FCC TEST REPORT

Test report No.:	EMC- FCC- R0214
FCC ID:	A3LSPWB4339S
Type of equipment:	Wi-Fi module
Model Name:	SPW-B4339S
Applicant:	Samsung Electronics Co., Ltd.
Max.RF Output Power:	13.53 dBm
FCC Rule Part(s):	FCC Part 15 Subpart E 15.407
Frequency Range:	5 150 MHz ~ 5 250 MHz 5 250 MHz ~ 5 350 MHz 5 470 MHz ~ 5 650 MHz 5 725 MHz ~ 5 850 MHz
Test result:	Complied

The above equipment was tested by EMC compliance Testing Laboratory for compliance with the requirements of FCC Rules and Regulations.
The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of receipt: 2014. 11. 17

Date of test: 2014. 12. 15 ~ 12. 22

Issued date: 2015. 01. 21

Tested by: KIM, SUNG SIN

Approved by: YU, SANG HOON

This test report shall not be reproduced except in full, Without the written approval.

[Contents]

1. Client information **3**
2. Laboratory information **4**
3. Description of E.U.T. **5**
3.1 Basic description 5
3.2 General description 6
3.3 Available channel list and frequency 7
3.4 Test Voltage 7
3.5 Duty Factor 7
4. Summary of test results **8**
4.1 Standards & results 8
4.2 Uncertainty 8
5. Test results **9**
5.1 Antenna Requirement 9
5.2 Maximum Conducted Output Power 10
5.3 Bandwidth Measurement 17
5.4 Peak Power Spectral Density 82
5.6 Spurious Emission, Band Edge And Restricted Bands 126
5.7 Frequency Stability 151
5.8 DFS(Dynamic Frequency Selection) 165
5.9 Conducted Emission 178
6. Test equipment used for test **180**

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

1. Client information

Applicant:	Samsung Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea 443-742
Telephone number:	+82-31-277-6038
Contact person:	Lee Kyeong Min / km8489.lee@samsung.com

Manufacturer:	Samsung Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea 443-742

This test report shall not be reproduced except in full, Without the written approval.

2. Laboratory information

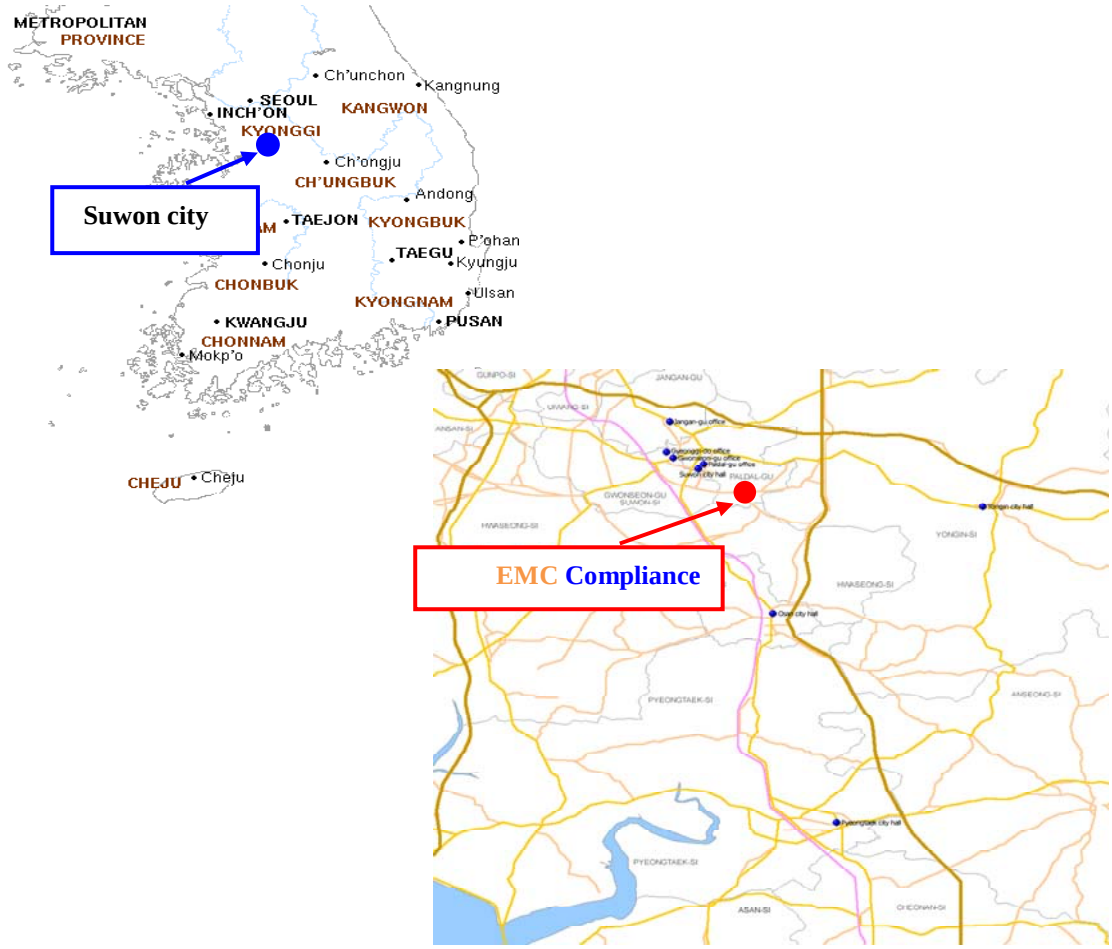
Address

EMC compliance Ltd.
480-5 Shin-dong, Yeongtong-gu, Suwon-city, Gyunggi-do, 443-390, Korea
Telephone Number: 82-31-336-9919 Facsimile Number: 82-505-299-8311

Certificate

KOLAS No.: 231
FCC Site Designation No: KR0040
FCC Site Registration No: 687132
VCCI Site Registration No.: R-3327, G-198, C-3706, T-1849
IC Site Registration No.:8035A-2

SITE MAP



This test report shall not be reproduced except in full, Without the written approval.

3. Description of E.U.T.

3.1 Basic description

Applicant:	Samsung Electronics Co., Ltd.
Address of Applicant	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea 443-742
Manufacturer	Samsung Electronics Co., Ltd.
Address of Manufacturer	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea 443-742
Type of equipment	Wi-Fi module
Basic Model	SPW-B4339S
Serial number	N/A

This test report shall not be reproduced except in full, Without the written approval.

3.2 General description

Frequency Range	2 402 ㎒ ~ 2 480 ㎒ (Bluetooth, Bluetooth LE) 2 412 ㎒ ~ 2 472 ㎒ (802.11b/g/n_HT20) 5 180 ㎒ ~ 5 240 ㎒ (802.11a/n/ac_HT20/VHT20)_Non DFS 5 190 ㎒ ~ 5 230 ㎒ (802.11n/ac_HT40/VHT40)_Non DFS 5 210 ㎒ (802.11ac_VHT80)_Non DFS 5 260 ㎒ ~ 5 320 ㎒ (802.11a/n/ac_HT20/VHT20)_DFS 5 270 ㎒ ~ 5 310 ㎒ (802.11n/ac_HT40/VHT40)_DFS 5 290 ㎒ (802.11ac_VHT80)_DFS 5 500 ㎒ ~ 5 700 ㎒ (802.11a/n/ac_HT20/VHT20)_DFS 5 510 ㎒ ~ 5 670 ㎒ (802.11n/ac_HT40/VHT40)_DFS 5 530 ㎒ (802.11ac_VHT80)_DFS 5 745 ㎒ ~ 5 825 ㎒ (802.11a/n/ac_HT20/VHT20)_Non DFS 5 755 ㎒ ~ 5 795 ㎒ (802.11n/ac_HT40/VHT40)_Non DFS 5 775 ㎒ (802.11ac_VHT80)_Non DFS
Type of Modulation	GFSK : Bluetooth, Bluetooth LE, π/4DQPSK, 8DPSK : Bluetooth, CCK, OFDM : WIFI
Number of Channels	2.0 ㎓:79 ch (Bluetooth), 40 ch (Bluetooth LE) 13 ch (802.11b/g/n_HT20) 5.0 ㎓: 5 150 ㎒ Band: 4 ch (802.11a/n/ac_HT20/VHT20) 2 ch (802.11n/ac_HT40/VHT40) 1 ch (802.11ac_VHT80) 5 250 ㎒ Band: 4 ch (802.11a/n/ac_HT20/VHT20) 2 ch (802.11n/ac_HT40/VHT40) 1 ch (802.11ac_VHT80) 5 470 ㎒ Band: 8 ch (11a/n/ac_HT20/VHT20) 4 ch (802.11n/ac_HT40/VHT40) 1 ch (802.11ac_VHT80) 5 725 ㎒ Band: 5 ch (802.11a/n/ac_HT20/VHT20) 2 ch (802.11n/ac_HT40/VHT40) 1 ch (802.11ac_VHT80)
Type of Antenna	PCB Antenna
Antenna Gain	2 ㎓: 1.9 dBi (Bluetooth, Bluetooth LE, WiFi) 5 ㎓: 5 150 ㎒ Band: -0.7 dBi, 5 250 ㎒ Band: 1.4 dBi 5 470 ㎒ Band: 0.3 dBi, 5 725 ㎒ Band: 0.3 dBi
Transmit Power	13.53 dBm
Power supply	DC 3.3 V
H/W Version	WLM320A_P0
S/W Version	Driver : DHD_1_141_33 WiFi F/W : 6.37.23.34.15.7
Test S/W version	M-tool 2.0.2.3
RF Power setting	set -1 for default value and applied NV Ram

* Declared by the applicant.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

3.3 Available channel list and frequency

5.0 GHz Band

* 802.11a/n/ac_HT20/VHT20

	Frequency			
Low frequency	5 180 MHz	5 260 MHz	5 500 MHz	5 745 MHz
Middle frequency	5 200 MHz	5 280 MHz	5 580 MHz	5 785 MHz
High frequency	5 240 MHz	5 320 MHz	5 700 MHz	5 825 MHz

* 802.11n/ac_HT40/VHT40

	Frequency			
Low frequency	5 190 MHz	5 270 MHz	5 510 MHz	5 755 MHz
Middle frequency	5 230 MHz	5 310 MHz	5 590 MHz	5 795 MHz
High frequency			5 670 MHz	

* 802.11ac_VHT80

	Frequency			
Low frequency	5 210 MHz	5 290 MHz	5 530 MHz	5 775 MHz

3.4 Test Voltage

mode	Voltage
Norminal voltage	DC 3.3 V

3.5 Duty Factor

	Duty cucle	Duty cycle factor
802.11a	0.95	0.23
802.11n HT20	0.95	0.23
802.11n HT40	0.90	0.45
802.11ac VHT20	0.98	0.07
802.11ac VHT40	0.97	0.14
802.11ac VHT80	0.94	0.28

* Duty cycle factor=10log(1/Duty cycle)

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

4. Summary of test results

4.1 Standards & results

FCC Rule	Parameter	Report Section	Test Result
15.203 15.407(a)(1)(2)(3)	Antenna Requirement	5.1	C
15.403(i),15.407(e)	Bandwidth Measurement	5.2	C
15.407(a)(1)(2)	Maximum Conducted Output Power	5.3	C
15.407(a)(1)(2)(5)	Peak Power Spectral Density	5.4	C
15.205(a), 15.209(a), 15.407(b)(1), 15.407(b)(2), 15.407(b)(3)	Spurious Emission, Band Edge and Restricted bands	5.6	C
15.407(g)	Frequency Stability	5.7	C
15.207(a)	Conducted Emissions	5.8	C
15.407(h)	Dynamic Freqyency Selection	5.9	C

* The general test methods used to test this device is ANSI C63.4 2013

4.2 Uncertainty

Measurement Item	Expanded Uncertainty U = KUc (K = 2)	
Conducted RF power	± 1.36 dB	
Conducted Spurious Emissions	± 1.52 dB	
Radiated Spurious Emissions	30 MHz ~ 300 MHz:	+ 4.94 dB, - 5.06 dB
		+ 4.93 dB, - 5.05 dB
	300 MHz ~ 1 000 MHz:	+ 4.97 dB, - 5.08 dB
		+ 4.84 dB, - 4.96 dB
	1 GHz ~ 40 GHz:	+ 6.03 dB, - 6.05 dB
Conducted Emissions	9 kHz ~ 150 kHz:	± 3.75 dB
	150 kHz ~ 30 MHz:	± 3.36 dB

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5. Test results

5.1 Antenna Requirement

5.1.1 Regulation

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.407(a)(1)(2)(3), If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.1.2 Result

-Complied

The transmitter has an integral PCB antenna.

The total directional peak gain of the antenna does not exceed 6.0 dBi

	5 150 ㎒ Band	5 250 ㎒ Band	5 470 ㎒ Band	5 725 ㎒ Band
ANT Gain	-0.70 dBi	-1.40 dBi	0.30 dBi	0.30 dBi

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.2 Maximum Conducted Output Power

5.2.1 Regulation

According to §15.407(a) (1) (iv) For mobile and portable client devices in the 5.15-5.25 ㎓ band, the maximum conducted output power over the frequency band of operation shall not exceed 250 ㎽ provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (2) For the 5.25-5.35 ㎓ and 5.47-5.725 ㎓ bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 ㎽ or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dBthat the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3) For the band 5.725-5.85 ㎓, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-㎑ band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

5.2.2 Measurement Procedure

These test measurement settings are specified in section C of 789033 D02 General UNII Test Procedures.

5.2.2.1 Method PM (Measurement using an RF average power meter):

(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

- The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
- At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
- The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

(ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section II.B.

(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

(iv) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10 log(1/0.25) if the duty cycle is 25 percent).

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.2.4 Test Result

-Complied

*FCC Rule 802.11a_5 150 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 180	11.15	0.23	11.38	24.00	12.62
5 200	11.02	0.23	11.25	24.00	12.75
5 240	10.69	0.23	10.92	24.00	13.08

*FCC Rule 802.11a_5 250 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 260	10.67	0.23	10.90	24.00	13.10
5 280	10.44	0.23	10.67	24.00	13.33
5 320	10.70	0.23	10.93	24.00	13.07

*FCC Rule 802.11a_5 470 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 500	13.30	0.23	13.53	24.00	10.47
5 580	13.13	0.23	13.36	24.00	10.64
5 700	11.65	0.23	11.88	24.00	12.12

*FCC Rule 802.11a_5 725 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 745	12.90	0.23	13.13	30.00	16.87
5 785	12.15	0.23	12.38	30.00	17.62
5 825	12.41	0.23	12.64	30.00	17.36

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*FCC Rule 802.11n HT20_5 150 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 180	11.15	0.23	11.38	24.00	12.62
5 200	11.06	0.23	11.29	24.00	12.71
5 240	10.66	0.23	10.89	24.00	13.11

*FCC Rule 802.11n HT20_5 250 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 260	10.48	0.23	10.71	24.00	13.29
5 280	10.58	0.23	10.81	24.00	13.19
5 320	10.54	0.23	10.77	24.00	13.23

*FCC Rule 802.11n HT20_5 470 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 500	13.09	0.23	13.32	24.00	10.68
5 580	12.84	0.23	13.07	24.00	10.93
5 700	11.66	0.23	11.89	24.00	12.11

*FCC Rule 802.11n HT20_5 725 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 745	12.00	0.23	12.23	30.00	17.77
5 785	12.25	0.23	12.48	30.00	17.52
5 825	12.47	0.23	12.70	30.00	17.30

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*FCC Rule 802.11n HT40_5 150 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 190	9.94	0.45	10.39	24.00	13.61
5 230	9.63	0.45	10.08	24.00	13.92

*FCC Rule 802.11n HT40_5 250 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 270	9.47	0.45	9.92	24.00	14.08
5 310	9.51	0.45	9.96	24.00	14.04

*FCC Rule 802.11n HT40_5 470 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 510	12.19	0.45	12.64	24.00	11.36
5 590	12.28	0.45	12.73	24.00	11.27
5 670	11.02	0.45	11.47	24.00	12.53

*FCC Rule 802.11n HT40_5 725 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 755	10.69	0.45	11.14	30.00	18.86
5 795	11.25	0.45	11.70	30.00	18.30

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*FCC Rule 802.11ac VHT20_5 150 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 180	11.45	0.07	11.52	24.00	12.48
5 200	11.21	0.07	11.28	24.00	12.72
5 240	10.89	0.07	10.96	24.00	13.04

*FCC Rule 802.11ac VHT20_5 250 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 260	10.94	0.07	11.01	24.00	12.99
5 280	10.77	0.07	10.84	24.00	13.16
5 320	10.89	0.07	10.96	24.00	13.04

*FCC Rule 802.11ac VHT20_5 470 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 500	13.40	0.07	13.47	24.00	10.53
5 580	13.20	0.07	13.27	24.00	10.73
5 700	12.03	0.07	12.10	24.00	11.90

*FCC Rule 802.11ac VHT20_5 725 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 745	12.38	0.07	12.45	30.00	17.55
5 785	12.59	0.07	12.66	30.00	17.34
5 825	12.80	0.07	12.87	30.00	17.13

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*FCC Rule 802.11ac VHT40_5 150 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 190	10.32	0.14	10.46	24.00	13.54
5 230	9.97	0.14	10.11	24.00	13.89

*FCC Rule 802.11ac VHT40_5 250 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 270	9.86	0.14	10.00	24.00	14.00
5 310	9.88	0.14	10.02	24.00	13.98

*FCC Rule 802.11ac VHT40_5 470 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 510	12.61	0.14	12.75	24.00	11.25
5 590	12.53	0.14	12.67	24.00	11.33
5 670	11.23	0.14	11.37	24.00	12.63

*FCC Rule 802.11ac VHT40_5 725 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 755	10.58	0.14	10.72	30.00	19.28
5 795	11.19	0.14	11.33	30.00	18.67

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*FCC Rule 802.11ac VHT80_5 150 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 210	8.60	0.28	8.88	24.00	15.12

*FCC Rule 802.11ac VHT80_5 250 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 290	8.21	0.28	8.49	24.00	15.51

*FCC Rule 802.11ac VHT80_5 470 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 530	11.09	0.28	11.37	24.00	12.63

*FCC Rule 802.11ac VHT80_5 725 Band

Frequency [MHz]	Average Power (dBm)	Duty Factor	Result	Limit (dBm)	Margin (dBm)
5 775	10.01	0.28	10.29	30.00	19.71

-NOTE:

1. Duty Factor : refer to 3.5
2. Result = Total power calculation + Duty Factor

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.3 Bandwidth Measurement

5.3.1 Regulation

According to §15.403,(i) Emission bandwidth. For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 ㏈ down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

According to §15.407,(e) Within the 5.725-5.85 ㎓ band, the minimum 6 ㏈ bandwidth of U-NII devices shall be at least 500 ㎑.

5.3.2 Measurement Procedure

1.Emission Bandwidth (EBW)

a)Set RBW = approximately 1% of the emission bandwidth.
b)Set the VBW > RBW.
c)Detector = Peak.
d)Trace mode = max hold.
e)Measure the maximum width of the emission that is 26 ㏈ down from the maximum of theemission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeatmeasurement as needed until the RBW/EBW ratio is approximately 1%.

2.Minimum Emission Bandwidth for the band 5.725 - 5.85 ㎓

Section 15.407(e) specifies the minimum 6 ㏈ emission bandwidth of at least 500 ㎑ for theband 5.715-5.85 ㎓. The following procedure shall be used for measuring this bandwidth:

a) Set RBW = 100 ㎑.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associatedwith the two outermost amplitude points (upper and lower frequencies) that are attenuated by6 ㏈ relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.3.3 Test Result

-Complied

*802.11a

5 150 Band

Frequency	26 dB Bandwidth	OBW
5 180	21.30	16.81
5 200	21.17	16.68
5 240	21.33	16.79

5 250 Band

Frequency	26 dB Bandwidth	OBW
5 260	21.36	16.80
5 280	21.18	16.79
5 320	21.33	16.84

5 470 Band

Frequency	26 dB Bandwidth	OBW
5 500	21.37	16.85
5 580	21.31	16.81
5 700	21.41	16.72

5 725 Band

Frequency	6 dB Bandwidth	OBW
5 745	16.35	16.49
5 785	16.35	16.53
5 825	16.20	16.51

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*802.11n HT20

5 150 Band

Frequency	26 dB Bandwidth	OBW
5 180	21.57	17.97
5 200	21.50	17.84
5 240	21.60	17.89

5 250 Band

Frequency	26 dB Bandwidth	OBW
5 260	21.60	17.95
5 280	21.70	17.97
5 320	21.46	17.95

5 470 Band

Frequency	26 dB Bandwidth	OBW
5 500	21.57	17.85
5 580	21.49	17.80
5 700	21.59	17.89

5 725 Band

Frequency	6 dB Bandwidth	OBW
5 745	17.58	17.71
5 785	17.58	17.74
5 825	17.58	17.75

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*802.11n HT40

5 150 Band

Frequency	26 dB Bandwidth	OBW
5 190	40.05	36.48
5 230	39.94	36.52

5 250 Band

Frequency	26 dB Bandwidth	OBW
5 270	39.75	36.50
5 310	39.92	36.52

5 470 Band

Frequency	26 dB Bandwidth	OBW
5 510	39.98	36.49
5 590	40.02	36.47
5 670	39.99	36.45

5 725 Band

Frequency	6 dB Bandwidth	OBW
5 755	36.10	36.15
5 795	36.07	36.14

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*802.11ac VHT20

5 150 Band

Frequency	26 dB Bandwidth	OBW
5 180	21.71	17.80
5 200	21.52	17.81
5 240	21.37	17.95

5 250 Band

Frequency	26 dB Bandwidth	OBW
5 260	21.63	17.98
5 280	21.75	17.91
5 320	21.61	17.93

5 470 Band

Frequency	26 dB Bandwidth	OBW
5 500	21.75	17.87
5 580	21.50	17.89
5 700	21.53	17.90

5 725 Band

Frequency	6 dB Bandwidth	OBW
5 745	17.58	17.83
5 785	17.58	17.77
5 825	17.59	17.77

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*802.11ac VHT40

5 150 Band

Frequency	26 dB Bandwidth	OBW
5 190	40.06	36.46
5 230	40.01	36.53

5 250 Band

Frequency	26 dB Bandwidth	OBW
5 270	40.01	36.48
5 310	39.87	36.48

5 470 Band

Frequency	26 dB Bandwidth	OBW
5 510	40.16	36.48
5 590	40.07	36.46
5 670	39.85	36.36

5 725 Band

Frequency	6 dB Bandwidth	OBW
5 755	36.26	36.12
5 795	36.00	36.12

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*802.11ac VHT80

5 150 Band

Frequency	26 dB Bandwidth	OBW
5 210	81.40	75.72

5 250 Band

Frequency	26 dB Bandwidth	OBW
5 290	81.85	75.77

5 470 Band

Frequency	26 dB Bandwidth	OBW
5 530	81.70	75.70

5 725 Band

Frequency	6 dB Bandwidth	OBW
5 775	75.37	75.25

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

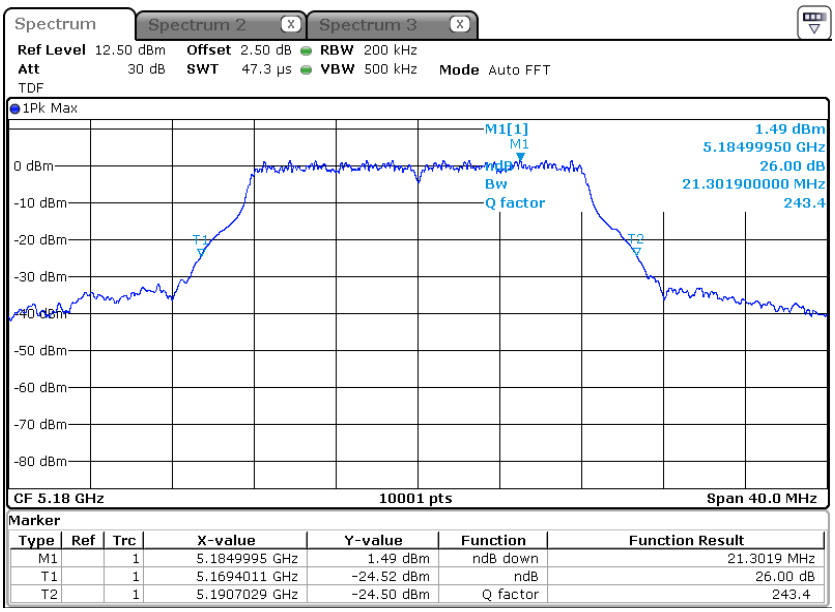
5.3.4 Test Plot

Figure 1. Plot of Bandwidth Measurement

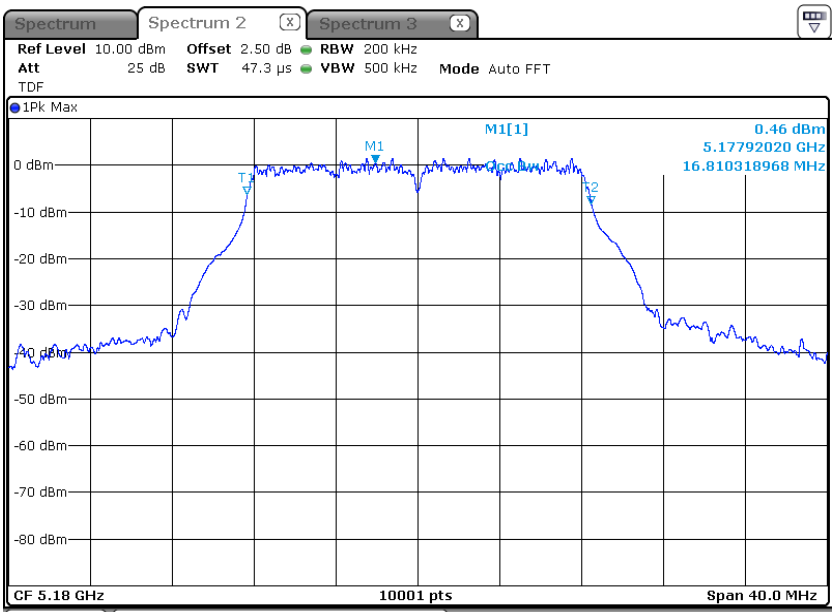
* 802.11a_5 150 Band (26 dB Bandwidth)

-5 180 ㎒

EBW



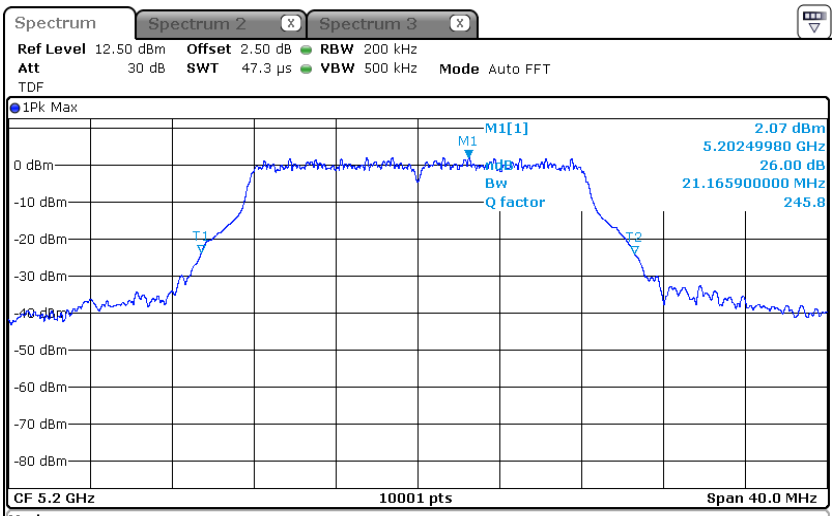
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 200 ㎒

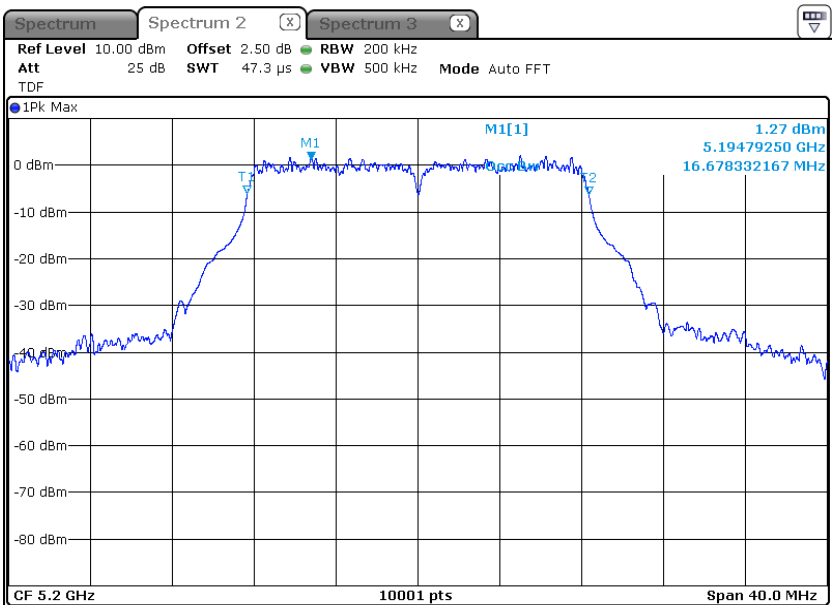
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2024998 GHz	2.07 dBm	ndB down	21.1659 MHz
T1		1	5.1894051 GHz	-23.91 dBm	ndB	26.00 dB
T2		1	5.2105709 GHz	-23.93 dBm	Q factor	245.8

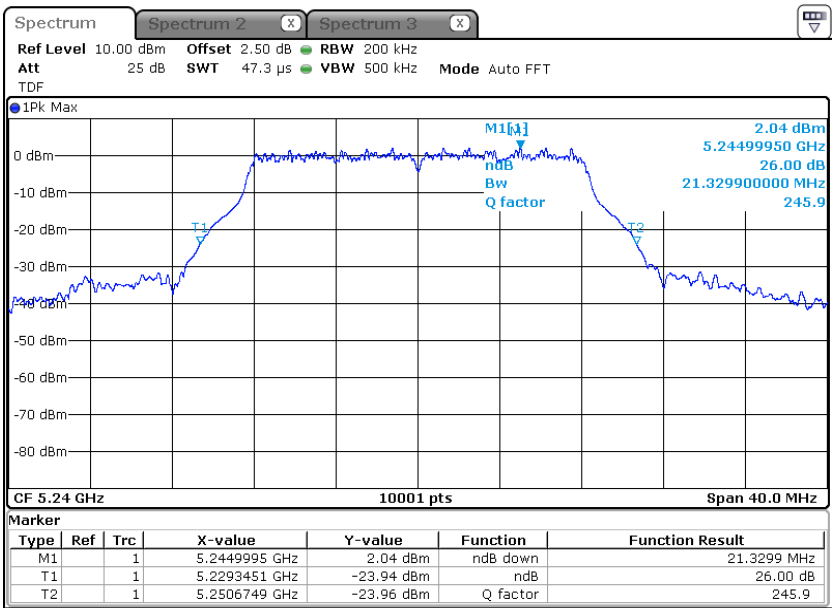
OBW



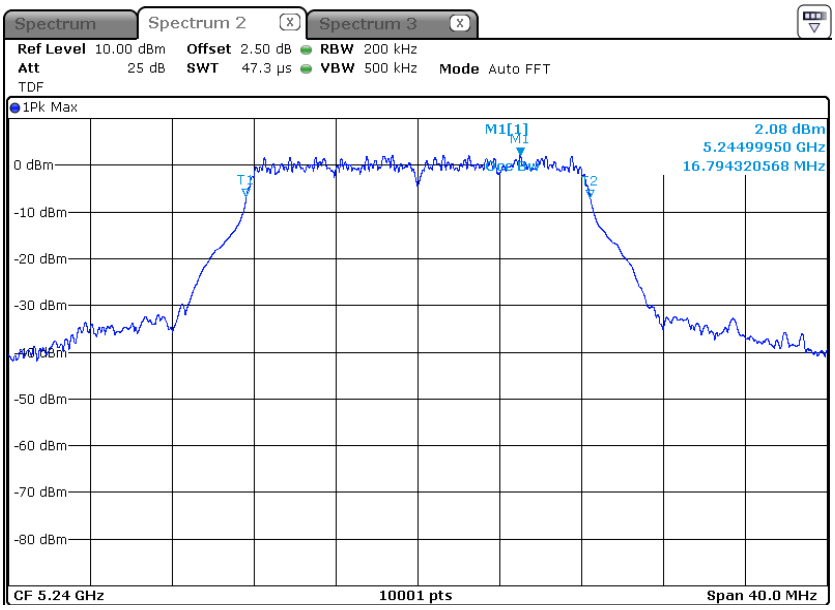
This test report shall not be reproduced except in full, Without the written approval.

-5 240 ㎒

EBW



OBW

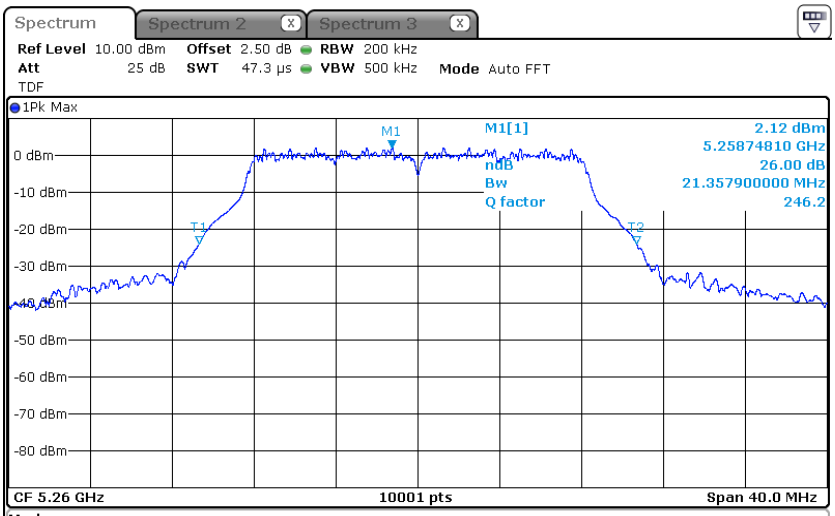


This test report shall not be reproduced except in full, Without the written approval.

* 802.11a_5 250 Band (26 dB Bandwidth)

-5 260 MHz

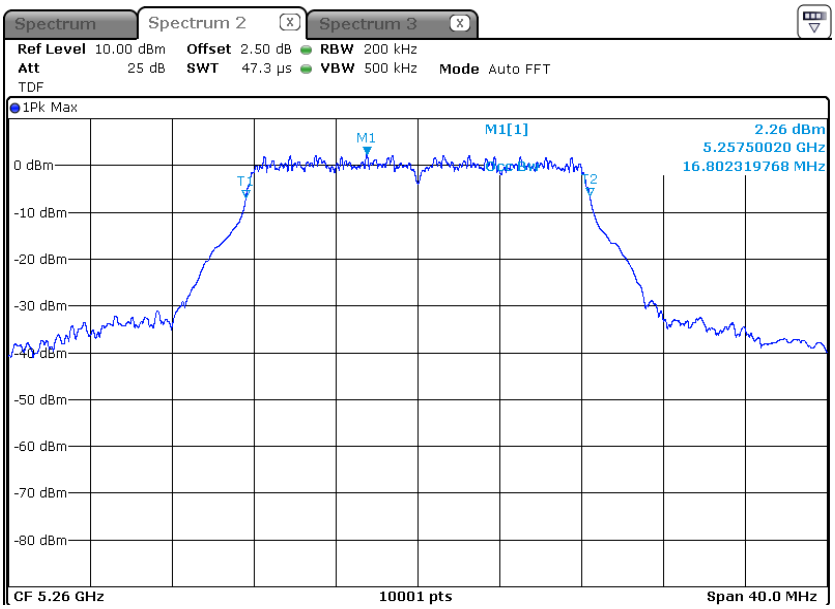
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2587481 GHz	2.12 dBm	ndB down	21.3579 MHz
T1		1	5.2493131 GHz	-23.90 dBm	ndB	26.00 dB
T2		1	5.2706709 GHz	-23.87 dBm	Q factor	246.2

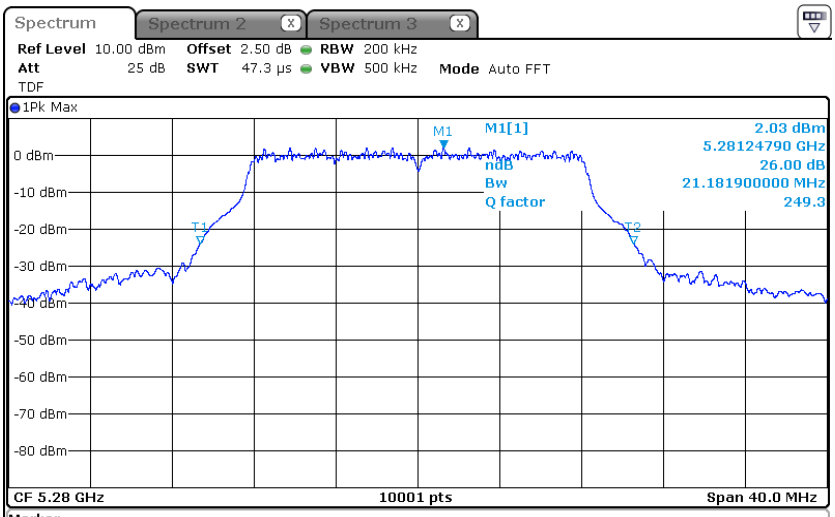
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 280 ㎒

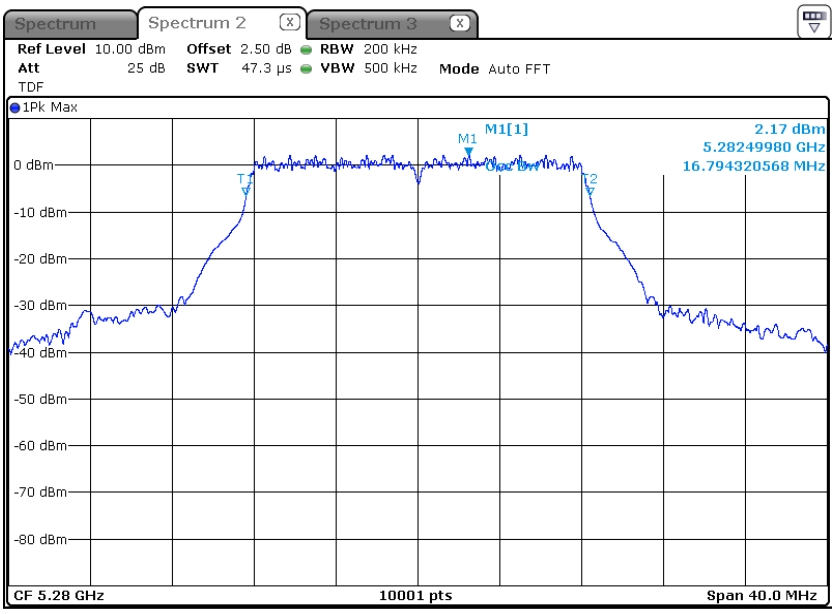
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2812479 GHz	2.03 dBm	ndB down	21.1819 MHz
T1		1	5.2693611 GHz	-23.97 dBm	ndB	26.00 dB
T2		1	5.2905429 GHz	-23.98 dBm	Q factor	249.3

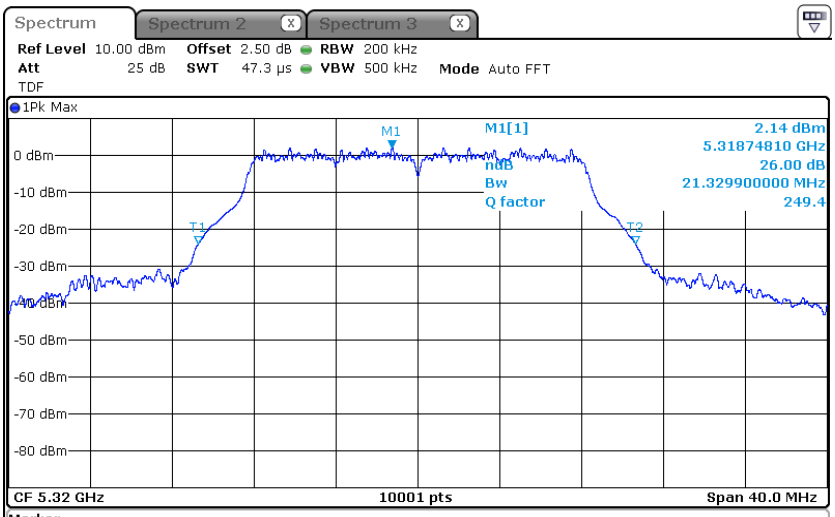
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 320 ㎒

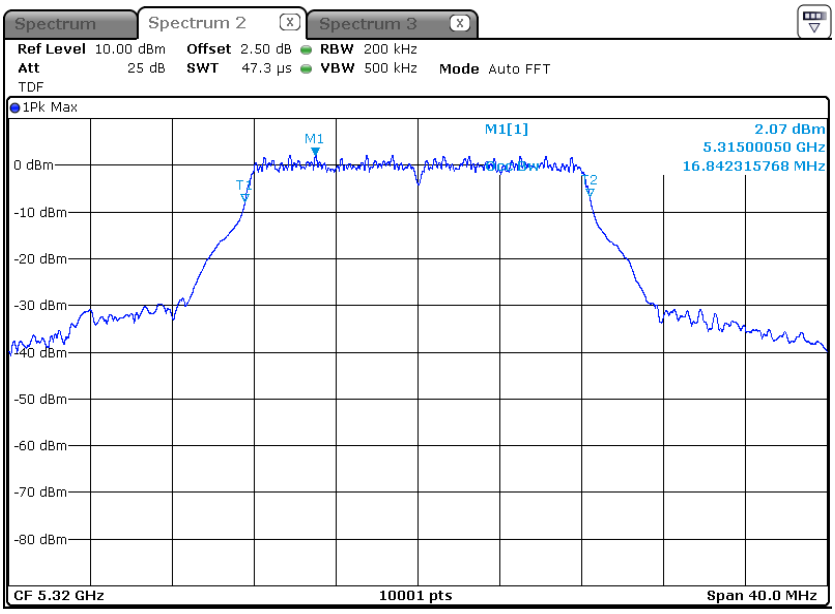
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.3187481 GHz	2.14 dBm	ndB down	21.3299 MHz
T1		1	5.3092811 GHz	-23.87 dBm	ndB	26.00 dB
T2		1	5.3306109 GHz	-23.88 dBm	Q factor	249.4

OBW

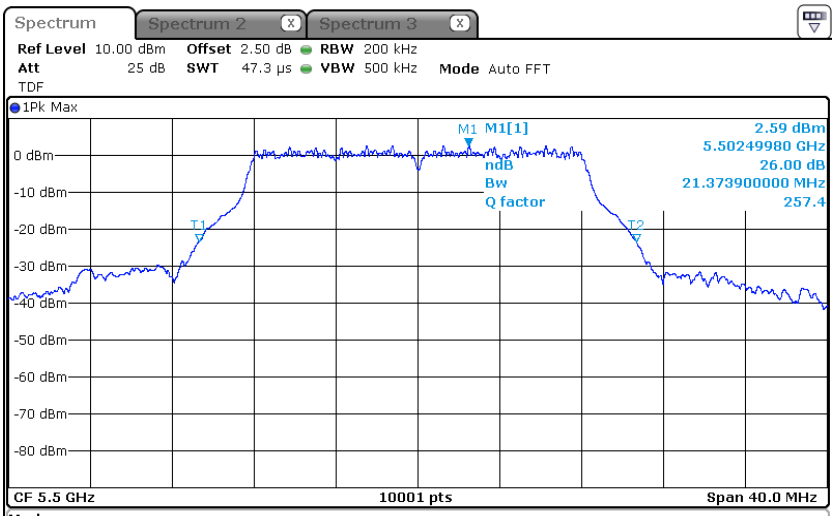


This test report shall not be reproduced except in full, Without the written approval.

* 802.11a _5 470 Band (26 ㏈ Bandwidth)

-5 500 ㎒

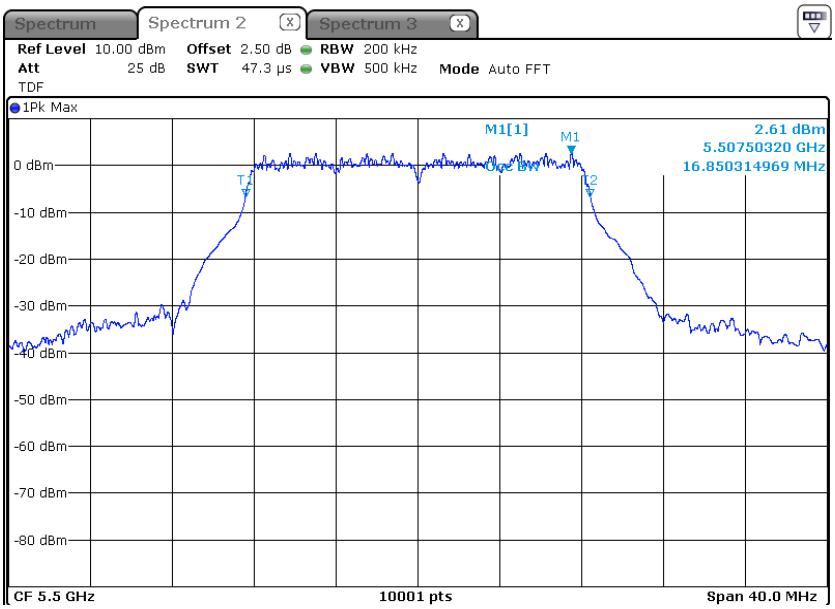
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5024998 GHz	2.59 dBm	ndB down	21.3739 MHz
T1		1	5.4892971 GHz	-23.41 dBm	ndB	26.00 dB
T2		1	5.5106709 GHz	-23.41 dBm	Q factor	257.4

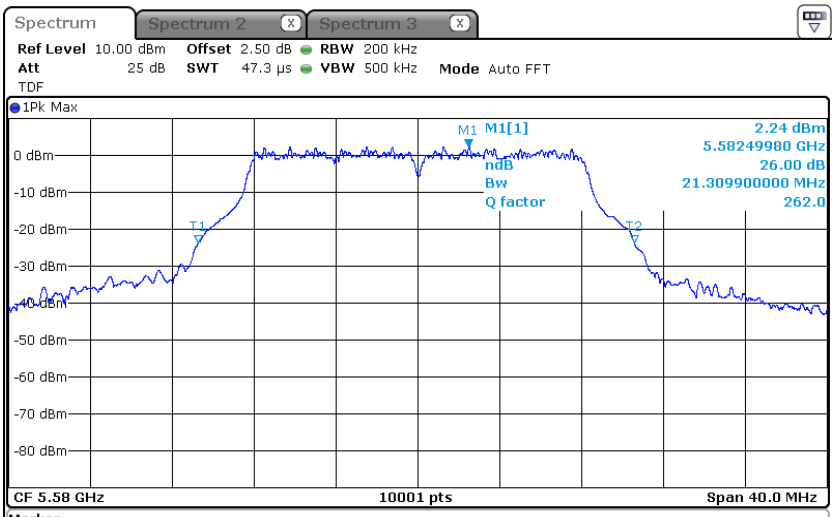
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 580 ㎒

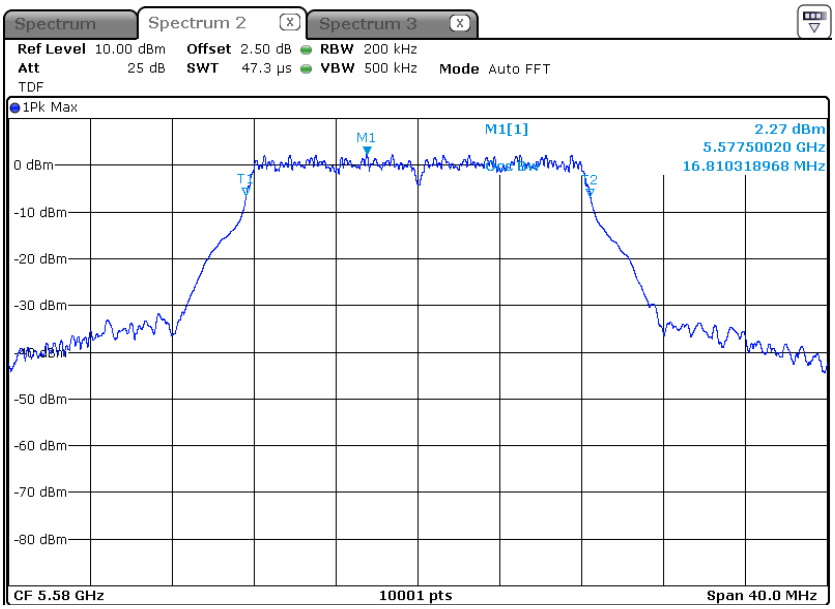
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5824998 GHz	2.24 dBm	ndB down	21.3099 MHz
T1		1	5.5692611 GHz	-23.75 dBm	ndB	26.00 dB
T2		1	5.5905709 GHz	-23.77 dBm	Q factor	262.0

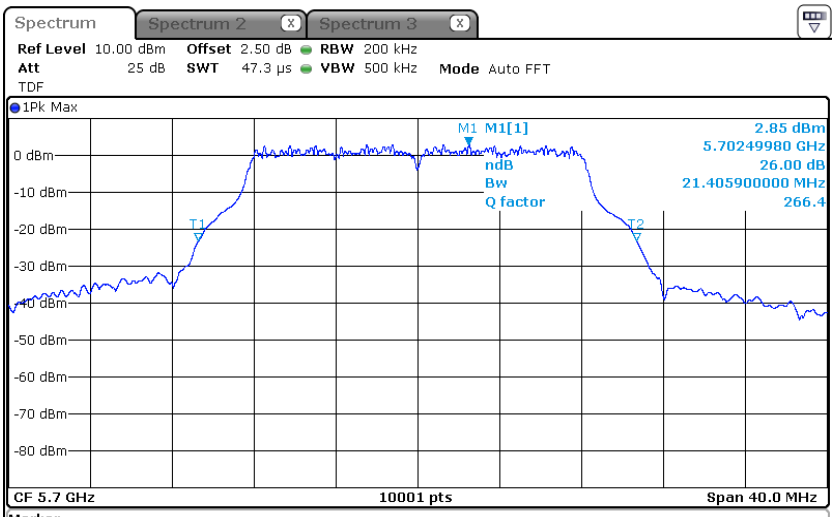
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 700 ㎒

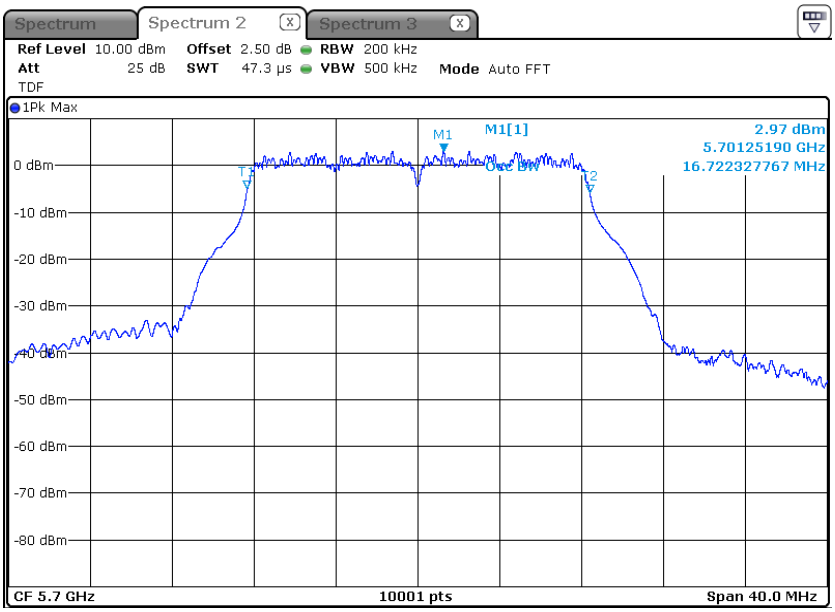
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7024998 GHz	2.85 dBm	ndB down	21.4059 MHz
T1		1	5.6892851 GHz	-23.15 dBm	ndB	26.00 dB
T2		1	5.7106909 GHz	-23.15 dBm	Q factor	266.4

OBW

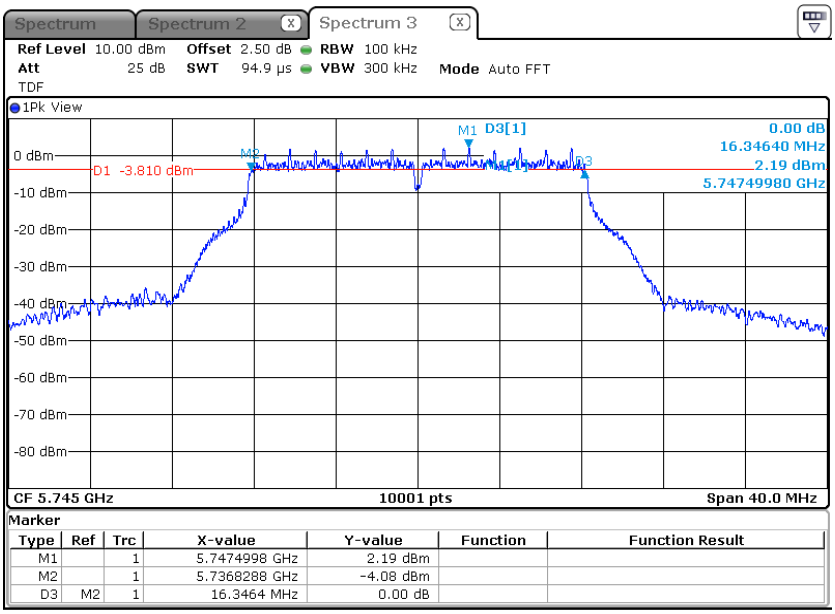


This test report shall not be reproduced except in full, Without the written approval.

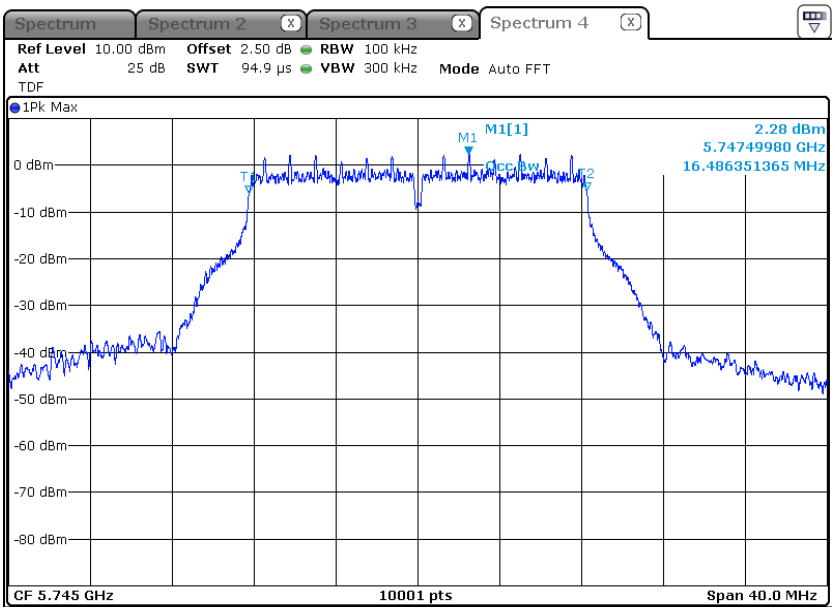
* 802.11a_5 725 Band (6 dB Bandwidth)

-5 745 MHz

6 dB Bandwidth



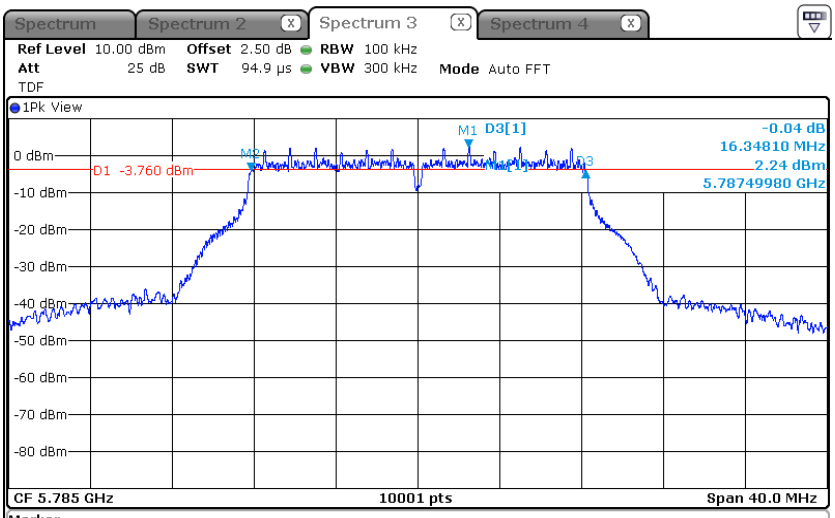
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 785 ㎒

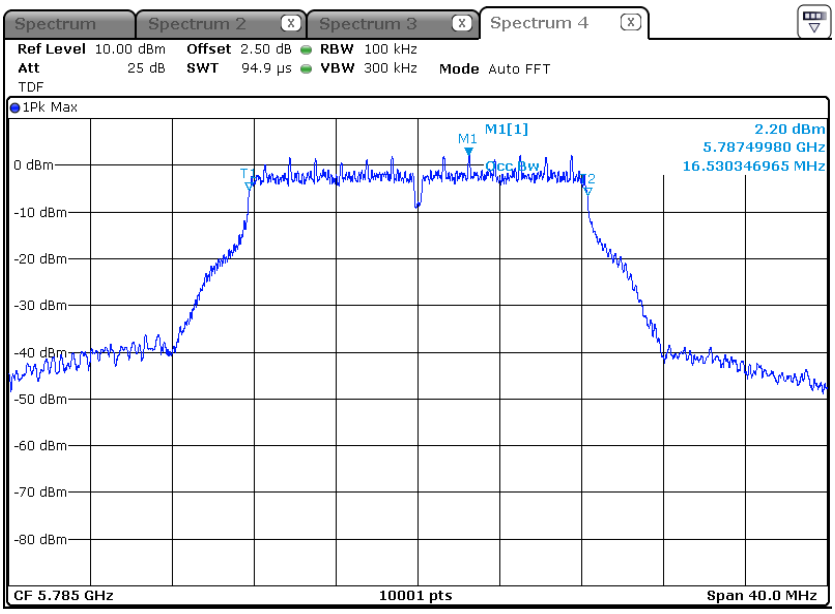
6 ㏈ Bandwidth



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7874998 GHz	2.24 dBm		
M2		1	5.7768288 GHz	-4.00 dBm		
D3	M2	1	16.3481 MHz	-0.04 dB		

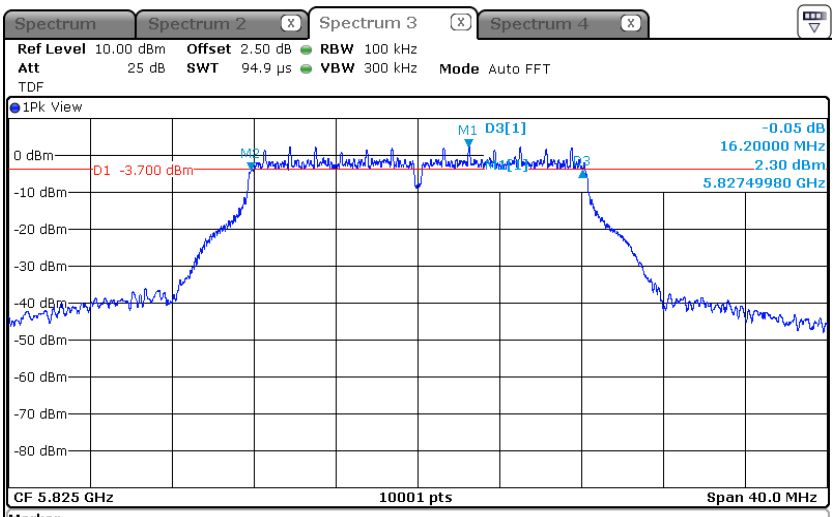
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 825 ㎒

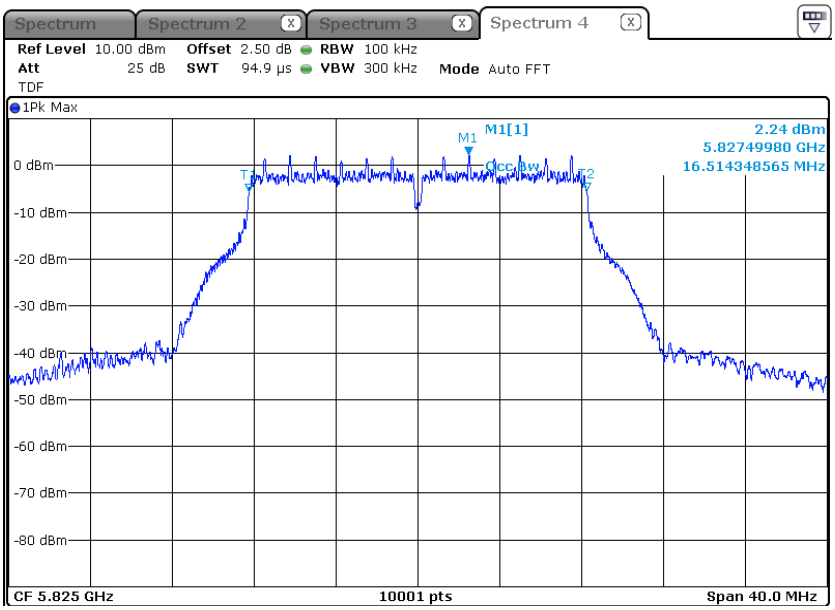
6 ㏈ Bandwidth



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8274998 GHz	2.30 dBm		
M2		1	5.8168288 GHz	-3.88 dBm		
D3	M2	1	16.2 MHz	-0.05 dB		

OBW

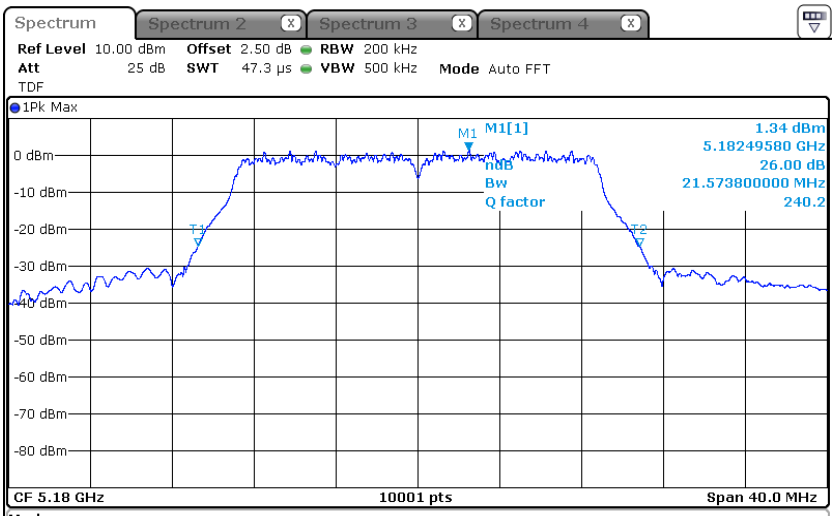


This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT20_5 150 Band (26 dB Bandwidth)

-5 180 MHz

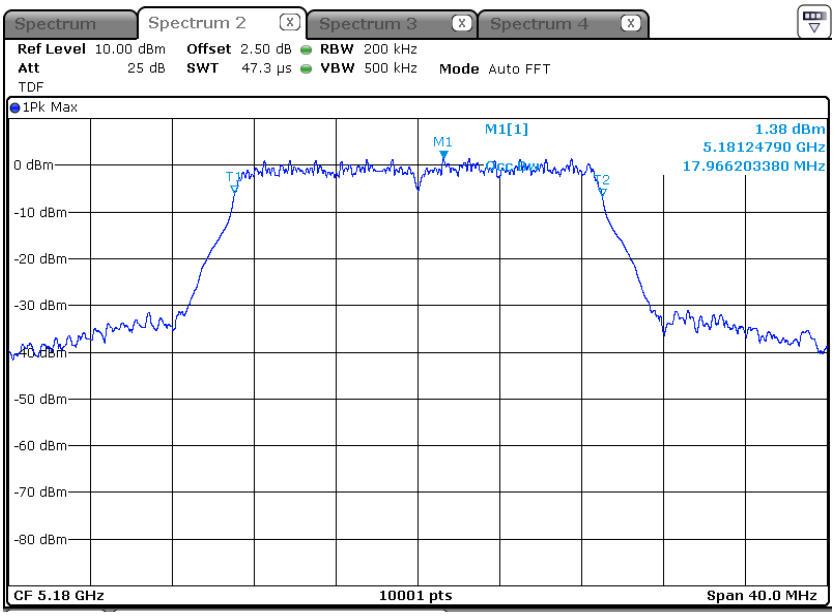
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1824958 GHz	1.34 dBm	ndB down	21.5738 MHz
T1		1	5.1692451 GHz	-24.67 dBm	ndB	26.00 dB
T2		1	5.1908189 GHz	-24.66 dBm	Q factor	240.2

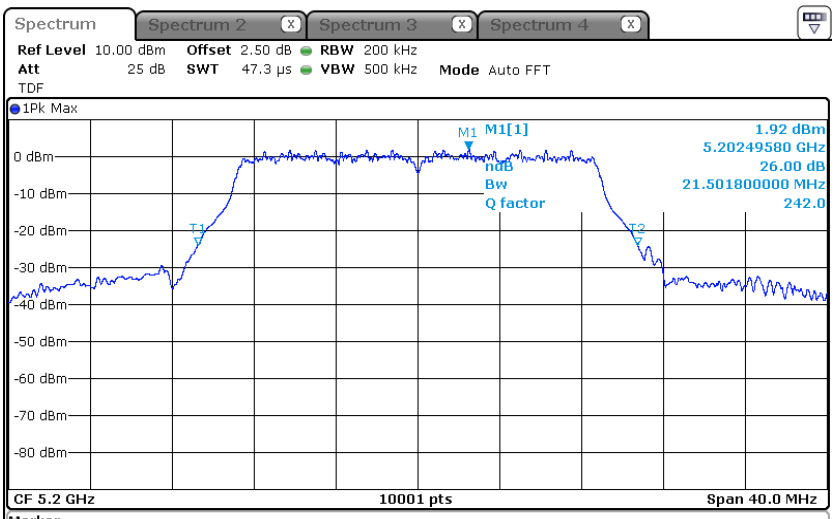
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 200 ㎒

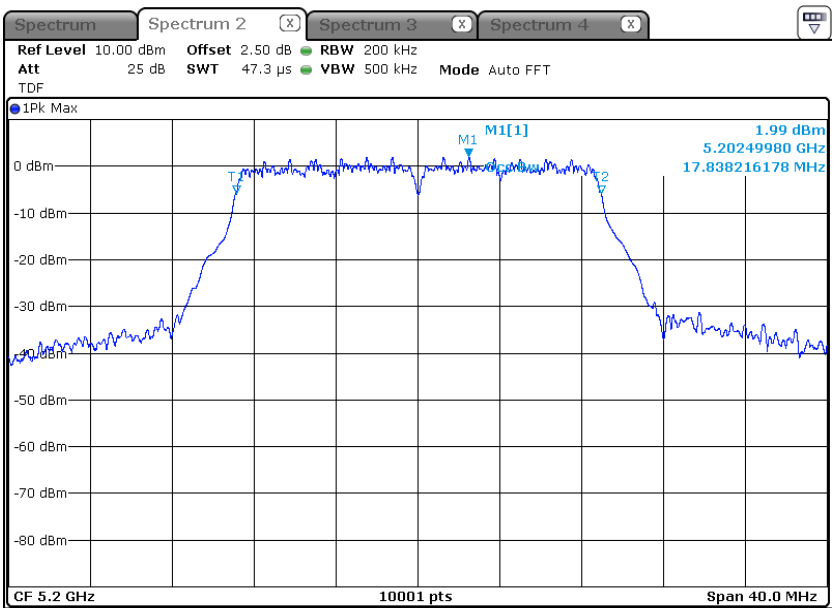
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2024958 GHz	1.92 dBm	ndB down	21.5018 MHz
T1		1	5.1892451 GHz	-24.09 dBm	ndB	26.00 dB
T2		1	5.2107469 GHz	-24.09 dBm	Q factor	242.0

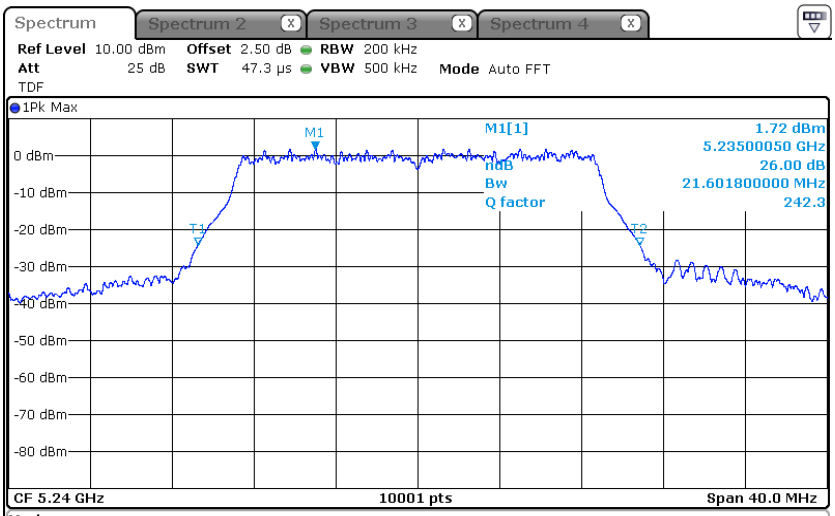
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 240 ㎒

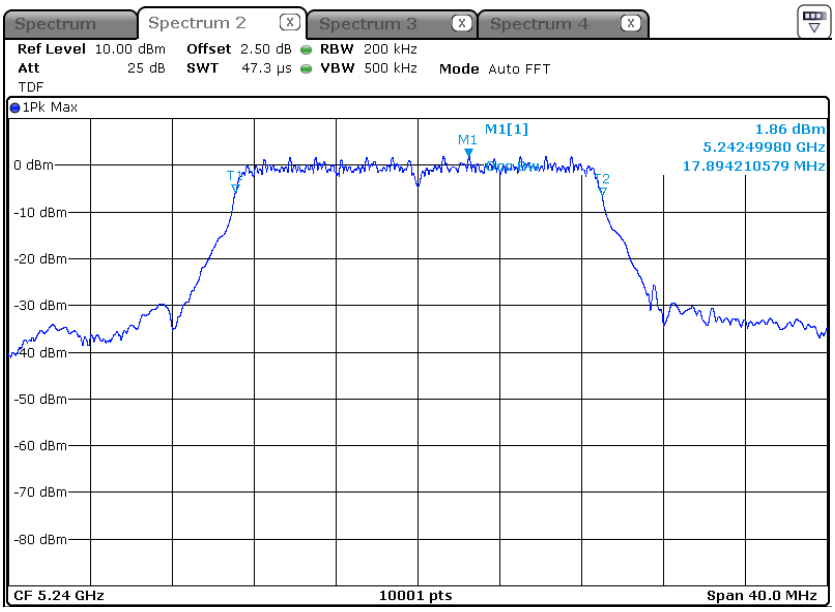
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2350005 GHz	1.72 dBm	ndB down	21.6018 MHz
T1		1	5.2292451 GHz	-24.29 dBm	ndB	26.00 dB
T2		1	5.2508469 GHz	-24.28 dBm	Q factor	242.3

OBW

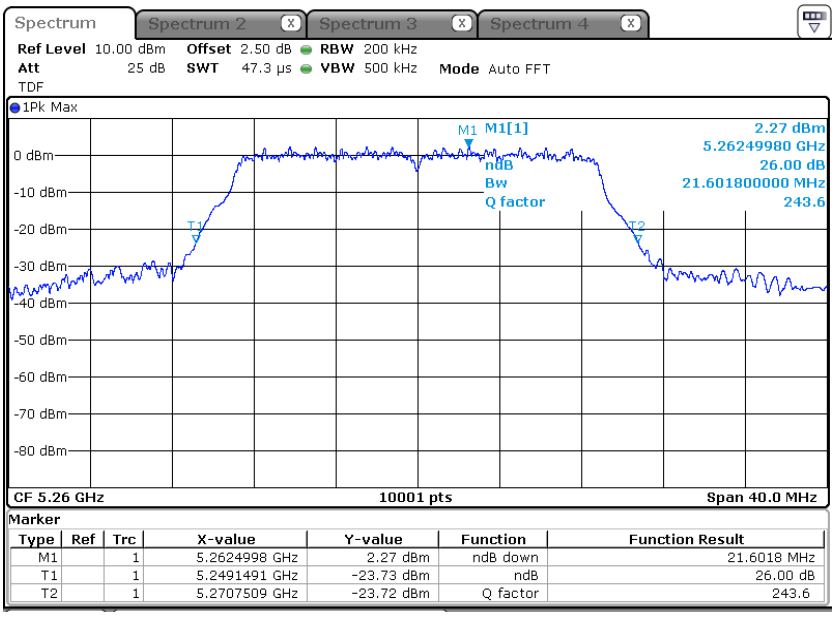


This test report shall not be reproduced except in full, Without the written approval.

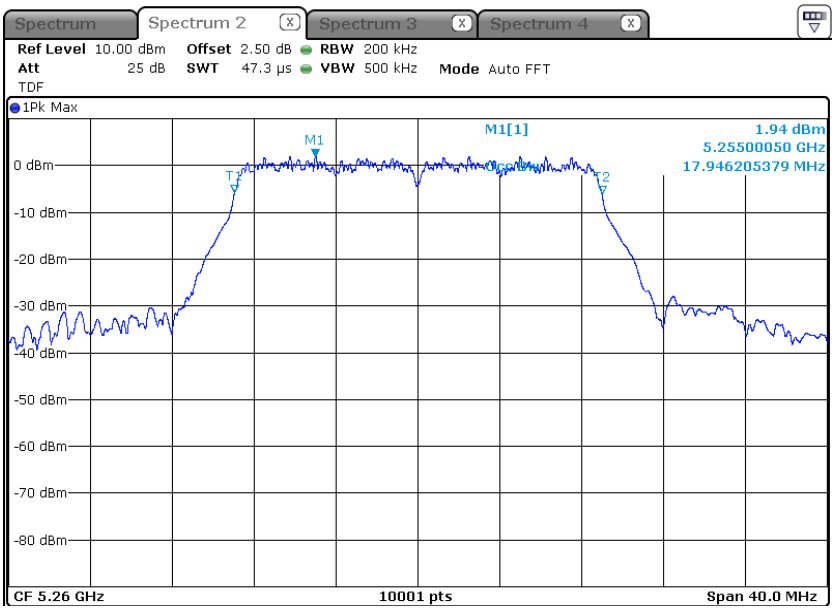
* 802.11n HT20_5 250 Band (26 dB Bandwidth)

-5 260 MHz

EBW



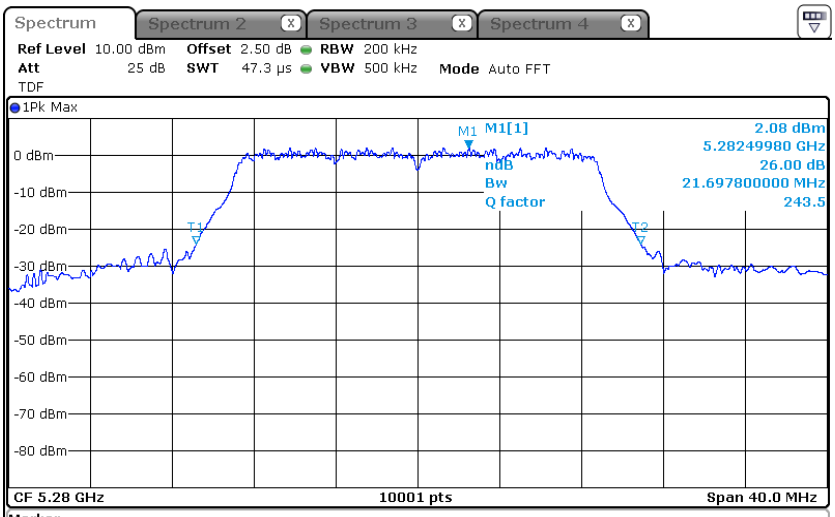
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 280 ㎒

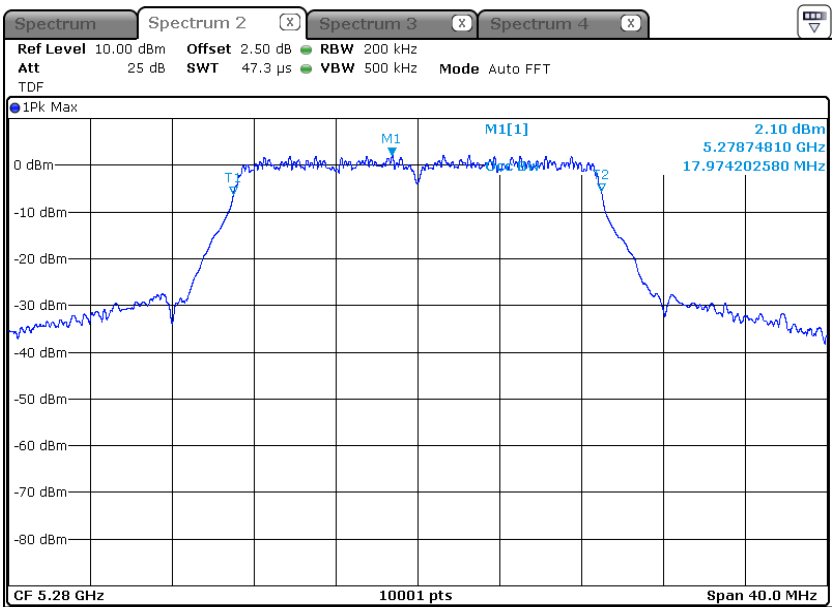
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2824998 GHz	2.08 dBm	ndB down	21.6978 MHz
T1		1	5.2691811 GHz	-23.93 dBm	ndB	26.00 dB
T2		1	5.2908789 GHz	-23.93 dBm	Q factor	243.5

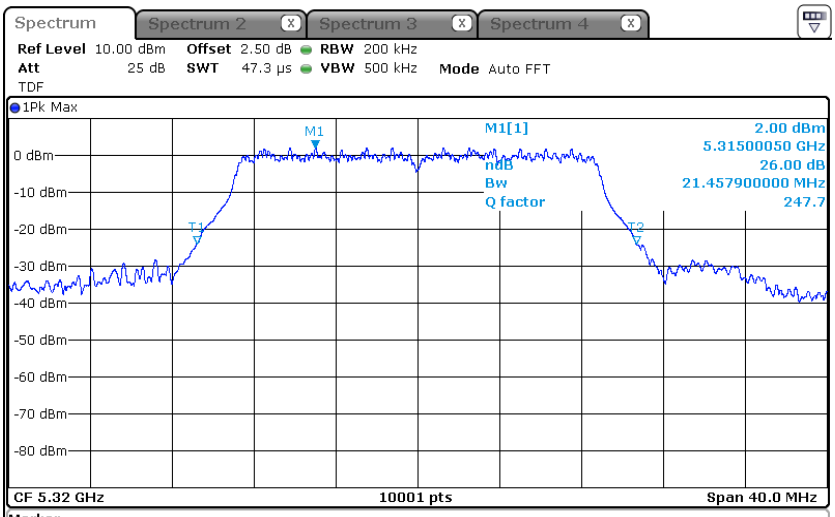
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 320 ㎒

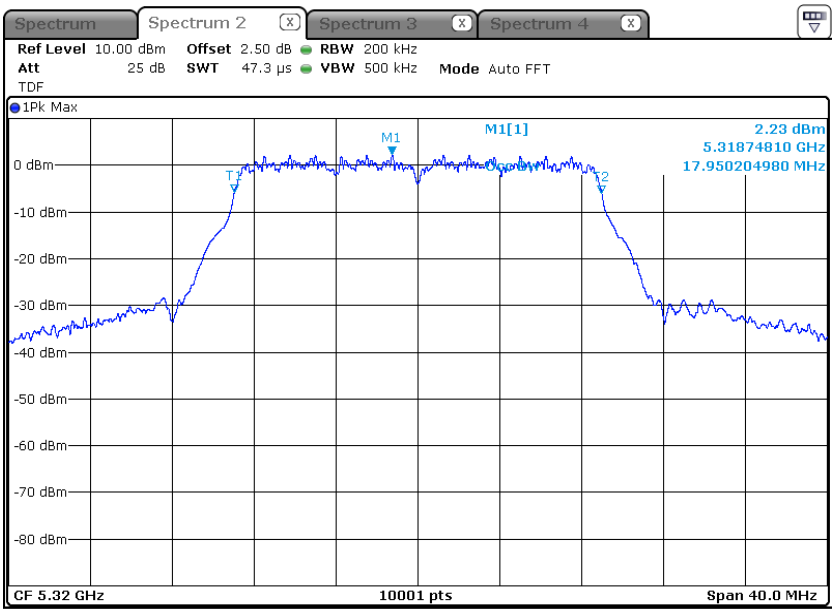
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.3150005 GHz	2.00 dBm	ndB down	21.4579 MHz
T1		1	5.3092051 GHz	-24.00 dBm	ndB	26.00 dB
T2		1	5.3306629 GHz	-24.03 dBm	Q factor	247.7

OBW

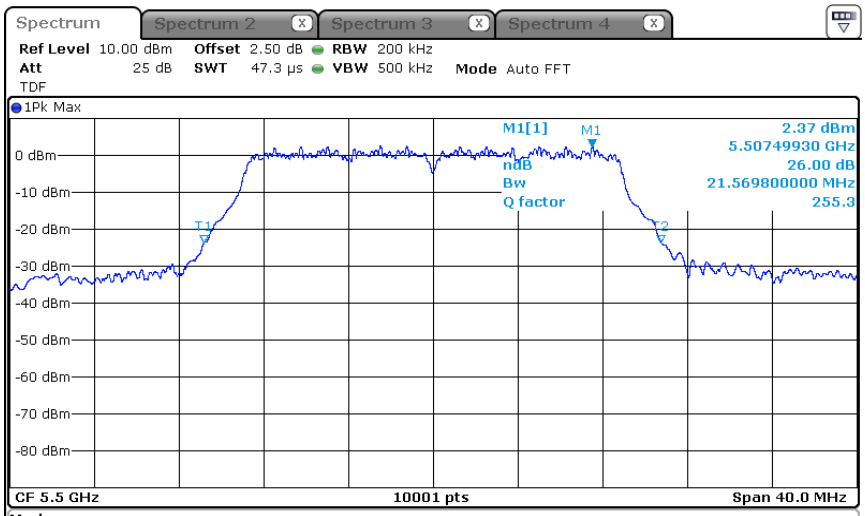


This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT20_5 470 Band (26 dB Bandwidth)

-5500 MHz

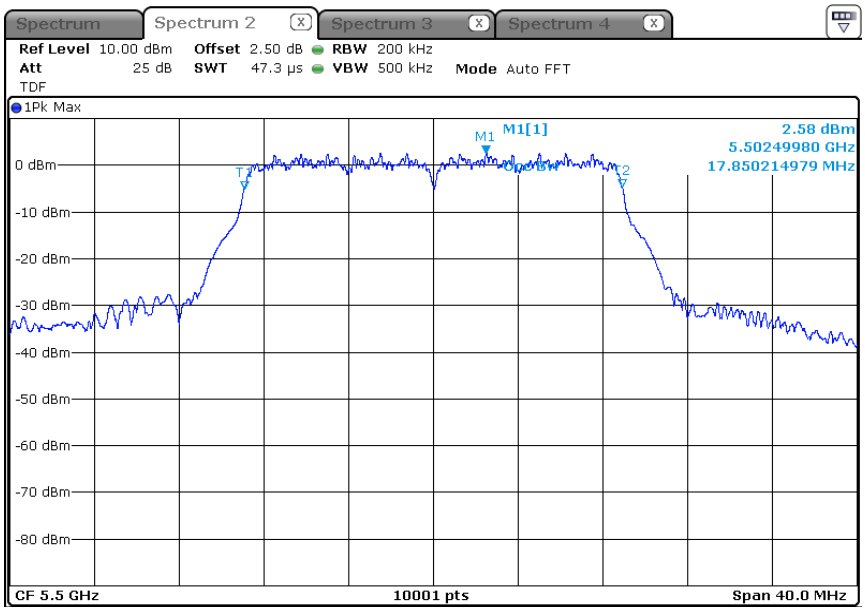
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5074993 GHz	2.37 dBm	ndB down	21.5698 MHz
T1		1	5.4891691 GHz	-23.63 dBm	ndB	26.00 dB
T2		1	5.5107389 GHz	-23.62 dBm	Q factor	255.3

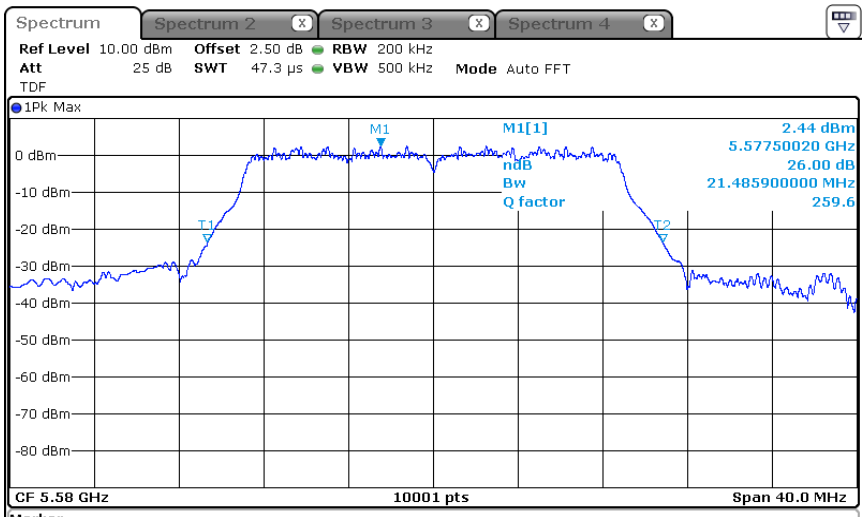
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 580 ㎒

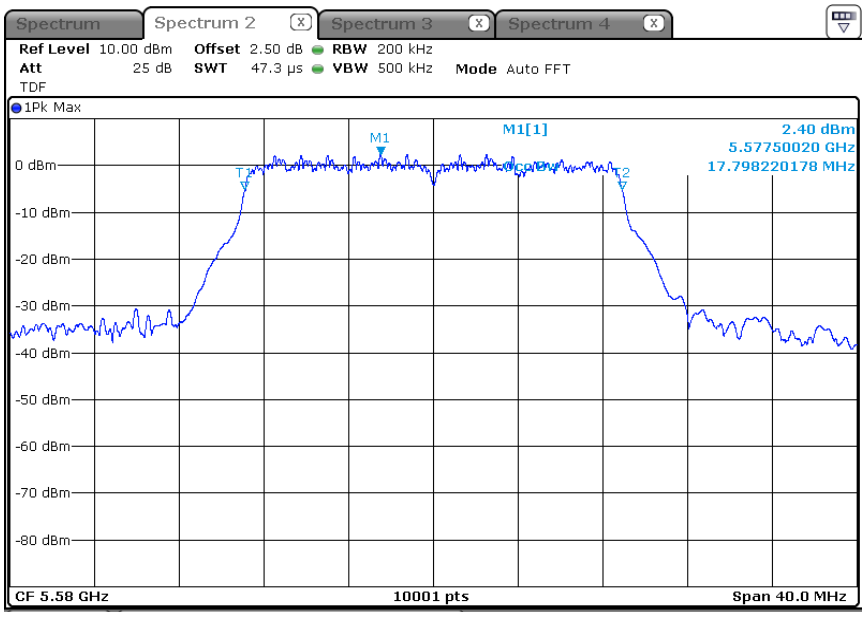
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5775002 GHz	2.44 dBm	ndB down	21.4859 MHz
T1		1	5.5693411 GHz	-23.55 dBm	ndB	26.00 dB
T2		1	5.5908269 GHz	-23.56 dBm	Q factor	259.6

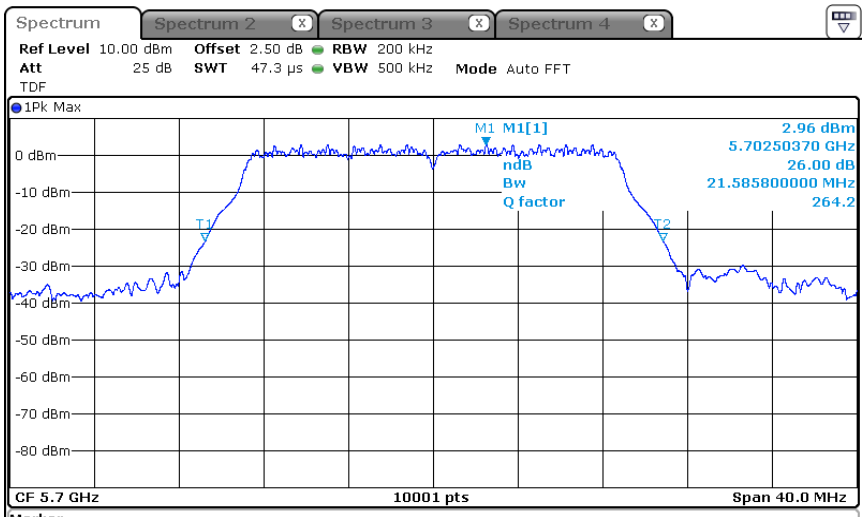
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 700 ㎒

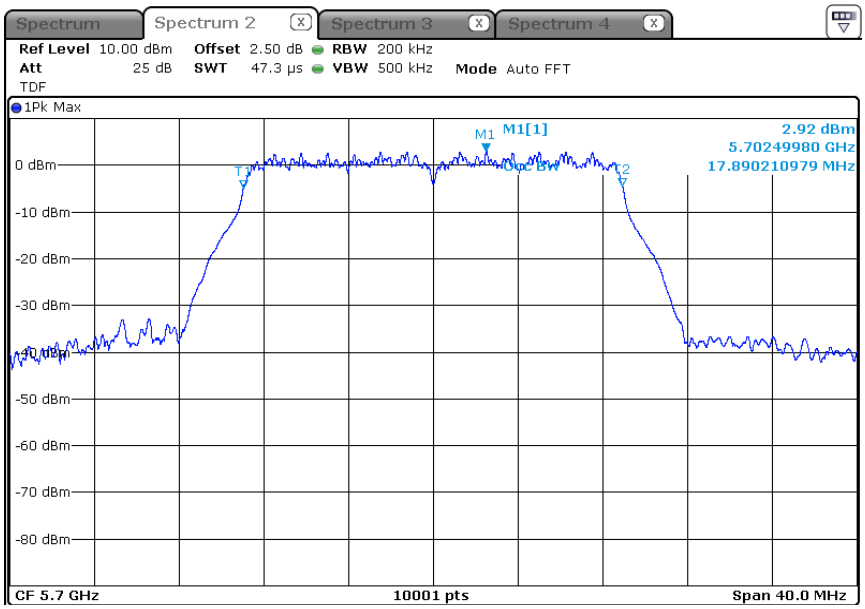
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7025037 GHz	2.96 dBm	ndB down	21.5858 MHz
T1		1	5.6892411 GHz	-23.05 dBm	ndB	26.00 dB
T2		1	5.7108269 GHz	-23.05 dBm	Q factor	264.2

OBW

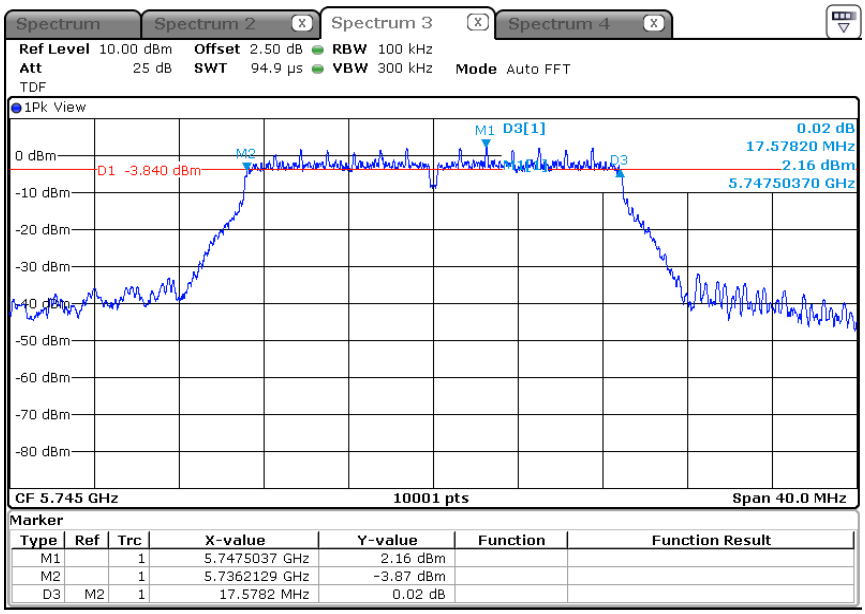


This test report shall not be reproduced except in full, Without the written approval.

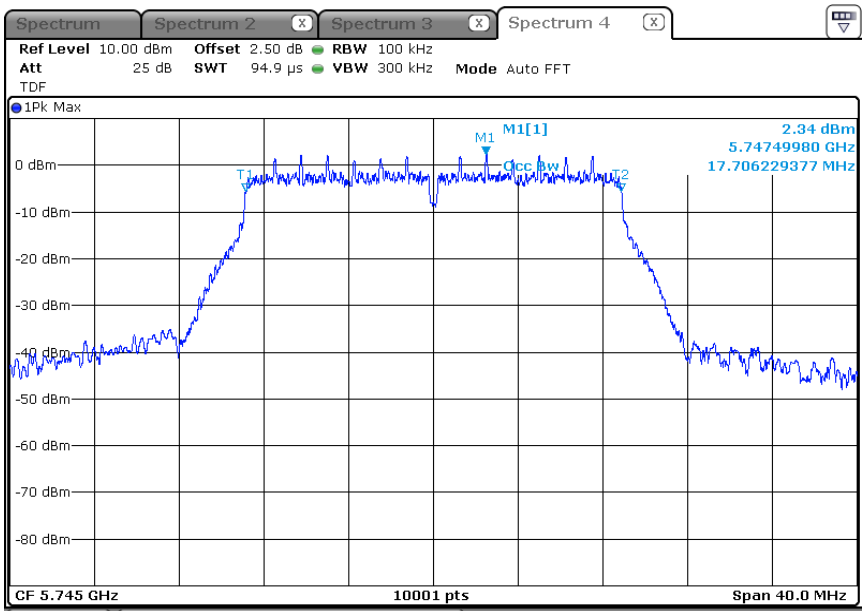
* 802.11n HT20_5 725 Band (6 dB Bandwidth)

-5 745 ㎒

6 dB Bandwidth



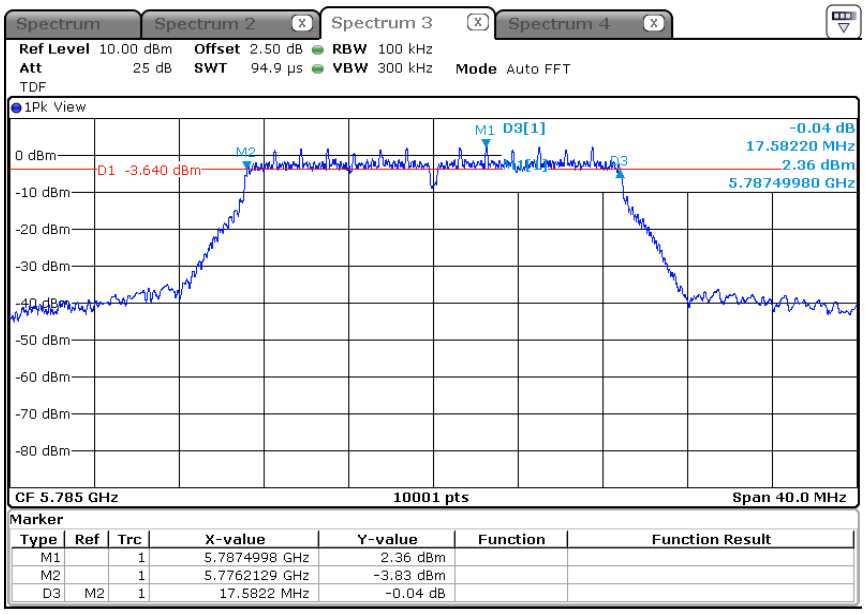
OBW



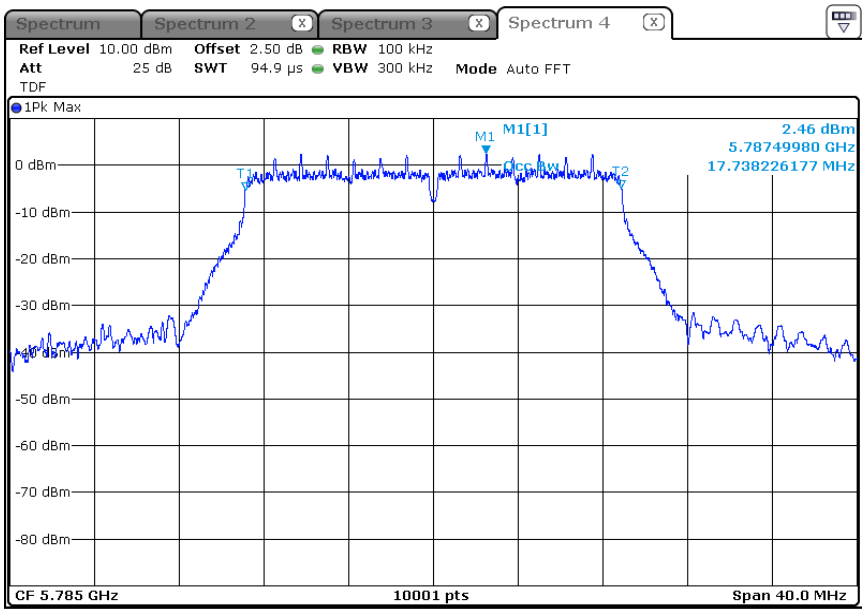
This test report shall not be reproduced except in full, Without the written approval.

-5 785 ㎒

6 ㏈ Bandwidth



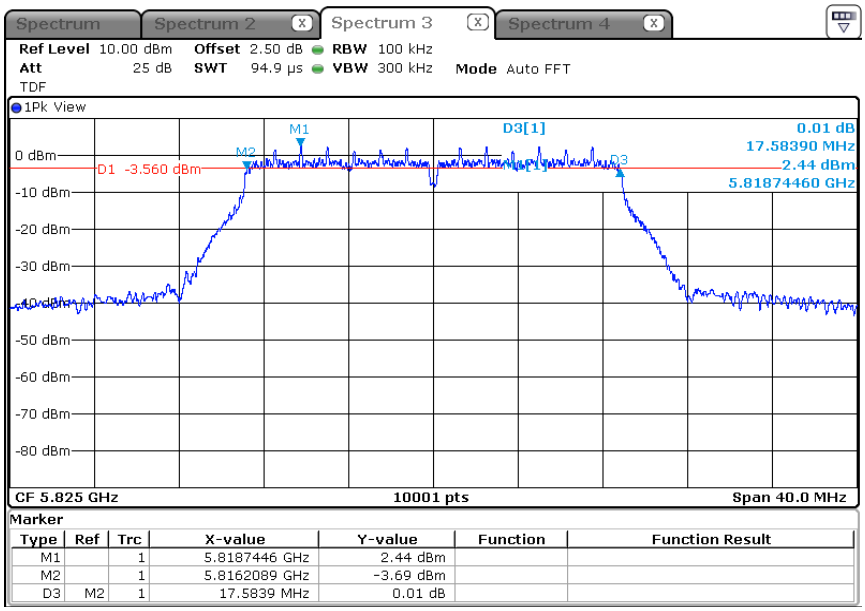
OBW



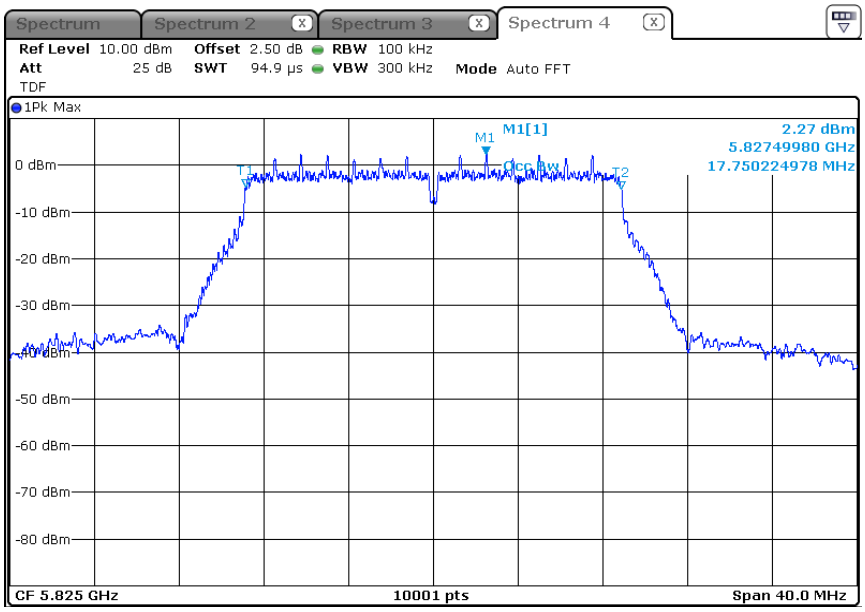
This test report shall not be reproduced except in full, Without the written approval.

-5 825 ㎒

6 ㏈ Bandwidth



OBW

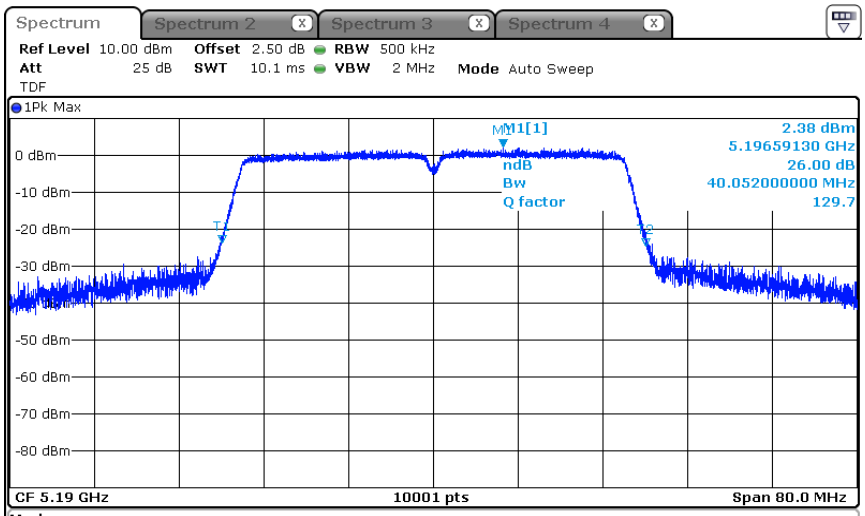


This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT40_5 150 Band (26 dB Bandwidth)

-5 190 MHz

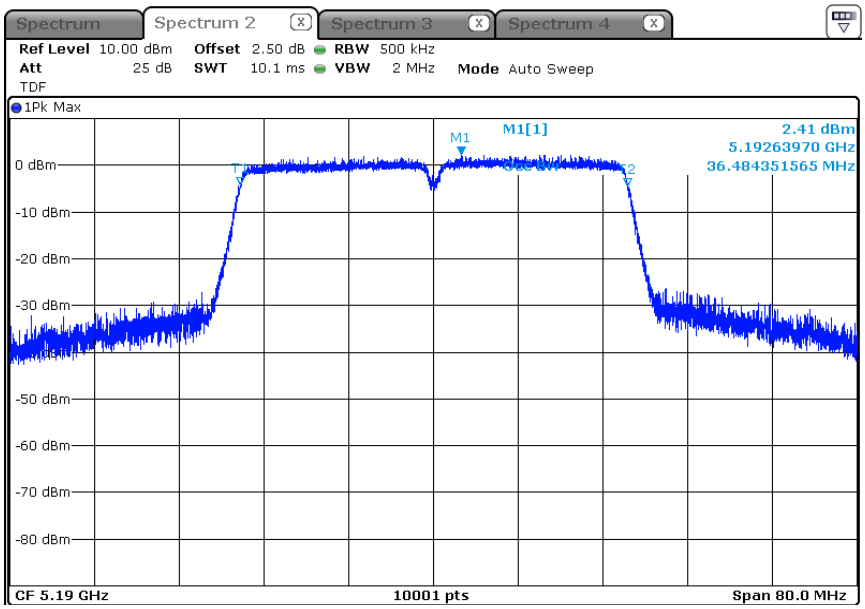
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1965913 GHz	2.38 dBm	ndB down	40.052 MHz
T1		1	5.17001 GHz	-23.80 dBm	ndB	26.00 dB
T2		1	5.210062 GHz	-24.48 dBm	Q factor	129.7

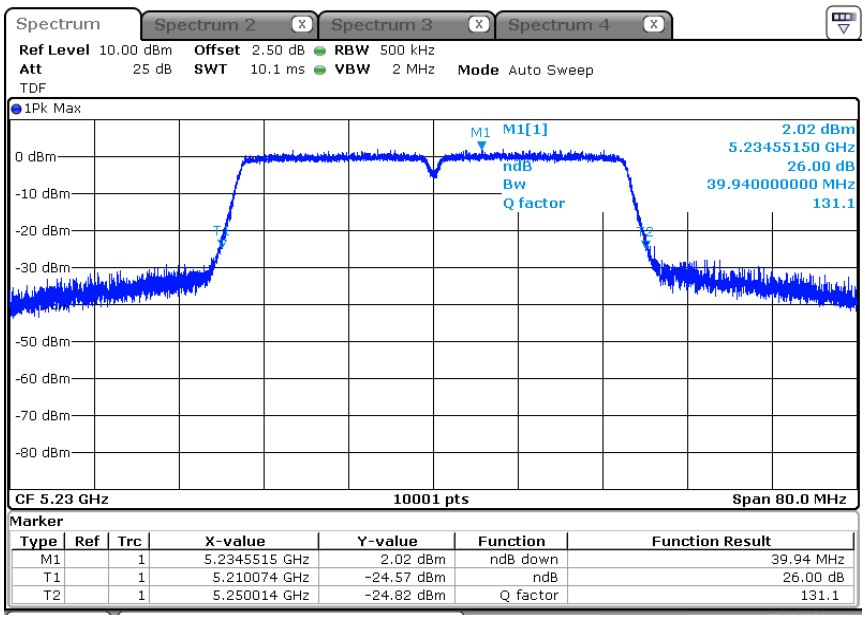
OBW



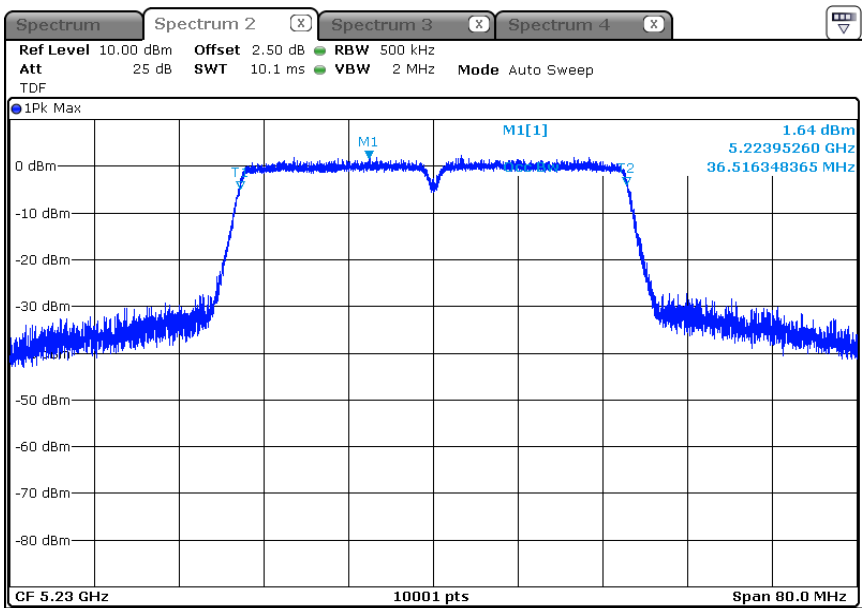
This test report shall not be reproduced except in full, Without the written approval.

-5 230 ㎒

EBW



OBW

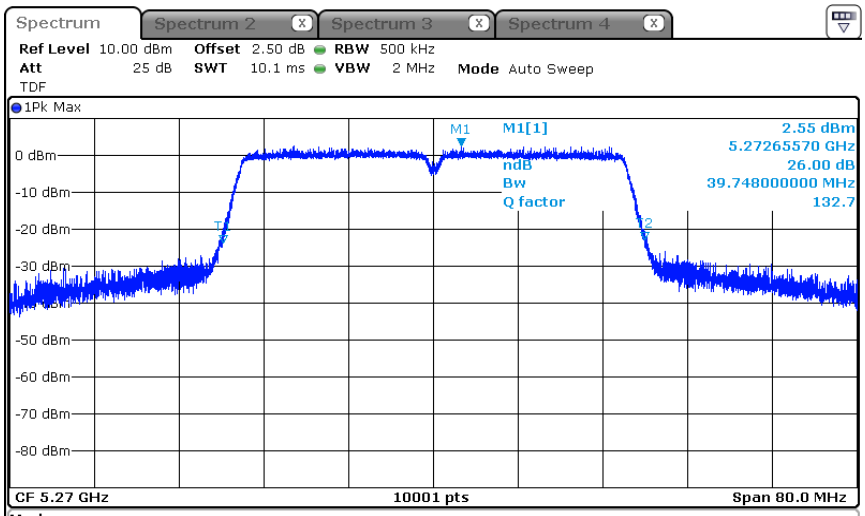


This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT40_ 5 250 Band (26 dB Bandwidth)

-5 270 MHz

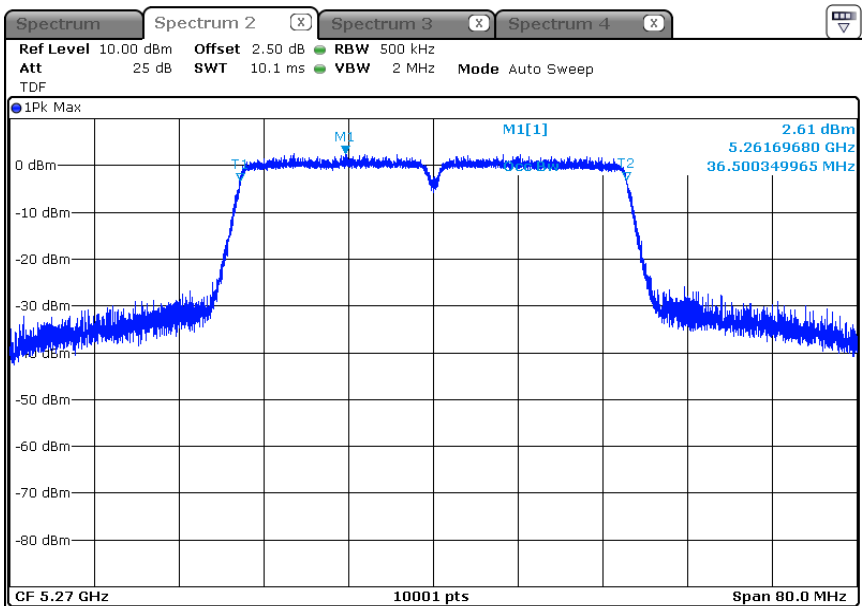
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2726557 GHz	2.55 dBm	ndB down	39.748 MHz
T1		1	5.250202 GHz	-23.65 dBm	ndB	26.00 dB
T2		1	5.28995 GHz	-22.78 dBm	Q factor	132.7

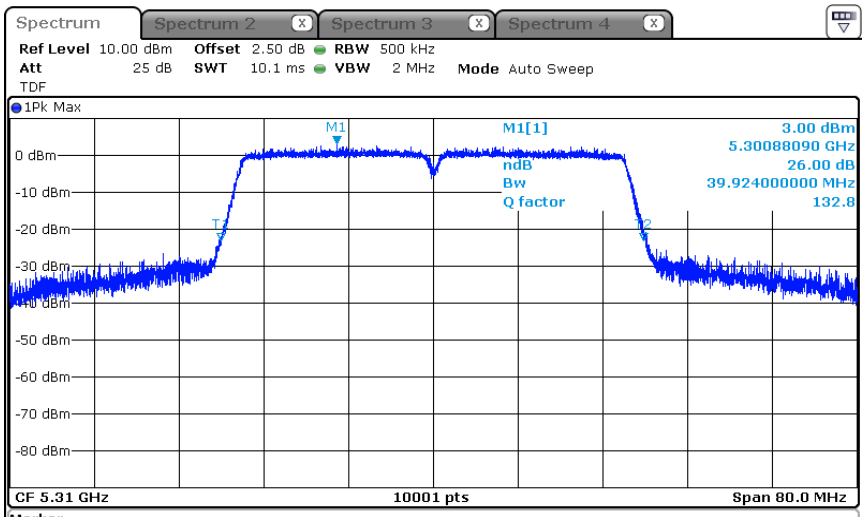
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 310 ㎒

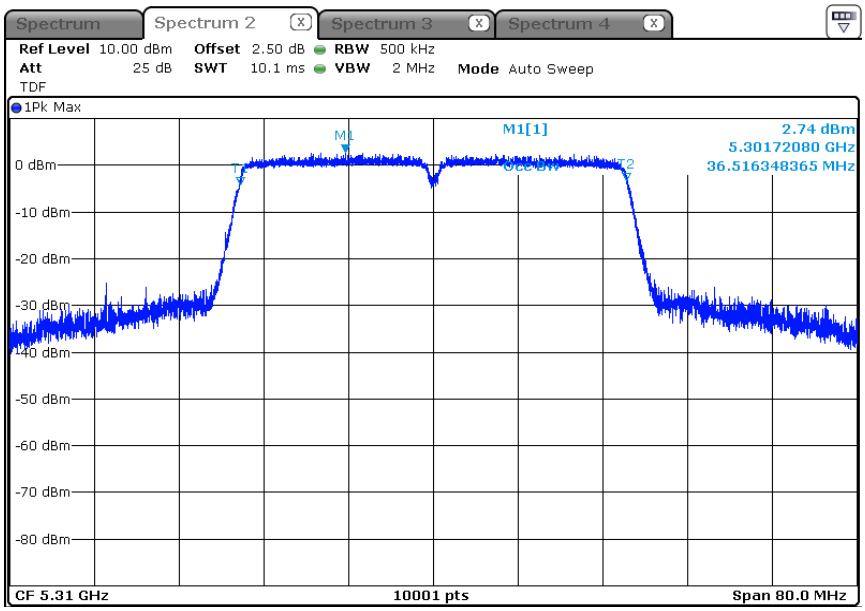
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.3008809 GHz	3.00 dBm	ndB down	39.924 MHz
T1		1	5.28997 GHz	-23.26 dBm	ndB	26.00 dB
T2		1	5.329894 GHz	-23.07 dBm	Q factor	132.8

OBW

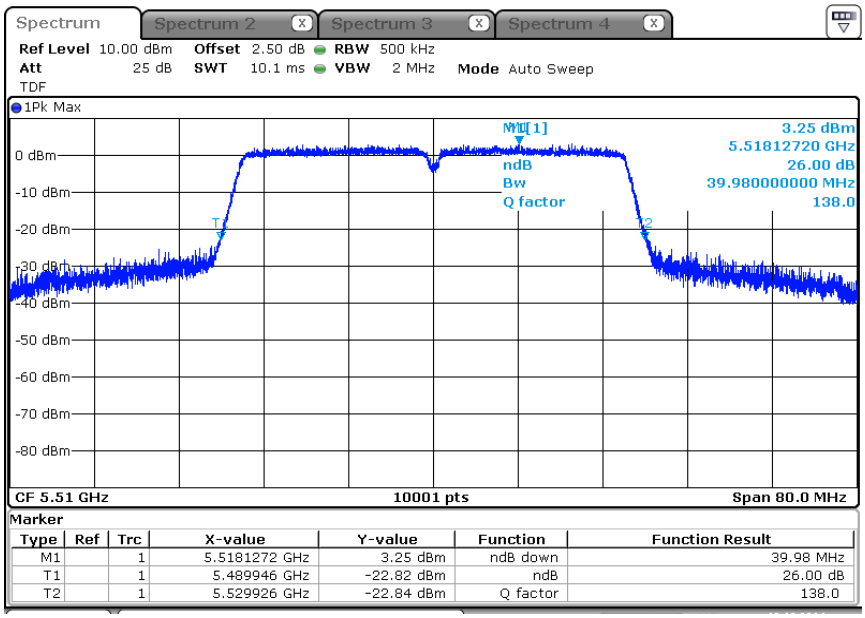


This test report shall not be reproduced except in full, Without the written approval.

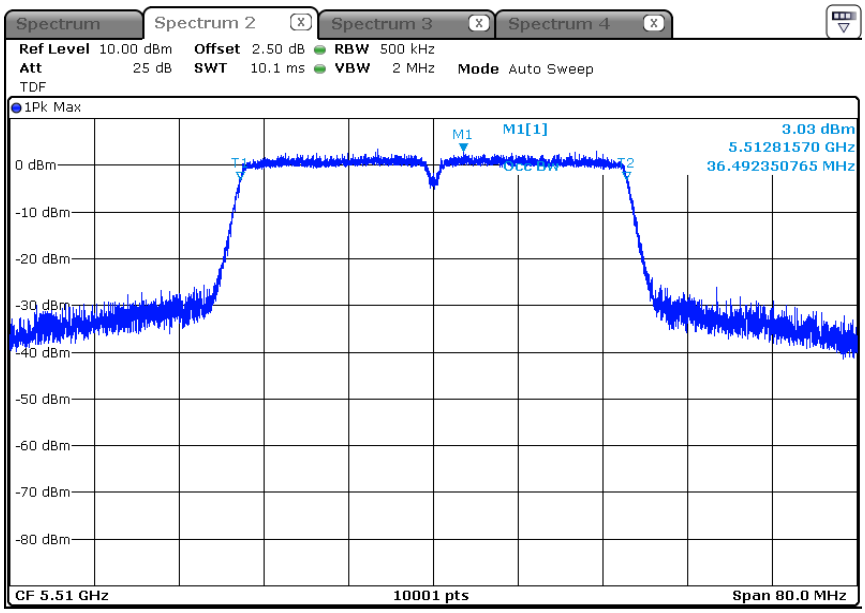
* 802.11n HT40_5 470 Band (26 ㏈ Bandwidth)

-5 510 ㎒

EBW



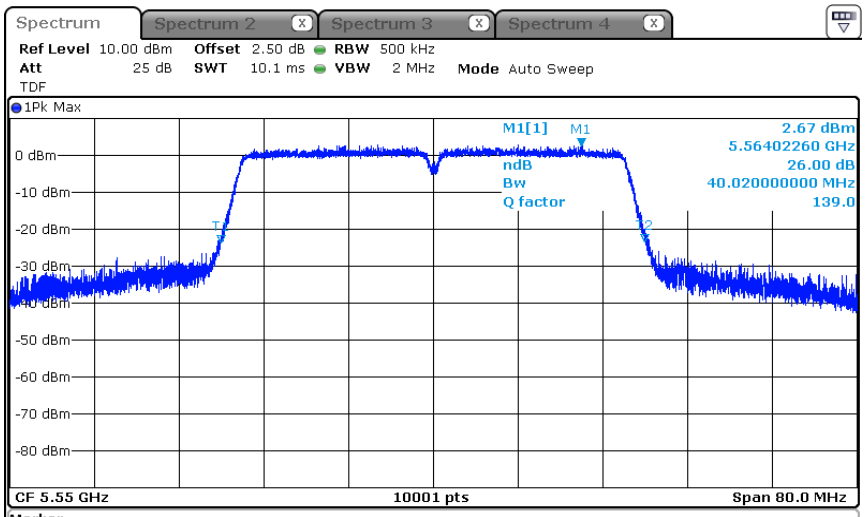
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 550 ㎒

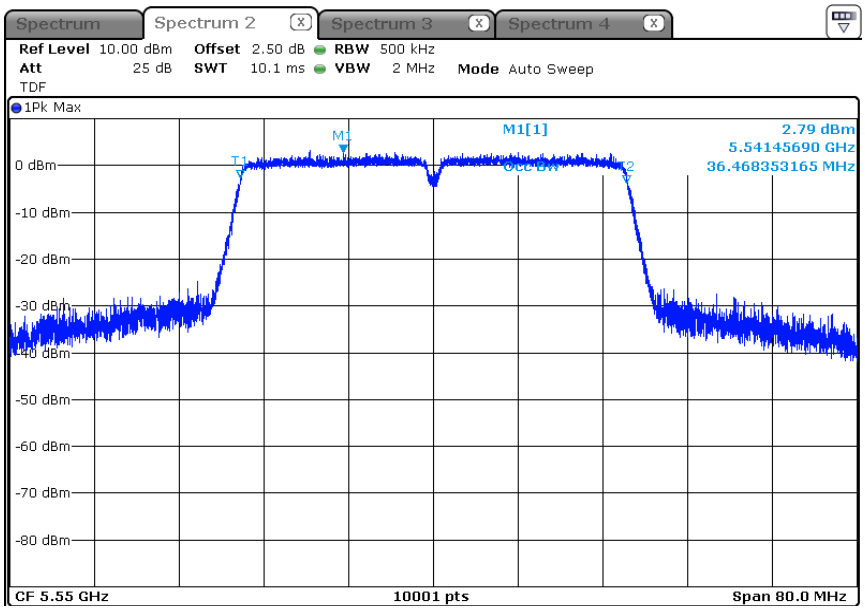
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5640226 GHz	2.67 dBm	ndB down	40.02 MHz
T1		1	5.529962 GHz	-23.75 dBm	ndB	26.00 dB
T2		1	5.569982 GHz	-23.37 dBm	Q factor	139.0

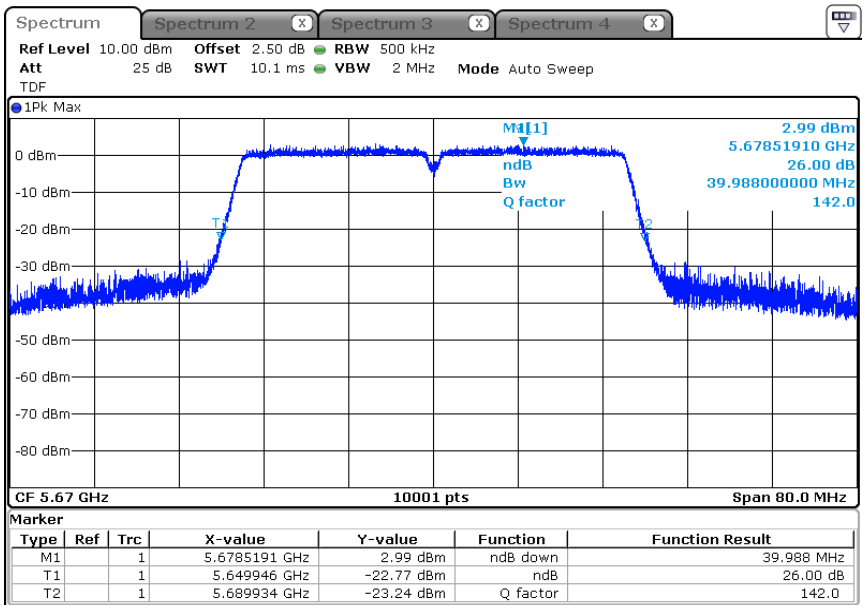
OBW



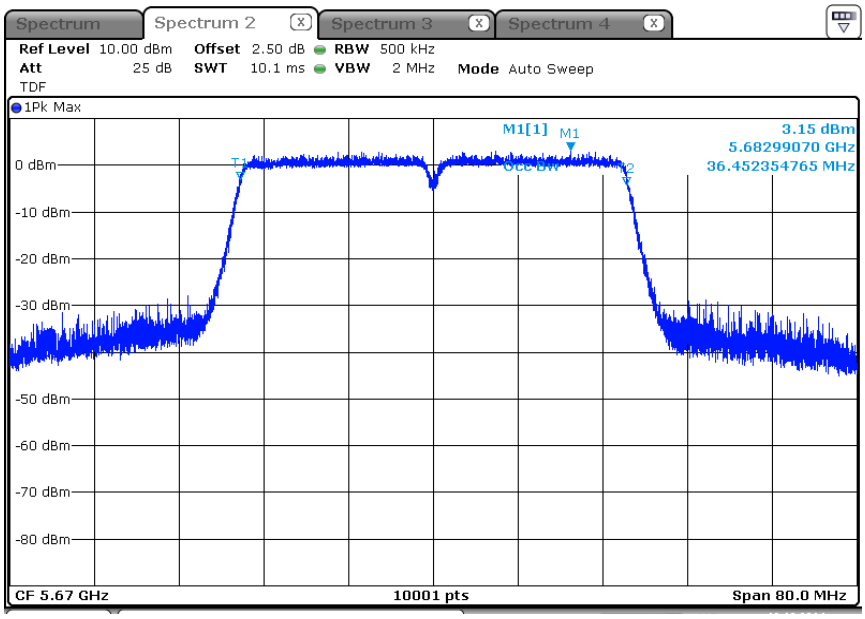
This test report shall not be reproduced except in full, Without the written approval.

-5 670 ㎒

EBW



OBW

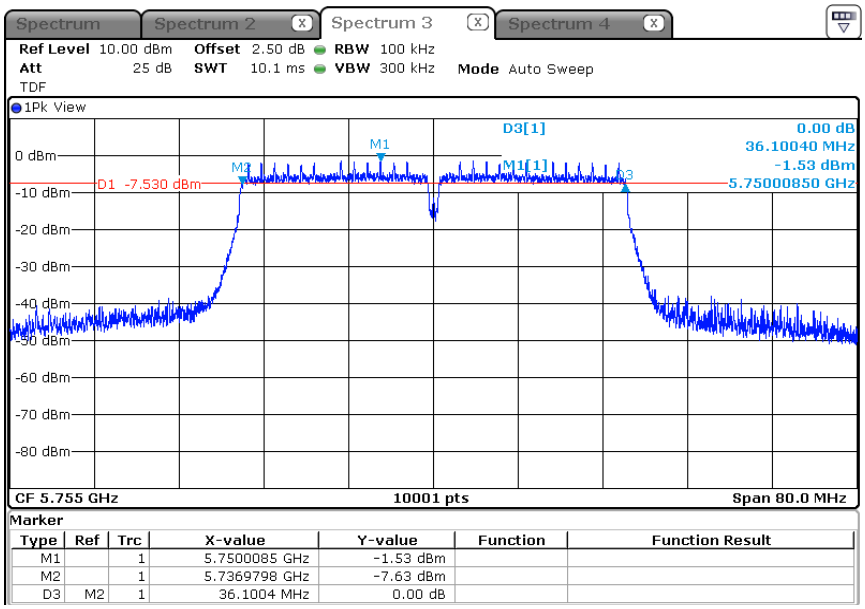


This test report shall not be reproduced except in full, Without the written approval.

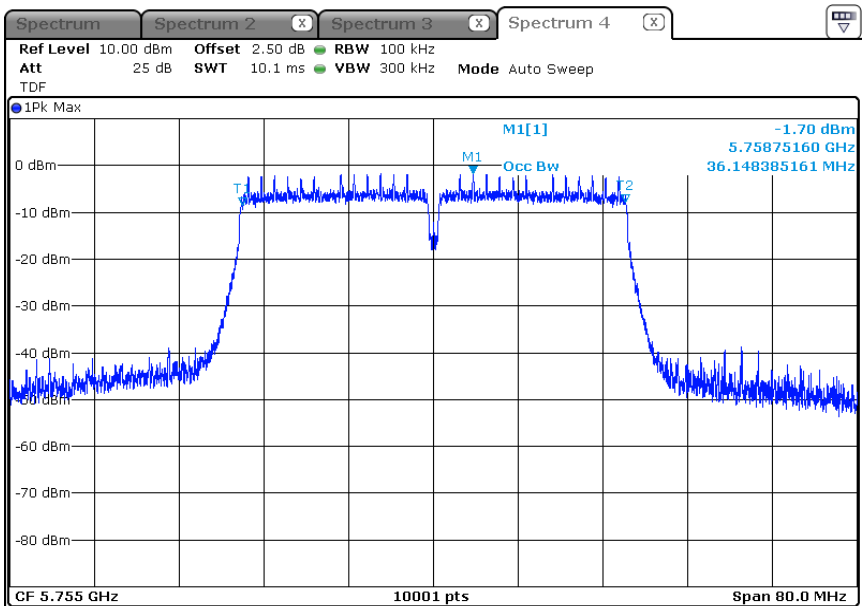
* 802.11n HT40_5 725 Band (6 dB Bandwidth)

-5 755 MHz

6 dB Bandwidth



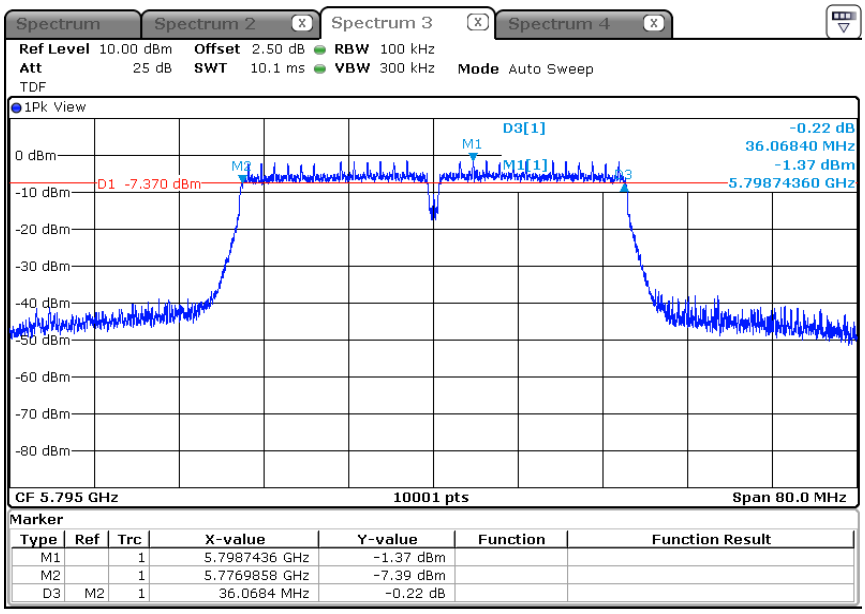
OBW



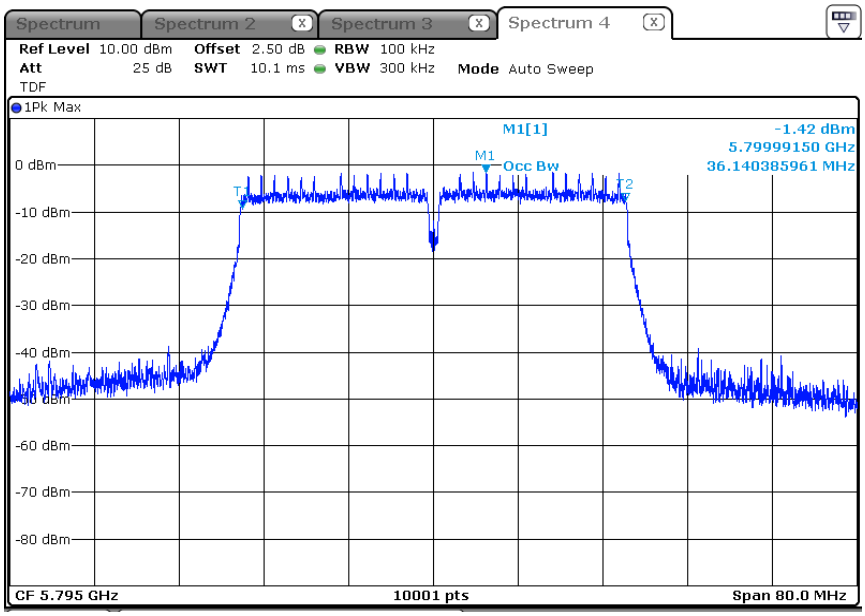
This test report shall not be reproduced except in full, Without the written approval.

-5 795 ㎒

6 ㏈ Bandwidth



OBW

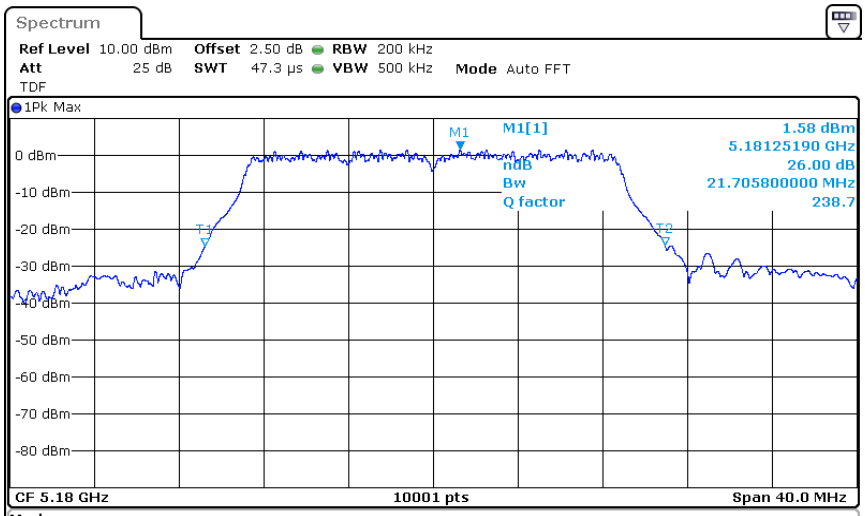


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT20_5 150 Band (26 dB Bandwidth)

-5 180 MHz

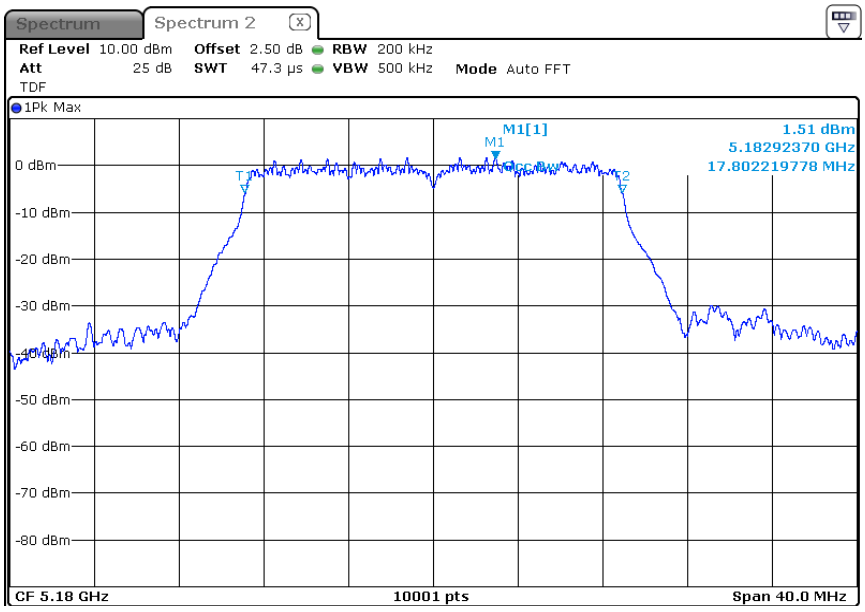
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1812519 GHz	1.58 dBm	ndB down	21.7058 MHz
T1		1	5.1692211 GHz	-24.43 dBm	ndB	26.00 dB
T2		1	5.1909269 GHz	-24.43 dBm	Q factor	238.7

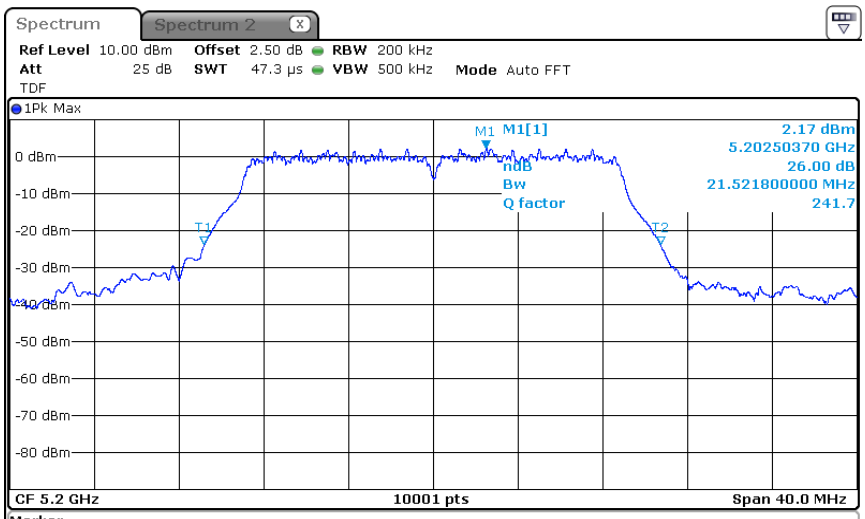
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 200 ㎒

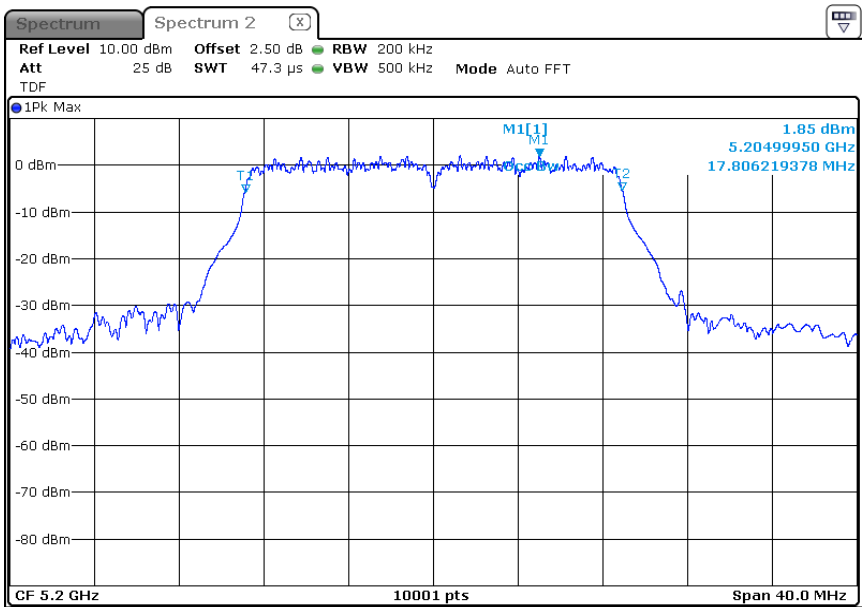
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2025037 GHz	2.17 dBm	ndB down	21.5218 MHz
T1		1	5.1891891 GHz	-23.85 dBm	ndB	26.00 dB
T2		1	5.2107109 GHz	-23.86 dBm	Q factor	241.7

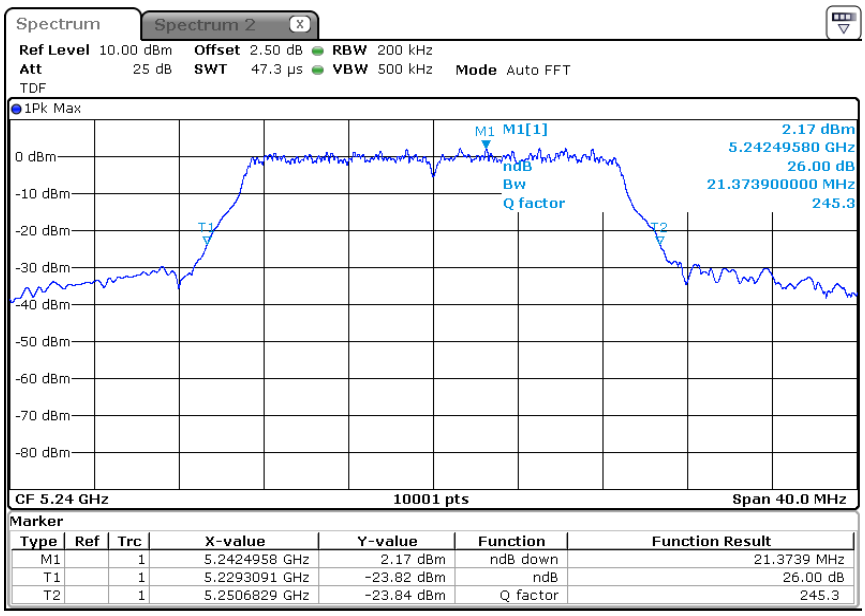
OBW



This test report shall not be reproduced except in full, Without the written approval.

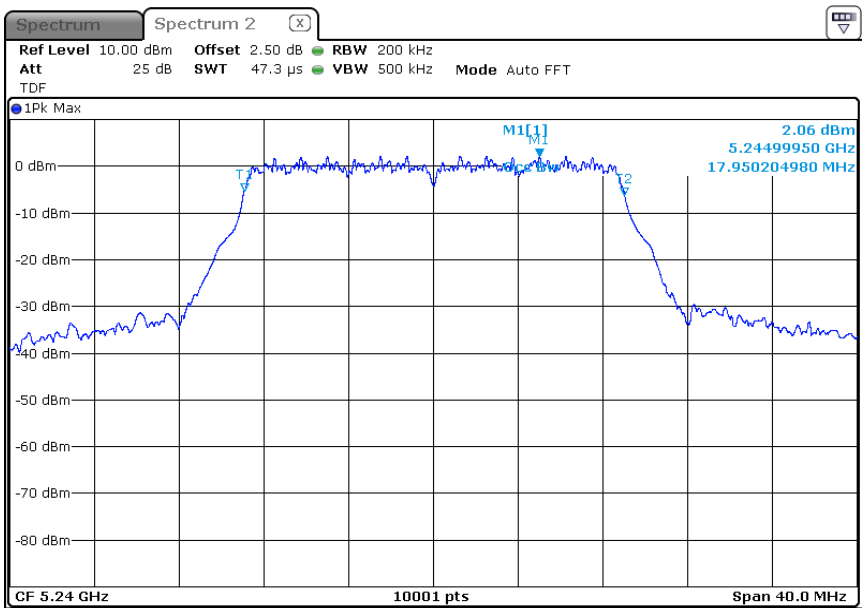
-5 240 ㎒

EBW



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2424958 GHz	2.17 dBm	ndB down	21.3739 MHz
T1		1	5.2293091 GHz	-23.82 dBm	ndB	26.00 dB
T2		1	5.2506829 GHz	-23.84 dBm	Q factor	245.3

OBW

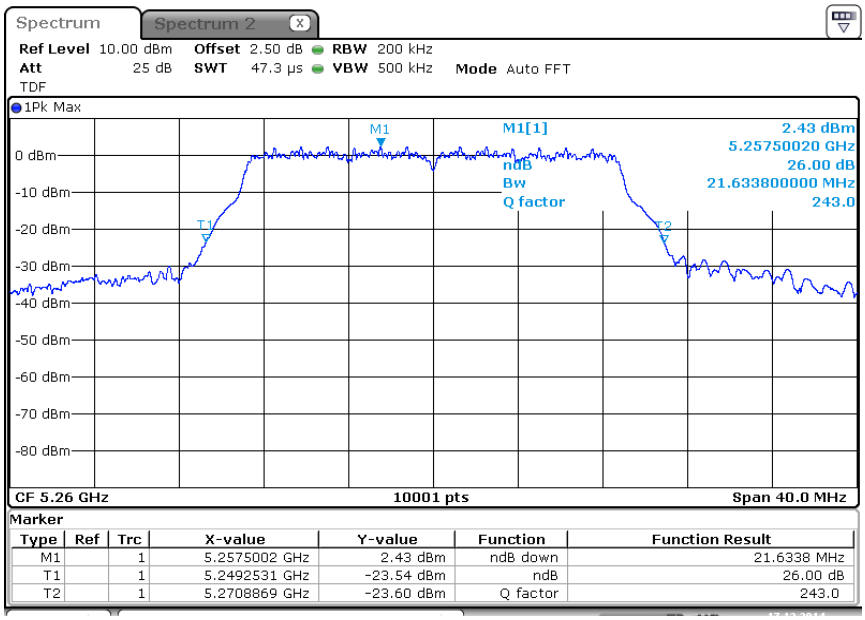


This test report shall not be reproduced except in full, Without the written approval.

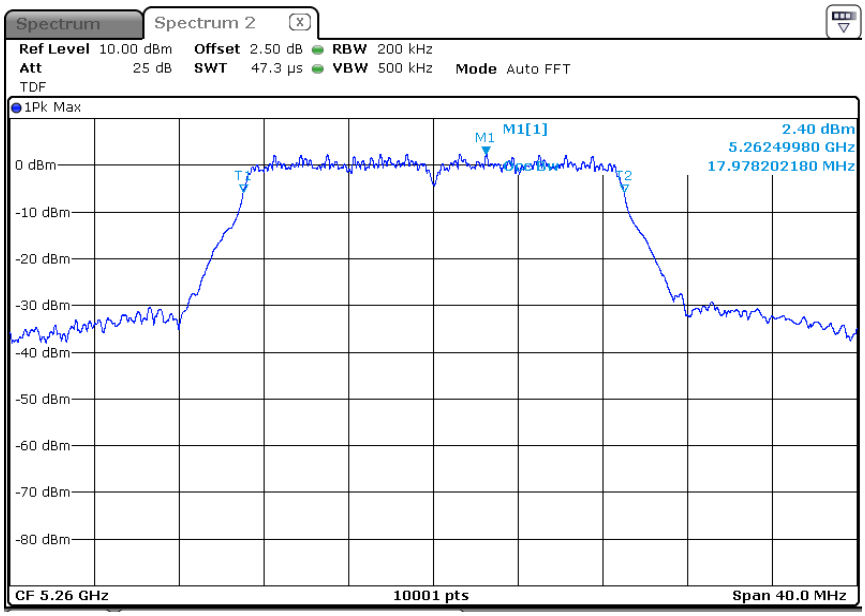
* 802.11ac VHT20_5 250 Band (26 dB Bandwidth)

-5 260 MHz

EBW



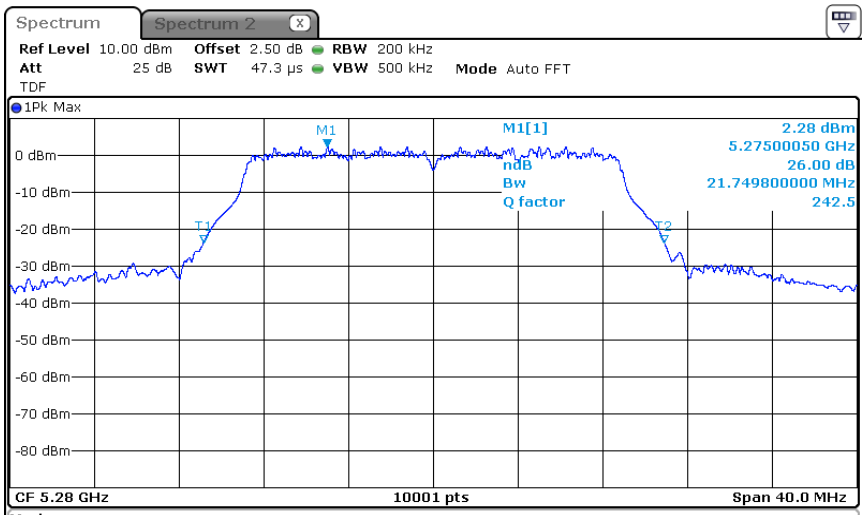
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 280 ㎒

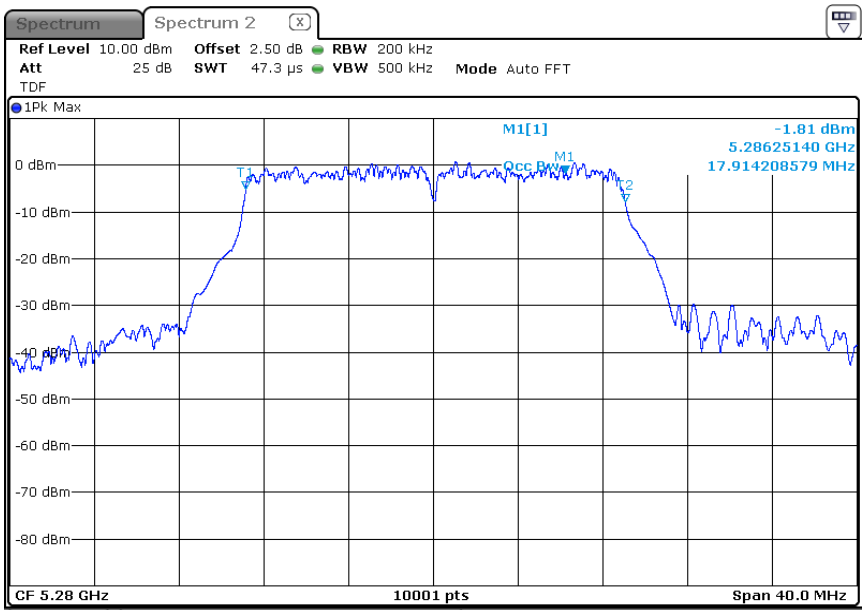
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2750005 GHz	2.28 dBm	ndB down	21.7498 MHz
T1		1	5.2691491 GHz	-23.72 dBm	ndB	26.00 dB
T2		1	5.2908989 GHz	-23.74 dBm	Q factor	242.5

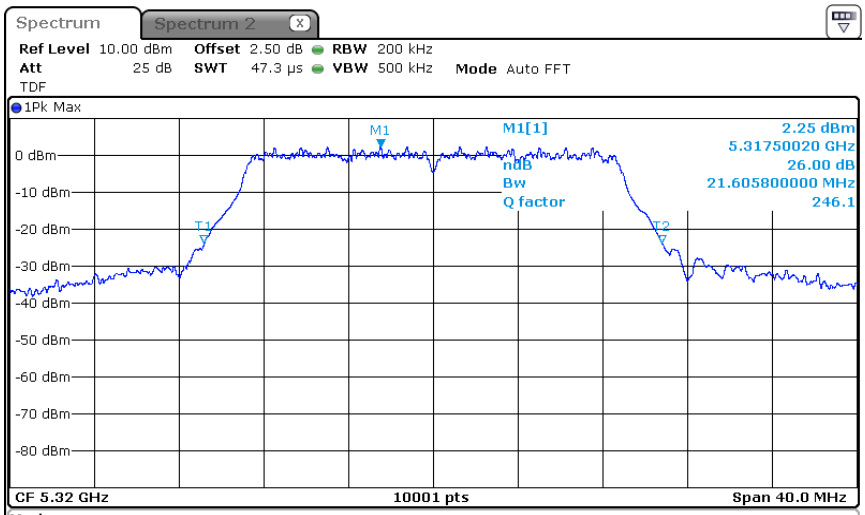
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 320 ㎒

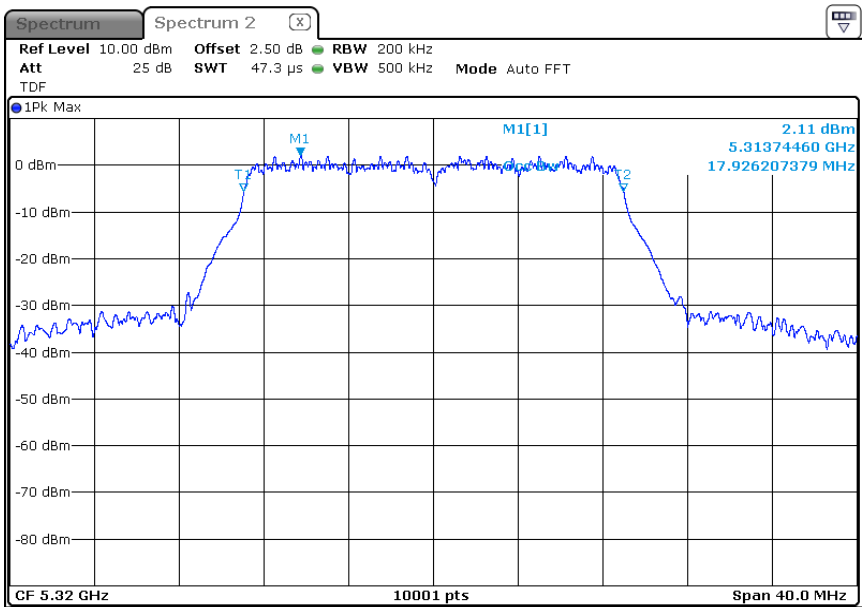
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.3175002 GHz	2.25 dBm	ndB down	21.6058 MHz
T1		1	5.3091851 GHz	-23.77 dBm	ndB	26.00 dB
T2		1	5.3307909 GHz	-23.74 dBm	Q factor	246.1

OBW

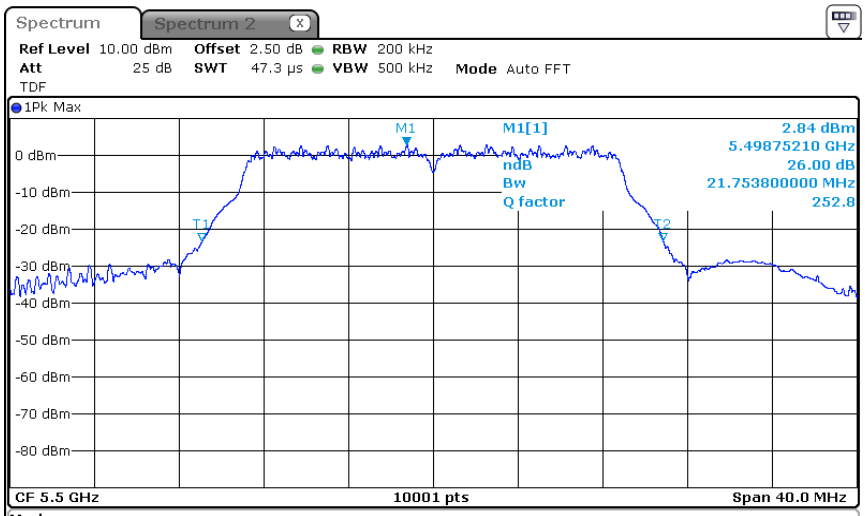


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT20_5 470 Band (26 dB Bandwidth)

-5500 MHz

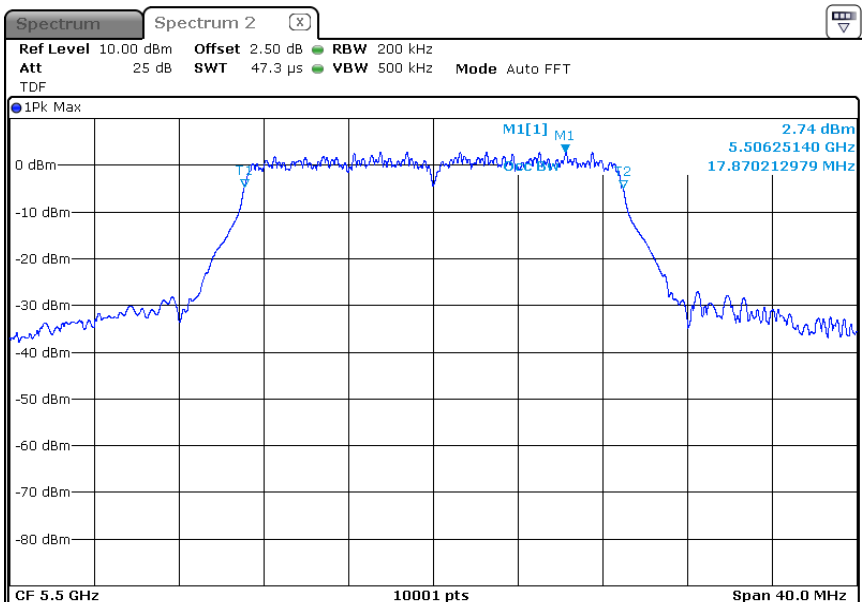
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.4987521 GHz	2.84 dBm	ndB down	21.7538 MHz
T1		1	5.4890851 GHz	-23.15 dBm	ndB	26.00 dB
T2		1	5.5108389 GHz	-23.16 dBm	Q factor	252.8

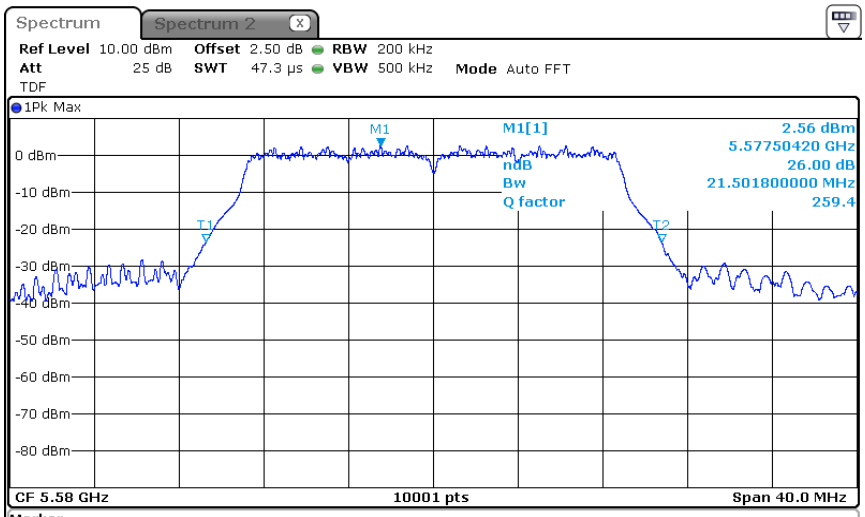
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 580 ㎒

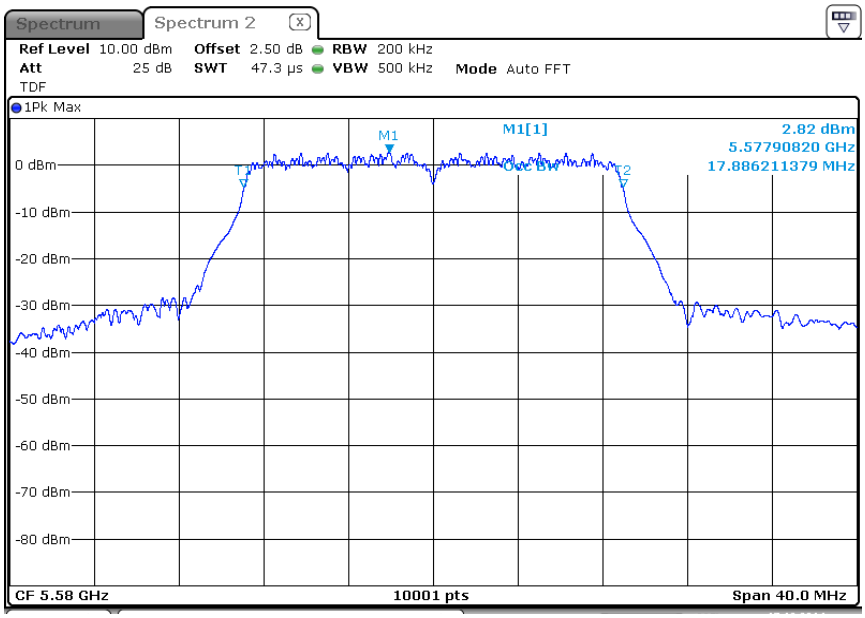
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5775042 GHz	2.56 dBm	ndB down	21.5018 MHz
T1		1	5.5692651 GHz	-23.46 dBm	ndB	26.00 dB
T2		1	5.5907669 GHz	-23.44 dBm	Q factor	259.4

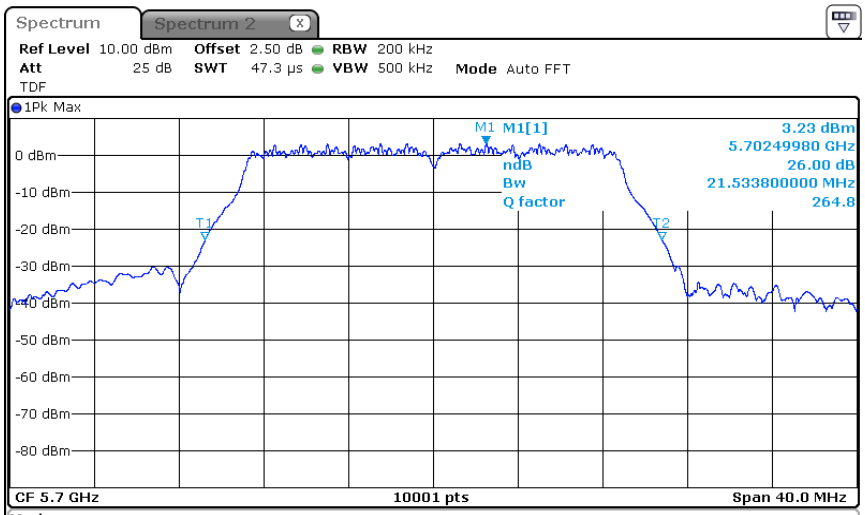
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 700 ㎒

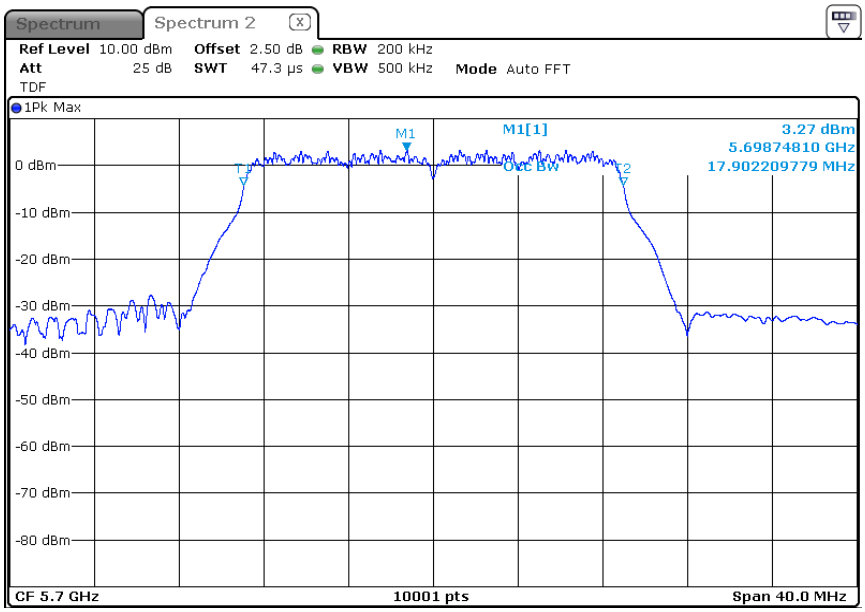
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7024998 GHz	3.23 dBm	ndB down	21.5338 MHz
T1		1	5.6892371 GHz	-22.77 dBm	ndB	26.00 dB
T2		1	5.7107709 GHz	-22.78 dBm	Q factor	264.8

OBW

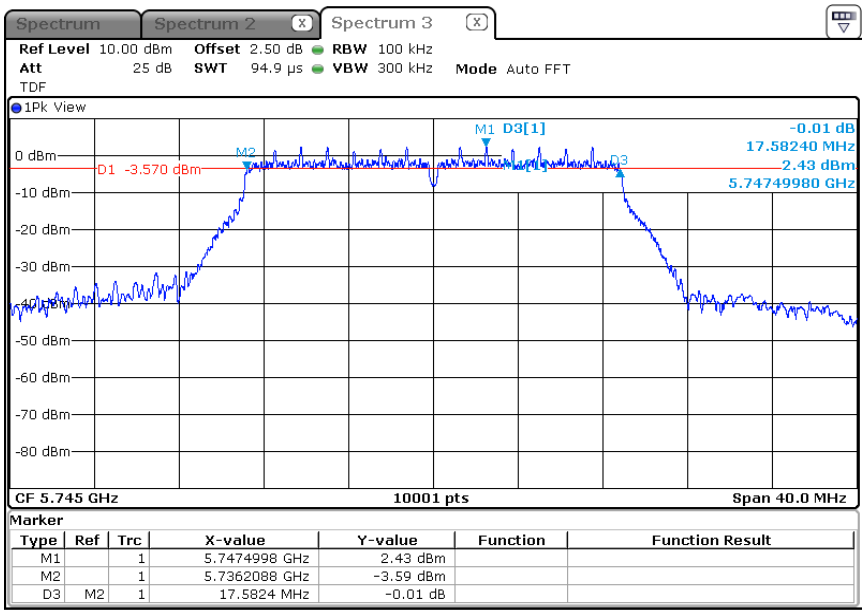


This test report shall not be reproduced except in full, Without the written approval.

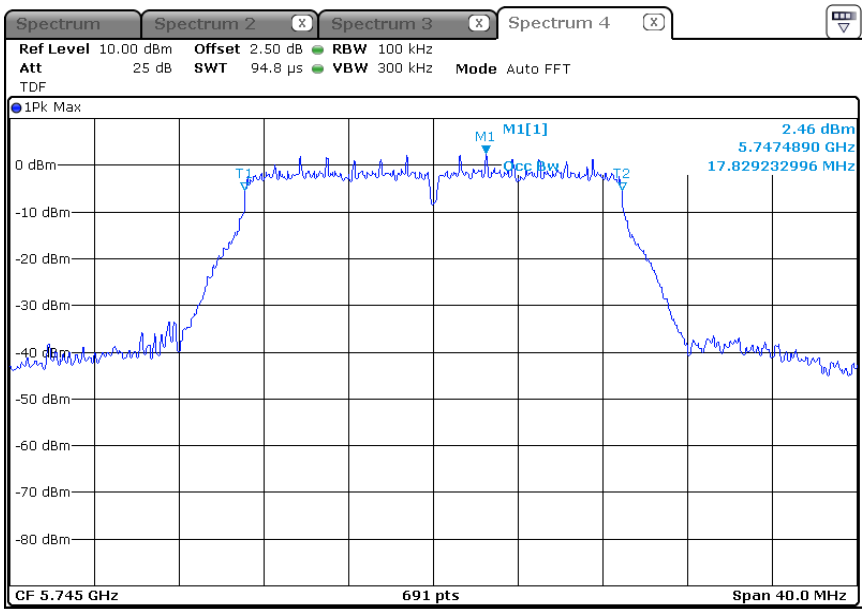
* 802.11ac VHT20_5 725 Band (6 dB Bandwidth)

-5 745 ㎒

6 dB Bandwidth



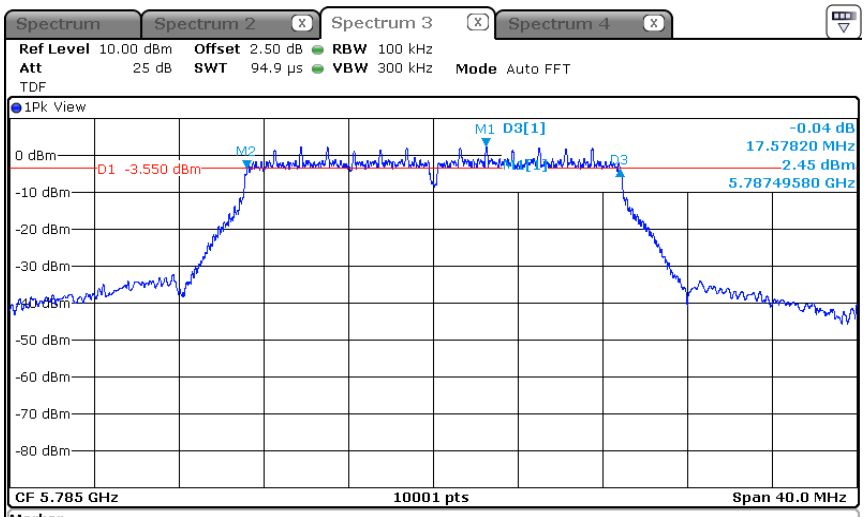
OBW



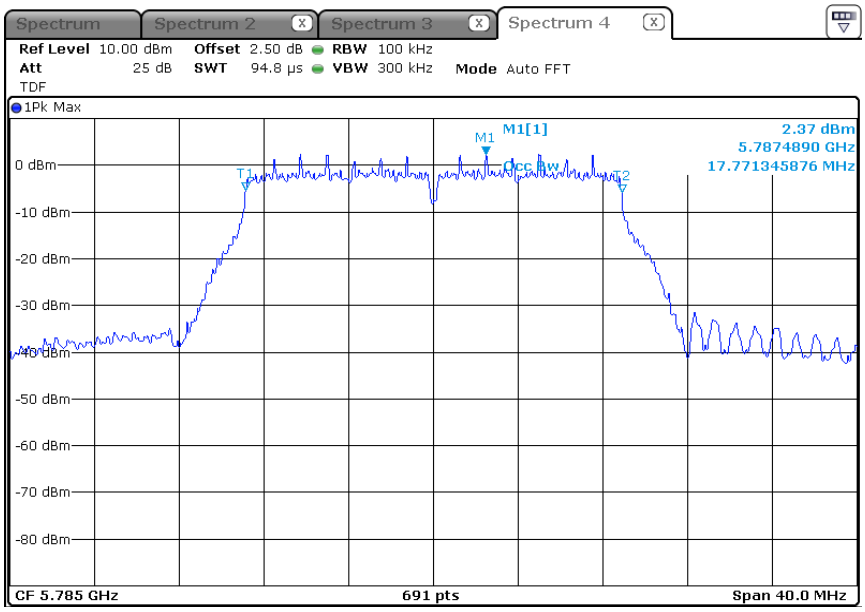
This test report shall not be reproduced except in full, Without the written approval.

-5 785 ㎒

6 ㏈ Bandwidth



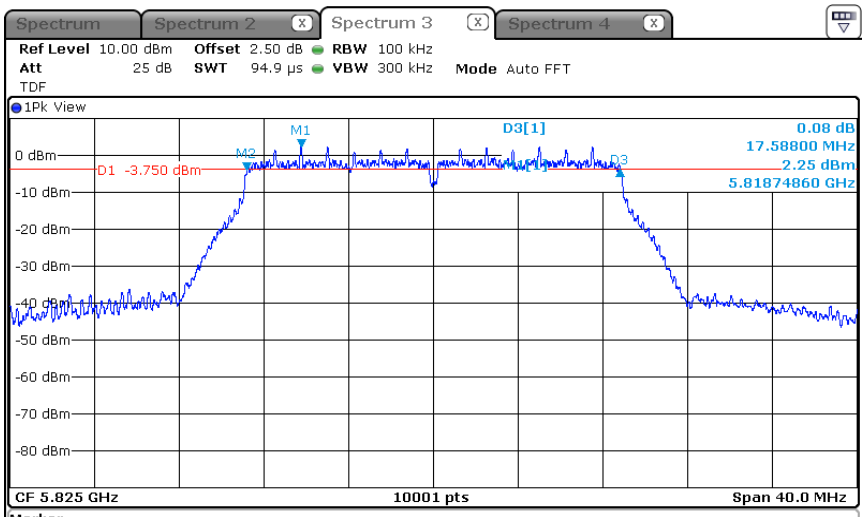
OBW



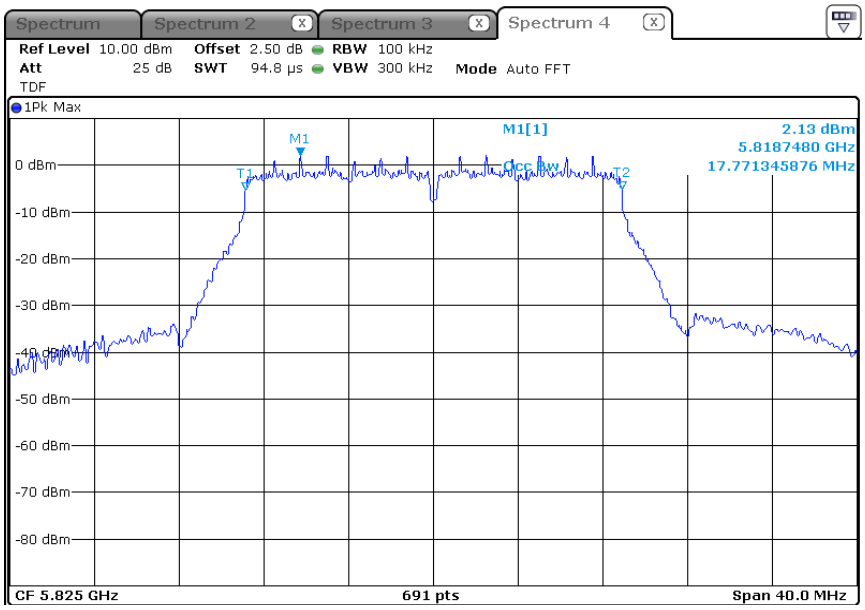
This test report shall not be reproduced except in full, Without the written approval.

-5 825 ㎒

6 ㏈ Bandwidth



OBW

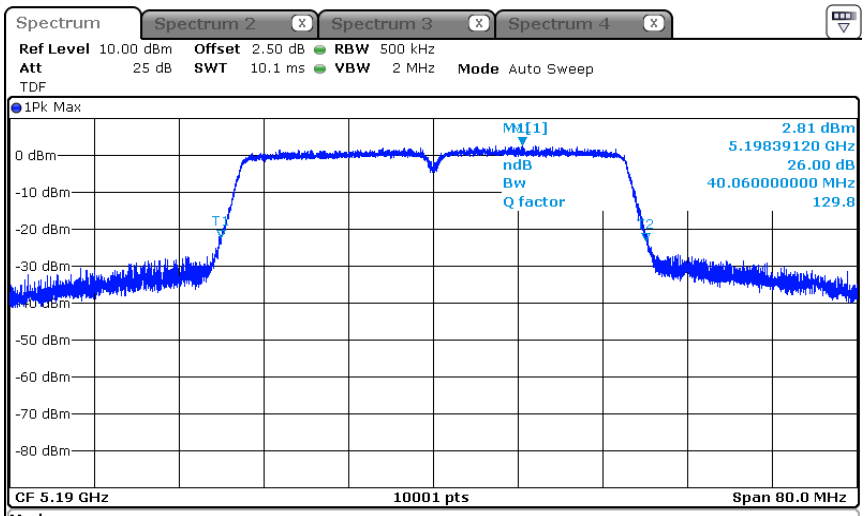


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_5 150 Band (26 dB Bandwidth)

-5 190 MHz

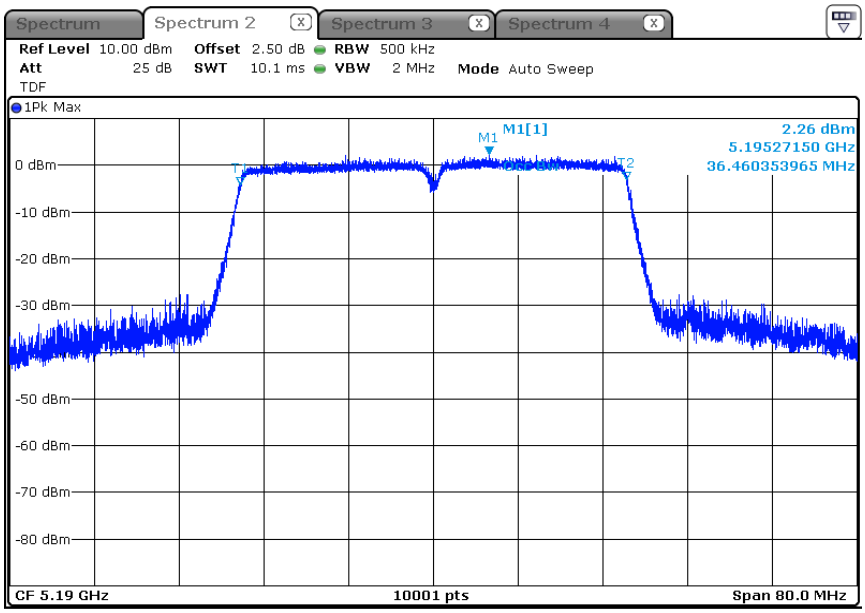
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1983912 GHz	2.81 dBm	ndB down	40.06 MHz
T1		1	5.169986 GHz	-22.38 dBm	ndB	26.00 dB
T2		1	5.210046 GHz	-23.27 dBm	Q factor	129.8

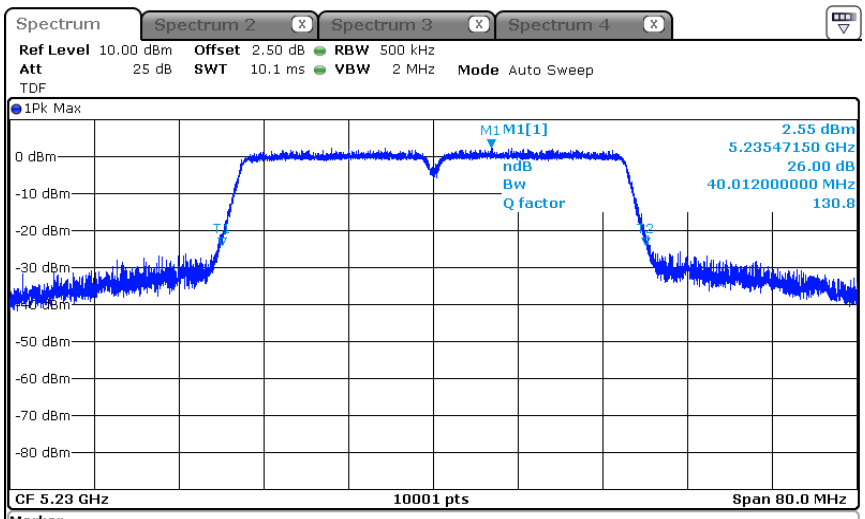
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 230 ㎒

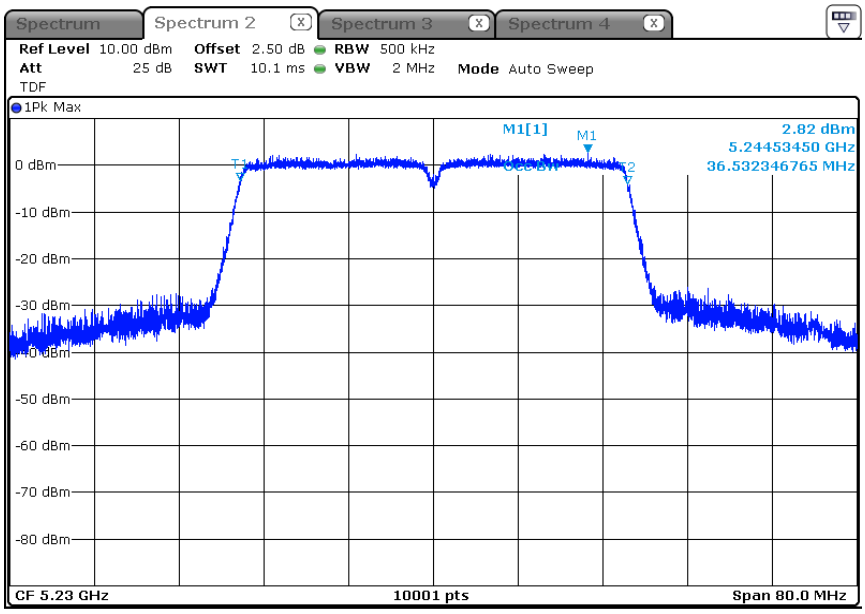
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2354715 GHz	2.55 dBm	ndB down	40.012 MHz
T1		1	5.21005 GHz	-24.09 dBm	ndB	26.00 dB
T2		1	5.250062 GHz	-24.11 dBm	Q factor	130.8

OBW

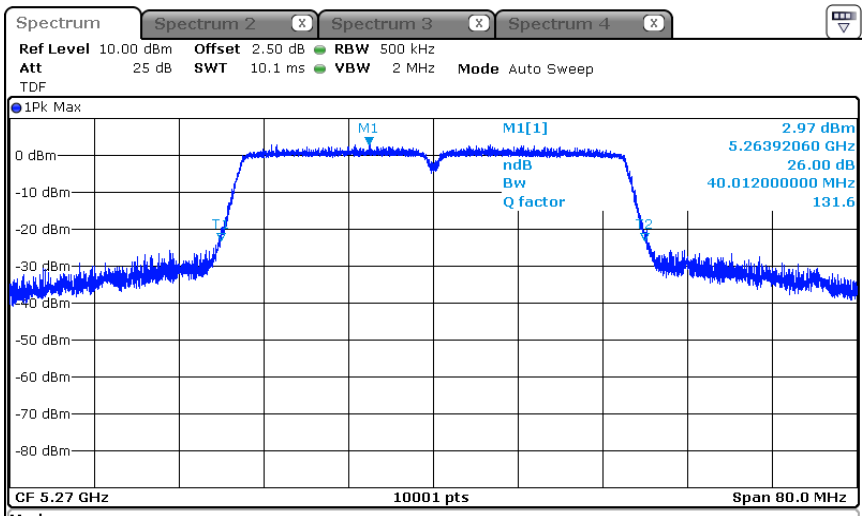


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_ 5 250 Band (26 dB Bandwidth)

-5 270 MHz

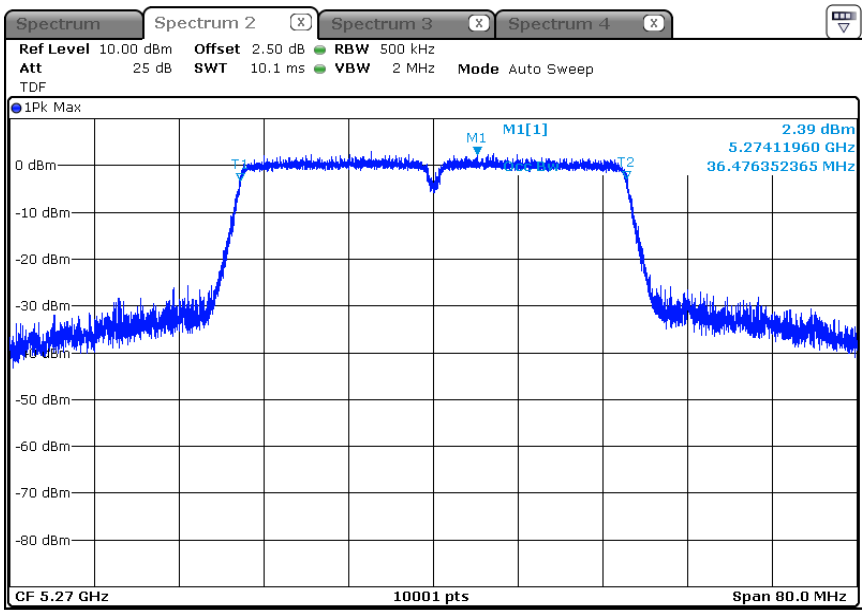
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2639206 GHz	2.97 dBm	ndB down	40.012 MHz
T1		1	5.249914 GHz	-23.26 dBm	ndB	26.00 dB
T2		1	5.289926 GHz	-23.05 dBm	Q factor	131.6

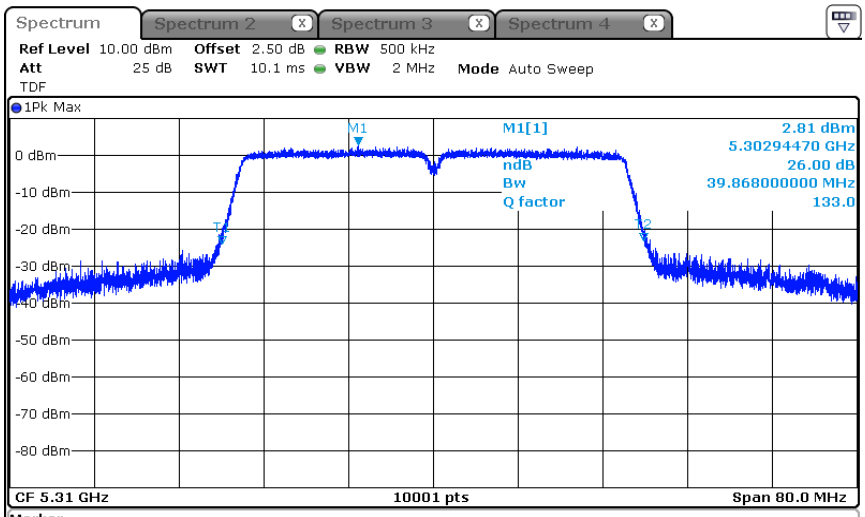
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 310 ㎒

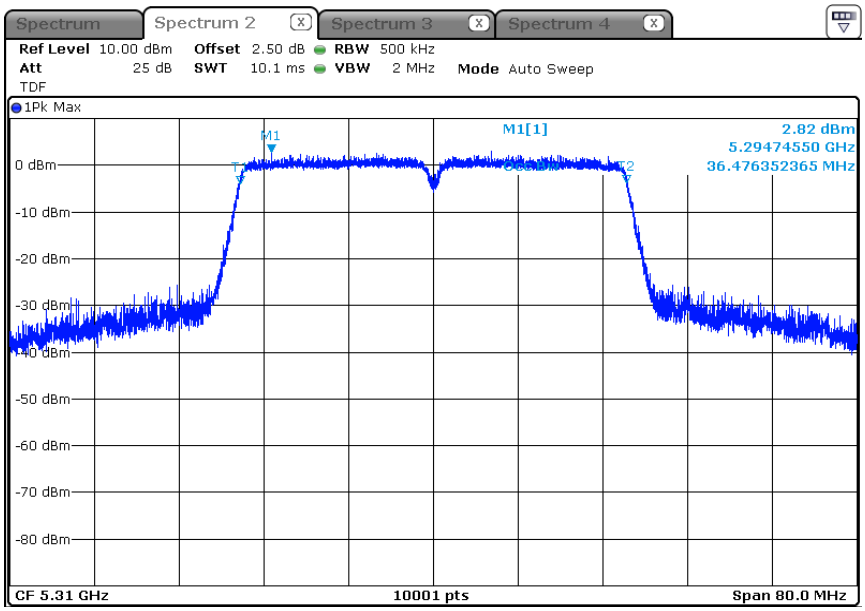
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.3029447 GHz	2.81 dBm	ndB down	39.868 MHz
T1		1	5.290018 GHz	-23.94 dBm	ndB	26.00 dB
T2		1	5.329886 GHz	-23.19 dBm	Q factor	133.0

OBW

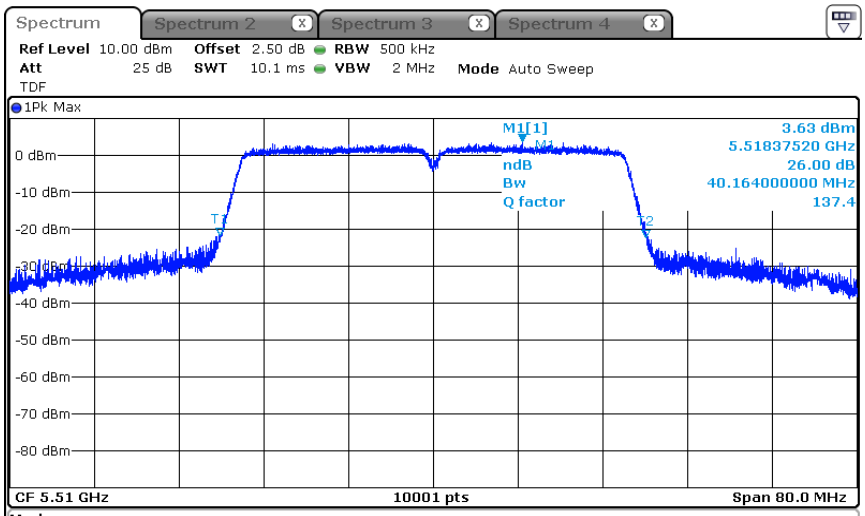


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_5 470 Band (26 dB Bandwidth)

-5 510 MHz

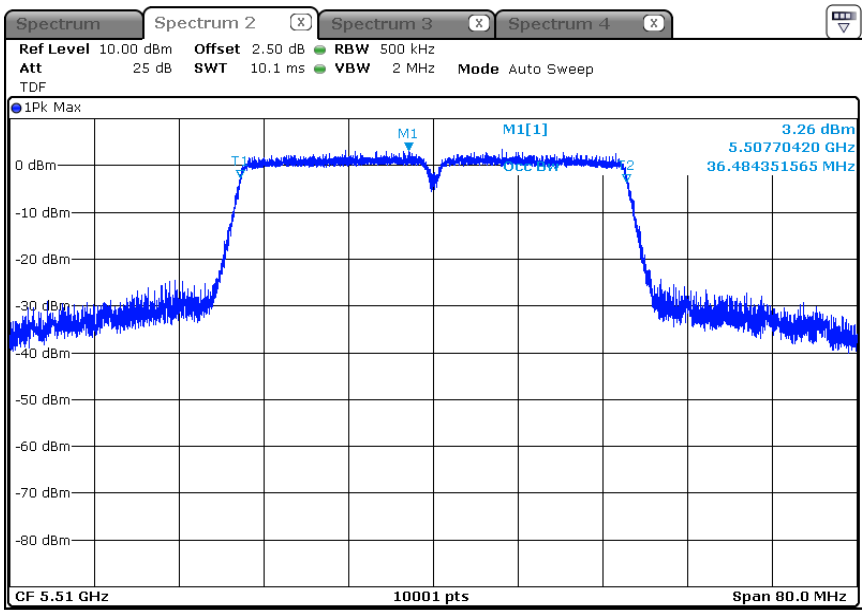
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5183752 GHz	3.63 dBm	ndB down	40.164 MHz
T1		1	5.489898 GHz	-21.85 dBm	ndB	26.00 dB
T2		1	5.530062 GHz	-22.39 dBm	Q factor	137.4

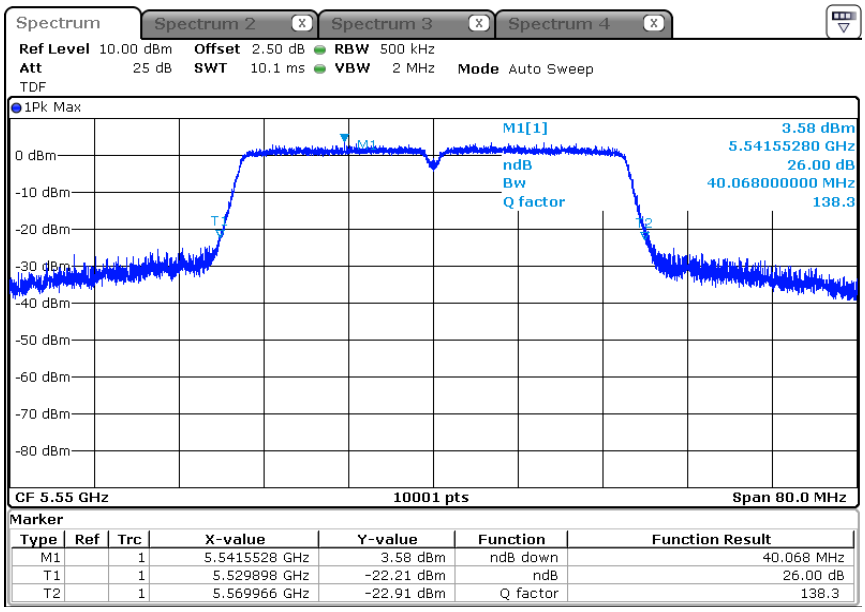
OBW



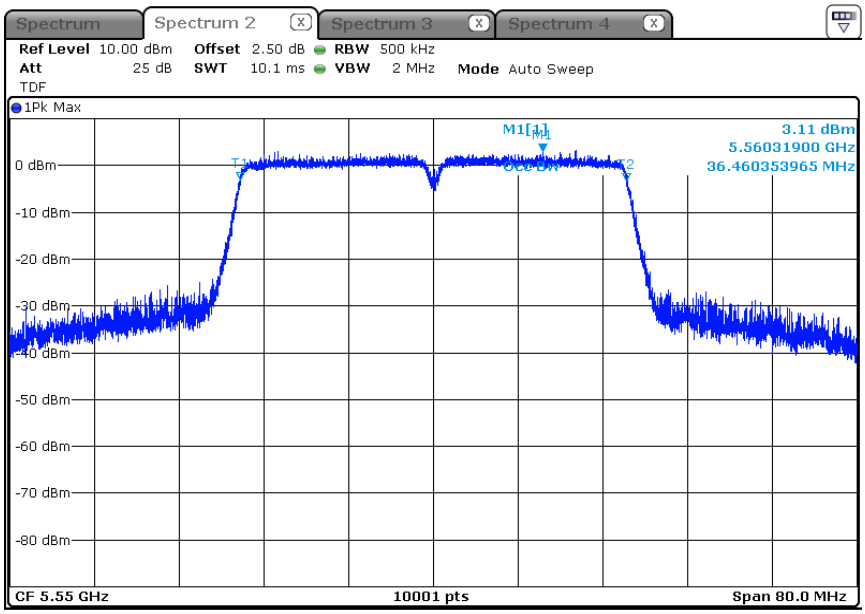
This test report shall not be reproduced except in full, Without the written approval.

-5 550 ㎒

EBW



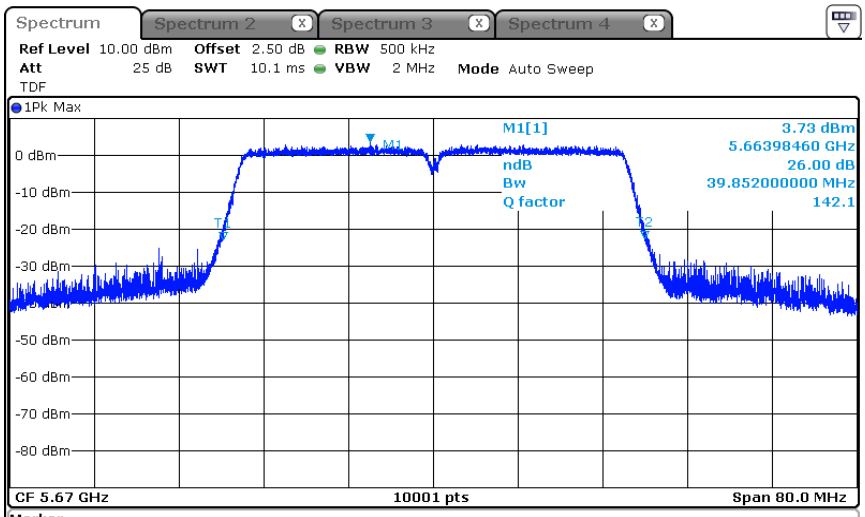
OBW



This test report shall not be reproduced except in full, Without the written approval.

-5 670 ㎒

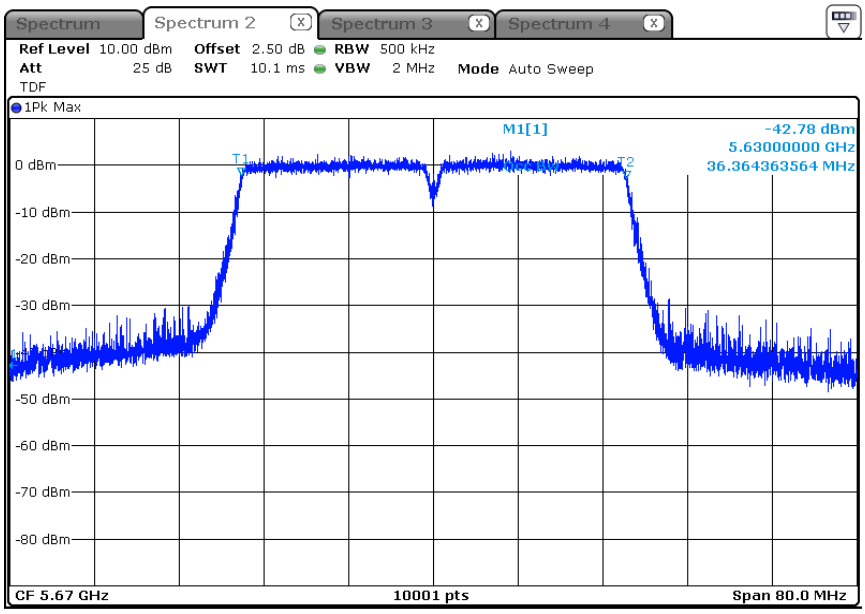
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.6639846 GHz	3.73 dBm	ndB down	39.852 MHz
T1		1	5.650114 GHz	-22.78 dBm	ndB	26.00 dB
T2		1	5.689966 GHz	-22.69 dBm	Q factor	142.1

OBW

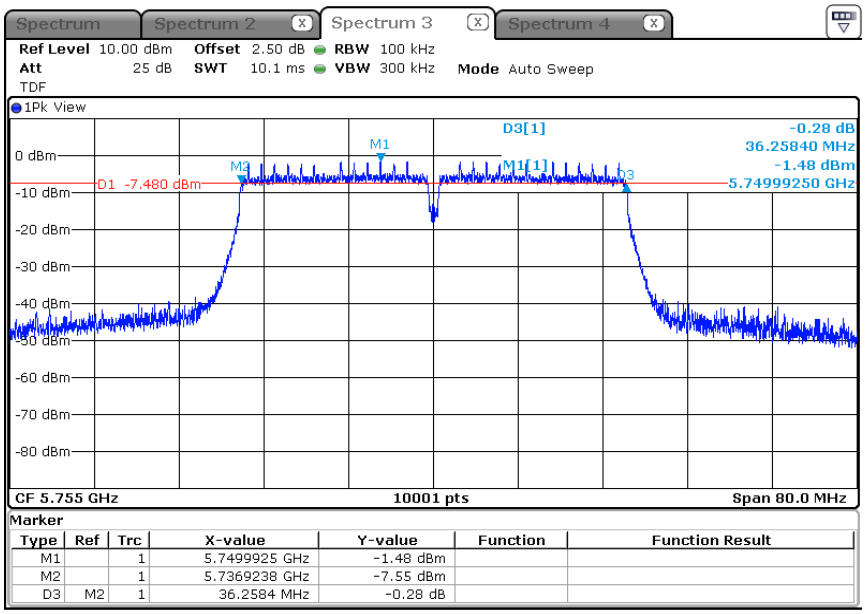


This test report shall not be reproduced except in full, Without the written approval.

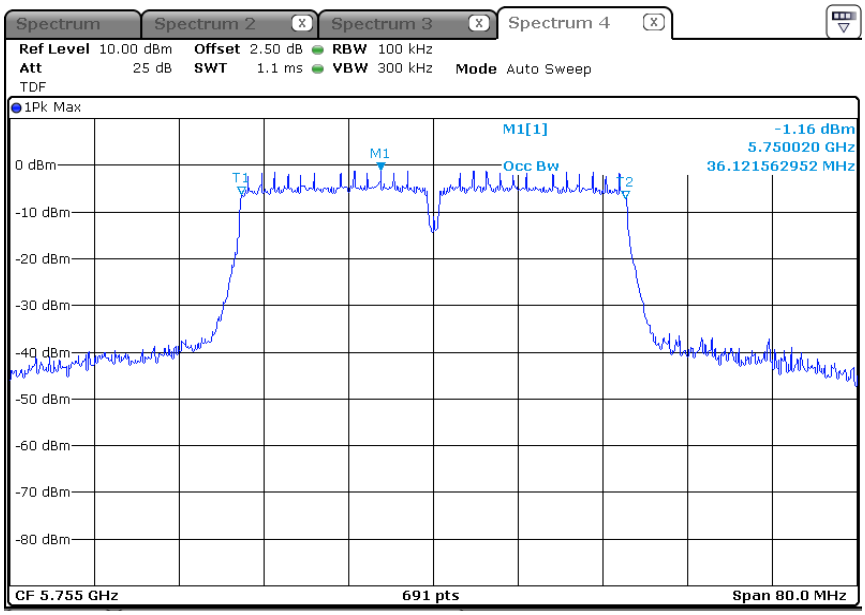
* 802.11ac VHT40_5 725 Band (6 dB Bandwidth)

-5 755 MHz

6 dB Bandwidth



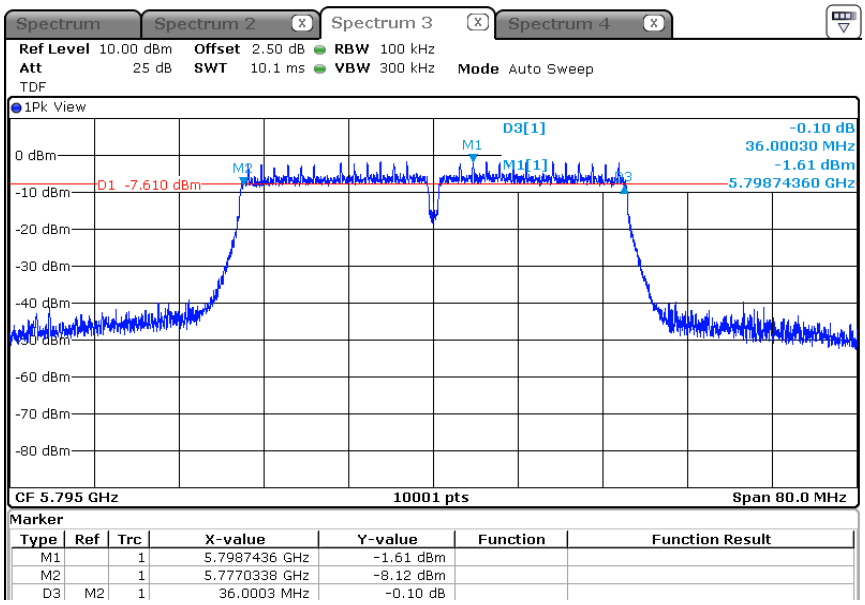
OBW



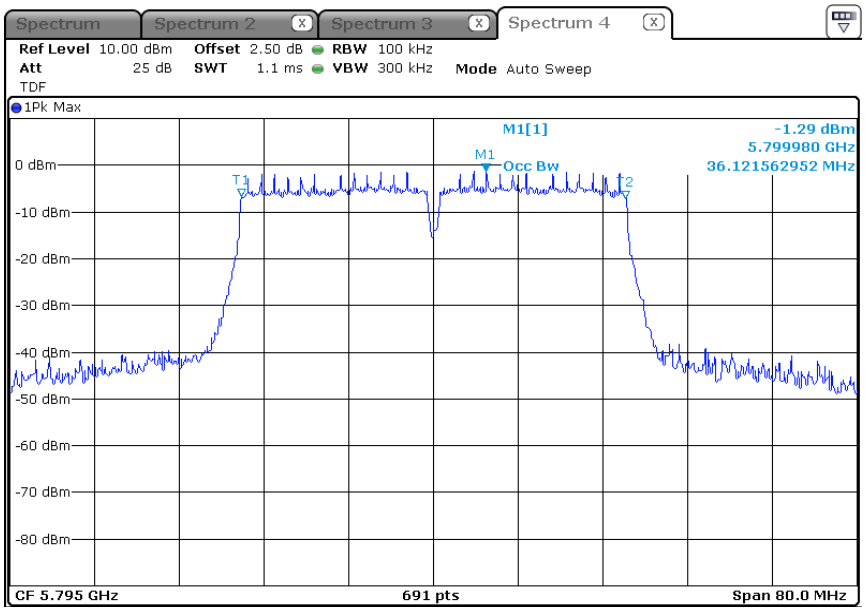
This test report shall not be reproduced except in full, Without the written approval.

-5 795 ㎒

6 ㏈ Bandwidth



OBW

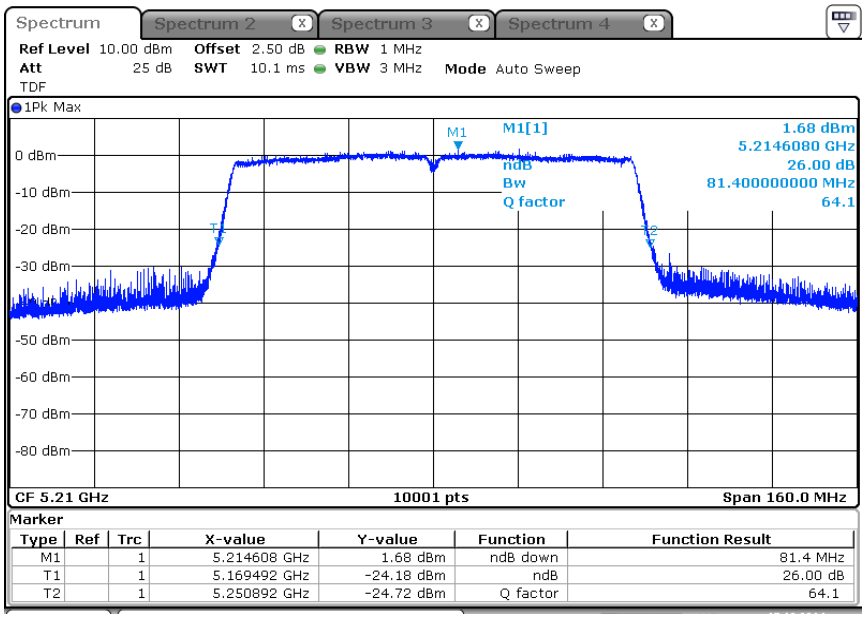


This test report shall not be reproduced except in full, Without the written approval.

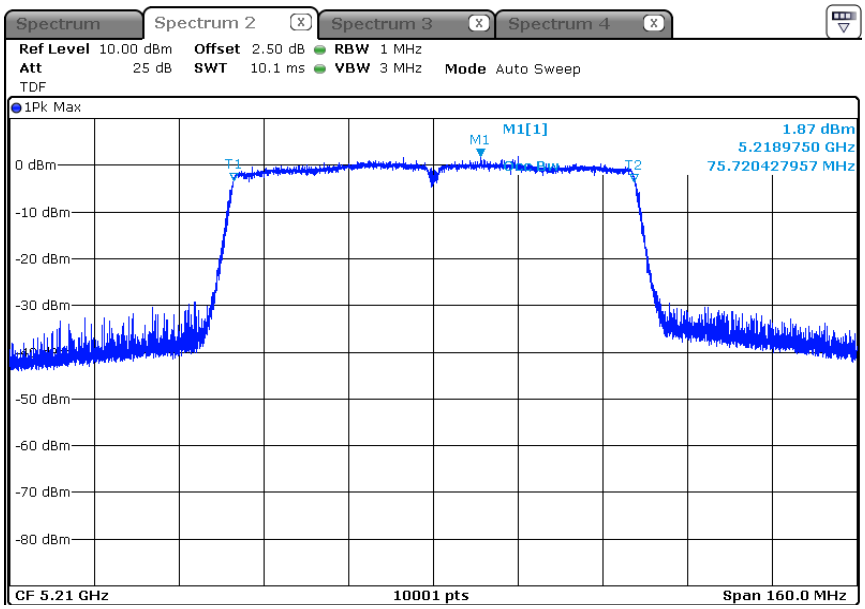
* 802.11ac HT80_5 150 Band (26 dB Bandwidth)

-5 210 MHz

EBW



OBW

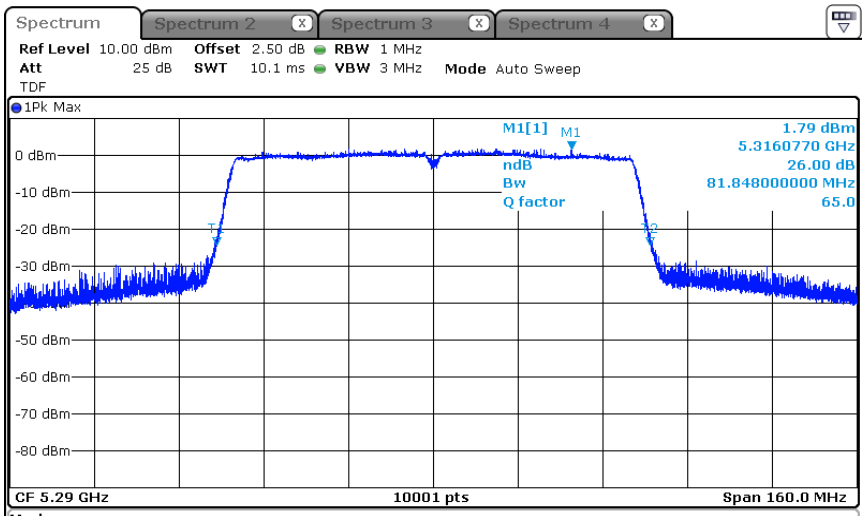


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac HT80_ 5 250 Band (26 dB Bandwidth)

-5 290 MHz

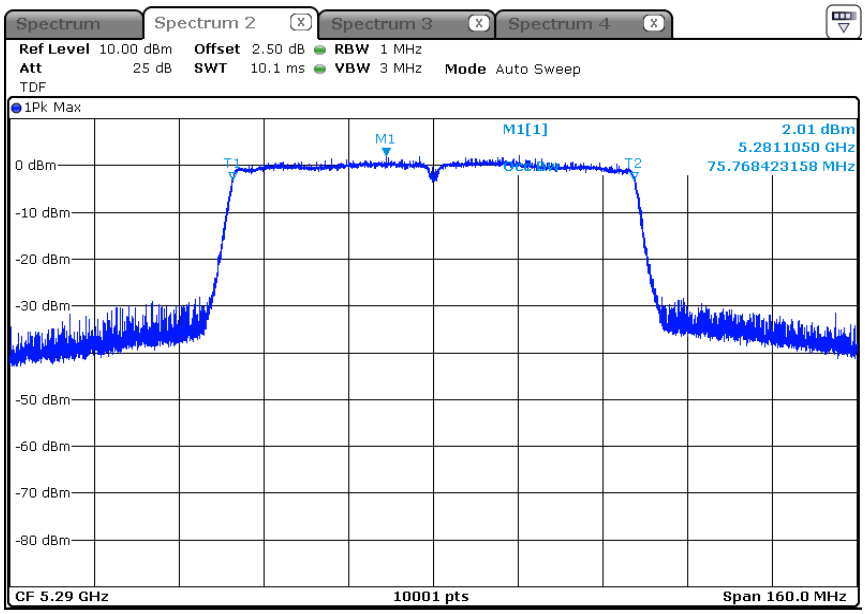
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.316077 GHz	1.79 dBm	ndB down	81.848 MHz
T1		1	5.249044 GHz	-24.23 dBm	ndB	26.00 dB
T2		1	5.330892 GHz	-24.35 dBm	Q factor	65.0

OBW

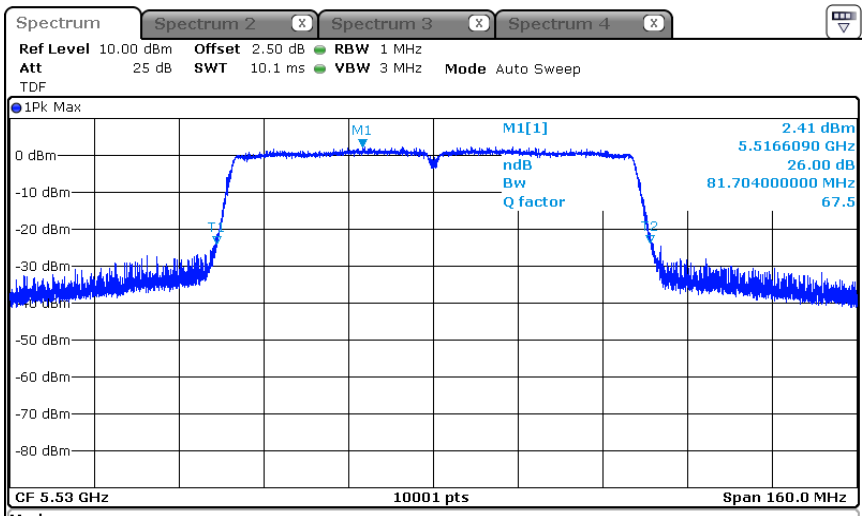


This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac HT80_5 470 Band (26 dB Bandwidth)

-5 530 MHz

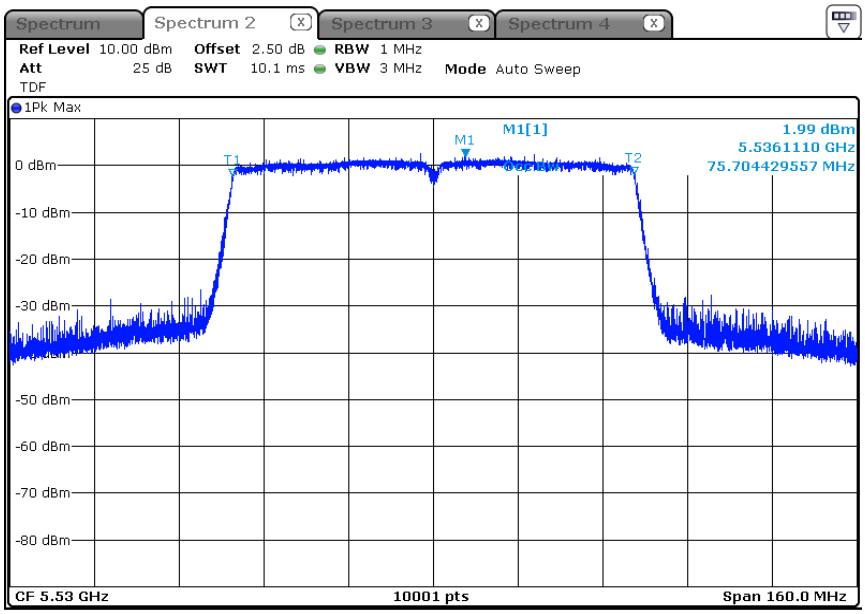
EBW



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.516609 GHz	2.41 dBm	ndB down	81.704 MHz
T1		1	5.489188 GHz	-23.91 dBm	ndB	26.00 dB
T2		1	5.570892 GHz	-23.74 dBm	Q factor	67.5

OBW

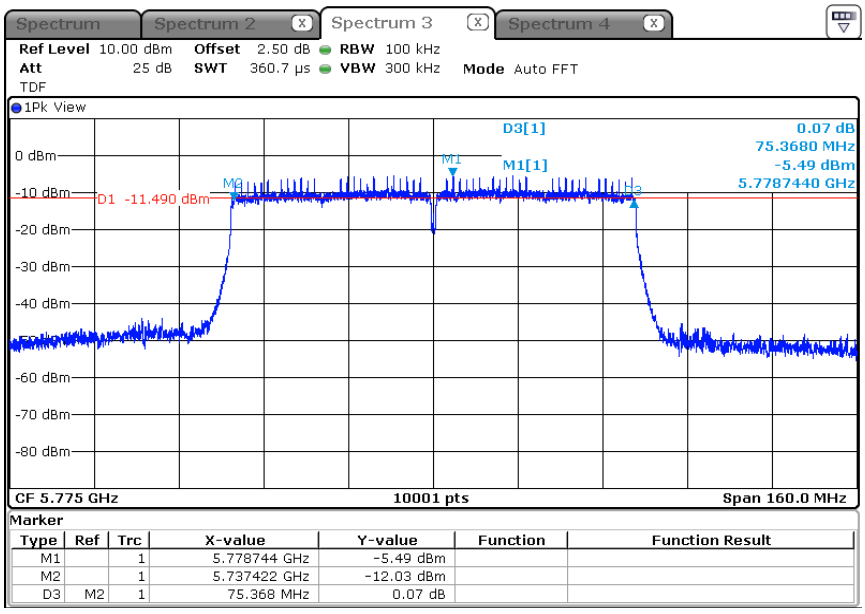


This test report shall not be reproduced except in full, Without the written approval.

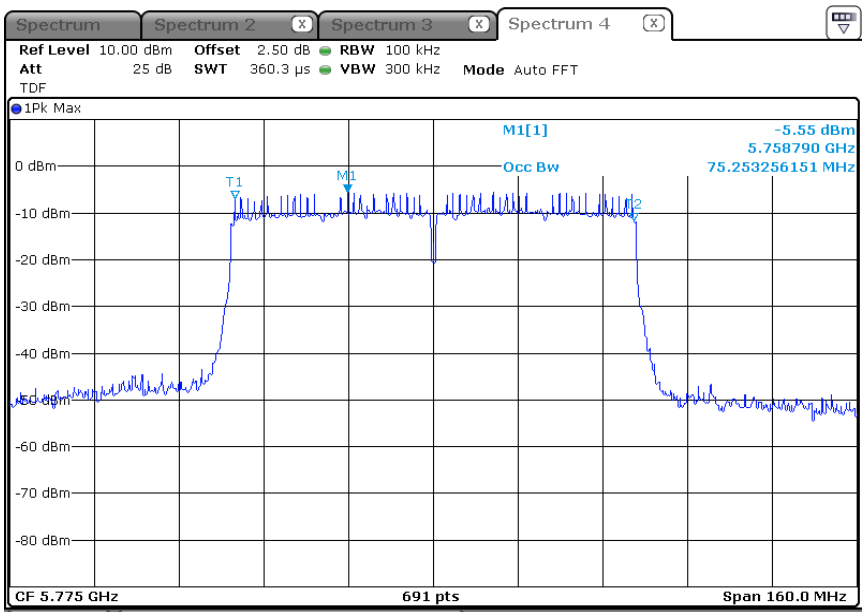
* 802.11n HT40_5 725 Band (6 dB Bandwidth)

-5 775 MHz

6 dB Bandwidth



OBW



This test report shall not be reproduced except in full, Without the written approval.

5.4 Peak Power Spectral Density

5.4.1 Regulation

According to §15.407(a) (1) (iv) For mobile and portable client devices in the 5.15-5.25 ㎓ band, the maximum conducted output power over the frequency band of operation shall not exceed 250 ㎽ provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (2) For the 5.25-5.35 ㎓ and 5.47-5.725 ㎓ bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 ㎽ or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dBthat the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3) For the band 5.725-5.85 ㎓, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-㎑ band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.4.2 Measurement Procedure

These test measurement settings are specified in section F of 789033 D02 General UNII Test Procedures New Rules v01.

5.4.2.1 Maximum power spectral density (PSD)

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power…". (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)

2. Use the peak search function on the instrument to find the peak of the spectrum and record its value.

3. Make the following adjustments to the peak value of the spectrum, if applicable:
a) If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.
b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 ㎤ to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1 ㎒ reference bandwidth.

5. For devices operating in the bands 5.15-5.25 ㎓, 5.25-5.35 ㎓, and 5.47-5.725 ㎓, the above procedures make use of 1 ㎒ RBW to satisfy directly the 1 ㎒ reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 ㎓, the rules specify a measurement bandwidth of 500 ㎑. Many spectrum analyzers do not have 500 ㎑ RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 ㎒, or 500 ㎑, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 ㎒, or 500 ㎑). If measurements are performed using a reduced resolution bandwidth (< 1 ㎒, or < 500 ㎑) and integrated over 1 ㎒, or 500 ㎑ bandwidth, the following adjustments to the procedures apply: a) Set RBW ≥ 1/T, where T is defined in section II.B.l.a).
c) Set VBW ≥ 3 RBW.
d) If measurement bandwidth of Maximum PSD is specified in 500 ㎑, add 10log(500㎑/RBW) to the measured result, whereas RBW (< 500 ㎑) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
e) If measurement bandwidth of Maximum PSD is specified in 1 ㎒, add 10log(1㎒/RBW) to the measured result, whereas RBW (< 1 ㎒) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
f) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 ㎑ for the sections 5.c) and 5.d) above, since RBW=100 ㎑ is available on nearly all spectrum analyzers.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.4.3 Test Result

-Complied

802.11a

5 150 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 180	0.92	0.23	1.15	11.00	9.85
5 200	1.24	0.23	1.47	11.00	9.53
5 240	1.22	0.23	1.45	11.00	9.55

5 250 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 260	1.47	0.23	1.70	11.00	9.30
5 280	1.23	0.23	1.46	11.00	9.54
5 320	0.97	0.23	1.20	11.00	9.80

5 470 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 500	1.74	0.23	1.97	11.00	9.03
5 580	1.71	0.23	1.94	11.00	9.06
5 700	1.98	0.23	2.21	11.00	8.79

5 725 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 745	-0.51	0.23	-0.28	30.00	30.28
5 785	-0.50	0.23	-0.27	30.00	30.27
5 825	-0.21	0.23	0.02	30.00	29.98

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT20

5 150 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 180	0.59	0.23	0.82	11.00	10.18
5 200	0.87	0.23	1.10	11.00	9.90
5 240	0.70	0.23	0.93	11.00	10.07

5 250 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 260	1.04	0.23	1.27	11.00	9.73
5 280	0.84	0.23	1.07	11.00	9.93
5 320	0.94	0.23	1.17	11.00	9.83

5 470 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 500	1.59	0.23	1.82	11.00	9.18
5 580	1.11	0.23	1.34	11.00	9.66
5 700	1.58	0.23	1.81	11.00	9.19

5 725 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 745	-0.91	0.23	-0.68	30.00	30.68
5 785	-0.98	0.23	-0.75	30.00	30.75
5 825	-0.73	0.23	-0.50	30.00	30.50

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT40

5 150 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 190	-3.23	0.45	-2.78	11.00	13.78
5 230	-3.26	0.45	-2.81	11.00	13.81

5 250 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 270	-2.95	0.45	-2.50	11.00	13.50
5 310	-3.06	0.45	-2.61	11.00	13.61

5 470 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 510	-2.32	0.45	-1.87	11.00	12.87
5 550	-2.31	0.45	-1.86	11.00	12.86
5 670	-2.22	0.45	-1.77	11.00	12.77

5 725 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 755	-4.61	0.45	-4.16	30.00	34.16
5 795	-4.44	0.45	-3.99	30.00	33.99

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT20

5 150 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 180	0.71	0.07	0.78	11.00	10.22
5 200	1.25	0.07	1.32	11.00	9.68
5 240	1.16	0.07	1.23	11.00	9.77

5 250 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 260	1.19	0.07	1.26	11.00	9.74
5 280	1.09	0.07	1.16	11.00	9.84
5 320	1.01	0.07	1.08	11.00	9.92

5 470 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 500	1.86	0.07	1.93	11.00	9.07
5 580	1.60	0.07	1.67	11.00	9.33
5 700	2.21	0.07	2.28	11.00	8.72

5 725 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 745	0.66	0.07	0.73	30.00	29.27
5 785	0.63	0.07	0.70	30.00	29.30
5 825	-0.17	0.07	-0.10	30.00	30.10

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT40

5 150 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 190	-2.90	0.14	-2.76	11.00	13.76
5 230	-3.14	0.14	-3.00	11.00	14.00

5 250 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 270	-2.92	0.14	-2.78	11.00	13.78
5 310	-2.66	0.14	-2.52	11.00	13.52

5 470 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 510	-1.96	0.14	-1.82	11.00	12.82
5 550	-2.06	0.14	-1.92	11.00	12.92
5 670	-1.90	0.14	-1.76	11.00	12.76

5 725 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 755	-1.96	0.14	-1.82	11.00	12.82
5 795	-2.06	0.14	-1.92	11.00	12.92

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac HT80

5 150 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5210	-7.30	0.28	-7.02	11.00	18.02

5 250 Band

Frequency (MHz)	Reading (dBm) Ant1	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5290	-7.01	0.28	-6.73	11.00	17.73

5 470 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5530	-6.09	0.28	-5.81	11.00	16.81

5 725 Band

Frequency (MHz)	Reading (dBm)	Duty Cycle (dB)	Total result (dBm)	Limit (dBm)	Margin (dB)
5 775	-8.64	0.28	-8.36	30.00	38.36

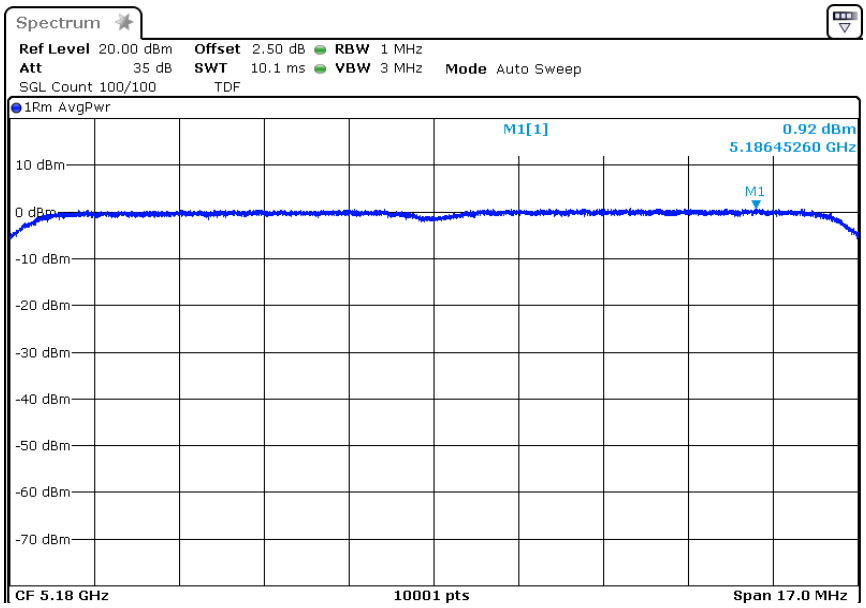
480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.4.4 Test Plot

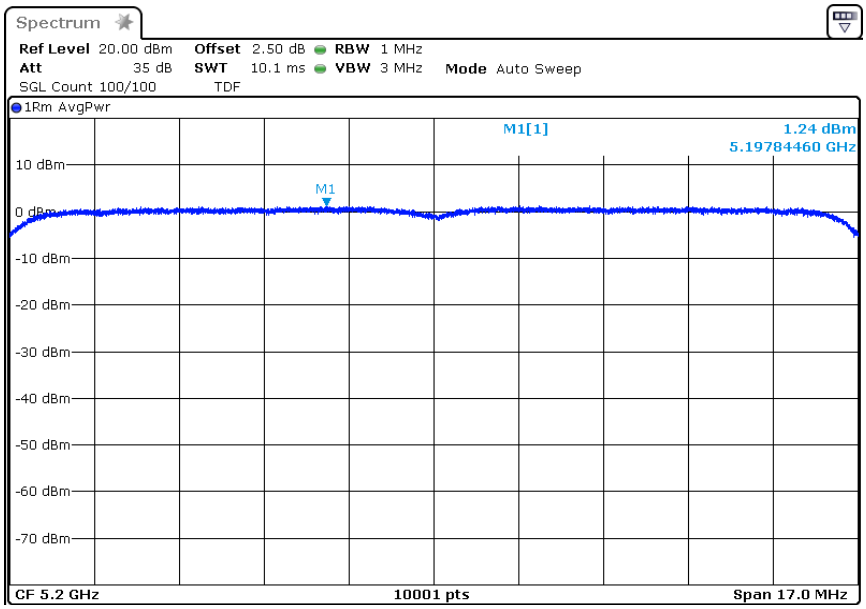
Figure 2. Plot of the Power Spectral Density

* 802.11a_5 150 Band

-5 180 MHz

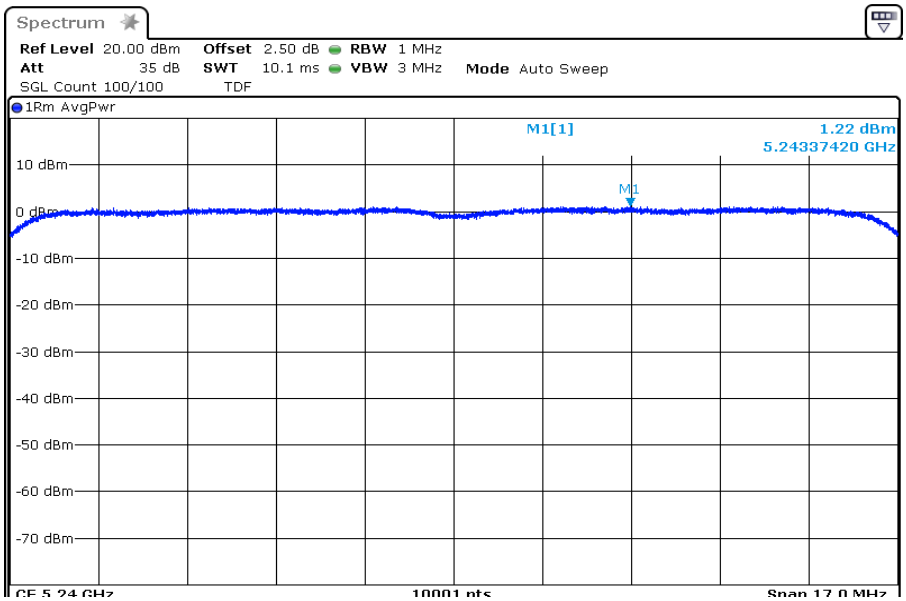


-5 200 MHz



This test report shall not be reproduced except in full, Without the written approval.

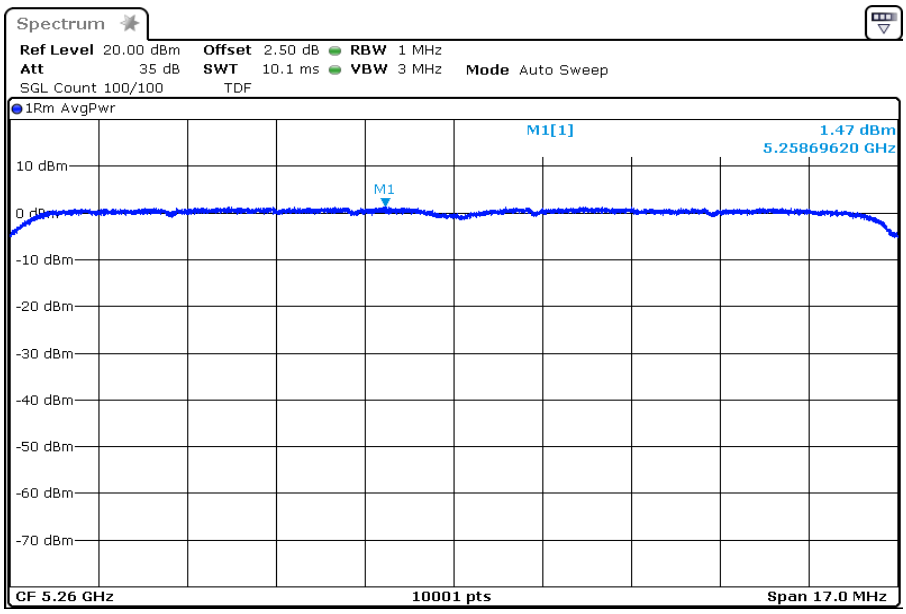
-5 240 MHz



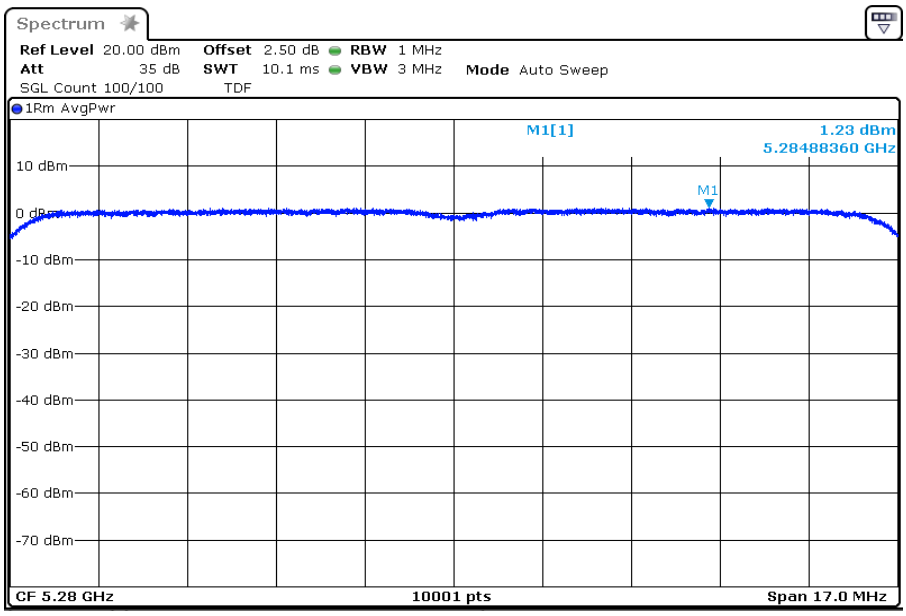
480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

* 802.11a_5 250 Band

-5 260 MHz

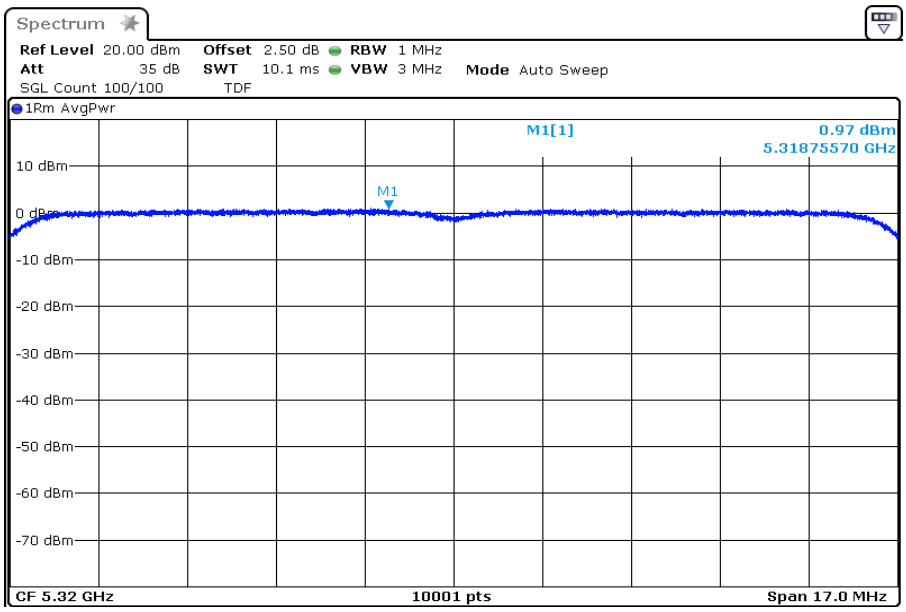


-5 280 MHz



This test report shall not be reproduced except in full, Without the written approval.

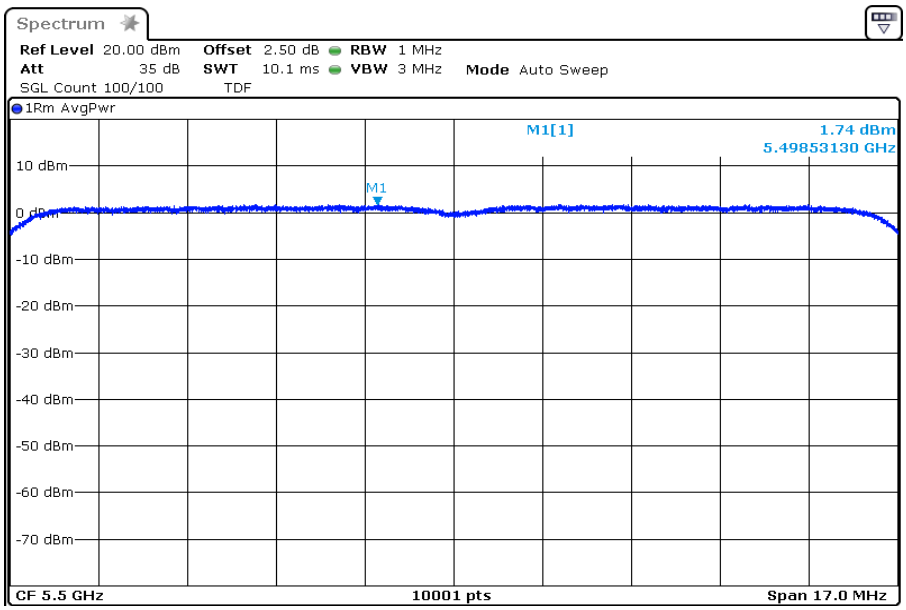
-5 320 ㎒



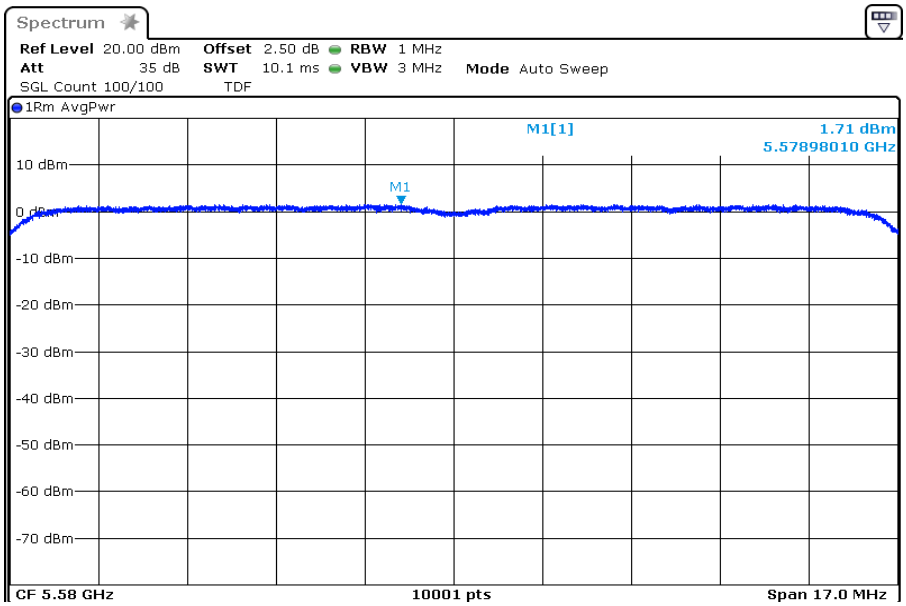
This test report shall not be reproduced except in full, Without the written approval.

* 802.11a_5 470 Band

-5 500 MHz

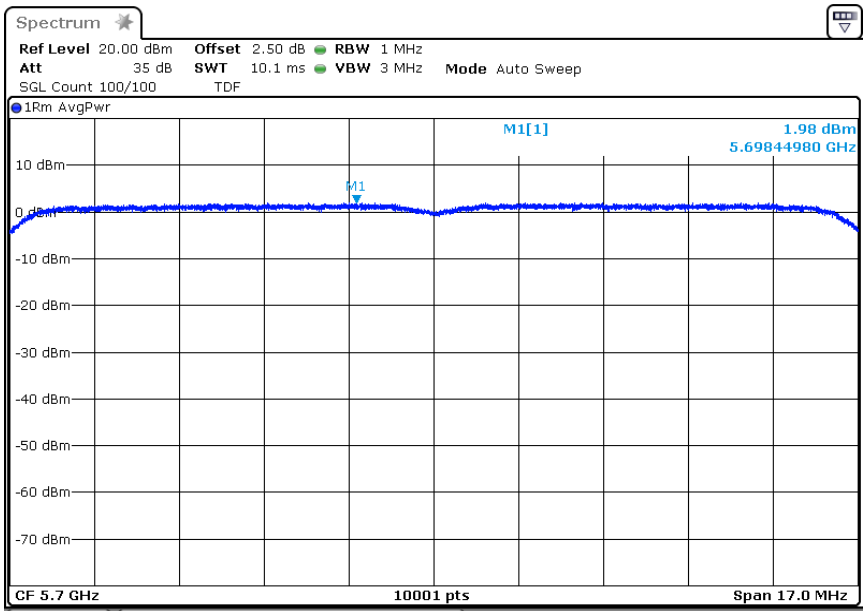


-5 580 MHz



This test report shall not be reproduced except in full, Without the written approval.

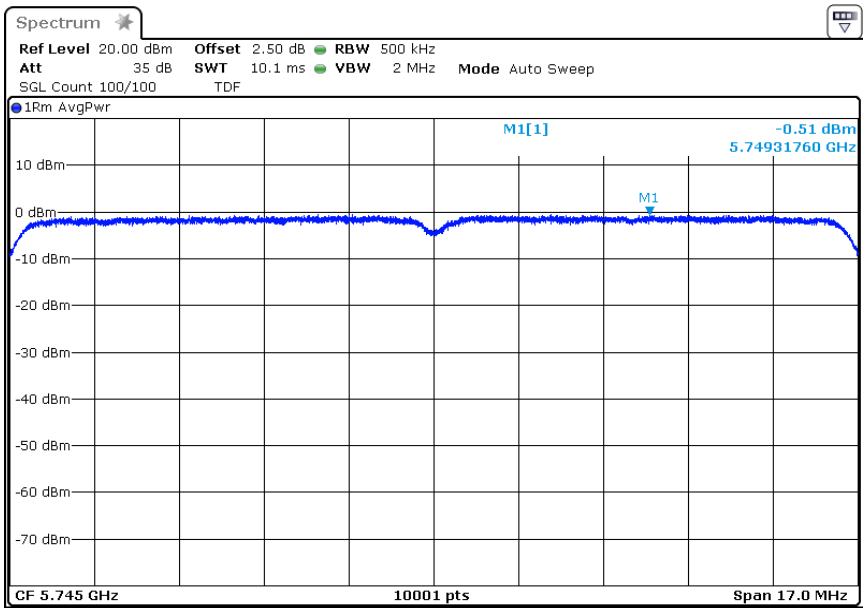
-5 700 ㎒



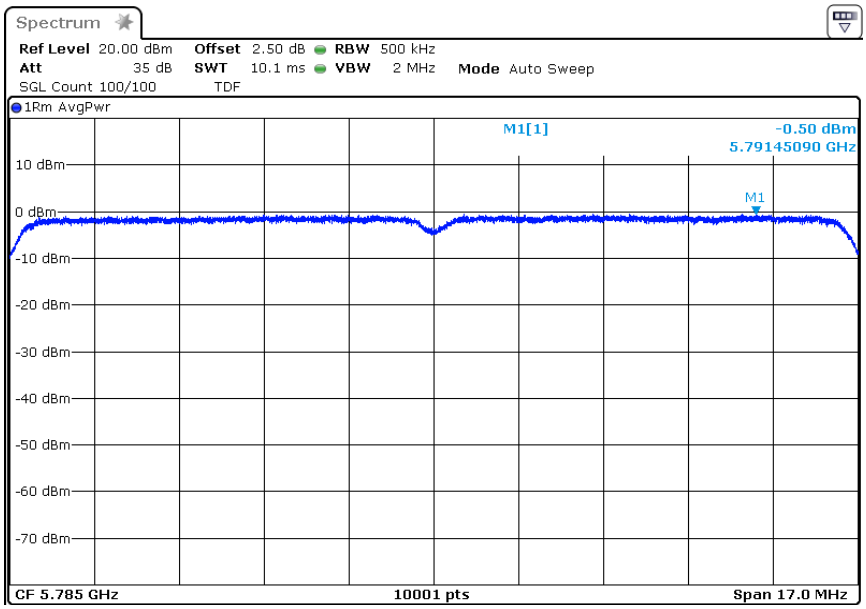
This test report shall not be reproduced except in full, Without the written approval.

* 802.11a_5 725 Band

-5 745 ㎒

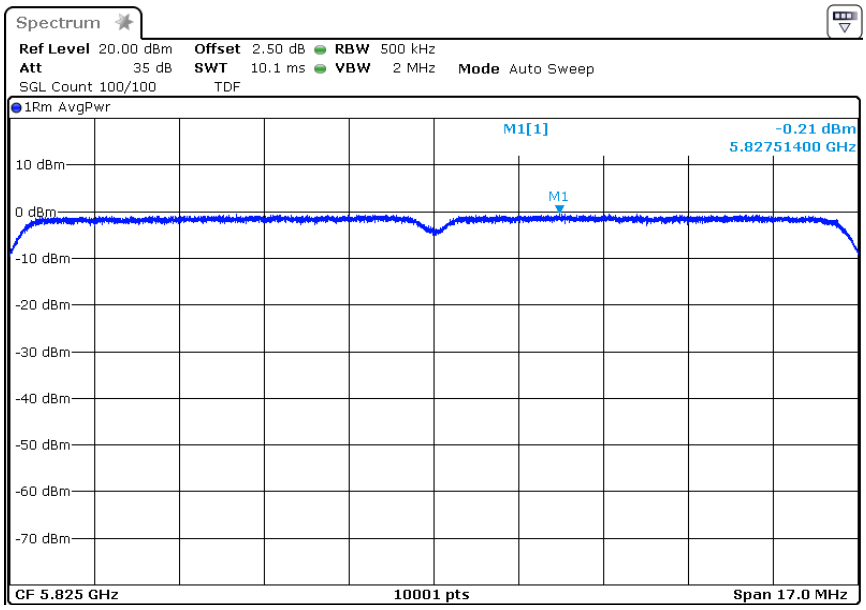


-5 785 ㎒



This test report shall not be reproduced except in full, Without the written approval.

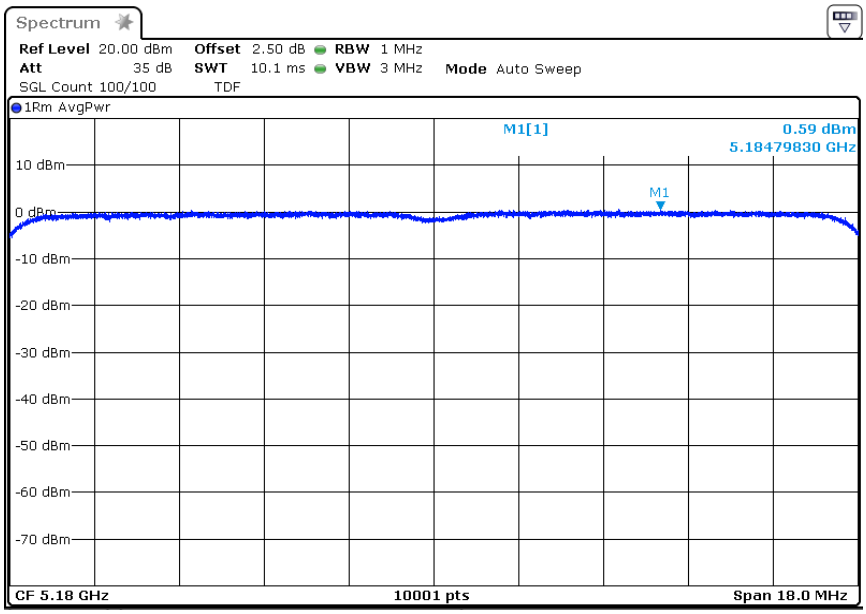
-5 825 MHz



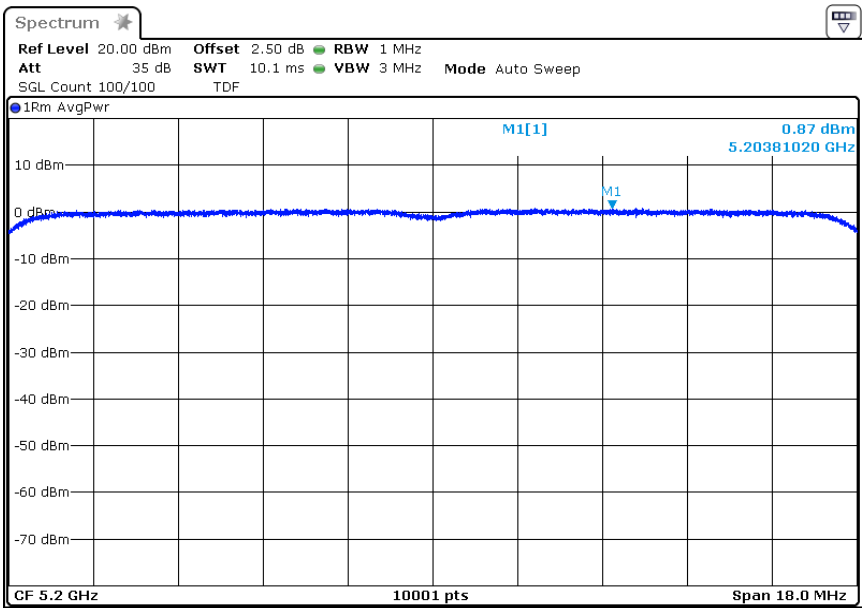
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT20 _5 150 Band

-5 180 ㎒

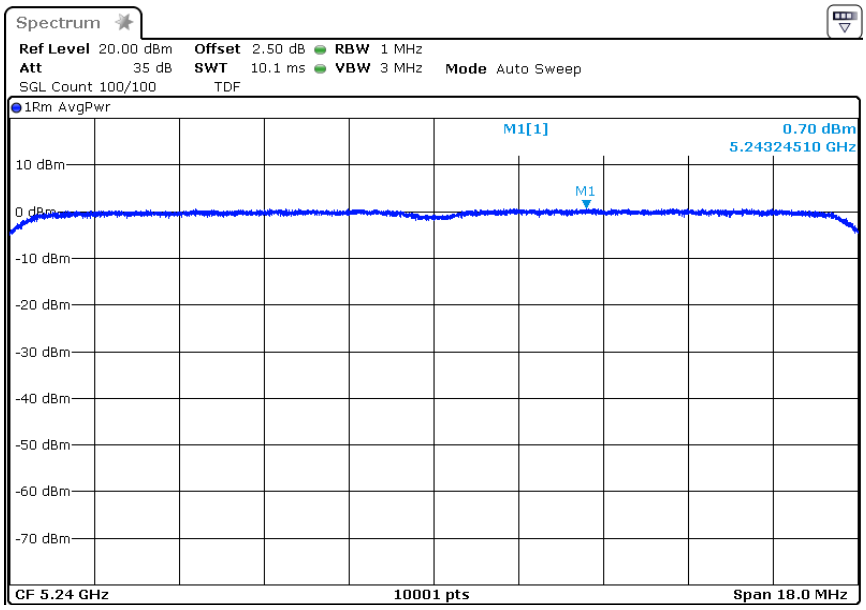


-5 200 ㎒



This test report shall not be reproduced except in full, Without the written approval.

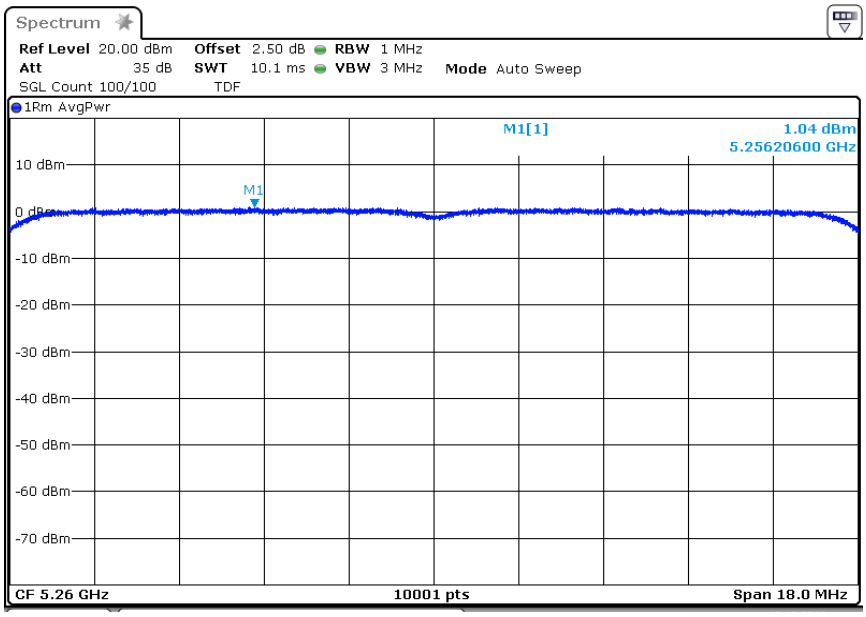
-5 240 MHz



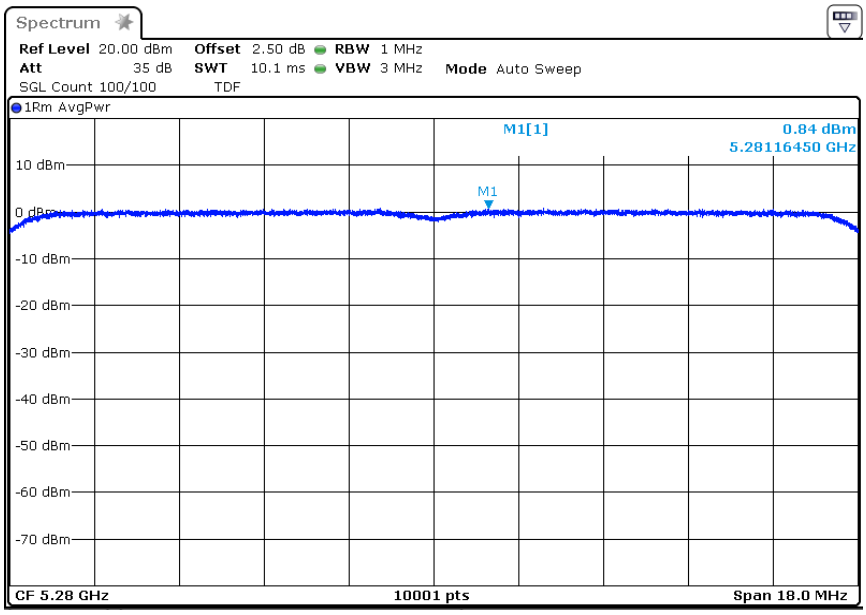
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT20_5 250 Band

-5 260 MHz

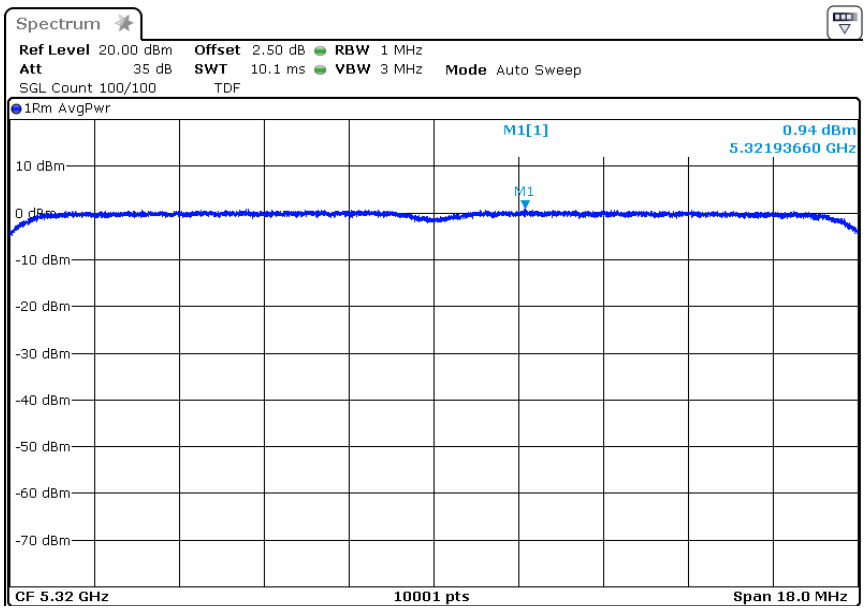


-5 280 MHz



This test report shall not be reproduced except in full, Without the written approval.

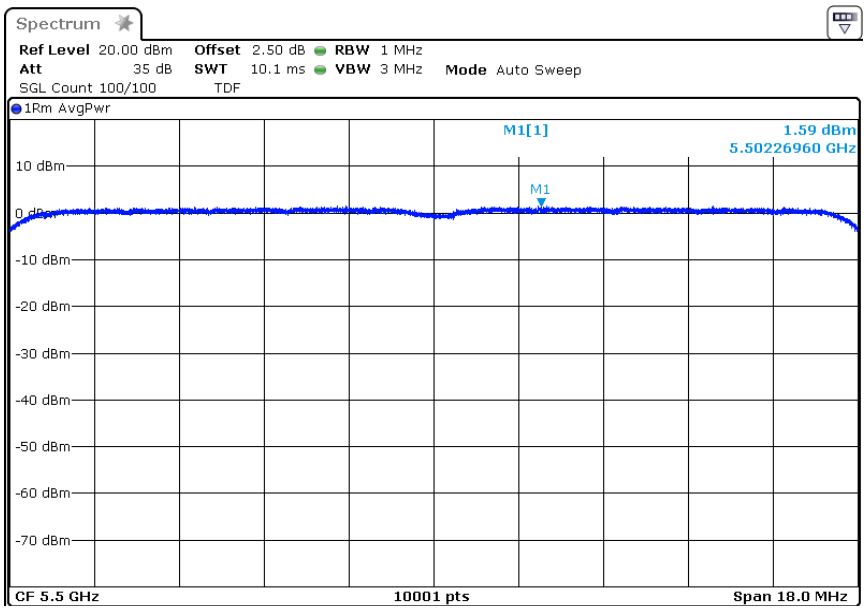
-5 320 MHz



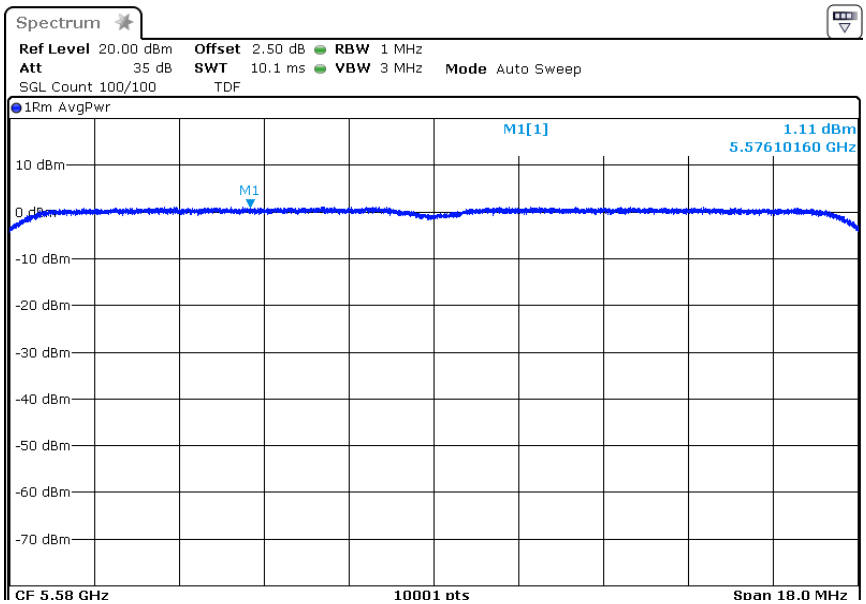
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT20_5 470 Band

-5 500 MHz

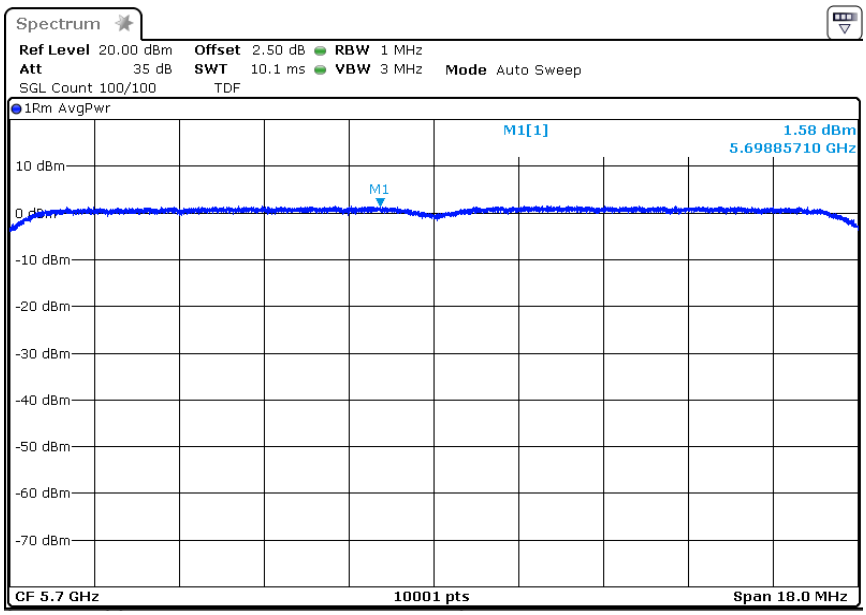


-5 580 MHz



This test report shall not be reproduced except in full, Without the written approval.

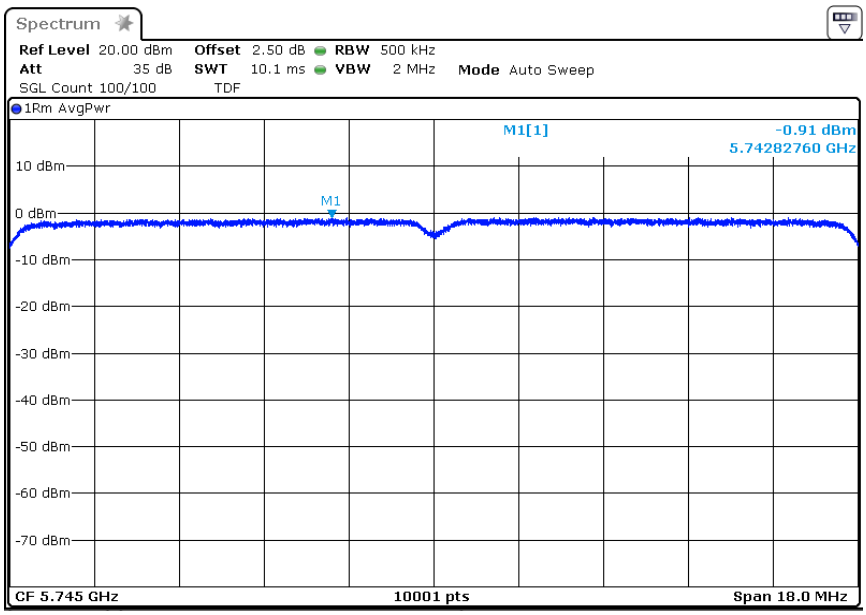
-5 700 ㎒



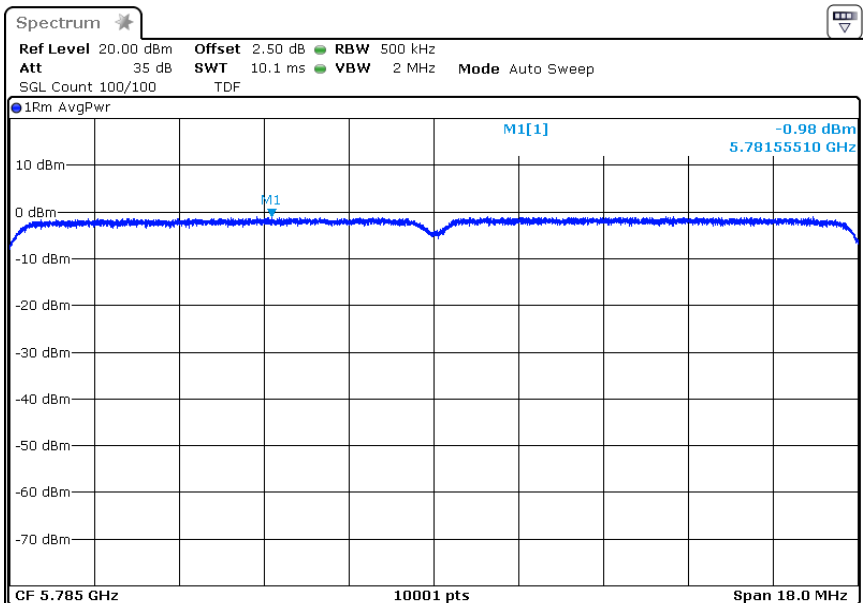
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT20_ 5 725 Band

-5 745 ㎒

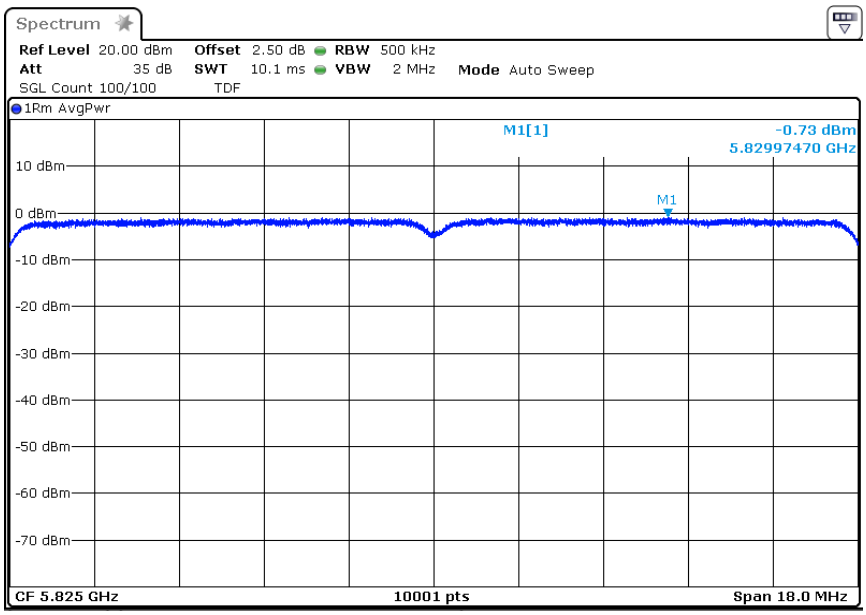


-5 785 ㎒



This test report shall not be reproduced except in full, Without the written approval.

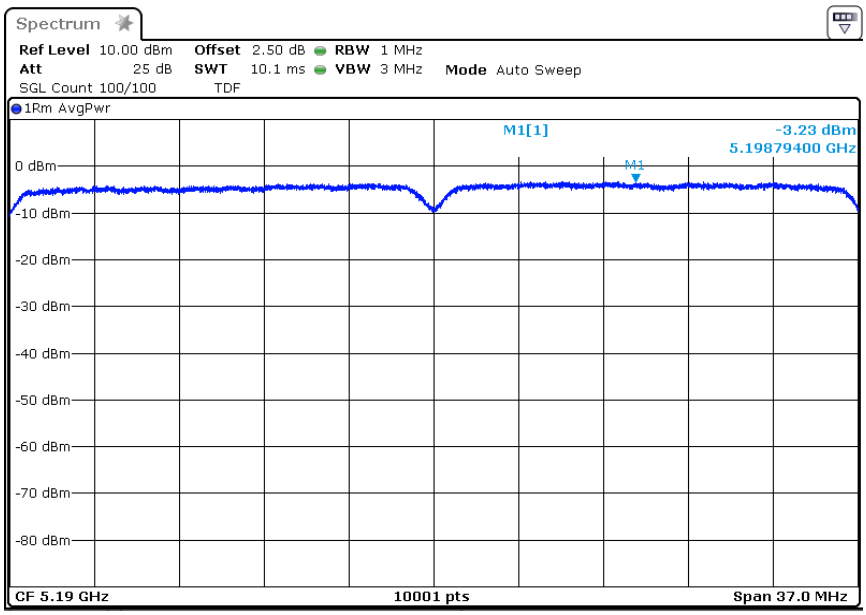
-5 825 MHz



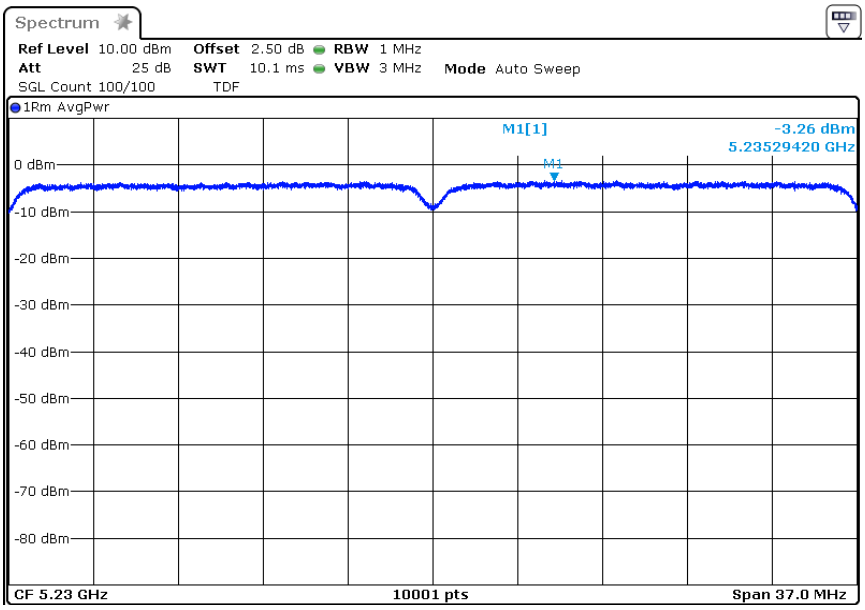
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT40_5 150 Band

-5 190 MHz



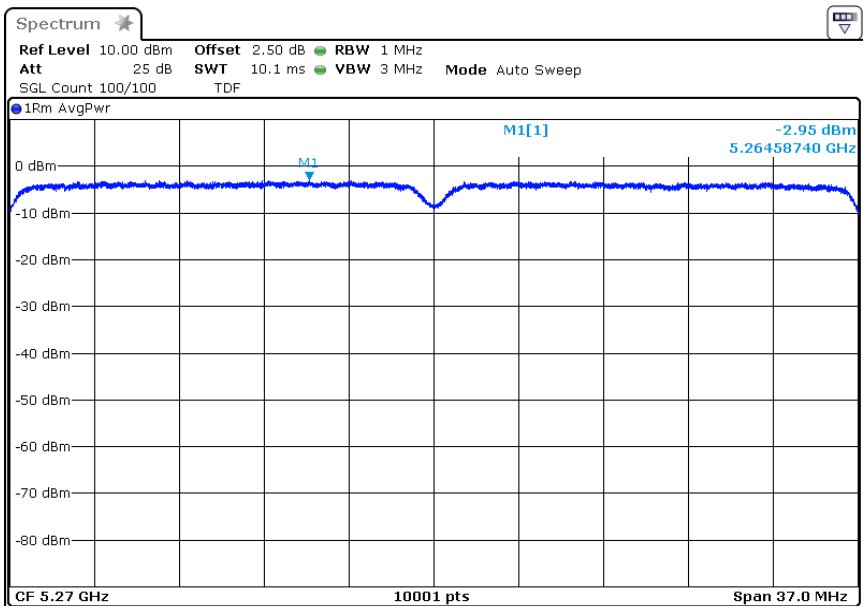
-5 230 MHz



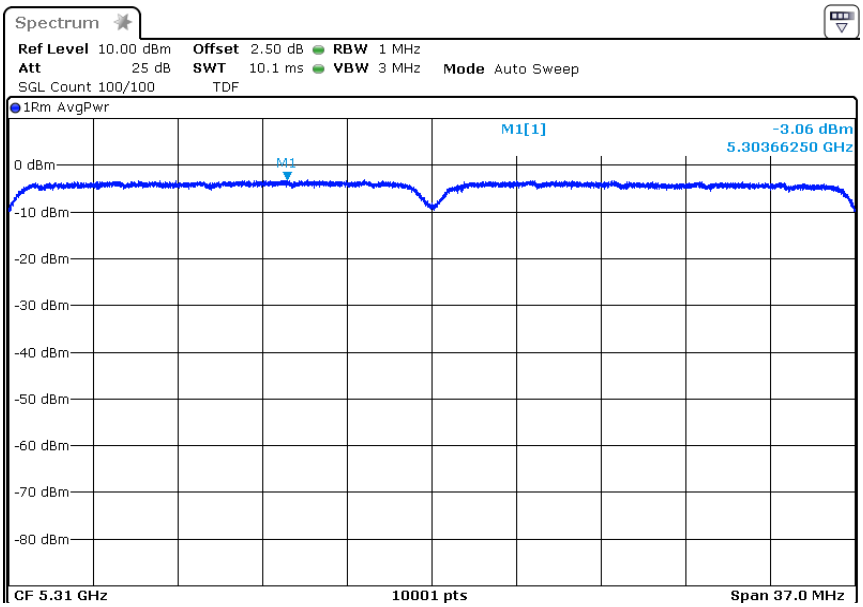
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT40_5 250 Band

-5 270 MHz



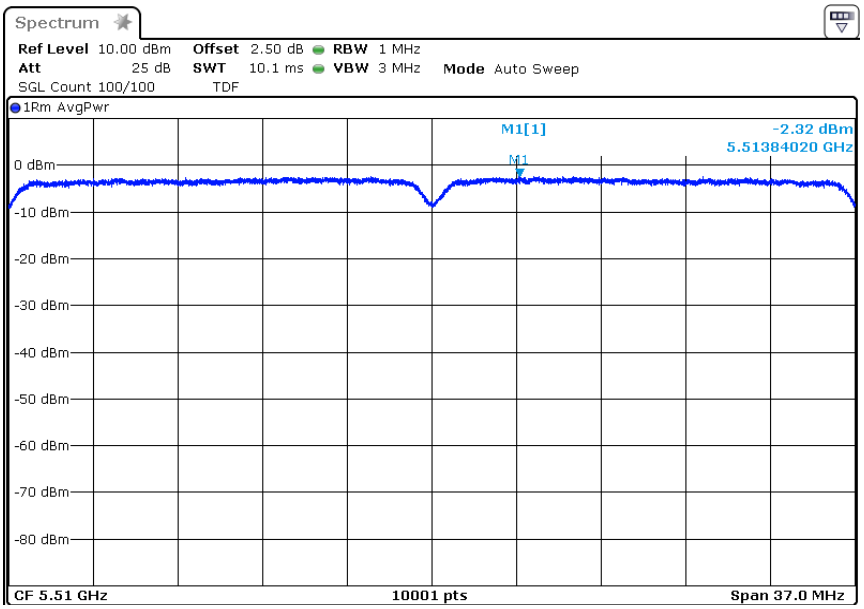
-5 310 MHz



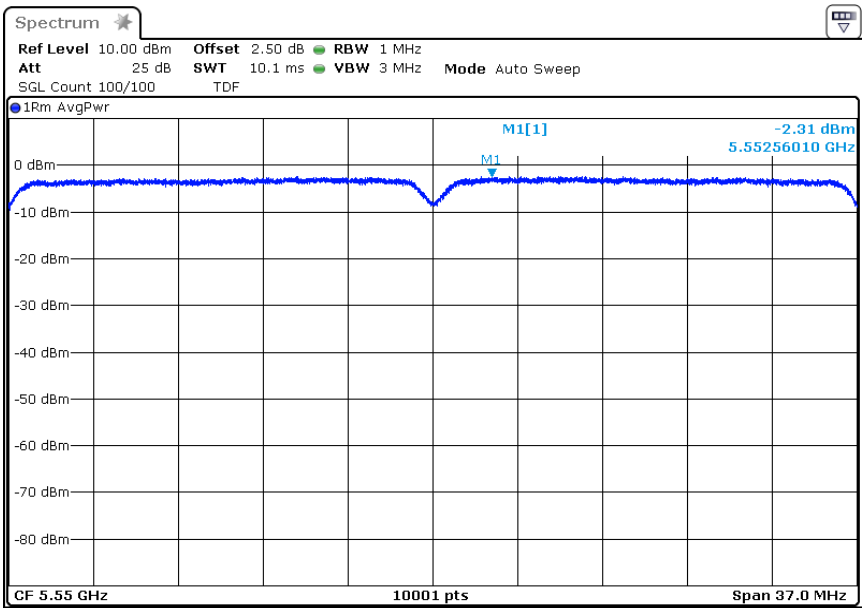
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT40_5 470 Band

-5 510 ㎒

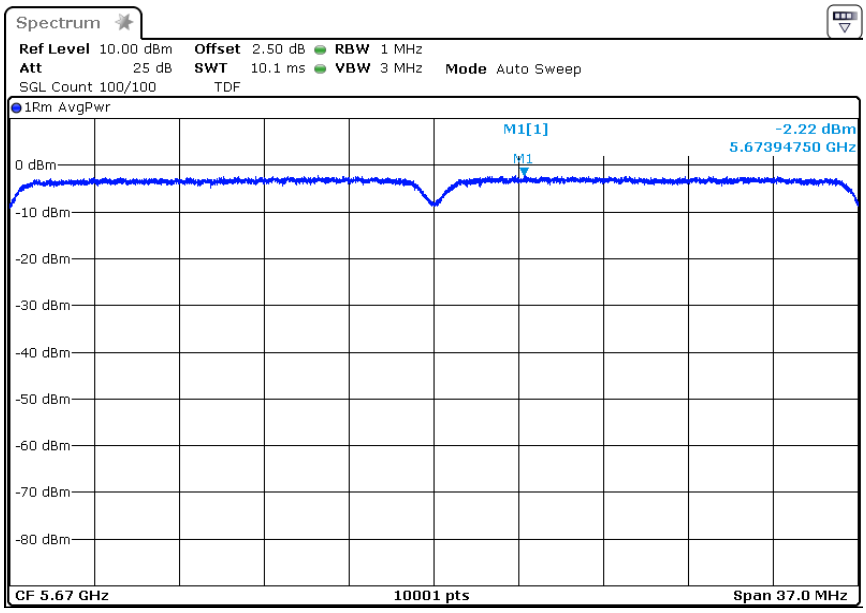


-5 550 ㎒



This test report shall not be reproduced except in full, Without the written approval.

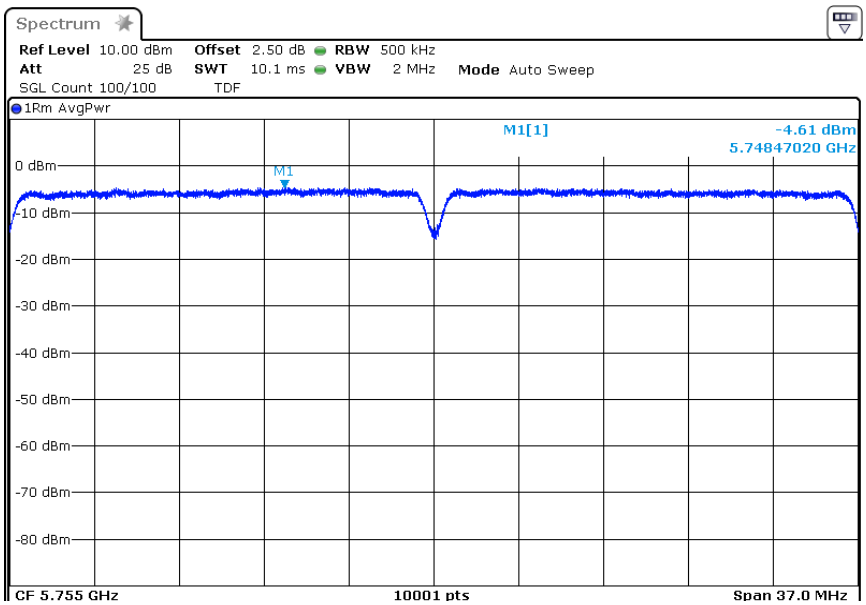
-5 670 MHz



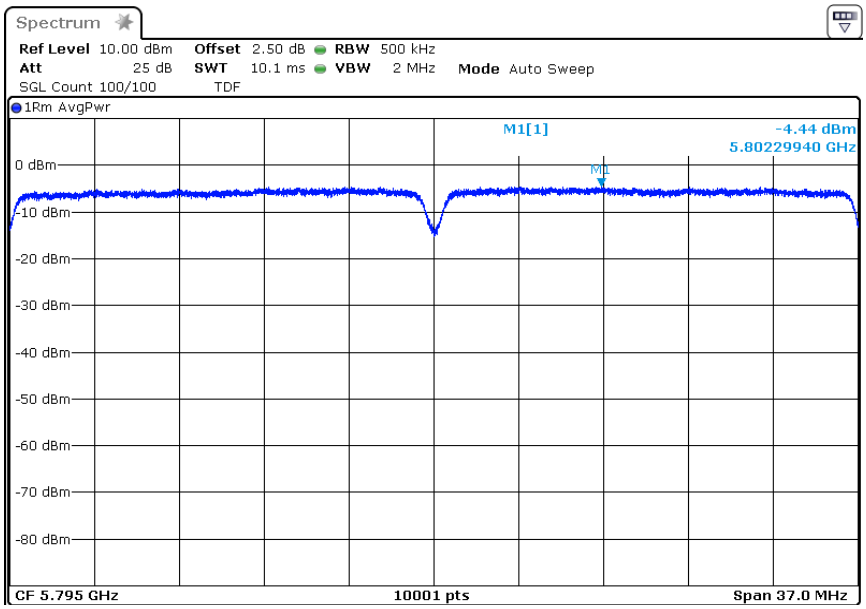
This test report shall not be reproduced except in full, Without the written approval.

* 802.11n HT40_5 725 Band

-5 755 ㎒



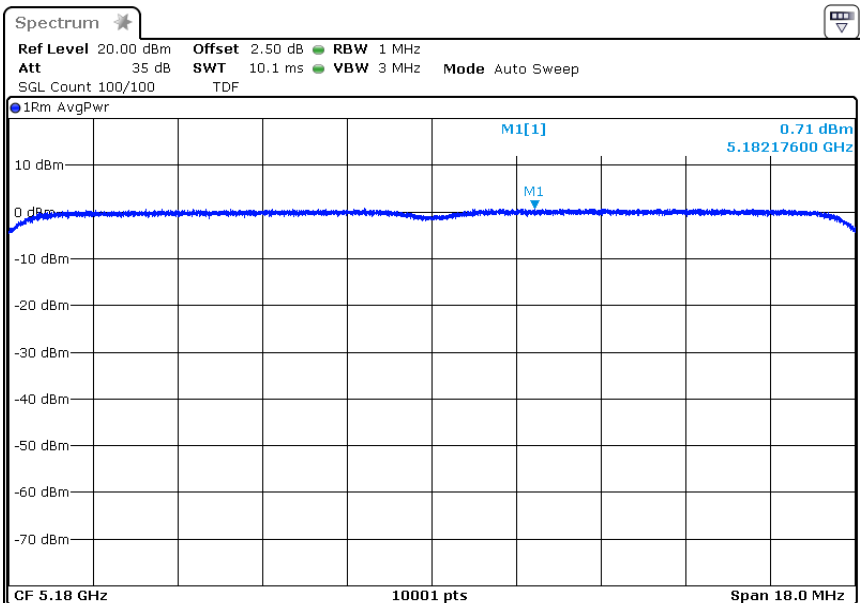
-5 795 ㎒



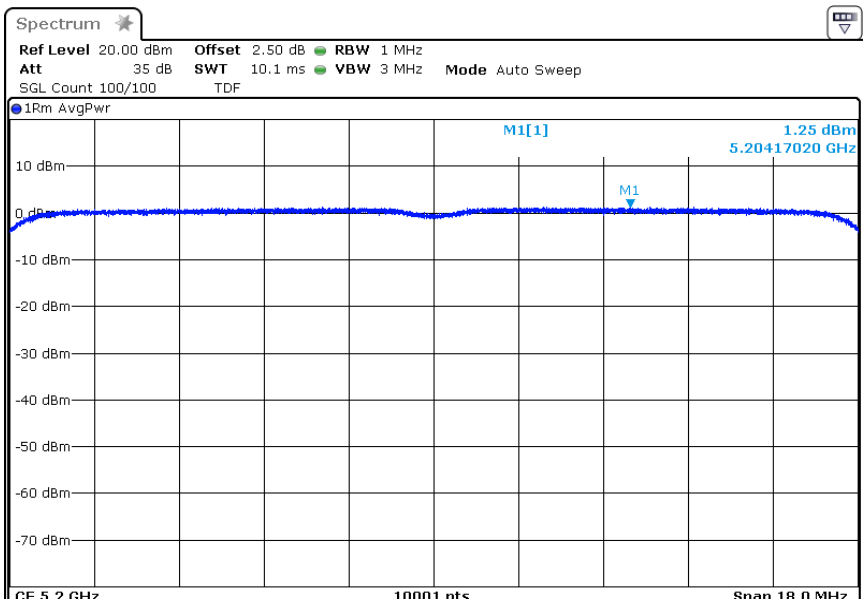
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT20 _5 150 Band

-5 180 MHz

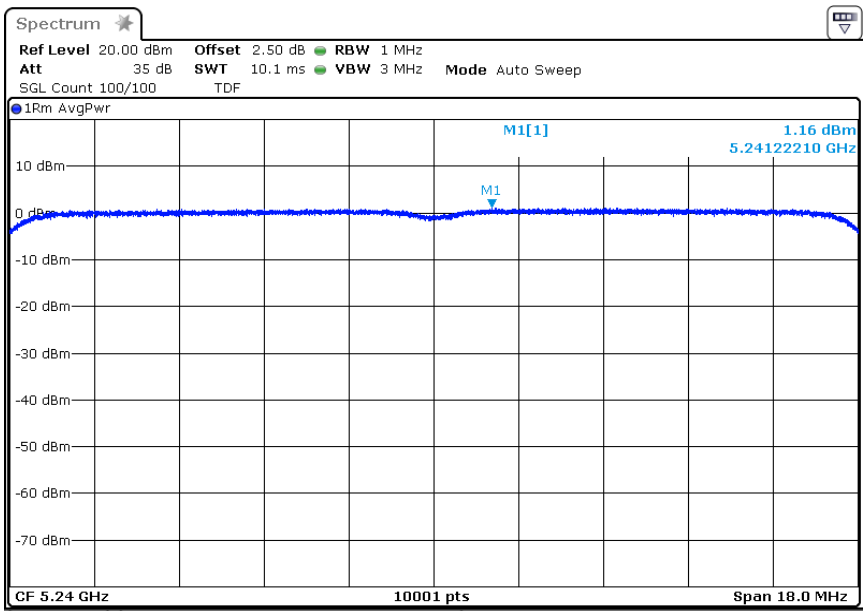


-5 200 MHz



This test report shall not be reproduced except in full, Without the written approval.

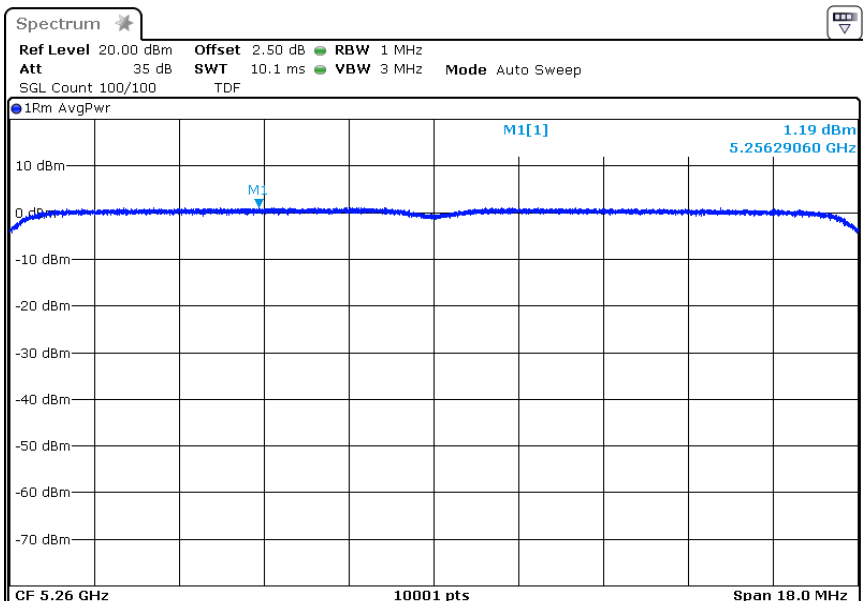
-5 240 ㎒



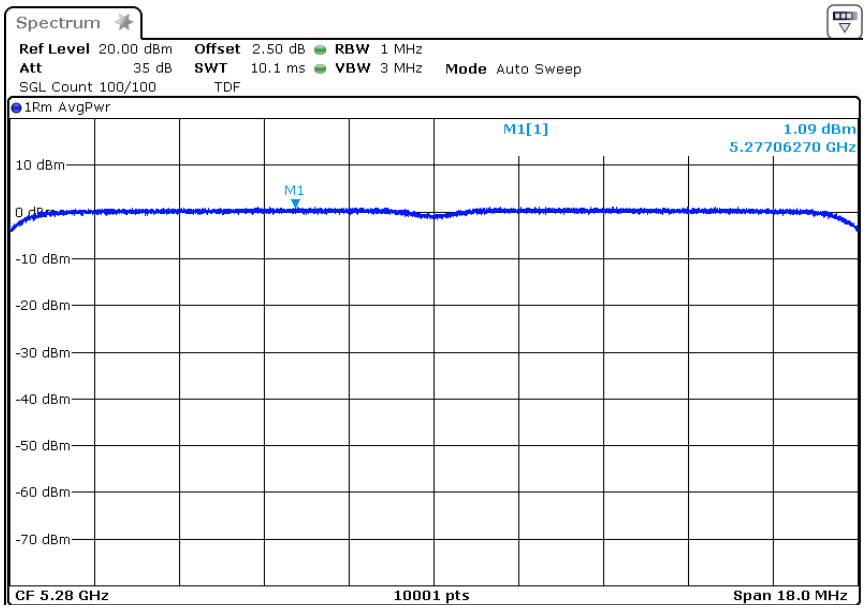
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT20_5 250 Band

-5 260 MHz

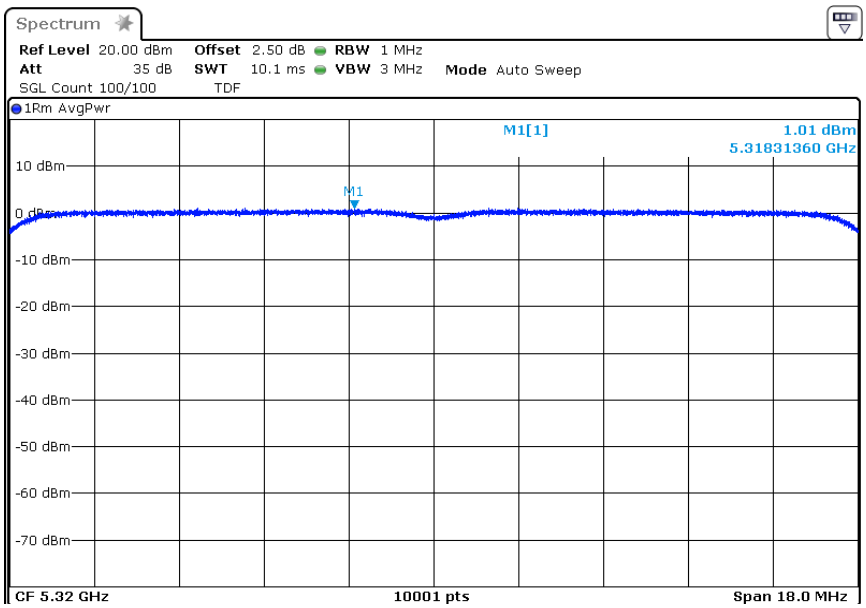


-5 280 MHz



This test report shall not be reproduced except in full, Without the written approval.

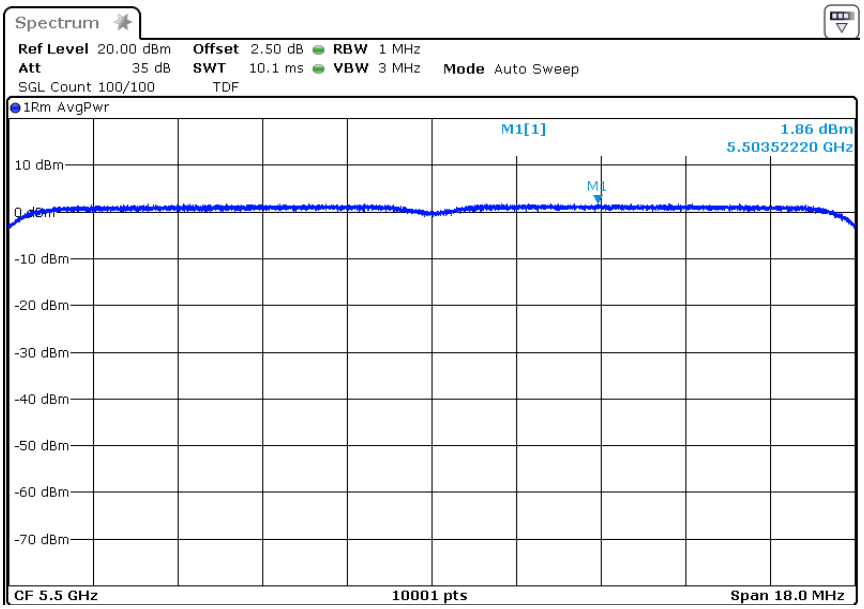
-5 320 MHz



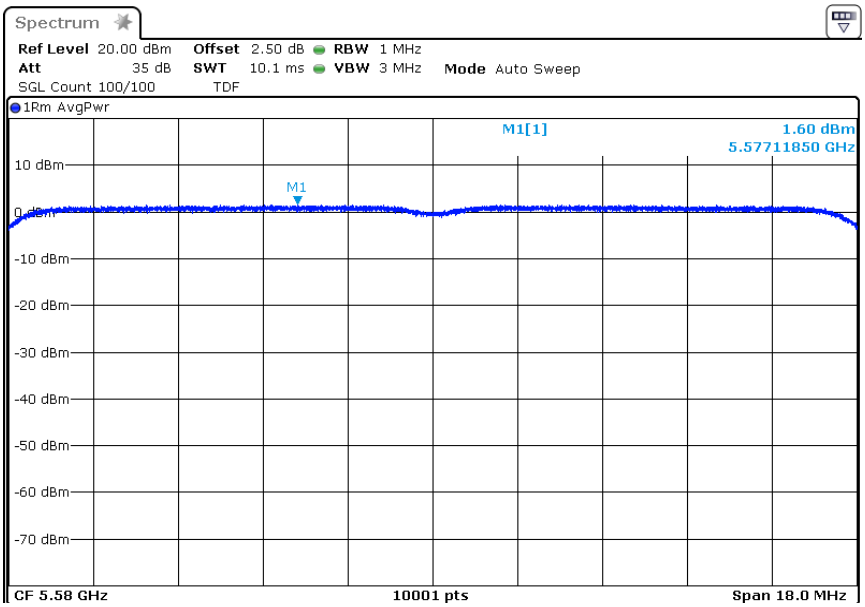
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT20_5 470 Band

-5 500 MHz

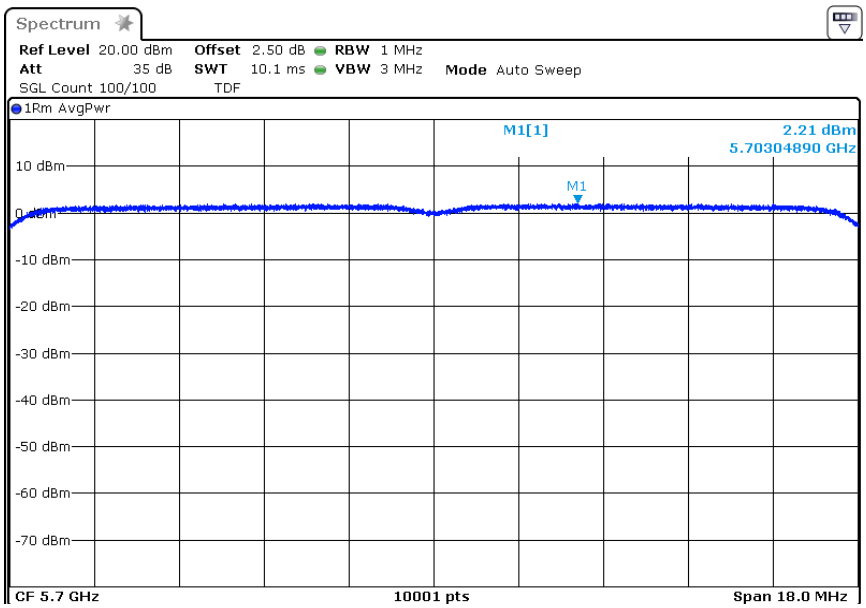


-5 580 MHz



This test report shall not be reproduced except in full, Without the written approval.

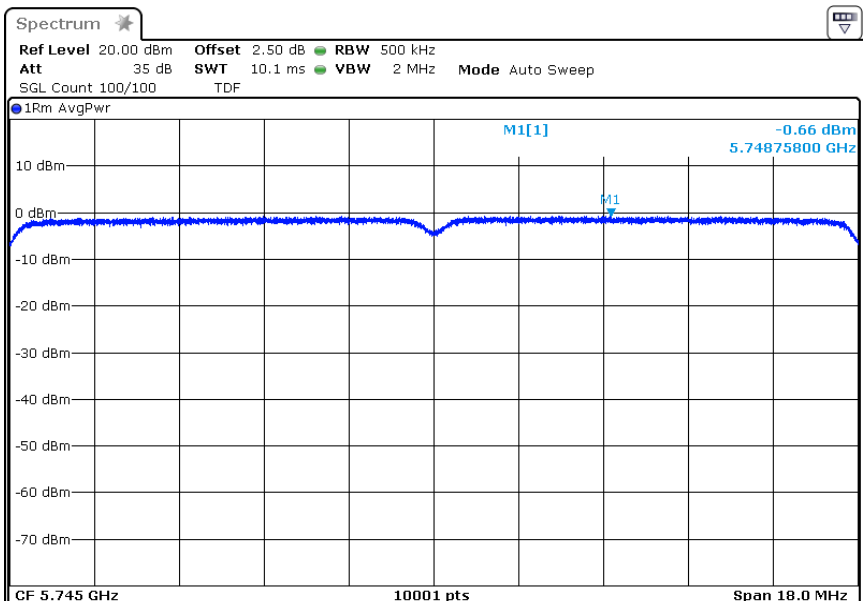
-5 700 ㎒



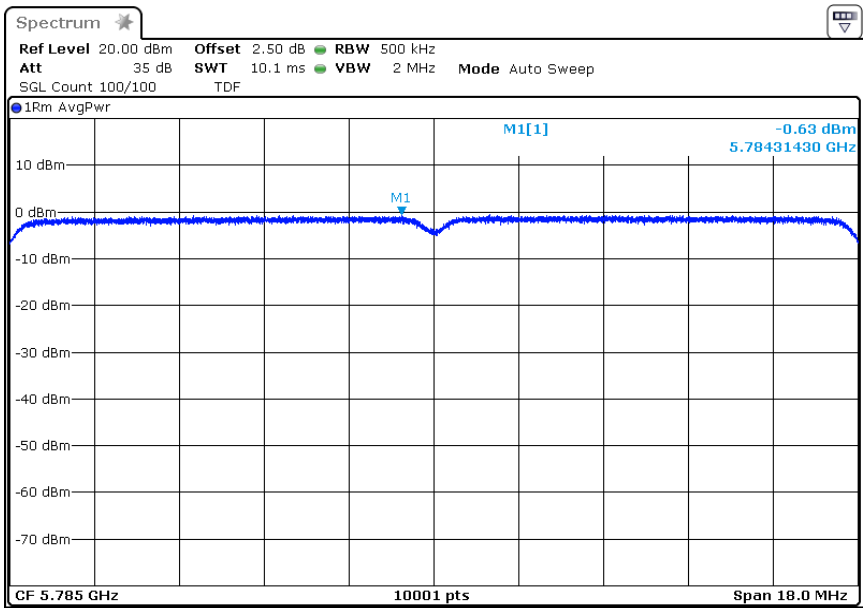
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT20_ 5 725 Band

-5 745 ㎒

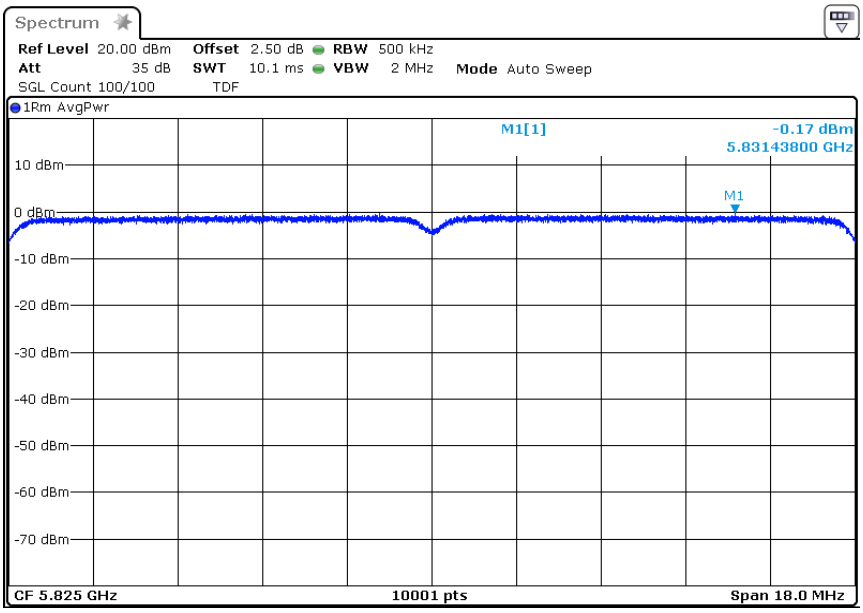


-5 785 ㎒



This test report shall not be reproduced except in full, Without the written approval.

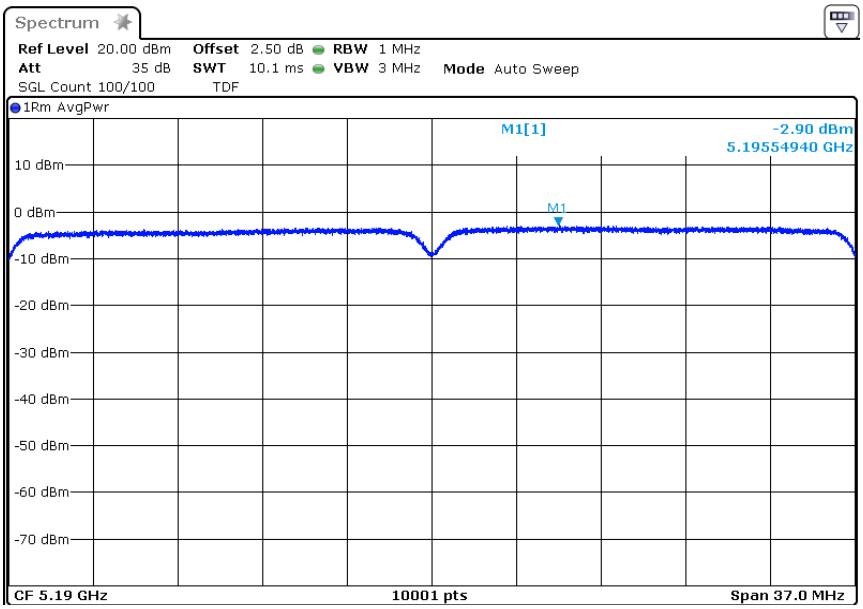
-5 825 MHz



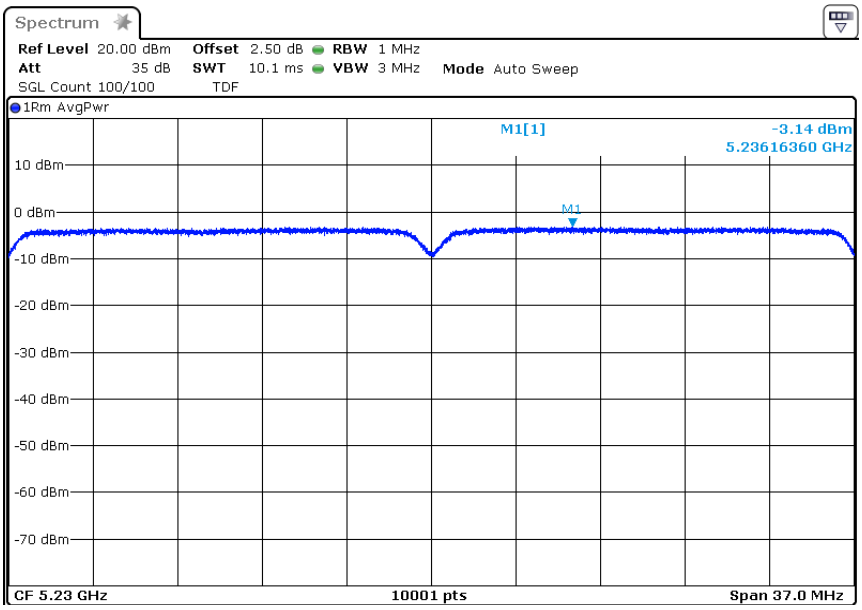
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_5 150 Band

-5 190 MHz



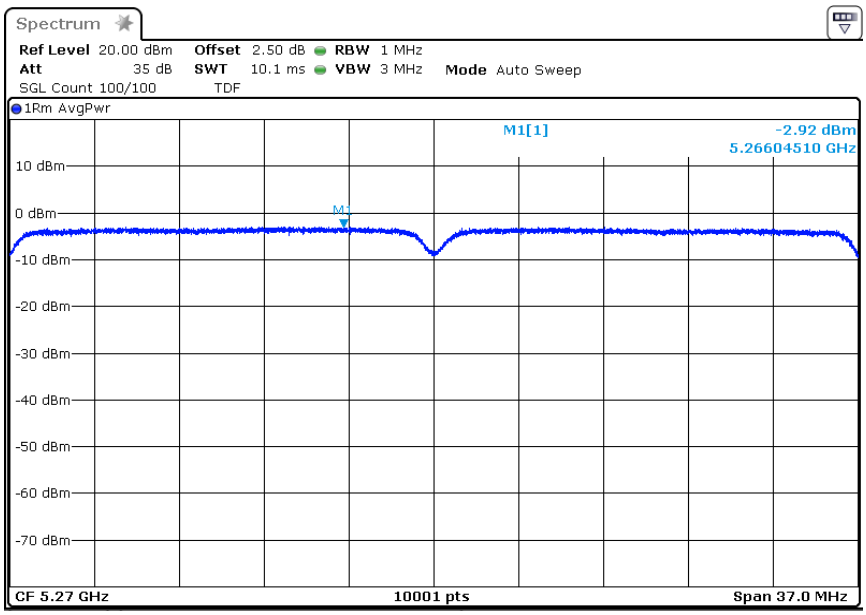
-5 230 MHz



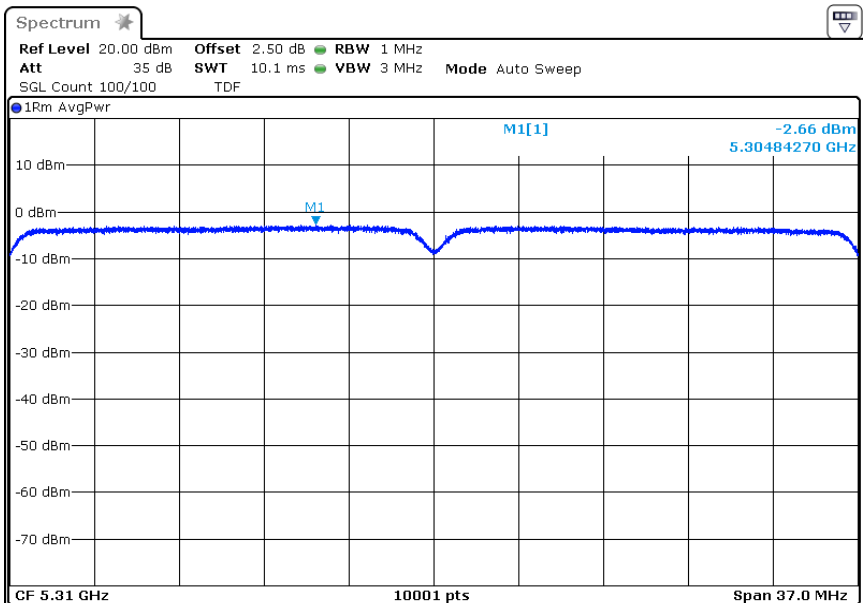
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_5 250 Band

-5 270 MHz



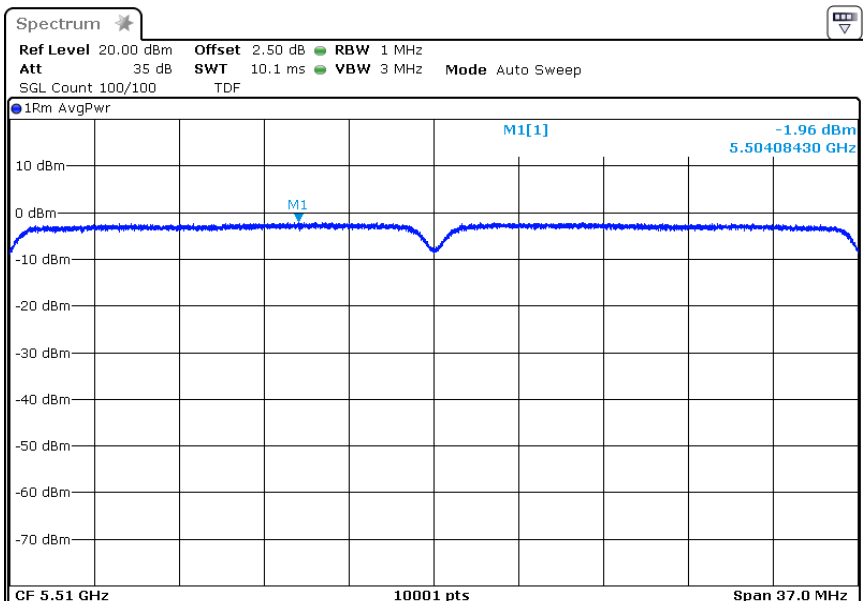
-5 310 MHz



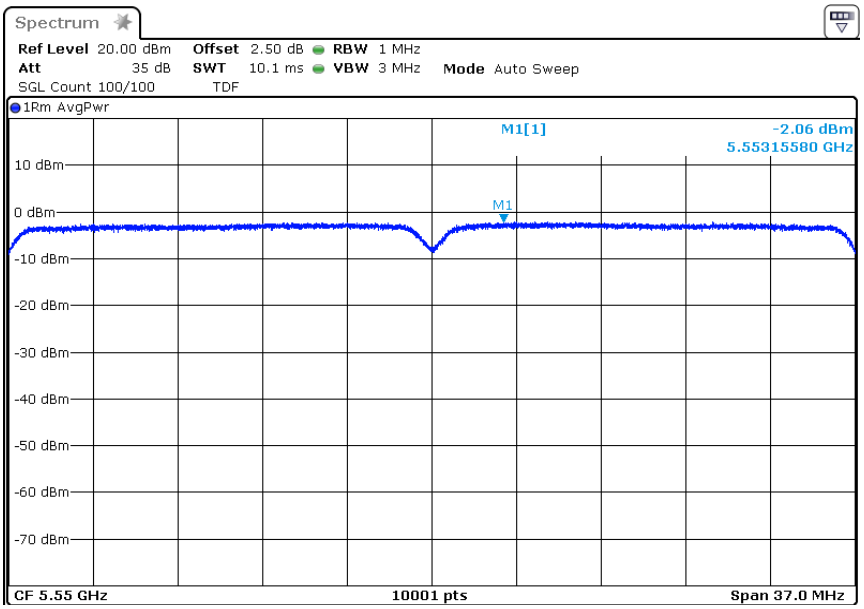
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_5 470 Band

-5 510 ㎒

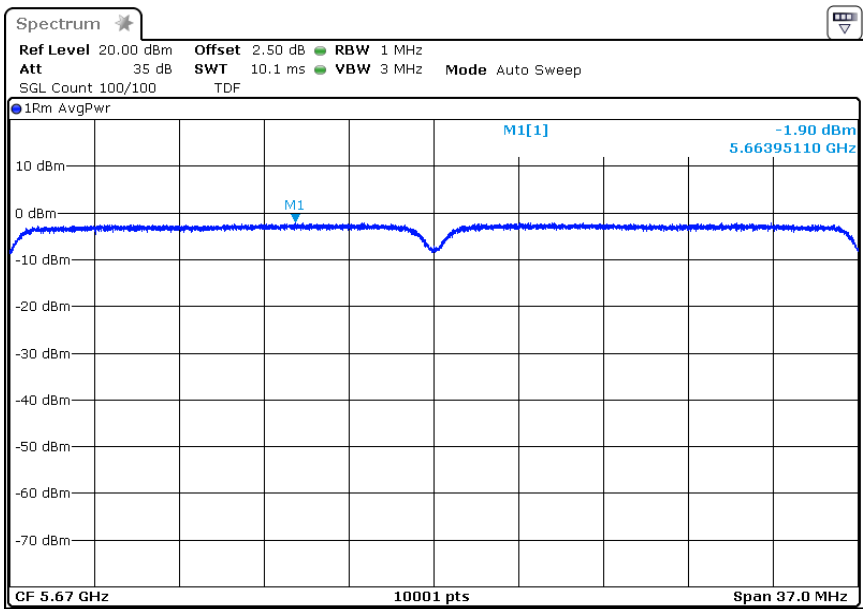


-5 550 ㎒



This test report shall not be reproduced except in full, Without the written approval.

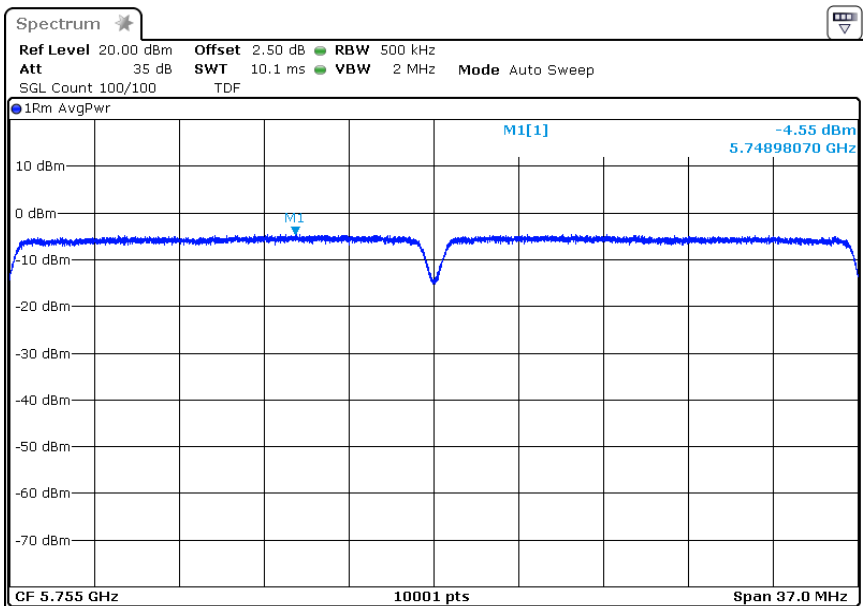
-5 670 MHz



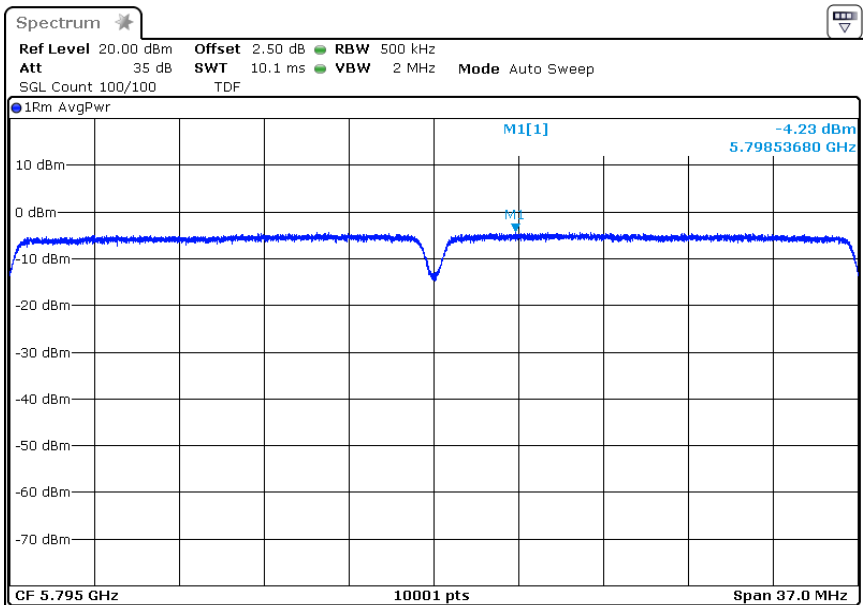
This test report shall not be reproduced except in full, Without the written approval.

* 802.11ac VHT40_5 725 Band

-5 755 MHz



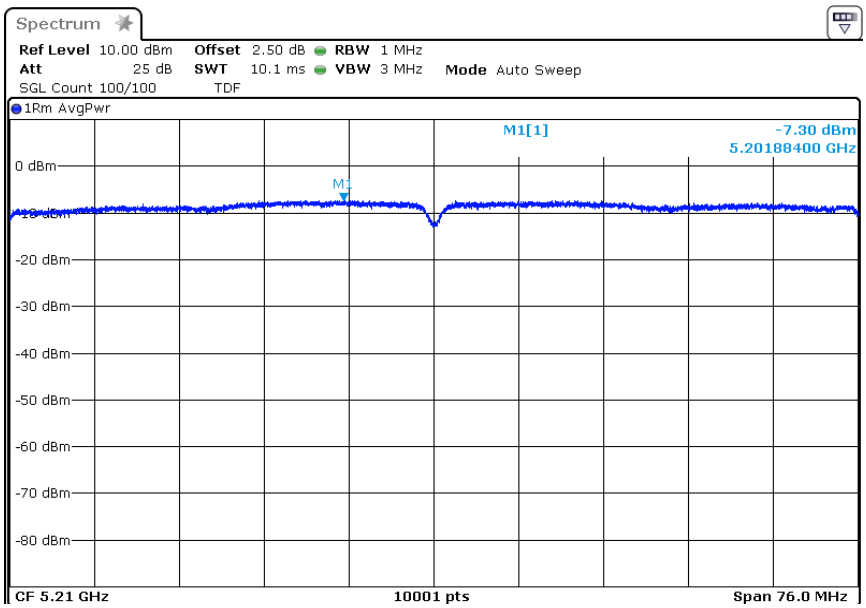
-5 795 MHz



This test report shall not be reproduced except in full, Without the written approval.

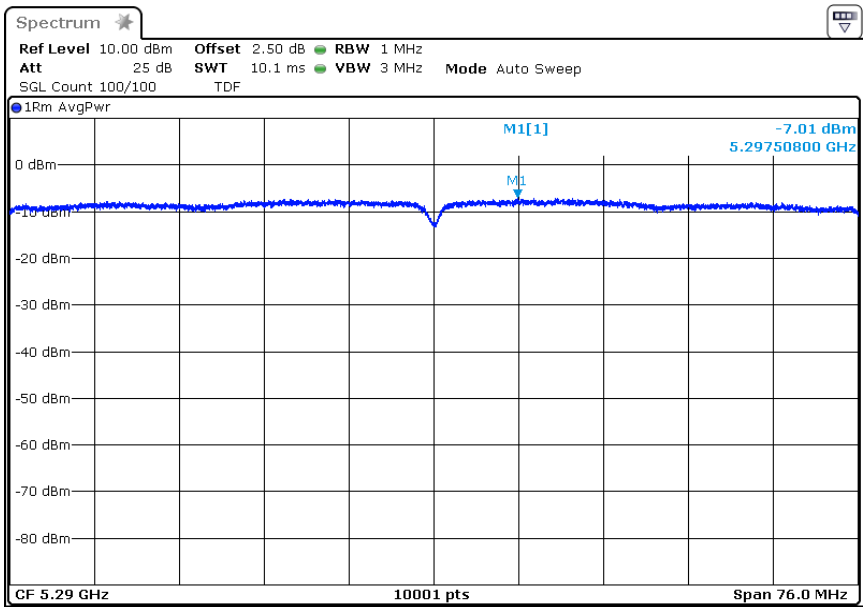
* 802.11ac VHT80_ 5 150 Band

-5 210 ㎒



* 802.11ac VHT80_ 5 250 Band

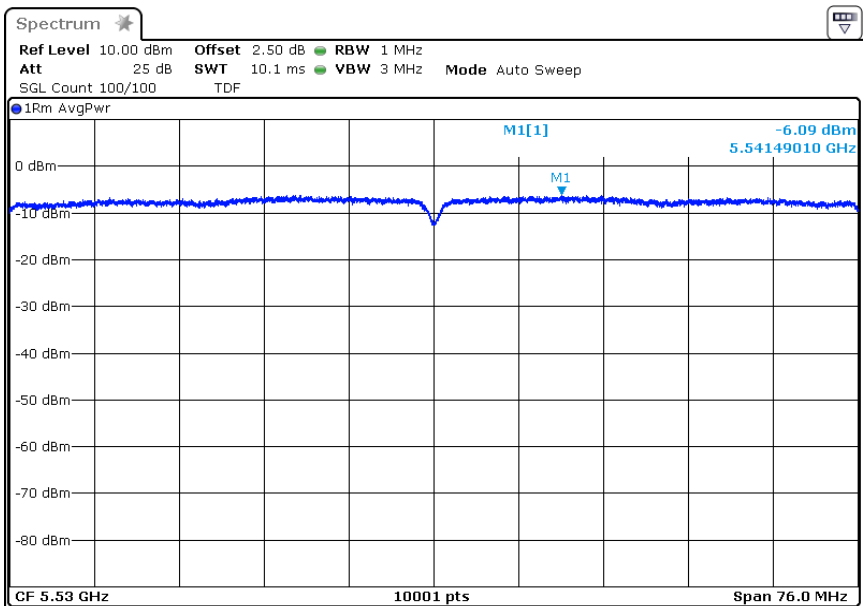
-5 290 ㎒



This test report shall not be reproduced except in full, Without the written approval.

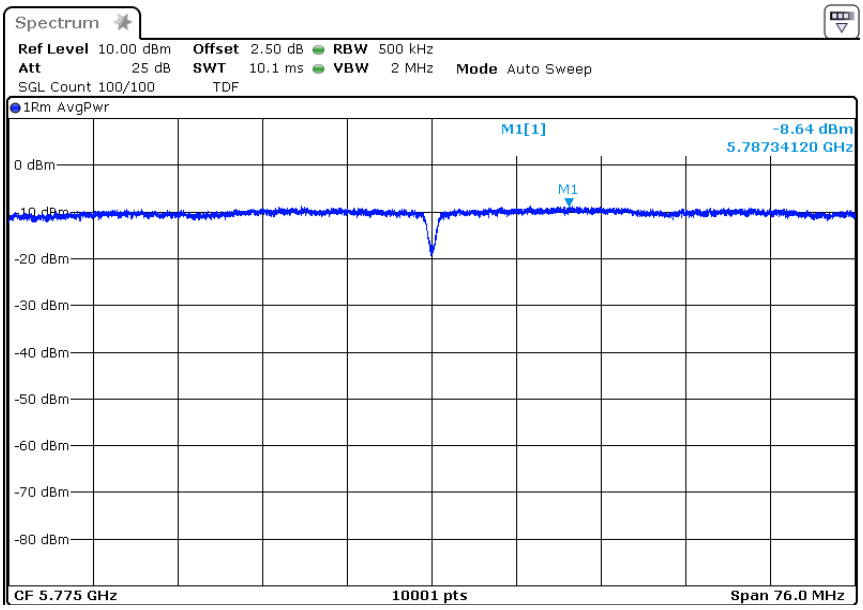
* 802.11ac VHT80_ 5 470 Band

-5 210 ㎒



* 802.11ac VHT80_ 5 725 Band

-5 290 ㎒



This test report shall not be reproduced except in full, Without the written approval.

5.6 Spurious Emission, Band Edge And Restricted Bands

5.6.1 Regulation

According to §15.407(b)(1) For transmitters operating in the 5.15–5.25 ㎓ band: all emissions outside of the 5.15–5.35 ㎓ band shall not exceed an EIRP of -27 dBm/㎒.

According to §15.407(b) (2) For transmitters operating in the 5.25-5.35 ㎓band: All emissions outside of the 5.15-5.35 ㎓band shall not exceed an e.i.r.p. of −27 dBm/㎒.

According to §15.407(b) For transmitters operating in the 5.47-5.725 ㎓band: All emissions outside of the 5.47-5.725 ㎓band shall not exceed an e.i.r.p. of −27 dBm/㎒.

According to §15.407(b) (4) For transmitters operating in the 5.725-5.85 ㎓ band: All emissions within the frequency range from the band edge to 10 ㎒ above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/㎒; for frequencies 10 ㎒ or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/㎒.

According to §15.407(b)(6) Unwanted emissions below 1 ㎓ must comply with the general field strength limits set forth in §15.209.

According to §15.209(a), Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall notexceed the field strength levels specified in the following table:

Frequency (㎒)	Field strength (μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(㎑)	300
0.490 -1.705	24000/F(㎑)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

** The emission limits shown in the above table are based on measurement instrumentation employing a CISPR quasi-peak detector and above 1000 ㎒ are based on the average value of measured emissions.

According to §15.407(b)(7) The provisions of §15.205 apply to intentional radiators operating under this section.
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.6.2 Measurement Procedure

These test measurement settings are specified in section G of 789033 D02 General UNII Test Procedures New Rules v01.
For all radiated emissions tests, measurements must correspond to the direction of maximum emission level for each measured emission (see ANSI C63.10 for guidance).

5.6.2.1 Unwanted Emissions in the Restricted Bands & Outside of the Restricted Bands

(1) For all measurements, follow the requirements in section II.G.3., "General Requirements for Unwanted Emissions Measurements".
(2) At frequencies below 1000 ㎒, use the procedure described in section II.G.4., "Procedure for Unwanted Emissions Measurements Below 1000 ㎒".
(3) At frequencies above 1000 ㎒, measurements performed using the peak and average measurement procedures described in sections II.G.5. and II.G.6, respectively, must satisfy the respective peak and average limits. If all peak measurements satisfy the average limit, then average measurements are not required.

(4) Unwanted Emissions that fall Outside of the Restricted Bands
As specified in § 15.407(b), emissions above 1000 ㎒ that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/㎒ (or -17 dBm/㎒ as specified in § 15.407(b)(4)).
However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/㎒ or -17 dBm/㎒ maximum emission limit.

a) If radiated measurements are performed, field strength is then converted to EIRP as follows:
(i) EIRP = ((E*d)^2) / 30
where: • E is the field strength in V/m; • d is the measurement distance in meters;
• EIRP is the equivalent isotropically radiated power in watts.
(ii) Working in dB units, the above equation is equivalent to:
EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
(iii) Or, if d is 3 meters:
EIRP[dBm] = E[dBμV/m] - 95.2

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.6.2.2 Spurious Radiated Emissions:

1. The preliminary and final rdiated measurements were performed to determine the frequency producing the maximum emissions in at a 10m anechoic chamber. The EUT was tested at a distance 3 meters.
2. The EUT was placed on the top of the 0.8-meter height, 1 × 1.5 meter non-metallic table. To find the maximum emission levels, the height of a measuring antenna was changed and the turntable was rotated 360˚.
3. The antenna polarization was also changed from vertical to horizontal. The spectrum was scanned from 9 ㎑ to 30 ㎒ using the loop antenna, and from 30 to 1000 ㎒ using the TRILOG broadband antenna, and from 1 000 ㎒ to 40 000 ㎒ using the horn antenna.
4. Each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.

Note

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 ㎑ for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1 ㎓.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 ㎒ for Peak detection and frequency above 1 ㎓.
   The resolution bandwidth of test receiver/spectrum analyzer is 1 ㎒ and the video bandwidth is 1 ㎑(≥1/T) for Average detection (AV) at frequency above 1 ㎓. (where T = pulse width)

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.6.3 Test Result

-complied

1. Band-edge & Conducted Spurious Emissions was shown in figure 3.
   Note: We took the insertion loss of the cable into consideration within the measuring instrument.
2. Measured value of the Field strength of spurious Emissions (Radiated)

*** Below 1 ㎓ data (Worst-case: 5 150 Band_Middle channel)**

802.11a

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Quasi-Peak DATA. Emissions below 30 ㎒ (3m Distance)							
below 30.00	**Not Detected**	-	-	-	-	-	-
Quasi-Peak DATA. Emissions below 1 ㎓							
45.72	120	V	47.6	-13.2	34.4	40.0	5.6
60.12	120	V	47.8	-14.5	33.3	40.0	6.7
191.29	120	H	49.7	-15.1	34.6	43.5	8.9
249.97	120	H	54.8	-13.0	41.8	46.0	4.2
374.89	120	H	52.0	-9.5	42.5	46.0	3.5
499.94	120	H	45.2	-7.2	38.0	46.0	8.0
624.99	120	V	35.3	-4.5	30.8	46.0	15.2
750.03	120	H	39.7	-3.1	36.6	46.0	9.4
874.96	120	H	40.6	-0.2	40.4	46.0	5.6
Above 900.00	Not Detected	-	-	-	-	-	-

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*** Above 1 ㎓ data_5 150 Band**

802.11a (5 180 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 044.56	1 000	V	42.1	8.6	50.7	74.0	23.3
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 044.56	1 000	V	34.4	8.6	43.0	54.0	11.0
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11a (5 200 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 240 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT20 (5 180 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 145.63	1 000	H	42.8	8.7	51.5	74.0	22.5
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 145.63	1 000	H	30.9	8.7	39.6	54.0	14.4
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11n HT20 (5 200 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT20 (5 240 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT40 (5 190 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 146.31	1 000	H	49.8	8.7	58.5	74.0	15.5
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 146.31	1 000	H	33.2	8.7	41.9	54.0	12.1
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11n HT40 (5 230 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11ac VHT20 (5 180 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 142.19	1 000	H	44.6	8.7	53.3	74.0	20.7
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 142.19	1 000	H	31.1	8.7	39.8	54.0	14.2
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT20 (5 200 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11ac VHT20 (5 240 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11ac VHT40 (5 190 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 144.94	1 000	H	52.0	8.7	60.7	74.0	13.3
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 144.94	1 000	H	33.4	8.7	42.1	54.0	11.9
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT40 (5 230 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11ac VHT80 (5 210 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 146.31	1 000	H	48.6	8.7	57.3	74.0	16.7
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 146.31	1 000	H	33.0	8.7	41.7	54.0	12.3
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*** Above 1 ㎓ data_5 250 Band**

802.11a (5 260 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 280 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 320 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 355.31	1 000	H	41.1	9.1	50.2	74.0	23.8
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 355.31	1 000	H	32.7	9.1	41.8	54.0	12.2
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT20 (5 260 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT20 (5 280 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT20 (5 320 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	43.1	9.0	52.1	74.0	21.9
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	25.7	9.0	34.7	54.0	19.3
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT40 (5 270 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT40 (5 310 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	48.6	9.0	57.6	74.0	16.4
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	31.3	9.0	40.3	54.0	13.7
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11ac VHT20 (5 260 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This test report shall not be reproduced except in full, Without the written approval.

802.11n HT20 (5 280 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT20 (5 320 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	42.7	9.0	51.7	74.0	22.3
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	26.0	9.0	35.0	54.0	19.0
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11ac VHT40 (5 270 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
Above 6 000.00	Not Detected	-	-	-	-	-	-

This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT40 (5 310 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	48.5	9.0	57.5	74.0	16.5
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	29.1	9.0	38.1	54.0	15.9
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11ac VHT80 (5 290 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	45.5	9.0	54.5	74.0	19.5
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	33.3	9.0	42.3	54.0	11.7
Above 6 000.00	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*** Above 1 ㎓ data_5 470 Band**

802.11a (5 500 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 467.38	1 000	V	41.5	9.3	50.8	68.2	17.4
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11a (5 580 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 700 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 725.88	1 000	V	42.0	10.2	52.2	68.2	16.0
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT20 (5 500 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 463.25	1 000	H	40.7	9.3	50.0	68.2	18.2
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11n HT20 (5 580 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT20 (5 700 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 725.88	1 000	H	44.5	10.2	54.7	68.2	13.5
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT40 (5 510 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 468.06	1 000	H	48.1	9.3	57.4	68.2	10.8
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11n HT40 (5 550 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT40 (5 670 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 735.50	1 000	V	42.2	10.2	52.4	68.2	15.8
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT20 (5 500 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 468.75	1 000	H	41.1	9.3	50.4	68.2	17.8
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11ac VHT20 (5 580 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11ac VHT20 (5 700 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 725.19	1 000	H	47.7	10.2	57.9	68.2	10.3
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT40 (5 510 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11ac VHT40 (5 550 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11ac VHT40 (5 670 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 727.94	1 000	H	41.3	10.2	51.5	68.2	16.7
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT80 (5 530 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 461.19	1 000	H	43.2	9.3	52.5	68.2	15.7
#5 736.88	1 000	H	41.1	10.2	51.3	68.2	16.9
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

*** Above 1 ㎓ data_5 725 Band**

802.11a (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 724.50	1 000	V	49.1	10.2	59.3	78.2	18.9
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11a (5 785 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 825 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 851.69	1 000	V	41.3	10.7	52.0	78.2	26.2
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT20 (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 721.75	1 000	H	49.7	10.2	59.9	78.2	18.3
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11n HT20 (5 785 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11n HT20 (5 825 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(㎶)]	Factor [dB]	Result [dB(㎶/m)]	Limit [dB(㎶/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 850.31	1 000	H	44.6	10.7	55.3	78.2	22.9
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11n HT40 (5 755 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 716.94	1 000	V	47.0	10.1	57.1	78.2	21.1
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11n HT40 (5 795 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 853.75	1 000	H	40.4	10.7	51.1	78.2	27.1
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11ac VHT20 (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 723.81	1 000	H	55.1	10.2	65.3	78.2	12.9
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT20 (5 785 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11ac VHT20 (5 825 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 853.06	1 000	H	43.4	10.7	54.1	78.2	24.1
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11ac VHT40 (5 755 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 722.44	1 000	H	47.3	10.2	57.5	78.2	20.7
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

802.11ac VHT40 (5 795 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 851.00	1 000	H	39.8	10.7	50.5	74.0	27.7
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11ac VHT80 (5 775 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 718.31	1 000	V	45.1	10.1	55.2	78.2	23.0
#5 852.38	1 000	V	40.7	10.7	51.4	78.2	26.8
Above 6 000.00	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.7 Frequency Stability

5.7.1 Regulation

According to §15.407 (g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

5.7.2 Measurement Procedure

The frequency stability of the carrier frequency of the intentional radiator shall be maintained all conditions of normal operation as specified in the users manual. The frequency stability shall be maintained over a temperature variation of specified in the users manual at normal supply voltage, and over a variation in the primary supply voltage of specified in the users manual of the rated supply voltage at a temperature of 20 °C. For equipment that is capable only of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.

1. The EUT was placed inside the environmental test chamber.
2. The temperature was incremented by 10 °C intervals from lowest temperature.
3. Each increase step of temperature measured the frequency.
4. The test temperature was set 20°C and the supply voltage was then adjusted on the EUT from 85 % to 115% and the frequency record.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.7.3 Test Result

-complied

-5 180 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 179 996 570	3 430	0.000 1
100		-20	5 180 051 565	-51 565	-0.001 0
100		-10	5 180 061 047	-61 047	-0.001 2
100		0	5 180 042 482	-42 482	-0.000 8
100		10	5 180 069 845	-69 845	-0.001 3
100		30	5 180 064 818	-64 818	-0.001 3
100		40	5 180 087 042	-87 042	-0.001 7
100		50	5 180 094 871	-94 871	-0.001 8
85	3.2	20	5 179 992 584	7 416	0.000 1
115	3.6	20	5 179 994 457	5 543	0.0 1

-5 200 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 200 009 004	-9 004	-0.000 2
100		-20	5 200 027 591	-27 591	-0.000 5
100		-10	5 200 085 908	-85 908	-0.001 7
100		0	5 200 006 197	-6 197	-0.000 1
100		10	5 200 085 038	-85 038	-0.001 6
100		30	5 200 006 440	-6 440	-0.000 1
100		40	5 200 088 804	-88 804	-0.001 7
100		50	5 200 085 141	-85 141	-0.001 6
85	3.2	20	5 200 053 373	-53 373	-0.001 0
115	3.6	20	5 200 052 645	-52 645	-0.001 0

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

-5 240 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 240 019 225	-19 225	-0.000 4
100		-20	5 239 990 383	9 617	0.000 2
100		-10	5 240 028 324	-28 324	-0.000 5
100		0	5 240 065 243	-65 243	-0.001 2
100		10	5 240 050 652	-50 652	-0.001 0
100		30	5 240 085 249	-85 249	-0.001 6
100		40	5 239 996 866	3 134	0.000 1
100		50	5 240 071 150	-71 150	-0.001 4
85	3.2	20	5 240 040 827	-40 827	-0.000 8
115	3.6	20	5 240 041 239	-41 239	-0.000 8

-5 190 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 190 023 249	-23 249	-0.000 4
100		-20	5 190 036 000	-36 000	-0.000 7
100		-10	5 189 992 909	7 091	0.000 1
100		0	5 190 061 351	-61 351	-0.001 2
100		10	5 190 024 206	-24 206	-0.000 5
100		30	5 190 069 991	-69 991	-0.001 3
100		40	5 190 004 176	-4 176	-0.000 1
100		50	5 190 048 664	-48 664	-0.000 9
85	3.2	20	5 190 061 423	-61 423	-0.001 2
115	3.6	20	5 190 059 264	-59 264	-0.001 1

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

-5 230 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 230 043 661	-43 661	-0.000 8
100		-20	5 230 086 097	-86 097	-0.001 6
100		-10	5 230 045 362	-45 362	-0.000 9
100		0	5 230 000 724	-724	0.000 0
100		10	5 230 032 442	-32 442	-0.000 6
100		30	5 230 013 255	-13 255	-0.000 3
100		40	5 230 030 572	-30 572	-0.000 6
100		50	5 229 999 074	926	0.000 0
85	3.2	20	5 230 027 190	-27 190	-0.000 5
115	3.6	20	5 230 035 554	-35 554	-0.000 7

-5 210 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 210 070 197	-70 197	-0.001 3
100		-20	5 210 015 697	-15 697	-0.000 3
100		-10	5 209 990 679	9 321	0.000 2
100		0	5 209 992 881	7 119	0.000 1
100		10	5 210 044 983	-44 983	-0.000 9
100		30	5 210 020 018	-20 018	-0.000 4
100		40	5 210 034 504	-34 504	-0.000 7
100		50	5 210 069 159	-69 159	-0.001 3
85	3.2	20	5 210 060 272	-60 272	-0.001 2
115	3.6	20	5 210 055 094	-55 094	-0.001 1

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

-5 260 ㎒

Voltage (%)	Power (V_{DC})	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100	3.3	20	5 260 006 975	-6 975	-0.000 1
100		-20	5 260 079 477	-79 477	-0.001 5
100		-10	5 260 037 733	-37 733	-0.000 7
100		0	5 260 037 724	-37 724	-0.000 7
100		10	5 260 083 276	-83 276	-0.001 6
100		30	5 259 998 774	1 226	0.000 0
100		40	5 260 083 476	-83 476	-0.001 6
100		50	5 260 085 716	-85 716	-0.001 6
85	3.2	20	5 259 992 653	7 347	0.000 1
115	3.6	20	5 260 011 367	-11 367	-0.000 2

-5 280 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100	3.3	20	5 280 058 476	-58 476	-0.001 1
100		-20	5 280 018 944	-18 944	-0.000 4
100		-10	5 280 006 508	-6 508	-0.000 1
100		0	5 280 066 071	-66 071	-0.001 3
100		10	5 279 999 507	493	0.000 0
100		30	5 279 995 206	4 794	0.000 1
100		40	5 280 080 715	-80 715	-0.001 5
100		50	5 280 002 214	-2 214	0.000 0
85	3.2	20	5 280 071 101	-71 101	-0.001 3
115	3.6	20	5 280 046 900	-46 900	-0.000 9

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 320 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 320 057 080	-57 080	-0.001 1
100		-20	5 320 003 360	-3 360	-0.000 1
100		-10	5 320 035 766	-35 766	-0.000 7
100		0	5 320 036 322	-36 322	-0.000 7
100		10	5 320 024 806	-24 806	-0.000 5
100		30	5 320 051 187	-51 187	-0.001 0
100		40	5 320 042 554	-42 554	-0.000 8
100		50	5 320 043 185	-43 185	-0.000 8
85	3.2	20	5 320 047 759	-47 759	-0.000 9
115	3.6	20	5 320 044 944	-44 944	-0.000 9

- 5 270 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 270 024 832	-24 832	-0.000 5
100		-20	5 270 041 845	-41 845	-0.000 8
100		-10	5 270 081 570	-81 570	-0.001 5
100		0	5 269 991 182	8 818	0.000 2
100		10	5 270 046 551	-46 551	-0.000 9
100		30	5 269 993 442	6 558	0.000 1
100		40	5 270 067 835	-67 835	-0.001 3
100		50	5 270 009 677	-9 677	-0.000 2
85	3.2	20	5 270 021 371	-21 371	-0.000 4
115	3.6	20	5 270 024 415	-24 415	-0.000 5

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 310 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 310 037 969	-37 969	-0.000 7
100		-20	5 310 081 895	-81 895	-0.001 5
100		-10	5 310 087 521	-87 521	-0.001 6
100		0	5 310 041 064	-41 064	-0.000 8
100		10	5 309 992 412	7 588	0.000 1
100		30	5 310 016 483	-16 483	-0.000 3
100		40	5 310 075 202	-75 202	-0.001 4
100		50	5 310 053 389	-53389	-0.001 0
85	3.2	20	5 310 027 839	-27 839	-0.000 5
115	3.6	20	5 310 042 684	-42 684	-0.000 8

- 5 290 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 290 088 156	-88 156	-0.001 7
100		-20	5 290 050 903	-50 903	-0.001 0
100		-10	5 290 021 173	-21 173	-0.000 4
100		0	5 290 055 008	-55 008	-0.001 0
100		10	5 290 065 284	-65 284	-0.001 2
100		30	5 290 089 458	-89 458	-0.001 7
100		40	5 289 992 144	7 856	0.000 1
100		50	5 290 013 858	-13 858	-0.000 3
85	3.2	20	5 290 069 127	-69 127	-0.001 3
115	3.6	20	5 290 063 455	-63 455	-0.001 2

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 500 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 500 022 687	-22 687	-0.000 4
100		-20	5 500 034 518	-34 518	-0.000 6
100		-10	5 500 069 711	-69 711	-0.001 3
100		0	5 500 087 755	-87 755	-0.001 6
100		10	5 500 071 279	-71 279	-0.001 3
100		30	5 500 089 855	-89 855	-0.001 6
100		40	5 500 006 435	-6 435	-0.000 1
100		50	5 500 087 217	-87 217	-0.001 6
85	3.2	20	5 500 011 519	-11 519	-0.000 2
115	3.6	20	5 500 008 674	-8 674	-0.000 2

- 5 580 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 580 069 957	-69 957	-0.001 3
100		-20	5 580 059 445	-59 445	-0.001 1
100		-10	5 580 085 191	-85 191	-0.001 5
100		0	5 580 014 942	-14 942	-0.000 3
100		10	5 580 036 921	-36 921	-0.000 7
100		30	5 580 020 189	-20 189	-0.000 4
100		40	5 580 086 777	-86 777	-0.001 6
100		50	5 580 026 884	-26 884	-0.000 5
85	3.2	20	5 580 064 034	-64 034	-0.001 1
115	3.6	20	5 580 073 698	-73 698	-0.001 3

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 700 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 700 010 919	-10 919	-0.000 2
100		-20	5 700 052 313	-52 313	-0.000 9
100		-10	5 700 013 031	-13 031	-0.000 2
100		0	5 700 048 873	-48 873	-0.000 9
100		10	5 700 067 369	-67 369	-0.001 2
100		30	5 700 028 288	-28 288	-0.000 5
100		40	5 700 079 254	-79 254	-0.001 4
100		50	5 700 016 296	-16 296	-0.000 3
85	3.2	20	5 700 024 146	-24 146	-0.000 4
115	3.6	20	5 700 013 721	-13 721	-0.000 2

- 5 510 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 510 056 178	-56 178	-0.001 0
100		-20	5 510 074 974	-74 974	-0.001 4
100		-10	5 510 086 167	-86 167	-0.001 6
100		0	5 510 016 836	-16 836	-0.000 3
100		10	5 510 017 633	-17 633	-0.000 3
100		30	5 510 017 681	-17 681	-0.000 3
100		40	5 510 014 437	-14 437	-0.000 3
100		50	5 510 023 122	-23 122	-0.000 4
85	3.2	20	5 510 058 769	-58 769	-0.001 1
115	3.6	20	5 510 066 602	-66 602	-0.001 2

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 550 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 550 004 743	-4 743	-0.000 1
100		-20	5 550 002 346	-2 346	0.000 0
100		-10	5 550 015 012	-15 012	-0.000 3
100		0	5 550 083 702	-83 702	-0.001 5
100		10	5 550 036 798	-36 798	-0.000 7
100		20	5 550 075 623	-75 623	-0.001 4
100		40	5 550 007 307	-7 307	-0.000 1
100		50	5 550 015 479	-15 479	-0.000 3
85	3.2	20	5 549 994 341	5 659	0.000 1
115	3.6	20	5 550 004 601	-4 601	-0.000 1

- 5 670 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 670 007 345	-7 345	-0.000 1
100		-20	5 670 071 215	-71 215	-0.001 3
100		-10	5 670 050 157	-50 157	-0.000 9
100		0	5 670 057 985	-57 985	-0.001 0
100		10	5 670 055 479	-55 479	-0.001 0
100		20	5 670 007 063	-7 063	-0.000 1
100		40	5 670 008 001	-8 001	-0.000 1
100		50	5 670 072 984	-72 984	-0.001 3
85	3.2	20	5 669 993 304	6 696	0.000 1
115	3.6	20	5 670 005 152	-5 152	-0.000 1

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 530 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 530 010 097	-10 097	-0.000 2
100		-20	5 529 998 254	1 746	0.000 0
100		-10	5 530 032 337	-32 337	-0.000 6
100		0	5 529 991 589	8 411	0.000 2
100		10	5 530 049 168	-49 168	-0.000 9
100		30	5 529 997 710	2 290	0.000 0
100		40	5 530 030 937	-30 937	-0.000 6
100		50	5 530 069 739	-69 739	-0.001 3
85	3.2	20	5 529 995 650	4 350	0.000 1
115	3.6	20	5 529 996 582	3 418	0.000 1

- 5 745 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 745 016 943	-16 943	-0.000 3
100		-20	5 745 034 779	-34 779	-0.000 6
100		-10	5 745 072 719	-72 719	-0.001 3
100		0	5 745 012 709	-12 709	-0.000 2
100		10	5 744 996 291	3 709	0.000 1
100		30	5 745 080 823	-80 823	-0.001 4
100		40	5 744 997 933	2 067	0.000 0
100		50	5 745 078 565	-78 565	-0.001 4
85	3.2	20	5 745 009 997	-9 997	-0.000 2
115	3.6	20	5 745 030 223	-30 223	-0.000 5

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 785 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 785 071 111	-71 111	-0.001 2
100		-20	5 785 029 302	-29 302	-0.000 5
100		-10	5 785 019 918	-19 918	-0.000 3
100		0	5 785 065 488	-65 488	-0.001 1
100		10	5 785 004 507	-4 507	-0.000 1
100		30	5 784 999 502	498	0.000 0
100		40	5 785 028 911	-28 911	-0.000 5
100		50	5 785 015 501	-15 501	-0.000 3
85	3.2	20	5 785 056 445	-56 445	-0.001 0
115	3.6	20	5 785 078 379	-78 379	-0.001 4

- 5 825 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 825 064 183	-64 183	-0.001 1
100		-20	5 825 007 797	-7 797	-0.000 1
100		-10	5 825 033 567	-33 567	-0.000 6
100		0	5 825 065 808	-65 808	-0.001 1
100		10	5 825 076 144	-76 144	-0.001 3
100		30	5 825 070 075	-70 075	-0.001 2
100		40	5 824 993 568	6 432	0.000 1
100		50	5 824 996 835	3 165	0.000 1
85	3.2	20	5 825 051 590	-51 590	-0.000 9
115	3.6	20	5 825 041 223	-41 223	-0.000 7

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 755 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 755 016 821	-16 821	-0.000 3
100		-20	5 755 065 159	-65 159	-0.001 1
100		-10	5 755 071 856	-71 856	-0.001 2
100		0	5 754 990 148	98 52	0.000 2
100		10	5 755 069 434	-694 34	-0.001 2
100		30	5 755 002 199	-2 199	0.000 0
100		40	5 754 999 995	5	0.000 0
100		50	5 755 052 998	-52 998	-0.000 9
85	3.2	20	5 755 030 822	-30 822	-0.000 5
115	3.6	20	5 755 030 509	-30 509	-0.000 5

- 5 795 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 794 992 602	7 398	0.000 1
100		-20	5 795 029 779	-29 779	-0.000 5
100		-10	5 795 003 333	-3 333	-0.000 1
100		0	5 795 058 448	-58 448	-0.001 0
100		10	5 795 054 190	-54 190	-0.000 9
100		30	5 795 080 425	-80 425	-0.001 4
100		40	5 795 060 670	-60 670	-0.001 0
100		50	5 795 087 413	-87 413	-0.001 5
85	3.2	20	5 794 999 216	784	0.000 0
115	3.6	20	5 795 006 044	-6 044	-0.000 1

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

- 5 775 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100	3.3	20	5 775 020 611	-20 611	-0.000 4
100		-20	5 774 996 404	3 596	0.000 1
100		-10	5 775 038 789	-38 789	-0.000 7
100		0	5 775 082 945	-82 945	-0.001 4
100		10	5 775 028 133	-28 133	-0.000 5
100		30	5 775 042 860	-42 860	-0.000 7
100		40	5 775 069 538	-69 538	-0.001 2
100		50	5 775 026 178	-26 178	-0.000 5
85	3.2	20	5 775 002 273	-2 273	0.000 1
115	3.6	20	5 775 013 777	-13 777	-0.000 2

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.8 DFS(Dynamic Frequency Selection)

5.8.1 Regulation

Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS).

(1) Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 ㎓ band and the 5.47-5.725 ㎓ band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 ㎽.

(2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 ㎓ and 5.47-5.725 ㎓ bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. Operators shall only use equipment with a DFS mechanism that is turned on when operating in these bands. The device must sense for radar signals at 100 percent of its emission bandwidth. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 ㎽ to 1 W is −64 dBm. For devices that operate with less than 200 ㎽ e.i.r.p. and a power spectral density of less than 10 dBm in a 1 MHz band, the minimum detection threshold is −62 dBm. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 dBi antenna. For the initial channel setting, the manufacturers shall be permitted to provide for either random channel selection or manual channel selection.

(i) Operational Modes. The DFS requirement applies to the following operational modes:

(A) The requirement for channel availability check time applies in the master operational mode.

(B) The requirement for channel move time applies in both the master and slave operational modes.

(ii) Channel Availability Check Time. A U-NII device shall check if there is a radar system already operating on the channel before it can initiate a transmission on a channel and when it has to move to a new channel. The U-NII device may start using the channel if no radar signal with a power level greater than the interference threshold values listed in paragraph (h)(2) of this section, is detected within 60 seconds.

(iii) Channel Move Time. After a radar's presence is detected, all transmissions shall cease on the operating channel within 10 seconds. Transmissions during this period shall consist of normal traffic for a maximum of 200 ms after detection of the radar signal. In addition, intermittent management and control signals can be sent during the remaining time to facilitate vacating the operating channel.

(iv) Non-occupancy Period. A channel that has been flagged as containing a radar system, either by a channel availability check or in-service monitoring, is subject to a non-occupancy period of at least 30 minutes. The non-occupancy period starts at the time when the radar system is detected.

(i) Device Security. All U-NII devices must contain security features to protect against modification of software by unauthorized parties.

5.8.2 Measurement Procedure

The following table from FCC 06-96 lists the applicable requirements for the DFS testing.
The device evaluated in this report is considered a client device without radar detection capability.
The DFS testing was performed as per KDB 905462 D02 UNII DFS Compliance Procedures New Rules v01r01,Sections 7 and 8.

5.8.3 Support Equipment

Product	Manufacture	Model No.	Serial No.	FCCID.
Cisco Aironet IOS Access Point	Cisco	AIR-CAP2702E-A-K9	FGL1848X4LC	LDK102091

Note. This device was functioned as a Master device during the DFS test.

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.8.4 Test Result

The UUT is a U-NII Device operating in Client mode without radar detection. The radar test signals are injected into the Master Device.

The highest power level within these bands in 19.42 dBm (87.50 mW) EIRP in the 5 250 ~ 5 350 MHz band and 20.50 dBm (112.20 mW) EIRP in the 5 470 ~ 5 725 MHz band.

The gain antenna assembly utilized with the master has a gain of 2.99 dBi.

The calibrated conducted DFS detection threshold level is set to -58.01dBm.(-62 + 1 + 2.99 = -58.01)

Channel Move Time

Frequency (MHz)	Channel Move Time (s)	Limit (s)
5 260	8.649	10
5 500	8.720	10
5 310	8.282	10
5 510	8.361	10
5 290	8.316	10
5 530	8.939	10

Channel Closing Time

Frequency (MHz)	1 Signal	The Number	Channel Closing Time (ms)	Limit (ms)
5 260	0.667	4	2.668	60
5 500	0.667	4	2.668	60
5 310	0.667	4	2.668	60
5 510	0.667	4	2.668	60
5 290	0.667	4	2.668	60
5 530	0.667	4	2.668	60

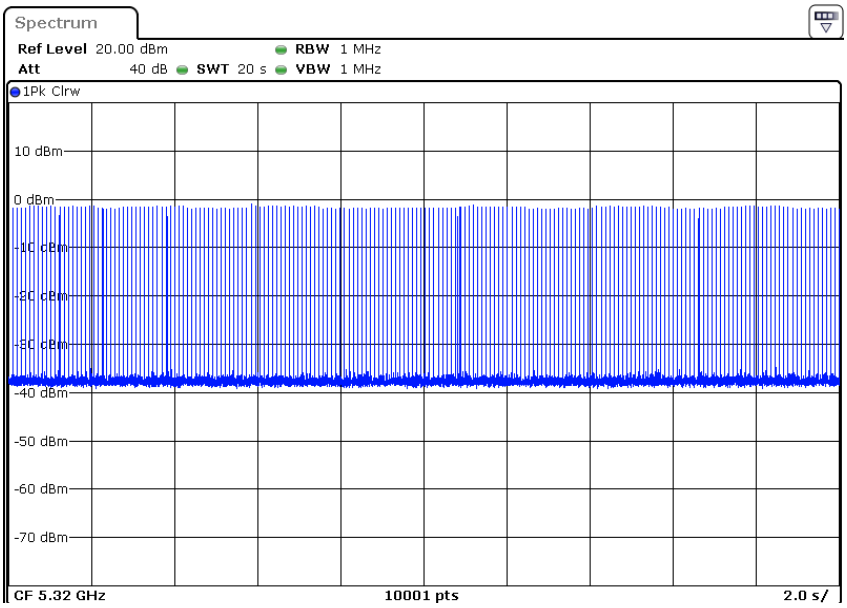
Note. Channel Closing Time = 1 Signal x The Number

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

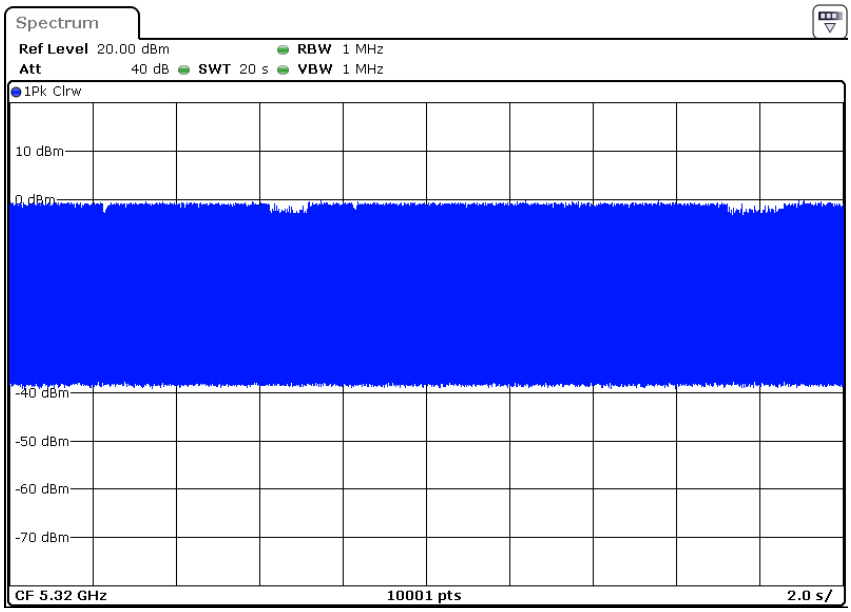
5.8.5 Test Plot

Figure 3. Plot of the DFS

No traffic signal(master signal)



Client(EUT) Data Traffic Signal

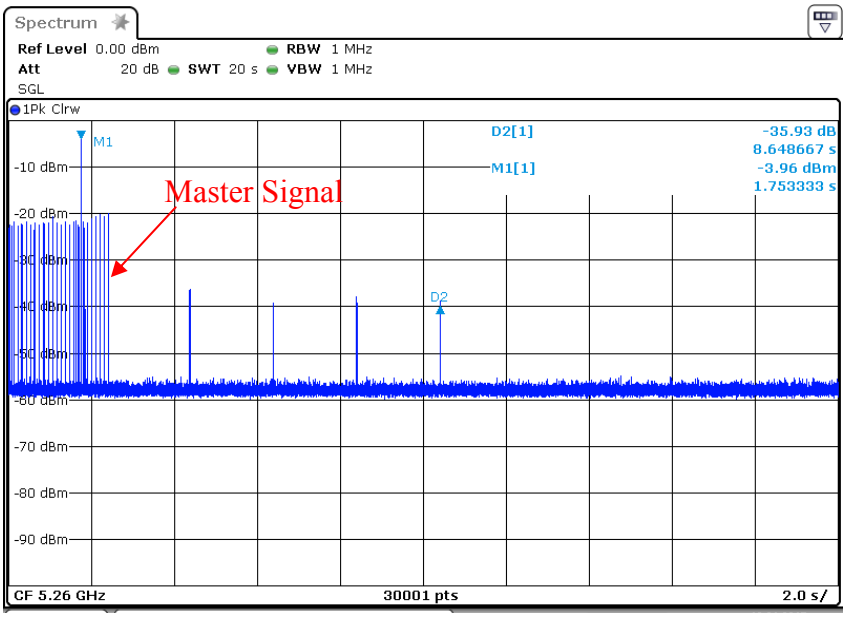


This test report shall not be reproduced except in full, Without the written approval.

Channel closing time and move time

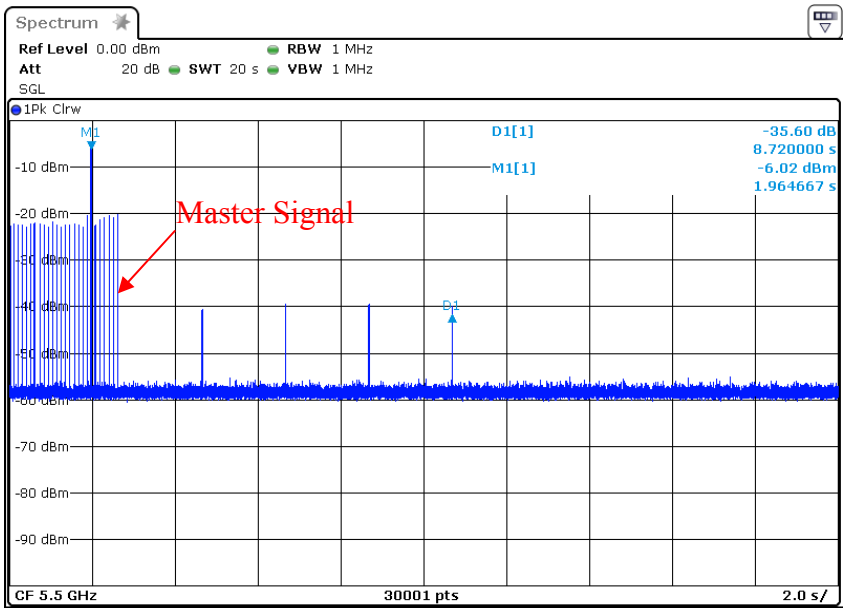
* 20 ㎒ BW

- 5 260 ㎒



* 20 ㎒ BW

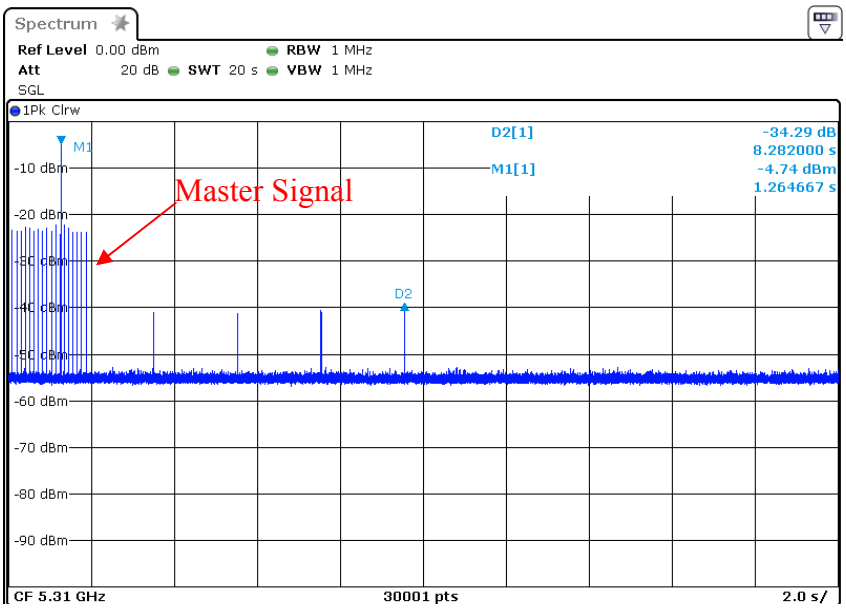
- 5 500 ㎒



This test report shall not be reproduced except in full, Without the written approval.

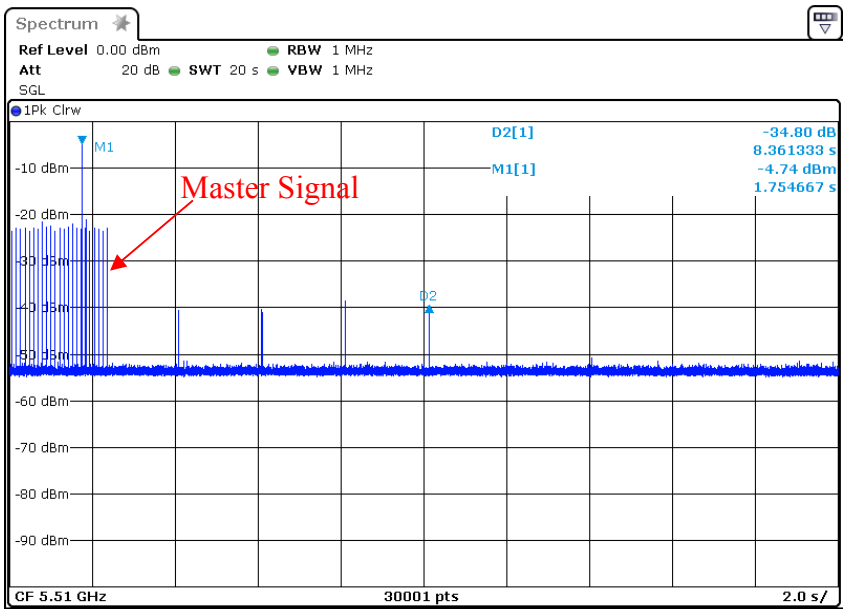
* 40 ㎒ BW

- 5 310 ㎒



* 40 ㎒ BW

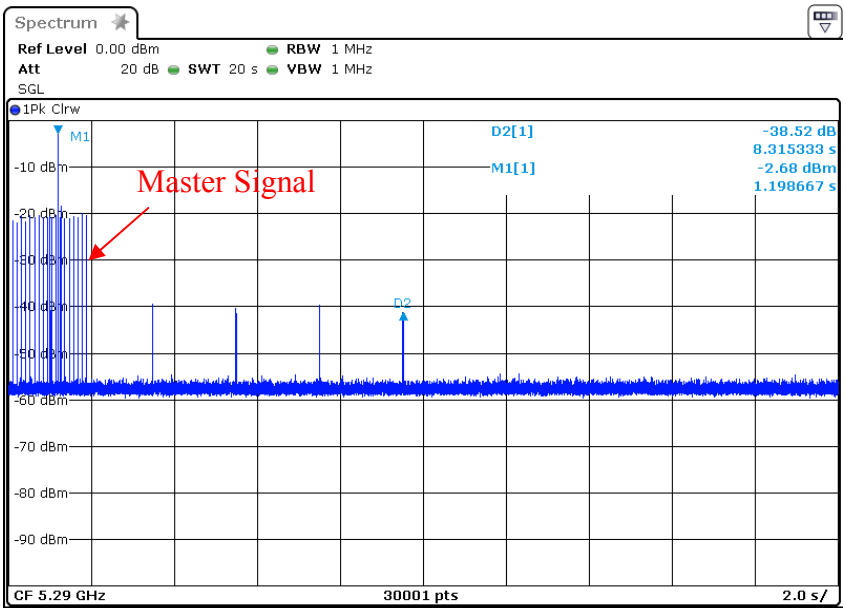
- 5 510 ㎒



This test report shall not be reproduced except in full, Without the written approval.

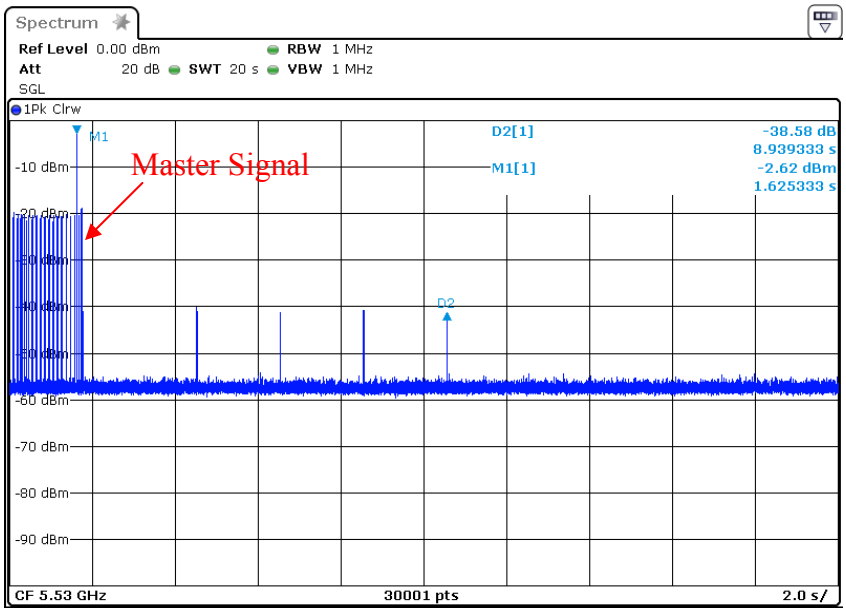
* 80 ㎒ BW

- 5 290 ㎒



* 80 ㎒ BW

- 5 530 ㎒

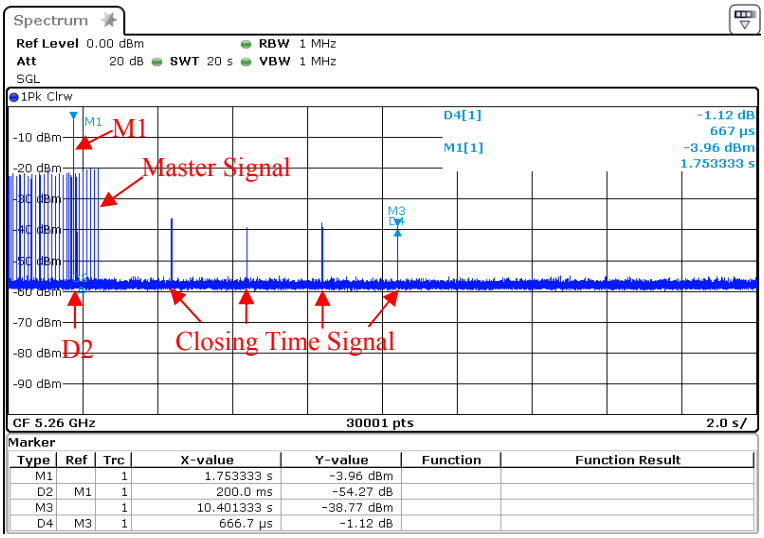


This test report shall not be reproduced except in full, Without the written approval.

Channel Closing Time

* 20 ㎒ BW

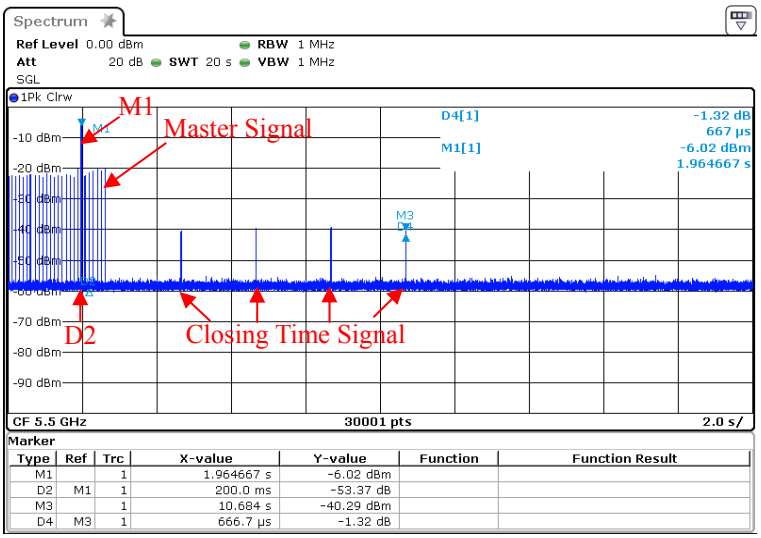
- 5 260 ㎒



*M1 : Rader Signal
*D2 : 200 ms in Point
* Channel Closing Time = 1 Signal x The Number : 0.667 x 4 =2.668

* 20 ㎒ BW

- 5 500 ㎒

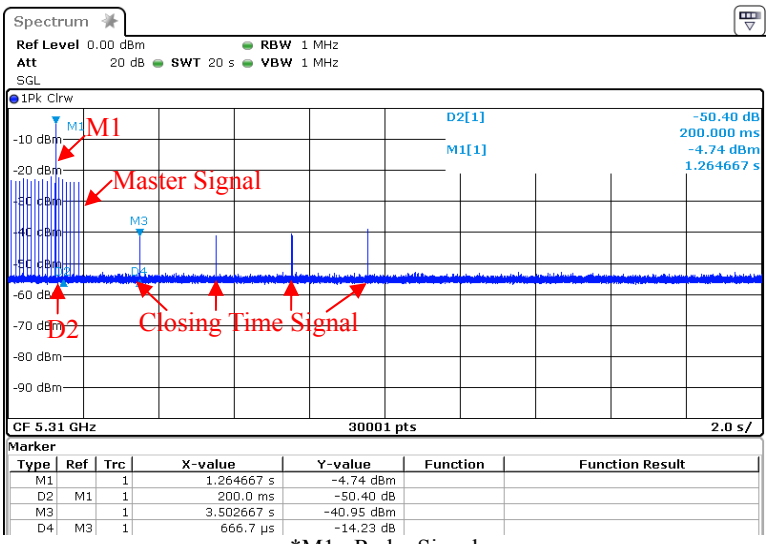


*M1 : Rader Signal
*D2 : 200 ms in Point
* Channel Closing Time = 1 Signal x The Number : 0.667 x 4 =2.668

This test report shall not be reproduced except in full, Without the written approval.

* 40 ㎒ BW

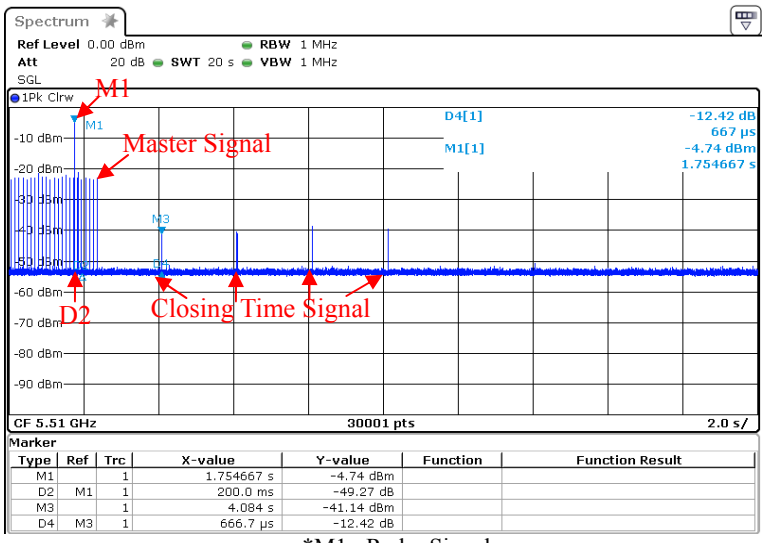
- 5 310 ㎒



*M1 : Rader Signal
*D2 : 200 ms in Point
* Channel Closing Time = 1 Signal x The Number : 0.667 x 4 =2.668

* 40 ㎒ BW

- 5 510 ㎒

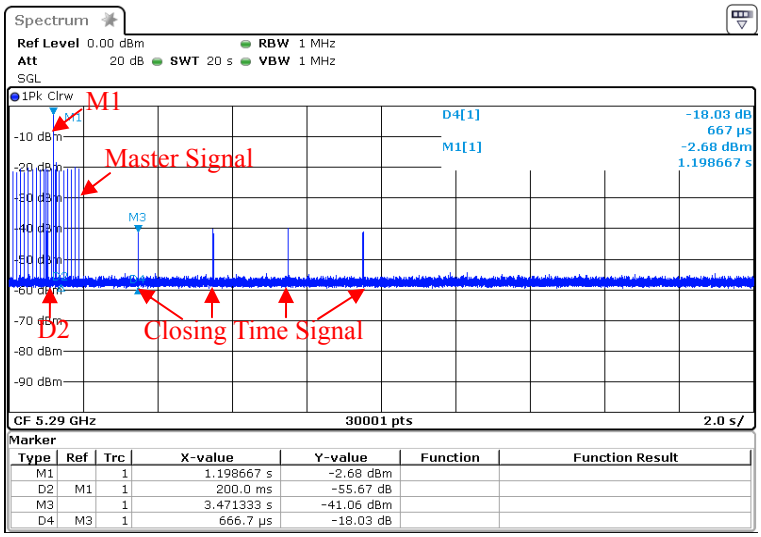


*M1 : Rader Signal
*D2 : 200 ms in Point
* Channel Closing Time = 1 Signal x The Number : 0.667 x 4 =2.668

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

* 80 ㎒ BW

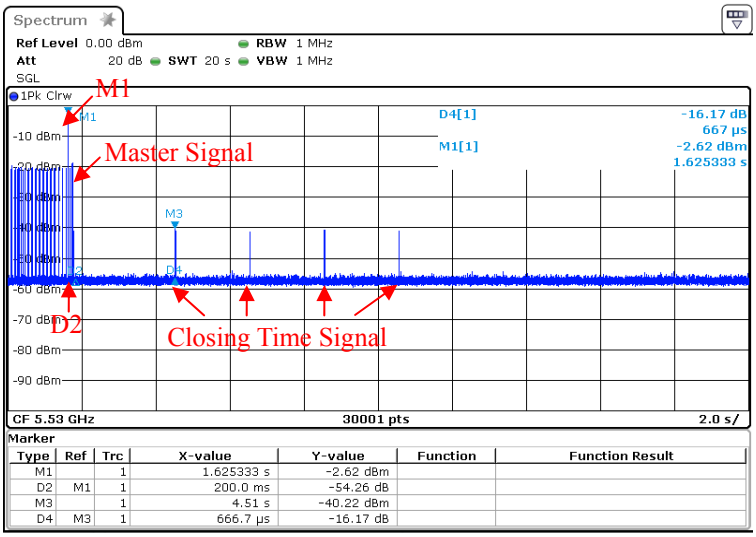
- 5 290 ㎒



*M1 : Rader Signal
*D2 : 200 ms in Point
* Channel Closing Time = 1 Signal x The Number : 0.667 x 4 =2.668

* 80 ㎒ BW

- 5 530 ㎒



*M1 : Rader Signal
*D2 : 200 ms in Point
* Channel Closing Time = 1 Signal x The Number : 0.667 x 4 =2.668

This test report shall not be reproduced except in full, Without the written approval.

Non-Occupancy Period

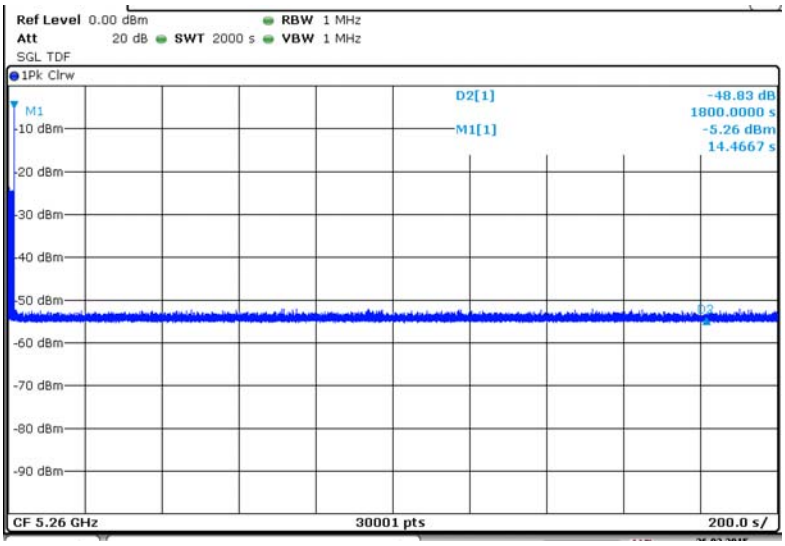
Frequency (㎒)	Non-Occupancy Period (min)	Limit (min)
5 260	Over 30	> 30
5 500	Over 30	> 30
5 310	Over 30	> 30
5 510	Over 30	> 30
5 290	Over 30	> 30
5 530	Over 30	> 30

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

Non-Occupancy Period

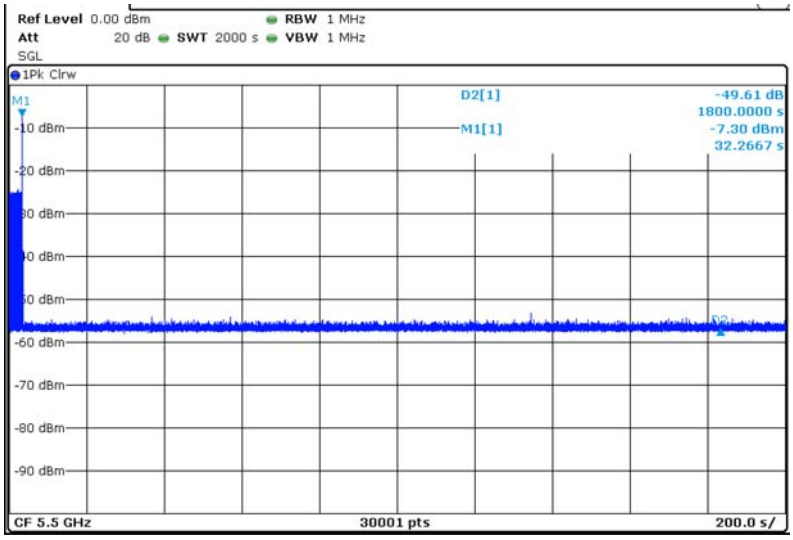
* 20 ㎒ BW

- 5 260 ㎒



* 20 ㎒ BW

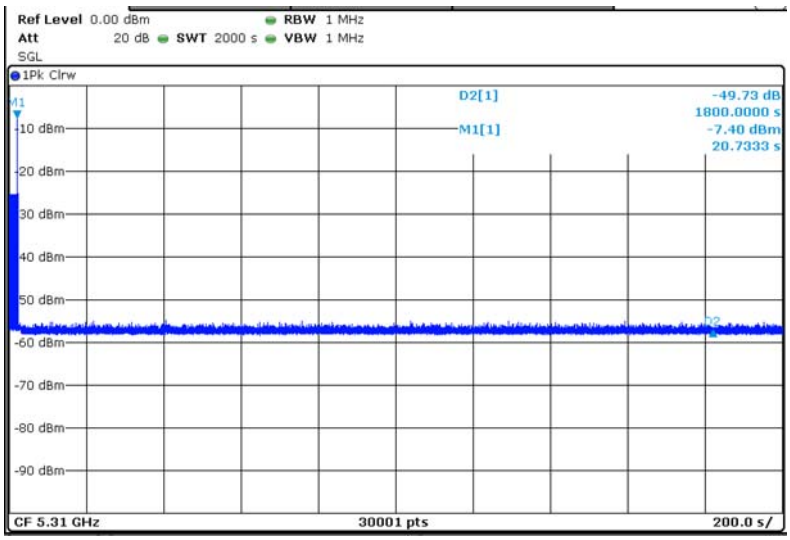
- 5 500 ㎒



This test report shall not be reproduced except in full, Without the written approval.

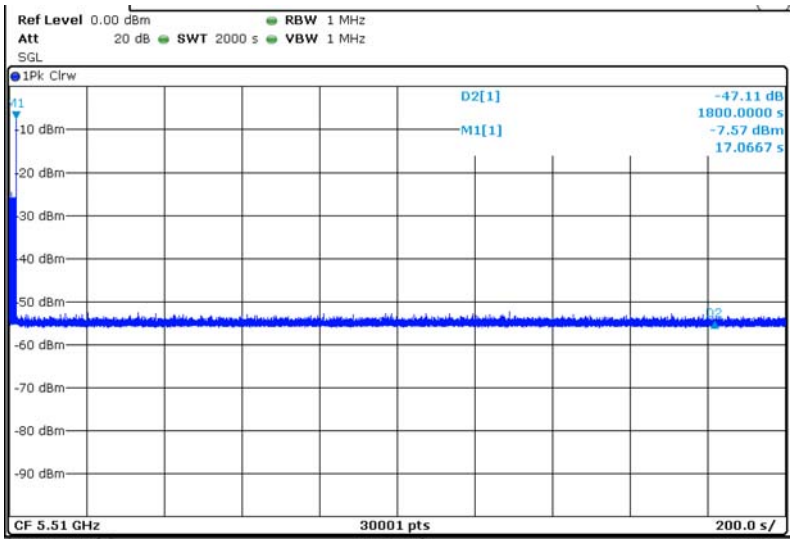
* 40 ㎒ BW

- 5 310 ㎒



* 40 ㎒ BW

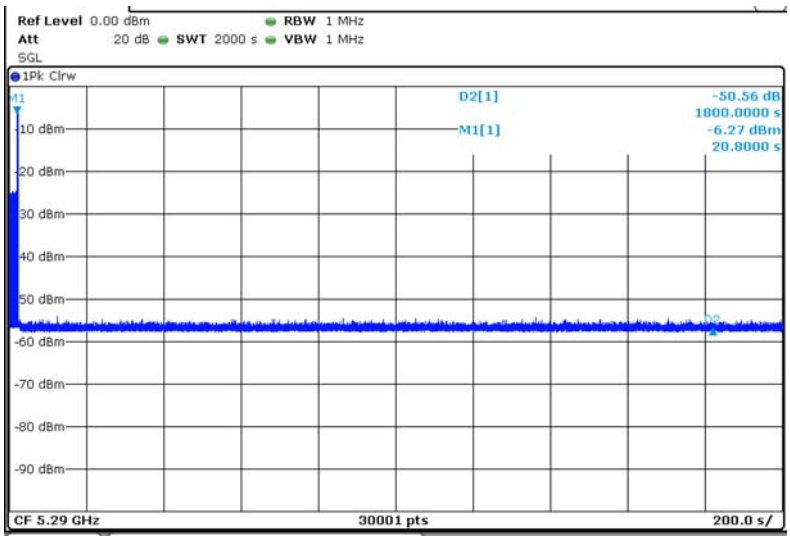
- 5 510 ㎒



This test report shall not be reproduced except in full, Without the written approval.

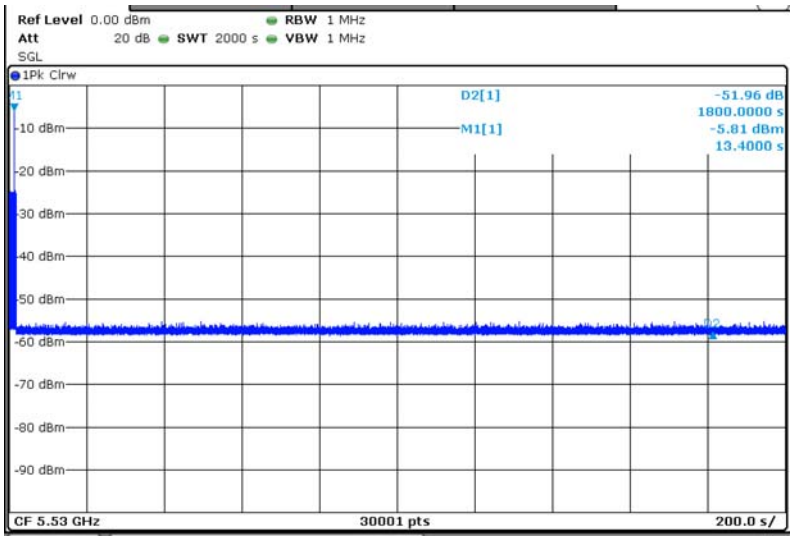
* 80 ㎒ BW

- 5 290 ㎒



* 80 ㎒ BW

- 5 530 ㎒



This test report shall not be reproduced except in full, Without the written approval.

5.9 Conducted Emission

5.9.1 Regulation

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50 µH/50 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (㎒)	Conducted limit (㏈㎶)	
	Qausi-peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency.

According to §15.107(a), for unintentional device, except for Class A digital devices, line conducted emission limits are the same as the above table.

5.9.2 Measurement Procedure

1) The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 ㎝ in which is located 40 ㎝ away from the vertical wall and 1.5m away from the side wall of the shielded room.

2) Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50µH LISN, which is an input transducer to a Spectrum Analyzer or an EMI/Field Intensity Meter, to the input power source.

3) Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.

4) The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 ㎒ to 30 ㎒.

5) The measurements were made with the detector set to PEAK amplitude within a bandwidth of 10 ㎑ or to QUASI-PEAK and AVERAGE within a bandwidth of 9 ㎑. The EUT was in transmitting mode during the measurements.

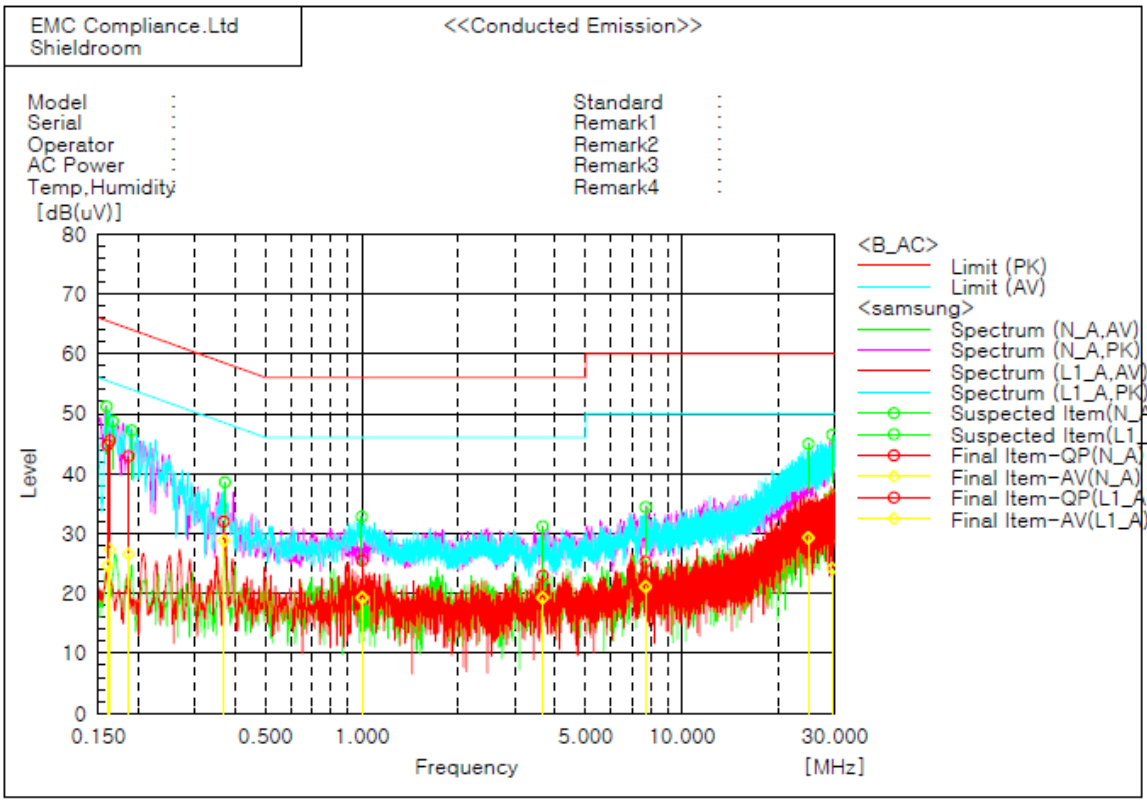
480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.

5.9.3 Test Result

- Complied

Figure 4. plot of Conducted Emission

*Conducted worst-case data : 802.11n HT20_Middle Channel (2 437 ㎒)



Final Result

--- N_A Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]	Remark
1	0.16316	35.4	17.3	10.1	45.5	27.4	65.3	55.3	19.8	27.9	
2	0.18645	32.7	16.4	10.2	42.9	26.6	64.2	54.2	21.3	27.6	
3	3.67224	12.2	8.6	10.7	22.9	19.3	56.0	46.0	33.1	26.7	
4	7.69758	12.8	8.6	12.5	25.3	21.1	60.0	50.0	34.7	28.9	

--- L1_A Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]	Remark
1	0.16004	34.7	14.6	10.1	44.8	24.7	65.5	55.5	20.7	30.8	
2	0.37012	21.8	18.6	10.2	32.0	28.8	58.5	48.5	26.5	19.7	
3	1.00155	15.4	9.2	10.1	25.5	19.3	56.0	46.0	30.5	26.7	
4	24.84428	10.8	6.0	23.3	34.1	29.3	60.0	50.0	25.9	20.7	
5	29.4695	2.0	-2.9	27.1	29.1	24.2	60.0	50.0	30.9	25.8	

This test report shall not be reproduced except in full, Without the written approval.

6. Test equipment used for test

	Description	Manufacturer	Model No.	Serial No.	Next Cal Date.
■	Wideband Power Sensor	R&S	NRP-Z81	102398	15.11.27
■	Attenuator	HP	8491A	18591	15.05.08
■	Spectrum Analyzer	R&S	FSV40	100989	16.01.23
■	DC Power Supply	AGILENT	E3632A	MY400088000	15.12.11
■	Power Divider	Aeroflex/ Weinschel,Inc	1580-1	RM987	15.04.08
■	Signal Generator	R&S	SMR40	100007	15.06.10
■	Amplifier	Sonoma Instrument	310N	293004	15.09.25
■	Loop Antenna	R&S	HFH2-Z2	100355	15.06.19
■	Bi-Log Antenna	Schwarzbeck	VULB9163	552	16.05.14
■	Horn Antenna	ETS-LINDGREN	3117	155787	15.02.26
■	Horn Antenna	ETS.lindgren	3116	00086632	15.10.20
■	Spiral Antenna	COBHAM	PSA-75301R/170	406827-0001	-
■	Broadband Preamplifier	Schwarzbeck	BBV9718	216	15.04.22
■	Broadband Preamplifier	SCHWARZBECK	BBV9721	2	15.05.09
■	Attenuator	HP	8491A	16861	15.07.01
■	Highpass Filter	Wainwright Instruments GmbH	WHKX6.5/ 18G-8SS	2	15.06.19
■	EMI Test Receiver	R&S	ESCI	100001	15.06.24
	TWO-Line Vnetword	R&S	ENV216	101358	15.10.04
■	Turn Table	Innco Systems	DT2000S-1t	79	-
■	Antenna Mast	Innco Systems	MA4000-EP	303	-

480-5, Sin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
82-31-336-9919 (Main) 82-505-299-8311 (Fax)
This test report shall not be reproduced except in full, Without the written approval.