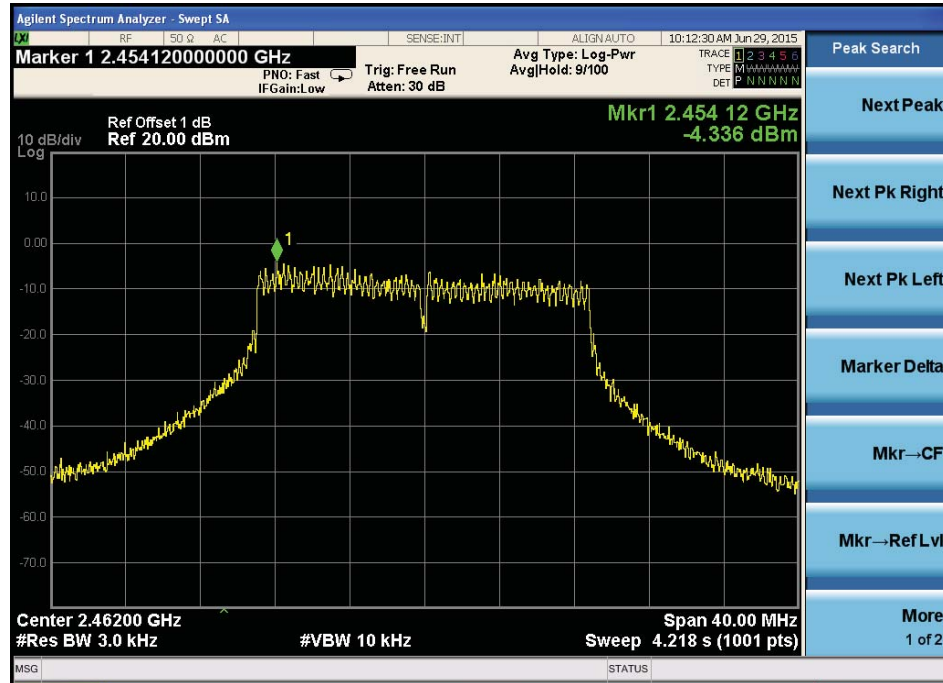
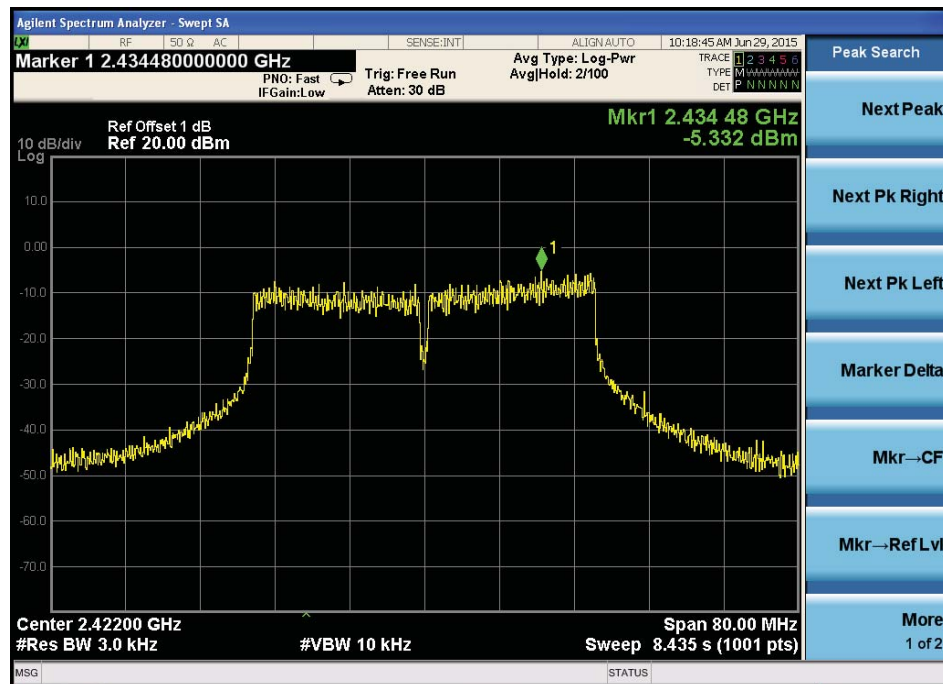


CH Hig:

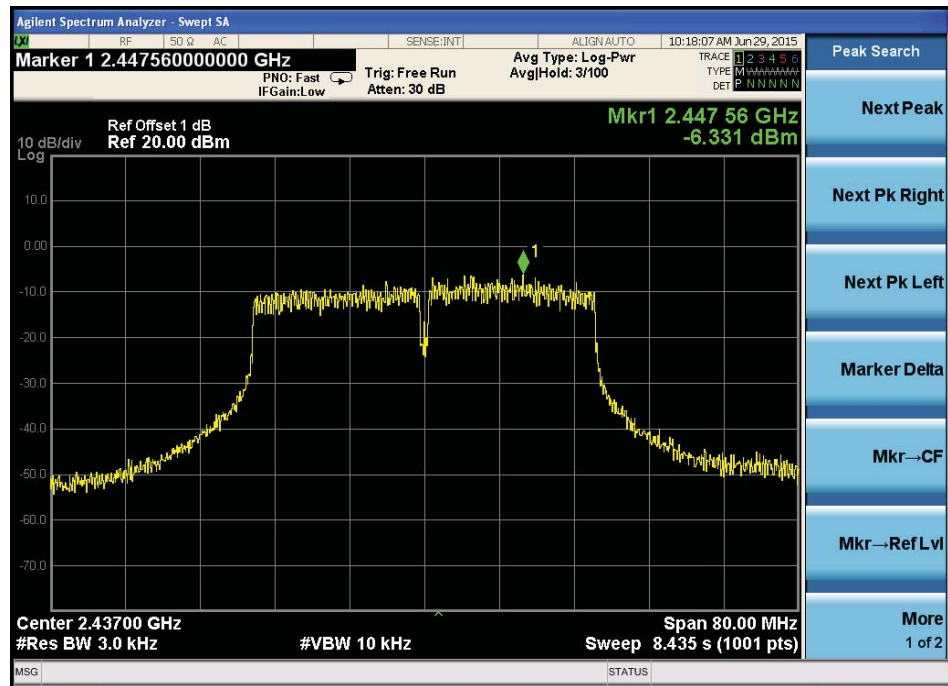


IEEE 802.11n HT40 :

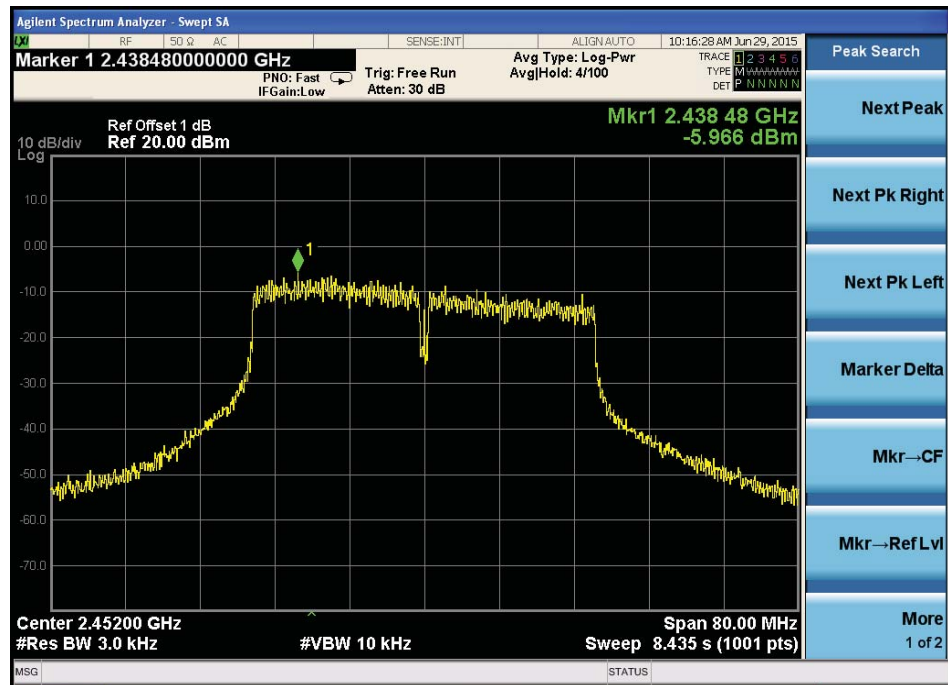
CH Low :



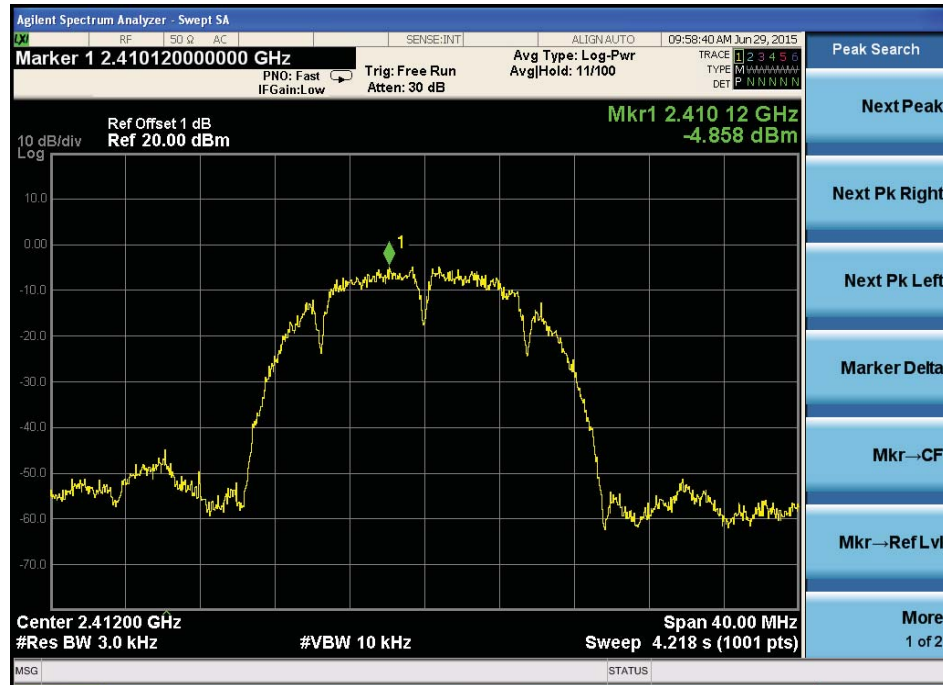
CH Mid:



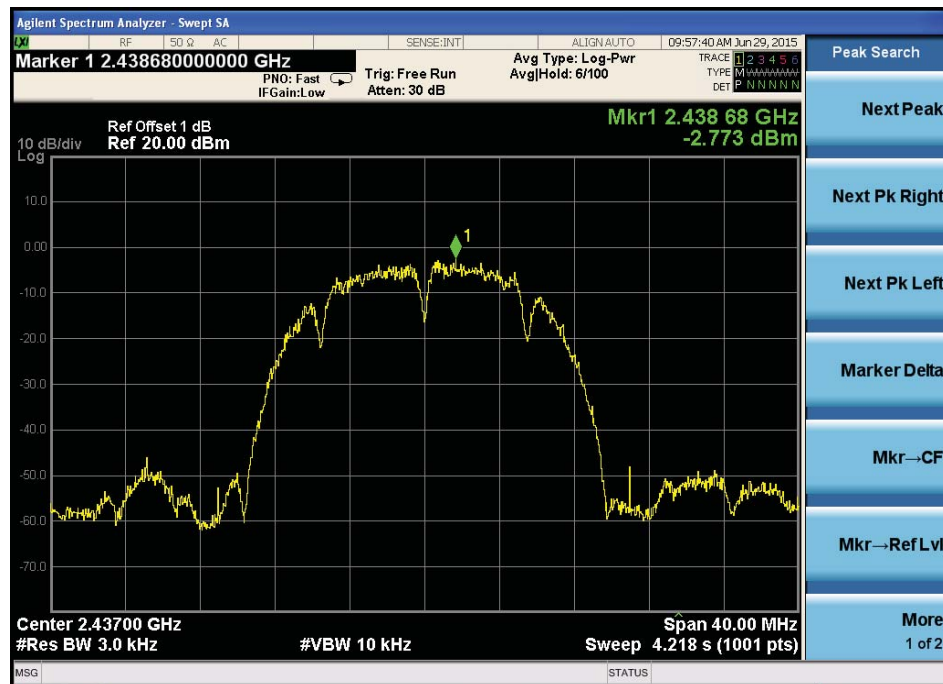
CH Hig:



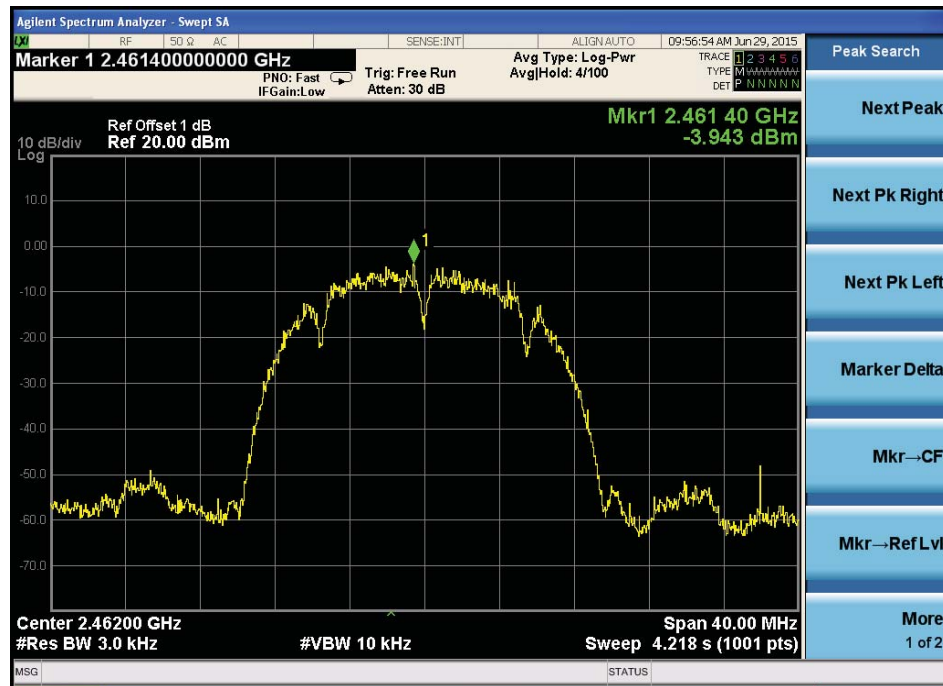
port 1 antenna
IEEE 802.11b :
CH Low :



CH Mid:

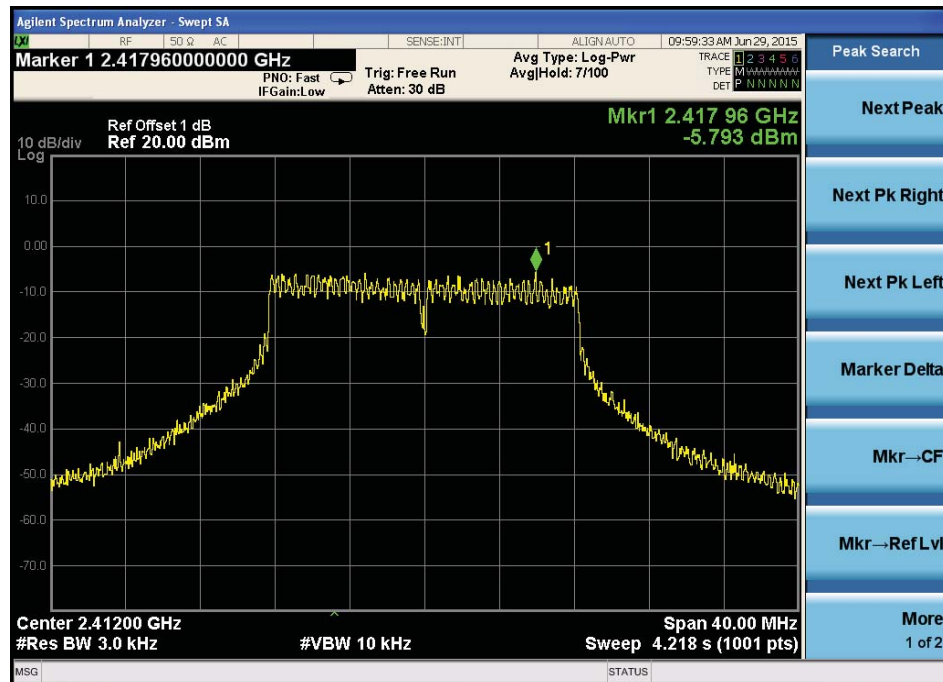


CH Hig:

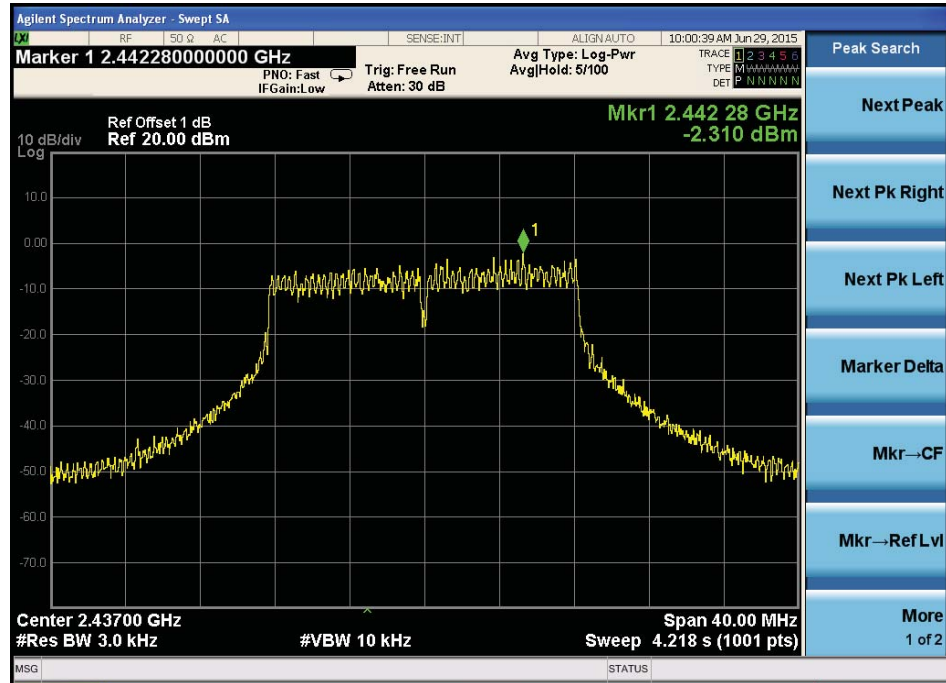


IEEE 802.11g :

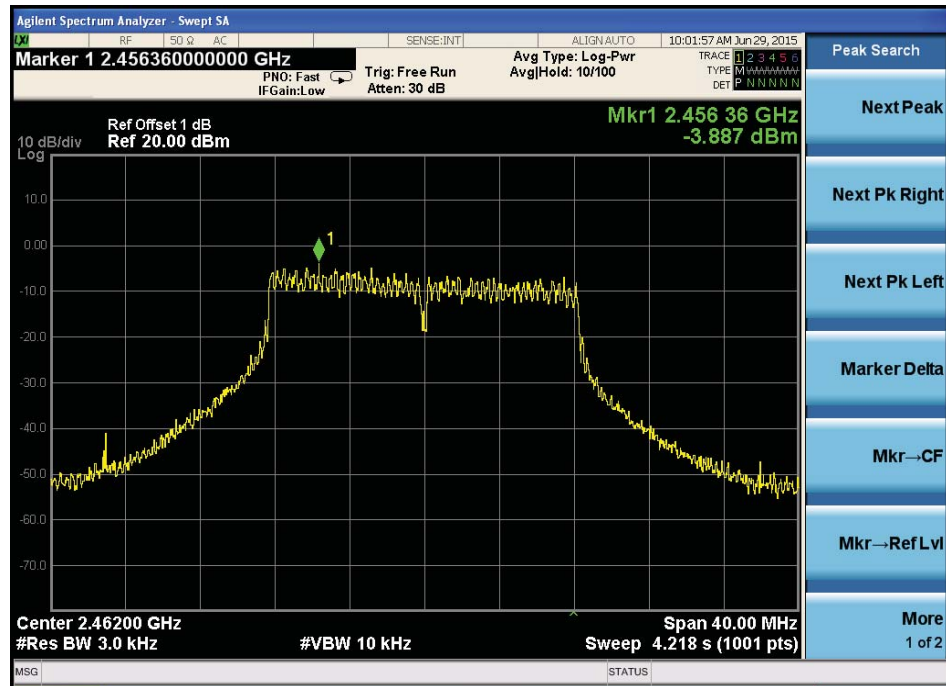
CH Low :



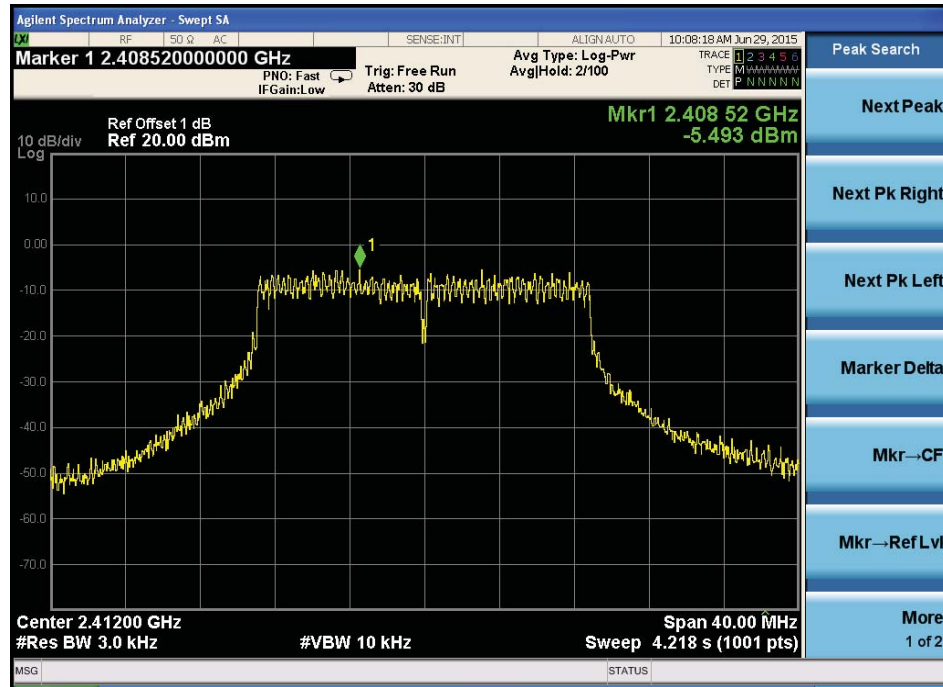
CH Mid:



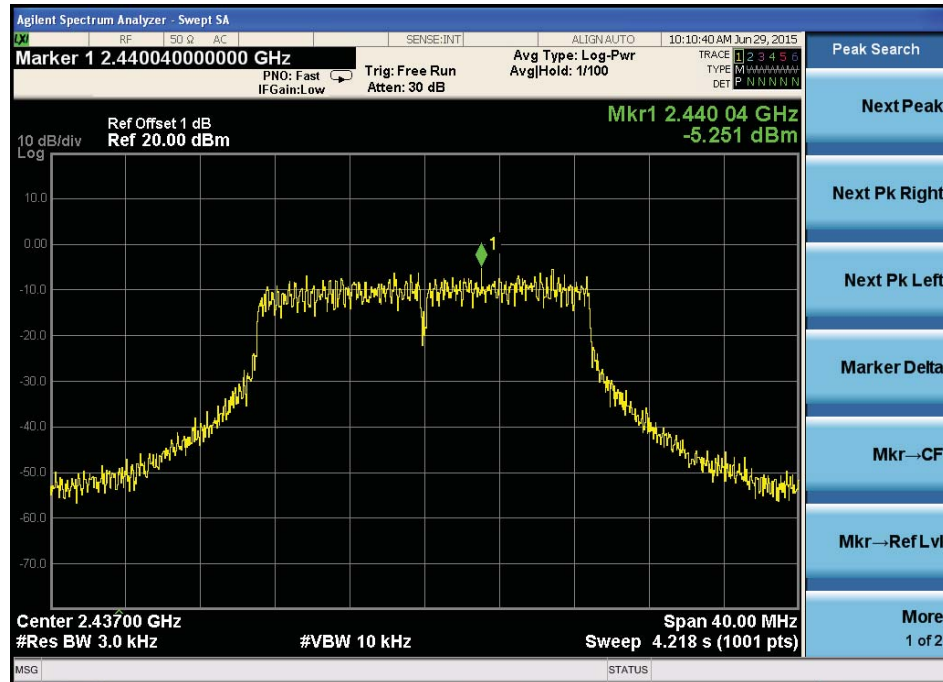
CH Hig:



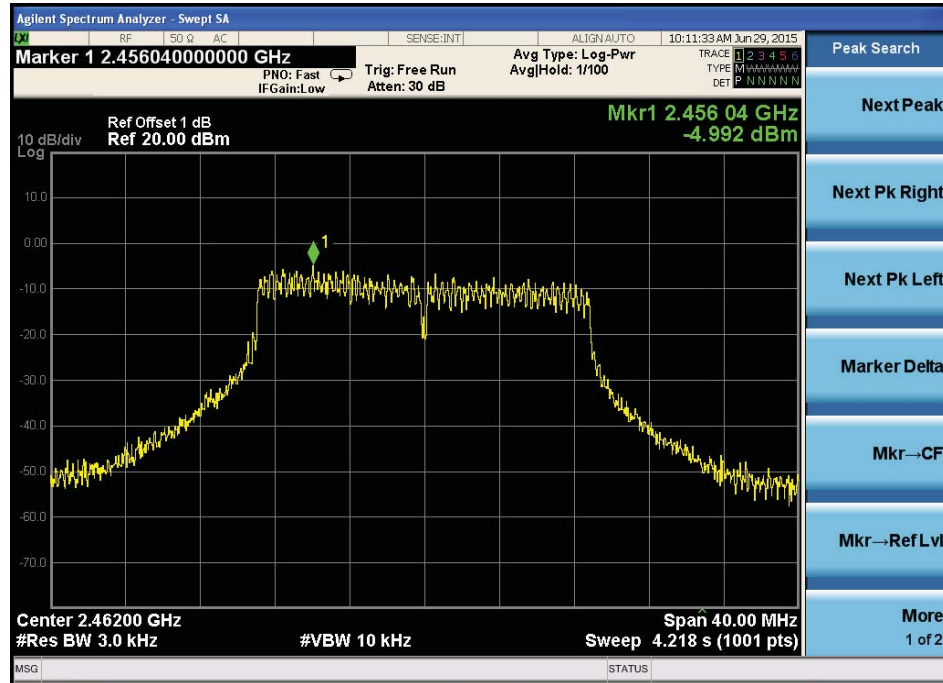
IEEE 802.11n HT20 :
CH Low :



CH Mid:

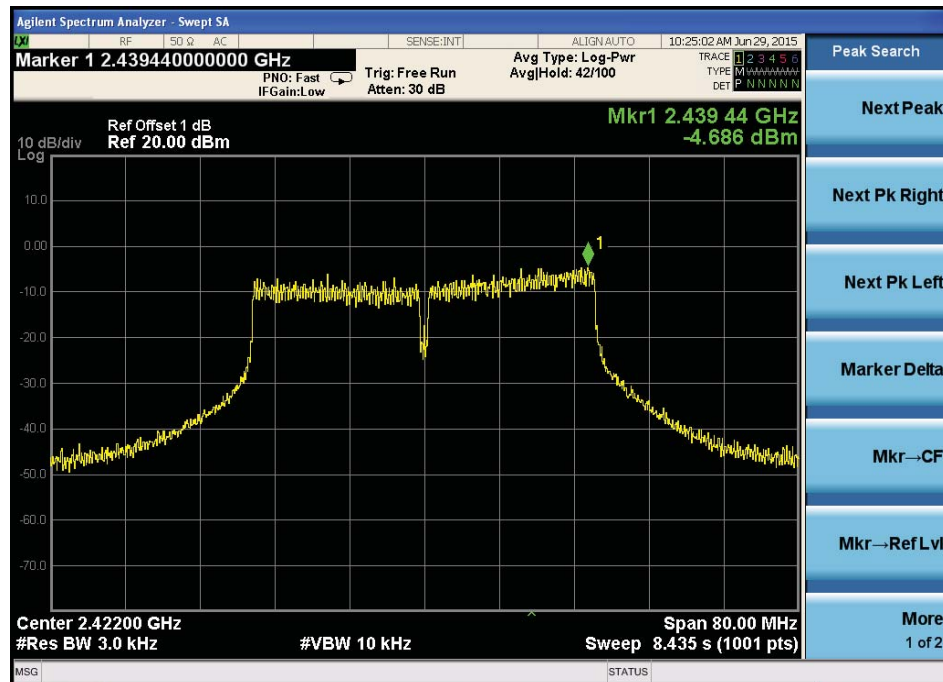


CH Hig:

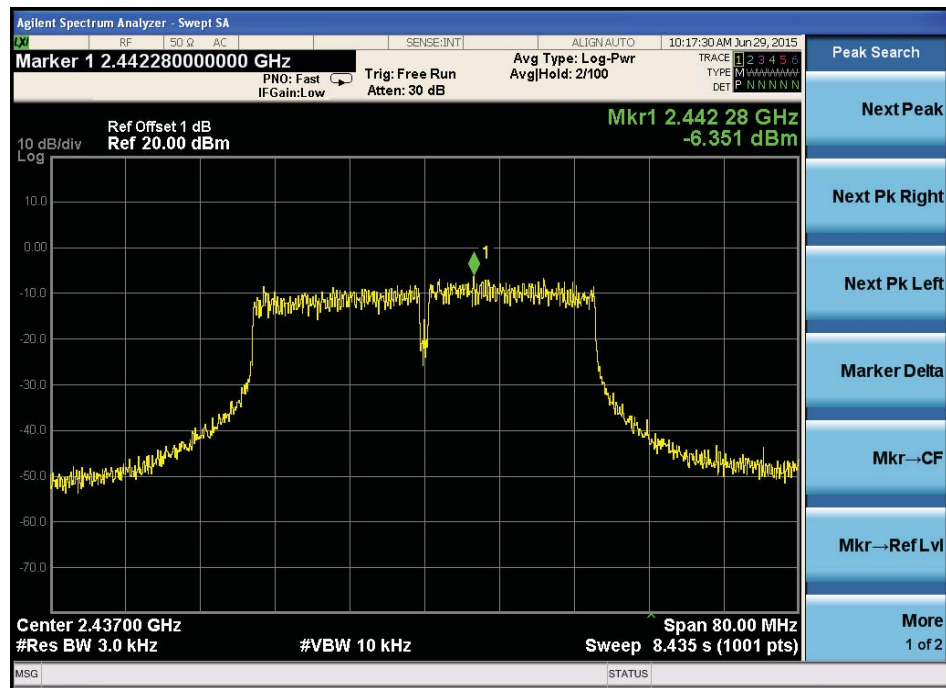


IEEE 802.11n HT40 :

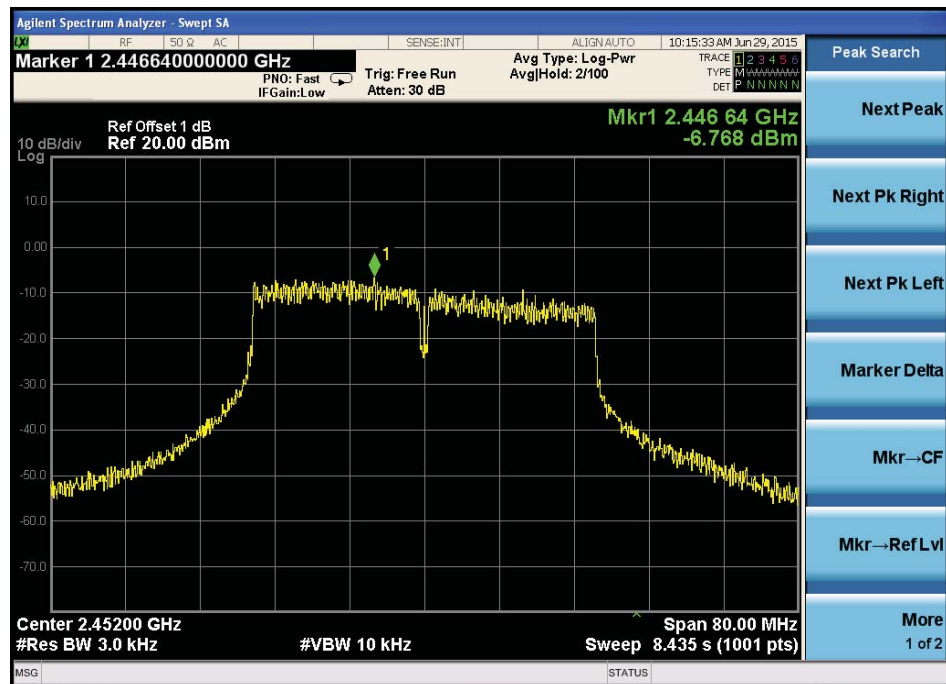
CH Low :



CH Mid:



CH Hig:



9 Bandwidth

9.1 Test limit

Please refer section 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) 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 $RBW = 1-5 \% EBW$, $VBW \geq 3RBW$, Sweep time set auto, detail see the test plot.

9.3 Test Setup



9.4 Test Results

PASS.

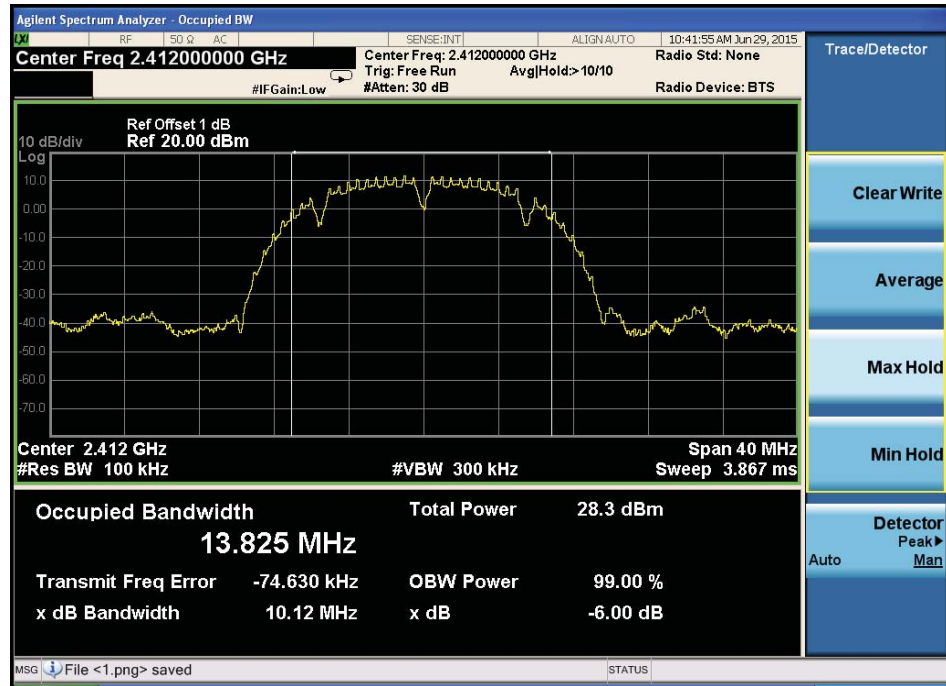
Antenna 0 and Antenna 1 port all have been tested ,
only worse case is reported

Detailed information please see the following page.

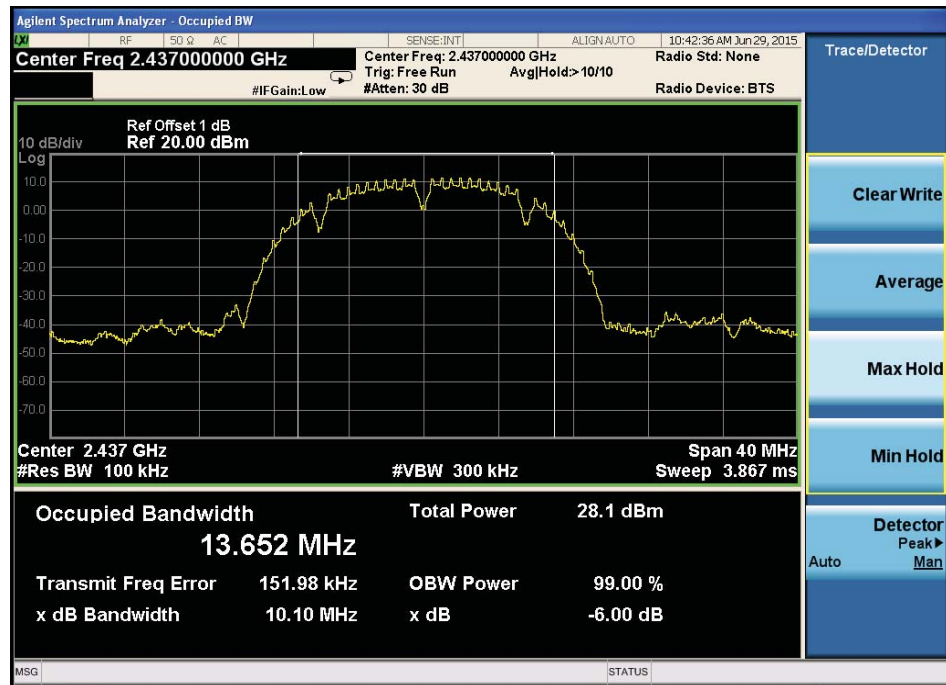
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b:					
Low	2412	10.12	13.825	0.5	PASS
Mid	2437	10.10	13.652	0.5	PASS
High	2462	9.657	13.816	0.5	PASS
IEEE 802.11g					
Low	2412	16.61	16.627	0.5	PASS
Mid	2437	16.51	16.522	0.5	PASS
High	2462	16.53	16.754	0.5	PASS
IEEE 802.11n/HT20:					
Low	2412	17.85	17.784	0.5	PASS
Mid	2437	17.74	17.702	0.5	PASS
High	2462	17.77	17.798	0.5	PASS
IEEE 802.11n/HT40:					
Low	2422	36.55	36.541	0.5	PASS
Mid	2437	36.51	36.231	0.5	PASS
High	2452	36.53	36.192	0.5	PASS

IEEE 802.11b:

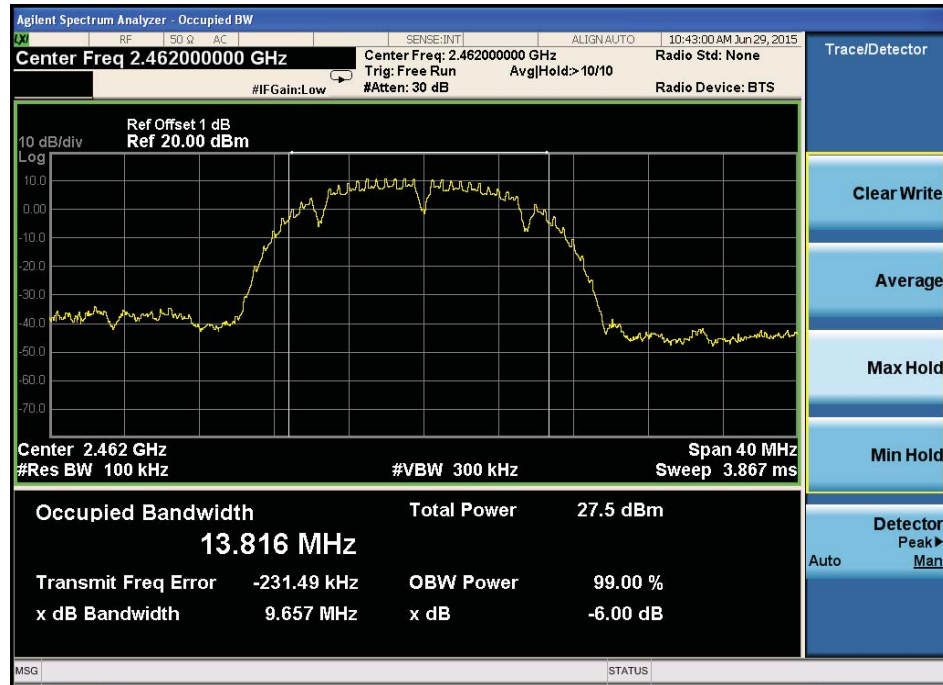
CH Low :



CH Mid :

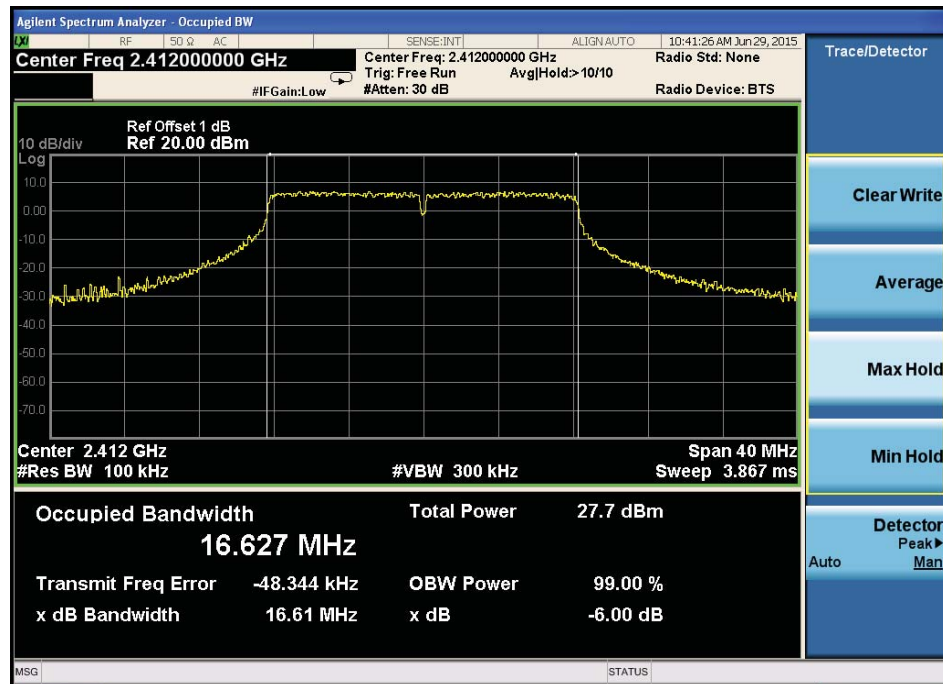


CH High :

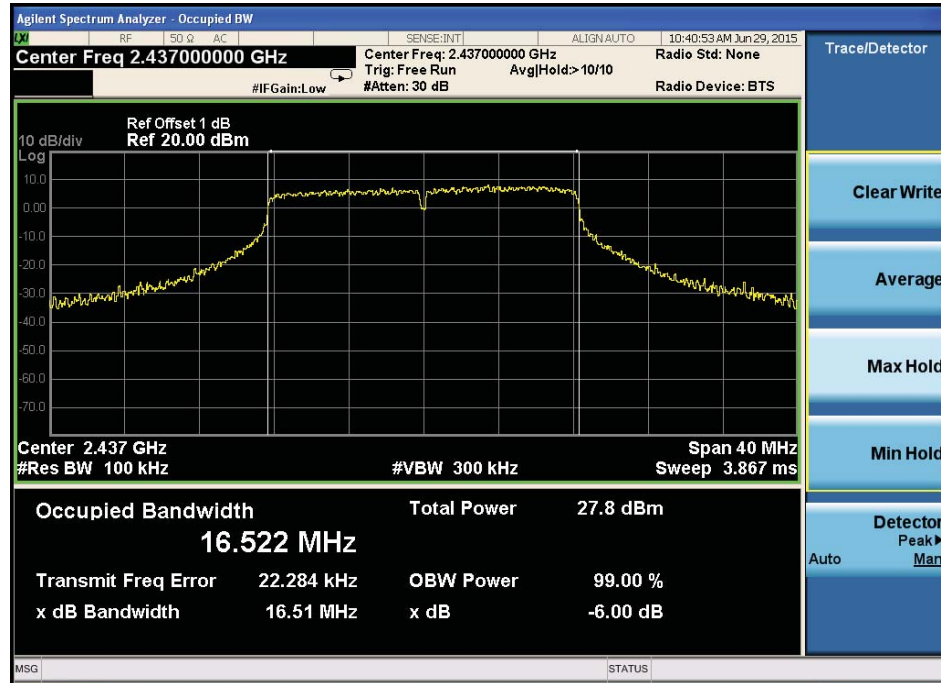


IEEE 802.11g:

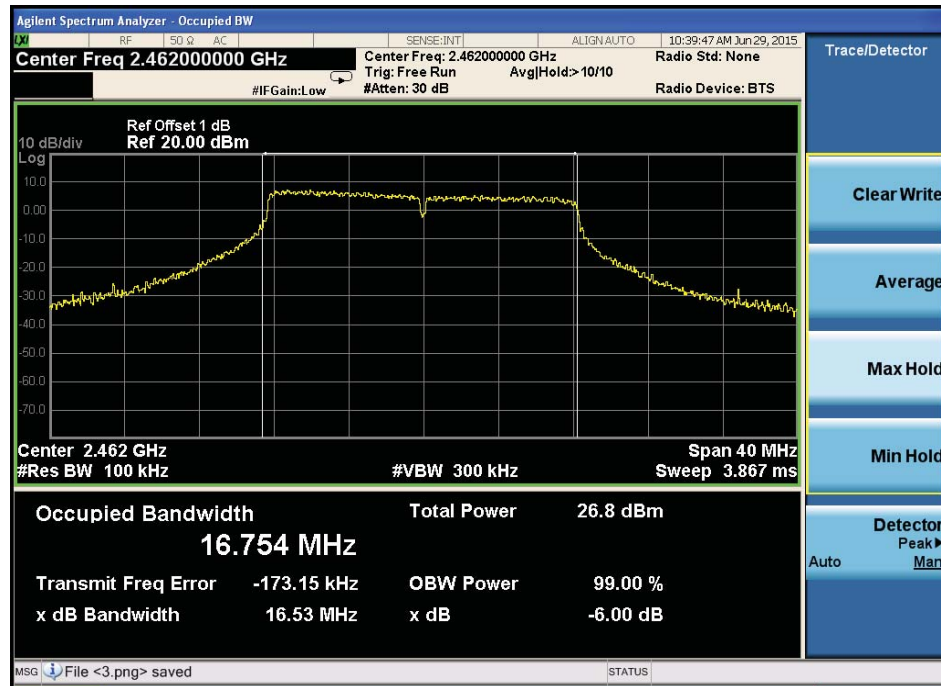
CH Low :



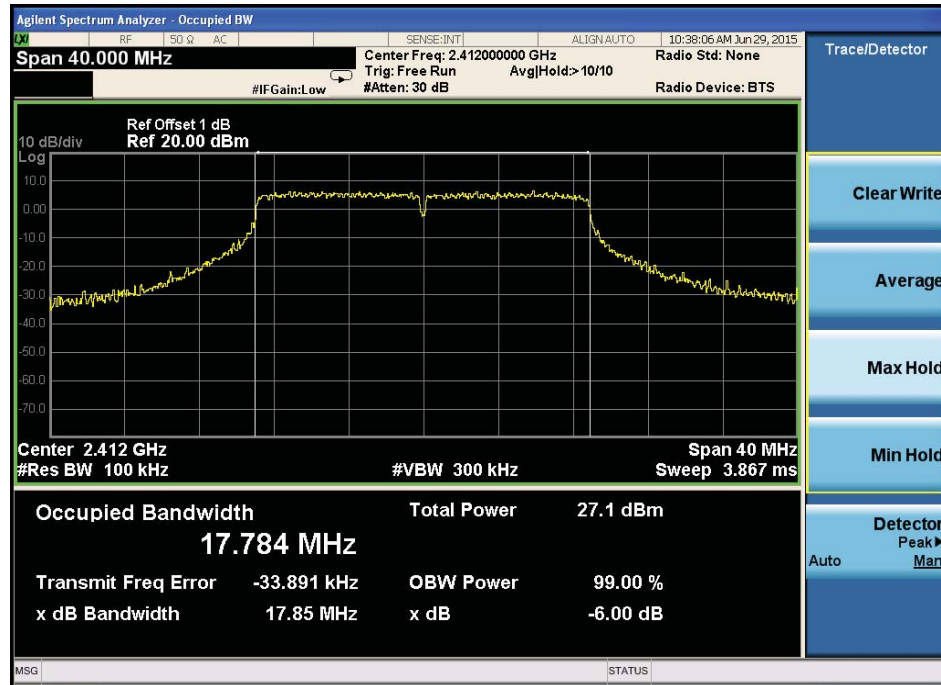
CH Mid:



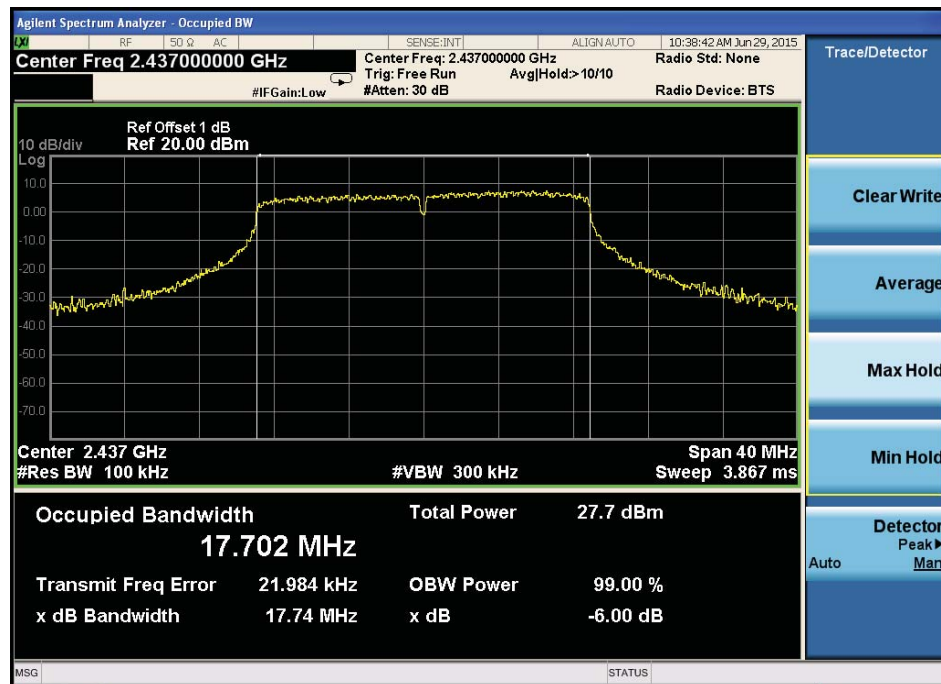
CH Hig:



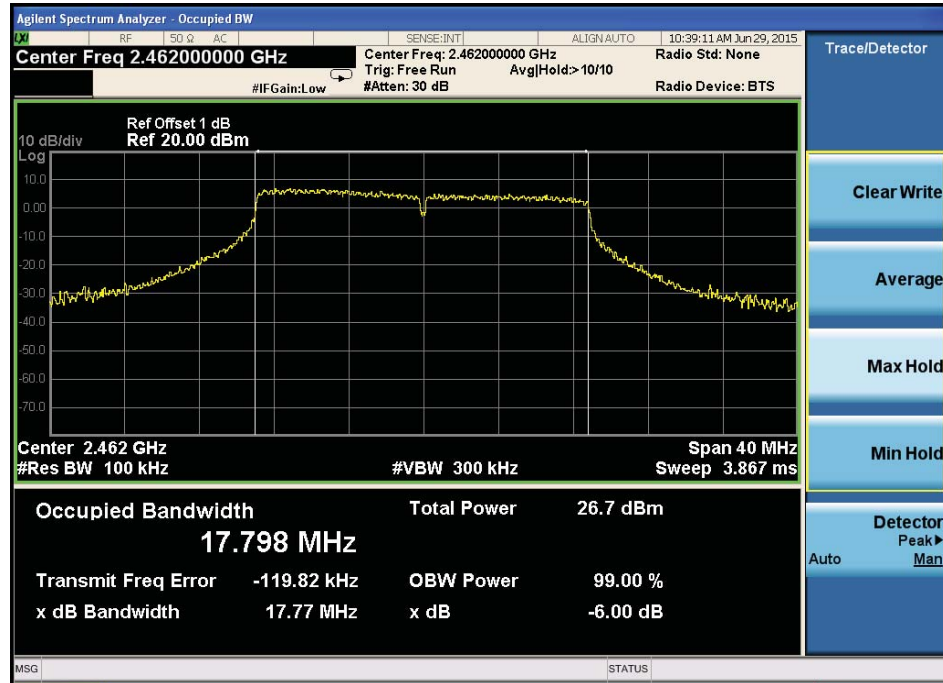
IEEE 802.11n HT20:
CH Low :



CH Mid :

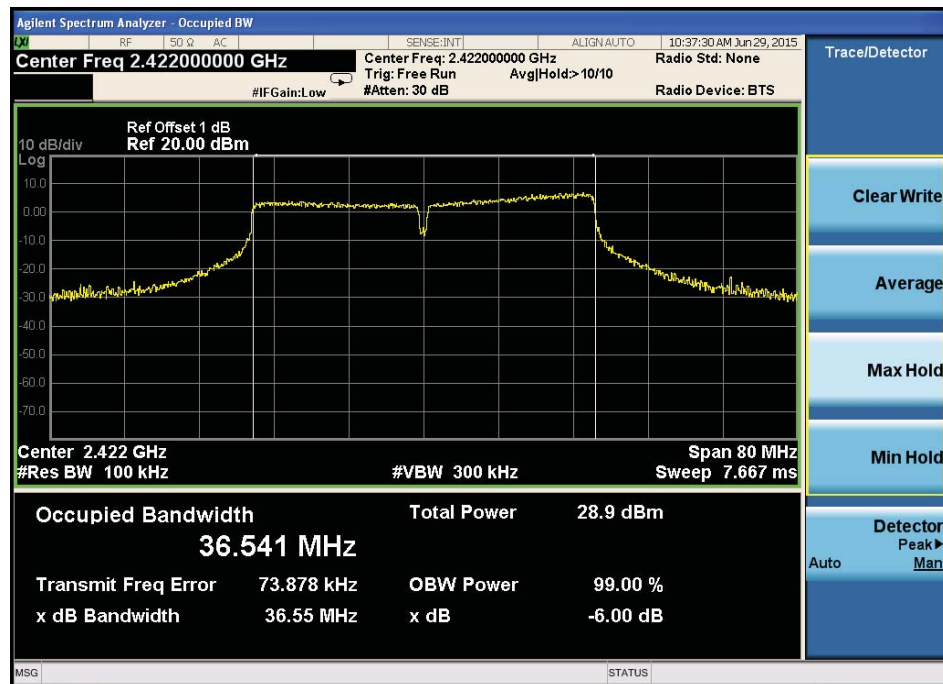


CH High :

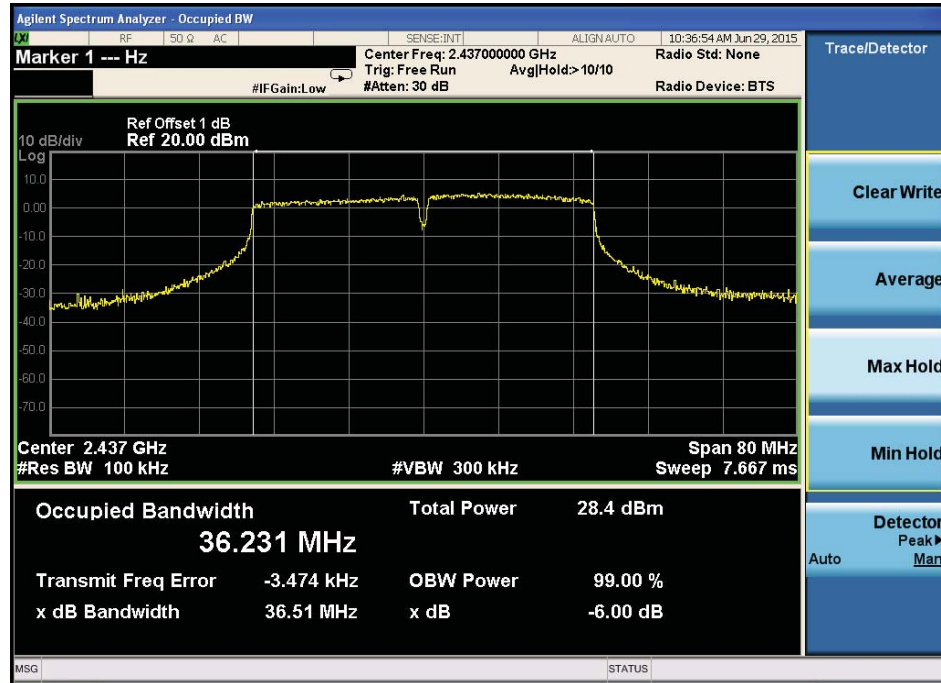


IEEE 802.11n/HT40:

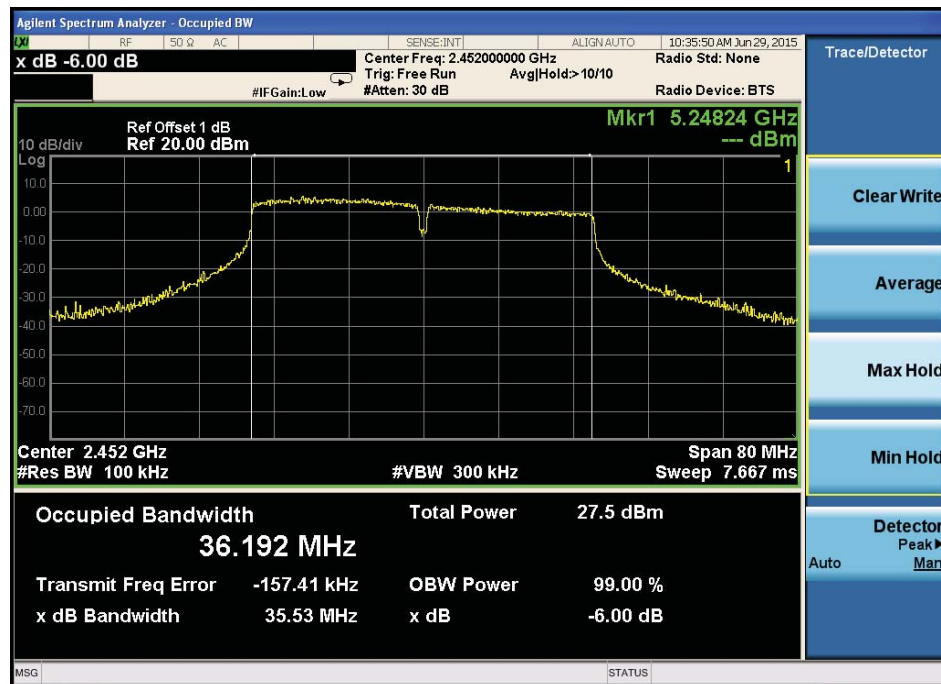
CH Low :



CH Mid:



CH High :



10 Band Edge Check

10.1 Test limit

Please refer section 15.247

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.

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30			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	42.52	27.62	3.92	34.97	39.09	74	34.91	PK
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	42.74	27.62	3.92	34.97	39.31	74	34.69	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.								

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30			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	41.62	27.89	4	34.97	38.54	74	35.46	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	42.54	27.89	4	34.97	39.46	74	34.54	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.								

Band Edge Test result												
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2							
Power: DC 24V From adapter												
Test date: 2015-06-30 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	43.52	27.62	3.92	34.97	40.09	74	33.91	PK				
2390	--	27.62	3.94	34.97	--	54	--	AV				
Antenna Polarity: Horizontal												
2390	42.59	27.62	3.92	34.97	39.16	74	34.84	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.

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30 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	42.29	27.89	4	34.97	39.21	74	34.79	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	42.75	27.89	4	34.97	39.67	74	34.33	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.								

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30			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	41.89	27.62	3.92	34.97	38.46	74	34.79	PK
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	42.64	27.62	3.92	34.97	39.21	74	34.79	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.

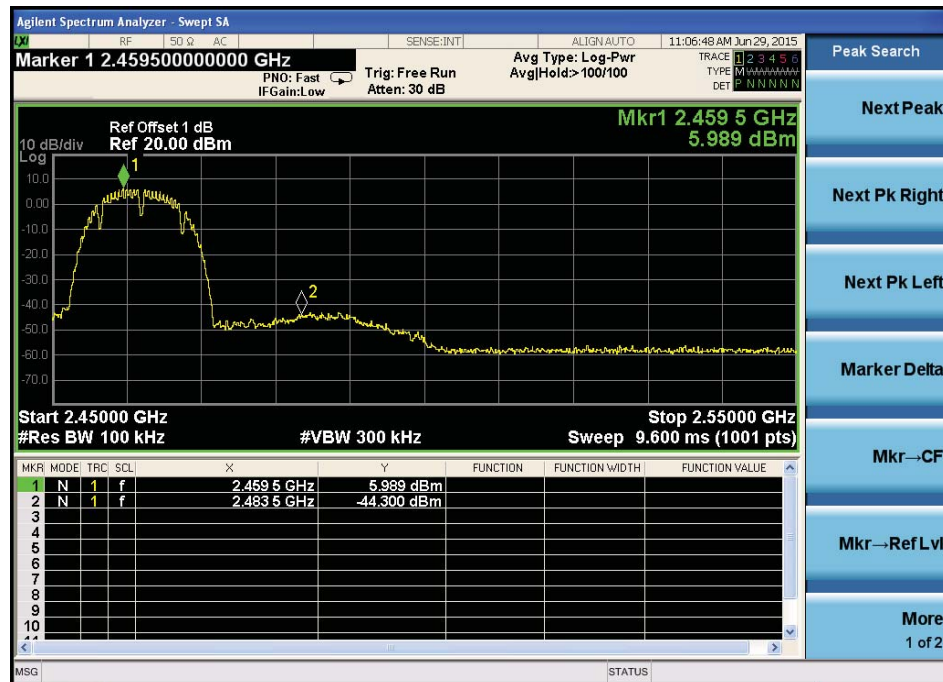
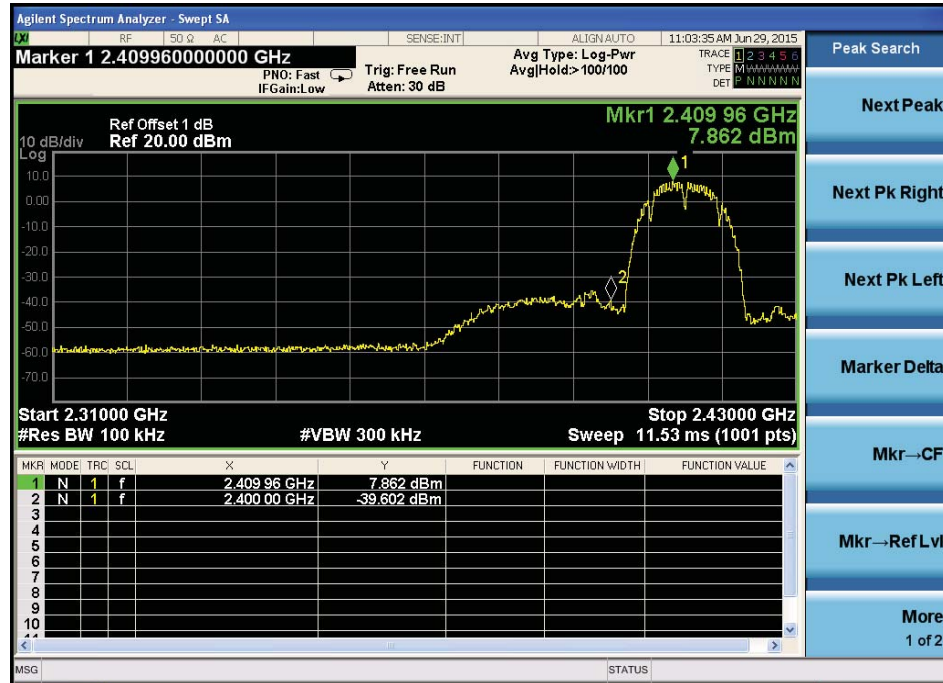
Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30			Test site: 3m Chamber		Tested by: Store			
Test mode: MIMO TX High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	41.77	27.89	4	34.97	38.69	74	35.31	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	42.26	27.89	4	34.97	39.18	74	34.82	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.								

Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30			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	42.34	27.62	3.92	34.97	38.91	74	35.09	PK
2390	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	42.76	27.62	3.92	34.97	39.33	74	34.67	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.								

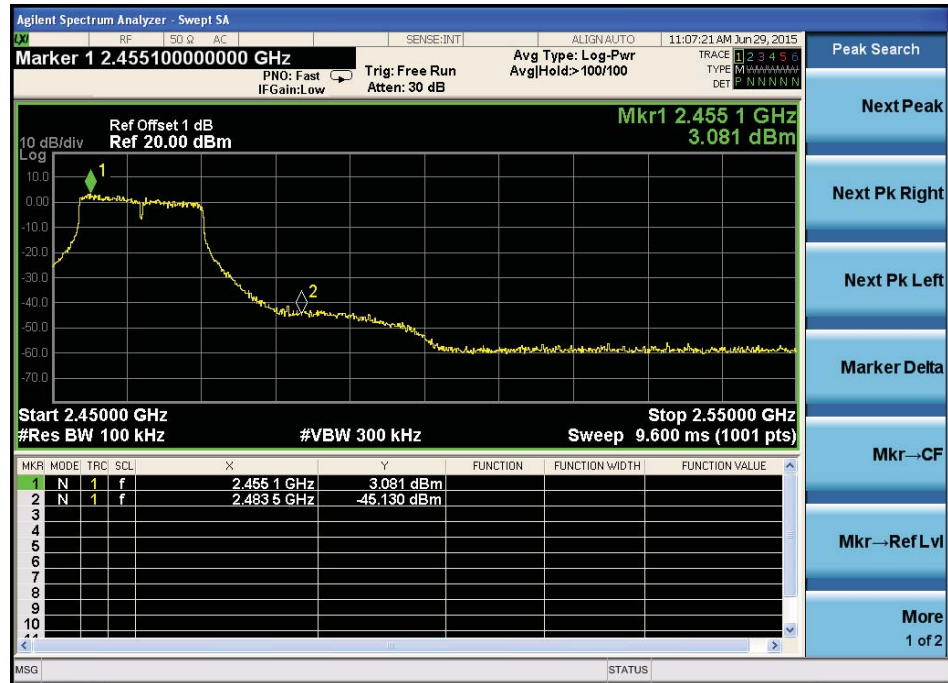
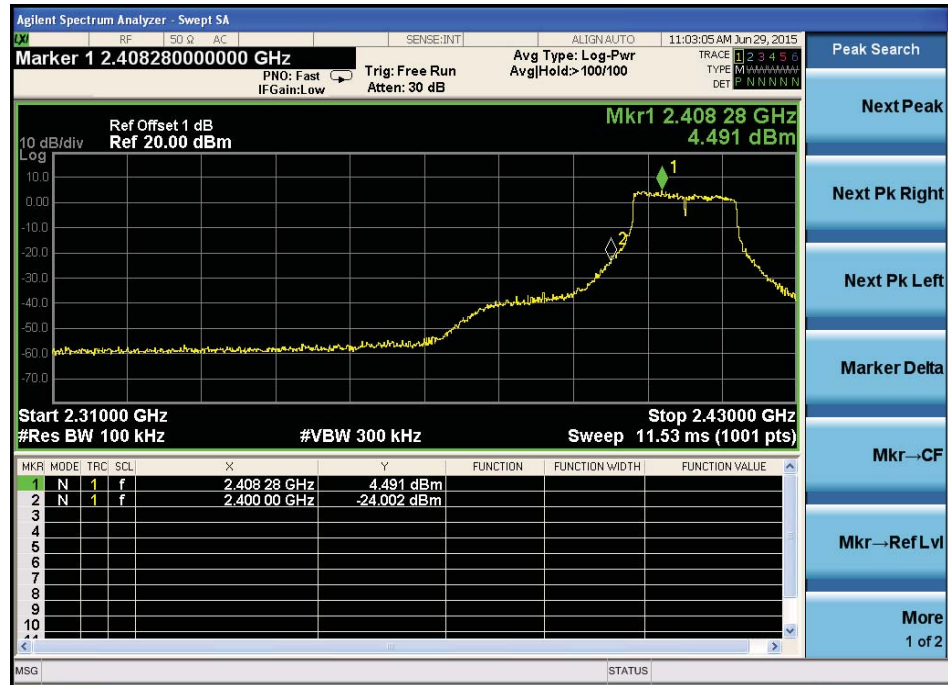
Band Edge Test result								
EUT: Broadband Digital Transmission System					M/N: LigoDLB Propeller 2			
Power: DC 24V From adapter								
Test date: 2015-06-30			Test site: 3m Chamber		Tested by: Store			
Test mode: MIMO TX High								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	41.67	27.89	4	34.97	38.59	74	35.41	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	42.06	27.89	4	34.97	38.98	74	35.02	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 PORT 0 and 1 all have been tested ,only report worse case

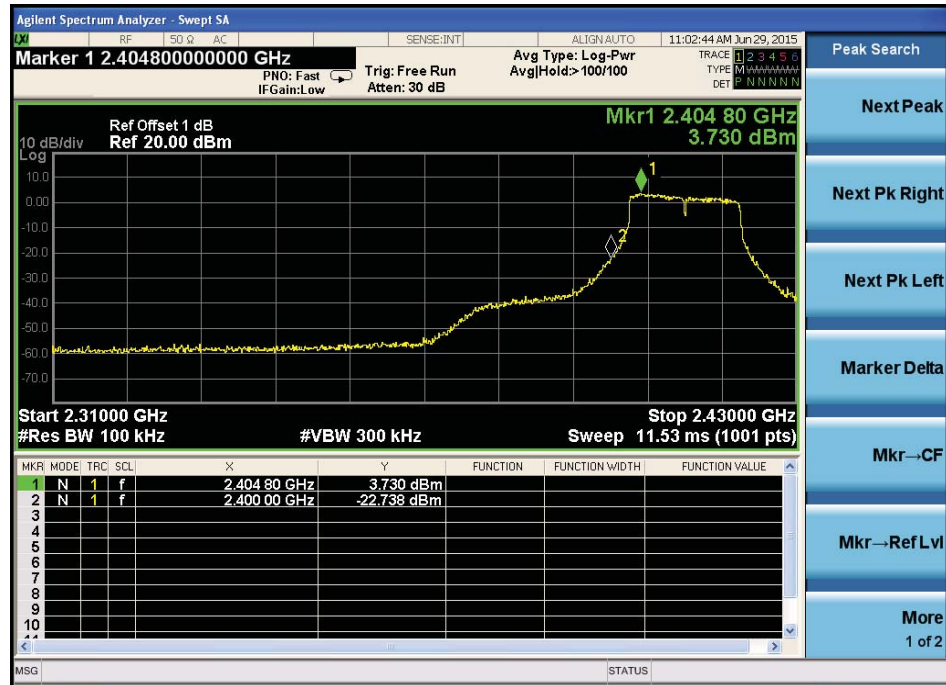
802.11b



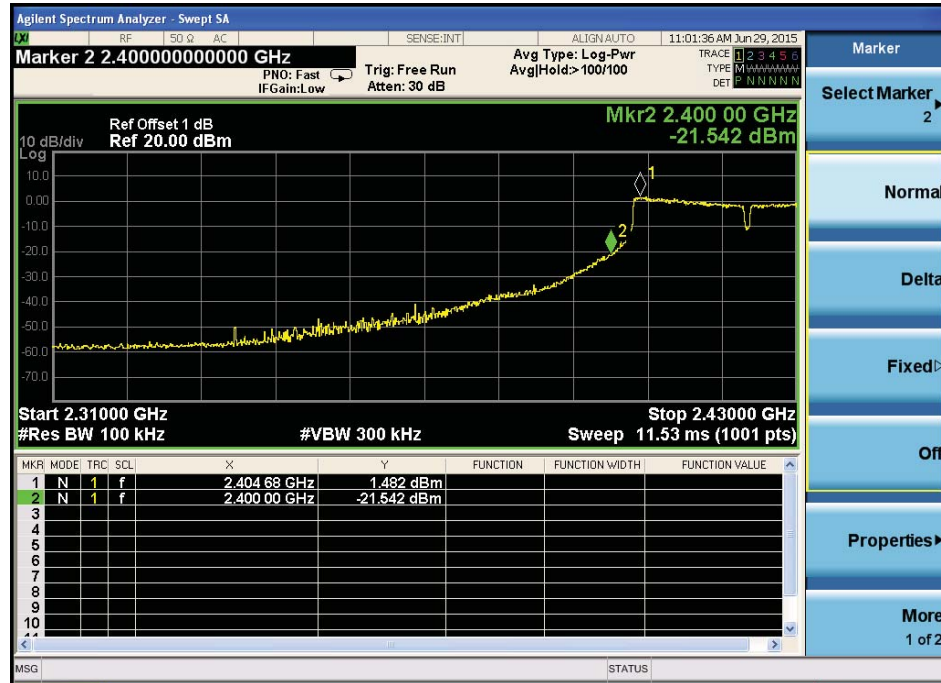
802.11g



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

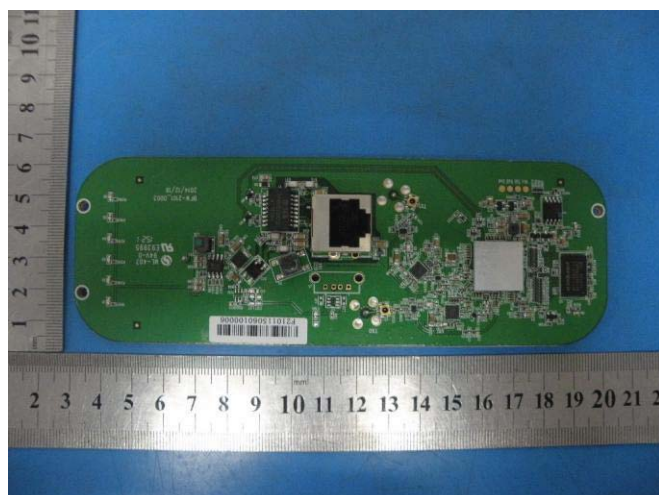
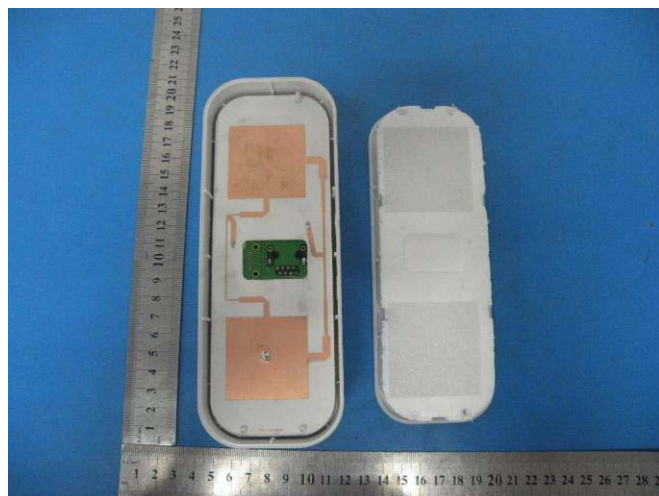
The EUT antenna is printed Antenna. It comply with the standard requirement.

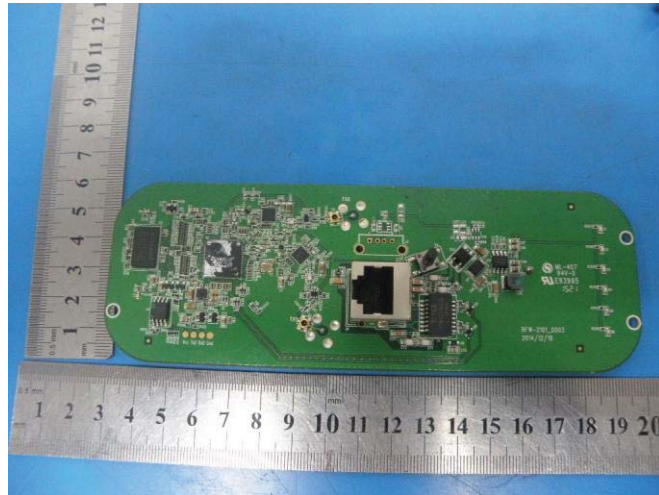
12 Photographs of EUT

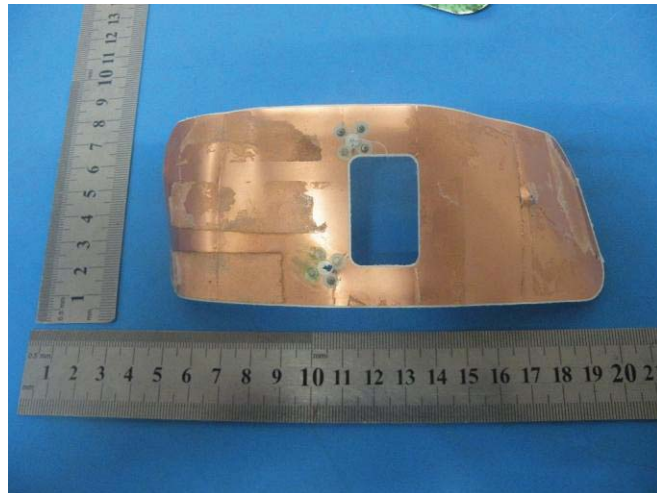
















-----END OF THE REPORT-----