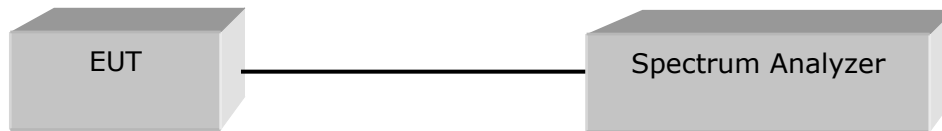


4.2 OUTPUT POWER

Test Procedures

Maximum Conducted Output Power(KDB 789033, Method SA-1, Method SA-2)
Multiple Transmitter Output (KDB 662911 D01, D02)
RSS-GEN Issue 4 6.12

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 1 MHz
- b) VBW $\geq 3 \times$ RBW
- c) Sweep time = auto
- d) Detector = power averaging (rms)
- e) Trace mode = Average at least 100
- f) Duty cycle factor = $10\log(1/x)$

Test mode	Duty Cycle Factor (dB)
802.11a	0.11
802.11n_HT20	0.00
802.11n_HT40	0.10
802.11ac_VHT20	0.00
802.11ac_VHT40	0.09
802.11ac_VHT80	0.24
802.11ac_VHT160	0.11



CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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 CTK-2018-02348
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Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 2A	802.11a/n/ac	ANT0	7.91	22.09
			ANT1	7.89	22.11
			ANT2	7.85	22.15
			ANT3	7.93	22.07
	UNII 2C		ANT0	7.91	22.09
			ANT1	7.89	22.11
			ANT2	7.85	22.15
			ANT3	7.93	22.07
MIMO (2Tx)	UNII 2A	802.11a/n/ac	ANT0 + ANT1	10.91	19.09
	UNII 2C				
MIMO (3Tx)	UNII 2A	802.11a/n/ac	ANT0 + ANT1 + ANT2	12.65	17.35
	UNII 2C				
MIMO (4Tx)	UNII 2A	802.11a/n/ac	ANT0 + ANT1 + ANT2 + ANT3	13.92	16.08
	UNII 2C				

Test Data

ANTO

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	6.80	0.11	6.91	22.09	15.18
	5 300	6.53	0.11	6.64	22.09	15.45
	5 320	6.03	0.11	6.14	22.09	15.95
	5 500	3.43	0.11	3.54	22.09	18.55
	5 600	6.41	0.11	6.52	22.09	15.57
	5 720	5.67	0.11	5.78	22.09	16.31
802.11n _HT20	5 260	7.14	0.00	7.14	22.09	14.95
	5 300	6.86	0.00	6.86	22.09	15.23
	5 320	6.26	0.00	6.26	22.09	15.83
	5 500	4.33	0.00	4.33	22.09	17.76
	5 600	7.22	0.00	7.22	22.09	14.87
	5 720	6.56	0.00	6.56	22.09	15.53
802.11ac _VHT20	5 260	7.34	0.00	7.34	22.09	14.75
	5 300	7.04	0.00	7.04	22.09	15.05
	5 320	6.51	0.00	6.51	22.09	15.58
	5 500	4.47	0.00	4.47	22.09	17.62
	5 600	7.37	0.00	7.37	22.09	14.72
	5 720	6.66	0.00	6.66	22.09	15.43
802.11n _HT40	5 270	9.11	0.10	9.21	22.09	12.88
	5 310	8.47	0.10	8.57	22.09	13.52
	5 510	6.27	0.10	6.37	22.09	15.72
	5 590	8.74	0.10	8.84	22.09	13.25
	5 710	8.10	0.10	8.20	22.09	13.89
802.11ac _VHT40	5 270	9.13	0.09	9.22	22.09	12.87
	5 310	8.54	0.09	8.63	22.09	13.46
	5 510	6.27	0.09	6.36	22.09	15.73
	5 590	8.89	0.09	8.98	22.09	13.11
	5 710	8.25	0.09	8.34	22.09	13.75
802.11ac _VHT80	5 290	8.93	0.23	9.16	22.09	12.93
	5 530	7.62	0.24	7.86	22.09	14.23
	5 690	9.25	0.24	9.49	22.09	12.60
Measurement uncertainty		± 1.5 dB				



ANT1

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	6.09	0.11	6.2	22.11	15.91
	5 300	6.58	0.11	6.69	22.11	15.42
	5 320	6.28	0.11	6.39	22.11	15.72
	5 500	4.00	0.11	4.11	22.11	18.00
	5 600	5.96	0.11	6.07	22.11	16.04
	5 720	6.81	0.11	6.92	22.11	15.19
802.11n _HT20	5 260	6.93	0.00	6.93	22.11	15.18
	5 300	7.34	0.00	7.34	22.11	14.77
	5 320	7.10	0.00	7.10	22.11	15.01
	5 500	4.79	0.00	4.79	22.11	17.32
	5 600	6.82	0.00	6.82	22.11	15.29
	5 720	7.64	0.00	7.64	22.11	14.47
802.11ac _VHT20	5 260	6.80	0.00	6.80	22.11	15.31
	5 300	7.30	0.00	7.30	22.11	14.81
	5 320	7.10	0.00	7.10	22.11	15.01
	5 500	4.72	0.00	4.72	22.11	17.39
	5 600	6.76	0.00	6.76	22.11	15.35
	5 720	7.60	0.00	7.60	22.11	14.51
802.11n _HT40	5 270	8.40	0.10	8.50	22.11	13.61
	5 310	8.54	0.10	8.64	22.11	13.47
	5 510	6.05	0.10	6.15	22.11	15.96
	5 590	7.54	0.10	7.64	22.11	14.47
	5 710	8.60	0.10	8.70	22.11	13.41
802.11ac _VHT40	5 270	8.23	0.09	8.32	22.11	13.79
	5 310	8.43	0.09	8.52	22.11	13.59
	5 510	5.98	0.09	6.07	22.11	16.04
	5 590	7.59	0.09	7.68	22.11	14.43
	5 710	8.65	0.09	8.74	22.11	13.37
802.11ac _VHT80	5 290	8.60	0.23	8.83	22.11	13.28
	5 530	6.55	0.24	6.79	22.11	15.32
	5 690	8.94	0.24	9.18	22.11	12.93
Measurement uncertainty		± 1.5 dB				



ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	6.66	0.11	6.77	22.15	15.38
	5 300	7.55	0.11	7.66	22.15	14.49
	5 320	7.25	0.11	7.36	22.15	14.79
	5 500	4.42	0.11	4.53	22.15	17.62
	5 600	6.13	0.11	6.24	22.15	15.91
	5 720	7.34	0.11	7.45	22.15	14.70
802.11n _HT20	5 260	6.38	0.00	6.38	22.15	15.77
	5 300	7.21	0.00	7.21	22.15	14.94
	5 320	6.83	0.00	6.83	22.15	15.32
	5 500	4.47	0.00	4.47	22.15	17.68
	5 600	6.37	0.00	6.37	22.15	15.78
	5 720	7.41	0.00	7.41	22.15	14.74
802.11ac _VHT20	5 260	6.32	0.00	6.32	22.15	15.83
	5 300	7.17	0.00	7.17	22.15	14.98
	5 320	6.77	0.00	6.77	22.15	15.38
	5 500	4.44	0.00	4.44	22.15	17.71
	5 600	6.39	0.00	6.39	22.15	15.76
	5 720	7.38	0.00	7.38	22.15	14.77
802.11n _HT40	5 270	8.40	0.10	8.50	22.15	13.65
	5 310	9.12	0.10	9.22	22.15	12.93
	5 510	6.24	0.10	6.34	22.15	15.81
	5 590	7.77	0.10	7.87	22.15	14.28
	5 710	8.93	0.10	9.03	22.15	13.12
802.11ac _VHT40	5 270	8.35	0.09	8.44	22.15	13.71
	5 310	9.03	0.09	9.12	22.15	13.03
	5 510	6.21	0.09	6.30	22.15	15.85
	5 590	7.79	0.09	7.88	22.15	14.27
	5 710	8.95	0.09	9.04	22.15	13.11
802.11ac _VHT80	5 290	8.87	0.23	9.10	22.15	13.05
	5 530	6.62	0.24	6.86	22.15	15.29
	5 690	8.93	0.24	9.17	22.15	12.98
Measurement uncertainty		± 1.5 dB				



ANT3

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	7.05	0.11	7.16	22.07	14.91
	5 300	6.72	0.11	6.83	22.07	15.24
	5 320	5.89	0.11	6.00	22.07	16.07
	5 500	4.20	0.11	4.31	22.07	17.76
	5 600	6.70	0.11	6.81	22.07	15.26
	5 720	6.24	0.11	6.35	22.07	15.72
802.11n _HT20	5 260	7.20	0.00	7.20	22.07	14.87
	5 300	6.85	0.00	6.85	22.07	15.22
	5 320	6.13	0.00	6.13	22.07	15.94
	5 500	4.84	0.00	4.84	22.07	17.23
	5 600	7.51	0.00	7.51	22.07	14.56
	5 720	7.09	0.00	7.09	22.07	14.98
802.11ac _VHT20	5 260	7.36	0.00	7.36	22.07	14.71
	5 300	7.09	0.00	7.09	22.07	14.98
	5 320	6.32	0.00	6.32	22.07	15.75
	5 500	4.94	0.00	4.94	22.07	17.13
	5 600	7.57	0.00	7.57	22.07	14.50
	5 720	7.10	0.00	7.10	22.07	14.97
802.11n _HT40	5 270	9.27	0.10	9.37	22.07	12.70
	5 310	8.64	0.10	8.74	22.07	13.33
	5 510	6.82	0.10	6.92	22.07	15.15
	5 590	9.07	0.10	9.17	22.07	12.90
	5 710	8.70	0.10	8.80	22.07	13.27
802.11ac _VHT40	5 270	9.13	0.09	9.22	22.07	12.85
	5 310	8.55	0.09	8.64	22.07	13.43
	5 510	6.76	0.09	6.85	22.07	15.22
	5 590	9.02	0.09	9.11	22.07	12.96
	5 710	8.68	0.09	8.77	22.07	13.30
802.11ac _VHT80	5 290	9.22	0.23	9.45	22.07	12.62
	5 530	8.02	0.24	8.26	22.07	13.81
	5 690	9.32	0.24	9.56	22.07	12.51
Measurement uncertainty		± 1.5 dB				



ANTO+ANT1

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	9.47	0.11	9.58	19.09	9.51
	5 300	9.57	0.11	9.68	19.09	9.41
	5 320	9.17	0.11	9.28	19.09	9.81
	5 500	6.73	0.11	6.84	19.09	12.25
	5 600	9.20	0.11	9.31	19.09	9.78
	5 720	9.29	0.11	9.40	19.09	9.69
802.11n _HT20	5 260	10.05	0.00	10.05	19.09	9.04
	5 300	10.12	0.00	10.12	19.09	8.97
	5 320	9.71	0.00	9.71	19.09	9.38
	5 500	7.58	0.00	7.58	19.09	11.51
	5 600	10.03	0.00	10.03	19.09	9.06
	5 720	10.14	0.00	10.14	19.09	8.95
802.11ac _VHT20	5 260	10.09	0.00	10.09	19.09	9.00
	5 300	10.18	0.00	10.18	19.09	8.91
	5 320	9.83	0.00	9.83	19.09	9.26
	5 500	7.61	0.00	7.61	19.09	11.48
	5 600	10.09	0.00	10.09	19.09	9.00
	5 720	10.17	0.00	10.17	19.09	8.92
802.11n _HT40	5 270	11.78	0.10	11.88	19.09	7.21
	5 310	11.52	0.10	11.62	19.09	7.47
	5 510	9.17	0.10	9.27	19.09	9.82
	5 590	11.19	0.10	11.29	19.09	7.80
	5 710	11.37	0.10	11.47	19.09	7.62
802.11ac _VHT40	5 270	11.71	0.09	11.80	19.09	7.29
	5 310	11.50	0.09	11.59	19.09	7.50
	5 510	9.14	0.09	9.23	19.09	9.86
	5 590	11.30	0.09	11.39	19.09	7.70
	5 710	11.46	0.09	11.55	19.09	7.54
802.11ac _VHT80	5 290	11.78	0.23	12.01	19.09	7.08
	5 530	10.13	0.24	10.37	19.09	8.72
	5 690	12.11	0.24	12.35	19.09	6.74
Measurement uncertainty		± 1.5 dB				



ANTO+ANT1+ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	11.30	0.11	11.41	17.35	5.94
	5 300	11.68	0.11	11.79	17.35	5.56
	5 320	11.32	0.11	11.43	17.35	5.92
	5 500	8.74	0.11	8.85	17.35	8.50
	5 600	10.94	0.11	11.05	17.35	6.30
	5 720	11.43	0.11	11.54	17.35	5.81
802.11n _HT20	5 260	11.60	0.00	11.60	17.35	5.75
	5 300	11.91	0.00	11.91	17.35	5.44
	5 320	11.52	0.00	11.52	17.35	5.83
	5 500	9.31	0.00	9.31	17.35	8.04
	5 600	11.59	0.00	11.59	17.35	5.76
	5 720	12.00	0.00	12.00	17.35	5.35
802.11ac _VHT20	5 260	11.61	0.00	11.61	17.35	5.74
	5 300	11.94	0.00	11.94	17.35	5.41
	5 320	11.57	0.00	11.57	17.35	5.78
	5 500	9.32	0.00	9.32	17.35	8.03
	5 600	11.63	0.00	11.63	17.35	5.72
	5 720	12.00	0.00	12.00	17.35	5.35
802.11n _HT40	5 270	13.42	0.10	13.52	17.35	3.83
	5 310	13.49	0.10	13.59	17.35	3.76
	5 510	10.96	0.10	11.06	17.35	6.29
	5 590	12.82	0.10	12.92	17.35	4.43
	5 710	13.33	0.10	13.43	17.35	3.92
802.11ac _VHT40	5 270	13.36	0.09	13.45	17.35	3.90
	5 310	13.45	0.09	13.54	17.35	3.81
	5 510	10.93	0.09	11.02	17.35	6.33
	5 590	12.90	0.09	12.99	17.35	4.36
	5 710	13.40	0.09	13.49	17.35	3.86
802.11ac _VHT80	5 290	13.57	0.23	13.80	17.35	3.55
	5 530	11.73	0.24	11.97	17.35	5.38
	5 690	13.81	0.24	14.05	17.35	3.30
Measurement uncertainty		± 1.5 dB				



ANTO+ANT1+ANT2+ANT3

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	12.68	0.11	12.79	16.08	3.29
	5 300	12.89	0.11	13.00	16.08	3.08
	5 320	12.42	0.11	12.53	16.08	3.55
	5 500	10.05	0.11	10.16	16.08	5.92
	5 600	12.33	0.11	12.44	16.08	3.64
	5 720	12.58	0.11	12.69	16.08	3.39
802.11n _HT20	5 260	12.94	0.00	12.94	16.08	3.14
	5 300	13.09	0.00	13.09	16.08	2.99
	5 320	12.62	0.00	12.62	16.08	3.46
	5 500	10.63	0.00	10.63	16.08	5.45
	5 600	13.02	0.00	13.02	16.08	3.06
	5 720	13.21	0.00	13.21	16.08	2.87
802.11ac _VHT20	5 260	13.00	0.00	13.00	16.08	3.08
	5 300	13.17	0.00	13.17	16.08	2.91
	5 320	12.71	0.00	12.71	16.08	3.37
	5 500	10.67	0.00	10.67	16.08	5.41
	5 600	13.07	0.00	13.07	16.08	3.01
	5 720	13.22	0.00	13.22	16.08	2.86
802.11n _HT40	5 270	14.83	0.10	14.93	16.08	1.15
	5 310	14.72	0.10	14.82	16.08	1.26
	5 510	12.38	0.10	12.48	16.08	3.60
	5 590	14.35	0.10	14.45	16.08	1.63
	5 710	14.61	0.10	14.71	16.08	1.37
802.11ac _VHT40	5 270	14.75	0.09	14.84	16.08	1.24
	5 310	14.66	0.09	14.75	16.08	1.33
	5 510	12.34	0.09	12.43	16.08	3.65
	5 590	14.39	0.09	14.48	16.08	1.60
	5 710	14.66	0.09	14.75	16.08	1.33
802.11ac _VHT80	5 290	14.93	0.23	15.16	16.08	0.92
	5 530	13.27	0.24	13.51	16.08	2.57
	5 690	15.13	0.24	15.37	16.08	0.71
Measurement uncertainty		± 1.5 dB				



ANTO + ANT2_1TX

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ac_VHT160	5 250	11.87	0.11	11.98	19.09	7.11
	5 570	12.09	0.11	12.20	19.09	6.89
Measurement uncertainty		± 1.5 dB				

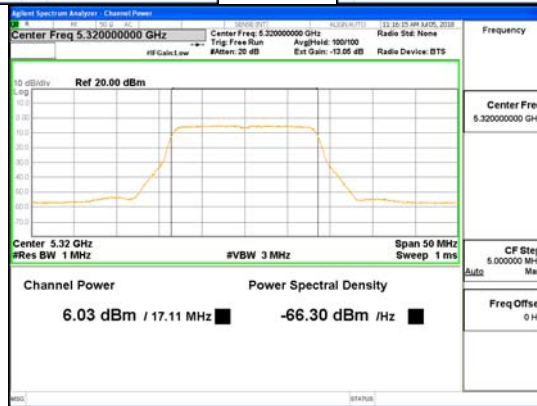
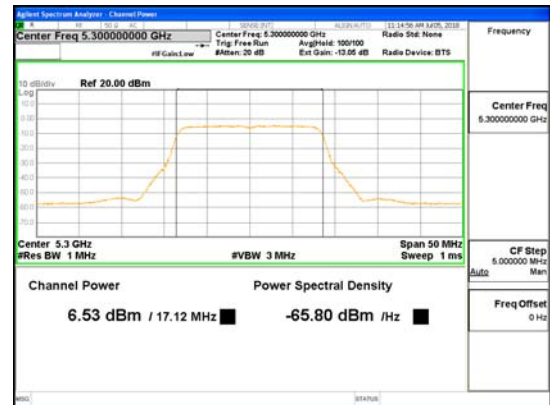
ANT1 + ANT3_1TX

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ac_VHT160	5 250	12.31	0.11	12.42	19.09	6.67
	5 570	12.47	0.11	12.58	19.09	6.51
Measurement uncertainty		± 1.5 dB				

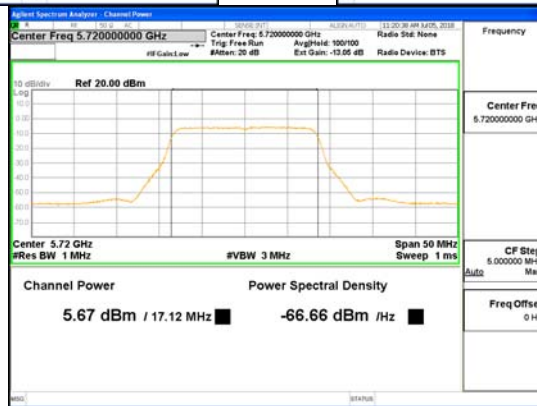
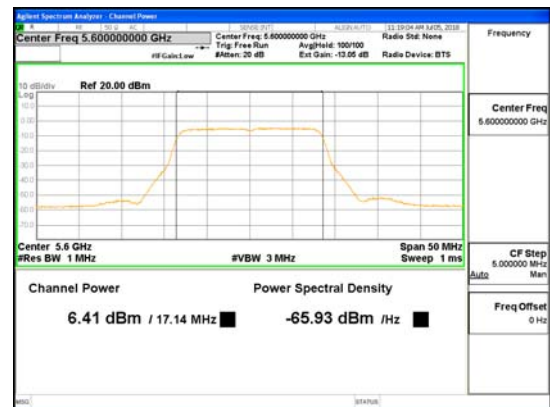
ANTO + ANT1 + ANT2 + ANT3_2TX

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ac_VHT160	5 250	15.11	0.11	15.22	16.08	0.86
	5 570	15.29	0.11	15.40	16.08	0.68
Measurement uncertainty		± 1.5 dB				

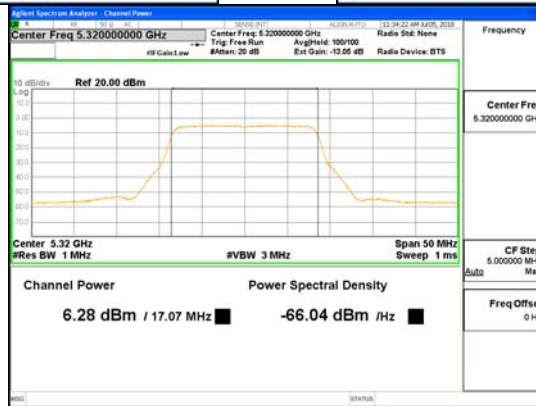
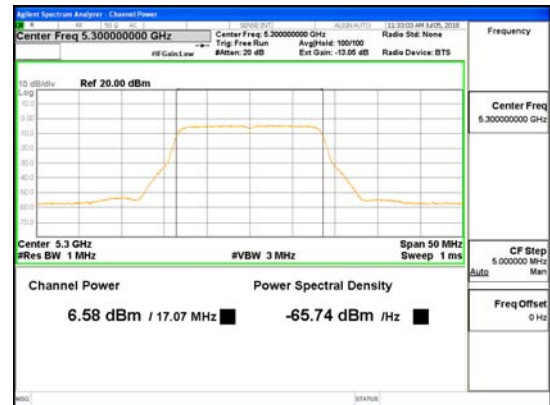
See next pages for actual measured spectrum plots.



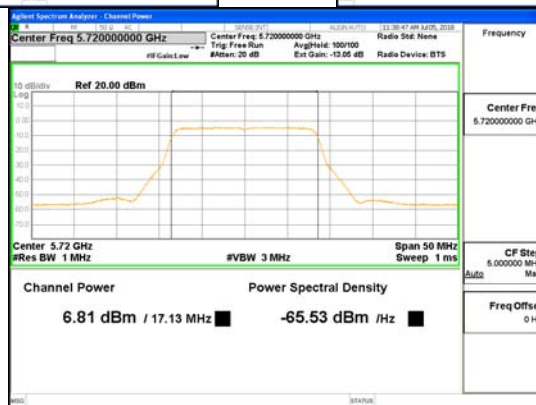
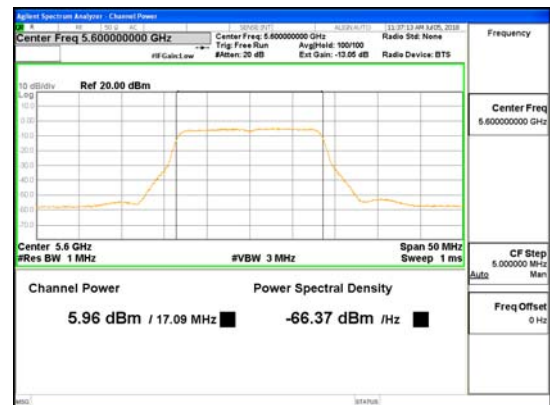
ANTO_802.11a_UNI I 2A



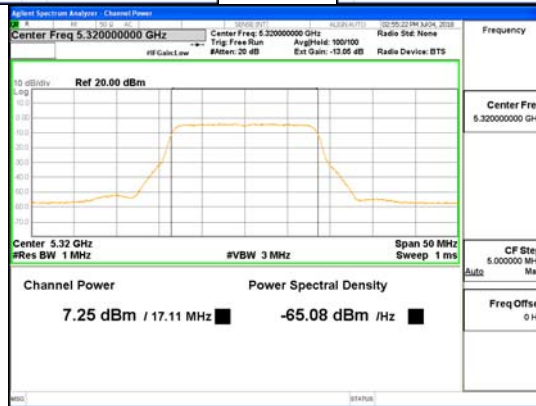
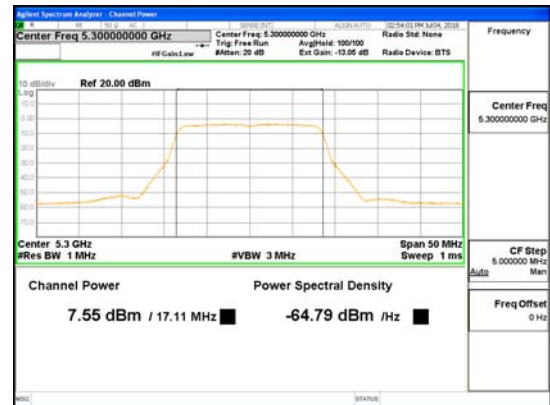
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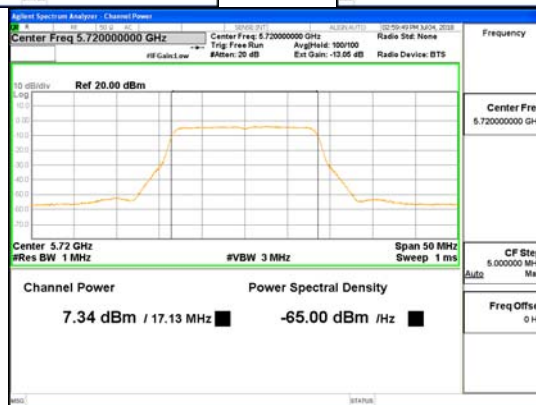
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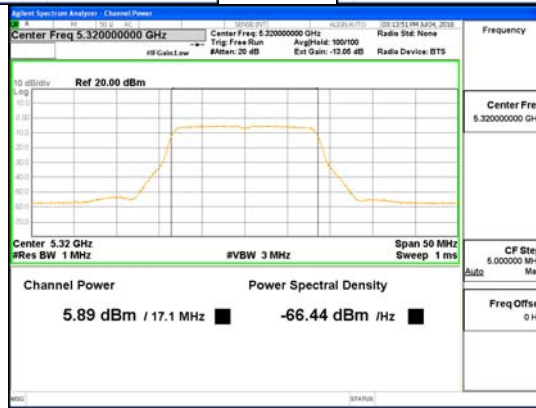
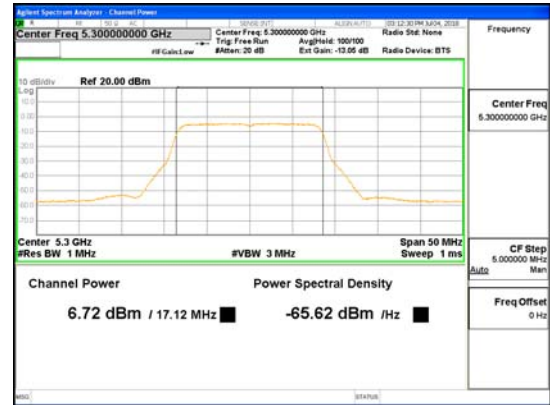
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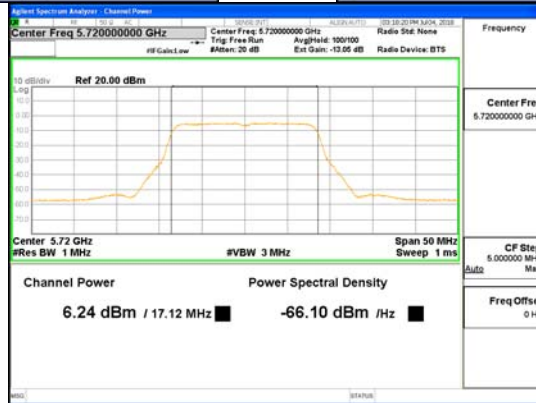
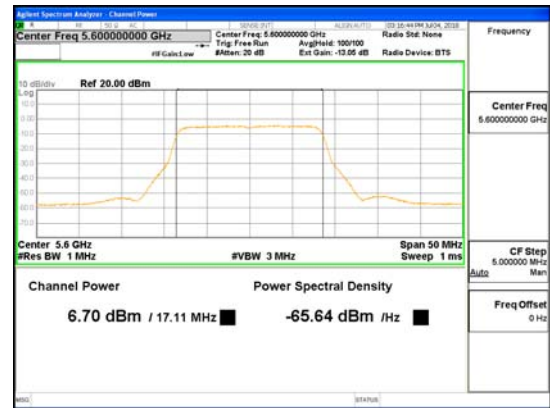
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ANT2_802.11a_UNI I 2C



ANT3_802.11a_UNI I 2A

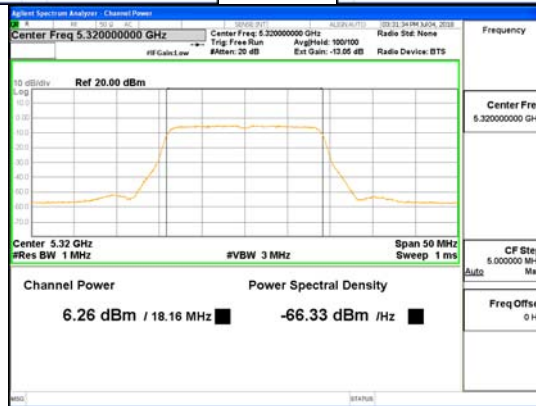
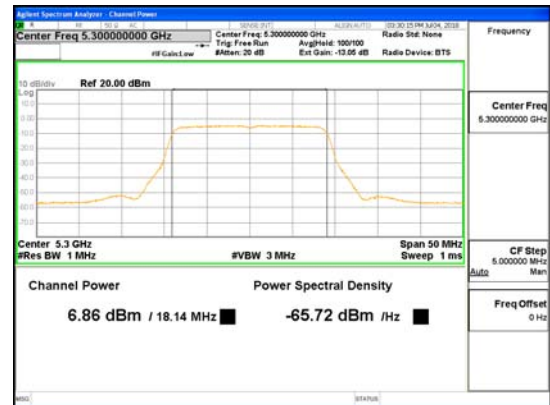


ANT3_802.11a_UNI I 2C



CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

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ANTO_802.11n_HT20_UNI I 2A

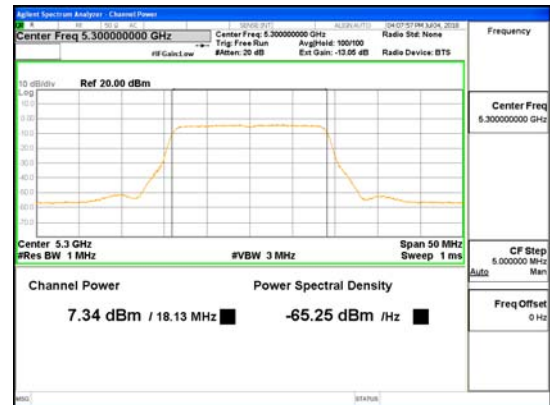


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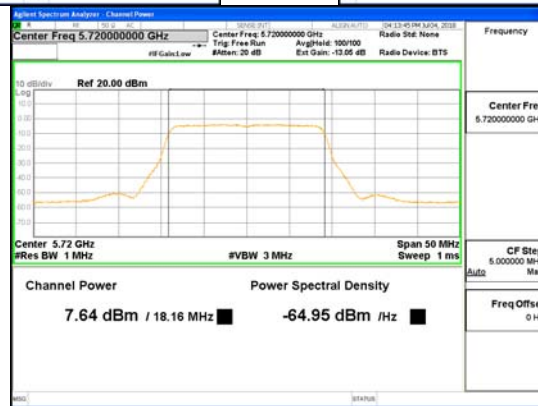


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

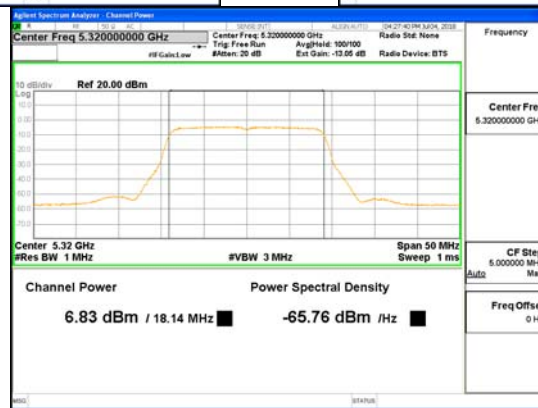
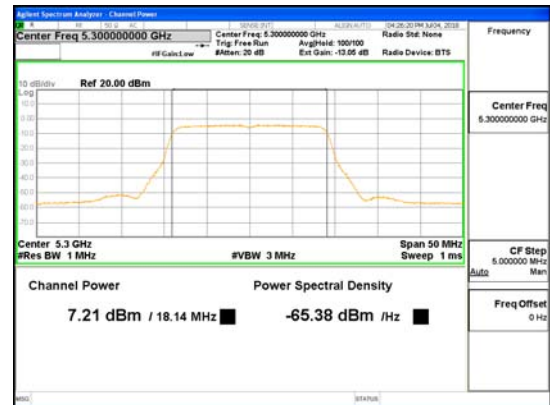
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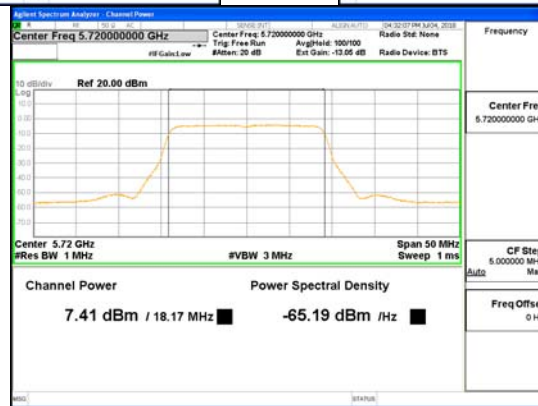
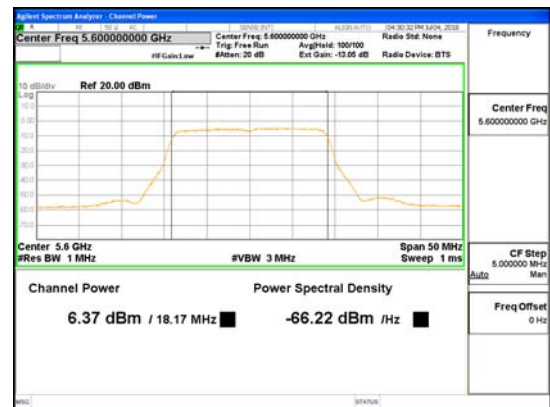
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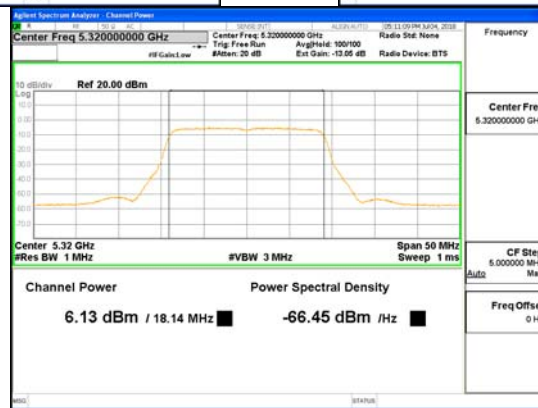
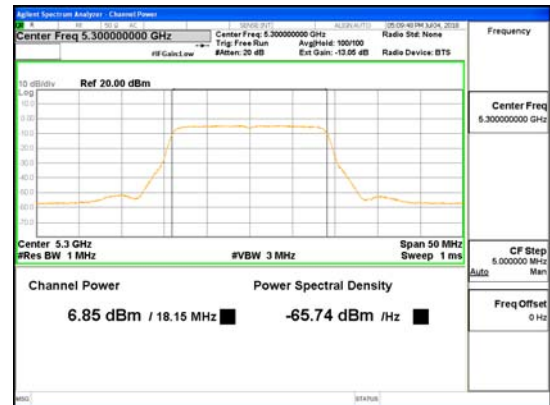
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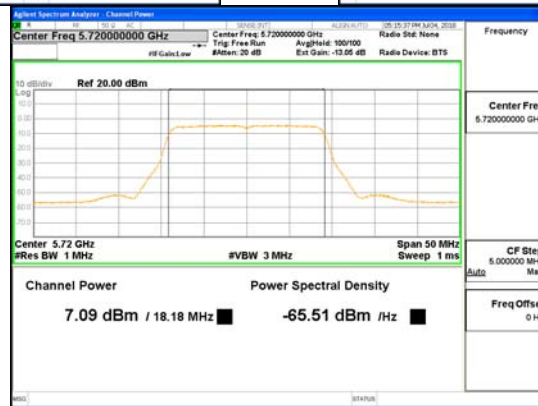
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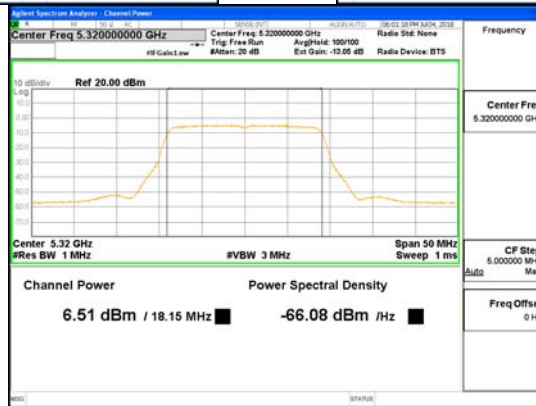
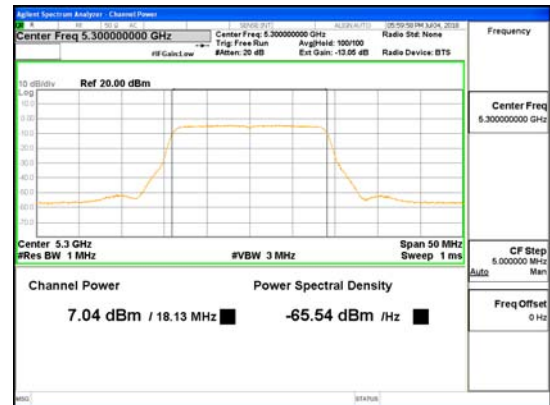
ANT2_802.11n_HT20_UNI I 2C



ANT3_802.11n_HT20_UNII 2A



ANT3_802.11n_HT20_UNII 2C



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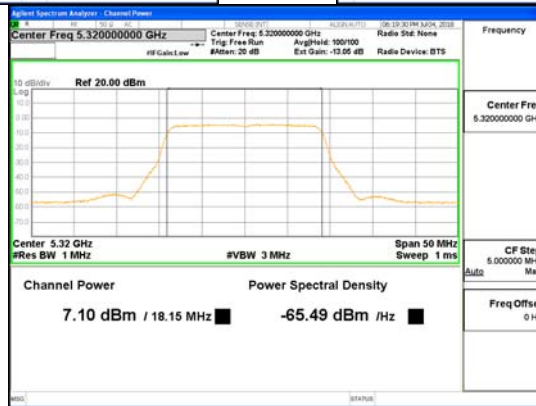
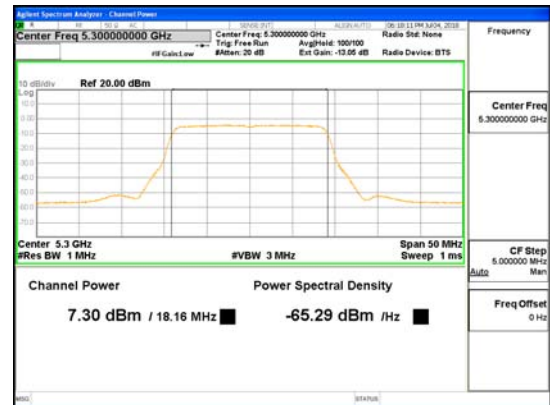


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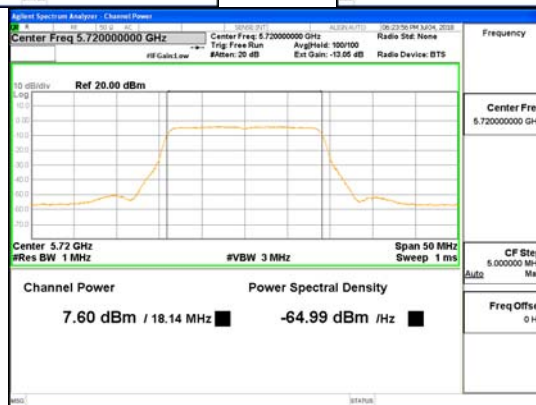
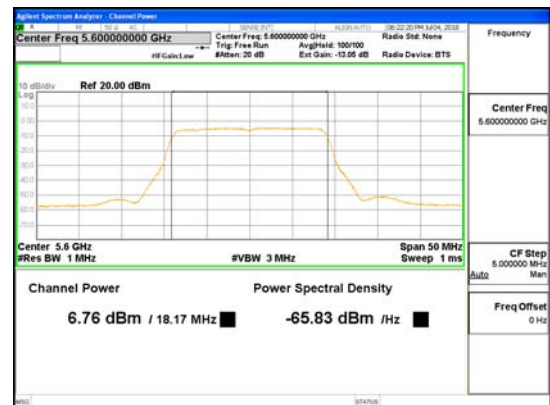


CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

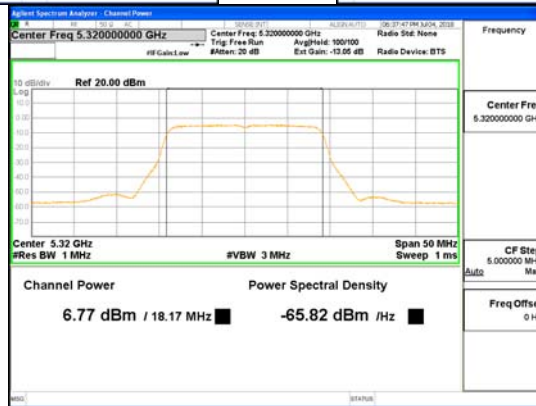
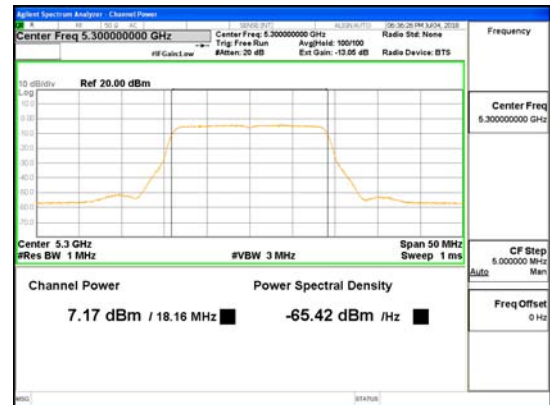
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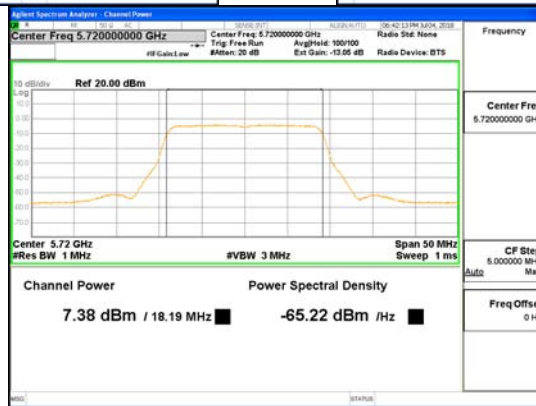
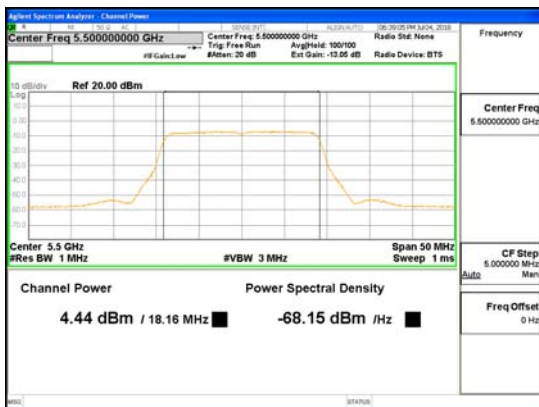
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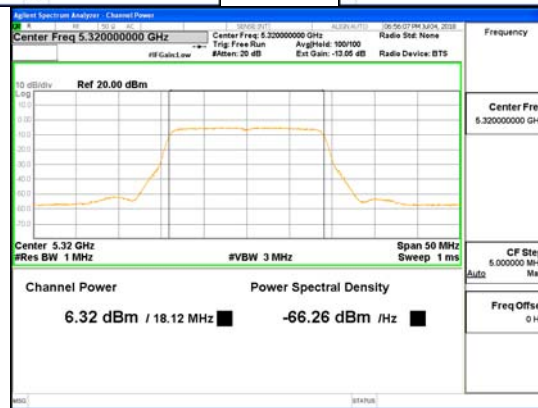
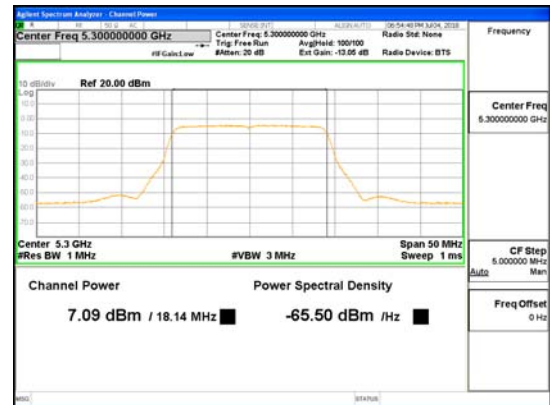
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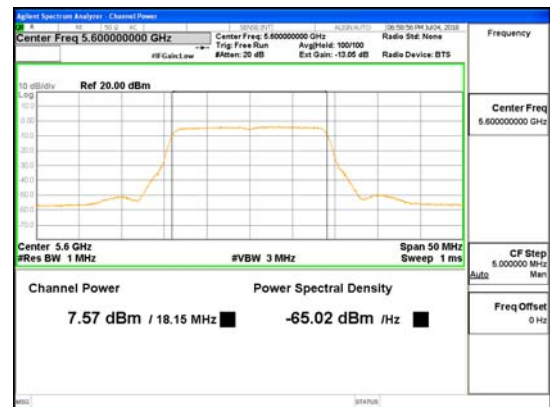
ANT2_802.11ac_VHT20_UNII 2A



ANT2_802.11ac_VHT20_UNII 2C



ANT3_802.11ac_VHT20_UNII 2A



ANT3_802.11ac_VHT20_UNII 2C



CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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ANTO_802.11n_HT40_UNII 2A

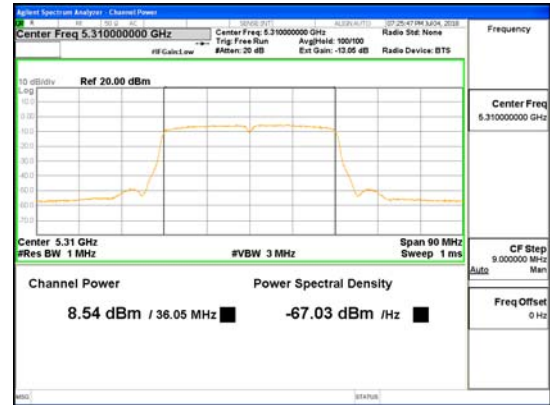


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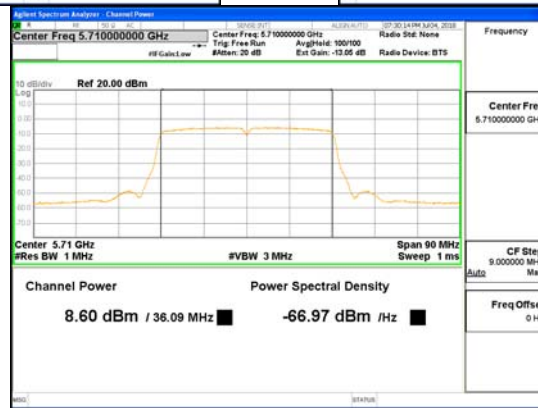


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

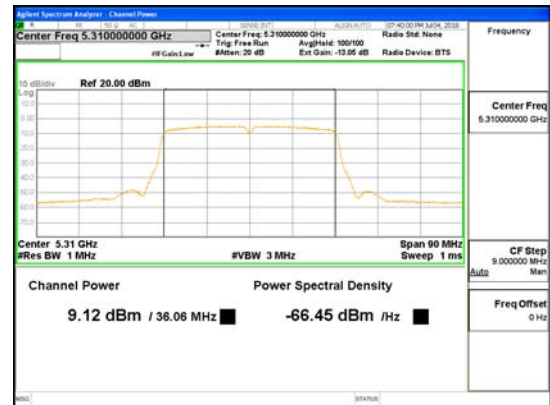
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ANT1_802.11n_HT40_UNII 2A



ANT1_802.11n_HT40_UNII 2C



ANT2_802.11n_HT40_UNII 2A



ANT2_802.11n_HT40_UNII 2C



ANT3_802.11n_HT40_UNII 2A



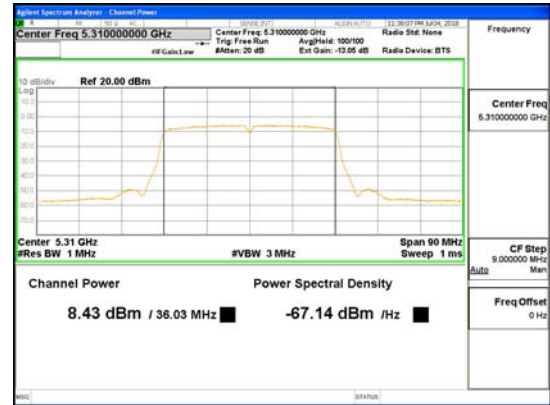
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ANTO_802.11ac_VHT40_UNII 2A



ANTO_802.11ac_VHT40_UNII 2C



ANT1_802.11ac_VHT40_UNII 2A



ANT1_802.11ac_VHT40_UNII 2C



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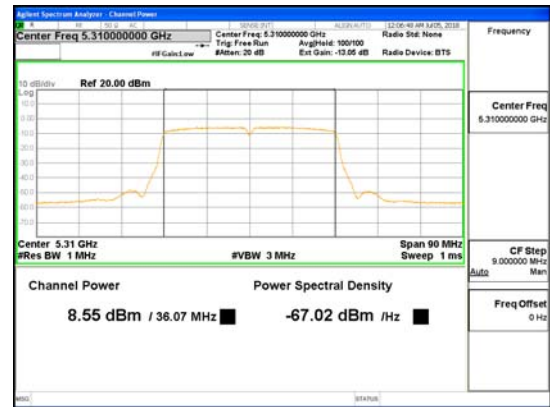


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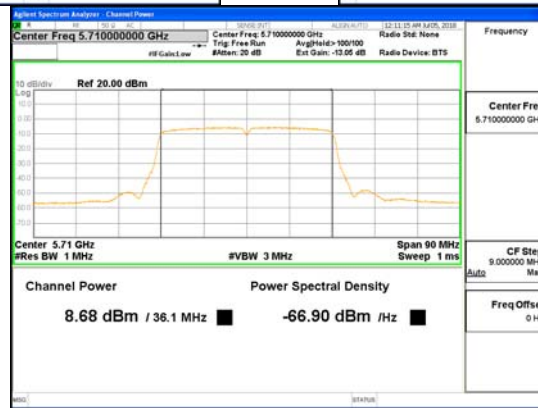


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
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ANT3_802.11ac_VHT40_UNII 2A



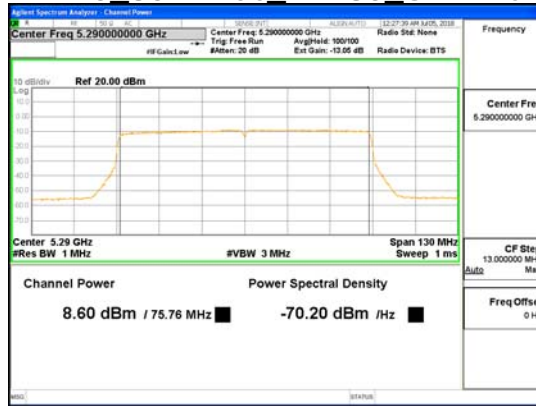
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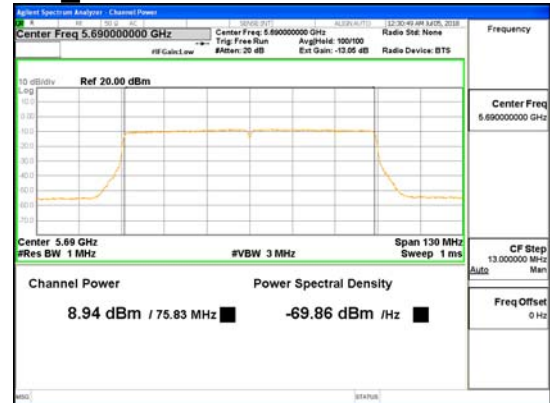
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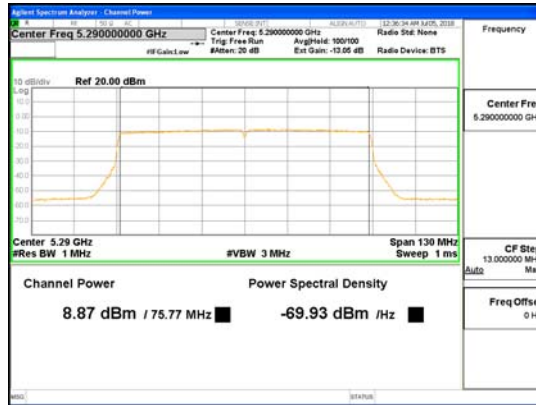
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ANT1_802.11ac_VHT80_UNII 2A



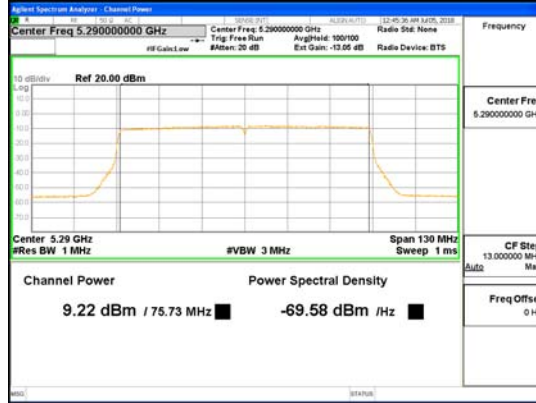
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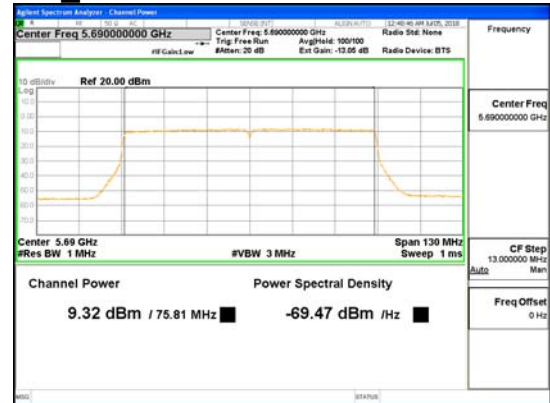
ANT2_802.11ac_VHT80_UNII 2A



ANT2_802.11ac_VHT80_UNII 2C



ANT3_802.11ac_VHT80_UNII 2A



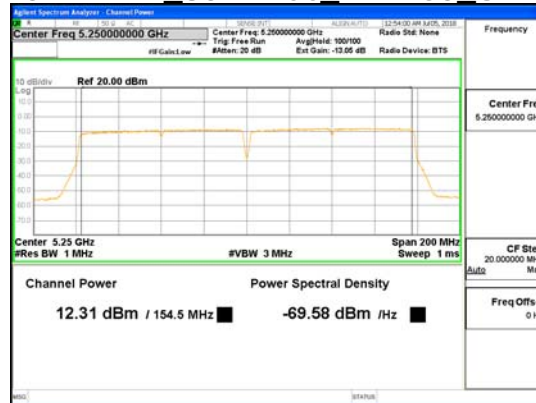
ANT3_802.11ac_VHT80_UNII 2C



ANTO + ANT2_802.11ac_VHT160_UNII 2A



ANTO + ANT2_802.11ac_VHT160_UNII 2C



ANT1 + ANT3_802.11ac_VHT160_UNII 2A



ANT1 + ANT3_802.11ac_VHT160_UNII 2C



4.3 Power Spectral Density

Test Procedures

Maximum Power Spectral Density (KDB 789033, Method SA-1, Method SA-2)
Multiple Transmitter Output (KDB 662911 D01, D02)
RSS-247 Issue 2 5.2(b)

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 1 MHz
- b) VBW = 3 MHz
- c) Sweep time = auto
- d) Detector = power averaging (rms)
- e) Trace mode = Average at least 100
- f) Duty cycle factor = $10\log(1/x)$

Test mode	Duty Cycle Factor (dB)
802.11a	0.11
802.11n_HT20	0.00
802.11n_HT40	0.10
802.11ac_VHT20	0.00
802.11ac_VHT40	0.09
802.11ac_VHT80	0.24
802.11ac_VHT160	0.11



CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 2A	802.11a/n/ac	ANT0	7.91	9.09
			ANT1	7.89	9.11
			ANT2	7.85	9.15
			ANT3	7.93	9.07
	UNII 2C		ANT0	7.91	9.09
			ANT1	7.89	9.11
			ANT2	7.85	9.15
			ANT3	7.93	9.07
MIMO (2Tx)	UNII 2A	802.11a/n/ac	ANT0 + ANT1	10.91	6.09
	UNII 2C				
MIMO (3Tx)	UNII 2A	802.11a/n/ac	ANT0 + ANT1 + ANT2	12.65	4.35
	UNII 2C				
MIMO (4Tx)	UNII 2A	802.11a/n/ac	ANT0 + ANT1 + ANT2 + ANT3	13.92	3.08
	UNII 2C				



Test Data

ANTO

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	-4.30	0.11	-4.19	9.09	13.28
	5 300	-4.63	0.11	-4.52	9.09	13.61
	5 320	-5.07	0.11	-4.96	9.09	14.05
	5 500	-7.49	0.11	-7.38	9.09	16.47
	5 600	-4.65	0.11	-4.54	9.09	13.63
	5 720	-5.60	0.11	-5.49	9.09	14.58
802.11n _HT20	5 260	-4.09	0.00	-4.09	9.09	13.18
	5 300	-4.44	0.00	-4.44	9.09	13.53
	5 320	-5.04	0.00	-5.04	9.09	14.13
	5 500	-6.96	0.00	-6.96	9.09	16.05
	5 600	-3.91	0.00	-3.91	9.09	13.00
	5 720	-4.91	0.00	-4.91	9.09	14.00
802.11ac _VHT20	5 260	-3.75	0.00	-3.75	9.09	12.84
	5 300	-4.36	0.00	-4.36	9.09	13.45
	5 320	-4.77	0.00	-4.77	9.09	13.86
	5 500	-6.84	0.00	-6.84	9.09	15.93
	5 600	-3.83	0.00	-3.83	9.09	12.92
	5 720	-4.77	0.00	-4.77	9.09	13.86
802.11n _HT40	5 270	-5.09	0.10	-4.99	9.09	14.08
	5 310	-5.84	0.10	-5.74	9.09	14.83
	5 510	-7.84	0.10	-7.74	9.09	16.83
	5 590	-5.29	0.10	-5.19	9.09	14.28
	5 710	-6.07	0.10	-5.97	9.09	15.06
802.11ac _VHT40	5 270	-5.01	0.09	-4.92	9.09	14.01
	5 310	-5.86	0.09	-5.77	9.09	14.86
	5 510	-7.77	0.09	-7.68	9.09	16.77
	5 590	-5.02	0.09	-4.93	9.09	14.02
	5 710	-5.69	0.09	-5.60	9.09	14.69
802.11ac _VHT80	5 290	-8.39	0.23	-8.16	9.09	17.25
	5 530	-9.37	0.24	-9.13	9.09	18.22
	5 690	-8.07	0.24	-7.83	9.09	16.92
Measurement uncertainty		± 1.5 dB				



ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	-4.88	0.11	-4.77	9.11	13.88
	5 300	-4.50	0.11	-4.39	9.11	13.50
	5 320	-4.87	0.11	-4.76	9.11	13.87
	5 500	-6.98	0.11	-6.87	9.11	15.98
	5 600	-4.97	0.11	-4.86	9.11	13.97
	5 720	-4.35	0.11	-4.24	9.11	13.35
802.11n _HT20	5 260	-4.42	0.00	-4.42	9.11	13.53
	5 300	-4.16	0.00	-4.16	9.11	13.27
	5 320	-4.32	0.00	-4.32	9.11	13.43
	5 500	-6.43	0.00	-6.43	9.11	15.54
	5 600	-4.32	0.00	-4.32	9.11	13.43
	5 720	-3.68	0.00	-3.68	9.11	12.79
802.11ac _VHT20	5 260	-4.52	0.00	-4.52	9.11	13.63
	5 300	-4.02	0.00	-4.02	9.11	13.13
	5 320	-4.31	0.00	-4.31	9.11	13.42
	5 500	-6.57	0.00	-6.57	9.11	15.68
	5 600	-4.51	0.00	-4.51	9.11	13.62
	5 720	-3.82	0.00	-3.82	9.11	12.93
802.11n _HT40	5 270	-5.71	0.10	-5.61	9.11	14.72
	5 310	-5.62	0.10	-5.52	9.11	14.63
	5 510	-7.97	0.10	-7.87	9.11	16.98
	5 590	-6.45	0.10	-6.35	9.11	15.46
	5 710	-5.57	0.10	-5.47	9.11	14.58
802.11ac _VHT40	5 270	-5.90	0.09	-5.81	9.11	14.92
	5 310	-5.81	0.09	-5.72	9.11	14.83
	5 510	-7.96	0.09	-7.87	9.11	16.98
	5 590	-6.18	0.09	-6.09	9.11	15.20
	5 710	-5.41	0.09	-5.32	9.11	14.43
802.11ac _VHT80	5 290	-8.83	0.23	-8.60	9.11	17.71
	5 530	-10.40	0.24	-10.16	9.11	19.27
	5 690	-8.24	0.24	-8.00	9.11	17.11
Measurement uncertainty		± 1.5 dB				



ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	-4.28	0.11	-4.17	9.15	13.32
	5 300	-3.60	0.11	-3.49	9.15	12.64
	5 320	-3.91	0.11	-3.80	9.15	12.95
	5 500	-6.65	0.11	-6.54	9.15	15.69
	5 600	-4.67	0.11	-4.56	9.15	13.71
	5 720	-3.73	0.11	-3.62	9.15	12.77
802.11n _HT20	5 260	-4.89	0.00	-4.89	9.15	14.04
	5 300	-4.11	0.00	-4.11	9.15	13.26
	5 320	-4.56	0.00	-4.56	9.15	13.71
	5 500	-6.87	0.00	-6.87	9.15	16.02
	5 600	-4.83	0.00	-4.83	9.15	13.98
	5 720	-3.97	0.00	-3.97	9.15	13.12
802.11ac _VHT20	5 260	-4.94	0.00	-4.94	9.15	14.09
	5 300	-4.18	0.00	-4.18	9.15	13.33
	5 320	-4.64	0.00	-4.64	9.15	13.79
	5 500	-6.95	0.00	-6.95	9.15	16.10
	5 600	-4.74	0.00	-4.74	9.15	13.89
	5 720	-3.97	0.00	-3.97	9.15	13.12
802.11n _HT40	5 270	-5.57	0.10	-5.47	9.15	14.62
	5 310	-5.04	0.10	-4.94	9.15	14.09
	5 510	-7.88	0.10	-7.78	9.15	16.93
	5 590	-6.00	0.10	-5.90	9.15	15.05
	5 710	-5.07	0.10	-4.97	9.15	14.12
802.11ac _VHT40	5 270	-5.72	0.09	-5.63	9.15	14.78
	5 310	-5.21	0.09	-5.12	9.15	14.27
	5 510	-7.79	0.09	-7.70	9.15	16.85
	5 590	-6.02	0.09	-5.93	9.15	15.08
	5 710	-4.97	0.09	-4.88	9.15	14.03
802.11ac _VHT80	5 290	-8.64	0.23	-8.41	9.15	17.56
	5 530	-9.99	0.24	-9.75	9.15	18.90
	5 690	-8.21	0.24	-7.97	9.15	17.12
Measurement uncertainty		± 1.5 dB				



ANT3

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	-3.91	0.11	-3.80	9.07	12.87
	5 300	-4.37	0.11	-4.26	9.07	13.33
	5 320	-5.12	0.11	-5.01	9.07	14.08
	5 500	-6.91	0.11	-6.80	9.07	15.87
	5 600	-4.26	0.11	-4.15	9.07	13.22
	5 720	-4.99	0.11	-4.88	9.07	13.95
802.11n _HT20	5 260	-4.03	0.00	-4.03	9.07	13.10
	5 300	-4.55	0.00	-4.55	9.07	13.62
	5 320	-5.13	0.00	-5.13	9.07	14.20
	5 500	-6.49	0.00	-6.49	9.07	15.56
	5 600	-3.70	0.00	-3.70	9.07	12.77
	5 720	-4.39	0.00	-4.39	9.07	13.46
802.11ac _VHT20	5 260	-3.96	0.00	-3.96	9.07	13.03
	5 300	-4.22	0.00	-4.22	9.07	13.29
	5 320	-5.11	0.00	-5.11	9.07	14.18
	5 500	-6.15	0.00	-6.15	9.07	15.22
	5 600	-3.73	0.00	-3.73	9.07	12.80
	5 720	-4.20	0.00	-4.20	9.07	13.27
802.11n _HT40	5 270	-4.98	0.10	-4.88	9.07	13.95
	5 310	-5.55	0.10	-5.45	9.07	14.52
	5 510	-7.22	0.10	-7.12	9.07	16.19
	5 590	-4.93	0.10	-4.83	9.07	13.90
	5 710	-5.43	0.10	-5.33	9.07	14.40
802.11ac _VHT40	5 270	-5.14	0.09	-5.05	9.07	14.12
	5 310	-5.79	0.09	-5.70	9.07	14.77
	5 510	-7.11	0.09	-7.02	9.07	16.09
	5 590	-5.06	0.09	-4.97	9.07	14.04
	5 710	-5.40	0.09	-5.31	9.07	14.38
802.11ac _VHT80	5 290	-8.05	0.23	-7.82	9.07	16.89
	5 530	-8.83	0.24	-8.59	9.07	17.66
	5 690	-7.94	0.24	-7.70	9.07	16.77
Measurement uncertainty		± 1.5 dB				



ANTO+ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	-1.57	0.11	-1.46	6.09	7.55
	5 300	-1.55	0.11	-1.44	6.09	7.53
	5 320	-1.96	0.11	-1.85	6.09	7.94
	5 500	-4.22	0.11	-4.11	6.09	10.20
	5 600	-1.80	0.11	-1.69	6.09	7.78
	5 720	-1.92	0.11	-1.81	6.09	7.90
802.11n _HT20	5 260	-1.24	0.00	-1.24	6.09	7.33
	5 300	-1.29	0.00	-1.29	6.09	7.38
	5 320	-1.65	0.00	-1.65	6.09	7.74
	5 500	-3.68	0.00	-3.68	6.09	9.77
	5 600	-1.10	0.00	-1.10	6.09	7.19
	5 720	-1.24	0.00	-1.24	6.09	7.33
802.11ac _VHT20	5 260	-1.11	0.00	-1.11	6.09	7.20
	5 300	-1.18	0.00	-1.18	6.09	7.27
	5 320	-1.52	0.00	-1.52	6.09	7.61
	5 500	-3.69	0.00	-3.69	6.09	9.78
	5 600	-1.15	0.00	-1.15	6.09	7.24
	5 720	-1.26	0.00	-1.26	6.09	7.35
802.11n _HT40	5 270	-2.38	0.10	-2.28	6.09	8.37
	5 310	-2.72	0.10	-2.62	6.09	8.71
	5 510	-4.89	0.10	-4.79	6.09	10.88
	5 590	-2.82	0.10	-2.72	6.09	8.81
	5 710	-2.80	0.10	-2.70	6.09	8.79
802.11ac _VHT40	5 270	-2.42	0.09	-2.33	6.09	8.42
	5 310	-2.82	0.09	-2.73	6.09	8.82
	5 510	-4.85	0.09	-4.76	6.09	10.85
	5 590	-2.55	0.09	-2.46	6.09	8.55
	5 710	-2.54	0.09	-2.45	6.09	8.54
802.11ac _VHT80	5 290	-5.59	0.23	-5.36	6.09	11.45
	5 530	-6.84	0.24	-6.60	6.09	12.69
	5 690	-5.14	0.24	-4.90	6.09	10.99
Measurement uncertainty		± 1.5 dB				



ANTO+ANT1+ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	0.29	0.11	0.40	4.35	3.95
	5 300	0.55	0.11	0.66	4.35	3.69
	5 320	0.18	0.11	0.29	4.35	4.06
	5 500	-2.26	0.11	-2.15	4.35	6.50
	5 600	0.01	0.11	0.12	4.35	4.23
	5 720	0.28	0.11	0.39	4.35	3.96
802.11n _HT20	5 260	0.32	0.00	0.32	4.35	4.03
	5 300	0.54	0.00	0.54	4.35	3.81
	5 320	0.14	0.00	0.14	4.35	4.21
	5 500	-1.98	0.00	-1.98	4.35	6.33
	5 600	0.43	0.00	0.43	4.35	3.92
	5 720	0.62	0.00	0.62	4.35	3.73
802.11ac _VHT20	5 260	0.40	0.00	0.40	4.35	3.95
	5 300	0.59	0.00	0.59	4.35	3.76
	5 320	0.20	0.00	0.20	4.35	4.15
	5 500	-2.01	0.00	-2.01	4.35	6.36
	5 600	0.43	0.00	0.43	4.35	3.92
	5 720	0.60	0.00	0.60	4.35	3.75
802.11n _HT40	5 270	-0.68	0.10	-0.58	4.35	4.93
	5 310	-0.72	0.10	-0.62	4.35	4.97
	5 510	-3.13	0.10	-3.03	4.35	7.38
	5 590	-1.12	0.10	-1.02	4.35	5.37
	5 710	-0.78	0.10	-0.68	4.35	5.03
802.11ac _VHT40	5 270	-0.75	0.09	-0.66	4.35	5.01
	5 310	-0.85	0.09	-0.76	4.35	5.11
	5 510	-3.07	0.09	-2.98	4.35	7.33
	5 590	-0.94	0.09	-0.85	4.35	5.20
	5 710	-0.58	0.09	-0.49	4.35	4.84
802.11ac _VHT80	5 290	-3.85	0.23	-3.62	4.35	7.97
	5 530	-5.13	0.24	-4.89	4.35	9.24
	5 690	-3.40	0.24	-3.16	4.35	7.51
Measurement uncertainty		± 1.5 dB				



ANTO+ANT1+ANT2+ANT3

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	1.69	0.11	1.80	3.08	1.28
	5 300	1.76	0.11	1.87	3.08	1.21
	5 320	1.31	0.11	1.42	3.08	1.66
	5 500	-0.98	0.11	-0.87	3.08	3.95
	5 600	1.39	0.11	1.50	3.08	1.58
	5 720	1.41	0.11	1.52	3.08	1.56
802.11n _HT20	5 260	1.68	0.00	1.68	3.08	1.40
	5 300	1.71	0.00	1.71	3.08	1.37
	5 320	1.27	0.00	1.27	3.08	1.81
	5 500	-0.66	0.00	-0.66	3.08	3.74
	5 600	1.85	0.00	1.85	3.08	1.23
	5 720	1.81	0.00	1.81	3.08	1.27
802.11ac _VHT20	5 260	1.75	0.00	1.75	3.08	1.33
	5 300	1.83	0.00	1.83	3.08	1.25
	5 320	1.32	0.00	1.32	3.08	1.76
	5 500	-0.60	0.00	-0.60	3.08	3.68
	5 600	1.84	0.00	1.84	3.08	1.24
	5 720	1.85	0.00	1.85	3.08	1.23
802.11n _HT40	5 270	0.69	0.10	0.79	3.08	2.29
	5 310	0.52	0.10	0.62	3.08	2.46
	5 510	-1.70	0.10	-1.60	3.08	4.68
	5 590	0.39	0.10	0.49	3.08	2.59
	5 710	0.50	0.10	0.60	3.08	2.48
802.11ac _VHT40	5 270	0.59	0.09	0.68	3.08	2.40
	5 310	0.36	0.09	0.45	3.08	2.63
	5 510	-1.62	0.09	-1.53	3.08	4.61
	5 590	0.48	0.09	0.57	3.08	2.51
	5 710	0.66	0.09	0.75	3.08	2.33
802.11ac _VHT80	5 290	-2.45	0.23	-2.22	3.08	5.30
	5 530	-3.59	0.24	-3.35	3.08	6.43
	5 690	-2.09	0.24	-1.85	3.08	4.93
Measurement uncertainty		± 1.5 dB				



Ant0 + Ant2_1TX

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ac_VHT160	5 250	-8.02	0.11	-7.91	6.09	14.00
	5 570	-7.15	0.11	-7.04	6.09	13.13
Measurement uncertainty		± 1.5 dB				

Ant1 + Ant3_1TX

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ac_VHT160	5 250	-7.57	0.11	-7.46	6.09	13.55
	5 570	-6.32	0.11	-6.21	6.09	12.30
Measurement uncertainty		± 1.5 dB				

Ant0 + Ant1 + Ant2 + ANT3_2TX

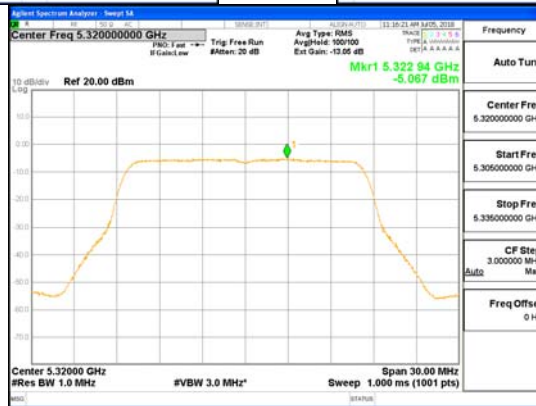
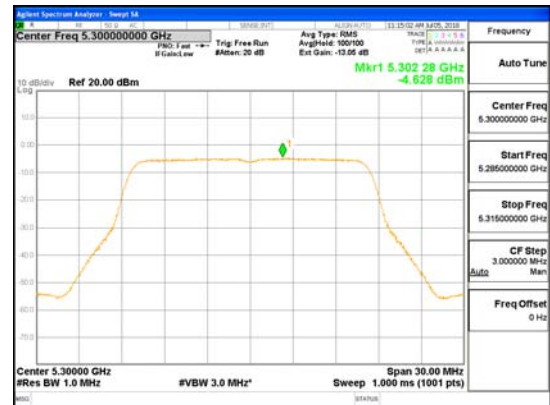
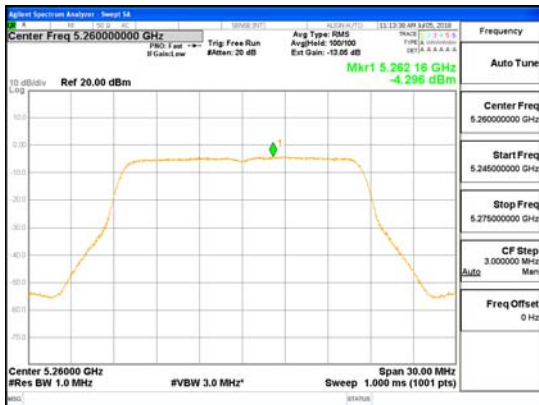
Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ac_VHT160	5 250	-4.78	0.11	-4.67	3.08	7.75
	5 570	-3.70	0.11	-3.59	3.08	6.67
Measurement uncertainty		± 1.5 dB				

See next pages for actual measured spectrum plots.

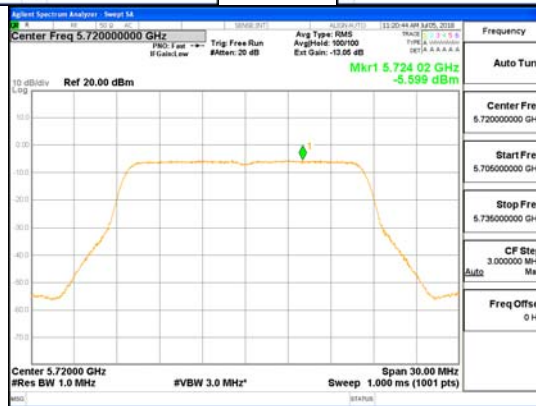
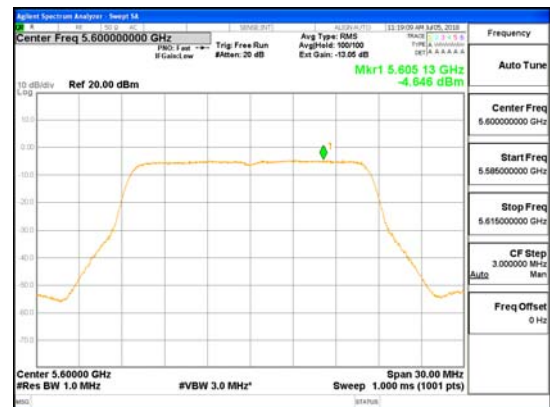
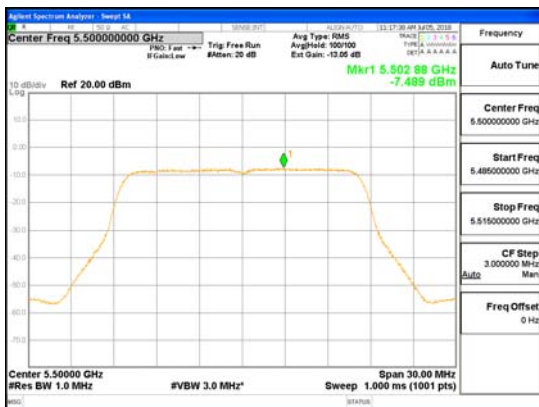


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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ANTO_802.11a_UNII 2A

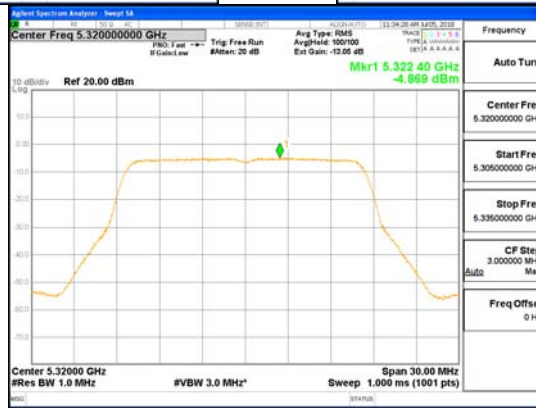
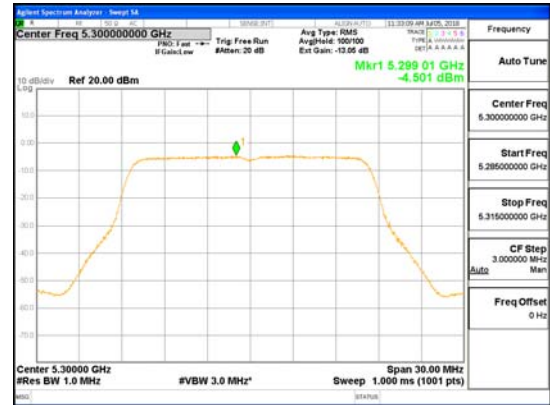
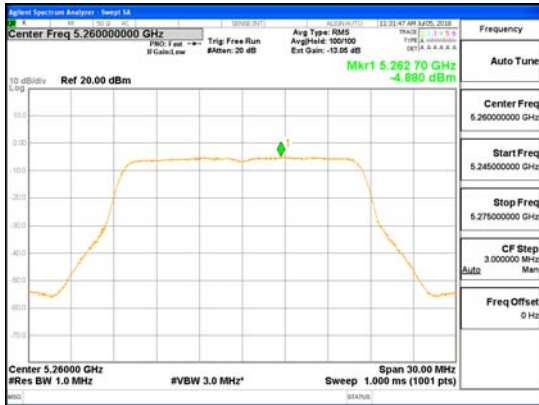


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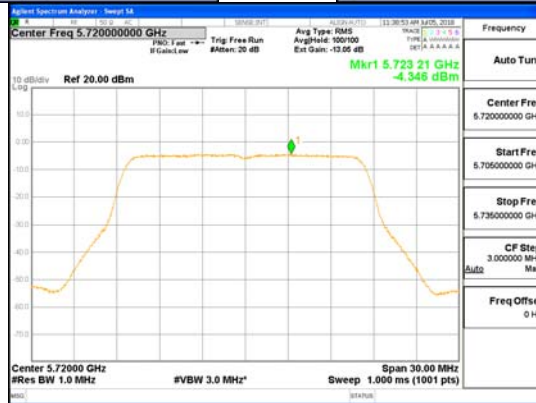
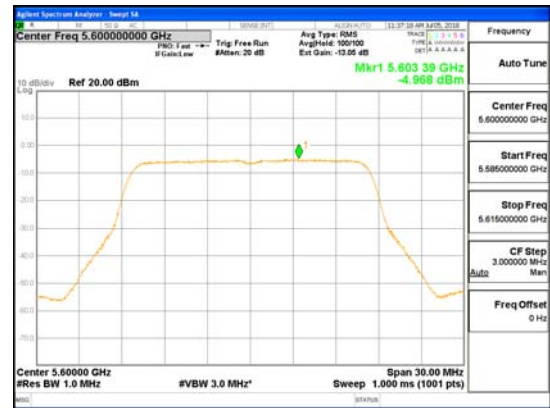
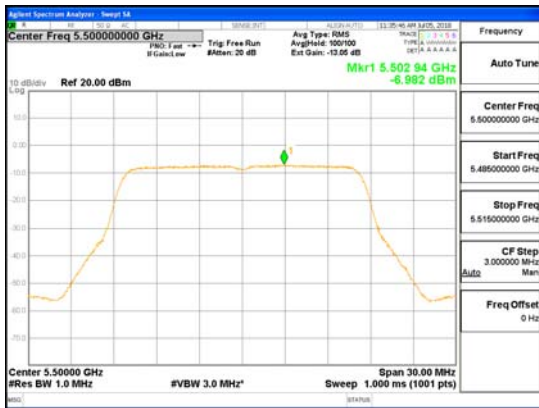


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
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ANT1_802.11a_UNII 2A

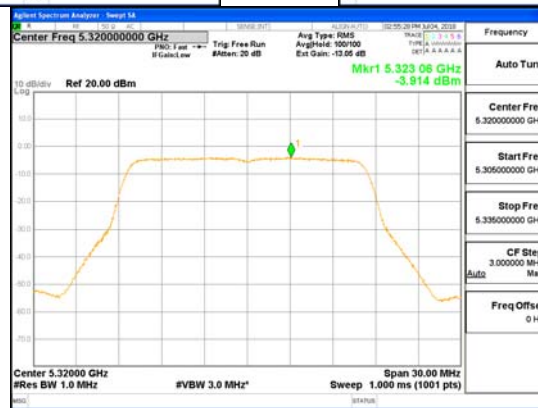
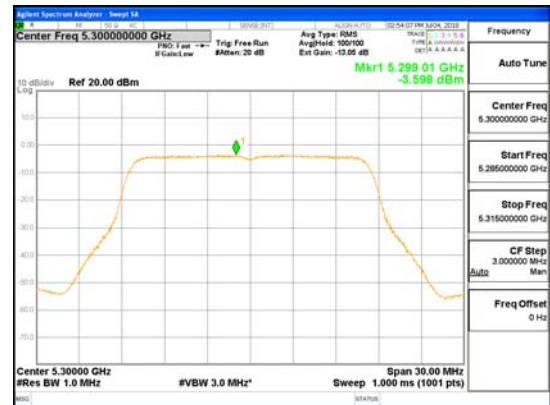
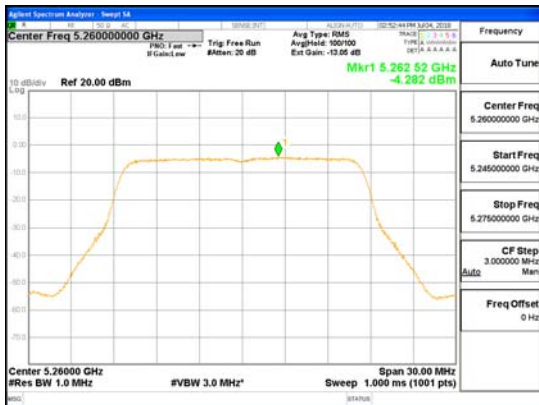


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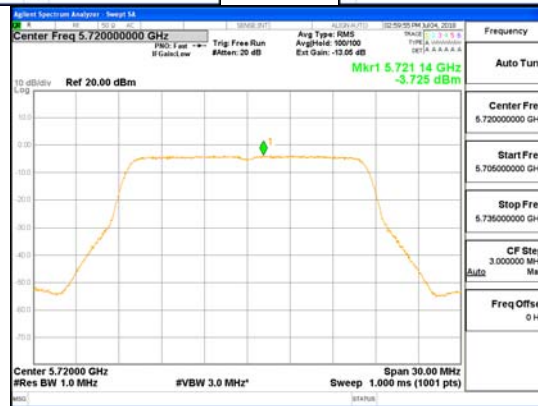
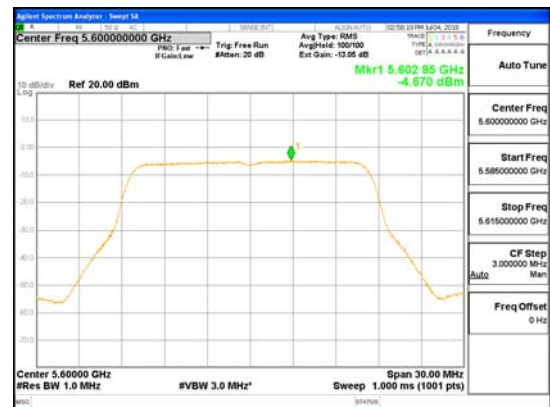
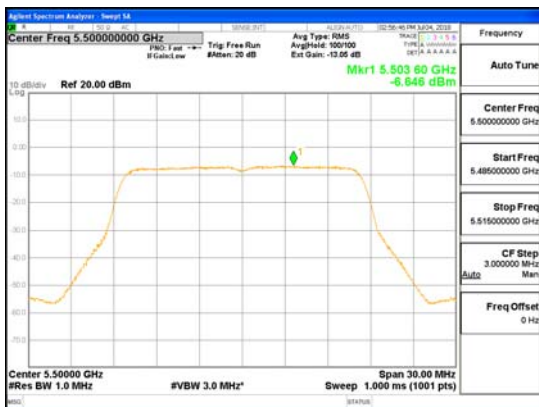


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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ANT2_802.11a_UNII 2A

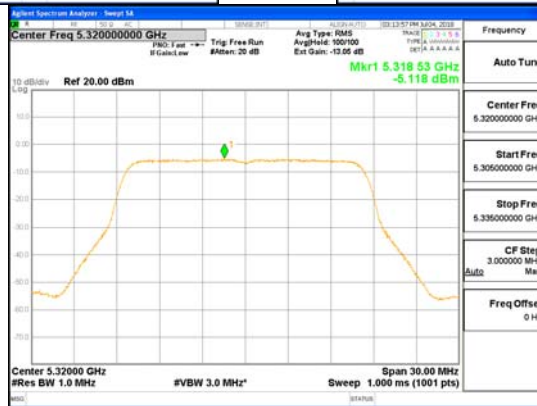
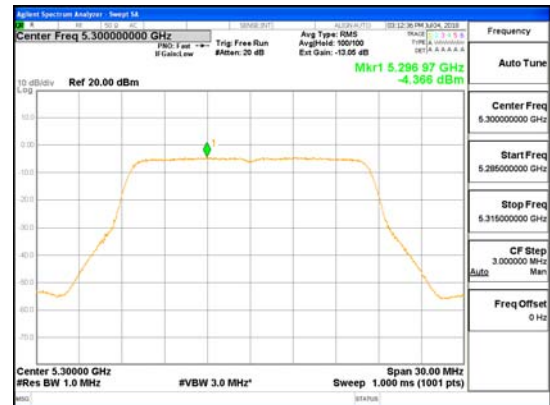
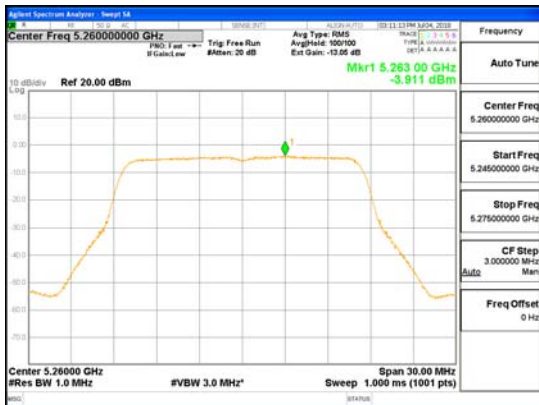


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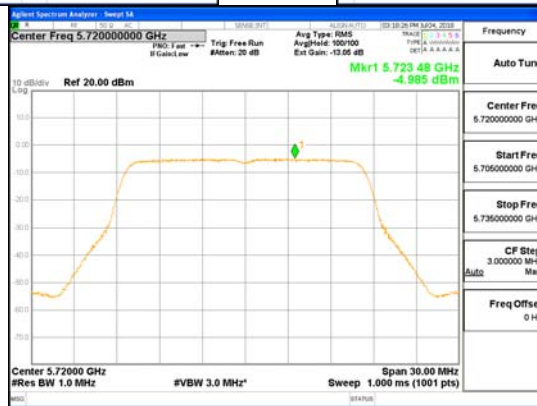
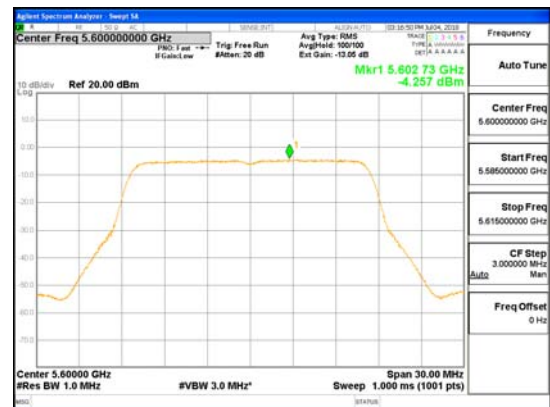
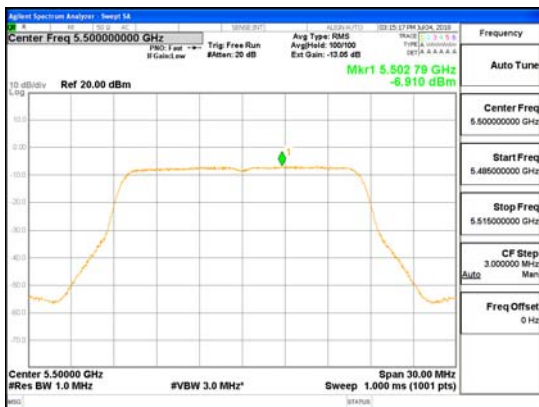


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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ANT3_802.11a_UNII 2A

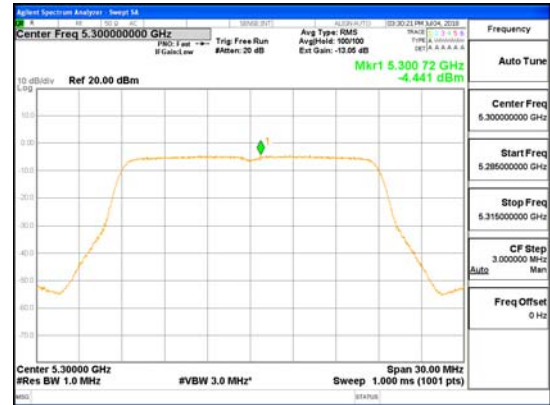
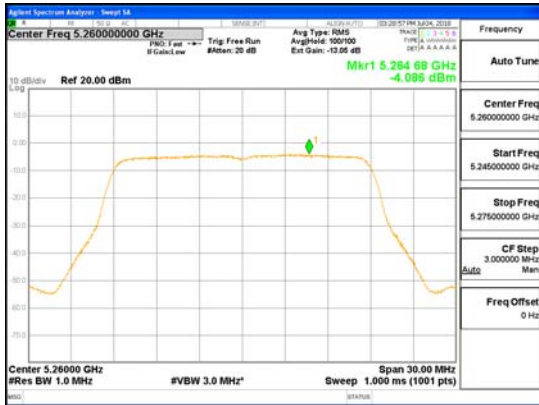


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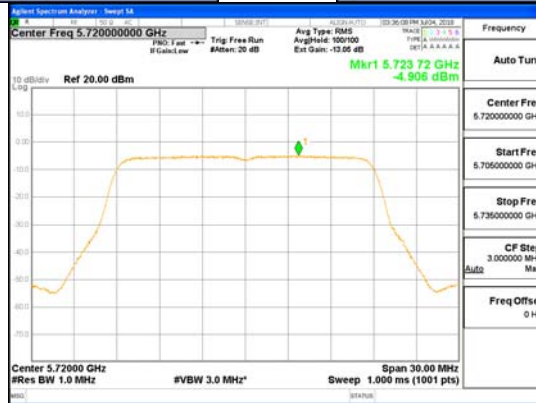
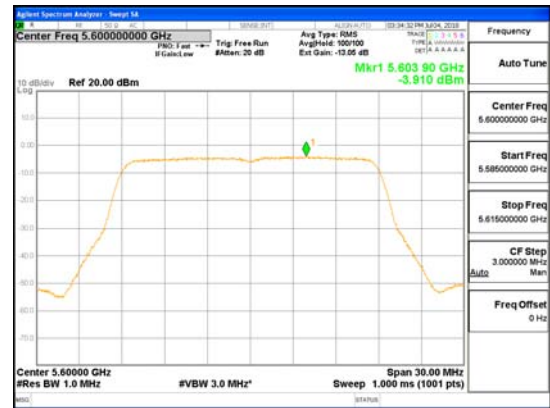
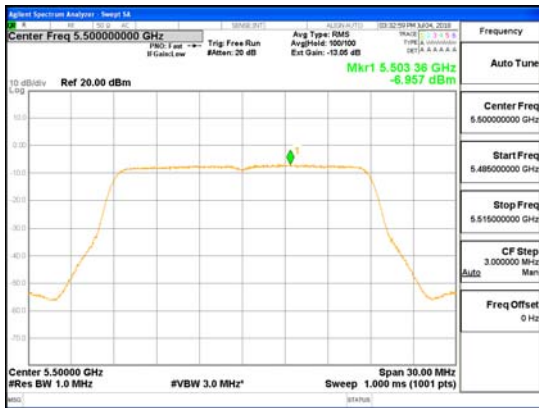


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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ANTO_802.11n_HT20_UNII 2A

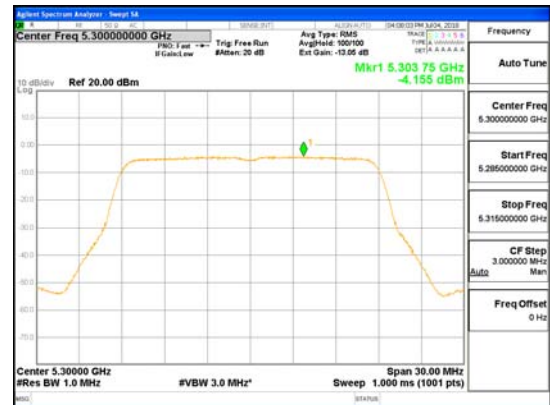
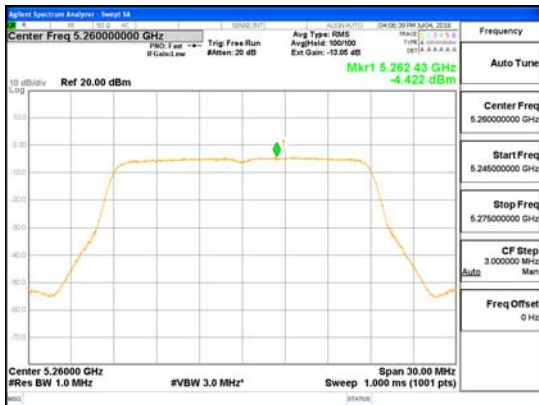


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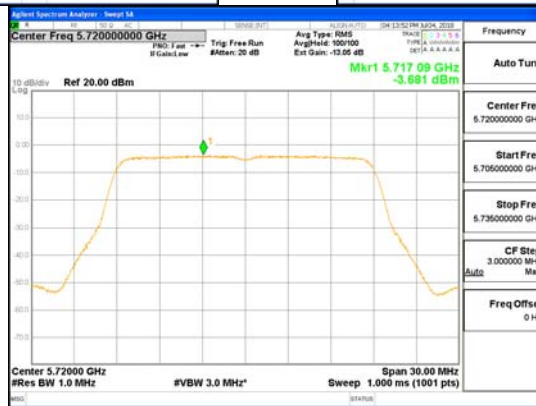
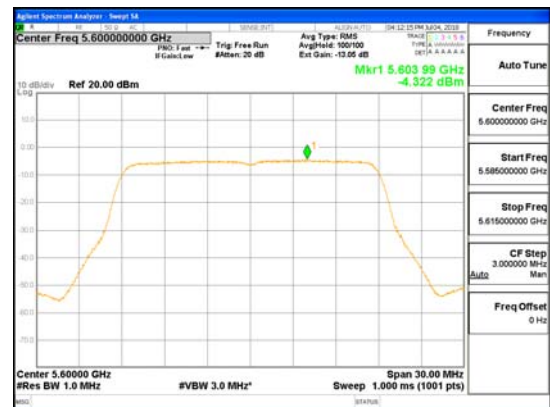
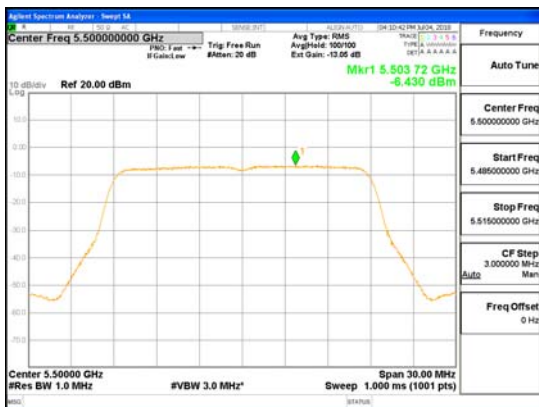


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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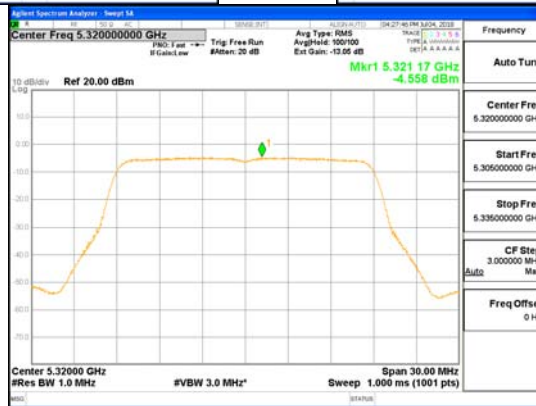
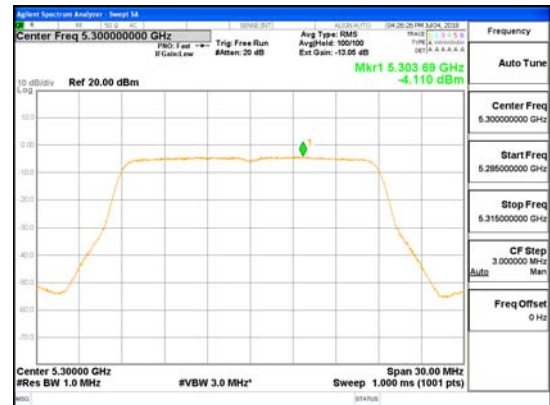
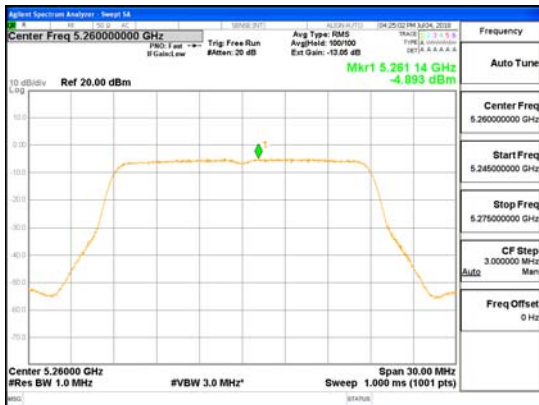


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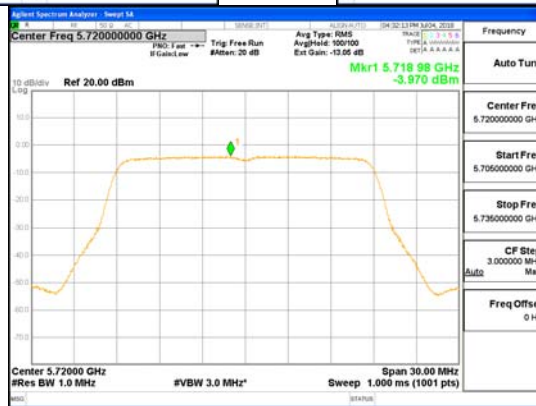
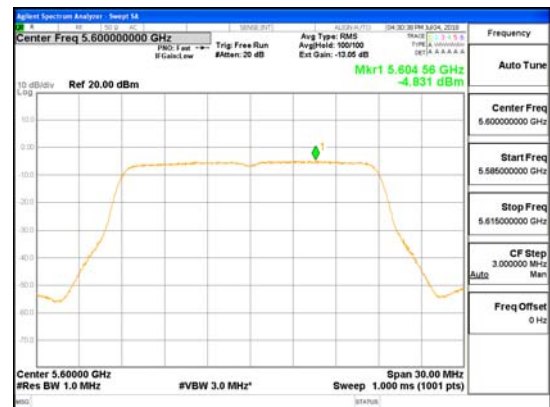
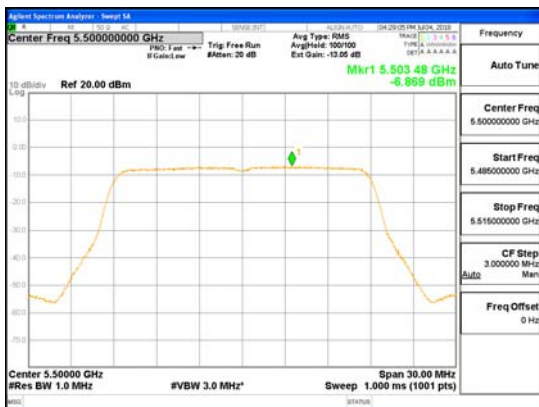


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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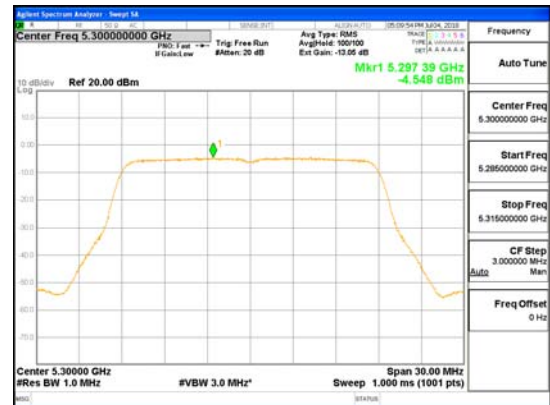
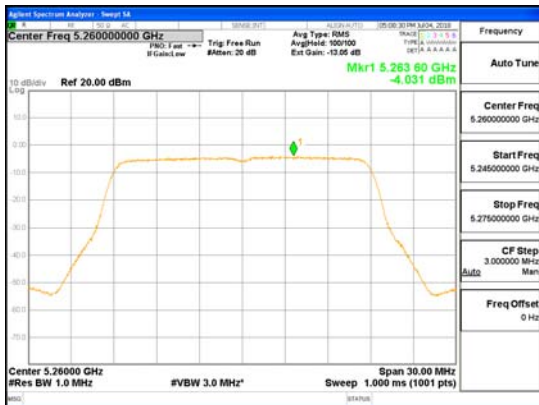


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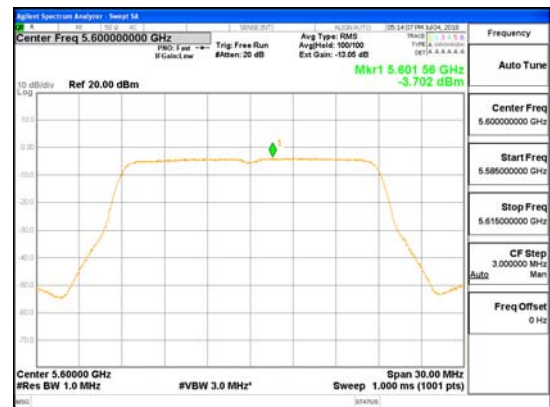
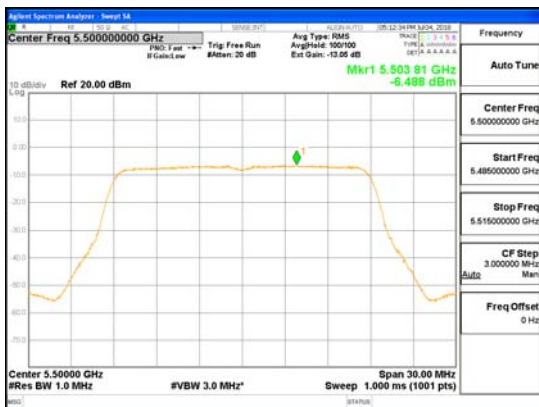


CTK Co., Ltd.
 (Ho-dong), 113, Yejik-ro, Cheoin-gu,
 Yongin-si, Gyeonggi-do, Korea
 Tel: +82-31-339-9970
 Fax: +82-31-624-9501

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