



TEST REPORT

FCC ID:V2V-2900

Applicant : LigoWave LLC

Address : 138 Mountain Brook Dr Canton, GA 30115 United States

Equipment under Test (EUT):

Name : Broadband Digital Transmission System
Model : FWBD-2900

Standards : FCC PART 15, SUBPART C : 2015 (Section 15.407)
ANSI C63.4:2014 ; ANSI C63.10:2013

Report No. : T1851859 06

Date of Test : March 01, 2016- April 28, 2016

Date of Issue : April 30, 2016

Test Result :	PASS *
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* In the configuration tested, the EUT complied with the standards specified above

Authorized Signature

(Mark Zhu)
General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Alpha Product Testing Co., Ltd. Or test done by Shenzhen Alpha Product Testing Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Alpha Product Testing Co., Ltd. Approvals in writing.

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TEST REPORT VERIFICATION

Applicant : LigoWave LLC
Manufacturer : LigoWave LLC
EUT Description : Broadband Digital Transmission System

(A) Model No. : FWBD-2900
(B) Trademark : N/A
(C) Ratings Supply : DC 48V Supply by POE adaptor with 120V/60Hz input
(D) Test Voltage : DC 48V Supply by POE adaptor with 120V/60Hz input

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C 2015, ANSI C63.4-2014, ANSI C63.10-2013

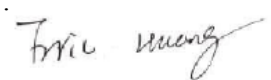
The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....:

Eric Huang
Test Engineer

.....

.....

Approved by (name + signature).....:

Simple Guan
Project Manager

.....

.....

Date of issue.....:

April 30, 2016

1 General Information

1.1 Description of Device (EUT)

Trade Name	: N/A
EUT	: Broadband Digital Transmission System
Model No.	FWBD-2900
DIFF.	: N/A
Operation Type	: Point to Point, MIMO Tx mode
Antenna Type	20dBi panel antenna with two antennas, directional gain 23dBi. 17dBi sector antenna with two antennas, directional gain 20dBi. 27dBi dish antenna with two antennas, directional gain 30dBi
Operation Frequency	IEEE 802.11n HT20: 5180MHz-5240MHz,5745MHz-5825MHz IEEE 802.11n HT40:5190MHz-5230MHz,5755MHz-5795MHz IEEE 802.11a:5180MHz-5240MHz, 5.745GHz-5.825GHz IEEE 802.11n HT20 5.2GHz band: 4 Channels IEEE 802.11n HT20 5.8GHz band: 5 Channels
Channel number	IEEE 802.11n HT40 5.2GHz band: 2Channels IEEE 802.11n HT40 5.8GHz band: 2Channels IEEE 802.11a 5.2GHz band :4Channels IEEE 802.11a 5.8GHz band :5Channels
Modulation type	IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11a :OFDM(64QAM, 16QAM, QPSK, BPSK)
Power Supply	: DC 48V Supply by POE adaptor with 120V/60Hz input
Adapter	Model No.: GRT-POE20-480050A, G0720-480-050
Applicant	: LigoWave LLC
Address	: 138 Mountain Brook Dr Canton, GA 30115 United States
Manufacturer	: LigoWave LLC
Address	: 138 Mountain Brook Dr Canton, GA 30115 United States

1.2 Description of Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road,
Bao'an, Shenzhen, China

August 11, 2014 File on Federal Communication Commission
Registration Number: 203110

July 18, 2014 Certificated by IC
Registration Number: 12135A

2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal. Due to	Cal Interval
3m Semi-Anechoic	CHENYU	N/A	N/A	2018.01.18	2Year
Spectrum analyzer	Agilent	E4407B	MY46185649	2017.01.16	1Year
Receiver	R&S	ESPI	101873	2017.01.16	1Year
Receiver	R&S	ESCI	101165	2017.01.16	1Year
Bilog Antenna	SCHWARZBECK	VULB 9168	VULB9168-438	2018.01.18	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2017.01.20	2Year
Cable	Resenberger	N/A	No.1	2017.01.16	1Year
Cable	SCHWARZBECK	N/A	No.2	2017.01.16	1Year
Cable	SCHWARZBECK	N/A	No.3	2017.01.16	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2017.01.18	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2017.01.18	1Year
vector Signal Generator	Agilent	N5182A	MY49060042	2016.11.16	1 Year
vector Signal Generator	Agilent	E4438C	US44271917	2016.11.16	1 Year
X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080020	2016.11.16	1 Year

X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54110001	2016.11.16	1 Year
Signal Analyzer	Agilent	N9020A	MY48030494	2016.11.16	1 Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126466	2017.01.16	1 Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2017.01.16	1 Year

3 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard ANSI C63.4:2014 using a 50 μ H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25°C with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard ANSI C63.4:2014 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25°C with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS

33.20 dBuV + 10.36 dB + 0.9 dB= 44.46 dBuV/m @ 3m

ANSI STANDARD ANSI C63.4:2014 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard ANSI C63.4:2014 10.1.7 with the EUT 40 cm from the vertical ground wall.

4 Summary of Measurement

4.1 Summary of test result

Test Item	Test Requirement	Standards Paragraph	Result
Spurious Emission	FCC PART 15 : 2015	Section 15.407(b)&15.209	Compliance
Conduction Emission	FCC PART 15 : 2015	Section 15.207	Compliance
Bandwidth Test	FCC PART 15 : 2015	Section 15.407(a)	Compliance
Peak Power	FCC PART 15 : 2015	Section 15.407(a)	Compliance
Power Density	FCC PART 15 : 2015	Section 15.407(a)	Compliance
Undesirable emission	FCC PART 15 : 2015	Section 15.407(b)	Compliance
Antenna Requirement	FCC PART 15 : 2015	Section 15.203	Compliance

Note: The EUT has been tested as an independent unit. And Continual Transmitting in maximum power (The adapter be used during Test)

4.2 Test connection



4.3 Assistant equipment used for test

Description	:	Adapter
Manufacturer	:	N/A
Model No.	:	GRT-POE20-480050A

Description	:	Adapter
Manufacturer	:	N/A
Model No.	:	G0720-480-050

4.4 Test mode

Dutycycle :100%			
Keeping MIMO TX mode			
Tested mode, channel, and data rate information 5.2G			
Mode	Data rate (Mbps) see Note	Channel	Frequency (MHz)
IEEE 802.11n HT20	6.5	CH36	5180
	6.5	CH40	5200
	6.5	CH48	5240
IEEE 802.11n HT40	13.5	CH38	5190
	13.5	CH46	5230
IEEE 802.11a	6	CH36	5180
	6	CH40	5200
	6	CH48	5240
Note: According exploratory test and product specification EUT will have maximum output power in those data rate, so those data rate were used for all test.			
Note2: All mode with 3 different kind of antennas has been tested, and only worst data of dish antenna is listed.			

4.5

Dutycycle :100%			
Keeping MIMO TX mode			
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)
IEEE 802.11 n/HT20 with 5.8G	6.5	CH149	5745
	6.5	CH157	5785
	6.5	CH165	5825
IEEE 802.11 n/HT40 with 5.8G	13.5	CH151	5755
	13.5	CH159	5795
IEEE 802.11a with 5.8G	6	CH149	5745
	6	CH157	5785
	6	CH165	5825
Note: According exploratory test, EUT will have maximum output power in those data rate. so those data rate were used for all test.			
Note2: All mode with 3 different kind of antennas has been tested, and only worst data of dish antenna is listed.			

4.5 Channel list

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

For IEEE 802.11 n/HT40 with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH38	5190	CH46	5230

For IEEE 802.11 a with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH149	5745	CH157	5785	CH165	5825
CH153	5765	CH161	5805		

For IEEE 802.11n/HT20 with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH149	5745	CH157	5785	CH165	5825
CH153	5765	CH161	5805		

For IEEE 802.11n/HT40 with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH151	5755	CH159	5795		

4.6 Test Conditions

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

4.7 Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	1×10^{-9}	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

5 Spurious Emission

5.1 Radiation Emission

5.1.1 Radiation Emission Limits(15.209)

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

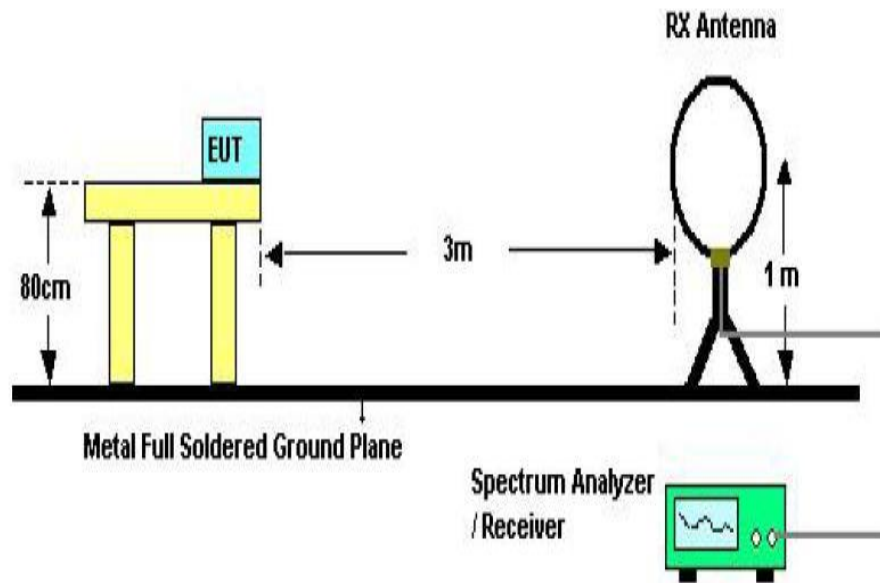
Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

NOTE:

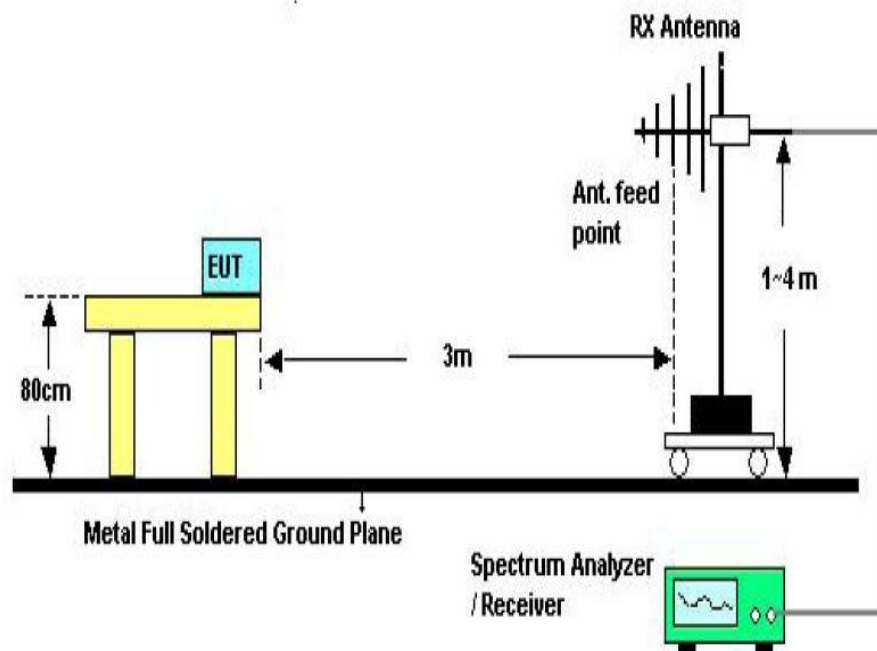
- The tighter limit applies at the band edges.
- Emission Level(dB uV/m)=20log Emission Level(Uv/m)

5.1.2 Test Setup

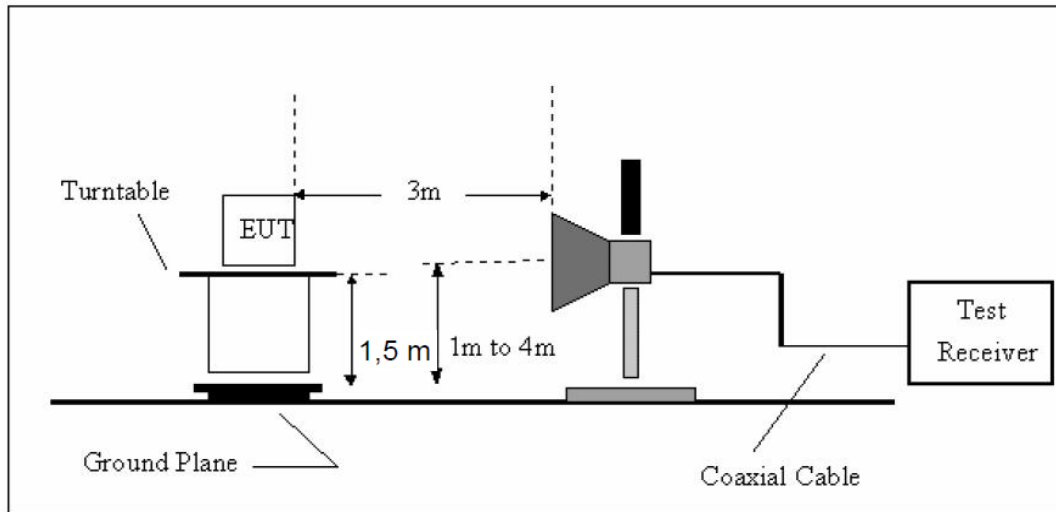
See the next page



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

5.1.3 Test Procedure

- The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation
- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make 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 Qusia Peak Detector mode premeasured
- If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
- For the actual test configuration, please see the test setup photo.

5.1.4 Test Equipment Setting For emission test Result

9KHz~150KHz	RBW 200Hz	VBW1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHz~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

5.1.5 Test Condition

MIMO Continual Transmitting in maximum power.

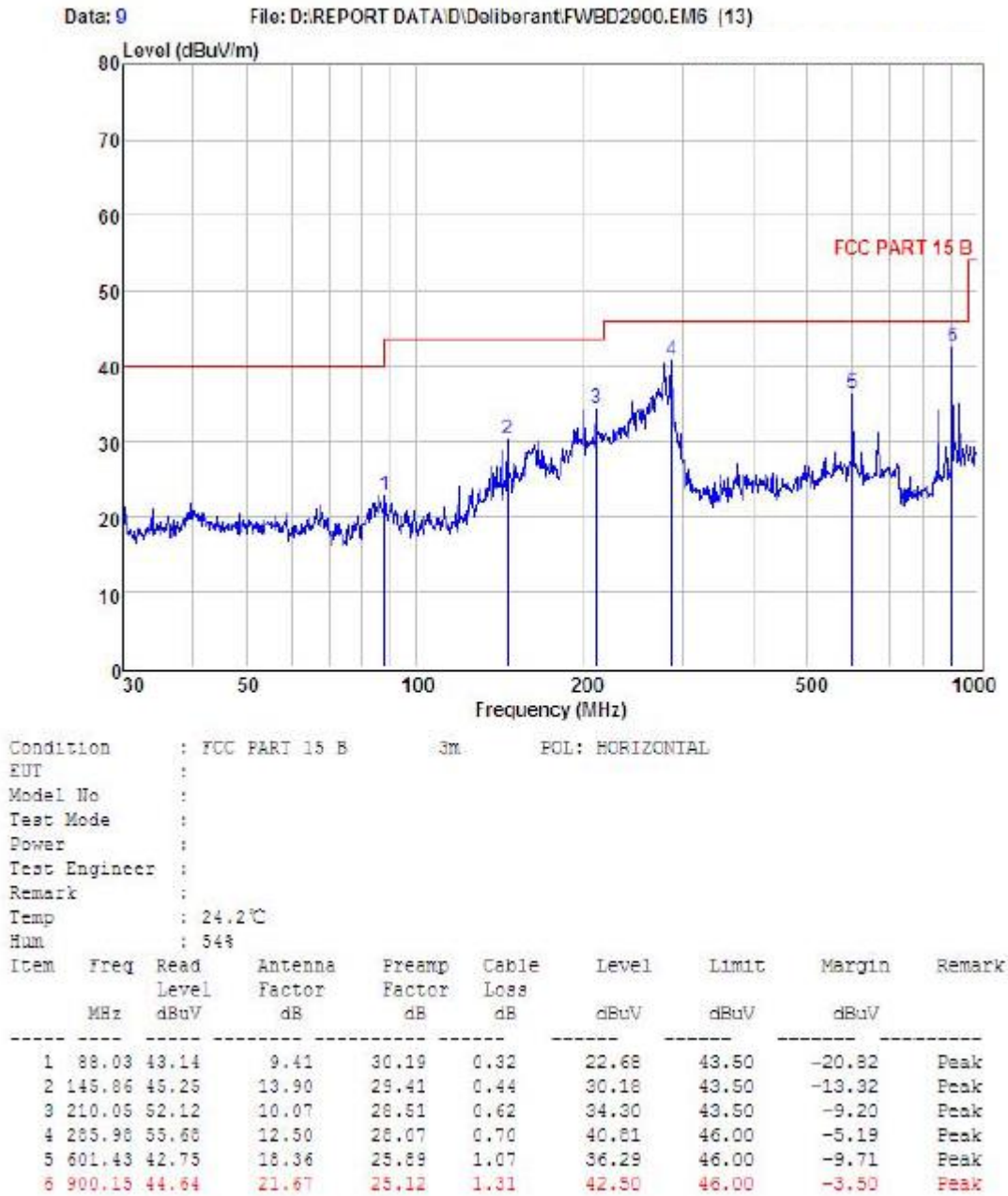
5.1.6 Test Result

We have scanned the 9KHz from 25GHz to the EUT.
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

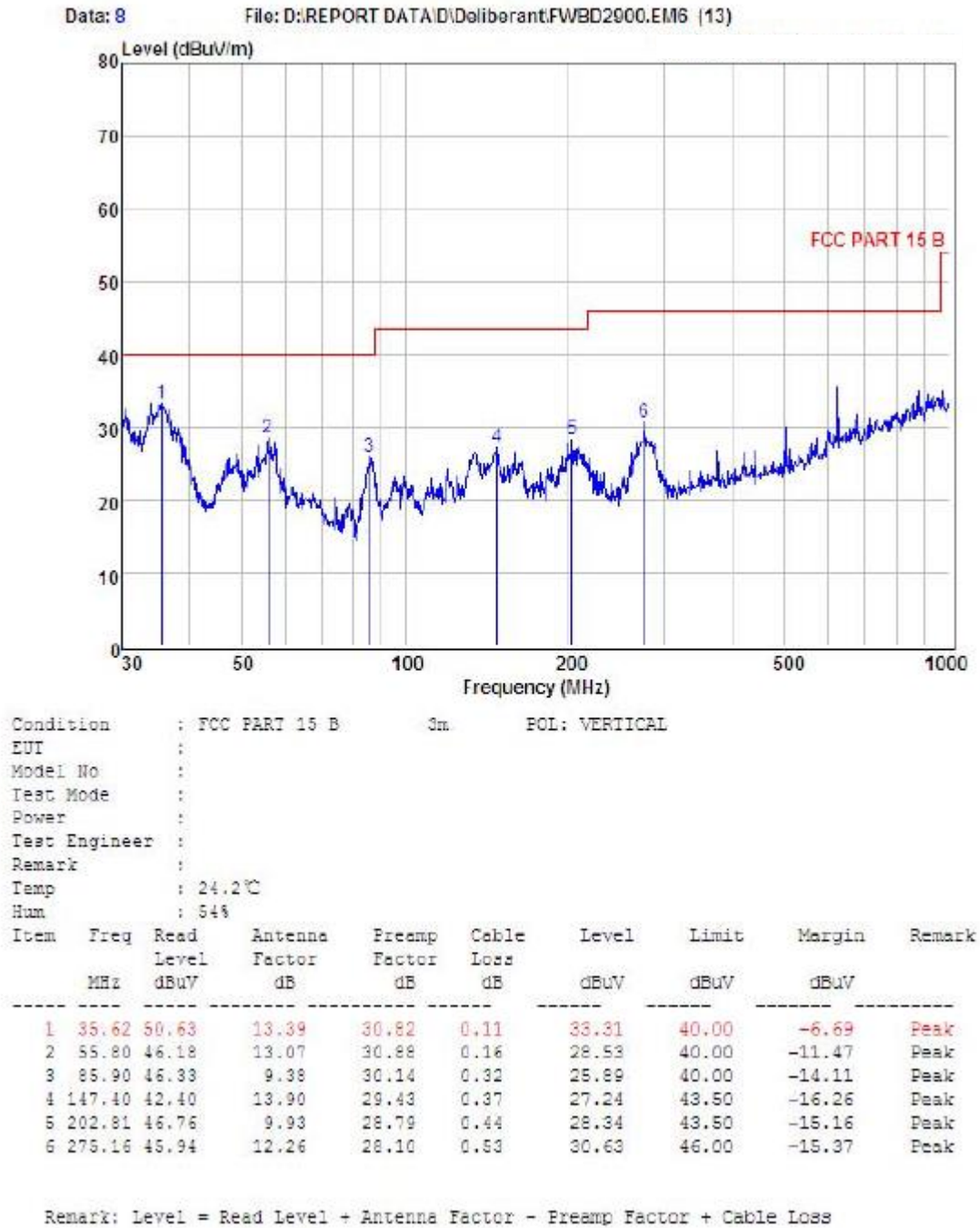
Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Data with GRT-POE20-480050A adapter



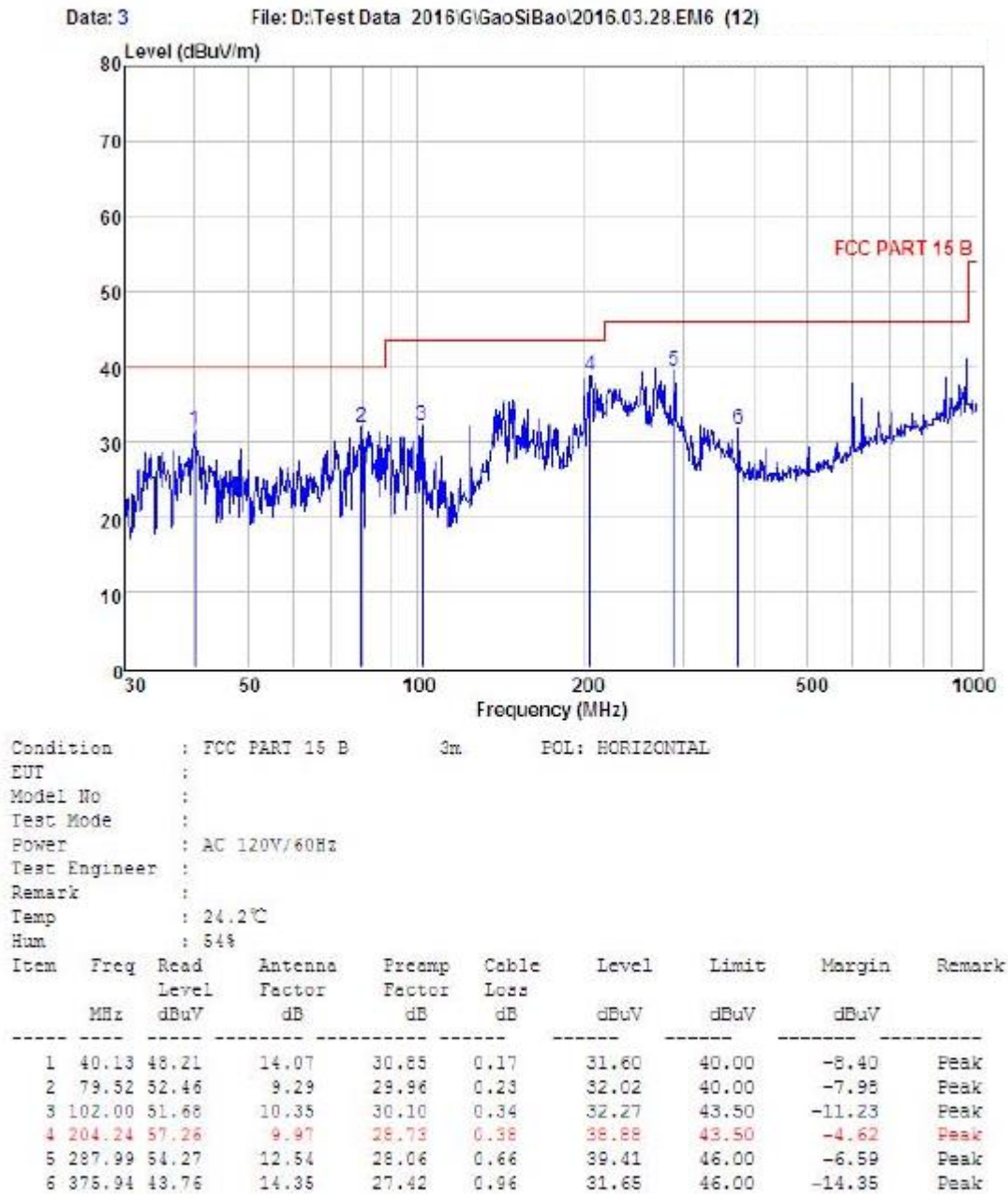
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark: All modes and channels have been tested and only worst data of 802.11a, 5180MHz are listed in this report.



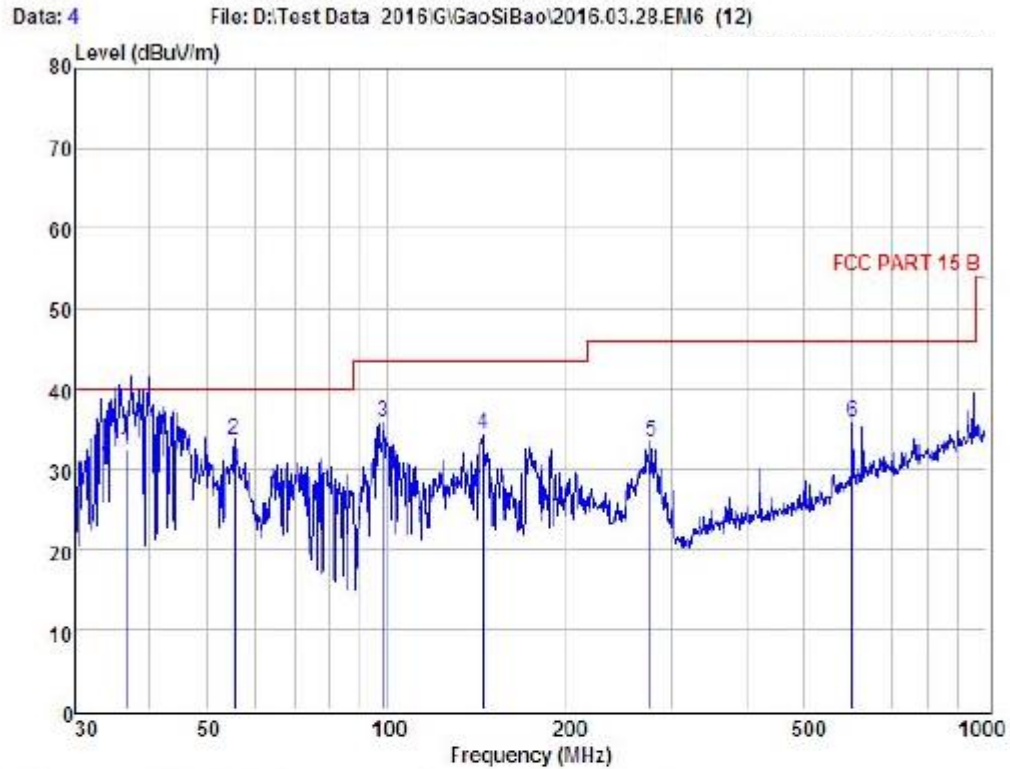
Remark: All modes and channels have been tested and only worst data of 802.11a, 5180MHz are listed in this report.

Data with G0720-480-050 adapter



Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark: All modes and channels have been tested and only worst data of 802.11a, 5180MHz are listed in this report.



Condition : FCC PART 15 B 3m POL: VERTICAL
 EUT :
 Model No :
 Test Mode :
 Power : AC 120V/60Hz
 Test Engineer :
 Remark :
 Temp : 24.2℃
 Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamplifier Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	36.52	49.71	13.39	30.83	0.10	32.37	40.00	-7.63	QP
2	55.41	51.20	13.07	30.87	0.18	33.58	40.00	-6.42	Peak
3	98.83	55.53	10.15	30.17	0.38	35.89	43.50	-7.61	Peak
4	144.84	49.50	13.77	29.41	0.46	34.32	43.50	-9.18	Peak
5	277.09	48.69	12.31	28.09	0.49	33.40	46.00	-12.60	Peak
6	601.43	42.18	18.36	25.89	1.07	35.72	46.00	-10.28	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark: All modes and channels have been tested and only worst data of 802.11a, 5180MHz are listed in this report.

20dBi panel antenna with two antennas, directional gain 23dBi.

From 1G-25GHz

IEEE 802.11a with 5.2G

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Remark
					Peak (dBuV/m)	AV (dBuV/m)			
10360	V	47.91	---	2.36	50.27	---	68.2	/	Peak
15540	V	32.92	---	4.52	37.44	---	68.2	/	Peak
N/A									

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Remark
					Peak (dBuV/m)	AV (dBuV/m)			
10360	H	48.05	---	2.36	50.41	---	68.2	/	Peak
15540	H	32.84	---	4.52	37.36	---	68.2	/	Peak
N/A									

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	47.77	---	2.36	50.13	---	68.2	/		Peak
15600	V	33.16	---	4.52	37.68	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	50.29	---	2.36	52.65	---	68.2	/		Peak
15600	H	32.59	---	4.52	37.11	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	49.82	---	2.36	52.18	---	68.2	/		Peak
15720	V	32.72	---	4.52	37.24	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	49.32	---	2.36	51.68	---	68.2	/		Peak
15720	H	32.70	---	4.52	37.22	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.2G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	48.22	---	2.36	50.58	---	68.2	/		Peak
15540	V	32.71	---	4.52	37.23	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	49.48	---	2.36	51.84	---	68.2	/		Peak
15540	H	33.02	---	4.52	37.54	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	50.19	---	2.36	52.55	---	68.2	/		Peak
15600	V	33.13	---	4.52	37.65	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	48.31	---	2.36	50.67	---	68.2	/		Peak
15600	H	33.62	---	4.52	38.14	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	48.22	---	2.36	50.58	---	68.2	/		Peak
15720	V	33.61	---	4.52	38.13	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	47.87	---	2.36	50.23	---	68.2	/		Peak
15720	H	33.15	---	4.52	37.67	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.2G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
10380	V	49.17	---	2.36	51.53	---	68.2	/		Peak
15570	V	33.06	---	4.52	37.58	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10380	H	49.52	---	2.36	51.88	---	68.2	/		Peak
15570	H	32.02	---	4.52	36.54	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	V	48.50	---	2.36	50.86	---	68.2	/		Peak
15690	V	27.43	---	4.52	31.95	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	H	49.4	---	2.36	51.76	---	68.2	/		Peak
15690	H	32.93	---	4.52	37.45	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

From 1G-25GHz:
IEEE 802.11a with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	V	49.31	---	2.36	51.67	---	68.2	/		Peak
17235	V	33.26	---	4.52	37.78	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	48.87	---	2.36	51.23	---	68.2	/		Peak
17235	H	33.84	---	4.52	38.36	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	53.37	---	2.36	51.73	---	68.2	/		Peak
17355	V	34.01	---	4.52	38.53	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	52.91	---	2.36	51.27	---	68.2	/		Peak
17355	H	32.91	---	4.52	37.43	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	53.29	---	2.36	51.65	---	68.2	/		Peak
17475	V	31.21	---	4.52	35.73	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	53.32	---	2.36	51.68	---	68.2	/		Peak
17475	H	33.74	---	4.52	38.26	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
11490	V	53.36	---	2.36	51.72	---	68.2	/		Peak
17235	V	34.04	---	4.52	38.56	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	53.29	---	2.36	51.65	---	68.2	/		Peak
17235	H	33.56	---	4.52	38.08	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	53.4	---	2.36	51.76	---	68.2	/		Peak
17355	V	33.84	---	4.52	38.36	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	53.27	---	2.36	51.63	---	68.2	/		Peak
17355	H	34.06	---	4.52	38.58	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	52.92	---	2.36	51.28	---	68.2	/		Peak
17475	V	34.02	---	4.52	38.54	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	53.4	---	2.36	51.76	---	68.2	/		Peak
17475	H	33.13	---	4.52	37.65	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11510	V	53.43	---	2.36	51.79	---	68.2	/		Peak
17265	V	33.15	---	4.52	37.67	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11510	H	53.10	---	2.36	51.46	---	68.2	/		Peak
17265	H	32.73	---	4.52	37.25	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	V	53.29	---	2.36	51.65	---	68.2	/		Peak
17385	V	33.21	---	4.52	37.73	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	H	53.17	---	2.36	51.53	---	68.2	/		Peak
17385	H	33.76	---	4.52	38.28	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

17dBi sector antenna with two antennas, directional gain 20dBi.

From 1G-25GHz

IEEE 802.11a with 5.2G

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	51.32	---	2.36	52.68	---	68.2	/		Peak
15540	V	32.55	---	4.52	37.07	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	51.29	---	2.36	52.65	---	68.2	/		Peak
15540	H	32.37	---	4.52	36.89	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	50.29	---	2.36	50.65	---	68.2	/		Peak
15600	V	31.93	---	4.52	36.45	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	51.53	---	2.36	50.89	---	68.2	/		Peak
15600	H	32.55	---	4.52	37.07	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	51.07	---	2.36	50.43	---	68.2	/		Peak
15720	V	32.32	---	4.52	36.84	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	51.25	---	2.36	50.61	---	68.2	/		Peak
15720	H	32.07	---	4.52	36.59	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.2G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	51.29	---	2.36	50.65	---	68.2	/		Peak
15540	V	31.86	---	4.52	36.38	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	51.31	---	2.36	50.67	---	68.2	/		Peak
15540	H	32.24	---	4.52	36.76	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	51.32	---	2.36	50.68	---	68.2	/		Peak
15600	V	32.33	---	4.52	36.85	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	51.01	---	2.36	50.37	---	68.2	/		Peak
15600	H	32.23	---	4.52	36.75	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	50.89	---	2.36	50.25	---	68.2	/		Peak
15720	V	32.49	---	4.52	37.01	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	50.83	---	2.36	50.19	---	68.2	/		Peak
15720	H	32.20	---	4.52	36.72	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.2G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
10380	V	51.29	---	2.36	50.65	---	68.2	/		Peak
15570	V	32.10	---	4.52	36.62	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10380	H	51.22	---	2.36	50.58	---	68.2	/		Peak
15570	H	31.67	---	4.52	36.19	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	V	51.29	---	2.36	51.65	---	68.2	/		Peak
15690	V	32.06	---	4.52	36.58	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	H	51.22	---	2.36	50.58	---	68.2	/		Peak
15690	H	31.85	---	4.52	36.37	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

From 1G-25GHz:
IEEE 802.11a with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	V	51.50	---	2.36	51.86	---	68.2	/		Peak
17235	V	32.86	---	4.52	37.38	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	51.29	---	2.36	50.65	---	68.2	/		Peak
17235	H	32.21	---	4.52	36.73	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	51.19	---	2.36	51.55	---	68.2	/		Peak
17355	V	32.15	---	4.52	36.67	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	51.29	---	2.36	50.65	---	68.2	/		Peak
17355	H	31.67	---	4.52	36.19	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	51.16	---	2.36	51.52	---	68.2	/		Peak
17475	V	32.89	---	4.52	37.41	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	53.2	---	2.36	50.56	---	68.2	/		Peak
17475	H	33.20	---	4.52	37.72	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
11490	V	51.29	---	2.36	51.65	---	68.2	/		Peak
17235	V	31.80	---	4.52	36.32	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	51.22	---	2.36	50.58	---	68.2	/		Peak
17235	H	32.91	---	4.52	37.43	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	50.96	---	2.36	51.32	---	68.2	/		Peak
17355	V	31.89	---	4.52	36.41	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	51.20	---	2.36	50.56	---	68.2	/		Peak
17355	H	31.65	---	4.52	36.17	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	51.29	---	2.36	51.65	---	68.2	/		Peak
17475	V	31.63	---	4.52	36.15	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	51.19	---	2.36	50.55	---	68.2	/		Peak
17475	H	32.26	---	4.52	36.78	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11510	V	51.29	---	2.36	51.65	---	68.2	/		Peak
17265	V	32.19	---	4.52	36.71	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11510	H	51.17	---	2.36	50.53	---	68.2	/		Peak
17265	H	31.36	---	4.52	35.88	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	V	51.37	---	2.36	51.73	---	68.2	/		Peak
17385	V	31.1	---	4.52	35.62	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	H	50.19	---	2.36	50.55	---	68.2	/		Peak
17385	H	31.64	---	4.52	36.16	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

27dBi dish antenna with two antennas, directional gain 30dBi.
 From 1G-25GHz
 IEEE 802.11a with 5.2G

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	52.22	---	2.36	51.58	---	68.2	/		Peak
15540	V	32.16	---	4.52	36.68	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	52.42	---	2.36	50.78	---	68.2	/		Peak
15540	H	32.17	---	4.52	36.69	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	52.39	---	2.36	51.75	---	68.2	/		Peak
15600	V	32.32	---	4.52	36.84	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	52.32	---	2.36	50.68	---	68.2	/		Peak
15600	H	32.03	---	4.52	36.55	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	51.99	---	2.36	51.35	---	68.2	/		Peak
15720	V	32.67	---	4.52	37.19	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	53.07	---	2.36	50.43	---	68.2	/		Peak
15720	H	32.19	---	4.52	36.71	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.2G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	52.89	---	2.36	51.25	---	68.2	/		Peak
15540	V	32.55	---	4.52	37.07	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	52.82	---	2.36	50.18	---	68.2	/		Peak
15540	H	32.77	---	4.52	37.29	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	52.78	---	2.36	52.14	---	68.2	/		Peak
15600	V	32.87	---	4.52	37.39	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	53.10	---	2.36	50.46	---	68.2	/		Peak
15600	H	34.09	---	4.52	38.61	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	52.73	---	2.36	52.09	---	68.2	/		Peak
15720	V	33.91	---	4.52	38.43	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	53.16	---	2.36	50.52	---	68.2	/		Peak
15720	H	32.76	---	4.52	37.28	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.2G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
10380	V	52.78	---	2.36	52.14	---	68.2	/		Peak
15570	V	33.42	---	4.52	37.94	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10380	H	52.30	---	2.36	50.66	---	68.2	/		Peak
15570	H	32.07	---	4.52	36.59	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	V	52.03	---	2.36	52.39	---	68.2	/		Peak
15690	V	27.24	---	4.52	31.76	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	H	53.47	---	2.36	50.83	---	68.2	/		Peak
15690	H	32.90	---	4.52	37.42	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

From 1G-25GHz:
IEEE 802.11a with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	V	53.35	---	2.36	52.71	---	68.2	/		Peak
17235	V	32.90	---	4.52	37.42	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	53.22	---	2.36	50.58	---	68.2	/		Peak
17235	H	34.15	---	4.52	38.67	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	53.45	---	2.36	52.81	---	68.2	/		Peak
17355	V	34.23	---	4.52	38.75	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	53.30	---	2.36	50.66	---	68.2	/		Peak
17355	H	33.32	---	4.52	37.84	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	53.55	---	2.36	52.91	---	68.2	/		Peak
17475	V	34.24	---	4.52	38.76	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	52.82	---	2.36	50.18	---	68.2	/		Peak
17475	H	33.55	---	4.52	38.07	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remarks
					Peak (dBuV/m)	AV (dBuV/m)				
11490	V	53.55	---	2.36	52.91	---	68.2	/		Peak
17235	V	33.91	---	4.52	38.43	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	53.11	---	2.36	50.47	---	68.2	/		Peak
17235	H	34.26	---	4.52	38.78	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	52.71	---	2.36	52.07	---	68.2	/		Peak
17355	V	34.00	---	4.52	38.52	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	53.26	---	2.36	50.62	---	68.2	/		Peak
17355	H	33.86	---	4.52	38.38	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	53.36	---	2.36	52.72	---	68.2	/		Peak
17475	V	33.99	---	4.52	38.51	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	53.45	---	2.36	50.81	---	68.2	/		Peak
17475	H	33.05	---	4.52	37.57	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.8G

EUT		Broadband Digital Transmission System			Model Name		FWBD-2900			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 48V From adapter			
Test Mode		MIMO TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11510	V	52.71	---	2.36	52.07	---	68.2	/		Peak
17265	V	33.12	---	4.52	37.64	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11510	H	53.45	---	2.36	50.81	---	68.2	/		Peak
17265	H	33.24	---	4.52	37.76	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	V	52.91	---	2.36	52.27	---	68.2	/		Peak
17385	V	32.87	---	4.52	37.39	---	68.2	/		Peak
N/A										

EUT	Broadband Digital Transmission System	Model Name	FWBD-2900
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 48V From adapter
Test Mode	MIMO TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/m)	AV Reading (dBuV/m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)		Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	H	53.22	---	2.36	50.58	---	68.2	/		Peak
17385	H	33.95	---	4.52	38.47	---	68.2	/		Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

6 POWER LINE CONDUCTED EMISSION

6.1 Conducted Emission Limits(15.207)

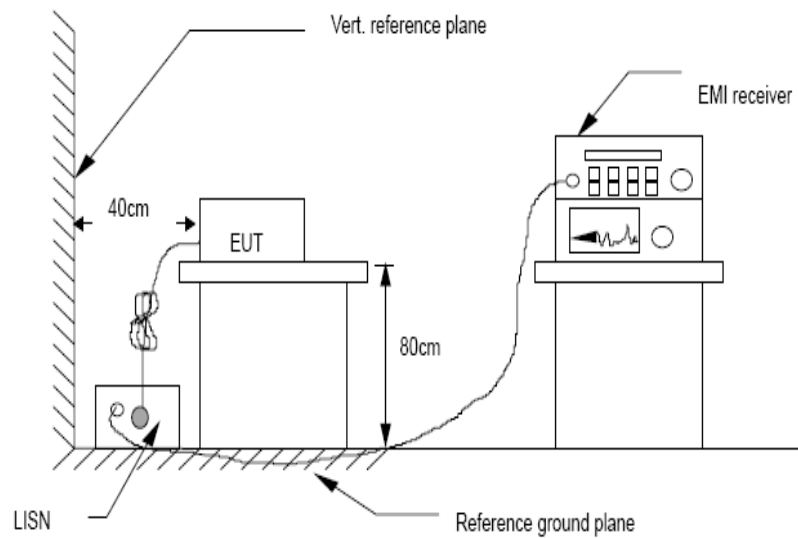
Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3. The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

6.2 Test Setup



6.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4:2014 on Conducted Emission Measurement. The bandwidth of test receiver is set at 9 kHz.

6.4 Test Results

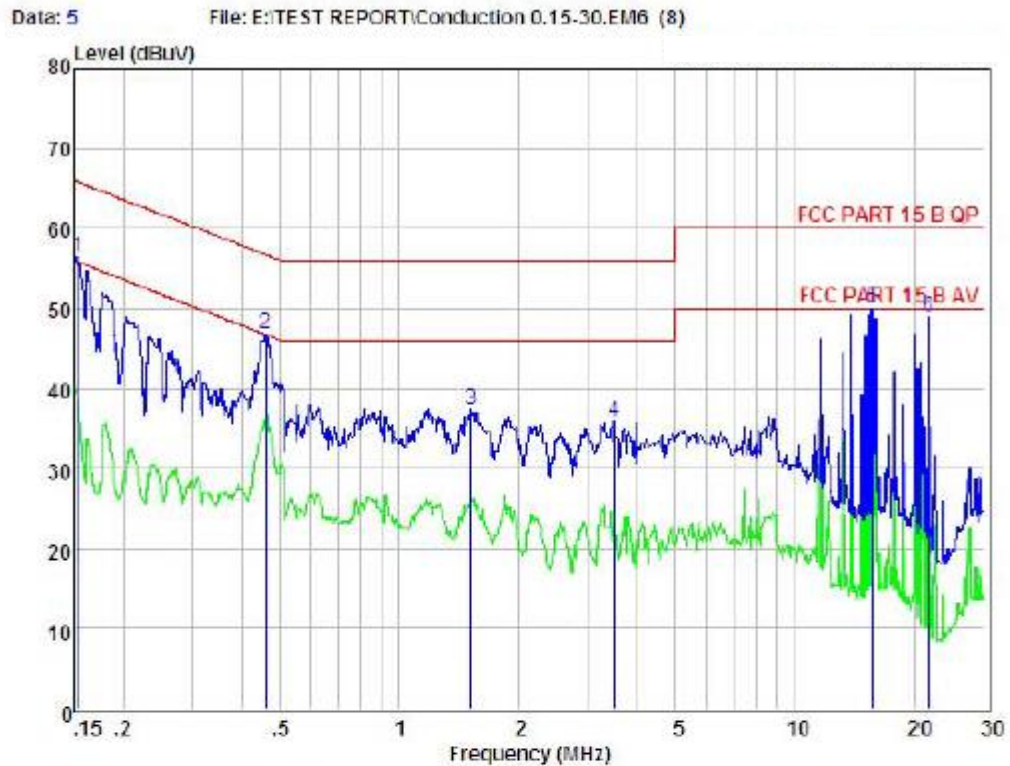
MIMO TX MODE

Worse case is reported only

PASS

Detailed information please see the following page.

Data with GRT-POE20-480050A adapter

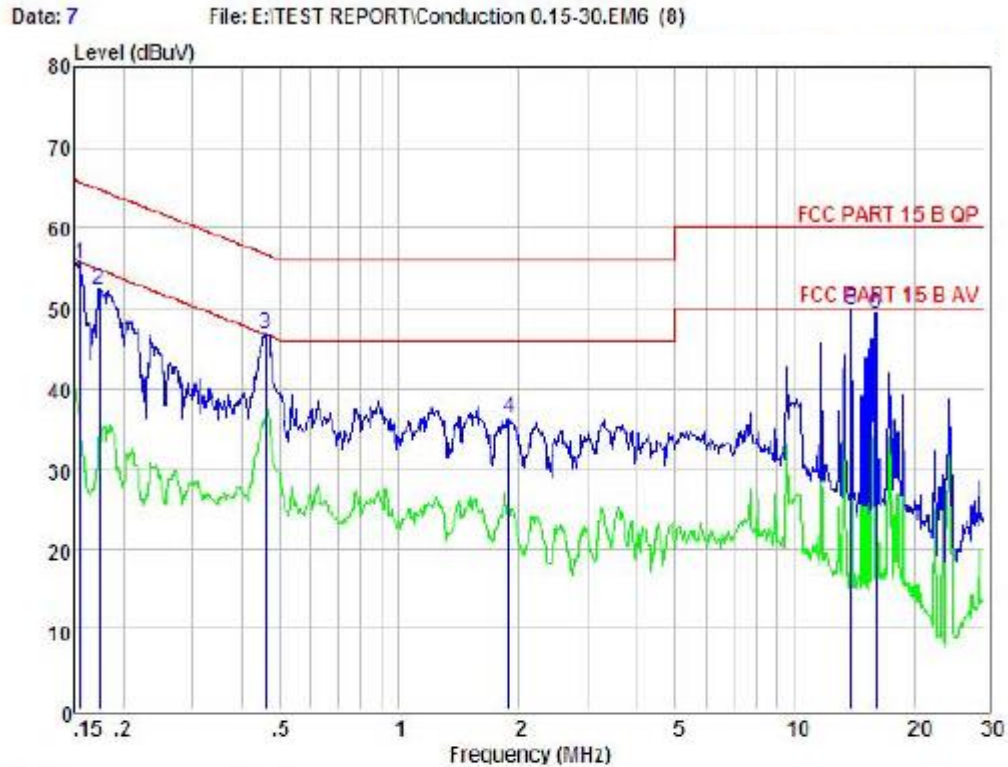


Condition : FCC PART 15 B QP POL: LINE Temp: 25.7 °C Hum: 51 %
 EUT :
 Model No :
 Test Mode :
 Power :
 Test Engineer:
 Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.153	46.74	0.03	-9.52	0.08	56.37	56.82	-9.45	Peak
2	0.459	37.09	0.03	-9.58	0.08	46.78	56.71	-9.93	Peak
3	1.519	27.57	0.05	-9.68	0.10	37.40	56.00	-18.60	Peak
4	3.509	25.76	0.08	-9.85	0.14	35.83	56.00	-20.17	Peak
5	15.801	39.63	0.25	-9.83	0.28	49.99	60.00	-10.01	Peak
6	21.600	38.33	0.37	-9.81	0.47	48.98	60.00	-11.02	Peak

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

Note: Green curve is AV result and much lower than AV limit



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:25.7 °C Hum:51 %
 EUT :
 Model No :
 Test Mode :
 Power :
 Test Engineer:
 Remark :

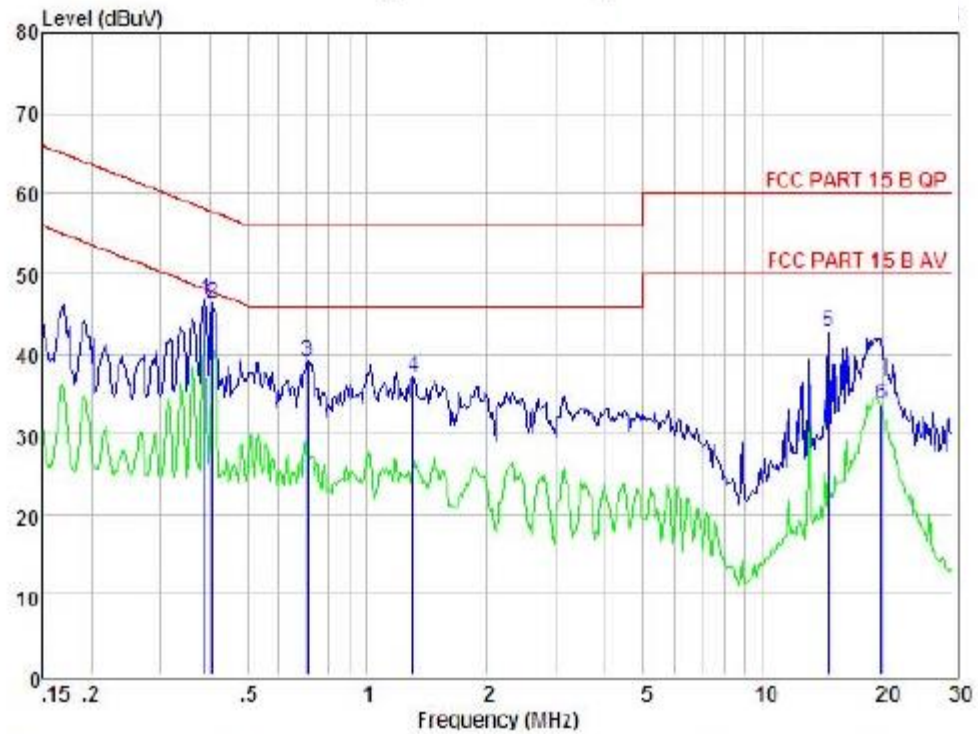
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.156	45.94	0.03	-9.52	0.08	55.57	65.69	-10.12	Peak
2	0.174	42.72	0.03	-9.52	0.08	52.35	64.77	-12.42	Peak
3	0.459	37.02	0.03	-9.55	0.08	46.71	56.71	-10.00	Peak
4	1.898	26.48	0.05	-9.71	0.10	36.34	56.00	-19.66	Peak
5	13.915	39.40	0.23	-9.87	0.25	49.75	60.00	-10.25	Peak
6	16.055	39.01	0.25	-9.83	0.28	49.37	60.00	-10.63	Peak

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

Note: Green curve is AV result and much lower than AV limit

Data with G0720-480-050 adapter

Data: 104 File: E:\TEST REPORT\yj\2016.03.22 CE.EM6 (109)



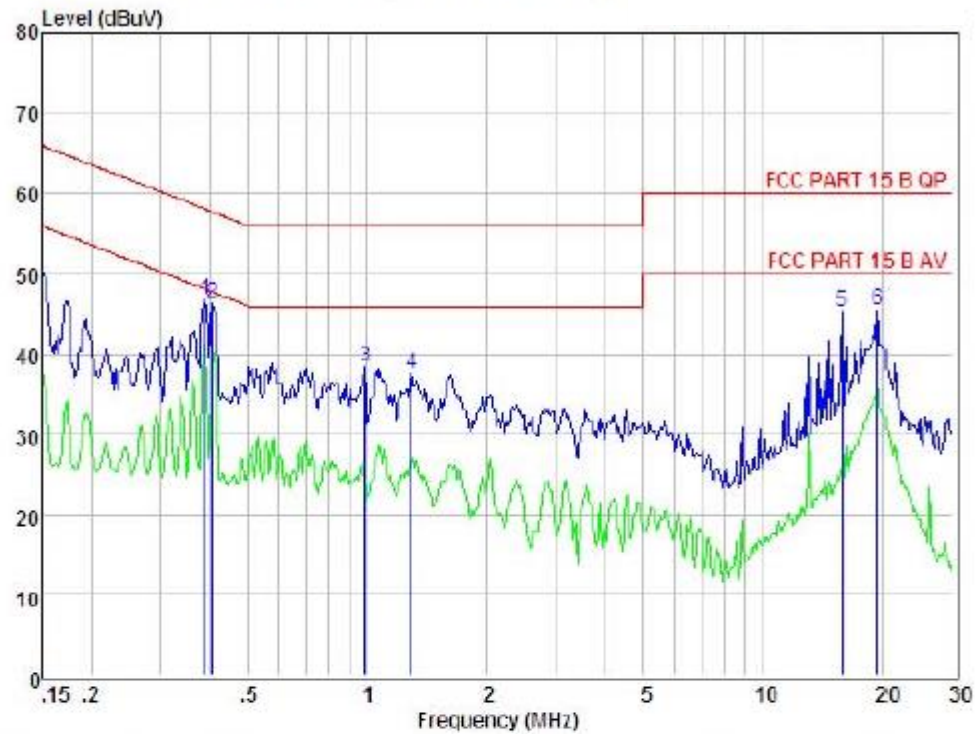
Condition : FCC PART 15 B QP POL: LINE Temp: 25.7 °C Hum: 51 %
 EUT :
 Model No :
 Test Mode :
 Power : AC 120V/60Hz
 Test Engineer :
 Remark :

Item	Freq MHz	Read Level dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.389	37.08	0.03	-9.57	0.10	46.78	58.08	-11.30	Peak
2	0.406	36.52	0.03	-9.57	0.10	46.22	57.73	-11.51	Peak
3	0.708	29.36	0.04	-9.59	0.10	39.09	56.00	-16.91	Peak
4	1.310	27.36	0.05	-9.65	0.10	37.16	56.00	-18.84	Peak
5	14.672	32.26	0.24	-9.86	0.23	42.89	60.00	-17.11	Peak
6	19.950	23.30	0.31	-9.60	0.35	33.76	60.00	-26.24	Peak

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

Note: Green curve is AV result and much lower than AV limit

Data: 102 File: E:\TEST REPORT\yji2016.03.22 CE.EM6 (109)



Condition : FCC PART 15 B QP POL: NEUTRAL Temp: 25.7 °C Hum: 51 %
 EUT :
 Model No :
 Test Mode :
 Power : AC 120V/60Hz
 Test Engineer :
 Remark :

Item	Freq MHz	Read Level dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.389	36.99	0.03	-9.57	0.10	46.69	58.08	-11.39	Peak
2	0.406	36.60	0.03	-9.57	0.10	46.30	57.73	-11.43	Peak
3	0.989	28.52	0.04	-9.63	0.10	38.29	56.00	-17.71	Peak
4	1.296	27.69	0.05	-9.65	0.10	37.49	56.00	-18.51	Peak
5	15.885	34.80	0.25	-9.83	0.27	45.15	60.00	-14.85	Peak
6	19.532	34.92	0.31	-9.80	0.34	45.37	60.00	-14.63	Peak

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

Note: Green curve is AV result and much lower than AV limit

7 Conducted Maximum Output Power

7.1 Test limit

For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, 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..

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

7.2 Test Procedure

Details see the KDB558074 Meas Guidance V03

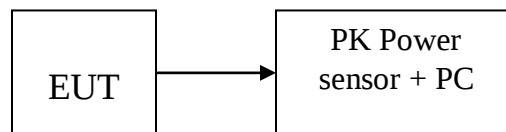
7.2.1 Place the EUT on the table and set it in transmitting mode.

7.2.2 Connected the EUT's antenna port to peak power meter by 20dB attenuator.

7.2.3 Measure out each mode and each bands peak output power of EUT.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset. Details see the KDB558074 DTS Meas Guidance V03

7.3 Test Setup



7.4 Test Results

PASS

Detailed information please see the following page.

Maximum directional antenna gain is 30 dBi, limit is $[30-(30-23)]=23\text{dBm}$

EUT: Broadband Digital Transmission System				M/N: FWBD-2900		
Test date: 2016-03-17		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)		Limit (dBm)	Margin (dB)
IEEE 802.11 a with 5.2G	CH36:5180	0	20.01	22.91	23	0.09
		1	19.78			
	CH40:5200	0	20.03	22.72	23	0.28
		1	19.37			
	CH48:5240	0	20.31	22.90	23	0.10
		1	19.43			
IEEE 802.11 n/HT20 with 5.2G	CH36:5180	0	19.51	22.44	23	0.56
		1	19.34			
	CH40:5200	0	19.12	22.07	23	0.93
		1	18.99			
	CH48:5240	0	19.97	22.57	23	0.43
		1	19.10			
IEEE 802.11 n/HT40 with 5.2G	CH38:5190	0	19.92	22.77	23	0.23
		1	19.59			
	CH46:5230	0	20.20	22.98	23	0.02
		1	19.73			
Conclusion: PASS						

EUT: Broadband Digital Transmission System				M/N: FWBD-2900		
Test date: 2016-03-17		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output powe(dBm)		Limit (dBm)	Margin (dB)
IEEE 802.11 a with 5.8G	CH149:5745	0	27.01	29.89	30	0.11
		1	26.75			
	CH157:5785	0	26.69	29.53	30	0.47
		1	26.34			
	CH165:5825	0	26.37	29.55	30	0.45
		1	26.04			
IEEE 802.11 n/HT20 with 5.8G	CH149:5745	0	26.67	29.64	30	0.36
		1	26.58			
	CH157:5785	0	25.89	29.02	30	0.98
		1	26.13			
	CH165:5825	0	26.06	29.11	30	0.89
		1	26.13			
IEEE 802.11 n/HT40 with 5.8G	CH151:5755	0	26.88	29.81	30	0.19
		1	26.71			
	CH159:5795	0	26.06	29.07	30	0.93
		1	26.05			
Conclusion: PASS						

8 PEAK POWER SPECTRAL DENSITY

8.1 Test limit

For the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

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

8.2 Method of measurement

Details see the KDB558074 DTS Meas Guidance V03

8.2.1 Place the EUT on the table and set it in transmitting mode.

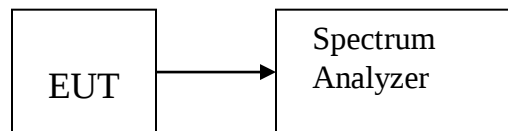
8.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

8.2.3 Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, span=5-30%EBW, detail see the test plot.

8.2.4 Record the max reading.

8.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

8.3 Test Setup



8.4 Test Results

PASS.

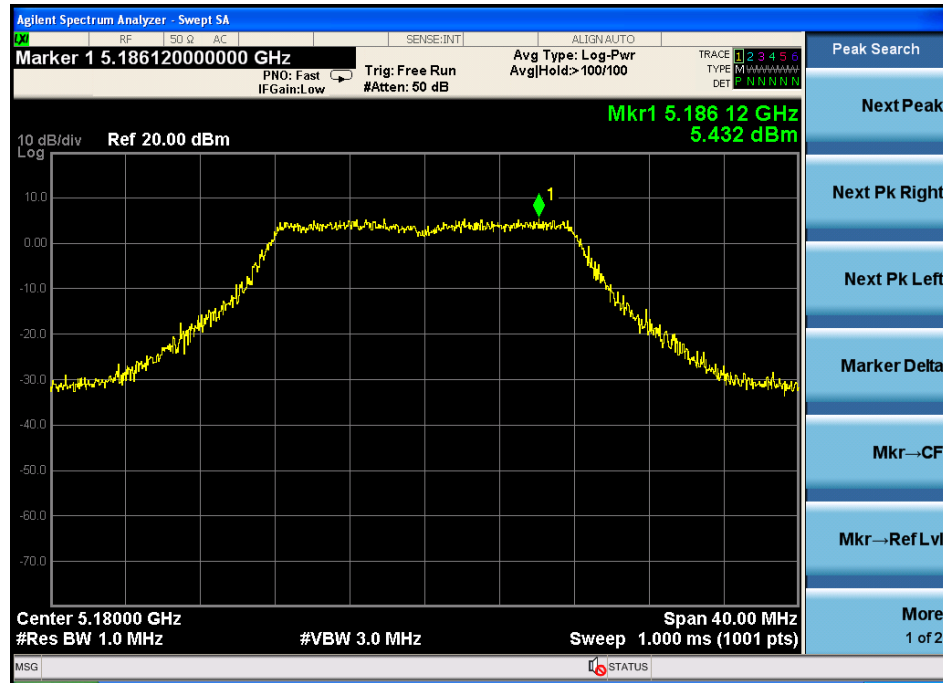
Detailed information please see the following page.

Maximum directional antenna gain is 30 dBi, limit is $[17-(30-23)]=10\text{dBm}$

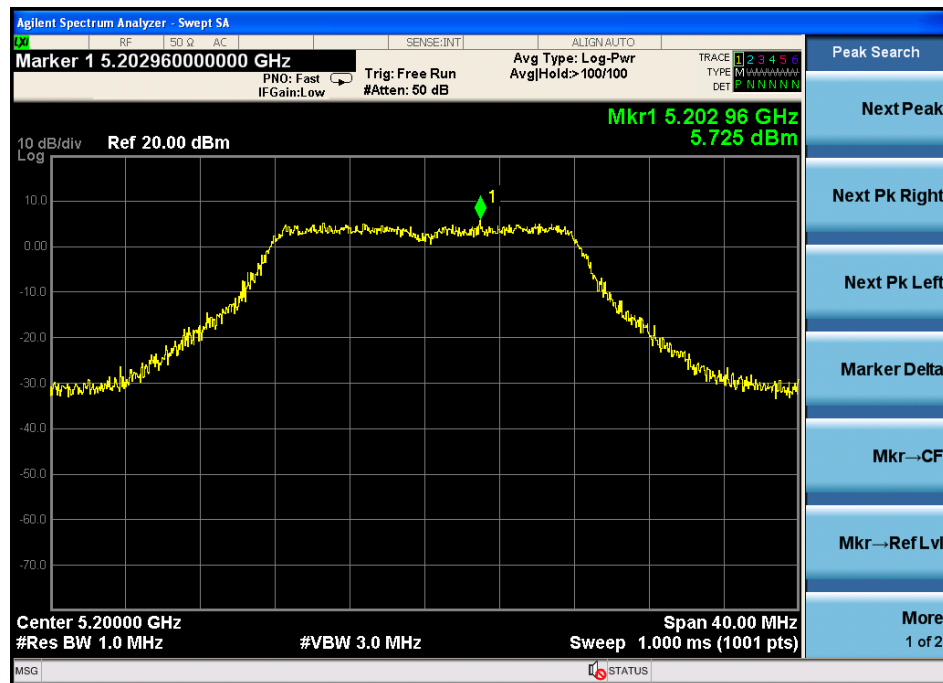
EUT: Broadband Digital Transmission System				M/N: FWBD-2900		
Test date: 2016-03-17		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)		Limit (dBm)	Result
IEEE 802.11 a with 5.2G	CH36:5180	0	5.432	8.67	10	Pass
		1	5.867			
	CH40:5200	0	5.725	8.86	10	Pass
		1	5.974			
	CH48:5240	0	5.515	8.50	10	Pass
		1	5.464			
IEEE 802.11 n/HT20 with 5.2G	CH36:5180	0	4.144	7.41	10	Pass
		1	4.648			
	CH40:5200	0	5.270	7.86	10	Pass
		1	4.393			
	CH48:5240	0	4.424	7.51	10	Pass
		1	4.582			
IEEE 802.11 n/HT40 with 5.2G	CH38:5190	0	1.957	4.67	10	Pass
		1	1.351			
	CH46:5230	0	1.773	4.69	10	Pass
		1	1.589			
Conclusion: PASS						

EUT: Broadband Digital Transmission System				M/N: FWBD-2900		
Test date: 2016-03-17		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)		Limit (dBm)	Result
IEEE 802.11 a with 5.8G	CH149:5745	0	11.537	14.091	30	Pass
		1	10.570			
	CH157:5785	0	10.517	13.492	30	Pass
		1	10.447			
	CH165:5825	0	10.467	13.443	30	Pass
		1	10.398			
IEEE 802.11 n/HT20 with 5.8G	CH149:5745	0	11.185	14.105	30	Pass
		1	11.003			
	CH157:5785	0	10.608	13.425	30	Pass
		1	10.213			
	CH165:5825	0	10.224	13.564	30	Pass
		1	10.860			
IEEE 802.11 n/HT40 with 5.8G	CH151:5755	0	7.753	10.439	30	Pass
		1	7.079			
	CH159:5795	0	7.074	10.224	30	Pass
		1	7.350			
Conclusion: PASS						

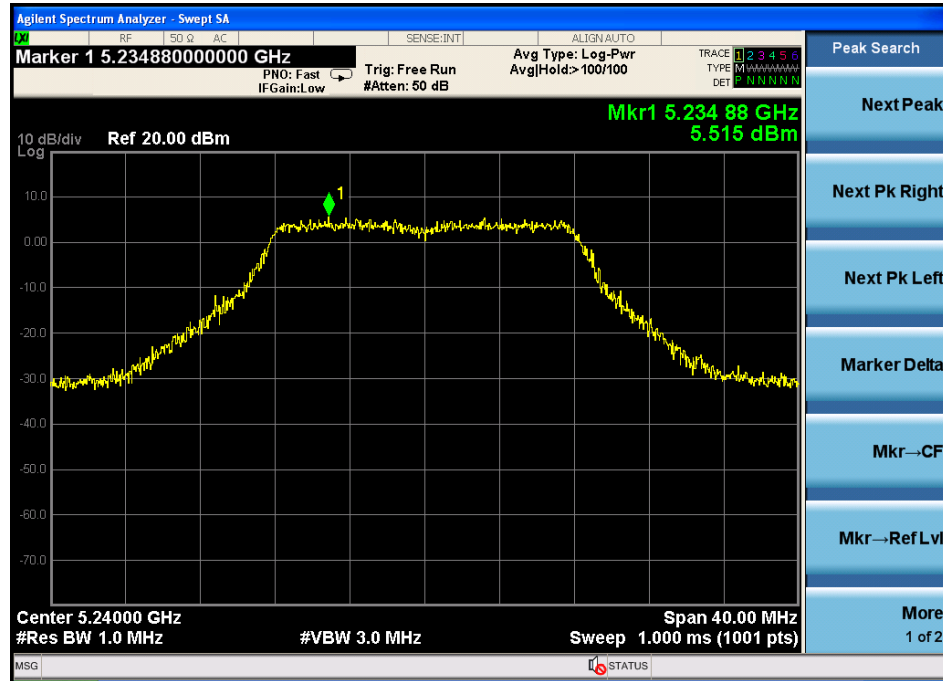
Port 0 antenna with 5.2G
IEEE 802.11a :
CH Low :



CH Mid:

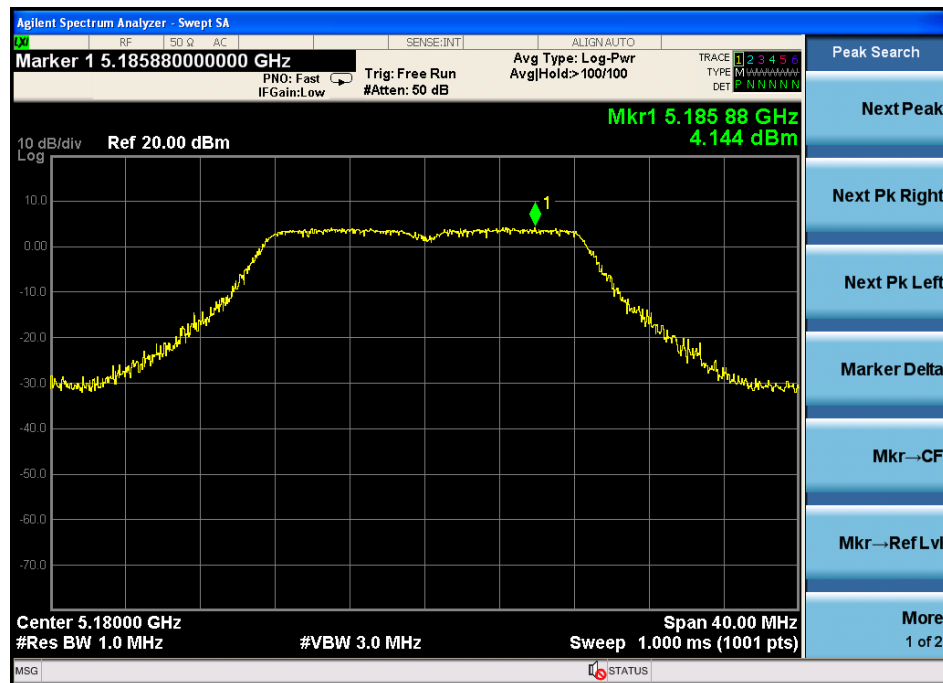


CH High:

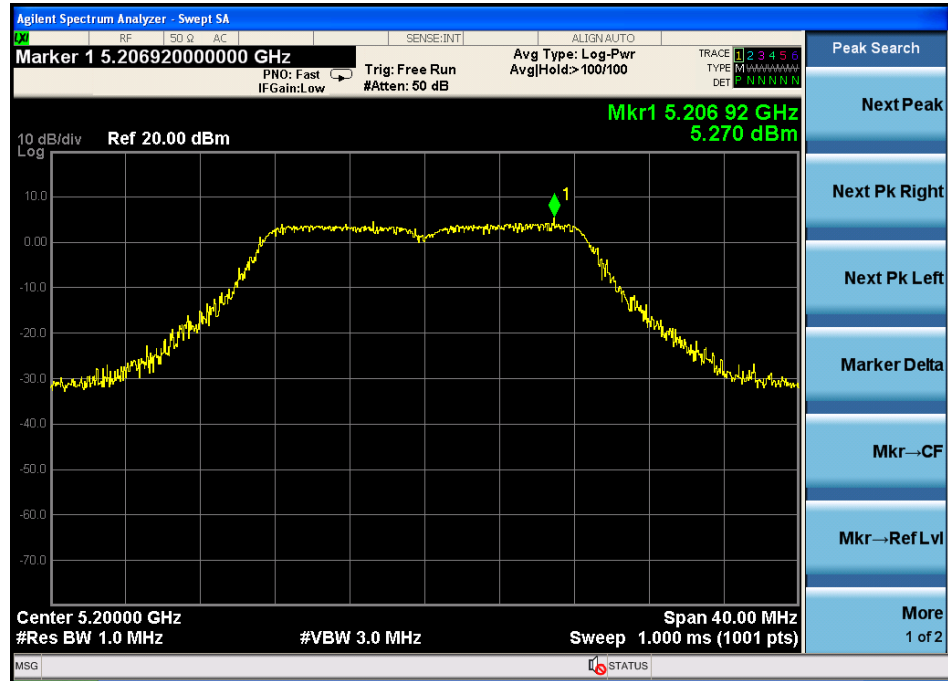


IEEE 802.11n HT20 :

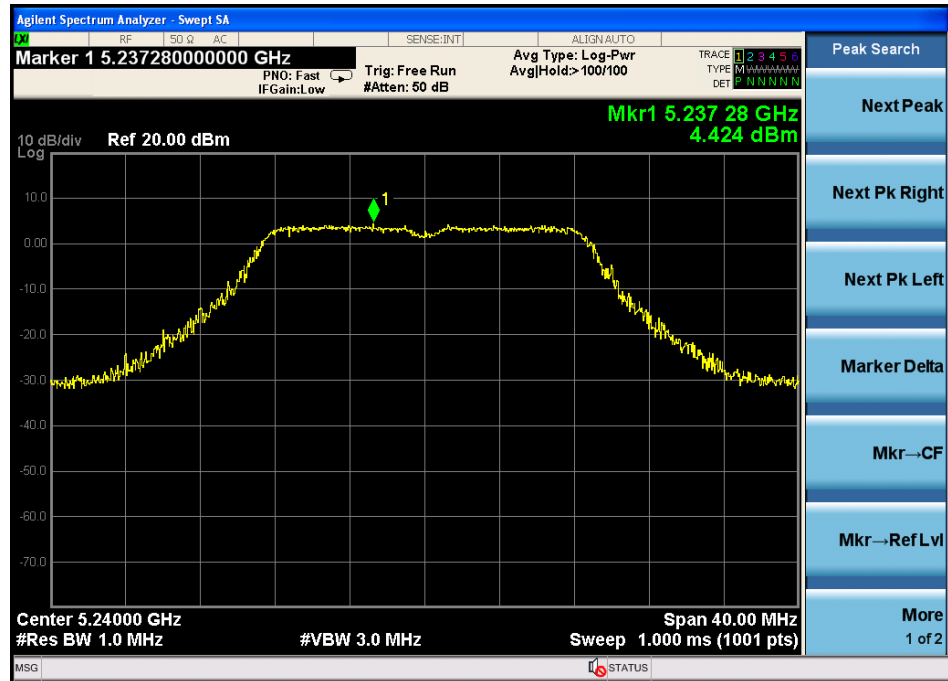
CH Low :



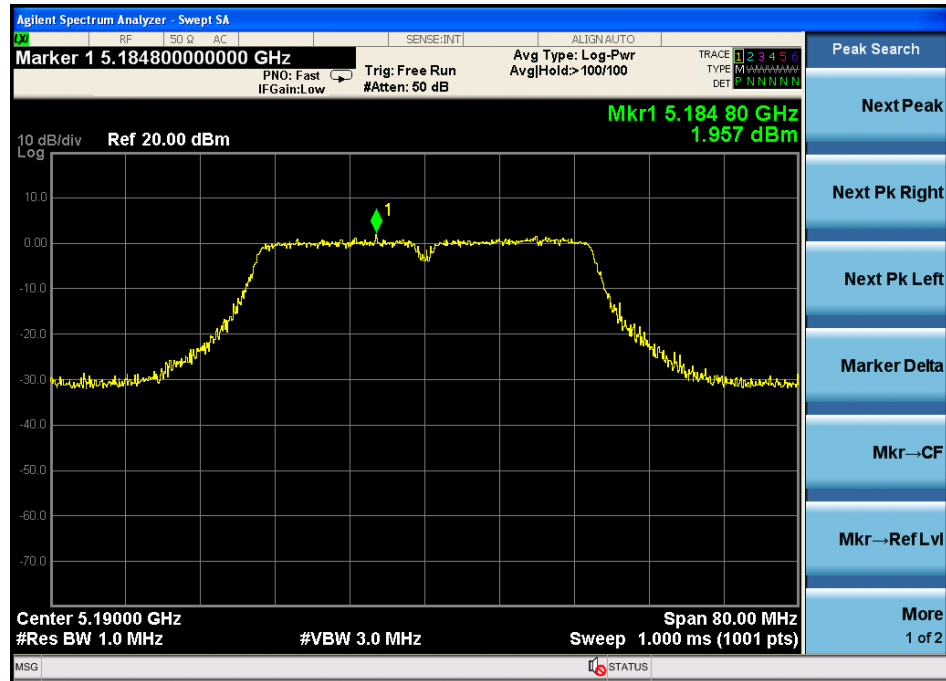
CH Mid:



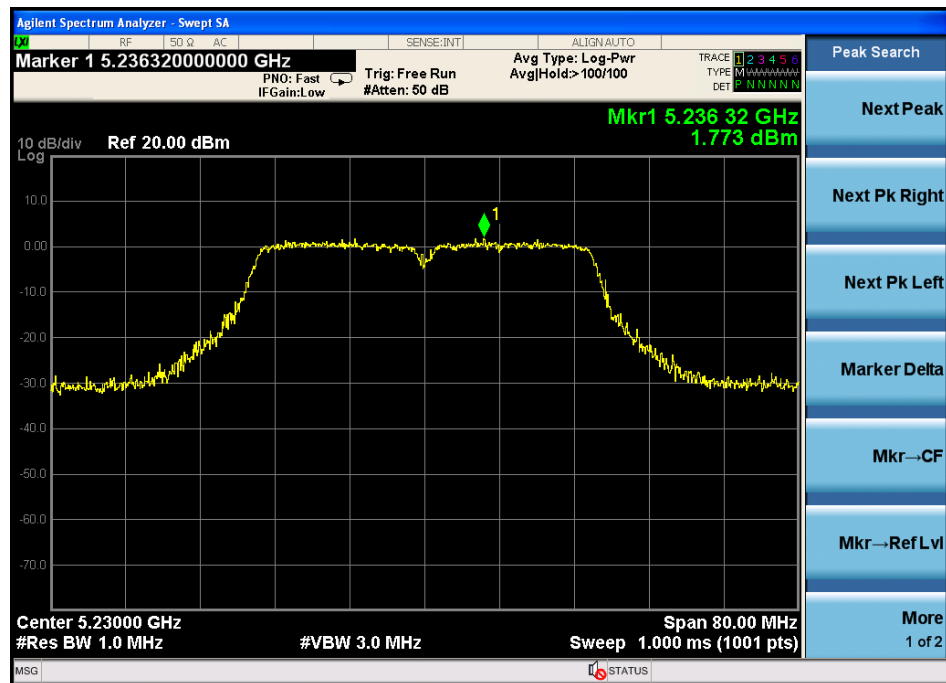
CH High:



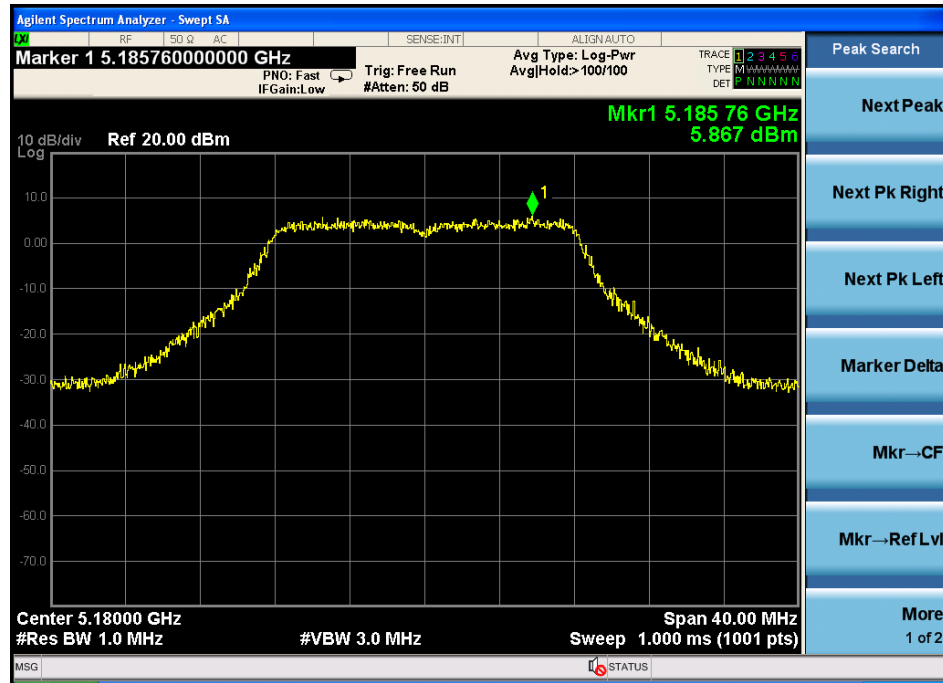
IEEE 802.11n HT40 :
CH Low :



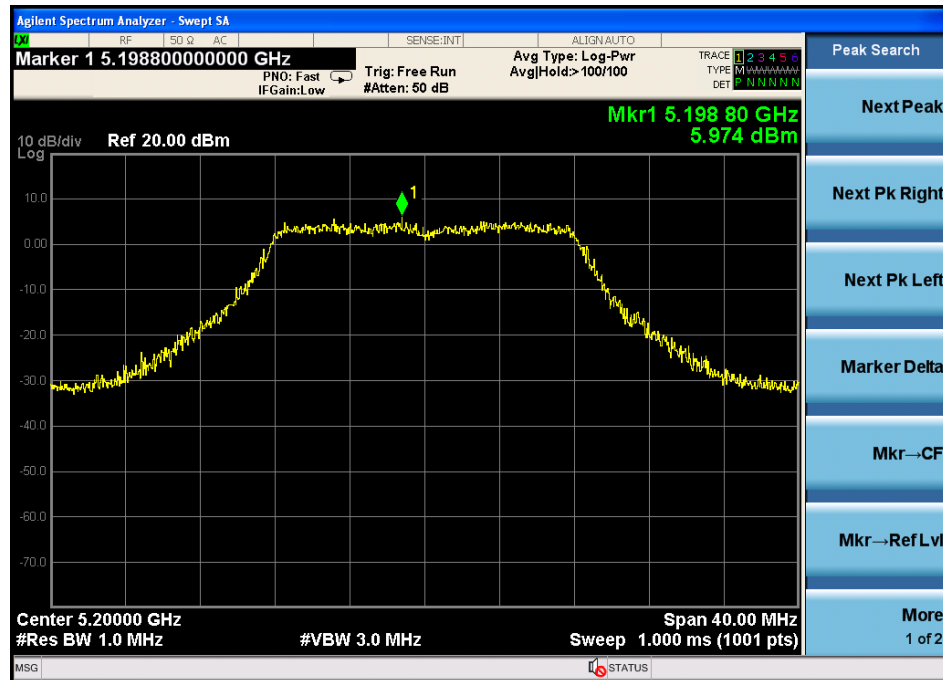
CH High:



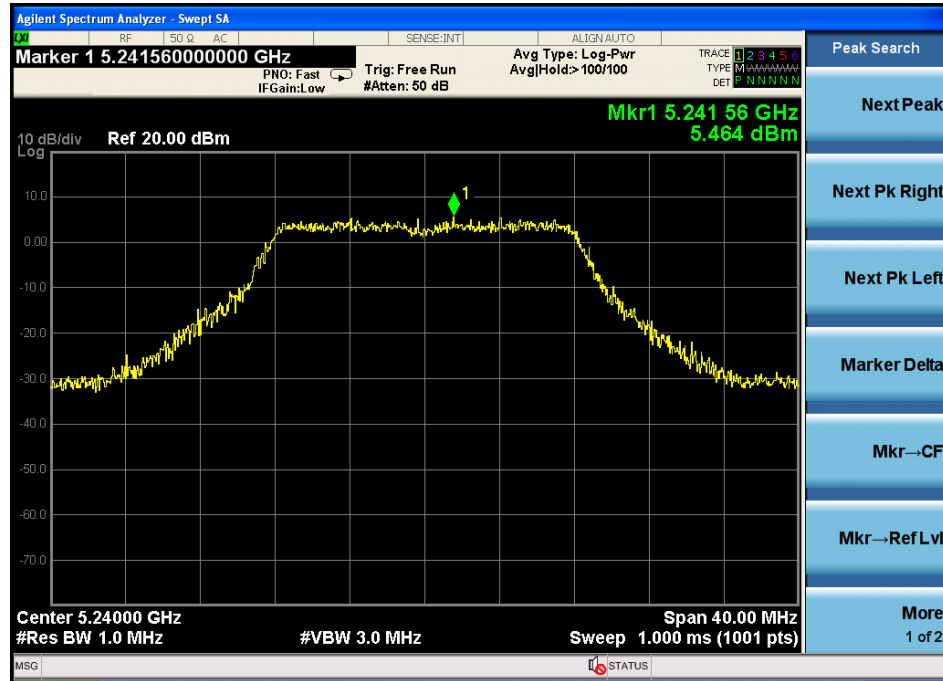
port 1 antenna with 5.2G
IEEE 802.11a :
CH Low :



CH Mid:

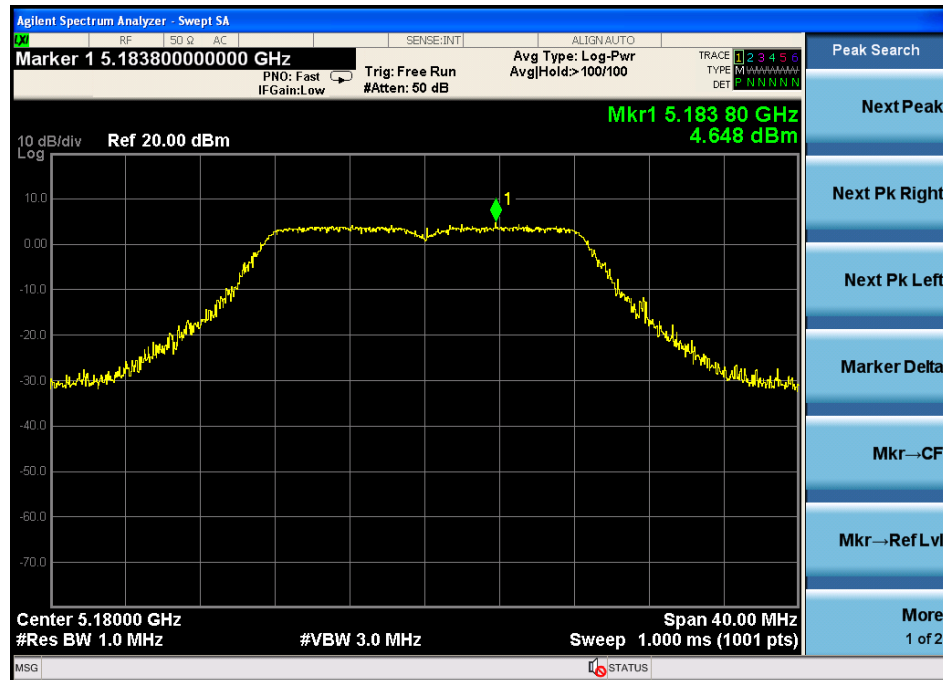


CH High:

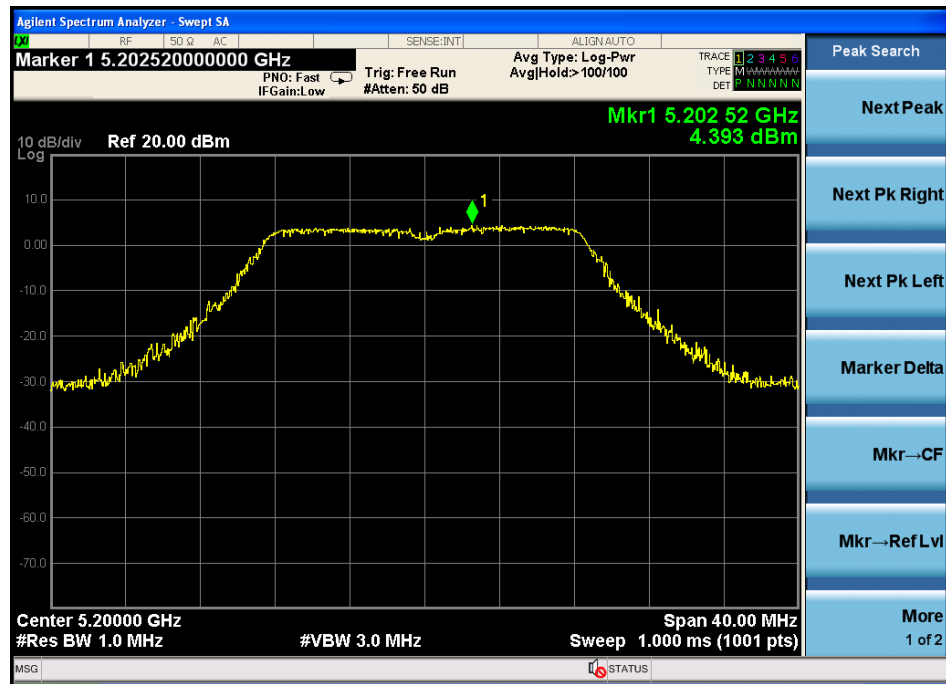


IEEE 802.11n HT20 :

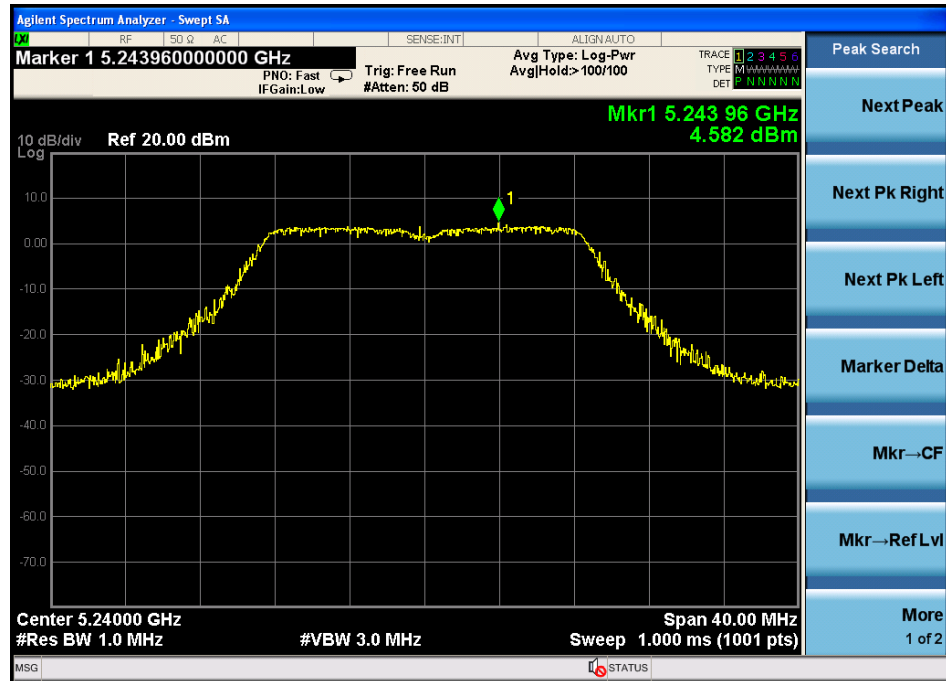
CH Low :



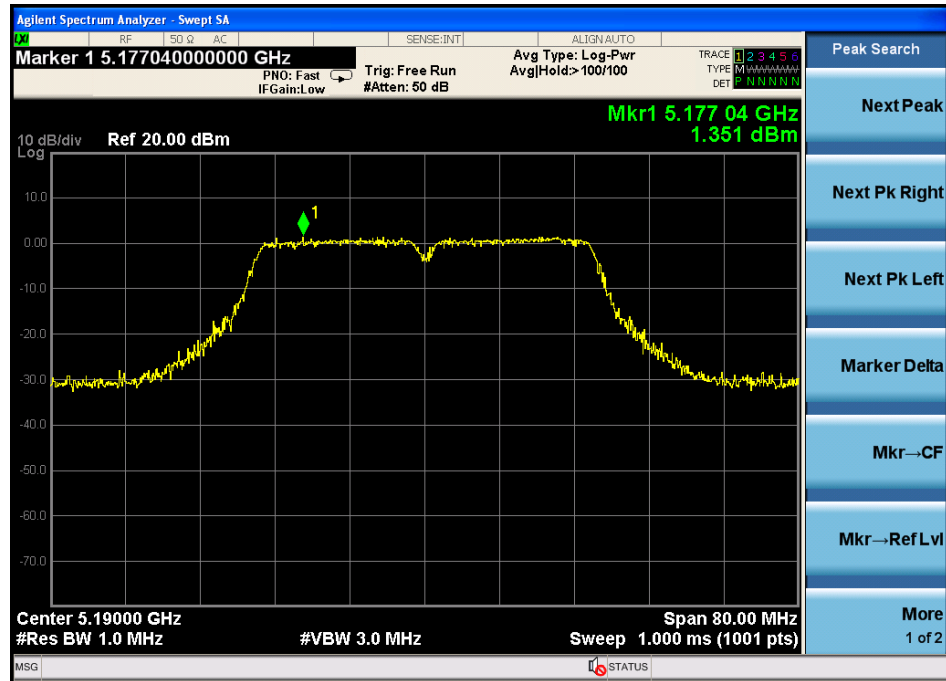
CH Mid:



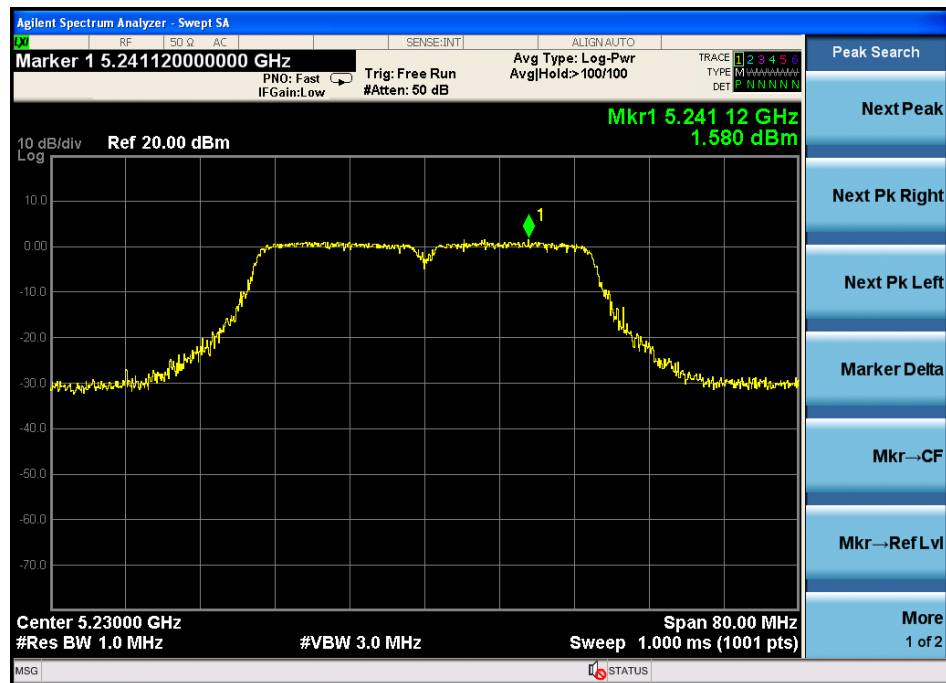
CH High:



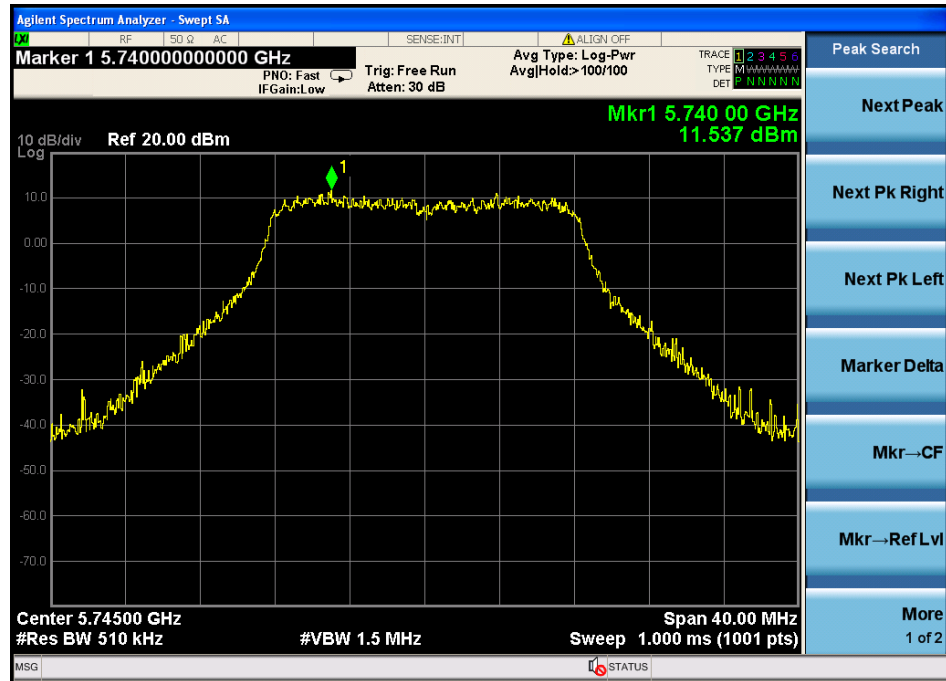
IEEE 802.11n HT40 :
CH Low :



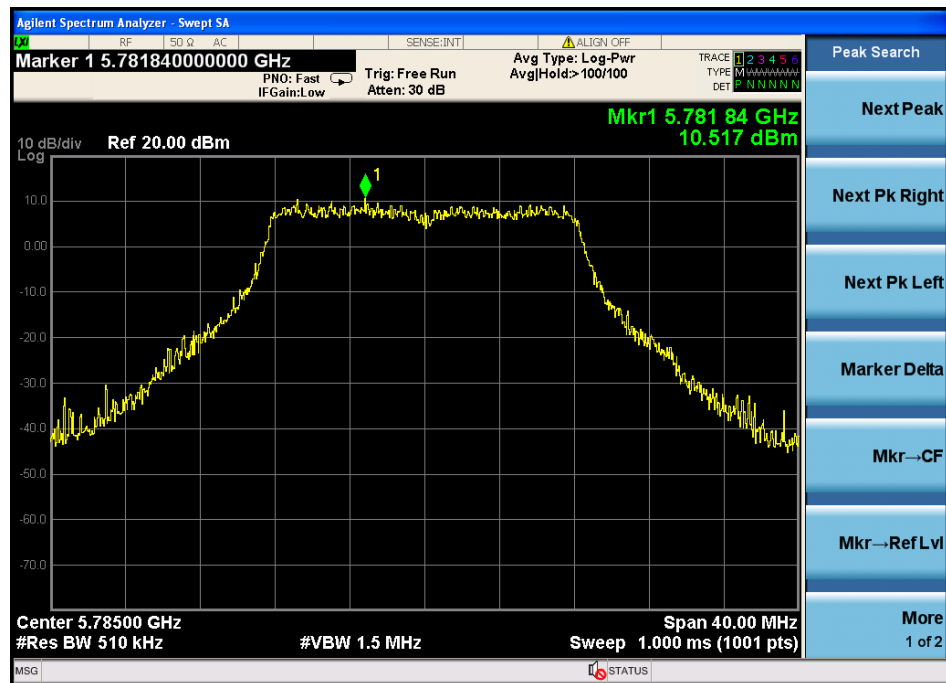
CH High:



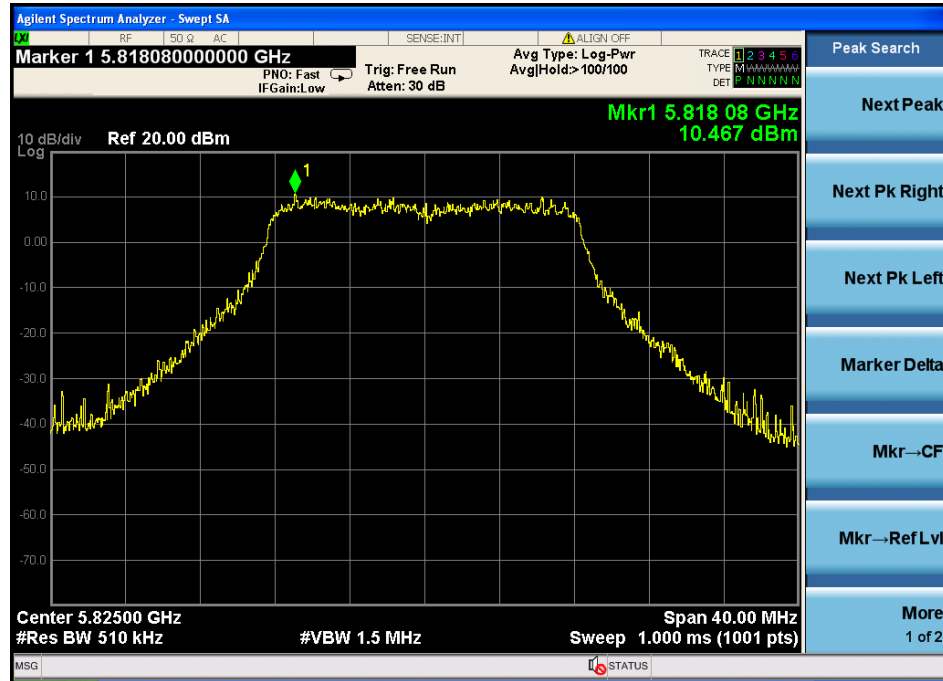
port 0 antenna
IEEE 802.11a with 5.8G:
CH Low :



CH Mid:

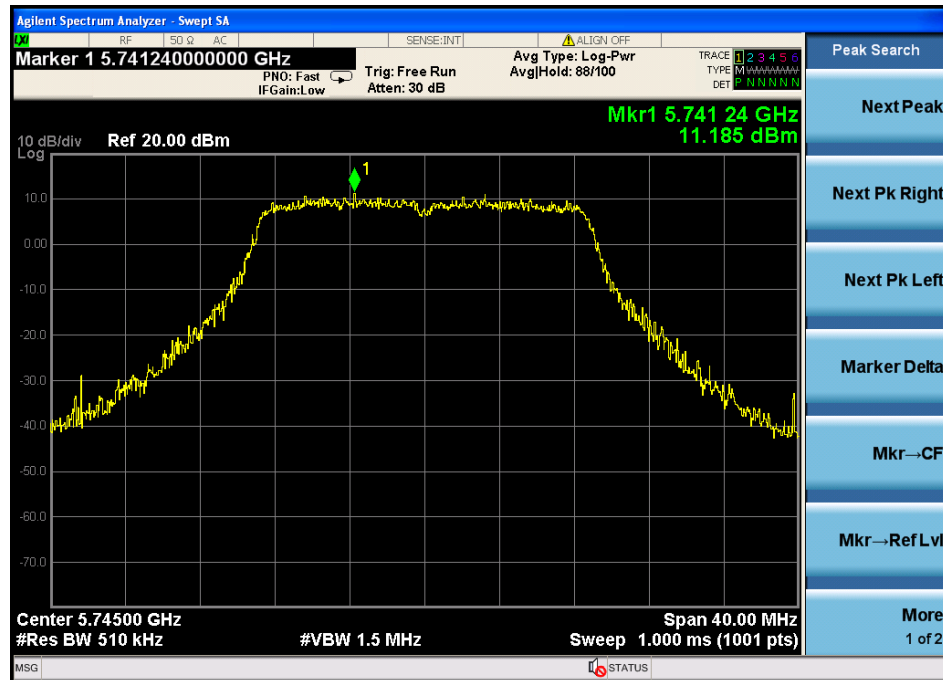


CH High:

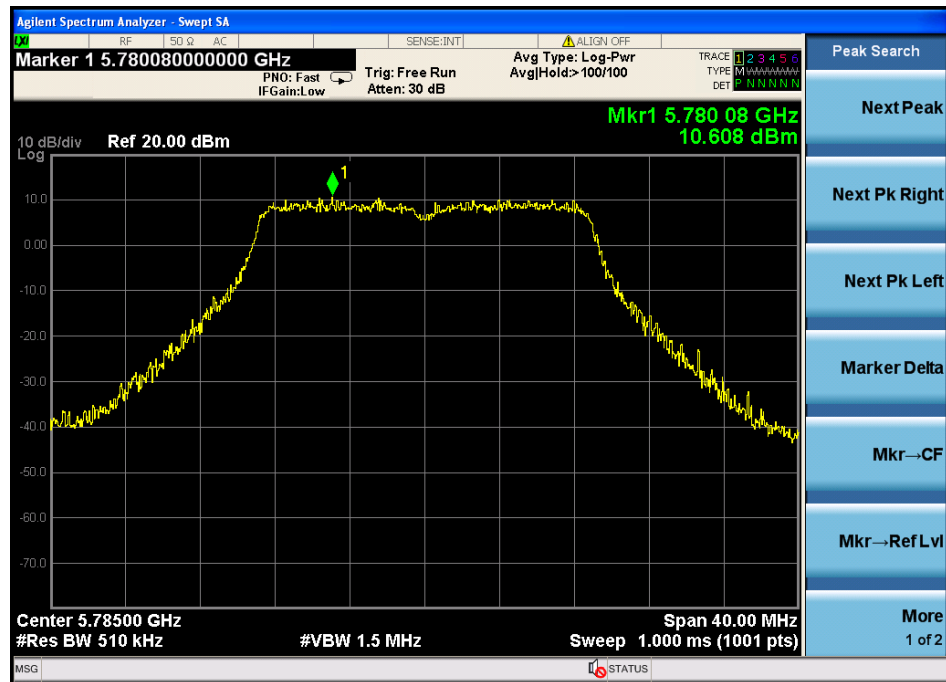


IEEE 802.11n HT20 with 5.8G:

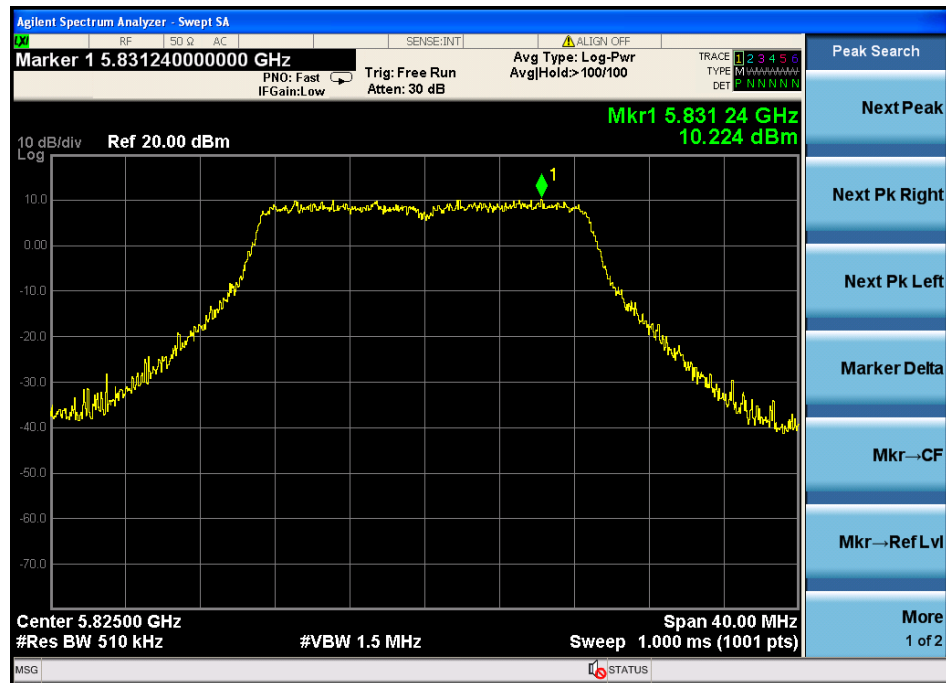
CH Low :



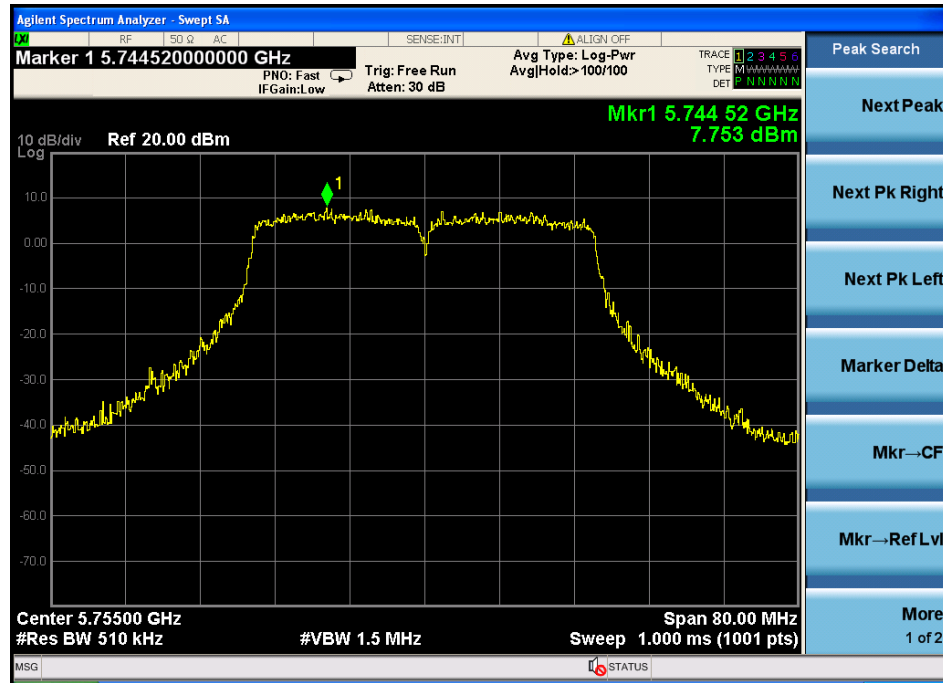
CH Mid:



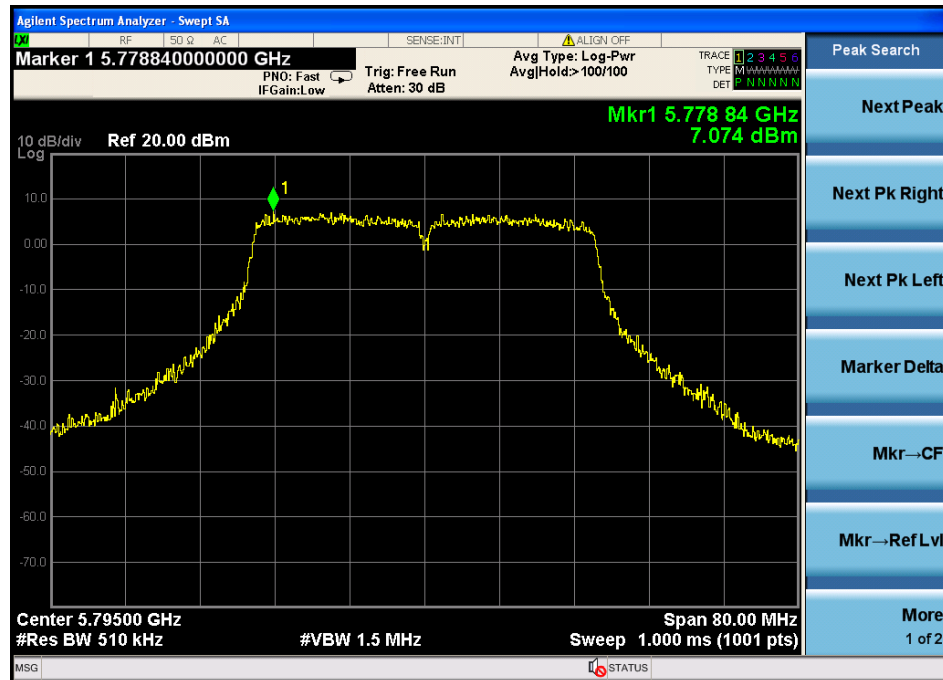
CH High:



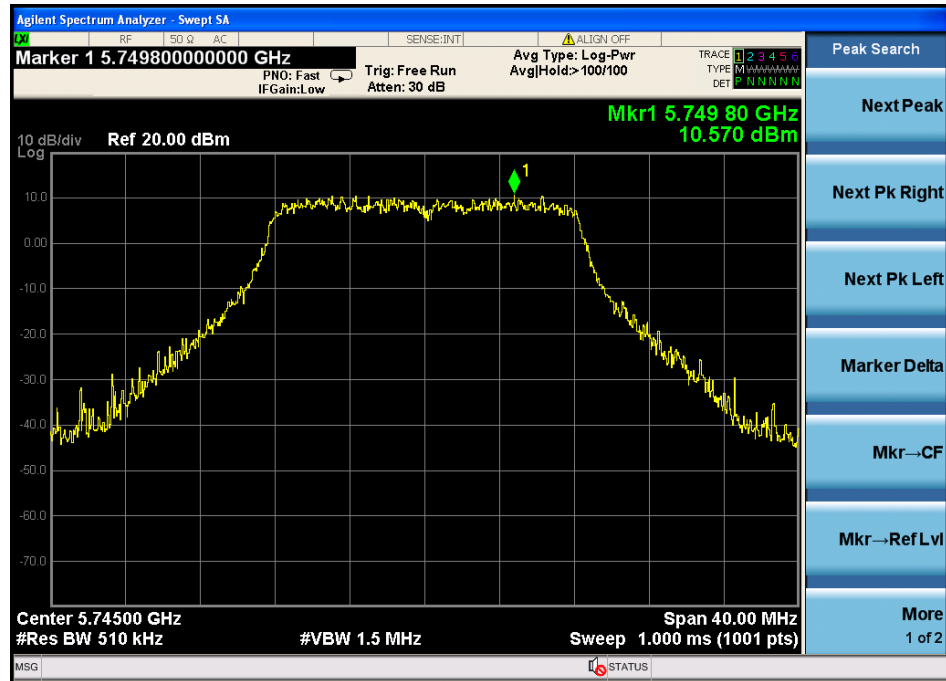
IEEE 802.11n HT40 with 5.8G:
CH Low :



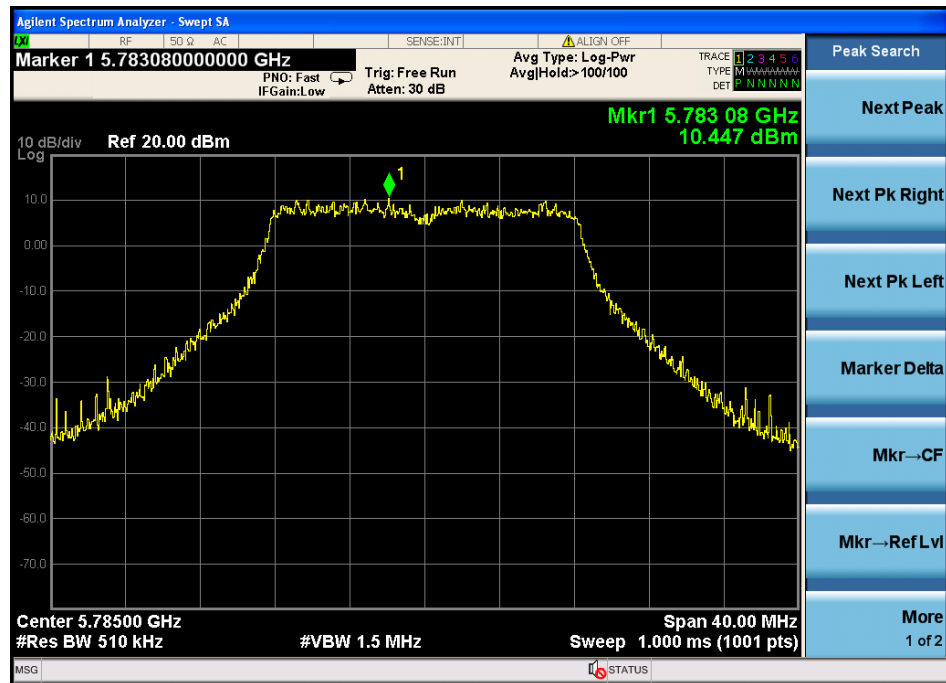
CH High:



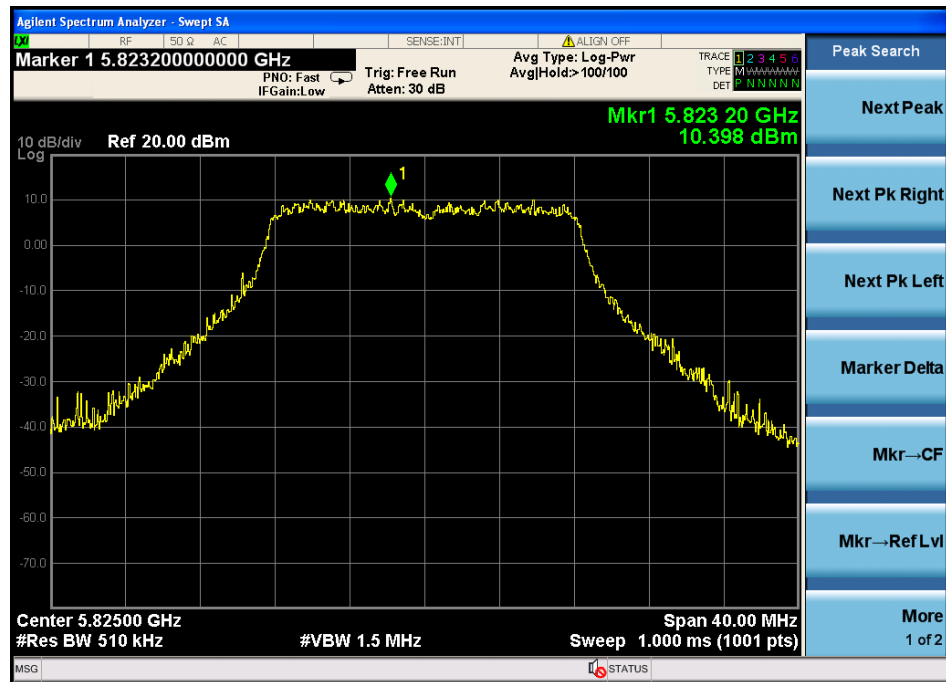
port 1 antenna
IEEE 802.11a with 5.8G:
CH Low :



CH Mid:

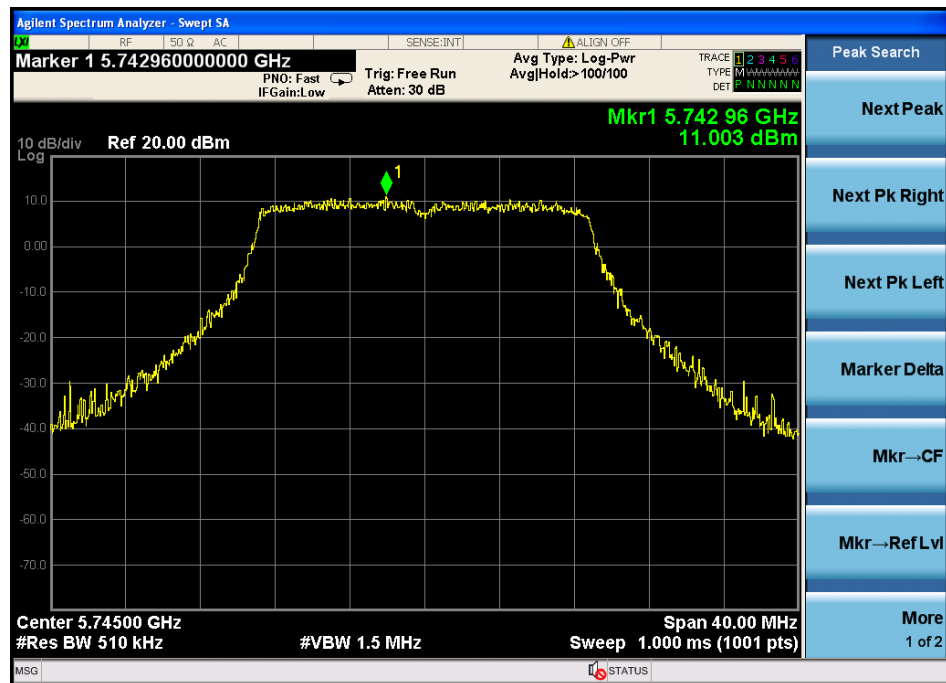


CH High:

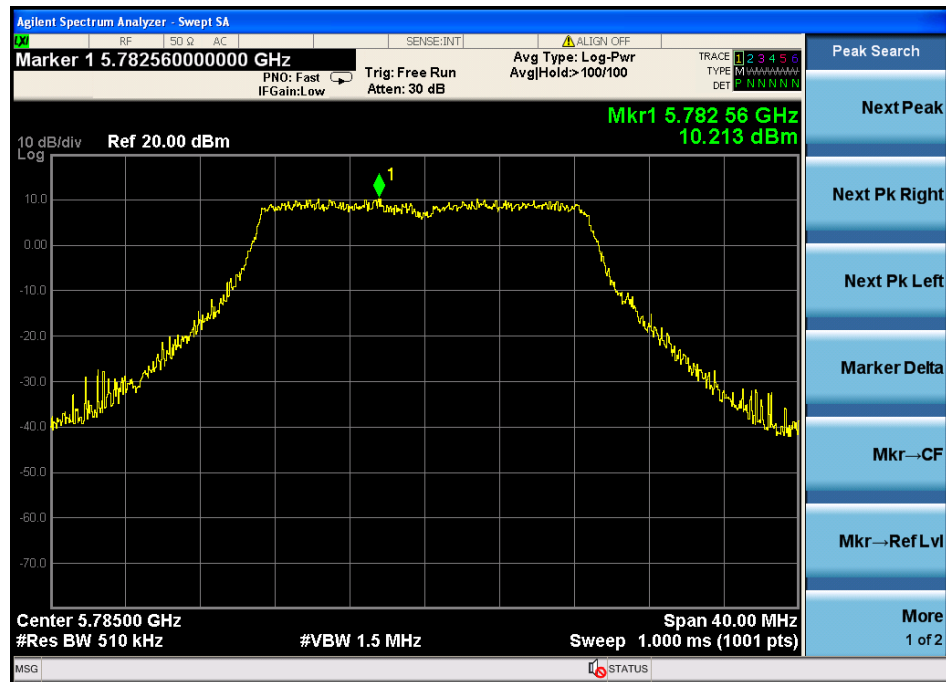


IEEE 802.11n HT20 with 5.8G:

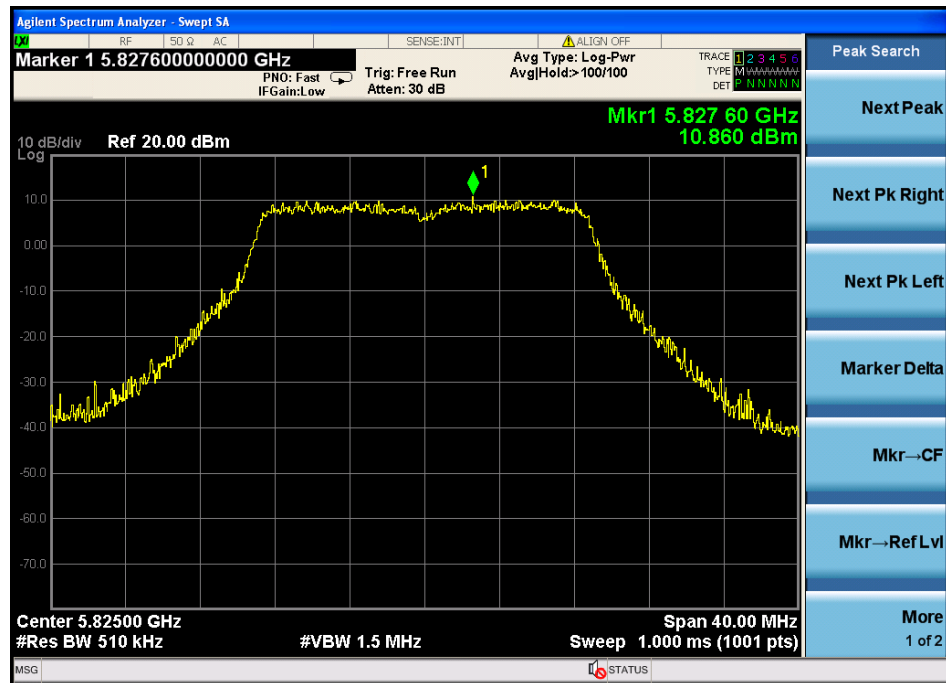
CH Low :



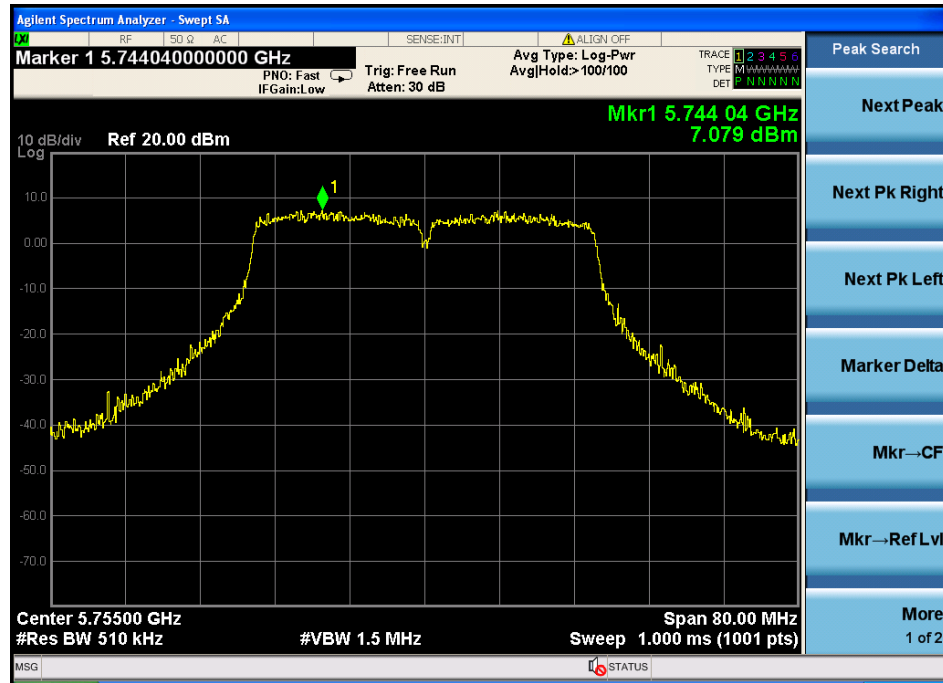
CH Mid:



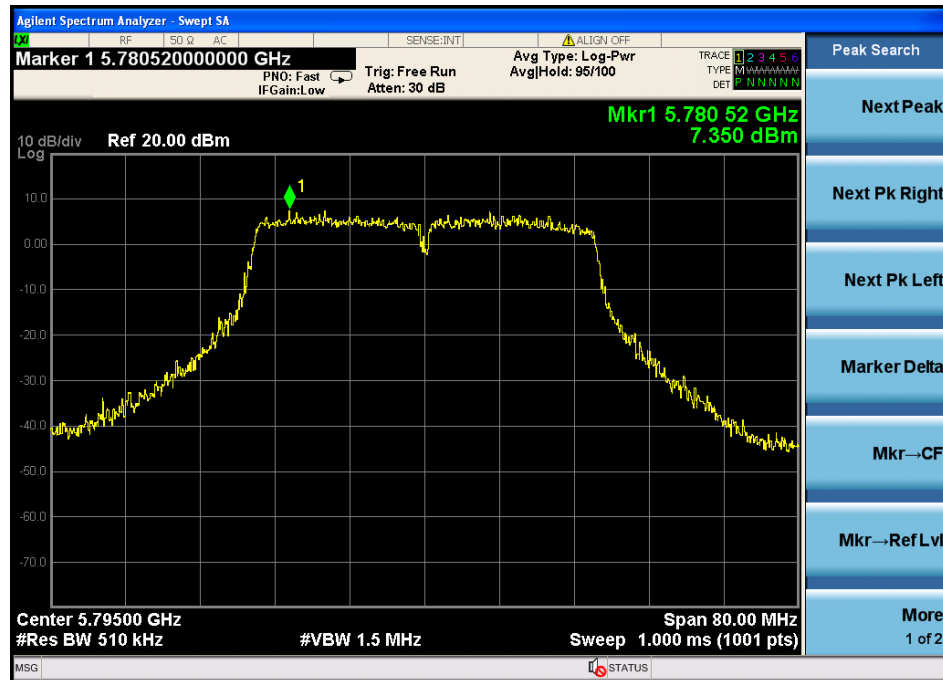
CH High:



IEEE 802.11n HT40 with 5.8G:
CH Low :



CH Hig:



9 Bandwidth

9.1 Test limit

Please refer section 15.407

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

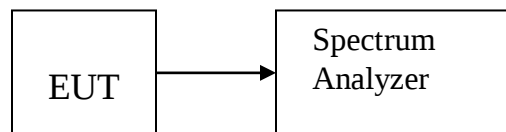
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

9.2 Method of measurement

Details see the KDB558074 D01 Meas Guidance

- a) The bandwidth is measured at an amplitude level reduced 26dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.
- b) The test receiver set RBW = 1-5 % EBW, VBW $\geq$ 3RBW, Sweep time set auto, detail see the test plot. Peak detector is used.

9.3 Test Setup



9.4 Test Results

PASS.

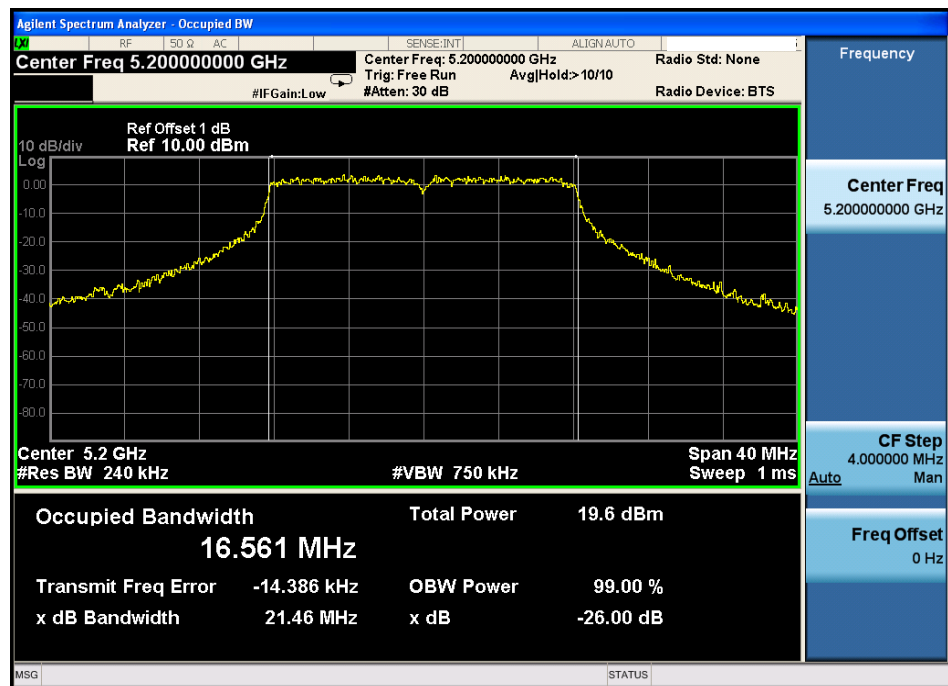
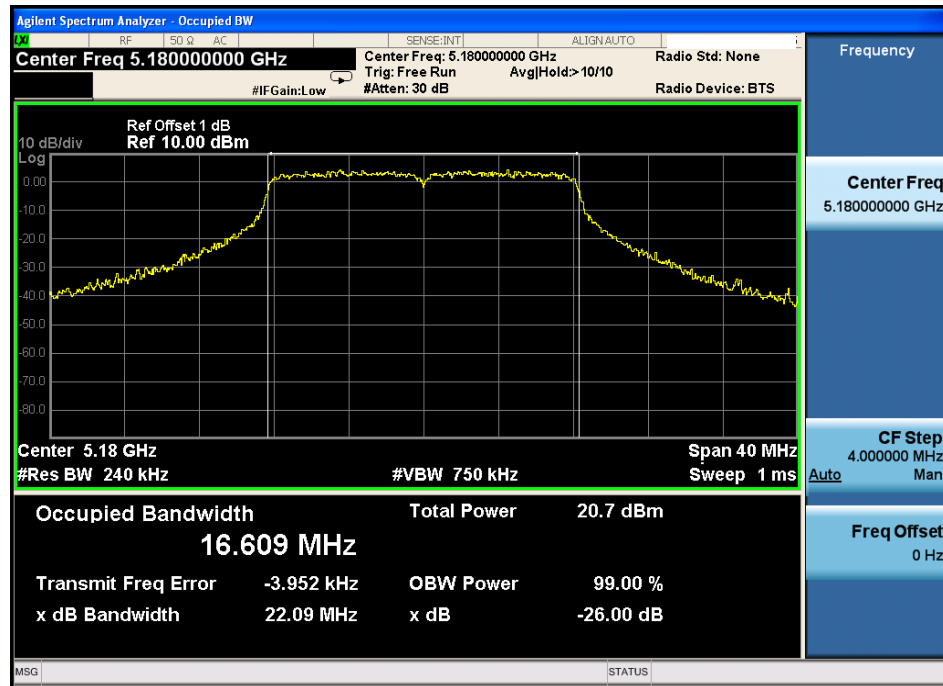
Antenna 0 and Antenna 1 port all have been tested ,
only worse case is reported

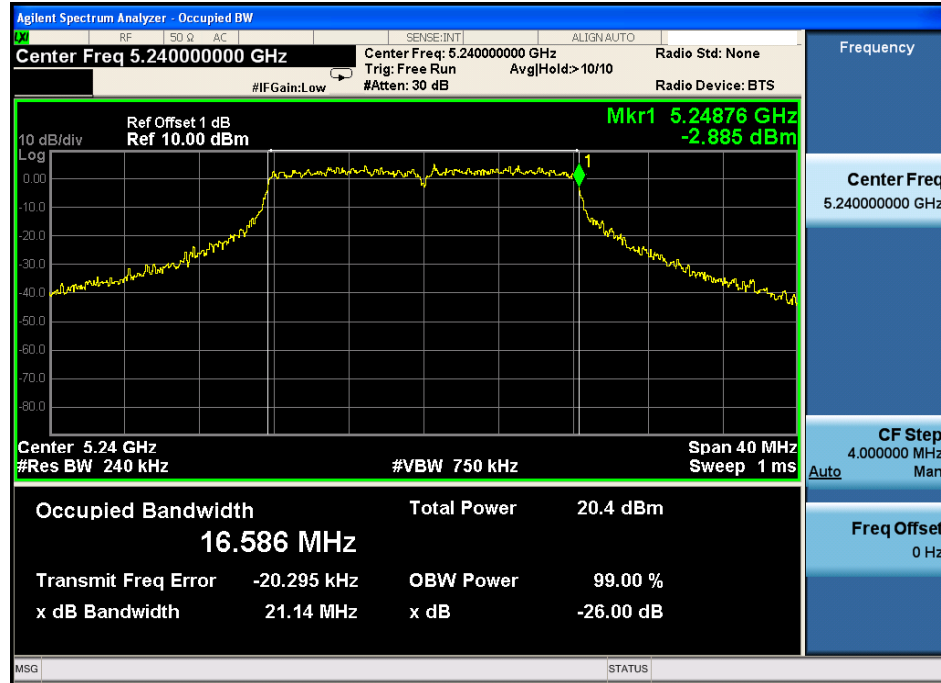
Detailed information please see the following page.

5.2G

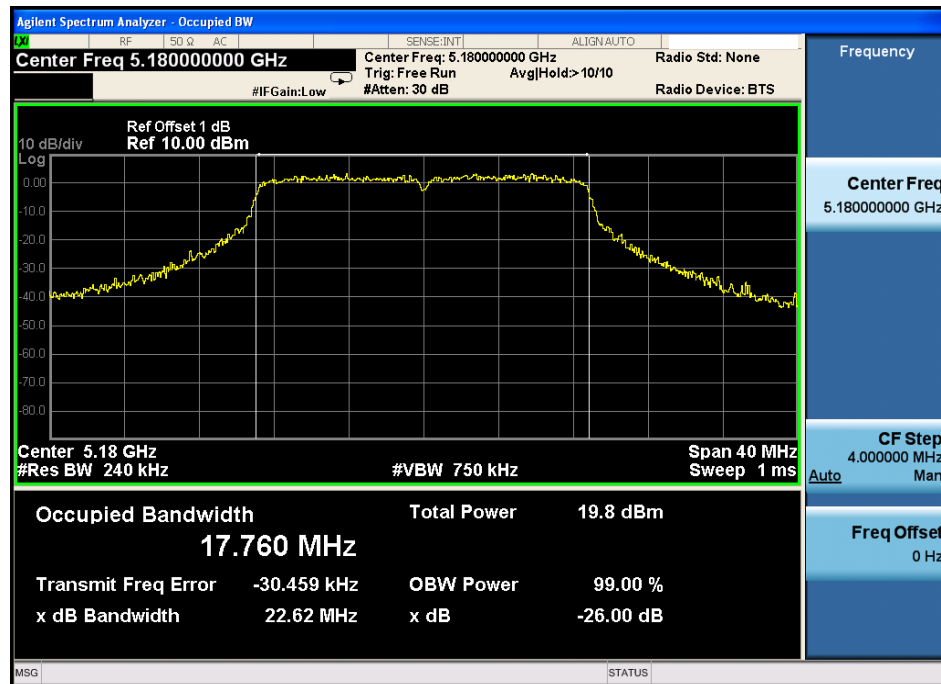
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5180	22.09	16.609	/	PASS
Mid	5200	21.46	15.561	/	PASS
High	5240	21.14	16.586	/	PASS
IEEE 802.11n/HT20:					
Low	5180	22.62	17.76	/	PASS
Mid	5200	23.19	17.748	/	PASS
High	5240	23.15	17.745	/	PASS
IEEE 802.11n/HT40:					
Low	5190	46.23	36.43	/	PASS
High	5230	44.93	36.455	/	PASS

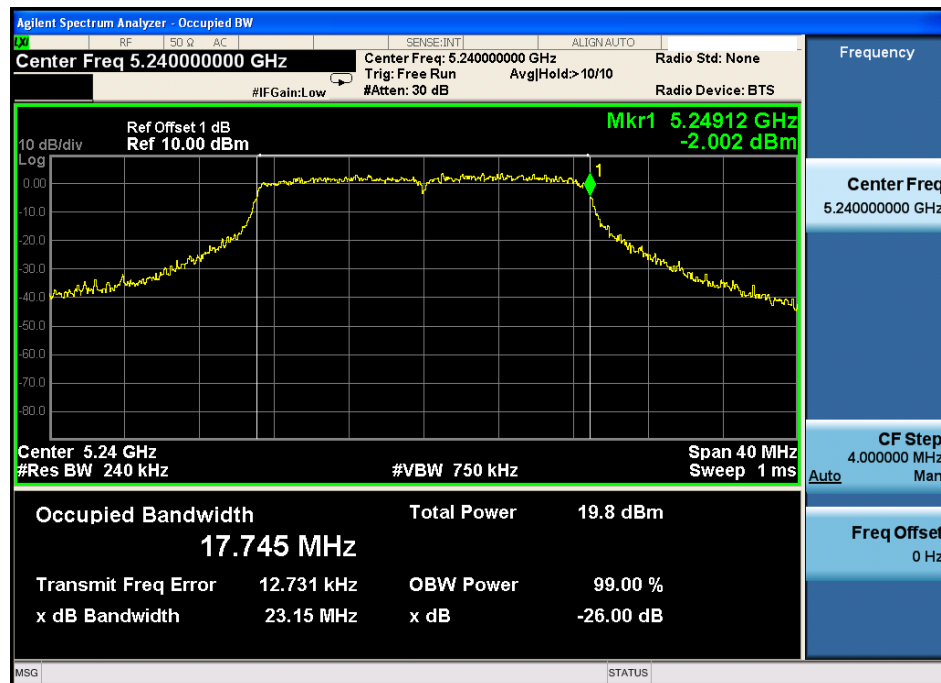
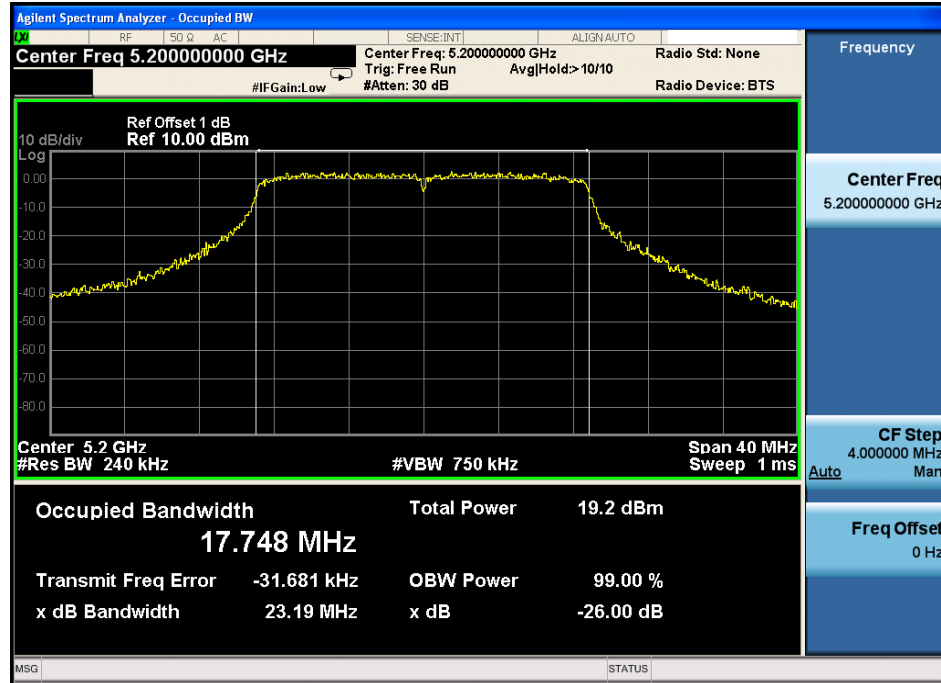
IEEE 802.11a



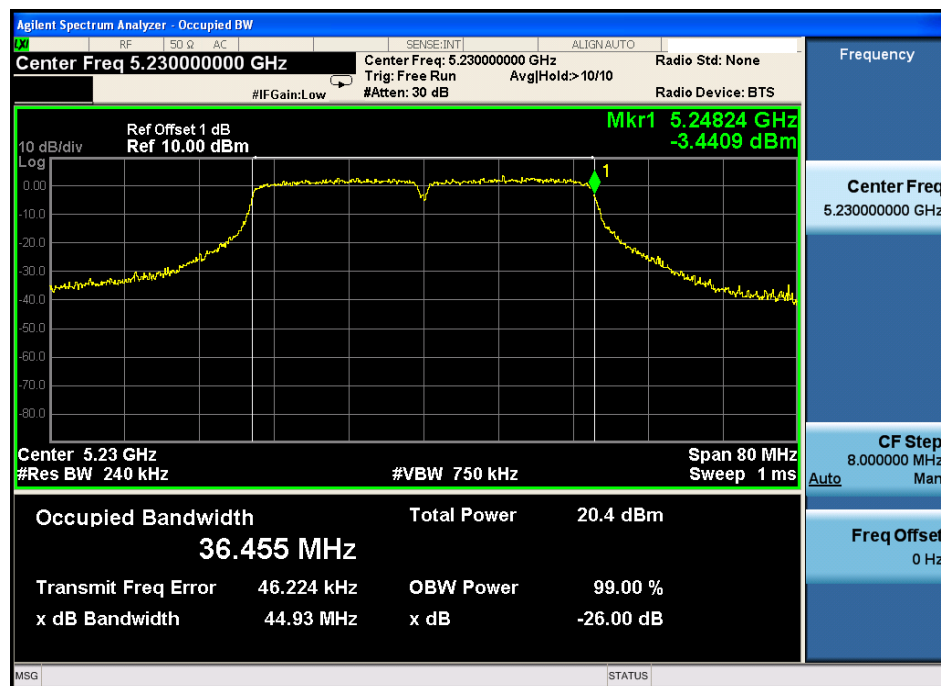
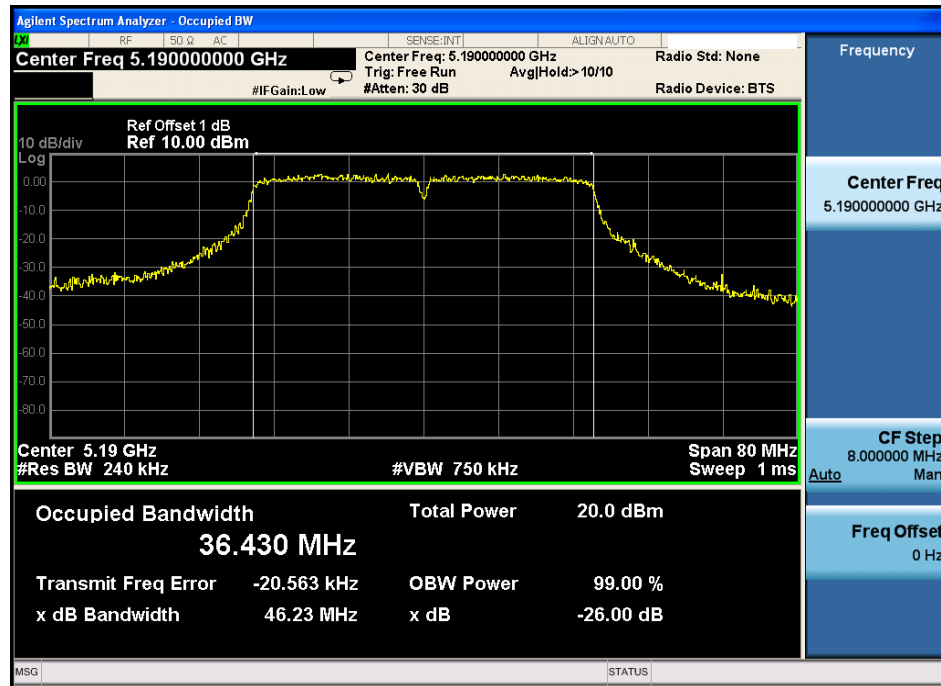


IEEE 802.11n HT20:



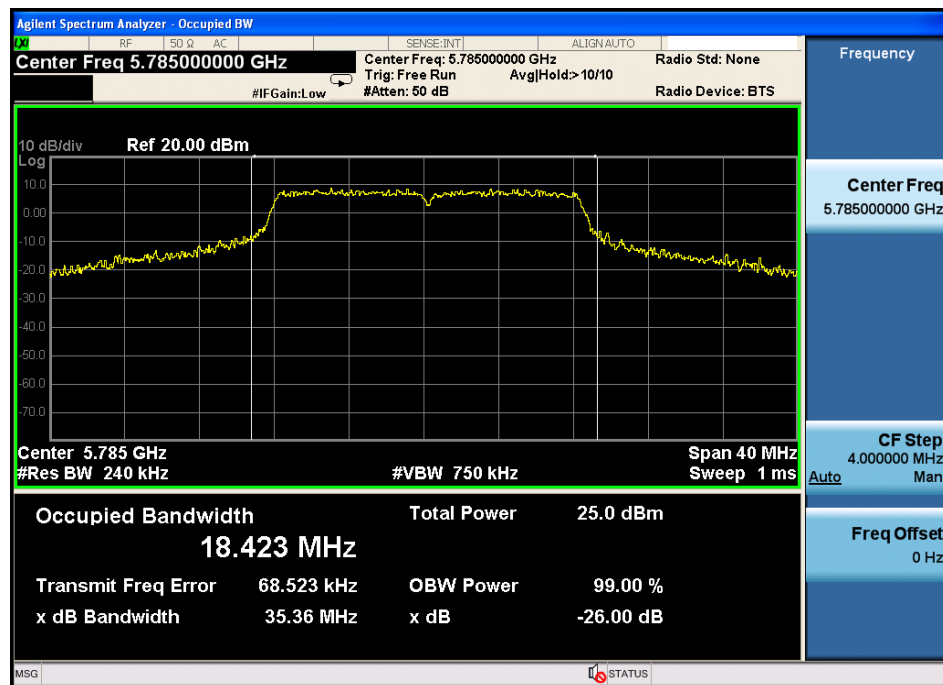
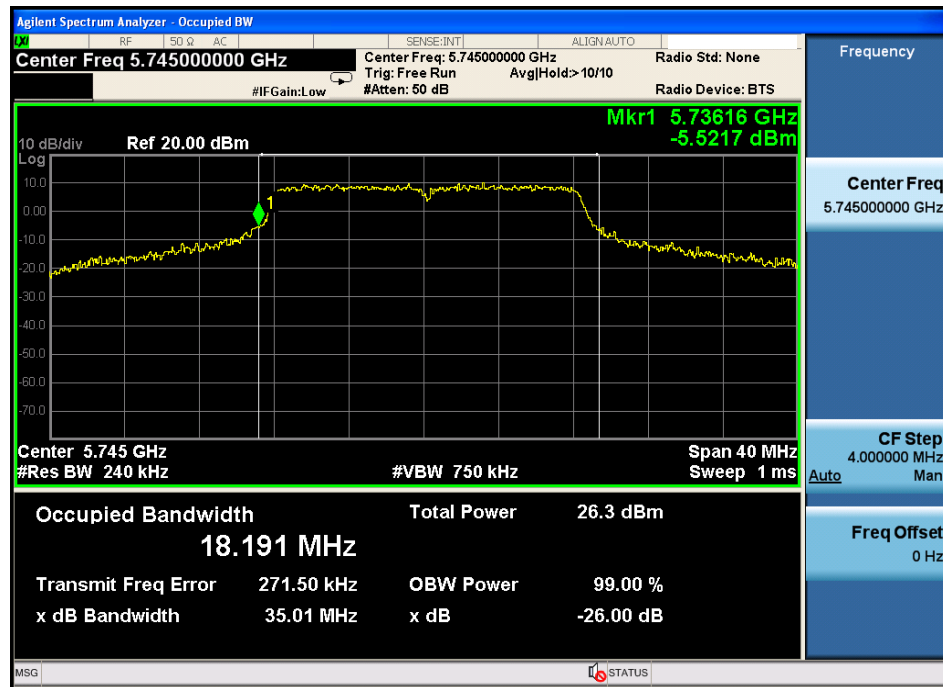


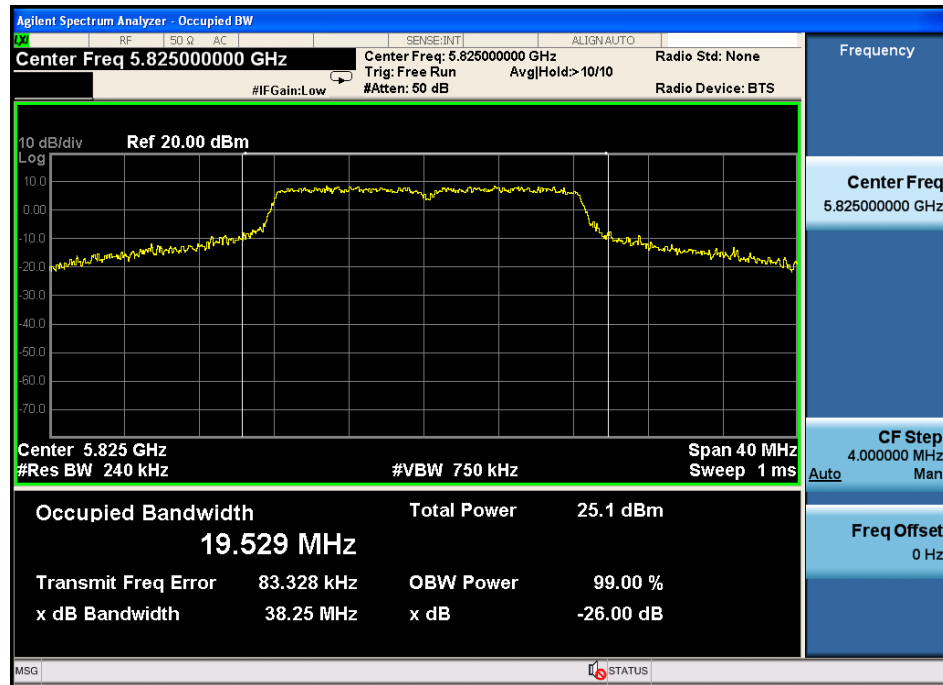
IEEE 802.11n HT40:



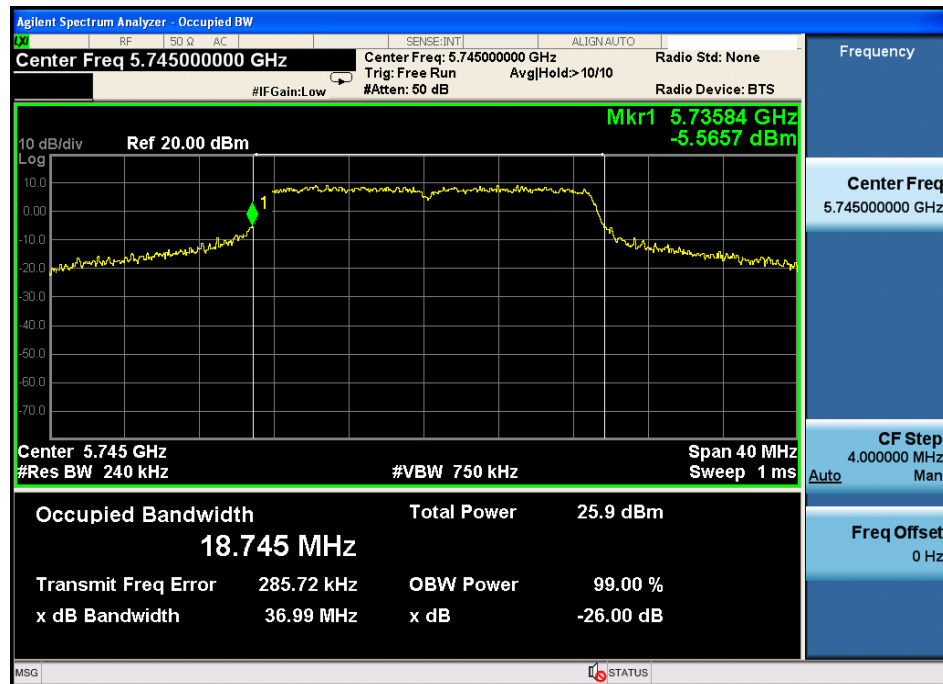
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5745	35.01	18.191	/	PASS
Mid	5785	35.36	18.423	/	PASS
High	5825	38.25	19.529	/	PASS
IEEE 802.11n/HT20:					
Low	5745	36.99	18.745	/	PASS
Mid	5785	39.45	19.365	/	PASS
High	5825	39.51	20.450	/	PASS
IEEE 802.11n/HT40:					
Low	5755	76.91	37.090	/	PASS
High	5795	79.89	40.101	/	PASS

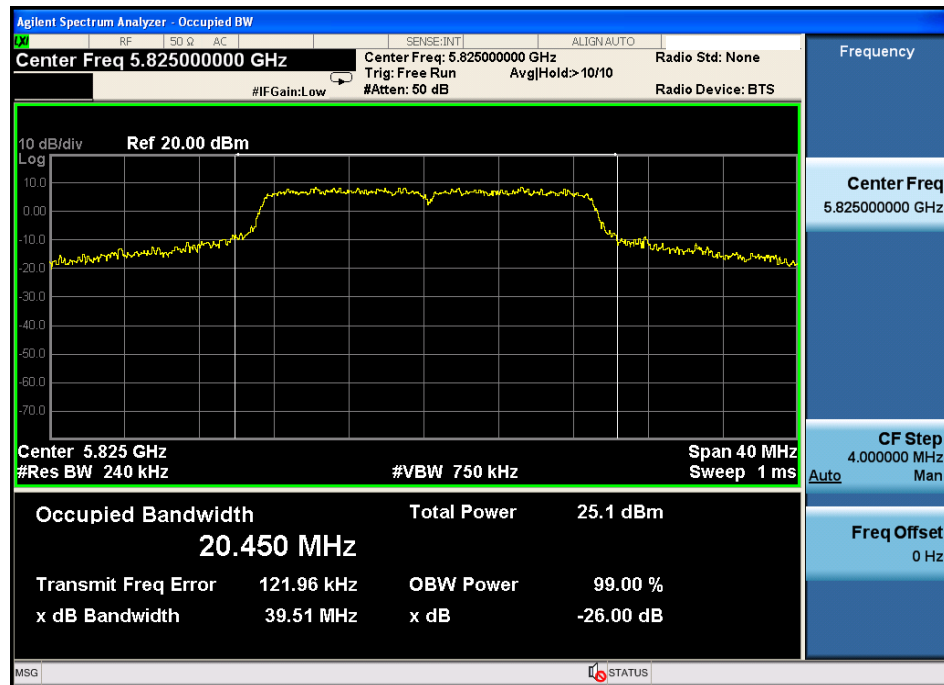
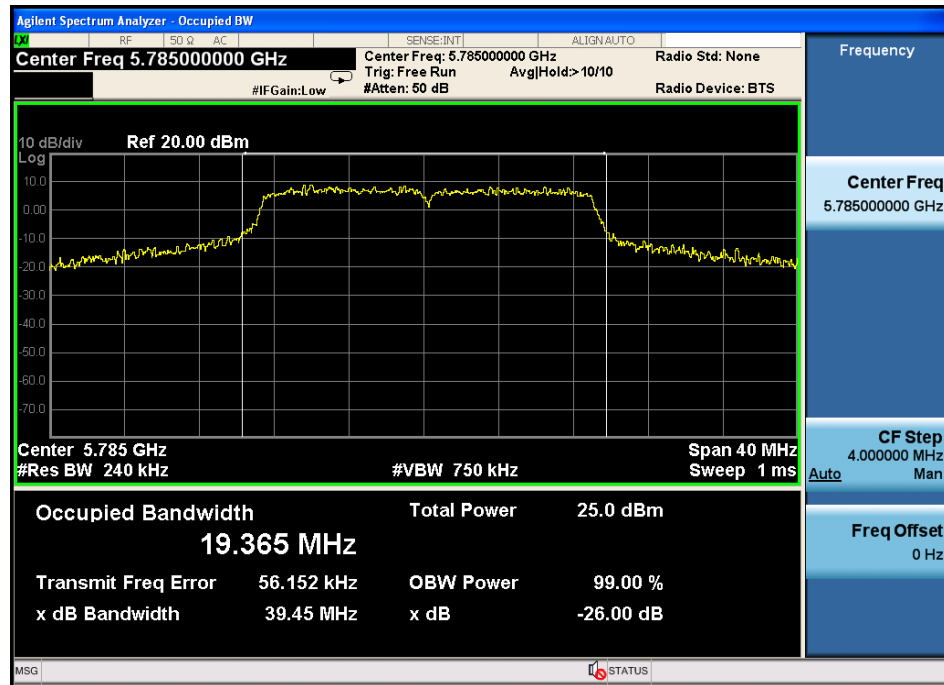
IEEE 802.11a



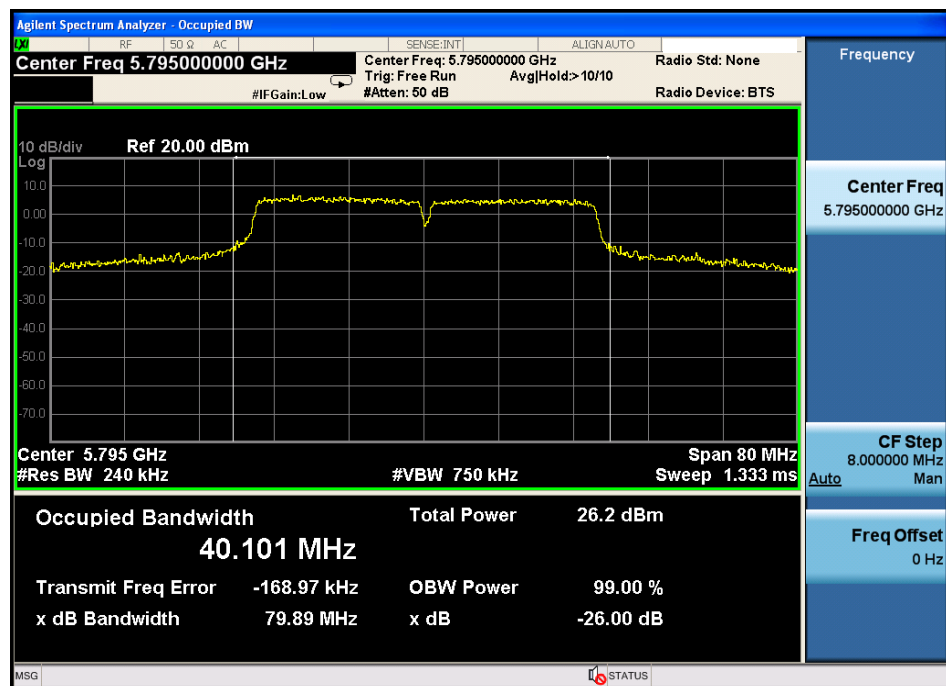
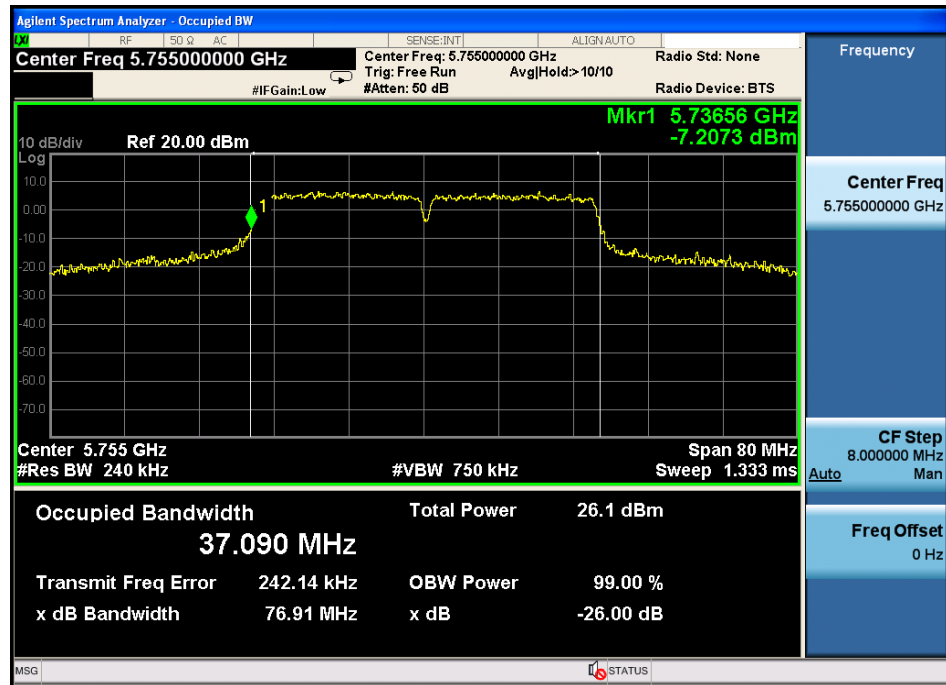


IEEE 802.11n HT20:





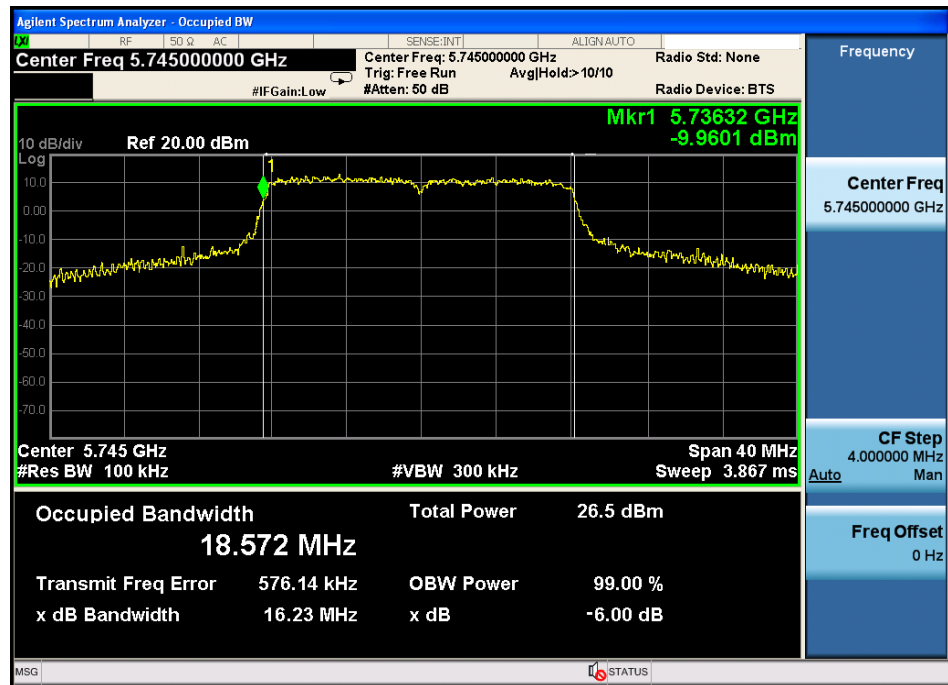
IEEE 802.11n HT40:



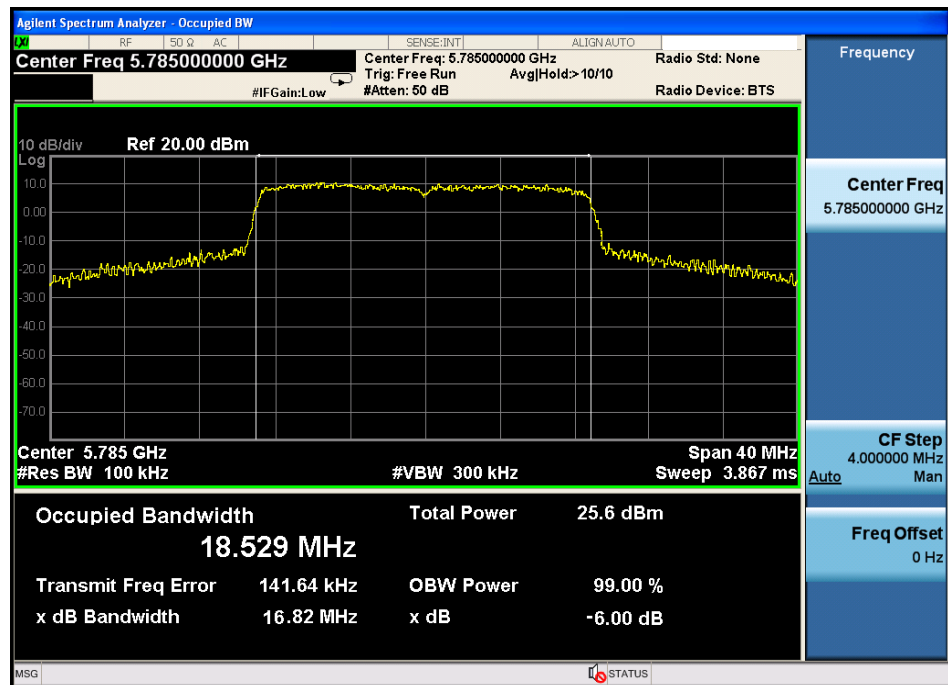
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5745	16.23	18.572	0.5	PASS
Mid	5785	16.82	18.529	0.5	PASS
High	5825	16.16	19.699	0.5	PASS
IEEE 802.11n/HT20:					
Low	5745	16.69	17.972	0.5	PASS
Mid	5785	16.03	17.897	0.5	PASS
High	5825	17.01	17.860	0.5	PASS
IEEE 802.11n/HT40:					
Low	5755	35.45	36.338	0.5	PASS
High	5795	36.47	36.423	0.5	PASS

IEEE 802.11a with 5.8G:

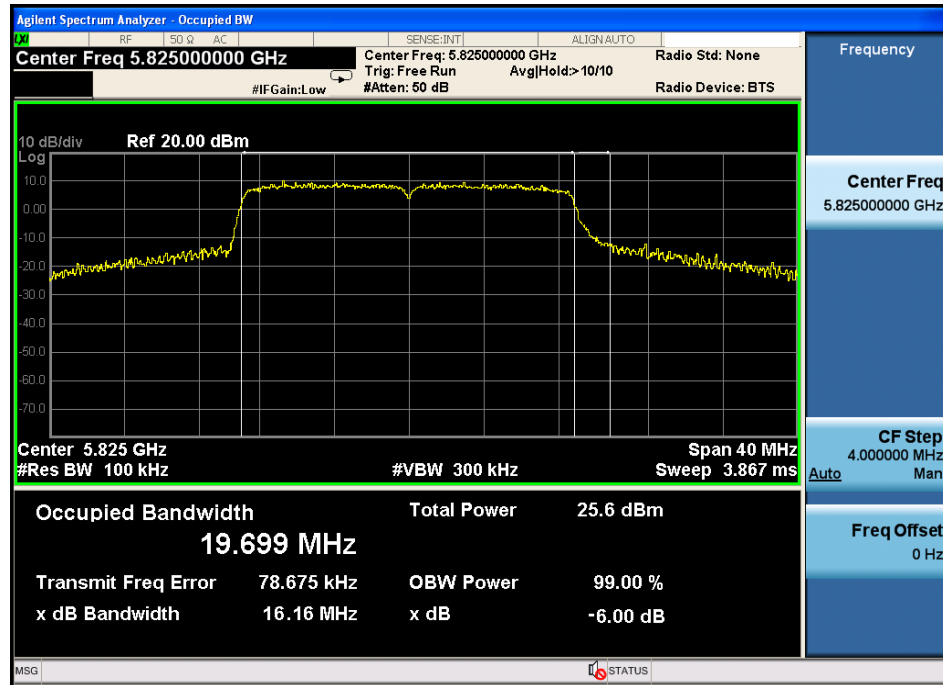
CH Low :



CH Mid :

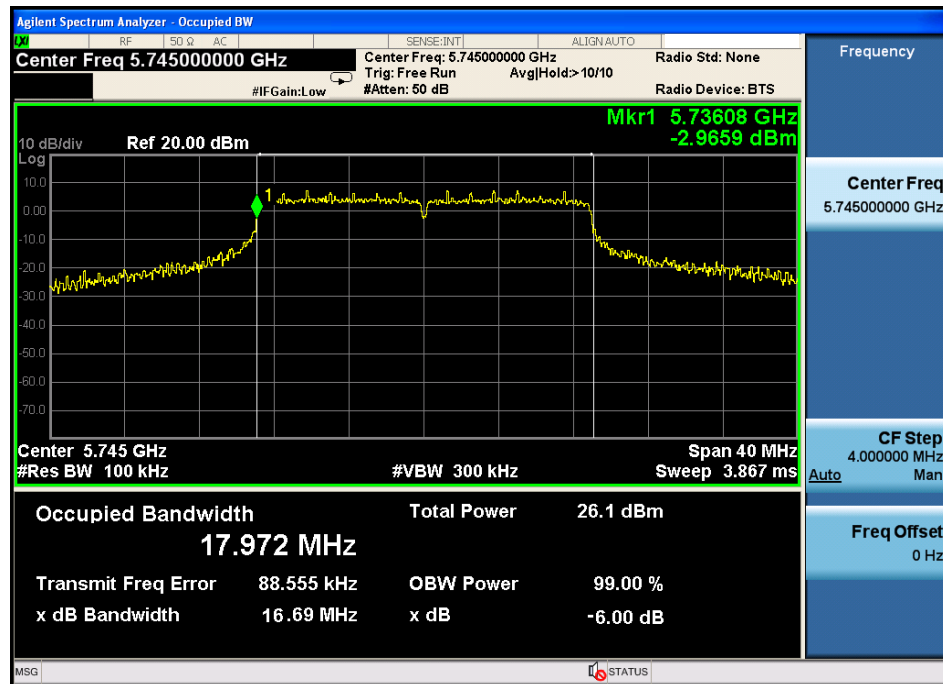


CH High :

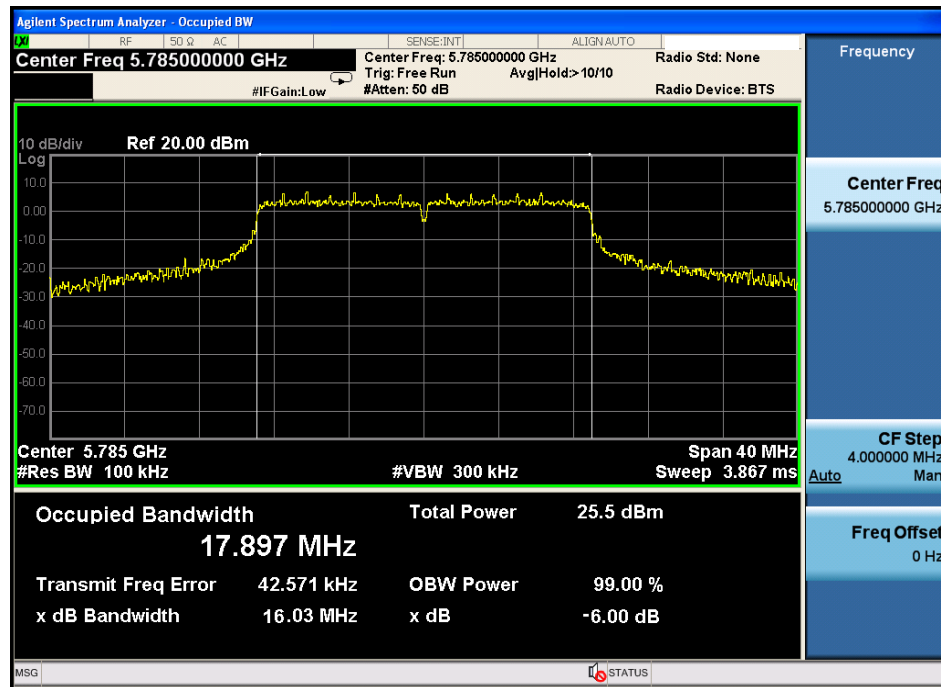


IEEE 802.11n HT20:

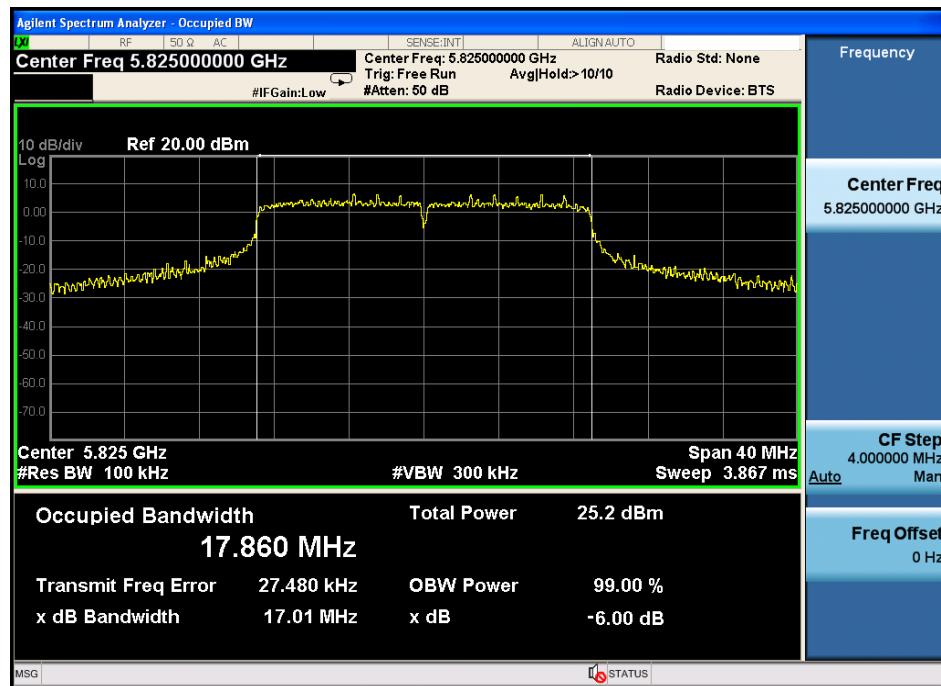
CH Low :



CH Mid :

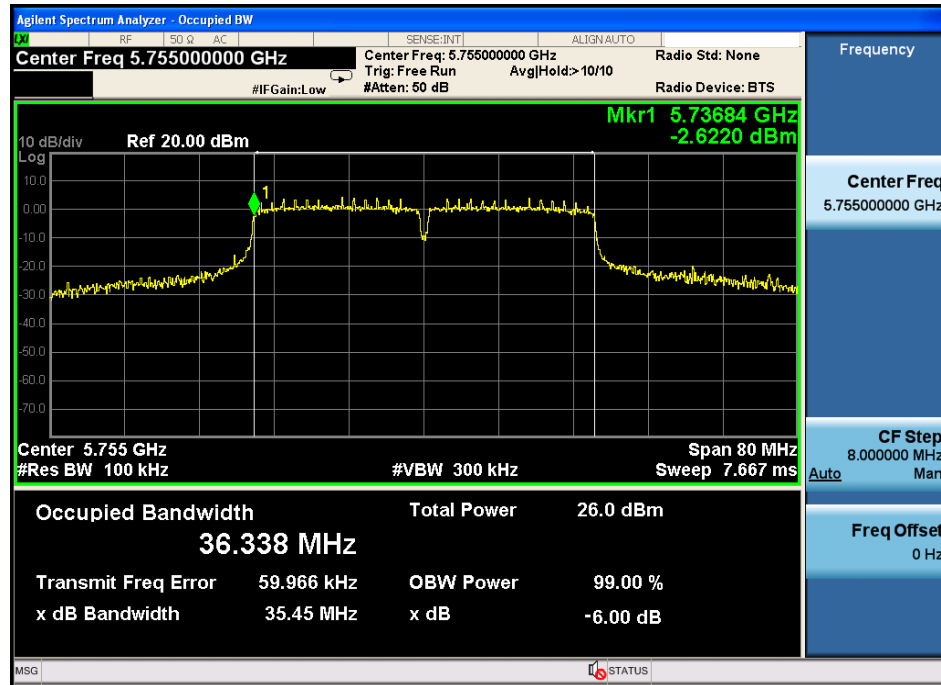


CH High :

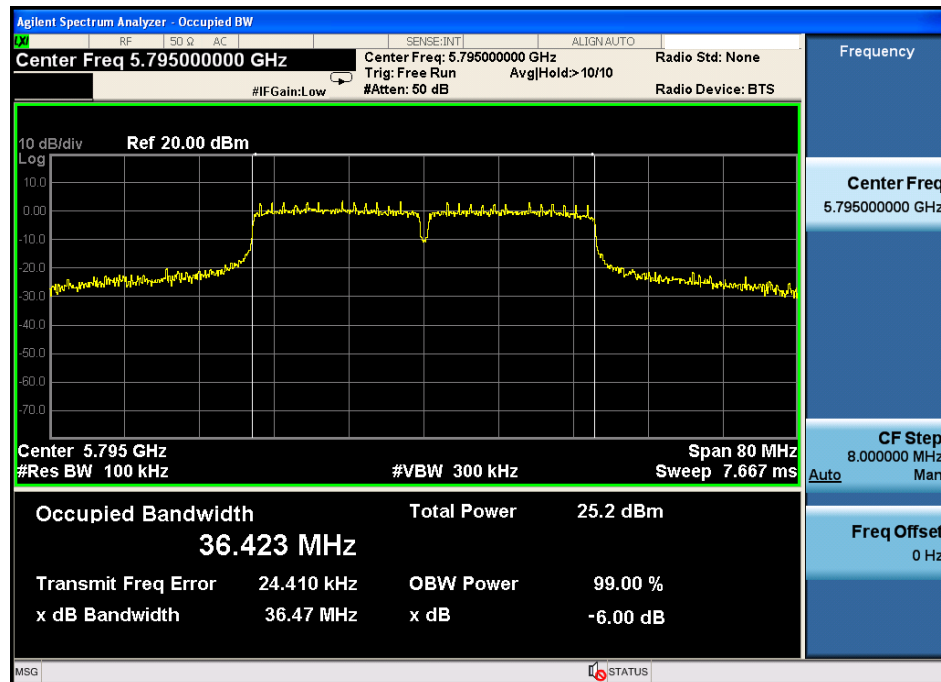


IEEE 802.11n/HT40:

CH Low :



CH High :



10 Undesirable emission

10.1 Test limit

Except as shown in paragraph (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section.
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits

10.2 Test Procedure

12.2.1 Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission

12.2.2 Check the spurious emissions out of band.

12.2.3 RBW 1MHz ,VBW 3MHz ,peak detector for peak value , RBW 1MHz ,VBW 3MHz , RMS detector for AV value.

10.3 Test Setup

Same as 5.2.2.

10.4 Test Result

All antennas have been tested, only worse case (27dBi dish antenna with two antennas, directional gain 30dBi) is report
PASS.

Detailed information please see the following page.

5.2G Band

Radiated Method:

IEEE 802.11a CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17 Test site: 3m Chamber Tested by: Simple Guan								
Test mode: MIMO TX Low								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150	45.44	31.65	5.92	33.9	49.11	68.2	19.09	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5150	43.19	31.65	5.92	33.9	46.86	68.2	21.34	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP [dBm] =E [dBuV/m] -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11a CH High

Band Edge Test result

EUT: Broadband Digital Transmission System

M/N: FWBD-2900

Power: DC 48V From adapter

Test date: 2016-03-17 Test site: 3m Chamber Tested by: Simple Guan

Test mode: MIMO TX High

Antenna polarity: Vertical

Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5350	46.25	31.73	6.05	33.73	50.3	68.2	17.9	PK
--	--	--	--	--	--	--	--	--

Antenna Polarity: Horizontal

5350	44.52	31.73	6.05	33.73	48.57	68.2	19.63	PK
--	--	--	--	--	--	--	--	--

Note:

1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK

2, Result = Read level + Antenna factor + cable loss-Amp factor

3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Note: According to KDB 789033, EIRP [dBm] =E [dBuV/m] -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT20 CH Low

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17		Test site: 3m Chamber		Tested by: Simple Guan				
Test mode: MIMO TX Low								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150	45.38	31.65	5.92	33.9	49.05	68.2	19.15	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5150	43.93	31.65	5.92	33.9	47.6	68.2	20.6	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT20 CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17		Test site: 3m Chamber		Tested by:		Simple Guan		
Test mode: MIMO TX High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5350	45.98	31.73	6.05	33.73	50.03	68.2	18.17	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5350	43.72	31.73	6.05	33.73	47.77	68.2	20.43	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT40 CH Low

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17		Test site: 3m Chamber		Tested by: Simple Guan				
Test mode: MIMO TX Low								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150	45.28	31.65	5.92	33.9	48.95	68.2	19.25	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5150	43.28	31.65	5.92	33.9	46.95	68.2	21.25	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT40 CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17		Test site: 3m Chamber		Tested by:		Simple Guan		
Test mode: MIMO TX High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5350	44.99	31.73	6.05	33.73	49.04	68.2	19.16	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5350	42.27	31.73	6.05	33.73	46.32	68.2	21.88	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

5.8G Band

Radiated Method:

IEEE 802.11a CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17 Test site: 3m Chamber Tested by: Simple Guan								
Test mode: MIMO TX Low								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5460	41.57	31.81	6.11	33.68	45.81	68.2	22.39	PK
5725	43.84	32.17	6.26	33.58	48.69	68.2	19.51	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5460	41.39	31.81	6.11	33.68	45.63	68.2	22.57	PK
5725	44.82	32.17	6.26	33.58	49.67	68.2	18.53	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11a CH High

Band Edge Test result

EUT: Broadband Digital Transmission System

M/N: FWBD-2900

Power: DC 48V From adapter

Test date: 2016-03-17 Test site: 3m Chamber Tested by: Simple Guan

Test mode: MIMO TX High

Antenna polarity: Vertical

Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5850	43.28	32.5	6.33	33.64	48.47	68.2	19.73	PK
--	--	--	--	--	--	--	--	--

Antenna Polarity: Horizontal

5850	42.89	32.5	6.33	33.64	48.08	68.2	20.12	PK
--	--	--	--	--	--	--	--	--

Note:

1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK

2, Result = Read level + Antenna factor + cable loss-Amp factor

3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Note: According to KDB 789033, EIRP 【dBm】=E 【dBuV/m】-95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT20 CH Low

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17 Test site: 3m Chamber Tested by: Simple Guan								
Test mode: MIMO TX Low								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5460	41.57	31.81	6.11	33.68	45.81	68.2	22.39	PK
5725	44.28	32.17	6.26	33.58	49.13	68.2	19.07	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5460	41.57	31.81	6.11	33.68	45.81	68.2	22.39	PK
5725	44.06	32.17	6.26	33.58	48.91	68.2	19.29	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT20 CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17		Test site: 3m Chamber		Tested by: Simple Guan				
Test mode: MIMO TX High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5850	43.25	32.5	6.33	33.64	48.44	68.2	19.76	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5850	42.84	32.5	6.33	33.64	48.03	68.2	20.17	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT40 CH Low

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17 Test site: 3m Chamber Tested by: Simple Guan								
Test mode: MIMO TX Low								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5460	42.06	31.81	6.11	33.68	46.3	68.2	21.9	PK
5725	43.99	32.17	6.26	33.58	48.84	68.2	19.36	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5460	41.24	31.81	6.11	33.68	45.48	68.2	22.72	PK
5725	43.87	32.17	6.26	33.58	48.72	68.2	19.48	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT40 CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: FWBD-2900			
Power: DC 48V From adapter								
Test date: 2016-03-17		Test site: 3m Chamber		Tested by:		Simple Guan		
Test mode: MIMO TX High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5850	43.02	32.5	6.33	33.64	48.21	68.2	19.99	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5850	42.77	32.5	6.33	33.64	47.96	68.2	20.24	PK
--	--	--	--	--	--	--	--	--
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Result = Read level + Antenna factor + cable loss-Amp factor								
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Note: According to KDB 789033, EIRP 【dBm】 =E 【dBuV/m】 -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

11 Frequency stability

11.1 Test 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.

11.2 Result

802.11a Mode:

EUT: Broadband Digital Transmission System M/N: FWBD-2900					
Power: DC 48V From adapter					
Ambient Temperature:23℃			Relative Humidity: 60%		
Test date: 2016-03-17			Test site: RF site		Tested by: Simple Guan
Conclusion: PASS					
Mode	Voltage (V)	FH _L (5180MHz)	Deviation (KHz)	FH _H (5240MHz)	Deviation (KHz)
5.2G Band	132 V	5179.975	25	5239.974	26
	120 V	5179.975	25	5239.974	26
	108 V	5179.975	25	5239.974	26
5.8G Band	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
	132 V	5744.935	65	5824.931	69
	120 V	5744.937	63	5824.945	55
	108 V	5744.940	60	5824.937	63

Mode	Temperature (°C)	FH _L (5180MHz)	Deviation (KHz)	FH _H (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.932	68	5239.942	58
	-20	5179.957	43	5239.951	49
	-10	5179.941	59	5239.947	53
	0	5179.949	51	5239.962	38
	10	5179.968	32	5239.921	79
	20	5179.932	68	5239.947	53
	30	5179.954	46	5239.951	49
	40	5179.959	41	5239.959	41
	50	5179.957	43	5239.968	32
5.8G Band	Temperature (°C)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
	-30	5744.928	72	5824.935	65
	-20	5744.939	61	5824.924	76
	-10	5744.954	46	5824.957	43
	0	5744.957	43	5824.929	71
	10	5744.949	51	5824.949	51
	20	5744.935	65	5824.953	47
	30	5744.937	63	5824.968	32
	40	5744.942	58	5824.954	46
	50	5744.956	44	5824.972	28

802.11n20 Mode:

EUT: Broadband Digital Transmission System M/N: FWBD-2900					
Power: DC 48V From adapter					
Ambient Temperature:23℃			Relative Humidity: 60%		
Test date: 2016-03-17			Test site: RF site		Tested by: Simple Guan
Conclusion: PASS					
Mode	Voltage (V)	FH _L (5180MHz)	Deviation (KHz)	FH _H (5240MHz)	Deviation (KHz)
5.2G Band	132 V	5179.975	25	5239.975	25
	120 V	5179.974	24	5239.974	26
	108 V	5179.974	24	5239.977	23
5.8G Band	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
	132 V	5744.935	65	5824.931	69
	120 V	5744.939	61	5824.948	52
	108 V	5744.941	59	5824.952	48

Mode	Temperature (℃)	FH _L (5180MHz)	Deviation (KHz)	FH _H (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.931	69	5239.945	55
	-20	5179.952	48	5239.955	45
	-10	5179.945	55	5239.941	59
	0	5179.947	53	5239.965	35
	10	5179.961	39	5239.927	73
	20	5179.935	65	5239.945	55
	30	5179.955	45	5239.953	47
	40	5179.952	48	5239.952	48
	50	5179.956	44	5239.963	37
5.8G Band	Temperature (℃)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
	-30	5744.921	79	5824.931	69
	-20	5744.935	65	5824.925	75
	-10	5744.956	44	5824.957	43
	0	5744.968	32	5824.935	65
	10	5744.945	55	5824.953	47
	20	5744.939	61	5824.952	48
	30	5744.931	69	5824.961	39
	40	5744.944	56	5824.958	42
	50	5744.957	43	5824.978	22

802.11n40 Mode:

EUT: Broadband Digital Transmission System M/N: FWBD-2900					
Power: DC 48V From adapter					
Ambient Temperature:23℃			Relative Humidity: 60%		
Test date: 2016-03-17			Test site: RF site		Tested by: Simple Guan
Conclusion: PASS					
Mode	Voltage (V)	FH _L (5190MHz)	Deviation (KHz)	FH _H (5230MHz)	Deviation (KHz)
5.2G Band	132 V	5189.965	35	5229.970	30
	120 V	5189.965	35	5229.967	33
	108 V	5189.965	35	5229.967	33
5.8G Band	Voltage (V)	FHL (5755MHz)	Deviation (KHz)	FHH (5795MHz)	Deviation (KHz)
	132 V	5754.961	39	5794.965	35
	120 V	5754.961	39	5794.965	35
	108 V	5754.961	39	5794.967	33

Mode	Temperature (℃)	FH _L (5190MHz)	Deviation (KHz)	FH _H (5230MHz)	Deviation (KHz)
5.2G Band	-30	5189.961	39	5229.954	46
	-20	5189.965	35	5229.961	39
	-10	5189.966	34	5229.955	45
	0	5189.967	33	5229.963	37
	10	5189.962	38	5229.967	33
	20	5189.956	44	5229.961	39
	30	5189.962	38	5229.966	34
	40	5189.967	33	5229.962	38
	50	5189.969	31	5229.969	31
5.8G Band	Temperature (℃)	FHL (5755MHz)	Deviation (KHz)	FHH (5795MHz)	Deviation (KHz)
	-30	5754.941	59	5794.961	39
	-20	5754.955	45	5794.965	35
	-10	5754.963	37	5794.962	38
	0	5754.951	49	5794.968	32
	10	5754.968	32	5794.963	37
	20	5754.965	35	5794.965	35
	30	5754.966	34	5794.962	38
	40	5754.965	35	5794.962	38
	50	5754.967	33	5794.961	39

12 Antenna Requirement

12.1 Standard Requirement

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

12.2 Antenna Connected Construction

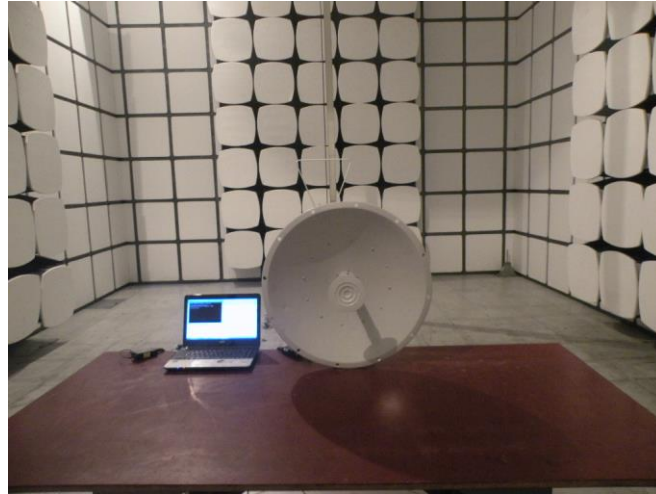
The antenna connector is unique antenna and no consideration of replacement. Please see EUT photo for details.

12.3 Result

The EUT antenna is professional installed. It comply with the standard requirement.

13 Test setup photo

13.1 Photos of Radiated emission



13.2 Photos of Conducted Emission test



14 Photographs of EUT

Plz refer to EUT photo document.

-----END OF THE REPORT-----