

TEST REPORT

Product Name : FM/AM 2 Band Radio
Model Number : TR604, TR604W, TR618, TR629
FCC ID : 2AAR8TR604

Prepared for : HENAN ESHOW ELECTRONIC COMMERCE CO., LTD.
Address : Room 722, Sanjiang Building, No.170 Nanyang Road, Huiji District,Zhengzhou, Henan Province, China

Prepared by : EMTEK (Dongguan) Co., Ltd.
Address : -1&2F., Building 2, Zone A, Zhongda Marine Biotechnology Research and Development Base, No. 9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China

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Date(s) of Tests : October 20, 2021 to November 02, 2021
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TEST REPORT DESCRIPTION

Applicant : HENAN ESHOW ELECTRONIC COMMERCE CO., LTD.
Manufacturer : HENAN ESHOW ELECTRONIC COMMERCE CO., LTD.
Factory : Shenzhen Retevis Technology Co., Ltd.
Trade Mark : RETEKESS
EUT : FM/AM 2 Band Radio
Model No. : TR604, TR604W, TR618, TR629
Power Supply : AC 110V 60Hz

Measurement Procedure Used:

FCC CFR Title 47, Part 15, Subpart B
ANSI C63.4-2014

The device described above is tested by EMTEK (Dongguan) Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (Dongguan) Co., Ltd. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (Dongguan) Co., Ltd.

Date of Test : October 20, 2021 to November 02, 2021

Prepared by :

Galen Xiao

Galen Xiao /Editor

Tim Dong

Reviewer :

Tim Dong /Supervisor

Approved & Authorized Signer :

Sam Lv

Sam Lv /Manager

Modified Information

Version	Report No.	Revision Data	Summary
	EDG2110200114E00501R	/	Original Version



1. SUMMARY OF TEST RESULTS

EMISSION		
Description of Test Item	Standard & Limits	Results
Conducted Emission at Mains Terminals	FCC Part 15, Subpart B, Class B ANSI C63.4-2014	Pass
Radiated Emission	FCC Part 15, Subpart B, Class B ANSI C63.4-2014	Pass
Note: N/A is an abbreviation for Not Applicable.		



2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : FM/AM 2 Band Radio

Model Number : TR604, TR604W, TR618, TR629
(Note: These models are the same, except for the model names; TR604 was selected for full test.)

Test Voltage : AC 120V 60Hz

Applicant : HENAN ESHOW ELECTRONIC COMMERCE CO., LTD.

Address : Room 722, Sanjiang Building, No.170 Nanyang Road, Huiji District, Zhengzhou, Henan Province, China

Manufacturer : HENAN ESHOW ELECTRONIC COMMERCE CO., LTD.

Address : Room 722, Sanjiang Building, No.170 Nanyang Road, Huiji District, Zhengzhou, Henan Province, China

Factory : Shenzhen Retevis Technology Co., Ltd.

Address : 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longqiang District, Shenzhen, China

Date of Received : October 20, 2021

Date of Test : October 20, 2021 to November 02, 2021

2.2. Input / Output Ports

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
0	Enclosure	N/E	--	--	None

* Note: Use abbreviations:

AC= AC Power Port

DC= DC Power Port

N/E= Non-Electrical

I/O= Signal Input or Output Port (Not Involved in Process Control)

TP= Telecommunication Ports

2.3. Independent Operation Modes

A. FM(88Mhz, 98Mhz, 108Mhz)

B. AM(1200Khz)

2.4. Test Manner

Test Items	Test Voltage	Operation Modes	Worst case
Conducted Emission	AC 120V 60Hz	Mode A&B	B
Radiated Emission (Up to 1GHz)	AC 120V 60Hz	Mode A&B	A
Radiated Emission (Above 1GHz)	/	/	

2.5. Description of Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2020.08.27
The certificate is valid until 2024.07.05
The Laboratory has been assessed and proved to be in compliance with
CNAS/CL01:2018
The Certificate Registration Number is L3150

Accredited by FCC
Designation Number: CN1300
Test Firm Registration Number: 945551

Accredited by A2LA, April 05, 2021
The Certificate Registration Number is 4321.02

Accredited by Industry Canada
The Certificate Registration Number is CN0113

Name of Firm : EMTEK (Dongguan) Co., Ltd.
Site Location : -1&2/F., Building 2, Zone A, Zhongda Marine Biotechnology Research and
Development Base, No.9, Xincheng Avenue, Songshanhu High-technology
Industrial Development Zone, Dongguan, Guangdong, China

2.6. Test Software

Item	Software
Conducted Emission	: EMTEK(Ver.CON-03A1)-Shenzhen

Radiated Emission : EMTEK(Ver.RA-03A1)-Shenzhen

2.7. Description of Support Device

FM Signal	: Manufacturer: HP
Generator	M/N: 8648A
	S/N: 3642V01576

2.8. Measurement Uncertainty

Test Item	Uncertainty
Conducted Emission Uncertainty	: 2.08dB(9k~150kHz Conduction 1#) 2.42dB(150k-30MHz Conduction 1#)
Radiated Emission Uncertainty (3m Chamber)	: 3.32dB (30M~1GHz Polarize: H) 3.34dB (30M~1GHz Polarize: V) 4.98dB (1~6GHz) 5.20dB (6~18GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Power Line Conducted Emission Measurement

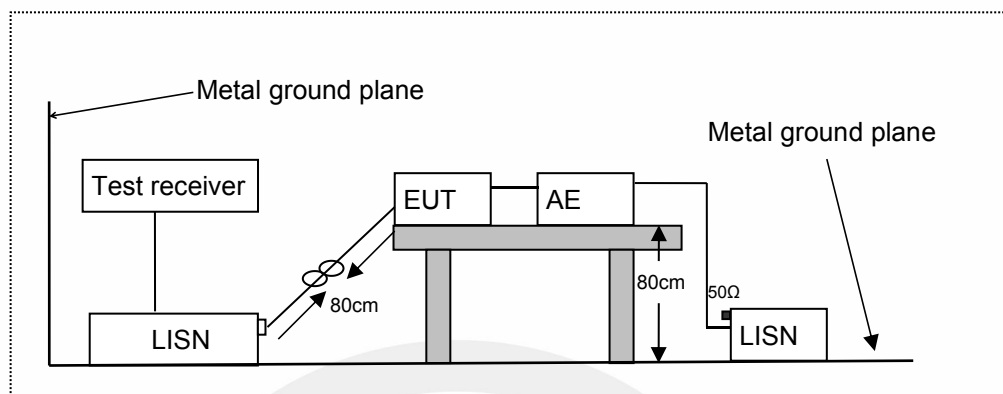
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒	Test Receiver	Rohde& Schwarz	ESCI	100137	2021/5/20	1 Year
☒	L.I.S.N.	Rohde& Schwarz	ENV216	100017	2021/5/20	1 Year

3.2. For Radiated Emission Measurement

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒	EMI Test Receiver	Rohde & Schwarz	ESCI	101415	2021/5/20	1Year
☒	Bilog Antenna	Schwarzbeck	VULB9163	141	2021/5/23	1 Year
☒	Power Amplifier	HP	8447F	OPTH64	2021/5/20	1 Year
☒	Cable	N/A	CIL02	A0783566	2021/5/20	1 Year
☒	Cable	N/A	RG 223/U	525178	2021/5/20	1 Year
☒	Cable	N/A	RG 223/U	525179	2021/5/20	1 Year
☐	Signal Analyzer	R&S	FSV30	103039	2021/5/20	1 Year
☐	Horn Antenna	Schwarzbeck	BBHA9120 D	1272	2021/5/23	1 Year
☐	High frequency horn antenna	Schwarzbeck	BBHA9170	9170-567	2021/5/20	1 Year
☐	Power Amplifier	LUNAR EM	PM1-18-40	J1010000008 1	2021/5/20	1 Year
☐	Cable	N/A	CBL-26	D1245	2021/5/24	1 Year
☐	Cable	N/A	CBL-26	D8503	2021/5/24	1 Year
☐	Cable	N/A	CBL-26	N/A	2021/5/24	1 Year

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



LISN: Line Impedance Stabilization Network
AE: Associated equipment
EUT: Equipment under test

4.2. Limits

FCC Part 15, Subpart B, Class B

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

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

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

4.3. Test Procedure

The EUT was placed on a desk 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a line impedance stabilization network (LISN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other LISN.

The LISN provides 50 ohm coupling impedance for the measuring instrument.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

Test results were obtained from the following equation:

Emission Level (dB μ V) = LISN Factor (dB) + Cable Loss (dB) + Reading (dB μ V)

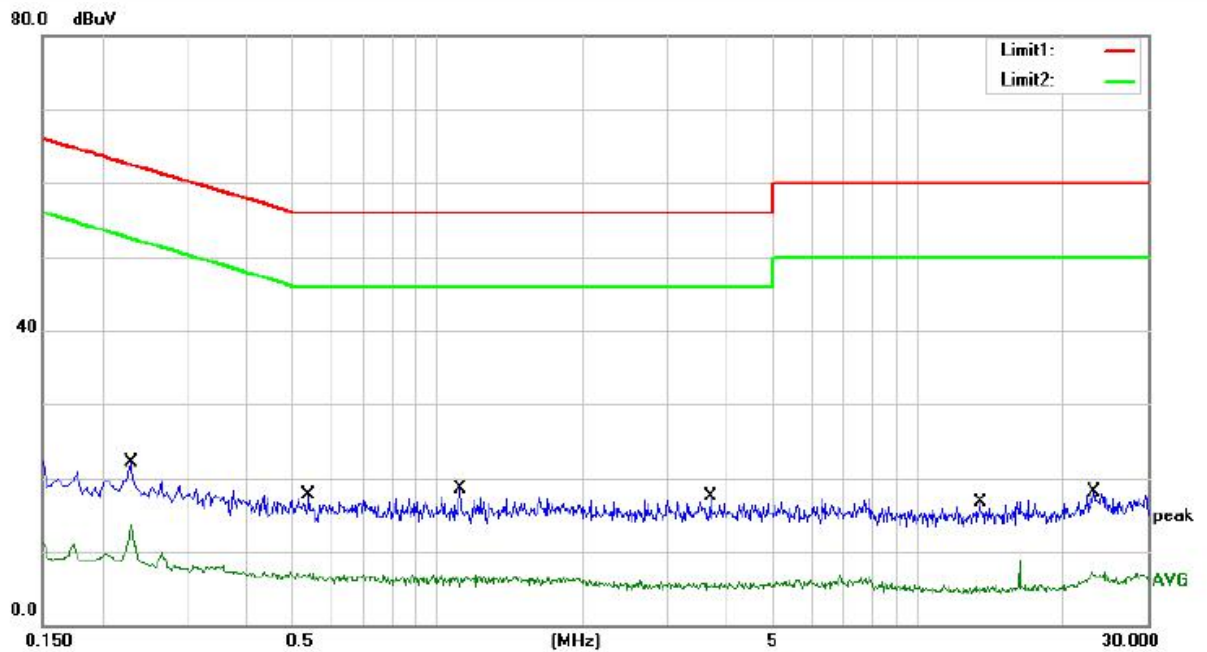
Margin (dB) = Emission Level (dB μ V) - Limit (dB μ V)

4.4.Measuring Results

PASS.

The worst test data are attach on following pages.

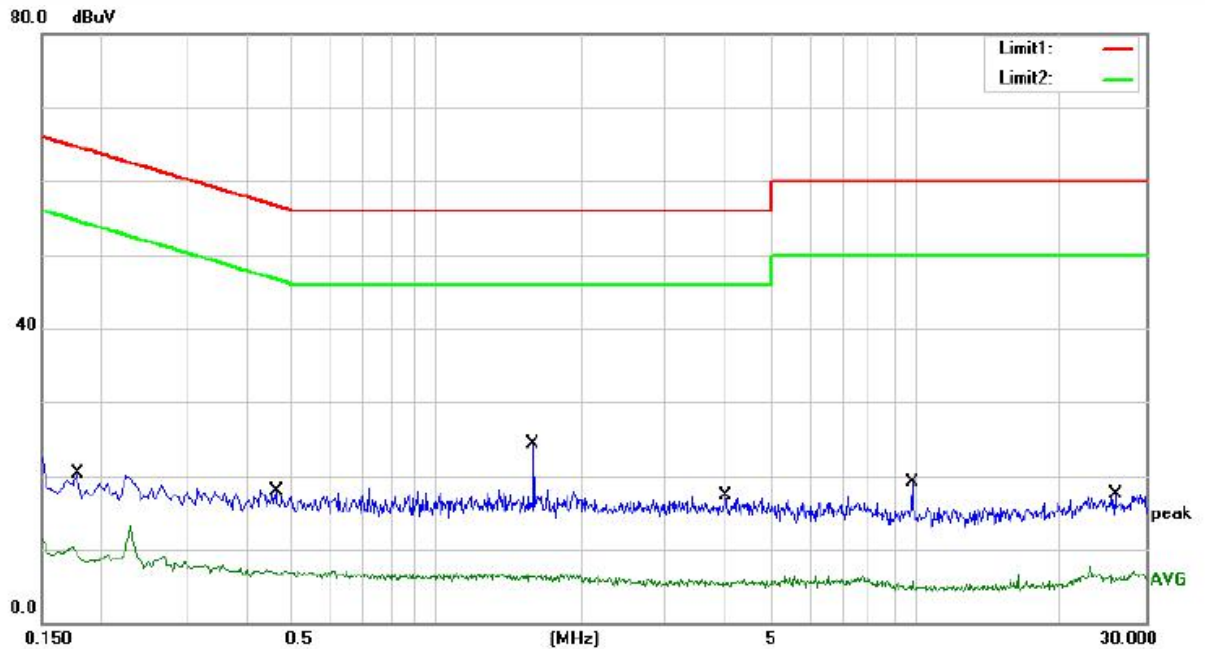




Site: site #1 Phase: **L1** Temperature: 23
 Limit: FCC PART 15 B_QP (CE) Power: AC 120V/60Hz Humidity: 52 %
 Mode: FM
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2300	11.69	10.44	22.13	62.45	-40.32	QP	
2		0.2300	3.31	10.44	13.75	52.45	-38.70	AVG	
3		0.5380	7.61	10.13	17.74	56.00	-38.26	QP	
4		0.5380	-3.21	10.13	6.92	46.00	-39.08	AVG	
5	*	1.1140	8.31	10.12	18.43	56.00	-37.57	QP	
6		1.1140	-3.58	10.12	6.54	46.00	-39.46	AVG	
7		3.6860	7.34	10.07	17.41	56.00	-38.59	QP	
8		3.6860	-3.21	10.07	6.86	46.00	-39.14	AVG	
9		13.4500	6.60	10.04	16.64	60.00	-43.36	QP	
10		13.4500	-1.18	10.04	8.86	50.00	-41.14	AVG	
11		23.1900	8.08	10.02	18.10	60.00	-41.90	QP	
12		23.1900	-2.66	10.02	7.36	50.00	-42.64	AVG	

*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator: XIA



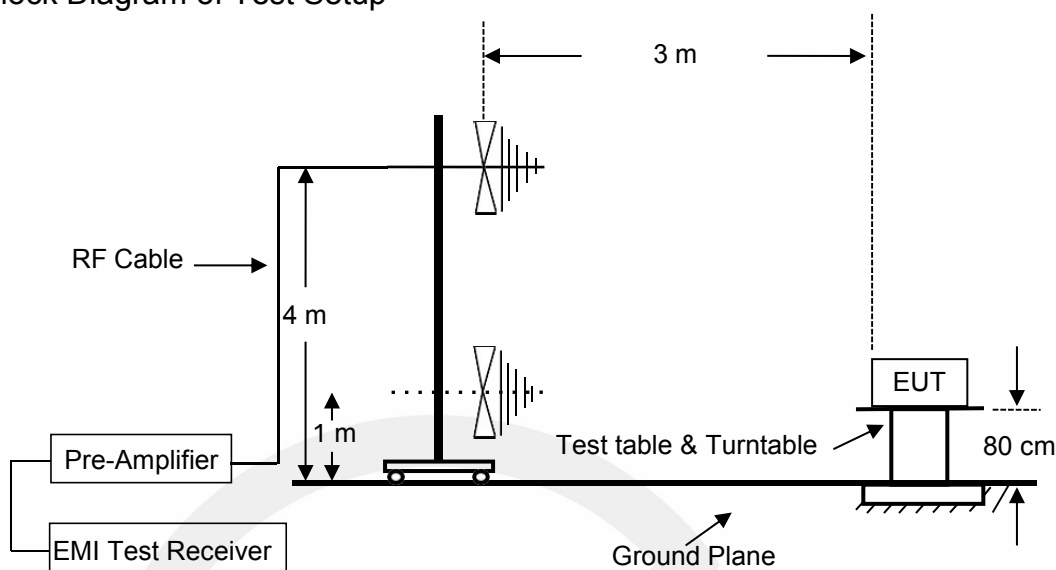
Site: site #1 Phase: **N** Temperature: 23
 Limit: FCC PART 15 B_QP (CE) Power: AC 120V/60Hz Humidity: 52 %
 Mode: FM
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1780	9.86	10.50	20.36	64.58	-44.22	QP	
2		0.1780	2.72	10.50	13.22	54.58	-41.36	AVG	
3		0.4620	7.72	10.17	17.89	56.66	-38.77	QP	
4		0.4620	-2.99	10.17	7.18	46.66	-39.48	AVG	
5	*	1.5900	14.12	10.11	24.23	56.00	-31.77	QP	
6		1.5900	-3.35	10.11	6.76	46.00	-39.24	AVG	
7		3.9940	7.21	10.07	17.28	56.00	-38.72	QP	
8		3.9940	-4.07	10.07	6.00	46.00	-40.00	AVG	
9		9.7980	9.11	10.04	19.15	60.00	-40.85	QP	
10		9.7980	-3.67	10.04	6.37	50.00	-43.63	AVG	
11		25.9140	7.39	10.02	17.41	60.00	-42.59	QP	
12		25.9140	-3.24	10.02	6.78	50.00	-43.22	AVG	

*: Maximum data x: Over limit !: over margin Comment: Factor build in receiver. Operator: XIA

5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup



5.2. Radiated Limit

FCC Part 15, Subpart B, Class B

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

5.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

Test results were obtained from the following equation:

Emission level (dB μ V/m) = Antenna Factor - Amp Factor + Cable Loss + Reading

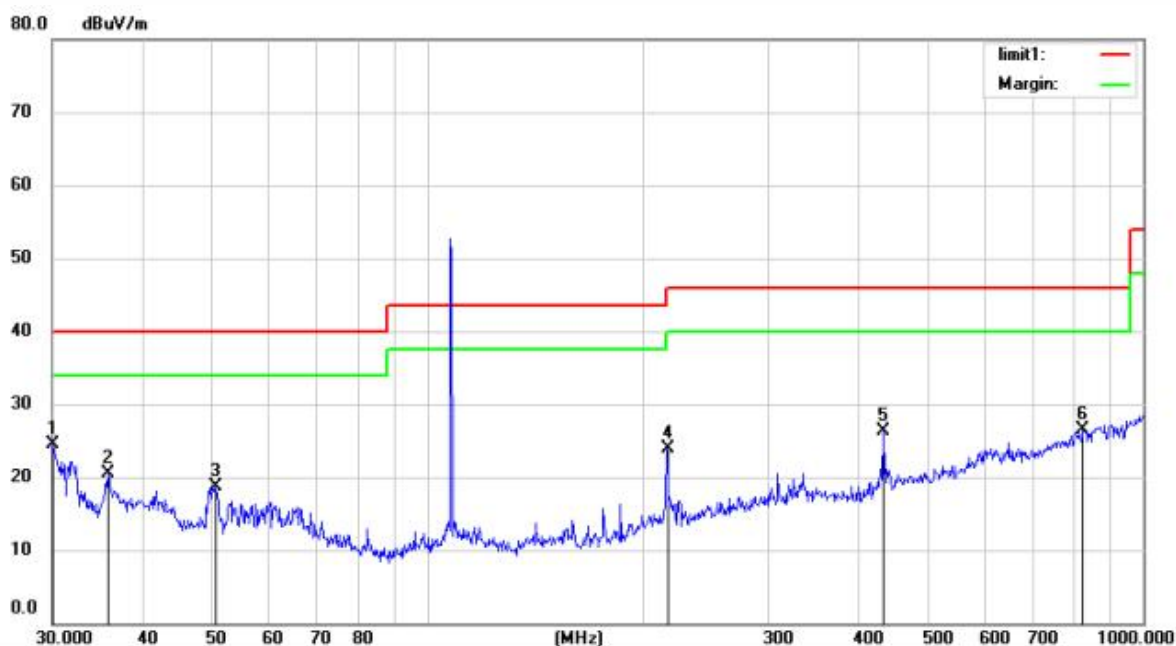
Margin (dB) = Emission Level (dB μ V/m) - Limit (dB μ V/m)

5.4. Measuring Results

PASS.

The worst test data are attach on following pages.





Site Chamber #1

Polarization: **Horizontal**

Temperature: 23

Limit: FCC PART 15 B 3m(RE)

Power: AC 120V/60Hz

Humidity: 58 %

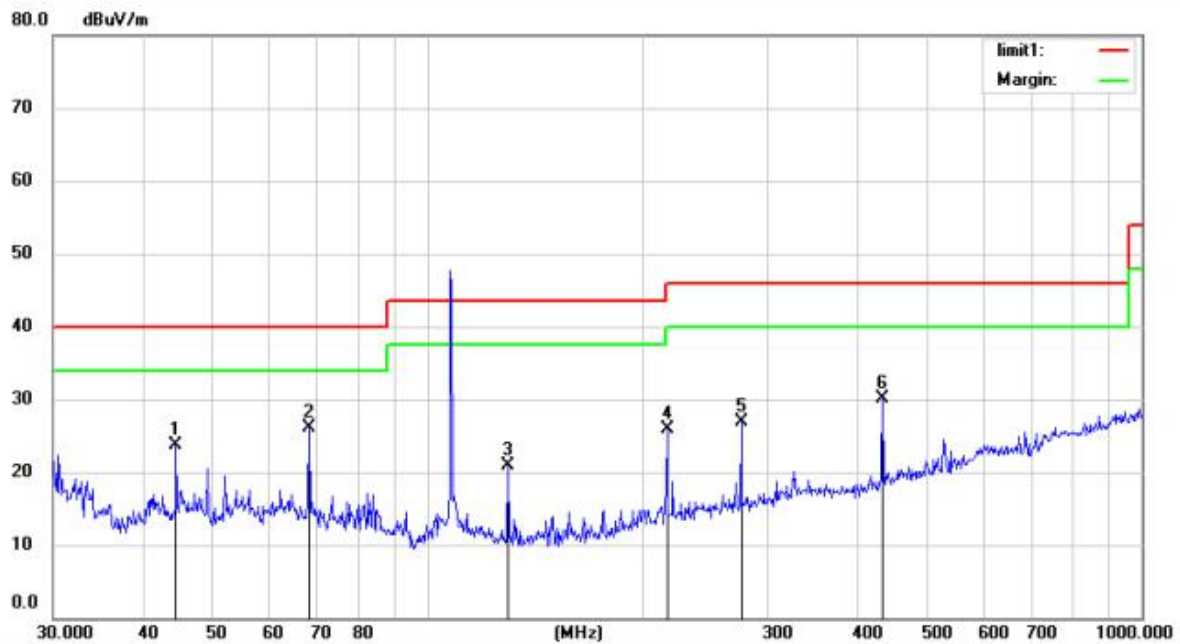
Mode: FM 108Mhz

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	30.1051	39.38	-14.82	24.56	40.00	-15.44	QP		
2		35.8746	35.52	-15.06	20.46	40.00	-19.54	QP		
3		50.7635	35.26	-16.57	18.69	40.00	-21.31	QP		
4		216.0240	39.29	-15.47	23.82	46.00	-22.18	QP		
5		434.0650	37.42	-11.19	26.23	46.00	-19.77	QP		
6		824.5968	31.51	-4.96	26.55	46.00	-19.45	QP		

*:Maximum data x:Over limit !:over margin

Operator: Ccyf



Site Chamber #1

Polarization: **Vertical**

Temperature: 23

Limit: FCC PART 15 B 3m(RE)

Power: AC 120V/60Hz

Humidity: 58 %

Mode: FM 108Mhz

Note:

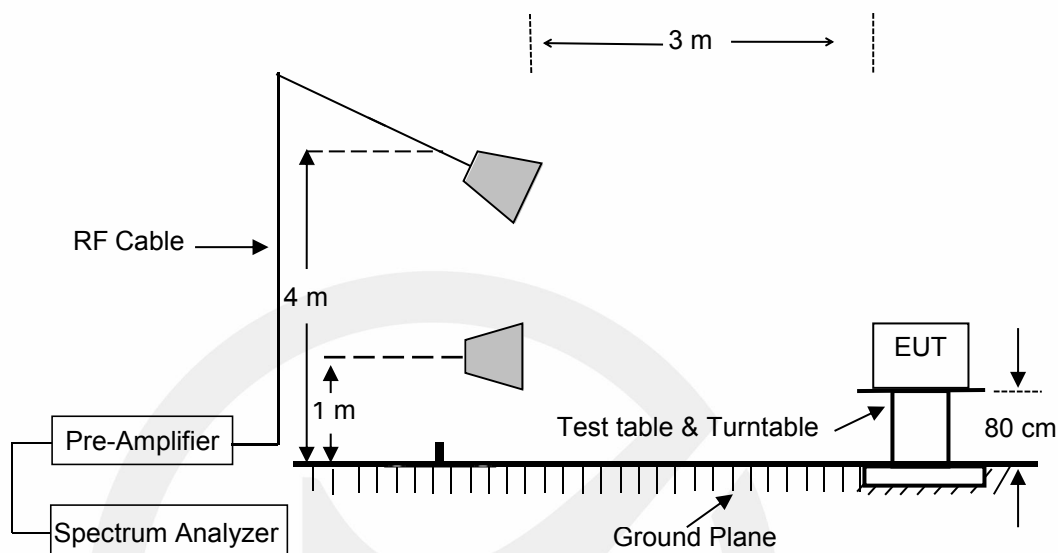
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		44.5867	41.01	-17.31	23.70	40.00	-16.30	QP		
2	*	68.3906	43.45	-17.39	26.06	40.00	-13.94	QP		
3		129.9225	40.40	-19.42	20.98	43.50	-22.52	QP		
4		216.7828	41.27	-15.45	25.82	46.00	-20.18	QP		
5		275.1570	40.53	-13.71	26.82	46.00	-19.18	QP		
6		434.0650	41.39	-11.19	30.20	46.00	-15.80	QP		

*:Maximum data x:Over limit !:over margin

Operator: Ccyf

6. RADIATED EMISSION MEASUREMENT (ABOVE 1GHZ)

6.1 Block Diagram of Test Setup



6.2 Radiated Limit

FCC Part 15, Subpart B, Class B

Frequency range GHz	Average limit dB(μ V/m)	Peak limit dB(μ V/m)
Above 1000	54	74

Note: The highest internal source of an EUT is defined as the highest frequency generated or used in the device or on which the EUT operates or tunes. If the highest frequency of the internal sources of the EUT is less than 1.705 MHz, the measurement shall only be made up to 30 MHz. If the highest frequency of the internal sources of the EUT is between 1.705 MHz and 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

6.3 Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the

maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with peak detector for peak values, and use RBW=1 MHz and VBW=10 Hz with peak detector for Average Values.

Test results were obtained from the following equation:

Emission level (dB μ V/m) = Antenna Factor - Amp Factor + Cable Loss + Reading

Margin (dB) = Emission Level (dB μ V/m) - Limit (dB μ V/m)

6.4 Measuring Results

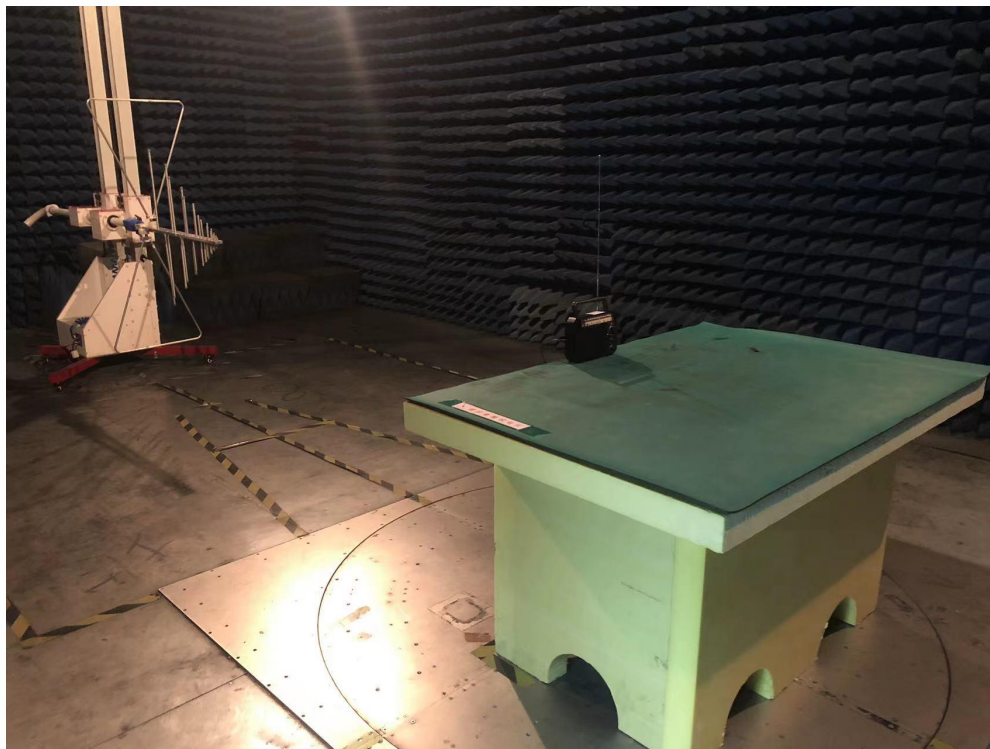
N/A.

7. PHOTOGRAPHS

7.1. Photos of Conducted Emission Measurement



7.2. Photos of Radiation Emission Measurement



APPENDIX A: Label Requirements

- (1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under part 73 of this chapter, land mobile operation under part 90 of this chapter, etc., shall bear the following statement in a conspicuous location on the device:
This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.
- (2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:
This device complies with part 15 of the FCC Rules for use with cable television service.
- (3) All other devices shall bear the following statement in a conspicuous location on the device:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



APPENDIX B: Warning Statement

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

APPENDIX C: Photos of EUT

See External Photos and Internal photos

*** End of Report ***

声明 Statement

1. 本报告无授权批准人签字及“检验报告专用章”无效；

This report will be void without authorized signature or special seal for testing report.

2. 未经许可本报告不得部分复制；

This report shall not be copied partly without authorization.

3. 本报告的检测结果仅对送测样品有效，委托方对样品的代表性和资料的真实性负责；

The test results or observations are applicable only to tested sample. Client shall be responsible for representativeness of the sample and authenticity of the material.

4. 本检测报告中检测项目标注有特殊符号则该项目不在资质认定范围内，仅作为客户委托、科研、教学或内部质量控制等目的使用；

The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.

5. 本检测报告以实测值进行符合性判定，未考虑不确定度所带来的风险，本实验室不承担相关责任，特别约定、标准或规范中有明确规定的除外；

The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, EMTEK shall not assume any responsibility.

6. 对本检测报告若有异议，请于收到报告之日起 20 日内提出；

Objections shall be raised within 20 days from the date receiving the report.