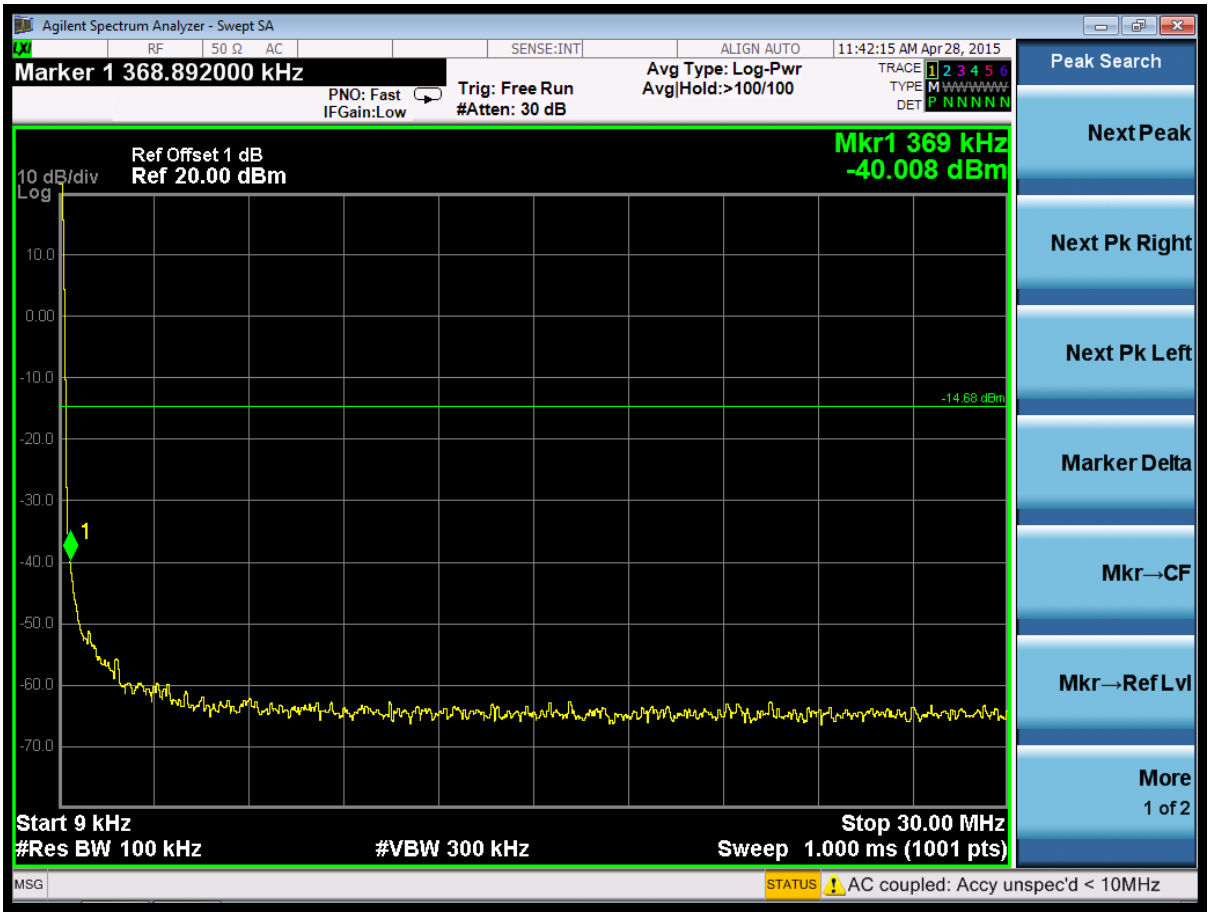
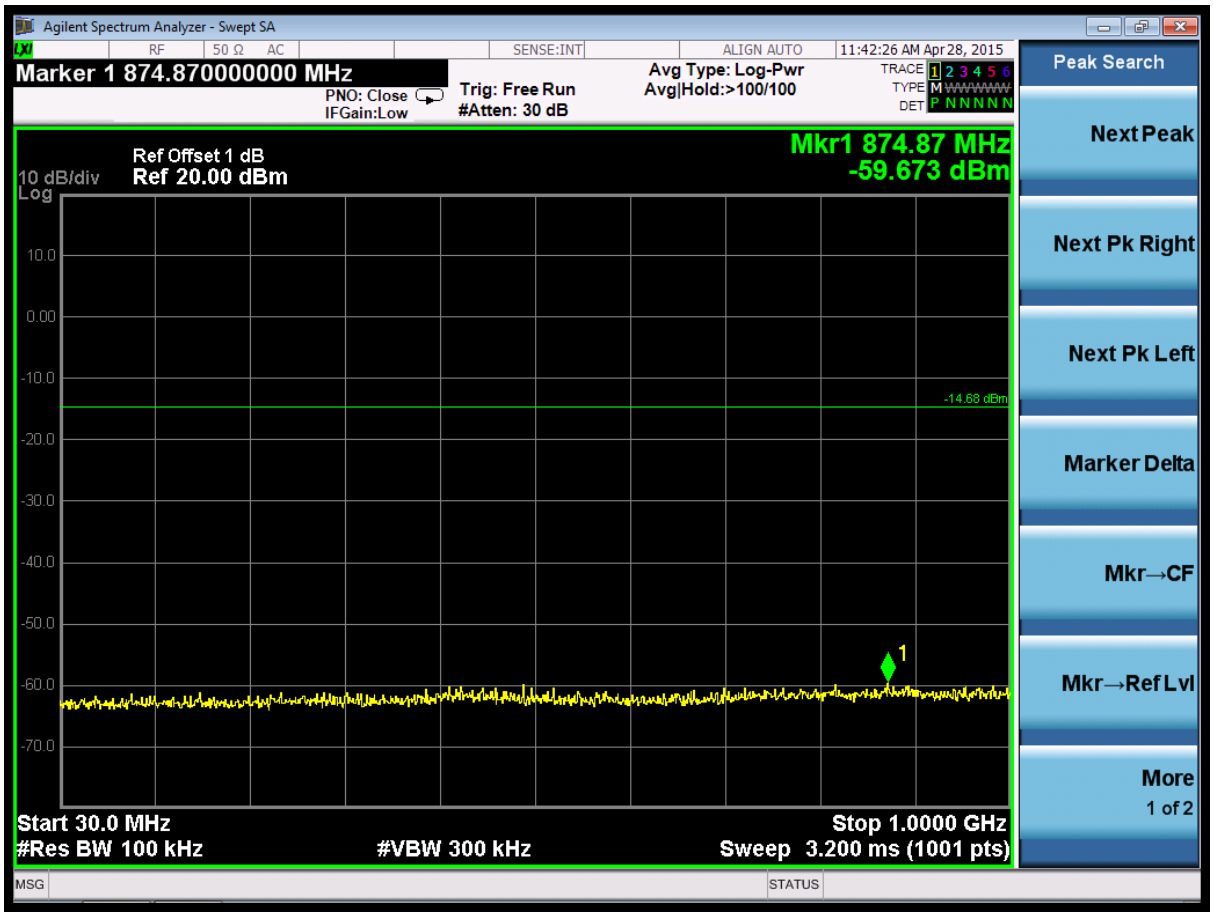
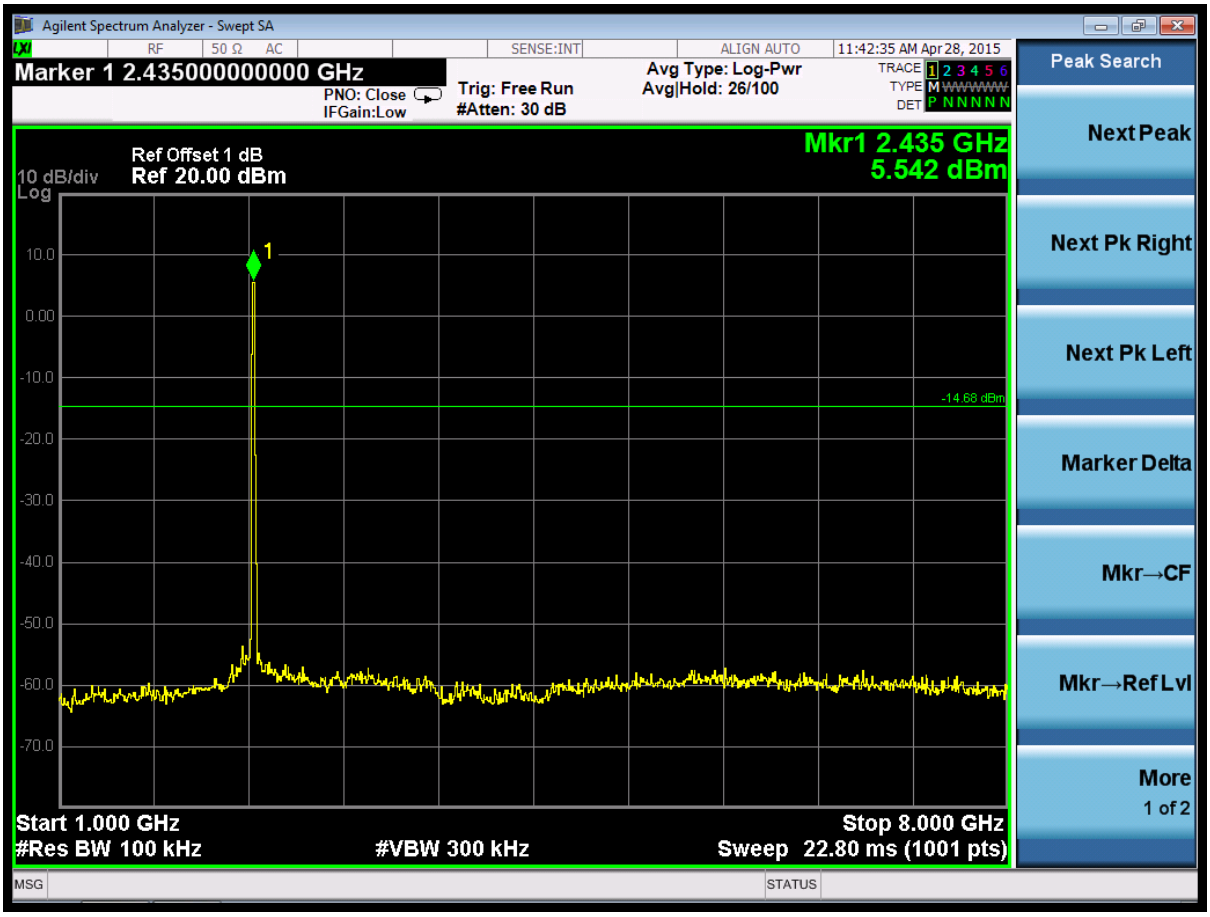
(Plot 4.7.1 B1: Channel 6: 2437MHz @ 802.11b)



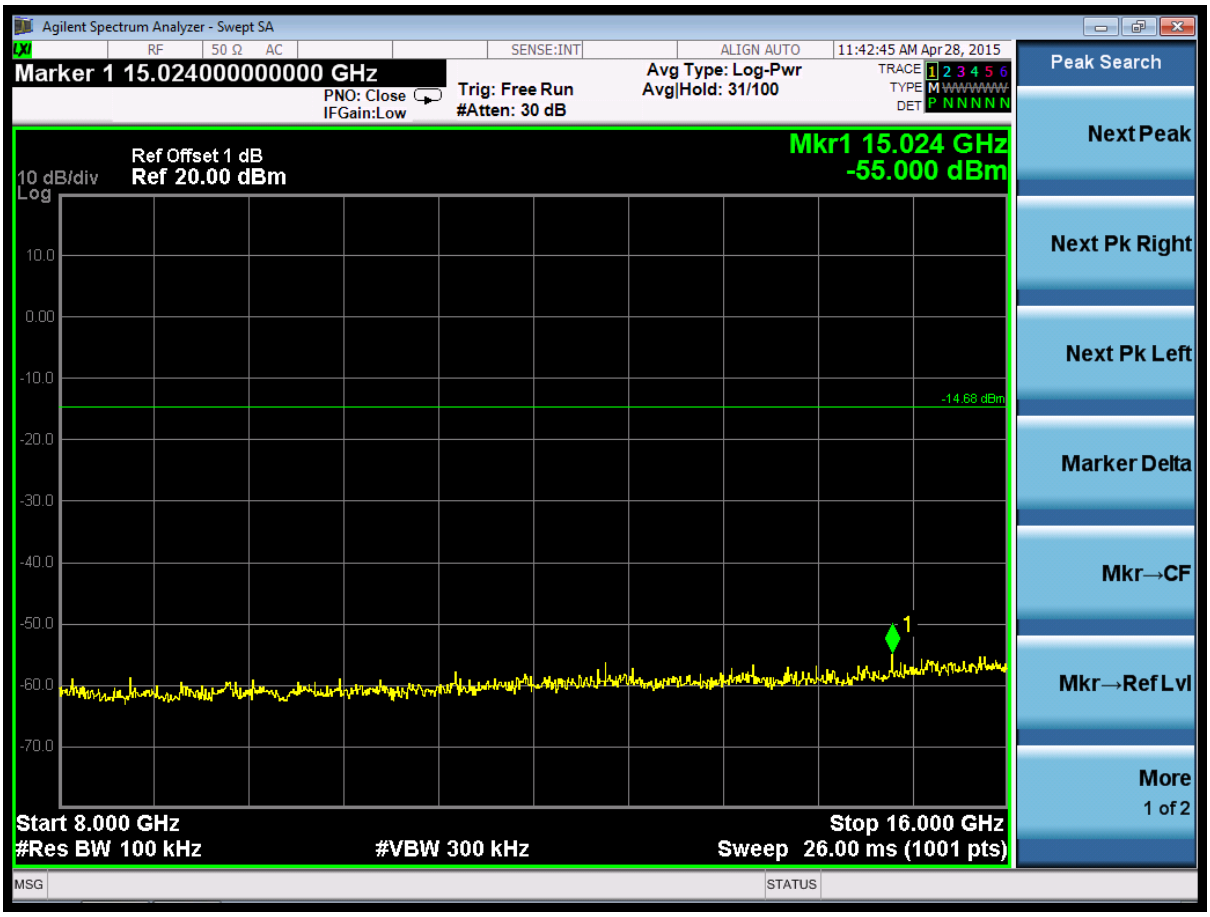
(Plot 4.7.1 B2: Channel 6: 2437MHz @ 802.11b)



(Plot 4.7.1 B3: Channel 6: 2437MHz @ 802.11b)



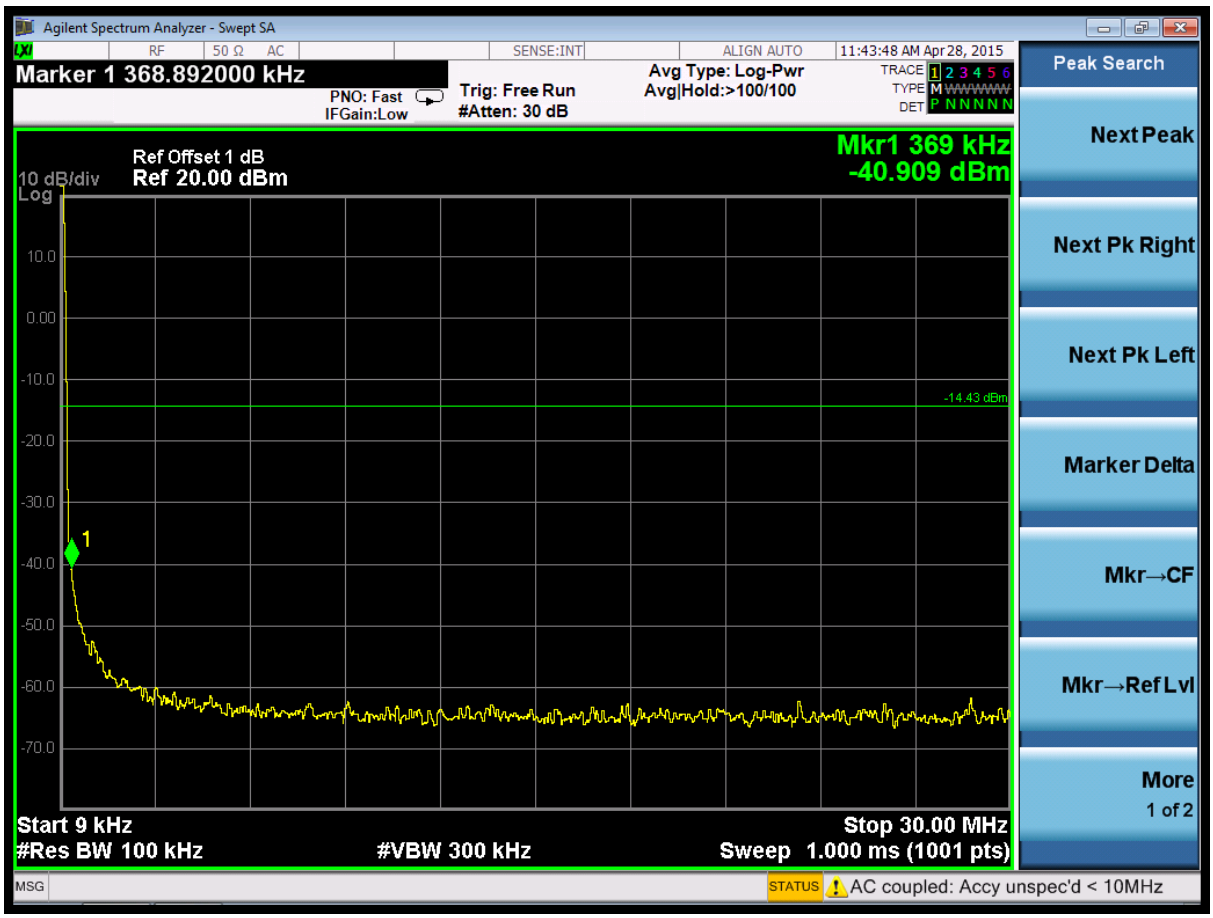
(Plot 4.7.1 B4: Channel 6: 2437MHz @ 802.11b)



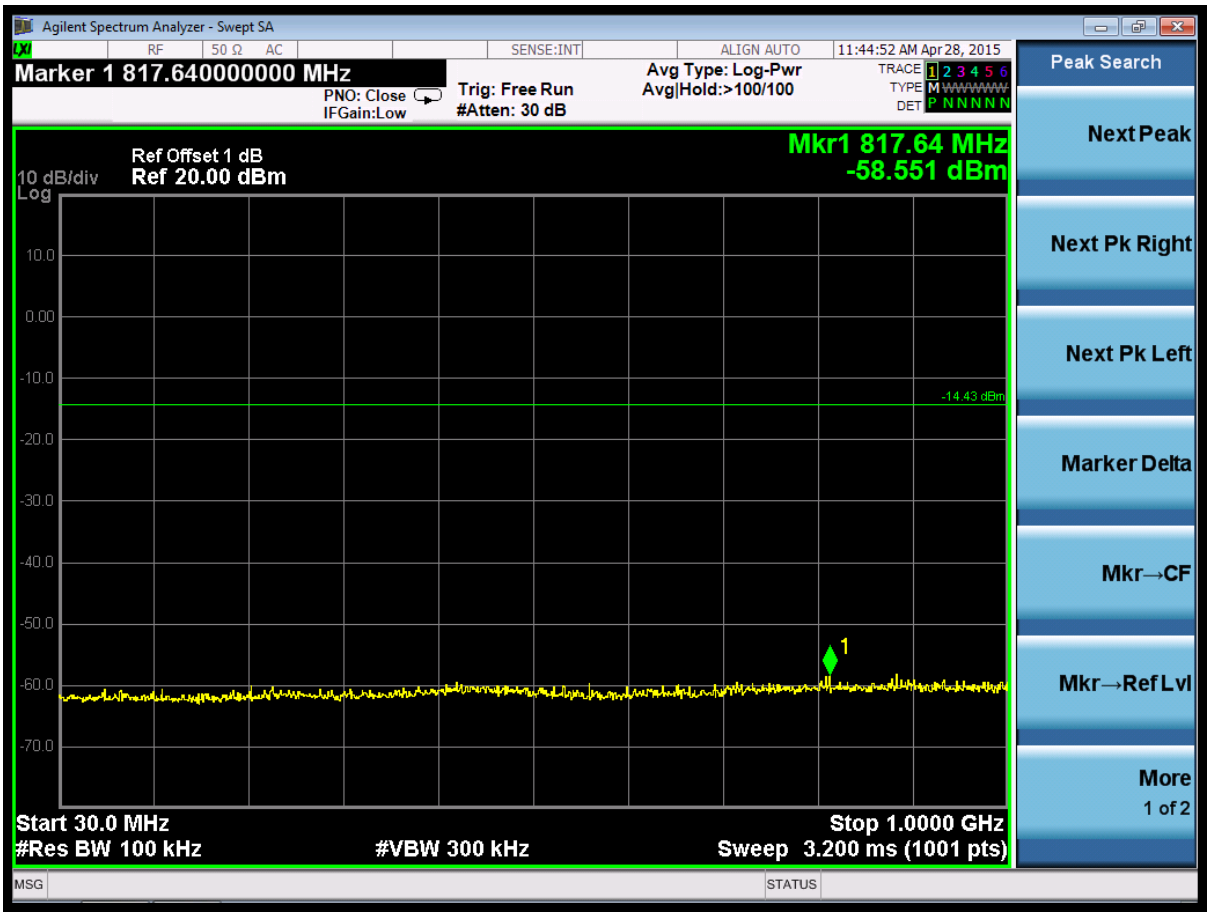
(Plot 4.7.1 B5: Channel 6: 2437MHz @ 802.11b)

(Plot 4.7.1 B6: Channel 6: 2437MHz @ 802.11b)

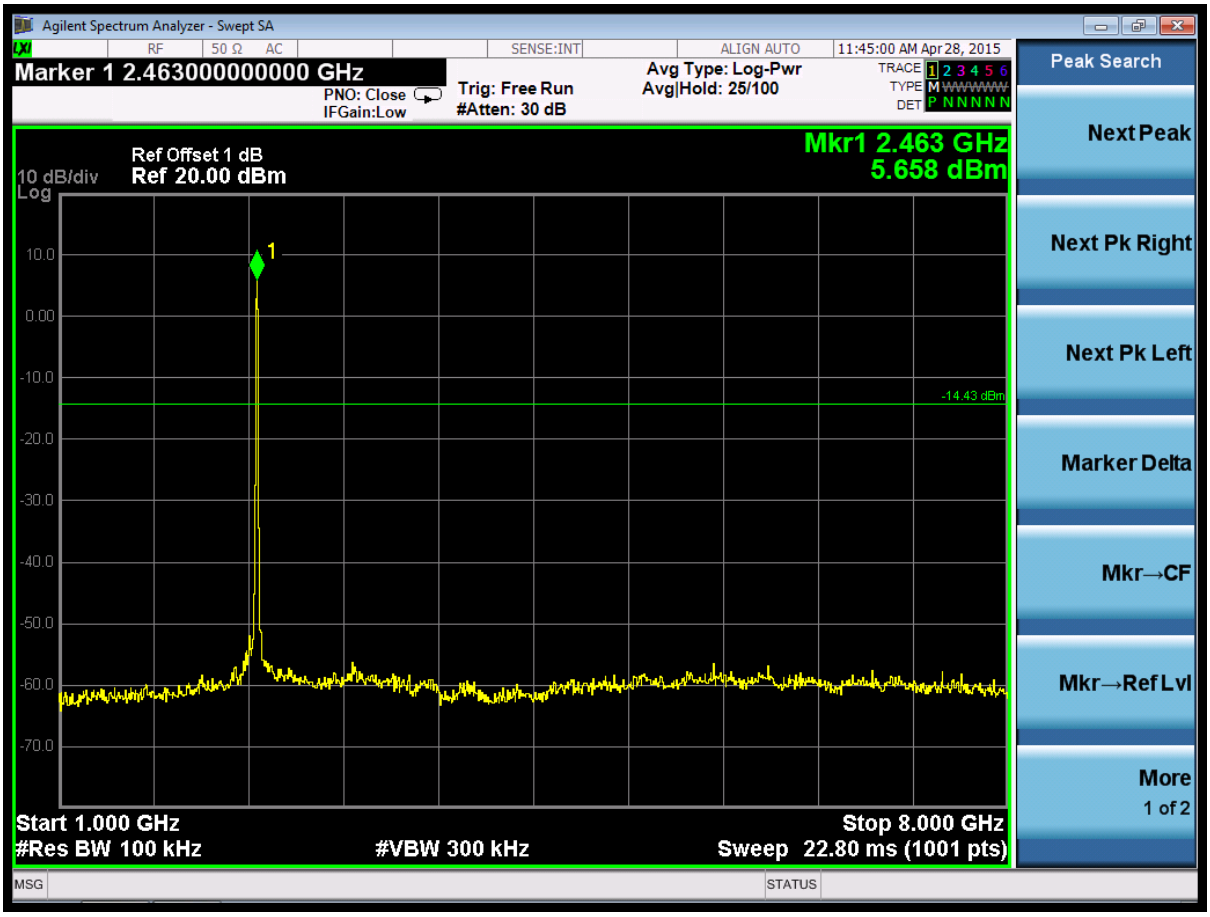
(Plot 4.7.1 C1: Channel 11: 2462MHz @ 802.11b)



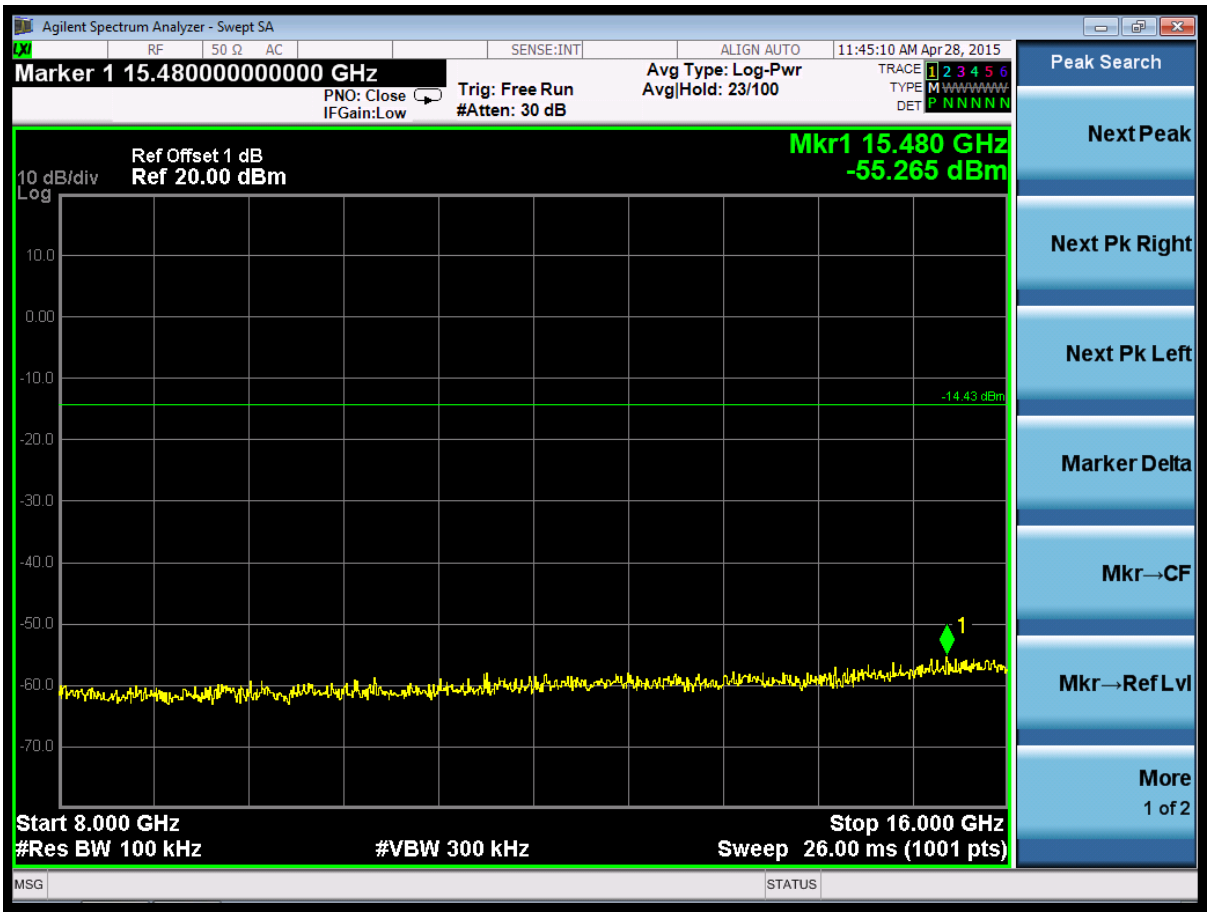
(Plot 4.7.1 C2: Channel 11: 2462MHz @ 802.11b)



(Plot 4.7.1 C3: Channel 11: 2462MHz @ 802.11b)

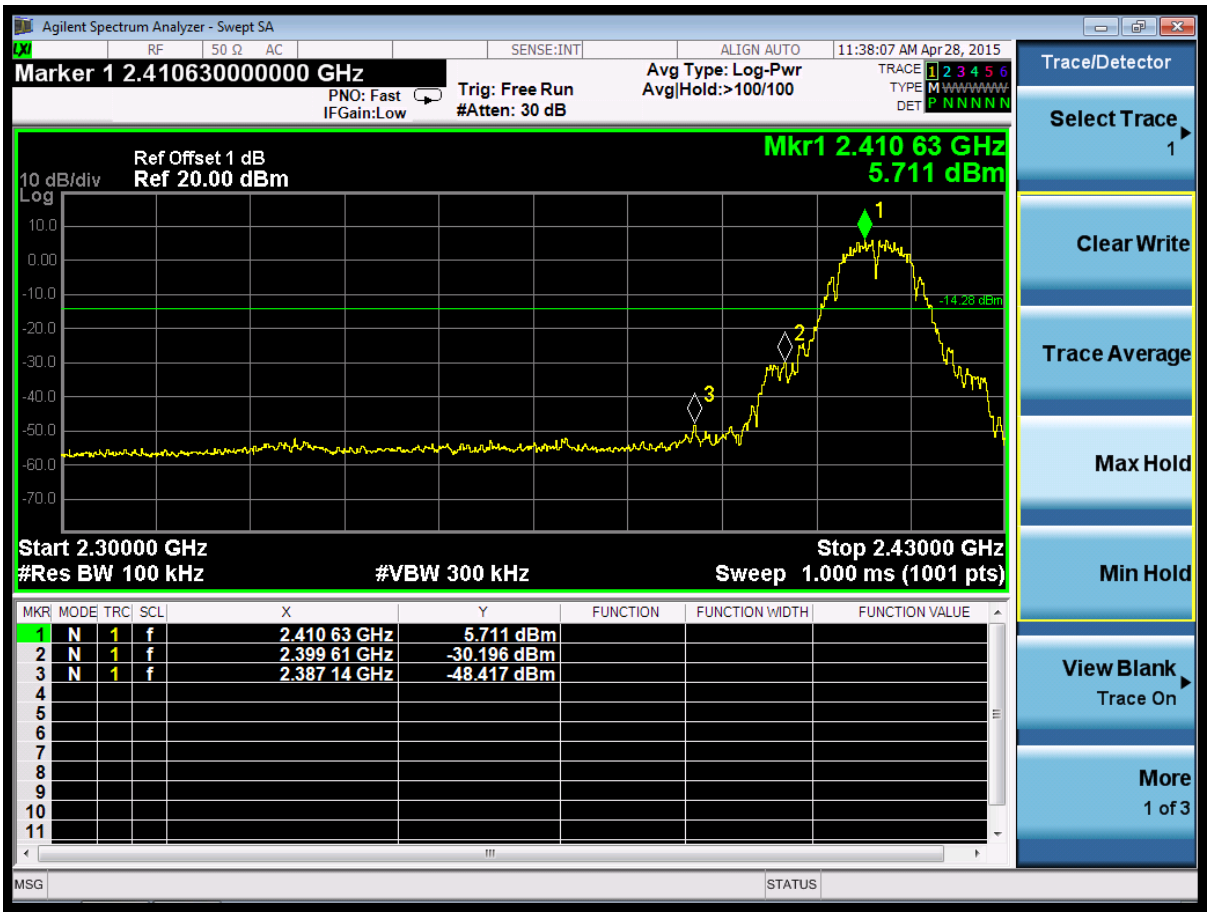


(Plot 4.7.1 C4: Channel 11: 2462MHz @ 802.11b)

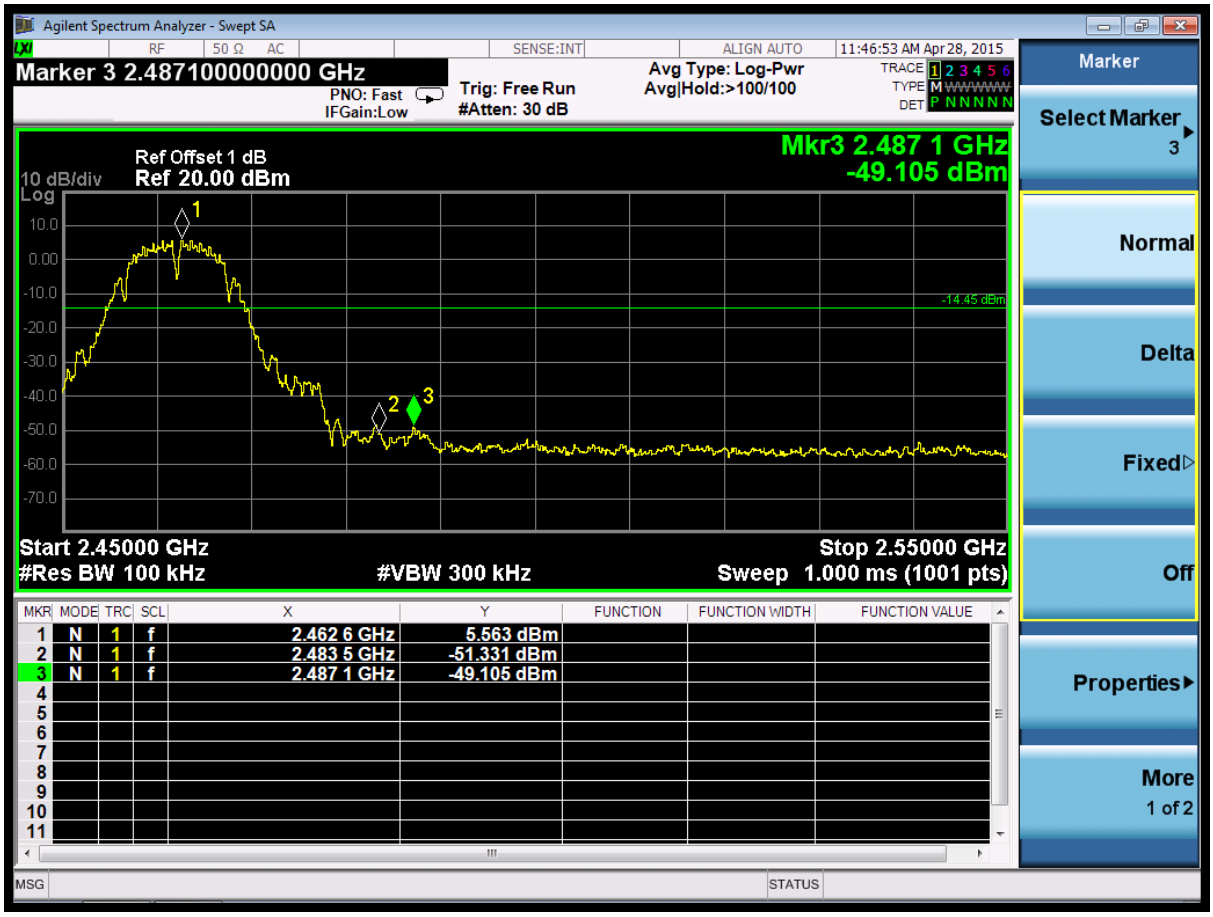


(Plot 4.7.1 C5: Channel 11: 2462MHz @ 802.11b)

(Plot 4.7.1 C6: Channel 11: 2462MHz @ 802.11b)



(Plot 4.7.1 D: Channel 1: 2412MHz @ 802.11b)



(Plot 4.7.1 E: Channel 11: 2462MHz @ 802.11b)

4.7.2 802.11g Test Mode

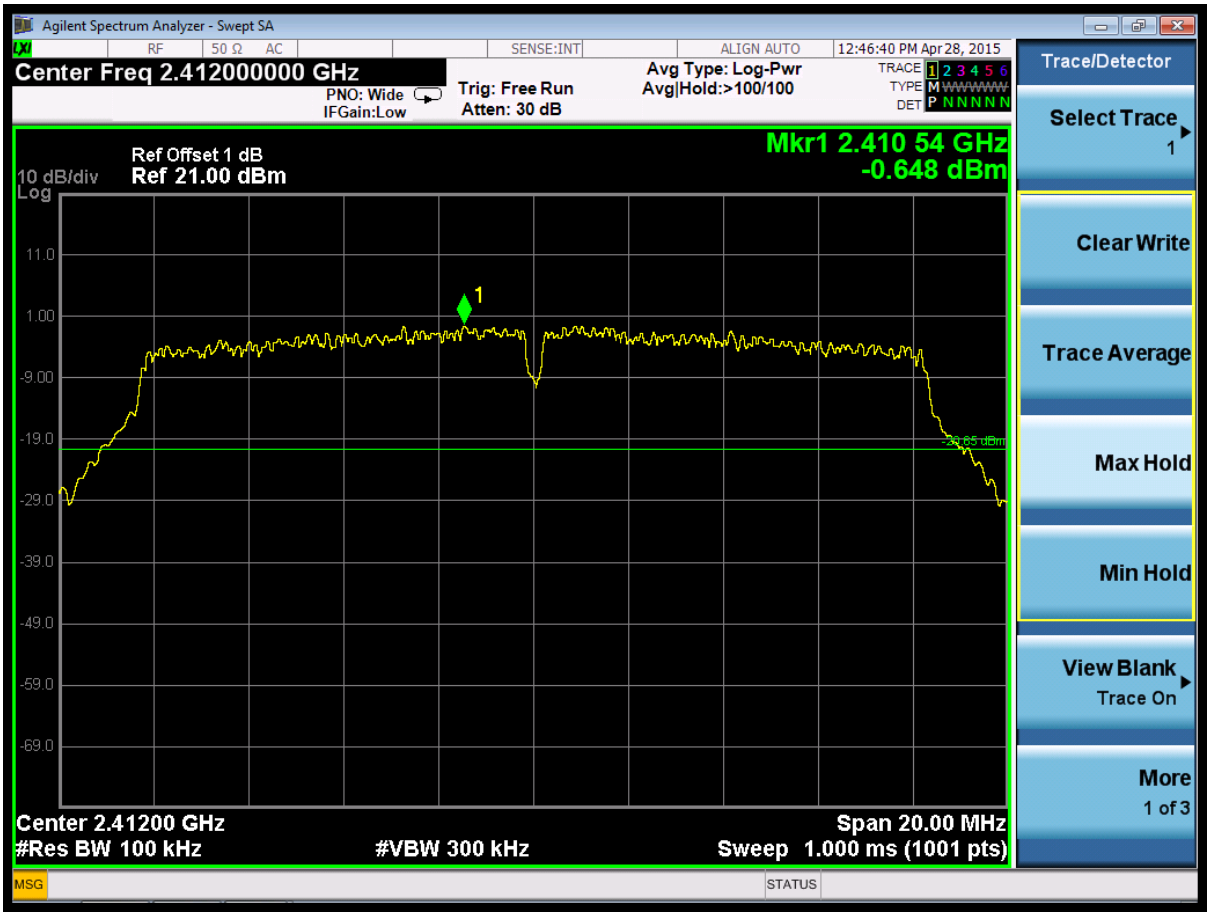
A. Test Verdict

Channel	Frequency (MHz)	Frequency Range	Refer to Plot	Limit (dBc)	Verdict
1	2412	2412MHz	Plot 4.7.2 A1	N/A	PASS
		9KHz-30MHz	Plot 4.7.2 A2	-20	PASS
		30MHz-1GHz	Plot 4.7.2 A3	-20	PASS
		1GHz-8GHz	Plot 4.7.2 A4	-20	PASS
		8GHz-16GHz	Plot 4.7.2 A5	-20	PASS
		16GHz-25GHz	Plot 4.7.2 A6	-20	PASS
6	2437	2437MHz	Plot 4.7.2 B1	N/A	PASS
		9KHz-30MHz	Plot 4.7.2 B2	-20	PASS
		30MHz-1GHz	Plot 4.7.2 B3	-20	PASS
		1GHz-8GHz	Plot 4.7.2 B4	-20	PASS
		8GHz-16GHz	Plot 4.7.2 B5	-20	PASS
		16GHz-25GHz	Plot 4.7.2 B6	-20	PASS
11	2462	2462MHz	Plot 4.7.2 C1	N/A	PASS
		9KHz-30MHz	Plot 4.7.2 C2	-20	PASS
		30MHz-1GHz	Plot 4.7.2 C3	-20	PASS
		1GHz-8GHz	Plot 4.7.2 C4	-20	PASS
		8GHz-16GHz	Plot 4.7.2 C5	-20	PASS
		16GHz-25GHz	Plot 4.7.2 C6	-20	PASS

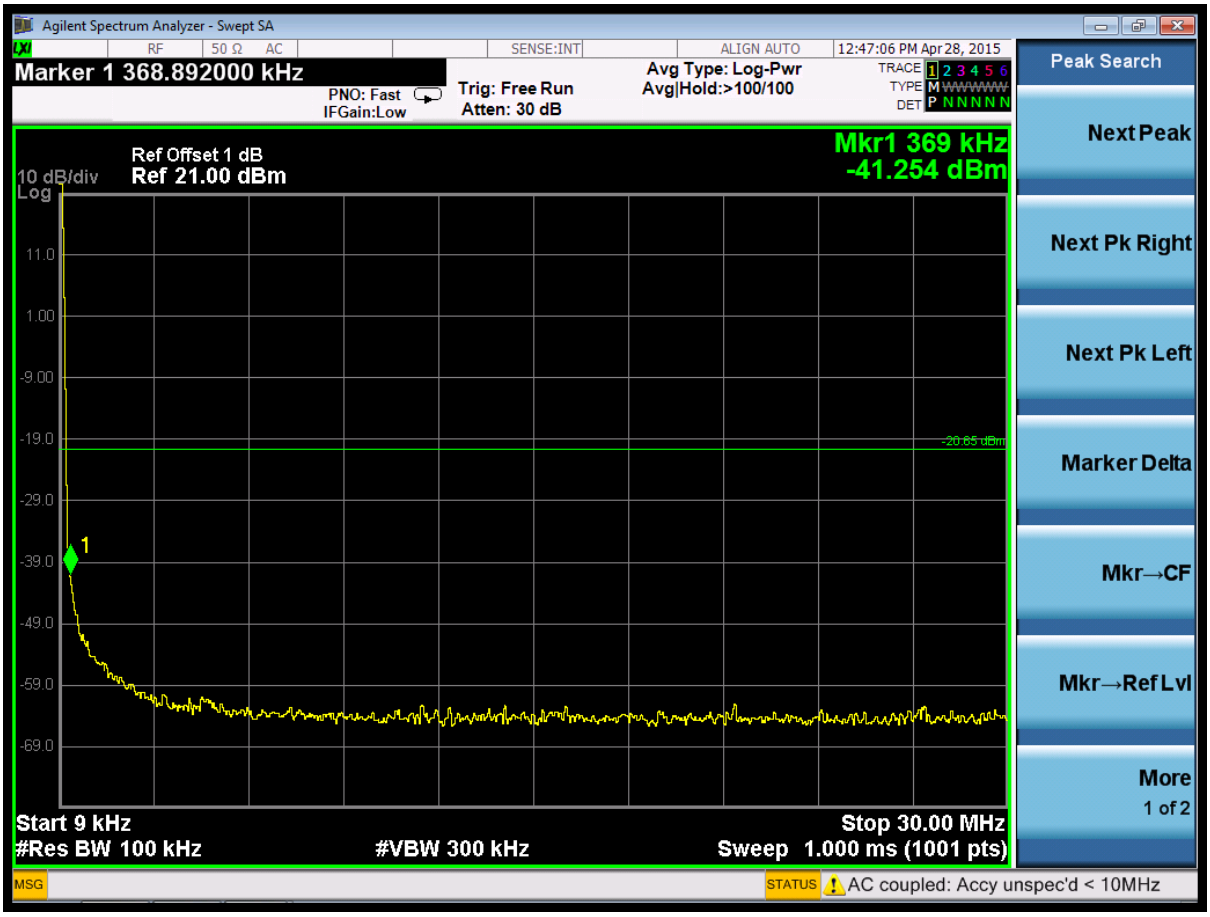
Frequency (MHz)	Delta Peak to Band emission (dBc)	Detector	Limit (dBc)	Refer to Plot	Verdict
2400.00	-29.251	Peak	-20	Plot 4.7.2 D	PASS
2483.50	-41.093	Peak	-20	Plot 4.7.2 E	PASS

Note:
1. For 802.11g mode at finial test to get the worst-case emission at 6Mbps.
2. The test results including the cable lose.

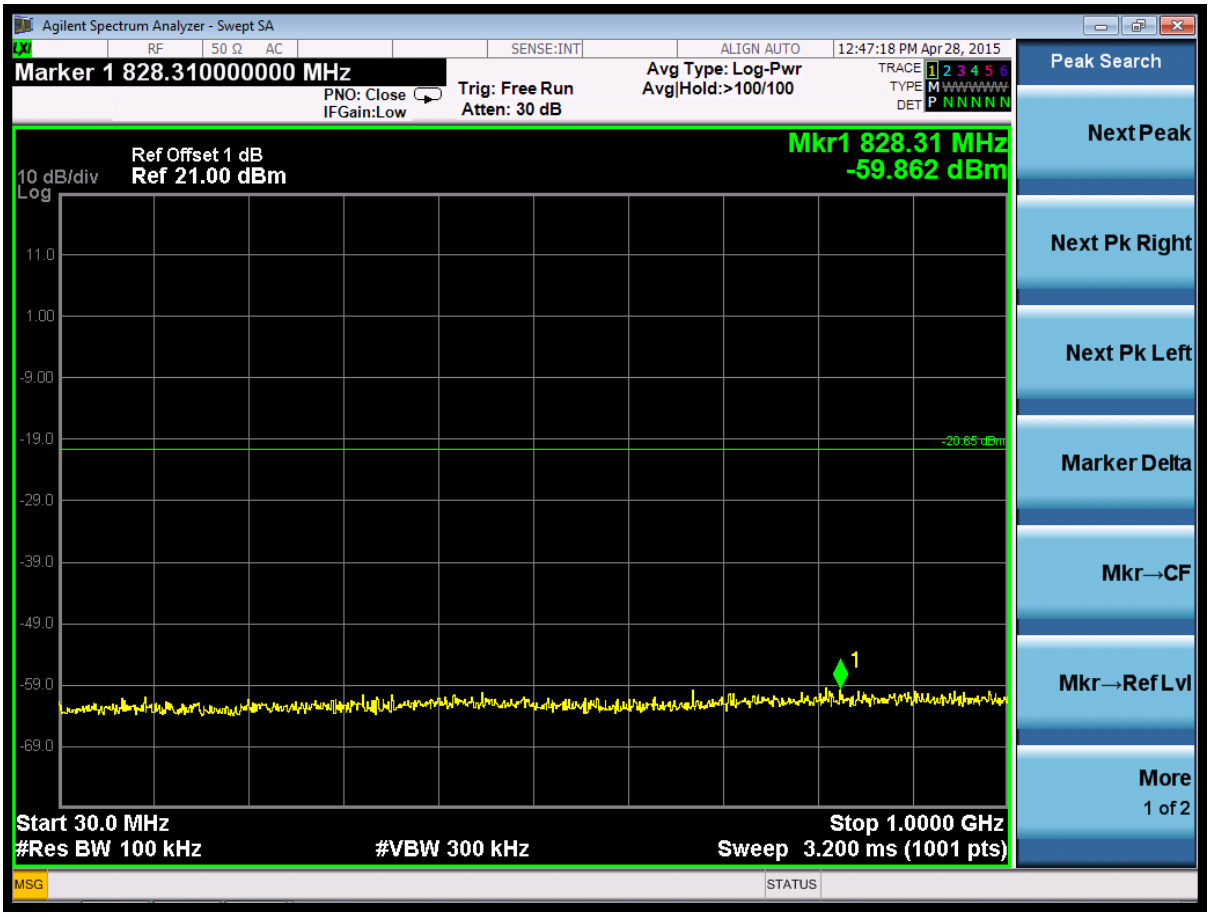
B. Test Plots



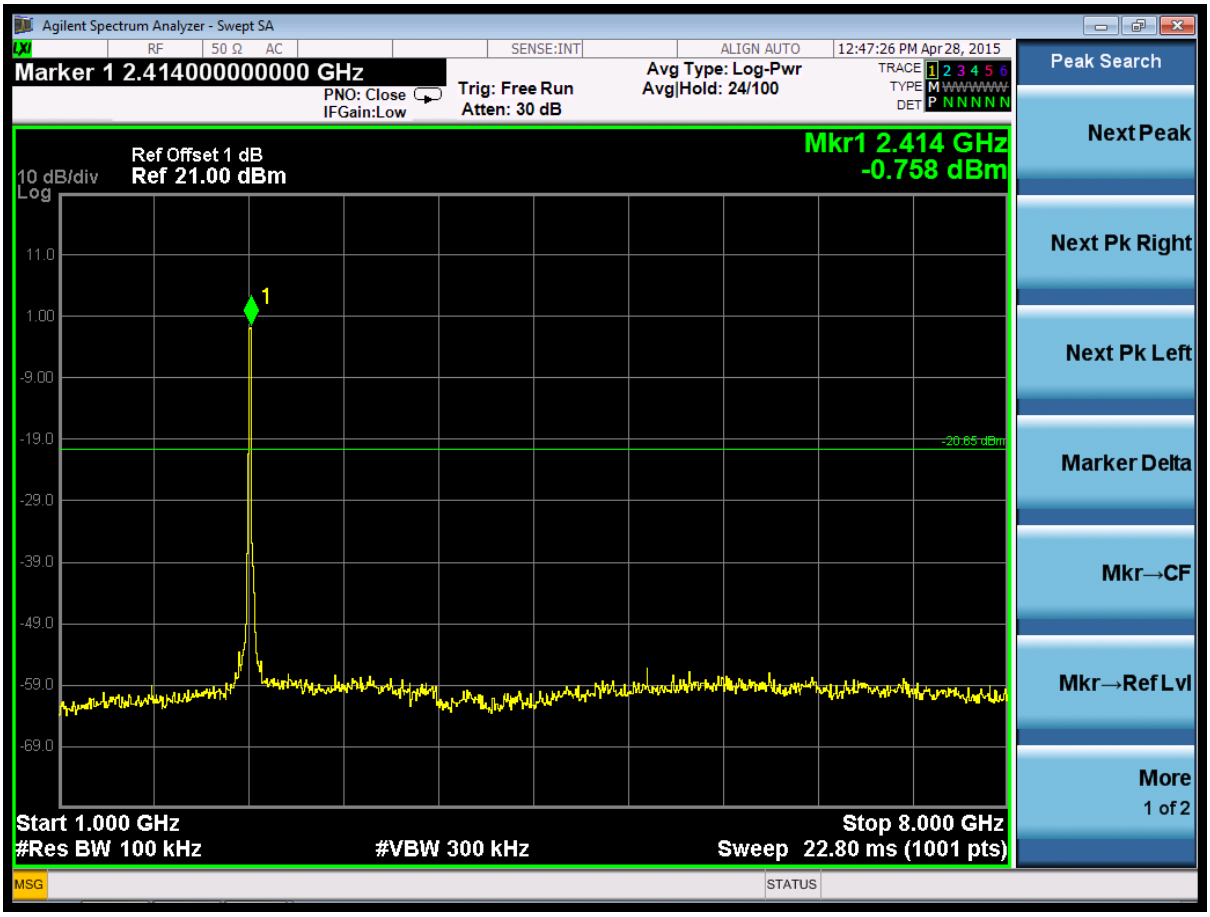
(Plot 4.7.2 A1: Channel 1: 2412MHz @ 802.11g)



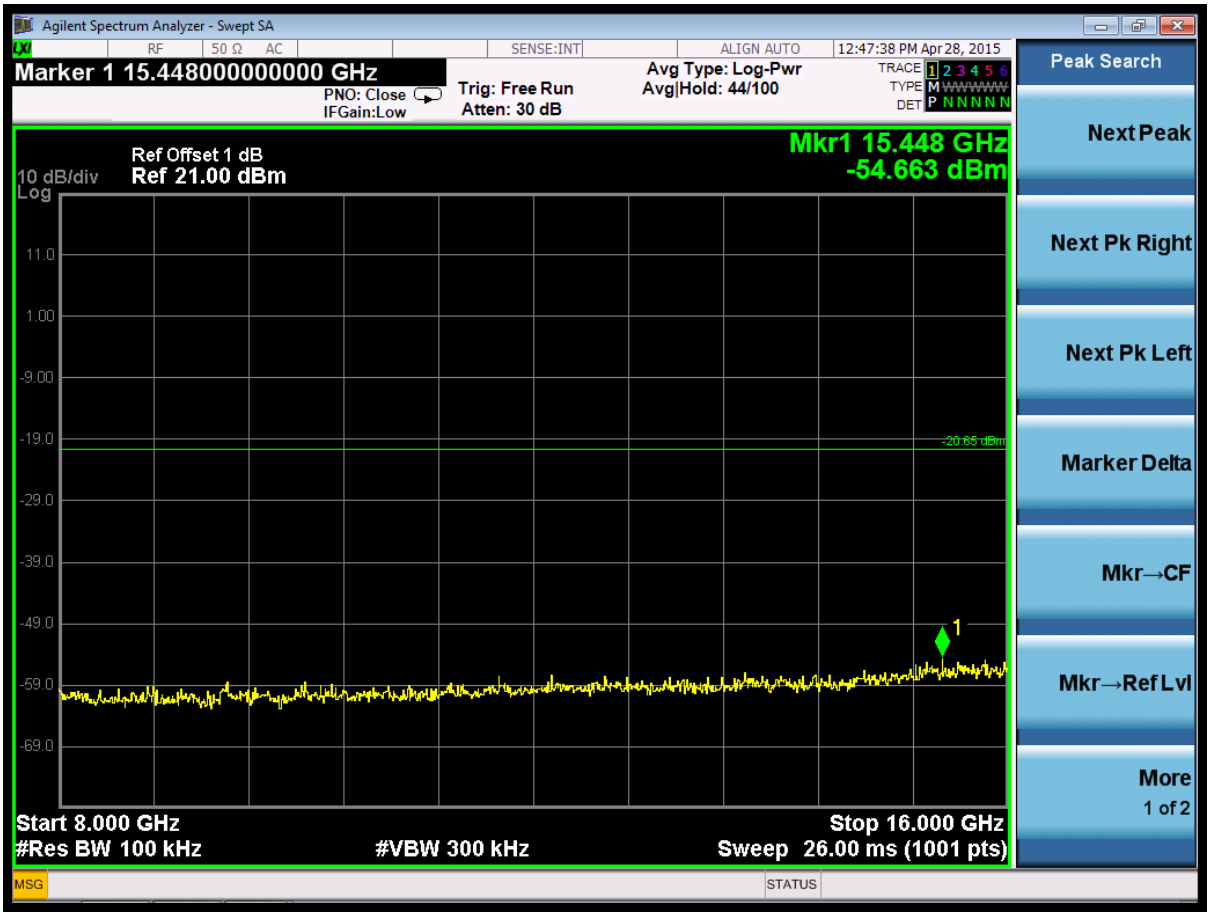
(Plot 4.7.2 A2: Channel 1: 2412MHz @ 802.11g)



(Plot 4.7.2 A3: Channel 1: 2412MHz @ 802.11g)

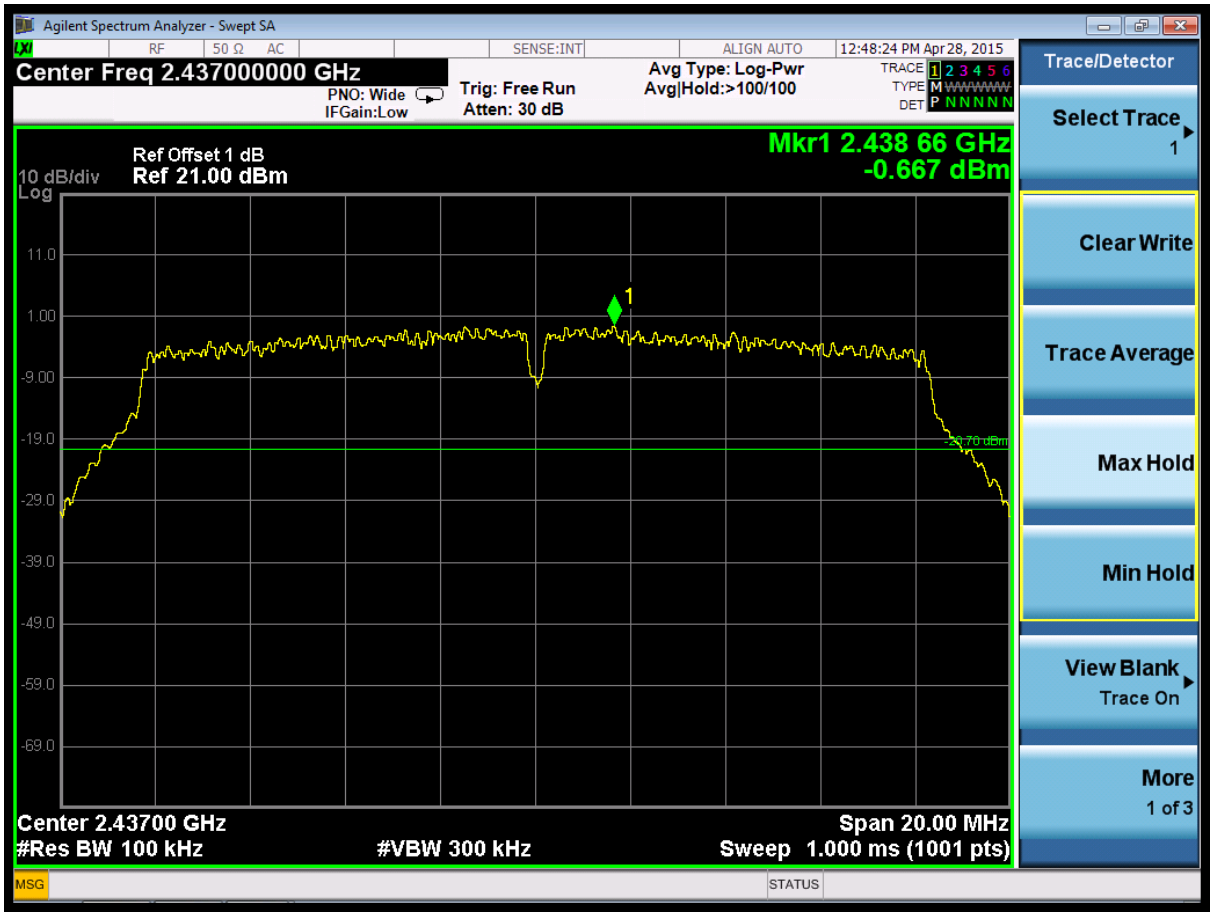


(Plot 4.7.2 A4: Channel 1: 2412MHz @ 802.11g)

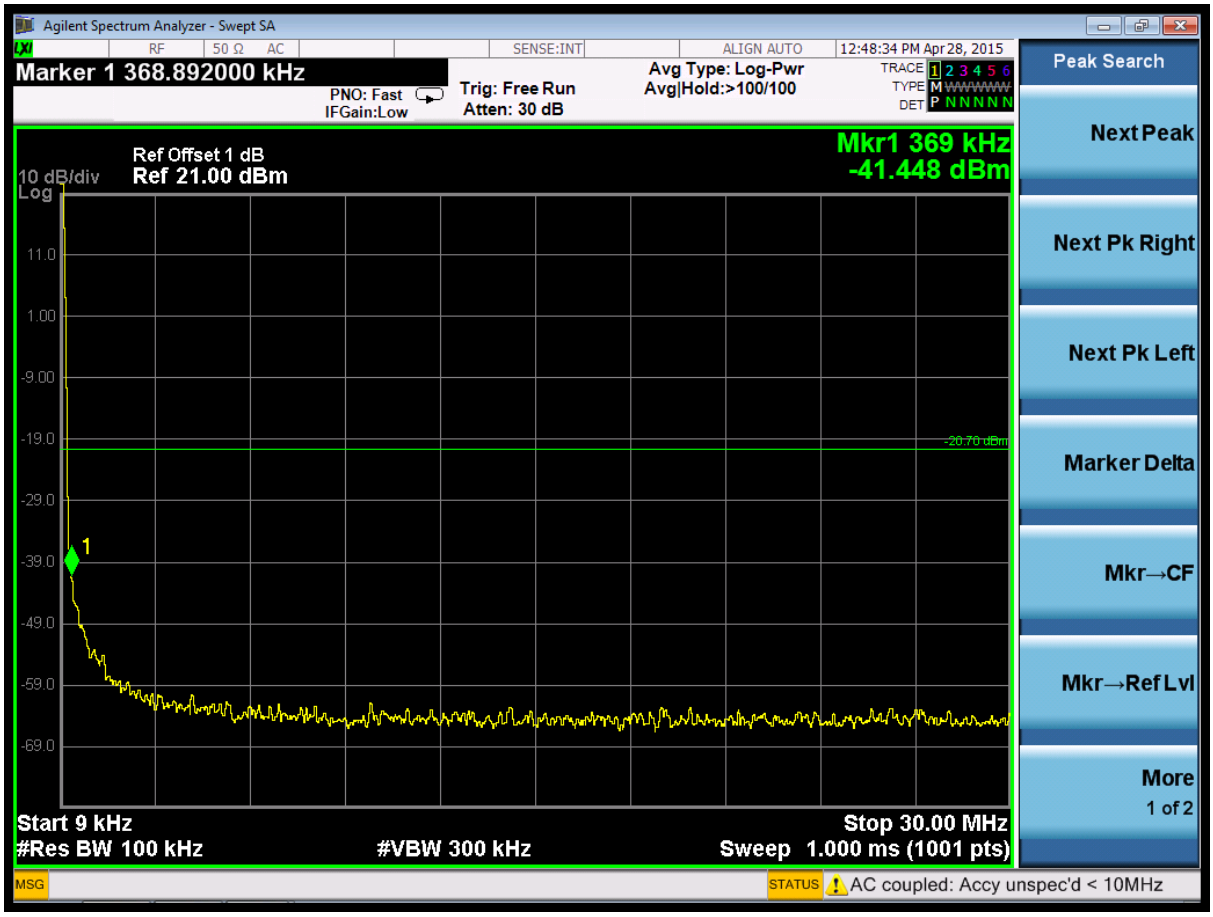


(Plot 4.7.2 A5: Channel 1: 2412MHz @ 802.11g)

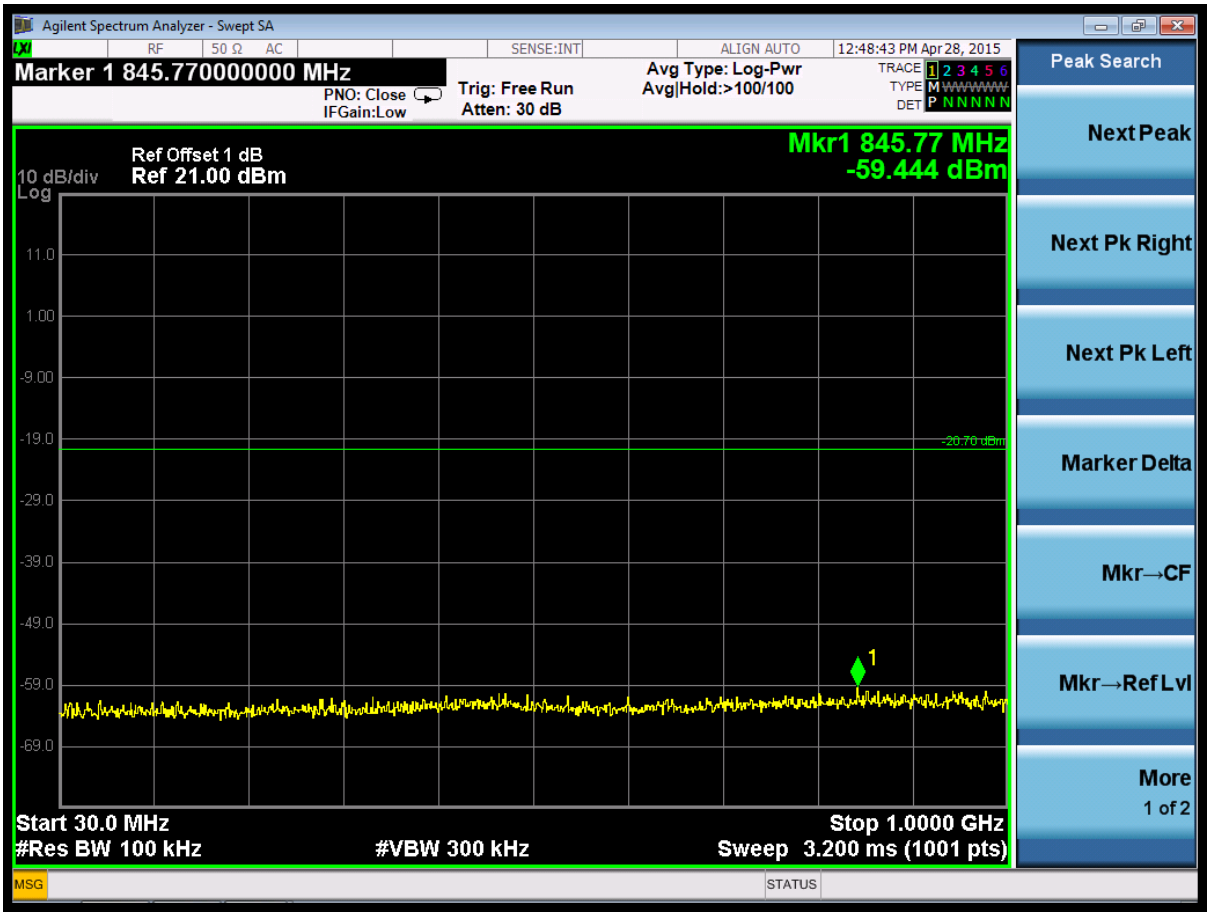
(Plot 4.7.2 A6: Channel 1: 2412MHz @ 802.11g)



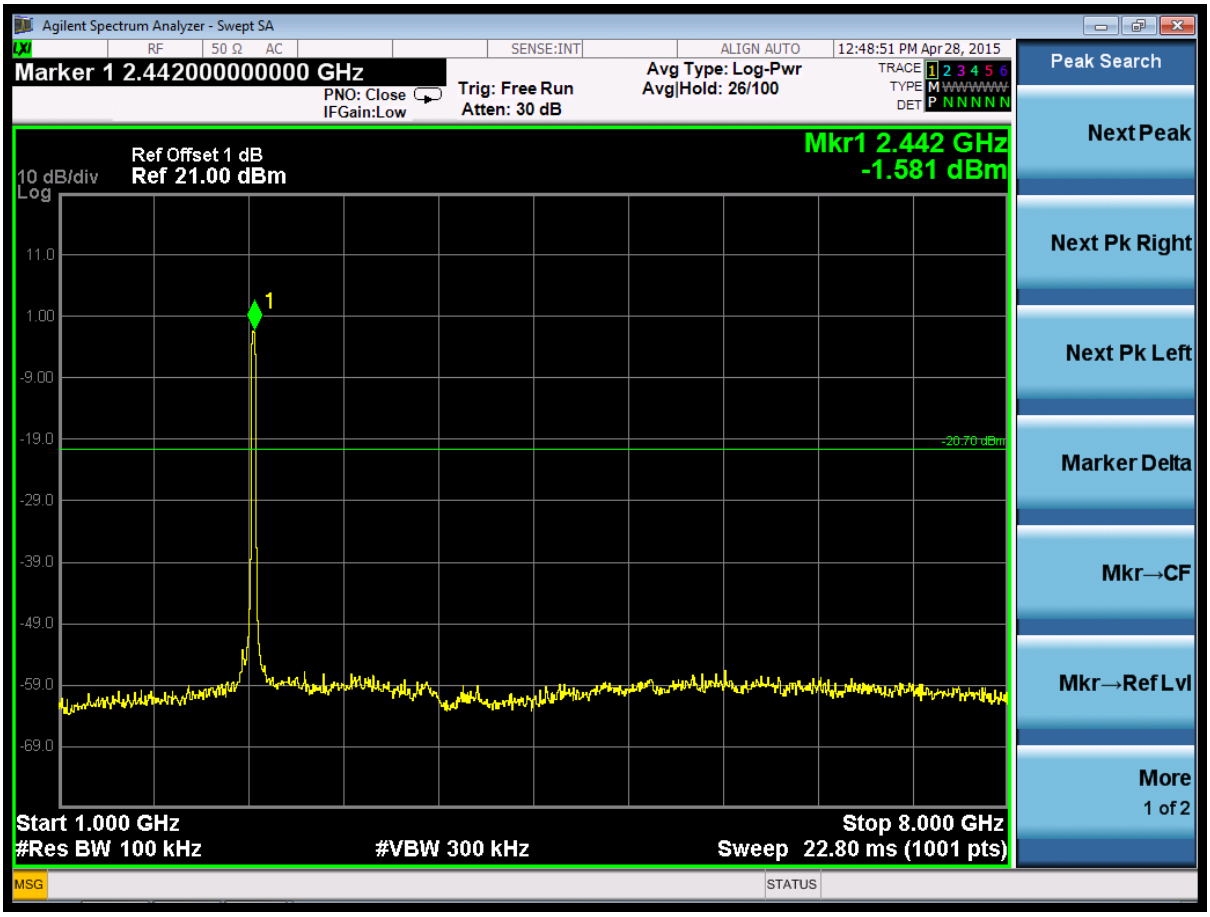
(Plot 4.7.2 B1: Channel 6: 2437MHz @ 802.11g)



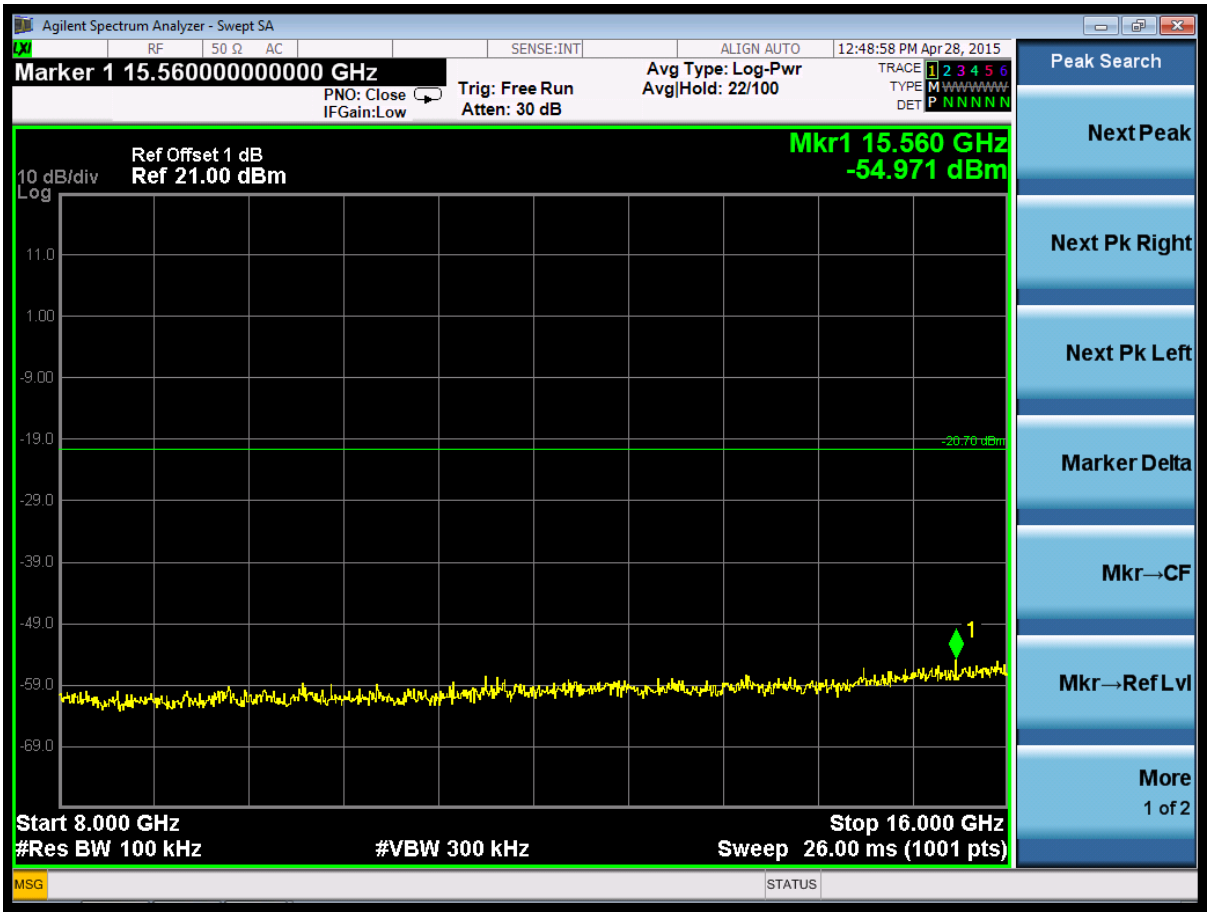
(Plot 4.7.2 B2: Channel 6: 2437MHz @ 802.11g)



(Plot 4.7.2 B3: Channel 6: 2437MHz @ 802.11g)

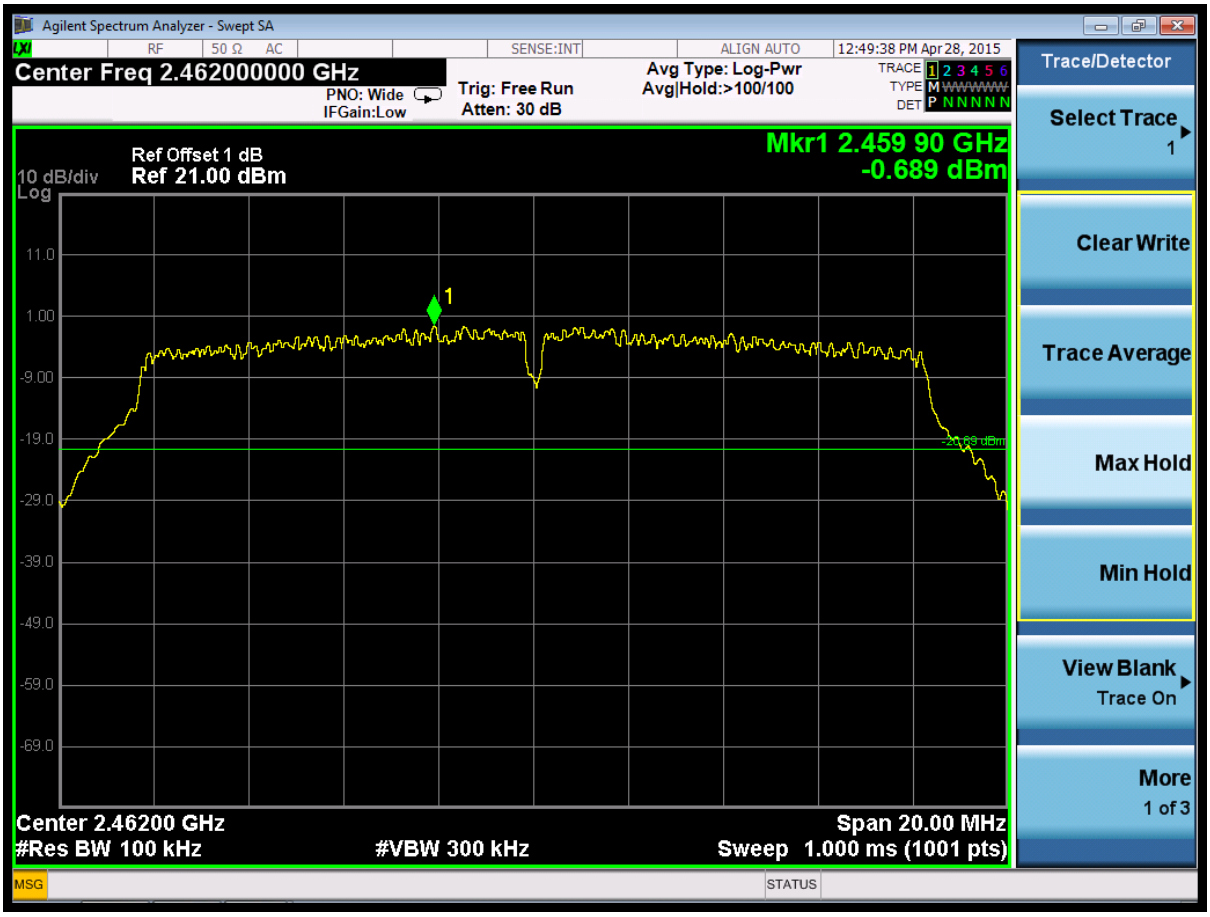


(Plot 4.7.2 B4: Channel 6: 2437MHz @ 802.11g)

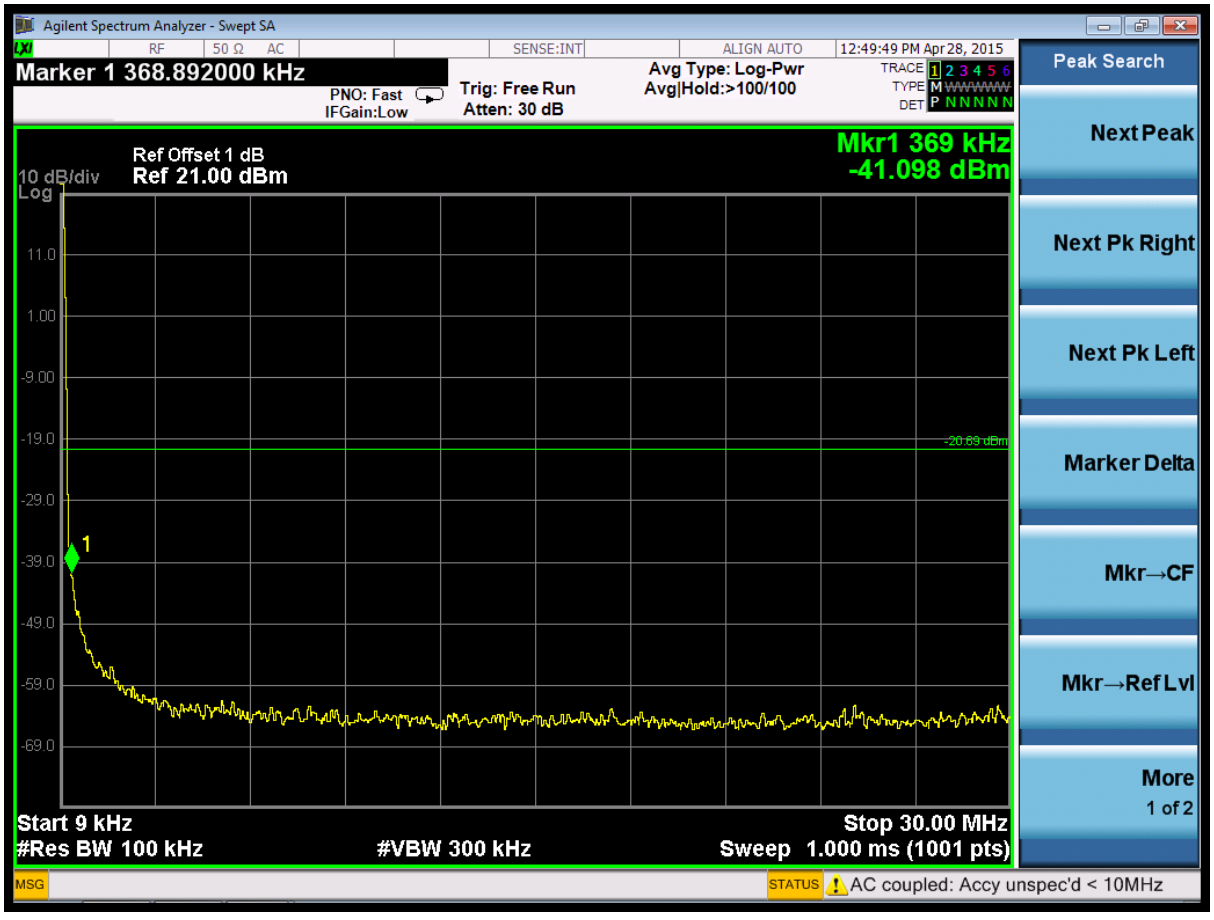


(Plot 4.7.2 B5: Channel 6: 2437MHz @ 802.11g)

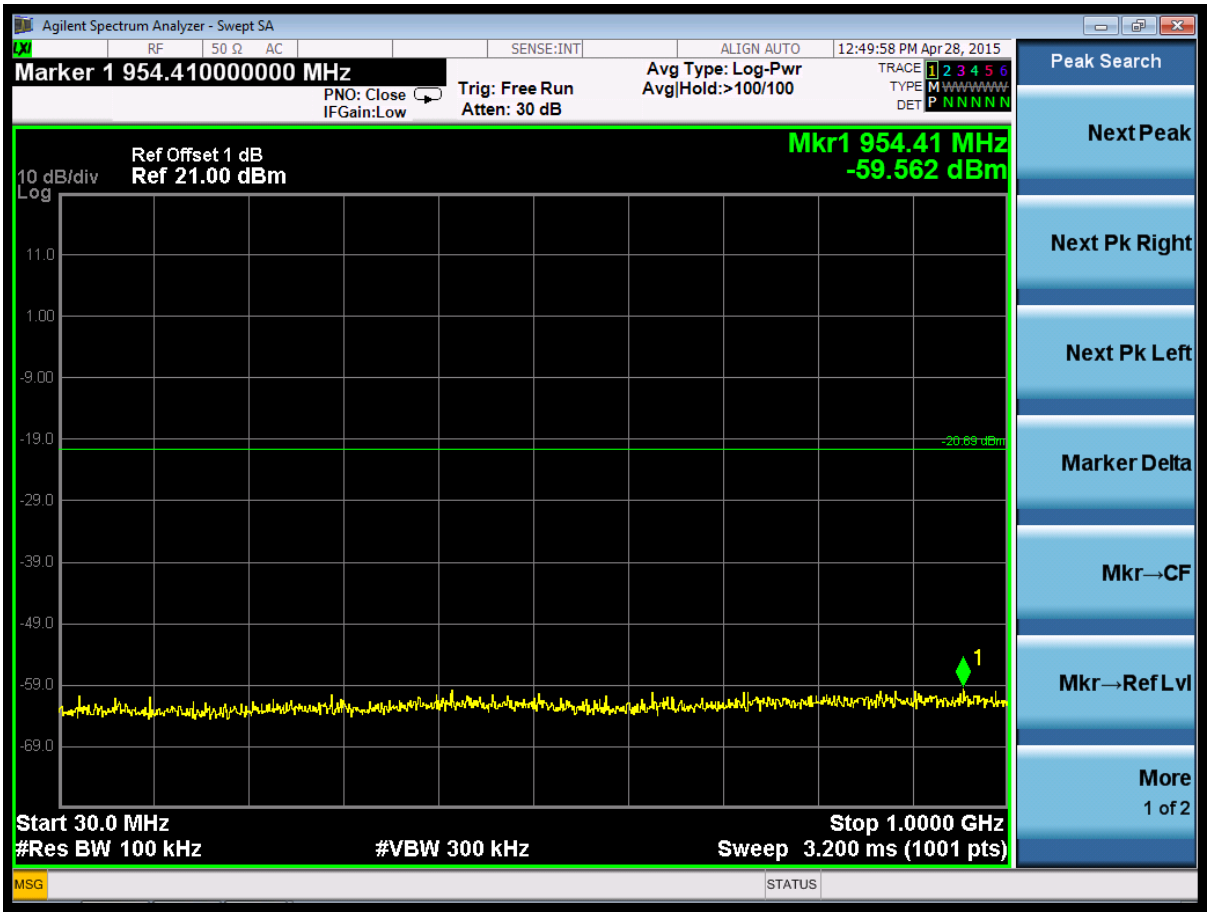
(Plot 4.7.2 B6: Channel 6: 2437MHz @ 802.11g)



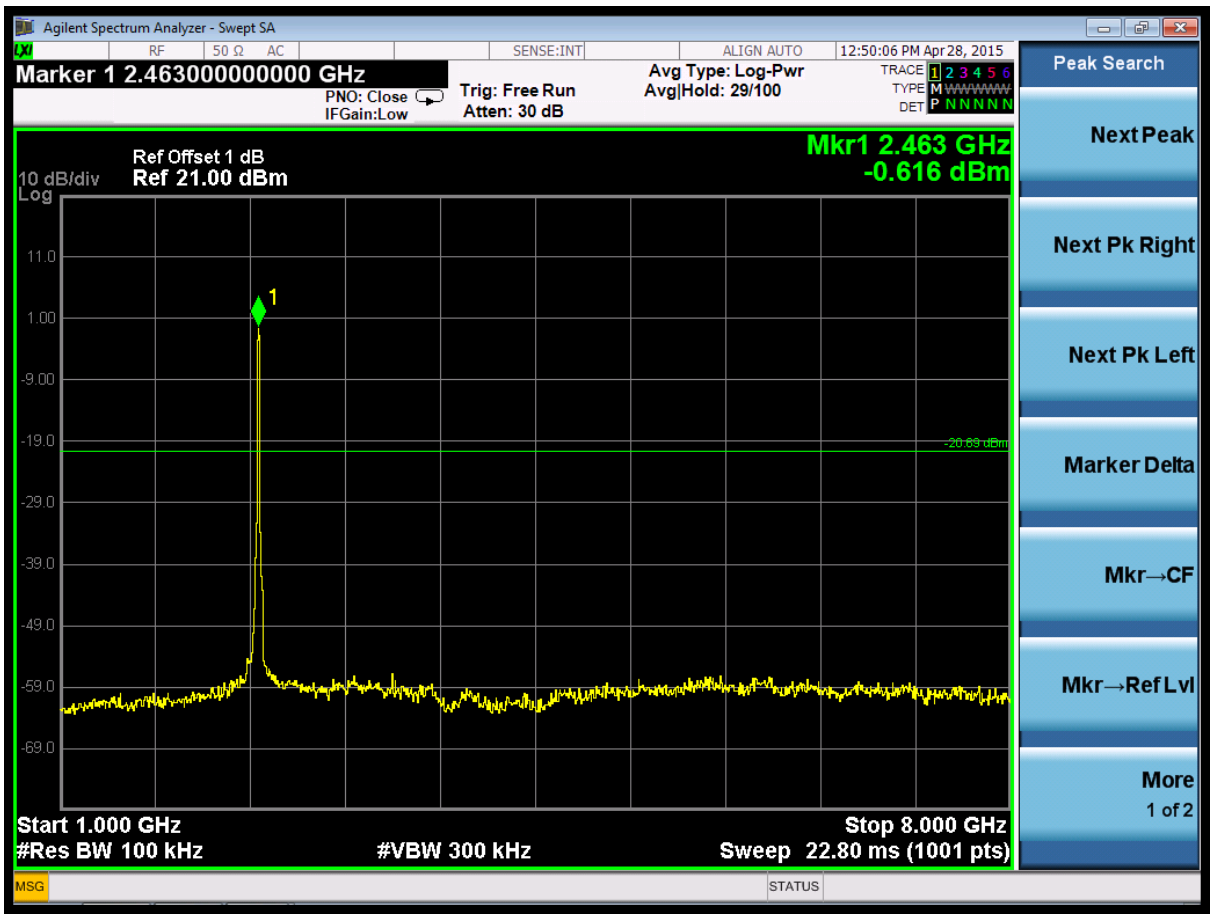
(Plot 4.7.2 C1: Channel 11: 2462MHz @ 802.11g)



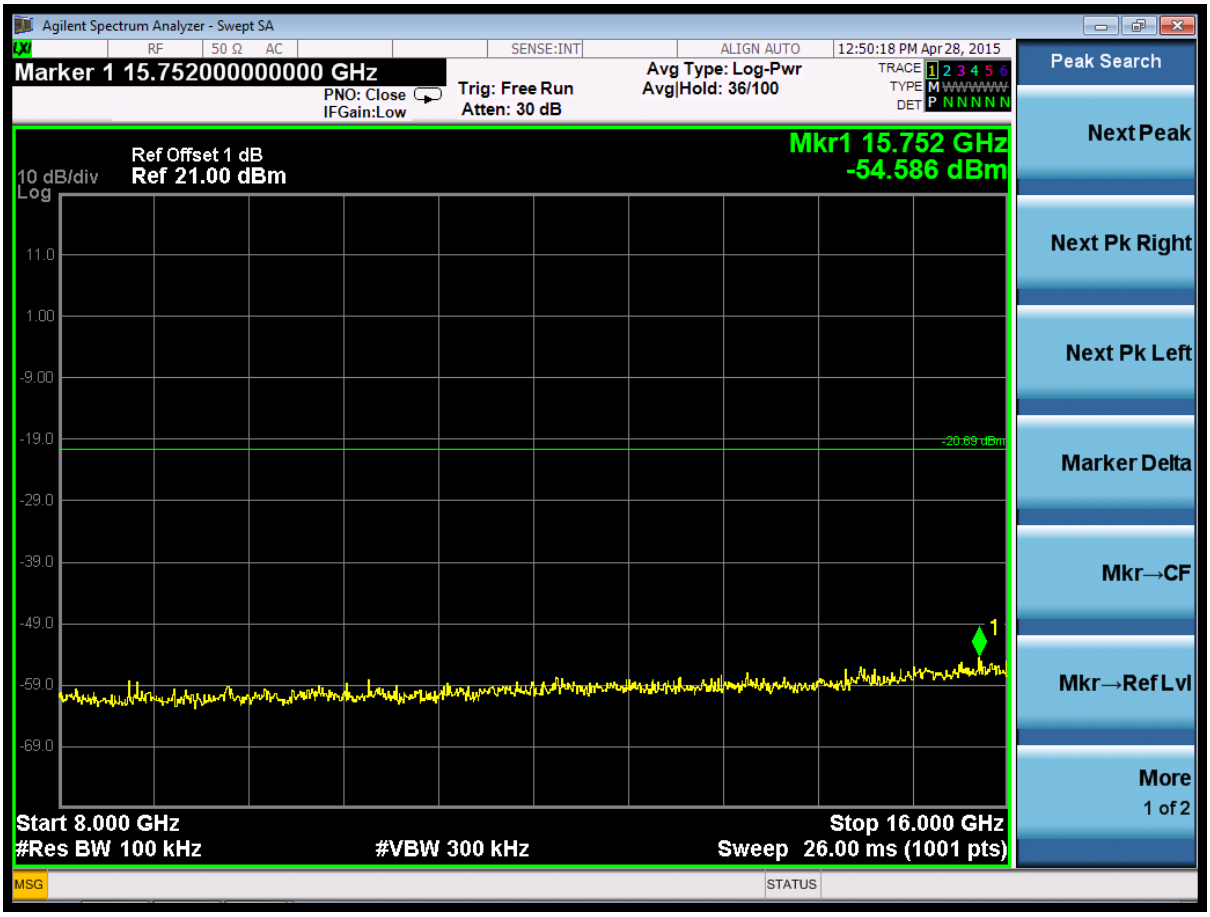
(Plot 4.7.2 C2: Channel 11: 2462MHz @ 802.11g)



(Plot 4.7.2 C3: Channel 11: 2462MHz @ 802.11g)



(Plot 4.7.2 C4: Channel 11: 2462MHz @ 802.11g)



(Plot 4.7.2 C5: Channel 11: 2462MHz @ 802.11g)

(Plot 4.7.2 C6: Channel 11: 2462MHz @ 802.11g)

(Plot 4.7.2 D: Channel 1: 2412MHz @ 802.11g)

(Plot 4.7.2 E: Channel 11: 2462MHz @ 802.11g)

4.7.3 802.11n HT20 Test Mode

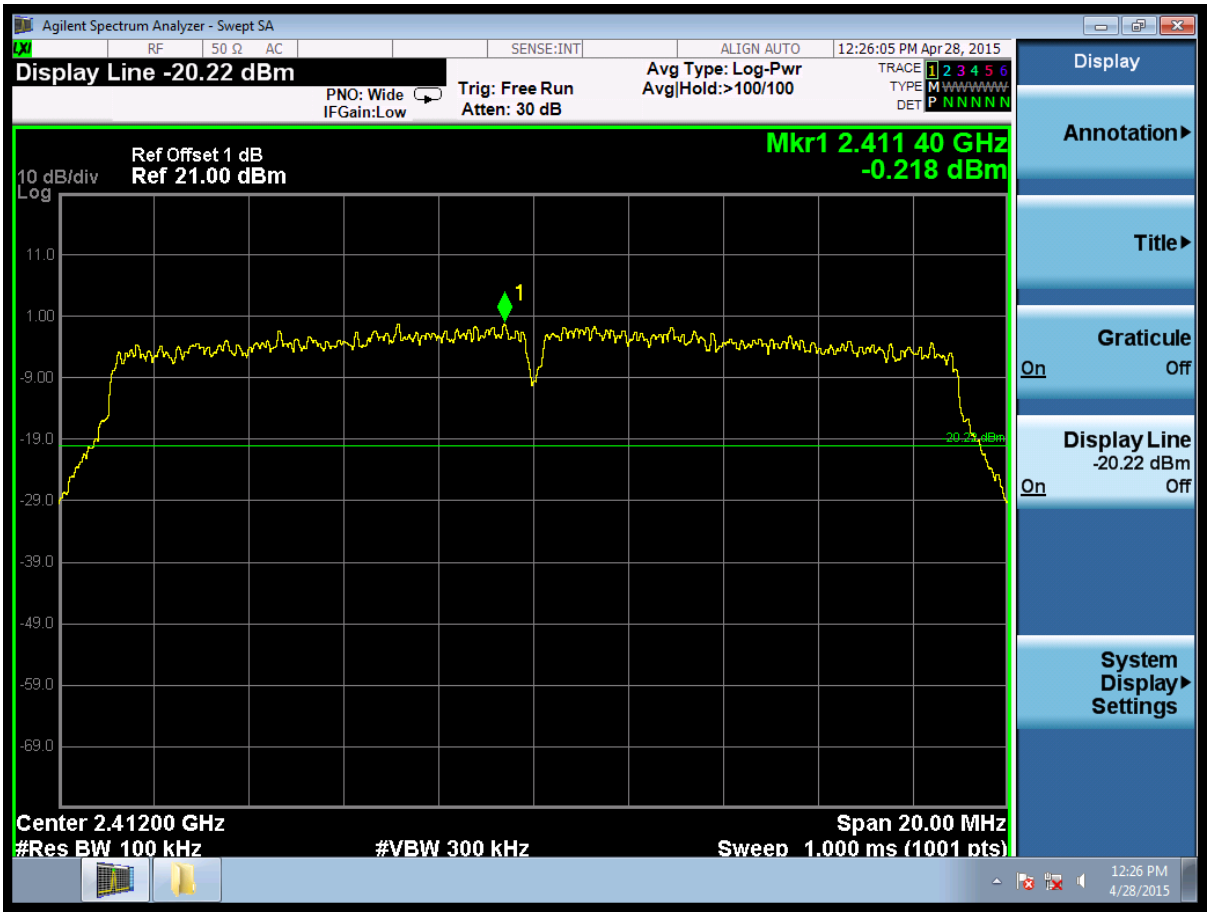
A. Test Verdict

Channel	Frequency (MHz)	Frequency Range	Refer to Plot	Limit (dBc)	Verdict
1	2412	2412MHz	Plot 4.7.3 A1	N/A	PASS
		9KHz-30MHz	Plot 4.7.3 A2	-20	PASS
		30MHz-1GHz	Plot 4.7.3 A3	-20	PASS
		1GHz-8GHz	Plot 4.7.3 A4	-20	PASS
		8GHz-16GHz	Plot 4.7.3 A5	-20	PASS
		16GHz-25GHz	Plot 4.7.3 A6	-20	PASS
6	2437	2437MHz	Plot 4.7.3 B1	N/A	PASS
		9KHz-30MHz	Plot 4.7.3 B2	-20	PASS
		30MHz-1GHz	Plot 4.7.3 B3	-20	PASS
		1GHz-8GHz	Plot 4.7.3 B4	-20	PASS
		8GHz-16GHz	Plot 4.7.3 B5	-20	PASS
		16GHz-25GHz	Plot 4.7.3 B6	-20	PASS
11	2462	2462MHz	Plot 4.7.3 C1	N/A	PASS
		9KHz-30MHz	Plot 4.7.3 C2	-20	PASS
		30MHz-1GHz	Plot 4.7.3 C3	-20	PASS
		1GHz-8GHz	Plot 4.7.3 C4	-20	PASS
		8GHz-16GHz	Plot 4.7.3 C5	-20	PASS
		16GHz-25GHz	Plot 4.7.3 C6	-20	PASS

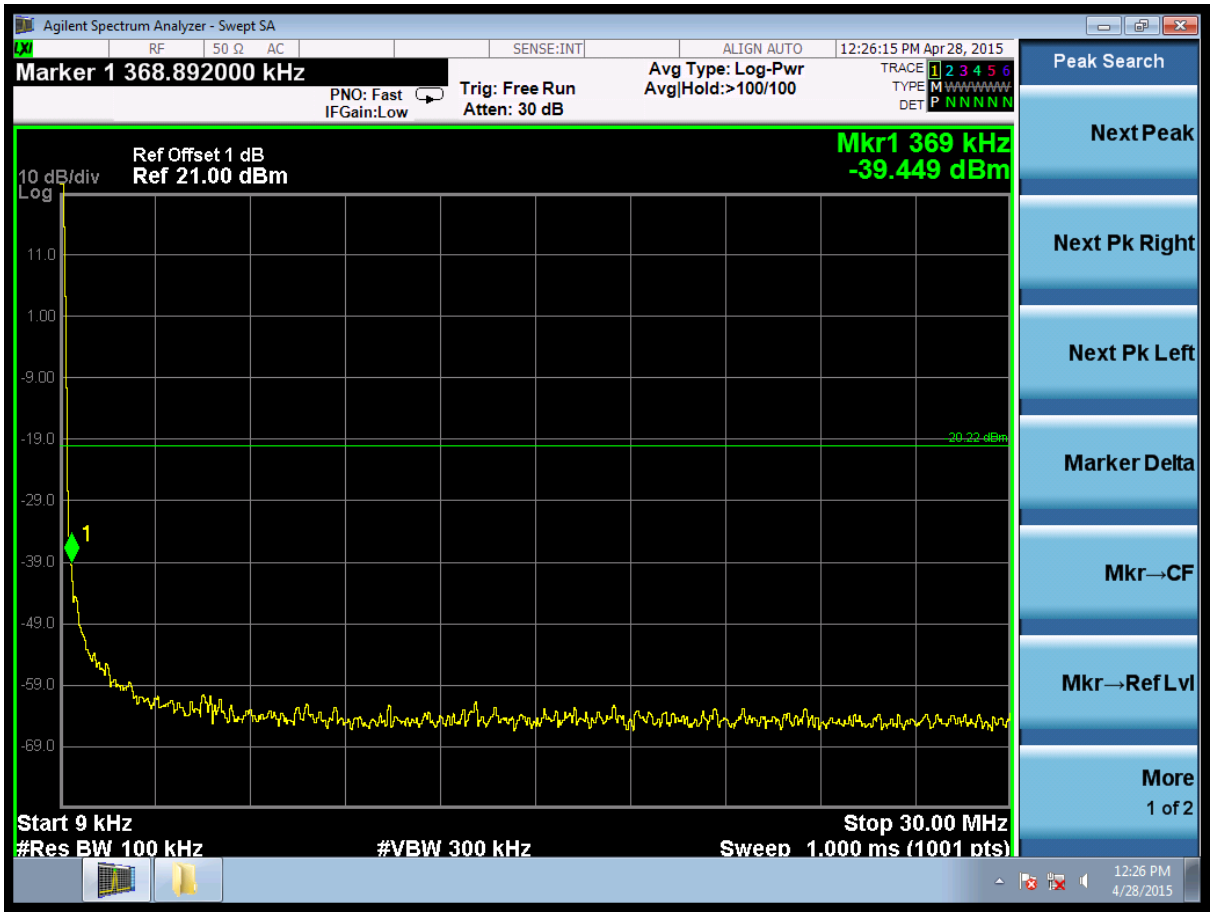
Frequency (MHz)	Delta Peak to Band emission (dBc)	Detector	Limit (dBc)	Refer to Plot	Verdict
2396.50	-31.682	Peak	-20	Plot 4.7.3 D	PASS
2485.70	-39.057	Peak	-20	Plot 4.7.3 E	PASS

Note:
1. For 802.11n HT20 mode at finial test to get the worst-case emission at 6.5Mbps.
2. The test results including the cable lose.

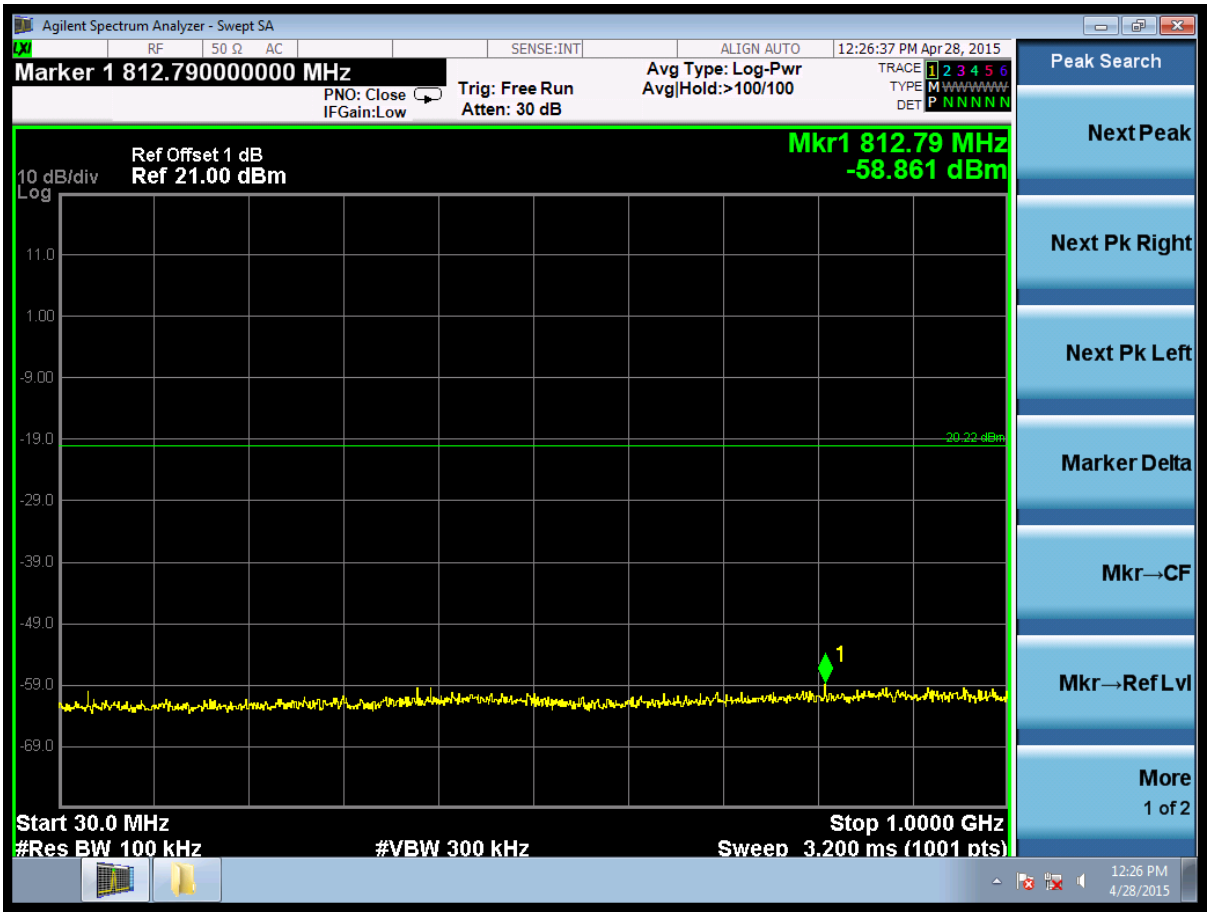
B. Test Plots



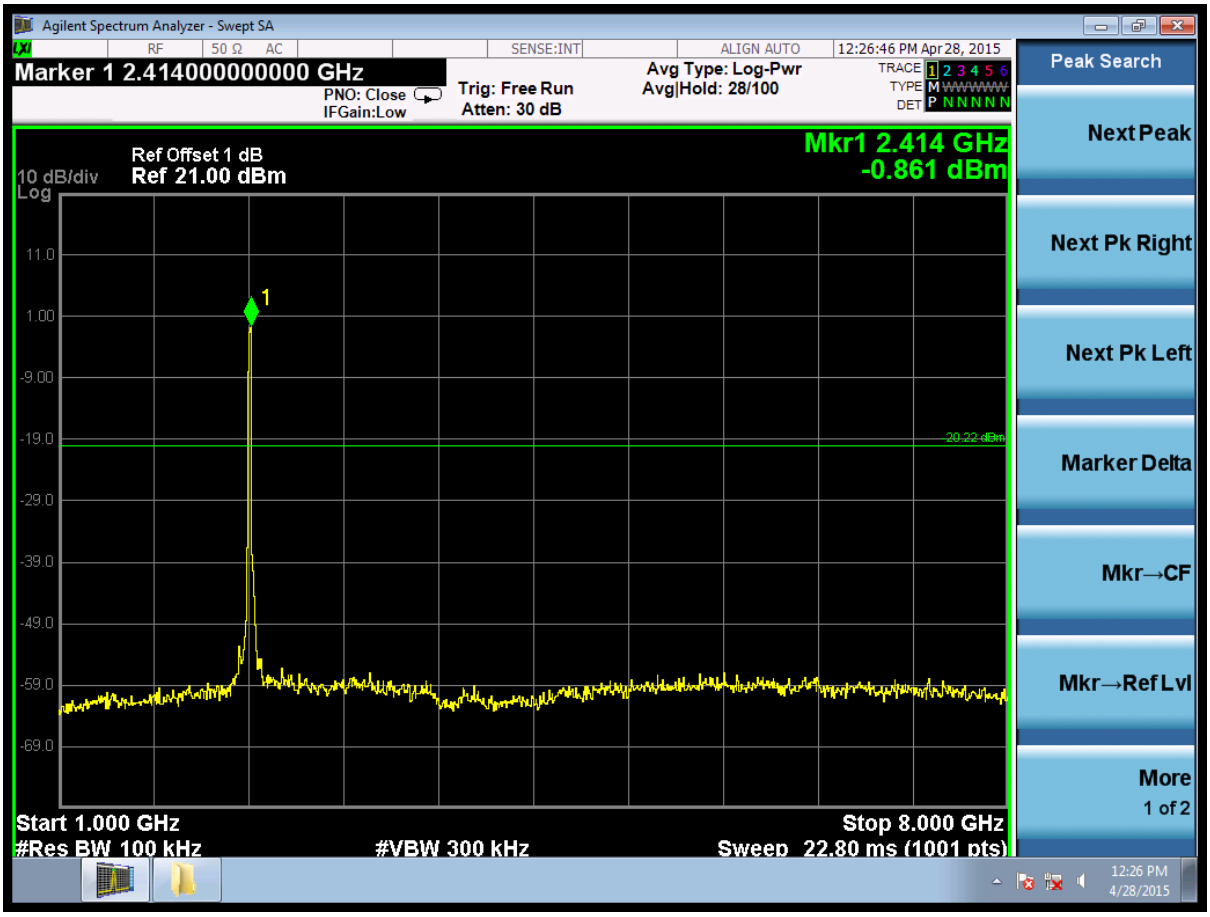
(Plot 4.7.3 A1: Channel 1: 2412MHz @ 802.11n HT20)



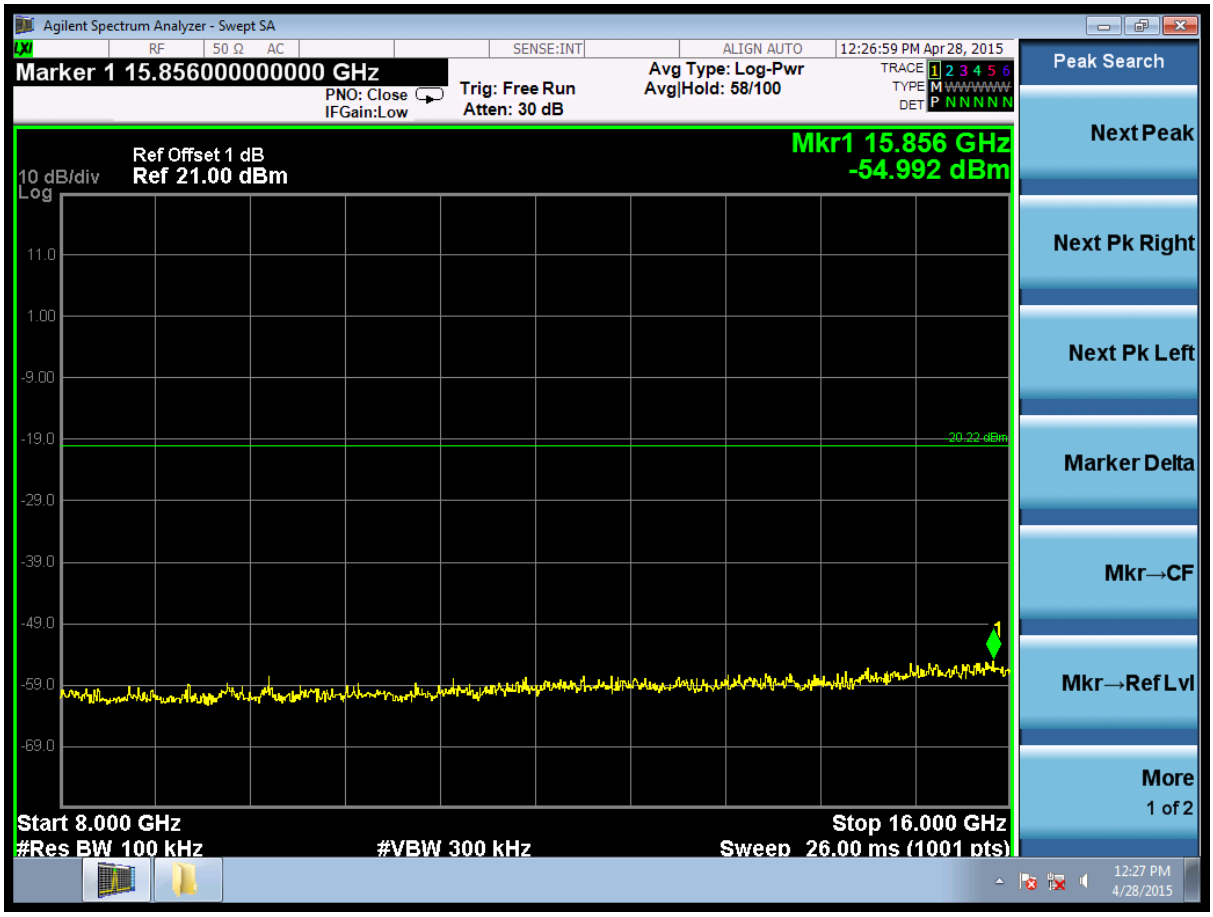
(Plot 4.7.3 A2: Channel 1: 2412MHz @ 802.11n HT20)



(Plot 4.7.3 A3: Channel 1: 2412MHz @ 802.11 n HT20)



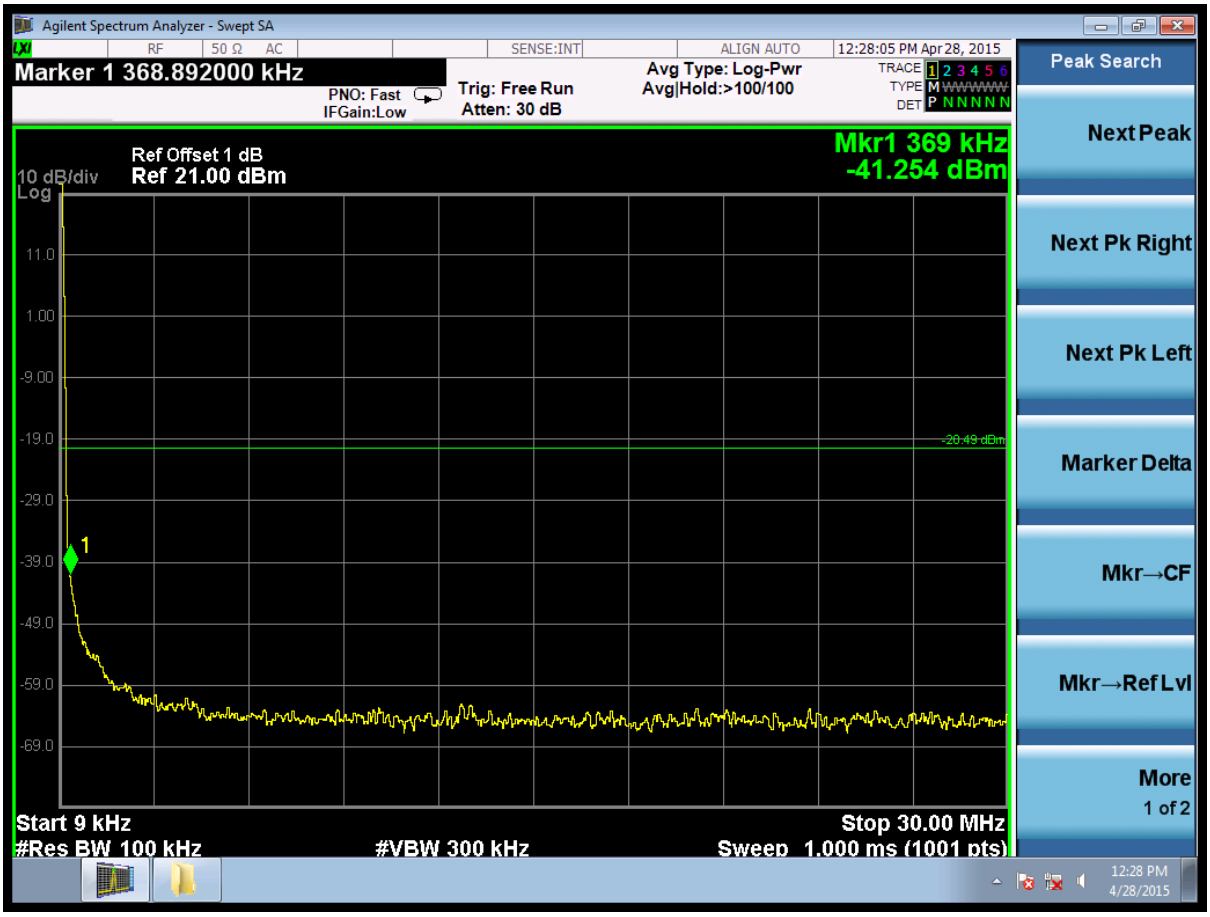
(Plot 4.7.3 A4: Channel 1: 2412MHz @ 802.11n HT20)



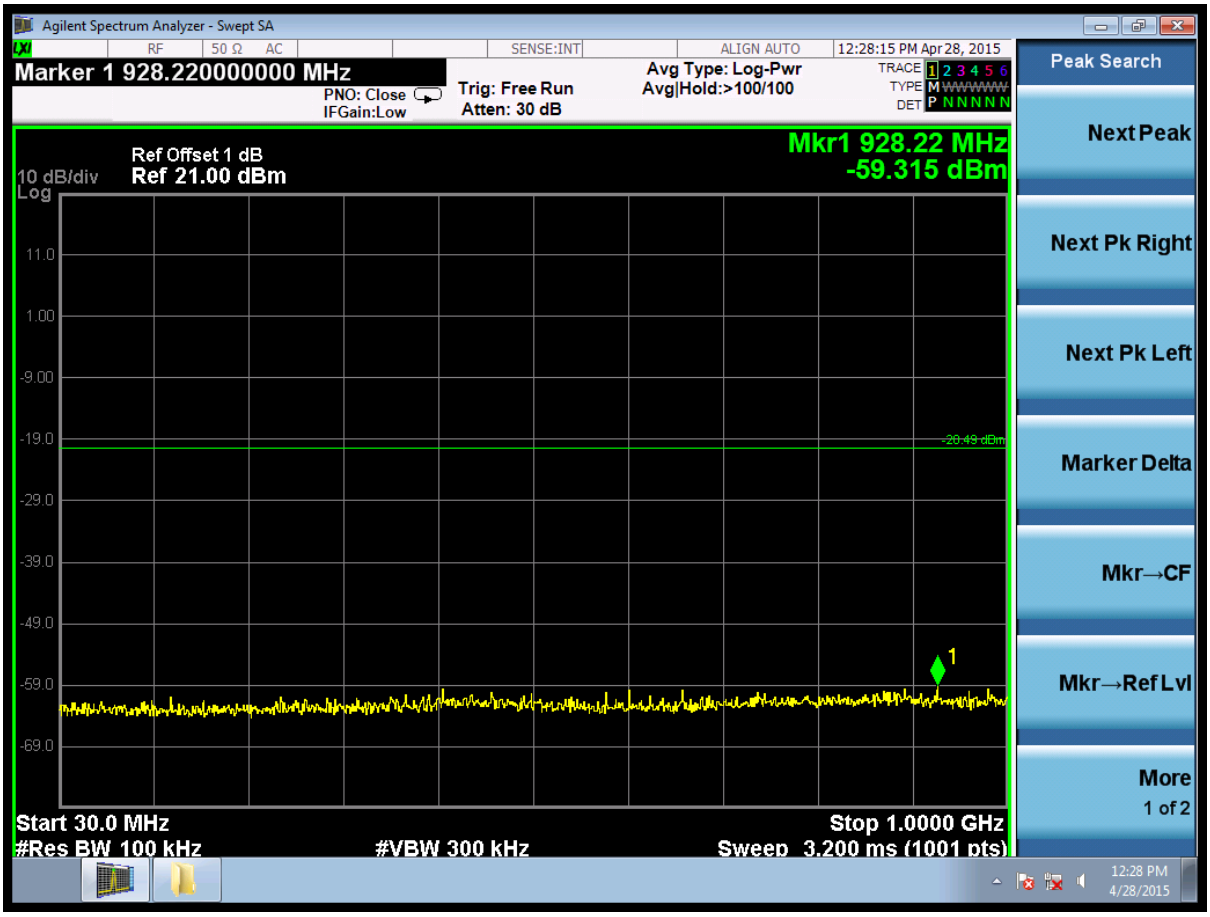
(Plot 4.7.3 A5: Channel 1: 2412MHz @ 802.11n HT20)

(Plot 4.7.3 A6: Channel 1: 2412MHz @ 802.11 n HT20)

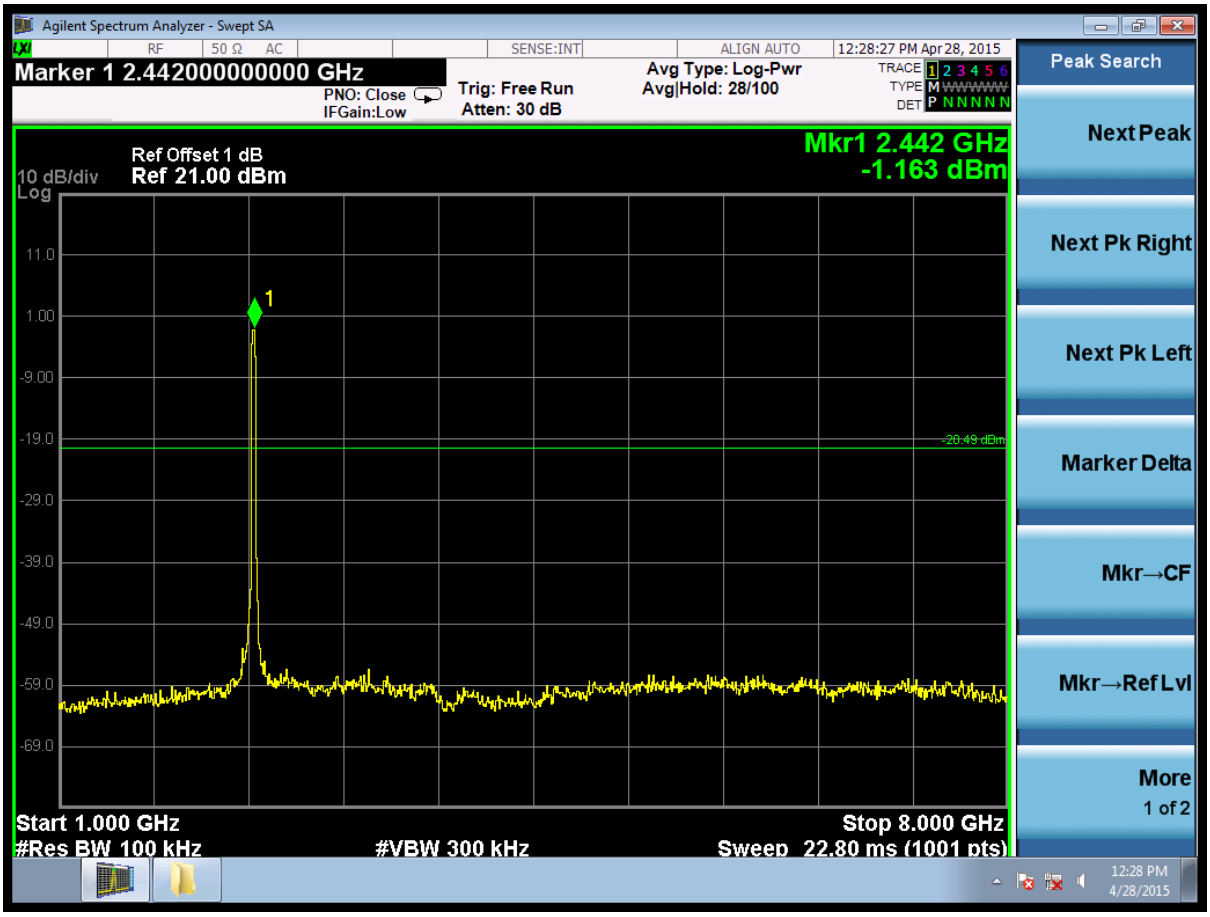
(Plot 4.7.3 B1: Channel 6: 2437MHz @ 802.11n HT20)



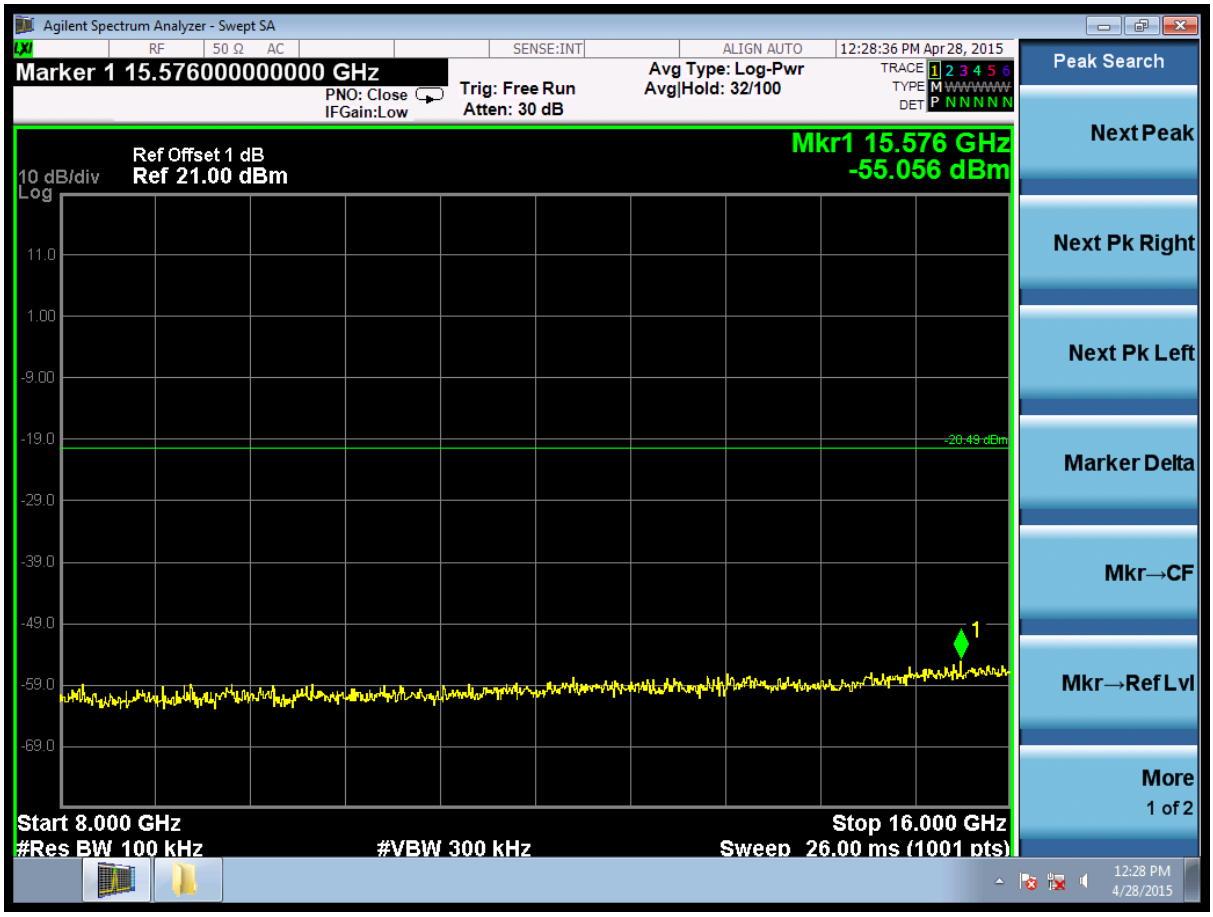
(Plot 4.7.3 B2: Channel 6: 2437MHz @ 802.11n HT20)



(Plot 4.7.3 B3: Channel 6: 2437MHz @ 802.11n HT20)

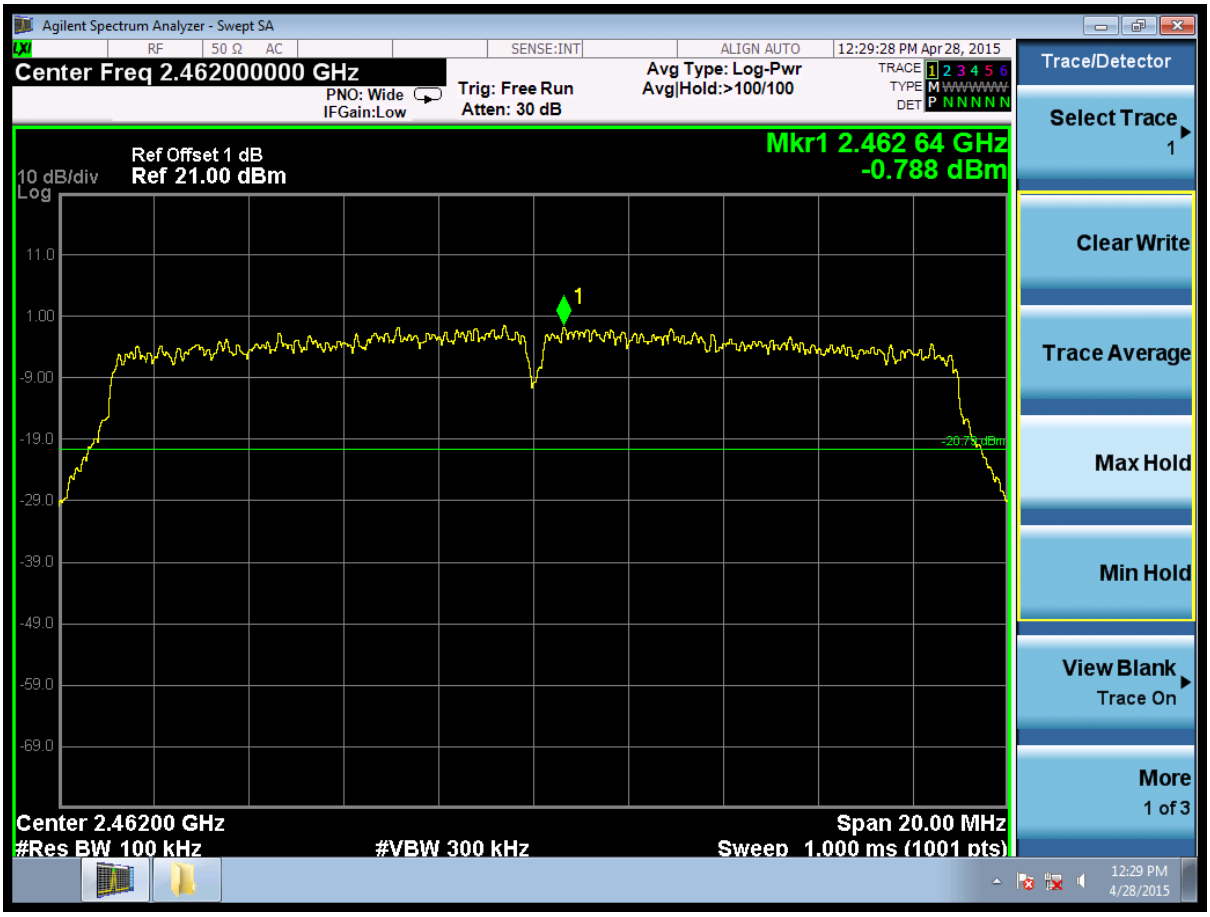


(Plot 4.7.3 B4: Channel 6: 2437MHz @ 802.11n HT20)

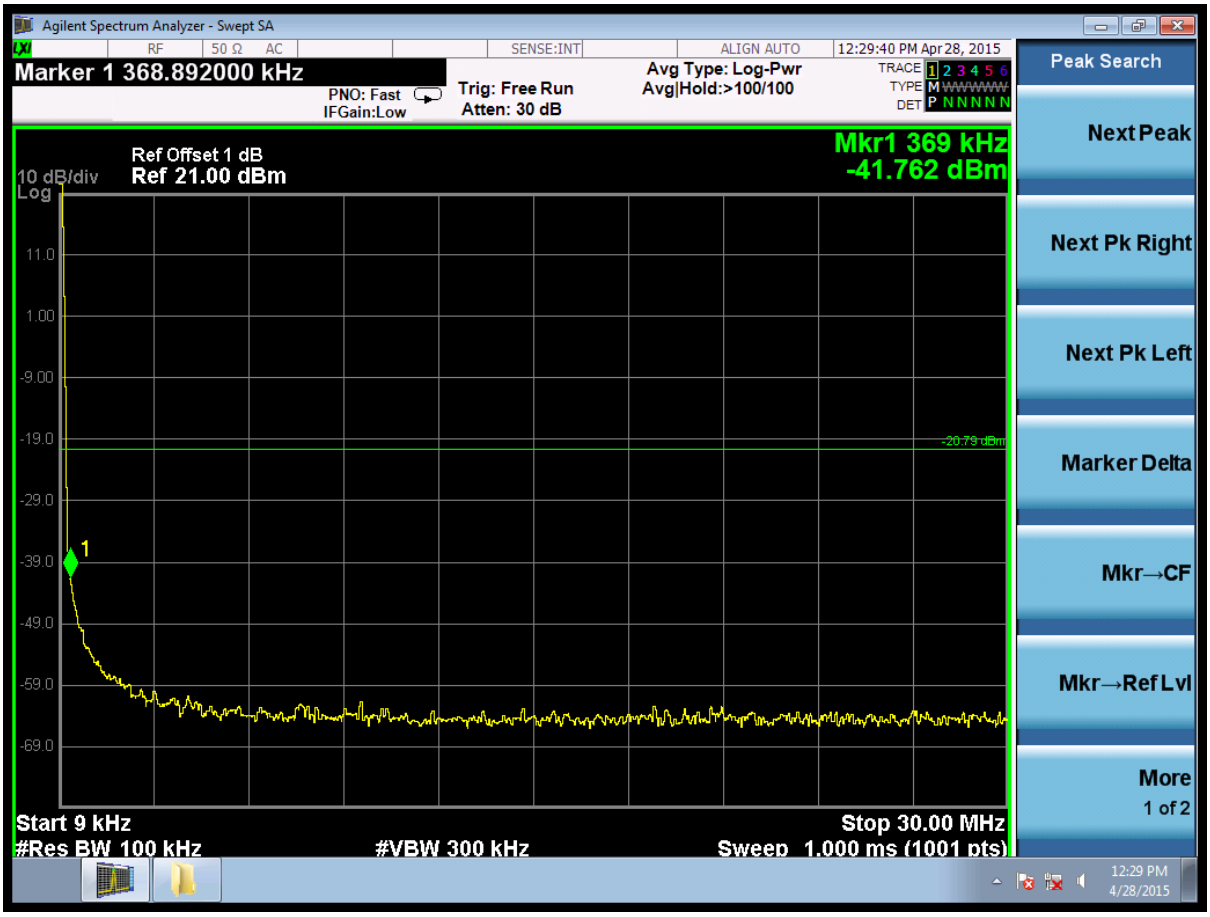


(Plot 4.7.3 B5: Channel 6: 2437MHz @ 802.11n HT20)

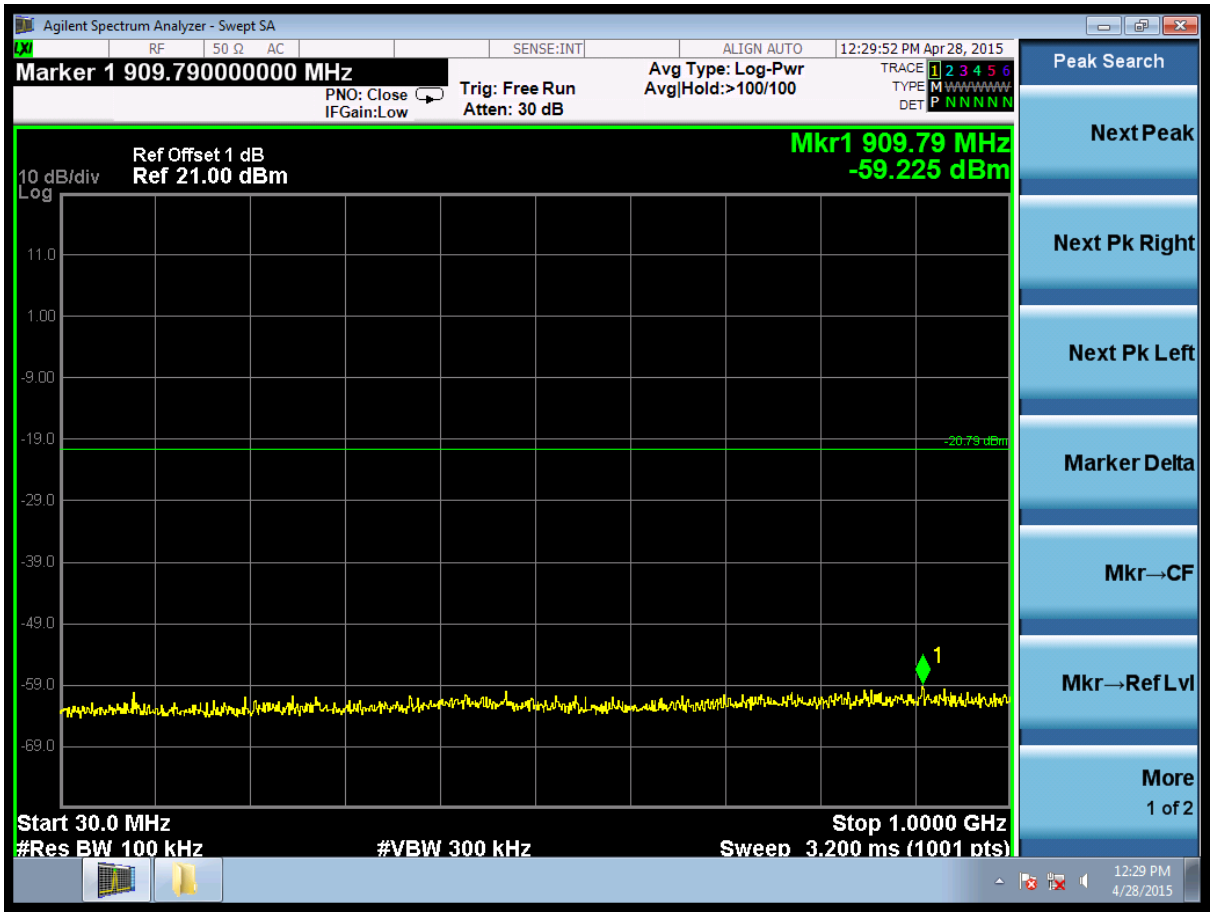
(Plot 4.7.3 B6: Channel 6: 2437MHz @ 802.11n HT20)



(Plot 4.7.3 C1: Channel 11: 2462MHz @ 802.11n HT20)

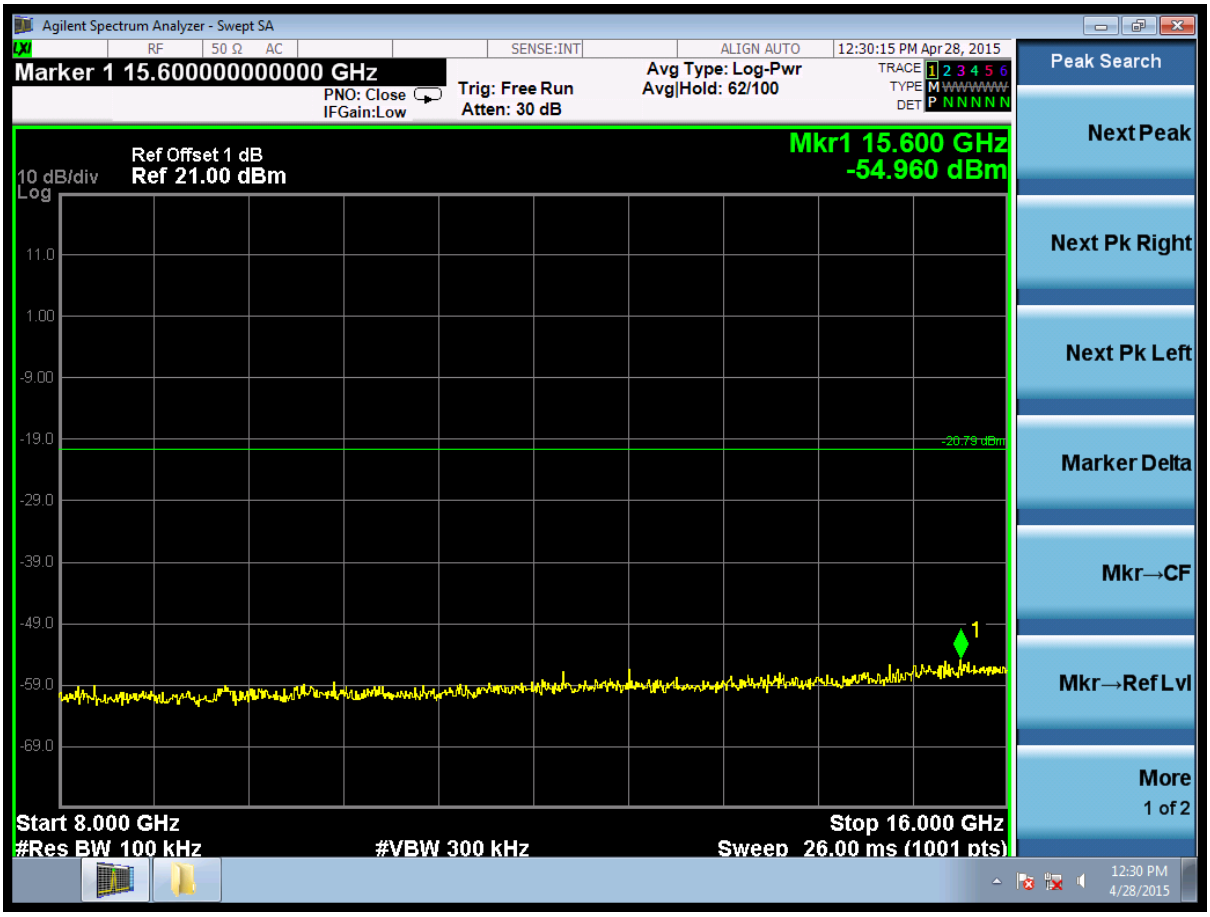


(Plot 4.7.3 C2: Channel 11: 2462MHz @ 802.11n HT20)



(Plot 4.7.3 C3: Channel 11: 2462MHz @ 802.11n HT20)

(Plot 4.7.3 C4: Channel 11: 2462MHz @ 802.11n HT20)



(Plot 4.7.3 C5: Channel 11: 2462MHz @ 802.11n HT20)

(Plot 4.7.3 C6: Channel 11: 2462MHz @ 802.11n HT20)

(Plot 4.7.3 D: Channel 1: 2412MHz @ 802.11n HT20)

(Plot 4.6.3 E: Channel 11: 2462MHz @ 802.11n HT20)

4.7.4 802.11n HT40 Test Mode

A. Test Verdict

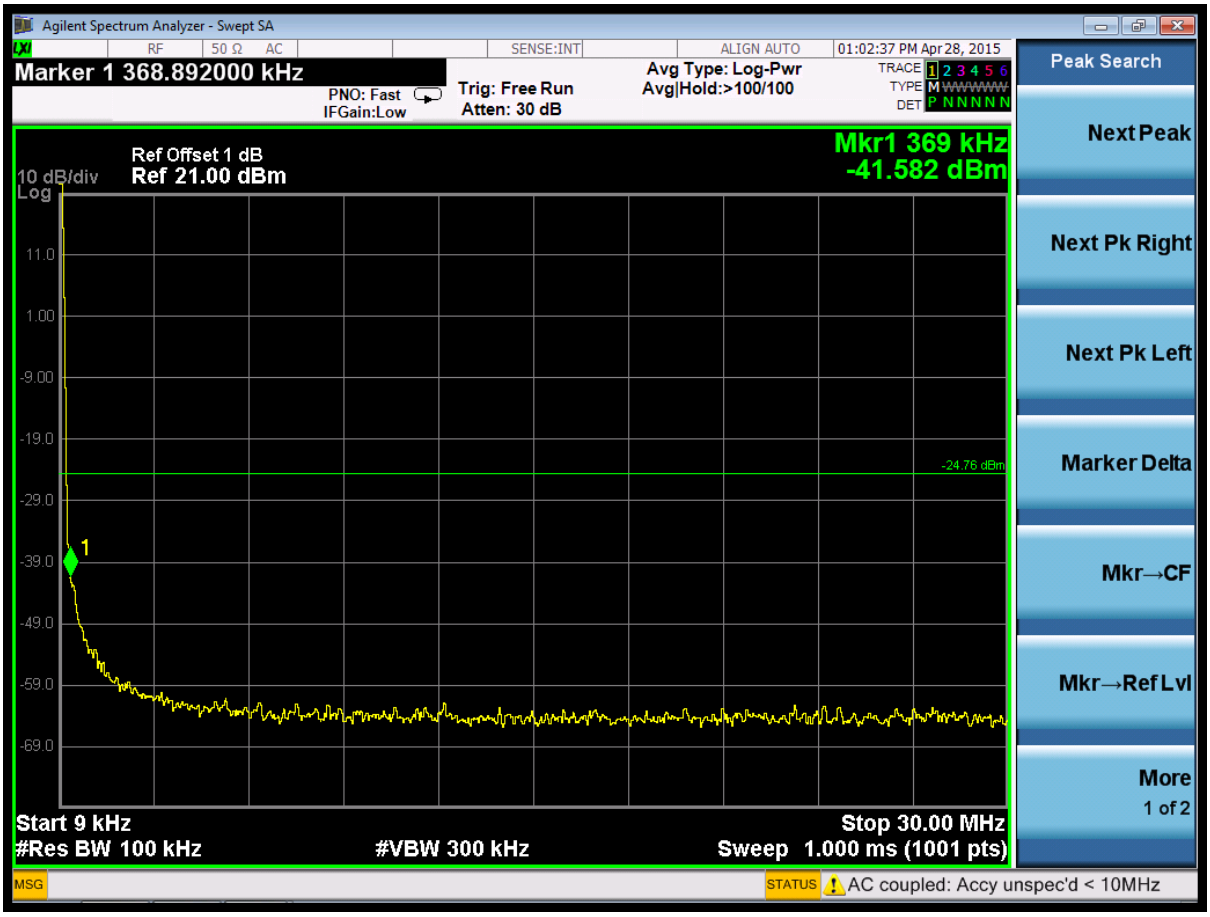
Channel	Frequency (MHz)	Frequency Range	Refer to Plot	Limit (dBc)	Verdict
3	2422	2422MHz	Plot 4.7.4 A1	N/A	PASS
		9KHz-30MHz	Plot 4.7.4 A2	-20	PASS
		30MHz-1GHz	Plot 4.7.4 A3	-20	PASS
		1GHz-8GHz	Plot 4.7.4 A4	-20	PASS
		8GHz-16GHz	Plot 4.7.4 A5	-20	PASS
		16GHz-25GHz	Plot 4.7.4 A6	-20	PASS
6	2437	2437MHz	Plot 4.7.4 B1	N/A	PASS
		9KHz-30MHz	Plot 4.7.4 B2	-20	PASS
		30MHz-1GHz	Plot 4.7.4 B3	-20	PASS
		1GHz-8GHz	Plot 4.7.4 B4	-20	PASS
		8GHz-16GHz	Plot 4.7.4 B5	-20	PASS
		16GHz-25GHz	Plot 4.7.4 B6	-20	PASS
9	2452	2452MHz	Plot 4.7.4 C1	N/A	PASS
		9KHz-30MHz	Plot 4.7.4 C2	-20	PASS
		30MHz-1GHz	Plot 4.7.4 C3	-20	PASS
		1GHz-8GHz	Plot 4.7.4 C4	-20	PASS
		8GHz-16GHz	Plot 4.7.4 C5	-20	PASS
		16GHz-25GHz	Plot 4.7.4 C6	-20	PASS

Frequency (MHz)	Delta Peak to Band emission (dBc)	Detector	Limit (dBc)	Refer to Plot	Verdict
2400.00	-34.199	Peak	-20	Plot 4.7.4 D	PASS
2490.24	-36.717	Peak	-20	Plot 4.7.4 E	PASS

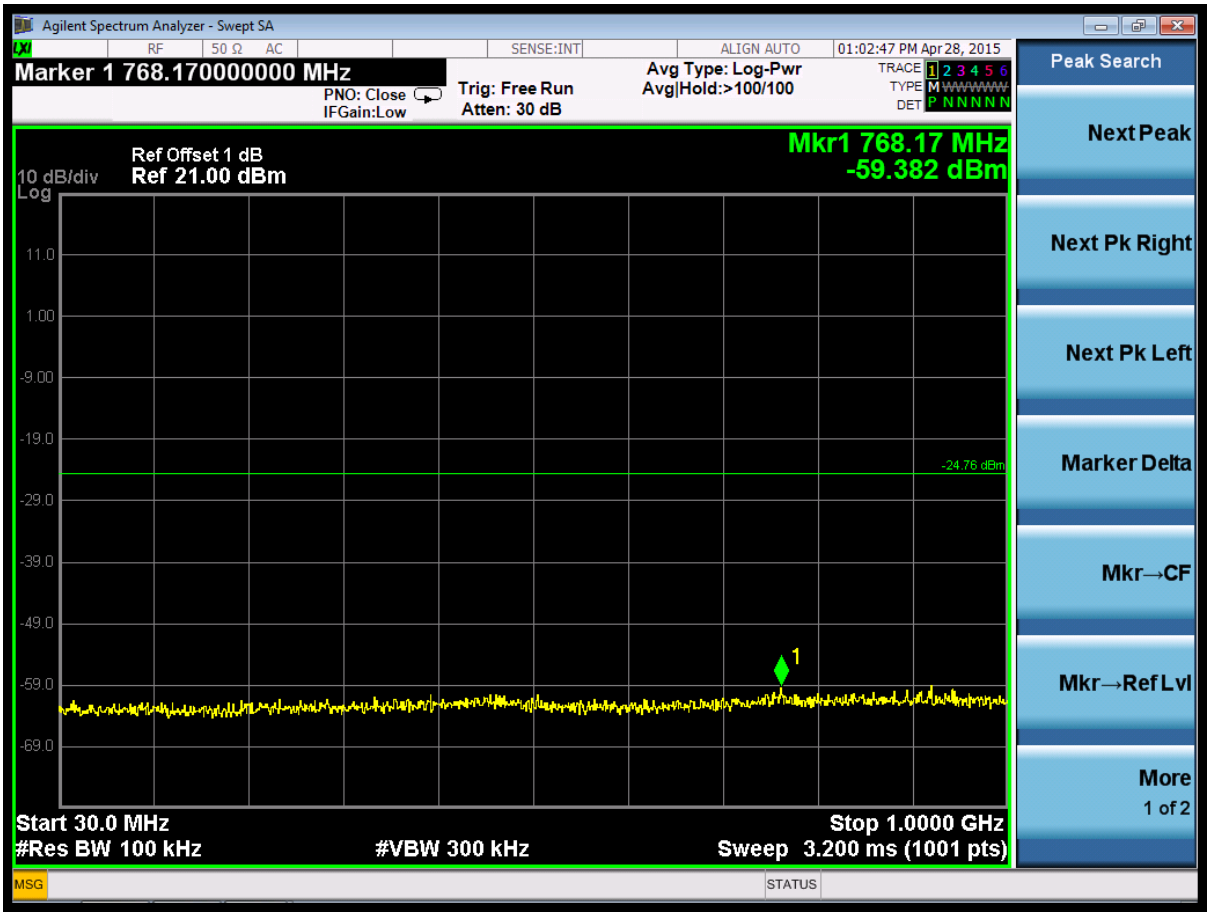
Note:
1. For 802.11n HT40 mode at finial test to get the worst-case emission at 13.5Mbps.
2. The test results including the cable lose.

B. Test Plots

(Plot 4.7.4 A1: Channel 3: 2422MHz @ 802.11n HT40)

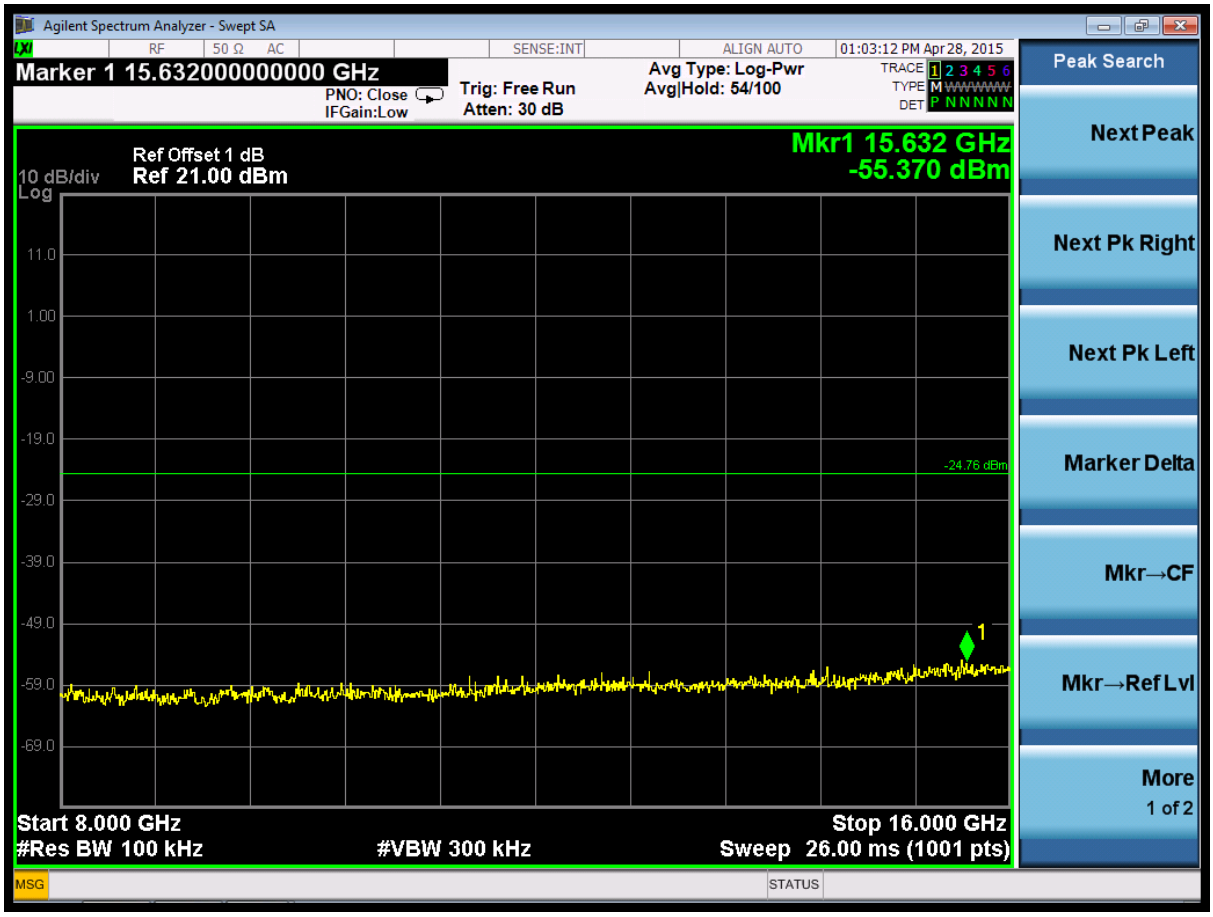


(Plot 4.7.4 A2: Channel 3: 2422MHz @ 802.11n HT40)



(Plot 4.7.4 A3: Channel 3: 2422MHz @ 802.11n HT40)

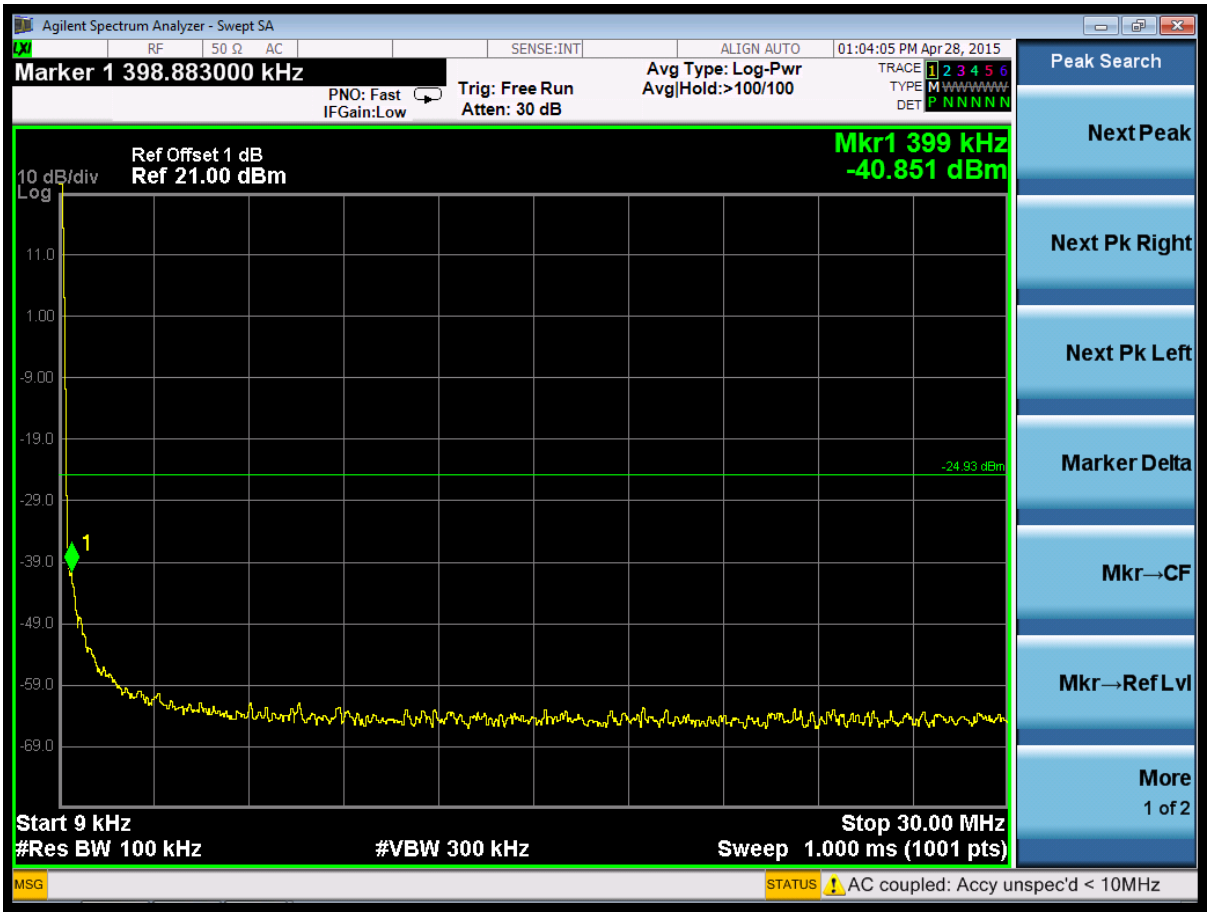
(Plot 4.7.4 A4: Channel 3: 2422MHz @ 802.11n HT40)



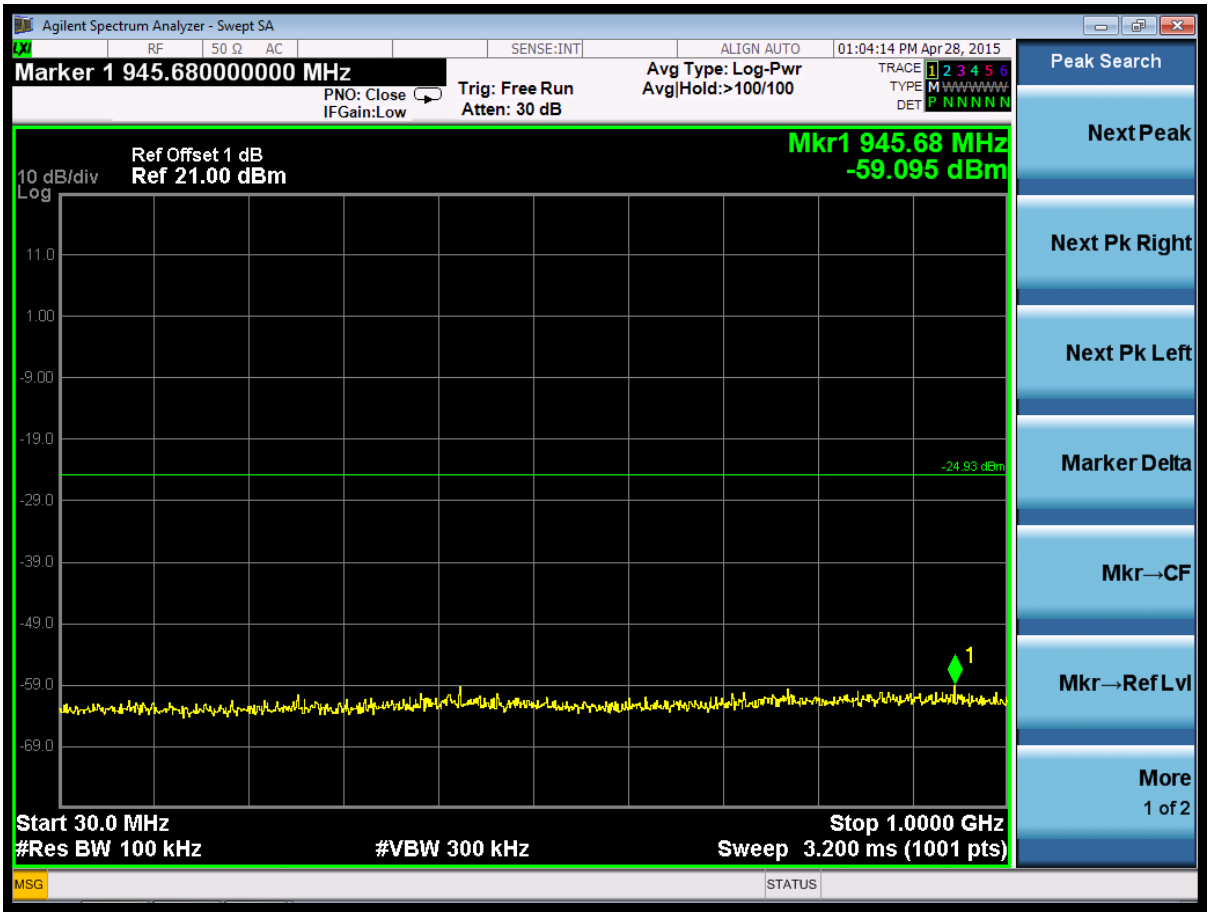
(Plot 4.7.4 A5: Channel 3: 2422MHz @ 802.11n HT40)

(Plot 4.7.4 A6: Channel 3: 2422MHz @ 802.11n HT40)

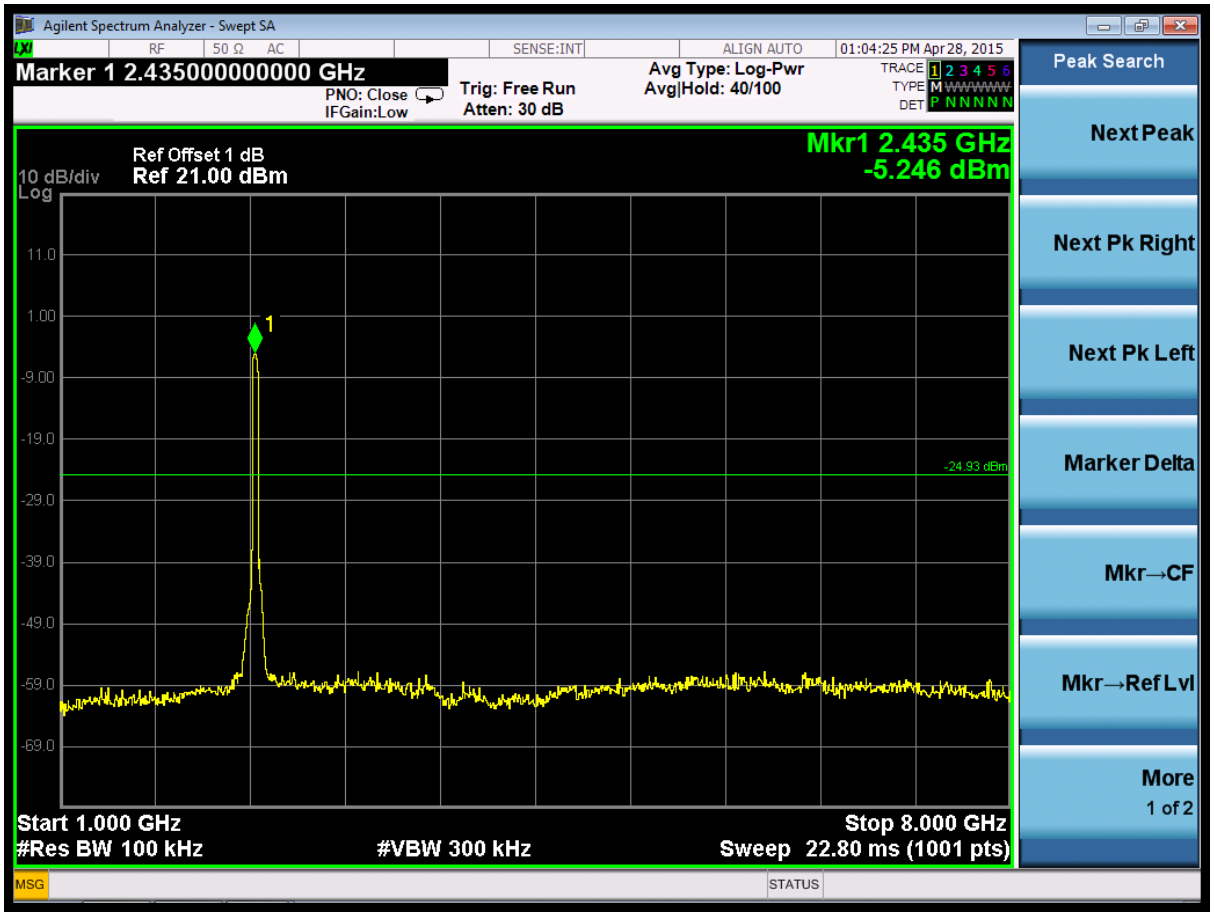
(Plot 4.7.4 B1: Channel 6: 2437MHz @ 802.11n HT40)



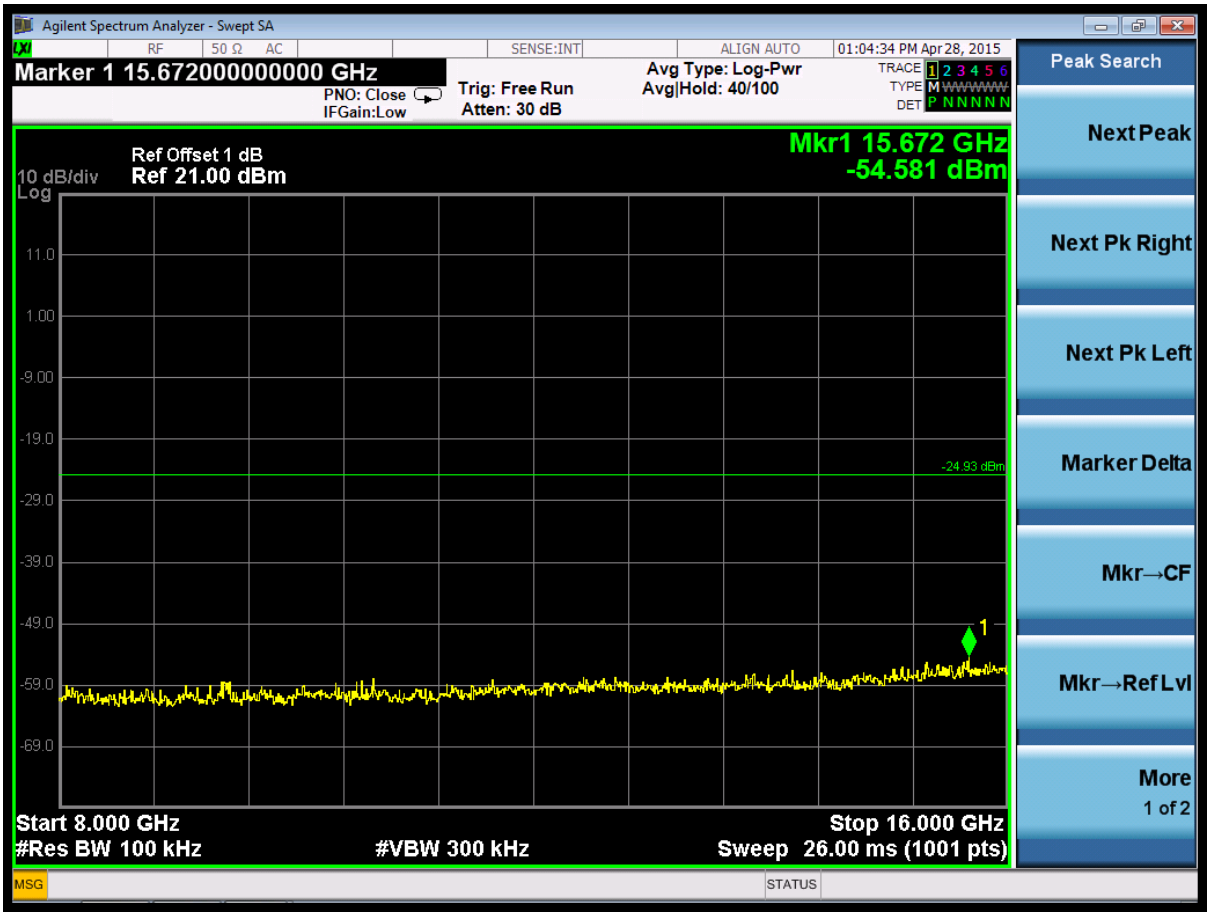
(Plot 4.7.4 B2: Channel 6: 2437MHz @ 802.11n HT40)



(Plot 4.7.4 B3: Channel 6: 2437MHz @ 802.11n HT40)



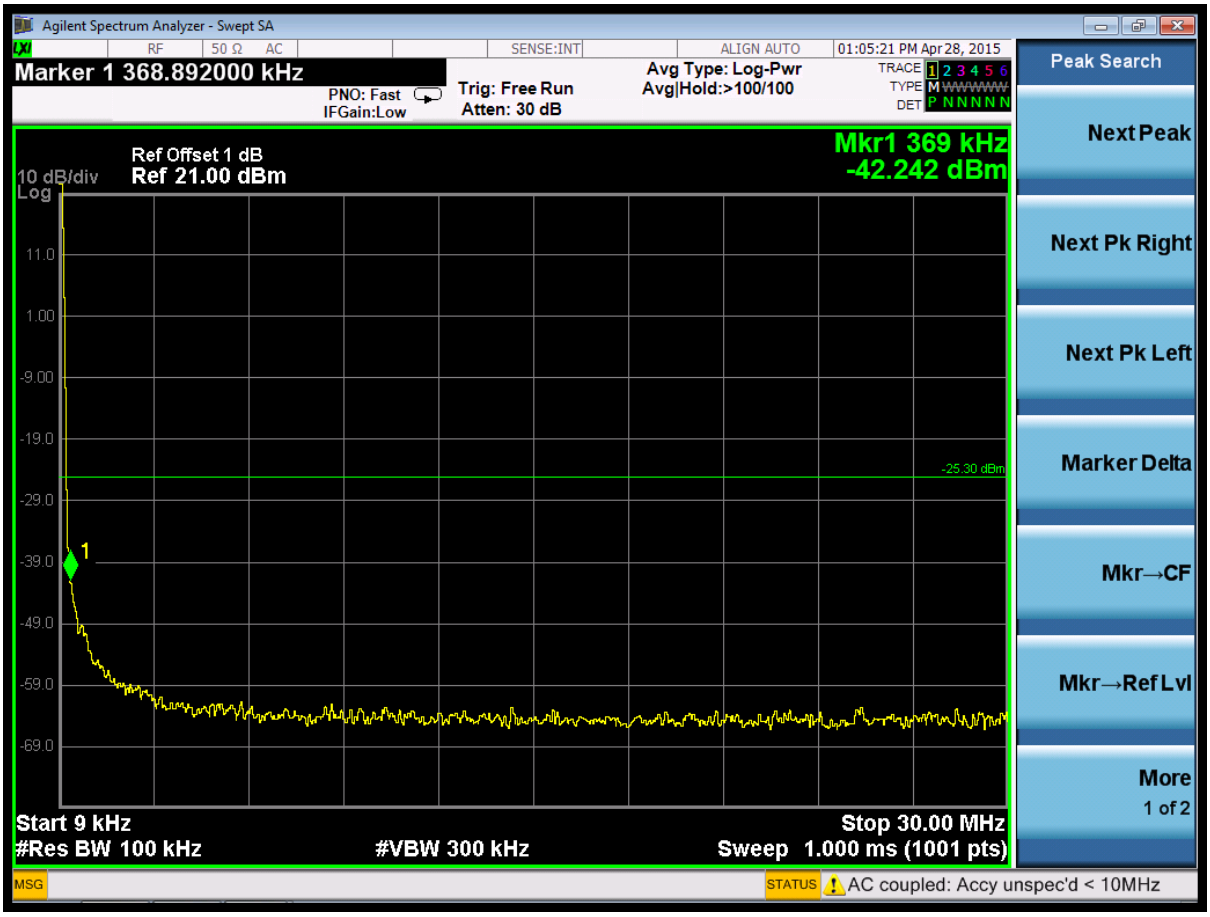
(Plot 4.7.4 B4: Channel 6: 2437MHz @ 802.11n HT40)



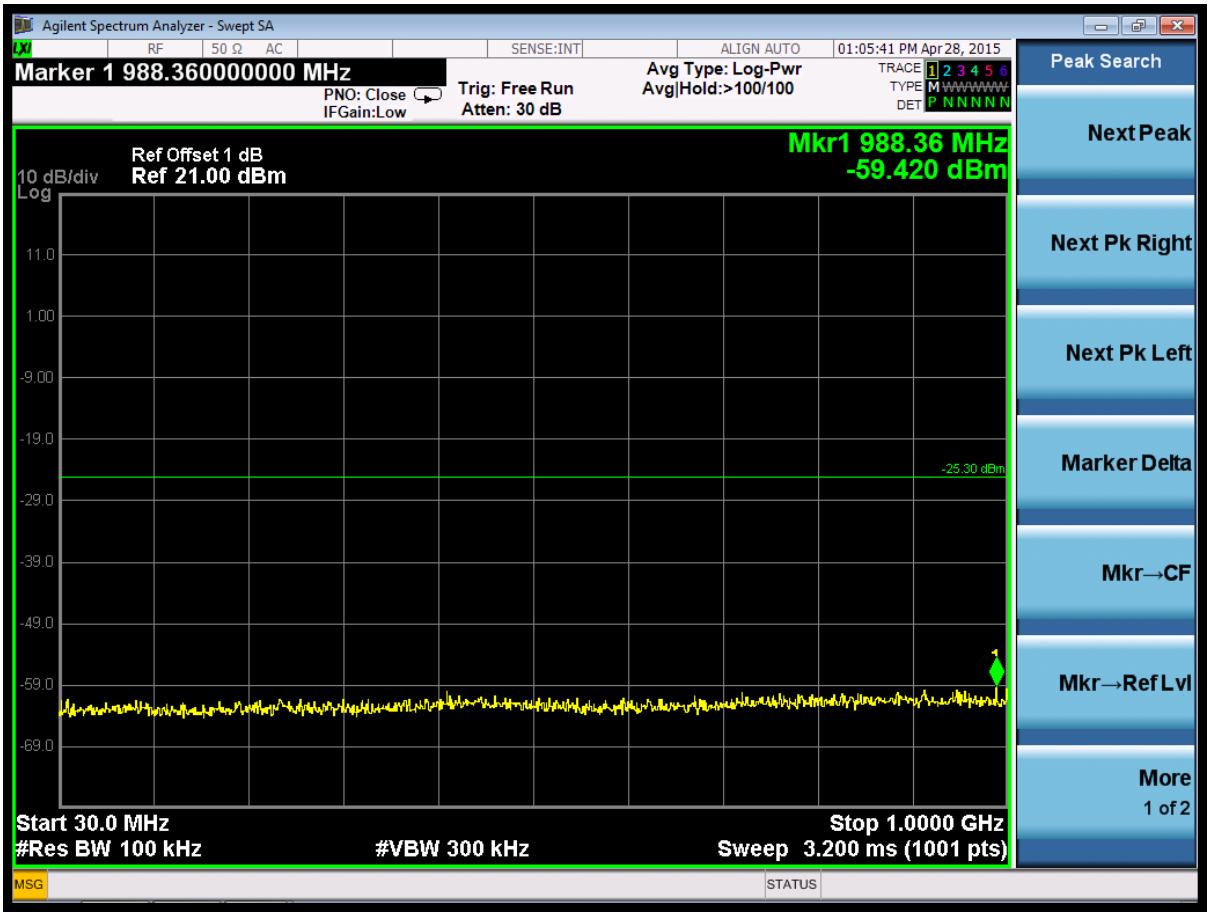
(Plot 4.7.4 B5: Channel 6: 2437MHz @ 802.11n HT40)

(Plot 4.7.4 B6: Channel 6: 2437MHz @ 802.11n HT40)

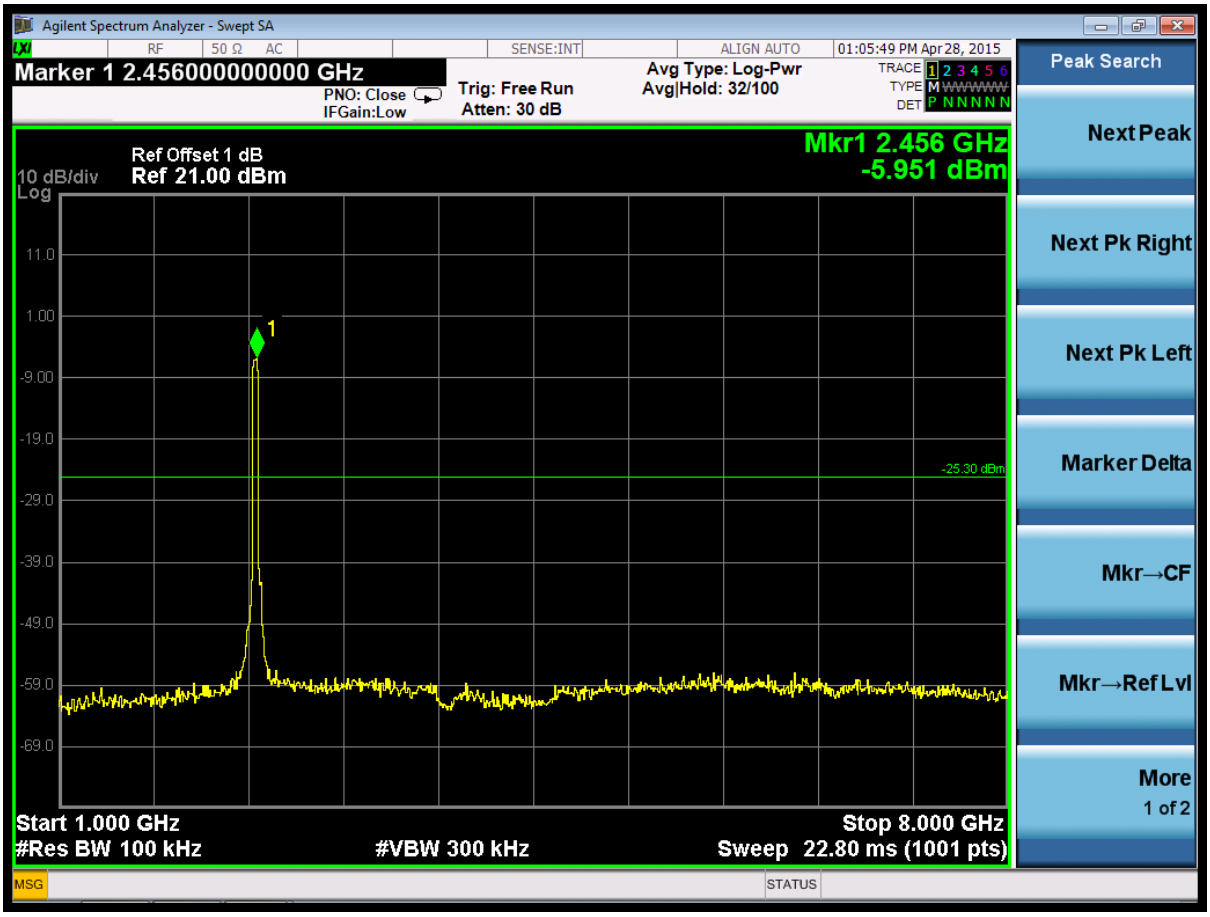
(Plot 4.7.4 C1: Channel 3: 2452MHz @ 802.11n HT40)



(Plot 4.7.4 C2: Channel 9: 2452MHz @ 802.11n HT40)

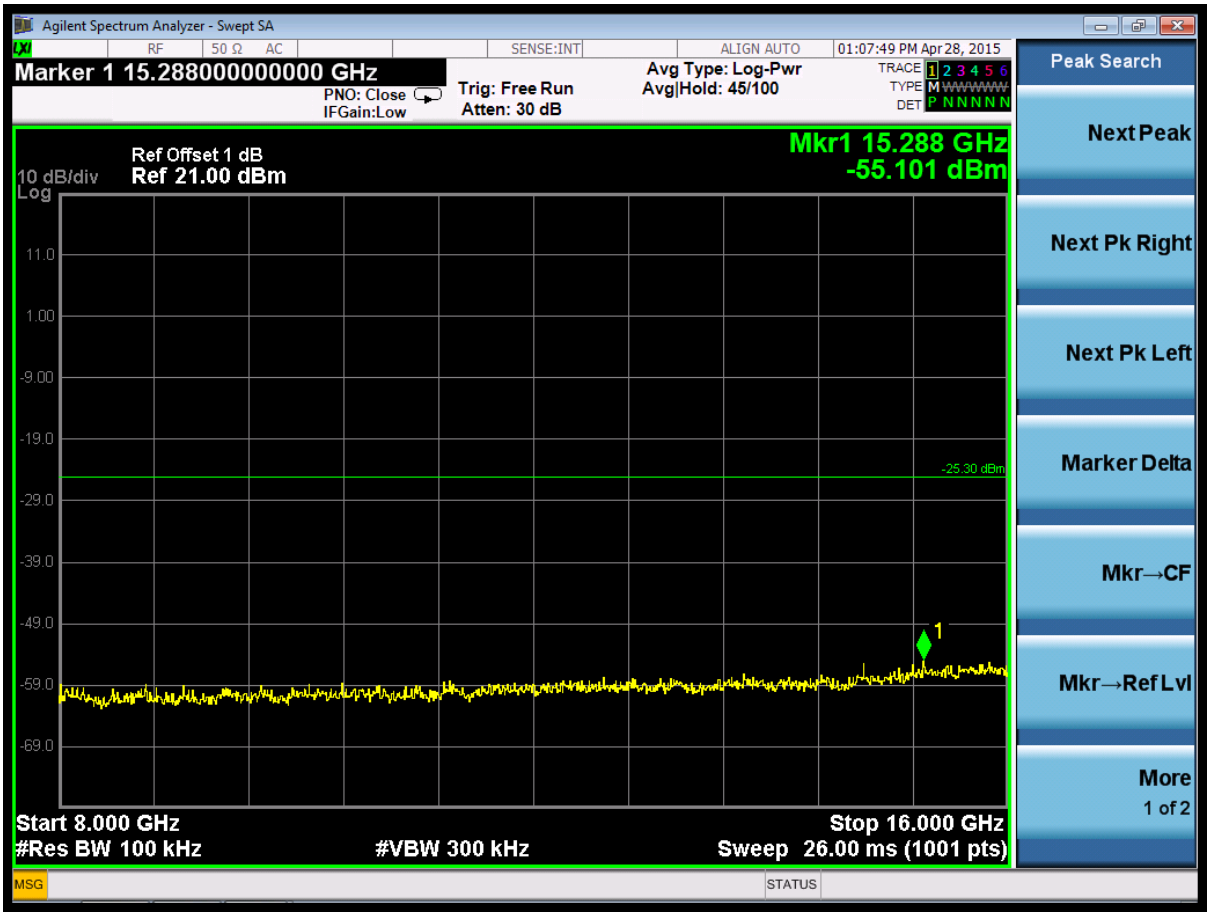


(Plot 4.7.4 C3: Channel 9: 2452MHz @ 802.11n HT40)

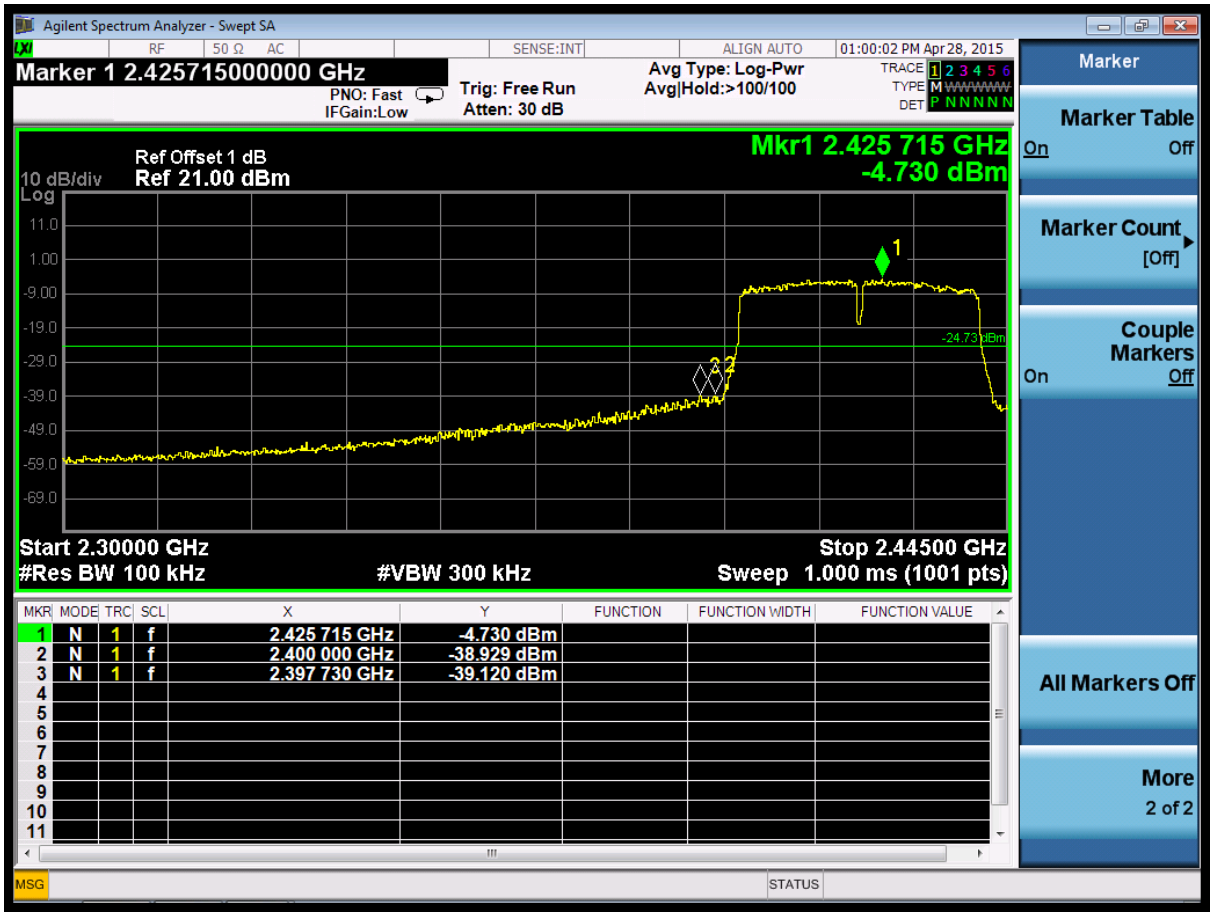


(Plot 4.7.4 C4: Channel 3: 2452MHz @ 802.11n HT40)

(Plot 4.7.4 C5: Channel 9: 2452MHz @ 802.11n HT40)



(Plot 4.7.4 C6: Channel 9: 2452MHz @ 802.11n HT40)



(Plot 4.7.4 D: Channel 3: 2422MHz @ 802.11n HT40)

(Plot 4.7.4 E: Channel 9: 2452MHz @ 802.11n HT40)

4.8. Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Measurement

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.For normal WLAN devices, the DSSS mode is used.

Measurement parameters

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1MHz
Video bandwidth:	3MHz
Trace-Mode:	Max hold

Limits

FCC	IC
Antenna Gain	
6 dBi	

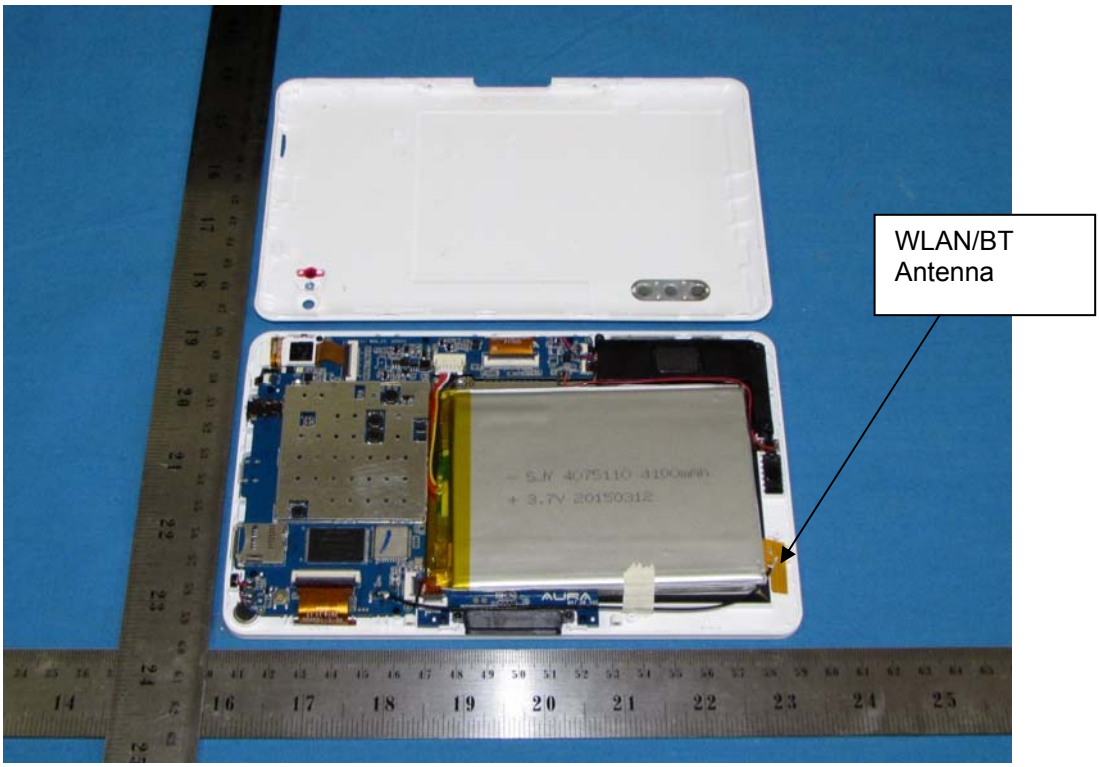
Results

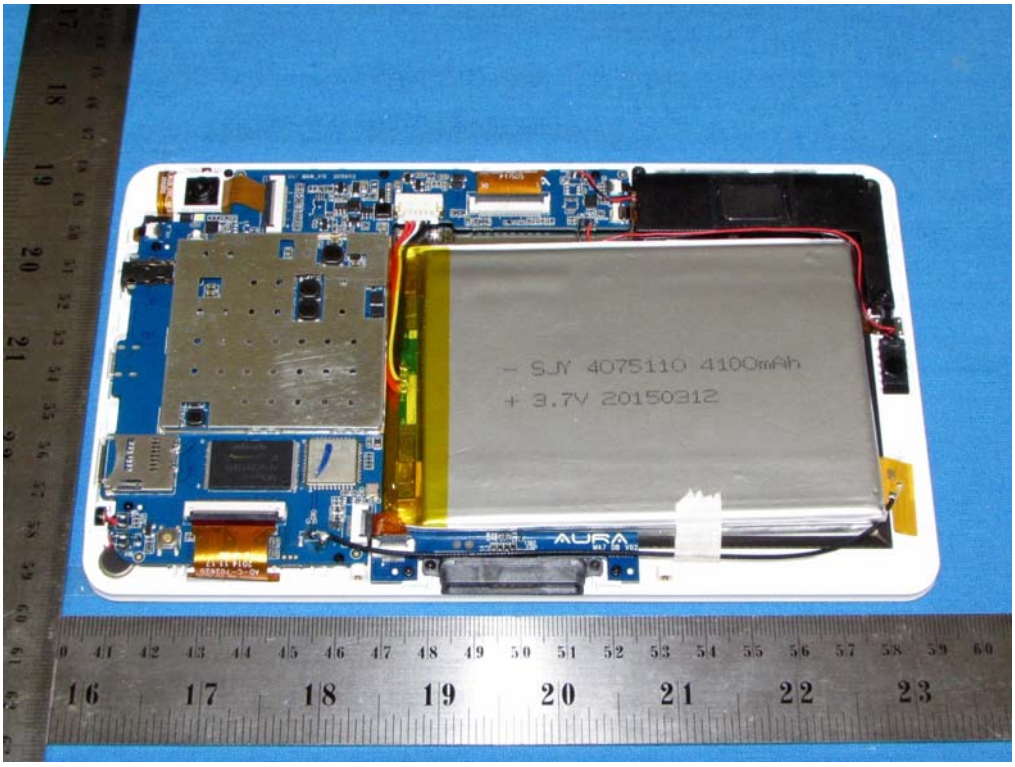
T_{nom}	V_{nom}	Lowest Channel 2412 MHz	Middle Channel 2437 MHz	Highest Channel 2462 MHz
Conducted power [dBm] Measured with DSSS modulation		10.29	10.67	10.38
Conducted power [dBm] Measured with DSSS modulation		9.56	10.42	9.87
Gain [dBi] Calculated		-0.73	-0.25	-0.51
Measurement uncertainty		± 0.6 dB (cond.) / ± 2.56 dB (rad.)		

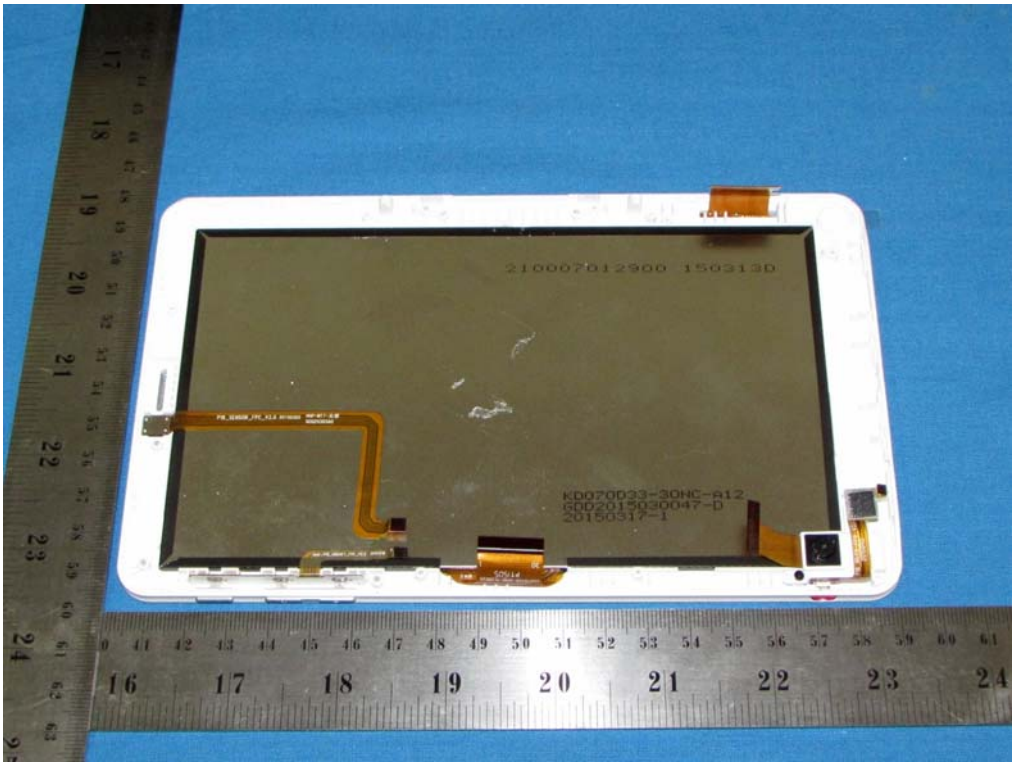
5. Test Setup Photos of the EUT

External Photos

Internal Photos



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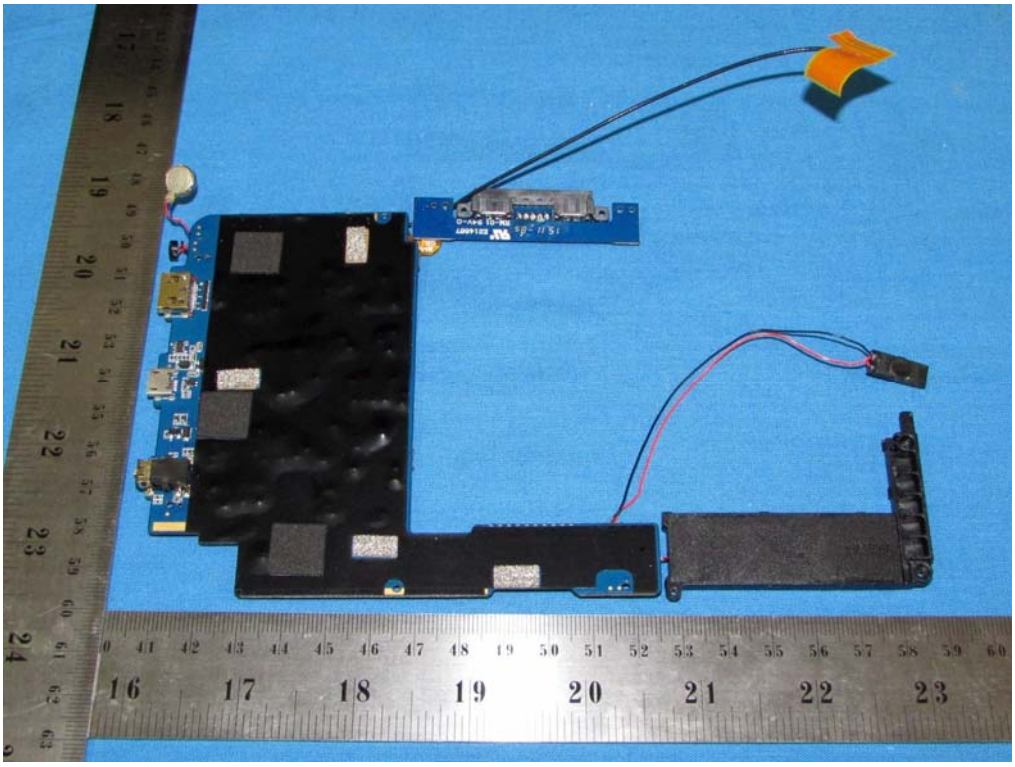
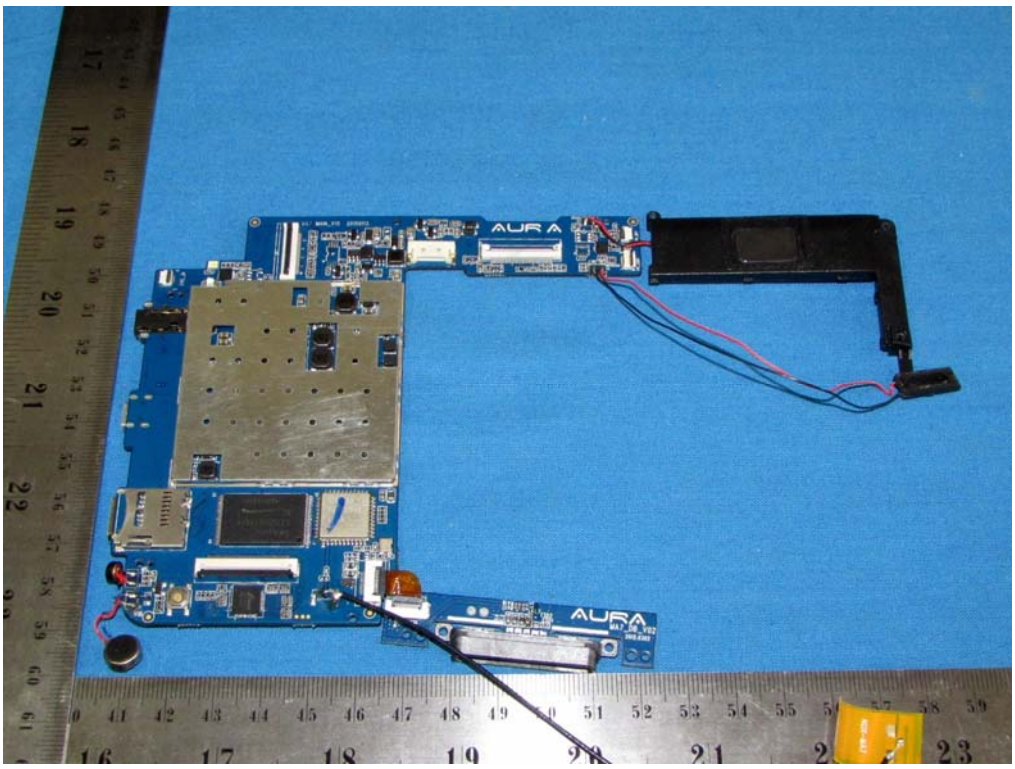
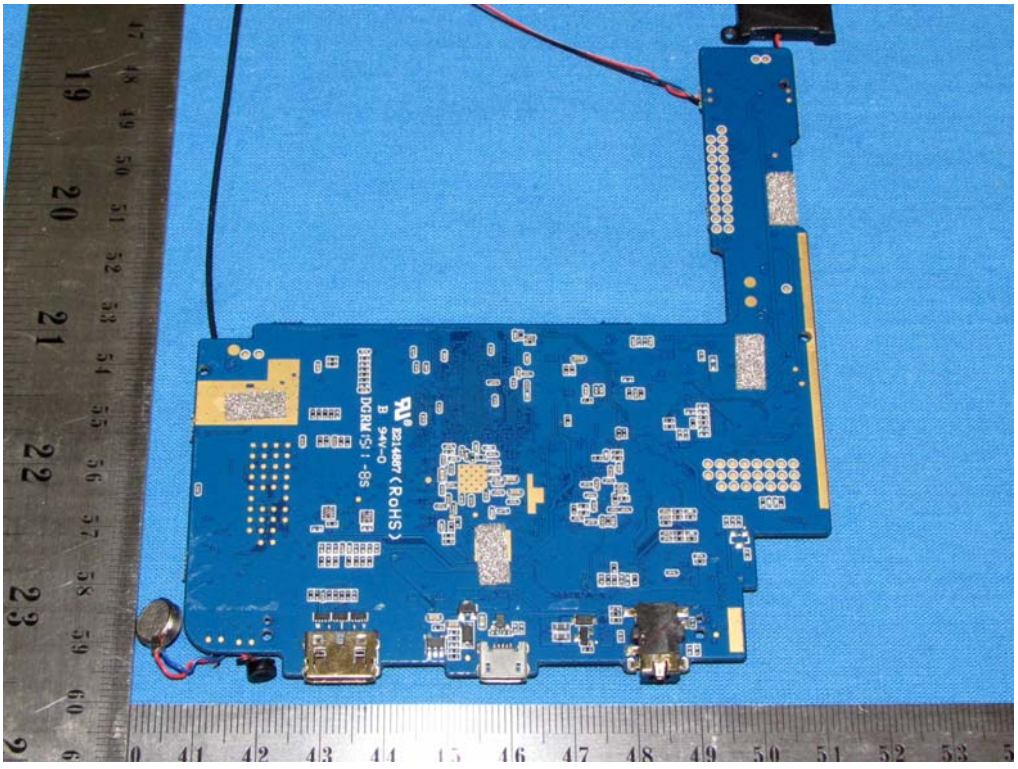
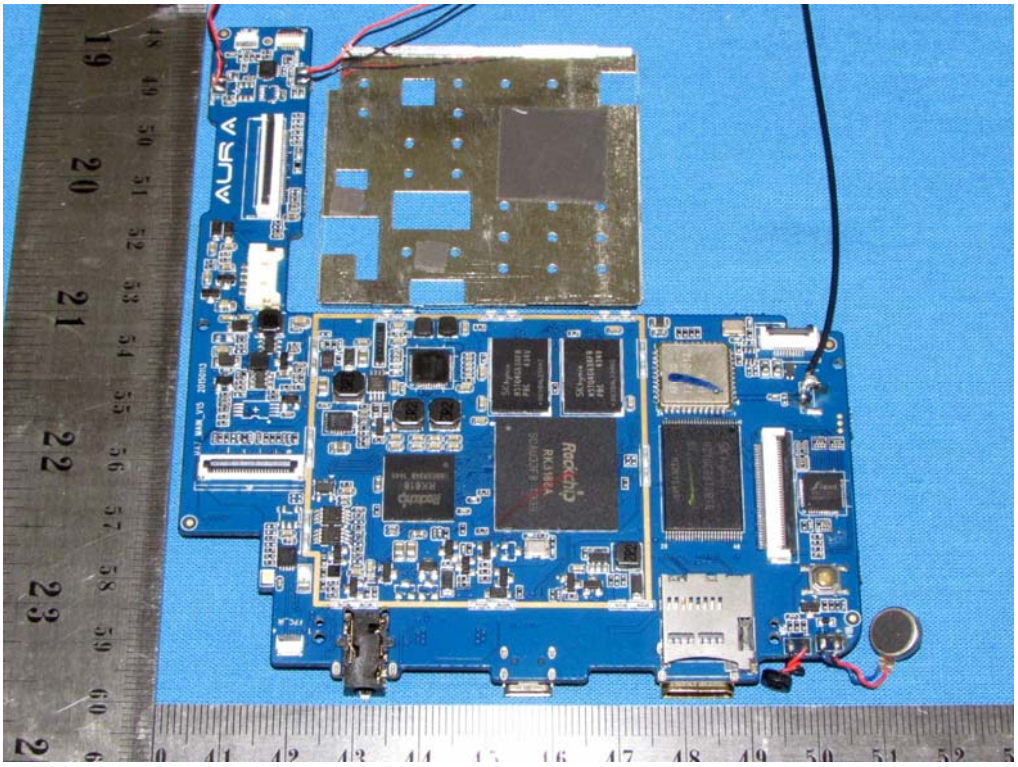



AURA
AURA


E214987 (RoHS)
941-0



.....End of Report.....