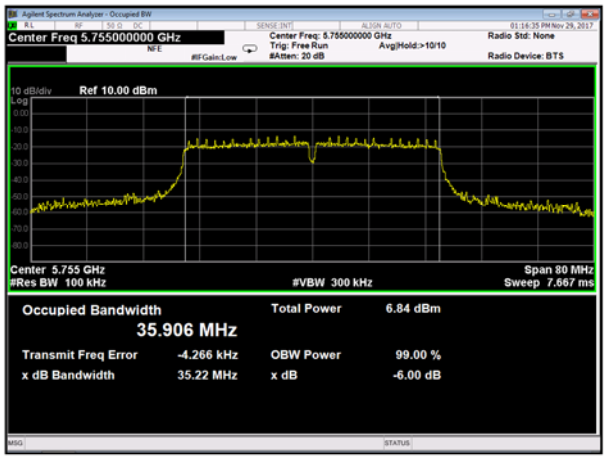
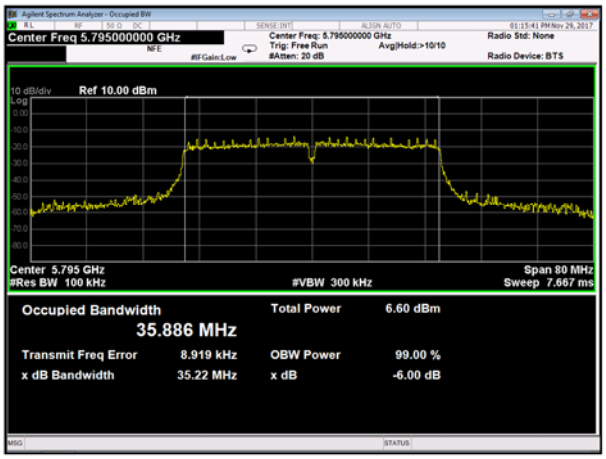
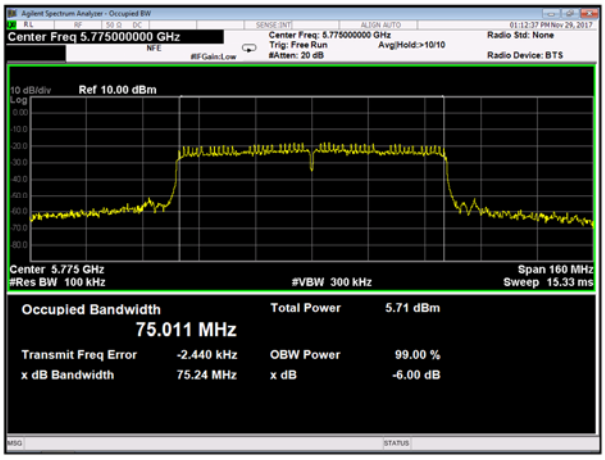
11ac-HT40	
5755MHz	5795MHz
	
11ac-HT80	
5775MHz	
	

7. MAXIMUM PEAK OUTPUT POWER

7.1. Test Procedure

(1) Connect the EUT RF output port to wideband power meter via calibrated coaxial cable and suitable attenuator (if necessary).
(2) Activates the EUT System and execute the software prepared for test, if necessary.
(3) To find out the worst condition, the transmitting data rate of EUT is changed.
(4) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal.
(5) Measure the average power of the transmitter.
(6) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle.

7.2. Test Results

11a Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	11.65	1.55	1.51	14.71	23.97	9.26
5220	11.65	1.63	1.51	14.79	23.97	9.18
5240	11.65	1.67	1.51	14.83	23.97	9.14
5745	11.66	1.14	1.51	14.31	30.00	15.69
5785	11.66	1.06	1.51	14.23	30.00	15.77
5825	11.66	1.35	1.51	14.52	30.00	15.48

11n-HT20 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5180	11.65	-1.84	3.02	12.83	19.19
5220	11.65	-1.63	3.02	13.04	20.14
5240	11.65	-1.58	3.02	13.09	20.38
5745	11.66	-2.13	3.02	12.55	17.99
5785	11.66	-2.34	3.02	12.34	17.14
5825	11.66	-1.97	3.02	12.71	18.67

11n-HT20 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5180	11.65	-3.23	3.02	11.44	13.94
5220	11.65	-3.20	3.02	11.47	14.03
5240	11.65	-3.51	3.02	11.16	13.07
5745	11.66	-2.83	3.02	11.85	15.32
5785	11.66	-2.75	3.02	11.93	15.60
5825	11.66	-2.81	3.02	11.87	15.39

11n-HT20 Ant A+B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Conducted Power (Ant A + B) (mW)	Conducted Power (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	19.19	13.94	33.13	15.20	23.97	8.77
5220	20.14	14.03	34.17	15.34	23.97	8.63
5240	20.38	13.07	33.45	15.24	23.97	8.73
5745	17.99	15.32	33.31	15.23	30.00	14.77
5785	17.14	15.60	32.74	15.15	30.00	14.85
5825	18.67	15.39	34.06	15.32	30.00	14.68

11n-HT40 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5190	11.65	-0.84	1.97	12.78	18.97
5230	11.65	-0.62	1.97	13.00	19.96
5755	11.66	-0.97	1.97	12.66	18.46
5795	11.66	-1.06	1.97	12.57	18.08

11n-HT40 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5190	11.65	-2.03	1.97	11.59	14.43
5230	11.65	-1.93	1.97	11.69	14.76
5755	11.66	-1.50	1.97	12.13	16.34
5795	11.66	-1.71	1.97	11.92	15.56

11n-HT40 Ant A+B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Conducted Power (Ant A + B) (mW)	Conducted Power (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5190	18.97	14.43	33.40	15.24	23.97	8.73
5230	19.96	14.76	34.72	15.41	23.97	8.56
5755	18.46	16.34	34.80	15.42	30.00	14.58
5795	18.08	15.56	33.64	15.27	30.00	14.73

11ac-HT20 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5180	11.65	-0.84	1.89	12.70	18.63
5220	11.65	-1.02	1.89	12.52	17.87
5240	11.65	-0.78	1.89	12.76	18.88
5745	11.66	-0.83	1.89	12.72	18.71
5785	11.66	-1.02	1.89	12.53	17.91
5825	11.66	-1.09	1.89	12.46	17.62

11ac-HT20 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5180	11.65	-2.54	1.89	11.00	12.59
5220	11.65	-2.05	1.89	11.49	14.10
5240	11.65	-1.69	1.89	11.85	15.32
5745	11.66	-1.74	1.89	11.81	15.18
5785	11.66	-1.85	1.89	11.70	14.80
5825	11.66	-1.81	1.89	11.74	14.93

11ac-HT20 Ant A+B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Conducted Power (Ant A + B) (mW)	Conducted Power (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	18.63	12.59	31.22	14.94	23.97	9.03
5220	17.87	14.10	31.97	15.05	23.97	8.92
5240	18.88	15.32	34.20	15.34	23.97	8.63
5745	18.71	15.18	33.89	15.30	30.00	14.70
5785	17.91	14.80	32.71	15.15	30.00	14.85
5825	17.62	14.93	32.55	15.13	30.00	14.87

11ac-HT40 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5190	11.65	-5.79	5.35	11.21	13.22
5230	11.65	-5.90	5.35	11.10	12.89
5755	11.66	-5.86	5.35	11.15	13.04
5795	11.66	-5.74	5.35	11.27	13.40

11ac-HT40 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5190	11.65	-8.25	5.35	8.75	7.50
5230	11.65	-8.39	5.35	8.61	7.27
5755	11.66	-7.33	5.35	9.68	9.29
5795	11.66	-7.15	5.35	9.86	9.69

11ac-HT40 Ant A+B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Conducted Power (Ant A + B) (mW)	Conducted Power (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5190	13.22	7.50	20.72	13.16	23.97	10.81
5230	12.89	7.27	20.16	13.04	23.97	10.93
5755	13.04	9.29	22.33	13.49	30.00	16.51
5795	13.40	9.69	23.09	13.63	30.00	16.37

11ac-HT80 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5210	11.65	-6.04	4.98	10.59	11.46
5775	11.66	-6.14	4.98	10.50	11.23

11ac-HT80 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Power (dBm)	Conducted Power (mW)
5210	11.65	-7.68	4.98	8.95	7.86
5775	11.66	-6.32	4.98	10.32	10.77

11ac-HT80 Ant A+B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Conducted Power (Ant A + B) (mW)	Conducted Power (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5210	11.46	7.86	19.32	12.86	23.97	11.11
5775	11.23	10.77	22.00	13.42	30.00	16.58

[Note]
Correction Factor includes the cable loss and attenuator loss.

[Calculation method]
Conducted Output Power (dBm)
= Meter Reading (dBm) + Correction Factor (dB) + Duty Cycle Factor (dB) (*)
(*) See next page

Tested Date	Environment	
	Temperature	Humidity
29 November 2017	22 °C	35 %

Duty Cycle

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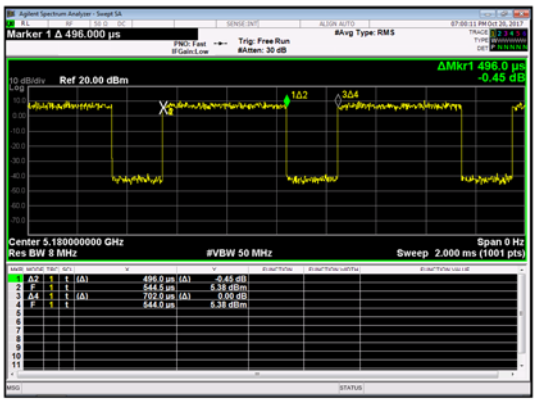	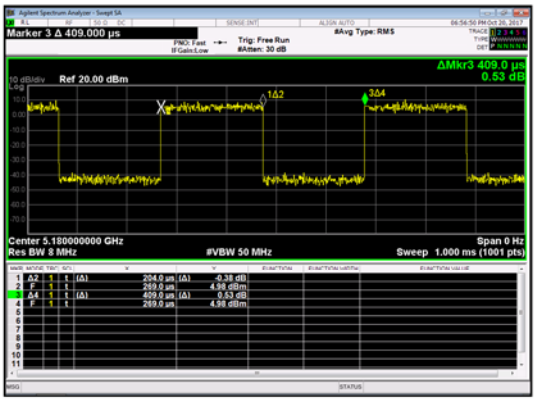
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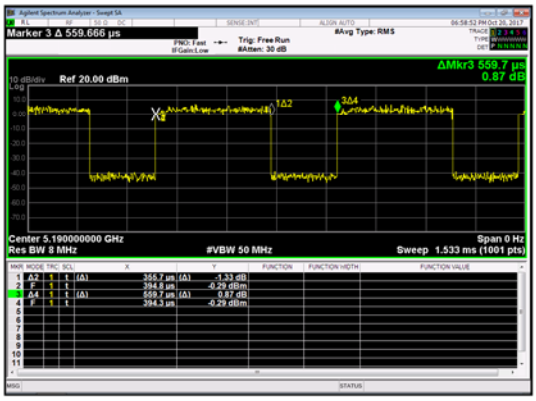	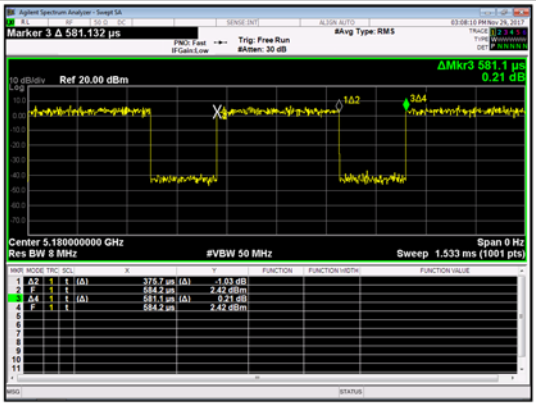
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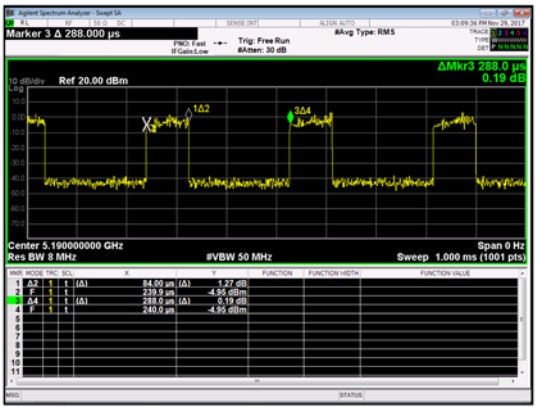
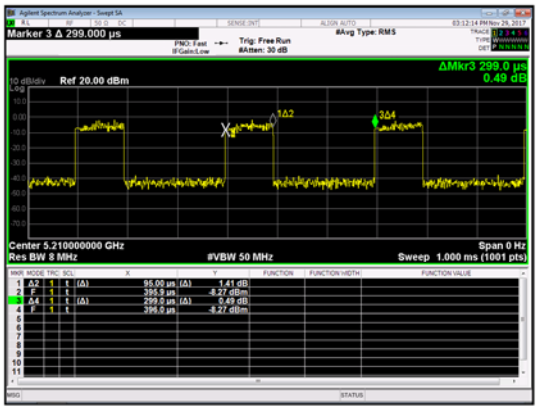
	

	11a	11n-HT20	11n-HT40	11ac-HT20	11ac-HT40	11ac-HT80
Tx on	496.00	204.00	355.70	375.70	84.00	95.00
Tx on + Tx off	702.00	409.00	559.70	581.10	288.00	299.00
Duty Cycle	0.71	0.50	0.64	0.65	0.29	0.32
Duty Cycle Factor (dB)	1.51	3.02	1.97	1.89	5.35	4.98

[Calculation method]

Duty Cycle = (Tx on) / (Tx on + Tx off)
Duty Cycle Factor (dB) = 10Log (1/Duty Cycle)

8. POWER SPECTRAL DENSITY

8.1. Test Procedure

(1) Connect the EUT RF output port to spectrum analyzer (*1) via calibrated coaxial cable and suitable attenuator (if necessary).
(2) Activates the EUT System and execute the software prepared for test, if necessary.
(3) To find out the worst condition, the transmitting data rate of EUT is changed.
(4) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal.
(5) Record the spectral density perform peak search using the spectrum analyzer.
(6) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle.

[Note]

(*1) Spectrum Analyzer Set Up Conditions

Resolution bandwidth	: 1MHz
Video bandwidth	: ≧3 x RBW
Detector function	: RMS
Trace average	: 100 times

Spectrum Analyzer Set Up Conditions (operating in the band 5.725-5.85GHz)

Resolution bandwidth	: 470kHz
Video bandwidth	: ≧3 x RBW
Detector function	: RMS
Trace average	: 100 times

8.2. Test Results

11a Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	12.29	-10.45	1.51	-	3.35	11.00	7.65
5220	12.29	-10.51	1.51	-	3.29	11.00	7.71
5240	12.29	-10.67	1.51	-	3.13	11.00	7.87
5745	12.33	-14.08	1.51	0.27	0.03	30.00	29.97
5785	12.33	-14.27	1.51	0.27	-0.16	30.00	30.16
5825	12.34	-14.14	1.51	0.27	-0.02	30.00	30.02

11n-HT20 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5180	12.29	-13.93	3.02	-	1.38	1.38
5220	12.29	-12.63	3.02	-	2.68	1.86
5240	12.29	-12.74	3.02	-	2.57	1.81
5745	12.33	-16.01	3.02	0.27	-0.39	0.92
5785	12.33	-16.38	3.02	0.27	-0.76	0.84
5825	12.34	-16.52	3.02	0.27	-0.89	0.82

11n-HT20 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5180	12.29	-13.88	3.02	-	1.43	1.39
5220	12.29	-14.71	3.02	-	0.60	1.15
5240	12.29	-13.93	3.02	-	1.38	1.38
5745	12.33	-16.98	3.02	0.27	-1.36	0.74
5785	12.33	-17.12	3.02	0.27	-1.50	0.71
5825	12.34	-17.53	3.02	0.27	-1.90	0.65

11n-HT20 Ant A + B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Power Spectral Density (Ant A + B) (mW)	Power Spectral Density (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	1.38	1.39	2.77	4.42	11.00	6.58
5220	1.86	1.15	3.01	4.79	11.00	6.21
5240	1.81	1.38	3.19	5.04	11.00	5.96
5745	0.92	0.74	1.66	2.20	30.00	27.80
5785	0.84	0.71	1.55	1.90	30.00	28.10
5825	0.82	0.65	1.47	1.67	30.00	28.33

11n-HT40 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5190	12.29	-15.56	1.97	-	-1.30	0.75
5230	12.29	-15.16	1.97	-	-0.90	0.82
5755	12.33	-18.53	1.97	0.27	-3.96	0.41
5795	12.33	-18.54	1.97	0.27	-3.97	0.41

11n-HT40 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5190	12.29	-16.39	1.97	-	-2.13	0.62
5230	12.29	-16.20	1.97	-	-1.94	0.64
5755	12.33	-18.34	1.97	0.27	-3.77	0.42
5795	12.33	-19.73	1.97	0.27	-5.16	0.31

11n-HT40 Ant A + B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Power Spectral Density (Ant A + B) (mW)	Power Spectral Density (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5190	0.75	0.62	1.37	1.37	11.00	9.63
5230	0.82	0.64	1.46	1.64	11.00	9.36
5755	0.41	0.42	0.83	-0.81	30.00	30.81
5795	0.41	0.31	0.72	-1.43	30.00	31.43

11ac-HT20 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5180	12.29	-12.27	1.89	-	1.91	1.56
5220	12.29	-11.94	1.89	-	2.24	1.68
5240	12.29	-12.01	1.89	-	2.17	1.65
5745	12.33	-15.71	1.89	0.27	-1.22	0.76
5785	12.33	-15.66	1.89	0.27	-1.17	0.77
5825	12.34	-15.44	1.89	0.27	-0.94	0.81

11ac-HT20 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5180	12.29	-14.08	1.89	-	0.10	1.03
5220	12.29	-13.61	1.89	-	0.57	1.15
5240	12.29	-13.62	1.89	-	0.56	1.14
5745	12.33	-16.15	1.89	0.27	-1.66	0.69
5785	12.33	-16.41	1.89	0.27	-1.92	0.65
5825	12.34	-16.95	1.89	0.27	-2.45	0.57

11ac-HT20 Ant A + B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Power Spectral Density (Ant A + B) (mW)	Power Spectral Density (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	1.56	1.03	2.59	4.13	11.00	6.87
5220	1.68	1.15	2.83	4.52	11.00	6.48
5240	1.65	1.14	2.79	4.46	11.00	6.54
5745	0.76	0.69	1.45	1.61	30.00	28.39
5785	0.77	0.65	1.42	1.52	30.00	28.48
5825	0.81	0.57	1.38	1.40	30.00	28.60

11ac-HT40 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5190	12.29	-20.00	5.35	-	-2.36	0.59
5230	12.29	-19.44	5.35	-	-1.80	0.67
5755	12.33	-22.62	5.35	0.27	-4.67	0.35
5795	12.33	-22.87	5.35	0.27	-4.92	0.33

11ac-HT40 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5190	12.29	-21.60	5.35	-	-3.96	0.41
5230	12.29	-22.09	5.35	-	-4.45	0.36
5755	12.33	-23.66	5.35	0.27	-5.71	0.27
5795	12.33	-23.99	5.35	0.27	-6.04	0.25

11ac-HT40 Ant A + B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Power Spectral Density (Ant A + B) (mW)	Power Spectral Density (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5190	0.59	0.41	1.00	0.00	11.00	11.00
5230	0.67	0.36	1.03	0.13	11.00	10.87
5755	0.35	0.27	0.62	-2.08	30.00	32.08
5795	0.33	0.25	0.58	-2.37	30.00	32.37

11ac-HT80 Ant A

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5210	12.29	-22.64	4.98	-	-5.37	0.30
5775	12.33	-25.13	4.98	0.27	-7.55	0.18

11ac-HT80 Ant B

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Power Spectral Density (dBm)	Power Spectral Density (mW)
5210	12.29	-24.71	4.98	-	-7.44	0.19
5775	12.33	-26.64	4.98	0.27	-9.06	0.13

11ac-HT80 Ant A + B

Measured Frequency (MHz)	Ant A (mW)	Ant B (mW)	Power Spectral Density (Ant A + B) (mW)	Power Spectral Density (Ant A + B) (dBm)	Limit (dBm)	Margin for Limit (dB)
5210	0.30	0.19	0.49	-3.10	11.00	14.10
5775	0.18	0.13	0.31	-5.09	30.00	35.09

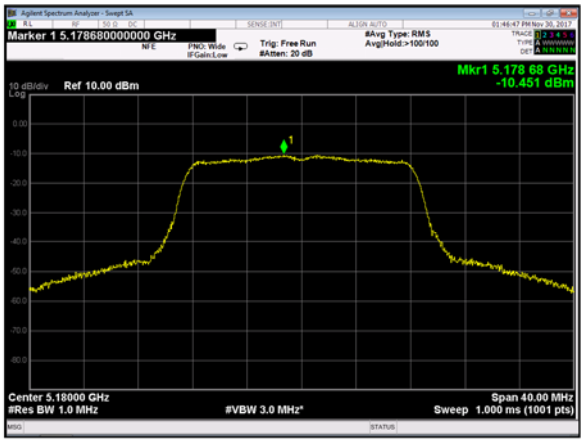
[Note]
(1) Correction Factor includes the cable loss and attenuator loss.
(2) See next page figure.

[Calculation method]
Maximum Power Spectral Density (dBm)
= Meter Reading (dBm) + Correction Factor (dB) + Duty Cycle Factor (dB) (*) + Conversion Factor (dB)
(*) See page 33.

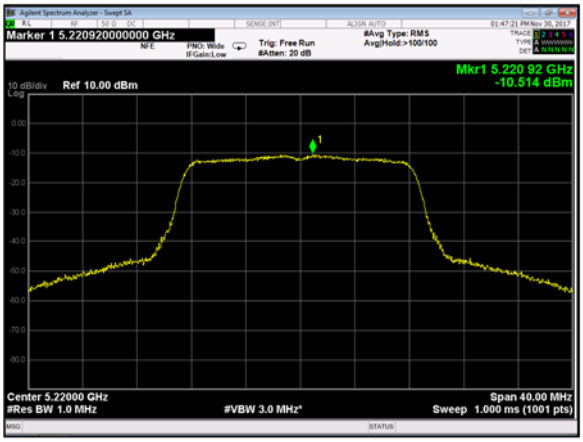
Tested Date	Environment	
	Temperature	Humidity
29 November 2017	22 °C	35 %

11a

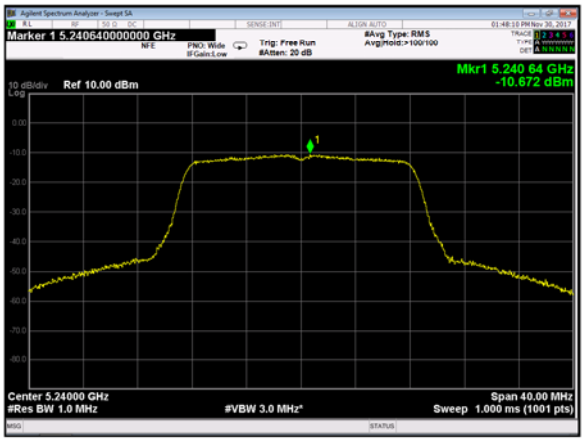
5180MHz



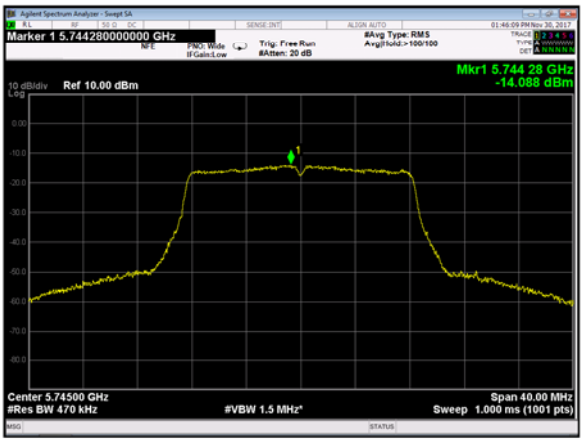
5220MHz



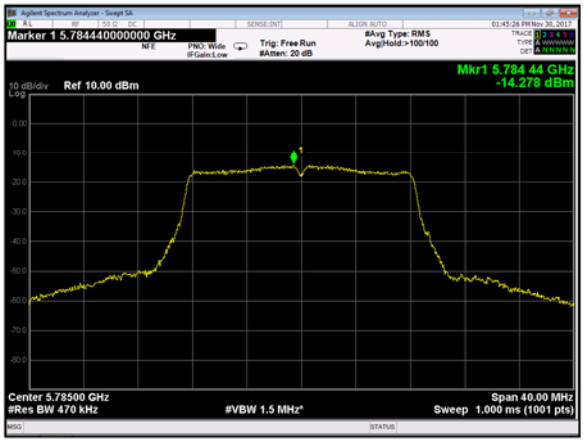
5240MHz



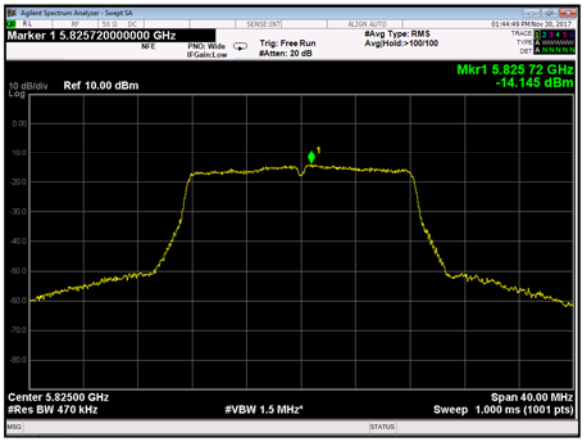
5745MHz

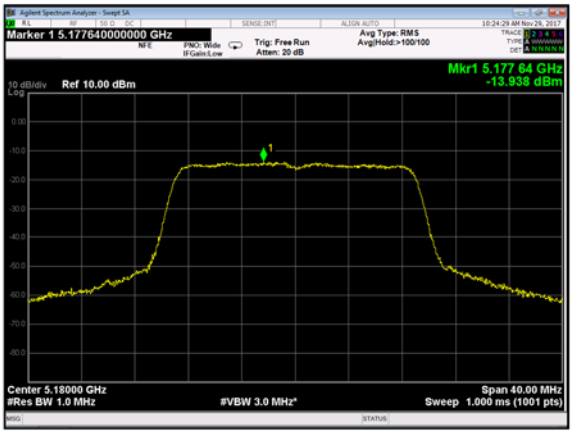
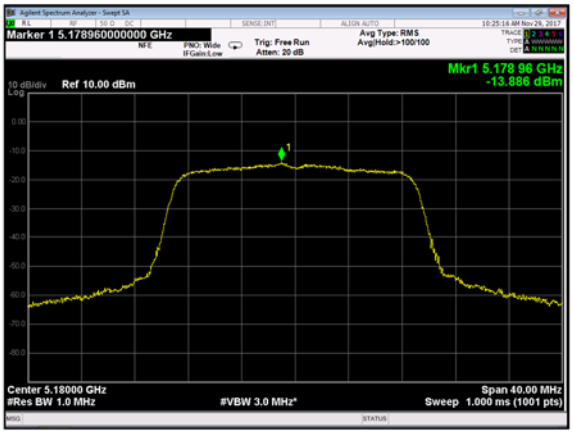
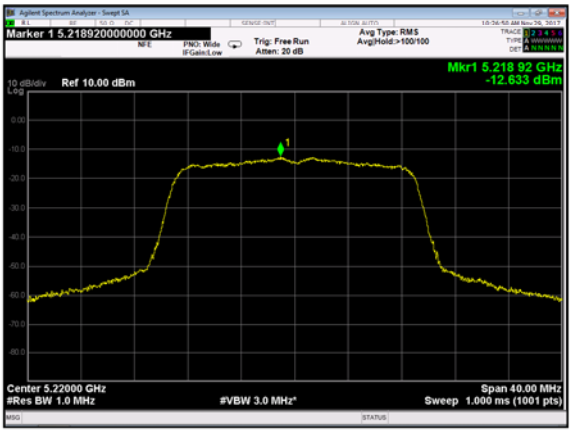
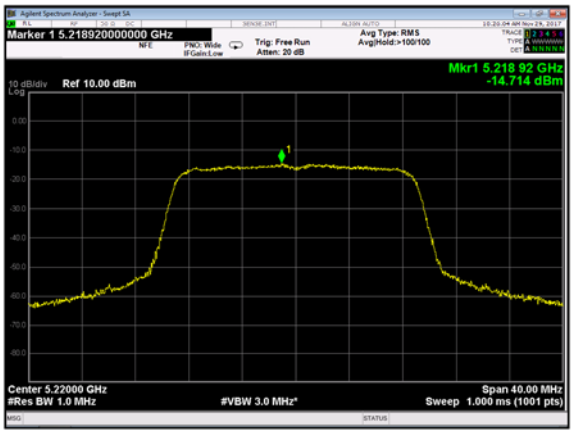
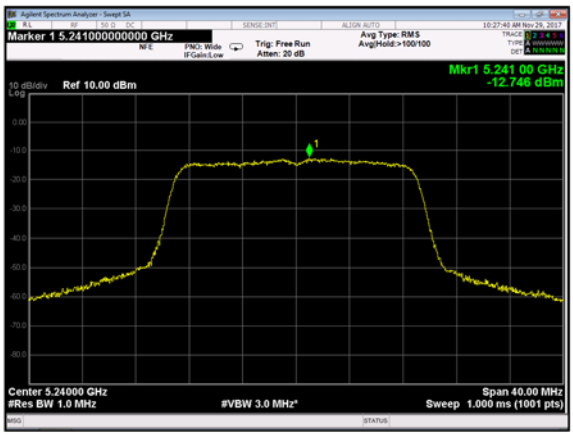
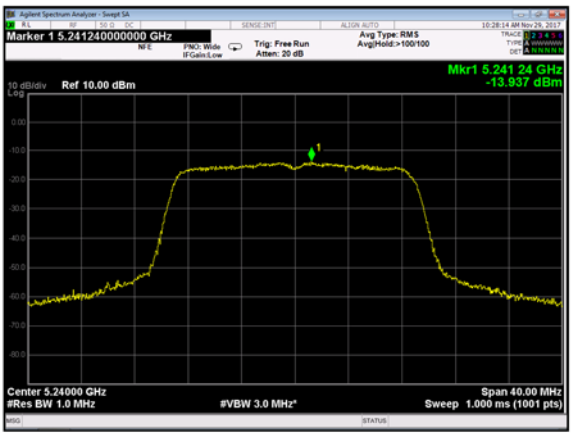


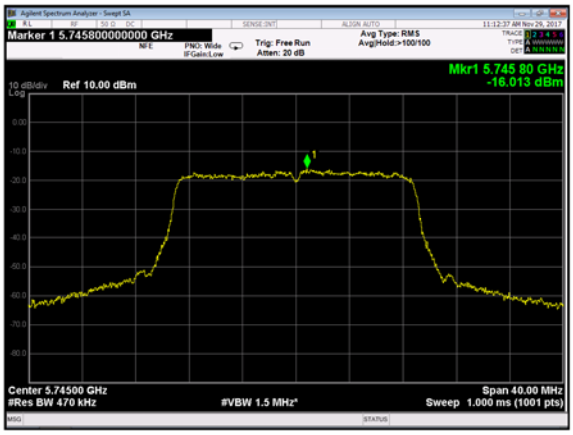
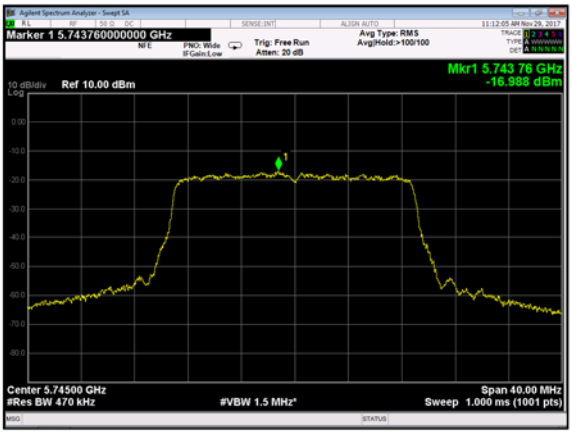
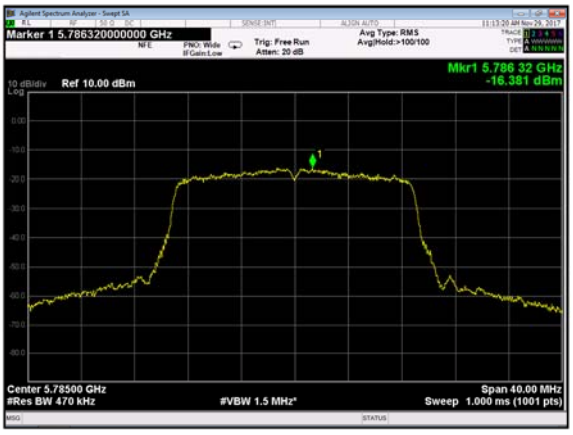
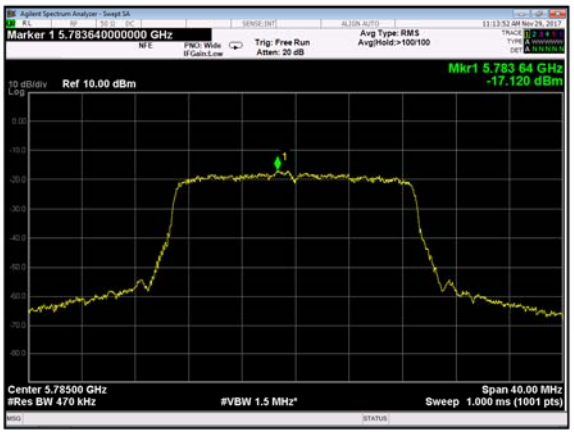
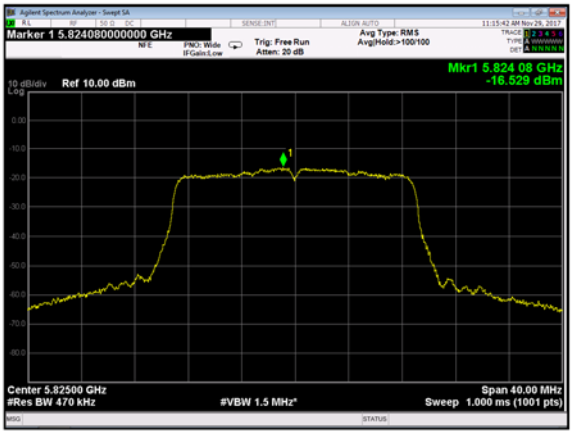
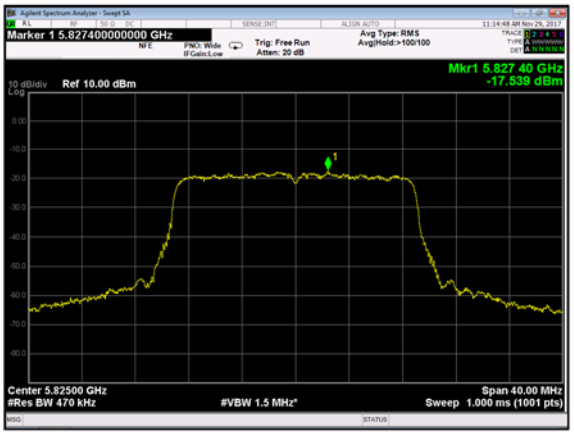
5785MHz

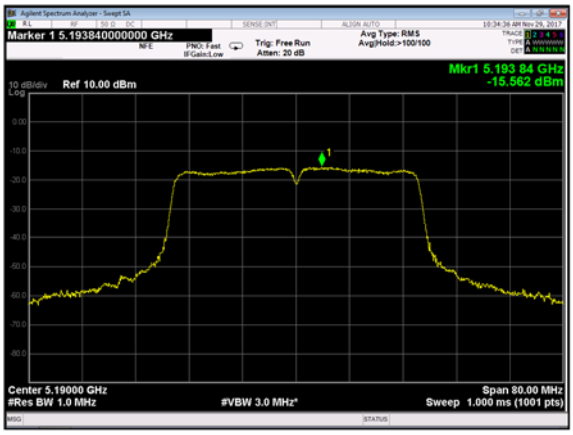
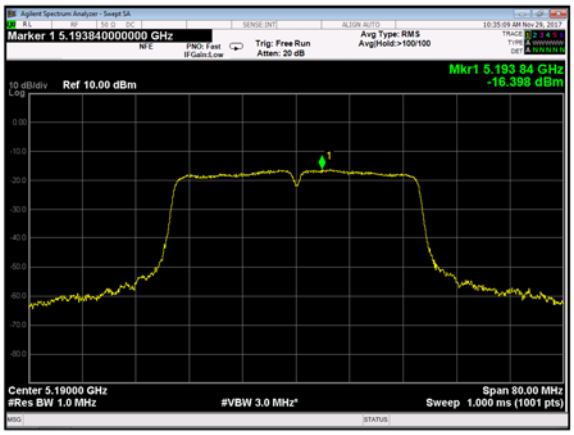
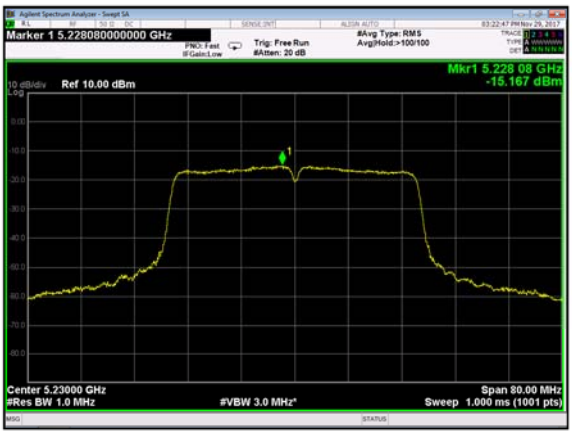
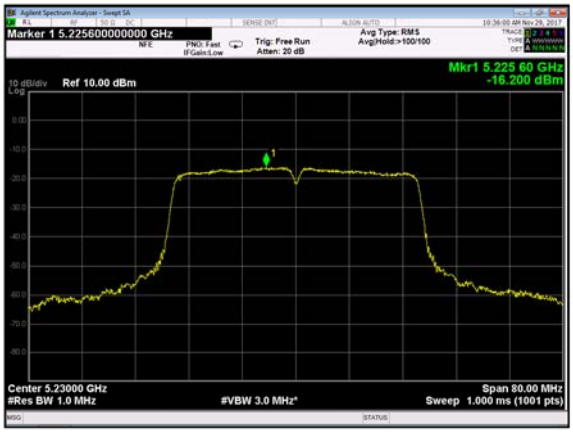


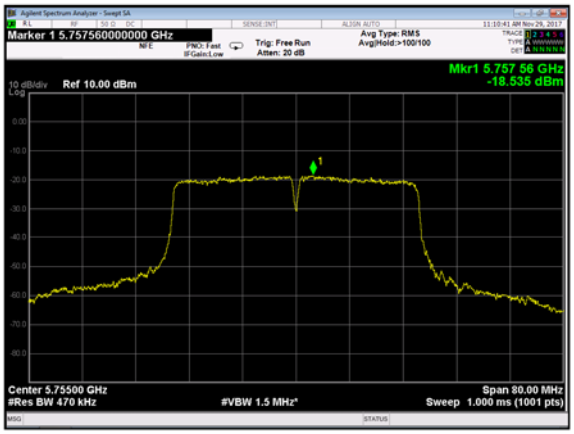
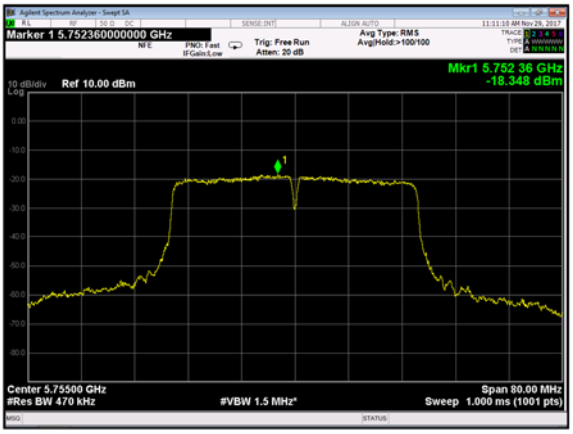
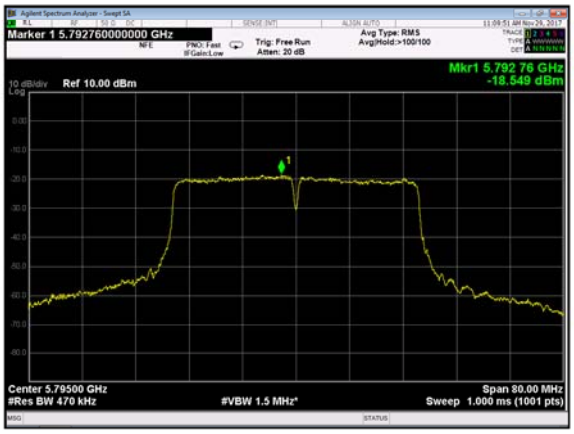
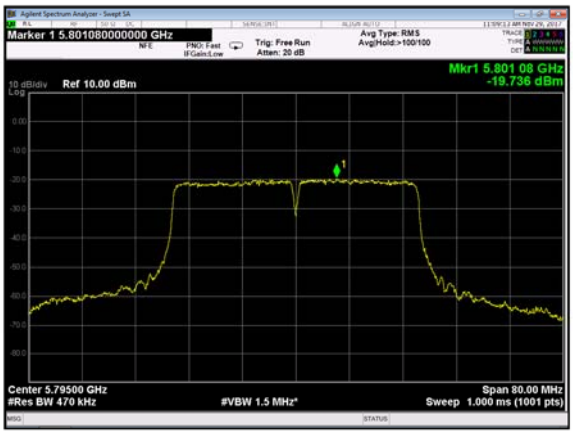
5825MHz

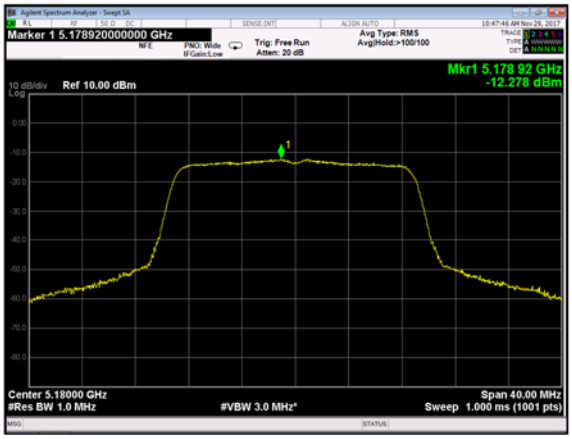
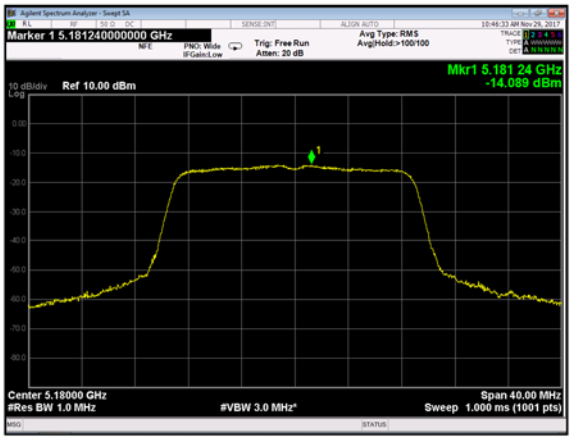
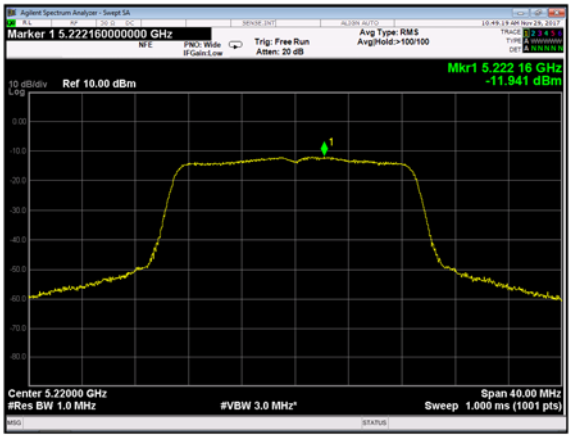
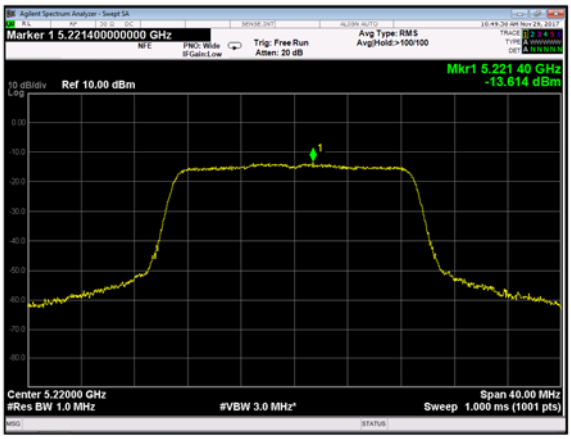
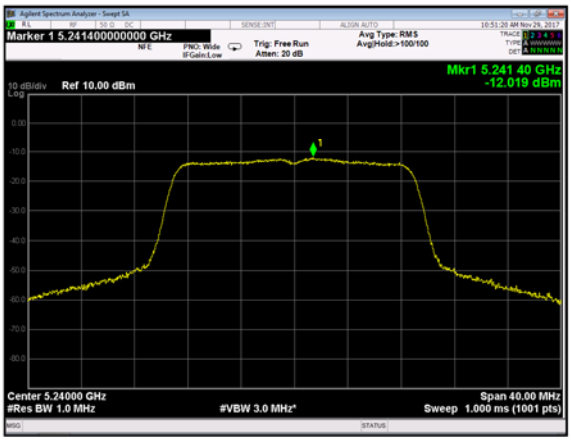
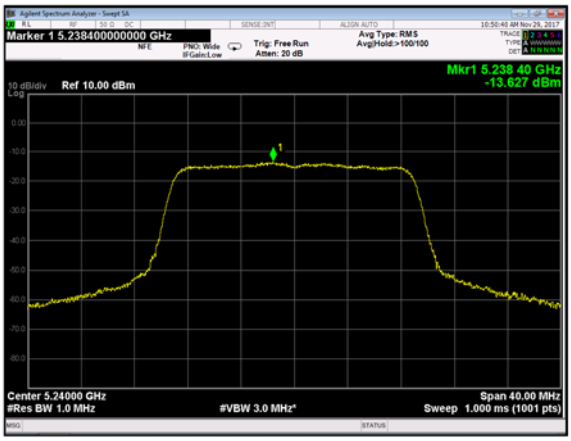


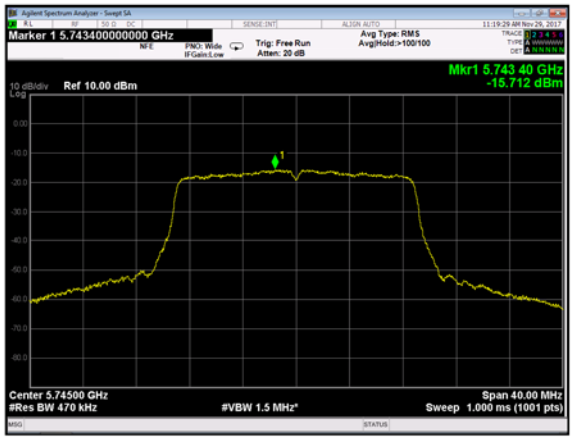
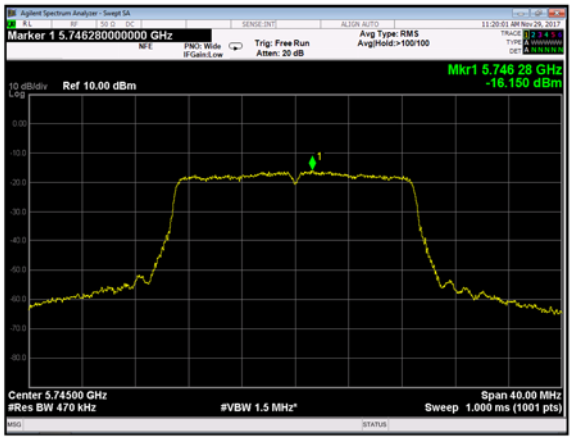
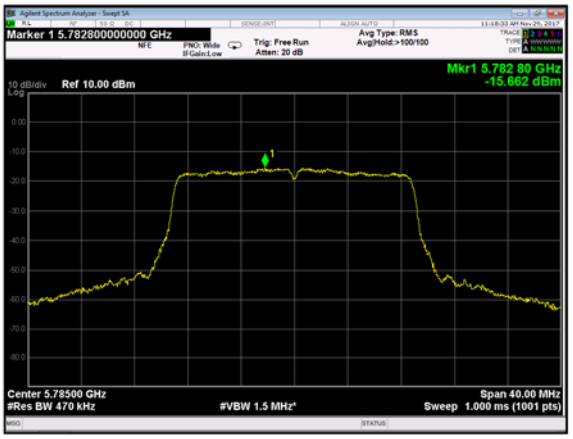
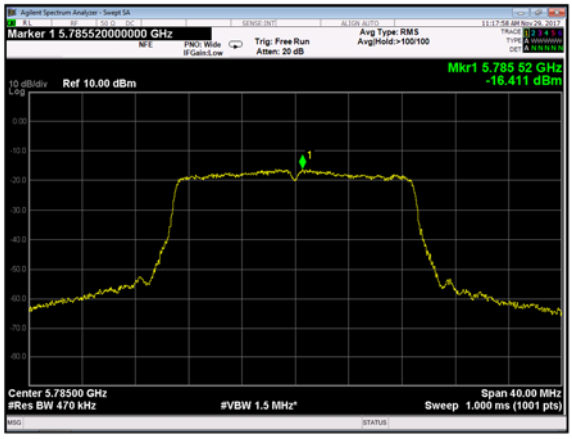
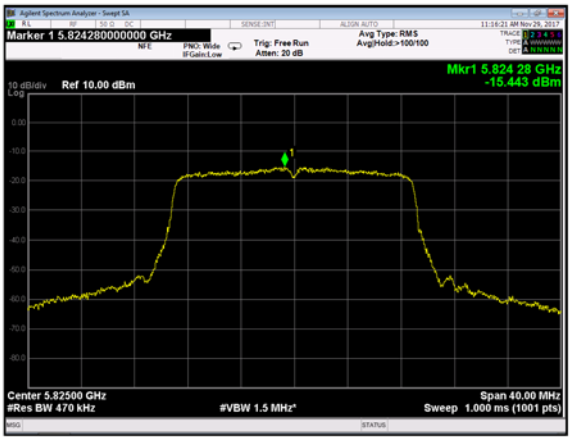
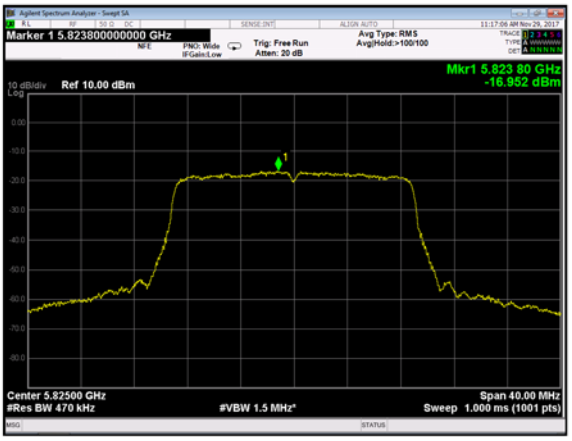
11n-HT20	
5180MHz	
Ant A	Ant B
	
5220MHz	
	Ant B
	
5240MHz	
Ant A	Ant B
	

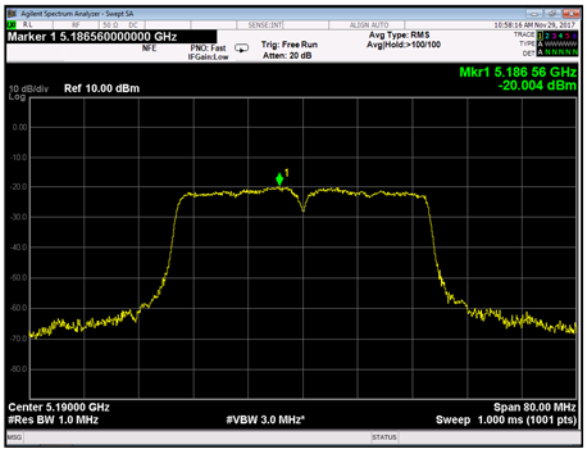
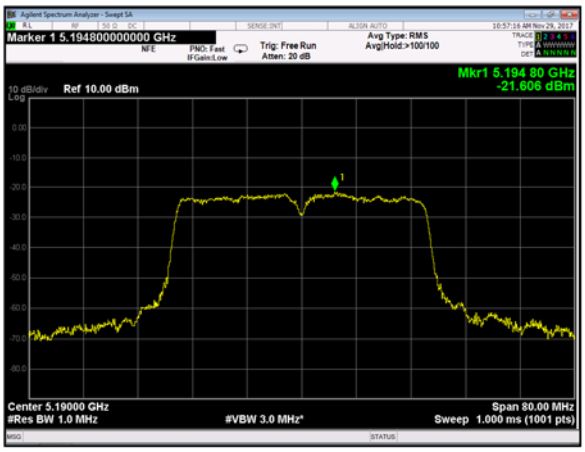
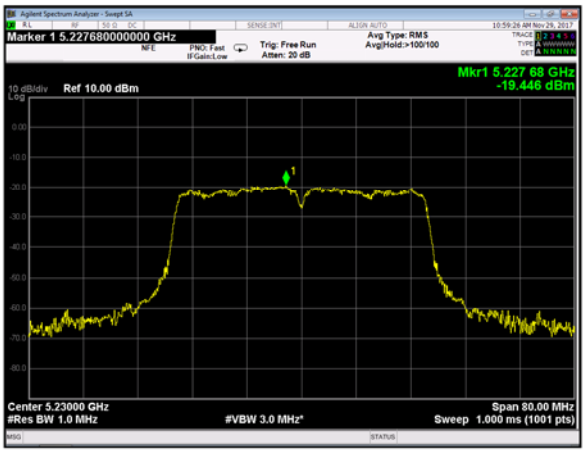
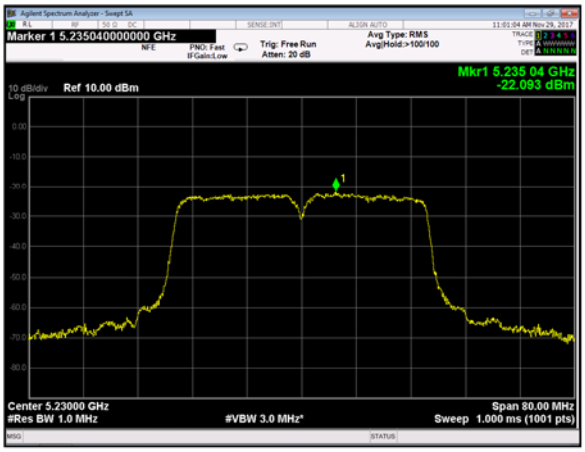
11n-HT20	
5745MHz	
Ant A	Ant B
	
5785MHz	
Ant A	Ant B
	
5825MHz	
Ant A	Ant B
	

11n-HT40	
5190MHz	
Ant A	Ant B
	
5230MHz	
Ant A	Ant B
	

11n-HT40	
5755MHz	
Ant A	Ant B
	
5795MHz	
Ant A	Ant B
	

11ac-HT20	
5180MHz	
Ant A	Ant B
	
5220MHz	
Ant A	Ant B
	
5240MHz	
Ant A	Ant B
	

11ac-HT20	
5745MHz	
Ant A	Ant B
	
5785MHz	
Ant A	Ant B
	
5825MHz	
Ant A	Ant B
	

11ac-HT40	
5190MHz	
Ant A	Ant B
	
5230MHz	
Ant A	Ant B