

ETS Dr.GenZ Taiwan PS Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679

Accredited Testing Laboratory

A2LA Cert.No.: 2300.01

FCC

TEST - REPORT

FCC RULES PART 15 / SUBPART C § 15.249

FCC ID : H8GRHP7

Test report no.:

W6M20505-5930-P-15

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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

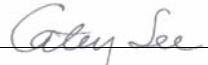
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

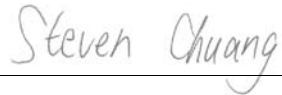
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Tester:

07.06.2005		Catey Lee	
Date	ETS-Lab.	Name	Signature

Technical responsibility for area of testing:

07.06.2005		Steven Chuang	
Date	ETS	Name	Signature

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1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)

Company
ETS Dr.Genx Taiwan PS Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory

A2LA-registration number: 2300.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679

1.3 Details of approval holder

Name:	A-FOUR TECH CO., LTD.
Street:	6F, No.108, Min-Chuan Rd., Hsin-Tien
Town:	Taipei
Country:	Taiwan, R.O.C.
Telephone:	+886-2-2218-4952
Fax:	+886-2-2218-9908

Contact	Kenny Kao
Telephone:	+886-2-2218-4952

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1.4 Application details

Date of receipt of application: 26.05.2005
Date of receipt of test item: 27.05.2005
Date of test: 28.05.2005 to 03.06.2005

1.5 General information of Test item

Type of test item : Wireless Headphone

Model Number : RHP-7

Serial number : without

Photos : see Annex

Technical data

Frequency band : 912.5, 913, 913.5 MHz

Operation Frequency : 913 MHz

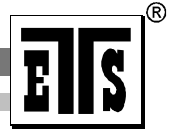
Frequency 1 : 913 MHz

Operation modes : Simplex

Modulation Type : FM Stereo

Antenna type : integral antenna

Power supply : 120 VAC (AC/DC Adapter)



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Manufacturer:
(if applicable)

Name : ./.
Street : ./.
Town : ./.
Country : ./.

Additional information : --

1.6 Test standards

Technical standard : FCC RULES PART 15 / SUBPART C § 15.249
FCC part 15 : July 2003

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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



or

The deviations as specified in 2.5 were ascertained in the course of the tests performed.



2.2 Test environment

Temperature	: 23 °C
Relative humidity content	: 20 ... 75 %
Air pressure	: 86 ... 103 kPa
Details of power supply	: 120 VAC (AC/DC Adapter)
Extreme conditions parameters	: Not required

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2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2005/11/8
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY				
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2006/11/8
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2006/11/3
ETSTW-CE 006	IMPULS-BEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2006/11/10
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	ABSORPTIONS-MESSWANDLER-ZANGE	2006/11/4
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2005/5/10
ETSTW-CE 010	Comb Generator-conducted			ETS	
ETSTW-CE 011	Power Line Conducted Emission Only			ETS	
ETSTW-CE 012	Dual-Phase-V-Network	NNB-2/16Z	03/10201	Telemeter	2006/4/11
ETSTW-CS 001	SIGNAL GENERATOR	SMX	849254/003	R&S	2005/10/31
ETSTW-CS 002	COUPLING AND DECOUPLING NETWORK	CDN S751	19263	CHAFFNER	2006/11/3
ETSTW-CS 003	COUPLING AND DECOUPLING NETWORK	CDN T400	19820	CHAFFNER	2006/11/3
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	CHAFFNER	2006/11/3
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	2005/11/3
ETSTW-CS 006	Terminal 50Ω Load	50T-116 M		JFW	
ETSTW-CS 007	Terminal 50Ω Load	50T-116 F		JFW	
ETSTW-CS 008	6 dB Attenuator	HFP-5100-3/06 N M/F	2010876106		
ETSTW-RE 001	Controller	CD 1000	C01000/154/867 /004/L	Heinrich Deisel	
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2005/11/3
ETSTW-RE 003	EMI TEST RECEIVER	ESI	831438/001	R&S	2005/11/16
ETSTW-RE 004	EMI TEST RECEIVER	ESI	831459/012	R&S	2005/11/9
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2005/11/1
ETSTW-RE 008	Controller	HD100	C0100-L/047/ 6670703/L	Heinrich Deisel	
ETSTW-RE 009	Controller	HD100	100/341	Heinrich Deisel	
ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0036	397	K&L	
ETSTW-RE 014	DUAL TRACKING WITH 5V FIXED	GPC-3030D		GW	

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ETSTW-RE 015	ANTENNA	HK116	841489/003	R&S	
ETSTW-RE 016	ANTENNA	HL223	848953/006	R&S	
ETSTW-RE 017	ANTENNA	HL025	352886/001	R&S	
ETSTW-RE 018	ANTENNA	AT4560	27212	AR	2006/11/7
ETSTW-RE 019	ANTENNA , HORN	22240-25	121074	FM	
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2005/11/10
ETSTW-RE 022	AMPLIFIER	8447D	2944A09837	Agilent	2005/11/1
ETSTW-RE 023	Shielded room	SR 1		Frankonia	
ETSTW-RE 024	Anechoic Chamber	CHC 1		Frankonia	
ETSTW-RE 025	Anechoic Chamber	CHC 2		Frankonia	
ETSTW-RE 026	Open Area Test Site	10m		ETS	
ETSTW-RE 027	Passive Loop Antenna	6512	34563	EMCO	2006/6/29
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	2006/6/14
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2006/6/16
ETSTW-RE 030	Double-Ridged Waveguide Horn Antenna	3117	35224	EMCO	2006/5/4
ETSTW-RE 031	Comb Generator-radiated			ETS	
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2005/11/17
ETSTW-RE 033	4CH 1GHz 5GS/s DSO	WAVERUNNER 6100A	LCRY0604P14508	LeCory	
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2005/11/17
ETSTW-RE 035	1.5GHz Active Voltage Probe	HFP1500	2332	LeCory	
ETSTW-RE 036	100MHz High Voltage Diff Probe	ADP305	3305	LeCory	
ETSTW-RE 037	Log-Periodic DipoleArray Antenna	3148	00034546	EMCO	2006/11/17
ETSTW-RE 038	Log-Periodic DipoleArray Antenna	3148	00034547	EMCO	2006/11/17
ETSTW-RE 039	Biconical Antenna	3110B	41760	EMCO	2006/11/17
ETSTW-RE 040	Biconical Antenna	3110B	41761	EMCO	2006/11/17
ETSTW-RE 041	Anechoic Chamber	CHC 3		Frankonia	
ETSTW-RE 042	ANTENNA	HK116	100172	R&S	2007/1/13
ETSTW-RE 043	ANTENNA	HL223	100166	R&S	2006/4/15
ETSTW-RE 044	ANTENNA	HL050	100094	R&S	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2006/3/21
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	93	EMC-PARTNER	2005/11/17
ETSTW-EMS 001	Clamp BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	2005/11/1
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014		
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2005/11/1
ETSTW-EMS 004	ESD generator minizap	ESD2000	016	EMC-PARTNER	2005/11/1

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ETSTW-EMS 005	Attenuator (50Ω)	VERI50	051	EMC-PARTNER	2006/8/30
ETSTW-EMS 006	Attenuator (1 KΩ)	VERI1K	019	EMC-PARTNER	2006/10/20
ETSTW-EMS 007	20GΩ Divider	ESD-VERI-V	021	EMC-PARTNER	2006/3/16
ETSTW-RS 001	14" COLOR VIDEO MONITOR	TP-1480HR	P009799	TOPICA	
ETSTW-RS 002	14" COLOR VIDEO MONITOR	TP-1480HR	P009814	TOPICA	
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	2005/11/18
ETSTW-RS 005	Electric Field Probe Type 8.3	EMR-20	BN 2244/20	GW	2005/9/3
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2005/11/15
ETSTW-RS 007	AUDIO ANALYZER	UPA3	843458/029	R&S	2005/11/15
ETSTW-EMS 008	Safety Test Solutions	ELT-400	E-0039	Narda	2006/1/4
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	2006/12/2
ETSTW-GSM 01	SIM Simulator	IT3	B2004-50106	ORGA Testsystems GmBh	
ETSTW-GSM 02	Universal Radio Communication Tester	CMU 200	103489	R&S	
ETSTW-GSM 03	Agilent 8960 Test Set 1	E5515C	GB44052675	Agilent	2006/7/14
ETSTW-GSM 04	Agilent 8960 Test Set 2	E5515C	GB44052665	Agilent	2006/7/14
ETSTW-GSM 05	Agilent 8960 Test Set 3	E5515C	GB44052852	Agilent	2006/7/17
ETSTW-GSM 06	Agilent 8960 Test Set 4	E5515C	GB44052984	Agilent	2006/7/16
ETSTW-GSM 07	Agilent 8960 Test Set 5	E5515C	GB44052658	Agilent	2006/7/14
ETSTW-GSM 08	Agilent 8960 Test Set 6	E5515C	GB44052666	Agilent	2006/7/16
ETSTW-GSM 09	Controler PC	Dell GX 270	700F61J	Dell	
ETSTW-GSM 10	Combiner Wessex / Anite	B4605/100	053	Wessex / Anite	07.06
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G		Rohde & Schwarz	11.05
ETSTW-GSM 12	Acoustical Calibrator	4231	2463874	Brüel&Kjær	
ETSTW-GSM 13	Conditioning Amplifier	2690--0S2	2437856	Brüel&Kjær	
ETSTW-GSM 14	Telephone Test Head	4602B	2465324	Brüel&Kjær	2005/11/17
ETSTW-GSM 15	Mouth Simulator	4227	2462516	Brüel&Kjær	
ETSTW-GSM 16	TEMP.&HUMIDITY CHAMBER	GTH-120-40-1P-U	MAA0501002	GIANT FORCE	12/290/2005
ETSTW-GSM 17	ANTENNA COPLER	CMU-Z10	100988	R&S	

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2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2000 using a 50 μ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2000 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 23°C with a humidity of 40 %.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB μ V) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF + CABLE LOSS (to the receiver) = FS
33	20 dB μ V + 10.36 dB + 6 dB = 36.36 dB μ V/m @3m

ANSI STANDARD C63.4-2000 10.1.7 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table). The UUT was placed in the center of the table. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

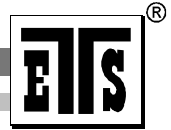
Peak readings were taken in three (3) orthogonal planes and the highest readings.

Measurements were made by ETS Dr. Genx GmbH at the registered open field test site located at No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.)
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When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

ANTENNA & GROUND:

This unit uses integral antenna (see photo).



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3 Test results (enclosure)

TEST CASE	Required	Test passed	Test failed
Peak Output Power 15.249 (b)	☒	☒	☐
Spurious Emissions radiated – Transmitter operating 15.249 (e)	☒	☒	☐
Spurious Emissions conducted – Transmitter operating 15.249 (e)	☐	☐	☐
Radiated Emission FCC part 15.109	☒	☒	☐
Out of Band Spurious Emission, Bandedge-Transmitter operating	☐	☐	☐
Power Line Conducted Emission 15.207	☒	☒	☐

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3.1 Peak Output Power (transmitter)

FCC Rule: 15.249 (b)

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).

Test conditions Frequency 2		Transmitter field strength of fundamental	Transmitter field strength of harmonics
		[dB μ V/m]	
T _{nom} = 23 °C	V _{nom} = 120 V	83.08	--
Measurement uncertainty		< 3 dB	

Test equipment used: ETSTW-RE 003, ETSTW-RE 012, ETSTW-RE 017, ETSTW-RE 024

Remarks: The diagrams for the field strength measurements are included in appendix.

3.2 Equivalent isotropic radiated power

Because using an permanent antenna there are no deviations from the radiated test results according 3.1.

3.2.1 Transmitter

Integral Antenna:

At the transmitter the measurement was transacted with the modulation declared by the manufacturer and the maximum available output power of the EUT.

In this arrangement the EUT fulfils the requirements of the FCC rules § 15.249, subpart C, This unit uses permanent antenna. There is no provision for an external antenna (see photo).

3.3 RF Exposure Compliance Requirements

Not applicable for this wireless headphone for the low power level.

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3.4 Out of Band Radiated Emissions

FCC Rule: 15.49 (d)(e), 15.35(b)

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in section 15.209, whichever is the lesser attenuation.

For frequency above 1000 MHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

Limits:

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolts/meter)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.5
Above 960	500	54.0

For frequencies above 1 GHz (Peak measurements).

Limit + 20 dB

$$54.0 \text{ dB}\mu\text{V/m} + 20 \text{ dB} = 74 \text{ dB}\mu\text{V/m}$$

Or

Must be attenuated at least 50dB below the level of fundament

Test equipment used: ETSTW-RE 003 , ETSTW-RE 012 , ETSTW-RE 015 , ETSTW-RE 016 ,
ETSTW-RE 017 , ETSTW-RE 024

Remark: see attached diagram

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3.5 Spurious emission (tx)

Spurious emission was measured with modulation (declared by manufacturer).

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in section 15.209, whichever is the lesser attenuation.

For frequencies above 1000 MHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

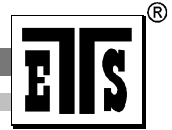
SAMPLE CALCULATION OF LIMIT. ALL results will be updated by an automatic measuring system in accordance with point 2.3.

The peak and average spurious emission plots was measured with the average limits.

The critical peak value listed in the table agree with the above calculated limits.

Summary table with radiated data of the test plots

Freq,	Used Ch,	Frequency Marker [MHz]	Polarization	corrections dB	Corrected Reading [dBuV/m]	Compliance Limit [dBuV/m]	Detector	BW [MHz]	Margin
1	2	36,813627	H		24,98	40	PK	0,1	15,02
1	2	36,813627	V		27,74	40	PK	0,1	12,26
1	2	80,080160	H		22,60	40	PK	0,1	17,40
1	2	80,080160	V		28,38	40	PK	0,1	11,62
1	2	89,959920	H		24,82	43,5	PK	0,1	18,68
1	2	89,959920	V		31,69	43,5	PK	0,1	11,81
2	2	200,000000	H		34,31	43,5	PK	0,1	9,19
2	2	200,000000	V		34,52	43,5	PK	0,1	8,98
2	2	284,969940	H		35,20	46	PK	0,1	10,80
2	2	284,969940	V		37,16	46	PK	0,1	8,84
2	2	499,799599	H		38,33	46	PK	0,1	7,67
2	2	499,799599	V		38,22	46	PK	0,1	7,78
3	2	1823,647295	H		43,90	54	PK	1	10,10
3	2	1823,647295	V		42,65	54	PK	1	11,35
3	2	2737,474950	H		47,08	54	PK	1	6,92
3	2	2737,474950	V		46,05	54	PK	1	7,95
4	2	7831,663327	H		52,22	54	PK	1	1,78
4	2	7831,663327	V		51,36	54	PK	1	2,64
5	2	11751,503006	H		52,04	54	PK	1	1,96
5	2	11751,503006	V		51,95	54	PK	1	2,05



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Freq. – Frequency Range:

1:	30	-	200 MHz
2:	200	-	1000 MHz
3:	1	-	4 GHz
4:	4	-	8 GHz
5:	8	-	12 GHz
6:	12	-	17 GHz
7:	17	-	26.5 GHz

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.

Comment: see attached diagrams

Test equipment used: ETSTW-RE 003, ETSTW-RE 012, ETSTW-RE 015, ETSTW-RE 016,
ETSTW-RE 017, ETSTW-RE 024

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3.6 Test protocols for Receiver**Radio Noise Field Strength****Emission**Standard : FCC part 15BReg.-no. : W6M20505-5930-P-15BDevice : RHP-7Date : 07.06.2005Operator : *Cathy Lee*Class : B

Temperature : 24 °C
Pressure : 969 hPa
Rel. humidity: 60 %

Frequency Range Polarization	Limit $\mu\text{V/m}$	Passed	Failed	Number of rechecks
30 MHz – 88 MHz	100	☒	☐	0
88 MHz – 216 MHz	150	☒	☐	0
216 MHz – 960 MHz	200	☒	☐	0
Above 960 MHz	500	☒	☐	0

Comment: See attached diagrams – RX.

Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

Standard : FCC part 15B

Reg.-no. : W6M20505-5930-P-15B

Device : RHP-7

Date : 07.06.2005

Operator : *Cathy Lee*

Class : B

Temperature : 24 °C
Pressure : 969 hPa
Rel. humidity: 60 %

Freq,	Used Ch,	Frequency Marker [MHz]	Polarization	corrections dB	Corrected Reading [dBuV/m]	Compliance Limit [dBuV/m]	Detector	BW [MHz]	Margin
1	2	63,727455	H		19,85	40	PK	0,1	20,15
1	2	63,727455	V		17,98	40	PK	0,1	22,02
1	2	124,709419	H		24,11	43,5	PK	0,1	19,39
1	2	124,709419	V		21,38	43,5	PK	0,1	22,12
2	2	863,727455	H		38,33	46	PK	0,1	7,67
2	2	863,727455	V		41,63	46	PK	0,1	4,37
2	2	1727,454910	H		46,51	54	PK	1	7,49
2	2	1727,454910	V		52,85	54	PK	1	1,15
2	2	2587,174349	H		45,00	54	PK	1	9,00
2	2	2587,174349	V		46,16	54	PK	1	7,84
3	2	5178,356713	H		49,17	54	PK	1	4,83
3	2	5178,356713	V		46,87	54	PK	1	7,13
3	2	6044,088176	H		51,66	54	PK	1	2,34
3	2	6044,088176	V		51,24	54	PK	1	2,76
4	2	6909,819639	H		48,39	54	PK	1	5,61
4	2	6909,819639	V		46,03	54	PK	1	7,97
5	2	10733,466934	H		49,57	54	PK	1	4,43
5	2	10733,466934	V		49,10	54	PK	1	4,90

Registration number: W6M20505-5930-P-15
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3.7 Radiated Emission on the bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band and they are at least 50 dB below the carrier level at band edge (902 and 928 MHz). It meets the requirement of section 15.249(d).

Test conditions T _{nom} = 23°C, V _{nom} = 120V Frequency [MHz]	Transmitter field strength of Radiated Emission (Peak Detector)	Transmitter field strength of Radiated Emission (Average Detector)
	[dB μ V/m]	
--	--	--
--	--	--

Limit:

Frequency Range (MHz)	Limit (dB μ V/m)	
	Peak	Average
902 – 928 2400 – 2483,5 5725 – 5875 24000 - 24250	74	54

Test equipment used: ETSTW-RE 003, ETSTW-RE 012, ETSTW-RE 017, ETSTW-RE 024

Remark: This test is not required

3.8 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

Frequency	Level (dBμV)	
	quasi-peak	average
150 kHz	lower limit line	Lower limit line

Measurement Result: “_ Fin AV”

Frequency Marker [MHz]	Type	Corrected Reading [dBuV]	Compliance AVLimit [dBuV]	BW [MHz]	Margin(AV)
0,175	N	33,21	55	0,01	21,79
0,755	N	26,8	46	0,01	19,2
24,575	N	11,08	50	0,01	38,92
0,465	N	30,2	47	0,01	16,8

Frequency Marker [MHz]	Type	Corrected Reading [dBuV]	Compliance AVLimit [dBuV]	BW [MHz]	Margin(AV)
0,175	L1	33,46	55	0,01	21,54
0,755	L1	33,43	46	0,01	12,57
24,575	L1	6,16	50	0,01	43,84
0,465	L1	35,5	47	0,01	11,5

Registration number: W6M20505-5930-P-15

FCC ID: H8GRHP7

Measurement Result: “_ Fin QP”

Frequency Marker [MHz]	Type	Corrected Reading [dBuV]	Compliance QPLimit [dBuV]	BW [MHz]	Margin(QP)
0,175	N	50,93	65	0,01	14,07
0,755	N	42,2	56	0,01	13,8
24,575	N	26,25	60	0,01	33,75
0,465	N	42,1	57	0,01	14,9

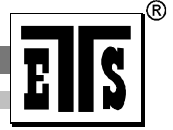
Frequency Marker [MHz]	Type	Corrected Reading [dBuV]	Compliance QPLimit [dBuV]	BW [MHz]	Margin(QP)
0,175	L1	48,8	65	0,01	16,2
0,755	L1	43,86	56	0,01	12,14
24,575	L1	22,26	60	0,01	37,74
0,465	L1	44,3	57	0,01	12,7

Limits:

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Test equipment used: ETSTW-CE 004, ETSTW-CE 001, ETSTW-RE 023

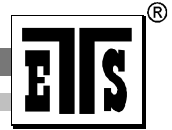
Comment: See attached diagrams



Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

Appendix

- A Fundamental Field Strength
- B Spurious Emissions radiated – Transmitter operating
- C Radiated Emission – Receiver operating
- D Power Line Conducted Emission
- E Pictures



Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

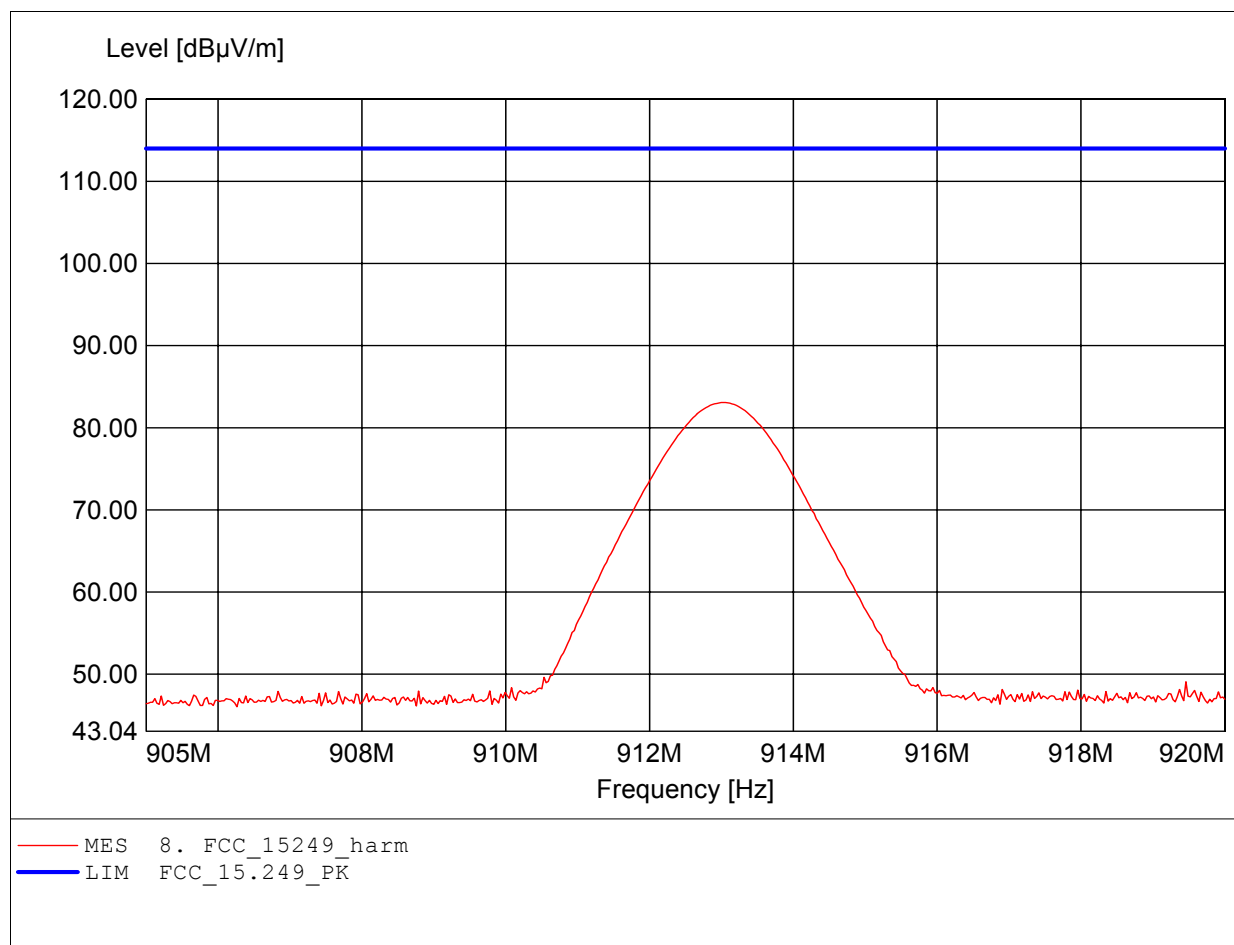
Appendix A

Fundamental Field Strength

Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

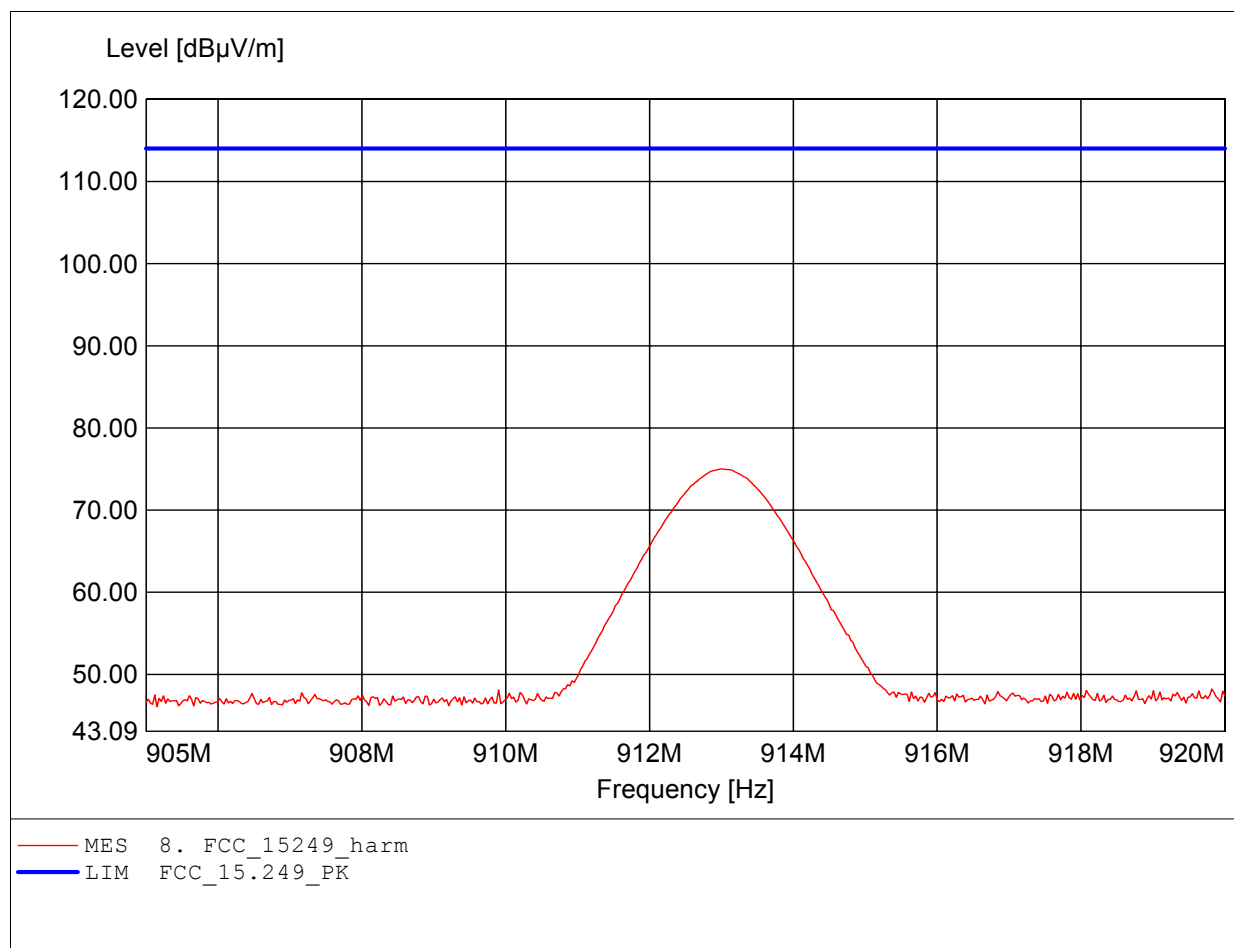
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 913.026MHz, Emax: 83.08dBμV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 912.996MHz, Emax: 75.02dBµV/m, RBW: 1MHz





Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

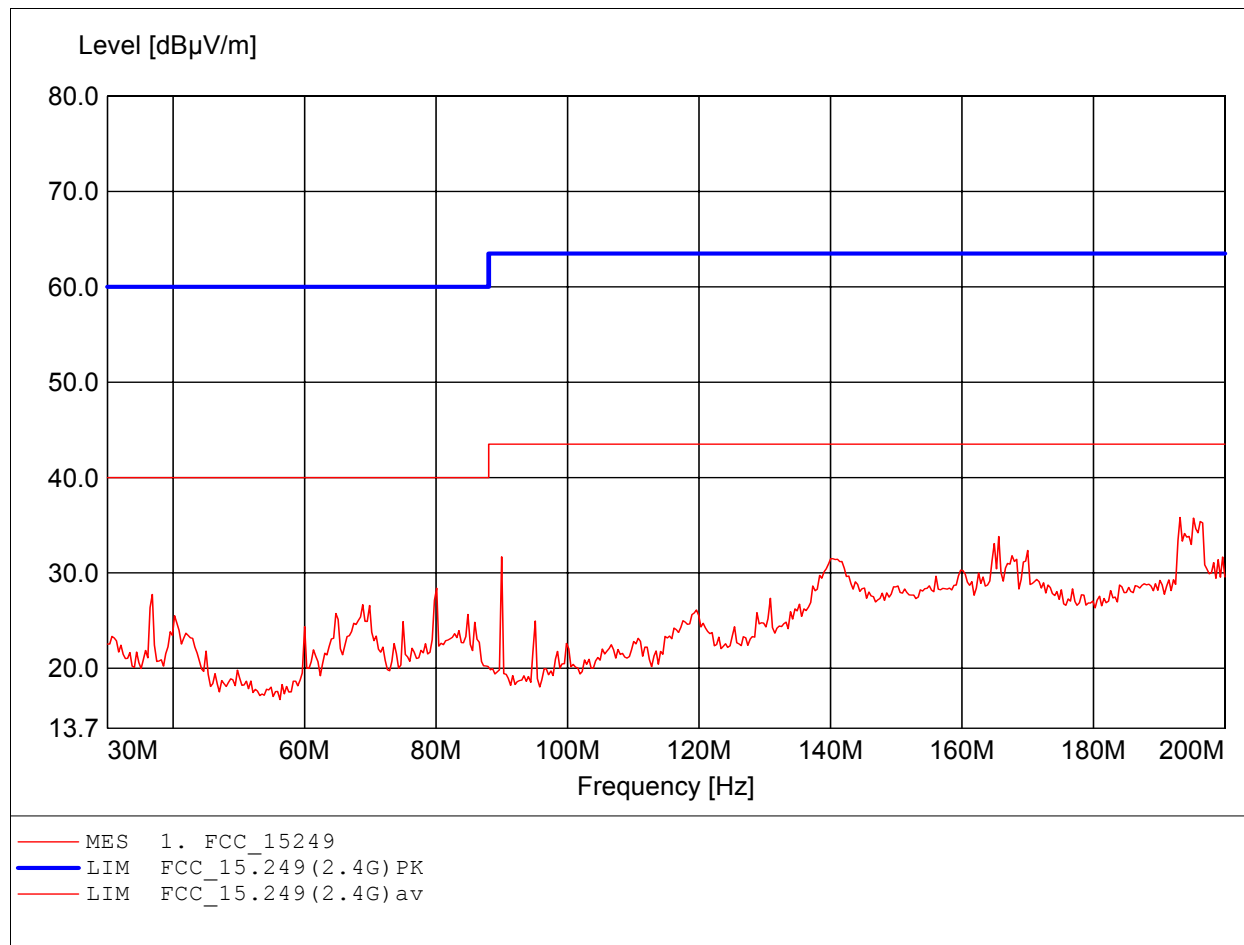
Appendix B

Spurious Emissions radiated – Transmitter operating

Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

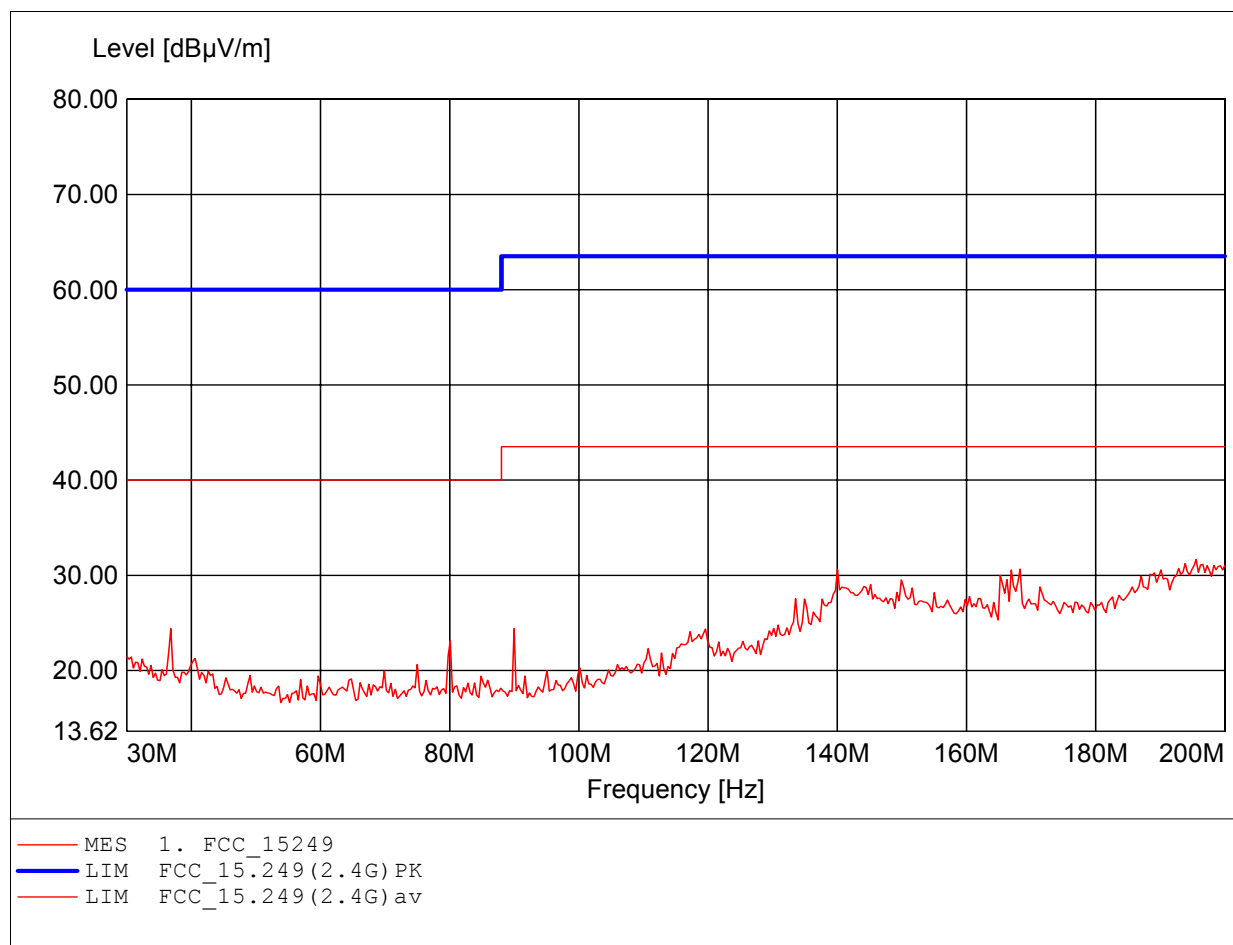
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 193.186MHz, Emax: 35.80dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

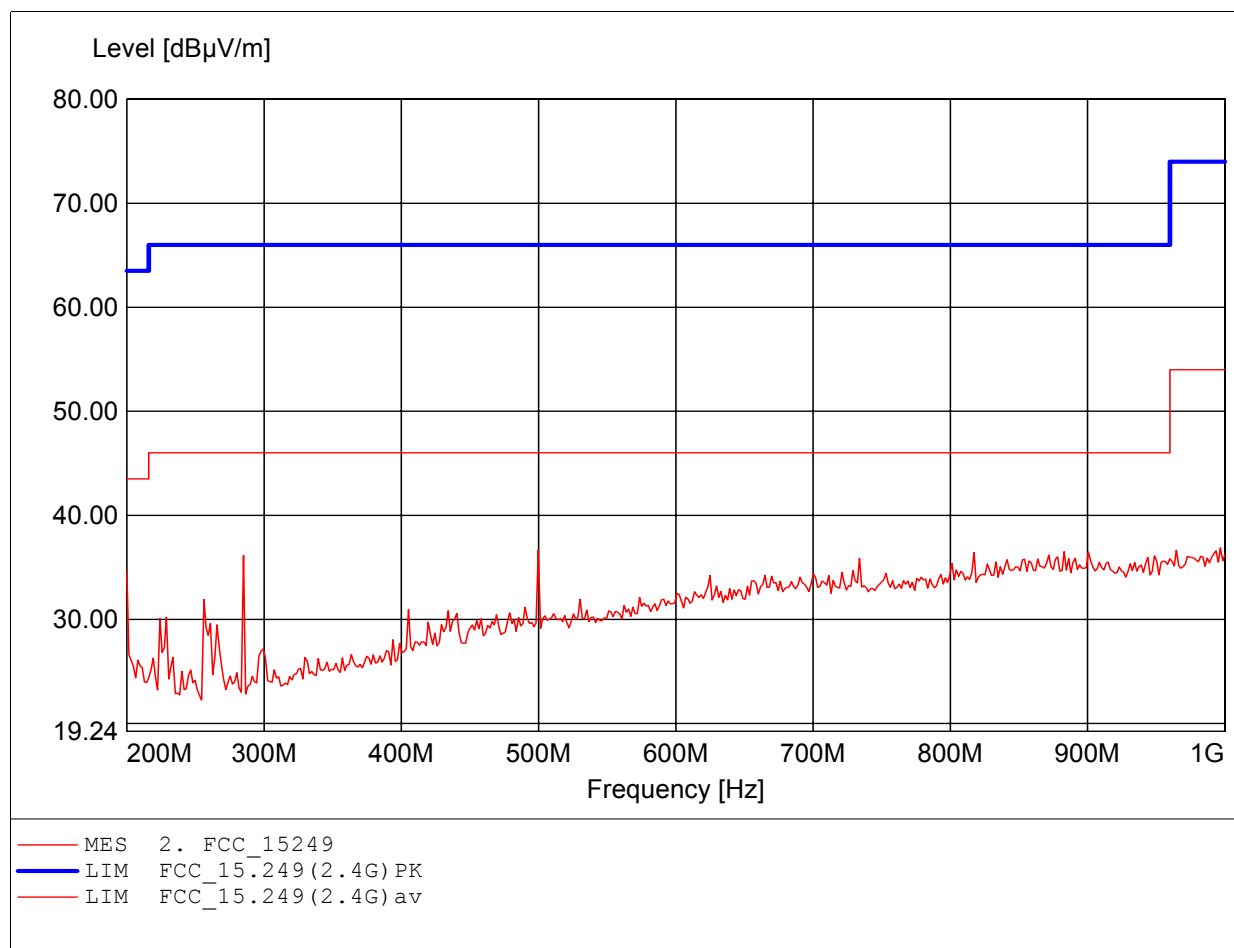
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 195.571MHz, Emax: 31.65dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

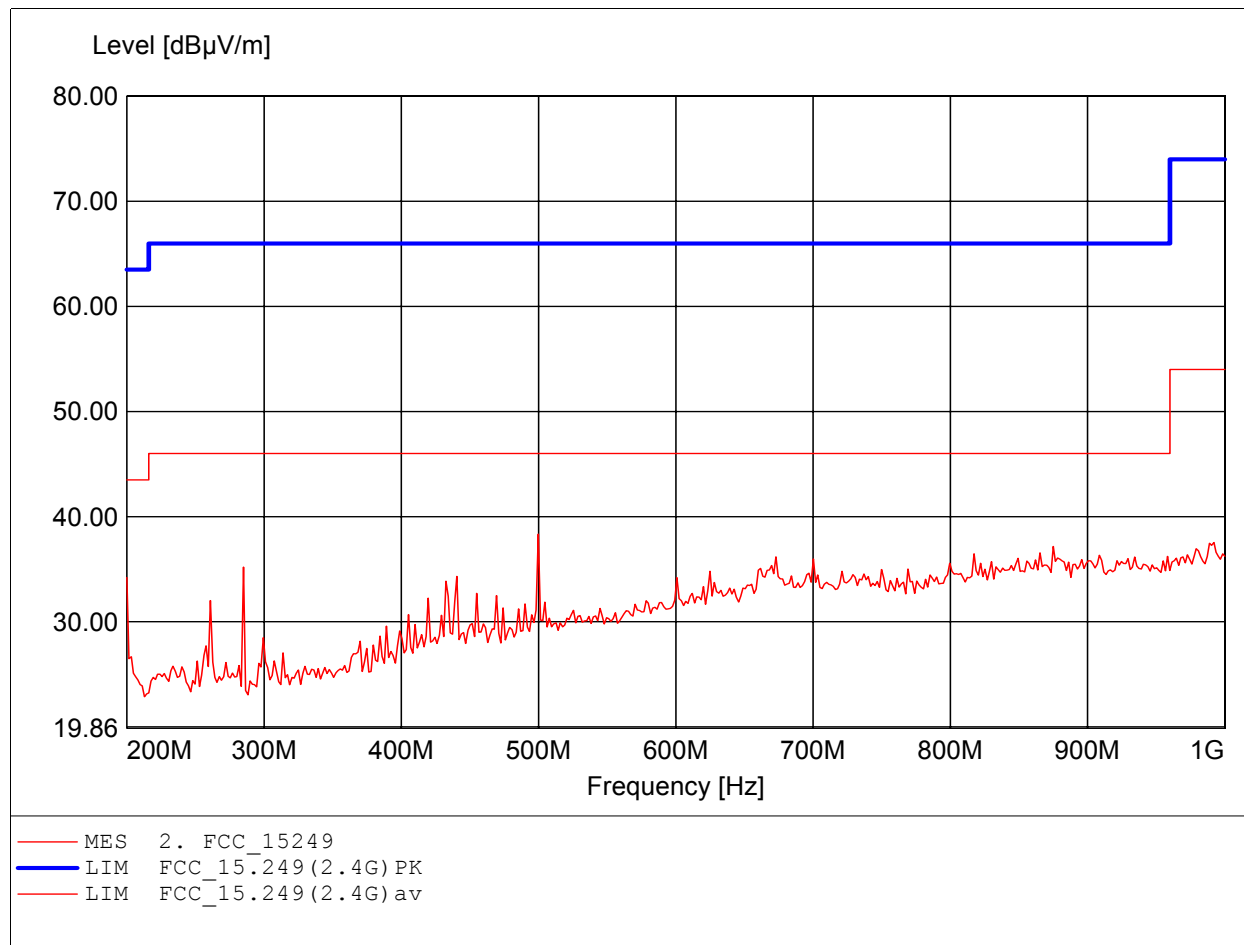
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 996.794MHz, Emax: 36.87dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

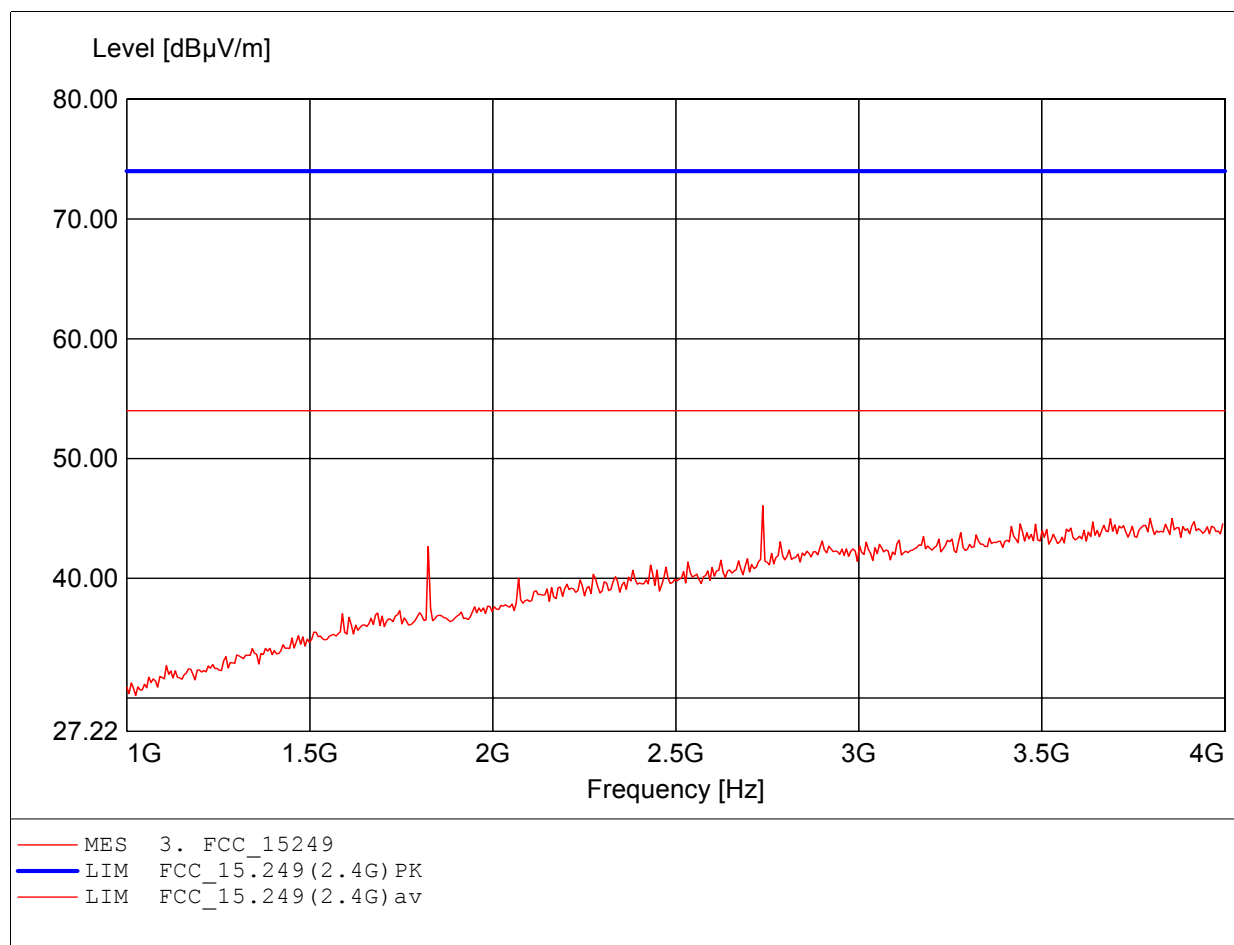
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 499.800MHz, Emax: 38.33dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

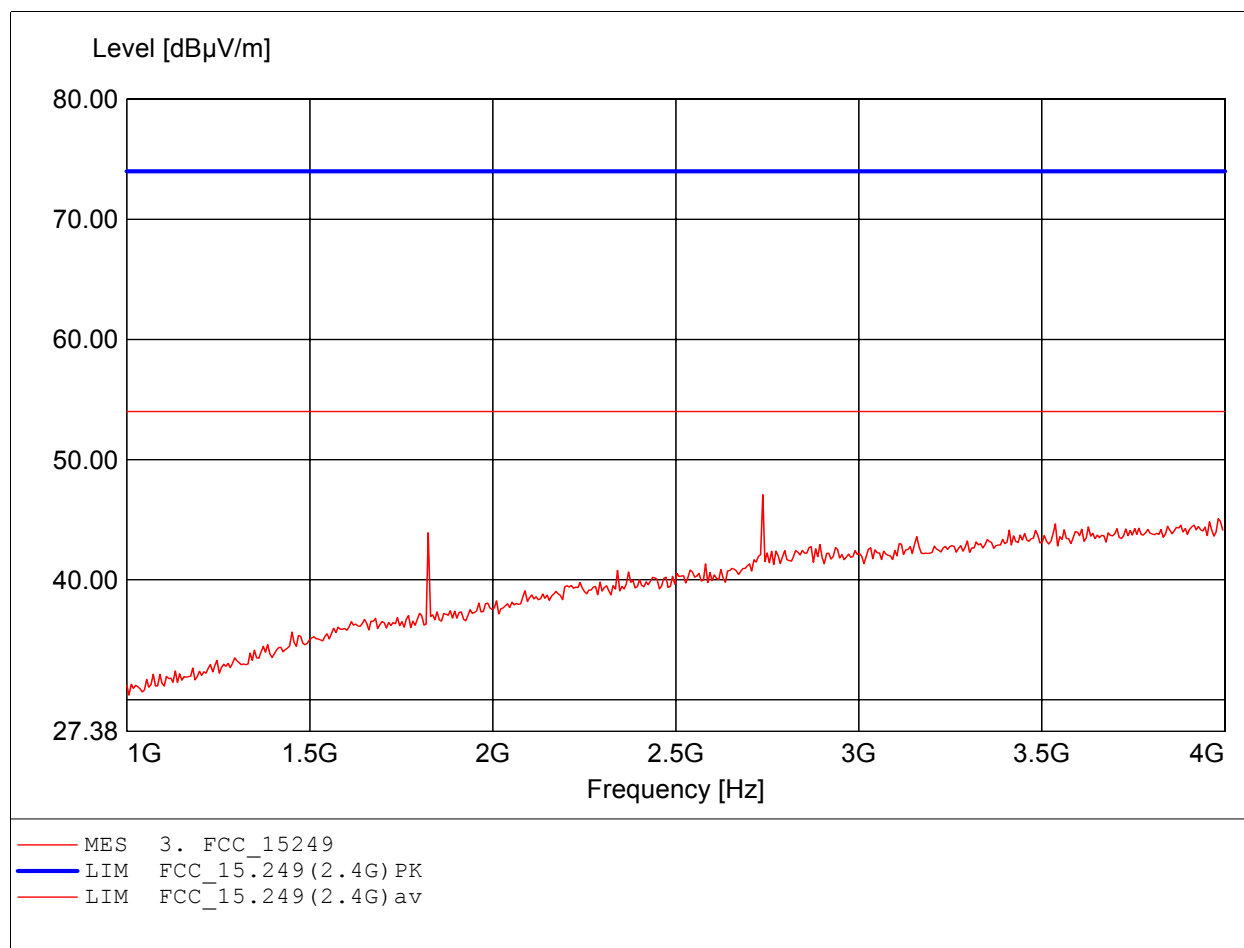
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.737GHz, Emax: 46.05dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

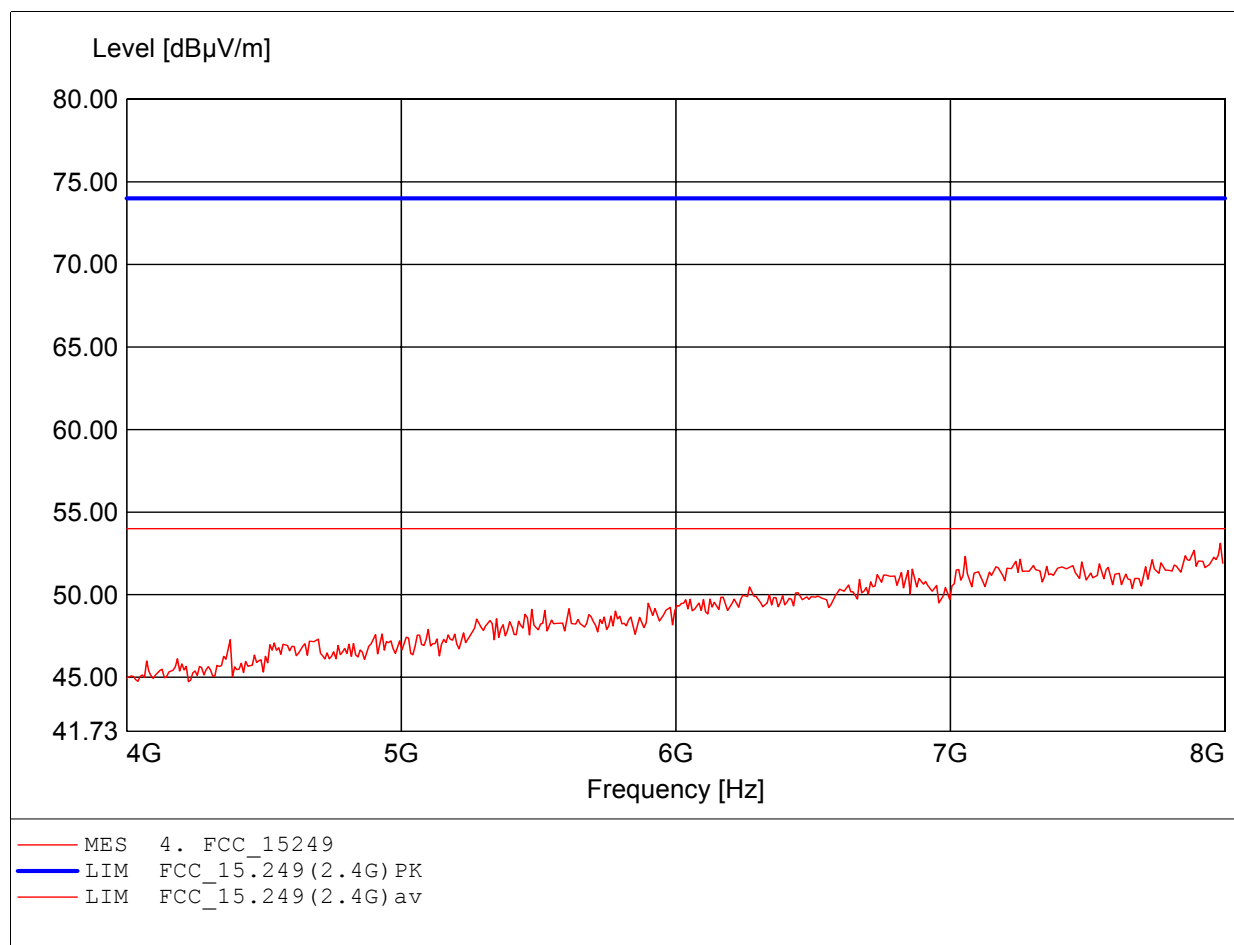
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.737GHz, Emax: 47.08dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

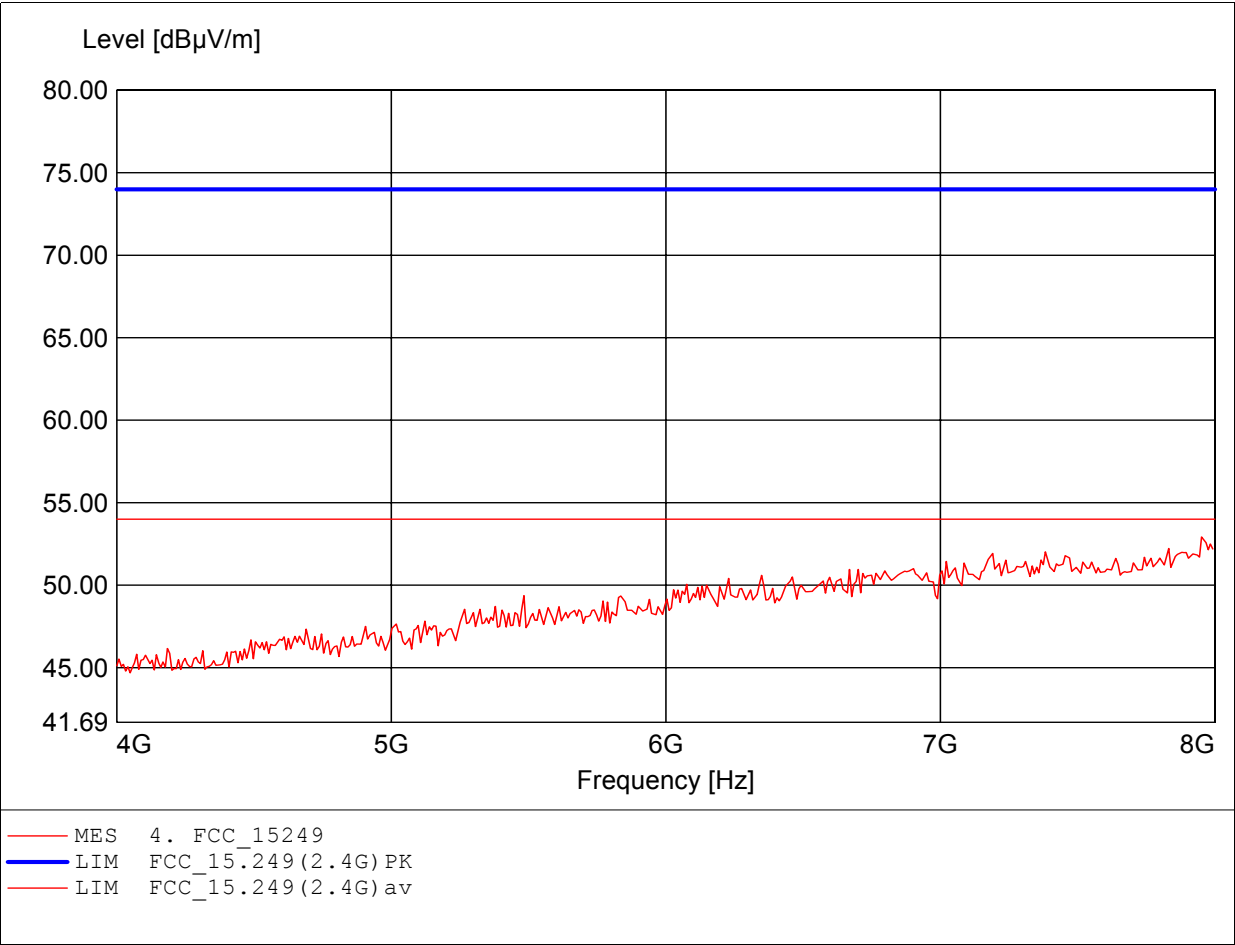
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.984GHz, Emax: 53.12dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

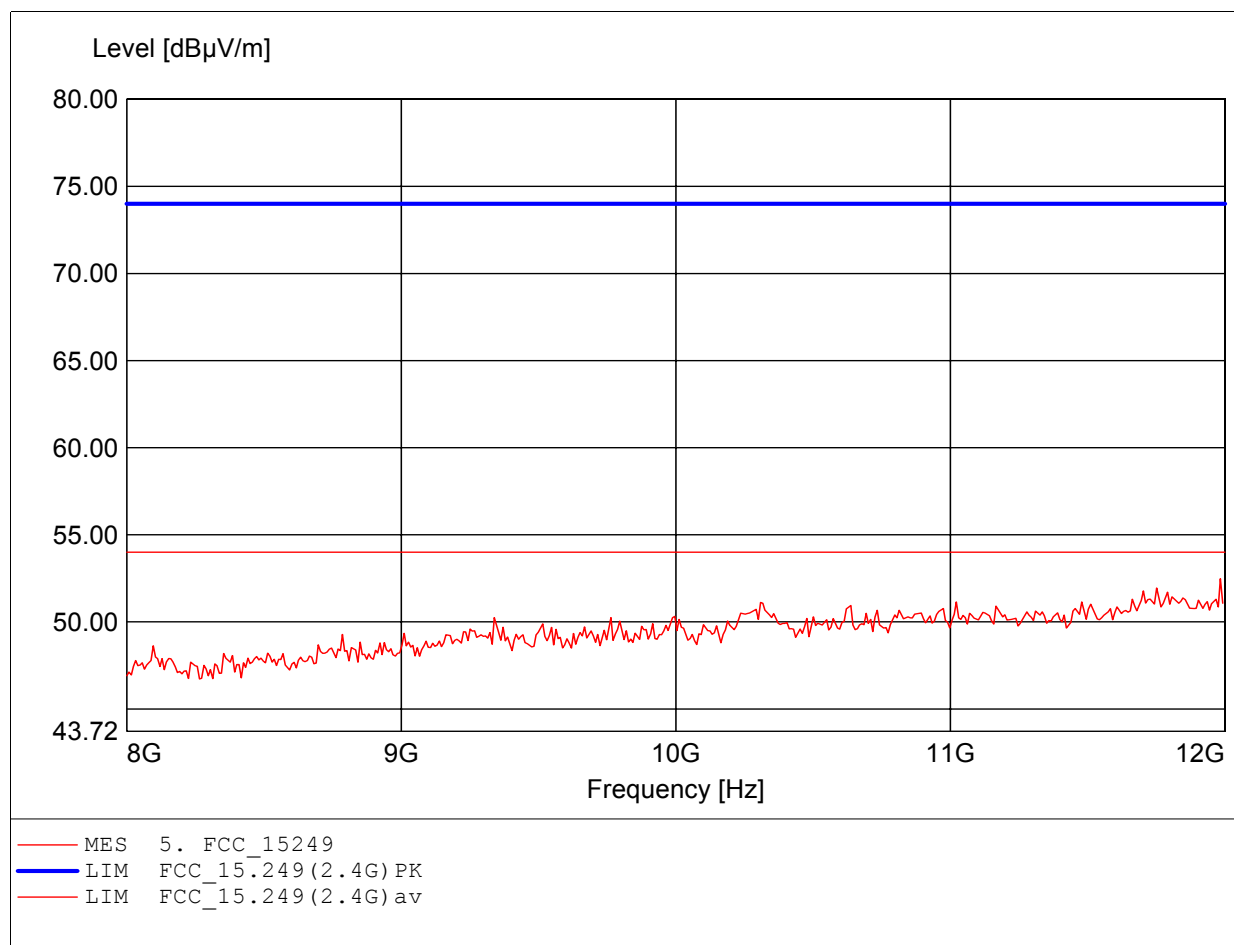
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.952GHz, Emax: 52.93dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

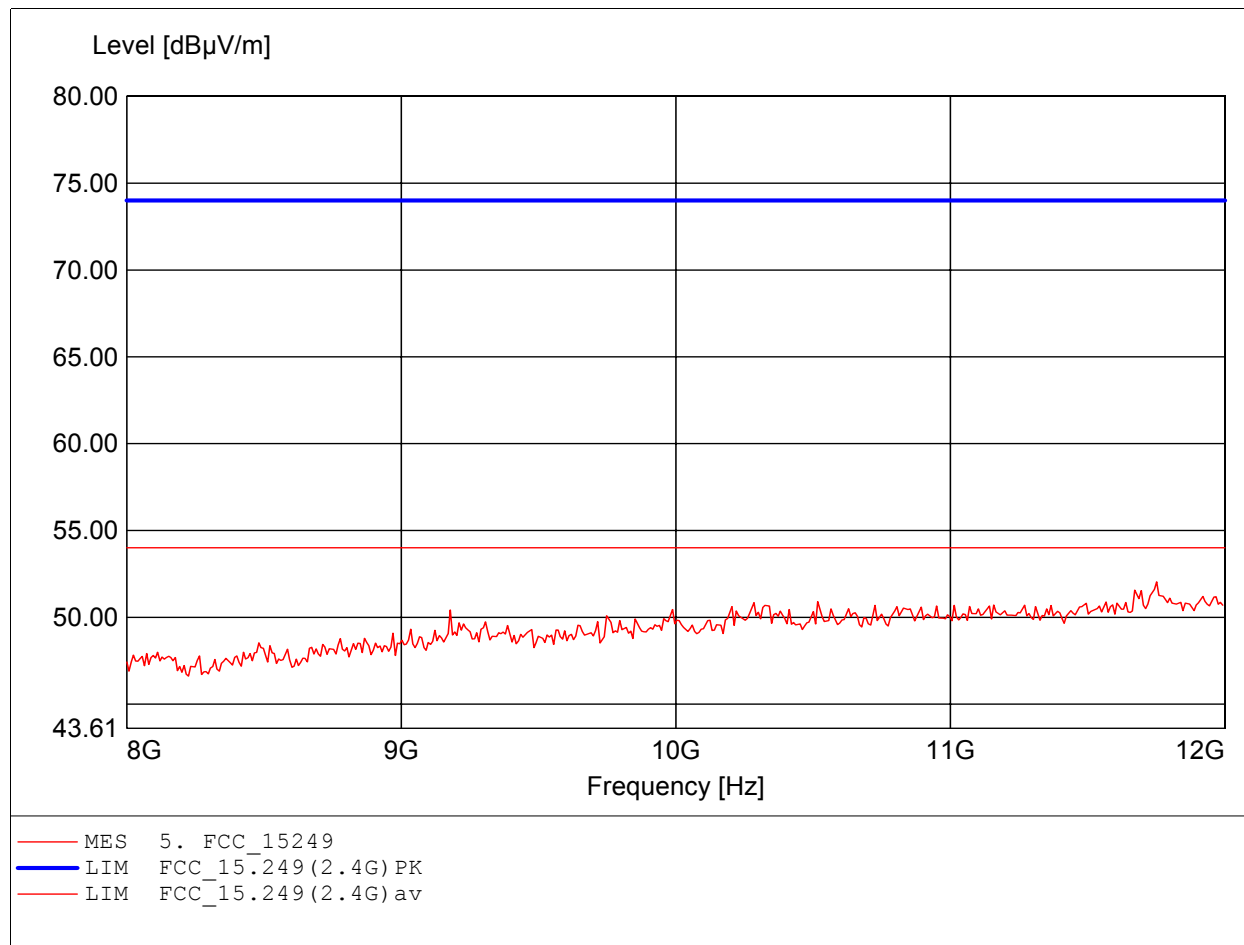
EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.984GHz, Emax: 52.48dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

EUT: Wireless Headphone
MODEL NO.: RHP-7 Middle channel
Approval Holder: A-Four TECH CO.,LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 120VAC (ac/dc adaptor)
Test Specification: according to §15.249, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.752GHz, Emax: 52.04dBμV/m, RBW: 1MHz





Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

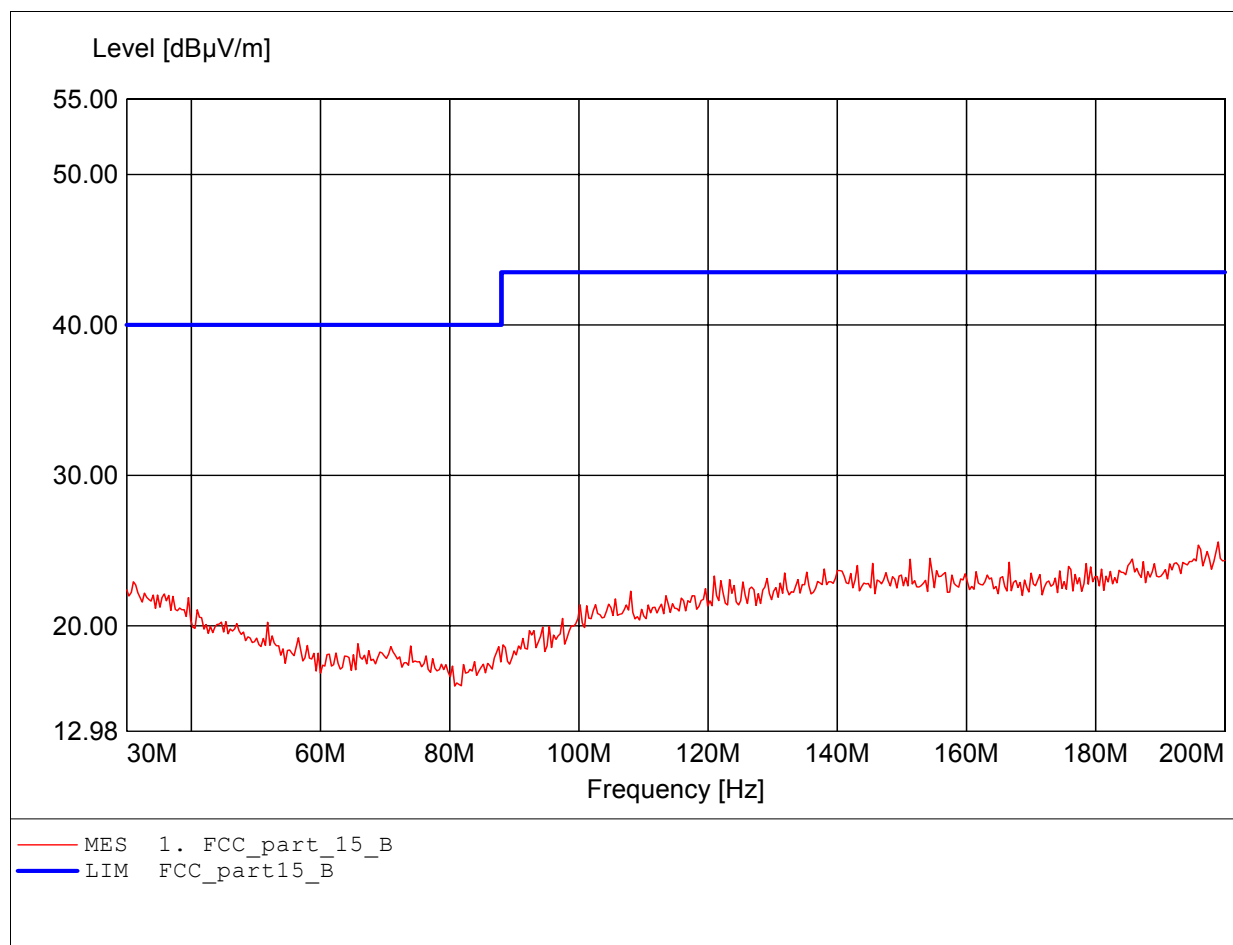
Appendix C

Radiated Emission – Receiver operating

Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

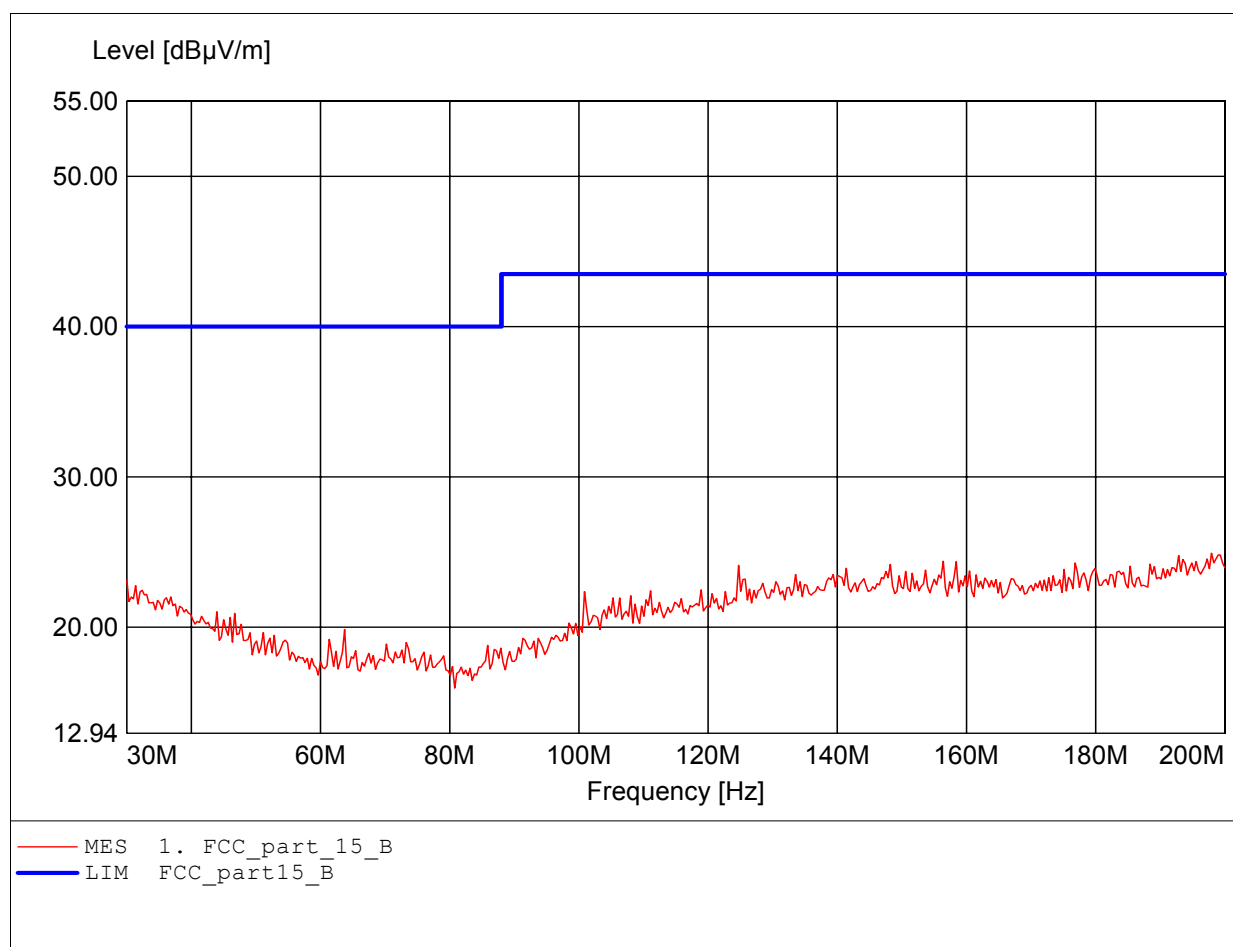
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HK 116
Freq:198.978MHz Emax:25.57dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

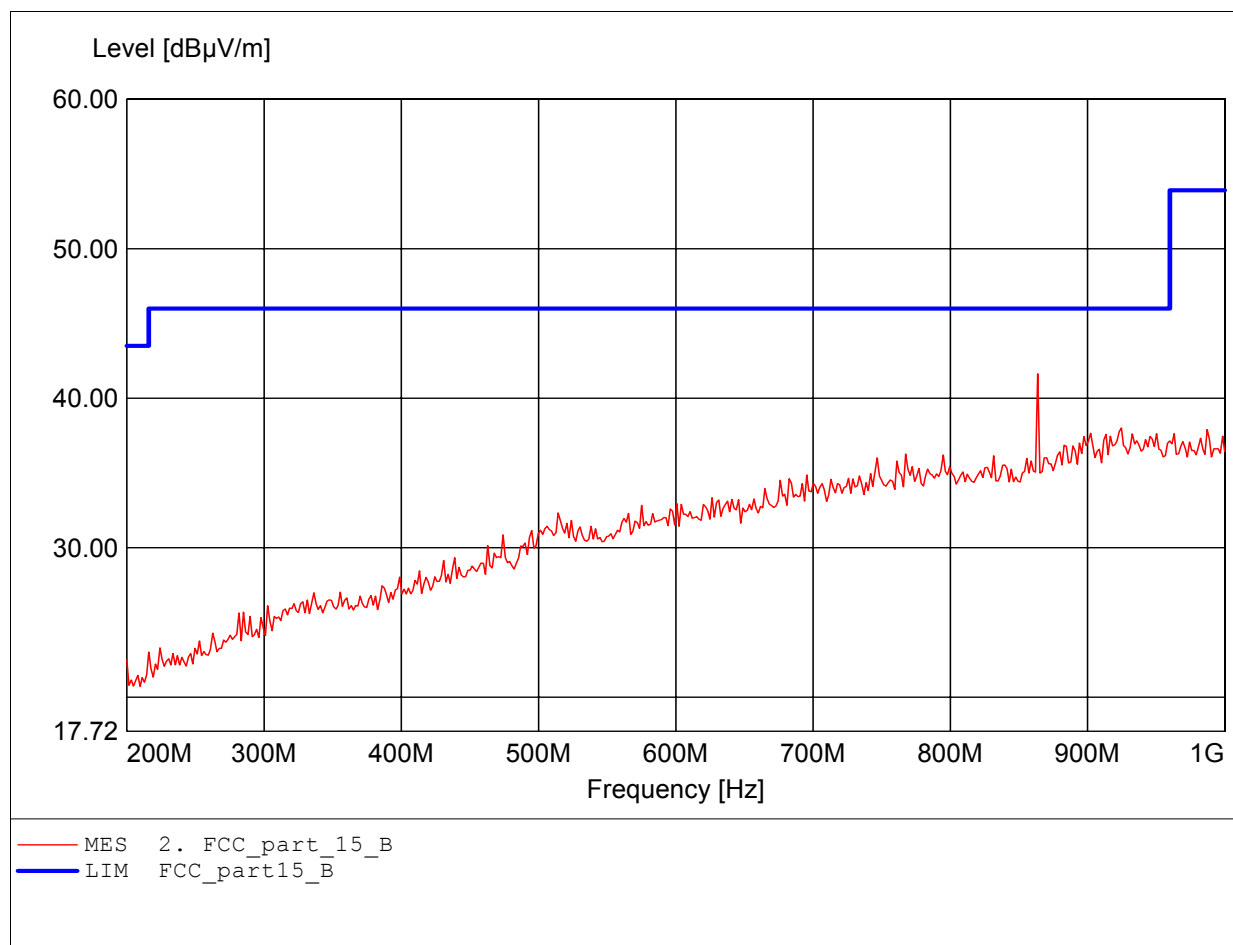
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HK 116
Freq:197.956MHz Emax:24.93dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

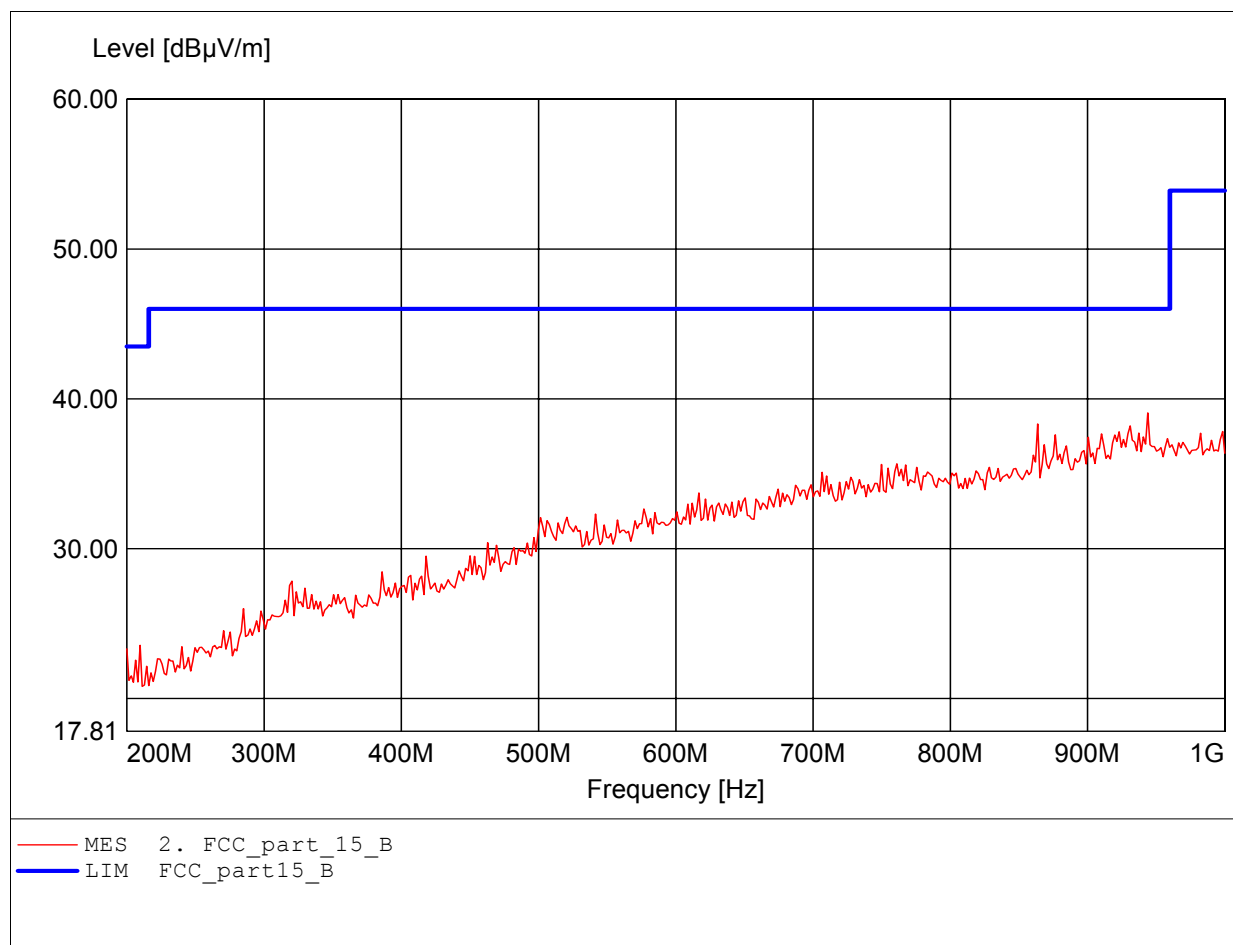
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL 223, ampl.
Freq: 863.727MHz Emax: 41.63dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

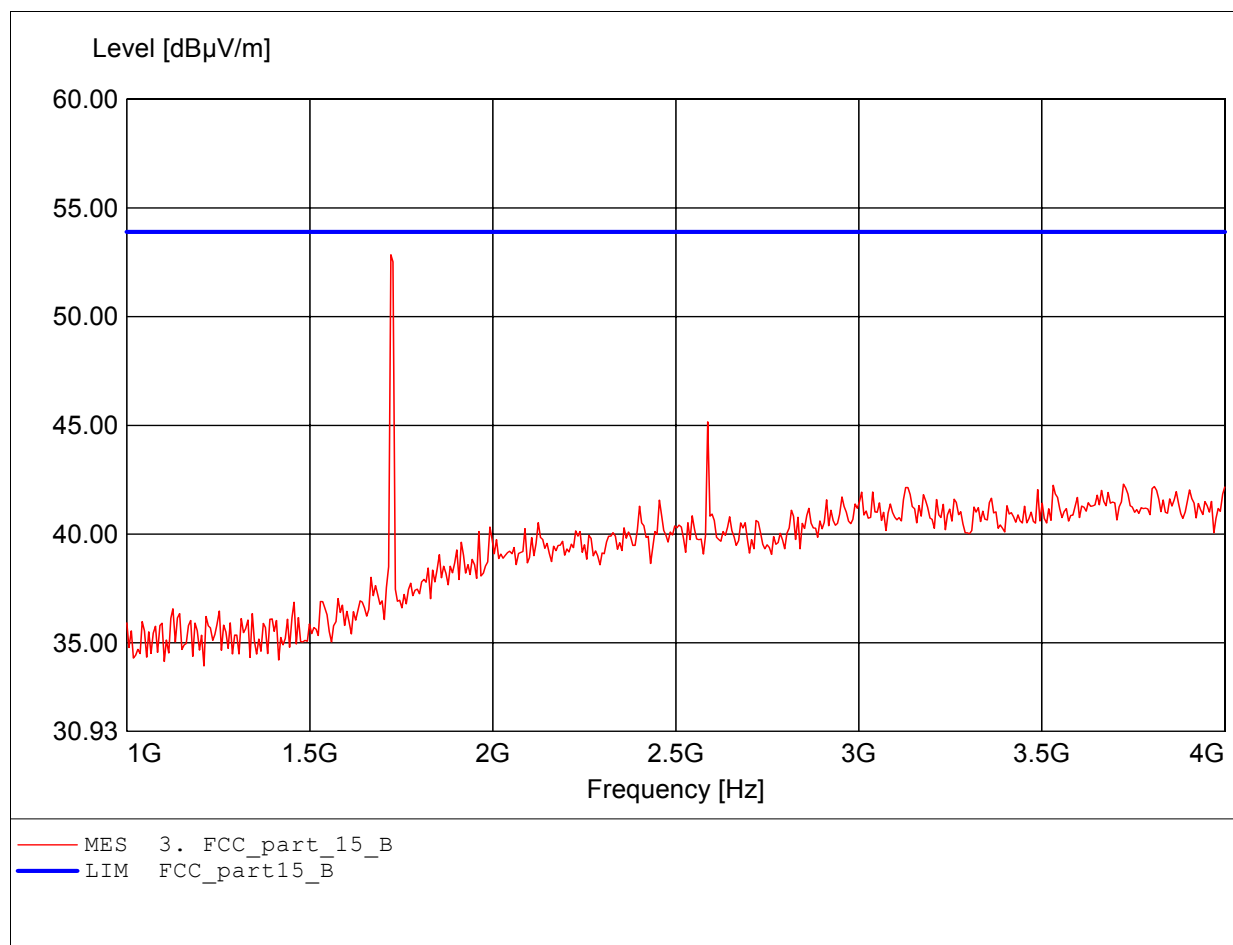
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL 223, ampl.
Freq: 943.888MHz Emax: 39.06dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

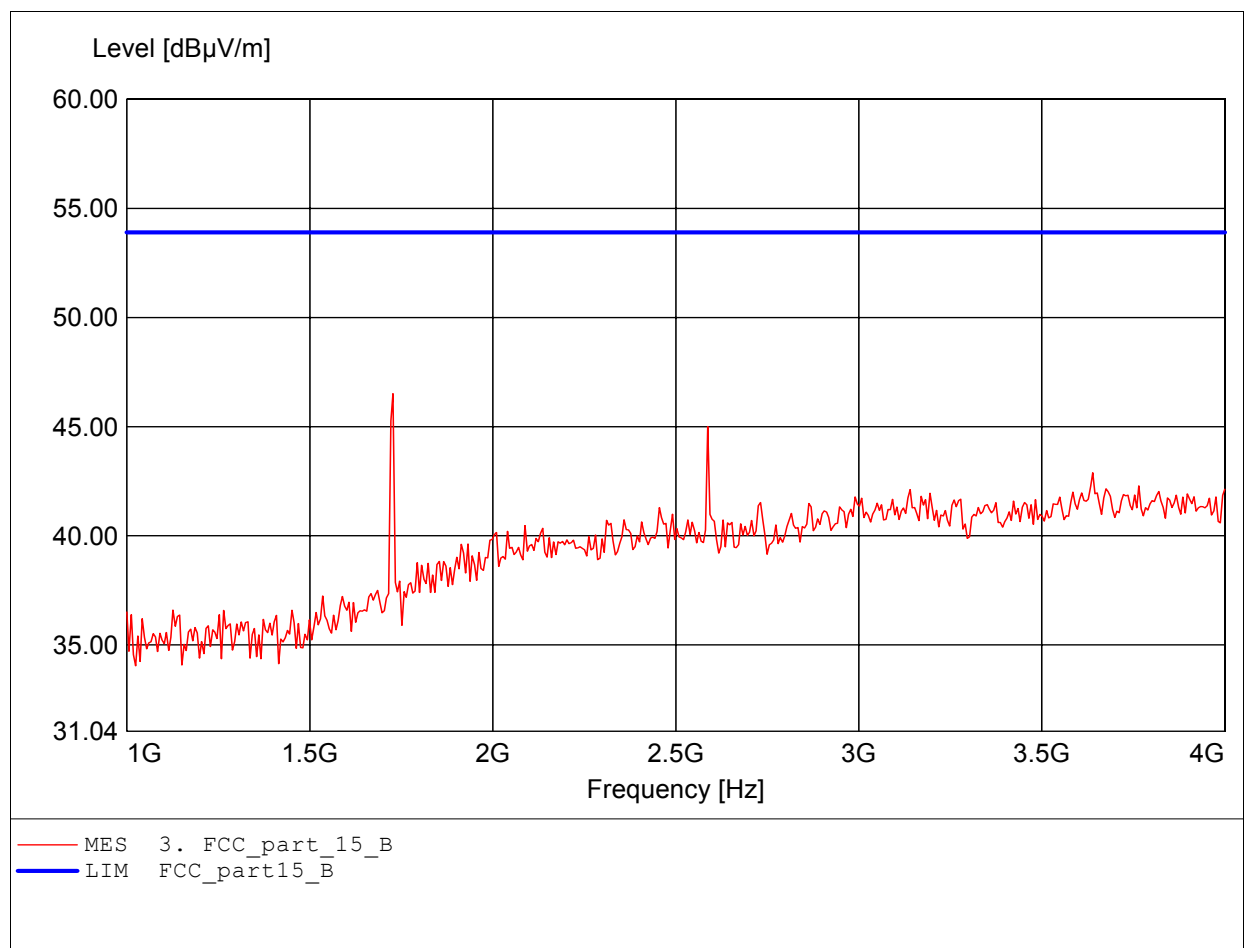
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL25, ampl.
Freq:1.721GHz Emax:52.85dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

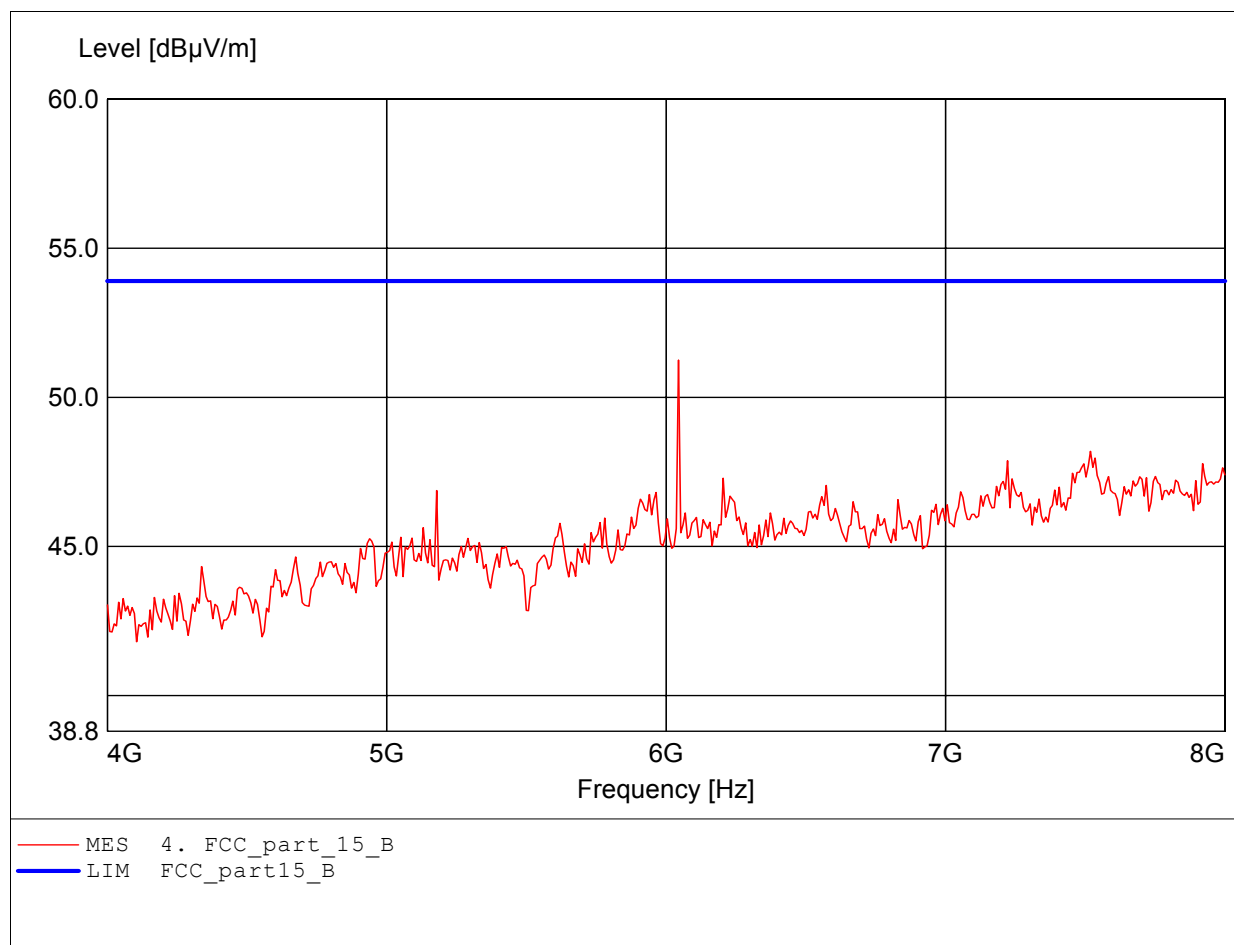
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL25, ampl.
Freq:1.727GHz Emax:46.51dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

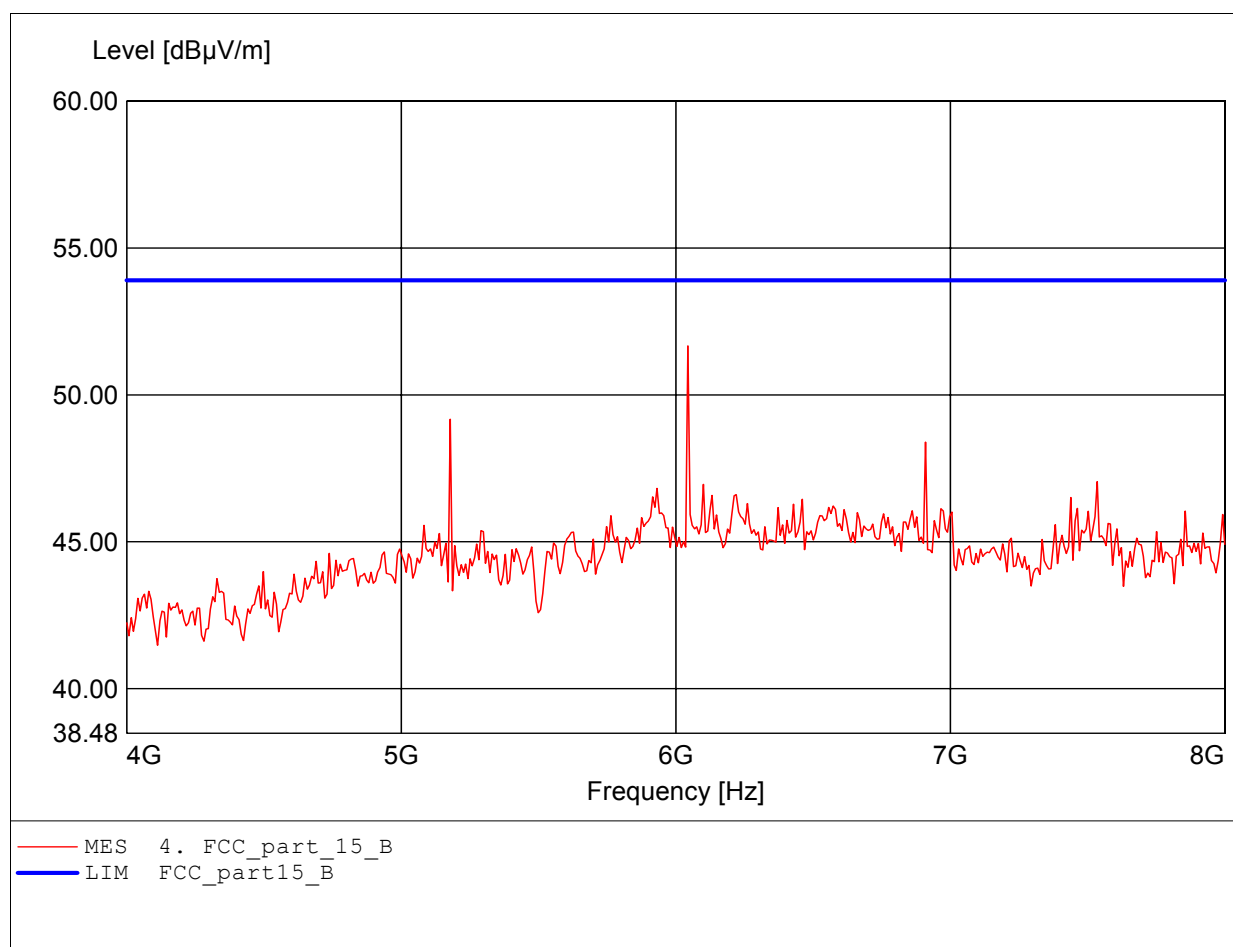
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL25, ampl.
Freq: 6.044GHz Emax: 51.24dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

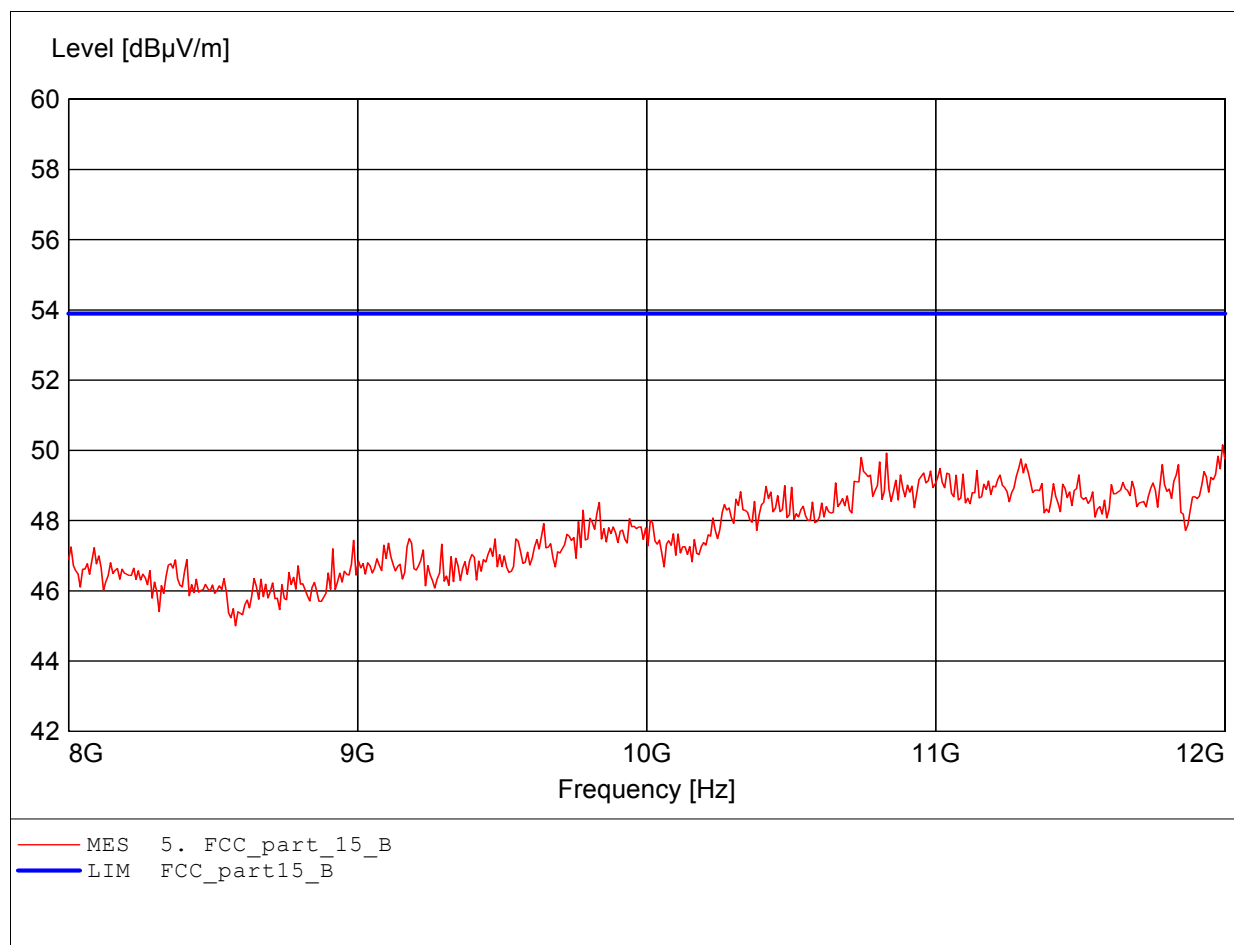
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL25, ampl.
Freq: 6.044GHz Emax: 51.66dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

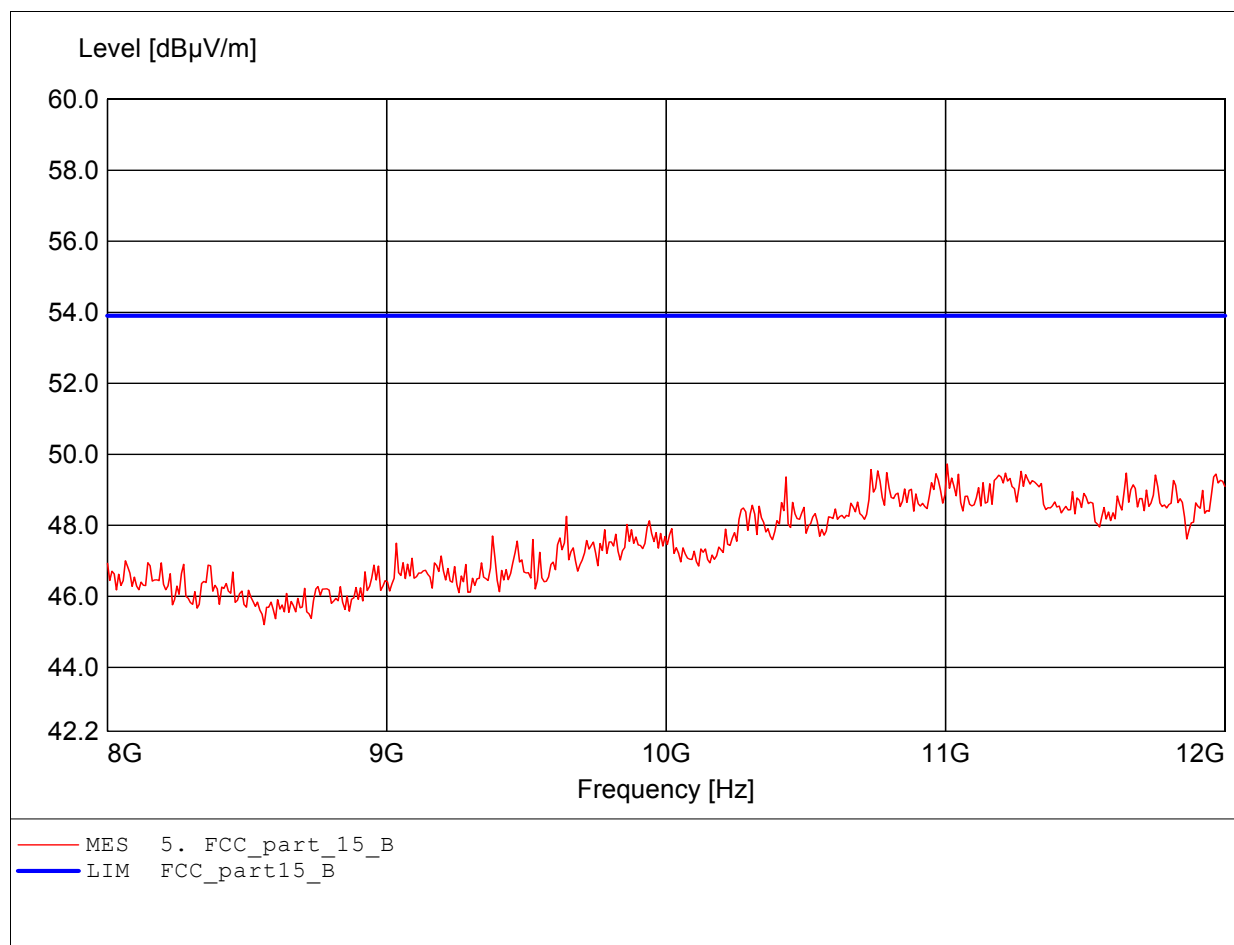
EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL25, ampl.
Freq: 11.992GHz Emax: 50.16dBμV/m RBW: 1 MHz

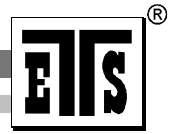


Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

EUT: Wireless Headphone
Model: RHP-7 Middle Channel
Approval Holder: A-FOUR TECH CO., LTD.
Test Site / Operator: ETS / Catey
Temperature/Voltage: Temp.: 23°C/ Unom.: 3 VDC (1.5V x 2 Battery)
Test Specification: according to subpart B
Dist.: 3m, Ant.: HL25, ampl.
Freq: 11.006GHz Emax: 49.73dBμV/m RBW: 1 MHz





Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

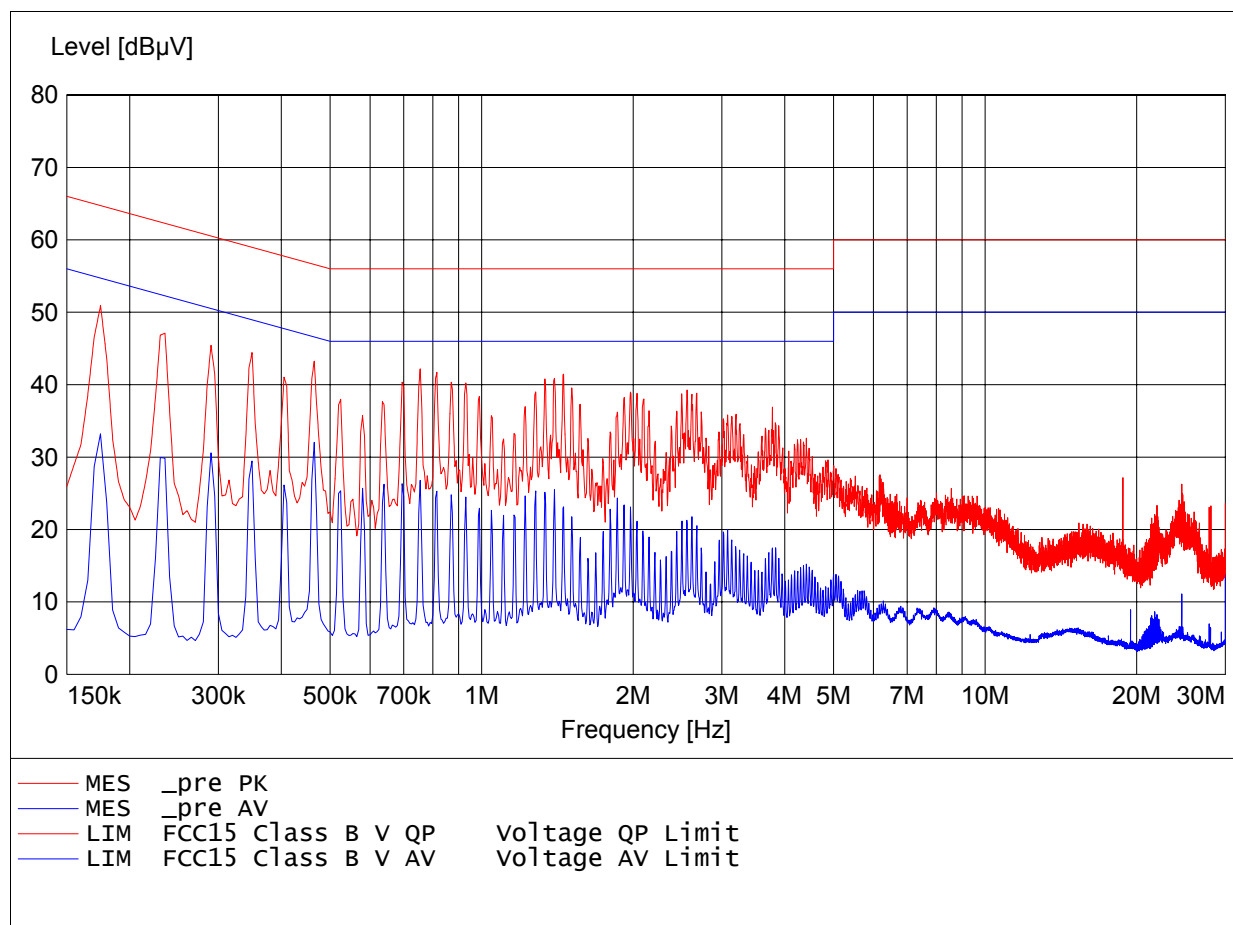
Appendix D

Power Line Conducted Emission

EMI voltage test in the ac-mains according to FCC Part 15

Class B

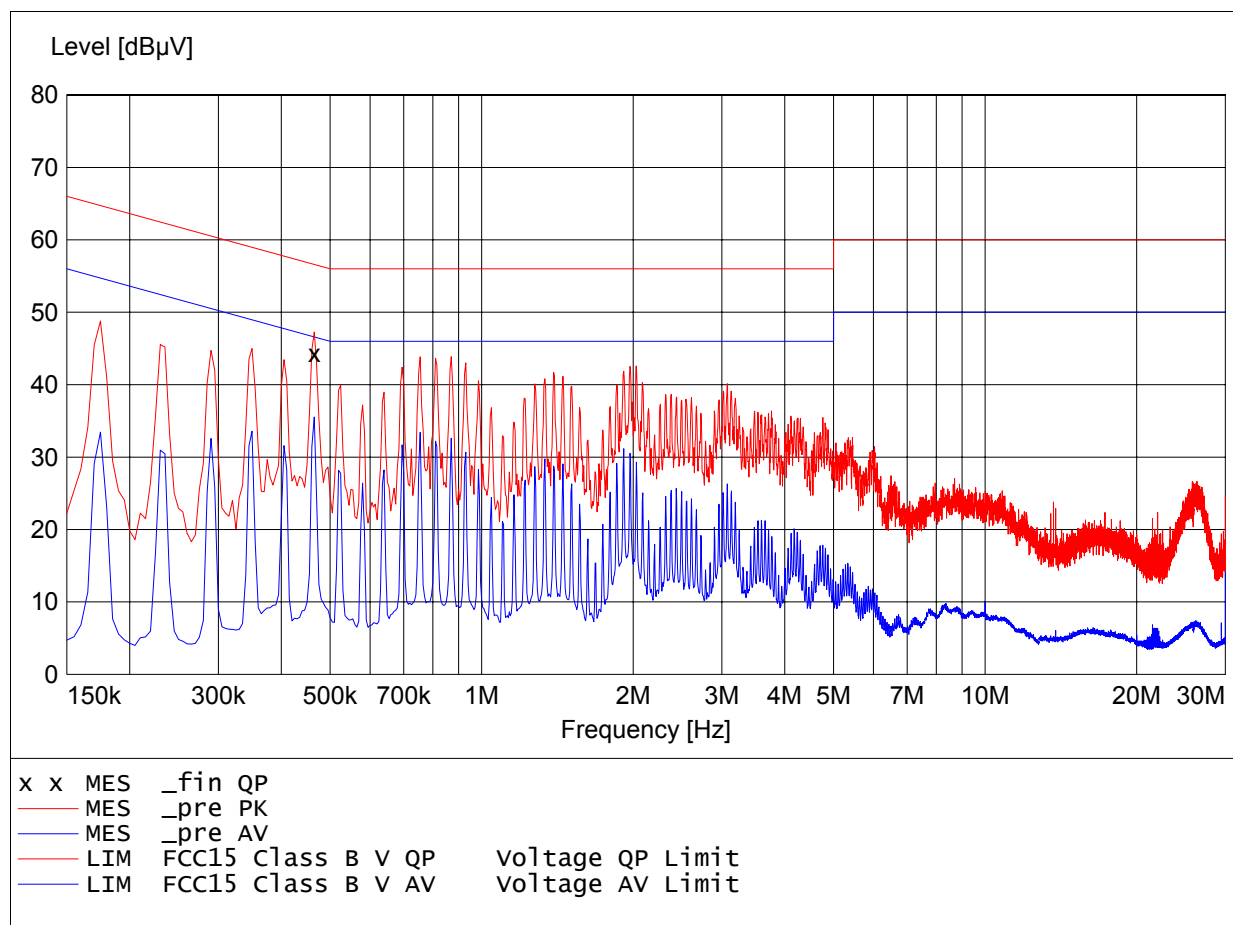
EUT: Wireless Headphone
Manufacturer: A-Four TECH CO., LTD.
Operating Condition: Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site: ETS
Operator: Catey
Test Specification: V-network: ESH3-Z5 N
Comment : model: RHP-7 mode: active



EMI voltage test in the ac-mains according to FCC Part 15

Class B

EUT: Wireless Headphone
Manufacturer: A-Four TECH CO., LTD.
Operating Condition: Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site: ETS
Operator: Catey
Test Specification: V-network: ESH3-Z5 L1
Comment : model: RHP-7 mode: active



EMI voltage test in the ac-mains according to FCC Part 15

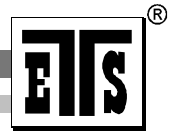
Class B

EUT: Wireless Headphone
Manufacturer: A-Four TECH CO., LTD.
Operating Condition: Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site: ETS
Operator: Catey
Test Specification: V-network: ESH3-Z5 L1
Comment : model: RHP-7 mode: active

MEASUREMENT RESULT: "_fin QP"

6/2/05 5:01PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.465000	44.30	10.0	57	12.3	---	---



Registration number: W6M20505-5930-P-15
FCC ID: H8GRHP7

Appendix E

Pictures