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TEST REPORT

KCTL Inc.
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KCTL

1. Client

- Name : Vieworks Co., Ltd.
- Address : (Gwanyang-dong) 41-3, Burim-ro 170beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 431-060 Republic of Korea
- Date of Receipt : 2017-01-17

2. Use of Report : -

3. Name of Product and Model : 802.11ac Dual Band Module / WLE900VX 7AA000S-VW

4. Manufacturer and Country of Origin : Compex (Suzhou) Co. Ltd / China

5. FCC ID : PFRWLE900VXVW

6. IC : 11233A-WLE900VXVW

7. Date of Test : 2017-03-20 to 2017-04-20

8. Test Standards : FCC Part 15 Subpart E, 15.407
RSS-247 Issue 1 May 2015
RSS GEN Issue 4 November 2014

9. Test Results : Refer to the test result in the test report

Affirmation	Tested by Name : Taeyoung Kim (Signature)	Technical Manager Name : Bongok Ko (Signature)

2017-07-18

KCTL Inc.

As a test result of the sample which was submitted from the client, this report does not guarantee the whole product quality. This test report should not be used and copied without a written agreement by KCTL Inc.

REPORT REVISION HISTORY

Date	Revision	Page No
2016-06-20	Originally issued	-
2017-07-11	Revised all not ok comment	Several page
2017-07-18	Added antenna connector specification and test jig note	7, 11

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[Contents]

1. Client information 4
2. Laboratory information 5
3. Description of E.U.T. 6
3.1 Basic description 6
3.2 General description 6
3.3 Test frequency 8
3.4 Test Voltage 8
4. Summary of test results 9
4.1 Standards & results 9
4.2 Uncertainty 9
5. Test results 10
5.1 Antenna Requirement 10
5.2 Maximum Conducted Output Power 14
5.3 Bandwidth Measurement 141
5.4 Peak Power Spectral Density 279
5.5 Spurious Emission, Band Edge And Restricted Bands 390
5.6 Frequency Stability 441
5.7 Conducted Emission 448
6. Test equipment used for test 450

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1. Client information

Applicant:	Vieworks Co., Ltd.
Address:	(Gwanyang-dong) 41-3, Burim-ro 170beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 431-060 Republic of Korea
Telephone number:	82-70-4496-1859
Facsimile number:	82-31-386-8631
Contact person:	Jordin Kim / trubloomer@vieworks.com

Manufacturer:	Compex (Suzhou) Co. Ltd
Address:	12 ChuangTou Industrial Square Lou Feng North, Suzhou Industrial Park Suzhou, P.R. China 215122

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2. Laboratory information

Address

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea

Telephone Number: 82 31 285 0894

Facsimile Number: 82 505 299 8311

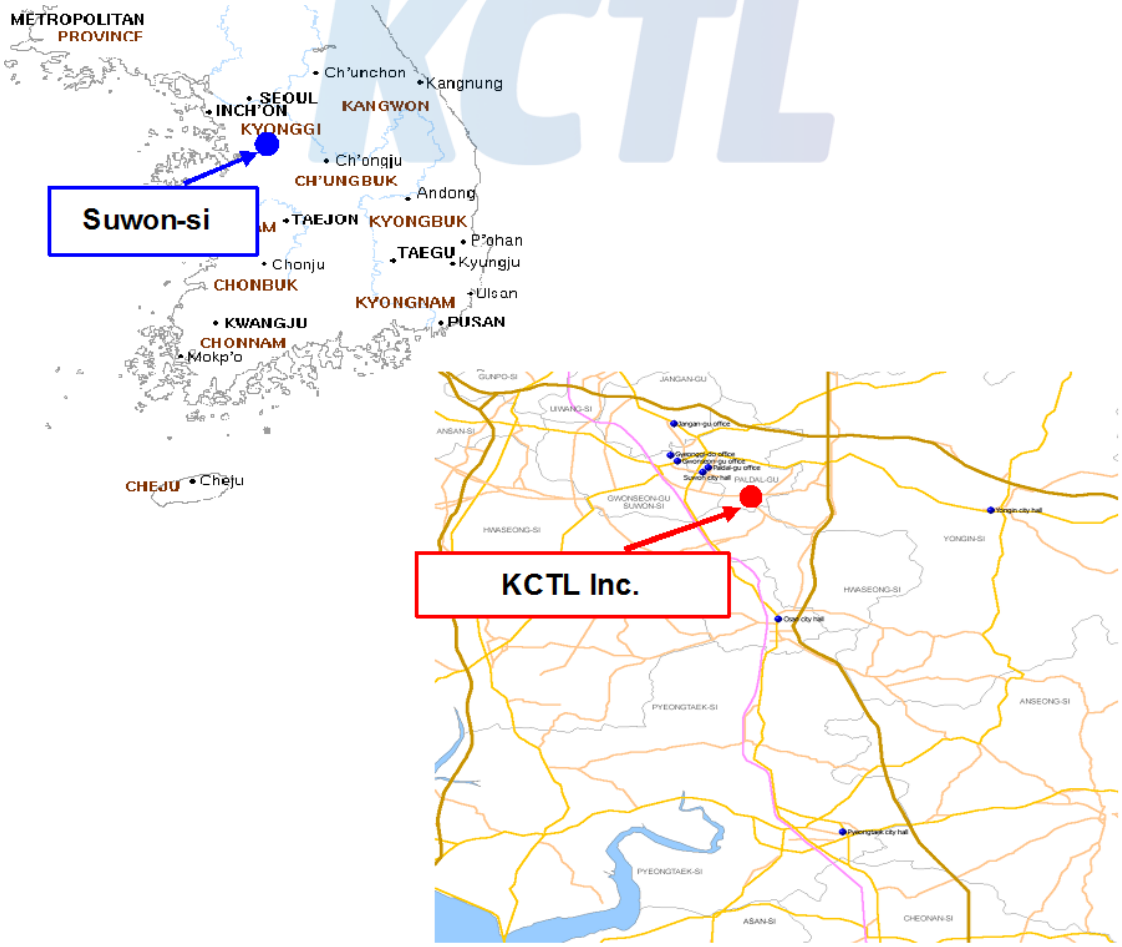
FCC Site Designation No: KR0040, FCC Site Registration No: 687132

VCCI Registration No. : R-3327, G-198, C-3706, T-1849

Industry Canada Registration No. : 8035A

KOLAS NO.: KT231

SITE MAP



3. Description of E.U.T.

3.1 Basic description

Applicant	Vieworks Co., Ltd.
Address of Applicant	(Gwanyang-dong) 41-3, Burim-ro 170beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 431-060 Republic of Korea
Manufacturer	Compex (Suzhou) Co. Ltd
Address of Manufacturer	12 ChuangTou Industrial Square Lou Feng North, Suzhou Industrial Park Suzhou, P.R. China 215122
Type of equipment	802.11ac Dual Band Module
Basic Model	WLE900VX 7AA000S-VW
Serial number	N/A

3.2 General description

Frequency Range	2 412 ㎒ ~ 2 462 ㎒ (802.11b/g/n_HT20) 2 422 ㎒ ~ 2 452 ㎒ (802.11n_HT40) 5 180 ㎒ ~ 5 240 ㎒ (802.11a/n_HT20/ac_VHT20) 5 190 ㎒ ~ 5 230 ㎒ (802.11n_HT40/ac_VHT40) 5 210 ㎒ (802.11ac_VHT80) 5 745 ㎒ ~ 5 825 ㎒ (802.11a/n_HT20/ac_VHT20) 5 755 ㎒ ~ 5 795 ㎒ (802.11n_HT40/ac_VHT40) 5 775 ㎒ (802.11ac_VHT80)
Type of Modulation	802.11b : DSSS, 802.11a/g/n/ac : OFDM
The number of channels	2.4 ㎓: 11 ch (802.11b/g/n_HT20), 7 ch (802.11n_HT40) 5 ㎓: 5 150 ㎒ Band: 4 (802.11a/n_HT20/ac_VHT20) 5 150 ㎒ Band: 2 (802.11n_HT40/ac_VHT40) 5 150 ㎒ Band: 1 (802.11ac_VHT80) 5 725 ㎒ Band: 4 (802.11a/n_HT20/ac_VHT20) 5 725 ㎒ Band: 2 (802.11n_HT40/ac_VHT40) 5 725 ㎒ Band: 1 (802.11ac_VHT40)

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Type of Antenna	Conected PCB Antenna (3 x U.FL)
Antenna Gain	2.4 ㎓: 2.83 ㏈i (2 400 ㎒ ~ 2 483.5 ㎒)_ANT 0 2.38 ㏈i (2 400 ㎒ ~ 2 483.5 ㎒)_ANT 1 2.19 ㏈i (2 400 ㎒ ~ 2 483.5 ㎒)_ANT 2 5 ㎓: 1.99 ㏈i (5 150 ㎒ ~ 5 250 ㎒)_ANT 0 1.40 ㏈i (5 150 ㎒ ~ 5 250 ㎒)_ANT 1 1.89 ㏈i (5 150 ㎒ ~ 5 250 ㎒)_ANT 2 3.89 ㏈i (5 725 ㎒ ~ 5 850 ㎒)_ANT 0 2.59 ㏈i (5 725 ㎒ ~ 5 850 ㎒)_ANT 1 2.80 ㏈i (5 725 ㎒ ~ 5 850 ㎒)_ANT 2
Transmit Power	19.29 ㏈m
Power supply	DC 5.00 V
Product SW/HW version	V1.0.0.6TS / D04
Radio SW/HW version	V1.01 / V1.01
Test SW Version	CTS2 v1043
RF power setting in TEST SW	- ANT 0 5 150 ㎒ Band : 802.11a: 17 802.11n HT20/ac VHT20 : 16.5 802.11n HT40/ac VHT40 : 14 802.11ac VHT80 : 12 5 725 ㎒ Band : 802.11a: 20 802.11n HT20/ac VHT20 : 19.5 802.11n HT40/ac VHT40 : 19.5 802.11ac VHT80 : 19.5 - ANT 1 5 150 ㎒ Band : 802.11n HT20/ac VHT20 : 13.5 802.11n HT40/ac VHT40 : 11.5 802.11ac VHT80 : 9.5 5 725 ㎒ Band : 802.11n HT20/ac VHT20 : 16.5 802.11n HT40/ac VHT40 : 16.5 802.11ac VHT80 : 16.5 - ANT 2 5 150 ㎒ Band : 802.11n HT20/ac VHT20 : 11.5 802.11n HT40/ac VHT40 : 9.5 802.11ac VHT80 : 8 5 725 ㎒ Band : 802.11n HT20/ac VHT20 : 14.5 802.11n HT40/ac VHT40 : 14.5 802.11ac VHT80 : 14.5

Note : The above EUT information was declared by the manufacturer.

3.3 Test frequency

- 802.11a/n/ac HT20/VHT20

Frequency	Band 1	Band 4
Lowest frequency	5 180 ㎒	5 745 ㎒
Middle frequency	5 200 ㎒	5 785 ㎒
Highest frequency	5 240 ㎒	5 825 ㎒

- 802.11n/ac HT40/VHT40

Frequency	Band 1	Band 4
Lowest frequency	5 190 ㎒	5 755 ㎒
Middle frequency	5 230 ㎒	5 795 ㎒

- 802.11ac VHT80

Frequency	Band 1	Band 4
Lowest frequency	5 210 ㎒	5 775 ㎒

3.4 Test Voltage

Mode	Voltage
Nominal Voltage	DC 5.00 V

4. Summary of test results

4.1 Standards & results

FCC Rule	IC Rule	Parameter	Report Section	Test Result
15.203 15.407(a)(1)(2)(3)	-	Antenna Requirement	5.1	C
15.407(a)(1)(2)	RSS-247, 5.4	Maximum Conducted Output Power	5.2	C
15.403(i), 15.407(e)	RSS-247, 5.1 RSS-GEN, 6.6	Bandwidth Measurement	5.3	C
15.407(a)(1)(2)(5)	RSS-247, 5.3, (2)	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)	RSS-247, 5.5 RSS-GEN, 8.9, 10	Spurious Emission, Band Edge and Restricted bands	5.5	C
15.407(g)	RSS-GEN, 6.11	Frequency Stability	5.6	C
15.207(a)	RSS-GEN, 8.8	Conducted Emissions	5.7	C
15.407(h)	RSS-247, 6.3	Dynamic Frequency Selection	-	NA
Note: C = complies NC = Not complies NT = Not tested NA = Not Applicable				

Note: The general test methods used to test this device is ANSI C63.10:2013

4.2 Uncertainty

Measurement Item	Expanded Uncertainty U = *k*Uc (*k* = 2)	
Conducted RF power	1.44 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 ~ 25 GHz:	+6.03 dB, -6.05 dB
Conducted Emissions	9 kHz ~ 150 kHz:	3.75 dB
	150 kHz ~ 30 MHz:	3.36 dB

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 Conected PCB Antenna (3 x U.FL) antenna(external antenna).
The total directional peak gain of the antenna not exceeds 6.0 dBi

	5 150 ㎒ Band	5 725 ㎒ Band
ANT 0 Gain	1.99 dBi	3.89 dBi
ANT 1 Gain	1.40 dBi	2.59 dBi
ANT 2 Gain	1.89 dBi	2.80 dBi

According to KDB 662911 D01 Multiple Transmitter Output v02r01
- Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.
  For power measurements on IEEE 802.11 devices

- 5 150 ㎒ Band

In case of 2 Tx MIMO

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

Total gain = 5.00 dBi (individual gain(1.99 dBi) + Array gain(3.01 dBi))

For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for N_{ANT} ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 ㎒ for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-㎒ channel widths with N_{ANT} ≥ 5.

Total gain = 1.99 dBi (individual gain(1.99 dBi) + Array gain(0 dBi))

For power measurements on all other devices:

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

In case of 3 Tx MIMO

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

Total gain = 6.76 dBi (individual gain (1.99 dBi) + Array gain (4.77 dBi))

For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for N_{ANT} ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with N_{ANT} ≥ 5.

Total gain = 1.99 dBi (individual gain(1.99 dBi) + Array gain(0 dBi))

For power measurements on all other devices:

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

- 5 725 MHz Band

In case of 2 Tx MIMO

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

Total gain = 6.90 dBi (individual gain(3.89 dBi) + Array gain(3.01 dBi))

For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for N_{ANT} ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with N_{ANT} ≥ 5.

Total gain = 3.89 dBi (individual gain(3.89 dBi) + Array gain(0 dBi))

For power measurements on all other devices:

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

In case of 3 Tx MIMO

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}) ㏈.

Total gain = 6.76 ㏈i (individual gain (3.89 ㏈i) + Array gain (4.77 ㏈i))

For power measurements on IEEE 802.11 devices

Array Gain = 0 ㏈ (i.e., no array gain) for N_{ANT} ≤ 4;

Array Gain = 0 ㏈ (i.e., no array gain) for channel widths ≥ 40 ㎒ for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) ㏈ or 3 ㏈, whichever is less, for 20-㎒ channel widths with N_{ANT} ≥ 5.

Total gain = 8.66 ㏈i (individual gain(3.89 ㏈i) + Array gain(0 ㏈i))

For power measurements on all other devices:

Array Gain = 10 log(N_{ANT}/N_{SS}) ㏈.

5.2 Maximum Conducted Output Power

5.2.1 Regulation

According to §15.407(a) (1) (ii) For an indoor access point operating in the band 5.15-5.25 ㎓, the maximumConducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 ㏈i. In addition, the maximum power spectral density shall not exceed 17 ㏈m in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

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 ㏈m + 10 log B, where B is the 26 ㏈ emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 ㏈m in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in ㏈that the directional gain of the antenna exceeds 6 ㏈i.

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 ㏈m in any 500-㎑ band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 ㏈i 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 SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):

(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW ≥ 3 MHz.

(iv) Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”

(viii) Trace average at least 100 traces in power averaging (rms) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

5.2.2.2 Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

(i) Measure the duty cycle, x, of the transmitter output signal as described in section II.B.

(ii) Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(iii) Set RBW = 1 MHz.

(iv) Set VBW ≥ 3 MHz.

(v) Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(vi) Sweep time = auto.

(vii) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.

(viii) Do not use sweep triggering. Allow the sweep to “free run.”

(ix) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.

(x) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.

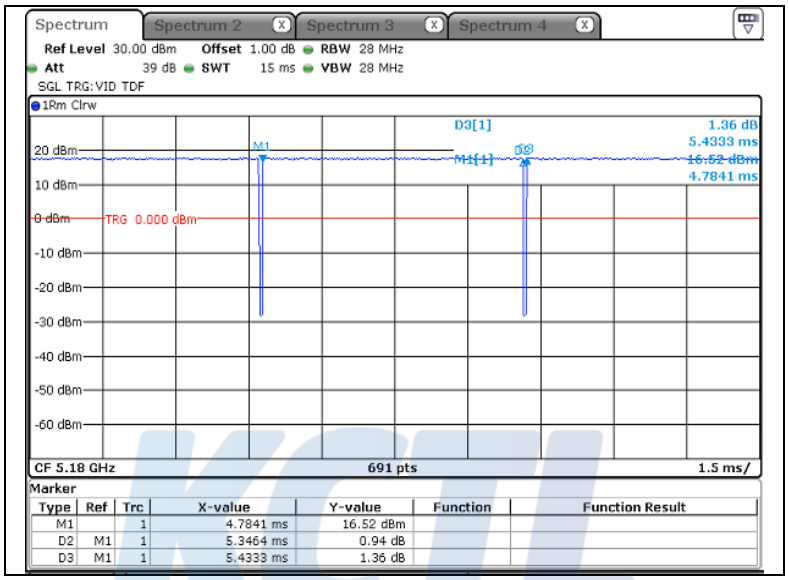
(xi) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10 log (1/0.25) = 6 dB if the duty cycle is 25 %.

- Duty Cycle Correction Factor

- 5 150 Band

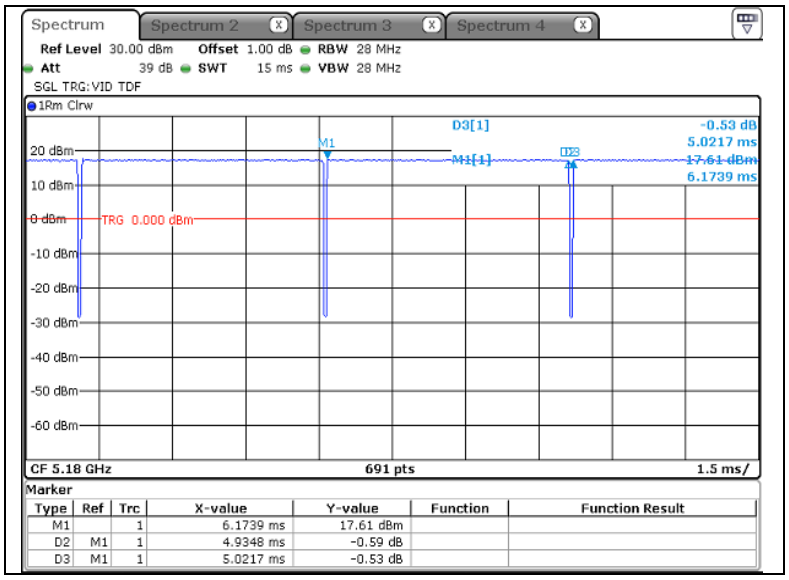
- ANT 0, 1, 2

- 802.11a



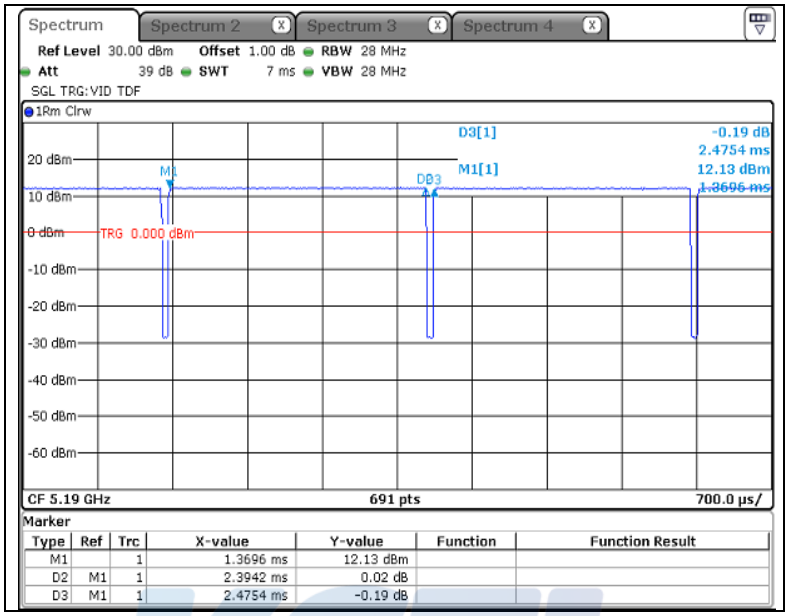
Note1) : period : 5.43 ms, On time : 5.35 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(5.43 / 5.35) = 0.07, x = 0.98
Note3) : 802.11a is a continuous transmission (duty cycle >=98 %)"

- 802.11n HT20



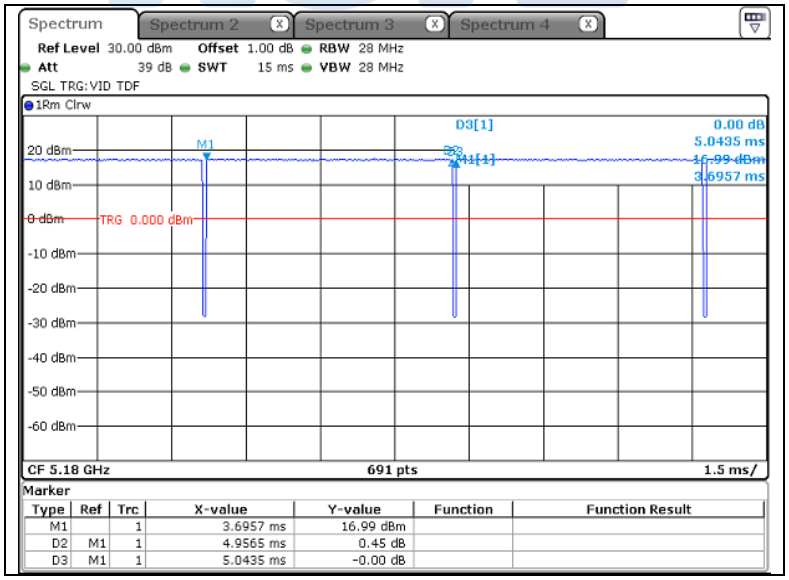
Note1) : period : 5.02 ms, On time : 4.93 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(5.02 / 4.93) = 0.08, x = 0.98
Note3) : 802.11n HT20 is a continuous transmission (duty cycle >=98 %)"

- 802.11n HT40



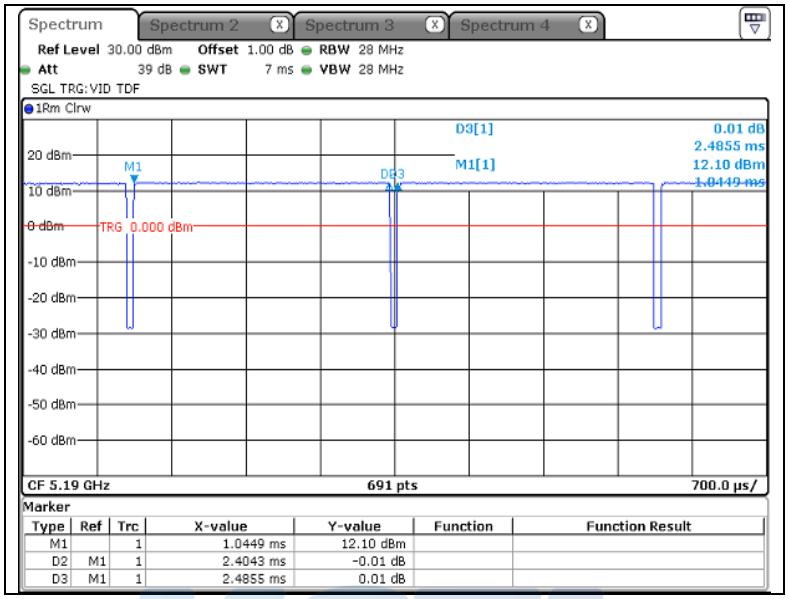
Note1) : period : 2.48 ms, On time : 2.39 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.48 / 2.39) = 0.14, x = 0.97

- 802.11ac VHT20



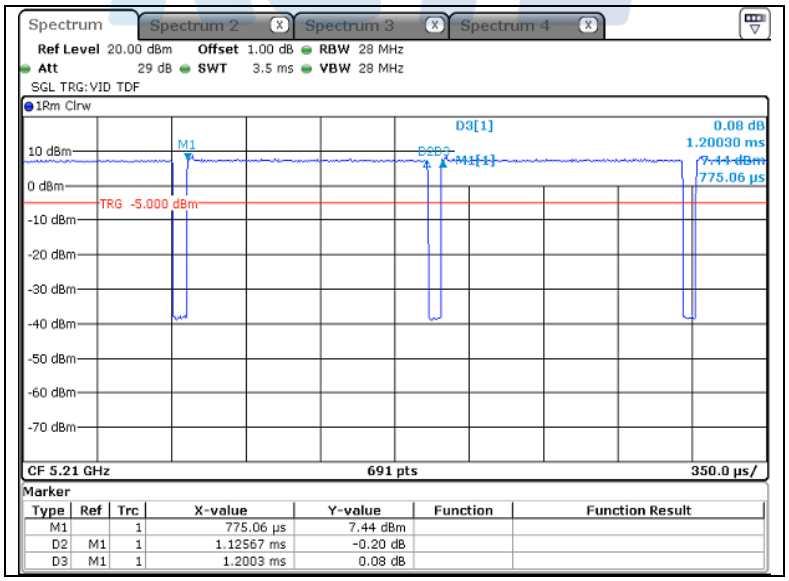
Note1) : period : 5.04 ms, On time : 4.96 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(5.04 / 4.96) = 0.08, x = 0.98
Note3) : 802.11ac VHT20 is a continuous transmission (duty cycle >=98 %)"

- 802.11ac VHT40



Note1) : period : 2.49 ms, On time : 2.40 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.49 / 2.40) = 0.14, x = 0.97

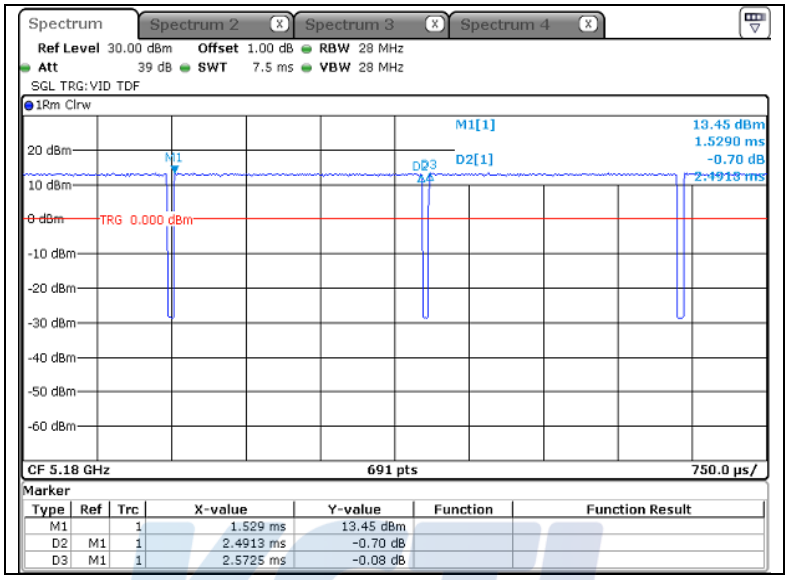
- 802.11ac VHT80



Note1) : period : 1.20 ms, On time : 1.13 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.20 / 1.13) = 0.28, x = 0.94

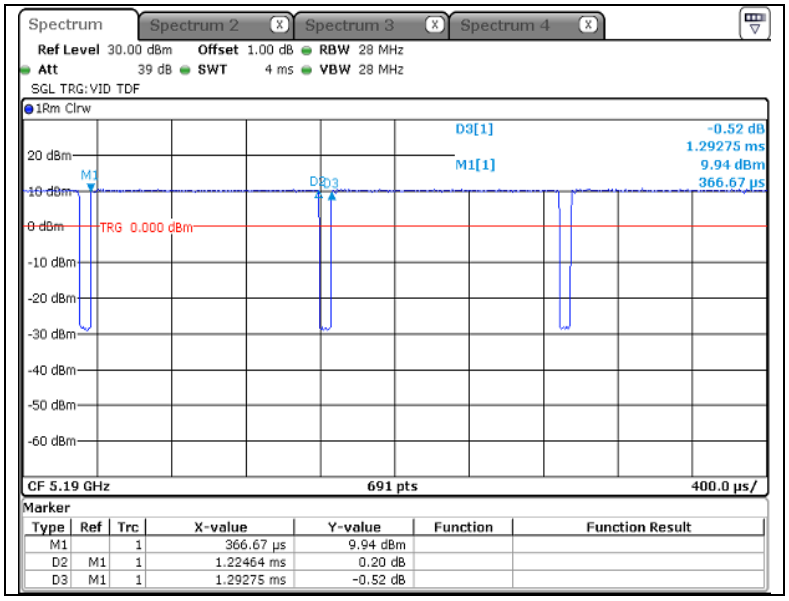
- MIMO (ANT 0+1)

- 802.11n HT20



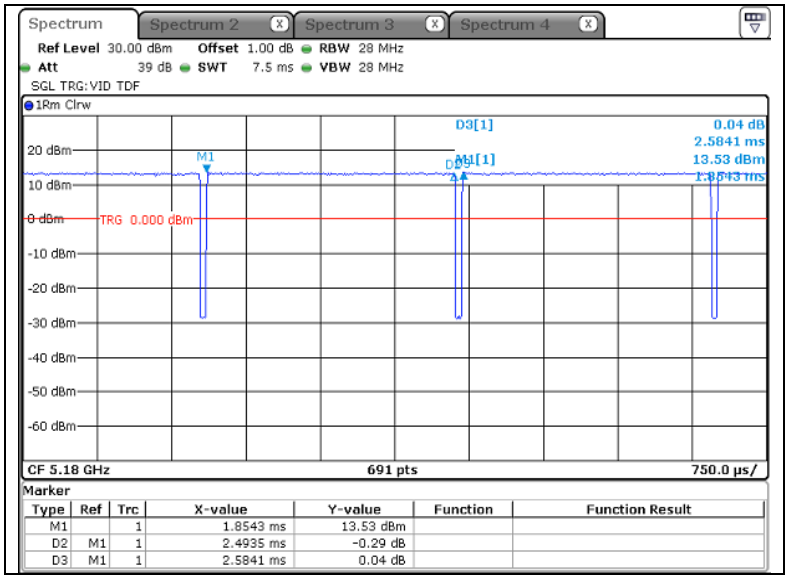
Note1) : period : 2.57 ms, On time : 2.49 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.57 / 2.49) = 0.14, x = 0.97

- 802.11n HT40



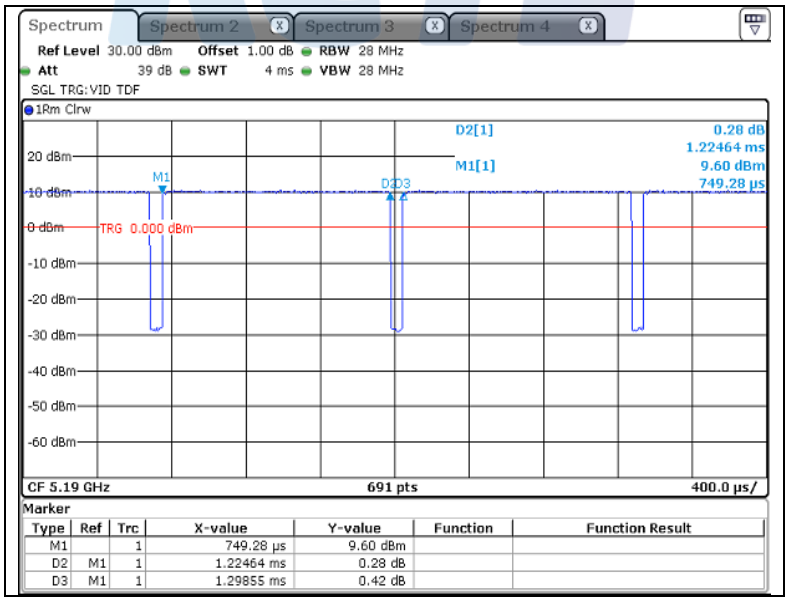
Note1) : period : 1.29 ms, On time : 1.22 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.29 / 1.22) = 0.24, x = 0.95

- 802.11ac VHT20



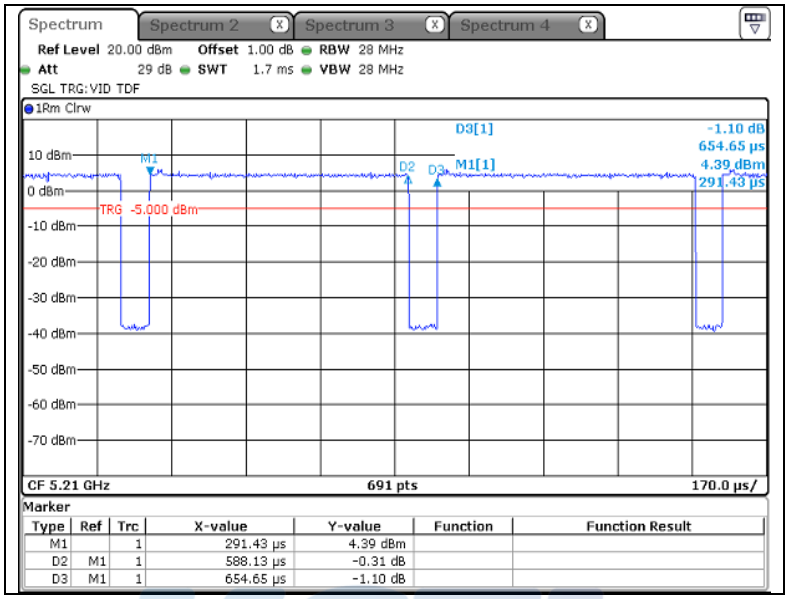
Note1) : period : 2.58 ms, On time : 2.49 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.58 / 2.49) = 0.15, x = 0.96

- 802.11ac VHT40



Note1) : period : 1.30 ms, On time : 1.22 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.30 / 1.22) = 0.25, x = 0.94

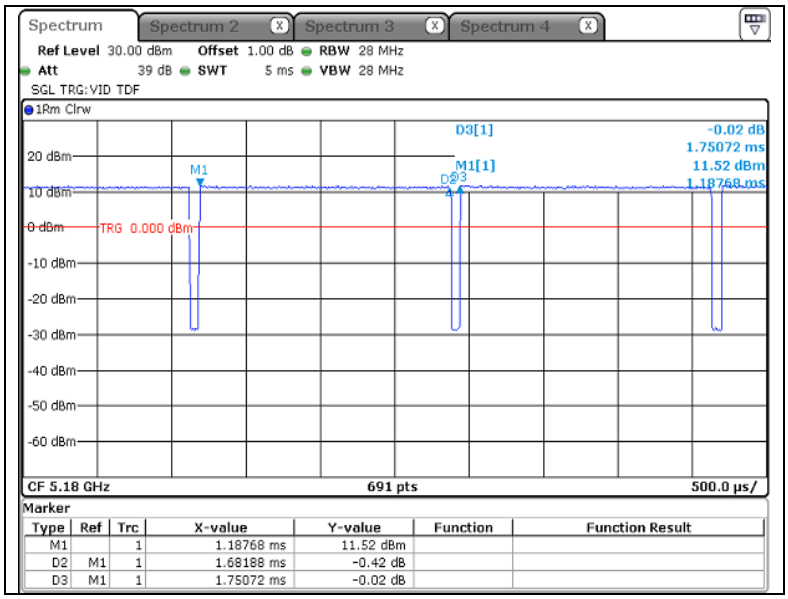
- 802.11ac VHT80



Note1) : period : 0.65 ms, On time : 0.59 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.65 / 0.59) = 0.47, x = 0.90

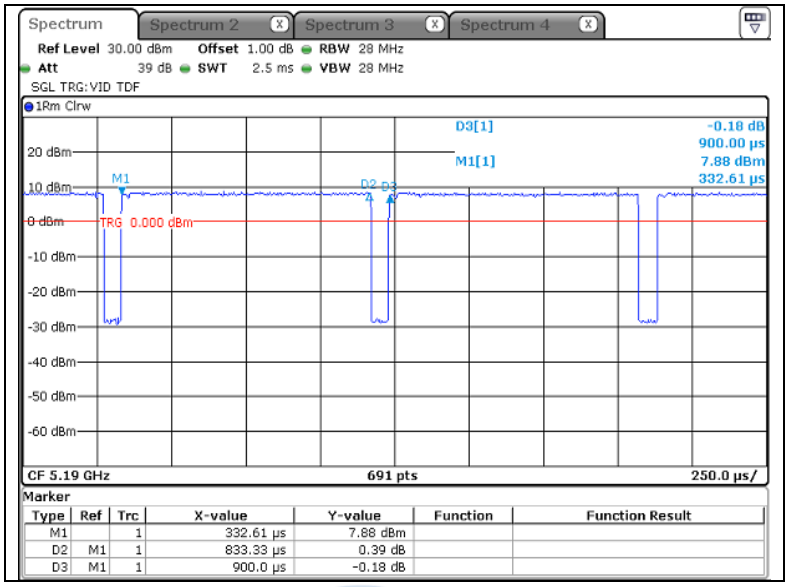
- MIMO (ANT 0+1+2)

- 802.11n HT20



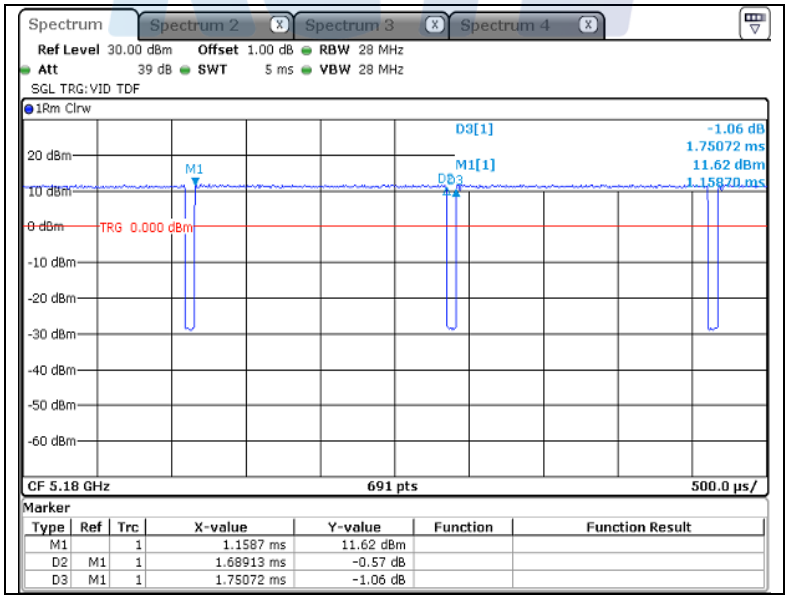
Note1) : period : 1.75 ms, On time : 1.68 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.75 / 1.68) = 0.17, x = 0.96

- 802.11n HT40



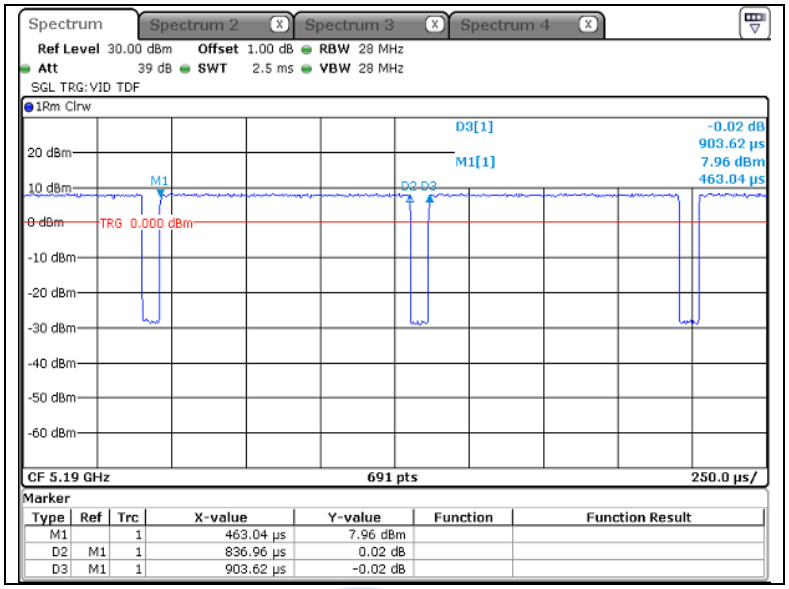
Note1) : period : 0.90 ms, On time : 0.83 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.90 / 0.83) = 0.33, x = 0.93

- 802.11ac VHT20



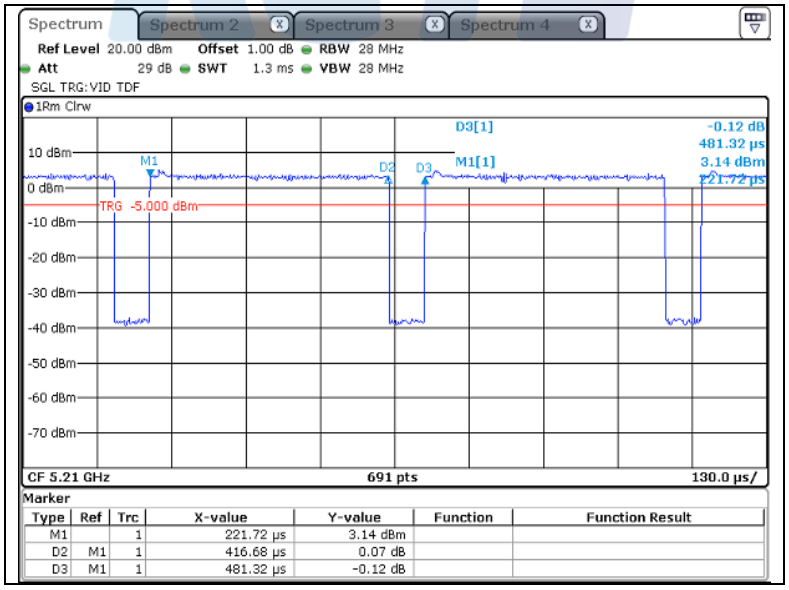
Note1) : period : 1.75 ms, On time : 1.69 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.75 / 1.69) = 0.16, x = 0.96

- 802.11ac VHT40



Note1) : period : 0.90 ms, On time : 0.84 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.90 / 0.84) = 0.33, x = 0.93

- 802.11ac VHT80

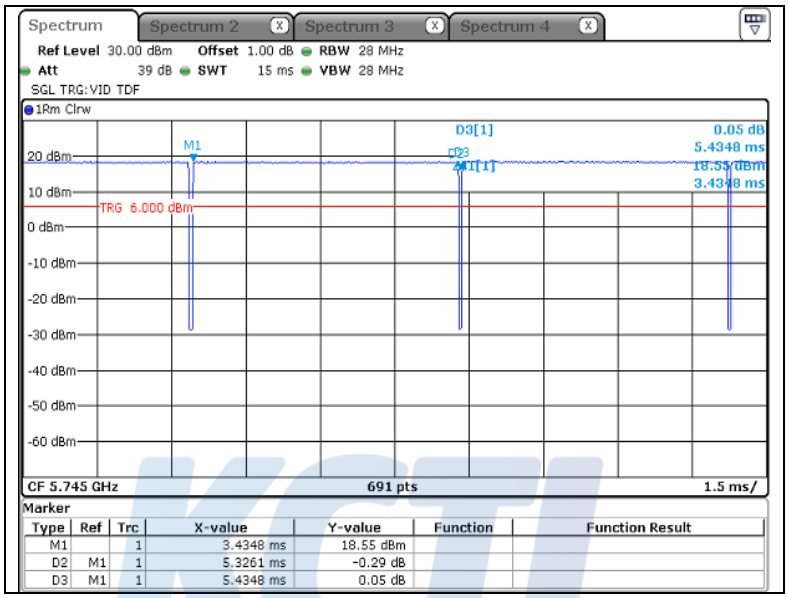


Note1) : period : 0.48 ms, On time : 0.42 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.48 / 0.42) = 0.63, x = 0.87

- 5 725 Band

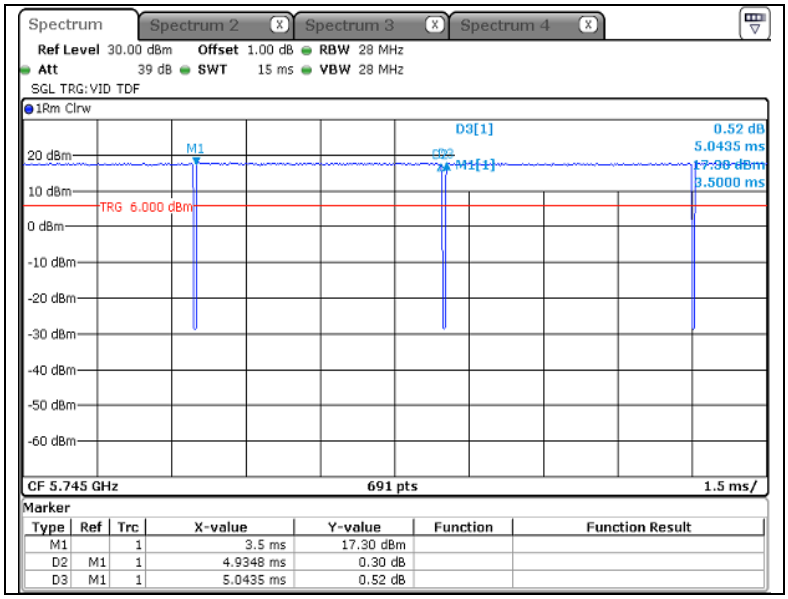
- ANT 0, 1, 2

- 802.11a



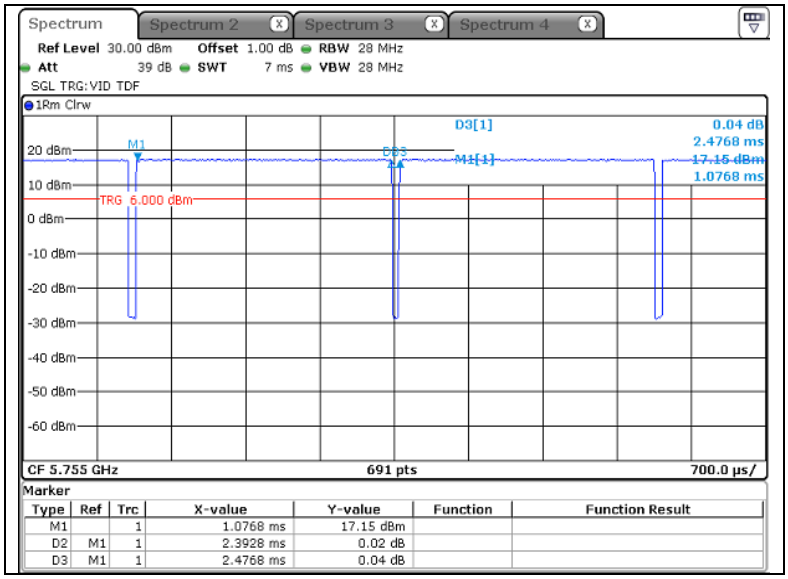
Note1) : period : 5.43 ms, On time : 5.33 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(5.43 / 5.33) = 0.09, x = 0.98
Note3) : 802.11a is a continuous transmission (duty cycle >=98 %)"

- 802.11n HT20



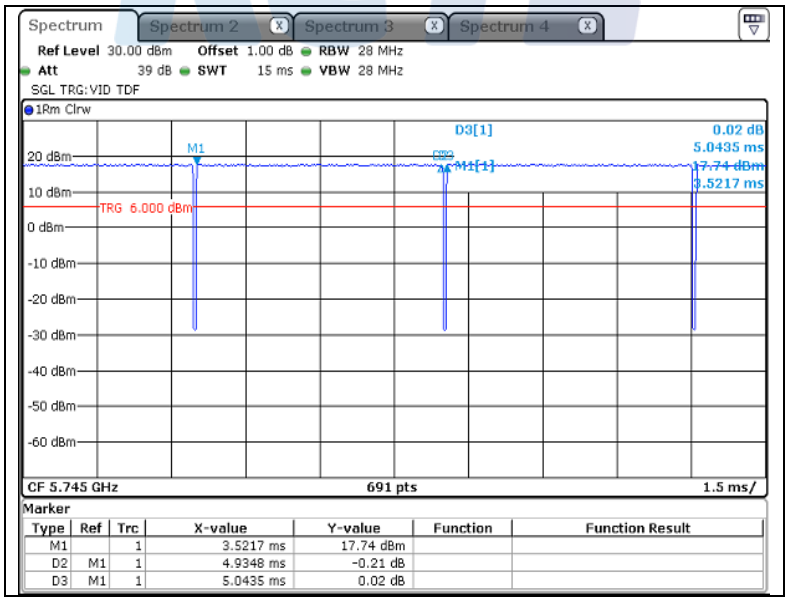
Note1) : period : 5.04 ms, On time : 4.93 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(5.04 / 4.93) = 0.09, x = 0.98
Note3) : 802.11n HT20 is a continuous transmission (duty cycle >=98 %)"

- 802.11n HT40



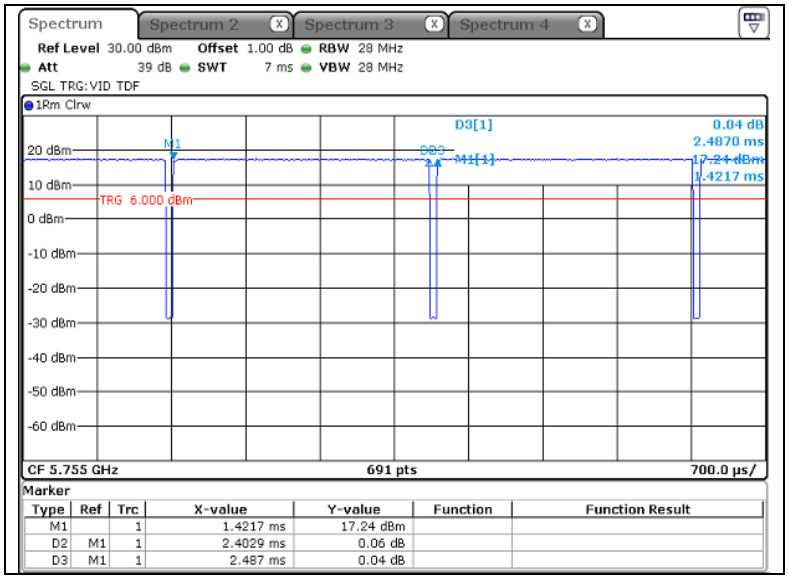
Note1) : period : 2.48 ms, On time : 2.39 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.48 / 2.39) = 0.15, x = 0.97

- 802.11ac VHT20



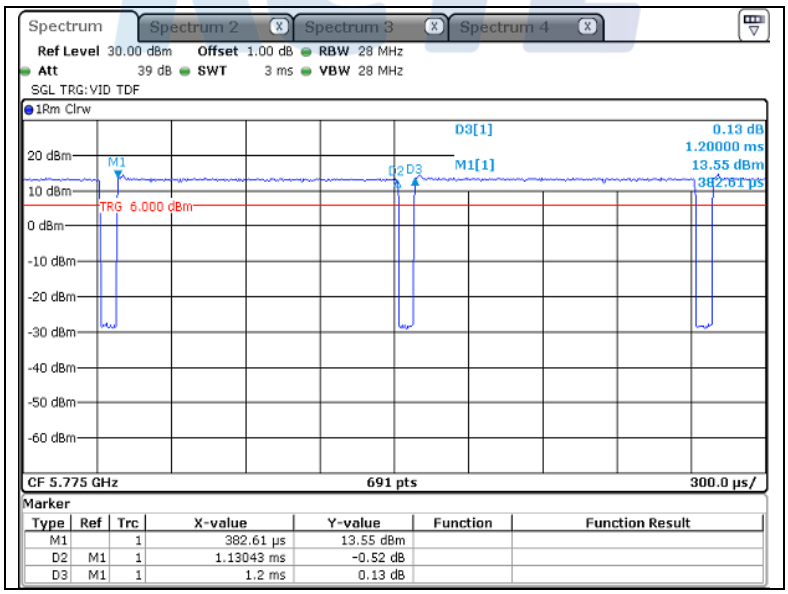
Note1) : period : 5.04 ms, On time : 4.93 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(5.04 / 4.93) = 0.09, x = 0.98
Note3) : 802.11ac VHT20 is a continuous transmission (duty cycle >=98 %)"

- 802.11ac VHT40



Note1) : period : 2.49 ms, On time : 2.40 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.49 / 2.40) = 0.15, x = 0.97

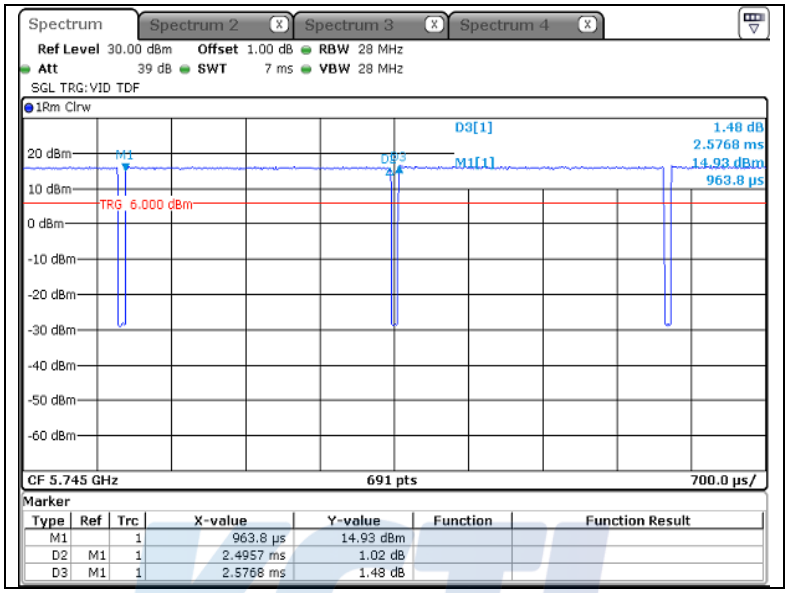
- 802.11ac VHT80



Note1) : period : 1.20 ms, On time : 1.13 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.20 / 1.13) = 0.26, x = 0.94

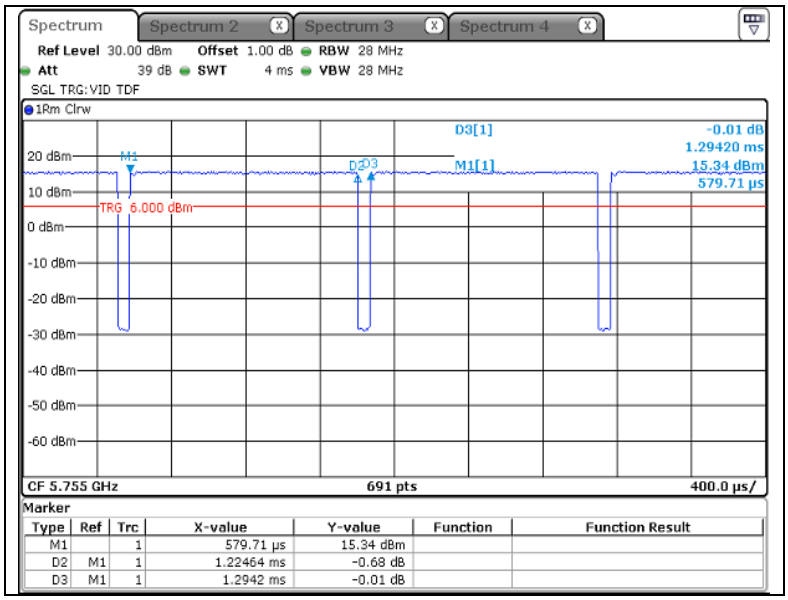
- MIMO (ANT 0+1)

- 802.11n HT20



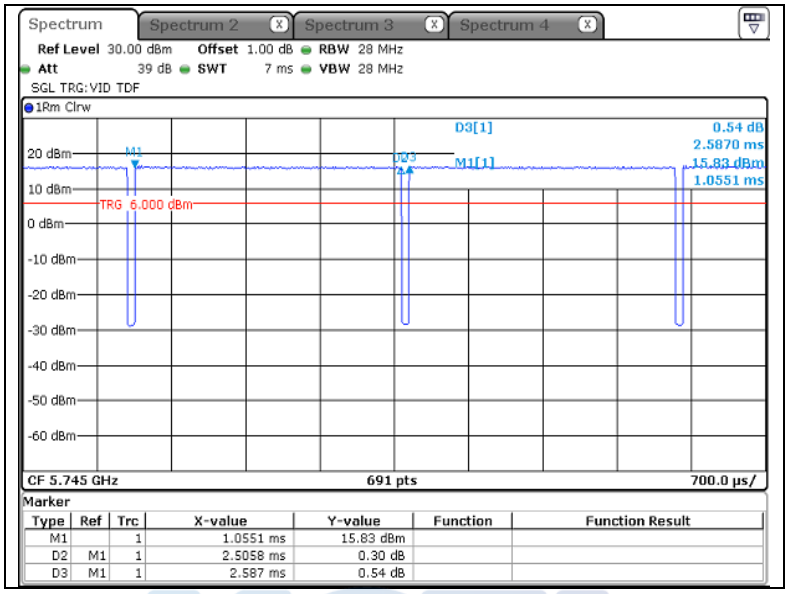
Note1) : period : 2.58 ms, On time : 2.50 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.58 / 2.50) = 0.14, x = 0.97

- 802.11n HT40



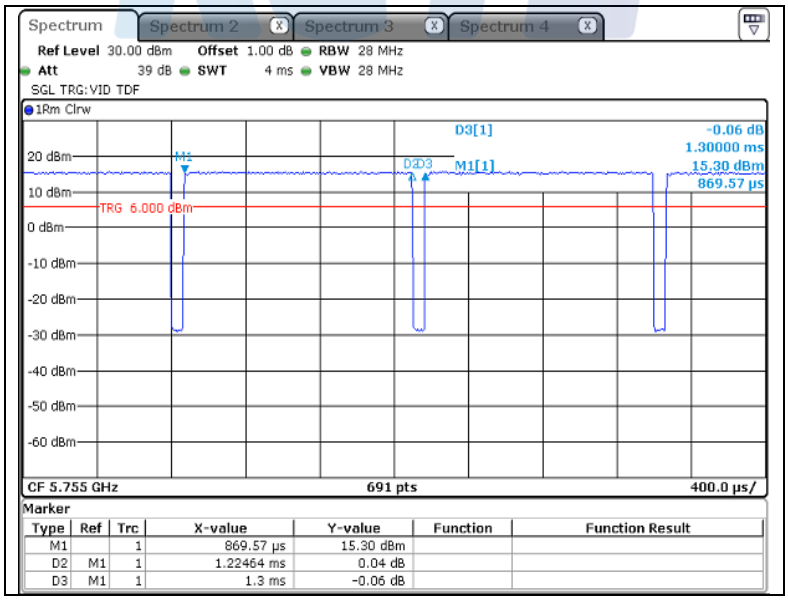
Note1) : period : 1.29 ms, On time : 1.22 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.29 / 1.22) = 0.24, x = 0.95

- 802.11ac VHT20



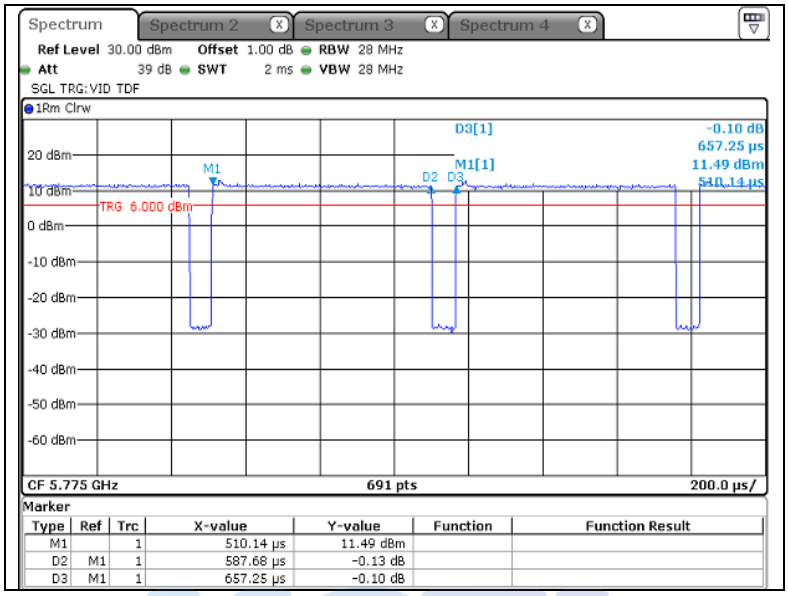
Note1) : period : 2.59 ms, On time : 2.51 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(2.59 / 2.51) = 0.14, x = 0.97

- 802.11ac VHT40



Note1) : period : 1.30 ms, On time : 1.22 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.30 / 1.22) = 0.26, x = 0.94

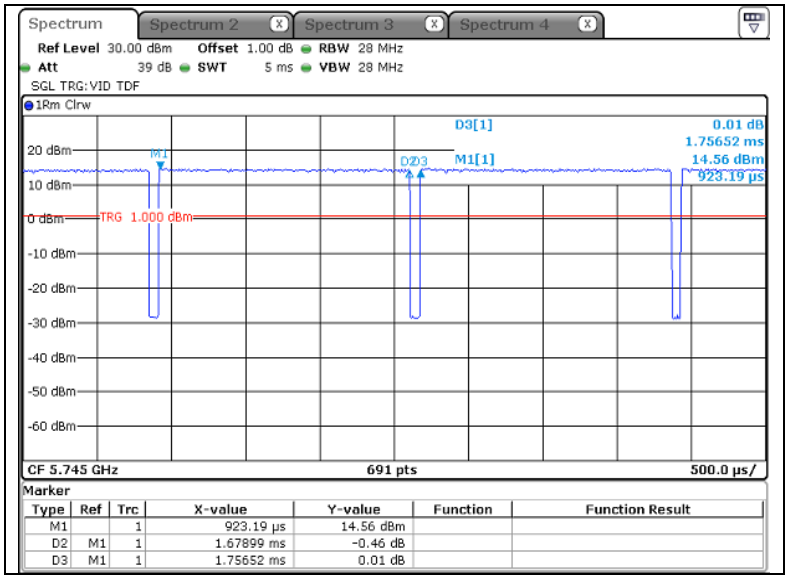
- 802.11ac VHT80



Note1) : period : 0.66 ms, On time : 0.59 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.66 / 0.59) = 0.49, x = 0.89

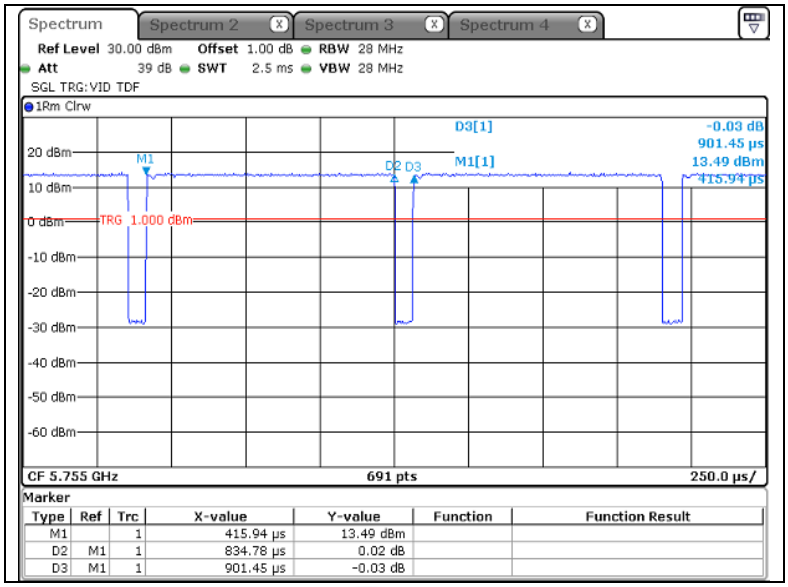
- MIMO (ANT 0+1+2)

- 802.11n HT20



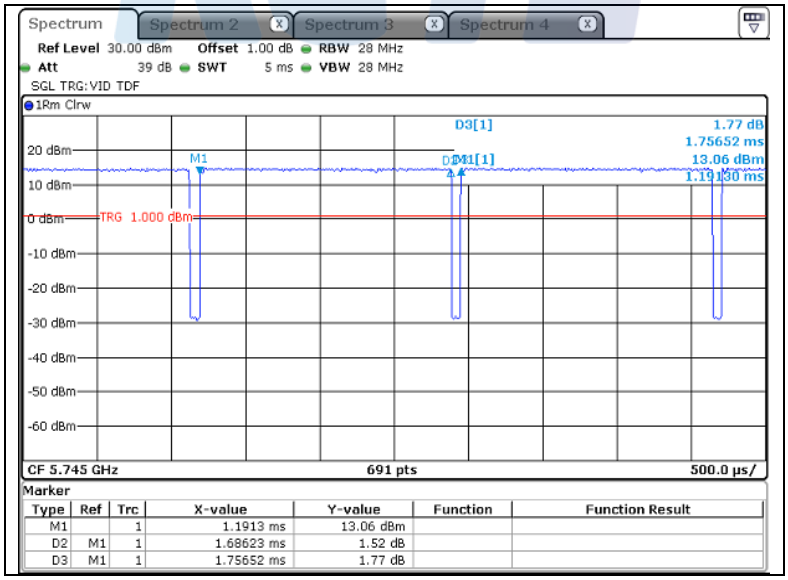
Note1) : period : 1.76 ms, On time : 1.68 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.76 / 1.68) = 0.20, x = 0.96

- 802.11n HT40



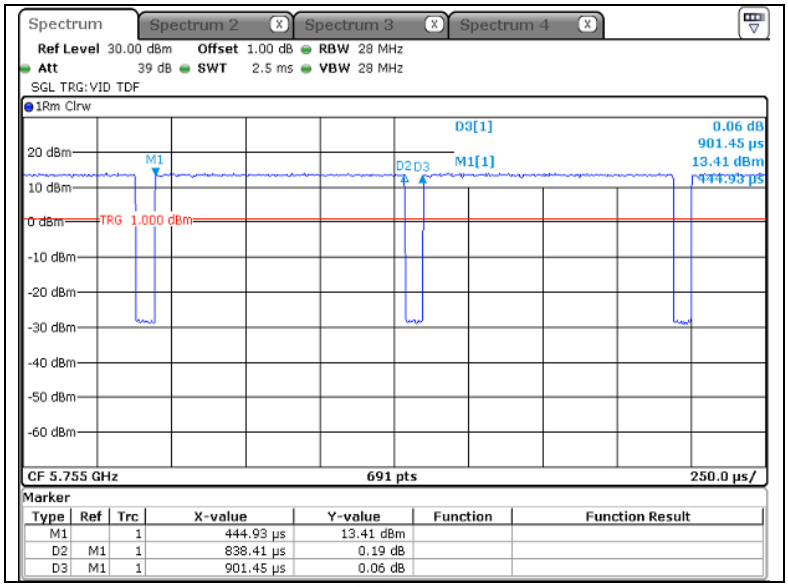
Note1) : period : 0.90 ms, On time : 0.83 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.90 / 0.83) = 0.33, x = 0.93

- 802.11ac VHT20



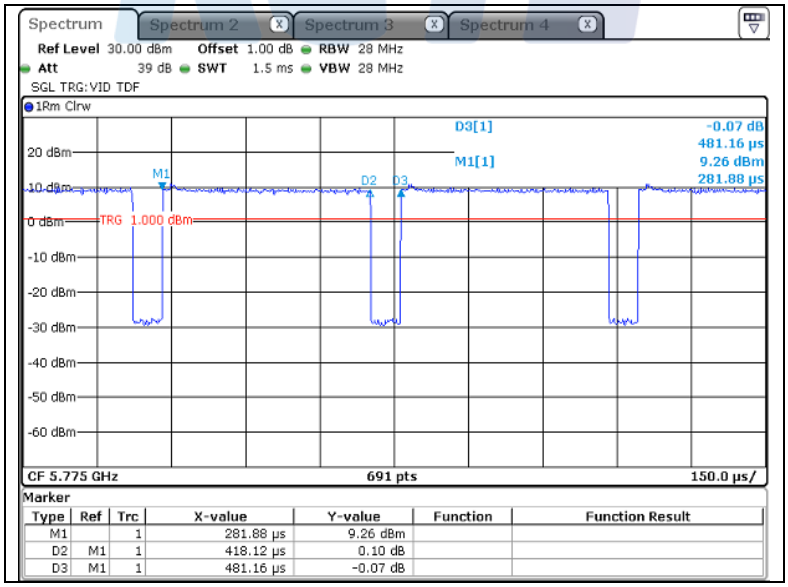
Note1) : period : 1.76 ms, On time : 1.69 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(1.76 / 1.69) = 0.18, x = 0.96

- 802.11ac VHT40



Note1) : period : 0.90 ms, On time : 0.84 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.90 / 0.84) = 0.31, x = 0.93

- 802.11ac VHT80



Note1) : period : 0.48 ms, On time : 0.42 ms
Note2) : DCCF = 10 log(1 / x) = 10 log(0.48 / 0.42) = 0.61, x = 0.87

5.2.3 Test Result

-Complied

- 5 150 Band

- Ant 0

-802.11a

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.74	0.07	17.81	30.00	12.19
Middle	5 200	17.82	0.07	17.89	30.00	12.11
Highest	5 240	17.75	0.07	17.82	30.00	12.18

-802.11n HT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.34	0.08	17.42	30.00	12.58
Middle	5 200	17.25	0.08	17.33	30.00	12.67
Highest	5 240	17.26	0.08	17.34	30.00	12.66

-802.11n HT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	13.63	0.14	13.77	30.00	16.23
Middle	5 230	14.18	0.14	14.32	30.00	15.68

-802.11ac VHT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.24	0.08	17.32	30.00	12.68
Middle	5 200	17.29	0.08	17.37	30.00	12.63
Highest	5 240	17.26	0.08	17.34	30.00	12.66

-802.11ac VHT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	13.63	0.14	13.77	30.00	16.23
Middle	5 230	14.13	0.14	14.27	30.00	15.73

-802.11ac VHT80

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 210	12.05	0.28	12.33	30.00	17.67

- Ant 1

-802.11a

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.64	0.07	17.71	30.00	12.29
Middle	5 200	17.61	0.07	17.68	30.00	12.32
Highest	5 240	17.60	0.07	17.67	30.00	12.33

-802.11n HT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.14	0.08	17.22	30.00	12.78
Middle	5 200	15.75	0.08	15.83	30.00	14.17
Highest	5 240	16.65	0.08	16.73	30.00	13.27

-802.11n HT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	13.28	0.14	13.42	30.00	16.58
Middle	5 230	13.60	0.14	13.74	30.00	16.26

-802.11ac VHT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.19	0.08	17.27	30.00	12.73
Middle	5 200	15.71	0.08	15.79	30.00	14.21
Highest	5 240	16.20	0.08	16.28	30.00	13.72

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-802.11ac VHT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	13.23	0.14	13.37	30.00	16.63
Middle	5 230	13.55	0.14	13.69	30.00	16.31

-802.11ac VHT80

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 210	12.02	0.28	12.30	30.00	17.70

- Ant 2

-802.11a

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	17.14	0.07	17.21	30.00	12.79
Middle	5 200	17.62	0.07	17.69	30.00	12.31
Highest	5 240	17.60	0.07	17.67	30.00	12.33

-802.11n HT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	16.51	0.08	16.59	30.00	13.41
Middle	5 200	17.04	0.08	17.12	30.00	12.88
Highest	5 240	17.15	0.08	17.23	30.00	12.77

-802.11n HT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	13.45	0.14	13.59	30.00	16.41
Middle	5 230	13.82	0.14	13.96	30.00	16.04

-802.11ac VHT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	16.43	0.08	16.51	30.00	13.49
Middle	5 200	16.82	0.08	16.90	30.00	13.10
Highest	5 240	16.92	0.08	17.00	30.00	13.00

-802.11ac VHT40

Channel	Frequency [MHz]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	13.44	0.14	13.58	30.00	16.42
Middle	5 230	13.84	0.14	13.98	30.00	16.02

-802.11ac VHT80

Channel	Frequency [MHz]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 210	12.09	0.28	12.37	30.00	17.63

- MIMO (ANT 0+1)

-802.11n HT20

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	13.01	13.26	0.14	16.29	30.00	13.71
Middle	5 200	13.52	13.76	0.14	16.79	30.00	13.21
Highest	5 240	13.72	13.71	0.14	16.86	30.00	13.14

-802.11n HT40

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	10.19	10.61	0.24	13.65	30.00	16.35
Middle	5 230	10.13	10.55	0.24	13.59	30.00	16.41

-802.11ac VHT20

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	13.02	13.74	0.15	16.56	30.00	13.44
Middle	5 200	13.61	14.14	0.15	17.05	30.00	12.95
Highest	5 240	13.78	14.12	0.15	17.12	30.00	12.88

-802.11ac VHT40

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	10.20	10.75	0.25	13.75	30.00	16.25
Middle	5 230	10.68	10.98	0.25	14.10	30.00	15.90

-802.11ac VHT80

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 210	8.81	9.28	0.47	12.53	30.00	17.47

- MIMO (ANT 0+1+2)

-802.11n HT20

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	11.30	11.67	11.15	0.17	16.32	30.00	13.68
Middle	5 200	11.98	12.17	11.89	0.17	16.96	30.00	13.04
Highest	5 240	11.80	12.15	11.79	0.17	16.86	30.00	13.14

-802.11n HT40

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	8.68	8.89	8.47	0.33	13.79	30.00	16.21
Middle	5 230	9.23	9.26	9.29	0.33	14.37	30.00	15.63

-802.11ac VHT20

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 180	11.23	11.52	11.03	0.16	16.19	30.00	13.81
Middle	5 200	11.53	11.94	11.56	0.16	16.61	30.00	13.39
Highest	5 240	12.11	11.97	11.56	0.16	16.81	30.00	13.19

-802.11ac VHT40

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 190	8.69	8.85	9.33	0.33	14.07	30.00	15.93
Middle	5 230	9.09	9.14	9.21	0.33	14.25	30.00	15.75

-802.11ac VHT80

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 210	7.39	7.13	7.26	0.63	12.66	30.00	17.34

- 5 725 Band

- Ant 0

-802.11a

Channel	Frequency [MHz]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	19.08	0.09	19.17	30.00	10.83
Middle	5 785	19.20	0.09	19.29	30.00	10.71
Highest	5 825	19.11	0.09	19.20	30.00	10.80

-802.11n HT20

Channel	Frequency [MHz]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	18.76	0.09	18.85	30.00	11.15
Middle	5 785	18.75	0.09	18.84	30.00	11.16
Highest	5 825	18.60	0.09	18.69	30.00	11.31

-802.11n HT40

Channel	Frequency [MHz]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	18.55	0.15	18.70	30.00	11.30
Middle	5 795	18.87	0.15	19.02	30.00	10.98

-802.11ac VHT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	18.83	0.09	18.92	30.00	11.08
Middle	5 785	18.66	0.09	18.75	30.00	11.25
Highest	5 825	18.68	0.09	18.77	30.00	11.23

-802.11ac VHT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	18.63	0.15	18.78	30.00	11.22
Middle	5 795	18.59	0.15	18.74	30.00	11.26

-802.11ac VHT80

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 775	18.63	0.26	18.89	30.00	11.11

- Ant 1

-802.11a

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	19.05	0.09	19.14	30.00	10.86
Middle	5 785	19.09	0.09	19.18	30.00	10.82
Highest	5 825	19.02	0.09	19.11	30.00	10.89

-802.11n HT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	18.69	0.09	18.78	30.00	11.22
Middle	5 785	18.71	0.09	18.80	30.00	11.20
Highest	5 825	18.58	0.09	18.67	30.00	11.33

-802.11n HT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	18.75	0.15	18.90	30.00	11.10
Middle	5 795	18.83	0.15	18.98	30.00	11.02

-802.11ac VHT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	18.66	0.09	18.75	30.00	11.25
Middle	5 785	18.91	0.09	19.00	30.00	11.00
Highest	5 825	18.76	0.09	18.85	30.00	11.15

-802.11ac VHT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	18.50	0.15	18.65	30.00	11.35
Middle	5 795	18.75	0.15	18.90	30.00	11.10

-802.11ac VHT80

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 775	18.56	0.26	18.82	30.00	11.18

- Ant 2

-802.11a

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	19.16	0.09	19.25	30.00	10.75
Middle	5 785	19.03	0.09	19.12	30.00	10.88
Highest	5 825	19.14	0.09	19.23	30.00	10.77

-802.11n HT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	18.56	0.09	18.65	30.00	11.35
Middle	5 785	18.61	0.09	18.70	30.00	11.30
Highest	5 825	18.43	0.09	18.52	30.00	11.48

-802.11n HT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	18.67	0.15	18.82	30.00	11.18
Middle	5 795	18.83	0.15	18.98	30.00	11.02

-802.11ac VHT20

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	18.56	0.09	18.65	30.00	11.35
Middle	5 785	18.66	0.09	18.75	30.00	11.25
Highest	5 825	18.57	0.09	18.66	30.00	11.34

-802.11ac VHT40

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	18.65	0.15	18.80	30.00	11.20
Middle	5 795	18.81	0.15	18.96	30.00	11.04

-802.11ac VHT80

Channel	Frequency [㎒]	Average power [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 775	18.68	0.26	18.94	30.00	11.06

- MIMO (ANT 0+1)

-802.11n HT20

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	15.20	15.63	0.14	18.57	30.00	11.43
Middle	5 785	15.27	15.60	0.14	18.59	30.00	11.41
Highest	5 825	15.35	15.66	0.14	18.66	30.00	11.34

-802.11n HT40

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	15.14	15.68	0.24	18.67	30.00	11.33
Middle	5 795	15.21	15.63	0.24	18.68	30.00	11.32

-802.11ac VHT20

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	15.24	15.62	0.14	18.58	30.00	11.42
Middle	5 785	15.31	15.59	0.14	18.60	30.00	11.40
Highest	5 825	15.31	15.54	0.14	18.58	30.00	11.42

-802.11ac VHT40

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	15.35	15.77	0.26	18.83	30.00	11.17
Middle	5 795	15.27	15.76	0.26	18.79	30.00	11.21

-802.11ac VHT80

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 775	14.75	15.84	0.49	18.83	30.00	11.17

- MIMO (ANT 0+1+2)

-802.11n HT20

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	13.21	13.77	14.08	0.20	18.67	30.00	11.33
Middle	5 785	13.14	13.86	14.32	0.20	18.77	30.00	11.23
Highest	5 825	13.20	13.75	14.28	0.20	18.73	30.00	11.27

-802.11n HT40

Channel	Frequency [㎒]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	14.05	14.03	13.99	0.33	19.13	30.00	10.87
Middle	5 795	13.70	14.19	13.61	0.33	18.95	30.00	11.05

-802.11ac VHT20

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 745	13.20	13.39	14.37	0.18	18.63	30.00	11.37
Middle	5 785	13.25	13.58	14.28	0.18	18.67	30.00	11.33
Highest	5 825	13.52	13.57	13.91	0.18	18.62	30.00	11.38

-802.11ac VHT40

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 755	13.53	14.18	13.99	0.31	18.99	30.00	11.01
Middle	5 795	13.70	13.94	13.47	0.31	18.79	30.00	11.21

-802.11ac VHT80

Channel	Frequency [MHz]	Average power _ANT 0 [dBm]	Average power _ANT 1 [dBm]	Average power _ANT 2 [dBm]	D.C.C.F [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Lowest	5 775	12.69	14.07	14.03	0.61	19.02	30.00	10.98

Note: D.C.C.F = Duty cycle correction factor = 10log(1/Duty Cycle)

5.2.4 Test Plot

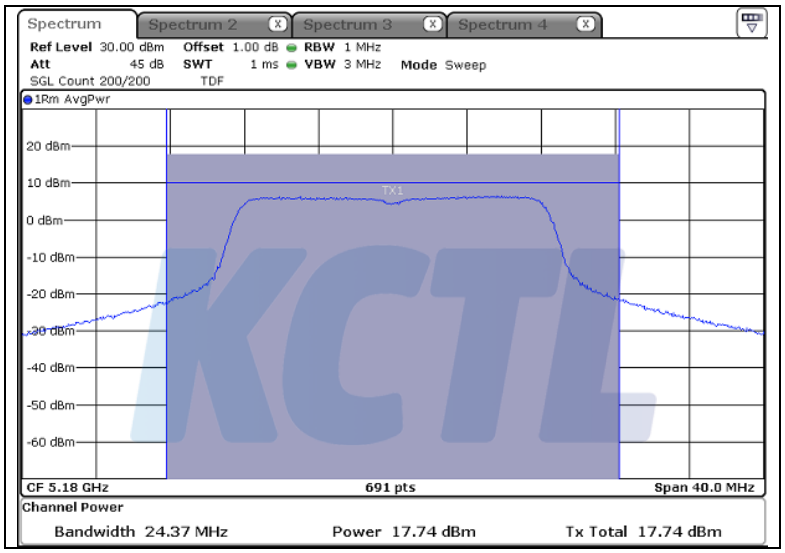
Figure 1. Conducted Output Power

- 5 150 Band

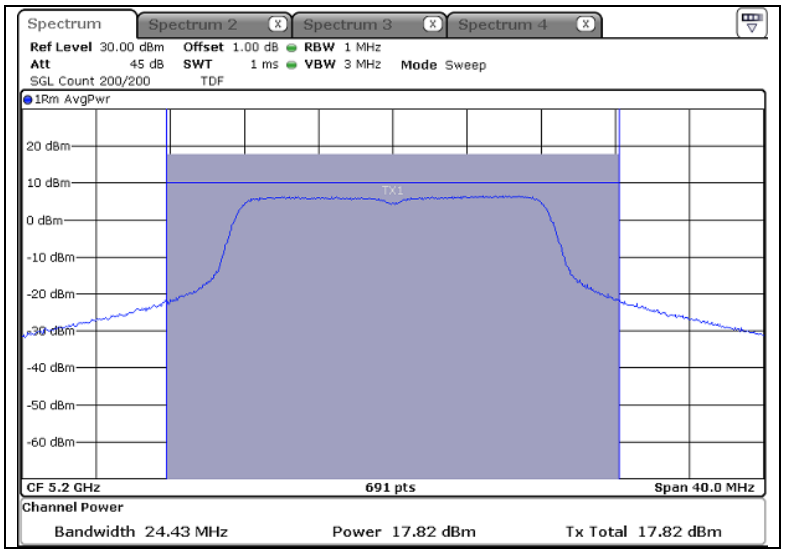
- ANT 0

-802.11a

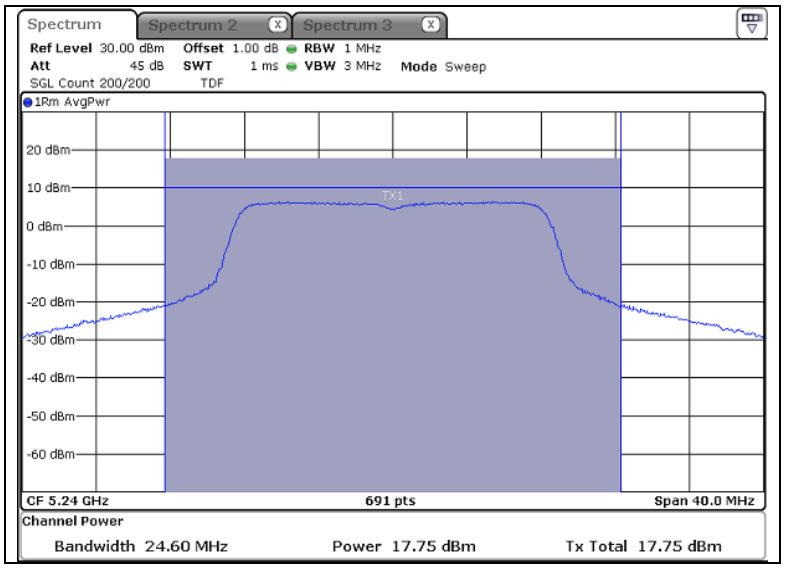
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

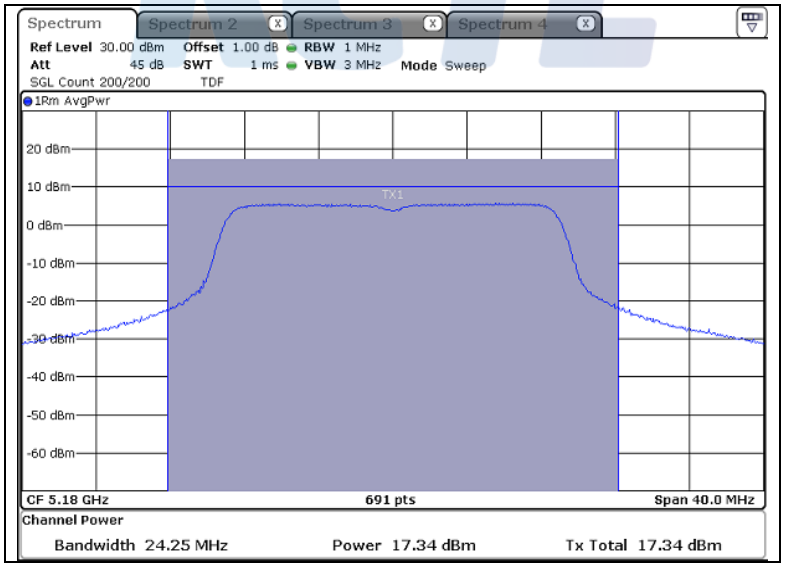


Highest Channel (5 240 ㎒)

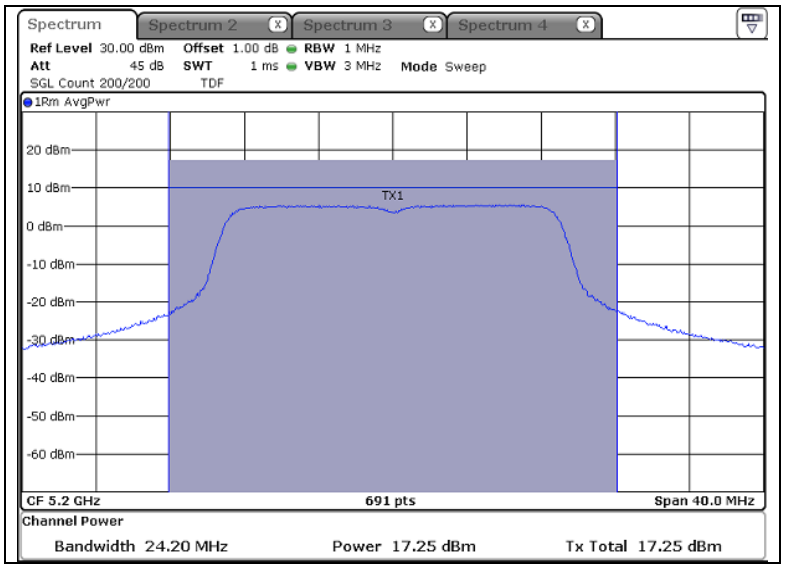


-802.11n HT20

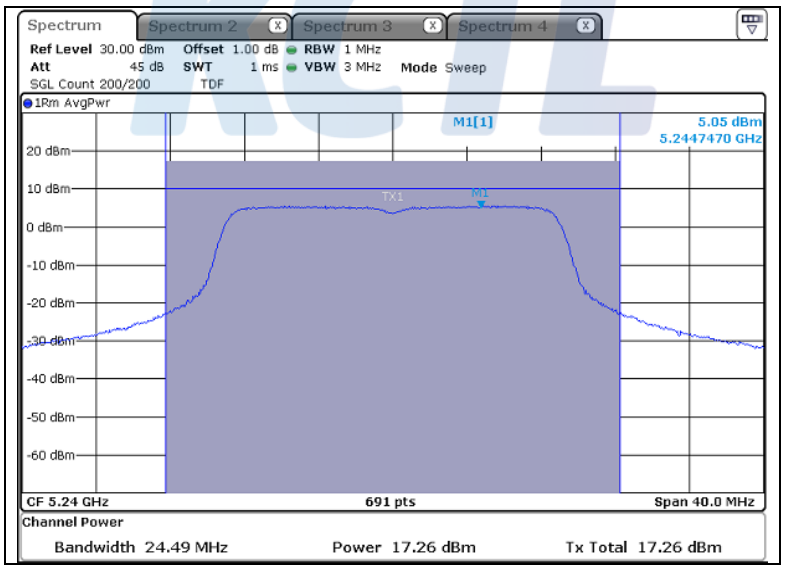
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

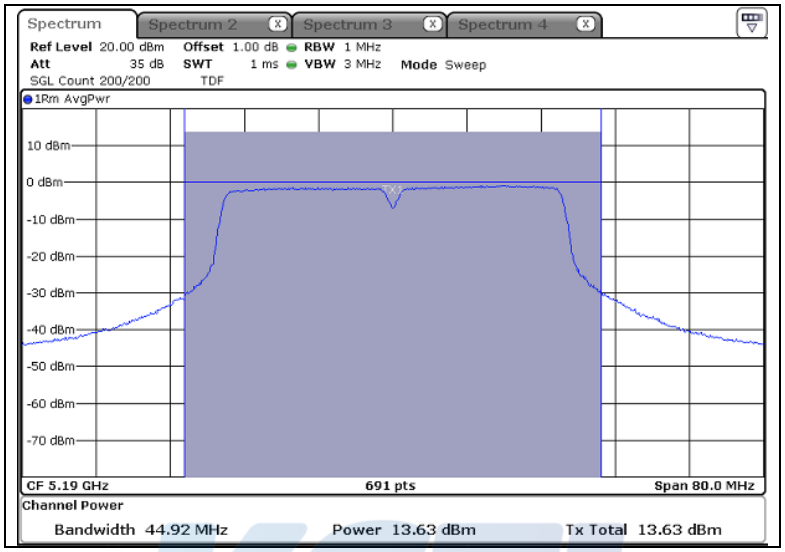


Highest Channel (5 240 ㎒)

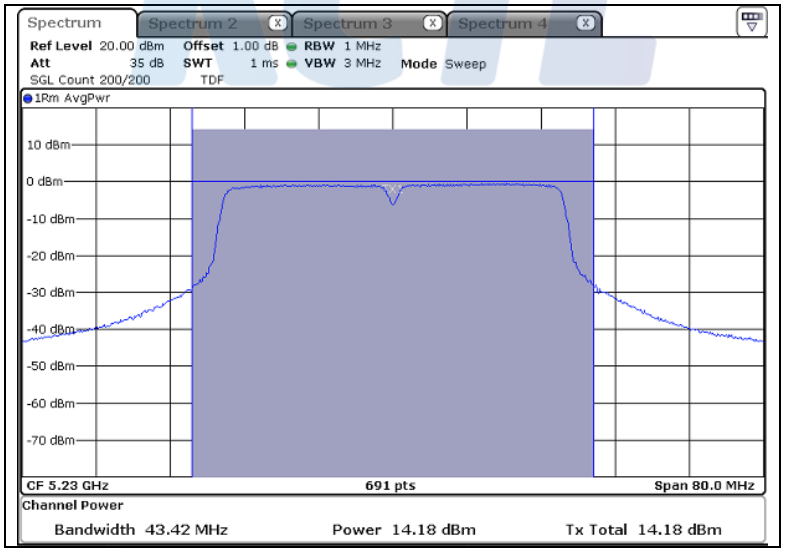


-802.11n_HT40

Lowest Channel (5 190 ㎒)

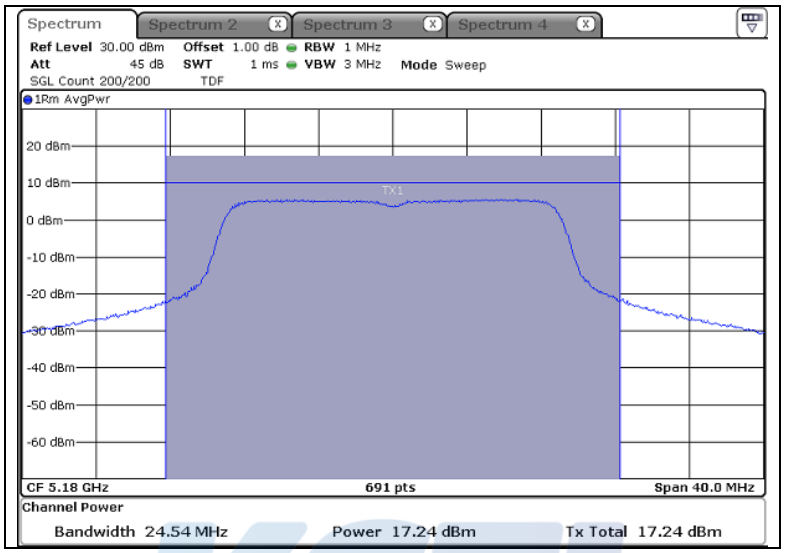


Middle Channel (5 230 ㎒)

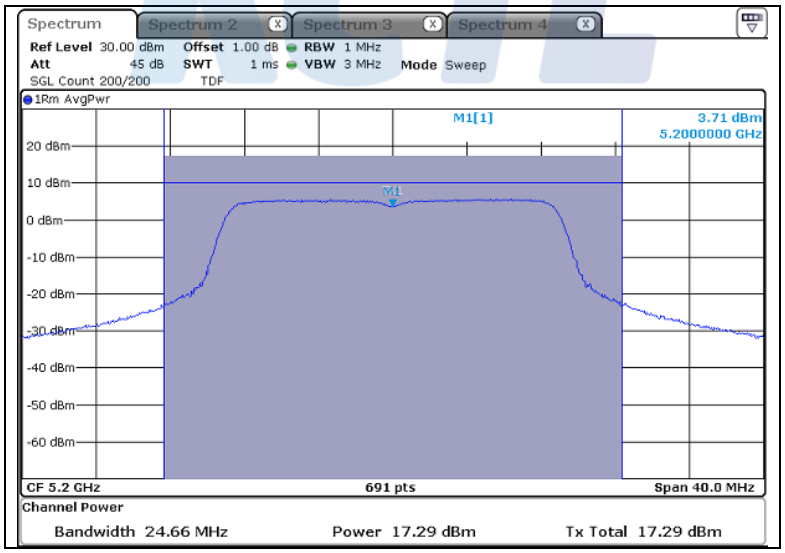


-802.11ac VHT20

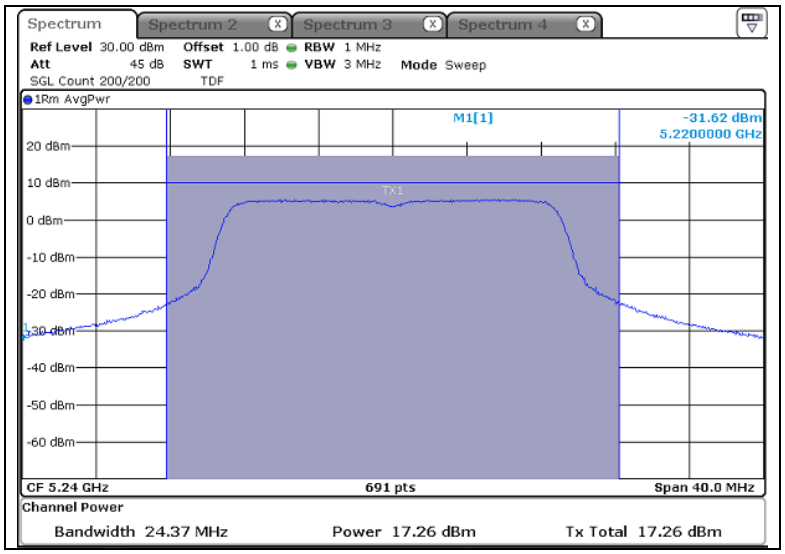
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

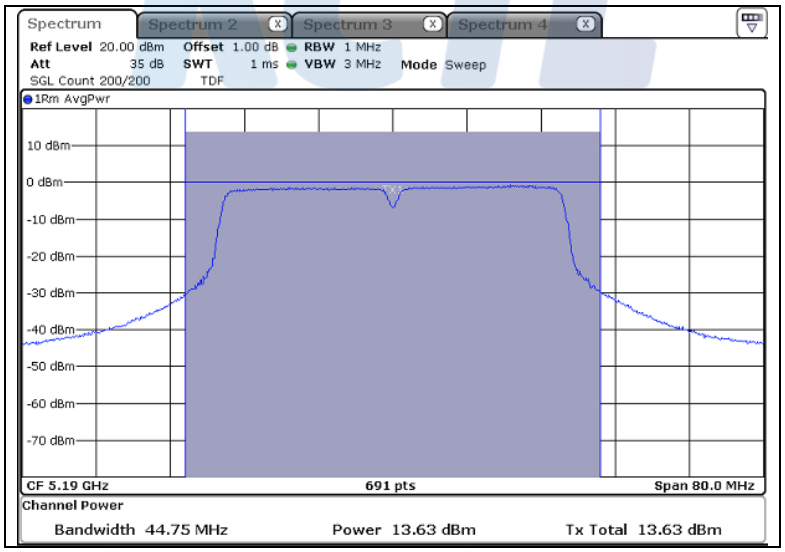


Highest Channel (5 240 ㎒)

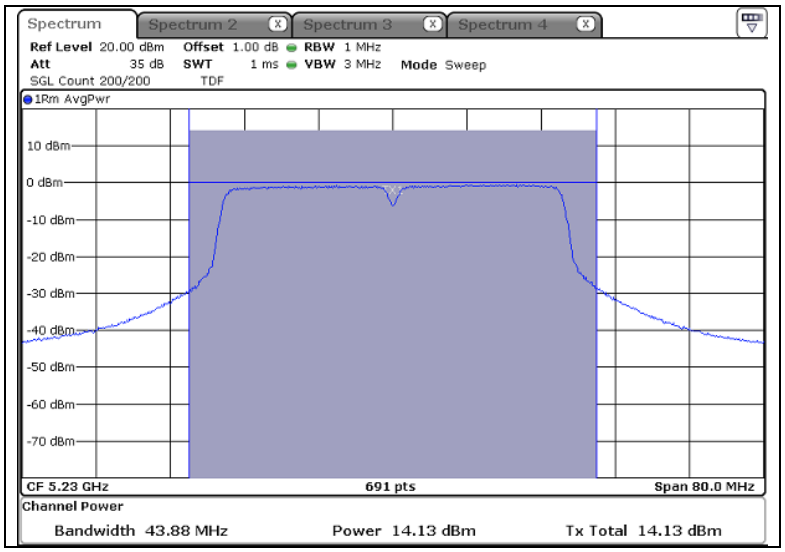


-802.11ac VHT40

Lowest Channel (5 190 ㎒)

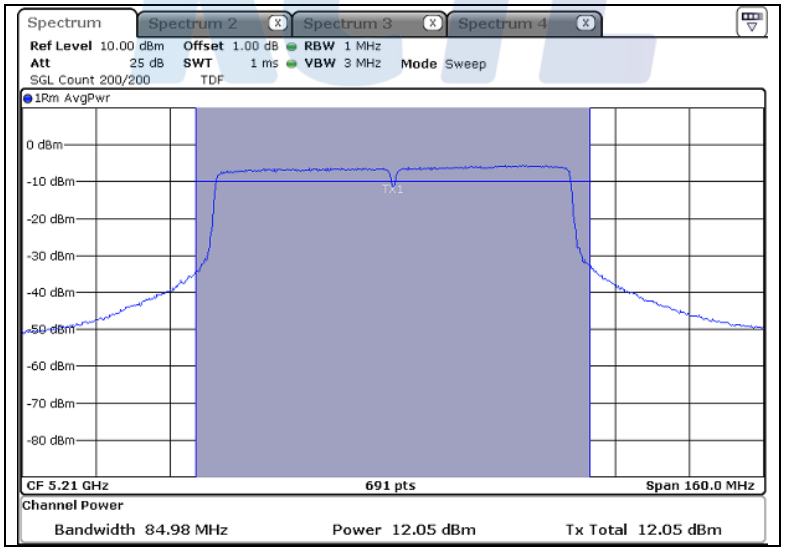


Highest Channel (5 230 ㎒)



-802.11ac VHT80

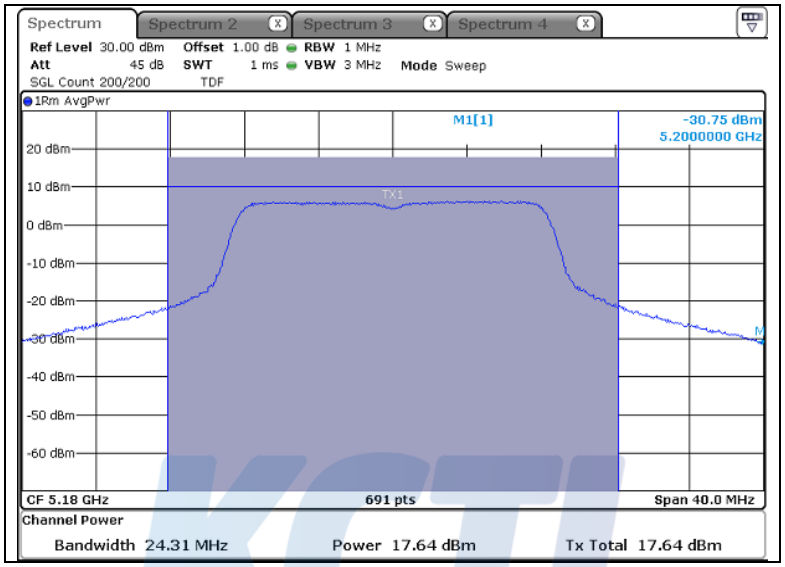
Lowest Channel (5 210 ㎒)



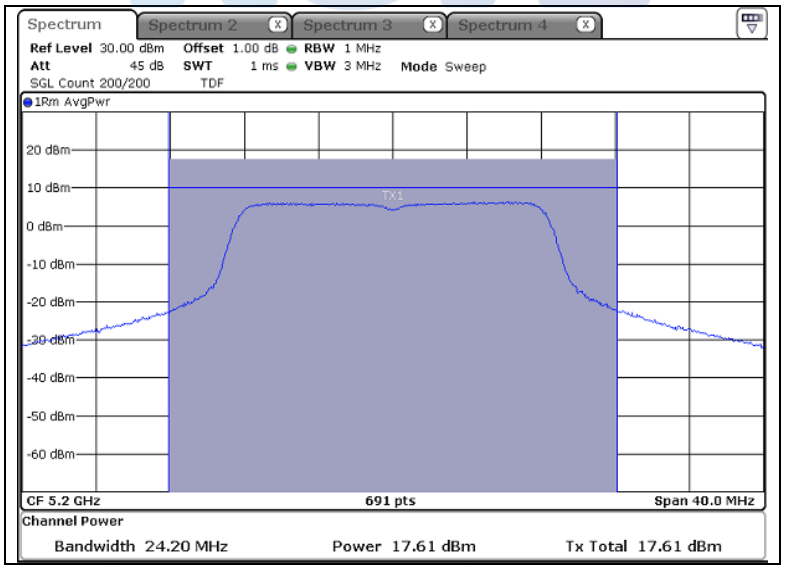
- ANT 1

-802.11a

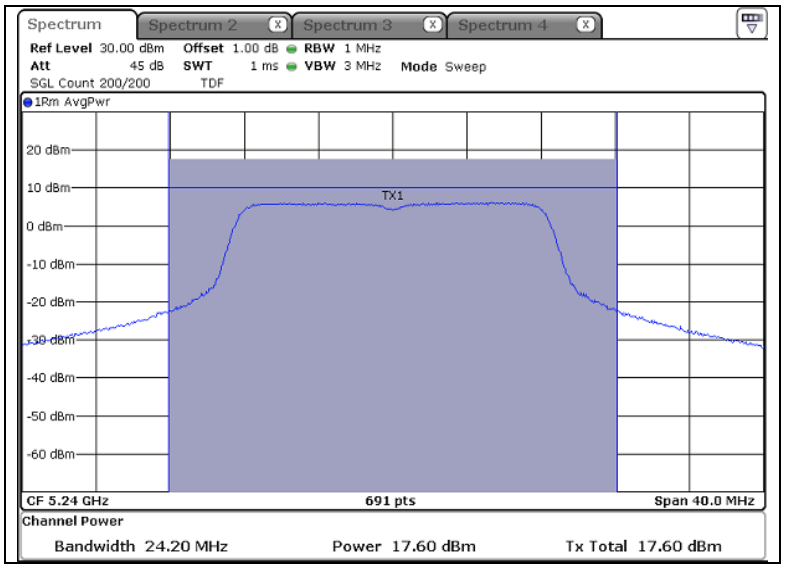
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

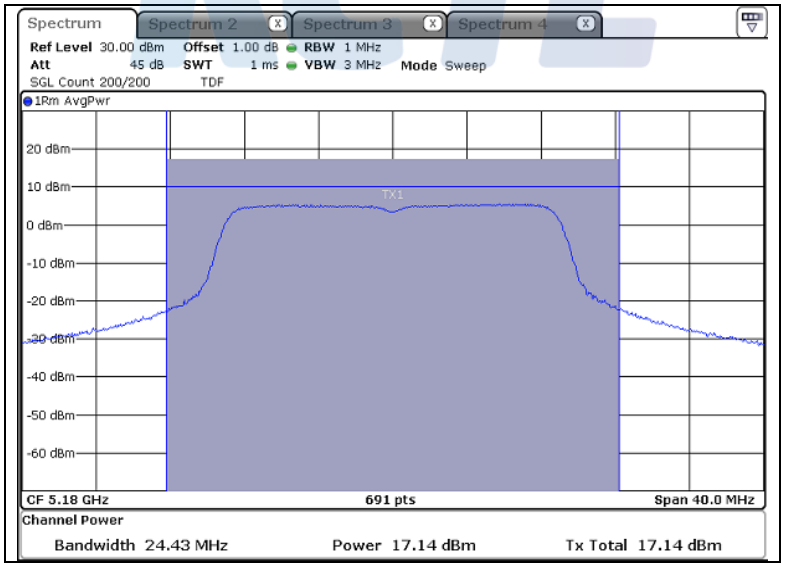


Highest Channel (5 240 ㎒)

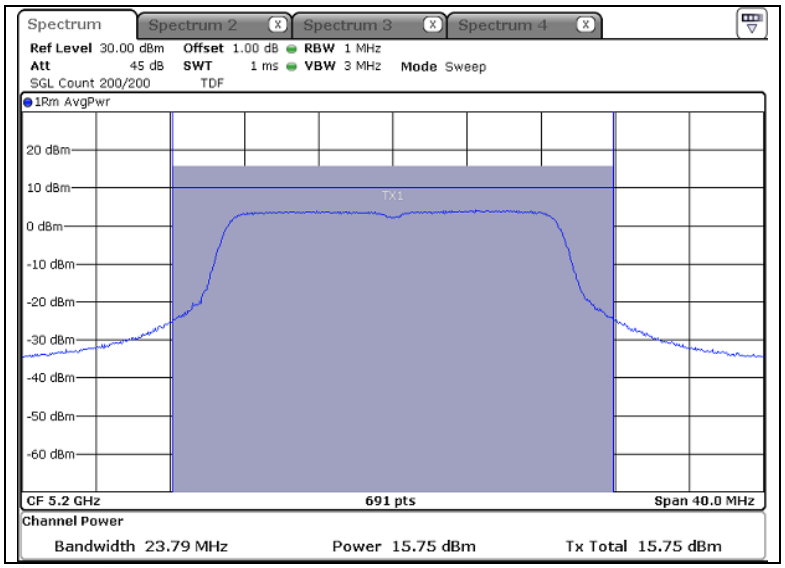


-802.11n HT20

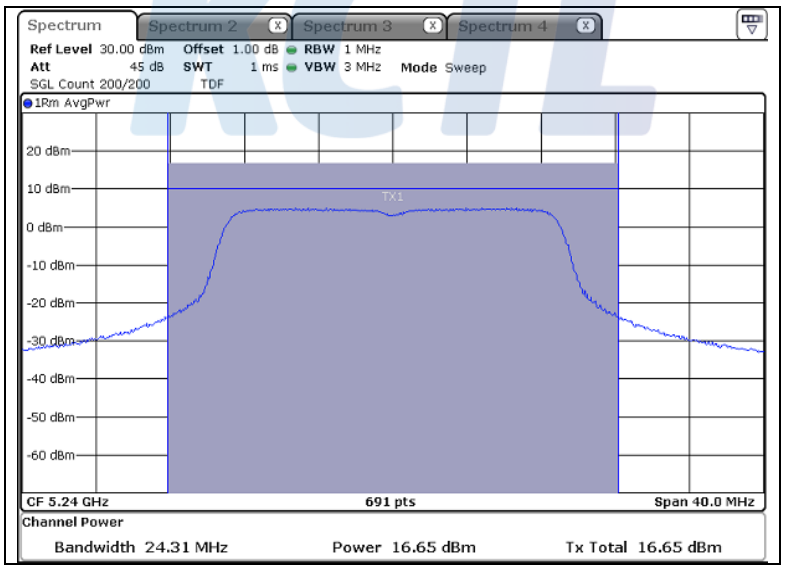
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

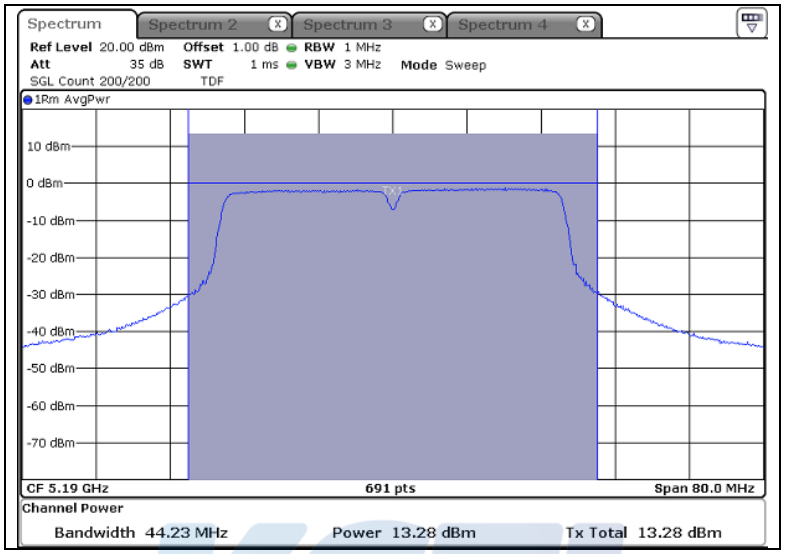


Highest Channel (5 240 ㎒)

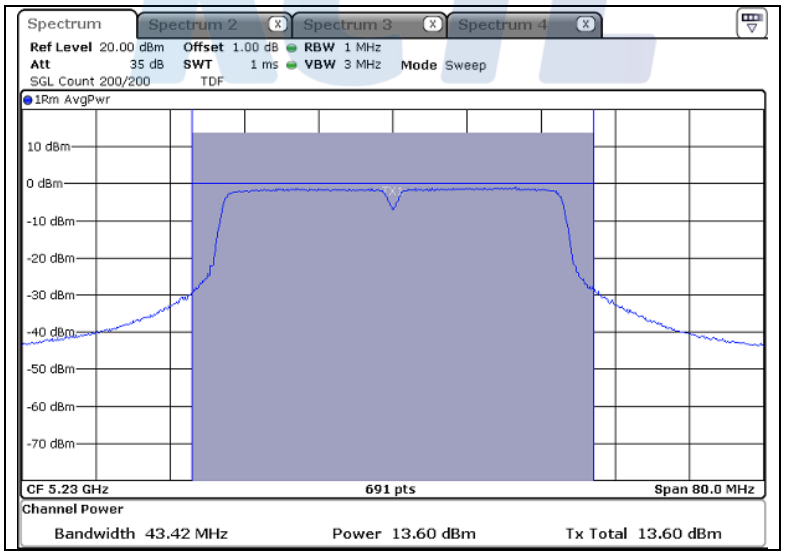


-802.11n_HT40

Lowest Channel (5 190 ㎒)

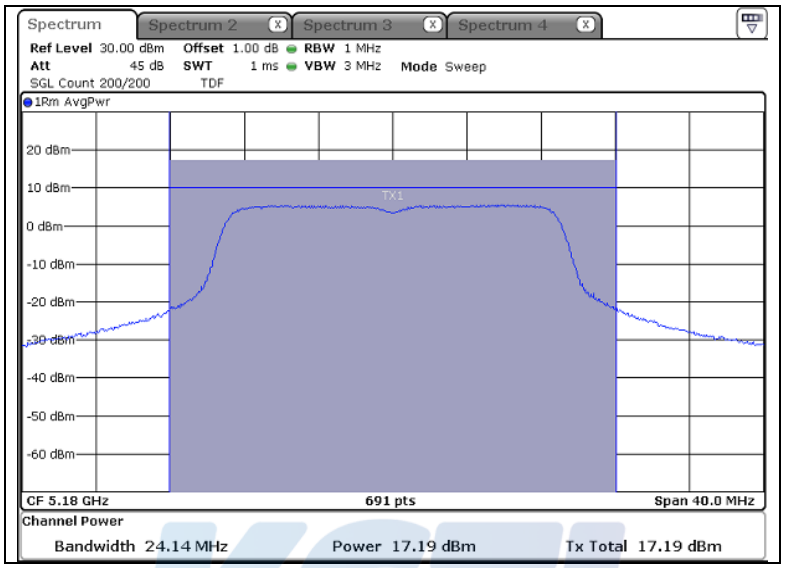


Middle Channel (5 230 ㎒)

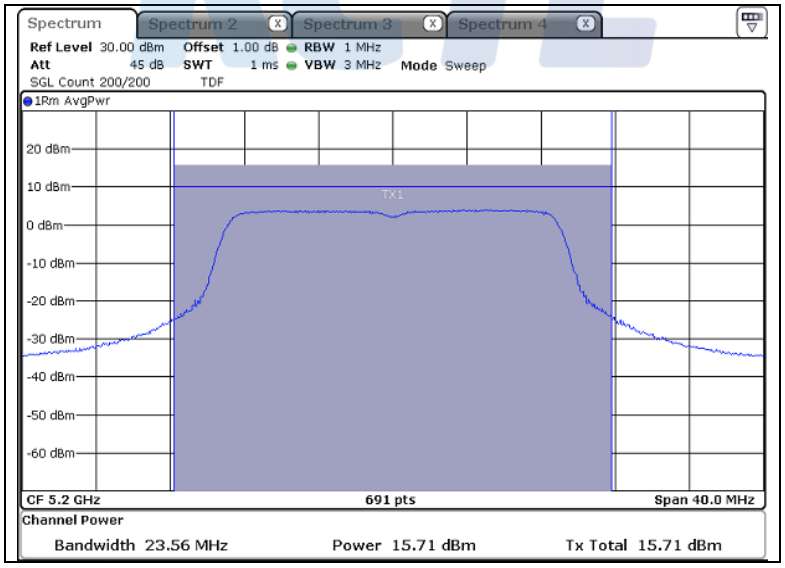


-802.11ac VHT20

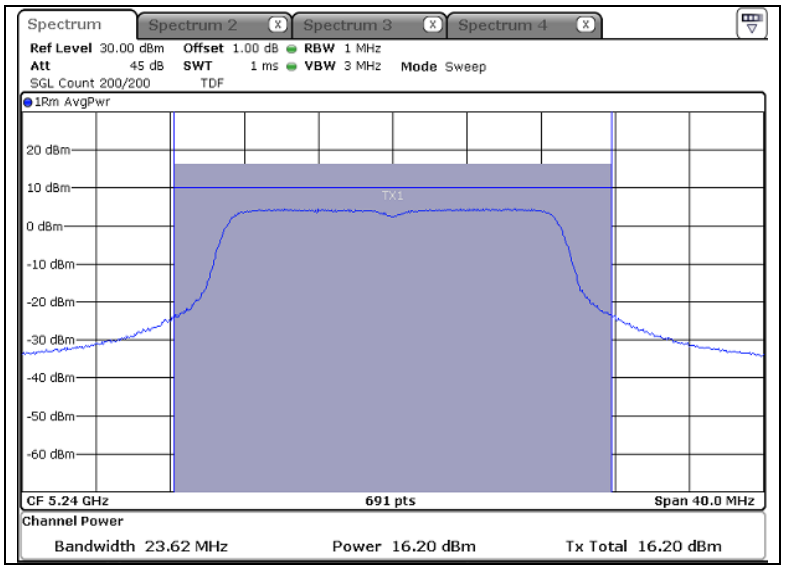
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

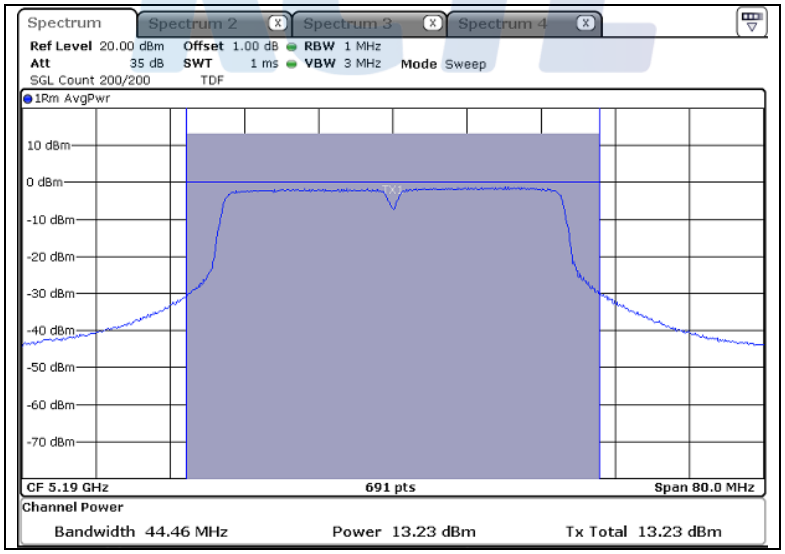


Highest Channel (5 240 ㎒)

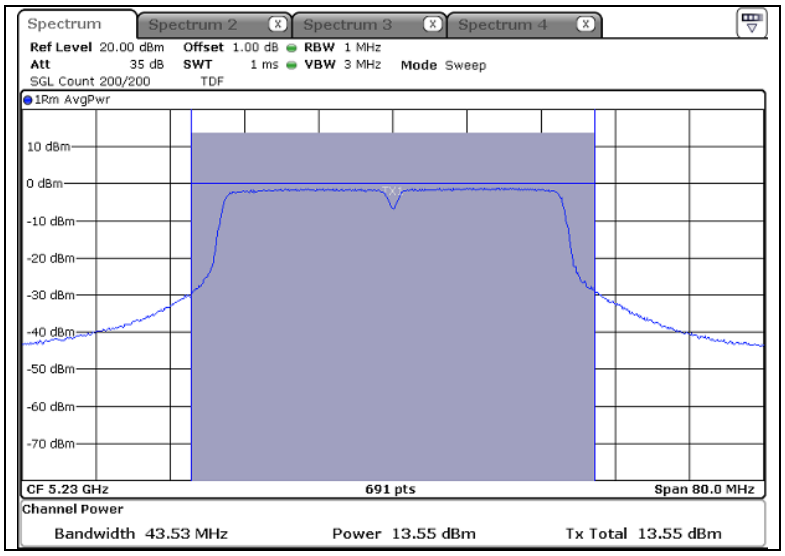


-802.11ac VHT40

Lowest Channel (5 190 ㎒)

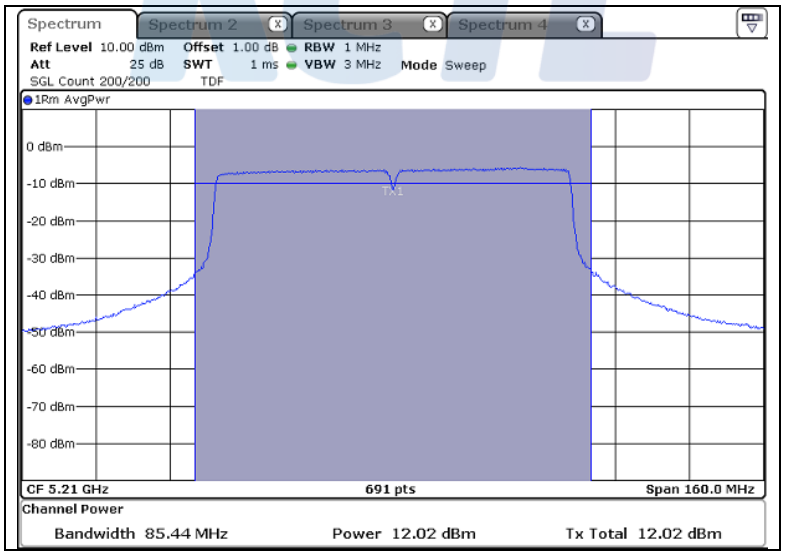


Highest Channel (5 230 ㎒)



-802.11ac VHT80

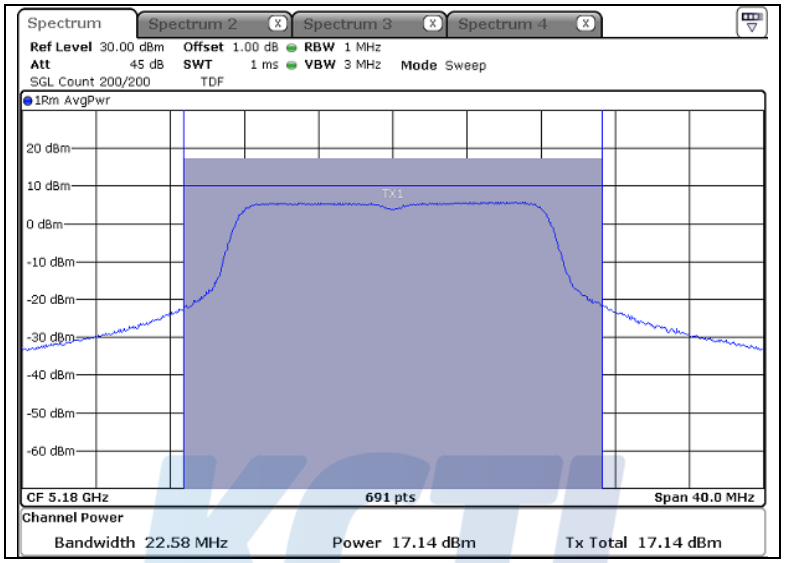
Lowest Channel (5 210 ㎒)



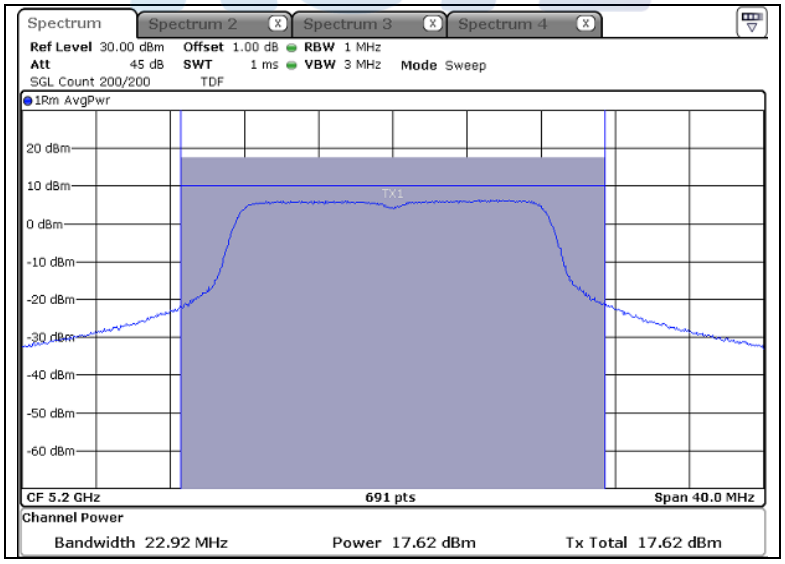
- ANT 2

-802.11a

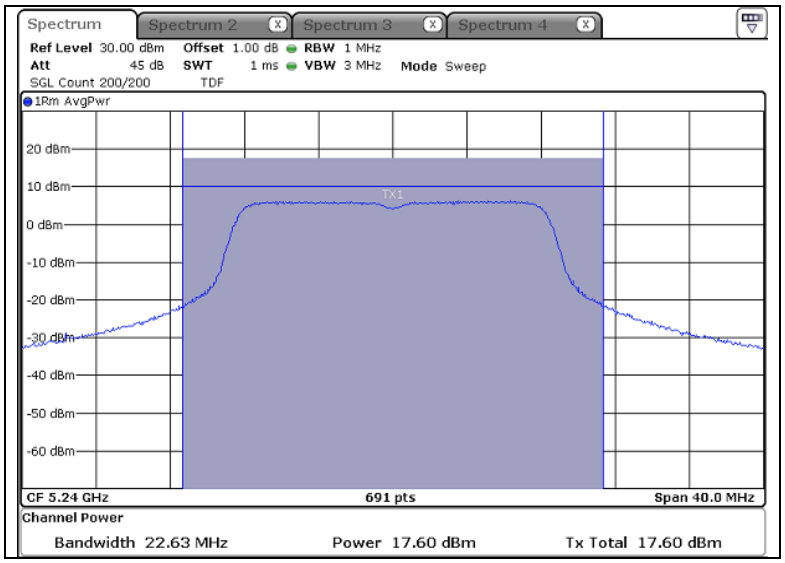
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

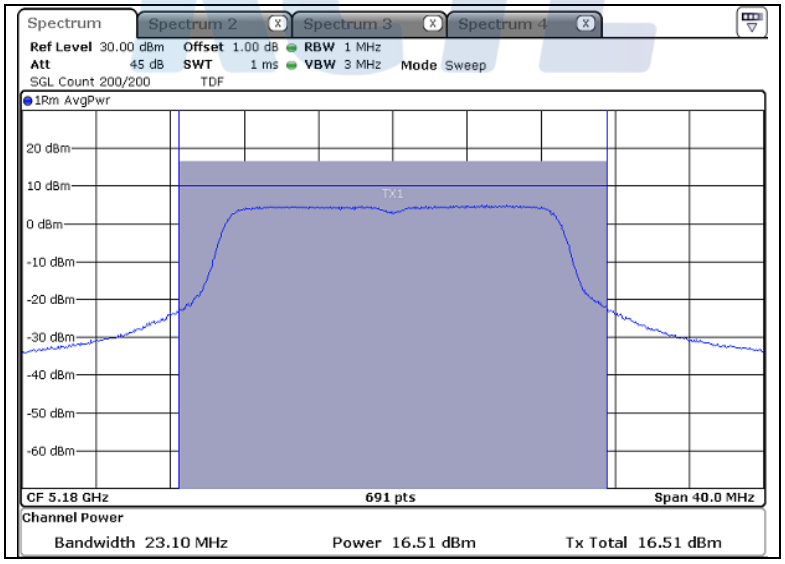


Highest Channel (5 240 ㎒)

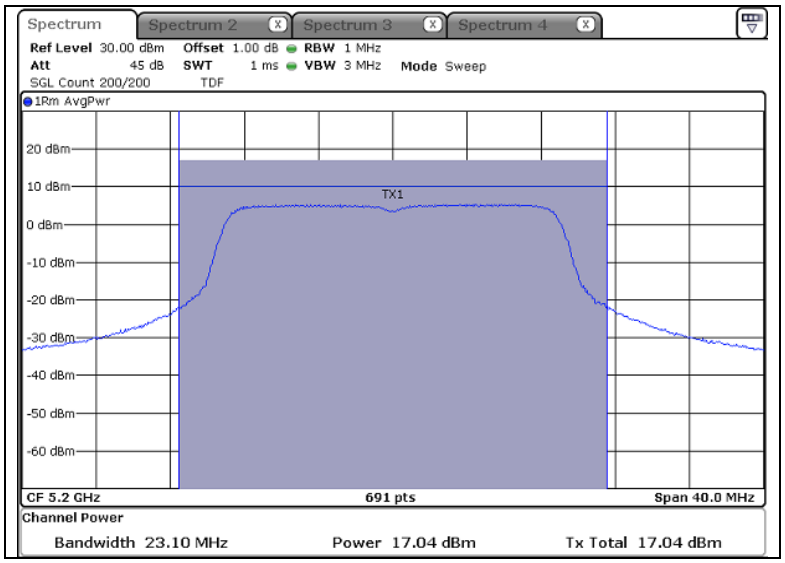


-802.11n HT20

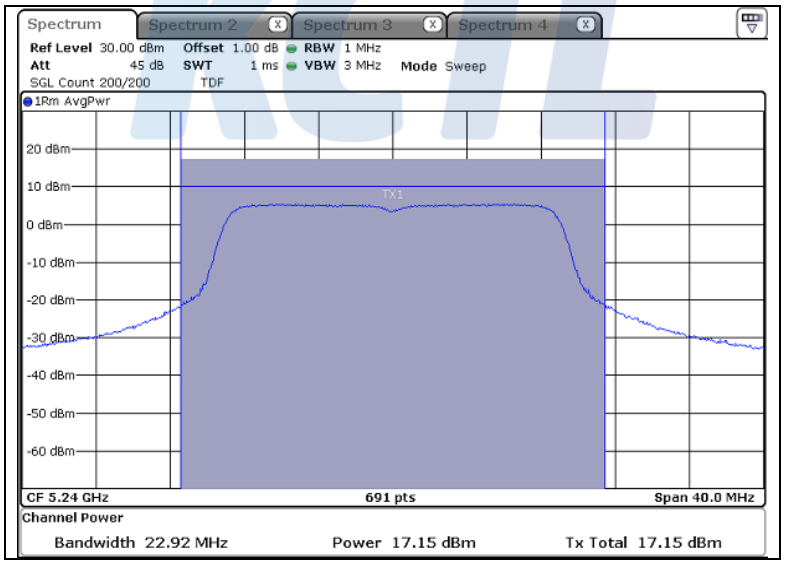
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

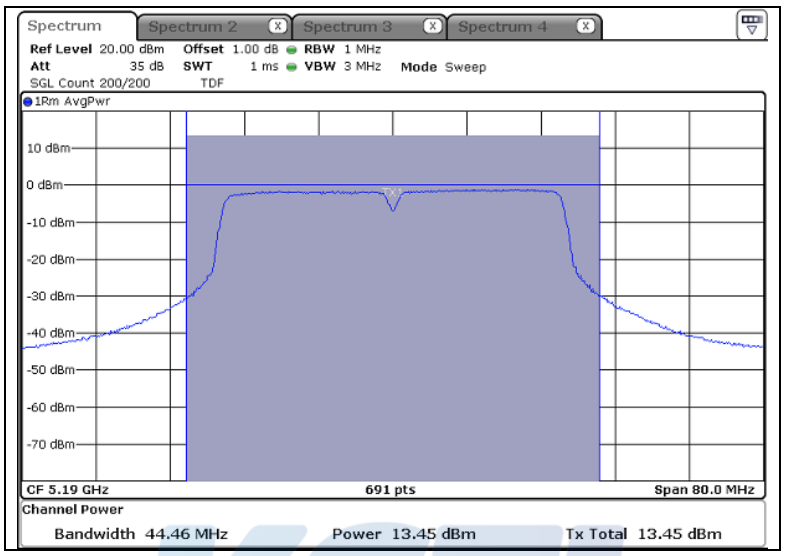


Highest Channel (5 240 ㎒)

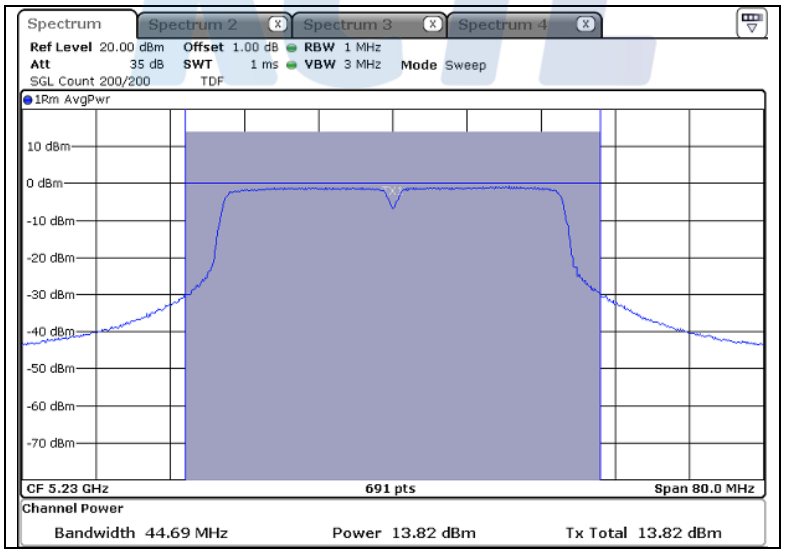


-802.11n_HT40

Lowest Channel (5 190 ㎒)

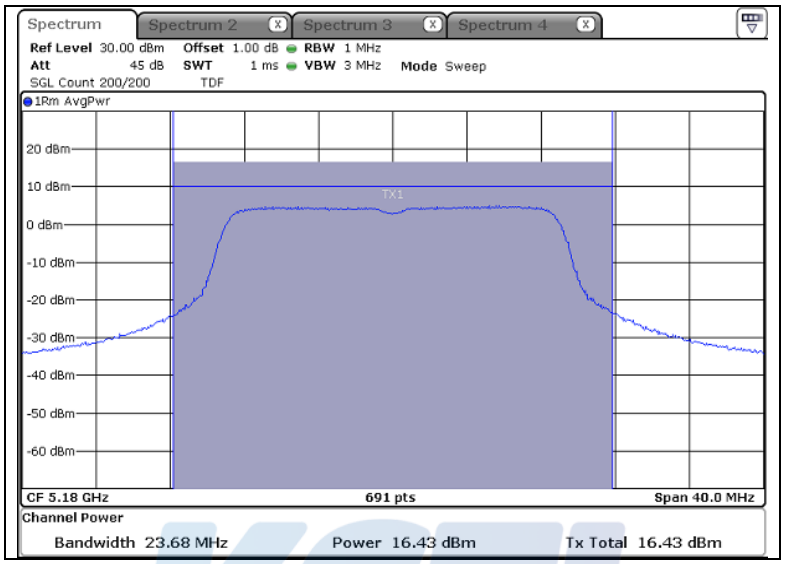


Middle Channel (5 230 ㎒)

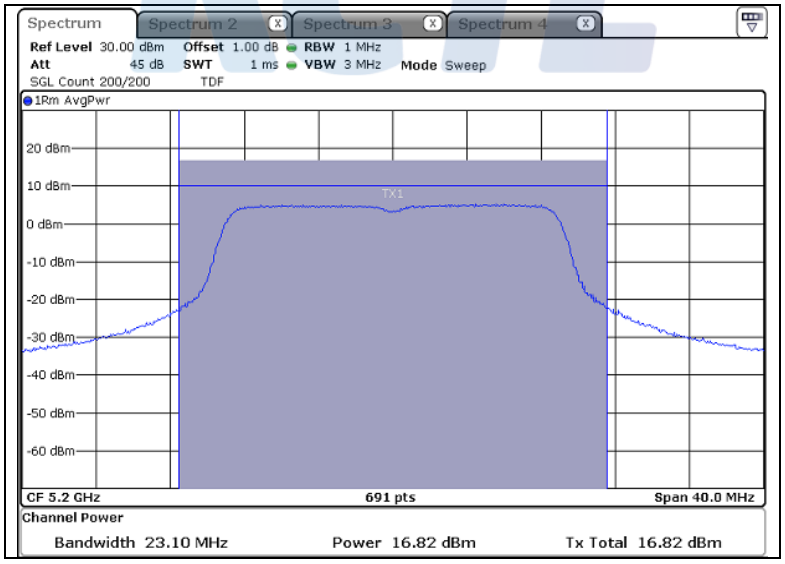


-802.11ac VHT20

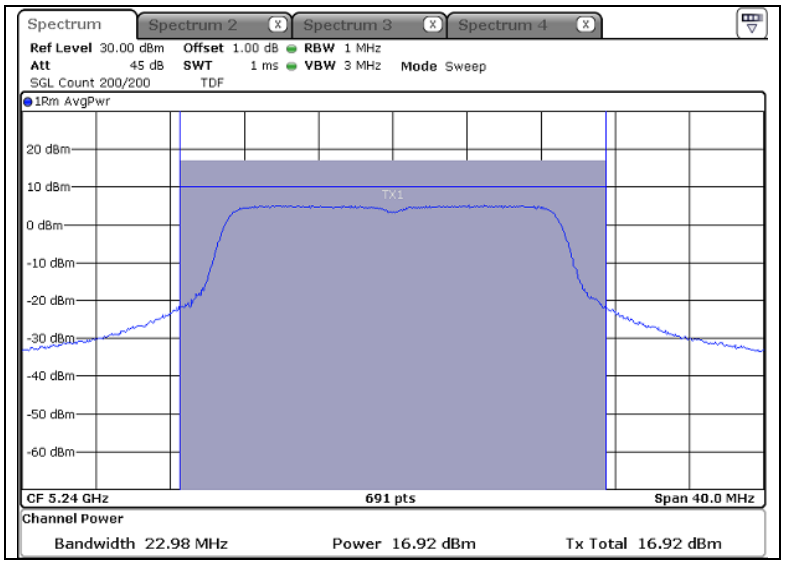
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

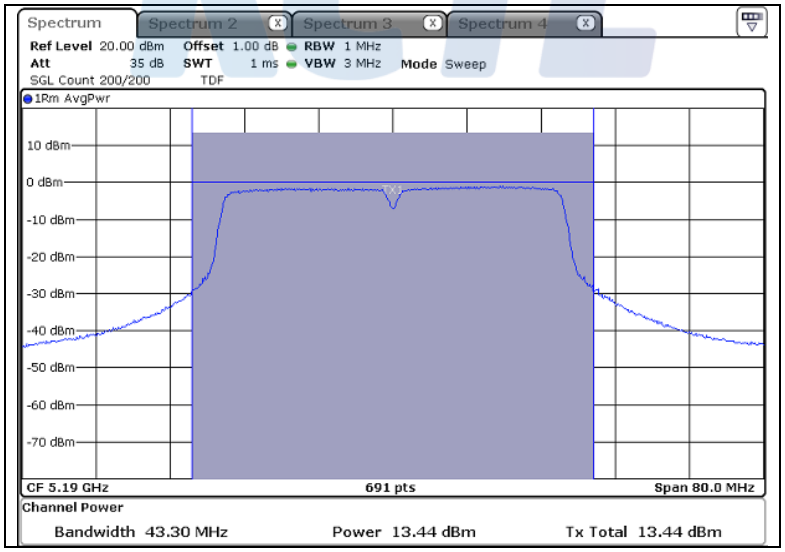


Highest Channel (5 240 ㎒)

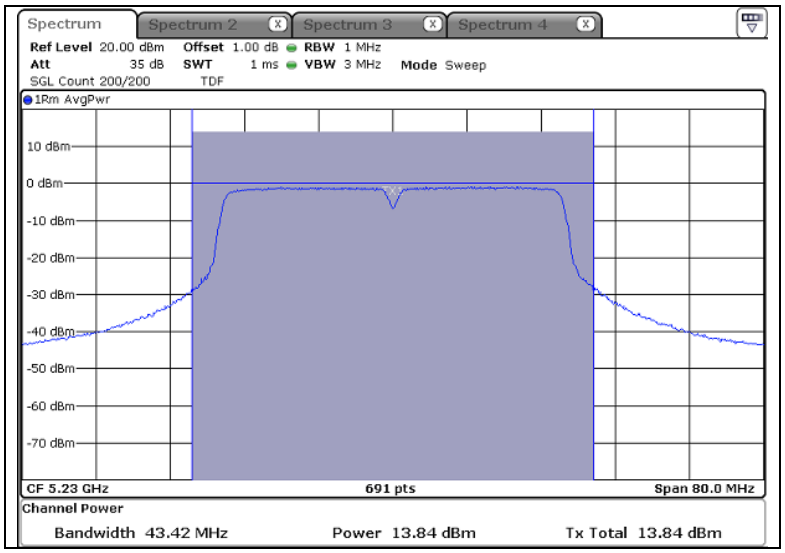


-802.11ac VHT40

Lowest Channel (5 190 ㎒)

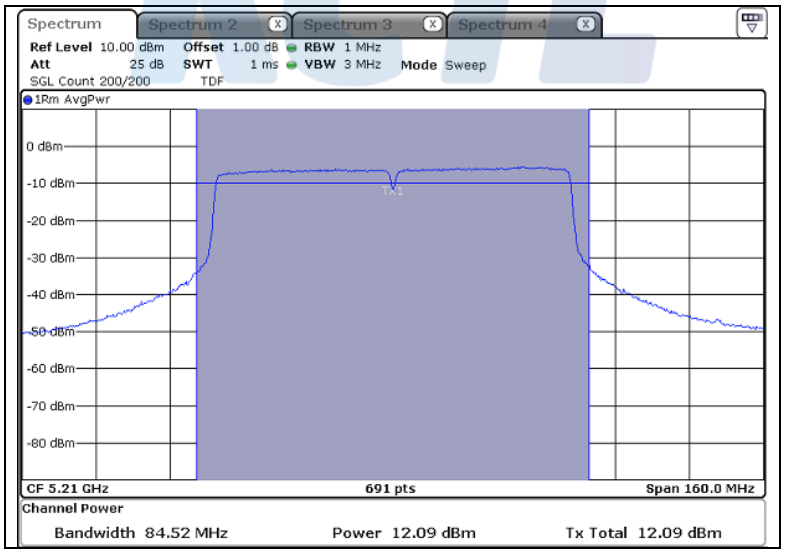


Highest Channel (5 230 ㎒)



-802.11ac VHT80

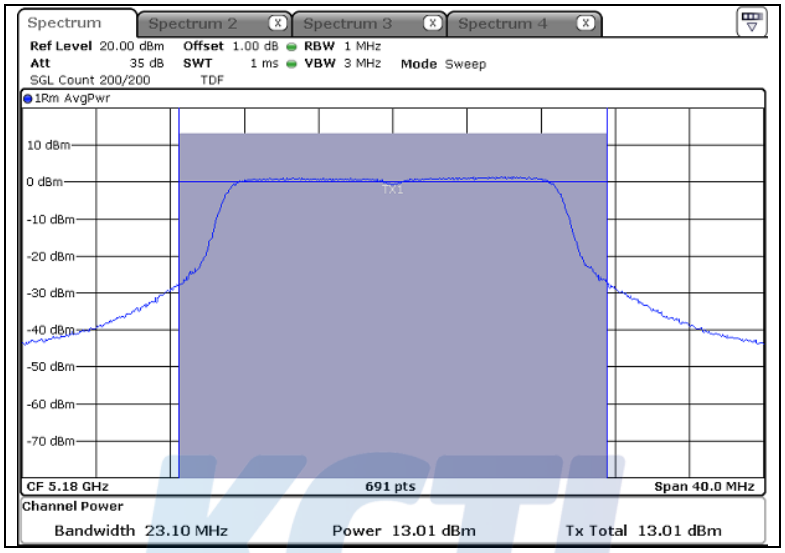
Lowest Channel (5 210 ㎒)



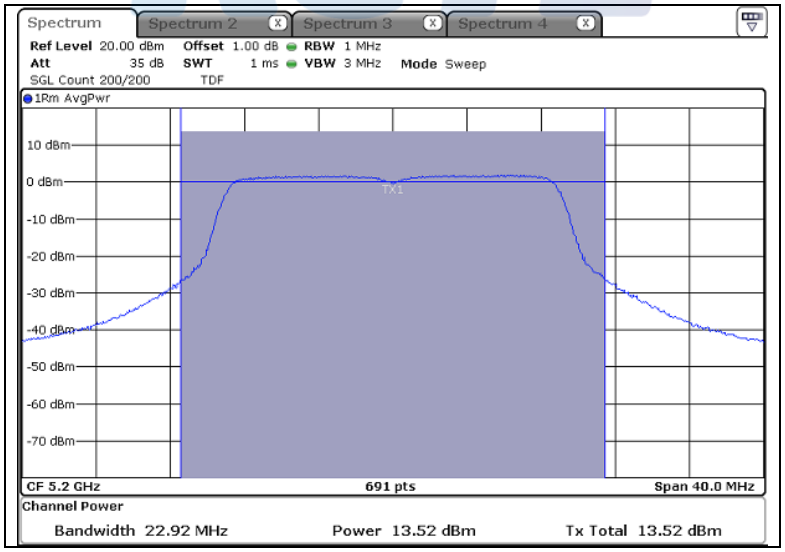
- MIMO 2 Tx (ANT 0)

-802.11n HT20

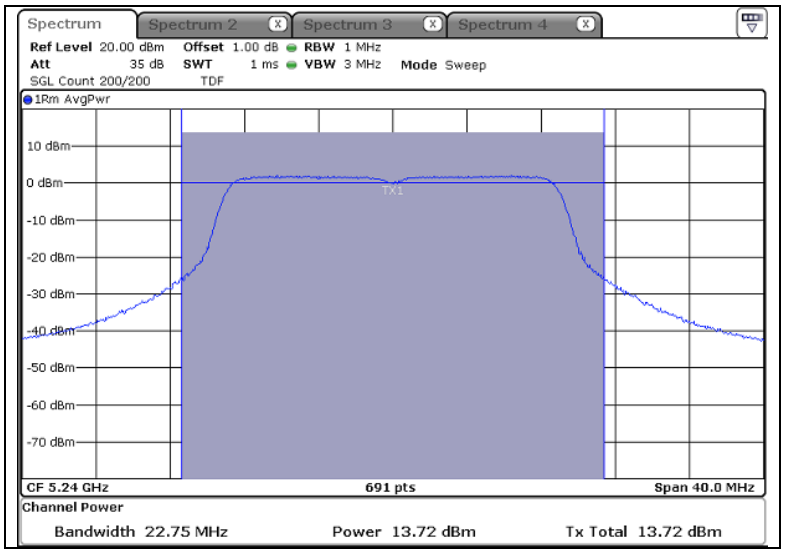
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

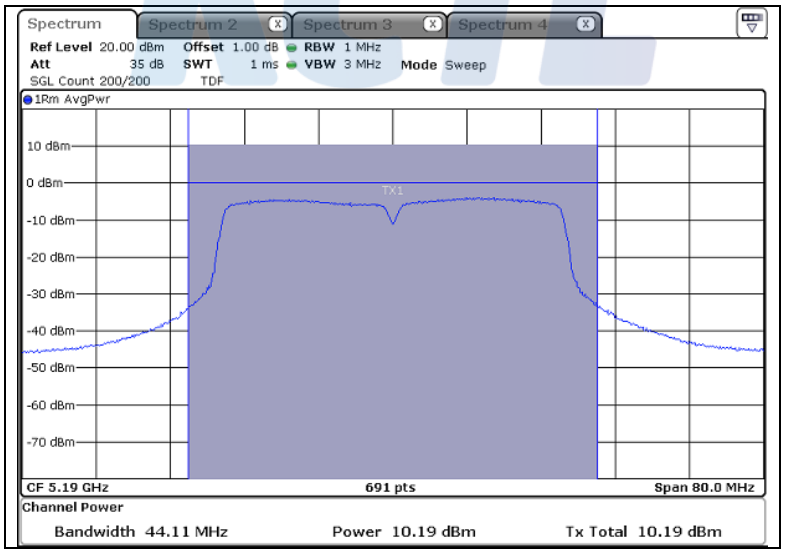


Highest Channel (5 240 ㎒)

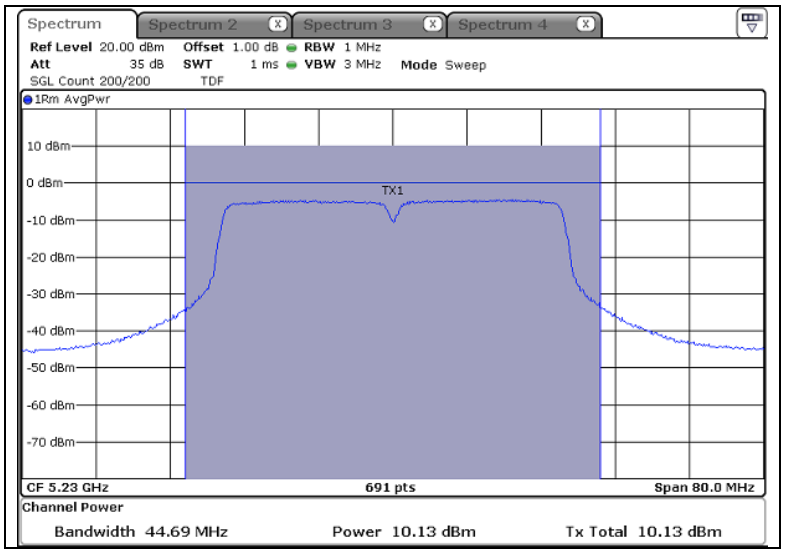


-802.11n_HT40

Lowest Channel (5 190 ㎒)

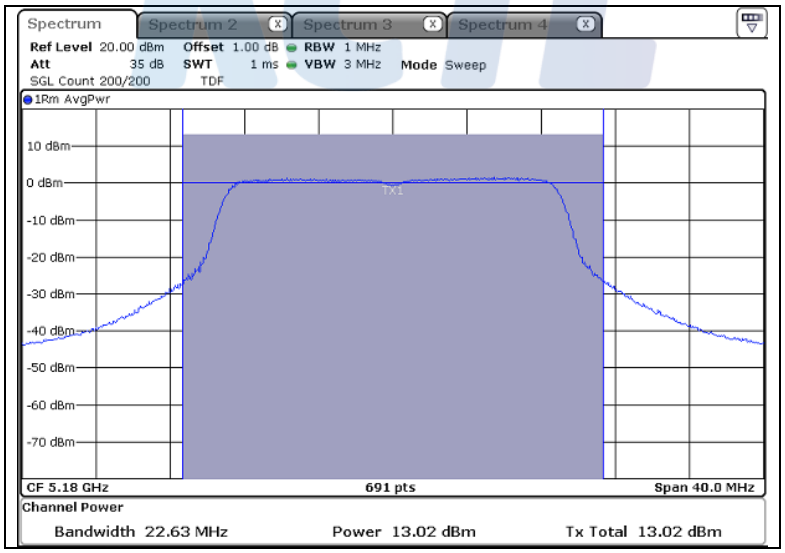


Middle Channel (5 230 ㎒)

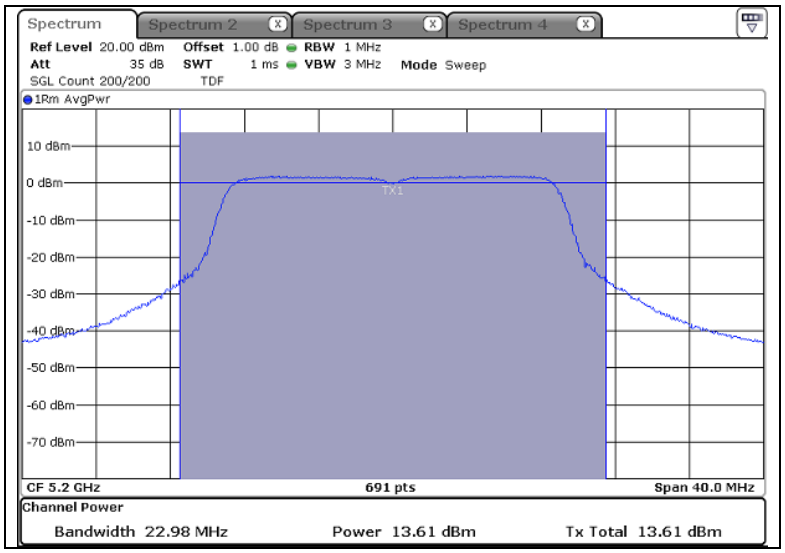


-802.11ac VHT20

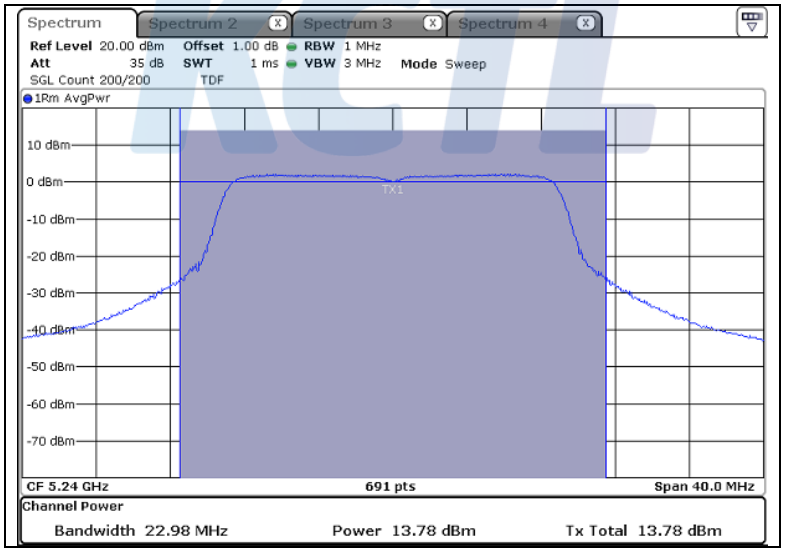
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

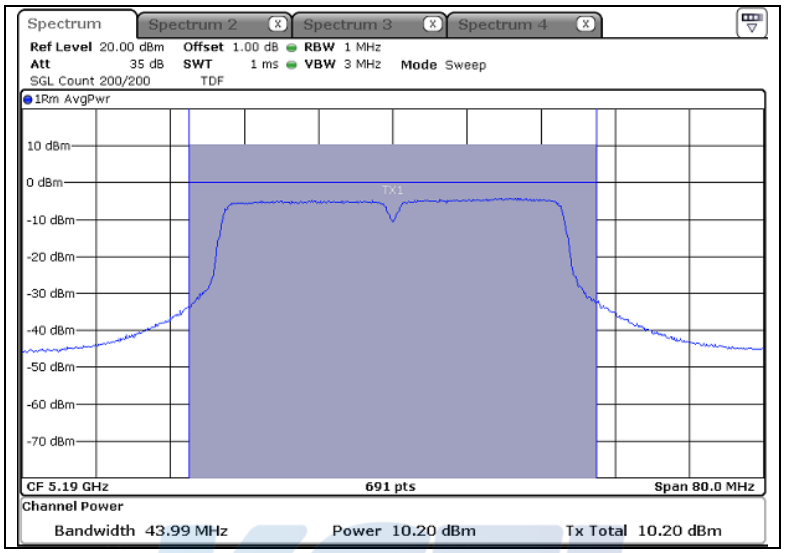


Highest Channel (5 240 ㎒)

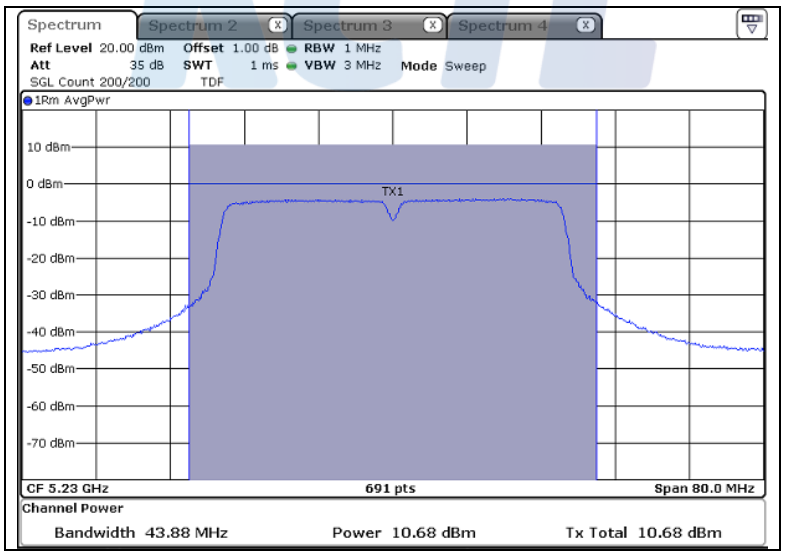


-802.11ac VHT40

Lowest Channel (5 190 ㎒)

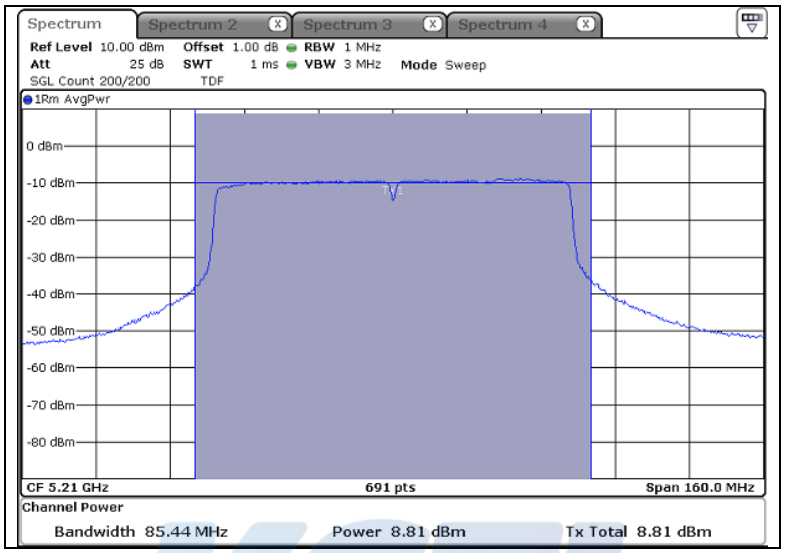


Highest Channel (5 230 ㎒)



-802.11ac VHT80

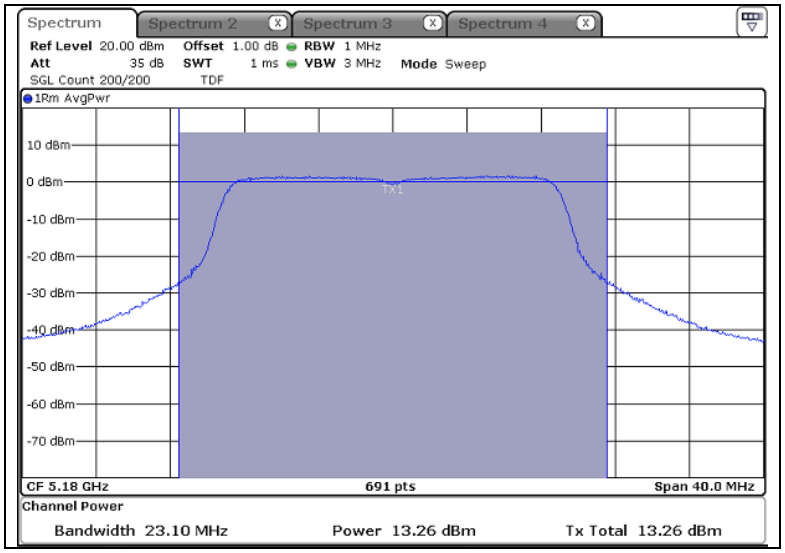
Lowest Channel (5 210 ㎒)



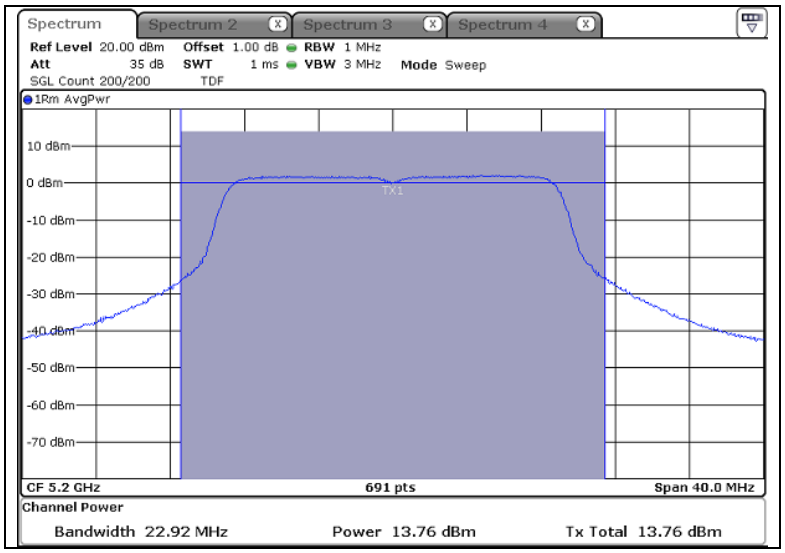
- MIMO 2 Tx (ANT 1)

-802.11n HT20

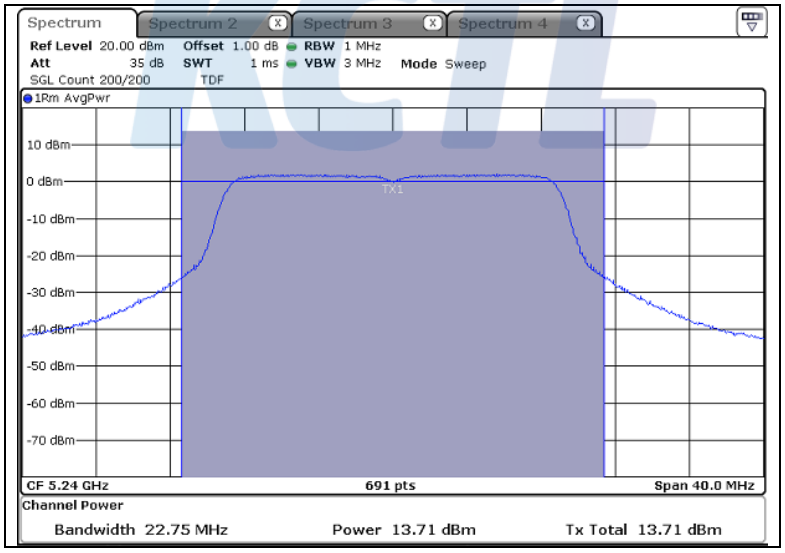
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

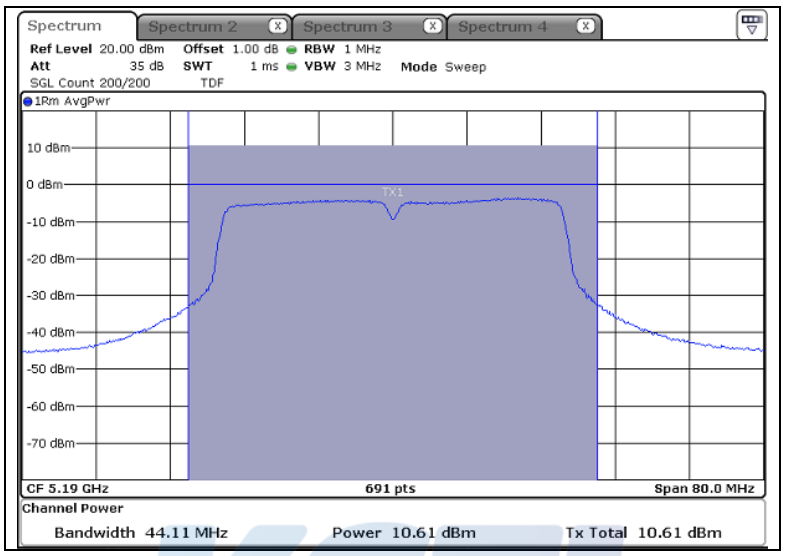


Highest Channel (5 240 ㎒)

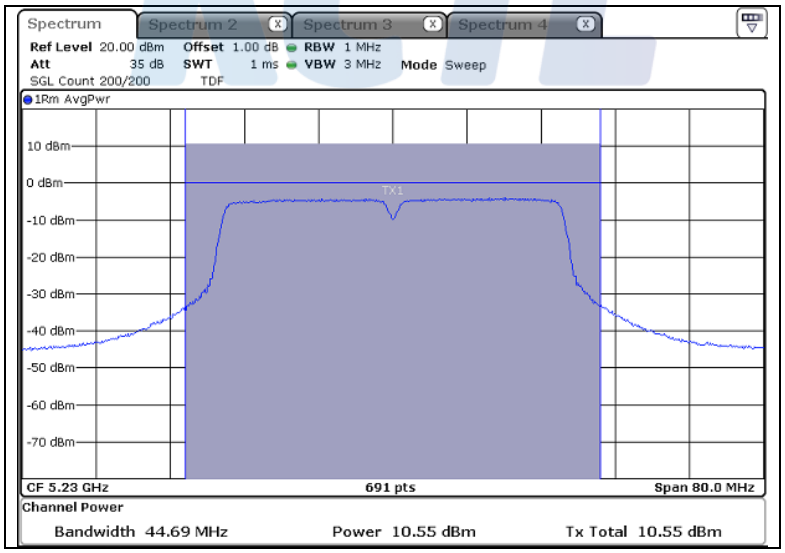


-802.11n HT40

Lowest Channel (5 190 ㎒)

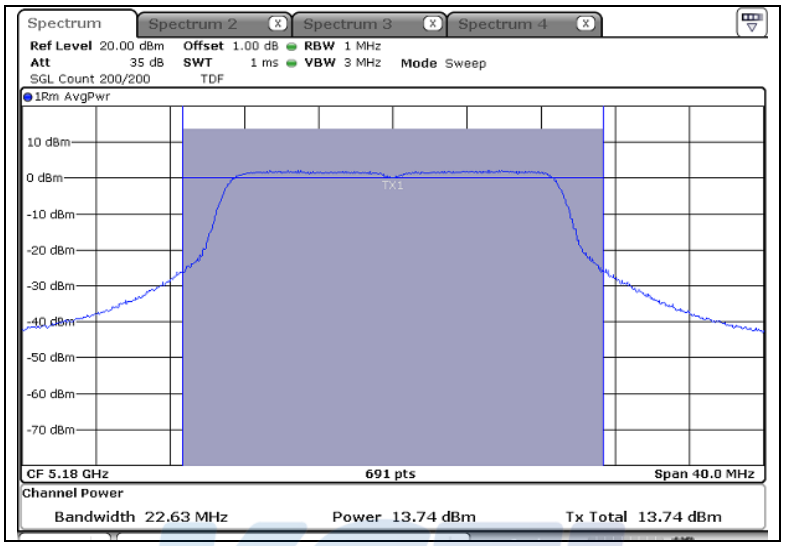


Middle Channel (5 230 ㎒)

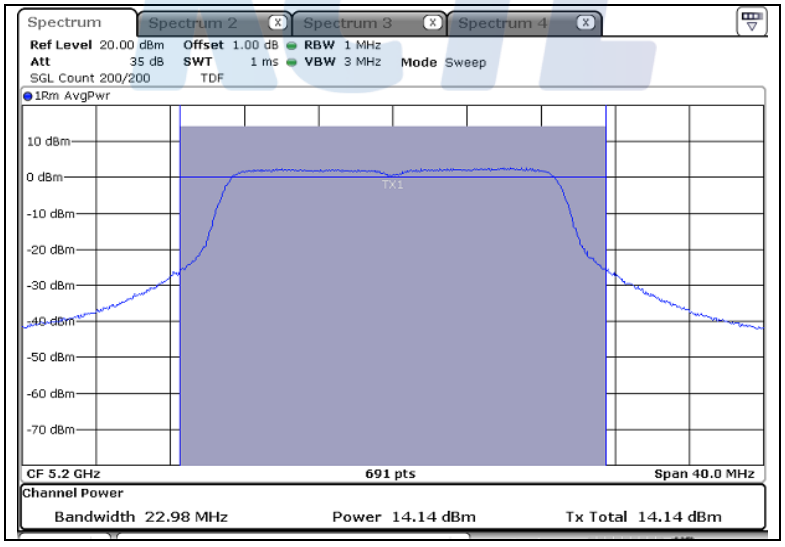


-802.11ac VHT20

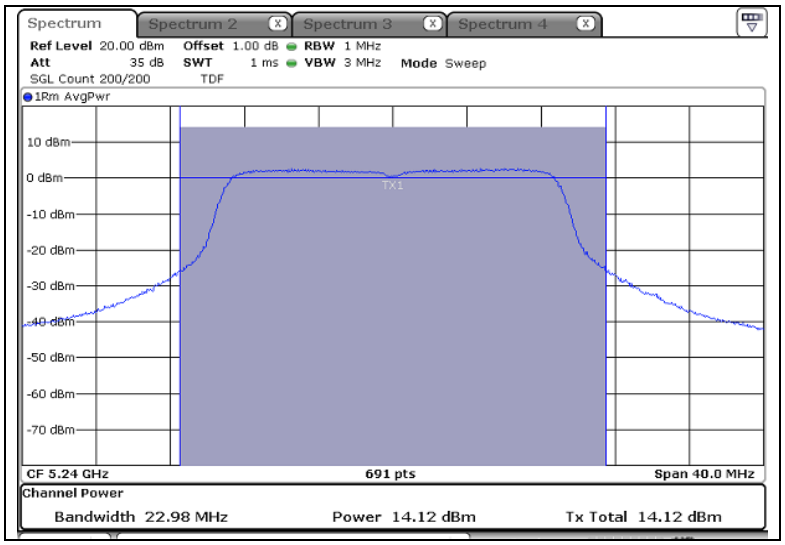
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

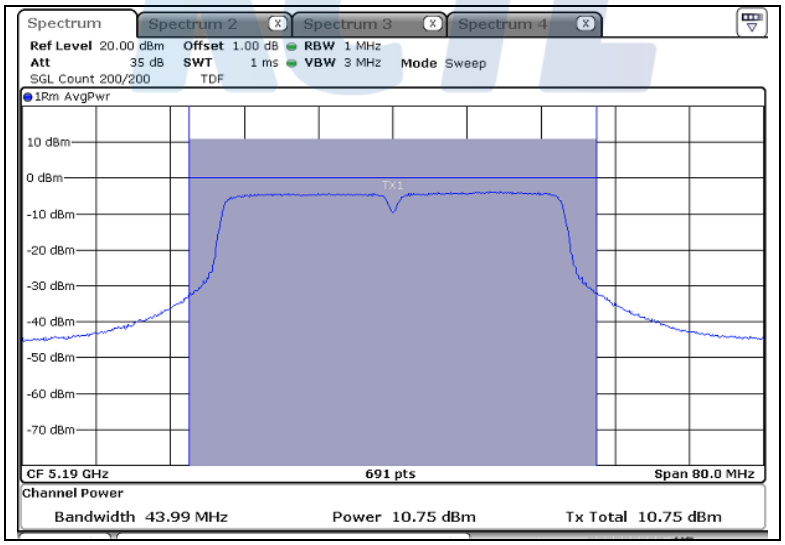


Highest Channel (5 240 ㎒)

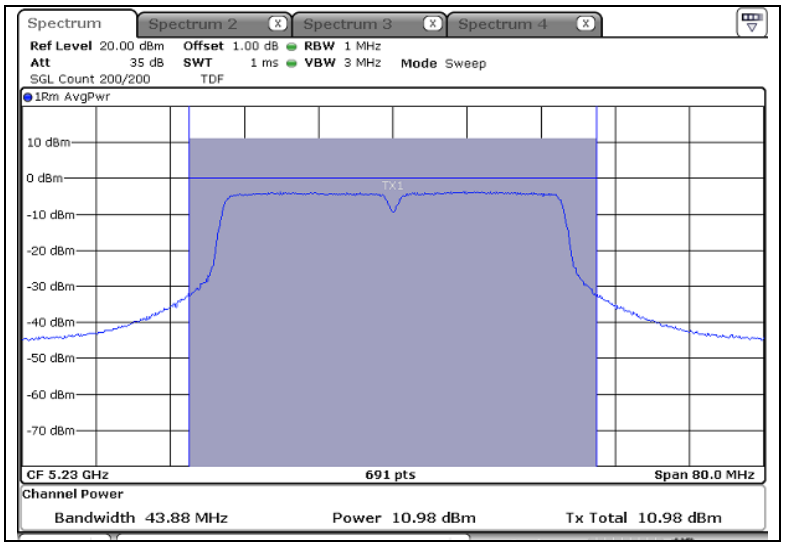


-802.11ac VHT40

Lowest Channel (5 190 ㎒)

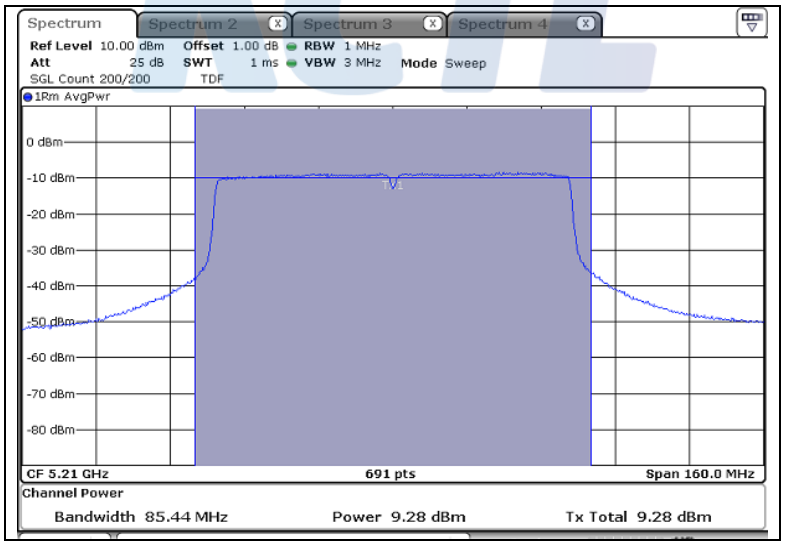


Highest Channel (5 230 ㎒)



-802.11ac VHT80

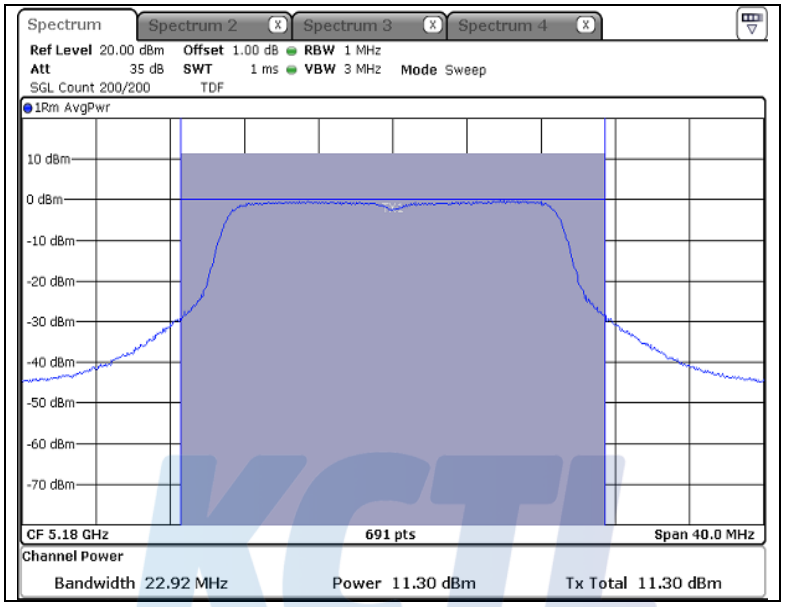
Lowest Channel (5 210 ㎒)



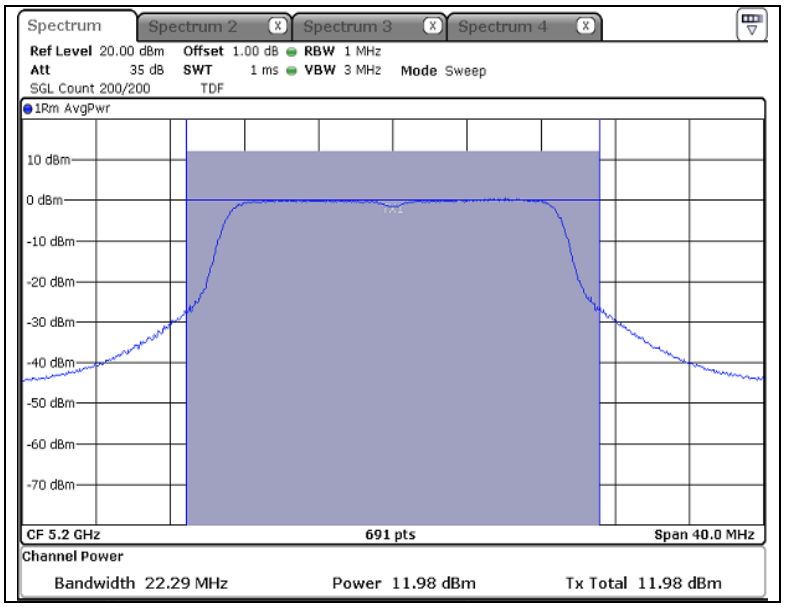
- MIMO 3 Tx (ANT 0)

-802.11n HT20

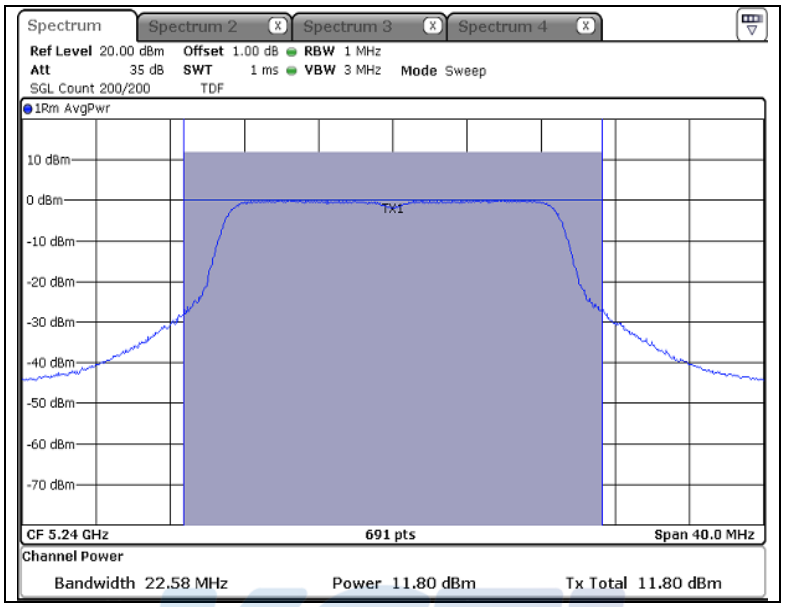
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

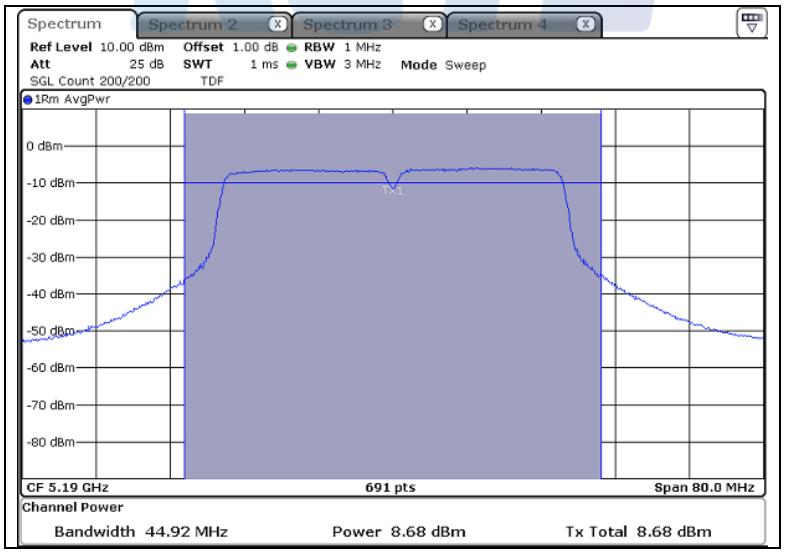


Highest Channel (5 240 ㎒)

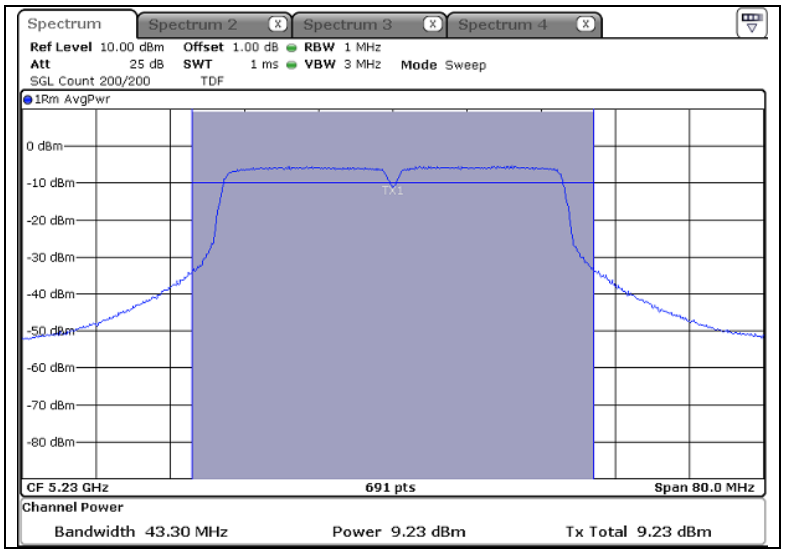


-802.11n_HT40

Lowest Channel (5 190 ㎒)

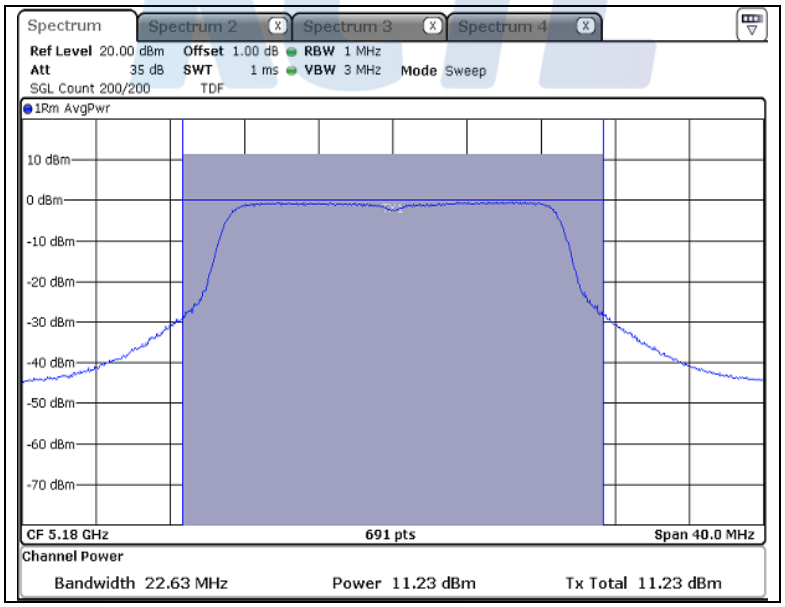


Middle Channel (5 230 ㎒)

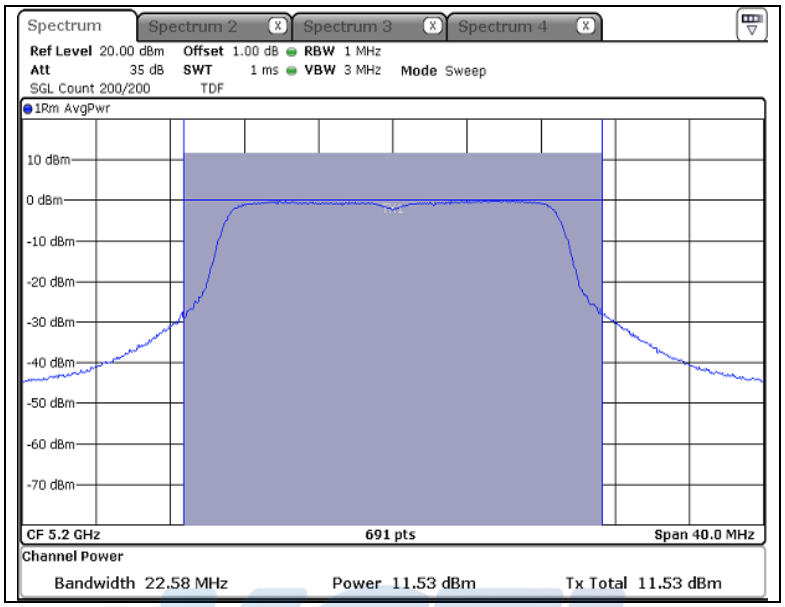


-802.11ac VHT20

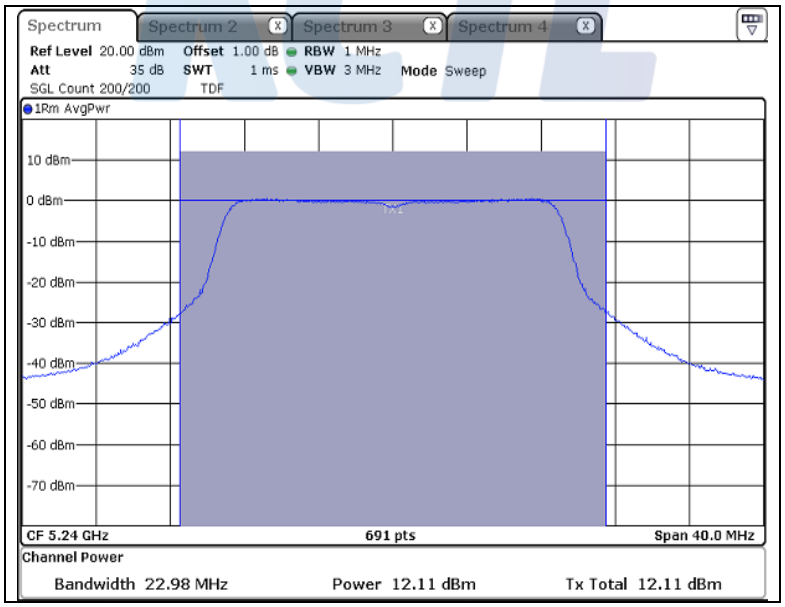
Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)

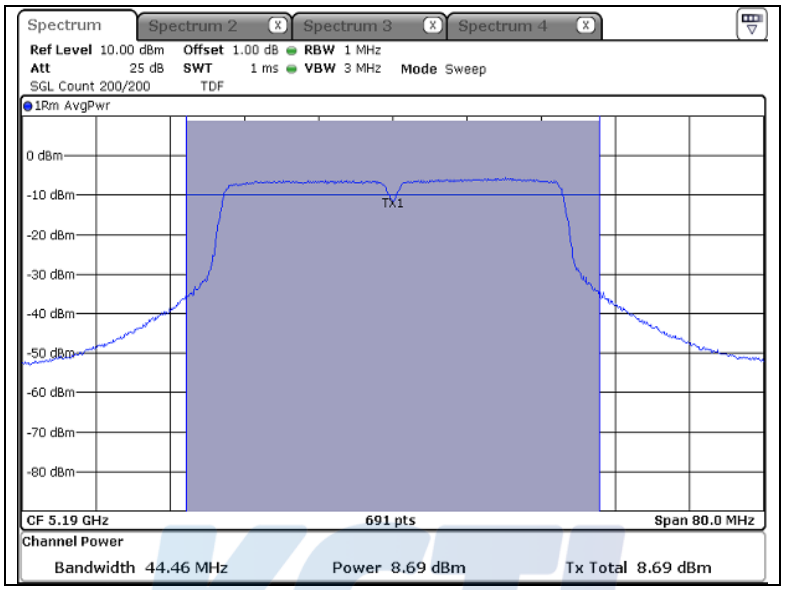


Highest Channel (5 240 ㎒)

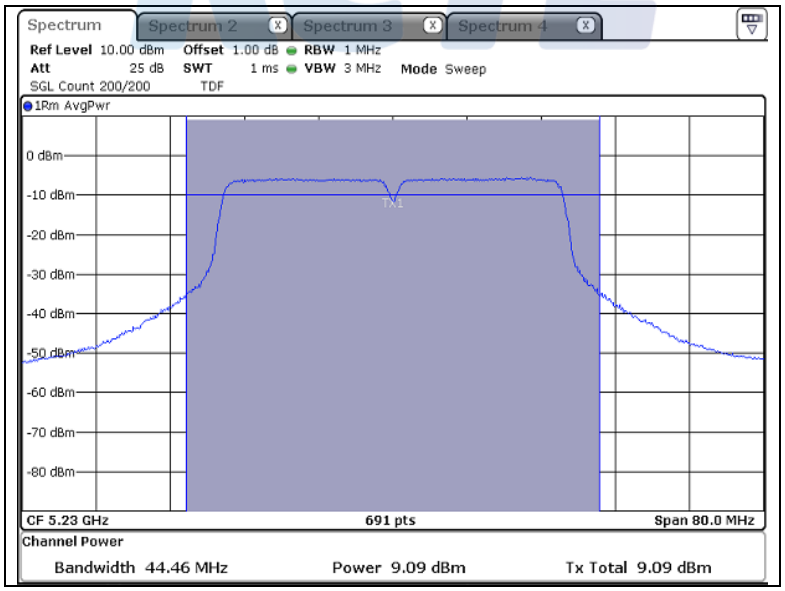


-802.11ac VHT40

Lowest Channel (5 190 ㎒)

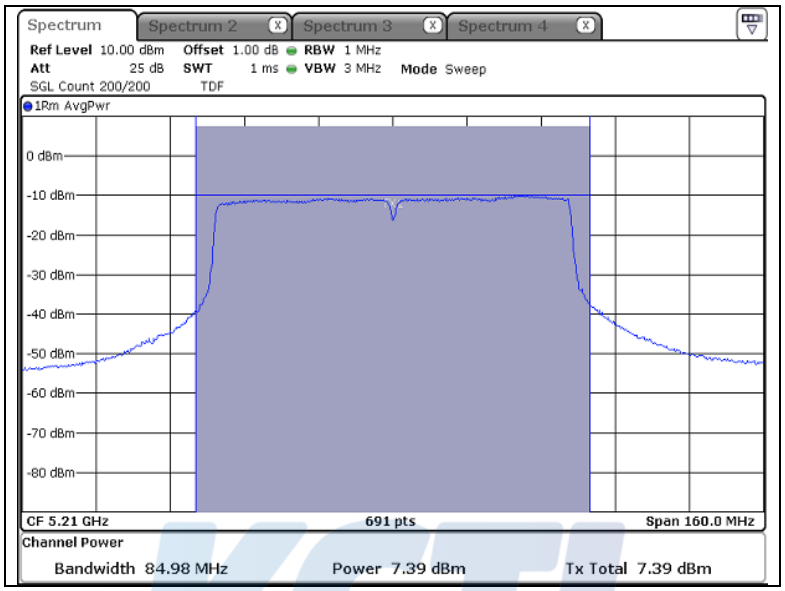


Highest Channel (5 230 ㎒)



-802.11ac VHT80

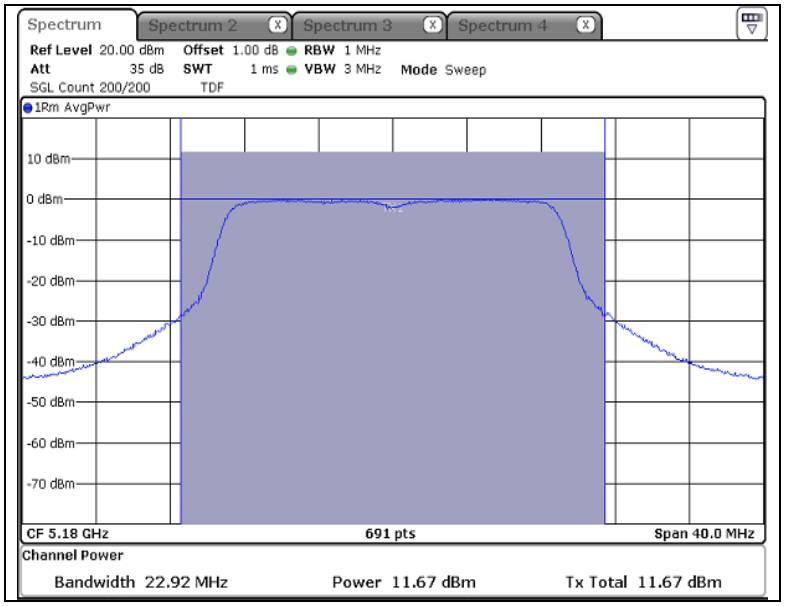
Lowest Channel (5 210 ㎒)



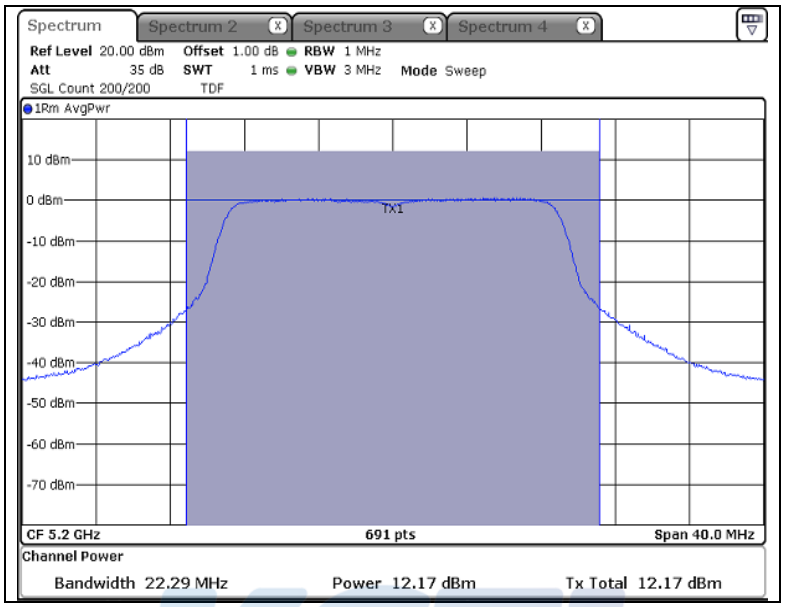
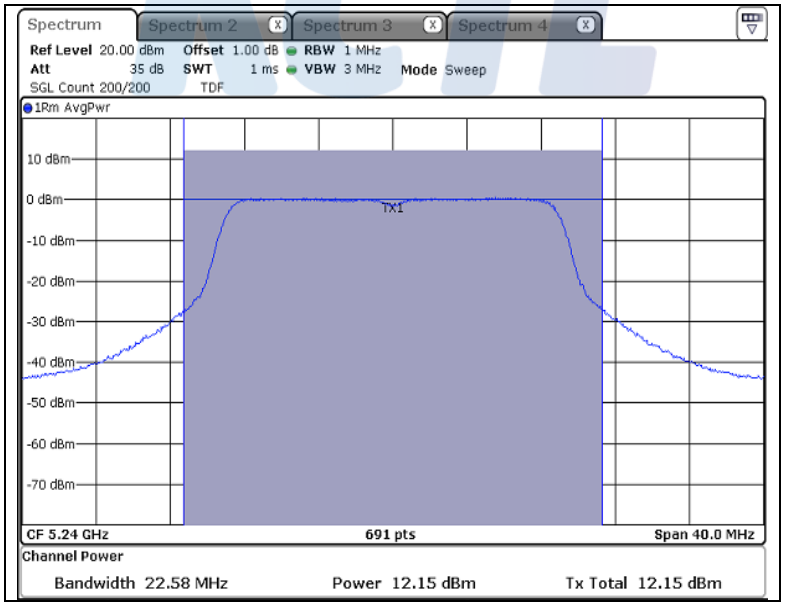
- MIMO 3 Tx (ANT 1)

-802.11n HT20

Lowest Channel (5 180 ㎒)



Middle Channel (5 200 ㎒)



Highest Channel (5 240 ㎒)