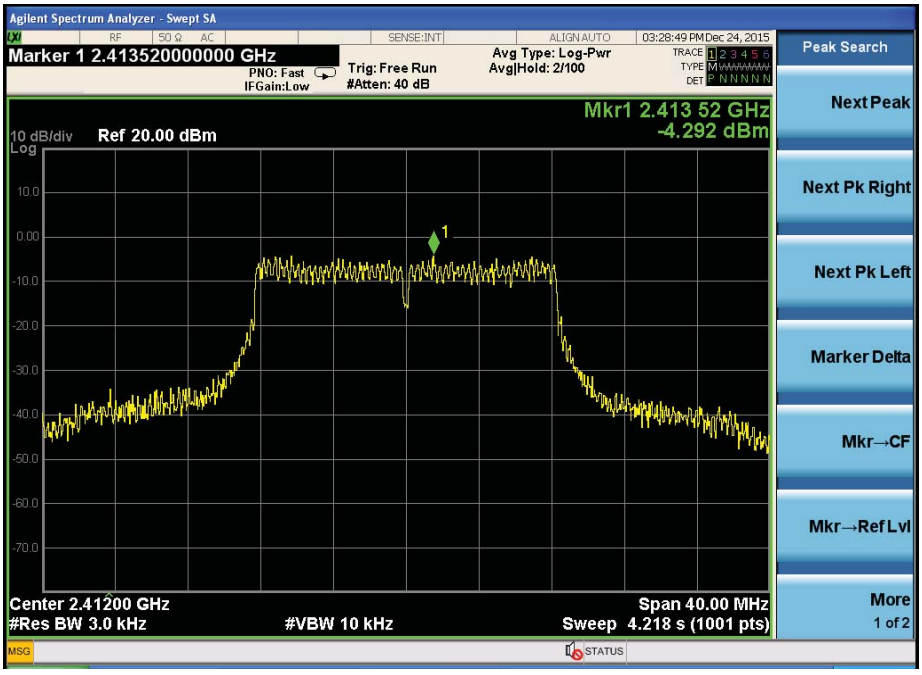
port 1 antenna
IEEE 802.11b :
CH Low :

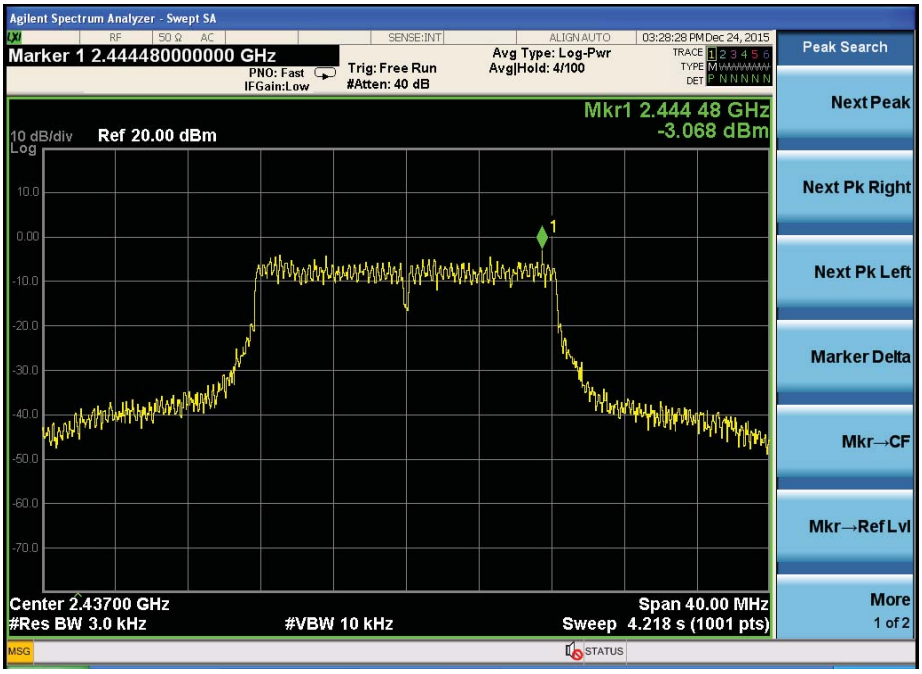
CH Mid:

CH Hig:

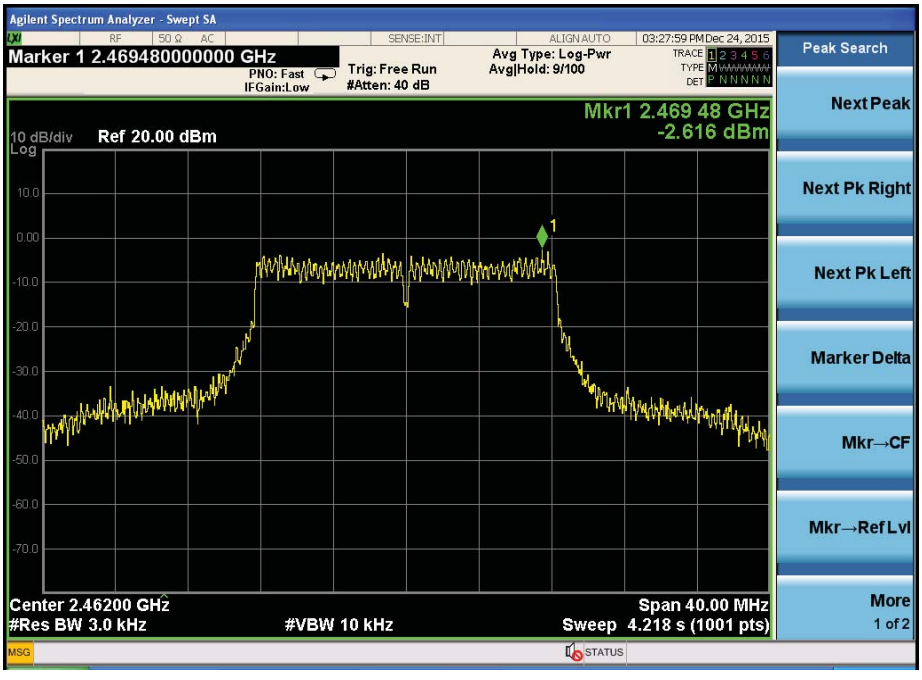
IEEE 802.11g :
CH Low :



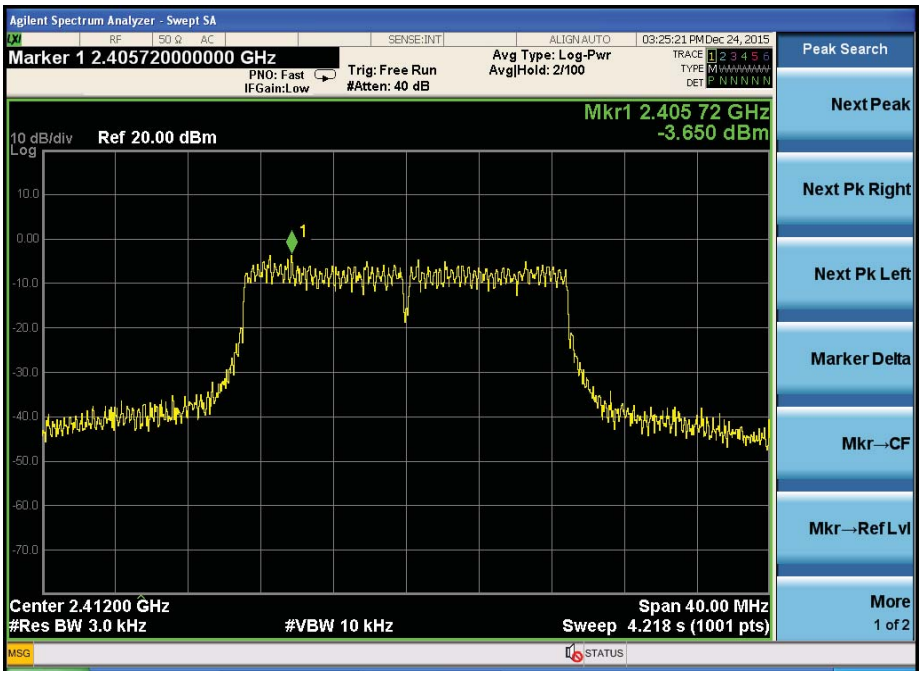
CH Mid:


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.444480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 4/100
03:28:28 PM Dec 24, 2015
Mkr1 2.444 48 GHz
-3.068 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.43700 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 40.00 MHz
Sweep 4.218 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

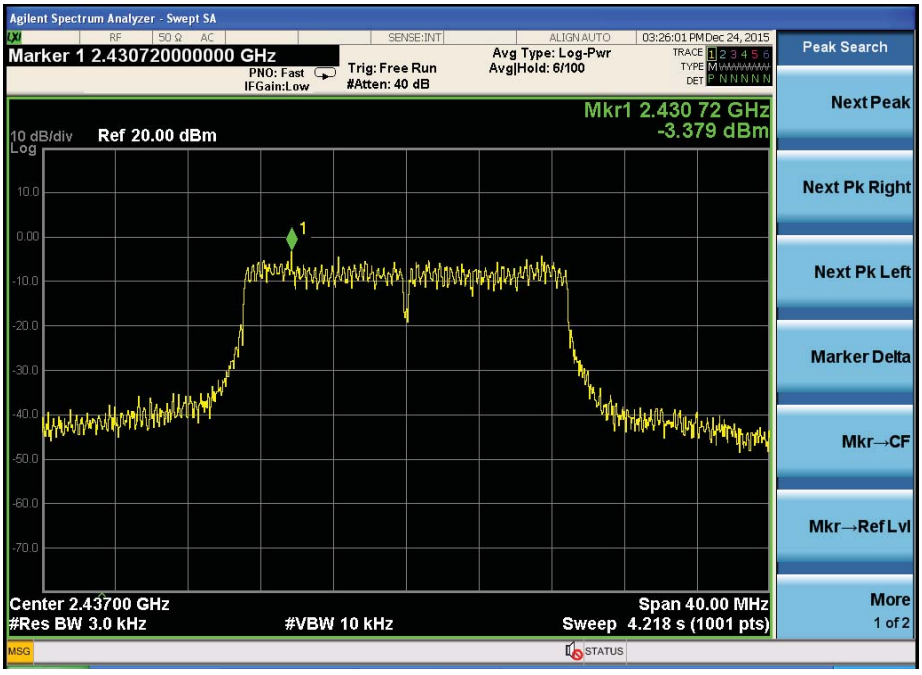
CH Hig:


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.469480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 9/100
03:27:59 PM Dec 24, 2015
Mkr1 2.469 48 GHz
-2.616 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 40.00 MHz
Sweep 4.218 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

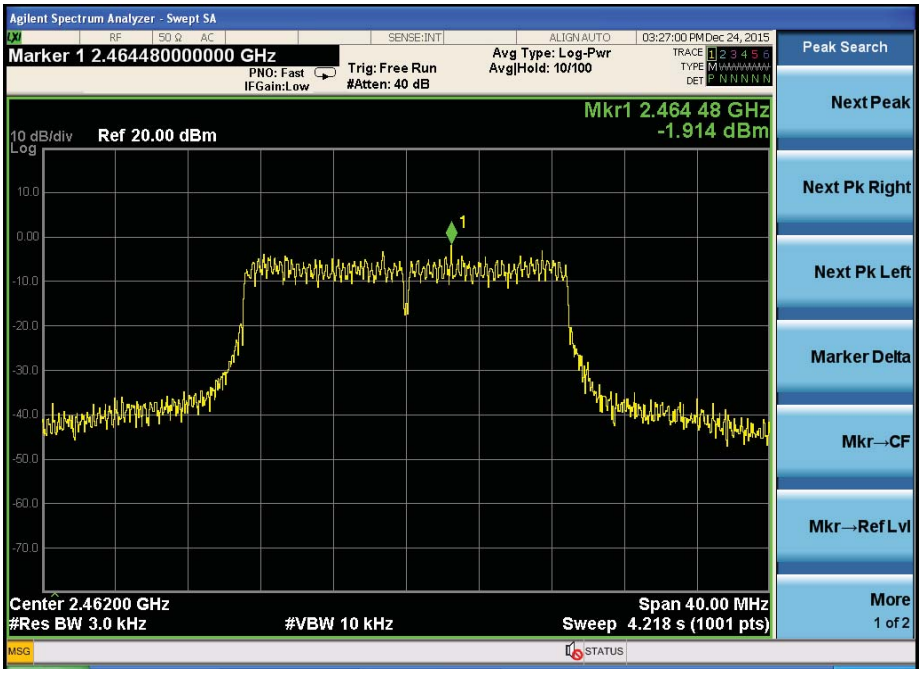
IEEE 802.11n HT20 :
CH Low :



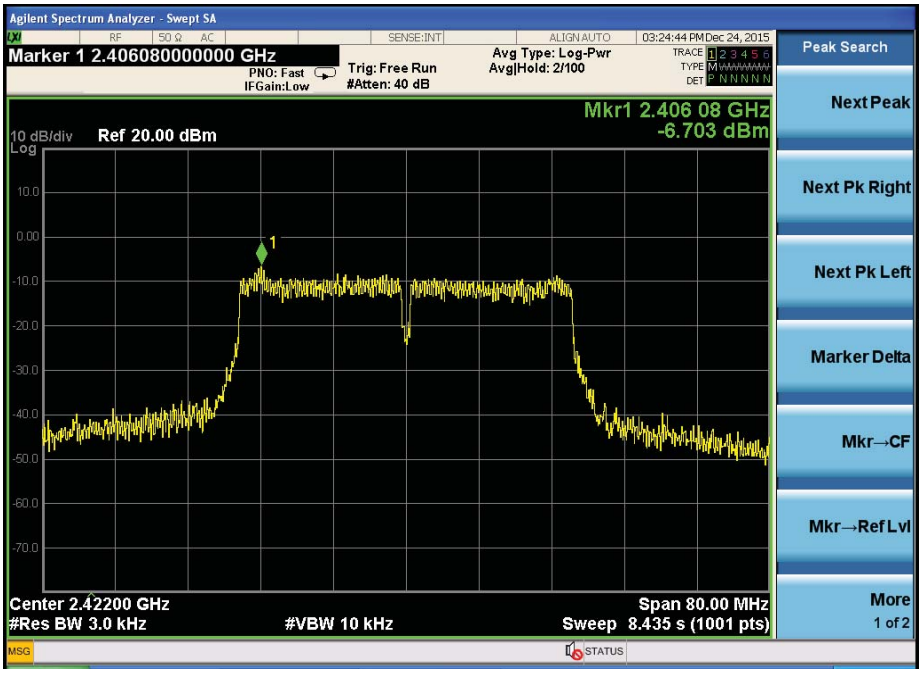
CH Mid:



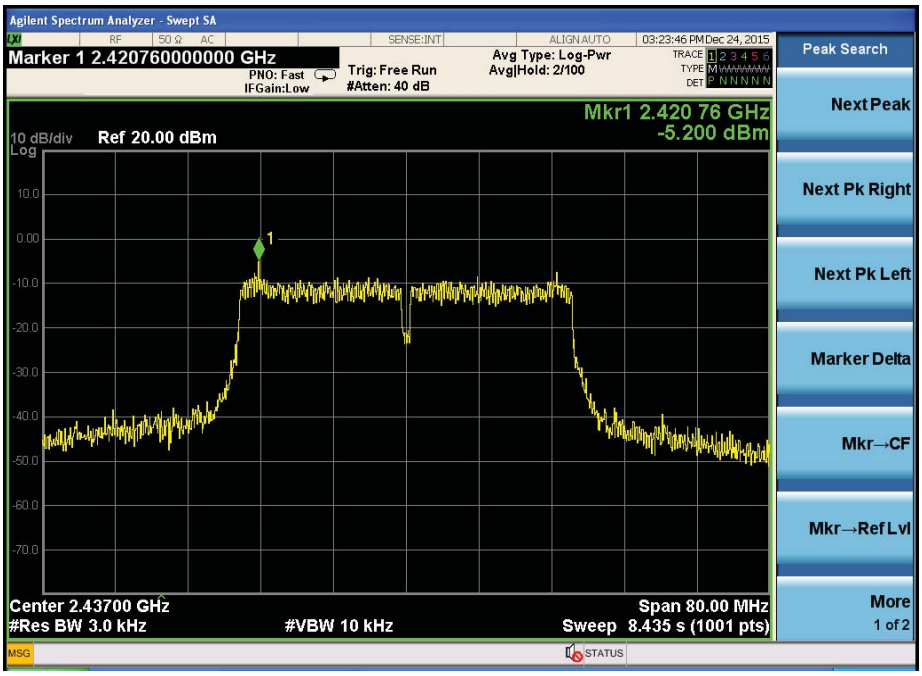
CH Hig:



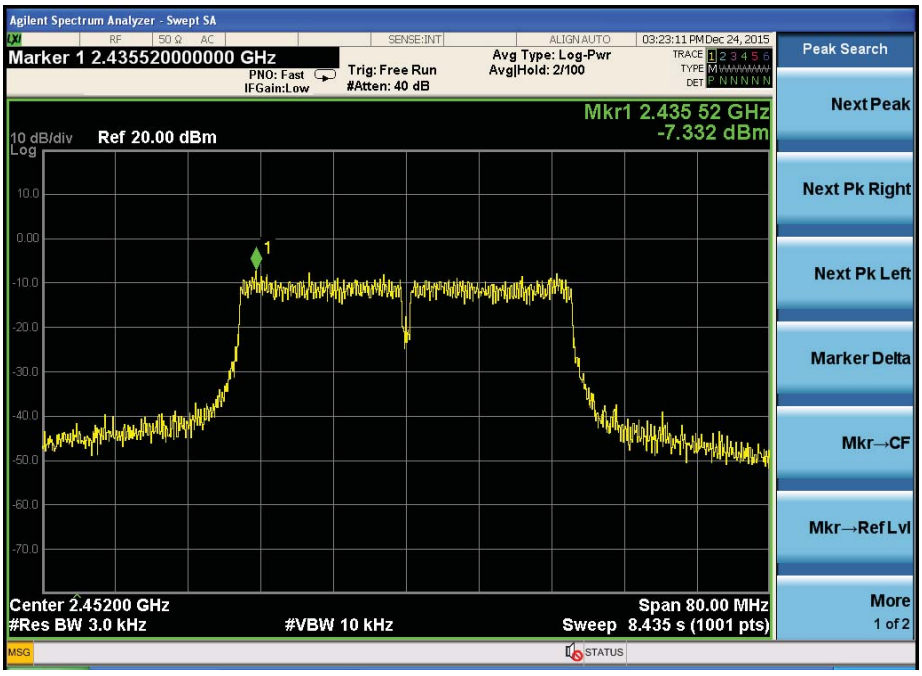
IEEE 802.11n HT40 :
CH Low :



CH Mid:


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.420760000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 2/100
03:23:46 PM Dec 24, 2015
Mkr1 2.420 76 GHz
-5.200 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.43700 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 80.00 MHz
Sweep 8.435 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

CH Hig:


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.435520000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 2/100
03:23:11 PM Dec 24, 2015
Mkr1 2.435 52 GHz
-7.332 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.45200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 80.00 MHz
Sweep 8.435 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

9 Bandwidth

9.1 Test limit

Please refer section15.247

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

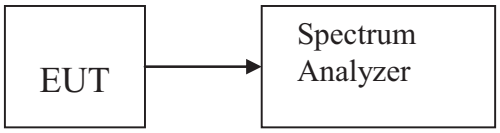
9.2 Method of measurement

Details see the KDB558074 D01 Meas Guidance

a) The bandwidth is measured at an amplitude level reduced 20dB 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, Peak Detector, Sweep time set auto, detail see the test plot.

9.3 Test Setup



9.4 Test Results

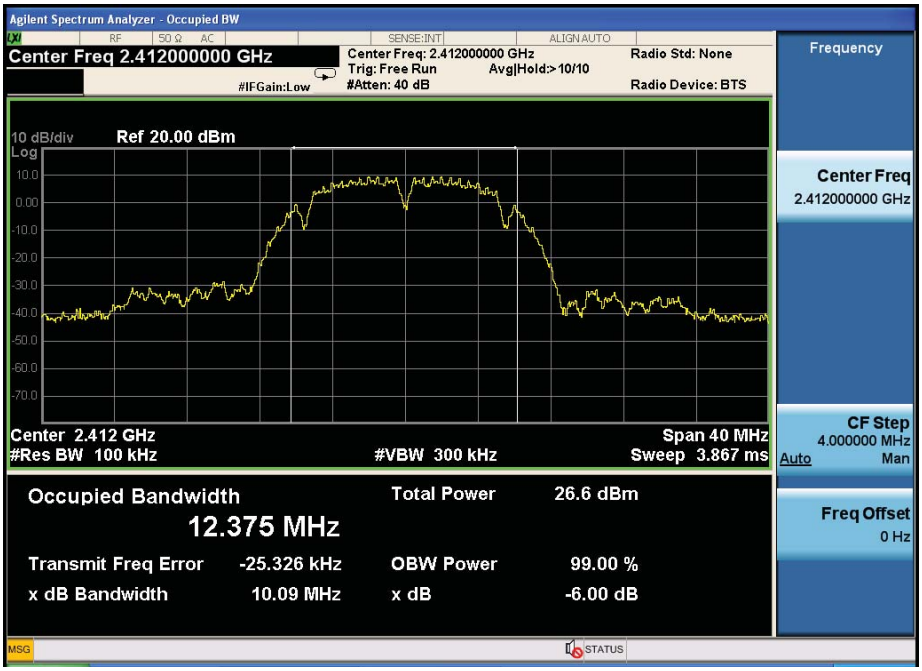
PASS.

All mode and Antenna chains have been tested ,
only worse case is reported

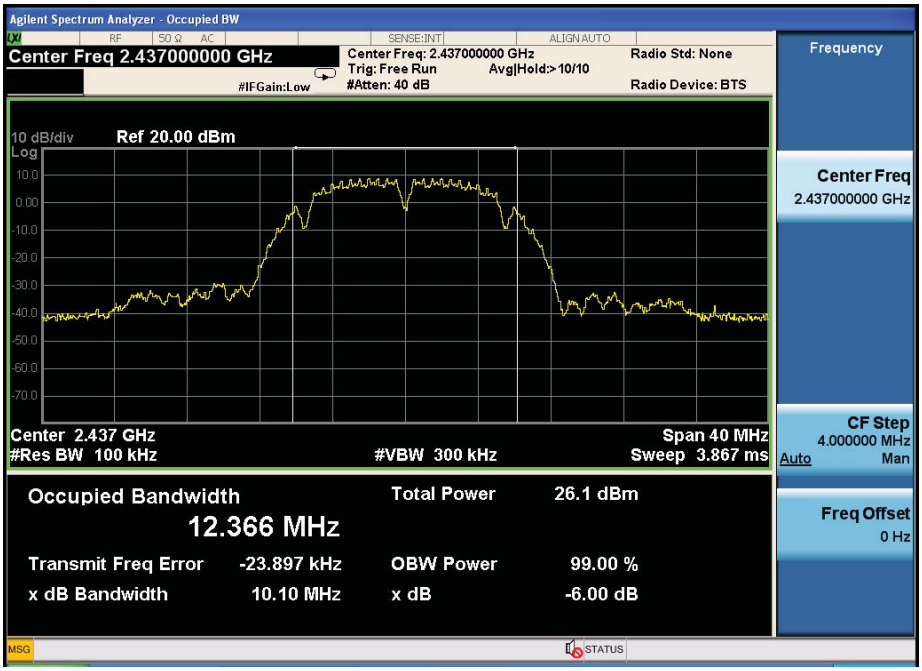
Detailed information please see the following page.

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b:					
Low	2412	10.09	12.375	0.5	PASS
Mid	2437	10.10	12.366	0.5	PASS
High	2462	10.10	12.309	0.5	PASS
IEEE 802.11g					
Low	2412	16.37	16.552	0.5	PASS
Mid	2437	16.41	16.553	0.5	PASS
High	2462	16.40	16.535	0.5	PASS
IEEE 802.11n/HT20:					
Low	2412	17.07	17.625	0.5	PASS
Mid	2437	17.31	17.613	0.5	PASS
High	2462	17.07	17.624	0.5	PASS
IEEE 802.11n/HT40:					
Low	2422	35.05	36.210	0.5	PASS
Mid	2437	35.92	36.232	0.5	PASS
High	2452	35.98	36.214	0.5	PASS

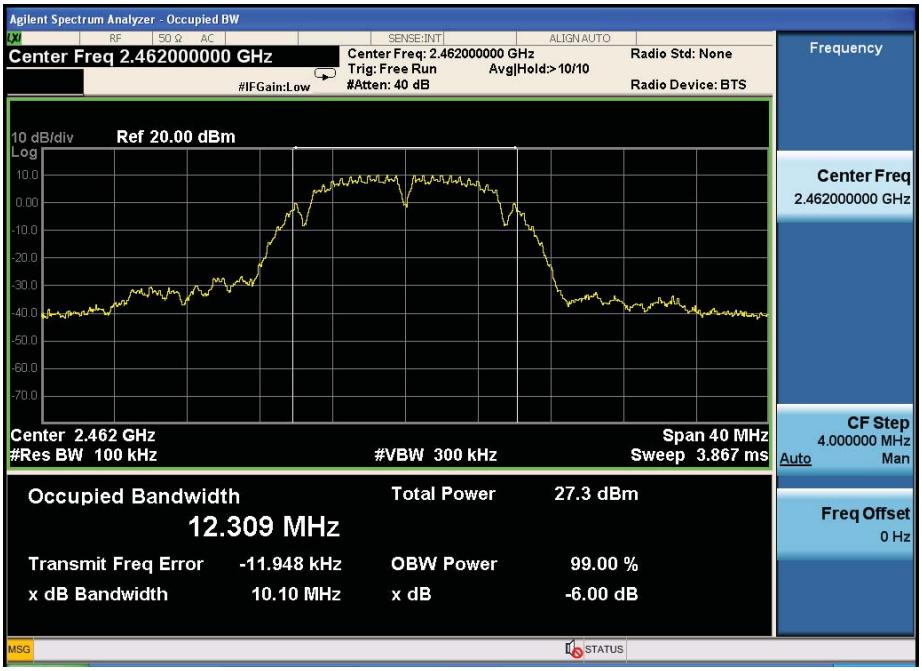
IEEE 802.11b:
CH Low :



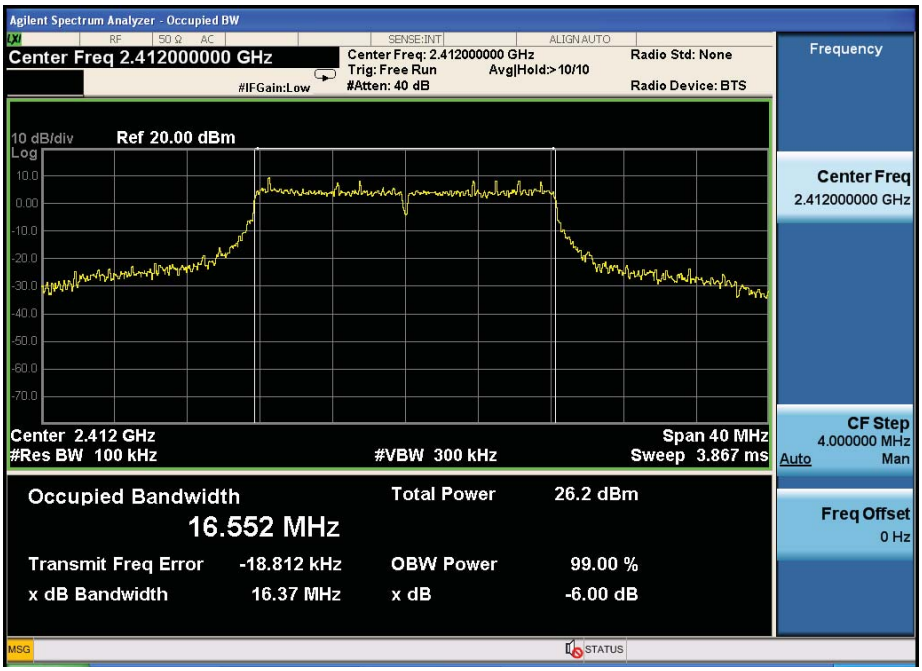
CH Mid :



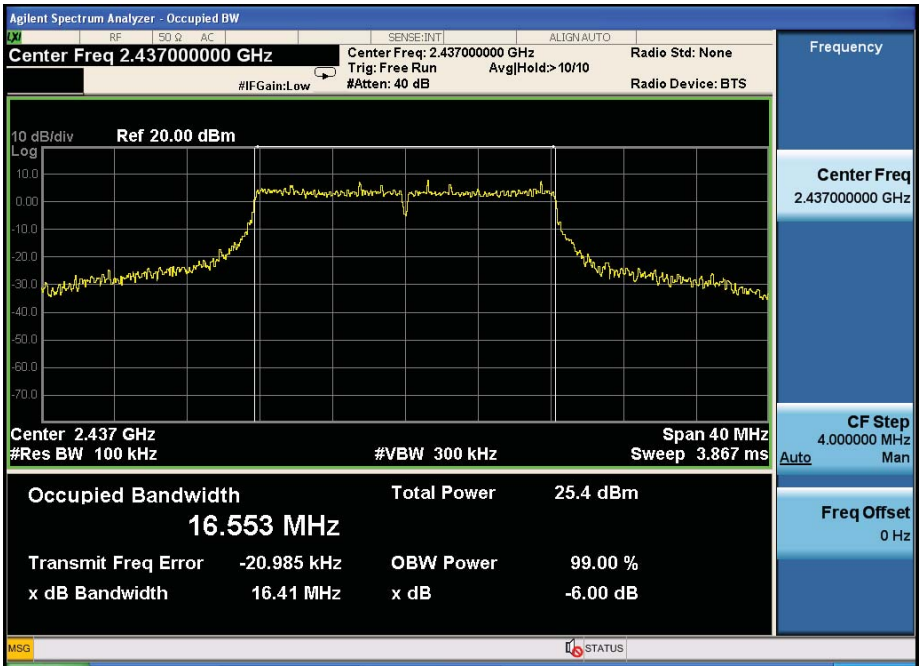
CH High :



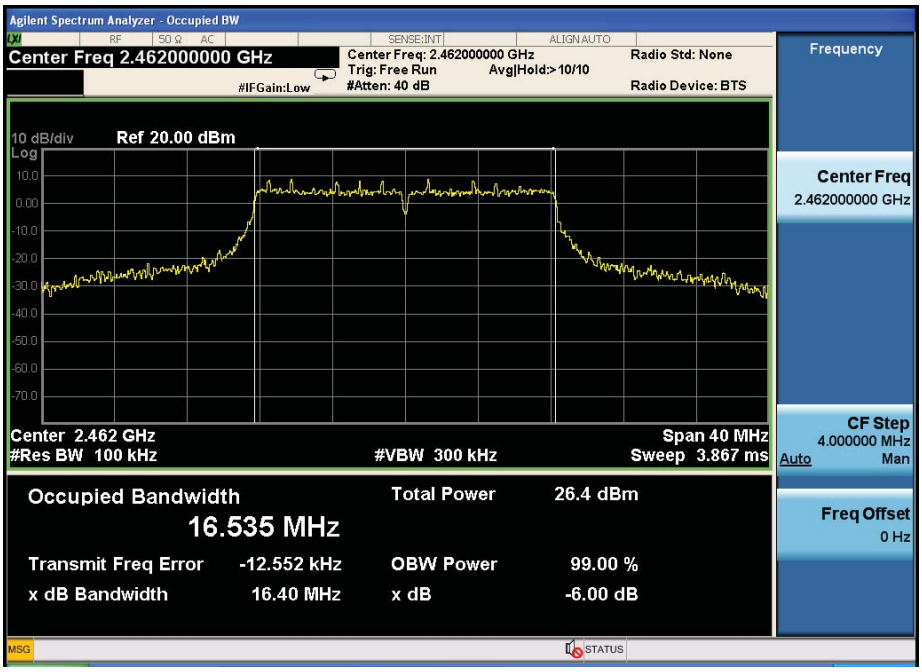
IEEE 802.11g:
CH Low :



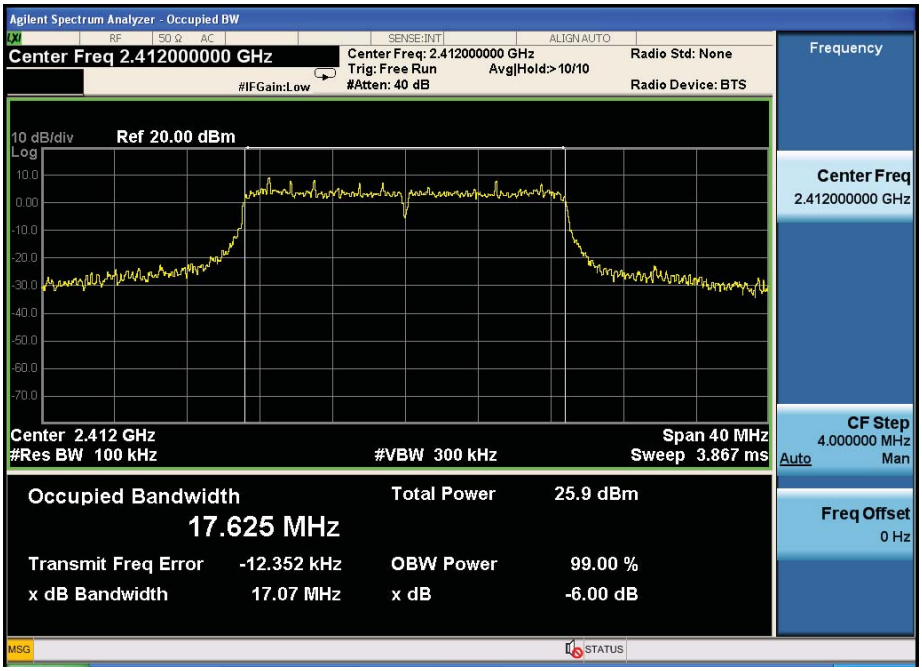
CH Mid:


Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.437000000 GHz
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40 MHz
Sweep 3.867 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
16.553 MHz
Total Power
25.4 dBm
Transmit Freq Error
-20.985 kHz
OBW Power
99.00 %
x dB Bandwidth
16.41 MHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS

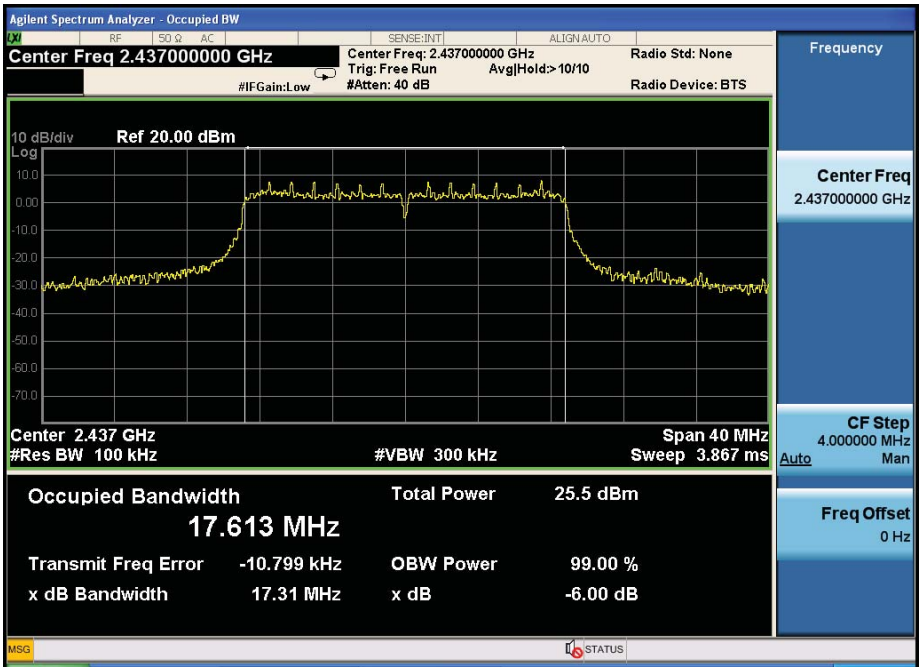
CH Hig:


Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.462000000 GHz
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40 MHz
Sweep 3.867 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
16.535 MHz
Total Power
26.4 dBm
Transmit Freq Error
-12.552 kHz
OBW Power
99.00 %
x dB Bandwidth
16.40 MHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS

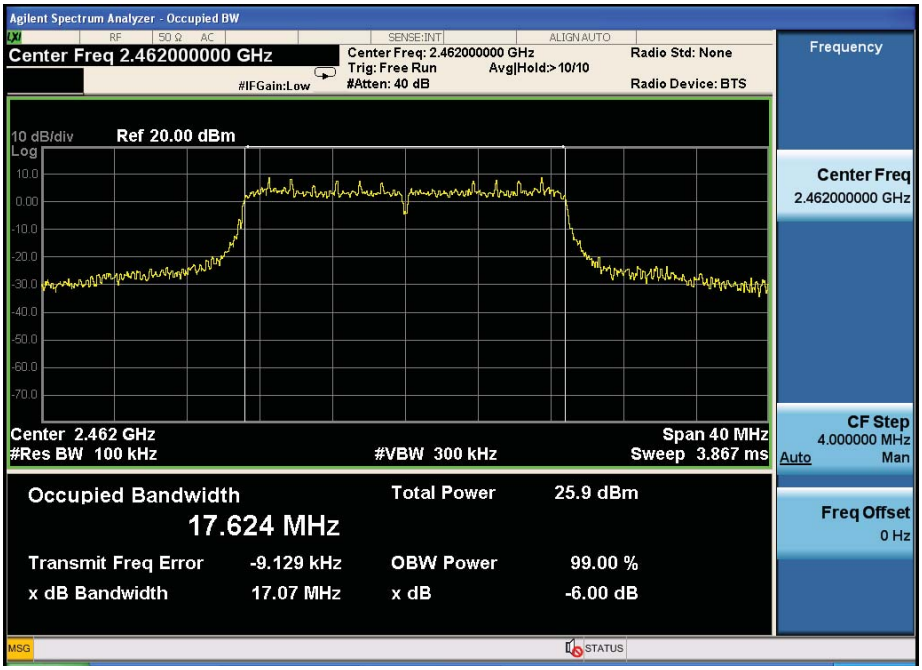
IEEE 802.11n HT20:
CH Low :



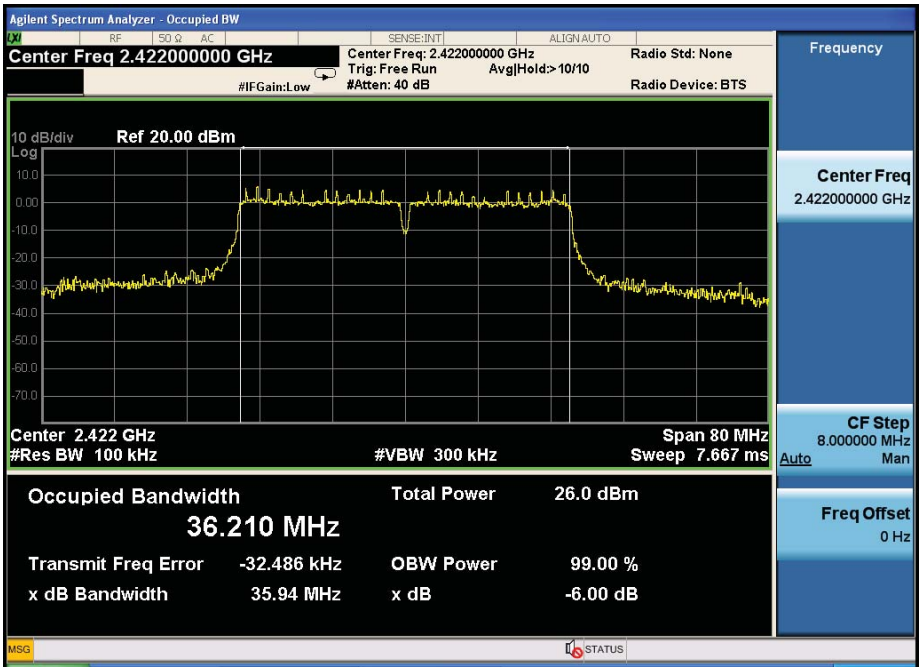
CH Mid :



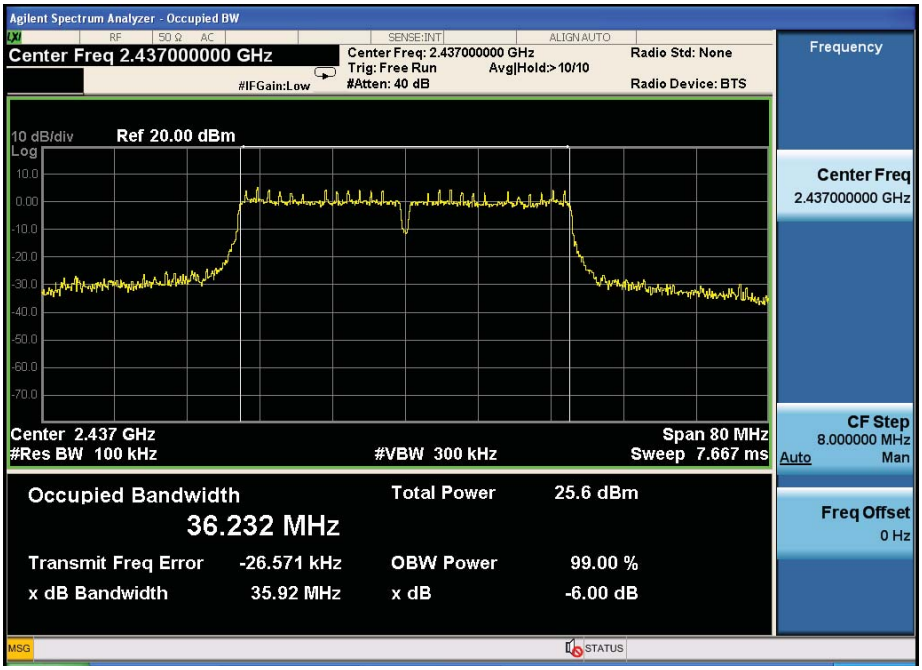
CH High :



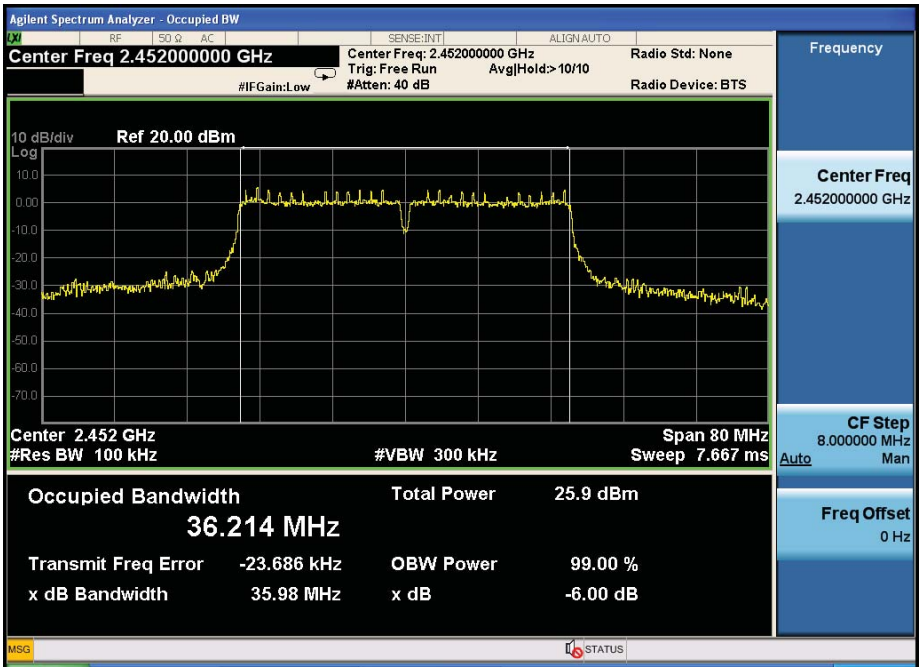
IEEE 802.11n/HT40:
CH Low :



CH Mid:



CH High :



10 Band Edge Check

10.1 Test limit

Please refer section15.247

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz and 5725MHz to 5850MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

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.

All SISO and MIMO mode and all antenna have been tested , only SISO mode of 2*Omni antenna and MIMO mode of 19dBi LigoDLB PRO sector antenna are worse case and only reported

2*Omni antenna MODE

SISO mode
Radiated Method:
Ant0
IEEE 802.11b CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	46.02	27.62	3.92	34.97	42.59	74	31.41	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	44.79	27.62	3.92	34.97	41.36	74	32.64	**PK**
2390	--	27.62	3.94	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.

IEEE 802.11b CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.86	27.89	4	34.97	42.78	74	31.22	**PK**
2483.5	--	27.89	4	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.06	27.89	4	34.97	41.98	74	32.02	**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.

IEEE 802.11g CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	44.52	27.62	3.92	34.97	41.09	74	32.91	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	45.47	27.62	3.92	34.97	42.04	74	31.96	**PK**
2390	--	27.62	3.94	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.

IEEE 802.11g CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	44.99	27.89	4	34.97	41.91	74	32.09	**PK**
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.21	27.89	4	34.97	42.13	74	31.87	**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
IEEE 802.11b CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.77	27.62	3.92	34.97	42.34	74	31.66	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	44.54	27.62	3.92	34.97	41.11	74	32.89	**PK**
2390	--	27.62	3.94	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.

IEEE 802.11b CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.61	27.89	4	34.97	42.53	74	31.47	**PK**
2483.5	--	27.89	4	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	44.81	27.89	4	34.97	41.73	74	32.27	**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.

IEEE 802.11g CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	44.27	27.62	3.92	34.97	40.84	74	33.16	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	45.22	27.62	3.92	34.97	41.79	74	32.21	**PK**
2390	--	27.62	3.94	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.

IEEE 802.11g CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	44.74	27.89	4	34.97	41.66	74	32.34	**PK**
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	44.96	27.89	4	34.97	41.88	74	32.12	**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.

19dBi LigoDLB PRO sector antenna mode

MIMO mode
Radiated Method:
IEEE 802.11b CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	46.63	27.62	3.92	34.97	43.2	74	30.8	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	46.12	27.62	3.92	34.97	42.69	74	31.31	**PK**
2390	--	27.62	3.94	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.

IEEE 802.11b CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.96	27.89	4	34.97	42.88	74	31.12	**PK**
2483.5	--	27.89	4	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	46.15	27.89	4	34.97	43.07	74	30.93	**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.

IEEE 802.11g CH LOW

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	44.96	27.62	3.92	34.97	41.53	74	32.47	**PK**
2390	--	27.62	3.94	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	3.94	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.

IEEE 802.11g CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.43	27.89	4	34.97	42.35	74	31.65	**PK**
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.65	27.89	4	34.97	42.57	74	31.43	**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.

IEEE 802.11n HT20 CH Low

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.73	27.62	3.92	34.97	42.3	74	31.7	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	46.05	27.62	3.92	34.97	42.62	74	31.38	**PK**
2390	--	27.62	3.94	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.

IEEE 802.11n HT20 CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.14	27.89	4	34.97	42.06	74	31.94	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.58	27.89	4	34.97	42.5	74	31.5	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.

IEEE 802.11n HT40 CH Low

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	45.73	27.62	3.92	34.97	42.3	74	31.7	**PK**
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	45.69	27.62	3.92	34.97	42.26	74	31.74	**PK**
2390	--	27.62	3.94	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.

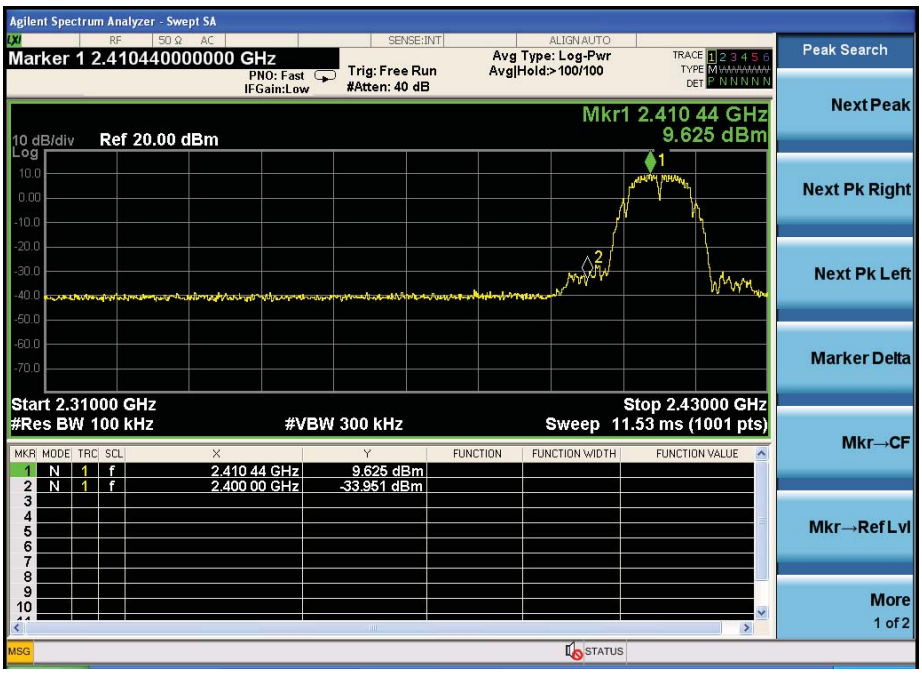
IEEE 802.11n HT40 CH High

Band Edge Test result								
EUT: Broadband Digital Transmission System M/N: FWBD-3000								
Power: DC 48V From adapter								
Test date: 2016-03-22 Test site: 3m Chamber Tested by: Store								
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	44.98	27.89	4	34.97	41.9	74	32.1	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	46.23	27.89	4	34.97	43.15	74	30.85	PK
2483.5		--	--	--	--	54	--	AV

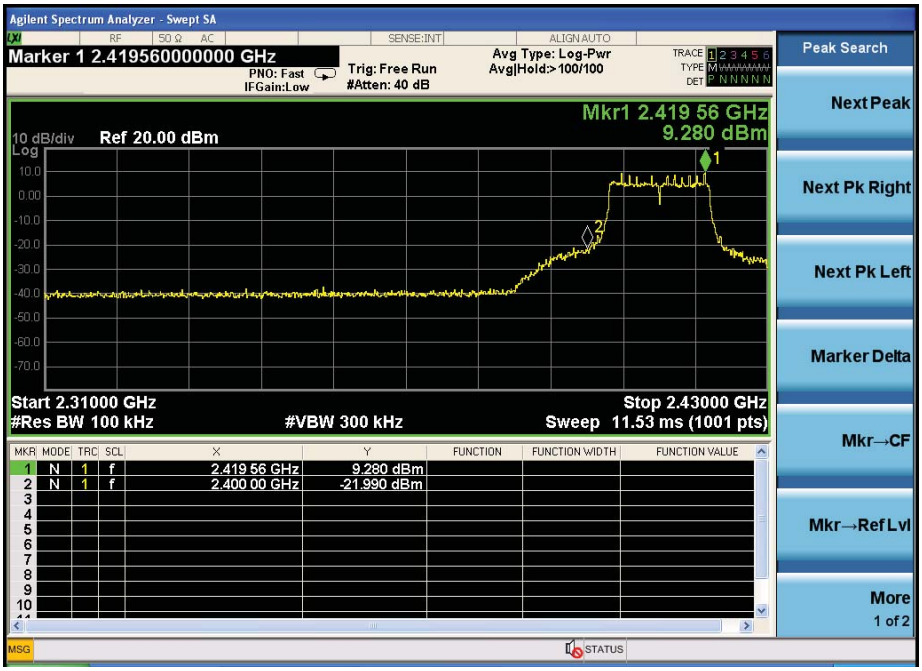
Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=3MHz, Sweep time=Auto, Detector: RMS
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed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

All mode and All antenna port have been tested， only worse case is reported

802.11b

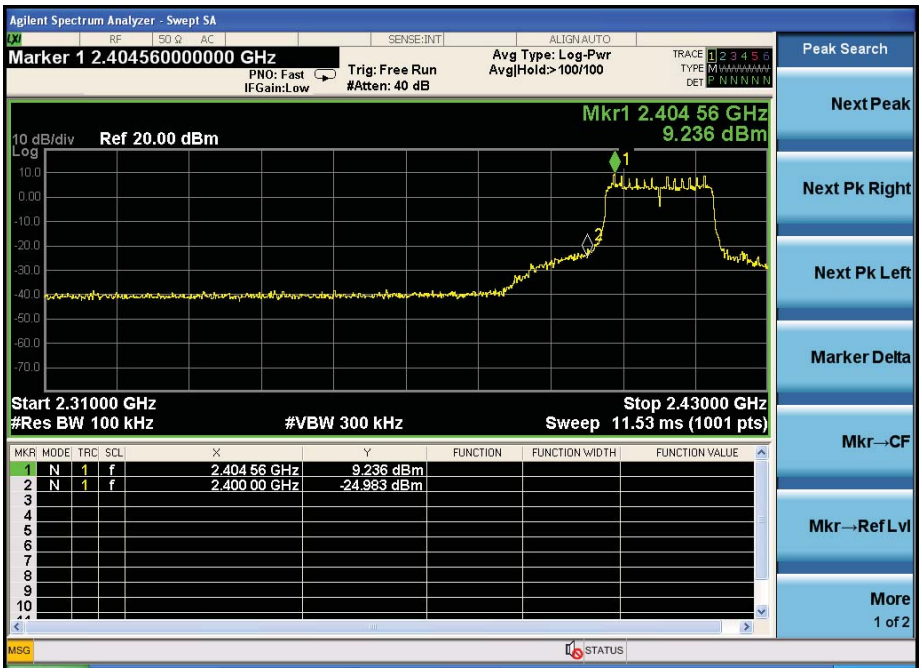


802.11g


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.419560000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Mkr1 2.419 56 GHz
9.280 dBm
10 dB/div
Ref 20.00 dBm
Start 2.31000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.43000 GHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 2.419 56 GHz 9.280 dBm
2 N 1 f 2.400 00 GHz -21.990 dBm

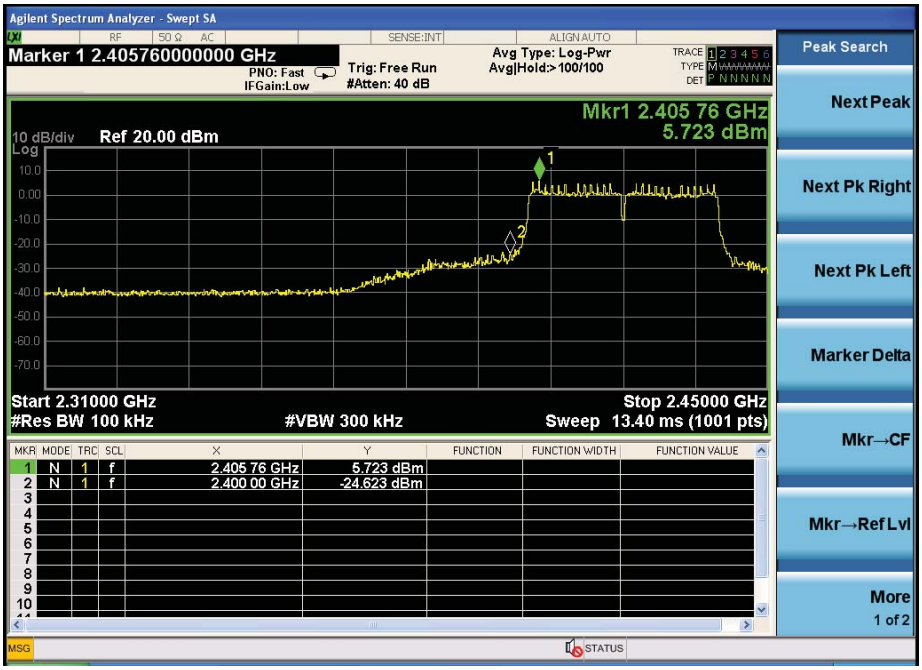

Agilent Spectrum Analyzer - Swept SA
Marker 1 2.454500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Mkr1 2.454 5 GHz
9.528 dBm
10 dB/div
Ref 20.00 dBm
Start 2.45000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 9.600 ms (1001 pts)
1 N 1 f 2.454 5 GHz 9.528 dBm
2 N 1 f 2.483 5 GHz -34.030 dBm

802.11n HT20


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.404560000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Mkr1 2.404 56 GHz
9.236 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 2.31000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.43000 GHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 2.404 56 GHz 9.236 dBm
2 N 1 f 2.400 00 GHz -24.983 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.469500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Mkr1 2.469 5 GHz
8.661 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 2.45000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 9.600 ms (1001 pts)
1 N 1 f 2.469 5 GHz 8.661 dBm
2 N 1 f 2.483 5 GHz -33.232 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

802.11n HT40


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.405760000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Mkr1 2.405 76 GHz
5.723 dBm
10 dB/div
Ref 20.00 dBm
Start 2.31000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.45000 GHz
Sweep 13.40 ms (1001 pts)
1 N 1 f 2.405 76 GHz 5.723 dBm
2 N 1 f 2.400 00 GHz -24.623 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.435760000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Mkr1 2.435 76 GHz
5.411 dBm
10 dB/div
Ref 20.00 dBm
Start 2.43000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 2.435 76 GHz 5.411 dBm
2 N 1 f 2.483 50 GHz -31.535 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

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 unique Antenna. It comply with the standard requirement.