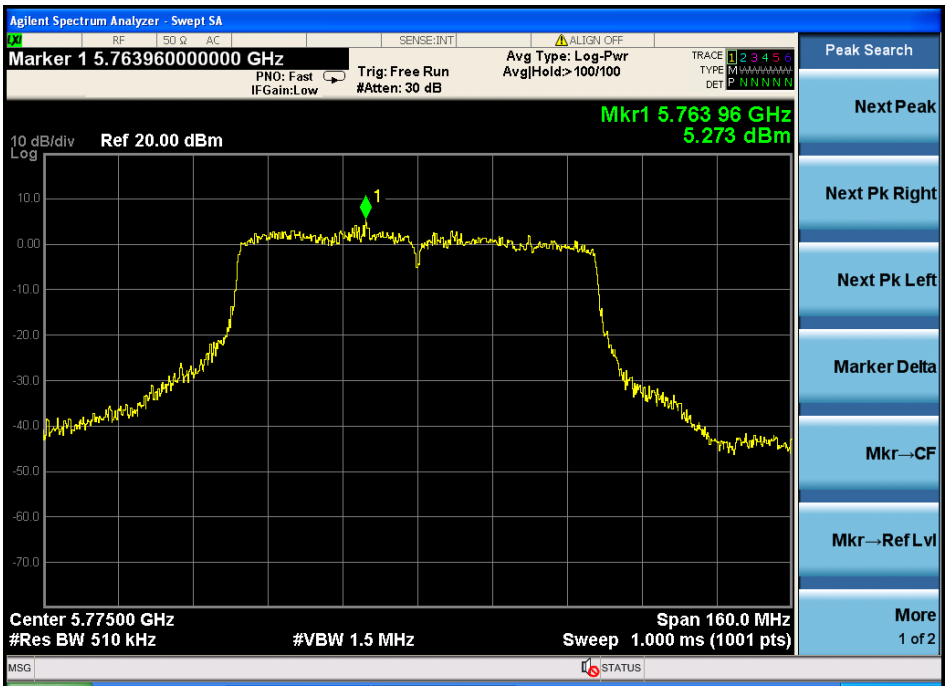
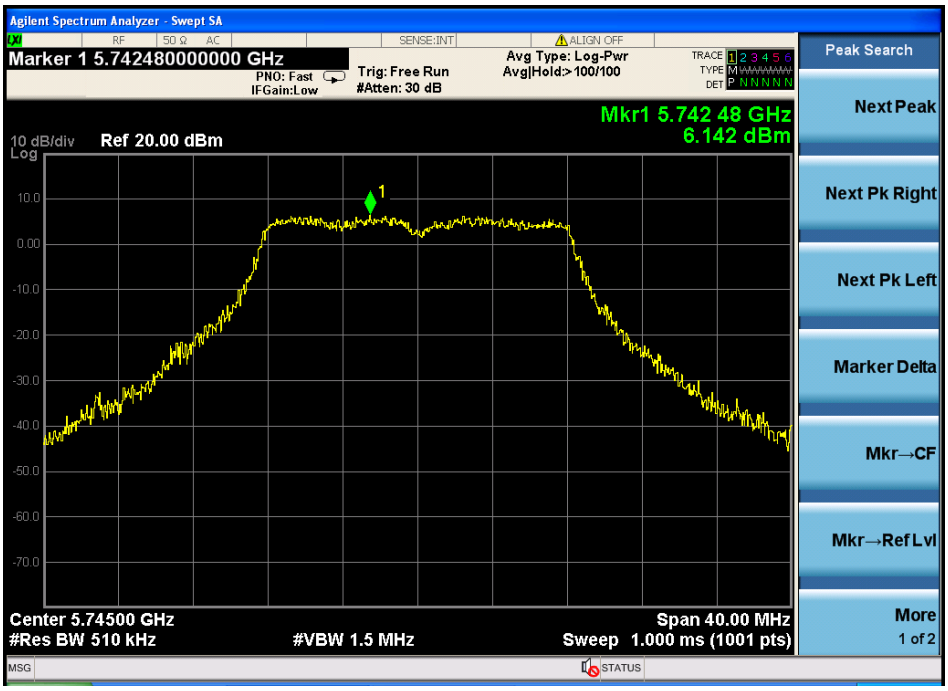
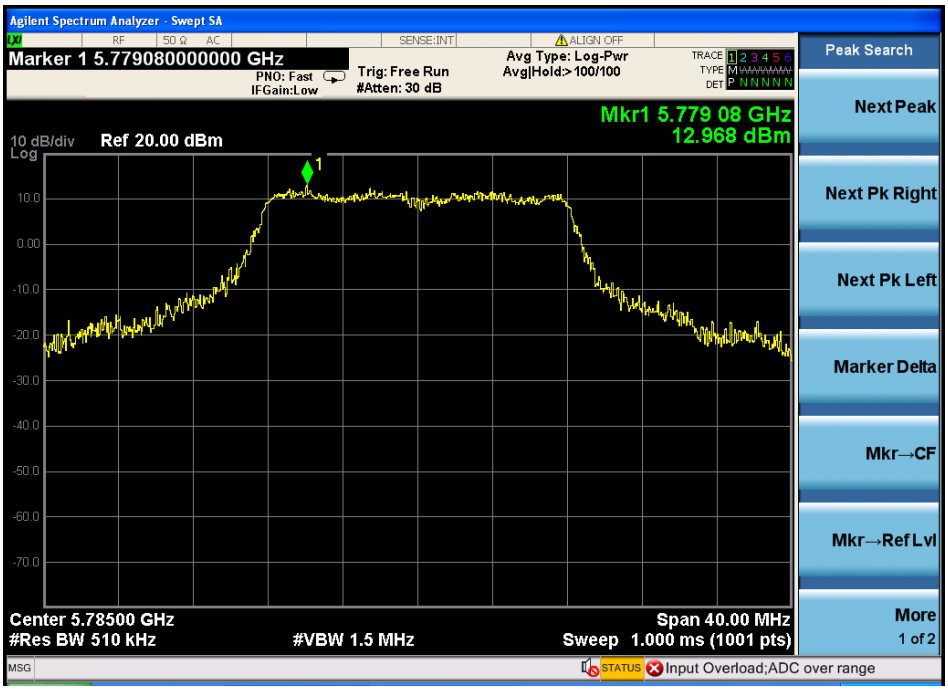
IEEE 802.11ac with 5.8G:



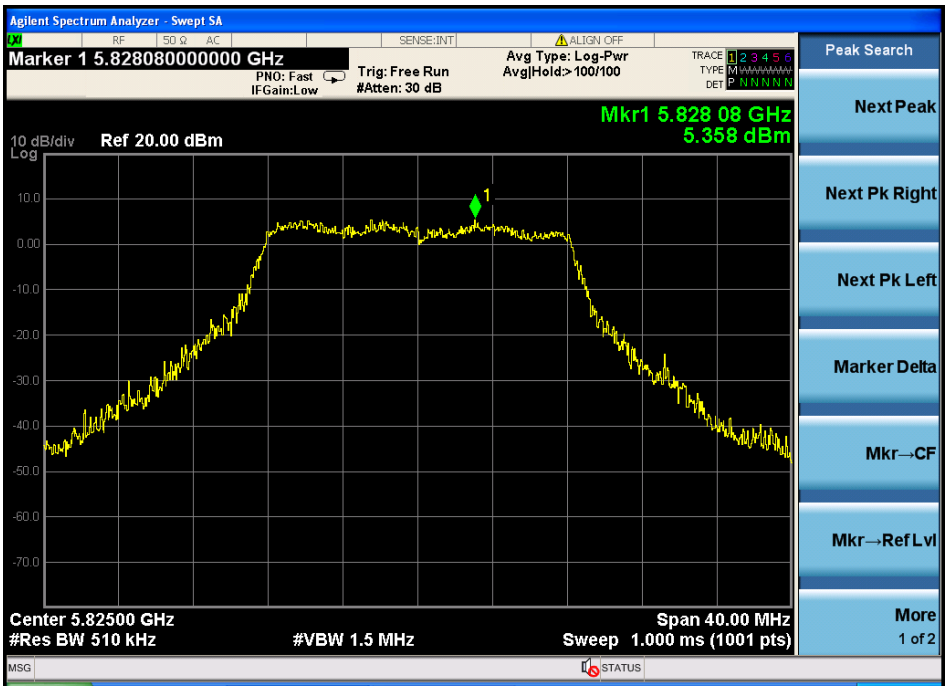
IEEE 802.11a with 5.8G Ant port1:
CH Low :



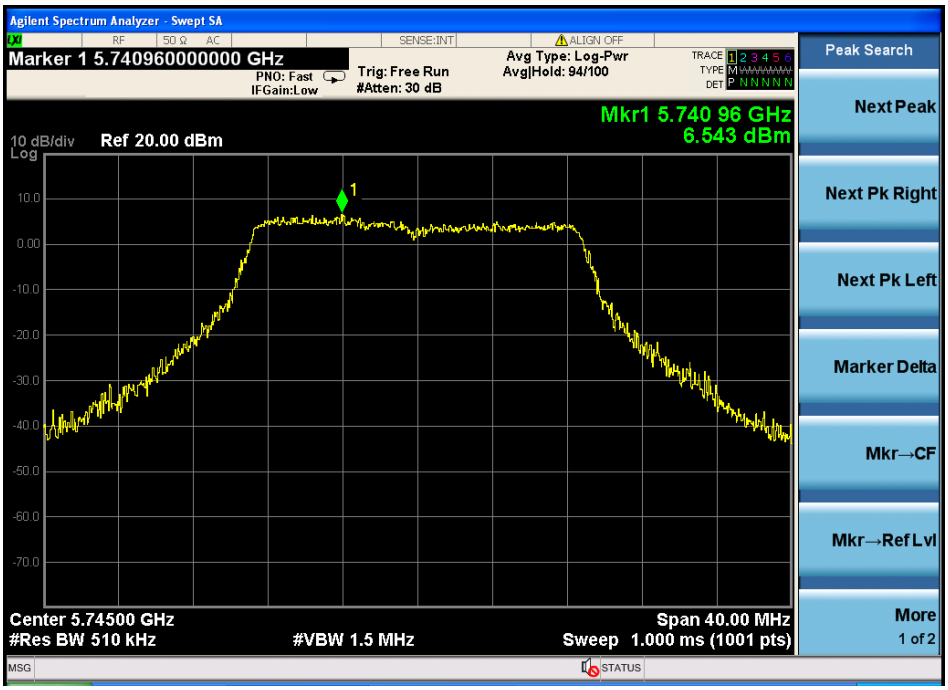
CH Mid:



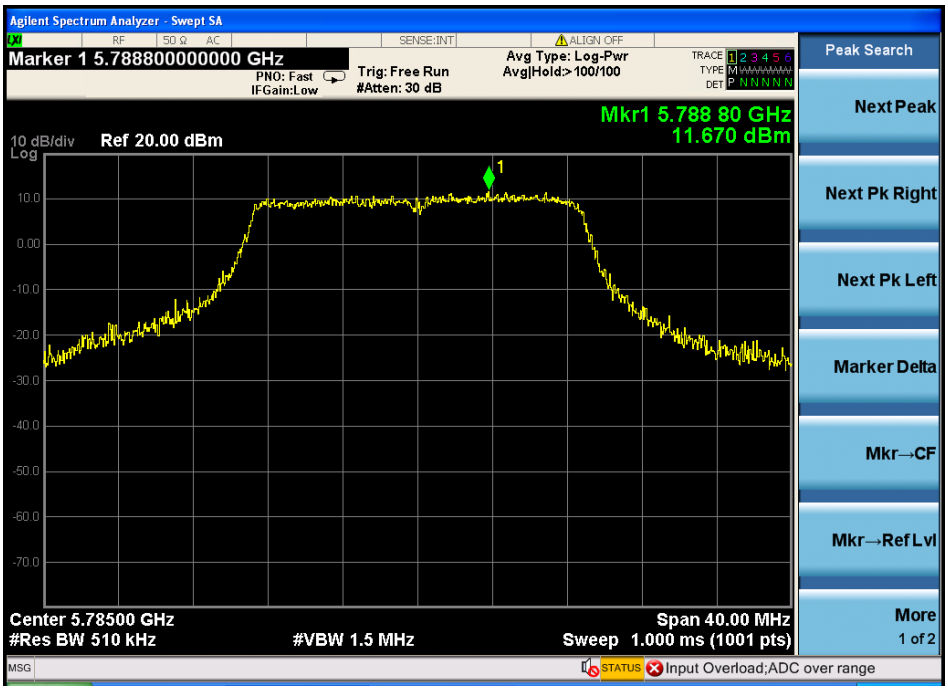
CH Hig:



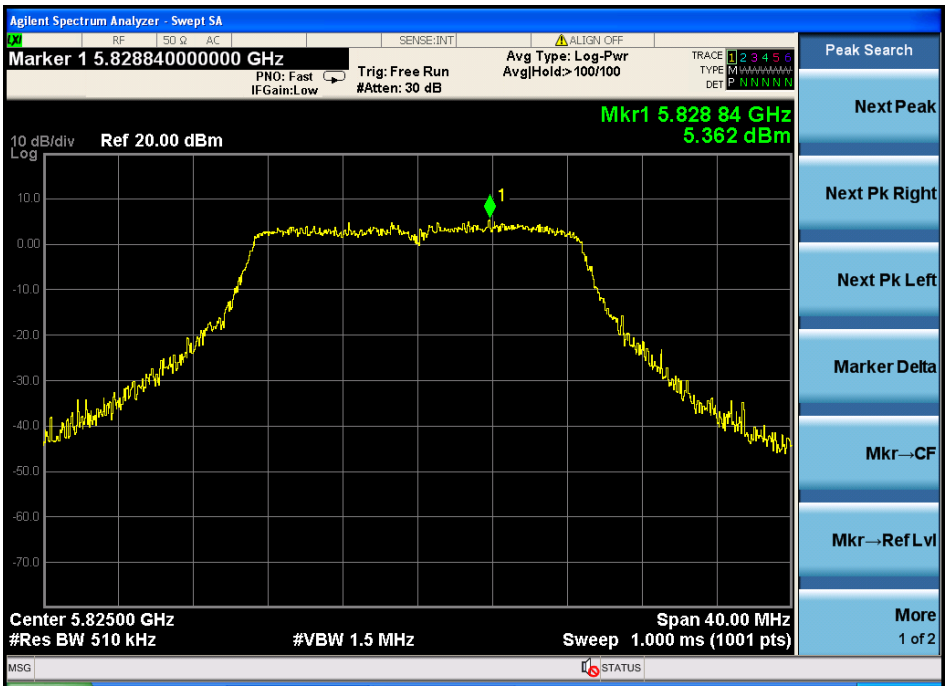
IEEE 802.11n HT20 with 5.8G:
CH Low :



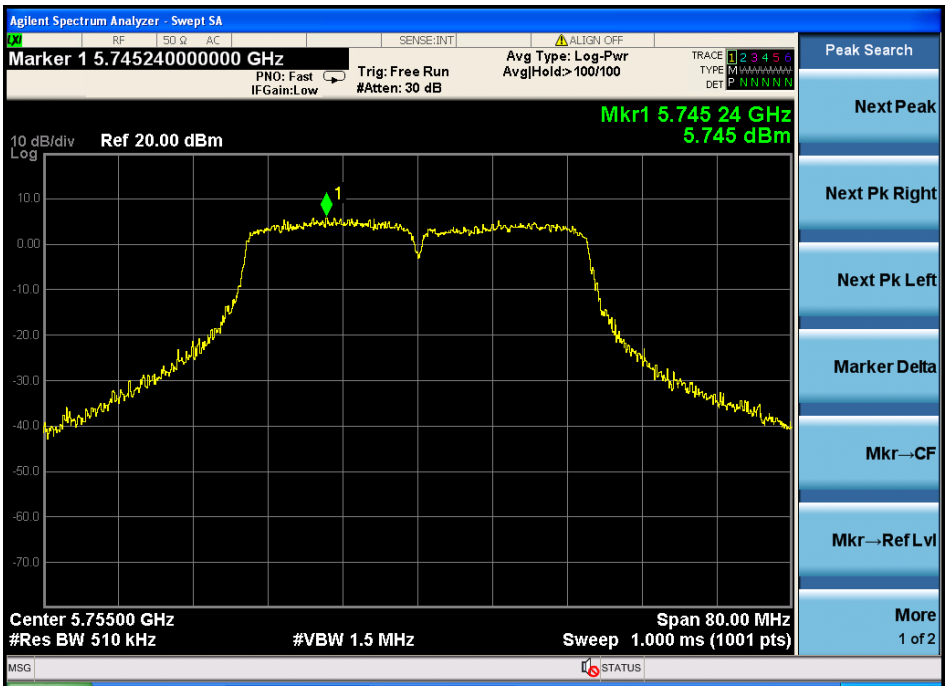
CH Mid:


Agilent Spectrum Analyzer - Swept SA
Marker 1 5.788800000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Mkr1 5.788 80 GHz
11.670 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.78500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 40.00 MHz
Sweep 1.000 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Input Overload;ADC over range

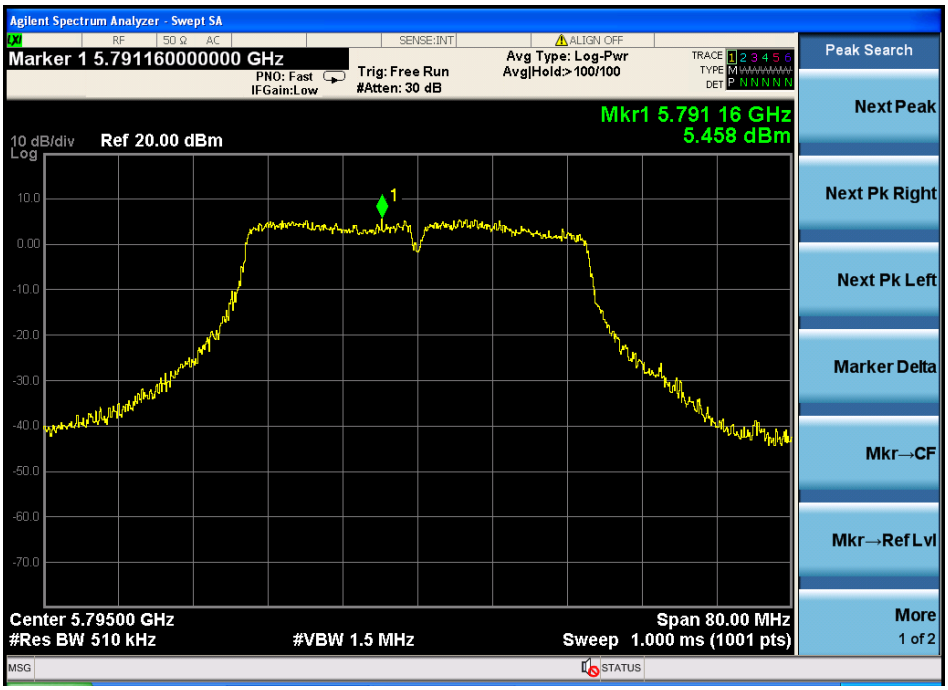
CH Hig:


Agilent Spectrum Analyzer - Swept SA
Marker 1 5.828840000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Mkr1 5.828 84 GHz
5.362 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.82500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 40.00 MHz
Sweep 1.000 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

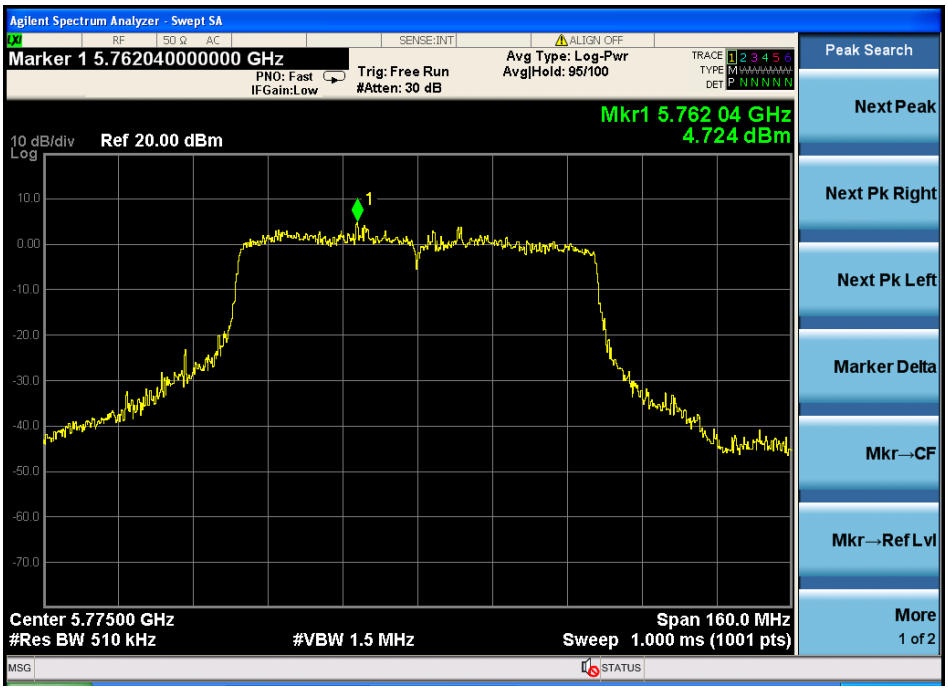
IEEE 802.11n HT40 with 5.8G:
CH Low :



CH Hig:



IEEE 802.11acwith 5.8G:



Remark: A RBW of 500KHz can not be set for the Spectrum Analyzer, and the results of RBW 510KHz are worse than RBW of 500KHz, therefore, if results of the RBW 510KHz complies with limit, results of RBW 500KHz are deemed to comply with limit

9 Bandwidth

9.1 Test limit

Please refer section15.407

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.

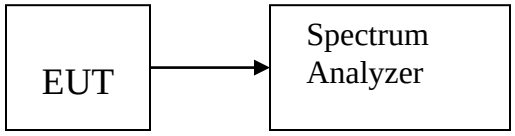
9.2 Method of measurement

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≥3RBW, Sweep time set auto, detail see the test plot. Peak detector is used .

9.3 Test Setup



9.4 Test Results

PASS.

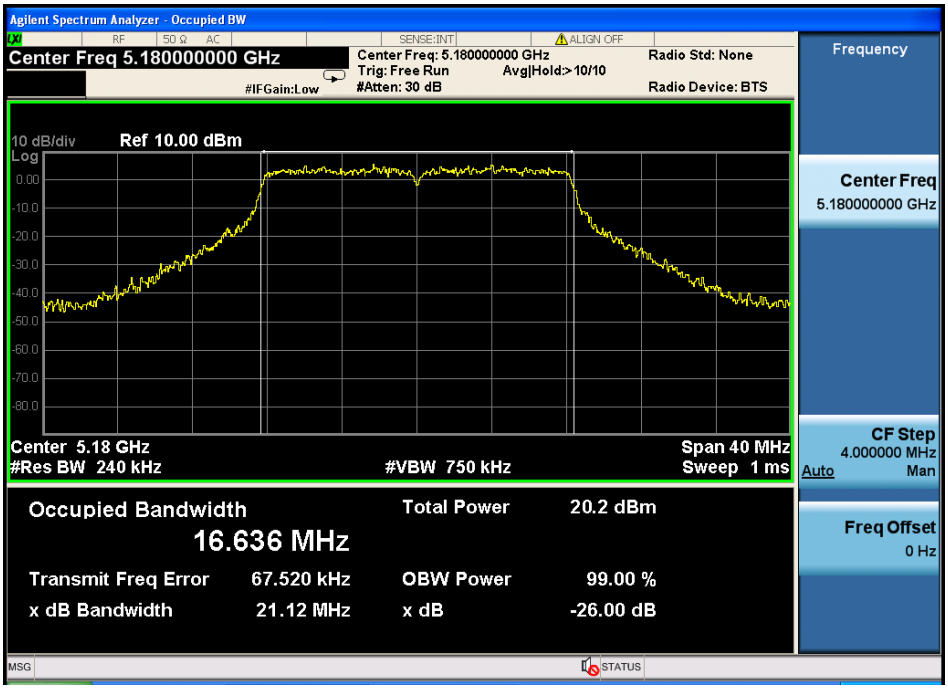
Antenna 0 and Antenna 1port all have been tested ,
only worse case is reported

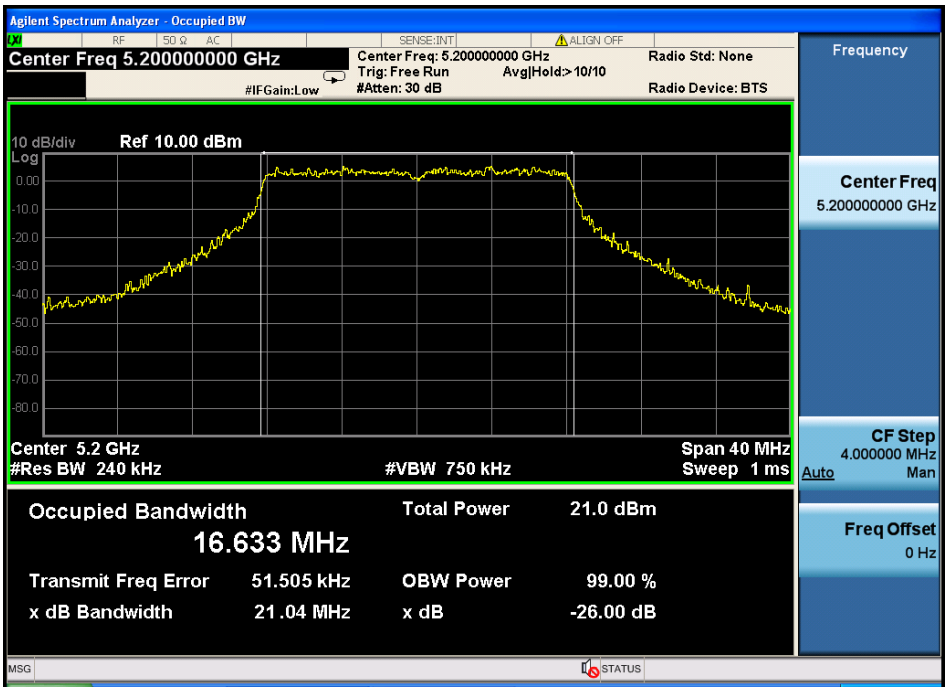
Detailed information please see the following page.

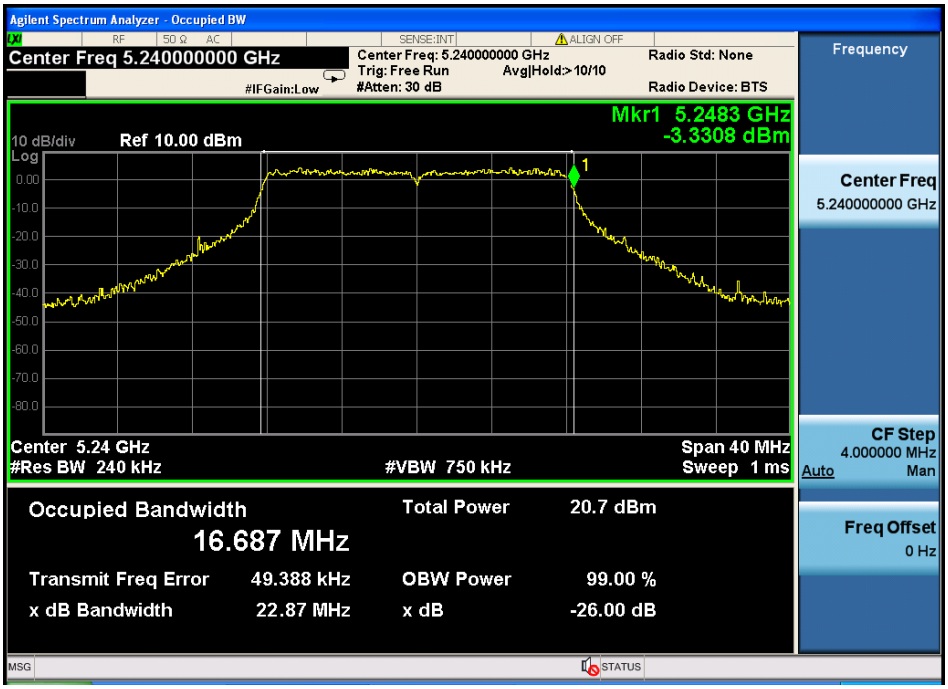
5.2G

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5180	21.12	16.636	/	PASS
Mid	5200	21.04	16.633	/	PASS
High	5240	22.87	16.687	/	PASS
IEEE 802.11n/HT20:					
Low	5180	22.14	17.807	/	PASS
Mid	5200	22.42	17.797	/	PASS
High	5240	22.72	17.801	/	PASS
IEEE 802.11n/HT40:					
Low	5190	42.26	36.144	/	PASS
High	5230	42.61	36.193	/	PASS
IEEE 802.11ac:					
	5210	78.01	75.565	/	PASS

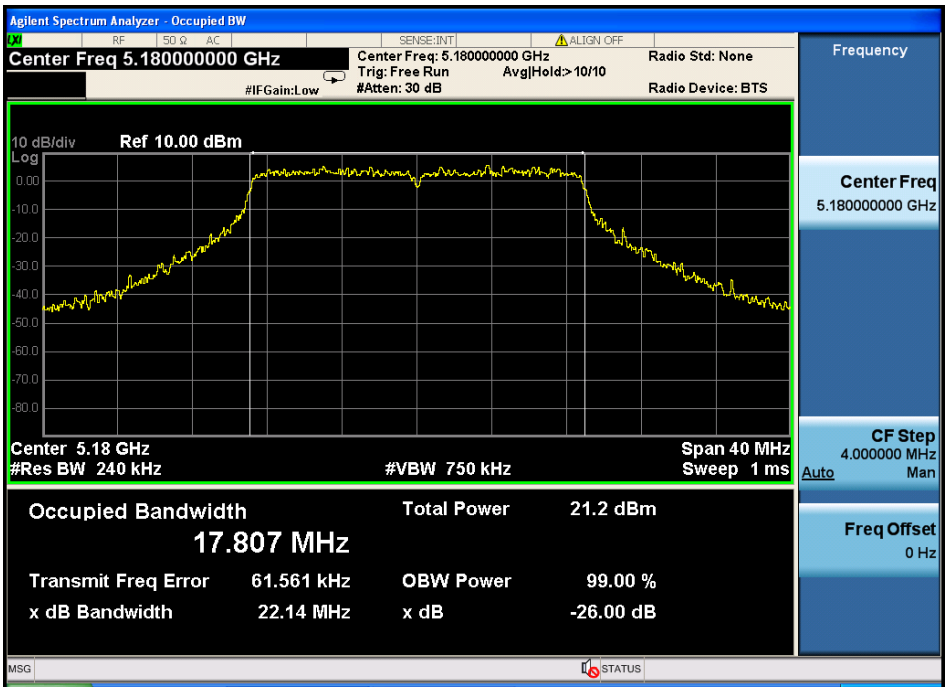
IEEE 802.11a

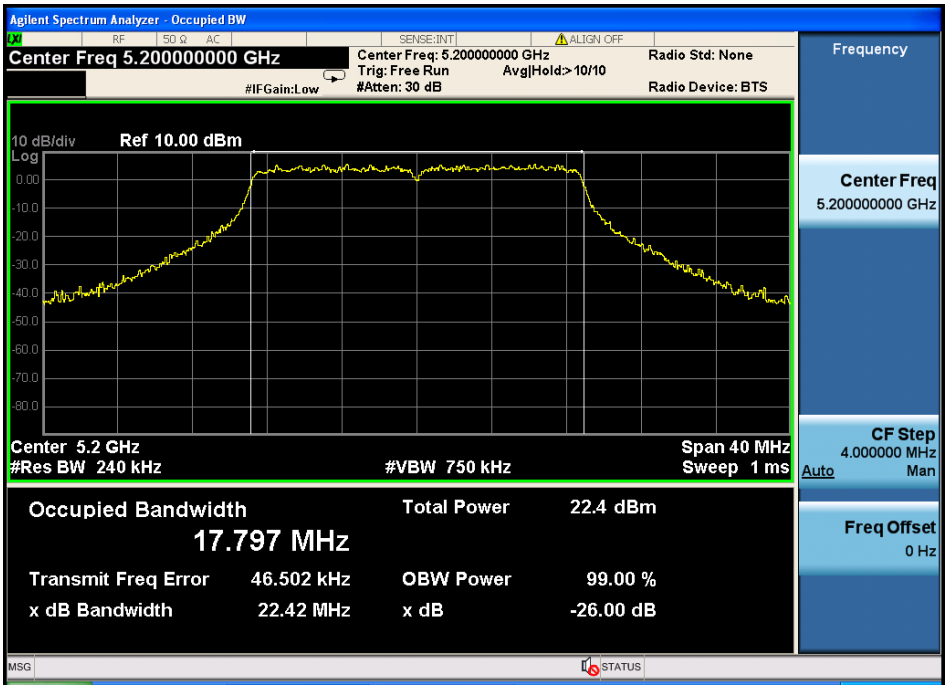

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.180000000 GHz
Center Freq: 5.180000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
10 dB/div
Ref 10.00 dBm
Center 5.18 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.636 MHz
Total Power 20.2 dBm
Transmit Freq Error 67.520 kHz
OBW Power 99.00 %
x dB Bandwidth 21.12 MHz
x dB -26.00 dB
Frequency
Center Freq
5.180000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz

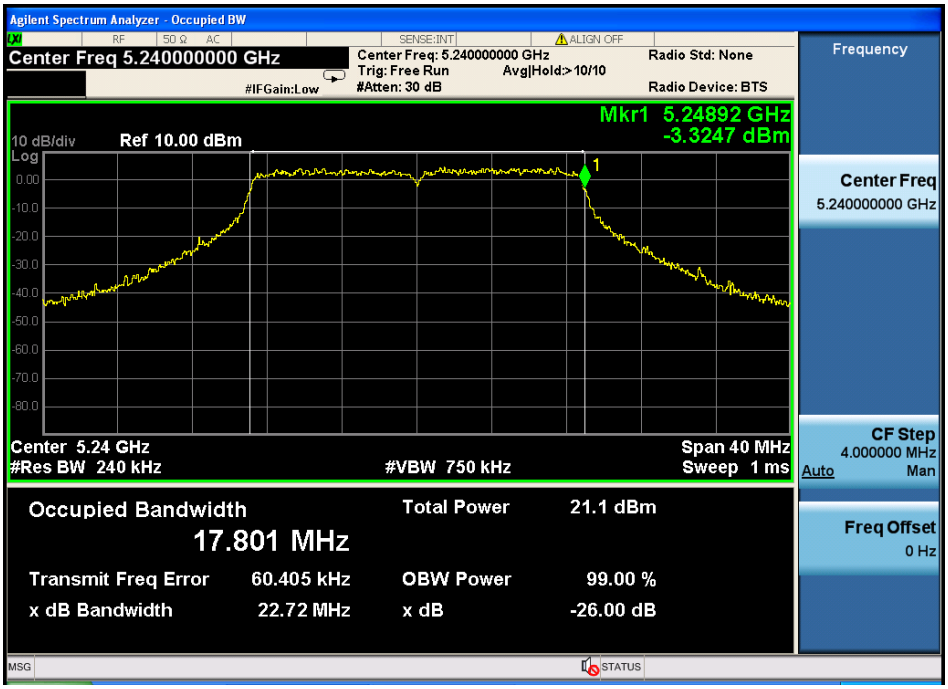

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.200000000 GHz
Center Freq: 5.200000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
10 dB/div
Ref 10.00 dBm
Center 5.2 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.633 MHz
Total Power 21.0 dBm
Transmit Freq Error 51.505 kHz
OBW Power 99.00 %
x dB Bandwidth 21.04 MHz
x dB -26.00 dB
Frequency
Center Freq
5.200000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz



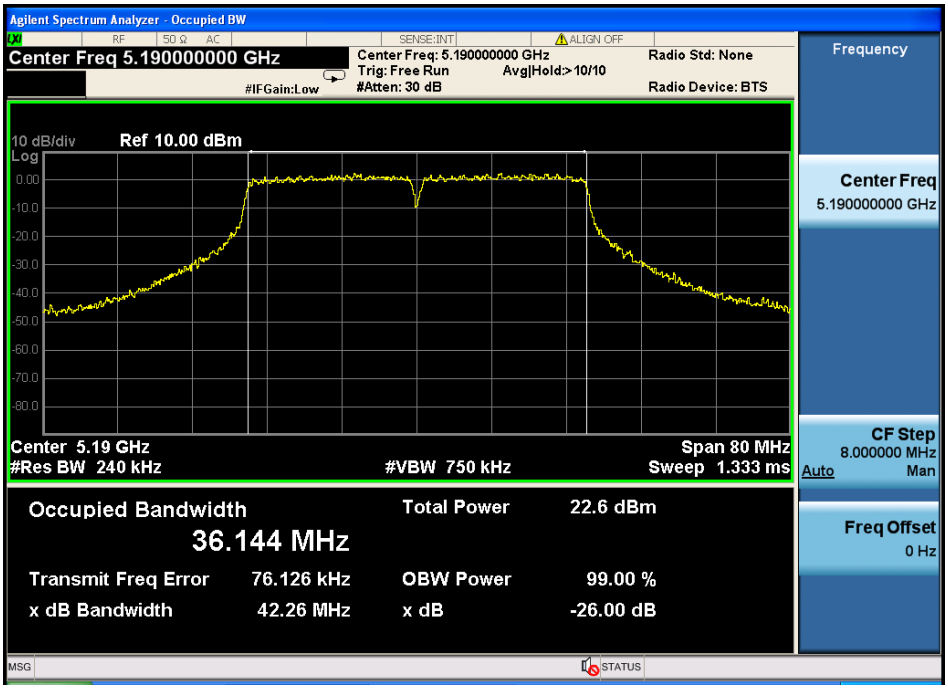
IEEE 802.11n HT20:

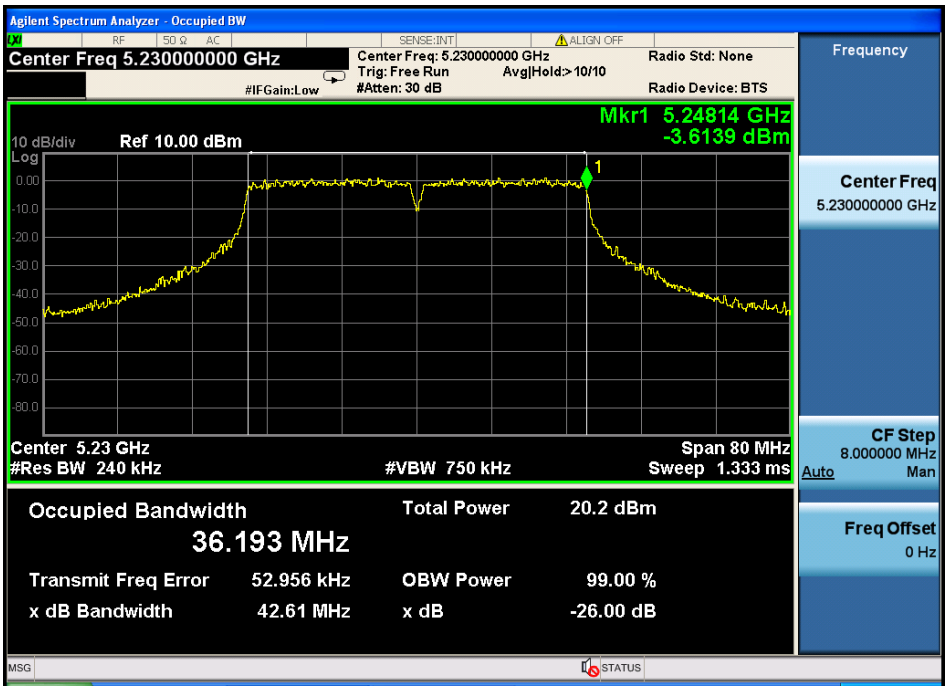



Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.200000000 GHz
Center Freq: 5.200000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
10 dB/div
Ref 10.00 dBm
Center 5.2 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.797 MHz
Total Power 22.4 dBm
Transmit Freq Error 46.502 kHz
OBW Power 99.00 %
x dB Bandwidth 22.42 MHz
x dB -26.00 dB
Frequency
Center Freq
5.200000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz

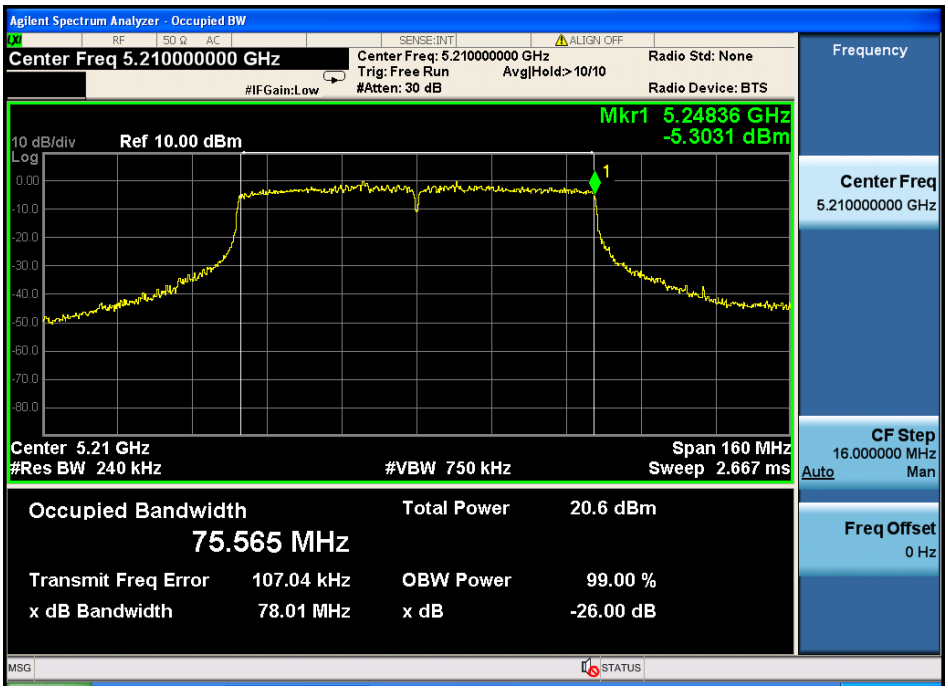

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.240000000 GHz
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
Mkr1 5.24892 GHz
-3.3247 dBm
10 dB/div
Ref 10.00 dBm
Center 5.24 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.801 MHz
Total Power 21.1 dBm
Transmit Freq Error 60.405 kHz
OBW Power 99.00 %
x dB Bandwidth 22.72 MHz
x dB -26.00 dB
Frequency
Center Freq
5.240000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz

IEEE 802.11n HT40:



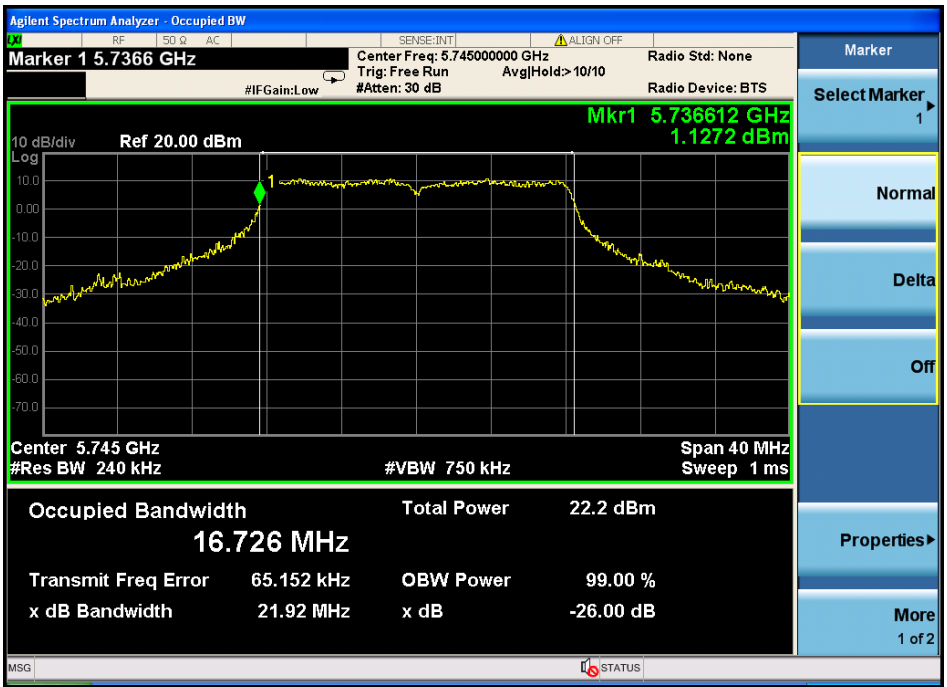


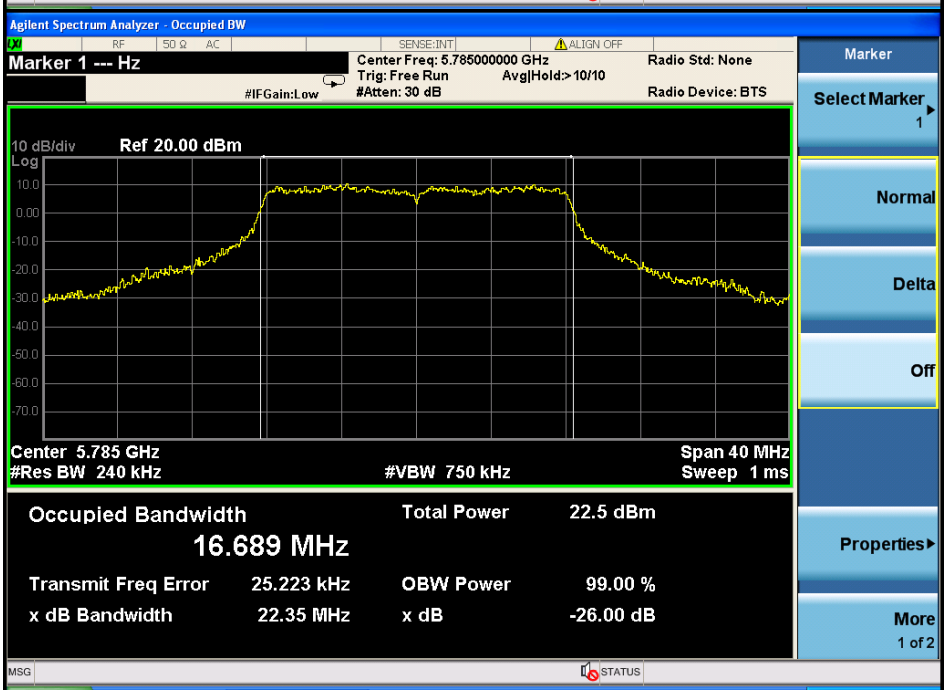
IEEE 802.11ac

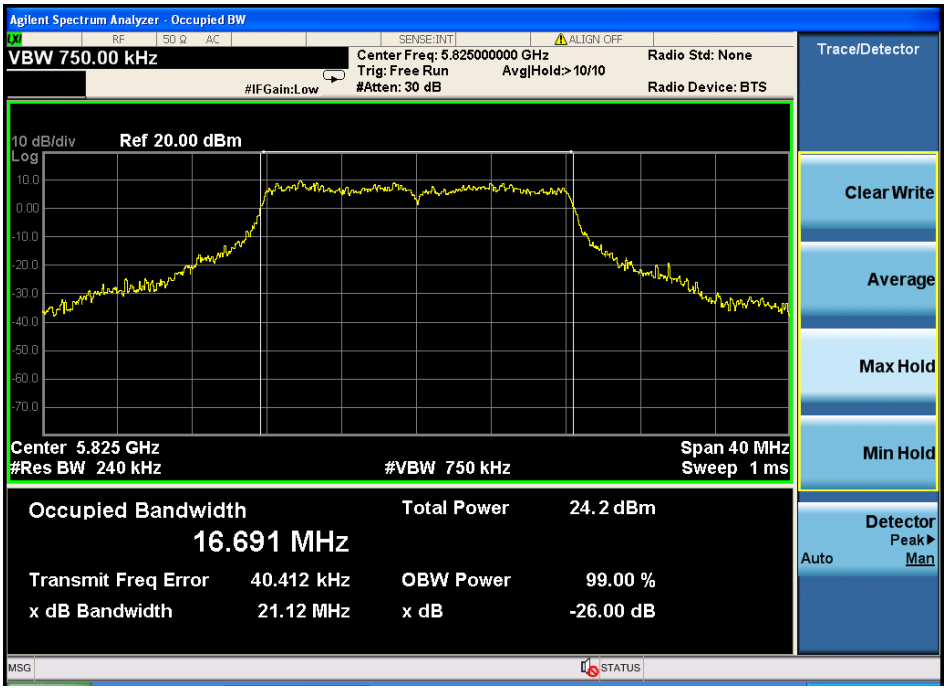


Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5745	21.92	16.726	/	PASS
Mid	5785	22.35	16.689	/	PASS
High	5825	21.12	16.691	/	PASS
IEEE 802.11n/HT20:					
Low	5745	21.02	17.847	/	PASS
Mid	5785	21.20	17.774	/	PASS
High	5825	22.33	17.844	/	PASS
IEEE 802.11n/HT40:					
Low	5755	43.03	36.186	/	PASS
High	5795	42.02	36.218	/	PASS
IEEE 802.11ac:					
	5775	81.13	75.393	/	PASS

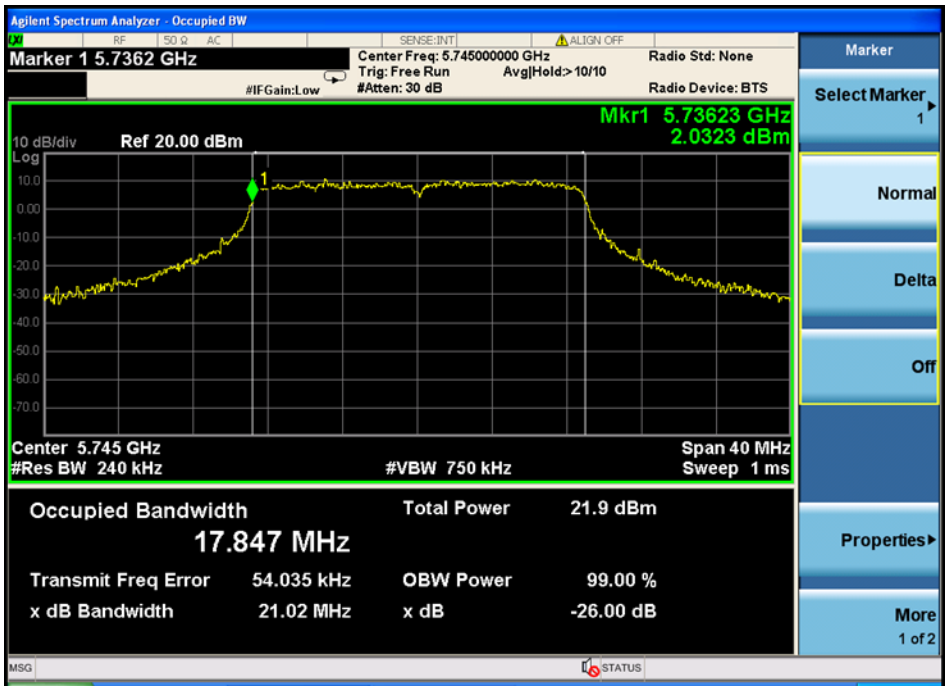
IEEE 802.11a

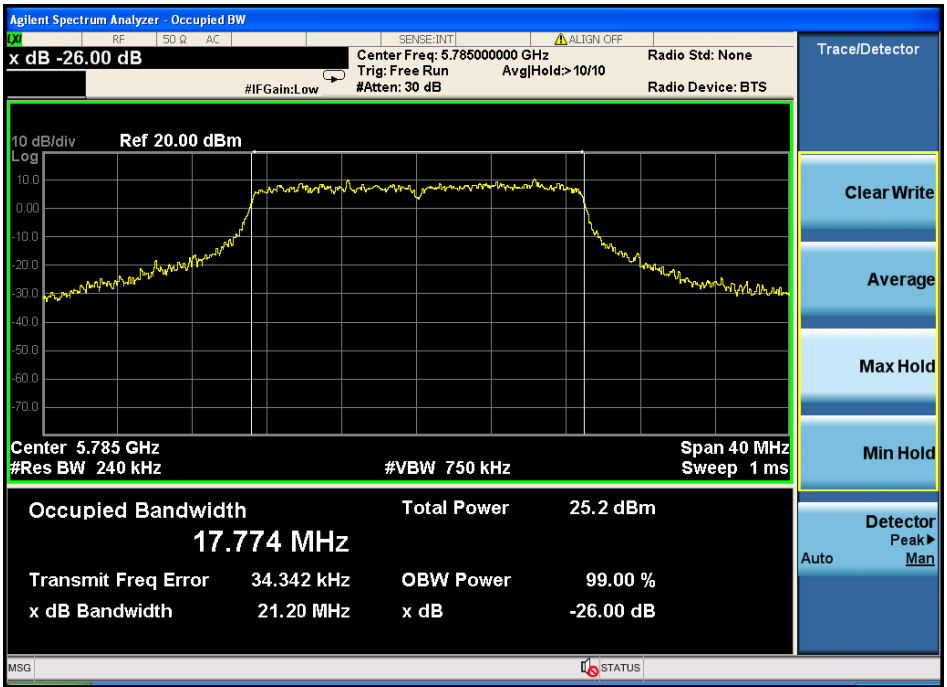

Agilent Spectrum Analyzer - Occupied BW
Marker 1 5.7366 GHz
Center Freq: 5.745000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Mkr1 5.736612 GHz
1.1272 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.745 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.726 MHz
Total Power 22.2 dBm
Transmit Freq Error 65.152 kHz
OBW Power 99.00 %
x dB Bandwidth 21.92 MHz
x dB -26.00 dB
Marker
Select Marker 1
Normal
Delta
Off
Properties
More 1 of 2
MSG
STATUS

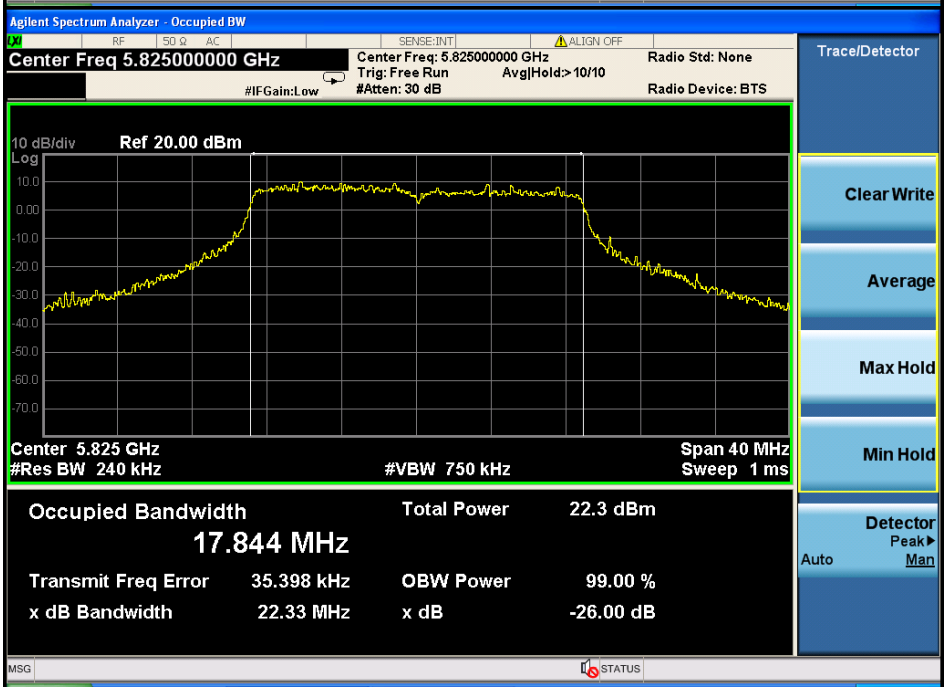

Agilent Spectrum Analyzer - Occupied BW
Marker 1 --- Hz
Center Freq: 5.785000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
10 dB/div
Ref 20.00 dBm
Log
Center 5.785 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.689 MHz
Total Power 22.5 dBm
Transmit Freq Error 25.223 kHz
OBW Power 99.00 %
x dB Bandwidth 22.35 MHz
x dB -26.00 dB
Marker
Select Marker 1
Normal
Delta
Off
Properties
More 1 of 2
MSG
STATUS



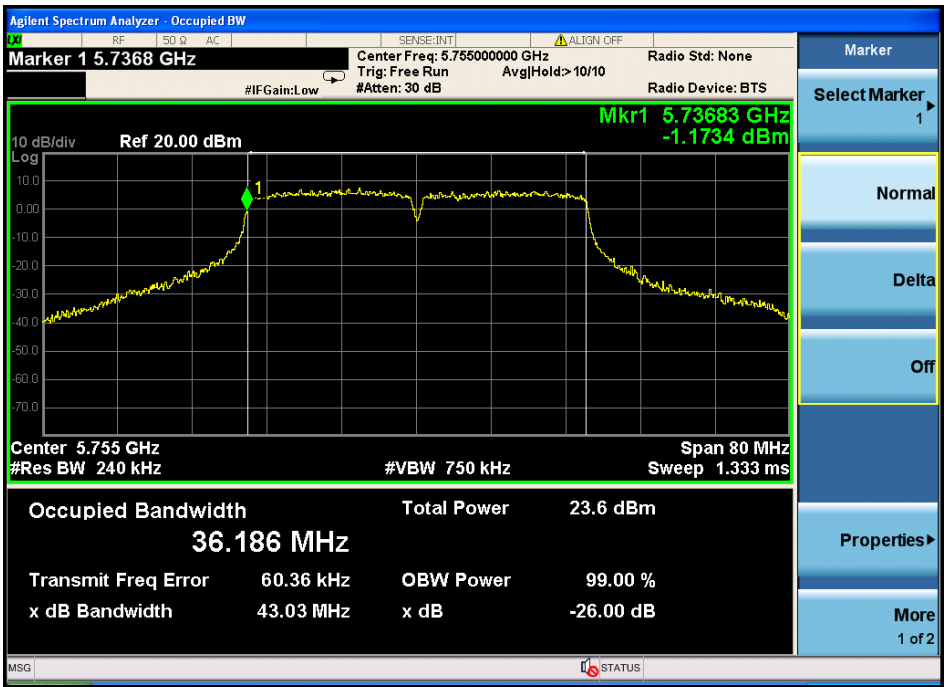
IEEE 802.11n HT20:

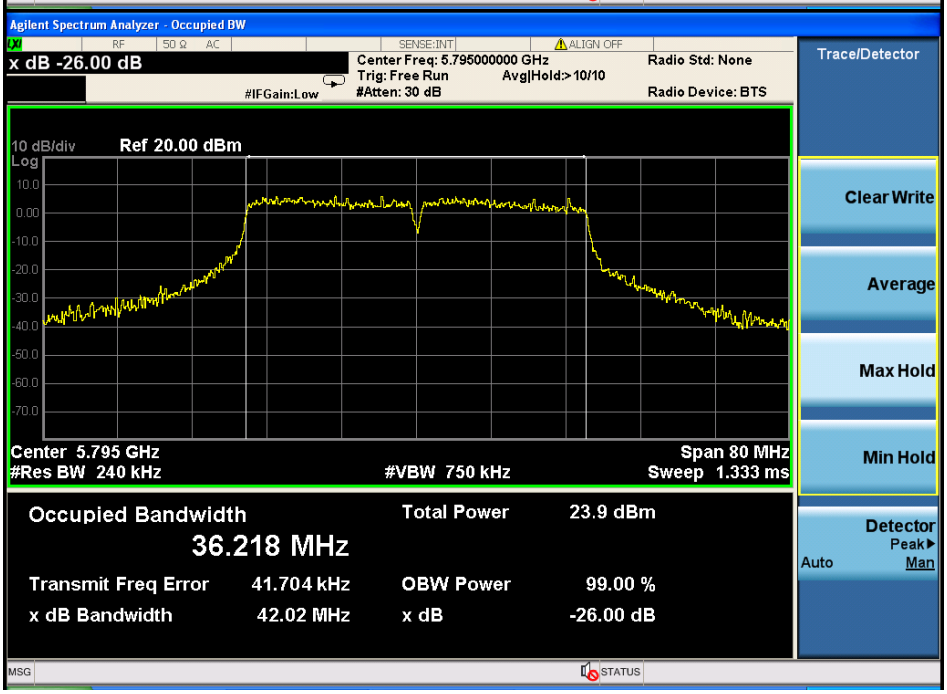



Agilent Spectrum Analyzer - Occupied BW
x dB -26.00 dB
Center Freq: 5.785000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
Trace/Detector
10 dB/div
Ref 20.00 dBm
Log
Clear Write
Average
Max Hold
Min Hold
Center 5.785 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.774 MHz
Total Power 25.2 dBm
Transmit Freq Error 34.342 kHz
OBW Power 99.00 %
x dB Bandwidth 21.20 MHz
x dB -26.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

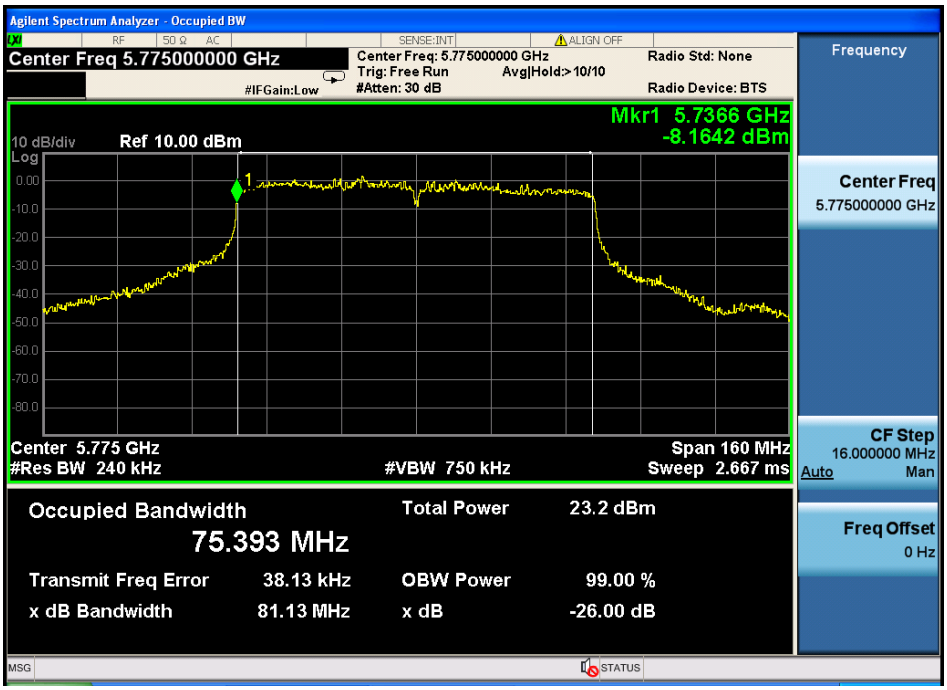

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.825000000 GHz
Center Freq: 5.825000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
Trace/Detector
10 dB/div
Ref 20.00 dBm
Log
Clear Write
Average
Max Hold
Min Hold
Center 5.825 GHz
#Res BW 240 kHz
#VBW 750 kHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.844 MHz
Total Power 22.3 dBm
Transmit Freq Error 35.398 kHz
OBW Power 99.00 %
x dB Bandwidth 22.33 MHz
x dB -26.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

IEEE 802.11n HT40:





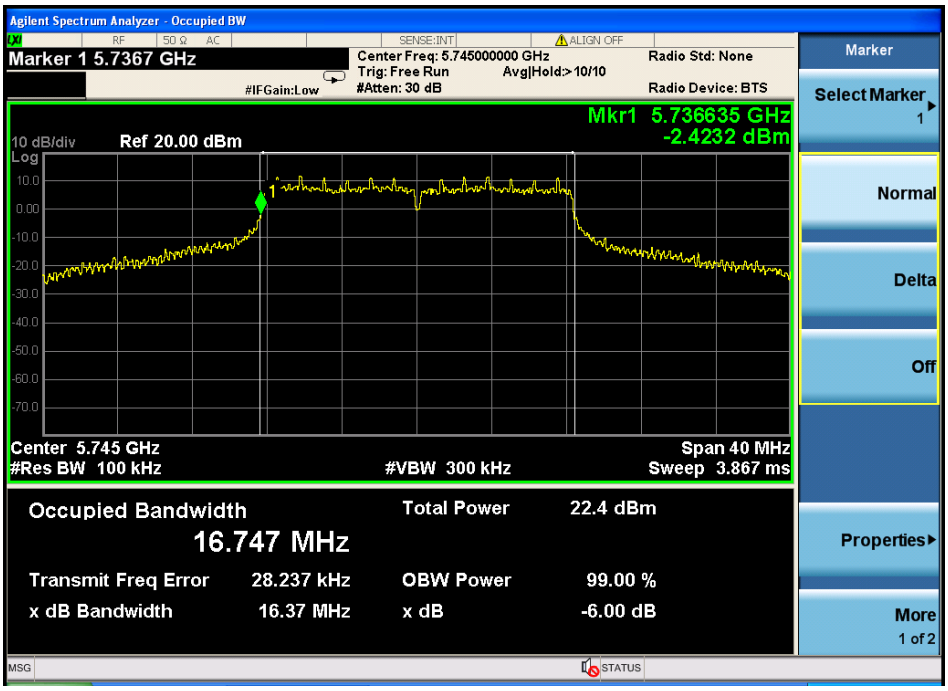
IEEE 802.11ac



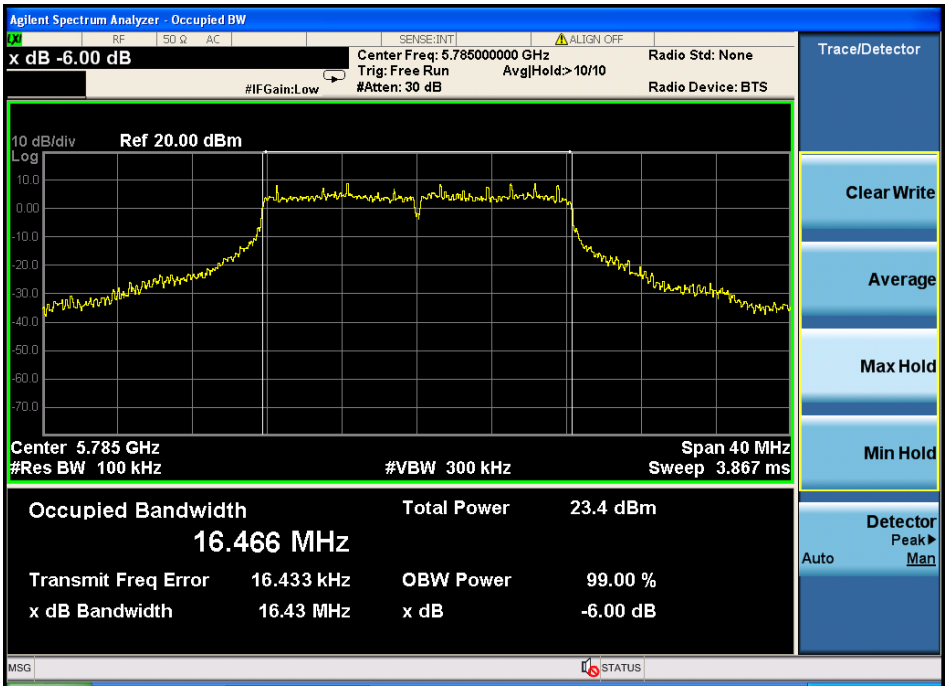
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5745	16.37	16.747	0.5	PASS
Mid	5785	16.43	16.466	0.5	PASS
High	5825	16.26	16.446	0.5	PASS
IEEE 802.11n/HT20:					
Low	5745	17.41	17.437	0.5	PASS
Mid	5785	17.19	17.676	0.5	PASS
High	5825	16.62	17.617	0.5	PASS
IEEE 802.11n/HT40:					
Low	5755	35.21	36.161	0.5	PASS
High	5795	35.57	36.186	0.5	PASS
IEEE 802.11ac:					
	5775	75.72	75.532	0.5	PASS

IEEE 802.11a with 5.8G:

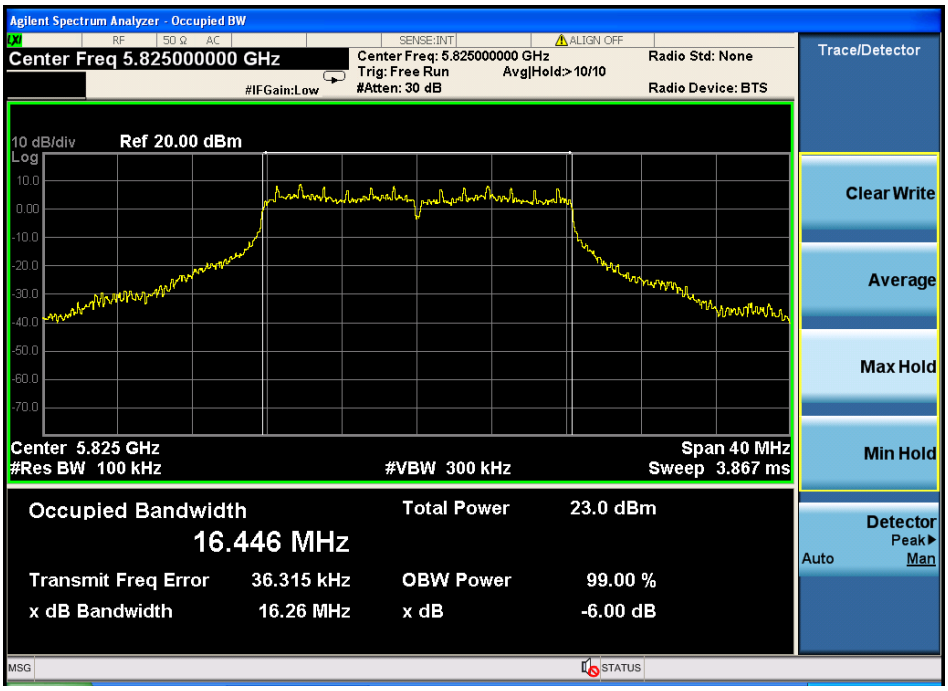
CH Low :



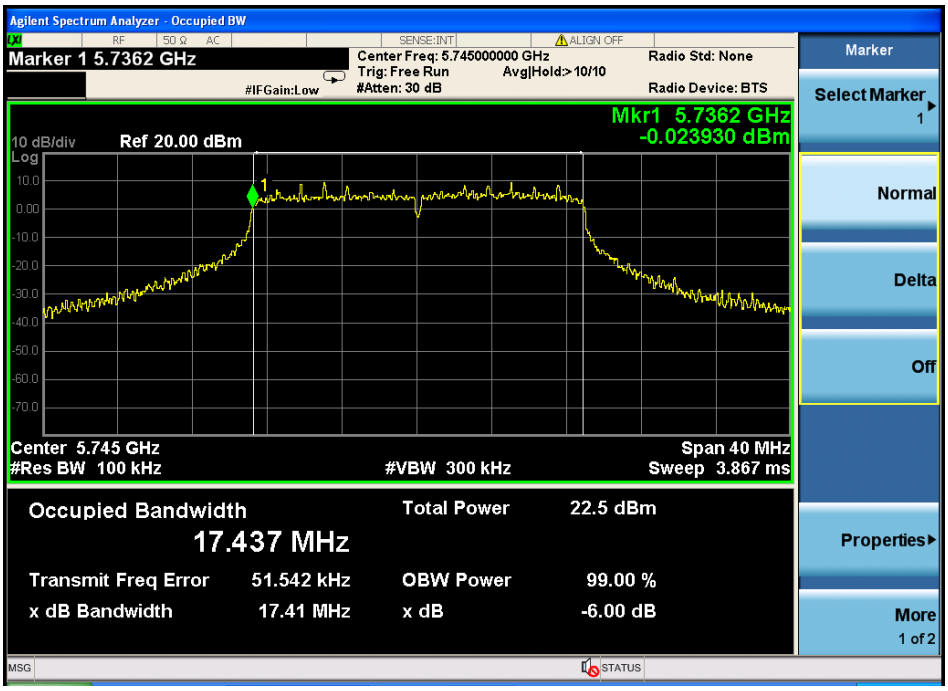
CH Mid :



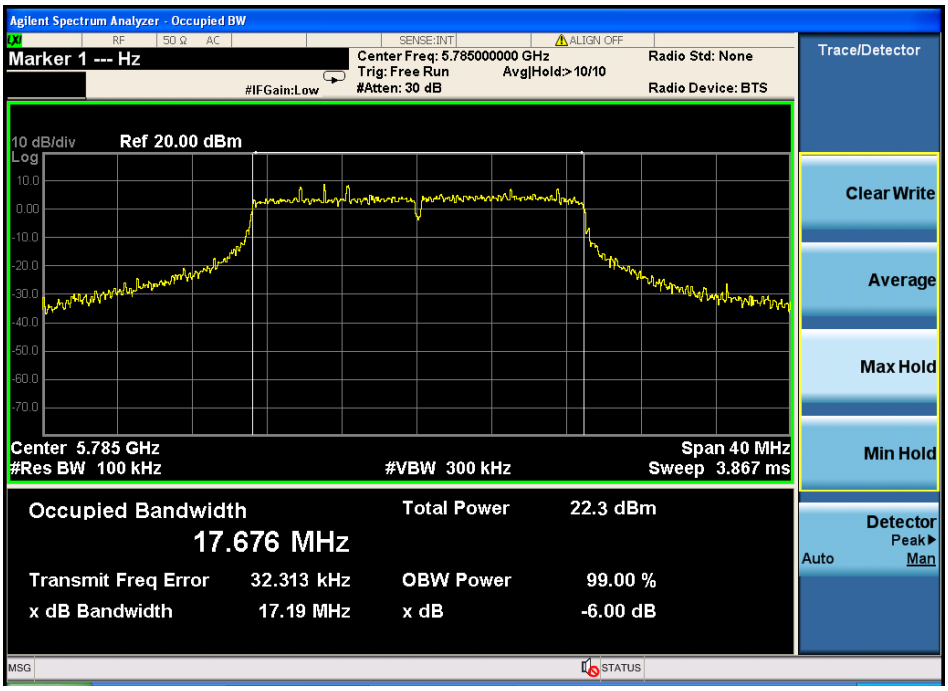
CH High :



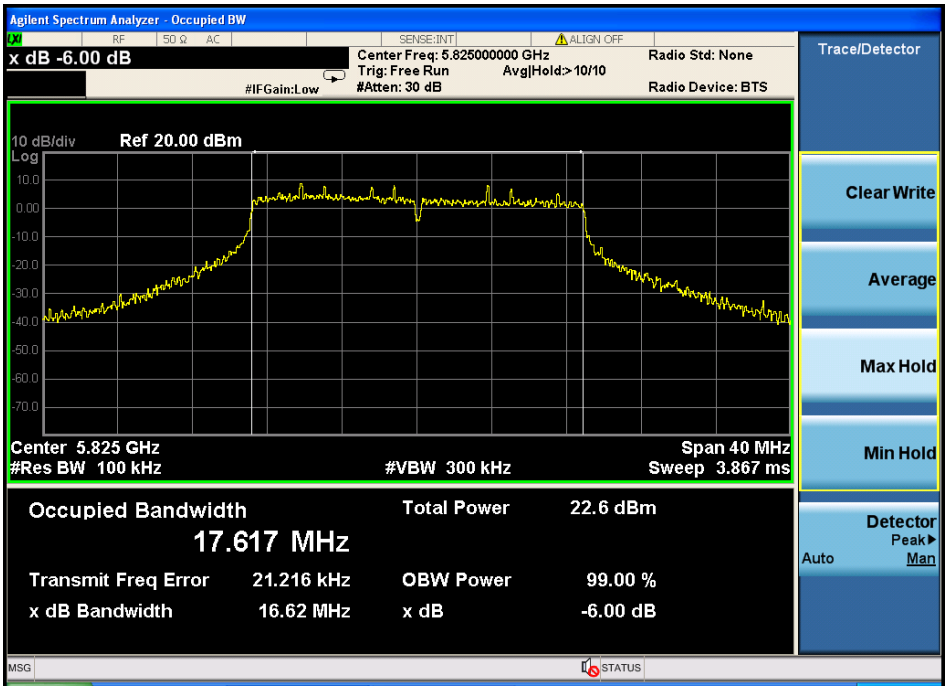
IEEE 802.11n HT20:
CH Low :



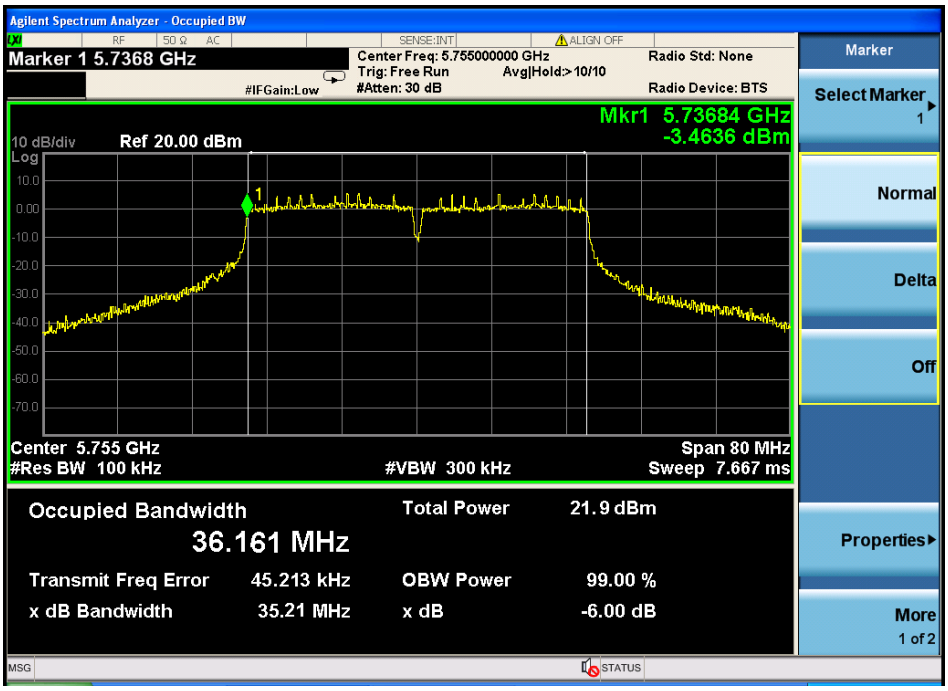
CH Mid :



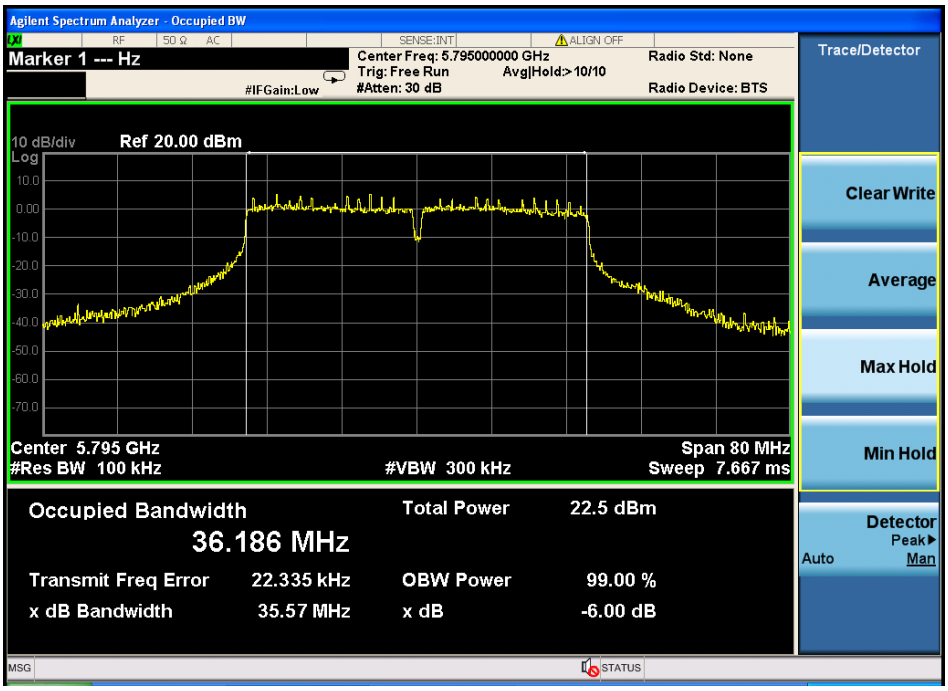
CH High :



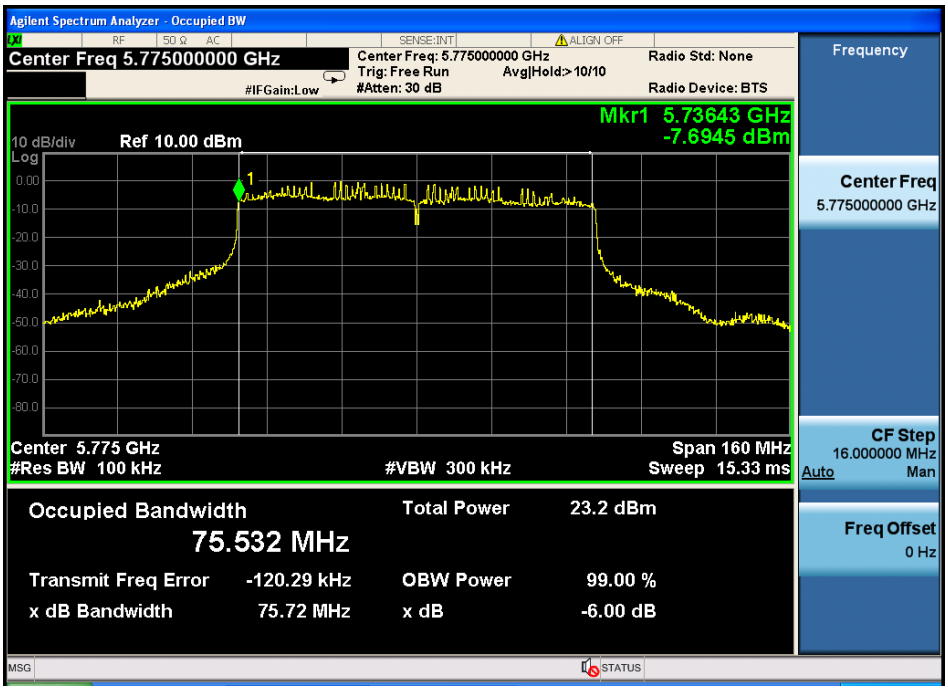
IEEE 802.11n/HT40:
CH Low :



CH High :



IEEE 802.11ac:



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) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(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 1.5m 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

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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	43.89	31.65	5.92	33.9	47.56	68.2	20.64	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5150	42.98	31.65	5.92	33.9	46.65	68.2	21.55	**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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	44.29	31.73	6.05	33.73	48.34	68.2	19.86	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5350	42.37	31.73	6.05	33.73	46.42	68.2	21.78	**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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	43.57	31.65	5.92	33.9	47.24	68.2	20.96	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5150	42.26	31.65	5.92	33.9	45.93	68.2	22.27	**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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	43.29	31.73	6.05	33.73	47.34	68.2	20.86	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5350	41.75	31.73	6.05	33.73	45.8	68.2	22.4	**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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	42.93	31.65	5.92	33.9	46.6	68.2	21.6	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5150	43.06	31.65	5.92	33.9	46.73	68.2	21.47	**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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	45.79	31.73	6.05	33.73	49.84	68.2	18.36	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5350	43.22	31.73	6.05	33.73	47.27	68.2	20.93	**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 802.11ac

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	43.42	31.65	5.92	33.9	47.09	68.2	21.11	**PK**
5350	45.62	31.73	6.05	33.73	49.67	68.2	18.53	PK
Antenna Polarity: Horizontal								
5150	42.76	31.65	5.92	33.9	46.43	68.2	21.77	**PK**
5350	43.29	31.73	6.05	33.73	47.34	68.2	20.86	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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	41.93	31.81	6.11	33.68	46.17	68.2	22.03	**PK**
5725	43.24	32.17	6.26	33.58	48.09	68.2	20.11	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5460	41.84	31.81	6.11	33.68	46.08	68.2	22.12	**PK**
5725	43.79	32.17	6.26	33.58	48.64	68.2	19.56	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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	42.29	32.5	6.33	33.64	47.48	68.2	20.72	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5850	42.16	32.5	6.33	33.64	47.35	68.2	20.85	**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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	41.59	31.81	6.11	33.68	45.83	68.2	22.37	**PK**
5725	43.35	32.17	6.26	33.58	48.2	68.2	20	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5460	41.78	31.81	6.11	33.68	46.02	68.2	22.18	**PK**
5725	43.29	32.17	6.26	33.58	48.14	68.2	20.06	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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	43.26	32.5	6.33	33.64	48.45	68.2	19.75	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5850	42.58	32.5	6.33	33.64	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 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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	41.71	31.81	6.11	33.68	45.95	68.2	22.25	**PK**
5725	43.65	32.17	6.26	33.58	48.5	68.2	19.7	PK
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5460	41.93	31.81	6.11	33.68	46.17	68.2	22.03	**PK**
5725	43.29	32.17	6.26	33.58	48.14	68.2	20.06	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: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	42.95	32.5	6.33	33.64	48.14	68.2	20.06	**PK**
--	--	--	--	--	--	--	--	--
Antenna Polarity: Horizontal								
5850	42.43	32.5	6.33	33.64	47.62	68.2	20.58	**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 802.11ac

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: NFT 2ac								
Power: DC 48V From adapter								
Test date: 2016-08-05 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	42.52	31.81	6.11	33.68	46.76	68.2	21.44	**PK**
5725	43.78	32.17	6.26	33.58	48.63	68.2	19.57	PK
5850	42.79	32.5	6.33	33.64	47.98	68.2	20.22	PK
Antenna Polarity: Horizontal								
5460	41.39	31.81	6.11	33.68	45.63	68.2	22.57	**PK**
5725	43.51	32.17	6.26	33.58	48.36	68.2	19.84	PK
5850	42.16	32.5	6.33	33.64	47.35	68.2	20.85	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

EUT: Broadband Digital Transmission System M/N: NFT 2ac					
Power: DC 48V From adapter					
Ambient Temperature:23℃		Relative Humidity: 60%			
Test date: 2016-08-05		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	5179.973	27	5239.976	24
	120 V	5179.973	27	5239.976	24
	108 V	5179.973	27	5239.976	24
5.8G Band	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
	132 V	5744.935	25	5824.970	30
	120 V	5744.935	25	5824.970	30
	108 V	5744.935	25	5824.970	30

Mode	Temperature (℃)	FH_L (5180MHz)	Deviation (KHz)	FH_H (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.937	63	5239.946	44
	-20	5179.955	45	5239.955	45
	-10	5179.963	37	5239.951	49
	0	5179.955	45	5239.964	36
	10	5179.973	27	5239.968	32
	20	5179.971	29	5239.962	38
	30	5179.965	35	5239.973	27
	40	5179.972	28	5239.970	30
	50	5179.983	17	5239.971	29
5.8G Band	Temperature (℃)	FH_L (5745MHz)	Deviation (KHz)	FH_H (5825MHz)	Deviation (KHz)
	-30	5744.925	75	5824.939	61
	-20	5744.931	69	5824.928	72
	-10	5744.934	66	5824.951	49
	0	5744.947	53	5824.925	75
	10	5744.951	49	5824.953	47
	20	5744.953	47	5824.979	21
	30	5744.956	44	5824.965	35
	40	5744.968	32	5824.957	43
	50	5744.979	21	5824.983	17

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

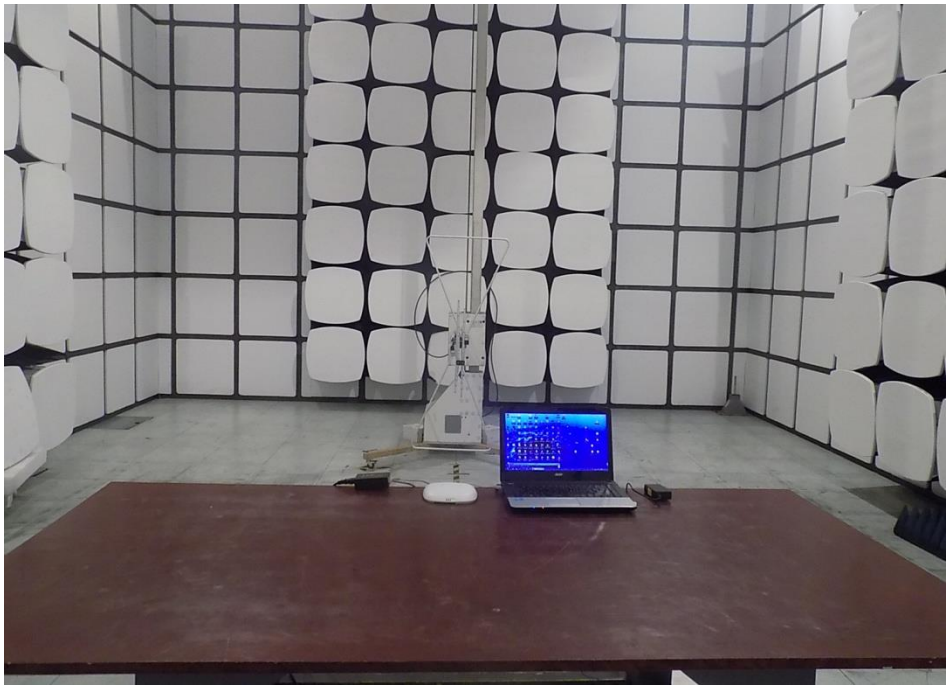
The antenna connector is unique antenna and no consideration of replacement. Please see EUT photo for details.

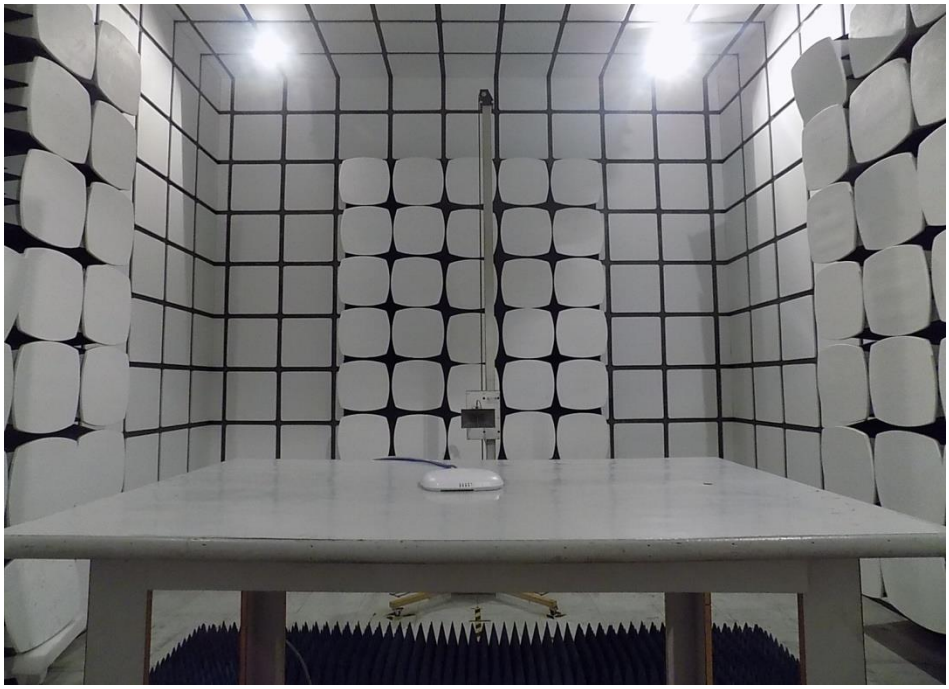
12.3 Result

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

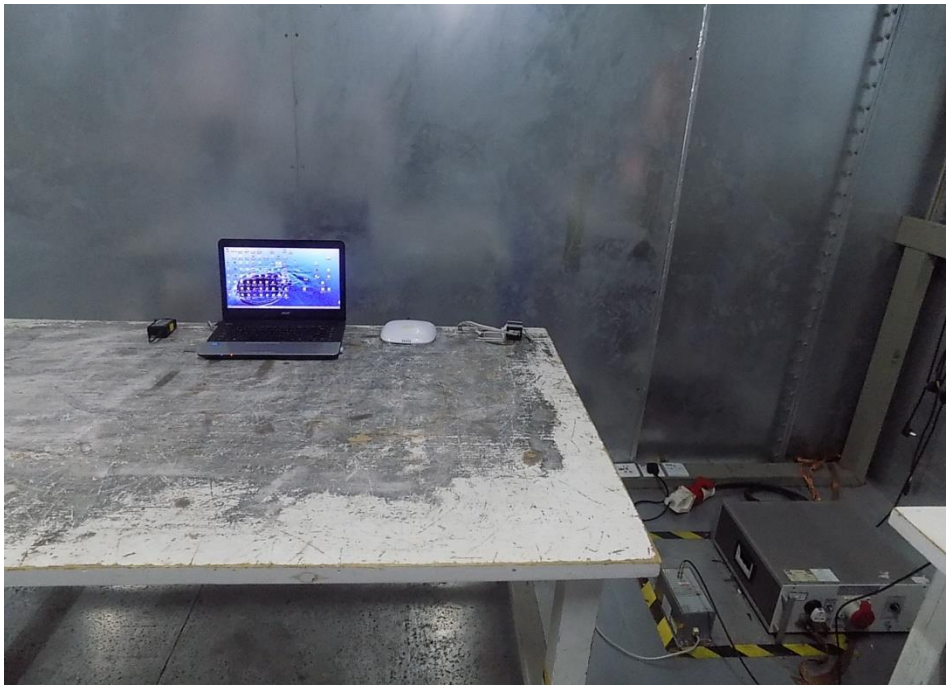
13 Test setup photo

13.1 Photos of Radiated emission



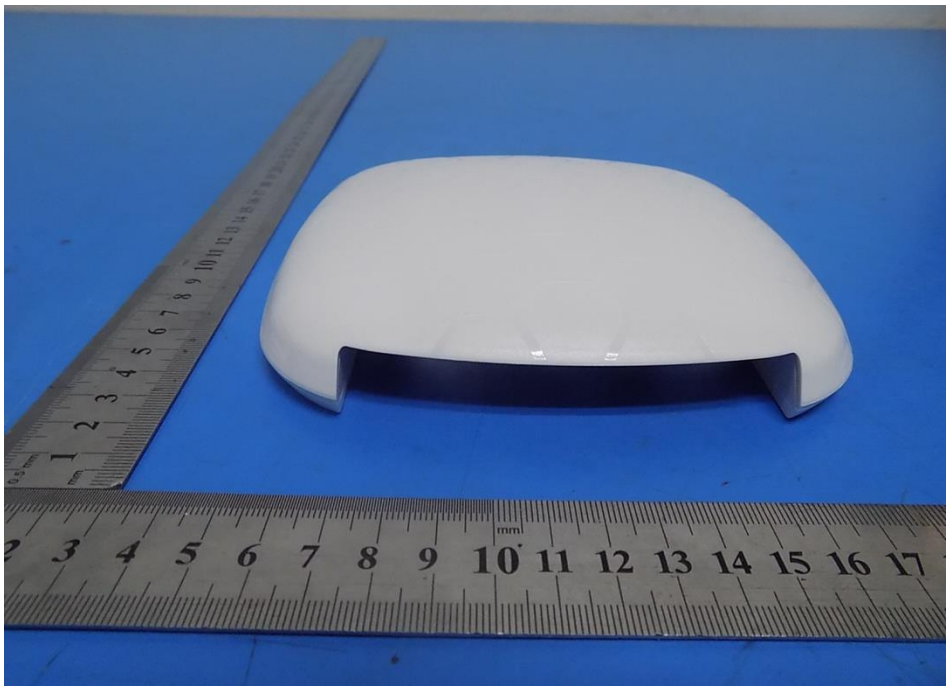


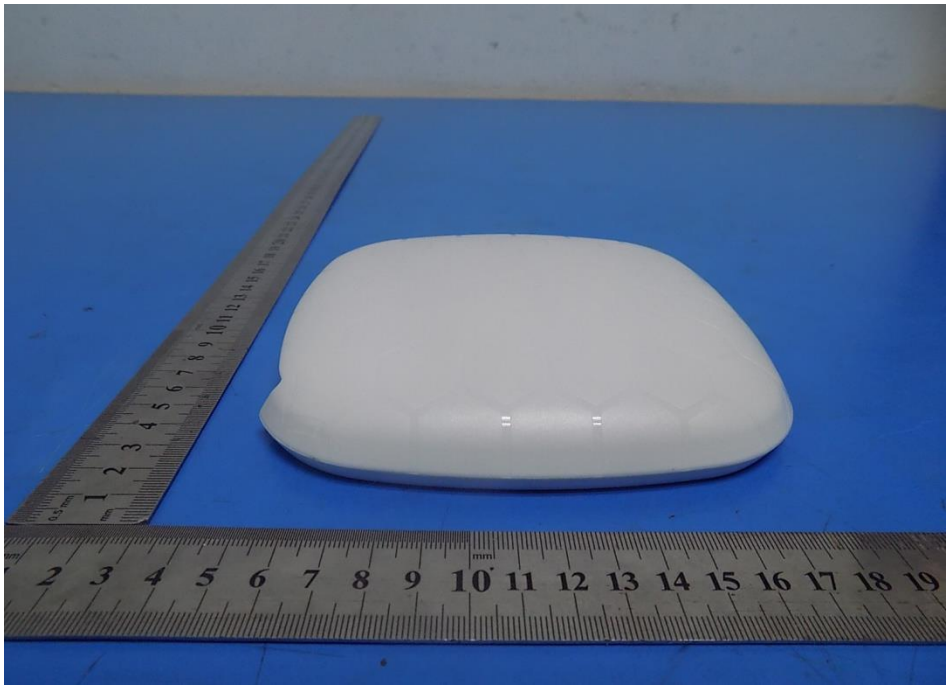
13.2 Photos of Conducted Emission test

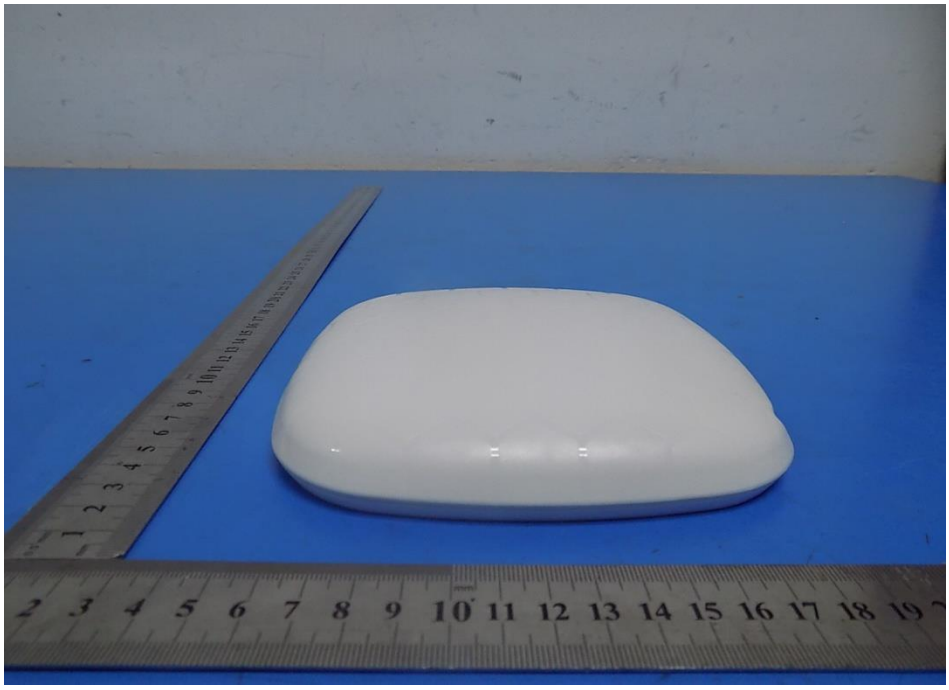


14 Photographs of EUT

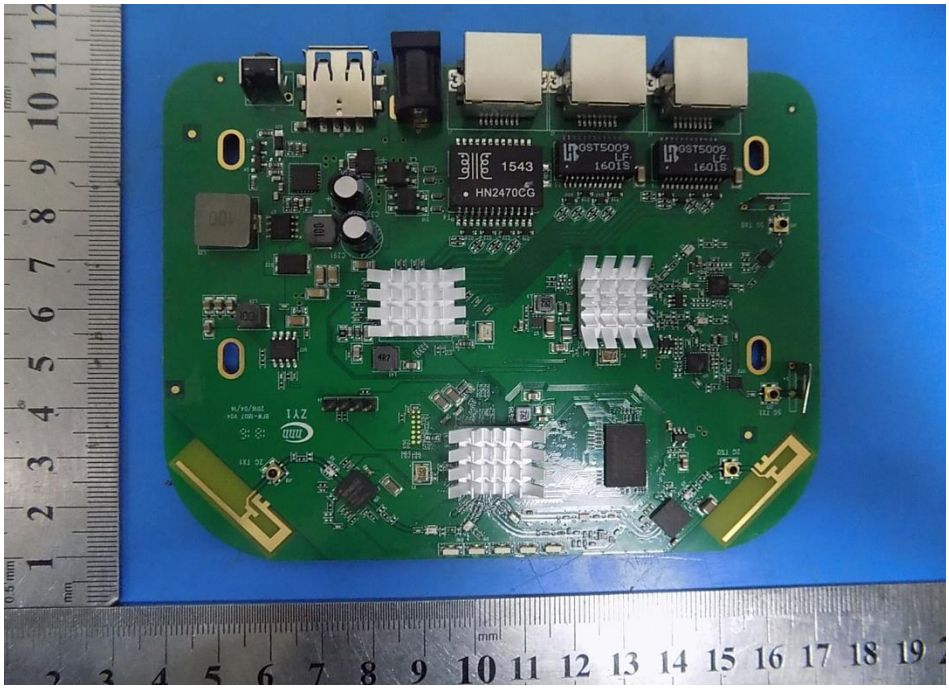
POE POWER ADAPTER
MODEL:GRT-POE20-480050A
INPUT:100-240V ~ 50/60Hz 0.5A
OUTPUT:48V ⎓ 500mA
For I.T.E Use only
MADE IN CHINA
SN:1603185859

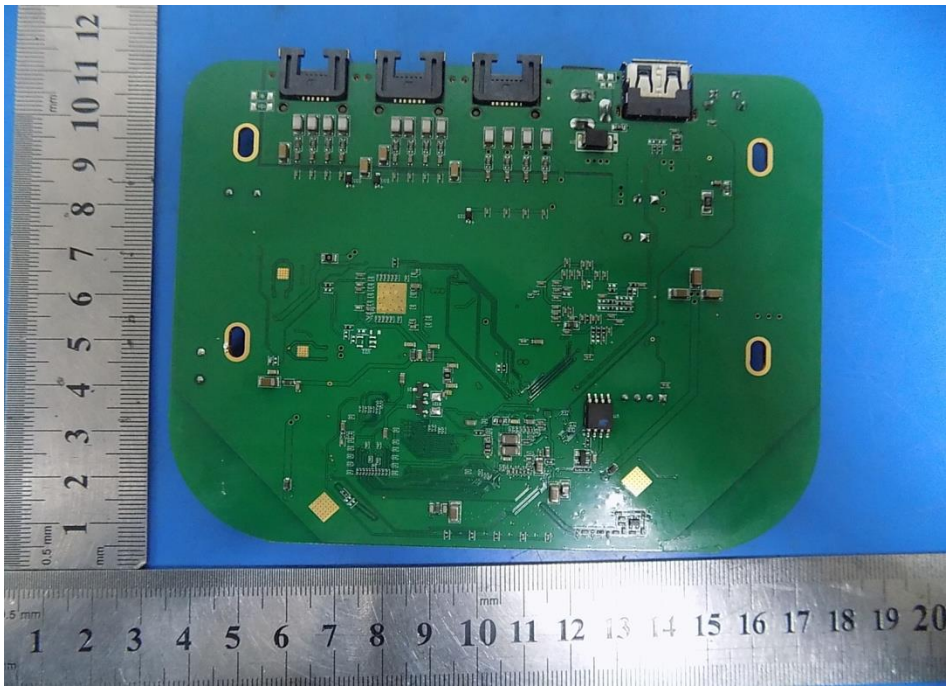






Model:NFT 2ac


1543
HN2470CG
GSTS009
1601S
GSTS009
1601S



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