

TEST REPORT

of

FCC Part 15 Subpart E §15.407

FCC ID: A3LSMC200

Equipment Under Test : Samsung Gear 360
Model Name : SM-C200
Applicant : Samsung Electronics Co., Ltd.
Manufacturer : Samsung Electronics Co., Ltd.
Date of Test(s) : 2016.01.25 ~ 2016.02.15
Date of Issue : 2016.02.24

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

Tested By:

Date:

2016.02.24


Jungmin Yang

Approved By:

Date:

2016.02.24


Hyunchae You

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RTT5041-20(2015.10.01)(3)

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A4(210 mm x 297 mm)

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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 : Samsung Electronics Co., Ltd.

Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Contact Person : Ha, Ji-Hoon

Phone No. : +82 31 277 3376

1.3. Description of EUT

Kind of Product		Samsung Gear 360
Model Name		SM-C200
Power Supply		DC 3.85 V
Frequency Range		2 402 MHz ~ 2 480 MHz (Bluetooth, Bluetooth Low Energy), 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 ~ 5 700 MHz (Band 2C: 11a/n_HT20, 11ac_VHT20), 5 510 MHz ~ 5 670 MHz (Band 2C: 11n_HT40, 11ac_VHT40), 5 530 MHz (Band 2C: 11ac_VHT80)
Modulation Technique		DSSS, OFDM, GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels		79 channel (Bluetooth), 40 channel (Bluetooth Low Energy), 11 channel (11b/g/n_HT20), 5 channel (Band 3: 11a/n_HT20, 11ac_VHT20), 2 channel (Band 3: 11n_HT40, 11ac_VHT40), 1 channel (Band 3: 11ac_VHT80), 4 channel (Band 1: 11a/n_HT20, 11ac_VHT20), 2 channel (Band 1: 11n_HT40, 11ac_VHT40), 1 channel (Band 1: 11ac_VHT80), 4 channel (Band 2A: 11a/n_HT20, 11ac_VHT20), 2 channel (Band 2A: 11n_HT40, 11ac_VHT40), 1 channel (Band 2A: 11ac_VHT80), 8 channel (Band 2C: 11a/n_HT20, 11ac_VHT20), 3 channel (Band 2C: 11n_HT40, 11ac_VHT40), 1 channel (Band 2C: 11ac_VHT80)
Antenna Type		PIFA (Planar Inverted F Antenna)
Antenna Gain	Port#1	2 402 MHz ~ 2 480 MHz: -0.55 dB i, 2 412 MHz ~ 2 462 MHz (MIMO): -0.55 dB i, 5 180 MHz ~ 5 320 MHz: -1.40 dB i, 5 500 MHz ~ 5 700 MHz: 2.70 dB i, 5 745 MHz ~ 5 825 MHz: -0.70 dB i
	Port#2	2 412 MHz ~ 2 462 MHz (MIMO): 0.28 dB i
H/W Version		REV 0.5
S/W Version		SMC200GLU0APA9

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1.4. Declaration by the manufacturer

- Client without Radar Detection and TPC.
- EUT is not supported TDWR(5.6-5.65 GHz) band.
- WLAN & Bluetooth do not transmit simultaneously.
- WLAN supports MIMO(Multi Input Multi Output) condition within 2.4 GHz band.

1.5. Test equipment list

Equipment	Manufacturer	Model	S/N	Cal Date	Cal Interval	Cal Due.
Signal Generator	Agilent	E8257D	MY51501169	Jul. 13, 2015	Annual	Jul. 13, 2016
Spectrum Analyzer	R&S	FSV30	103100	Jun. 22, 2015	Annual	Jun. 22, 2016
Spectrum Analyzer	Agilent	N9030A	US51350132	Sep. 24, 2015	Annual	Sep. 24, 2016
Power Meter	Anritsu	ML2495A	1223004	Jun. 08, 2015	Annual	Jun. 08, 2016
Power Sensor	Anritsu	MA2411B	1207272	Jun. 08, 2015	Annual	Jun. 08, 2016
Attenuator	MCLI	FAS-12-10	3	Jun. 09, 2015	Annual	Jun. 09, 2016
Low Pass Filter	Mini-Circuits	NLP-1200+	V 8979400903-2	Mar. 12, 2015	Annual	Mar. 12, 2016
High Pass Filter	Wainwright Instrument GmbH	WHNX6.0/18G-10SS	51	Jun. 23, 2015	Annual	Jun. 23, 2016
High Pass Filter	Wainwright Instrument GmbH	WHNX7.5/26.5G-6SS	15	Jun. 23, 2015	Annual	Jun. 23, 2016
DC Power Supply	Agilent	U8002A	MY53150029	Jun. 22, 2015	Annual	Jun. 22, 2016
Preamplifier	H.P.	8447F	2944A03909	Aug. 27, 2015	Annual	Aug. 27, 2016
Preamplifier	R&S	SCU-18	10117	Apr. 10, 2015	Annual	Apr. 10, 2016
Preamplifier	MITEQ Inc.	JS44-18004000-35-8P	1546891	May 07, 2015	Annual	May 07, 2016
Loop Antenna	R&S	HFH2-Z2	100118	Jun. 04, 2015	Biennial	Jun. 04, 2017
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB9163	396	Jun. 18, 2015	Biennial	Jun. 18, 2017
Horn Antenna	R&S	HF906	100608	Oct. 16, 2014	Biennial	Oct. 16, 2016
Horn Antenna	Schwarzbeck Mess-Elektronik	BBHA9170	BBHA9170431	May 15, 2014	Biennial	May 15, 2016
Antenna Master	INN-CO	MM4000	N/A	N.C.R.	N/A	N.C.R.
Turn Table	INN-CO	DS 1200 S	N/A	N.C.R.	N/A	N.C.R.
Test Receiver	R&S	ESU26	100109	Mar. 03, 2015	Annual	Mar. 03, 2016
Anechoic Chamber	SY Corporation	L x W x H (9.6 m x 6.4 m x 6.6 m)	N/A	N.C.R.	N/A	N.C.R.
Test Receiver	R&S	ESCI 7	100911	Dec. 22, 2015	Annual	Dec. 22, 2016
Two-Line V-Network	R&S	ENV216	100190	Dec. 21, 2015	Annual	Dec. 21, 2016
Shield Room	SY Corporation	L x W x H (6.5 m x 3.5 m x 3.5 m)	N/A	N.C.R.	N/A	N.C.R.

► Support equipment

Description	Manufacturer	Model	Serial Number / FCC ID
N/A	-	-	-

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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	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 and Conducted spurious emission	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
15.207	AC Power Line Conducted Emission	Complied

1.7. Test Procedure(s)

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2009) and the guidance provided in KDB 789033_v01r01 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 (dB)

1.9. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL009517	2016.02.17	Initial
1	F690501/RF-RTL009517-1	2016.02.24	Modified typo

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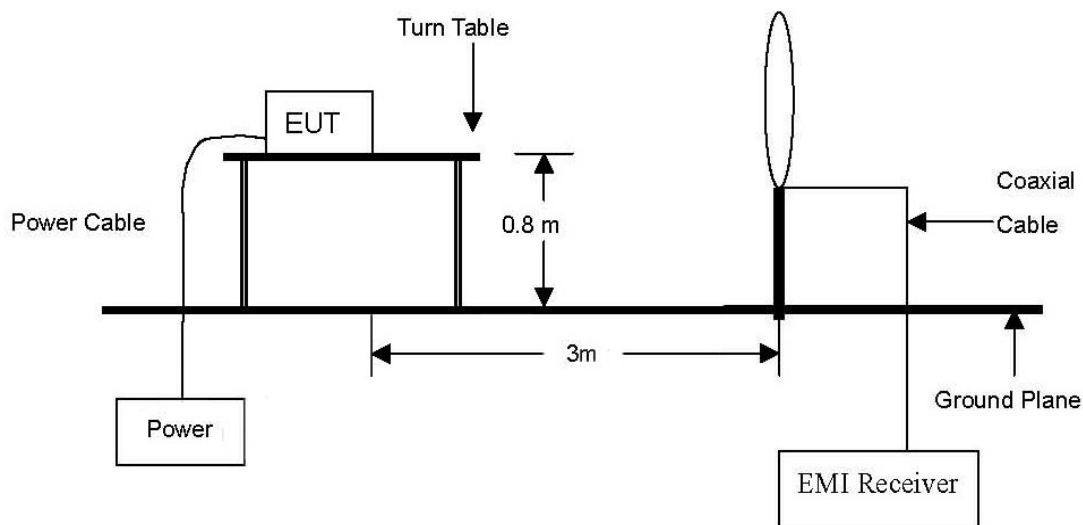
A4(210 mm x 297 mm)

2. Transmitter radiated spurious emissions and conducted spurious emission

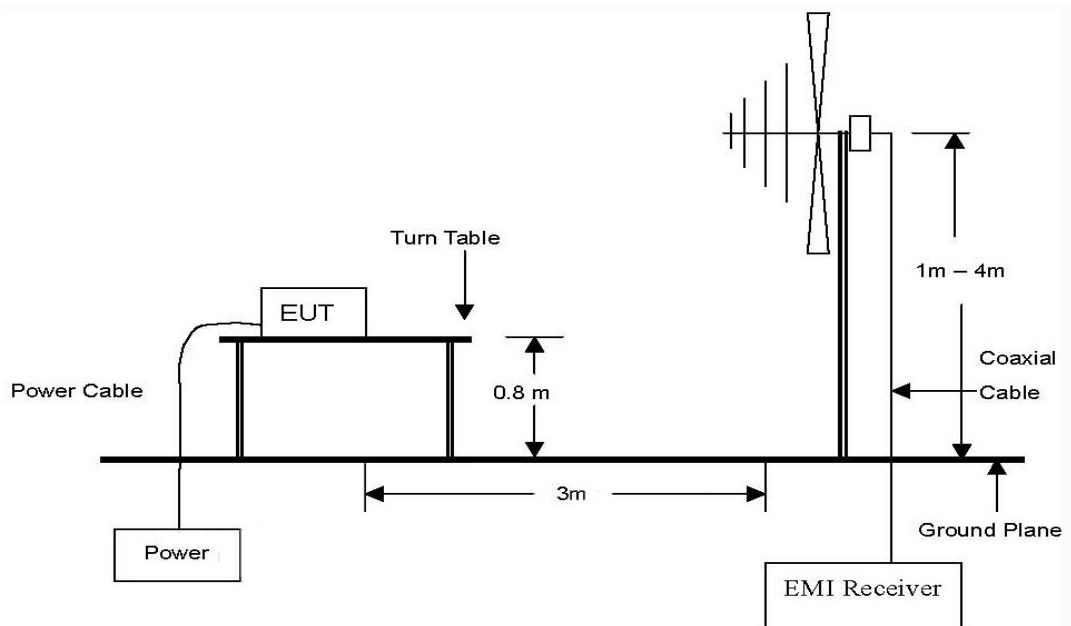
2.1. Test setup

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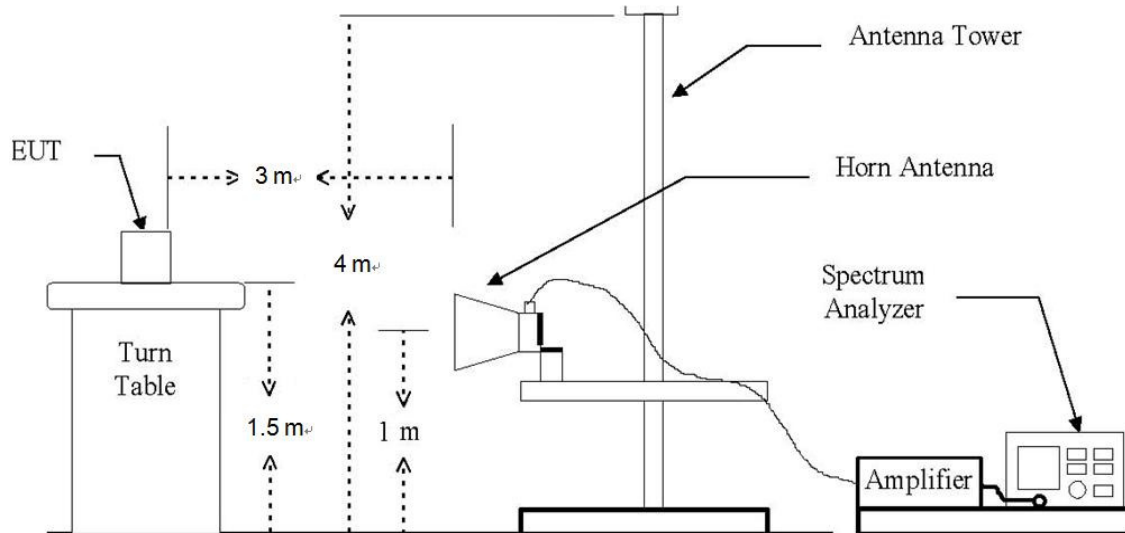
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The diagram below shows the test setup that is utilized to make the measurements for emission. The spurious emissions were investigated from 1 GHz to the 10th harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.



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2.2. Limit

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 EIRP of -27 dB m/MHz.

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 EIRP of -27 dB m/MHz.

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 EIRP of -27 dB m/MHz.

For transmitters operating in the 5.725 ~ 5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dB m/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dB m/MHz.

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

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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_v01r01 and ANSI C63.10-2009.

Remark:

Testing for radiated emissions above 1GHz was performed with the EUT elevated at 1.5m instead of 0.8m. 1.5m is the required height in ANSI C63.10:2013 as referenced by RSS GEN issue 4. This test height has been permitted by FCC as discussed in FCC-TCB conference call in December 2014.

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.

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.
If duty cycle < 98 percent, a correction factor shall be added to the measurement results.
If power averaging (rms) mode was used, then the applicable correction factor is 10 log (1/x), where x is the duty cycle.
- To get a maximum emission level from the EUT, the EUT is manipulated through three orthogonal planes (X, Y, Z). Worst orthogonal plan of EUT is **X – axis** during radiation test.

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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 MHz 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)
360.00	38.90	Peak	H	15.75	-25.44	29.21	46.00	16.79
504.05	35.90	Peak	V	18.70	-25.88	28.72	46.00	17.28
648.01	38.90	Peak	V	20.56	-25.65	33.81	46.00	12.19
648.01	37.70	Peak	H	20.20	-25.65	32.25	46.00	13.75
792.02	41.30	Peak	H	21.23	-25.08	37.45	46.00	8.55
792.06	36.40	Peak	V	22.44	-25.08	33.76	46.00	12.24
Above 800.00	Not detected	-	-	-	-	-	-	-

Remark:

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

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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 (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	15.67	Peak	V	31.94	7.42	-	55.03	74.00	18.97
*4 500.00	5.61	Average	V	31.94	7.42	0.32	45.29	54.00	8.71
*4 585.71	17.41	Peak	V	32.16	7.43	-	57.00	74.00	17.00
*4 624.40	6.90	Average	V	32.26	7.35	0.32	46.83	54.00	7.17
*5 150.00	16.16	Peak	V	33.43	7.49	-	57.08	74.00	16.92
*5 150.00	6.43	Average	V	33.43	7.49	0.32	47.67	54.00	6.33

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. Middle Channel (5 200 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)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 240 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)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

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802.11a (Band 2A)_6 Mbps

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)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 280 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)
Above 1 000.00	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	16.60	Peak	V	33.72	7.34	-	57.66	74.00	16.34
*5 350.00	6.72	Average	V	33.72	7.34	0.32	48.10	54.00	5.90
*5 354.80	19.30	Peak	V	33.72	7.40	-	60.42	74.00	13.58
*5 351.56	6.91	Average	V	33.72	7.36	0.32	48.31	54.00	5.69
*5 460.00	16.40	Peak	V	33.87	7.74	-	58.01	74.00	15.99
*5 460.00	5.44	Average	V	33.87	7.74	0.32	47.37	54.00	6.63

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)
*10 639.82	36.71	Peak	H	37.97	-29.10	-	45.58	74.00	28.42
*10 639.88	25.70	Average	H	37.97	-29.10	0.32	34.89	54.00	19.11
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 (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*5 350.00	14.31	Peak	V	33.72	7.34	-	55.37	74.00	18.63
*5 350.00	5.50	Average	V	33.72	7.34	0.32	46.88	54.00	7.12
*5 457.38	16.60	Peak	V	33.87	7.73	-	58.20	74.00	15.80
*5 458.28	6.28	Average	V	33.87	7.74	0.32	48.21	54.00	5.79
*5 460.00	15.04	Peak	V	33.87	7.74	-	56.65	74.00	17.35
*5 460.00	5.67	Average	V	33.87	7.74	0.32	47.60	54.00	6.40

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)
*10 998.41	37.27	Peak	H	38.20	-29.09	-	46.38	74.00	27.62
*10 999.94	25.83	Average	H	38.20	-29.09	0.32	35.26	54.00	18.74
Above 11 000.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 580 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)
*11 159.82	36.71	Peak	H	38.19	-29.05	-	45.85	74.00	28.15
*11 159.84	25.59	Average	H	38.19	-29.05	0.32	35.05	54.00	18.95
Above 11 200.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 700 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)
*11 401.66	40.38	Peak	H	38.18	-28.83	-	49.73	74.00	24.27
*11 399.95	28.98	Average	H	38.18	-28.83	0.32	38.65	54.00	15.35
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)
5 710.00	18.11	Peak	V	34.11	7.87	-	60.09	68.23	8.14
5 724.40	23.61	Peak	V	34.13	7.97	-	65.71	78.23	12.52

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)
*11 488.83	45.81	Peak	H	38.17	-29.04	-	54.94	74.00	19.06
*11 489.82	34.51	Average	H	38.17	-29.04	0.32	43.96	54.00	10.04
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)
*11 569.17	43.40	Peak	H	38.17	-29.27	-	52.30	74.00	21.70
*11 569.98	31.60	Average	H	38.17	-29.27	0.32	40.82	54.00	13.18
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)
5 850.32	18.49	Peak	V	34.24	8.22	-	60.95	78.23	17.28
5 864.63	17.79	Peak	V	34.25	8.24	-	60.28	68.23	7.95

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)
*11 650.64	43.24	Peak	H	38.16	-29.28	-	52.12	74.00	21.88
*11 649.88	31.86	Average	H	38.16	-29.28	0.32	41.06	54.00	12.94
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 (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	15.19	Peak	V	31.94	7.42	-	54.55	74.00	19.45
*4 500.00	5.15	Average	V	31.94	7.42	0.32	44.83	54.00	9.17
*5 031.74	17.93	Peak	V	33.27	7.41	-	58.61	74.00	15.39
*5 149.27	6.75	Average	V	33.43	7.49	0.32	47.99	54.00	6.01
*5 150.00	16.49	Peak	V	33.43	7.49	-	57.41	74.00	16.59
*5 150.00	6.60	Average	V	33.43	7.49	0.32	47.84	54.00	6.16

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. Middle Channel (5 200 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)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 240 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)
Above 1 000.00	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 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)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 280 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)
Above 1 000.00	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	15.27	Peak	V	33.72	7.34	-	56.33	74.00	17.67
*5 350.00	5.50	Average	V	33.72	7.34	0.32	46.88	54.00	7.12
*5 419.78	17.08	Peak	V	33.82	7.84	-	58.74	74.00	15.26
*5 373.88	6.31	Average	V	33.75	7.62	0.32	48.00	54.00	6.00
*5 460.00	14.89	Peak	V	33.87	7.74	-	56.50	74.00	17.50
*5 460.00	5.24	Average	V	33.87	7.74	0.32	47.17	54.00	6.83

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)
*10 639.85	36.56	Peak	H	37.97	-29.10	-	45.43	74.00	28.57
*10 639.53	25.54	Average	H	37.97	-29.10	0.32	34.73	54.00	19.27
Above 10 700.00	Not detected	-	-	-	-	-	-	-	-

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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 (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Duty (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
*5 350.00	13.88	Peak	V	33.72	7.34	-	54.94	74.00	19.06
*5 350.00	5.31	Average	V	33.72	7.34	0.32	46.69	54.00	7.31
*5 418.68	17.20	Peak	V	33.81	7.84	-	58.85	74.00	15.15
*5 385.38	6.24	Average	V	33.77	7.76	0.32	48.09	54.00	5.91
*5 460.00	15.22	Peak	V	33.87	7.74	-	56.83	74.00	17.17
*5 460.00	5.92	Average	V	33.87	7.74	0.32	47.85	54.00	6.15

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)
*10 999.17	37.86	Peak	H	38.20	-29.09	-	46.97	74.00	27.03
*11 000.03	25.91	Average	H	38.20	-29.09	0.32	35.34	54.00	18.66
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 580 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)
*11 159.12	36.49	Peak	H	38.19	-29.05	-	45.63	74.00	28.37
*11 159.83	25.59	Average	H	38.19	-29.05	0.32	35.05	54.00	18.95
Above 11 200.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 700 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)
*11 400.14	39.40	Peak	H	38.18	-28.83	-	48.75	74.00	25.25
*11 399.74	27.86	Average	H	38.18	-28.83	0.32	37.53	54.00	16.47
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)

802.11n_HT20 (Band 3)_MCS0

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)
5 712.50	17.71	Peak	V	34.12	7.89	-	59.72	68.23	8.51
5 724.88	23.11	Peak	V	34.13	7.97	-	65.21	78.23	13.02

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)
*11 489.55	44.52	Peak	H	38.17	-29.04	-	53.65	74.00	20.35
*11 489.98	32.64	Average	H	38.17	-29.04	0.32	42.09	54.00	11.91
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)
*11 569.55	42.51	Peak	H	38.17	-29.27	-	51.41	74.00	22.59
*11 569.92	30.82	Average	H	38.17	-29.27	0.32	40.04	54.00	13.96
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)
5 854.52	18.20	Peak	V	34.24	8.23	-	60.67	78.23	17.56
5 867.07	17.59	Peak	V	34.25	8.24	-	60.08	68.23	8.15

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)
*11 650.33	43.60	Peak	H	38.16	-29.28	-	52.48	74.00	21.52
*11 650.00	32.36	Average	H	38.16	-29.28	0.32	41.56	54.00	12.44
Above 11 700.00	Not detected	-	-	-	-	-	-	-	-

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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	15.76	Peak	V	31.94	7.42	-	55.12	74.00	18.88
*4 500.00	5.58	Average	V	31.94	7.42	0.97	45.91	54.00	8.09
*5 137.59	18.12	Peak	V	33.42	7.48	-	59.02	74.00	14.98
*5 147.81	7.97	Average	V	33.43	7.49	0.97	49.86	54.00	4.14
*5 150.00	17.05	Peak	V	33.43	7.49	-	57.97	74.00	16.03
*5 150.00	7.93	Average	V	33.43	7.49	0.97	49.82	54.00	4.18

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)
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

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

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)
Above 1 000.00	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	16.49	Peak	V	33.72	7.34	-	57.55	74.00	16.45
*5 350.00	7.72	Average	V	33.72	7.34	0.97	49.75	54.00	4.25
*5 353.72	18.95	Peak	V	33.72	7.38	-	60.05	74.00	13.95
*5 350.84	8.35	Average	V	33.72	7.35	0.97	50.39	54.00	3.61
*5 460.00	14.17	Peak	V	33.87	7.74	-	55.78	74.00	18.22
*5 460.00	5.73	Average	V	33.87	7.74	0.97	48.31	54.00	5.69

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)
*10 620.38	37.24	Peak	H	37.96	-29.10	-	46.10	74.00	27.90
*10 620.01	26.50	Average	H	37.96	-29.10	0.97	36.33	54.00	17.67
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 (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	14.85	Peak	V	33.72	7.34	-	55.91	74.00	18.09
*5 350.00	4.80	Average	V	33.72	7.34	0.97	46.83	54.00	7.17
*5 457.02	17.49	Peak	V	33.87	7.73	-	59.09	74.00	14.91
*5 457.38	6.47	Average	V	33.87	7.73	0.97	49.04	54.00	4.96
*5 460.00	16.35	Peak	V	33.87	7.74	-	57.96	74.00	16.04
*5 460.00	5.69	Average	V	33.87	7.74	0.97	48.27	54.00	5.73

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)
*11 020.34	36.70	Peak	H	38.20	-29.08	-	45.82	74.00	28.18
*11 019.86	26.18	Average	H	38.20	-29.08	0.97	36.27	54.00	17.73
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

B. Middle Channel (5 550 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)
*11 100.06	39.14	Peak	H	38.19	-29.05	-	48.28	74.00	25.72
*11 099.95	27.62	Average	H	38.19	-29.05	0.97	37.73	54.00	16.27
Above 11 200.00	Not detected	-	-	-	-	-	-	-	-

C. High Channel (5 670 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)
*11 340.44	39.12	Peak	H	38.18	-28.92	-	48.38	74.00	25.62
*11 340.16	28.37	Average	H	38.18	-28.92	0.97	38.60	54.00	15.40
Above 11 400.00	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)
5 714.22	21.23	Peak	V	34.12	7.90	-	63.25	68.23	4.98
5 722.73	22.51	Peak	V	34.13	7.95	-	64.59	78.23	13.64

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)
*11 509.52	41.66	Peak	H	38.17	-29.09	-	50.74	74.00	23.26
*11 509.76	30.62	Average	H	38.17	-29.09	0.97	40.67	54.00	13.33
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)	AMP+ CL (dB)	Duty (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
5 852.35	17.99	Peak	V	34.24	8.22	-	60.45	78.23	17.78
5 868.40	17.48	Peak	V	34.25	8.25	-	59.98	68.23	8.25

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)
*11 590.65	42.26	Peak	H	38.16	-29.34	-	51.08	74.00	22.92
*11 589.90	30.65	Average	H	38.16	-29.34	0.97	40.44	54.00	13.56
Above 11 600.00	Not detected	-	-	-	-	-	-	-	-

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A4(210 mm x 297 mm)

802.11ac_VHT80 (Band 1)_MCS0

A. Middle 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	14.68	Peak	V	31.94	7.42	-	54.04	74.00	19.96
*4 500.00	6.35	Average	V	31.94	7.42	1.14	46.85	54.00	7.15
*5 144.89	17.37	Peak	V	33.43	7.48	-	58.28	74.00	15.72
*5 139.78	7.10	Average	V	33.42	7.48	1.14	49.14	54.00	4.86
*5 150.00	17.12	Peak	V	33.43	7.49	-	58.04	74.00	15.96
*5 150.00	6.76	Average	V	33.43	7.49	1.14	48.82	54.00	5.18

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	14.93	Peak	V	33.72	7.34	-	55.99	74.00	18.01
*5 350.00	5.99	Average	V	33.72	7.34	1.14	48.19	54.00	5.81
*5 356.16	17.73	Peak	V	33.73	7.41	-	58.87	74.00	15.13
*5 358.14	6.91	Average	V	33.73	7.44	1.14	49.22	54.00	4.78
*5 460.00	14.21	Peak	V	33.87	7.74	-	55.82	74.00	18.18
*5 460.00	4.71	Average	V	33.87	7.74	1.14	47.46	54.00	6.54

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	-	-	-	-	-	-	-	-

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A4(210 mm x 297 mm)

802. 11ac_VHT80 (Band 2C)_MCS0

A. Middle 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	14.79	Peak	V	33.72	7.34	-	55.85	74.00	18.15
*5 350.00	5.50	Average	V	33.72	7.34	1.14	47.70	54.00	6.30
*5 440.28	17.18	Peak	V	33.85	7.74	-	58.77	74.00	15.23
*5 454.68	6.61	Average	V	33.87	7.72	1.14	49.34	54.00	4.66
*5 460.00	15.07	Peak	V	33.87	7.74	-	56.68	74.00	17.32
*5 460.00	5.95	Average	V	33.87	7.74	1.14	48.70	54.00	5.30

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)
*11 060.16	37.21	Peak	H	38.20	-29.06	-	46.35	74.00	27.65
*11 059.99	26.64	Average	H	38.20	-29.06	1.14	36.92	54.00	17.08
Above 11 100.00	Not detected	-	-	-	-	-	-	-	-

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A4(210 mm x 297 mm)

802.11ac_VHT80 (Band 3)_MCS0

A. Low 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)
5 711.58	20.27	Peak	V	34.12	7.88	-	62.27	68.23	5.96
5 721.42	19.89	Peak	V	34.12	7.95	-	61.96	78.23	16.27
5 852.73	17.87	Peak	V	34.24	8.22	-	60.33	78.23	17.90
5 863.90	17.75	Peak	V	34.25	8.24	-	60.24	68.23	7.99

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)
*11 549.65	39.43	Peak	H	38.17	-29.21	-	48.39	74.00	25.61
*11 550.14	28.14	Average	H	38.17	-29.22	1.14	38.23	54.00	15.77
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 frequency between 5 715 MHz ~ 5 725 MHz and 5 850 MHz ~ 5 860 MHz the limit is determined as 78.23 dBμV/m.

$$78.23 \text{ dB}\mu\text{V/m} = \text{EIRP} - 20 \log(d) + 104.77 = -17 - 20 \log(3) + 104.77$$
7. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.

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A4(210 mm x 297 mm)

3. 26 dB Bandwidth & 99 % Bandwidth

3.1. Test setup



3.2. Test procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

3.2.1. 26 dB Bandwidth

1. This measurement settings are specified in section C.1 of KDB 789033_v01r01.
2. Set RBW : approximately 1 % of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %

3.2.2. 99 % Bandwidth

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % occupied bandwidth is the difference between these two frequencies.

In the result,

- DFS requirements are not applicable in the 5 150 MHz - 5 250 MHz

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A4(210 mm x 297 mm)

3.4. Test result

Ambient temperature : (23 ± 1) °C

Relative humidity : 47 % R.H.

Band	Mode	Frequency (MHz)	Ch.	Data Rate (Mbps)	26 dB Bandwidth (MHz)	99 % Bandwidth (MHz)
U-NII 1	11a	5 180	36	6	21.698	-
		5 200	40	6	21.658	-
		5 240	48	6	18.621	-
	11n_HT20	5 180	36	MCS0	21.818	-
		5 200	40	MCS0	21.738	-
		5 240	48	MCS0	19.021	-
	11n_HT40	5 190	38	MCS0	40.599	-
		5 230	46	MCS0	40.440	36.763
	11ac_VHT80	5 210	42	MCS0	82.680	75.764
U-NII 2A	11a	5 260	52	6	18.581	-
		5 280	56	6	21.538	-
		5 320	64	6	21.459	-
	11n_HT20	5 260	52	MCS0	18.981	-
		5 280	56	MCS0	21.658	-
		5 320	64	MCS0	21.778	-
	11n_HT40	5 270	54	MCS0	40.519	-
		5 310	62	MCS0	40.599	-
	11ac_VHT80	5 290	58	MCS0	82.480	-
U-NII 2C	11a	5 500	100	6	21.499	-
		5 580	116	6	18.541	-
		5 700	140	6	21.459	-
	11n_HT20	5 500	100	MCS0	21.818	-
		5 580	116	MCS0	18.901	-
		5 700	140	MCS0	21.738	-
	11n_HT40	5 510	102	MCS0	40.599	-
		5 550	110	MCS0	40.519	-
		5 670	134	MCS0	40.679	-
	11ac_VHT80	5 530	106	MCS0	82.320	-
U-NII 3	11a	5 745	149	6	21.259	-
		5 785	157	6	21.618	-
		5 825	165	6	21.419	-
	11n_HT20	5 745	149	MCS0	21.778	-
		5 785	157	MCS0	21.658	-
		5 825	165	MCS0	21.578	-
	11n_HT40	5 755	151	MCS0	40.519	-
		5 795	159	MCS0	40.599	-
	11ac_VHT80	5 775	155	MCS0	82.960	-

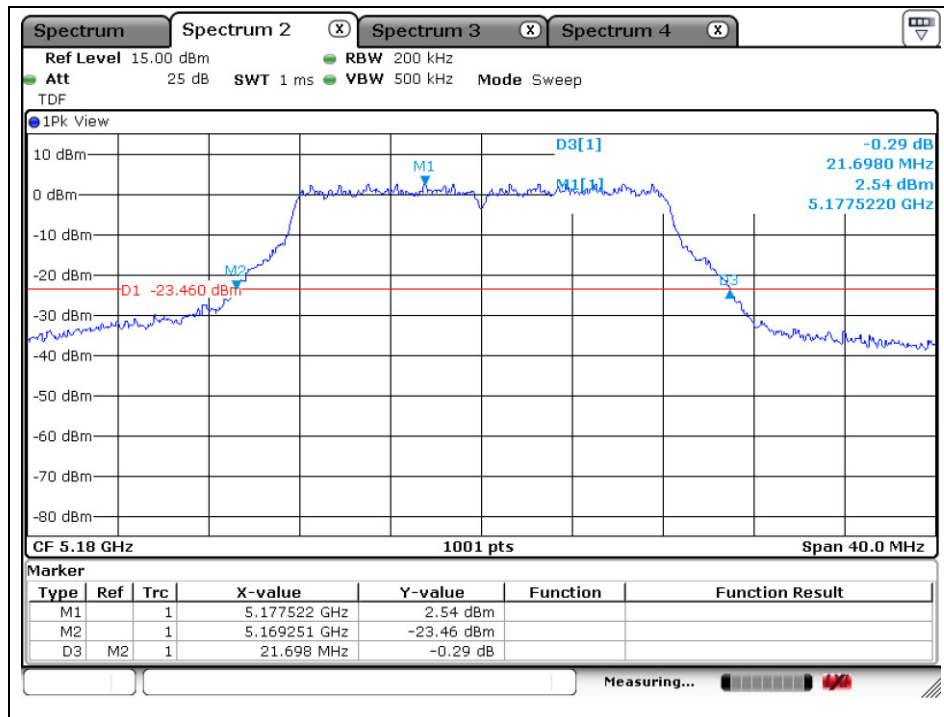
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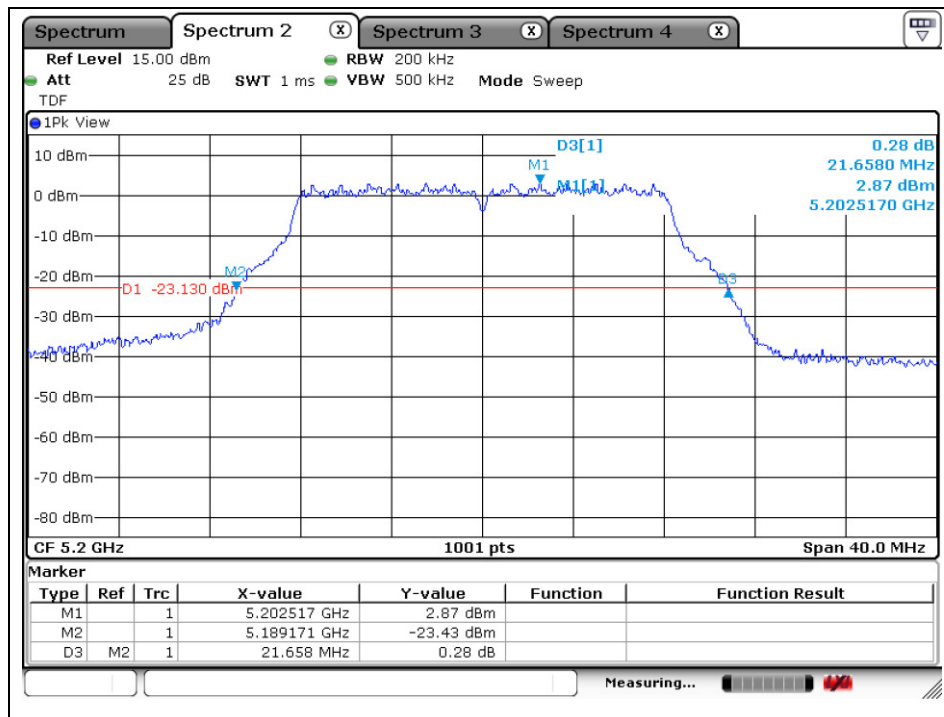
26 dB Bandwidth

802.11a (Band 1)

Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)



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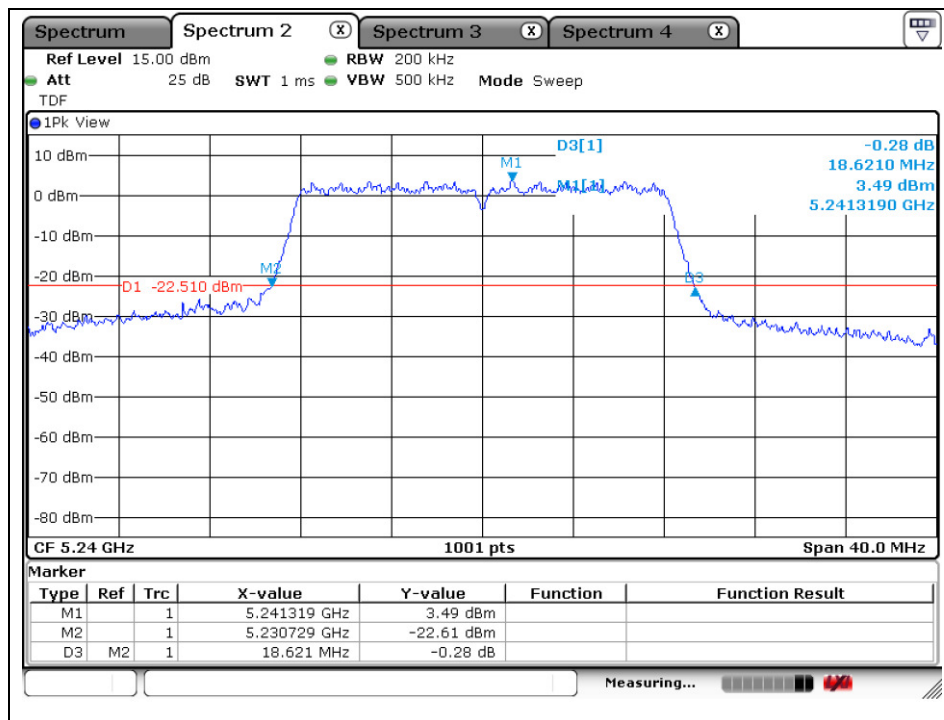
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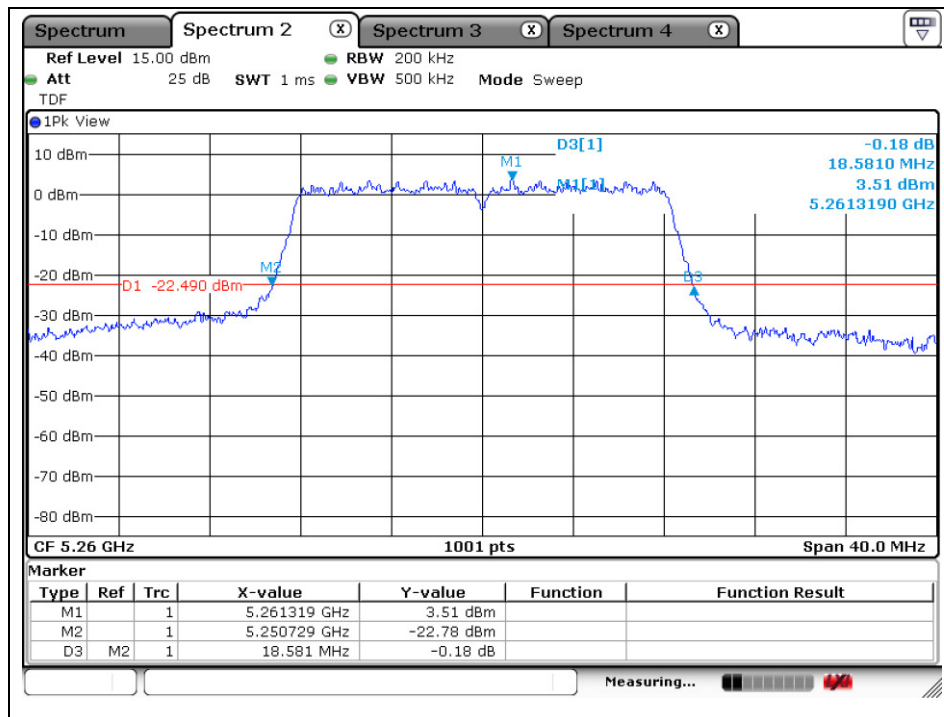
A4(210 mm x 297 mm)

High Channel (5 240 MHz)



802.11a (Band 2A)

Low Channel (5 260 MHz)



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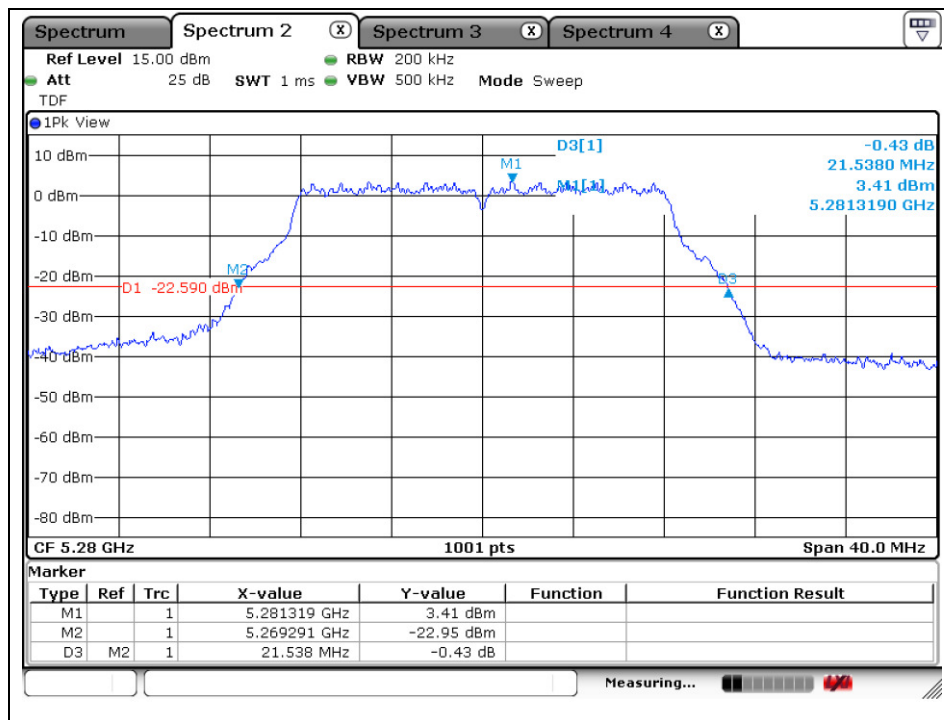
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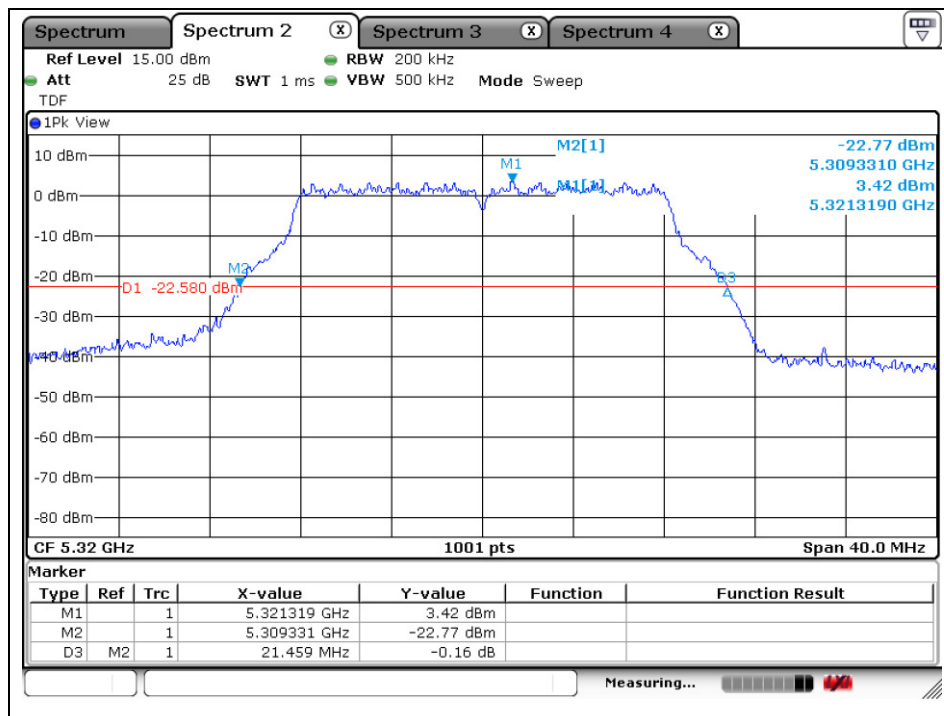
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A4(210 mm x 297 mm)

Middle Channel (5 280 MHz)



High Channel (5 320 MHz)



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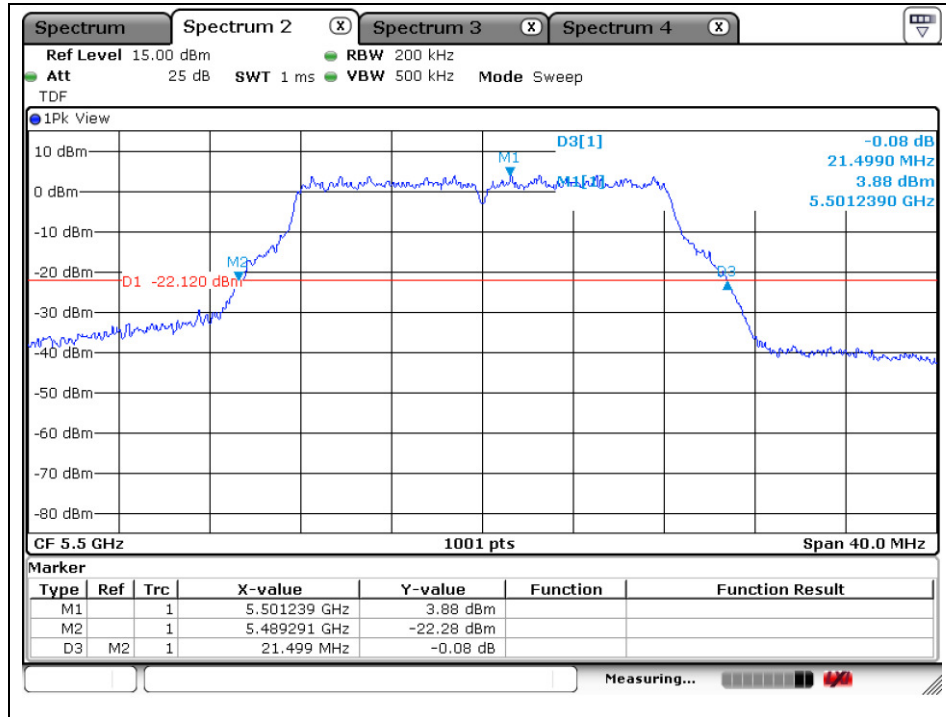
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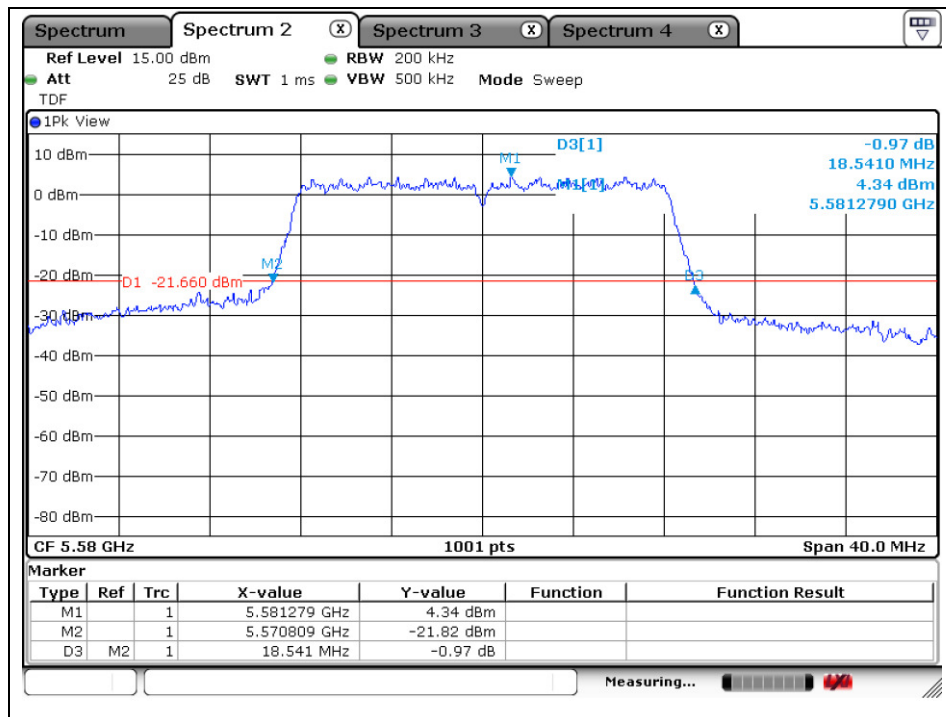
A4(210 mm x 297 mm)

802.11a (Band 2C)

Low Channel (5 500 MHz)



Middle Channel (5 580 MHz)



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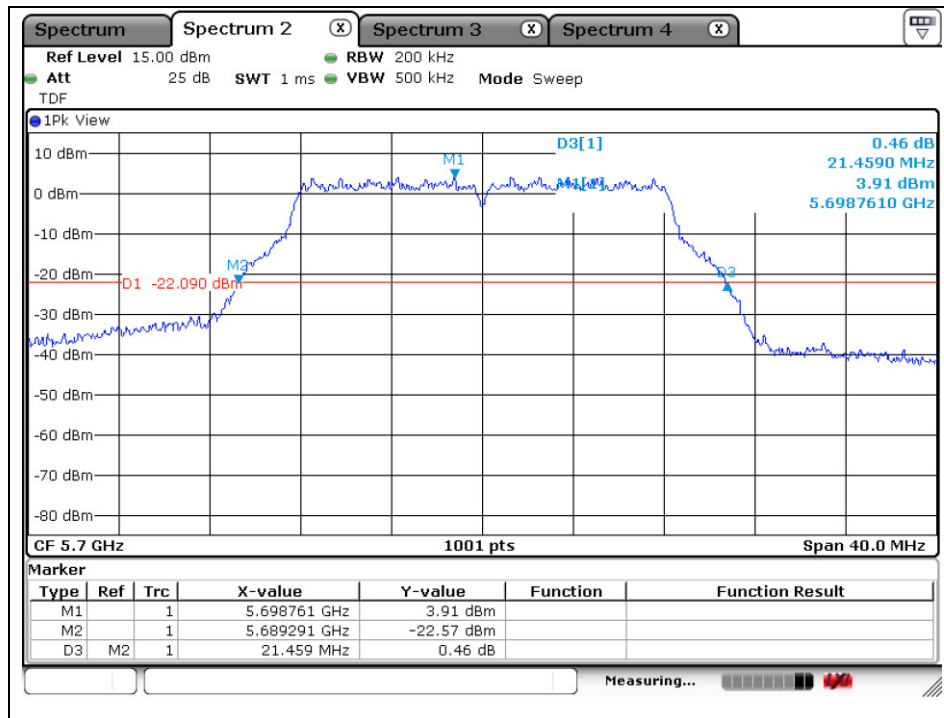
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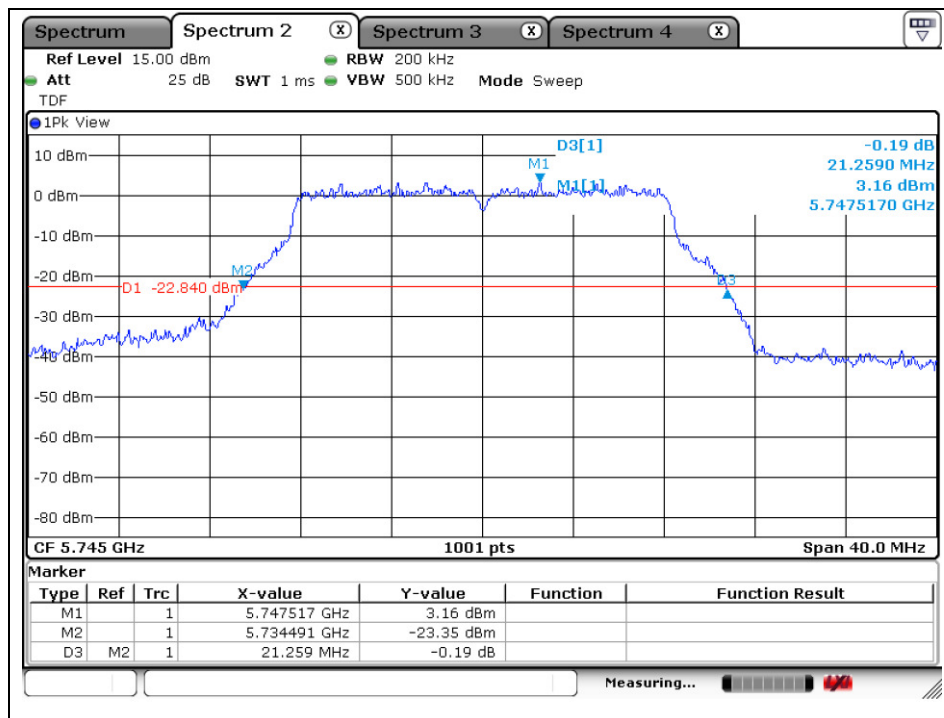
A4(210 mm x 297 mm)

High Channel (5 700 MHz)



802.11a (Band 3)

Low Channel (5 745 MHz)



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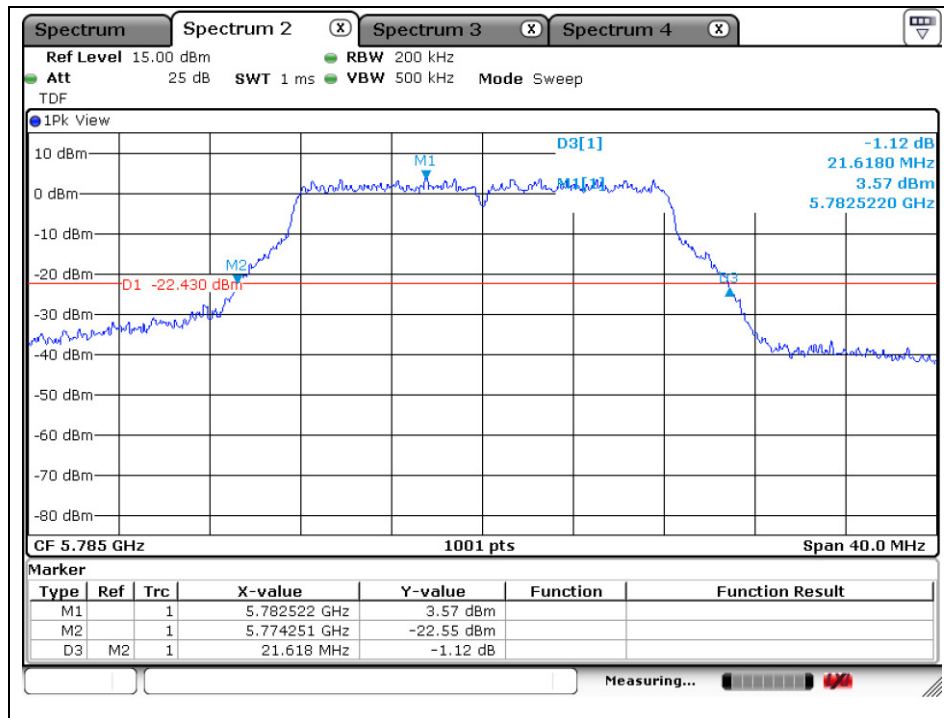
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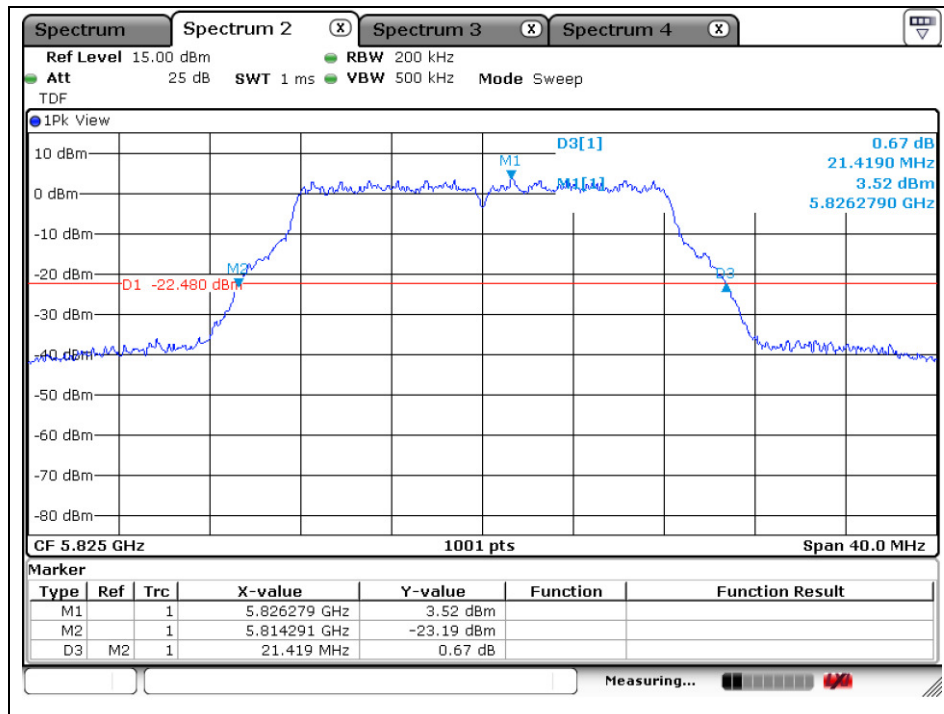
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A4(210 mm x 297 mm)

Middle Channel (5 785 MHz)



High Channel (5 825 MHz)



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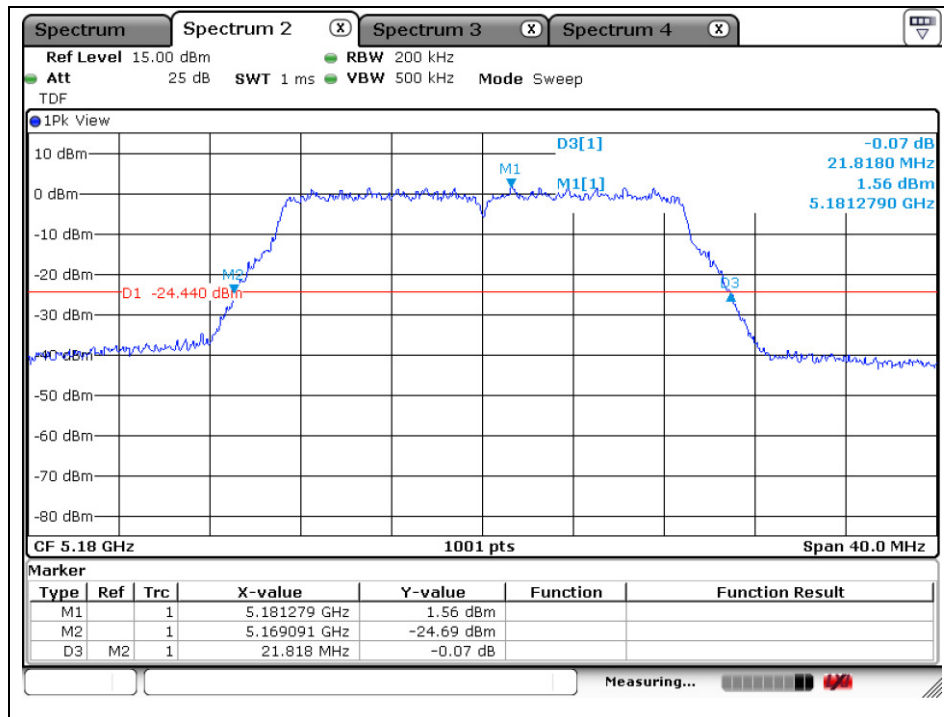
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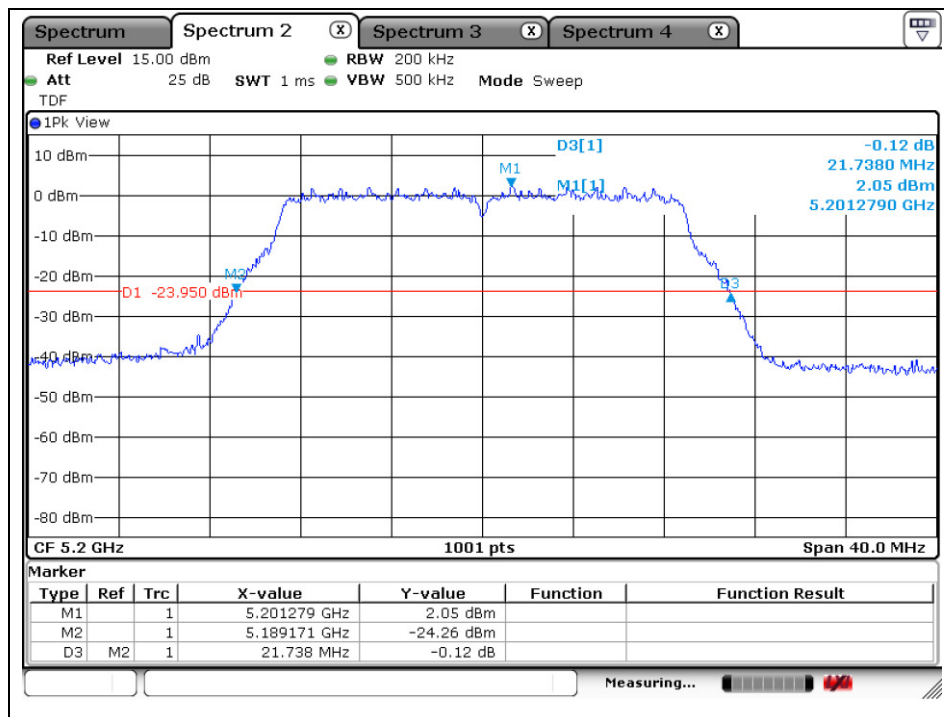
A4(210 mm x 297 mm)

802.11n-HT20 (Band 1)

Low Channel (5 180 MHz)



Middle Channel (5 200 MHz)



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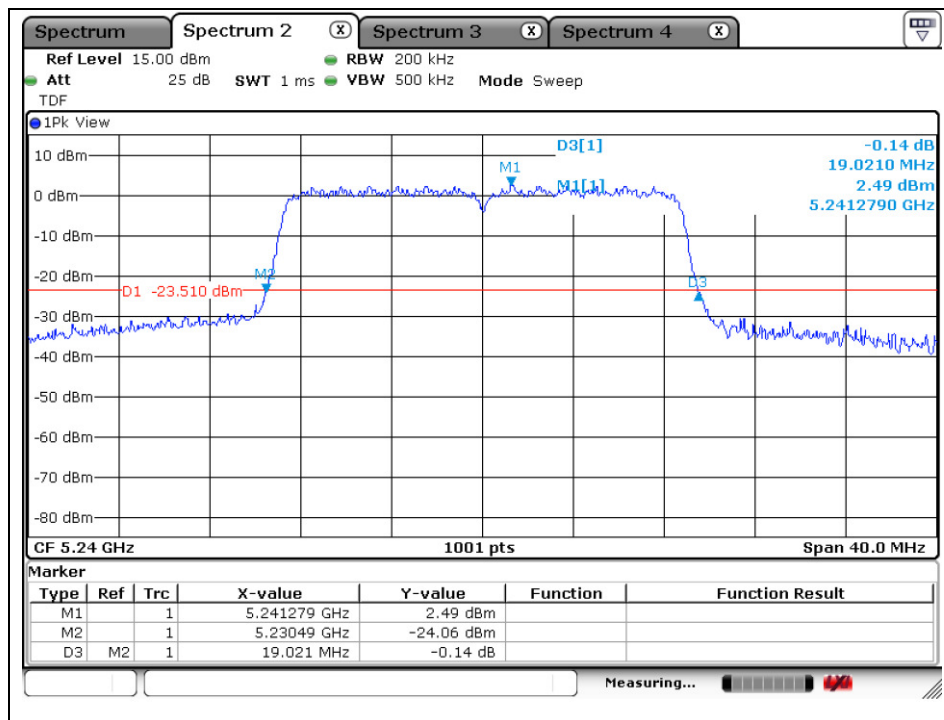
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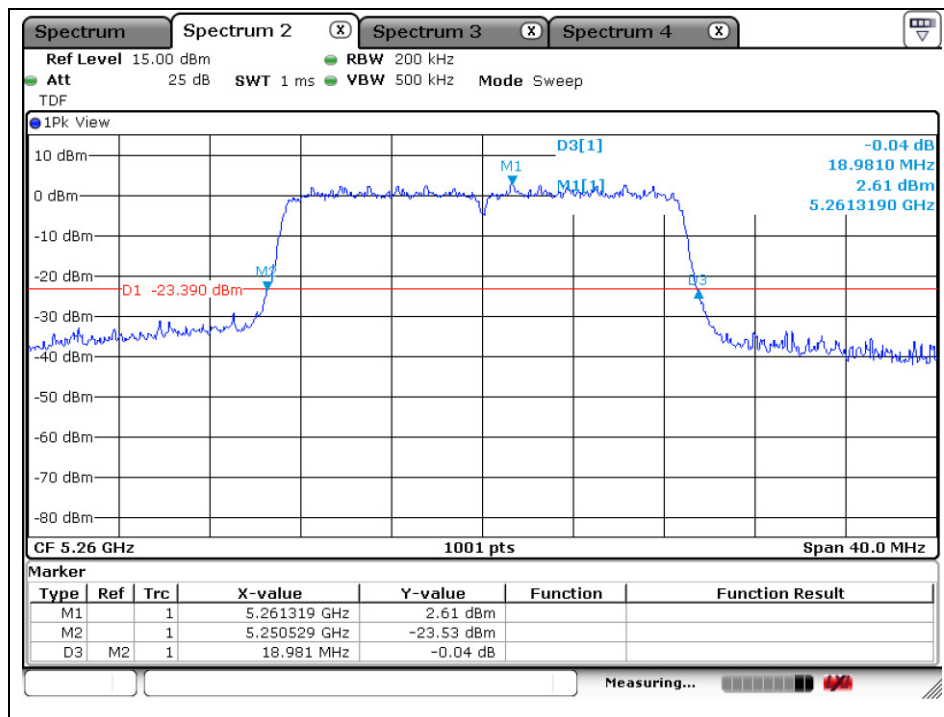
A4(210 mm x 297 mm)

High Channel (5 240 MHz)



802.11n-HT20 (Band 2A)

Low Channel (5 260 MHz)



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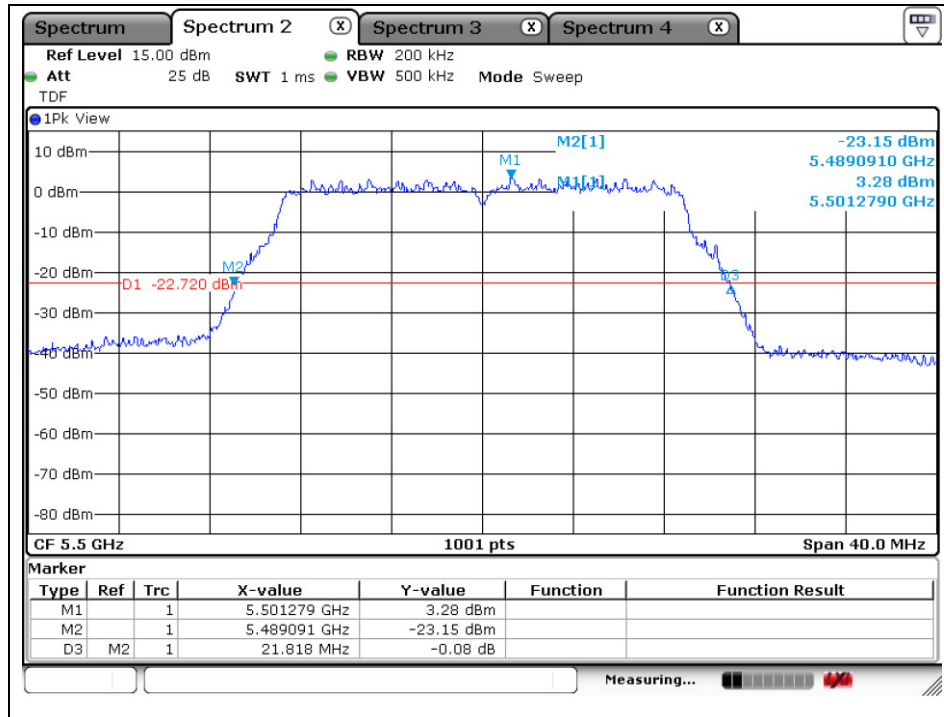
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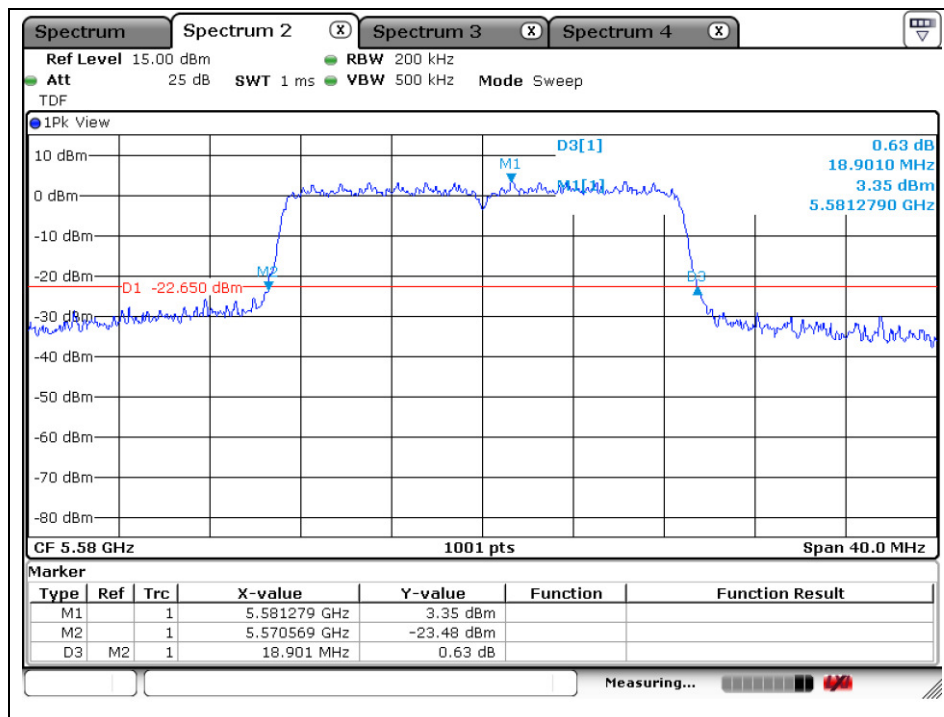
A4(210 mm x 297 mm)

802.11n-HT20 (Band 2C)

Low Channel (5 500 MHz)



Middle Channel (5 580 MHz)



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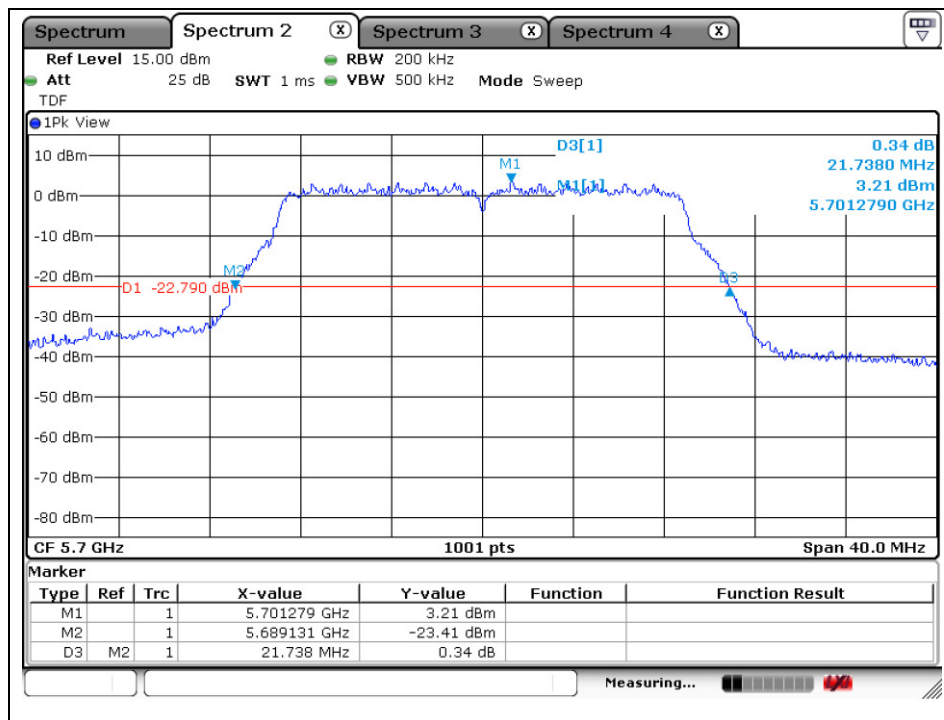
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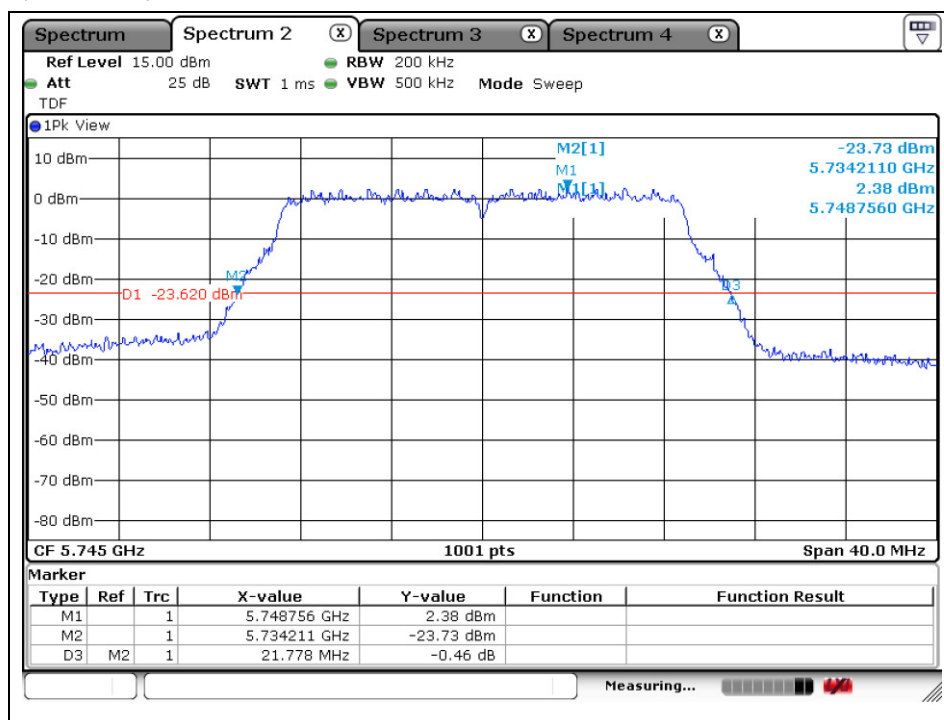
A4(210 mm x 297 mm)

High Channel (5 700 MHz)



802.11n_HT20 (Band 3)

Low Channel (5 745 MHz)



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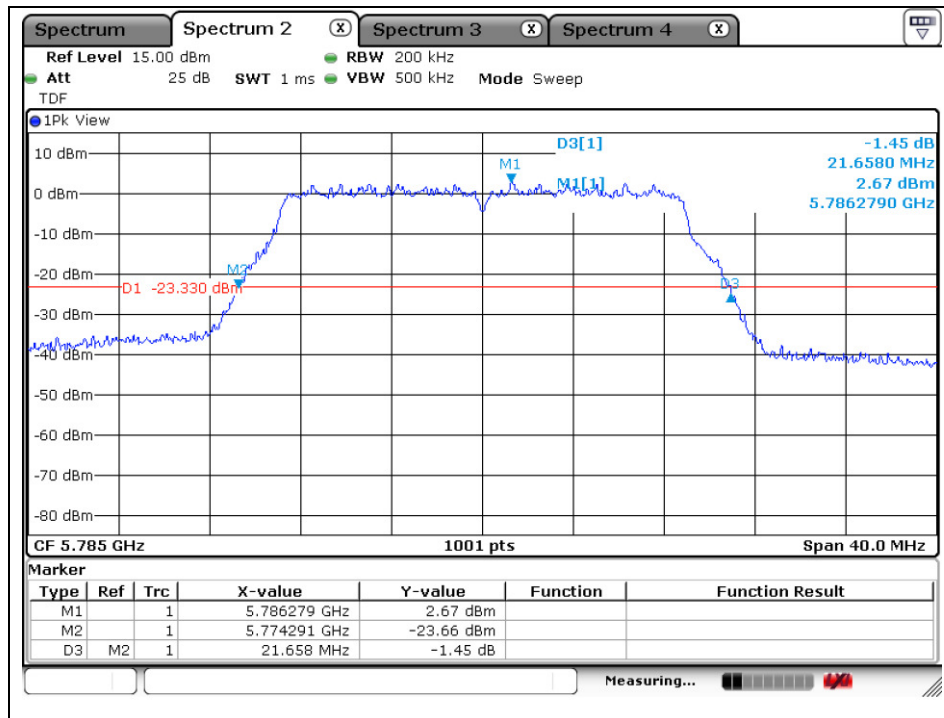
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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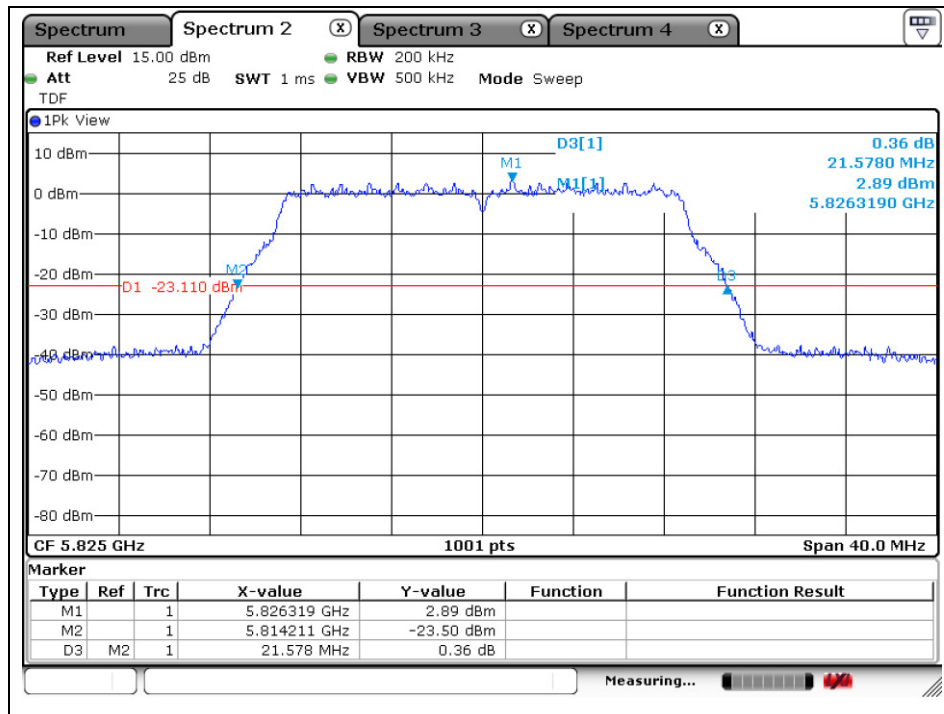
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A4(210 mm x 297 mm)

Middle Channel (5 785 MHz)



High Channel (5 825 MHz)



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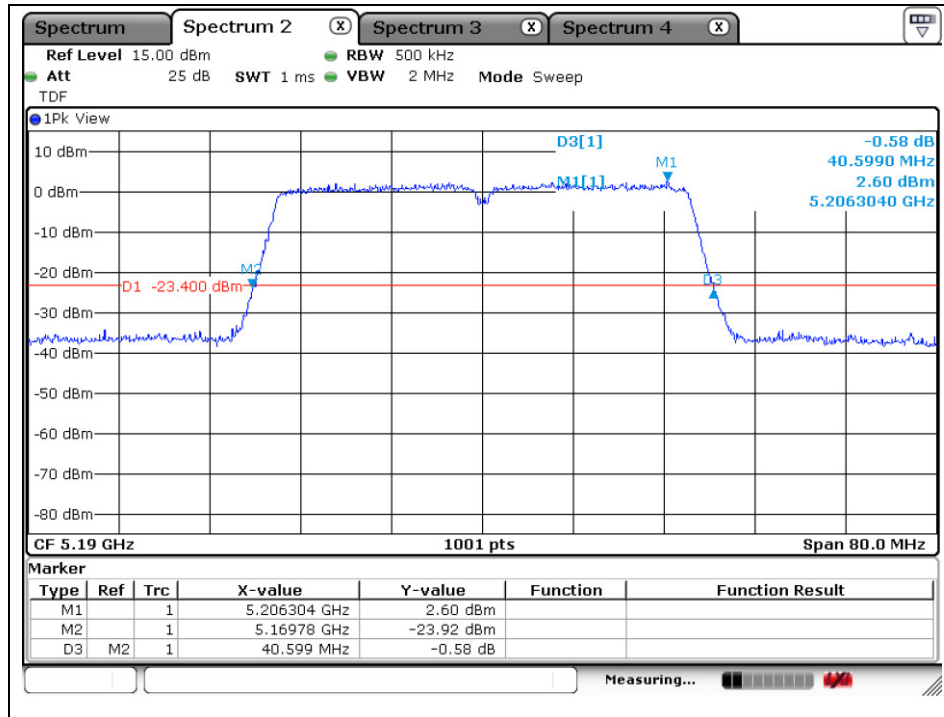
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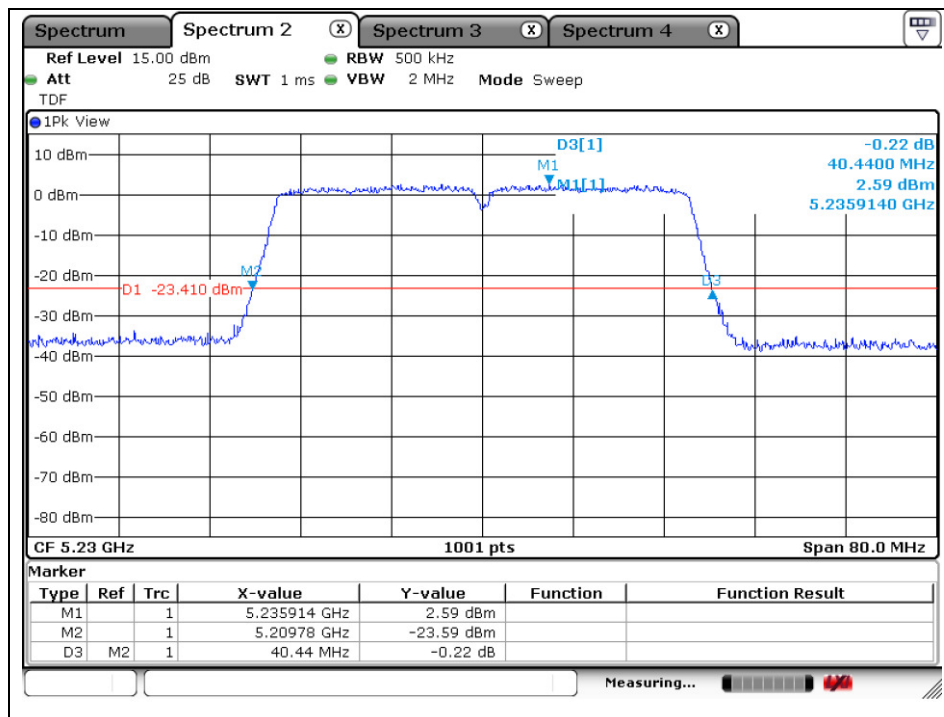
A4(210 mm x 297 mm)

802.11n-HT40 (Band 1)

Low Channel (5 190 MHz)



High Channel (5 230 MHz)



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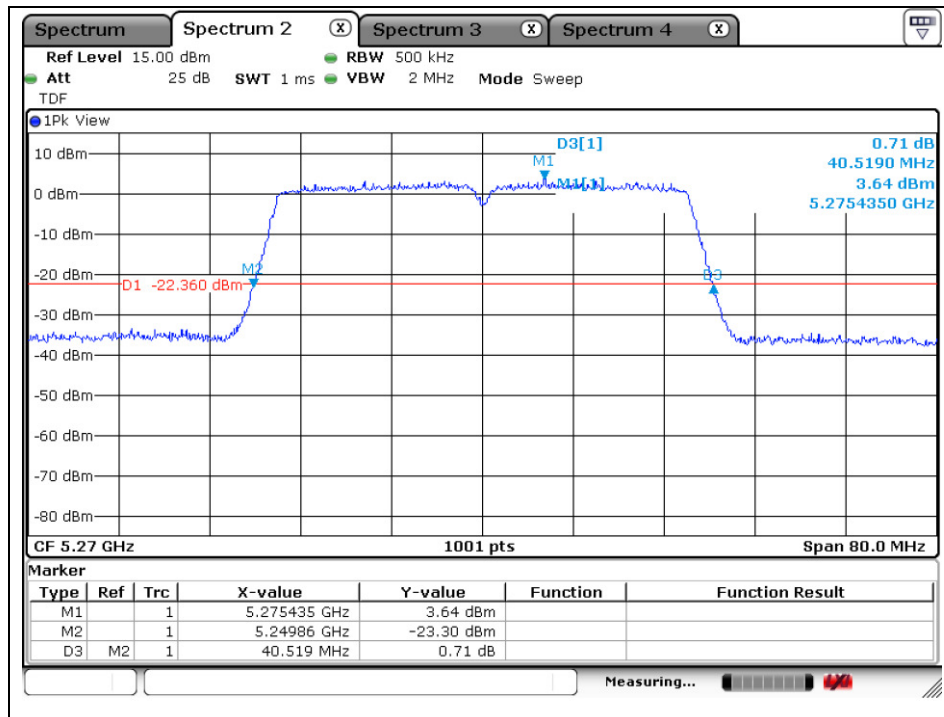
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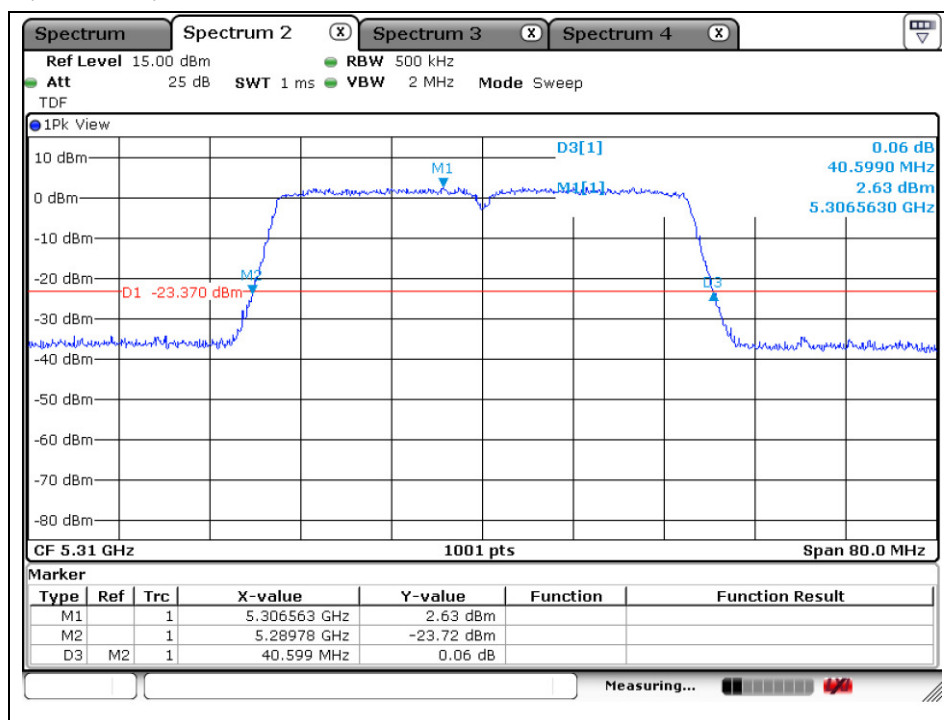
A4(210 mm x 297 mm)

802.11n-HT40 (Band 2A)

Low Channel (5 270 MHz)



High Channel (5 310 MHz)



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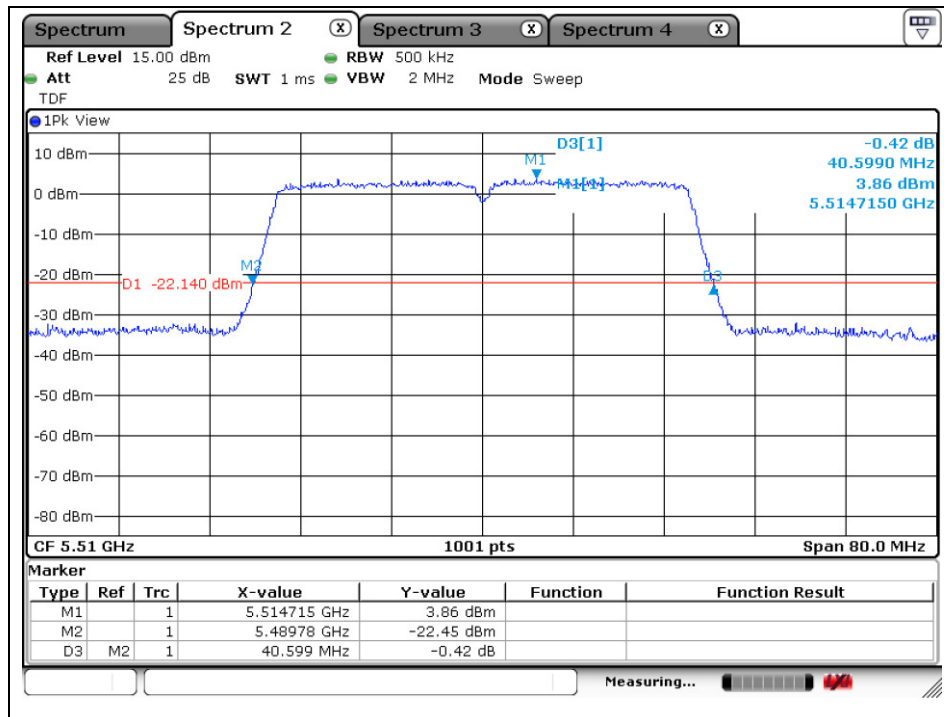
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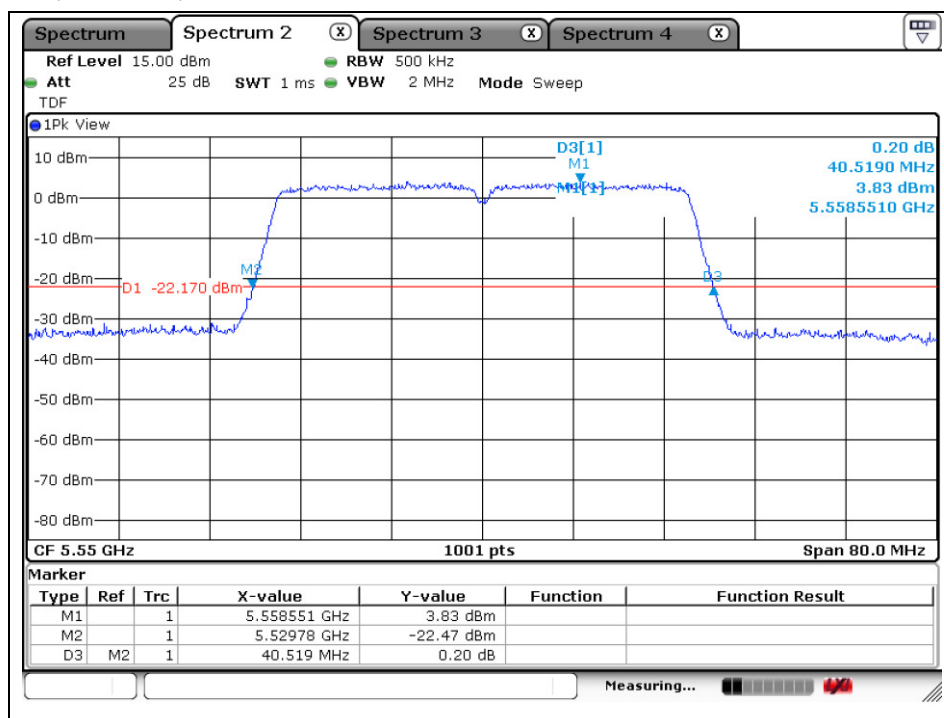
A4(210 mm x 297 mm)

802.11n-HT40 (Band 2C)

Low Channel (5 510 MHz)



Middle Channel (5 550 MHz)



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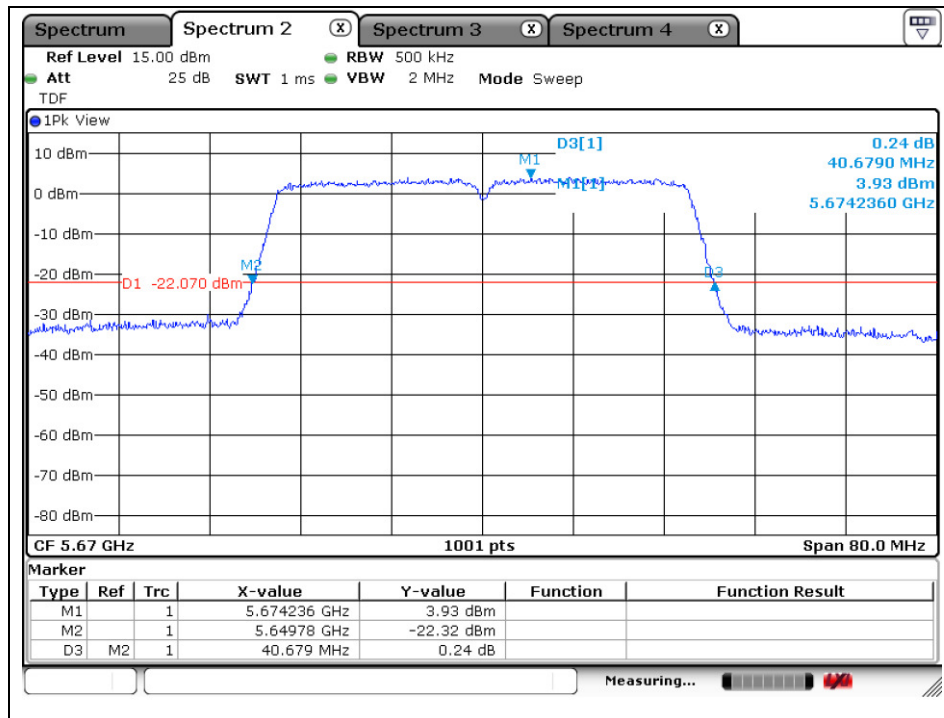
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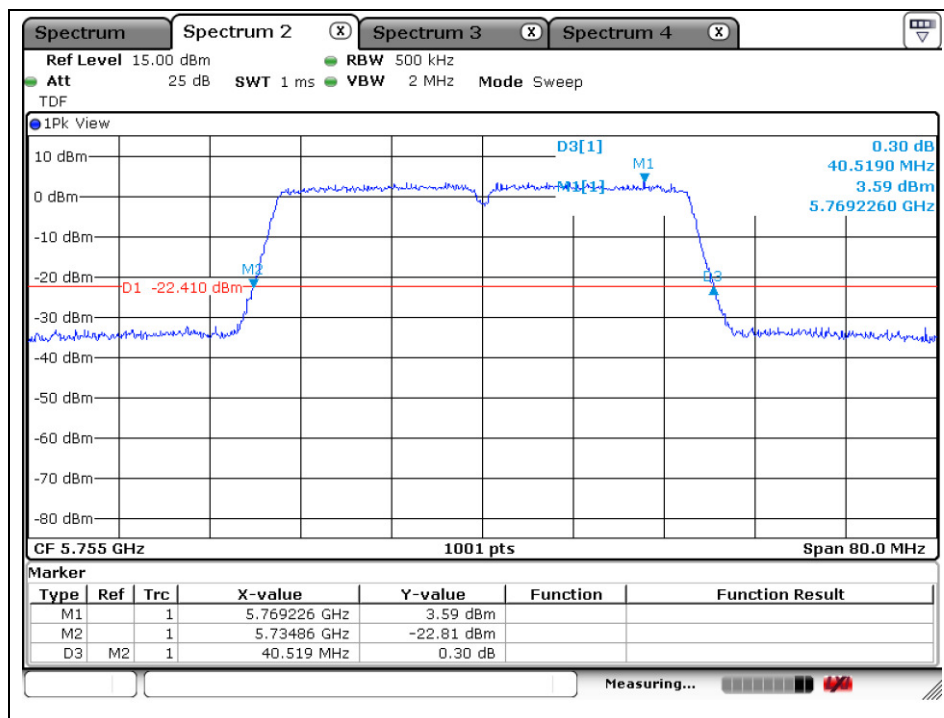
A4(210 mm x 297 mm)

High Channel (5 670 MHz)



802.11n_HT40 (Band 3)

Low Channel (5 755 MHz)



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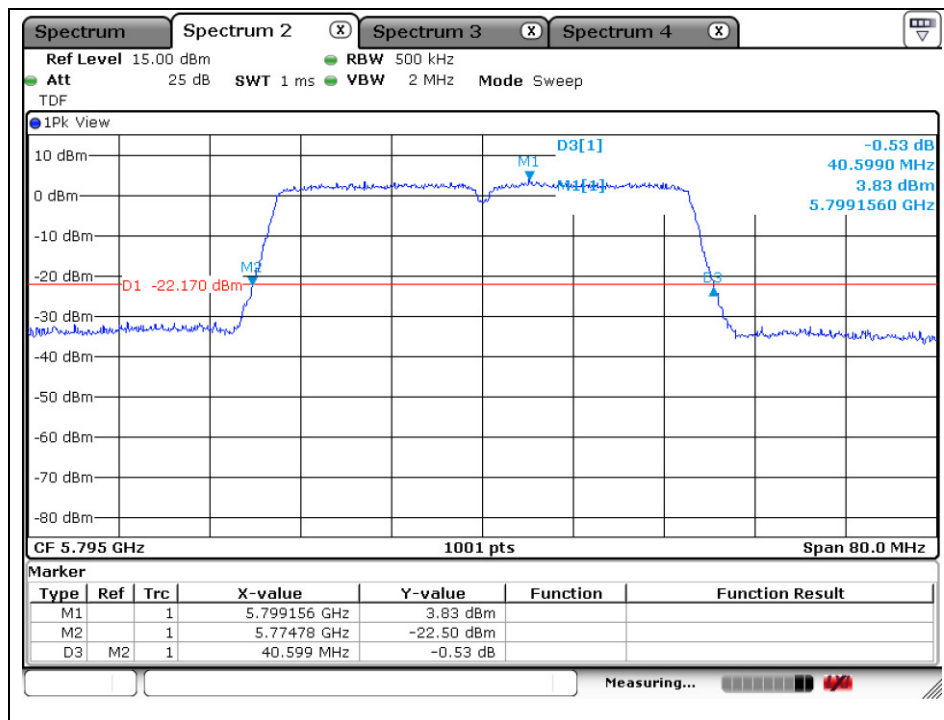
SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

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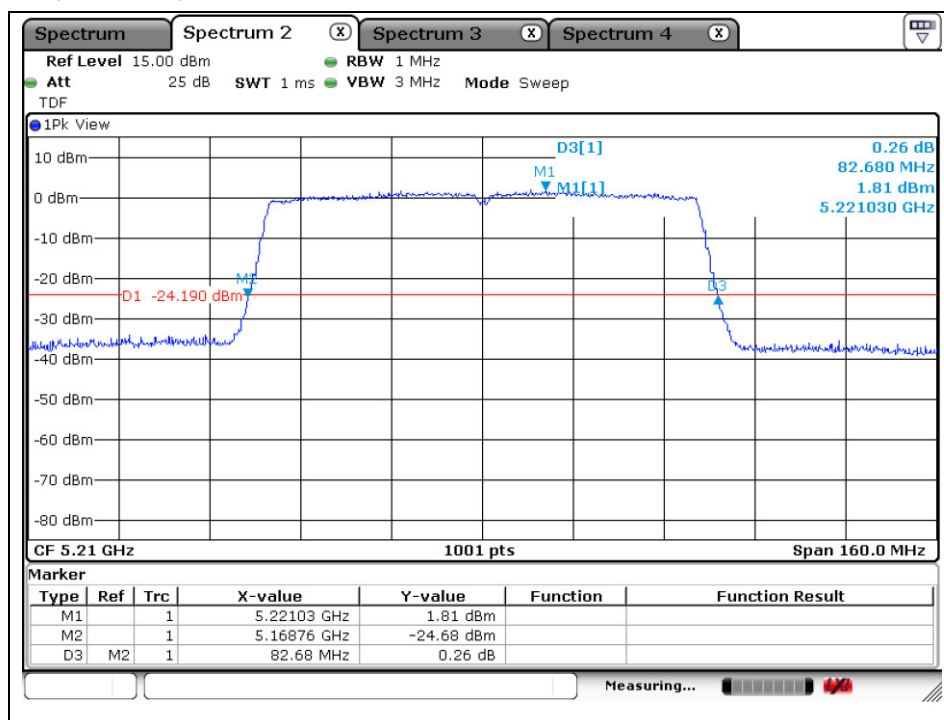
A4(210 mm x 297 mm)

High Channel (5 795 MHz)



802.11ac_VHT80 (Band 1)

Middle Channel (5 210 MHz)



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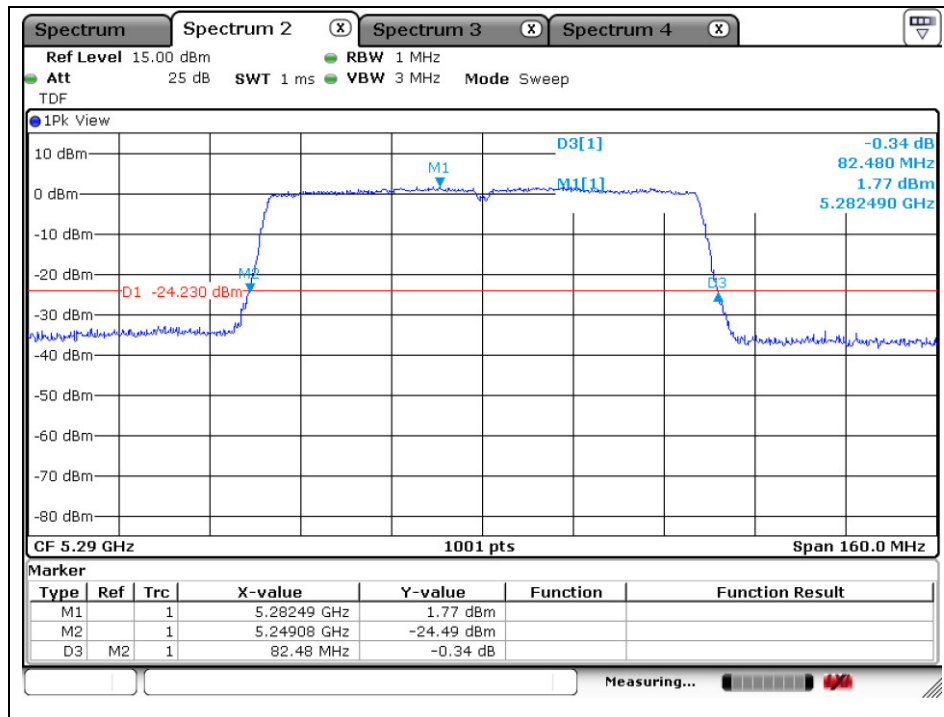
RTT5041-20(2015.10.01)(3)

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

A4(210 mm x 297 mm)

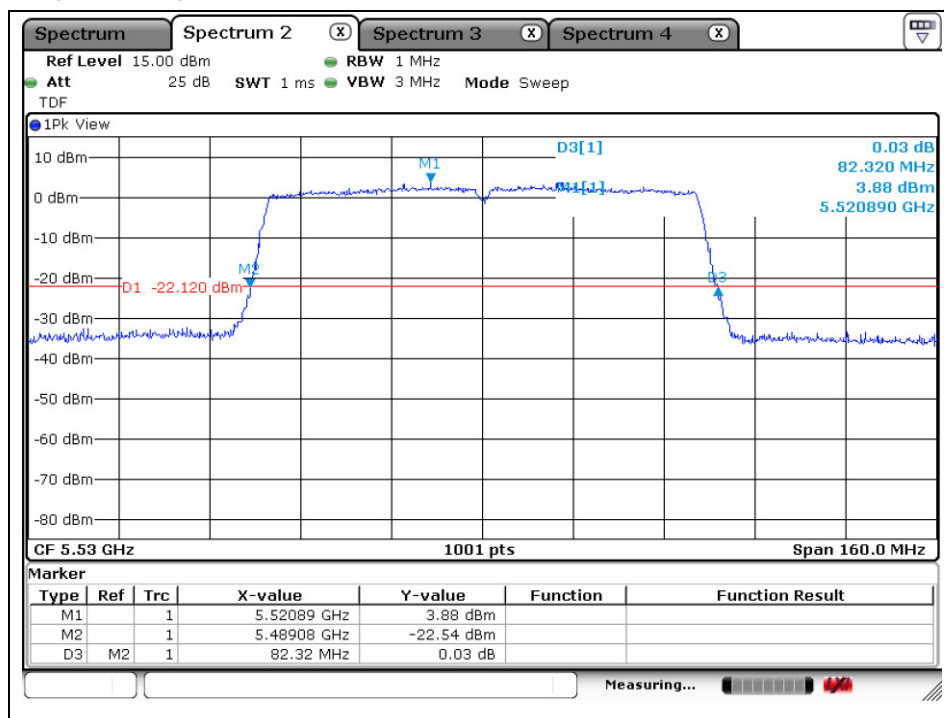
802.11ac_VHT80 (Band 2A)

Middle Channel (5 290 MHz)



802.11ac_VHT80 (Band 2C)

Middle Channel (5 530 MHz)



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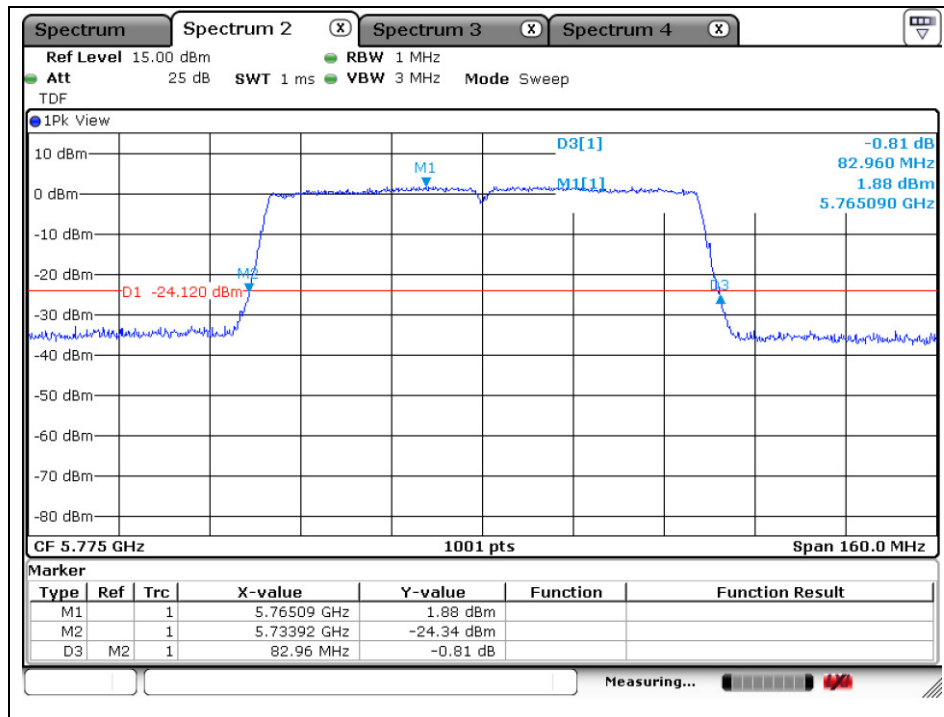
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A4(210 mm x 297 mm)

802.11ac_VHT80 (Band 3)

Middle Channel (5 775 MHz)



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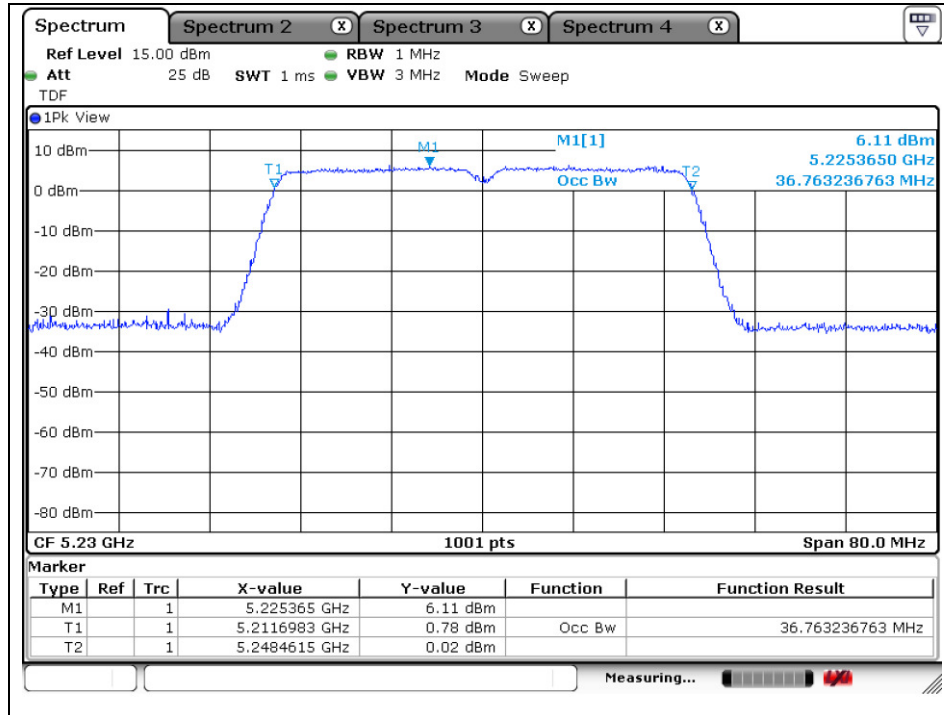
Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

99 % Bandwidth

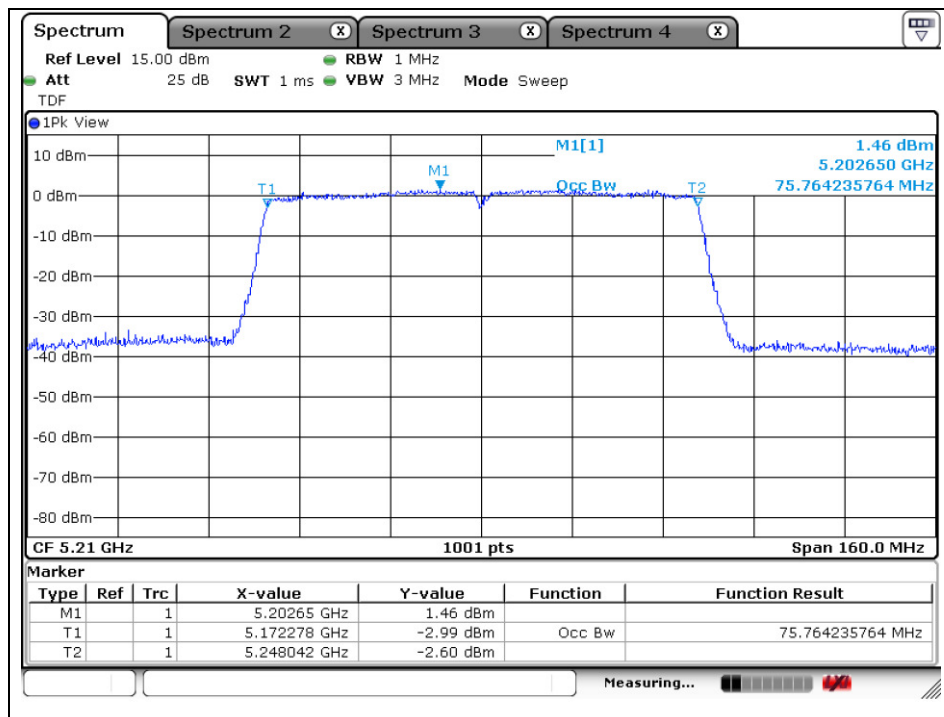
802.11n_HT40 (Band 1)

High Channel (5 230 MHz)



802.11ac_VHT80 (Band 1)

Middle Channel (5 210 MHz)



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A4(210 mm x 297 mm)

4. 6 dB bandwidth

4.1. Test setup



4.2. Limit

Within the 5.725 – 5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

4.3. Test procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

1. This measurement settings are specified in section C.2 of KDB 789033_v01r01.
2. Set RBW : 100 kHz.
3. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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A4(210 mm x 297 mm)

4.4. Test result

Ambient temperature : (23 ± 1) °C
Relative humidity : 47 % R.H.

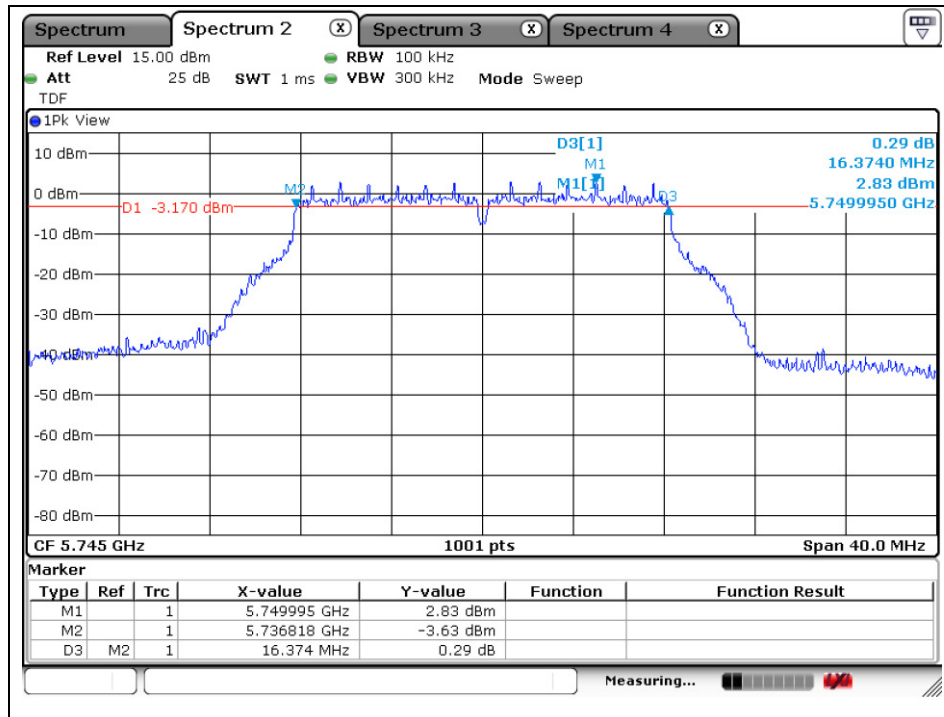
Band	Mode	Frequency (MHz)	Ch.	Data Rate (Mbps)	6 dB Bandwidth (MHz)	Minimum Bandwidth (kHz)
U-NII 3	11a	5 745	149	6	16.374	500
		5 785	157	6	16.384	500
		5 825	165	6	16.384	500
	11n_HT20	5 745	149	MCS0	17.612	500
		5 785	157	MCS0	17.622	500
		5 825	165	MCS0	17.622	500
	11n_HT40	5 755	151	MCS0	36.364	500
		5 795	159	MCS0	36.324	500
	11ac_VHT80	5 775	155	MCS0	76.080	500

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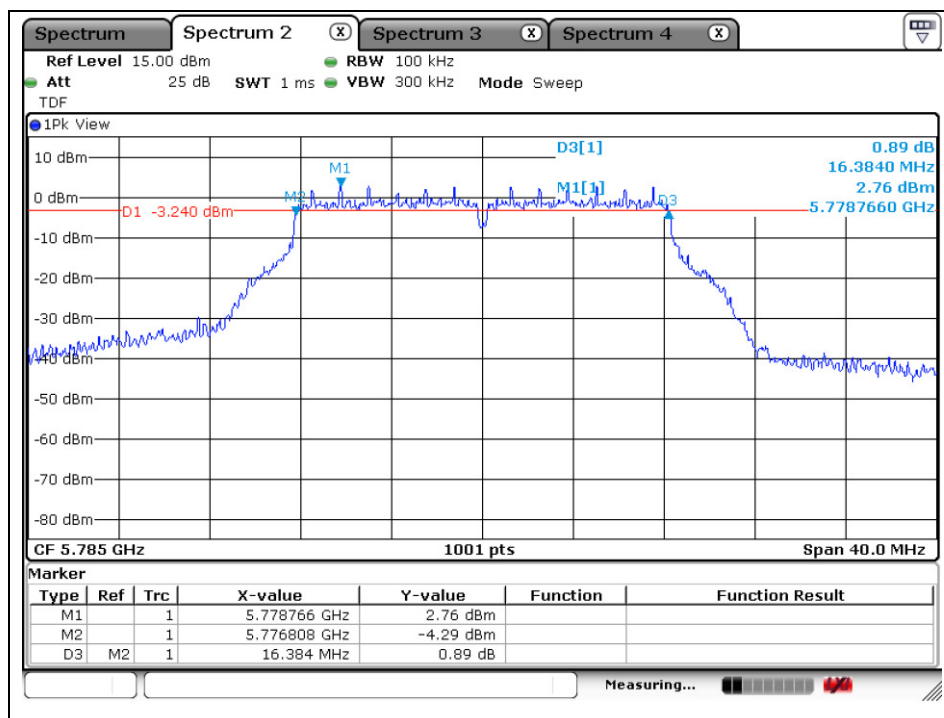
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802.11a (Band 3)

Low Channel (5 745 MHz)



Middle Channel (5 785 MHz)



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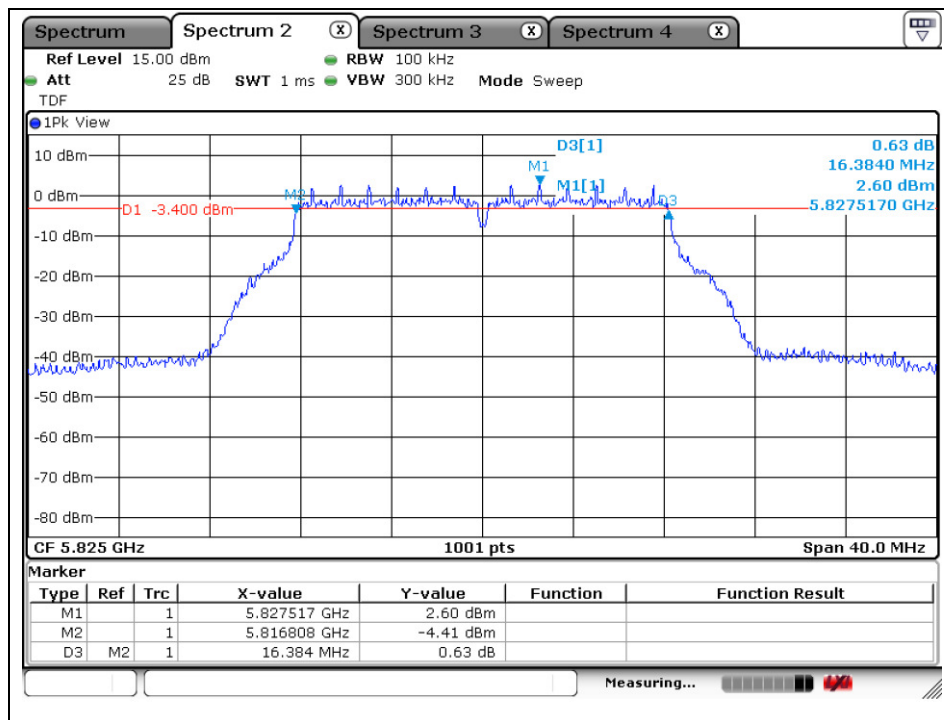
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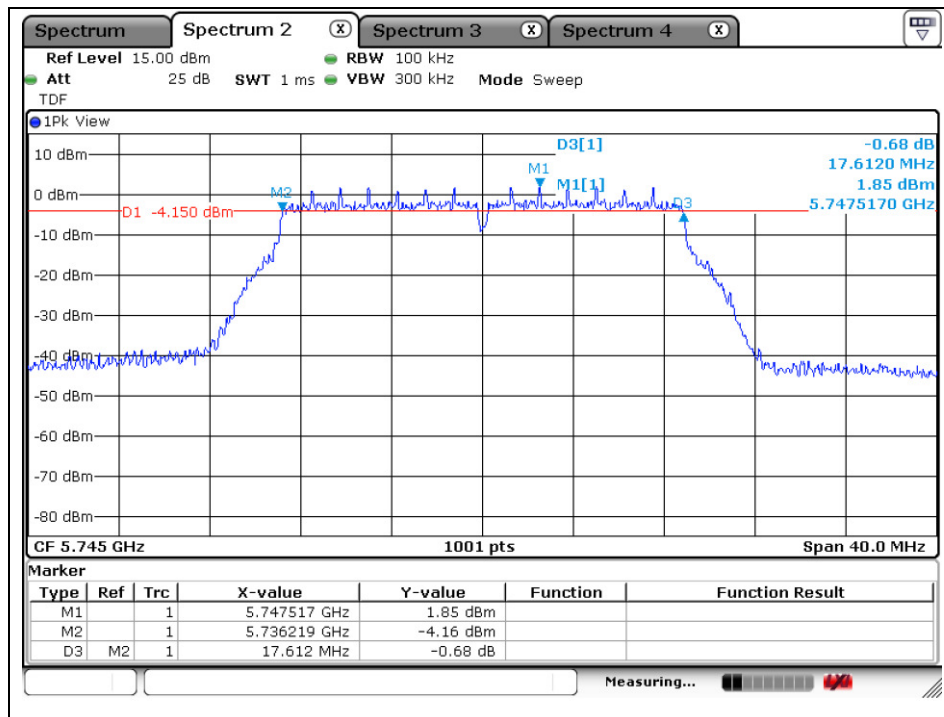
A4(210 mm x 297 mm)

High Channel (5 825 MHz)



802.11n_HT20 (Band 3)

Low Channel (5 745 MHz)



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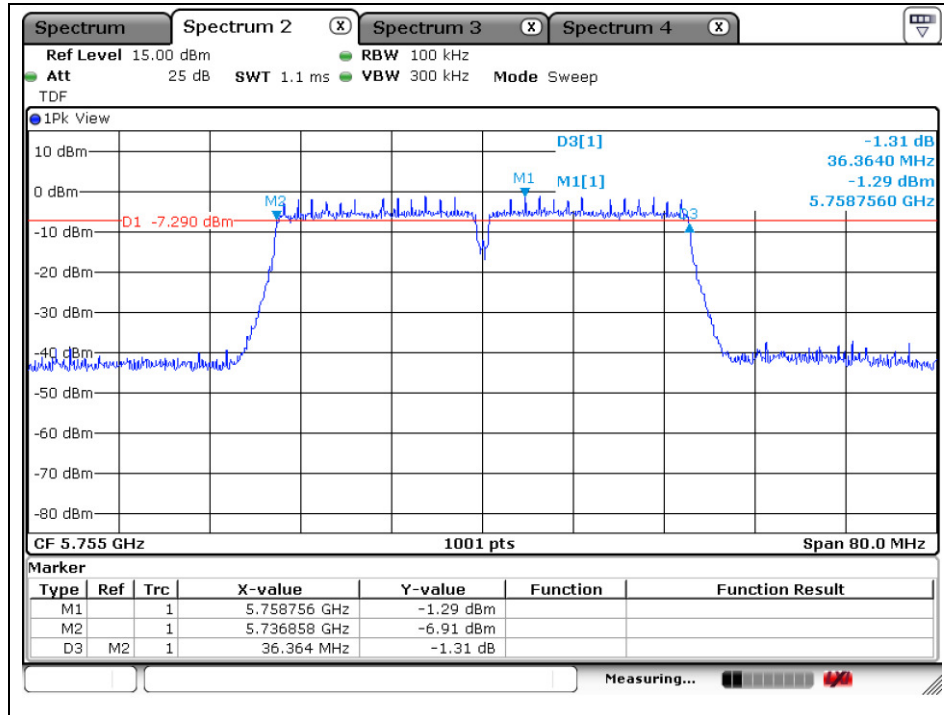
RTT5041-20(2015.10.01)(3)

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

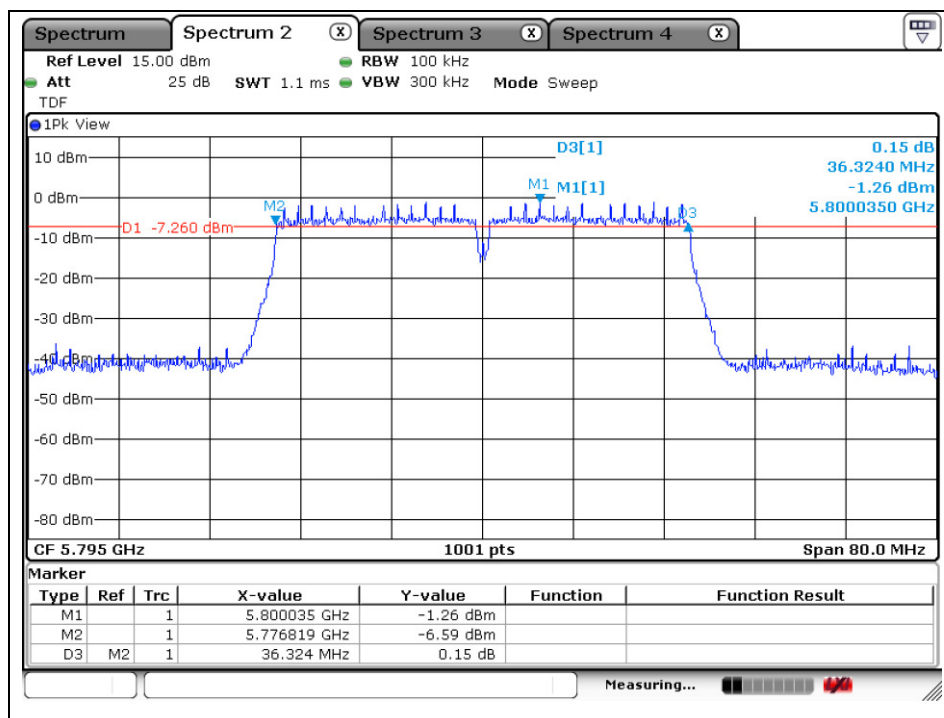
A4(210 mm x 297 mm)

802.11n_HT40 (Band 3)

Low Channel (5 755 MHz)



High Channel (5 795 MHz)



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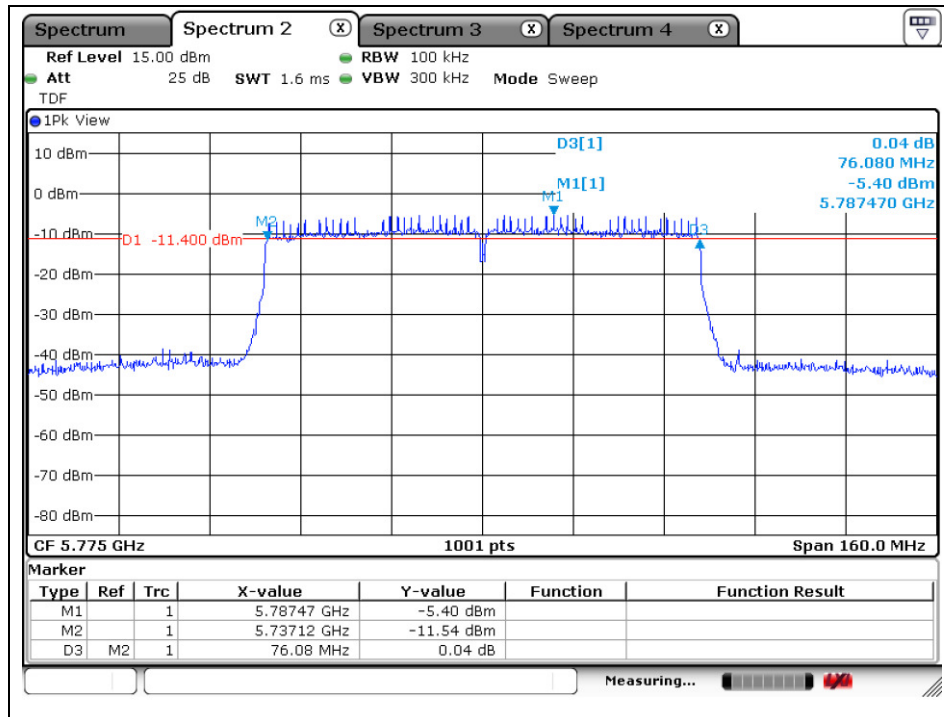
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A4(210 mm x 297 mm)

802.11ac_VHT80 (Band 3) Middle Channel (5 775 MHz)



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A4(210 mm x 297 mm)