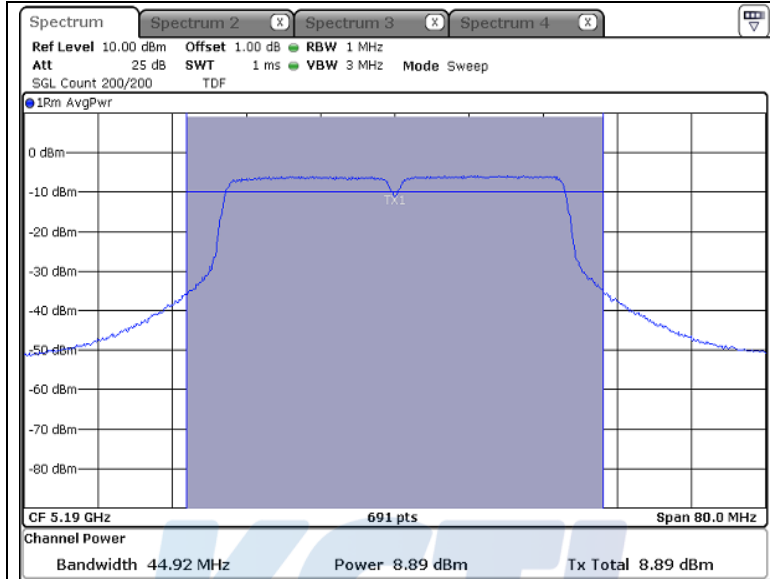
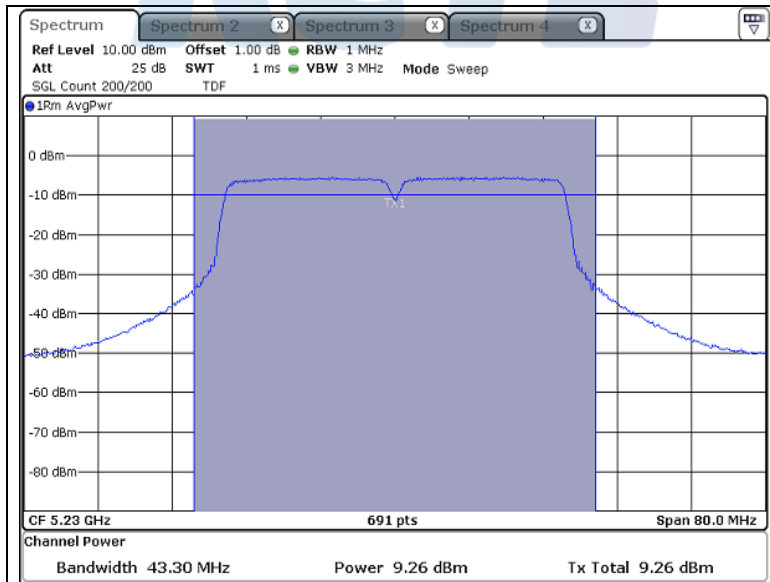


-802.11n_HT40

Lowest Channel (5 190 MHz)



Middle Channel (5 230 MHz)



KCTL Inc.

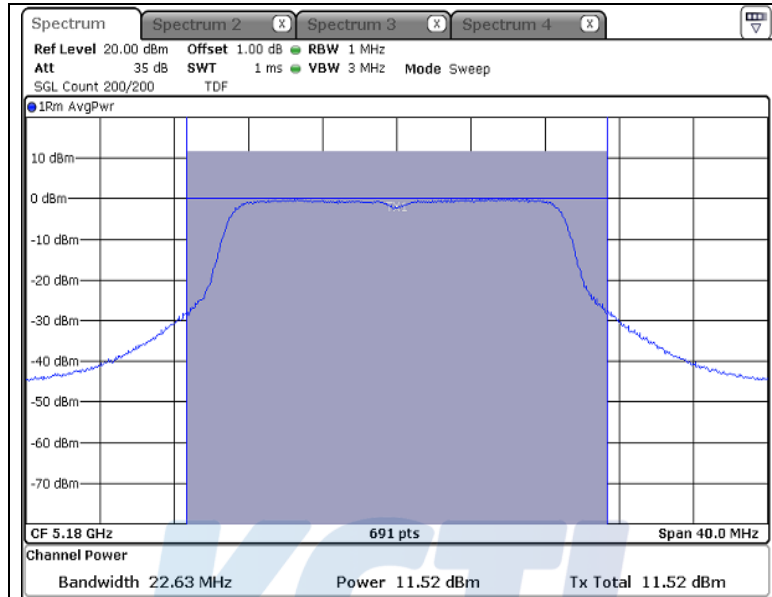
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (84) of (450)

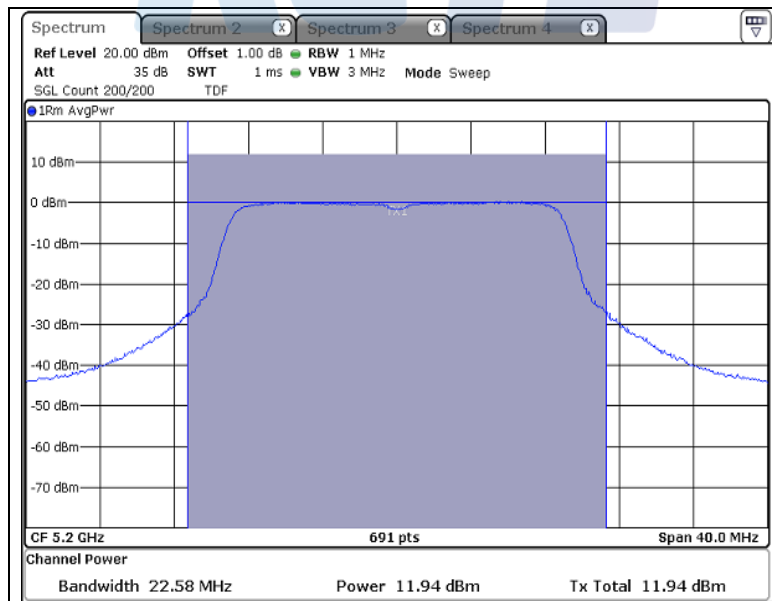


-802.11ac VHT20

Lowest Channel (5 180 MHz)



Middle Channel (5 200 MHz)



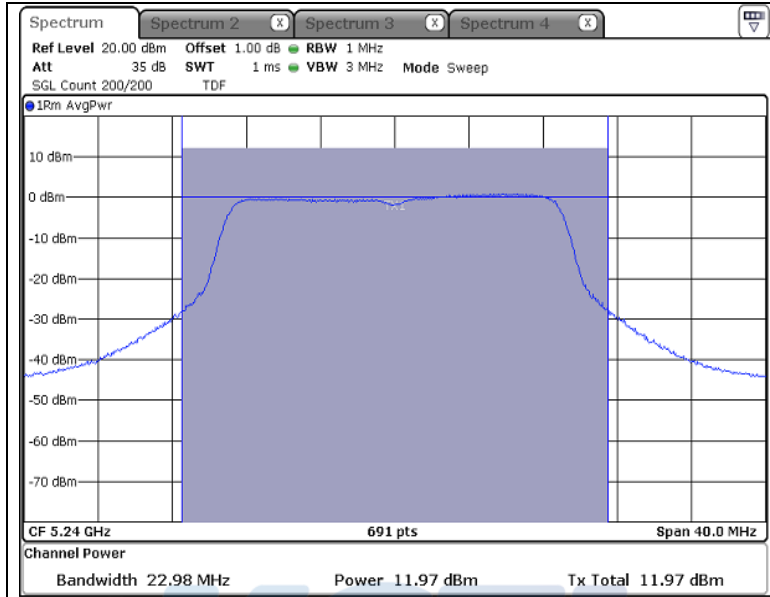
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (85) of (450)

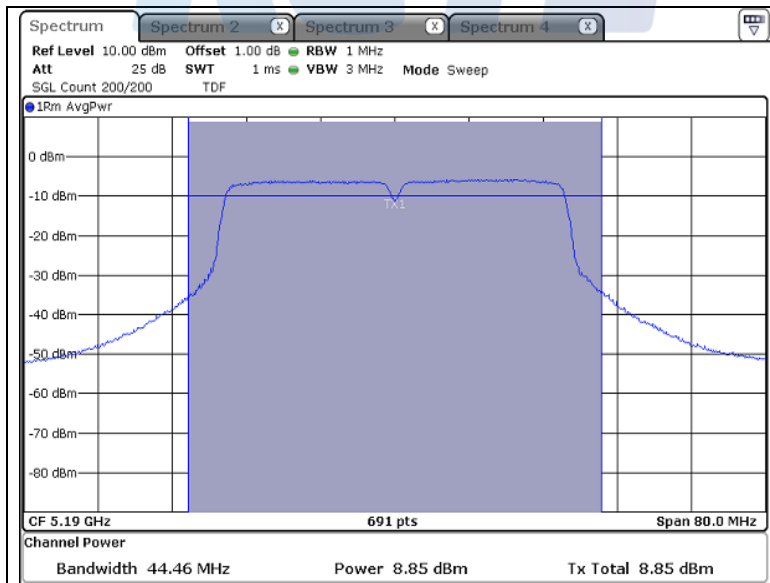


Highest Channel (5 240 MHz)



-802.11ac VHT40

Lowest Channel (5 190 MHz)



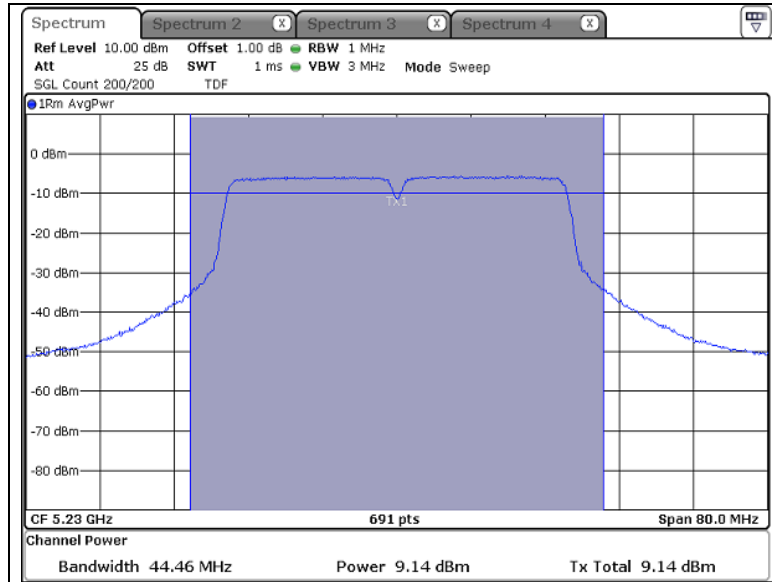
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (86) of (450)

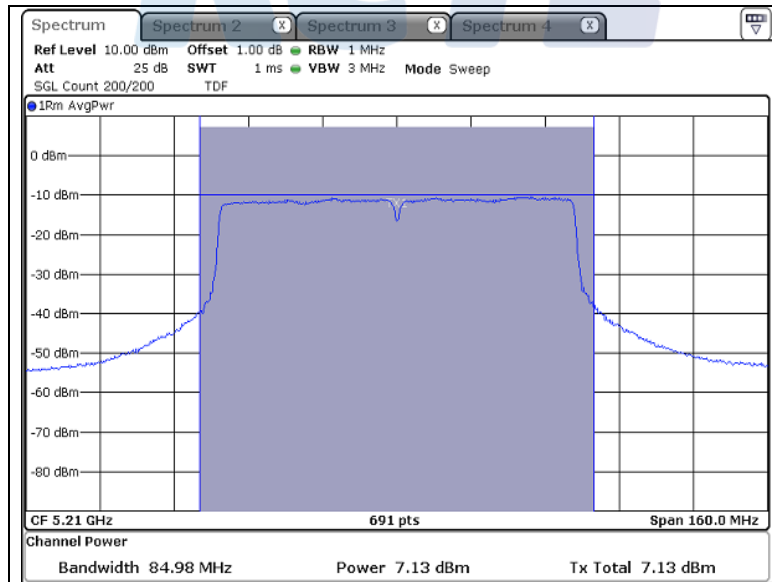


Highest Channel (5 230 MHz)



-802.11ac VHT80

Lowest Channel (5 210 MHz)



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

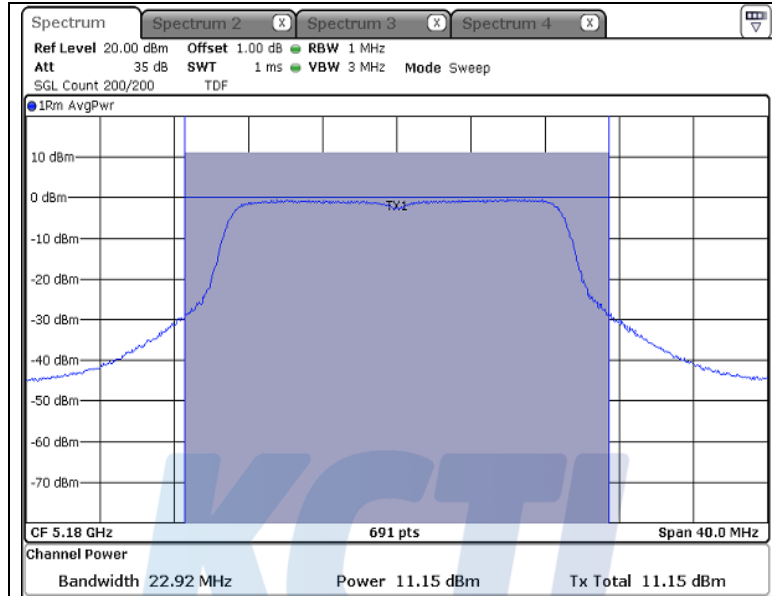
Report No.:
KR17-SRF0056-B
Page (87) of (450)



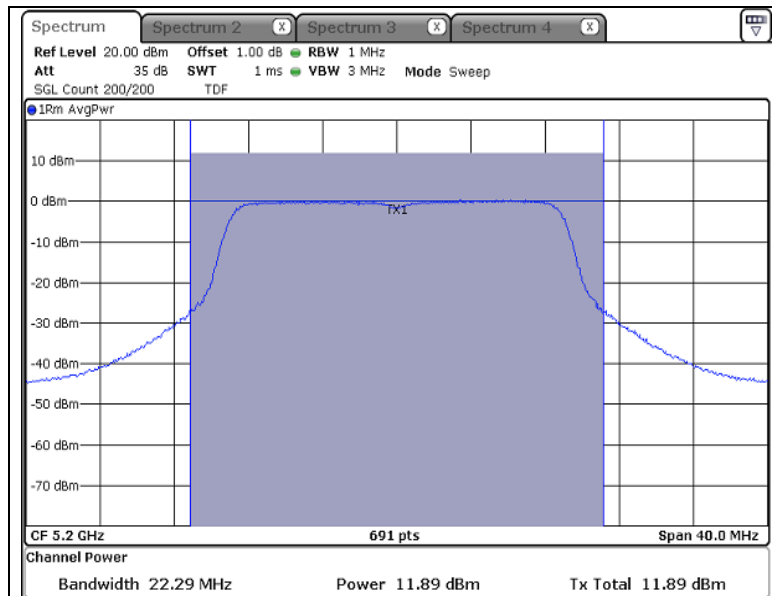
- MIMO 3 Tx (ANT 2)

-802.11n HT20

Lowest Channel (5 180 MHz)



Middle Channel (5 200 MHz)



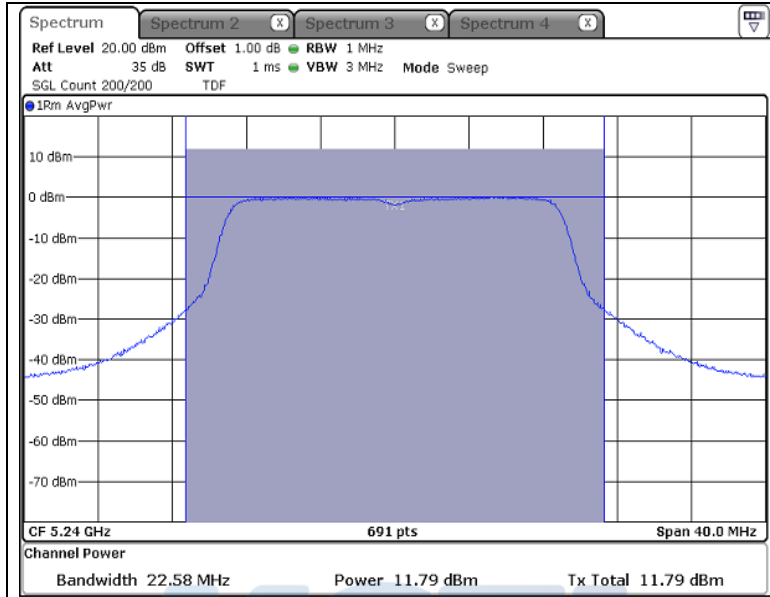
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (88) of (450)

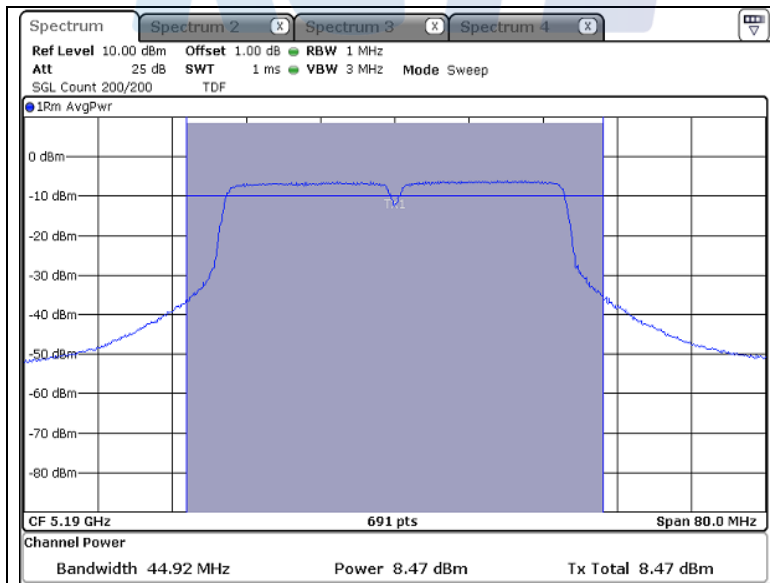


Highest Channel (5 240 MHz)



-802.11n_HT40

Lowest Channel (5 190 MHz)



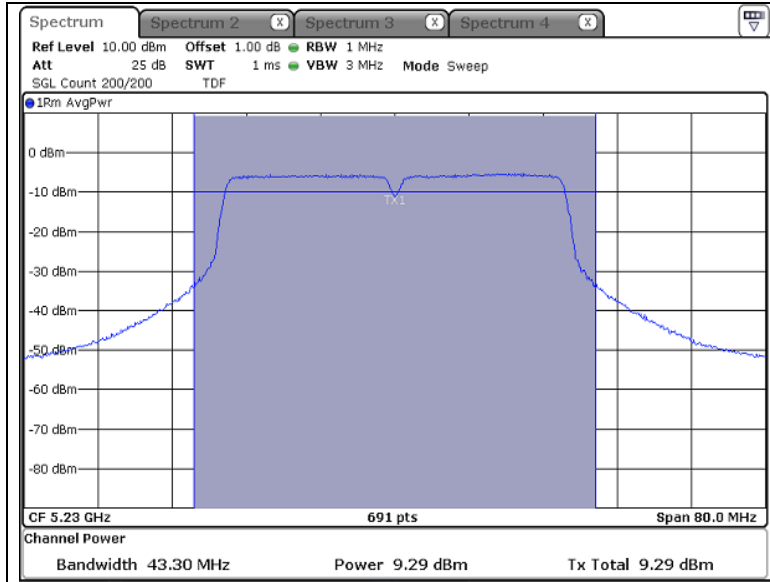
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (89) of (450)

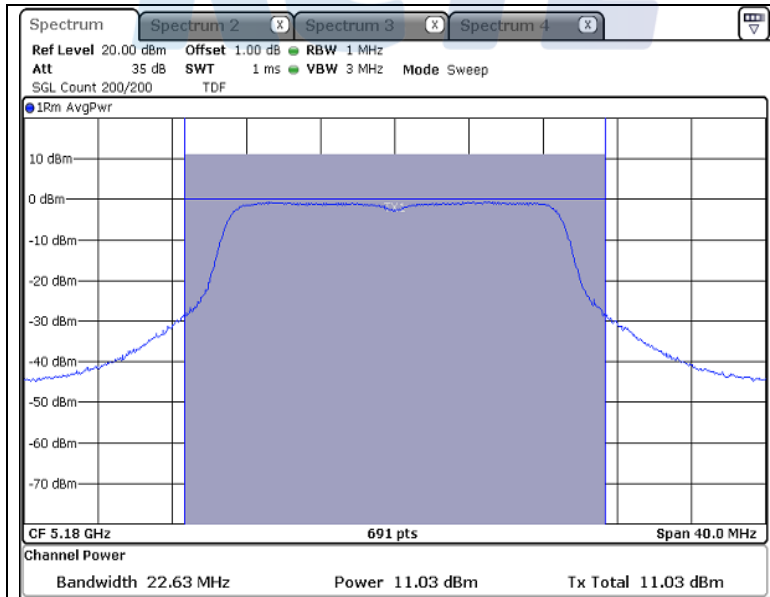


Middle Channel (5 230 MHz)



-802.11ac VHT20

Lowest Channel (5 180 MHz)



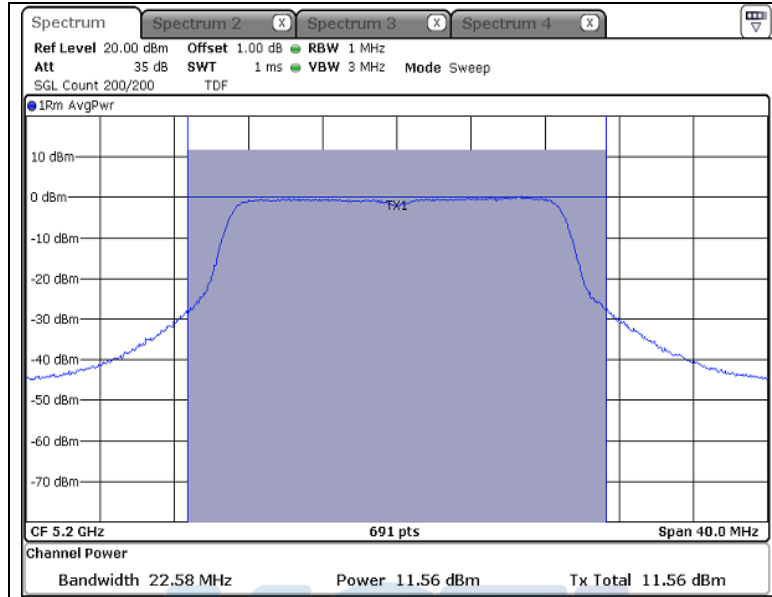
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

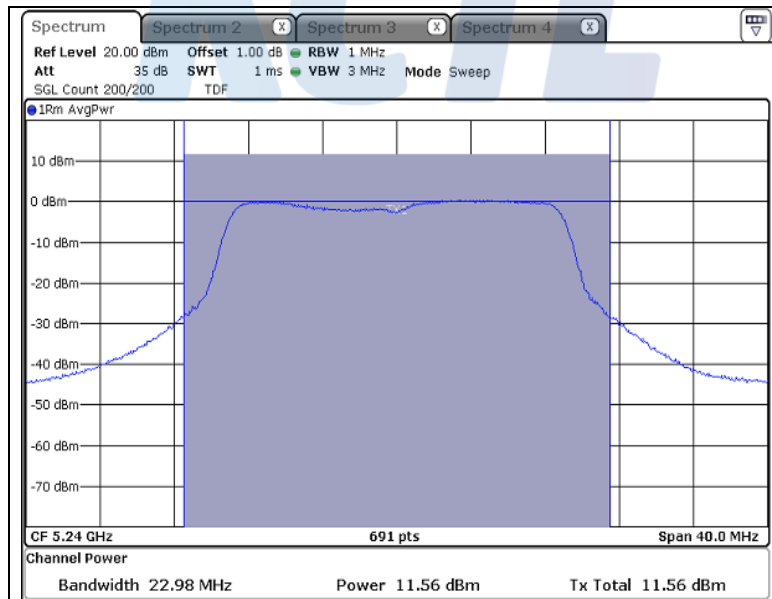
Report No.:
KR17-SRF0056-B
Page (90) of (450)



Middle Channel (5 200 MHz)

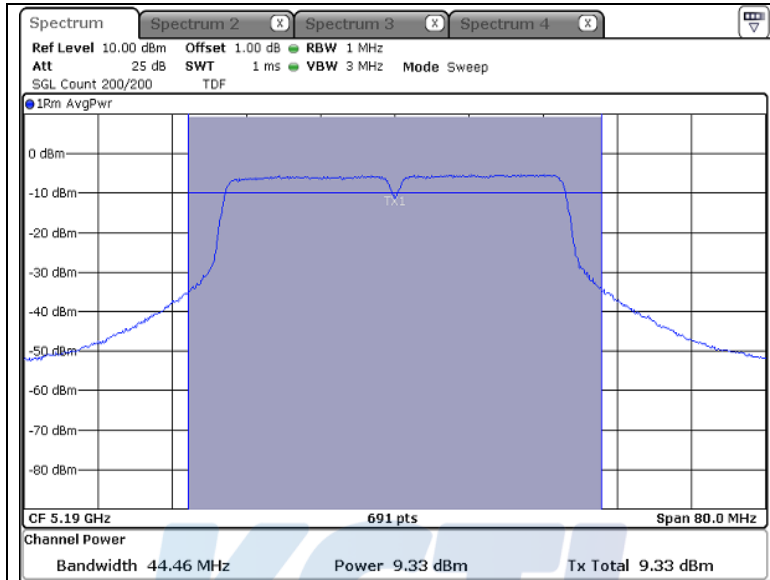


Highest Channel (5 240 MHz)

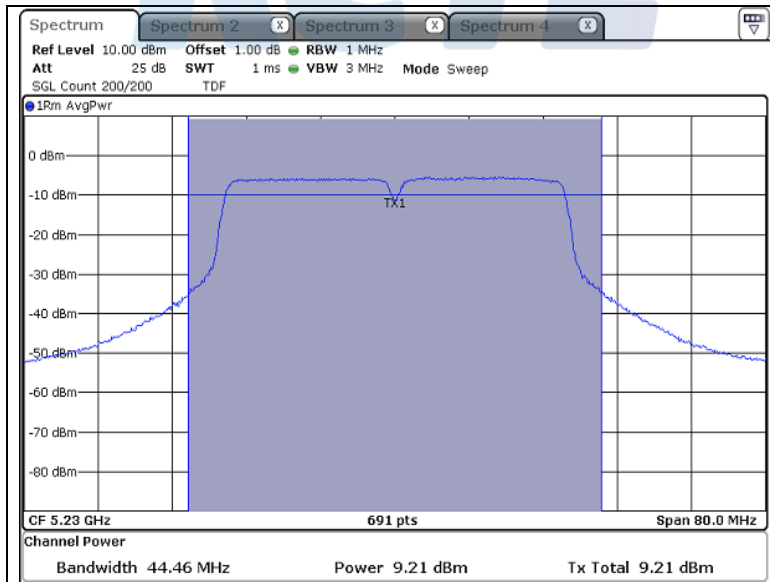


-802.11ac VHT40

Lowest Channel (5 190 MHz)

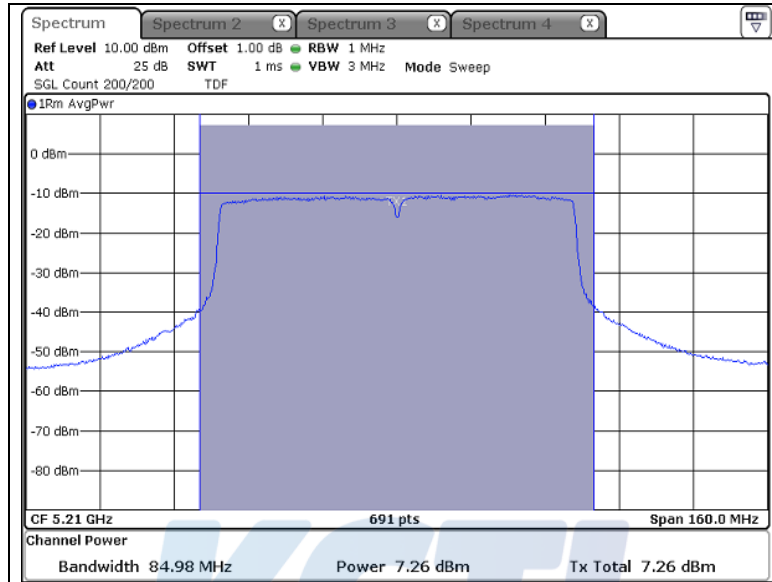


Highest Channel (5 230 MHz)



-802.11ac VHT80

Lowest Channel (5 210 MHz)

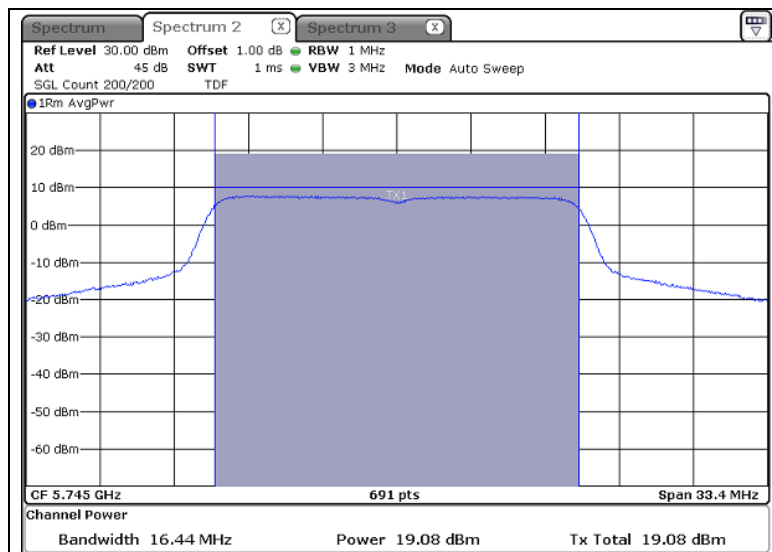


- 5 725 Band

- ANT 0

-802.11a

Lowest Channel (5 745 MHz)



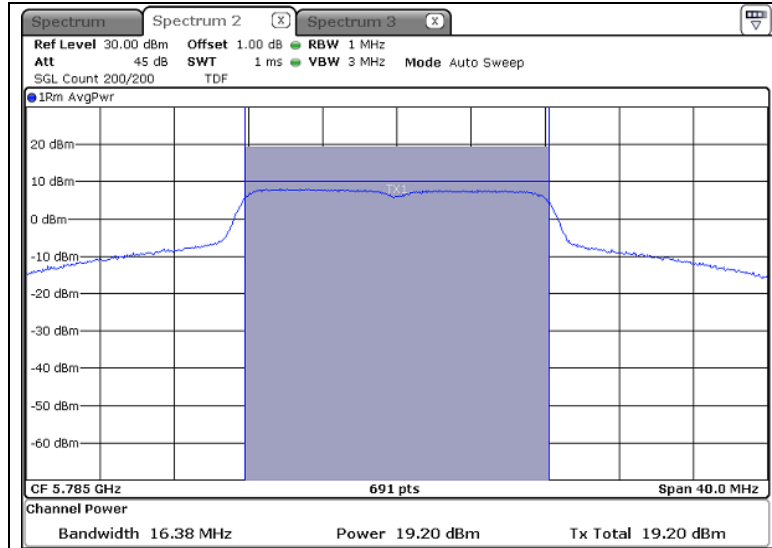
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

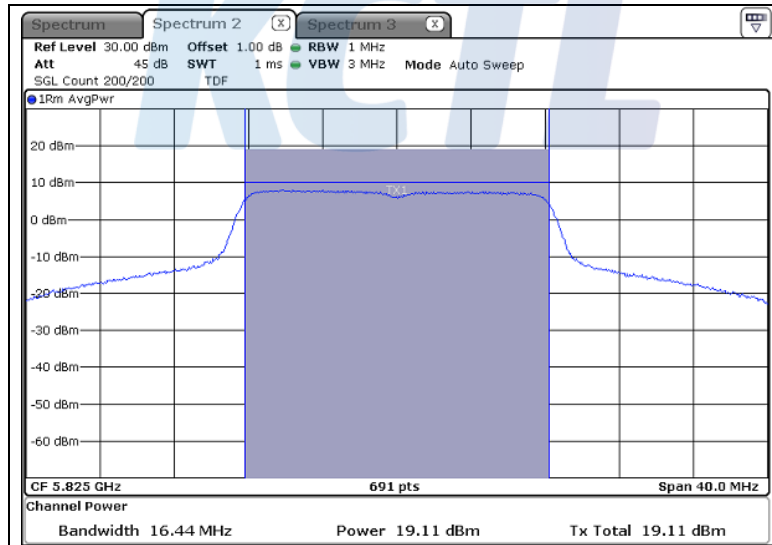
Report No.:
KR17-SRF0056-B
Page (93) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

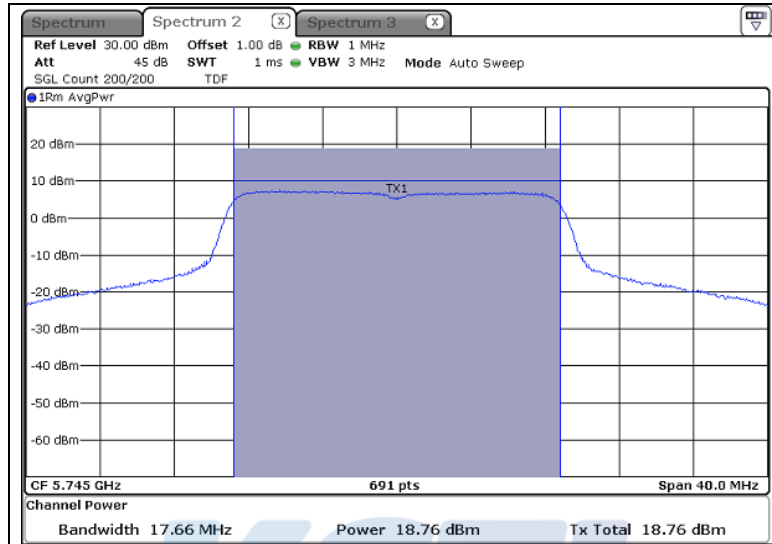
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (94) of (450)

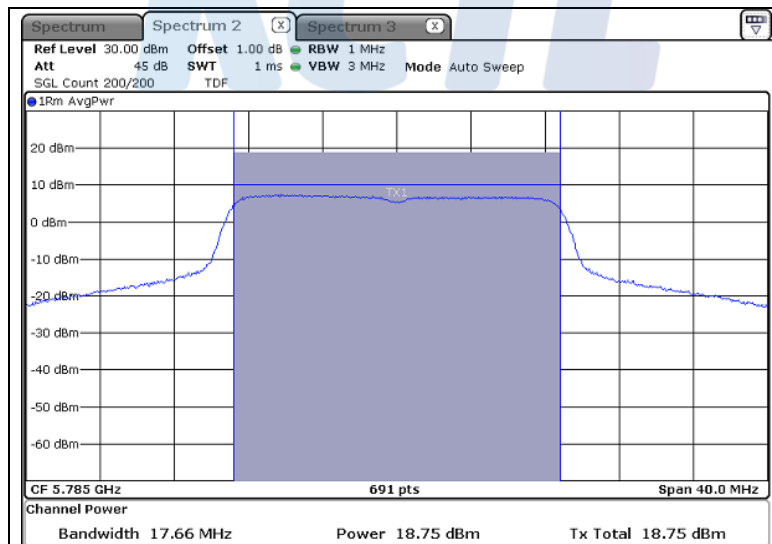


-802.11n HT20

Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)



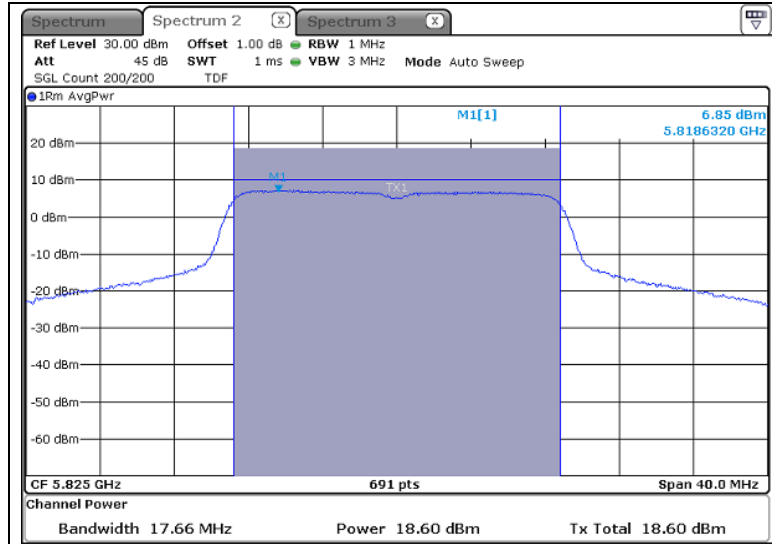
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (95) of (450)

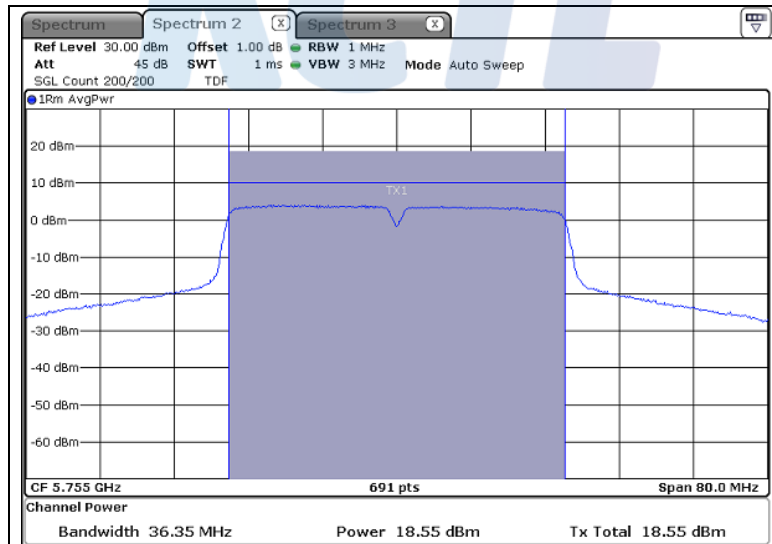


Highest Channel (5 825 MHz)



-802.11n HT40

Lowest Channel (5 755 MHz)



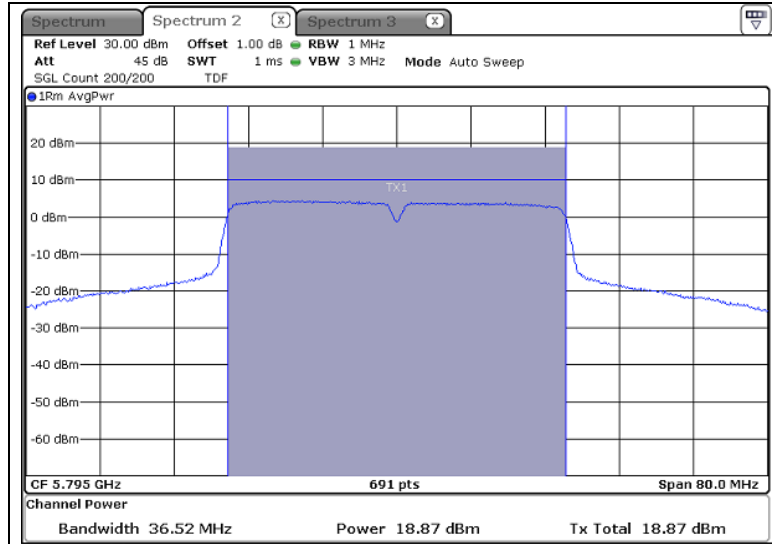
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (96) of (450)

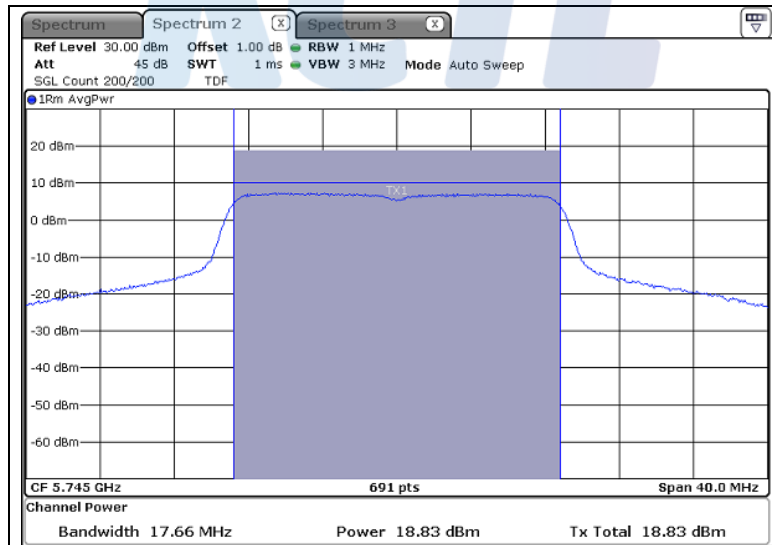


Middle Channel (5 795 MHz)



-802.11ac VHT20

Lowest Channel (5 745 MHz)



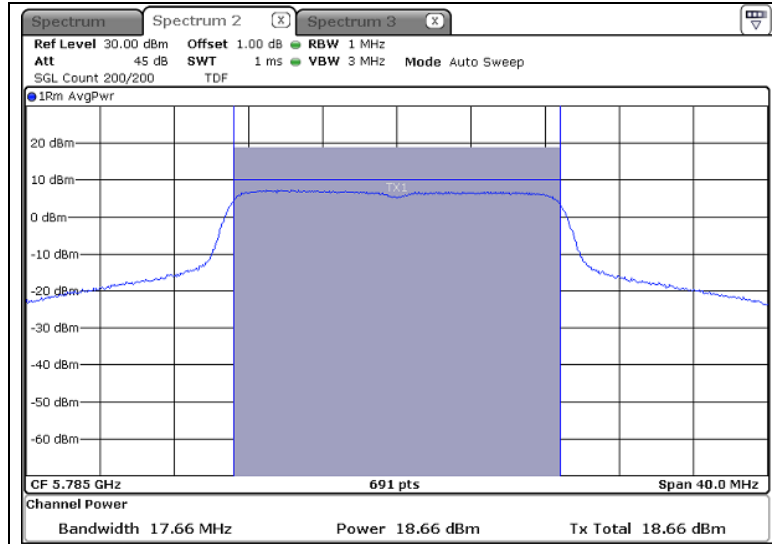
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

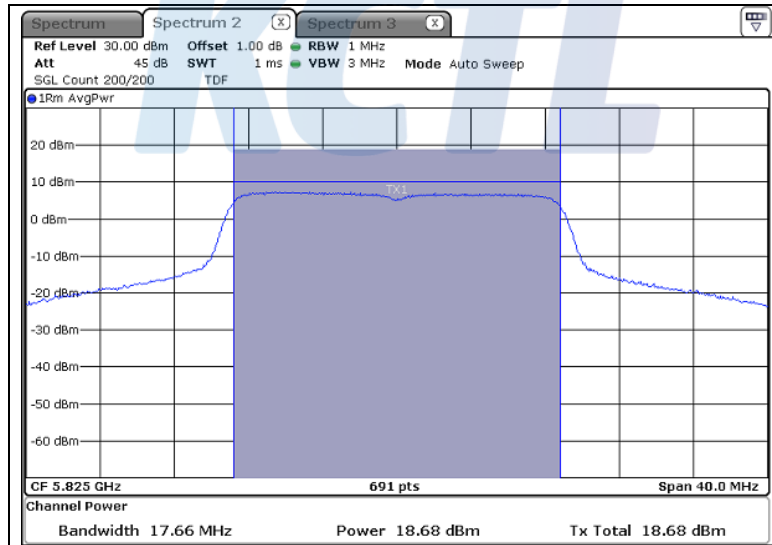
Report No.:
KR17-SRF0056-B
Page (97) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

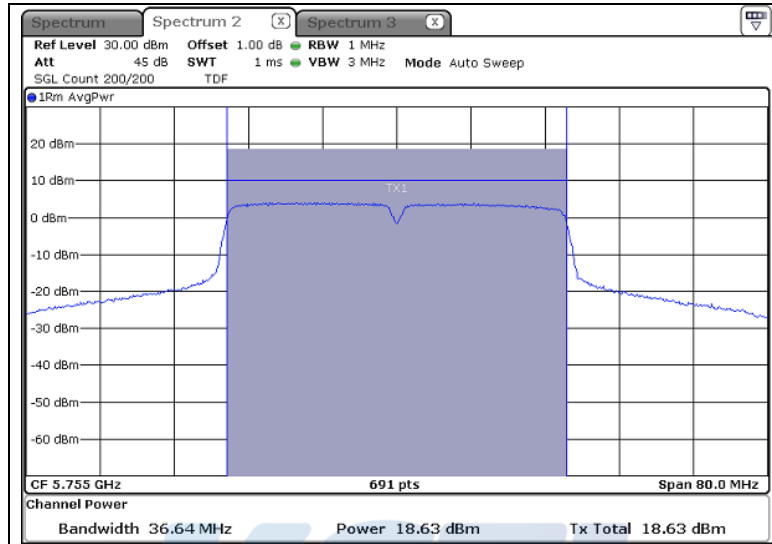
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (98) of (450)

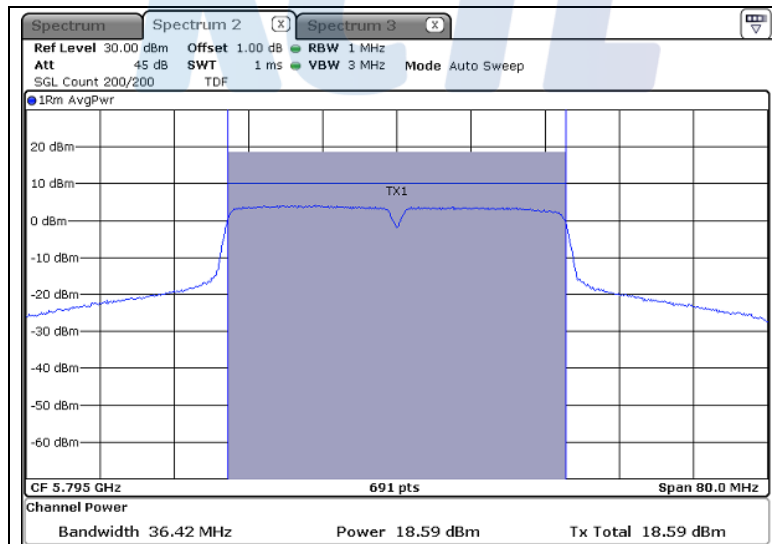


-802.11ac VHT40

Lowest Channel (5 755 MHz)



Highest Channel (5 795 MHz)



KCTL Inc.

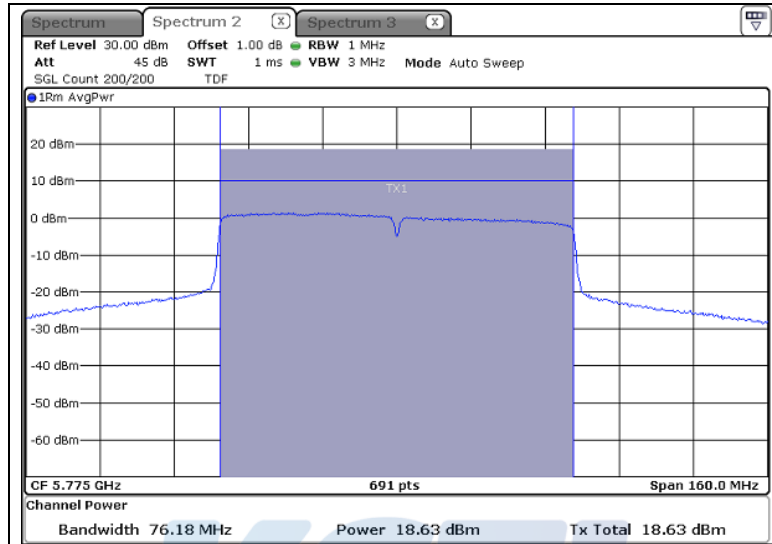
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (99) of (450)



-802.11ac VHT80

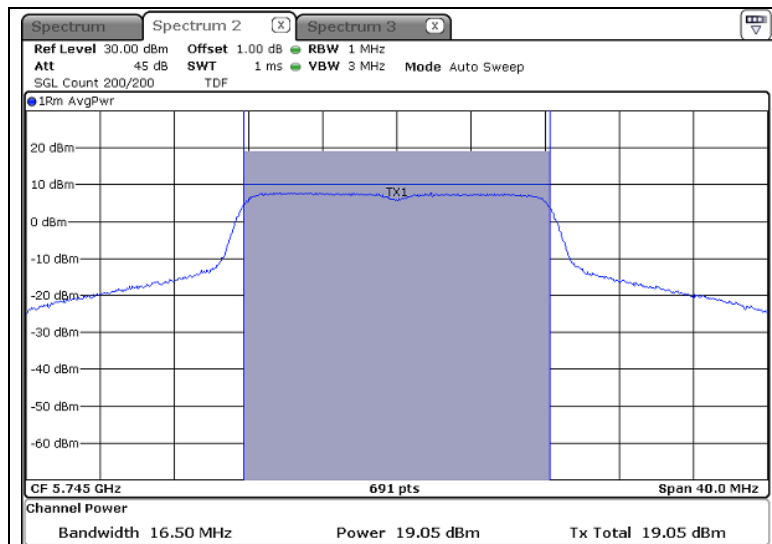
Lowest Channel (5 210 MHz)



- ANT 1

-802.11a

Lowest Channel (5 745 MHz)



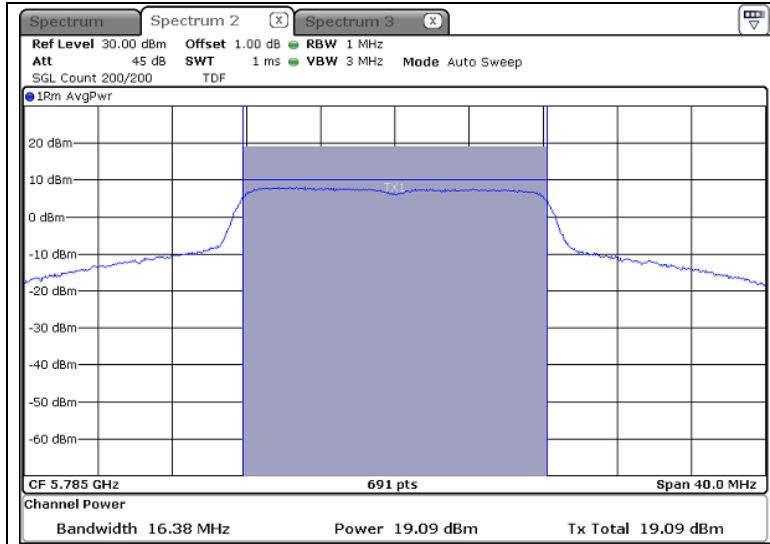
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

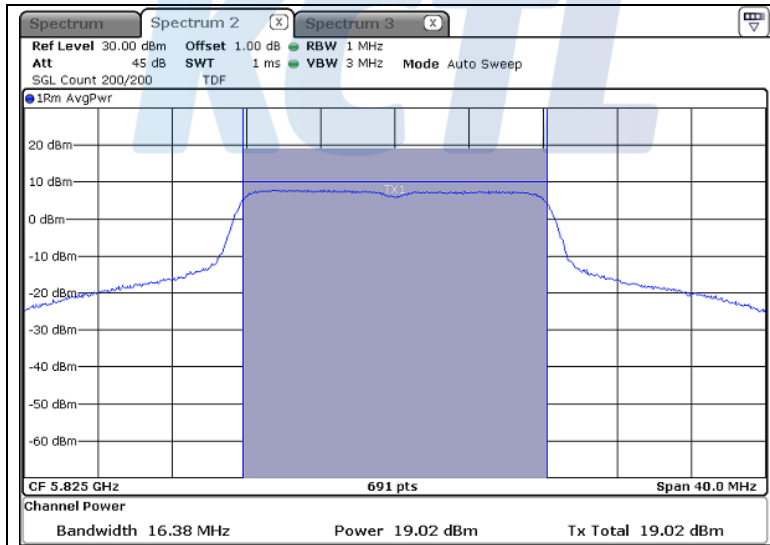
Report No.:
KR17-SRF0056-B
Page (100) of (450)



Middle Channel (5 785 MHz)

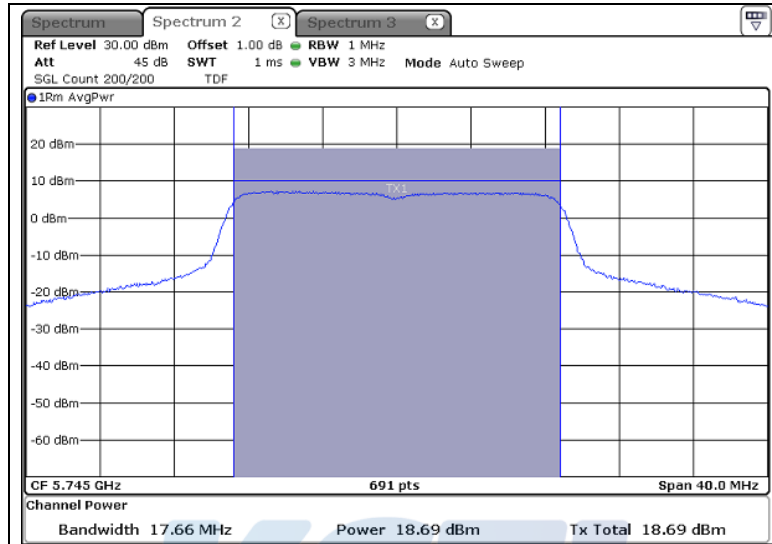


Highest Channel (5 825 MHz)

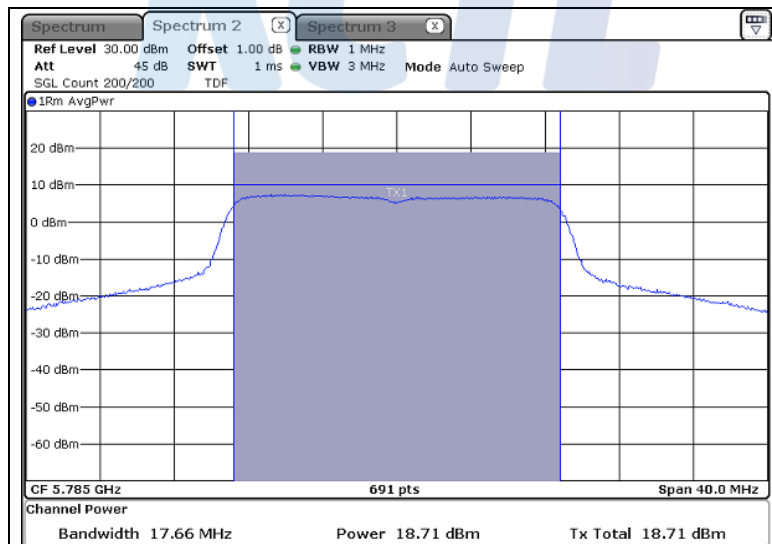


-802.11n HT20

Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)



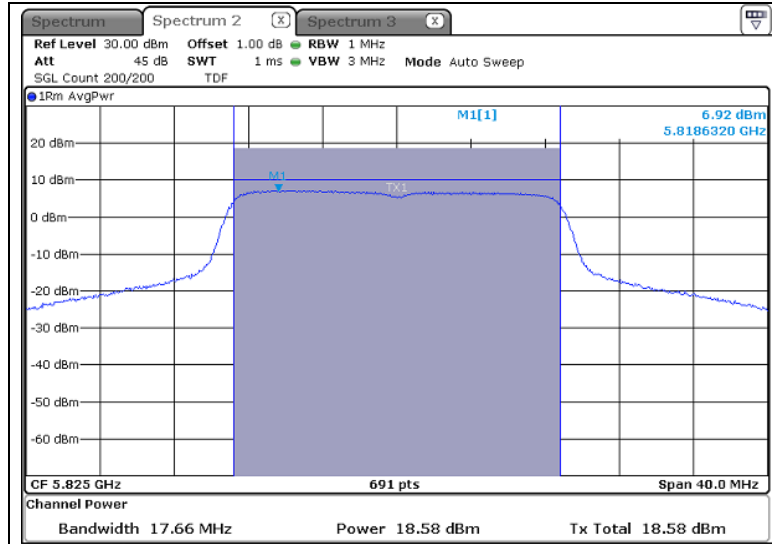
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (102) of (450)

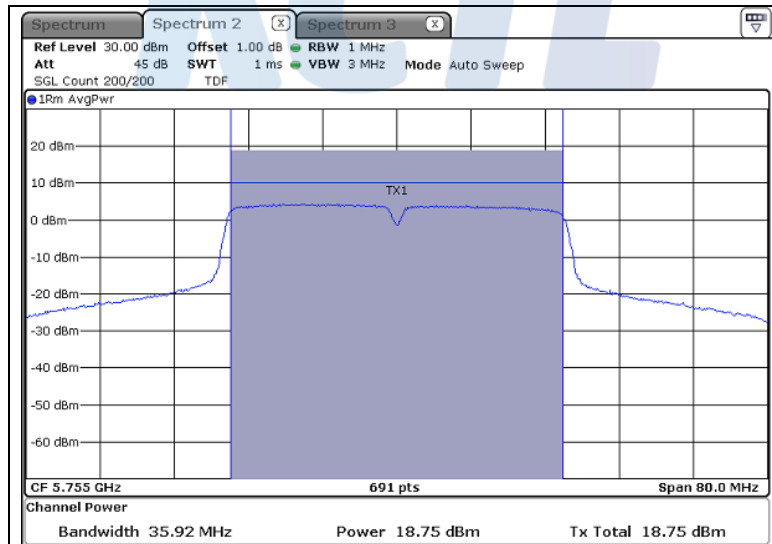


Highest Channel (5 825 MHz)



-802.11n HT40

Lowest Channel (5 755 MHz)



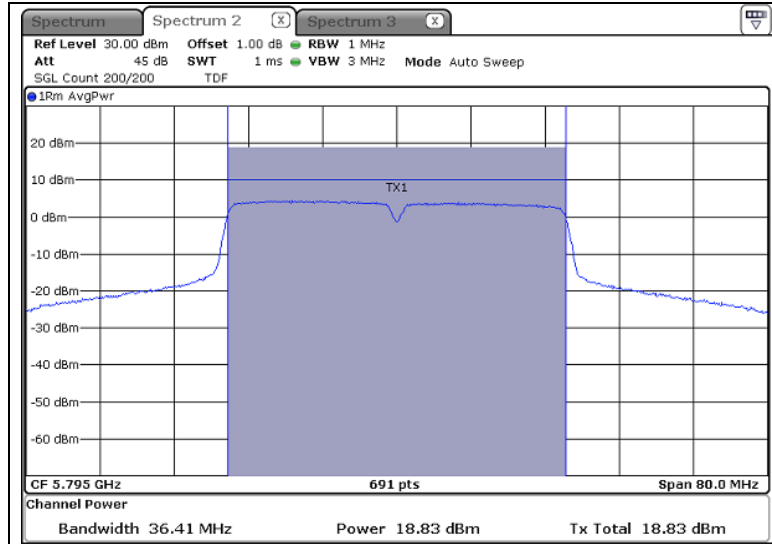
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (103) of (450)

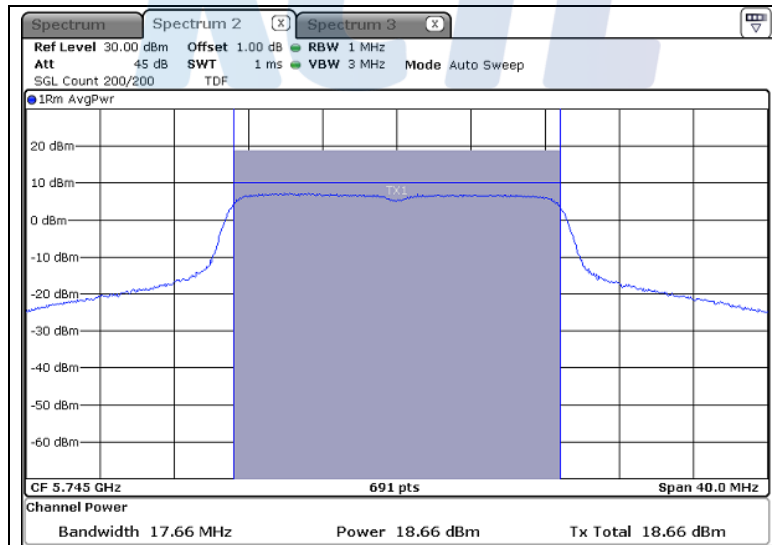


Middle Channel (5 795 MHz)



-802.11ac VHT20

Lowest Channel (5 745 MHz)



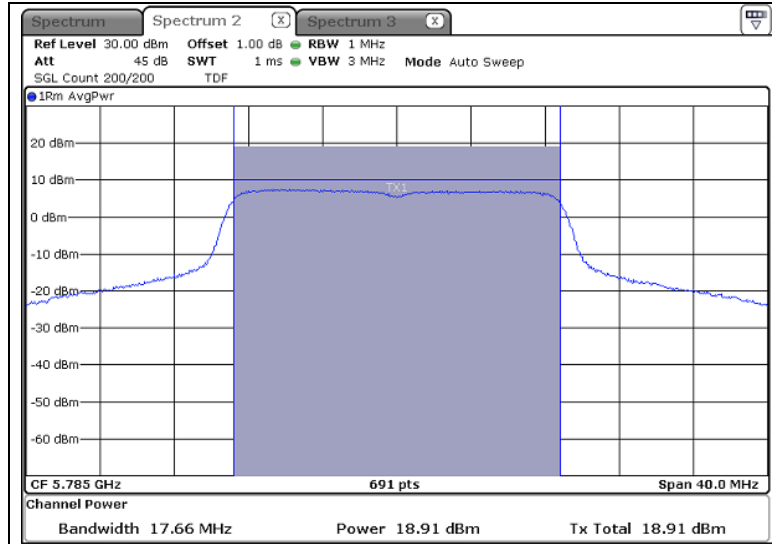
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

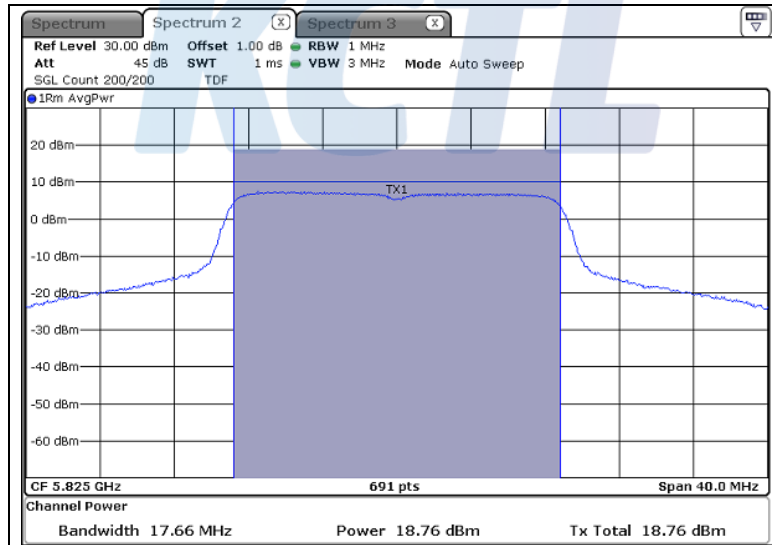
Report No.:
KR17-SRF0056-B
Page (104) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

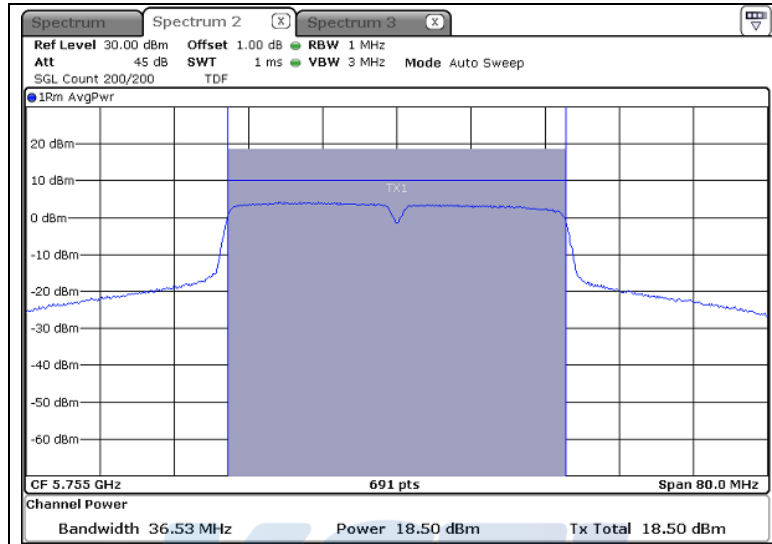
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (105) of (450)

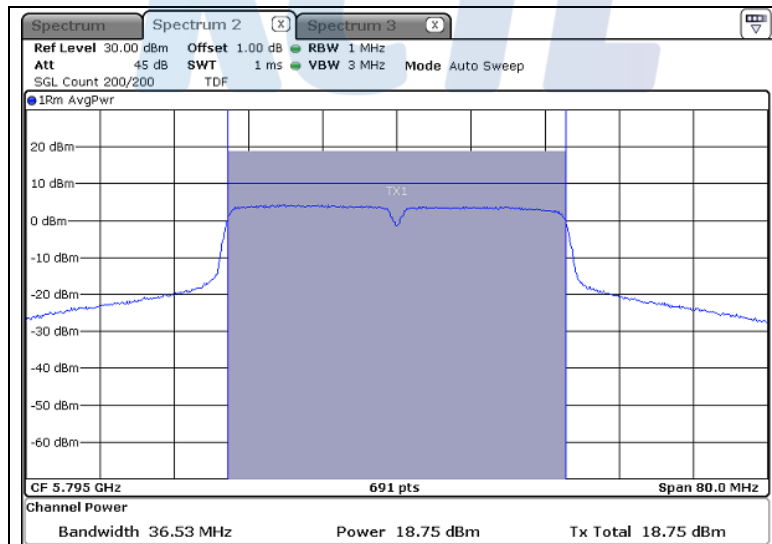


-802.11ac VHT40

Lowest Channel (5 755 MHz)

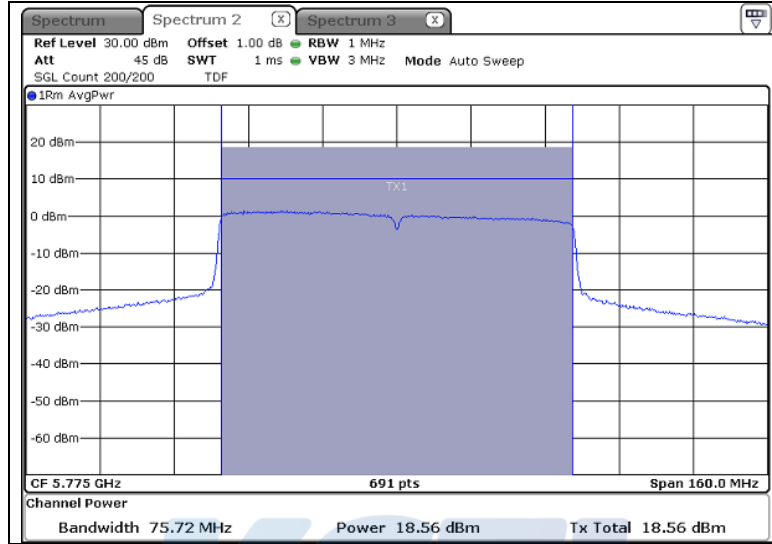


Highest Channel (5 795 MHz)



-802.11ac VHT80

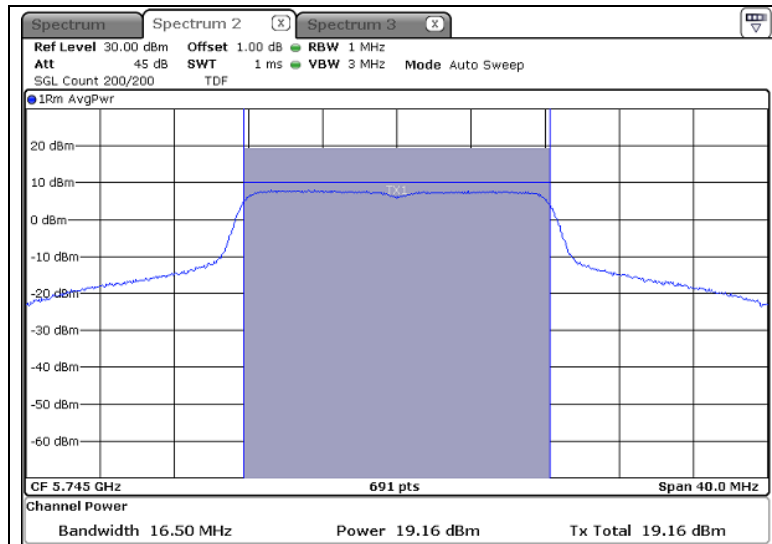
Lowest Channel (5 210 MHz)



- ANT 2

-802.11a

Lowest Channel (5 745 MHz)



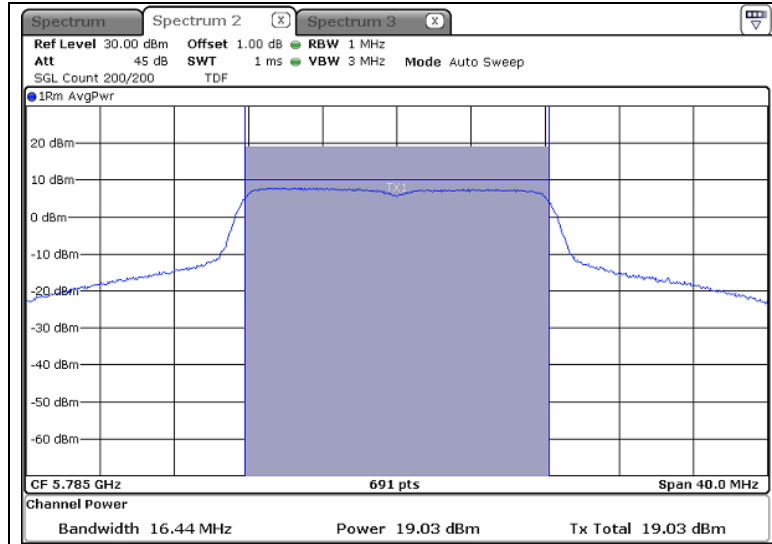
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

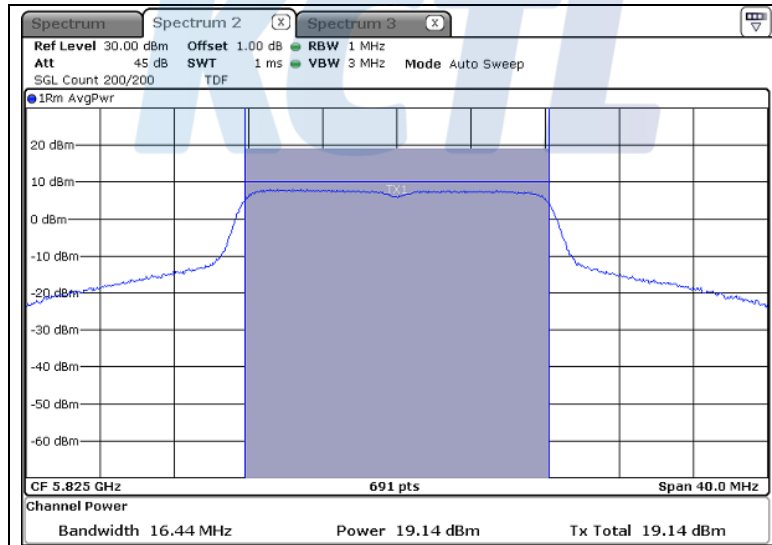
Report No.:
KR17-SRF0056-B
Page (107) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

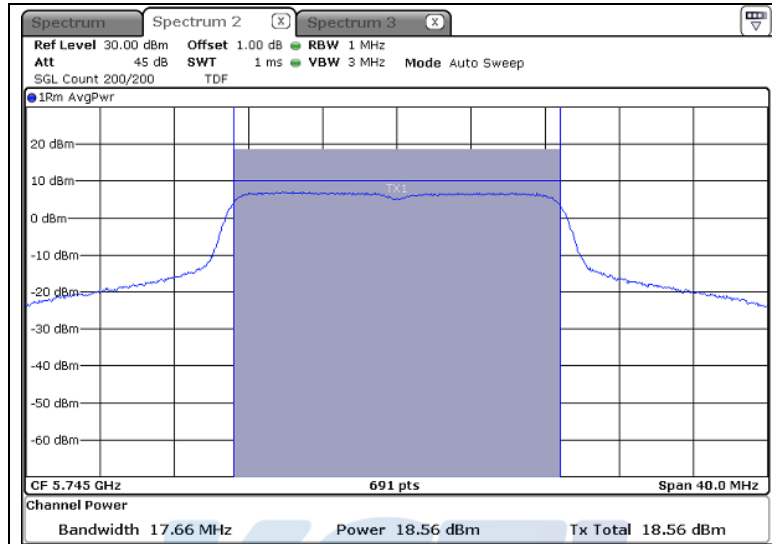
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (108) of (450)

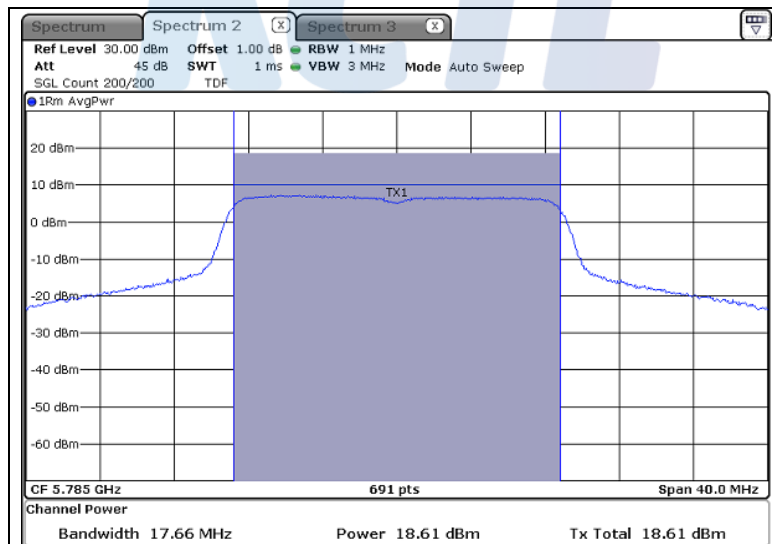


-802.11n HT20

Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)



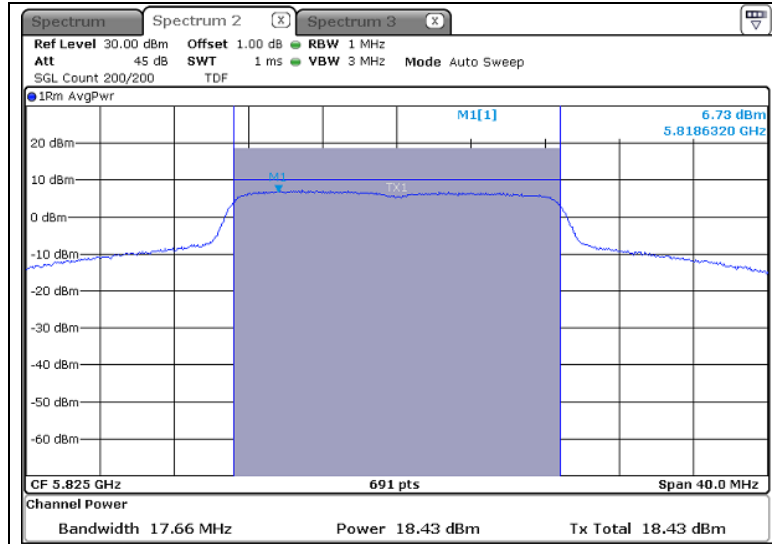
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (109) of (450)

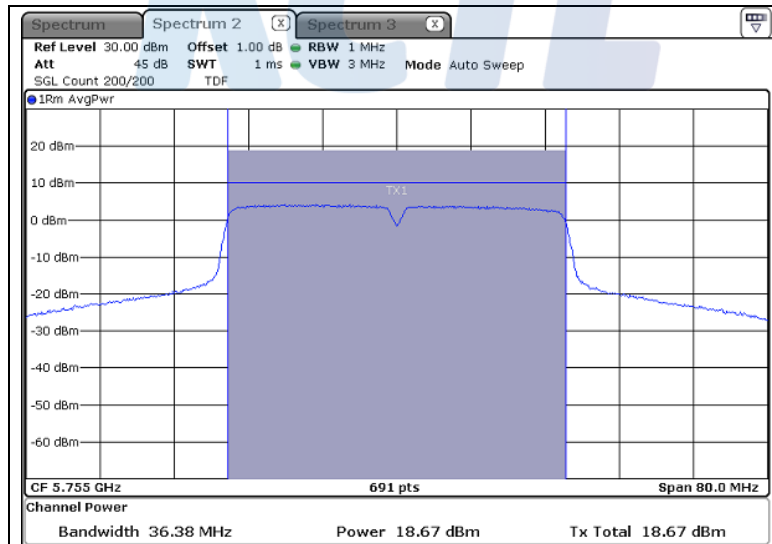


Highest Channel (5 825 MHz)



-802.11n HT40

Lowest Channel (5 755 MHz)



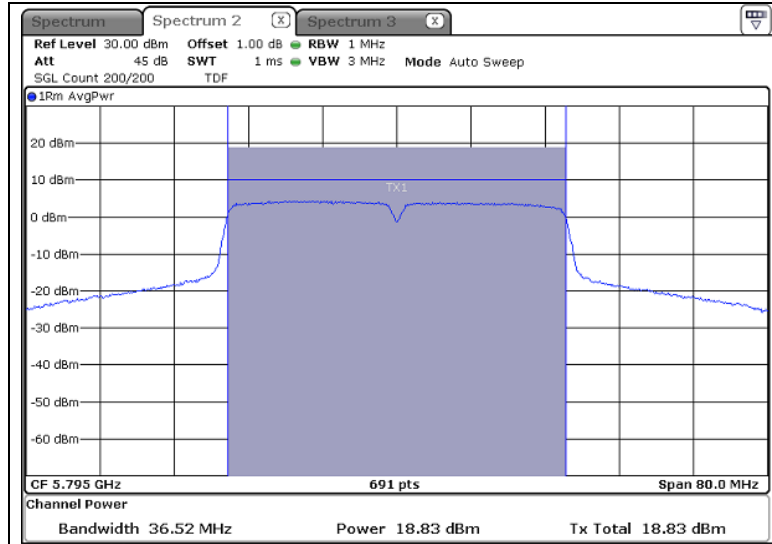
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (110) of (450)

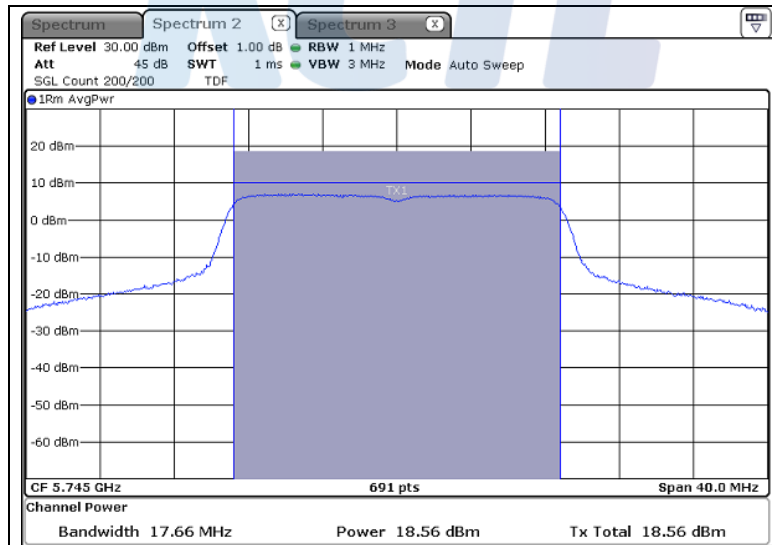


Middle Channel (5 795 MHz)



-802.11ac VHT20

Lowest Channel (5 745 MHz)



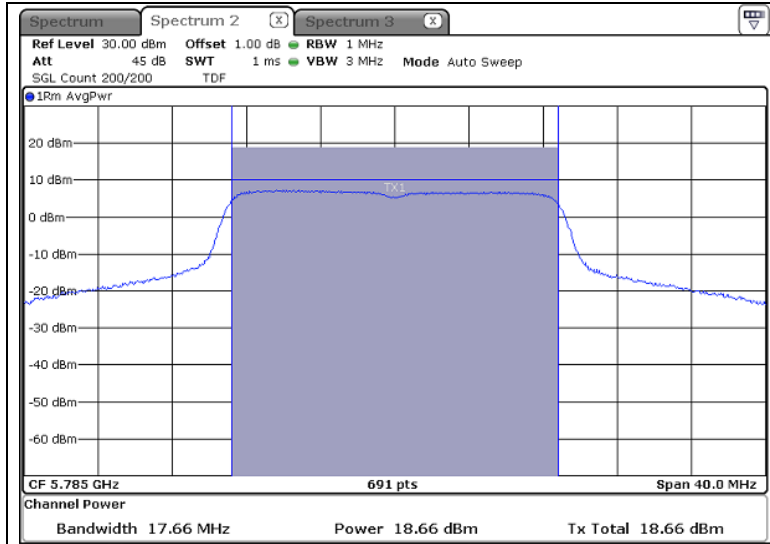
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

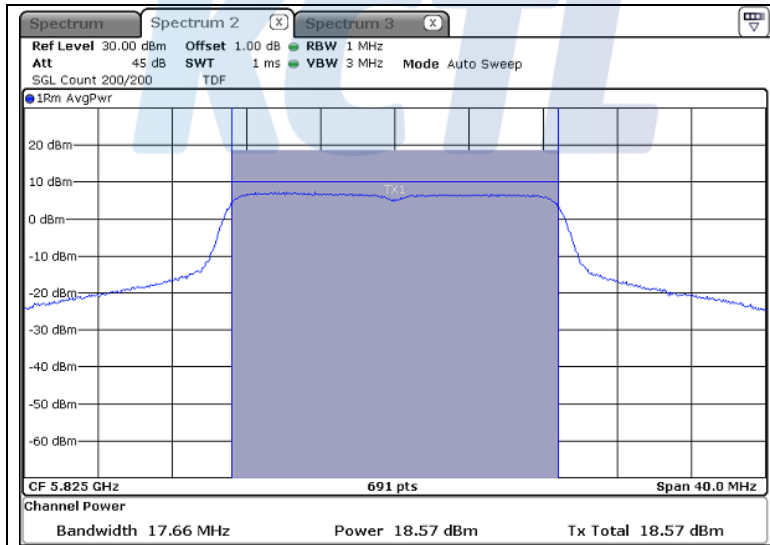
Report No.:
KR17-SRF0056-B
Page (111) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

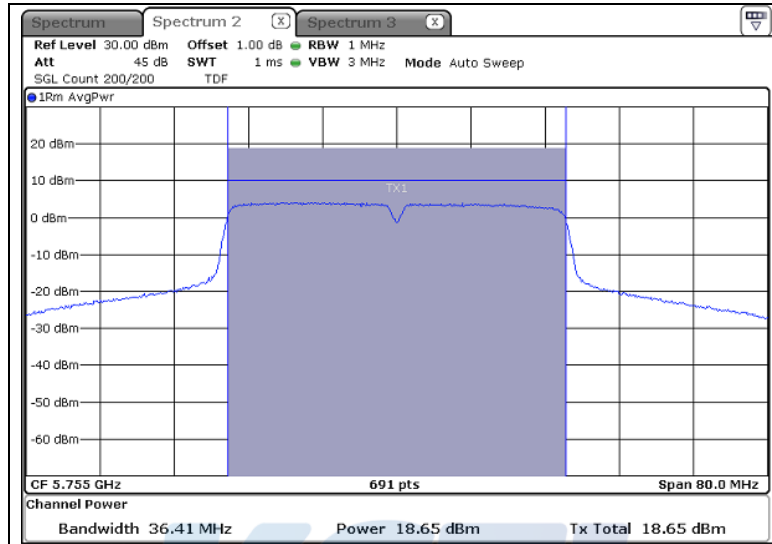
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (112) of (450)

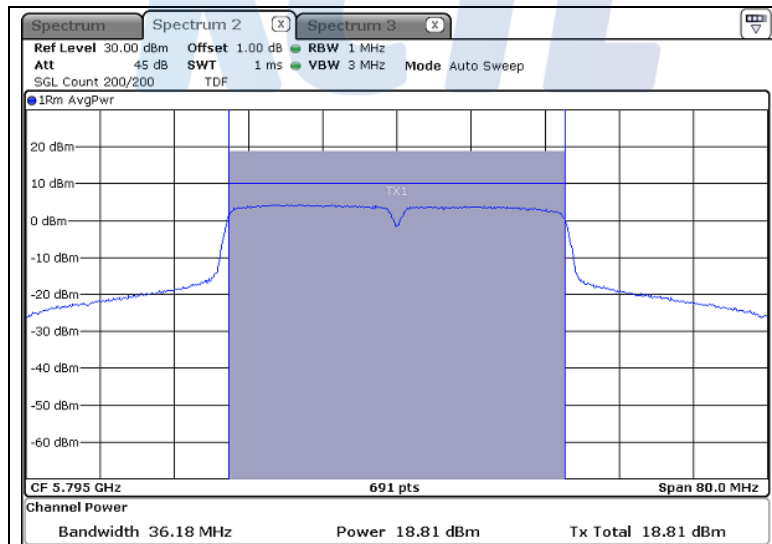


-802.11ac VHT40

Lowest Channel (5 755 MHz)

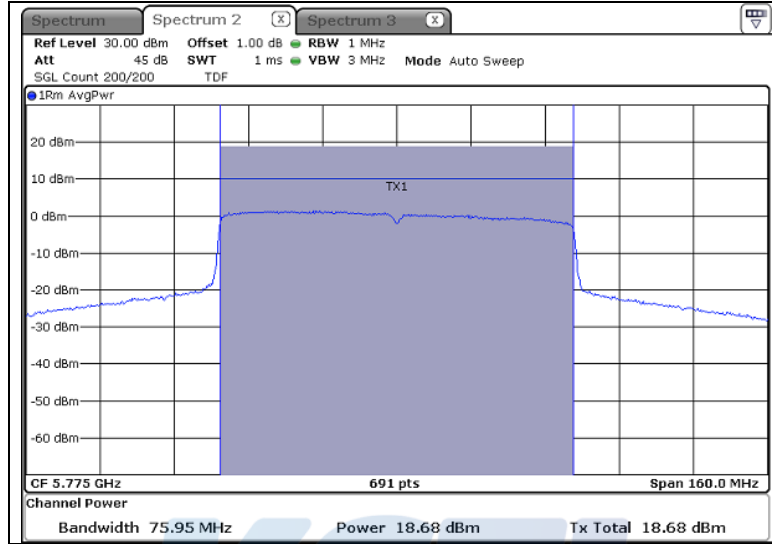


Highest Channel (5 795 MHz)



-802.11ac VHT80

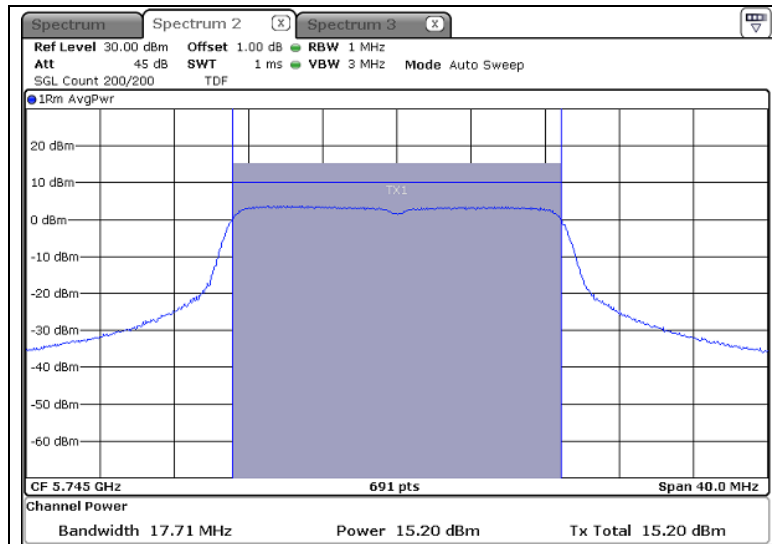
Lowest Channel (5 210 MHz)



- MIMO 2 Tx (ANT 0)

-802.11n HT20

Lowest Channel (5 745 MHz)



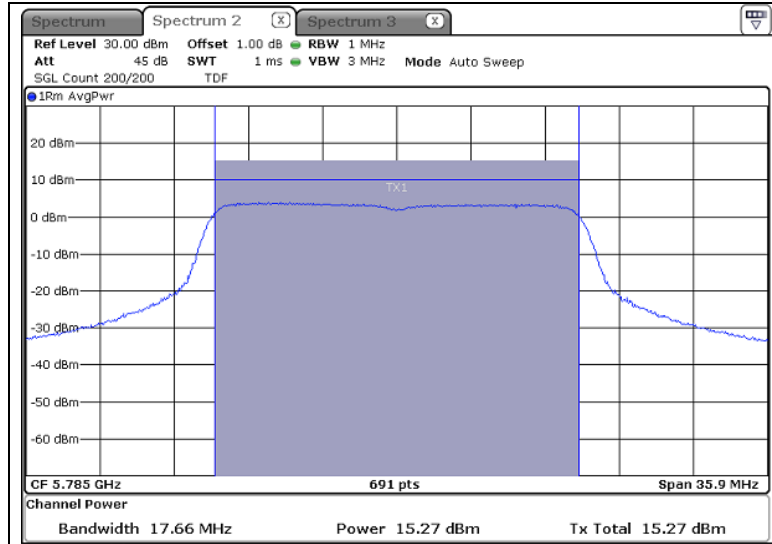
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

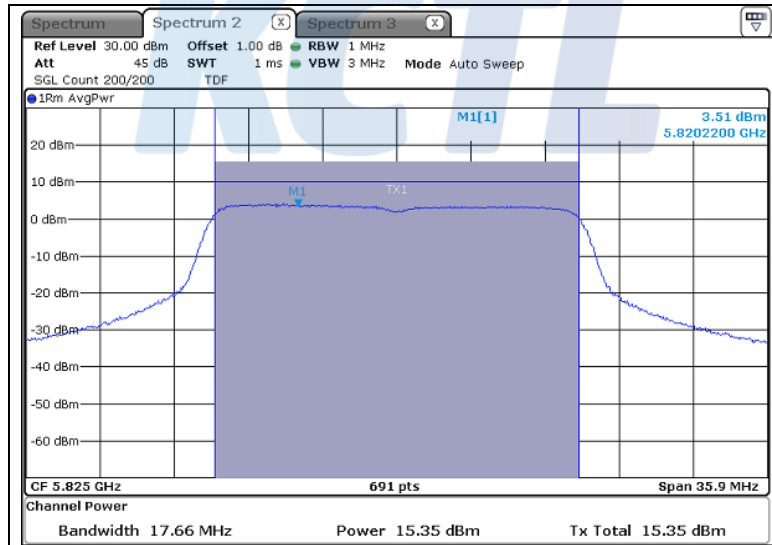
Report No.:
KR17-SRF0056-B
Page (114) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

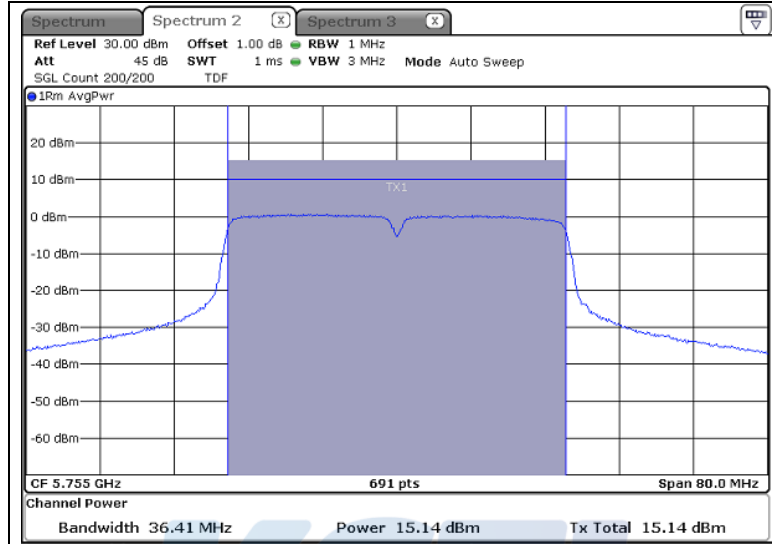
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (115) of (450)

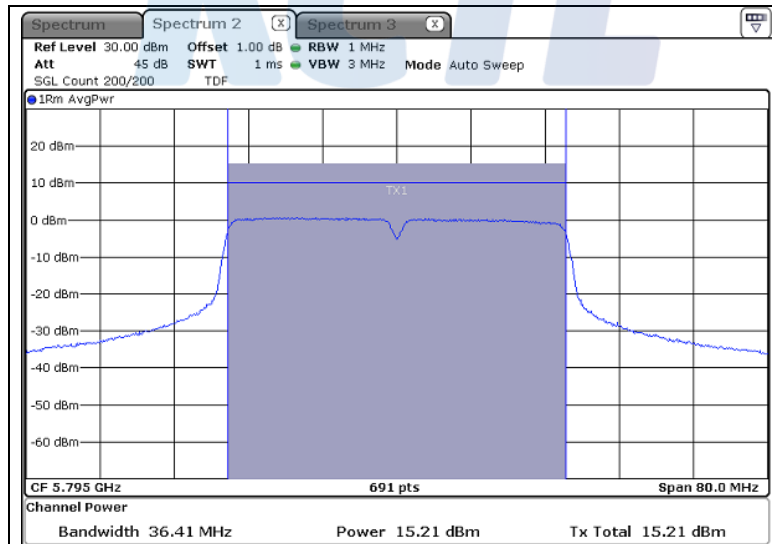


-802.11n HT40

Lowest Channel (5 755 MHz)



Middle Channel (5 795 MHz)



KCTL Inc.

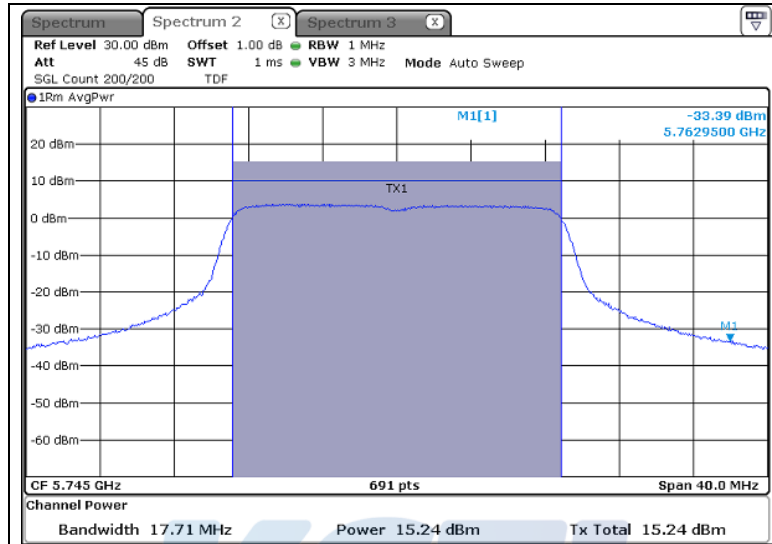
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (116) of (450)

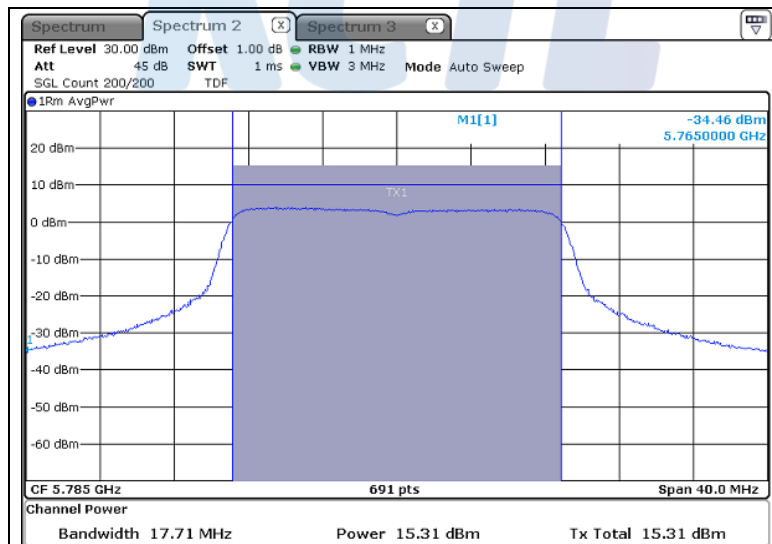


-802.11ac VHT20

Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)



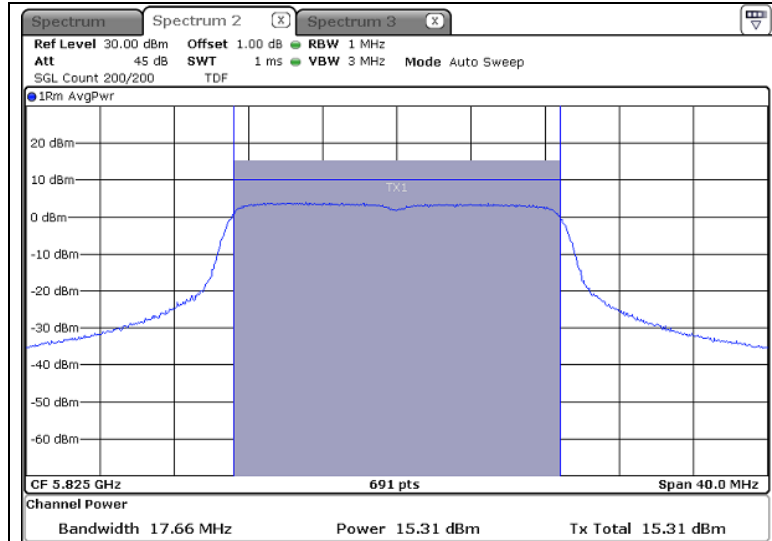
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (117) of (450)

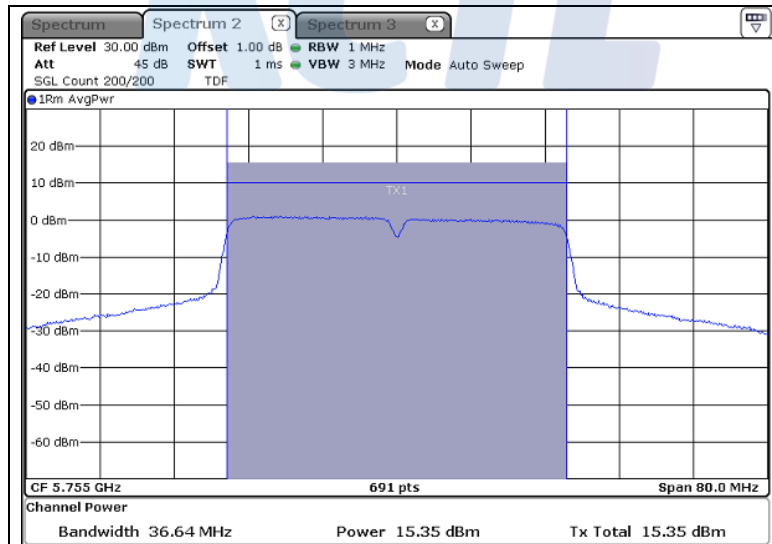


Highest Channel (5 825 MHz)



-802.11ac VHT40

Lowest Channel (5 755 MHz)



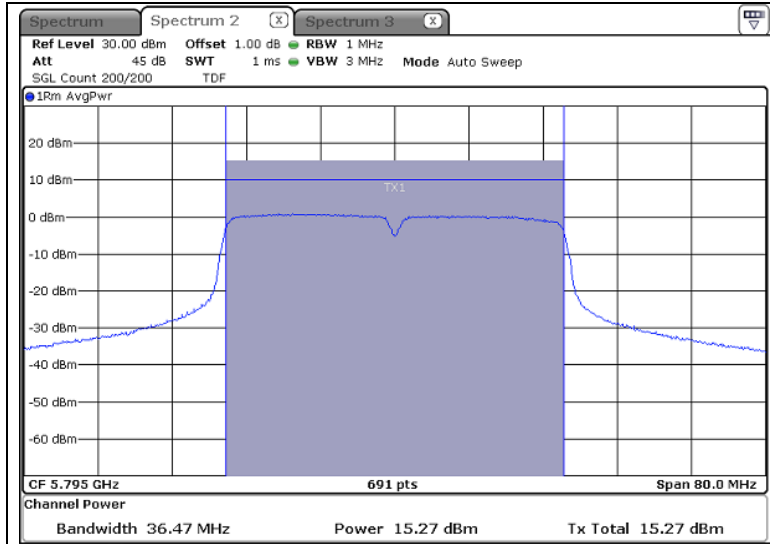
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (118) of (450)

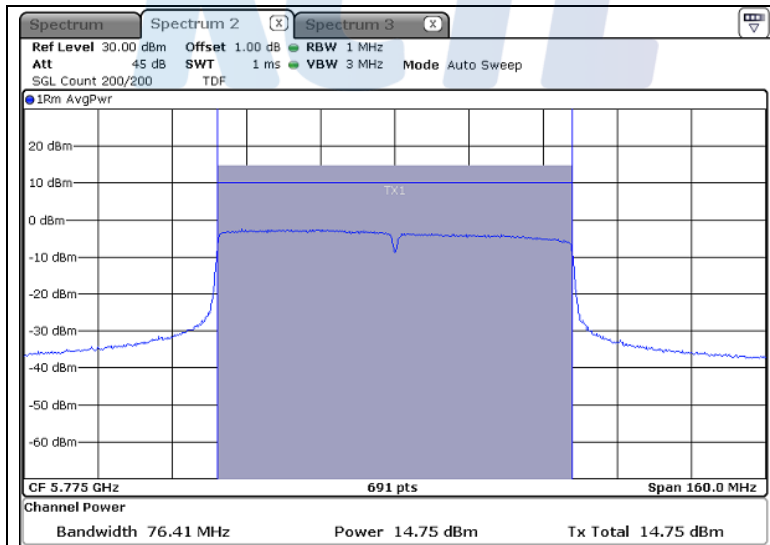


Middle Channel (5 795 MHz)



-802.11ac VHT80

Lowest Channel (5 775 MHz)



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

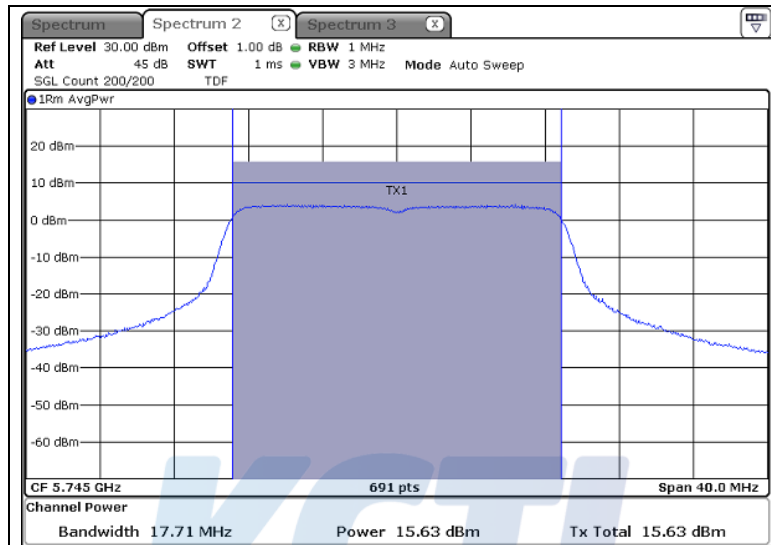
Report No.:
KR17-SRF0056-B
Page (119) of (450)



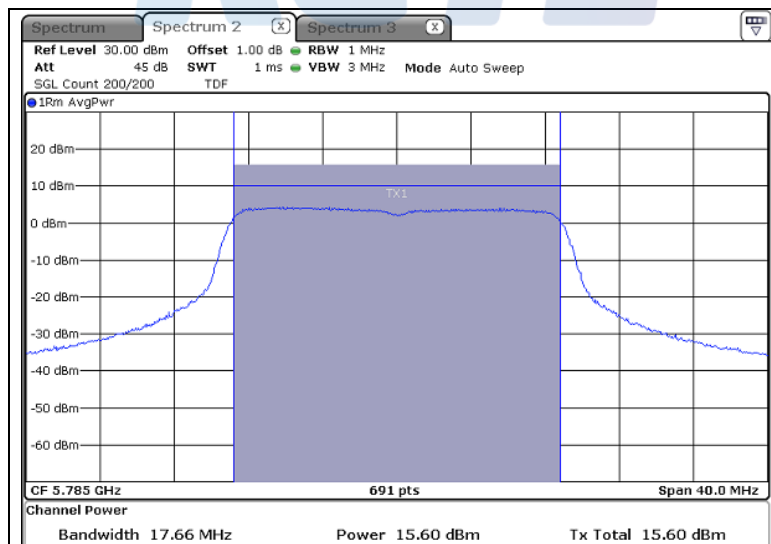
- MIMO 2 Tx (ANT 1)

-802.11n HT20

Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)



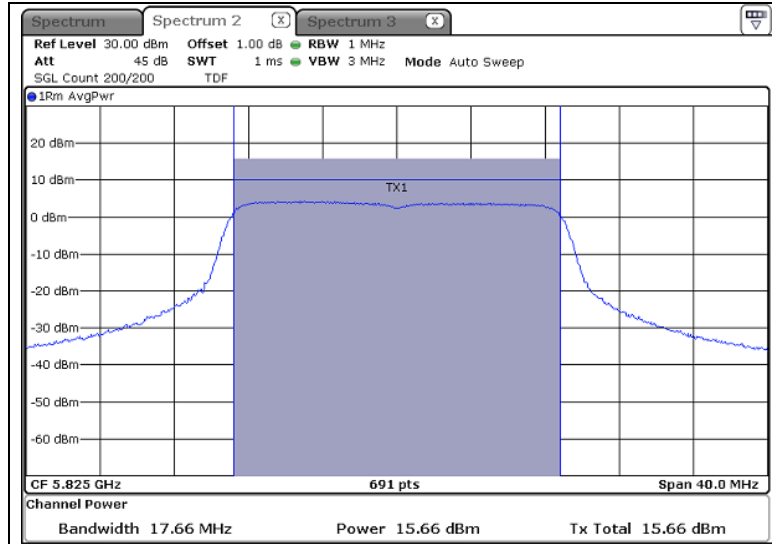
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (120) of (450)

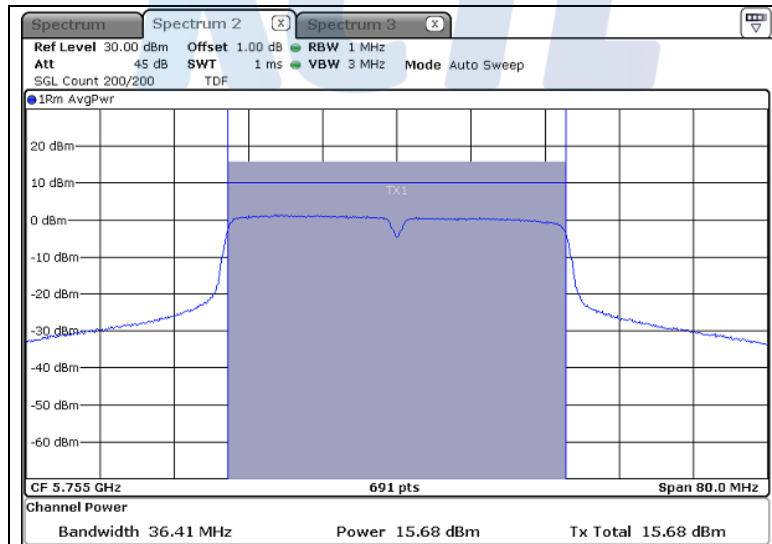


Highest Channel (5 825 MHz)



-802.11n HT40

Lowest Channel (5 755 MHz)



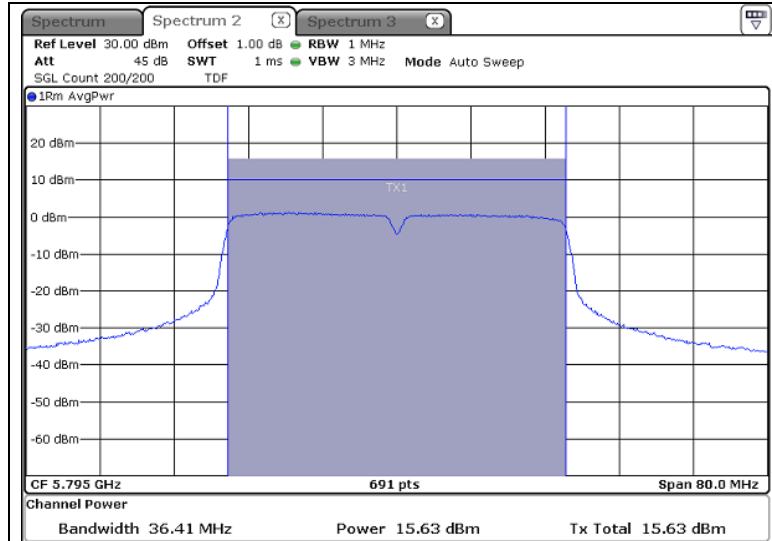
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (121) of (450)

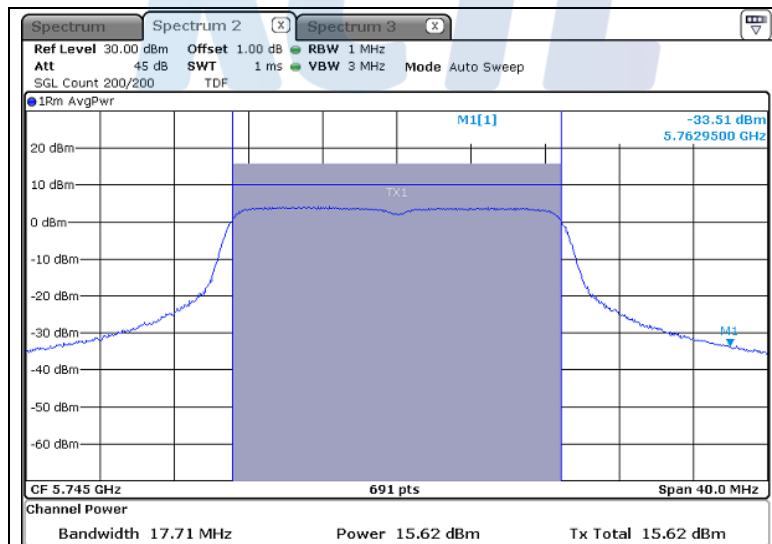


Middle Channel (5 795 MHz)



-802.11ac VHT20

Lowest Channel (5 745 MHz)



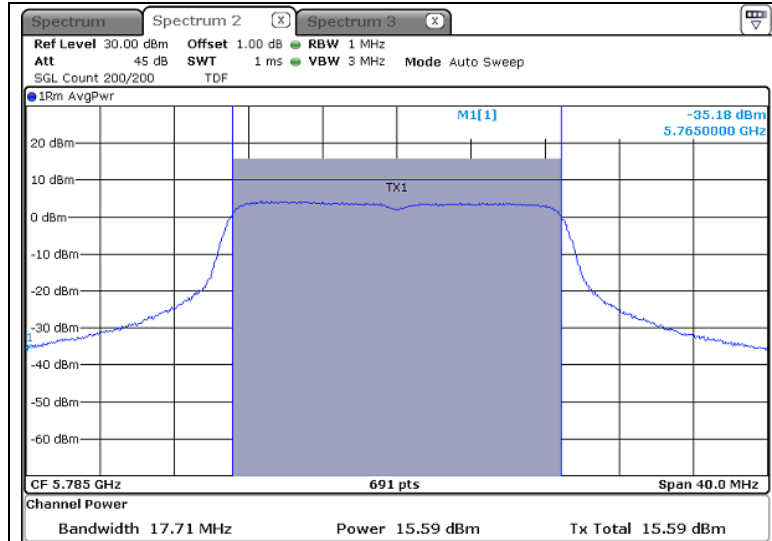
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

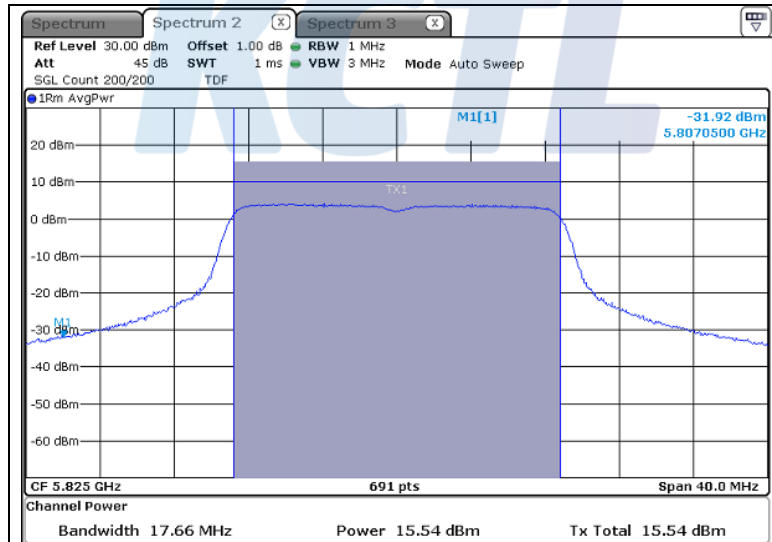
Report No.:
KR17-SRF0056-B
Page (122) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

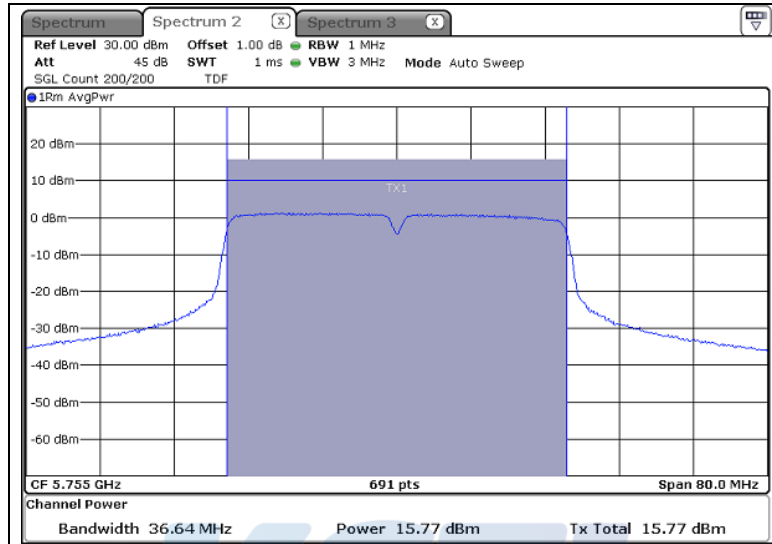
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (123) of (450)

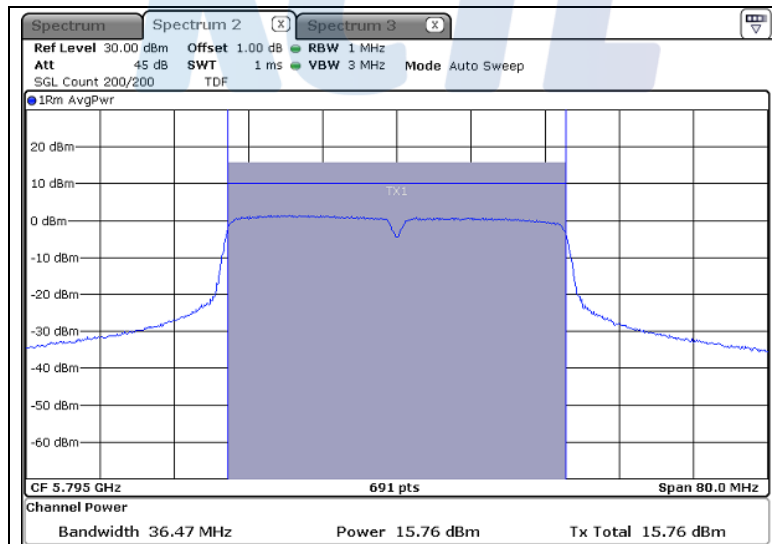


-802.11ac VHT40

Lowest Channel (5 755 MHz)

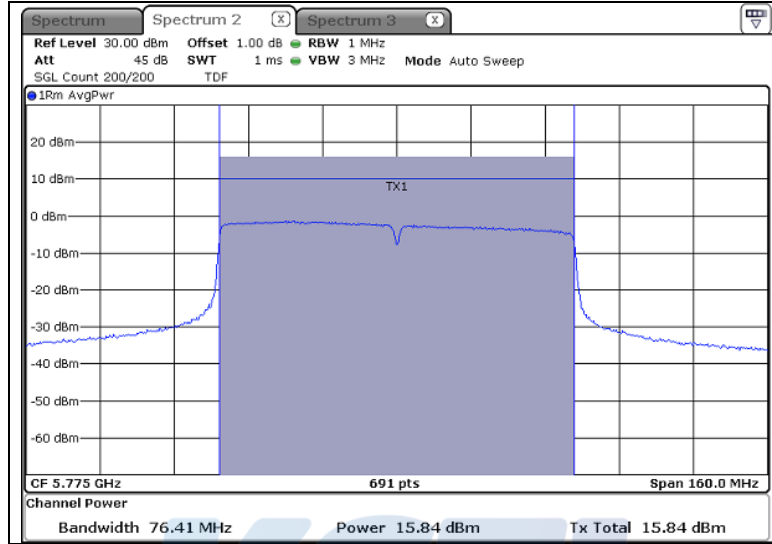


Highest Channel (5 795 MHz)



-802.11ac VHT80

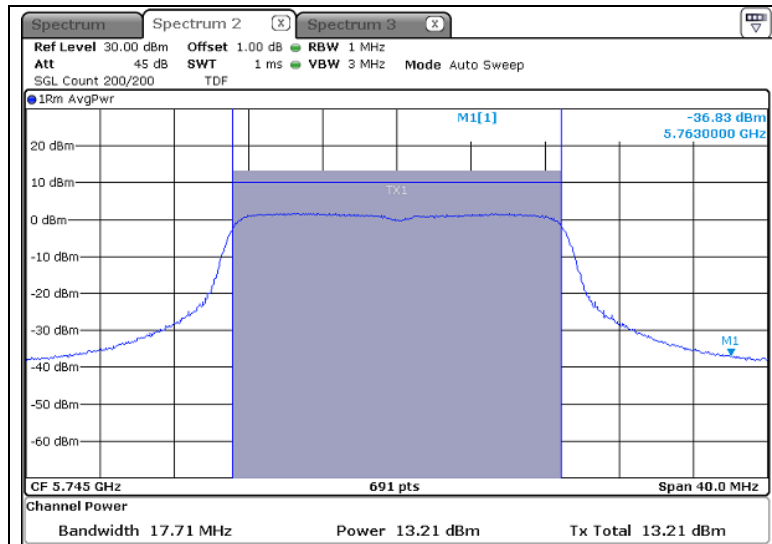
Lowest Channel (5 210 MHz)



- MIMO 3 Tx (ANT 0)

-802.11n HT20

Lowest Channel (5 745 MHz)



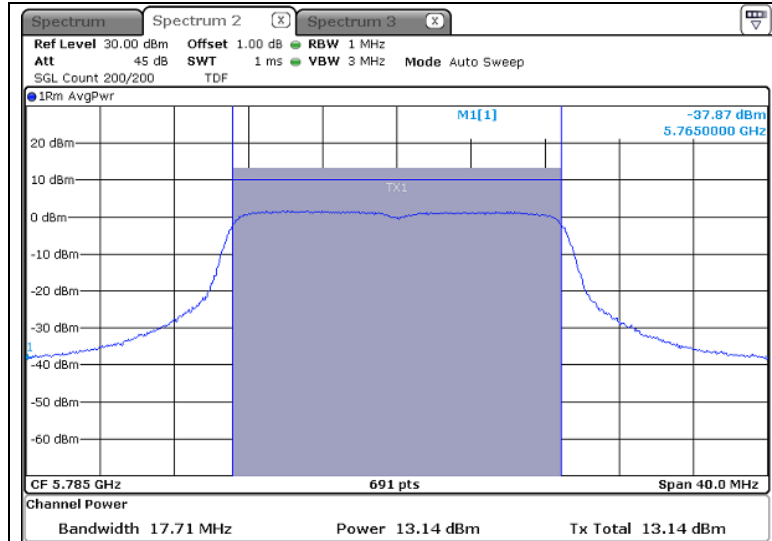
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

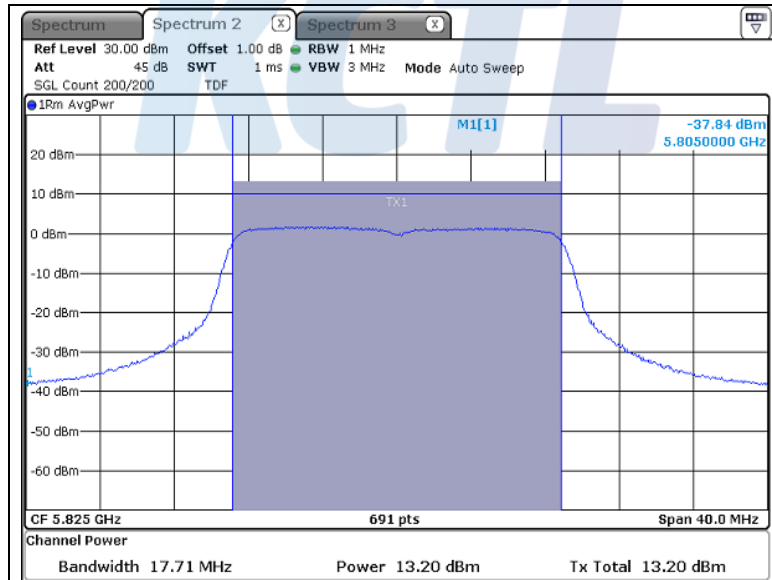
Report No.:
KR17-SRF0056-B
Page (125) of (450)



Middle Channel (5 785 MHz)

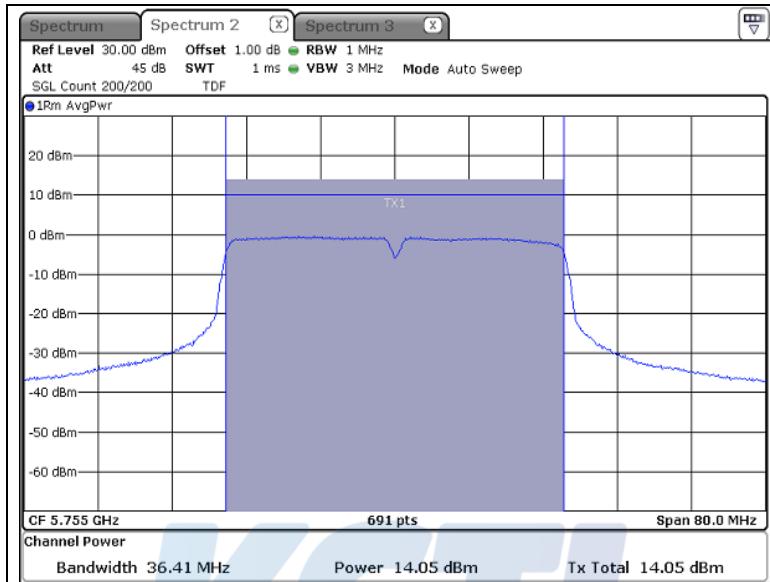


Highest Channel (5 825 MHz)

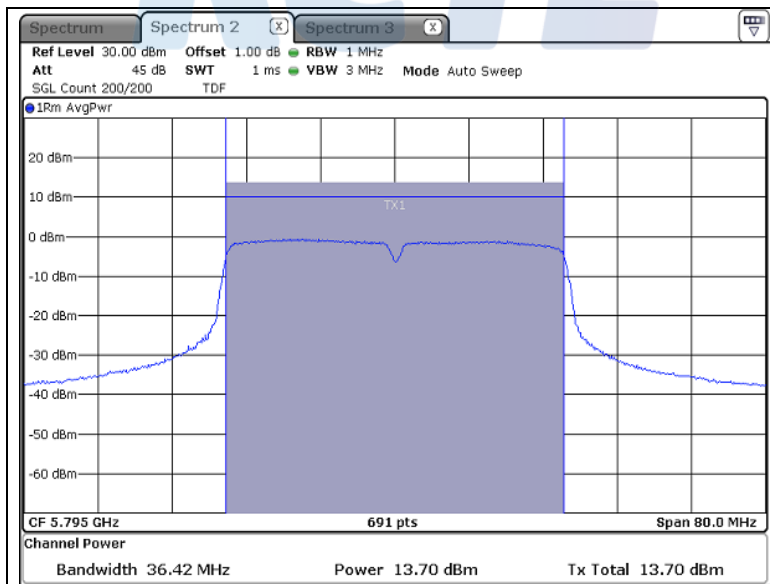


-802.11n HT40

Lowest Channel (5 755 MHz)

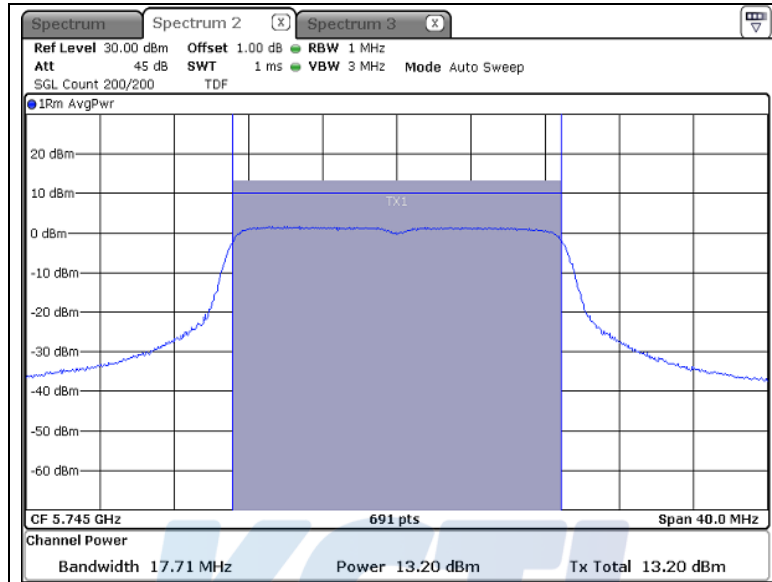


Middle Channel (5 795 MHz)

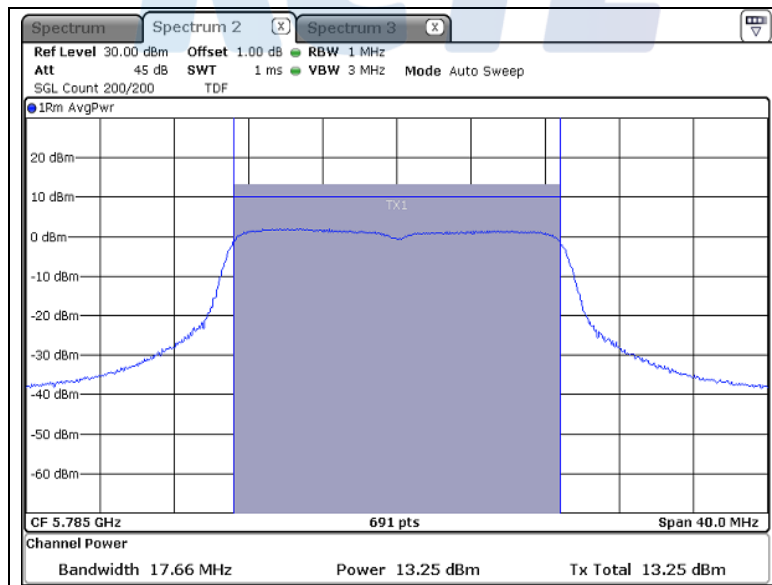


-802.11ac VHT20

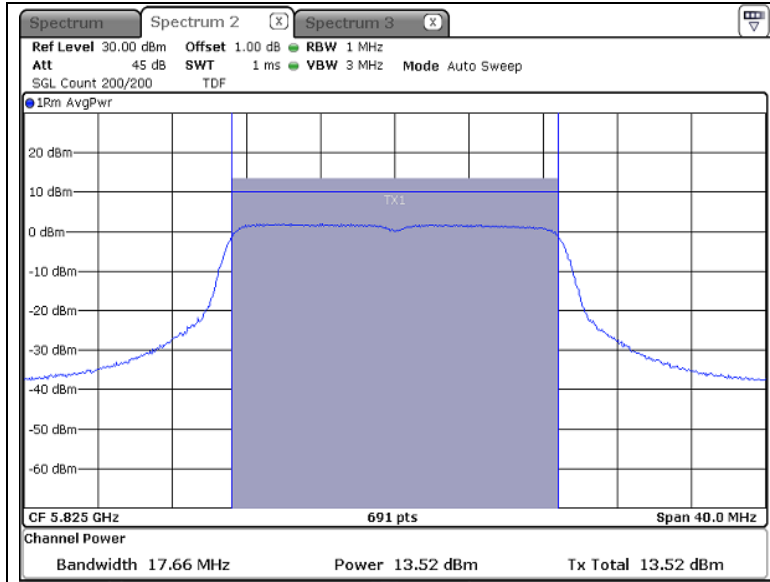
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

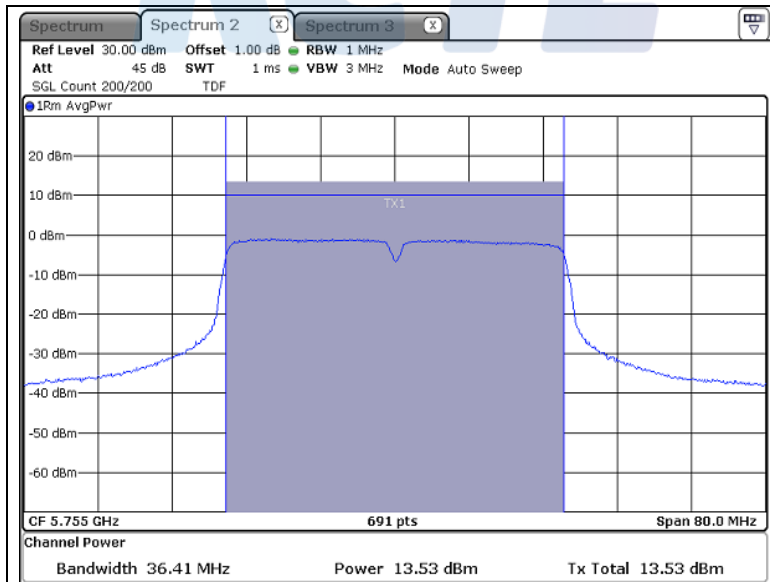


Highest Channel (5 825 MHz)

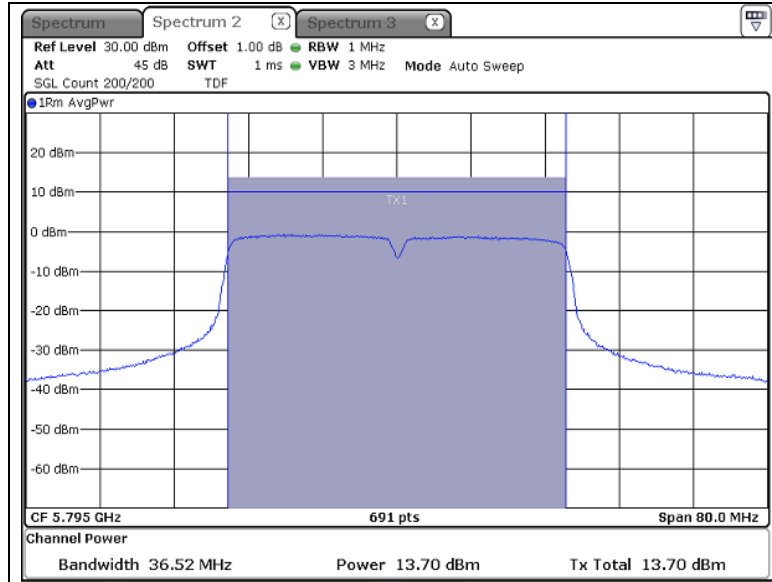


-802.11ac VHT40

Lowest Channel (5 755 MHz)

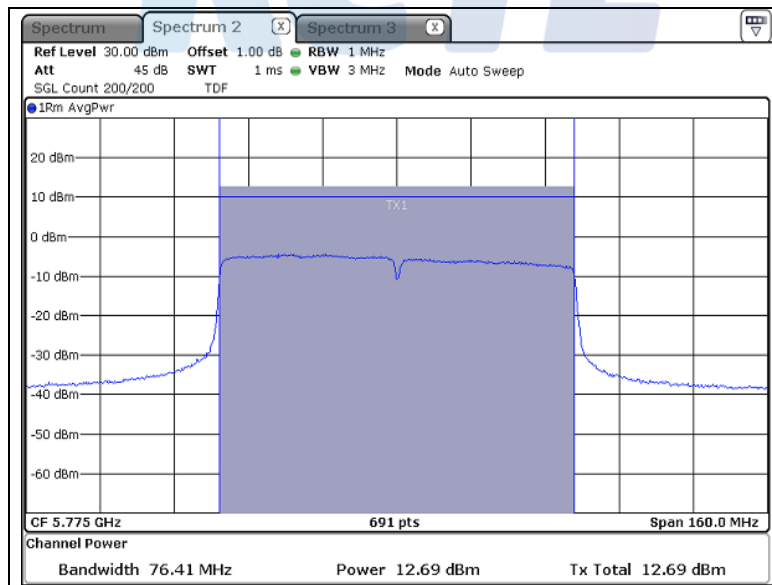


Middle Channel (5 795 MHz)



-802.11ac VHT80

Lowest Channel (5 775 MHz)



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

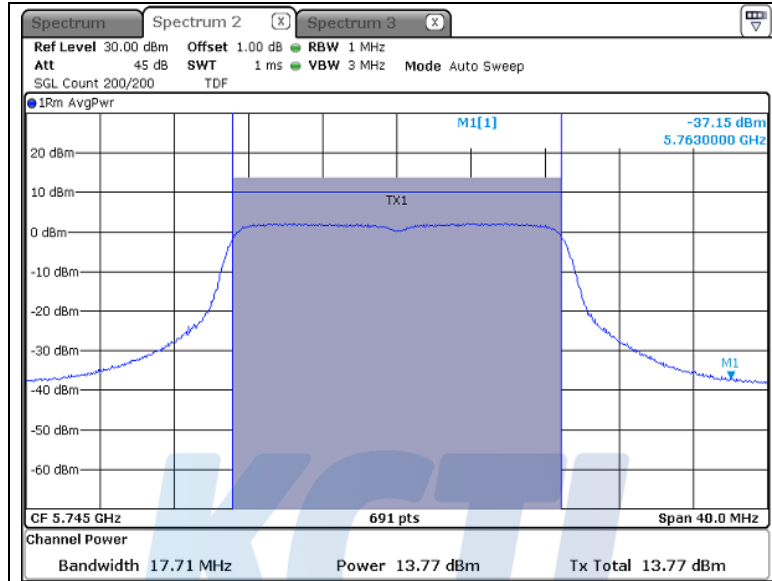
Report No.:
KR17-SRF0056-B
Page (130) of (450)



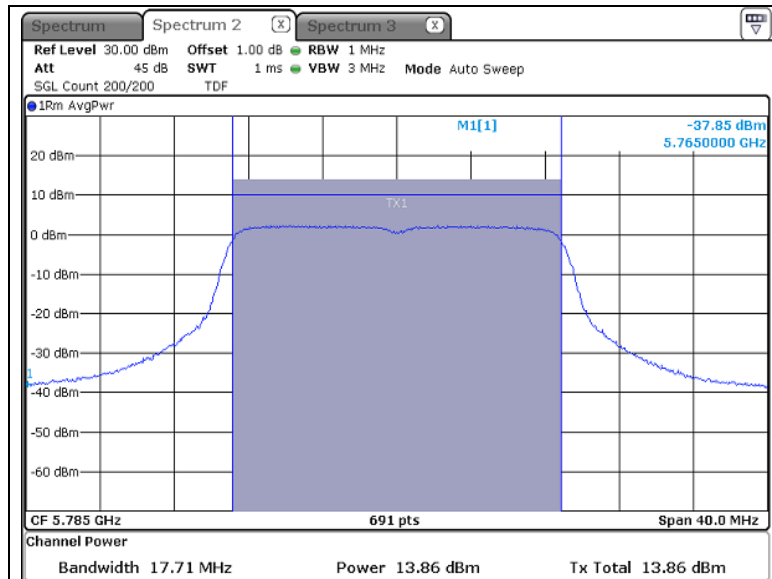
- MIMO 3 Tx (ANT 1)

-802.11n HT20

Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)



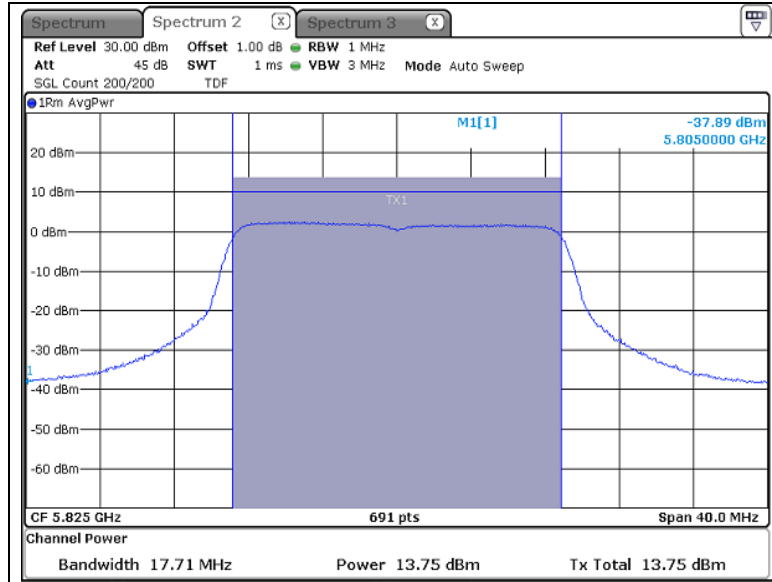
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (131) of (450)

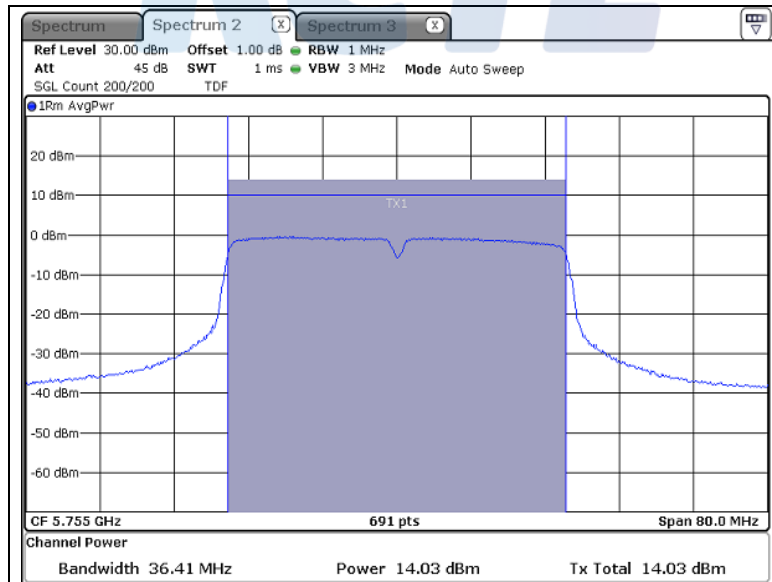


Highest Channel (5 825 MHz)



-802.11n HT40

Lowest Channel (5 755 MHz)



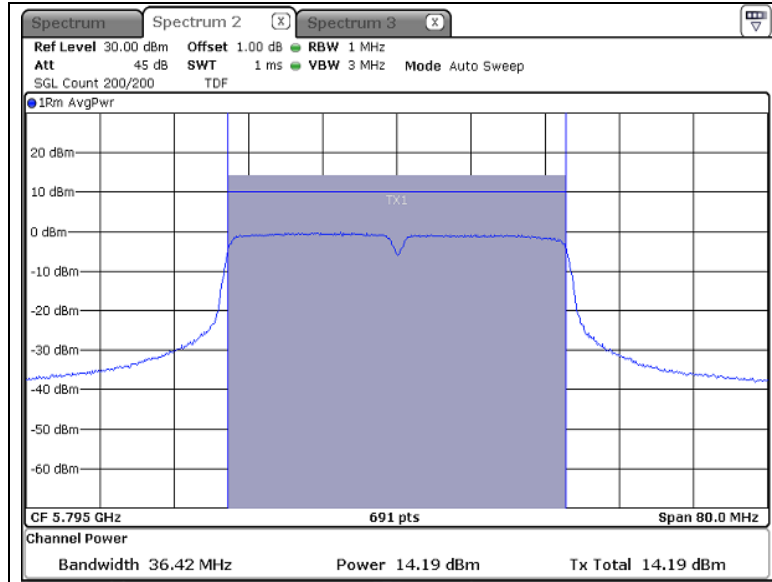
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (132) of (450)

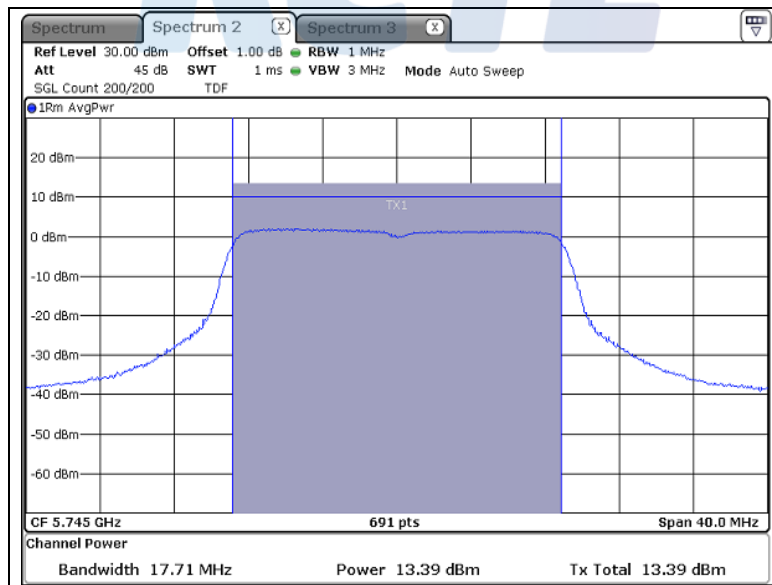


Middle Channel (5 795 MHz)

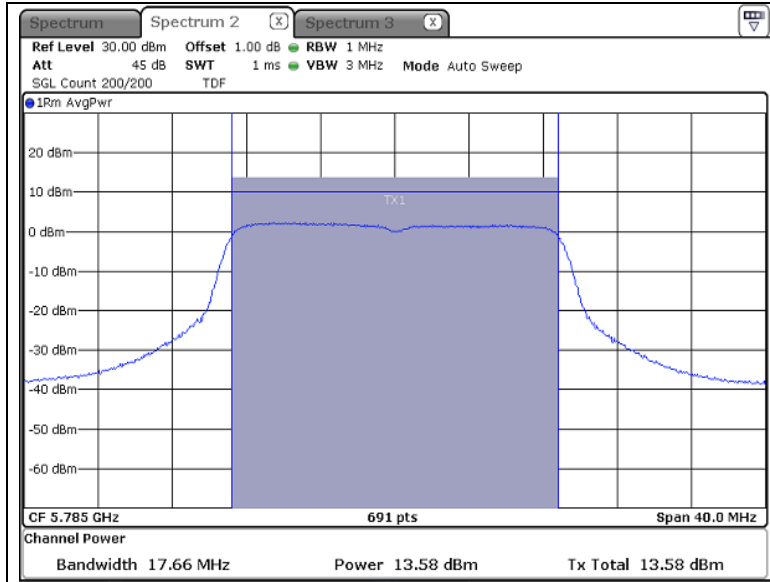


-802.11ac VHT20

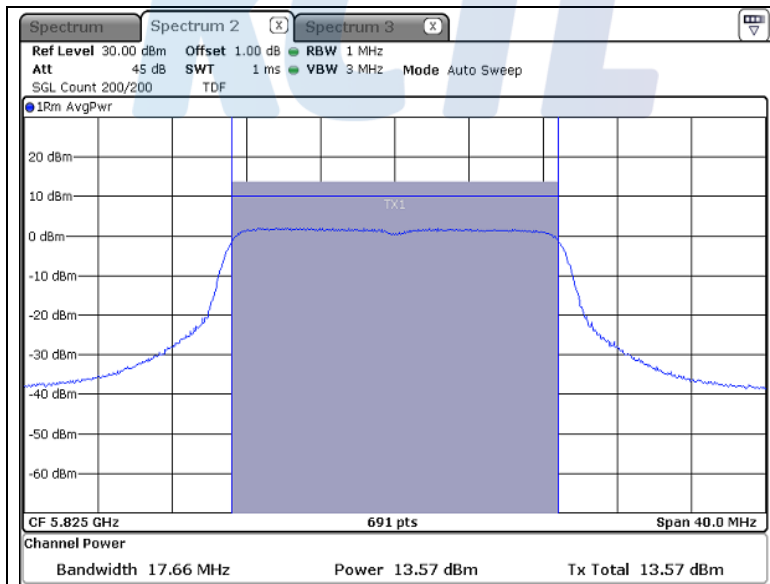
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

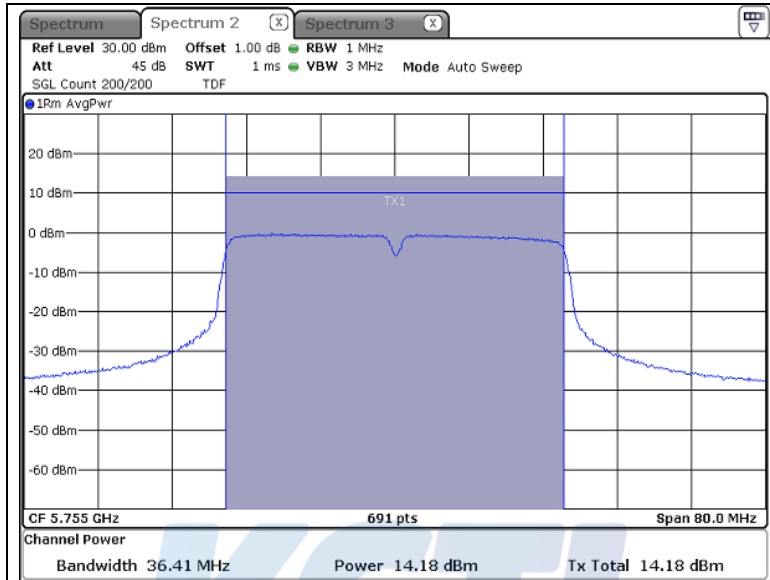


Highest Channel (5 825 MHz)

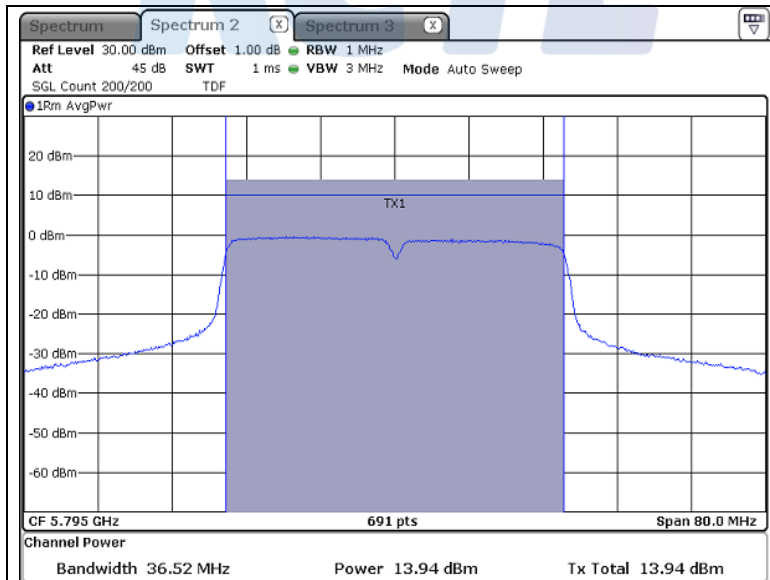


-802.11ac VHT40

Lowest Channel (5 755 MHz)

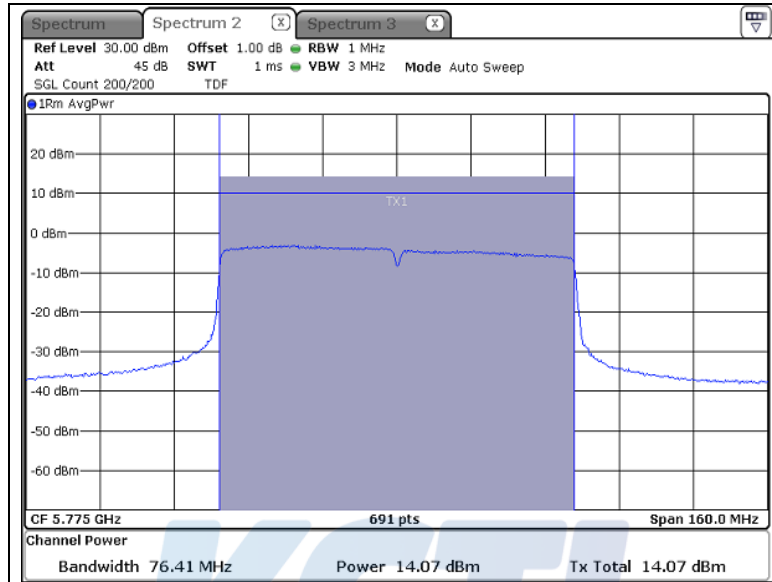


Highest Channel (5 795 MHz)



-802.11ac VHT80

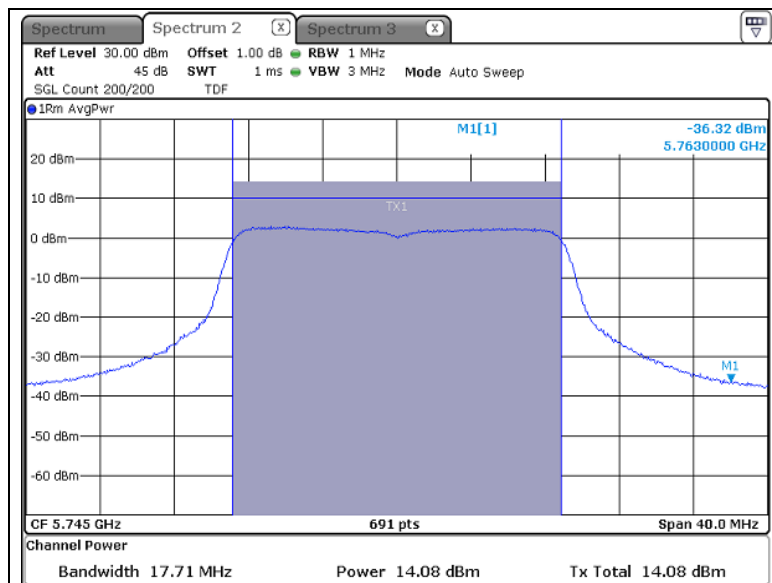
Lowest Channel (5 210 MHz)



- MIMO 3 Tx (ANT 2)

-802.11n HT20

Lowest Channel (5 745 MHz)



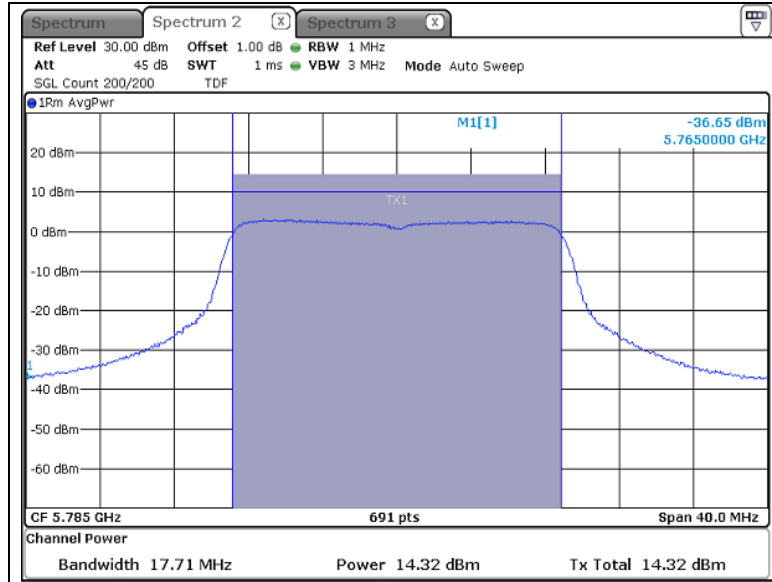
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

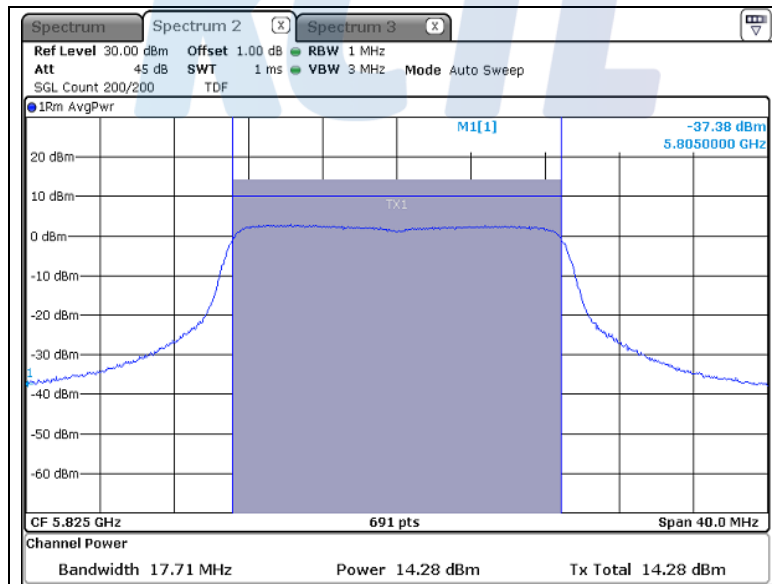
Report No.:
KR17-SRF0056-B
Page (136) of (450)



Middle Channel (5 785 MHz)



Highest Channel (5 825 MHz)



KCTL Inc.

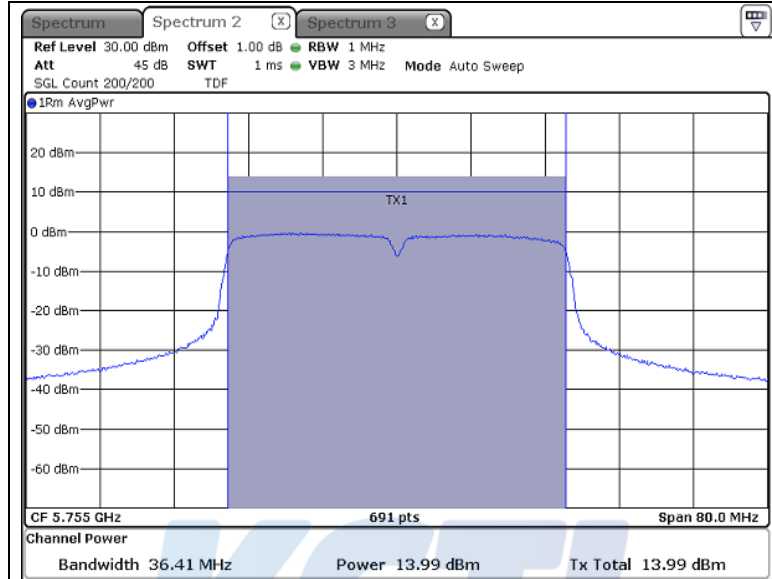
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (137) of (450)

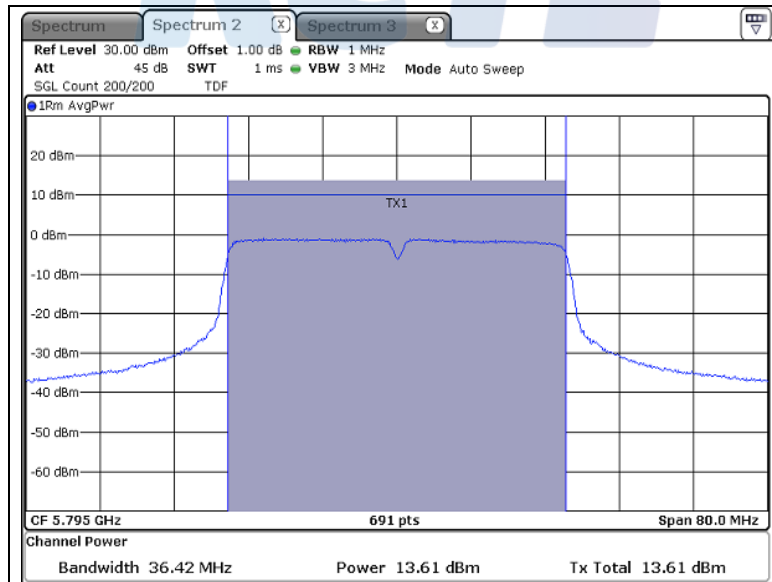


-802.11n HT40

Lowest Channel (5 755 MHz)

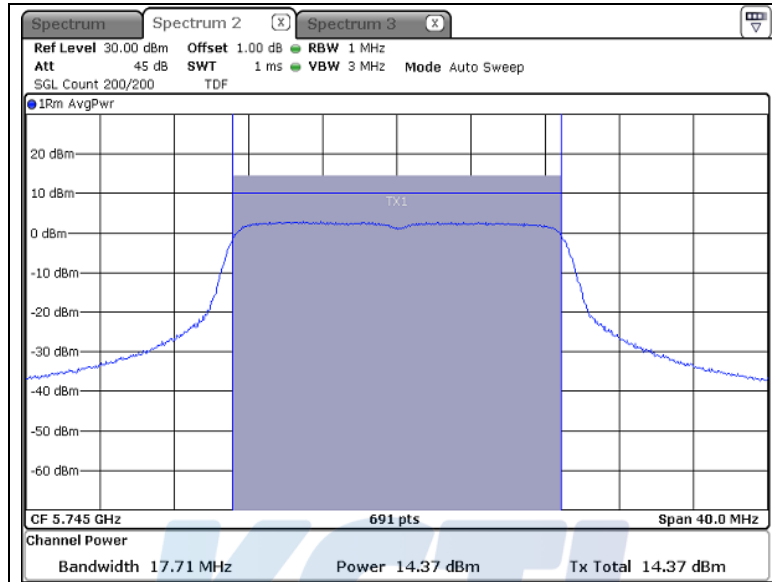


Middle Channel (5 795 MHz)

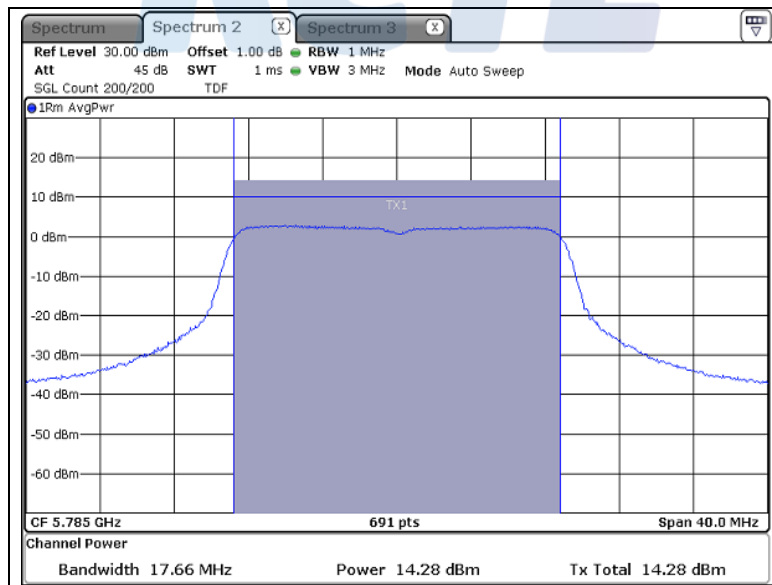


-802.11ac VHT20

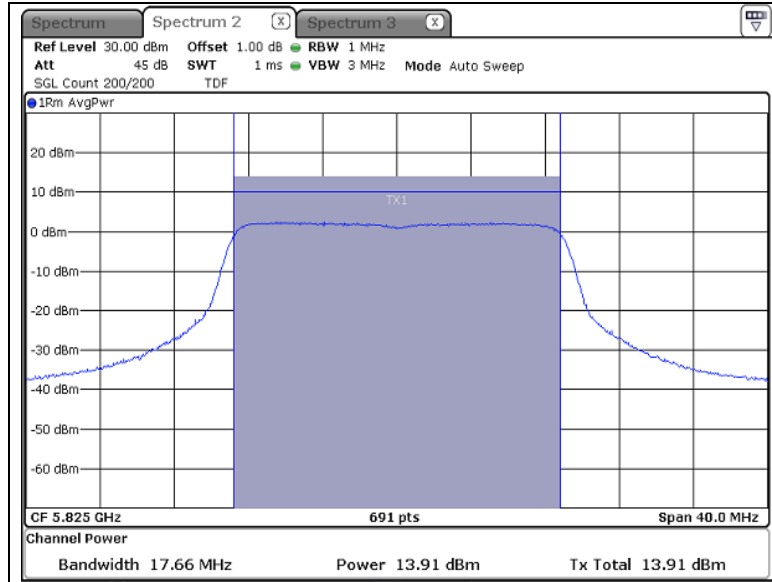
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

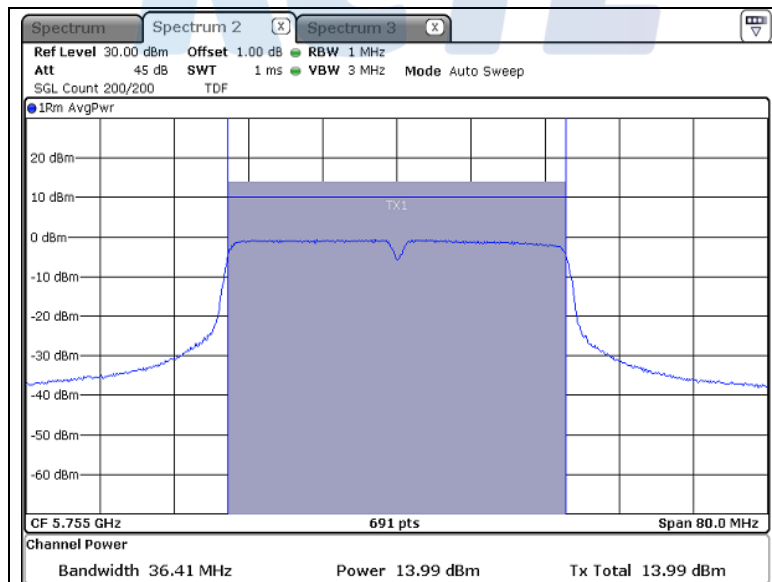


Highest Channel (5 825 MHz)

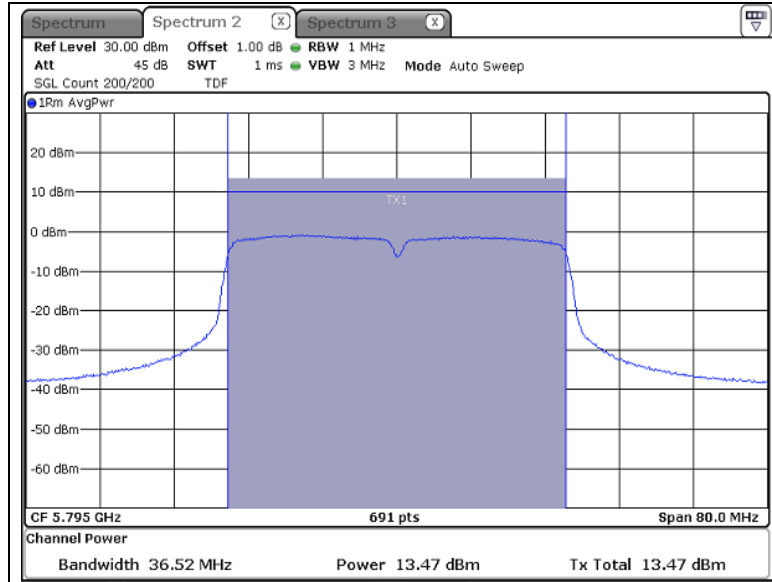


-802.11ac VHT40

Lowest Channel (5 755 MHz)

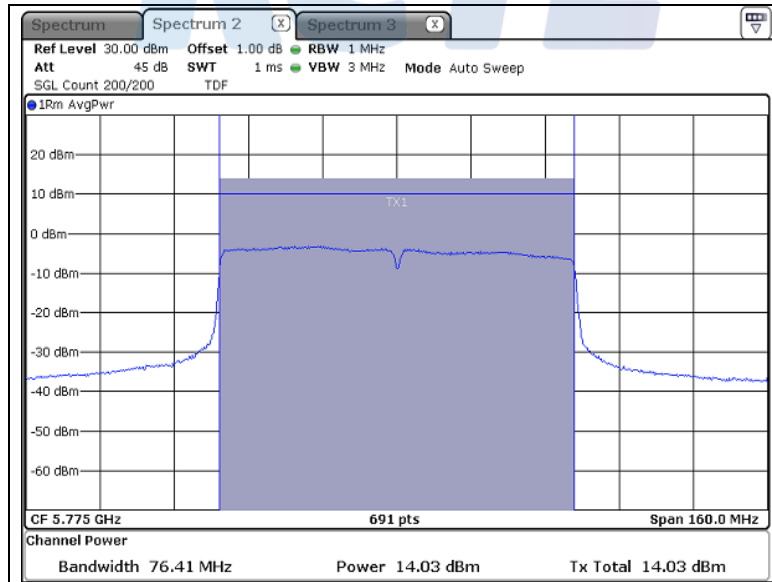


Middle Channel (5 795 MHz)



-802.11ac VHT80

Lowest Channel (5 775 MHz)



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

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 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

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

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

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ 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 associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (142) of (450)



5.3.3 Test Result

-Complied

- 5 150 Band

- Ant 0

- 802.11a

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	24.37	0.50	17.13
Middle	5 200	24.43	0.50	17.02
Highest	5 240	24.60	0.50	17.13

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	24.26	0.50	18.06
Middle	5 200	24.20	0.50	18.00
Highest	5 240	24.49	0.50	18.12

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.92	0.50	36.58
Middle	5 230	43.42	0.50	36.47

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	24.54	0.50	18.12
Middle	5 200	24.66	0.50	18.12
Highest	5 240	24.37	0.50	18.06

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.57	0.50	36.47
Middle	5 230	43.88	0.50	36.70

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 210	84.98	0.50	75.72

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

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B

Page (143) of (450)



- Ant 1

- 802.11a

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	24.31	0.50	17.02
Middle	5 200	24.20	0.50	17.13
Highest	5 240	24.20	0.50	17.08

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	24.43	0.50	18.12
Middle	5 200	23.79	0.50	17.95
Highest	5 240	24.31	0.50	18.06

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.23	0.50	36.58
Middle	5 230	43.42	0.50	36.70

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	24.14	0.50	18.06
Middle	5 200	23.56	0.50	18.06
Highest	5 240	23.62	0.50	18.06

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.46	0.50	36.47
Middle	5 230	43.53	0.50	36.47

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 210	85.44	0.50	75.95

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B

Page (144) of (450)



- Ant 2

- 802.11a

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	22.58	0.50	16.96
Middle	5 200	22.92	0.50	16.96
Highest	5 240	22.63	0.50	16.90

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	23.10	0.50	18.06
Middle	5 200	23.62	0.50	17.89
Highest	5 240	22.92	0.50	18.00

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.46	0.50	36.47
Middle	5 230	44.69	0.50	36.47

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	23.68	0.50	18.00
Middle	5 200	23.10	0.50	18.06
Highest	5 240	22.98	0.50	17.95

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	43.30	0.50	36.47
Middle	5 230	43.42	0.50	36.58

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 210	84.52	0.50	76.18

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (145) of (450)



- MIMO (ANT 0+1)

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	23.10	0.50	18.00
Middle	5 200	22.92	0.50	17.89
Highest	5 240	22.75	0.50	18.06

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.11	0.50	36.70
Middle	5 230	44.69	0.50	36.58

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	22.63	0.50	17.95
Middle	5 200	22.98	0.50	18.00
Highest	5 240	22.98	0.50	18.00

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	43.99	0.50	36.47
Middle	5 230	43.88	0.50	36.47

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 210	85.44	0.50	76.18

- MIMO (ANT 0+1+3)

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	22.92	0.50	17.89
Middle	5 200	22.29	0.50	18.00
Highest	5 240	22.58	0.50	17.95

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.92	0.50	36.58
Middle	5 230	43.30	0.50	36.58

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

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311

www.kctl.co.kr

Report No.:
KR17-SRF0056-B

Page (146) of (450)



- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 180	22.63	0.50	17.89
Middle	5 200	22.58	0.50	17.89
Highest	5 240	22.98	0.50	17.89

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 190	44.46	0.50	36.47
Middle	5 230	43.99	0.50	36.58

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 210	84.98	0.50	76.18

- 5 725 Band

- Ant 0

- 802.11a

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	16.44	0.50	17.31
Middle	5 785	16.38	0.50	17.37
Highest	5 825	16.44	0.50	17.13

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.66	0.50	18.23
Middle	5 785	17.66	0.50	18.12
Highest	5 825	17.66	0.50	18.12

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.35	0.50	37.28
Middle	5 795	36.52	0.50	36.82

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B

Page (147) of (450)



- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.66	0.50	18.29
Middle	5 785	17.66	0.50	18.18
Highest	5 825	17.66	0.50	18.12

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.64	0.50	37.16
Middle	5 795	36.42	0.50	36.82

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 775	76.18	0.50	76.18

- Ant 1

- 802.11a

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	16.50	0.50	17.13
Middle	5 785	16.38	0.50	17.13
Highest	5 825	16.38	0.50	17.02

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.66	0.50	18.06
Middle	5 785	17.66	0.50	18.12
Highest	5 825	17.66	0.50	18.00

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	35.92	0.50	36.93
Middle	5 795	36.41	0.50	36.82

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.66	0.50	18.12
Middle	5 785	17.66	0.50	18.12
Highest	5 825	17.66	0.50	18.12

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

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (148) of (450)

KCTL**- 802.11ac VHT40**

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.53	0.50	36.93
Middle	5 795	36.53	0.50	36.70

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 775	75.72	0.50	75.95

- Ant 2**- 802.11a**

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	16.50	0.50	16.96
Middle	5 785	16.44	0.50	17.02
Highest	5 825	16.44	0.50	16.85

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.66	0.50	18.12
Middle	5 785	17.66	0.50	18.06
Highest	5 825	17.66	0.50	17.95

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.38	0.50	36.70
Middle	5 795	36.52	0.50	36.82

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.66	0.50	18.06
Middle	5 785	17.66	0.50	18.00
Highest	5 825	17.66	0.50	18.00

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.41	0.50	36.58
Middle	5 795	36.18	0.50	36.82

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

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B

Page (149) of (450)



- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 775	75.95	0.50	75.95

- MIMO (ANT 0+1)

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.71	0.50	17.95
Middle	5 785	17.66	0.50	17.83
Highest	5 825	17.66	0.50	18.06

- 802.11n HT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.41	0.50	36.70
Middle	5 795	36.41	0.50	36.47

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.71	0.50	18.06
Middle	5 785	17.71	0.50	17.89
Highest	5 825	17.66	0.50	18.00

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.64	0.50	36.58
Middle	5 795	36.47	0.50	36.58

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 775	76.41	0.50	76.41

- MIMO (ANT 0+1+2)

- 802.11n HT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.71	0.50	18.00
Middle	5 785	17.71	0.50	17.95
Highest	5 825	17.71	0.50	17.95

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

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (150) of (450)

**- 802.11n HT40**

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.41	0.50	36.58
Middle	5 795	36.42	0.50	36.35

- 802.11ac VHT20

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 745	17.71	0.50	17.95
Middle	5 785	17.66	0.50	18.00
Highest	5 825	17.66	0.50	17.89

- 802.11ac VHT40

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 755	36.41	0.50	36.47
Middle	5 795	36.52	0.50	36.82

- 802.11ac VHT80

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Min. Limit [MHz]	OBW [MHz]
Lowest	5 775	76.41	0.50	75.95

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (151) of (450)



5.3.4 Test Plot

Figure 1. Plot of Bandwidth Measurement

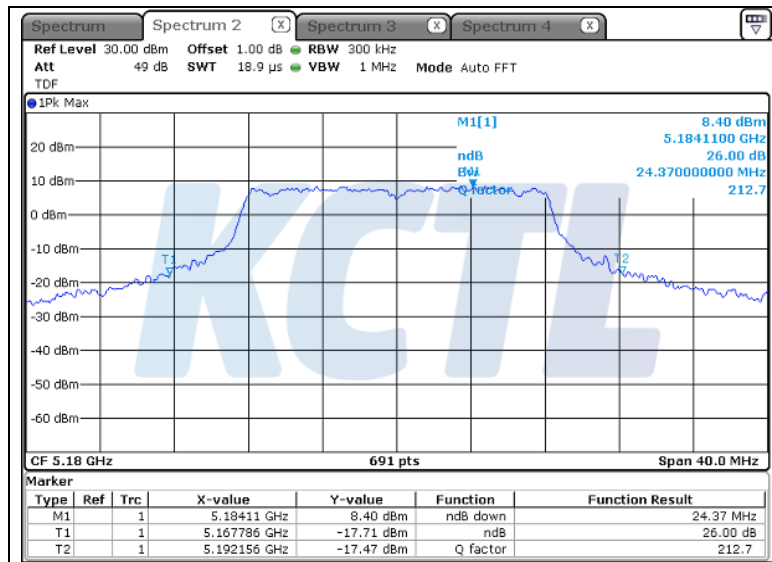
- 5 150 Band

Ant 0

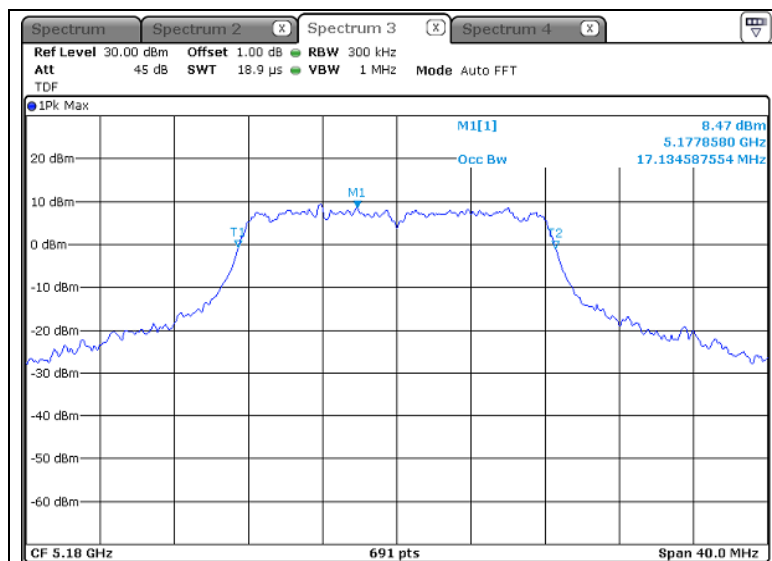
- 802.11a

- 5 180 MHz

EBW



OBW



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

KCTL Inc.

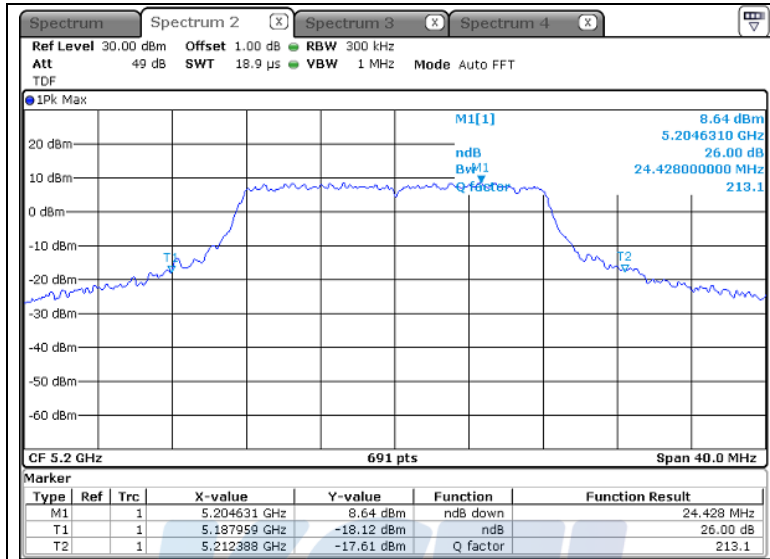
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (152) of (450)

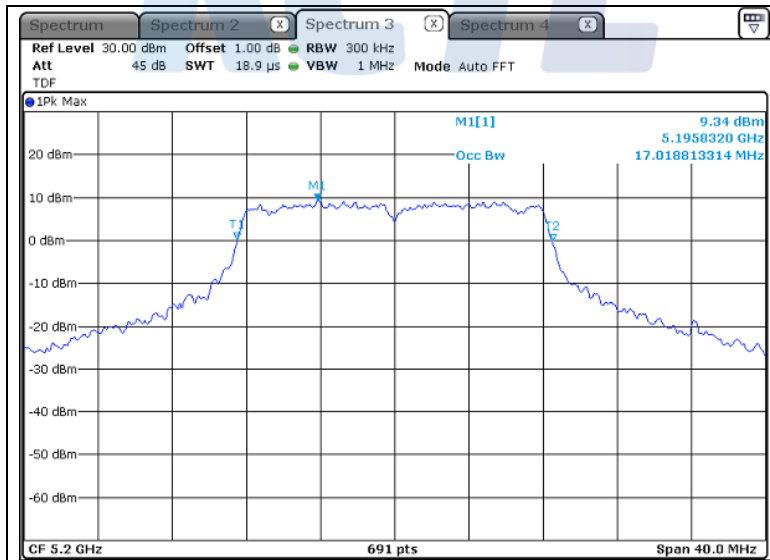


- 5 200 MHz

EBW



OBW



KCTL Inc.

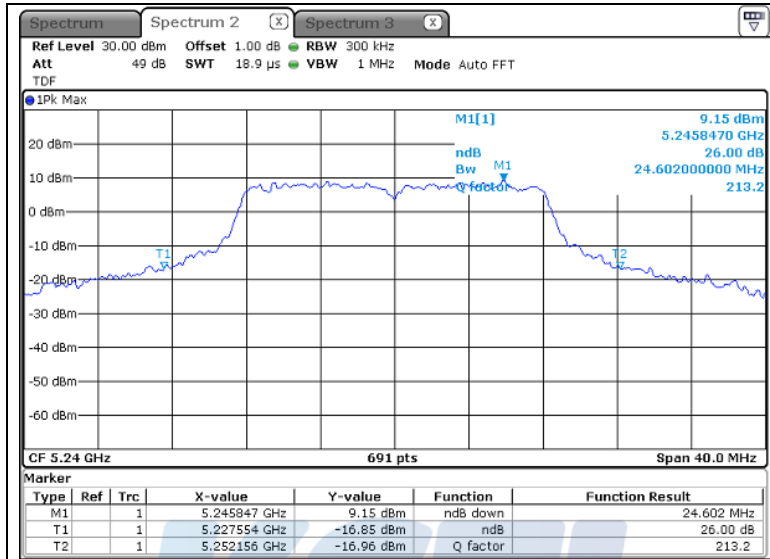
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (153) of (450)

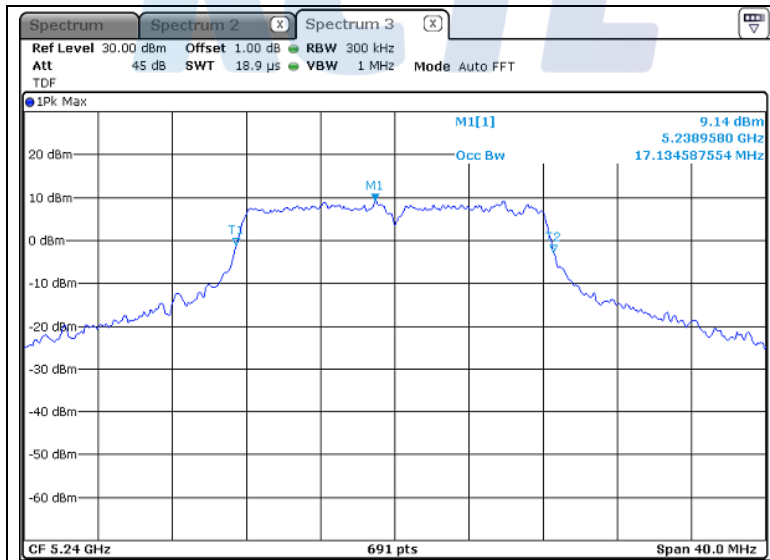


- 5 240 MHz

EBW



OBW



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

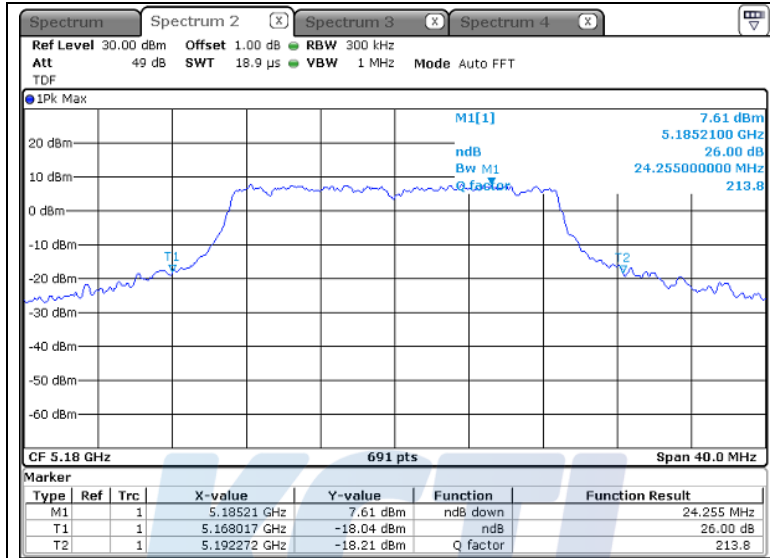
Report No.:
KR17-SRF0056-B
Page (154) of (450)



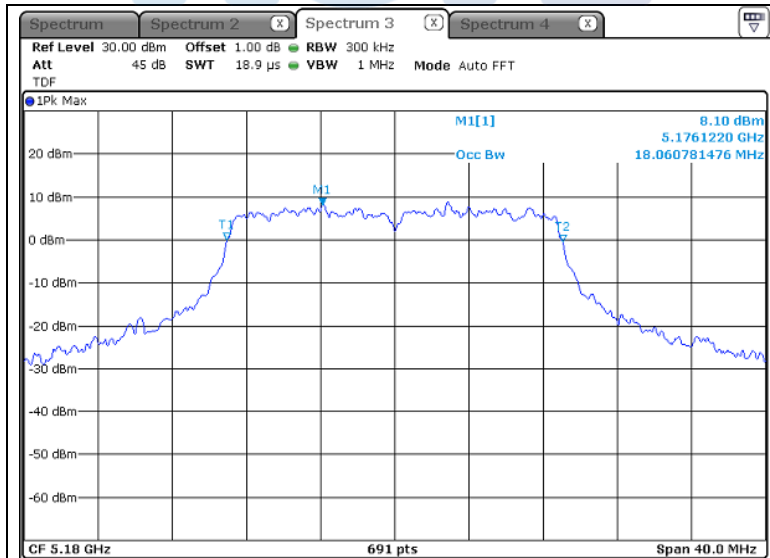
- 802.11n HT20

- 5 180 MHz

EBW



OBW



KCTL Inc.

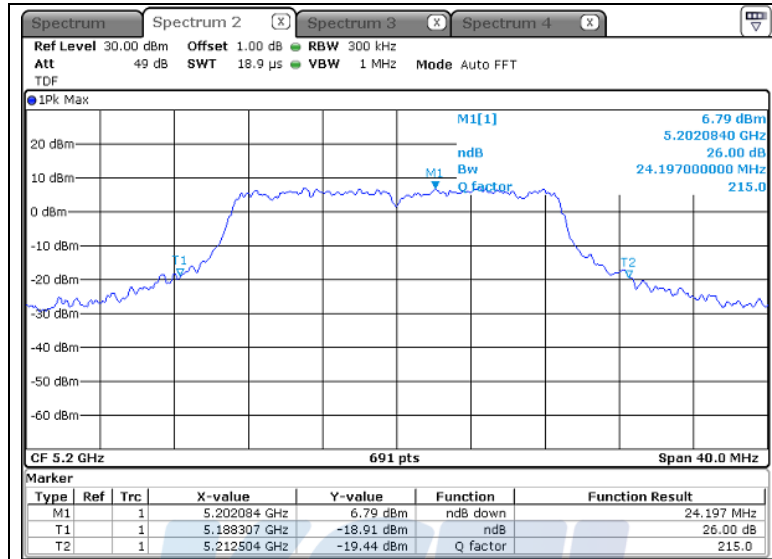
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (155) of (450)

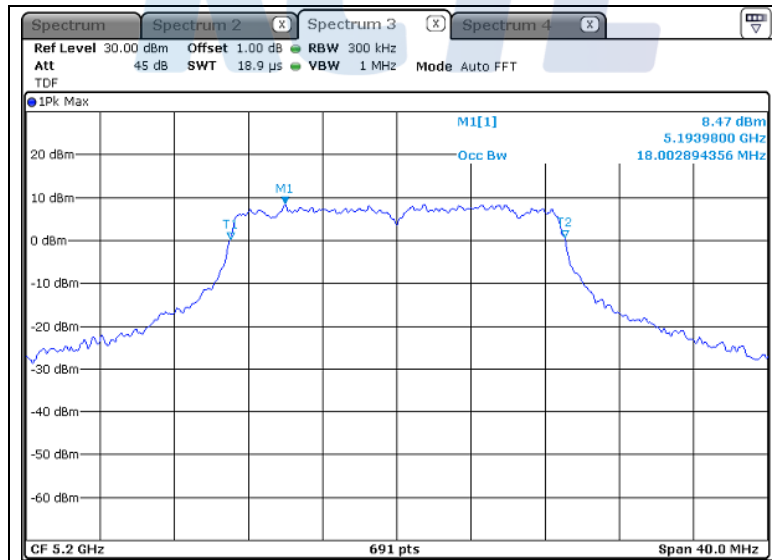


- 5 200 MHz

EBW



OBW



KCTL Inc.

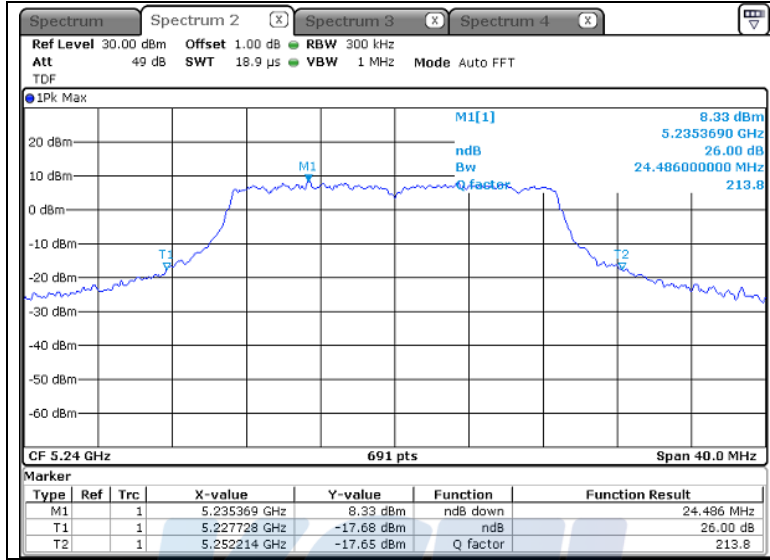
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-SRF0056-B
Page (156) of (450)

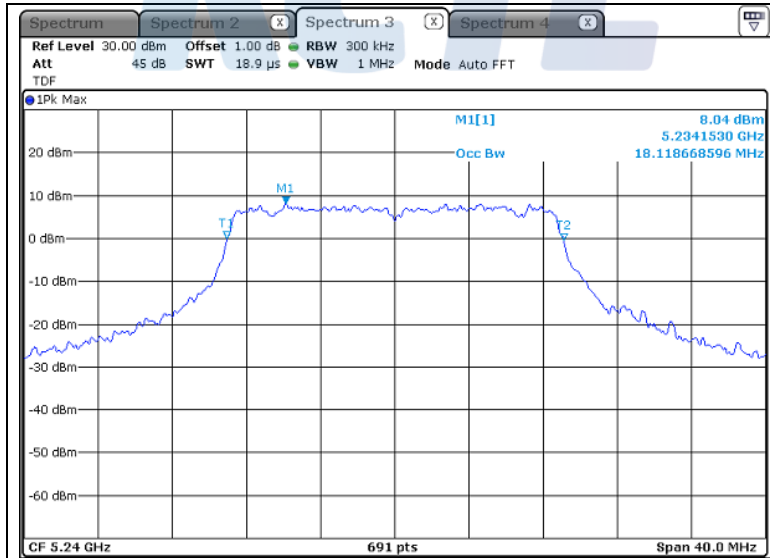


- 5 240 MHz

EBW



OBW



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

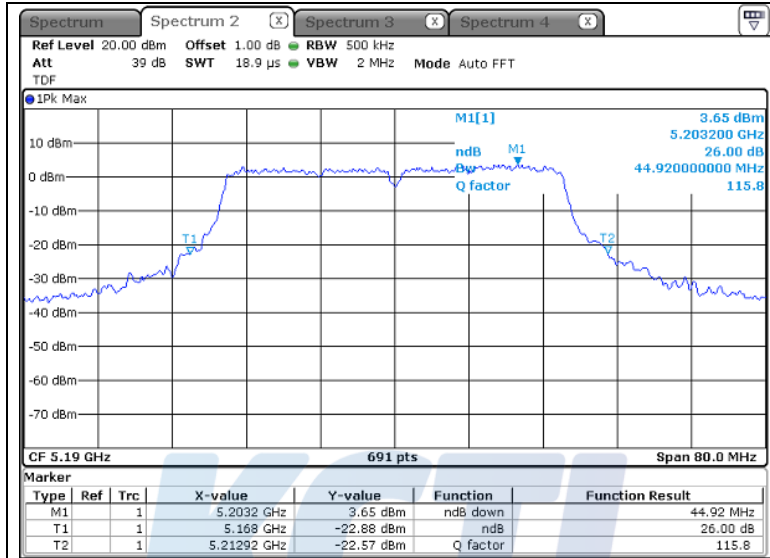
Report No.:
KR17-SRF0056-B
Page (157) of (450)



- 802.11n HT40

- 5 190 MHz

EBW



OBW

