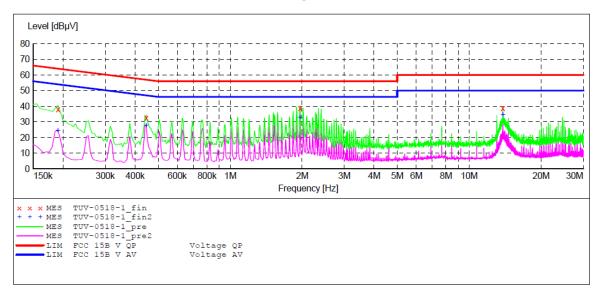
Frequency Frequency Width Time Bandw.

9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008

Average

150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



#### MEASUREMENT RESULT: "TUV-0518-1 fin"

5/18/2018 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190000	38.10	10.5	64	25.9	OP	L1	GND
0.445000	32.50	10.7	57	24.5	QP	L1	GND
1.960000	38.90	11.0	56	17.1	QP	L1	GND
13.825000	38.90	11.4	60	21.1	QP	L1	GND

#### MEASUREMENT RESULT: "TUV-0518-1 fin2"

5/18/2018 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190000	24.70	10.5	54	29.3	AV	L1	GND
0.445000	28.00	10.7	47	19.0	AV	L1	GND
1.960000	33.00	11.0	46	13.0	AV	L1	GND
13.825000	34.80	11.4	50	15.2	AV	L1	GND

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#### ACCURATE TECHNOLOGY CO., LTD

#### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: ACTIVE SPEAKER SYSTEM M/N:A300

Manufacturer: Dongguan Platinum Audio Systems Co., Ltd.

Operating Condition: Bluetooth playing Test Site: 1#Shielding Room

Operator: WADE

Test Specification: N 120V/60Hz Comment: Mains port Start of Test: 5/18/2018 /

#### SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70

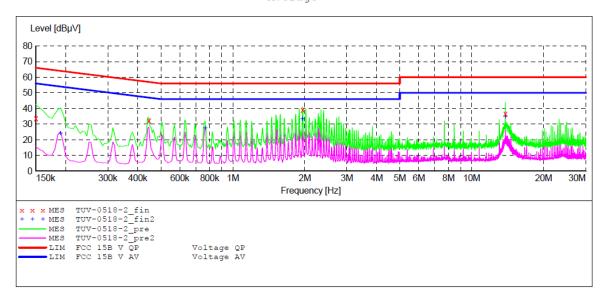
Start Stop Step Detector Meas. IF Transducer Frequency Frequency Width Time Bandw.

Frequency Frequency Width Time Bandw. 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008

Average

150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



## MEASUREMENT RESULT: "TUV-0518-2 fin"

5/18/2018							
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dBµV	dB	dBuV	dB			
	·						
0.150000	33.60	10.5	66	32.4	QP	N	GND
0.445000	32.30	10.7	57	24.7	QP	N	GND
1.960000	39.20	11.0	56	16.8	QP	N	GND
13.825000	36.50	11.4	60	23.5	OP	N	GND
					~		

#### MEASUREMENT RESULT: "TUV-0518-2 fin2"

5/18/2018 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190000	24.10	10.5	54	29.9	AV	N	GND
0.765000	27.60	10.8	46	18.4	AV	N	GND
1.960000	33.40	11.0	46	12.6	AV	N	GND
13.825000	35.00	11.4	50	15.0	AV	N	GND

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## 13.99% OCCUPIED BANDWIDTH

# 13.1. The Requirement for RSS-Gen Clause 6.6

The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth. When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth

# 13.2.EUT Configuration on Measurement

The following equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

# 13.3. Operating Condition of EUT

- 13.3.1. Setup the EUT and simulator as shown as Section 5.1.
- 13.3.2. Turn on the power of all equipment.
- 13.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

#### 13.4.Test Procedure

- 13.4.1.The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 13.4.2. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW. Set RBW of spectrum analyzer to 30kHz and VBW to 100kHz.



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13.4.3.Set SPA "Meas" function, Select "Occupied Bandwidth" function, Select "99% Power Bandwidth". The frequency of the upper and lower markers indicating the edges of the transmitters "99% Power" emission bandwidth shall be recorded to automate by SPA.

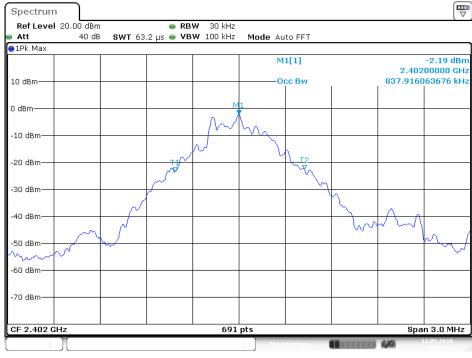
## 13.5.Measurement Result

Channel	Frequency (MHz)	BDR mode 99% Bandwidth (MHz)	EDR mode 99% Bandwidth (MHz)	Result
Low	2402	0.838	1.151	Pass
Middle	2441	0.838	1.137	Pass
High	2480	0.842	1.142	Pass

The spectrum analyzer plots are attached as below.

#### BDR mode

#### Low channel



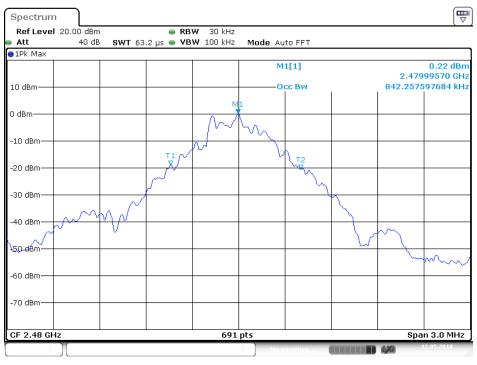
Date: 12.MAY.2018 15:54:12

## Middle channel



Date: 12.MAY.2018 15:53:31

# High channel



Date: 12.MAY.2018 15:52:40



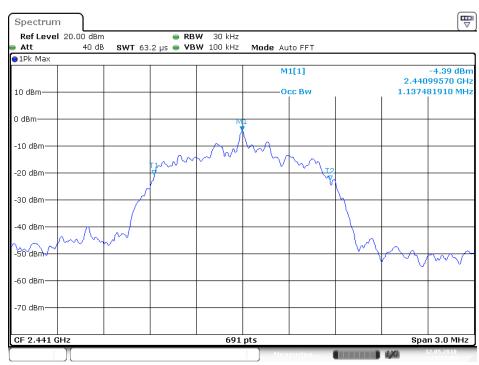
#### EDR mode

#### Low channel

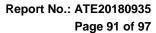


Date: 12.MAY.2018 15:49:47

#### Middle channel

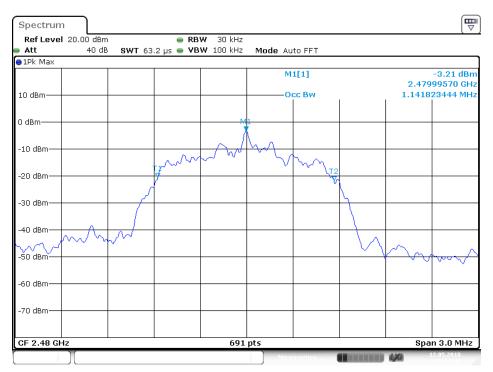


Date: 12.MAY.2018 15:51:04





# High channel

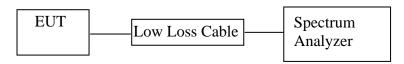


Date: 12.MAY.2018 15:51:44

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## 14. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

# 14.1.Block Diagram of Test Setup



(EUT: ACTIVE SPEAKER SYSTEM)

## 14.2. The Requirement For Section 15.247(d)

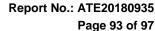
Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 14.3.EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 14.4. Operating Condition of EUT

- 14.4.1. Setup the EUT and simulator as shown as Section 14.1.
- 14.4.2. Turn on the power of all equipment.
- 14.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.





#### 14.5.Test Procedure

- 14.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 14.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz
- 14.5.3. The Conducted Spurious Emission was measured and recorded.

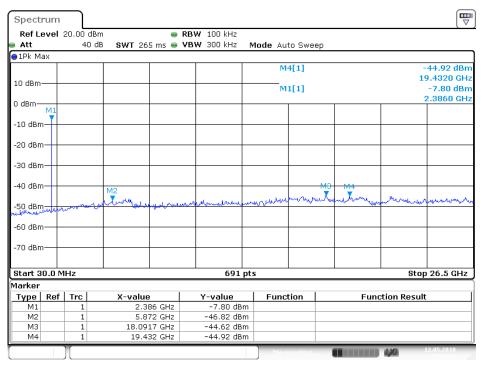
## 14.6.Test Result

#### Pass.

The spectrum analyzer plots are attached as below.

#### **BDR** mode

#### Low Channel 2402MHz

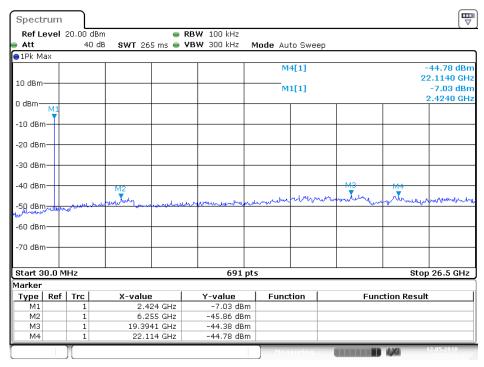


Date: 12.MAY.2018 15:56:26

Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: +86-755-26503290 Fax: +86-755-26503396 E-mail: webmaster@atc-lab.com Http://www.atc-lab.com

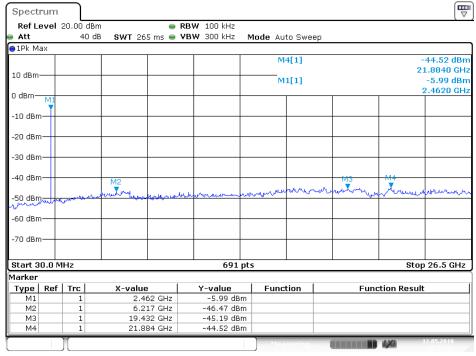


#### Middle Channel 2441MHz



Date: 12.MAY.2018 15:57:53

## **High Channel 2480MHz**

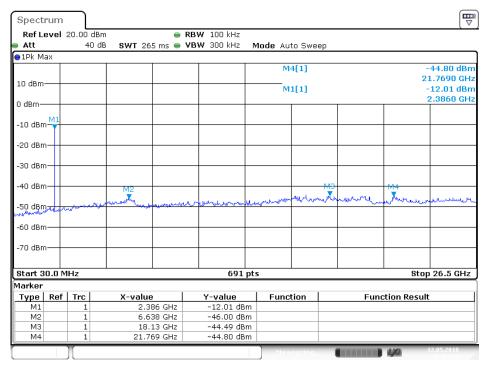


Date: 12.MAY.2018 15:59:11

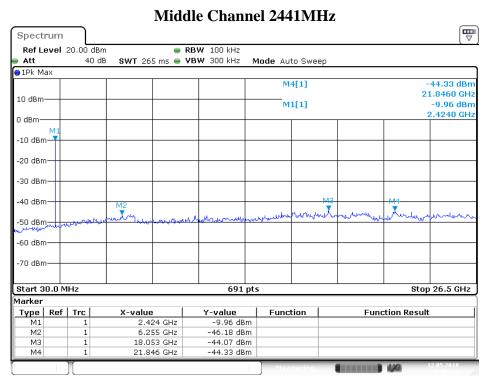


#### **EDR** mode

#### Low Channel 2402MHz



Date: 12.MAY.2018 16:03:22

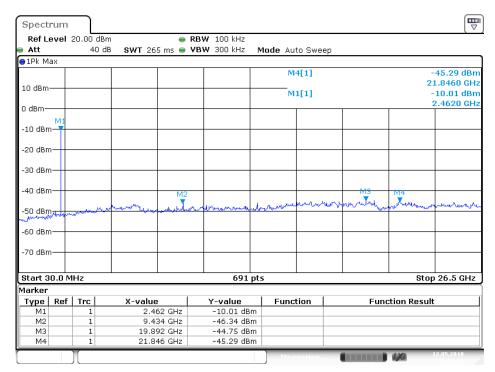


Date: 12.MAY.2018 16:01:43

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# **High Channel 2480MHz**



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# 15.ANTENNA REQUIREMENT

# 15.1.The Requirement

According to 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.

## 15.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Max Antenna gain of EUT is 3.25dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.