10. 99% Bandwidth

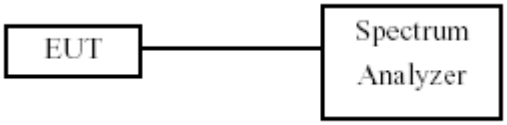
10.1.Test Limit

None; for reporting purposes only.

10.2.Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

10.3.Test Setup Layout



10.4.Test Result and Data

Test Date: Aug. 22, 2015 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 65%

802.11a mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5180	17.20	17.10
Middle	5220	18.90	17.20
High	5240	19.30	17.20
Worst		19.30	17.20

802.11n HT20 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5180	18.30	18.10
Middle	5220	18.30	18.00
High	5240	18.40	18.00
Worst		18.40	18.10

802.11n HT40 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5190	36.20	36.00
High	5230	36.00	36.00
Worst		36.20	36.00

802.11ac VHT80 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Middle	5210	75.20	75.20
Worst		75.20	75.20

802.11a mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5260	19.00	17.20
Middle	5300	19.10	17.50
High	5320	17.10	17.10
Worst		19.10	17.50

802.11n HT20 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5260	18.20	18.00
Middle	5300	18.20	18.00
High	5320	18.20	18.00
Worst		18.20	18.00

802.11n HT40 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5270	36.00	36.00
High	5310	36.00	36.00
Worst		36.00	36.00

802.11ac VHT80 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Middle	5290	75.20	74.88
Worst		75.20	74.88

802.11a mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5500	17.10	17.00
Middle	5580	18.50	17.80
High	5700	17.10	17.10
Worst		18.50	17.80

802.11n HT20 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5500	18.30	18.00
Middle	5580	18.20	18.00
High	5700	18.20	18.10
Worst		18.30	18.10

802.11n HT40 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5510	36.00	36.00
Middle	5550	36.20	36.20
High	5670	36.00	36.00
Worst		36.20	36.20

802.11ac VHT80 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Middle	5530	75.20	75.20
Worst		75.20	75.20

802.11a mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5745	18.80	17.40
Middle	5785	18.20	17.30
High	5825	19.00	18.00
Worst		19.00	18.00

802.11n HT20 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5745	18.20	18.10
Middle	5785	18.20	18.00
High	5825	18.20	18.10
Worst		18.20	18.10

802.11n HT40 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Low	5755	36.00	36.00
High	5795	36.00	36.00
Worst		36.00	36.00

802.11ac VHT80 mode in the 5.8G Band

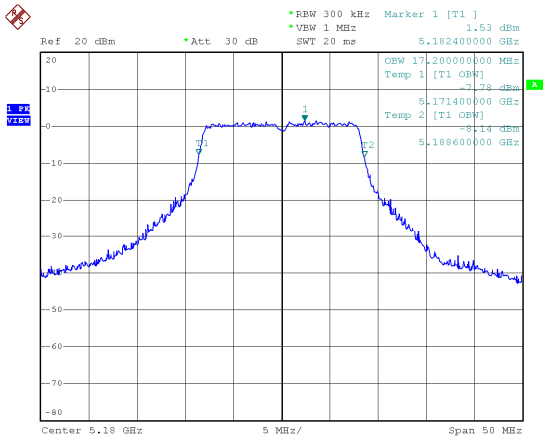
Channel	Frequency (MHz)	Ant. A 99% Bandwidth (MHz)	Ant. B 99% Bandwidth (MHz)
Middle	5775	75.52	75.52
Worst		75.52	75.52

5.2G Band:

Antenna A

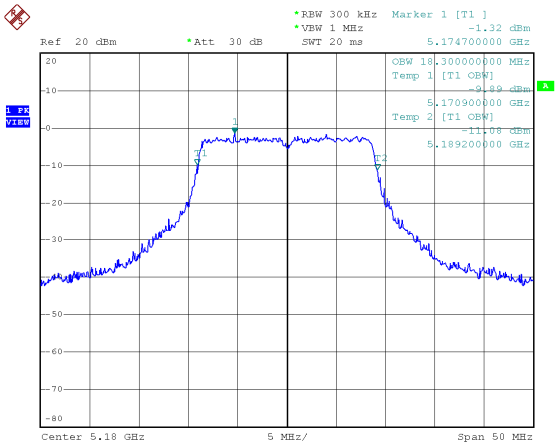
Modulation Standard: 802.11a (6Mbps)

CH36

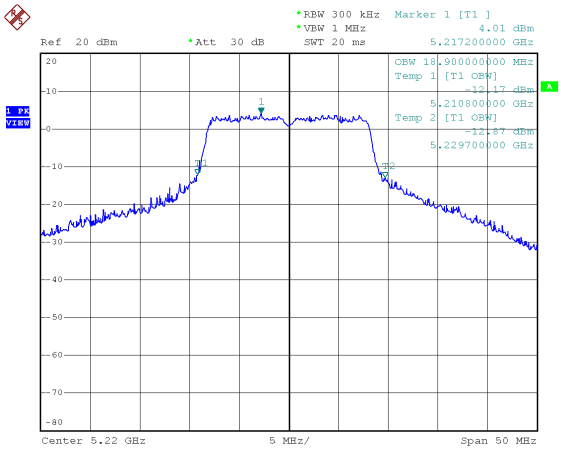


Modulation Standard: 802.11an HT20 (13Mbps)

CH36



CH44



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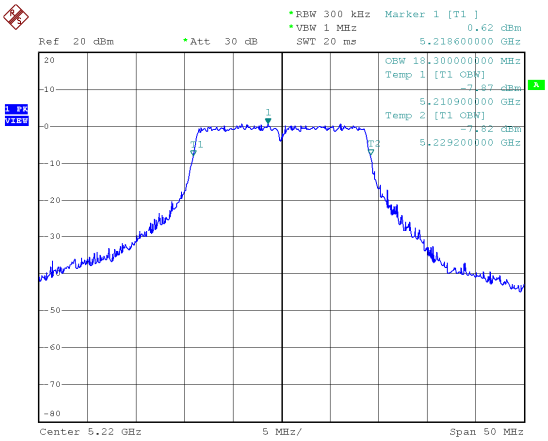
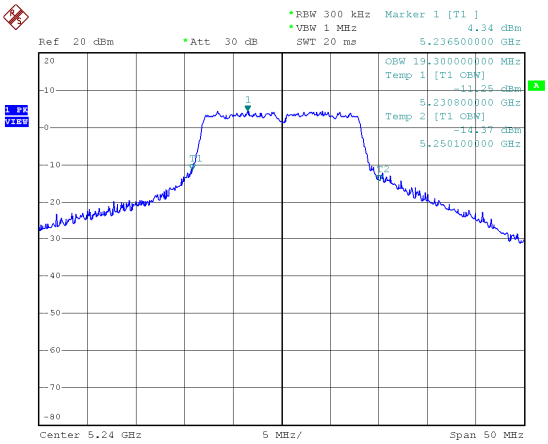
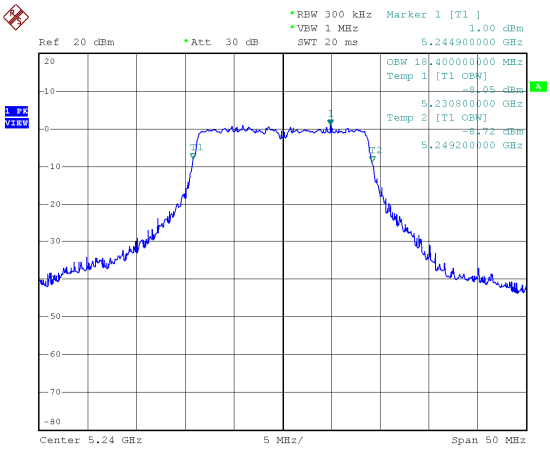


CH48



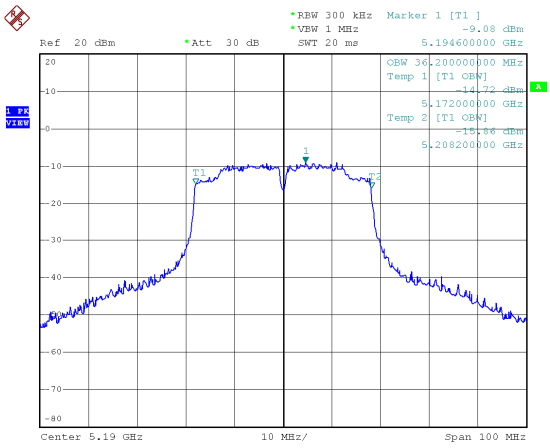
CH48



Antenna B:

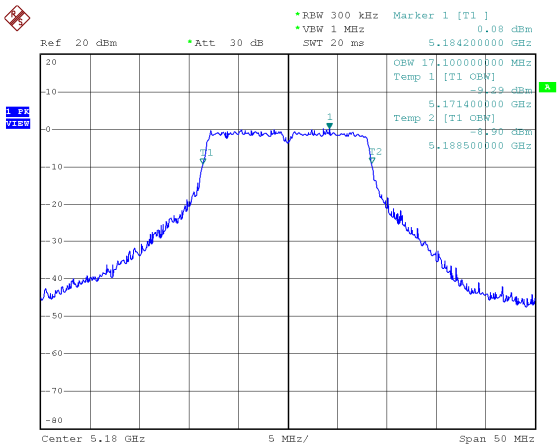
Modulation Standard: 802.11an HT40 (27Mbps)

CH38

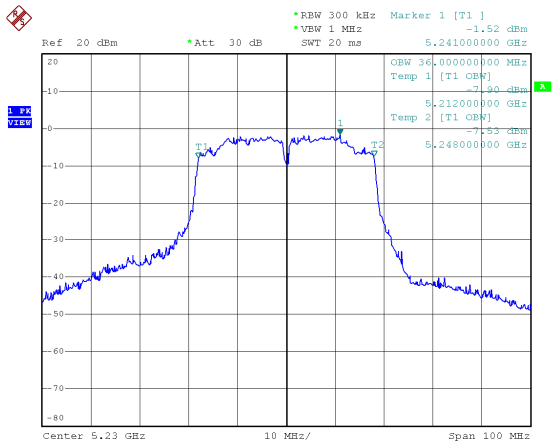


Modulation Standard: 802.11a (6Mbps)

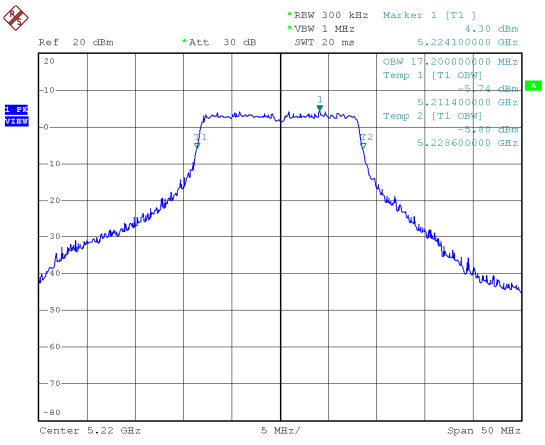
CH36



CH46

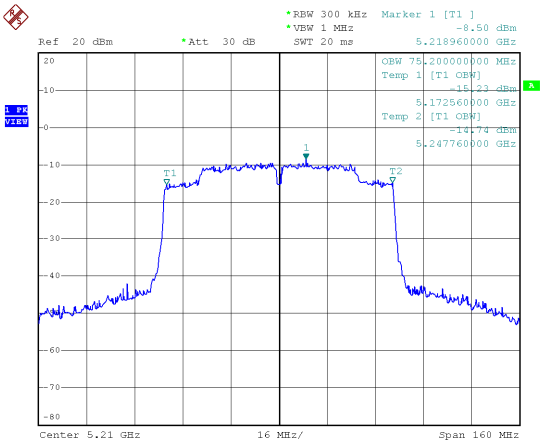


CH44

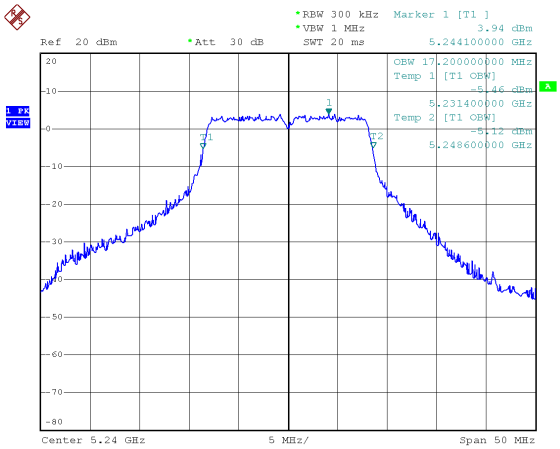


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

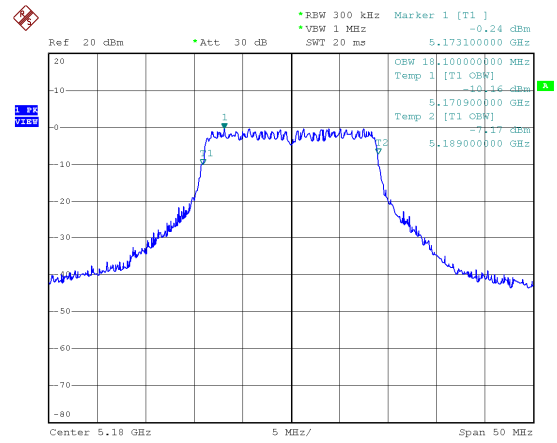
CH42



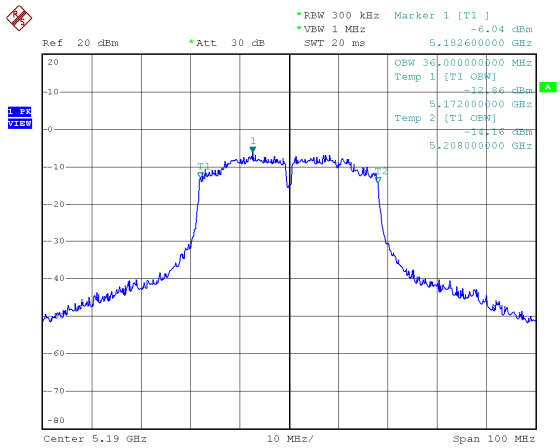
CH48



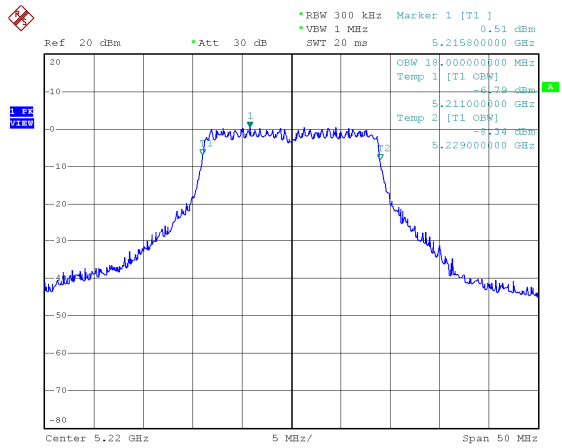
Modulation Standard: 802.11an HT20 (13Mbps)
CH36



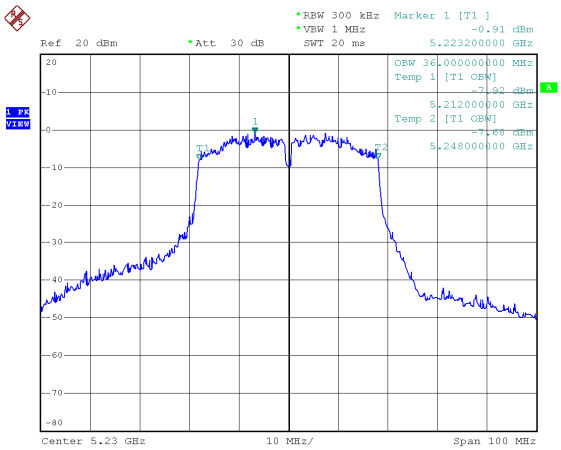
Modulation Standard: 802.11an HT40 (27Mbps)
CH38



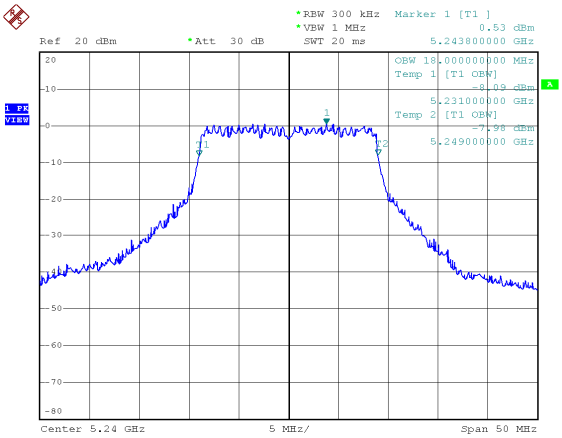
CH44



CH46



Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH48



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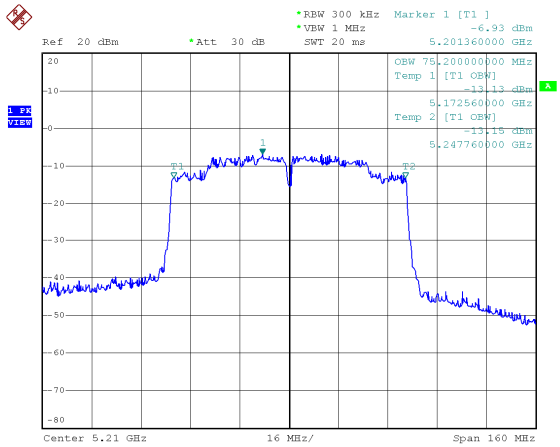
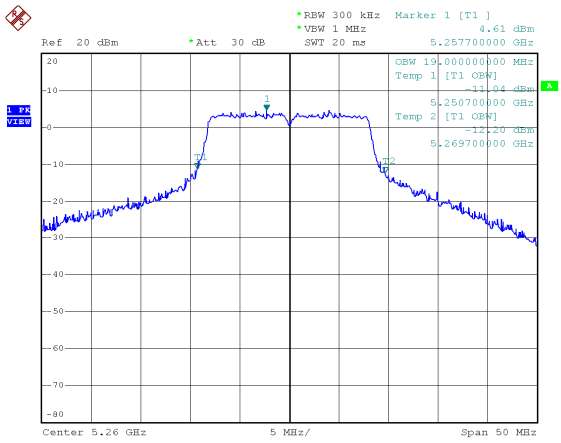
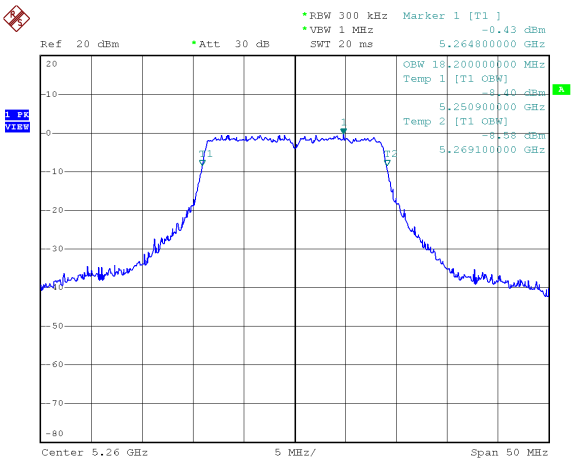


5.3G Band:
Antenna A

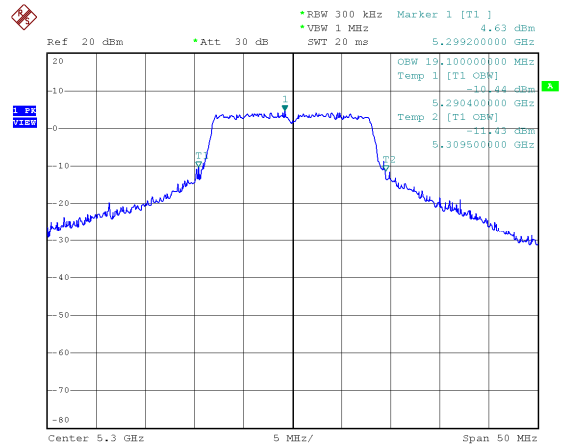
Modulation Standard: 802.11a (6Mbps)
CH52



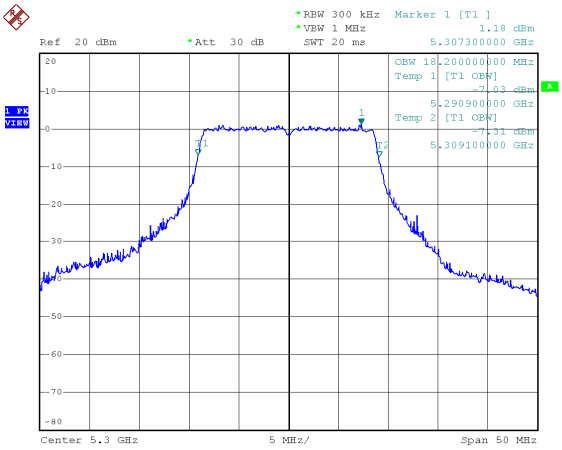
Modulation Standard: 802.11an HT20 (13Mbps)
CH52



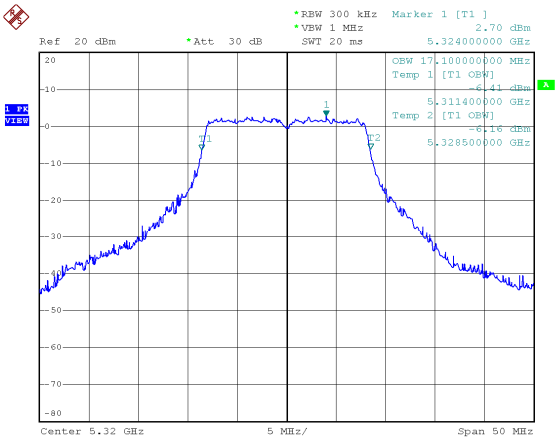
CH60



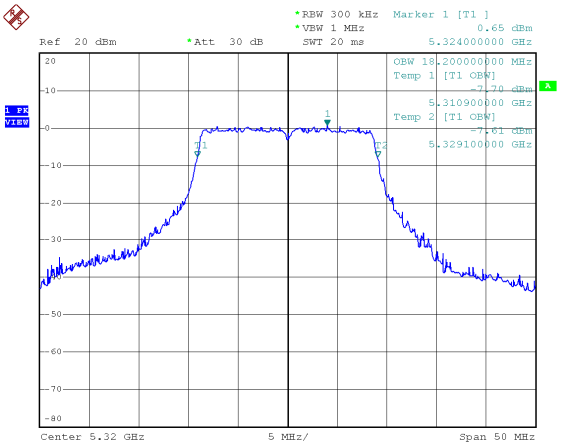
CH60



CH64



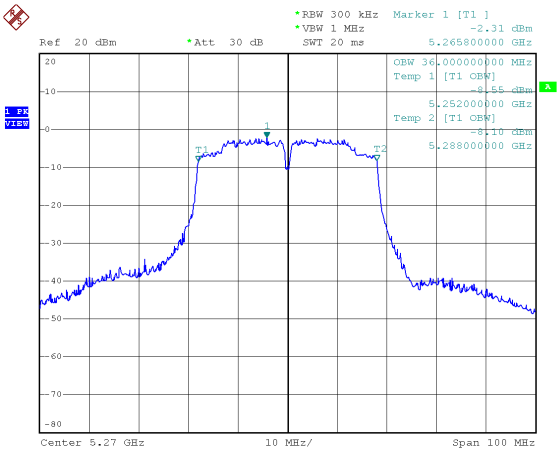
CH64



Antenna B:

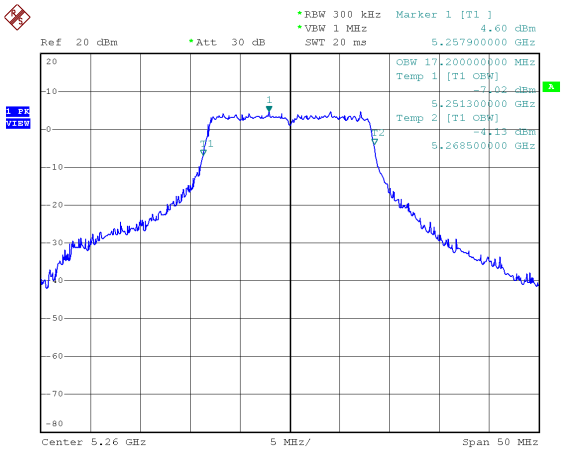
Modulation Standard: 802.11an HT40 (27Mbps)

CH54

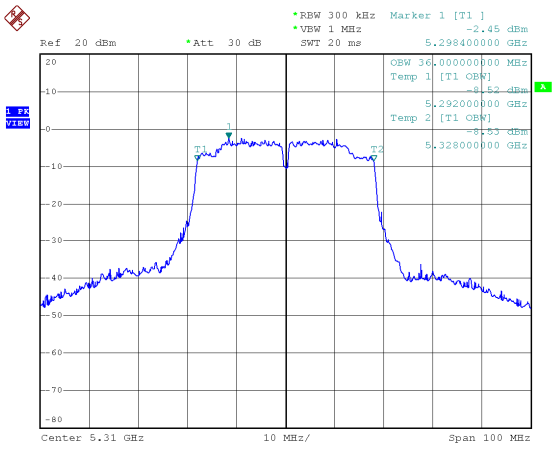


Modulation Standard: 802.11a (6Mbps)

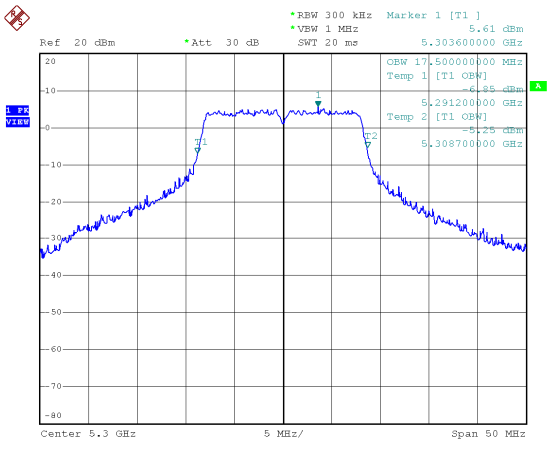
CH52



CH62

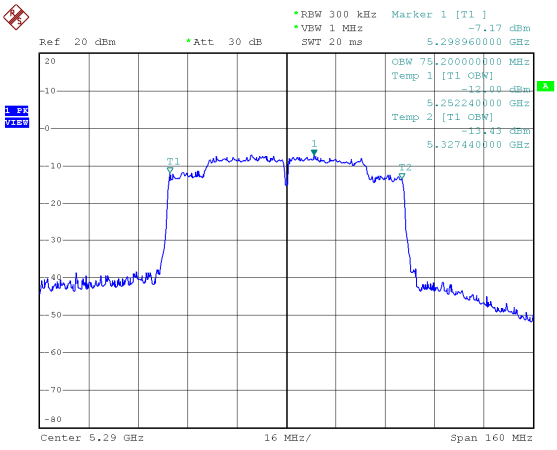


CH60

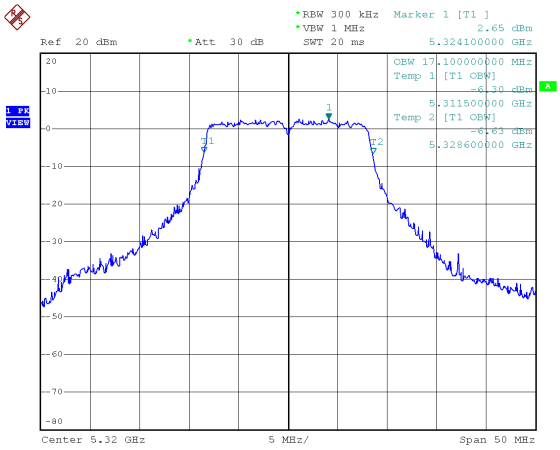


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

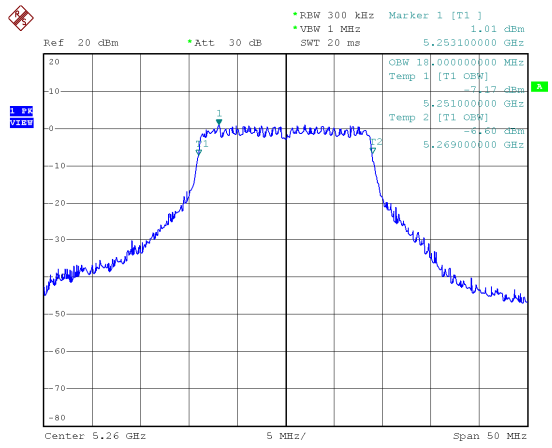
CH58



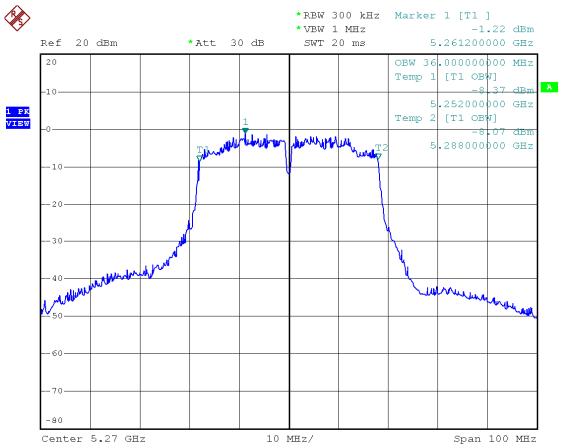
CH64



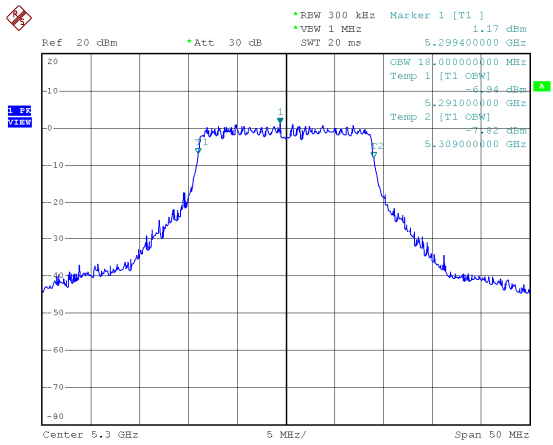
Modulation Standard: 802.11an HT20 (13Mbps)
CH52



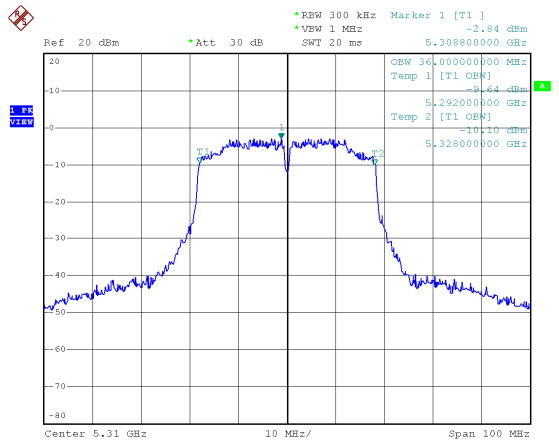
Modulation Standard: 802.11an HT40 (27Mbps)
CH54



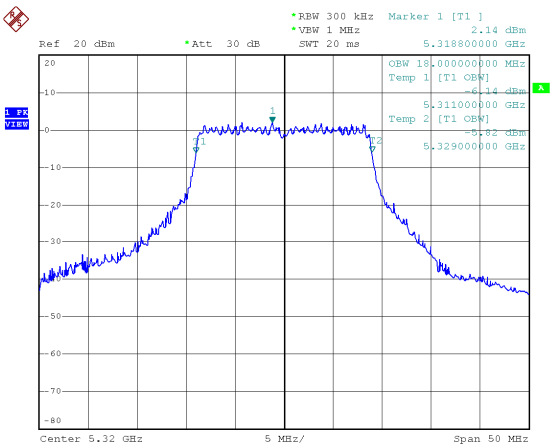
CH60



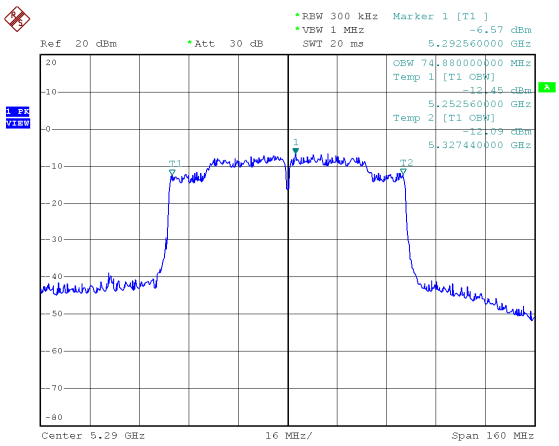
CH62



Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH64

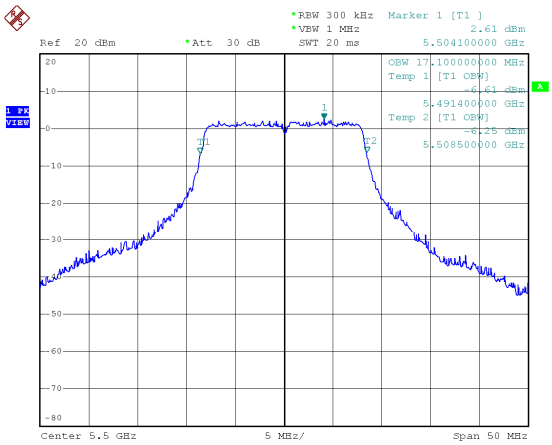


CH58

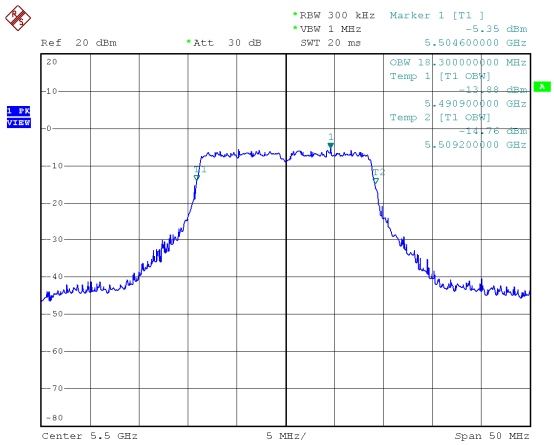


5.5G Band:
Antenna A

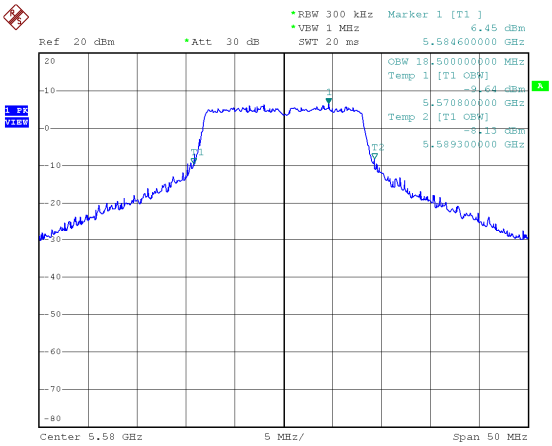
Modulation Standard: 802.11a (6Mbps)
CH100



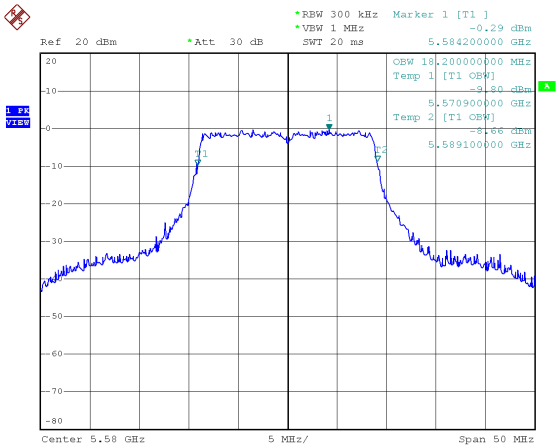
Modulation Standard: 802.11an HT20 (13Mbps)
CH100



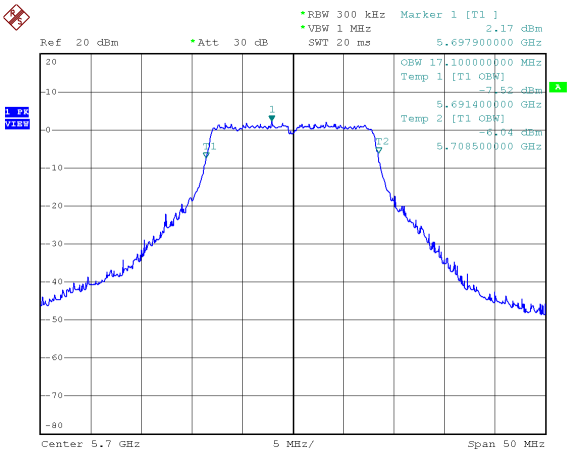
CH116



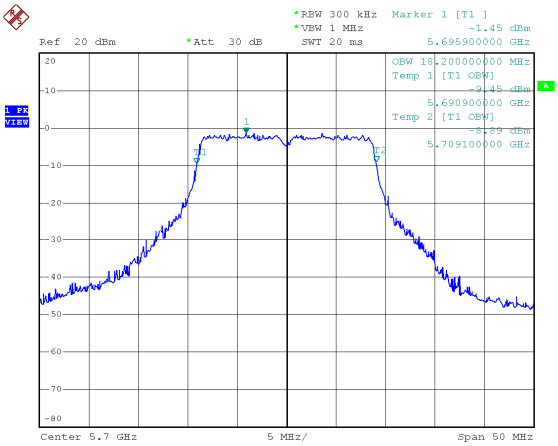
CH116



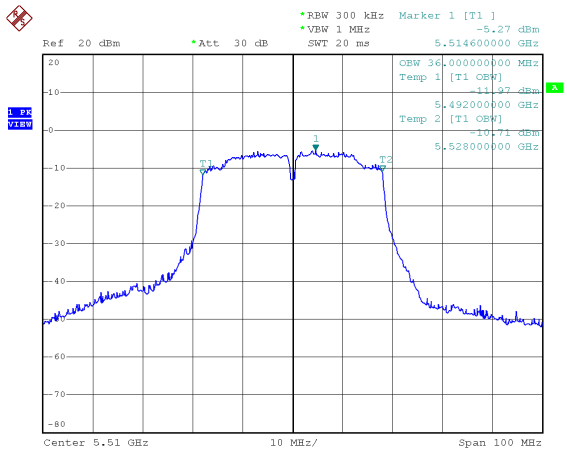
CH140



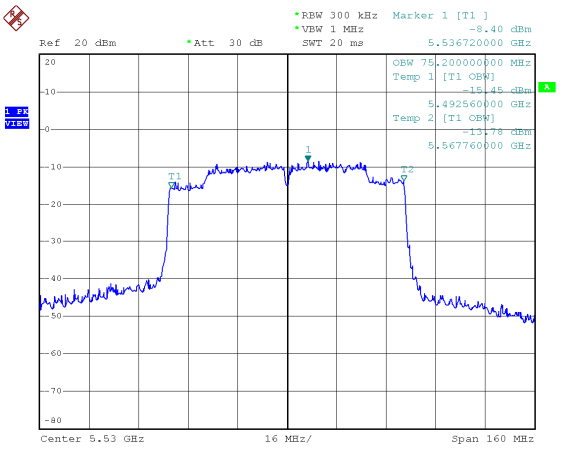
CH140



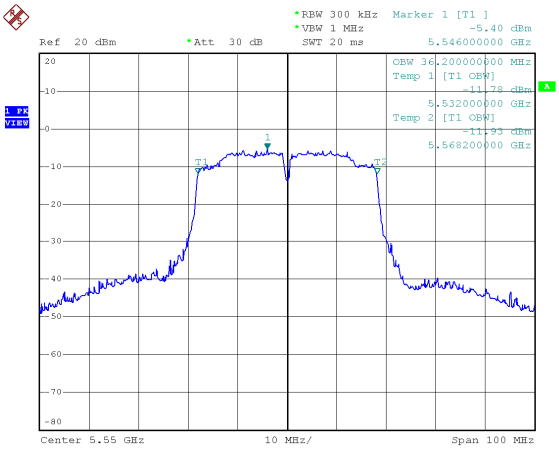
Modulation Standard: 802.11an HT40 (27Mbps)
CH102



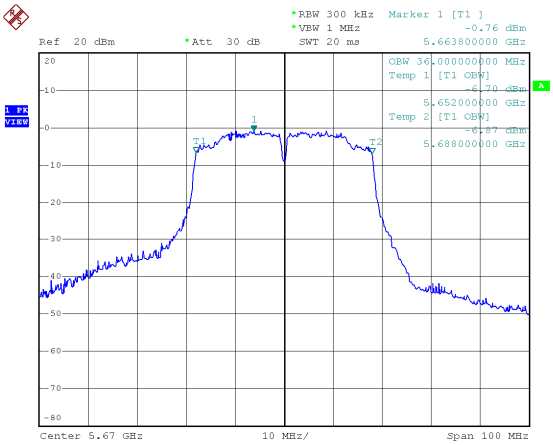
Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH106



CH110

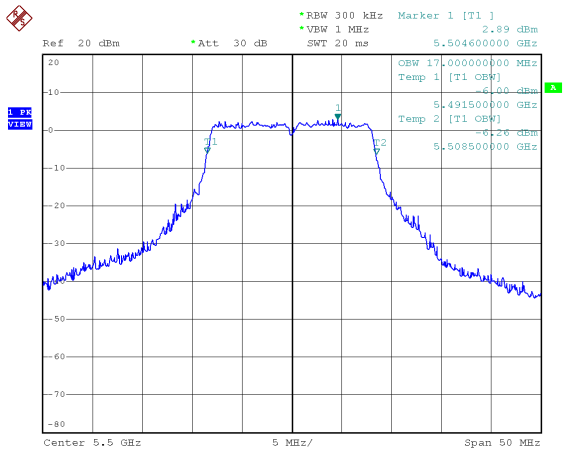


CH134

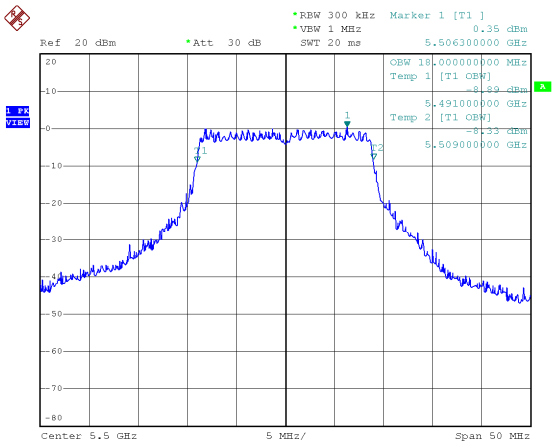


Antenna B

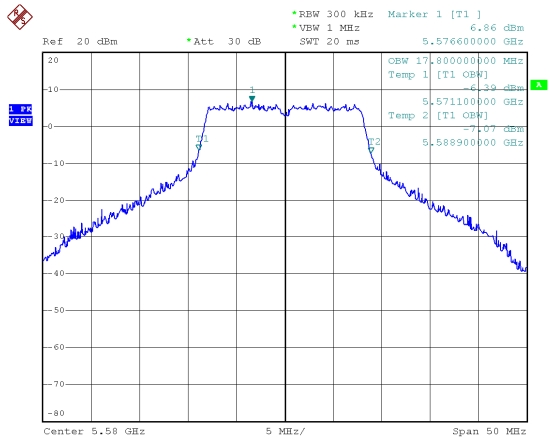
Modulation Standard: 802.11a (6Mbps)
CH100



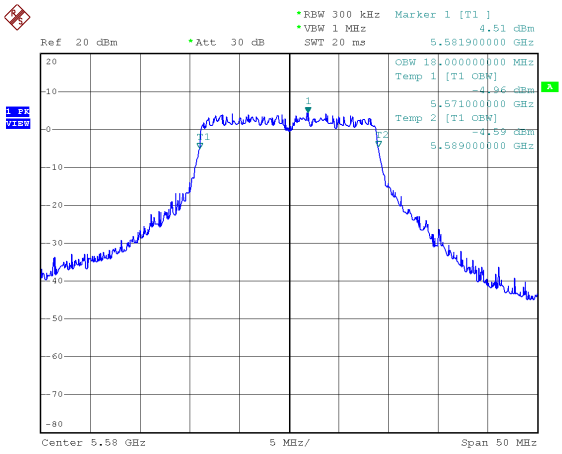
Modulation Standard: 802.11an HT20 (13Mbps)
CH100



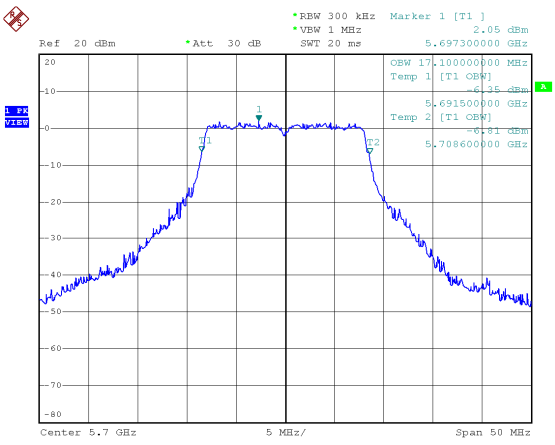
CH116



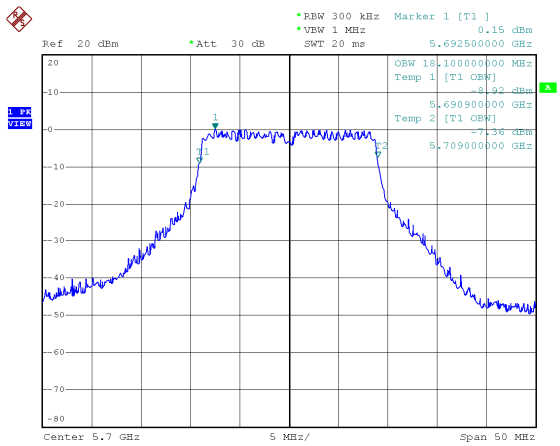
CH116



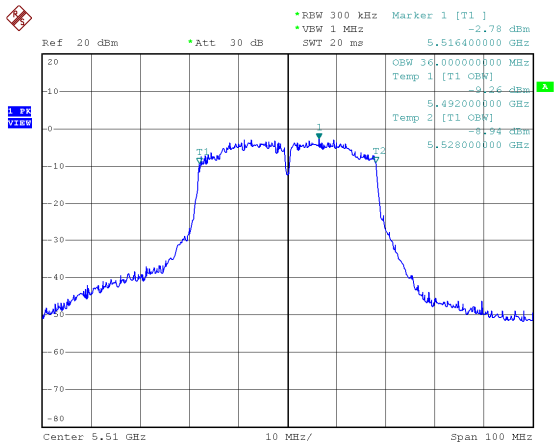
CH140



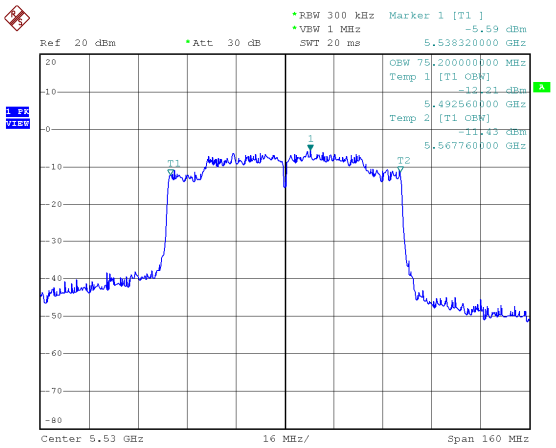
CH140



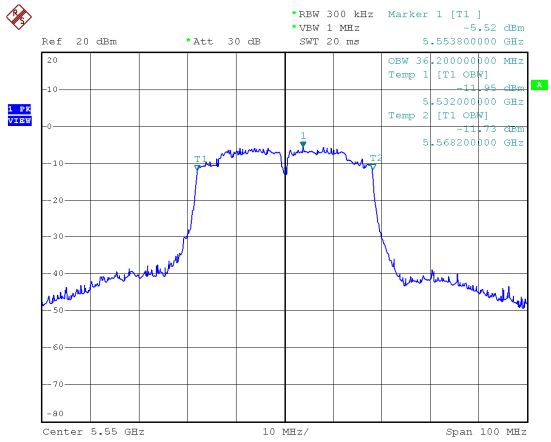
Modulation Standard: 802.11an HT40 (27Mbps)
CH102



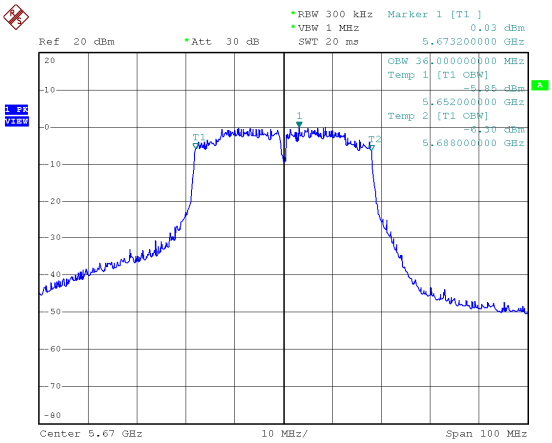
Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH106



CH110

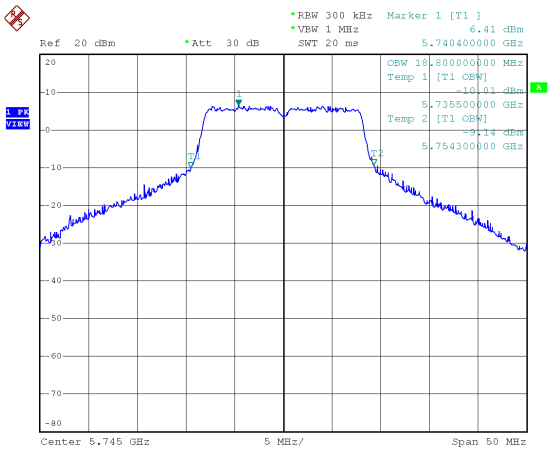


CH134

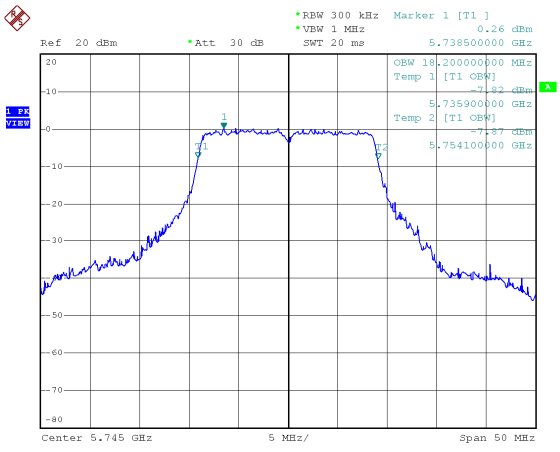


5.8G Band:
Antenna A

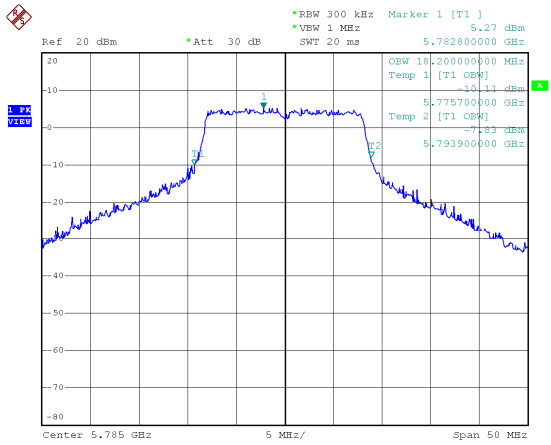
Modulation Standard: 802.11a (6Mbps)
CH149



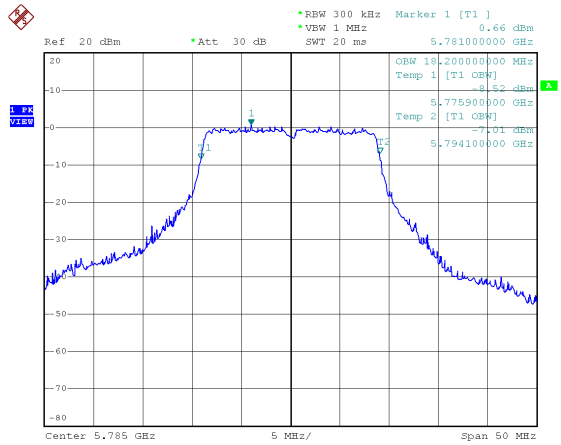
Modulation Standard: 802.11an HT20 (13Mbps)
CH149



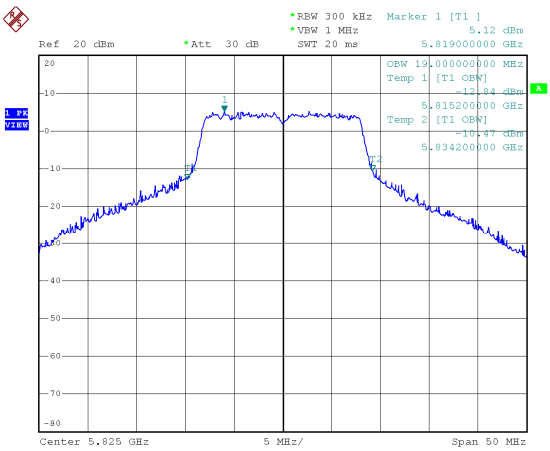
CH157



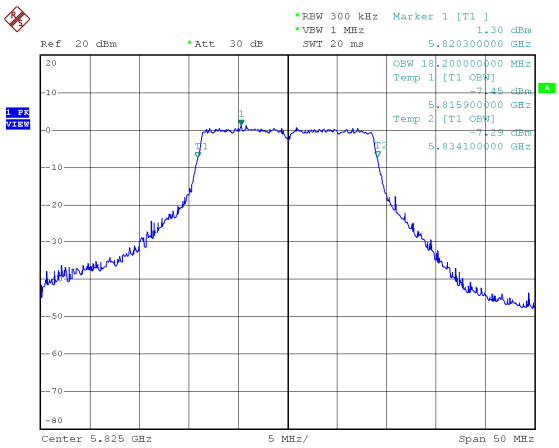
CH157



CH165



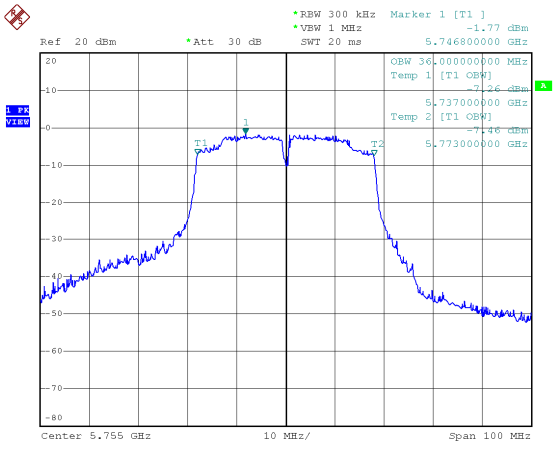
CH165



Antenna B:

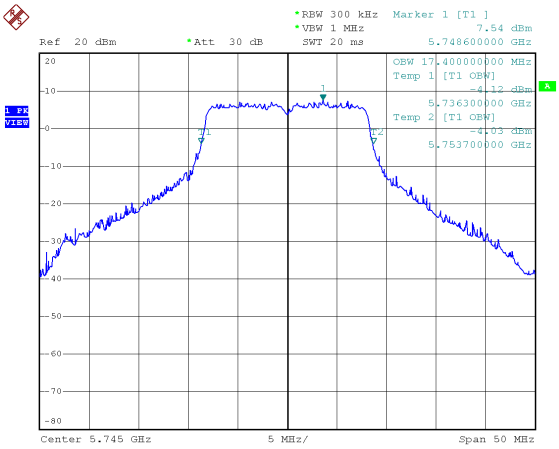
Modulation Standard: 802.11an HT40 (27Mbps)

CH151

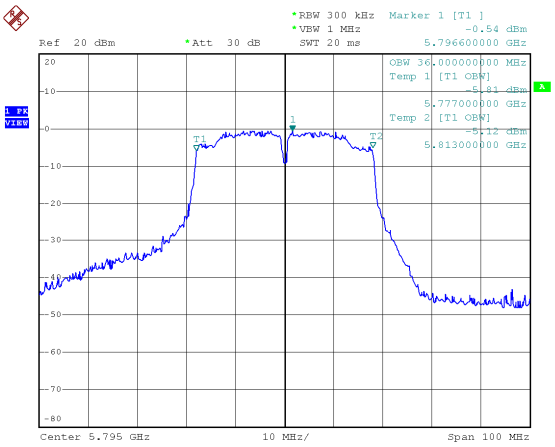


Modulation Standard: 802.11a (6Mbps)

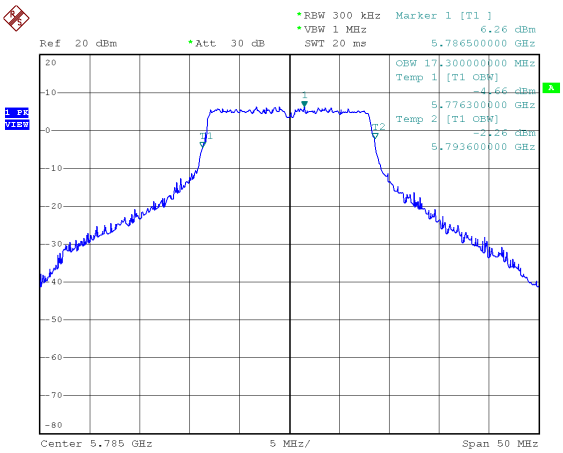
CH149



CH159

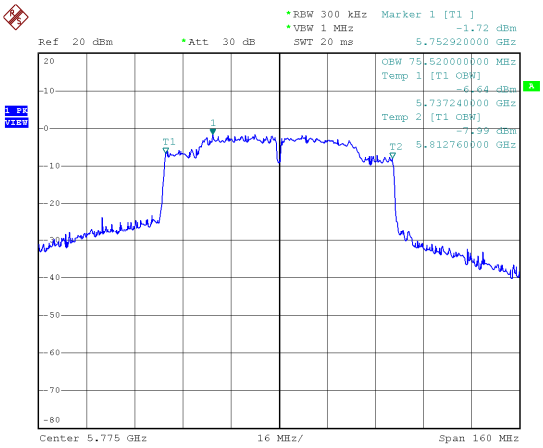


CH157

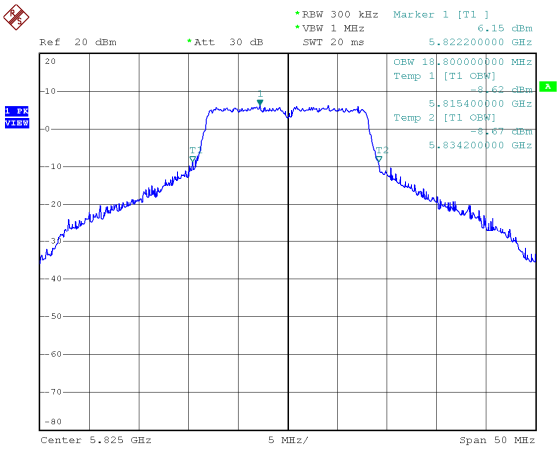


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

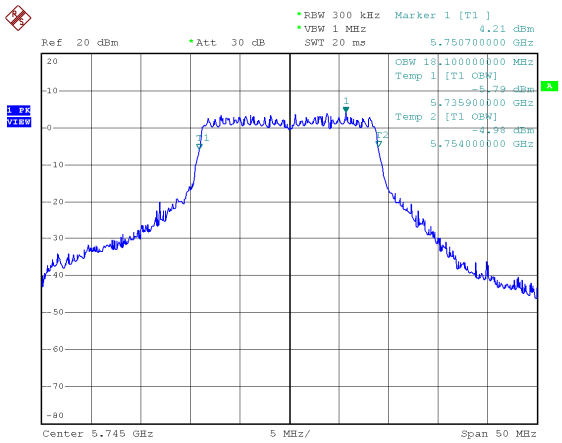
CH155



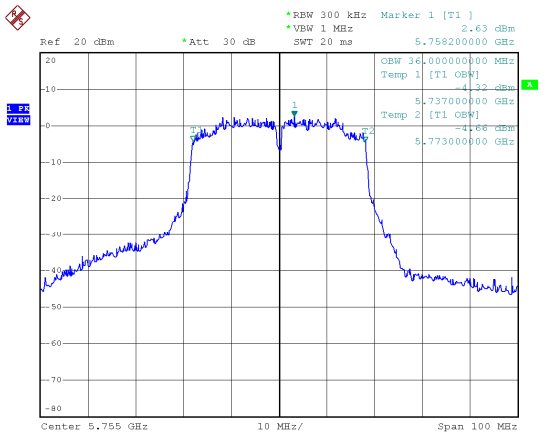
CH165



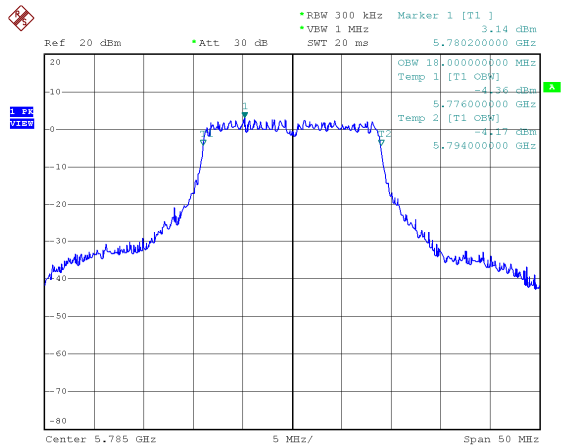
Modulation Standard: 802.11an HT20 (13Mbps)
CH149



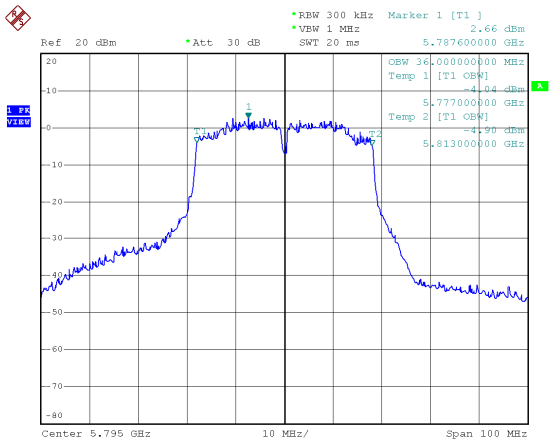
Modulation Standard: 802.11an HT40 (27Mbps)
CH151



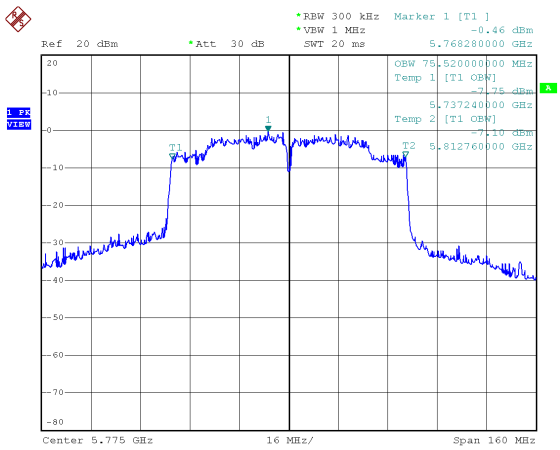
CH157



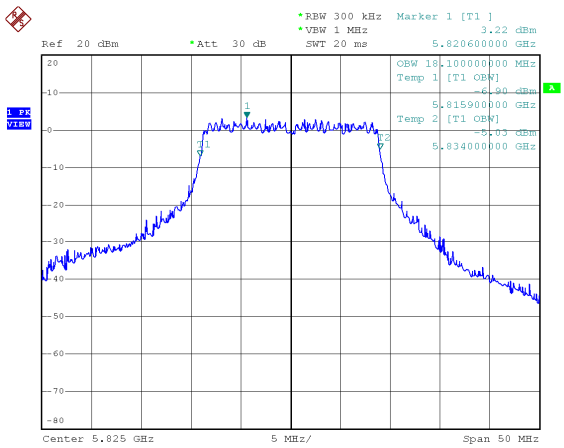
CH159



Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH155



CH165



11. Average Power

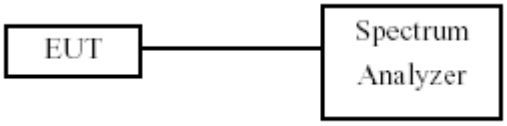
11.1. Test Limit

None; for reporting purposes only.

11.2. Test Procedure

The transmitter output is connected to a power meter.
The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

11.3. Test Setup Layout



11.4. Test Result and Data

Test Date: Aug. 22, 2015 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 65%

802.11a mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5180	12.58	12.83
Middle	5220	13.87	14.02
High	5240	13.72	14.22
Worst		13.87	14.22

802.11n HT20 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5180	10.54	10.72
Middle	5220	11.22	11.13
High	5240	10.77	10.78
Worst		11.22	11.13

802.11n HT40 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5190	6.73	6.20
High	5230	10.78	11.31
Worst		10.78	11.31

802.11ac VHT20 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5180	11.20	13.77
Middle	5220	11.78	14.02
High	5240	11.47	13.62
Worst		11.78	14.02

802.11ac VHT40 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5190	6.67	7.04
High	5230	11.22	11.56
Worst		11.22	11.56

802.11ac VHT80 mode in the 5.2G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Middle	5210	6.53	6.53
Worst		6.53	6.53

802.11a mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5260	13.77	14.62
Middle	5300	12.88	14.38
High	5320	11.44	11.82
Worst		13.77	14.62

802.11n HT20 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5260	11.52	11.63
Middle	5300	11.23	11.35
High	5320	10.69	10.89
Worst		11.23	11.63

802.11n HT40 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5270	6.73	6.20
High	5310	10.78	11.31
Worst		10.78	11.31

802.11ac VHT20 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5260	10.59	10.93
Middle	5300	10.63	10.77
High	5320	10.49	10.52
Worst		10.63	10.93

802.11ac VHT40 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5270	7.44	7.63
High	5310	9.13	9.22
Worst		9.13	9.22

802.11ac VHT80 mode in the 5.3G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Middle	5290	7.22	7.20
Worst		7.22	7.20

802.11a mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5500	11.56	11.94
Middle	5580	14.88	15.05
High	5700	11.13	11.04
Worst		14.88	15.05

802.11n HT20 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5500	8.65	8.73
Middle	5580	12.23	12.36
High	5700	9.22	9.09
Worst		12.23	12.36

802.11n HT40 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5510	6.93	6.65
Middle	5550	11.55	11.88
High	5670	11.78	11.72
Worst		11.78	11.88

802.11ac VHT20 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5500	8.77	9.04
Middle	5580	11.78	11.83
High	5700	9.23	9.61
Worst		11.78	11.83

802.11ac VHT40 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5510	6.45	6.72
Middle	5550	11.55	11.88
High	5670	11.12	11.47
Worst		11.55	11.88

802.11ac VHT80 mode in the 5.5G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Middle	5530	7.23	7.14
Worst		7.23	7.14

802.11a mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5745	13.71	15.32
Middle	5785	14.36	15.11
High	5825	14.22	15.22
Worst		14.36	15.32

802.11n HT20 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5745	12.08	12.11
Middle	5785	11.76	11.88
High	5825	11.48	11.52
Worst		12.08	12.11

802.11n HT40 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5755	12.33	12.55
High	5795	12.24	12.32
Worst		12.33	12.55

802.11ac VHT20 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5745	11.78	11.92
Middle	5785	11.88	11.73
High	5825	11.93	12.11
Worst		11.93	12.11

802.11ac VHT40 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Low	5755	11.72	11.63
High	5795	11.24	11.43
Worst		11.72	11.63

802.11ac VHT80 mode in the 5.8G Band

Channel	Frequency (MHz)	Ant. A Avg Power (dBm)	Ant. B Avg Power (dBm)
Middle	5775	12.29	12.45
Worst		12.29	12.45

12. Output Power and PPSD

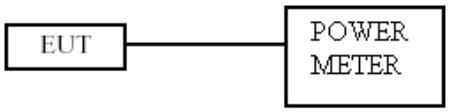
12.1.Test Limit

FCC §15.407 (a) (1)
For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

12.2.Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was Measured with an average power meter employing a video bandwidth greater than 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.
802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)
802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).
When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

12.3.Test Setup Layout



12.4. Test Result and Data

Test Date: Aug. 22, 2015 Temperature: 25℃

Atmospheric pressure: 1056 hPa Humidity: 52%

5.2G Band

Modulation Standard: IEEE 802.11a (6Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	22.90	17.2	24.10	17.100	5
Middle	5220	34.40	18.9	23.90	17.200	5
High	5240	30.00	19.3	24.00	17.200	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC EIRP PPSD Limit (dBm/MHz)
Low	5180	24.00	22.36	11.00	10.00
Middle	5220	24.00	22.76	11.00	10.00
High	5240	24.00	22.86	11.00	10.00
Duty Cycle CF (dB)		0.02	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5180	18.11	16.33	20.32	18.131	16.351	20.34	24.00	-3.66
Middle	5220	17.73	18.23	21.00	17.751	18.251	21.02	24.00	-2.98
High	5240	17.63	19.37	21.60	17.651	19.391	21.62	24.00	-2.38

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5180	18.11	16.33	20.32	18.131	16.351	20.34	22.36	-2.02
Middle	5220	17.73	18.23	21.00	17.751	18.251	21.02	22.76	-1.74
High	5240	17.63	19.37	21.60	17.651	19.391	21.62	22.86	-1.24

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5180	-4.74	-6.05	-4.719	-6.029	11/10
Middle	5220	-2.58	-2.63	-2.559	-2.609	11/10
High	5240	-3.17	-1.62	-3.149	-1.599	11/10

Modulation Standard: IEEE 802.11an HT20 (13Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	25.60	18.3	22.90	18.1	5
Middle	5220	24.20	18.3	23.60	18	5
High	5240	23.90	18.4	23.00	18	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC EIRP PPSD Limit (dBm/MHz)
Low	5180	24.00	22.62	11.00	10.00
Middle	5220	24.00	22.62	11.00	10.00
High	5240	24.00	22.65	11.00	10.00
Duty Cycle CF (dB)		0.07	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5180	16.44	16.27	19.37	16.509	16.339	19.44	24.00	-4.56
Middle	5220	17.13	16.78	19.97	17.199	16.849	20.04	24.00	-3.96
High	5240	16.57	16.46	19.53	16.639	16.529	19.6	24.00	-4.4

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5180	16.44	16.27	19.37	16.509	16.339	19.44	23.22	-3.78
Middle	5220	17.13	16.78	19.97	17.199	16.849	20.04	23.22	-3.18
High	5240	16.57	16.46	19.53	16.639	16.529	19.6	23.11	-3.51

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5180	-8.2	-7.96	-8.131	-7.891	11/10
Middle	5220	-4.44	-6.14	-1.649	-6.071	11/10
High	5240	-5.7	-6.97	-5.631	-6.901	11/10

Modulation Standard: IEEE 802.11an HT40 (27Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	42.40	36.200	41.00	36	5
Middle	5230	41.20	36.000	41.00	36	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC EIRP PPSD Limit (dBm/MHz)
Low	5190	24.00	25.59	11.00	10.00
Middle	5230	24.00	25.56	11.00	10.00
Duty Cycle CF (dB)		0.15	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5190	12.24	11.8	15.04	16.509	16.339	15.19	24.00	-8.81
Middle	5230	16.23	17.2	19.75	17.199	16.849	19.9	24.00	-4.1

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5190	12.24	11.8	15.04	12.392	11.952	15.19	23.22	-8.03
Middle	5230	16.23	17.2	19.75	16.382	17.352	19.9	23.22	-3.32

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5190	-15.4	-13.94	-15.248	-13.788	11/10
Middle	5230	-7.61	-7.45	-7.458	-7.298	11/10

Modulation Standard: IEEE 802.11ac VHT80 (58.5Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5210	79.68	75.2	79.36	75.2	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC EIRP PPSD Limit (dBm/MHz)
Low	5210	24.00	28.76	11.00	10.00
Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5210	15.56	15.37	18.48	15.892	15.702	18.81	24.00	-5.19

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5210	15.56	15.37	18.48	15.892	15.702	18.81	23.22	-4.41

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5210	-14.27	-13.4	-13.938	-13.068	11/10

5.3G Band

Modulation Standard: IEEE 802.11a (6Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	31.70	19.0	25.00	17.2	5
Middle	5300	31.70	19.1	25.90	17.5	5
High	5320	23.40	17.1	23.20	17.1	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5260	24.00	23.79	11.00	11.00
Middle	5300	24.00	23.81	11.00	11.00
High	5320	24.00	23.33	11.00	11.00
Duty Cycle CF (dB)		0.02	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5260	17.59	19.68	21.77	17.611	19.701	21.79	24.00	-2.21
Middle	5300	17.66	19.17	21.49	17.681	19.191	21.51	24.00	-2.49
High	5320	17.15	19.02	21.20	17.171	19.041	21.22	24.00	-27.78

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5180	17.59	19.68	21.77	17.611	19.701	21.79	23.79	-2
Middle	5220	17.66	19.17	21.49	17.681	19.191	21.51	23.81	-2.3
High	5240	17.15	19.02	21.20	17.171	19.041	21.22	23.33	-2.11

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5260	-1.31	-2.07	-1.289	-2.049	11
Middle	5300	-1.44	-0.72	-1.419	-0.699	11
High	5320	-3.45	-3.89	-3.429	-3.869	11

Modulation Standard: IEEE 802.11an HT20 (13Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	23.60	18.2	23.00	18	5
Middle	5300	23.80	18.2	23.30	18	5
High	5320	23.80	18.2	23.50	18	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5260	24.00	23.60	11.00	11.00
Middle	5300	24.00	23.60	11.00	11.00
High	5320	24.00	23.60	11.00	11.00
Duty Cycle CF (dB)		0.07	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5260	16.36	16.88	19.64	16.429	16.949	19.71	24.00	-4.29
Middle	5300	16.22	16.48	19.36	16.289	16.549	19.43	24.00	-4.57
High	5320	16.69	16.77	19.74	16.759	16.839	20.04	24.00	-3.96

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5180	16.36	16.88	19.64	16.429	16.949	19.71	23.60	-3.89
Middle	5220	16.22	16.48	19.36	16.289	16.549	19.43	23.60	-4.17
High	5240	16.69	16.77	19.74	16.759	16.839	20.04	23.60	-3.56

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5260	-6.24	-5.77	-6.171	-5.701	11
Middle	5300	-5.54	-8.09	-5.471	-8.021	11
High	5320	-5.08	-4.76	-5.011	-4.691	11

Modulation Standard: IEEE 802.11an HT40 (27Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5270	41.20	36.00	41.40	36	5
Middle	5310	41.20	36.00	40.80	36	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5270	24.00	24.00	11.00	11.00
Middle	5310	24.00	24.00	11.00	11.00
Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5270	13.85	13.11	16.51	14.002	13.262	16.66	24.00	-7.34
Middle	5310	15.13	14.87	18.01	15.282	15.022	18.16	24.00	-5.84

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5270	13.85	13.11	16.51	14.002	13.262	16.66	24.00	-7.34
Middle	5310	15.13	14.87	18.01	15.282	15.022	18.16	24.00	-5.84

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5270	-8.45	-8.4	-8.298	-8.248	11
Middle	5310	-9.39	-8.95	-9.238	-8.798	11

Modulation Standard: IEEE 802.11ac VHT80 (58.5Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5290	79.68	75.2	79.36	74.88	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5290	24.00	24.00	11.00	11.00
Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5290	15.69	15.51	18.61	16.022	15.842	18.94	24.00	-5.06

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5290	15.69	15.51	18.61	16.022	15.842	18.94	24.00	-5.06

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5290	-13.19	-13.04	-12.858	-12.708	11

5.5G Band

Modulation Standard: IEEE 802.11a (6Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	23.00	17.1	22.80	17	5
Middle	5580	29.20	18.5	28.60	17.8	5
High	5700	22.70	17.1	22.40	17.1	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5500	24.00	23.33	11.00	11.00
Middle	5580	24.00	23.67	11.00	11.00
High	5700	24.00	23.33	11.00	11.00
Duty Cycle CF (dB)		0.02	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5500	17.23	17.63	20.44	17.251	17.651	20.46	24.00	-3.54
Middle	5580	19.22	19.88	22.57	19.241	19.901	22.59	24.00	-1.41
High	5700	16.88	16.73	19.85	16.901	16.751	19.87	24.00	-4.13

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5500	17.23	17.63	20.44	17.251	17.651	20.46	23.33	-2.87
Middle	5580	19.22	19.88	22.57	19.241	19.901	22.59	23.67	-1.08
High	5700	16.88	16.73	19.85	16.901	16.751	19.87	23.33	-3.46

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5500	-4.06	-3.31	-4.039	-3.289	11
Middle	5580	0.13	0.22	0.151	0.241	11
High	5700	-4.23	-4.59	-4.209	-4.569	11

Modulation Standard: IEEE 802.11an HT20 (13Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	23.60	18.3	23.20	18.0	5
Middle	5580	23.10	18.2	25.00	18.0	5
High	5700	23.90	18.2	23.00	18.1	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5500	24.00	23.62	11.00	11.00
Middle	5580	24.00	23.60	11.00	11.00
High	5700	24.00	23.60	11.00	11.00
Duty Cycle CF (dB)		0.07	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5500	14.33	14.65	17.50	14.399	14.719	17.57	24.00	-6.43
Middle	5580	18.19	18.23	21.22	18.259	18.299	21.29	24.00	-2.71
High	5700	15.23	15.37	18.31	15.299	15.439	18.38	24.00	-5.62

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5500	14.33	14.65	17.50	14.399	14.719	17.57	23.62	-6.05
Middle	5580	18.19	18.23	21.22	18.259	18.299	21.29	23.60	-2.31
High	5700	15.23	15.37	18.31	15.299	15.439	18.38	23.60	-5.22

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5500	-11.71	-7.22	-11.641	-7.151	11
Middle	5580	-6.7	-2.94	-3.631	-2.82	11
High	5700	-6.7	-6.64	-6.631	-6.571	11

Modulation Standard: IEEE 802.11an HT40 (27Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	41.20	36.000	41.20	36.000	5
Middle	5550	41.40	36.200	41.60	36.200	5
High	5670	41.60	36.000	41.00	36.000	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5510	24.00	24.00	11.00	11.00
Middle	5550	24.00	24.00	11.00	11.00
High	5670	24.00	24.00	11.00	11.00
Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5510	12.66	12.18	15.44	12.812	12.332	15.59	24.00	-8.41
Middle	5550	17.92	17.45	20.70	18.072	17.602	20.85	24.00	-3.15
High	5670	17.82	17.35	20.60	17.972	17.502	20.75	24.00	-3.25

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5510	12.66	12.18	15.44	12.812	12.332	15.59	24.00	-8.41
Middle	5550	17.92	17.45	20.70	18.072	17.602	20.85	24.00	-3.15
High	5670	17.82	17.35	20.60	17.972	17.502	20.75	24.00	-3.25

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5510	-11.64	-9.79	-11.488	-9.638	11
Middle	5550	-11.96	-12.02	-11.808	-11.868	11
High	5670	-6.08	-6.9	-5.928	-6.748	11

Modulation Standard: IEEE 802.11ac VHT80 (58.5Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5530	79.68	75.2	79.36	75.2	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5530	24.00	24.00	11.00	11.00
Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5530	16.03	16.18	19.12	16.362	16.512	19.45	24.00	-4.55

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5530	16.03	16.18	19.12	16.362	16.512	19.45	24.00	-4.55

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5530	-14.37	-12.75	-14.038	-12.418	11

5.8G Band

Modulation Standard: IEEE 802.11a (6Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	16.50	18.8	16.50	17.4	5
Middle	5785	16.40	18.2	16.40	17.3	5
High	5825	16.50	19	16.50	18.8	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5745	30.00	30.00	30.00	30.00
Middle	5785	30.00	30.00	30.00	30.00
High	5825	30.00	30.00	30.00	30.00
Duty Cycle CF (dB)		0.02	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Ant. A Meas Power (dBm)	Ant. B Meas Power (dBm)	Ant. A Total Corr'd Power (dBm)	Ant. B Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dBm)
Low	5745	18.46	20.22	18.481	20.241	30.00	-9.76
Middle	5785	18.77	20.44	18.791	20.461	30.00	-9.54
High	5825	18.43	19.64	18.451	19.661	30.00	-10.34

IC Output Power Results

Channel	Frequency (MHz)	Ant. A Meas Power (dBm)	Ant. B Meas Power (dBm)	Ant. A Total Corr'd Power (dBm)	Ant. B Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dBm)
Low	5745	18.46	20.22	18.481	20.241	30.00	-9.76
Middle	5785	18.77	20.44	18.791	20.461	30.00	-9.54
High	5825	18.43	19.64	18.451	19.661	30.00	-10.34

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5745	-1.38	0.3	-1.359	0.321	30.00
Middle	5785	-0.57	0.34	-0.549	0.361	30.00
High	5825	-1.55	-0.53	-1.529	-0.509	30.00

Modulation Standard: IEEE 802.11an HT20 (13Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	17.60	18.2	17.60	18.1	5
Middle	5785	17.60	18.2	17.60	18.0	5
High	5825	17.60	18.2	17.60	18.1	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5745	30.00	30.00	30.00	30.00
Middle	5785	30.00	30.00	30.00	30.00
High	5825	30.00	30.00	30.00	30.00
Duty Cycle CF (dB)		0.07	Included in Calculations of Corr'd Power & PPSD		

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5745	17.78	18.07	20.94	17.85	18.14	21.01	30.00	-8.99
Middle	5785	17.83	17.79	20.82	17.90	17.86	20.89	30.00	-9.11
High	5825	17.65	17.83	20.75	17.72	17.90	20.82	30.00	-9.18

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5745	17.78	18.07	20.94	17.85	18.14	21.01	30.00	-8.99
Middle	5785	17.83	17.79	20.82	17.90	17.86	20.89	30.00	-9.11
High	5825	17.65	17.83	20.75	17.72	17.90	20.82	30.00	-9.18

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5745	-6.39	-3.88	-6.321	-3.811	30.00
Middle	5785	-5.1	-5.18	-5.031	-5.111	30.00
High	5825	-5.44	-3.39	-5.371	-3.321	30.00

Modulation Standard: IEEE 802.11an HT40 (27Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5755	36.20	36.000	36.40	36.000	5
Middle	5795	36.00	36.000	36.40	36.000	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5755	30.00	30.00	30.00	30.00
Middle	5795	30.00	30.00	30.00	30.00
Duty Cycle CF (dB)	0.15	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5755	17.76	18.55	21.18	17.912	18.702	21.23	30.00	-8.77
Middle	5795	17.88	18.22	21.06	18.032	18.372	21.21	30.00	-8.79

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5755	17.76	18.55	21.18	17.912	18.702	21.23	30.00	-8.77
Middle	5795	17.88	18.22	21.06	18.032	18.372	21.21	30.00	-8.79

PPSD Results

Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5755	-5.23	-4.52	-5.078	-4.368	30.00
Middle	5795	-5.86	-5.34	-5.708	-5.188	30.00

Modulation Standard: IEEE 802.11ac VHT80 (58.5Mbps)

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Ant. A 26 dB BW (MHz)	Ant. A Min 99% BW (MHz)	Ant. B 26 dB BW (MHz)	Ant. B Min 99% BW (MHz)	Directional Gain (dBi)
Low	5775	75.84	75.52	75.52	75.52	5

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	FCC PPSD Limit (dBm/MHz)	IC PPSD Limit (dBm/MHz)
Low	5775	30.00	30.00	30.00	30.00
Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD			

FCC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5775	18.35	18.22	21.30	18.682	18.552	21.63	30.00	-8.37

IC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)			Total Corr'd Power (dBm)			Power Limit (dBm)	Power Margin (dBm)
		ANT A	ANTB	ANT A+B	ANT A	ANTB	ANT A+B		
Low	5775	18.35	18.22	21.30	18.682	18.552	21.63	30.00	-8.37

PPSD Results

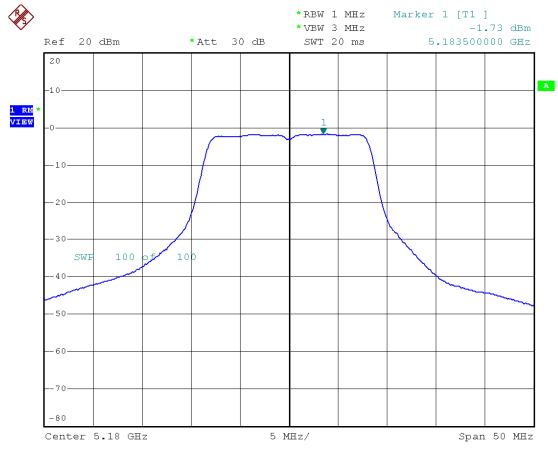
Channel	Frequency (MHz)	Meas PPSD (dBm/500kHz)		Total Corr'd PPSD (dBm/500kHz)		PPSD Limit FCC/IC (dBm/500kHz)
		ANT A	ANT B	ANT A	ANT B	
Low	5775	-7.09	-6.92	-6.758	-6.588	30.00

5.2G Band:

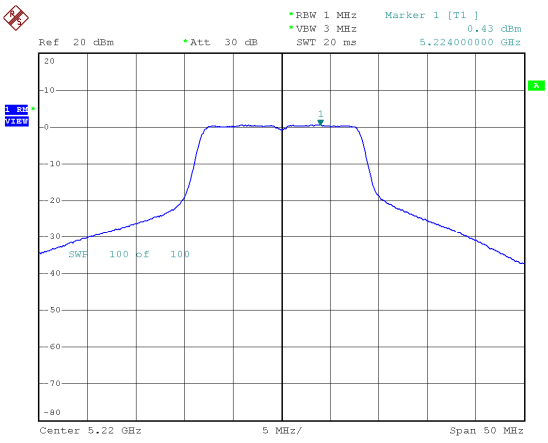
Antenna A

Modulation Standard: 802.11a (6Mbps)

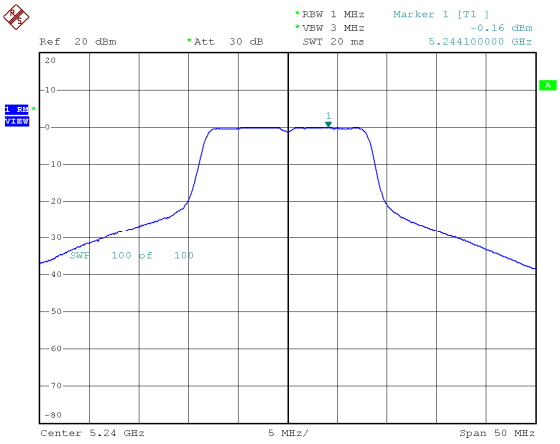
CH36



CH44

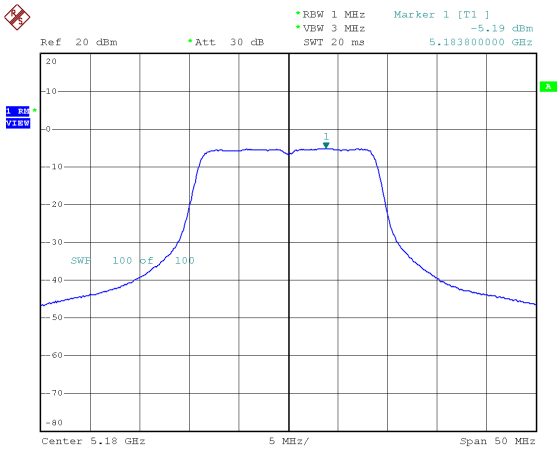


CH48



Modulation Standard: 802.11an HT20 (13Mbps)

CH36



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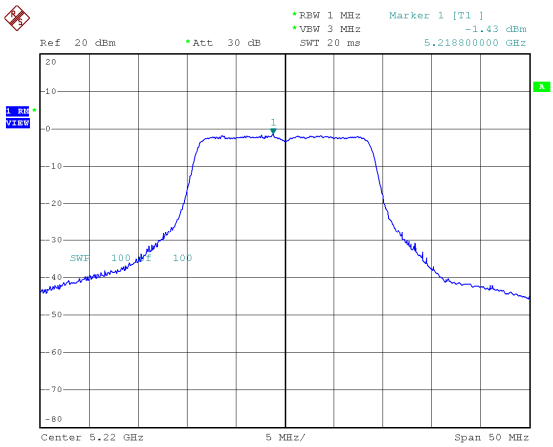

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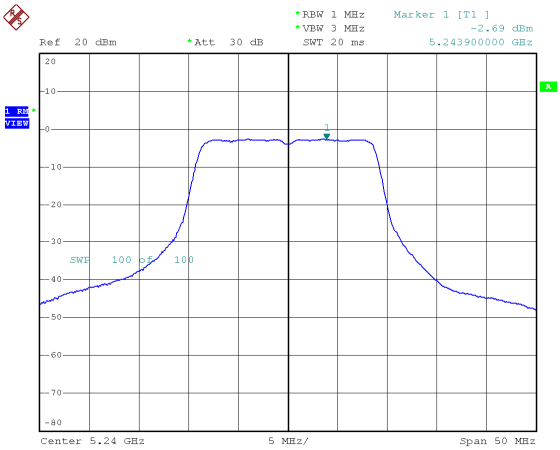
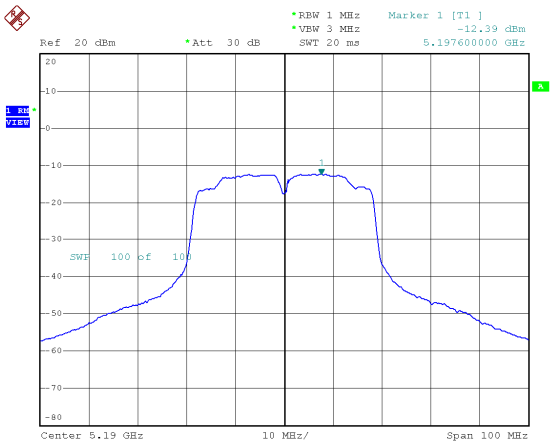


Antenna B:

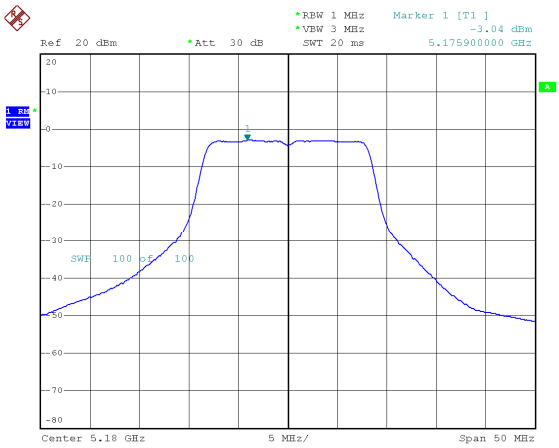
Modulation Standard: 802.11an HT40 (27Mbps)

CH38

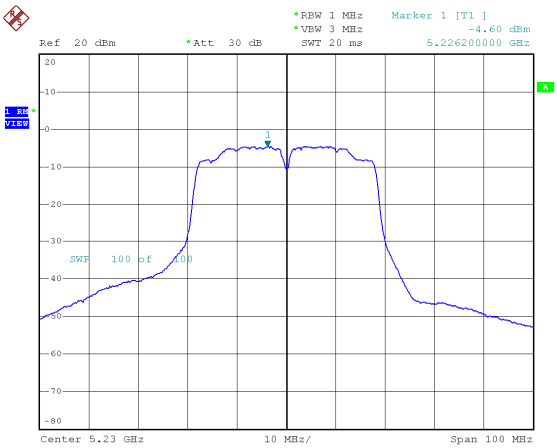


Modulation Standard: 802.11a (6Mbps)

CH36



CH46



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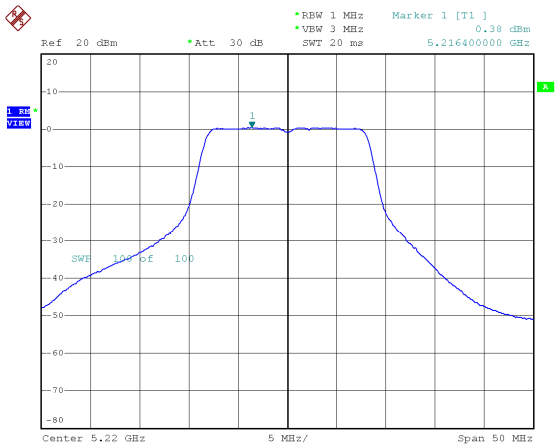
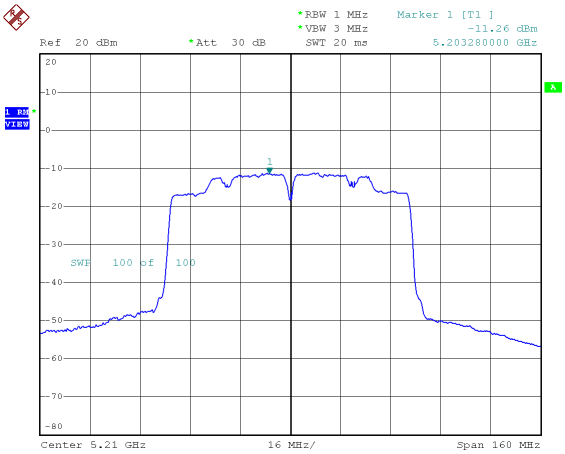
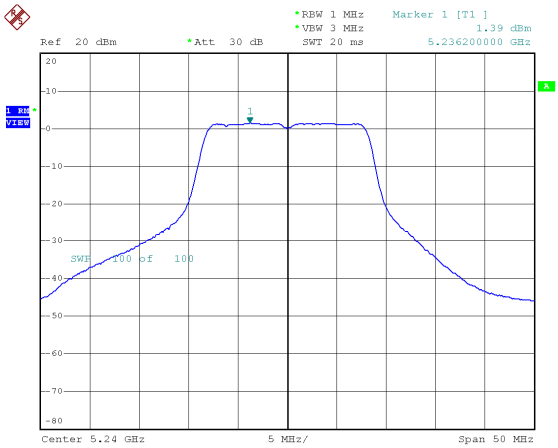


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

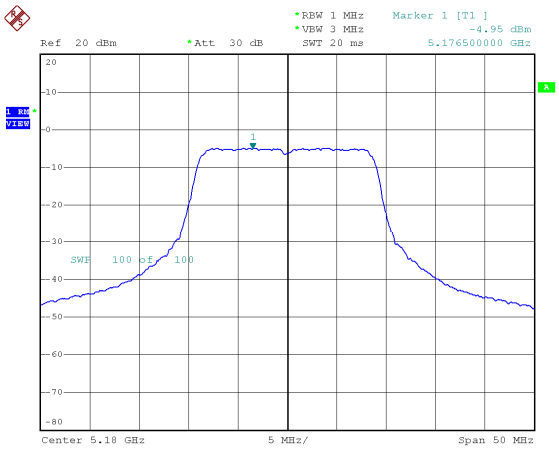
CH42



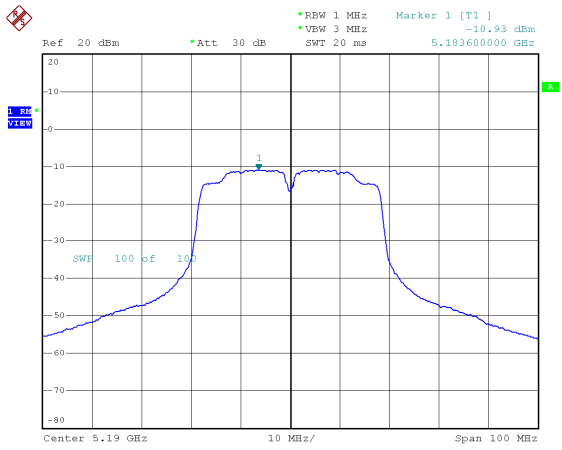
CH48



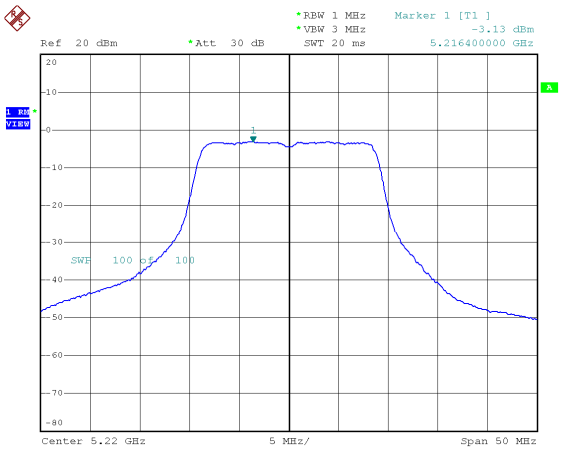
Modulation Standard: 802.11an HT20 (13Mbps)
CH36



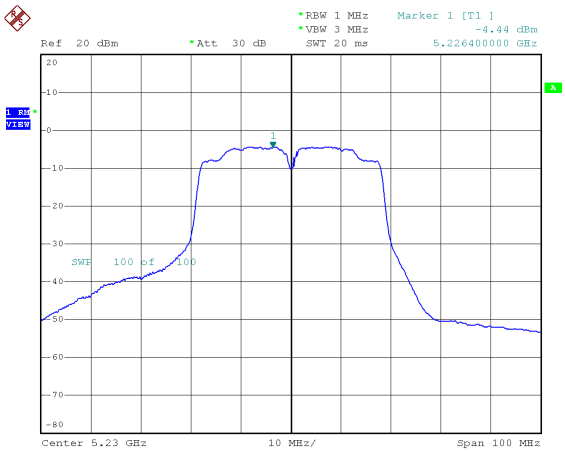
Modulation Standard: 802.11an HT40 (27Mbps)
CH38



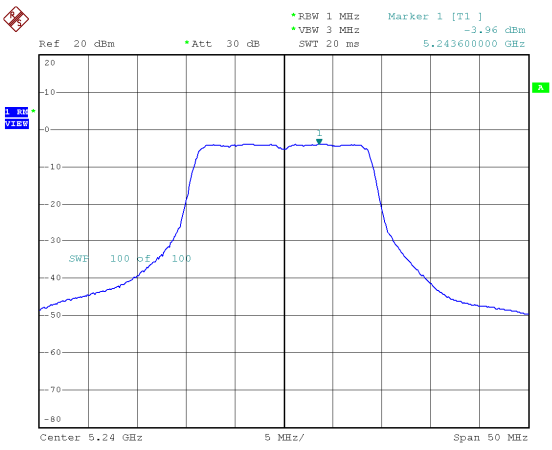
CH44



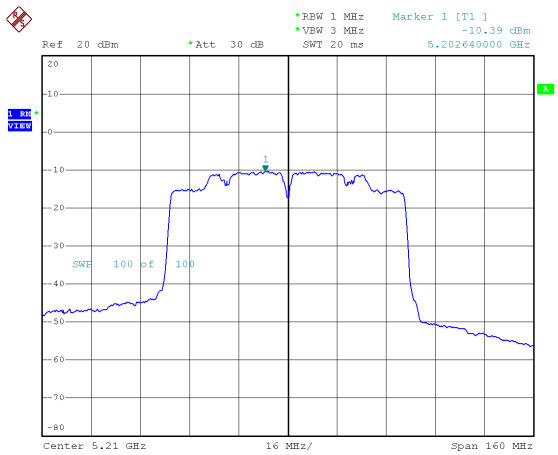
CH46



Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH48

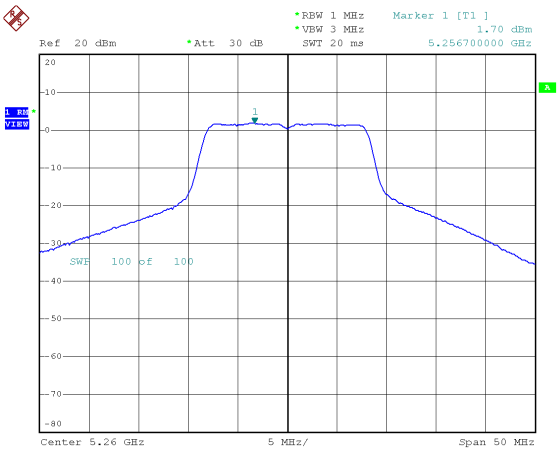


CH42

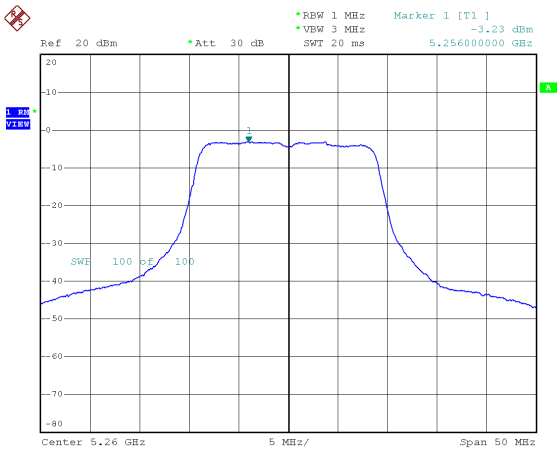


5.3G Band:
Antenna A

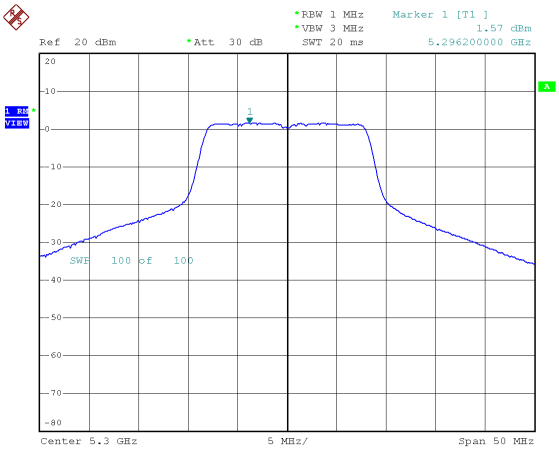
Modulation Standard: 802.11a (6Mbps)
CH52



Modulation Standard: 802.11an HT20 (13Mbps)
CH52



CH60



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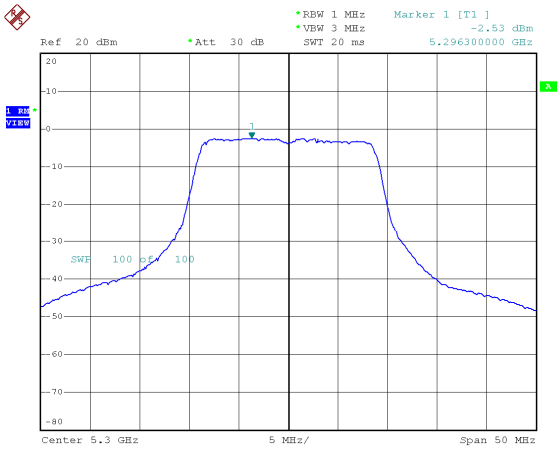
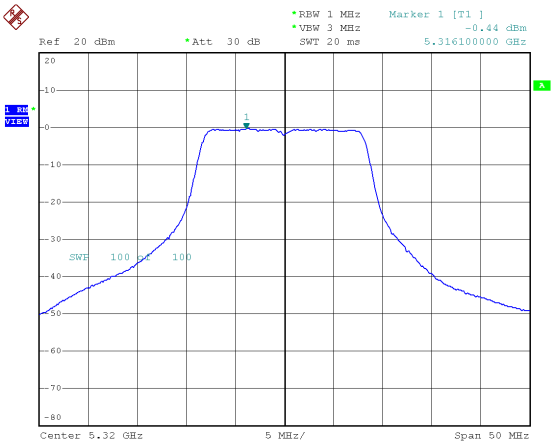


CH64



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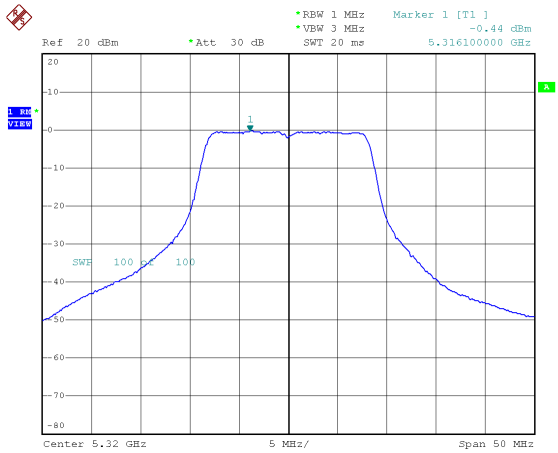
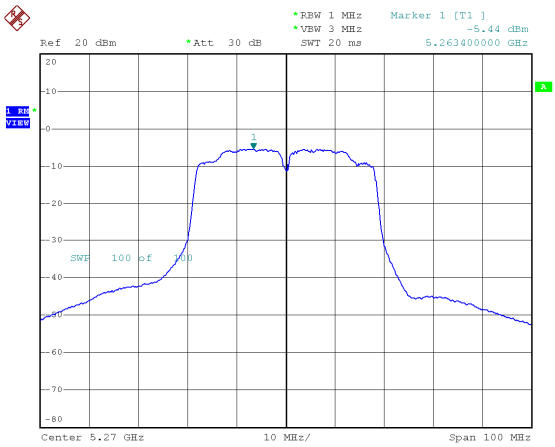


Antenna B:

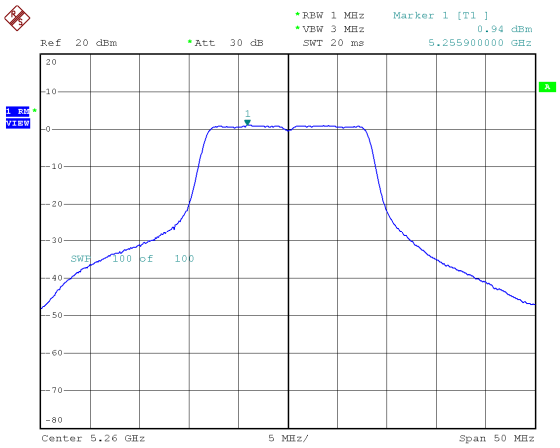
Modulation Standard: 802.11an HT40 (27Mbps)

CH54

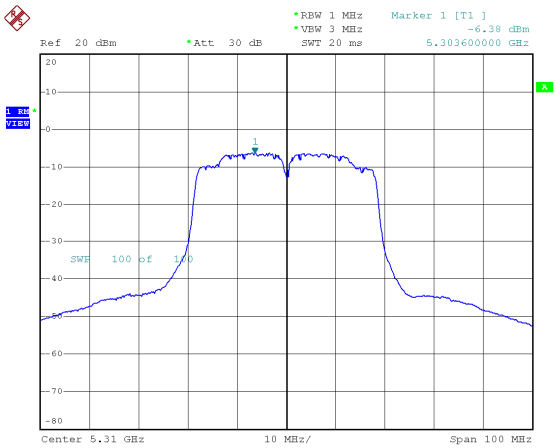


Modulation Standard: 802.11a (6Mbps)

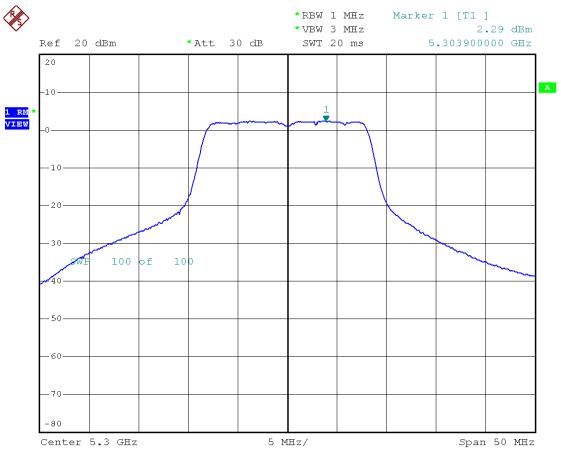
CH52



CH62

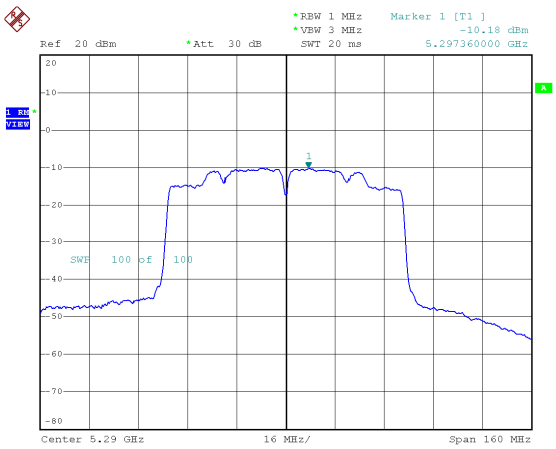


CH60

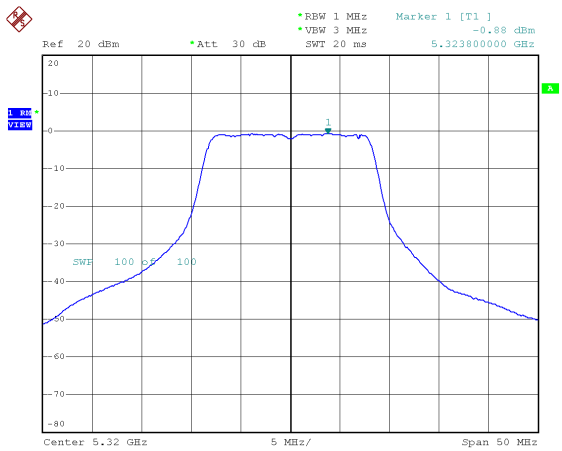


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

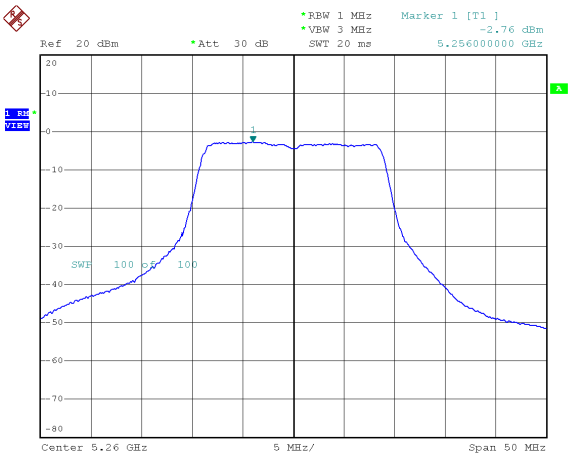
CH58



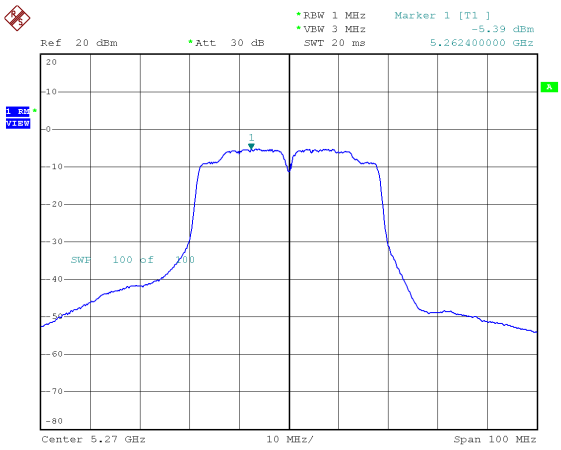
CH64



Modulation Standard: 802.11an HT20 (13Mbps)
CH52



Modulation Standard: 802.11an HT40 (27Mbps)
CH54



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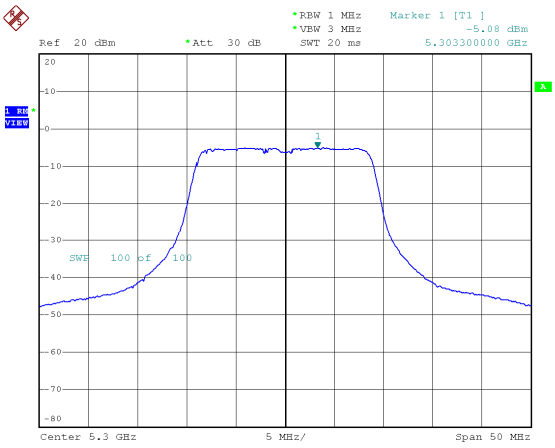

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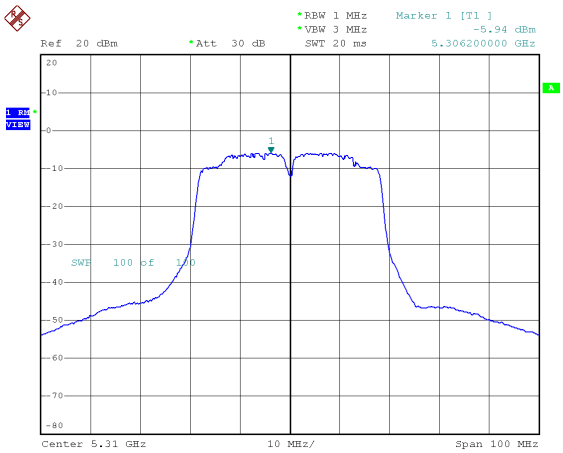

Modulation Standard: 802.11ac VHT80 (58.5Mbps)
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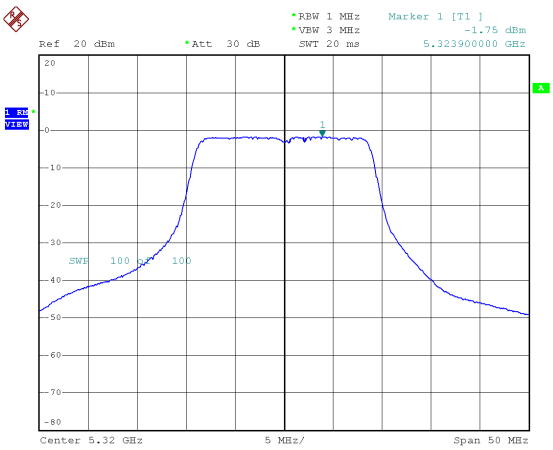
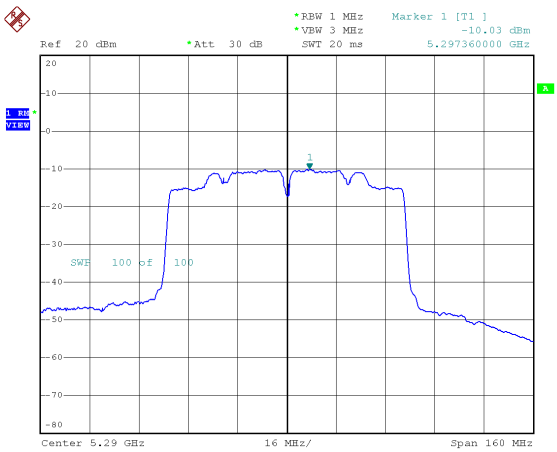
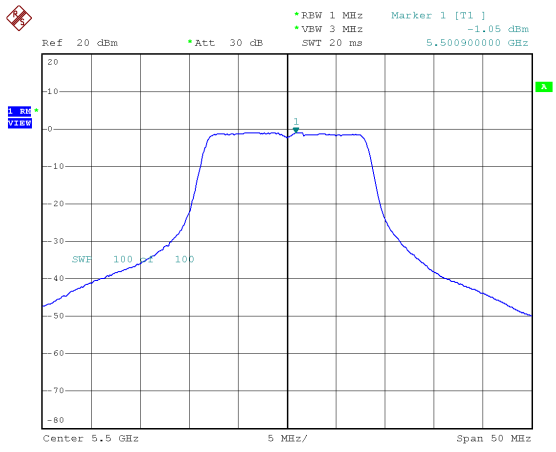


CH58

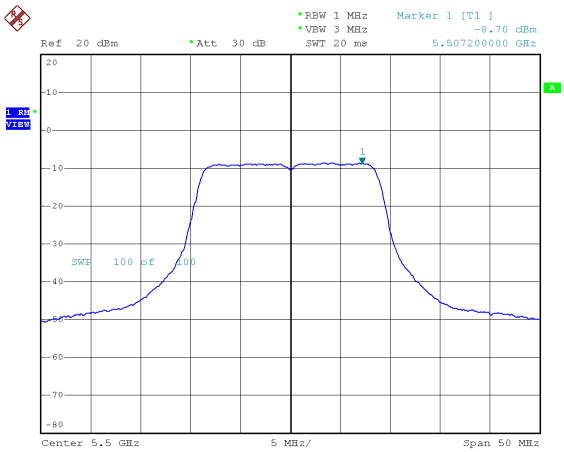


5.5G Band:
Antenna A

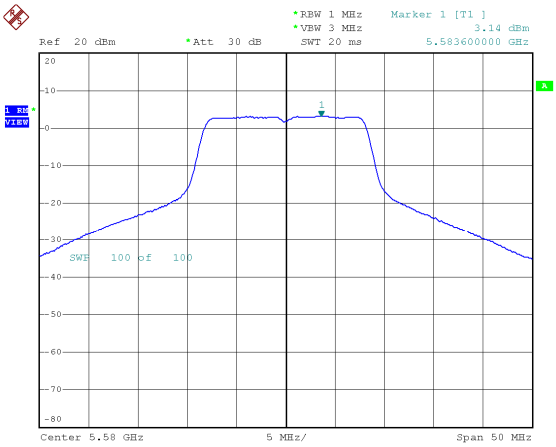
Modulation Standard: 802.11a (6Mbps)
CH100



Modulation Standard: 802.11an HT20 (13Mbps)
CH100



CH116



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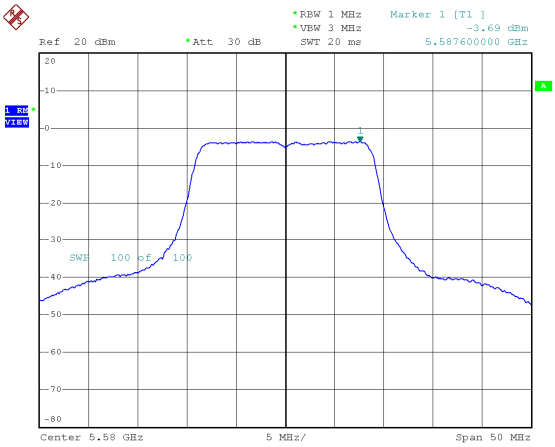
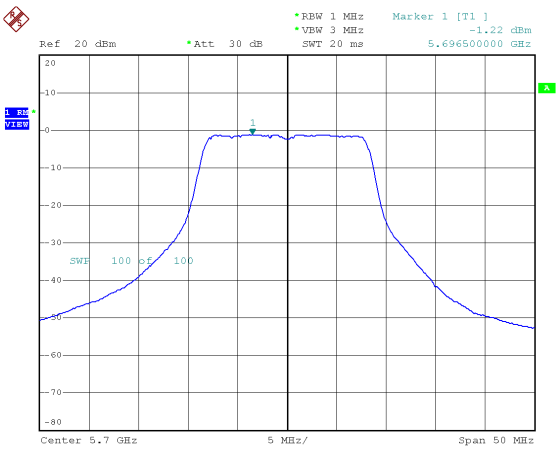
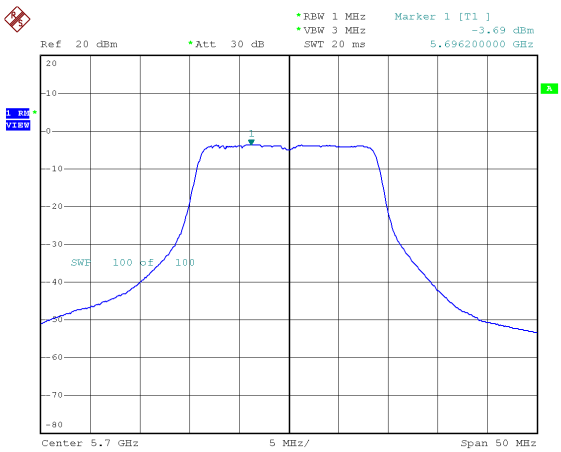


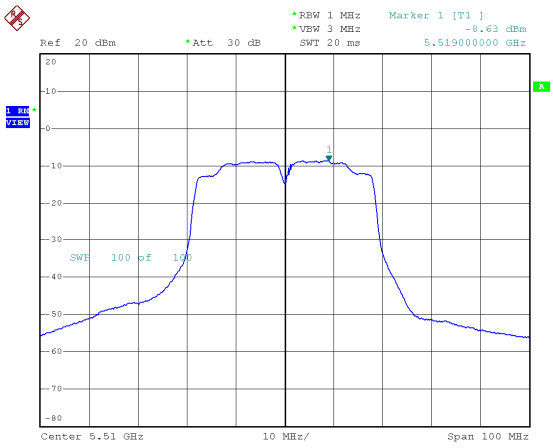
CH140



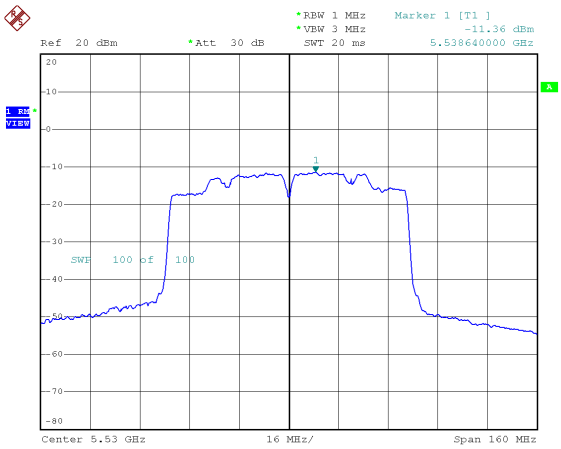
CH140



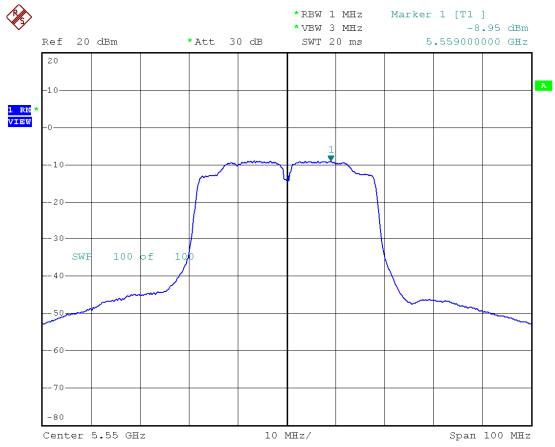
Modulation Standard: 802.11an HT40 (27Mbps)
CH102



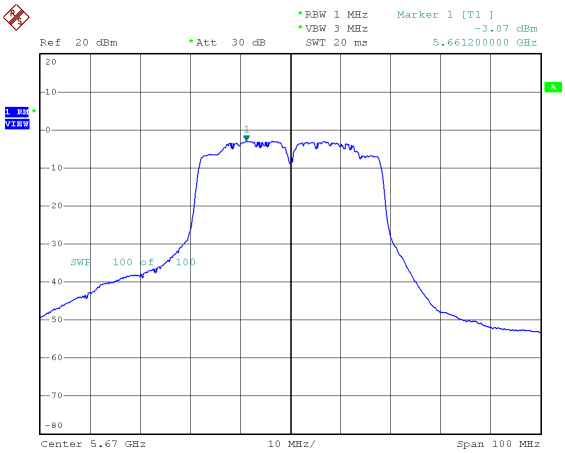
Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH106



CH110

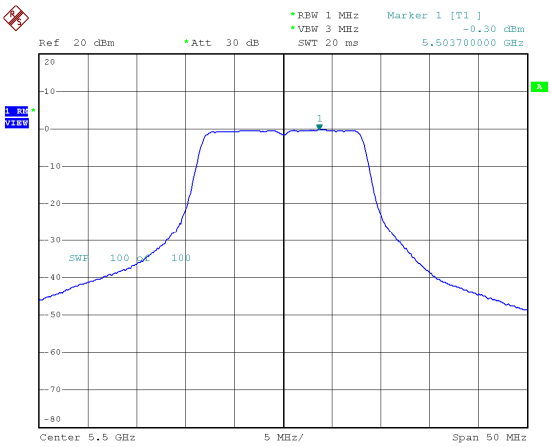


CH134

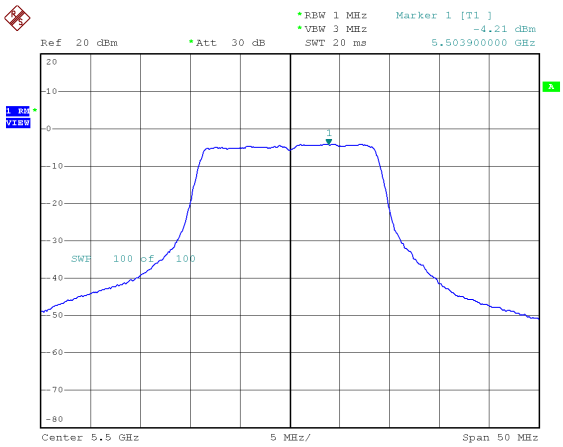


Antenna B

Modulation Standard: 802.11a (6Mbps)
CH100



Modulation Standard: 802.11an HT20 (13Mbps)
CH100



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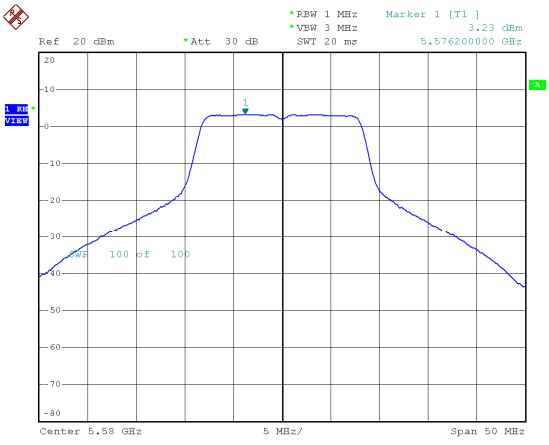

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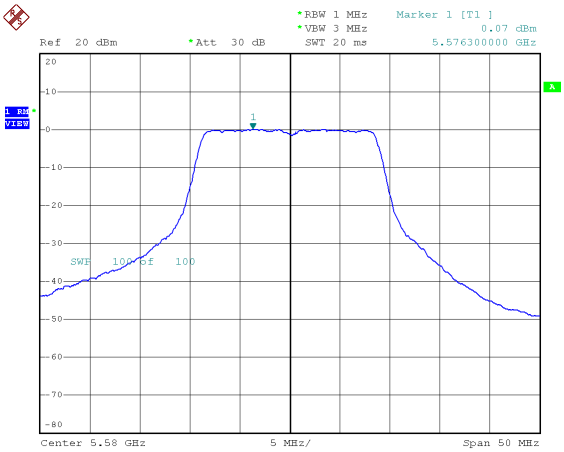
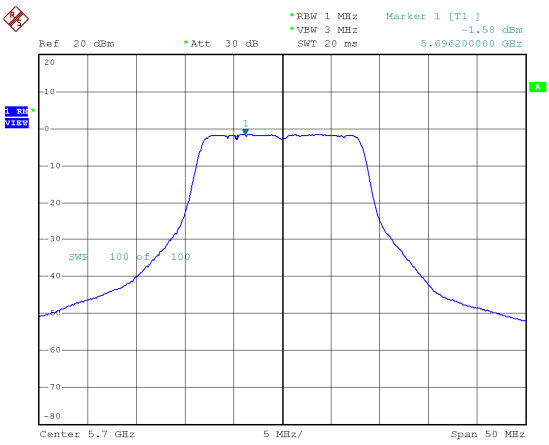
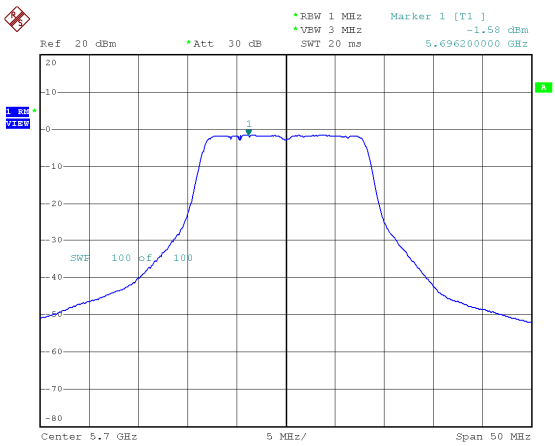


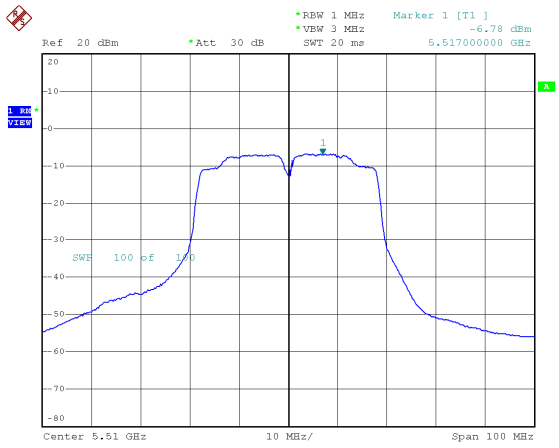
CH140



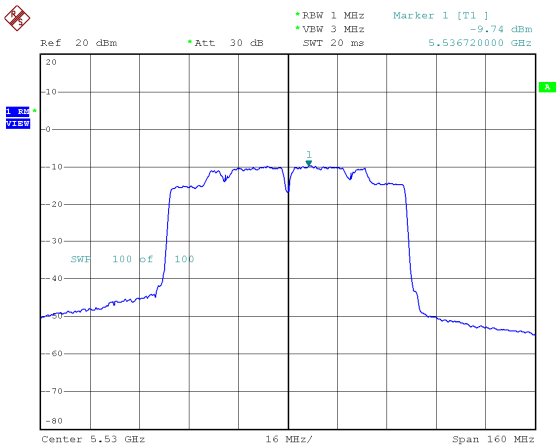
CH140



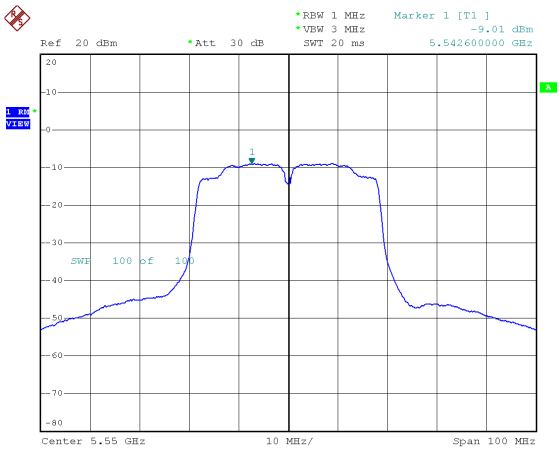
Modulation Standard: 802.11an HT40 (27Mbps)
CH102



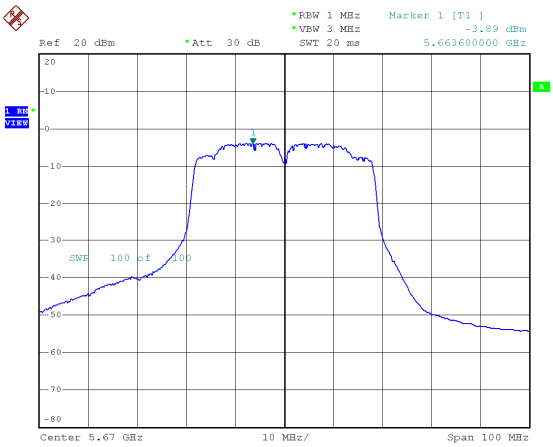
Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH106



CH110

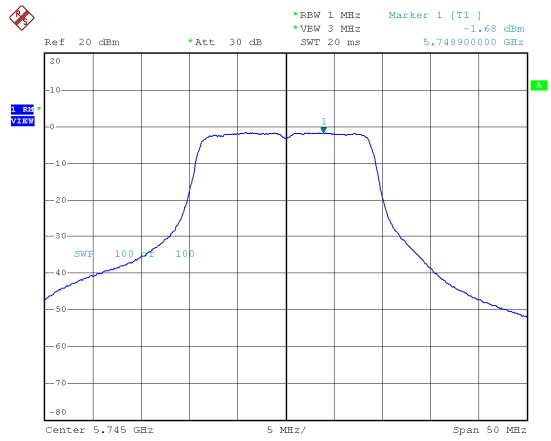


CH134

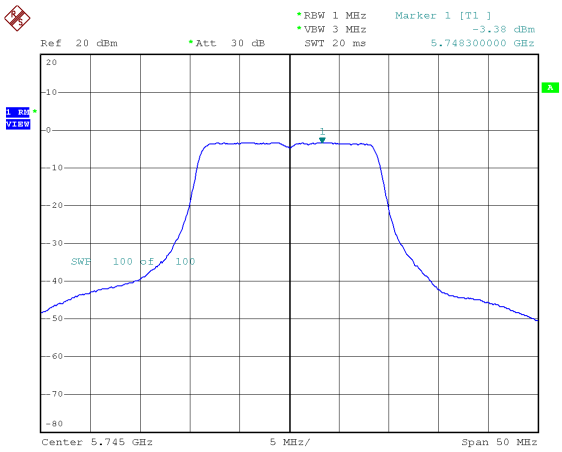


5.8G Band:
Antenna A

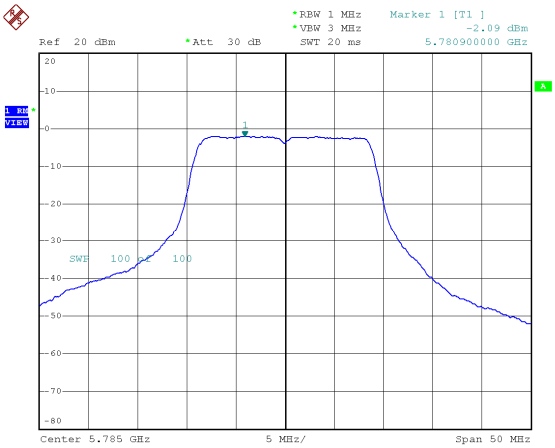
Modulation Standard: 802.11a (6Mbps)
CH149



Modulation Standard: 802.11an HT20 (13Mbps)
CH149



CH157



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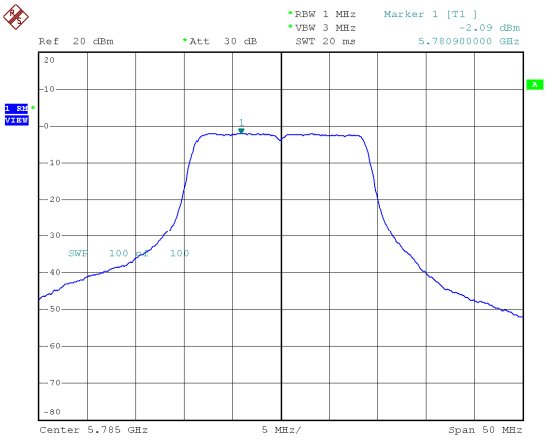
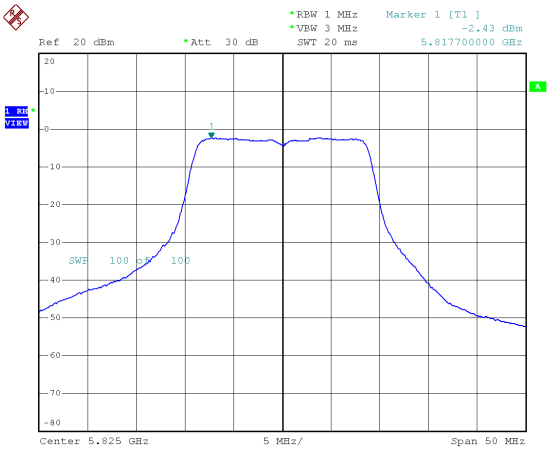
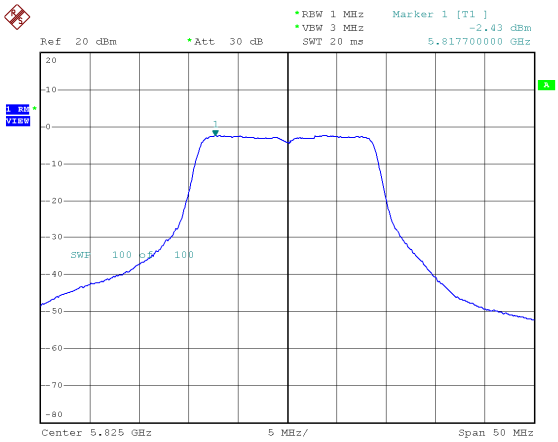


CH165



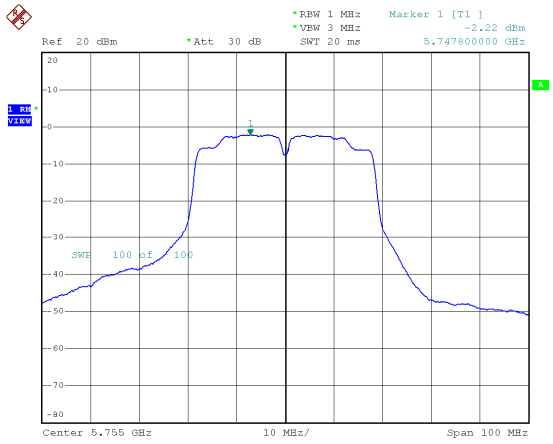
CH165



Antenna B:

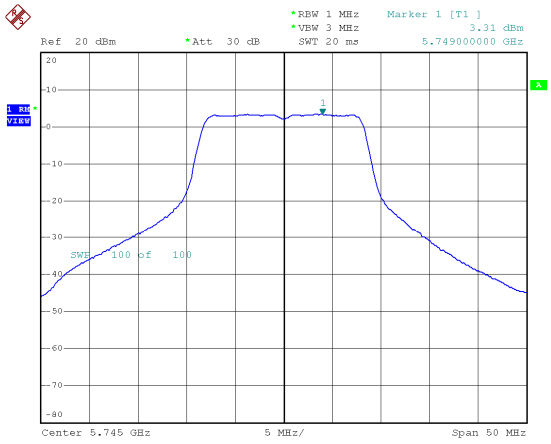
Modulation Standard: 802.11an HT40 (27Mbps)

CH151

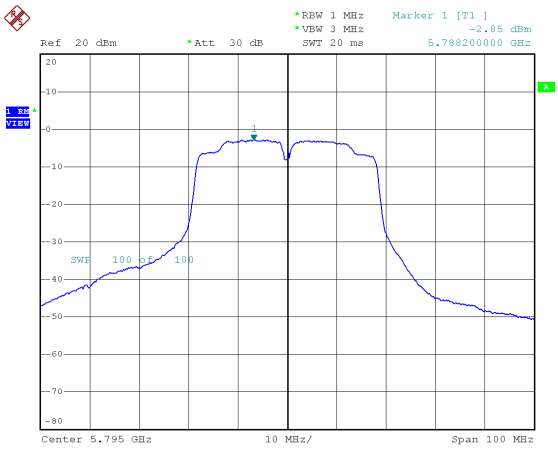


Modulation Standard: 802.11a (6Mbps)

CH149



CH159



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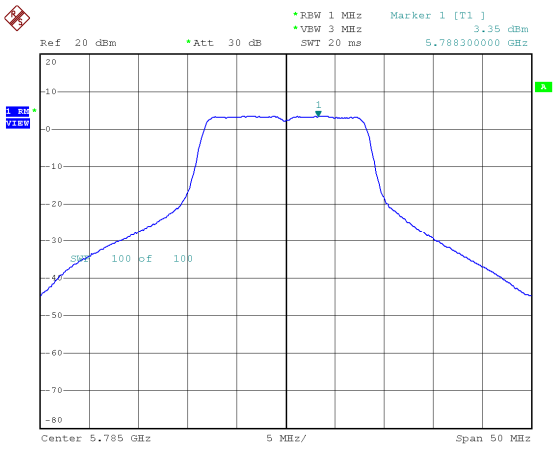
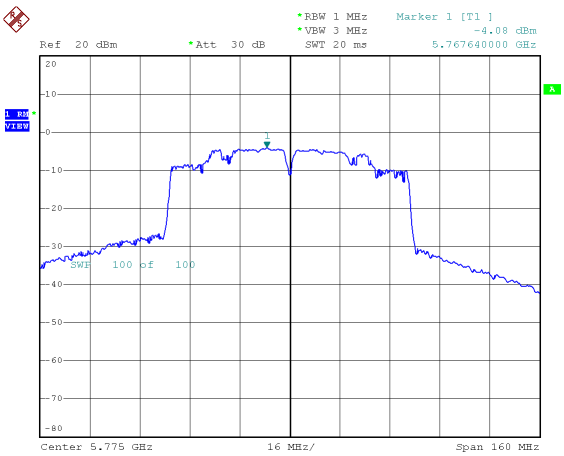
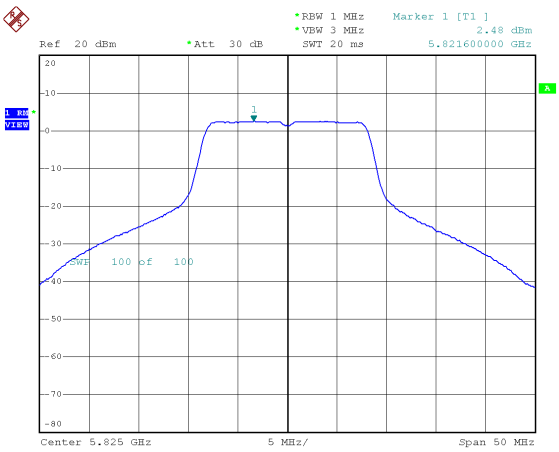


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

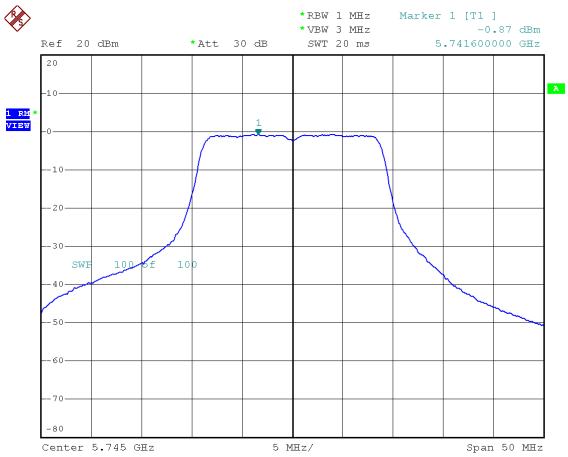
CH155



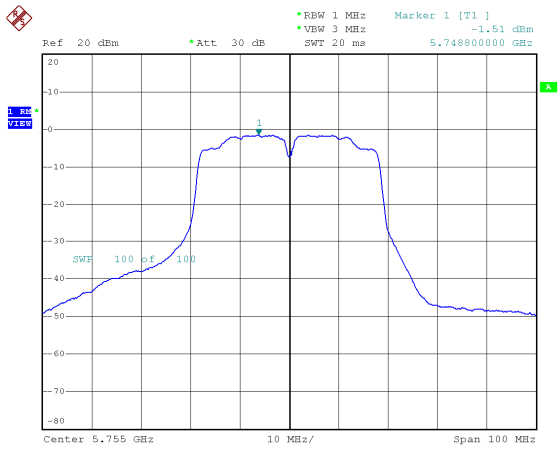
CH165



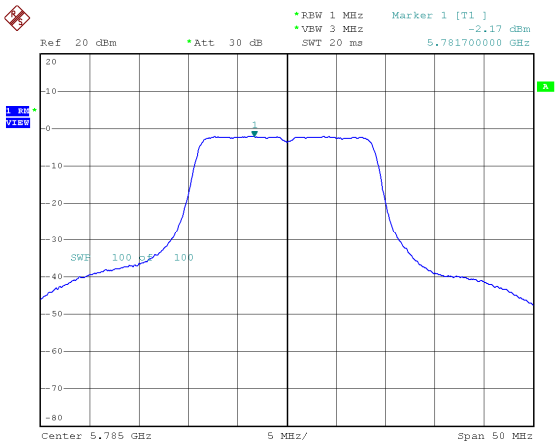
Modulation Standard: 802.11an HT20 (13Mbps)
CH149



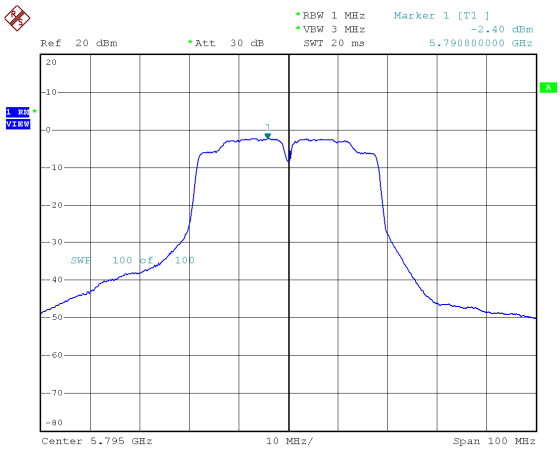
Modulation Standard: 802.11an HT40 (27Mbps)
CH151



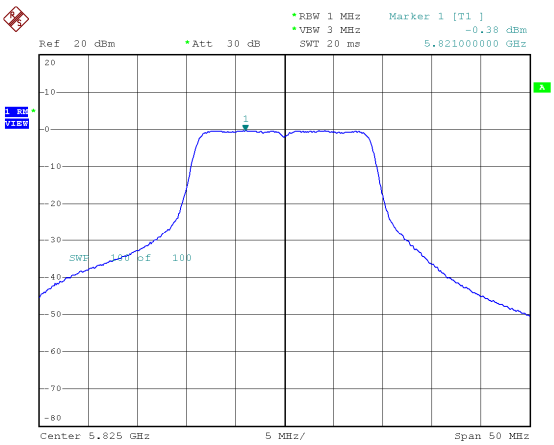
CH157



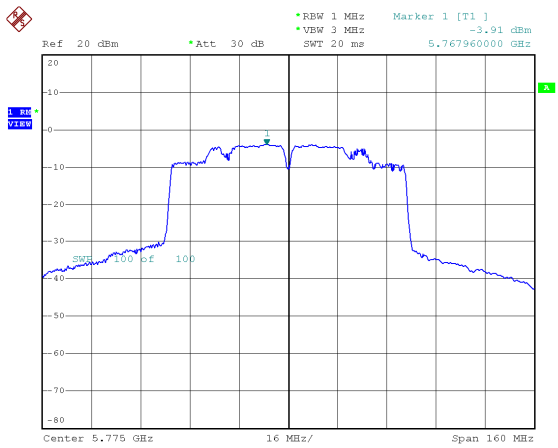
CH159



Modulation Standard: 802.11ac VHT80 (58.5Mbps)
CH165



CH155

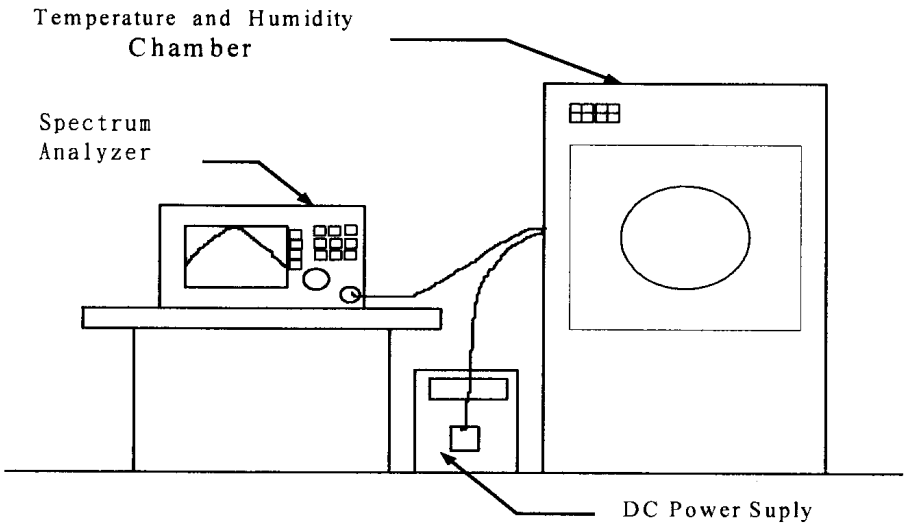


13. Frequency Stability

13.1. Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

13.2. Test Setup Layout



13.3. Test Result and Data

Test Date: Sep. 02, 2014 Temperature: 24℃

Atmospheric pressure: 1014 hPa Humidity: 68%

Operating frequency: 5670 MHz							
Temp (°C)	Power supply (V)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
80	93.5	5669.1497	-0.014997	5669.3651	-0.011198	5669.4987	-0.008841
	110	5669.2030	-0.014057	5669.8270	-0.003051	5669.0493	-0.016767
	126.5	5669.5078	-0.008681	5669.0167	-0.017342	5669.4212	-0.010207
70	93.5	5669.7870	-0.003757	5669.5740	-0.007513	5669.3970	-0.010634
	110	5669.3151	-0.012080	5669.1923	-0.014245	5669.0433	-0.016874
	126.5	5669.7091	-0.005130	5669.5584	-0.007788	5669.3334	-0.011757
60	93.5	5669.0870	-0.016102	5669.1353	-0.015251	5669.0041	-0.017564
	110	5669.7760	-0.003950	5669.4291	-0.010068	5669.8788	-0.002137
	126.5	5669.8208	-0.003161	5669.0514	-0.016730	5669.9812	-0.000332
50	93.5	5669.8882	-0.001971	5669.0276	-0.017149	5669.5519	-0.007903
	110	5669.9853	-0.000260	5669.4005	-0.010574	5669.4412	-0.009856
	126.5	5669.6463	-0.006238	5669.6975	-0.005336	5669.5920	-0.007196
40	93.5	5669.2717	-0.012845	5669.1616	-0.014787	5669.3807	-0.010922
	110	5669.6445	-0.006269	5669.2083	-0.013963	5669.6835	-0.005581
	126.5	5669.2976	-0.012387	5669.7221	-0.004901	5669.1467	-0.015050
30	93.5	5669.6914	-0.005443	5669.3823	-0.010895	5669.2750	-0.012787
	110	5669.1910	-0.014268	5669.5470	-0.007990	5669.8078	-0.003390
	126.5	5669.0405	-0.016923	5669.9374	-0.001104	5669.0565	-0.016641
20	93.5	5669.4376	-0.009918	5669.6133	-0.006820	5669.4439	-0.009808
	110	5669.0736	-0.016338	5669.1604	-0.014808	5669.1576	-0.014856
	126.5	5669.7229	-0.004888	5669.8853	-0.002023	5669.3523	-0.011424
10	93.5	5669.6391	-0.006366	5669.4722	-0.009308	5669.1762	-0.014529
	110	5669.8209	-0.003159	5669.9369	-0.001113	5669.5399	-0.008115
	126.5	5669.2560	-0.013121	5669.5069	-0.008697	5669.9849	-0.000267
0	93.5	5669.9539	-0.000813	5669.0746	-0.016320	5669.4154	-0.010310
	110	5669.7189	-0.004958	5669.4854	-0.009075	5669.7497	-0.004415
	126.5	5669.8643	-0.002393	5669.2836	-0.012634	5669.7776	-0.003923

Limit:

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

14. Dynamic Frequency Selection

14.1. List of Measurement and Examinations

EUT Applicability of DFS requirements and Frequency Range

Operation Mode		Operating Frequency Range	
		5250-5350MHz	5470-5725MHz
Master	--	--	--
Client without radar detection	√	√	√
Client with radar detection	--	--	--

Minimum limit for DFS testing

Maximum Transmit Power	Value*	Minimum Antenna Gain(dBi)	Attach	limit
≧200milli	-64	--	1dB	--
＜200milli	-62	6		-55dBm
*1 This is the level at the input of the receiver assuming a 0dBi receive antenna. *2 Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.				

14.2.Test Setup

Setup for Master with injection at the Master

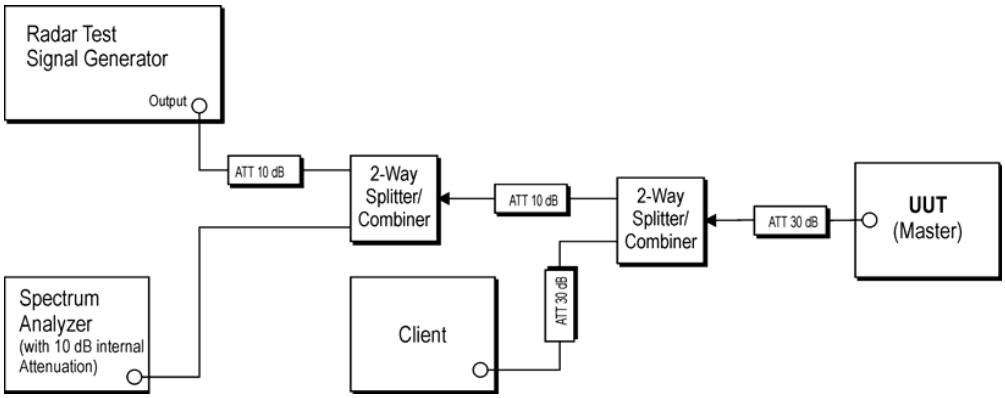


Figure 1: Example Conducted Setup where UUT is a Master and Radar Test Waveforms are injected into the Master

Setup for Client with injection at the Master

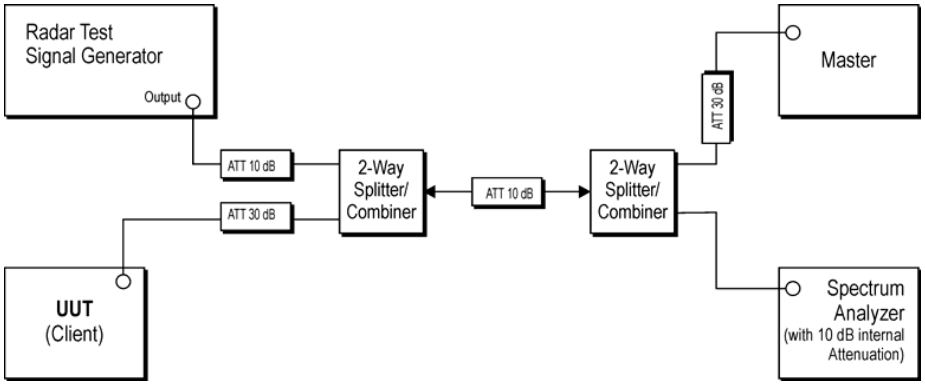


Figure 2: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Master

Setup for Client with injection at the Client

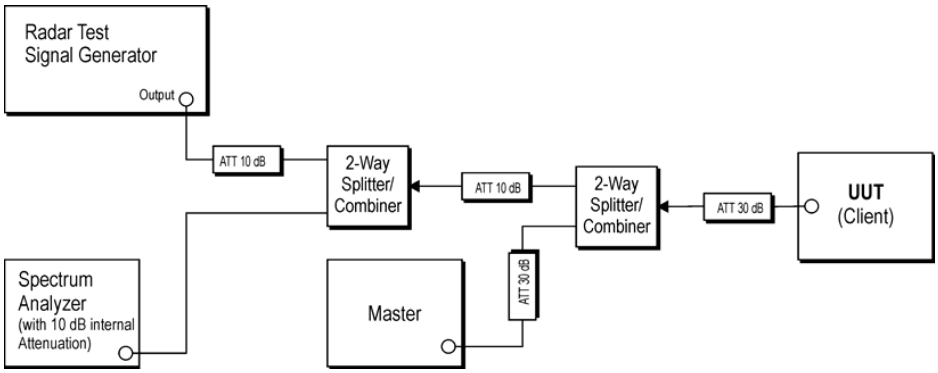


Figure 3: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Client

14.3.Non-Occupancy Period

The Channel Shutdown is defined as the process initiated by the RLAN device immediately after a radar signal has been detected on an Operating Channel.

The master device shall instruct all associated slave devices to stop transmitting on this channel, which they shall do within the Channel Move Time.

Slave devices with a Radar Interference Detection function, shall stop their own transmissions within the Channel Move Time.

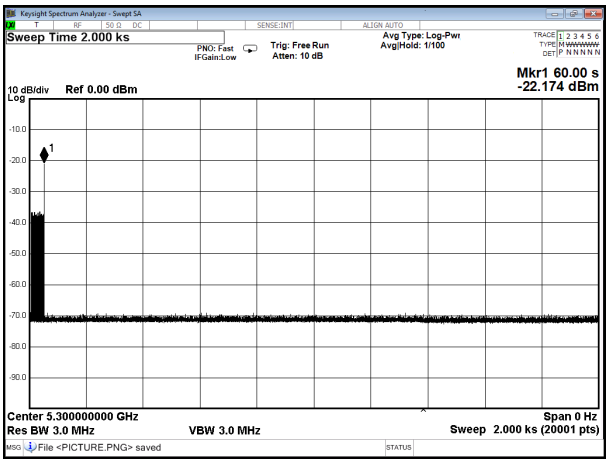
The aggregate duration of all transmissions of the RLAN device on this channel during the Channel Move Time shall be limited to the Channel Closing Transmission Time. The aggregate duration of all transmissions shall not include quiet periods in between transmissions.

13.3.1 Test Limit

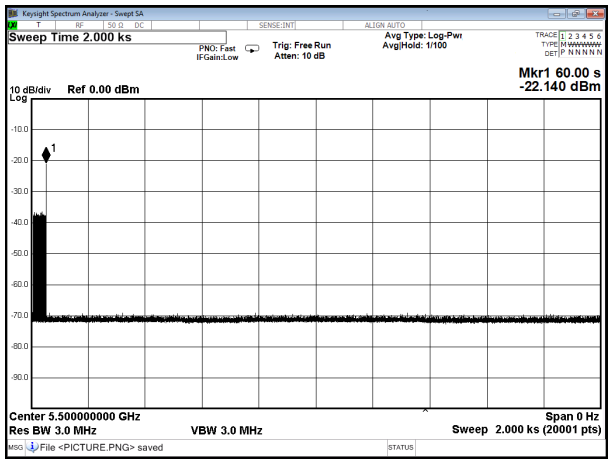
Radar Test Signal	Master (min)	Client (min)
1	> 30	> 30
2	> 30	> 30
3	> 30	> 30
4	> 30	> 30
5	> 30	> 30
6	> 30	> 30

13.3.2 Test Result of Non-Occupancy Period

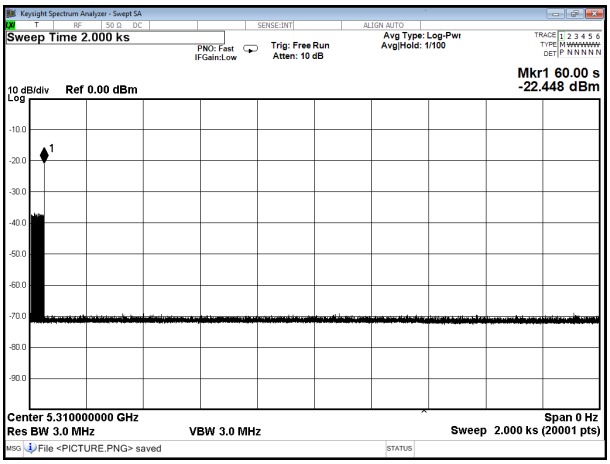
Signal 1 at 5300MHz, HT20



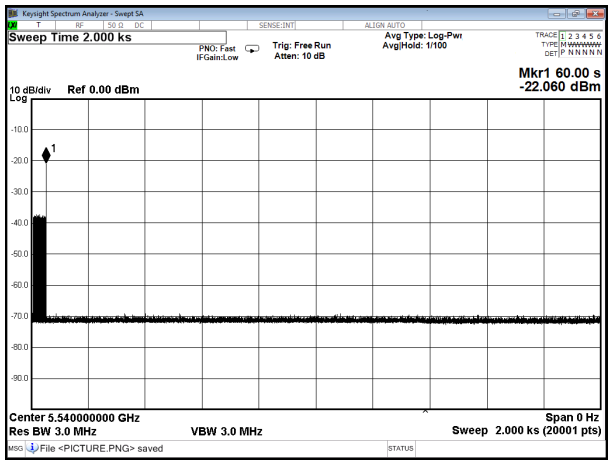
Signal 1 at 5500MHz, HT20



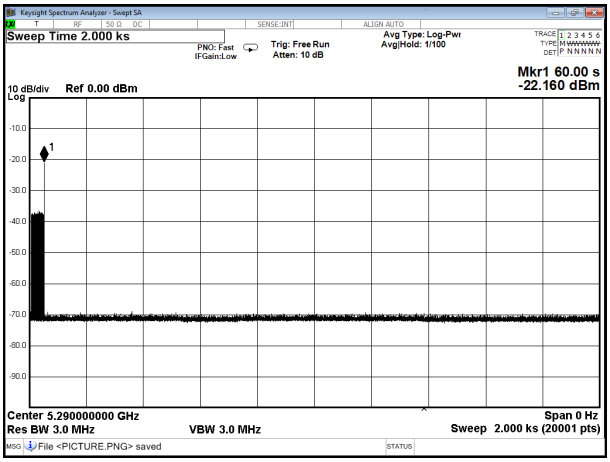
Signal 1 at 5310MHz,HT40



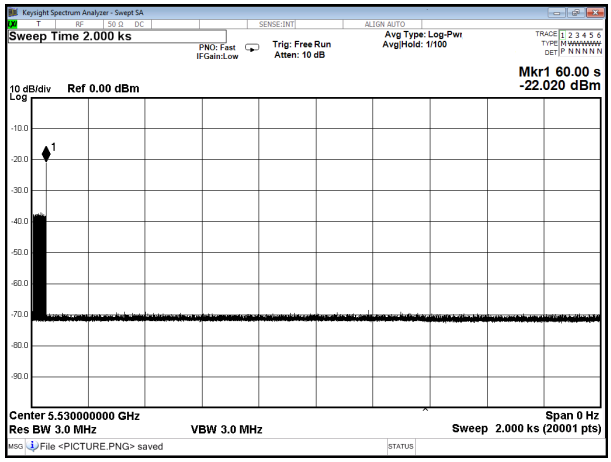
Signal 1 at 5540MHz,HT40



Signal 1 at 5290MHz,VHT80



Signal 1 at 5530MHz,VHT80



14.4.DFS Detection Threshold

This is a client without radar detection device, this test item is not applicable.

14.5. Channel Availability Check

This is a client without radar detection device, this test item is not applicable.

14.6.U-NII Detection Bandwidth

This is a client without radar detection device, this test item is not applicable.

14.7.Uniform Spreading

This is a client without radar detection device, this test item is not applicable.

14.8.In-Service Monitoring

The In-Service Monitoring is defined as the process by which an RLAN monitors the Operating Channel for the presence of radar signals.

13.8.1 Test Limit

Parameter	Value
Channel Move Time	< 10 s (See Note 1)
Channel Closing Transmission Time	< 200 ms+ an aggregate of 60 milliseconds over remaining 10 second period. (See Notes 1 and Notes 2.)

Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:
- For the Short Pulse Radar Test Signals this instant is the end of the Burst.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.
- For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

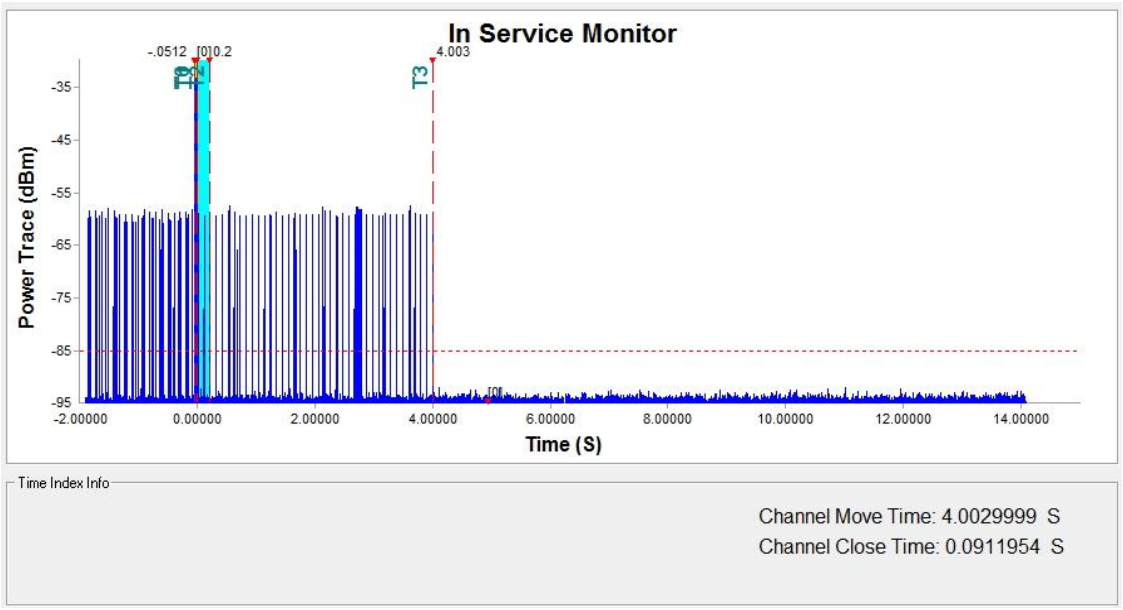
Limits Clause 4.7.2.2.2

The In-Service Monitoring shall be used to continuously monitor an Operating Channel.

The In-Service-Monitoring shall start immediately after the RLAN has started transmissions on an Operating Channel.

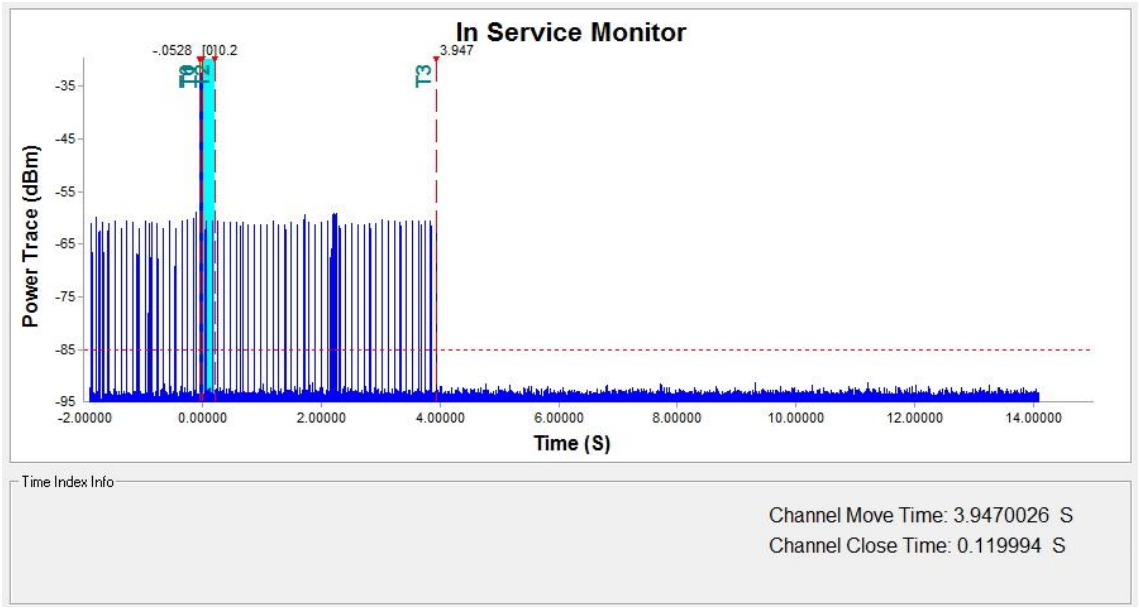
13.8.2 Test Result

Signal 1 at 5300MHz, HT20



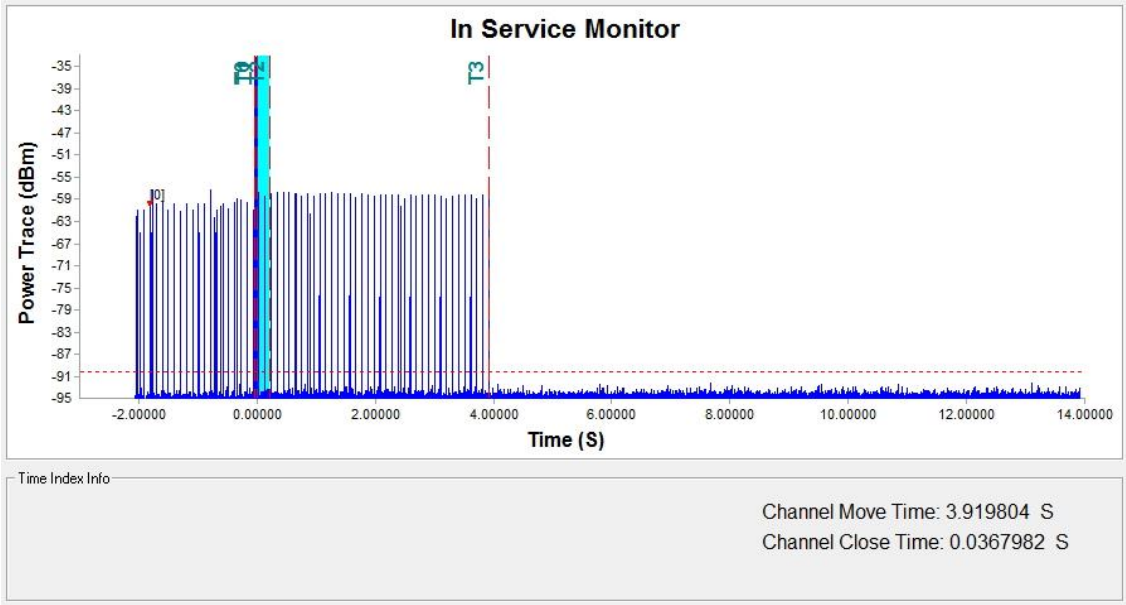
	Value(S)	Result
Channel Move Time	4.0030	Pass
Channel Closing Transmission Time	0.0912	pass

Signal 1 at 5500MHz, HT20



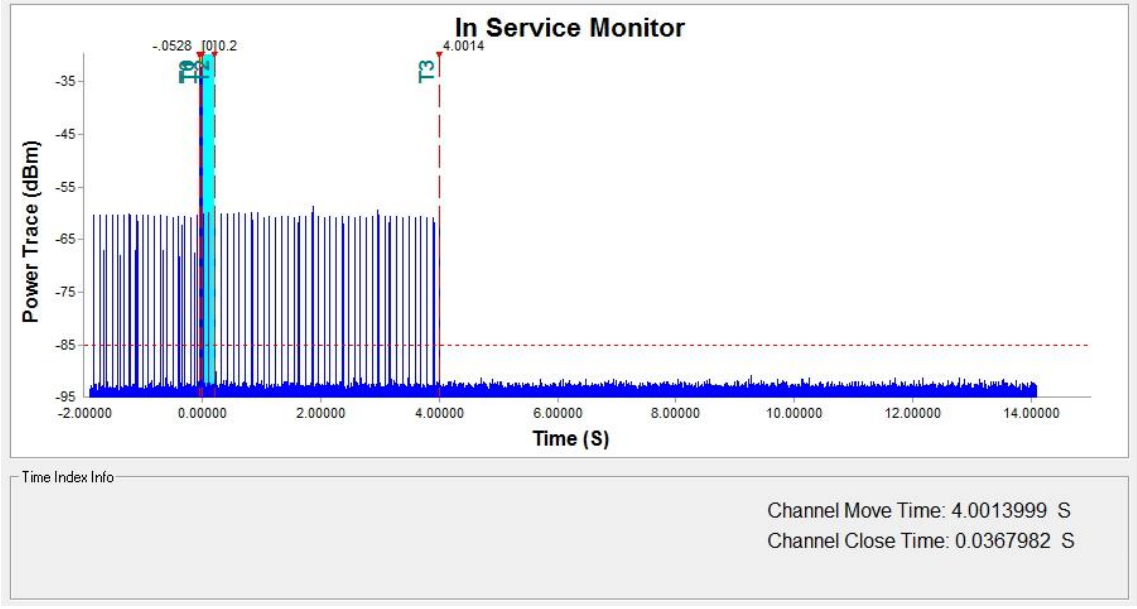
	Value(S)	Result
Channel Move Time	3.9470	Pass
Channel Closing Transmission Time	0.1120	pass

Signal 1 at 5310MHz, HT40



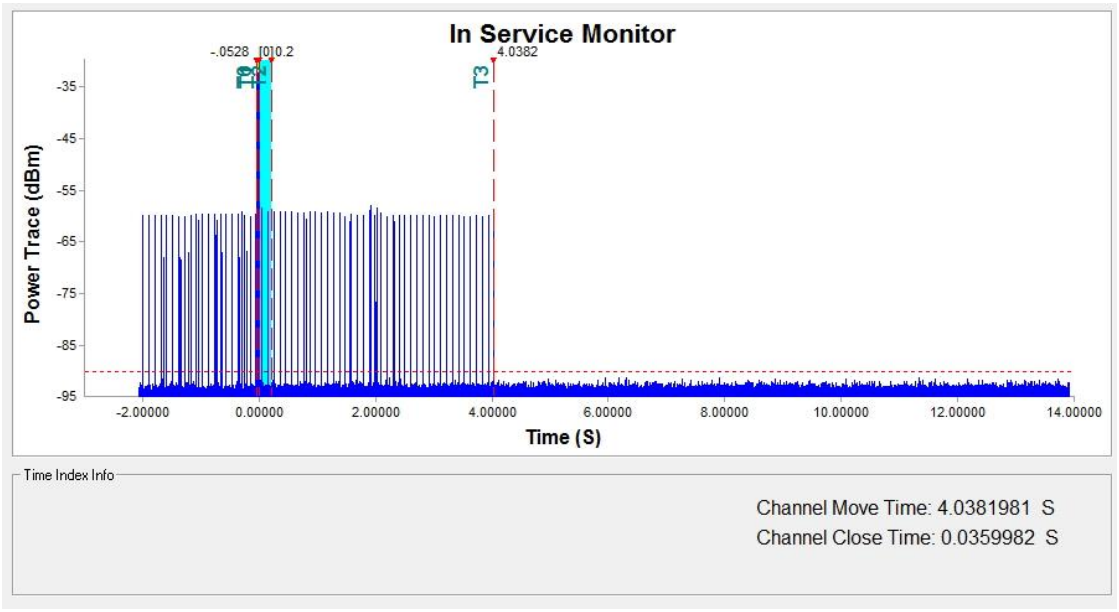
	Value(S)	Result
Channel Move Time	3.9198	Pass
Channel Closing Transmission Time	0.03680	pass

Signal 1 at 5540MHz, HT40



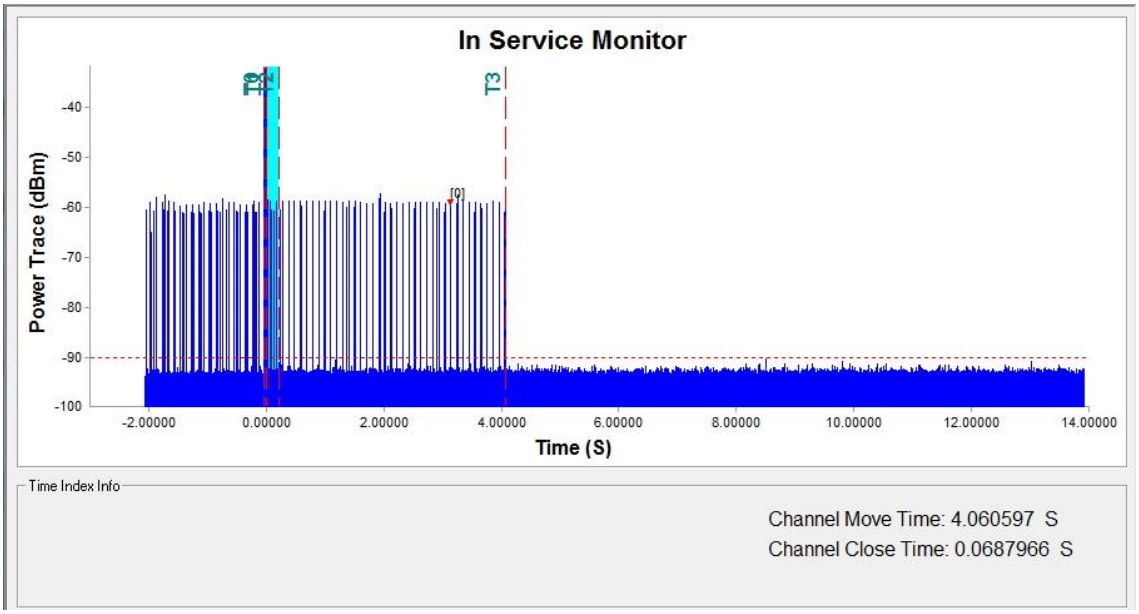
	Value(S)	Result
Channel Move Time	4.0014	Pass
Channel Closing Transmission Time	0.0368	pass

Signal 1 at 5290MHz, VHT80



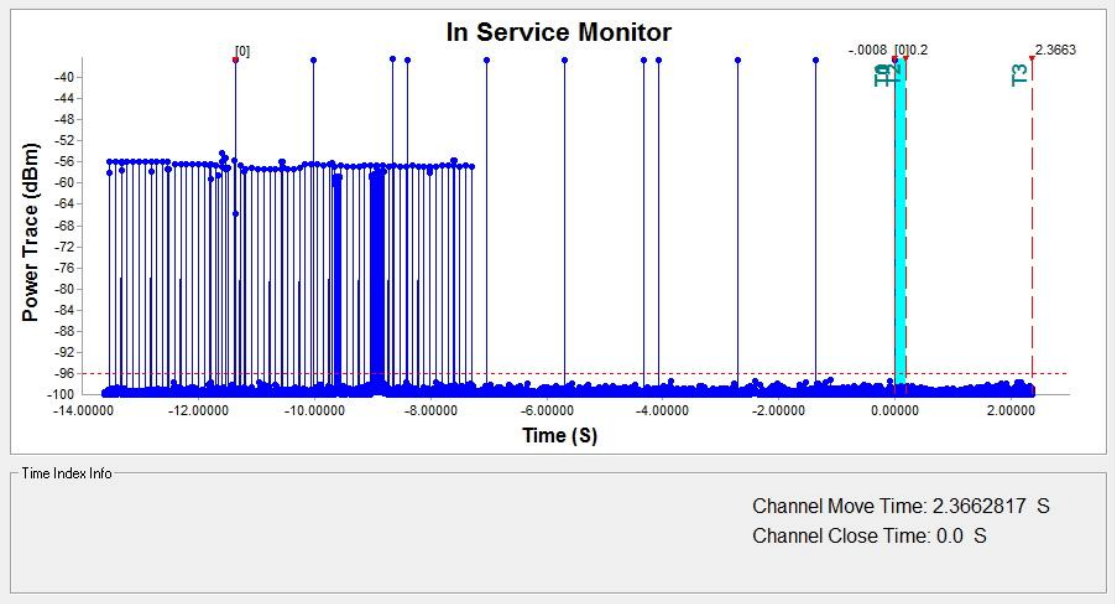
	Value(S)	Result
Channel Move Time	4.0382	Pass
Channel Closing Transmission Time	0.0360	pass

Signal 1 at 5530MHz, VHT80



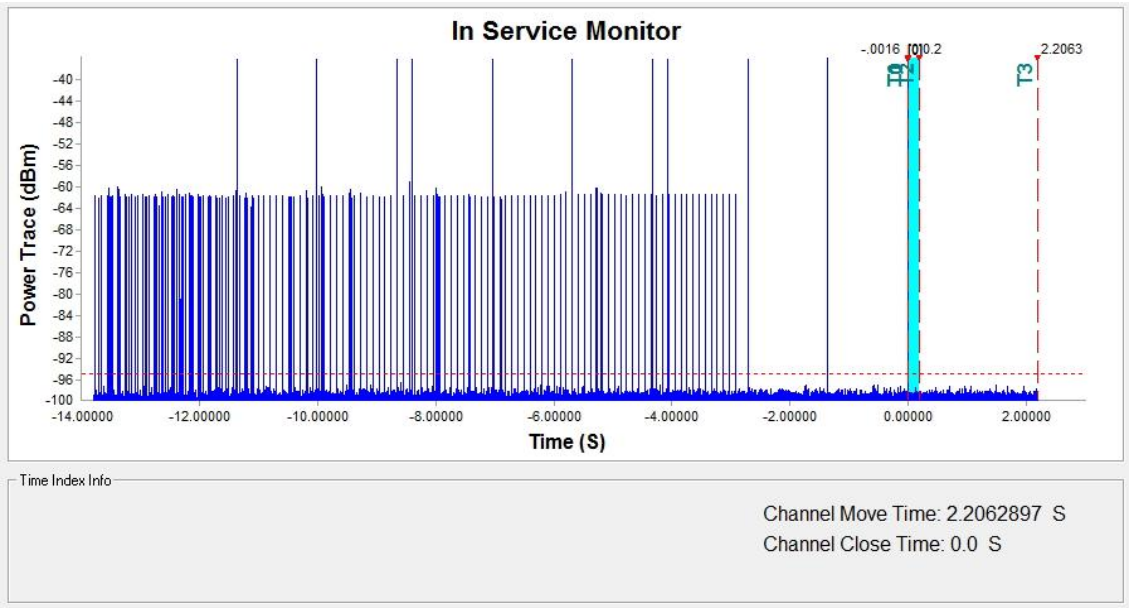
	Value(S)	Result
Channel Move Time	4.0606	Pass
Channel Closing Transmission Time	0.0688	pass

Signal 5 at 5300MHz, HT20



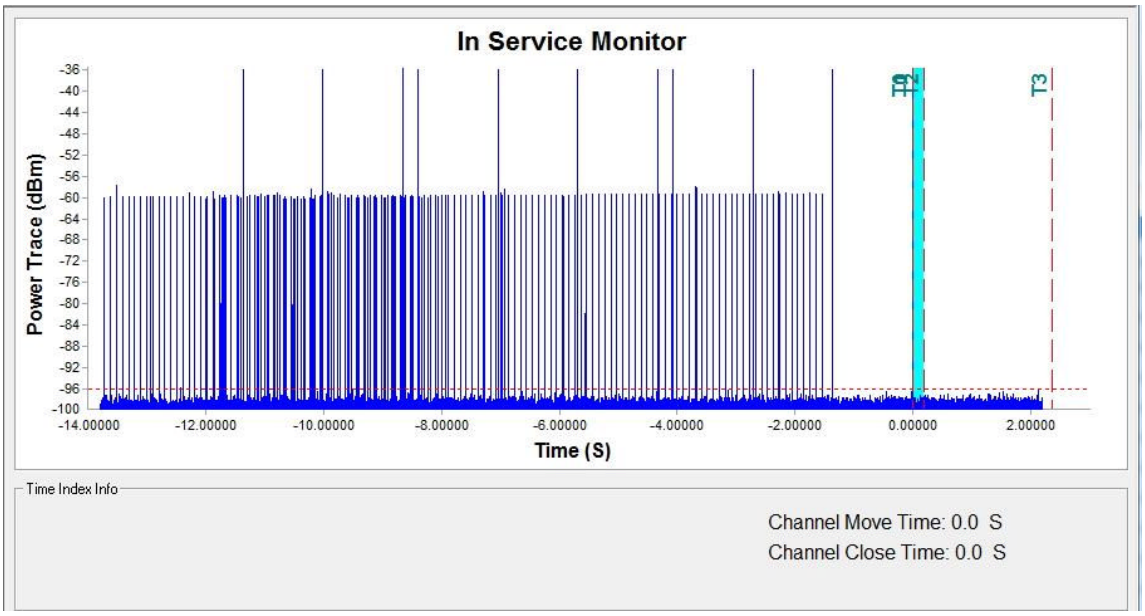
	Value(S)	Result
Channel Move Time	2.3663	Pass
Channel Closing Transmission Time	0	pass

Signal 5 at 5500MHz, HT20



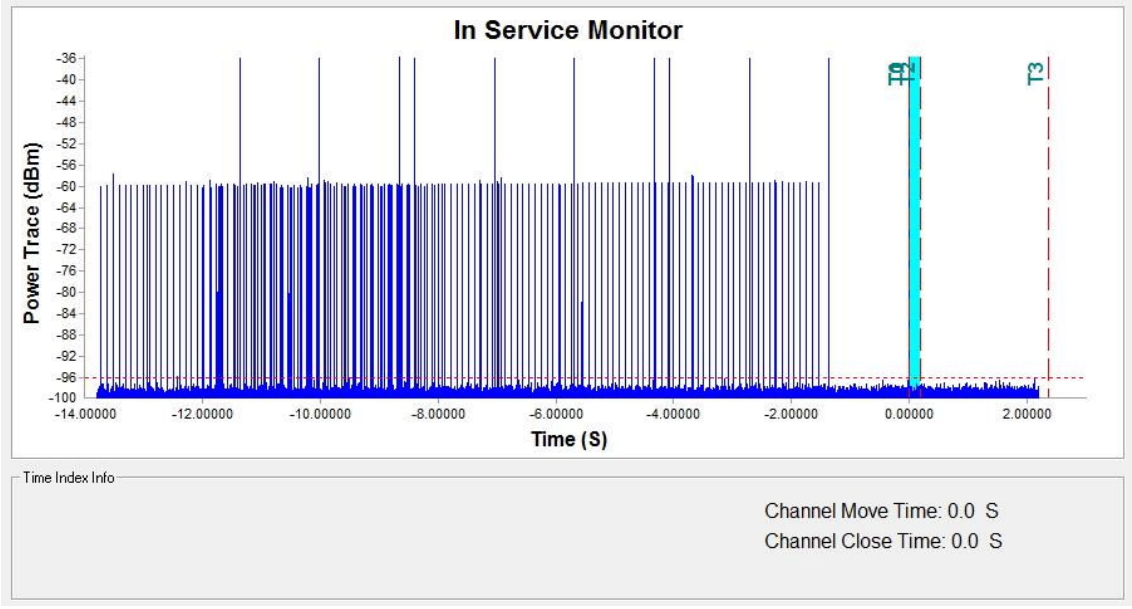
	Value(S)	Result
Channel Move Time	2.2063	Pass
Channel Closing Transmission Time	0	pass

Signal 5 at 5310MHz, HT40



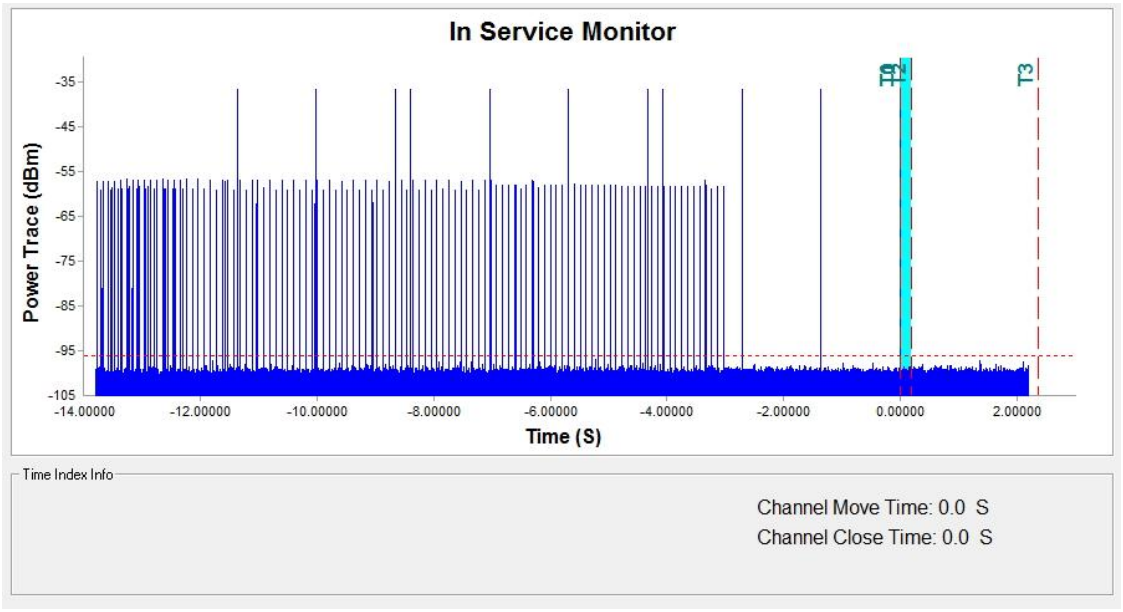
	Value(S)	Result
Channel Move Time	0	Pass
Channel Closing Transmission Time	0	pass

Signal 5 at 5540MHz, HT40



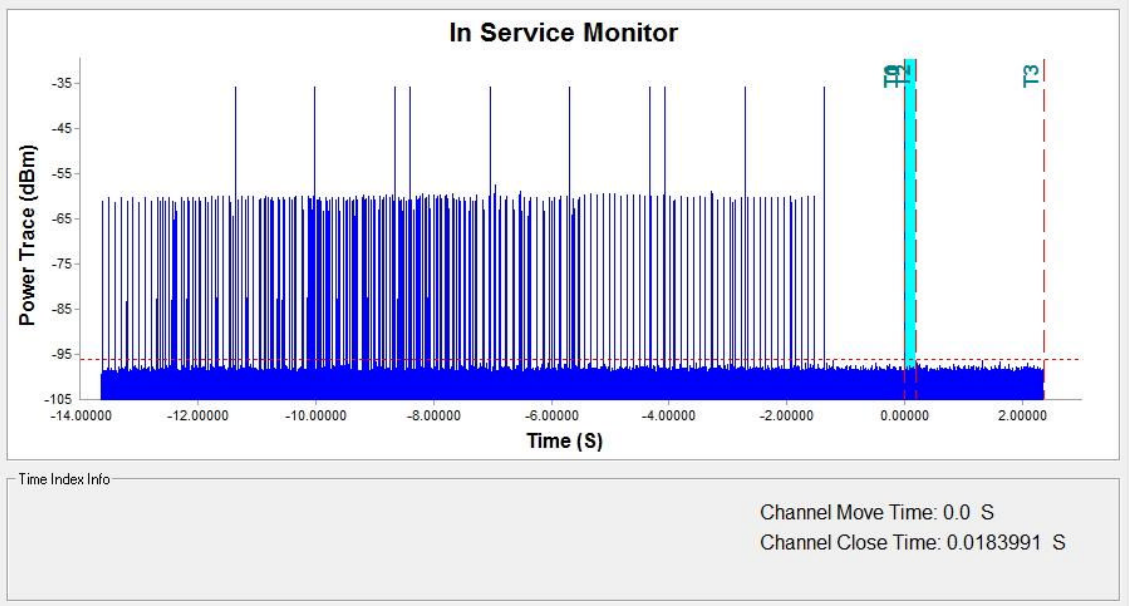
	Value(S)	Result
Channel Move Time	0	Pass
Channel Closing Transmission Time	0	pass

Signal 5 at 5290MHz, VHT80



	Value(S)	Result
Channel Move Time	0	Pass
Channel Closing Transmission Time	0	pass

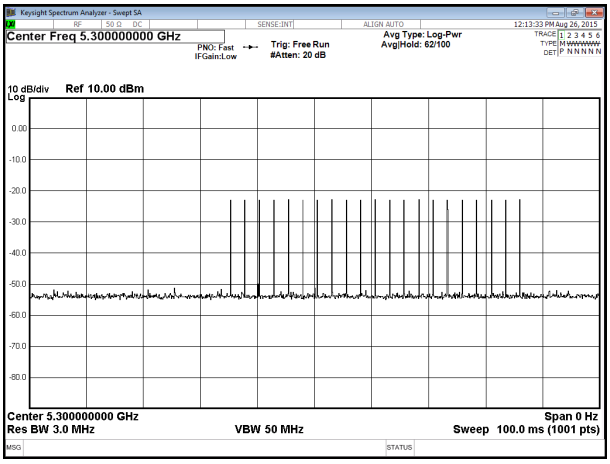
Signal 1 at 5530MHz, VHT80



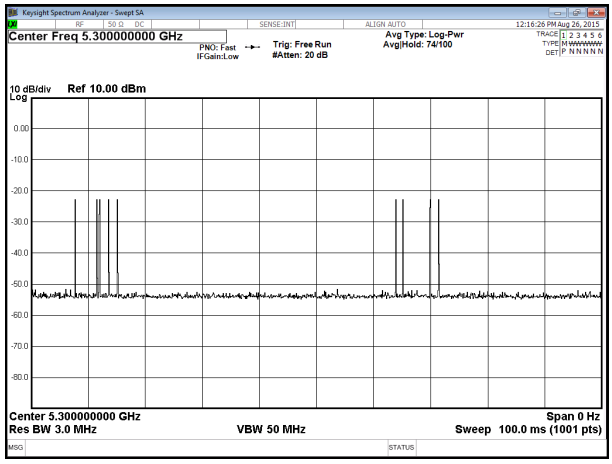
	Value(S)	Result
Channel Move Time	0	Pass
Channel Closing Transmission Time	0.0184	pass

14.9.Radar Calibration

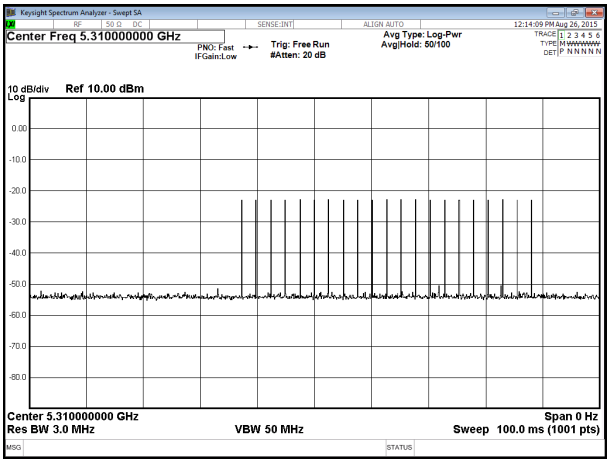
Signal 1, HT20



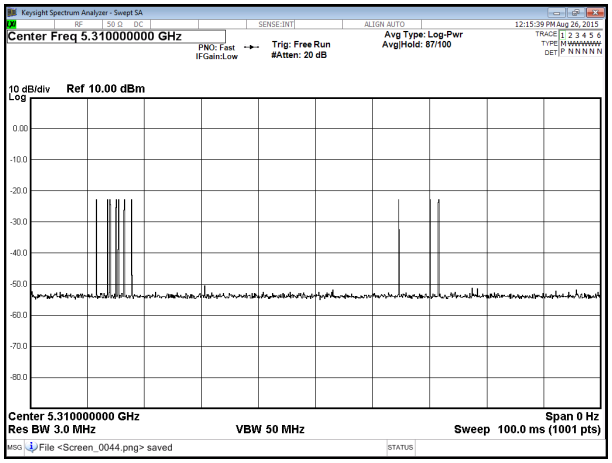
Signal 5, HT20



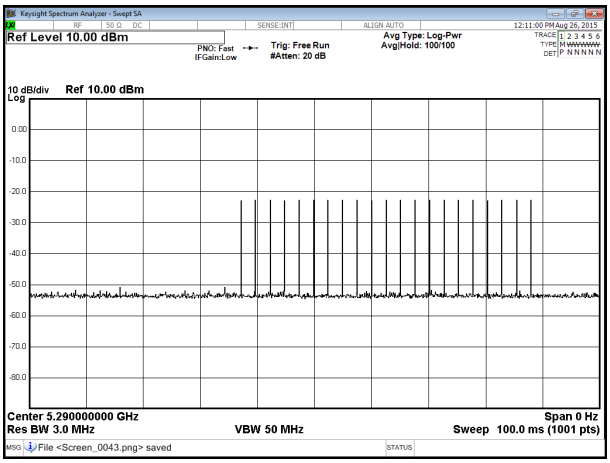
Signal 1, HT40



Signal 5,HT40



Signal 1, VHT80



Signal 5,VHT80