

APPLICATION CERTIFICATION FCC Part 15B
On Behalf of
Shenzhen Waikin Electronic Co., Ltd.

Car Radio Bluetooth
Model No.: 87752824

FCC ID: YJ6-87752824

Prepared for : Shenzhen Waikin Electronic Co., Ltd.
Address : Wu Tong Shan Village, Shenzhen, China

Prepared by : ACCURATE TECHNOLOGY CO. LTD
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Report Number : ATE20101270-2
Date of Test : June 28, 2010
Date of Report : June 29, 2010

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Test Report Certification

Applicant : Shenzhen Waikin Electronic Co., Ltd.
Manufacturer : Shenzhen Waikin Electronic Co., Ltd.
EUT Description : Car Radio Bluetooth
(A) MODEL NO.: 87752824
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: DC 12V

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B ANSI C63.4: 2003

The device described above is tested by 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 B limits. The measurement results are contained in this test report and 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 ACCURATE TECHNOLOGY CO. LTD.

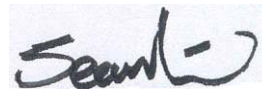
Date of Test : June 28, 2010

Prepared by :



(Engineer)

Approved & Authorized Signer :



(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Car Radio Bluetooth
Model Number	:	87752824
Frequency Band	:	2402-2480MHz
Power Supply	:	DC 12V
PC System	:	Manufacturer: DELL M/N: DCNE Serial No.: 6CQSC2X
Printer	:	Manufacturer: Canon Model No.: BJC-1000SP
Applicant	:	Shenzhen Waikin Electronic Co., Ltd.
Address	:	Wu Tong Shan Village, Shenzhen, China
Manufacturer	:	Shenzhen Waikin Electronic Co., Ltd.
Address	:	Wu Tong Shan Village, Shenzhen, China
Date of sample received	:	June 9, 2010
Date of Test	:	June 28, 2010

1.2. Description of Test Facility

EMC Lab	:	<p>Accredited by TUV Rheinland Shenzhen</p> <p>Listed by FCC The Registration Number is 752051</p> <p>Listed by Industry Canada The Registration Number is 5077A-2</p> <p>Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193</p>
Name of Firm	:	ACCURATE TECHNOLOGY CO. LTD
Site Location	:	<p>F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China</p>

1.3. 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. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 9, 2011
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 9, 2011
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 9, 2011
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 9, 2011
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 9, 2011
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 9, 2011
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 9, 2011
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 9, 2011
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 9, 2011
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 9, 2011

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: Connect to PC

3.2.Configuration and peripherals

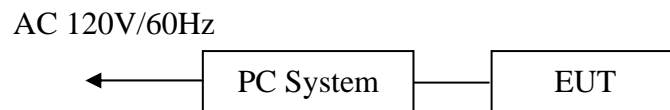


Figure 1 Setup: Connect to PC

(EUT: Car Radio Bluetooth)

4. TEST PROCEDURES AND RESULTS

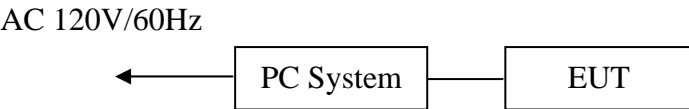
FCC Rules	Description of Test	Result
Section 15.107	Conducted Emission Test	Compliant
Section 15.109	Radiated Emission Test	Compliant

5. CONDUCTED EMISSION FOR FCC PART 15 SECTION

15.107(A)

5.1. Block Diagram of Test Setup

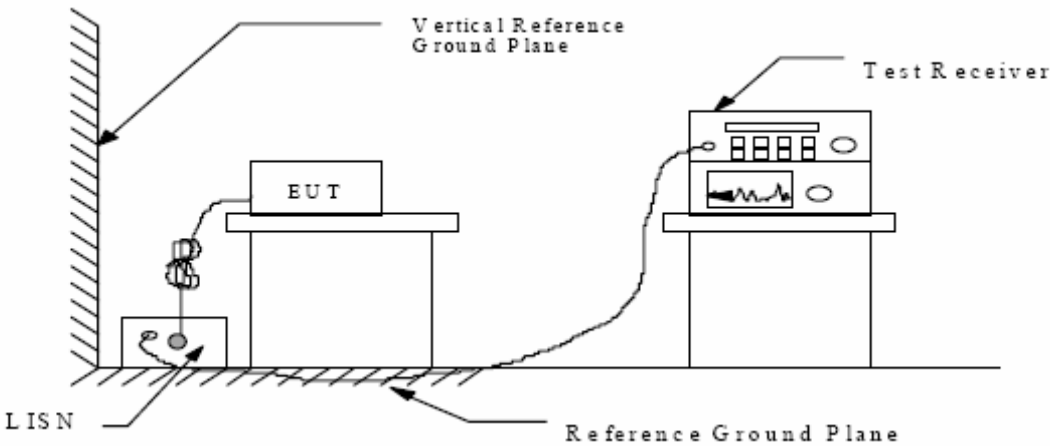
5.1.1. Block diagram of connection between the EUT and simulators



Setup: Connect to PC

(EUT: Car Radio Bluetooth)

5.1.2. Shielding Room Test Setup Diagram



(EUT: Car Radio Bluetooth)

5.2. The Emission Limit

5.2.1. Conducted Emission Measurement Limits According to Section 15.107(a)

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

* Decreases with the logarithm of the frequency.

5.3.Configuration of EUT on Measurement

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

5.3.1.Car Radio Bluetooth (EUT)

Model Number : 87752824
Serial Number : N/A
Manufacturer : Shenzhen Waikin Electronic Co., Ltd.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in Connect to PC mode measure it.

5.5.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 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 C63.4: 2003 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.

5.6. Power Line Conducted Emission Measurement Results

PASS.

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

Date of Test:	June 28, 2010	Temperature:	25°C
EUT:	Car Radio Bluetooth	Humidity:	50%
Model No.:	87752824	Power Supply:	Connect to PC use USB terminal PC power: AC 120V/60Hz
Test Mode:	Connect to PC	Test Engineer:	Joe

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.188327	45.00	11.2	64	19.1	QP	L1	GND
0.517062	37.70	12.0	56	18.3	QP	L1	GND
0.933537	39.50	11.8	56	16.5	QP	L1	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.190596	38.00	11.2	54	16.0	AV	L1	GND
0.571327	30.70	12.0	46	15.3	AV	L1	GND
0.933537	29.90	11.8	46	16.1	AV	L1	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.189080	46.00	11.2	64	18.1	QP	N	GND
0.515002	37.90	12.0	56	18.1	QP	N	GND
0.933537	38.80	11.8	56	17.2	QP	N	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.190596	39.20	11.2	54	14.8	AV	N	GND
0.533841	30.30	12.0	46	15.7	AV	N	GND
0.929818	27.20	11.8	46	18.8	AV	N	GND

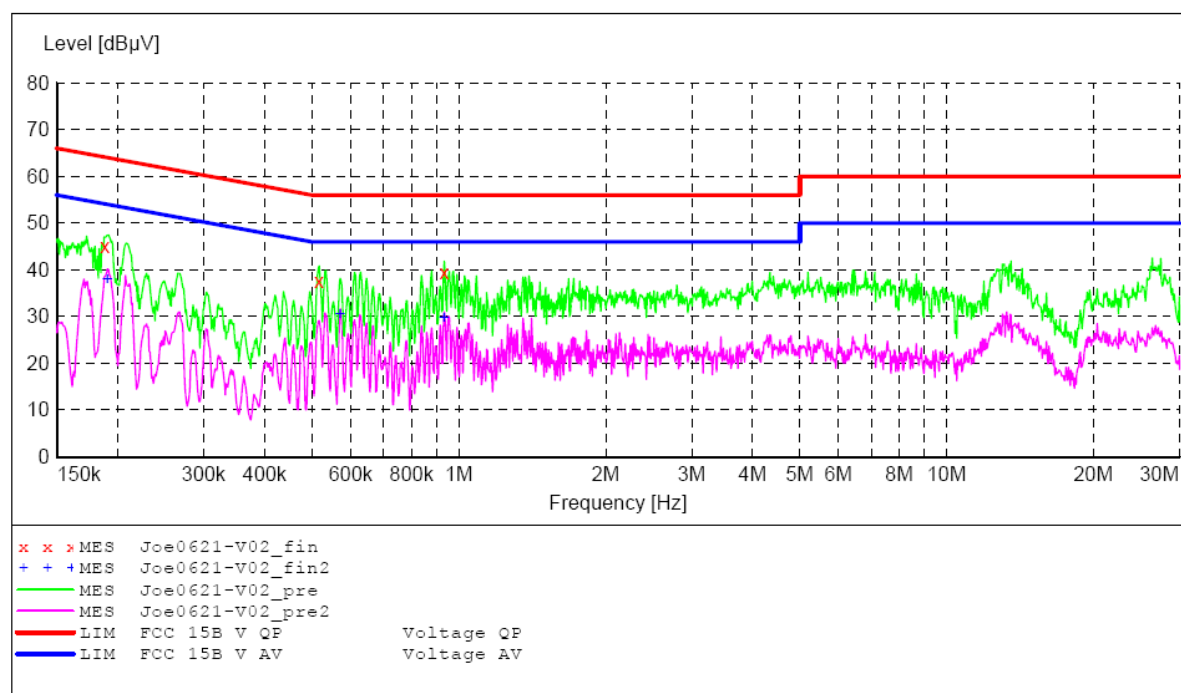
Emissions attenuated more than 20 dB below the permissible value are not reported.
The spectral diagrams are attached as below.

ACCURATE TECHNOLOGY CO.,LTD**CONDUCTED EMISSION STANDARD FCC 15 Part B**

EUT: Car Radio Bluetooth M/N:87752824
 Manufacturer: Shenzhen Waikin Electronic Co., Ltd.
 Operating Condition: Connect to PC
 Test Site: 1#Shielding Room
 Operator: Joe
 Test Specification: L 120V/60Hz
 Comment: Report No.:ATE20101270 Sample No.:101459
 Start of Test: 6/28/2010 / 11:15:10AM

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 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average

**MEASUREMENT RESULT: "Joe0628-V02_fin"**

6/28/2010 11:17AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.188327	45.00	11.2	64	19.1	QP	L1	GND
0.517062	37.70	12.0	56	18.3	QP	L1	GND
0.933537	39.50	11.8	56	16.5	QP	L1	GND

MEASUREMENT RESULT: "Joe0628-V02_fin2"

6/28/2010 11:17AM

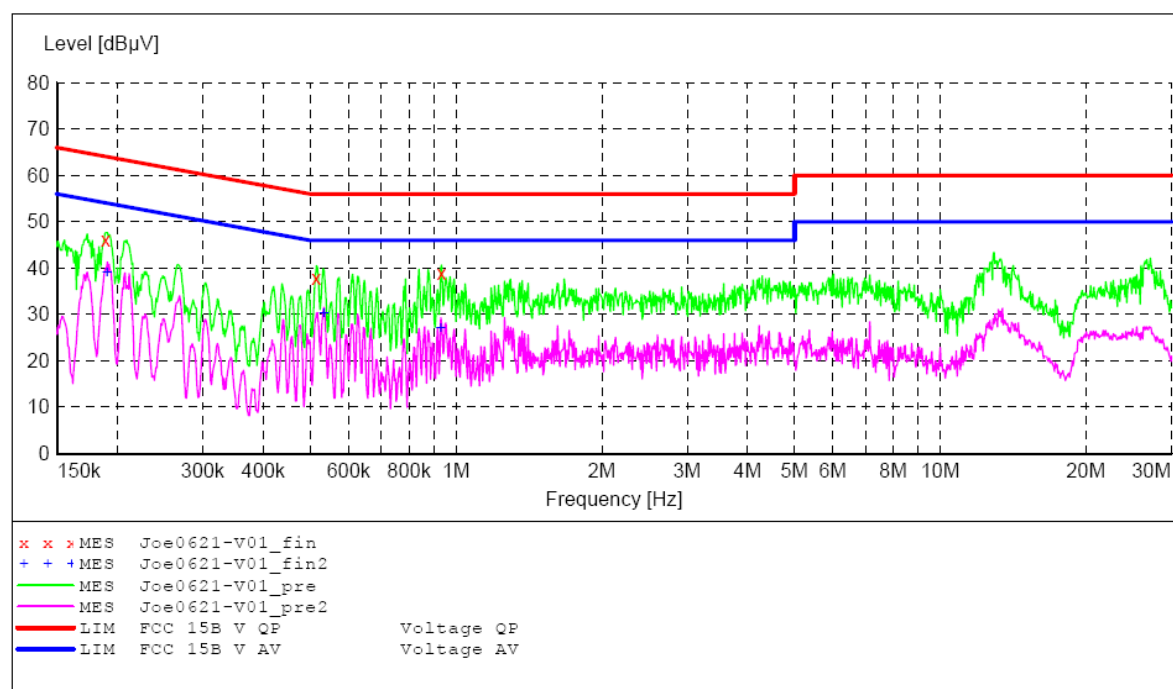
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.190596	38.00	11.2	54	16.0	AV	L1	GND
0.571327	30.70	12.0	46	15.3	AV	L1	GND
0.933537	29.90	11.8	46	16.1	AV	L1	GND

ACCURATE TECHNOLOGY CO.,LTD**CONDUCTED EMISSION STANDARD FCC 15 Part B**

EUT: Car Radio Bluetooth M/N:87752824
 Manufacturer: Shenzhen Waikin Electronic Co., Ltd.
 Operating Condition: Connect to PC
 Test Site: 1#Shielding Room
 Operator: Joe
 Test Specification: N 120V/60Hz
 Comment: Report No.:ATE20101270 Sample No.:101459
 Start of Test: 6/28/2010 / 11:08:43AM

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 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average

**MEASUREMENT RESULT: "Joe0628-V01_fin"**

6/28/2010 11:13AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.189080	46.00	11.2	64	18.1	QP	N	GND
0.515002	37.90	12.0	56	18.1	QP	N	GND
0.933537	38.80	11.8	56	17.2	QP	N	GND

MEASUREMENT RESULT: "Joe0628-V01_fin2"

6/28/2010 11:13AM

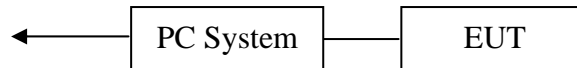
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.190596	39.20	11.2	54	14.8	AV	N	GND
0.533841	30.30	12.0	46	15.7	AV	N	GND
0.929818	27.20	11.8	46	18.8	AV	N	GND

6. RADIATED EMISSION FOR FCC PART 15 SECTION 15.109(A)

6.1. Block Diagram of Test Setup

6.1.1. Block diagram of connection between the EUT and simulators

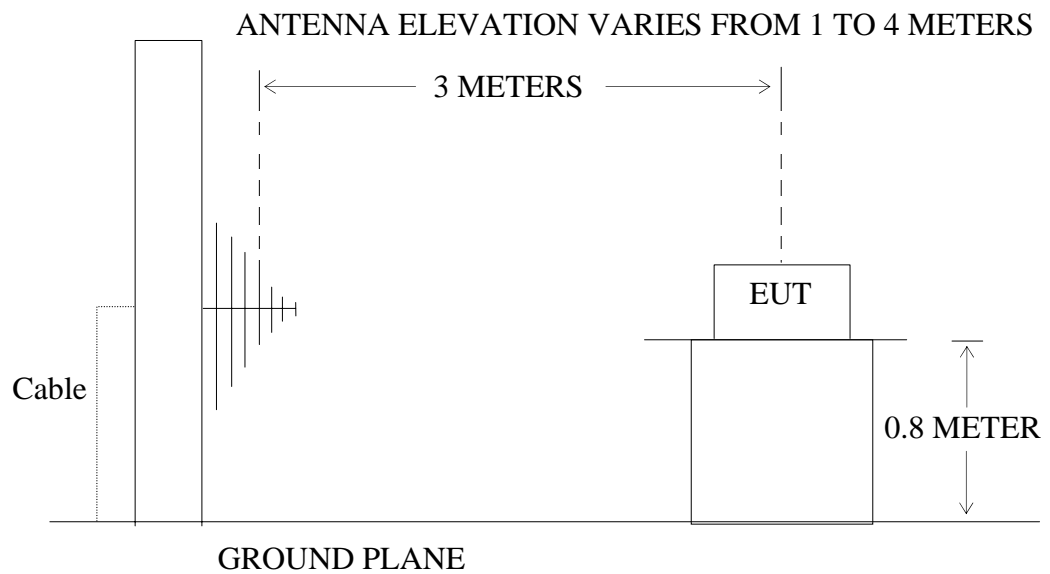
AC 120V/60Hz



Setup: Connect to PC

(EUT: Car Radio Bluetooth)

6.1.2. Semi-Anechoic Chamber Test Setup Diagram



(EUT: Car Radio Bluetooth)

6.2.The Emission Limit For Section 15.109 (a)

6.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a).

Frequency (MHz)	Limit	
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

6.3.EUT Configuration on Measurement

The following 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.

6.3.1.Car Radio Bluetooth (EUT)

Model Number : 87752824
 Serial Number : N/A
 Manufacturer : Shenzhen Waikin Electronic Co., Ltd.

6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3. Let the EUT work in Connect to PC mode measure it.

6.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 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 bilog 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 interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz.

The frequency range from 30MHz to 1000MHz is checked.

The final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

6.6.The Emission Measurement Result

PASS.

Date of Test:	June 28, 2010	Temperature:	25°C
EUT:	Car Radio Bluetooth	Humidity:	50%
			Connect to PC use USB terminal
Model No.:	87752824	Power Supply:	PC power: AC 120V/60Hz
Test Mode:	Connect to PC	Test Engineer:	Joe

Frequency (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
	QP		QP	QP	QP	
35.9866	14.67	17.47	32.14	40.00	-7.86	Vertical
288.0121	17.39	18.55	35.94	46.00	-10.06	Vertical
860.0603	9.72	28.65	38.37	46.00	-7.63	Vertical
288.0121	21.43	18.55	39.98	46.00	-6.02	Horizontal
382.0098	18.82	21.60	40.42	46.00	-5.58	Horizontal
860.0603	11.98	28.65	40.63	46.00	-5.37	Horizontal

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:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

$$\text{Where Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} + \text{High Pass Filter Loss} - \text{Amplifier Gain}$$
3. The spectral diagrams are attached as below display the measurement of peak values.



ACCURATE TECHNOLOGY CO., LTD.

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

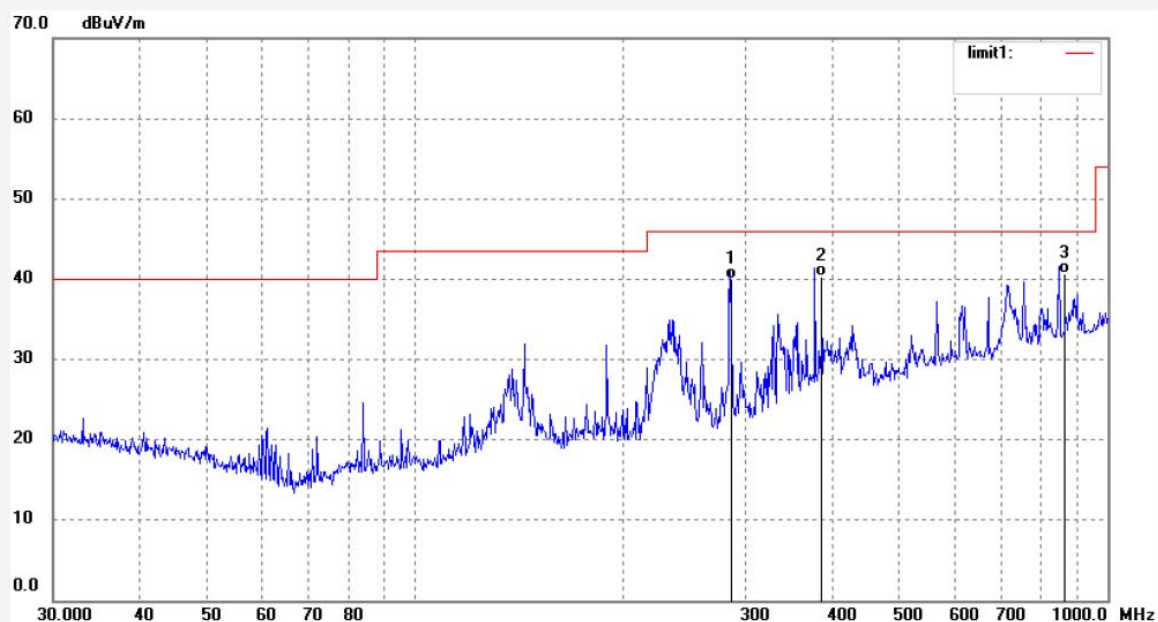
Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: RTTE #5336
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 50 %
EUT: Car Radio Bluetooth
Mode: Connect to PC
Model: 87752824

Polarization: Horizontal
Power Source: DC 12V
Date: 2010/06/28
Time: 9:06:40
Engineer Signature: Joe
Distance: 3m

Manufacturer: Shenzhen Waikin Electronic Co., Ltd.

Note: Sample No.:101459 Report No.:ATE20101270



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	288.0121	21.43	18.55	39.98	46.00	-6.02	QP			
2	382.0098	18.82	21.60	40.42	46.00	-5.58	QP			
3	860.0603	11.98	28.65	40.63	46.00	-5.37	QP			



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: RTTE #5337

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 50 %

EUT: Car Radio Bluetooth

Mode: Connect to PC

Model: 87752824

Manufacturer: Shenzhen Waikin Electronic Co., Ltd.

Polarization: Vertical

Power Source: DC 12V

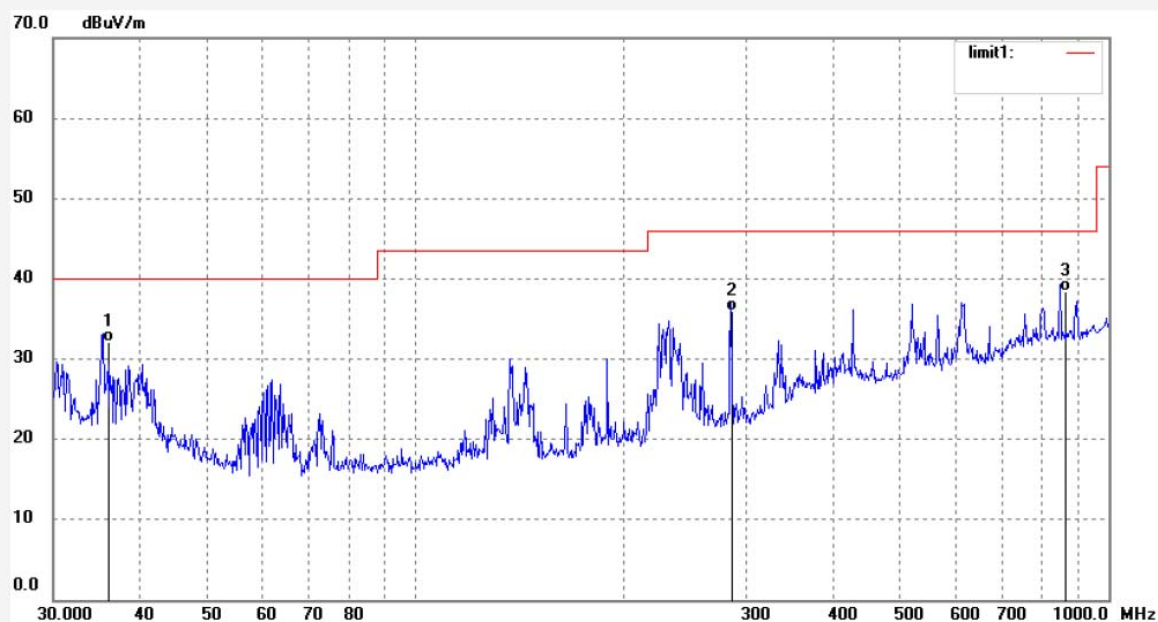
Date: 2010/06/28

Time: 9:09:47

Engineer Signature: Joe

Distance: 3m

Note: Sample No.:101459 Report No.:ATE20101270



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.9866	14.67	17.47	32.14	40.00	-7.86	QP			
2	288.0121	17.39	18.55	35.94	46.00	-10.06	QP			
3	860.0603	9.72	28.65	38.37	46.00	-7.63	QP			