

APPLICATION FOR CERTIFICATION

On Behalf of

LG Electronics Inc.

Network Blu-Ray Home Theater

Model No.: (1)HB954PAW (2)LHB978

Brand: LG

FCC ID : BEJ9QK-HB954W

Prepared for : LG Electronics Inc.

19-1, Cheongho-Ri, Jinwuy-Myun, Pyungtaek-
City, Kyunggi-Do, 451-713 Korea

Prepared by : AUDIX Technology Corporation

EMC Department

No. 53-11, Tin-Fu Tsun, Lin-Kou,
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TEST REPORT CERTIFICATION

Applicant : LG Electronics Inc.
 Manufacturer #1 : LG Electronics Inc.
 Manufacturer #2 : LG Electronics (Huizhou) Inc. Huitai Factory
 Manufacturer #3 : SHEN ZHEN KWANG SUNG Electronics H.K. Co., Ltd.
 Manufacturer #4 : PT LG Electronics Indonesia (Factory 1)
 EUT Description : Network Blu-Ray Home Theater
 FCC ID : BEJ9QK-HB954W
 (A) MODEL NO. : (1)HB954PAW (2)LHB978
 (B) SERIAL NO. : N/A
 (C) BRAND : LG
 (D) POWER SUPPLY : 120V~ 60Hz
 (E) TEST VOLTAGE : AC 120V/60Hz

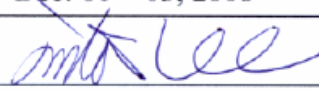
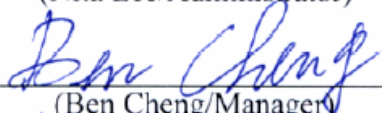
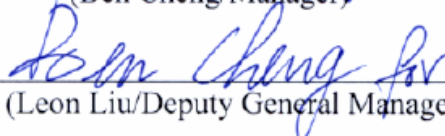
Measurement Procedure Used:

FCC Public Notice DA 00-705 Released March 30, 2000
 FCC RULES AND REGULATIONS PART 15 SUBPART C, July 2008
 FCC CFR 47 Part 15C, §15.207 and §15.209 and §15.247
 AND ANSI C63.4/2003

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Report:	Dec. 01 ~ 03, 2008	Date of Report:		Dec. 12, 2008
Producer:	 (Nita Lee/Administrator)			
Review:	 (Ben Cheng/Manager)			
Signatory:	 (Leon Liu/Deputy General Manager)			

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description : Network Blu-Ray Home Theater

Model Number : (1)HB954PAW (2)LHB978
(The EUT is a transmitter unit.
There is transmit and receive functions.)
The difference list for all models are as follows:

Model Number	Unit	Power	Wireless Function	Speaker Ch	Speaker Design	HDMI-in Port	Wireless RX Kit
HB954PAW	Basic	110W	O	3.1 Ch	Basic	O	O
LHB978	M/L	110W	O	3.1 Ch	Basic	O	O

The Network Blu-Ray Home Theater include transmitter (M/N HB954PAW) and receiver (M/N W94-R) and these device are all the same RF module.

The receiver (M/N W94-R) is applicable to M/N HB954PAW.

FCC ID : BEJ9QK-HB954W

Brand Name : LG

Applicant : LG Electronics Inc.
19-1, Cheongho-Ri, Jinwuy-Myun, Pyungtaek-City, Kyunggi-Do, 451-713 Korea

Manufacturer #1 : LG Electronics Inc.
19-1, Cheongho-Ri, Jinwuy-Myun, Pyungtaek-City, Kyunggi-Do, 451-713 Korea

Manufacturer #2 : LG Electronics (Huizhou) Inc. Huitai Factory
No. 1 Xingda Road, Huitai Industrial Park of Zhongkai Development Zone, Huizhou City, Guangdong, China

Manufacturer #3 : SHEN ZHEN KWANG SUNG Electronics H.K. Co., Ltd.
Shi Tou Shan Industrial Zone, Zhuan Chang Village, Shiyen Town, Baoan District, Shenzhen City, GuangDong Province, China

Manufacturer #4 : PT LG Electronics Indonesia (Factory 1)
 Block G - MM 2100 Industrial Town Cikarang
 Barat _ Bekasi 17520, west Java Indonesia

 TX/RX Module : Eleven Engineering Incorporated,
 M/N WHAM2-D2

 Fundamental Range : 2400MHz ~ 2483.5MHz

 Channel Number : 20

 Radio Technology : FHSS Modulation

 Antenna Gain : 0.94dBi

 Date of Receipt of Sample : Dec. 01, 2008

 Date of Test : Dec. 01 ~ 03, 2008

1.2. Tested Supporting System Details

【FOR CONDUCTED EMISSION MEASUREMET】

1.2.1. LCD TV (LINK TO EUT)

Model Number : VIZIO VX20L HDTV
 Serial Number : LSAAAAG4719229
 FCC ID : By DoC
 Brand : VIZIO
 Component Cable : Non-Shielded, Detachable, 1.8m
 Video Cable : Non-Shielded, Detachable, 1.8m
 HDMI Cable : Shielded, Detachable, 1.8m
 Power Cable : Non-Shielded, Detachable, 1.8m

1.2.2. I-POD #1 (LINK TO EUT)

Model Number : A1204
 Serial Number : 4H722TA0VTE
 FCC ID : By DoC
 BSMI ID : R33057
 Manufacturer : APPLE (Brand: APPLE)
 USB Cable : Shielded, Undetachable, 1.0m

1.2.3. I-POD #2 (LINK TO EUT)

Model Number : A1204
 Serial Number : 4H722T6KVTE
 FCC ID : By DoC
 BSMI ID : R33057
 Manufacturer : APPLE (Brand: APPLE)

1.2.4. DVD PLAYER (LINK TO EUT)

Model Number	:	DVR-550H-S
Serial Number	:	HBDL003247TA
Brand	:	Pioneer
Manufacturer	:	Pioneer
BSMI ID	:	R31271-ETC
HDMI Cable	:	Shielded, Detachable, 1.8m
Coaxial Cable	:	Non-Shielded, Detachable, 1.8m
Audio Cable	:	Non-Shielded, Detachable, 1.8m
Power Cord	:	Non-Shielded, Detachable, 1.5m

1.2.5. WALKMAN (LINK TO EUT)

Model Number	:	RQ-P35LT-K
Serial Number	:	HA08473
Manufacturer	:	Panasonic
Audio Cable	:	Non-Shielded, Detachable, 1.8m

1.2.6. MINIDISC DECK (LINK TO EUT)

Model Number	:	MDS-S39
Serial Number	:	3357518
Manufacturer	:	SONY
Optical Cable	:	Non-Shielded, Detachable, 1.8m
Power Cord	:	Non-Shielded, Undetachable, 2.0m

1.2.7. SPEAKER #1 (LINK TO EUT)

Model Number	:	LHS-761AS
Serial Number	:	3850RMM681C
Manufacturer	:	LG
Impedance	:	4Ω
Max. Power	:	200W
Speaker Cable	:	Non-Shielded, Detachable, 4.0m

1.2.8. SPEAKER #2 (LINK TO EUT)

Model Number	:	LHS-761AS
Serial Number	:	3850RMM681C
Manufacturer	:	LG
Impedance	:	4Ω
Max. Power	:	200W
Speaker Cable	:	Non-Shielded, Detachable, 4.0m

1.2.9. RECEIVER

Model Number	:	W94-R
Serial Number	:	N/A
Manufacturer	:	LG
Power Cord	:	Non-Shielded, Undetachable, 1.8m

1.2.10. SPEAKER #3 (LINK TO RECEIVER)

Model Number	:	LHS-761AS
Serial Number	:	3850RMM681C
Manufacturer	:	LG
Impedance	:	4Ω
Max. Power	:	200W
Speaker Cable	:	Non-Shielded, Detachable, 4.0m

Add a ferrite core with speaker cable #4

1.2.11. SPEAKER #4 (LINK TO RECEIVER)

Model Number	:	LHS-761AS
Serial Number	:	3850RMM681C
Manufacturer	:	LG
Impedance	:	4Ω
Max. Power	:	200W
Speaker Cable	:	Non-Shielded, Detachable, 4.0m

1.2.12. SPEAKER #5 (LINK TO EUT)

Model Number	:	LHS-761AC
Serial Number	:	3850RMM680C
Manufacturer	:	LG
Impedance	:	4Ω
Max. Power	:	200W
Speaker Cable	:	Non-Shielded, Detachable, 4.0m

1.2.13. SPEAKER #6 (LINK TO EUT)

Model Number	:	LHS-T6540W
Serial Number	:	N/A
Manufacturer	:	LG
Impedance	:	4Ω
Max. Power	:	240W
Speaker Cable	:	Non-Shielded, Detachable, 4.0m

1.2.14. RJ-45 CABLE (LINK TO INTERNET)

RJ-45 Cable	:	Non-Shielded, Detachable, 5.0m
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1.2.15. FM ANTENNA CABLE

FM Antenna Cable	:	Non-Shielded, Detachable, 1.5m
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1.2.16. AM ANTENNA CABLE

AM Antenna Cable	:	Non-Shielded, Detachable, 1.5m
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1.3. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation**
EMC Department
 No. 53-11, Tin-Fu Tsun, Lin-Kou,
 Taipei, Taiwan

Test Location & Facility : **No. 2 Shielded Room**
 (C2/Semi-AC) No. 67-4, Tin-Fu Tsun, Lin-Kou,
 Taipei, Taiwan.

Semi-Anechoic Chamber
 No. 53-11, Tin-Fu Tsun, Lin-Kou,
 Taipei, Taiwan

Federal Communication Commission
 Registration Number: 90993
 Filing on May 16, 2006

NVLAP Lab. Code : 200077-0
 (NVLAP is a NATA accredited body under Mutual Recognition Agreement)

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±1.73dB
Radiation Test (Distance: 3m)	30MHz~300MHz	±2.91dB
	300MHz~1000MHz	±2.94dB
	Above 1GHz	± 5.02dB

Remark : Uncertainty = $k_{uc}(y)$

Test Item	Uncertainty
20dB Bandwidth	± 0.2kHz
Carrier Frequency Separation	± 0.2kHz
Time Of Occupancy	± 0.03sec
Maximum peak Output power	± 0.52dBm
Emission Limitations	± 0.13dB
Band Edges	± 0.13dB

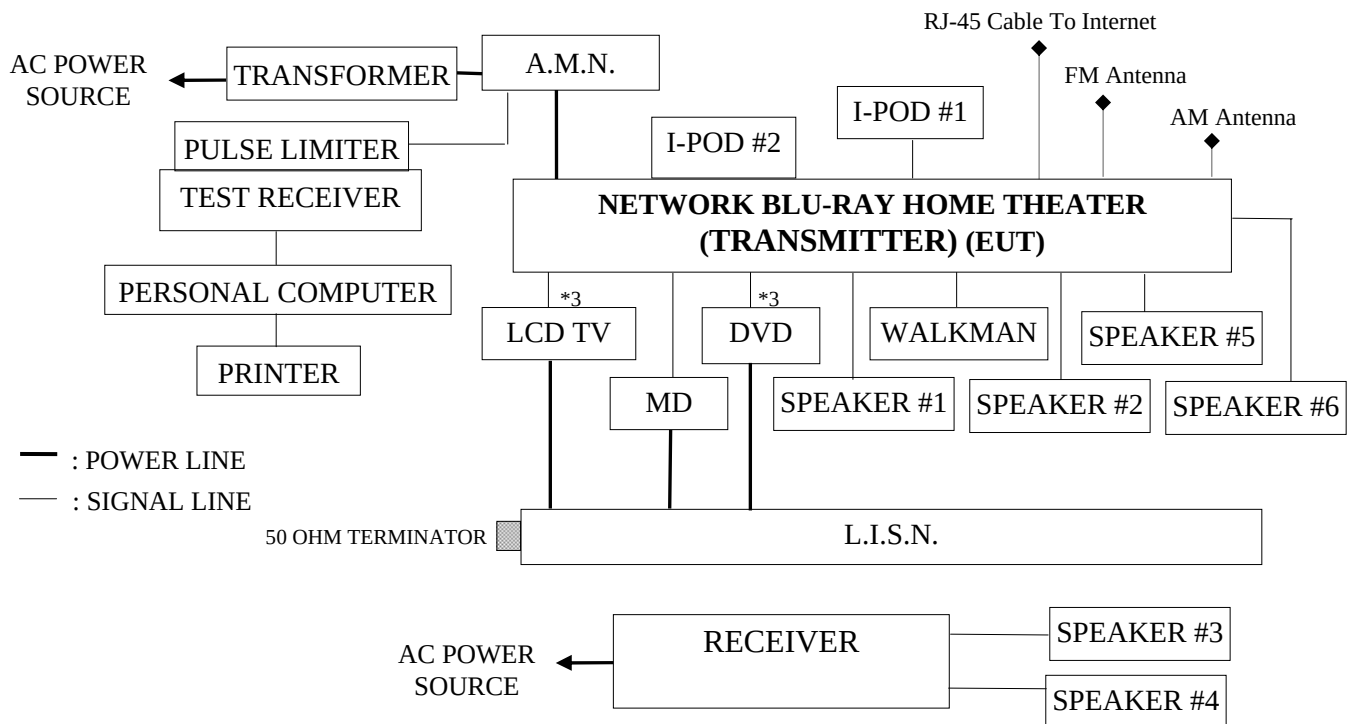
2. CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipments were used during the conducted measurement:
(No. 2 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCS30	100339	Mar. 21, 08'	Mar. 20, 09'
2.	A.M.N.	R & S	ESH2-Z5	890485/023	Jan. 24, 08'	Jan. 23, 09'
2.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	Mar. 24, 08'	Mar. 23, 09'
3.	Pulse Limiter	R & S	ESH3-Z2	001	Feb. 22, 08'	Feb. 21, 09'

2.2. Block Diagram of Test Setup



2.3. Powerline Conducted Emission Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dB μ V	56 ~ 46 dB μ V
500kHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ V

Remark1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2.: The lower limit applies at the band edges.

2.4. Operating Condition of EUT

- 2.4.1. Set up the EUT (Network Blu-Ray Home Theater) and simulator as shown on 2.2.
- 2.4.2. To turn on the power of all equipment.
- 2.4.3. The Network Blu-Ray Home Theater (EUT) was playing DVD-Disk and sent the “Color Bar” image to the LCD TV via HDMI Input of Network Blu-Ray Home Theater (EUT) and sending sound to speakers through Network Blu-Ray Home Theater (EUT)’s speakers ports during all testing.
- 2.4.4. The receiver was receiving sound signal from transmitter and sending to speakers during all testing.
- 2.4.5. The other peripheral devices were driven and operated in turn during all testing.

2.5. Test Procedure

The EUT was put on table which was above the ground by 80cm and its power cord connected to the AC main through an Artificial Mains Network (A.M.N.). The other peripheral devices power cords were connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.) Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to FCC ANSI C63.4 and FCC Public Notice DA 00-705 during conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

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

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. (Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

2.6. Conducted Emission Measurement Results

PASSED.

(All the emissions not reported below are too low against the prescribed limits.)

The EUT was performed during this section testing and all the test results are attached in next pages.

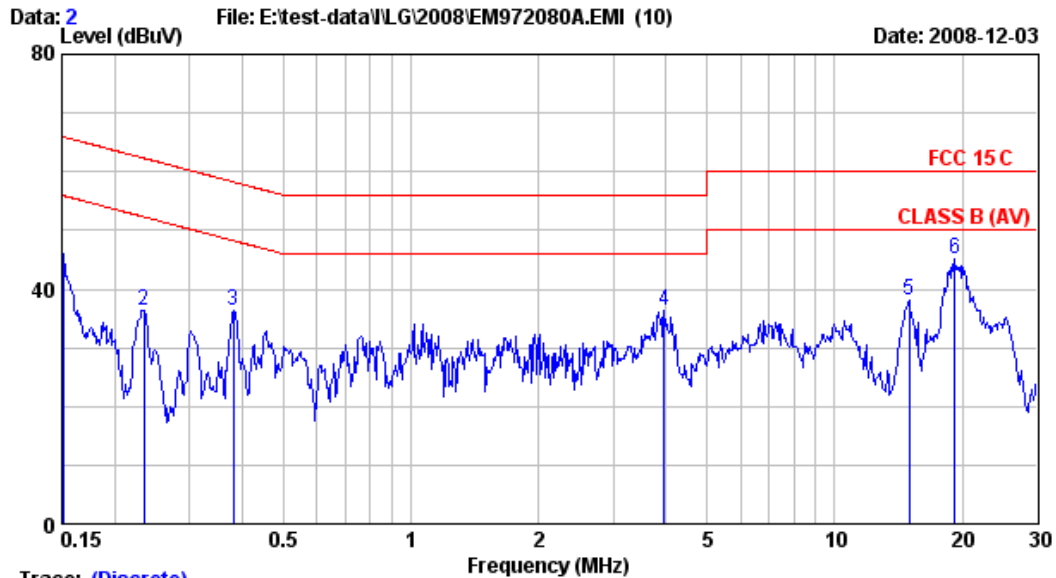
EUT : Network Blu-Ray Home Theater M/N : HB954PAW

Test Date : Dec. 03, 2008 Temperature : 27°C Humidity : 63%

Reference Test Data No.: Neutral: # 2 ; Line: # 1



AUDIX TECHNOLOGY Corp. EMC Laboratory
 No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei
 County, Taiwan R.O.C. Post Code:24443
 Tel:02-26092133 Fax:02-26099303
 Email:ttmc@ttmc.com.tw



Site : No.2 Shielded room Data : 2
 Condition : ESH2-Z5 Phase : NEUTRAL
 Limit : FCC 15C
 Env. / Ins. : 27°C,63% / ESCS 30 Engineer: Albert_Liang
 EUT : Network Blu-Ray Home Theater
 Power Rating : 120Vac/60Hz M/N: HB954PAW
 Test Mode : operating

		LISN	Cable	Emission				
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBμV)	(dBμV)	(dBμV)	(dB)	
1	0.151	0.10	0.24	45.65	45.99	65.96	19.97	QP
2	0.234	0.10	0.27	35.92	36.29	62.30	26.01	QP
3	0.381	0.10	0.32	35.94	36.36	58.25	21.90	QP
4	3.964	0.20	0.40	35.77	36.37	56.00	19.63	QP
5	14.986	0.40	0.70	36.90	38.00	60.00	22.00	QP
6	19.224	0.49	0.70	44.06	45.25	60.00	14.75	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + Reading.
 2.If the average limit is met when using a quasi-peak detector
 ,the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei
County, Taiwan R.O.C. Post Code:24443
Tel:02-26092133 Fax:02-26099303
Email:ttemc@ttemc.com.tw



Site : No.2 Shielded room Data : 1
Condition : ESH2-Z5 Phase : LINE
Limit : FCC 15C
Env. / Ins. : 27°C,63% / ESCS 30 Engineer: Albert_Liang
EUT : Network Blu-Ray Home Theater
Power Rating : 120Vac/60Hz : M/N: HB954PAW
Test Mode : operating

		LISN	Cable	Emission				
Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)		
1	0.150	0.10	0.24	44.28	44.62	66.00	21.38	QP
2	0.381	0.10	0.32	35.78	36.20	58.25	22.06	QP
3	0.755	0.17	0.38	32.67	33.21	56.00	22.79	QP
4	3.840	0.20	0.40	39.12	39.72	56.00	16.28	QP
5	14.750	0.39	0.70	40.62	41.72	60.00	18.29	QP
6	19.635	0.68	0.70	41.46	42.84	60.00	17.16	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

3.1.1. For Frequency 30MHz~1000MHz (at Semi-Anechoic Chamber)

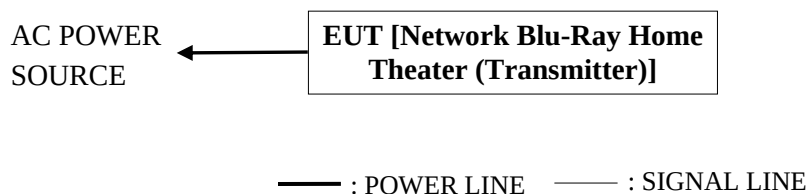
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 24, 08'	Oct. 23, 09'
2.	Test Receiver	R & S	ESCS30	100265	Aug. 28, 08'	Aug. 27, 09'
3.	Pre-Amplifier	HP	8447D	2944A06305	Feb. 19, 08'	Feb. 18, 09'
4.	Biconical Antenna	CHASE	VBA6106A	1264	Apr. 10, 08'	Apr. 09, 09'
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108-A	0139	Apr. 10, 08'	Apr. 09, 09'

3.1.2. For Frequency above 1GHz (at Semi-Anechoic Chamber)

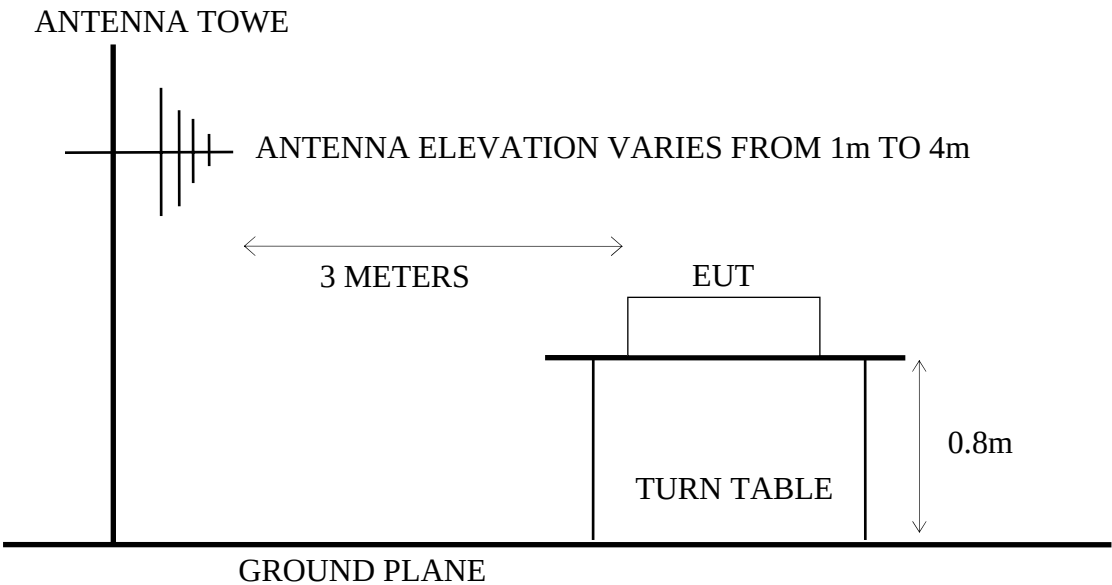
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 24, 08'	Oct. 23, 09'
2.	Pre-Amplifier	HP	8449B	3008A01284	Jun. 17, 08'	Jun. 16, 09'
3.	2.4GHz Notch Filter	EWT	EWT-14-0070	G2	Dec. 07, 07'	Dec. 06, 08'
4.	Horn Antenna	EMCO	3115	9112-3775	May 20, 08'	May 19, 09'
5.	Horn Antenna	EMCO	3116	2653	Oct. 03, 08'	Oct. 02, 09'
6.	High Pass Filter	HP	84300-80038	005	Jan. 08, 08'	Jan. 07, 09'

3.2. Test Setup

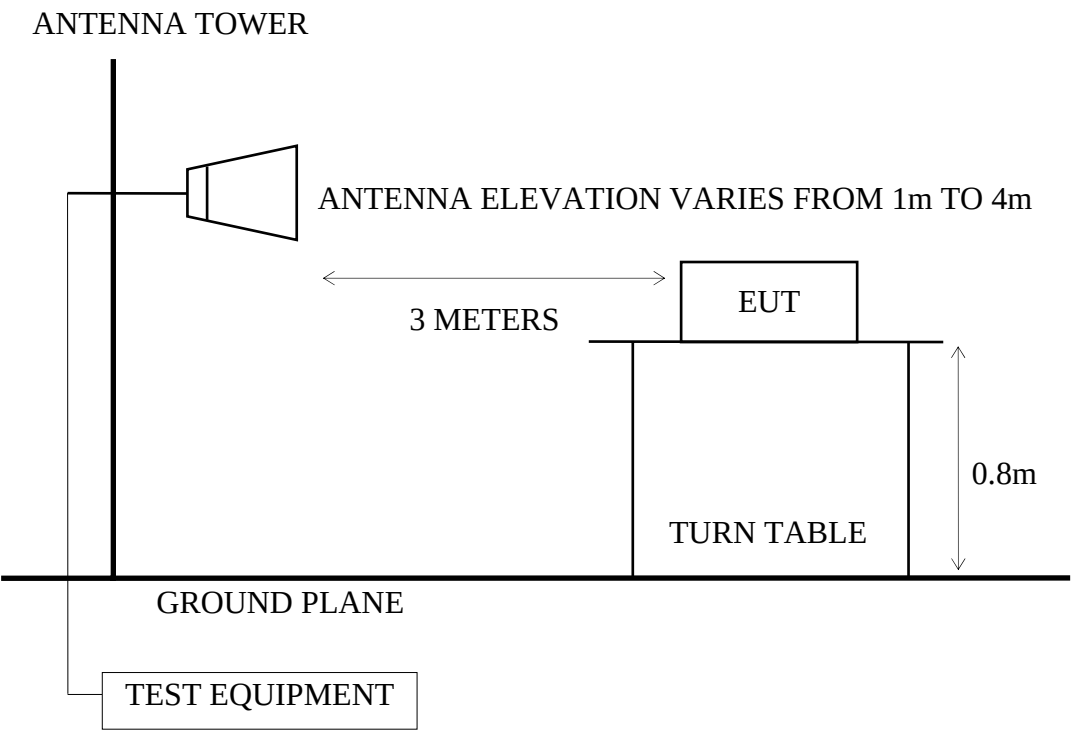
3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



3.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



3.3. Radiated Emission Limits

§15.209/§15.109 Class B Radiated Emission Limits

Frequency MHz	Distance Meters	Field Strengths Limits	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

- Remark :
- (1) Emission level ($\text{dB}\mu\text{V/m}$) = $20 \log$ Emission level ($\mu\text{V/m}$)
 - (2) The tighter limit applies at the edge between two frequency bands.
 - (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 - (4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
 - (5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

3.4. Operating Condition of EUT

- 3.4.1. Set up the EUT (Network Blu-Ray Home Theater) and simulator as shown on 3.2.
- 3.4.2. To turn on the power of all equipment.
- 3.4.3. The EUT (Network Blu-Ray Home Theater) was on normal function status (transmitting and receiving) during all testing.

3.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. For 30MHz to 1000MHz frequency ranges, EUT was set 3 or 10 meters and for above 1GHz frequency ranges, EUT was set at 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antennas (bilog antenna or broadband and log periodical or horn antenna) were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4 and FCC Public Notice DA 00-705 regulation.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.
The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10th harmonics from fundamental frequency) was checked.

3.6. Radiated Emission Measurement Results

PASSED. All the emissions not reported below are too low against the official limits.

EUT : Network Blu-Ray Home Theater

M/N : HB954PAW

Test Date : Dec. 01, 2008 Temperature : 22°C Humidity : 48%

For Frequency Range 30MHz~1000MHz:

The EUT with following test modes was performed during this section testing and all the test results are listed in section 3.6.1.

No.	Test Unit	Test Mode and Frequency		Reference Test Data No.	
				Horizontal	Vertical
1.	Transmitter	Transmitting	2403.328MHz (CH0)	# 11	# 12
2.			2442.240MHz (CH19)	# 12	# 11
3.			2479.104MHz (CH37)	# 11	# 12
4.	Receiver	Receiving	2442.240MHz (CH19)	# 10	# 9

* Above all final readings were measured with Quasi-Peak detector.

For Frequency above 1GHz:

The EUT with following test modes was performed during this section testing and all the test results are listed in section 3.6.2.

No.	Test Mode and Frequency	
1.	Transmitting	2403.328MHz (CH0)
2.		2442.240MHz (CH19)
3.		2479.104MHz (CH37)
4.	Receiving	2442.240MHz (CH19)

The average measurement of frequency range from 10000MHz to 25000MHz is measured at 1m distance and doesn't find any spurious emission in this frequency range. So just provide the peak measurement results.

For Restricted Bands:

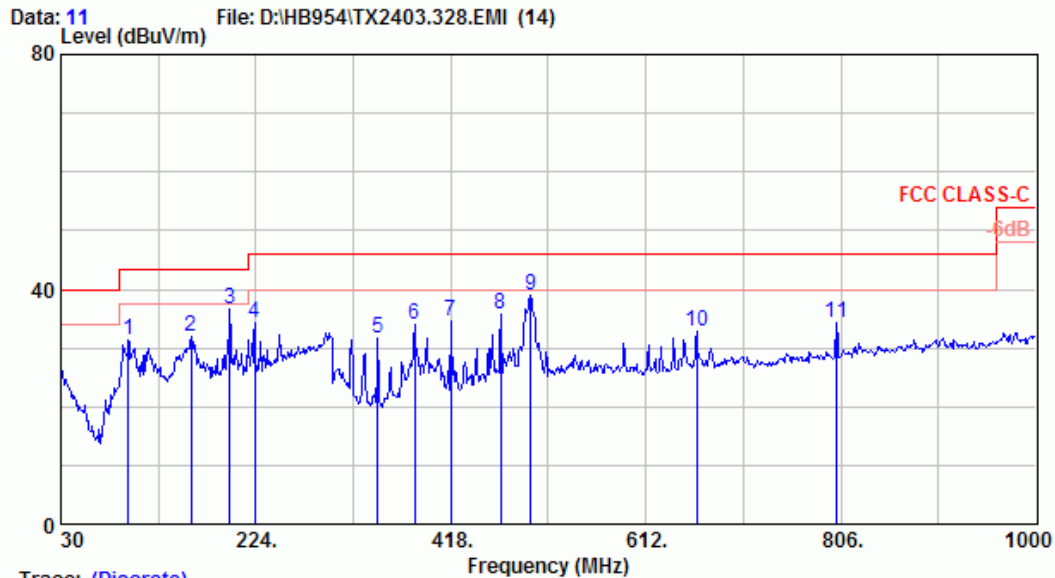
The EUT was tested in restricted bands and all the test results are listed in section 3.6.3. (The restricted bands defined in part 15.205(a))

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2403.328MHz (CH0)	# 1, # 4	# 2 , # 3
2.		2479.104MHz (CH37)	# 6, # 7	# 5, # 8

3.6.1. 30MHz~ 1000MHz Frequency Range Measurement Result



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Site no. : A/C Chamber Data no. : 11
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC CLASS-C
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2403.328MHz

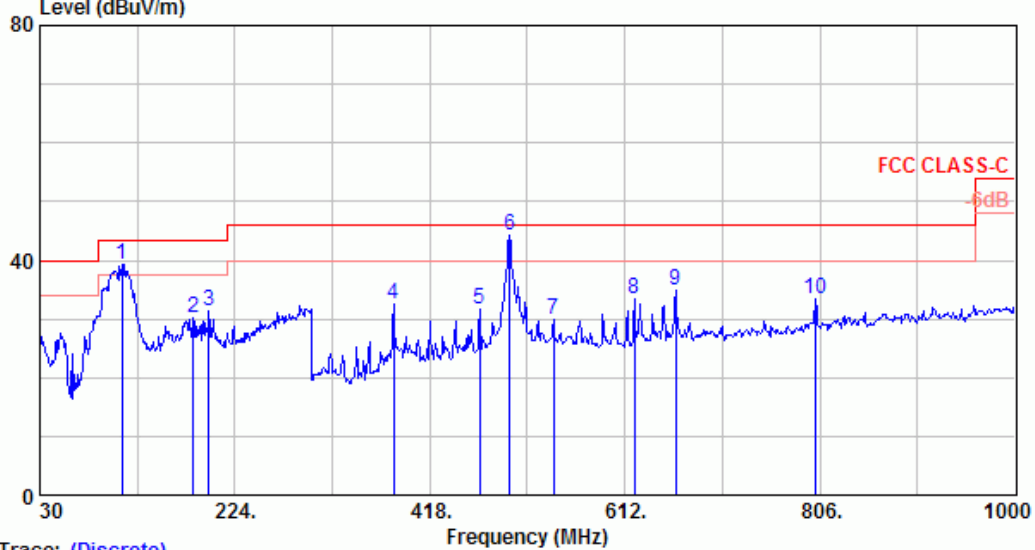
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	96.930	16.75	2.05	12.58	31.38	43.50	12.12	
2	159.980	20.80	2.70	8.47	31.96	43.50	11.54	
3	197.810	22.02	3.00	11.51	36.54	43.50	6.96	
4	223.030	21.94	3.30	9.13	34.37	46.00	11.63	
5	345.250	15.05	4.40	12.25	31.70	46.00	14.30	
6	382.110	17.29	4.60	12.23	34.12	46.00	11.88	
7	418.000	16.93	5.04	12.69	34.67	46.00	11.33	
8	467.470	18.21	5.80	11.66	35.67	46.00	10.33	
9	497.540	18.71	6.43	13.77	38.90	46.00	7.10	
10	662.440	22.47	6.39	3.94	32.80	46.00	13.20	
11	802.120	24.17	6.90	3.24	34.30	46.00	11.70	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 12 File: D:\HB954\TX2403.328.EMI (14)



Trace: (Discrete)
Site no. : A/C Chamber Data no. : 12
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC CLASS-C
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2403.328MHz

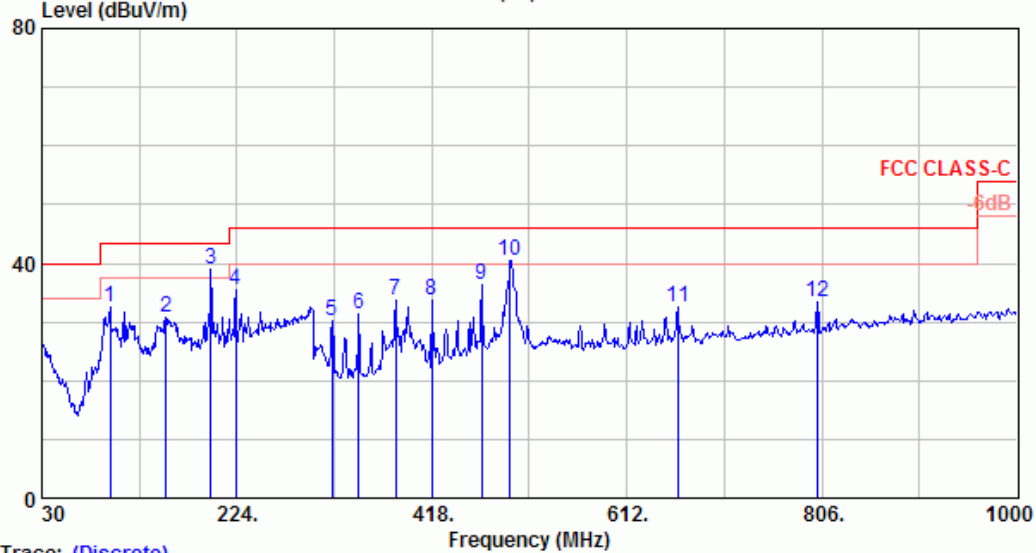
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	111.480	18.28	2.20	18.77	39.25	43.50	4.25	
2	182.290	21.33	2.90	6.10	30.32	43.50	13.18	
3	197.810	22.02	3.00	6.39	31.42	43.50	12.08	
4	382.110	17.29	4.60	10.67	32.56	46.00	13.44	
5	467.470	18.21	5.80	7.56	31.57	46.00	14.43	
6	497.540	18.71	6.43	19.07	44.20	46.00	1.80	
7	541.190	19.25	7.01	3.77	30.03	46.00	15.97	
8	621.700	21.37	6.20	5.71	33.28	46.00	12.72	
9	662.440	22.47	6.39	6.08	34.94	46.00	11.06	
10	802.120	24.17	6.90	2.47	33.53	46.00	12.47	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 12 File: D:\HB954\TX2442.240.EMI (14)



Trace: (Discrete)

Site no. : A/C Chamber Data no. : 12
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC CLASS-C
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2442.240MHz

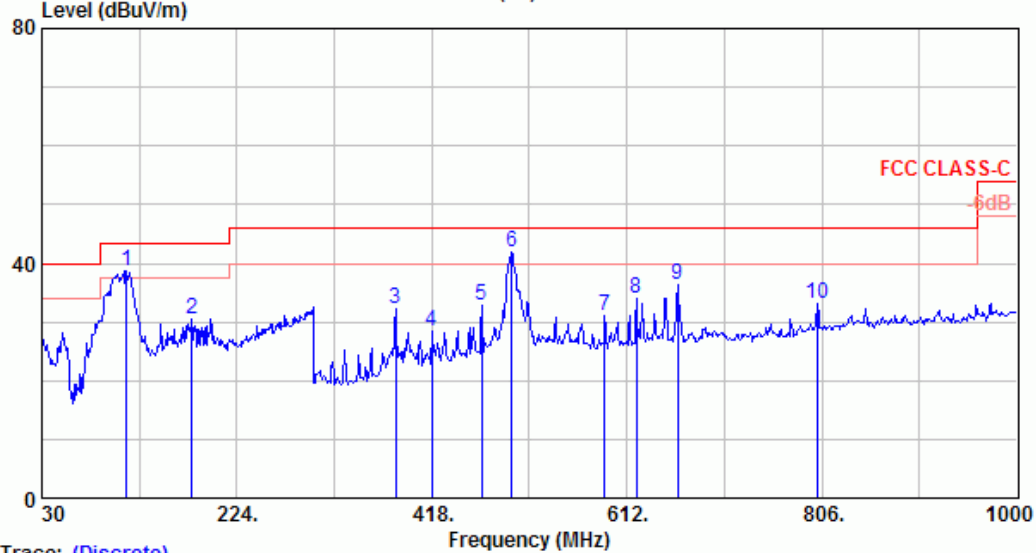
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	97.900	16.84	2.10	13.51	32.45	43.50	11.05	
2	153.190	20.69	2.60	7.46	30.75	43.50	12.75	
3	197.810	22.02	3.00	14.01	39.04	43.50	4.46	
4	223.030	21.94	3.30	10.31	35.55	46.00	10.45	
5	319.060	14.93	4.10	11.04	30.06	46.00	15.94	
6	345.250	15.05	4.40	11.89	31.34	46.00	14.66	
7	382.110	17.29	4.60	11.86	33.75	46.00	12.25	
8	418.000	16.93	5.04	11.78	33.76	46.00	12.24	
9	467.470	18.21	5.80	12.23	36.24	46.00	9.76	
10	495.600	18.69	6.40	15.49	40.58	46.00	5.42	
11	662.440	22.47	6.39	3.80	32.66	46.00	13.34	
12	802.120	24.17	6.90	2.33	33.39	46.00	12.61	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 11 File: D:\HB954\TX2442.240.EMI (14)



Trace: (Discrete)

Site no. : A/C Chamber Data no. : 11
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC CLASS-C
 Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
 EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
 Power Rating : 120Vac/60Hz
 Test Mode : TX2442.240MHz

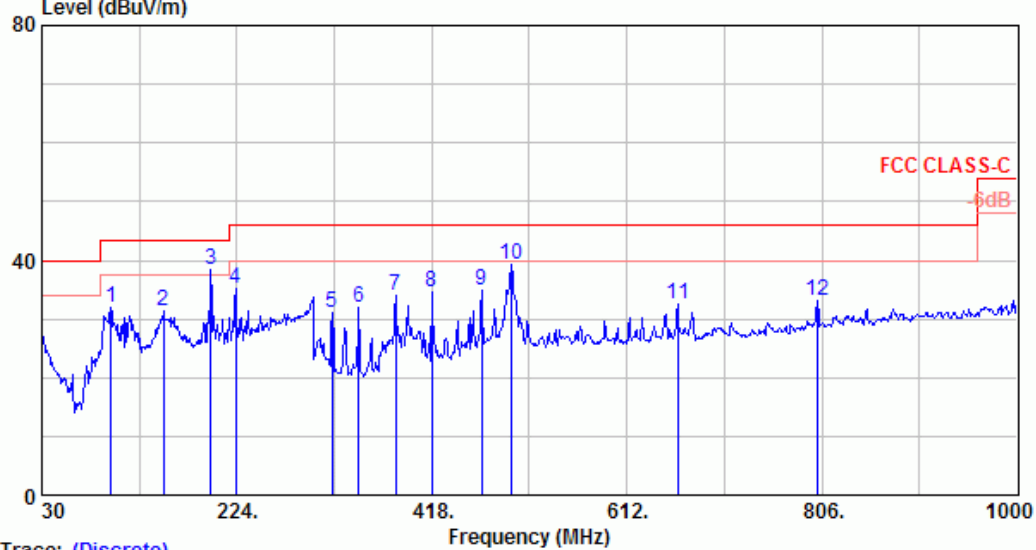
	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	114.390	18.60	2.30	17.77	38.67	43.50	4.83	
2	179.380	21.30	2.90	6.21	30.42	43.50	13.08	
3	382.110	17.29	4.60	10.34	32.23	46.00	13.77	
4	418.000	16.93	5.04	6.57	28.55	46.00	17.45	
5	467.470	18.21	5.80	8.79	32.80	46.00	13.20	
6	497.540	18.71	6.43	16.87	42.00	46.00	4.00	
7	589.690	21.01	6.30	3.69	31.00	46.00	15.00	
8	621.700	21.37	6.20	6.49	34.06	46.00	11.94	
9	662.440	22.47	6.39	7.51	36.37	46.00	9.63	
10	802.120	24.17	6.90	2.02	33.08	46.00	12.92	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 11 File: D:\HB954\TX2479.104.EMI (14)



Trace: (Discrete)

Site no. : A/C Chamber Data no. : 11
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC CLASS-C
 Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
 EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
 Power Rating : 120Vac/60Hz
 Test Mode : TX2479.104MHz

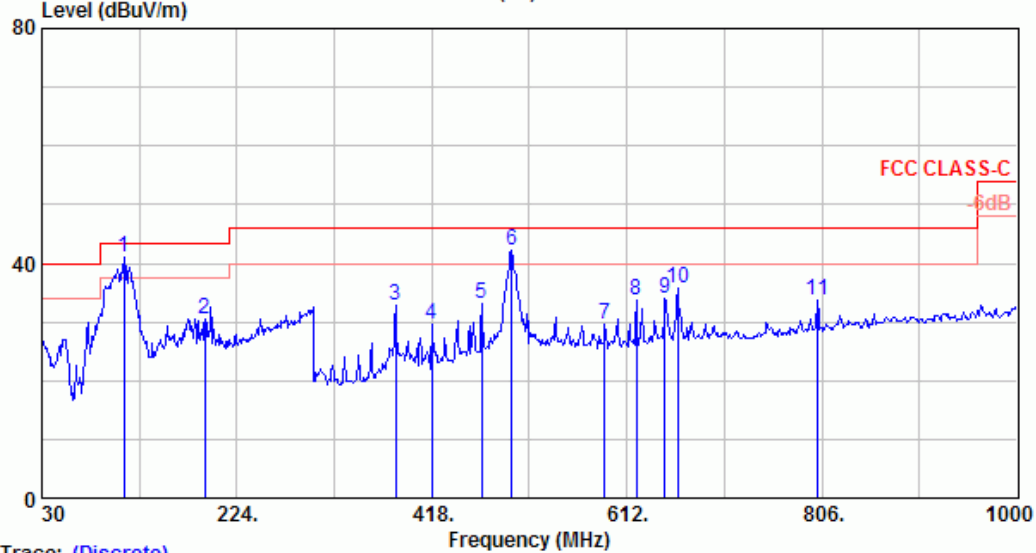
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	98.870	16.96	2.10	12.79	31.85	43.50	11.65	
2	151.250	20.65	2.60	8.05	31.30	43.50	12.20	
3	197.810	22.02	3.00	13.42	38.45	43.50	5.05	
4	223.030	21.94	3.30	9.83	35.07	46.00	10.93	
5	319.060	14.93	4.10	12.03	31.05	46.00	14.95	
6	345.250	15.05	4.40	12.53	31.98	46.00	14.02	
7	382.110	17.29	4.60	12.09	33.98	46.00	12.02	
8	418.000	16.93	5.04	12.61	34.59	46.00	11.41	
9	467.470	18.21	5.80	10.74	34.75	46.00	11.25	
10	497.540	18.71	6.43	14.26	39.39	46.00	6.61	
11	662.440	22.47	6.39	3.55	32.41	46.00	13.59	
12	802.120	24.17	6.90	2.07	33.13	46.00	12.87	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 12 File: D:\HB954\TX2479.104.EMI (14)



Trace: (Discrete)

Site no. : A/C Chamber Data no. : 12
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC CLASS-C
 Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
 EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
 Power Rating : 120Vac/60Hz
 Test Mode : TX2479.104MHz

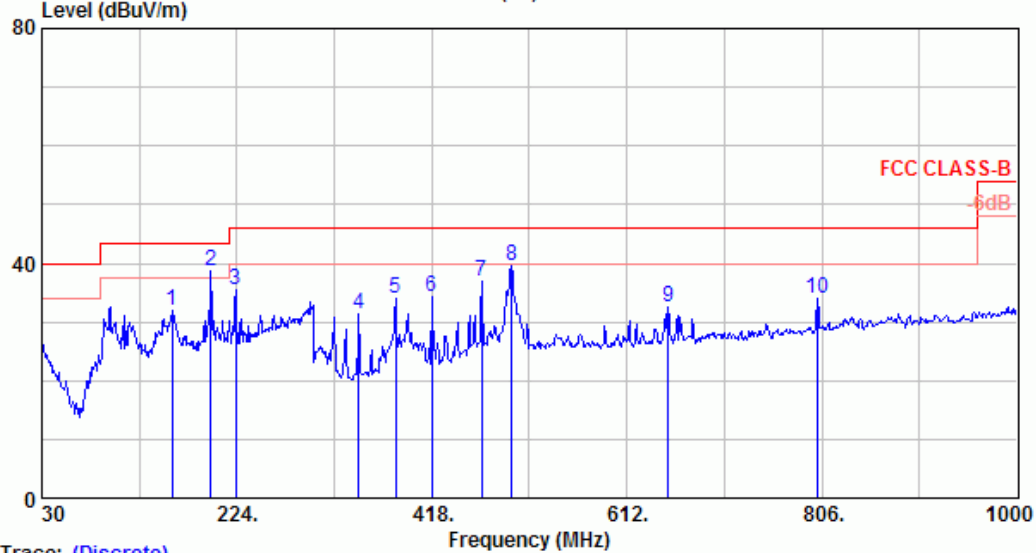
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	111.480	18.28	2.20	20.69	41.17	43.50	2.33	
2	191.990	21.60	3.00	6.02	30.62	43.50	12.88	
3	382.110	17.29	4.60	10.81	32.70	46.00	13.30	
4	418.000	16.93	5.04	7.49	29.47	46.00	16.53	
5	467.470	18.21	5.80	9.21	33.22	46.00	12.78	
6	497.540	18.71	6.43	17.03	42.16	46.00	3.84	
7	589.690	21.01	6.30	2.20	29.51	46.00	16.49	
8	621.700	21.37	6.20	6.21	33.78	46.00	12.22	
9	649.830	21.50	6.30	6.25	34.05	46.00	11.95	
10	662.440	22.47	6.39	6.93	35.79	46.00	10.21	
11	802.120	24.17	6.90	2.49	33.55	46.00	12.45	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 10 File: D:\HB954\RX2442.240.EMI (12)



Trace: (Discrete)

Site no. : A/C Chamber Data no. : 10
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC CLASS-B
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : RX2442.240MHz

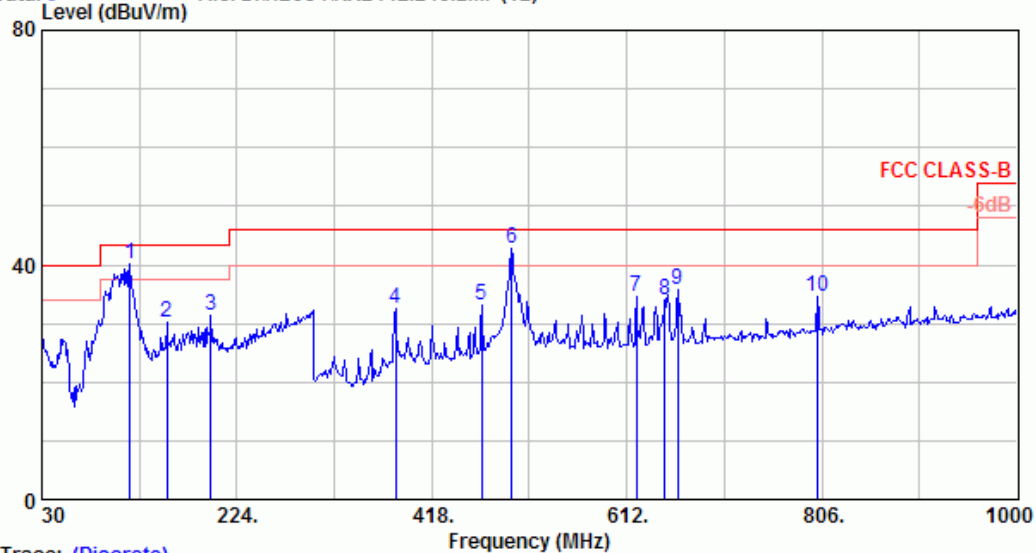
	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	159.980	20.80	2.70	8.52	32.01	43.50	11.49	
2	197.810	22.02	3.00	13.58	38.61	43.50	4.89	
3	223.030	21.94	3.30	10.17	35.41	46.00	10.59	
4	345.250	15.05	4.40	11.97	31.42	46.00	14.58	
5	382.110	17.29	4.60	12.02	33.91	46.00	12.09	
6	418.000	16.93	5.04	12.31	34.29	46.00	11.71	
7	467.470	18.21	5.80	13.06	37.07	46.00	8.93	
8	497.540	18.71	6.43	14.47	39.60	46.00	6.40	
9	652.740	21.79	6.30	4.56	32.66	46.00	13.34	
10	802.120	24.17	6.90	2.96	34.02	46.00	11.98	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 9 File: D:\HB954\RX2442.240.EMI (12)



Trace: (Discrete)

Site no. : A/C Chamber Data no. : 9
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC CLASS-B
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : RX2442.240MHz

	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	117.300	18.85	2.30	19.03	40.19	43.50	3.31	
2	154.160	20.71	2.60	6.98	30.29	43.50	13.21	
3	197.810	22.02	3.00	6.37	31.40	43.50	12.10	
4	382.110	17.29	4.60	10.76	32.65	46.00	13.35	
5	467.470	18.21	5.80	8.98	32.99	46.00	13.01	
6	497.540	18.71	6.43	17.76	42.89	46.00	3.11	
7	621.700	21.37	6.20	7.13	34.70	46.00	11.30	
8	649.830	21.50	6.30	6.34	34.14	46.00	11.86	
9	662.440	22.47	6.39	6.98	35.84	46.00	10.16	
10	802.120	24.17	6.90	3.47	34.53	46.00	11.47	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3.6.2. Above 1GHz Frequency Range Measurement ResultsDate of Test : Dec. 01, 2008 Temperature : 22°CEUT : Network Blu-Ray Home Theater
(Transmitter) Humidity : 48%Test Mode : Transmitting Mode, Frequency:
2403.328MHz (CH0) Test Voltage : AC 120V/60Hz

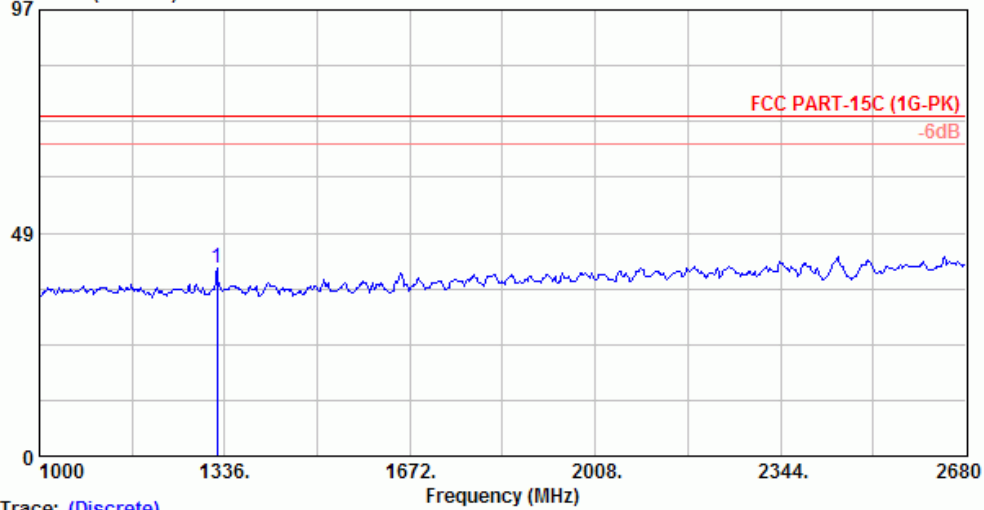
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Horizontal dBμV/m	Emission Level Horizontal dBμV/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	12.05	40.74	74.00	33.26
Average	1322.560	25.34	3.35	6.49	35.18	54.00	18.82
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	13.91	42.60	74.00	31.40
Average	1322.560	25.34	3.35	7.88	36.57	54.00	17.43

Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Measurement was up to 25GHz, but the emissions level were too low against the official limit and not report.



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Data: 1 File: D:\HB954\TX2403.328.EMI (14)
Level (dBuV/m)



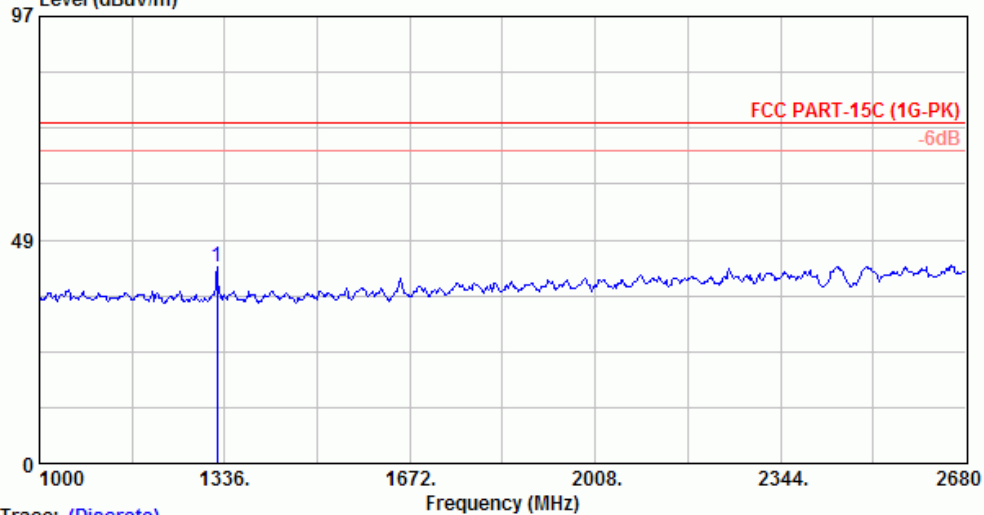
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2403.328MHz		



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Data: 2 File: D:\HB954\TX2403.328.EMI (14)
Level (dBuV/m)



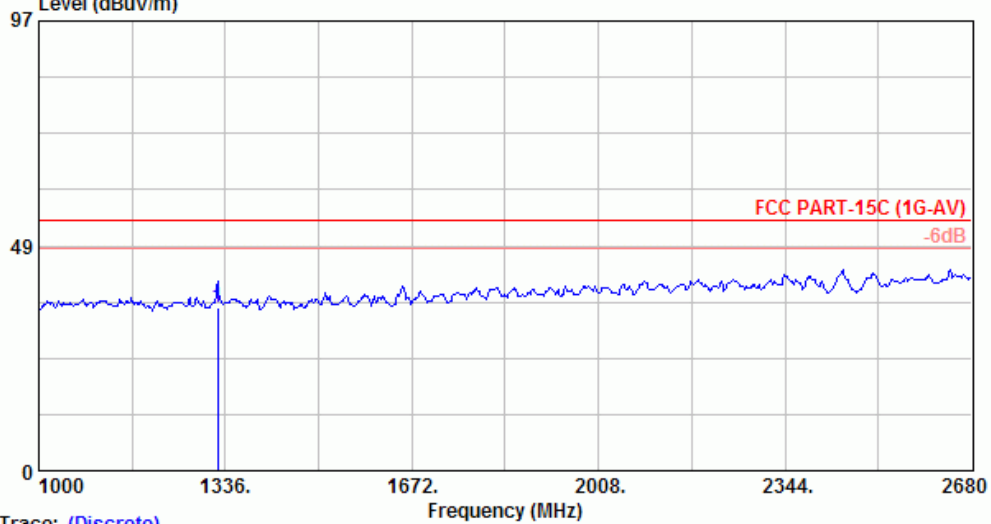
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 2
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2403.328MHz		



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Data: 13 File: D:\HB954\TX2403.328.EMI (14)

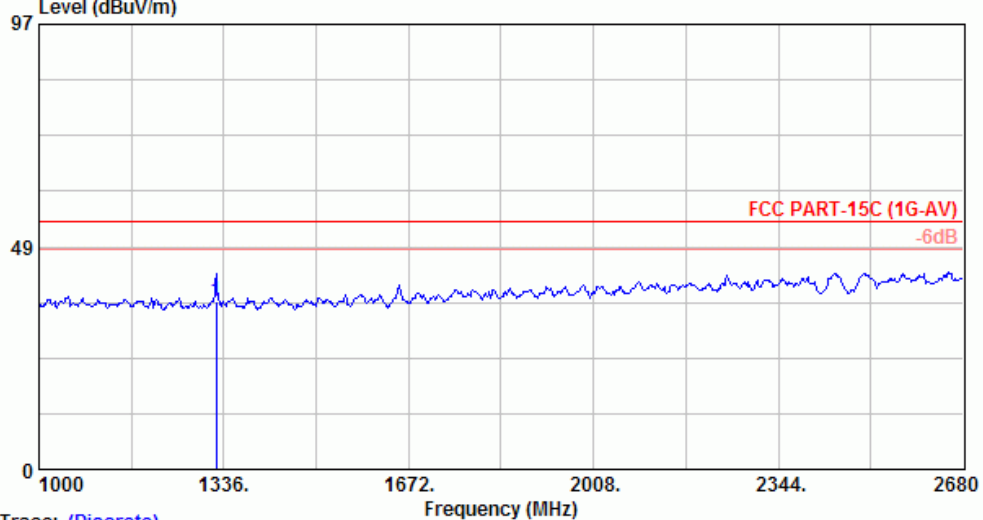


Trace: (Discrete)
Site no. : A/C Chamber Data no. : 13
Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2403.328MHz



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Email:ttemc@ttemc.com.tw

Data: 14 File: D:\HB954\TX2403.328.EMI (14)

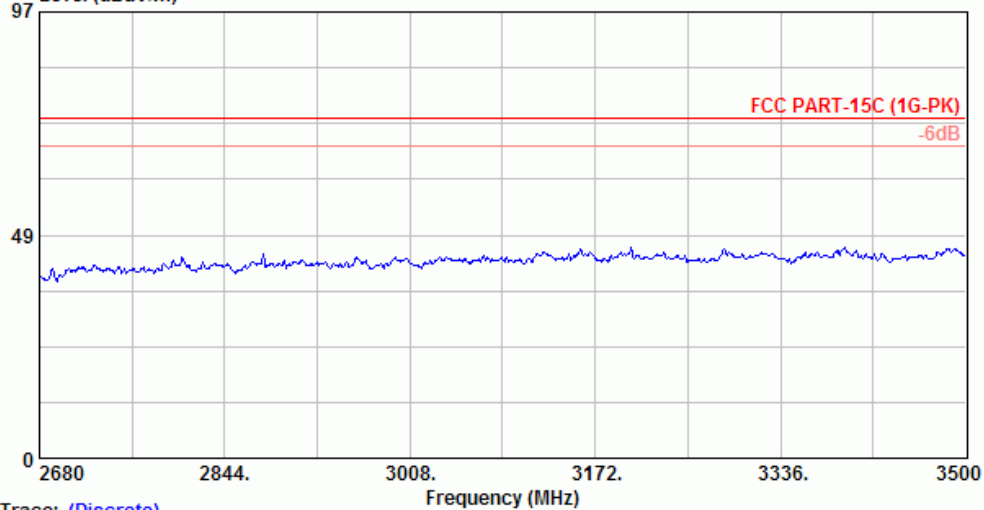


Trace: (Discrete)
Site no. : A/C Chamber Data no. : 14
Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2403.328MHz



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Data: 4 File: D:\HB954\TX2403.328.EMI (14)
Level (dBuV/m)

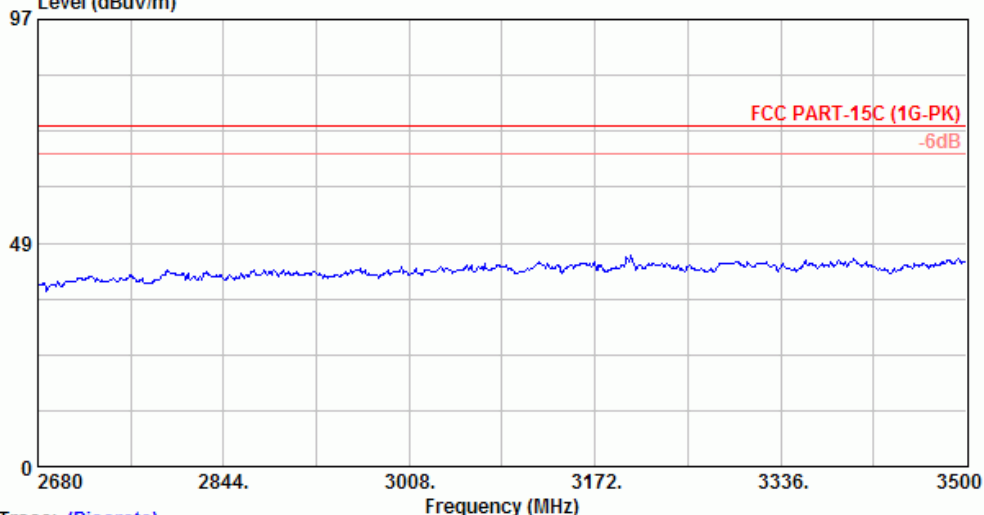


Site no.	: A/C Chamber	Data no.	: 4
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2403.328MHz		



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Data: 3 File: D:\HB954\TX2403.328.EMI (14)
Level (dBuV/m)

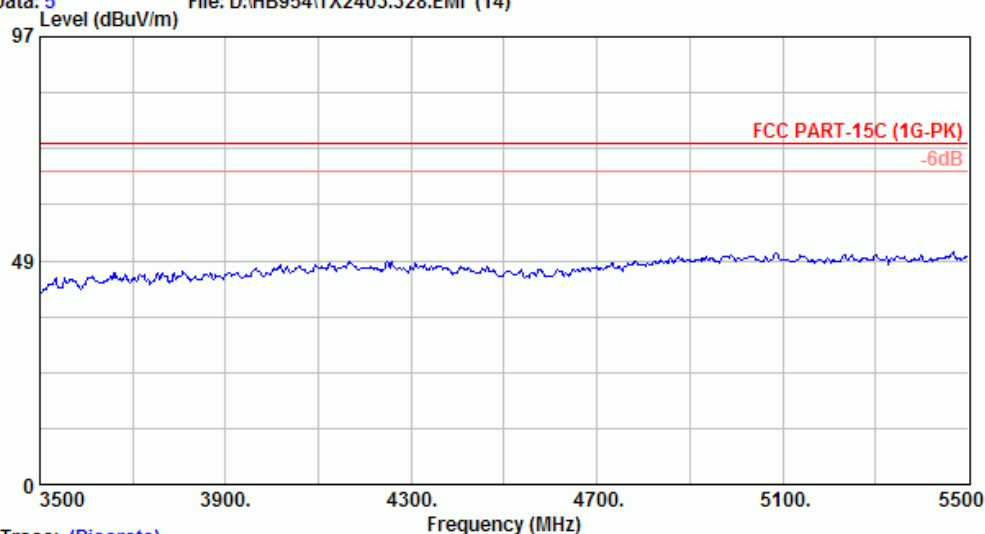


Site no.	: A/C Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2403.328MHz		



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Data: 5 File: D:\HB954\TX2403.328.EMI (14)



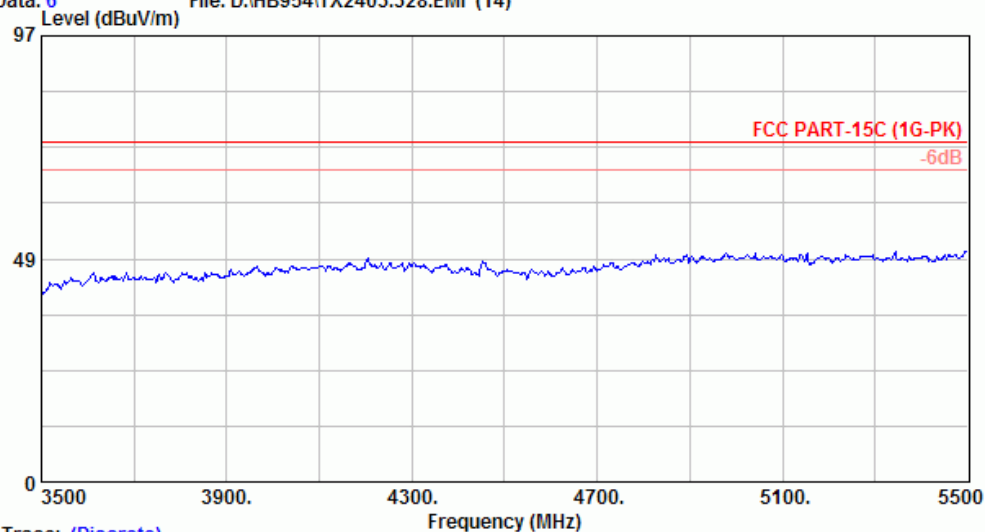
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 5
Dis. / Ant. : 3m 3115	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2403.328MHz	



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Data: 6 File: D:\HB954\TX2403.328.EMI (14)



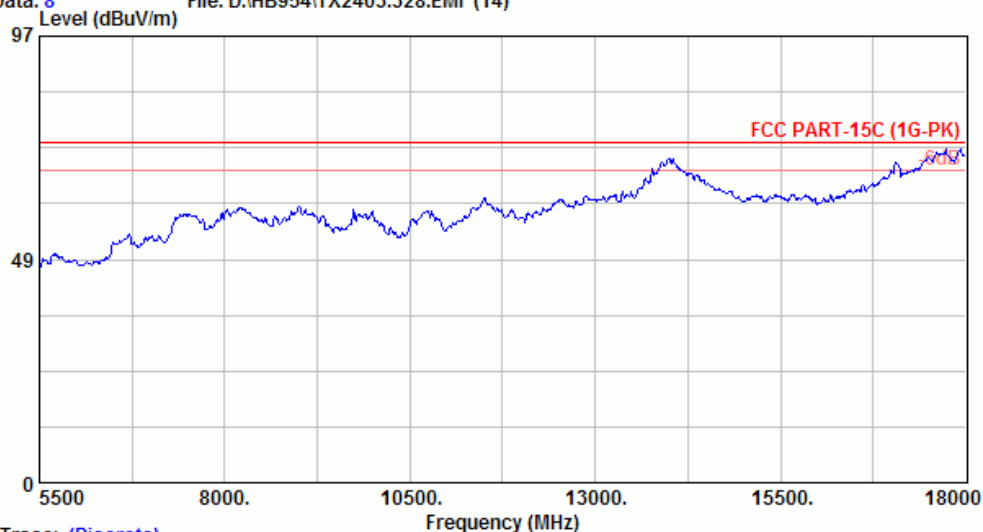
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 6
Dis. / Ant. : 3m 3115	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2403.328MHz	



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Data: 8 File: D:\HB954\TX2403.328.EMI (14)



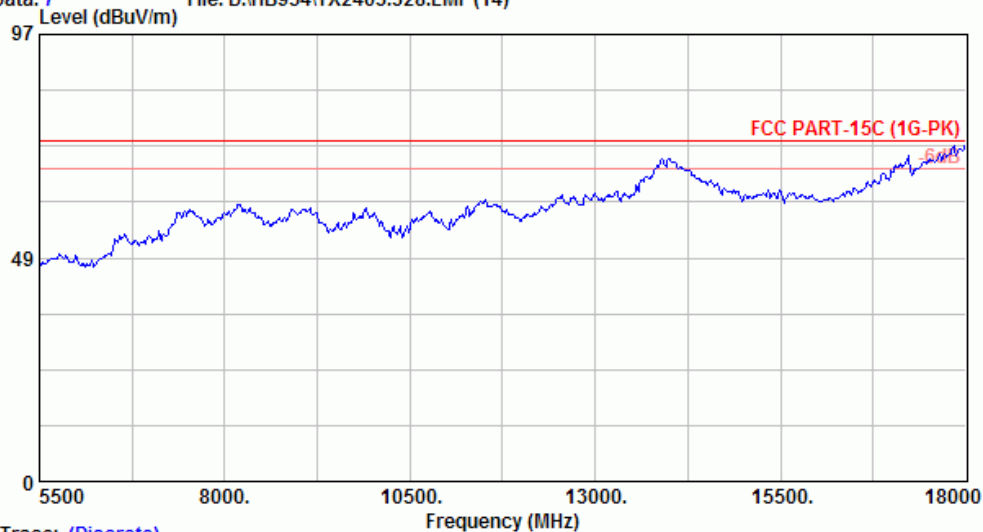
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 8
Dis. / Ant. : 3m 3115	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2403.328MHz	



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Data: 7 File: D:\HB954\TX2403.328.EMI (14)



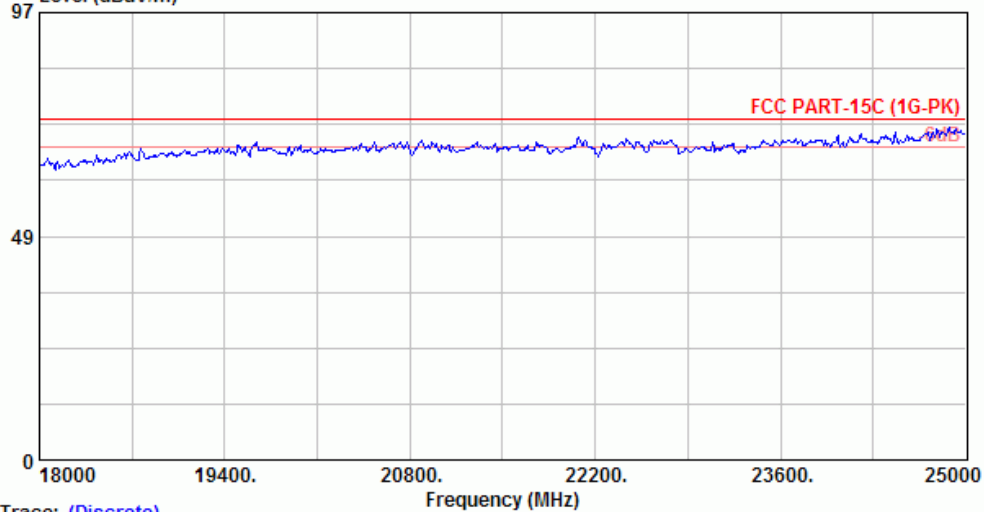
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 7
Dis. / Ant. : 3m 3115	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2403.328MHz	



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Data: 9 File: D:\HB954\TX2403.328.EMI (14)
Level (dBuV/m)

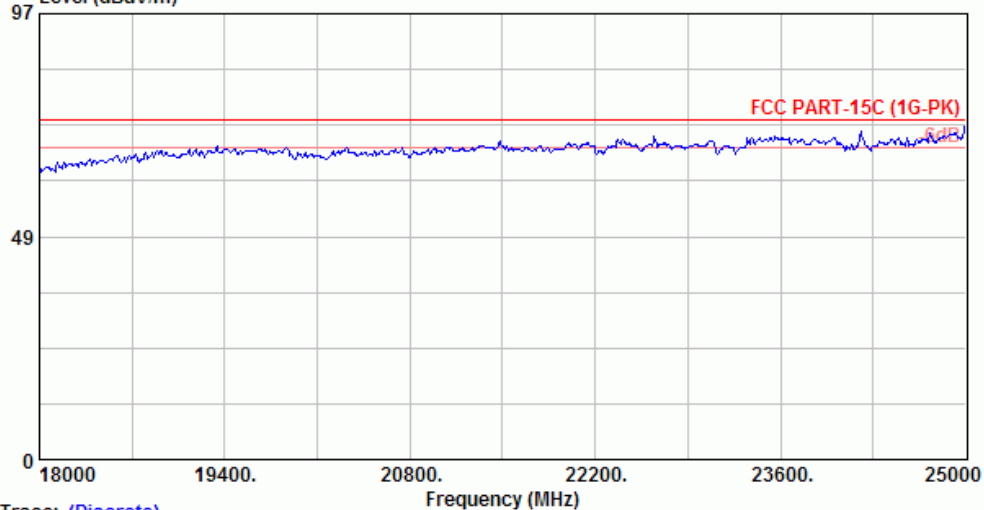


Site no. : site	Data no. : 9
Dis. / Ant. : 3m 3116	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2403.328MHz	



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Data: 10 File: D:\HB954\TX2403.328.EMI (14)
Level (dBuV/m)



Site no. : site	Data no. : 10
Dis. / Ant. : 3m 3116	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2403.328MHz	

Date of Test : Dec. 01, 2008 Temperature : 22°C

EUT : Network Blu-Ray Home Theater
(Transmitter) Humidity : 48%Test Mode : Transmitting Mode, Frequency:
2442.240MHz (CH19) Test Voltage : AC 120V/60Hz

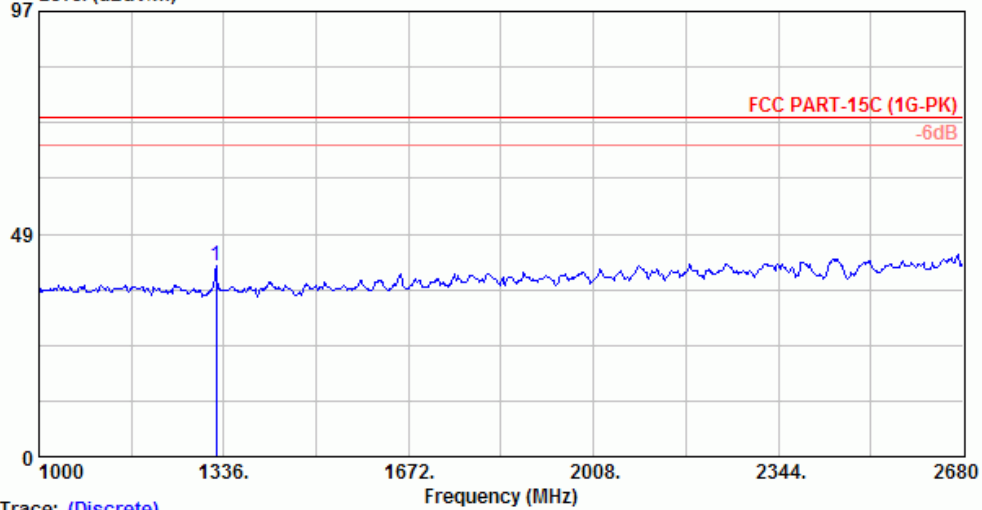
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB μ V	Meter Reading Horizontal dB μ V/m	Emission Level Horizontal dB μ V/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	12.78	41.47	74.00	32.53
Average	1322.560	25.34	3.35	6.89	35.58	54.00	18.42
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB μ V	Meter Reading Vertical dB μ V/m	Emission Level Vertical dB μ V/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	15.36	44.05	74.00	29.95
Average	1322.560	25.34	3.35	9.88	38.57	54.00	15.43

Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Measurement was up to 25GHz, but the emissions level were too low against the official limit and not report.



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Data: 5 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



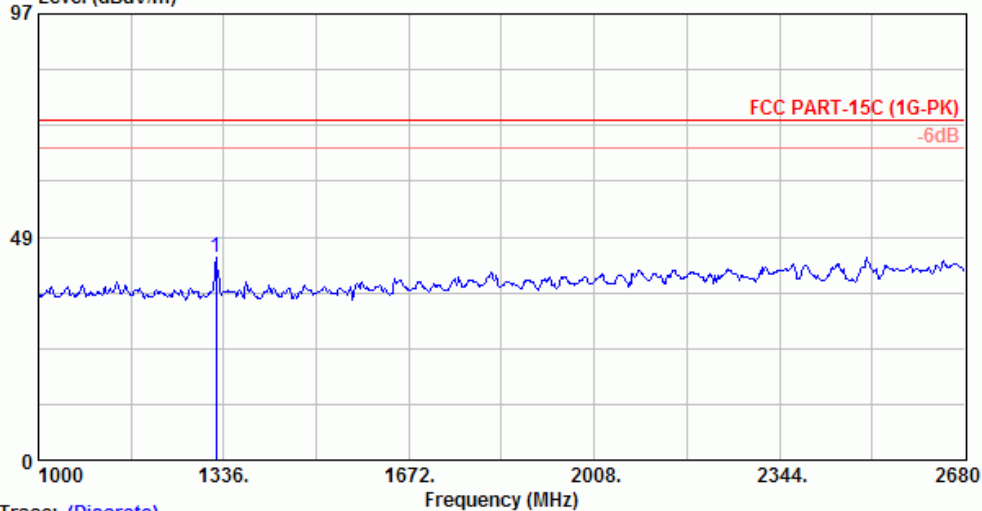
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 5
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 6 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



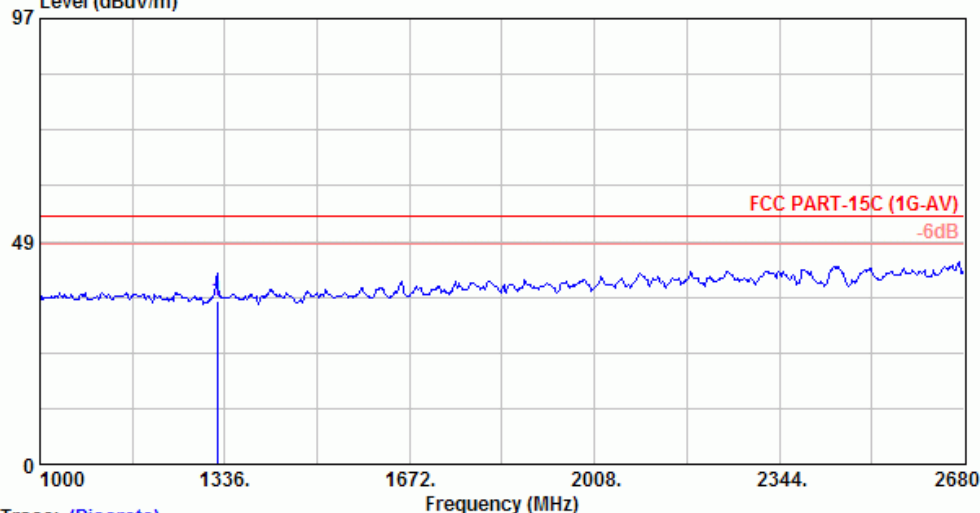
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 6
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 13 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



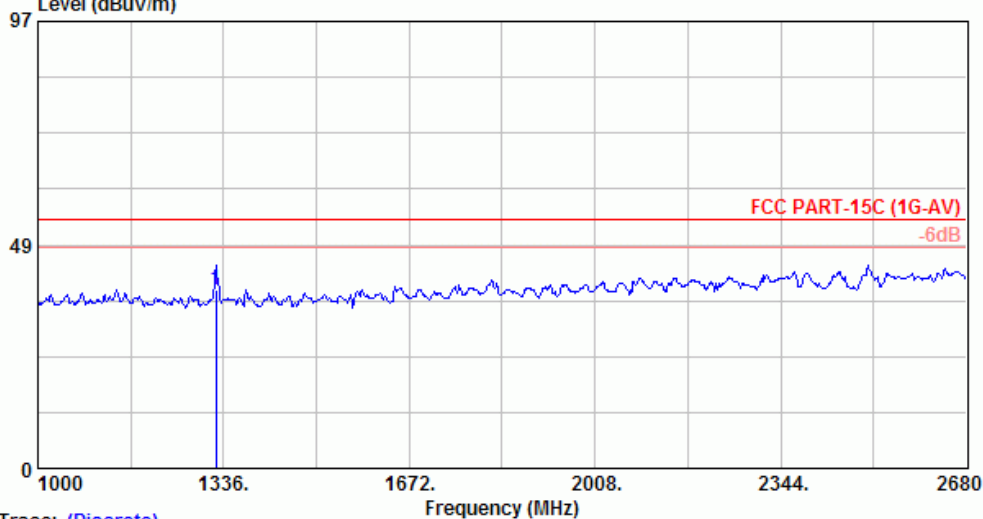
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 13
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-AV)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	: HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 14 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



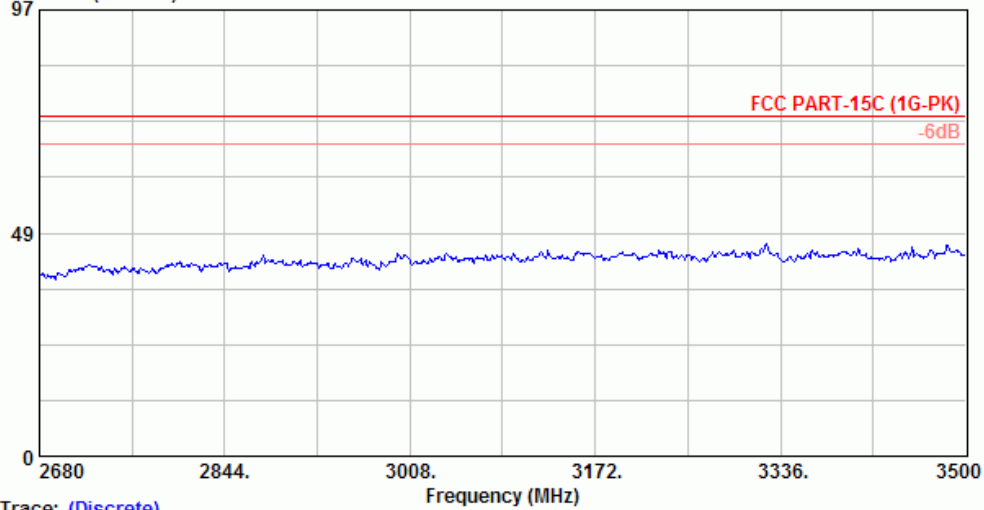
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 14
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-AV)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	: HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 8 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



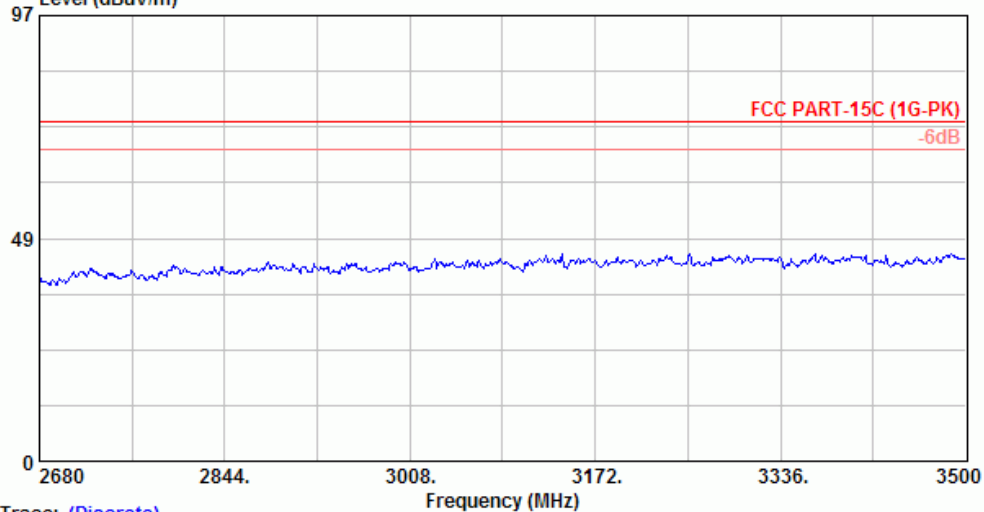
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 8
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 7 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



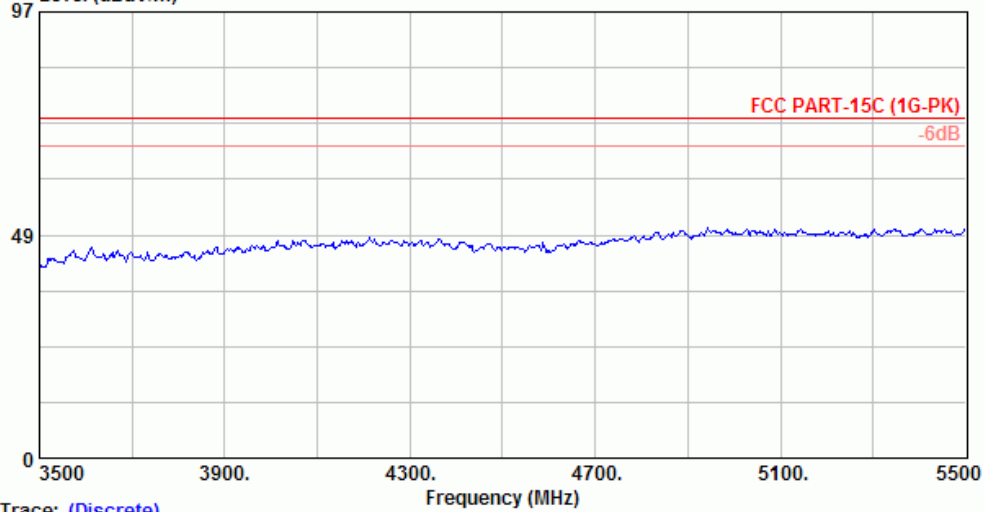
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 7
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 1 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



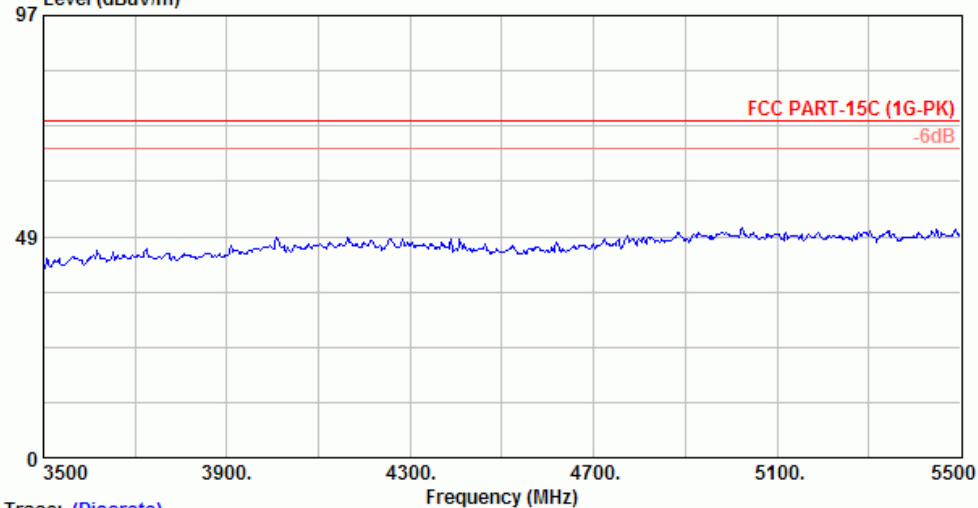
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 1
Dis. / Ant. : 3m 3115	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2442.240MHz	



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Data: 2 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



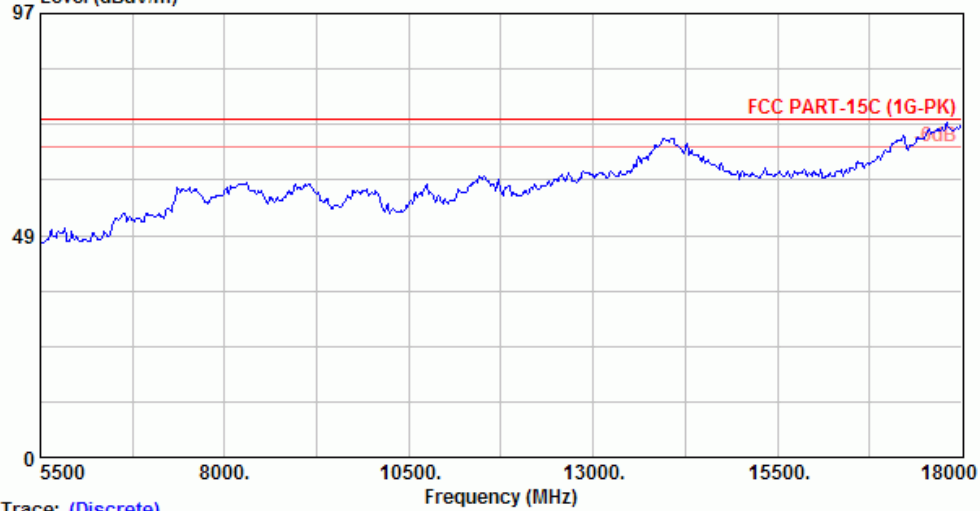
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 2
Dis. / Ant. : 3m 3115	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2442.240MHz	



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Data: 4 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



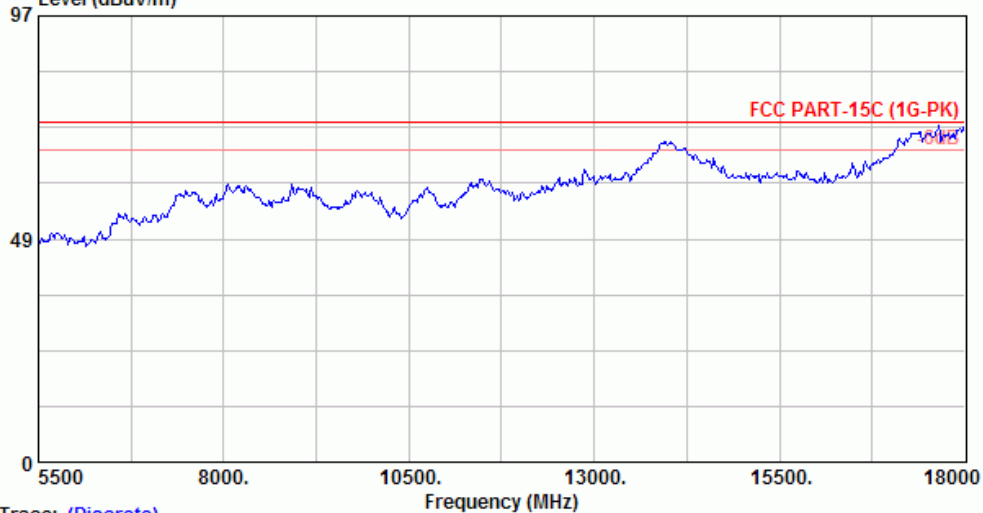
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 4
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	: HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 3 File: D:\HB954\TX2442.240.EMI (14)
Level (dBuV/m)



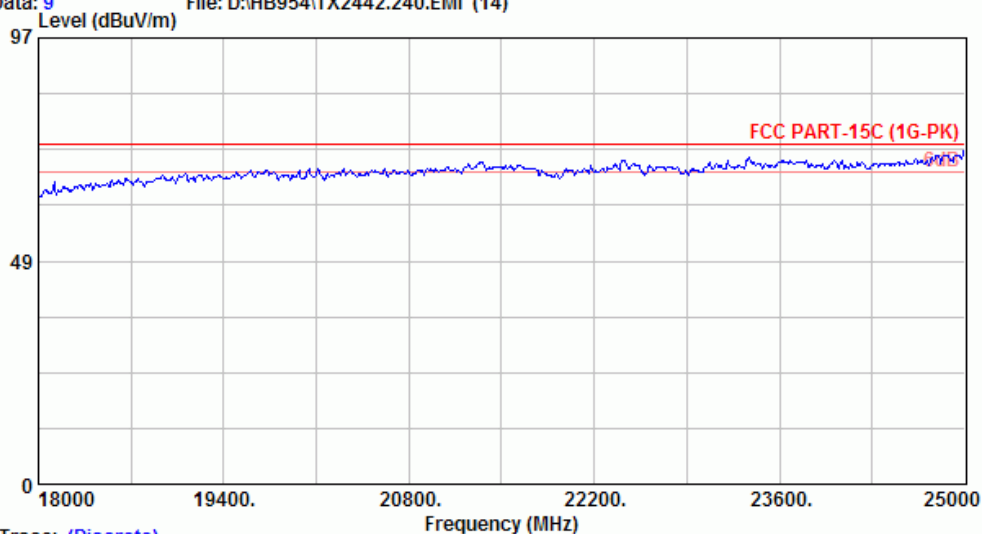
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	: HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2442.240MHz		



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Data: 9 File: D:\HB954\TX2442.240.EMI (14)



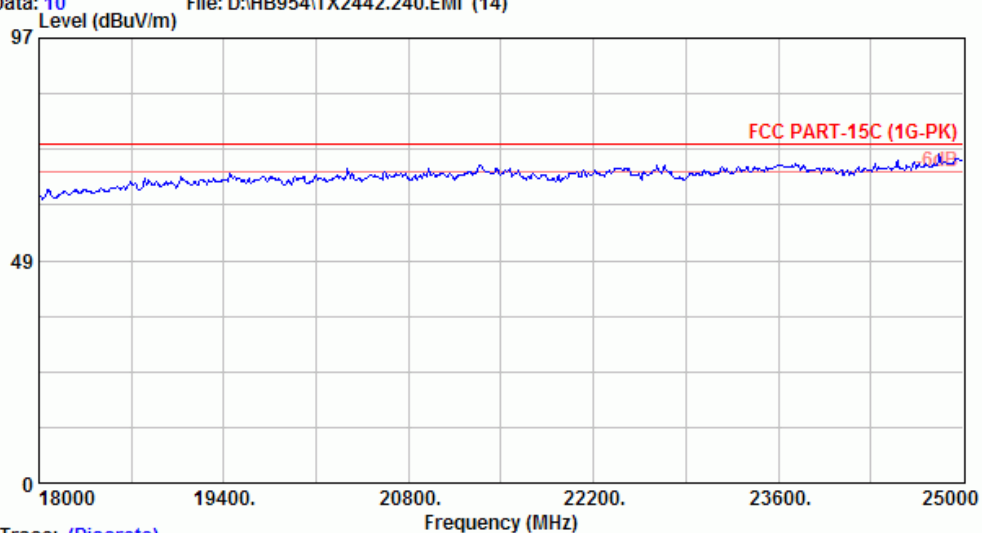
Trace: (Discrete)

Site no. : site	Data no. : 9
Dis. / Ant. : 3m 3116	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2442.240MHz	



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Data: 10 File: D:\HB954\TX2442.240.EMI (14)



Trace: (Discrete)

Site no. : site	Data no. : 10
Dis. / Ant. : 3m 3116	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2442.240MHz	

Date of Test : Dec. 01, 2008 Temperature : 22°CEUT : Network Blu-Ray Home Theater
(Transmitter) Humidity : 48%Test Mode : Transmitting Mode, Frequency:
2479.104MHz (CH37) Test Voltage : AC 120V/60Hz

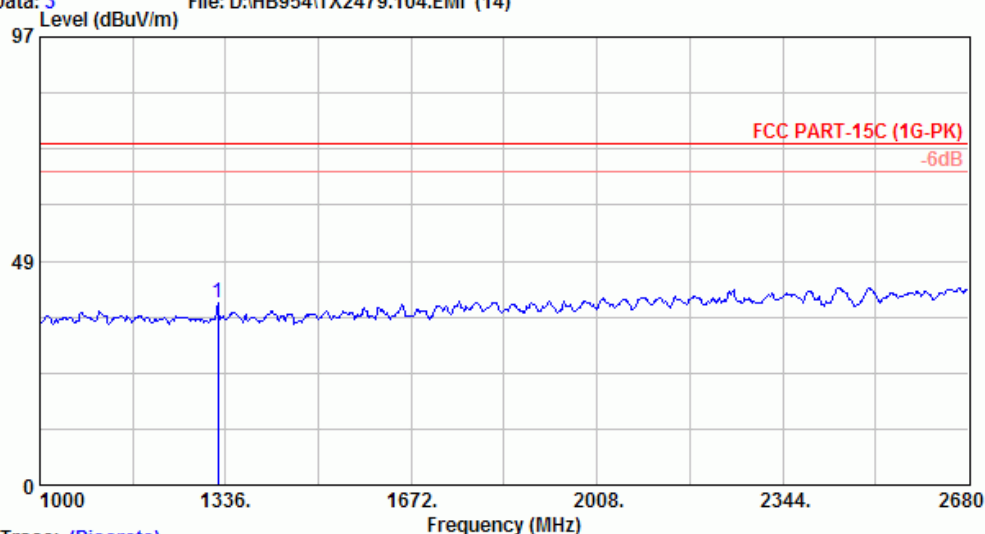
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Horizontal dBμV/m	Emission Level Horizontal dBμV/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	10.92	39.61	74.00	34.39
Average	1322.560	25.34	3.35	5.49	34.18	54.00	19.82
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	14.53	43.22	74.00	30.78
Average	1322.560	25.34	3.35	8.48	37.17	54.00	16.83

Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Measurement was up to 25GHz, but the emissions level were too low against the official limit and not report.



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Data: 3 File: D:\HB954\TX2479.104.EMI (14)



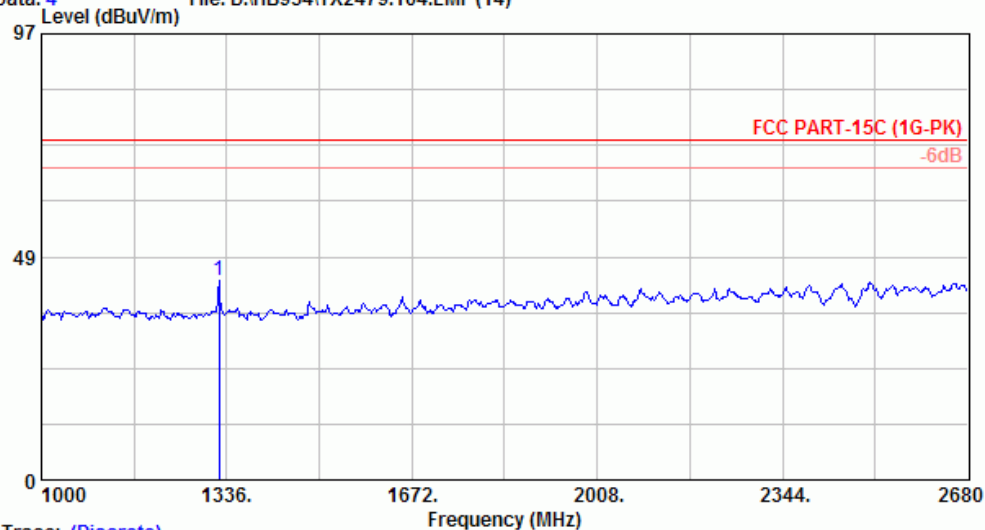
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2479.104MHz		



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Data: 4 File: D:\HB954\TX2479.104.EMI (14)



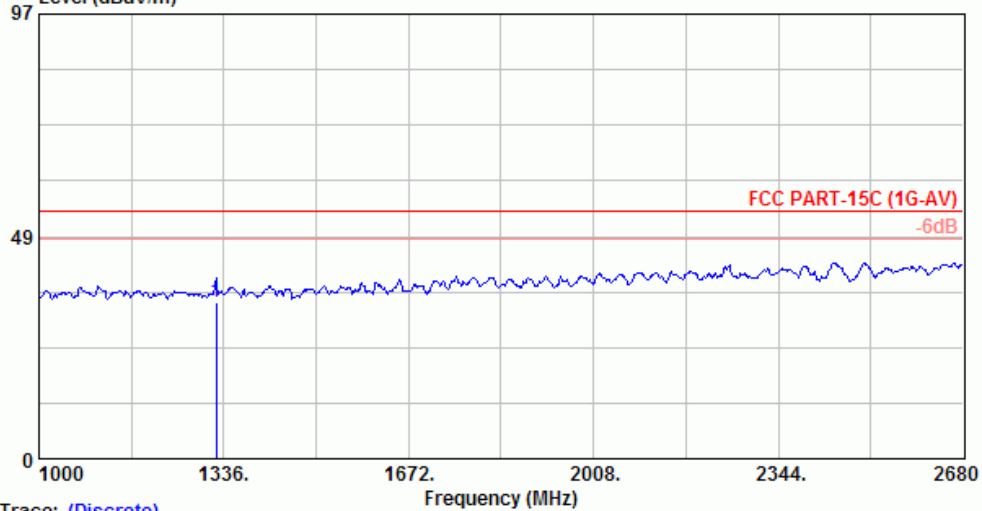
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 4
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2479.104MHz		



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Data: 13 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)



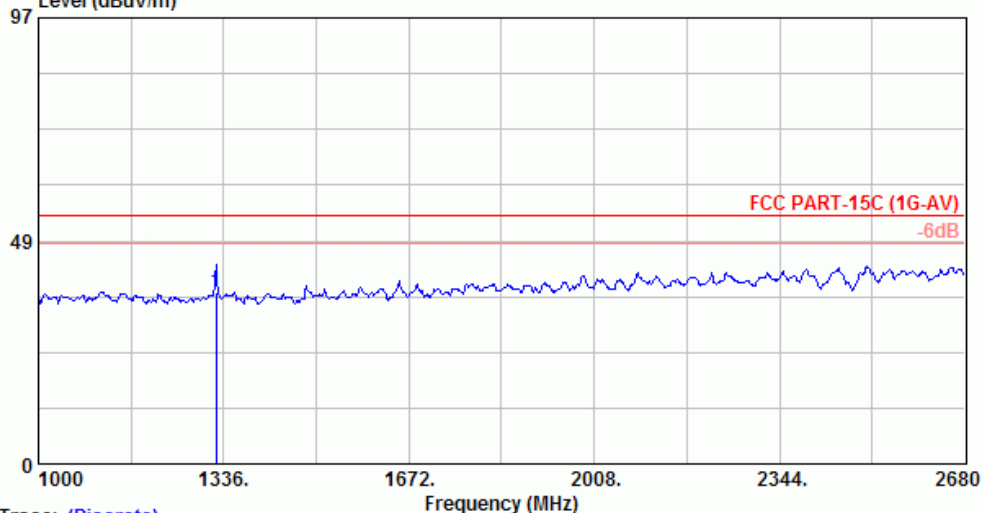
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 13
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-AV)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2479.104MHz		



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Data: 14 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)



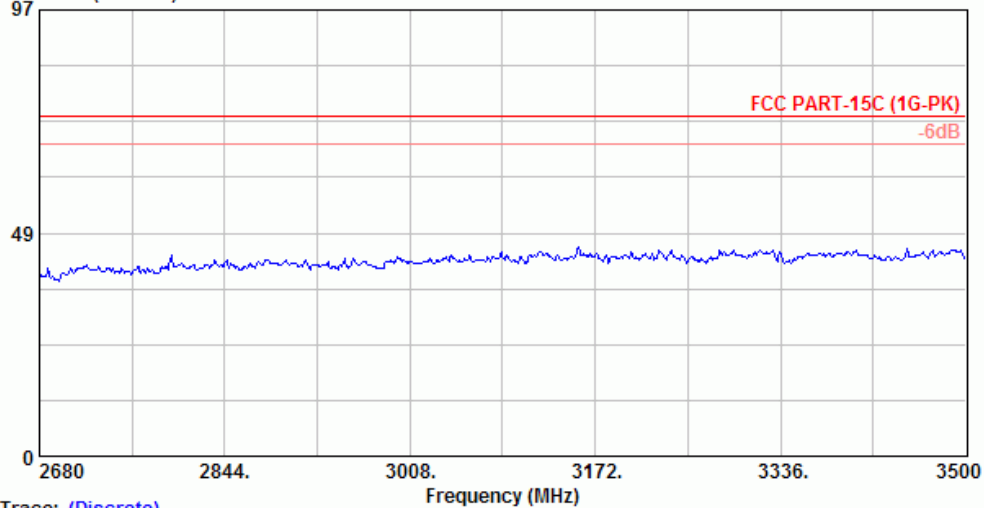
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 14
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-AV)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2479.104MHz		



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Data: 2 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)



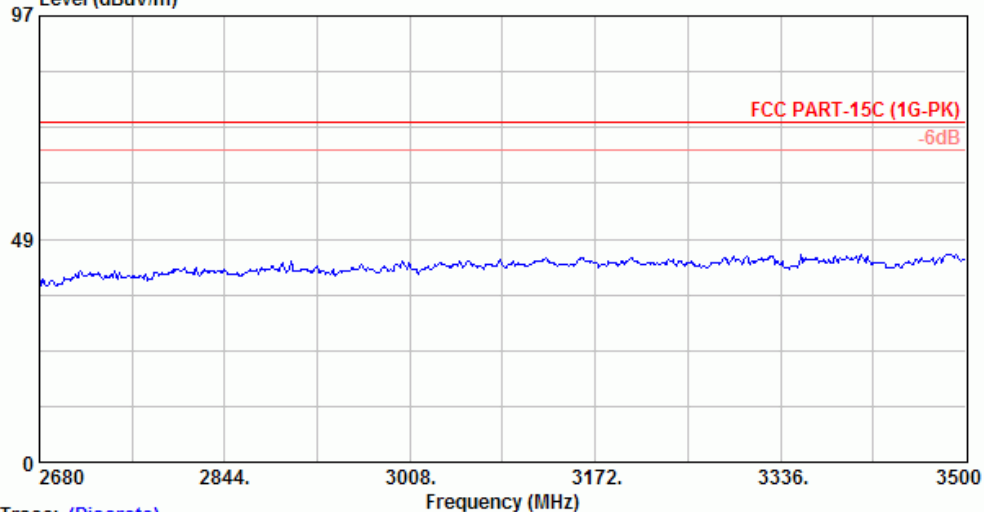
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 2
Dis. / Ant. : 3m 3115	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2479.104MHz	



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Data: 1 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)



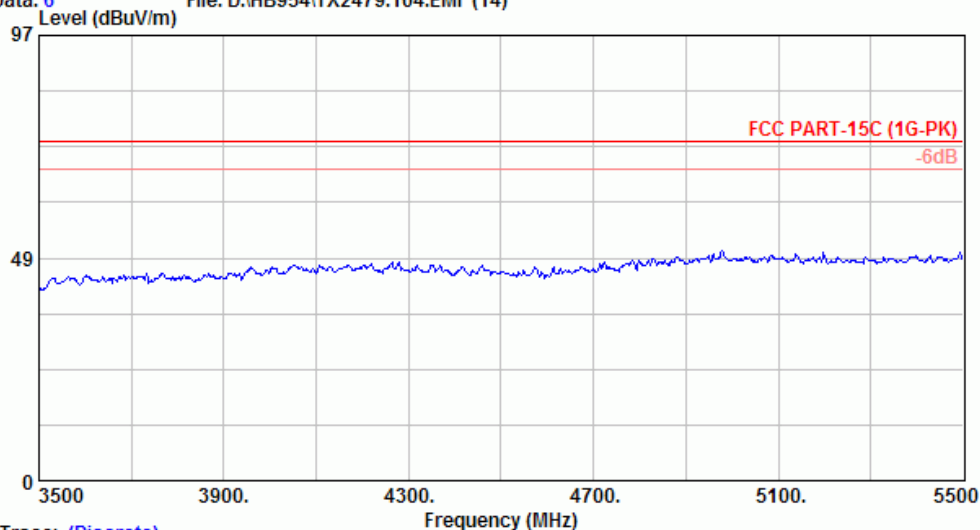
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 1
Dis. / Ant. : 3m 3115	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : TX2479.104MHz	



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Data: 6 File: D:\HB954\TX2479.104.EMI (14)



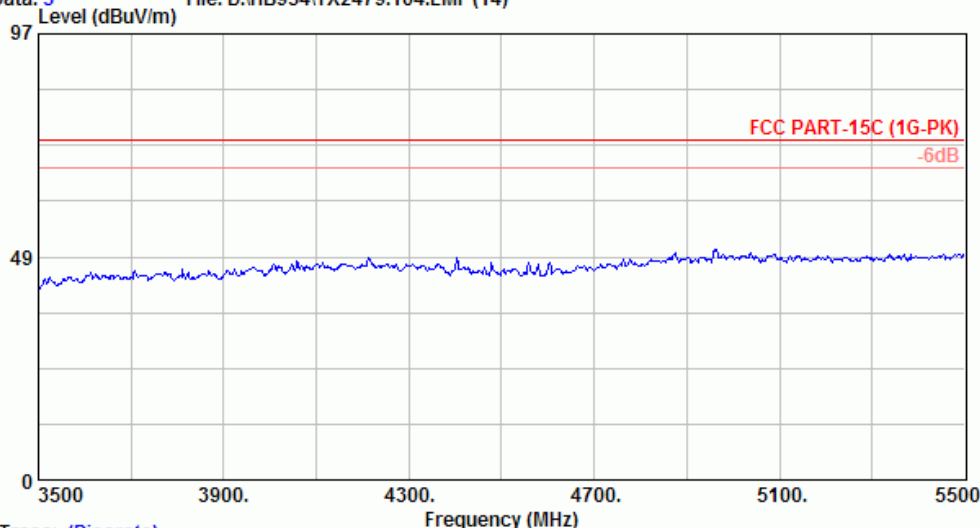
Trace: (Discrete)

Site no. :	A/C Chamber	Data no. :	6
Dis. / Ant. :	3m 3115	Ant. pol. :	HORIZONTAL
Limit :	FCC PART-15C (1G-PK)	Engineer :	Jarwei Wang
Env. / Ins. :	8564EC 22°C/48%	EUT :	NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating :	120Vac/60Hz		
Test Mode :	TX2479.104MHz		



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Data: 5 File: D:\HB954\TX2479.104.EMI (14)



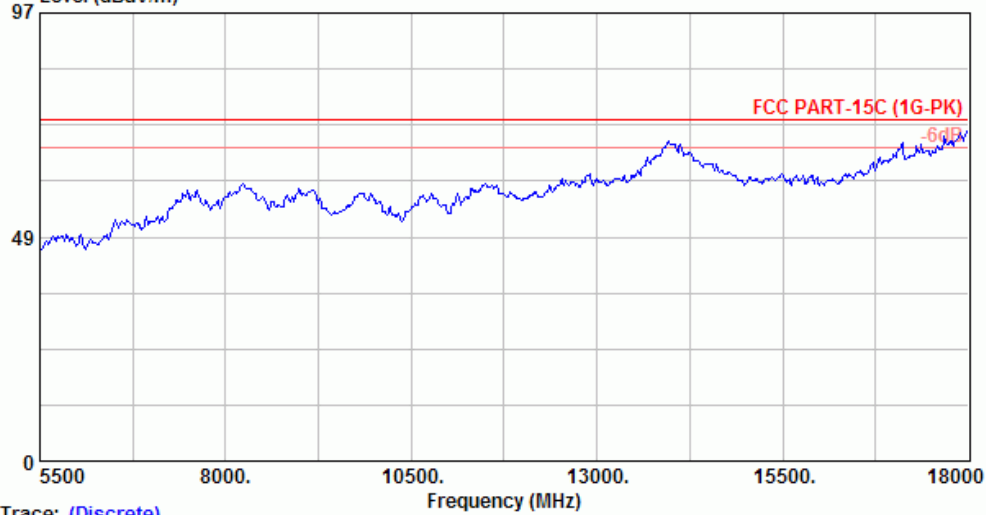
Trace: (Discrete)

Site no. :	A/C Chamber	Data no. :	5
Dis. / Ant. :	3m 3115	Ant. pol. :	VERTICAL
Limit :	FCC PART-15C (1G-PK)	Engineer :	Jarwei Wang
Env. / Ins. :	8564EC 22°C/48%	EUT :	NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating :	120Vac/60Hz		
Test Mode :	TX2479.104MHz		



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Data: 7 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)

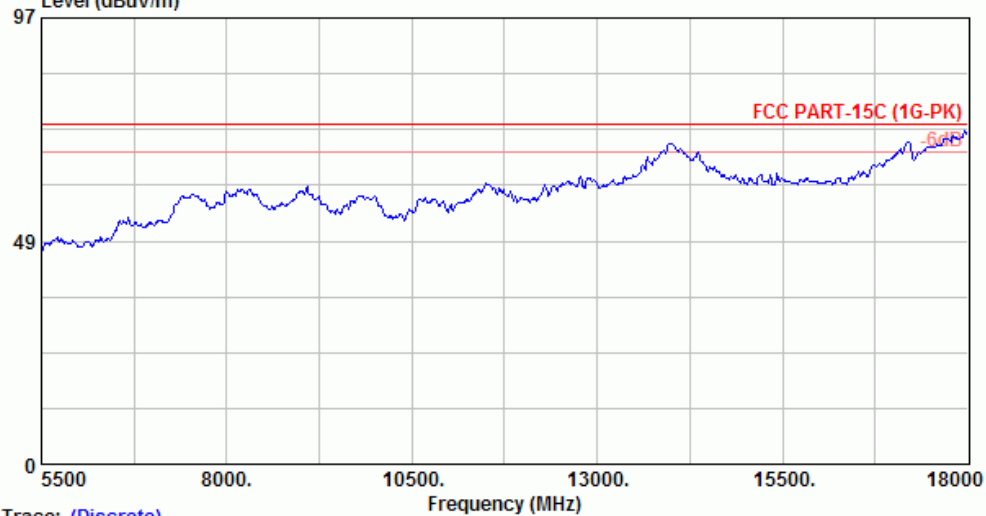


Trace: (Discrete)
Site no. : A/C Chamber Data no. : 7
Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2479.104MHz



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Data: 8 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)

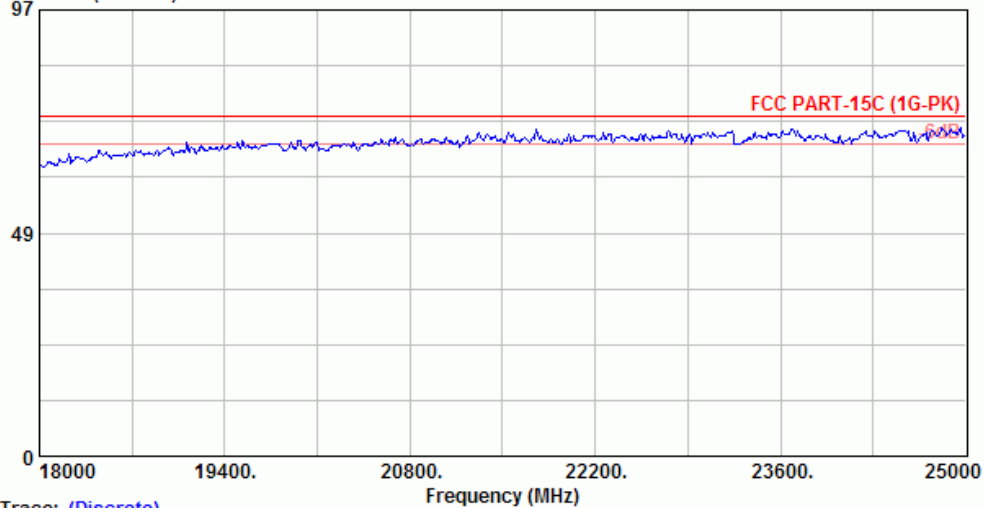


Trace: (Discrete)
Site no. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : TX2479.104MHz



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Data: 10 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)

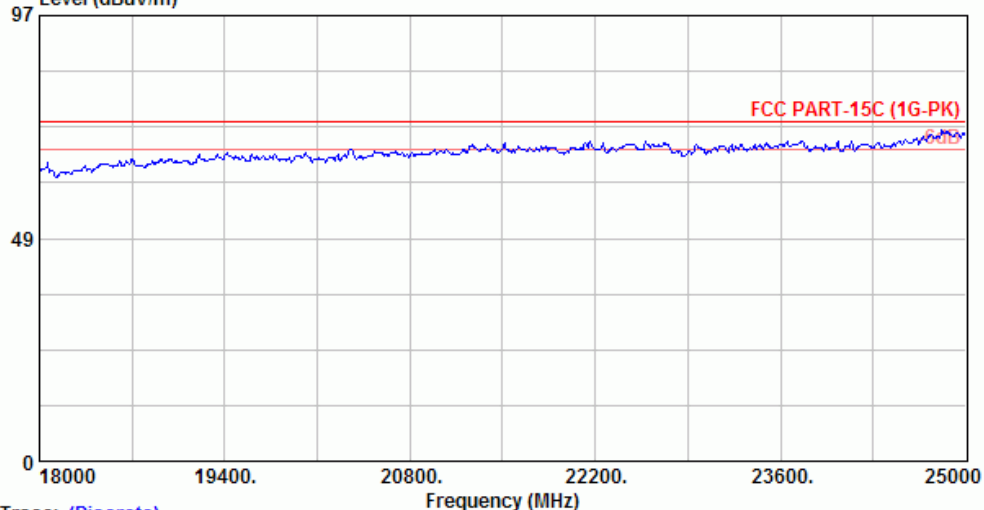


Site no.	: site	Data no.	: 10
Dis. / Ant.	: 3m 3116	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	EUT	: NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2479.104MHz		



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Data: 9 File: D:\HB954\TX2479.104.EMI (14)
Level (dBuV/m)



Site no.	: site	Data no.	: 9
Dis. / Ant.	: 3m 3116	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	EUT	: NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: TX2479.104MHz		

Date of Test : Dec. 01, 2008 Temperature : 22°C

EUT : Network Blu-Ray Home Theater (Transmitter) Humidity : 48%

Test Mode : Receiving Mode, Frequency: 2442.240MHz (CH19) Test Voltage : AC 120V/60Hz

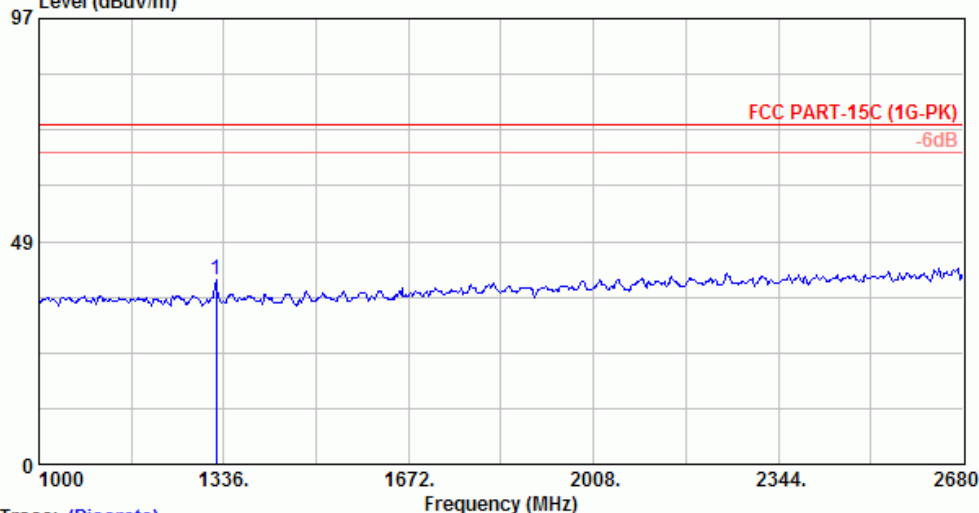
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Horizontal dBμV/m	Emission Level Horizontal dBμV/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	11.46	40.15	74.00	33.85
Average	1322.560	25.34	3.35	6.89	35.58	54.00	18.42
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak	1322.560	25.34	3.35	14.38	43.07	74.00	30.93
Average	1322.560	25.34	3.35	9.48	38.17	54.00	15.83

Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Measurement was up to 25GHz, but the emissions level were too low against the official limit and not report.



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Data: 2 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



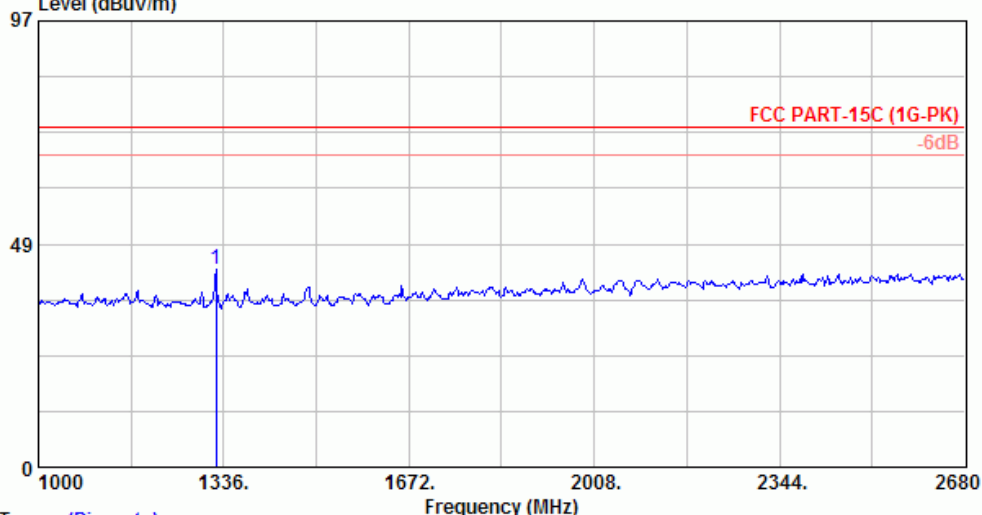
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 2
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: RX2442.240MHz		



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Data: 1 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



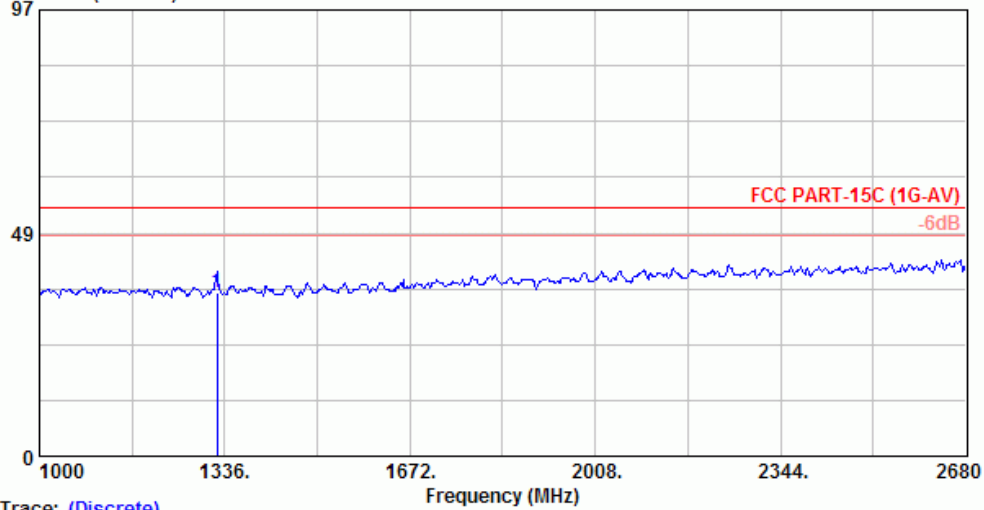
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 22°C/48%	Engineer	: Jarwei Wang
EUT	: NETWORK BLU-RAY HOME THEATER	M/N:	HB954PAW
Power Rating	: 120Vac/60Hz		
Test Mode	: RX2442.240MHz		



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Data: 12 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



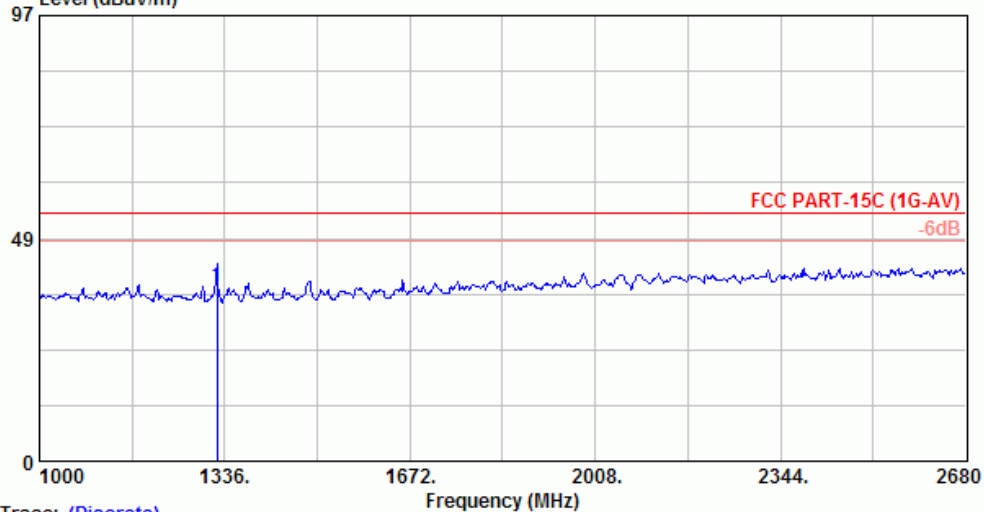
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 12
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-AV)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: RX2442.240MHz		



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Data: 11 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



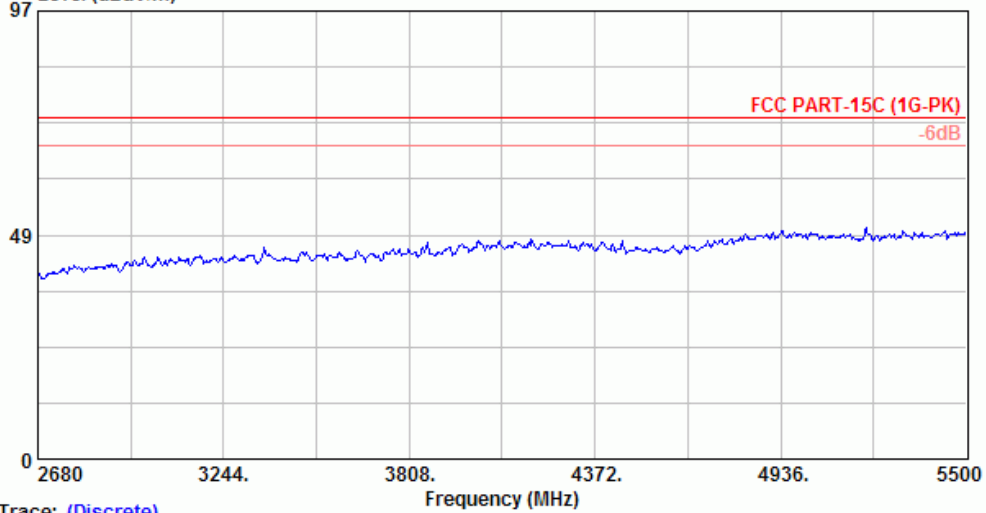
Trace: (Discrete)

Site no.	: A/C Chamber	Data no.	: 11
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-AV)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 22°C/48%	M/N:	HB954PAW
EUT	: NETWORK BLU-RAY HOME THEATER		
Power Rating	: 120Vac/60Hz		
Test Mode	: RX2442.240MHz		



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Data: 3 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



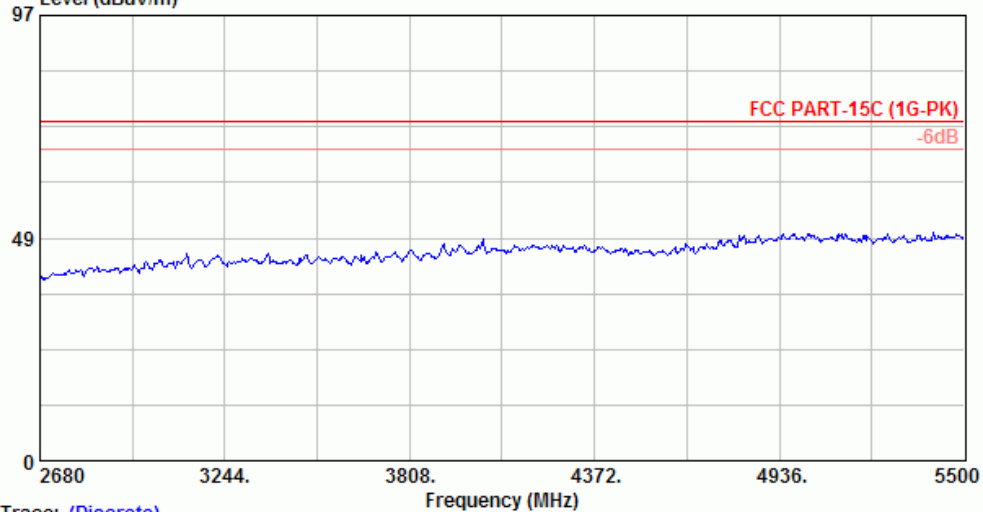
Trace: (Discrete)

Site no. :	A/C Chamber	Data no. :	3
Dis. / Ant. :	3m 3115	Ant. pol. :	HORIZONTAL
Limit :	FCC PART-15C (1G-PK)	Engineer :	Jarwei Wang
Env. / Ins. :	8564EC 22°C/48%		
EUT :	NETWORK BLU-RAY HOME THEATER	M/N:	HB954PAW
Power Rating :	120Vac/60Hz		
Test Mode :	RX2442.240MHz		



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Data: 4 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



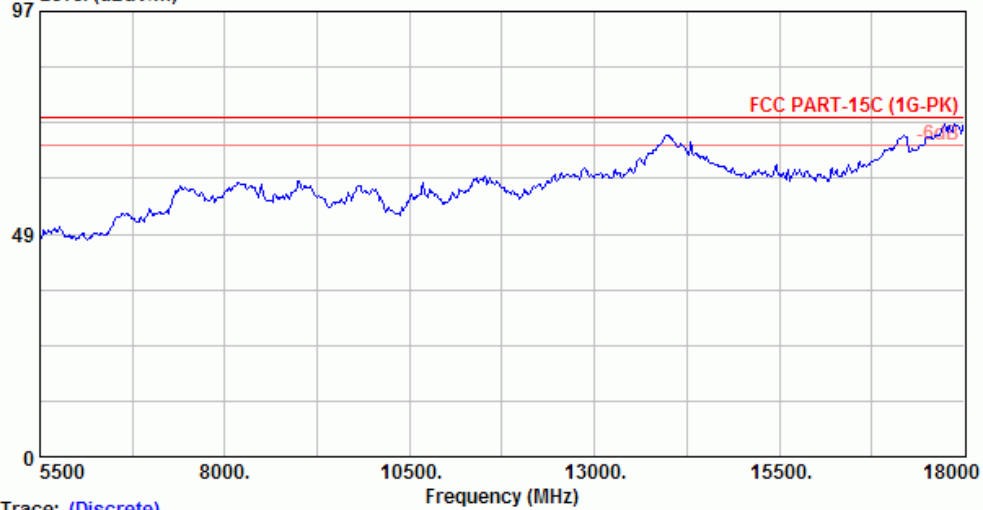
Trace: (Discrete)

Site no. :	A/C Chamber	Data no. :	4
Dis. / Ant. :	3m 3115	Ant. pol. :	VERTICAL
Limit :	FCC PART-15C (1G-PK)	Engineer :	Jarwei Wang
Env. / Ins. :	8564EC 22°C/48%		
EUT :	NETWORK BLU-RAY HOME THEATER	M/N:	HB954PAW
Power Rating :	120Vac/60Hz		
Test Mode :	RX2442.240MHz		



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Data: 6 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



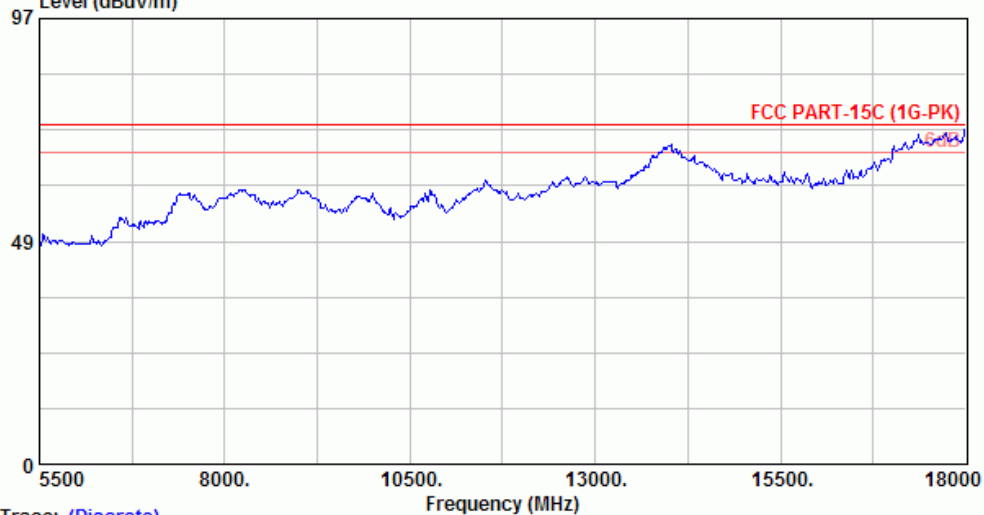
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 6
Dis. / Ant. : 3m 3115	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : RX2442.240MHz	



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Data: 5 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



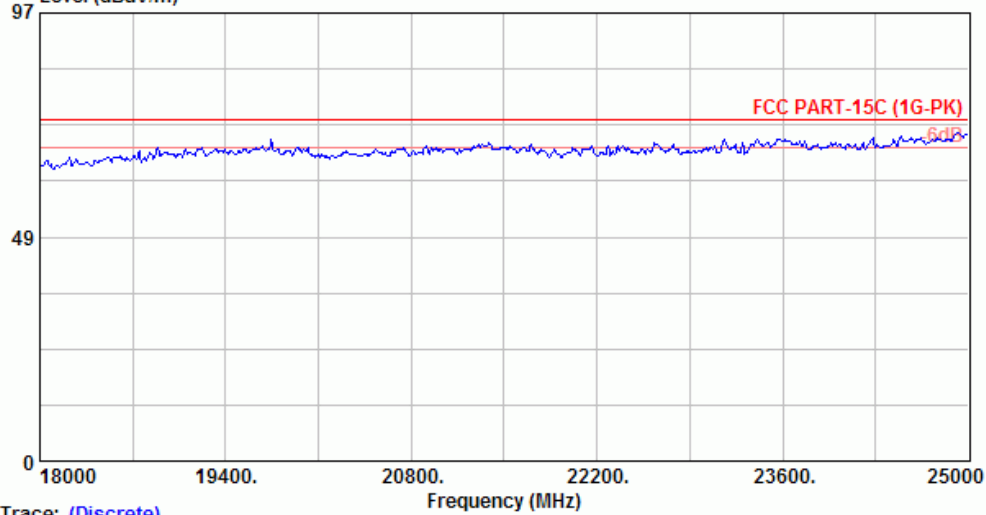
Trace: (Discrete)

Site no. : A/C Chamber	Data no. : 5
Dis. / Ant. : 3m 3115	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 22°C/48%	Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER	M/N: HB954PAW
Power Rating : 120Vac/60Hz	
Test Mode : RX2442.240MHz	



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Data: 7 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)

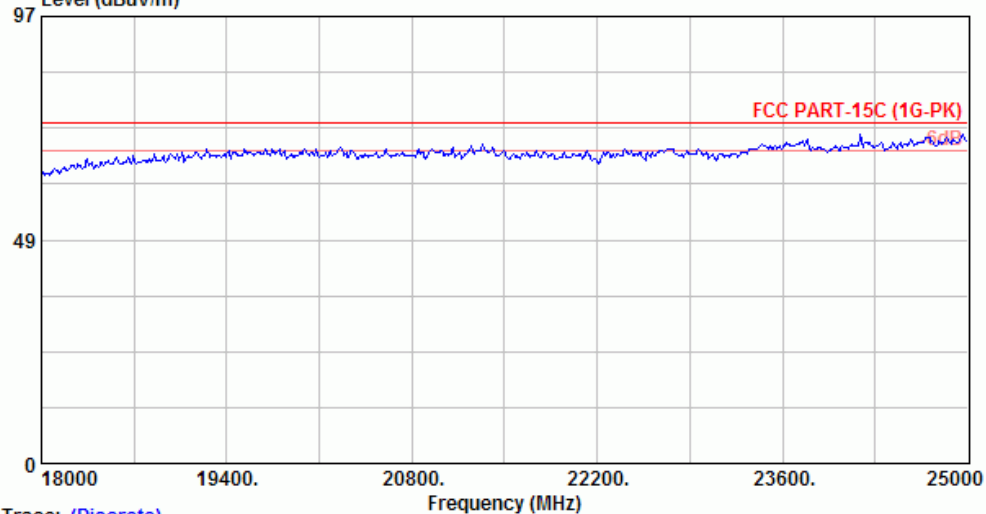


Trace: (Discrete)
Site no. : site Data no. : 7
Dis. / Ant. : 3m 3116 Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : RX2442.240MHz



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Data: 8 File: D:\HB954\RX2442.240.EMI (12)
Level (dBuV/m)



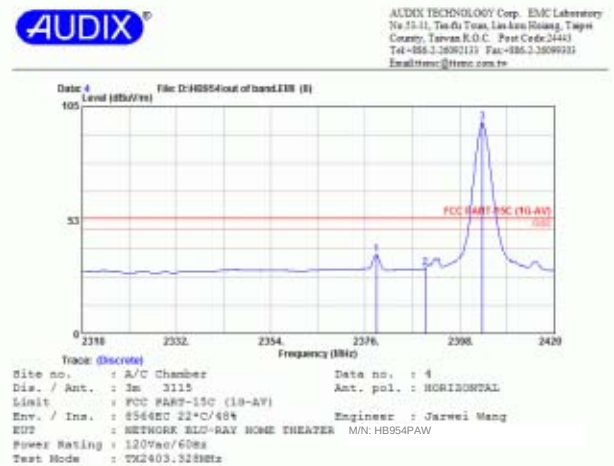
Trace: (Discrete)
Site no. : site Data no. : 8
Dis. / Ant. : 3m 3116 Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : 8564EC 22°C/48% Engineer : Jarwei Wang
EUT : NETWORK BLU-RAY HOME THEATER M/N: HB954PAW
Power Rating : 120Vac/60Hz
Test Mode : RX2442.240MHz

3.6.3. Restricted Bands Measurement Results

Date of Test :	Dec. 01, 2008	Temperature :	22°C
EUT :	Network Blu-Ray Home Theater (Transmitter)	Humidity :	48%
Test Mode :	Transmitting Mode, Frequency: 2403.328MHz (CH0)	Test Voltage :	AC 120V/60Hz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Horizontal dBμV/m	Emission Level Horizontal dBμV/m	Limits dB	Margin
Peak *	2378.640	28.58	5.18	14.93	48.69	74.00	25.31
Average *	2378.640	28.58	5.18	2.96	36.72	54.00	17.28

- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2420MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Date of Test : Dec. 01, 2008 Temperature : 22°C

EUT : Network Blu-Ray Home Theater (Transmitter) Humidity : 48%

Test Mode : Transmitting Mode, Frequency: 2403.328MHz (CH0) Test Voltage : AC 120V/60Hz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak *	2378.640	28.58	5.18	14.03	47.79	74.00	26.21
Average *	2378.640	28.58	5.18	-2.99	30.77	54.00	23.23

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2420MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Date of Test : Dec. 01, 2008 Temperature : 22°C

EUT : Network Blu-Ray Home Theater (Transmitter) Humidity : 48%

Test Mode : Transmitting Mode, Frequency: 2479.104MHz (CH37) Test Voltage : AC 120V/60Hz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB μ V	Meter Reading Horizontal dB μ V/m	Emission Level Horizontal dB μ V/m	Limits dB	Margin
Peak *	2483.640	28.77	5.23	14.35	48.35	74.00	25.65
Average *	2483.640	28.77	5.23	3.39	37.39	54.00	16.61

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2460-2520MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

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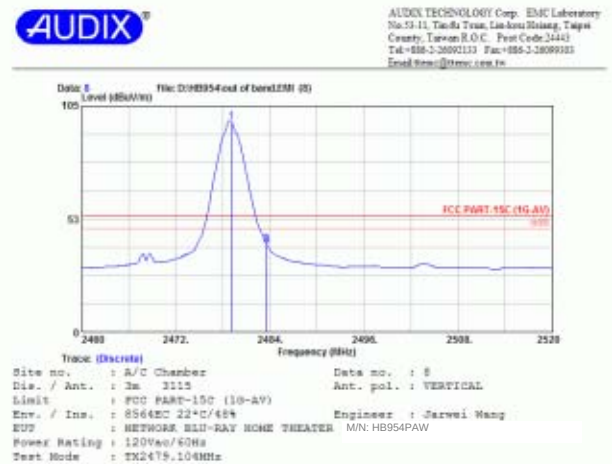
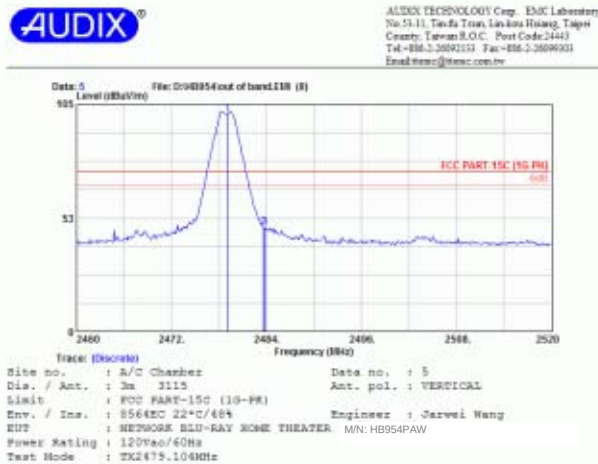
Date of Test : Dec. 01, 2008 Temperature : 22°C

EUT : Network Blu-Ray Home Theater (Transmitter) Humidity : 48%

Test Mode : Transmitting Mode, Frequency: 2479.104MHz (CH37) Test Voltage : AC 120V/60Hz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak *	2483.640	28.77	5.23	13.98	47.98	74.00	26.02
Average *	2483.640	28.77	5.23	6.19	40.19	54.00	13.81

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2460-2520MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



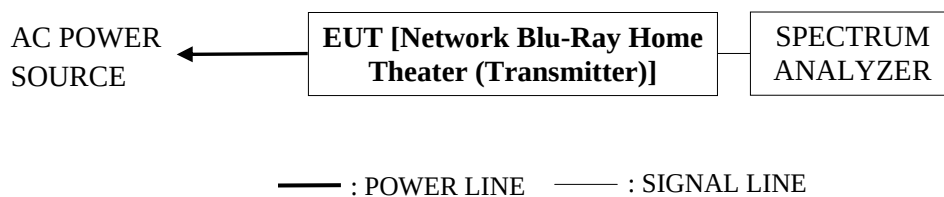
4. 20dB BANDWIDTH MEASUREMENT

4.1. Test Equipment

The following test equipment was used during the 20dB bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 08'	Aug. 06, 09'

4.2. Block Diagram of Test Setup



4.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

4.4. Operating Condition of EUT

- 4.4.1. Setup the EUT and simulator as shown on 4.2.
- 4.4.2. Turn on the power of all equipment.
- 4.4.3. EUT [Network Blu-Ray Home Theater (Transmitter)] was on transmitting frequency function during the testing.

4.5. Test Procedure (DA 00-705)

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.6. Test Results

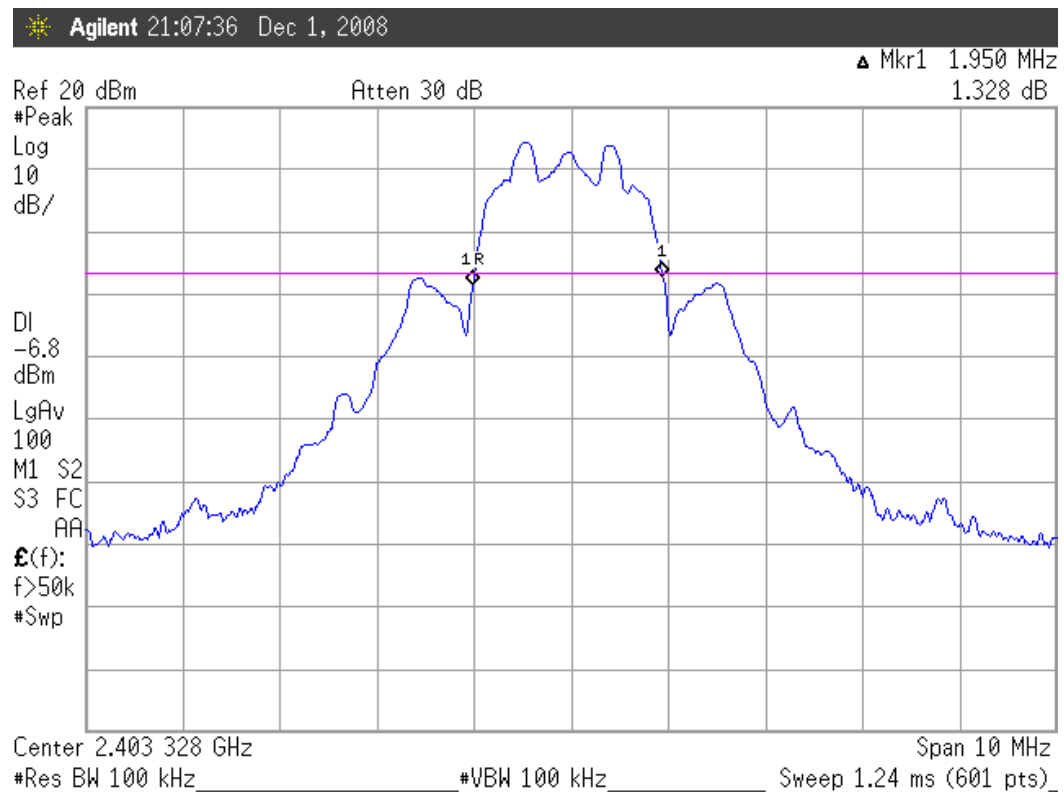
PASSED. All the test results are attached in next pages.

Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

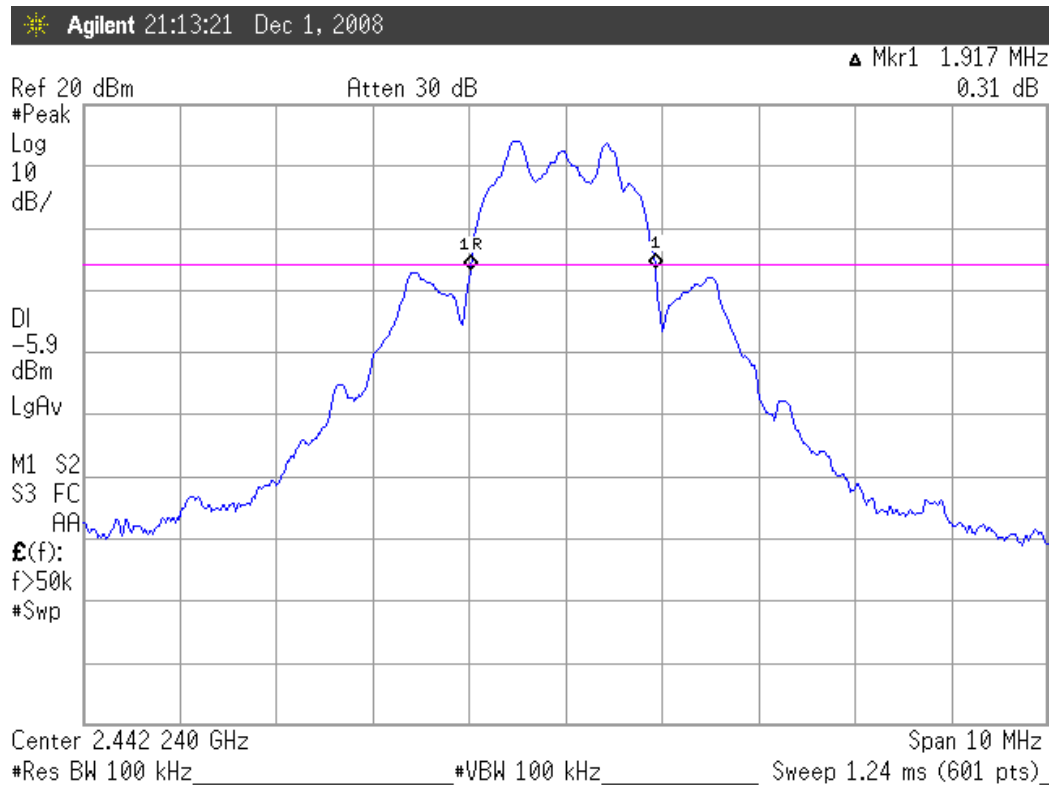
No.	Channel	Test Frequency	20dB Bandwidth	2/3 (20dB Bandwidth)
1.	0	2403.328MHz	1.950MHz	1.300MHz
2.	19	2442.240MHz	1.917MHz	1.278MHz
3.	37	2479.104MHz	1.883MHz	1.255MHz

The maximum two-thirds of the 20dB bandwidth shall be at maximum 1.287MHz.

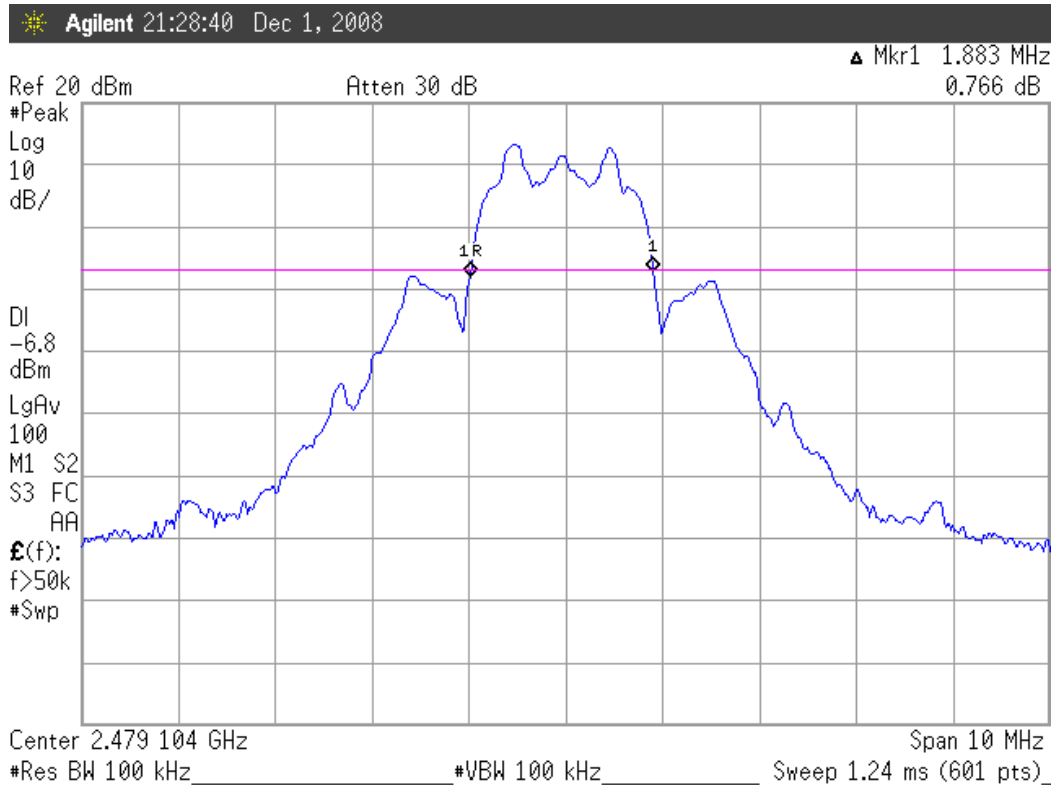
4.6.1. Channel 0, Frequency: 2403.328MHz



4.6.2. Channel 39, Frequency: 2442.240MHz



4.6.3. Channel 78, Frequency: 2479.104MHz



5. CARRIER FREQUENCY SEPARATION MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the carrier frequency separation measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 08'	Aug. 06, 09'

5.2. Block Diagram of Test Setup

The same as section.4.2.

5.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

5.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

5.5. Test Procedure (DA 00-705)

The transmitter output was connected to the spectrum analyzer. The channel separation was measure by spectrum analyzer with 100kHz RBW and 100kHz VBW. The video bandwidth not to be smaller than resolution bandwidth, the peak was mark on adjacent bandwidth, the between of peak is carrier frequency separation.

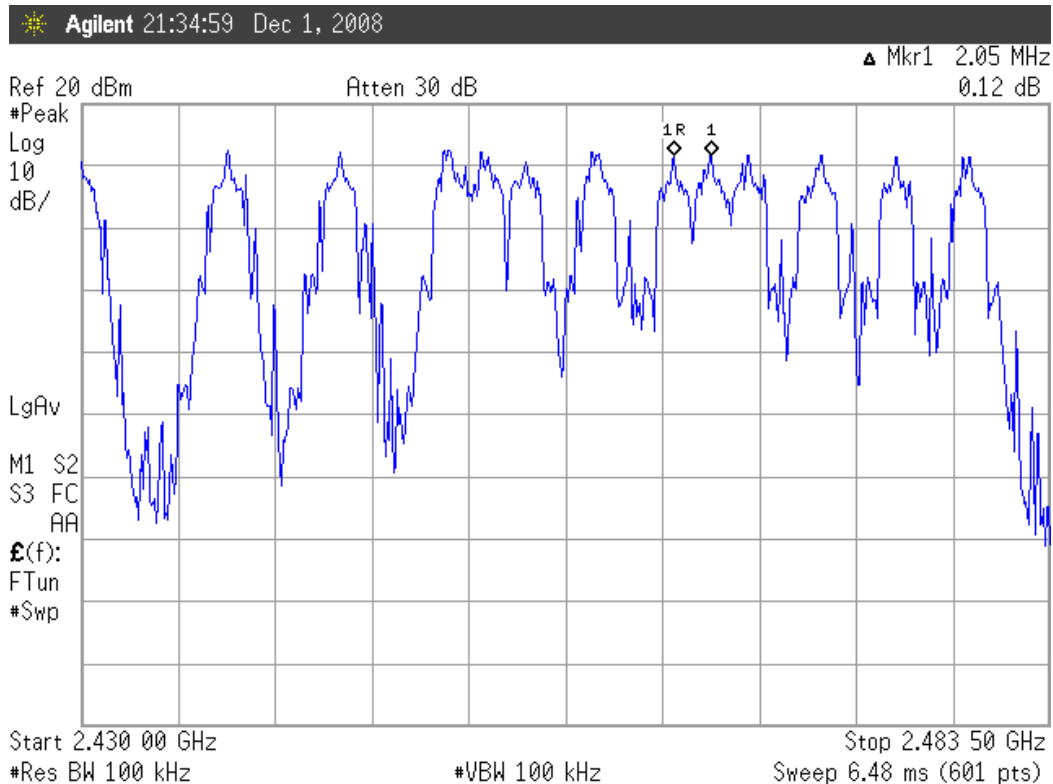
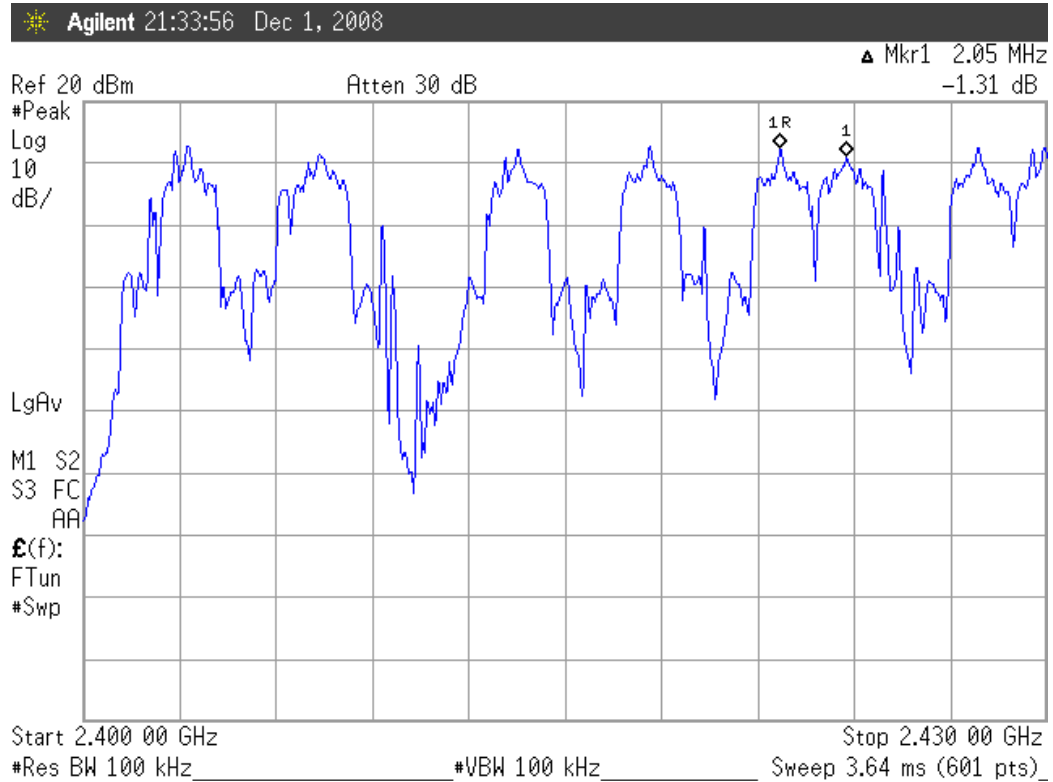
5.6. Test Results

PASSED. All the test results are attached in next pages.

Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

The minimum adjacent channel carrier frequency separation: 2.05MHz.

[Above values have met the requirement as specified in section 4.3: frequency hopping systems operating in the 2400-2483.5 MHz band 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.]



6. TIME OF OCCUPANCY MEASUREMENT

6.1. Test Equipment

The following test equipment was used during the time of occupancy measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 08'	Aug. 06, 09'

6.2. Block Diagram of Test Setup

The same as section.4.2.

6.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems in the 2400-2483.5MHz shall use at least 15 non-overlapping channels. 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 number of hopping channels employed.

6.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

6.5. Test Procedure (DA 00-705)

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1MHz RBW and 1MHz VBW. $VBW \geq RBW$; Span=zero span.

Centered on a hopping channel sweep=as necessary to capture the entire dwell time per hopping channel ; Detector function=peak ; Trace=Max hold

6.6. Test Results

PASSED. All the test results are attached in next pages.

Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

Duty cycle: 20 channels*0.4 seconds = 8 seconds

Test Frequency: 2403.328MHz

For per second of 10 channels appearance, the longest time of occupancy for each of 8 seconds is:

10 channels*8 seconds* 4.581ms = 366.48ms (<400ms)

Test Frequency: 2442.240MHz

For per second of 10 channels appearance, the longest time of occupancy for each of 8 seconds is:

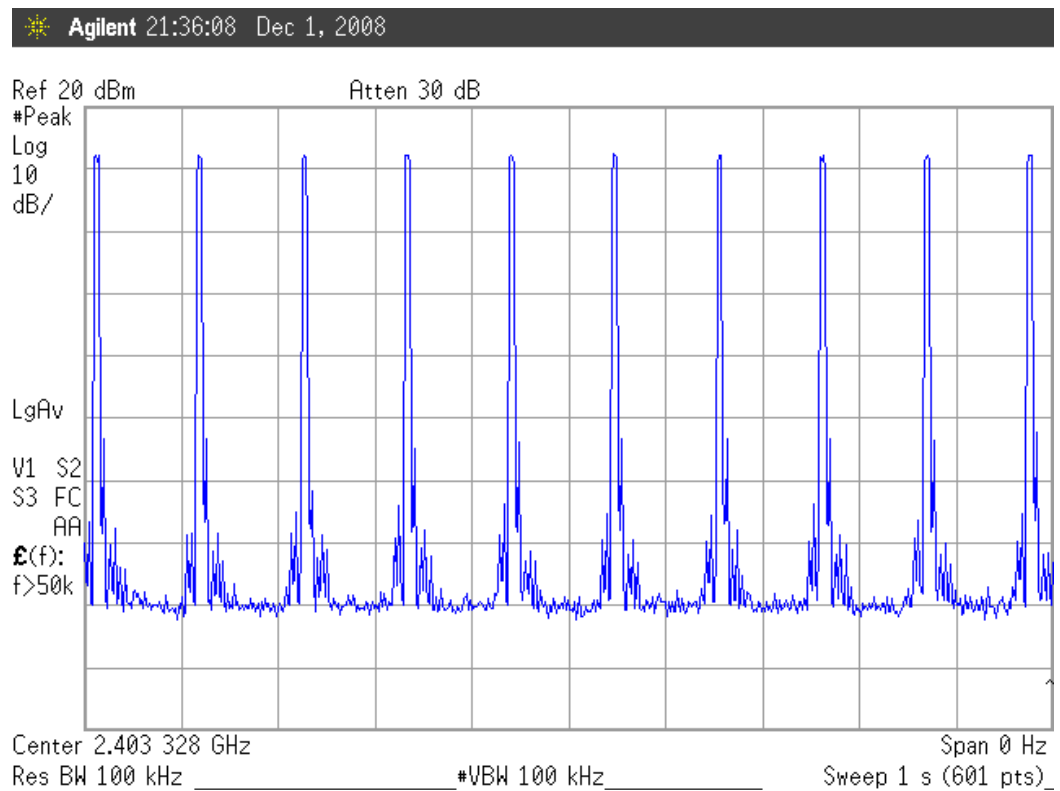
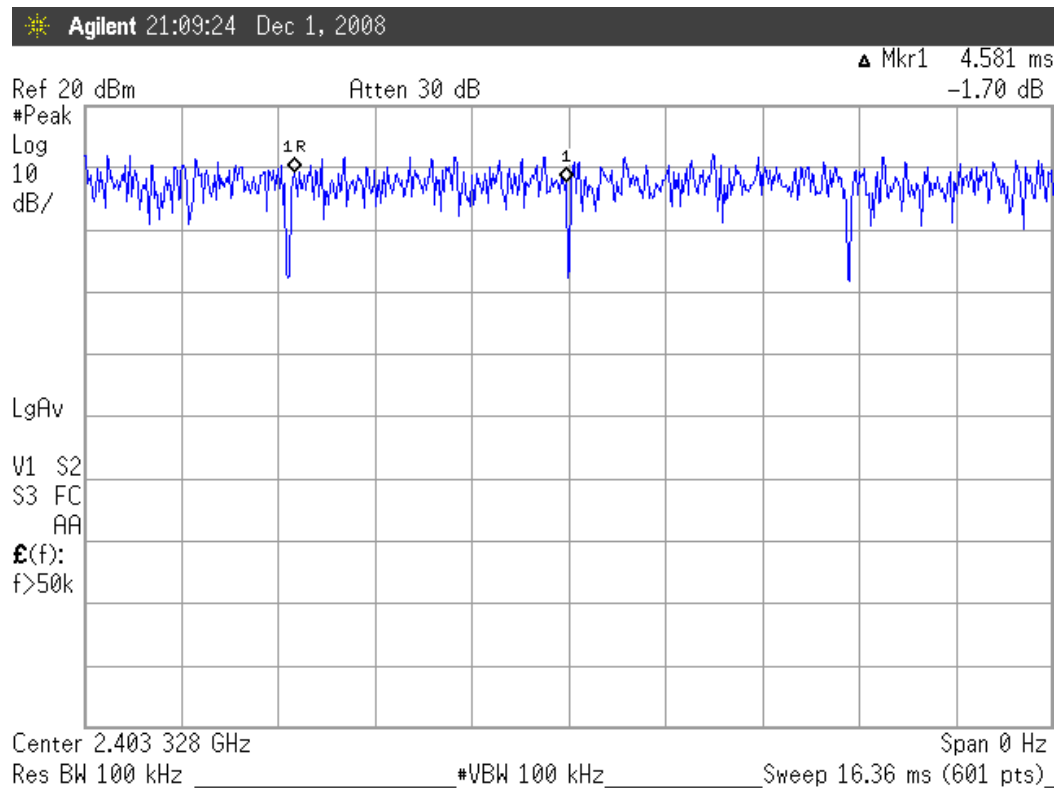
10 channels*8 seconds* 4.554ms = 364.320ms (<400ms)

Test Frequency: 2479.104MHz

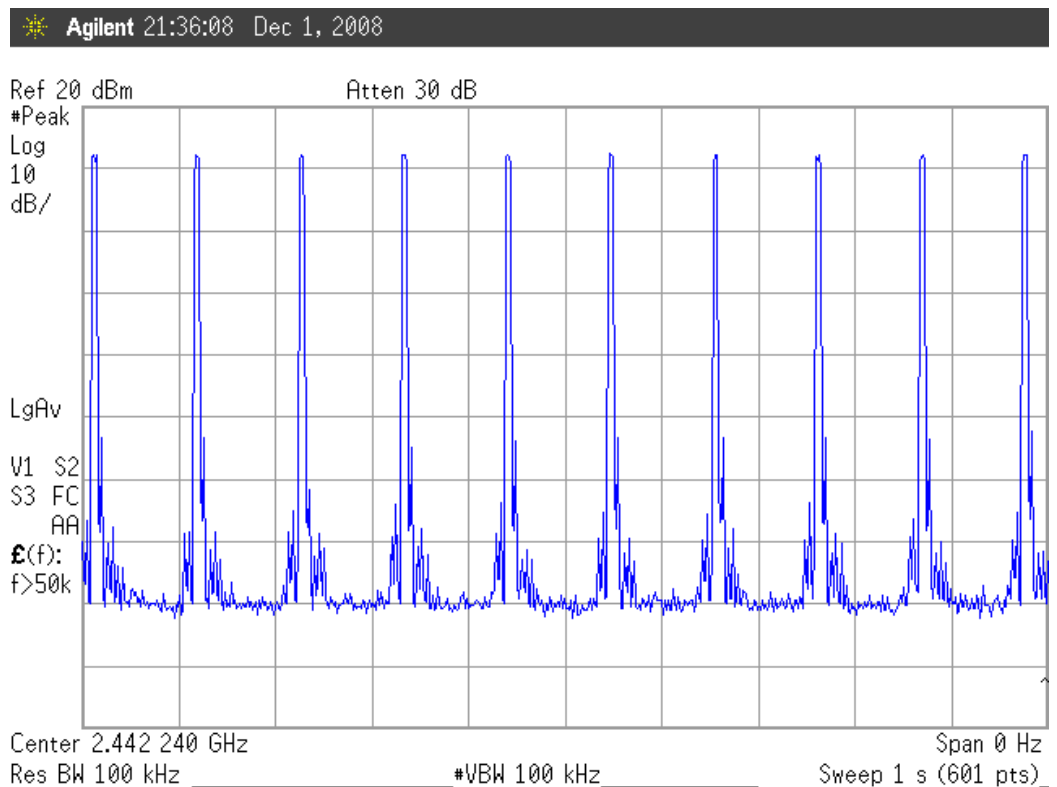
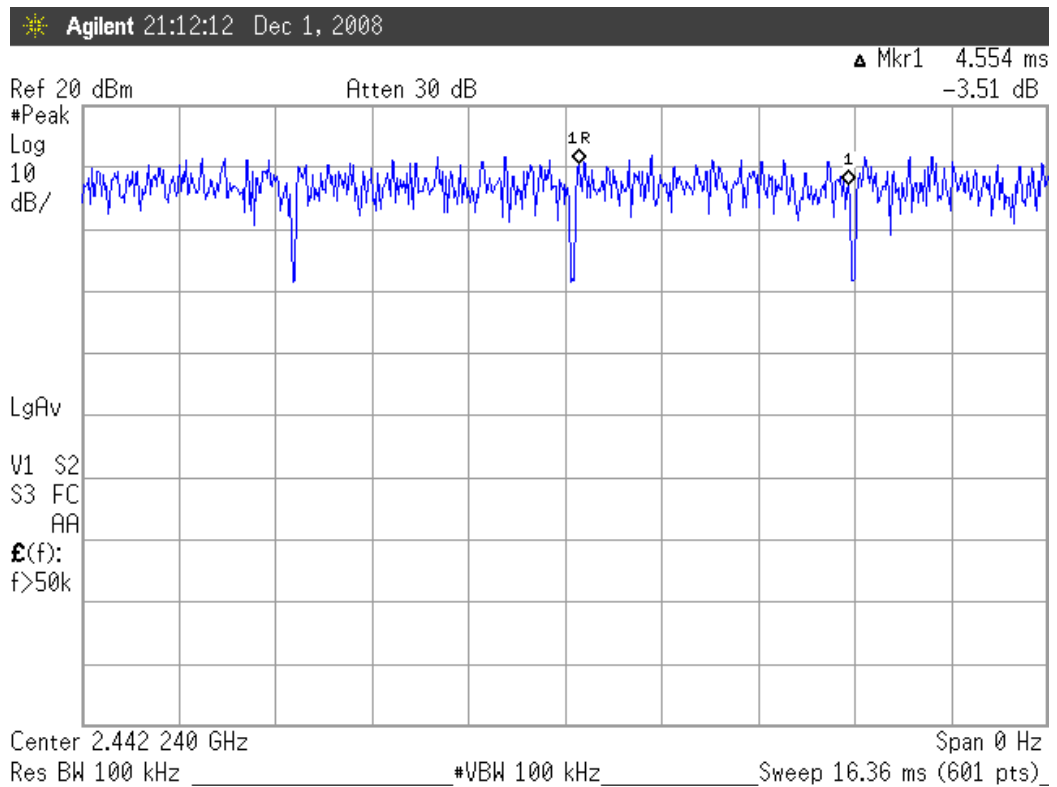
For per second of 10 channels appearance, the longest time of occupancy for each of 8 seconds is:

10 channels*8 seconds* 4.586ms = 366.880ms (<400ms)

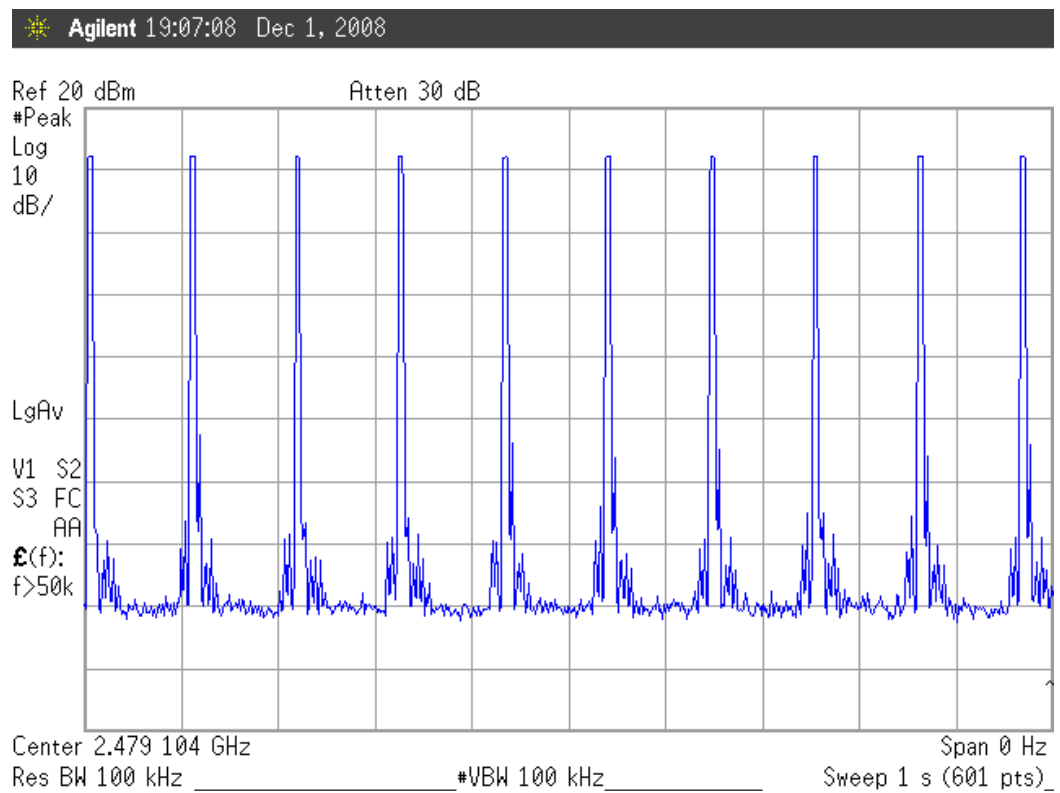
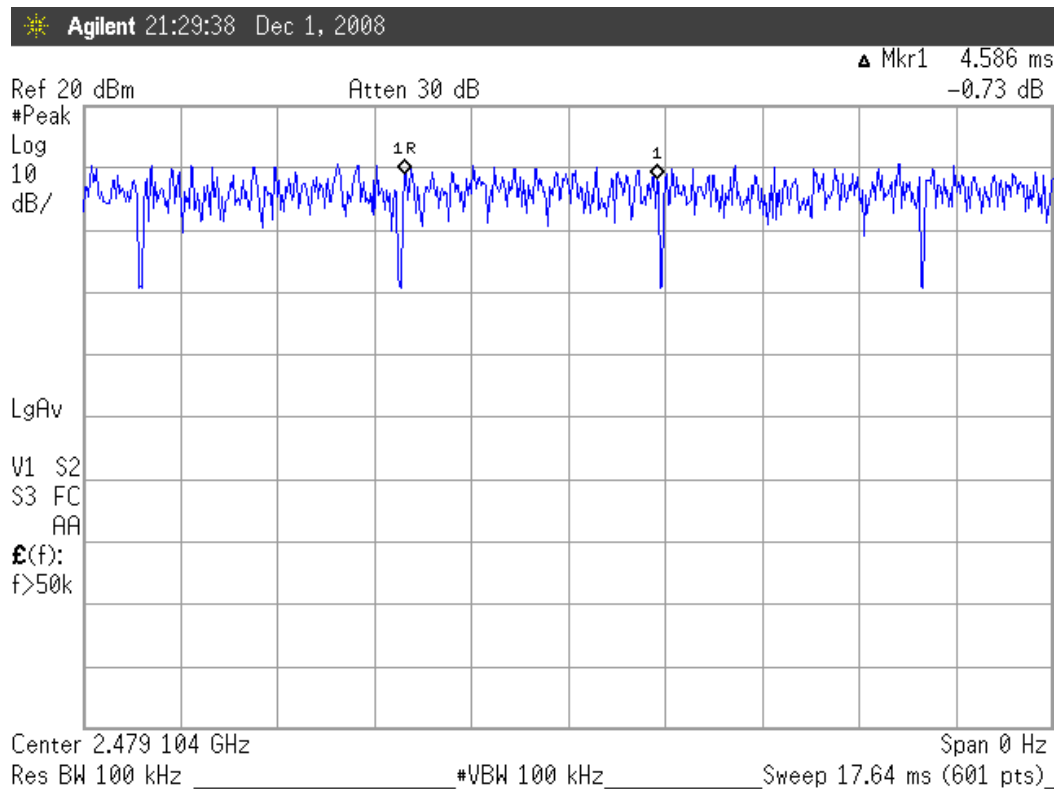
6.6.1. Channel 0, Test Frequency: 2403.328MHz



6.6.2. Channel 19, Test Frequency: 2442.240MHz



6.6.3. Channel 37, Test Frequency: 2479.104MHz



7. NUMBER OF HOPPING CHANNELS MEASUREMENT

7.1. Test Equipment

The following test equipment was used during the number of hopping channels measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 08'	Aug. 06, 09'

7.2. Block Diagram of Test Setup

The same as section.4.2.

7.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems which use fewer than 20 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels.

7.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

7.5. Test Procedure (DA 00-705)

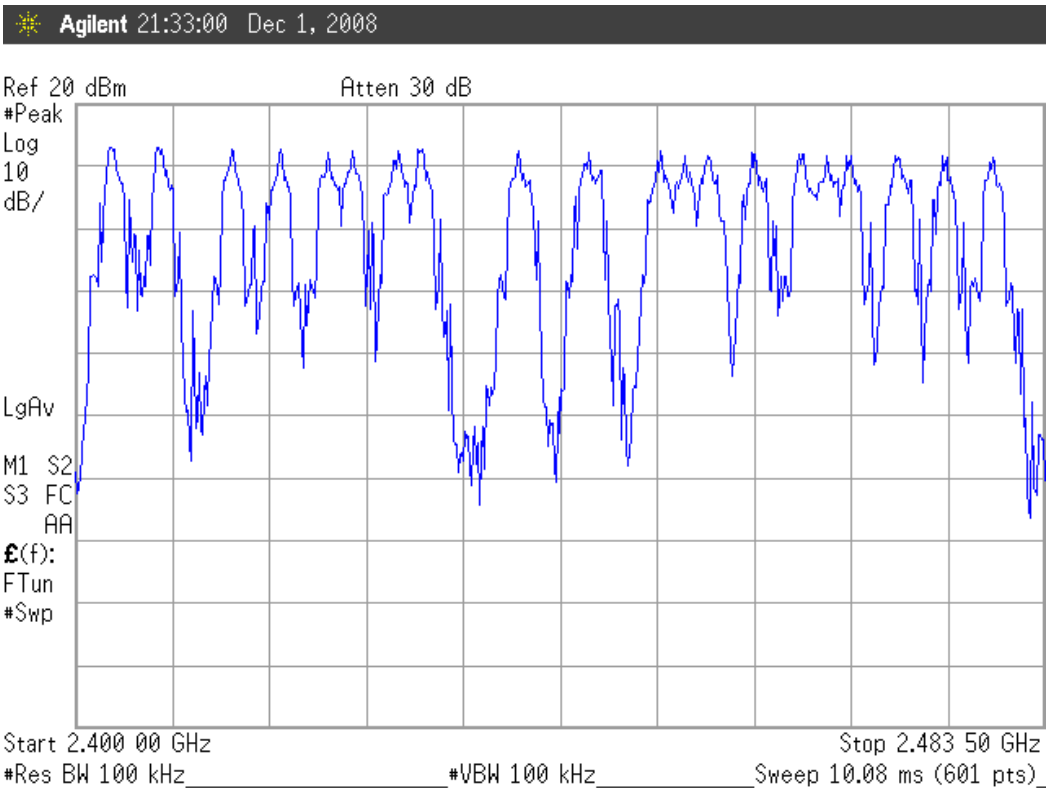
The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100kHz RBW and 100kHz VBW. Sweep=Auto ; Detector function=peak ; Trace=Max hold

7.6. Test Results

PASSED. All the test results are attached in next page.

Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

The number hopping channel is 20.



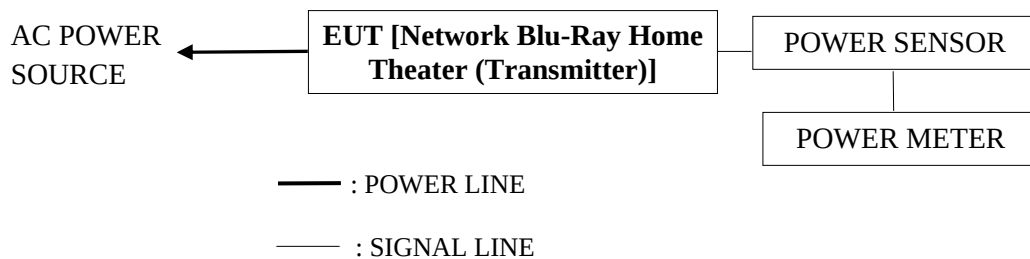
8. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

8.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Meter	Anritsu	ML2487A	6K00005406	Jan. 26, 08'	Jan. 25, 09'
2.	Power Sensor	Anritsu	MA2491A	030873	Jan. 26, 08'	Jan. 25, 09'

8.2. Block Diagram of Test Setup



8.3. Specification Limits (§15.247(b)-(1))

The Limits of maximum Peak Output Power for frequency hopping systems in 2400-2483.5MHz is: 0.125Watt. (21dBm)

8.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in 4.4 except the test set up replaced by section 8.2.

8.5. Test Procedure (DA 00-705)

The transmitter output was connected to the power sensor and record the reading of power meter.

8.6. Test Results

PASSED. All the test results are listed below.

Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

No.	Channel	Test Frequency	Peak Output Power	Limit
1.	0	2403.328MHz	14.38dBm	21dBm
2.	19	2442.240MHz	14.08dBm	21dBm
3.	37	2479.104MHz	13.79dBm	21dBm

9. EMISSION LIMITATIONS MEASUREMENT

9.1. Test Equipment

The following test equipment was used during the emission limitations measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 08'	Aug. 06, 09'

9.2. Block Diagram of Test Setup

The same as section.4.2.

9.3. Specification Limits (§15.247(c))

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)).(※ This test result attaching to §3.6.3)

9.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

9.5. Test Procedure (DA 00-705)

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with frequency range from 30MHz to 25GHz.

9.6. Test Results

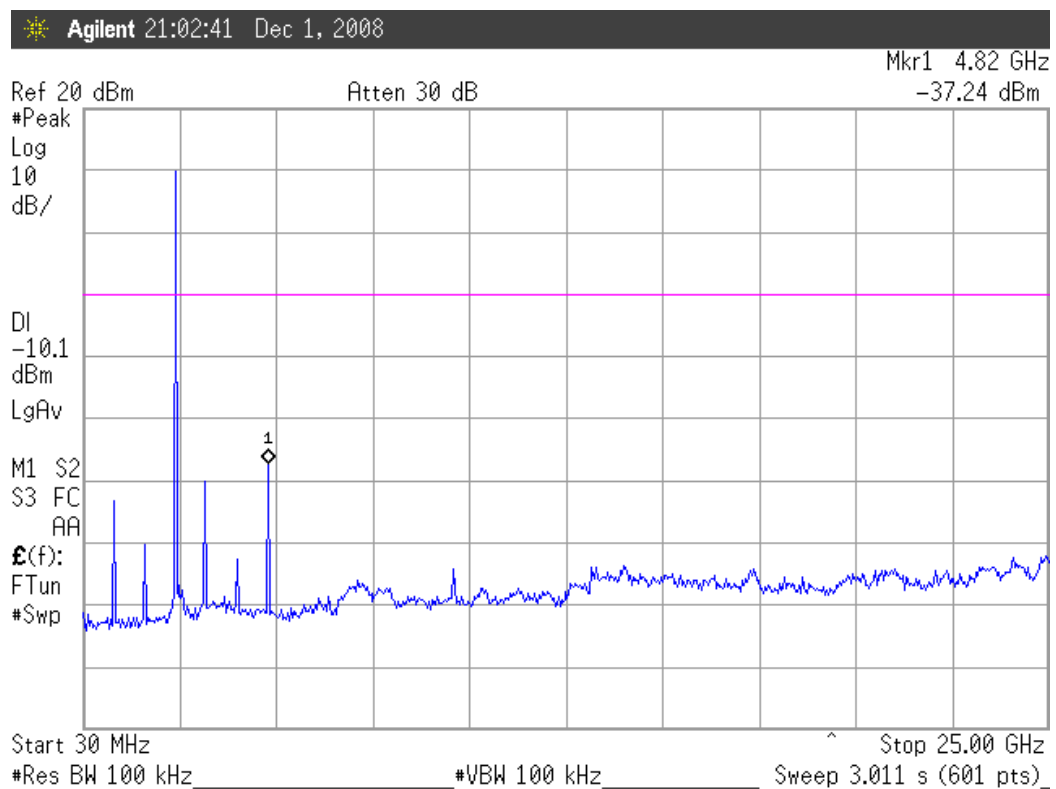
PASSED. All the test results are attached in next pages.

Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

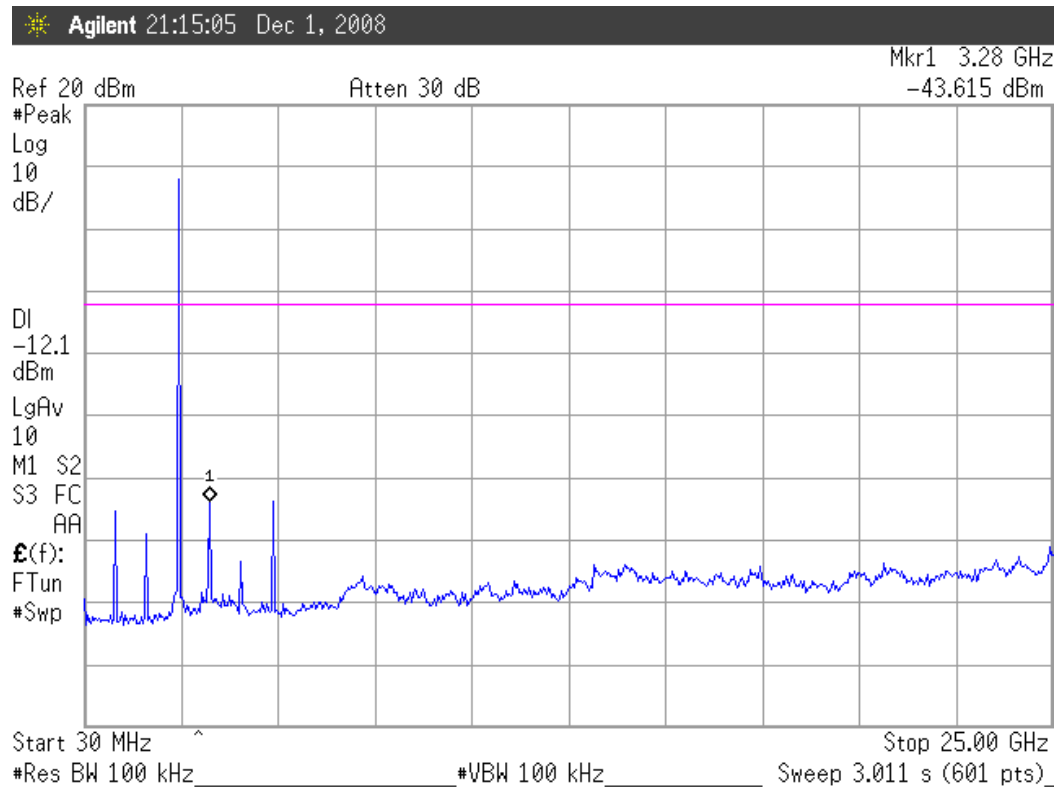
1. 2403.328MHz: During 30MHz~25GHz bandwidth. In the 2.4GHz, the -37.24dBm is max value that is lower than 20dB of primary channel.
2. 2442.240MHz: During 30MHz~25GHz bandwidth. In the 2.4GHz, the -43.615dBm is max value that is lower than 20dB of primary channel.
3. 2479.104MHz: During 30MHz~25GHz bandwidth. In the 2.4GHz, the -42.785dBm is max value that is lower than 20dB of primary channel.

Note: The peak above the limit line is the carrier frequency.

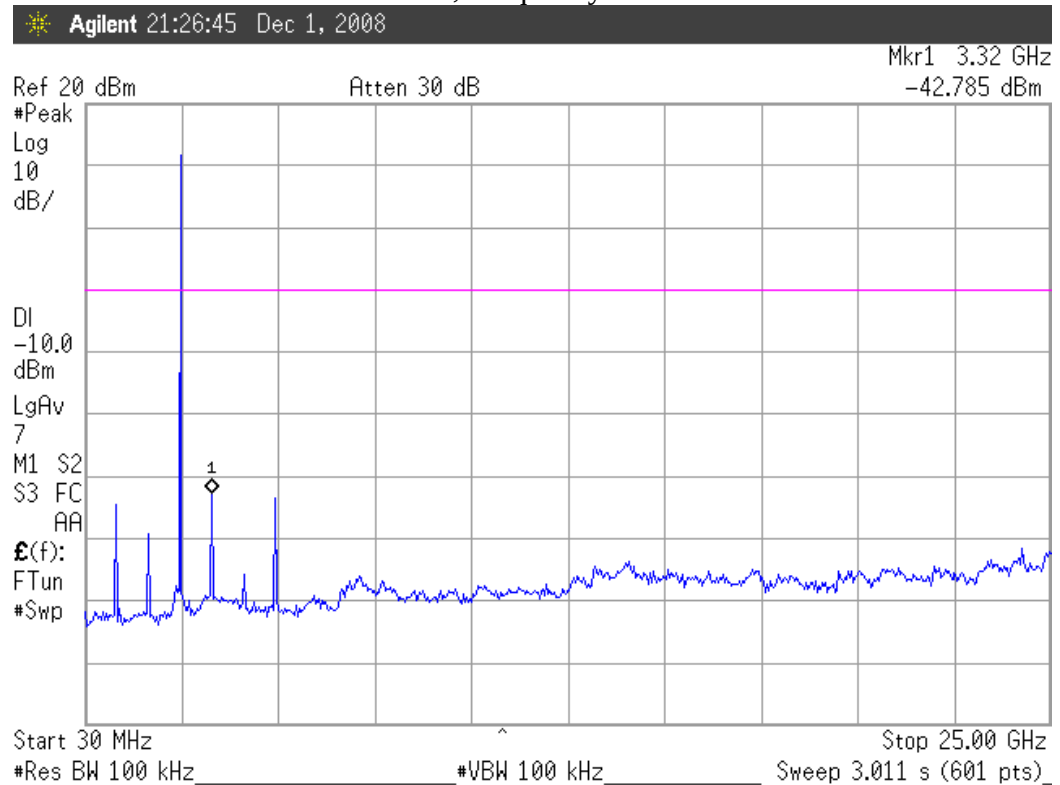
9.6.1. Channel 0, Frequency: 2403.328MHz



9.6.2. Channel 19, Frequency: 2442.240MHz



9.6.2.1. Channel 37, Frequency: 2479.104MHz



10.BAND EDGES MEASUREMENT

10.1.Test Equipment

The following test equipment was used during the band edges measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 08'	Aug. 06, 09'

10.2.Block Diagram of Test Setup

The same as section.4.2.

10.3.Specification Limits (§15.247(c))

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)). (※ This test result attaching to §3.6.3)

10.4.Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

10.5.Test Procedure (DA 00-705)

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100kHz bandwidth from band edge.

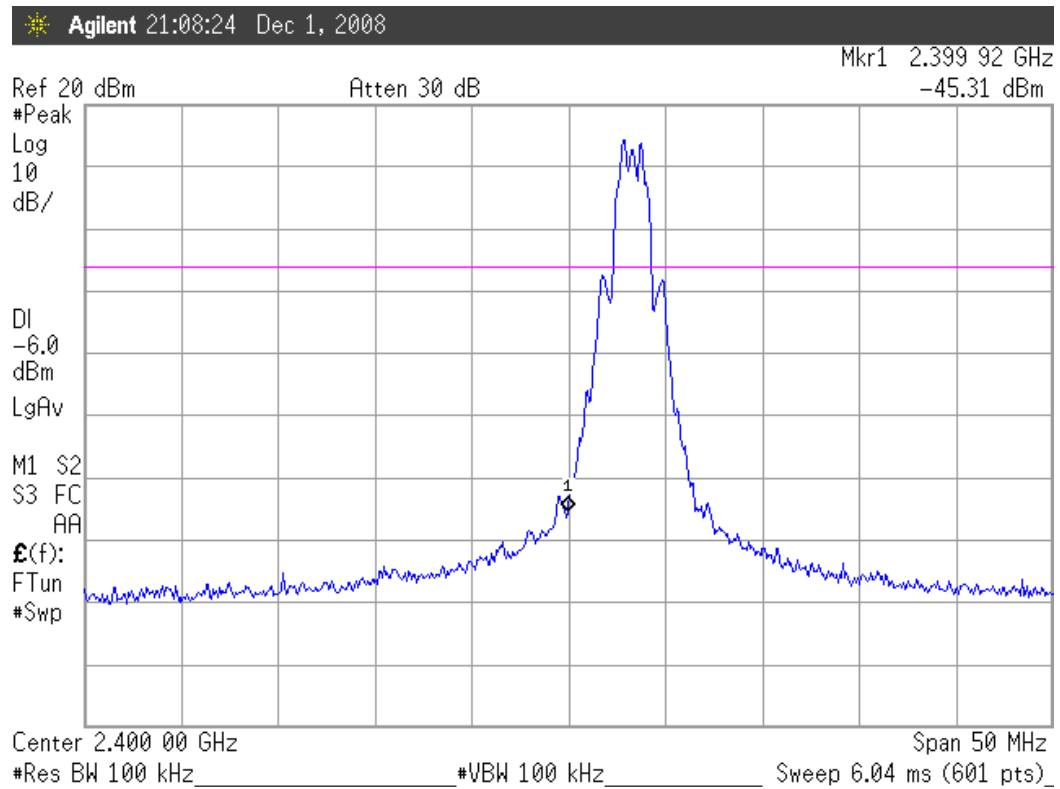
10.6.Test Results

PASSED. The testing data was attached in the next pages.

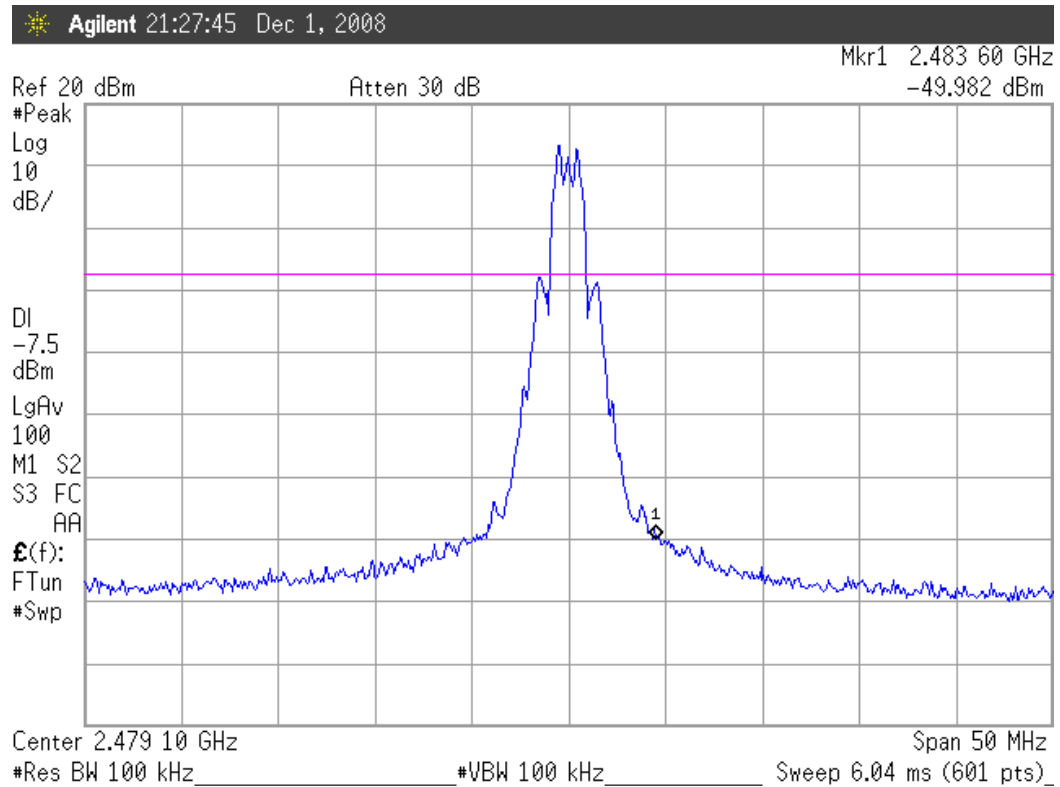
Test Date : Dec. 01, 2008 Temperature : 23 °C Humidity : 49 %

1. Upper Band edge : The highest emission level is – 45.31dBm on 2.39992GHz.
2. Below Band edge: The highest emission level is – 49.982dBm on 2.48360GHz.

10.6.1. Upper Band edge



10.6.2. Below Band edge



11.DEVIATION TO TEST SPECIFICATIONS

【NONE】