

TEST REPORT

of

FCC Part 15 Subpart E §15.407

FCC ID: TQ8-AVC42B2AN

Equipment Under Test : DIGITAL CAR AVN SYSTEM
Model Name : AVC42B2AN
Applicant : Hyundai MOBIS Co., Ltd.
Manufacturer : Hyundai MOBIS Co., Ltd.
Date of Receipt : 2016.12.26
Date of Test(s) : 2017.01.20 ~ 2017.02.04
Date of Issue : 2017.02.06

In the configuration tested, the EUT complied with the standards specified above.

Tested By:



Jinhyoung Cho

Date:

2017.02.06

Technical
Manager:



Hyunchae You

Date:

2017.02.06

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RTT5041-20(2015.10.01)(3)

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A4(210 mm x 297 mm)

INDEX

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1. General information

1.1. Testing laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Telephone : +82 31 688 0901

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1.2. Details of applicant

Applicant : Hyundai MOBIS Co., Ltd.

Address : 203, Teheran-ro, Gangnam-gu, Seoul, 06141, Korea

Contact Person : Kwon, Heung-Chul

Phone No. : +82 31 260 2714

1.3. Description of EUT

Kind of Product	DIGITAL CAR AVN SYSTEM
Model Name	AVC42B2AN
Power Supply	DC 14.4 V
Frequency Range	2 402 MHz ~ 2 480 MHz (Bluetooth), 2 412 MHz ~ 2 462 MHz (11b/g/n_HT20), 5 745 MHz ~ 5 825 MHz (Band 3: 11a/n_HT20, 11ac_VHT20), 5 755 MHz ~ 5 795 MHz (Band 3: 11n_HT40, 11ac_VHT40), 5 775 MHz (Band 3: 11ac_VHT80), 5 180 MHz ~ 5 240 MHz (Band 1: 11a/n_HT20, 11ac_VHT20), 5 190 MHz ~ 5 230 MHz (Band 1: 11n_HT40, 11ac_VHT40), 5 210 MHz (Band 1: 11ac_VHT80), 5 260 MHz ~ 5 320 MHz (Band 2A: 11a/n_HT20, 11ac_VHT20), 5 270 MHz ~ 5 310 MHz (Band 2A: 11n_HT40, 11ac_VHT40), 5 290 MHz (Band 2A: 11ac_VHT80), 5 500 MHz ~ 5 720 MHz (Band 2C: 11a/n_HT20, 11ac_VHT20), 5 510 MHz ~ 5 710 MHz (Band 2C: 11n_HT40, 11ac_VHT40), 5 530 MHz ~ 5 690 MHz (Band 2C: 11ac_VHT80)
Modulation Technique	GFSK, $\pi/4$ DQPSK, 8DPSK, DSSS, OFDM
Number of Channels	79 channels (Bluetooth), 11 channels (11b/g/n_HT20), 5 channels (Band 3: 11a/n_HT20, 11ac_VHT20), 2 channels (Band 3: 11n_HT40, 11ac_VHT40), 1 channel (Band 3: 11ac_VHT80), 4 channels (Band 1: 11a/n_HT20, 11ac_VHT20), 2 channels (Band 1: 11n_HT40, 11ac_VHT40), 1 channel (Band 1: 11ac_VHT80), 4 channels (Band 2A: 11a/n_HT20, 11ac_VHT20), 2 channels (Band 2A: 11n_HT40, 11ac_VHT40), 1 channel (Band 2A: 11ac_VHT80), 9 channels (Band 2C: 11a/n_HT20, 11ac_VHT20), 4 channels (Band 2C: 11n_HT40, 11ac_VHT40), 2 channels (Band 2C: 11ac_VHT80)
Antenna Type	Internal Antenna
Antenna Gain	WLAN : 2 400 MHz ~ 2 483.5 MHz: 1.60 dB i, Bluetooth : 2 400 MHz ~ 2 483.5 MHz: -0.10 dB i, 5 150 MHz ~ 5 350 MHz: 1.42 dB i, 5 470 MHz ~ 5 725 MHz: -0.85 dB i, 5 725 MHz ~ 5 850 MHz: -2.39 dB i

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1.4. Declaration by the manufacturer

- The EUT is a slave without radar detection and TPC.
- EUT is not supported TDWR(5.6 - 5.65 GHz) band.

1.5. Test equipment list

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	Agilent	E8257D	MY51501169	Jul. 07, 2016	Annual	Jul. 07, 2017
Signal Generator	R&S	SMBV100A	255834	Jun. 20, 2016	Annual	Jun. 20, 2017
Spectrum Analyzer	R&S	FSV30	100955	Mar. 30, 2016	Annual	Mar. 30, 2017
Spectrum Analyzer	Agilent	N9020A	MY53421758	Sep. 23, 2016	Annual	Sep. 23, 2017
Spectrum Analyzer	Agilent	N9030A	US51350132	Sep. 23, 2016	Annual	Sep. 23, 2017
Power Meter	Anritsu	ML2495A	1223004	Jun. 10, 2016	Annual	Jun. 10, 2017
Power Sensor	Anritsu	MA2411B	1207272	Jun. 10, 2016	Annual	Jun. 10, 2017
Attenuator	MCLI	FAS-23-20	23834	Jun. 08, 2016	Annual	Jun. 08, 2017
Low Pass Filter	Mini-Circuits	NLP-1200+	V 8979400903-2	Feb. 29, 2016	Annual	Feb. 28, 2017
High Pass Filter	Wainwright Instrument GmbH	WHKX6.0/18G-10SS	51	Jun. 18, 2016	Annual	Jun. 18, 2017
High Pass Filter	Wainwright Instrument GmbH	WHNX7.5/26.5G-6SS	11	Jun. 03, 2016	Annual	Jun. 03, 2017
DC Power Supply	Agilent	U8002A	MY50060028	Mar. 21, 2016	Annual	Mar. 21, 2017
Preamplifier	H.P.	8447F	2944A03909	Aug. 11, 2016	Annual	Aug. 11, 2017
Preamplifier	R&S	SCU-18	10117	Apr. 07, 2016	Annual	Apr. 07, 2017
Preamplifier	MITEQ Inc.	JS44-18004000-35-8P	1546891	May 12, 2016	Annual	May 12, 2017
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 19, 2015	Biennial	Aug. 19, 2017
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB9163	396	Jun. 18, 2015	Biennial	Jun. 18, 2017
Horn Antenna	R&S	HF906	100326	Feb. 01, 2016	Biennial	Feb. 01, 2018
Horn Antenna	Schwarzbeck Mess-Elektronik	BBHA 9170	9170-540	Sep. 04, 2015	Biennial	Sep. 04, 2017
Turn Table	Innco systems GmbH	DS 1200 S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/383 30516/L	N.C.R.	N/A	N.C.R.
Antenna Mast	Innco systems GmbH	MA4640-XP-ET	MA4640/536/383 30516/L	N.C.R.	N/A	N.C.R.
Test Receiver	R&S	ESU26	100109	Mar. 07, 2016	Annual	Mar. 07, 2017
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N/A	N.C.R.	N/A	N.C.R.

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1.6. Summary of test result

The EUT has been tested according to the following specifications:

APPLIED STANDARD : FCC Part 15 Subpart E		
Standard section	Test Item(s)	Result
15.205(a) 15.209(a) 15.407(b)(1) 15.407(b)(2) 15.407(b)(3) 15.407(b)(4)	Transmitter radiated spurious emissions	Complied
15.407(a)	26 dB Bandwidth & 99 % Bandwidth	Complied
15.407(e)	6 dB Bandwidth	Complied
15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	Maximum Conducted Output Power	Complied
15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	Peak Power Spectral Density	Complied

1.7. Test Procedure(s)

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 789033_v01r03 were used in the measurement of the DUT.

1.8. Sample calculation

Where relevant, the following sample calculation is provided:

1.8.1. Conducted test

Offset value (dB) = Attenuator (dB) + Cable loss (dB)

1.8.2. Radiation test

Field strength level (dB μ V/m) = Measured level (dB μ V) + Antenna factor (dB) + Cable loss (dB) - Amplifier gain (dB)

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1.9. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL010798	2017.02.06	Initial

1.10. Duty Cycle of EUT

Regarding to KDB789033 v01r03, B, the maximum duty cycles of all modes were investigated and set the spectrum analyzer as below

Set RBW $\geq$ OBW if possible; otherwise, set RBW to the largest available value, Set VBW $\geq$ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100.

Mode	Data Rate (Mbps)	Mode	Data Rate (Mbps)	Mode	Data Rate (Mbps)	Mode	Data Rate (Mbps)
11a	6	11n_HT20	MCS0	11n_HT40	MCS0	11ac_VHT80	MCS0
Duty Cycle (%)	93	Duty Cycle (%)	93	Duty Cycle (%)	87	Duty Cycle (%)	77
Correction factor (dB)	0.32	Correction factor (dB)	0.32	Correction factor (dB)	0.60	Correction factor (dB)	1.14

Remark:

- As measured duty cycles of EUT, all of mode and data rate keep constant period and are converted to log scale (power averaging) to compensate correction factor to result of average test items.
- Duty cycle (%) = (Tx on time / Tx on + off time) x 100
- Correction factor (dB) = 10 log (1 / Duty cycle)

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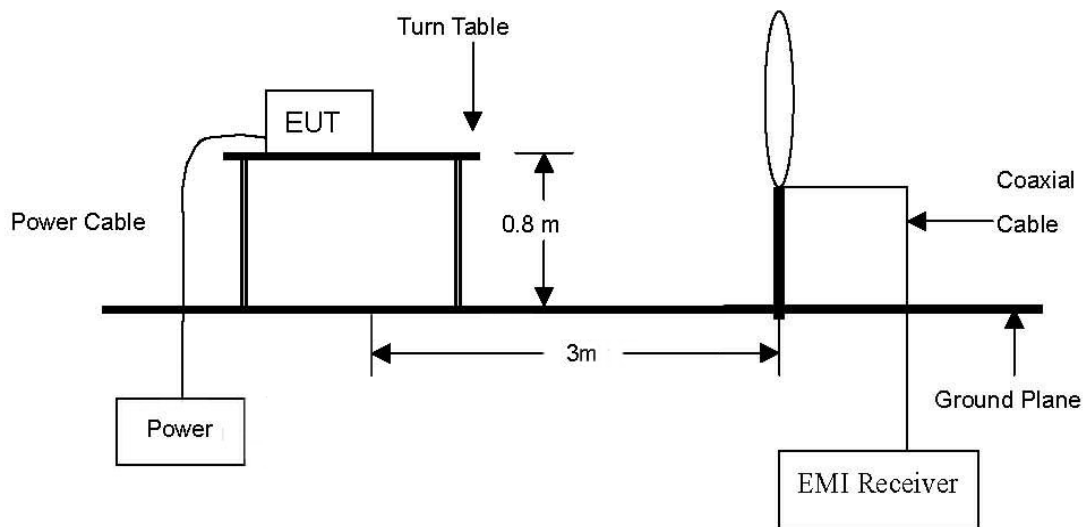
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2. Transmitter radiated spurious emissions

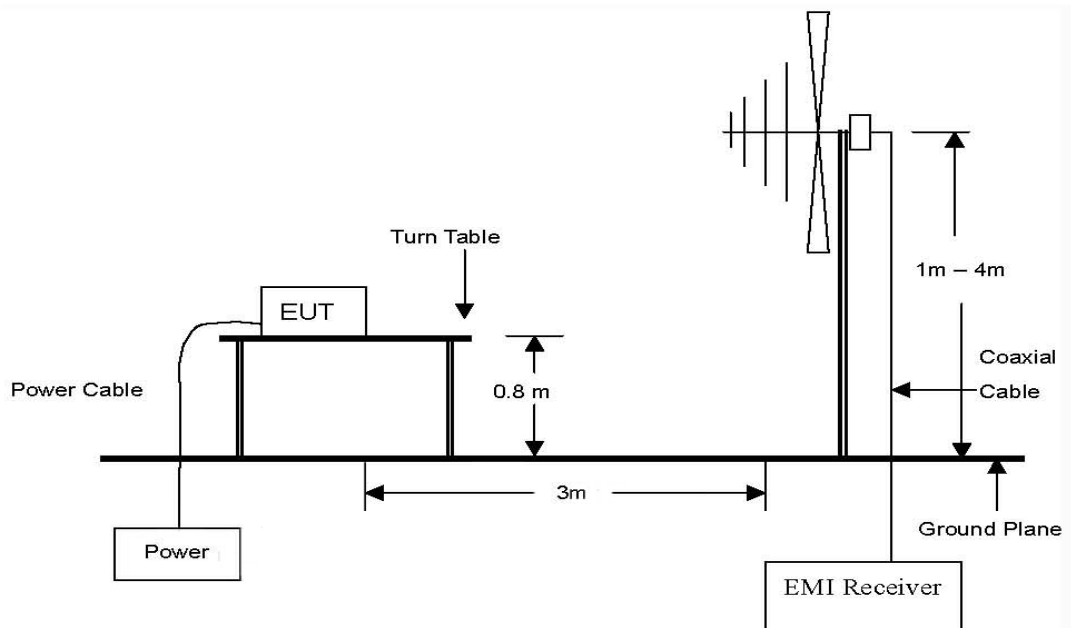
2.1. Test setup

2.1.1. Transmitter radiated spurious emissions

The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz emissions.



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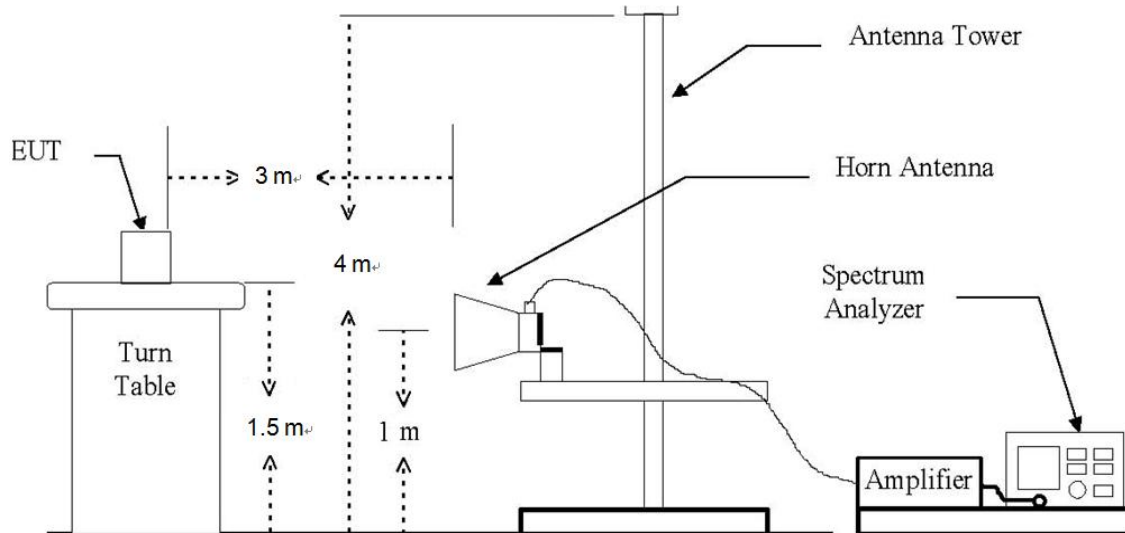
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The diagram below shows the test setup that is utilized to make the measurements for emission. The spurious emissions were investigated from 1 GHz to the 10th harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.



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2.2. Limit

According to § 15.407(b)

- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dB m/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dB m/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dB m/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: all emissions shall be limited to a level of -27 dB m/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dB m/MHz at 20 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dB m/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dB m/MHz at the band edge.

According to § 15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Distance (meters)
0.009 - 0.490	2 400/F(kHz)	20 log (2 400/F(kHz))	300
0.490 - 1.705	24 000/F(kHz)	20 log (24 000/F(kHz))	30
1.705 - 30.0	30	29.54	30
30 - 88	100**	40.0	3
88 - 216	150**	43.5	3
216 - 960	200**	46.0	3
Above 960	500	54.0	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §15.231 and §15.241.

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2.3. Test procedures

Radiated spurious emissions from the EUT were measured according to the dictates in section G of KDB 789033_v01r03 and ANSI C63.10-2013.

2.3.1. Test Procedures for emission below 30 MHz

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.
3. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test-receiver system was set to average or quasi peak detect function and Specified Bandwidth with Maximum Hold Mode.

Note;

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 meter open field test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

2.3.2. Test Procedures for emission from above 30 MHz

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site below 1 GHz and 1.5 meters above the ground at a 3 meter anechoic chamber test site above 1 GHz. The table was rotated 360 degrees to determine the position of the highest radiation.
2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3 meter away from the interference-receiving antenna.
3. The antenna is a bi-log antenna, a horn antenna and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

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NOTE;

All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

- The measurements for below 1 GHz refer to section II.G.4.

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.

- The measurements for above 1 GHz II.G.5.

Peak emission levels are measured by setting the analyzer as follows:

Set to RBW = 1 MHz, VBW ≥ 3 MHz, Detector = Peak, Sweep time = auto, Trace mode= Max hold

- The measurements for above 1 GHz II.G.6.

Average emission levels are measured by setting the analyzer as follows:

Set to RBW = 1 MHz, VBW ≥ 3 MHz, Detector = power averaging (rms), Averaging type = power averaging (rms), Sweep time = auto, Perform a trace average of at least 100 traces. If the transmission is continuous, If the transmission is not continuous, the number of traces shall be increased by a factor of 1/x, where x is the duty cycle. For example, with 50 % duty cycle, at least 200 traces shall be averaged.

If tests are performed with the EUT transmitting at a duty cycle less than 98 %, a correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle. The correction factor is computed as follows:

- If power averaging (rms) mode was used in step (iv) above, the correction factor is $10 \log (1/x)$, where x is the duty cycle. For example, if the transmit duty cycle was 50 %, then 3 dB must be added to the measured emission levels.
- If a specific emission is demonstrated to be continuous (100 % duty cycle) rather than turning on and off with the transmit cycle, no duty cycle correction is required for that emission.

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2.4. Test result

Ambient temperature : (23 ± 1) °C

Relative humidity : 47 % R.H.

2.4.1. Radiated Spurious Emission below 1 000 MHz

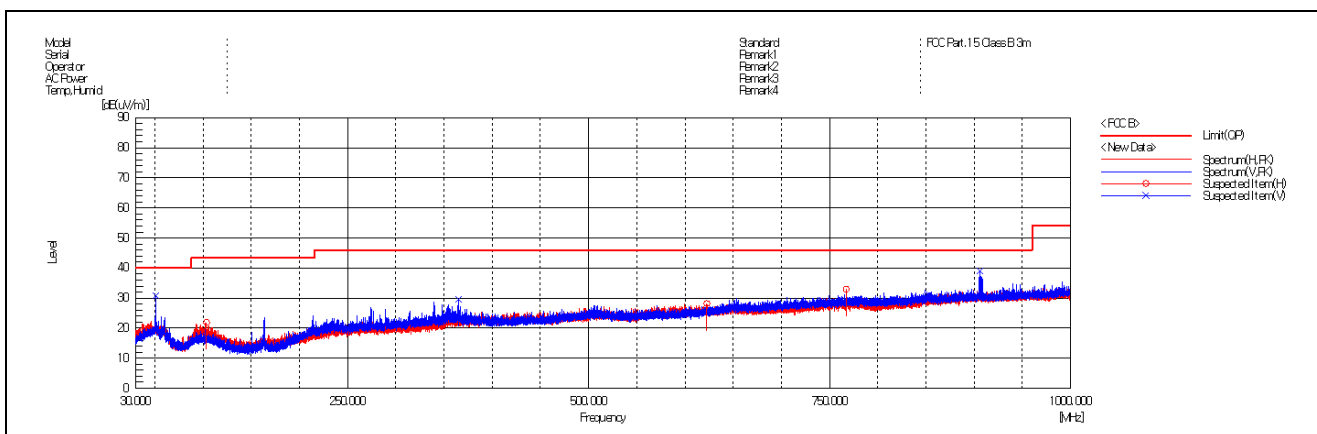
The frequency spectrum from 9 kHz to 1 000 MHz was investigated. All reading values are peak values.

Radiated Emissions			Ant.	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
50.77	43.50	Peak	V	14.39	-27.07	30.82	40.00	9.18
364.93	38.20	Peak	V	16.52	-25.33	29.39	46.00	16.61
622.67	34.00	Peak	H	20.06	-25.84	28.22	46.00	17.78
767.28	36.50	Peak	H	21.55	-25.08	32.97	46.00	13.03
905.59	39.90	Peak	V	23.47	-24.30	39.07	46.00	6.93

Remark:

- Spurious emissions for all channels and modes were investigated and almost the same below 1 GHz.
- Reported spurious emissions are in **11a (Band 2A) / 6Mbps / High channel** as worst case among other modes.
- Radiated spurious emission measurement as below.
(Actual = Reading + AF + AMP + CL)
- According to §15.31(o), emission levels are not report much lower than the limits by over 20 dB.

Test plot



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2.4.2. Radiated Spurious Emission above 1 000 MHz

802.11a (Band 1)_6 Mbps

A. Low Channel (5 180 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*4 500.00	14.71	Peak	H	31.84	6.48	-	53.03	74.00	20.97
*4 500.00	5.12	Average	H	31.84	6.48	0.32	43.76	54.00	10.24
*4 891.94	17.36	Peak	H	32.89	7.52	-	57.77	74.00	16.23
*5 060.93	6.71	Average	H	33.26	7.60	0.32	47.89	54.00	6.11
*5 150.00	15.18	Peak	H	33.38	7.87	-	56.43	74.00	17.57
*5 150.00	6.12	Average	H	33.38	7.87	0.32	47.69	54.00	6.31

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10 361.50	35.41	Peak	H	37.67	-24.46	-	48.62	68.23	19.61
Above 10 400.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 220 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10 442.12	36.00	Peak	H	37.71	-24.98	-	48.73	68.23	19.50
Above 10 500.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 240 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

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A4(210 mm x 297 mm)

802.11a (Band 2A)_6 Mbps

A. Low Channel (5 260 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10 521.19	35.47	Peak	H	37.75	-24.92	-	48.30	68.23	19.93
Above 10 600.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 300 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*10 600.57	35.81	Peak	H	37.81	-24.99	-	48.63	74.00	25.37
*10 603.43	24.93	Average	H	37.81	-25.02	0.32	38.04	54.00	15.96
Above 10 700.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 320 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*5 350.00	15.41	Peak	V	33.66	7.94	-	57.01	74.00	16.99
*5 350.00	6.12	Average	V	33.66	7.94	0.32	48.04	54.00	5.96
*5 406.96	17.14	Peak	V	33.73	8.77	-	59.64	74.00	14.36
*5 350.64	6.42	Average	V	33.66	7.95	0.32	48.35	54.00	5.65
*5 460.00	14.04	Peak	V	33.81	8.10	-	55.95	74.00	18.05
*5 460.00	5.64	Average	V	33.81	8.10	0.32	47.87	54.00	6.13

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*10 637.90	37.03	Peak	H	37.83	-25.35	-	49.51	74.00	24.49
*10 644.66	25.47	Average	H	37.84	-25.42	0.32	38.21	54.00	15.79
Above 10 700.00	Not detected	-	-	-	-	-	-	-	-

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RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

802.11a (Band 2C)_6 Mbps

A. Low Channel (5 500 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*5 350.00	15.55	Peak	H	33.66	7.94	-	57.15	74.00	16.85
*5 350.00	5.12	Average	H	33.66	7.94	0.32	47.04	54.00	6.96
*5 363.97	16.84	Peak	H	33.67	8.20	-	58.71	74.00	15.29
*5 425.34	5.86	Average	H	33.76	8.47	0.32	48.41	54.00	5.59
*5 460.00	13.49	Peak	H	33.81	8.10	-	55.40	74.00	18.60
*5 460.00	5.04	Average	H	33.81	8.10	0.32	47.27	54.00	6.73

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 000.44	34.33	Peak	H	38.08	-26.24	-	46.17	74.00	27.83
*10 997.60	23.55	Average	H	38.08	-26.24	0.32	35.71	54.00	18.29
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 580 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 156.45	34.90	Peak	H	38.20	-25.65	-	47.45	74.00	26.55
*11 160.28	24.76	Average	H	38.20	-25.67	0.32	37.61	54.00	16.39
Above 11 200.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 720 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 439.37	35.28	Peak	H	38.41	-25.38	-	48.31	74.00	25.69
*11 440.60	25.40	Average	H	38.41	-25.38	0.32	38.75	54.00	15.25
Above 11 500.00	Not detected	-	-	-	-	-	-	-	-

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RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

802.11a (Band 3)_6 Mbps

A. Low Channel (5 745 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 638.75	16.99	Peak	V	34.09	8.51	-	59.59	68.23	8.64
5 658.63	17.27	Peak	V	34.12	8.64	-	60.03	74.61	14.58

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 489.64	34.97	Peak	H	38.44	-25.42	-	47.99	74.00	26.01
*11 486.40	24.14	Average	H	38.44	-25.42	0.32	37.48	54.00	16.52
Above 11 500.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 785 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 570.31	35.81	Peak	H	38.43	-24.96	-	49.28	74.00	24.72
*11 572.01	24.86	Average	H	38.43	-24.95	0.32	38.66	54.00	15.34
Above 11 600.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 825 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 935.02	16.24	Peak	V	34.57	9.18	-	59.99	68.23	8.24

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 651.78	35.32	Peak	H	38.40	-24.93	-	48.79	74.00	25.21
*11 653.19	24.68	Average	H	38.40	-24.94	0.32	38.46	54.00	15.54
Above 11 700.00	Not detected	-	-	-	-	-	-	-	-

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802.11n_HT20 (Band 1)_MCS0

A. Low Channel (5 180 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*4 500.00	14.58	Peak	H	31.84	6.48	-	52.90	74.00	21.10
*4 500.00	5.57	Average	H	31.84	6.48	0.32	44.21	54.00	9.79
*4 578.77	18.07	Peak	H	32.05	6.85	-	56.97	74.00	17.03
*4 616.00	6.54	Average	H	32.15	7.04	0.32	46.05	54.00	7.95
*5 150.00	17.16	Peak	H	33.38	7.87	-	58.41	74.00	15.59
*5 150.00	6.07	Average	H	33.38	7.87	0.32	47.64	54.00	6.36

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 220 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 240 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

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802.11n_HT20 (Band 2A)_MCS0

A. Low Channel (5 260 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10 523.50	35.62	Peak	H	37.76	-24.92	-	48.46	68.23	19.77
Above 10 600.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 300 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*10 601.45	35.55	Peak	H	37.81	-25.00	-	48.36	74.00	25.64
*10 603.16	24.78	Average	H	37.81	-25.02	0.32	37.89	54.00	16.11
Above 10 700.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 320 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*5 350.00	14.39	Peak	V	33.66	7.94	-	55.99	74.00	18.01
*5 350.00	6.01	Average	V	33.66	7.94	0.32	47.93	54.00	6.07
*5 351.12	18.04	Peak	V	33.66	7.96	-	59.66	74.00	14.34
*5 350.64	6.39	Average	V	33.66	7.95	0.32	48.32	54.00	5.68
*5 460.00	14.17	Peak	V	33.81	8.10	-	56.08	74.00	17.92
*5 460.00	5.00	Average	V	33.81	8.10	0.32	47.23	54.00	6.77

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*10 637.97	35.59	Peak	H	37.83	-25.35	-	48.07	74.00	25.93
*10 639.91	25.52	Average	H	37.84	-25.38	0.32	38.30	54.00	15.70
Above 10 700.00	Not detected	-	-	-	-	-	-	-	-

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RTT5041-20(2015.10.01)(3)

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A4(210 mm x 297 mm)

802.11n_HT20 (Band 2C)_MCS0

A. Low Channel (5 500 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*5 350.00	14.05	Peak	H	33.66	7.94	-	55.65	74.00	18.35
*5 350.00	5.17	Average	H	33.66	7.94	0.32	47.09	54.00	6.91
*5 392.02	16.20	Peak	H	33.71	8.73	-	58.64	74.00	15.36
*5 370.43	5.85	Average	H	33.68	8.32	0.32	48.17	54.00	5.83
*5 460.00	14.41	Peak	H	33.81	8.10	-	56.32	74.00	17.68
*5 460.00	5.31	Average	H	33.81	8.10	0.32	47.54	54.00	6.46

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 004.84	34.64	Peak	H	38.08	-26.20	-	46.52	74.00	27.48
*11 000.38	23.48	Average	H	38.08	-26.24	0.32	35.64	54.00	18.36
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 580 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 156.49	35.30	Peak	H	38.20	-25.65	-	47.85	74.00	26.15
*11 155.47	24.44	Average	H	38.20	-25.65	0.32	37.31	54.00	16.69
Above 11 200.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 720 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 443.72	36.18	Peak	H	38.41	-25.39	-	49.20	74.00	24.80
*11 441.42	25.25	Average	H	38.41	-25.38	0.32	38.60	54.00	15.40
Above 11 500.00	Not detected	-	-	-	-	-	-	-	-

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802.11n_HT20 (Band 3)_MCS0

A. Low Channel (5 785 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 640.88	15.87	Peak	V	34.09	8.51	-	58.47	68.23	9.76
5 660.50	16.56	Peak	V	34.12	8.66	-	59.34	76.00	16.66

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 492.17	34.95	Peak	H	38.44	-25.42	-	47.97	74.00	26.03
*11 486.51	24.41	Average	H	38.44	-25.42	0.32	37.75	54.00	16.25
Above 11 500.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 785 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 569.64	34.96	Peak	H	38.43	-24.96	-	48.43	74.00	25.57
*11 571.29	24.56	Average	H	38.43	-24.95	0.32	38.36	54.00	15.64
Above 11 600.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 825 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 938.80	16.87	Peak	V	34.58	9.16	-	60.61	68.23	34.58

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 648.93	34.82	Peak	H	38.41	-24.92	-	48.31	74.00	25.69
*11 653.41	24.62	Average	H	38.40	-24.94	0.32	38.40	54.00	15.60
Above 11 700.00	Not detected	-	-	-	-	-	-	-	-

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RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

802.11n_HT40 (Band 1)_MCS0

A. Low Channel (5 190 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*4 500.00	14.84	Peak	H	31.84	6.48	-	53.16	74.00	20.84
*4 500.00	6.37	Average	H	31.84	6.48	0.60	45.29	54.00	8.71
*5 026.26	17.35	Peak	H	33.22	7.37	-	57.94	74.00	16.06
*4 521.83	6.51	Average	H	31.90	6.90	0.60	45.91	54.00	8.09
*5 150.00	15.08	Peak	H	33.38	7.87	-	56.33	74.00	17.67
*5 150.00	5.59	Average	H	33.38	7.87	0.60	47.44	54.00	6.56

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

B. High Channel (5 230 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10 456.82	35.78	Peak	H	37.72	-24.96	-	48.54	68.23	19.69
Above 10 500.00	Not detected	-	-	-	-	-	-	-	-

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A4(210 mm x 297 mm)

802. 11n_HT40 (Band 2A)_MCS0

A. Low Channel (5 270 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10 543.09	35.46	Peak	H	37.77	-24.94	-	48.29	68.23	19.94
Above 10 600.00	Not detected	-	-	-	-	-	-	-	-

B. High Channel (5 310 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*5 350.00	16.14	Peak	V	33.66	7.94	-	57.74	74.00	16.26
*5 350.00	6.24	Average	V	33.66	7.94	0.60	48.44	54.00	5.56
*5 452.44	17.18	Peak	V	33.80	8.08	-	59.06	74.00	14.94
*5 356.28	6.93	Average	V	33.66	8.06	0.60	49.25	54.00	4.75
*5 460.00	15.49	Peak	V	33.81	8.10	-	57.40	74.00	16.60
*5 460.00	5.06	Average	V	33.81	8.10	0.60	47.57	54.00	6.43

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*10 617.02	35.50	Peak	H	37.82	-25.16	-	48.16	74.00	25.84
*10 615.32	24.77	Average	H	37.82	-25.14	0.60	38.05	54.00	15.95
Above 10 700.00	Not detected	-	-	-	-	-	-	-	-

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RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

802. 11n_HT40 (Band 2C)_MCS0

A. Low Channel (5 510 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*5 350.00	13.45	Peak	H	33.66	7.94	-	55.05	74.00	18.95
*5 350.00	5.21	Average	H	33.66	7.94	0.60	47.41	54.00	6.59
*5 397.46	17.58	Peak	H	33.72	8.83	-	60.13	74.00	13.87
*5 447.78	5.98	Average	H	33.79	8.11	0.60	48.48	54.00	5.52
*5 460.00	13.77	Peak	H	33.81	8.10	-	55.68	74.00	18.32
*5 460.00	5.69	Average	H	33.81	8.10	0.60	48.20	54.00	5.80

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*11 020.64	34.25	Peak	H	38.10	-26.07	-	46.28	74.00	27.72
*11 023.22	24.02	Average	H	38.10	-26.06	0.60	36.66	54.00	17.34
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 550 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*11 096.76	34.51	Peak	H	38.15	-25.46	-	47.20	74.00	26.80
*11 099.69	23.92	Average	H	38.15	-25.44	0.60	37.23	54.00	16.77
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 710 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*11 423.94	34.34	Peak	H	38.39	-25.37	-	47.36	74.00	26.64
*11 423.89	24.25	Average	H	38.39	-25.37	0.60	37.87	54.00	16.13
Above 11 500.00	Not detected	-	-	-	-	-	-	-	-

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802.11n_HT40 (Band 3)_MCS0

A. Low Channel (5 755 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 630.63	16.52	Peak	V	34.07	8.49	-	59.08	68.23	9.15
5 660.13	16.94	Peak	V	34.12	8.66	-	59.72	75.72	16.00

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 506.44	35.56	Peak	H	38.45	-25.39	-	48.62	74.00	25.38
*11 514.81	25.10	Average	H	38.45	-25.33	0.60	38.82	54.00	15.18
Above 11 600.00	Not detected	-	-	-	-	-	-	-	-

B. High Channel (5 795 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 911.75	17.84	Peak	V	34.54	9.27	-	61.65	78.03	16.38
5 937.15	16.18	Peak	V	34.58	9.17	-	59.93	68.23	8.30

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 511.16	35.41	Peak	H	38.45	-25.35	-	48.51	74.00	25.49
*11 507.95	24.91	Average	H	38.45	-25.38	0.60	38.58	54.00	15.42
Above 11 600.00	Not detected	-	-	-	-	-	-	-	-

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RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

802.11ac_VHT80 (Band 1)_MCS0

A. Low Channel (5 210 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*4 500.00	13.72	Peak	H	31.84	6.48	-	52.04	74.00	21.96
*4 500.00	5.72	Average	H	31.84	6.48	1.14	45.18	54.00	8.82
*5 065.68	17.38	Peak	H	33.27	7.61	-	58.26	74.00	15.74
*5 113.86	6.54	Average	H	33.33	7.69	1.14	48.70	54.00	5.30
*5 150.00	14.47	Peak	H	33.38	7.87	-	55.72	74.00	18.28
*5 150.00	5.65	Average	H	33.38	7.87	1.14	48.04	54.00	5.96

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

802.11ac_VHT80 (Band 2A)_MCS0

A. Middle Channel (5 290 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*5 350.00	15.52	Peak	V	33.66	7.94	-	57.12	74.00	16.88
*5 350.00	6.13	Average	V	33.66	7.94	1.14	48.87	54.00	5.13
*5 376.76	16.28	Peak	V	33.69	8.44	-	58.41	74.00	15.59
*5 365.56	6.53	Average	V	33.68	8.23	1.14	49.58	54.00	4.42
*5 460.00	14.42	Peak	V	33.81	8.10	-	56.33	74.00	17.67
*5 460.00	5.33	Average	V	33.81	8.10	1.14	48.38	54.00	5.62

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10 575.61	35.89	Peak	H	37.79	-24.96	-	48.72	68.23	19.51
Above 10 600.00	Not detected	-	-	-	-	-	-	-	-

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802.11ac_VHT80 (Band 2C)_MCS0

A. Low Channel (5 530 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*5 350.00	13.31	Peak	H	33.66	7.94	-	54.91	74.00	19.09
*5 350.00	5.67	Average	H	33.66	7.94	1.14	48.41	54.00	5.59
*5 400.69	16.24	Peak	H	33.72	8.87	-	58.83	74.00	15.17
*5 399.67	5.79	Average	H	33.72	8.87	1.14	49.52	54.00	4.48
*5 460.00	14.15	Peak	H	33.81	8.10	-	56.06	74.00	17.94
*5 460.00	5.10	Average	H	33.81	8.10	1.14	48.15	54.00	5.85

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 056.67	35.53	Peak	H	38.12	-25.79	-	47.86	74.00	26.14
*11 061.02	24.40	Average	H	38.13	-25.75	1.14	37.92	54.00	16.08
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

B. High Channel (5 690 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*11 376.36	34.58	Peak	H	38.36	-25.20	-	47.74	74.00	26.26
*11 384.89	24.17	Average	H	38.36	-25.26	1.14	38.41	54.00	15.59
Above 11 400.00	Not detected	-	-	-	-	-	-	-	-

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802.11ac_VHT80 (Band 3)_MCS0

A. Middle Channel (5 775 MHz)

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 633.25	16.92	Peak	V	34.08	8.50	-	59.50	68.23	8.73
5 933.63	16.25	Peak	V	34.57	9.19	-	60.01	68.23	8.22

Radiated Emissions			Ant.	Correction Factors			Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*11 550.09	35.46	Peak	H	38.43	-25.09	-	48.80	74.00	25.20
*11 553.58	24.82	Average	H	38.43	-25.07	1.14	39.32	54.00	14.68
Above 11 600.00	Not detected	-	-	-	-	-	-	-	-

Remark:

1. “*” means the restricted band.
2. Radiated emissions measured in frequency above 1 000 MHz were made with an instrument using Peak / average detector mode if frequency was in restricted band. Otherwise the frequency was out of restricted band, only peak detector should be used.
3. Band edge measurement.
(Actual = Reading + AF + CL + Duty cycle)
4. Radiated spurious emission measurement.
(Actual = Reading + AF + AMP + CL + Duty cycle)
5. If frequency was out of restricted band, the calculation method for peak limit is same as below.
 $68.23 \text{ dB}\mu\text{V/m} = \text{EIRP} - 20 \log(d) + 104.77 = -27 - 20 \log(3) + 104.77$
6. In case of the emissions within $\pm 75 \text{ MHz}$ from band edge of band 3, limit should be adjusted to emission mask of 15.407(4)(i).
7. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.

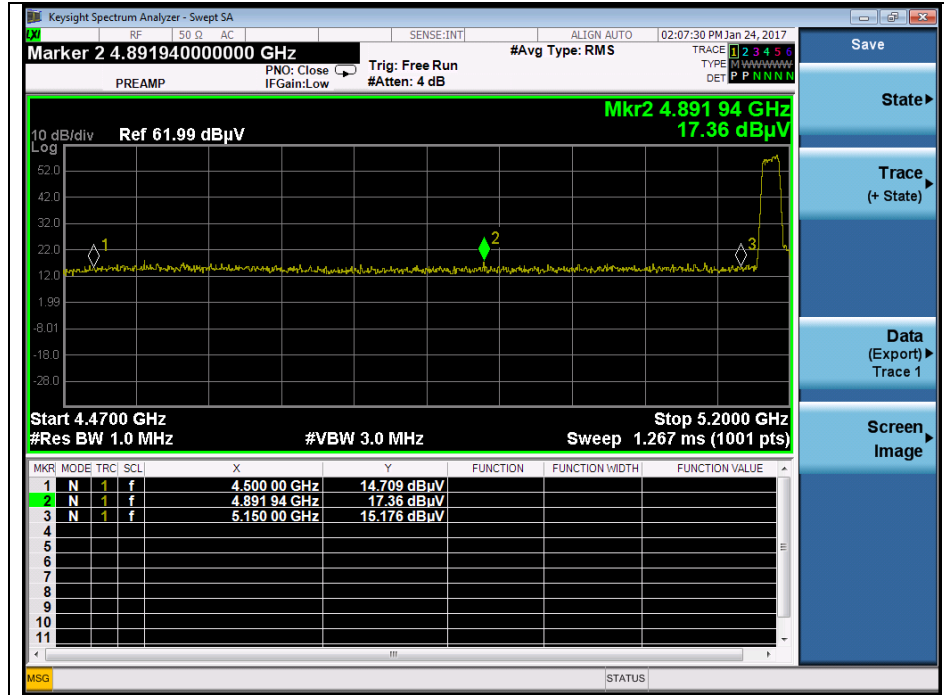
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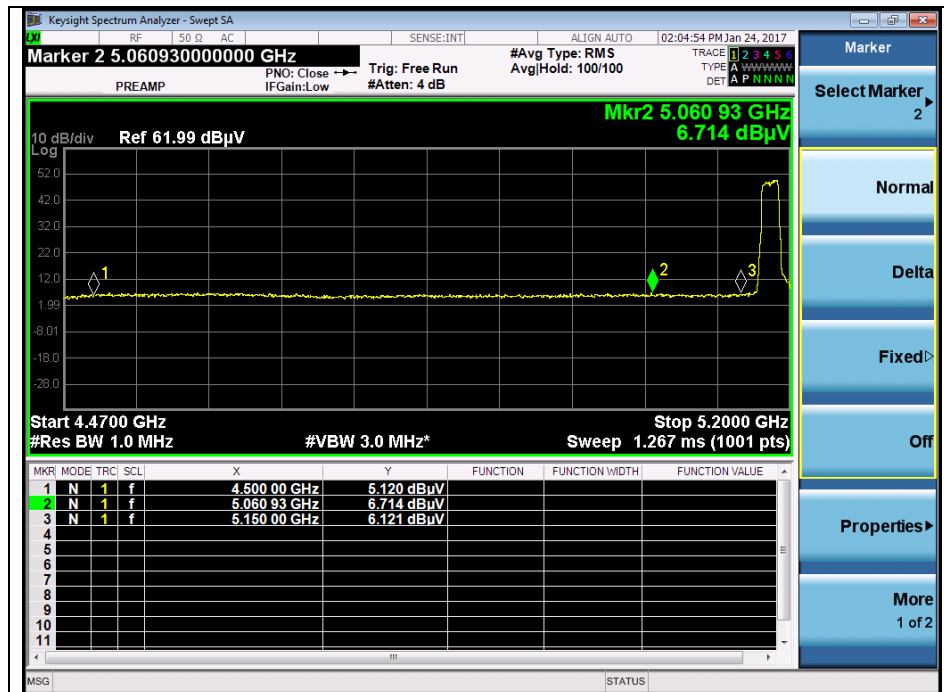
Plots of Spurious Emission

OFDM : 802.11a(6 Mbps)

Low channel Band edge (Peak) - Band 1



Low channel Band edge (Average) - Band 1



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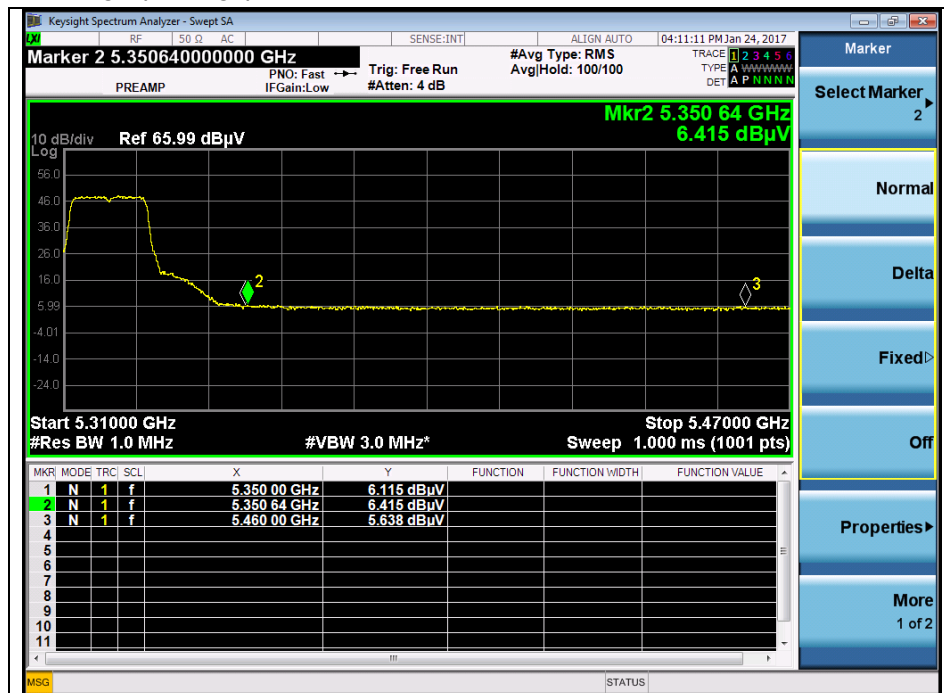
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A4(210 mm x 297 mm)

High channel Band edge (Peak) - Band 2A



High channel Band edge (Average) - Band 2A



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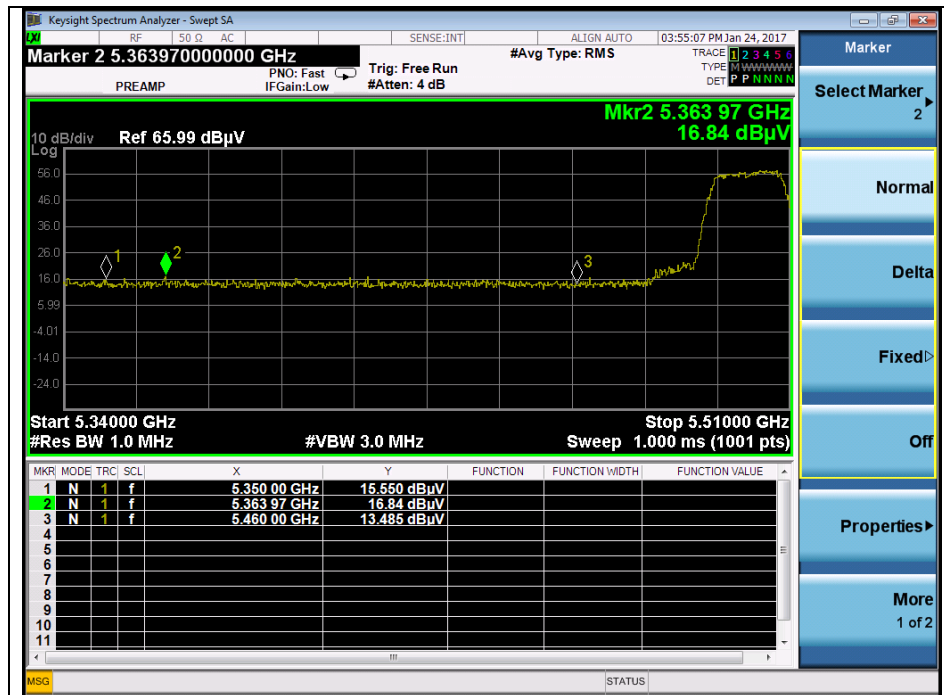
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

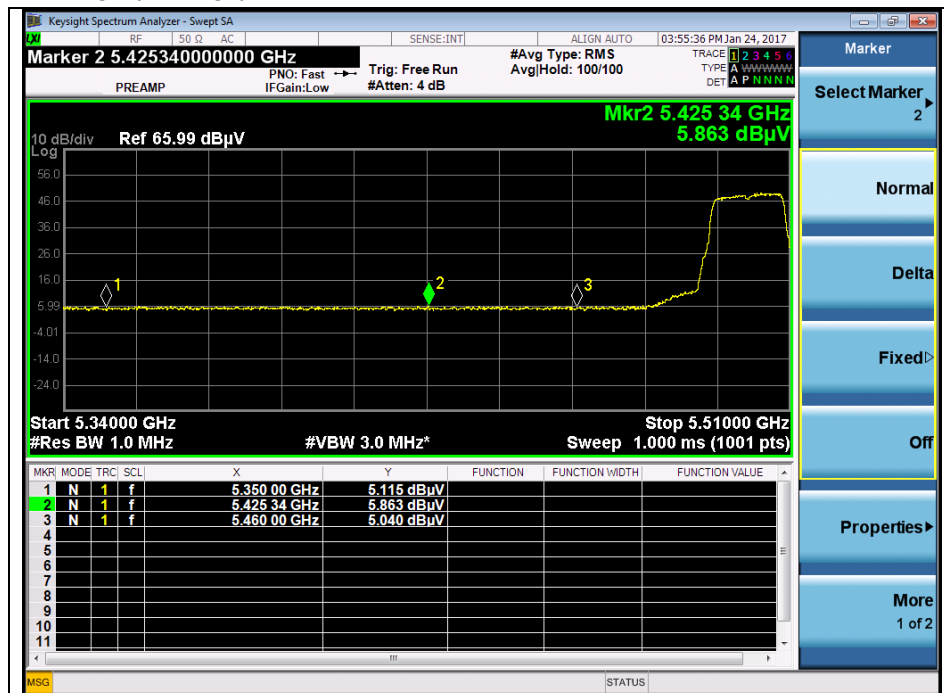
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A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 2C



Low channel Band edge (Average) - Band 2C



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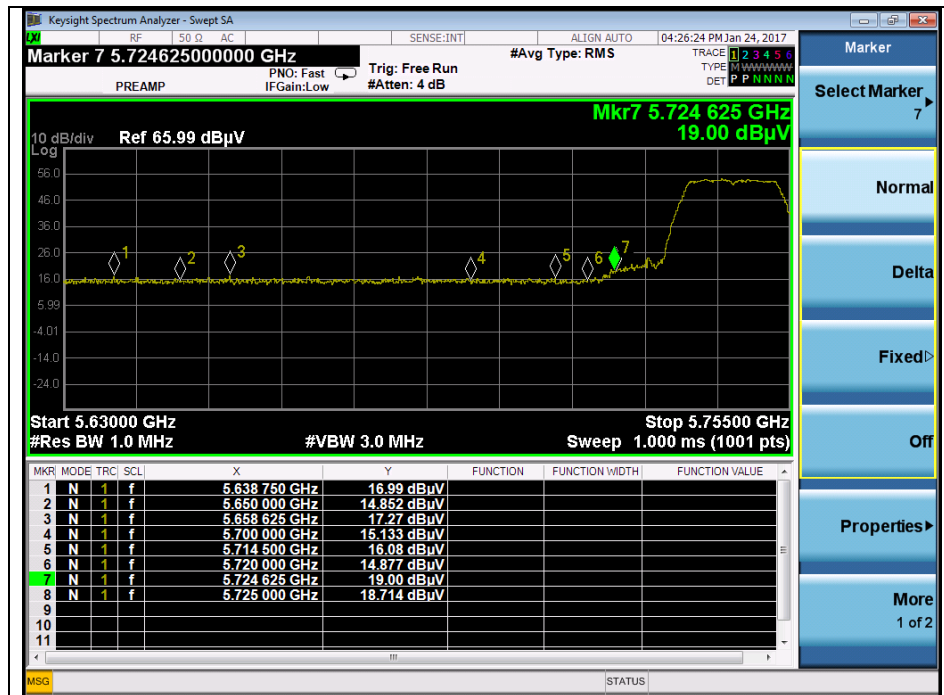
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RTT5041-20(2015.10.01)(3)

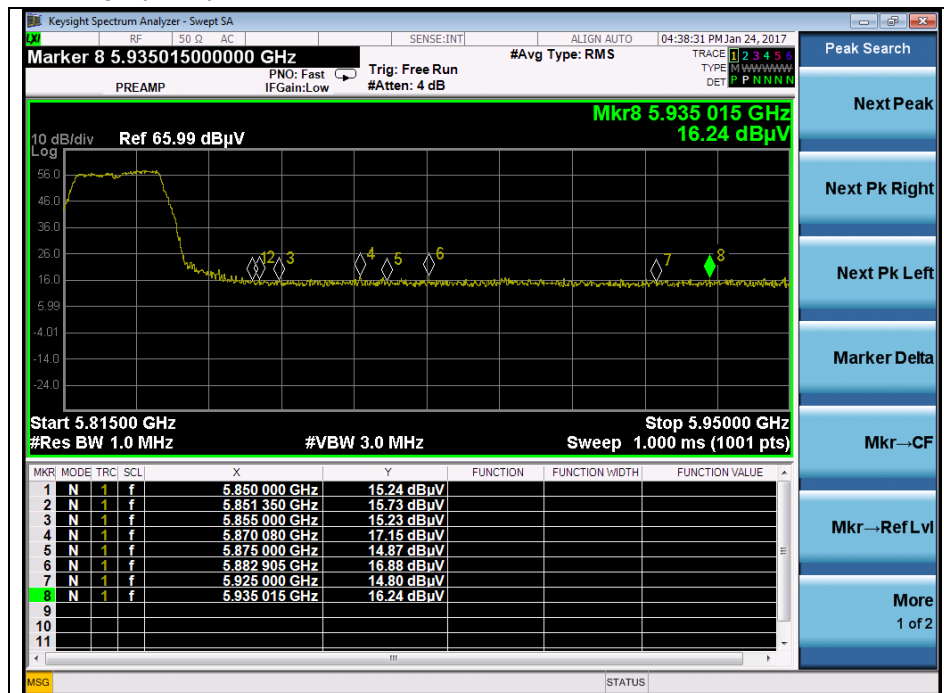
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A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 3



High channel Band edge (Peak) - Band 3



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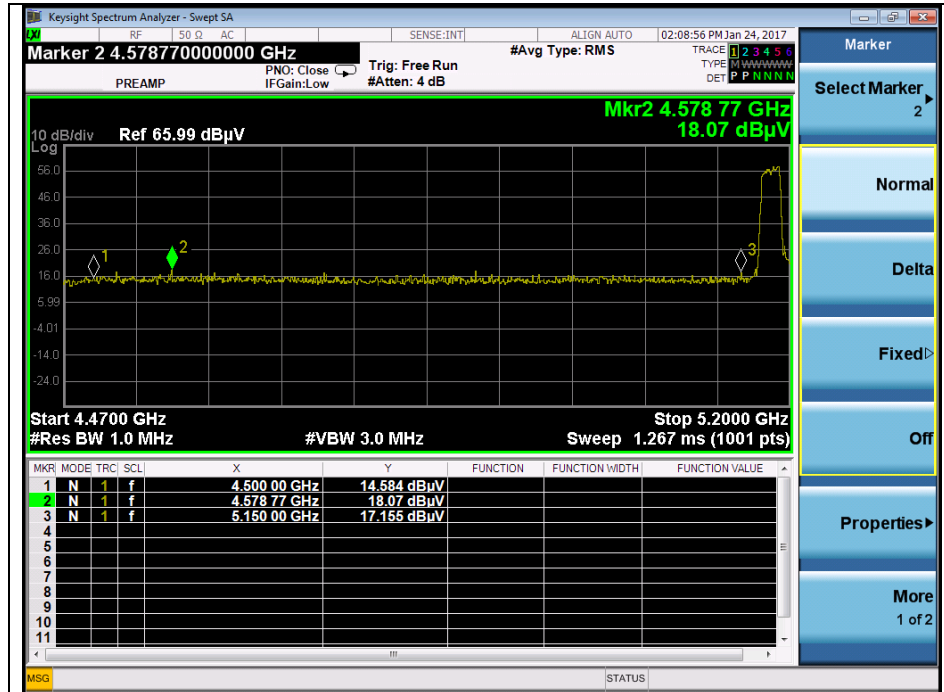
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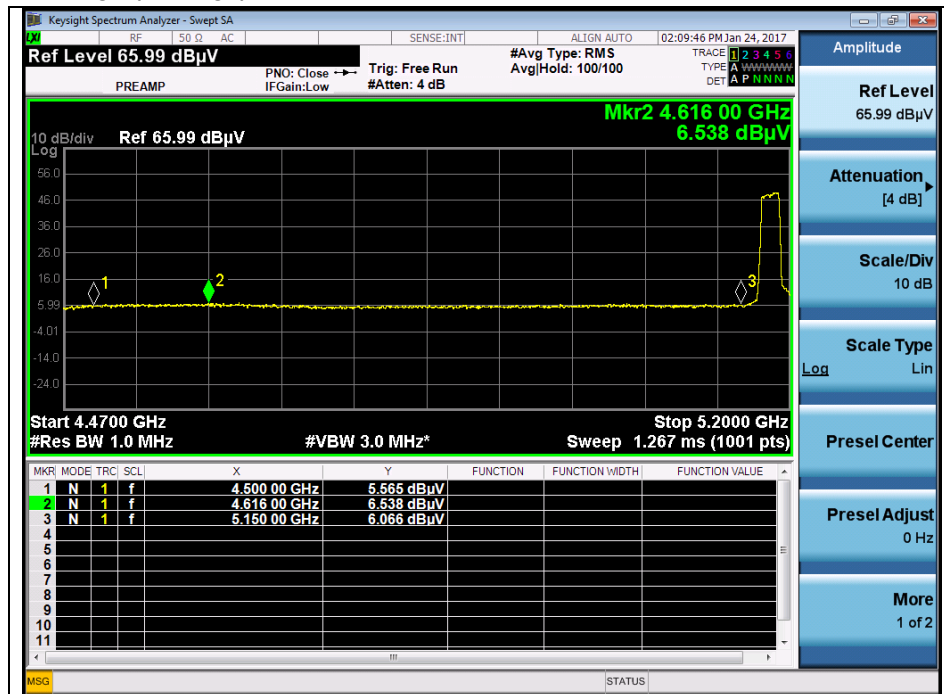
A4(210 mm x 297 mm)

OFDM : 802.11n_HT20(MCS0)

Low channel Band edge (Peak) - Band 1



Low channel Band edge (Average) - Band 1



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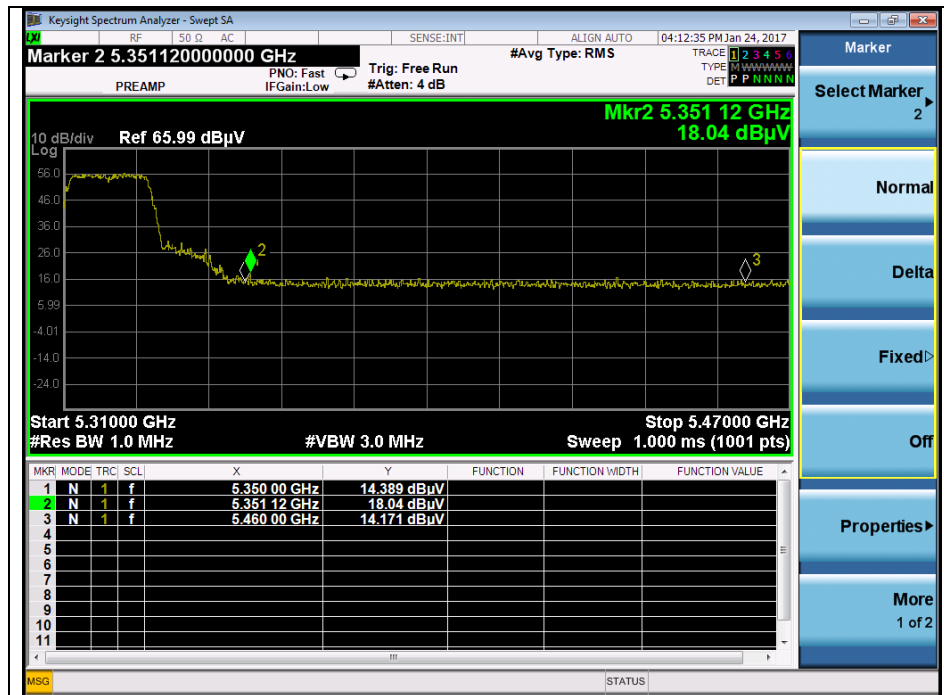
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RTT5041-20(2015.10.01)(3)

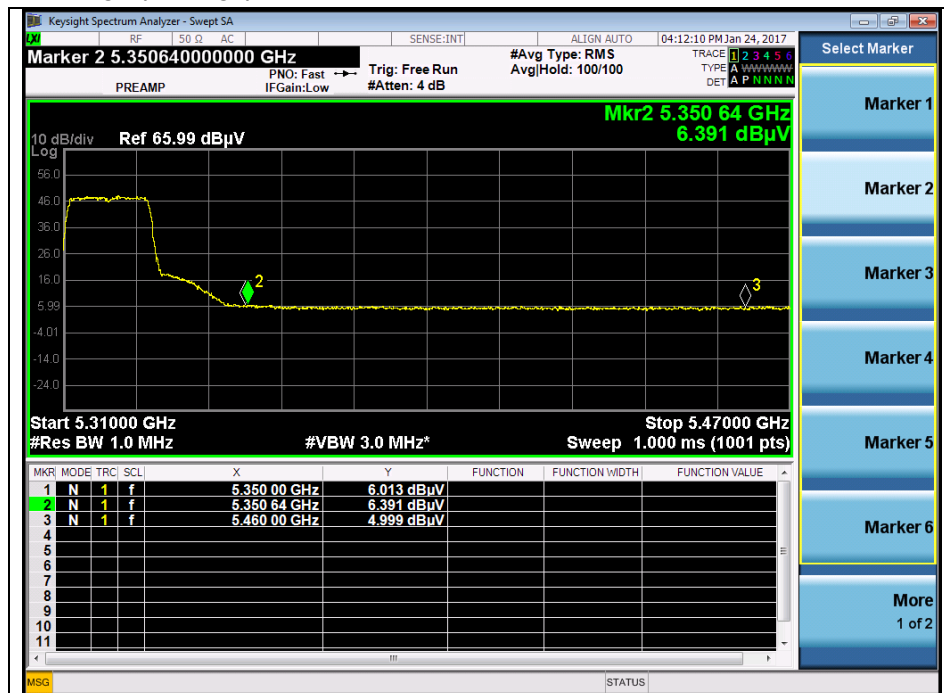
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A4(210 mm x 297 mm)

High channel Band edge (Peak) - Band 2A



High channel Band edge (Average) - Band 2A



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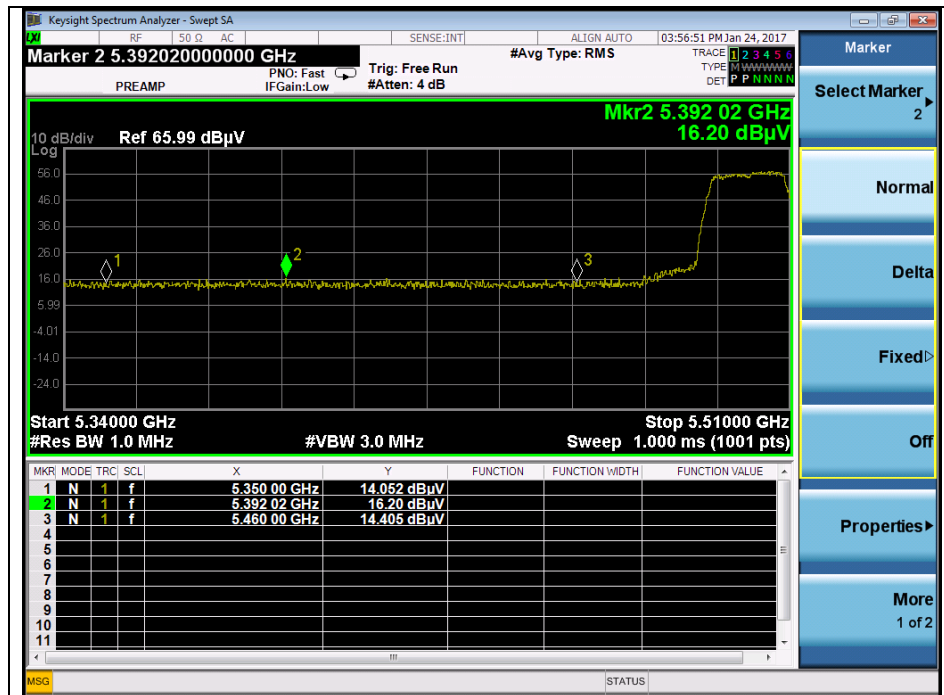
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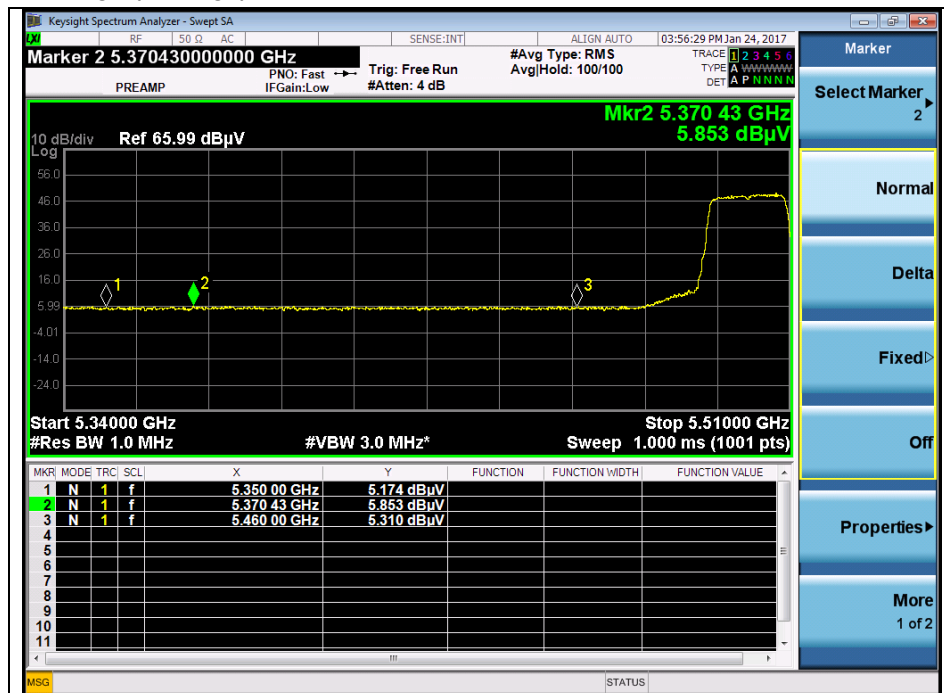
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A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 2C



Low channel Band edge (Average) - Band 2C



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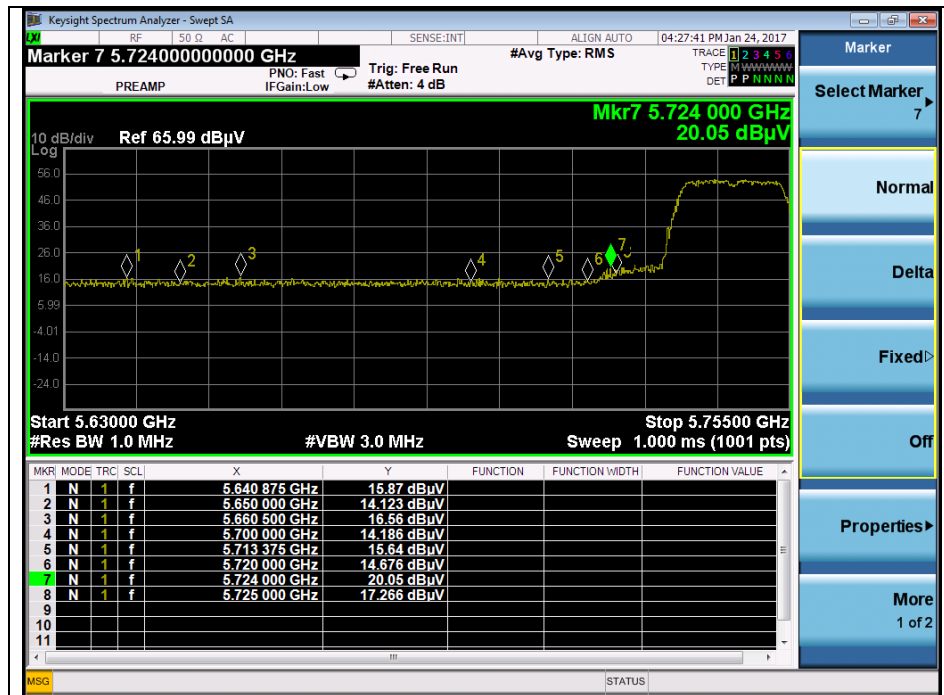
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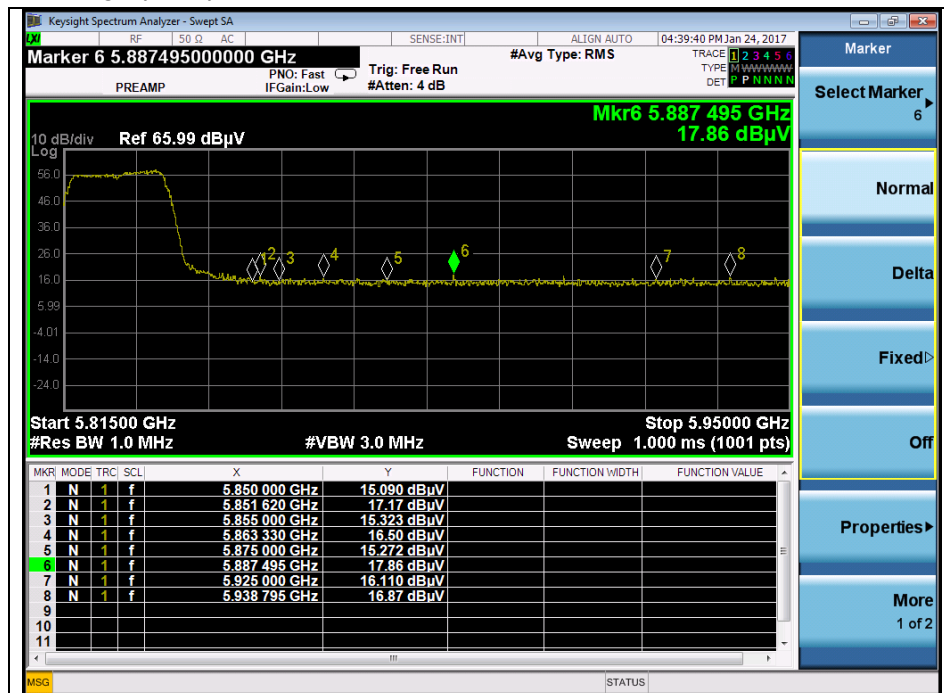
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A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 3



High channel Band edge (Peak) - Band 3



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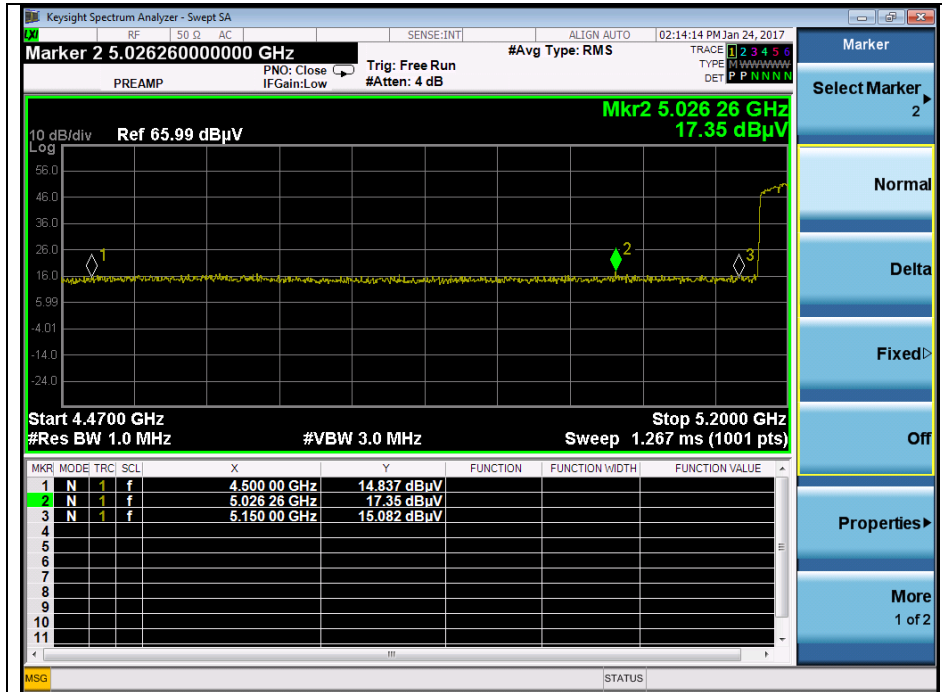
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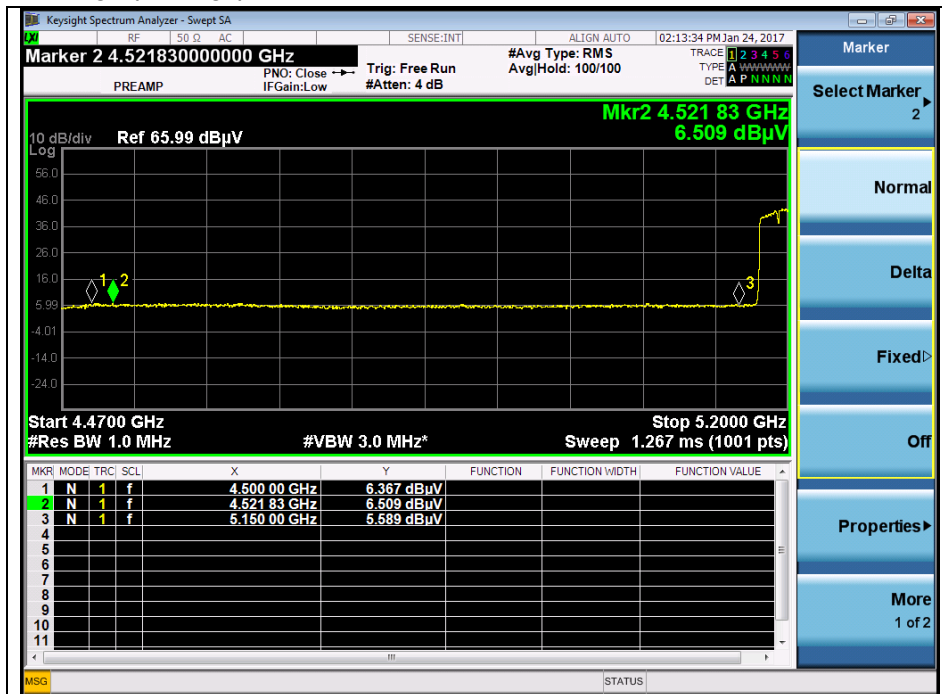
A4(210 mm x 297 mm)

OFDM : 802.11n_HT40(MCS0)

Low channel Band edge (Peak) - Band 1



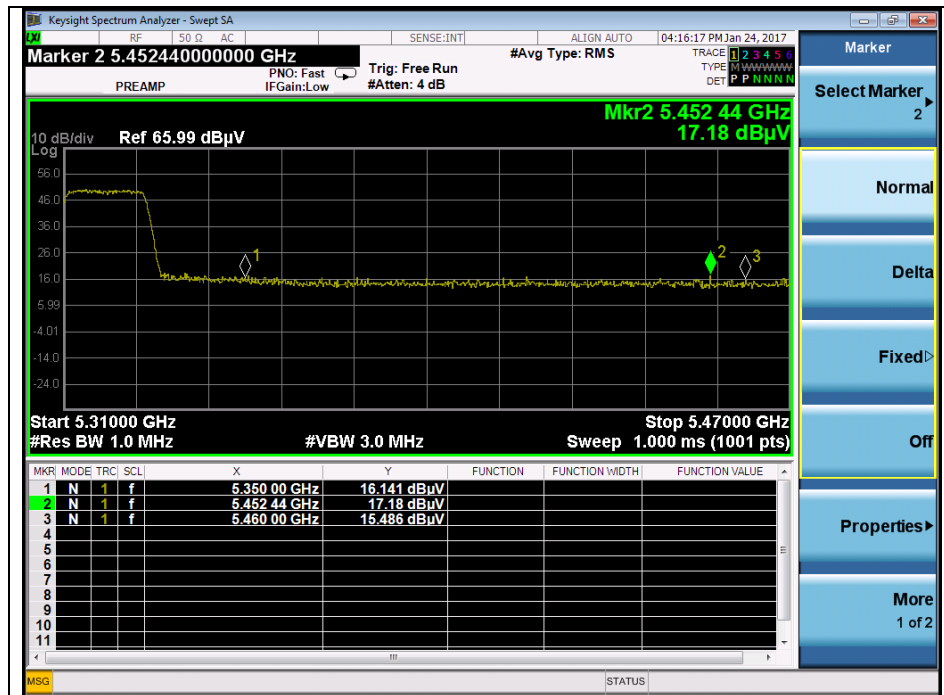
Low channel Band edge (Average) - Band 1



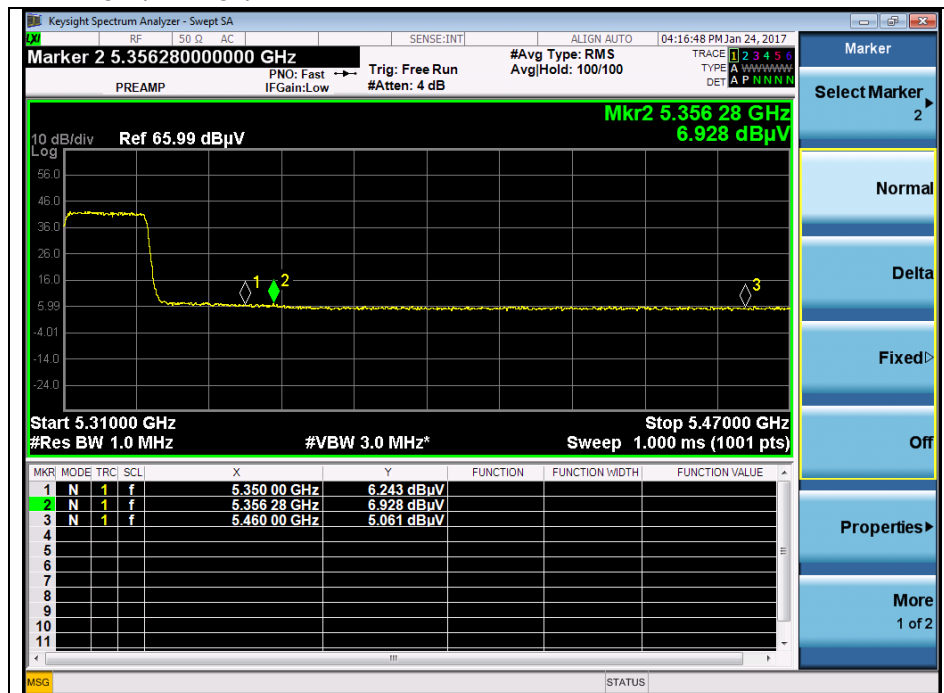
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High channel Band edge (Peak) - Band 2A



High channel Band edge (Average) - Band 2A



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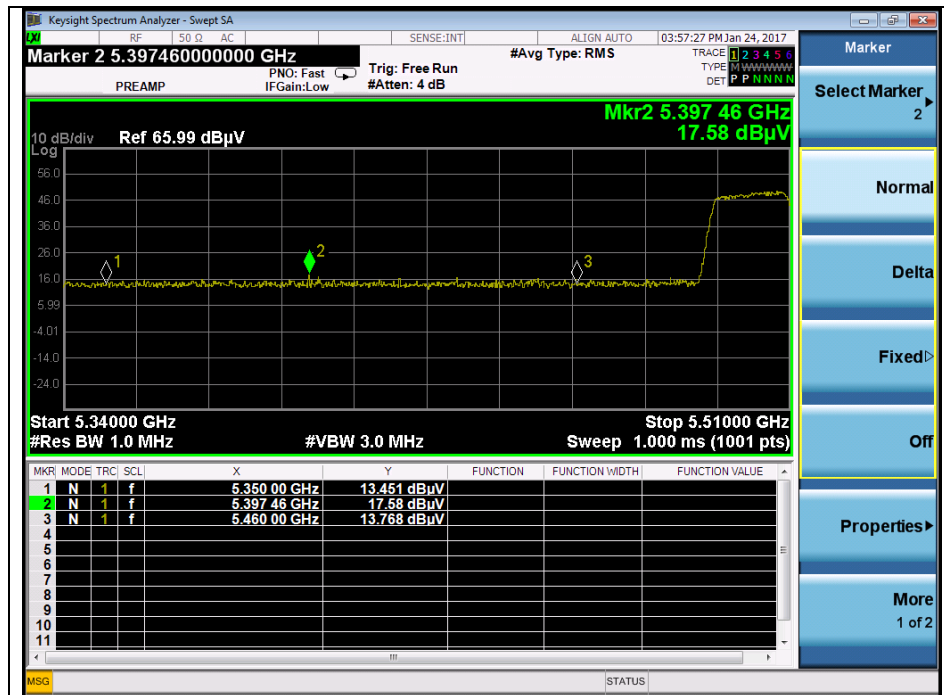
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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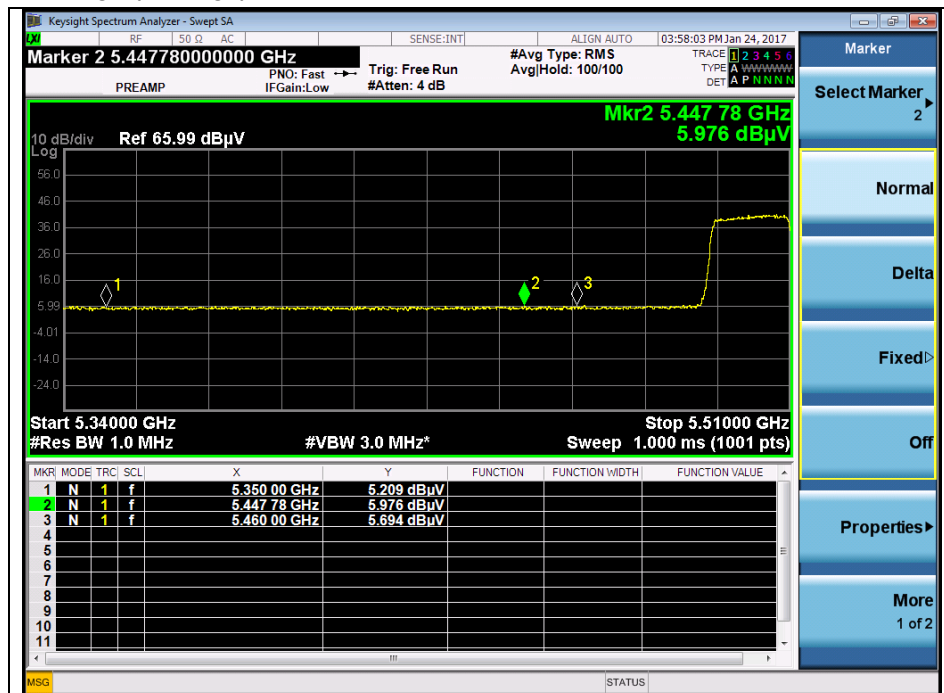
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 2C



Low channel Band edge (Average) - Band 2C



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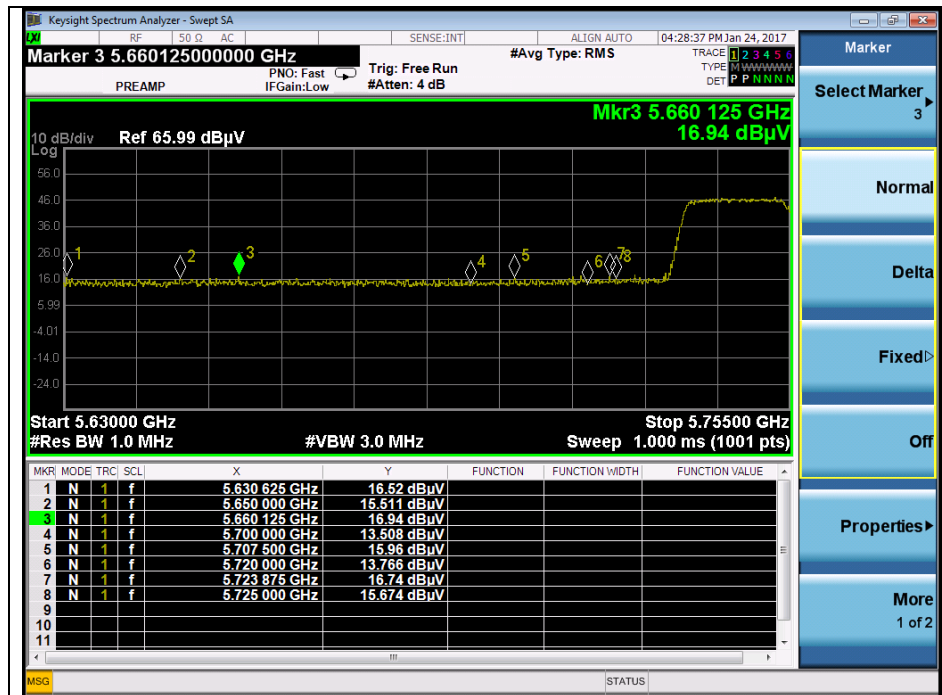
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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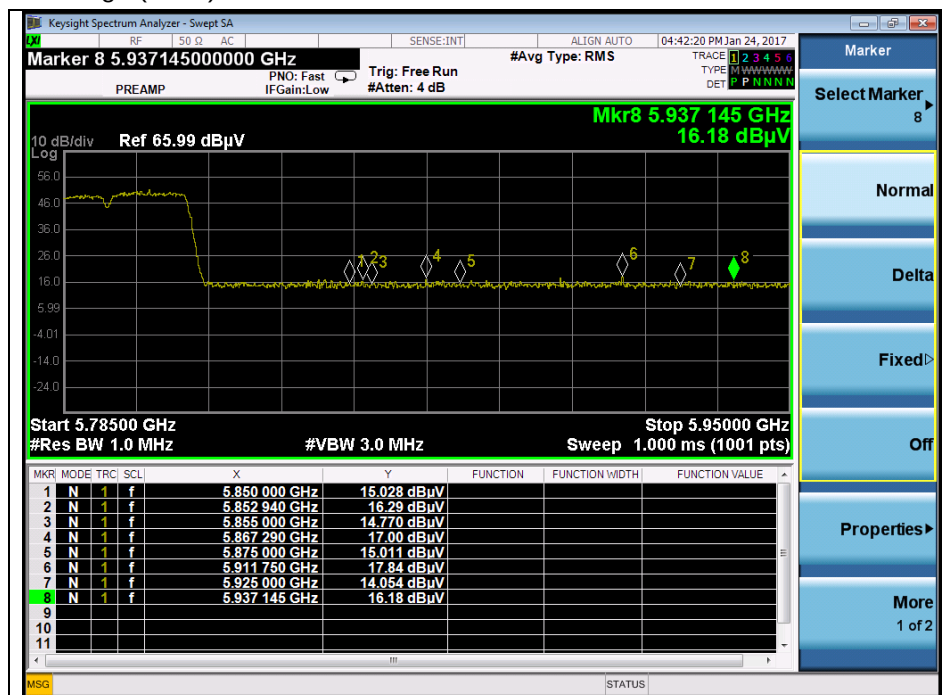
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 3



High channel Band edge (Peak) - Band 3



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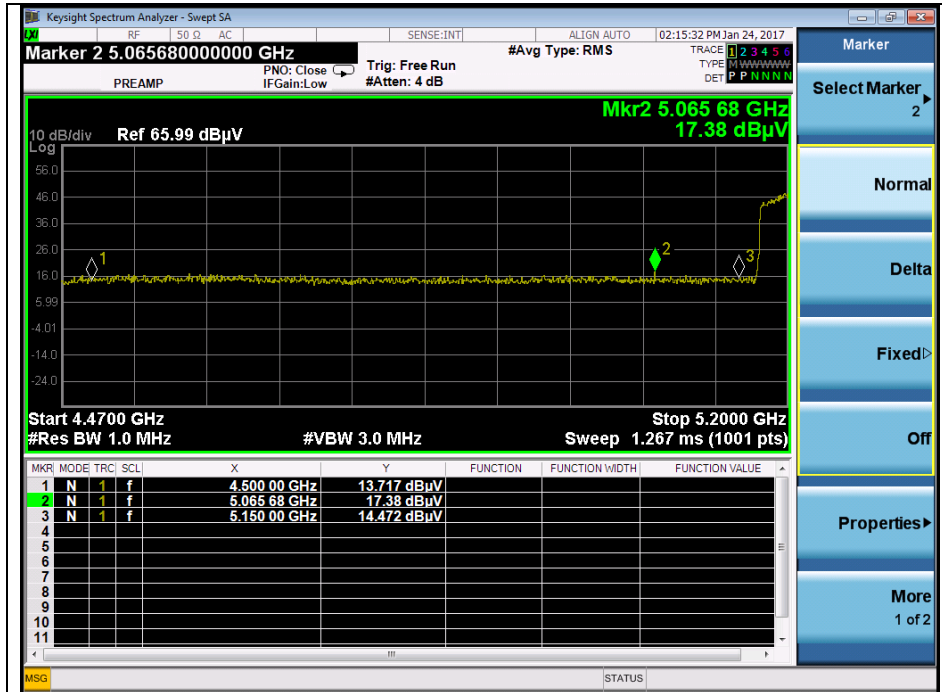
RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

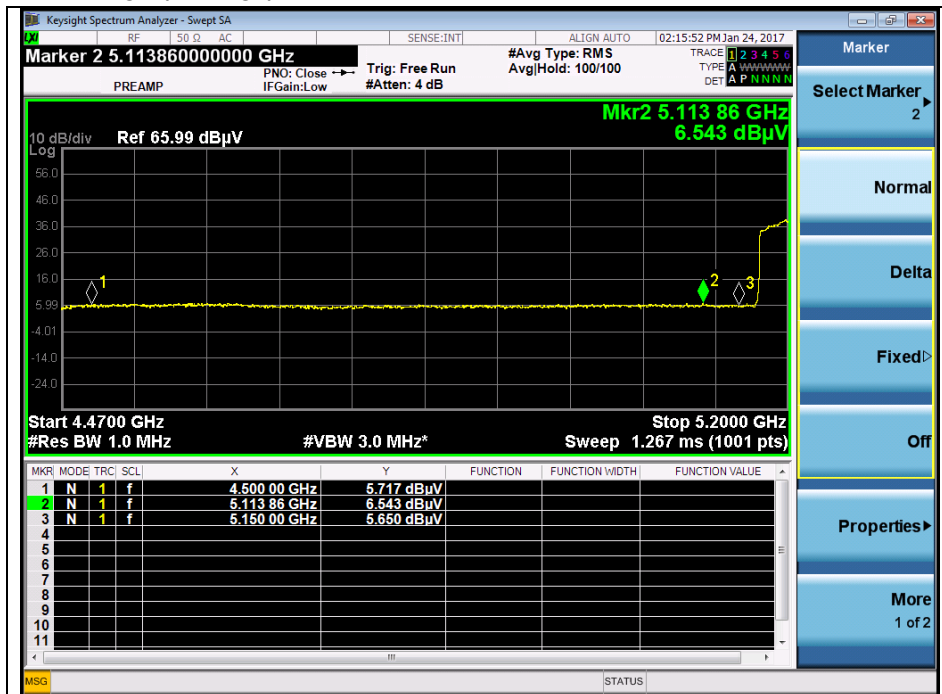
A4(210 mm x 297 mm)

OFDM : 802.11ac_VHT80(MCS0)

Middle channel Band edge (Peak) - Band 1



Middle channel Band edge (Average) - Band 1



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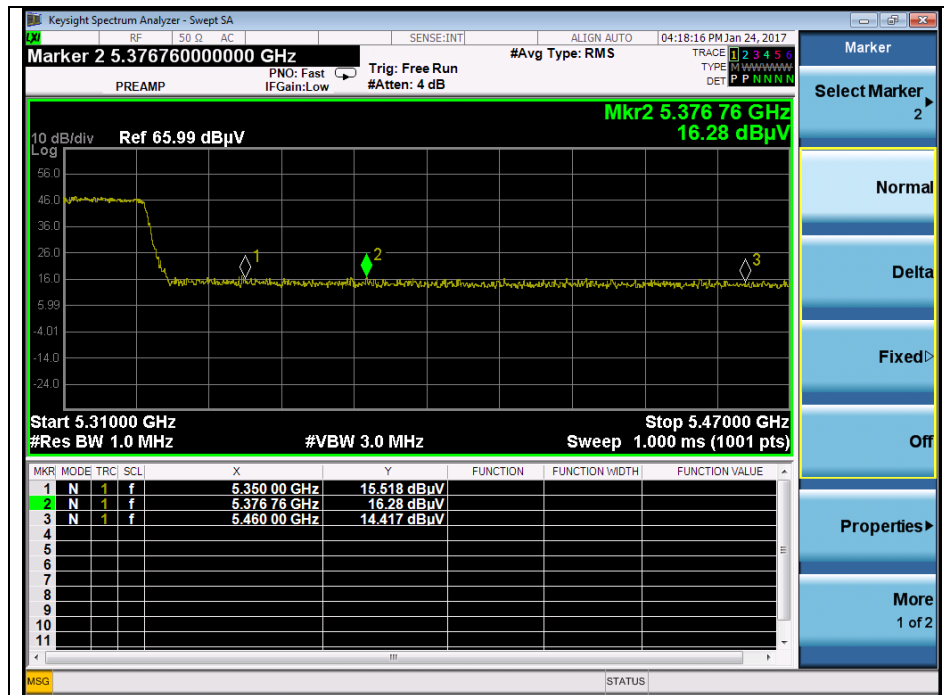
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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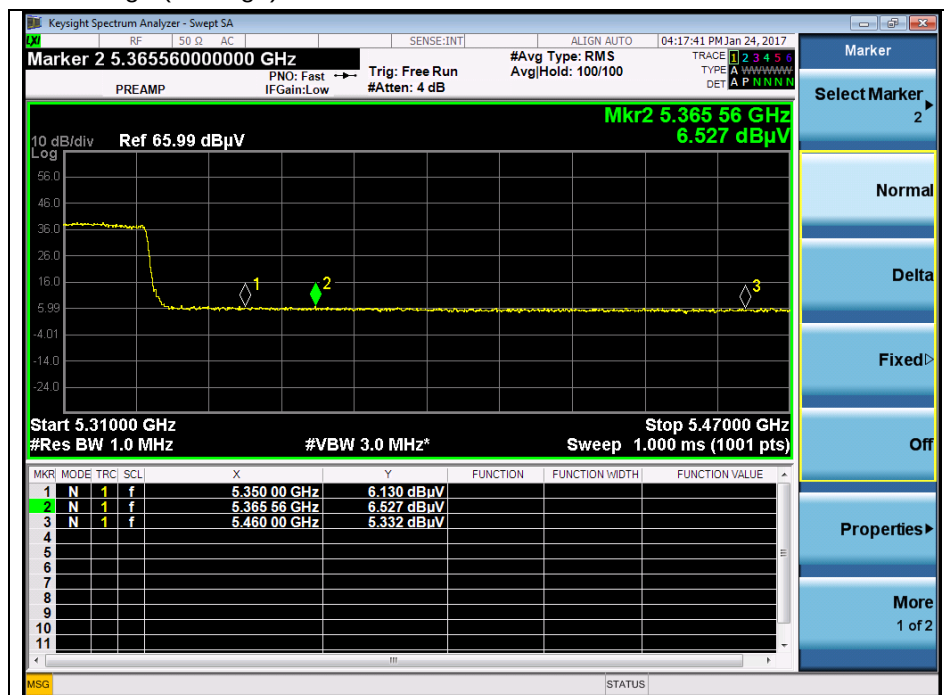
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Middle channel Band edge (Peak) - Band 2A



Middle channel Band edge (Average) - Band 2A



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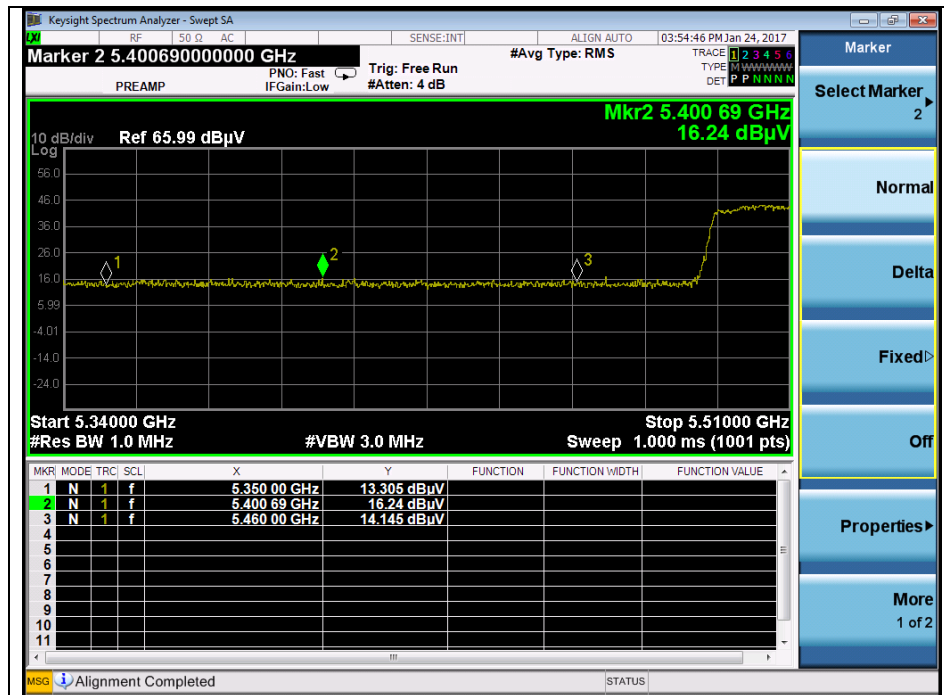
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

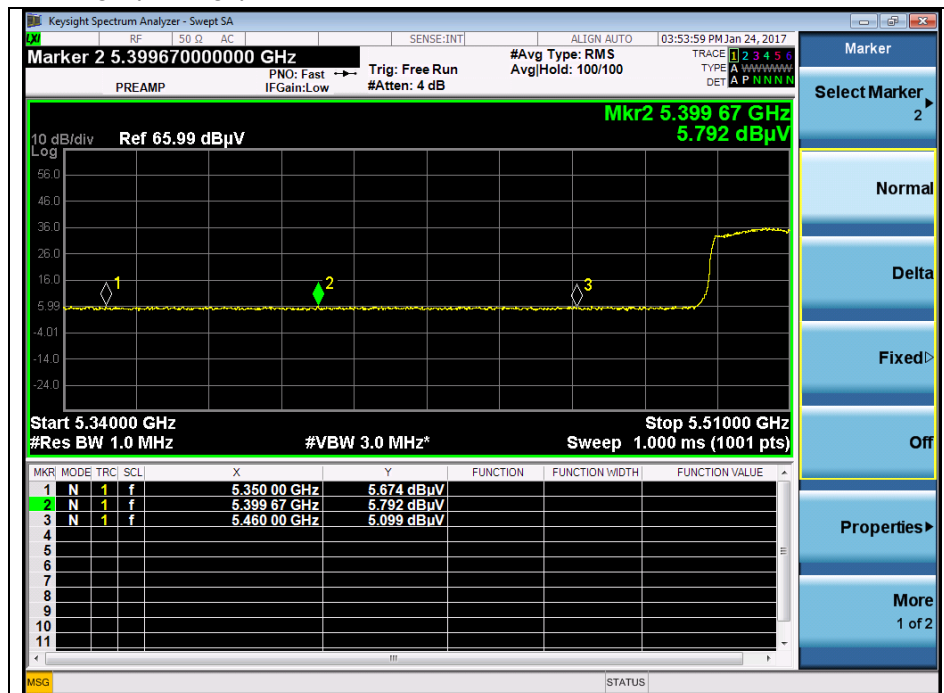
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A4(210 mm x 297 mm)

Low channel Band edge (Peak) - Band 2C



Low channel Band edge (Average) - Band 2C



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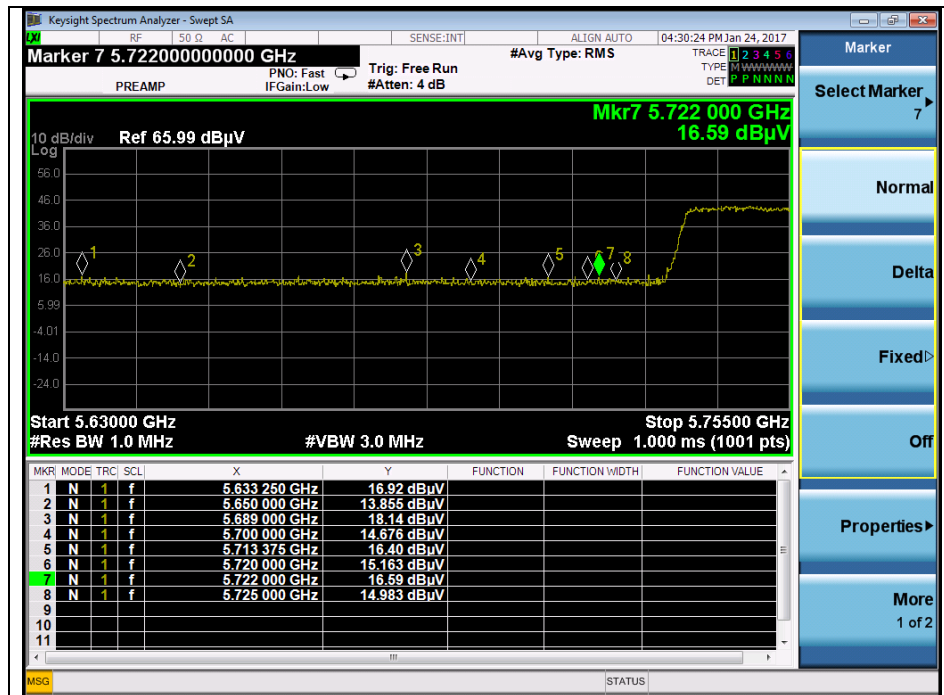
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

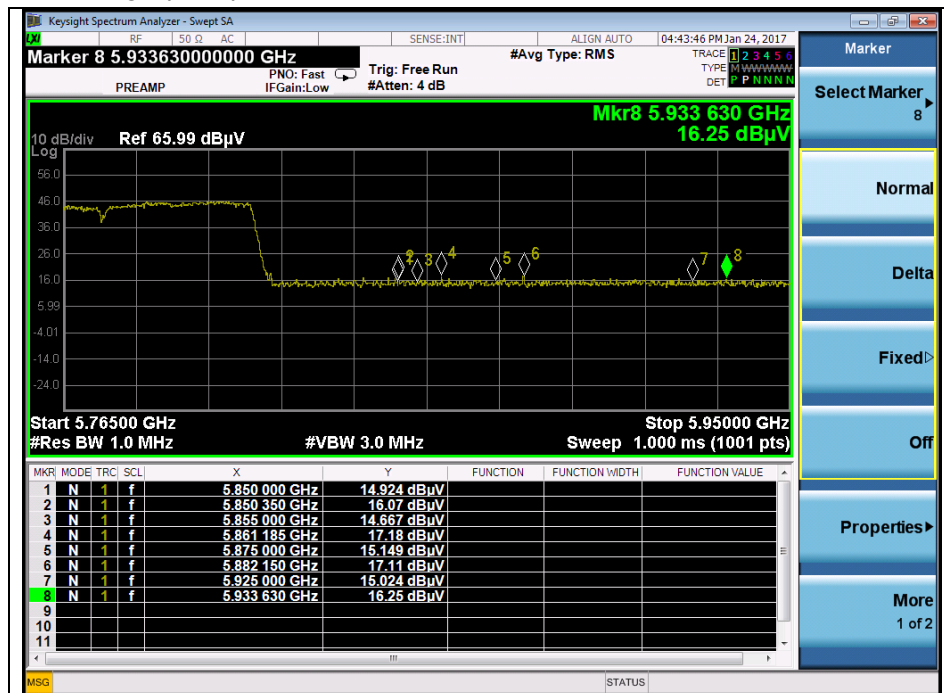
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A4(210 mm x 297 mm)

Middle channel Band edge (Peak) - Band 3



Middle channel Band edge (Peak) - Band 3



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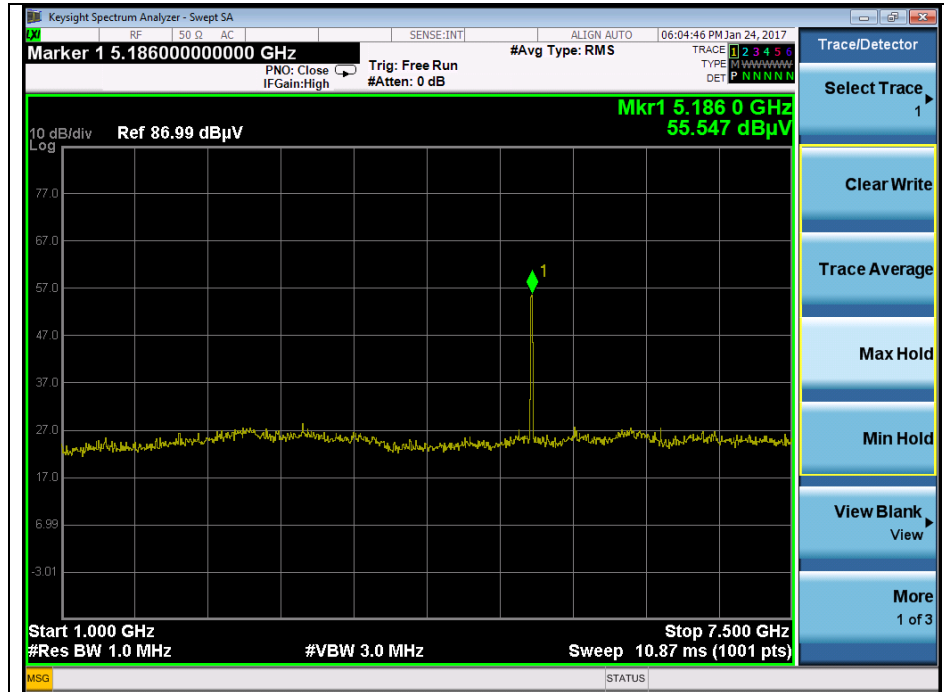
RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

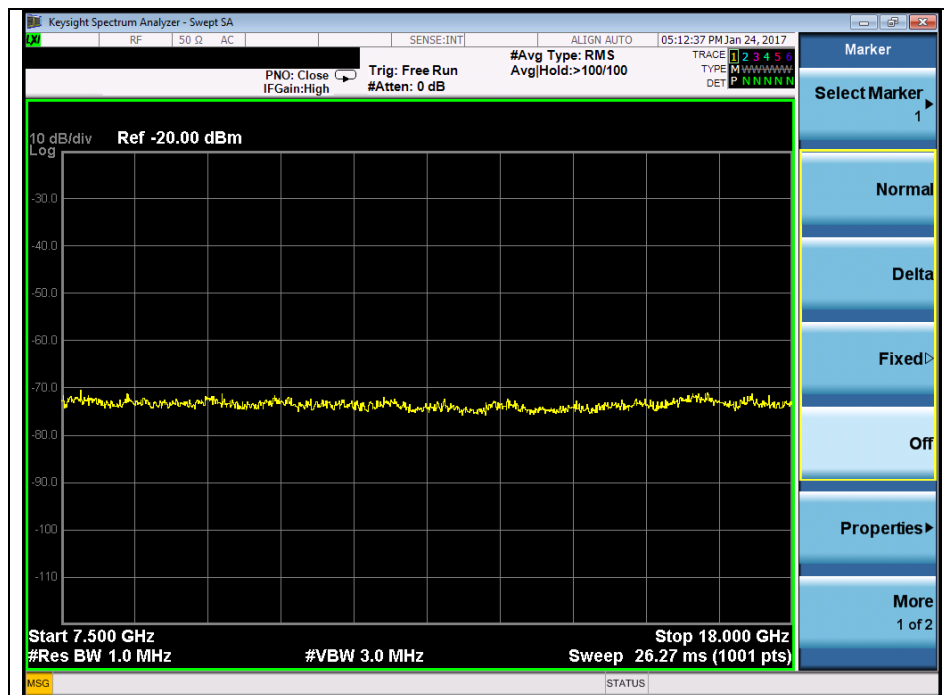
A4(210 mm x 297 mm)

Scanning Plots: 802.11a(6 Mbps)

1 GHz ~ 7.5 GHz



7.5 GHz ~ 18 GHz



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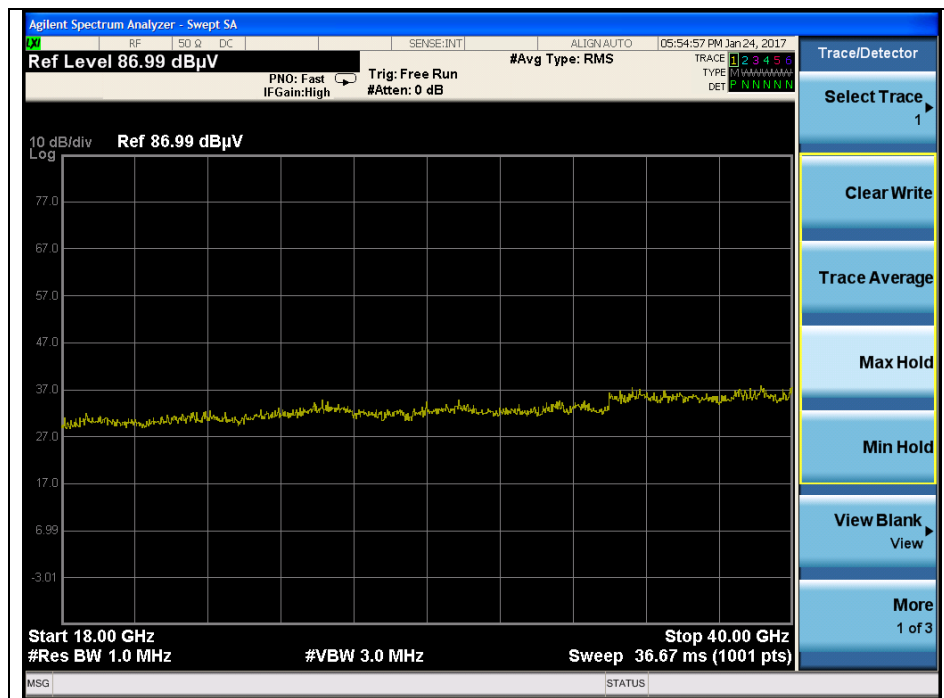
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A4(210 mm x 297 mm)

18 GHz ~ 40 GHz



Note: Emission was scanned up to 40 GHz.

No emissions were detected above the noise floor which was at least 20 dB below the specification limit.

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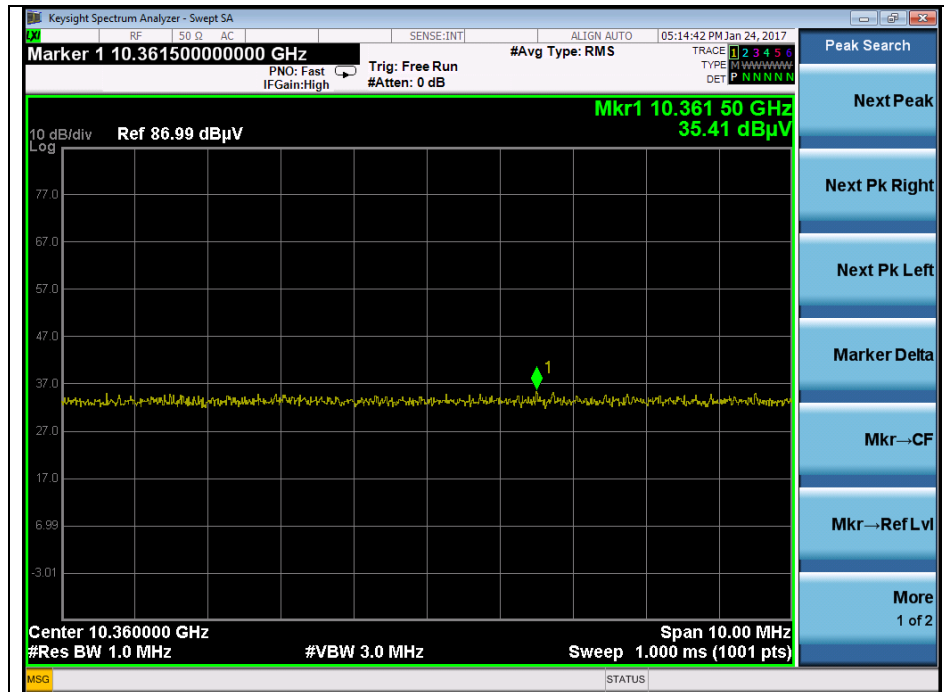
RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

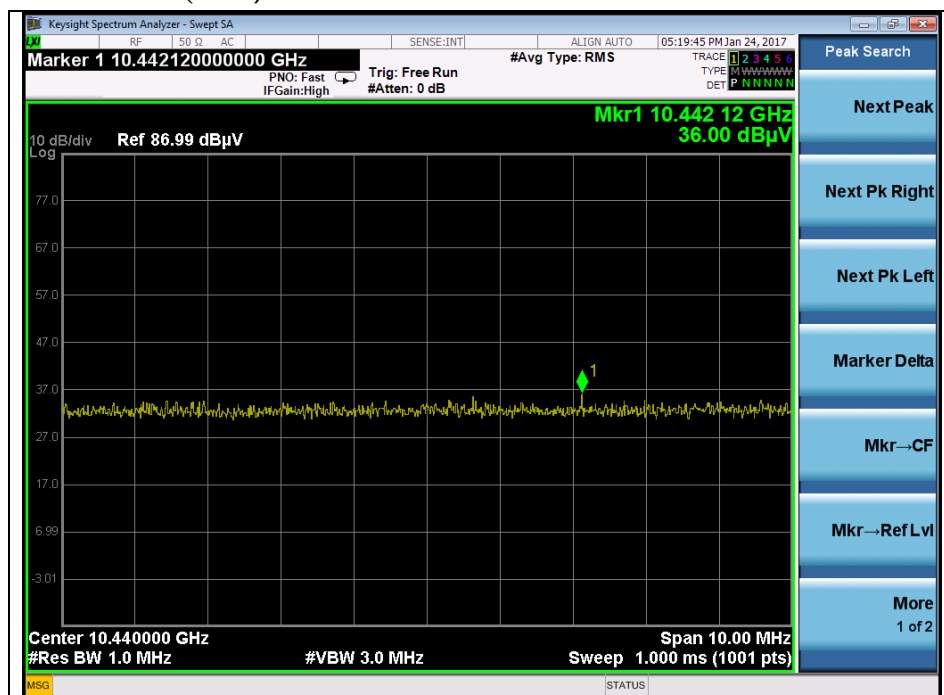
A4(210 mm x 297 mm)

OFDM : 802.11a(6 Mbps)

Low channel 2nd harmonic (Peak) - Band 1



Middle channel 2nd harmonic (Peak) - Band 1



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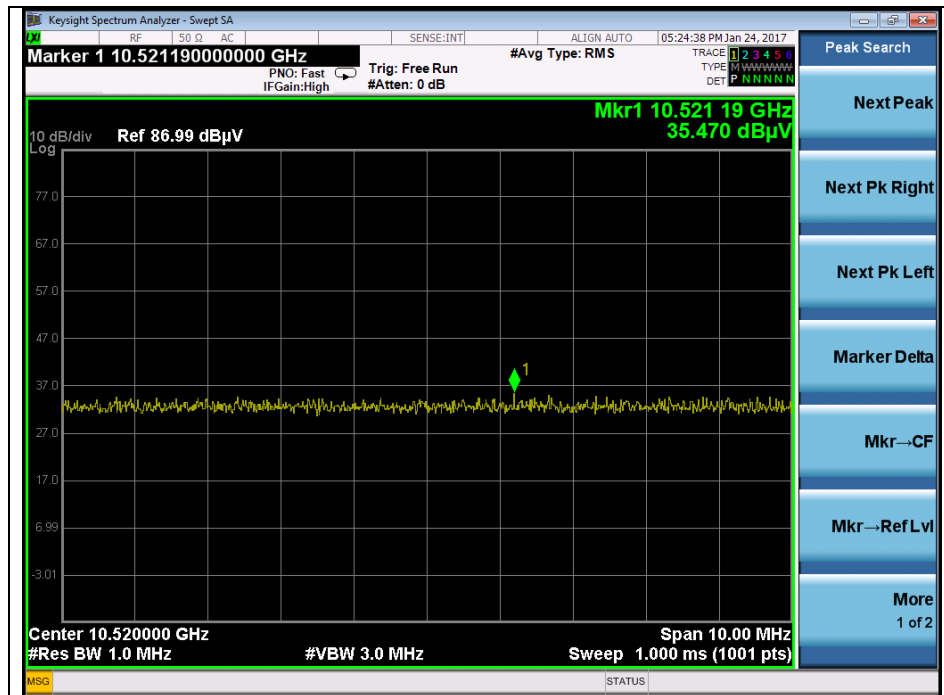
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

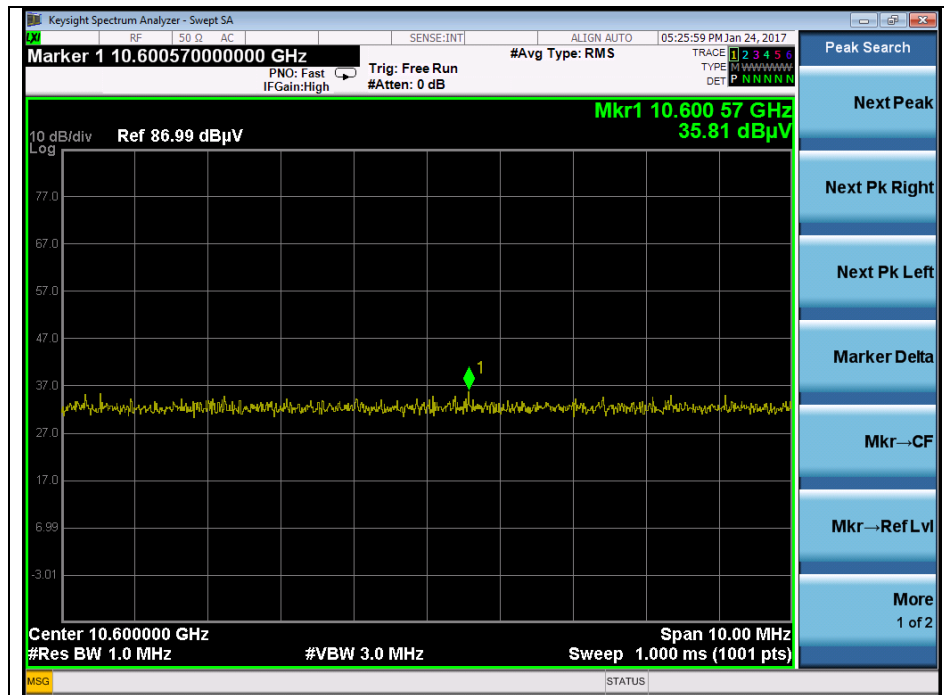
Low channel 2nd harmonic (Peak) - Band 2A



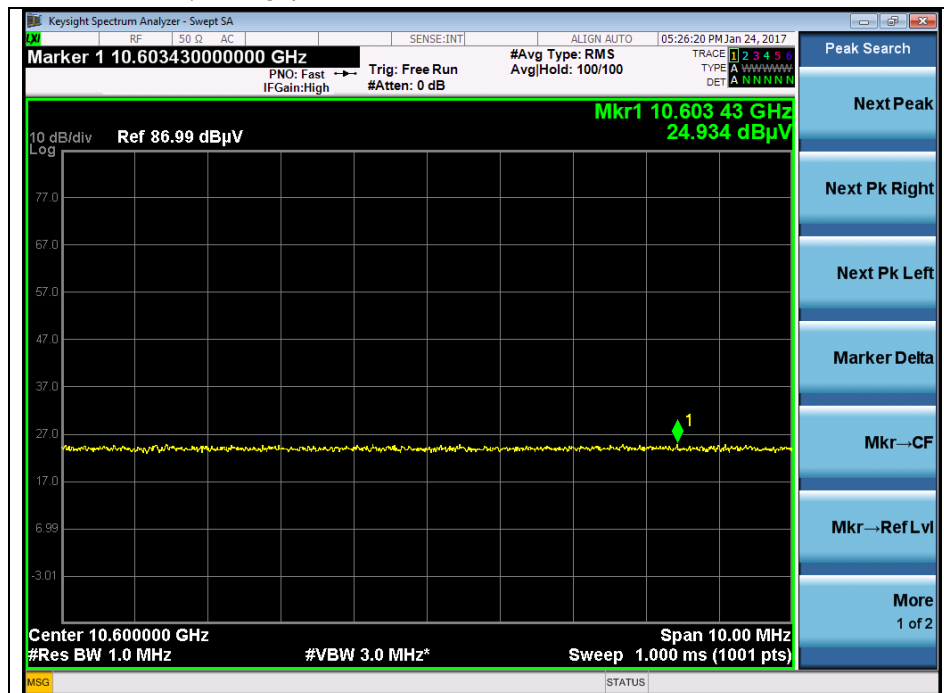
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Middle channel 2nd harmonic (Peak) - Band 2A



Middle channel 2nd harmonic (Average) - Band 2A



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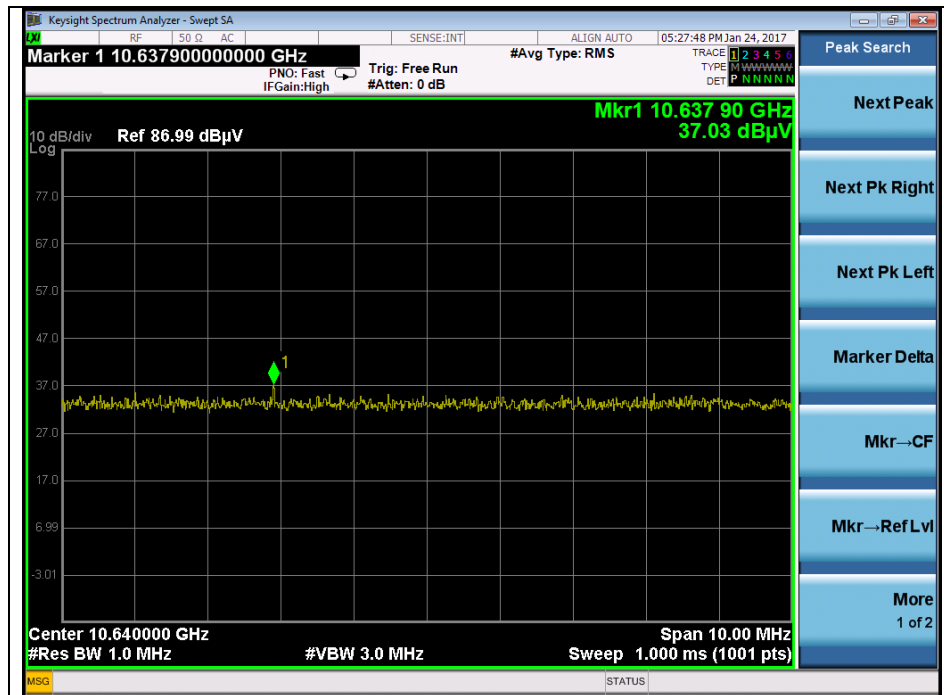
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

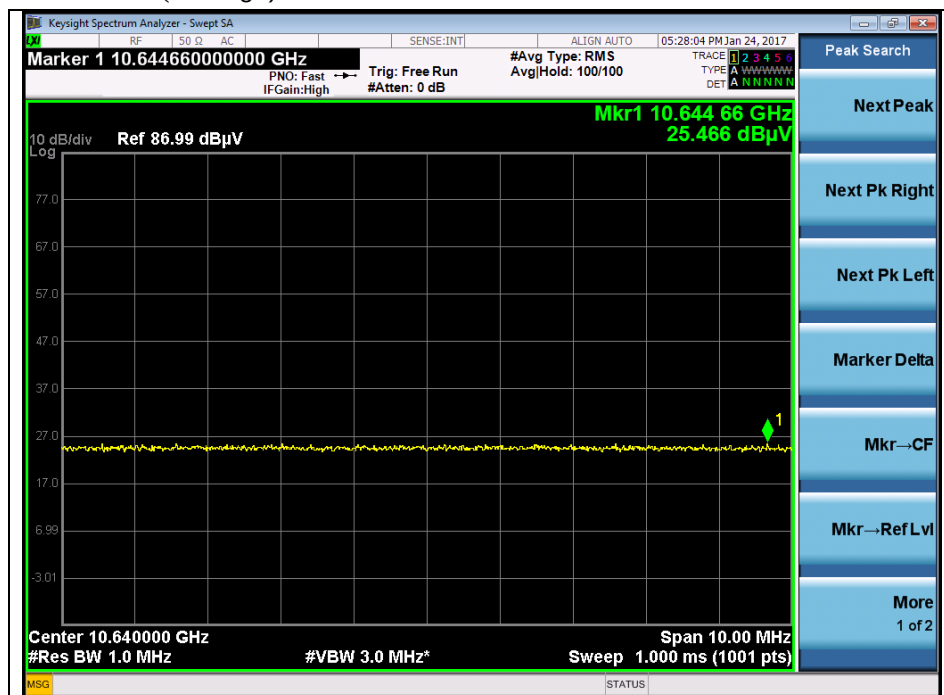
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A4(210 mm x 297 mm)

High channel 2nd harmonic (Peak) - Band 2A



High channel 2nd harmonic (Average) - Band 2A



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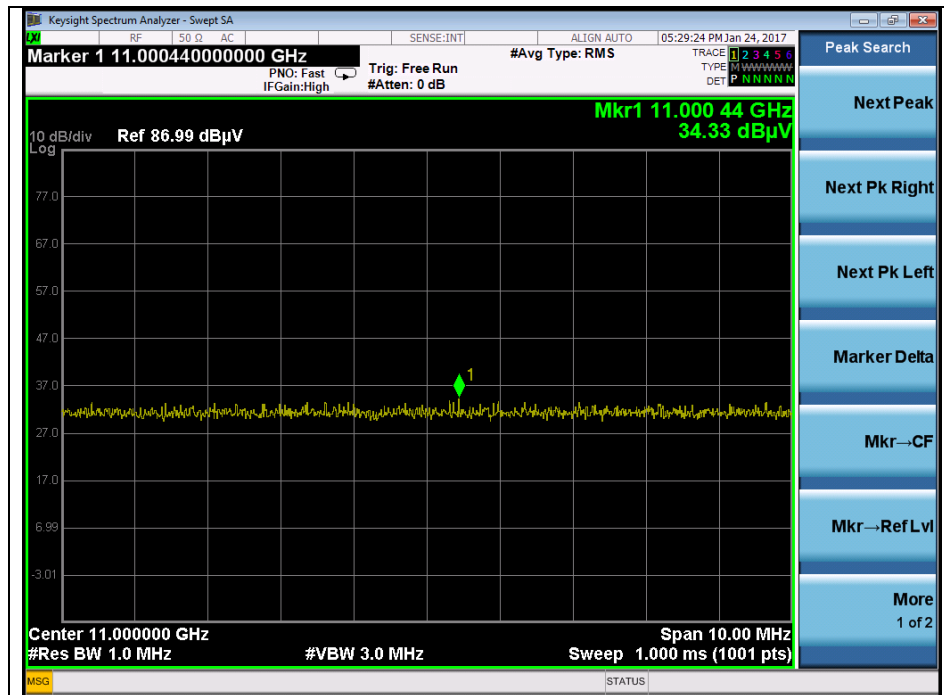
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

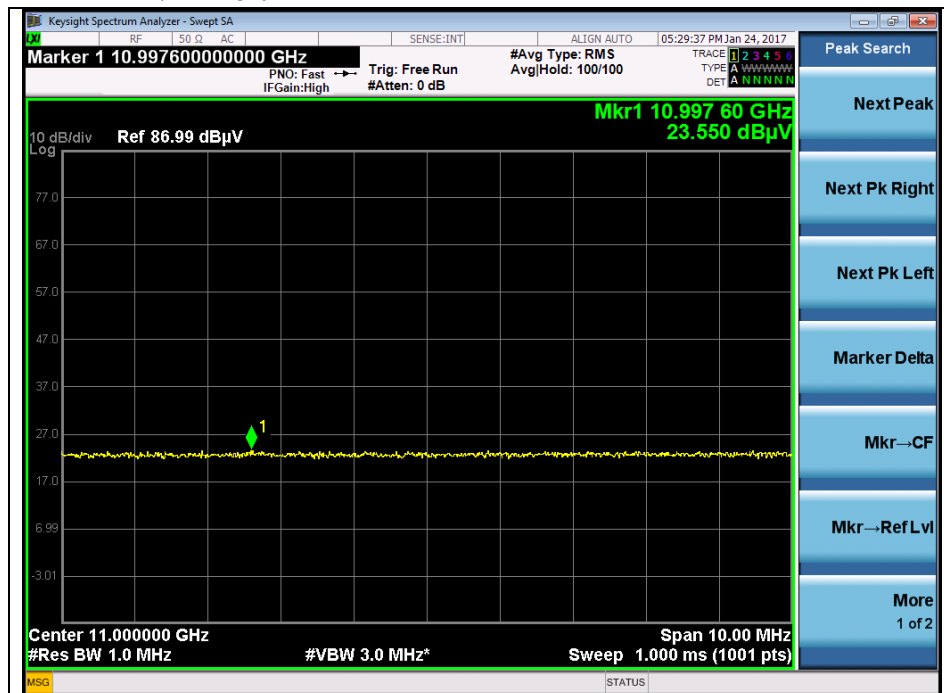
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Low channel 2nd harmonic (Peak) - Band 2C



Low channel 2nd harmonic (Average) - Band 2C



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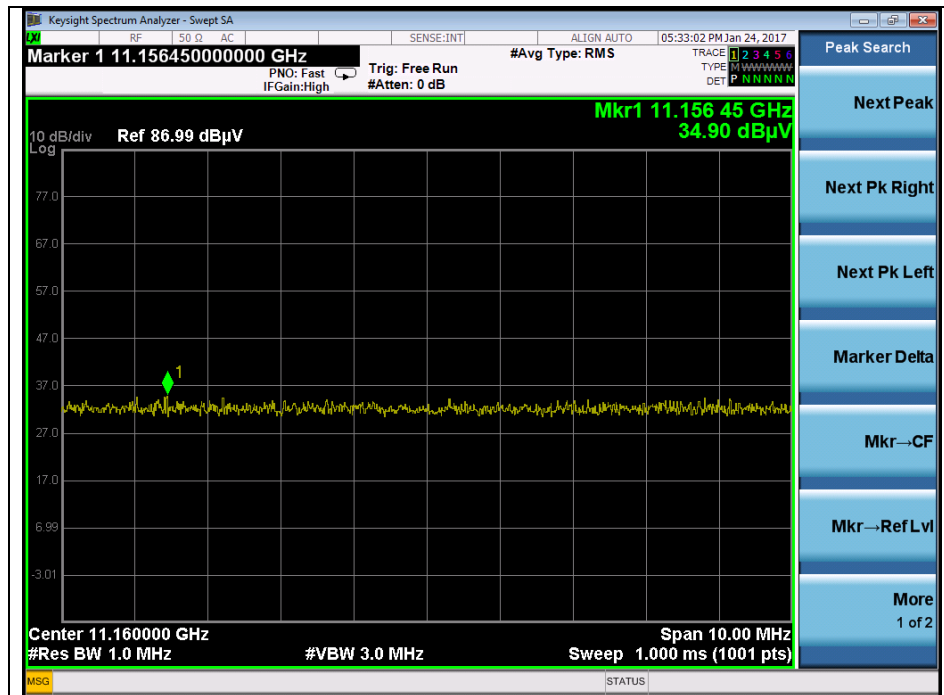
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

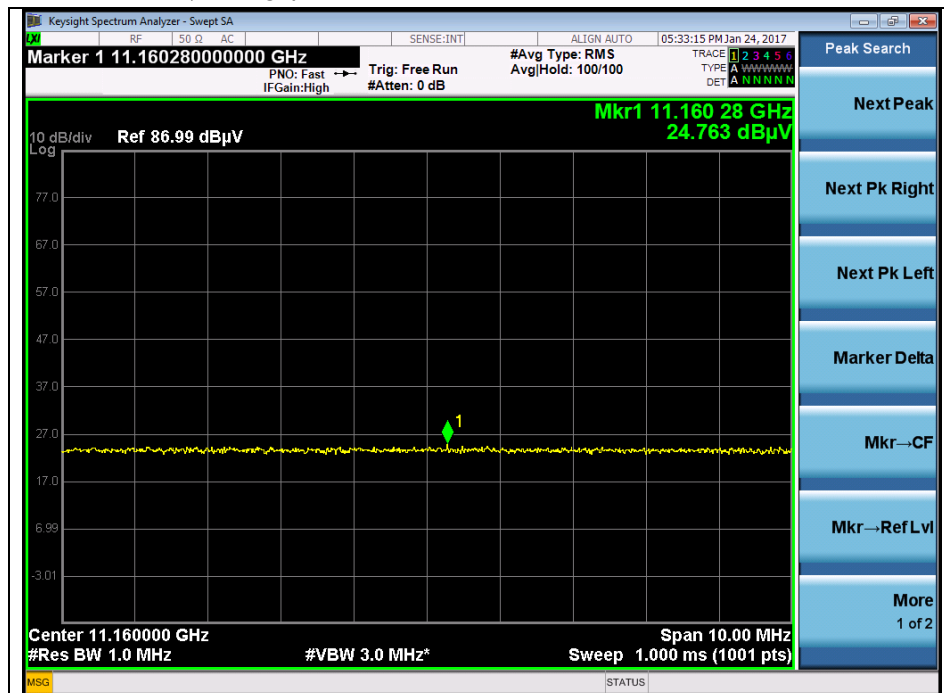
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Middle channel 2nd harmonic (Peak) - Band 2C



Middle channel 2nd harmonic (Average) - Band 2C



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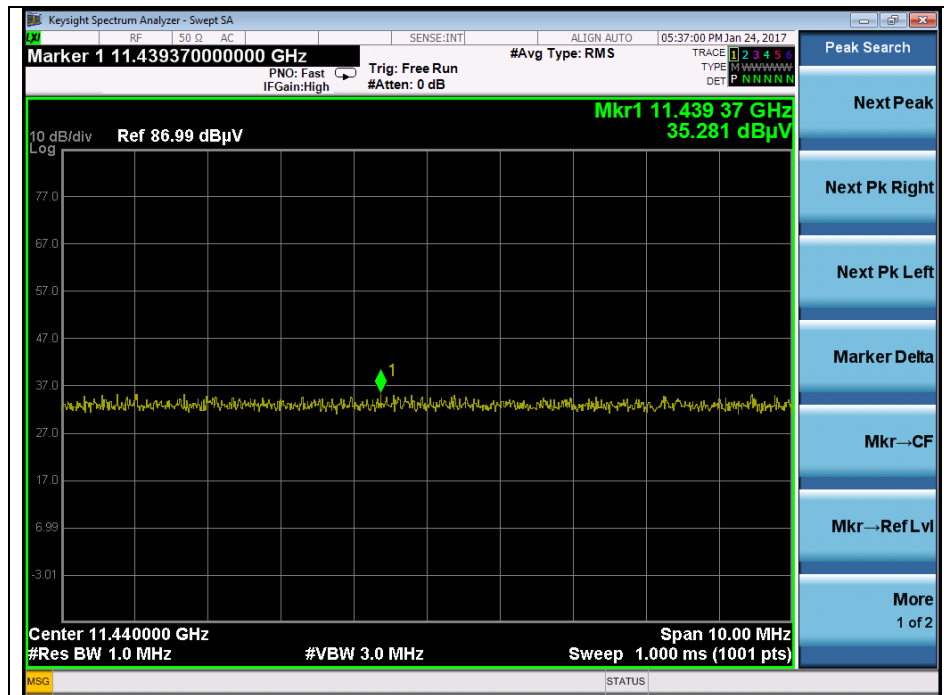
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-20(2015.10.01)(3)

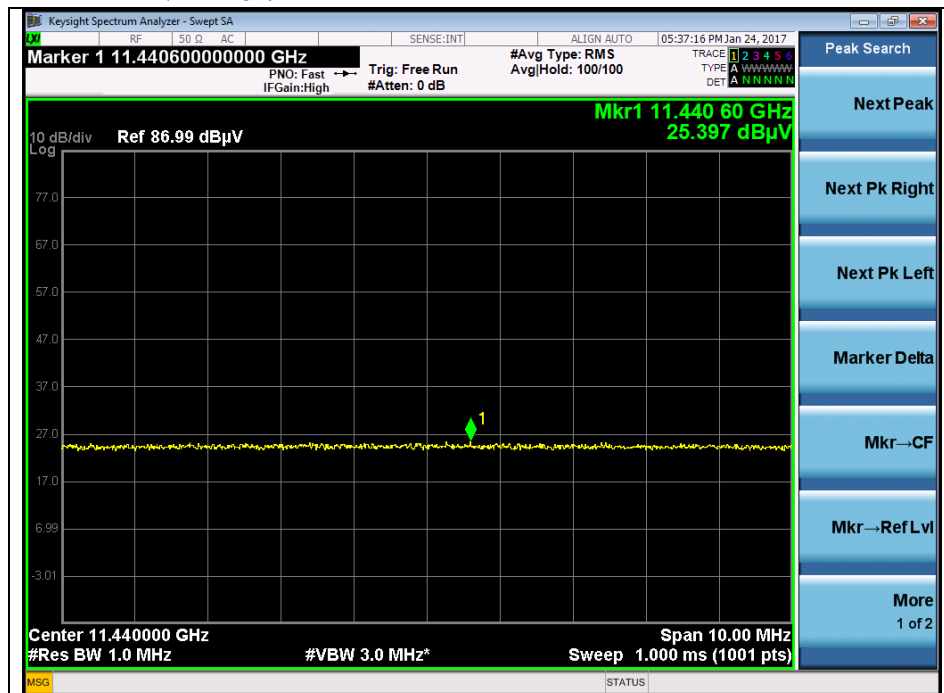
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

High channel 2nd harmonic (Peak) - Band 2C



High channel 2nd harmonic (Average) - Band 2C



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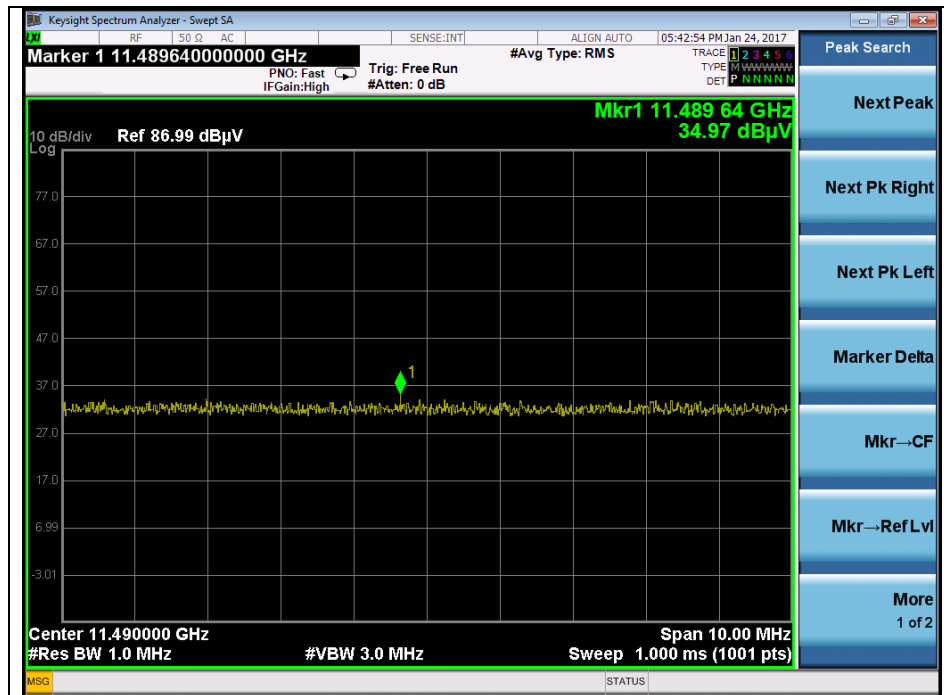
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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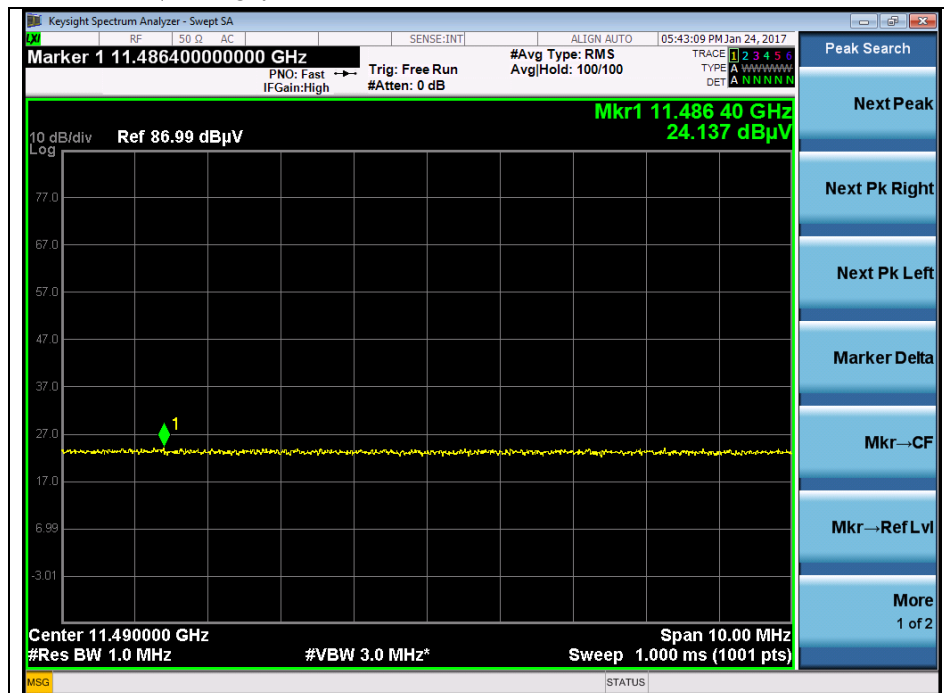
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Low channel 2nd harmonic (Peak) - Band 3



Low channel 2nd harmonic (Average) - Band 3



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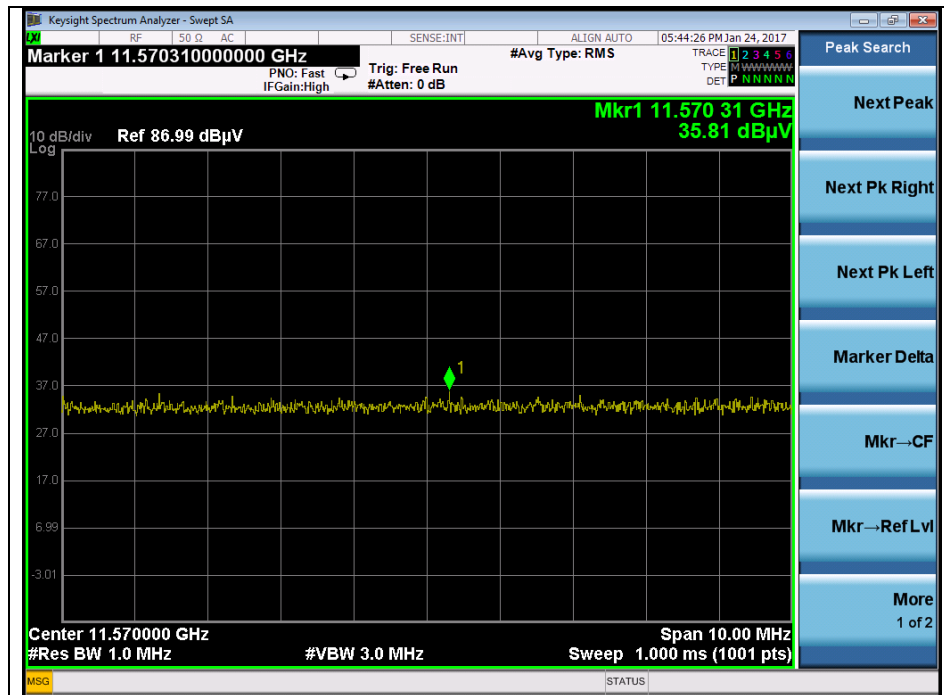
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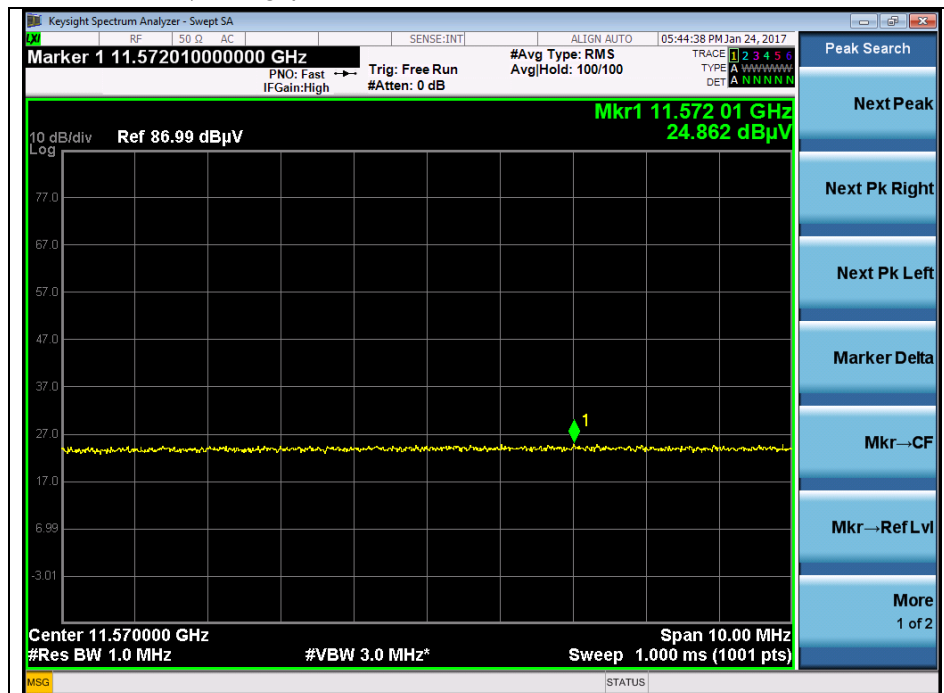
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

Middle channel 2nd harmonic (Peak) - Band 3



Middle channel 2nd harmonic (Average) - Band 3



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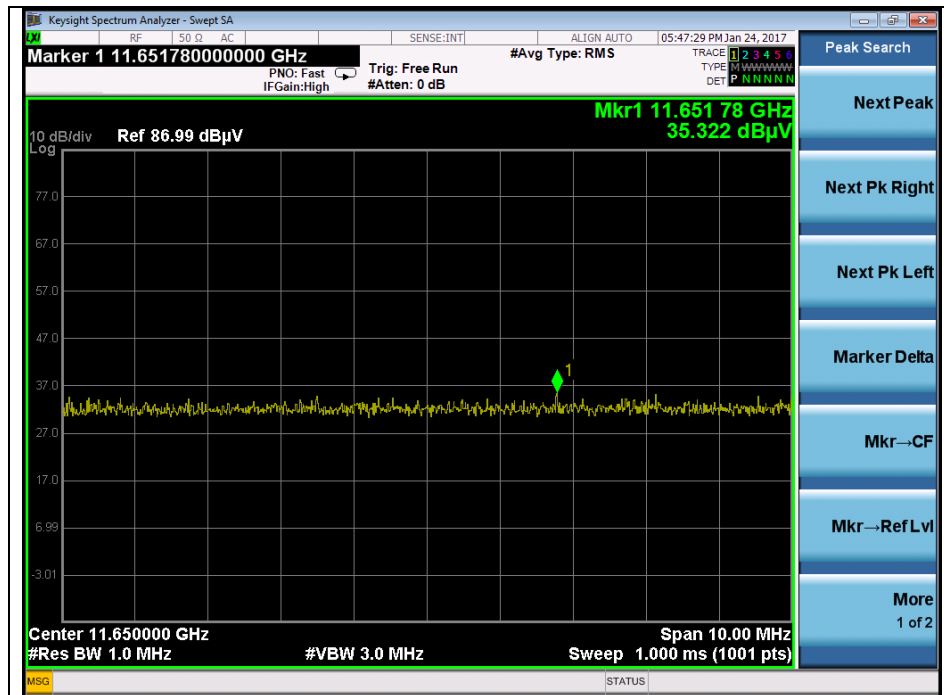
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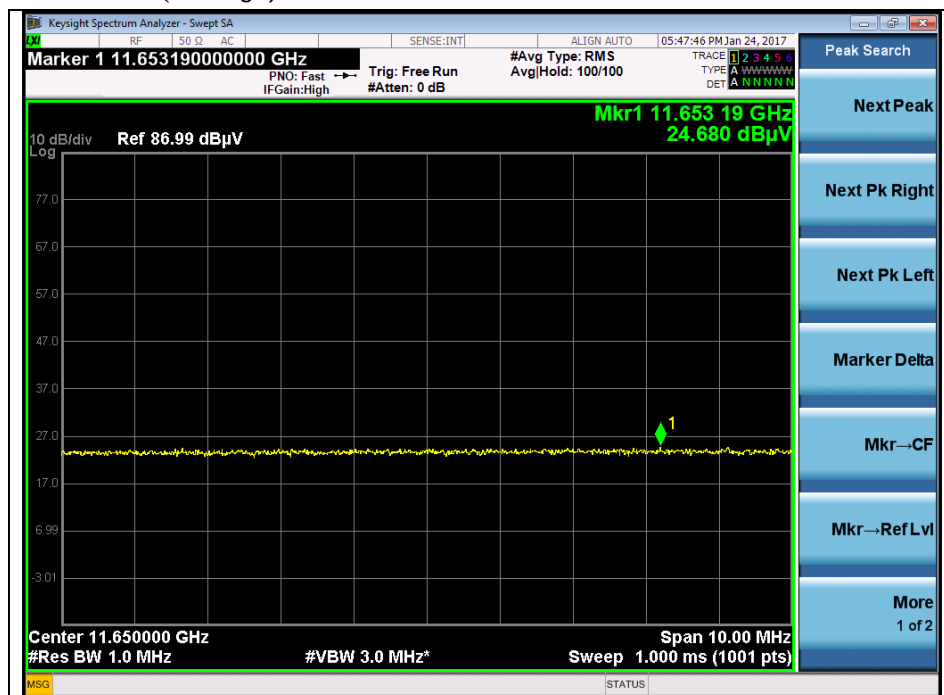
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A4(210 mm x 297 mm)

High channel 2nd harmonic (Peak) - Band 3



High channel 2nd harmonic (Average) - Band 3



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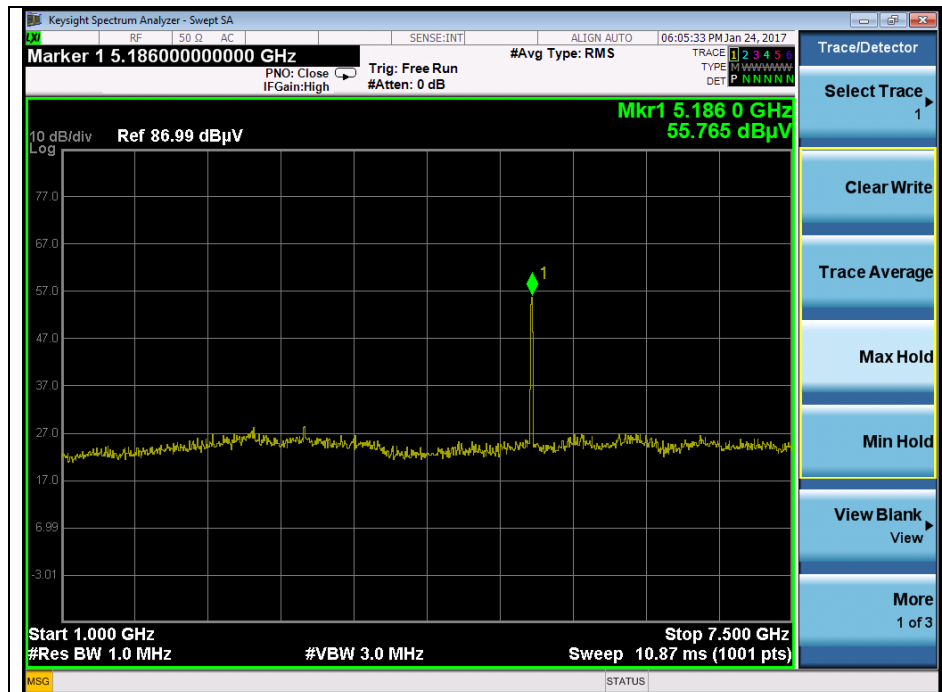
RTT5041-20(2015.10.01)(3)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

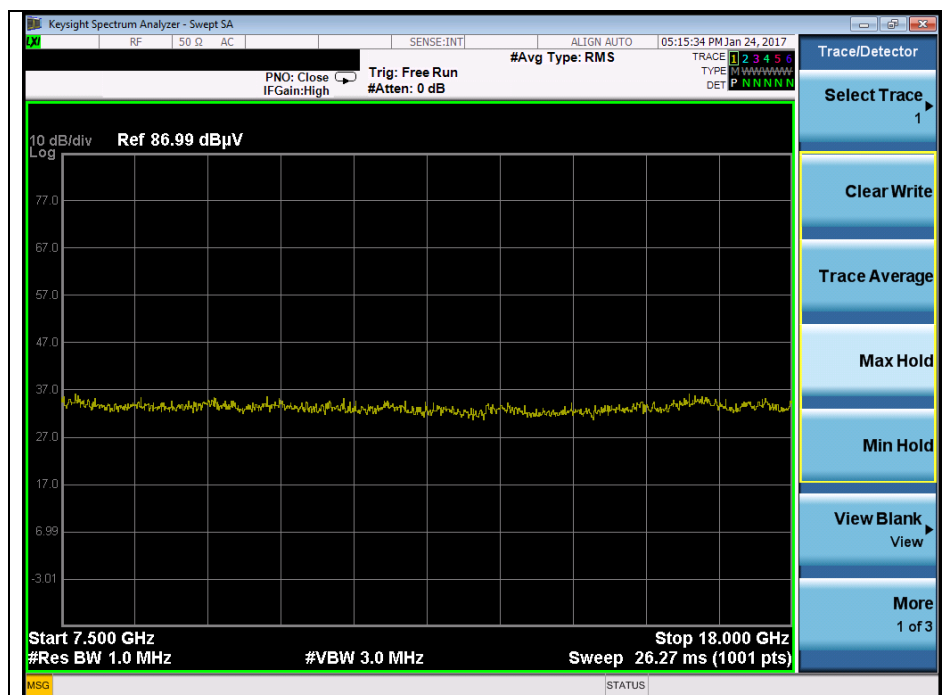
A4(210 mm x 297 mm)

Scanning Plots: 802.11n_HT20(MCS0)

1 GHz ~ 7.5 GHz

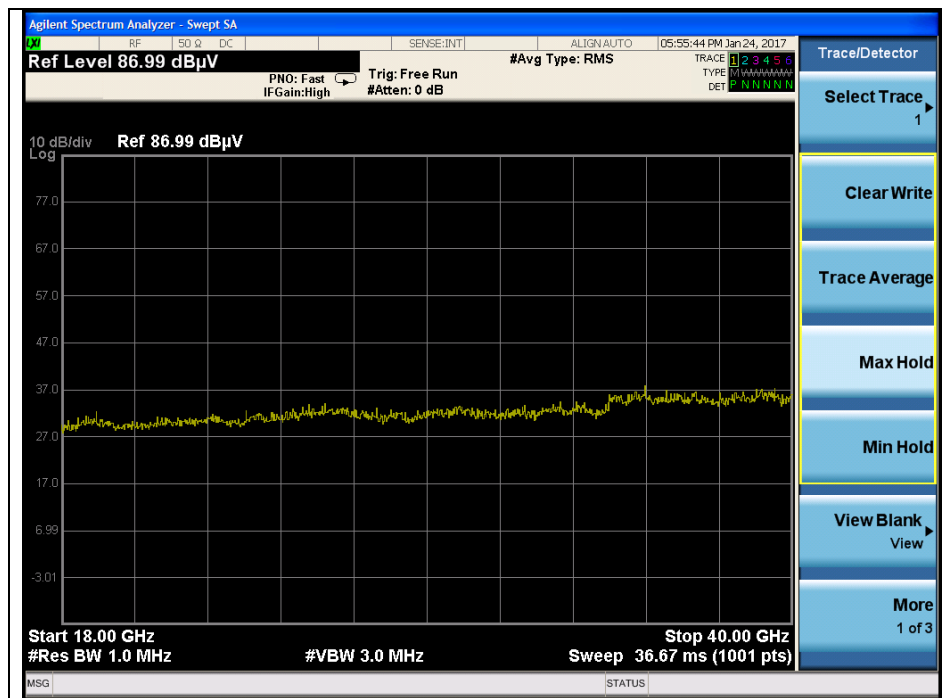


7.5 GHz ~ 18 GHz



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18 GHz ~ 40 GHz



Note: Emission was scanned up to 40 GHz.

No emissions were detected above the noise floor which was at least 20 dB below the specification limit.

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A4(210 mm x 297 mm)