FCC TEST REPORT

Report No: STS1711082W01

Issued for

Zhejiang Detu Internet Co., Ltd

Floor 26, South Lugu Information Industry Park, No.368, Chengbei Street, Liandu District, Lishui City, Zhejiang Province,China

Product Name:	DETU F4 Plus Professional 360 degree Camera
Brand Name:	N/A
Model Name:	F4 Plus
Series Model:	N/A
FCC ID:	2AKVD-F4PLUS
Test Standard:	FCC Part 15.407

Shenzhen STS Test Services Co., Ltd.
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TEST RESULT CERTIFICATION

Applicant's name	:	Zhejiang Detu Internet Co., Ltd
Address	:	Floor 26, South Lugu Information Industry Park, No.368, Chengbei Street, Liandu District, Lishui City, Zhejiang Province,China
Manufacture's Name	:	Zhejiang Detu Internet Co., Ltd
Address	:	Floor 26, South Lugu Information Industry Park, No.368, Chengbei Street, Liandu District, Lishui City, Zhejiang Province,China
Product description		
Product Name	:	DETU F4 Plus Professional 360 degree Camera
Brand Name	:	N/A
Model Name	:	F4 Plus
Series Model	:	N/A
Test Standards	:	FCC Part15.407
Test procedure		ANSI C63.10-2013

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

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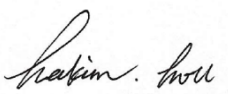
Date of Test	:	
Date (s) of performance of tests	:	09 Nov. 2017~16 Nov. 2017
Date of Issue	:	17 Nov. 2017
Test Result	:	**Pass**

Testing Engineer : 

(Sean she)

Technical Manager : 

(Hakim.hou)

Authorized Signatory : 

(Vita Li)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	17 Nov. 2017	STS1711082W01	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
§ 15.407,KDB 789033 D02 General U-NII Test Procedures New Rules v01r03

FCC Part 15.407		
FCC standard	Test Item	Results
15.207	AC Conducted Emission	PASS
§ 15.407 (2) (26 dB) / § 15.407 (e) (6 dB)/ § 15.407 (a) (99%)	26dB/6dB &99% Bandwidth	PASS
15.407(a) (1).(2).(3).(4).(5)	Maximum Conducted Output Power	PASS
15.407(b)	Peak Excursion Ratio	PASS
15.407(b)& 15.209	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(b)7	Conducted Emission And (bandedge Emissions) Measurement	PASS
15.407(a) (1).(2).(3).(4).(5)	Power Spectral Density	PASS
15.407(g)	Frequency Stability	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
15.203/15.204	Antenna Requirement	PASS

NOTE:

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

(2)all tests are according to ANSI C63.10-2013

1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
CNAS Registration No.: L7649; FCC Registration No.: 625569
IC Registration No.: 12108A; A2LA Certificate No.: 4338.01;

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	±2.88dB
2	Conducted Emission (150KHz-30MHz)	±2.67dB
3	RF power,conducted	±0.71dB
4	Spurious emissions,conducted	±0.63dB
5	All emissions,radiated(<1G) 30MHz-200MHz	±3.80dB
6	All emissions,radiated(<1G) 200MHz-1000MHz	±3.97dB
7	All emissions,radiated(>1G)	±3.03dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Product Name</td><td colspan="2">DETU F4 Plus Professional 360 degree Camera</td></tr>
<tr><td>Trade Name</td><td colspan="2">N/A</td></tr>
<tr><td>Model Name</td><td colspan="2">F4 Plus</td></tr>
<tr><td>Series Model</td><td colspan="2">N/A</td></tr>
<tr><td>Model Difference</td><td colspan="2">N/A</td></tr>
<tr><td>Product Description</td><td colspan="2">The EUT is a DETU F4 Plus Professional 360 degree Camera
<table><tr><td>Operation Frequency:</td><td>IEEE 802.11a/ n/ac(HT20)5.745GHz-5.825GHz
IEEE 802.11a/ n/ac(HT40)5.755GHz-5.795GHz
IEEE 802.11ac(HT80) 5.775GHz</td></tr><tr><td>Modulation Type:</td><td>IEEE for 802.11a/n/ac: OFDM(BPSK/QPSK/ 16QAM)</td></tr><tr><td>Antenna Designation:</td><td>See Note 3</td></tr><tr><td>Max.Output Power(Conducted):</td><td>5.933dBm</td></tr><tr><td colspan="2">The duty cycle of WLAN 802.11a/n/ac were 98 %</td></tr></table>More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Test Channel</td><td colspan="2">Please refer to the Note 2.</td></tr>
<tr><td>Adapter</td><td colspan="2">Input: AC 100-240V, 1.5A, 50/60 Hz
Output: DC 12V, 5A</td></tr>
<tr><td>Battery</td><td colspan="2">Rated Voltage: 7.4V
Capacity: 4800mAh</td></tr>
<tr><td>Hardware version number</td><td colspan="2">N/A</td></tr>
<tr><td>Software version number</td><td colspan="2">N/A</td></tr>
<tr><td>Connecting I/O Port(s)</td><td colspan="2">Please refer to the User's Manual</td></tr>
</table>

Note:For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

1.

Operation Frequency of channel			
5.745GHz-5.825GHz		--	--
Channel	Frequency	--	--
149	5745	--	--
151	5755	--	--
153	5765	--	--
157	5785	--	--
159	5795	--	--
161	5805	--	--
165	5825	--	--

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:
Carrier Frequency Channel

5GHz:

For 802.11a/n/ac (HT20)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
149	5745	/	/
157	5785	/	/
165	5825	/	/

For 802.11n/ac (HT40)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
151	5755	/	/
159	5795	/	/

For 802.11ac (HT80)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
155	5775	/	/

2. KDB 662911 D01 Multiple Transmitter Output v02r01

2) Directional Gain Calculations for In-Band Measurements

a) Basic methodology with NANT transmit antennas, each with the same directional gain GA NT dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be co mputed as follows:

(i) If any transmit signals are correlated with each other,

Directional gain = GANT + 10 log(NANT) dBi

(ii) If all transmit signals are completely uncorrelated with each other,
Directional gain = GANT
ANT A=3.5 dBi

ANT B=3.5 dBi

GANT + 10 log(NANT) dBi

Directional gain= 3.5+10log2=6.51dBi

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A	N/A	F4 Plus	PIFA Ant.	N/A	(5 725 -5 850)MHz: 3.5dBi	WLAN Ant
B	N/A	F4 Plus	PIFA Ant.	N/A	(5 725 -5 850)MHz: 3.5dBi	WLAN Ant

2.2 DESCRIPTION OF TEST MODES

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

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 2	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 3	TX IEEE 802.11ac HT20 CH149&CH157&CH165	NSS1 MCS0
Mode 4	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 5	TX IEEE 802.11ac HT40 CH151&CH159	NSS1 MCS0
Mode 6	TX IEEE 802.11ac HT80 CH155	NSS1 MCS0

Note: (1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

(3) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.

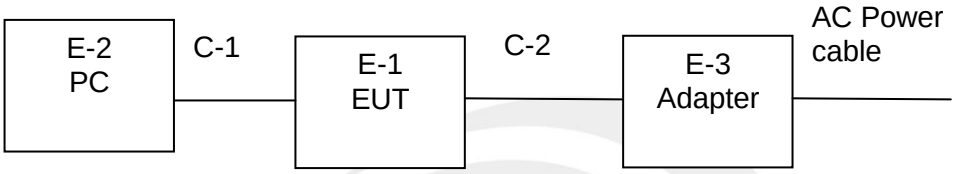
AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 7: Keeping TX + WLAN Link

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious EmissionTest

Conducted Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-2	PC	HP	N/A	N/A	N/A
E-3	Adapter	N/A	ADS-65HI-12N-1 12060E	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable	NO	120cm	N/A
C-2	DC power Cable	NO	120cm	N/A

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESW	101535	2017.06.01	2018.05.31
Bilog Antenna	TESEQ	CBL6111D	34678	2017.03.24	2018.03.23
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2017.03.06	2018.03.05
Horn Antenna	Schwarzbeck	BBHA 9170	9170-0741	2016.03.06	2019.03.03
50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2017.10.15	2018.10.14
PreAmplifier	Agilent	8449B	60538	2017.10.15	2018.10.14
Operational Manual Passive Loop (9K--30MHz)	ETS	6512	00165355	2017.03.06	2018.03.05
Low frequency cable	EM	R01	N/A	NCR	NCR
High frequency cable	SCHWARZBECK	AK9515H	SN-96286/96287	NCR	NCR

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESPI	102086	2017.10.15	2018.10.14
LISN	R&S	ENV216	101242	2017.10.15	2018.10.14
LISN	EMCO	3810/2NM	000-23625	2017.10.15	2018.10.14
Conduction Cable	EM	C01	N/A	2017.03.12	2018.03.11

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2017.10.15	2018.10.14
Spectrum Analyzer	Agilent	E4407B	MY50140340	2017.03.11	2018.03.10
Signal Analyzer	Agilent	N9020A	MY49100060	2017.03.11	2018.03.10

3. EMC EMISSION TEST

3.1CONDUCTED EMISSION MEASUREMENT

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

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

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

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

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

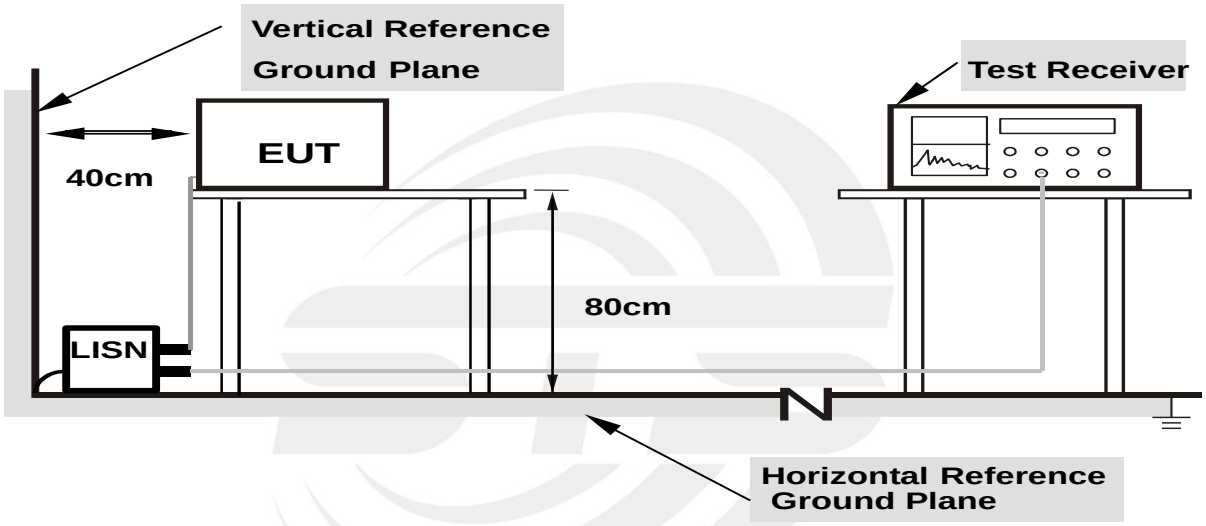
3.1.2 TEST PROCEDURE

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

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

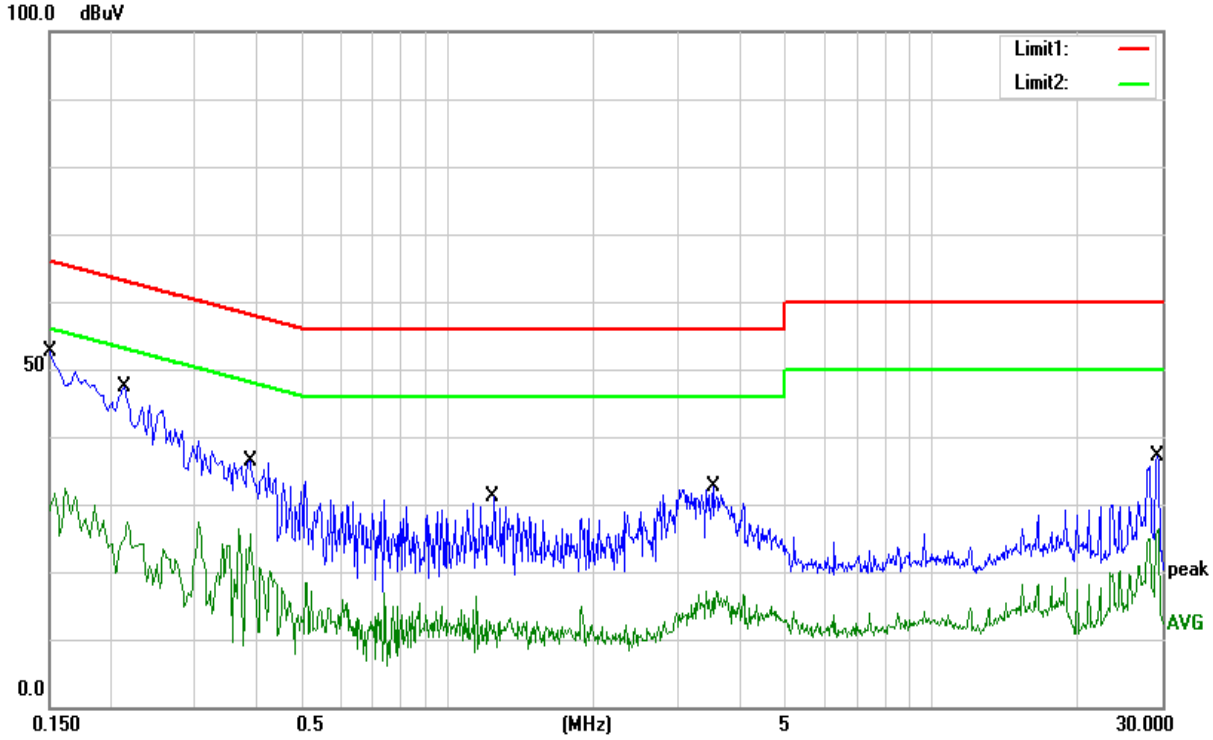
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 7

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1500	42.80	9.79	52.59	66.00	-13.41	QP
0.1500	20.81	9.79	30.60	56.00	-25.40	AVG
0.2140	37.51	9.84	47.35	63.05	-15.70	QP
0.2140	17.48	9.84	27.32	53.05	-25.73	AVG
0.3900	26.34	10.05	36.39	58.06	-21.67	QP
0.3900	14.26	10.05	24.31	48.06	-23.75	AVG
1.2460	21.39	9.80	31.19	56.00	-24.81	QP
1.2460	2.24	9.80	12.04	46.00	-33.96	AVG
3.5420	22.82	9.82	32.64	56.00	-23.36	QP
3.5420	7.40	9.82	17.22	46.00	-28.78	AVG
29.3380	26.88	10.28	37.16	60.00	-22.84	QP
29.3380	1.92	10.28	12.20	50.00	-37.80	AVG

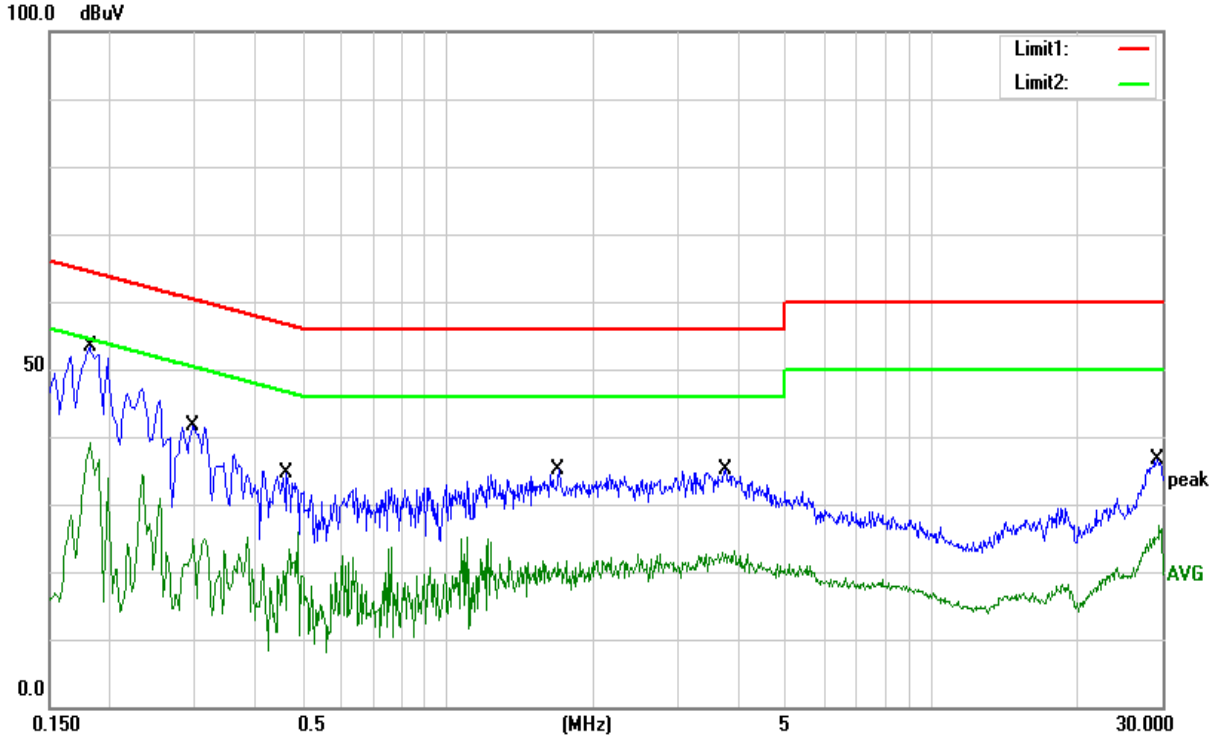
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	N
Test Voltage	AC 120V/60Hz	Test Mode	Mode 25

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1820	43.59	9.83	53.42	64.39	-10.97	QP
0.1820	25.87	9.83	35.70	54.39	-18.69	AVG
0.2980	31.40	10.26	41.66	60.30	-18.64	QP
0.2980	14.21	10.26	24.47	50.30	-25.83	AVG
0.4660	24.59	10.01	34.60	56.58	-21.98	QP
0.4660	9.92	10.01	19.93	46.58	-26.65	AVG
1.7060	25.31	9.85	35.16	56.00	-20.84	QP
1.7060	9.75	9.85	19.60	46.00	-26.40	AVG
3.7500	25.16	9.93	35.09	56.00	-20.91	QP
3.7500	11.85	9.93	21.78	46.00	-24.22	AVG
29.2700	26.22	10.50	36.72	60.00	-23.28	QP
29.2700	15.39	10.50	25.89	50.00	-24.11	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT

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

In case the emission fall within the restricted band specified on 15.407(b)7& 15.205/209(a), then the (a); limit in the table below has to be followed.

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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

Notes:

(1) The limit for radiated test was performed according to FCC PART 15E.

(2) The tighter limit applies at the band edges.

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

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarizations of the antenna are set to make the measurement
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

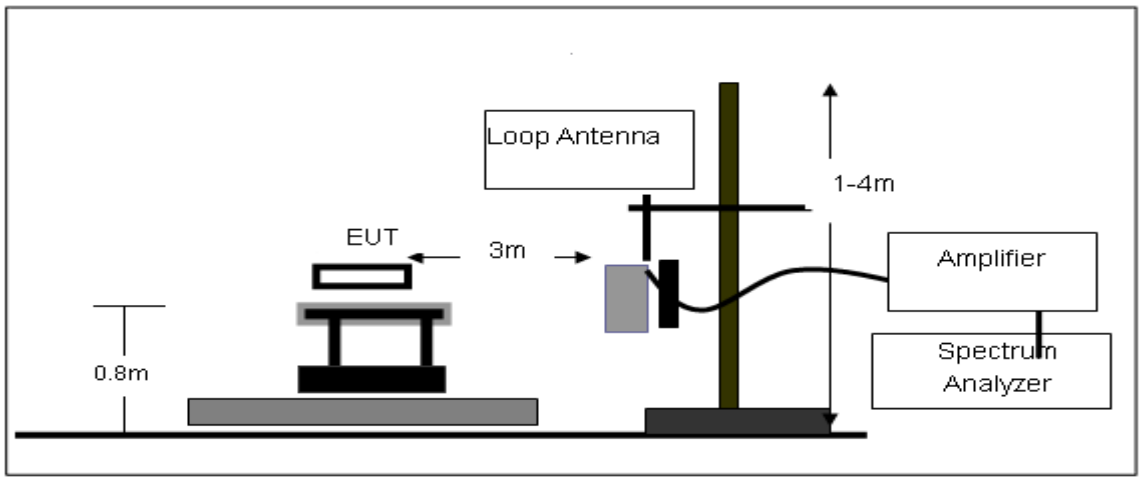
Both horizontal and vertical antenna polarities were tested and performed test to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

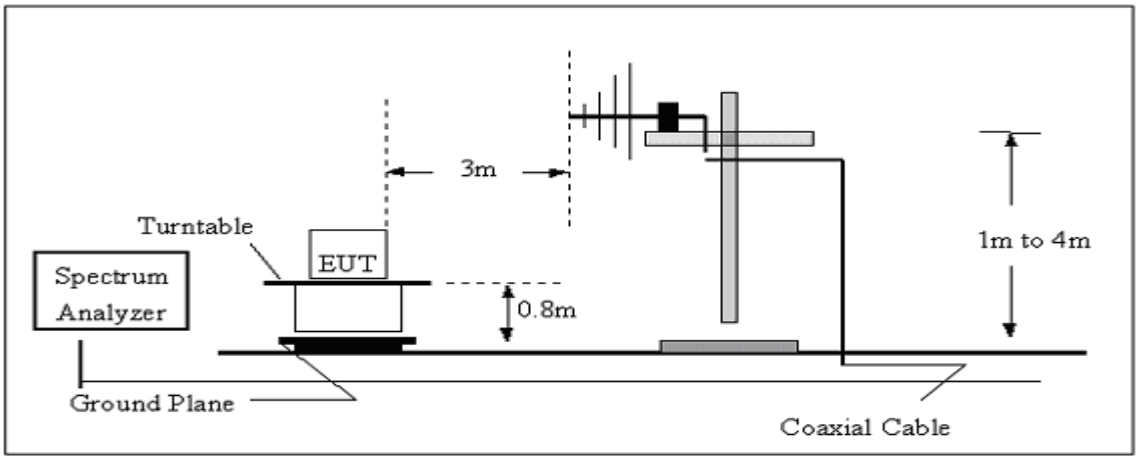
No deviation

3.2.4 TEST SETUP

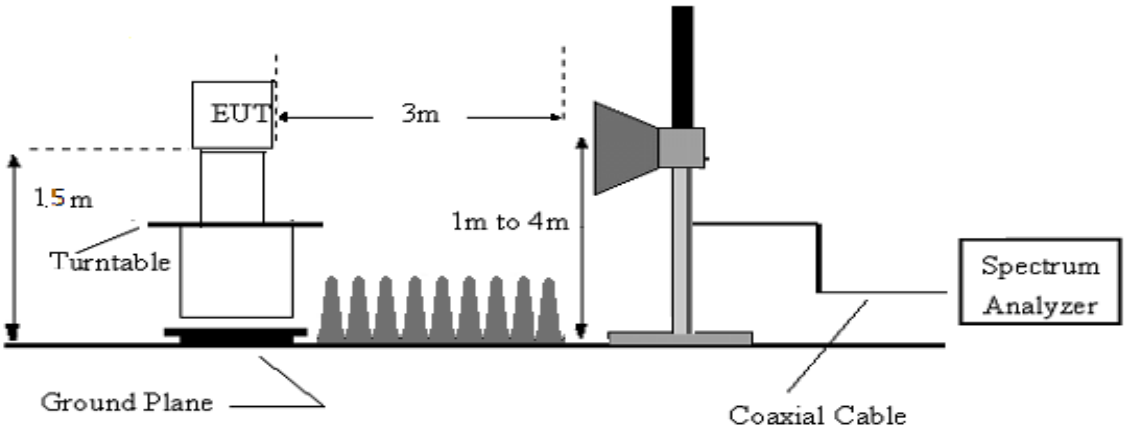
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS

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

3.2.6 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.7 TEST RESULTS (Between 9KHz – 30 MHz)

Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 7.4V from Battery
Test Mode ：	TX Mode	Polarization :	--

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

Note:

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

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

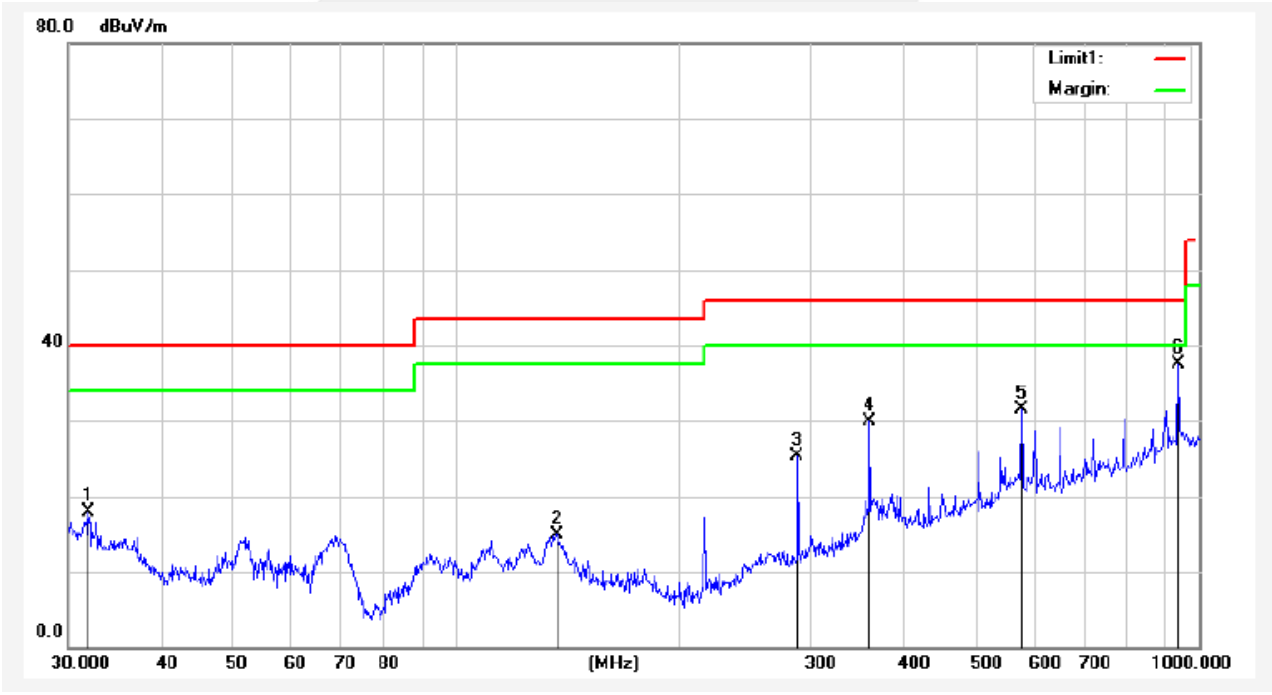
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.8 TEST RESULTS (Between 30MHz – 1GHz)

Temperature	26 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 7.4V from Battery
Test Mode	Mode 1-6(Mode 3-6M worst mode)	Polarization	Horizontal

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
31.9546	30.01	-12.20	17.81	40.00	-22.19	QP
136.4598	32.51	-17.52	14.99	43.50	-28.51	QP
287.9904	40.72	-15.49	25.23	46.00	-20.77	QP
360.4476	43.12	-13.12	30.00	46.00	-16.00	QP
576.6443	38.12	-6.69	31.43	46.00	-14.57	QP
938.8326	38.23	-0.75	37.48	46.00	-8.52	QP

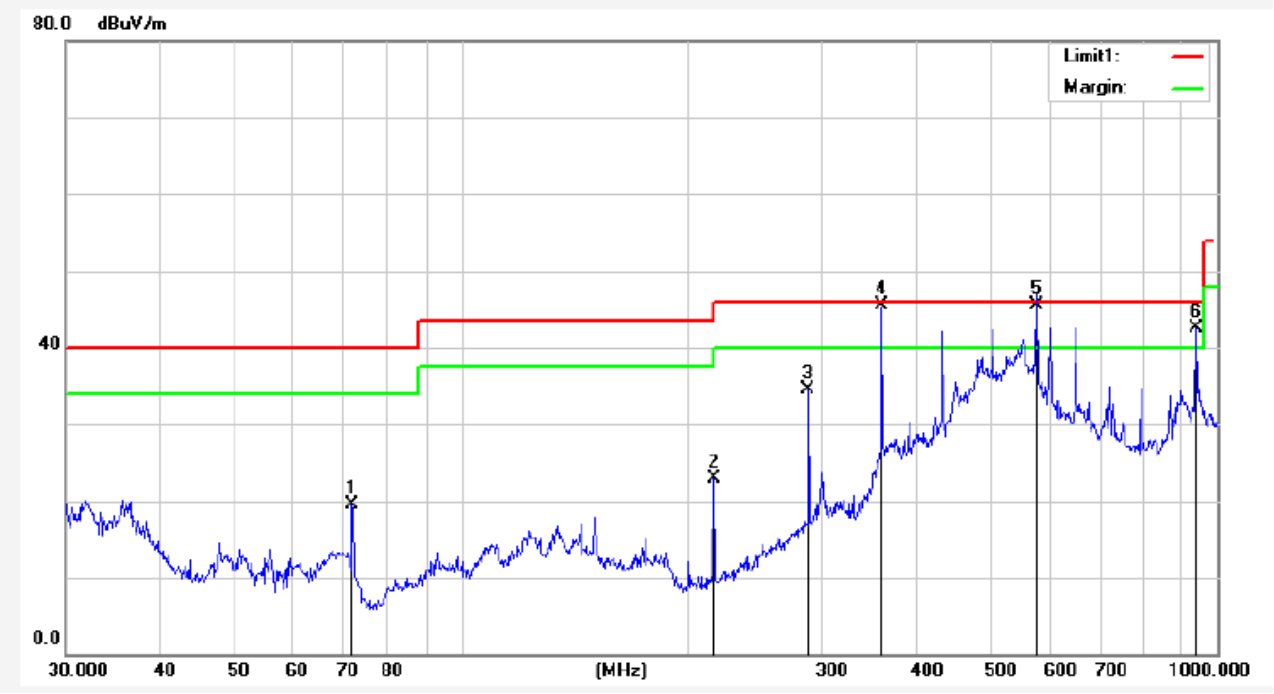
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature	26 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 7.4V from Battery
Test Mode	Mode 1-6(Mode 3-6M worst mode)	Polarization	Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
71.8320	43.36	-23.84	19.52	40.00	-20.48	QP
216.0240	42.29	-19.37	22.92	46.00	-23.08	QP
287.9904	50.00	-15.49	34.51	46.00	-11.49	QP
360.0077	58.63	-13.14	45.49	46.00	-0.51	QP
576.0243	52.25	-6.68	45.57	46.00	-0.43	QP
938.8325	43.21	-0.75	42.46	46.00	-3.54	QP

Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



3.2.9 TEST RESULTS (Above 1000 MHz)
Band IV(5.725-5.850) GHz

Band IV(5.725-5.85) GHz										
Frequency (MHz)	Reading (dBuV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Orrected Factor （dB）	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11 n20/ 5745 MHz)										
3256.18	44.46	44.70	6.70	28.20	-9.80	34.66	74.00	-39.34	Pk	Vertical
3256.18	41.21	44.70	6.70	28.20	-9.80	31.41	54.00	-22.59	AV	Vertical
3258.52	44.36	44.70	6.70	28.20	-9.80	34.56	74.00	-39.44	Pk	Horizontal
3258.52	41.02	44.70	6.70	28.20	-9.80	31.22	54.00	-22.78	AV	Horizontal
3989.64	39.61	44.20	7.90	29.70	-6.60	33.01	74.00	-40.99	Pk	Vertical
3989.64	36.07	44.20	7.90	29.70	-6.60	29.47	54.00	-24.53	AV	Vertical
3994.71	39.95	44.20	7.90	29.70	-6.60	33.35	74.00	-40.65	Pk	Horizontal
3994.71	36.81	44.20	7.90	29.70	-6.60	30.21	54.00	-23.79	AV	Horizontal
7224.22	37.53	43.50	11.40	35.50	3.40	40.93	74.00	-33.07	Pk	Vertical
7224.22	34.11	43.50	11.40	35.50	3.40	37.51	54.00	-16.49	AV	Vertical
7225.14	36.60	43.50	11.40	35.50	3.40	40.00	74.00	-34.00	Pk	Horizontal
7225.14	34.61	43.50	11.40	35.50	3.40	38.01	54.00	-15.99	AV	Horizontal
8512.83	39.58	44.50	13.90	38.80	8.20	47.78	74.00	-26.22	Pk	Vertical
8512.83	36.44	44.50	13.90	38.80	8.20	44.64	54.00	-9.36	AV	Vertical
8511.86	40.15	44.50	13.90	38.80	8.20	48.35	74.00	-25.65	Pk	Horizontal
8511.86	35.93	44.50	13.90	38.80	8.20	44.13	54.00	-9.87	AV	Horizontal
9400.07	34.18	43.60	14.30	39.50	10.20	44.38	74.00	-29.62	Pk	Vertical
9400.07	29.78	43.60	14.30	39.50	10.20	39.98	54.00	-14.02	AV	Vertical
9400.12	33.92	43.60	14.30	39.50	10.20	44.12	74.00	-29.88	Pk	Horizontal
9400.12	30.78	43.60	14.30	39.50	10.20	40.98	54.00	-13.02	AV	Horizontal
13297.56	32.07	42.60	15.90	38.90	12.20	44.27	74.00	-29.73	Pk	Vertical
13297.56	28.55	42.60	15.90	38.90	12.20	40.75	54.00	-13.25	AV	Vertical
13298.73	32.59	42.60	15.90	38.90	12.20	44.79	74.00	-29.21	Pk	Horizontal
13298.73	28.60	42.60	15.90	38.90	12.20	40.80	54.00	-13.20	AV	Horizontal
15780.19	31.09	42.70	18.00	37.10	12.40	43.49	74.00	-30.51	Pk	Vertical
15780.19	27.09	42.70	18.00	37.10	12.40	39.49	54.00	-14.51	AV	Vertical
15779.86	30.35	42.70	18.00	37.10	12.40	42.75	74.00	-31.25	Pk	Horizontal
15779.86	27.63	42.70	18.00	37.10	12.40	40.03	54.00	-13.97	AV	Horizontal
17234.94	27.85	42.70	19.40	46.50	23.20	51.05	74.00	-22.95	Pk	Vertical
17234.94	26.11	42.70	19.40	46.50	23.20	49.31	54.00	-4.69	AV	Vertical
17235.02	27.26	42.70	19.40	46.50	23.20	50.46	74.00	-23.54	Pk	Horizontal
17235.02	19.24	42.70	19.40	46.50	23.20	42.44	54.00	-11.56	AV	Horizontal

Mid Channel (802.11 n20/ 5785 MHz)										
3256.52	44.00	44.70	6.70	28.20	-9.80	34.20	74.00	-39.80	Pk	Vertical
3256.52	41.46	44.70	6.70	28.20	-9.80	31.66	54.00	-22.34	AV	Vertical
3259.43	43.83	44.70	6.70	28.20	-9.80	34.03	74.00	-39.97	Pk	Horizontal
3259.43	42.20	44.70	6.70	28.20	-9.80	32.40	54.00	-21.60	AV	Horizontal
3988.98	38.81	44.20	7.90	29.70	-6.60	32.21	74.00	-41.79	Pk	Vertical
3988.98	36.46	44.20	7.90	29.70	-6.60	29.86	54.00	-24.14	AV	Vertical
3984.95	39.78	44.20	7.90	29.70	-6.60	33.18	74.00	-40.82	Pk	Horizontal
3984.95	36.81	44.20	7.90	29.70	-6.60	30.21	54.00	-23.79	AV	Horizontal
7234.14	37.18	43.50	11.40	35.50	3.40	40.58	74.00	-33.42	Pk	Vertical
7234.14	33.50	43.50	11.40	35.50	3.40	36.90	54.00	-17.10	AV	Vertical
7228.22	36.55	43.50	11.40	35.50	3.40	39.95	74.00	-34.05	Pk	Horizontal
7228.22	34.39	43.50	11.40	35.50	3.40	37.79	54.00	-16.21	AV	Horizontal
8585.06	39.17	44.50	13.80	38.80	8.10	47.27	74.00	-26.73	Pk	Vertical
8585.06	36.54	44.50	13.80	38.80	8.10	44.64	54.00	-9.36	AV	Vertical
8598.13	38.74	44.50	13.80	38.80	8.10	46.84	74.00	-27.16	Pk	Horizontal
8598.13	36.37	44.50	13.80	38.80	8.10	44.47	54.00	-9.53	AV	Horizontal
9570.07	34.00	43.60	14.30	39.50	10.20	44.20	74.00	-29.80	Pk	Vertical
9570.07	31.10	43.60	14.30	39.50	10.20	41.30	54.00	-12.70	AV	Vertical
9570.43	32.95	43.60	14.30	39.50	10.20	43.15	74.00	-30.85	Pk	Horizontal
9570.43	30.62	43.60	14.30	39.50	10.20	40.82	54.00	-13.18	AV	Horizontal
13282.19	32.46	42.60	15.90	38.90	12.20	44.66	74.00	-29.34	Pk	Vertical
13282.19	29.27	42.60	15.90	38.90	12.20	41.47	54.00	-12.53	AV	Vertical
13287.06	32.26	42.60	15.90	38.90	12.20	44.46	74.00	-29.54	Pk	Horizontal
13287.06	28.72	42.60	15.90	38.90	12.20	40.92	54.00	-13.08	AV	Horizontal
15897.61	31.09	42.70	18.00	37.10	12.40	43.49	74.00	-30.51	Pk	Vertical
15897.61	27.48	42.70	18.00	37.10	12.40	39.88	54.00	-14.12	AV	Vertical
15599.52	30.74	42.70	18.00	37.10	12.40	43.14	74.00	-30.86	Pk	Horizontal
15599.52	27.75	42.70	18.00	37.10	12.40	40.15	54.00	-13.85	AV	Horizontal
17355.24	27.89	41.80	19.20	42.80	20.20	48.09	74.00	-25.91	Pk	Vertical
17355.24	25.00	41.80	19.20	42.80	20.20	45.20	54.00	-8.80	AV	Vertical
17354.86	27.05	41.80	19.20	42.80	20.20	47.25	74.00	-26.75	Pk	Horizontal
17354.86	19.16	41.80	19.20	42.80	20.20	39.36	54.00	-14.64	AV	Horizontal

Mid Channel (802.11 n20/ 5825 MHz)										
3255.57	44.60	44.70	6.70	28.20	-9.80	34.80	74.00	-39.20	Pk	Vertical
3255.57	41.60	44.70	6.70	28.20	-9.80	31.80	54.00	-22.20	AV	Vertical
3249.41	45.04	44.70	6.70	28.20	-9.80	35.24	74.00	-38.76	Pk	Horizontal
3249.41	42.11	44.70	6.70	28.20	-9.80	32.31	54.00	-21.69	AV	Horizontal
3995.15	40.00	44.20	7.90	29.70	-6.60	33.40	74.00	-40.60	Pk	Vertical
3995.15	36.09	44.20	7.90	29.70	-6.60	29.49	54.00	-24.51	AV	Vertical
3983.16	39.30	44.20	7.90	29.70	-6.60	32.70	74.00	-41.30	Pk	Horizontal
3983.16	37.06	44.20	7.90	29.70	-6.60	30.46	54.00	-23.54	AV	Horizontal
7235.53	37.60	43.50	11.40	35.50	3.40	41.00	74.00	-33.00	Pk	Vertical
7235.53	33.91	43.50	11.40	35.50	3.40	37.31	54.00	-16.69	AV	Vertical
7234.93	36.74	43.50	11.40	35.50	3.40	40.14	74.00	-33.86	Pk	Horizontal
7234.93	34.29	43.50	11.40	35.50	3.40	37.69	54.00	-16.31	AV	Horizontal
8620.55	39.24	44.50	13.80	38.80	8.10	47.34	74.00	-26.66	Pk	Vertical
8620.55	36.22	44.50	13.80	38.80	8.10	44.32	54.00	-9.68	AV	Vertical
8640.01	38.90	44.50	13.80	38.80	8.10	47.00	74.00	-27.00	Pk	Horizontal
8640.01	36.73	44.50	13.80	38.80	8.10	44.83	54.00	-9.17	AV	Horizontal
9650.23	34.12	43.60	14.30	39.50	10.20	44.32	74.00	-29.68	Pk	Vertical
9650.23	30.30	43.60	14.30	39.50	10.20	40.50	54.00	-13.50	AV	Vertical
9649.97	33.80	43.60	14.30	39.50	10.20	44.00	74.00	-30.00	Pk	Horizontal
9649.97	31.12	43.60	14.30	39.50	10.20	41.32	54.00	-12.68	AV	Horizontal
11650.23	34.12	43.60	14.30	39.50	10.20	44.32	74.00	-29.68	Pk	Vertical
11650.23	30.30	43.60	14.30	39.50	10.20	40.50	54.00	-13.50	AV	Vertical
11649.97	33.80	43.60	14.30	39.50	10.20	44.00	74.00	-30.00	Pk	Horizontal
11649.97	31.12	43.60	14.30	39.50	10.20	41.32	54.00	-12.68	AV	Horizontal
13299.13	32.94	42.70	18.00	37.10	12.40	45.34	74.00	-28.66	Pk	Vertical
13299.13	28.69	42.70	18.00	37.10	12.40	41.09	54.00	-12.91	AV	Vertical
13298.30	32.40	42.70	18.00	37.10	12.40	44.80	74.00	-29.20	Pk	Horizontal
13298.30	28.62	42.70	18.00	37.10	12.40	41.02	54.00	-12.98	AV	Horizontal
17474.88	31.09	41.80	19.20	42.80	20.20	51.29	74.00	-22.71	Pk	Vertical
17474.88	27.19	41.80	19.20	42.80	20.20	47.39	54.00	-6.61	AV	Vertical
17474.84	29.98	41.80	19.20	42.80	20.20	50.18	74.00	-23.82	Pk	Horizontal
17474.84	26.61	41.80	19.20	42.80	20.20	46.81	54.00	-7.19	AV	Horizontal

Remark:
1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (HT-20),802.11ac (HT-40), 802.11ac (HT-80) the worst case is 802.11n (HT-20).
3. The emission is mainly from the environment noise ,when the frequncy is higher 18GHz

3.2.10 Band Edge

Band IV(5.725-5.85 GHz)

Band IV(5.725-5.85 GHz)										
Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Orrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	（dB）	（dB）	（dB/m）	（dB）	(dBμV/m)	(dBμV/m)	(dB)	Type	
802.11a BW20MHz										
5725	38.78	44.20	10.00	32.00	-2.20	36.58	74	-37.42	Peak	Vertical
5725	30.11	44.20	10.00	32.00	-2.20	27.91	54	-26.09	AVG	Vertical
5725	39.49	44.20	10.00	32.00	-2.20	37.29	74	-36.71	Peak	Horizontal
5725	31.76	44.20	10.00	32.00	-2.20	29.56	54	-24.44	AVG	Horizontal
5850	42.93	44.20	10.20	32.00	-2.00	40.93	74	-33.07	Peak	Vertical
5850	31.58	44.20	10.20	32.00	-2.00	29.58	54	-24.42	AVG	Vertical
5850	40.48	44.20	10.20	32.00	-2.00	38.48	74	-35.52	Peak	Horizontal
5850	29.40	44.20	10.20	32.00	-2.00	27.40	54	-26.60	AVG	Horizontal
802.11n BW20MHz										
5725	39.18	44.20	10.00	32.00	-2.20	36.98	74	-37.02	Peak	Vertical
5725	30.63	44.20	10.00	32.00	-2.20	28.43	54	-25.57	AVG	Vertical
5725	38.18	44.20	10.00	32.00	-2.20	35.98	74	-38.02	Peak	Horizontal
5725	29.35	44.20	10.00	32.00	-2.20	27.15	54	-26.85	AVG	Horizontal
5850	46.18	44.20	10.20	32.00	-2.00	44.18	74	-29.82	Peak	Vertical
5850	30.13	44.20	10.20	32.00	-2.00	28.13	54	-25.87	AVG	Vertical
5850	39.15	44.20	10.20	32.00	-2.00	37.15	74	-36.85	Peak	Horizontal
5850	29.33	44.20	10.20	32.00	-2.00	27.33	54	-26.67	AVG	Horizontal
802.11n BW40MHz										
5725	40.98	44.20	10.00	32.00	-2.20	38.78	74	-35.22	Peak	Vertical
5725	27.96	44.20	10.00	32.00	-2.20	25.76	54	-28.24	AVG	Vertical
5725	40.38	44.20	10.00	32.00	-2.20	38.18	74	-35.82	Peak	Horizontal
5725	31.58	44.20	10.00	32.00	-2.20	29.38	54	-24.62	AVG	Horizontal
5850	43.85	44.20	10.20	32.00	-2.00	41.85	74	-32.15	Peak	Vertical
5850	30.51	44.20	10.20	32.00	-2.00	28.51	54	-25.49	AVG	Vertical
5850	38.03	44.20	10.20	32.00	-2.00	36.03	74	-37.97	Peak	Horizontal
5850	30.31	44.20	10.20	32.00	-2.00	28.31	54	-25.69	AVG	Horizontal

802.11ac BW20MHz										
5725	41.92	44.20	10.00	32.00	-2.20	39.72	74	-34.28	Peak	Vertical
5725	31.55	44.20	10.00	32.00	-2.20	29.35	54	-24.65	AVG	Vertical
5725	41.63	44.20	10.00	32.00	-2.20	39.43	74	-34.57	Peak	Horizontal
5725	29.51	44.20	10.00	32.00	-2.20	27.31	54	-26.69	AVG	Horizontal
5850	42.45	44.20	10.20	32.00	-2.00	40.45	74	-33.55	Peak	Vertical
5850	28.92	44.20	10.20	32.00	-2.00	26.92	54	-27.08	AVG	Vertical
5850	40.83	44.20	10.20	32.00	-2.00	38.83	74	-35.17	Peak	Horizontal
5850	31.19	44.20	10.20	32.00	-2.00	29.19	54	-24.81	AVG	Horizontal
802.11ac BW40MHz										
5725	41.97	44.20	10.00	32.00	-2.20	39.77	74	-34.23	Peak	Vertical
5725	27.52	44.20	10.00	32.00	-2.20	25.32	54	-28.68	AVG	Vertical
5725	38.62	44.20	10.00	32.00	-2.20	36.42	74	-37.58	Peak	Horizontal
5725	29.04	44.20	10.00	32.00	-2.20	26.84	54	-27.16	AVG	Horizontal
5850	43.64	44.20	10.20	32.00	-2.00	41.64	74	-32.36	Peak	Vertical
5850	27.93	44.20	10.20	32.00	-2.00	25.93	54	-28.07	AVG	Vertical
5850	39.03	44.20	10.20	32.00	-2.00	37.03	74	-36.97	Peak	Horizontal
5850	30.26	44.20	10.20	32.00	-2.00	28.26	54	-25.74	AVG	Horizontal
802.11ac BW80MHz										
5725	40.86	44.20	10.00	32.00	-2.20	38.66	74	-35.34	Peak	Vertical
5725	31.44	44.20	10.00	32.00	-2.20	29.24	54	-24.76	AVG	Vertical
5725	41.10	44.20	10.00	32.00	-2.20	38.90	74	-35.10	Peak	Horizontal
5725	29.43	44.20	10.00	32.00	-2.20	27.23	54	-26.77	AVG	Horizontal
5850	46.79	44.20	10.20	32.00	-2.00	44.79	74	-29.21	Peak	Vertical
5850	31.68	44.20	10.20	32.00	-2.00	29.68	54	-24.32	AVG	Vertical
5850	41.49	44.20	10.20	32.00	-2.00	39.49	74	-34.51	Peak	Horizontal
5850	29.92	44.20	10.20	32.00	-2.00	27.92	54	-26.08	AVG	Horizontal

4. CONDUCTED SPURIOUS EMISSIONS AND BANDEDGE

4.1 APPLIED PROCEDURES / LIMIT

Undesirable emission limits. Except as shown in paragraph (b)(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) For transmitters operating in the 5.725-5.85 GHz band:

(i) 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.

4.1.1 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	1000 KHz/3000 KHz
Trace-Mode:	Max hold

.

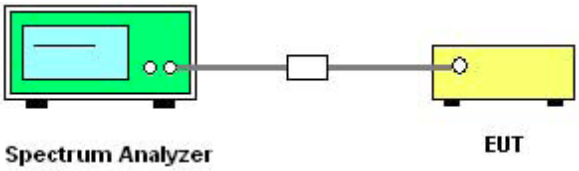
For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1000 KHz/3000 KHz
Trace-Mode:	Max hold

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.
Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1000 kHz. In order to make an accurate measurement, set the span greater than RBW.

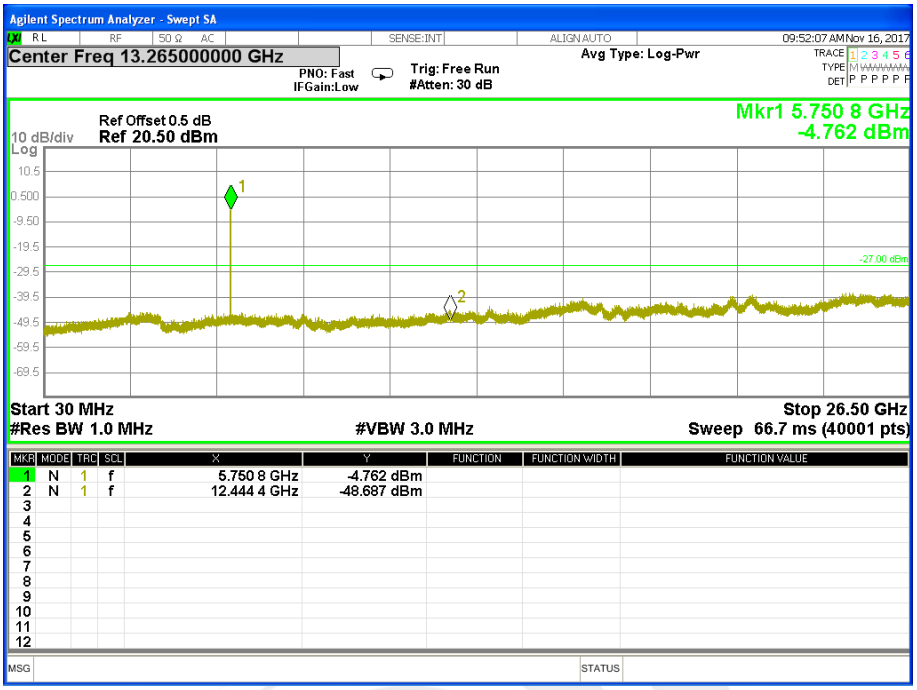
4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

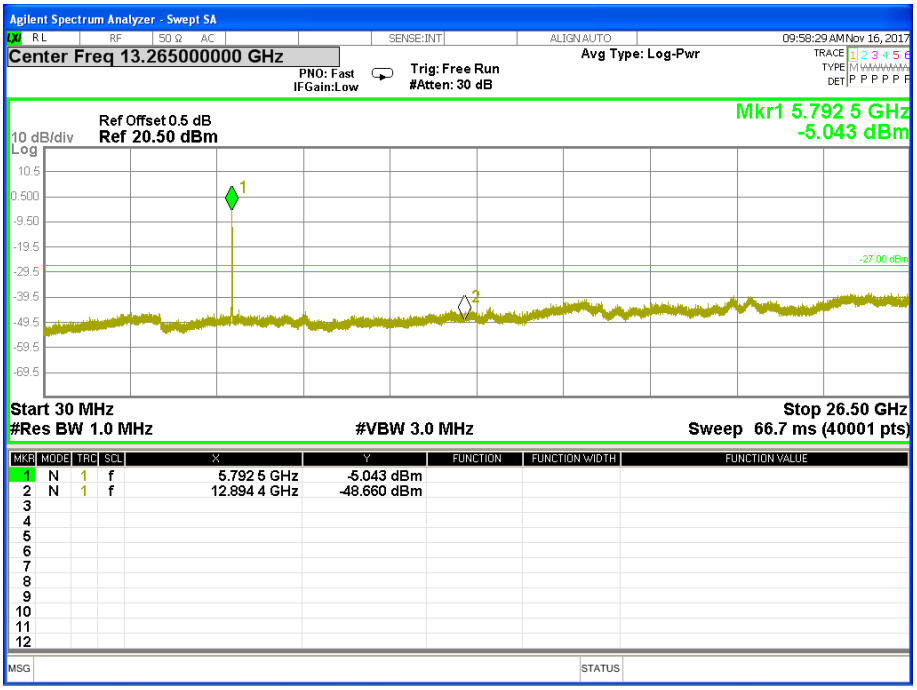
4.1.5 TEST RESULTS

Band IV (5.725-5.85GHz) Antenna A

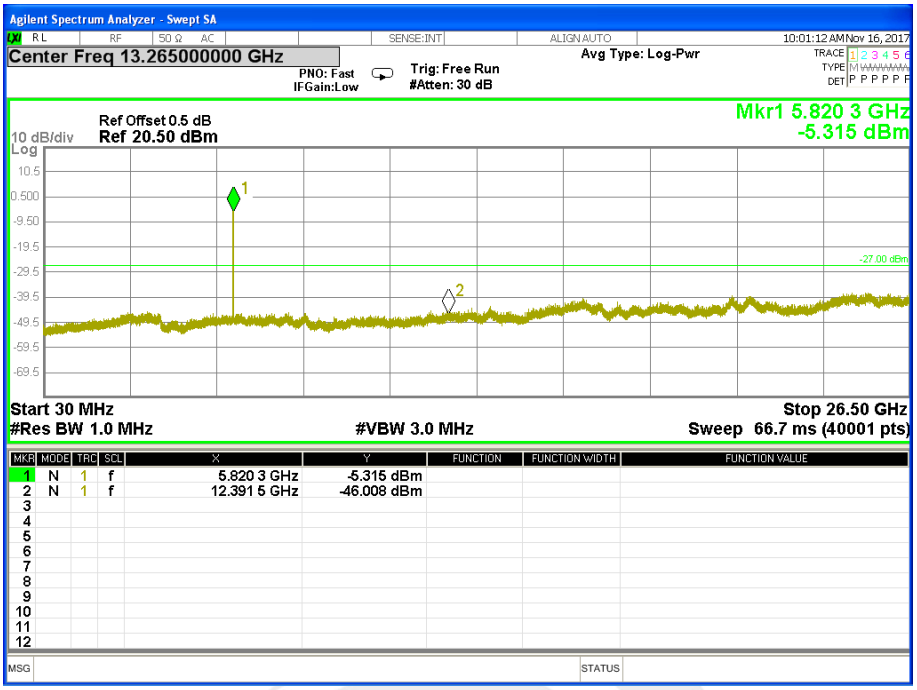
TX Spurious Emissions 802.11a Mode CH 149



TX Spurious Emissions 802.11a Mode CH 157

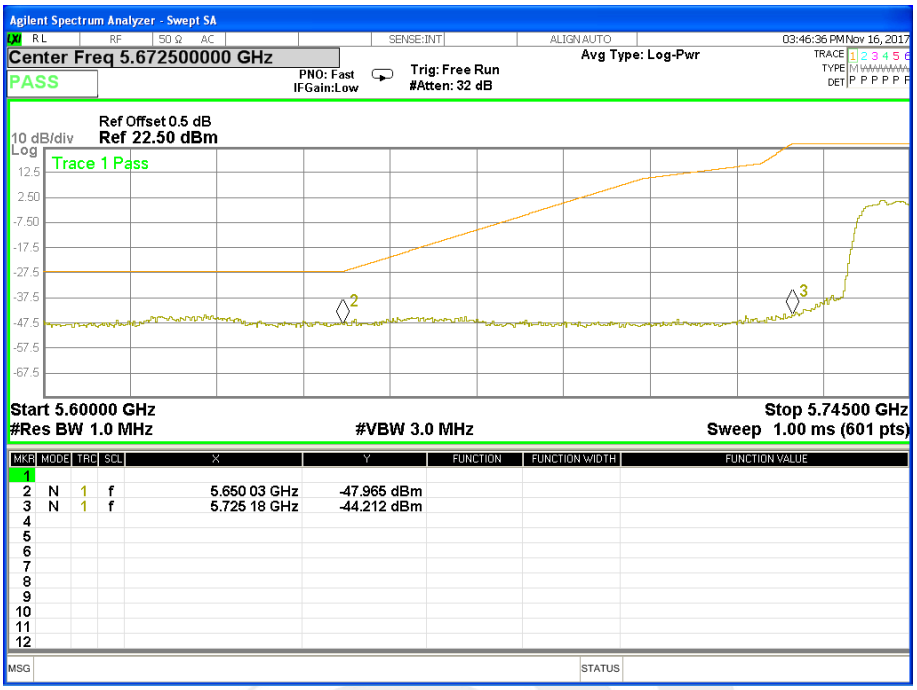


TX Spurious Emissions 802.11a Mode CH 165

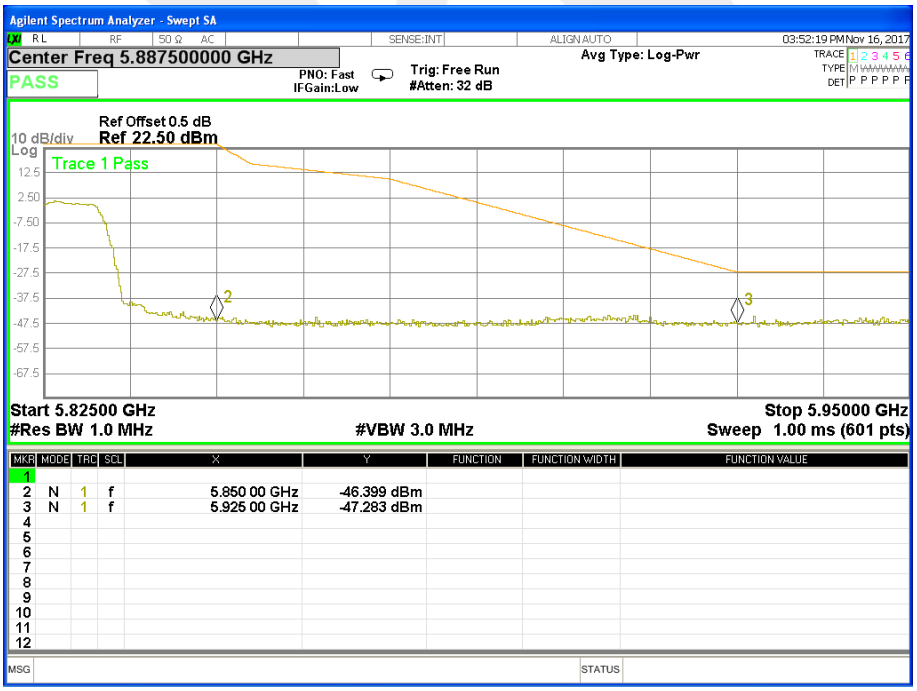


Band edge

TX Band edge 802.11a Mode CH 149

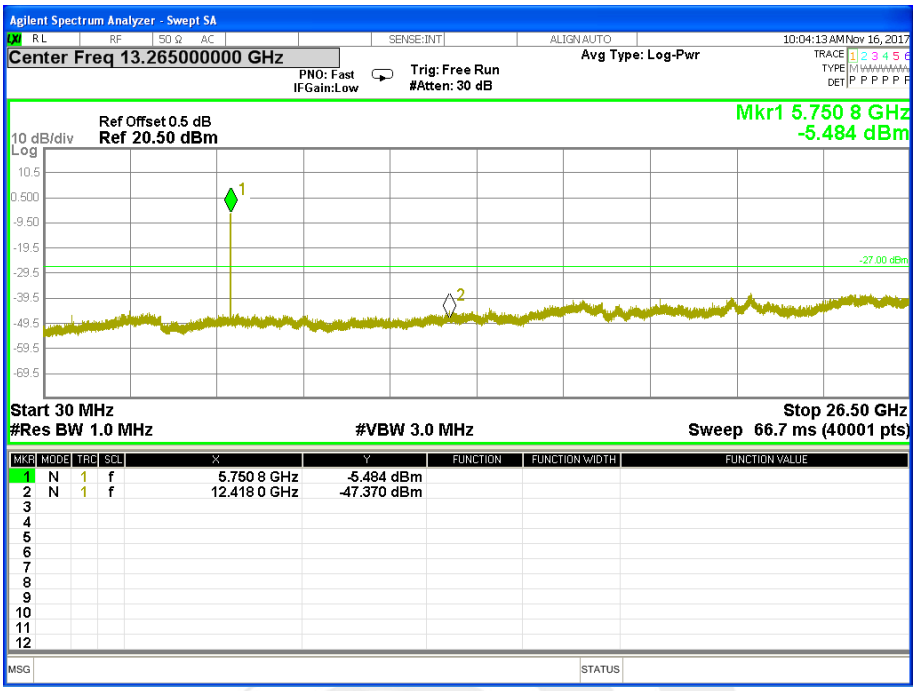


TX Band edge 802.11a Mode CH 165

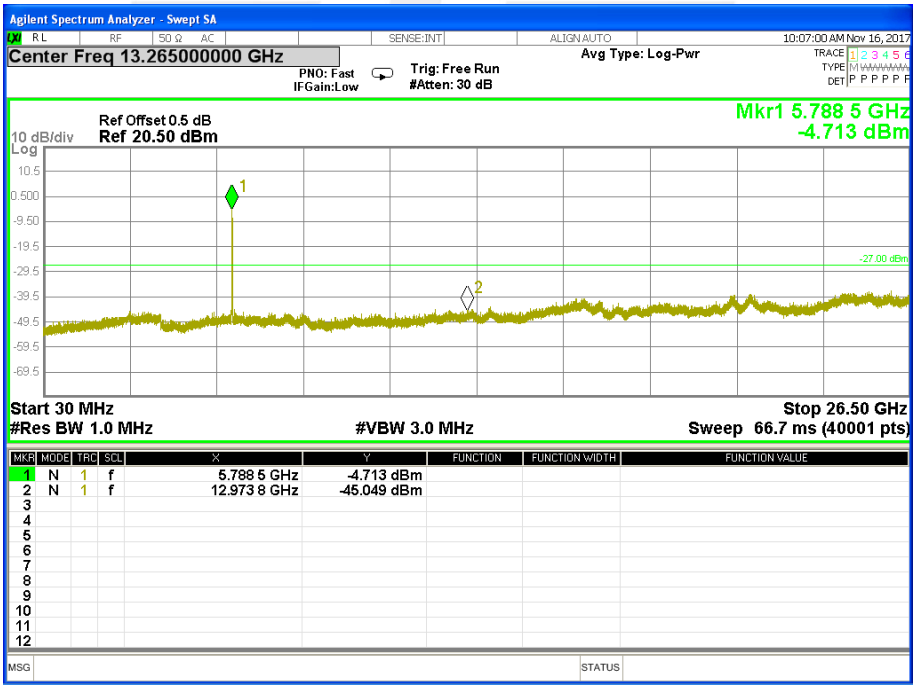


Band IV (5.725-5.85GHz) Antenna A

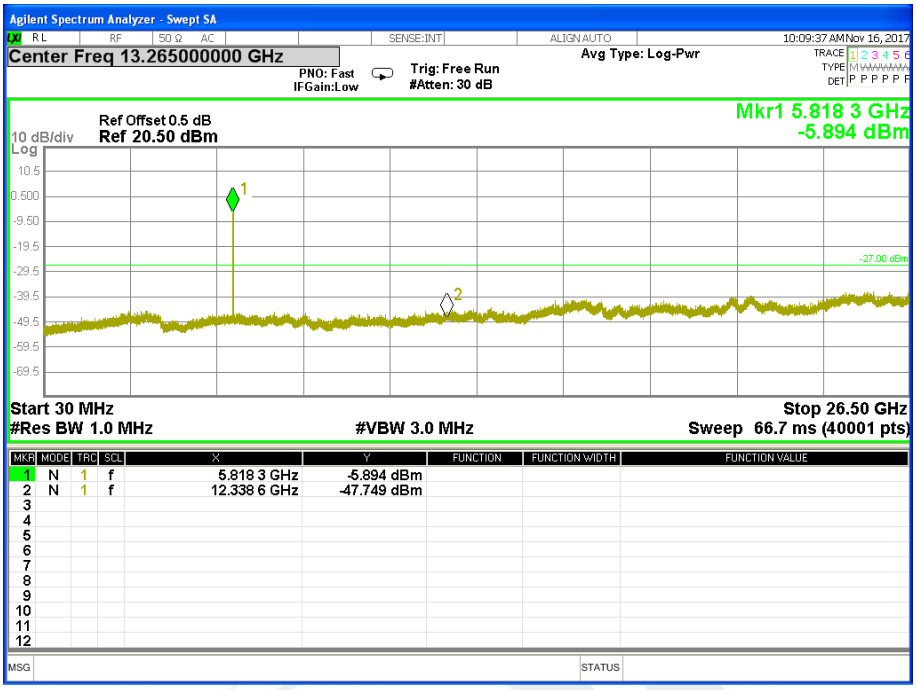
TX Spurious Emissions 802.11n(HT20) Mode CH 149



TX Spurious Emissions 802.11n(HT20) Mode CH 157

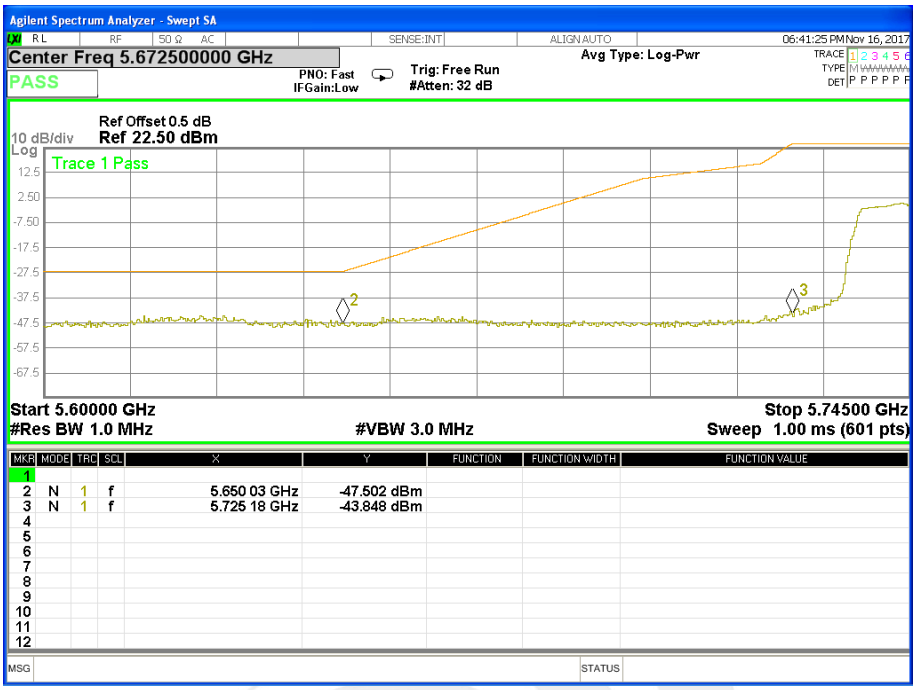


TX Spurious Emissions 802.11n(HT20) Mode CH 165

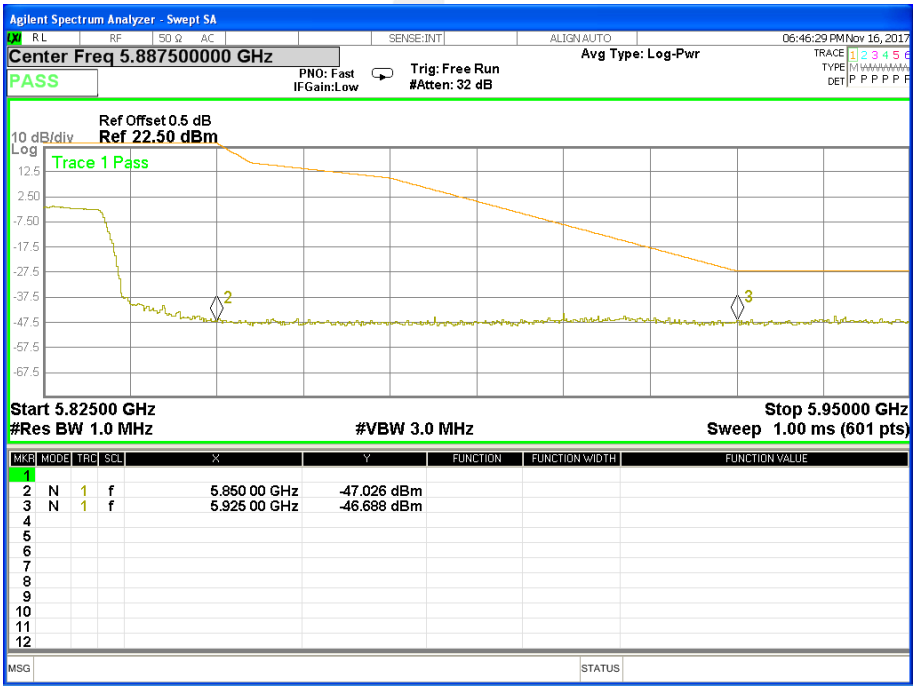


Band edge

TX Band edge 802.11n(HT20) Mode CH 149

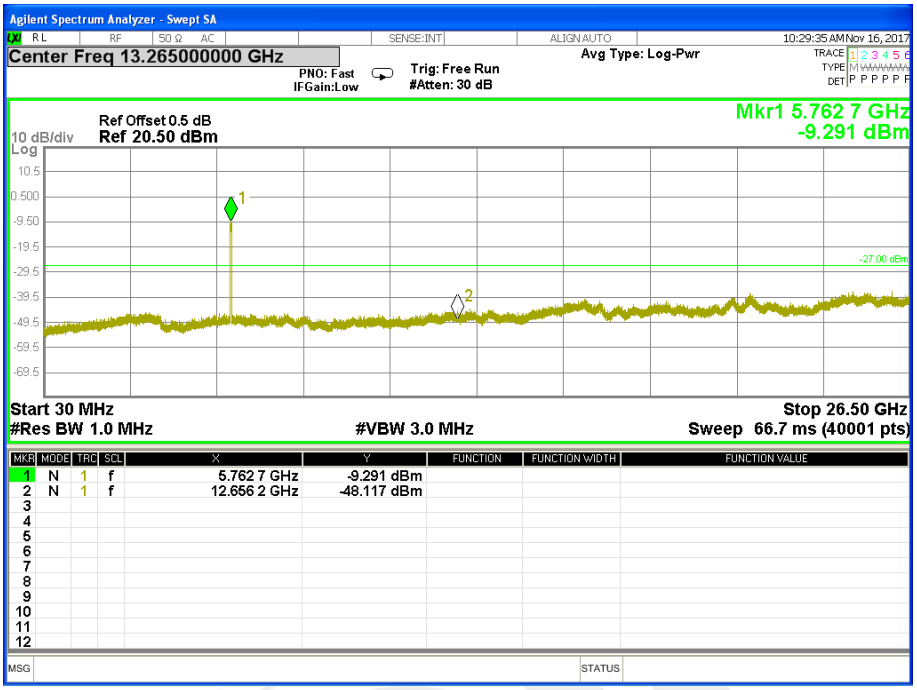


TX Band edge 802.11n(HT20) Mode CH 165

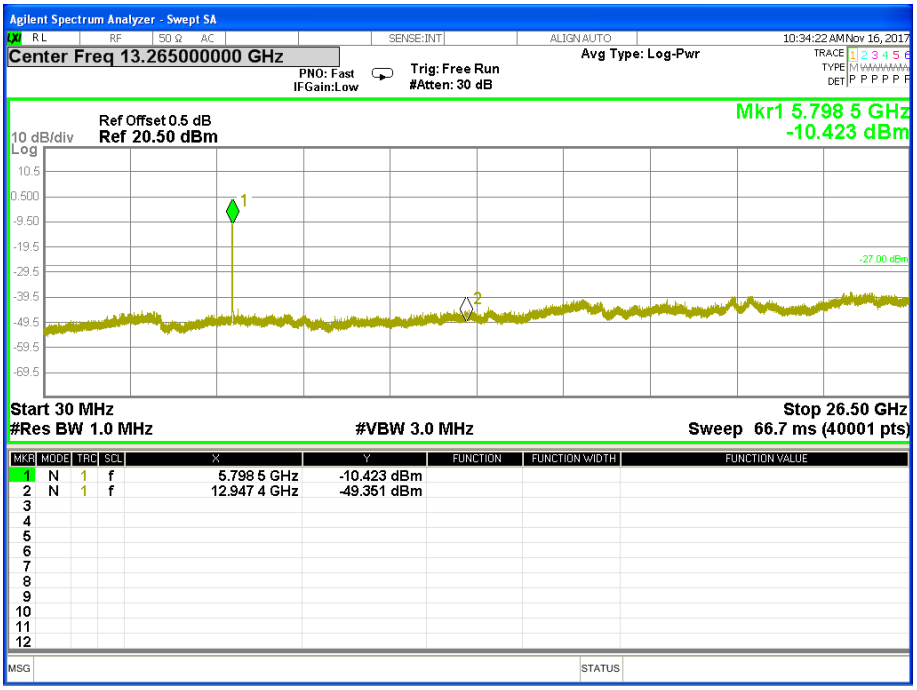


Band IV (5.725-5.85GHz) Antenna A

TX Spurious Emissions 802.11n(HT40) Mode CH 151

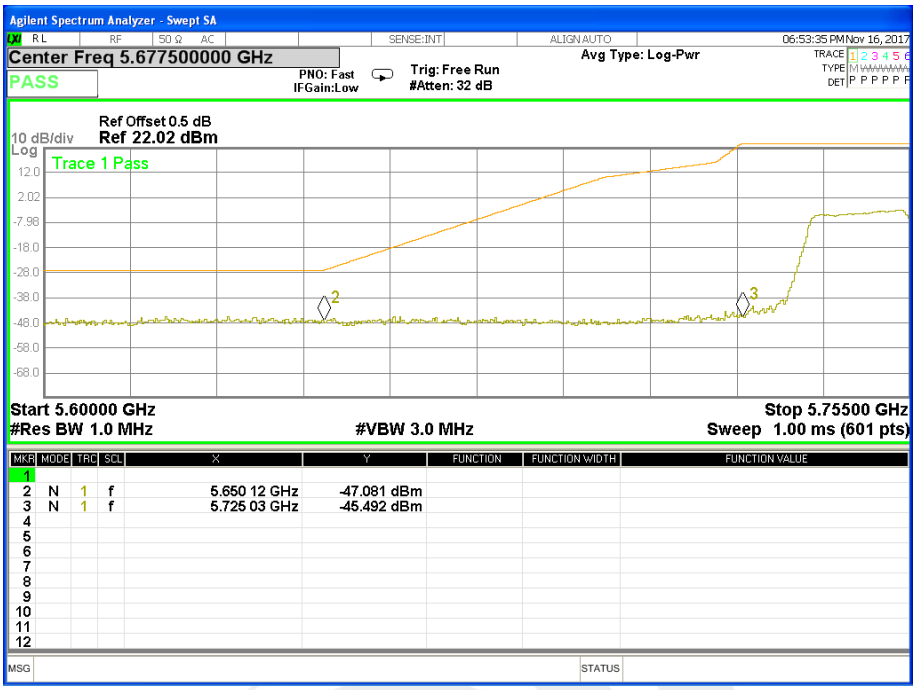


TX Spurious Emissions 802.11n(HT40) Mode CH 159

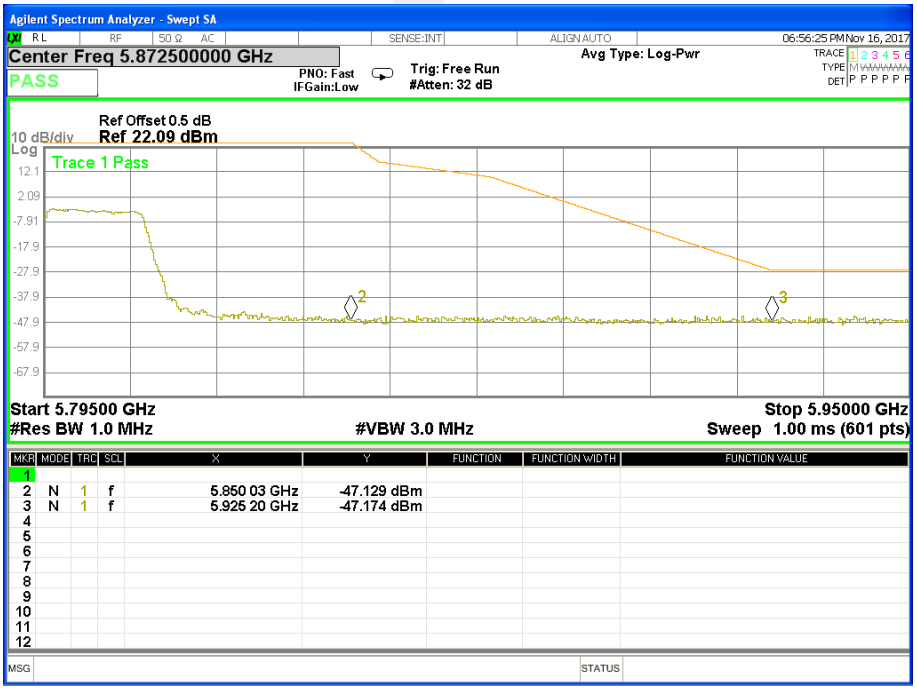


Band edge

TX Band edge 802.11n(HT40) Mode CH 151

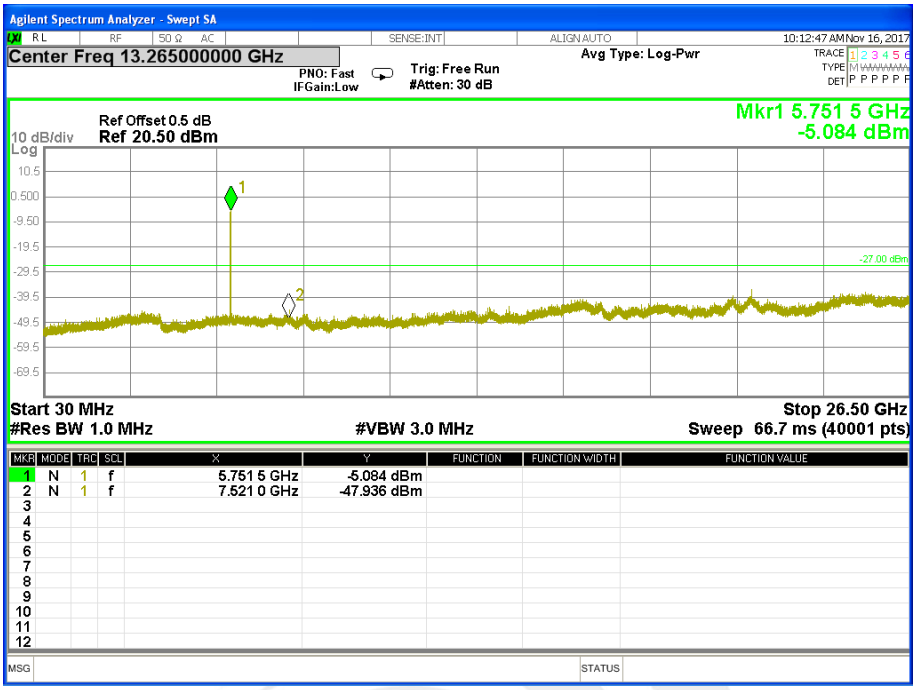


TX Band edge 802.11n(HT40) Mode CH 159

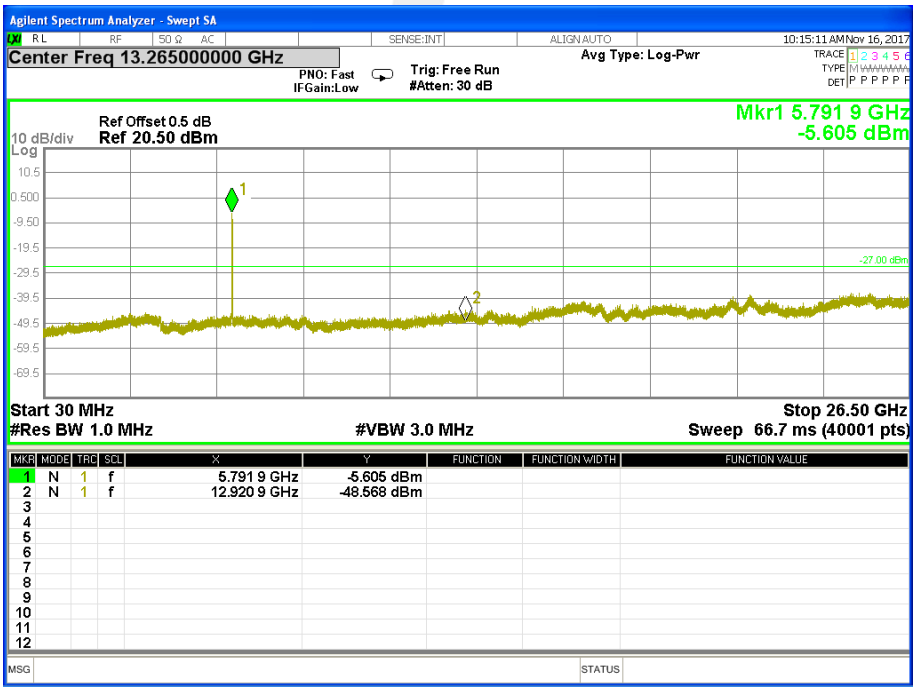


Band IV (5.725-5.85GHz) Antenna A

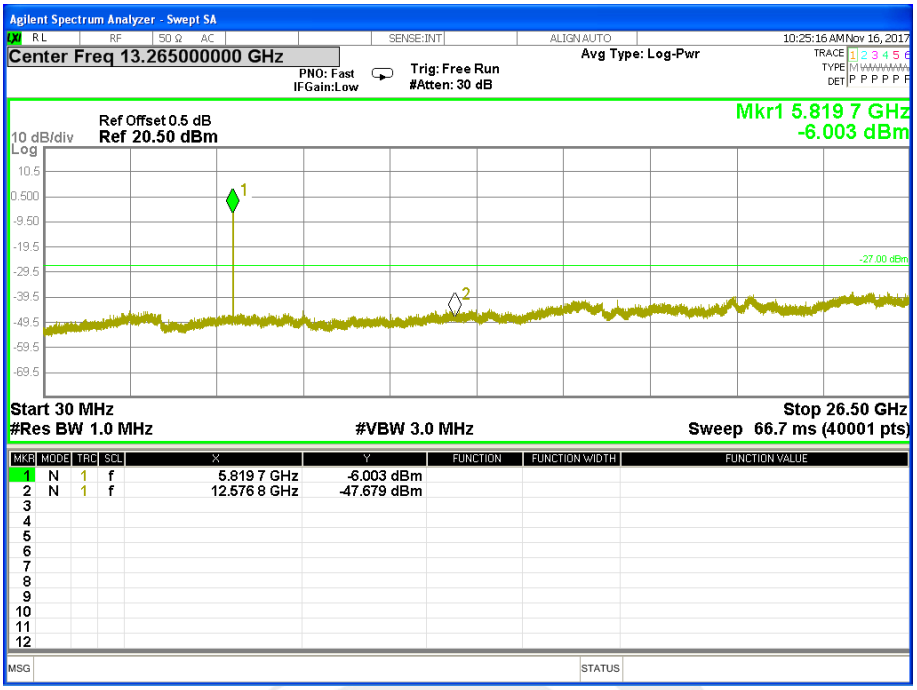
TX Spurious Emissions 802.11ac(HT20) Mode CH 149



TX Spurious Emissions 802.11ac(HT20) Mode CH 157

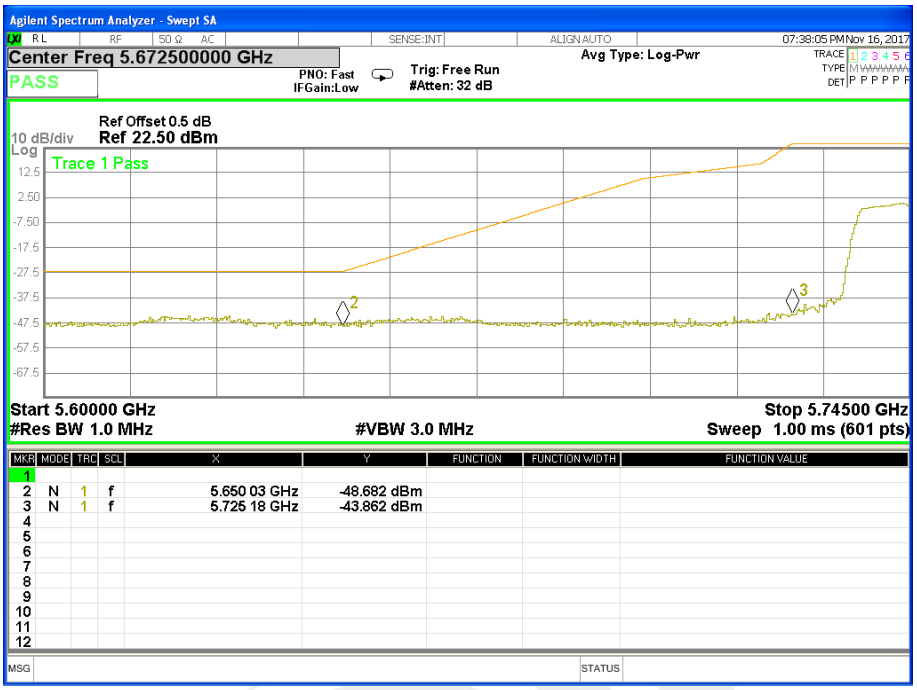


TX Spurious Emissions 802.11ac(HT20) Mode CH 165

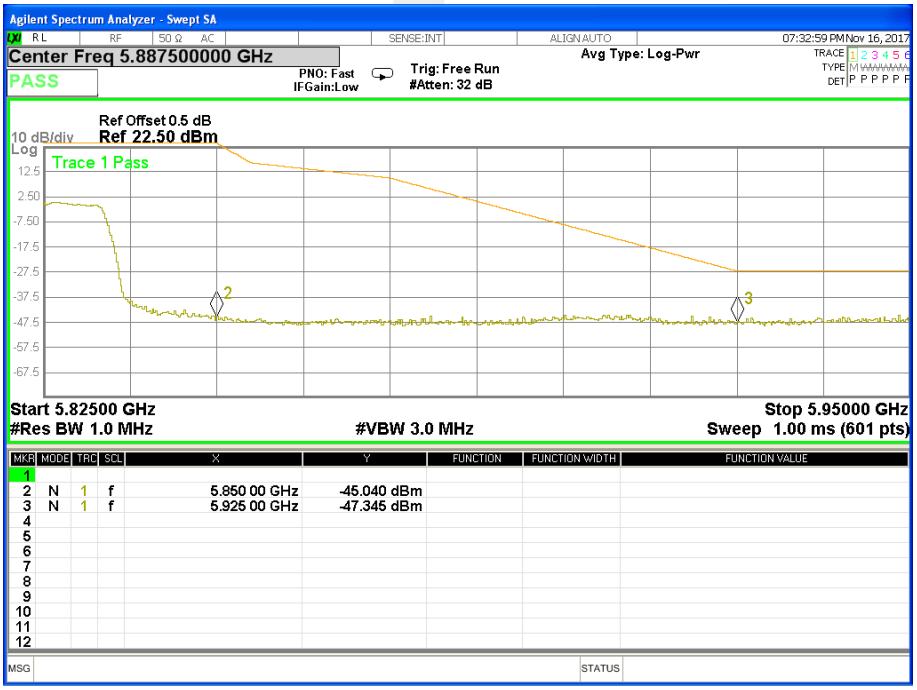


Band edge

TX Band edge 802.11ac(HT20) Mode CH 149

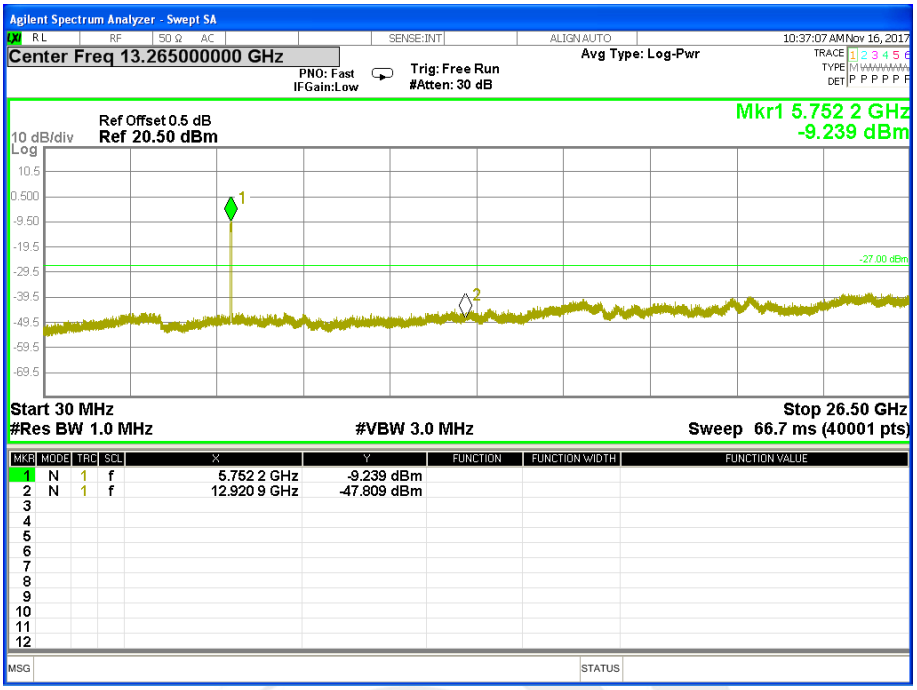


TX Band edge 802.11ac(HT20) Mode CH 165

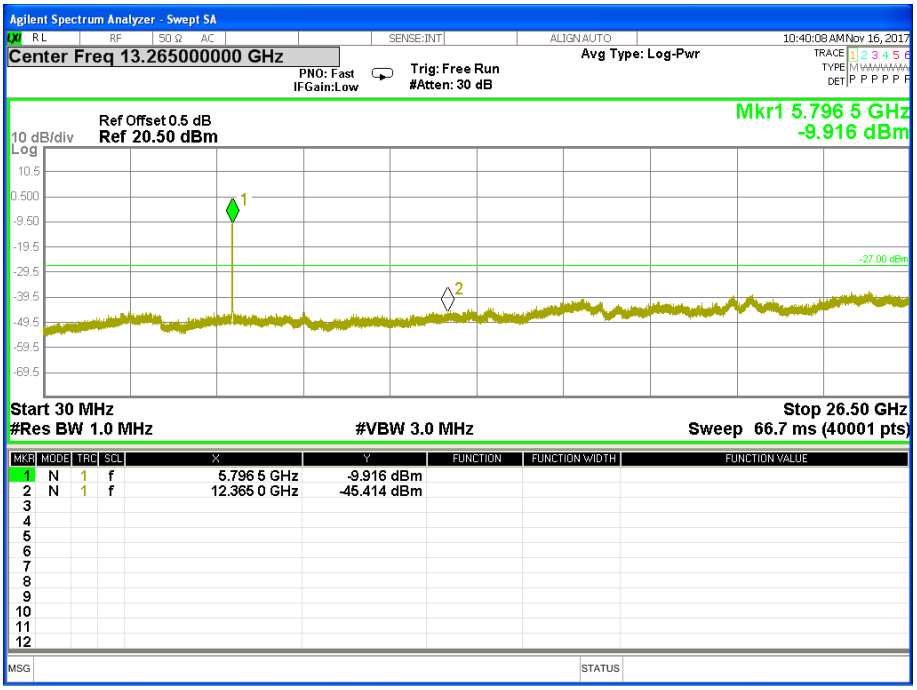


Band IV (5.725-5.85GHz) Antenna A

TX Spurious Emissions 802.11ac(HT40) Mode CH 151

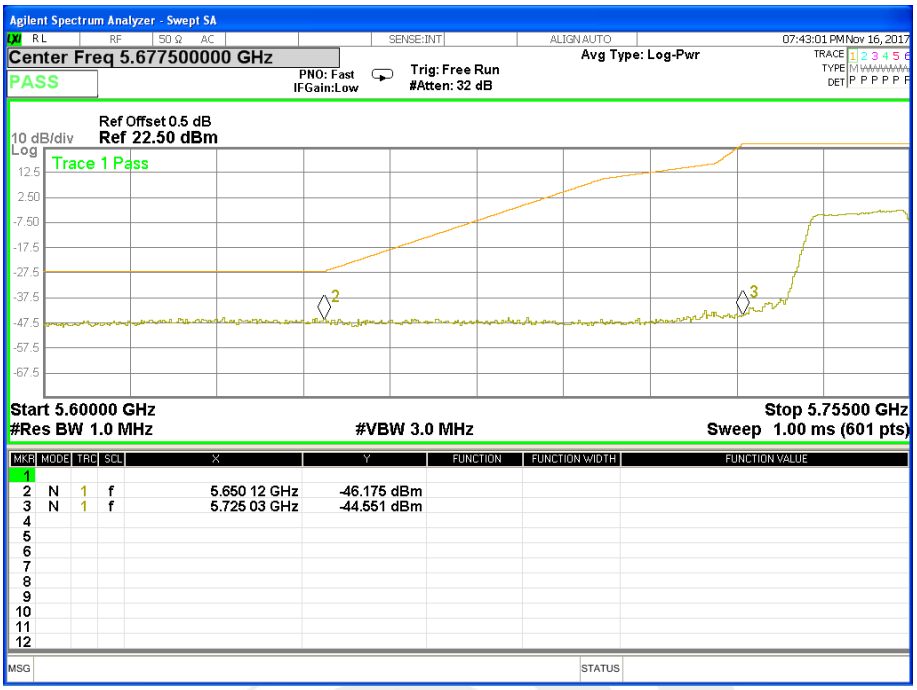


TX Spurious Emissions 802.11ac(HT40) Mode CH 159

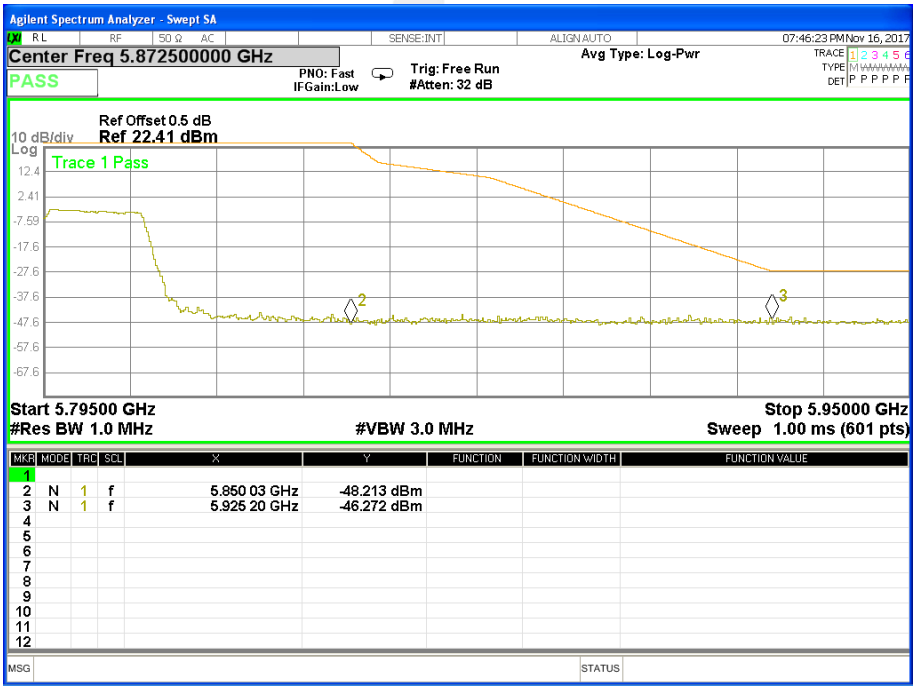


Band edge

TX Band edge 802.11ac(HT40) Mode CH 151

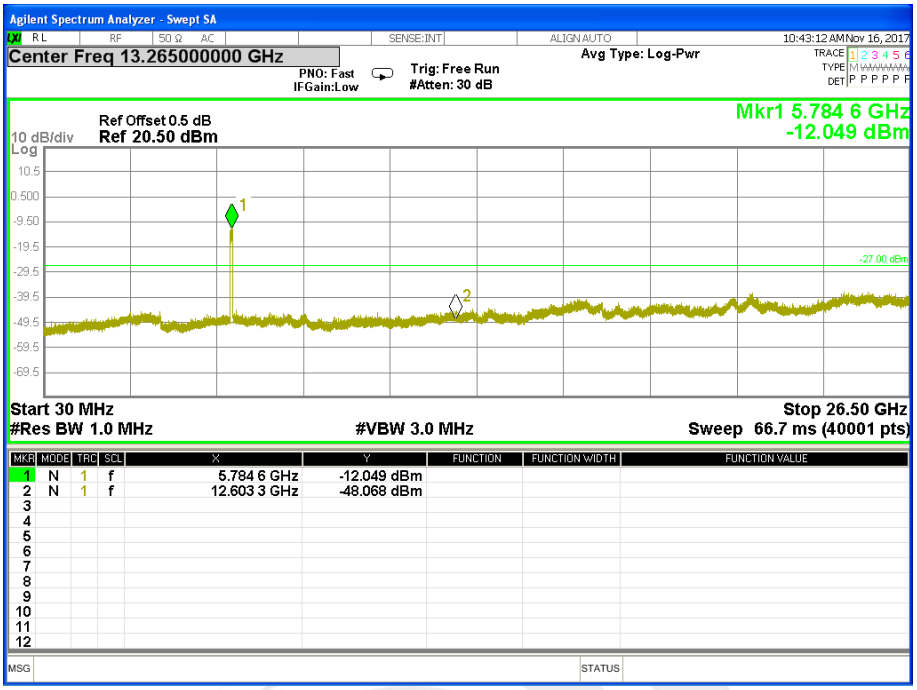


TX Band edge 802.11ac(HT40) Mode CH 159



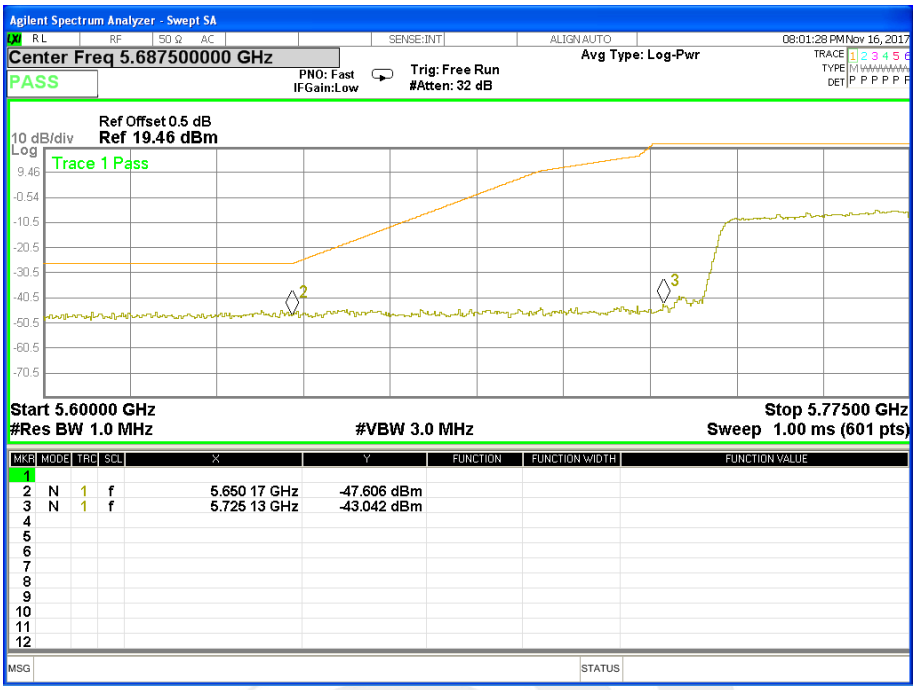
Band IV (5.725-5.85GHz) Antenna A

TX Spurious Emissions 802.11ac(HT80) Mode CH 155

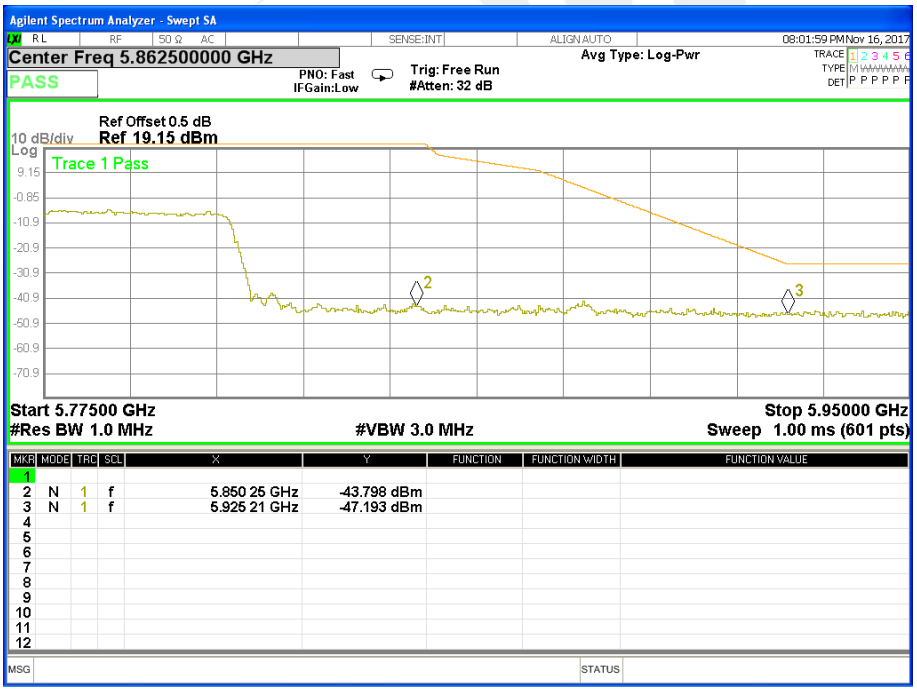


Band edge

TX Band edge 802.11ac(HT80) CH 155 Left



TX Band edge 802.11ac(HT80) CH 155 Right



5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

1. For mobile and portable client devices in the 5.15-5.25 GHz band, , the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.1.1 TEST PROCEDURE

1. The setting follows Method SA-1 of FCC KDB D02 General UNII Test Procedures New Rules v01r03.

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

a) Set RBW ≥ 1/*T*, where *T* is defined in section II.B.l.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

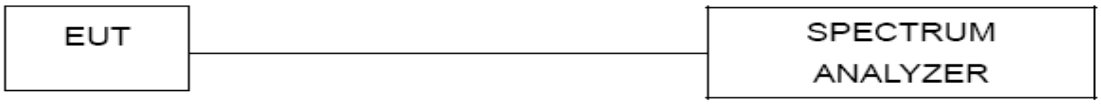
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

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

5.1.5 TEST RESULTS

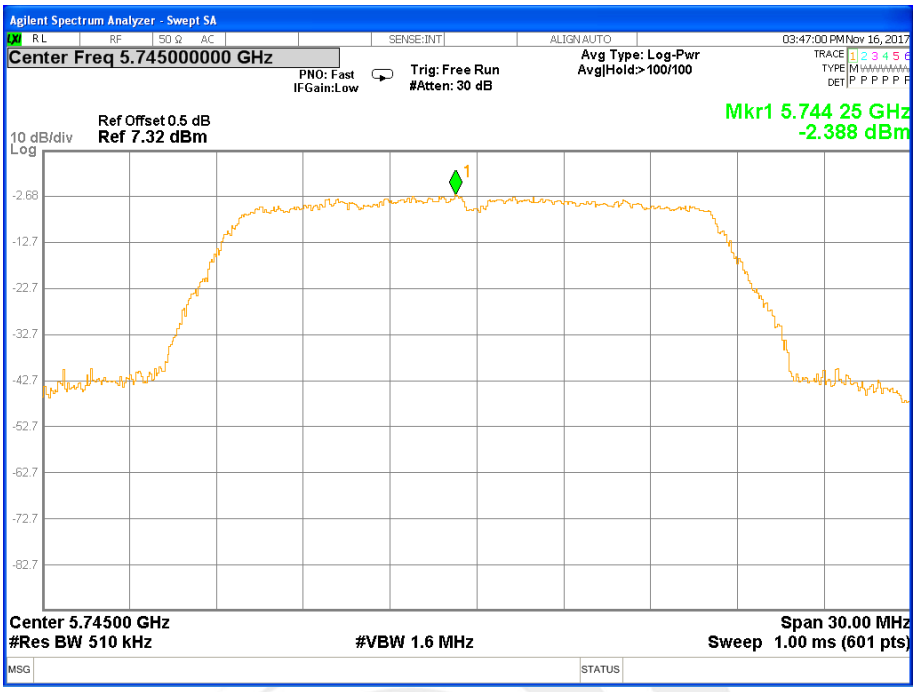
NOTE: 1. Antenna A Power> Antenna B Power, Both antenna A and B have been test
2. 802.11a model cannot emission at the same time.

Band IV (5.725-5.850GHz)

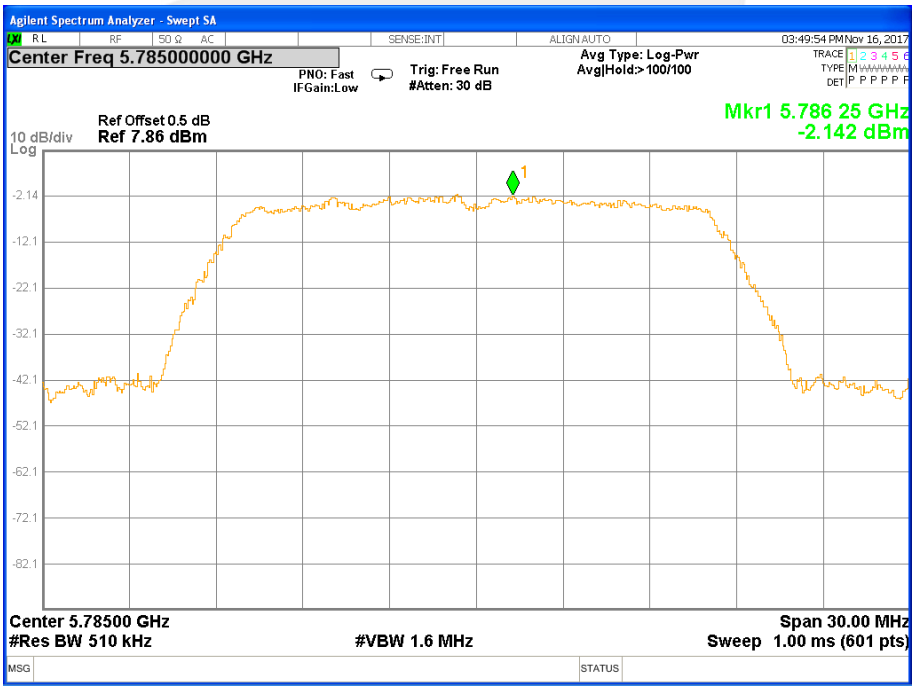
5725-5850MHz					
Frequency	Power Density A(dBm)	Power Density B(dBm)	Power Density Total(dBm)	Limit	Result
802.11a					
5745	-2.338	-2.567	--	30	PASS
5785	-2.142	-2.689	--	30	PASS
5825	-1.655	-1.905	--	30	PASS
802.11n20					
5745	-3.393	-3.765	-0.565	29.49	PASS
5785	-3.198	-3.468	-0.321	29.49	PASS
5825	-4.050	-4.356	-1.190	29.49	PASS
802.11n40					
5755	-6.666	-6.937	-3.789	29.49	PASS
5795	-6.036	-6.562	-3.281	29.49	PASS
802.11ac20					
5745	-3.445	-3.867	-0.641	29.49	PASS
5785	-5.390	-5.905	-2.630	29.49	PASS
5825	-2.562	-2.835	0.314	29.49	PASS
802.11ac40					
5755	-6.193	-6.459	-3.314	29.49	PASS
5795	-5.923	-6.057	-2.979	29.49	PASS
802.11ac80					
5775	-9.274	-9.651	-6.448	29.49	PASS

Band IV (5.725-5.850GHz)802.11a Antenna A

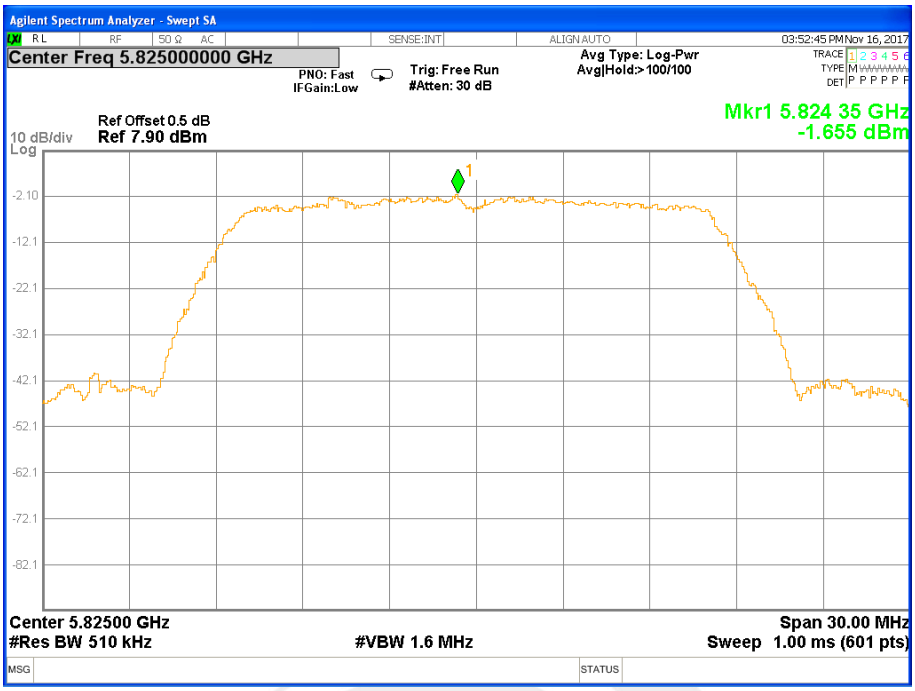
PSD 802.11a Channel 149



PSD 802.11a Channel 157

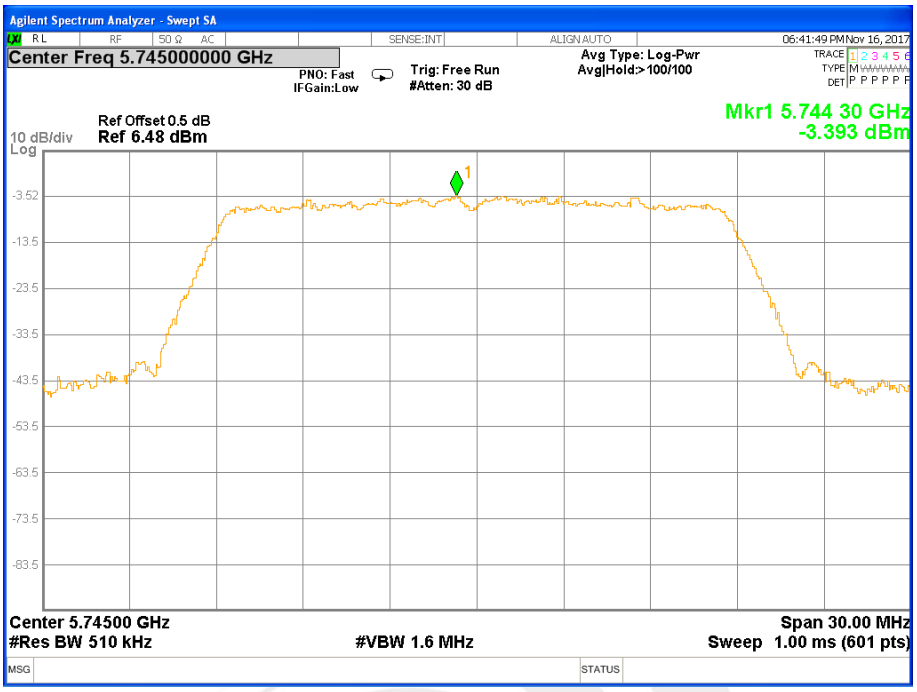


PSD 802.11a Channel 165

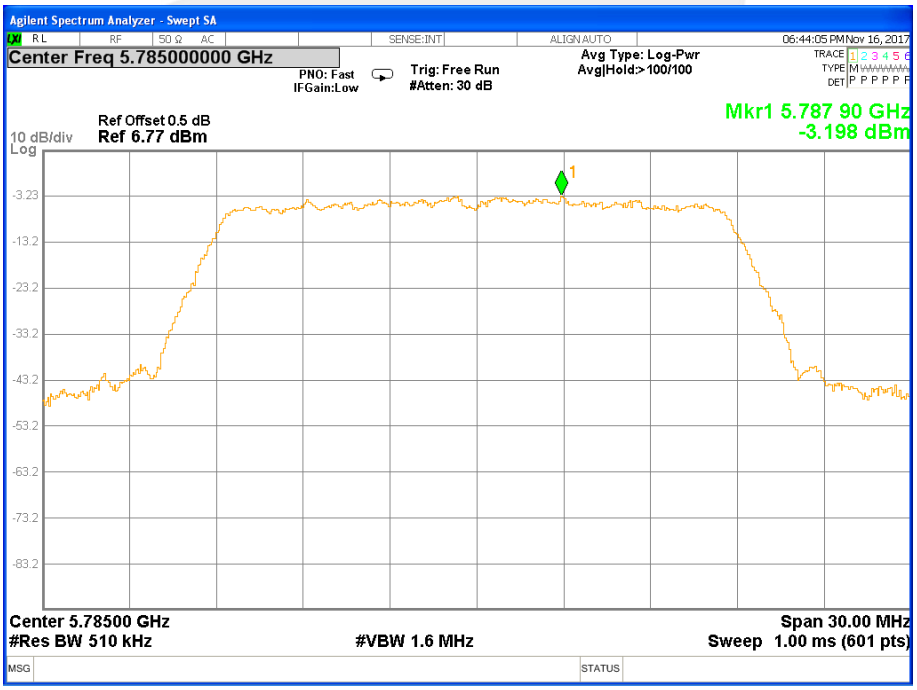


Band IV (5.725-5.850GHz)802.11n(HT20) Antenna A

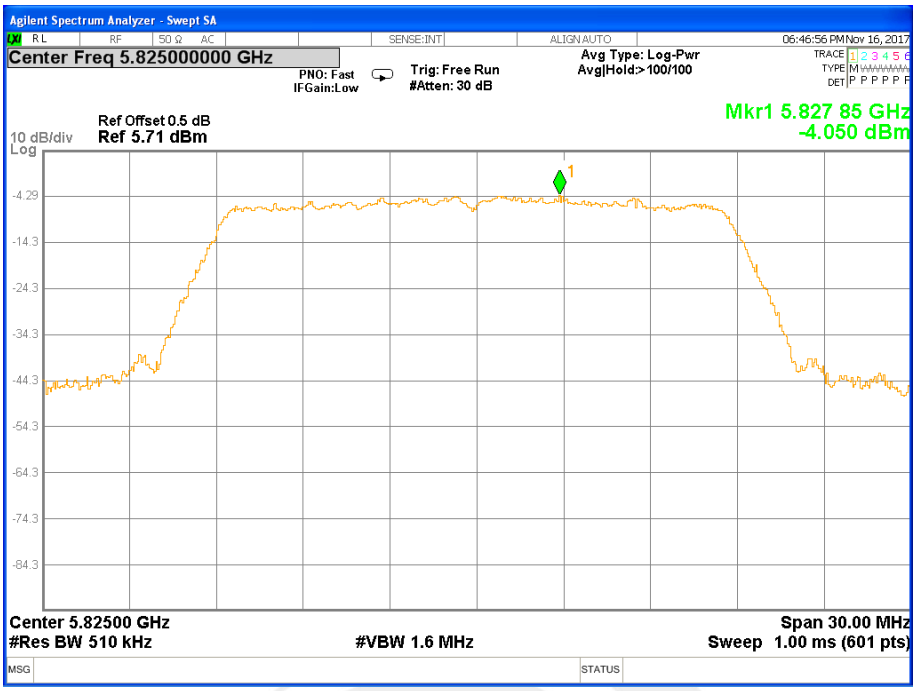
PSD 802.11n(HT20) Channel 149



PSD 802.11n(HT20) Channel 157

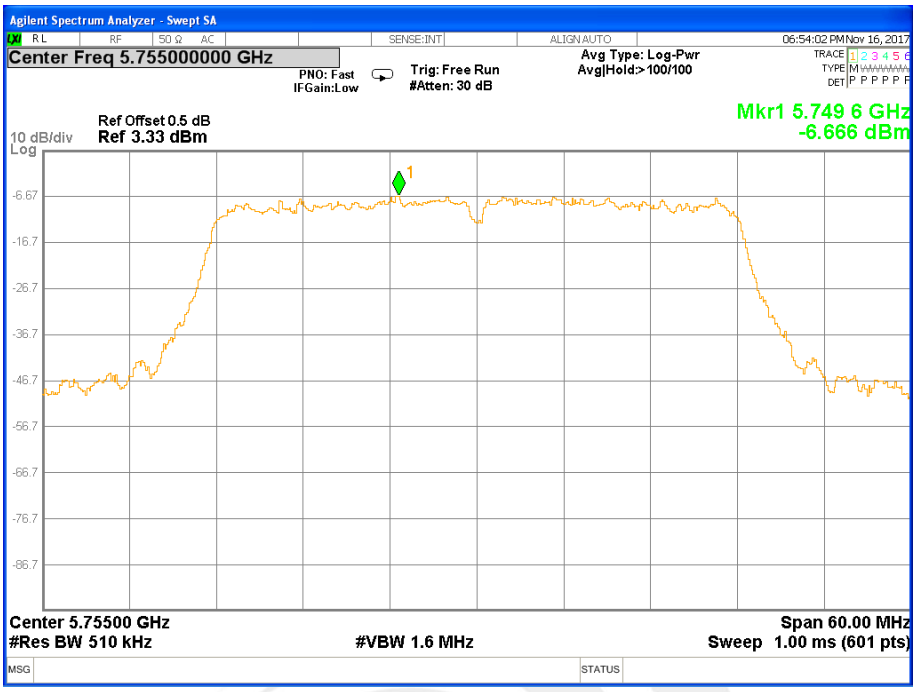


PSD 802.11n(HT20) Channel 165

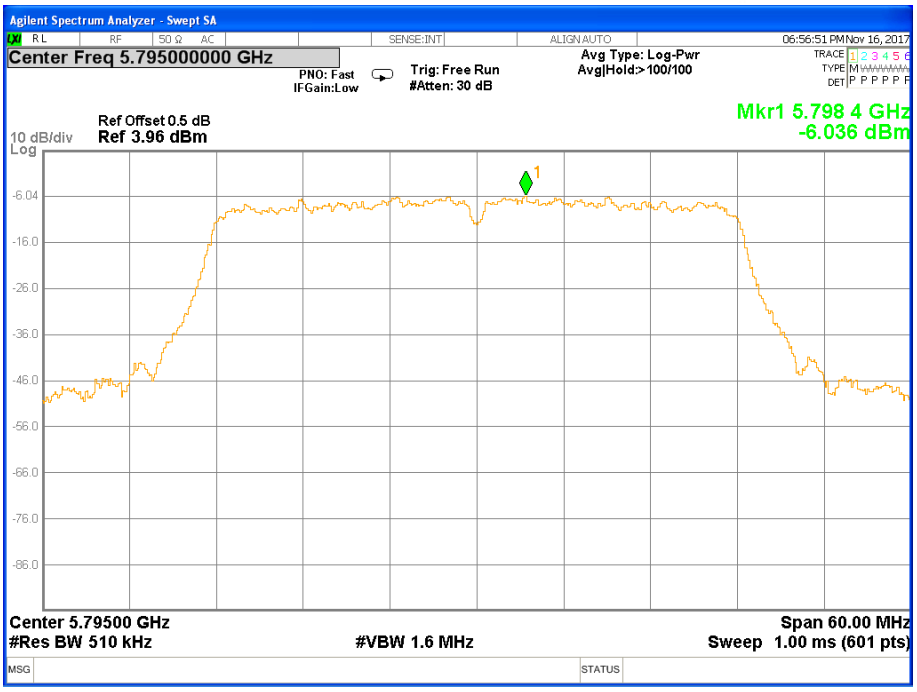


Band IV (5.725-5.850GHz)802.11n(HT40) Antenna A

PSD 802.11n(HT40) Channel 151

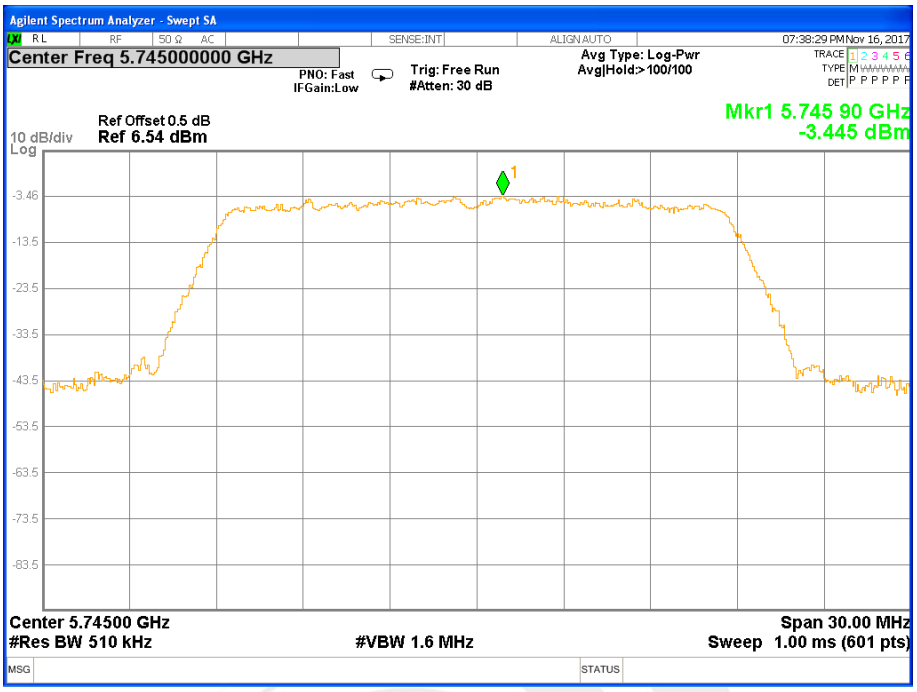


PSD 802.11n(HT40) Channel 159

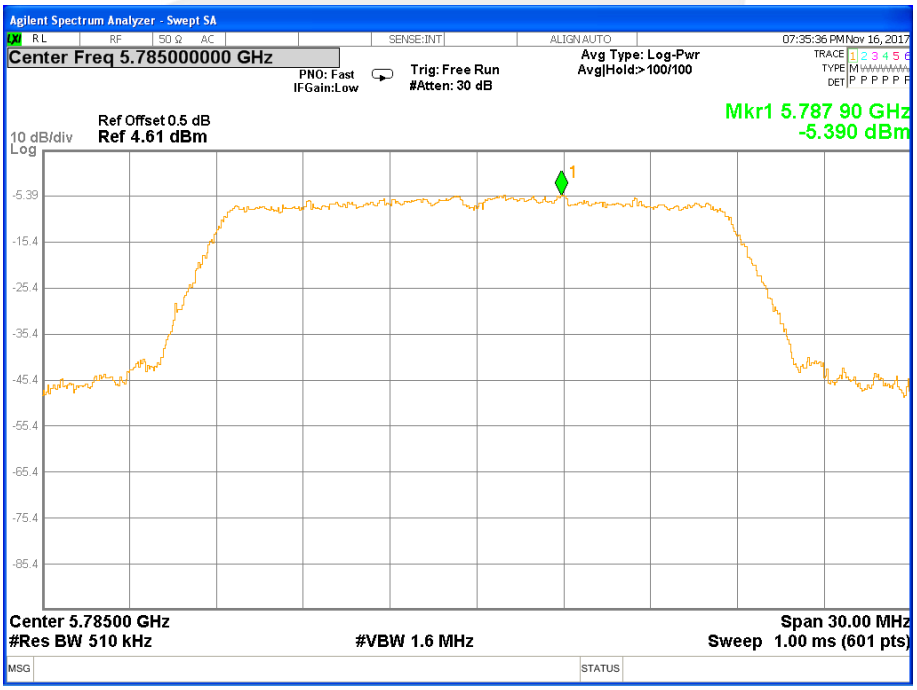


Band IV (5.725-5.850GHz)802.11ac(HT20) Antenna A

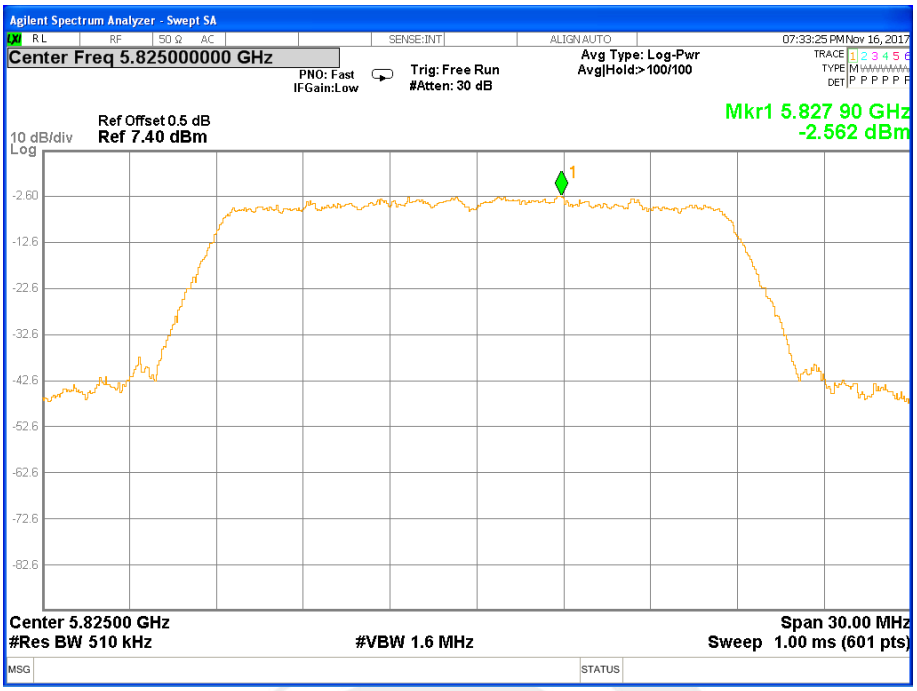
PSD 802.11ac(HT20) Channel 149



PSD 802.11ac(HT20) Channel 157

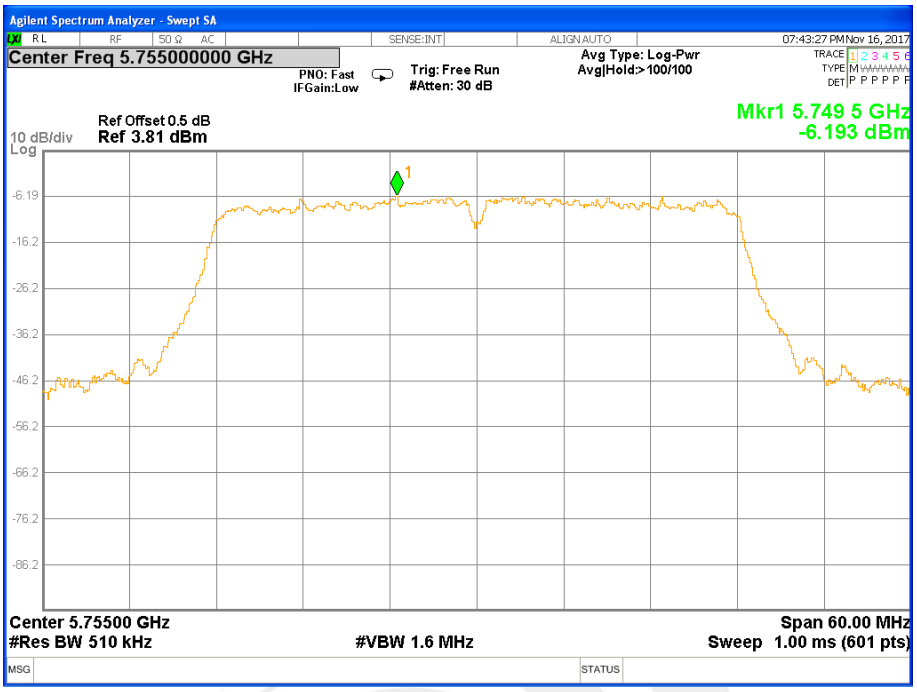


PSD 802.11ac(HT20) Channel 165

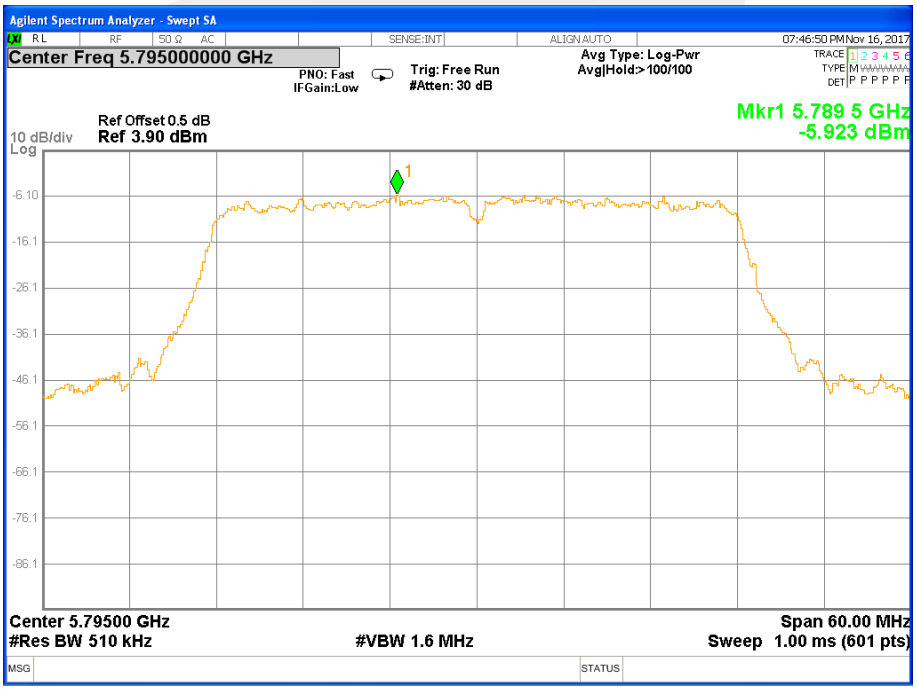


Band IV (5.725-5.850GHz)802.11ac(HT40) Antenna A

PSD 802.11ac(HT40) Channel 151

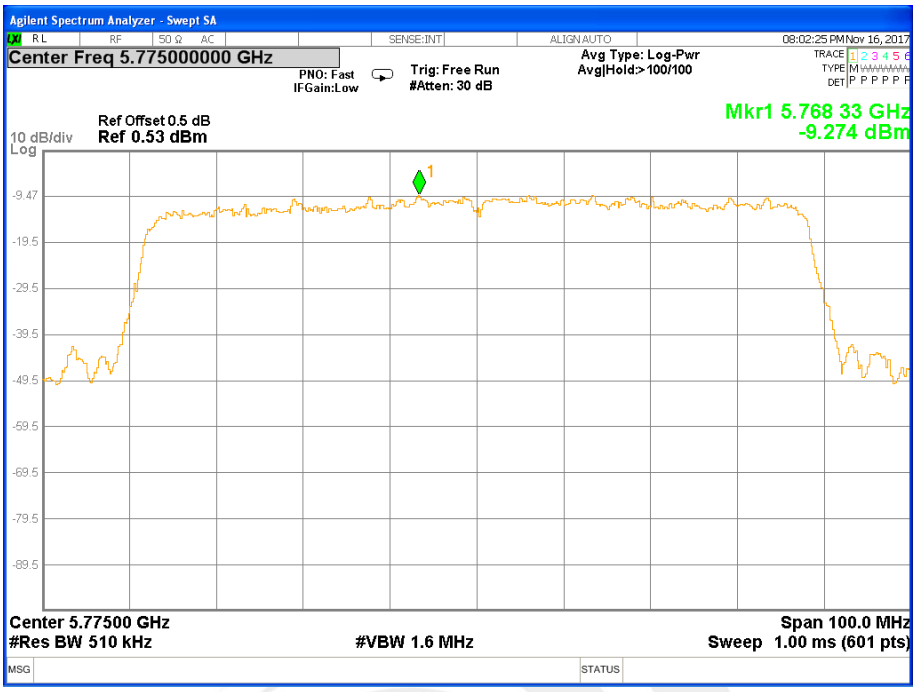


PSD 802.11ac(HT40) Channel 159



Band IV (5.725-5.850GHz)802.11ac(HT80) Antenna A

PSD 802.11ac(HT80) Channel 155



6. BANDWIDTH MEASUREMENT

6.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

See list of measuring instruments of this test report.

6.1.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > =RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP

6.1.4 EUT OPERATION CONDITIONS

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

6.1.5 TEST RESULTS

Band IV (5.725-5.850GHz)26dB Bandwidth

Frequency (MHz)	802.11a 26dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	19.37	19.37	N/A
5785	19.39	19.39	N/A
5825	19.54	19.42	N/A

Note: N/A, 26 db bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11n(HT20) 26dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	19.84	19.86	N/A
5785	19.89	19.86	N/A
5825	19.93	19.88	N/A

Note: N/A, 26 db bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11n(HT40) 26dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5755	40.11	39.91	N/A
5795	39.87	39.95	N/A

Note: N/A, 26 db bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11ac(HT20) 26dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	19.92	19.92	N/A
5785	19.87	19.85	N/A
5825	19.80	19.86	N/A

Note: N/A, 26 db bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11ac(HT40) 26dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5755	39.65	39.81	N/A
5795	39.75	39.95	N/A

Note: N/A, 26 db bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11ac(HT80) 26dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5775	80.84	80.83	N/A

Note: N/A, 26 db bandwidth measurement limit only embodied in the report

Band IV (5.725-5.850GHz)99% Bandwidth

Frequency (MHz)	802.11a 99% Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	16.575	16.558	N/A
5785	16.561	16.562	N/A
5825	16.554	16.562	N/A

Note: N/A, 99% bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11n(HT20) 99% Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	17.574	17.572	N/A
5785	17.586	17.612	N/A
5825	17.574	17.577	N/A

Note: N/A, 99% bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11n(HT40) 99% Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5755	36.031	36.034	N/A
5795	35.980	36.014	N/A

Note: N/A, 99% bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11ac(HT20) 99% Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	17.589	17.567	N/A
5785	17.570	17.573	N/A
5825	17.577	17.582	N/A

Note: N/A, 99% bandwidth measurement limit only embodied in the report.

Frequency (MHz)	802.11ac(HT40) 99% Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5755	36.005	36.016	N/A
5795	35.983	35.994	N/A

Note: N/A, 99% bandwidth measurement limit only embodied in the report.

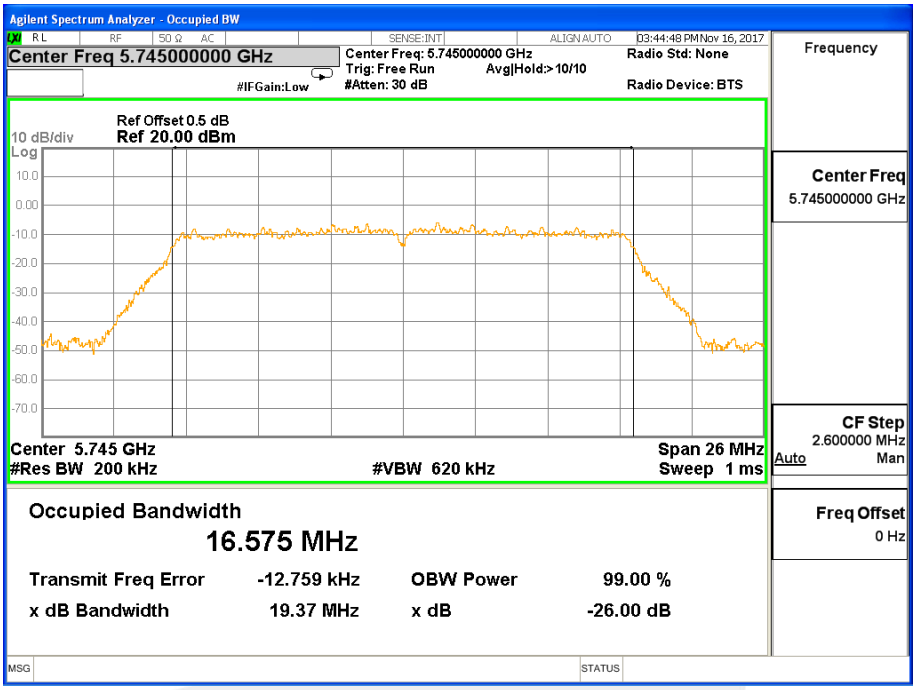
Frequency (MHz)	802.11ac(HT80) 99% Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5775	74.948	74.950	N/A

Note: N/A, 99% bandwidth measurement limit only embodied in the report.

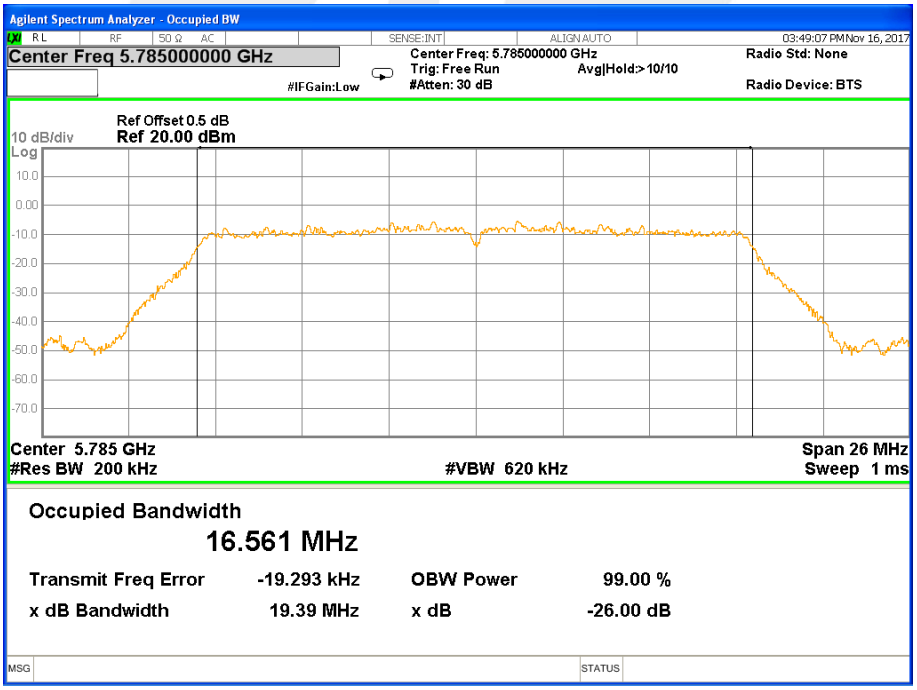
Antenna A

Band IV (5.725-5.850GHz) 802.11a, 26 dB &99% Bandwidth

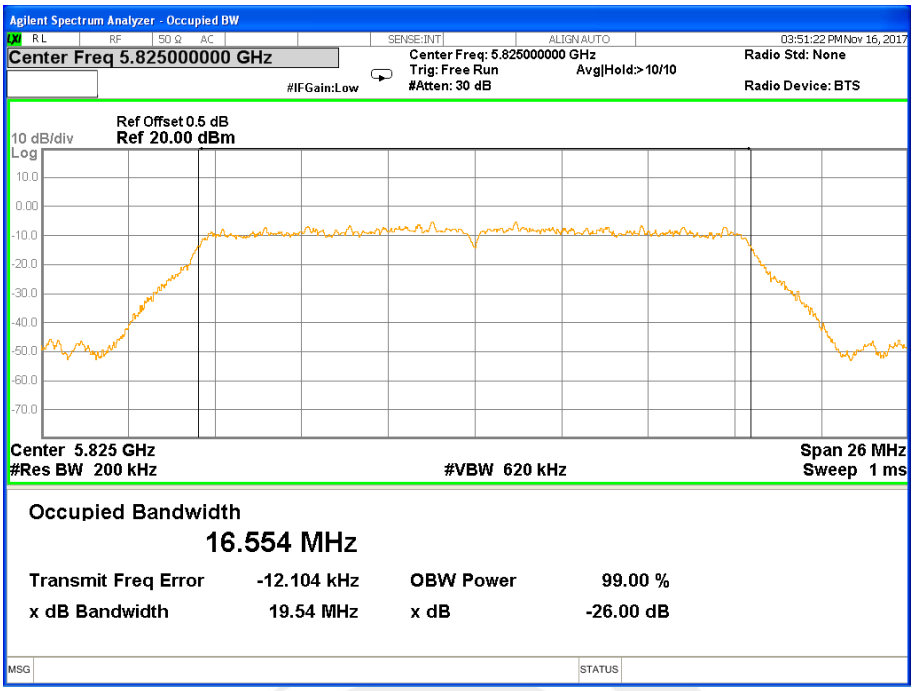
26 dB &99% Bandwidth 802.11a Channel 149



26 dB &99% Bandwidth 802.11a Channel 157

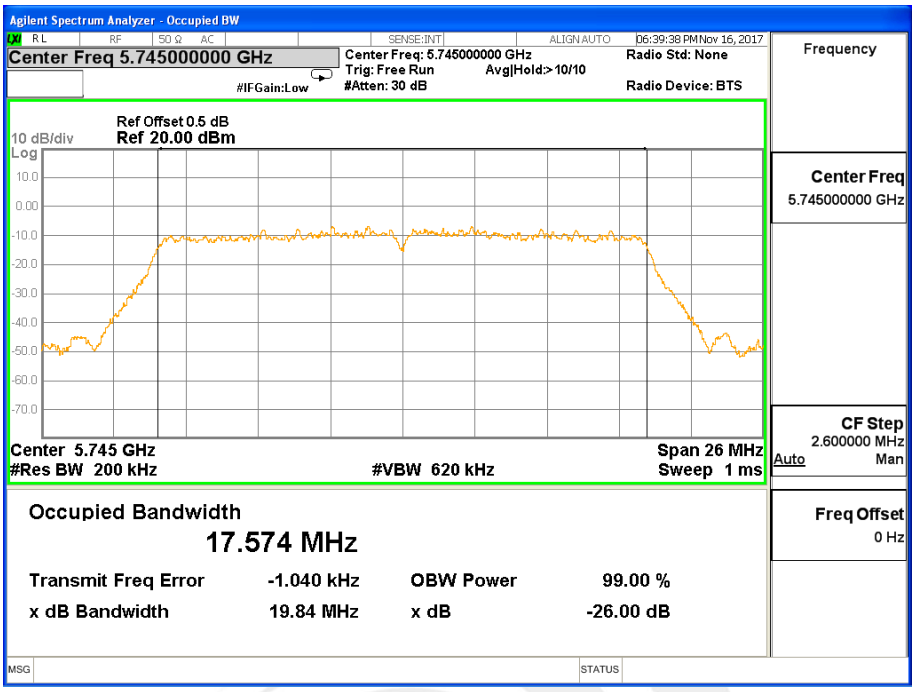


26 dB &99% Bandwidth 802.11a Channel 165

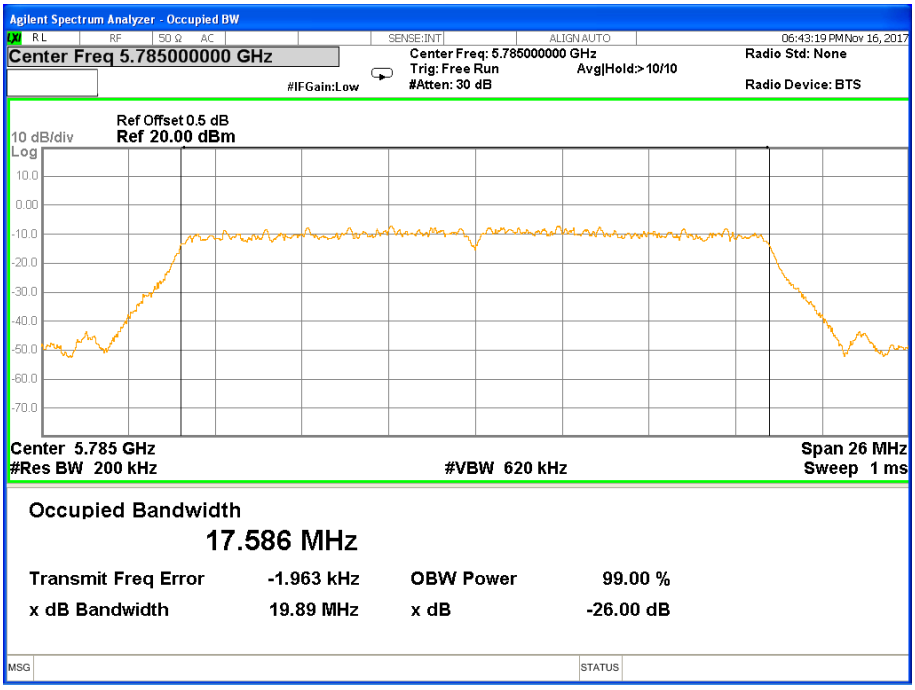


Band IV (5.725-5.850GHz) 802.11n(HT20) 26 dB &99% Bandwidth

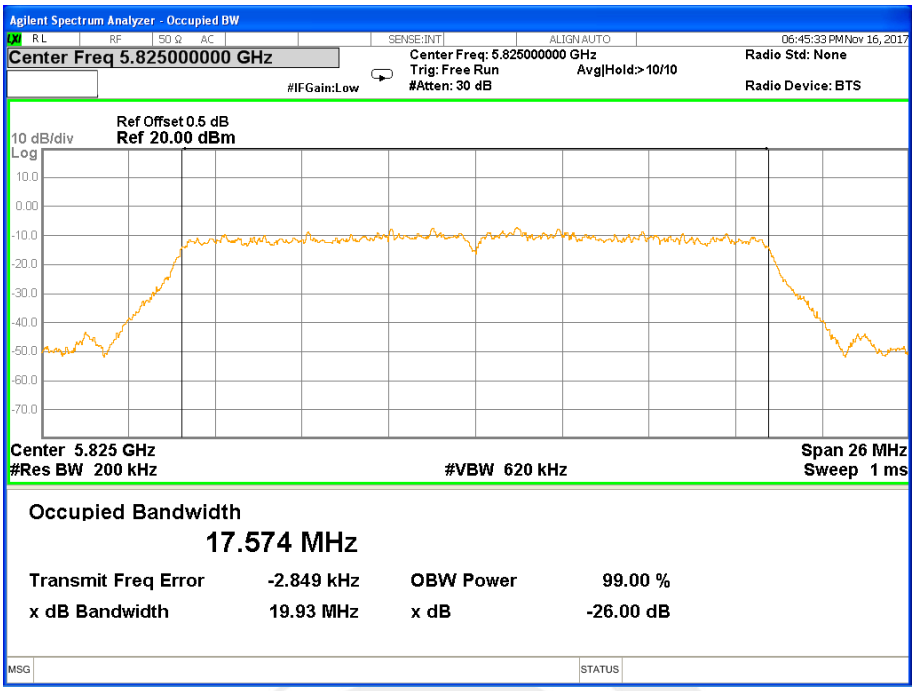
26 dB &99% Bandwidth 802.11n(HT20) Channel 149



26 dB &99% Bandwidth 802.11n(HT20) Channel 157

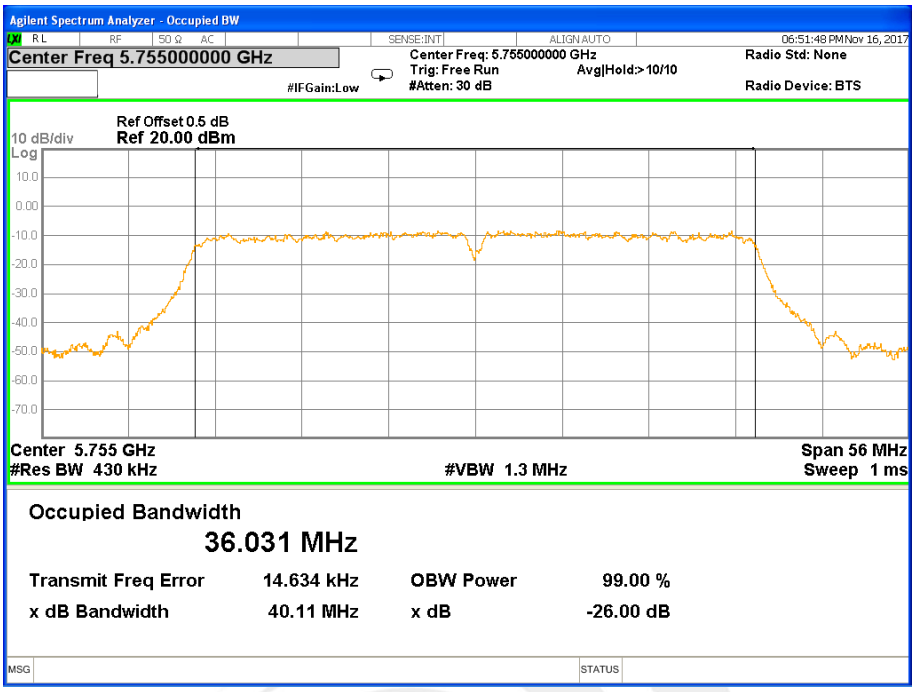


26 dB &99% Bandwidth 802.11n(HT20) Channel 165

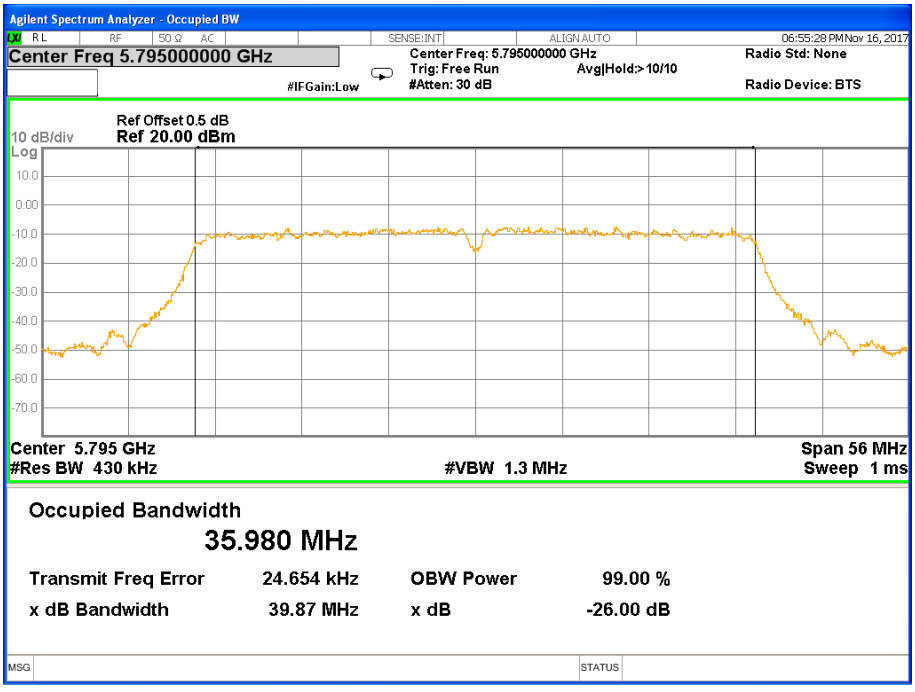


Band IV (5.725-5.850GHz) 802.11n(HT40) 26 dB &99% Bandwidth

26 dB &99% Bandwidth 802.11n(HT40) Channel 151

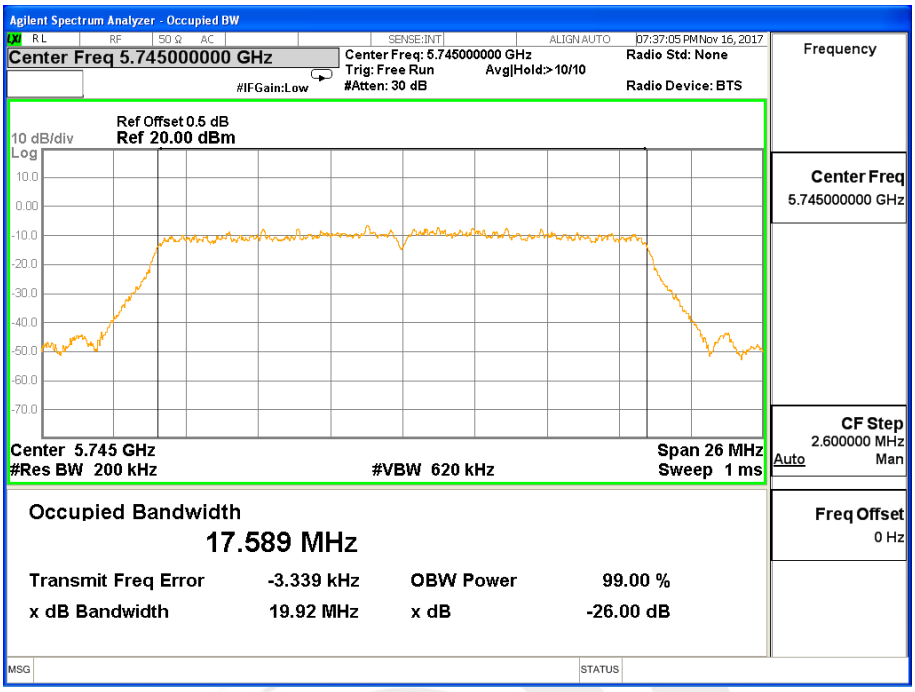


26 dB &99% Bandwidth 802.11n(HT40) Channel 159

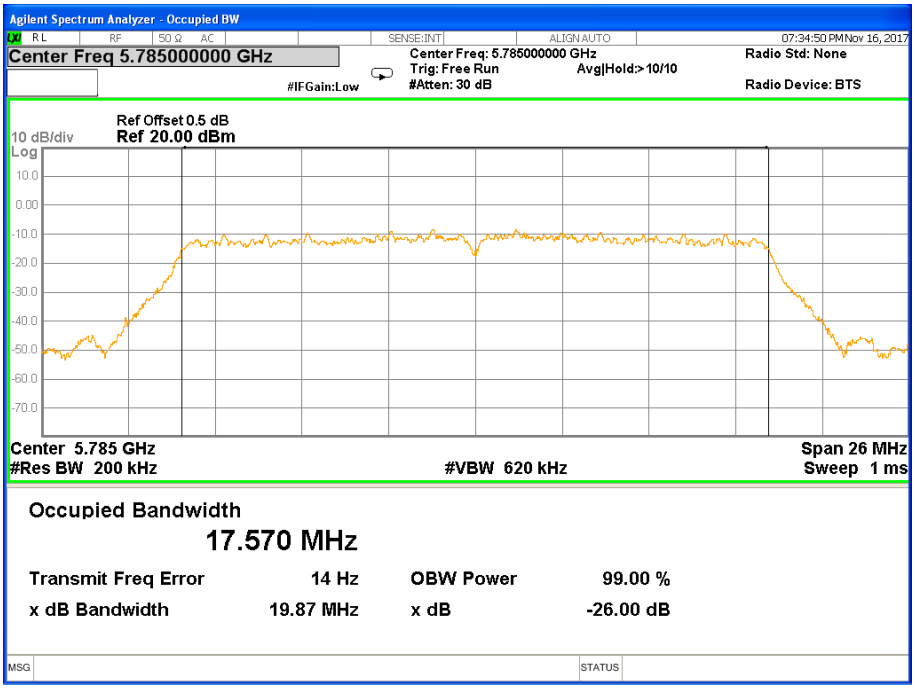


Band IV (5.725-5.850GHz) 802.11ac(HT20) 26 dB &99% Bandwidth

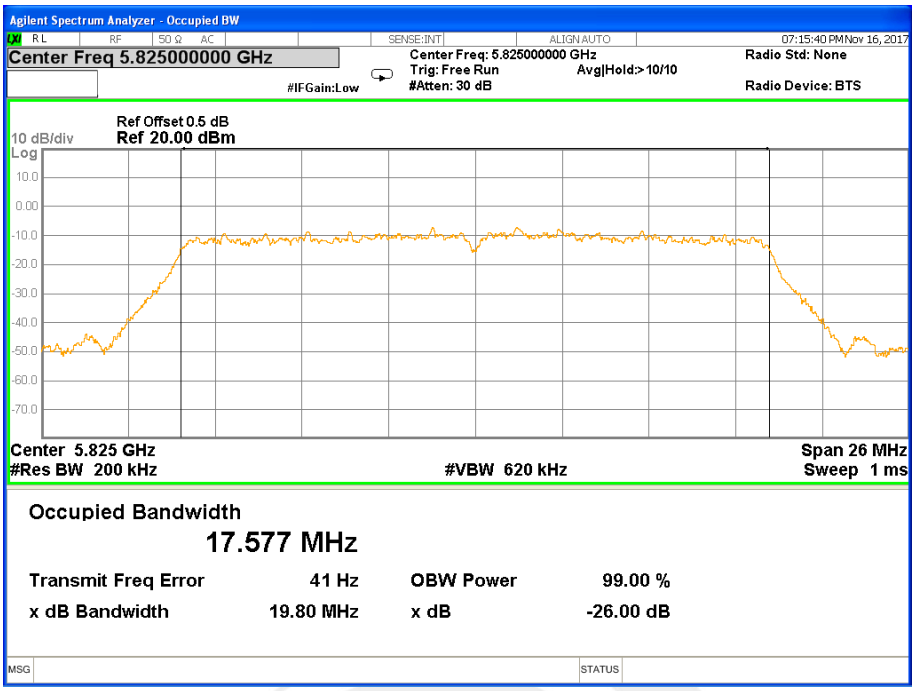
26 dB &99% Bandwidth 802.11ac(HT20) Channel 149



26 dB &99% Bandwidth 802.11ac(HT20) Channel 157

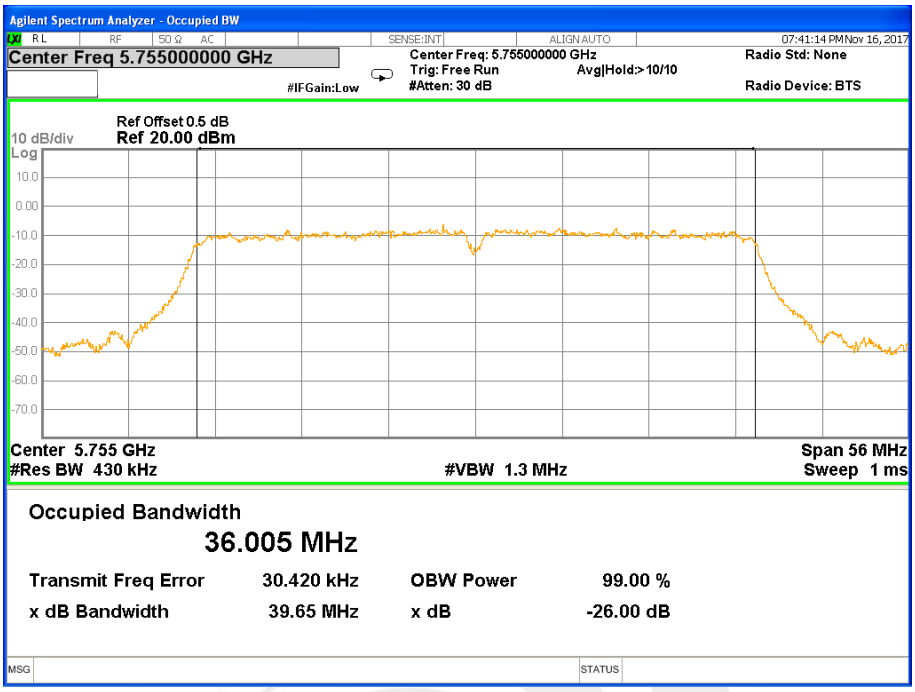


26 dB &99% Bandwidth 802.11ac(HT20) Channel 165

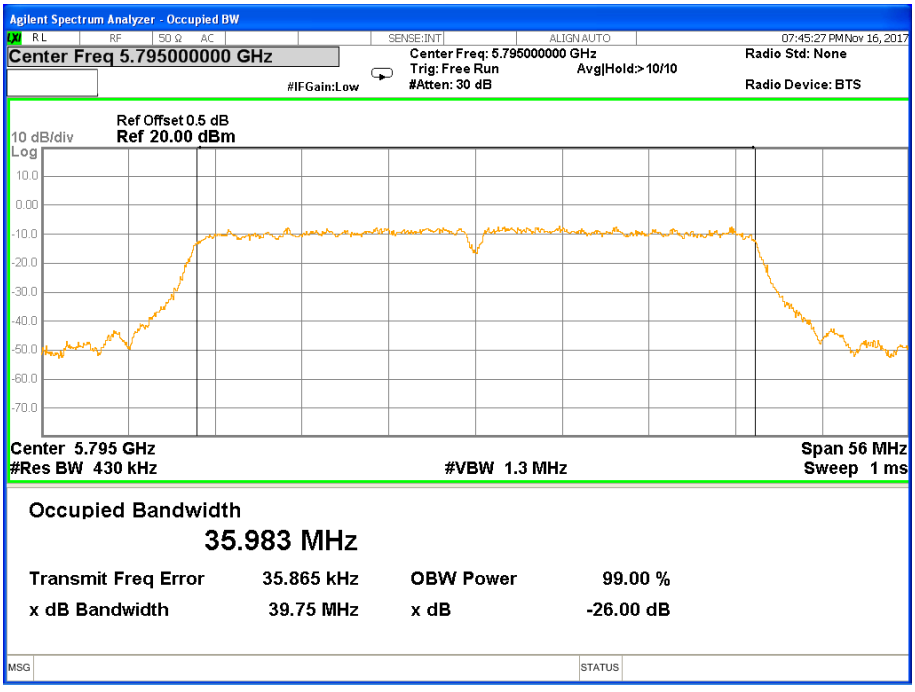


Band IV (5.725-5.850GHz) 802.11ac(HT40) 26 dB &99% Bandwidth

26 dB &99% Bandwidth 802.11ac(HT40) Channel 151

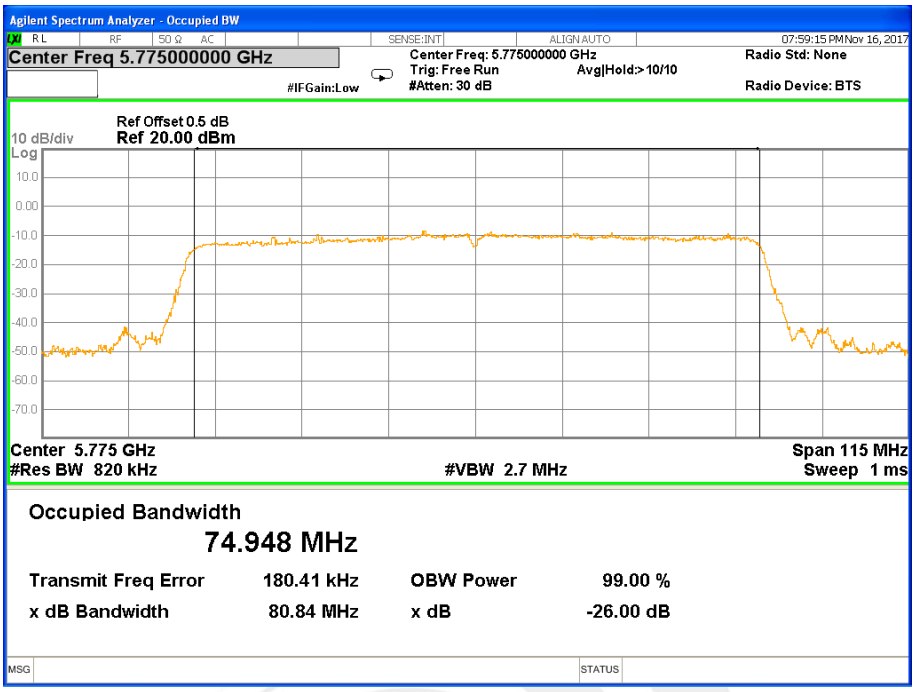


26 dB &99% Bandwidth 802.11ac(HT40) Channel 159



Band IV (5.725-5.850GHz) 802.11ac(HT80) 26 dB &99% Bandwidth

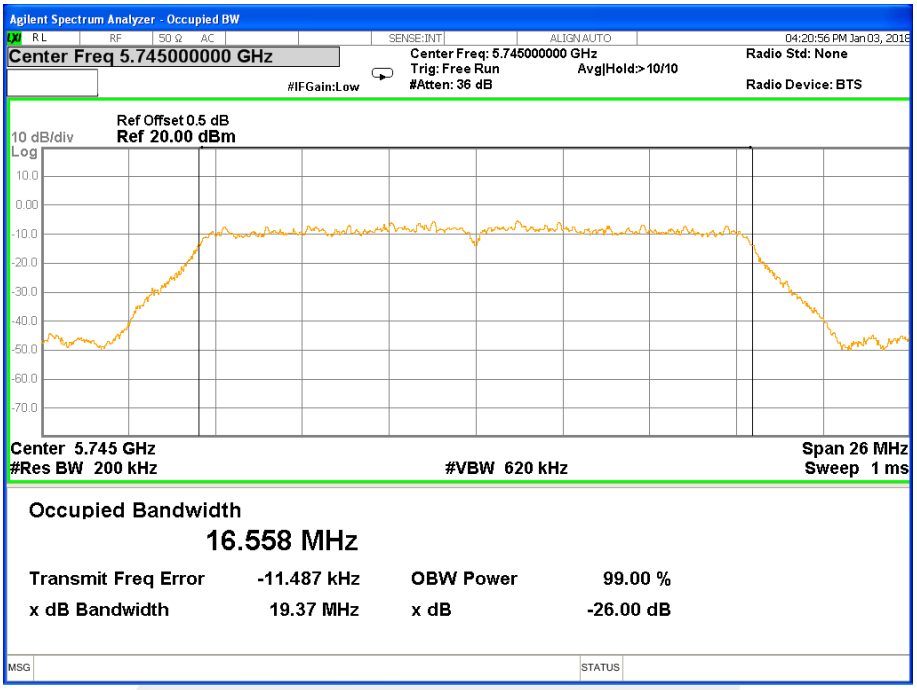
26 dB &99% Bandwidth 802.11ac(HT80) Channel 155



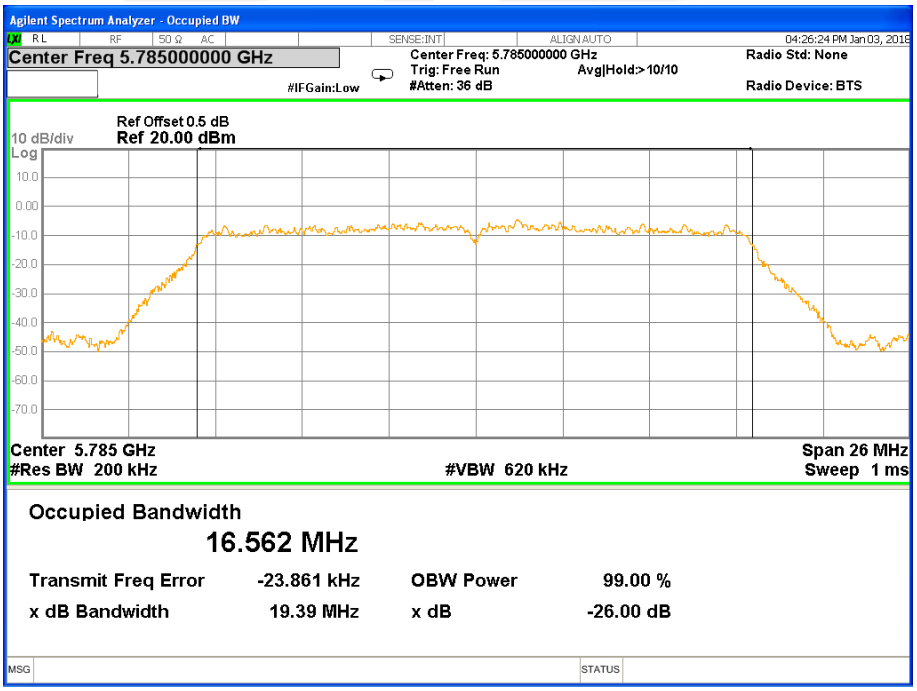
Antenna B

Band IV (5.725-5.850GHz) 802.11a, 26 dB &99% Bandwidth

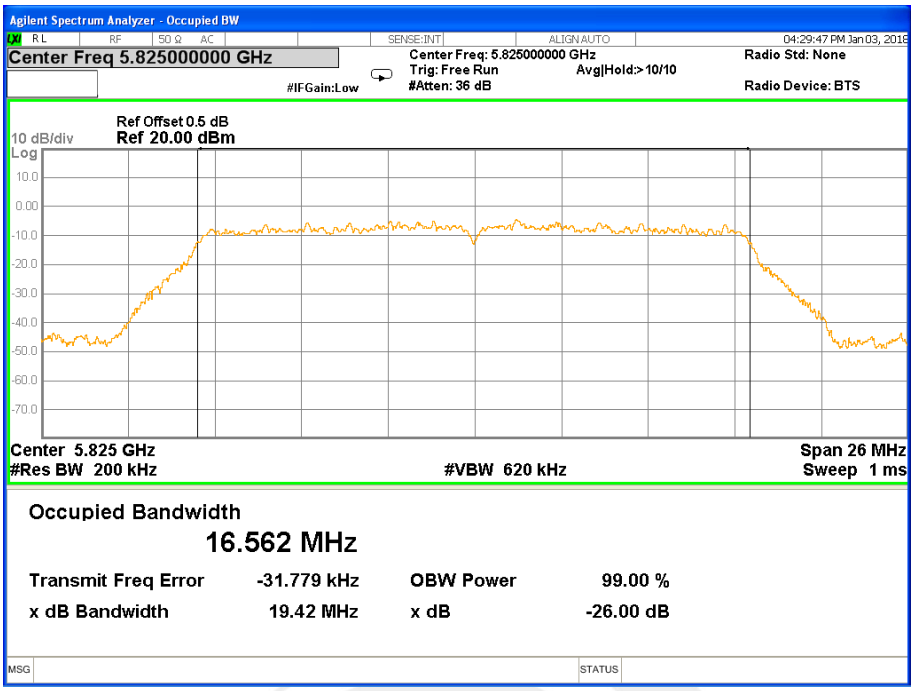
26 dB &99% Bandwidth 802.11a Channel 149



26 dB &99% Bandwidth 802.11a Channel 157

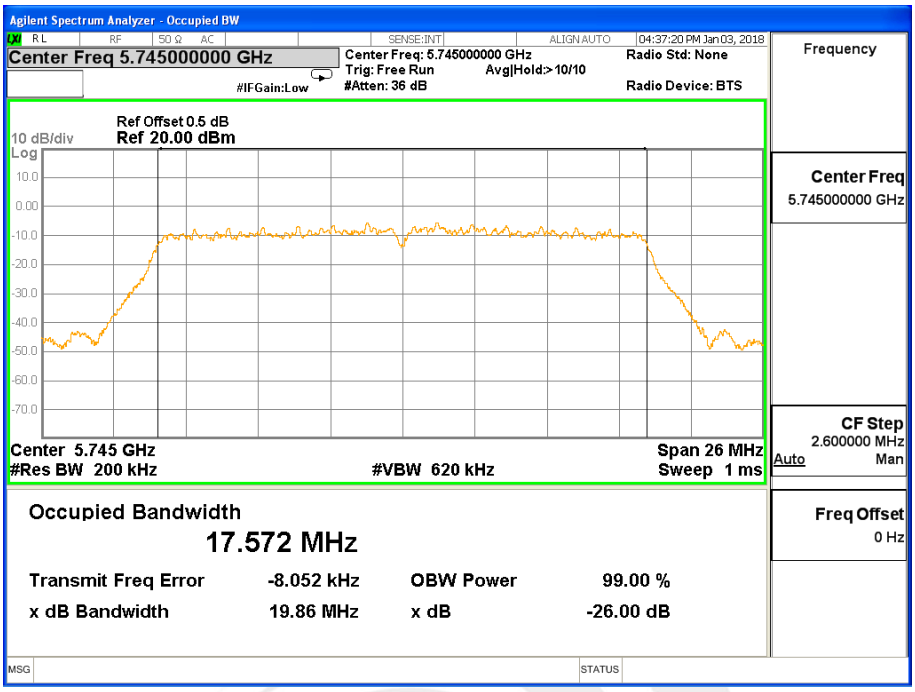


26 dB &99% Bandwidth 802.11a Channel 165

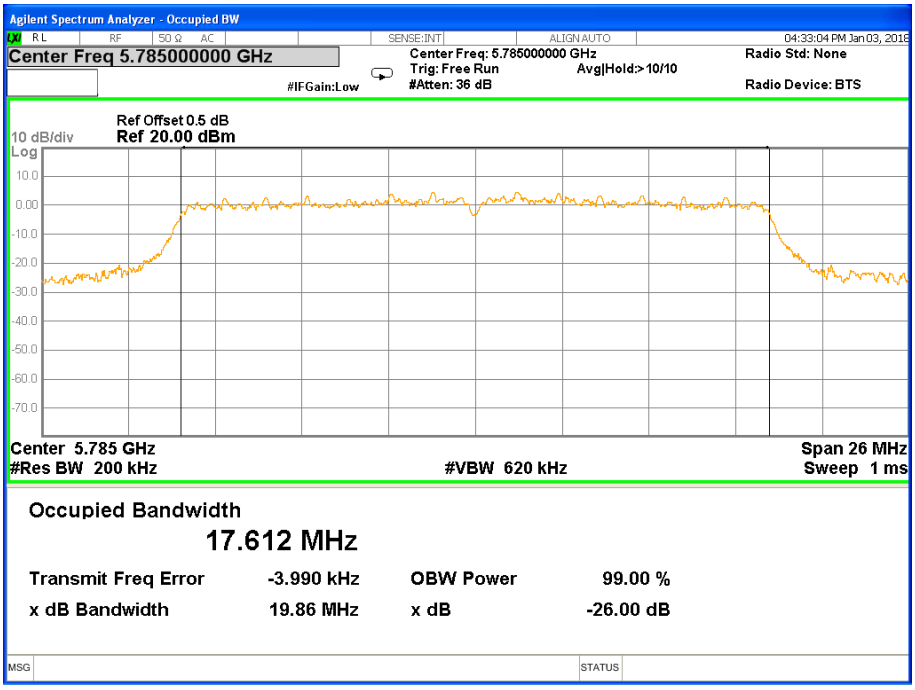


Band IV (5.725-5.850GHz) 802.11n(HT20) 26 dB &99% Bandwidth

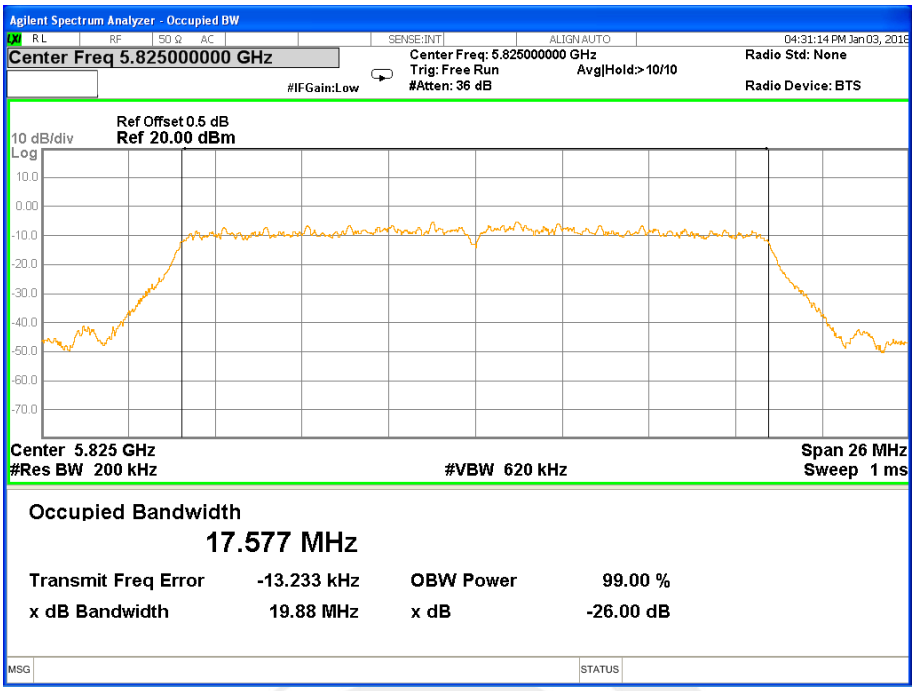
26 dB &99% Bandwidth 802.11n(HT20) Channel 149



26 dB &99% Bandwidth 802.11n(HT20) Channel 157

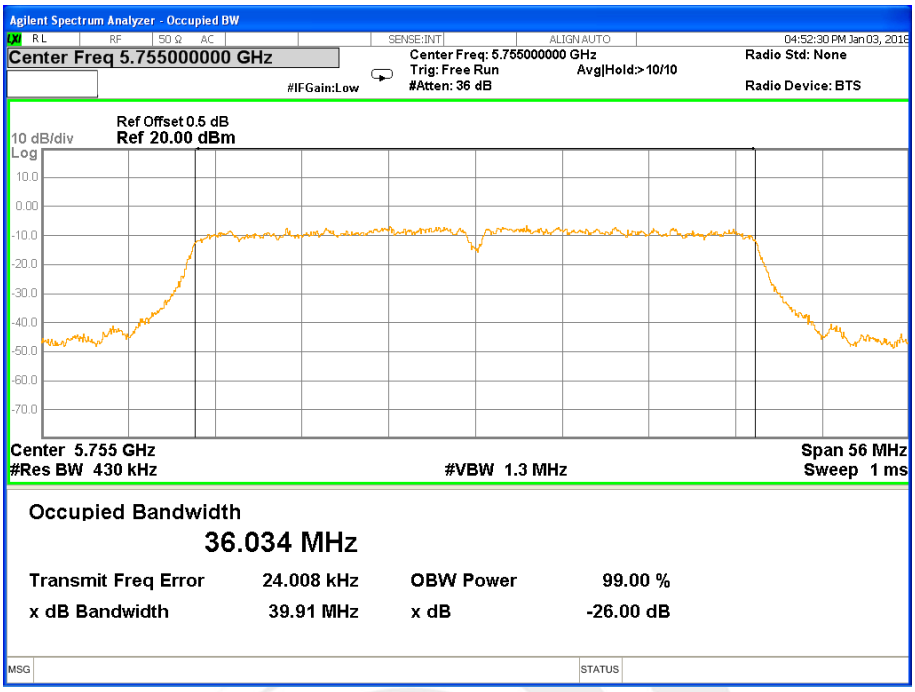


26 dB &99% Bandwidth 802.11n(HT20) Channel 165

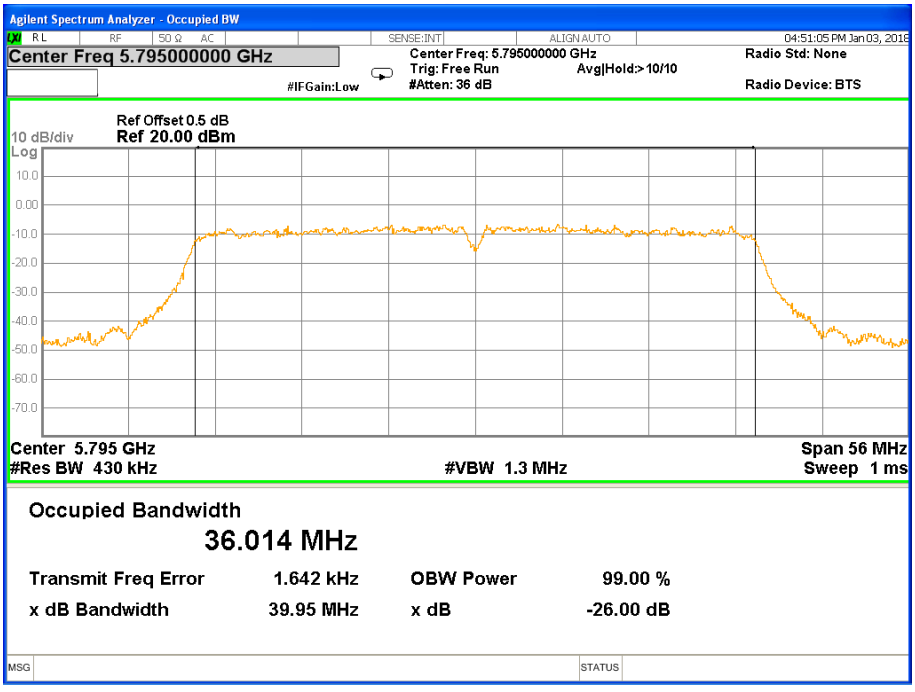


Band IV (5.725-5.850GHz) 802.11n(HT40) 26 dB &99% Bandwidth

26 dB &99% Bandwidth 802.11n(HT40) Channel 151

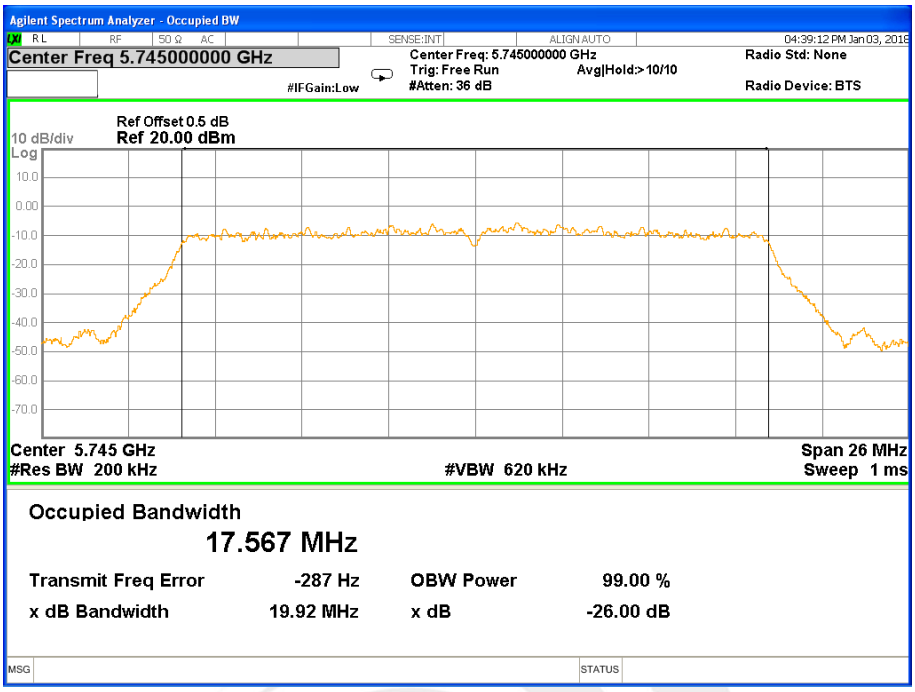


26 dB &99% Bandwidth 802.11n(HT40) Channel 159

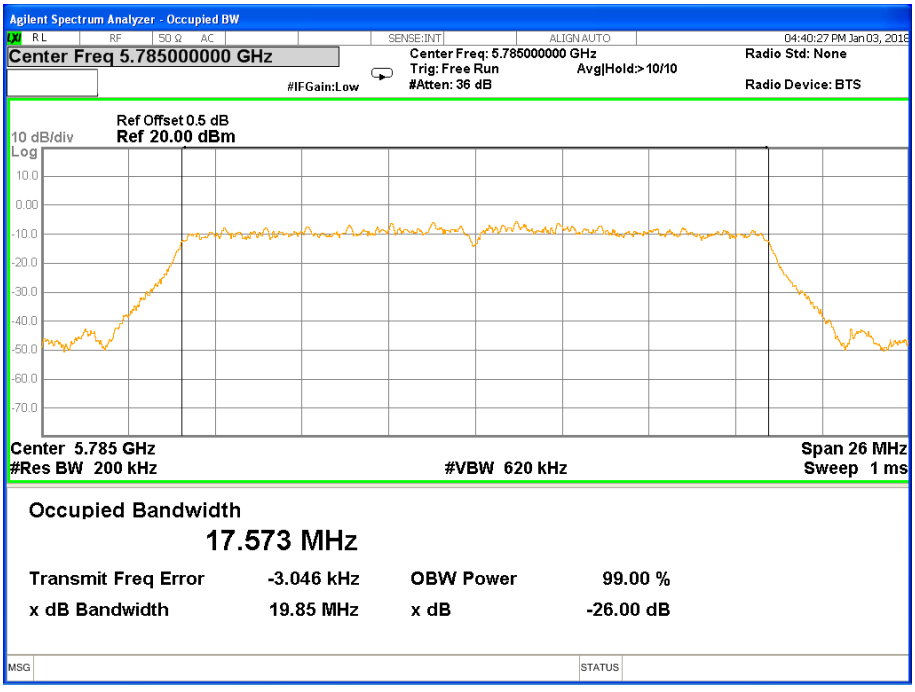


Band IV (5.725-5.850GHz) 802.11ac(HT20) 26 dB &99% Bandwidth

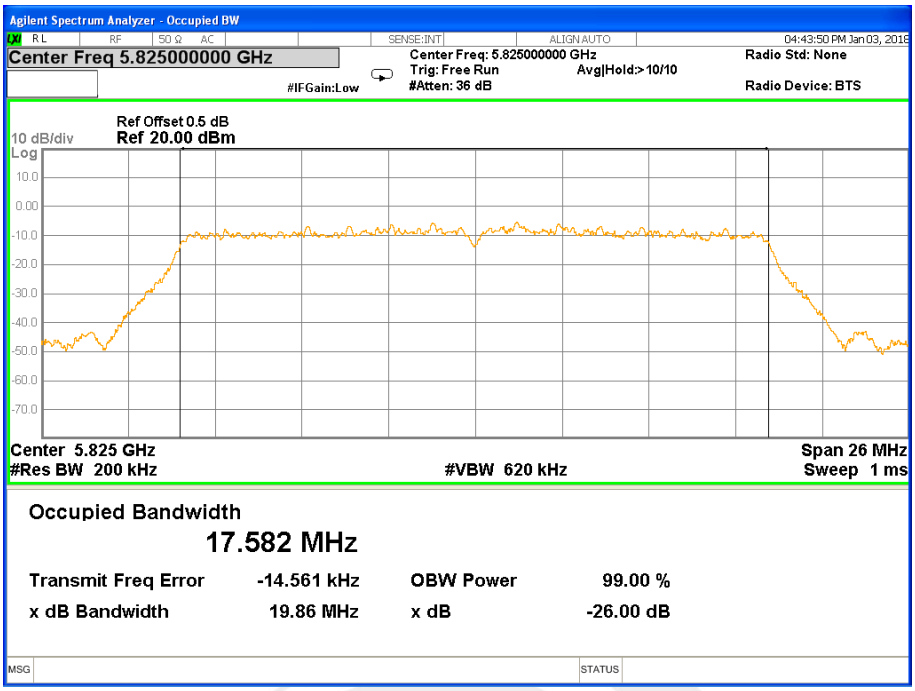
26 dB &99% Bandwidth 802.11ac(HT20) Channel 149



26 dB &99% Bandwidth 802.11ac(HT20) Channel 157

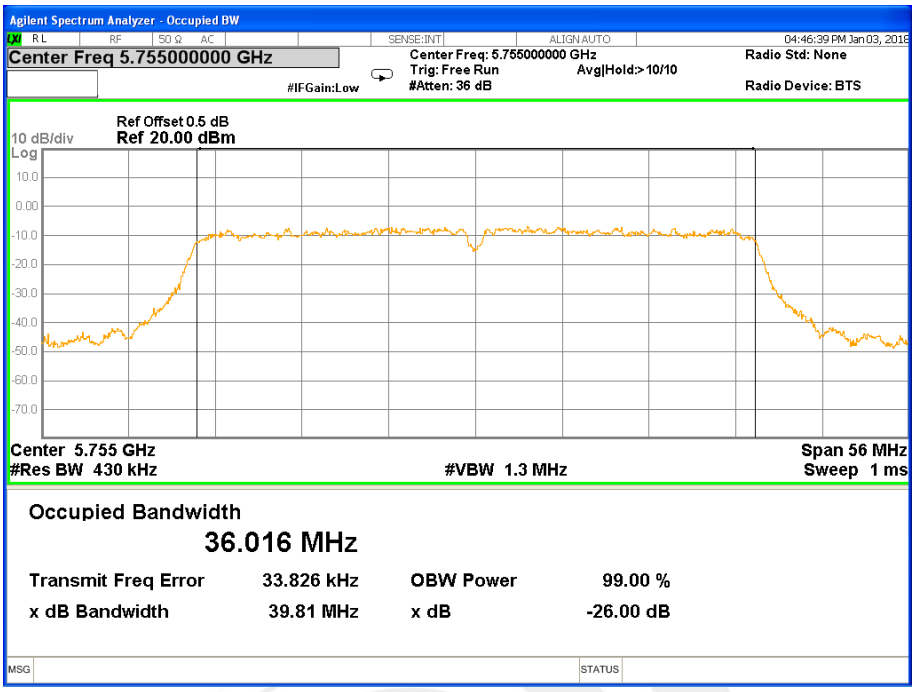


26 dB &99% Bandwidth 802.11ac(HT20) Channel 165

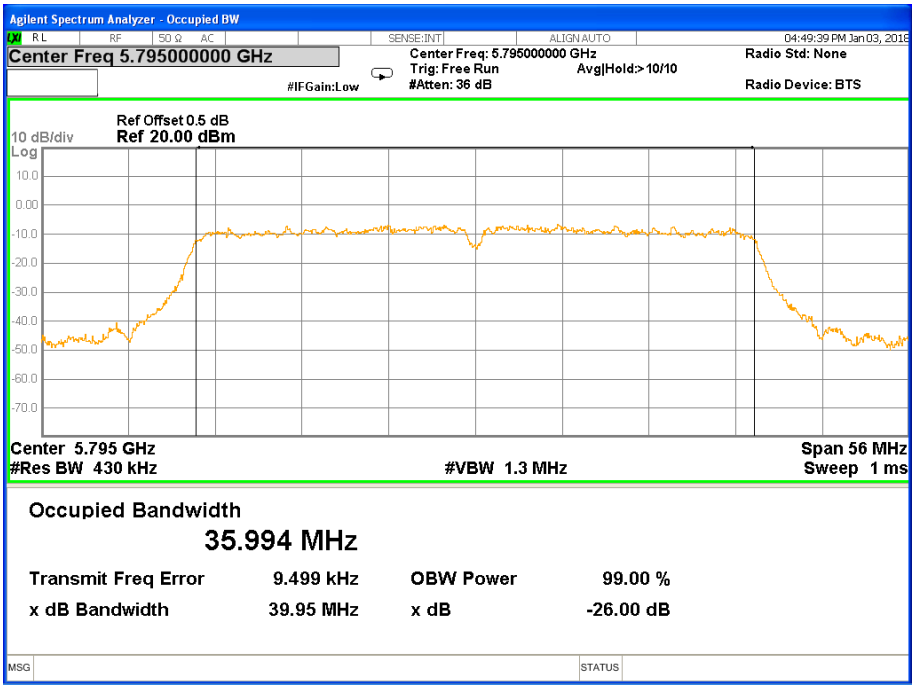


Band IV (5.725-5.850GHz) 802.11ac(HT40) 26 dB &99% Bandwidth

26 dB &99% Bandwidth 802.11ac(HT40) Channel 151

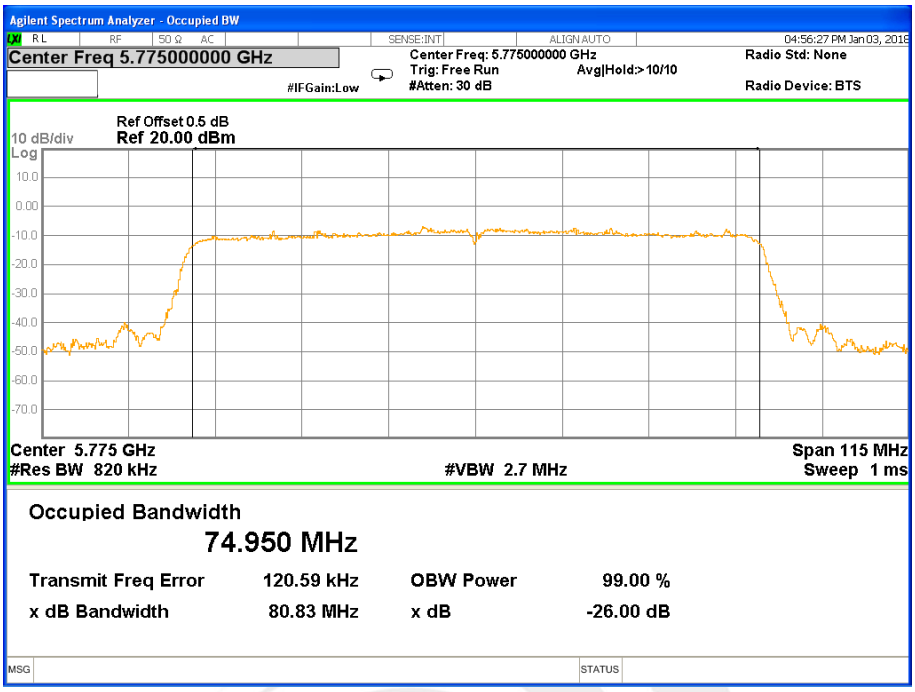


26 dB &99% Bandwidth 802.11ac(HT40) Channel 159



Band IV (5.725-5.850GHz) 802.11ac(HT80) 26 dB &99% Bandwidth

26 dB &99% Bandwidth 802.11ac(HT80) Channel 155



6.2 OCCUPIED BANDWIDTH (99%) TEST APPLIED PROCEDURES / LIMIT

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

6.2.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v01r03.
The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW

4. Set VBW ≥ 3 · RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

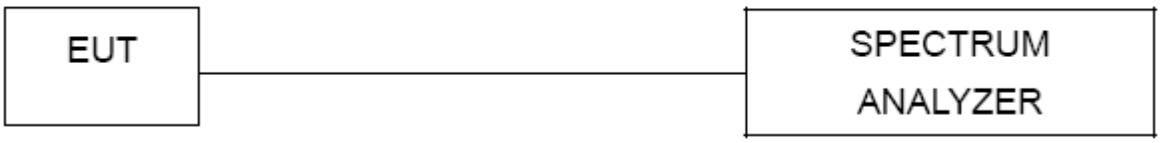
6. Use the 99 % power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

6.2.2 DEVIATION FROM STANDARD

No deviation.

6.2.3 TEST SETUP



6.2.4 EUT OPERATION CONDITIONS

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

6.2.5 TEST RESULTS

Data See 6.1.5

6.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

6.3.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v01r03.

a) Set RBW = 100 kHz.

b) Set the video bandwidth (VBW) ≥ 3 × RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Sweep = auto couple.

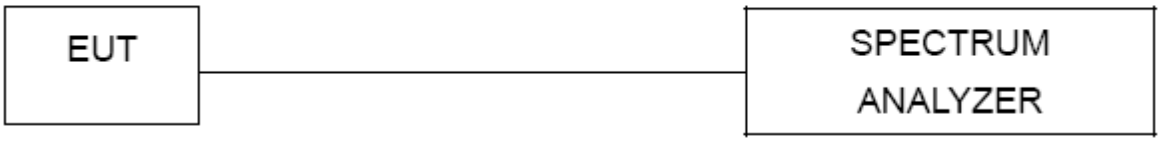
f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.3.2 DEVIATION FROM STANDARD

No deviation.

6.3.3 TEST SETUP



6.3.4 EUT OPERATION CONDITIONS

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

6.3.5 TEST RESULTS

Band IV (5.725-5.850GHz)6dB Bandwidth

Frequency (MHz)	802.11a 6dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	16.03	16.29	>500KHz
5785	16.27	16.02	>500KHz
5825	15.79	16.28	>500KHz

Note: N/A, 6 db bandwidth measurement limit only embodied in the report

Frequency (MHz)	802.11n(HT20) 6dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	16.90	17.04	>500KHz
5785	15.86	16.32	>500KHz
5825	16.99	16.98	>500KHz

Note: N/A, 6 db bandwidth measurement limit only embodied in the report

Frequency (MHz)	802.11n(HT40) 6dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5755	35.15	35.17	>500KHz
5795	35.17	35.17	>500KHz

Note: N/A, 6 db bandwidth measurement limit only embodied in the report

Frequency (MHz)	802.11ac(HT20) 6dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5745	16.32	16.30	>500KHz
5785	16.94	16.38	>500KHz
5825	16.28	17.02	>500KHz

Note: N/A, 6 db bandwidth measurement limit only embodied in the report

Frequency (MHz)	802.11ac(HT40) 6dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5755	35.21	35.20	>500KHz
5795	35.16	35.18	>500KHz

Note: N/A, 6 db bandwidth measurement limit only embodied in the report

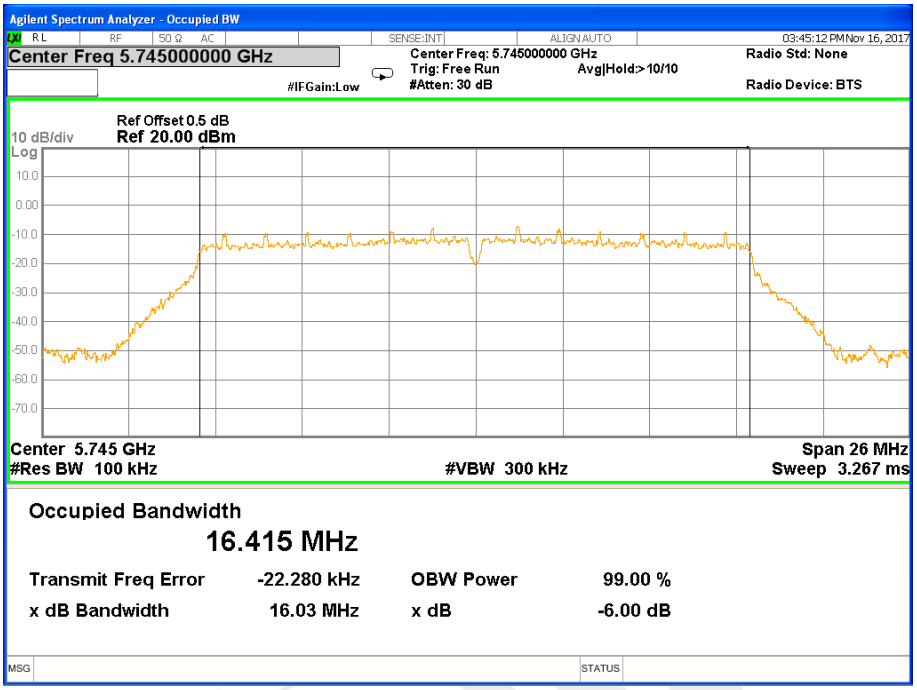
Frequency (MHz)	802.11ac(HT80) 6dB Bandwidth(MHz)		Pass/Fail
	ANTENNA -A	ANTENNA -B	
5775	73.96	75.03	>500KHz

Note: N/A, 26 db bandwidth measurement limit only embodied in the report

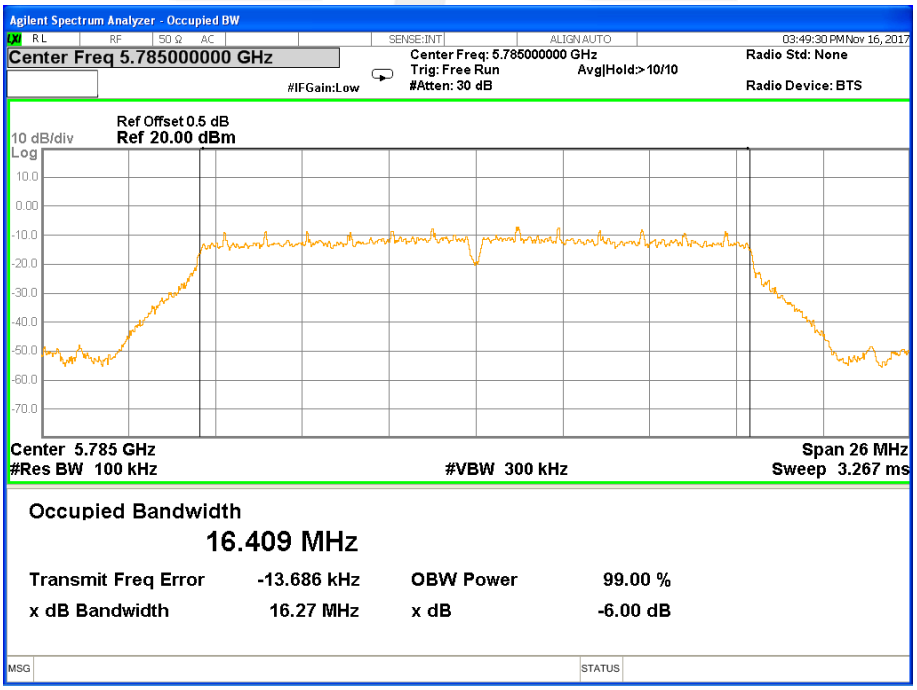
Antenna A

Band IV (5.725-5.850GHz) 802.11a, 6 dB Bandwidth

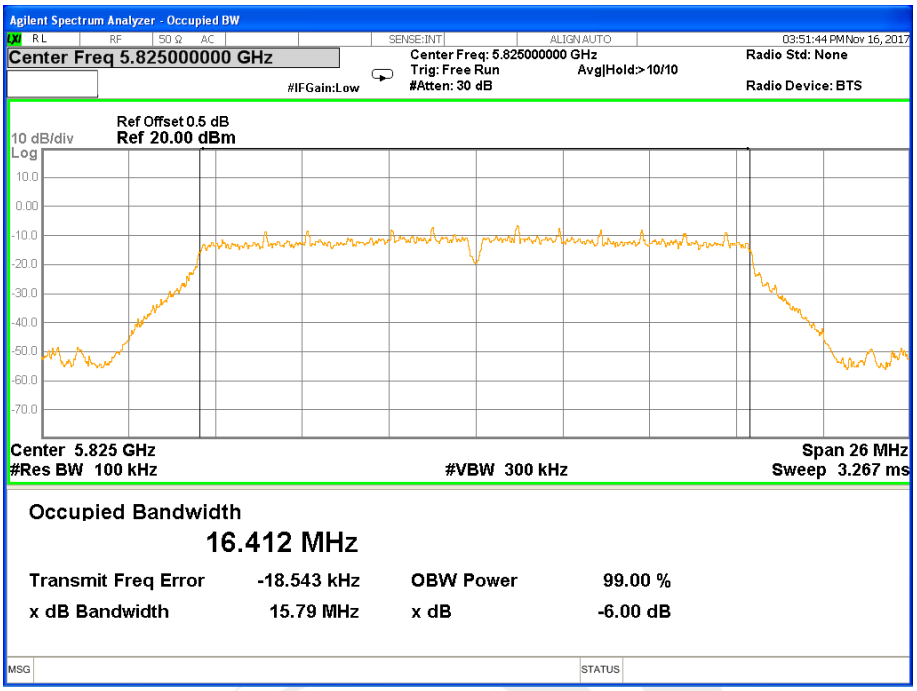
6 dB Bandwidth 802.11a Channel 149



6 dB Bandwidth 802.11a Channel 157

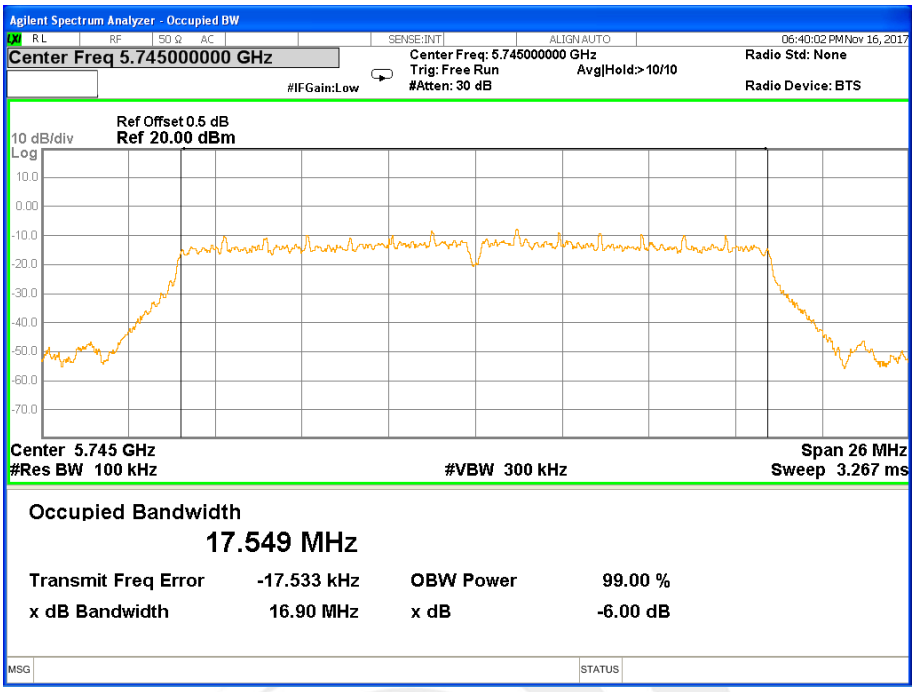


6 dB Bandwidth 802.11a Channel 165

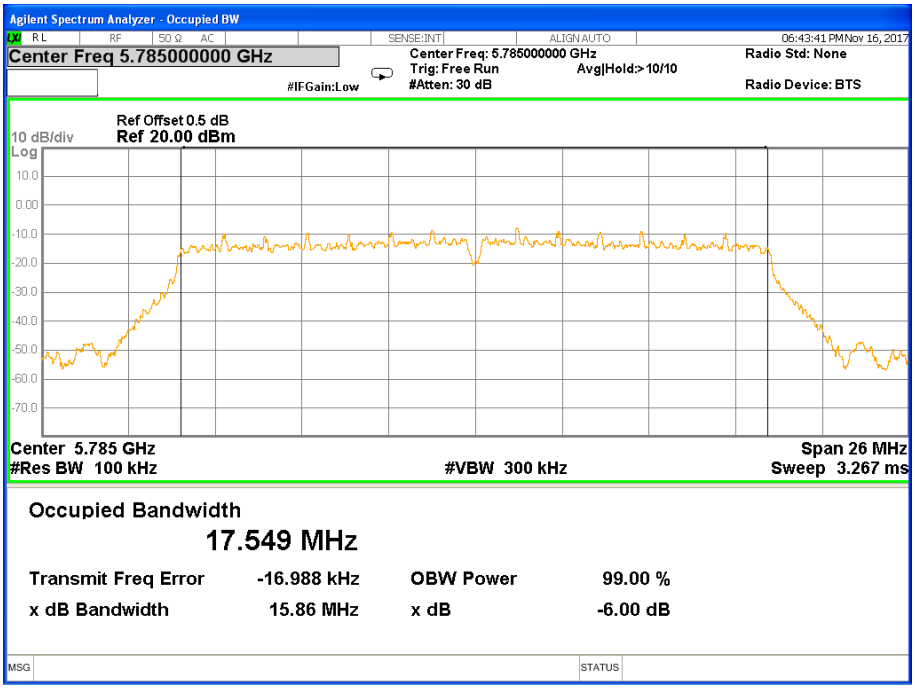


Band IV (5.725-5.850GHz) 802.11n(HT20) 6 dB Bandwidth

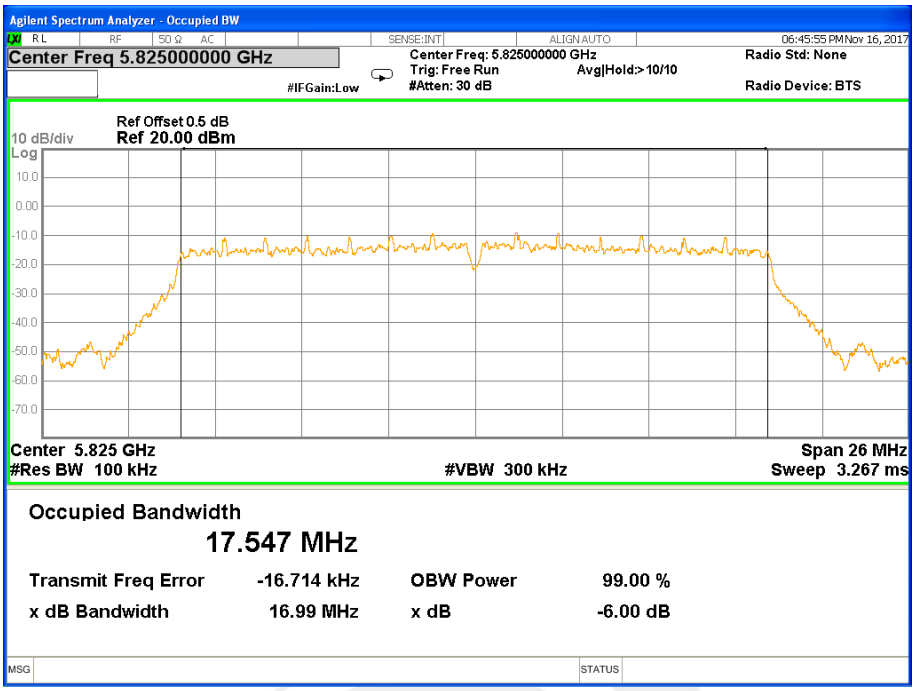
6 dB Bandwidth 802.11n(HT20) Channel 149



6 dB Bandwidth 802.11n(HT20) Channel 157

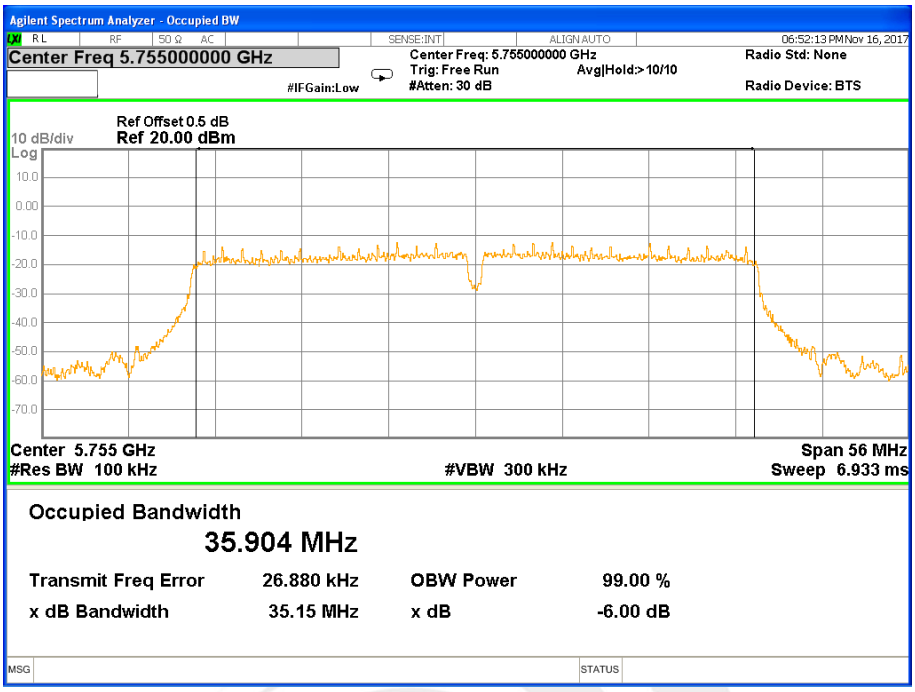


6 dB Bandwidth 802.11n(HT20) Channel 165

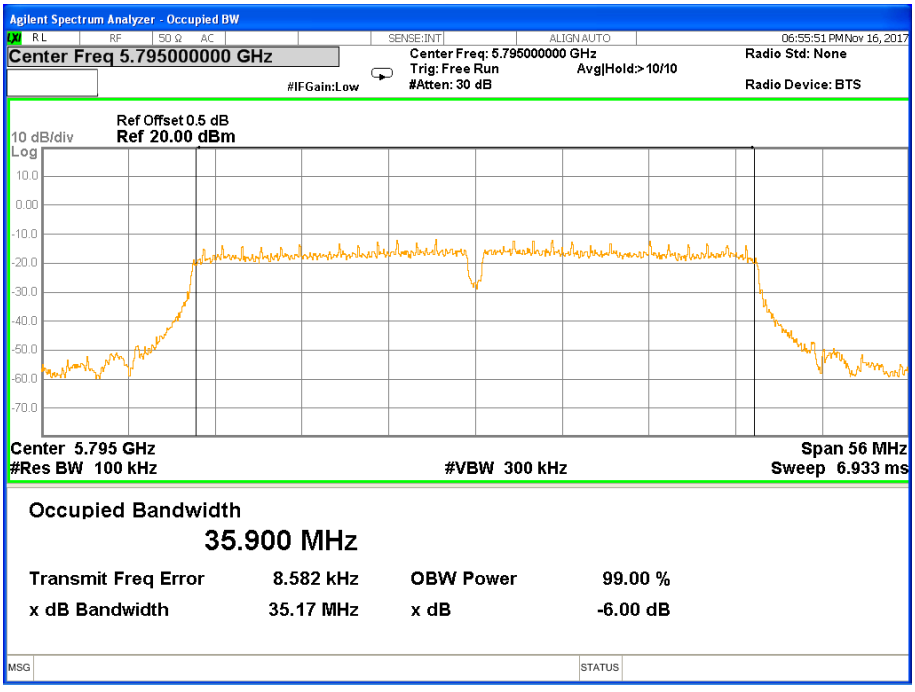


Band IV (5.725-5.850GHz) 802.11n(HT40) 6 dB Bandwidth

6 dB Bandwidth 802.11n(HT40) Channel 151

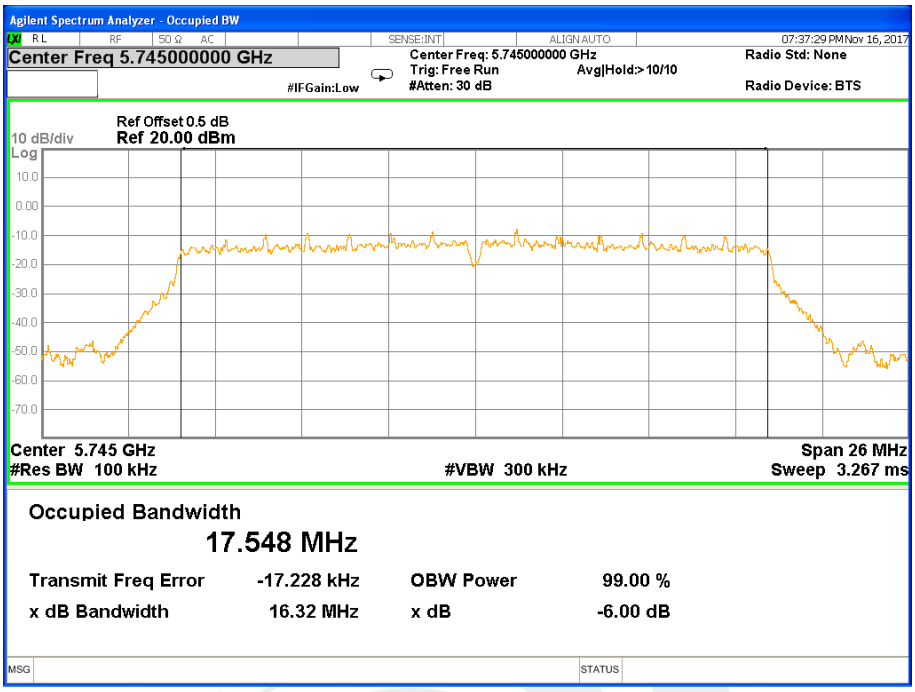


6 dB Bandwidth 802.11n(HT40) Channel 159

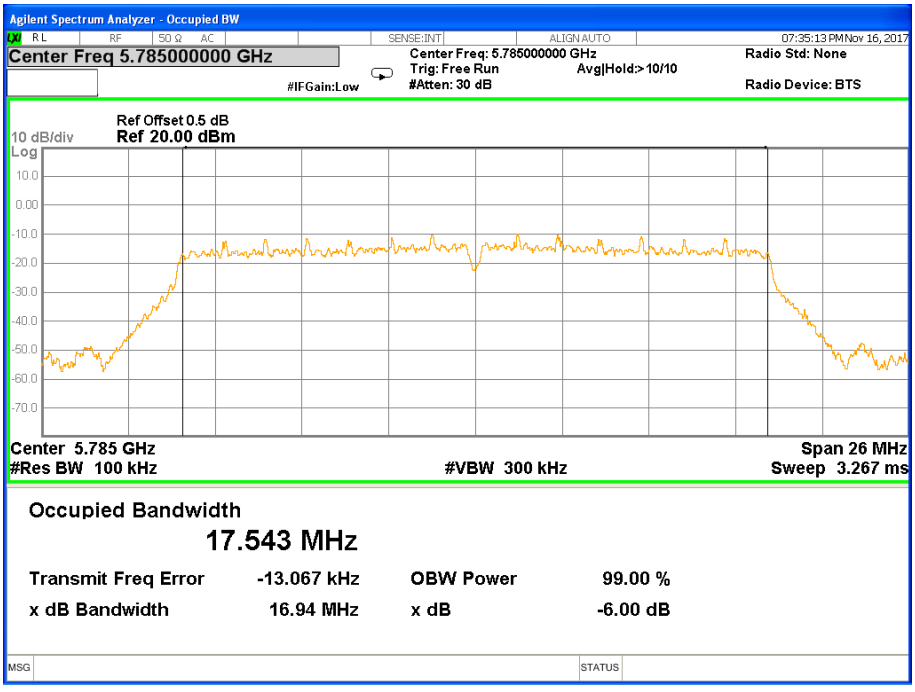


Band IV (5.725-5.850GHz) 802.11ac(HT20) 6 dB Bandwidth

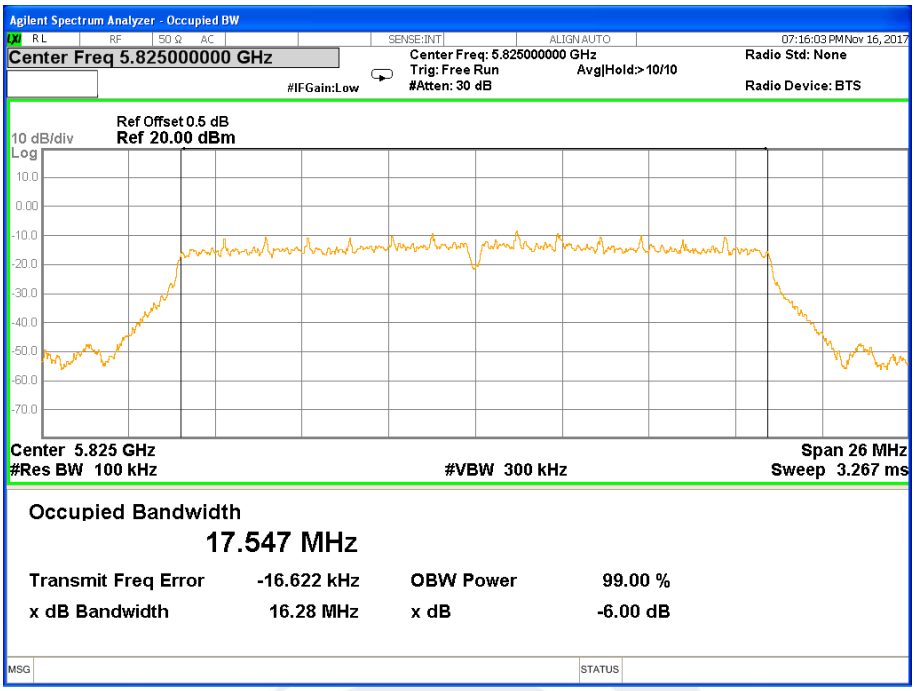
6 dB Bandwidth 802.11ac(HT20) Channel 149



6 dB Bandwidth 802.11ac(HT20) Channel 157

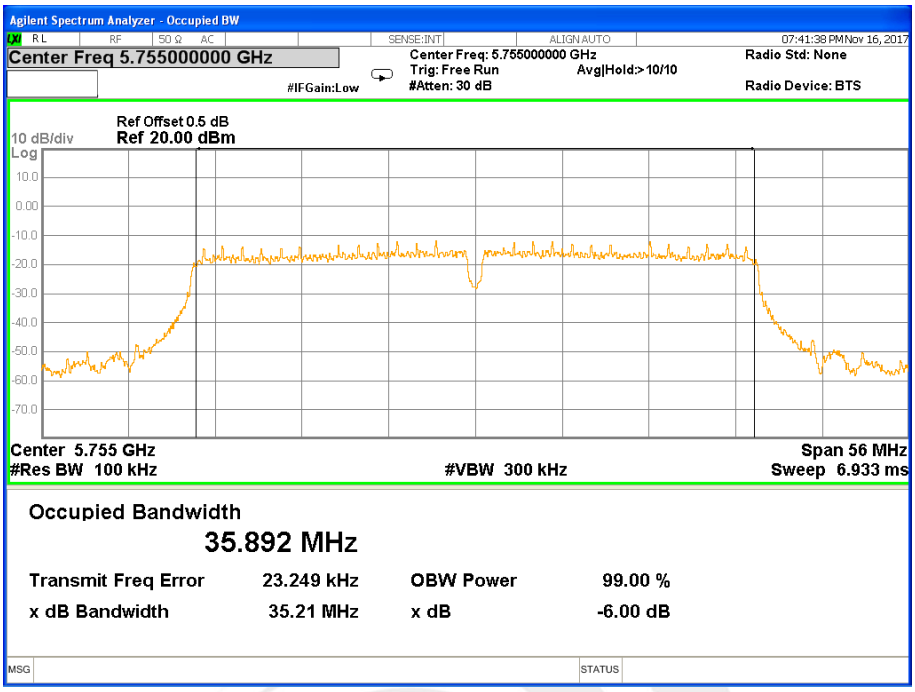


6 dB Bandwidth 802.11ac(HT20) Channel 165

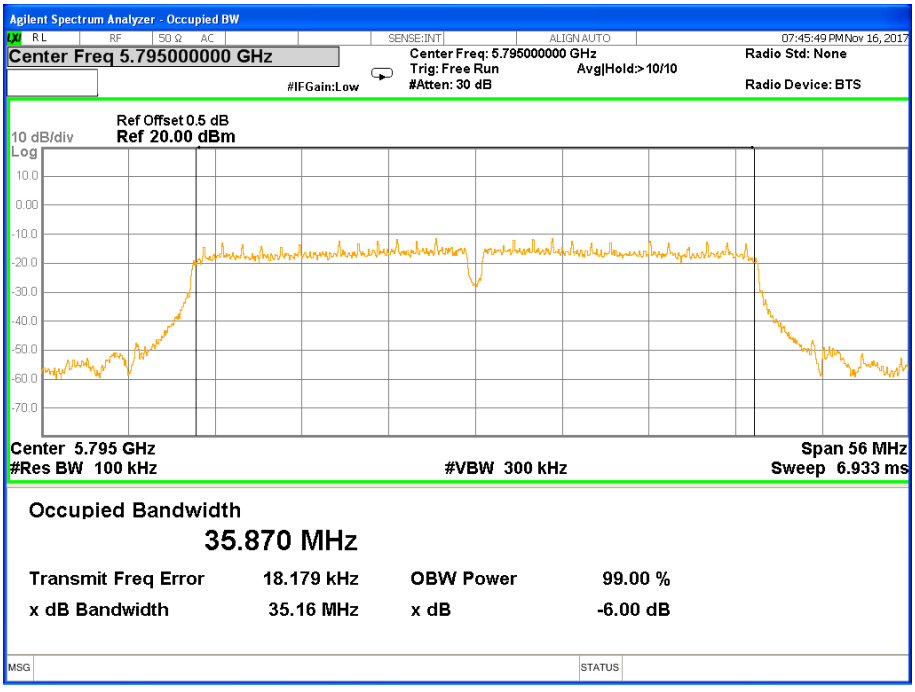


Band IV (5.725-5.850GHz) 802.11ac(HT40) 6 dB Bandwidth

6 dB Bandwidth 802.11ac(HT40) Channel 151

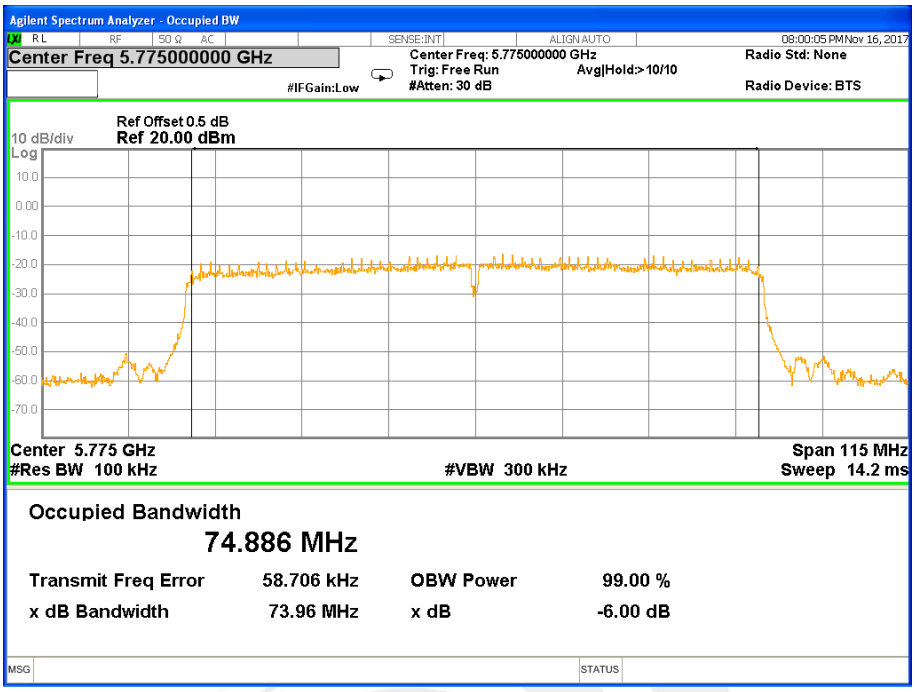


6 dB Bandwidth 802.11ac(HT40) Channel 159



Band IV (5.725-5.850GHz) 802.11ac(HT80) 6 dB Bandwidth

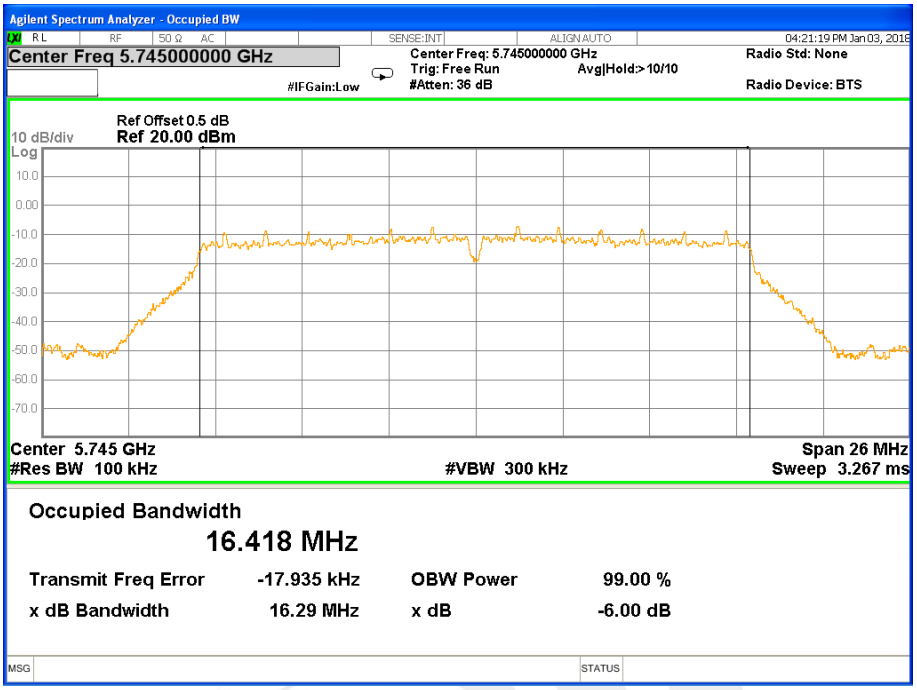
6 dB Bandwidth 802.11ac(HT80) Channel 155



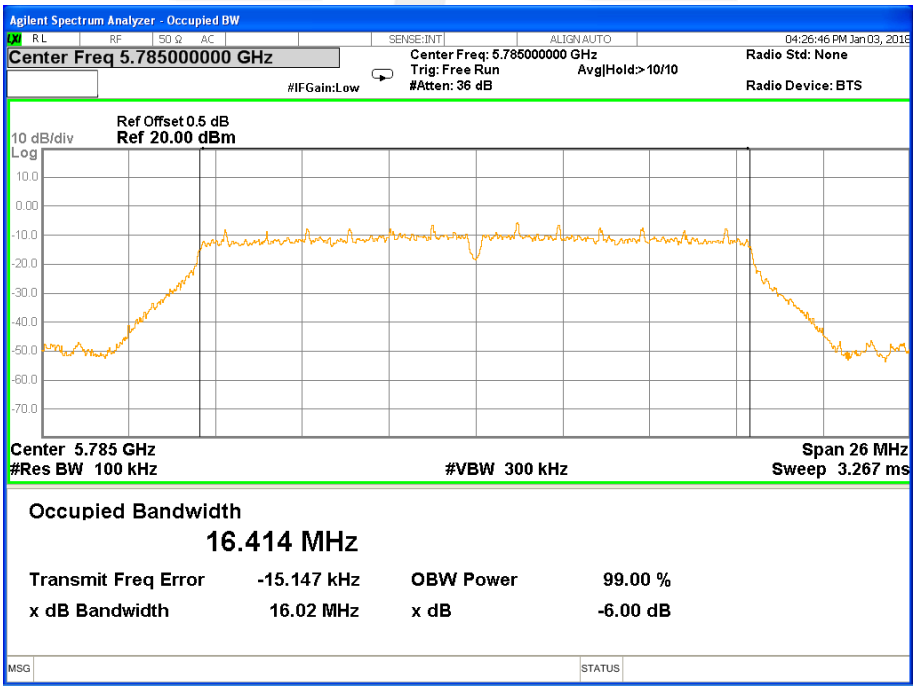
Antenna B

Band IV (5.725-5.850GHz) 802.11a, 6 dB Bandwidth

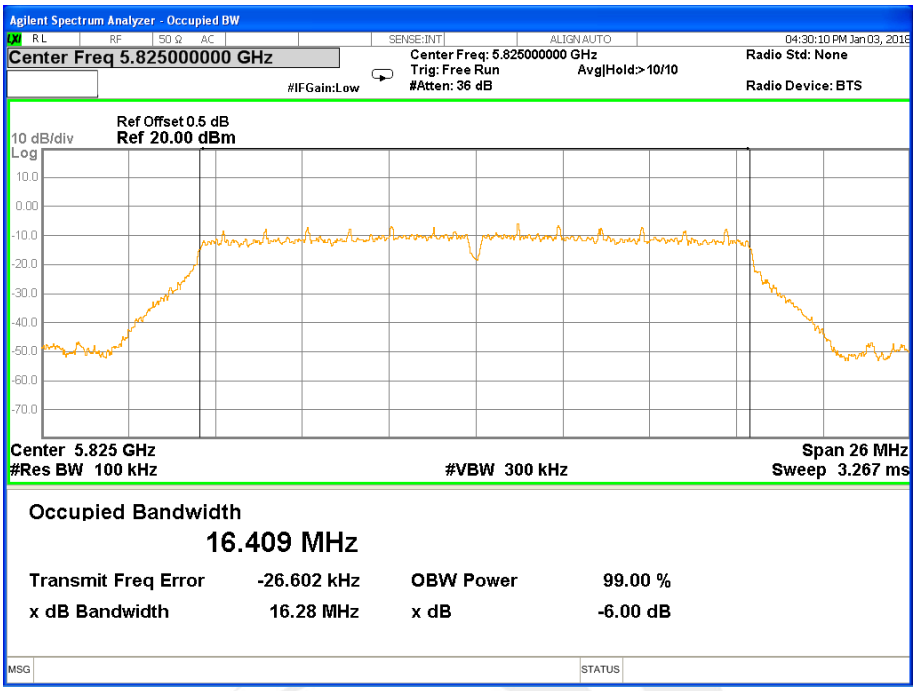
6 dB Bandwidth 802.11a Channel 149



6 dB Bandwidth 802.11a Channel 157

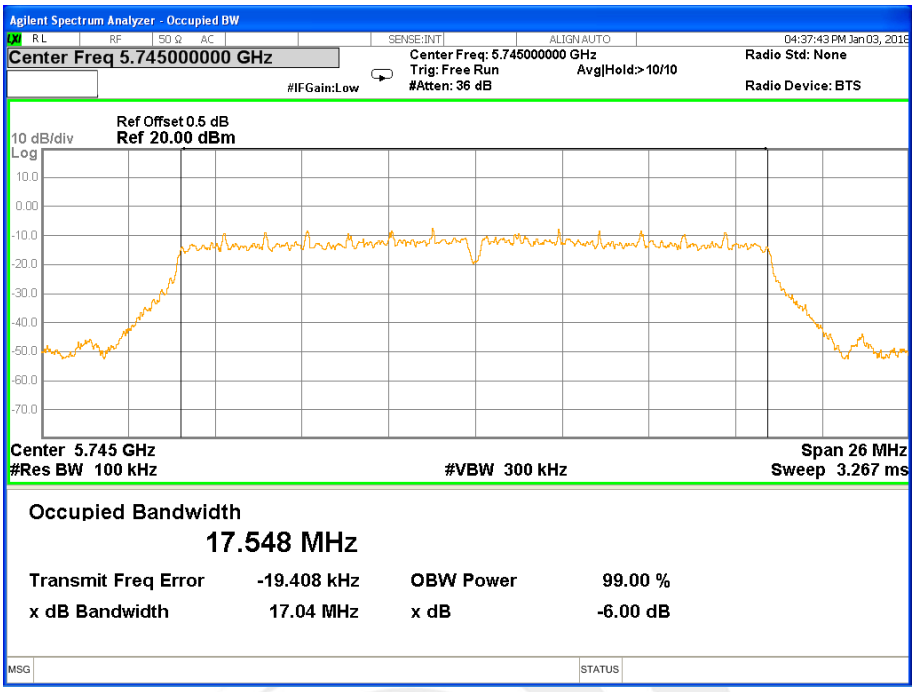


6 dB Bandwidth 802.11a Channel 165

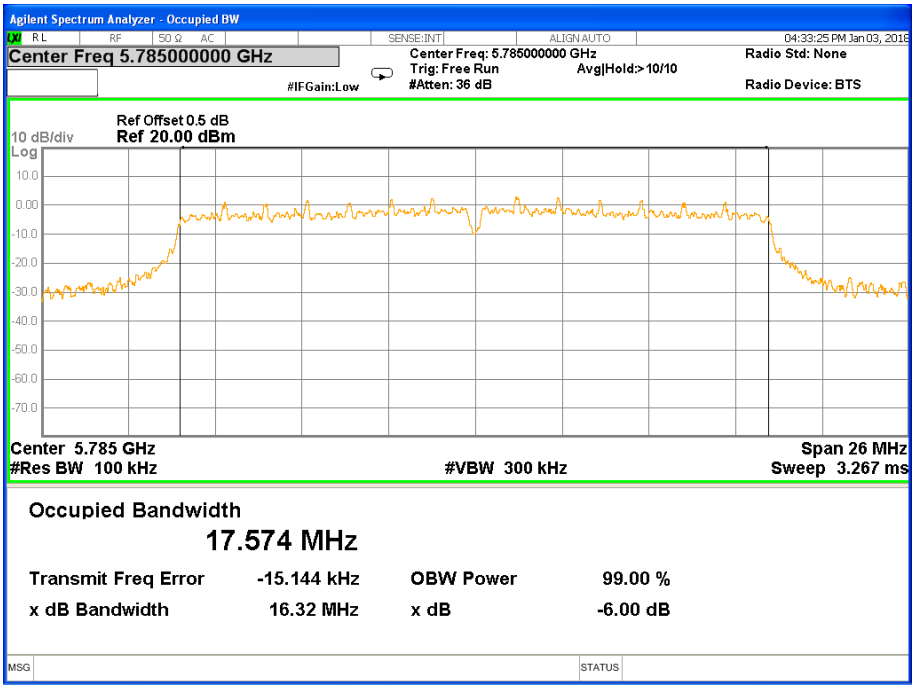


Band IV (5.725-5.850GHz) 802.11n(HT20) 6 dB Bandwidth

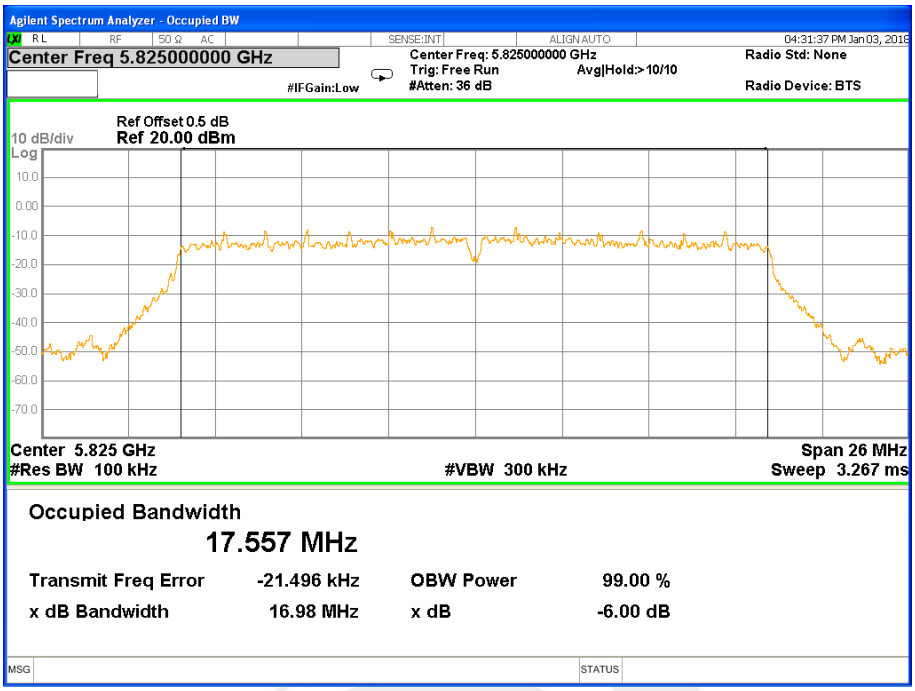
6 dB Bandwidth 802.11n(HT20) Channel 149



6 dB Bandwidth 802.11n(HT20) Channel 157

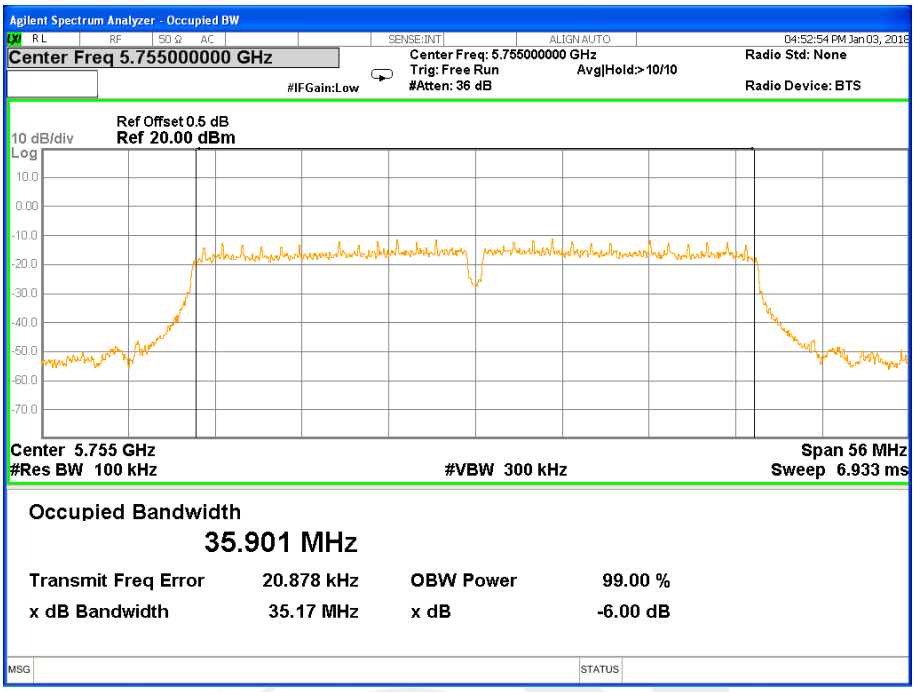


6 dB Bandwidth 802.11n(HT20) Channel 165

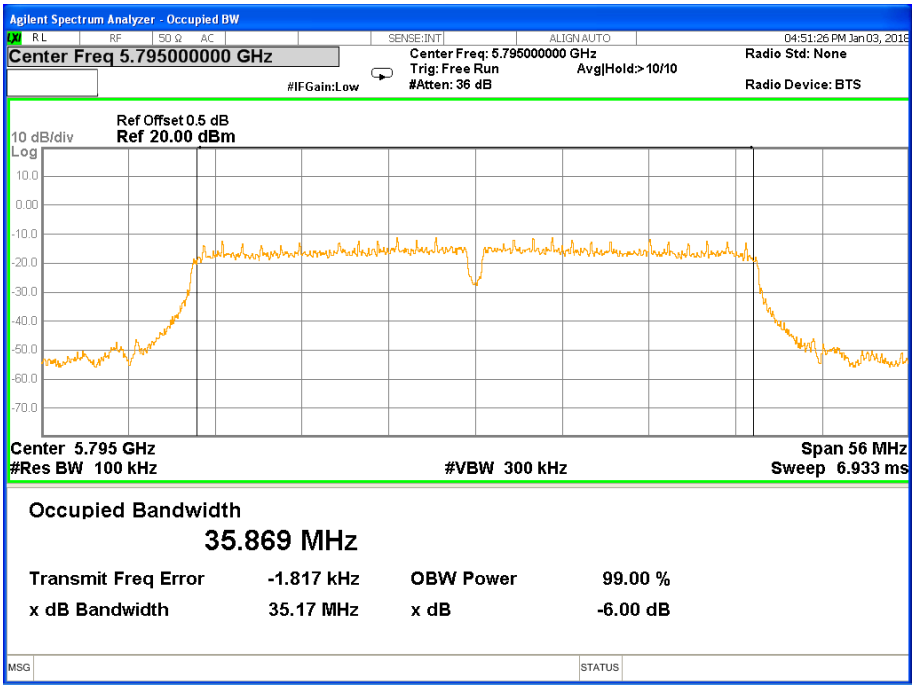


Band IV (5.725-5.850GHz) 802.11n(HT40) 6 dB Bandwidth

6 dB Bandwidth 802.11n(HT40) Channel 151

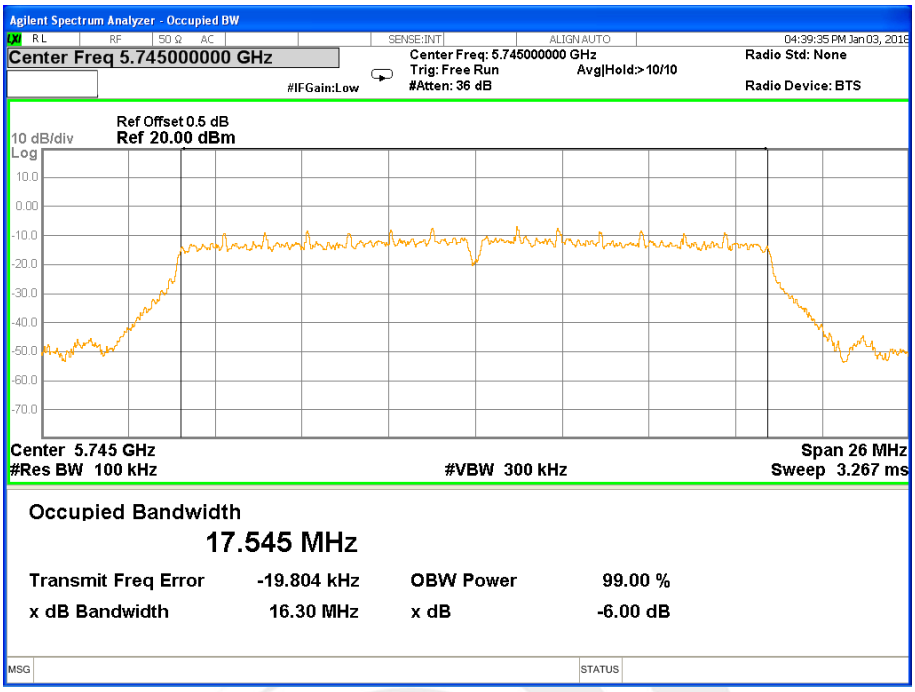


6 dB Bandwidth 802.11n(HT40) Channel 159

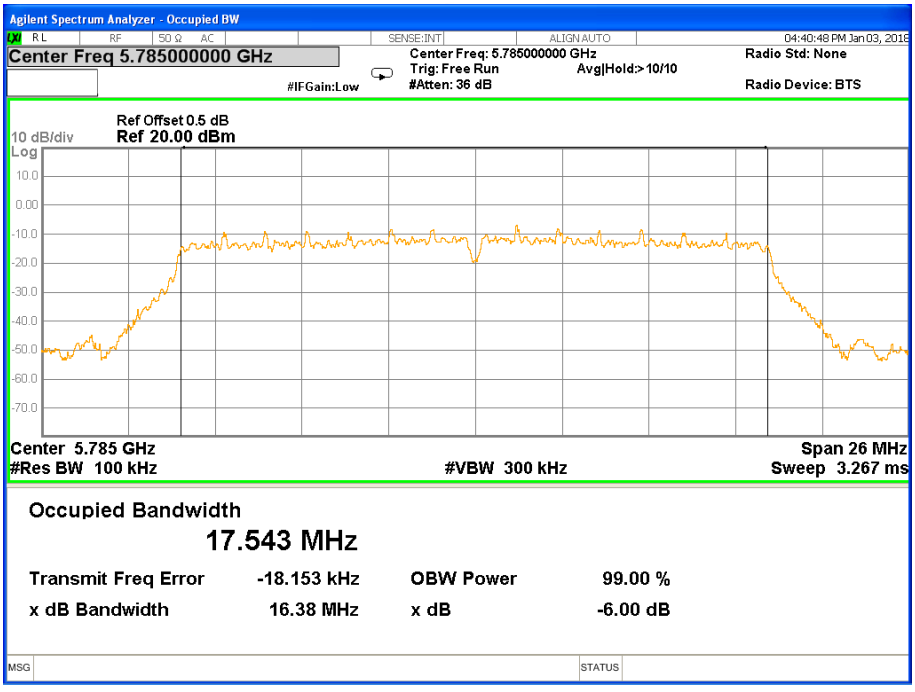


Band IV (5.725-5.850GHz) 802.11ac(HT20) 6 dB Bandwidth

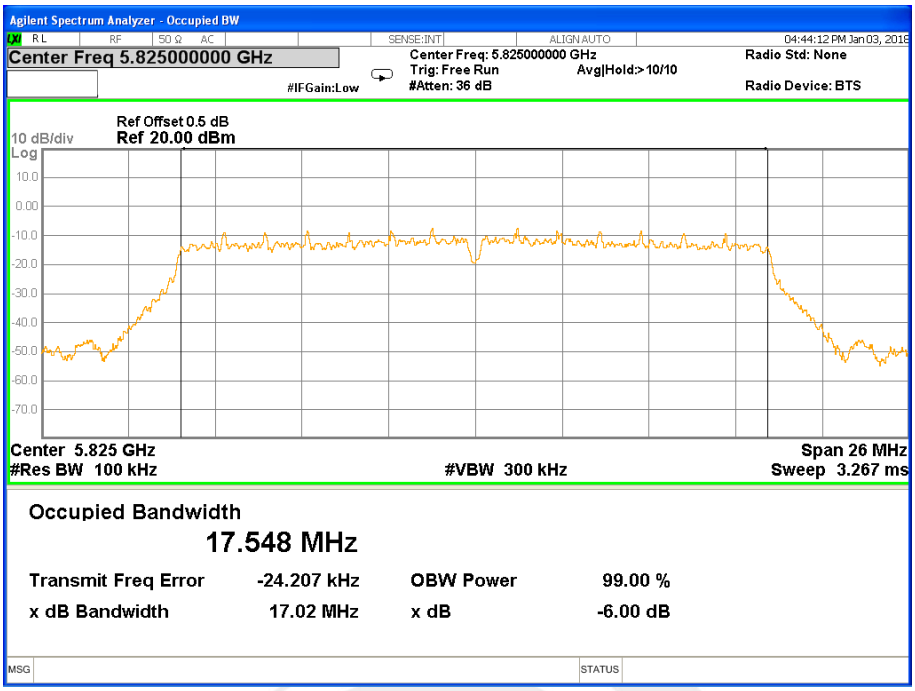
6 dB Bandwidth 802.11ac(HT20) Channel 149



6 dB Bandwidth 802.11ac(HT20) Channel 157

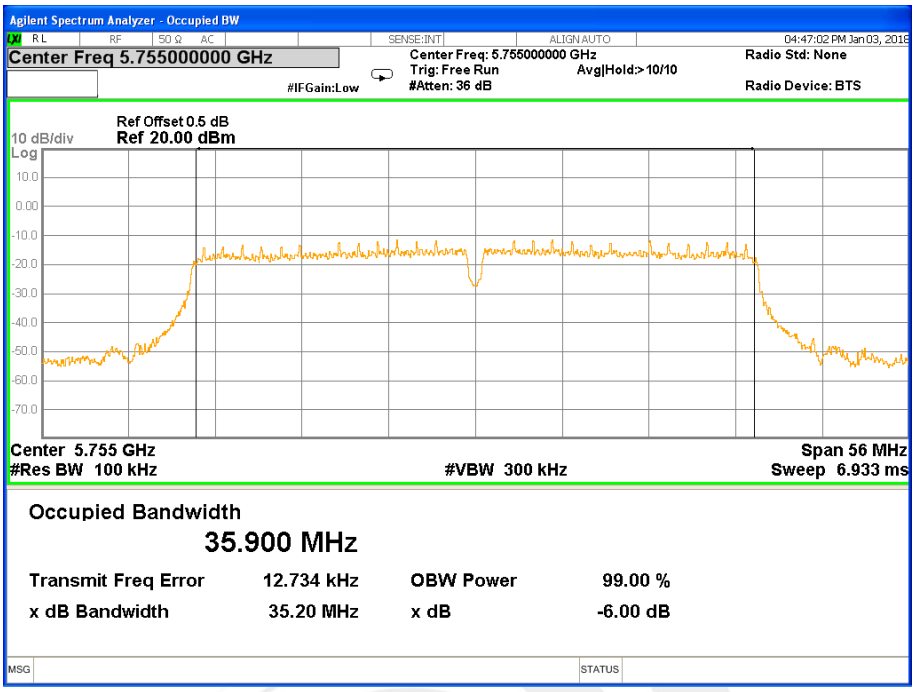


6 dB Bandwidth 802.11ac(HT20) Channel 165

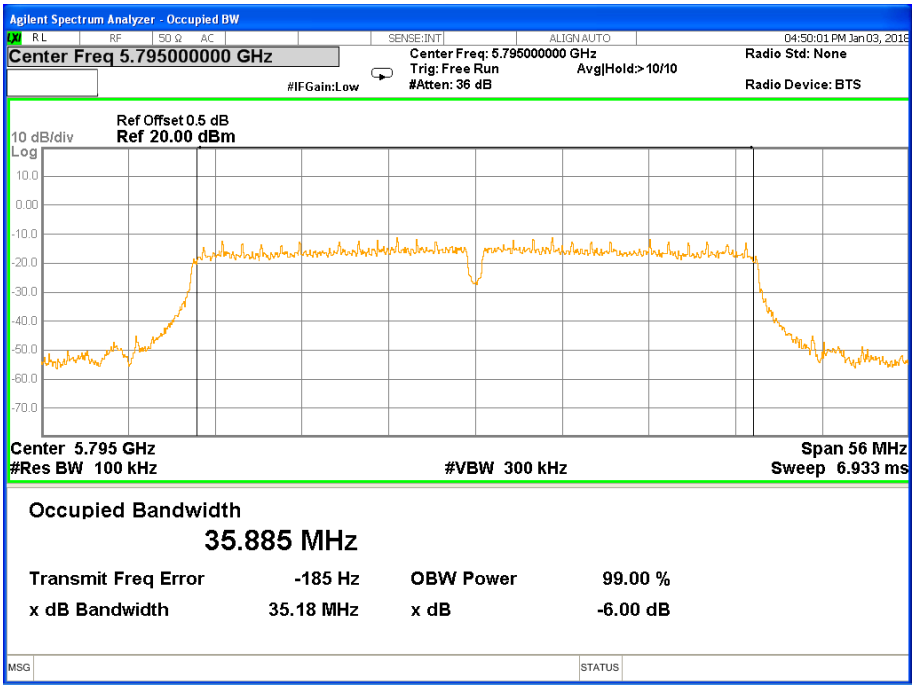


Band IV (5.725-5.850GHz) 802.11ac(HT40) 6 dB Bandwidth

6 dB Bandwidth 802.11ac(HT40) Channel 151

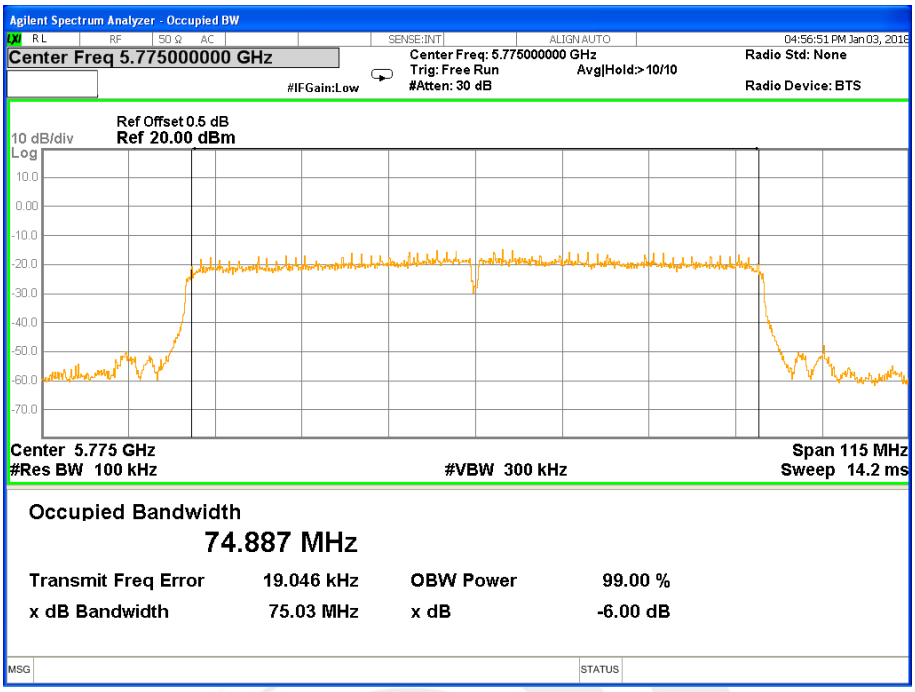


6 dB Bandwidth 802.11ac(HT40) Channel 159



Band IV (5.725-5.850GHz) 802.11ac(HT80) 6 dB Bandwidth

6 dB Bandwidth 802.11ac(HT80) Channel 155



7. MAXIMUM CONDUCTED OUTPUT POWER

7.1 APPLIED PROCEDURES / LIMIT

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

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz,If transmitting antennas of directional gain greater than 6 dBi are used.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used.

FCC Part15 (15.407) , Subpart E				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.407(a) (1) (iv)	Peak Output Power	0.25 watt	5150-5250	PASS
		The lesser of 250 mW or 11 dBm + 10 log (26 dB emission bandwidth)	5250-5350 5470-5725	
15.407(a) (3)		1 watt	5725-5825	

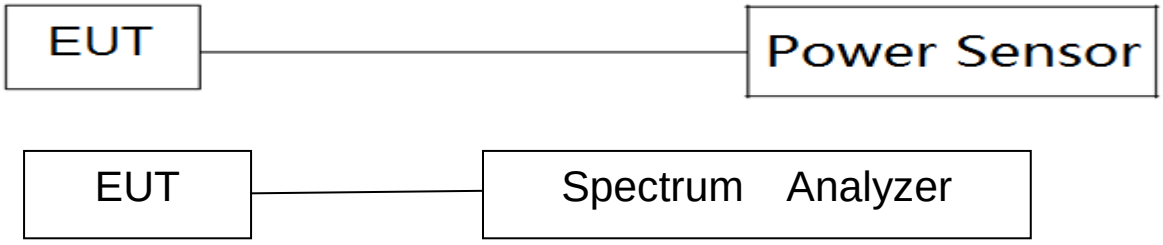
7.1.1 TEST PROCEDURE

The EUT was directly connected to the Power Sensor&PC

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 5 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 TEST RESULTS

NOTE: 1. Antenna A Power> Antenna B Power, Both antenna A and B have been test

2. 802.11a model cannot emission at the same time.

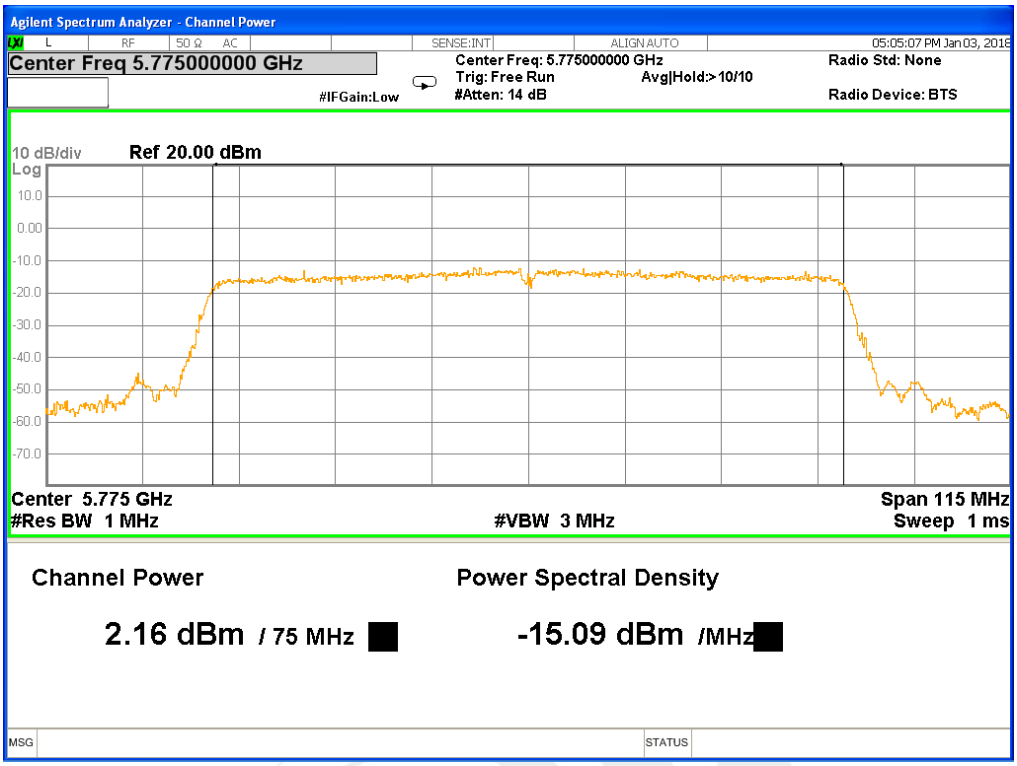
Band IV (5.725-5.85GHz)

Band IV (5.725-5.85GHz)								
Test Channel	Frequency (MHz)	PK Power A(dBm)	PK Power B(dBm)	PK Power Total(dBm)	AV Power (dBm)	AV Power B(dBm)	AV Power Total(dBm)	LIMIT (dBm)
802.11a								
149	5745	4.39	1.30	--	4.37	1.28	--	30
157	5785	3.24	1.54	--	3.22	1.52	--	30
165	5825	3.49	1.40	--	3.47	1.38	--	30
802.11n(HT20)								
149	5745	4.17	1.06	5.898	4.16	1.05	5.888	29.49
157	5785	2.85	1.84	5.385	2.84	1.83	5.375	29.49
165	5825	4.02	1.48	5.943	4.01	1.47	5.933	29.49
802.11n(HT40)								
151	5755	2.52	1.20	4.920	2.48	1.16	4.880	29.49
159	5795	2.56	0.71	4.743	2.52	0.67	4.703	29.49
802.11ac(HT20)								
149	5745	3.64	0.85	5.476	3.61	0.82	5.446	29.49
157	5785	2.65	1.02	4.921	2.62	0.99	4.891	29.49
165	5825	3.39	1.78	5.669	3.36	1.75	5.639	29.49
802.11ac(HT40)								
151	5755	2.95	0.88	5.047	2.90	0.83	4.997	29.49
159	5795	2.96	1.06	5.123	2.91	1.01	5.073	29.49
802.11ac(HT80)								
155	5775	2.24	0.94	4.649	2.16	0.86	4.569	29.49

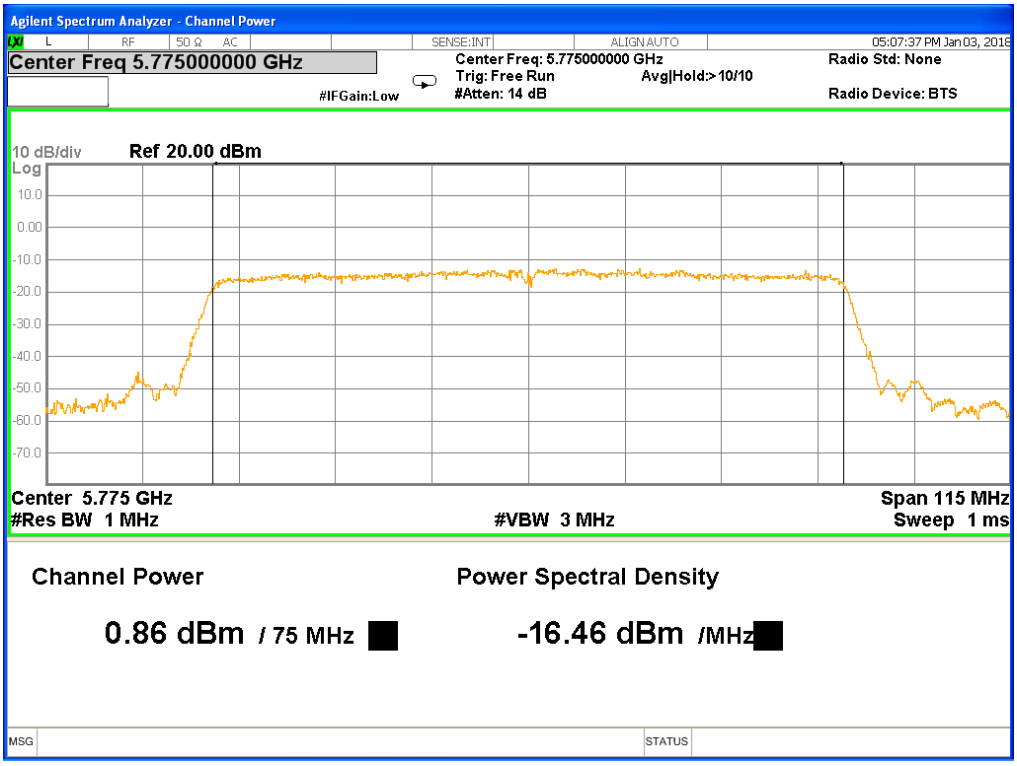
Note:

1. For the band 5.745-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W.
2. 802.11a only work in the SISO model, when 802.11n/ac can work in MIMO model.

Antenna A 802.11ac HT80(5775MHz)



Antenna B 802.11ac HT80 (5775MHz)



Duty cycle

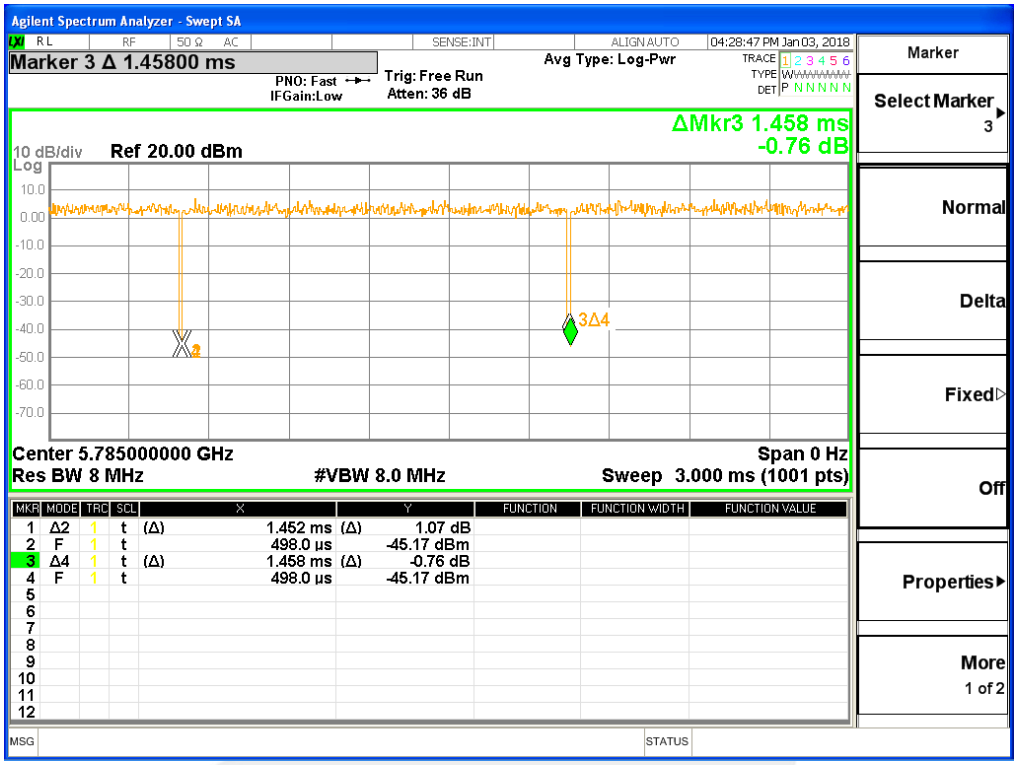
TX 802.11a Mode					
Test Channel	Channel (MHz)	ON Time (msec)	Period (msec)	Duty cycle (%)	Duty cycle factor
157	5785	1.452	1.458	99.59%	0.02
TX 802.11n(HT20) Mode					
Test Channel	Channel (MHz)	ON Time (msec)	Period (msec)	Duty cycle (%)	Duty cycle factor
157	5785	1.359	1.362	99.78%	0.01
TX 802.11n(HT40) Mode					
Test Channel	Channel (MHz)	ON Time (msec)	Period (msec)	Duty cycle (%)	Duty cycle factor
159	5795	0.674	0.680	99.12%	0.04
TX 802.11ac(HT20) Mode					
Test Channel	Channel (MHz)	ON Time (msec)	Period (msec)	Duty cycle (%)	Duty cycle factor
157	5785	1.371	1.380	99.35%	0.03
TX 802.11ac(HT40) Mode					
Test Channel	Channel (MHz)	ON Time (msec)	Period (msec)	Duty cycle (%)	Duty cycle factor
159	5795	0.684	0.692	98.84%	0.05
TX 802.11ac(HT80) Mode					
Test Channel	Channel (MHz)	ON Time (msec)	Period (msec)	Duty cycle (%)	Duty cycle factor
155	5775	0.340	0.346	98.27%	0.08

Note:

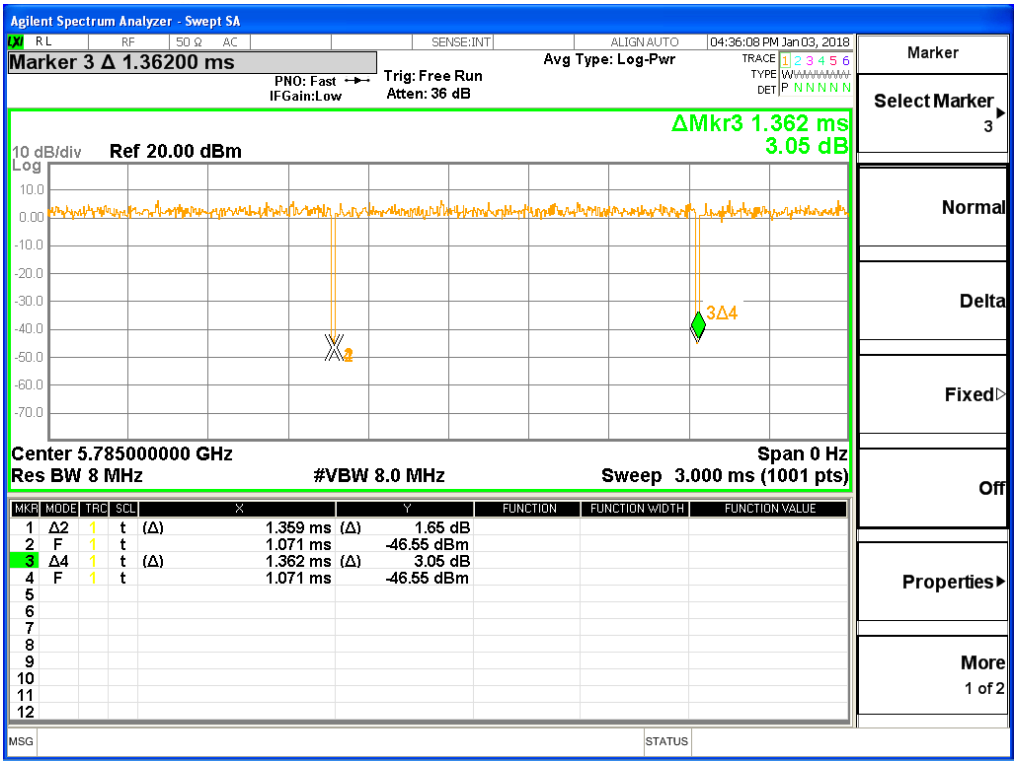
(1) Duty cycle factor =10*Log(1/ Duty cycle)

(2) Peak =AVG + Duty cycle factor

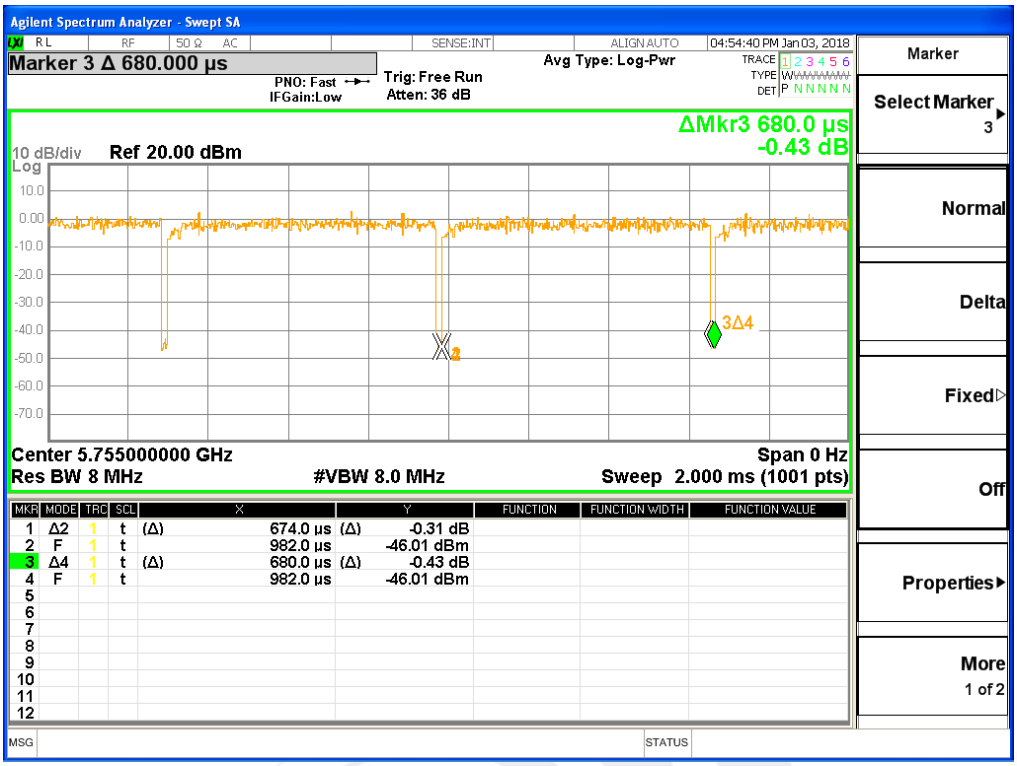
802.11a (5785MHz)



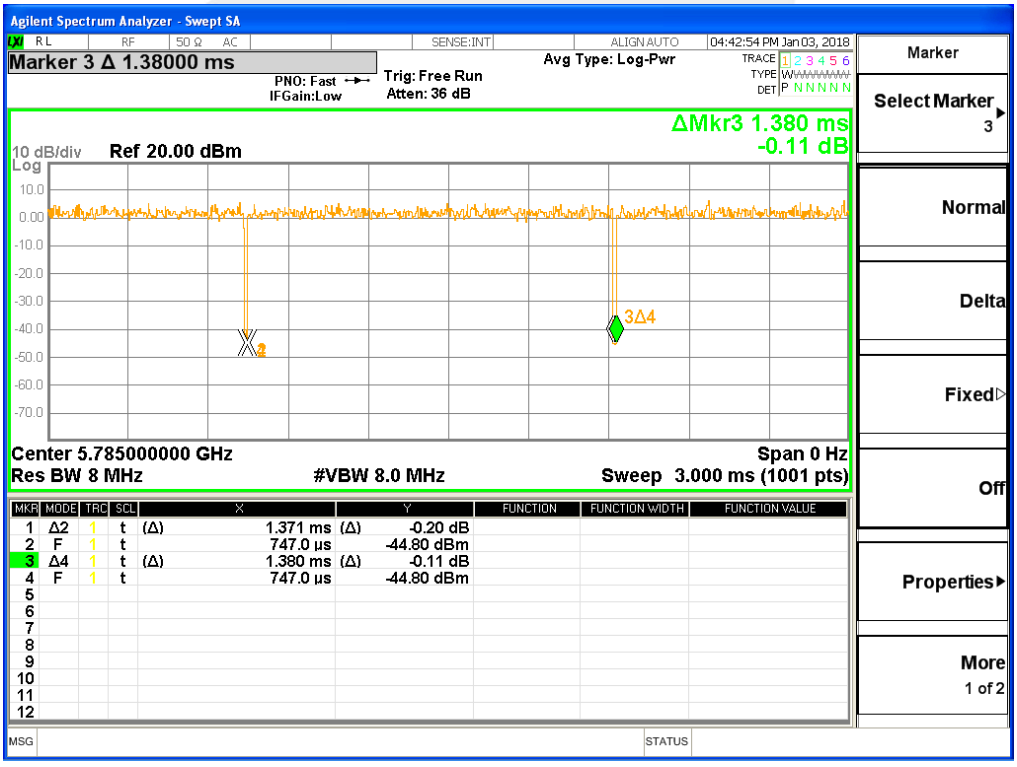
802.11n HT20 (5785MHz)



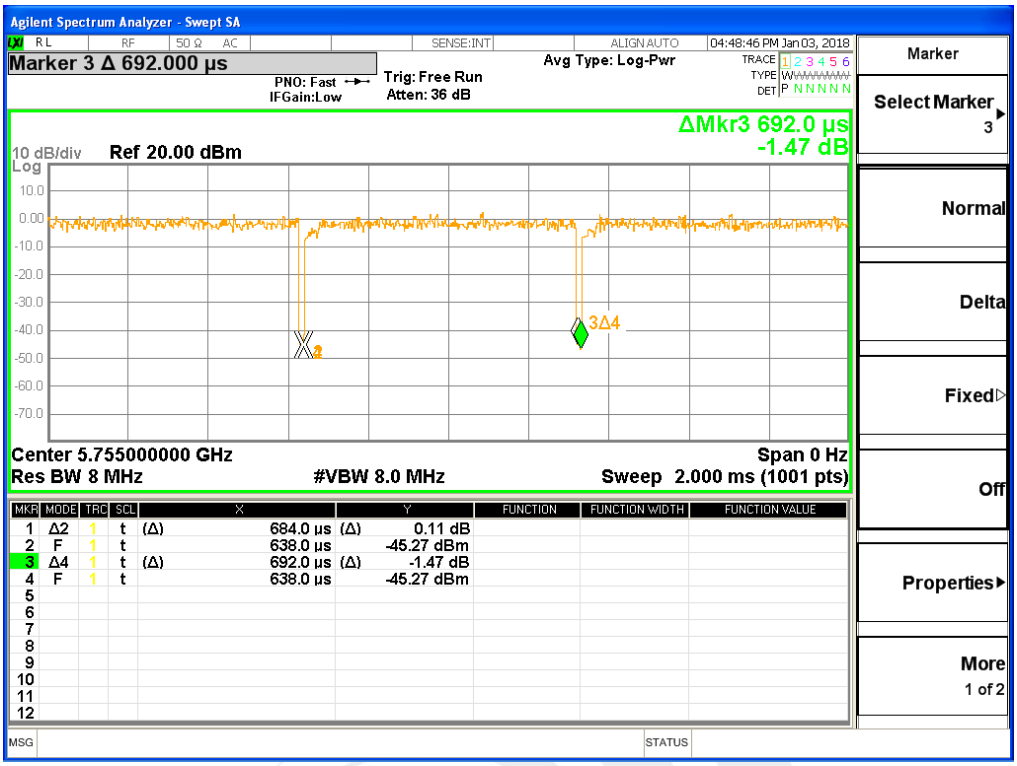
802.11n HT40 (5795MHz)



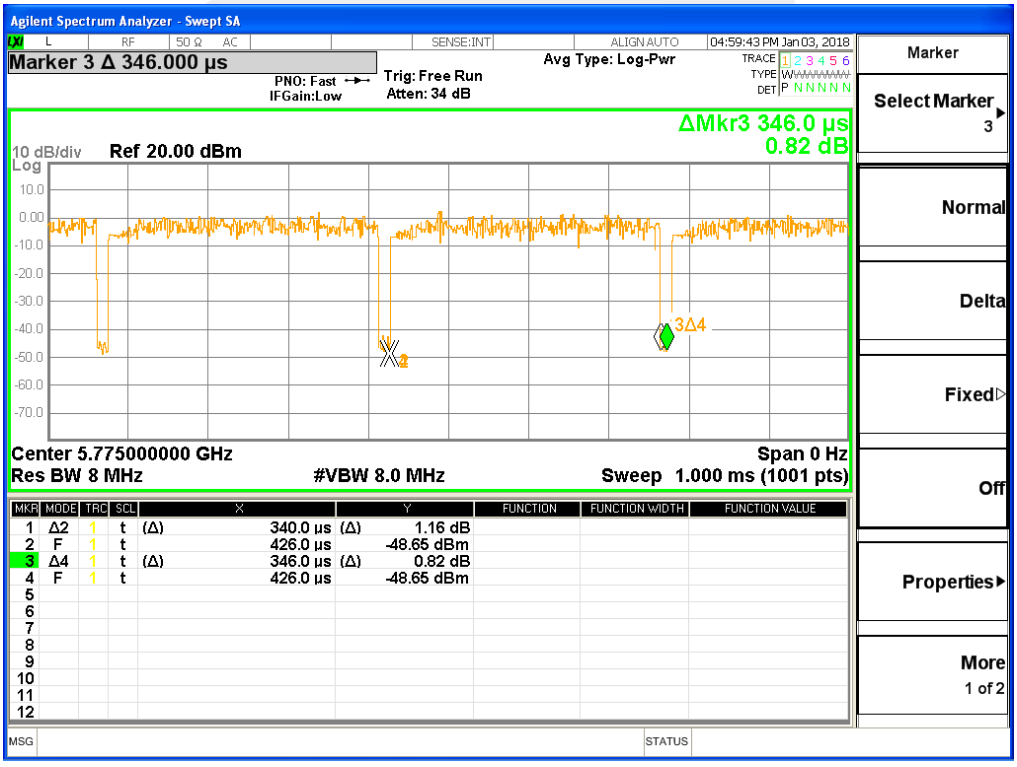
802.11ac HT20 (5785MHz)



802.11ac HT40 (5795MHz)



802.11ac HT80 (5775MHz)



8. FREQUENCY STABILITY MEASUREMENT

8.1 LIMIT OF FREQUENCY STABILITY

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 user's manual.

8.1.1 MEASURING INSTRUMENTS

See list of measuring instruments of this test report.

8.1.2 TEST PROCEDURES

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

8.1.3 TEST SETUP

8.1.4 TEST RESULTS

NOTE: 1. Antenna A Power> Antenna B Power, Both antenna A and B have all bandwidth and mode been test, Only the worst data

Voltage	Band IV (5.725-5.85GHz) Measurement Frequency(MHz)
AC (V)	5785
MAX	5784.9554
Nom	5784.9542
MIN	5784.9542
Max.Deviation(MHz)	0.0458
Max.Deviation(ppm)	8.81

Temperature Vs. Frequency Stabilty:

Temperature	Measurement Frequency(MHz)
(^{o}C)	5785
-30	5784.9583
-20	5784.9576
-10	5784.9545
0	5784.953
10	5784.9551
20	5784.9558
30	5784.9538
40	5784.9531
50	5784.9546
Max.Deviation(MHz)	0.0470
Max.Deviation(ppm)	8.12

9. AUTOMATICALLY DISCONTINUE TRANSMISSION

9.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

9.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission

10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

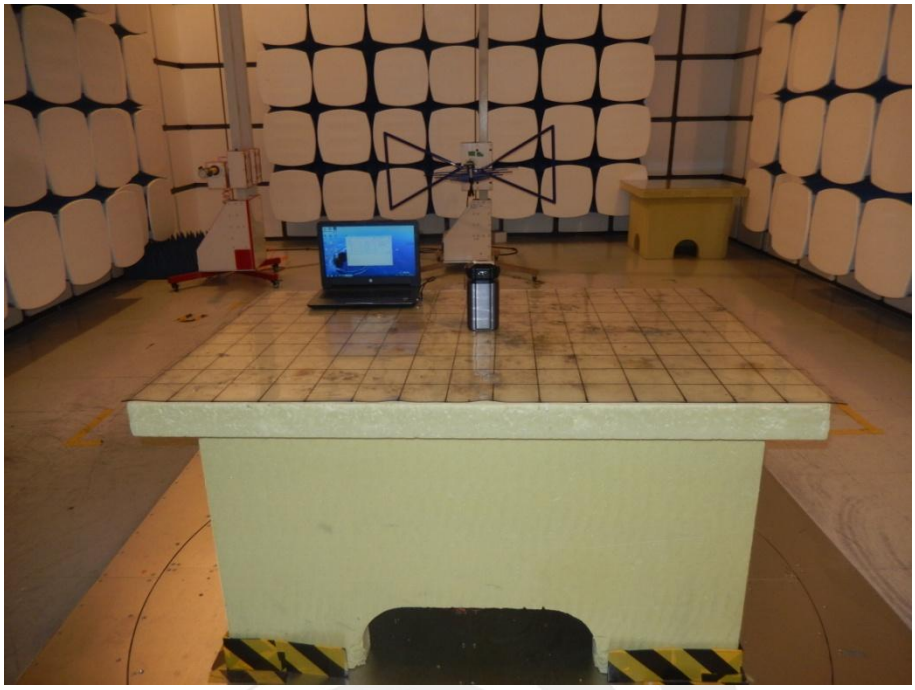
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

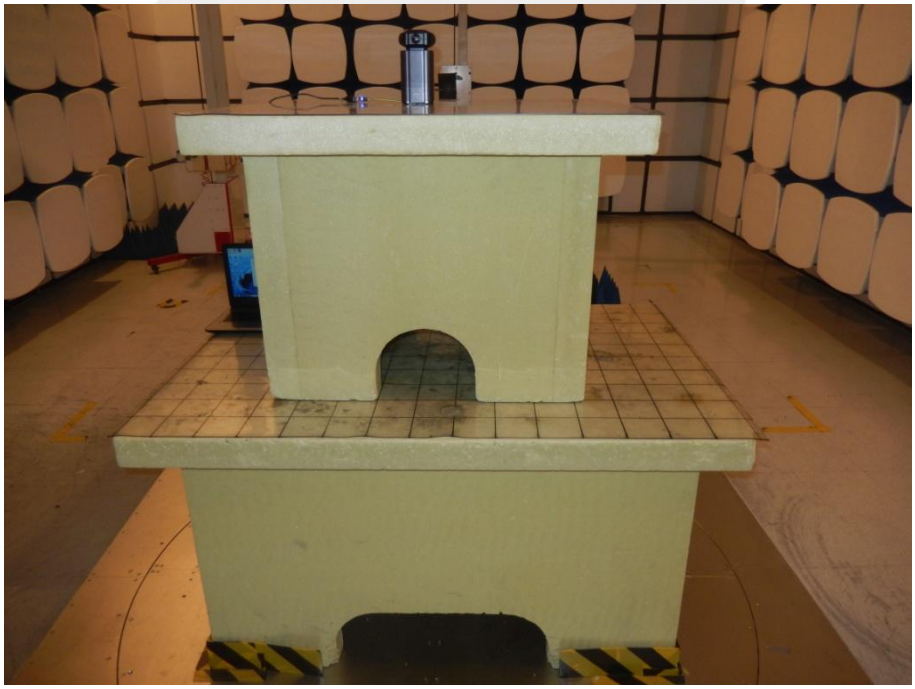
10.2 EUT ANTENNA

The EUT antenna is PIFA Antenna. It comply with the standard requirement.

APPENDIX - PHOTOS OF TEST SETUP

Radiated Measurement Photos





Conducted Measurement Photos

※※※※※END OF THE REPORT※※※※※