

Test Report

FCC ID:2ANKV-FK-M5

Date of issue: Jun. 30, 2017

Report Number:	MTi170829E186
Sample Description:	M5+ HiFi MUSIC SYSTEM
Model(s):	M5+, M4+
Applicant:	Shenzhen lemaga Technology Co., Ltd
Address:	Guan Li Da Building 301-31, Qianjin Road 1, Xin'an Ban, Bao An, Shenzhen city, Guangdong Province, China.
Date of Test:	Jun. 16, 2017 – Jun. 30, 2017

Shenzhen Microtest Co., Ltd.
<http://www.mtitest.com>

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TEST RESULT CERTIFICATION	
Applicant's name	Shenzhen Iemega Technology Co., Ltd
Address	Guan Li Da Building 301-31, Qianjin Road 1, Xin'an Ban, Bao An, Shenzhen city, Guangdong Province, China.
Manufacture's Name	Shenzhen Iemega Technology Co., Ltd
Address	Guan Li Da Building 301-31, Qianjin Road 1, Xin'an Ban, Bao An, Shenzhen city, Guangdong Province, China.
Product name	M5+ HiFi MUSIC SYSTEM
Model and/or type reference :	M5+
Serial Model	M4+
Standards	FCC Part15.407
Test procedure	ANSI C63.10-2013

This device described above has been tested by Shenzhen Toby Technology Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by:

Amy Lu

Amy Lu

Jun. 30, 2017

Reviewed by:

Smith Chen

Smith Chen

Jun. 30, 2017

Approved by:

Tom Xue

Tom Xue

Jun. 30, 2017

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.407(a)	Conducted Peak Output Power	PASS	
15.407(a)	Emission Bandwidth	PASS	
15.407(a)	Power Spectral Density	PASS	
15.407(b)&15.209	Spurious Emission	PASS	
15.407(b)	Undesirable emission	PASS	
15.407	Frequency stability	PASS	
15.203/15.407	Antenna Requirement	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

1.1 TEST FACILITY

Shenzhen Toby Technology Co., Ltd.

Add.: 10/F.,A Block, Jiada R&D Bldg., No.5 Songpingshan, Road, Science&Technology Park,
Shenzhen, 518057

FCC Registration No.:811562

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95 %**.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	M5+ HiFi MUSIC SYSTEM	
Trade Name	LEMEGA	
Model Name	M5+	
Serial Model	M4+	
Model Difference	Appearances are different	
Product Description	The EUT is a M5+ HiFi MUSIC SYSTEM	
	Operation Frequency:	802.11a:5180MHz~5240MHz 802.11n(H20):5180MHz~5240MHz
	Modulation Type:	11n: BPSK, QPSK, 16QAM, 64QAM with OFDM 11a: BPSK, QPSK, 16QAM, 64QAM, OFDM
	Bit Rate of Transmitter	802.11a: 6Mbps 802.11n(20): 6.5Mbps
	Number Of Channel	4 for 802.11a/802.11n(H20)
	Antenna Designation:	Please see Note 3.
	Antenna Gain (dBi)	4dBi
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Channel List	Please refer to the Note 2.	
Battery	N/A	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.

For IEEE 802.11 a with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH36	5180	CH44	5220
CH40	5200	CH48	5240

For IEEE 802.11 n/HT20 with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH36	5180	CH44	5220
CH40	5200	CH48	5240

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	internal antenna	N/A	4	Wifi Antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11a CH36/ CH40/ CH48
Mode 2	802.11n CH36/ CH40/ CH48
Mode 3	TX Mode

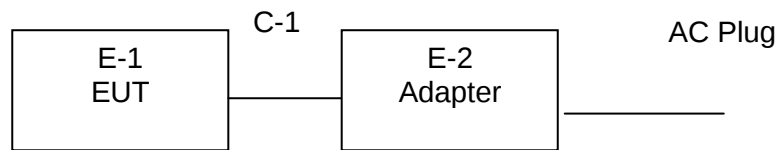
For Conducted Emission	
Final Test Mode	Description
Mode 3	TX Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11a CH36/ CH40/ CH48
Mode 2	802.11n CH36/ CH40/ CH48
Mode 3	TX Mode

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported
- (3) Duty cycle>98%

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	M5+ HiFi MUSIC SYSTEM	LEMEGA	M5+	N/A	EUT
E-2	Adapter	N/A	S030A 1202500M	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.0m	
C-2	NO	NO	0.8m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

For RF conducted test:

Equipment	Manufacturer	Model	Serial No.	Calibration Due
Universal Radio Communication Tester	Rohde&schwarz	CMU200	114587	2017/11/4
Spectrum analyzer	Agilent	E4407B	MY41441082	2017/11/4
Dc Power Supply	GW	GPR-6030D	/	2017/11/4
Temperature & Humidity Chamber	GIANT FORCE	GTH-056P	GF-94454-1	2017/11/14
Broadband TRILOG Antenna	Schwarabeck	VULB9163	9163-872	2017/11/14
Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-1145	2017/11/14
Amplifier	HP	8447D	3113A06150	2017/11/4
Amplifier	Agilent	8449B	3008A02400	2018/7/4
Test Receiver	Schwarabeck	ESPI7	100314	2017/11/4
Spectrum analyzer	Agilent	E4407B	MY41441082	2017/11/4
Signal Generator	R&S	SMT 06	832080/007	2017/11/4
Broadband TRILOG Antenna	Schwarabeck	VULB9163	9163-872	2017/11/14
Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-1145	2017/11/14
Amplifier	HP	8447D	3113A06150	2017/11/4
Amplifier	Agilent	8449B	3008A02400	2018/7/4
Test Receiver	Schwarabeck	ESPI	100314	2017/11/4
Spectrum analyzer	Agilent	E4407B	MY41441082	2017/11/4
LISN	R&S	ENV216	1001131	2017/9/25
Test Cable	United Microwave	57793	1m	2017.12.05
Test Cable	United Microwave	A30A30-5006	10m	2017.12.05

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

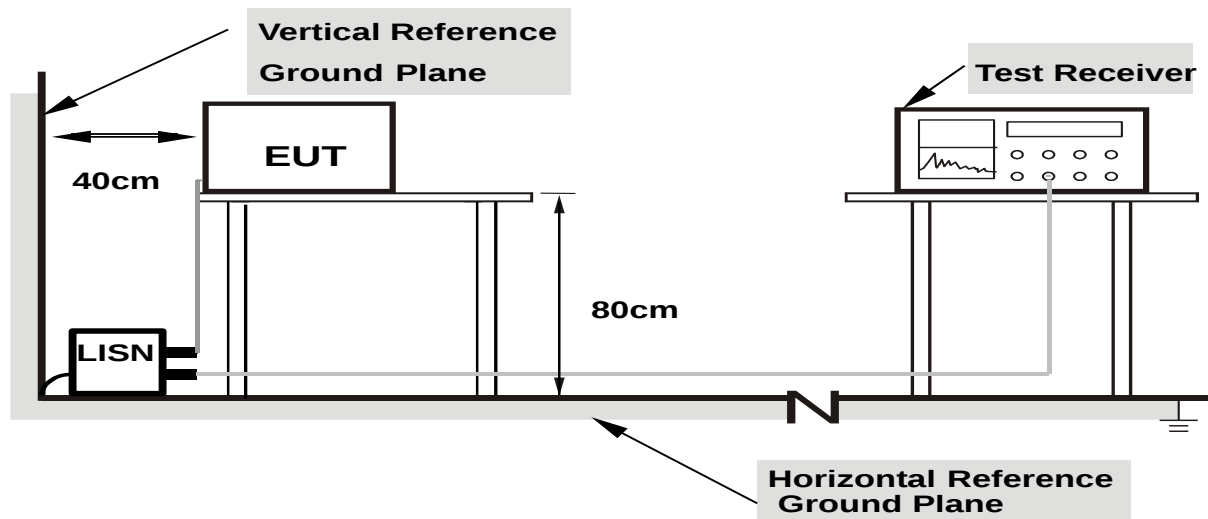
3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

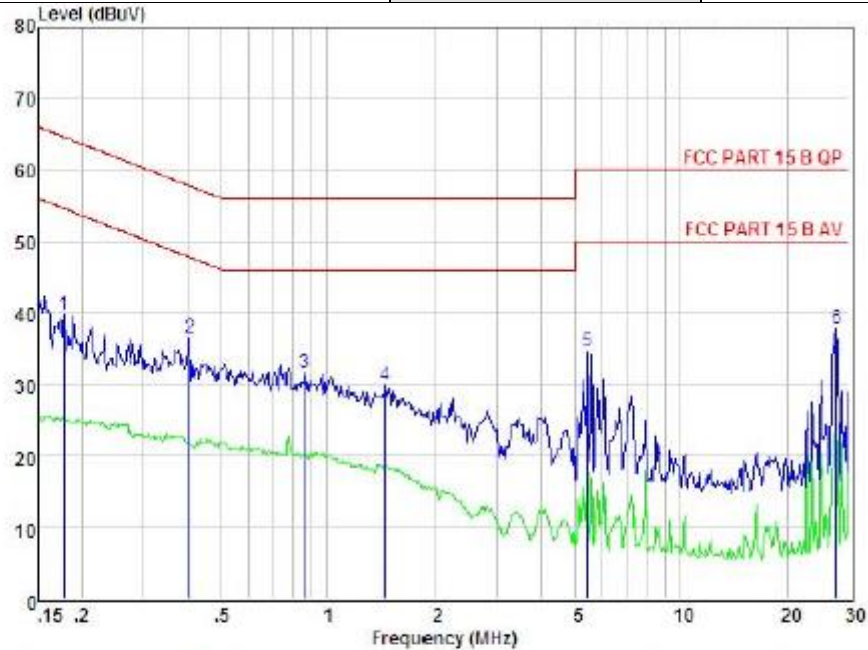
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

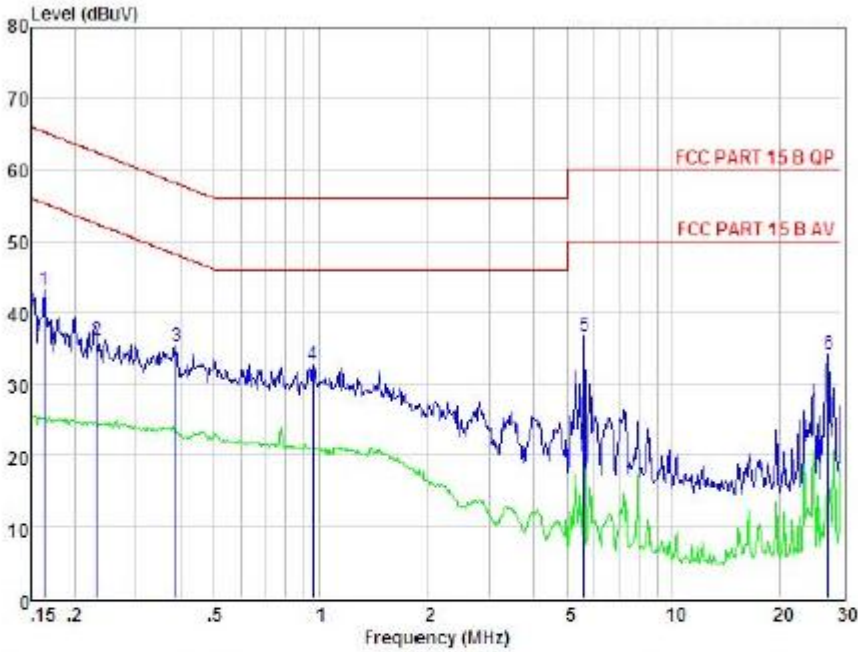
EUT :	M5+ HiFi MUSIC SYSTEM	Model Name. :	M5+
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 12V from adapter AC 120V/60Hz	Test Mode :	Mode 3



Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.178	29.79	0.03	-9.72	0.10	39.64	64.59	-24.95	Peak
2	0.406	26.60	0.03	-9.72	0.10	36.45	57.73	-21.28	Peak
3	0.862	21.59	0.04	-9.71	0.10	31.44	56.00	-24.56	Peak
4	1.464	19.92	0.05	-9.71	0.10	29.78	56.00	-26.22	Peak
5	5.419	24.67	0.10	-9.65	0.13	34.55	60.00	-25.45	Peak
6	27.708	26.95	0.47	-9.73	0.56	37.71	60.00	-22.29	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

EUT :	M5+ HiFi MUSIC SYSTEM	Model Name. :	M5+
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 12V from adapter AC 120V/60Hz	Test Mode :	Mode 3



Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.164	33.27	0.03	-9.72	0.10	43.12	65.25	-22.13	Peak
2	0.232	26.18	0.03	-9.72	0.10	36.03	62.39	-26.36	Peak
3	0.389	25.37	0.03	-9.72	0.10	35.22	58.08	-22.86	Peak
4	0.953	22.68	0.04	-9.71	0.10	32.53	56.00	-23.47	Peak
5	5.594	26.73	0.10	-9.64	0.13	36.60	60.00	-23.40	Peak
6	27.708	23.24	0.47	-9.73	0.36	34.00	60.00	-26.00	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable Loss

3.2 RADIATED EMISSION MEASUREMENT(UNDESIRABLE EMISSION)

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, RMS detector for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

微测检测

- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

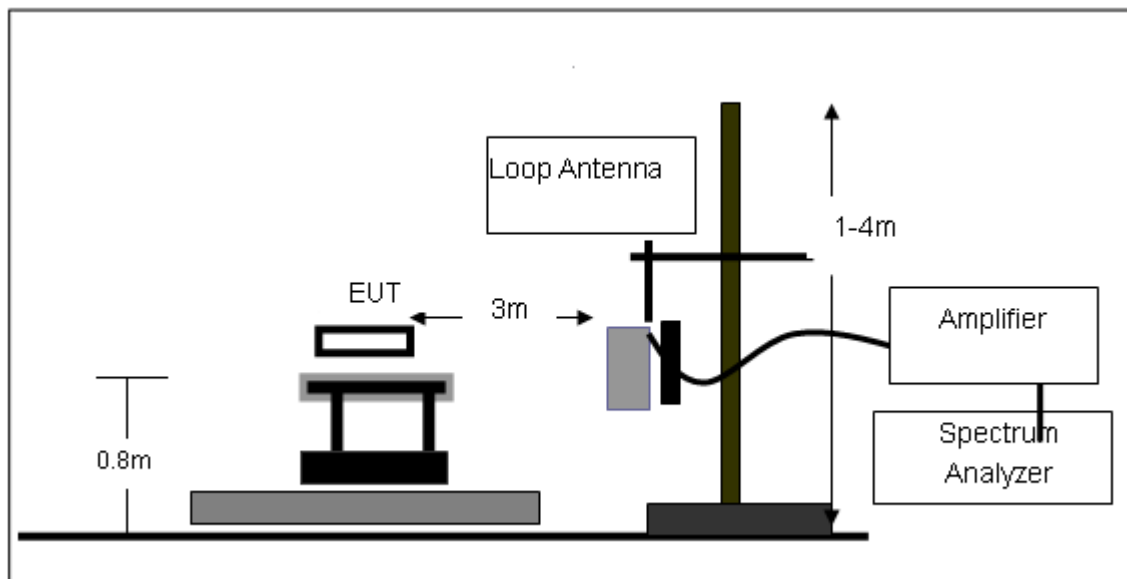
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

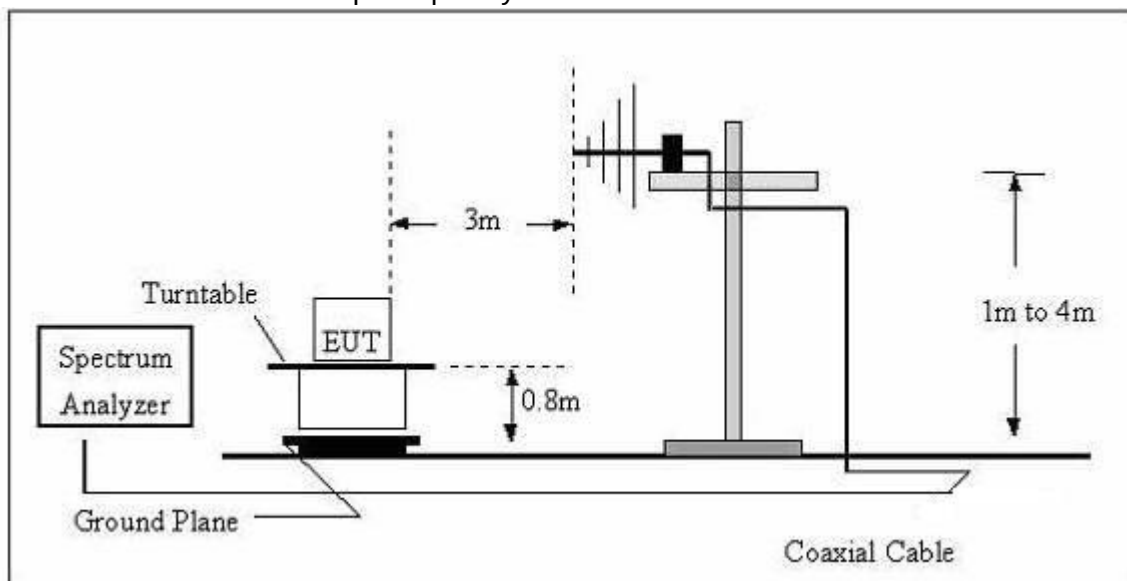
No deviation

3.2.4 TEST SETUP

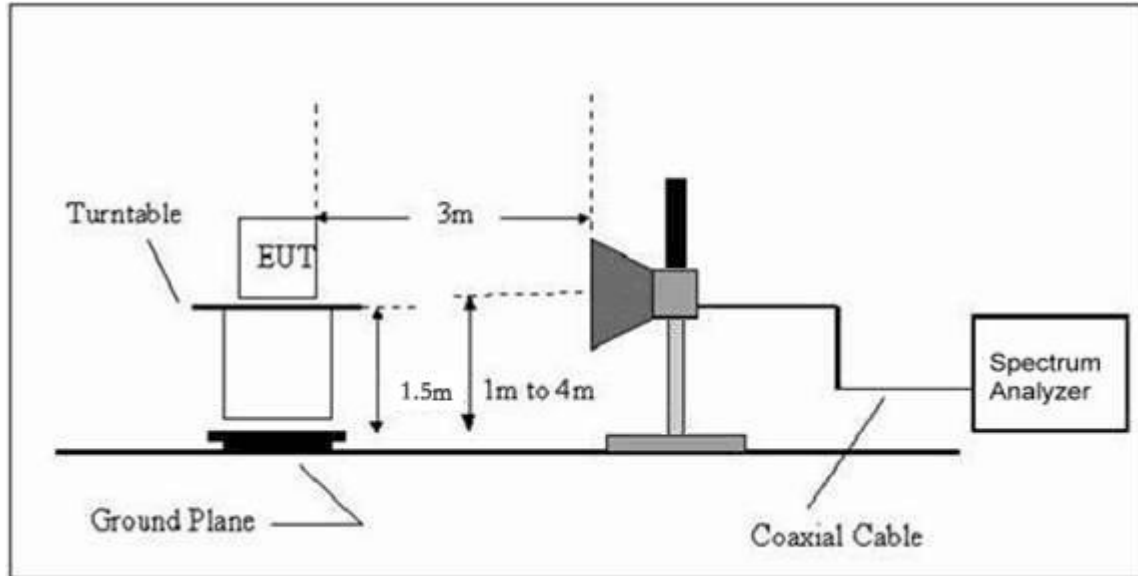
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz

**3.2.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

EUT:	M5+ HiFi MUSIC SYSTEM	Model Name. :	M5+
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	20 °C	Relative Humidity :	48%
Pressure:	1010 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBUV)	(dB)	(dBUV/m)	(dBUV/m)	(dB)	
V	119.4360	12.57	12.08	24.65	43.5	18.85	QP
V	128.1129	13.46	12.2	25.66	43.5	17.84	QP
V	170.7926	15.19	10.35	25.54	43.5	17.96	QP
V	341.9786	10.73	16.19	26.92	46	19.08	QP
V	468.8761	12.9	19.69	32.59	46	13.41	QP
V	935.5462	8.06	29.42	37.48	46	8.52	QP
H	170.7923	16.95	10.35	27.3	43.5	16.2	QP
H	341.9786	16.85	16.19	33.04	46	12.96	QP
H	468.8761	13.75	19.69	33.44	46	12.56	QP
H	726.8052	8.53	26	34.53	46	11.47	QP
H	813.1114	7.25	26.35	33.6	46	12.4	QP
H	854.0247	7.76	27.51	35.27	46	10.73	QP
Remark: Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level- Limit Factor = Antenna Factor + Cable Loss – Pre-amplifier. Factor added by measurement software automatically							

3.2.8 TEST RESULTS (1G-25GHZ)

802.11a

Normal Voltage

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)							
Vertical	2491.777	57.45	-11.65	45.8	74	28.2	Pk
Horizontal	2498.247	54.35	-12.73	41.62	74	32.38	Pk
Vertical	10360.112	54.34	-3.03	51.31	74	22.69	Pk
Horizontal	10360.112	54.66	-4.4	50.26	74	23.74	Pk
Vertical	1485.838	58.15	-17.1	41.05	74	32.95	Pk
Vertical	1636.784	57.84	-16.06	41.78	74	32.22	Pk
Vertical	2095.928	56.65	-11.88	44.77	74	29.23	Pk
Horizontal	1074.301	58.38	-19.69	38.69	74	35.31	Pk
Horizontal	1483.178	57.37	-17.09	40.28	74	33.72	Pk
Horizontal	1895.832	54.39	-14.25	40.14	74	33.86	Pk
Mid Channel (5200 MHz)							
Vertical	2474.777	54.23	-11.65	42.58	74	31.42	Pk
Horizontal	2474.144	54.76	-9.37	45.39	74	28.61	Pk
Vertical	10400.425	54.39	-1.35	53.04	74	20.96	Pk
Horizontal	10400.425	54.72	-3.67	51.05	74	22.95	Pk
Vertical	1433.535	61.13	-17.12	44.01	74	29.99	Pk
Vertical	1636.784	58.46	-16.06	42.4	74	31.6	Pk
Vertical	2284.166	52.2	-12.83	39.37	74	34.63	Pk
Horizontal	1280.515	57.86	-17.82	40.04	74	33.96	Pk
Horizontal	1636.784	56.69	-16.06	40.63	74	33.37	Pk
Horizontal	1892.438	56.81	-14.28	42.53	74	31.47	Pk
High Channel (5240 MHz)							
Vertical	2453.883	54.73	-12.91	41.82	74	32.18	Pk
Horizontal	2453.839	54.73	-11.59	43.14	74	30.86	Pk
Vertical	10480.325	51.65	1.69	53.34	74	20.66	Pk
Horizontal	10480.325	51.83	-1.56	50.27	74	23.73	Pk
Vertical	1187.688	55.76	-18.27	37.49	74	36.51	Pk
Vertical	1636.784	54.57	-16.06	38.51	74	35.49	Pk
Vertical	2084.693	52.16	-11.99	40.17	74	33.83	Pk
Horizontal	1534.540	54.82	-16.94	37.88	74	36.12	Pk
Horizontal	1786.985	54.53	-15.04	39.49	74	34.51	Pk
Horizontal	1892.438	54.41	-14.28	40.13	74	33.87	Pk

802.11n

Normal Voltage

Normal Voltage							
Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180 MHz							
V	10360.428	52.19	2.6	54.79	74	19.21	Pk
V	10360.428	30.89	5.23	36.12	54	17.88	AV
H	10360.529	51.78	2.6	54.38	74	19.62	Pk
H	10360.529	32.05	5.23	37.28	54	16.72	AV
operation frequency:5200 MHz							
V	10400.548	51.38	2.65	54.03	74	19.97	Pk
V	10400.548	32.93	5.33	38.26	54	15.74	AV
H	10400.279	52.94	2.65	55.59	74	18.41	Pk
H	10400.279	32.19	5.33	37.52	54	16.48	AV
operation frequency:5240 MHz							
V	10480.358	53.75	2.69	56.44	74	17.56	pk
V	10480.358	33.46	5.44	38.9	54	15.1	AV
H	10480.591	50.82	2.69	53.51	74	20.49	pk
H	10480.591	33.52	5.44	38.96	54	15.04	AV
Remark:							
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit							

BAND EDGE(Radiated)

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
LOW CH							
5150	53.86	-9.06	44.8	68.2	23.4	peak	Vertical
5150	53.73	-9.06	44.67	68.2	23.53	peak	Horizontal
HIGH CH							
5350	53.43	-8.96	44.47	68.2	23.73	peak	Vertical
5350	54.87	-8.96	45.91	68.2	22.29	peak	Horizontal

NOTE:The PK value is less than the AV value, AV value is not required.
802.11a & 802.11n(H20) all have been tested ,only worse case is reported.

4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part 15 Subpart C(15.407)		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	11dBm(in any 1 megahertz)	5150-5250
Power Spectral Density	30dBm(in any 500KHz)	5725-5850

4.1.1 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW =1MHz.
4. Set the VBW =3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



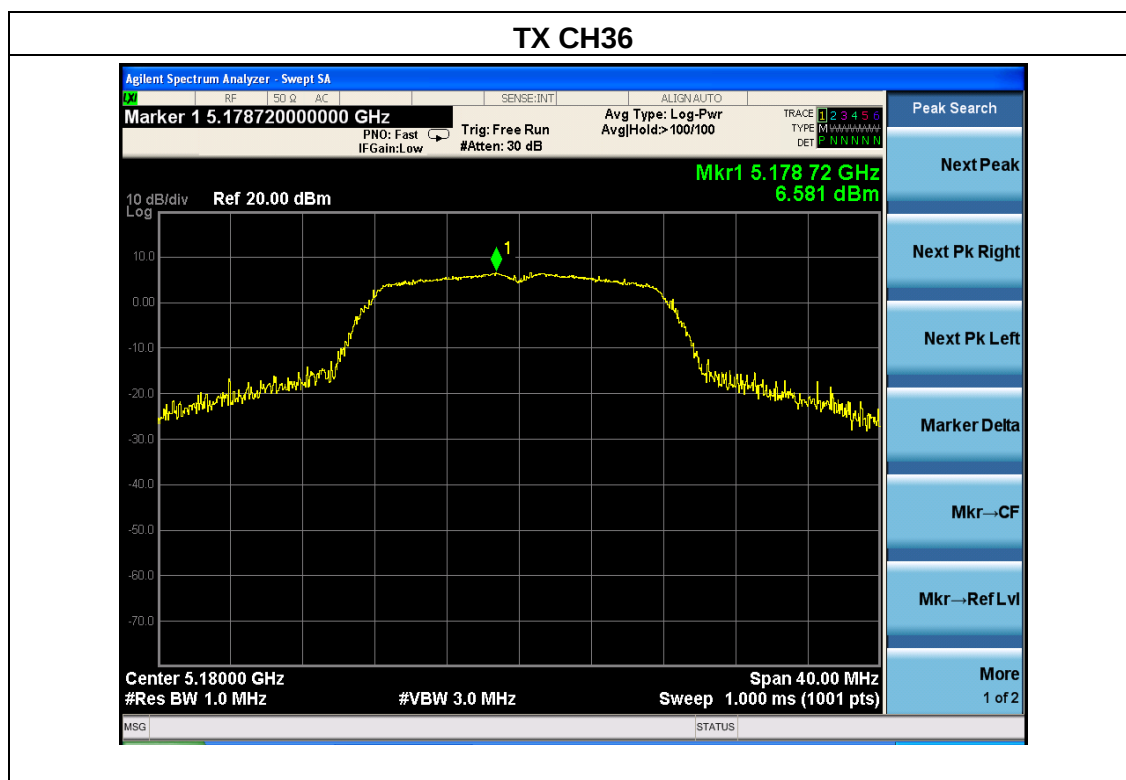
4.1.4 EUT OPERATION CONDITIONS

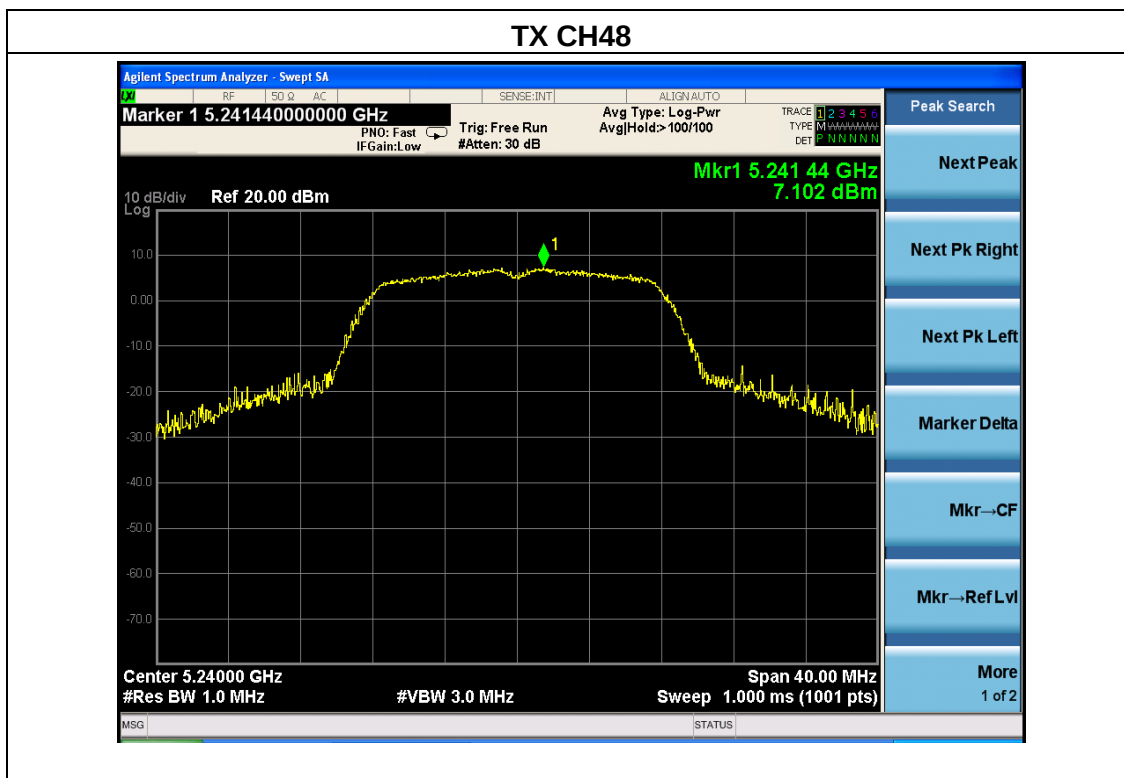
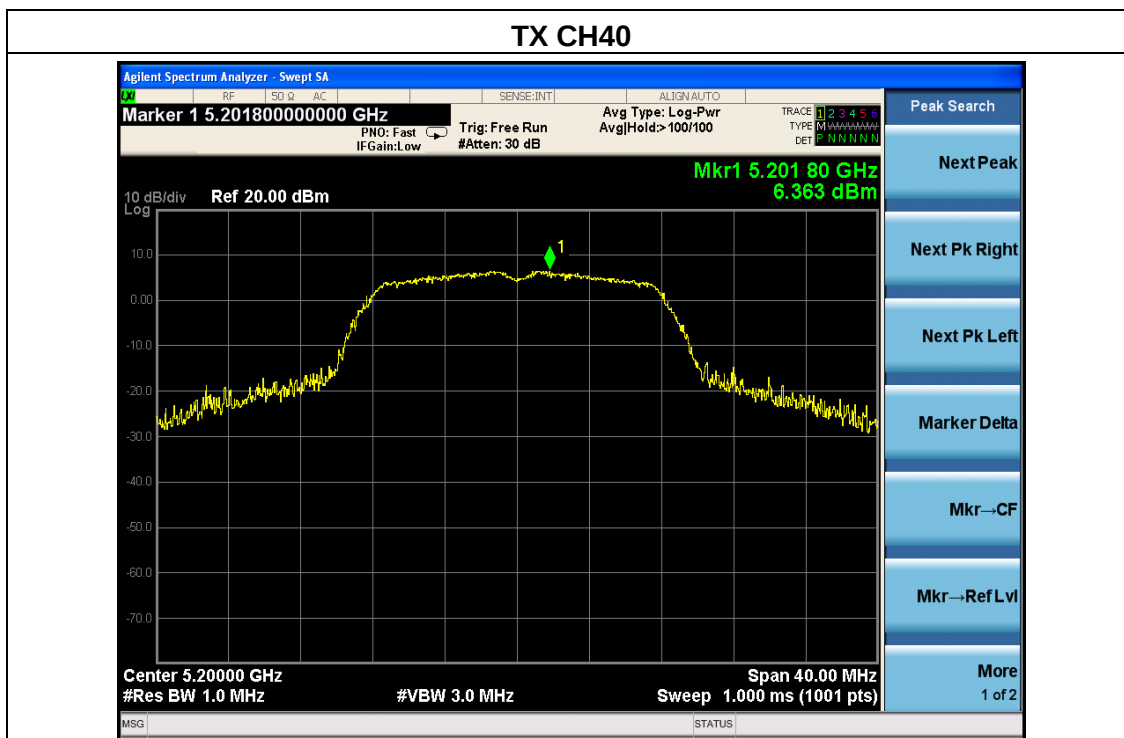
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX a Mode /CH36, CH40, CH48		

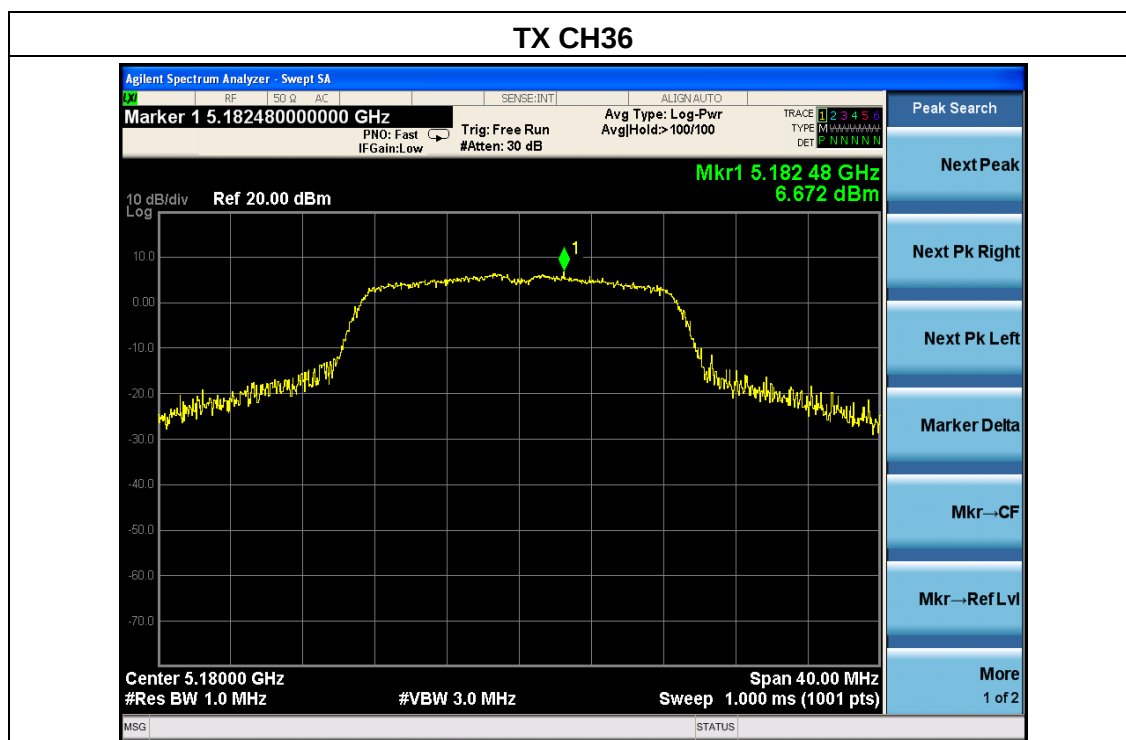
Frequency	Power Density (dBm)	Limit (dBm)	Result
5180 MHz	6.581	11	PASS
5200 MHz	6.363	11	PASS
5240 MHz	7.102	11	PASS



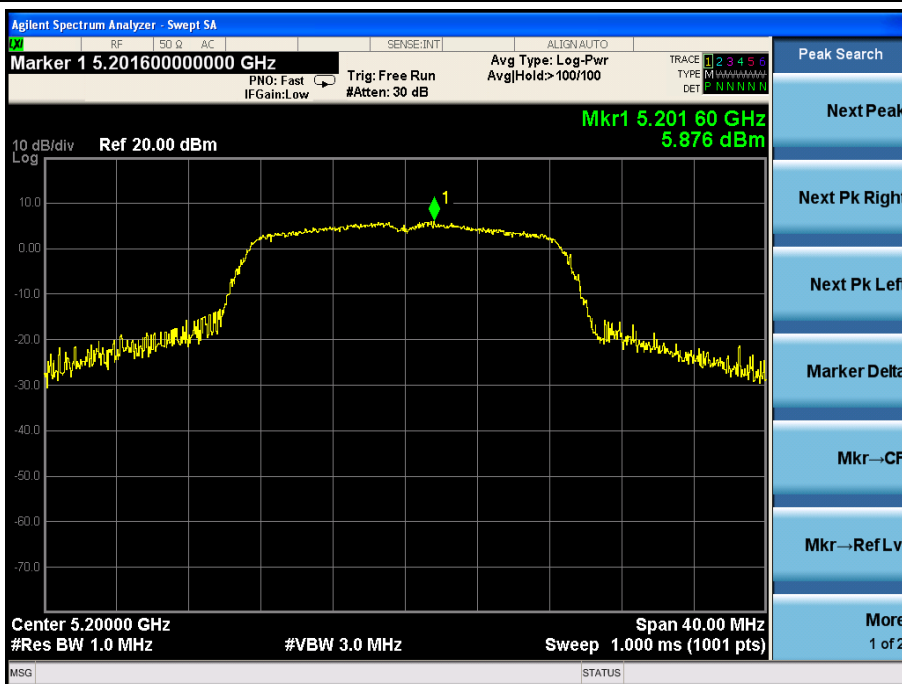


EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX n Mode /CH36, CH40, CH48		

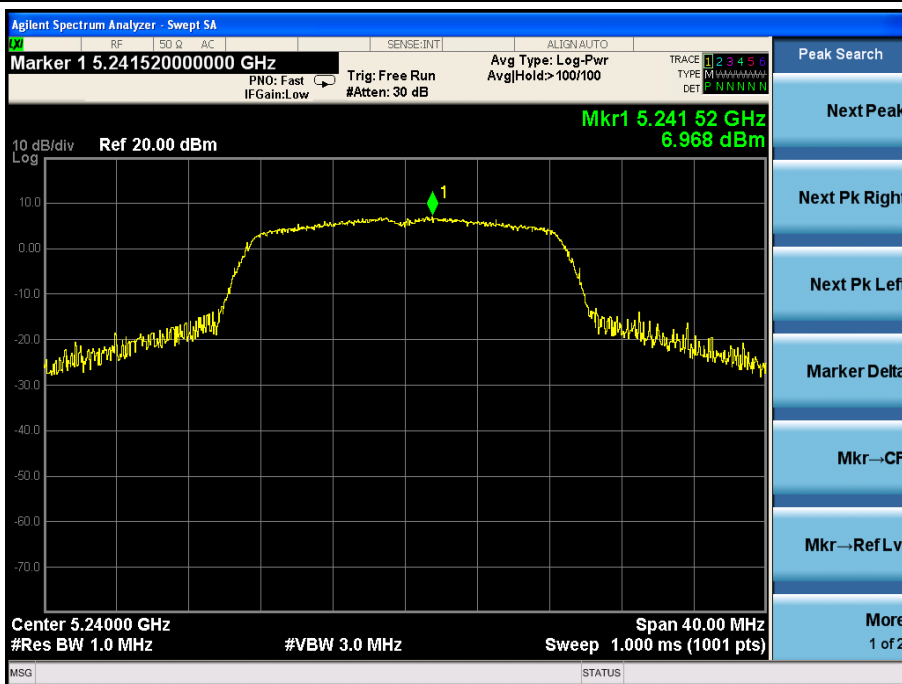
Frequency	Power Density (dBm)	Limit (dBm)	Result
5180 MHz	6.672	11	PASS
5200 MHz	5.876	11	PASS
5240 MHz	6.968	11	PASS



TX CH40



TX CH48



5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

5.1.1 TEST PROCEDURE

1. Set RBW= 1%-5% BW.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



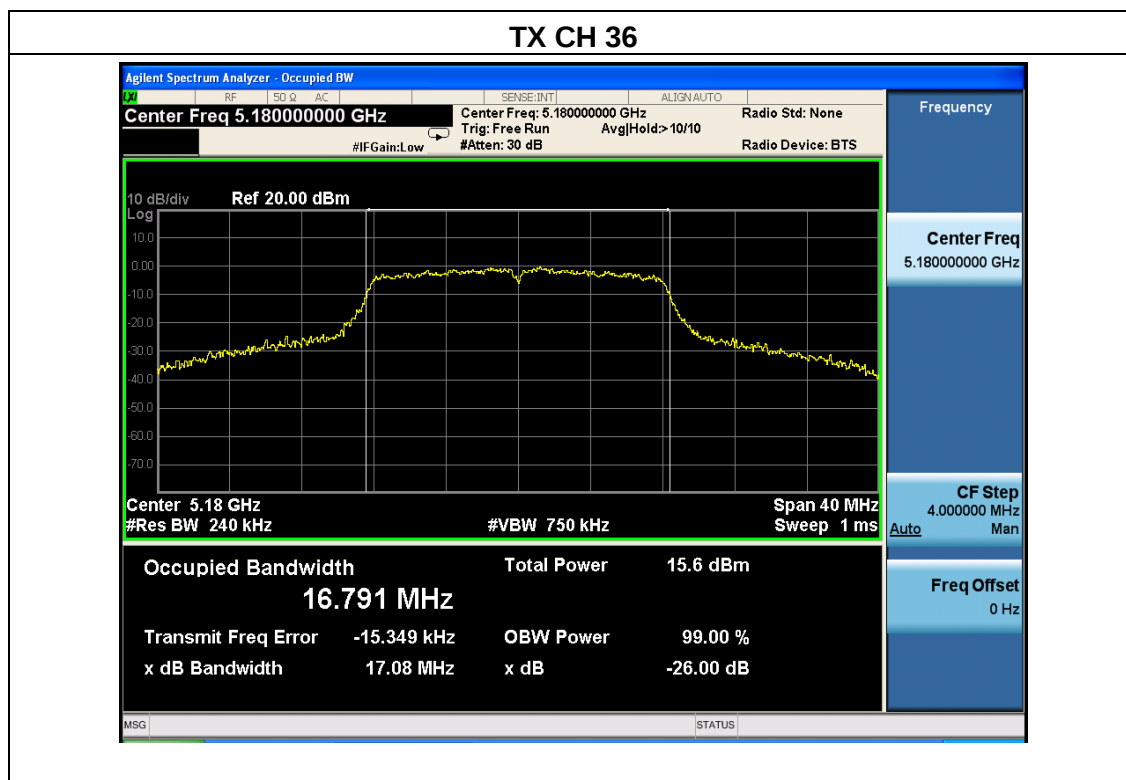
5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

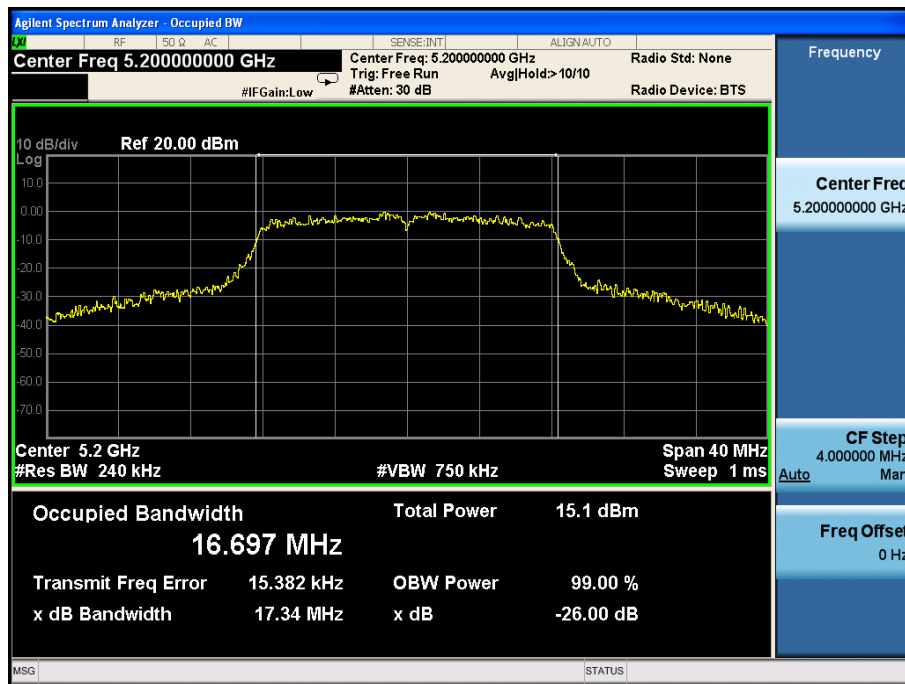
5.1.5 TEST RESULTS

EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX a Mode /CH36, CH40, CH48		

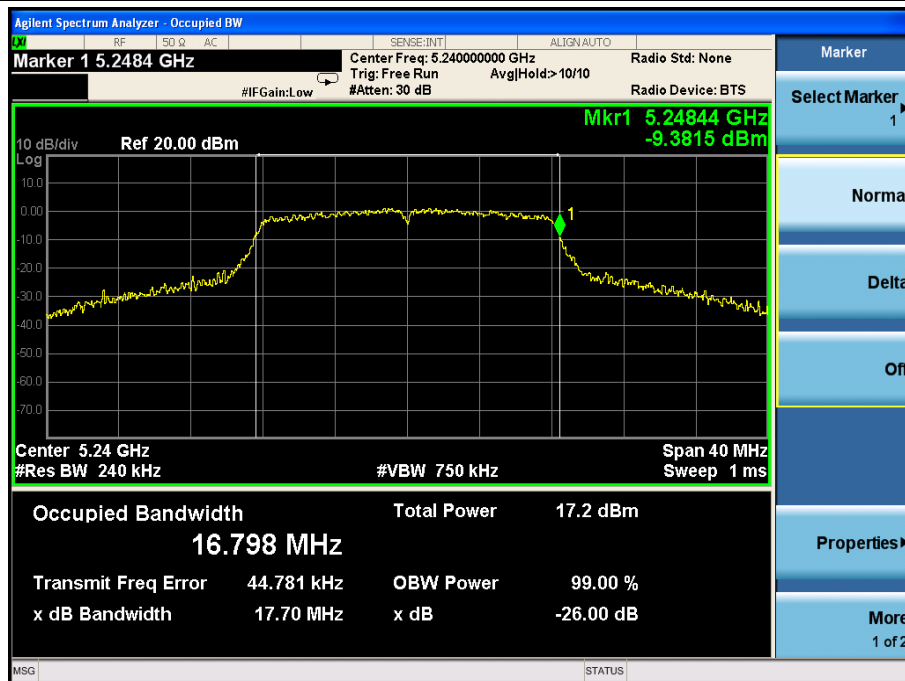
Channel	Frequency (MHz)	26dB bandwidth (MHz)	Limit (kHz)	Result
Low	5180	17.08	/	Pass
Middle	5200	17.34	/	Pass
High	5240	17.70	/	Pass



TX CH 40

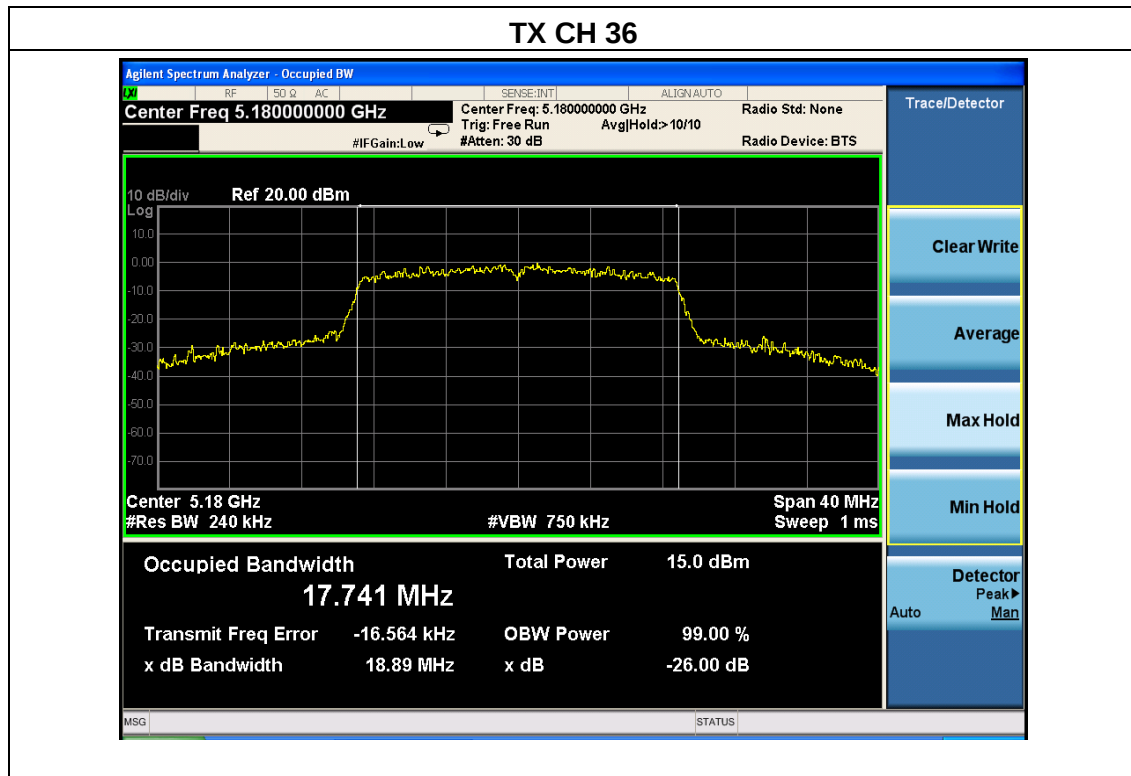


TX CH48

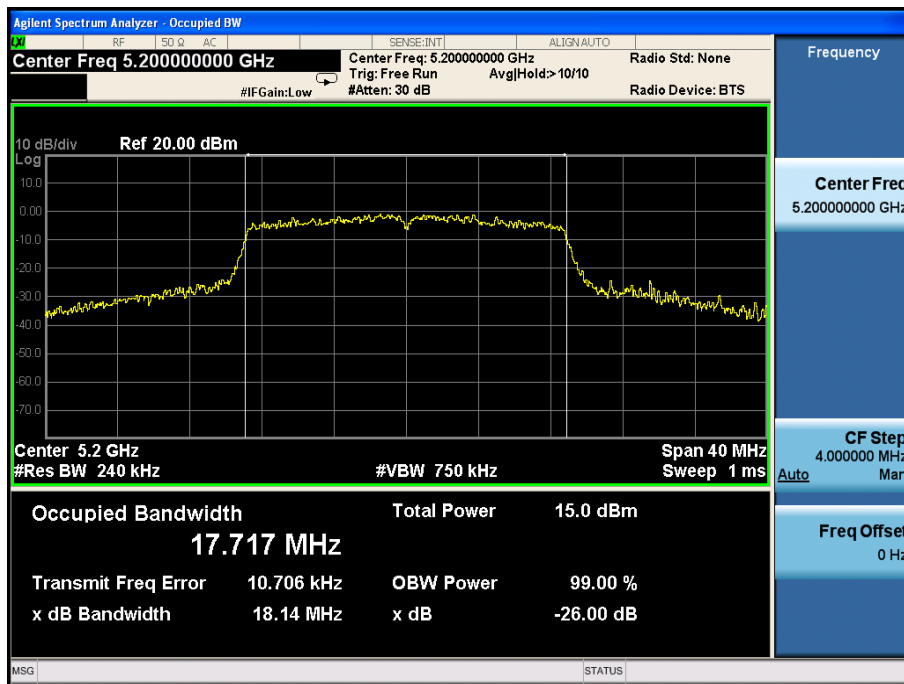


EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX n Mode /CH36, CH40, CH48		

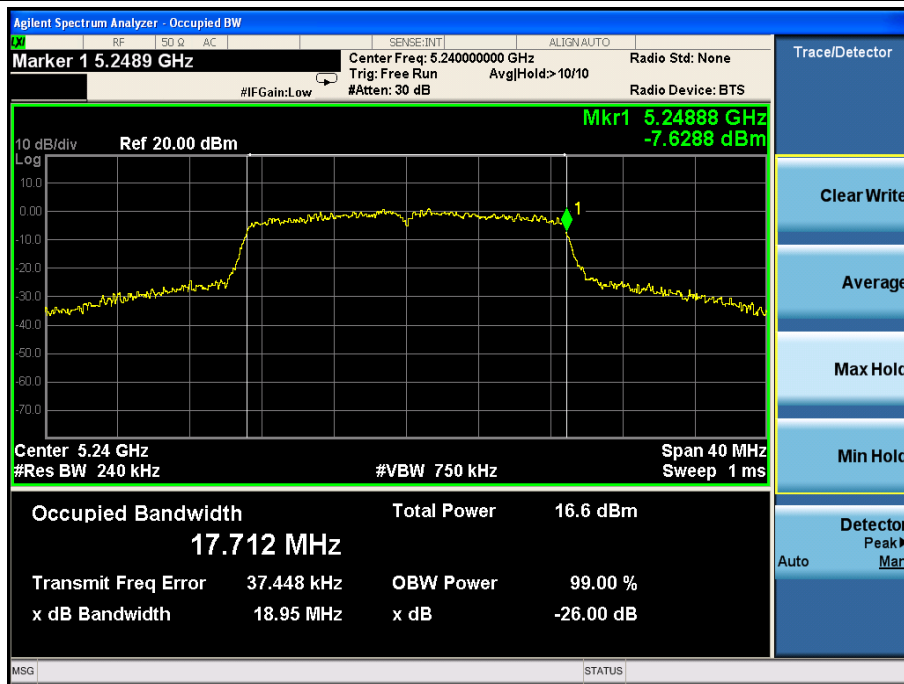
Channel	Frequency (MHz)	26dB bandwidth (MHz)	Limit (kHz)	Result
Low	5180	18.89	/	Pass
Middle	5200	18.14	/	Pass
High	5240	18.95	/	Pass



TX CH 40



TX CH48



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz
Test Mode :	TX a Mode /CH36, CH40, CH48		

TX 802.11a Mode			
Test Channe	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH36	5180	18.54	24
CH40	5200	18.46	24
CH48	5240	18.78	24
TX 802.11n Mode			
CH36	5180	17.61	24
CH40	5200	17.82	24
CH48	5240	17.59	24

///

7. FREQUENCY STABILITY

7.1 APPLIED PROCEDURES / LIMIT

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

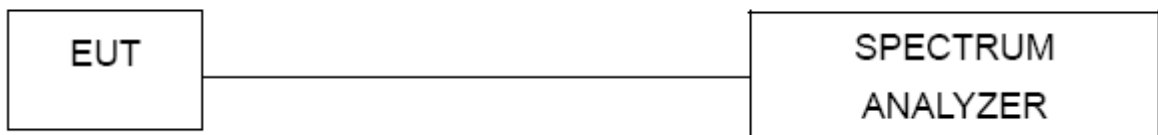
7.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the Spectrum Analyzer

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 TEST RESULTS

EUT :	M5+ HiFi MUSIC SYSTEM	Model Name :	M5+
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 12V from adapter AC 120V/60Hz

Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
5.2G Band	138V	5179.975	25	5239.975	25
	120V	5179.975	25	5239.975	25
	102V	5179.975	25	5239.975	25

Mode	Temperature (°C)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.928	72	5239.954	46
	-20	5179.948	52	5239.937	63
	-10	5179.938	62	5239.945	55
	0	5179.952	48	5239.965	35
	10	5179.957	43	5239.978	22
	20	5179.965	35	5239.951	9
	30	5179.975	25	5239.935	65
	40	5179.958	42	5239.969	31
	50	5179.982	18	5239.958	42

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

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

8.2 EUT ANTENNA

The EUT antenna is internal antenna. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used.

----END OF REPORT----