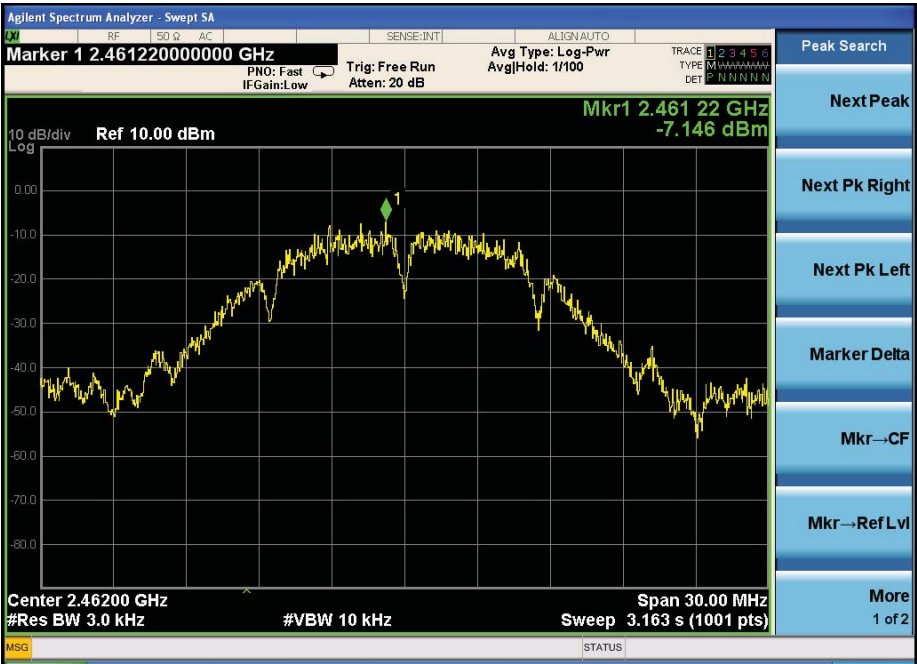


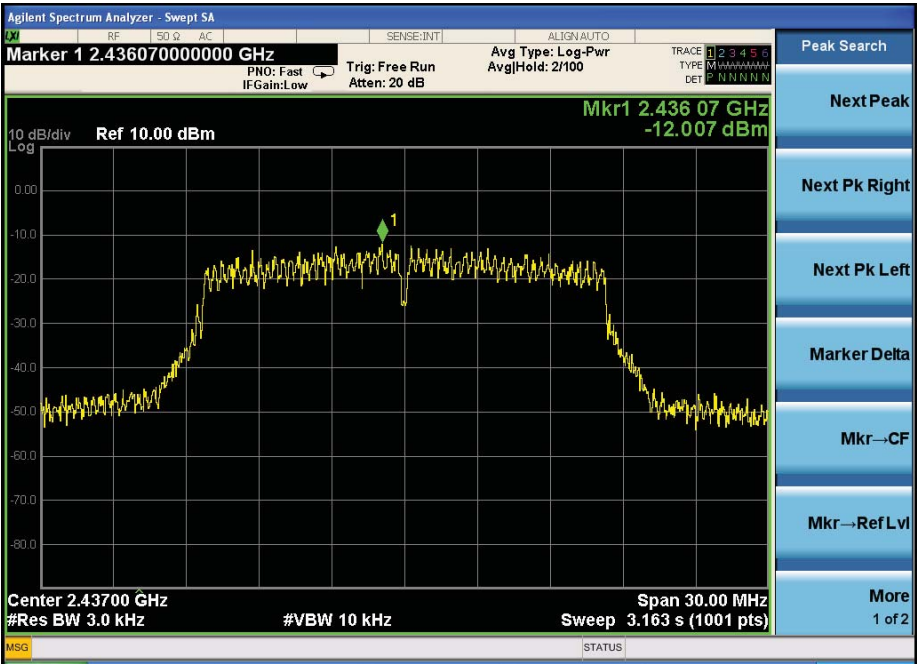
CH Hig:



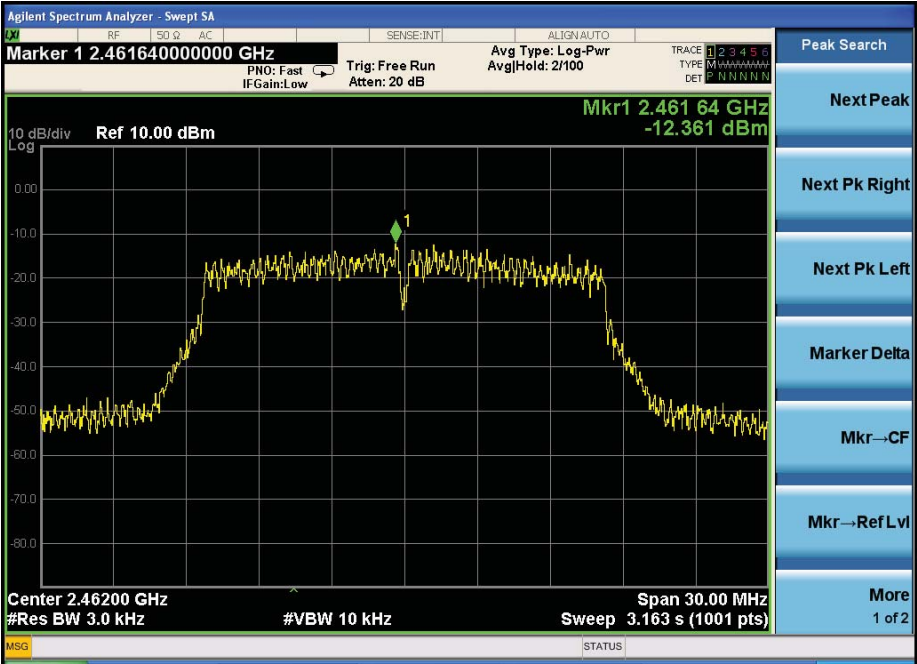
IEEE 802.11g :
CH Low



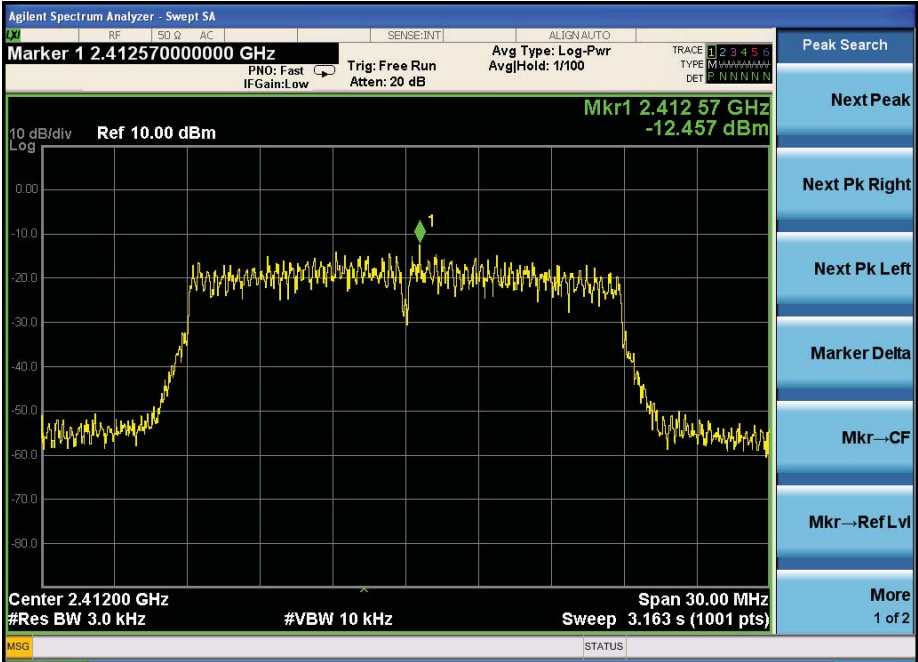
CH Mid:



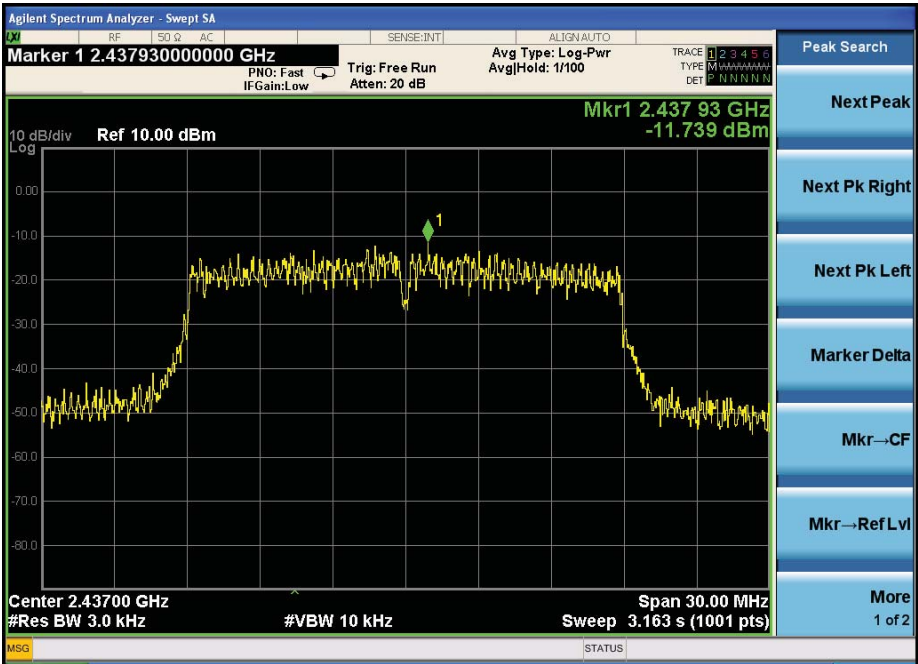
CH Hig:



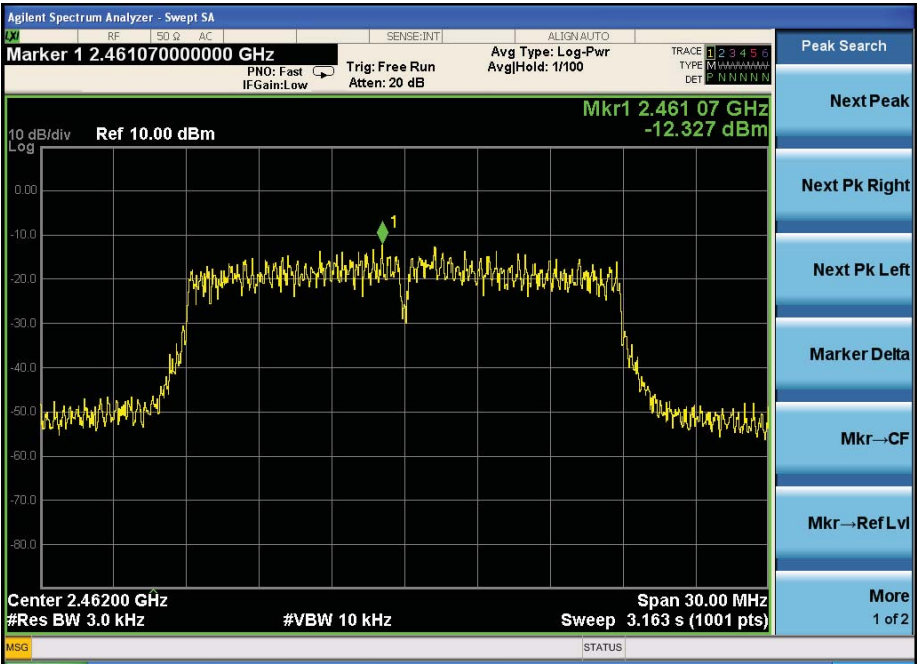
IEEE 802.11n HT20 :
CH Low :



CH Mid:

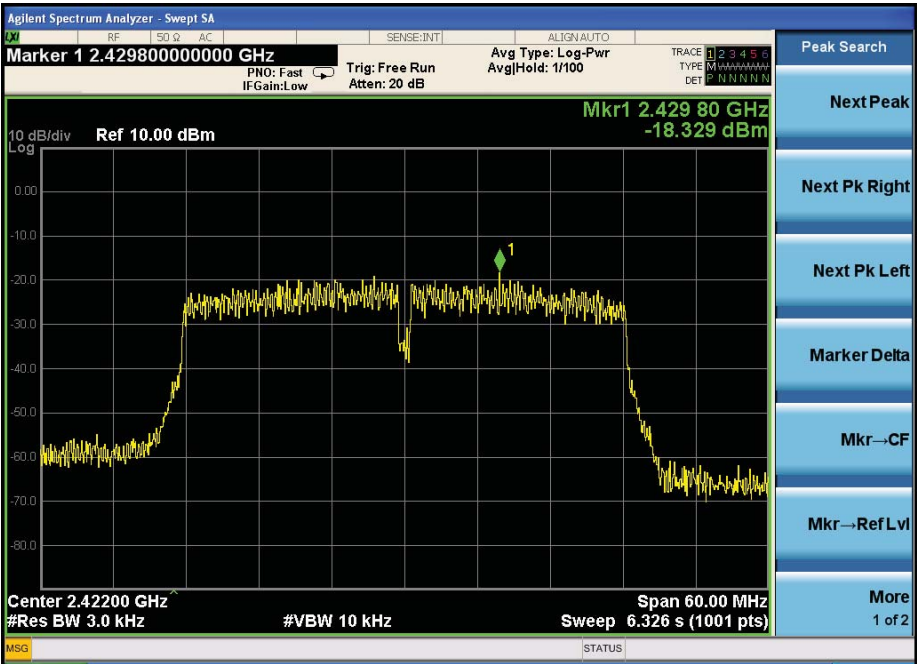


CH Hig:

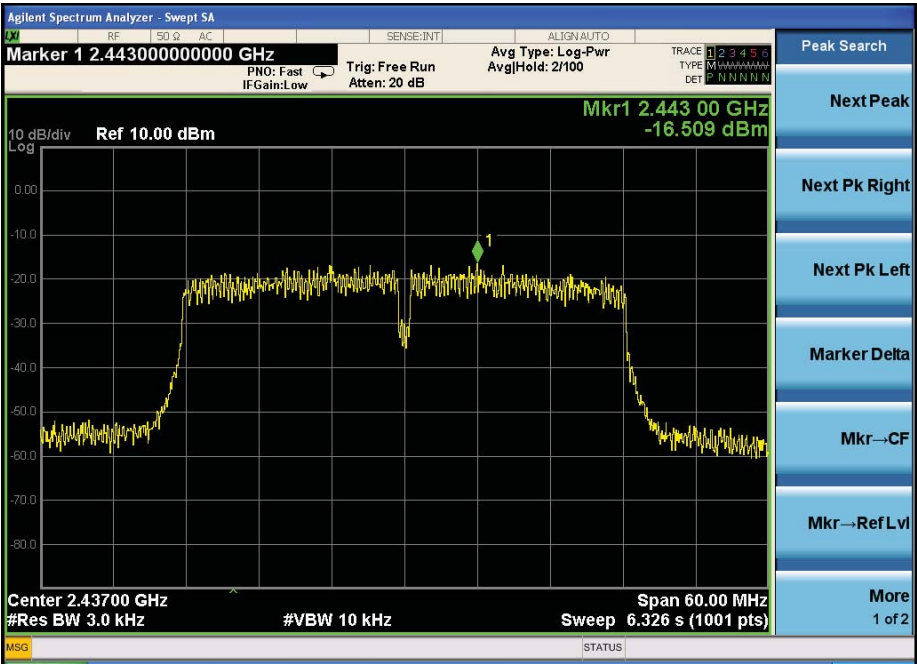


IEEE 802.11n HT40 :

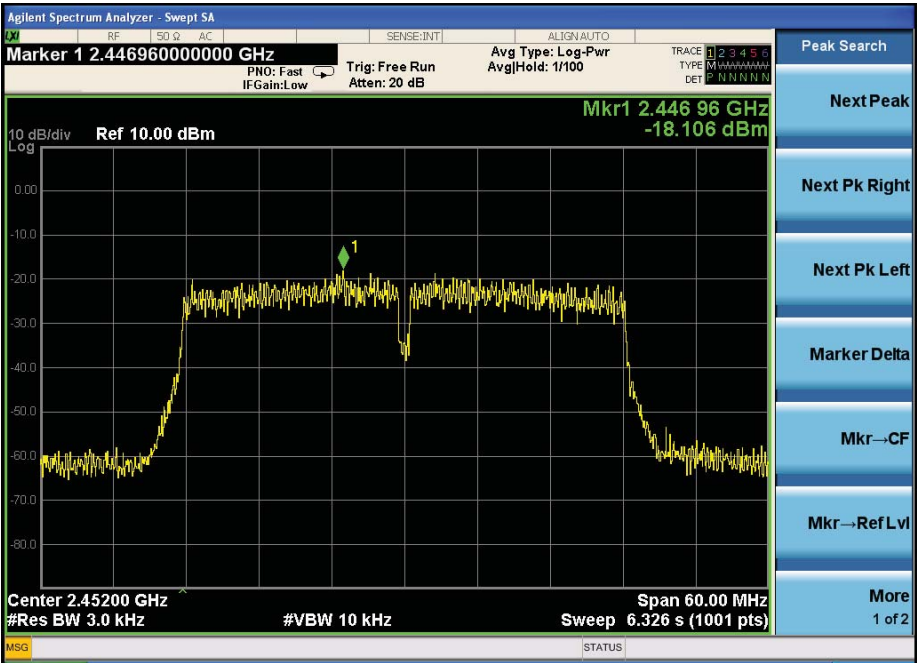
CH Low :



CH Mid:



CH Hig:



9 Bandwidth

9.1 Test limit

Please refer section RSS-247 & 15.247

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz.

9.2 Method of measurement

Details see the KDB558074 D01 Meas Guidance

- a) 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.
- b) The test receiver set RBW = 100KHz, VBW $\geq$ 3RBW, Peak detector, Sweep time set auto, detail see the test plot.

9.3 Test Setup



9.4 Test Results

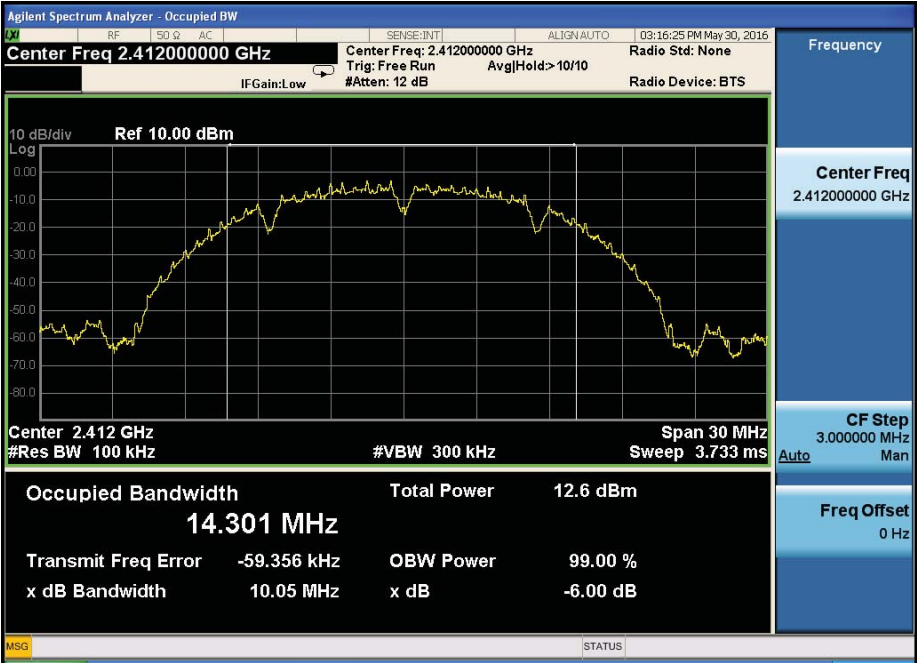
PASS.

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

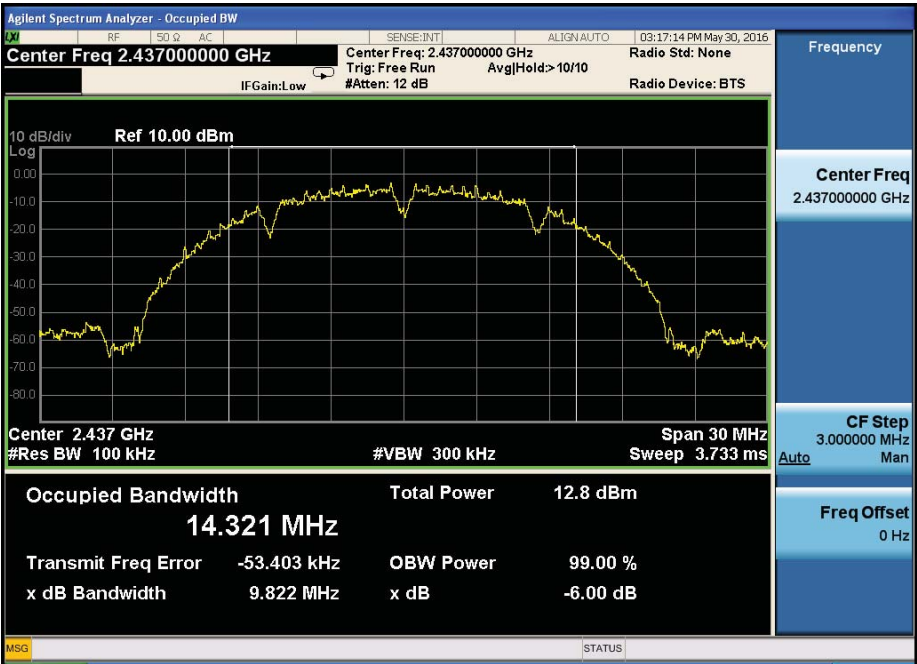
Detailed information please see the following page.

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b:					
Low	2412	10.05	/	0.5	PASS
Mid	2437	9.822	/	0.5	PASS
High	2462	9.587	/	0.5	PASS
IEEE 802.11g					
Low	2412	16.39	/	0.5	PASS
Mid	2437	16.38	/	0.5	PASS
High	2462	16.36	/	0.5	PASS
IEEE 802.11n/HT20:					
Low	2412	17.61	/	0.5	PASS
Mid	2437	17.62	/	0.5	PASS
High	2462	17.60	/	0.5	PASS
IEEE 802.11n/HT40:					
Low	2422	36.36	/	0.5	PASS
Mid	2437	36.27	/	0.5	PASS
High	2452	36.32	/	0.5	PASS

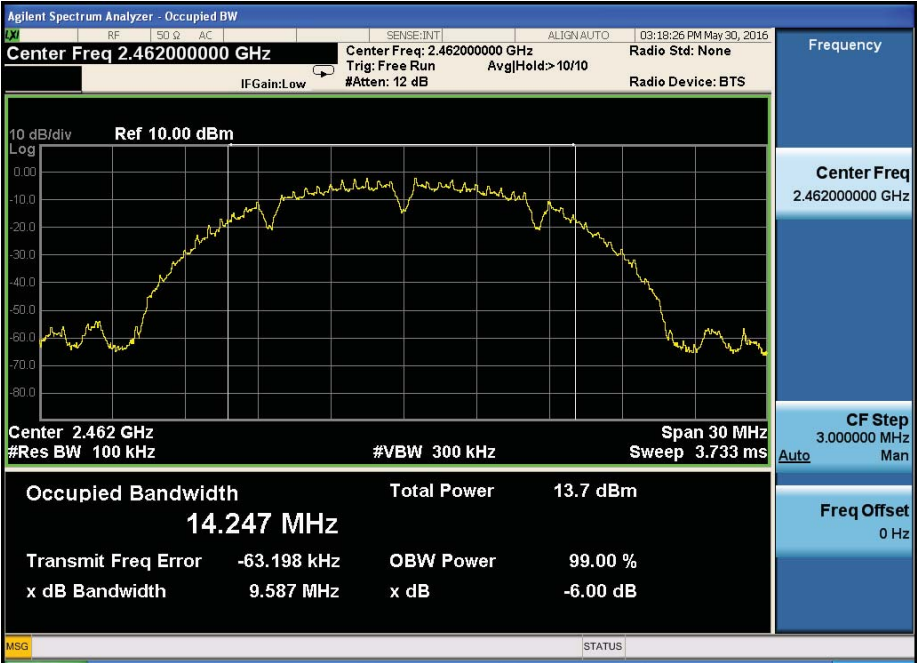
IEEE 802.11b:
CH Low :



CH Mid :

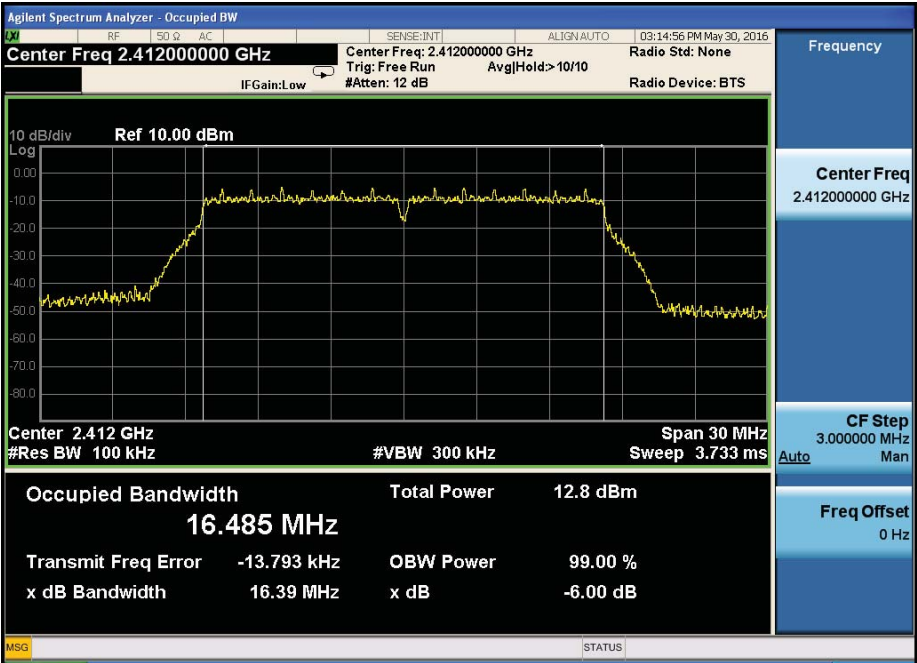


CH High :

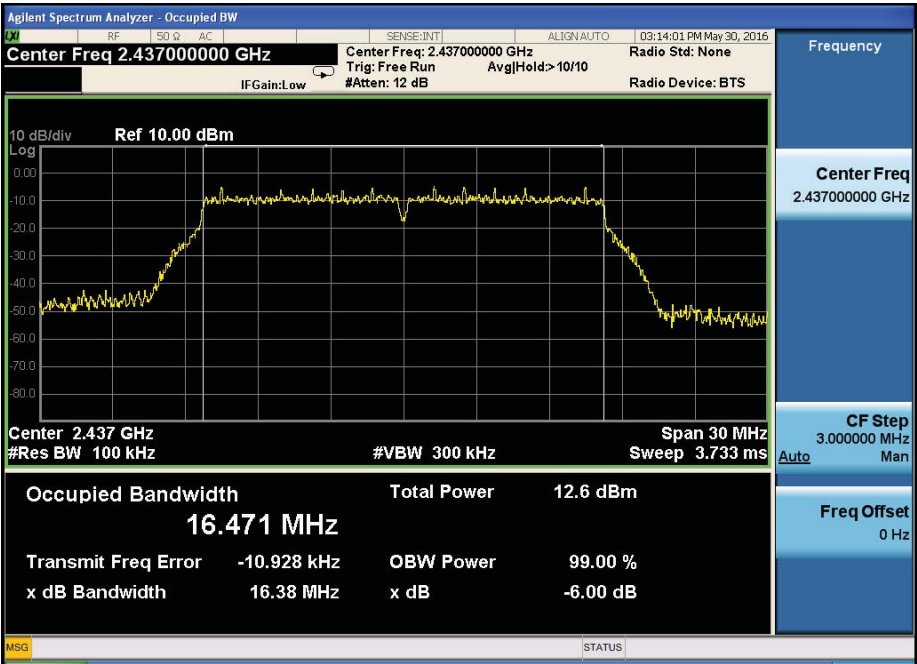


IEEE 802.11g:

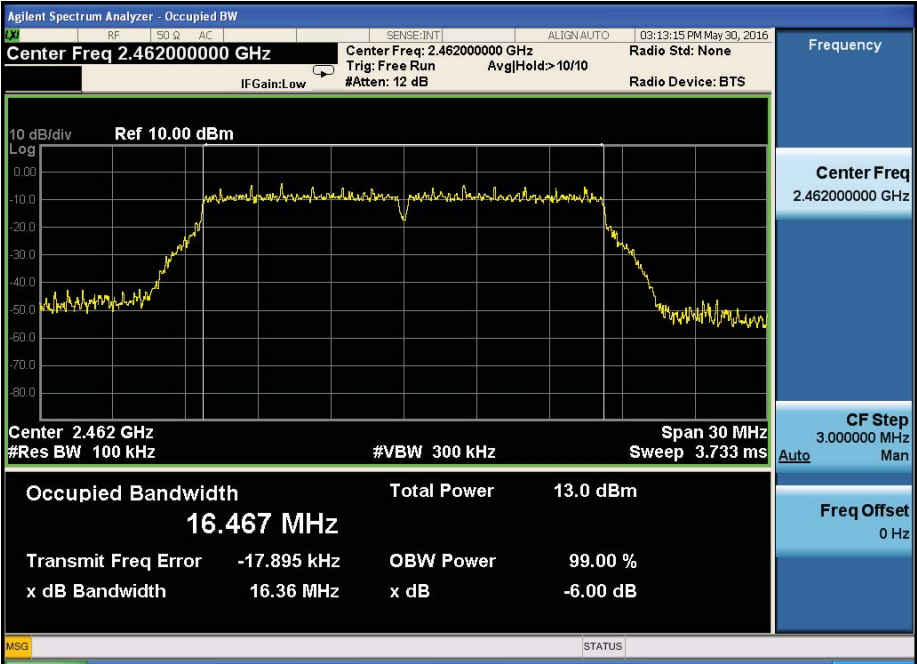
CH Low :



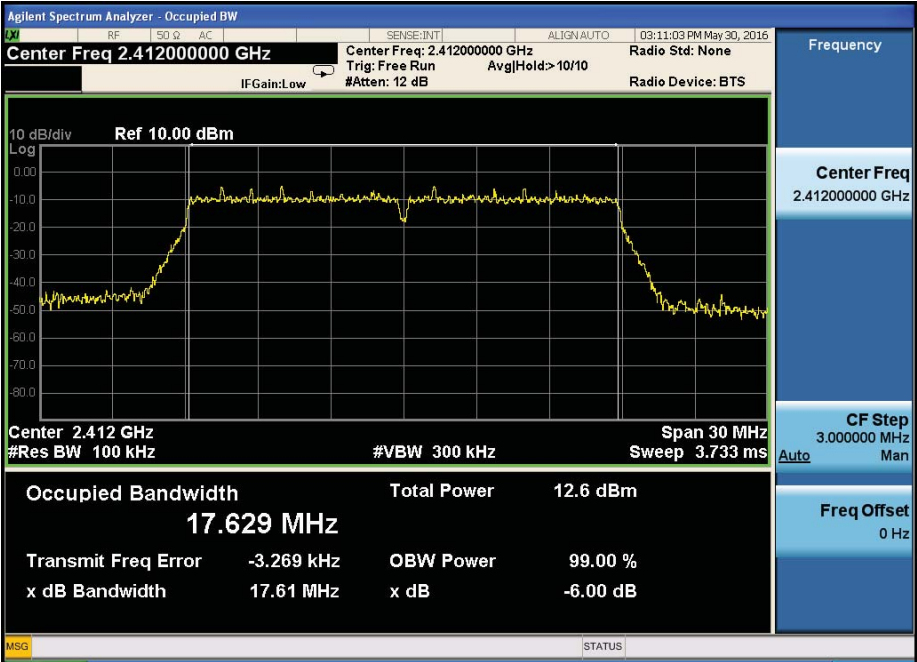
CH Mid:



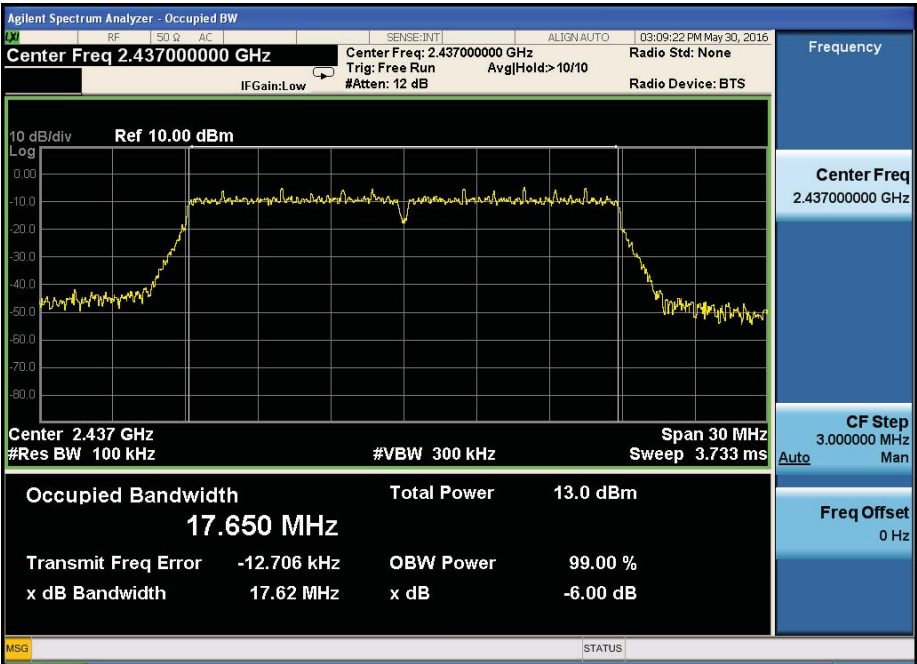
CH Hig:



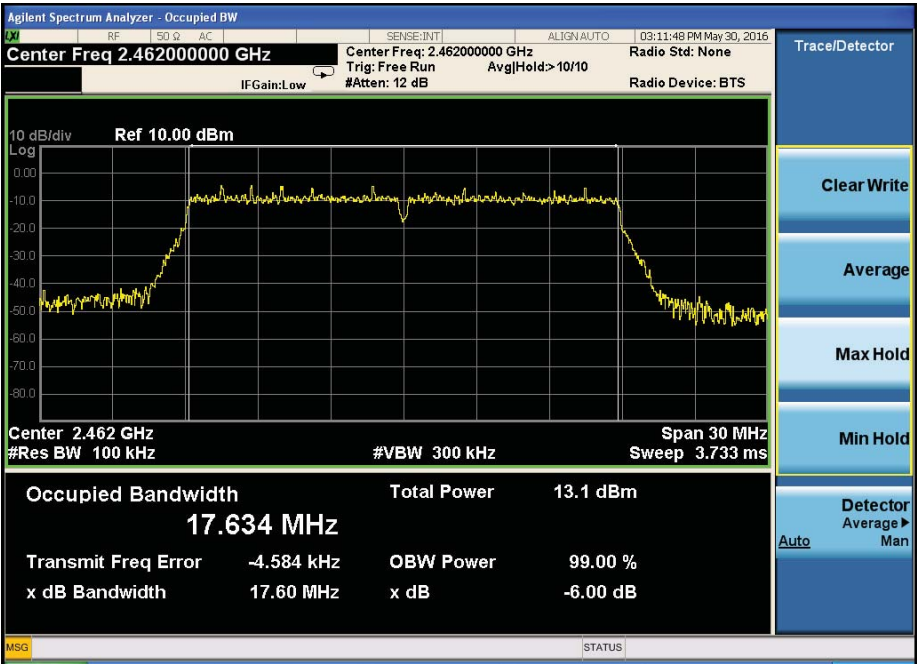
IEEE 802.11n HT20:
CH Low :



CH Mid :

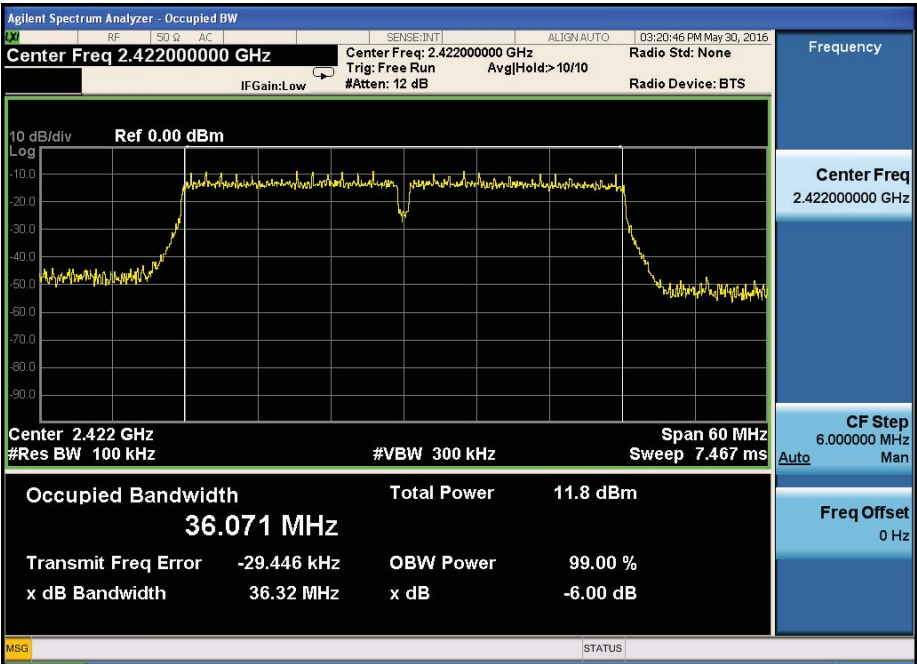


CH High :

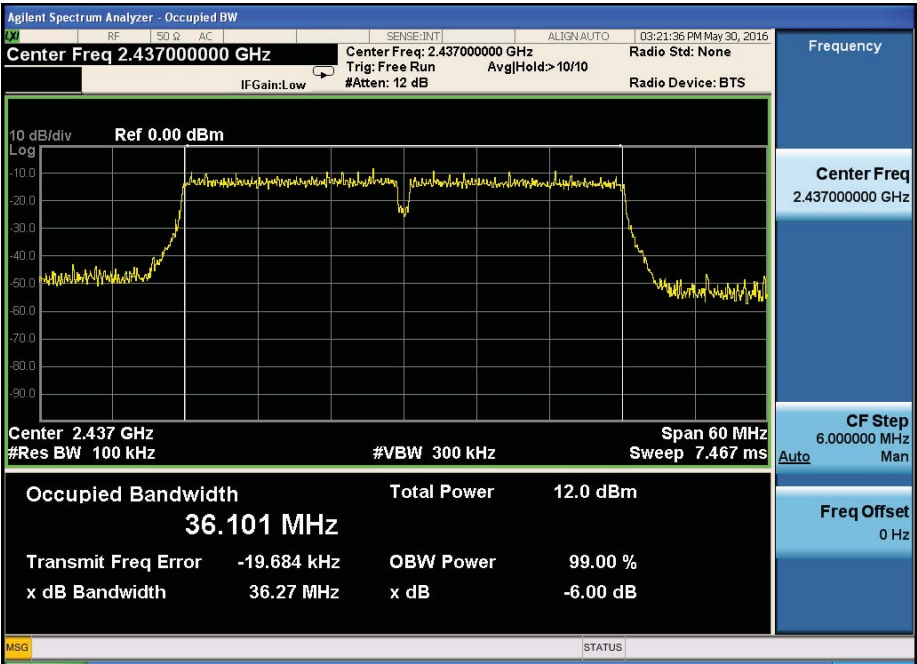


IEEE 802.11n/HT40:

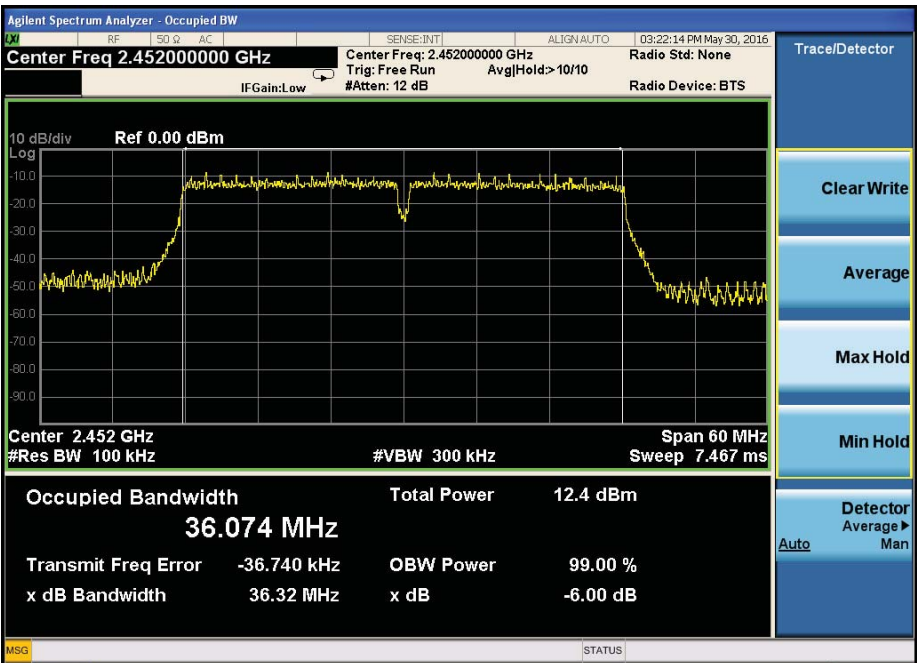
CH Low :



CH Mid:



CH High :



10 Band Edge Check

10.1 Test limit

Please refer section RSS-GEN&15.247.

10.2 Test Procedure

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

12.2.2 Check the spurious emissions out of band.

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

10.3 Test Setup

Same as 5.2.2.

10.4 Test Result

PASS.

Detailed information please see the following page.

802.11b

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2483.5	46.52	27.89	4	34.97	43.44	74	30.56	PK
2483.5	--	27.89	4	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.72	27.89	4	34.97	42.64	74	31.36	PK
2483.5	--	27.89	4	34.97	--	54	--	AV

Note:

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

2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS

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

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

802.11g

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2390	45.18	27.62	3.92	34.97	41.75	74	32.25	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	46.13	27.62	3.92	34.97	42.7	74	31.3	PK
2390	--	27.62	3.92	34.97	--	54	--	AV

Note:

- 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
- 2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS
- 3, Result = Read level + Antenna factor + cable loss-Amp factor
- 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2483.5	45.65	27.89	4	34.97	42.57	74	31.43	PK
2483.5	--	--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.87	27.89	4	34.97	42.79	74	31.21	PK
2483.5		--	--	--	--	54	--	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Ant1
802.11b

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2390	46.52	27.62	3.92	34.97	43.09	74	30.91	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	45.29	27.62	3.92	34.97	41.86	74	32.14	PK
2390	--	27.62	3.92	34.97	--	54	--	AV

Note:

- 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
- 2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS
- 3, Result = Read level + Antenna factor + cable loss-Amp factor
- 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2483.5	46.36	27.89	4	34.97	43.28	74	30.72	PK
2483.5	--	27.89	4	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.56	27.89	4	34.97	42.48	74	31.52	PK
2483.5	--	27.89	4	34.97	--	54	--	AV

Note:

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

2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS

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

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

802.11g

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2390	45.02	27.62	3.92	34.97	41.59	74	32.41	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	45.97	27.62	3.92	34.97	42.54	74	31.46	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: 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
2483.5	45.49	27.89	4	34.97	42.41	74	31.59	PK
2483.5	--	--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.71	27.89	4	34.97	42.63	74	31.37	PK
2483.5		--	--	--	--	54	--	AV

Note:

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

2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS

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

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

802.11n20

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30 Test site: 3m Chamber Tested by: Eric Huang								
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
2390	45.95	27.62	3.92	34.97	42.52	74	31.48	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	46.27	27.62	3.92	34.97	42.84	74	31.16	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
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
2483.5	45.36	27.89	4	34.97	42.28	74	31.72	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.8	27.89	4	34.97	42.72	74	31.28	PK
2483.5		--	--	--	--	54	--	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

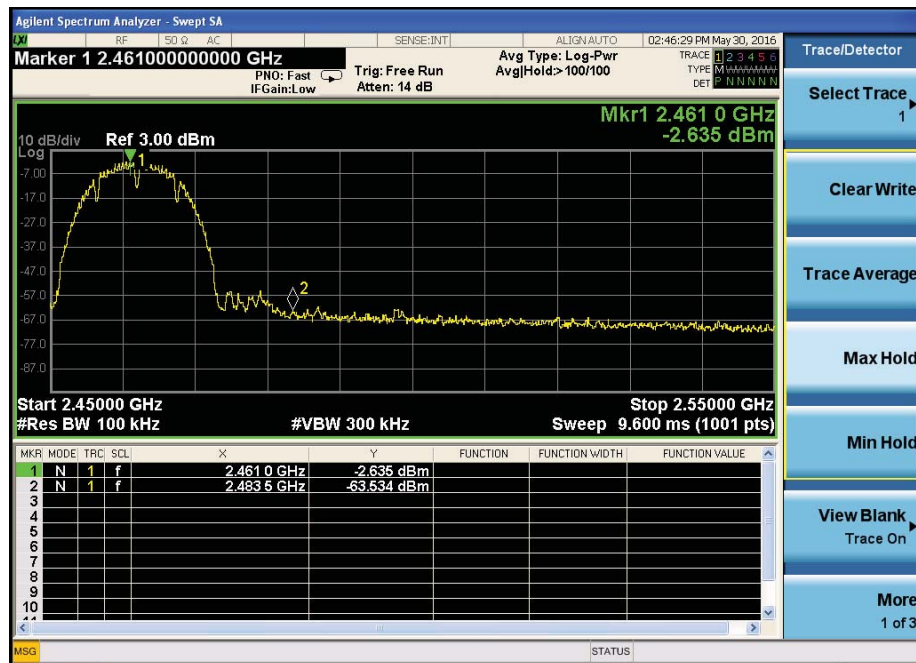
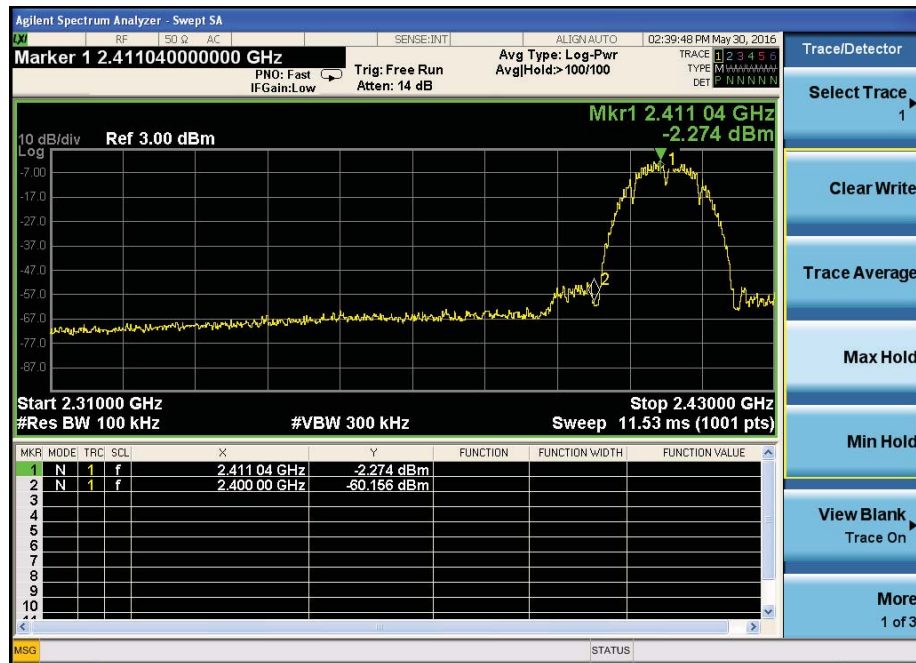
802.11n40

Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
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
2390	45.95	27.62	3.92	34.97	42.52	74	31.48	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	45.91	27.62	3.92	34.97	42.48	74	31.52	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

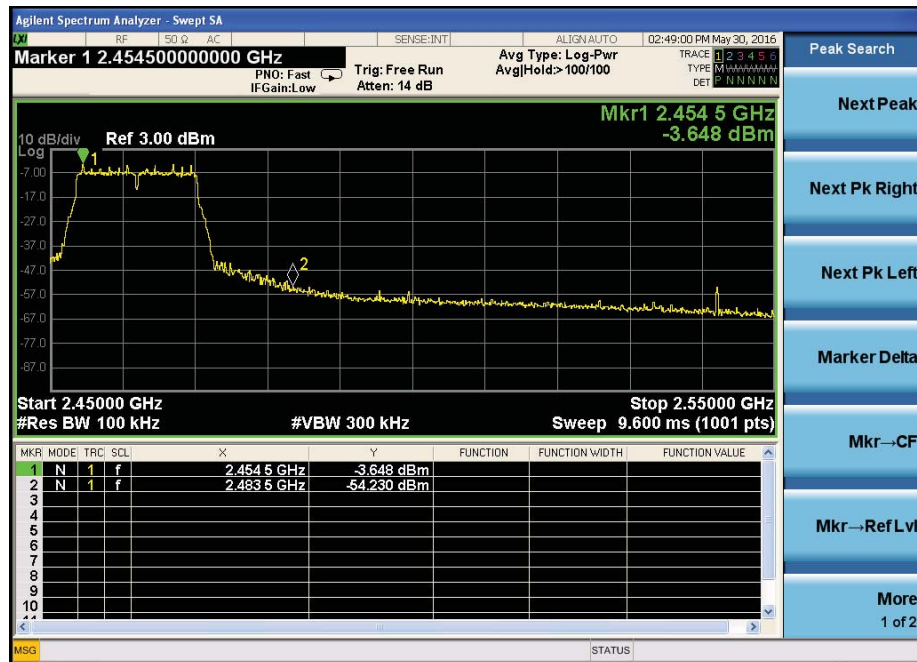
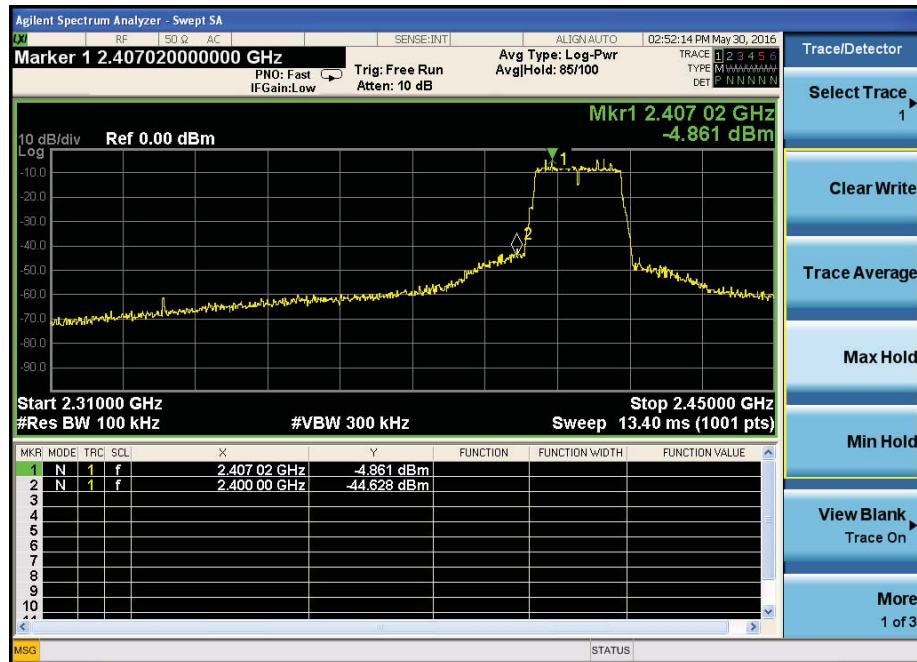
Band Edge Test result								
EUT: SG1000 home gateway					M/N: SG1000			
Power: DC 5V from USB Port								
Test date: 2016-05-30			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: MIMO Tx High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	45.2	27.89	4	34.97	42.12	74	31.88	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	46.45	27.89	4	34.97	43.37	74	30.63	PK
2483.5		--	--	--	--	54	--	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

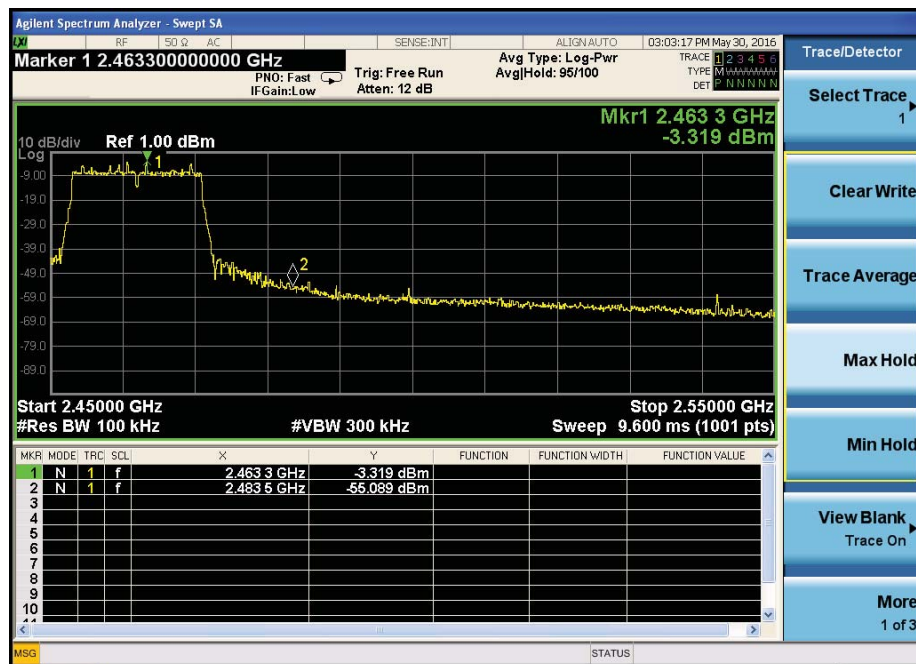
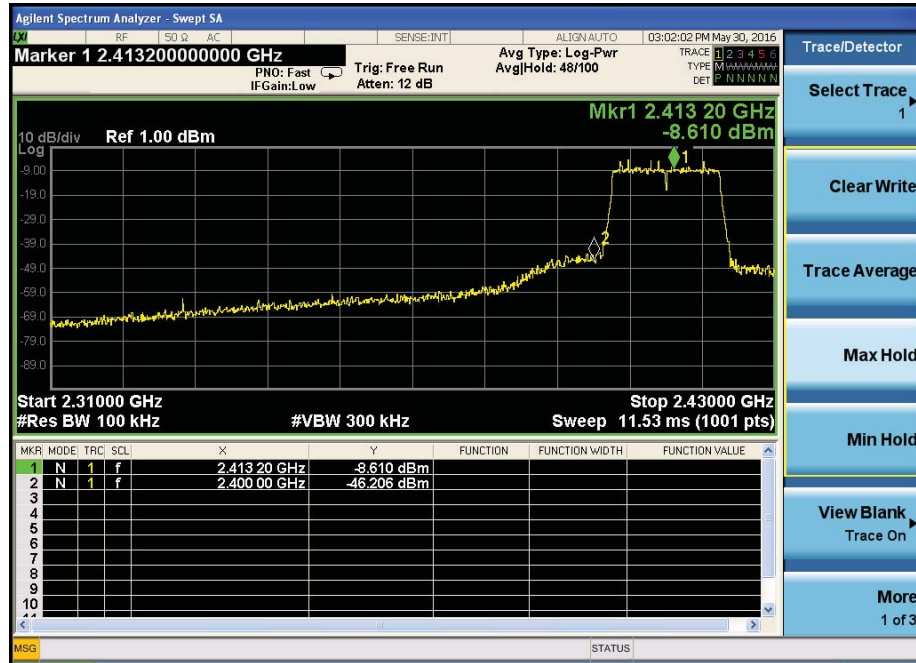
Conducted Method: ANT 1 and ANT 2 all have been tested , only worse case is reported 802.11b



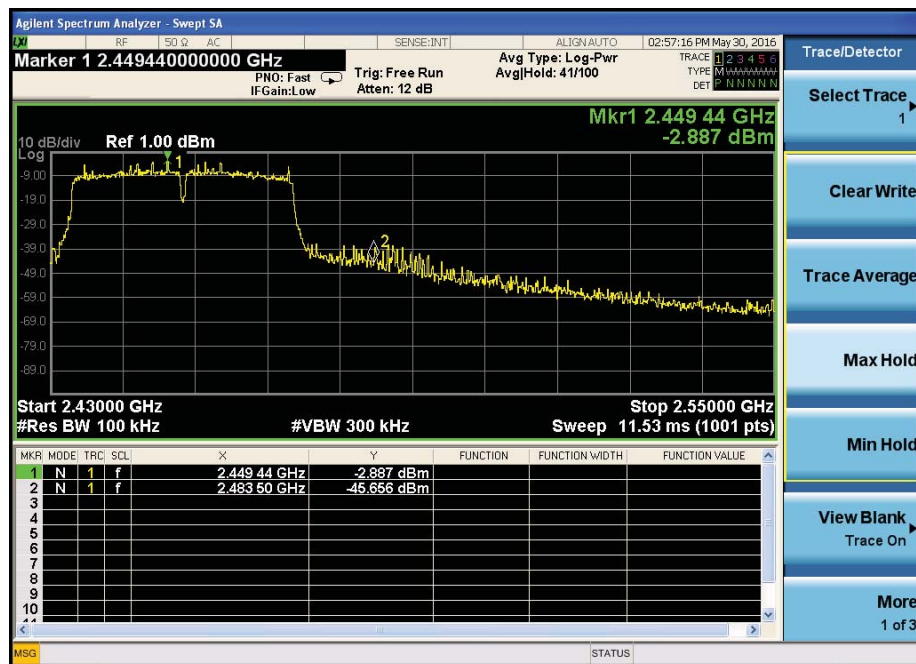
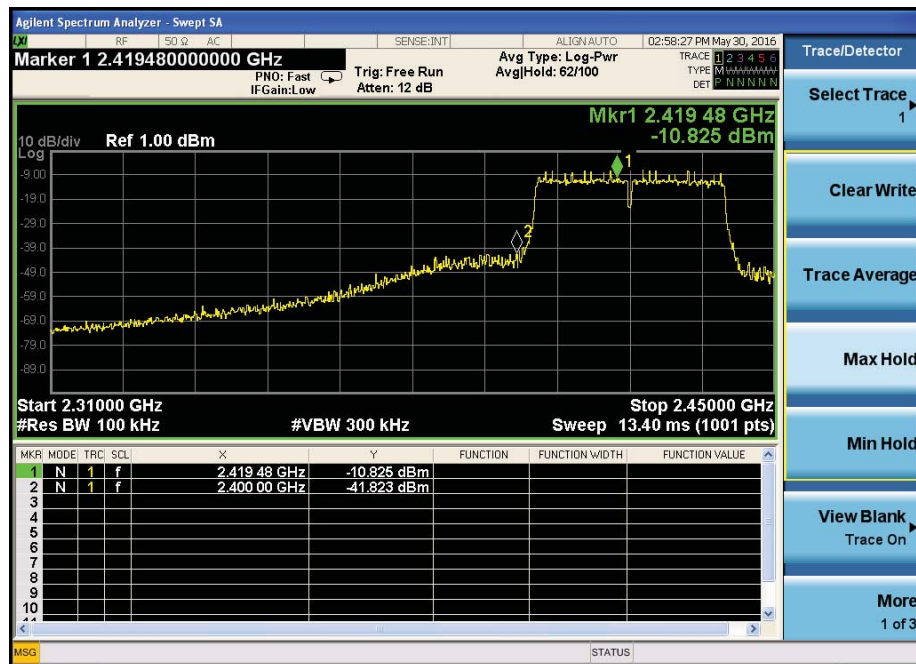
802.11g



802.11n HT20



802.11n HT40



11 Antenna Requirement

11.1 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.

11.2 Antenna Connected Construction

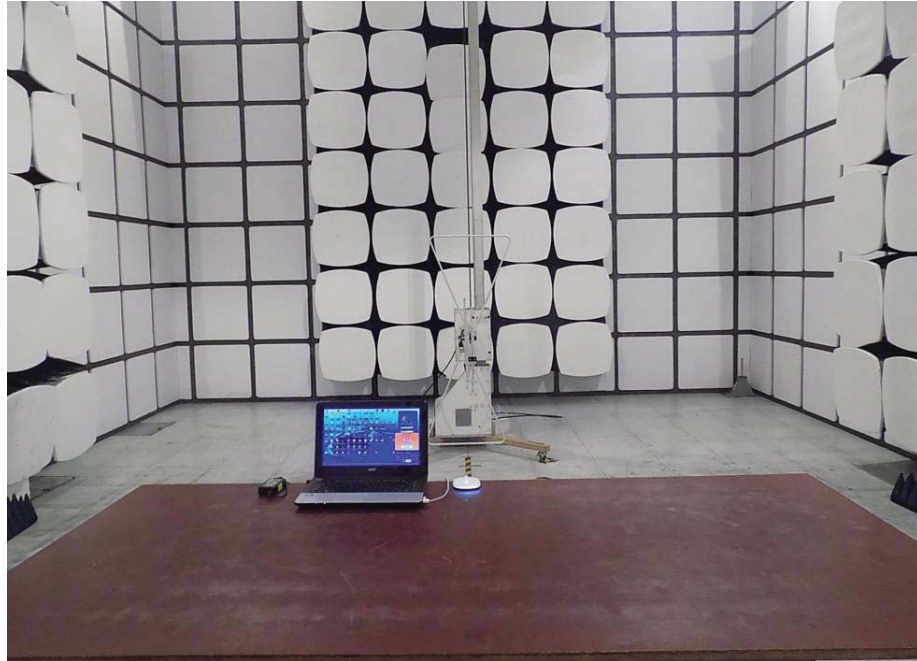
The antenna connector is unique antenna and no consideration of replacement. Please see EUT photo for details.

11.3 Result

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

12 Test setup photo

Photographs-Radiated Emission Test Setup in Chamber



Photos of conducted emission

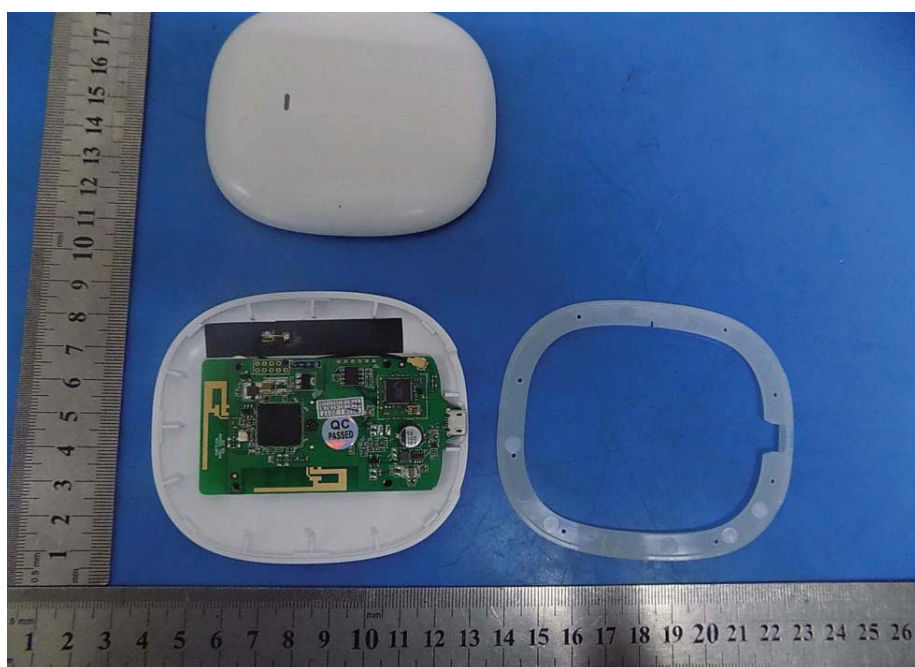


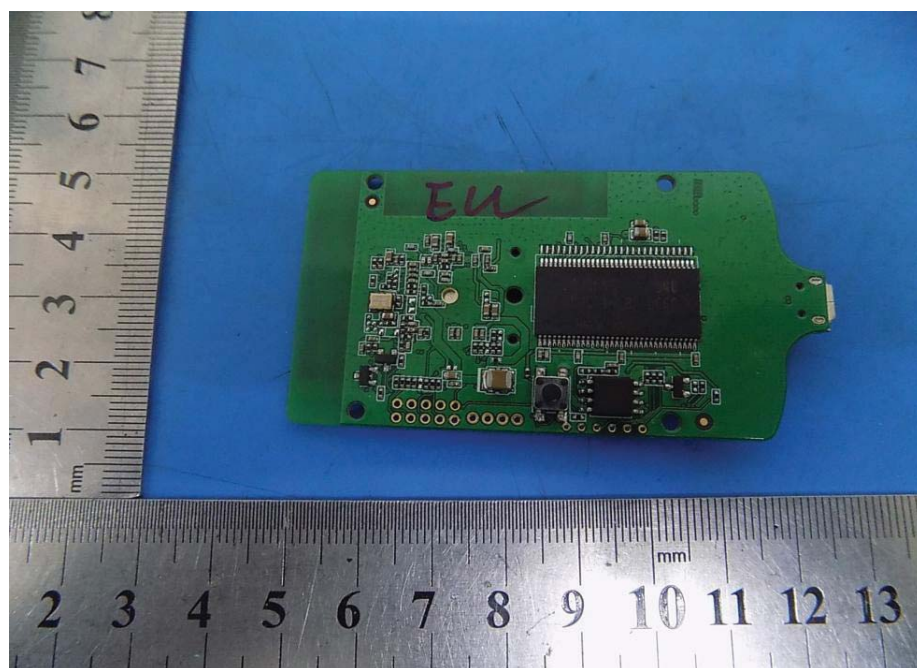
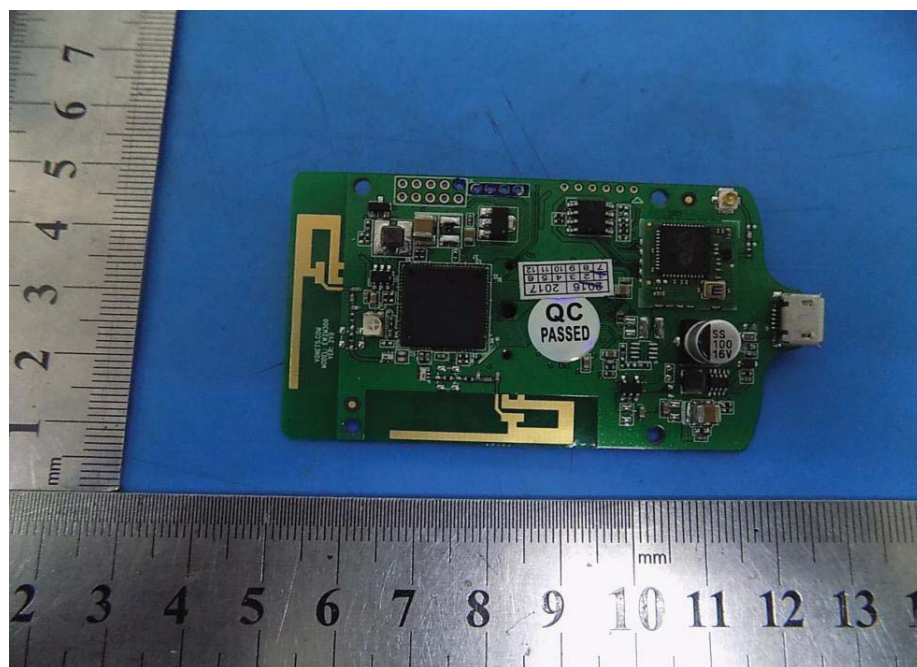
13 Photos of EUT







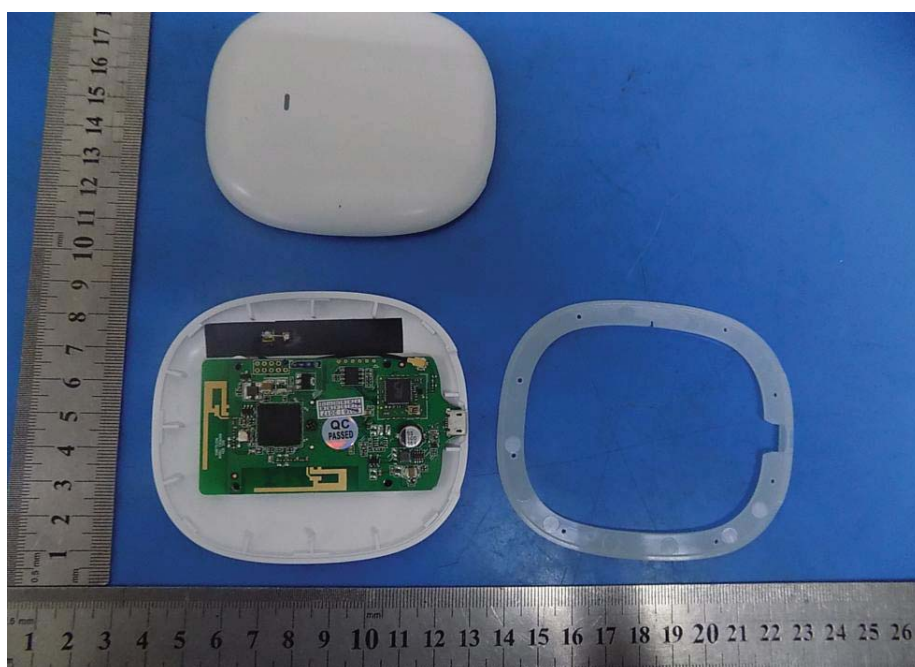


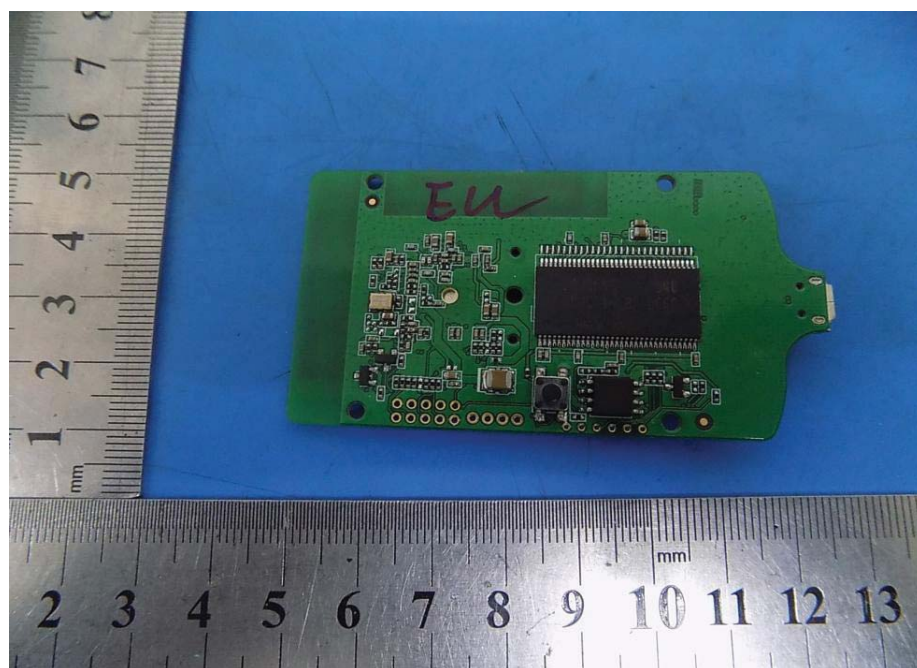
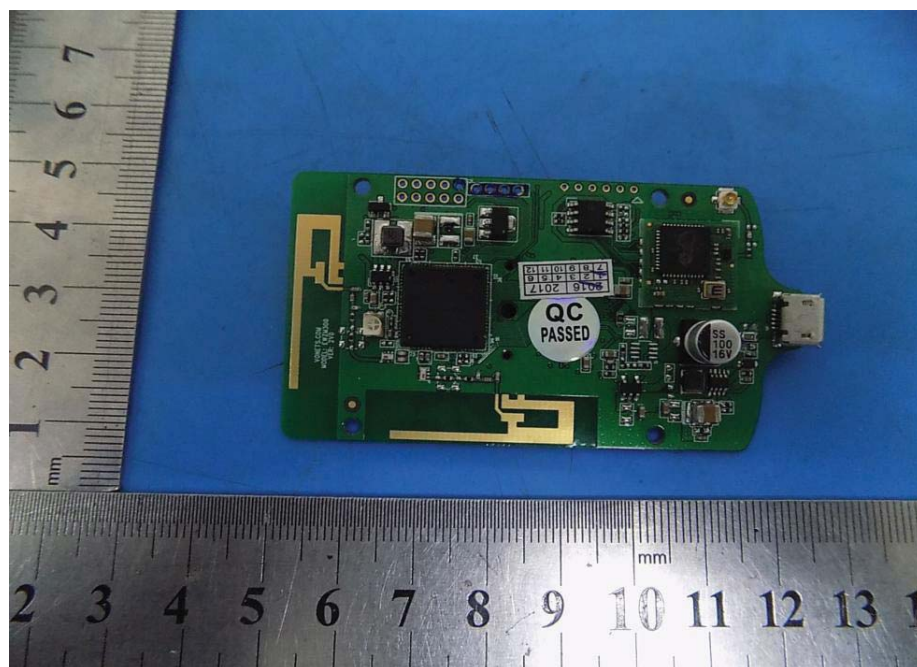












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