OUTPUT POWER

XMit 2019.02.26

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	11-Apr-19	11-Apr-20
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	13-Dec-18	13-Dec-19
Generator - Signal	Keysight	N5182B	TFX	22-Oct-18	22-Oct-21

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

The reference level offset of 21.62 dB was added to the spectrum analyzer readings as confirmed by the setup photos. The installed version of firmware on the spectrum analyzer did not show the reference level offset.

OUTPUT POWER

element

TbtTx 2018.09.13 XMit 2019.02.26

EUT:	**Duo WiFi**			**Work Order:**	**ADEM0001**
Serial Number:	**67504**			**Date:**	**19-Apr-19**
Customer:	**Ademco, Inc.**			**Temperature:**	**23.6 °C**
Attendees:	**None**			**Humidity:**	**30.3% RH**
Project:	**None**			**Barometric Pres.:**	**1019 mbar**
Tested by:	**Andrew Rogstad**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN05**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

None

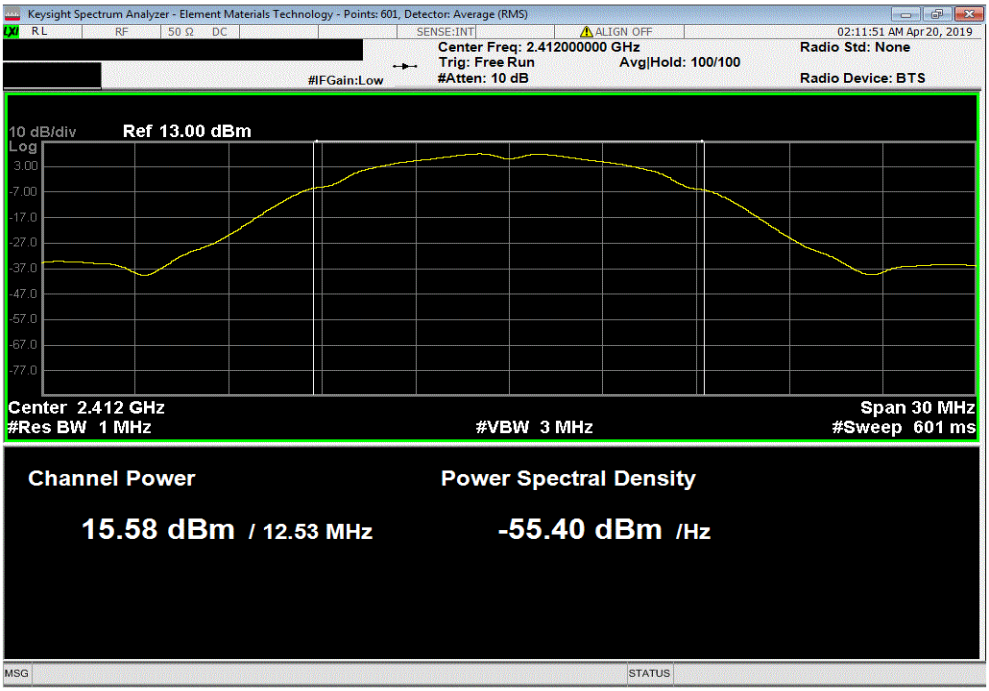
DEVIATIONS FROM TEST STANDARD

None

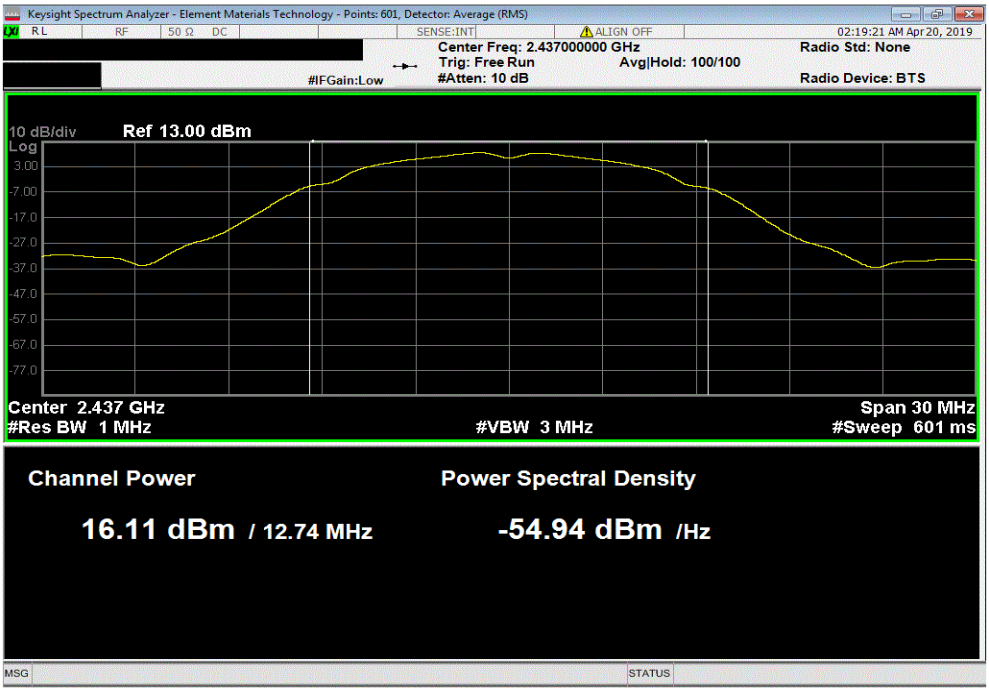
Configuration #	**2**	*Signature* Andrew Rogstad

		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
Antenna 0						
	802.11(b) 1 Mbps					
	Low Channel 1, 2412 MHz	15.578	0	15.6	30	Pass
	Mid Channel 6, 2437 MHz	16.109	0	16.1	30	Pass
	High Channel 11, 2462 MHz	15.662	0	15.7	30	Pass
	802.11(b) 11 Mbps					
	Low Channel 1, 2412 MHz	15.628	0.1	15.7	30	Pass
	Mid Channel 6, 2437 MHz	16.175	0.1	16.2	30	Pass
	High Channel 11, 2462 MHz	15.66	0.1	15.7	30	Pass
	802.11(g) 6 Mbps					
	Low Channel 1, 2412 MHz	8.627	0.1	8.7	30	Pass
	Mid Channel 6, 2437 MHz	14.22	0.1	14.3	30	Pass
	High Channel 11, 2462 MHz	8.197	0.1	8.3	30	Pass
	802.11(g) 36 Mbps					
	Low Channel 1, 2412 MHz	8.441	0.3	8.8	30	Pass
	Mid Channel 6, 2437 MHz	13.46	0.4	13.8	30	Pass
	High Channel 11, 2462 MHz	7.934	0.4	8.3	30	Pass
	802.11(g) 54 Mbps					
	Low Channel 1, 2412 MHz	8.216	0.5	8.7	30	Pass
	Mid Channel 6, 2437 MHz	9.747	0.5	10.2	30	Pass
	High Channel 11, 2462 MHz	7.963	0.5	8.5	30	Pass
	802.11(n) MCS0					
	Low Channel 1, 2412 MHz	8.554	0.1	8.6	30	Pass
	Mid Channel 6, 2437 MHz	13.627	0.1	13.7	30	Pass
	High Channel 11, 2462 MHz	8.238	0.1	8.3	30	Pass
	802.11(n) MCS7					
	Low Channel 1, 2412 MHz	8.113	0.5	8.6	30	Pass
	Mid Channel 6, 2437 MHz	8.2	0.5	8.7	30	Pass
	High Channel 11, 2462 MHz	7.727	0.5	8.2	30	Pass
Antenna 1						
	802.11(b) 1 Mbps					
	Low Channel 1, 2412 MHz	15.604	0	15.6	30	Pass
	Mid Channel 6, 2437 MHz	16.145	0	16.2	30	Pass
	High Channel 11, 2462 MHz	15.847	0	15.9	30	Pass
	802.11(b) 11 Mbps					
	Low Channel 1, 2412 MHz	15.669	0.1	15.7	30	Pass
	Mid Channel 6, 2437 MHz	16.219	0.1	16.3	30	Pass
	High Channel 11, 2462 MHz	15.859	0.1	15.9	30	Pass
	802.11(g) 6 Mbps					
	Low Channel 1, 2412 MHz	8.705	0.1	8.8	30	Pass
	Mid Channel 6, 2437 MHz	14.272	0.1	14.3	30	Pass
	High Channel 11, 2462 MHz	8.443	0.1	8.5	30	Pass
	802.11(g) 36 Mbps					
	Low Channel 1, 2412 MHz	8.389	0.3	8.7	30	Pass
	Mid Channel 6, 2437 MHz	13.53	0.4	13.9	30	Pass
	High Channel 11, 2462 MHz	8.086	0.3	8.4	30	Pass
	802.11(g) 54 Mbps					
	Low Channel 1, 2412 MHz	8.218	0.5	8.7	30	Pass
	Mid Channel 6, 2437 MHz	9.879	0.5	10.4	30	Pass
	High Channel 11, 2462 MHz	7.966	0.5	8.5	30	Pass
	802.11(n) MCS0					
	Low Channel 1, 2412 MHz	8.675	0.1	8.7	30	Pass
	Mid Channel 6, 2437 MHz	13.677	0.1	13.7	30	Pass
	High Channel 11, 2462 MHz	8.283	0.1	8.3	30	Pass
	802.11(n) MCS7					
	Low Channel 1, 2412 MHz	8.255	0.5	8.8	30	Pass
	Mid Channel 6, 2437 MHz	8.231	0.5	8.8	30	Pass
	High Channel 11, 2462 MHz	7.879	0.5	8.4	30	Pass

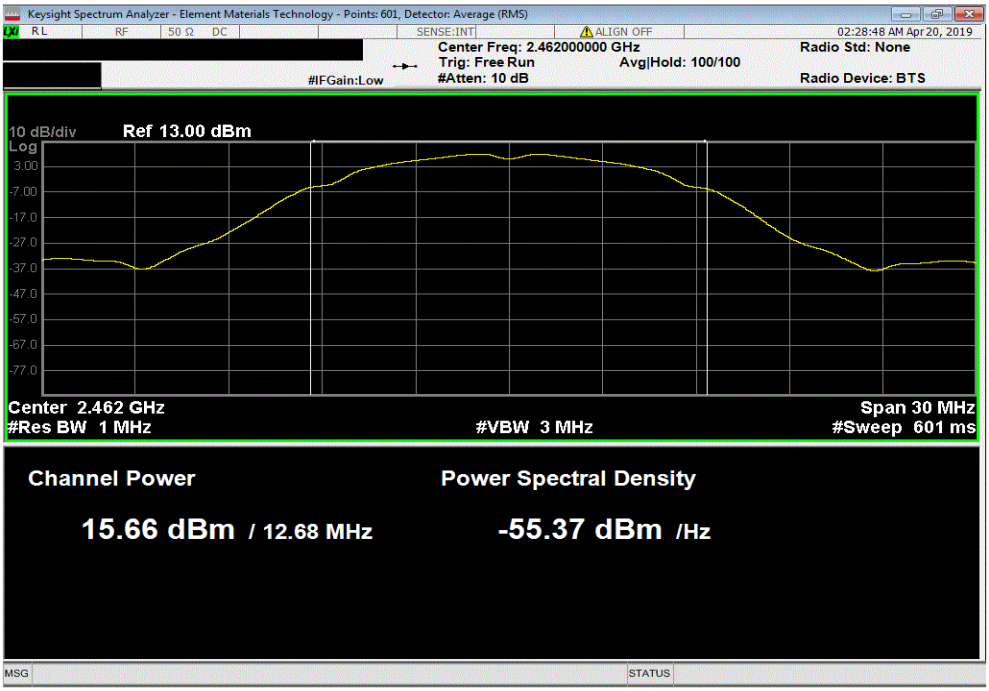
Antenna 0, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.578	0	15.6	30	Pass



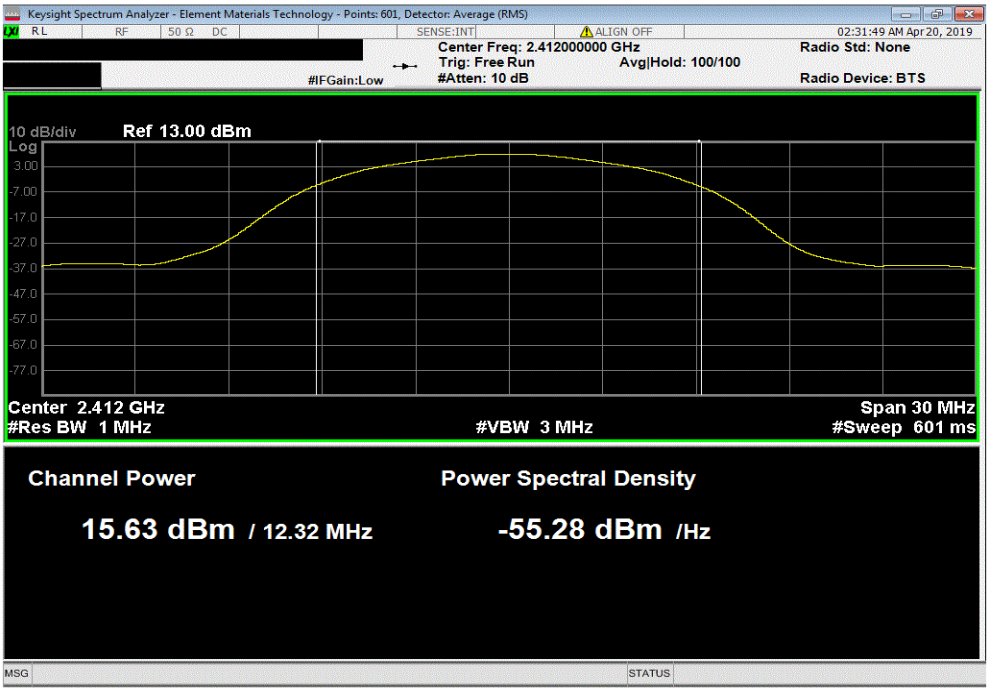
Antenna 0, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.109	0	16.1	30	Pass



Antenna 0, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.662	0	15.7	30	Pass

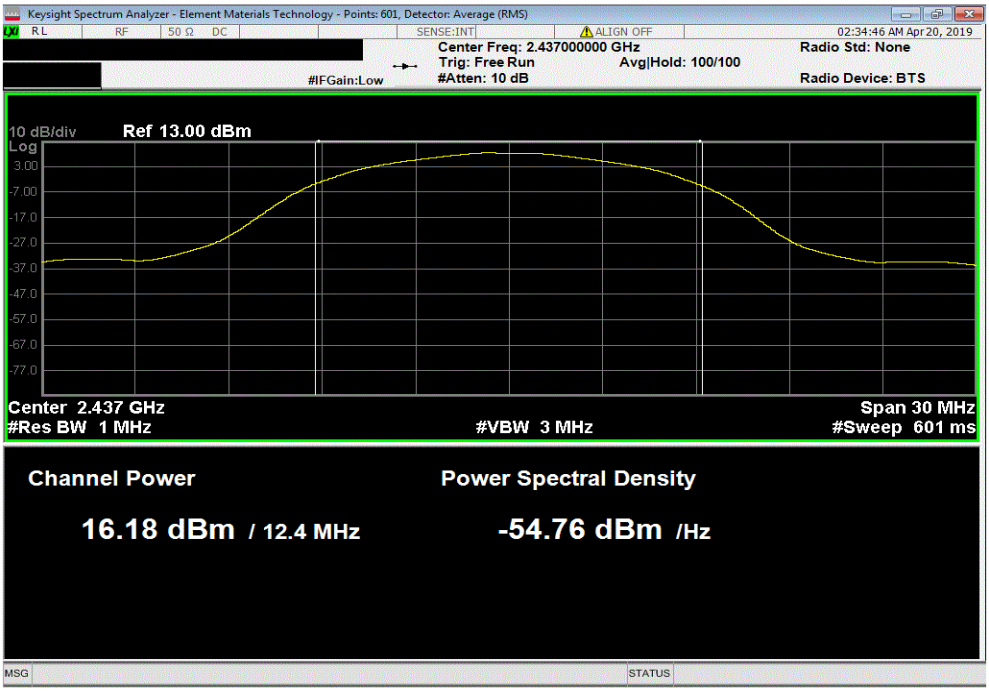


Antenna 0, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.628	0.1	15.7	30	Pass

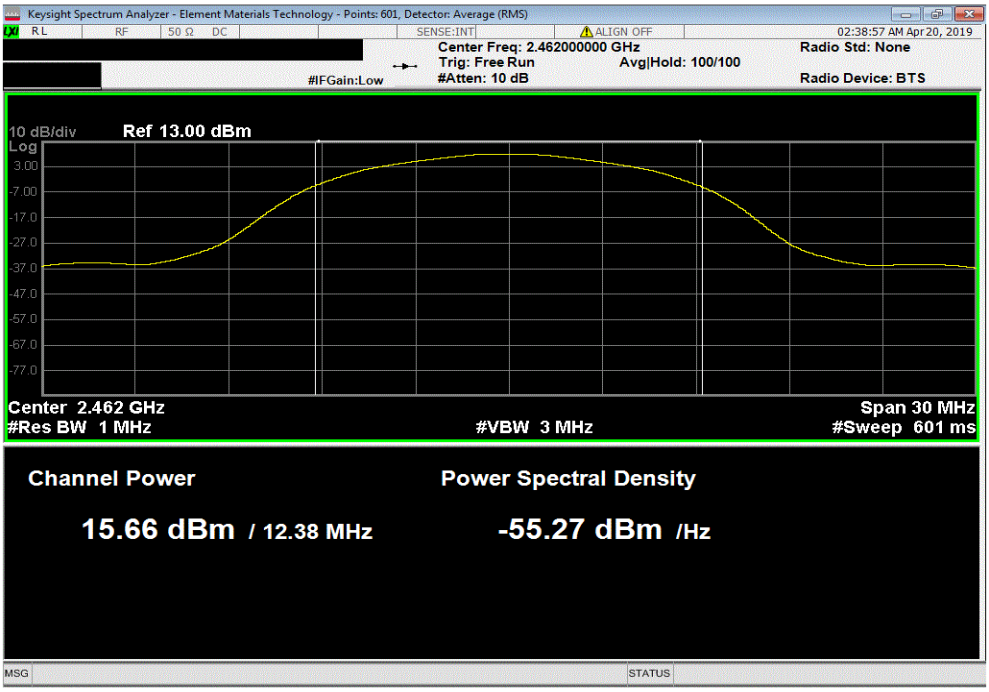


OUTPUT POWER

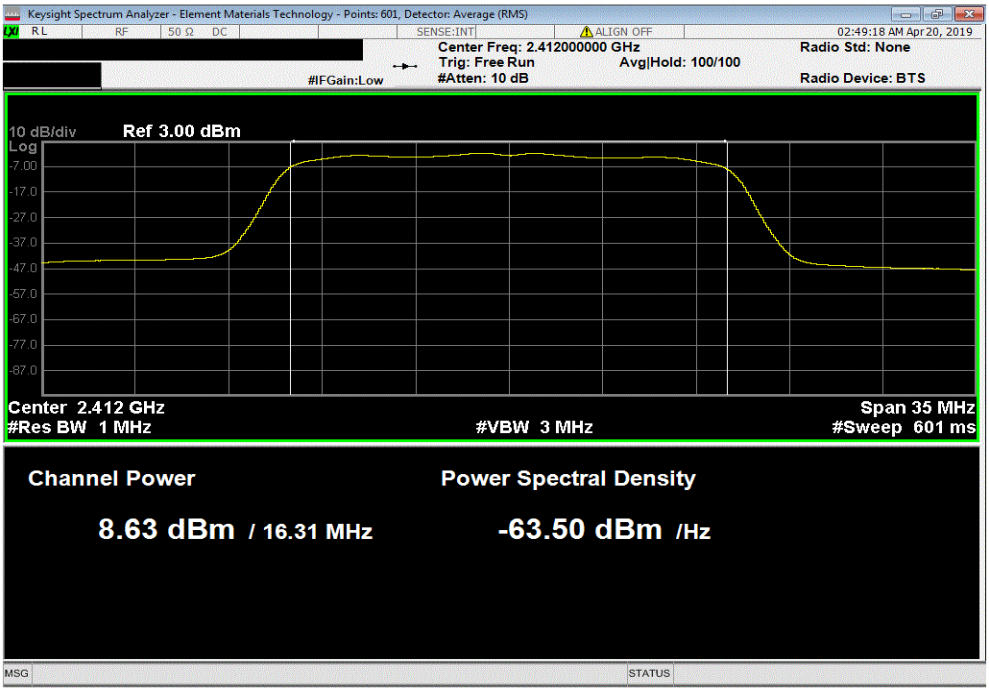
Antenna 0, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.175	0.1	16.2	30	Pass



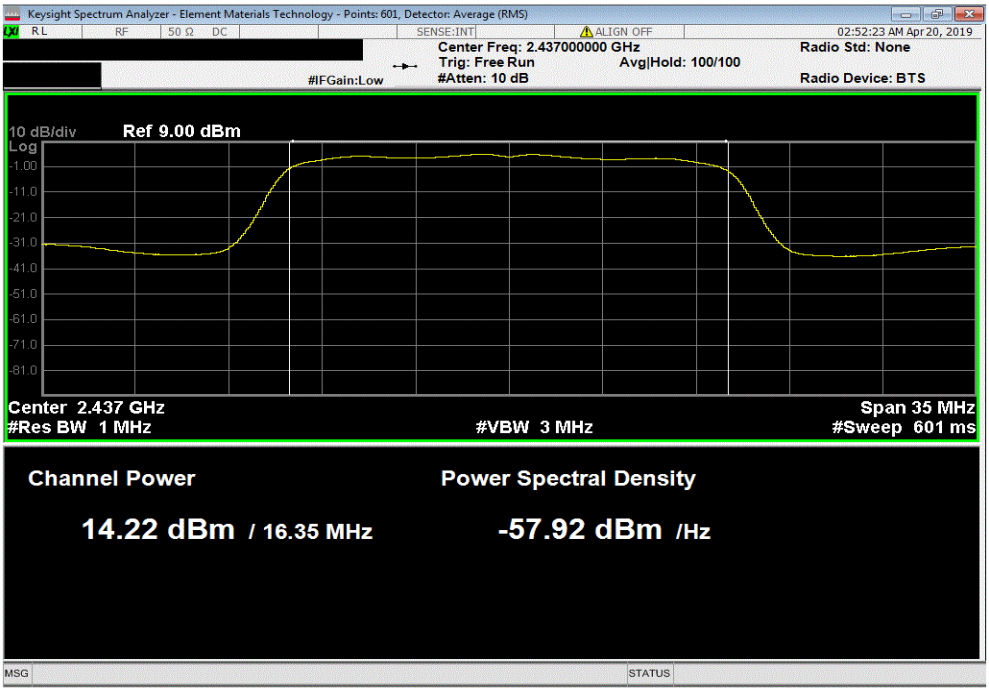
Antenna 0, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.66	0.1	15.7	30	Pass



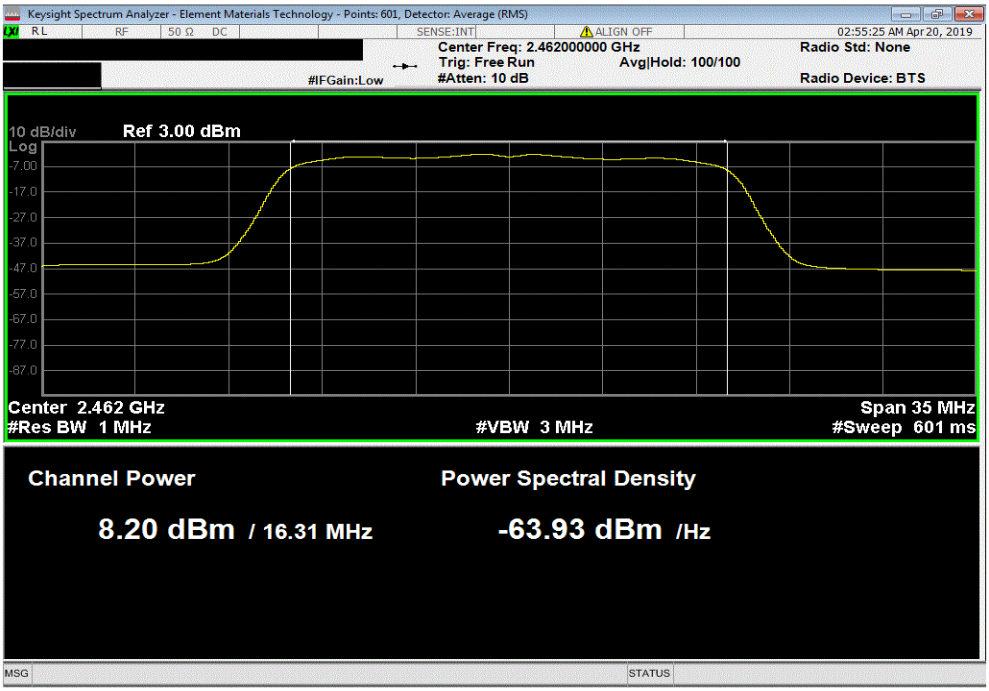
Antenna 0, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.627	0.1	8.7	30	Pass



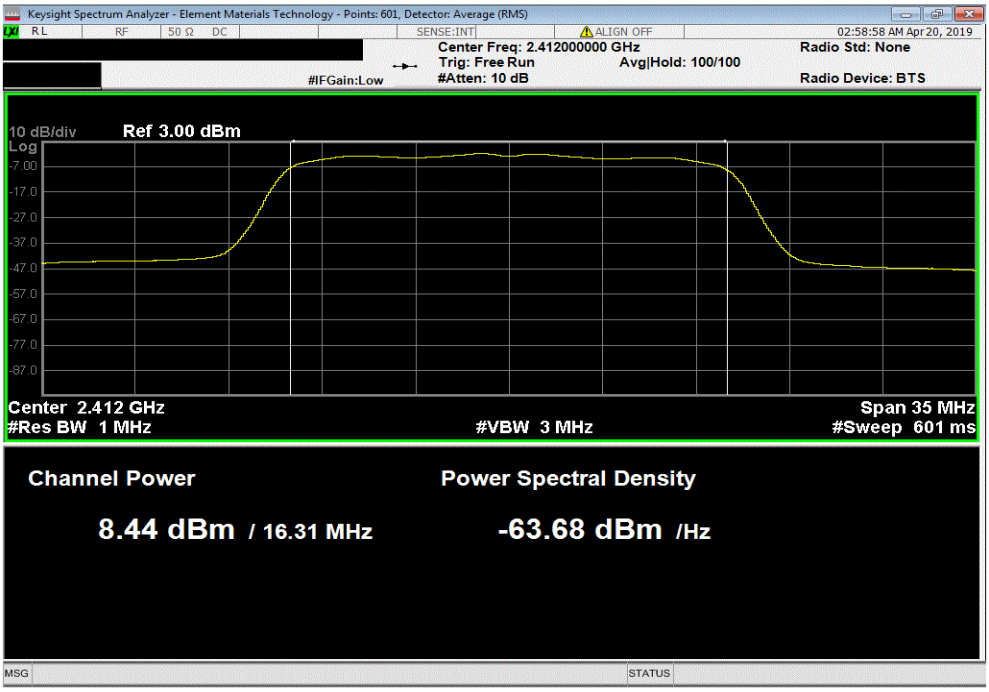
Antenna 0, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		14.22	0.1	14.3	30	Pass



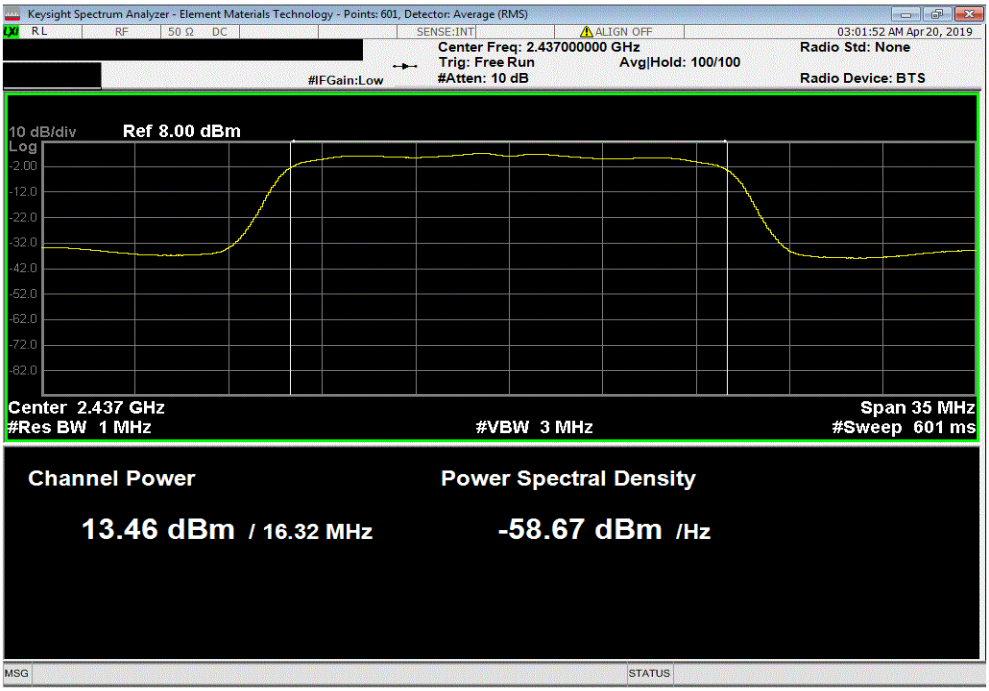
Antenna 0, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.197	0.1	8.3	30	Pass



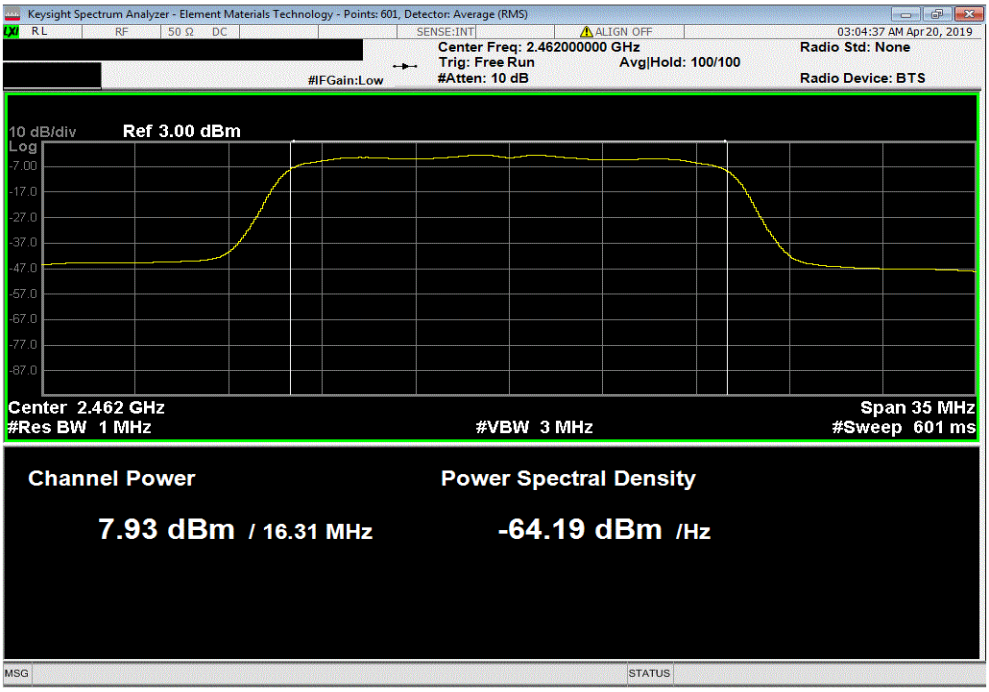
Antenna 0, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.441	0.3	8.8	30	Pass



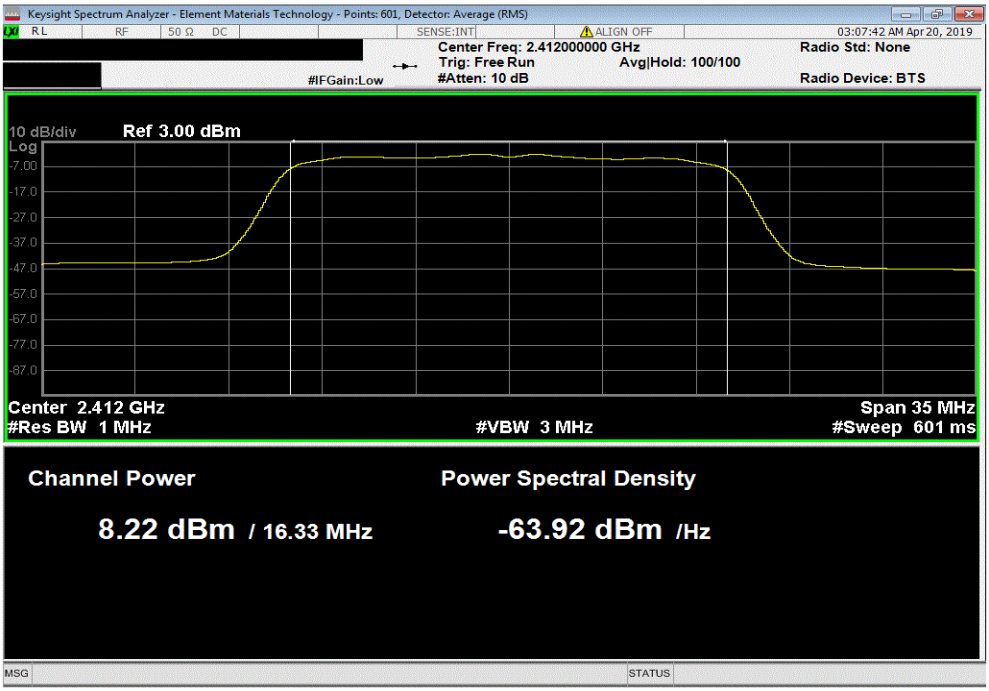
Antenna 0, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		13.46	0.4	13.8	30	Pass



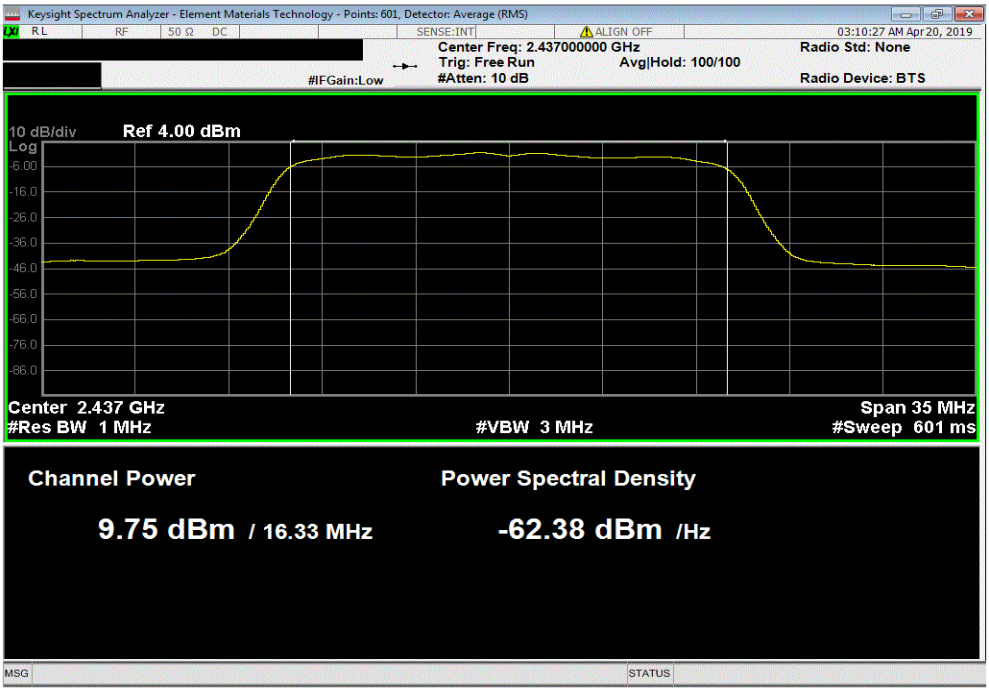
Antenna 0, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		7.934	0.4	8.3	30	Pass



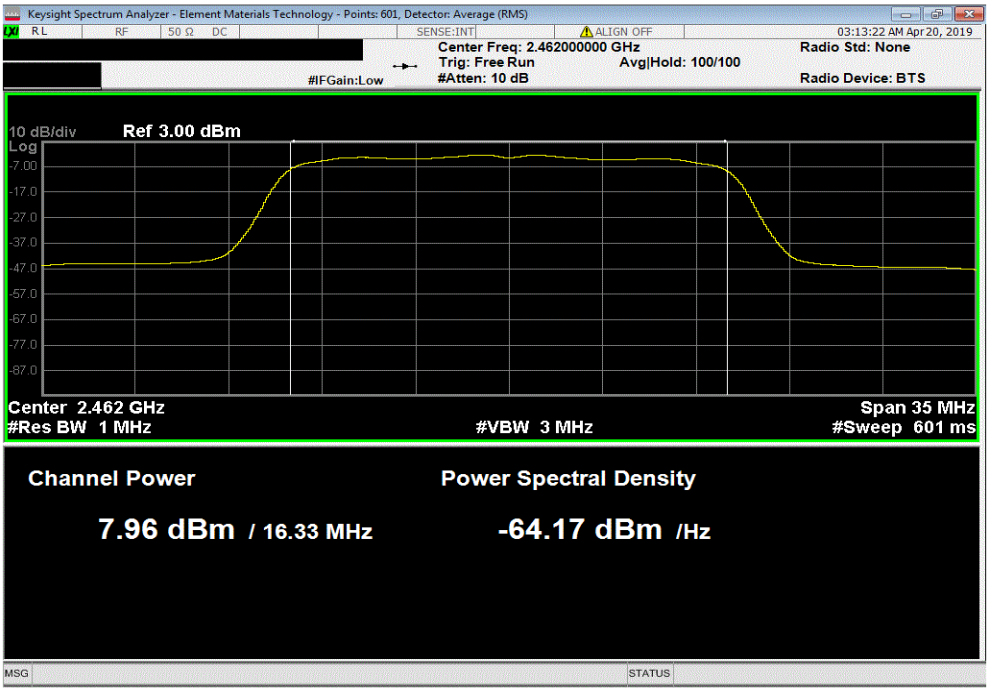
Antenna 0, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.216	0.5	8.7	30	Pass



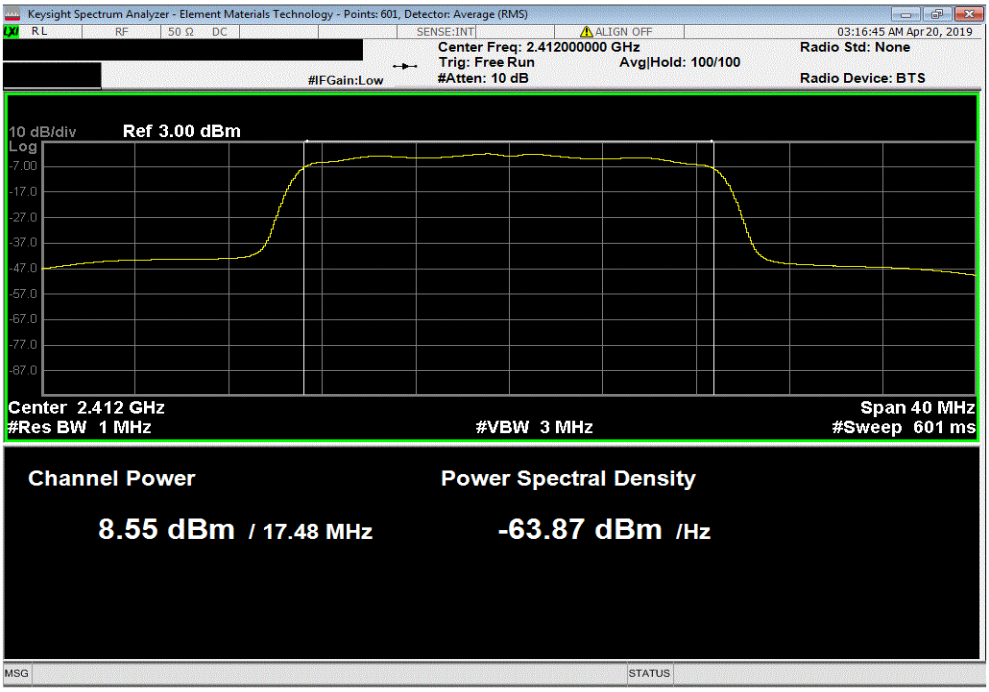
Antenna 0, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		9.747	0.5	10.2	30	Pass



Antenna 0, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		7.963	0.5	8.5	30	Pass

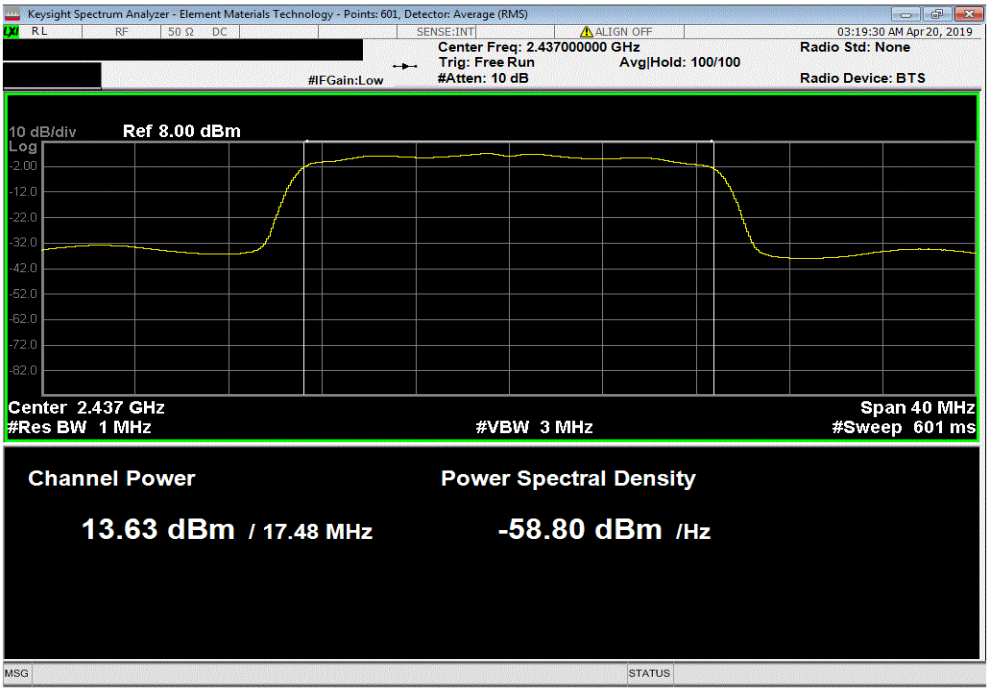


Antenna 0, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.554	0.1	8.6	30	Pass

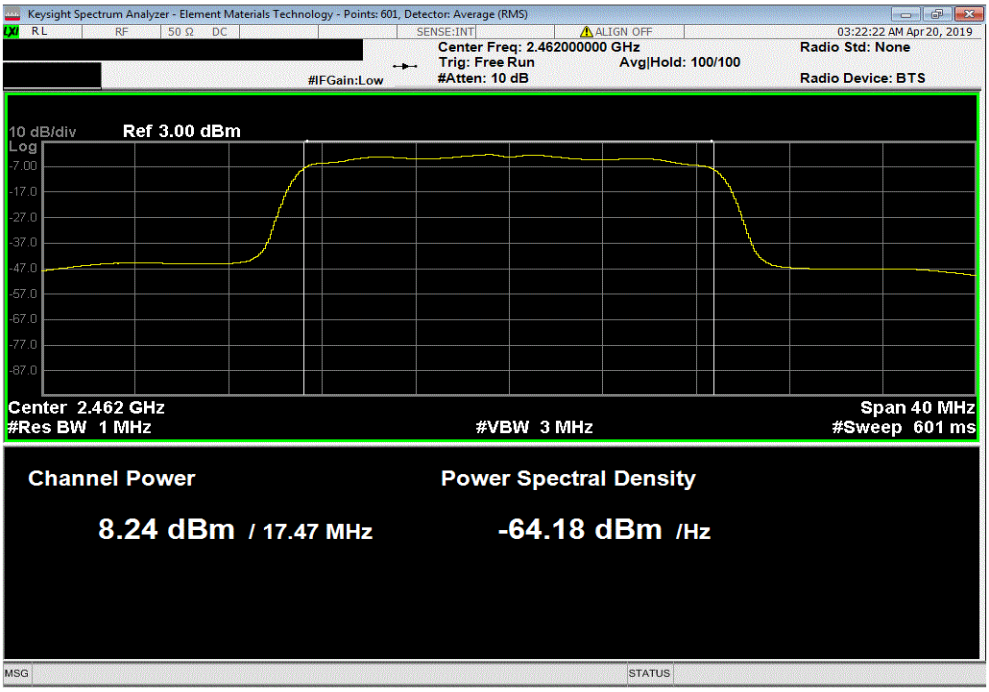


OUTPUT POWER

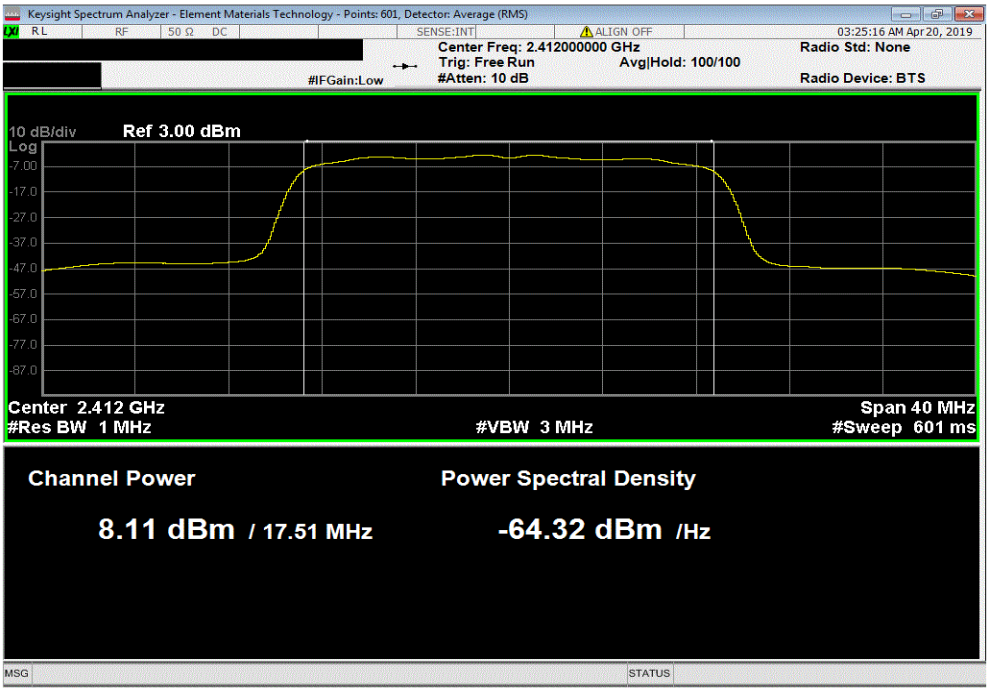
Antenna 0, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		13.627	0.1	13.7	30	Pass



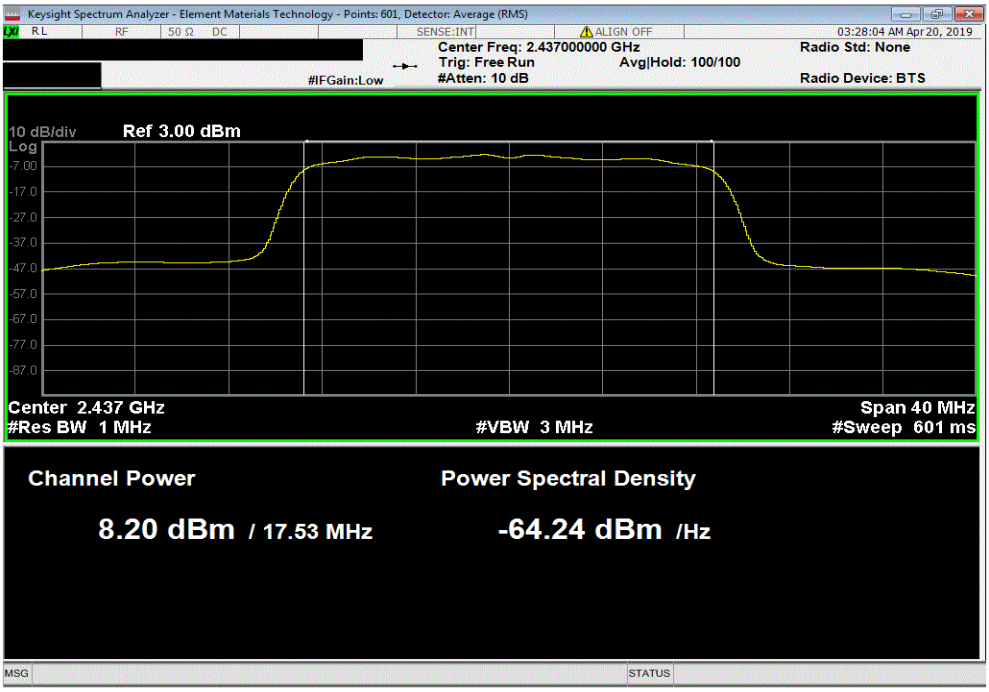
Antenna 0, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.238	0.1	8.3	30	Pass



Antenna 0, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.113	0.5	8.6	30	Pass

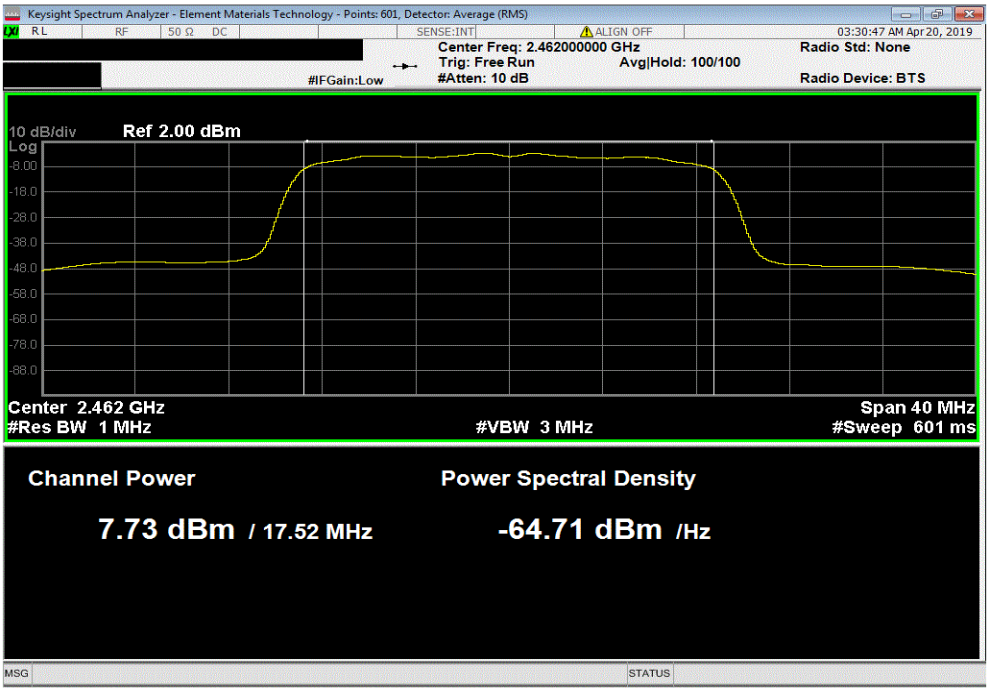


Antenna 0, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.2	0.5	8.7	30	Pass

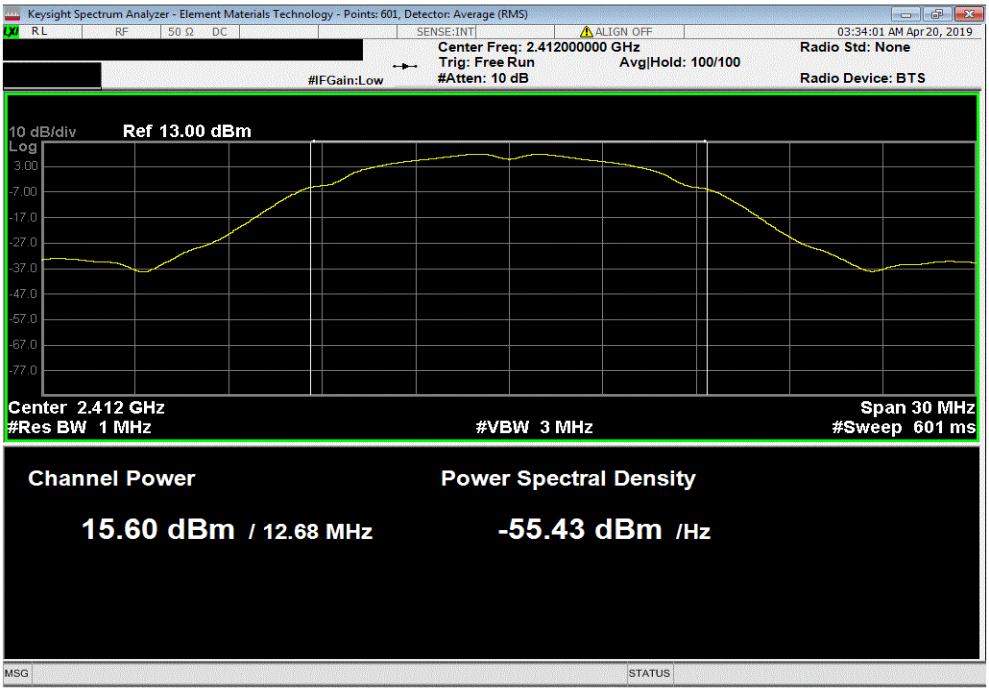


OUTPUT POWER

Antenna 0, 802.11(n) MCS7, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		7.727	0.5	8.2	30	Pass

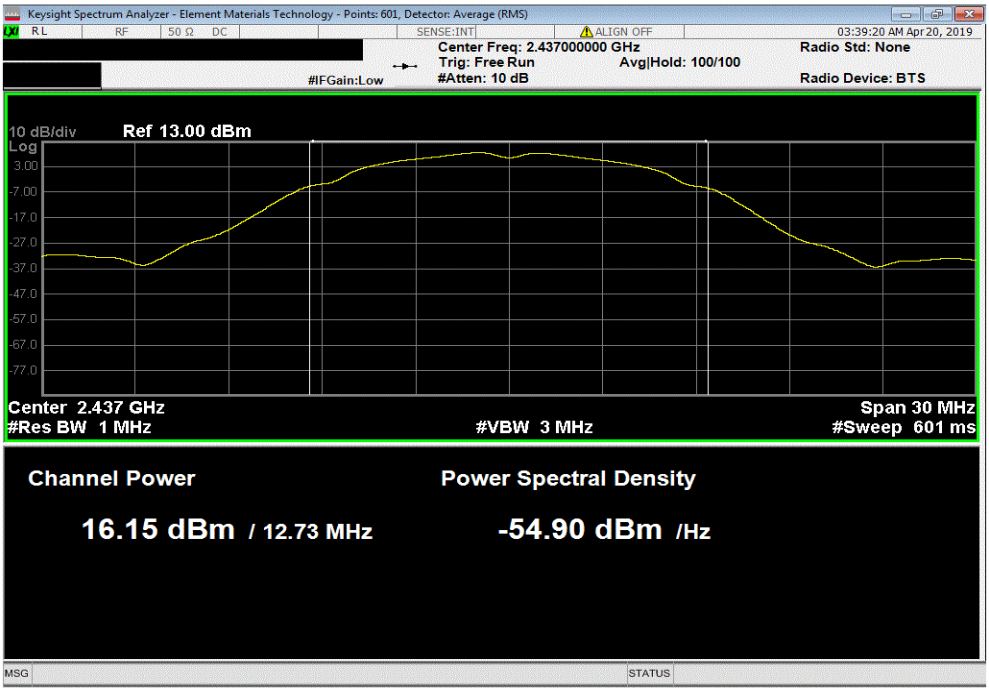


Antenna 1, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.604	0	15.6	30	Pass

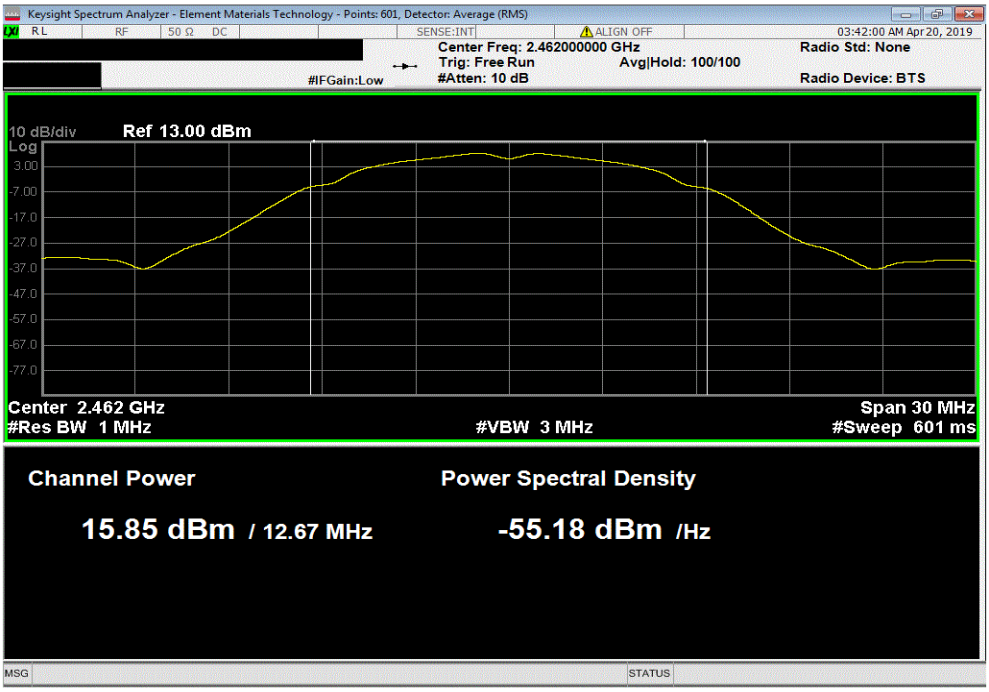


OUTPUT POWER

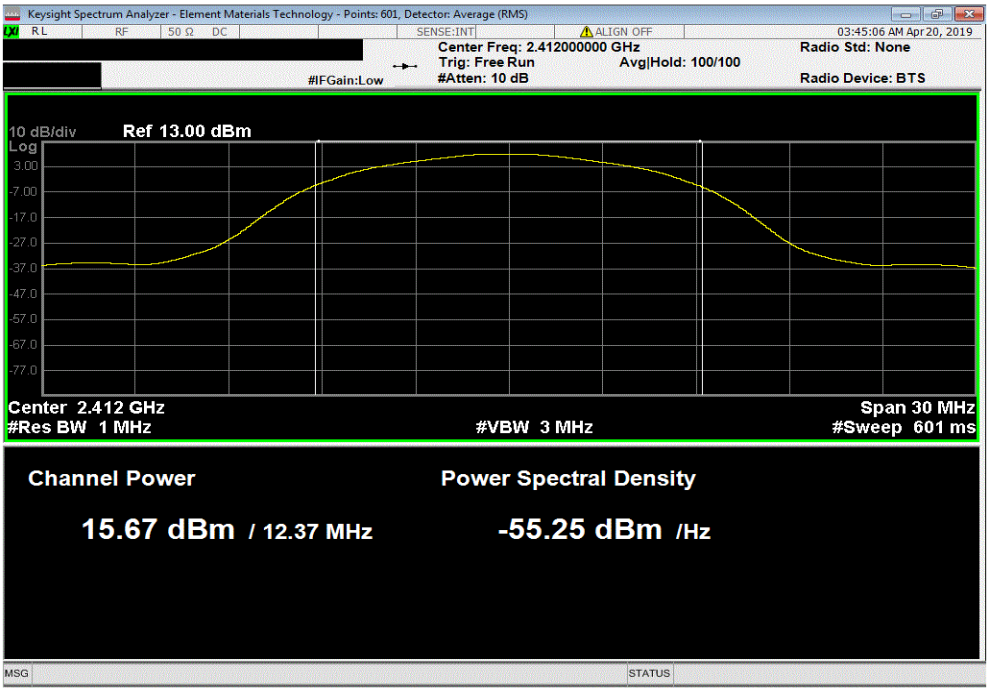
Antenna 1, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.145	0	16.2	30	Pass



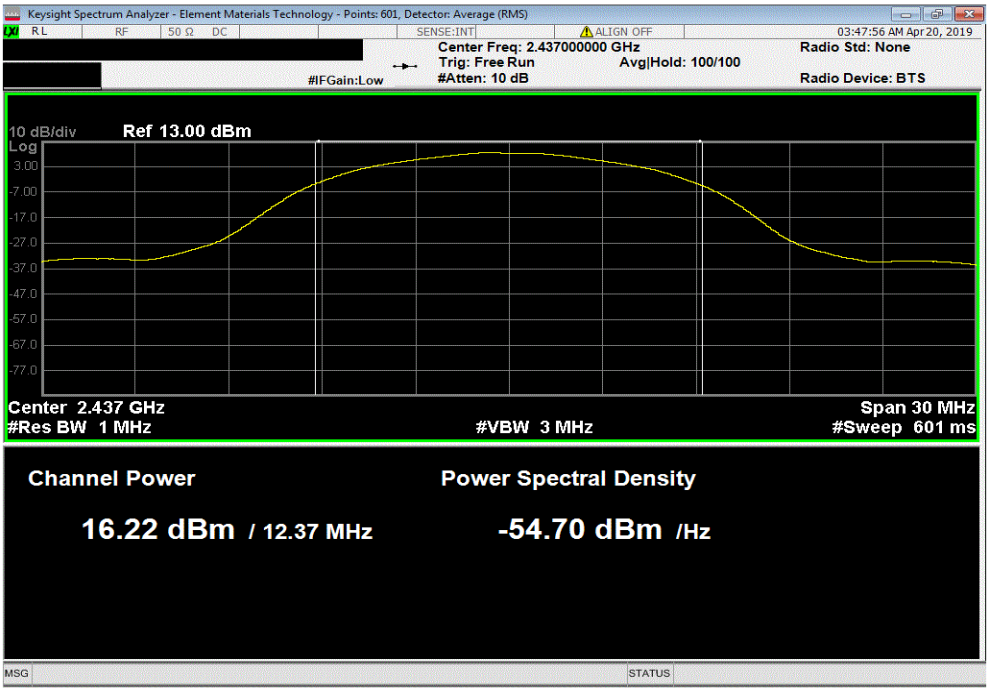
Antenna 1, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.847	0	15.9	30	Pass



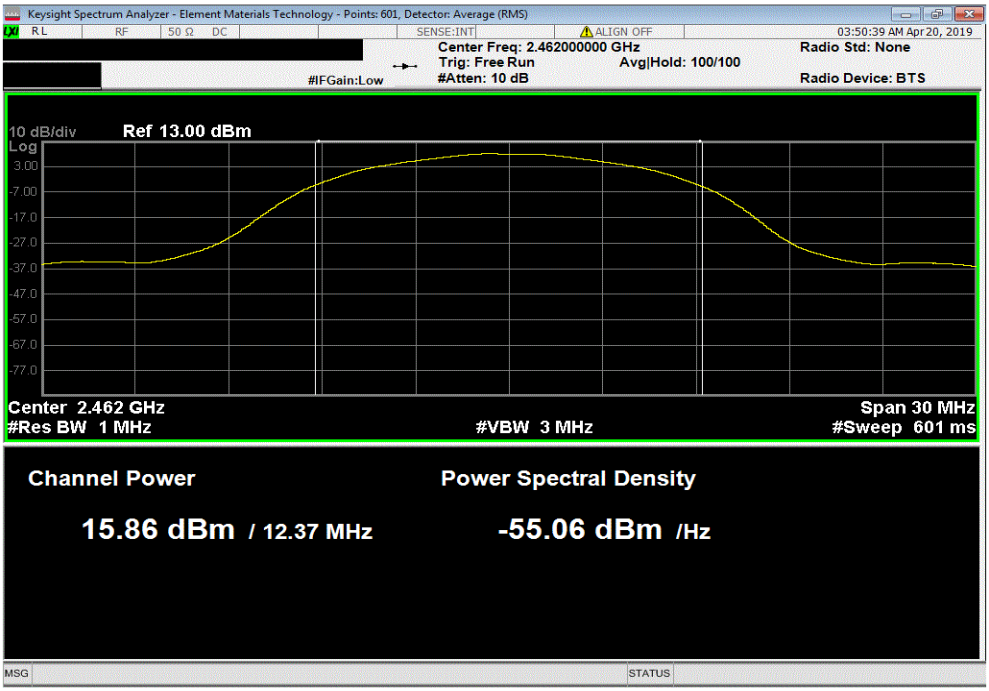
Antenna 1, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.669	0.1	15.7	30	Pass



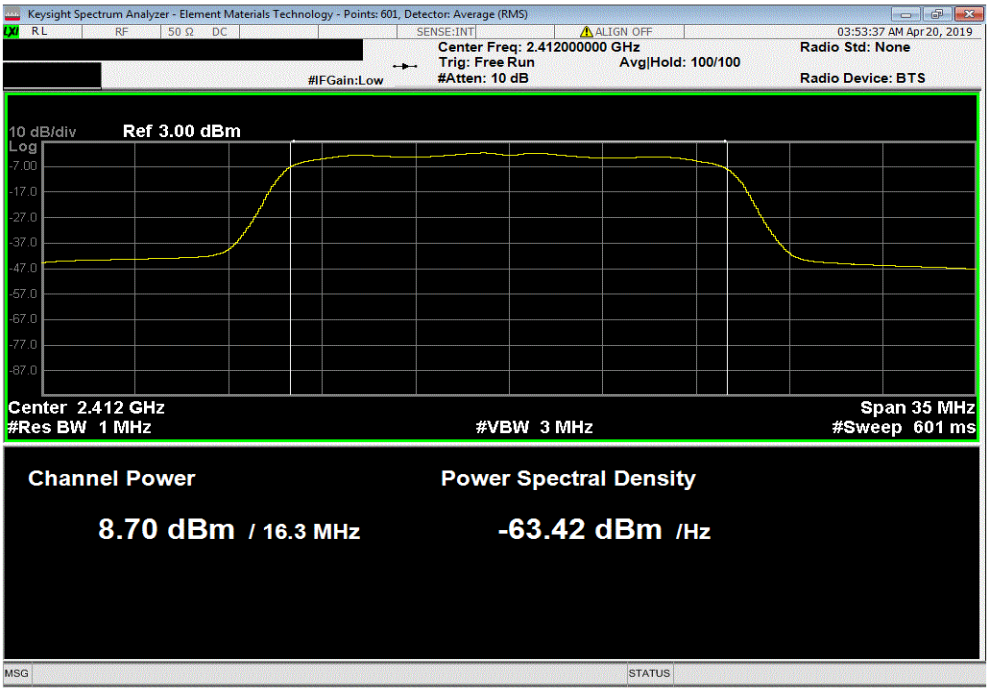
Antenna 1, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		16.219	0.1	16.3	30	Pass



Antenna 1, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		15.859	0.1	15.9	30	Pass

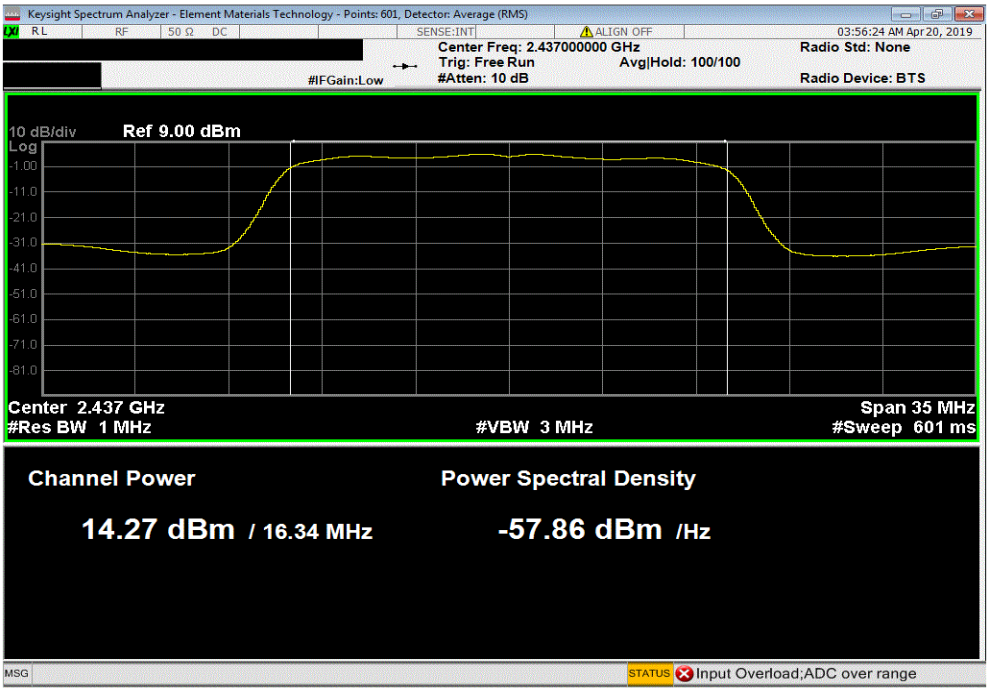


Antenna 1, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.705	0.1	8.8	30	Pass

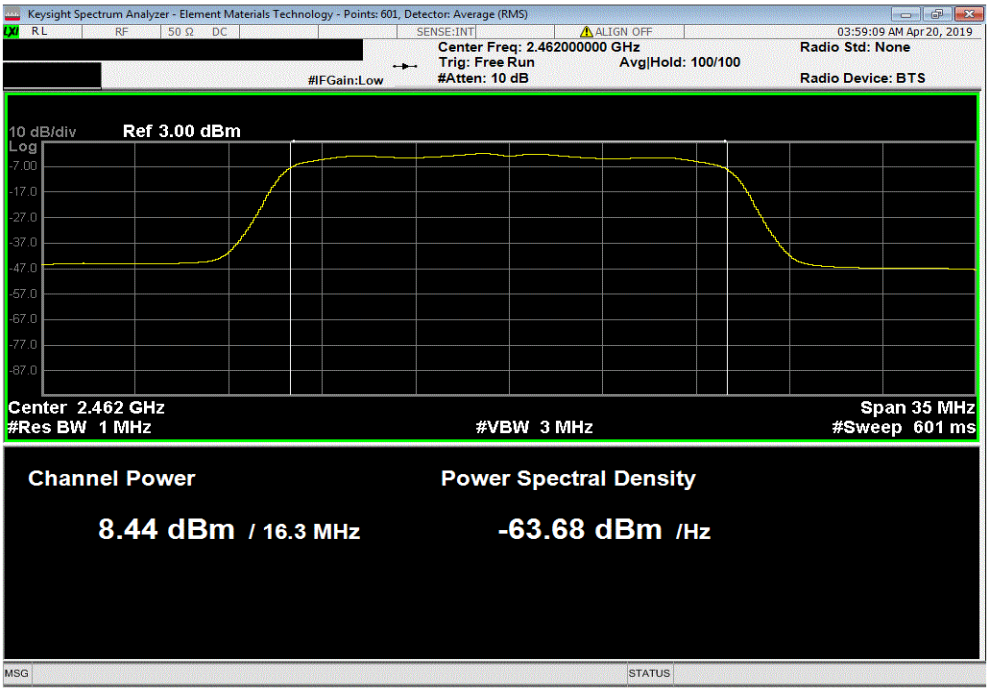


OUTPUT POWER

Antenna 1, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		14.272	0.1	14.3	30	Pass

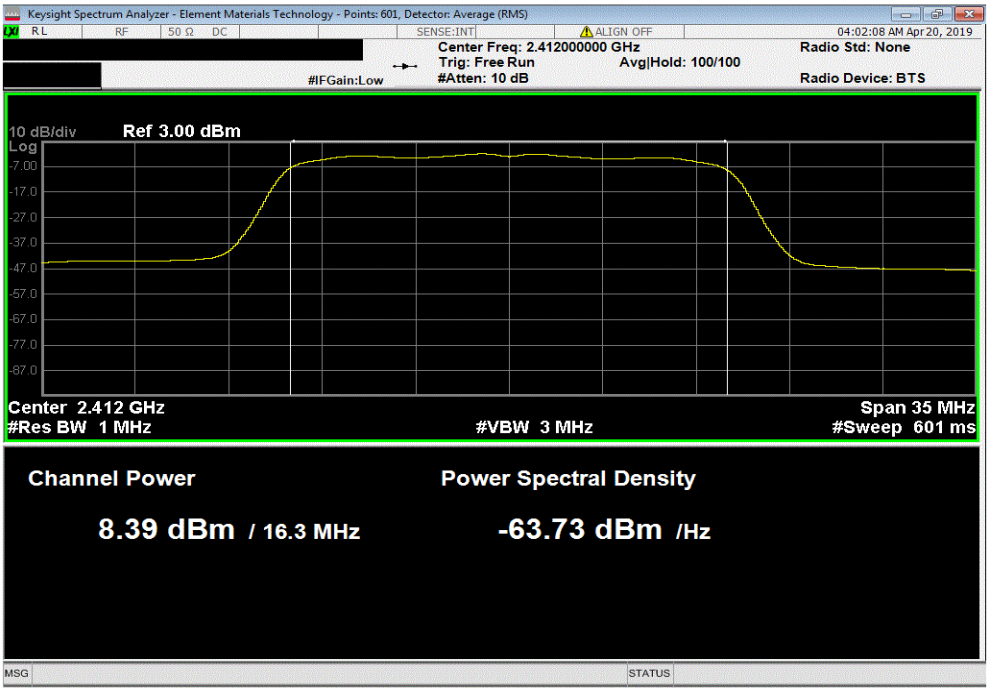


Antenna 1, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.443	0.1	8.5	30	Pass

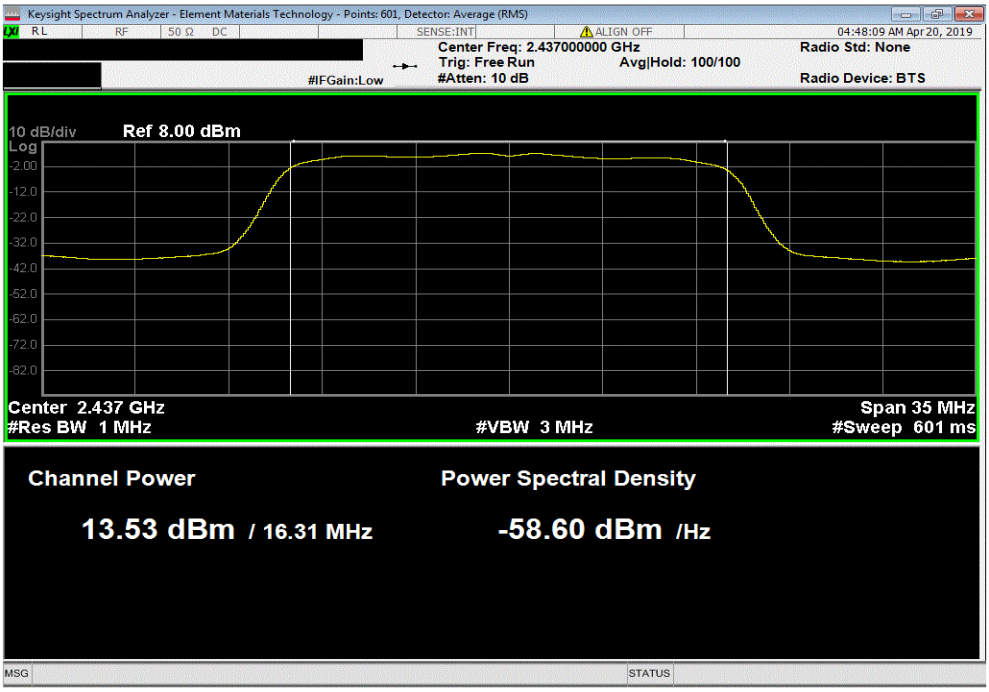


OUTPUT POWER

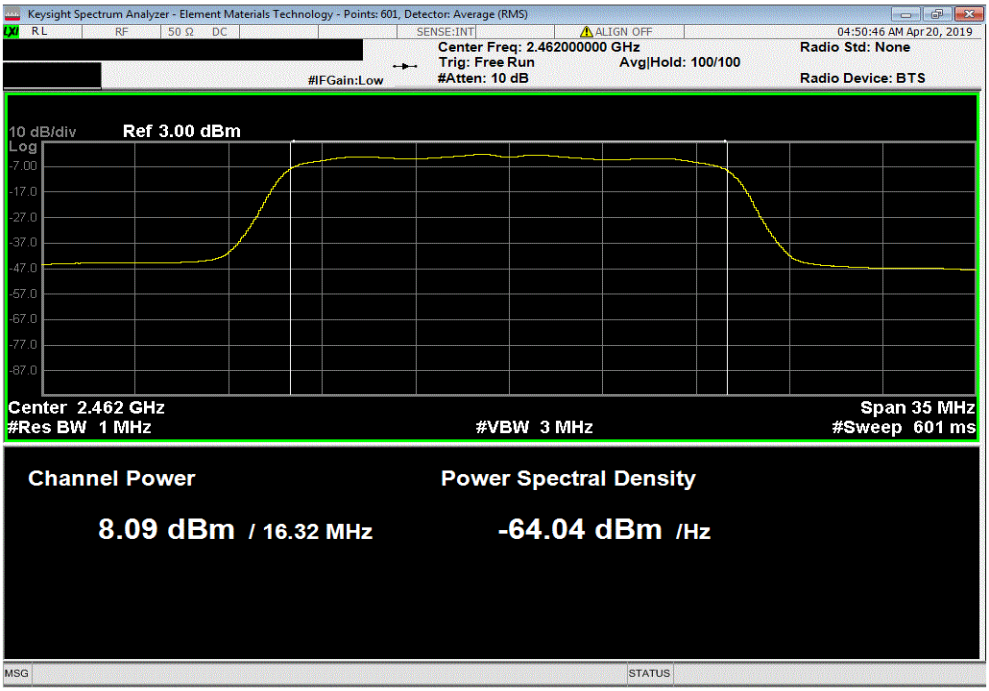
Antenna 1, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.389	0.3	8.7	30	Pass



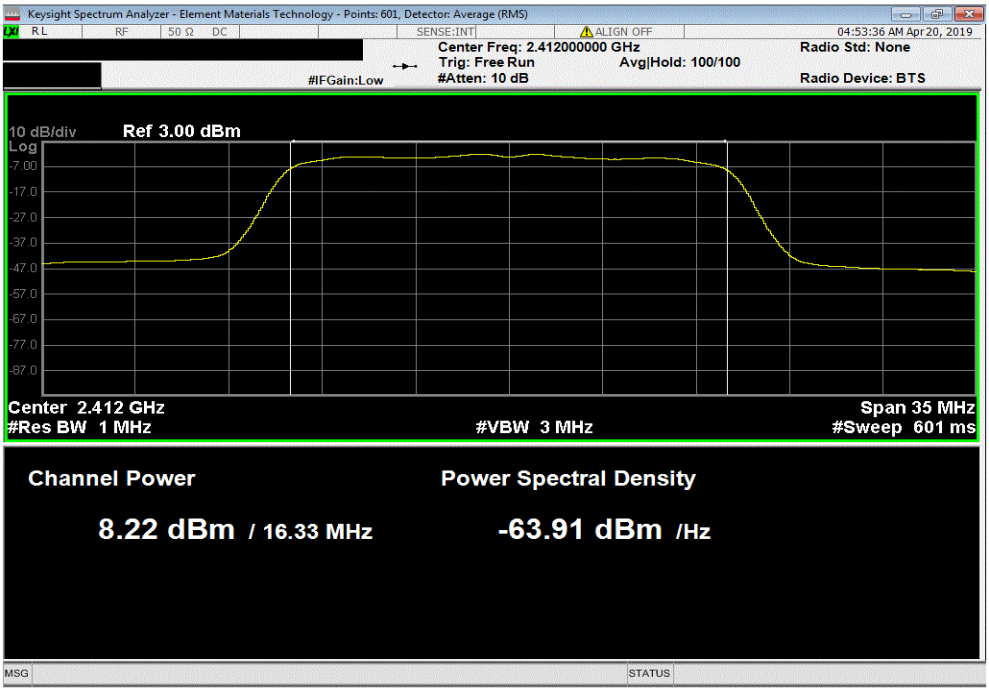
Antenna 1, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		13.53	0.4	13.9	30	Pass



Antenna 1, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.086	0.3	8.4	30	Pass

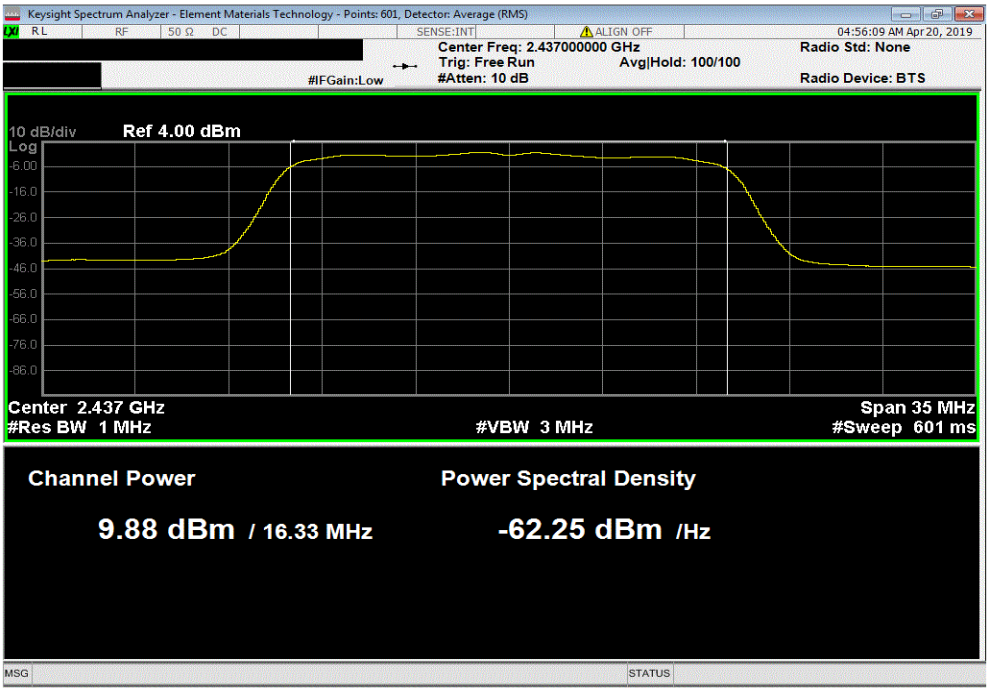


Antenna 1, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.218	0.5	8.7	30	Pass

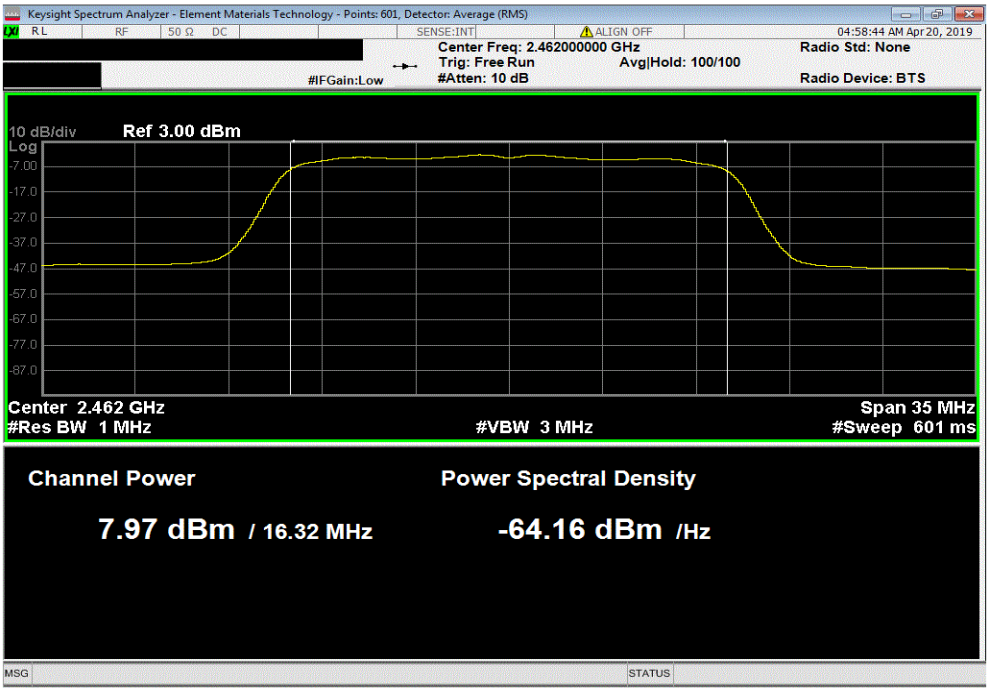


OUTPUT POWER

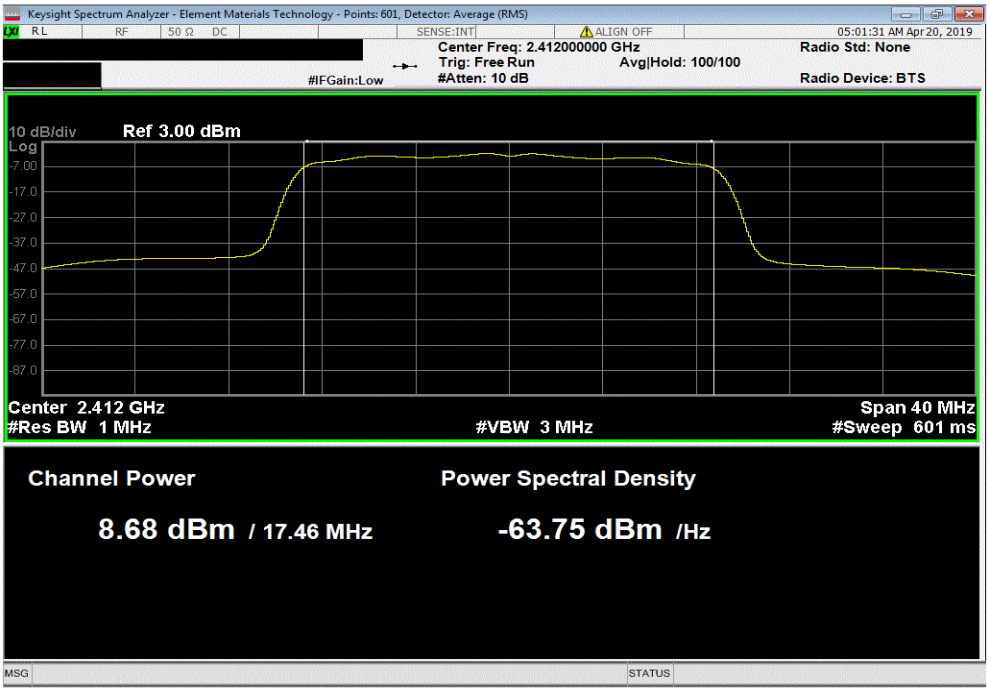
Antenna 1, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		9.879	0.5	10.4	30	Pass



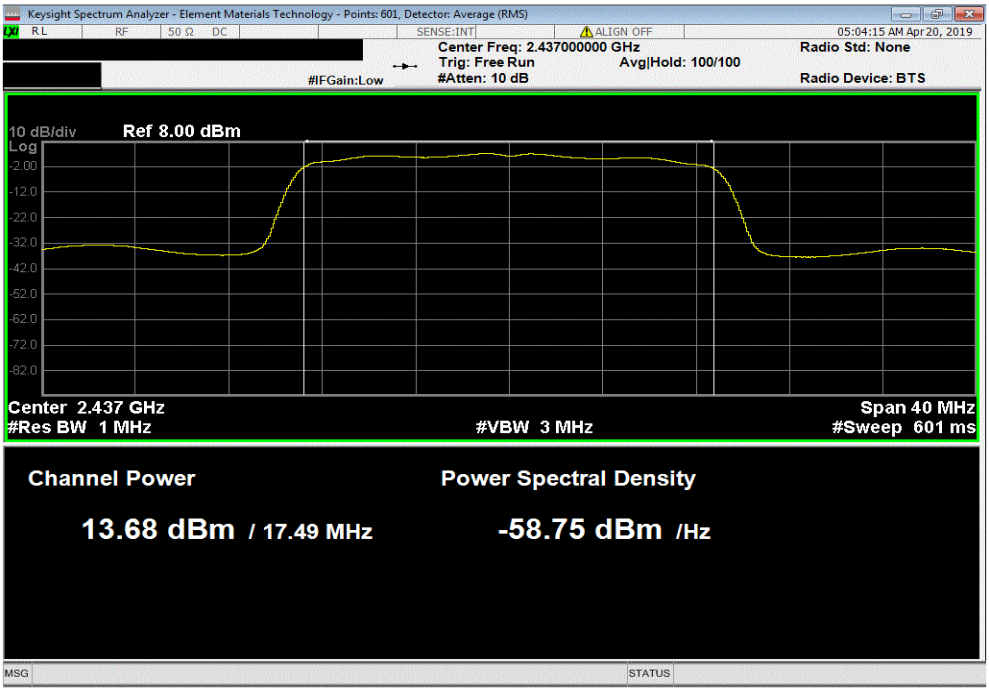
Antenna 1, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		7.966	0.5	8.5	30	Pass



Antenna 1, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.675	0.1	8.7	30	Pass

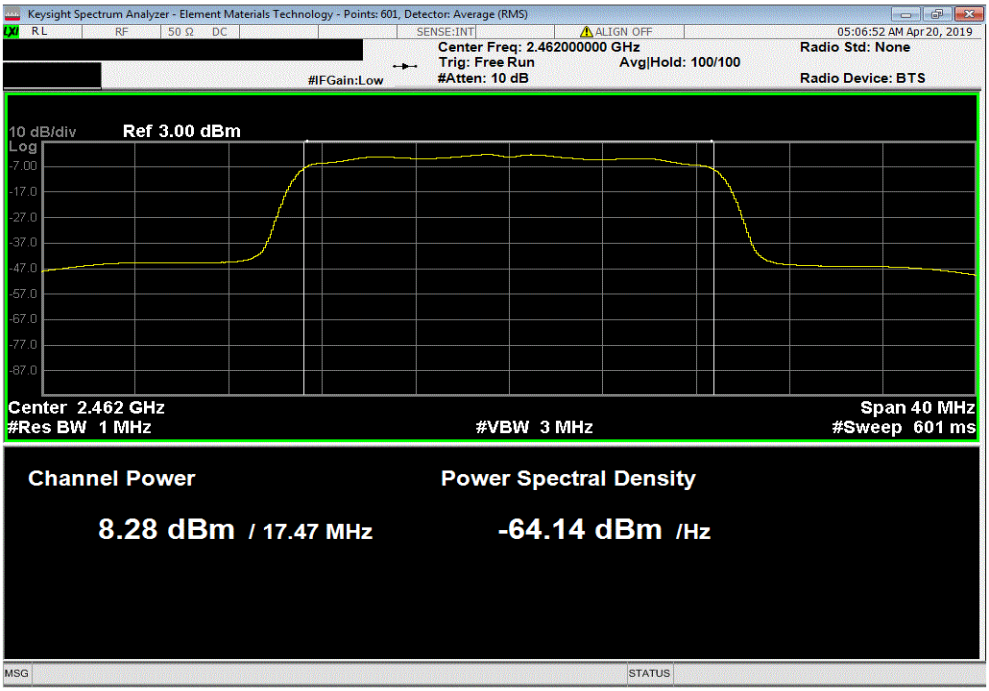


Antenna 1, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		13.677	0.1	13.7	30	Pass

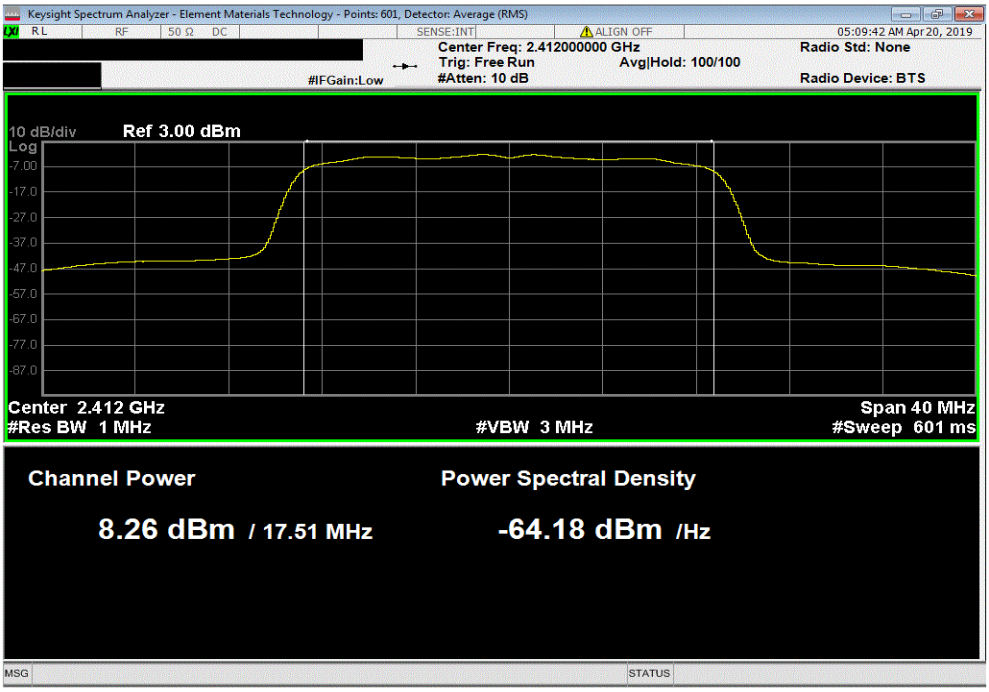


OUTPUT POWER

Antenna 1, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.283	0.1	8.3	30	Pass

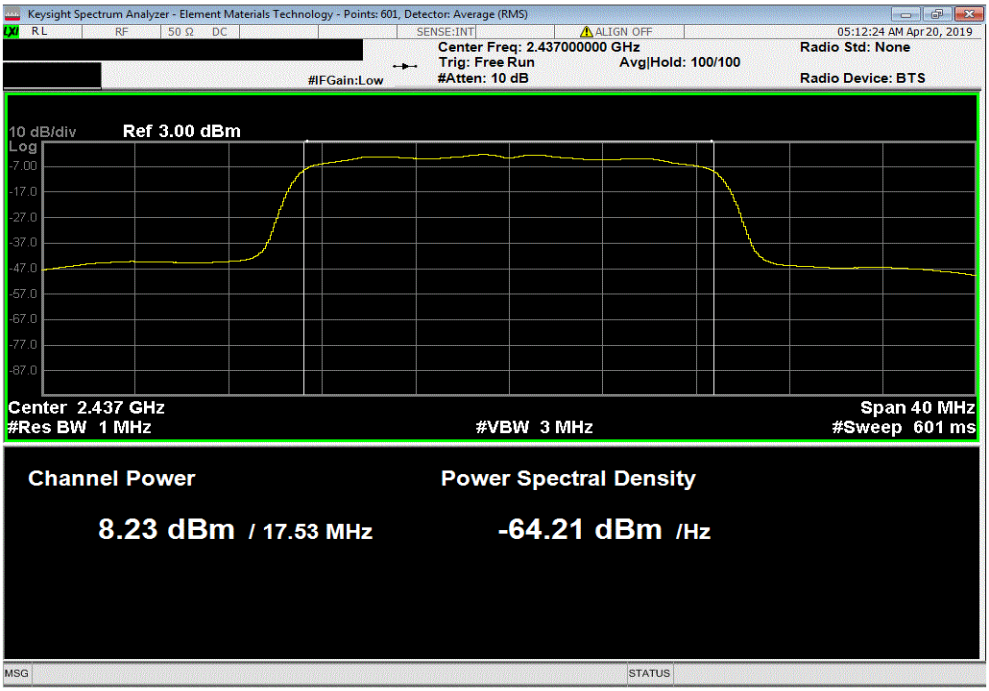


Antenna 1, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.255	0.5	8.8	30	Pass



OUTPUT POWER

Antenna 1, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		8.231	0.5	8.8	30	Pass



Antenna 1, 802.11(n) MCS7, High Channel 11, 2462 MHz						
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
		7.879	0.5	8.4	30	Pass