

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss1 VHT40 CH 6 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	4865.88	33.79	54.00	-20.21	27.17	6.08	33.62	33.08	340	195 Average	HORIZONTAL
2	4875.20	47.77	74.00	-26.23	41.11	6.08	33.66	33.08	340	195 Peak	HORIZONTAL
3	7302.04	52.63	74.00	-21.37	41.18	8.28	36.64	33.47	300	195 Peak	HORIZONTAL
4	7318.60	39.27	54.00	-14.73	27.75	8.30	36.69	33.47	300	195 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	4865.92	33.93	54.00	-20.07	27.31	6.08	33.62	33.08	248	195 Average	VERTICAL
2	4883.48	47.02	74.00	-26.98	40.36	6.08	33.66	33.08	248	195 Peak	VERTICAL
3	7307.56	52.46	74.00	-21.54	41.01	8.28	36.64	33.47	209	195 Peak	VERTICAL
4	7309.92	39.25	54.00	-14.75	27.80	8.28	36.64	33.47	209	195 Average	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss1 VHT40 CH 9 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4903.68	47.79	74.00	-26.21	41.06	6.07	33.73	33.07	192	195	Peak	HORIZONTAL
2	4904.88	34.10	54.00	-19.90	27.37	6.07	33.73	33.07	192	195	Average	HORIZONTAL
3	7363.76	53.22	74.00	-20.78	41.60	8.34	36.77	33.49	163	195	Peak	HORIZONTAL
4	7366.00	39.60	54.00	-14.40	27.98	8.34	36.77	33.49	163	195	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4905.84	47.31	74.00	-26.69	40.58	6.07	33.73	33.07	186	195	Peak	VERTICAL
2	4907.36	34.20	54.00	-19.80	27.47	6.07	33.73	33.07	186	195	Average	VERTICAL
3	7361.64	39.22	54.00	-14.78	27.61	8.32	36.77	33.48	220	195	Average	VERTICAL
4	7363.04	52.93	74.00	-21.07	41.31	8.34	36.77	33.49	220	195	Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss2 VHT20 CH 6 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	4867.16	47.26	74.00	-26.74	40.64	6.08	33.62	33.08	204	195 Peak	HORIZONTAL
2	4879.60	34.43	54.00	-19.57	27.77	6.08	33.66	33.08	204	195 Average	HORIZONTAL
3	7308.40	52.85	74.00	-21.15	41.40	8.28	36.64	33.47	257	195 Peak	HORIZONTAL
4	7316.60	39.28	54.00	-14.72	27.76	8.30	36.69	33.47	257	195 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	4869.80	33.96	54.00	-20.04	27.30	6.08	33.66	33.08	280	195 Average	VERTICAL
2	4876.52	47.21	74.00	-26.79	40.55	6.08	33.66	33.08	280	195 Peak	VERTICAL
3	7304.52	52.60	74.00	-21.40	41.15	8.28	36.64	33.47	266	195 Peak	VERTICAL
4	7311.04	39.34	54.00	-14.66	27.89	8.28	36.64	33.47	266	195 Average	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss2 VHT40 CH 6 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4864.96	33.89	54.00	-20.11	27.27	6.08	33.62	33.08	181	195	Average	HORIZONTAL
2	4871.40	46.69	74.00	-27.31	40.03	6.08	33.66	33.08	181	195	Peak	HORIZONTAL
3	7313.30	39.38	54.00	-14.62	27.91	8.30	36.64	33.47	150	195	Average	HORIZONTAL
4	7320.70	52.31	74.00	-21.69	40.79	8.30	36.69	33.47	150	195	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4850.60	34.13	54.00	-19.87	27.49	6.10	33.62	33.08	72	195	Average	VERTICAL
2	4874.30	46.98	74.00	-27.02	40.32	6.08	33.66	33.08	72	195	Peak	VERTICAL
3	7303.70	39.30	54.00	-14.70	27.85	8.28	36.64	33.47	106	195	Average	VERTICAL
4	7305.60	52.66	74.00	-21.34	41.21	8.28	36.64	33.47	106	195	Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	11481.88	59.35	74.00	-14.65	42.62	10.71	39.39	33.37	103	250 Peak	HORIZONTAL
2	11484.88	43.64	54.00	-10.36	26.91	10.71	39.39	33.37	103	250 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	11484.52	43.83	54.00	-10.17	27.10	10.71	39.39	33.37	199	250 Average	VERTICAL
2	11484.64	58.37	74.00	-15.63	41.64	10.71	39.39	33.37	199	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11569.52	43.39	54.00	-10.61	26.58	10.75	39.44	33.38	174	250 Average	HORIZONTAL
2	11575.04	60.03	74.00	-13.97	43.22	10.76	39.44	33.39	174	250 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11570.36	43.47	54.00	-10.53	26.66	10.76	39.44	33.39	287	250 Average	VERTICAL
2	11573.44	59.46	74.00	-14.54	42.65	10.76	39.44	33.39	287	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11649.21	58.90	74.00	-15.10	42.02	10.81	39.48	33.41	244	250 Peak	HORIZONTAL
2	11649.25	43.44	54.00	-10.56	26.56	10.81	39.48	33.41	244	250 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11650.59	43.45	54.00	-10.55	26.56	10.81	39.49	33.41	3	250 Average	VERTICAL
2	11650.89	58.52	74.00	-15.48	41.63	10.81	39.49	33.41	3	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11503.88	58.53	74.00	-15.47	41.78	10.72	39.40	33.37	339	250 Peak	HORIZONTAL
2	11506.76	43.56	54.00	-10.44	26.81	10.72	39.40	33.37	339	250 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11501.40	58.60	74.00	-15.40	41.85	10.72	39.40	33.37	18	250 Peak	VERTICAL
2	11519.40	43.63	54.00	-10.37	26.87	10.73	39.41	33.38	18	250 Average	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11583.84	59.25	74.00	-14.75	42.43	10.76	39.45	33.39	234	250 Peak	HORIZONTAL
2	11591.08	43.34	54.00	-10.66	26.52	10.76	39.45	33.39	234	250 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11581.80	58.77	74.00	-15.23	41.96	10.76	39.44	33.39	101	250 Peak	VERTICAL
2	11593.96	43.34	54.00	-10.66	26.52	10.76	39.45	33.39	101	250 Average	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11542.28	58.38	74.00	-15.62	41.61	10.73	39.42	33.38	86	250 Peak	HORIZONTAL
2	11554.36	43.36	54.00	-10.64	26.56	10.75	39.43	33.38	86	250 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11540.32	58.63	74.00	-15.37	41.86	10.73	39.42	33.38	18	250 Peak	VERTICAL
2	11553.24	43.44	54.00	-10.56	26.64	10.75	39.43	33.38	18	250 Average	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss2 VHT20 CH 149 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11483.56	43.81	54.00	-10.19	27.08	10.71	39.39	33.37	100	250 Average	HORIZONTAL
2	11484.68	56.82	74.00	-17.18	40.09	10.71	39.39	33.37	100	250 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11487.64	43.89	54.00	-10.11	27.16	10.71	39.39	33.37	17	250 Average	VERTICAL
2	11489.48	57.31	74.00	-16.69	40.58	10.71	39.39	33.37	17	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss2 VHT20 CH 157 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11563.92	43.48	54.00	-10.52	26.68	10.75	39.43	33.38	134	250 Average	HORIZONTAL
2	11570.28	56.77	74.00	-17.23	39.96	10.76	39.44	33.39	134	250 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11562.92	43.55	54.00	-10.45	26.75	10.75	39.43	33.38	211	250 Average	VERTICAL
2	11571.56	57.27	74.00	-16.73	40.46	10.76	39.44	33.39	211	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss2 VHT20 CH 165 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11646.28	56.69	74.00	-17.31	39.81	10.81	39.48	33.41	201	250 Peak	HORIZONTAL
2	11647.16	43.52	54.00	-10.48	26.64	10.81	39.48	33.41	201	250 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11643.20	43.56	54.00	-10.44	26.69	10.79	39.48	33.40	348	250 Average	VERTICAL
2	11657.44	56.60	74.00	-17.40	39.71	10.81	39.49	33.41	348	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss2 VHT40 CH 151 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	11544.36	43.51	54.00	-10.49	26.72	10.75	39.42	33.38	298	250 Average	HORIZONTAL
2	11558.28	56.85	74.00	-17.15	40.05	10.75	39.43	33.38	298	250 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	11540.60	43.66	54.00	-10.34	26.89	10.73	39.42	33.38	37	250 Average	VERTICAL
2	11552.76	57.55	74.00	-16.45	40.75	10.75	39.43	33.38	19	250 Peak	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss2 VHT40 CH 159 / Ant. 1 + Ant. 2 + Ant. 3+ Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11583.44	43.52	54.00	-10.48	26.70	10.76	39.45	33.39	330	250 Average	HORIZONTAL
2	11583.52	56.47	74.00	-17.53	39.65	10.76	39.45	33.39	330	250 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11585.28	56.71	74.00	-17.29	39.89	10.76	39.45	33.39	35	250 Peak	VERTICAL
2	11586.80	43.57	54.00	-10.43	26.75	10.76	39.45	33.39	35	250 Average	VERTICAL

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss2 VHT80 CH 155 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 16, 2015		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11540.00	43.48	54.00	-10.52	26.71	10.73	39.42	33.38	132	250 Average	HORIZONTAL
2	11543.76	56.73	74.00	-17.27	39.96	10.73	39.42	33.38	132	250 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	11554.08	57.73	74.00	-16.27	40.93	10.75	39.43	33.38	173	250 Peak	VERTICAL
2	11558.36	43.64	54.00	-10.36	26.84	10.75	39.43	33.38	173	250 Average	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. Emissions Measurement

4.6.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (30dBc in any 100 kHz bandwidth emission)	100 kHz / 300 kHz for Peak

4.6.3. Test Procedures

For Radiated band edges Measurement:

- The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around band edges.

For Radiated Out of Band Emission Measurement:

- Test was performed in accordance with KDB 558074 D01 v03r02 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 10.1 Unwanted Emissions into Non-Restricted Frequency Bands Measurement Procedure

4.6.4. Test Setup Layout

For Radiated band edges Measurement:

This test setup layout is the same as that shown in section 4.5.4.

For Radiated Out of Band Emission Measurement:

This test setup layout is the same as that shown in section 4.5.4.

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

For Non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For Beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

For Non-Beamforming Mode

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 09, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2387.00	53.71	54.00	-0.29	21.77	4.91	0.00	27.03	VERTICAL	298	100	Average
2	2390.00	63.59	74.00	-10.41	31.64	4.92	0.00	27.03	VERTICAL	298	100	Peak
3	2411.20	119.59			87.55	4.94	0.00	27.10	VERTICAL	298	100	Average
4	2413.00	123.66			91.62	4.94	0.00	27.10	VERTICAL	298	100	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2389.20	57.40	74.00	-16.60	25.46	4.91	0.00	27.03	VERTICAL	295	100	Peak
2	2390.00	46.17	54.00	-7.83	14.22	4.92	0.00	27.03	VERTICAL	295	100	Average
3	2436.20	119.69			87.58	4.96	0.00	27.15	VERTICAL	295	100	Average
4	2438.20	123.79			91.67	4.97	0.00	27.15	VERTICAL	295	100	Peak
5	2483.50	46.65	54.00	-7.35	14.37	5.01	0.00	27.27	VERTICAL	295	100	Average
6	2483.50	59.08	74.00	-14.92	26.80	5.01	0.00	27.27	VERTICAL	295	100	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2462.80	118.43			86.22	4.99	0.00	27.22	VERTICAL	74	109	Average
2	2463.00	122.53			90.32	4.99	0.00	27.22	VERTICAL	74	109	Peak
3	2483.50	53.94	54.00	-0.06	21.66	5.01	0.00	27.27	VERTICAL	74	109	Average
4	2483.50	66.43	74.00	-7.57	34.15	5.01	0.00	27.27	VERTICAL	74	109	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test Date	May 09, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2389.60	71.73	74.00	-2.27	39.79	4.91	0.00	27.03	VERTICAL	73	106	Peak
2	2390.00	53.59	54.00	-0.41	21.64	4.92	0.00	27.03	VERTICAL	73	106	Average
3	2413.20	112.74			80.70	4.94	0.00	27.10	VERTICAL	73	106	Average
4	2413.40	122.46			90.42	4.94	0.00	27.10	VERTICAL	73	106	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2388.80	66.08	74.00	-7.92	34.14	4.91	0.00	27.03	VERTICAL	70	103	Peak
2	2390.00	52.92	54.00	-1.08	20.97	4.92	0.00	27.03	VERTICAL	70	103	Average
3	2438.20	116.87			84.75	4.97	0.00	27.15	VERTICAL	70	103	Average
4	2438.20	127.35			95.23	4.97	0.00	27.15	VERTICAL	70	103	Peak
5	2483.50	53.98	54.00	-0.02	21.70	5.01	0.00	27.27	VERTICAL	70	103	Average
6	2483.90	69.22	74.00	-4.78	36.94	5.01	0.00	27.27	VERTICAL	70	103	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2463.00	120.17			87.96	4.99	0.00	27.22	VERTICAL	71	103	Peak
2	2463.20	110.10			77.89	4.99	0.00	27.22	VERTICAL	71	103	Average
3	2483.50	53.78	54.00	-0.22	21.50	5.01	0.00	27.27	VERTICAL	71	103	Average
4	2483.50	73.62	74.00	-0.38	41.34	5.01	0.00	27.27	VERTICAL	71	103	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss1 VHT20 CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test date	May 05, 2015, May 09, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2389.40	71.27	74.00	-2.73	39.33	4.91	0.00	27.03	VERTICAL	306	107	Peak
2	2390.00	53.52	54.00	-0.48	21.57	4.92	0.00	27.03	VERTICAL	306	107	Average
3	2411.60	110.63			78.59	4.94	0.00	27.10	VERTICAL	306	107	Average
4	2411.60	120.79			88.75	4.94	0.00	27.10	VERTICAL	306	107	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2388.00	69.31	74.00	-4.69	37.37	4.91	0.00	27.03	VERTICAL	0	108	Peak
2	2390.00	52.55	54.00	-1.45	20.60	4.92	0.00	27.03	VERTICAL	0	108	Average
3	2435.40	115.37			83.26	4.96	0.00	27.15	VERTICAL	0	108	Average
4	2435.80	126.31			94.20	4.96	0.00	27.15	VERTICAL	0	108	Peak
5	2485.50	51.56	54.00	-2.44	19.27	5.02	0.00	27.27	VERTICAL	0	108	Average
6	2485.90	68.58	74.00	-5.42	36.29	5.02	0.00	27.27	VERTICAL	0	108	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2464.20	108.63			76.42	4.99	0.00	27.22	VERTICAL	284	111	Average
2	2464.60	119.92			87.71	4.99	0.00	27.22	VERTICAL	284	111	Peak
3	2484.10	53.51	54.00	-0.49	21.23	5.01	0.00	27.27	VERTICAL	284	111	Average
4	2484.30	71.39	74.00	-2.61	39.11	5.01	0.00	27.27	VERTICAL	284	111	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss1 VHT40 CH 3, 6, 9 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test date	May 05, 2015		

Channel 3

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.13	53.76	54.00	-0.24	20.90	4.37	28.49	0.00	273	148	Average	VERTICAL
2	2389.71	66.50	74.00	-7.50	33.64	4.37	28.49	0.00	273	148	Peak	VERTICAL
3	2414.19	103.33			70.39	4.41	28.53	0.00	273	148	Average	VERTICAL
4	2414.19	112.90			79.96	4.41	28.53	0.00	273	148	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.71	52.56	54.00	-1.44	19.70	4.37	28.49	0.00	150	148	Average	VERTICAL
2	2390.00	65.49	74.00	-8.51	32.59	4.41	28.49	0.00	150	148	Peak	VERTICAL
3	2448.00	105.42			72.34	4.48	28.60	0.00	150	148	Average	VERTICAL
4	2448.29	115.67			82.59	4.48	28.60	0.00	150	148	Peak	VERTICAL
5	2483.50	53.46	54.00	-0.54	20.28	4.51	28.67	0.00	150	148	Average	VERTICAL
6	2483.79	67.17	74.00	-6.83	33.99	4.51	28.67	0.00	150	148	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2466.76	102.61			69.47	4.51	28.63	0.00	77	123	Average	VERTICAL
2	2467.05	112.55			79.41	4.51	28.63	0.00	77	123	Peak	VERTICAL
3	2486.39	53.95	54.00	-0.05	20.77	4.51	28.67	0.00	77	123	Average	VERTICAL
4	2488.71	66.55	74.00	-7.45	33.34	4.51	28.70	0.00	77	123	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

For Beamforming Mode

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss1 VHT20 CH 1, 6, 11 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test date	May 16, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.60	53.74	54.00	-0.26	20.88	4.37	28.49	0.00	191	195	Average	VERTICAL
2	2389.80	72.14	74.00	-1.86	39.24	4.41	28.49	0.00	191	195	Peak	VERTICAL
3	2409.80	113.77			80.83	4.41	28.53	0.00	191	195	Average	VERTICAL
4	2410.60	123.28			90.34	4.41	28.53	0.00	191	195	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	51.61	54.00	-2.39	18.71	4.41	28.49	0.00	274	195	Average	VERTICAL
2	2390.00	66.11	74.00	-7.89	33.21	4.41	28.49	0.00	274	195	Peak	VERTICAL
3	2435.20	127.30			94.30	4.44	28.56	0.00	274	195	Peak	VERTICAL
4	2436.40	116.92			83.92	4.44	28.56	0.00	274	195	Average	VERTICAL
5	2483.50	51.02	74.00	-22.98	17.84	4.51	28.67	0.00	274	195	Peak	VERTICAL
6	2485.30	65.16	54.00	11.16	31.98	4.51	28.67	0.00	274	195	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2464.40	120.31			87.20	4.48	28.63	0.00	83	195	Peak	VERTICAL
2	2465.20	110.53			77.42	4.48	28.63	0.00	83	195	Average	VERTICAL
3	2483.50	53.76	54.00	-0.24	20.58	4.51	28.67	0.00	83	195	Average	VERTICAL
4	2483.50	72.21	74.00	-1.79	39.03	4.51	28.67	0.00	83	195	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss1 VHT40 CH 3, 6, 9 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test date	May 16, 2015		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2386.80	70.47	74.00	-3.53	37.61	4.37	28.49	0.00	226	195	Peak	VERTICAL
2	2390.00	53.71	54.00	-0.29	20.81	4.41	28.49	0.00	226	195	Average	VERTICAL
3	2438.80	114.96			81.92	4.44	28.60	0.00	226	195	Peak	VERTICAL
4	2439.20	104.92			71.88	4.44	28.60	0.00	226	195	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2390.00	53.64	54.00	-0.36	20.74	4.41	28.49	0.00	271	186	Average	VERTICAL
2	2390.00	65.96	74.00	-8.04	33.06	4.41	28.49	0.00	271	186	Peak	VERTICAL
3	2429.40	107.57			74.57	4.44	28.56	0.00	271	186	Average	VERTICAL
4	2433.80	116.93			83.93	4.44	28.56	0.00	271	186	Peak	VERTICAL
5	2483.50	52.54	54.00	-1.46	19.36	4.51	28.67	0.00	271	186	Average	VERTICAL
6	2483.50	65.33	74.00	-8.67	32.15	4.51	28.67	0.00	271	186	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2468.80	113.61			80.47	4.51	28.63	0.00	233	195	Peak	VERTICAL
2	2469.20	104.75			71.61	4.51	28.63	0.00	233	195	Average	VERTICAL
3	2483.50	66.16	74.00	-7.84	32.98	4.51	28.67	0.00	233	195	Peak	VERTICAL
4	2484.74	53.78	54.00	-0.22	20.60	4.51	28.67	0.00	233	195	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss2 VHT20 CH 6 / Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test date	May 16, 2015		

Channel 6

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm	
1	2385.60	65.74	74.00	-8.26	32.88	4.37	28.49	0.00	69	195 Peak	VERTICAL
2	2390.00	51.58	54.00	-2.42	18.68	4.41	28.49	0.00	69	195 Average	VERTICAL
3	2438.20	126.50			93.46	4.44	28.60	0.00	69	195 Peak	VERTICAL
4	2439.40	117.36			84.32	4.44	28.60	0.00	69	195 Average	VERTICAL
5	2483.50	51.58	54.00	-2.42	18.40	4.51	28.67	0.00	69	195 Average	VERTICAL
6	2483.90	64.09	74.00	-9.91	30.91	4.51	28.67	0.00	69	195 Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Temperature	26°C	Humidity	55%
Test Engineer	Gino Huang	Configurations	IEEE 802.11n MCS0/Nss2 VHT40 CH6/ Ant. 1 + Ant. 2 + Ant. 3 + Ant. 4
Test date	May 16, 2015		

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	deg	cm		
1	2387.20	69.05	74.00	-4.95	36.19	4.37	28.49	0.00	268	180 Peak	VERTICAL
2	2390.00	53.88	54.00	-0.12	20.98	4.41	28.49	0.00	268	180 Average	VERTICAL
3	2430.20	117.06			84.06	4.44	28.56	0.00	268	180 Peak	VERTICAL
4	2431.00	107.09			74.09	4.44	28.56	0.00	268	180 Average	VERTICAL
5	2483.50	53.84	54.00	-0.16	20.66	4.51	28.67	0.00	268	180 Average	VERTICAL
6	2483.50	69.95	74.00	-4.05	36.77	4.51	28.67	0.00	268	180 Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

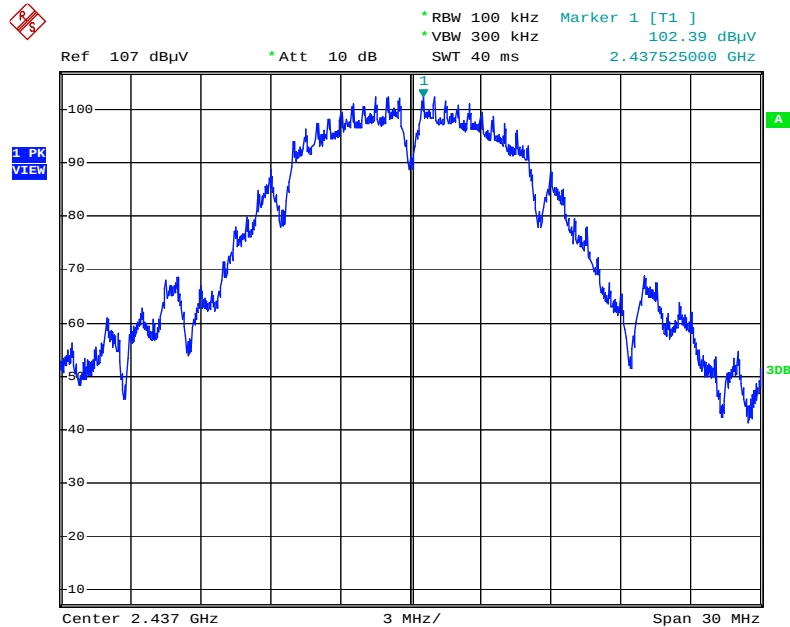
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

For Emission not in Restricted Band

For Non-Beamforming Mode

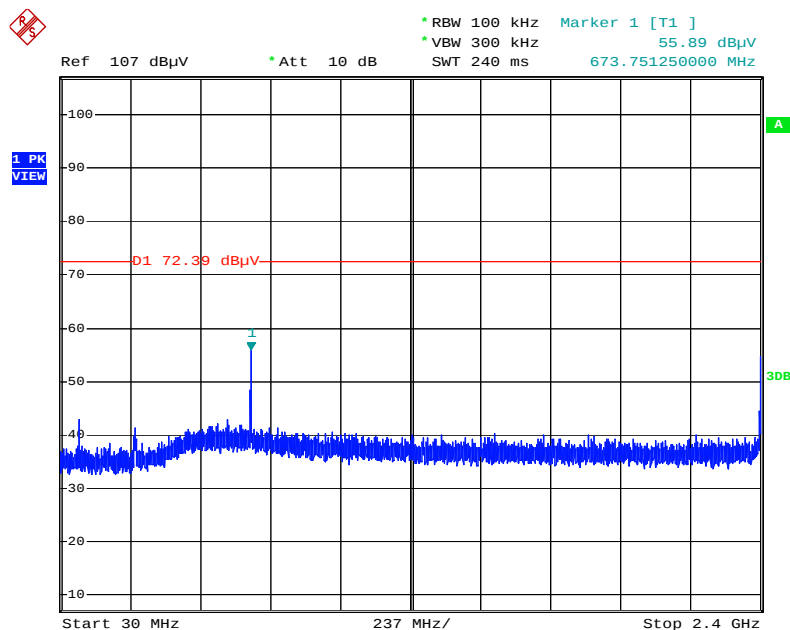
For 2.4G Band

Plot on Configuration IEEE 802.11b / Reference Level



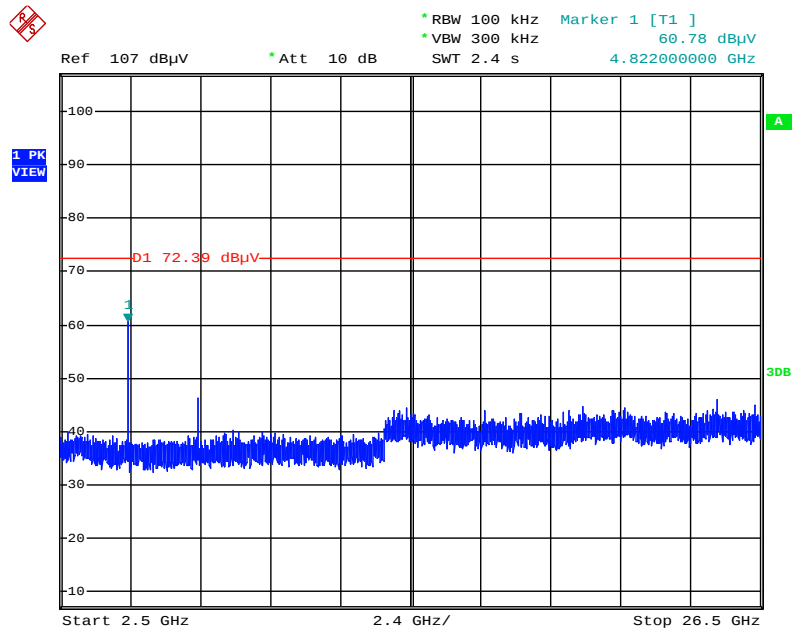
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Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



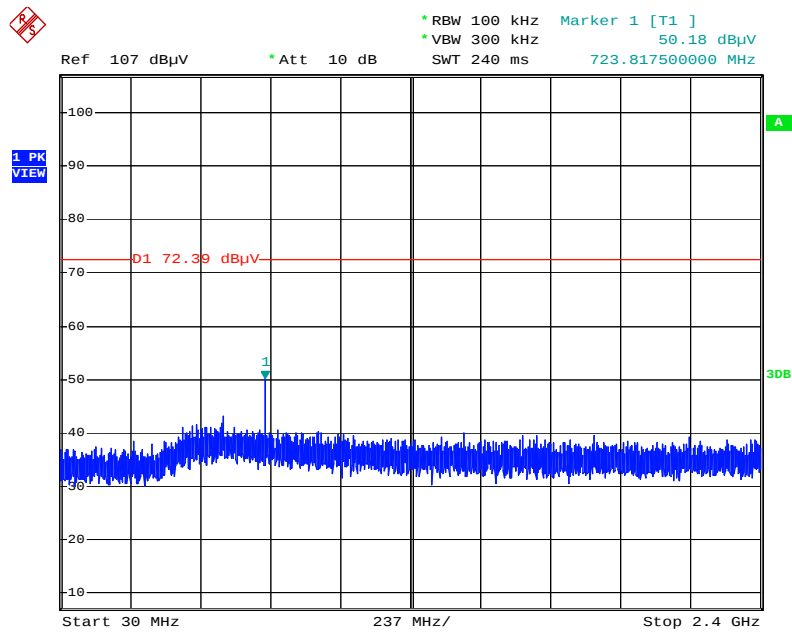
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Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



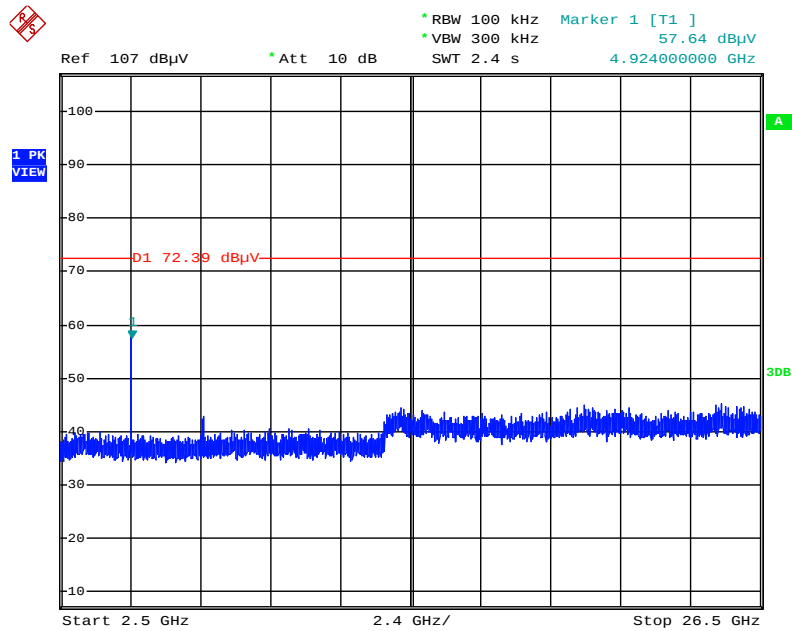
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Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



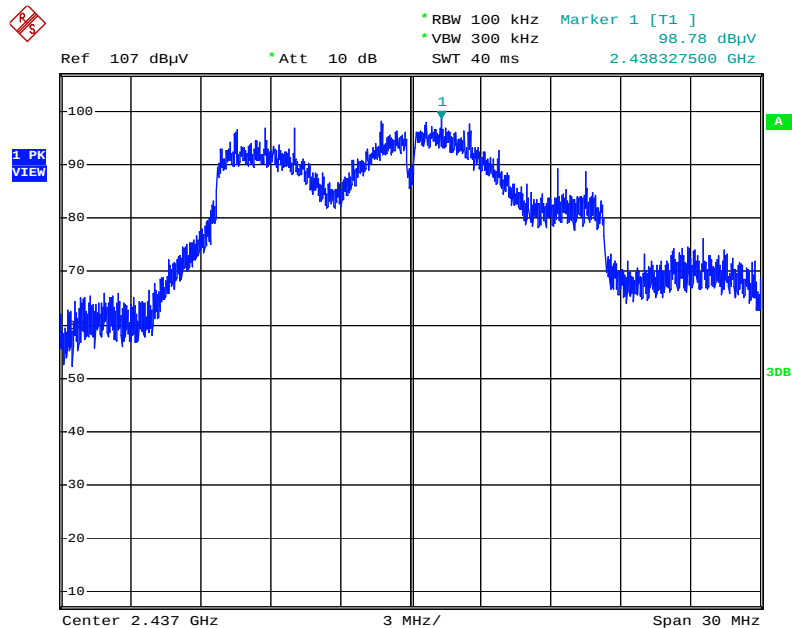
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Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



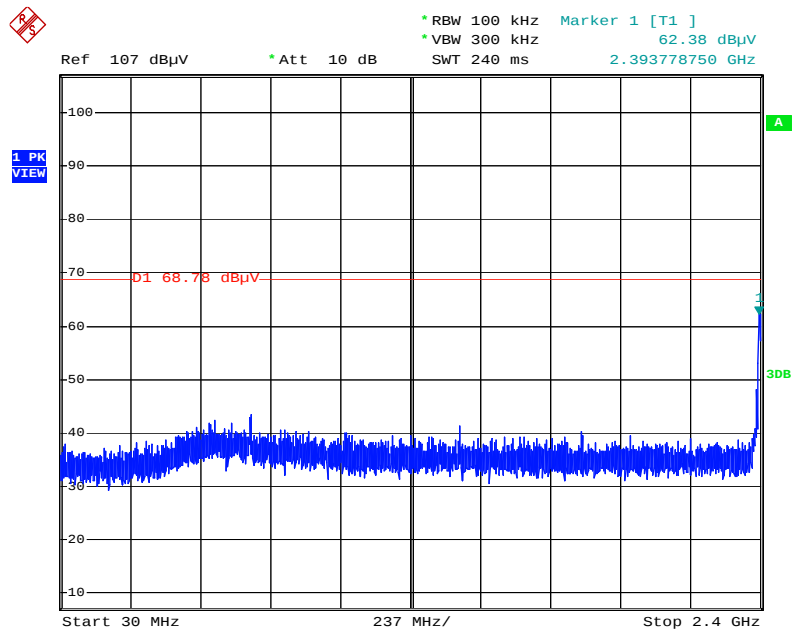
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Plot on Configuration IEEE 802.11g / Reference Level



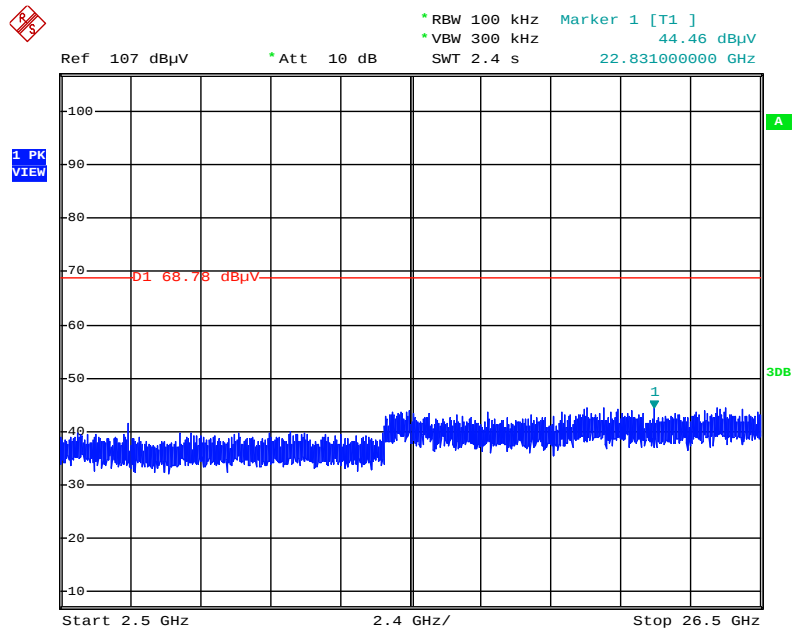
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Plot on Configuration IEEE 802.11g / CH 1 / 30MHz~2400MHz (down 30dBc)



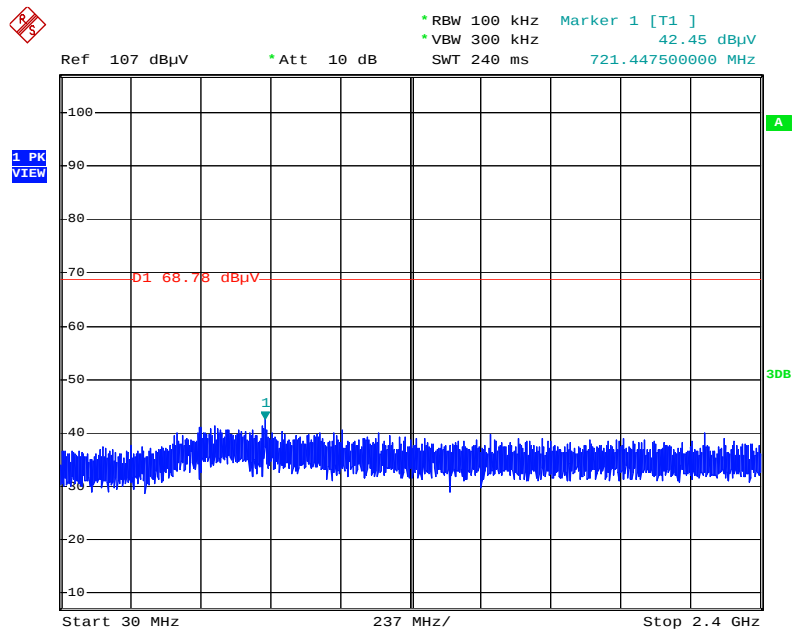
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Plot on Configuration IEEE 802.11g / CH 1 / 2500MHz~26500MHz (down 30dBc)



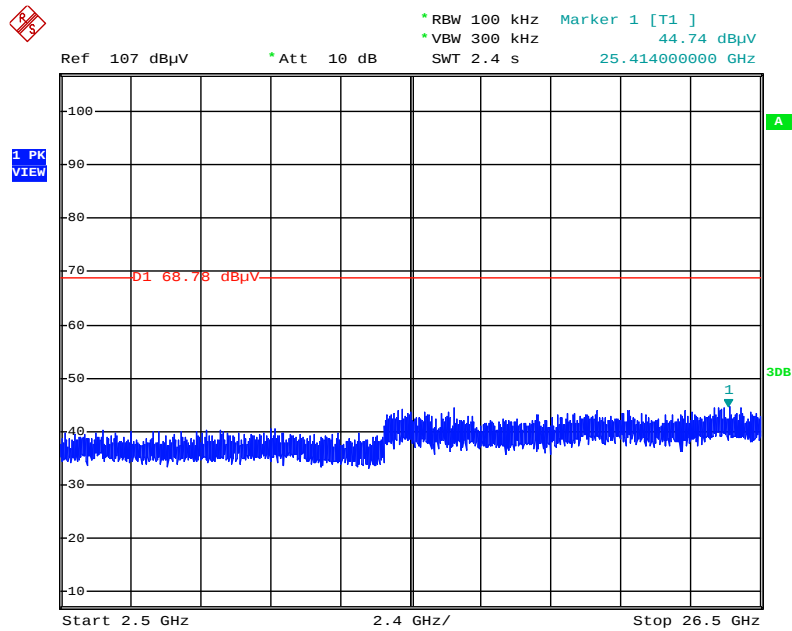
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Plot on Configuration IEEE 802.11g / CH 11 / 30MHz~2400MHz (down 30dBc)



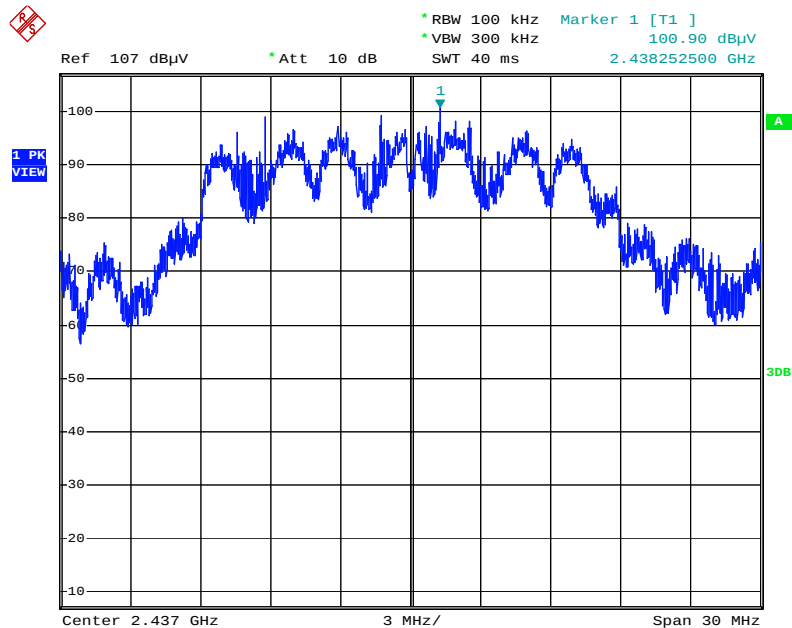
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Plot on Configuration IEEE 802.11g / CH 11 / 2500MHz~26500MHz (down 30dBc)



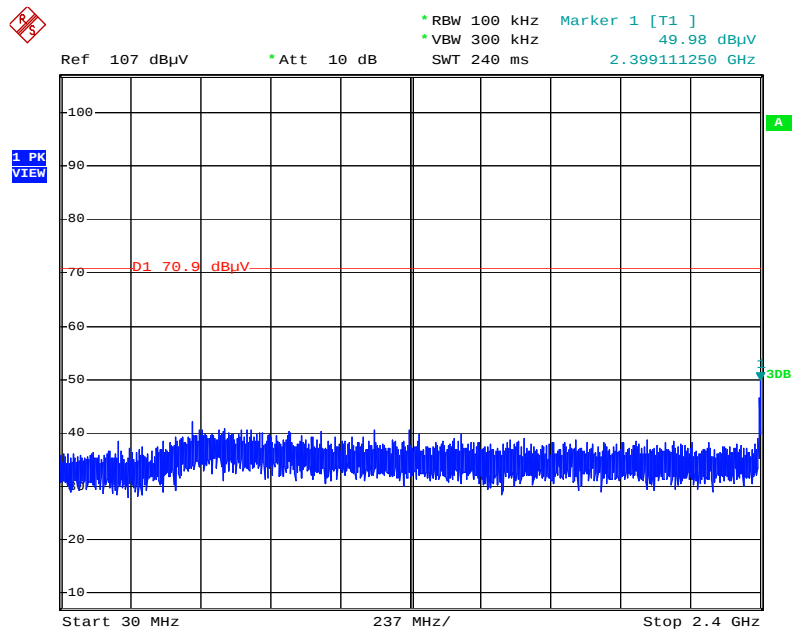
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Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / Reference Level



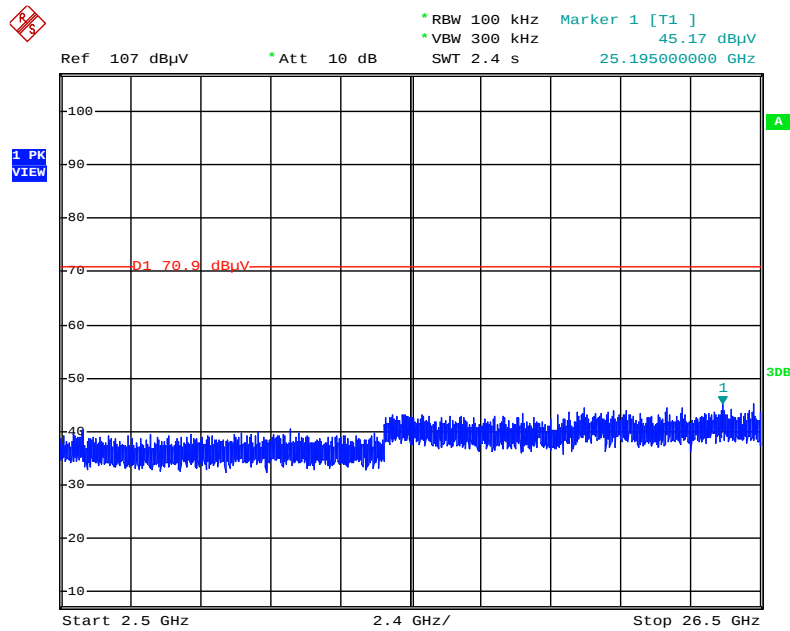
Date: 9.MAY.2015 03:18:13

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



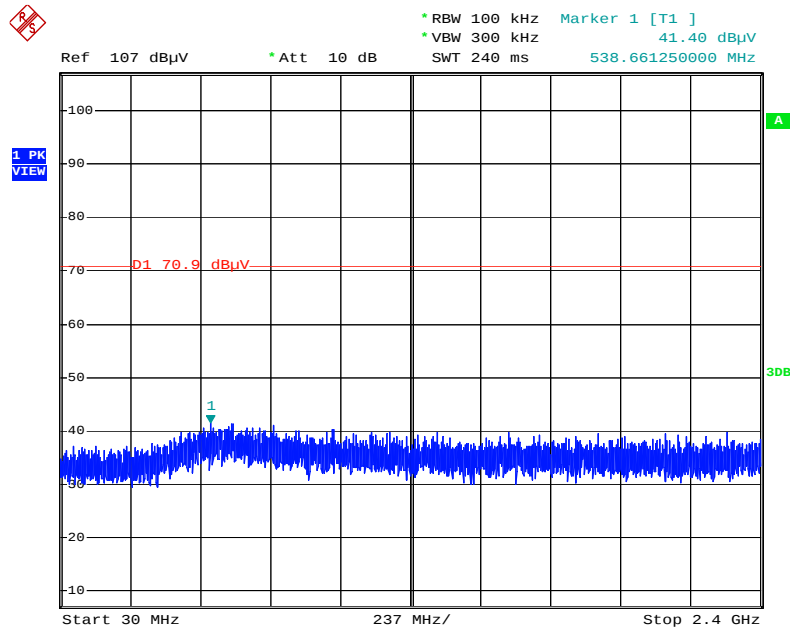
Date: 9.MAY.2015 03:19:02

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



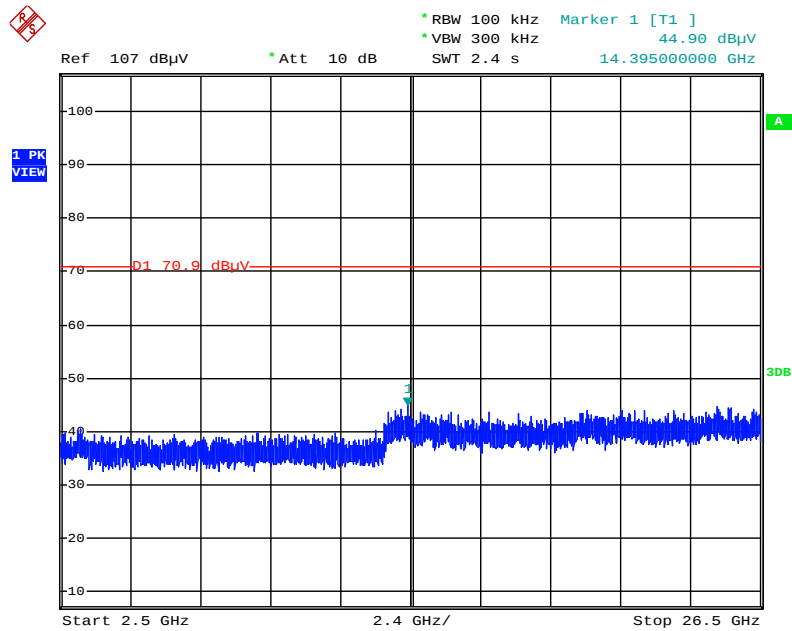
Date: 12.MAY.2015 23:33:35

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



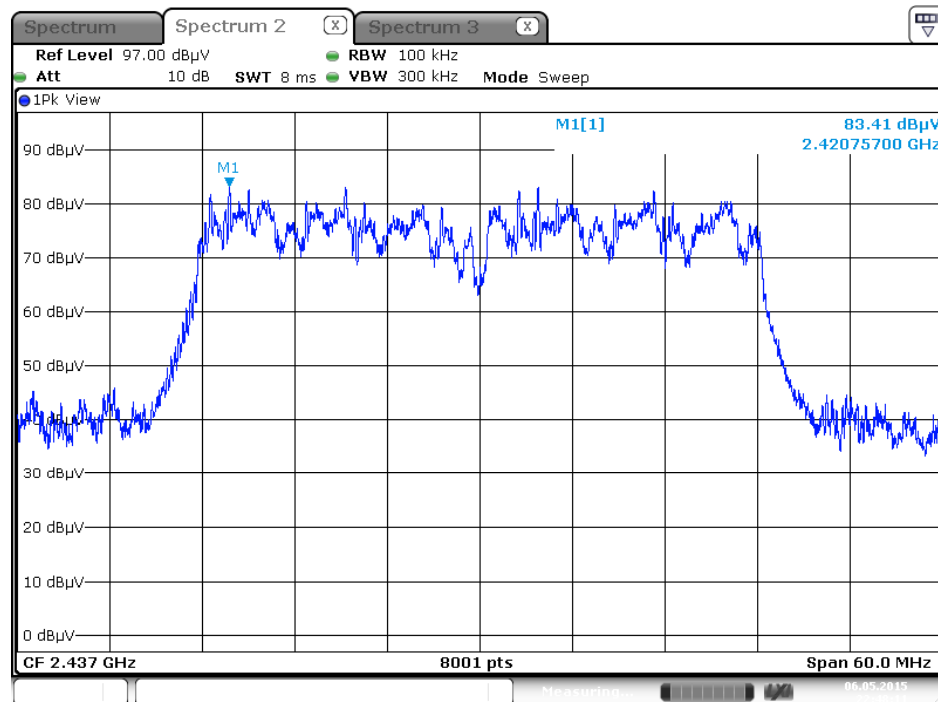
Date: 9.MAY.2015 03:20:19

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)

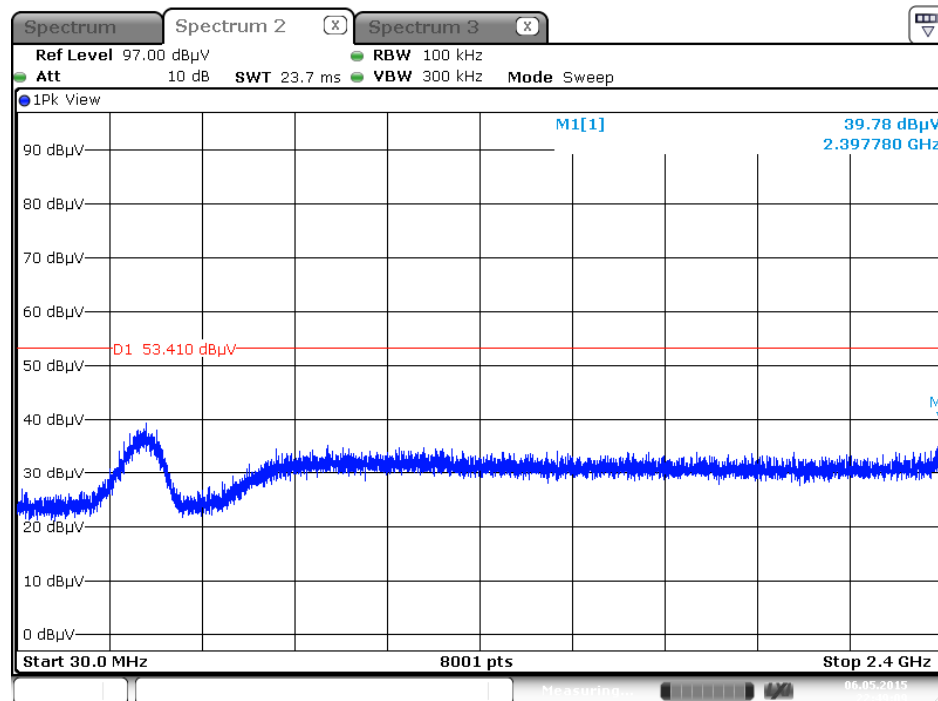


Date: 12.MAY.2015 23:34:56

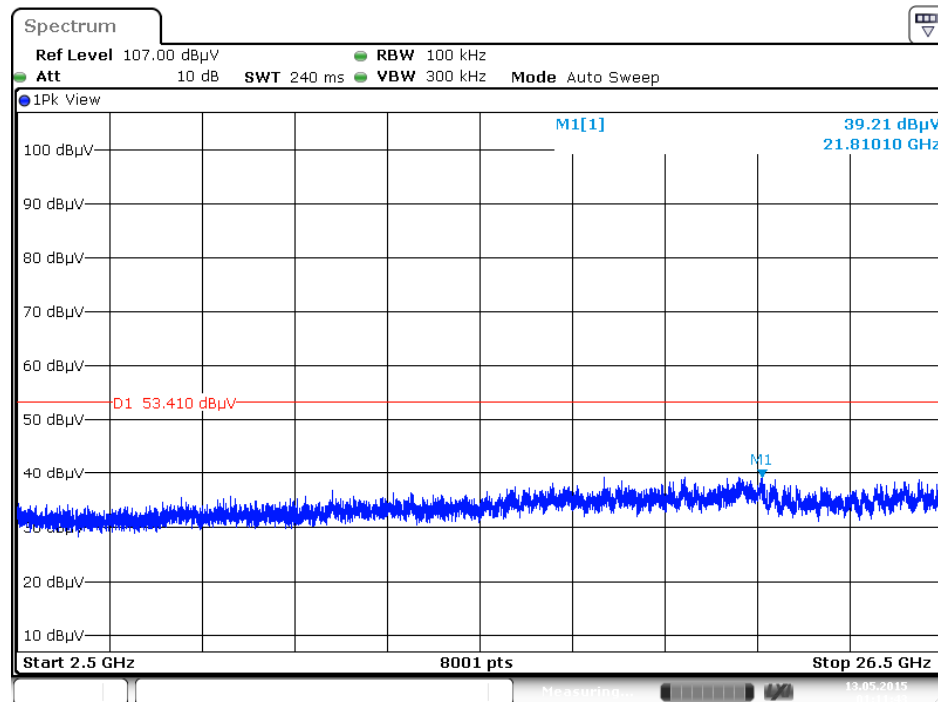
Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / Reference Level



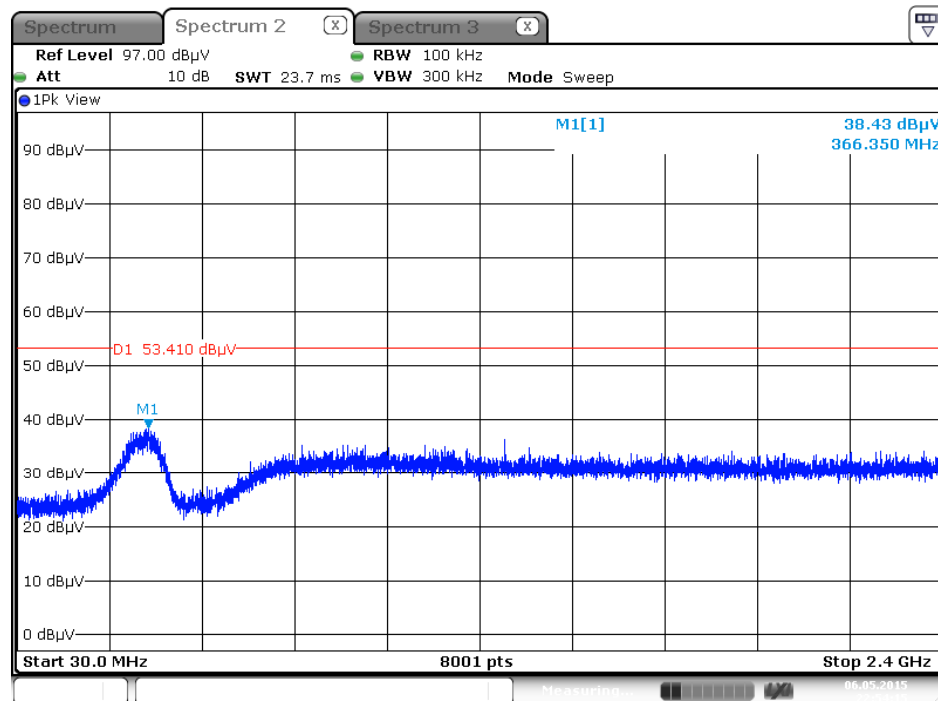
Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



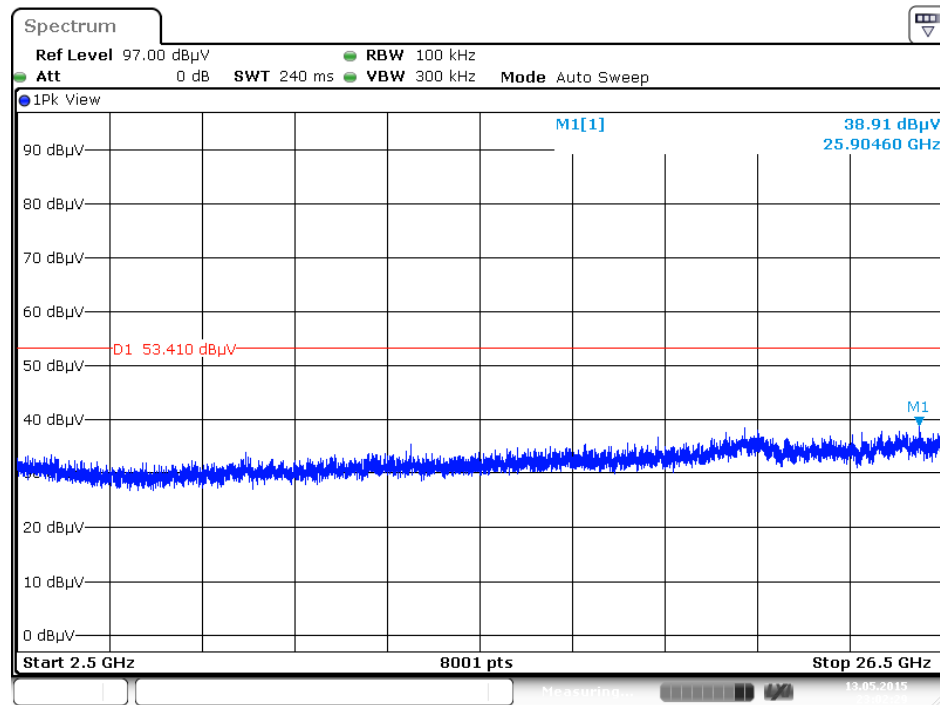
Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



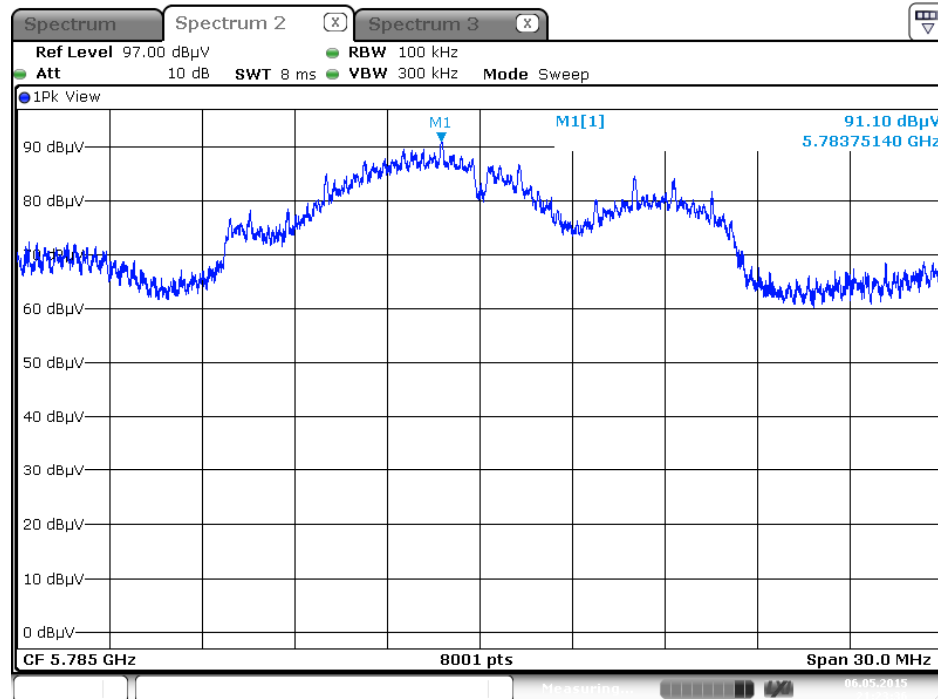
Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



Date: 13 MAY 2015 23:02:30

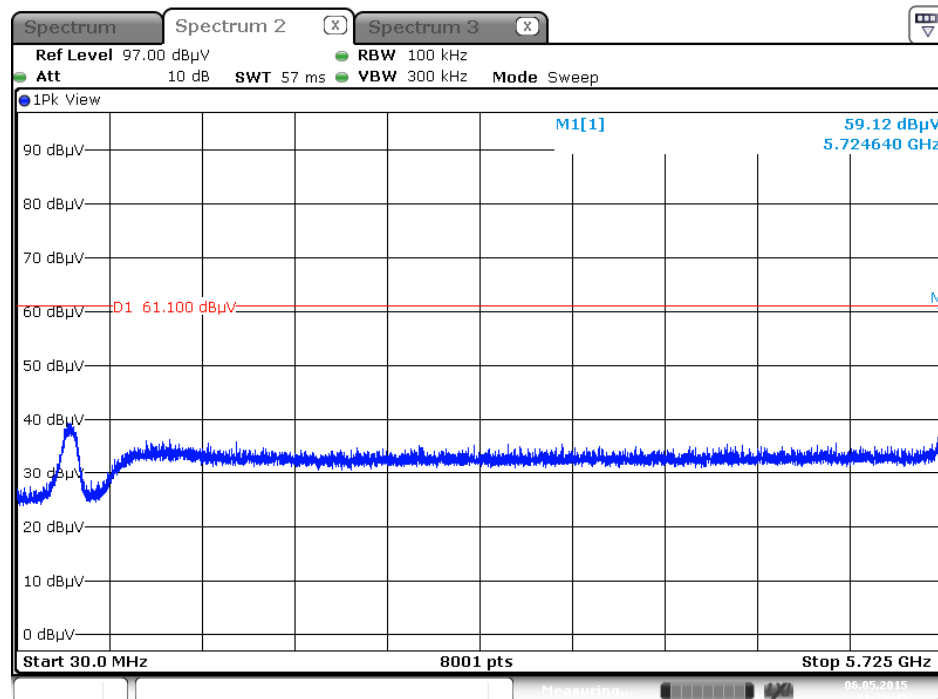
For 5G Band

Plot on Configuration IEEE 802.11a / Reference Level



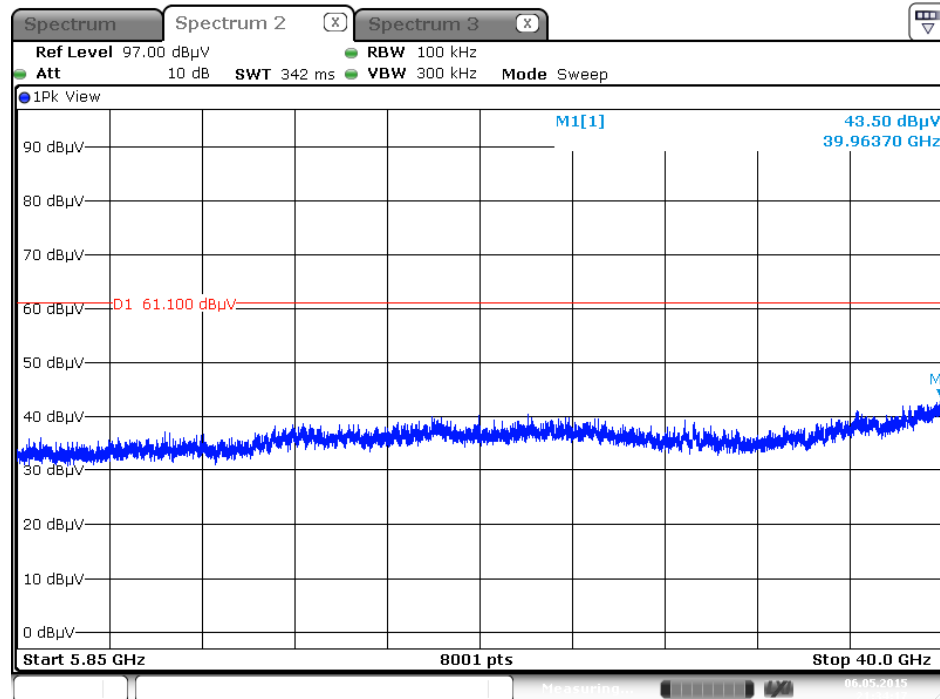
Date: 6 MAY 2015 21:23:36

Plot on Configuration IEEE 802.11a / CH 149 / 30MHz~5725MHz (down 30dBc)



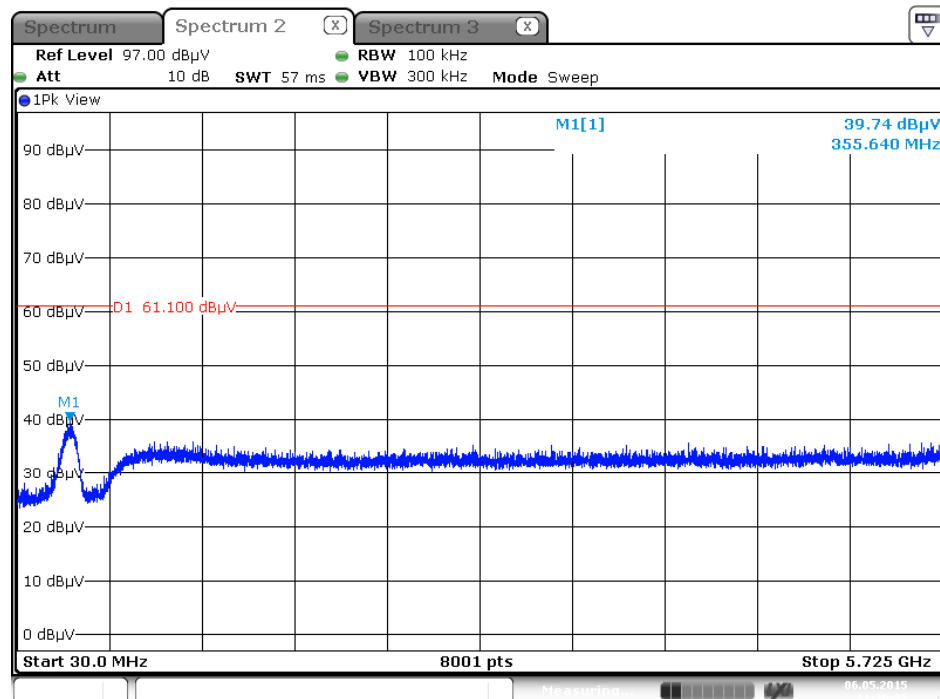
Date: 6 MAY 2015 21:30:46

Plot on Configuration IEEE 802.11a / CH 149 / 5850MHz~40000MHz (down 30dBc)



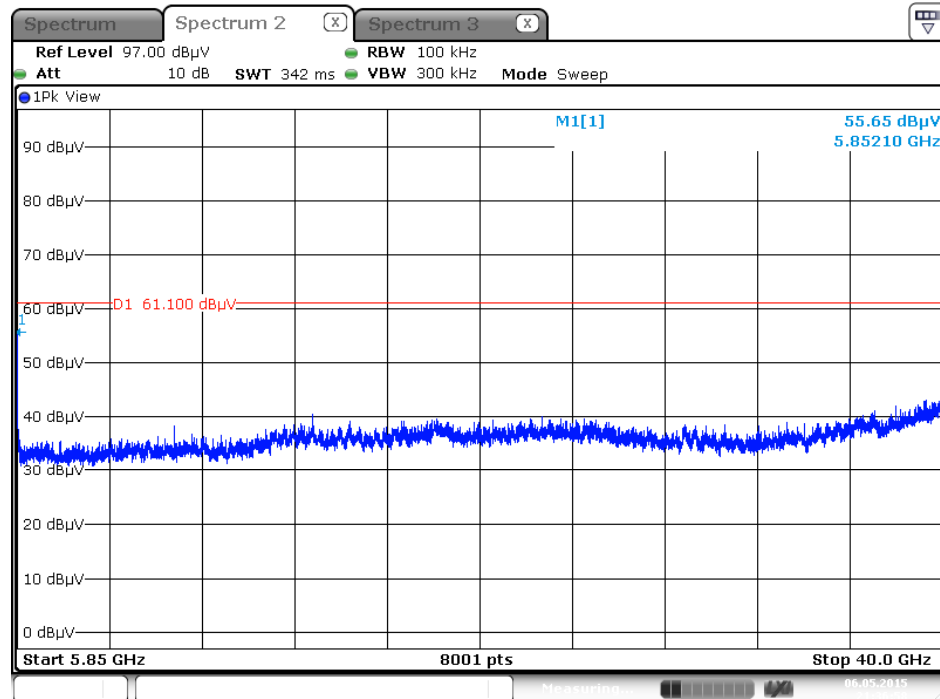
Date: 6 MAY 2015 21:34:18

Plot on Configuration IEEE 802.11a / CH 165 / 30MHz~5725MHz (down 30dBc)



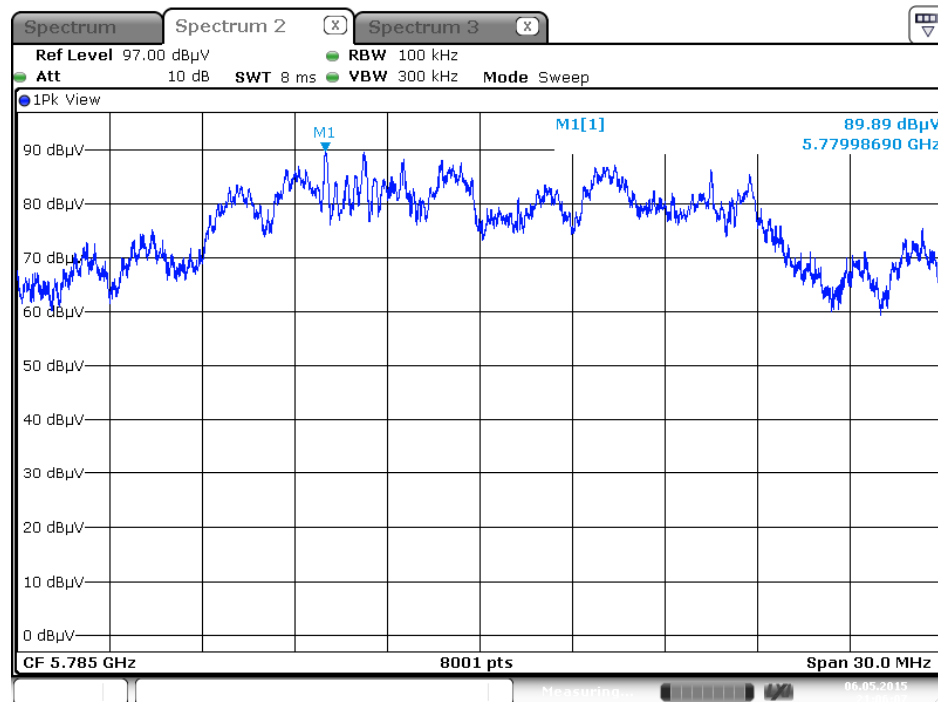
Date: 6 MAY 2015 21:36:23

Plot on Configuration IEEE 802.11a / CH 165 / 5850MHz~40000MHz (down 30dBc)



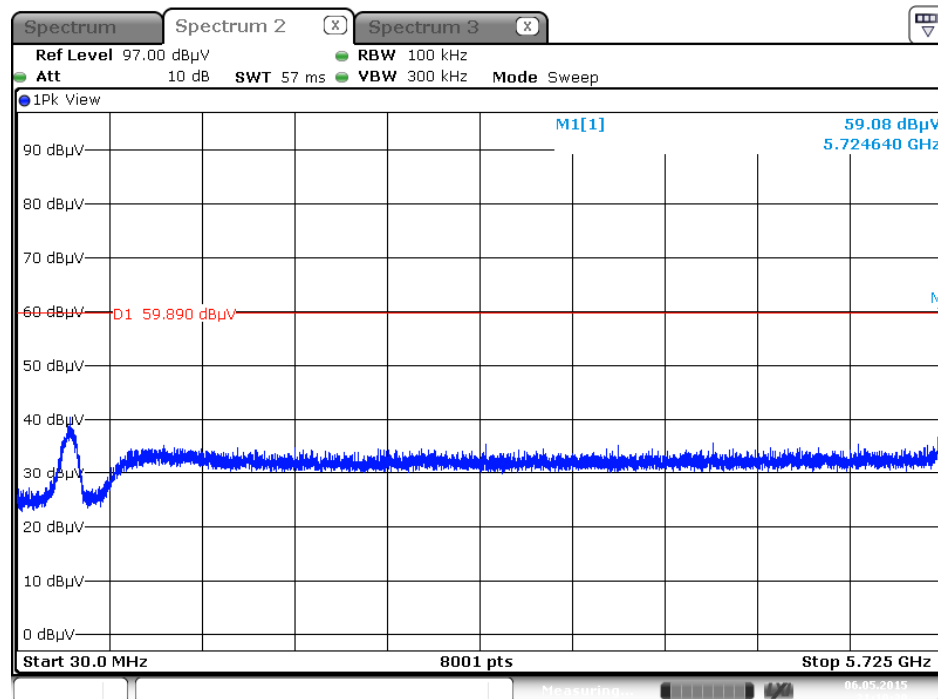
Date: 6 MAY 2015 21:36:59

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



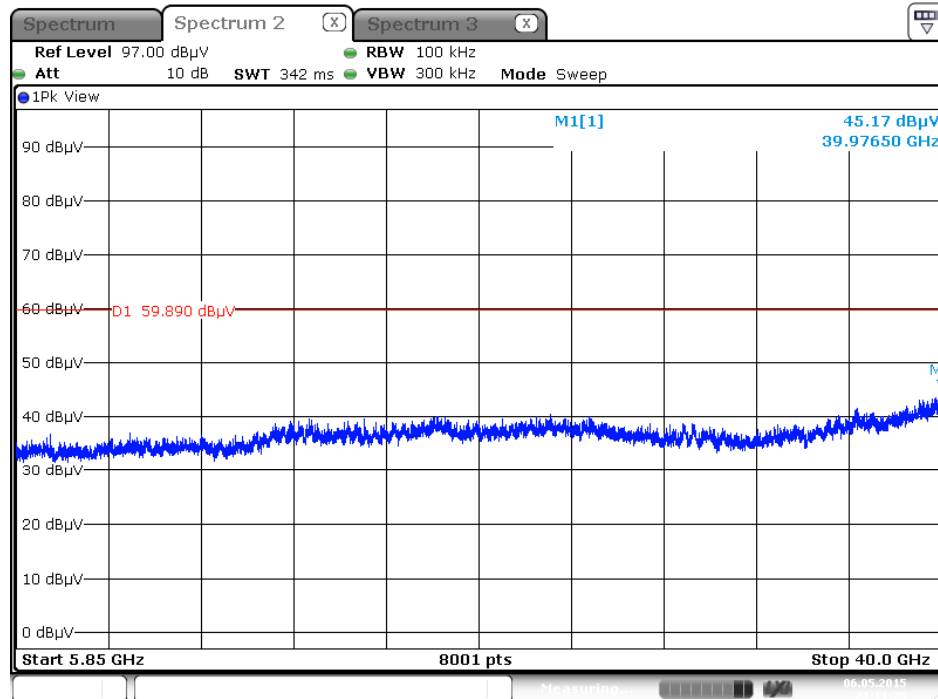
Date: 6 MAY 2015 21:06:07

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 30MHz~5725MHz (down 30dBc)

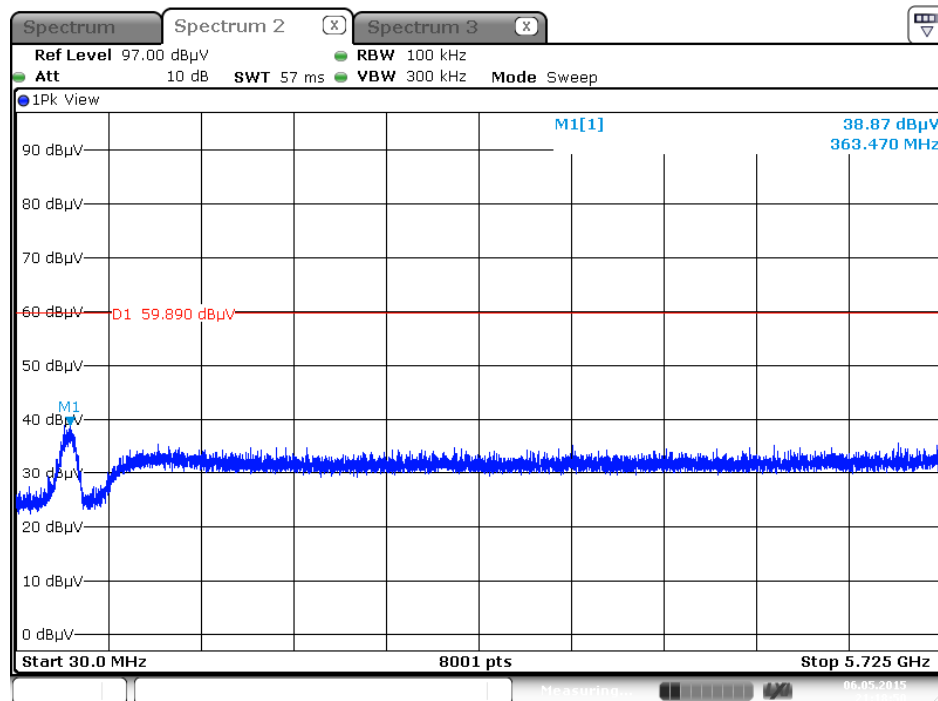


Date: 6 MAY 2015 21:10:39

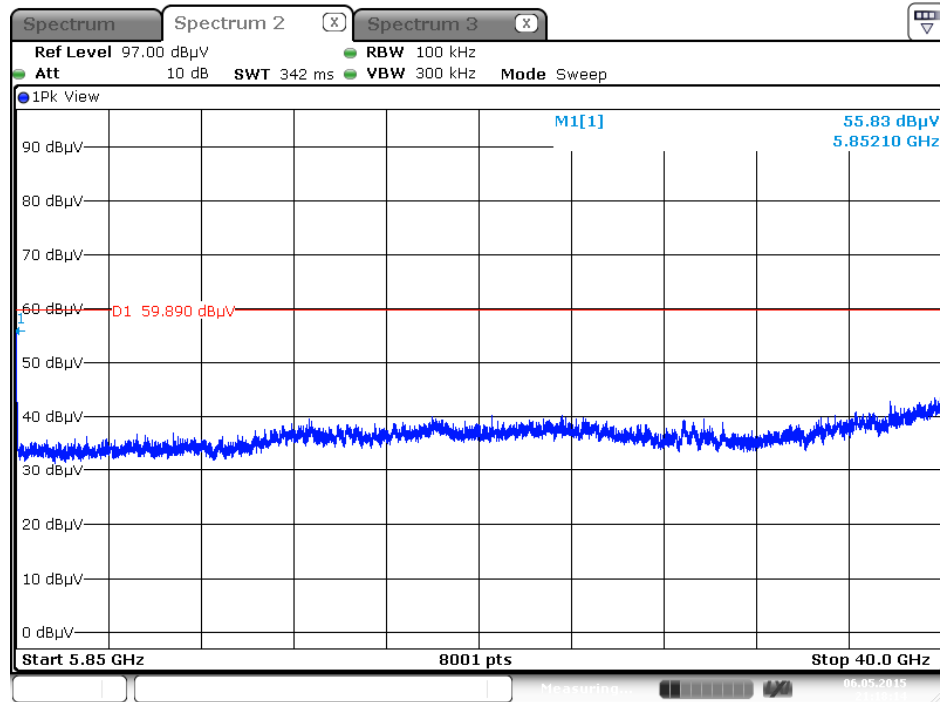
Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 5850MHz~40000MHz (down 30dBc)



Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 30MHz~5725MHz (down 30dBc)

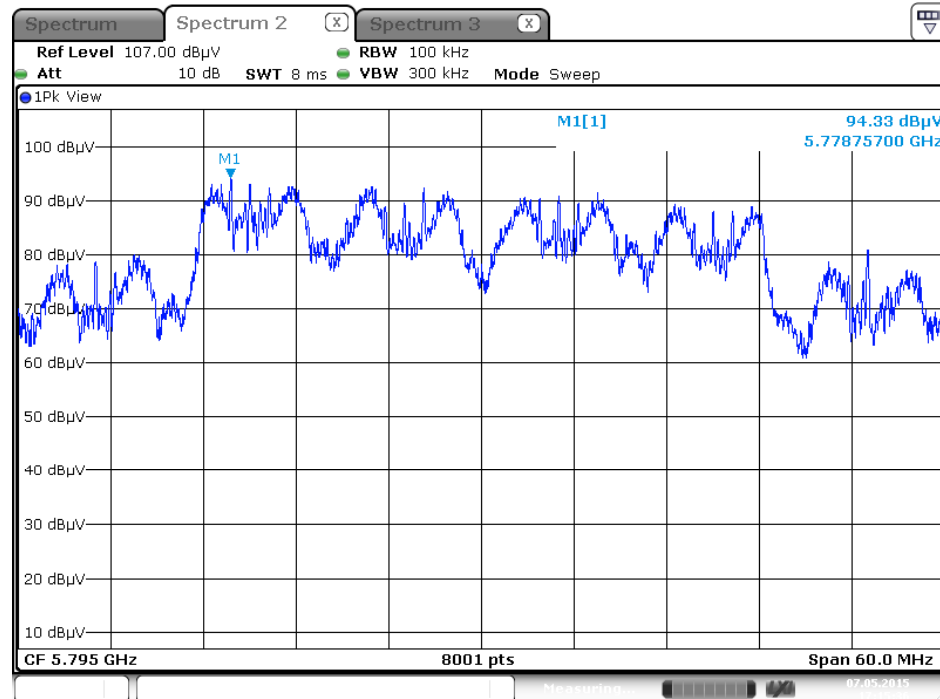


Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 5850MHz~40000MHz (down 30dBc)



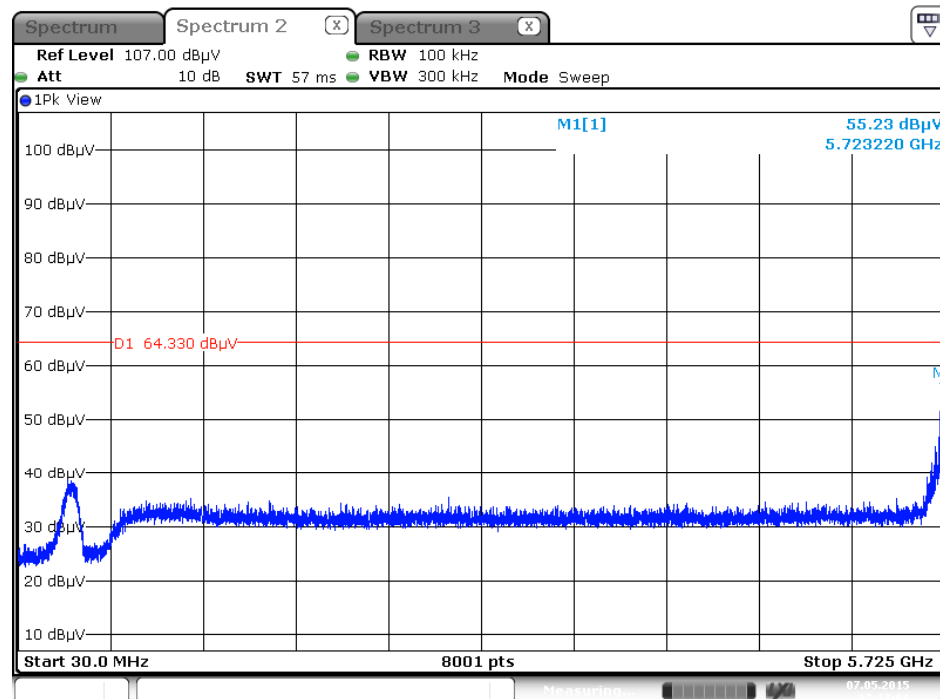
Date: 6 MAY 2015 21:18:13

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



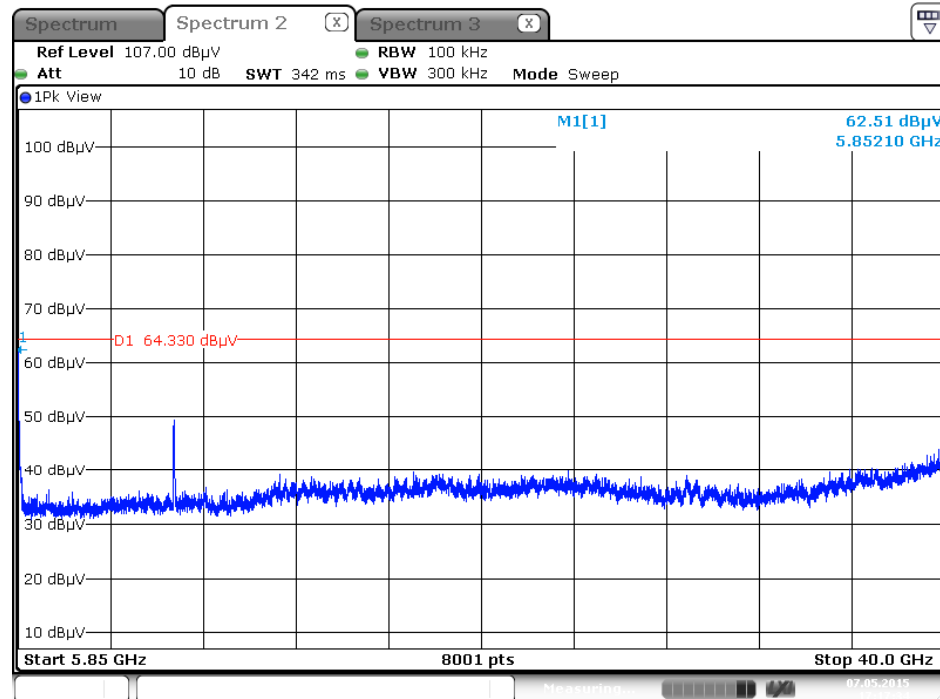
Date: 7 MAY 2015 17:15:36

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 30MHz~5725MHz (down 30dBc)



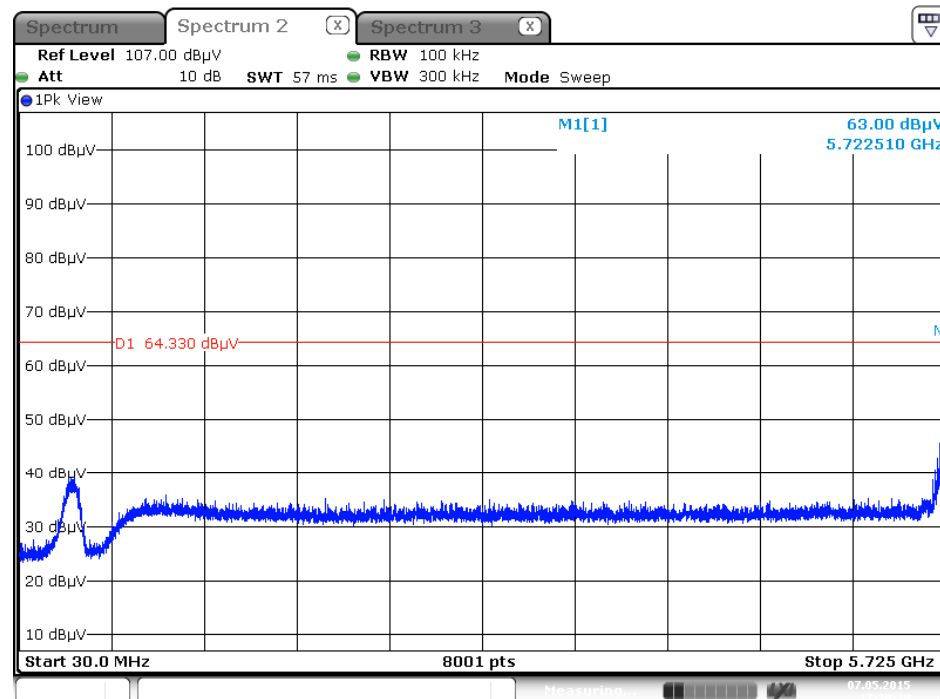
Date: 7 MAY 2015 17:17:01

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 5850MHz~40000MHz (down 30dBc)



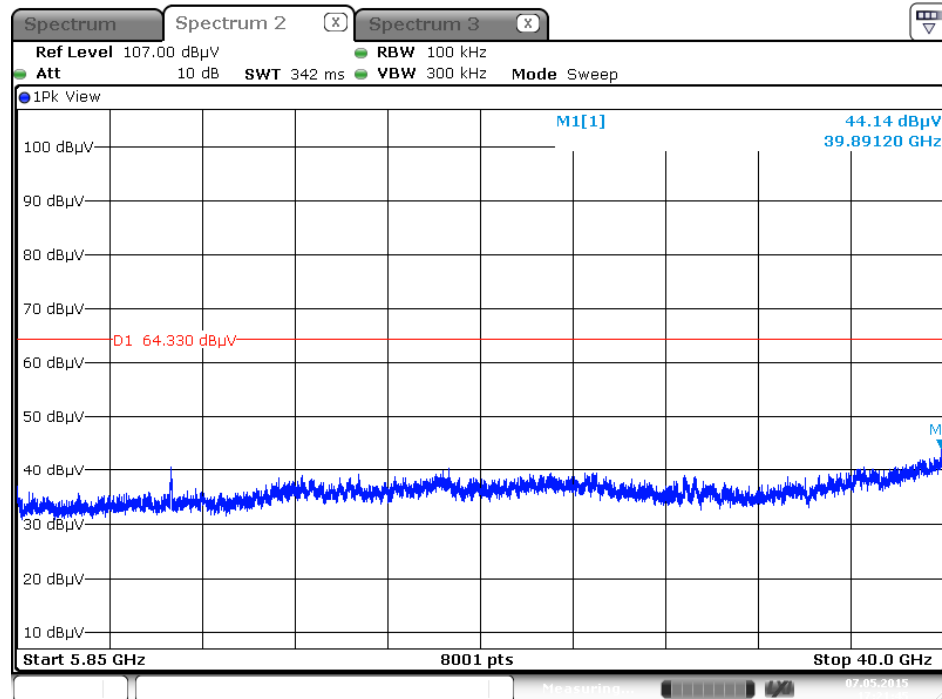
Date: 7 MAY 2015 17:17:35

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 30MHz~5725MHz (down 30dBc)



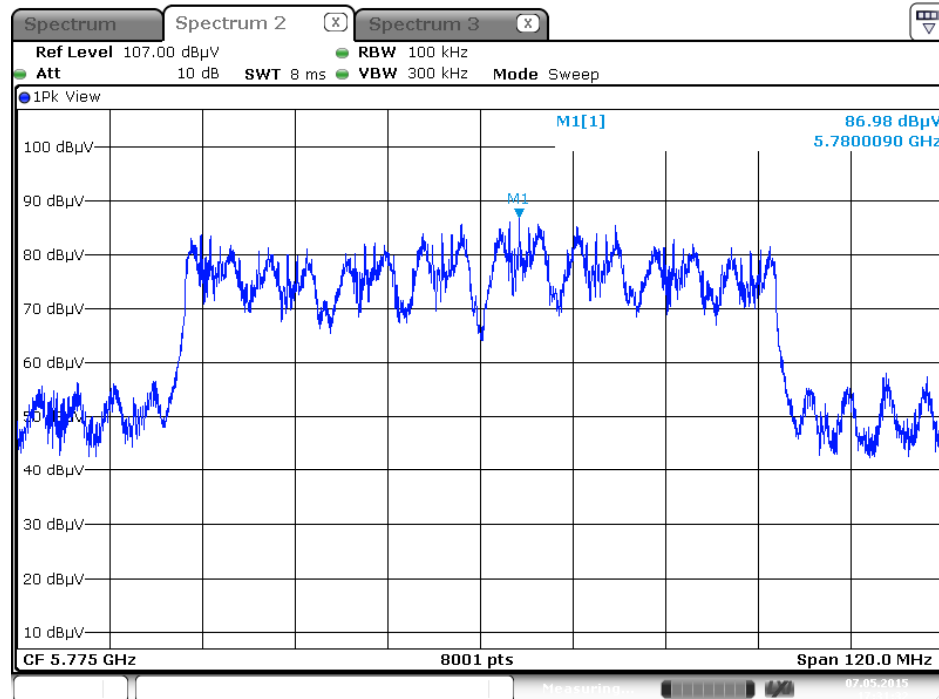
Date: 7 MAY 2015 17:20:24

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 5850MHz~40000MHz (down 30dBc)



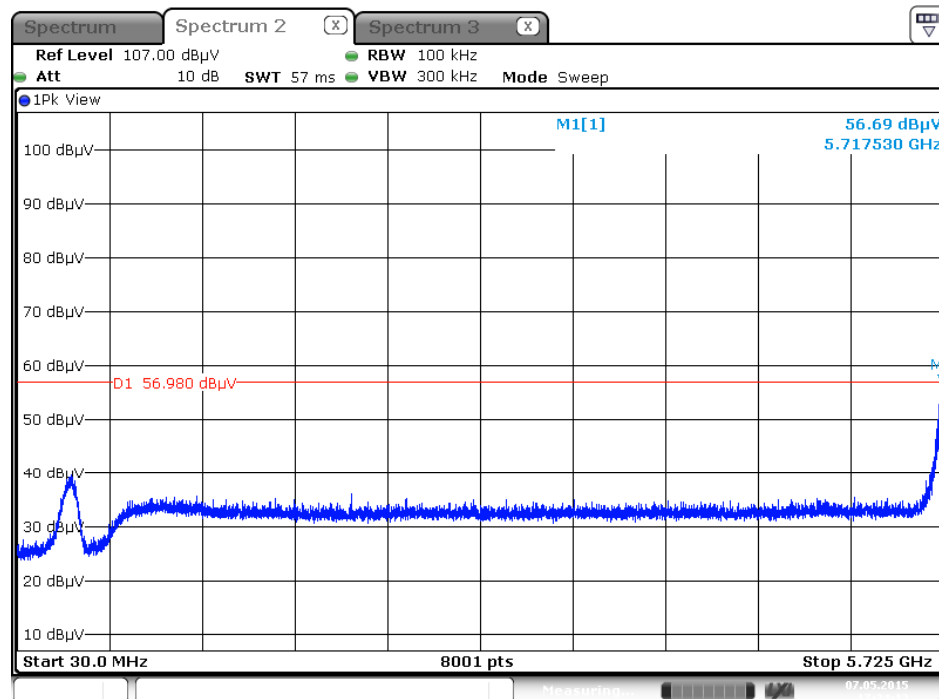
Date: 7 MAY 2015 17:21:45

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Reference Level



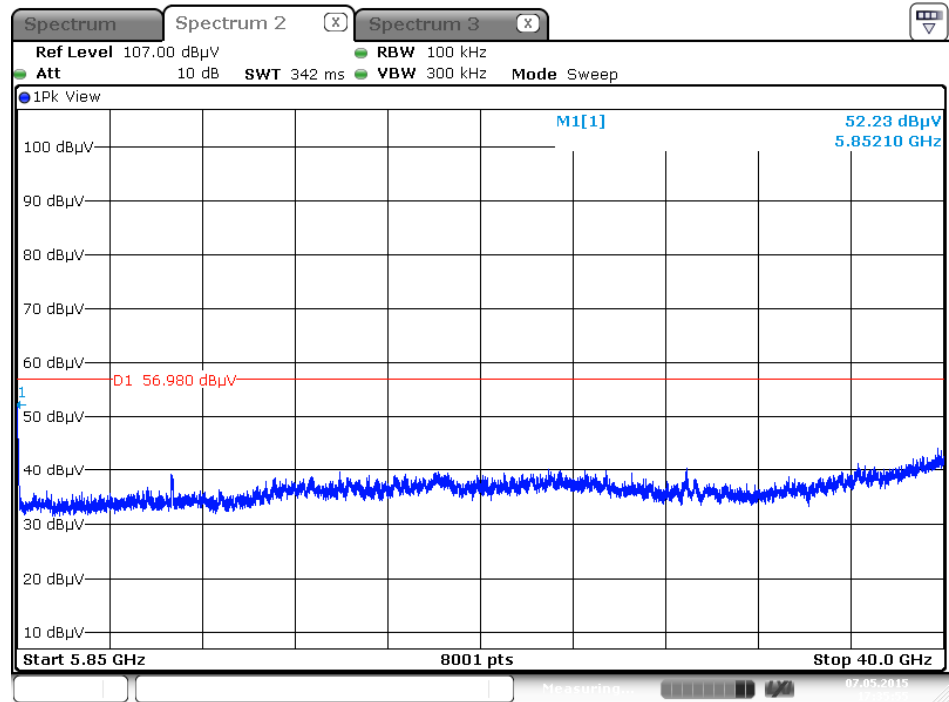
Date: 7 MAY 2015 17:31:32

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 30MHz~5725MHz (down 30dBc)



Date: 7 MAY 2015 17:34:12

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 5850MHz~40000MHz (down 30dBc)

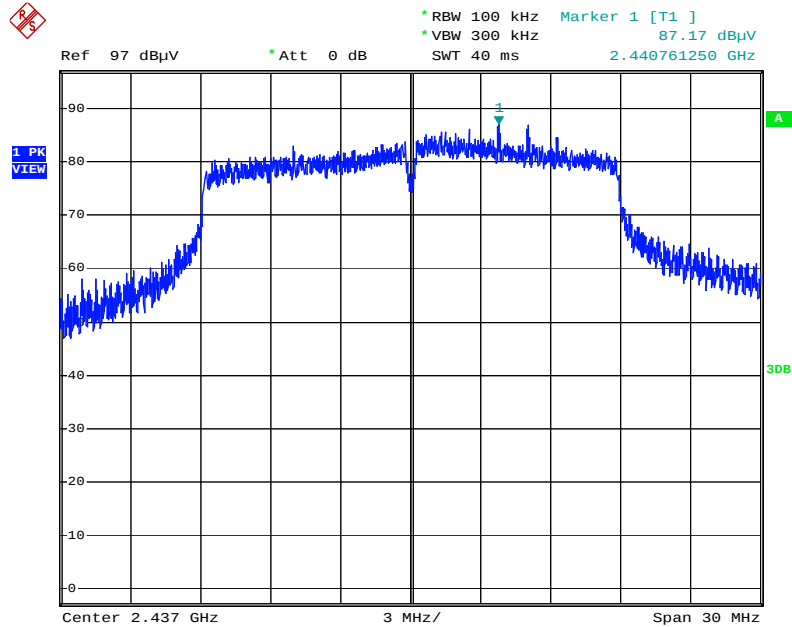


Date: 7 MAY 2015 17:35:55

For Beamforming Mode

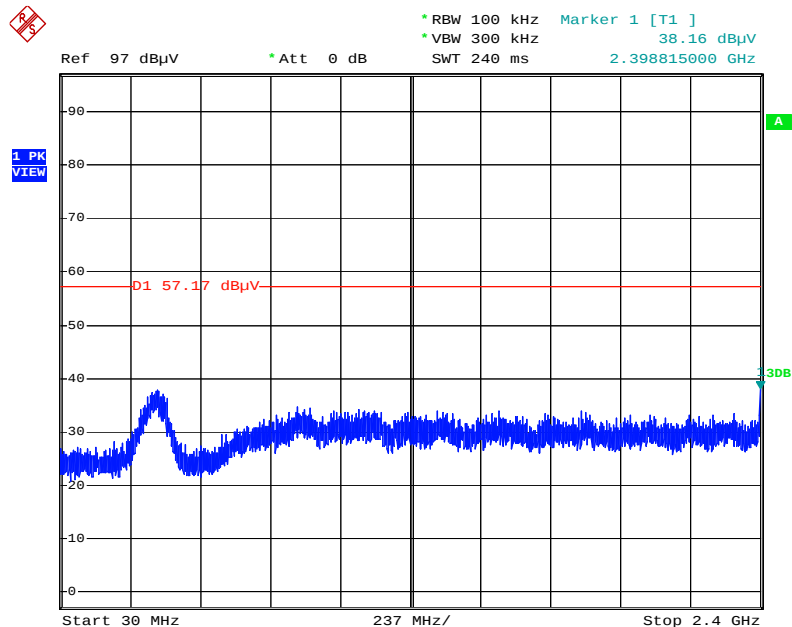
For 2.4G Band / Test Mode: MCS0/Nss1

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / Reference Level



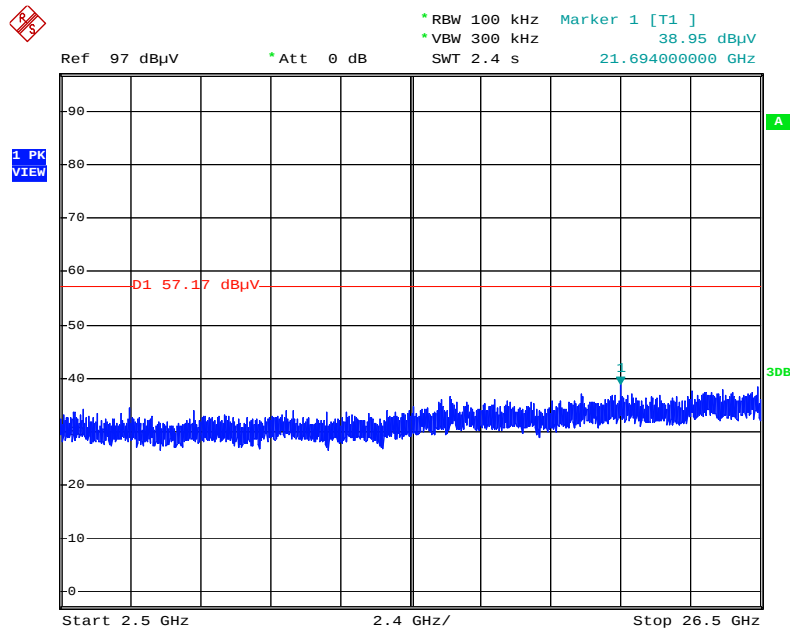
Date: 16.MAY.2015 15:22:23

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



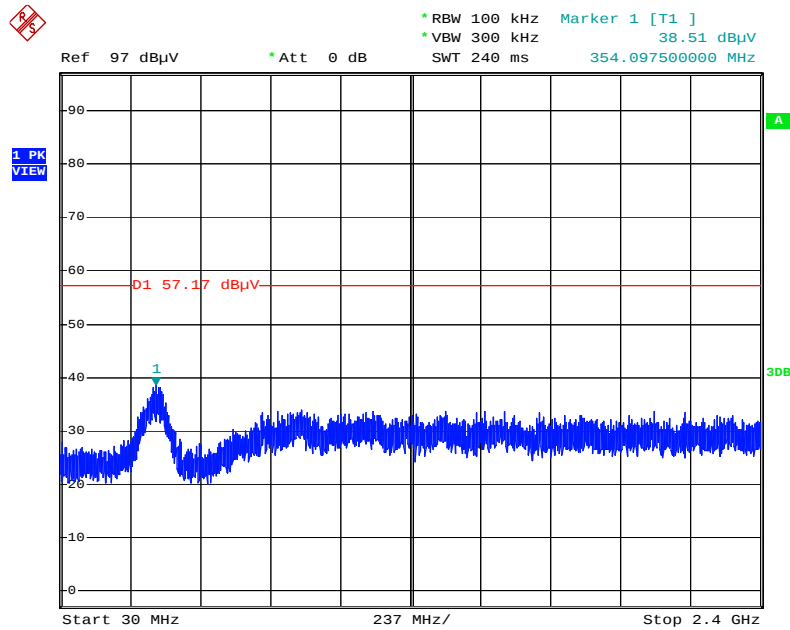
Date: 16.MAY.2015 15:24:30

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



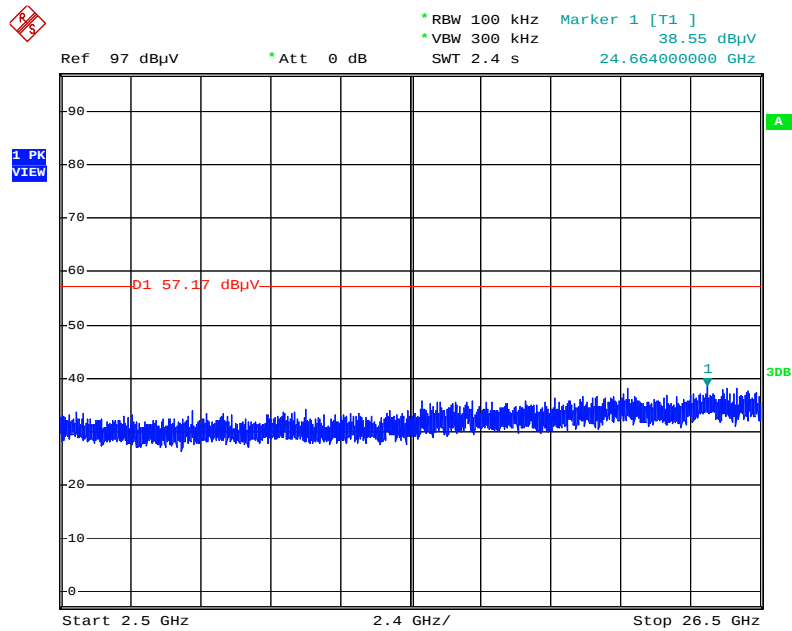
Date: 16.MAY.2015 15:23:36

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



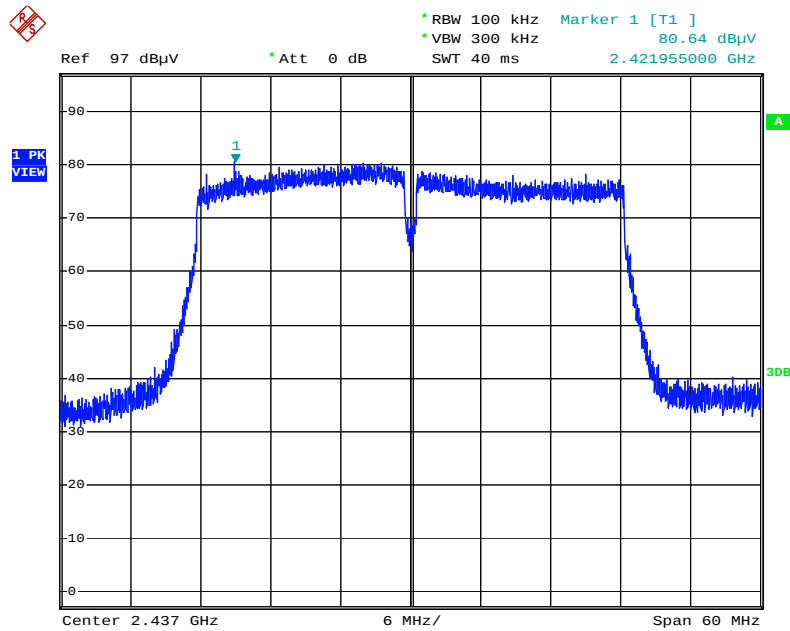
Date: 16.MAY.2015 15:25:29

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



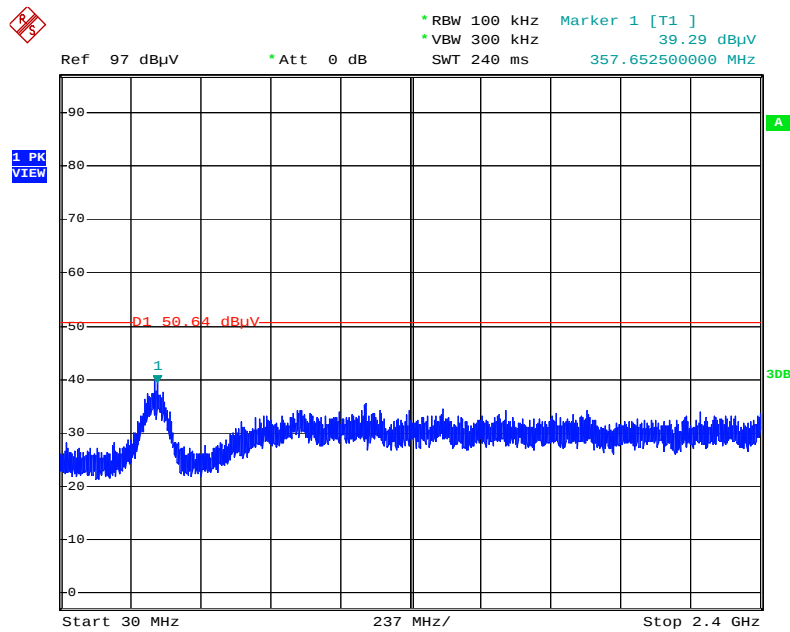
Date: 16.MAY.2015 15:25:55

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / Reference Level



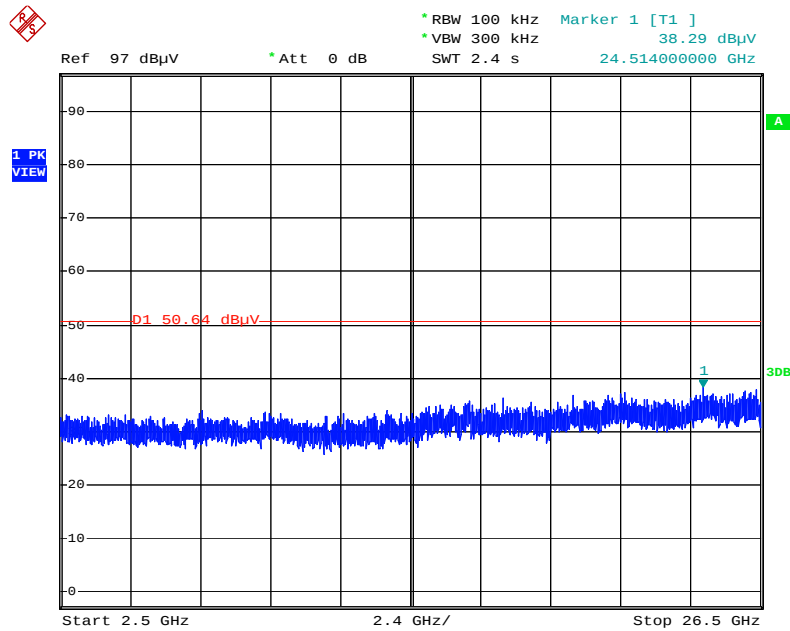
Date: 16.MAY.2015 15:36:46

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



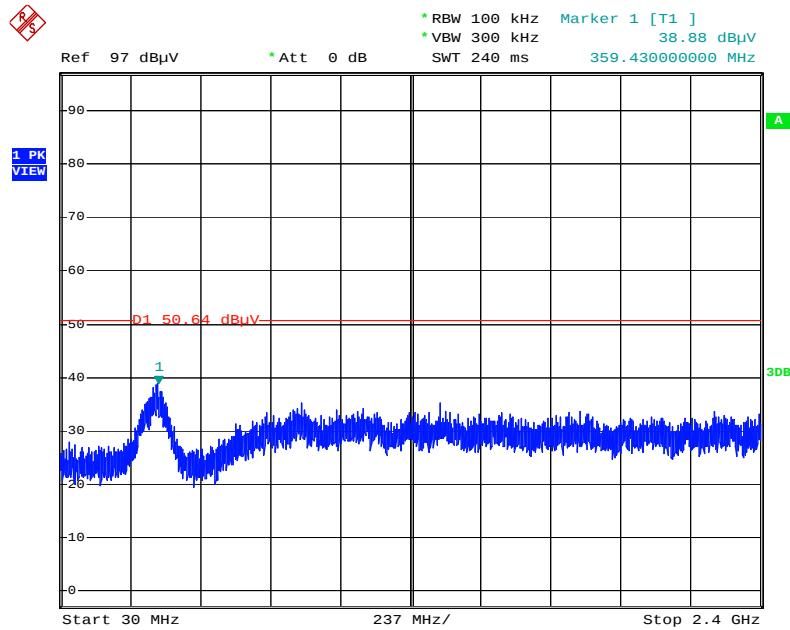
Date: 16.MAY.2015 15:37:57

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



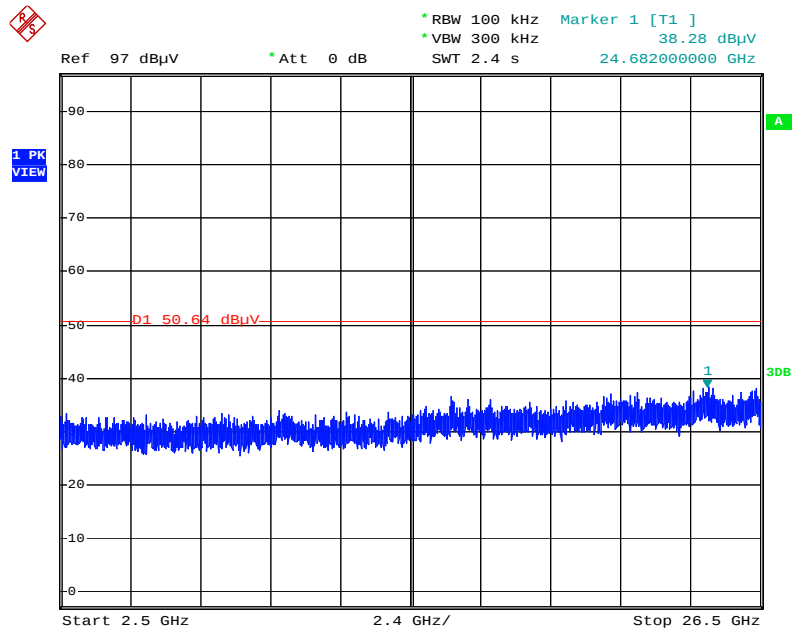
Date: 16.MAY.2015 15:38:19

Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



Date: 16.MAY.2015 15:39:14

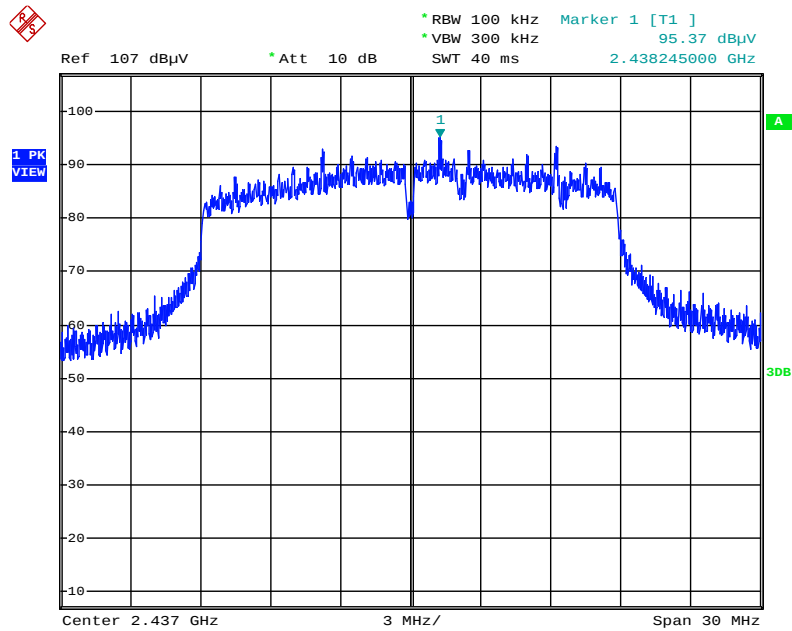
Plot on Configuration IEEE 802.11n MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



Date: 16.MAY.2015 15:38:58

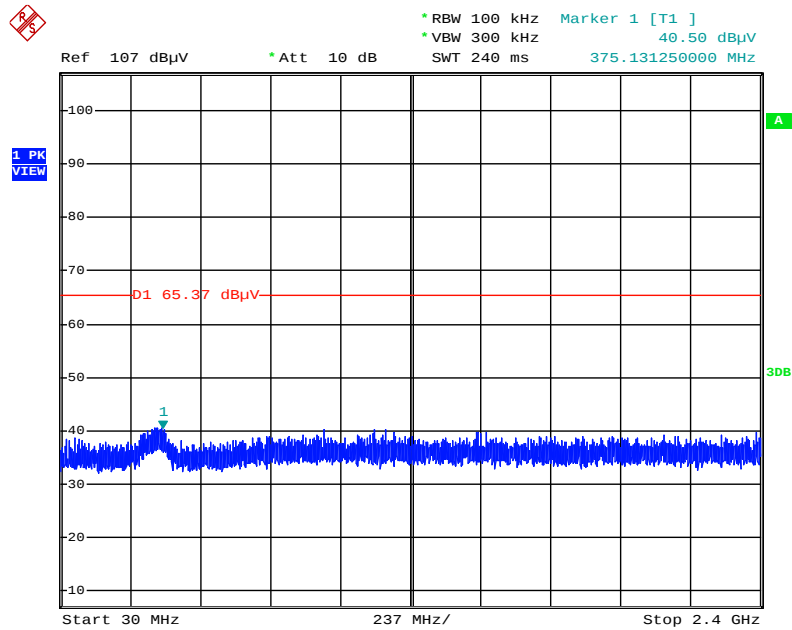
Test Mode: MCS0/Nss2

Plot on Configuration IEEE 802.11n MCS0/Nss2 VHT20 / Reference Level



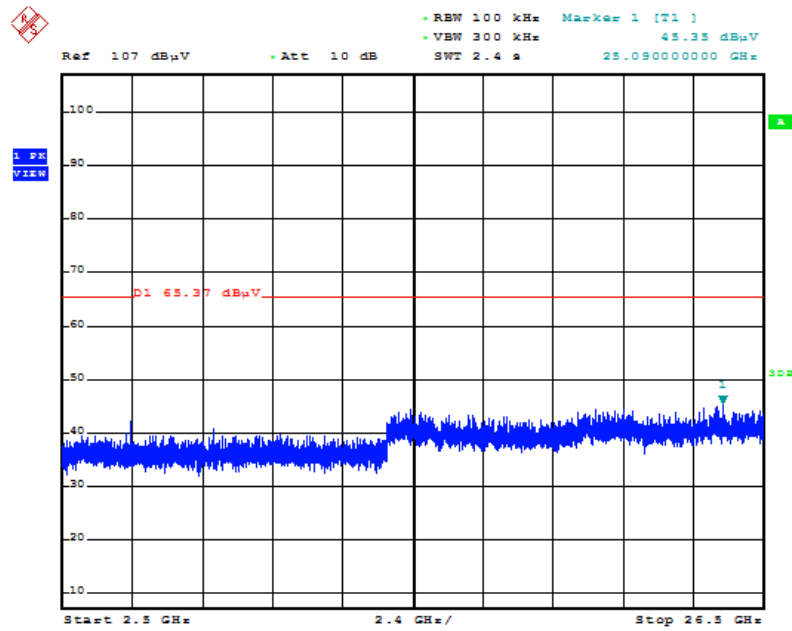
Date: 21.MAY.2015 18:31:55

Plot on Configuration IEEE 802.11n MCS0/Nss2 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



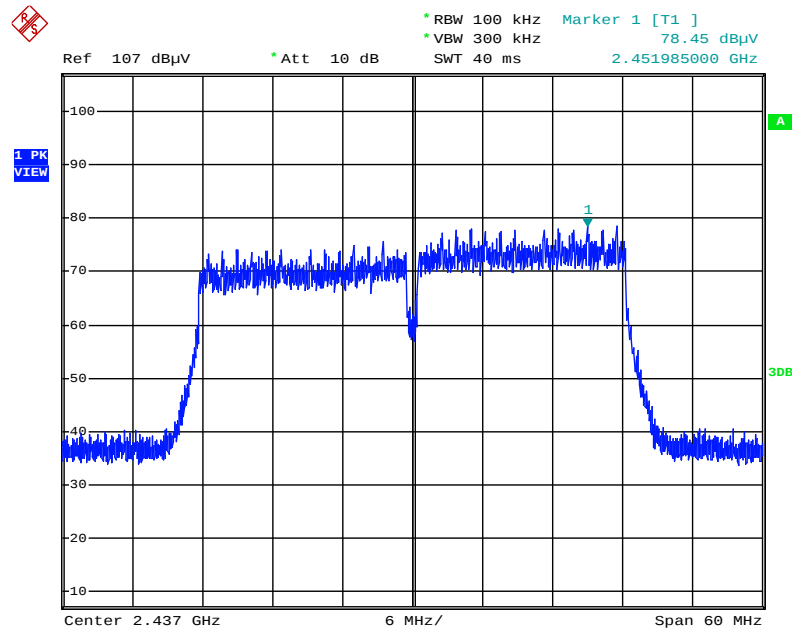
Date: 21.MAY.2015 18:32:37

Plot on Configuration IEEE 802.11n MCS0/Nss2 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



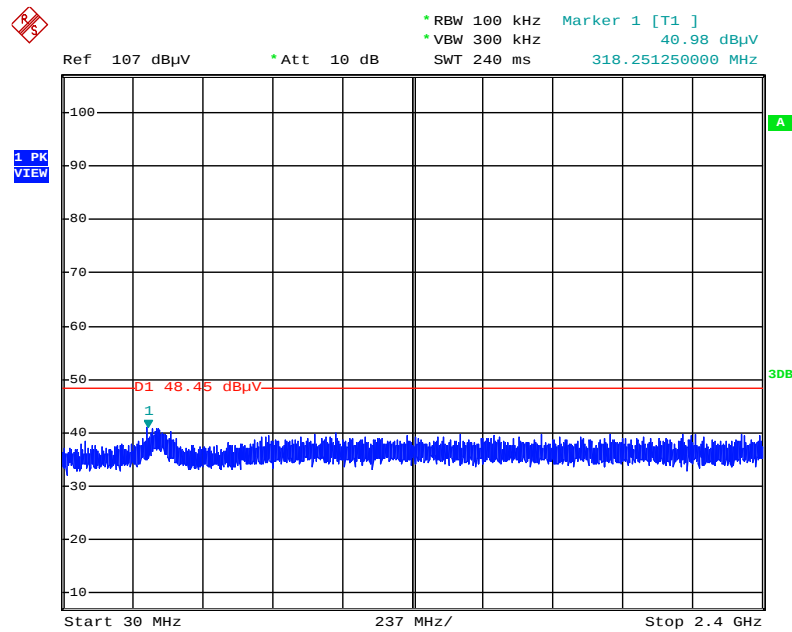
Date: 21.MAY.2015 19:21:40

Plot on Configuration IEEE 802.11n MCS0/Nss2 VHT40 / Reference Level



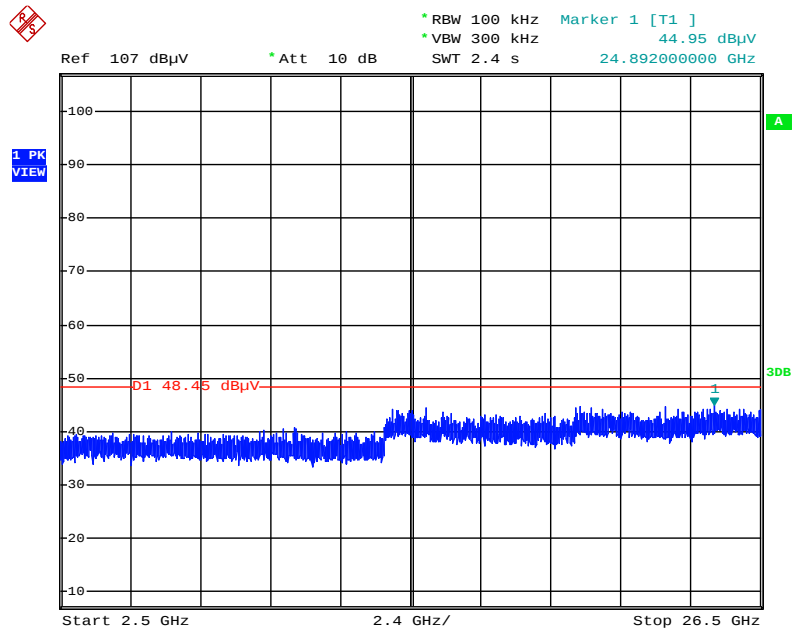
Date: 21.MAY.2015 18:34:35

Plot on Configuration IEEE 802.11n MCS0/Nss2 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



Date: 21.MAY.2015 18:35:46

Plot on Configuration IEEE 802.11n MCS0/Nss2 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)

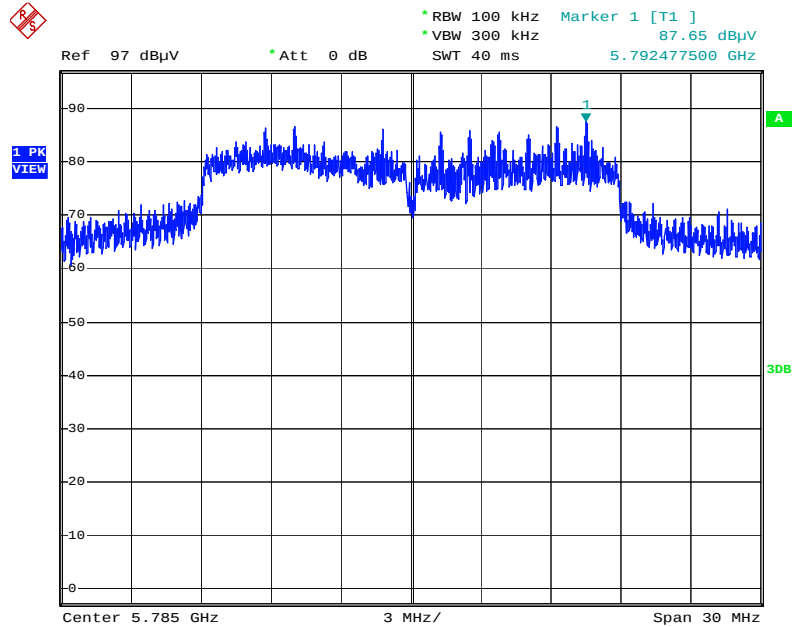


Date: 21.MAY.2015 18:36:28

For 5G Band

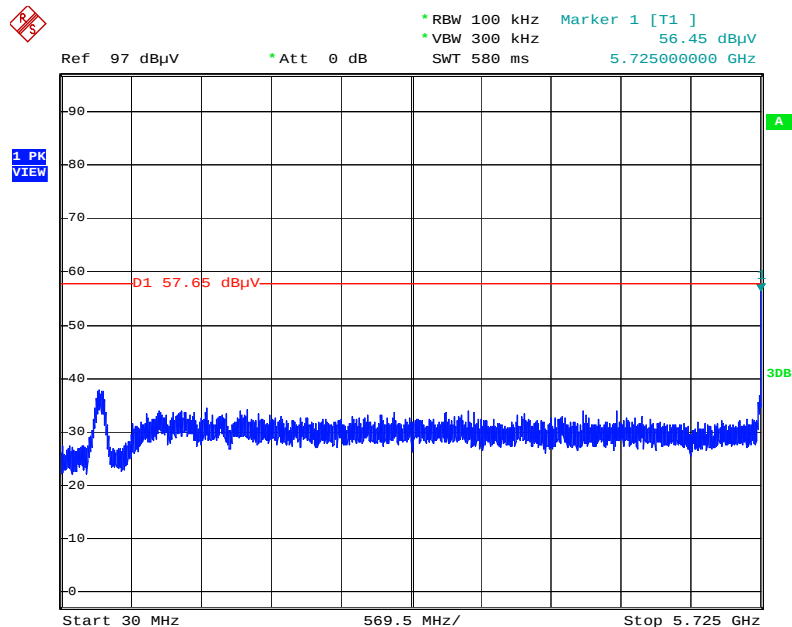
Test Mode: MCS0/Nss1

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



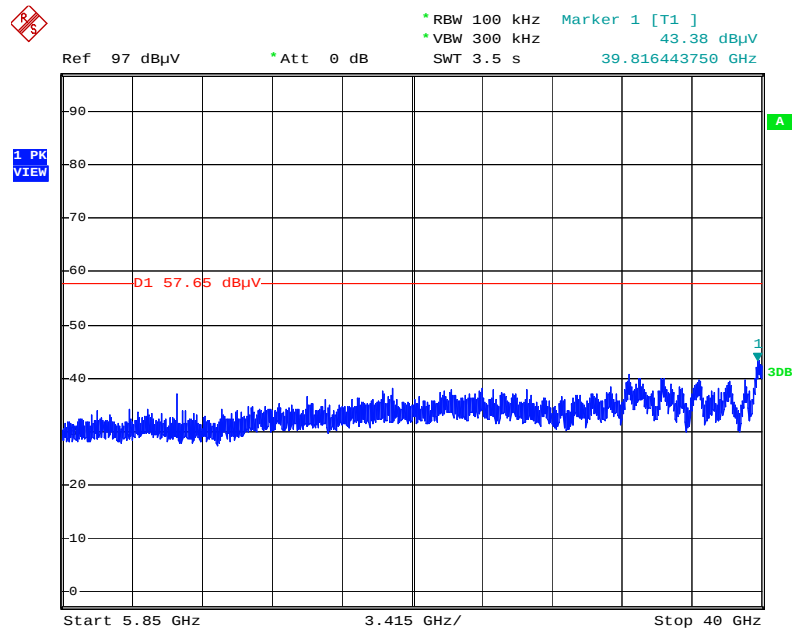
Date: 16.MAY.2015 12:38:10

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 30MHz~5725MHz (down 30dBc)



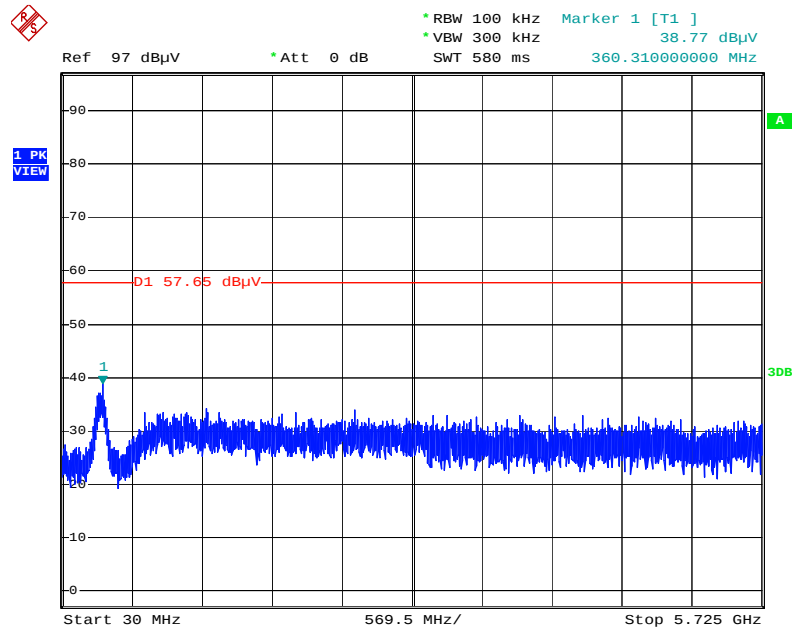
Date: 16.MAY.2015 12:38:52

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 5850MHz~40000MHz (down 30dBc)



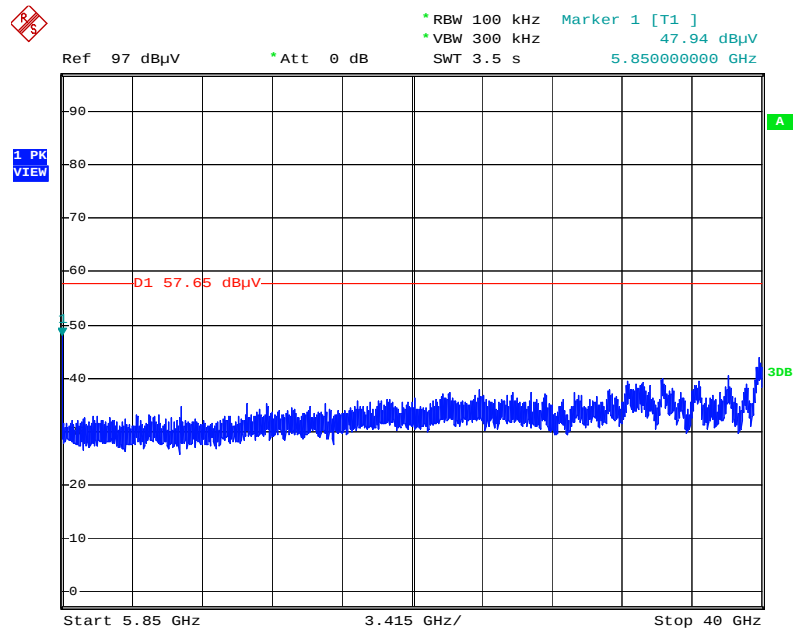
Date: 16.MAY.2015 12:39:30

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 30MHz~5725MHz (down 30dBc)



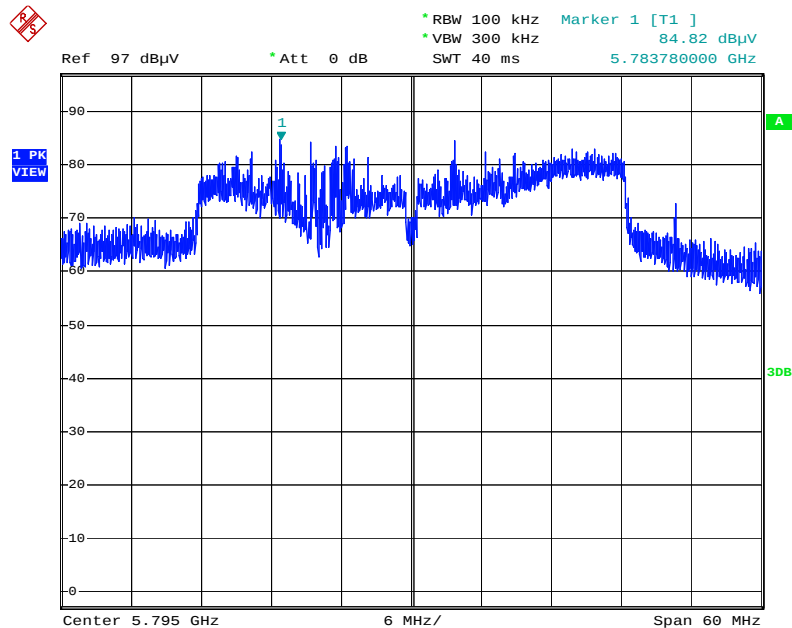
Date: 16.MAY.2015 12:49:22

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 5850MHz~40000MHz (down 30dBc)



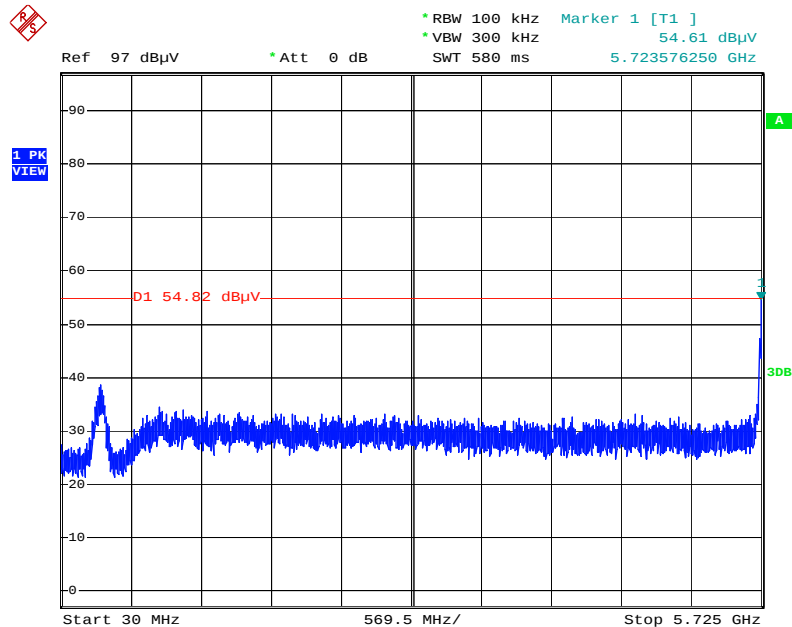
Date: 16.MAY.2015 12:49:04

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



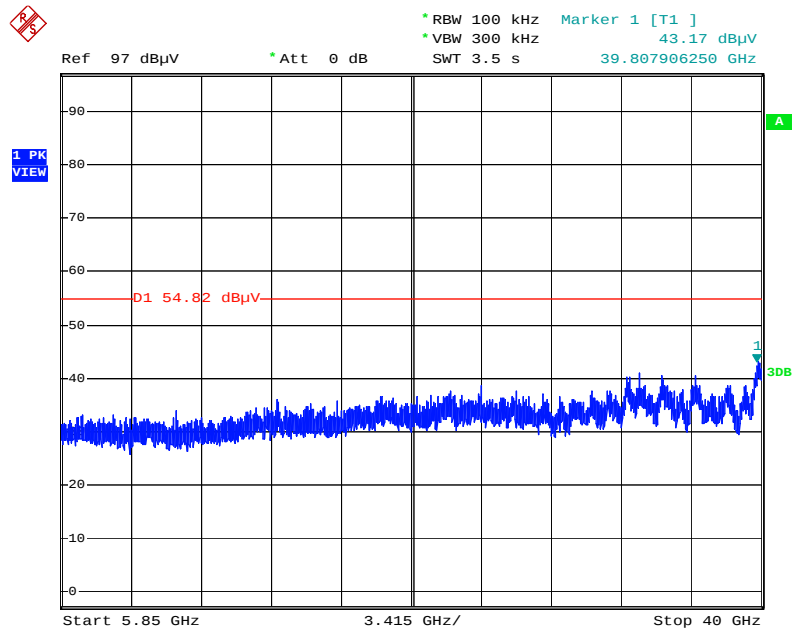
Date: 16.MAY.2015 12:52:07

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 30MHz~5725MHz (down 30dBc)



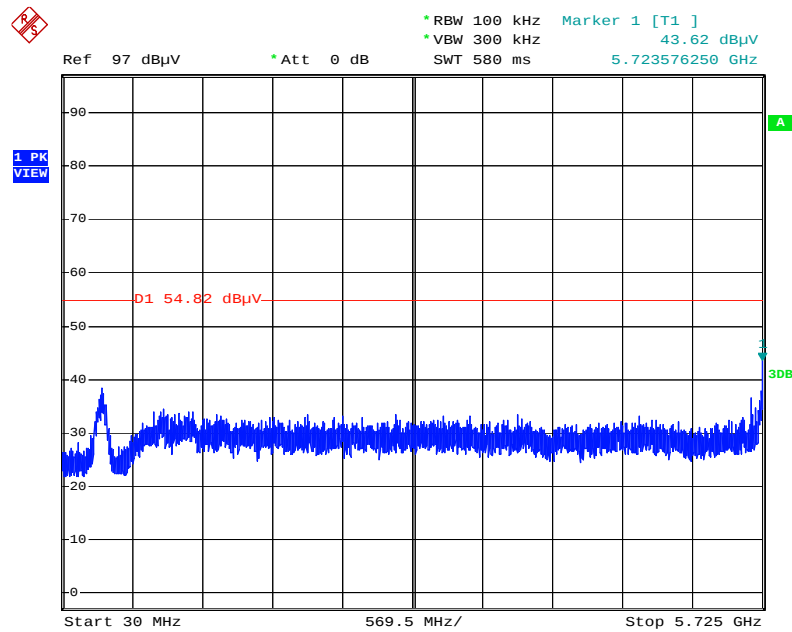
Date: 16.MAY.2015 12:54:22

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 5850MHz~40000MHz (down 30dBc)



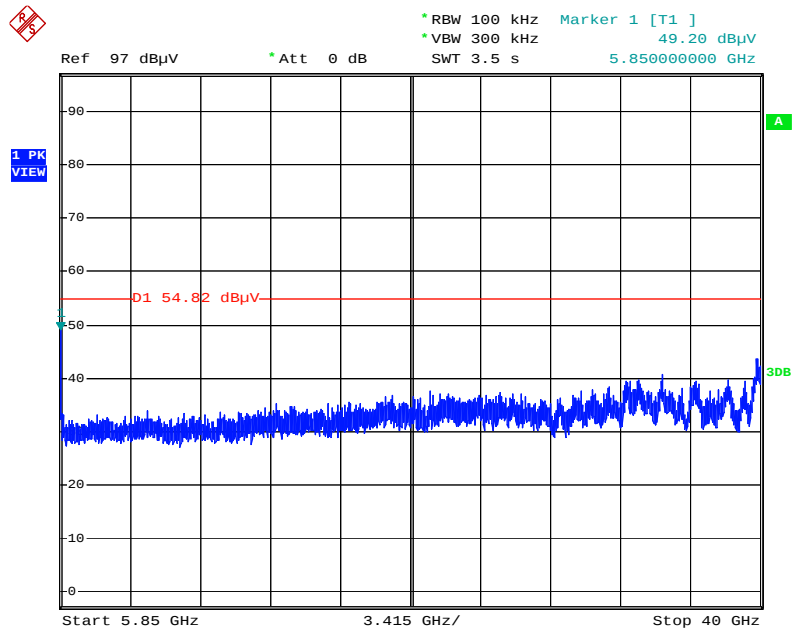
Date: 16.MAY.2015 12:53:58

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 30MHz~5725MHz (down 30dBc)



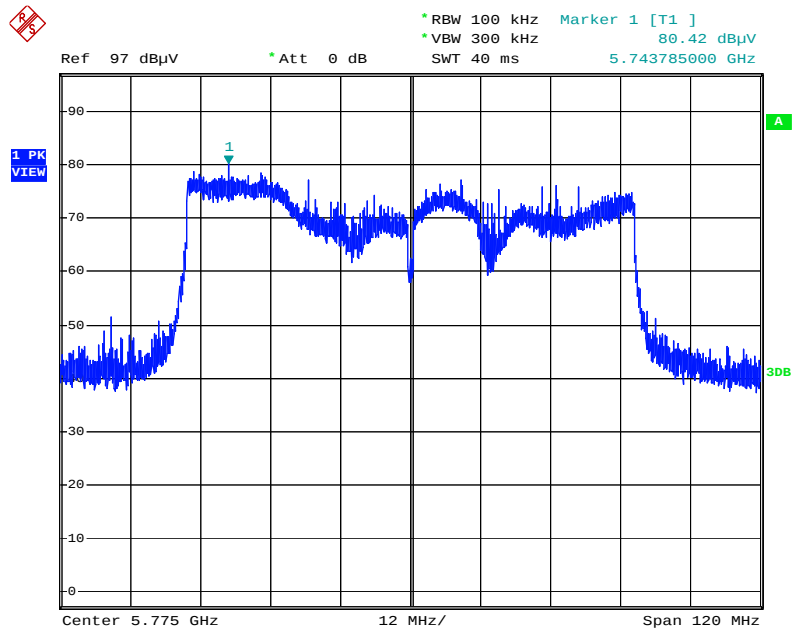
Date: 16.MAY.2015 12:52:53

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 5850MHz~40000MHz (down 30dBc)



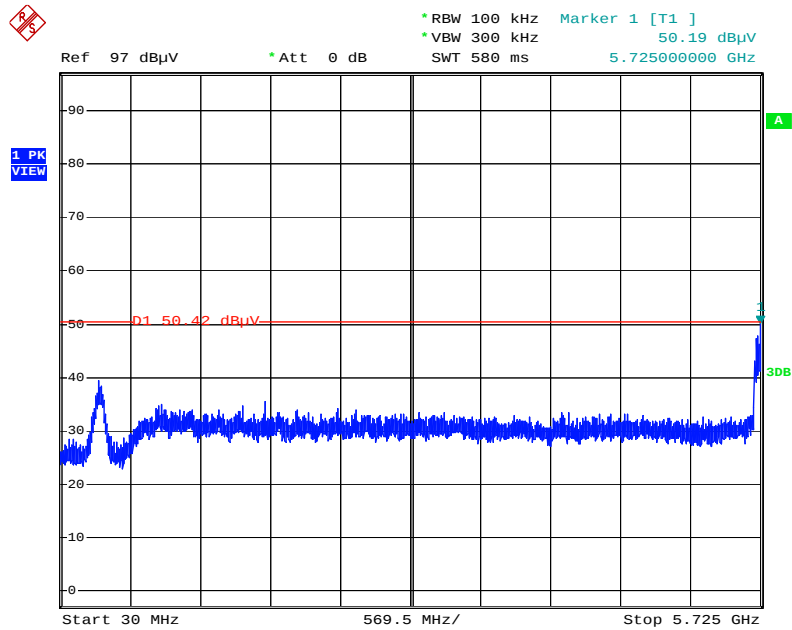
Date: 16.MAY.2015 12:53:18

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Reference Level



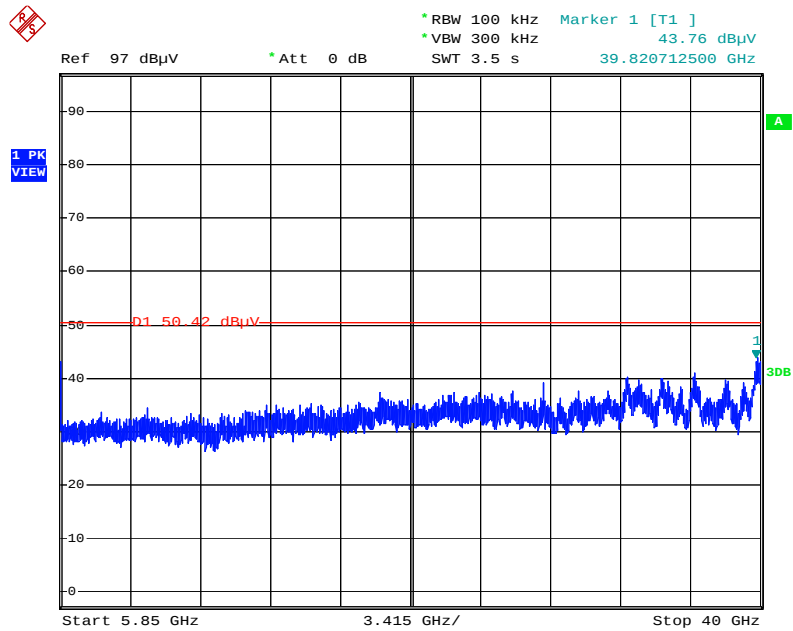
Date: 16.MAY.2015 12:55:11

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 30MHz~5725MHz (down 30dBc)



Date: 16.MAY.2015 12:55:55

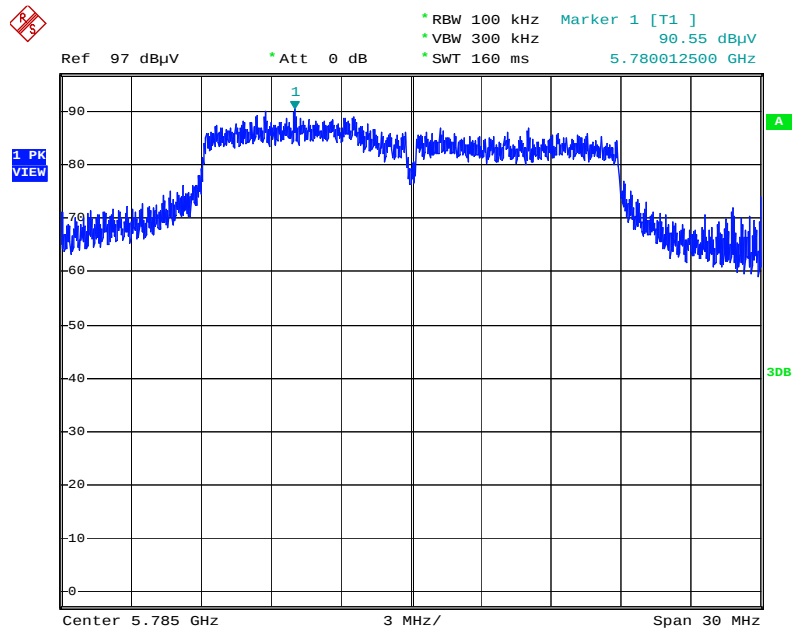
Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 5850MHz~40000MHz (down 30dBc)



Date: 16.MAY.2015 12:56:19

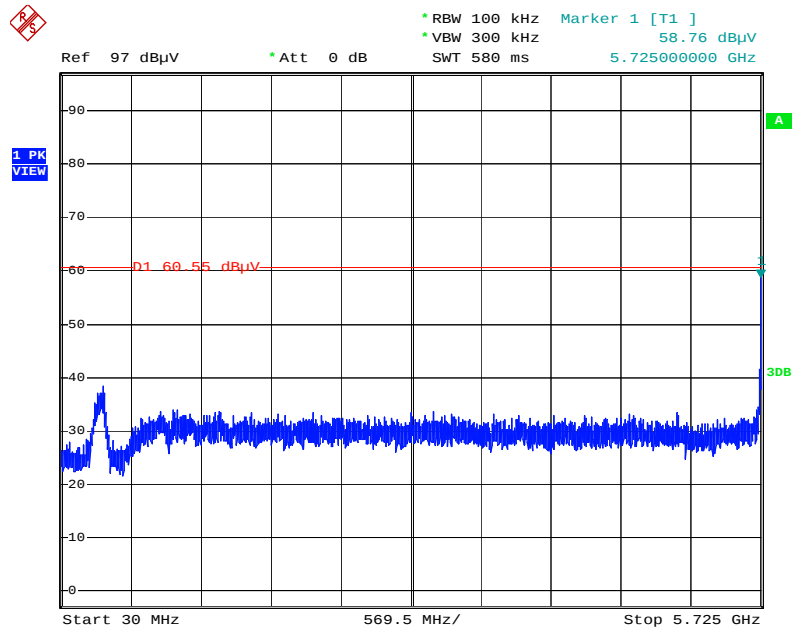
Test Mode: MCS0/Nss2

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / Reference Level



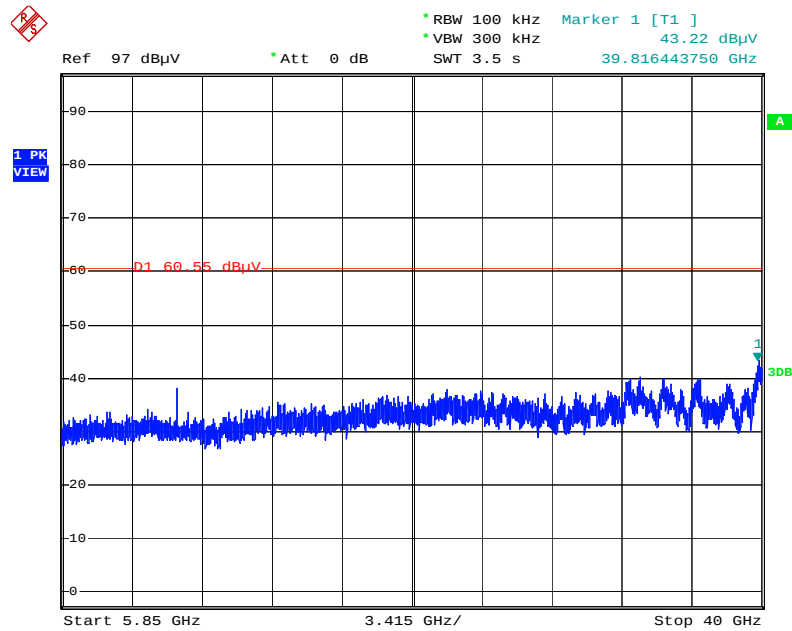
Date: 16.MAY.2015 11:53:28

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / CH 149 / 30MHz~5725MHz (down 30dBc)



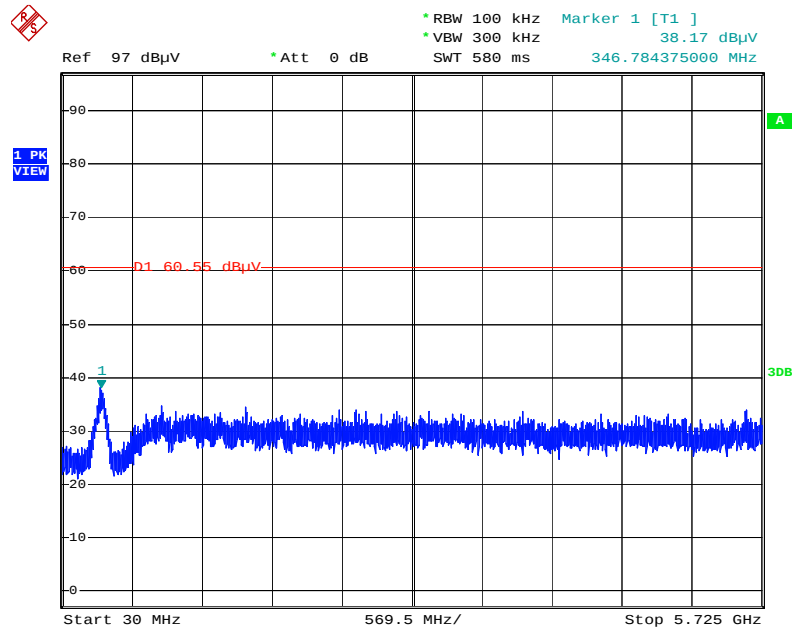
Date: 16.MAY.2015 11:56:28

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / CH 149 / 5850MHz~40000MHz (down 30dBc)



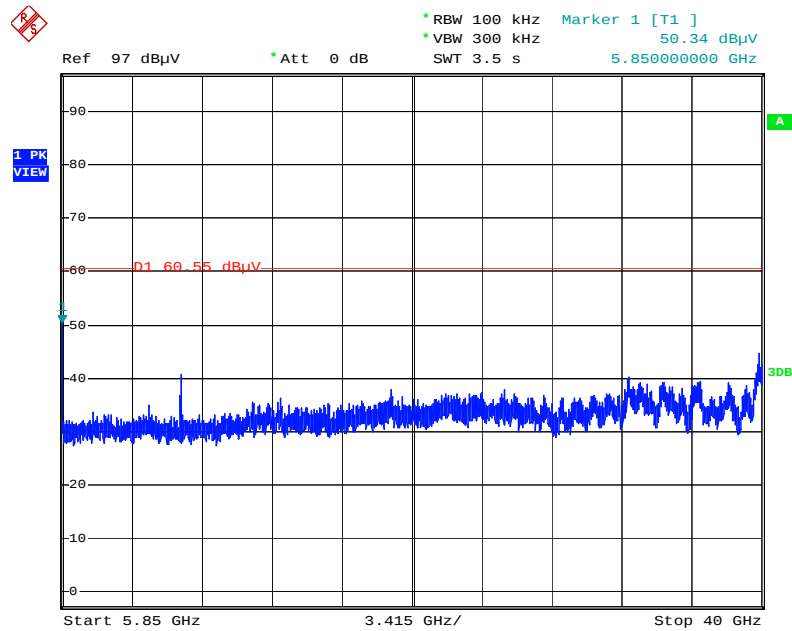
Date: 16.MAY.2015 11:57:02

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / CH 165 / 30MHz~5725MHz (down 30dBc)



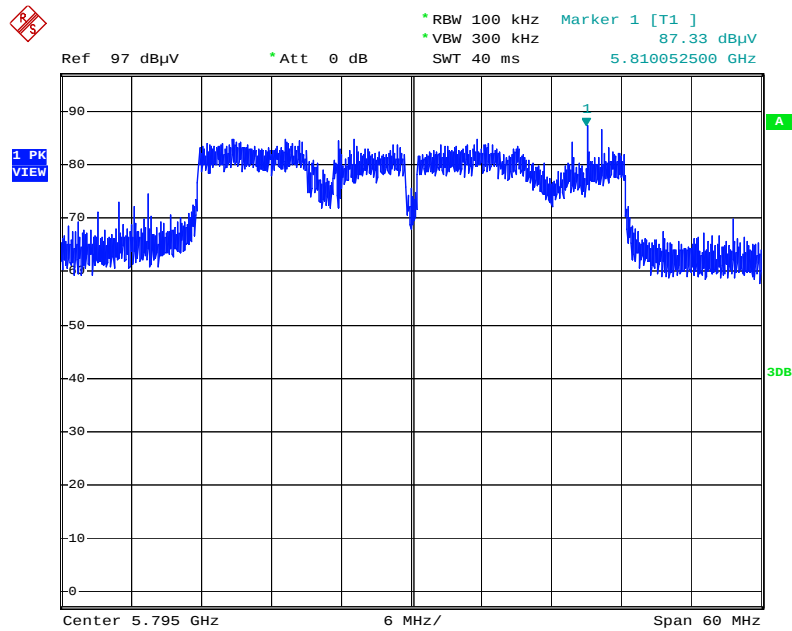
Date: 16.MAY.2015 11:58:44

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT20 / CH 165 / 5850MHz~40000MHz (down 30dBc)



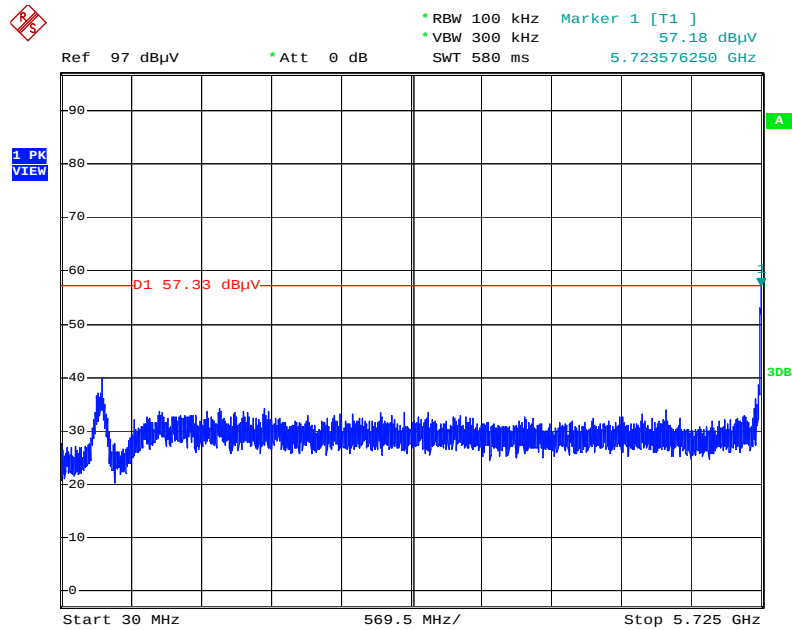
Date: 16.MAY.2015 11:58:13

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / Reference Level



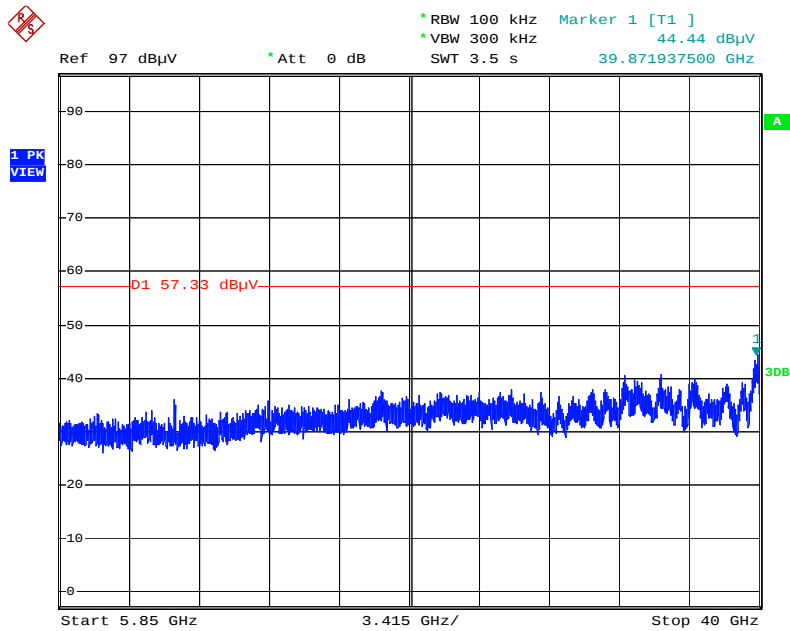
Date: 16.MAY.2015 12:04:29

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / CH 151 / 30MHz~5725MHz (down 30dBc)



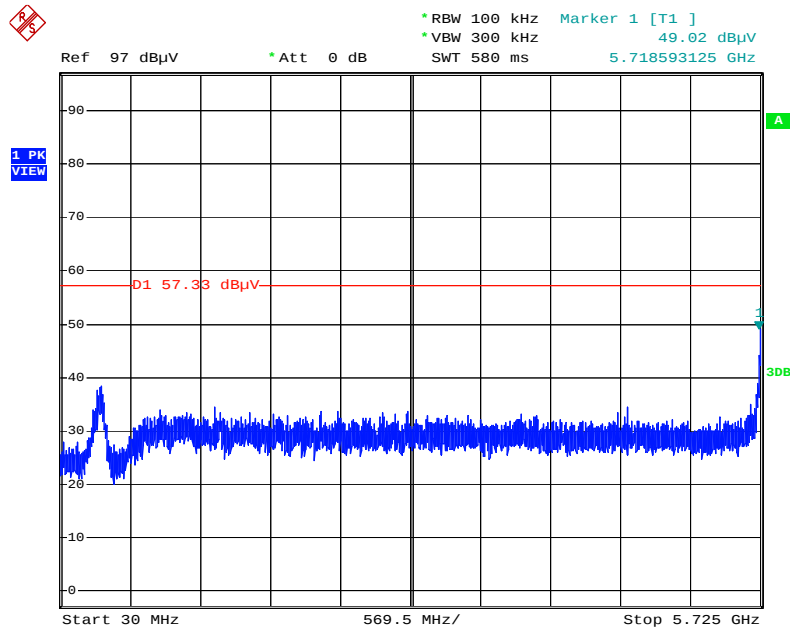
Date: 16.MAY.2015 12:07:55

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / CH 151 / 5850MHz~40000MHz (down 30dBc)



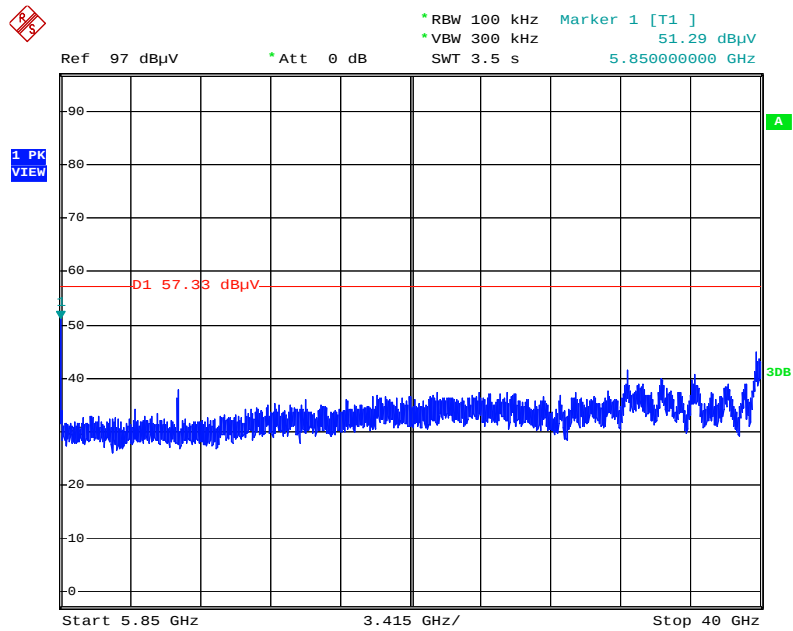
Date: 16.MAY.2015 12:07:27

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / CH 159 / 30MHz~5725MHz (down 30dBc)



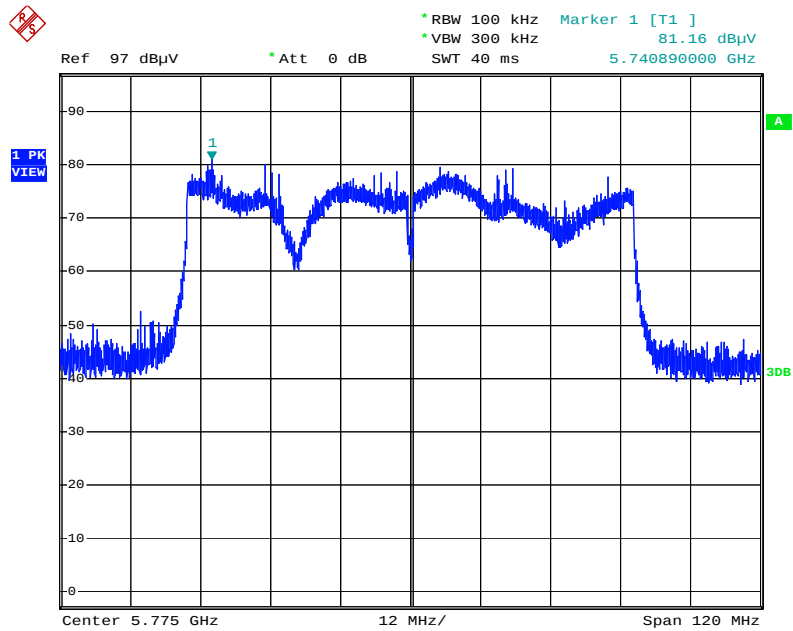
Date: 16.MAY.2015 12:06:02

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT40 / CH 159 / 5850MHz~40000MHz (down 30dBc)



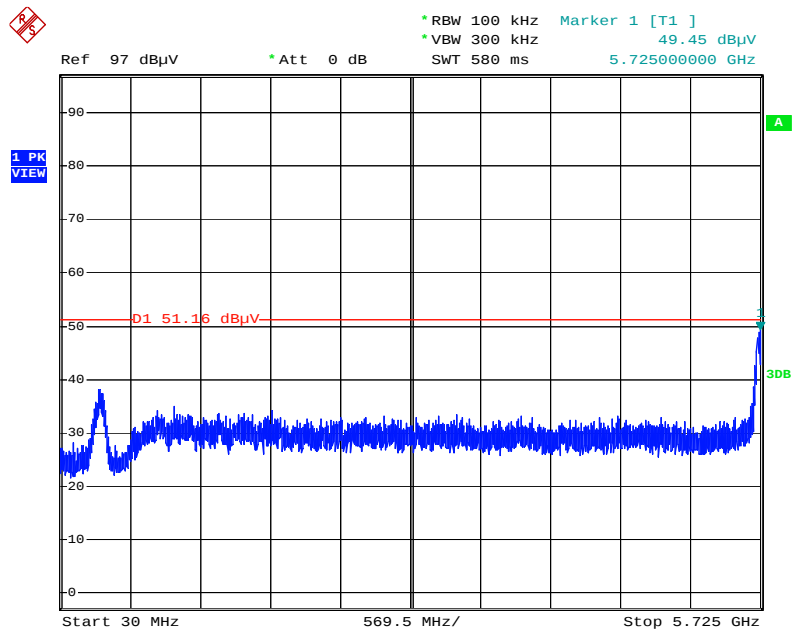
Date: 16.MAY.2015 12:05:44

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / Reference Level



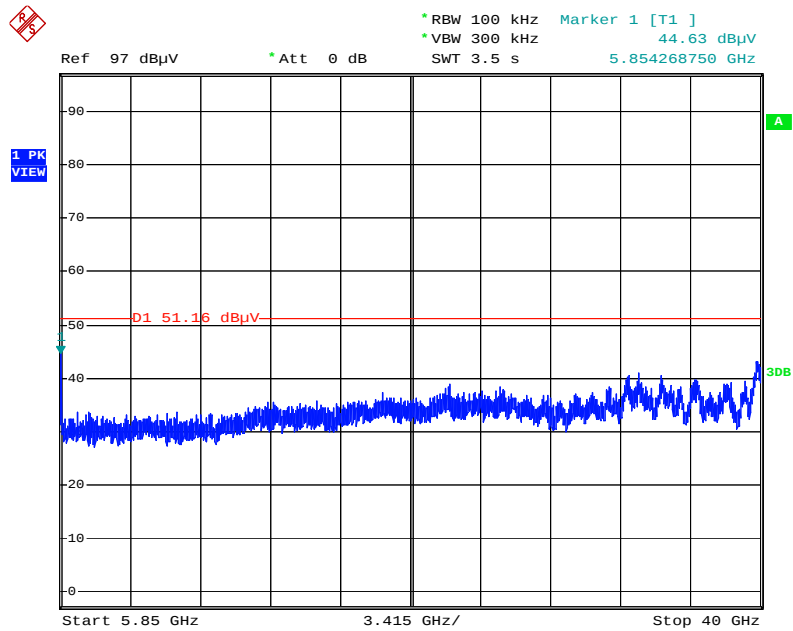
Date: 16.MAY.2015 12:12:13

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / CH 155 / 30MHz~5725MHz (down 30dBc)



Date: 16.MAY.2015 12:13:53

Plot on Configuration IEEE 802.11ac MCS0/Nss2 VHT80 / CH 155 / 5850MHz~40000MHz (down 30dBc)



Date: 16.MAY.2015 12:14:16

4.7. Antenna Requirements

4.7.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.7.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9kHz ~ 2.75GHz	Apr. 22, 2015	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 02, 2014	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 02, 2014	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	Dec. 03, 2014	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	May 26, 2014	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015	Radiation (03CH01-CB))
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 28, 2014	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2014	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Feb. 24, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 12, 2015	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 25, 2014	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 06, 2014	Radiation (03CH01-CB)
EMI Test Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8GHz	Jan. 21, 2015	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R.	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO 2000	N/A	1 m ~ 4 m	N.C.R.	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
Thermometer	HTC-1	HTC-1	TP-1	-50°C~70°C	Mar. 11, 2015	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 12, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 03, 2014	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%