

FCC RADIO TEST REPORT

FCC ID: SMC-G3PRO

Product : JMGO Smart Home Theater

Trade Mark : JMGOSMARTTHEATER

Model Name : G3 Pro

Serial Model : G3

Report No. : SER170908102004E

Prepared for

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TEST RESULT CERTIFICATION

Applicant's name : SHENZHEN HOLATEK CO.,LTD.

Address : Rm.1001,Unit 4,Bld.B,Kexing Science Park,Keyuan Road,
Nashan District, Shenzhen,China

Manufacturer's Name : SHENZHEN HOLATEK CO.,LTD.

Address : Rm.1001,Unit 4,Bld.B,Kexing Science Park,Keyuan Road,
Nashan District, Shenzhen,China

Product description

Product name..... : JMGO Smart Home Theater

Model and/or type reference : G3 Pro

Serial Model : G3

Standards : FCC Part15.407

Test procedure..... ANSI C63.10-2013 and KDB 789033 D02 General UNII Test
Procedures New Rules v01r01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 662911 D02 MIMO With Cross Polarized Antenna V01

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements/ the Industry Canada requirements.. And it is applicable only to the tested sample identified in the report.

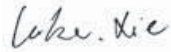
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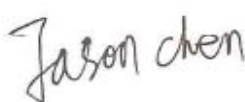
Date of Test.....

Date (s) of performance of tests..... 09 Sep. 2017 ~ 13 Dec. 2017

Date of Issue..... 13 Dec. 2017

Test Result..... **Pass**

Testing Engineer : 
(Lake Xie)

Technical Manager : 
(Jason Chen)

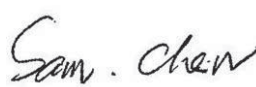
Authorized Signatory : 
(Sam Chen)

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Revision History

[illegible]

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.207	AC Power Line Conducted Emissions	PASS	
15.209(a), 15.407 (b)(1) 15.407 (b)(4) 15.407 (b)(6)	Spurious Radiated Emissions	PASS	(Outsourcing)
15.407 (a)(1) 15.407 (a)(3) 15.1049	26 dB and 99% Emission Bandwidth	PASS	
15.407(e)	Minimum 6 dB bandwidth	PASS	
15.407 (a)(1) 15.407 (a)(3)	Maximum Conducted Output Power	PASS	
2.1051, 15.407(b)(1) 15.407(b)(4)	Band Edge	PASS	
15.407 (a)(1) 15.407 (a)(3)	Power Spectral Density	PASS	
2.1051, 15.407(b)	Spurious Emissions at Antenna Terminals	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

Outsourcing: The 26G-40G Spurious Radiated Emissions in this test were outsourced to the Shenzhen Academy of Metrology & Quality Inspection

1.1 FACILITIES AND ACCREDITATIONS

FACILITIES

All measurement facilities used to collect the measurement data are located at 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

CNAS-Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
The Certificate Registration Number is L5516.

IC-Registration The Certificate Registration Number is 9270A-1.

FCC- Accredited Test Firm Registration Number: 463705.
Designation Number: CN1184

A2LA-Lab. The Certificate Registration Number is 4298.01
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Name of Firm : Shenzhen NTEK Testing Technology Co., Ltd.

Site Location : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

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	$\pm 2.80\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(30MHz~1GHz)	$\pm 2.64\text{dB}$
5	All emissions, radiated(1GHz~6GHz)	$\pm 2.40\text{dB}$
6	All emissions, radiated(> 6GHz)	$\pm 2.52\text{dB}$
7	Temperature	$\pm 0.5^{\circ}\text{C}$
8	Humidity	$\pm 2\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	JMGO Smart Home Theater	
Trade Mark	JMGOSMARTTHEATER	
Model Name	G3 Pro	
Serial Model	G3	
Model Difference	All the model are the same circuit and RF module, except the model No..	
FCC ID	SMC-G3PRO	
Product Description	IEEE 802.11 WLAN Mode Supported	☒ 802.11a/n/ac(20MHz channel bandwidth) ☒ 802.11n/ac(40MHz channel bandwidth) ☒ 802.11ac(80MHz channel bandwidth)
	Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS9
	Modulation	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
	Operating Frequency Range	☒ 5180-5240MHz for 802.11a/n(HT20)/ac20; 5190-5230MHz for 802.11n(HT40)/ac40; 5210MHz for 802.11 ac80; ☒ 5745-5825 MHz for 802.11a/n(HT20)/ac20; 5755-5795 MHz for 802.11a/n(HT40)/ac40; 5775MHz for 802.11 ac80;
	Number of Channels	☒ 4 channels for 802.11a/n20/ac20 in the 5180-5240MHz band ; 2 channels for 802.11 n40/ac40 in the 5190-5230MHz band ; 1 channels for 802.11 ac80 in the 5210MHz band ; ☒ 5 channels for 802.11a/n20/ac20 in the 5745-5825MHz band ; 2 channels for 802.11 n40/ac40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band ;
	Antenna Type	FPCB Antenna
	Antenna Gain	1dBi
	Based on the application, features, or specification exhibited in User's Manual, More details of EUT technical specification, please refer to the User's Manual.	
Ratings	DC 19.5V from adapter	
Adapter	Model:ADP-120MHD Input: 100-240V~50/60Hz, 2.2A Output: 19.5V---6.15A	
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. Frequency and Channel list for 802.11a/n(20MHz) band I (5180-5240MHz):

802.11a/n/ac(20MHz) Carrier Frequency Channel							
Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)
36	5180	44	5220	-	-	-	-
40	5200	48	5240	-	-	-	-

Frequency and Channel list for 802.11n(40MHz) band I (5190-5230MHz):

802.11n /ac(40MHz) Carrier Frequency Channel							
Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)
38	5190	-	-	-	-	-	-
46	5230	-	-	-	-	-	-

802.11ac (80MHz) Carrier Frequency Channel	
Channel	Frequency (MHz)
42	5210

Frequency and Channel list for 802.11a/n(20 MHz) band IV (5745-5825MHz):

802.11a/n/ac(20 MHz) Carrier Frequency Channel							
Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

Frequency and Channel list for 802.11n(40MHz) band IV (5755-5795MHz):

802.11n/ac 40MHz Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795	-	-

802.11ac 80MHz Carrier Frequency Channel	
Channel	Frequency (MHz)
155	5775

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	Normal Link Mode
Mode 2	802.11a / n/ ac 20 CH36/ CH40/ CH 48 802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 3	802.11n/ ac40 CH38/ CH 46 802.11n/ ac40 CH 151 / CH 159
Mode 4	802.11 ac80 CH 42/CH 155

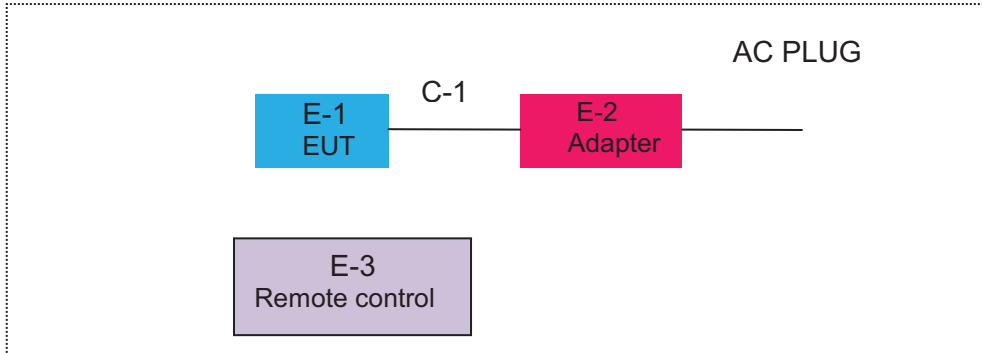
For Radiated Emission	
Final Test Mode	Description
Mode 1	Normal Link Mode
Mode 2	802.11a / n/ ac 20 CH36/ CH40/ CH 48 802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 3	802.11n/ ac40 CH38/ CH 46 802.11n/ ac40 CH 151 / CH 159
Mode 4	802.11 ac80 CH 42/CH 155

Note:

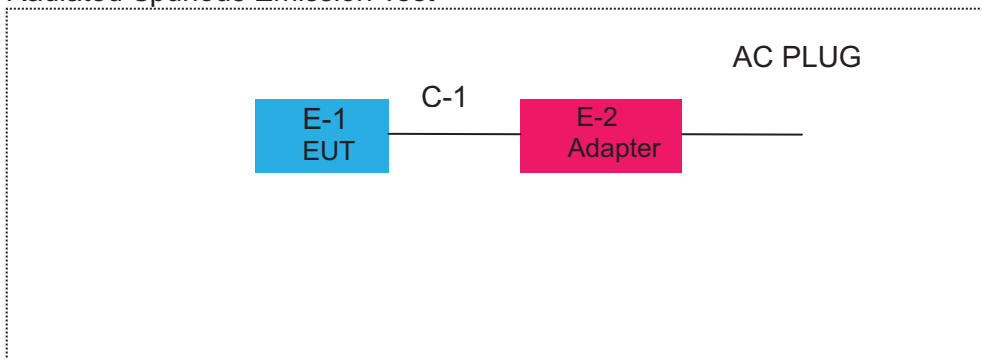
- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

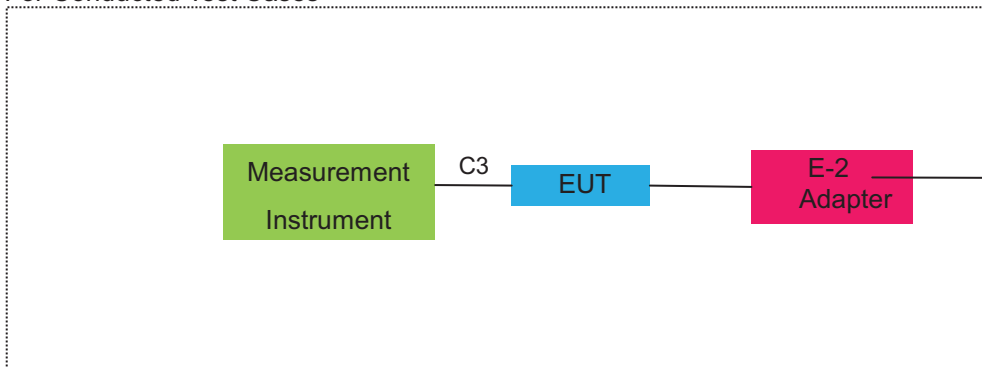
For AC Conducted Emission Mode



Radiated Spurious Emission Test



For Conducted Test Cases



Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

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	JMGO Smart Home Theater	JMGOSMARTTHEATER	G3 Pro	SMC-G3PRO	EUT
E-2	Adapter	N/A	ADP-120MHD	N/A	Peripherals
E-3	Remote control	JMGOSMARTTHEATER	G3 Pro	N/A	EUT

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	DC Cable	NO	YES	1.2m	
C-3	RF Cable	YES	NO	0.5m	

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

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2017.06.06	2018.06.05	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2017.11.09	2018.11.08	1 year
3	EMI Test Receiver	Agilent	N9038A	MY53227146	2017.06.06	2018.06.05	1 year
4	Test Receiver	R&S	ESPI	101318	2017.06.06	2018.06.05	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2017.04.09	2018.04.08	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2017.06.06	2018.06.05	1 year
7	Horn Antenna	EM	EM-AH-10180	2011071402	2017.04.09	2018.04.08	1 year
8	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2017.07.06	2018.07.05	1 year
9	Amplifier	EMC	EMC051835SE	980246	2017.08.09	2018.08.08	1 year
10	Amplifier	MITEQ	TTA1840-35-HG	177156	2017.06.06	2018.06.05	1 year
11	Loop Antenna	ARA	PLA-1030/B	1029	2017.06.06	2018.06.05	1 year
12	Power Meter	DARE	RPR3006W	15100041SN084	2017.08.09	2018.08.08	1 year
13	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
14	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
16	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Note:

We will use the temporary antenna connector (soldered on the PCB board) When conducted test
And this temporary antenna connector is listed within the instrument list

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2017.06.06	2018.06.05	1 year
2	LISN	R&S	ENV216	101313	2017.04.19	2018.04.18	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2017.06.06	2018.06.05	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2017.06.06	2018.06.05	1 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

1	Filter	TRILTHIC	2400MHz	29	2017.04.19	2018.04.18	1 year
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Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable which is scheduled for calibration every 3 years.

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

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

0.15 -0.5	66 - 56 *	56 - 46 *	FCC/ RSS-247
0.50 -5.0	56.00	46.00	FCC/ RSS-247
5.0 -30.0	60.00	50.00	FCC/ RSS-247

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

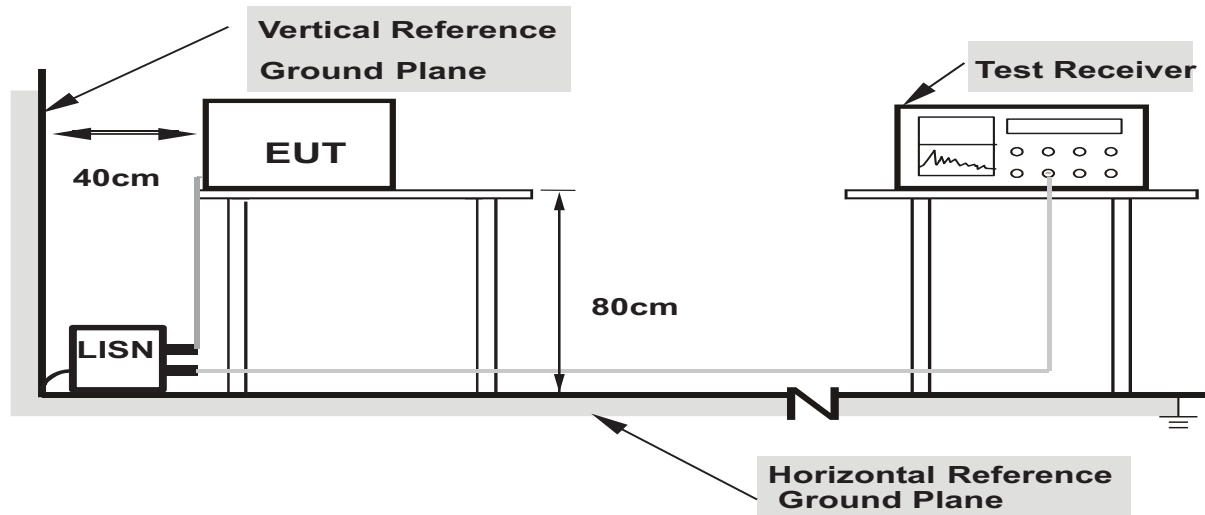
3.1.2 TEST PROCEDURE

- 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 cm from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

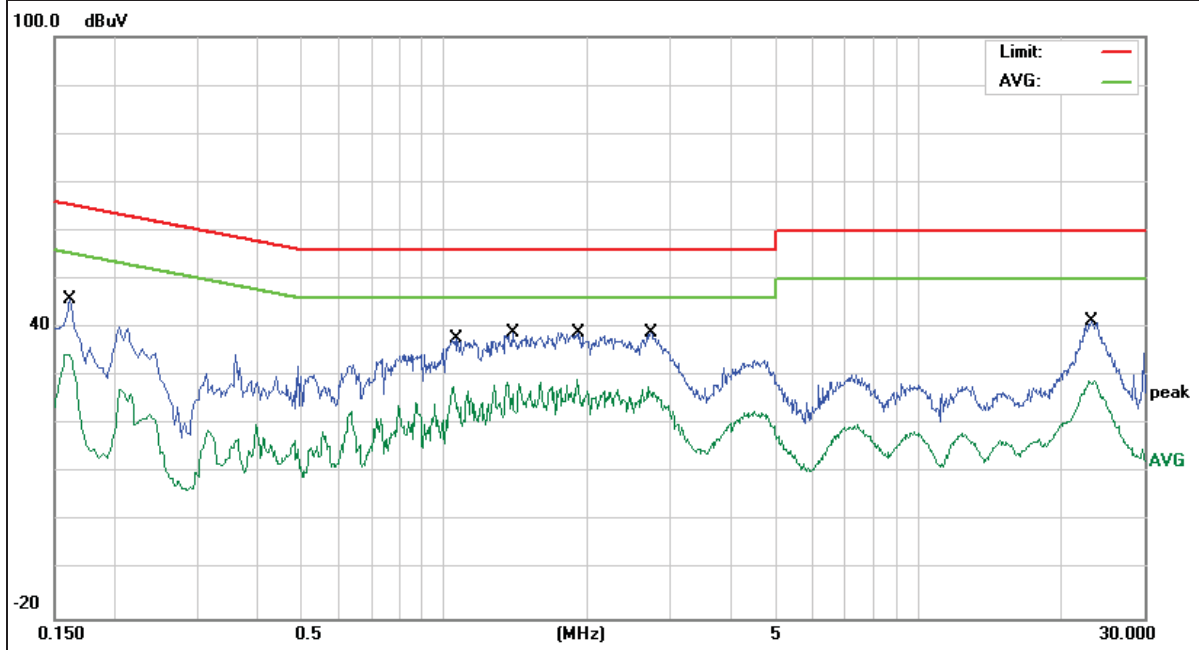
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz	Test Mode :	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1620	35.92	9.82	45.74	65.36	-19.62	QP
0.1620	24.64	9.82	34.46	55.36	-20.90	AVG
1.0580	27.97	9.92	37.89	56.00	-18.11	QP
1.0580	17.97	9.92	27.89	46.00	-18.11	AVG
1.3899	29.08	9.89	38.97	56.00	-17.03	QP
1.3899	18.86	9.89	28.75	46.00	-17.25	AVG
1.9259	29.01	9.85	38.86	56.00	-17.14	QP
1.9259	19.63	9.85	29.48	46.00	-16.52	AVG
2.7339	29.00	9.99	38.99	56.00	-17.01	QP
2.7339	17.98	9.99	27.97	46.00	-18.03	AVG
23.2220	31.18	10.29	41.47	60.00	-18.53	QP
23.2220	18.66	10.29	28.95	50.00	-21.05	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

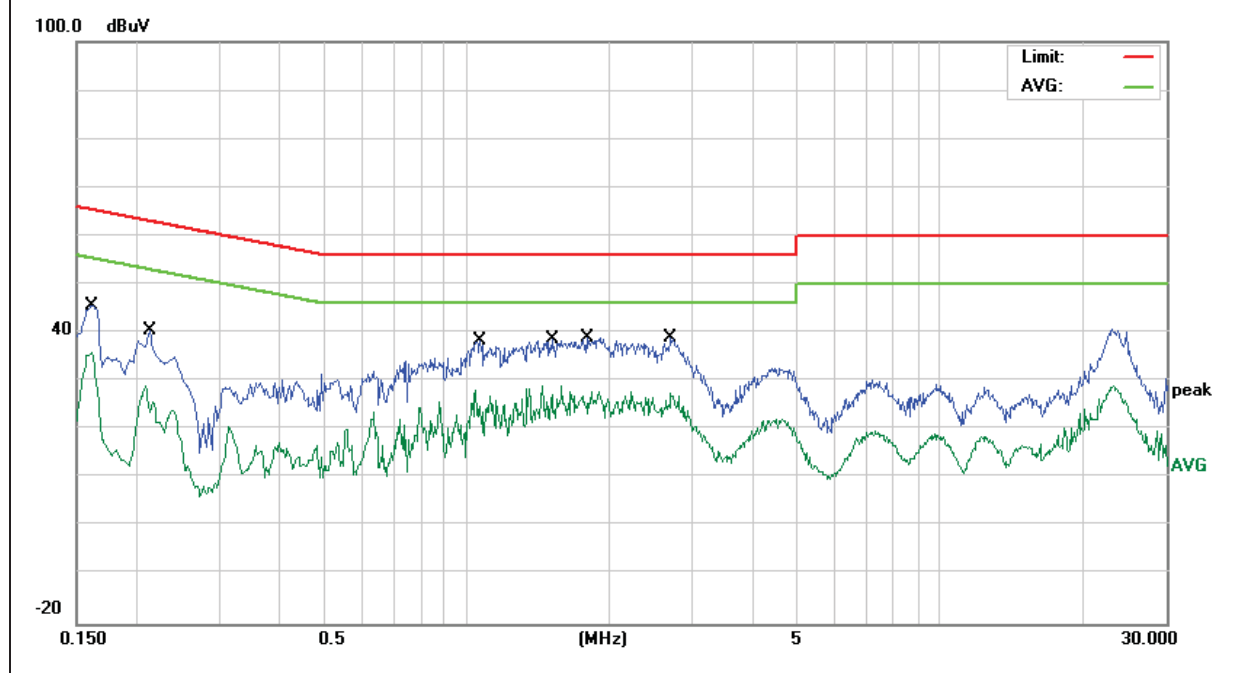


EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz	Test Mode :	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1620	35.78	9.92	45.70	65.36	-19.66	QP
0.1620	25.89	9.92	35.81	55.36	-19.55	AVG
0.2139	30.61	9.92	40.53	63.05	-22.52	QP
0.2139	19.09	9.92	29.01	53.05	-24.04	AVG
1.0660	28.45	9.93	38.38	56.00	-17.62	QP
1.0660	18.23	9.93	28.16	46.00	-17.84	AVG
1.5180	28.70	9.94	38.64	56.00	-17.36	QP
1.5180	19.19	9.94	29.13	46.00	-16.87	AVG
1.7940	29.12	9.94	39.06	56.00	-16.94	QP
1.7940	17.91	9.94	27.85	46.00	-18.15	AVG
2.6939	28.96	9.94	38.90	56.00	-17.10	QP
2.6939	17.59	9.94	27.53	46.00	-18.47	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

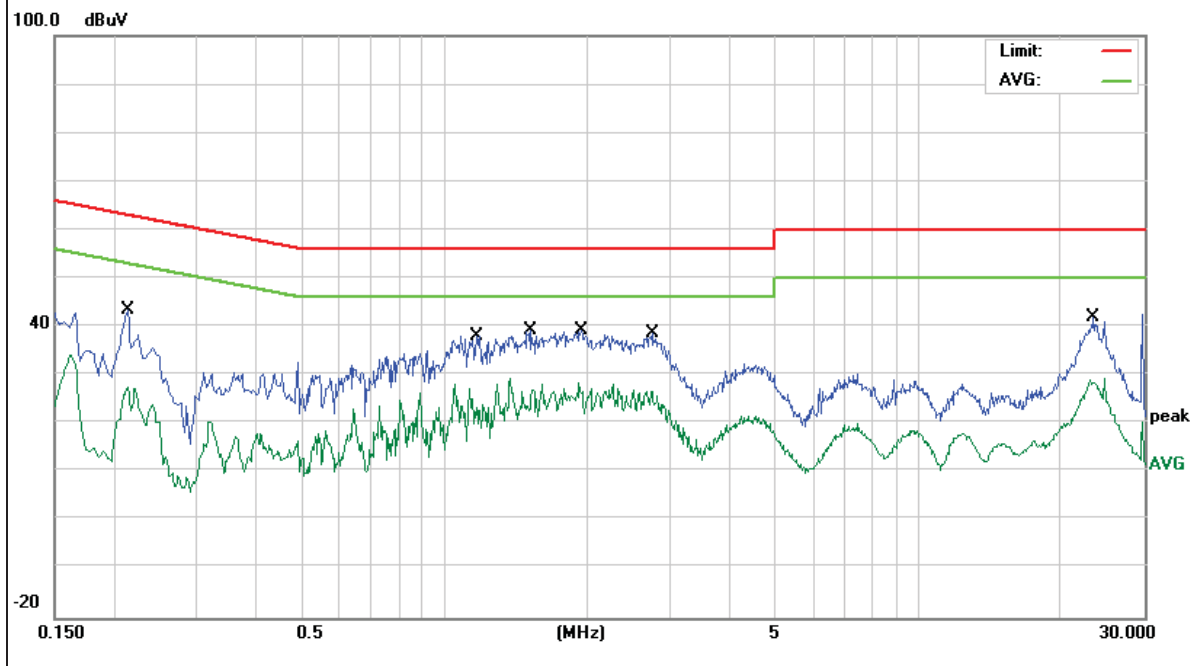


EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 19.5V from Adapter AC 240V/60Hz	Test Mode :	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2139	33.52	9.82	43.34	63.05	-19.71	QP
0.2139	17.76	9.82	27.58	53.05	-25.47	AVG
1.1659	28.24	9.91	38.15	56.00	-17.85	QP
1.1659	17.24	9.91	27.15	46.00	-18.85	AVG
1.5220	29.41	9.89	39.30	56.00	-16.70	QP
1.5220	17.12	9.89	27.01	46.00	-18.99	AVG
1.9419	29.34	9.85	39.19	56.00	-16.81	QP
1.9419	18.68	9.85	28.53	46.00	-17.47	AVG
2.7379	28.63	9.99	38.62	56.00	-17.38	QP
2.7379	16.69	9.99	26.68	46.00	-19.32	AVG
23.4780	31.76	10.29	42.05	60.00	-17.95	QP
23.4780	18.78	10.29	29.07	50.00	-20.93	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

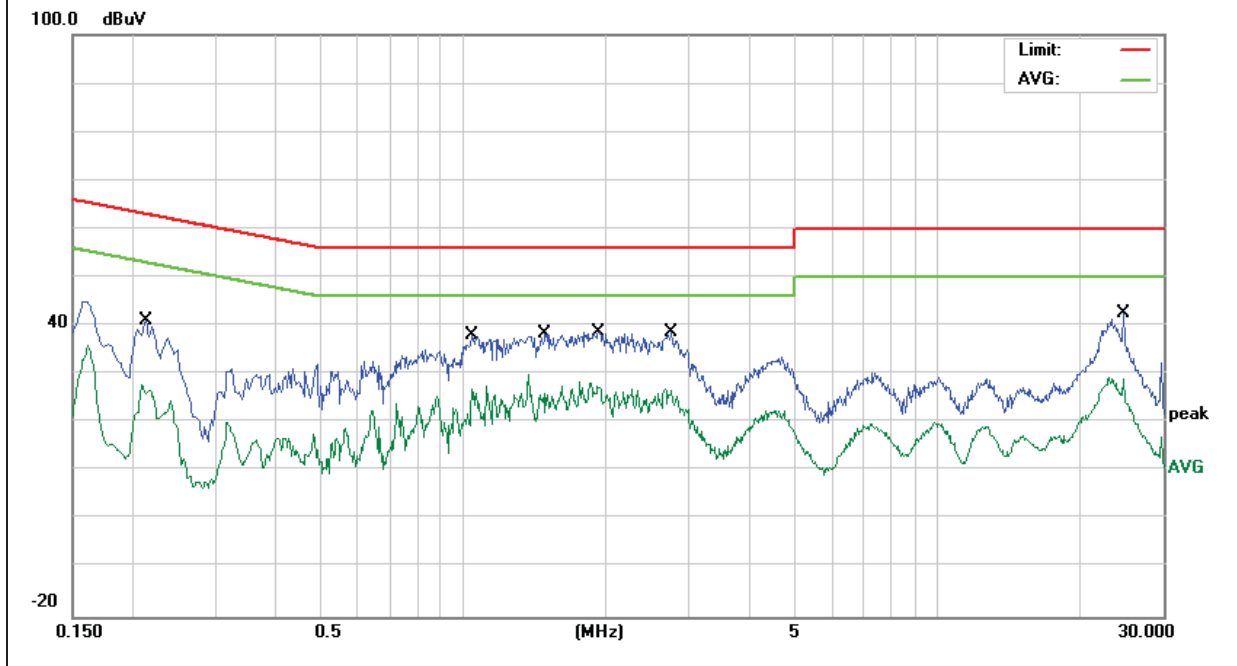


EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 19.5V from Adapter AC 240V/60Hz	Test Mode :	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2139	31.14	9.92	41.06	63.05	-21.99	QP
0.2139	17.89	9.92	27.81	53.05	-25.24	AVG
1.0460	28.04	9.93	37.97	56.00	-18.03	QP
1.0460	17.53	9.93	27.46	46.00	-18.54	AVG
1.4899	28.55	9.93	38.48	56.00	-17.52	QP
1.4899	17.67	9.93	27.60	46.00	-18.40	AVG
1.9379	28.70	9.94	38.64	56.00	-17.36	QP
1.9379	18.34	9.94	28.28	46.00	-17.72	AVG
2.7620	28.56	9.95	38.51	56.00	-17.49	QP
2.7620	16.95	9.95	26.90	46.00	-19.10	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 APPLICABLE STANDARD

According to FCC Part 15.407(d) and 15.209

3.2.2 CONFORMANCE LIMIT

According to FCC Part 15.407(b)(7): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

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.

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	2400/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency(MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Remark : 1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. Distance extrapolation factor =40log(Specific distance/ test distance)(dB);

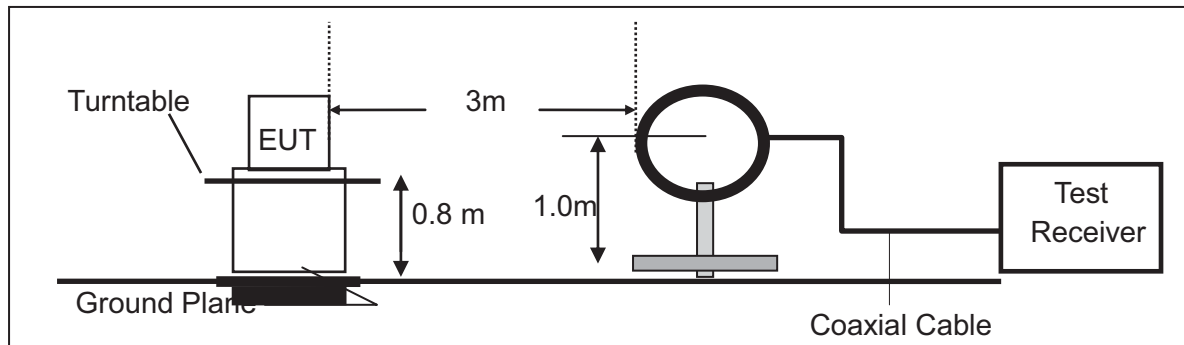
Limit line=Specific limits(dBuV) + distance extrapolation factor.

3.2.3 MEASURING INSTRUMENTS

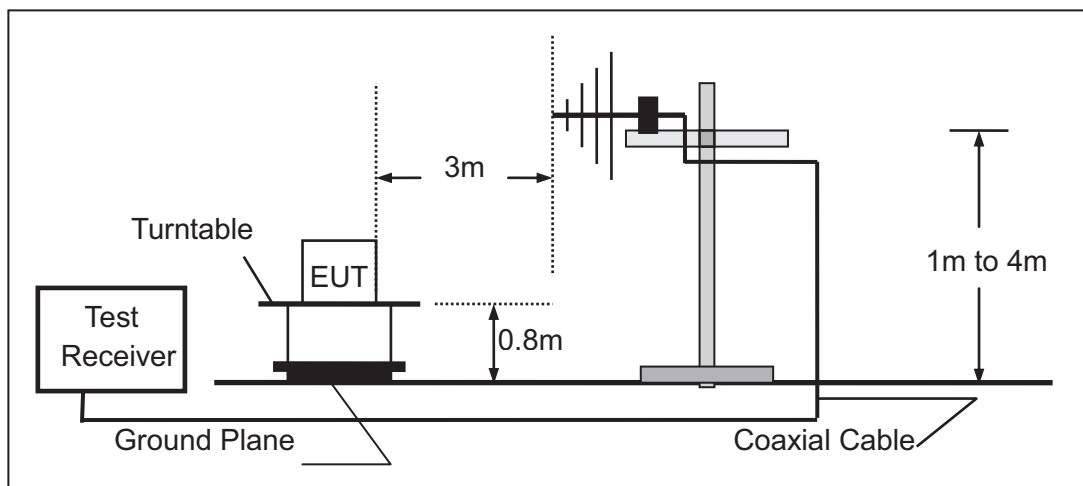
The Measuring equipment is listed in the section 6.3 of this test report.

3.2.4 TEST CONFIGURATION

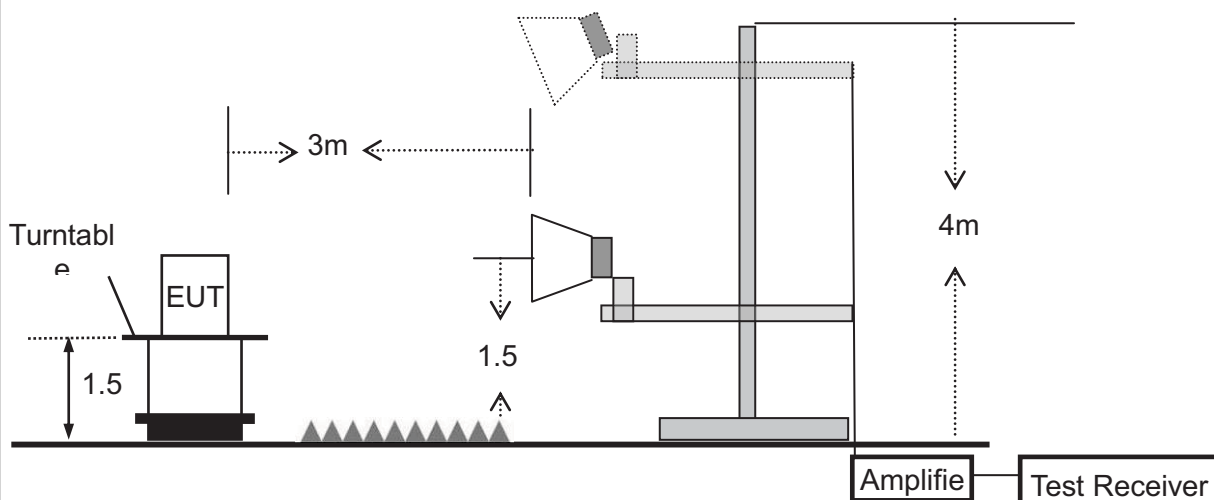
(a) For radiated emissions below 30MHz



(b) For radiated emissions from 30MHz to 1000MHz



(c) For radiated emissions above 1000MHz



3.2.5 TEST PROCEDURE

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT.

Use the following spectrum analyzer settings:

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, 1 MHz / 10Hz 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

- 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 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. 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 for below 1GHz and 1.5m for above 1GHz; 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.
- 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.
- 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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW [kHz]})$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

3.2.6 TEST RESULTS (9KHZ – 30 MHZ)

EUT:	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX	Polarization :	--

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

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

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

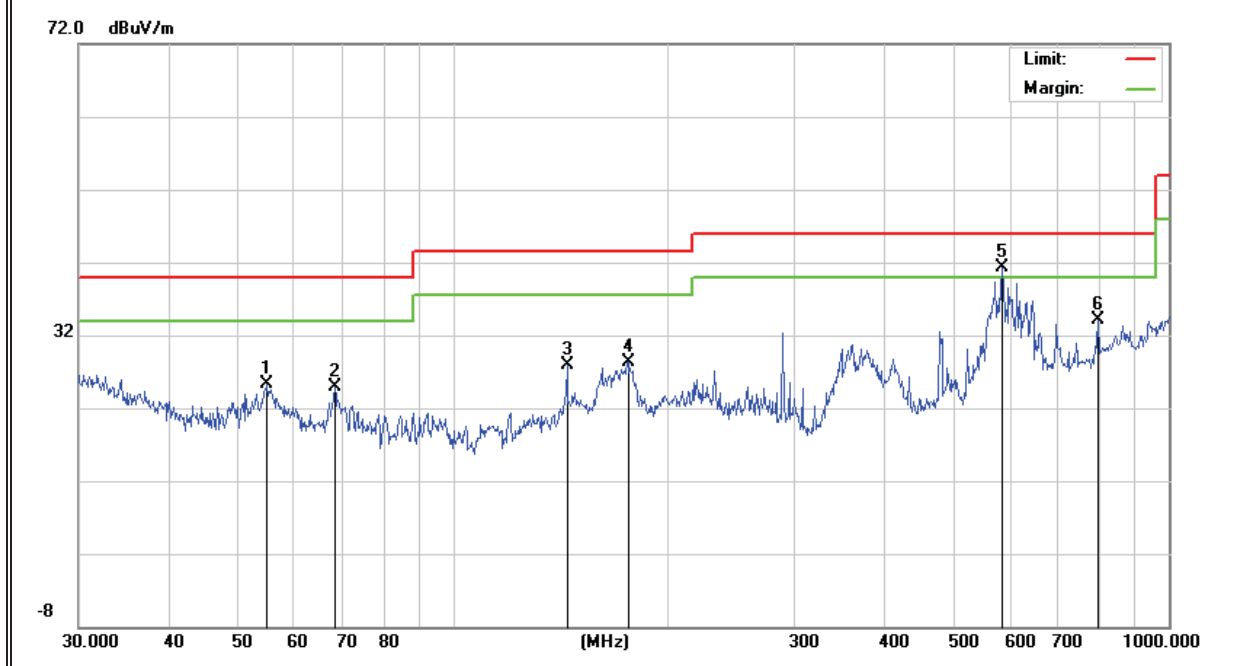
3.2.7 TEST RESULTS (30MHZ – 1GHZ)

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX(5.2G)- 802.11a (High CH)		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	55.0274	13.11	12.24	25.35	40.00	-14.65	QP
V	68.3906	14.85	9.97	24.82	40.00	-15.18	QP
V	144.3348	16.49	11.35	27.84	43.50	-15.66	QP
V	176.2684	15.62	12.66	28.28	43.50	-15.22	QP
V	584.7894	22.28	18.97	41.25	46.00	-4.75	QP
V	796.1829	10.26	23.88	34.14	46.00	-11.86	QP

Remark:

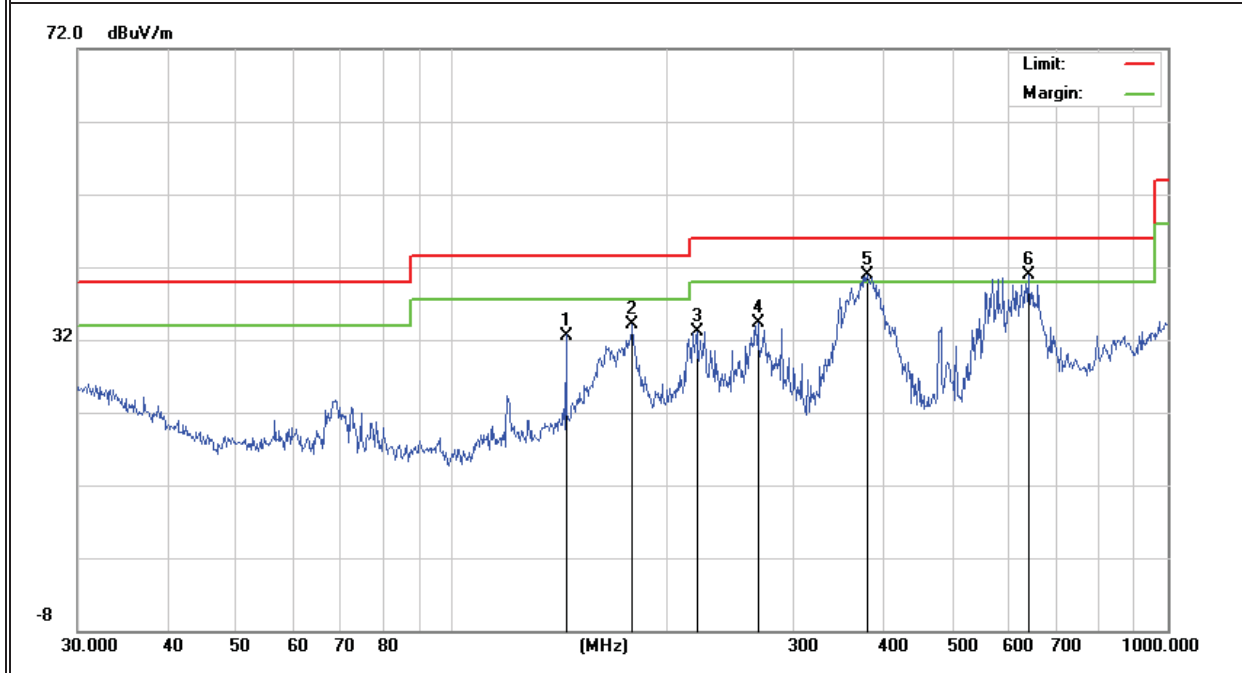
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	144.3348	21.25	11.35	32.60	43.50	-10.90	QP
H	178.7584	21.37	12.72	34.09	43.50	-9.41	QP
H	219.8448	20.93	12.25	33.18	46.00	-12.82	QP
H	267.5455	21.03	13.23	34.26	46.00	-11.74	QP
H	381.2487	26.07	14.89	40.96	46.00	-5.04	QP
H	638.3686	21.26	19.72	40.98	46.00	-5.02	QP

Remark:

Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit

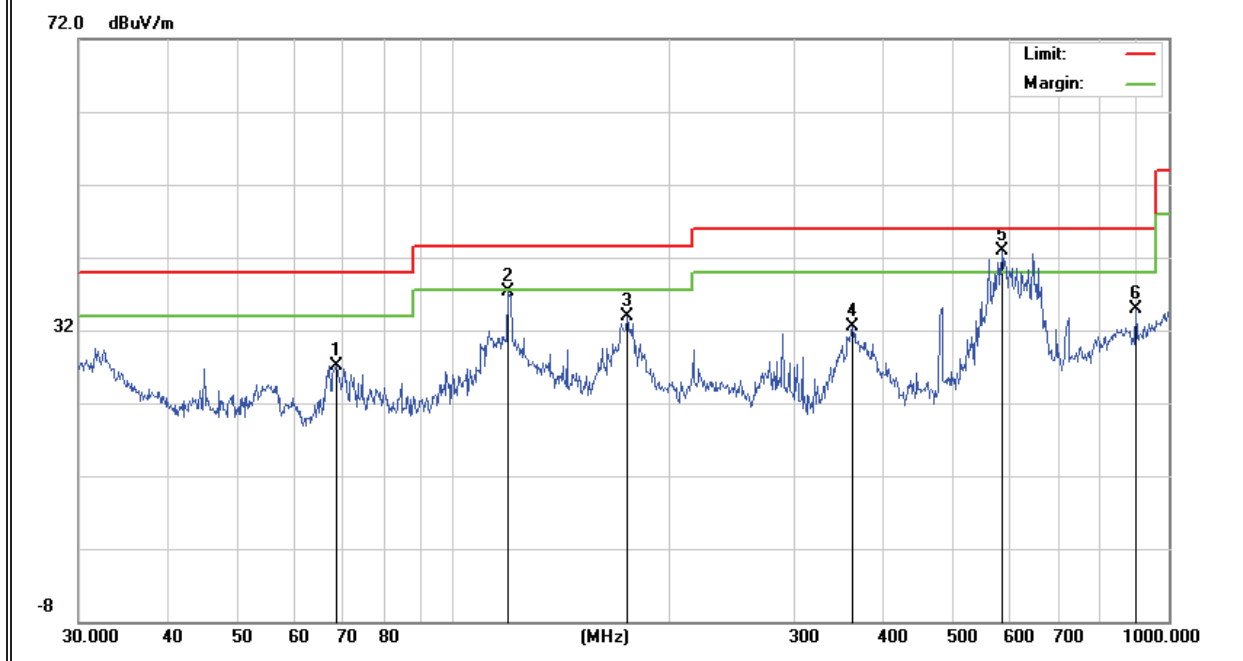


EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX(5.8G) - 802.11a (High CH)		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	68.6310	17.10	10.06	27.16	40.00	-12.84	QP
V	119.4361	26.74	10.55	37.29	43.50	-6.21	QP
V	175.0368	21.20	12.63	33.83	43.50	-9.67	QP
V	361.7139	17.99	14.49	32.48	46.00	-13.52	QP
V	584.7895	23.99	18.97	42.96	46.00	-3.04	QP
V	900.1474	10.33	24.52	34.85	46.00	-11.15	QP

Remark:

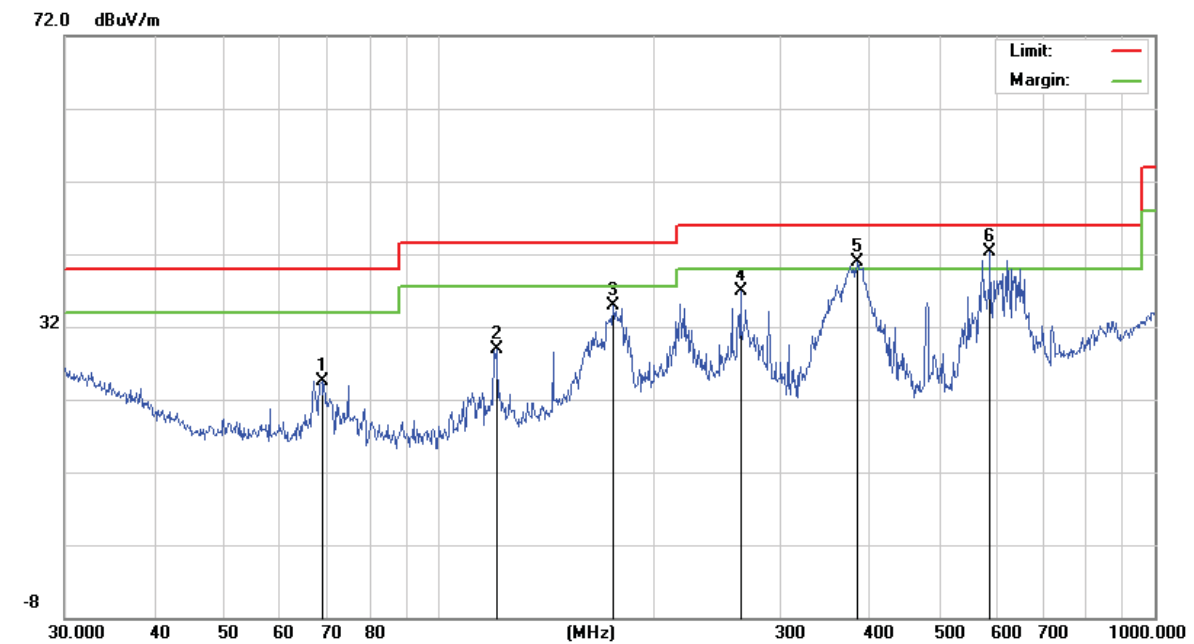
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	68.6310	14.49	10.06	24.55	40.00	-15.45	QP
H	120.2766	18.33	10.61	28.94	43.50	-14.56	QP
H	175.0368	22.19	12.63	34.82	43.50	-8.68	QP
H	263.8190	23.56	13.42	36.98	46.00	-9.02	QP
H	383.9318	25.89	14.94	40.83	46.00	-5.17	QP
H	588.9051	23.20	19.03	42.23	46.00	-3.77	QP

Remark:

Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit



3.2.8 TEST RESULTS (1GHz-26GHz)

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX(5.2G) - 802.11a _5180~5240MHz		

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G									
Vertical	4434.157	61.37	5.94	35.40	44.00	58.71	74.00	-15.29	Pk
Vertical	4434.157	46.57	5.94	35.40	44.00	43.91	54.00	-10.09	AV
Vertical	10370.362	60.41	8.46	39.75	44.50	64.12	74.00	-9.88	Pk
Vertical	10370.362	42.94	8.46	39.75	44.50	46.65	54.00	-7.35	AV
Vertical	15540.196	61.48	10.12	38.80	44.10	66.3	74.00	-7.7	Pk
Vertical	15540.196	37.56	10.12	38.80	42.70	43.78	54.00	-10.22	AV
Horizontal	4434.521	66.59	5.94	35.18	44.00	63.71	74.00	-10.29	Pk
Horizontal	4434.521	44.11	5.94	35.18	44.00	41.23	54.00	-12.77	AV
Horizontal	10370.623	58.97	8.46	38.71	44.50	61.64	74.00	-12.36	Pk
Horizontal	10370.623	41.03	8.46	38.71	44.50	43.7	54.00	-10.3	AV
Horizontal	10540.865	56.96	10.12	38.38	44.10	61.36	74.00	-12.64	Pk
Horizontal	10540.865	38.88	10.12	38.38	44.10	43.28	54.00	-10.72	AV
middle Channel (5200 MHz)-Above 1G									
Vertical	4592.093	60.25	6.48	36.35	44.05	59.03	74.00	-14.97	Pk
Vertical	4592.093	41.91	6.48	36.35	44.05	40.69	54.00	-13.31	AV
Vertical	10401.424	59.68	8.47	37.88	44.51	61.52	74.00	-12.48	Pk
Vertical	10401.424	42.74	8.47	37.88	44.51	44.58	54.00	-9.42	AV
Vertical	15600.218	56.52	10.12	38.8	44.10	61.34	74.00	-12.66	Pk
Vertical	15600.218	36.64	10.12	38.8	42.70	42.86	54.00	-11.14	AV
Horizontal	4592.691	59.86	6.48	36.37	44.05	58.66	74.00	-15.34	Pk
Horizontal	4592.691	43.11	6.48	36.37	44.05	41.91	54.00	-12.09	AV
Horizontal	10400.114	58.87	8.47	38.64	44.50	61.48	74.00	-12.52	Pk
Horizontal	10400.114	42.24	8.47	38.64	44.50	44.85	54.00	-9.15	AV
Horizontal	15600.187	59.86	10.12	38.38	44.10	64.26	74.00	-9.74	Pk
Horizontal	15600.187	38.78	10.12	38.38	44.10	43.18	54.00	-10.82	AV
High Channel (5240 MHz)-Above 1G									
Vertical	4739.246	61.23	7.10	37.24	43.50	62.07	74.00	-11.93	Pk
Vertical	4739.246	44.41	7.10	37.24	43.50	45.25	54.00	-8.75	AV
Vertical	10480.371	60.52	8.46	37.68	44.50	62.16	74.00	-11.84	Pk
Vertical	10480.371	40.32	8.46	37.68	44.50	41.96	54.00	-12.04	AV
Vertical	15720.359	61.74	10.12	38.8	44.10	66.56	74.00	-7.44	Pk
Vertical	15720.359	39.68	10.12	38.8	42.70	45.9	54.00	-8.1	AV
Horizontal	4739.352	62.24	7.10	37.24	43.50	63.08	74.00	-10.92	Pk
Horizontal	4739.352	43.27	7.10	37.24	43.50	44.11	54.00	-9.89	AV
Horizontal	10481.111	62.57	8.46	38.57	44.50	65.1	74.00	-8.9	Pk
Horizontal	10481.111	43.32	8.46	38.57	44.50	45.85	54.00	-8.15	AV
Horizontal	15720.357	60.74	10.12	38.38	44.10	65.14	74.00	-8.86	Pk
Horizontal	15720.357	42.26	10.12	38.38	44.10	46.66	54.00	-7.34	AV

Note:"802.11a(5G)" mode is the worst mode. PK value is lower than the Average value limit, So average didn't record.

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value

has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX (5.8G) -- 802.11a_5745~5825MHz		

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G									
Vertical	4679.195	58.33	5.94	35.40	44.00	55.67	74.00	-18.33	Pk
Vertical	4679.195	38.67	5.94	35.40	44.00	36.01	54.00	-17.99	AV
Vertical	11490.364	58.82	8.46	39.75	44.50	62.53	74.00	-11.47	Pk
Vertical	11490.364	41.08	8.46	39.75	44.50	44.79	54.00	-9.21	AV
Vertical	17235.101	56.66	10.12	38.80	44.10	61.48	74.00	-12.52	Pk
Vertical	17235.101	39.16	10.12	38.80	42.70	45.38	54.00	-8.62	AV
Horizontal	4679.332	58.54	5.94	35.18	44.00	55.66	74.00	-18.34	Pk
Horizontal	4679.332	43.51	5.94	35.18	44.00	40.63	54.00	-13.37	AV
Horizontal	11490.164	55.62	8.46	38.71	44.50	58.29	74.00	-15.71	Pk
Horizontal	11490.164	41.09	8.46	38.71	44.50	43.76	54.00	-10.24	AV
Horizontal	17235.196	59.32	10.12	38.38	44.10	63.72	74.00	-10.28	Pk
Horizontal	17235.196	44.18	10.12	38.38	44.10	48.58	54.00	-5.42	AV
middle Channel (5785 MHz)-Above 1G									
Vertical	4592.228	59.85	6.48	36.35	44.05	58.63	74.00	-15.37	Pk
Vertical	4592.228	43.32	6.48	36.35	44.05	42.1	54.00	-11.9	AV
Vertical	11570.203	61.15	8.47	37.88	44.51	62.99	74.00	-11.01	Pk
Vertical	11570.203	43.26	8.47	37.88	44.51	45.1	54.00	-8.9	AV
Vertical	17355.147	59.58	10.12	38.8	44.10	64.4	74.00	-9.6	Pk
Vertical	17355.147	42.21	10.12	38.8	42.70	48.43	54.00	-5.57	AV
Horizontal	4592.526	58.65	6.48	36.37	44.05	57.45	74.00	-16.55	Pk
Horizontal	4592.526	43.32	6.48	36.37	44.05	42.12	54.00	-11.88	AV
Horizontal	11570.123	60.02	8.47	38.64	44.50	62.63	74.00	-11.37	Pk
Horizontal	11570.123	42.22	8.47	38.64	44.50	44.83	54.00	-9.17	AV
Horizontal	17355.269	57.59	10.12	38.38	44.10	61.99	74.00	-12.01	Pk
Horizontal	17355.269	42.23	10.12	38.38	44.10	46.63	54.00	-7.37	AV
High Channel (5825 MHz)-Above 1G									
Vertical	6039.199	57.64	7.10	37.24	43.50	58.48	74.00	-15.52	Pk
Vertical	6039.199	42.25	7.10	37.24	43.50	43.09	54.00	-10.91	AV
Vertical	11652.562	58.95	8.46	37.68	44.50	60.59	74.00	-13.41	Pk
Vertical	11652.562	41.12	8.46	37.68	44.50	42.76	54.00	-11.24	AV
Vertical	17473.128	58.55	10.12	38.8	44.10	63.37	74.00	-10.63	Pk
Vertical	17473.128	40.32	10.12	38.8	42.70	46.54	54.00	-7.46	AV
Horizontal	6039.232	59.96	7.10	37.24	43.50	60.8	74.00	-13.2	Pk
Horizontal	6039.232	43.35	7.10	37.24	43.50	44.19	54.00	-9.81	AV
Horizontal	11652.319	52.26	8.46	38.57	44.50	54.79	74.00	-19.21	Pk
Horizontal	11652.319	40.14	8.46	38.57	44.50	42.67	54.00	-11.33	AV
Horizontal	17474.062	57.74	10.12	38.38	44.10	62.14	74.00	-11.86	Pk
Horizontal	17474.062	40.32	10.12	38.38	44.10	44.72	54.00	-9.28	AV

Note:"802.11a(5G)" mode is the worst mode. PK value is lower than the Average value limit, So average didn't record.

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value

has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.2.9 TEST RESULTS (26GHZ-40GHZ)

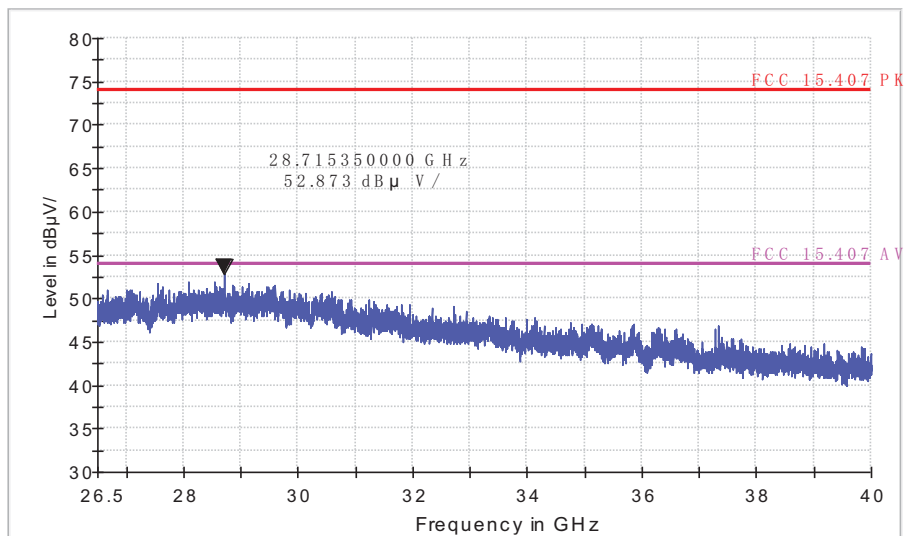
EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX (5.2G)-802.11a 5180MHz~5240MHz , TX (5.8G)-802.11a 5745MHz~5825MHz		

All the modulation modes have been tested, and the worst result was report as below:

Low Channel (5180 MHz)-Above 1G

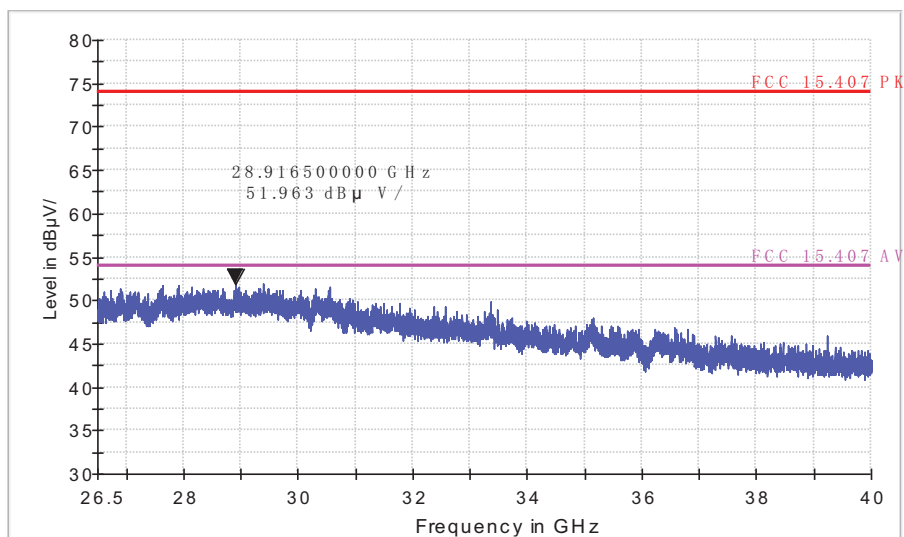
Horizontal

FCC Electric Field Strength 26.5-40GHz



Vertical

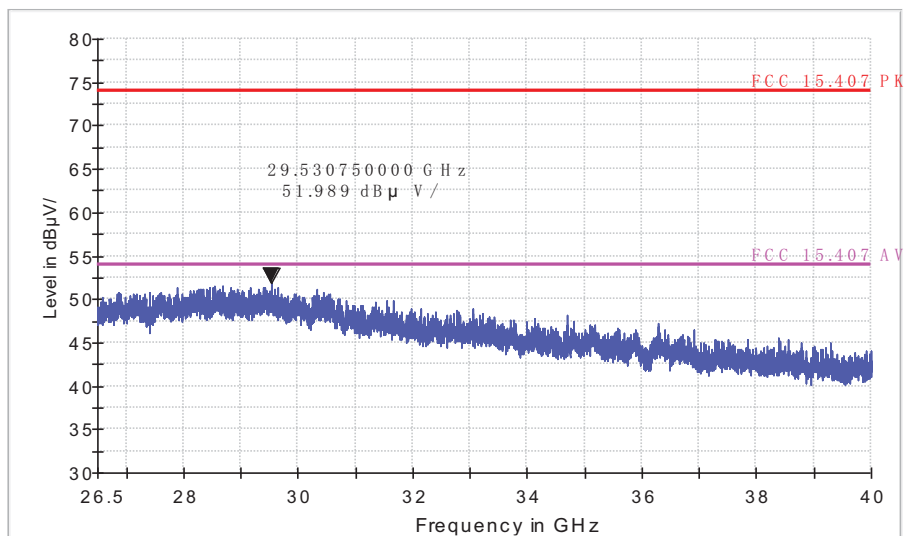
FCC Electric Field Strength 26.5-40GHz



High Channel (5240 MHz)-Above 1G

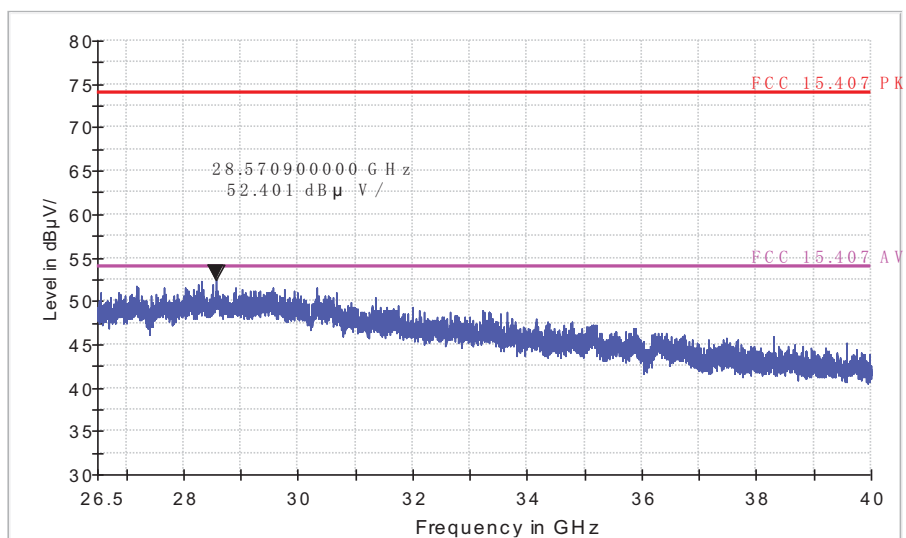
Horizontal

FCC Electric Field Strength 26.5-40GHz



Vertical

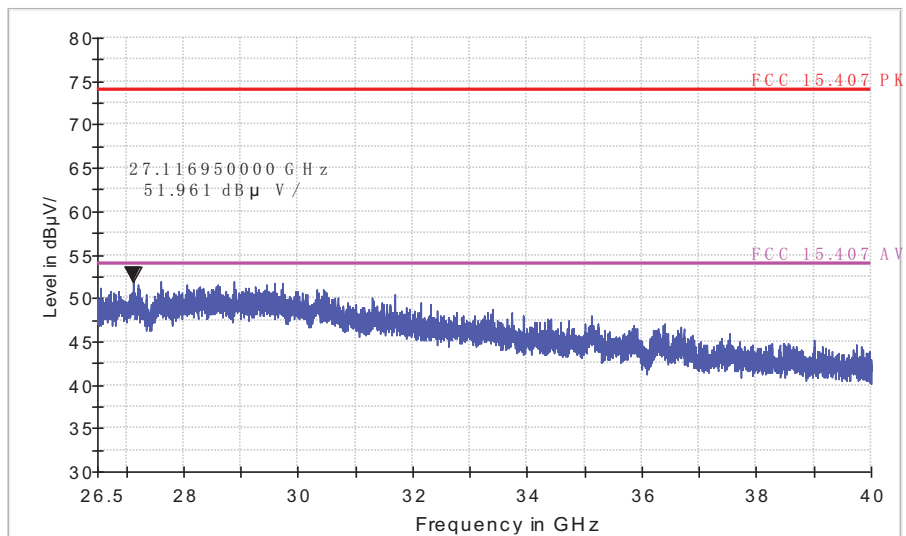
FCC Electric Field Strength 26.5-40GHz



Low Channel (5745 MHz)-Above 1G

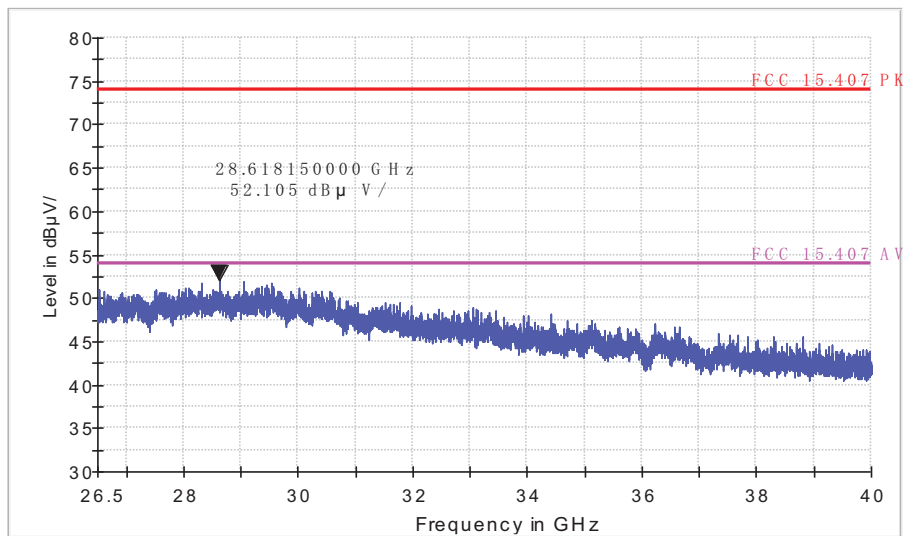
Horizontal

FCC Electric Field Strength 26.5-40GHz



Vertical

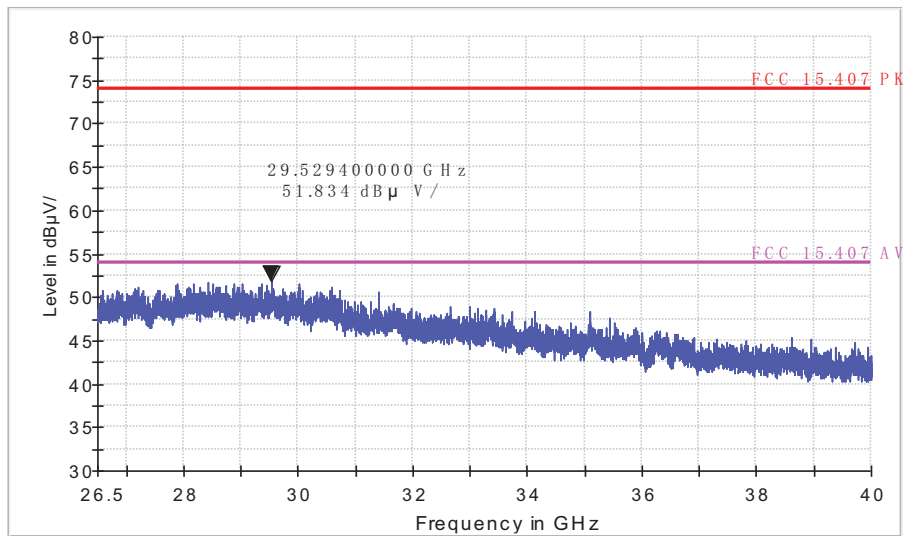
FCC Electric Field Strength 26.5-40GHz



High Channel (5825 MHz)-Above 1G

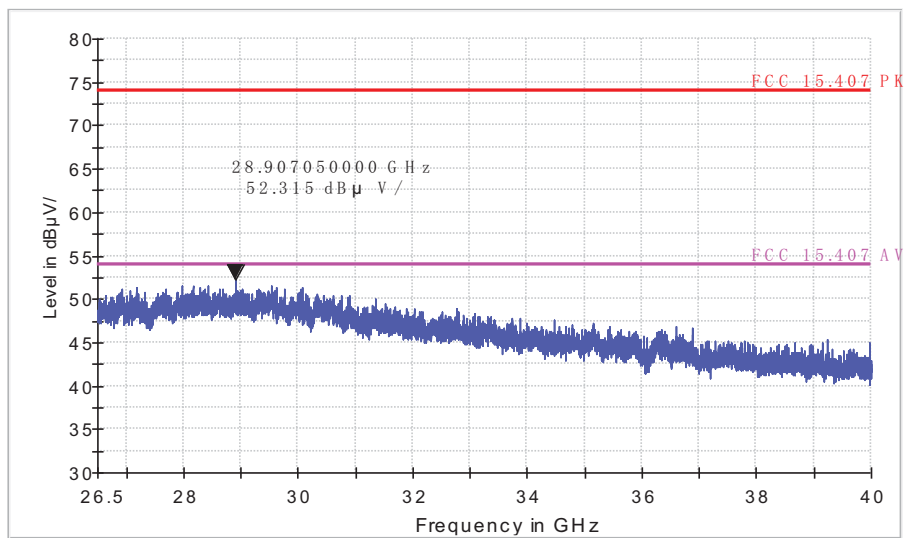
Horizontal

FCC Electric Field Strength 26.5-40GHz



Vertical

FCC Electric Field Strength 26.5-40GHz



4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

According to FCC §15.407(a)(3)

For the band 5.15-5.25 GHz,

- (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
- (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 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.
- (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
- (iv) For client devices in the 5.15-5.25 GHz band, 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.

For the band 5.725-5.85 GHz

- (3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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.

4.2 TEST PROCEDURE

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

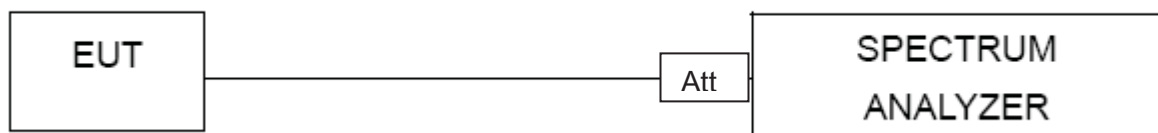
- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3$ RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ KHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ KHz}$ is available on nearly all spectrum analyzers.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



4.5 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.

4.6 TEST RESULTS

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX Frequency Band I (5150-5250MHz)		

Mode	Frequency	Measured Power Density (dBm)	Limit (dBm)	Result
802.11 a	5180 MHz	3.743	11	PASS
	5200 MHz	4.063	11	PASS
	5240 MHz	4.365	11	PASS
802.11 n20	5180 MHz	3.373	11	PASS
	5200 MHz	3.768	11	PASS
	5240 MHz	3.492	11	PASS
802.11 n40	5190 MHz	0.109	11	PASS
	5230 MHz	-0.392	11	PASS
802.11 AC20	5180 MHz	3.201	11	PASS
	5200 MHz	4.048	11	PASS
	5240 MHz	3.512	11	PASS
802.11 AC40	5190 MHz	-0.138	11	PASS
	5230 MHz	-0.798	11	PASS
802.11 AC80	5210 MHz	-3.150	11	PASS

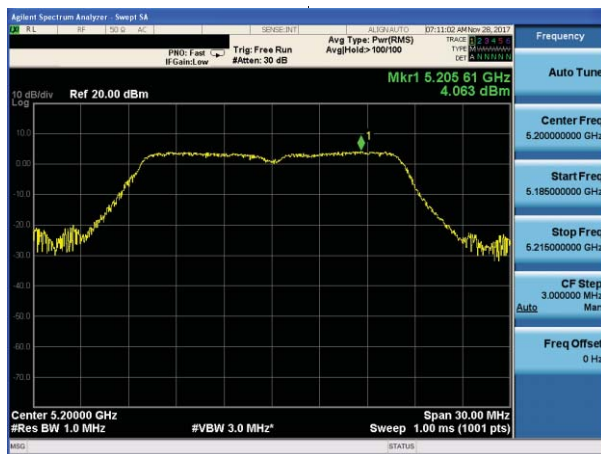
(802.11a) PSD plot on channel 36



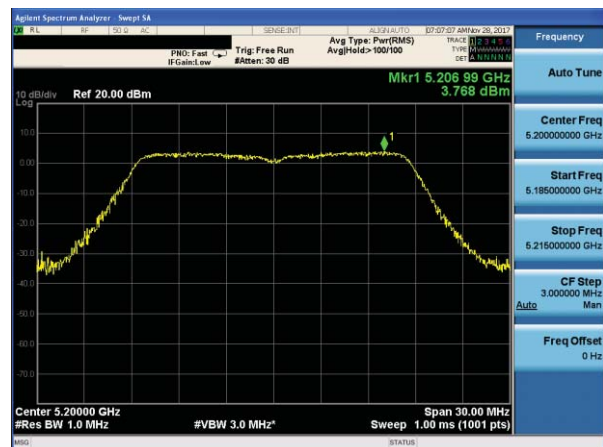
(802.11n20) PSD plot on channel 36



(802.11a) PSD plot on channel 40



(802.11n20) PSD plot on channel 40



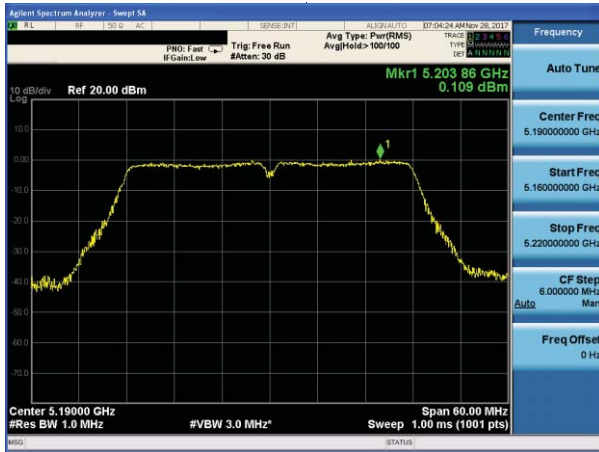
(802.11a) PSD plot on channel 48



(802.11n20) PSD plot on channel 48



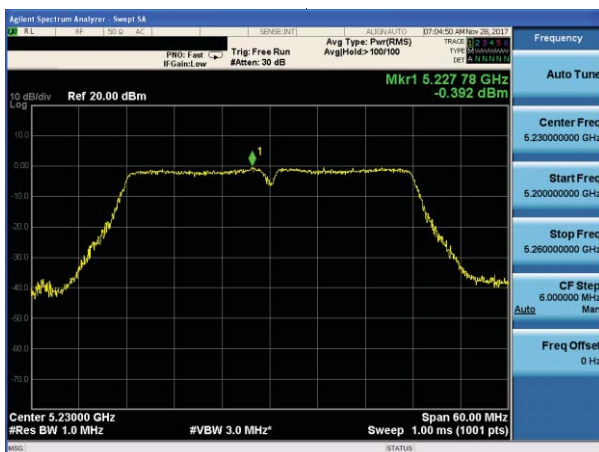
(802.11n40) PSD plot on channel 38



(802.11ac20) PSD plot on channel 36



(802.11n40) PSD plot on channel 46



(802.11ac20) PSD plot on channel 40



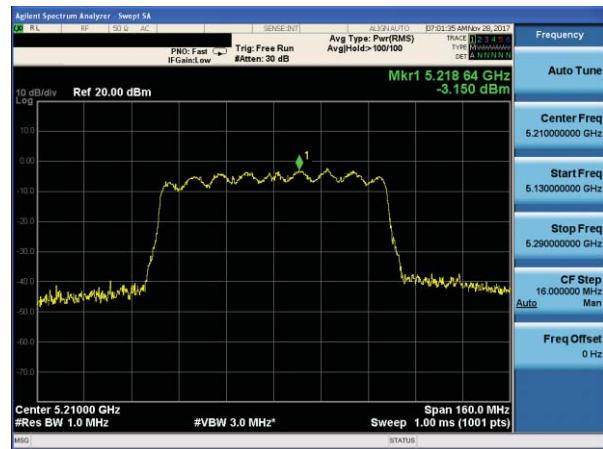
(802.11ac20) PSD plot on channel 48



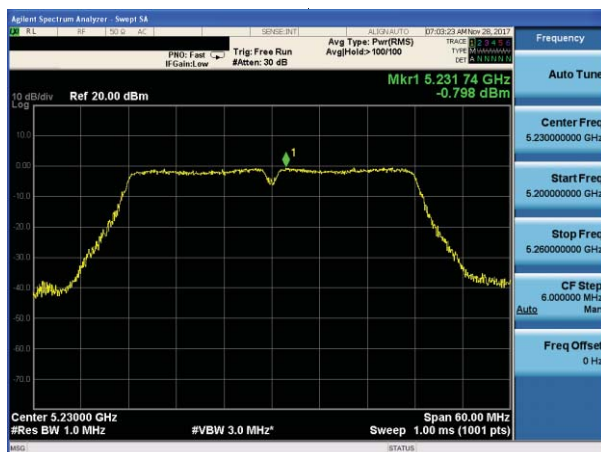
(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46



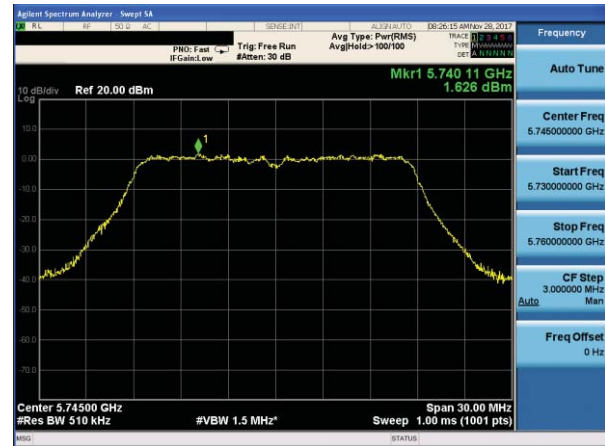
EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX Frequency Band IV (5745-5825MHz)		

Mode	Frequency	Measured Power Density (dBm)	Limit (dBm)	Result
802.11 a	5745 MHz	2.171	30	PASS
	5785 MHz	4.654	30	PASS
	5825 MHz	1.434	30	PASS
802.11 n20	5745 MHz	1.626	30	PASS
	5785 MHz	3.882	30	PASS
	5825 MHz	1.116	30	PASS
802.11 n40	5755 MHz	-1.660	30	PASS
	5795 MHz	0.545	30	PASS
802.11 AC20	5745 MHz	1.731	30	PASS
	5785 MHz	4.154	30	PASS
	5825 MHz	1.480	30	PASS
802.11 AC40	5755 MHz	-1.608	30	PASS
	5795 MHz	0.136	30	PASS
802.11 AC80	5775 MHz	-3.091	30	PASS

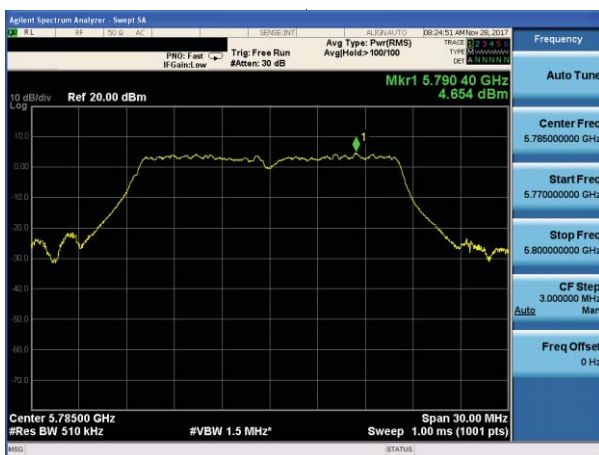
(802.11a) PSD plot on channel 149



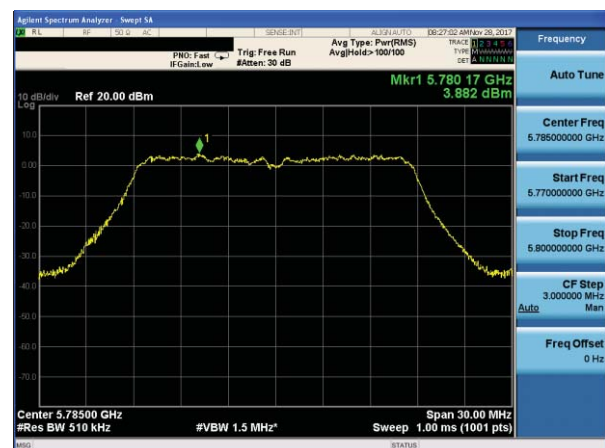
(802.11n20) PSD plot on channel 149



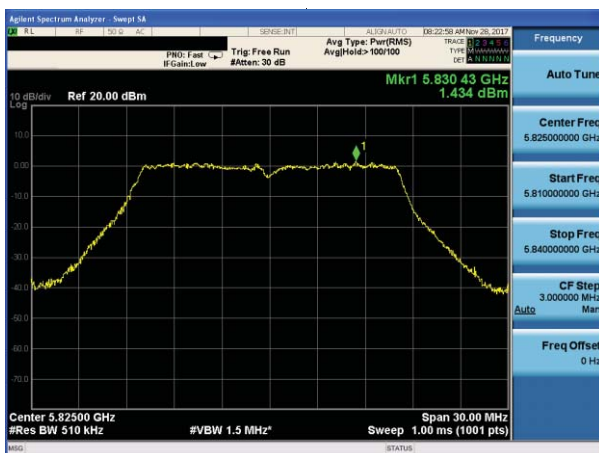
(802.11a) PSD plot on channel 157



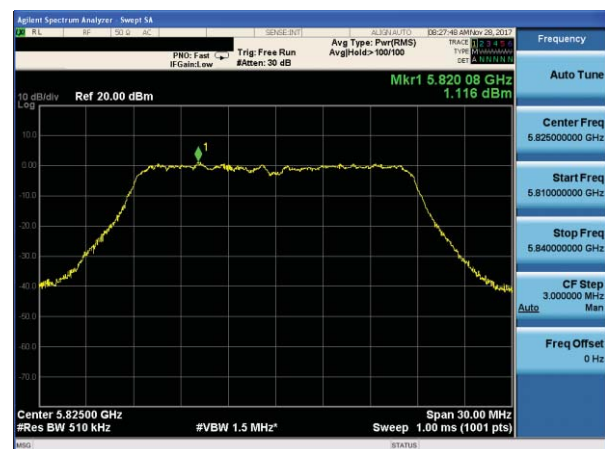
(802.11n20) PSD plot on channel 157



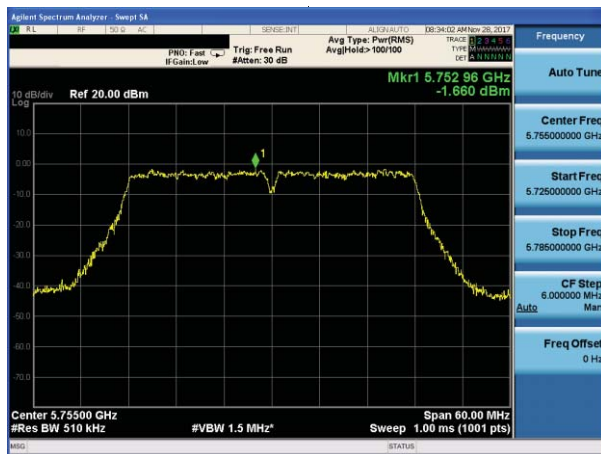
(802.11a) PSD plot on channel 165



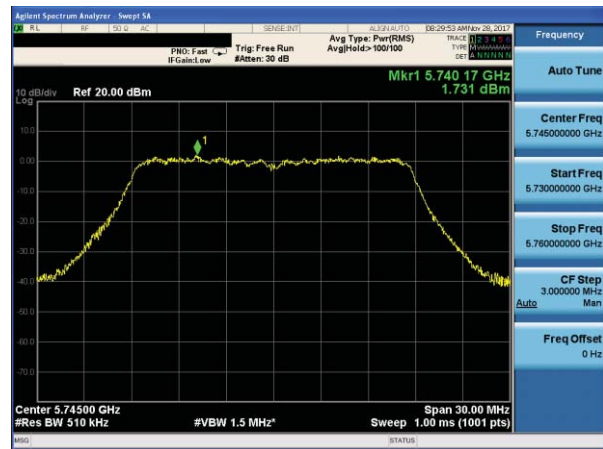
(802.11n20) PSD plot on channel 165



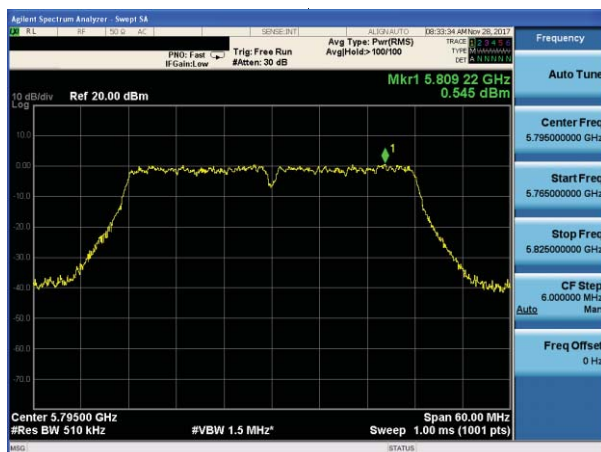
(802.11n40) PSD plot on channel 151



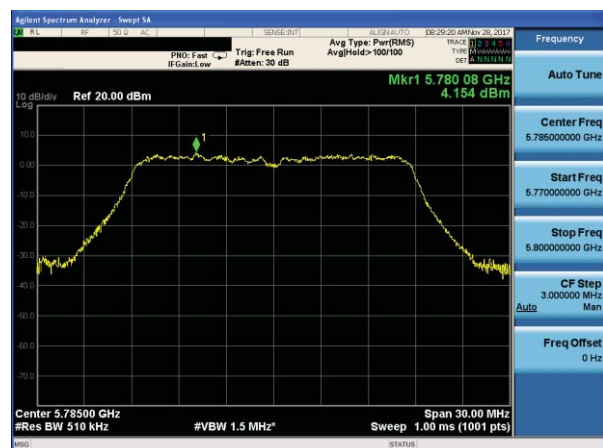
(802.11ac20) PSD plot on channel 149



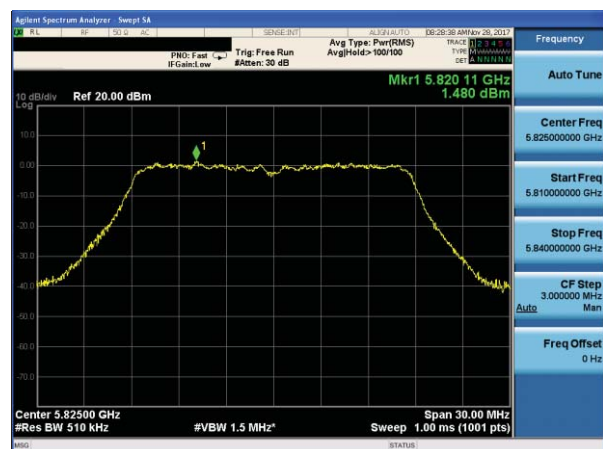
(802.11n40) PSD plot on channel 159



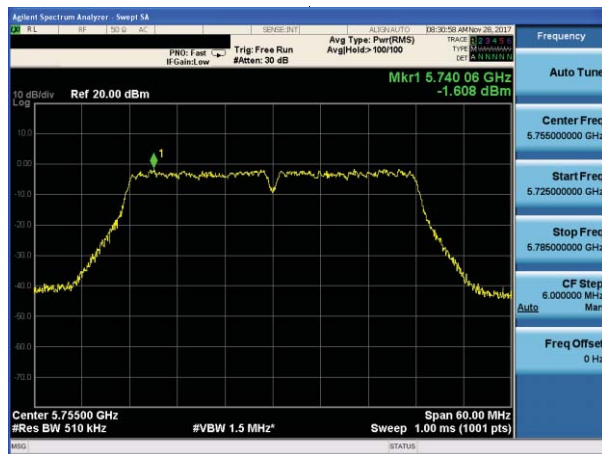
(802.11ac20) PSD plot on channel 157



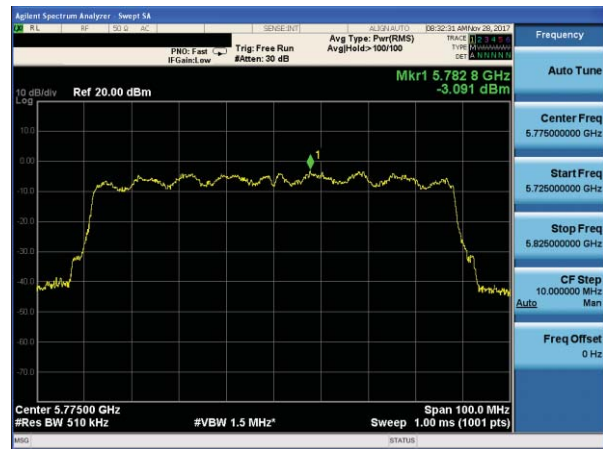
(802.11ac20) PSD plot on channel 165



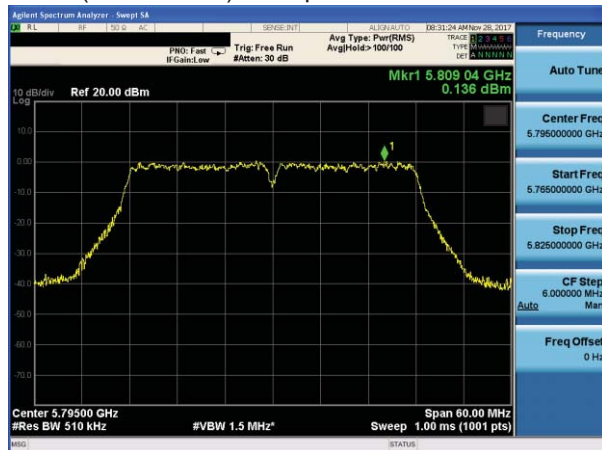
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155



(802.11ac40) PSD plot on channel 159



5. 26DB & 99% EMISSION BANDWIDTH

5.1 APPLIED PROCEDURES / LIMIT

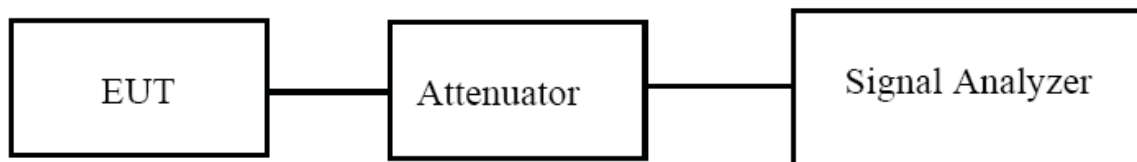
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

5.2 TEST PROCEDURE

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.



5.3 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.

5.4 TEST RESULTS

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX Frequency Band I (5150-5250MHz)		

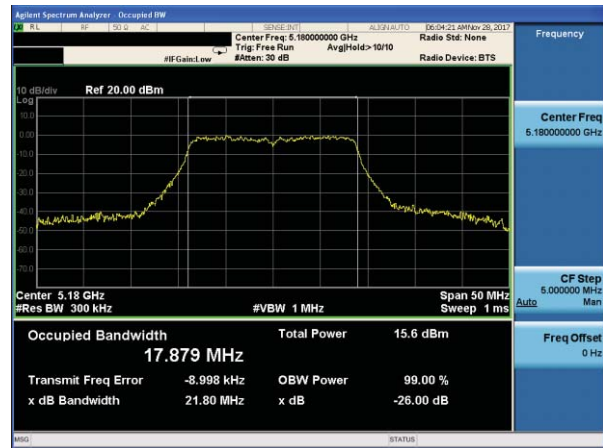
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	26dB bandwidth (MHz)	Result
802.11a	CH36	5180	16.825	21.17	Pass
	CH40	5200	16.884	21.22	Pass
	CH48	5240	16.903	23.22	Pass
802.11 n20	CH36	5180	17.879	21.80	Pass
	CH40	5200	17.905	21.92	Pass
	CH48	5240	17.895	21.82	Pass
802.11 n40	CH 38	5190	36.722	43.78	Pass
	CH 46	5230	36.712	43.84	Pass
802.11 AC20	CH36	5180	17.907	21.82	Pass
	CH40	5200	17.890	21.78	Pass
	CH48	5240	17.920	21.84	Pass
802.11 AC40	CH 38	5190	36.739	43.85	Pass
	CH 46	5230	36.679	43.80	Pass
802.11 AC80	CH 42	5210	75.162	82.48	Pass

Test plot

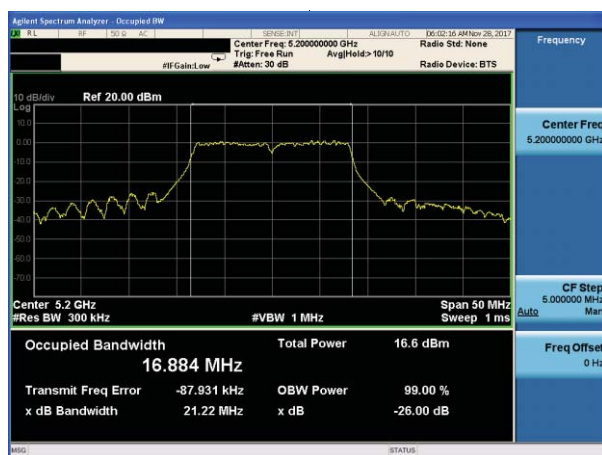
(802.11a) -26dB&99%Bandwidth plot on
channel 36



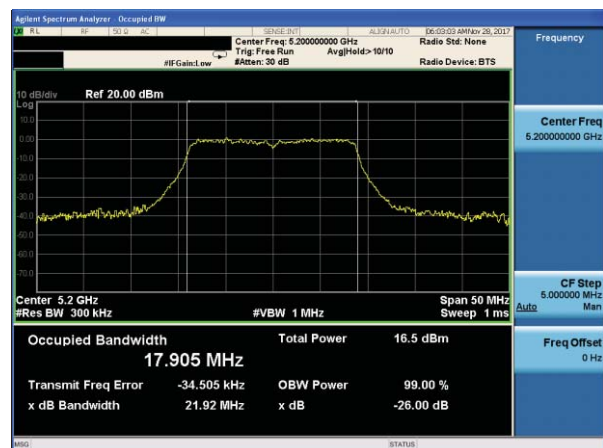
(802.11 n20) -26dB&99%Bandwidth plot on
channel 36



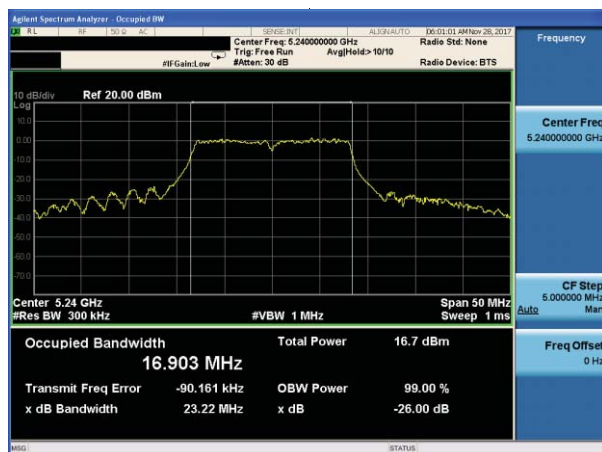
(802.11a) -26dB&99%Bandwidth plot on
channel 40



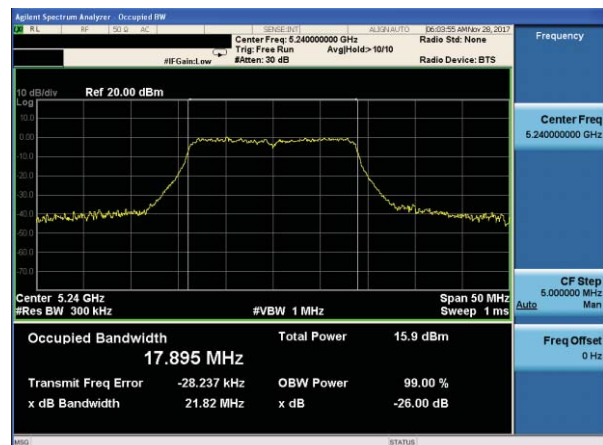
(802.11 n20) -26dB&99%Bandwidth plot on
channel 40



(802.11a) -26dB&99%Bandwidth plot on
channel 48

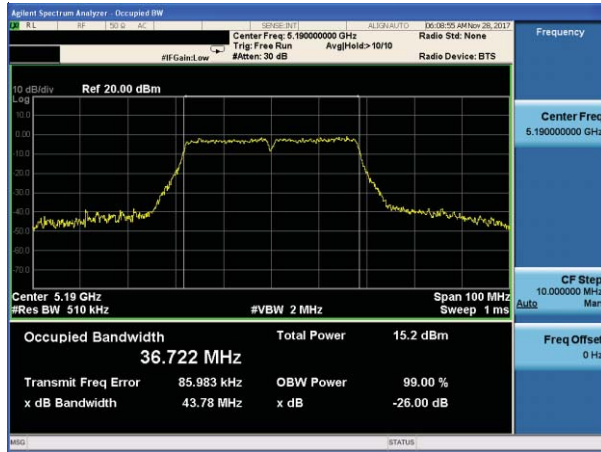


(802.11 n20) -26dB&99%Bandwidth plot on
channel 48

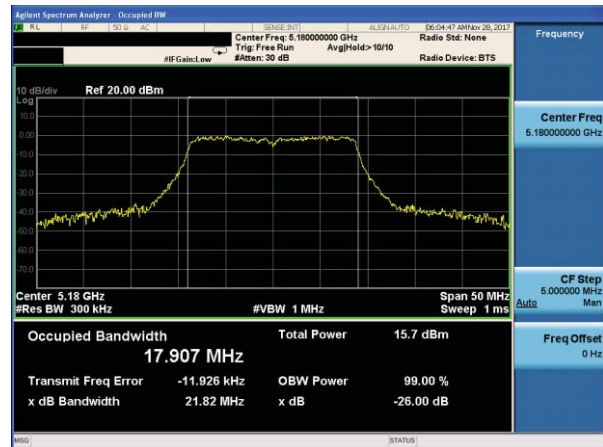


Test plot

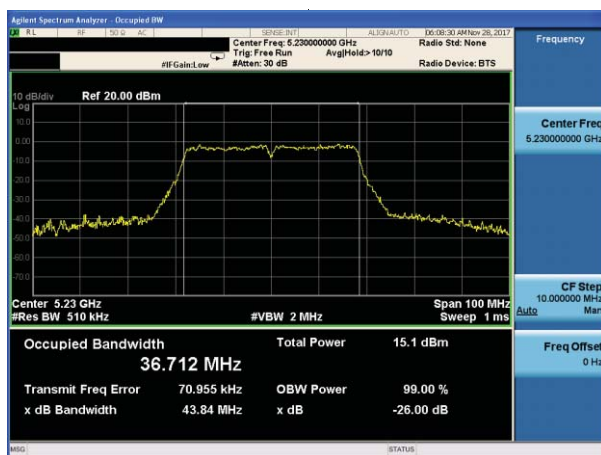
(802.11 n40) -26dB&99%Bandwidth plot on
channel 38



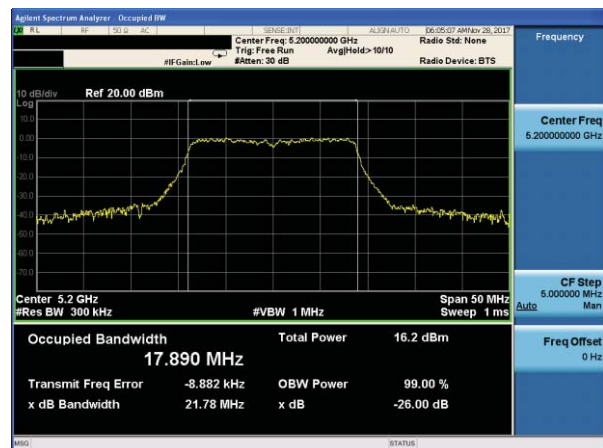
(802.11 AC20) -26dB&99%Bandwidth plot on
channel 36



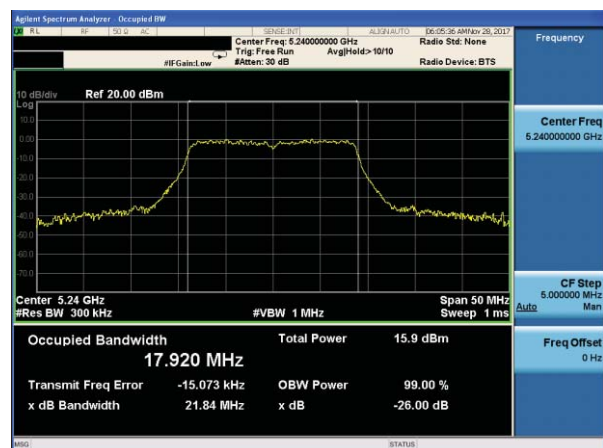
(802.11 n40) -26dB&99%Bandwidth plot on
channel 46



(802.11 AC20) -26dB&99%Bandwidth plot on
channel 40

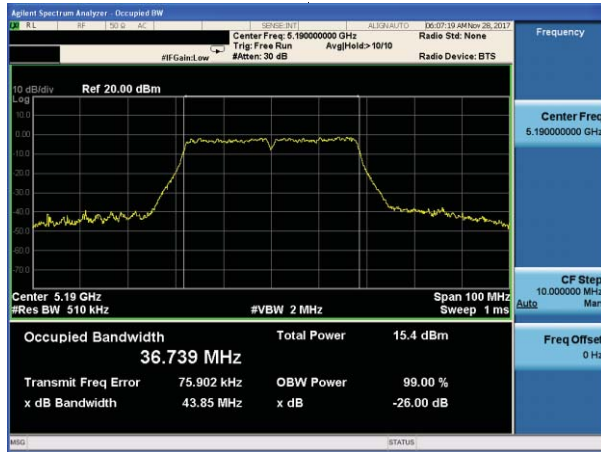


(802.11 AC20) -26dB&99%Bandwidth plot on
channel 48

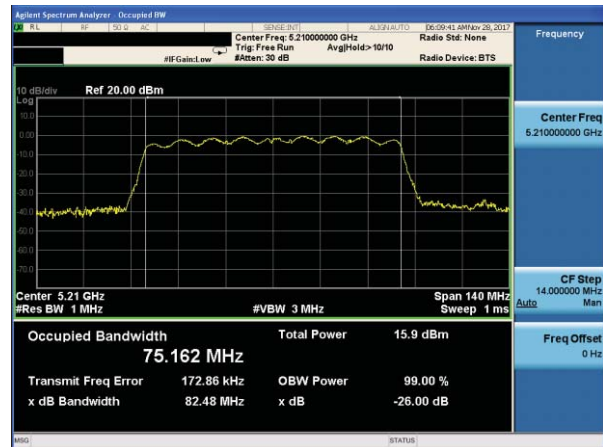


Test plot

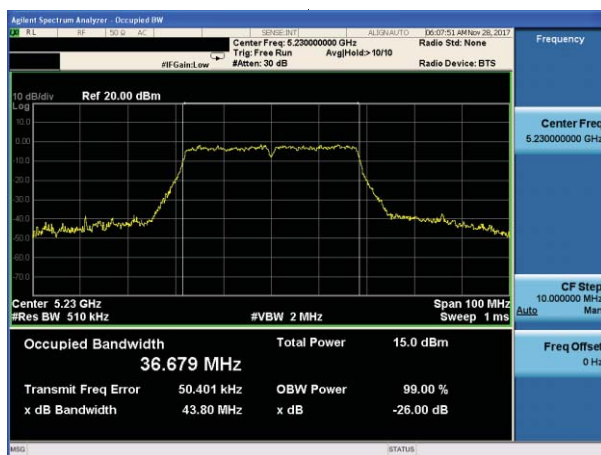
(802.11 AC40) -26dB&99%Bandwidth plot on
channel 38



(802.11 AC80) -26dB&99%Bandwidth plot on
channel 42



(802.11 AC40) -26dB&99%Bandwidth plot on
channel 46

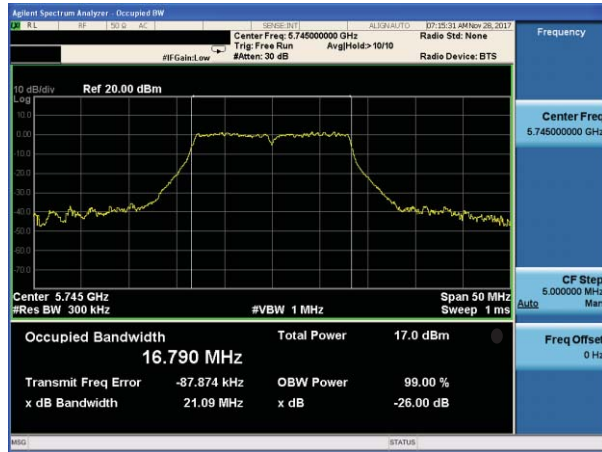


EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX Frequency Band IV(5745-5850MHz)		

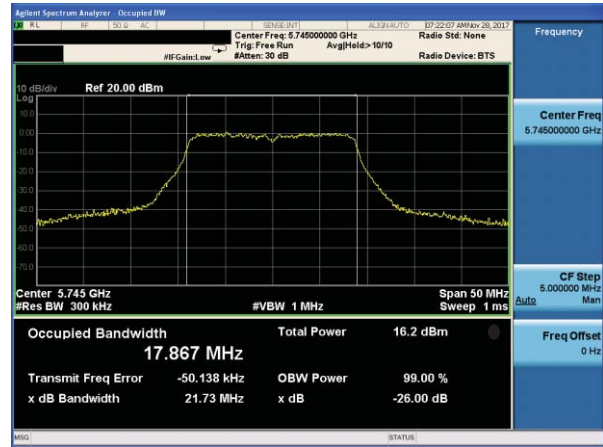
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	26dB bandwidth (MHz)	Result
802.11a	CH149	5745	16.790	21.09	Pass
	CH157	5785	16.821	21.11	Pass
	CH165	5825	16.785	21.09	Pass
802.11 n20	CH149	5745	17.867	21.73	Pass
	CH157	5785	17.884	21.82	Pass
	CH165	5825	17.841	21.61	Pass
802.11 n40	CH151	5755	36.660	43.96	Pass
	CH159	5795	36.656	43.86	Pass
802.11 AC20	CH149	5745	17.883	21.78	Pass
	CH157	5785	17.897	21.74	Pass
	CH165	5825	17.865	21.62	Pass
802.11 AC40	CH151	5755	36.693	43.75	Pass
	CH159	5795	36.665	43.76	Pass
802.11 AC80	CH155	5775	75.098	82.71	Pass

Test plot

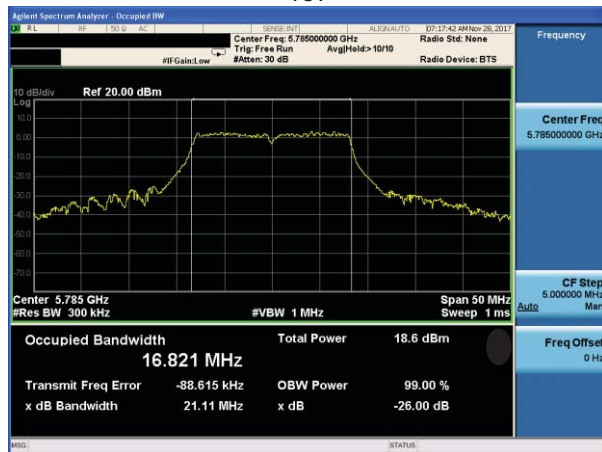
(802.11a) -26dB&99%Bandwidth plot on
channel 149



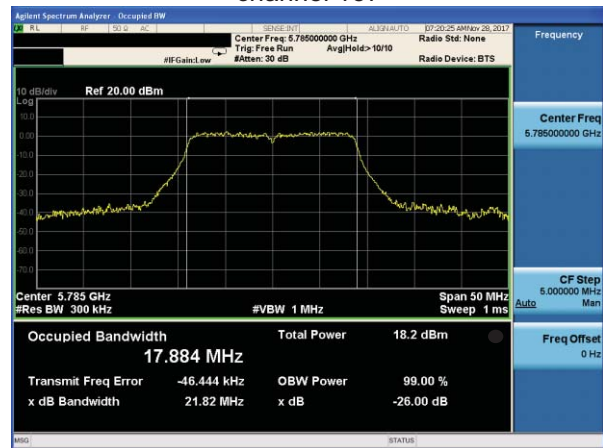
(802.11 n20) -26dB&99%Bandwidth plot on
channel 149



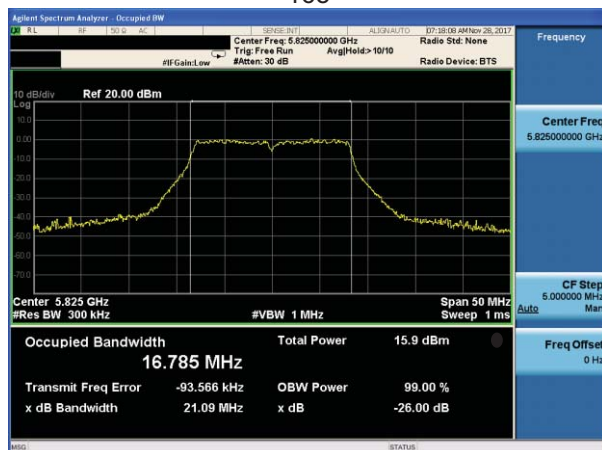
(802.11a) -26dB&99%Bandwidth plot on channel
157



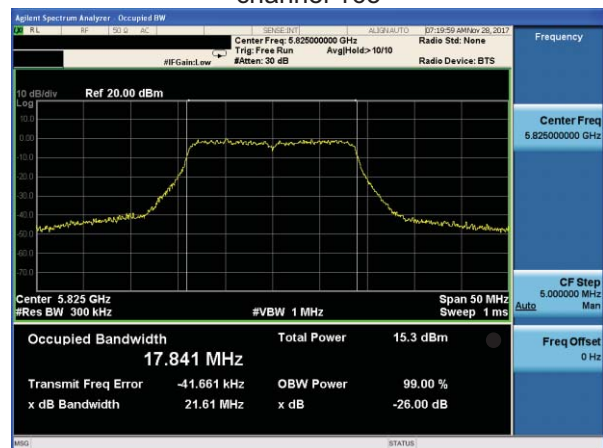
(802.11 n20) -26dB&99%Bandwidth plot on
channel 157



(802.11a) -26dB&99%Bandwidth plot on channel
165

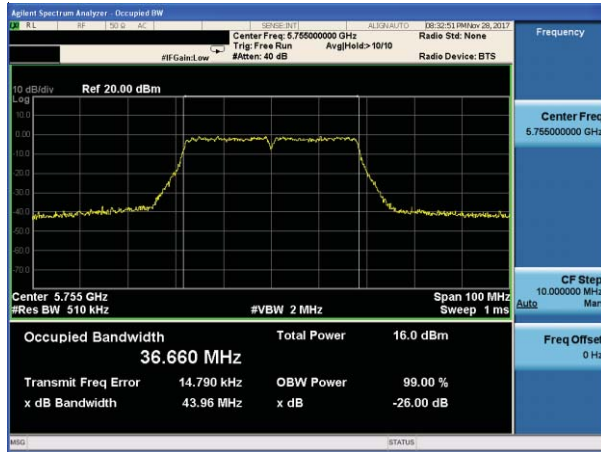


(802.11 n20) -26dB&99%Bandwidth plot on
channel 165

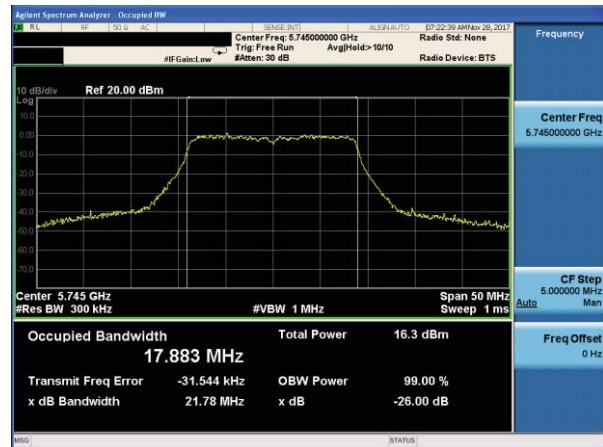


Test plot

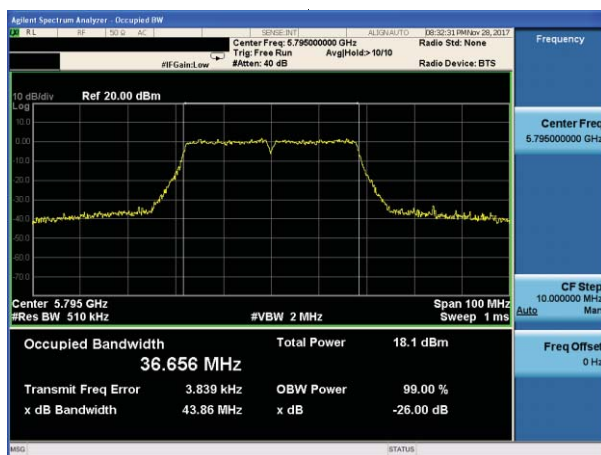
(802.11 n40) -26dB&99%Bandwidth plot on
channel 151



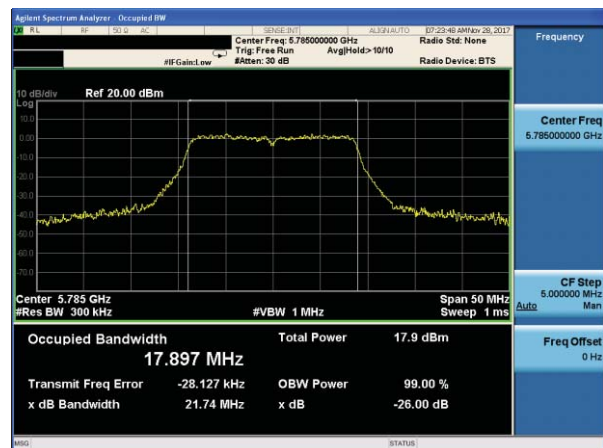
(802.11 AC20) -26dB&99%Bandwidth plot on
channel 149



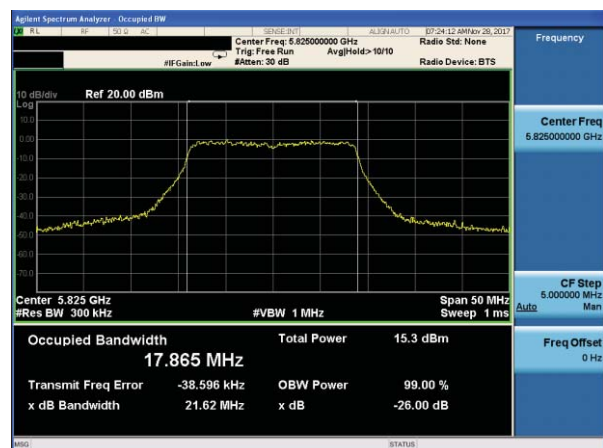
(802.11 n40) -26dB&99%Bandwidth plot on
channel 159



(802.11 AC20) -26dB&99%Bandwidth plot on
channel 157

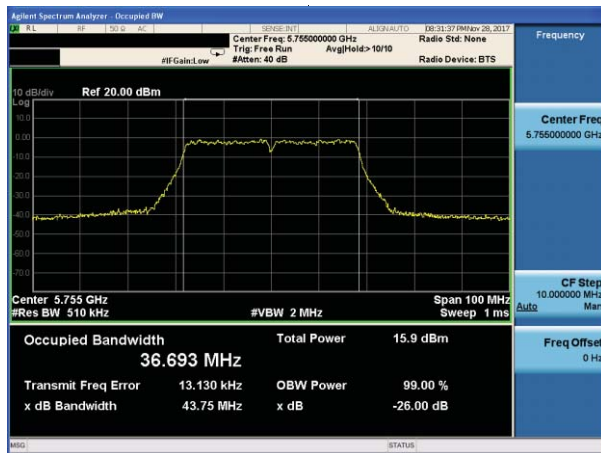


(802.11 AC20) -26dB&99%Bandwidth plot on
channel 165

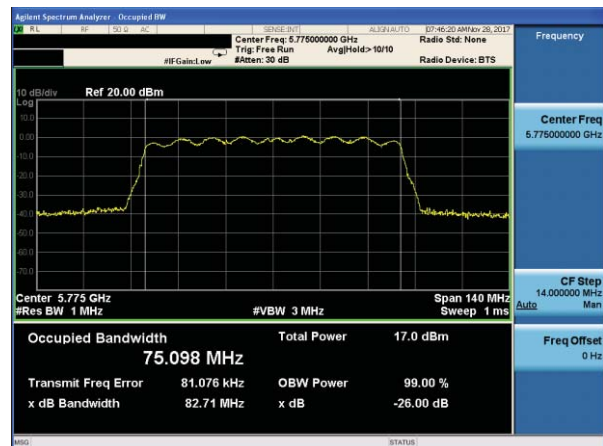


Test plot

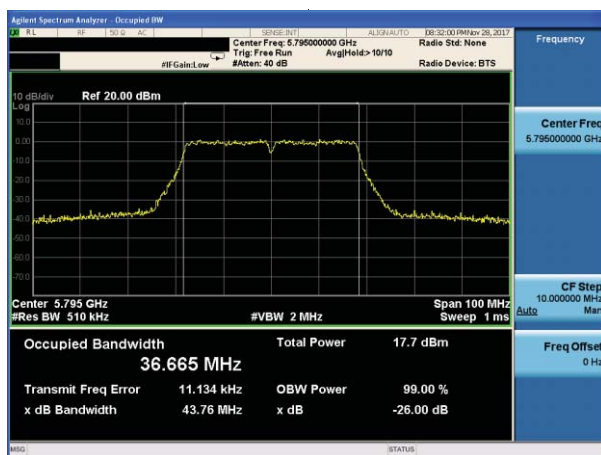
(802.11 AC40) -26dB&99%Bandwidth plot on
channel 151



(802.11 AC80) -26dB&99%Bandwidth plot on
channel 155



(802.11 AC40) -26dB&99%Bandwidth plot on
channel 159



6. MINIMUM 6 DB BANDWIDTH

6.1 APPLIED PROCEDURES / LIMIT

According to FCC §15.407(e)

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

6.2 TEST PROCEDURE

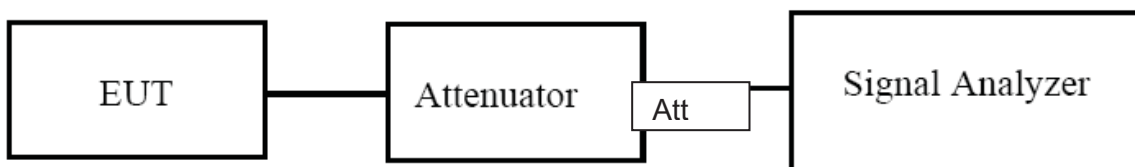
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 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.

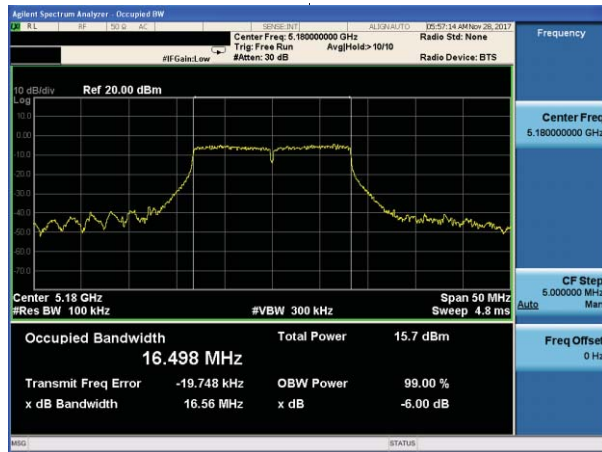
6.6 TEST RESULTS

EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX Frequency Band I (5150-5250MHz)		

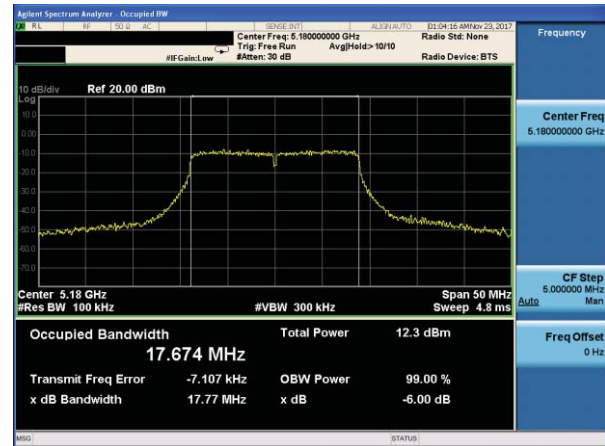
Mode	Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (KHz)	Result
802.11a	CH36	5180	16.56	≥ 500	Pass
	CH40	5200	16.58	≥ 500	Pass
	CH48	5240	16.57	≥ 500	Pass
802.11 n20	CH36	5180	17.77	≥ 500	Pass
	CH40	5200	17.79	≥ 500	Pass
	CH48	5240	17.79	≥ 500	Pass
802.11 n40	CH 38	5190	36.58	≥ 500	Pass
	CH 46	5230	36.56	≥ 500	Pass
802.11 AC20	CH36	5180	17.80	≥ 500	Pass
	CH40	5200	17.81	≥ 500	Pass
	CH48	5240	17.79	≥ 500	Pass
802.11 AC40	CH 38	5190	36.58	≥ 500	Pass
	CH 46	5230	36.56	≥ 500	Pass
802.11 AC80	CH 42	5210	75.26	≥ 500	Pass

Test plot

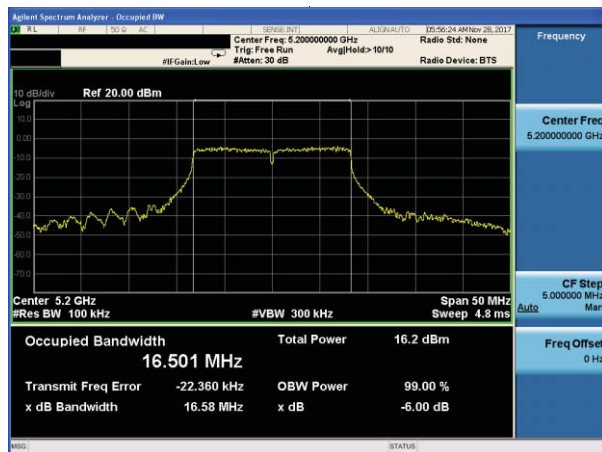
(802.11a) 6dB Bandwidth plot on channel 36



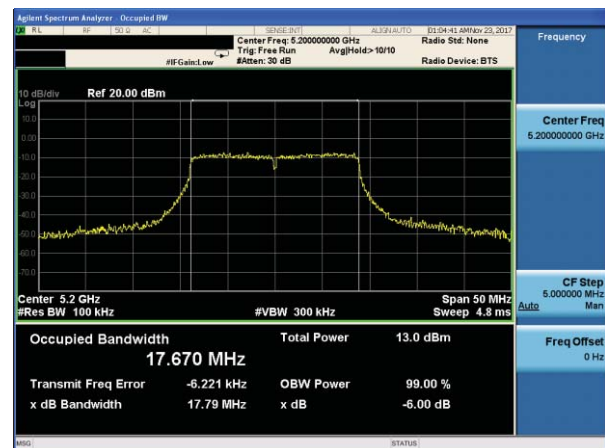
(802.11 n20) 6dB Bandwidth plot on channel 36



(802.11a) 6dB Bandwidth plot on channel 40



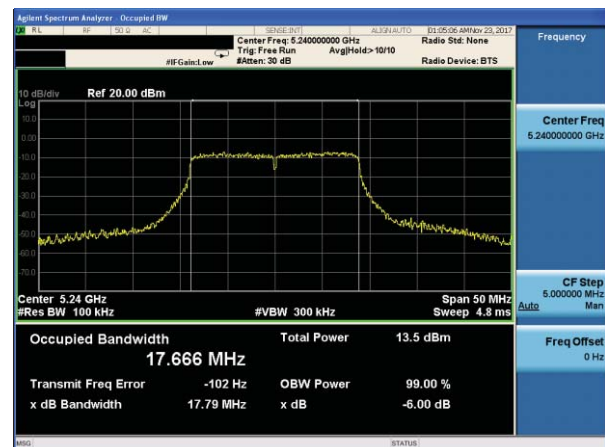
(802.11 n20) 6dB Bandwidth plot on channel 40



(802.11a) 6dB Bandwidth plot on channel 48

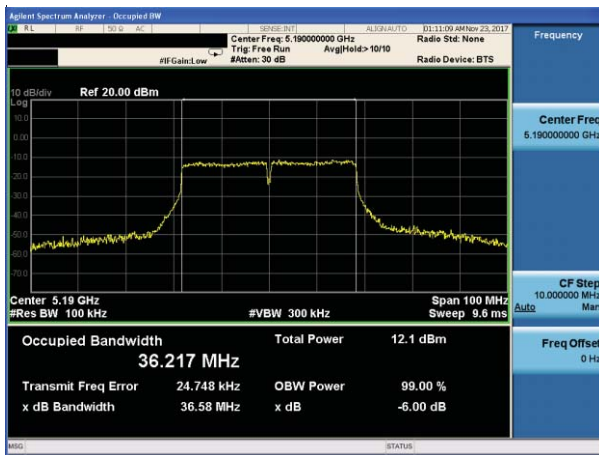


(802.11 n20) 6dB Bandwidth plot on channel 48

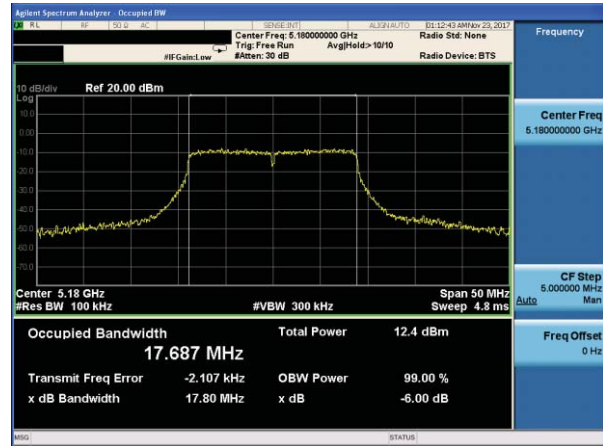


Test plot

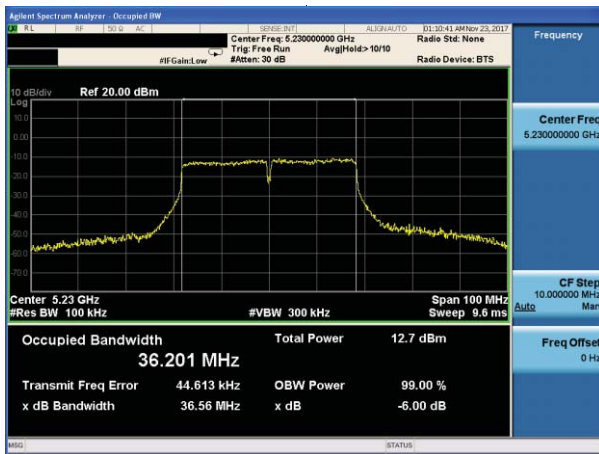
(802.11 n40) 6dB Bandwidth plot on channel 38



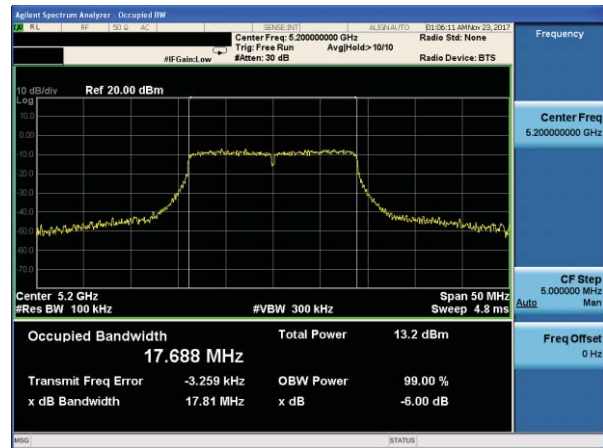
(802.11 AC20) 6dB Bandwidth plot on channel 36



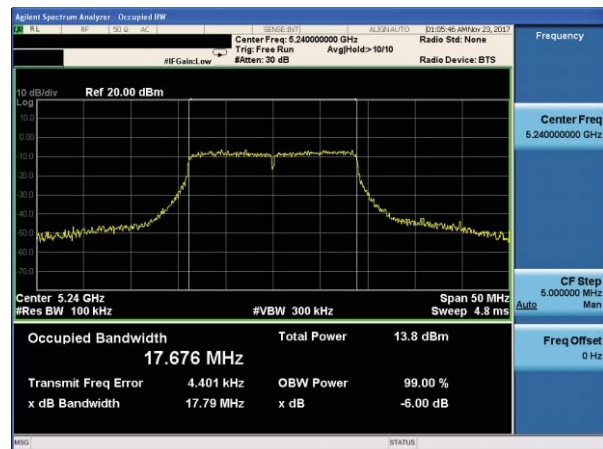
(802.11 n40) 6dB Bandwidth plot on channel 46



(802.11 AC20) 6dB Bandwidth plot on channel 40

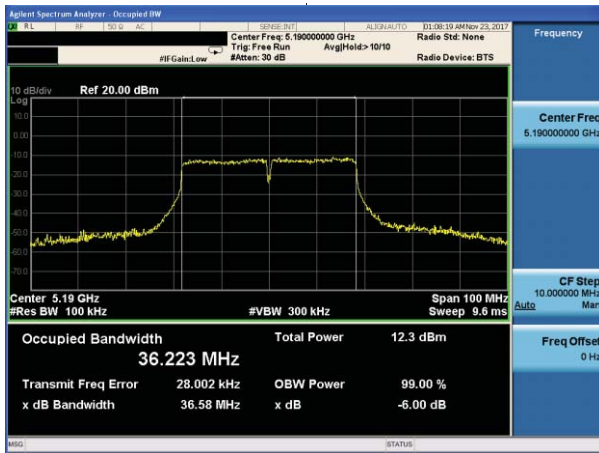


(802.11 AC20) 6dB Bandwidth plot on channel 48

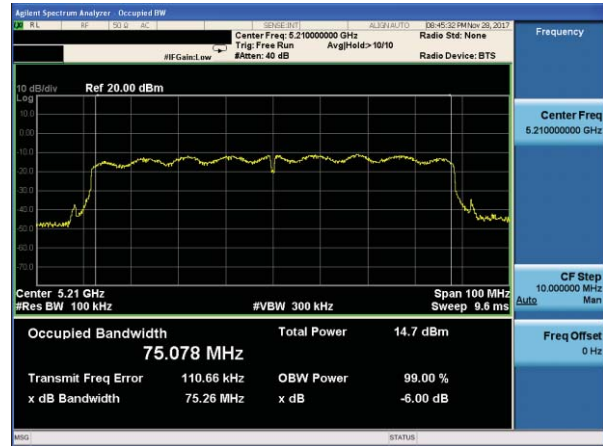


Test plot

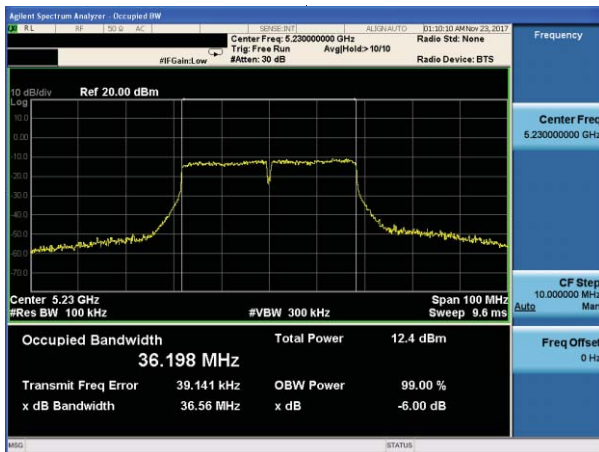
(802.11 AC40) 6dB Bandwidth plot on channel 38



(802.11 AC80) 6dB Bandwidth plot on channel 42



(802.11 AC40) 6dB Bandwidth plot on channel 46

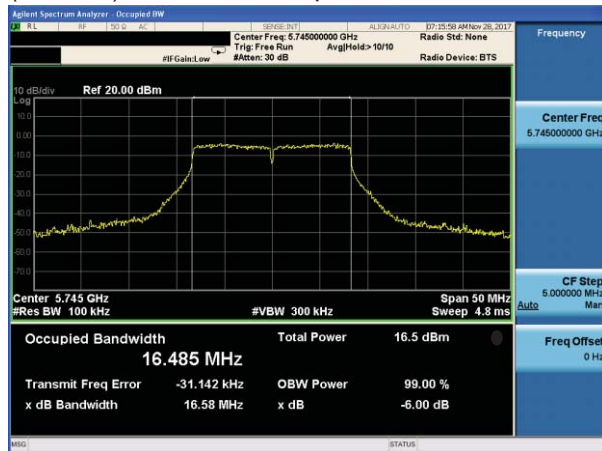


EUT :	JMGO Smart Home Theater	Model Name. :	G3 Pro
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 19.5V from Adapter AC 120V/60Hz
Test Mode :	TX (5G) Mode Frequency Band IV (5725-5825MHz)		

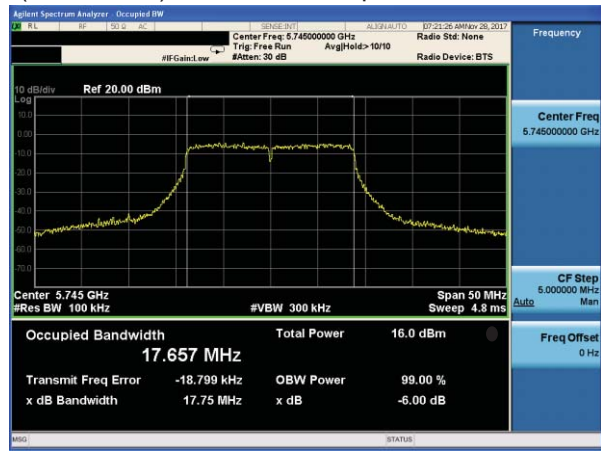
Mode	Channel	Frequency (MHz)	-6dB bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	5745	16.58	≥ 500	Pass
	157	5785	16.58	≥ 500	Pass
	165	5825	16.57	≥ 500	Pass
802.11 n20	149	5745	17.75	≥ 500	Pass
	157	5785	17.74	≥ 500	Pass
	165	5825	17.72	≥ 500	Pass
802.11 n40	151	5755	36.56	≥ 500	Pass
	159	5795	36.58	≥ 500	Pass
802.11 AC20	149	5745	17.72	≥ 500	Pass
	157	5785	17.80	≥ 500	Pass
	165	5825	17.78	≥ 500	Pass
802.11 AC40	149	5745	36.53	≥ 500	Pass
	157	5785	36.55	≥ 500	Pass
802.11 AC80	155	5775	75.83	≥ 500	Pass

Test plot

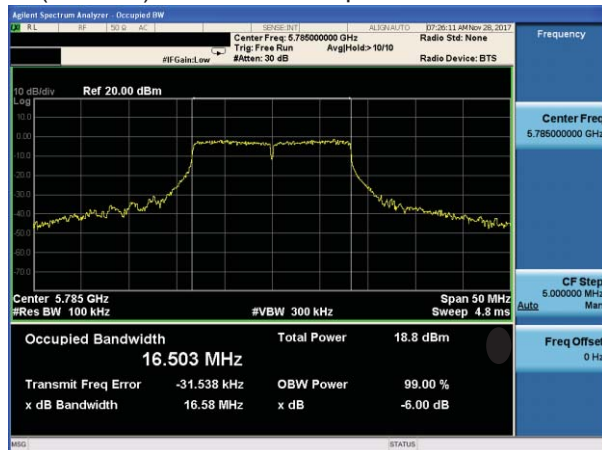
(802.11a) 6dB Bandwidth plot on channel 149



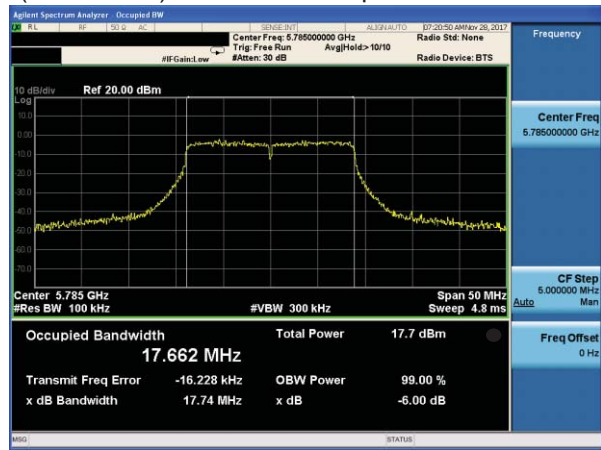
(802.11 n20) 6dB Bandwidth plot on channel 149



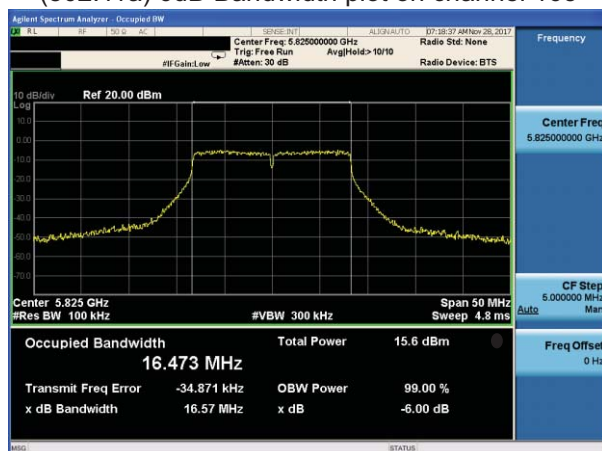
(802.11a) 6dB Bandwidth plot on channel 157



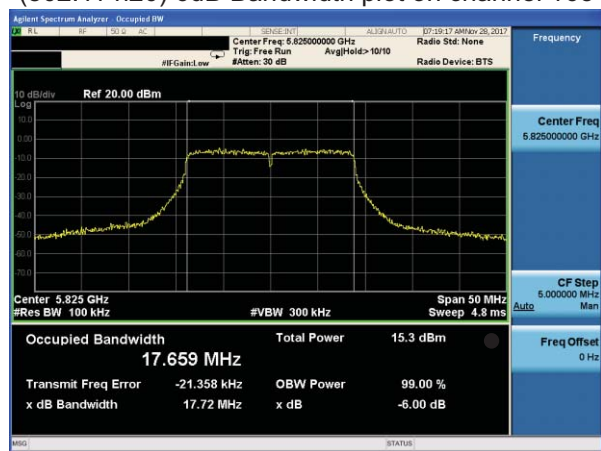
(802.11 n20) 6dB Bandwidth plot on channel 157



(802.11a) 6dB Bandwidth plot on channel 165

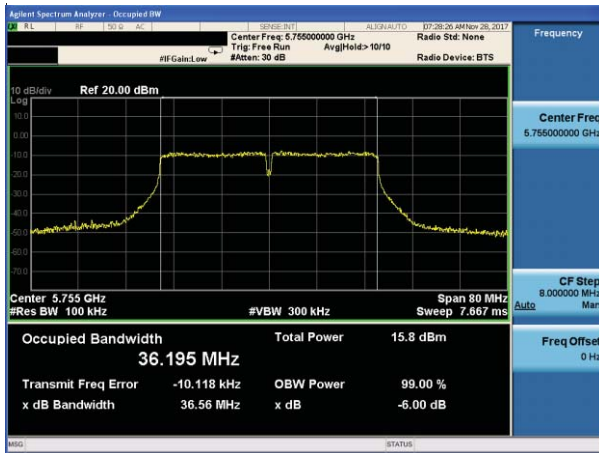


(802.11 n20) 6dB Bandwidth plot on channel 165

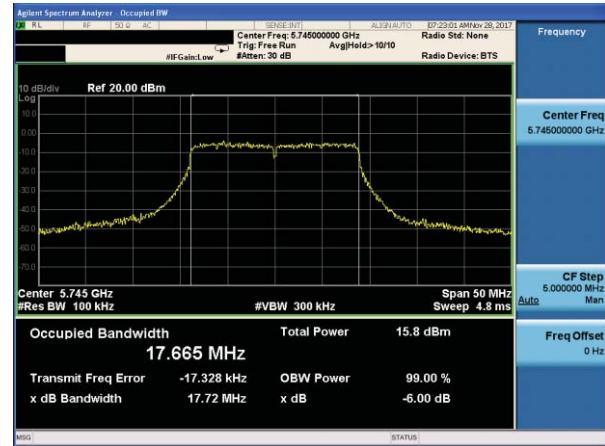


Test plot

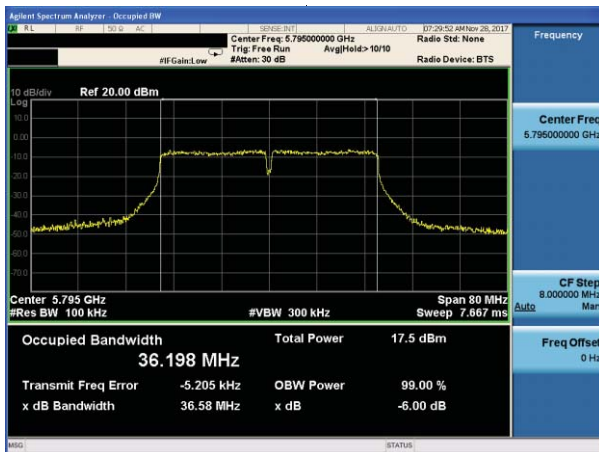
(802.11 n40) 6dB Bandwidth plot on channel 151



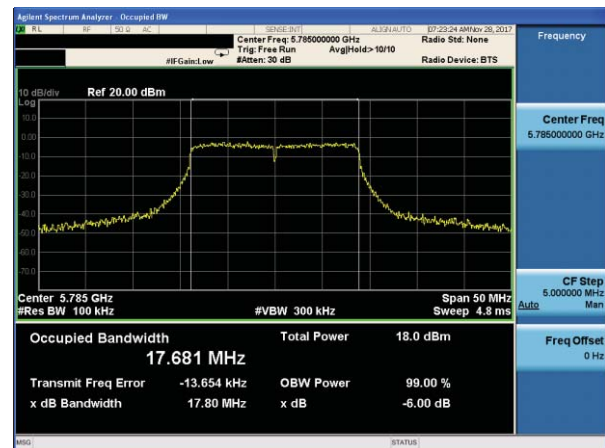
(802.11 AC20) 6dB Bandwidth plot on channel 149



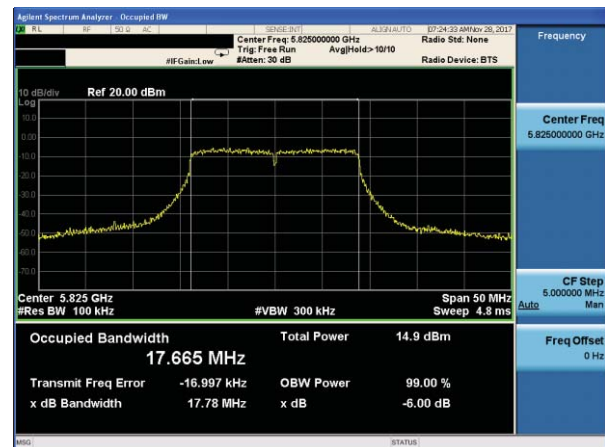
(802.11 n40) 6dB Bandwidth plot on channel 159



(802.11 AC20) 6dB Bandwidth plot on channel 157



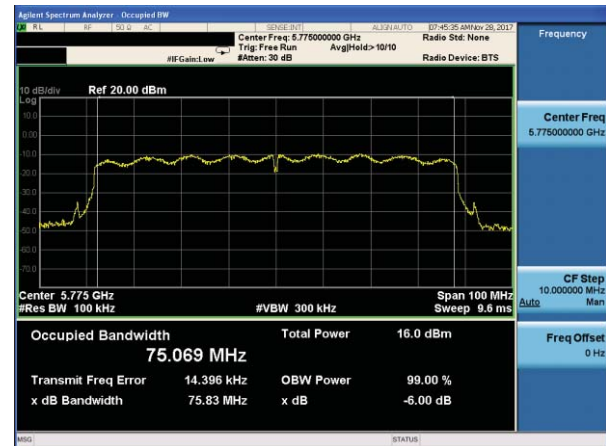
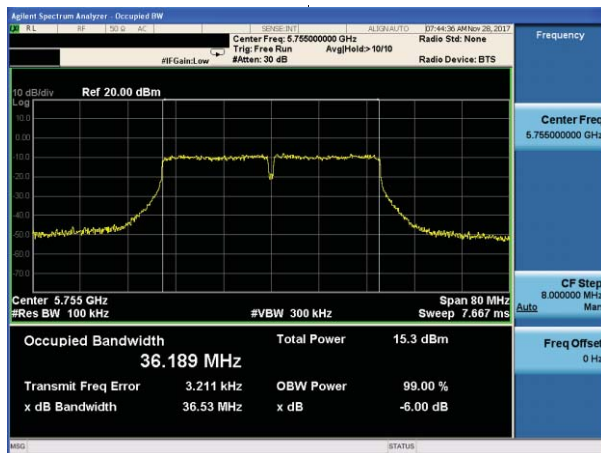
(802.11 AC20) 6dB Bandwidth plot on channel 165



Test plot

(802.11 AC40) 6dB Bandwidth plot on channel 151

(802.11 AC80) 6dB Bandwidth plot on channel 155



(802.11 AC40) 6dB Bandwidth plot on channel 159

