

TEST REPORT

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

- : 2AAR8TR604

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Report Number	:	EDG2110200114E00501R
Date(s) of Tests	:	October 20, 2021 to November 02, 2021
Date of issue	:	November 05, 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 Xia.
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		Tim Dong
Reviewer	:	V
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Approved & Autho	orized Signer :	* EMTE
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Modified Information

Version	Report No.	Revision Data	Summary
	EDG2110200114E00501R	1	Original Version



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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



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2. GENERAL INFORMATION

2.1. Description	Device (EUT)	
EUT	M/AM 2 Band Radio	
Model Number	R604, TR604W, TR618, TR629 Note: These models are the same, except for the mod was selected for full test.)	lel names; TR604
Test Voltage	AC 120V 60Hz	
Applicant	IENAN ESHOW ELECTRONIC COMMERCE CO., LT	D.
Address	Room 722, Sanjiang Building, No.170 Nanyang Road, I District,Zhengzhou, Henan Province, China	Huiji
Manufacturer	IENAN ESHOW ELECTRONIC COMMERCE CO., LT	D.
Address	Room 722, Sanjiang Building, No.170 Nanyang Road, I District,Zhengzhou, Henan Province, China	Huiji
Factory	Shenzhen Retevis Technology Co., Ltd.	
Address	/F, 13-C, Zhonghaixin Science&Technology Park, No.1 Road, Jihua Street, Longgang District, Shenzhen, Chin	
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	H		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	В
Radiated Emission (Up to 1GHz)	AC 120V 60Hz	Mode A&B	А
Radiated Emission (Above 1GHz)	/	1	

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2.5. Description of Test Facility

2.3. Description of restracility				
Site Description EMC Lab. : Accredited by CNAS, 2 The certificate is valid u The Laboratory has be CNAS/CL01:2018 The Certificate Registra	Intil 2024.07.05 en assessed and proved to be in compliance with			
Accredited by FCC Designation Number: C Test Firm Registration I				
Accredited by A2LA, Ap The Certificate Registra	oril 05, 2021 Ition Number is 4321.02			
Accredited by Industry The Certificate Registra	Canada ation Number is CN0113			
Development Base,N.9	o., Ltd. A,Zhongda Marine Biotechnology Research and ,Xincheng Avenue,Songshanhu High-technology Zone, Dongguan, Guangdong, China			
2.6. Test Software				
Item Software Conducted : EMTEK(Ver.CON-03A1 Emission)-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				
	inty (9k~150kHz Conduction 1#) (150k-30MHz Conduction 1#)			
(3m Chamber) 3.34dB 4.98dB	(30M~1GHz Polarize: H) (30M~1GHz Polarize: V) (1~6GHz) (6~18GHz)			

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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
Ø	Test Receiver	Rohde& Schwarz	ESCI	100137	2021/5/20	1 Year
Ø	L.I.S.N.	Rohde& Schwarz	ENV216	100017	2021/5/20	1 Year

3.2. For Radiated Emission Measurement

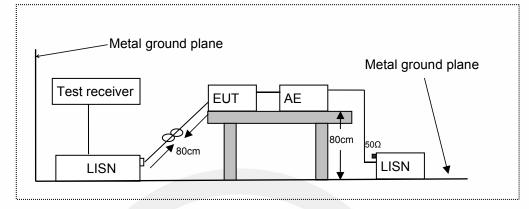
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Ø	EMI Test Receiver	Rohde & Schwarz	ESCI	101415	2021/5/20	1Year
V	Bilog Antenna	Schwarzbeck	VULB9163	141	2021/5/23	1 Year
V	Power Amplifier	HP	8447F	OPTH64	2021/5/20	1 Year
V	Cable	N/A	CIL02	A0783566	2021/5/20	1 Year
V	Cable	N/A	RG 223/U	525178	2021/5/20	1 Year
V	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	J101000008 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

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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

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

NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

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.

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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 (dBµV) = LISN Factor (dB) + Cable Loss (dB) + Reading (dBµV) Margin (dB) = Emission Level (dB μ V) - Limit (dB μ V)

4.4. Measuring Results

PASS.

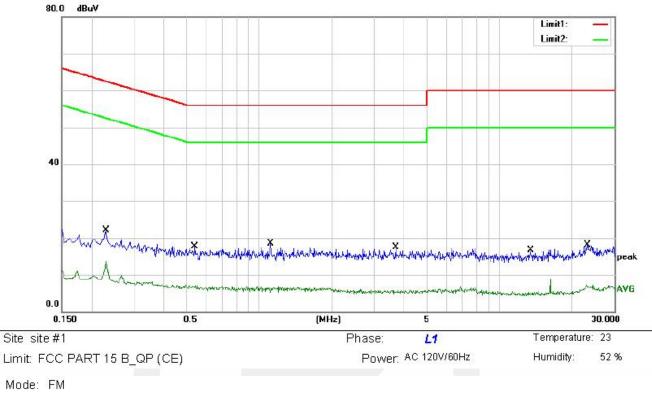
The worst test data are attach on following pages.



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Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	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	

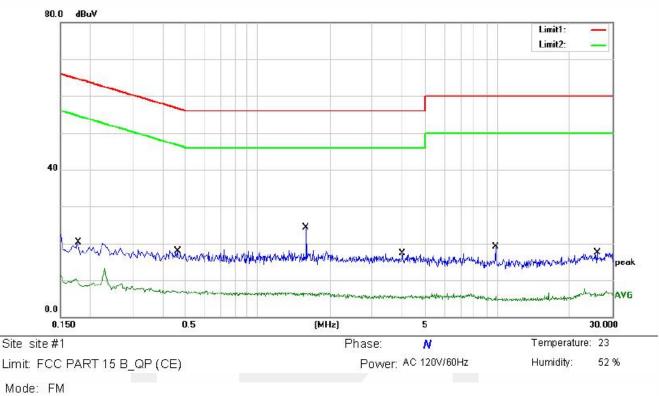
*:Maximum data

x:Over limit l:over margin Comment: Factor build in receiver.

Operator: XIA

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Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	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 l:over margin

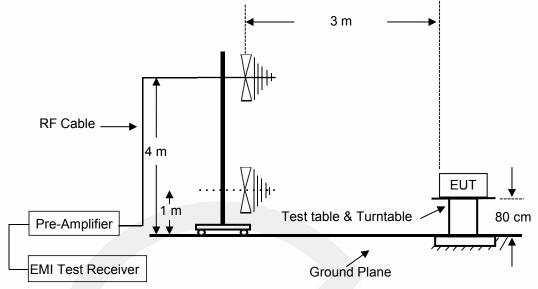
Comment: Factor build in receiver.

Operator: XIA



5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup



5.2. Radiated Limit

FCC Part 15, Subpart B, Class B

	Freque	ncy	Distance	Field Strengths Limit			
	MHz	Z	Meters	μV/m	dB(µV)/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.

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Test results were obtained from the following equation: Emission level (dBµV/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.

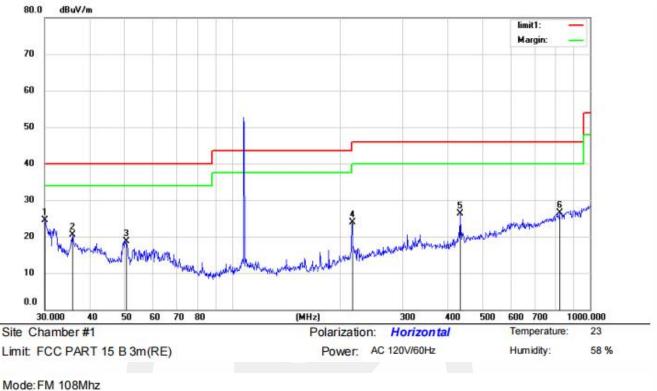
The worst test data are attach on following pages.



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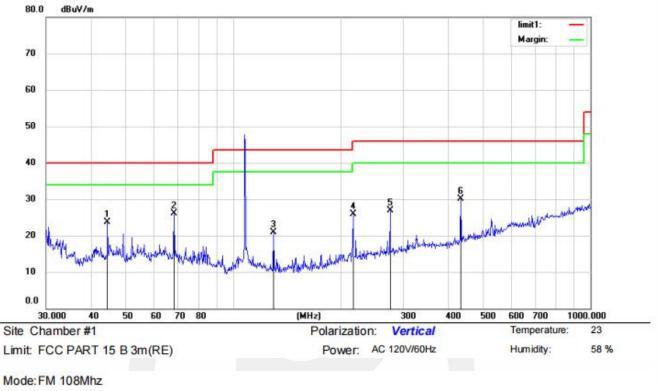
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	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	1	824.5968	31.51	-4.96	26.55	46.00	-19.45	QP			

*:Maximum data x:Over limit l:over margin Operator: Ccyf

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Note:

Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
	44.5867	41.01	-17.31	23.70	40.00	-16.30	QP			
*	68.3906	43.45	-17.39	26.06	40.00	-13.94	QP			
	129.9225	40.40	-19.42	20.98	43.50	-22.52	QP			
	216.7828	41.27	-15.45	25.82	46.00	-20.18	QP			
	275.1570	40.53	-13.71	26.82	46.00	-19.18	QP			
	434.0650	41.39	- <mark>11.1</mark> 9	30.20	46.00	-15.80	QP			
	*	MHz 44.5867 * 68.3906	Mk. Freq. Level MHz dBuV 44.5867 41.01 * 68.3906 43.45 129.9225 40.40 216.7828 41.27 275.1570 40.53	Mk. Freq. Level Factor MHz dBuV dB 44.5867 41.01 -17.31 * 68.3906 43.45 -17.39 129.9225 40.40 -19.42 216.7828 41.27 -15.45 275.1570 40.53 -13.71	Mk. Freq. Level Factor ment MHz dBuV dB dBuV/m 44.5867 41.01 -17.31 23.70 * 68.3906 43.45 -17.39 26.06 129.9225 40.40 -19.42 20.98 216.7828 41.27 -15.45 25.82 275.1570 40.53 -13.71 26.82	Mk. Freq. Level Factor ment Limit MHz dBuV dB dBuV/m dBuV/m 44.5867 41.01 -17.31 23.70 40.00 * 68.3906 43.45 -17.39 26.06 40.00 129.9225 40.40 -19.42 20.98 43.50 216.7828 41.27 -15.45 25.82 46.00 275.1570 40.53 -13.71 26.82 46.00	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB dBuV/m dB 44.5867 41.01 -17.31 23.70 40.00 -16.30 * 68.3906 43.45 -17.39 26.06 40.00 -13.94 129.9225 40.40 -19.42 20.98 43.50 -22.52 216.7828 41.27 -15.45 25.82 46.00 -20.18 275.1570 40.53 -13.71 26.82 46.00 -19.18	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dB dBuV/m dB Detector 44.5867 41.01 -17.31 23.70 40.00 -16.30 QP * 68.3906 43.45 -17.39 26.06 40.00 -13.94 QP 129.9225 40.40 -19.42 20.98 43.50 -22.52 QP 216.7828 41.27 -15.45 25.82 46.00 -20.18 QP 275.1570 40.53 -13.71 26.82 46.00 -19.18 QP	Mk. Freq. Level Factor ment Limit Over Height MHz dBuV dB dBuV/m dBuV/m dB Detector cm 44.5867 41.01 -17.31 23.70 40.00 -16.30 QP * 68.3906 43.45 -17.39 26.06 40.00 -13.94 QP 129.9225 40.40 -19.42 20.98 43.50 -22.52 QP 216.7828 41.27 -15.45 25.82 46.00 -20.18 QP 275.1570 40.53 -13.71 26.82 46.00 -19.18 QP	Mk. Freq. Level Factor ment Limit Over Height Degree MHz dBuV dB dBuV/m dBuV/m dB Detector cm degree 44.5867 41.01 -17.31 23.70 40.00 -16.30 QP - - * 68.3906 43.45 -17.39 26.06 40.00 -13.94 QP -

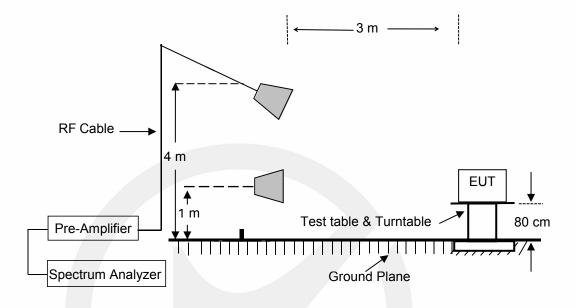
*:Maximum data x:Over limit l:over margin Operator: Ccyf

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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	Average limit	Peak limit		
GHz	dB(µV/m)	dB(µV/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

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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 $(dB\mu V/m)$ = Antenna Factor - Amp Factor +Cable Loss + Reading Margin (dB) = Emission Level $(dB\mu V/m)$ - Limit $(dB\mu V/m)$

6.4 Measuring Results

N/A.

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7. PHOTOGRAPHS

7.1. Photos of Conducted Emission Measurement





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7.2. Photos of Radiation Emission Measurement



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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.

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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 ***

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