

Prüfbericht-Nr.: <i>Test Report No.:</i>		Auftrags-Nr.: <i>Order No.:</i>		Seite 1 von 33 <i>Page 1 of 33</i>
16059704 001		174019879		
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>		Auftragsdatum: <i>Order date.:</i>		
440253		30.Mar.2014		
Auftraggeber: <i>Client:</i>		Dongguan Alllike Electronics Co., Ltd. Chuanacha Development Zone Mayong Town, Dongguan, Guangdong P.R. China		
Prüfgegenstand: <i>Test item:</i>		Tower Stereo System		
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>		FCC ID: <i>IC ID:</i>	BUQDM95B 11059A-DM95B	
ITSB-300				
Auftrags-Inhalt: <i>Order content:</i>		TUV Rheinland - EMC service		
Prüfgrundlage: <i>Test specification:</i>		CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 RSS-210 Issue 8 December 2010 RSS-Gen Issue 3 December 2010 RSS-102 Issue 4 March 2010		
Wareneingangsdatum: <i>Date of receipt:</i>				
31.Mar.2014				
Prüfmuster-Nr.: <i>Test sample No.:</i>				
N/A				
Prüfzeitraum: <i>Testing period:</i>				
Refer to test report				
Ort der Prüfung: <i>Place of testing:</i>				
Refer to section 2.1				
Prüflaboratorium: <i>Testing laboratory:</i>				
TÜV Rheinland (Guangdong) Ltd.				
Prüfergebnis*: <i>Test result*:</i>				
Pass				
geprüft von / tested by:		kontrolliert von / reviewed by:		
03.Jul.2014 Frank Du/ Project Manager 		03.Jul.2014 Liangdong Xie/Project Manager 		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 2 von 33

Page 2 of 33

Test Summary

FCC Rules		Test items	Result
Paragraph	Released Date		
Part 15 Per Section 15.207(a)	October 1, 2013	Conducted Emission	Pass
Part 15 Per Section 15.209(a)	October 1, 2013	Radiated Spurious Emission	Pass
Part 15 Per Section 15.203	October 1, 2013	Antenna requirement	Pass
Part 15 Per Section 15.247(b)(1)	October 1, 2013	Maximum Peak Output power	Pass
Part 15 Per Section 15.247(a)(1)	October 1, 2013	20dB Bandwidth	Pass
Part 15 Per Section 15.247(a)(1)	October 1, 2013	Hopping Channel Carrier Frequency Separation	Pass
Part 15 Per Section 15.247(a)(1)(iii)	October 1, 2013	Number of Hopping Frequency Used	Pass
Part 15 Per Section 15.247(a)(1)(iii)	October 1, 2013	Time of Occupancy (Dwell Time)	Pass
Part 15 Per Section 15.247(d)	October 1, 2013	Out-Of-Band Emission measurement	Pass
RSS-Gen clause 4.6.1	October 1, 2013	99% Bandwidth	Pass
FCC KDB Publication 447498 RSS-102 Issue 4	October 1, 2013	Safety Human exposure	Pass

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS	5
2	TEST SITES	5
2.1	TEST FACILITIES	5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY	7
2.4	CALIBRATION	7
2.5	MEASUREMENT UNCERTAINTY	7
2.6	LOCATION OF ORIGINAL DATA	7
2.7	STATUS OF FACILITY USED FOR TESTING	7
3	GENERAL PRODUCT INFORMATION	8
3.1	PRODUCT FUNCTION AND INTENDED USE	8
3.2	RATINGS AND SYSTEM DETAILS	8
3.3	INDEPENDENT OPERATION MODES	9
3.4	SUBMITTED DOCUMENTS	9
4	TEST SET-UP AND OPERATION MODE	10
4.1	PRINCIPLE OF CONFIGURATION SELECTION	10
4.2	TEST OPERATION AND TEST SOFTWARE	10
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	10
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	10
4.5	TEST SET-UP	11
5	TEST RESULTS EMISSION	14
5.1	CONDUCTED EMISSION	14
5.2	RADIATED SPURIOUS EMISSION	15
5.3	ANTENNA REQUIREMENT	16
5.4	MAXIMUM PEAK OUTPUT POWER	17
5.5	20DB BANDWIDTH	18
5.6	HOPPING CHANNEL CARRIER FREQUENCY SEPARATION	19
5.7	NUMBER OF HOPPING FREQUENCY USED	21
5.8	TIME OF OCCUPANCY (DWEIL TIME)	22
5.9	OUT-OF-BAND EMISSION	24
5.10	99% BANDWIDTH	28

Prüfbericht - Nr.:		16059704 001	Seite 4 von 33
<i>Test Report No.:</i>			<i>Page 4 of 33</i>
5.11	SAFETY HUMAN EXPOSURE	29	
6	PHOTOGRAPHS OF THE TEST SET-UP	30	
7	LIST OF TABLES	33	
8	LIST OF PHOTOGRAPHS	33	

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 5 von 33
Page 5 of 33

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test result

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

No.102, 1F of Southwest Warehouse Building, No.767 TianYuan Road,
Tianhe District, Guangzhou, P.R.China, 510650

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 6 von 33

Page 6 of 33

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Type	Manufacturer	S/N	Calibrated until	Calibrated Interval
EMI Test Receiver	ESCI-3	Rohde & Schwarz	100216	16.Mar.2015	1 year
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	16.Mar.2015	1 year
Trilog-Broadband Antenna	VULB9168 (30MHz-1GHz)	SCHWARZBECK MESSELEKTRONIK	209	16.Mar.2015	2 years
Double-Ridged Waveguide Horn Antenna	HF906 (1-18GHz)	Rohde & Schwarz	100385	16.Mar.2015	2 years
Pre-amplifier	AFS42-00101800-25-S-42	MITEQ	1101599	16.Mar.2015	2 years
Band Reject Filter	BRM50702	Micro-Tronics	023	16.Mar.2015	2 years
Standard Gain Horn Antenna	3160-09 (18-26.5GHz)	EMCO	21642	16.Mar.2015	5 years
Pre-amplifier	AFS33-18002650-30-8P-44	MITEQ	1108282	16.Mar.2015	2 years
3m Anechoic Chamber	N/A	Albatross Project GmbH	N/A	16.Mar.2015	1 year
Loop Antenna	HFH2-Z2 (<30MHz)	Rohde & Schwarz	100111	16.Mar.2015	2 years
EMI Test Receiver	ESCS30	Rohde & Schwarz	100316	16.Mar.2015	1 year
Two-Line V-Network	ESH3-Z5	Rohde & Schwarz	100308	16.Mar.2015	1 year
Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100701	16.Mar.2015	1 year

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications.

2.5 Measurement Uncertainty

Uncertainty for conducted emissions measurements is 2.68dB.

Uncertainty for radiated emissions measurements is 5.16dB (30M-1GHz) and 4.88dB (> 1GHz)

The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

2.6 Location of original data

The original copies of test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Guangdong) file for certification follow-up purposes.

2.7 Status of facility used for testing

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory; No.102, 1F of Southwest Warehouse Building, No.767 TianYuan Road, Tianhe District, Guangzhou, P.R.China is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register no. 833845.

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 8 von 33
Page 8 of 33

3 General Product Information

The submitted sample ITSB-300 is bluetooth speaker powered by AC mains.

For details, refer to technical document and the user manual.

3.1 Product Function and Intended Use

Refer to the Technical Documentation and user manual.

3.2 Ratings and System Details

Type designation	:	ITSB-300
FCC ID	:	BUQDM95B
Frequency range	:	2402.0MHz – 2480.0MHz (unlicensed ISM band)
Number of employed channels	:	79 channels
Total Number of channels	:	79 channels
Modulation Type	:	Frequency Hopping Spread Spectrum
Type of antenna	:	Integral antenna
Rated input	:	AC120V,60Hz
Ports	:	Audio in
Protection Class	:	II

Refer to the Technical Documentation for further information.

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 9 von 33
Page 9 of 33

3.3 Independent Operation Modes

Bluetooth: RF Transmitting and receiving

For further information refer to User Manual

3.4 Submitted Documents

Block Diagram
Schematics
Operation Description
Components List
FCC label and location
User Manual
Internal Photos
External Photos
Application form

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 10 von 33
Page 10 of 33

4 Test Set-up and Operation Mode

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Refer to test set-up in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

The products have been tested together with the following device:

Device	Manufacture	Model	Serial no./ Version
Laptop notebook	IBM	X60, 1706-5KC	L3-CB426
Bluetooth test Software	AppoTech	RF Control Kit	v3.2

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the technical document. No additional measures were employed to achieve compliance.

4.5 Test set-up

Diagram 1 of Configuration for Testing Radiated Emission 30MHz -1 GHz

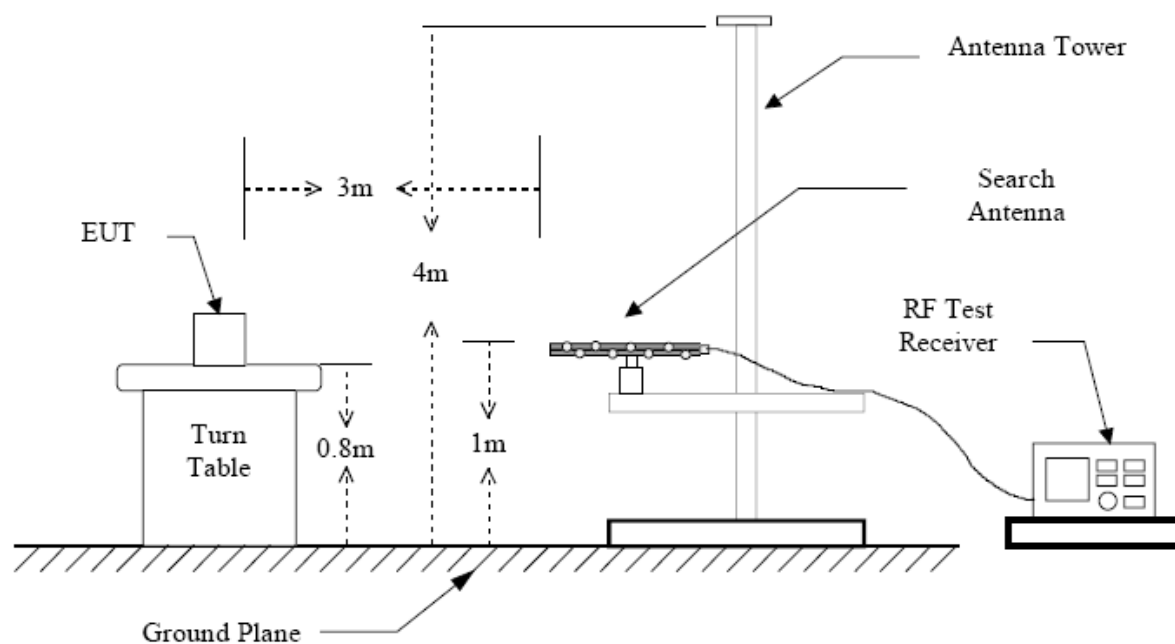


Diagram 2 of Configuration for Testing Radiated Emission above 1 GHz

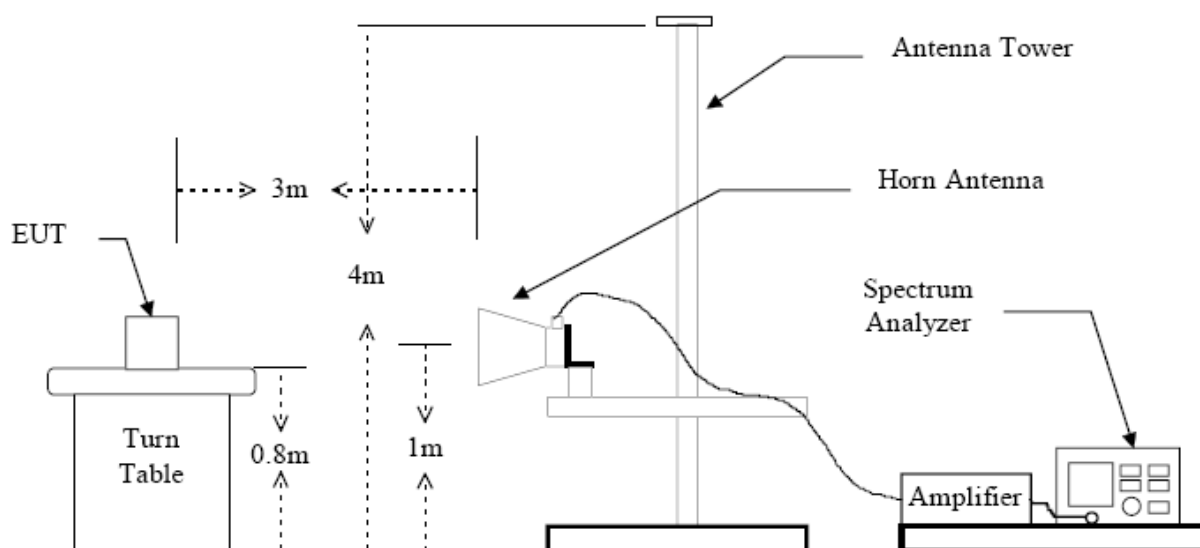


Diagram 3 of Configuration for Testing Conducted Emission

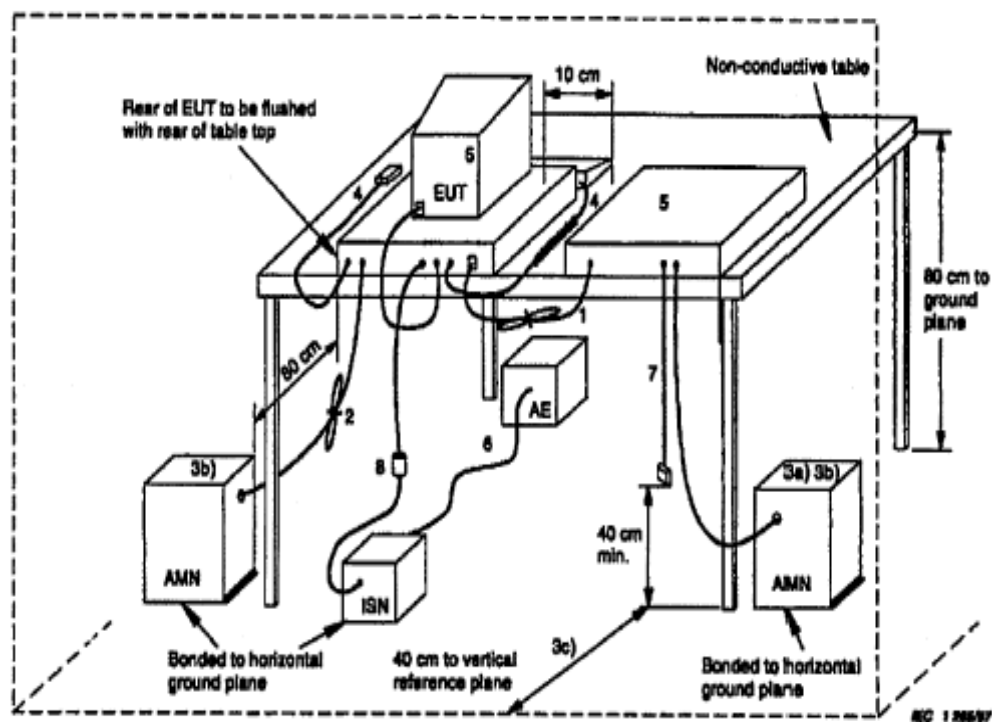
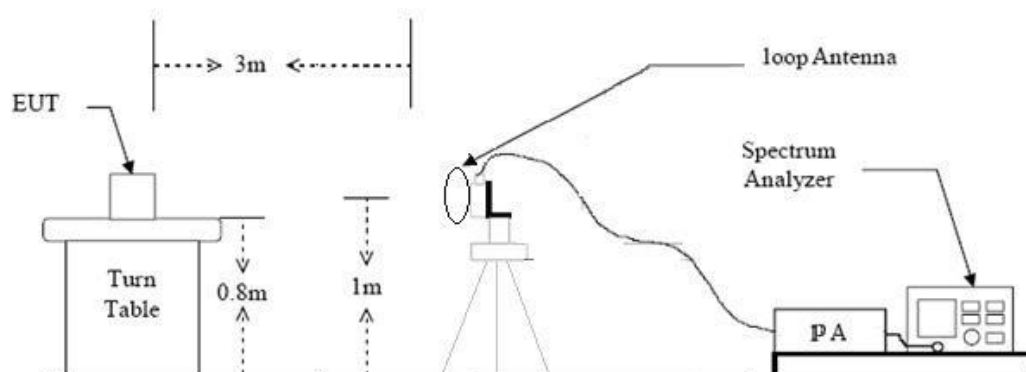


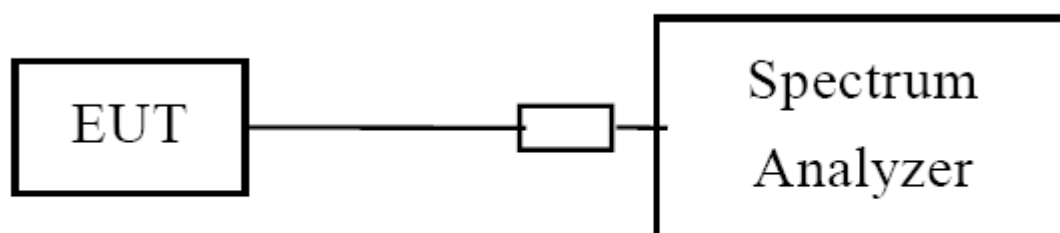
Diagram 4 of Configuration for Testing Radiated Emission below 30MHz



Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 13 von 33
Page 13 of 33

Diagram 5 of Configuration for Testing other test items



5 Test Results EMISSION

5.1 Conducted Emission

RESULT:

Pass

Date of testing	:	Apr.03.2014
Test specification	:	FCC Part 15 Per Section 15.207(a)
Limits	:	FCC Part 15 Per Section 15.207(a)
Test procedure	:	Procedure specified in ANSI C63.4 were followed

Deviations from Standard Test

Procedures	:	None
Kind of test site	:	Shielded room
Operation mode	:	A.Transmitting
Power supply	:	AC120V,60Hz
Temperature	:	20°C
Humidity	:	50%

Test procedure:

For tabletop device, the EUT and its peripherals were placed on a wooden table, 0.8cm above the horizontal reference plane and 40cm away from vertical reference plane in a shielded room. For floor-standing device, the EUT shall be placed either directly on the reference ground plane or on insulating material as described in ANSI C63.4 Clause 6.3.2.1.

The EUT was connected to input power source through a line impedance stabilization network (LISN).The excess length of the power cord between the EUT and the LISN shall be folded back and forth at the center of the lead to form a bundle not exceeding 40cm in length.

The EUT was tested in a typical model of operation in accordance with ANSI C63.4:2009, Pre-test was performed in peak and average detection mode. final measurement was performed using quasi-peak and average detection on the live and neutral lines with the worst case.

The test software Rohde & Schwarz EMC32 was used during the test.

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector may be omitted.

Refer to appendix 1 for test result.

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 15 von 33
Page 15 of 33

5.2 Radiated Spurious Emission

RESULT:

Pass

Date of testing	:	Apr.10.2014
Test specification	:	FCC Part 15 Per Section 15.209(a)
Limits	:	FCC Part 15 Per Section 15.209(a) Clause 5.5 of ICES-003 RSS-Gen 7.1.4
Test procedure	:	Procedure specified in ANSI C63.4 CAN/CSA-CEI/IEC CISPR 22-02 RSS-Gen Table 5
Deviations from Standard Test procedures	:	None
Kind of test site	:	3m Semi-anechoic chamber
Operation mode	:	Bluetooth RF transmitting at fix channel with max power (High, Low, Mid)
Power supply	:	AC120V,60Hz
Temperature	:	23°C
Humidity	:	50%

Test procedure:

For tabletop device, the and its peripherals were placed on a wooden table,80cm above ground plane in semi-anechoic chamber. For floor-standing equipment, the EUT and all cables shall be insulated, if required, from the ground plane by up to 12mm of insulating material in semi-anechoic chamber.

The EUT was set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower. Test shall be made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height shall be varied from 1m to 4m. The table was rotated 360 degrees to detect the suspected emission frequency points. The position of the worst radiation case with both horizontal and vertical receiving antenna polarization was recorded together with the suspected emission frequency points above-mentioned.

The EUT was tested in a typical model of operation in accordance with ANSI C63.4:2009, Pre-test was performed in peak detection mode. Final measurement was performed using quasi-peak detection with the worst case.

The test software Rohde & Schwarz EMC32 was used during the test.

Note:

While testing, the EUT is connected with a serial port bridge board for test mode setup. The length of the communication cable between the EUT and the bridge board, which including Tx, Rx, GND serial pins, is minimized to reduce the unwanted influence to test result. The bridge board can be connected to a host computer with standard DB9 com port cable for running of the test setup software. After setup successfully, the EUT can keep the test mode with the host computer and the cable removed.

Refer to appendix 1 for test result.

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 16 von 33
Page 16 of 33

5.3 Antenna requirement

RESULT:

Pass

Date of testing : ---

Test specification : FCC Part 15 Per Section 15.203
FCC Part 15 Per Section 15.247(b)
RSS-Gen 7.1.4

For intentional device, according to 15.203, and intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to 15.247(b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by amount in dB than the directional gain of the antenna exceeds of 6dBi.

As the BT antenna is permanently printed on RF Board, there is no consideration of replacement.

And the max gain of the antenna is 0dBi.

Prüfbericht - Nr.: 16059704 001

Seite 17 von 33

Test Report No.:

Page 17 of 33

5.4 Maximum Peak Output Power

RESULT:

Pass

Date of testing : 03.07.2014
Test specification : FCC Part 15 Per Section 15.247(b)(1)
RSS-210 A8.4 (2)
Limits : FCC Part 15 Per Section 15.247(b)(1)

For frequency hopping systems operating in the band 2400-2483.5 MHz employing at least 75 hopping channels, the maximum peak conducted output power shall not exceed 1 W; for all other frequency hopping systems in the band, the maximum peak conducted output power shall not exceed 0.125 W.

Deviations from Standard Test procedures :

None
Test procedure : Procedure specified in ANSI C63.4
Kind of test site : Shielded room
Operation mode : Bluetooth continuously transmitting on the measured channel.
Power supply : AC120V,60Hz
Temperature : 23°C
Humidity : 50%

Table 2: Peak Conducted Power

GFSK modulation

Channel	Frequenc y (MHz)	Power Reading(dBm)	Output Power (mW)	Limit (mW)*
Low	2402.2	-1.52	0.70	1000
Mid	2440.8	-1.46	0.72	1000
High	2479.9	-1.68	0.68	1000

8DPSK modulation

Channel	Frequenc y (MHz)	Power Reading(dBm)	Output Power (mW)	Limit (mW)*
Low	2402.2	-2.03	0.63	1000
Mid	2440.8	-1.98	0.64	1000
High	2479.9	-2.15	0.61	1000

Remark: RBW=3MHz.

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 18 von 33

Page 18 of 33

5.5 20dB Bandwidth

RESULT:

Pass

Date of testing	:	13.06.2014
Test specification	:	FCC Part 15 Per Section 15.247(a)(1)
Limits	:	FCC Part 15 Per Section 15.247(b)(1) RSS-210 A8.1 (a) Frequency hopping systems operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125W.
Deviations from Standard Test procedures	:	None
Test procedure	:	Procedure specified in ANSI C63.4
Operation mode	:	Bluetooth continuously transmitting on the measured channel.
Kind of test site	:	Shielded room
Power supply	:	AC120V,60Hz
Temperature	:	22°C
Humidity	:	52%

Test procedure:

1. Connect the antenna port of the EUT to the spectrum analyzer by a low loss cable.
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: Centered Frequency= measured channel, RBW=10kHz, VBW=30kHz.
4. Mark the peak power frequency point and the -20dB upper and lower frequency points.
5. Read the frequency delta value between the -20dB upper and lower frequency points.
6. Repeat step 2 to 5 until all the channels required are finished.

Table 3: 20dB Bandwidth

GFSK modulation

Channel	Frequency (GHz)	Test Result (kHz)
Low	2402.0	913
Mid	2441.0	911
High	2480.0	917

8DPSK modulation

Channel	Frequency (GHz)	Test Result (kHz)
Low	2402.0	1132
Mid	2441.0	1128
High	2480.0	1140

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 19 von 33

Page 19 of 33

5.6 Hopping Channel Carrier Frequency Separation

RESULT:

Pass

Date of testing	:	13.06.2014
Test specification	:	FCC Part 15 Per Section 15.247(a)(1)
Limits	:	FCC Part 15 Per Section 15.247(a)(1) RSS-210 A8.1 (b) Frequency hopping systems operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125W.
Deviations from Standard Test procedures	:	None
Test procedure	:	Procedure specified in ANSI C63.4
Kind of test site	:	Shielded room
Operation mode	:	Bluetooth transmitting with hopping at the full channel set
Power supply	:	AC120V,60Hz
Temperature	:	22°C
Humidity	:	55%

Test procedure:

1. Connect the antenna port of the EUT to the spectrum analyzer by a low lost cable.
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: Centered Frequency = measured channel, RBW = 30 kHz, VBW = 100 kHz, Frequency Span = wide enough to cover the adjacent channel.
4. Mark the peak power frequency point of the measured channel and its adjacent channel(s)
5. Read the frequency delta value between the measured channel and its adjacent channel(s)
6. Repeat step 3 to 5 until all the channels measured are finished.

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 20 von 33

Page 20 of 33

Table 4: Hopping Channel Carrier Frequency Separation

Channel	Adjacent Hopping channel separation (kHz)	Limit
Low	960	At least 25kHz or tow-thirds of the 20dB bandwidth of the hopping channel, whichever is greater. Note: refer to table 6 for the value of 20dB bandwidth
Mid	960	
High	960	

Remark: Above result is the worst result after tested GFSK modulation and 8DPSK modulation mode.

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 21 von 33

Page 21 of 33

5.7 Number of Hopping Frequency Used

RESULT:

Pass

Date of testing	:	Apr.17, 2014
Test specification	:	FCC Part 15 Per Section 15.247(a)(1)(iii) RSS-210 A8.1 (d)
Limits	:	FCC Part 15 Per Section 15.247(a)(1)(iii) Frequency hopping system in the 2400-2483.5 MHz band shall use at least 15 non-overlapping channels
Deviations from Standard Test procedures	:	None
Test procedure	:	Procedure specified in ANSI C63.4
Kind of test site	:	Shielded room
Operation mode	:	Bluetooth transmitting with hopping at the full channel set
Power supply	:	AC120V,60Hz
Temperature	:	22°C
Humidity	:	55%

Test procedure:

1. Connect the antenna port of the EUT to the spectrum analyzer by a low lost cable.
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: RBW = 100 kHz, VBW $\geq$ RBW, Frequency Span = wide enough to cover the channels to be plotted.
4. Set the spectrum analyzer to Max-hold mode and plot the result(s) with record of all hopping channel.

Table 5: Number of hopping frequency

Number of hopping frequency:	79
Limit:	At least 15 non-overlapping channels

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 22 von 33

Page 22 of 33

5.8 Time of Occupancy (Dwell Time)

RESULT:

Pass

Date of testing	:	Apr.17, 2014
Test specification	:	FCC Part 15 Per Section 15.247(a)(1)(iii)
Limits	:	FCC Part 15 Per Section 15.247(a)(1)(iii) RSS-210 A8.1 (d) For frequency hopping system operating in the 2400-2483.5MHz band, the average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.
Deviations from Standard Test procedures	:	None
Test Procedure	:	Procedure specified in ANSI C63.4
Kind of test site	:	Shielded room
Operation mode	:	Bluetooth transmitting with hopping at the full channel set (DH1,DH3,DH5 mode)
Power supply	:	AC120V,60Hz
Temperature	:	22°C
Humidity	:	55%

Test procedure:

1. Connect the antenna port of the EUT to the spectrum analyzer by a low lost cable.
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: Centered Frequency = measured channel, RBW = 1MHz, VBW $\geq$ RBW, Frequency Span = 0 Hz.
4. Set sweep time properly to capture the entire dwell time per hopping channel.
5. Set detector type to Peak and trace mode to Max Hold and make the measurement.
6. Repeat step 3-5 until all channels measured were complete.

Prüfbericht - Nr.: 16059704 001

Seite 23 von 33

Test Report No.:

Page 23 of 33

Table 6: Dwell Time

channel	Frequency (GHz)	Dwell time of one signal Burst (ms)	Total Dwell Time (ms)	Limit (ms)
Low	2.402	3.060	$(3.060 \times \mathbf{106.81}) = 326.83$	400
Mid	2.441	3.060	$(3.060 \times \mathbf{106.81}) = 326.83$	400
High	2.480	2.940	$(2.940 \times \mathbf{106.81}) = 314.02$	400

Remark: Above result is the worst result after tested GFSK modulation and 8DPSK modulation mode, and after tested DH1,DH3,DH5 mode.

Note :

Period = 0.4 (seconds) x 79 (channels) = 31.6 seconds

For Bluetooth system, there are 1600 timeslots in one second. The DH5 mode operates on a 5-slot transmission and 1-slot receiving basis. Thus there are $1600 / (5+1) = 266.7$ transmission per second. In one period for each particular channel there are $(266.7/79) \times 31.6 = 106.81$ times of transmission.

Dwell Time in one period(ms) = Dwell time of one-slot transmission(ms) multiplexes **106.81**

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 24 von 33
Page 24 of 33

5.9 Out-of-Band Emission

RESULT:

Pass

Date of testing : 13.06.2014
Test specification : FCC Part 15 Per Section 15.247(d)
Limits : FCC Part 15 Per Section 15.247(d)
RSS-210 A8.5

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

In addition:

FCC Part 15 - radiated emission 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).

Deviations from Standard Test procedures

: None
Test Procedure : Procedure specified in ANSI C63.4
Kind of test site : Shielded room
Operation mode : Bluetooth transmitting at the highest and lowest channel (band edge)
Power supply : AC120V,60Hz
Temperature : 22°C
Humidity : 55%

Test procedure:

1. Connect the antenna port of the EUT to the spectrum analyzer by a low lost cable.
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: RBW =100kHz, VBW=300kHz.
4. Set proper frequency span respectively for out-of-band emission measurement of the band edge and the whole range (up to 10 times of the carrier frequency.)
5. Set the trace mode to Max Hold and mark the peak reading of any spurious emission recorded.

Prüfbericht - Nr.: 16059704 001

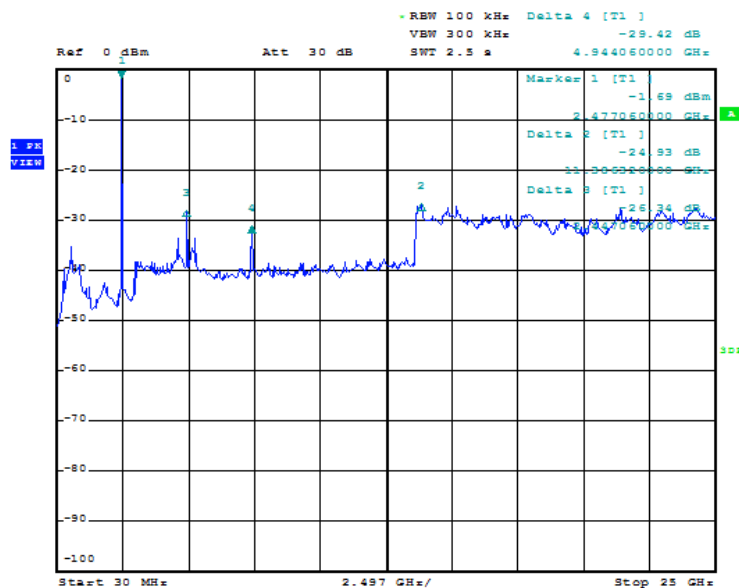
Test Report No.:

Seite 25 von 33

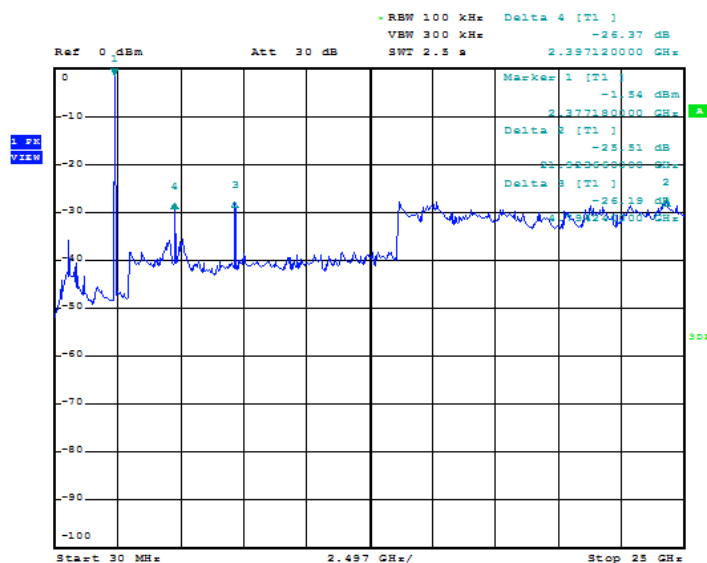
Page 25 of 33

Table 7: Out-Of-Band Emission measurement (conducted)

Emission (Carrier operating at Channel low, mid and high)	Attenuation	Limit (dB)
30MHz to 25GHz	All emission in this 100kHz bandwidth are attenuated more than 20dB from the carrier	$\Delta \geq 20$



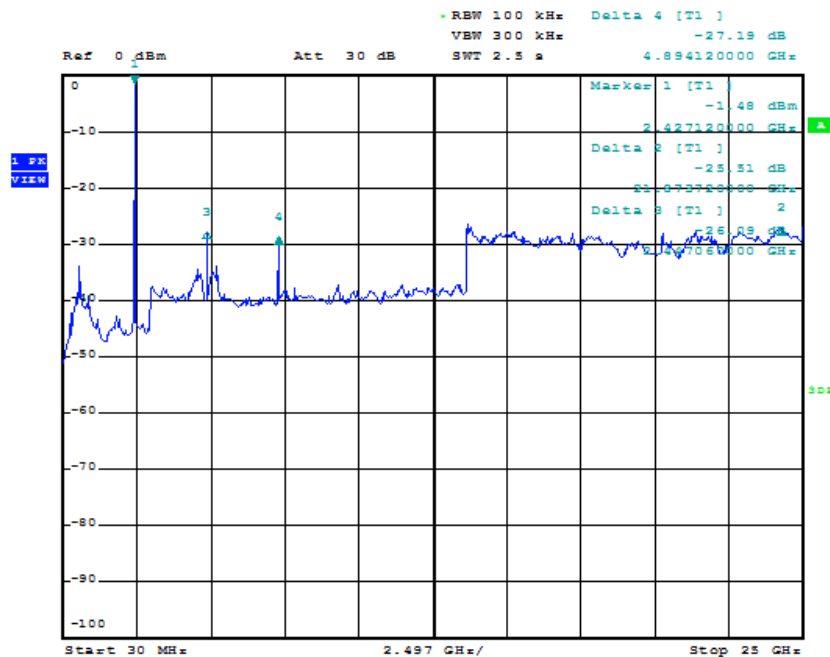
Date: 12.JUN.2014 23:29:14



Date: 12.JUN.2014 23:28:29

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 26 von 33
Page 26 of 33



Date: 12.JUN.2014 23:27:03

Remark: Above result is the worst result after tested GFSK modulation and 8DPSK modulation mode.

Table 8: Band Edges Emission in the Restricted Bands by Marker Delta Method

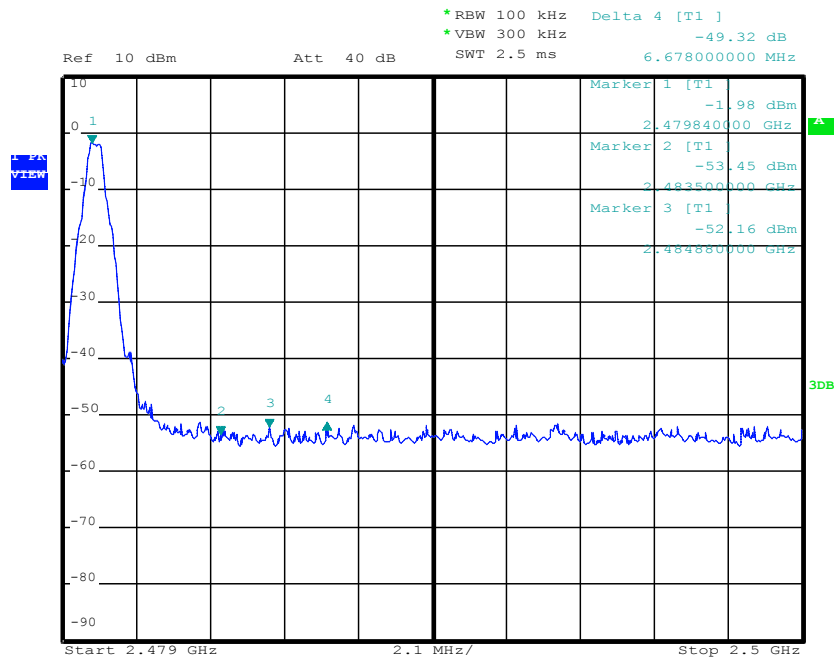
Frequency [MHz]	dBc [dB]	PK [dB μ V/m]	AV [dB μ V/m]	Polarity (H/V)	PK limit [dB μ V/m]	AV limit [dB μ V/m]
2484.6	50.48	48.99	---	H	74	54
2376.2	49.03	49.03	---	H	74	54

NOTE:

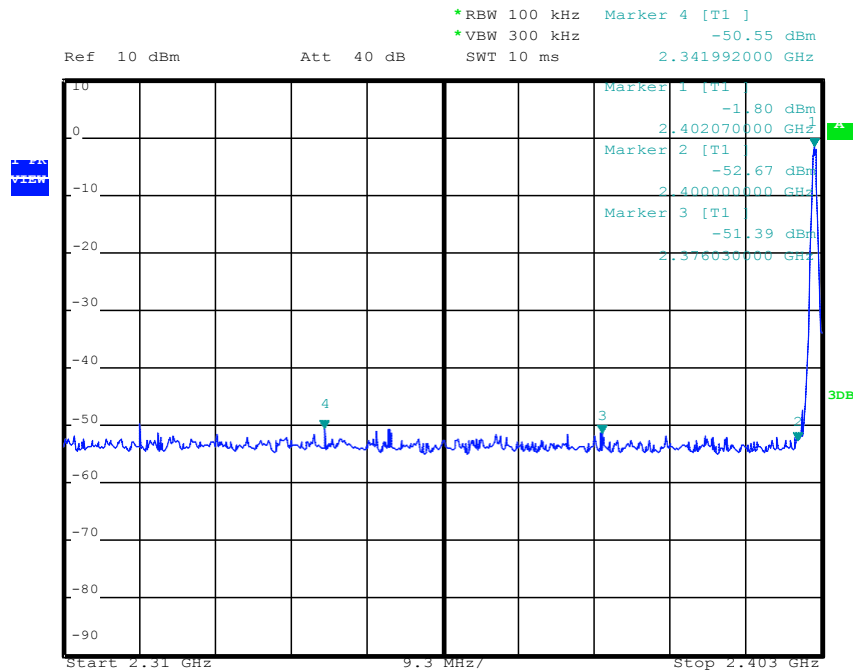
1. The Peak carrier field strength of the highest/lowest channel is 99.47dBuV/m, 98.06dBuV/m.
The above field strength levels were measured in horizontal polarity which is the worst case.
2. The dBc value between the carrier maximum power and band edge emission power of the frequency listed in the table is calculated from the test record showed in Appendix 1.
3. Peak value of the high/low band edge emission listed in the table is calculated by the below formula: PK value of band edge emission = Peak carrier field strength – dBc value in item2

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 27 von 33
Page 27 of 33



Date: 12.JUN.2014 23:32:53



Date: 12.JUN.2014 23:35:10

Remark: Above result is the worst result after tested GFSK modulation and 8DPSK modulation mode.

Prüfbericht - Nr.: 16059704 001

Test Report No.:

Seite 28 von 33

Page 28 of 33

5.10 99% Bandwidth

RESULT:

Passed

Date of testing : 02.07.2014
Test standard : RSS-Gen clause 4.6.1
Basic standard : ANSI C63.4: 2003
Kind of test site : Shielded room

Test setup
Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 22°C
Relative humidity : 52%
Atmospheric pressure : 101 kPa

Test result of 99% Bandwidth.

GFSK modulation

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402.0	915	/	Pass
Mid Channel	2441.0	913	/	Pass
High Channel	2480.0	919	/	Pass

8DPSK modulation

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402.0	1145	/	Pass
Mid Channel	2441.0	1136	/	Pass
High Channel	2480.0	1151	/	Pass

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 29 von 33
Page 29 of 33

5.11 Safety Human exposure

5.11.1 Radio Frequency Exposure Compliance

Electromagnetic Fields

RESULT:

Passed

Test standard : RSS-102 Issue 4
FCC KDB Publication 447498

The maximum peak output power of the transmitter is 0.72mW only, which less than 20mW. Hence the EUT is exempted from routine evaluation limits (SAR Evaluation) according to clause 2.5.1 of RSS-102 Issue 4.

The minimum distance for the EUT is 5mm, since maximum peak output power of the transmitter is 0.72mW <10mW, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile and Portable RF Exposure.Guidance v05.

Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 30 von 33
Page 30 of 33

6 Photographs of the Test Set-Up

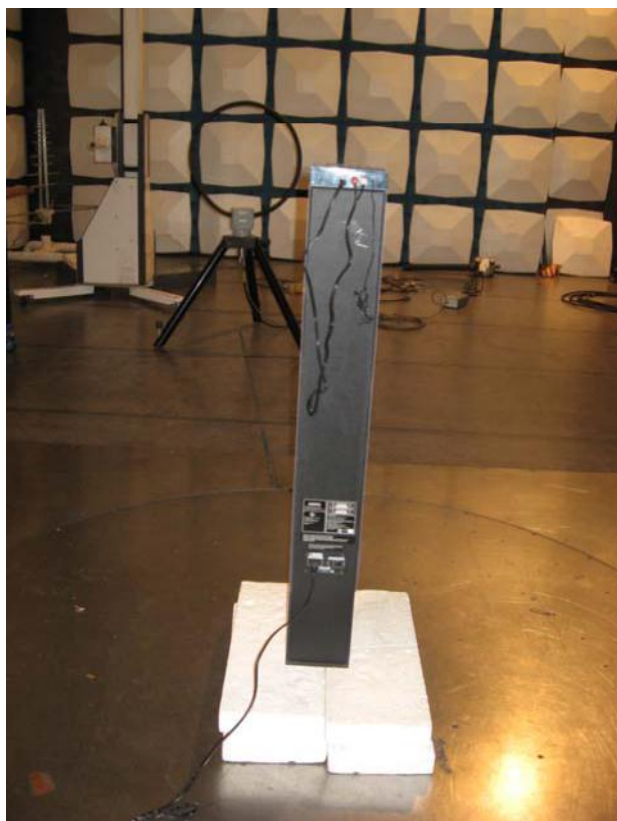
Photograph 1: Set-up for Conducted Emission



Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 31 von 33
Page 31 of 33

Photograph 2: Set-up for Radiation Measurement below 1GHz



Prüfbericht - Nr.: 16059704 001
Test Report No.:

Seite 32 von 33
Page 32 of 33

Photograph 3: Set-up for Radiation Measurement above 1GHz



7 List of Tables

Table 1: List of Test and Measurement Equipment	6
Table 2: Peak Conducted Power	17
Table 3: 20dB Bandwidth	18
Table 4: Hopping Channel Carrier Frequency Separation	20
Table 5: Number of hopping frequency	21
Table 6: Dwell Time	23
Table 7: Out-Of-Band Emission measurement (conducted)	25
Table 8: Band Edges Emission in the Restricted Bands by Marker Delta Method	26

8 List of Photographs

Photograph 1: Set-up for Conducted Emission	30
Photograph 2: Set-up for Radiation Measurement below 1GHz	31
Photograph 3: Set-up for Radiation Measurement above 1GHz	32

Prüfbericht - Nr.:

Test Report No.

16059704 001

Seite 1 von 33

Page 1 of 33

Contents

- | | |
|--------------------------------------|-------------|
| 1. Conducted Emission | 2-3 |
| 2. Radiated Spurious Emission | 4-33 |

Prüfbericht - Nr.:

16059704 001

Test Report No.

Seite 2 von 33

Page 2 of 33

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

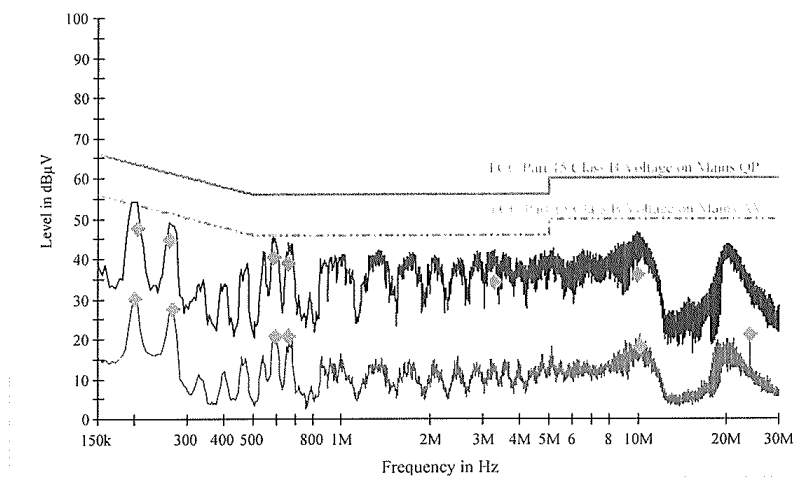
EMC Test Record (EMISSION)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC 15.207
Test Detail: Conducted Emission
Operation Mode: A
Climate Condition: 20°C; 50%RH; 101kPa.
Test Voltage/ Freq.: AC 120 V/ 60 Hz
Port / Line: AC Mains(L1+N)
Receipt No.: 174019879
Report No.: 16059704 001
Result: Pass
/

Hardware Setup: 1phase LISN ESH3-Z5 to ESCI
Level Unit: dBµV

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCI



Sign-off Test Data



4/3/2014, 10:53:44

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Seite 3 von 33

Test Report No.

Page 3 of 33

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.204000	47.8	2000.0	9.000	GN	L1	10.0	15.6	63.4	
0.262500	44.7	2000.0	9.000	GN	L1	9.9	16.7	61.4	
0.586500	40.4	2000.0	9.000	GN	L1	10.1	15.6	56.0	
0.663000	39.0	2000.0	9.000	GN	L1	10.2	17.0	56.0	
3.286500	34.1	2000.0	9.000	GN	L1	10.7	21.9	56.0	
9.924000	36.0	2000.0	9.000	GN	L1	11.0	24.0	60.0	

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.199500	30.3	2000.0	9.000	GN	L1	10.0	23.3	53.6	
0.267000	27.7	2000.0	9.000	GN	L1	9.9	23.5	51.2	
0.595500	20.9	2000.0	9.000	GN	L1	10.2	25.1	46.0	
0.663000	20.6	2000.0	9.000	GN	L1	10.2	25.4	46.0	
10.185000	18.3	2000.0	9.000	GN	N	11.0	31.7	50.0	
24.000000	21.2	2000.0	9.000	GN	N	11.9	28.8	50.0	

Save Test Data



4/3/2014, 10:53:44

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Seite 4 von 33

Test Report No.

Page 4 of 33

Radiated Spurious Emission

TUV Rheinland (Guangdong) Ltd.

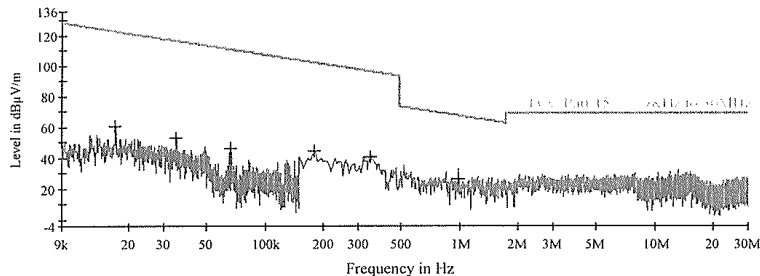
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
0.016920	/	60.6	1000.0	0.200	H	20.7	62.5	123.1
0.034840	/	52.7	1000.0	0.200	H	20.5	64.1	116.8
0.065800	/	46.5	1000.0	0.200	H	20.5	64.8	111.3
0.178000	/	44.6	1000.0	9.000	H	20.7	58.0	102.6
0.346000	/	40.6	1000.0	9.000	H	20.9	56.2	96.8
0.978000	26.7	/	1000.0	9.000	H	20.4	41.1	67.8

Sign-off Test Data



Date: 4/22/2014 - Time: 6:13:46

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 5 von 33
Page 5 of 33

TUV Rheinland (Guangdong) Ltd.

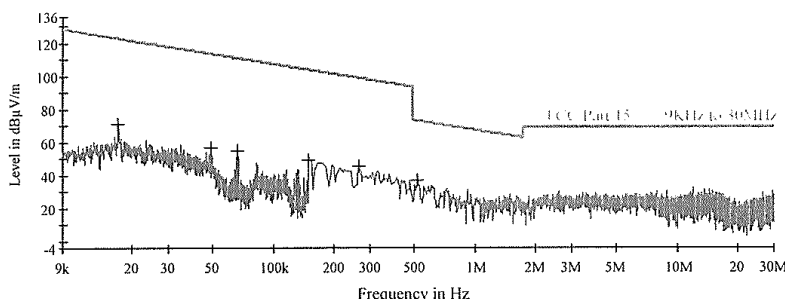
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.017000	/	70.8	1000.0	0.200	V	20.7	52.3	123.1
0.048840	/	57.3	1000.0	0.200	V	20.5	56.6	113.9
0.065800	/	54.9	1000.0	0.200	V	20.5	56.4	111.3
0.150000	/	49.5	1000.0	9.000	V	20.5	54.6	104.1
0.266000	/	45.3	1000.0	9.000	V	21.0	53.8	99.1
0.514000	37.0	/	1000.0	9.000	V	20.7	36.4	73.4

Sign-off Test Data



Date: 4/22/2014 - Time: 6:23:46

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 6 von 33
Page 6 of 33

TUV Rheinland (Guangdong) Ltd.

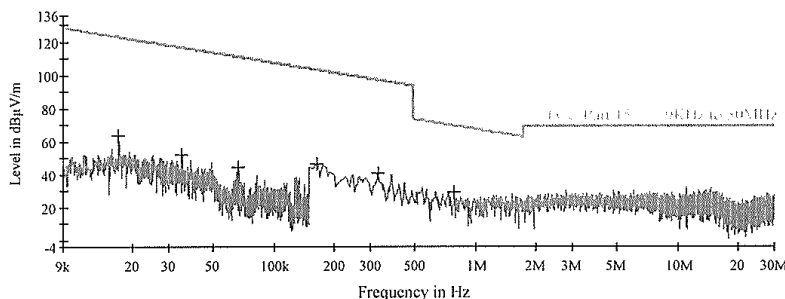
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
0.017000	/	63.3	1000.0	0.200	H	20.7	59.8	123.1
0.034840	/	52.6	1000.0	0.200	H	20.5	64.2	116.8
0.065880	/	44.8	1000.0	0.200	H	20.5	66.5	111.3
0.162000	/	46.1	1000.0	9.000	H	20.6	57.3	103.4
0.326000	/	41.2	1000.0	9.000	H	20.9	56.1	97.3
0.782000	29.5	/	1000.0	9.000	H	20.6	40.3	69.8

Sign-off Test Data



Date: 4/22/2014 - Time: 6:10:55

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 7 von 33
Page 7 of 33

TUV Rheinland (Guangdong) Ltd.

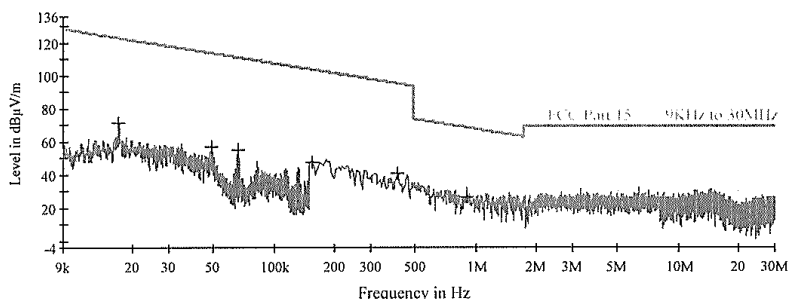
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

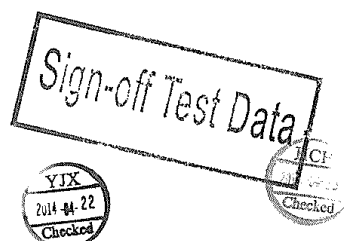
Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBμV/m)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBμV/m)
0.017000	/	71.1	1000.0	0.200	V	20.7	51.9	123.1
0.048840	/	57.3	1000.0	0.200	V	20.5	56.6	113.9
0.065800	/	54.8	1000.0	0.200	V	20.5	56.5	111.3
0.154000	/	47.8	1000.0	9.000	V	20.5	56.1	103.9
0.410000	/	40.3	1000.0	9.000	V	20.8	55.1	95.4
0.898000	26.7	/	1000.0	9.000	V	20.5	41.9	68.6



Date: 4/22/2014 - Time: 6:20:21

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 8 von 33
Page 8 of 33

TUV Rheinland (Guangdong) Ltd.

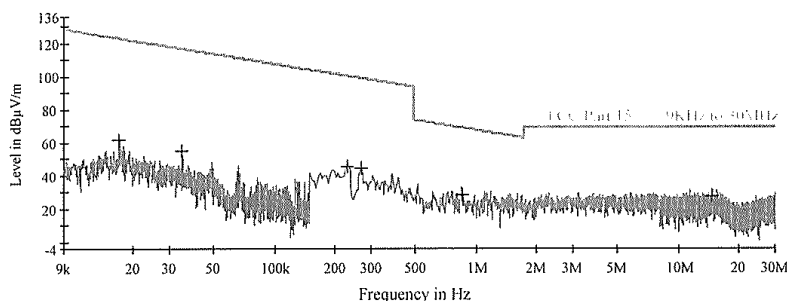
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
0.017000	/	61.6	1000.0	0.200	H	20.7	61.5	123.1
0.034920	/	55.1	1000.0	0.200	H	20.5	61.7	116.8
0.230000	/	45.3	1000.0	9.000	H	20.9	55.1	100.4
0.270000	/	44.4	1000.0	9.000	H	21.0	54.6	99.0
0.846000	28.6	/	1000.0	9.000	H	20.5	40.4	69.1
14.698000	27.1	/	1000.0	9.000	H	23.0	42.4	69.5

Sign-off Test Data



Date: 4/22/2014 - Time: 5:53:52

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 9 von 33
Page 9 of 33

TUV Rheinland (Guangdong) Ltd.

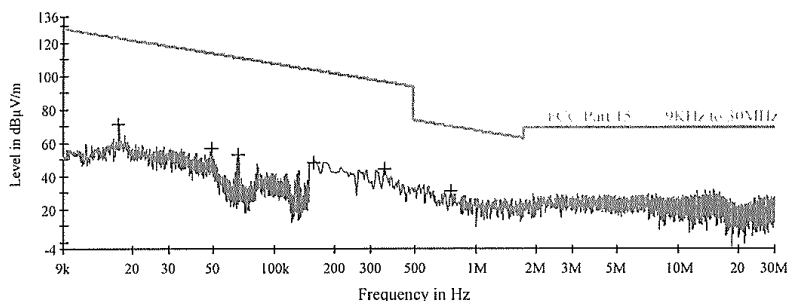
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
0.017000	/	70.9	1000.	0.200	V	20.7	52.2	123.1
0.048840	/	57.0	1000.	0.200	V	20.5	56.9	113.9
0.065880	/	53.5	1000.	0.200	V	20.5	57.7	111.3
0.158000	/	48.0	1000.	9.000	V	20.6	55.7	103.7
0.354000	/	44.9	1000.	9.000	V	20.8	51.7	96.6
0.750000	30.8	/	1000.	9.000	V	20.6	39.3	70.1

Sign-off Test Data



Date: 4/22/2014 - Time: 6:17:18

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 10 von 33
Page 10 of 33

TUV Rheinland (Guangdong) Ltd.

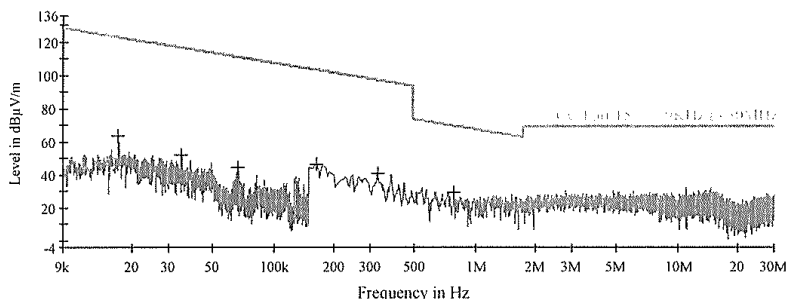
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Rx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
0.017000	/	63.3	1000.0	0.200	H	20.7	59.8	123.1
0.034840	/	52.6	1000.0	0.200	H	20.5	64.2	116.8
0.065880	/	44.8	1000.0	0.200	H	20.5	66.5	111.3
0.162000	/	46.1	1000.0	9.000	H	20.6	57.3	103.4
0.326000	/	41.2	1000.0	9.000	H	20.9	56.1	97.3
0.782000	29.5	/	1000.0	9.000	H	20.6	40.3	69.8

Sign-off Test Data



Date: 4/22/2014 - Time: 6:10:55

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 11 von 33
Page 11 of 33

TUV Rheinland (Guangdong) Ltd.

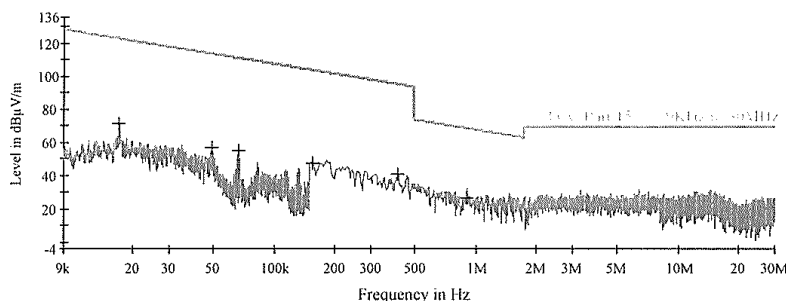
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Rx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 9K-30MHz
Receiver: TUV ESCI 3
Transducer: TUV SAC HFH2-Z2/ TUV ESCI 3-TUV SAC HFH2-Z2



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
0.017000	/	71.1	1000.0	0.200	V	20.7	51.9	123.1
0.048840	/	57.3	1000.0	0.200	V	20.5	56.6	113.9
0.065800	/	54.8	1000.0	0.200	V	20.5	56.5	111.3
0.154000	/	47.8	1000.0	9.000	V	20.5	56.1	103.9
0.410000	/	40.3	1000.0	9.000	V	20.8	55.1	95.4
0.898000	26.7	/	1000.0	9.000	V	20.5	41.9	68.6

Sign-off Test Data



Date: 4/22/2014 - Time: 6:20:21

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Seite 12 von 33

Test Report No.

Page 12 of 33

TUV Rheinland (Guangdong) Ltd.

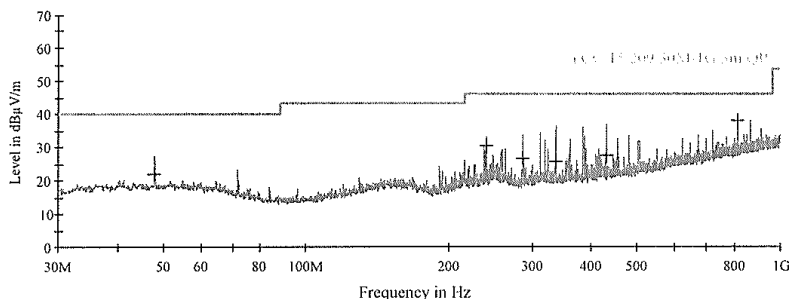
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	22.0	1000.0	120.000	H	15.0	18.0	40.0
240.000000	30.5	1000.0	120.000	H	13.7	15.5	46.0
288.000000	26.8	1000.0	120.000	H	15.7	19.2	46.0
336.050000	25.9	1000.0	120.000	H	16.9	20.1	46.0
432.050000	27.6	1000.0	120.000	H	19.5	18.4	46.0
816.050000	38.1	1000.0	120.000	H	26.3	7.9	46.0

Signal data



Date: 4/10/2014 - Time: 10:05:46

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 13 von 33
Page 13 of 33

TUV Rheinland (Guangdong) Ltd.

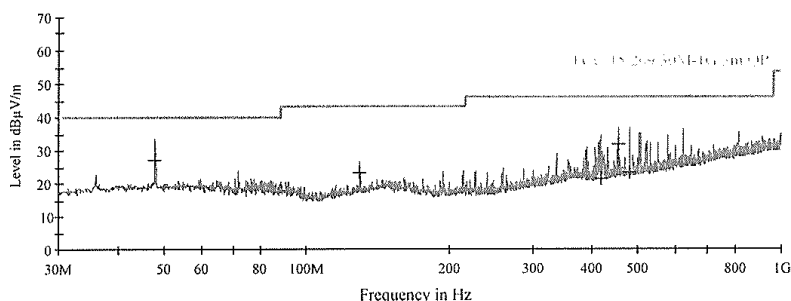
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	27.3	1000.0	120.000	V	15.0	12.7	40.0
129.450000	23.5	1000.0	120.000	V	13.8	20.0	43.5
416.200000	21.5	1000.0	120.000	V	18.9	24.5	46.0
453.050000	31.8	1000.0	120.000	V	19.9	14.2	46.0
480.100000	23.2	1000.0	120.000	V	20.3	22.8	46.0
480.100000	23.2	1000.0	120.000	V	20.3	22.8	46.0

Signature Data

Date: 4/10/2014 - Time: 10:09:17

Tested by:  Reviewed by: 

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 14 von 33
Page 14 of 33

TUV Rheinland (Guangdong) Ltd.

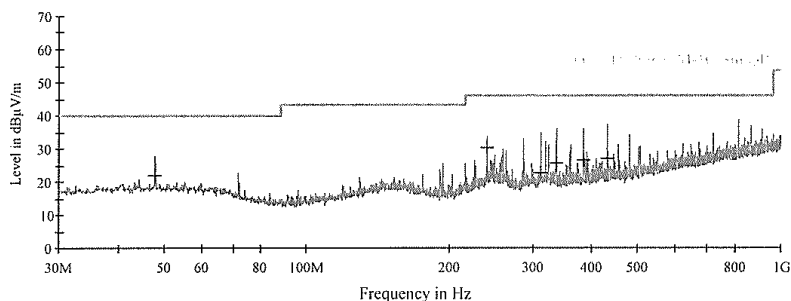
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	22.0	1000.0	120.000	H	15.0	18.0	40.0
240.000000	30.4	1000.0	120.000	H	13.7	15.6	46.0
312.050000	22.8	1000.0	120.000	H	16.3	23.2	46.0
336.050000	25.6	1000.0	120.000	H	16.9	20.4	46.0
384.050000	26.5	1000.0	120.000	H	18.1	19.5	46.0
432.050000	26.9	1000.0	120.000	H	19.5	19.1	46.0

Signature/Stamp



Date: 4/10/2014 - Time: 10:02:19

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Seite 15 von 33

Test Report No.

Page 15 of 33

TUV Rheinland (Guangdong) Ltd.

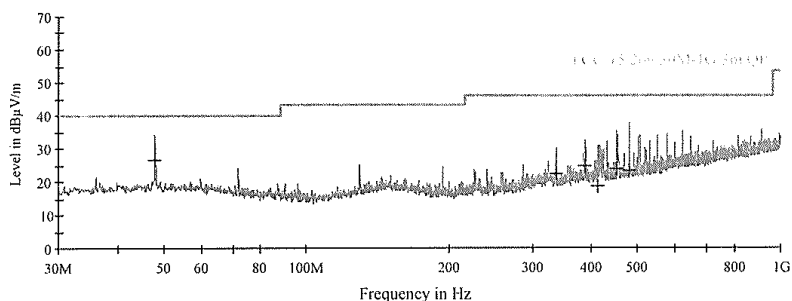
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

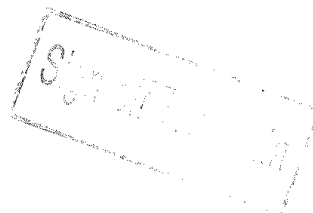
Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	26.7	1000.0	120.000	V	15.0	13.3	40.0
336.050000	22.4	1000.0	120.000	V	16.9	23.6	46.0
388.400000	25.0	1000.0	120.000	V	18.2	21.0	46.0
412.800000	18.4	1000.0	120.000	V	18.8	27.6	46.0
451.450000	23.7	1000.0	120.000	V	19.9	22.3	46.0
480.100000	23.5	1000.0	120.000	V	20.3	22.5	46.0



Date: 4/10/2014 - Time: 9:59:14

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Seite 16 von 33

Test Report No.

Page 16 of 33

TUV Rheinland (Guangdong) Ltd.

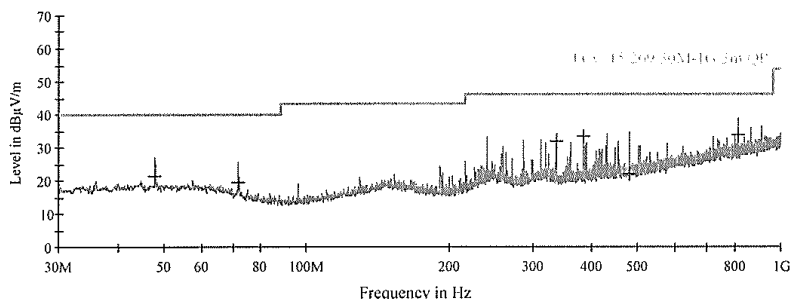
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

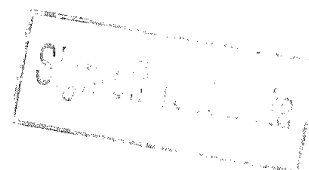
Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	21.2	1000.0	120.000	H	15.0	18.8	40.0
71.950000	19.4	1000.0	120.000	H	12.8	20.6	40.0
336.050000	31.8	1000.0	120.000	H	16.9	14.2	46.0
384.050000	33.2	1000.0	120.000	H	18.1	12.8	46.0
480.100000	21.9	1000.0	120.000	H	20.3	24.1	46.0
816.050000	34.0	1000.0	120.000	H	26.3	12.0	46.0



Date: 4/10/2014 - Time: 9:44:16

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 17 von 33
Page 17 of 33

TUV Rheinland (Guangdong) Ltd.

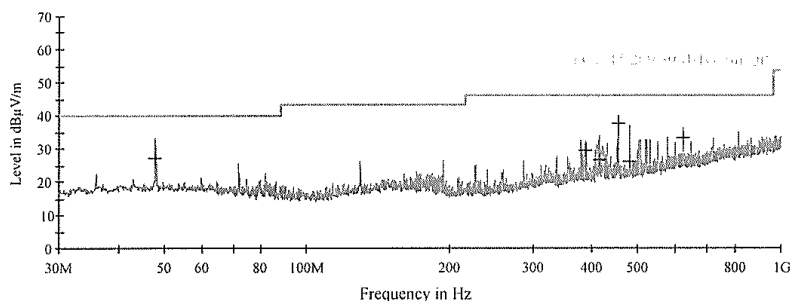
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

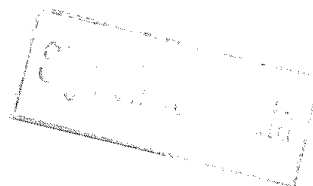
Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	27.3	1000.0	120.000	V	15.0	12.7	40.0
388.300000	29.4	1000.0	120.000	V	18.2	16.6	46.0
413.150000	26.6	1000.0	120.000	V	18.9	19.4	46.0
454.750000	37.6	1000.0	120.000	V	19.9	8.4	46.0
480.100000	26.2	1000.0	120.000	V	20.3	19.8	46.0
624.000000	33.5	1000.0	120.000	V	23.5	12.5	46.0



Date: 4/10/2014 - Time: 9:53:04

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 18 von 33
Page 18 of 33

TUV Rheinland (Guangdong) Ltd.

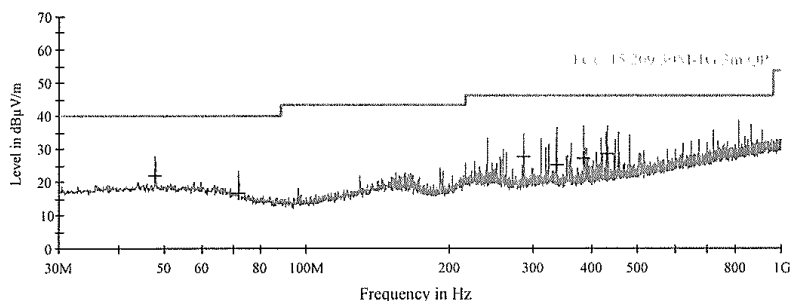
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Rx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	22.0	1000.0	120.000	H	15.0	18.0	40.0
71.950000	16.5	1000.0	120.000	H	12.8	23.5	40.0
288.000000	27.8	1000.0	120.000	H	15.7	18.2	46.0
336.050000	25.3	1000.0	120.000	H	16.9	20.7	46.0
384.050000	27.3	1000.0	120.000	H	18.1	18.7	46.0
432.050000	28.4	1000.0	120.000	H	19.5	17.6	46.0

Signal Test Data



Date: 4/10/2014 - Time: 10:18:12

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Seite 19 von 33

Test Report No.

Page 19 of 33

TUV Rheinland (Guangdong) Ltd.

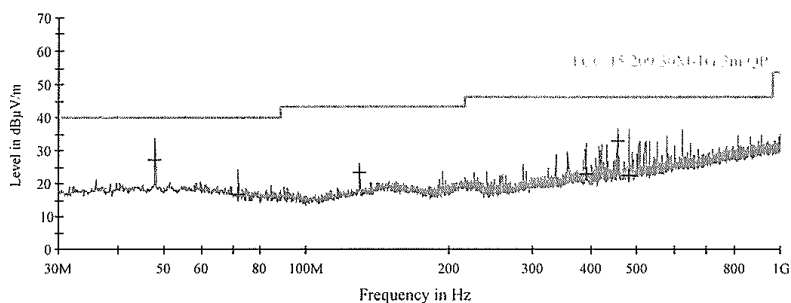
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Rx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 30M-1GHz
Receiver: TUV ESCI
Transducer: TUV SAC UVLB 9168/ TUV ESCI -TUV SAC UVLB 9168



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit (dBµV/m)
47.950000	27.2	1000.0	120.000	V	15.0	12.8	40.0
71.950000	16.7	1000.0	120.000	V	12.8	23.3	40.0
129.450000	23.5	1000.0	120.000	V	13.8	20.0	43.5
388.800000	23.1	1000.0	120.000	V	18.2	22.9	46.0
452.900000	32.6	1000.0	120.000	V	19.9	13.4	46.0
480.100000	22.2	1000.0	120.000	V	20.3	23.8	46.0

Signature

Date: 4/10/2014 - Time: 10:15:03

Tested by:  Reviewed by: 

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 20 von 33
Page 20 of 33

TUV Rheinland (Guangdong) Ltd.

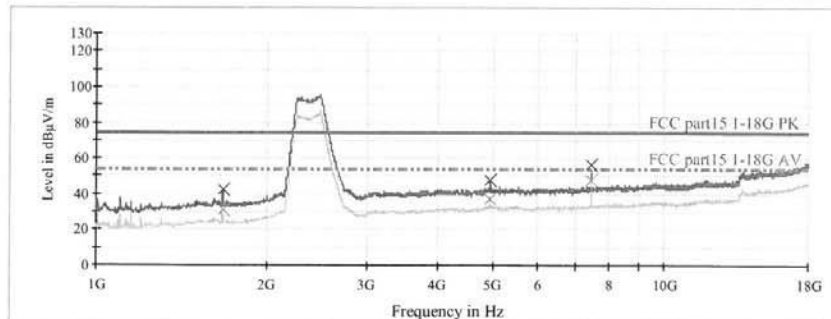
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 1GHz-18GHz
Receiver: TUV FSP30
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1665.000000	42.3	1000.0	1000.000	H	-11.5	31.7	74.0
4959.000000	47.7	1000.0	1000.000	H	-3.2	26.3	74.0
7441.000000	56.5	1000.0	1000.000	H	0.3	17.5	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1665.000000	30.5	1000.0	1000.000	H	-11.5	23.5	54.0
4959.000000	36.8	1000.0	1000.000	H	-3.2	17.2	54.0
7441.000000	47.5	1000.0	1000.000	H	0.3	6.5	54.0

Sign-off Test Data



Date: 6/13/2014 - Time: 1:55:29

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 21 von 33
Page 21 of 33

TUV Rheinland (Guangdong) Ltd.

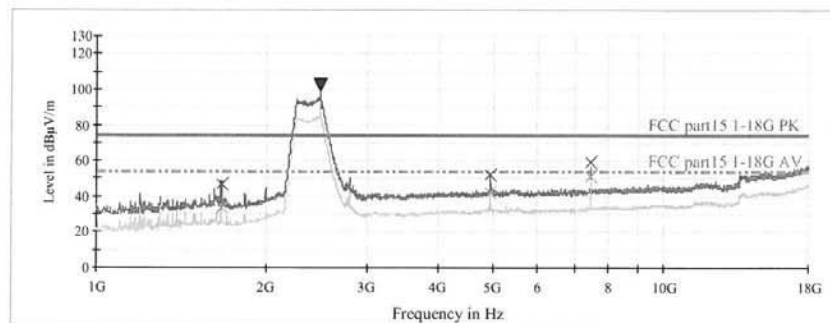
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 1GHz-18GHz
Receiver: TUV FSP30
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1663.000000	46.7	1000.0	1000.000	V	-11.5	27.3	74.0
4959.000000	52.4	1000.0	1000.000	V	-3.2	21.6	74.0
7441.000000	59.6	1000.0	1000.000	V	0.3	14.4	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1663.000000	33.8	1000.0	1000.000	V	-11.5	20.2	54.0
4959.000000	42.1	1000.0	1000.000	V	-3.2	11.9	54.0
7441.000000	51.0	1000.0	1000.000	V	0.3	3.0	54.0

Sign-off Test Data



Date: 6/13/2014 - Time: 1:48:09

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 22 von 33
Page 22 of 33

TUV Rheinland (Guangdong) Ltd.

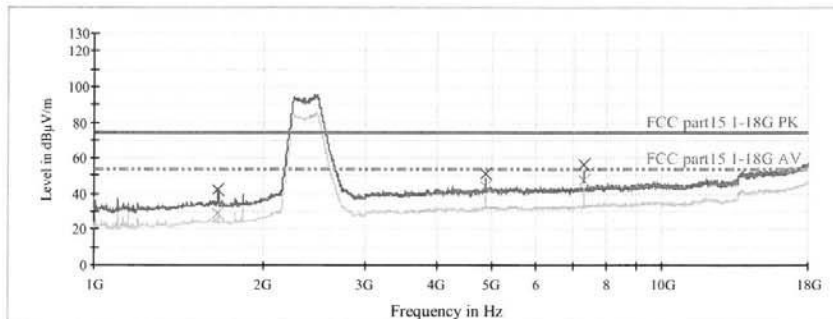
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 1GHz-18GHz
Receiver: TUV FSP30
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1659.000000	42.5	1000.0	1000.000	H	-11.5	31.5	74.0
4882.000000	51.2	1000.0	1000.000	H	-3.5	22.8	74.0
7322.000000	56.2	1000.0	1000.000	H	-0.4	17.8	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1659.000000	29.2	1000.0	1000.000	H	-11.5	24.8	54.0
4882.000000	44.2	1000.0	1000.000	H	-3.5	9.8	54.0
7322.000000	47.3	1000.0	1000.000	H	-0.4	6.7	54.0

Sign-off Test Data



Date: 6/13/2014 - Time: 1:36:20

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:

16059704 001

Test Report No.

Seite 23 von 33

Page 23 of 33

TUV Rheinland (Guangdong) Ltd.

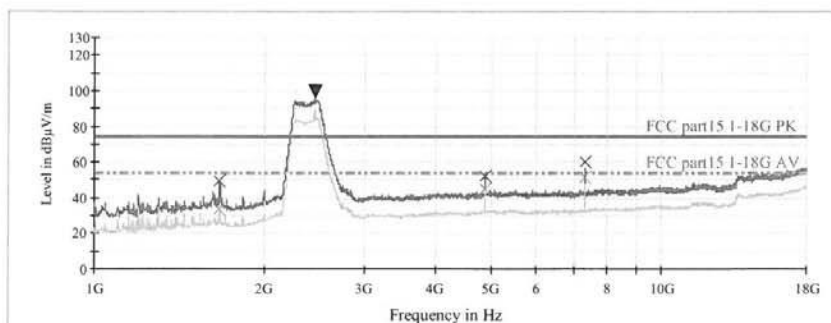
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 1GHz-18GHz
Receiver: TUV FSP30
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1661.000000	49.3	1000.0	1000.000	V	-11.5	24.7	74.0
4882.000000	51.9	1000.0	1000.000	V	-3.5	22.1	74.0
7322.000000	59.9	1000.0	1000.000	V	-0.4	14.1	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1661.000000	34.0	1000.0	1000.000	V	-11.5	20.0	54.0
4882.000000	44.7	1000.0	1000.000	V	-3.5	9.3	54.0
7322.000000	51.5	1000.0	1000.000	V	-0.4	2.5	54.0


YJX 2014-06-16 Checked
HCH 2014-06-16 Checked

Date: 6/13/2014 - Time: 1:42:22

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 24 von 33
Page 24 of 33

TUV Rheinland (Guangdong) Ltd.

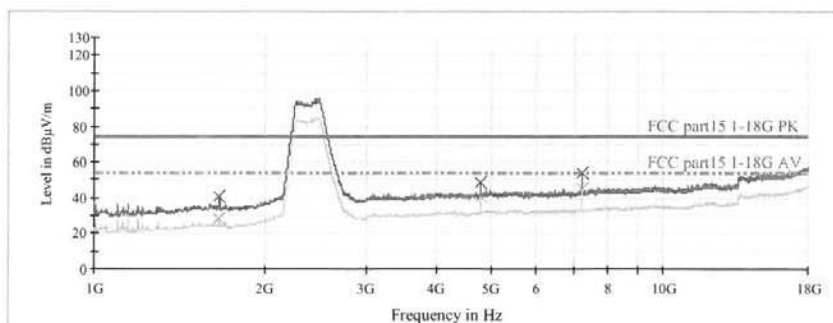
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 1GHz-18GHz
Receiver: TUV FSP30
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
1661.000000	41.0	1000.0	1000.000	H	-11.5	33.0	74.0
4804.000000	49.0	1000.0	1000.000	H	-3.7	25.0	74.0
7205.000000	54.0	1000.0	1000.000	H	0.1	20.0	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
1661.000000	28.2	1000.0	1000.000	H	-11.5	25.8	54.0
4804.000000	40.9	1000.0	1000.000	H	-3.7	13.1	54.0
7205.000000	45.1	1000.0	1000.000	H	0.1	8.9	54.0

Sign-off Test Data



Date: 6/13/2014 - Time: 1:30:53

Tested by: YJX Reviewed by: HCH

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 25 von 33
Page 25 of 33

TUV Rheinland (Guangdong) Ltd.

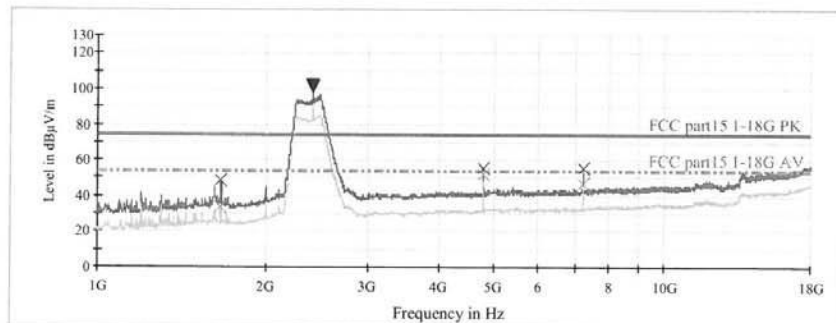
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Alike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 1GHz-18GHz
Receiver: TUV FSP30
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBμV/m)
1659.000000	48.4	1000.0	1000.000	V	-11.5	25.6	74.0
4804.000000	56.1	1000.0	1000.000	V	-3.7	17.9	74.0
7205.000000	55.3	1000.0	1000.000	V	0.1	18.7	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBμV/m)
1659.000000	33.3	1000.0	1000.000	V	-11.5	20.7	54.0
4804.000000	51.9	1000.0	1000.000	V	-3.7	2.1	54.0
7205.000000	46.5	1000.0	1000.000	V	0.1	7.5	54.0



Sign-off Test Data



Date: 6/13/2014 - Time: 1:22:53

Tested by: Reviewed by:

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 26 von 33
Page 26 of 33

TUV Rheinland (Guangdong) Ltd.

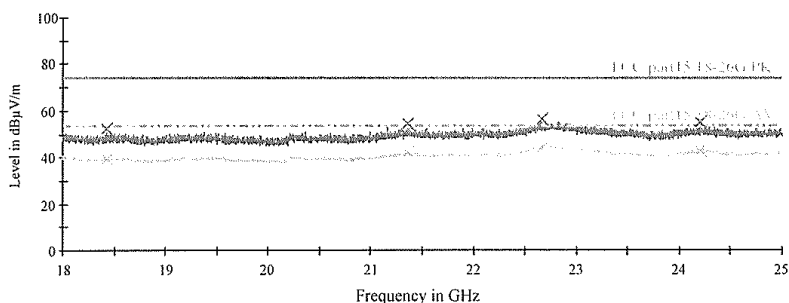
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
18423.000000	52.2	1000.0	1000.000	H	4.2	21.8	74.0
21361.000000	54.2	1000.0	1000.000	H	6.0	19.8	74.0
22671.000000	56.3	1000.0	1000.000	H	9.0	17.7	74.0
24196.000000	55.1	1000.0	1000.000	H	6.0	18.9	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18423.000000	39.2	1000.0	1000.000	H	4.2	14.8	54.0
21361.000000	42.0	1000.0	1000.000	H	6.0	12.0	54.0
22671.000000	44.5	1000.0	1000.000	H	9.0	9.5	54.0
24196.000000	42.8	1000.0	1000.000	H	6.0	11.2	54.0

Date: 4/10/2014 - Time: 4:15:41

Tested by: _____ Reviewed by: _____



Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 27 von 33
Page 27 of 33

TUV Rheinland (Guangdong) Ltd.

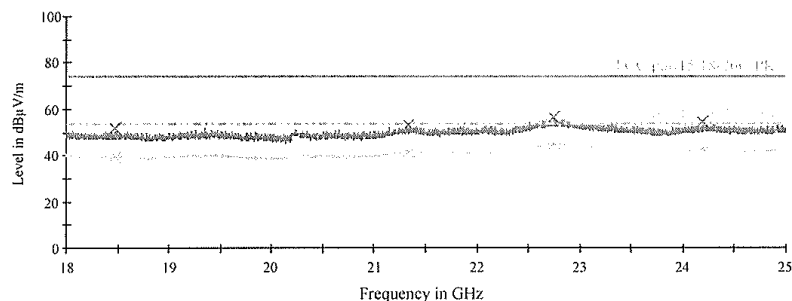
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
18480.000000	51.5	1000.0	1000.000	V	4.3	22.5	74.0
21338.000000	53.1	1000.0	1000.000	V	6.0	20.9	74.0
22741.000000	56.7	1000.0	1000.000	V	9.0	17.3	74.0
24191.000000	54.3	1000.0	1000.000	V	6.0	19.7	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18480.000000	39.5	1000.0	1000.000	V	4.3	14.5	54.0
21338.000000	41.5	1000.0	1000.000	V	6.0	12.5	54.0
22741.000000	44.7	1000.0	1000.000	V	9.0	9.3	54.0
24191.000000	42.6	1000.0	1000.000	V	6.0	11.4	54.0



Date: 4/10/2014 - Time: 4:18:24

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 28 von 33
Page 28 of 33

TUV Rheinland (Guangdong) Ltd.

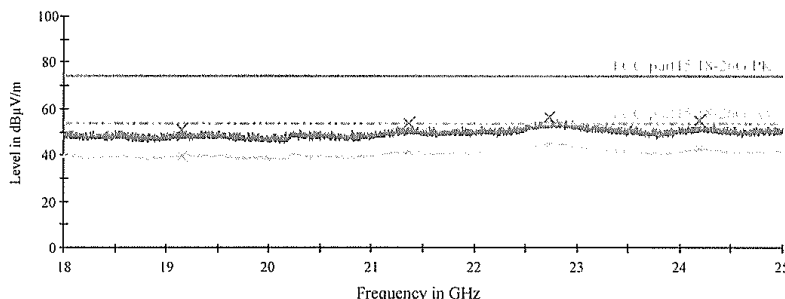
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
19157.000000	51.3	1000.0	1000.000	H	4.9	22.7	74.0
21362.000000	53.9	1000.0	1000.000	H	6.0	20.1	74.0
22721.000000	56.8	1000.0	1000.000	H	9.0	17.2	74.0
24189.000000	55.4	1000.0	1000.000	H	6.0	18.6	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
19157.000000	39.8	1000.0	1000.000	H	4.9	14.2	54.0
21362.000000	41.7	1000.0	1000.000	H	6.0	12.3	54.0
22721.000000	44.6	1000.0	1000.000	H	9.0	9.4	54.0
24189.000000	42.6	1000.0	1000.000	H	6.0	11.4	54.0



Date: 4/10/2014 - Time: 4:12:47

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 29 von 33
Page 29 of 33

TUV Rheinland (Guangdong) Ltd.

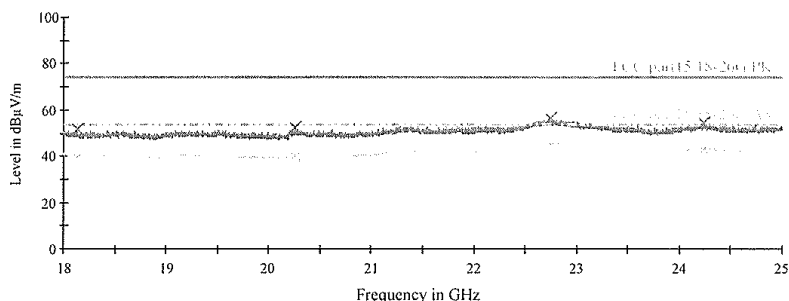
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
18144.000000	51.7	1000.0	1000.000	V	3.8	22.3	74.0
20254.000000	52.2	1000.0	1000.000	V	4.8	21.8	74.0
22736.000000	56.5	1000.0	1000.000	V	9.0	17.5	74.0
24226.000000	54.4	1000.0	1000.000	V	5.9	19.6	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18144.000000	39.3	1000.0	1000.000	V	3.8	14.7	54.0
20254.000000	40.3	1000.0	1000.000	V	4.8	13.7	54.0
22736.000000	44.7	1000.0	1000.000	V	9.0	9.3	54.0
24226.000000	42.8	1000.0	1000.000	V	5.9	11.2	54.0

Date: 4/10/2014 - Time: 4:08:46

Tested by: _____ Reviewed by: _____



Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 30 von 33
Page 30 of 33

TUV Rheinland (Guangdong) Ltd.

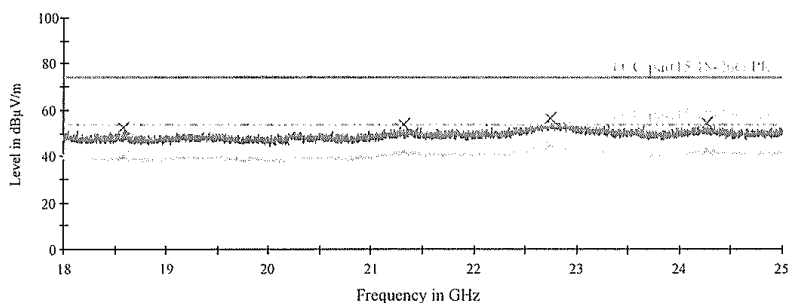
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
18577.000000	52.1	1000.0	1000.000	H	4.3	21.9	74.0
21312.000000	53.5	1000.0	1000.000	H	5.9	20.5	74.0
22748.000000	56.8	1000.0	1000.000	H	9.0	17.2	74.0
24257.000000	54.6	1000.0	1000.000	H	5.9	19.4	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18577.000000	40.2	1000.0	1000.000	H	4.3	13.8	54.0
21312.000000	42.0	1000.0	1000.000	H	5.9	12.0	54.0
22748.000000	44.8	1000.0	1000.000	H	9.0	9.2	54.0
24257.000000	43.0	1000.0	1000.000	H	5.9	11.0	54.0



Date: 4/10/2014 - Time: 4:02:18

Tested by: _____ Reviewed by: _____

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 31 von 33
Page 31 of 33

TUV Rheinland (Guangdong) Ltd.

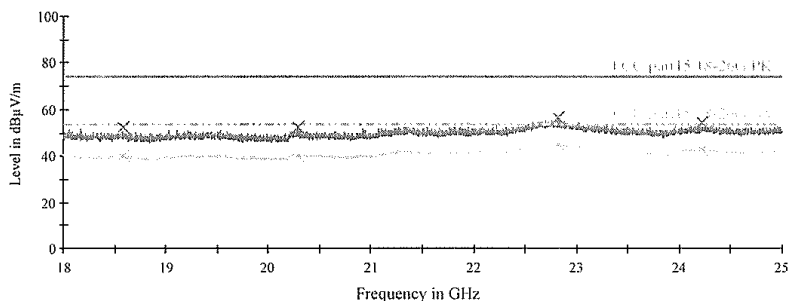
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Tx @ Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
18580.000000	52.4	1000.0	1000.000	V	4.3	21.6	74.0
20289.000000	52.6	1000.0	1000.000	V	4.8	21.4	74.0
22823.000000	56.3	1000.0	1000.000	V	8.7	17.7	74.0
24221.000000	54.6	1000.0	1000.000	V	5.9	19.4	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18580.000000	39.9	1000.0	1000.000	V	4.3	14.1	54.0
20289.000000	40.3	1000.0	1000.000	V	4.8	13.7	54.0
22823.000000	44.6	1000.0	1000.000	V	8.7	9.4	54.0
24221.000000	42.7	1000.0	1000.000	V	5.9	11.3	54.0

Date: 4/10/2014 - Time: 4:05:27

Tested by: _____ Reviewed by: _____



Source Data

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 32 von 33
Page 32 of 33

TUV Rheinland (Guangdong) Ltd.

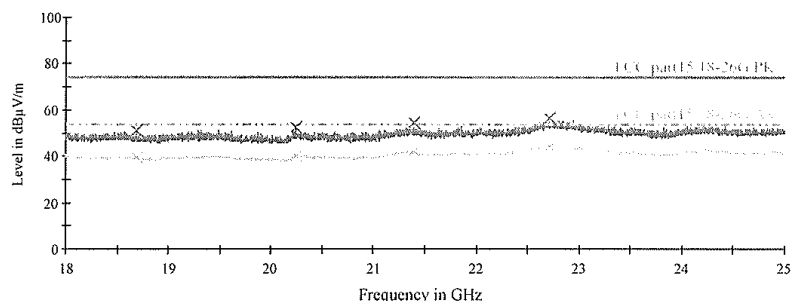
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Rx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18687.000000	50.7	1000.0	1000.000	H	4.5	34.9	74.0
20239.000000	52.1	1000.0	1000.000	H	4.8	33.6	74.0
21391.000000	54.2	1000.0	1000.000	H	6.0	32.1	74.0
22715.000000	56.3	1000.0	1000.000	H	9.0	29.6	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18687.000000	39.1	1000.0	1000.000	H	4.5	14.9	54.0
20239.000000	40.4	1000.0	1000.000	H	4.8	13.6	54.0
21391.000000	41.9	1000.0	1000.000	H	6.0	12.1	54.0
22715.000000	44.4	1000.0	1000.000	H	9.0	9.6	54.0

Date: 4/10/2014 - Time: 4:26:31

Tested by:  Reviewed by: 

Prüfbericht - Nr.:
Test Report No.

16059704 001

Seite 33 von 33
Page 33 of 33

TUV Rheinland (Guangdong) Ltd.

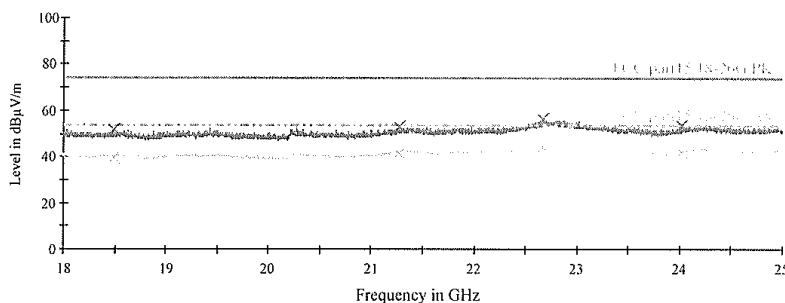
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer: Allike
Test Item: Tower Stereo System
Identification: ITSB-300
Test Standard: FCC Part 15.209
Test Detail: RE
Operation Mode: Rx @ Mid channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage/ Freq: AC 120 V/ 60 Hz
Receipt No: 174019879
Report No: 16059704 001
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1
Frequency Range: 18GHz-25GHz
Receiver: TUV 3160-09
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - PK+ (dB)	Limit (dBµV/m)
18489.000000	51.7	1000.0	1000.000	V	4.3	22.3	74.0
21272.000000	53.4	1000.0	1000.000	V	5.8	20.6	74.0
22661.000000	56.1	1000.0	1000.000	V	9.0	17.9	74.0
24023.000000	54.0	1000.0	1000.000	V	5.9	20.0	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - AVG (dB)	Limit (dBµV/m)
18489.000000	39.6	1000.0	1000.000	V	4.3	14.4	54.0
21272.000000	41.4	1000.0	1000.000	V	5.8	12.6	54.0
22661.000000	44.2	1000.0	1000.000	V	9.0	9.8	54.0
24023.000000	42.0	1000.0	1000.000	V	5.9	12.0	54.0

Date: 4/10/2014 - Time: 4:22:05

Tested by: _____ Reviewed by: _____

