

APPLICATION CERTIFICATION FCC Part 15C  
On Behalf of

Bulk Unlimited Corp

Stage Karaoke  
Model No.: 2700

FCC ID: 2AE67-2700

Prepared for : Bulk Unlimited Corp  
Address : 199 Lee Ave. Suite 464, Brooklyn, New York, United States  
11211

Prepared by : Shenzhen Accurate Technology Co., Ltd.  
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Report No. : ATE20172103 002  
Date of Test : September 7-8, 2018  
Date of Report of Rev. 1 : Nov. 10, 2017  
Date of Report of Rev. 2 : September 10, 2018

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## Test Report Certification

Applicant : Bulk Unlimited Corp  
Manufacturer : Dynamic Scientific Ltd  
EUT Description : Stage Karaoke  
Model No. : 2700  
Trade Name : Croove

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247: 2017**  
**ANSI C63.10: 2013**

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test : \_\_\_\_\_  
Date of Report of Rev. 1: \_\_\_\_\_  
Date of Report of Rev. 2: \_\_\_\_\_

September 7-8, 2018

Nov. 10, 2017

September 10, 2018

Prepared by : \_\_\_\_\_



Approved & Authorized Signer : \_\_\_\_\_

(Sean Liu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

Model Number : 2700

Bluetooth version : V 4.2  
This report is for BT classic mode

Frequency Range : 2402MHz-2480MHz

Number of Channels : 79

Antenna Gain(Max) : 0dBi

Antenna type : Integral antenna

Adapter Input Voltage : DC 3.7V (Powered by Lithium battery) or  
DC 5V (Powered by USB port)

Modulation mode : GFSK,  $\pi/4$  DQPSK, 8DPSK

Applicant : Bulk Unlimited Corp

Address : 199 Lee Ave. Suite 464, Brooklyn, New York, United States 11211

Manufacturer : Dynamic Scientific Ltd

Address : Room 04&05, 21/F, Canny Industrial Building, 33 San Po Kong, Kowloon, Hong Kong

### 1.2. Accessory and Auxiliary Equipment

N/A

### 1.3. Description of Test Facility

EMC Lab	: Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358
	Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2
	Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193
	Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	: Shenzhen Accurate Technology Co., Ltd.
Site Location	: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

### 1.4. Measurement Uncertainty

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

## 2. DESCRIPTION OF VERSION

Edition No.	Date of Rev.	Summary	Report No.
REV.1	Nov. 10, 2017	Original Report	ATE20172103
REV.2	September 10, 2018	Replace AUX OUT port	ATE20172103 002

### Remark for Rev. 2

1. This report is an additional version with original report number ATE20172103. The different with original report please see the above table of REV.2.
2. Compared with the original report ATE20172103, sample of the new provision is exactly the same as the old one. Through evaluation of the above difference, Conducted Emission and Radiated emission (Below 1GHz) is need to retest, portion test data and test pictures would refer to ATE20172103.
3. This report is based on report of ATE20172103.
4. For testing items not reflected in this report, Please refer to the original report.

Original External



Replace External



### 3. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment**

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 06, 2018	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 06, 2018	1 Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 06, 2018	1 Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 06, 2018	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 06, 2018	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 06, 2018	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 06, 2018	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 06, 2018	1 Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 06, 2018	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 06, 2018	1 Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 06, 2018	1 Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 06, 2018	1 Year

## 4. OPERATION OF EUT DURING TESTING

### 4.1.Operating Mode

The mode is used: Transmitting mode

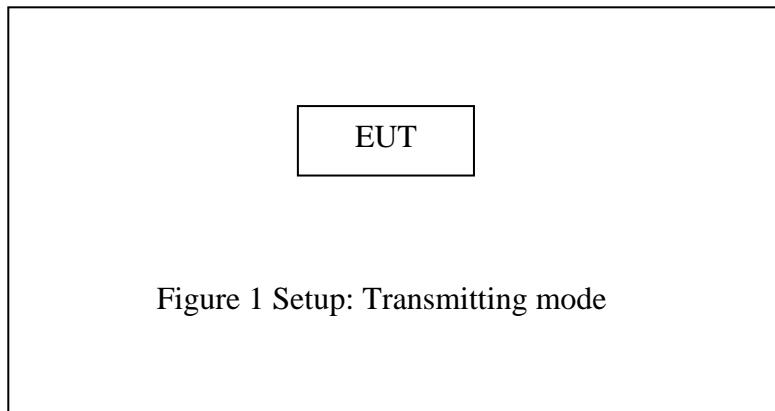
Low Channel: 2402MHz

Middle Channel: 2441MHz

High Channel: 2480MHz

Hopping

### 4.2.Configuration and peripherals



## 5. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.207	Conducted Emission Test	Compliant
Section 15.247(a)(1)	20dB Bandwidth Test	C refer to the original report
Section 15.247(a)(1)	Carrier Frequency Separation Test	refer to the original report
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	refer to the original report
Section 15.247(a)(1)(iii)	Dwell Time Test	refer to the original report
Section 15.247(b)(1)	Maximum Peak Output Power Test	refer to the original report
Section 15.247(d) Section 15.209	Radiated Emission Test	refer to the original report(Above 1GHz test data)
Section 15.247(d)	Band Edge Compliance Test	refer to the original report
Section 15.203	Antenna Requirement	refer to the original report

## 6. RADIATED EMISSION TEST

### 6.1. Block Diagram of Test Setup

#### 6.1.1. Block diagram of connection between the EUT and peripherals

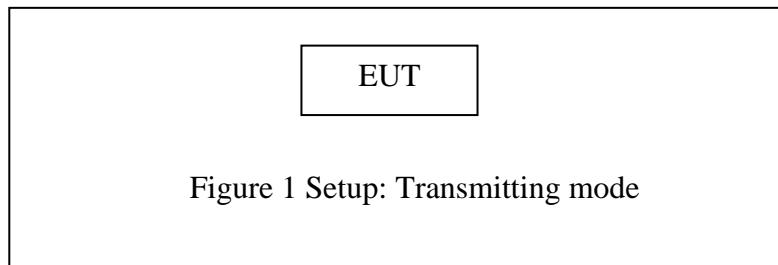
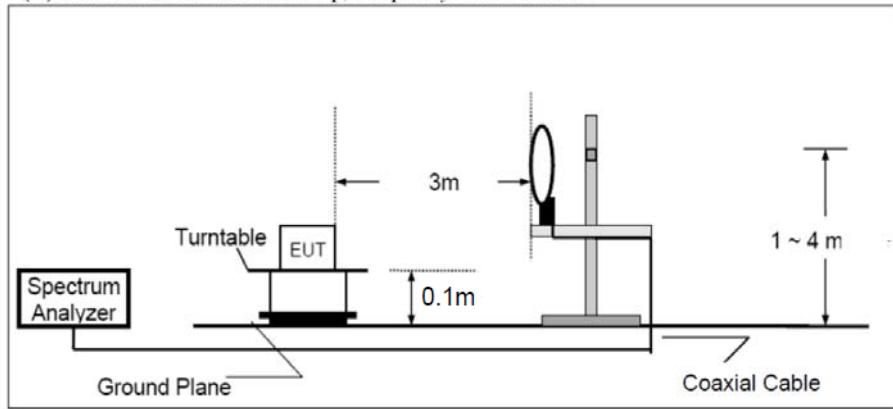


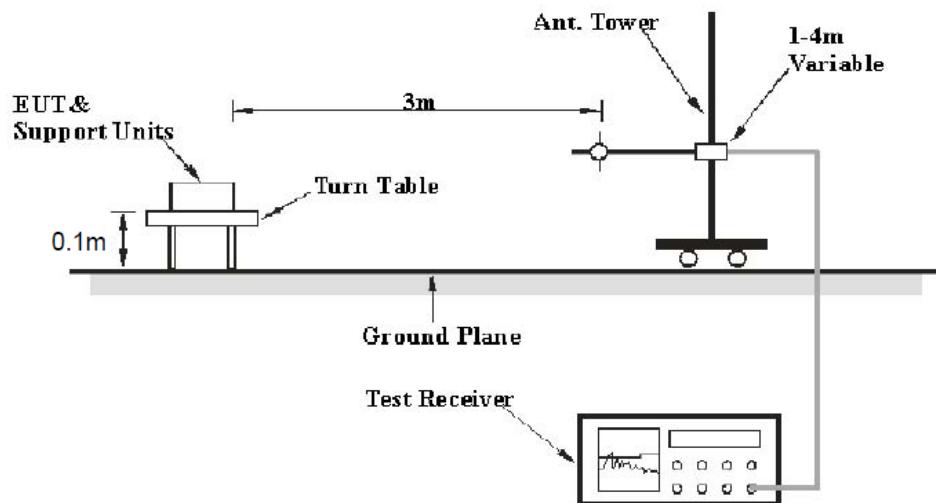
Figure 1 Setup: Transmitting mode

#### 6.1.2. Semi-Anechoic Chamber Test Setup Diagram

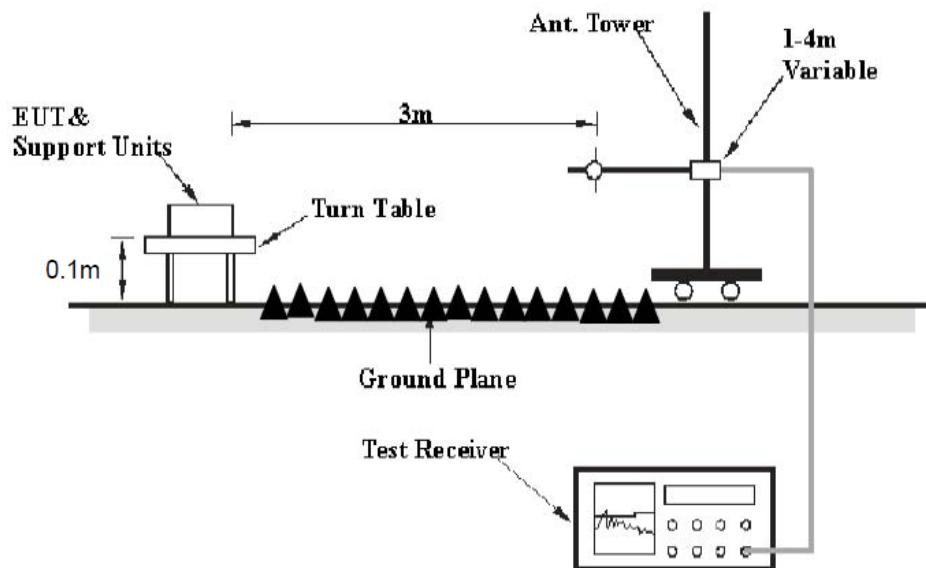
(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30MHz-1GHz



(C) Radiated Emission Test Set-Up, Frequency above 1GHz



## 6.2.The Limit 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).

## 6.3. Restricted bands of operation

### 6.3.1. FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 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	( <sup>2</sup> )
13.36-13.41			

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 6.4. Configuration of EUT on Measurement

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

## 6.5. Operating Condition of EUT

6.5.1. Setup the EUT and simulator as shown as Section 10.1.

6.5.2. Turn on the power of all equipment.

6.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

## 6.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.1 meter high above ground. 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.

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

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. 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.
3. 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.
4. All modes of operation were investigated and the worst-case emissions are reported.

## 6.7.Data Sample

Frequency (MHz)	Reading (dB $\mu$ V)	Factor (dB/m)	Result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Remark
X.XX	48.69	-13.35	35.34	46	-10.66	QP

Frequency(MHz) = Emission frequency in MHz

Reading(dB $\mu$ V) = Uncorrected Analyzer/Receiver reading

Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain

Result(dB $\mu$ V/m) = Reading(dB $\mu$ V) + Factor(dB/m)

Limit (dB $\mu$ V/m) = Limit stated in standard

Margin (dB) = Result(dB $\mu$ V/m) - Limit (dB $\mu$ V/m)

QP = Quasi-peak Reading

Calculation Formula:

Margin(dB) = Result (dB $\mu$ V/m)–Limit(dB $\mu$ V/m)

Result(dB $\mu$ V/m)= Reading(dB $\mu$ V)+ Factor(dB/m)

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.

## 6.8.The Field Strength of Radiation Emission Measurement Results

**PASS.**

**Note: 1.We tested GFSK mode,  $\Pi/4$ -DQPSK Mode & 8QPSK mode and recorded the worst case data (GFSK mode) for all test mode.**

**2. The test frequency is from 30MHz to 25GHz, The 18-25GHz emissions are not reported, because the levels are too low against the limit.**

**3. Above 1GHz test data please refer to the original report.**

The spectrum analyzer plots are attached as below.

## Below 1GHz



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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2018 #727

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V; 60Hz

Test item: Radiation Test

Date: 2018/09/08

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

Time: 17:27:32

EUT: Stage Karaoke

Engineer Signature: Frank

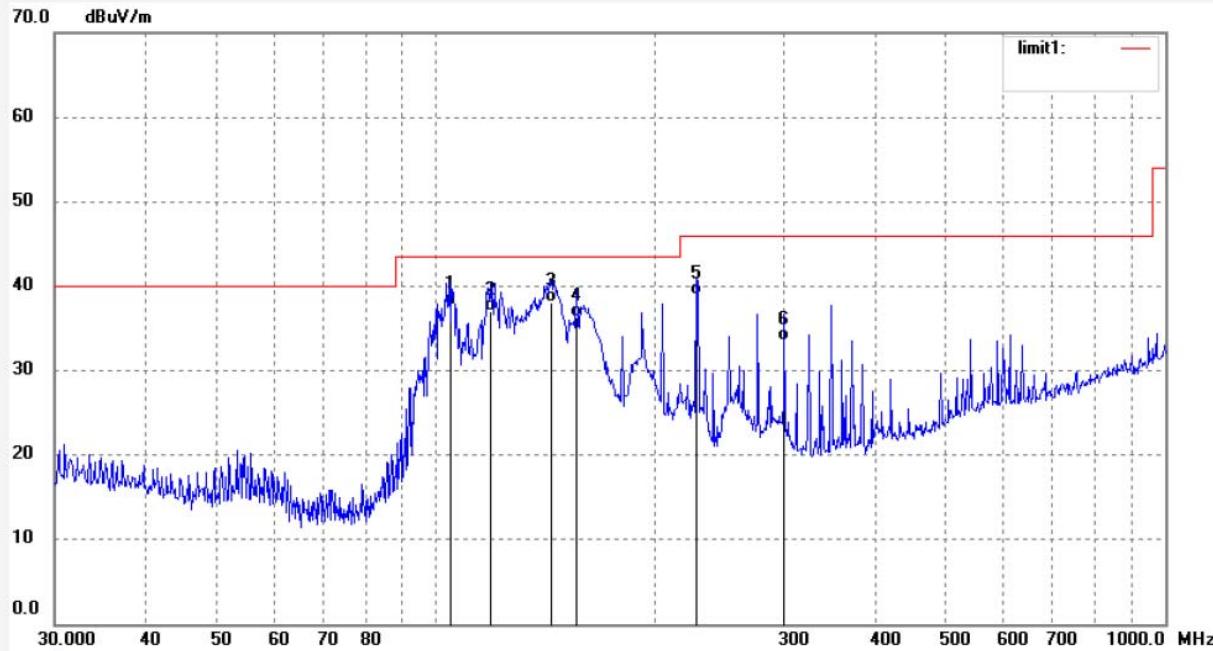
Mode: TX2402MHz(GFSK)

Distance: 3m

Model: 2700

Manufacturer: Dynamic Scientific Ltd

Note: Report NO.:ATE20172103 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	104.9033	51.56	-13.85	37.71	43.50	-5.79	QP	200	41	
2	119.0180	50.12	-13.06	37.06	43.50	-6.44	QP	200	302	
3	143.8294	53.15	-15.11	38.04	43.50	-5.46	QP	200	156	
4	155.9100	51.16	-14.87	36.29	43.50	-7.21	QP	200	123	
5	227.6905	50.15	-11.18	38.97	46.00	-7.03	QP	200	56	
6	300.3672	42.45	-9.01	33.44	46.00	-12.56	QP	200	146	



## ACCURATE TECHNOLOGY CO., LTD.

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

Job No.: FRANK2018 #728

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Stage Karaoke

Mode: TX2402MHz(GFSK)

Model: 2700

Manufacturer: Dynamic Scientific Ltd

Polarization: Vertical

Power Source: AC 120V; 60Hz

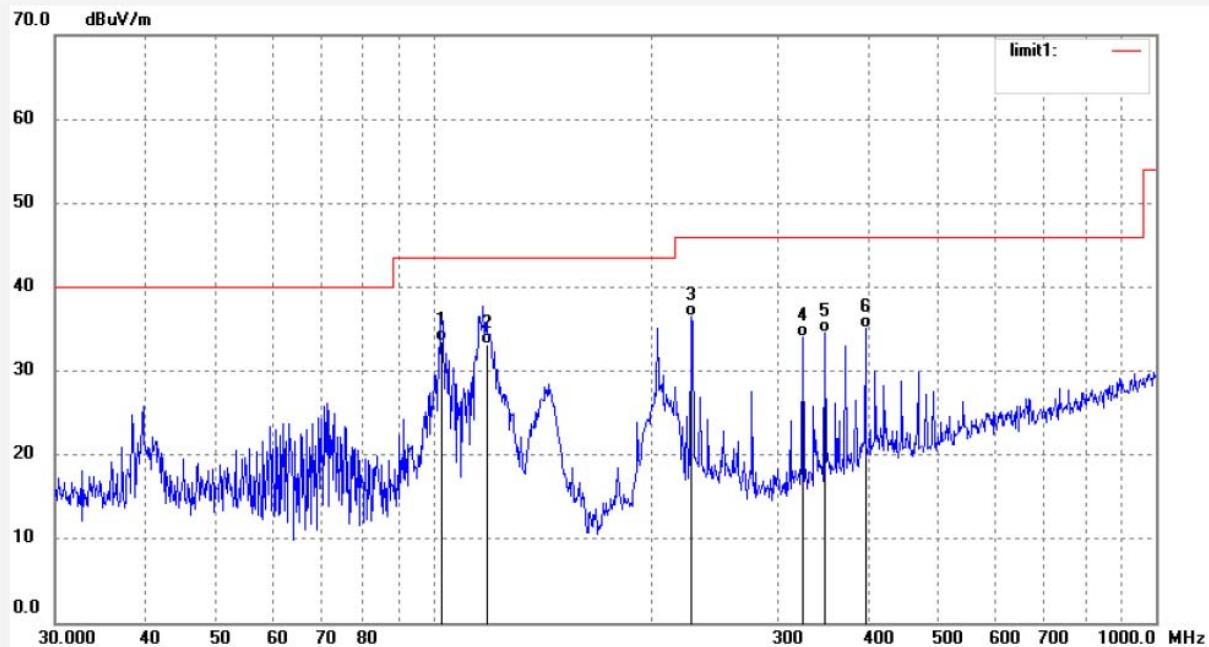
Date: 2018/09/08

Time: 17:29:05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172103 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	102.7192	47.02	-13.50	33.52	43.50	-9.98	QP	100	45	
2	118.6013	46.17	-13.05	33.12	43.50	-10.38	QP	100	110	
3	227.6905	47.64	-11.18	36.46	46.00	-9.54	QP	100	48	
4	324.4560	42.24	-8.26	33.98	46.00	-12.02	QP	100	233	
5	348.0274	41.98	-7.47	34.51	46.00	-11.49	QP	100	156	
6	396.2414	41.73	-6.59	35.14	46.00	-10.86	QP	100	156	

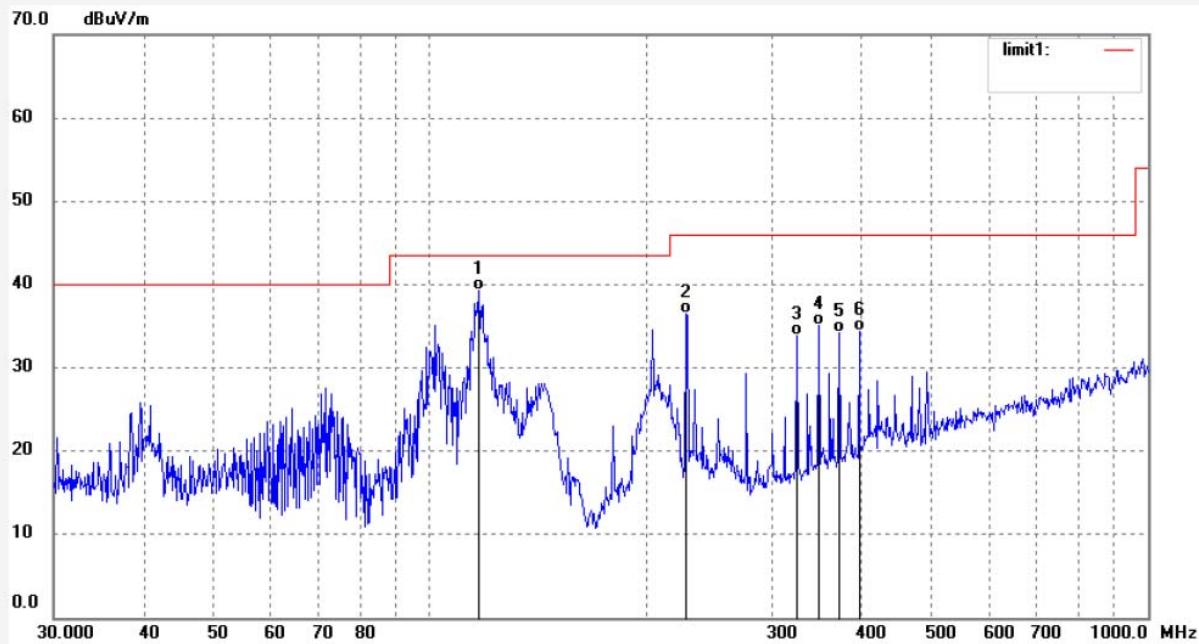


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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: FRANK2018 #729	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V; 60Hz
Test item: Radiation Test	Date: 2018/09/08
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:31:21
EUT: Stage Karaoke	Engineer Signature: Frank
Mode: TX2441MHz(GFSK)	Distance: 3m
Model: 2700	
Manufacturer: Dynamic Scientific Ltd	
Note: Report NO.:ATE20172103 002	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	116.9495	52.40	-13.06	39.34	43.50	-4.16	QP	100	102	
2	227.6905	47.61	-11.18	36.43	46.00	-9.57	QP	100	123	
3	324.4560	42.07	-8.26	33.81	46.00	-12.19	QP	100	302	
4	348.0274	42.50	-7.47	35.03	46.00	-10.97	QP	100	302	
5	372.0045	41.28	-7.13	34.15	46.00	-11.85	QP	100	154	
6	396.2414	40.90	-6.59	34.31	46.00	-11.69	QP	100	214	



## ACCURATE TECHNOLOGY CO., LTD.

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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2018 #730

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V; 60Hz

Test item: Radiation Test

Date: 2018/09/08

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

Time: 17:33:35

EUT: Stage Karaoke

Engineer Signature: Frank

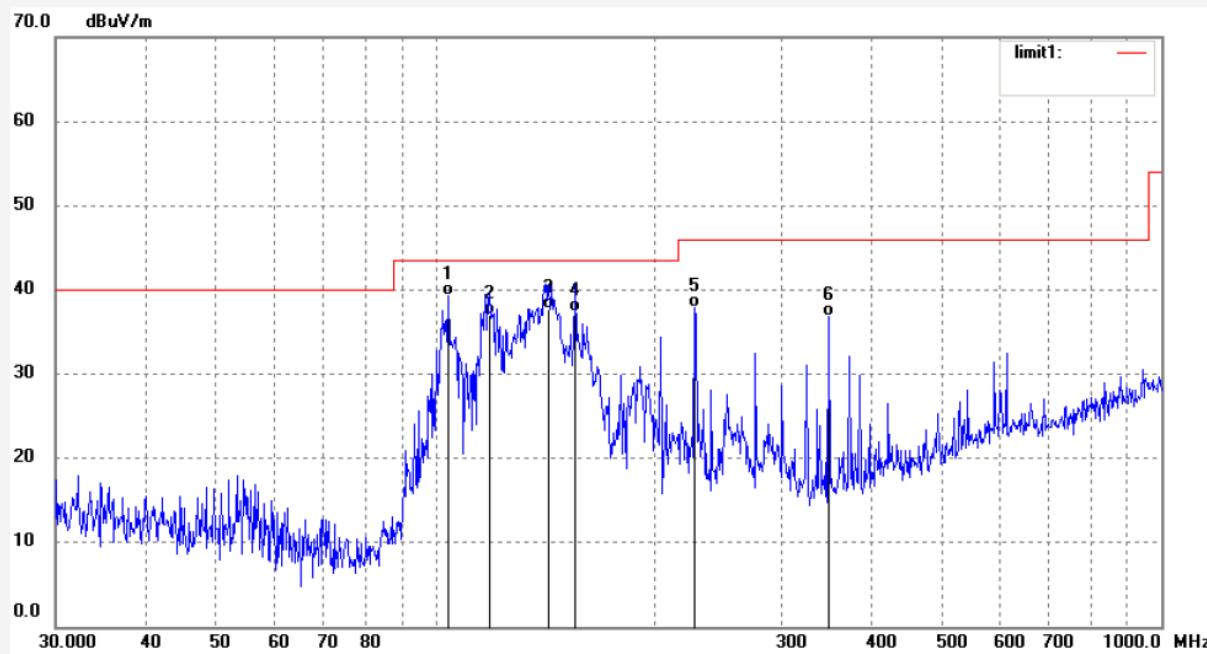
Mode: TX2441MHz(GFSK)

Distance: 3m

Model: 2700

Manufacturer: Dynamic Scientific Ltd

Note: Report NO.:ATE20172103 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	104.1701	53.03	-13.73	39.30	43.50	-4.20	QP	200	56	
2	119.0180	50.15	-13.06	37.09	43.50	-6.41	QP	200	15	
3	143.3260	52.87	-15.12	37.75	43.50	-5.75	QP	200	123	
4	155.9100	52.19	-14.87	37.32	43.50	-6.18	QP	200	102	
5	227.6905	49.03	-11.18	37.85	46.00	-8.15	QP	200	221	
6	348.0274	44.34	-7.47	36.87	46.00	-9.13	QP	200	135	

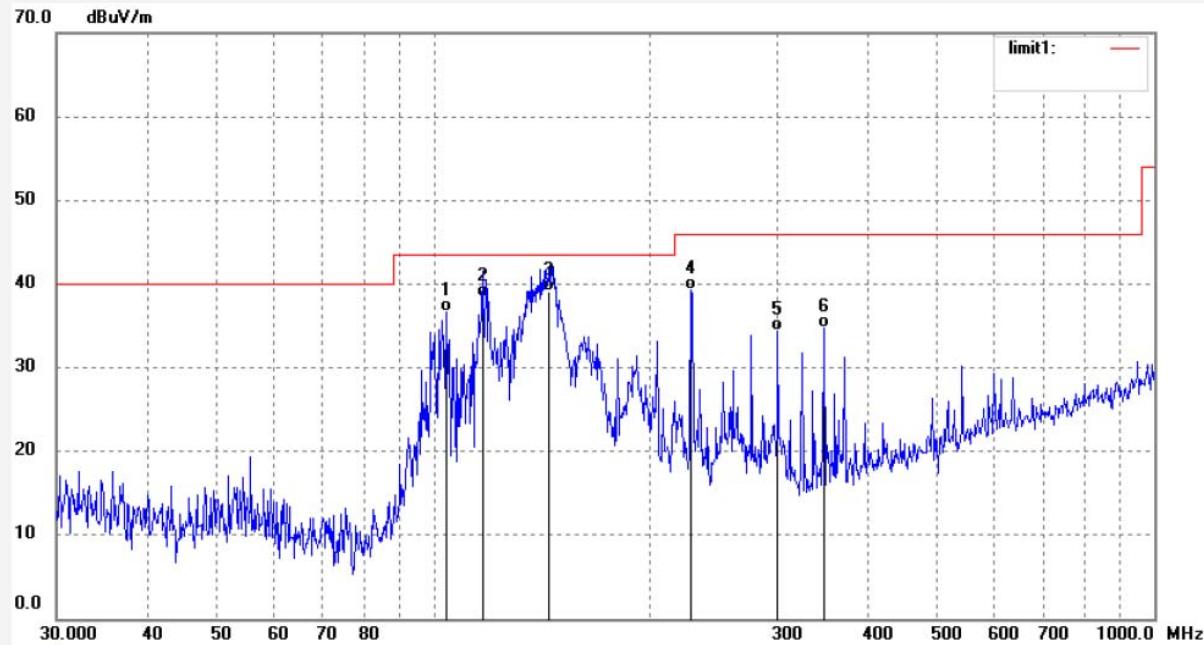


## ACCURATE TECHNOLOGY CO., LTD.

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Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: FRANK2018 #731	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V; 60Hz
Test item: Radiation Test	Date: 2018/09/08
Temp. ( C)/Hum.(%) 23 C / 48 %	Time: 17:35:01
EUT: Stage Karaoke	Engineer Signature: Frank
Mode: TX2480MHz(GFSK)	Distance: 3m
Model: 2700	
Manufacturer: Dynamic Scientific Ltd	
Note: Report NO.:ATE20172103 002	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	104.1701	50.40	-13.73	36.67	43.50	-6.83	QP	200	102	
2	116.9495	51.48	-13.06	38.42	43.50	-5.08	QP	200	45	
3	144.8418	54.15	-15.11	39.04	43.50	-4.46	QP	200	123	
4	227.6905	50.42	-11.18	39.24	46.00	-6.76	QP	200	262	
5	300.3672	43.36	-9.01	34.35	46.00	-11.65	QP	200	49	
6	348.0274	42.26	-7.47	34.79	46.00	-11.21	QP	200	135	

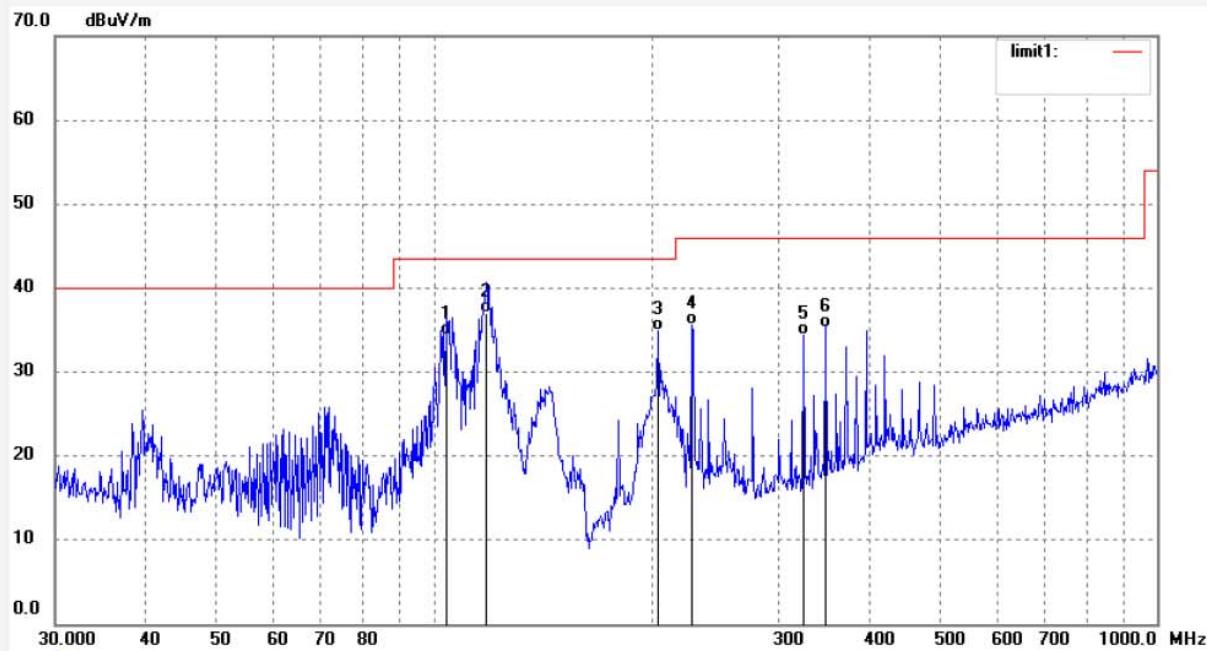


## ACCURATE TECHNOLOGY CO., LTD.

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

Job No.: FRANK2018 #732	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V; 60Hz
Test item: Radiation Test	Date: 2018/09/08
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:38:18
EUT: Stage Karaoke	Engineer Signature: Frank
Mode: TX2480MHz(GFSK)	Distance: 3m
Model: 2700	
Manufacturer: Dynamic Scientific Ltd	
Note: Report NO.:ATE20172103 002	

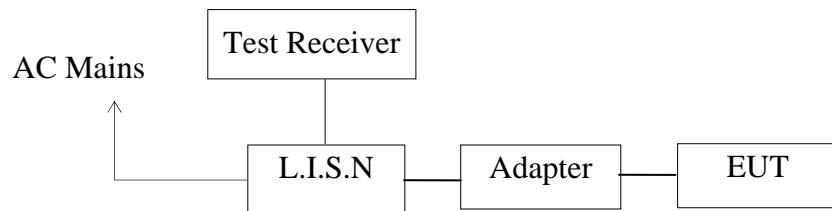


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	104.1701	48.15	-13.73	34.42	43.50	-9.08	QP	100	301	
2	118.1861	50.15	-13.06	37.09	43.50	-6.41	QP	100	321	
3	204.2376	47.02	-12.14	34.88	43.50	-8.62	QP	100	46	
4	227.6905	46.83	-11.18	35.65	46.00	-10.35	QP	100	156	
5	324.4560	42.69	-8.26	34.43	46.00	-11.57	QP	100	126	
6	348.0274	42.82	-7.47	35.35	46.00	-10.65	QP	100	302	

## 7. AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A)

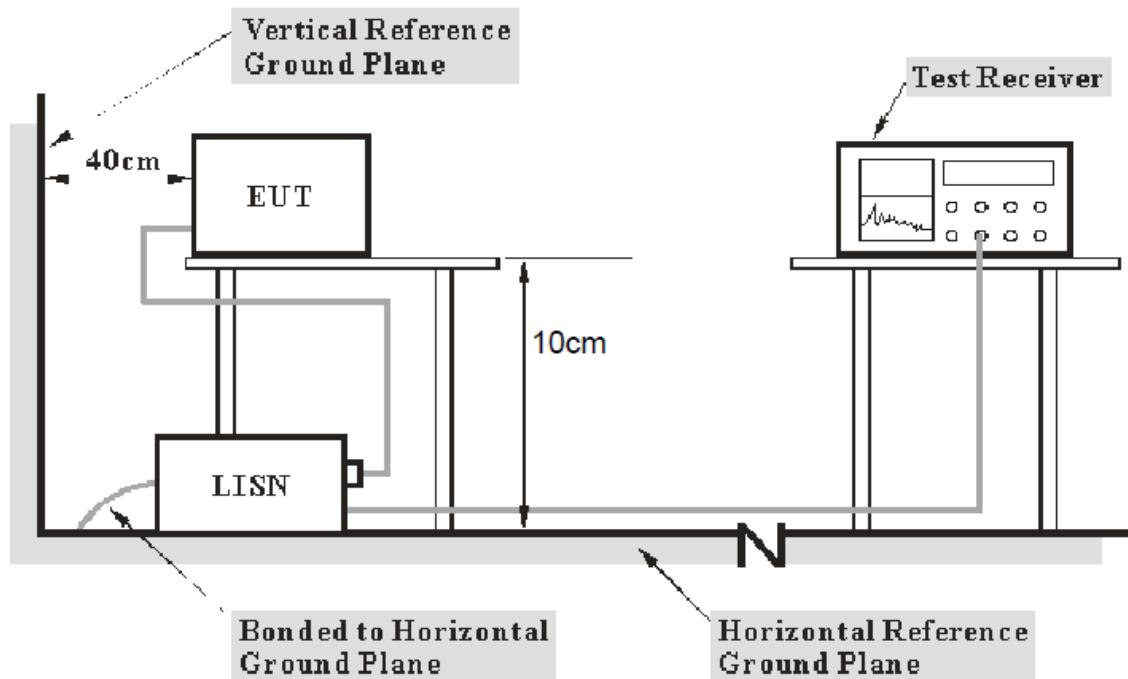
### 7.1. Block Diagram of Test Setup

#### 7.1.1. Block diagram of connection between the EUT and simulators



(EUT: Stage Karaoke)

#### 7.1.2. Test System Setup



**Note:**

1. Support units were connected to second LISN.
2. Both of LISNs (AMIN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

## 7.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	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.

## 7.3. Configuration of EUT on Measurement

The 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.

## 7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in test mode and measure it.

## 7.5. Test Procedure

The EUT is put on the plane 0.1m 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 50ohm 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 C63.10: 2013 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.

## 7.6.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dB $\mu$ V)	Average Level (dB $\mu$ V)	QuasiPeak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	10.5	51.1	34.2	56.0	46.0	4.9	11.8	Pass

Frequency(MHz) = Emission frequency in MHz

Transducer value(dB) = Insertion loss of LISN + Cable Loss

Level(dB $\mu$ V) = Quasi-peak Reading/Average Reading + Transducer value

Limit (dB $\mu$ V) = Limit stated in standard

Margin = Limit (dB $\mu$ V) - Level (dB $\mu$ V)

Calculation Formula:

Margin = Limit (dB $\mu$ V) - Level (dB $\mu$ V)

## 7.7.Power Line Conducted Emission Measurement Results

**PASS.**

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

Maximizing procedure was performed on the six (6) highest emissions of the EUT. Emissions attenuated more than 20 dB below the permissible value are not reported.

All data was recorded in the Quasi-peak and average detection mode.

The spectral diagrams are attached as below.

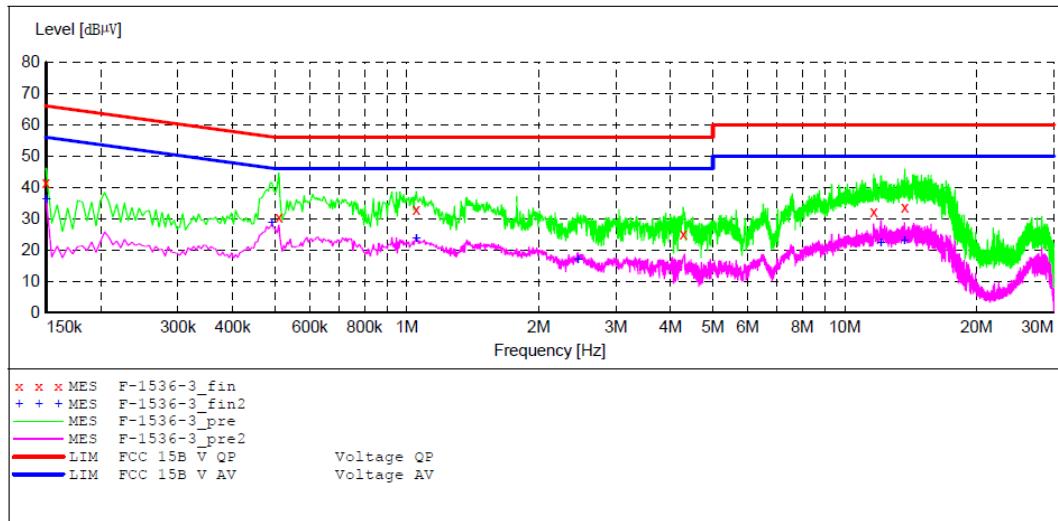
## ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Stage Karaoke M/N:2700  
 Manufacturer: Dynamic Scientific Ltd  
 Operating Condition: Charging with BT communication  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: L 120V/60Hz  
 Comment: Report NO.:ATE20172103 002  
 Start of Test: 2018-9-7 / 9:54:22

## SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "F-1536-3\_fin"

2018-9-7 9:57

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.150000	41.60	10.8	66	24.4	QP	L1	GND
0.510000	30.60	11.0	56	25.4	QP	L1	GND
1.050000	33.20	11.1	56	22.8	QP	L1	GND
4.276500	25.10	11.4	56	30.9	QP	L1	GND
11.656500	32.30	11.6	60	27.7	QP	L1	GND
13.717500	33.90	11.6	60	26.1	QP	L1	GND

## MEASUREMENT RESULT: "F-1536-3\_fin2"

2018-9-7 9:57

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.150000	36.30	10.8	56	19.7	AV	L1	GND
0.492000	28.60	11.0	46	17.5	AV	L1	GND
1.050000	23.70	11.1	46	22.3	AV	L1	GND
2.458500	17.00	11.3	46	29.0	AV	L1	GND
12.097500	22.40	11.6	50	27.6	AV	L1	GND
13.690500	22.90	11.6	50	27.1	AV	L1	GND

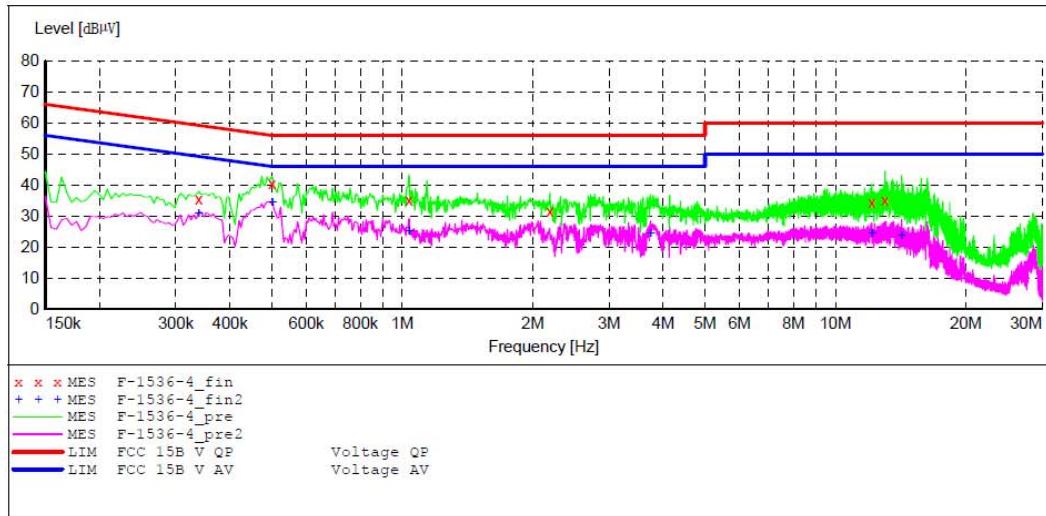
## ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Stage Karaoke M/N:2700  
 Manufacturer: Dynamic Scientific Ltd  
 Operating Condition: Charging with BT communication  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: N 120V/60Hz  
 Comment: Report No.:ATE20172103 002  
 Start of Test: 2018-9-7 / 9:58:19

## SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "F-1536-4\_fin"

2018-9-7 10:00

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.339000	35.60	10.9	59	23.6	QP	N	GND
0.501000	40.40	11.0	56	15.6	QP	N	GND
1.036500	35.30	11.1	56	20.7	QP	N	GND
2.193000	31.50	11.3	56	24.5	QP	N	GND
12.138000	34.50	11.6	60	25.5	QP	N	GND
13.015500	35.00	11.6	60	25.0	QP	N	GND

## MEASUREMENT RESULT: "F-1536-4\_fin2"

2018-9-7 10:00

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.339000	31.00	10.9	49	18.2	AV	N	GND
0.501000	34.50	11.0	46	11.5	AV	N	GND
1.036500	25.10	11.1	46	20.9	AV	N	GND
3.741000	24.60	11.4	46	21.4	AV	N	GND
12.138000	24.40	11.6	50	25.6	AV	N	GND
14.217000	23.90	11.6	50	26.1	AV	N	GND

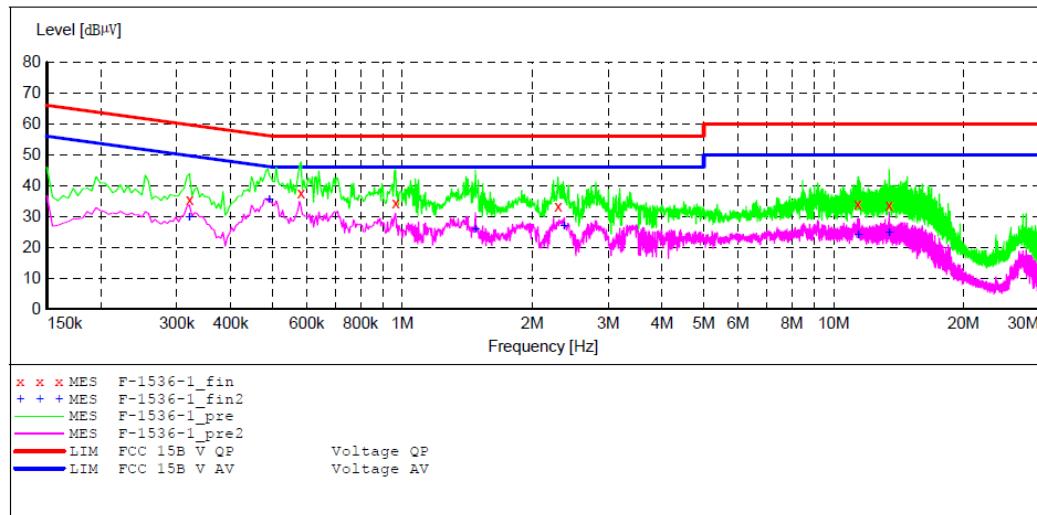
ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Stage Karaoke M/N:2700  
 Manufacturer: Dynamic Scientific Ltd  
 Operating Condition: Charging with BT communication  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: N 240V/60Hz  
 Comment: Report NO.:ATE20172103 002  
 Start of Test: 2018-9-7 / 9:48:09

## SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "F-1536-1\_fin"

2018-9-7 9:50

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.321000	35.40	10.9	60	24.3	QP	N	GND
0.582000	37.80	11.0	56	18.2	QP	N	GND
0.964500	34.30	11.1	56	21.7	QP	N	GND
2.296500	33.30	11.3	56	22.7	QP	N	GND
11.391000	34.10	11.6	60	25.9	QP	N	GND
13.447500	33.60	11.6	60	26.4	QP	N	GND

## MEASUREMENT RESULT: "F-1536-1\_fin2"

2018-9-7 9:50

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.321000	29.80	10.9	50	19.9	AV	N	GND
0.492000	35.50	11.0	46	10.6	AV	N	GND
1.477500	26.00	11.2	46	20.0	AV	N	GND
2.373000	26.90	11.3	46	19.1	AV	N	GND
11.400000	24.20	11.6	50	25.8	AV	N	GND
13.447500	24.70	11.6	50	25.3	AV	N	GND

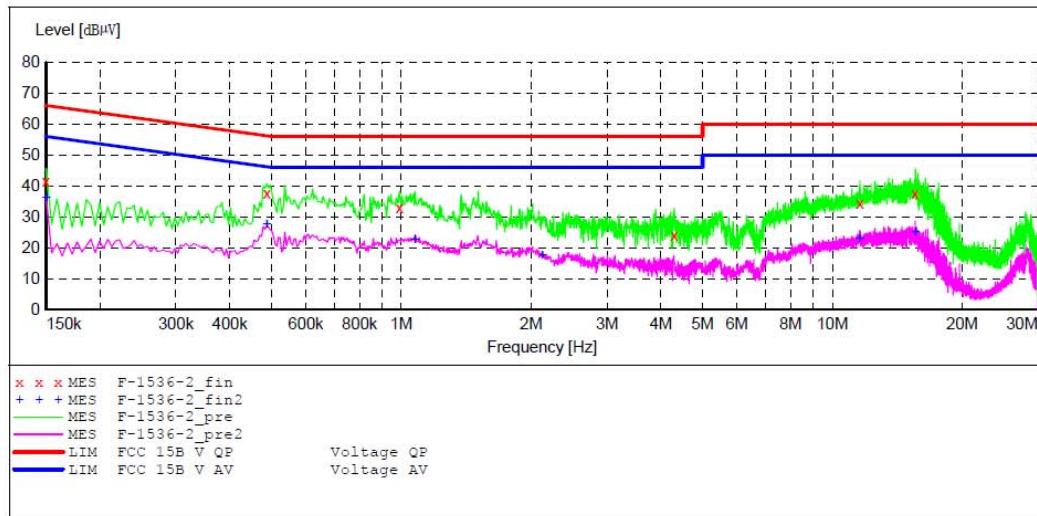
## ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Stage Karaoke M/N:2700  
 Manufacturer: Dynamic Scientific Ltd  
 Operating Condition: Charging with BT communication  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: L 240V/60Hz  
 Comment: Report NO.:ATE20172103 002  
 Start of Test: 2018-9-7 / 9:51:08

## SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "F-1536-2\_fin"

2018-9-7 9:53

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.150000	41.70	10.8	66	24.3	QP	L1	GND
0.487500	37.80	11.0	56	18.4	QP	L1	GND
0.991500	33.00	11.1	56	23.0	QP	L1	GND
4.299000	24.10	11.4	56	31.9	QP	L1	GND
11.580000	34.50	11.6	60	25.5	QP	L1	GND
15.562500	37.70	11.7	60	22.3	QP	L1	GND

## MEASUREMENT RESULT: "F-1536-2\_fin2"

2018-9-7 9:53

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.150000	36.30	10.8	56	19.7	AV	L1	GND
0.487500	27.60	11.0	46	18.6	AV	L1	GND
1.077000	22.50	11.1	46	23.5	AV	L1	GND
2.125500	17.80	11.3	46	28.2	AV	L1	GND
11.571000	23.20	11.6	50	26.8	AV	L1	GND
15.562500	25.20	11.7	50	24.8	AV	L1	GND

\*\*\*\*\* End of Test Report \*\*\*\*\*