

# KCTL Inc.

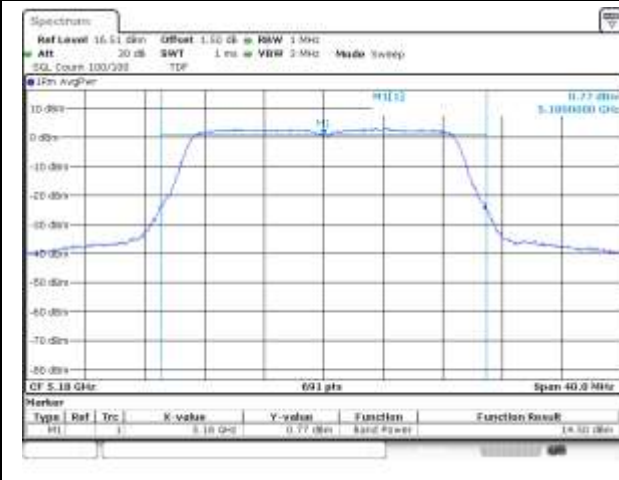
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

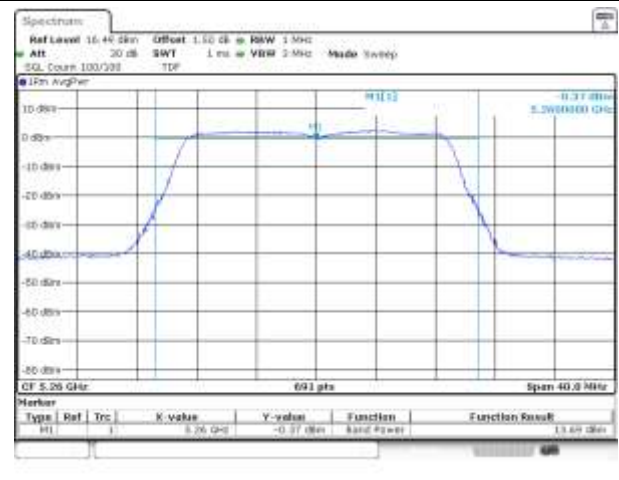
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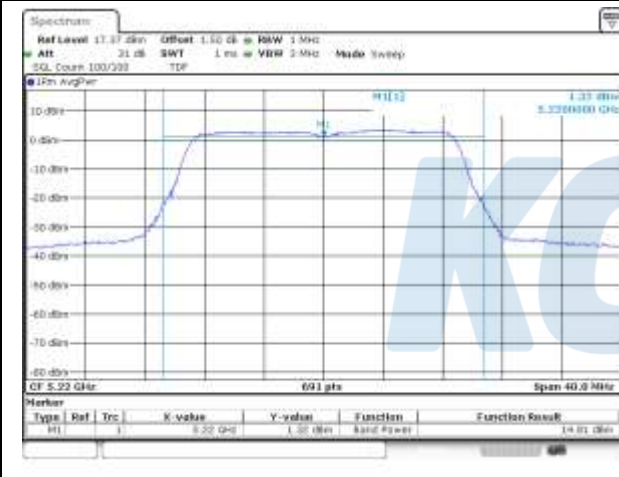
UNII-1 / 802.11n HT20 / 5 180 MHz



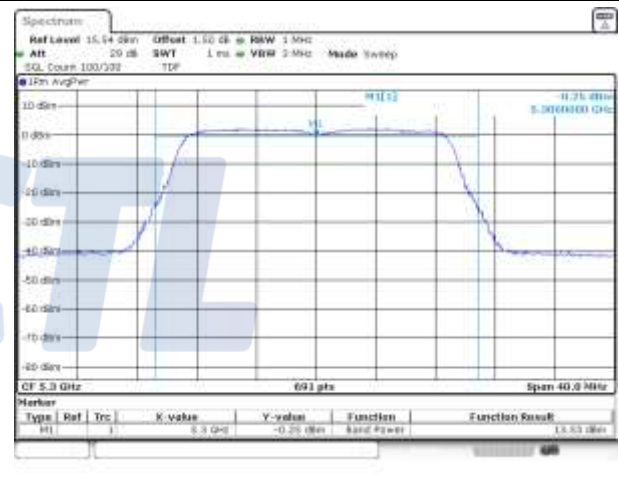
UNII-2A / 802.11n HT20 / 5 260 MHz



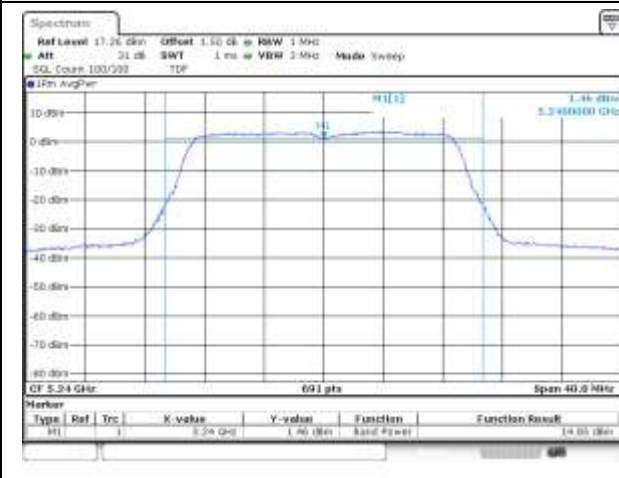
UNII-1 / 802.11n HT20 / 5 220 MHz



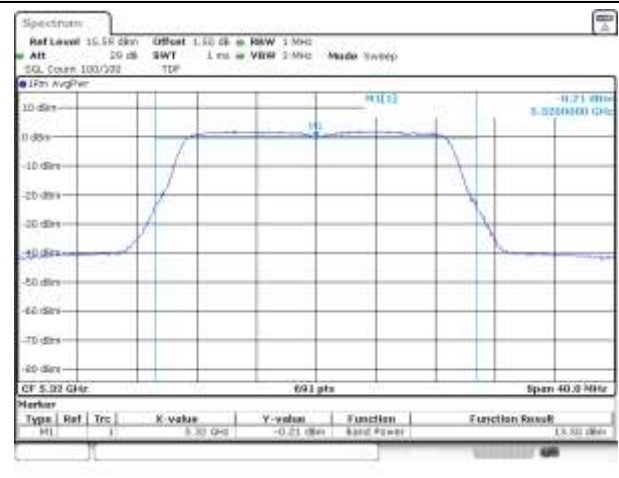
UNII-2A / 802.11n HT20 / 5 300 MHz



UNII-1 / 802.11n HT20 / 5 240 MHz



UNII-2A / 802.11n HT20 / 5 320 MHz



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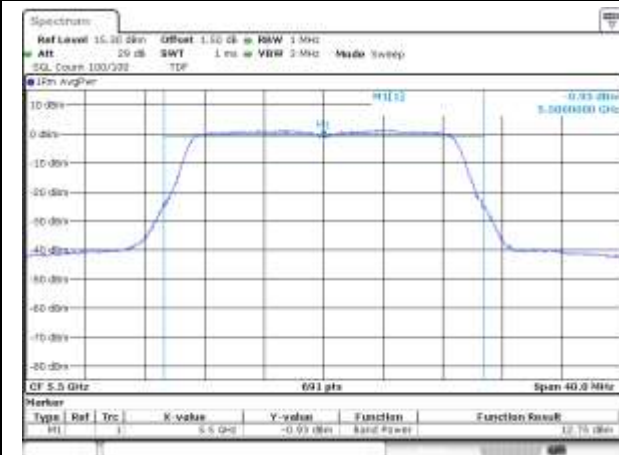
65, Sinwon-ro, Yeongtong-gu,  
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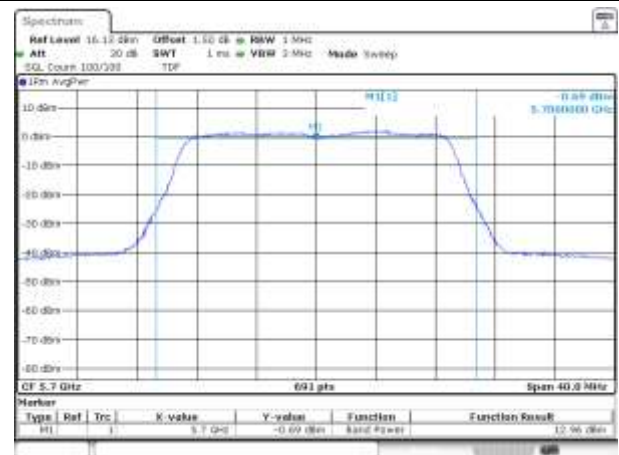
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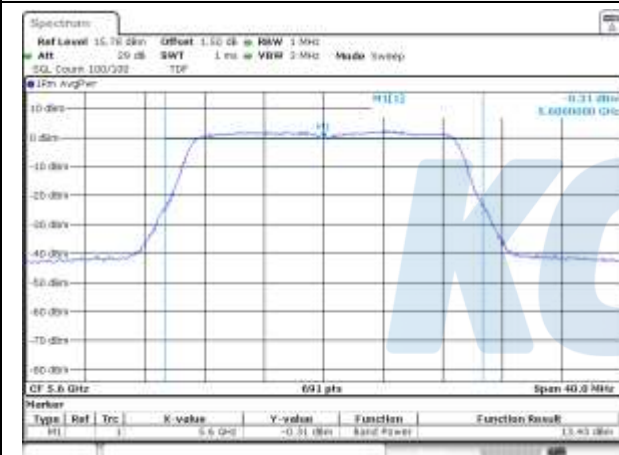
## UNII-2C / 802.11n HT20 / 5 500 MHz



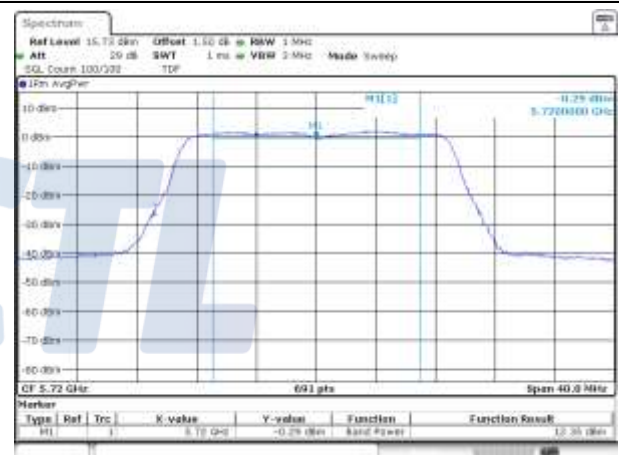
## UNII-2C / 802.11n HT20 / 5 700 MHz



## UNII-2C / 802.11n HT20 / 5 600 MHz



## UNII-2C / 802.11n HT20 / 5 720 MHz



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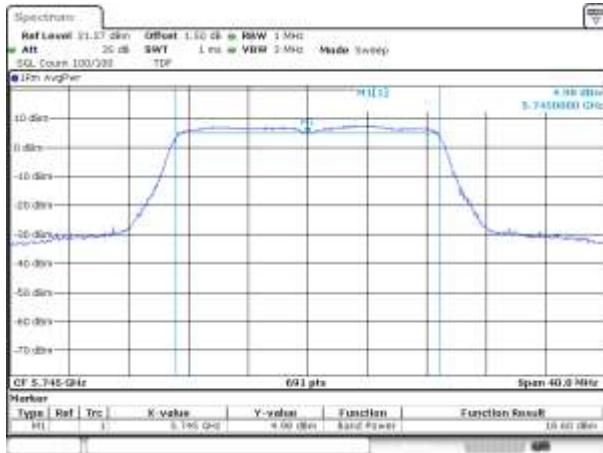
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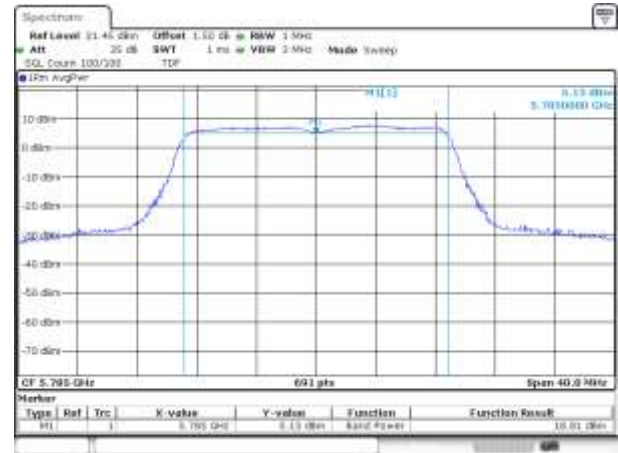
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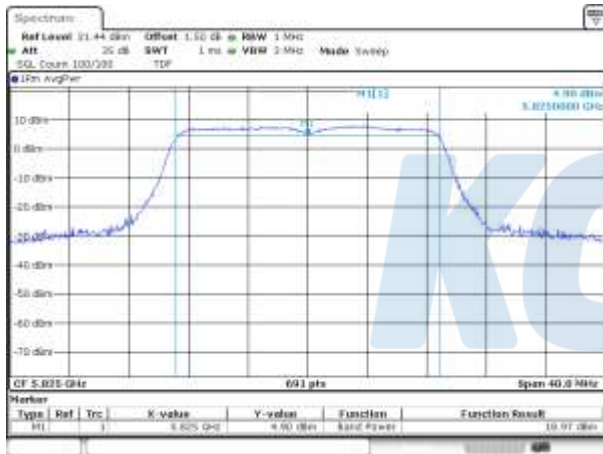
## UNII-3 / 802.11n HT20 / 5 745 MHz



## UNII-3 / 802.11n HT20 / 5 785 MHz



## UNII-3 / 802.11n HT20 / 5 825 MHz



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# KCTL Inc.

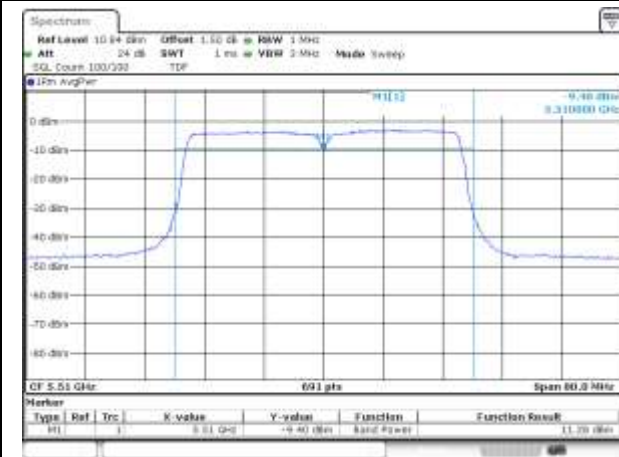
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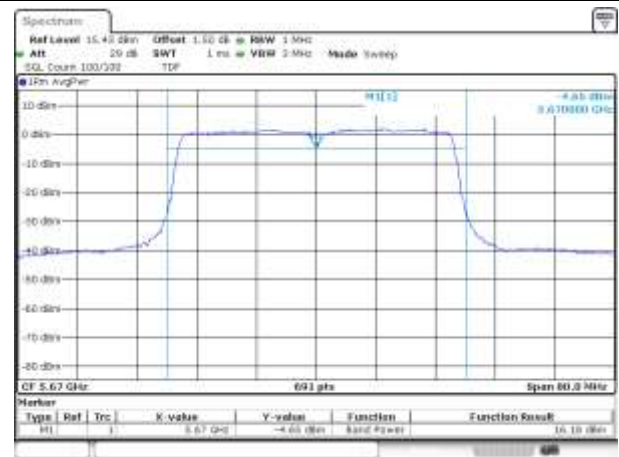
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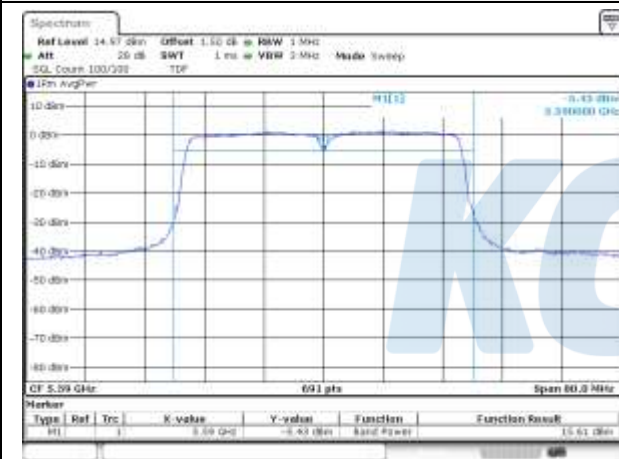
## UNII-2C / 802.11n HT40 / 5 510 MHz



## UNII-2C / 802.11n HT40 / 5 670 MHz



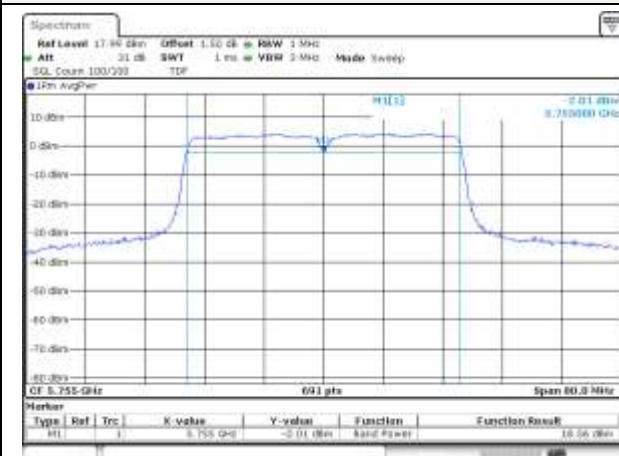
## UNII-2C / 802.11n HT40 / 5 590 MHz



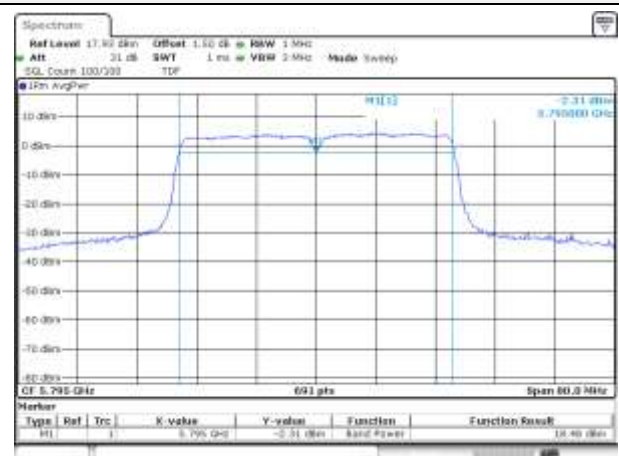
## UNII-2C / 802.11n HT40 / 5 710 MHz



## UNII-3 / 802.11n HT40 / 5 755 MHz



## UNII-3 / 802.11n HT40 / 5 795 MHz



# KCTL Inc.

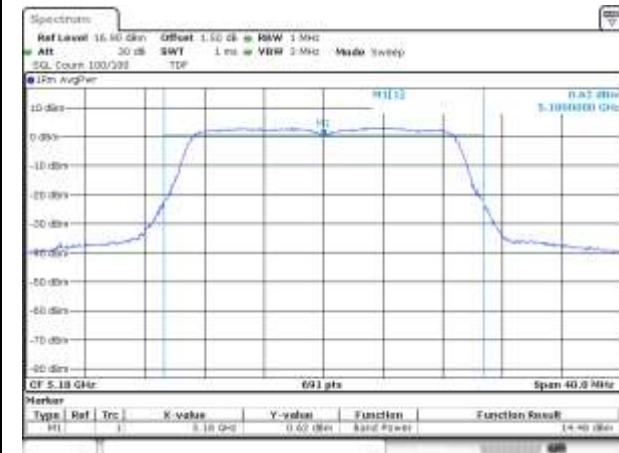
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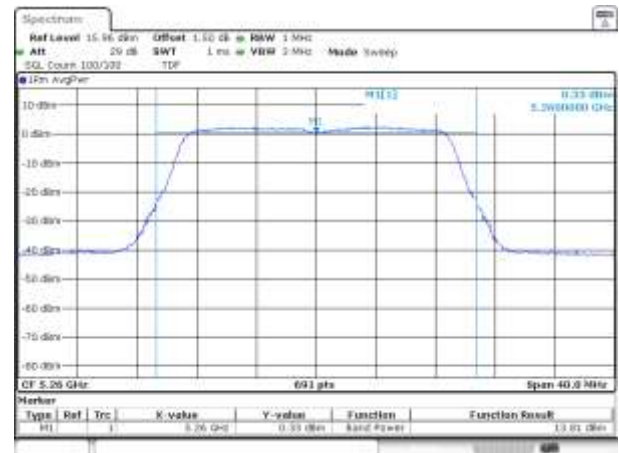
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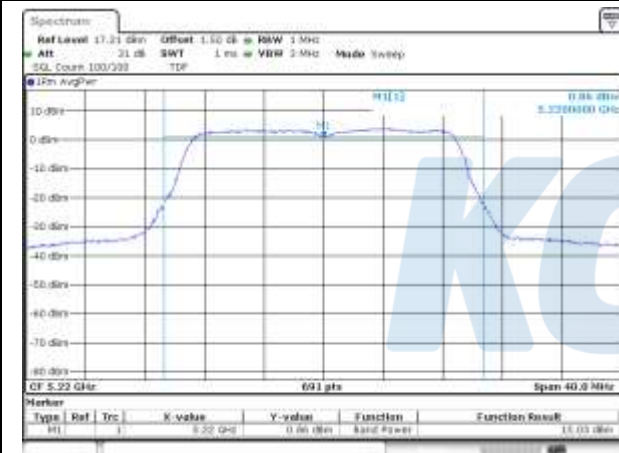
## UNII-1 / 802.11ac VHT20 / 5 180 MHz



## UNII-2A / 802.11ac VHT20 / 5 260 MHz



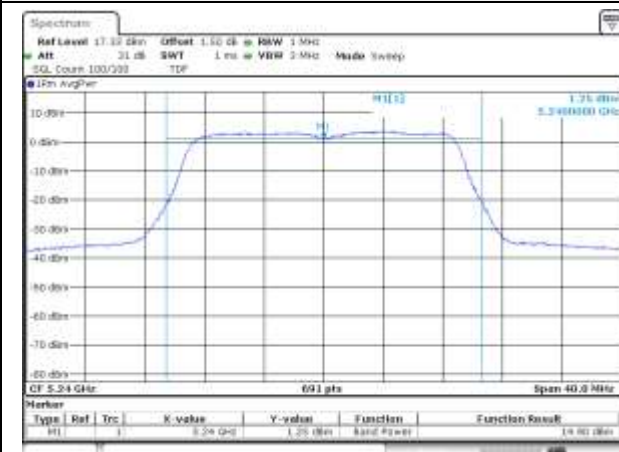
## UNII-1 / 802.11ac VHT20 / 5 220 MHz



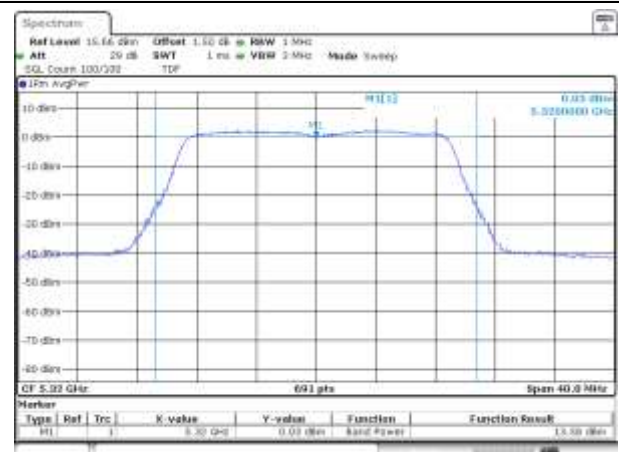
## UNII-2A / 802.11ac VHT20 / 5 300 MHz



## UNII-1 / 802.11ac VHT20 / 5 240 MHz



## UNII-2A / 802.11ac VHT20 / 5 320 MHz



# KCTL Inc.

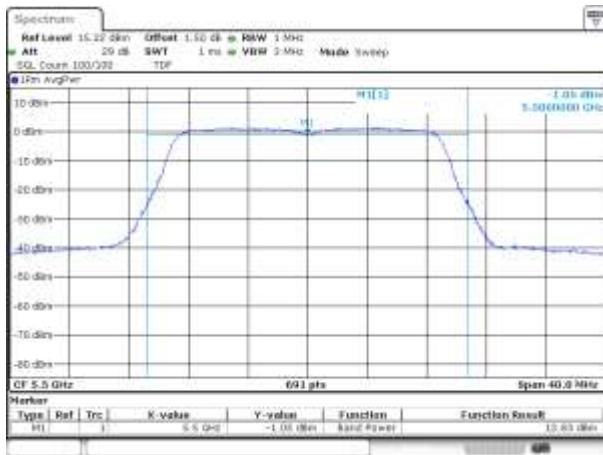
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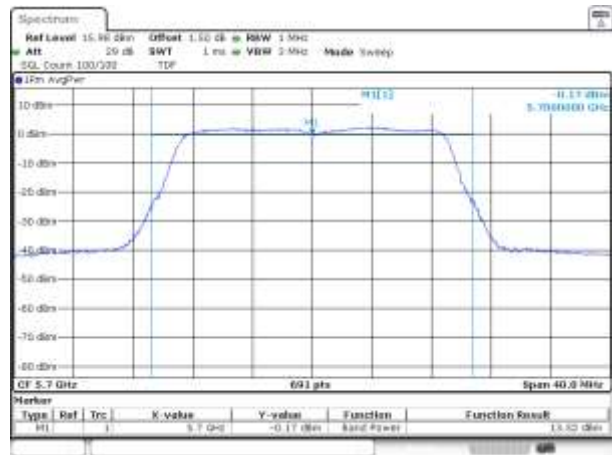
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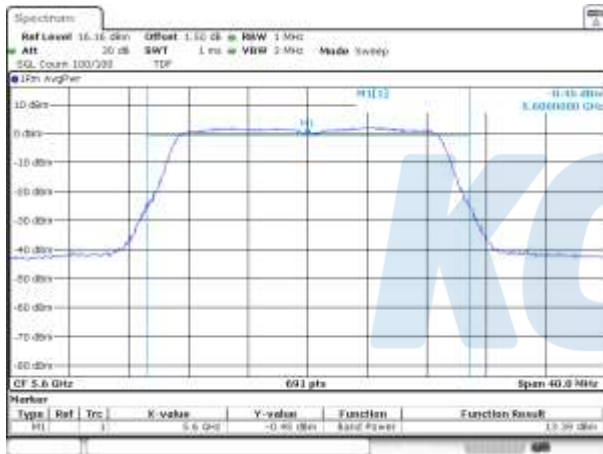
## UNII-2C / 802.11ac VHT20 / 5 500 MHz



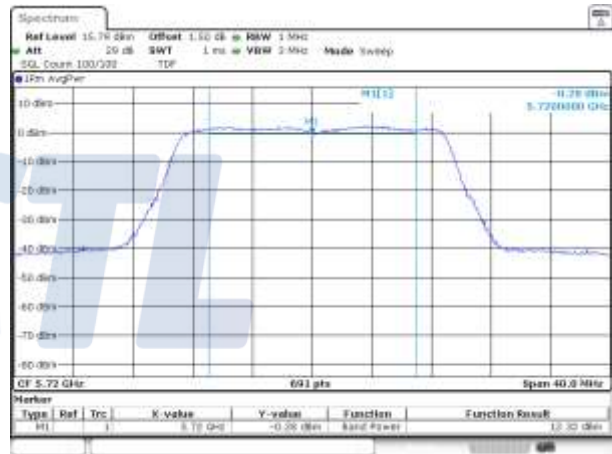
## UNII-2C / 802.11ac VHT20 / 5 700 MHz



## UNII-2C / 802.11ac VHT20 / 5 600 MHz



## UNII-2C / 802.11ac VHT20 / 5 720 MHz



# KCTL Inc.

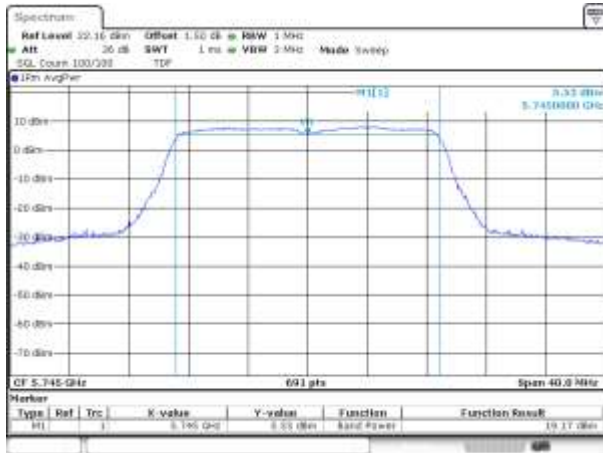
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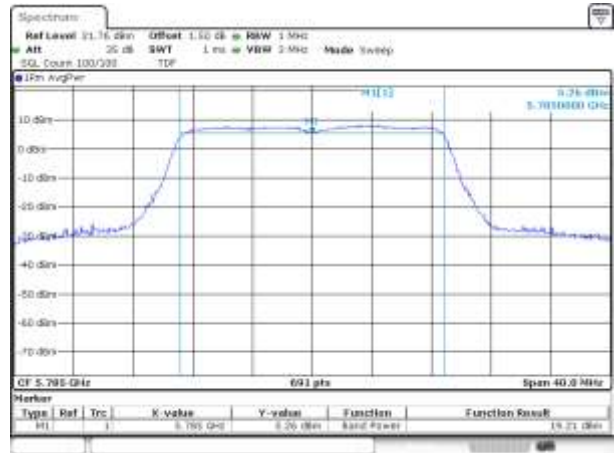
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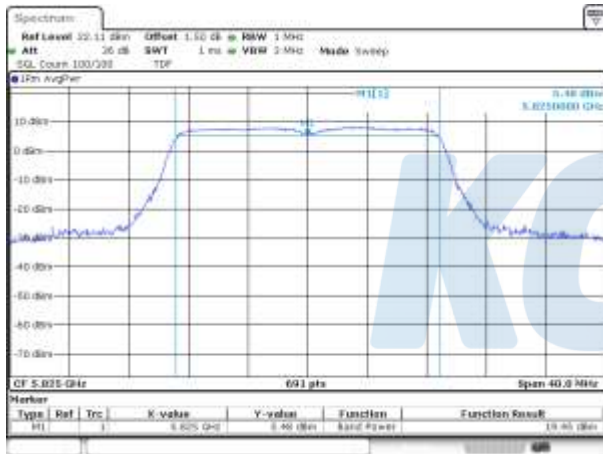
## UNII-3 / 802.11ac VHT20 / 5 745 MHz



## UNII-3 / 802.11ac VHT20 / 5 785 MHz



## UNII-3 / 802.11ac VHT20 / 5 825 MHz



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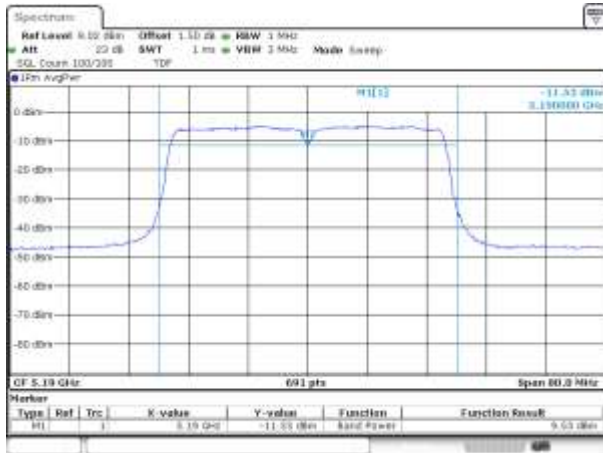
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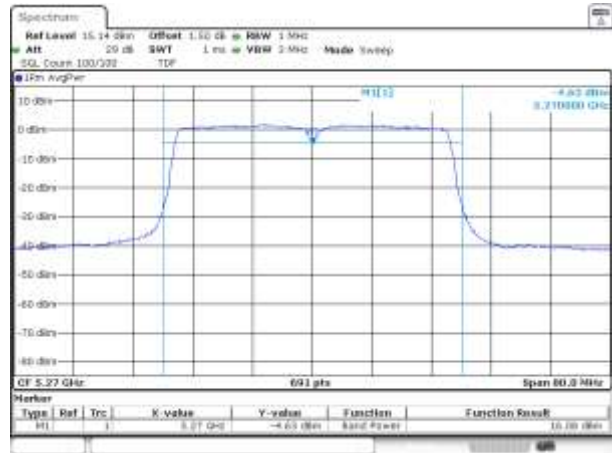
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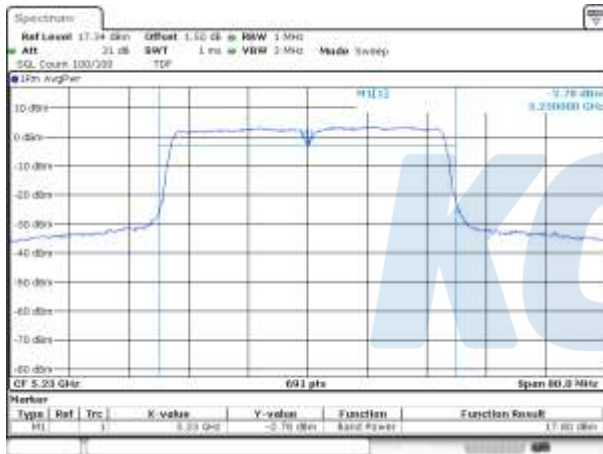
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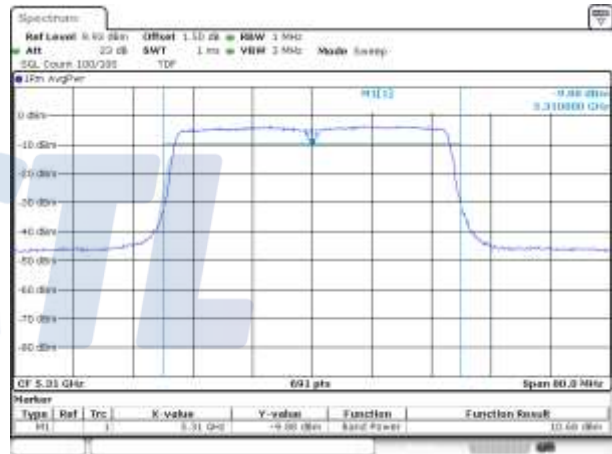
## UNII-2A / 802.11ac VHT40 / 5 270 MHz



## UNII-1 / 802.11ac VHT40 / 5 230 MHz



## UNII-2A / 802.11ac VHT40 / 5 310 MHz



# KCTL Inc.

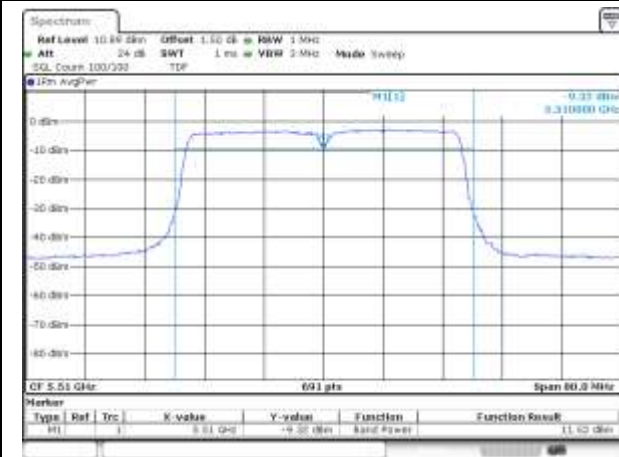
65, Sinwon-ro, Yeongtong-gu,  
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Report No.:  
KR20-SRF0030-D

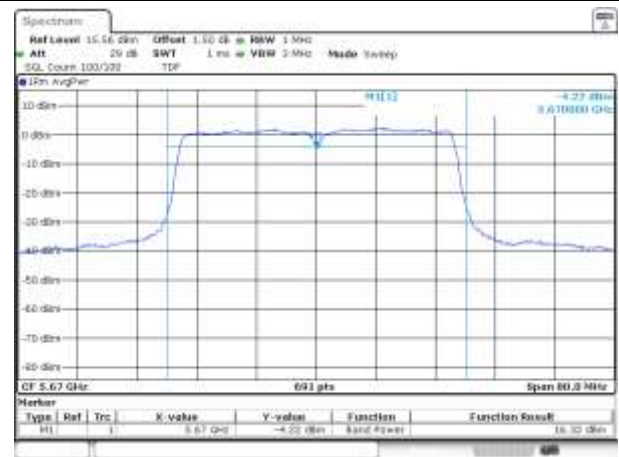
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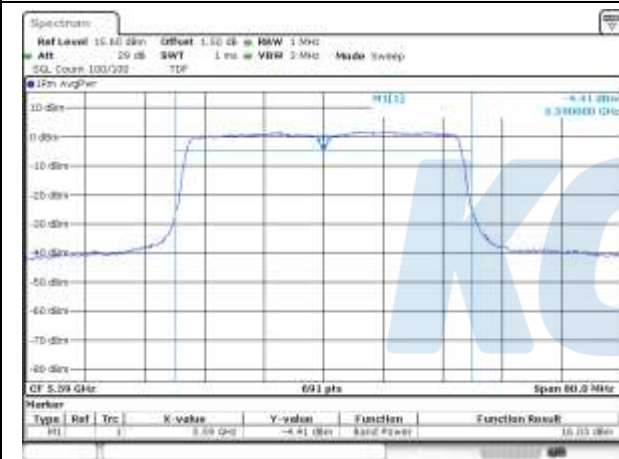
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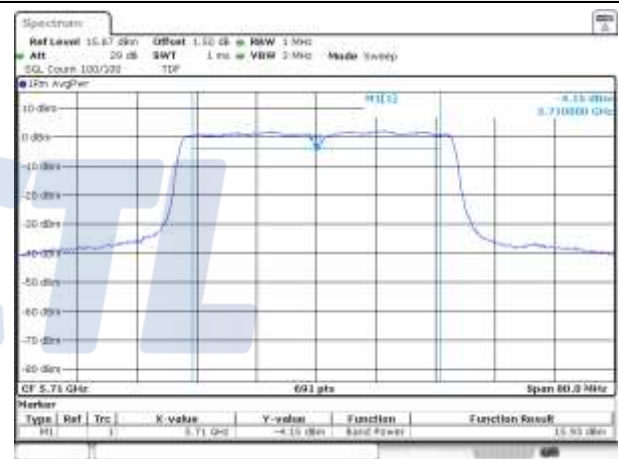
## UNII-2C / 802.11ac VHT40 / 5 670 MHz



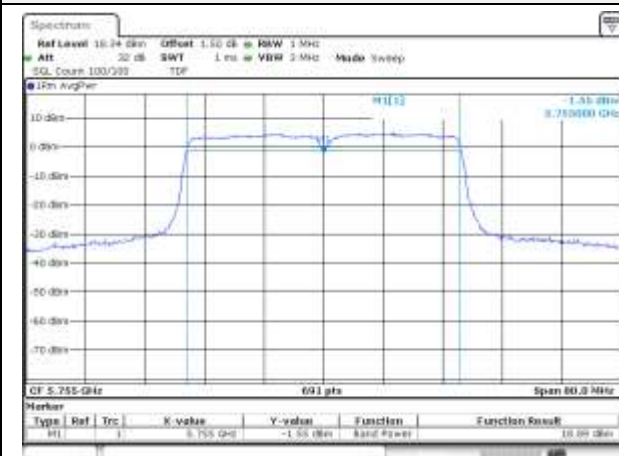
## UNII-2C / 802.11ac VHT40 / 5 590 MHz



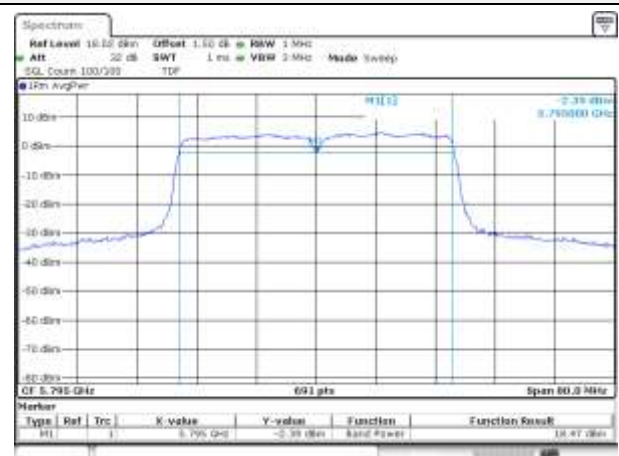
## UNII-2C / 802.11ac VHT40 / 5 710 MHz



## UNII-3 / 802.11ac VHT40 / 5 755 MHz



## UNII-3 / 802.11ac VHT40 / 5 795 MHz



# KCTL Inc.

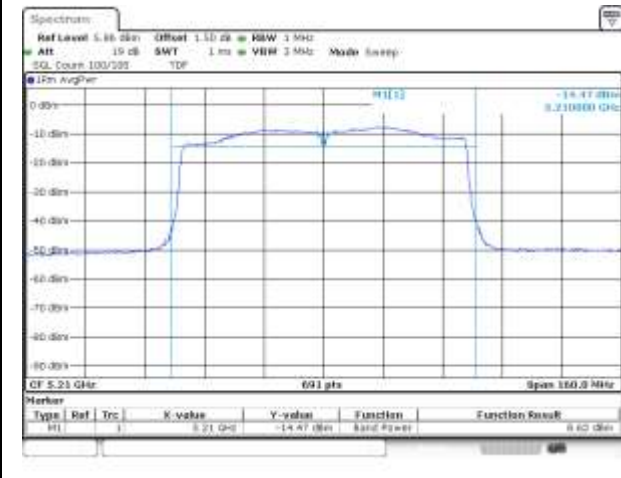
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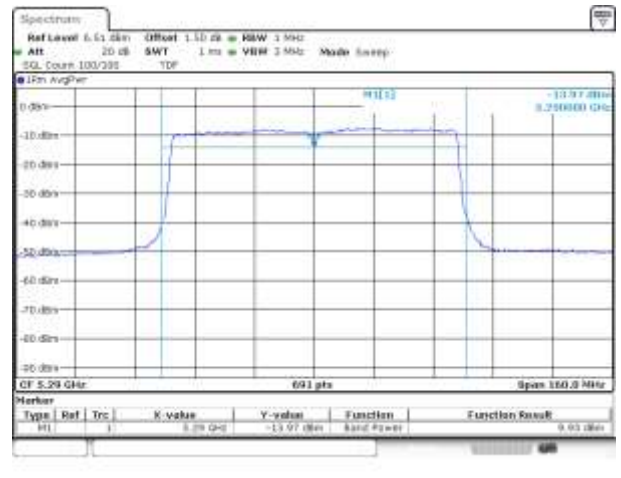
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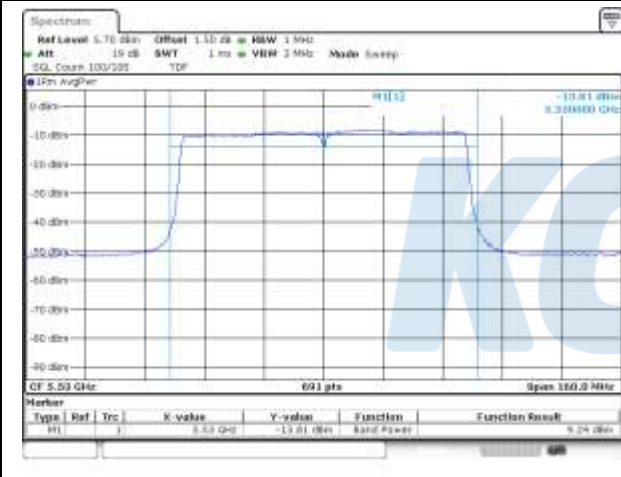
## UNII-1 / 802.11ac VHT80 / 5 210 MHz



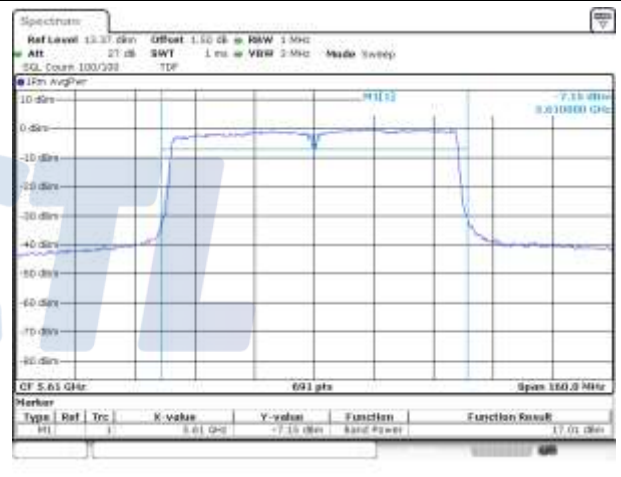
## UNII-2A / 802.11ac VHT80 / 5 290 MHz



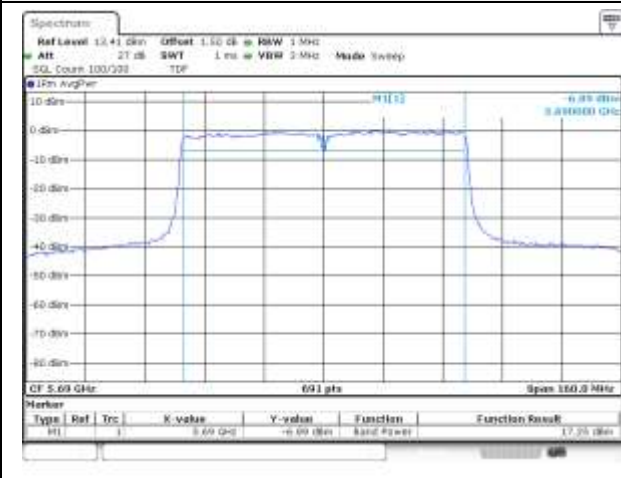
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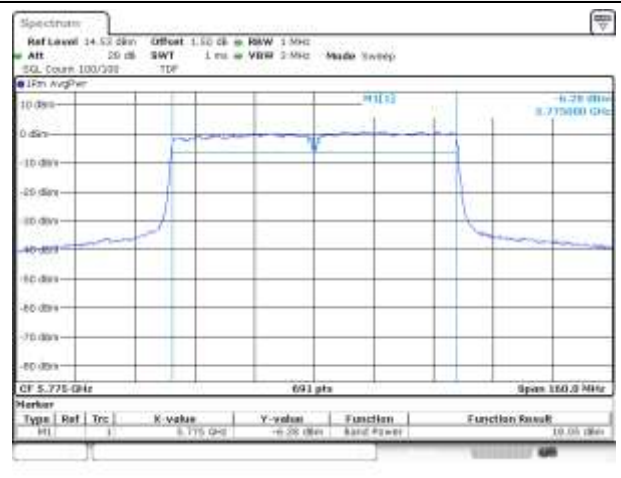
## UNII-2C / 802.11ac VHT80 / 5 610 MHz



## UNII-2C / 802.11ac VHT80 / 5 690 MHz



## UNII-3 / 802.11ac VHT80 / 5 775 MHz



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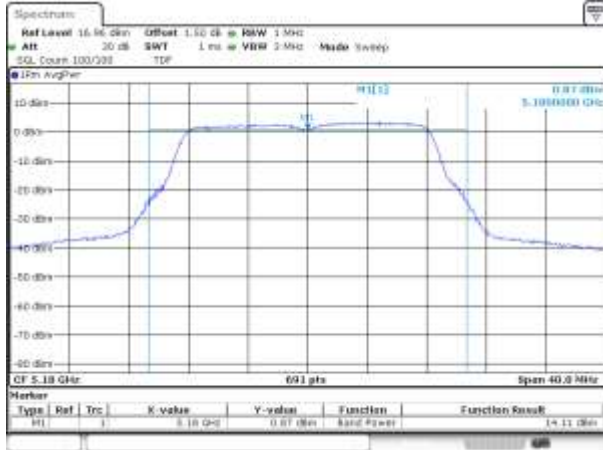
Report No.:  
KR20-SRF0030-D

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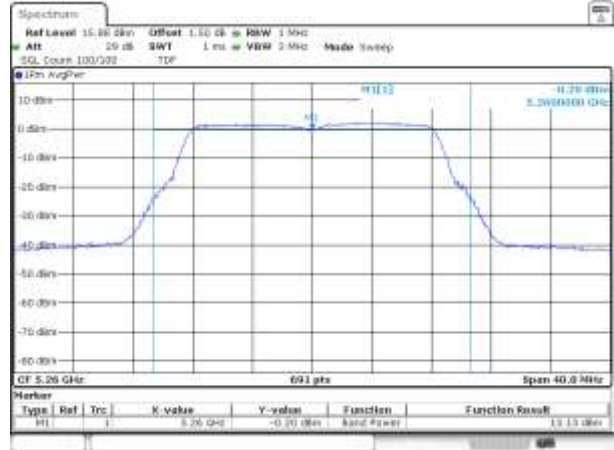


## 4TX MIMO ANT 2

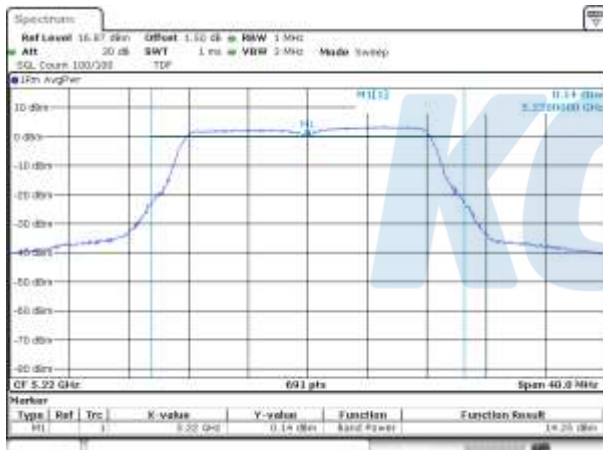
UNII-1 / 802.11a / 5 180 MHz



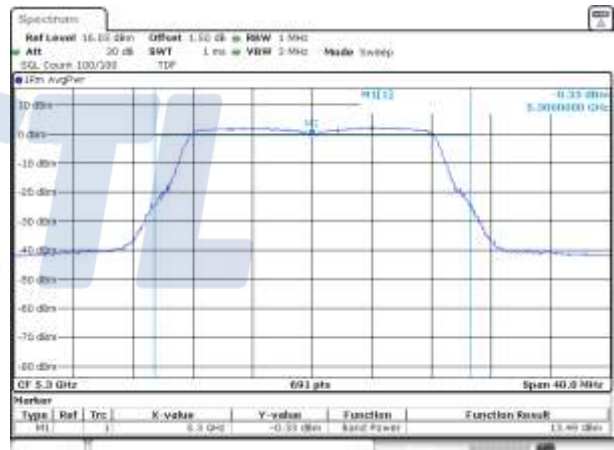
UNII-2A / 802.11a / 5 260 MHz



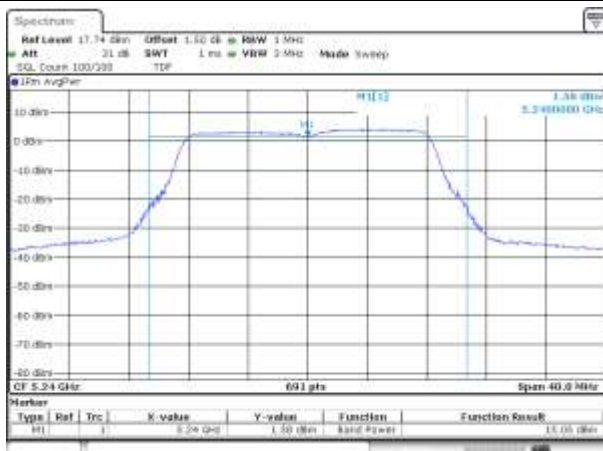
UNII-1 / 802.11a / 5 220 MHz



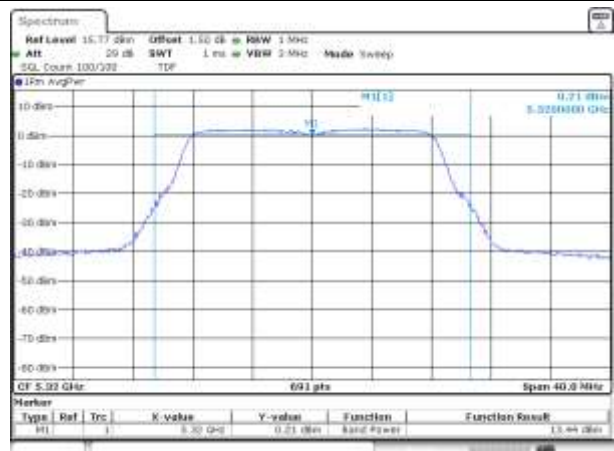
UNII-2A / 802.11a / 5 300 MHz



UNII-1 / 802.11a / 5 240 MHz



UNII-2A / 802.11a / 5 320 MHz



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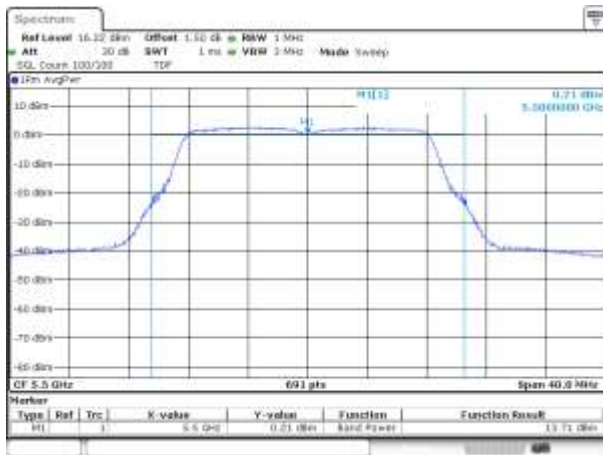
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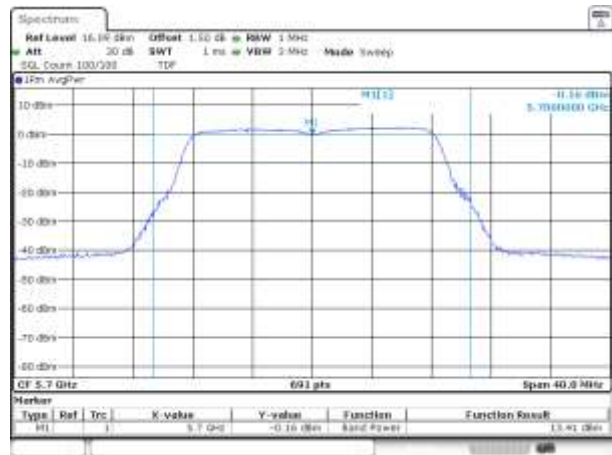
Page (108) of (1046)



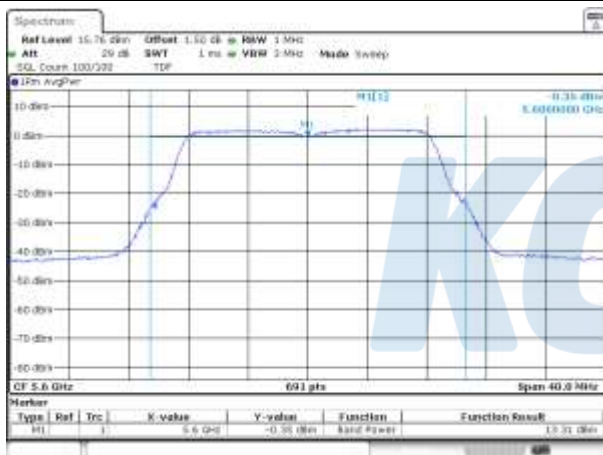
## UNII-2C / 802.11a / 5 500 MHz



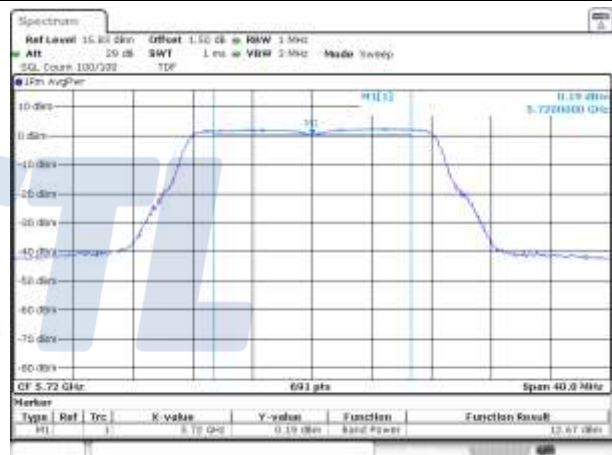
## UNII-2C / 802.11a / 5 700 MHz



## UNII-2C / 802.11a / 5 600 MHz



## UNII-2C / 802.11a / 5 720 MHz



# KCTL Inc.

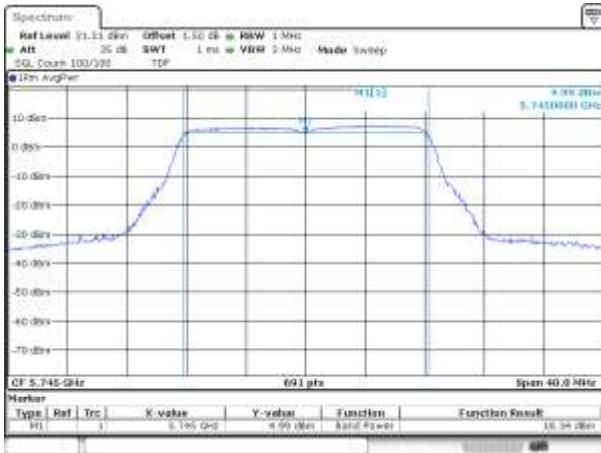
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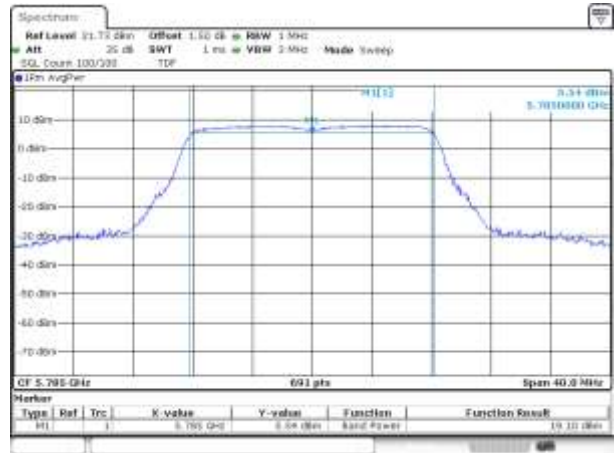
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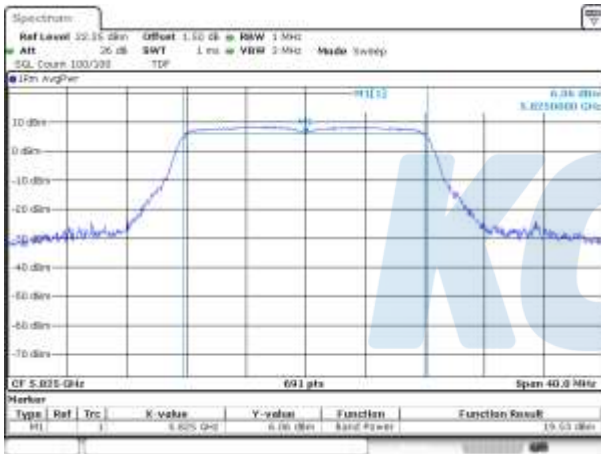
## UNII-3 / 802.11a / 5 745 MHz



## UNII-3 / 802.11a / 5 785 MHz



## UNII-3 / 802.11a / 5 825 MHz



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# KCTL Inc.

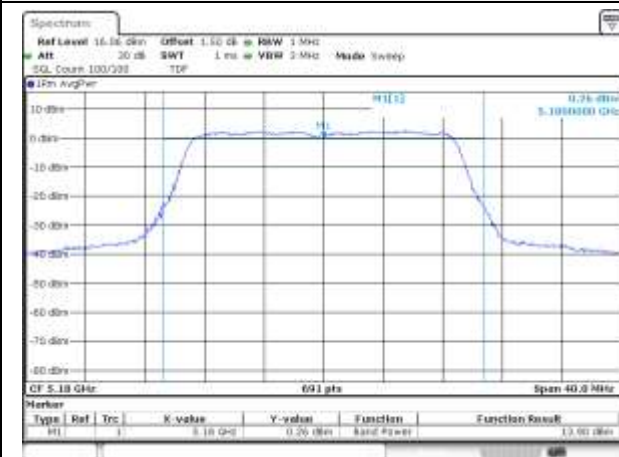
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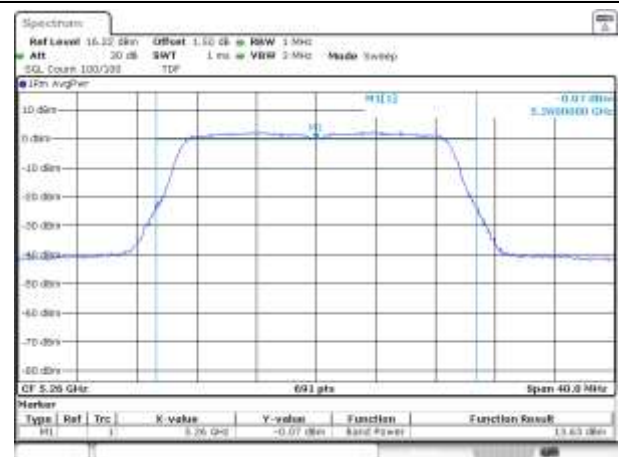
Page (110) of (1046)



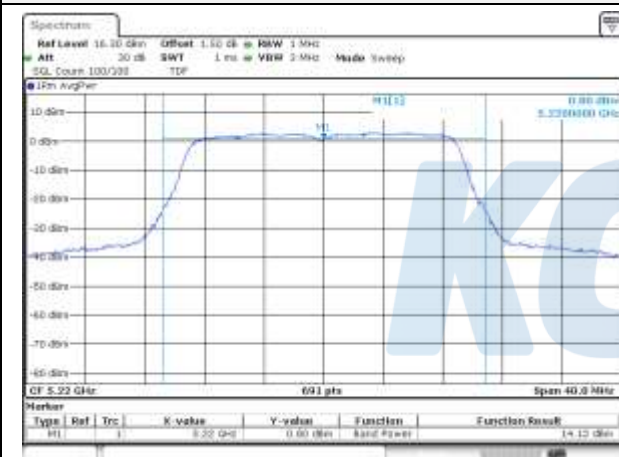
UNII-1 / 802.11n HT20 / 5 180 MHz



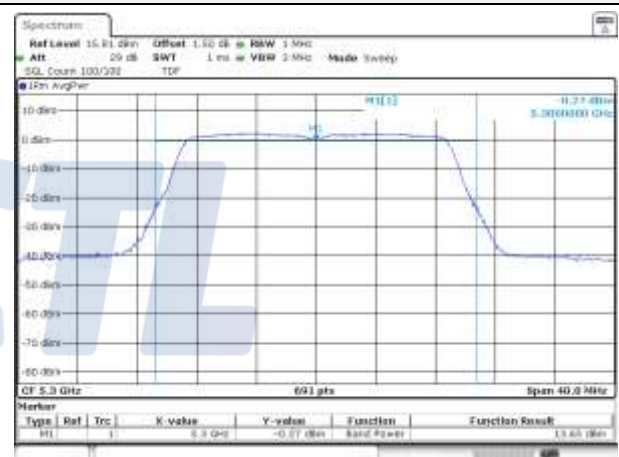
UNII-2A / 802.11n HT20 / 5 260 MHz



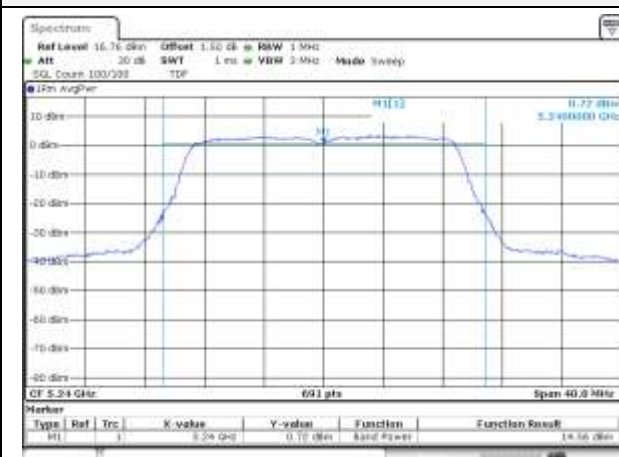
UNII-1 / 802.11n HT20 / 5 220 MHz



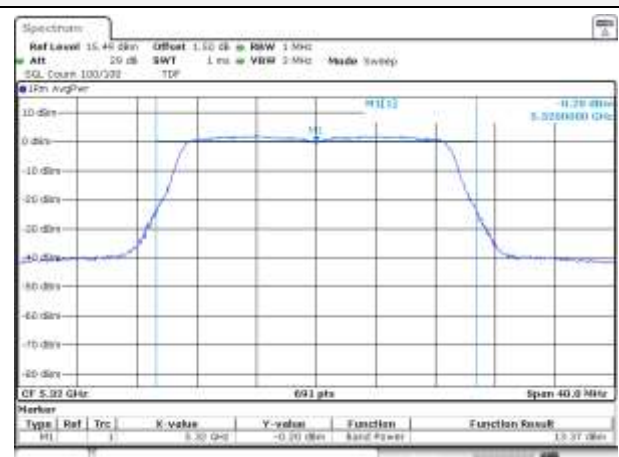
UNII-2A / 802.11n HT20 / 5 300 MHz



UNII-1 / 802.11n HT20 / 5 240 MHz



UNII-2A / 802.11n HT20 / 5 320 MHz



# KCTL Inc.

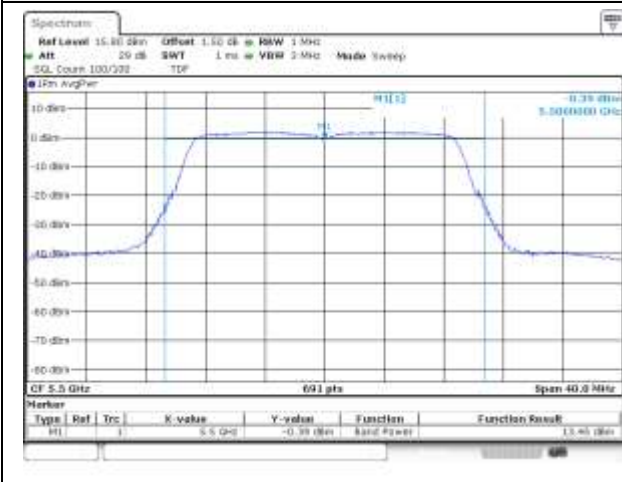
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

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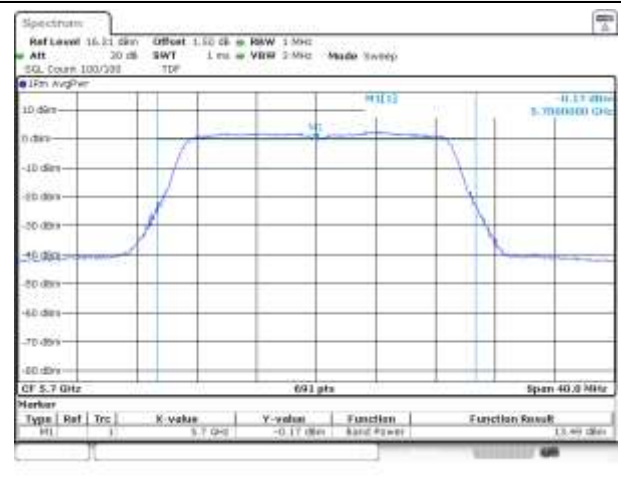
Page (111) of (1046)



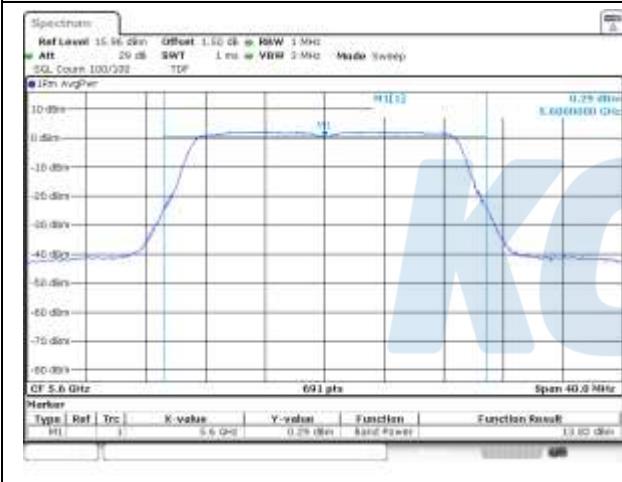
UNII-2C / 802.11n HT20 / 5 500 MHz



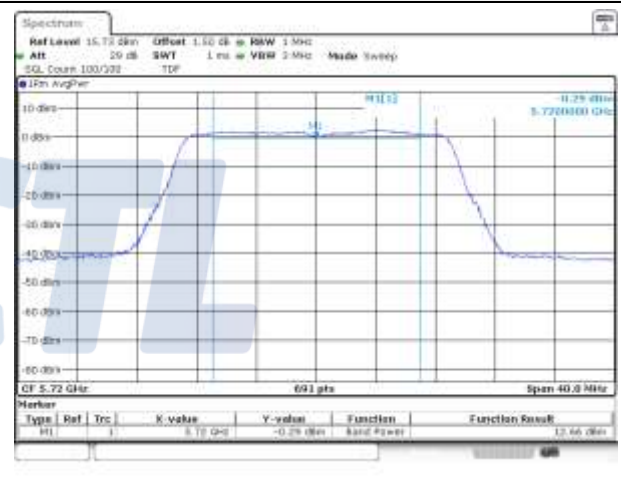
UNII-2C / 802.11n HT20 / 5 700 MHz



UNII-2C / 802.11n HT20 / 5 600 MHz



UNII-2C / 802.11n HT20 / 5 720 MHz





# KCTL Inc.

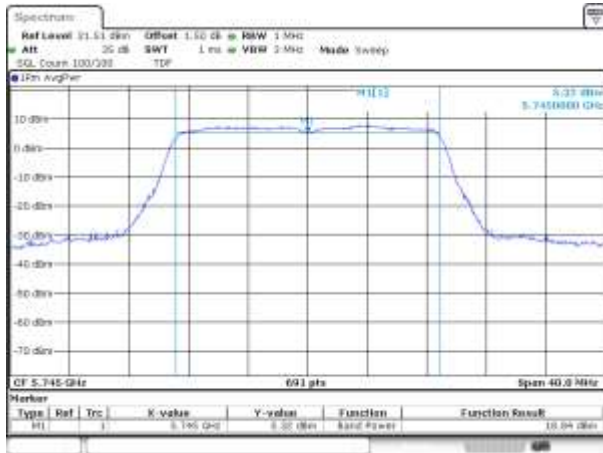
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
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Report No.:  
KR20-SRF0030-D

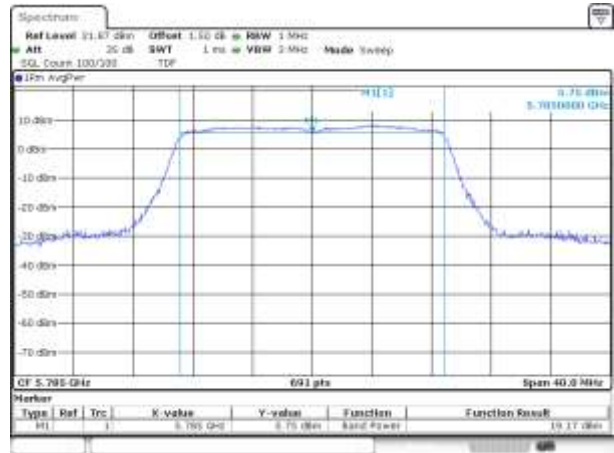
Page (112) of (1046)



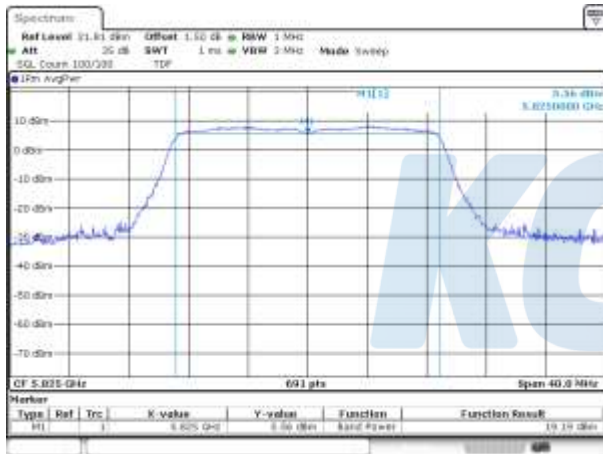
## UNII-3 / 802.11n HT20 / 5 745 MHz



## UNII-3 / 802.11n HT20 / 5 785 MHz



## UNII-3 / 802.11n HT20 / 5 825 MHz



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# KCTL Inc.

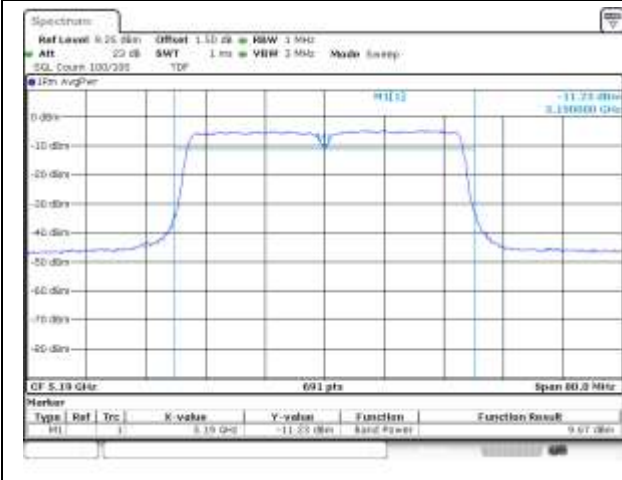
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
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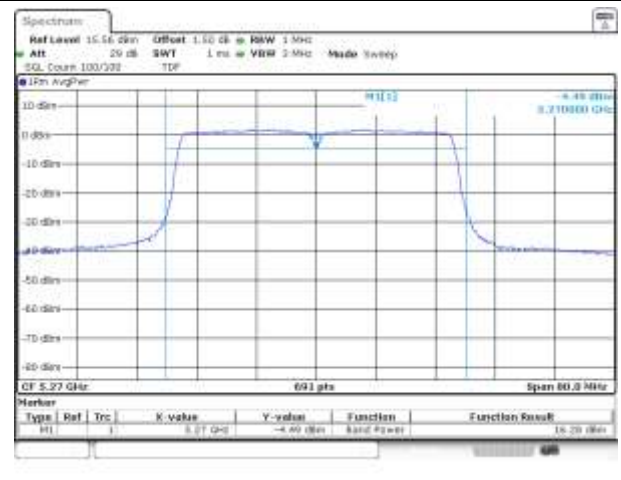
Page (113) of (1046)



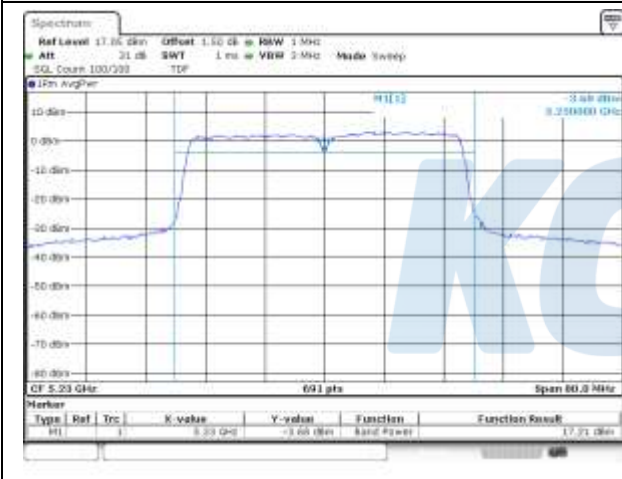
## UNII-1 / 802.11n HT40 / 5 190 MHz



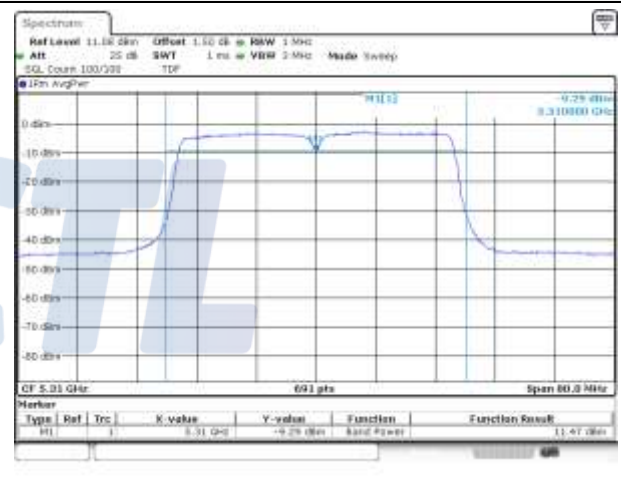
## UNII-2A / 802.11n HT40 / 5 270 MHz



## UNII-1 / 802.11n HT40 / 5 230 MHz



## UNII-2A / 802.11n HT40 / 5 310 MHz



# KCTL Inc.

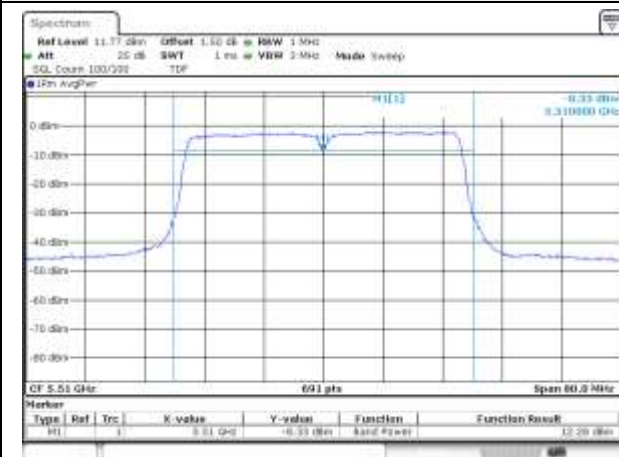
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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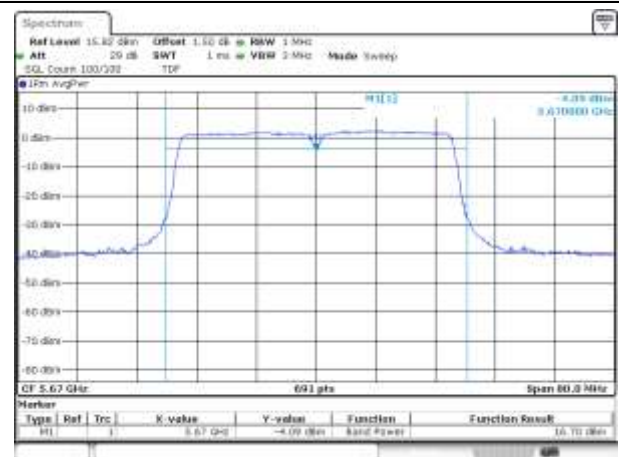
Page (114) of (1046)



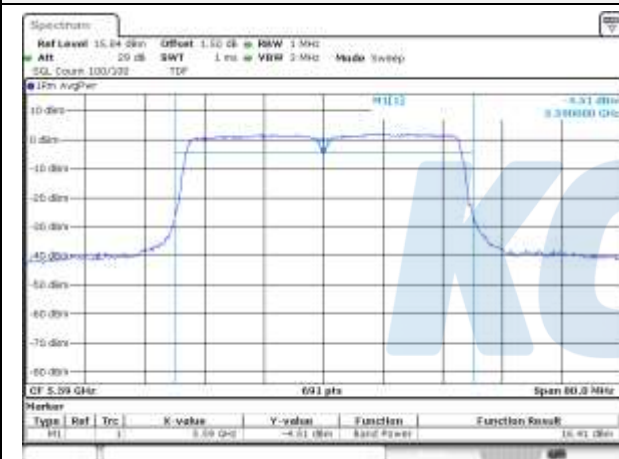
## UNII-2C / 802.11n HT40 / 5 510 MHz



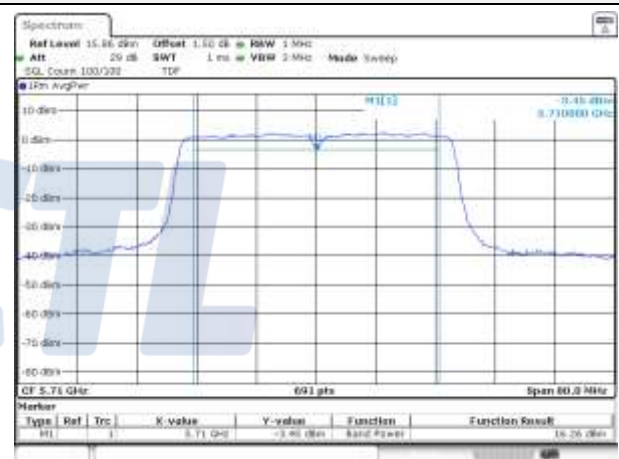
## UNII-2C / 802.11n HT40 / 5 670 MHz



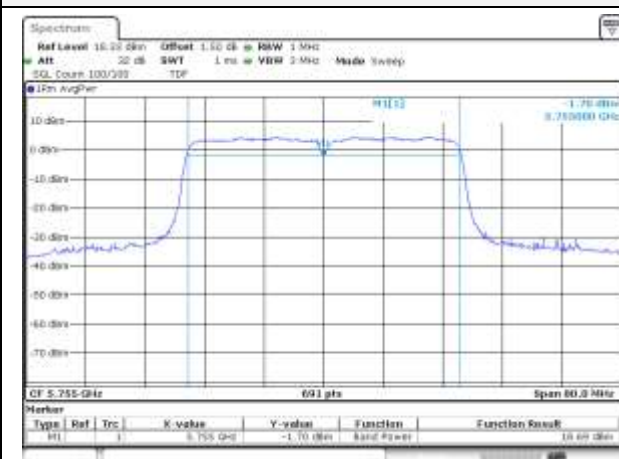
## UNII-2C / 802.11n HT40 / 5 590 MHz



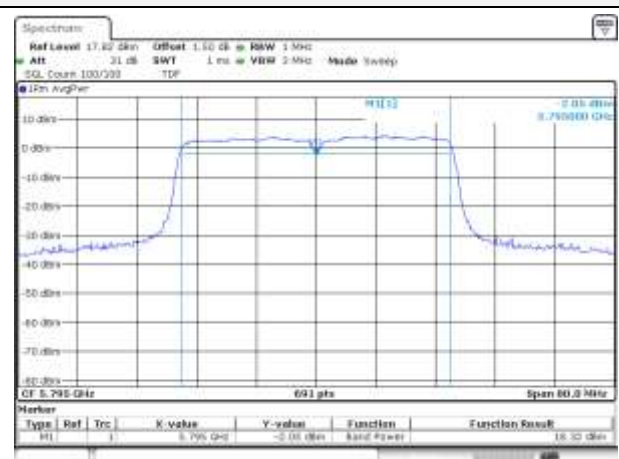
## UNII-2C / 802.11n HT40 / 5 710 MHz



## UNII-3 / 802.11n HT40 / 5 755 MHz



## UNII-3 / 802.11n HT40 / 5 795 MHz



# KCTL Inc.

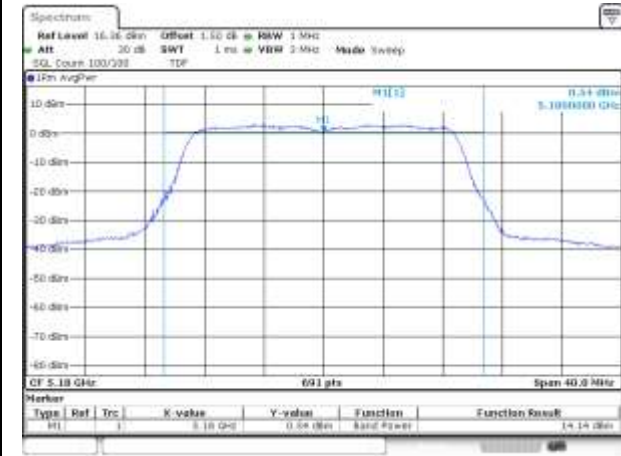
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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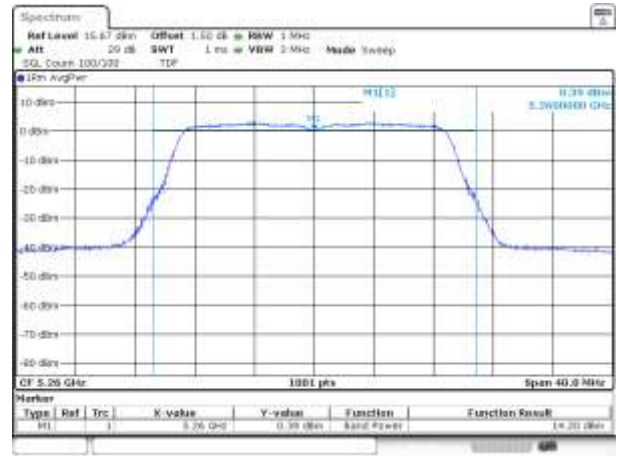
Page (115) of (1046)



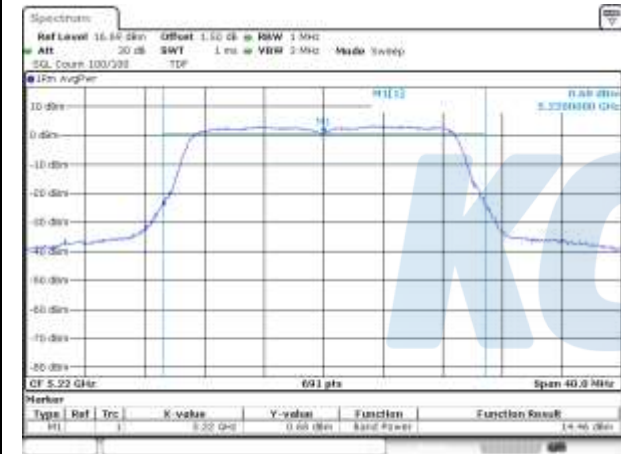
## UNII-1 / 802.11ac VHT20 / 5 180 MHz



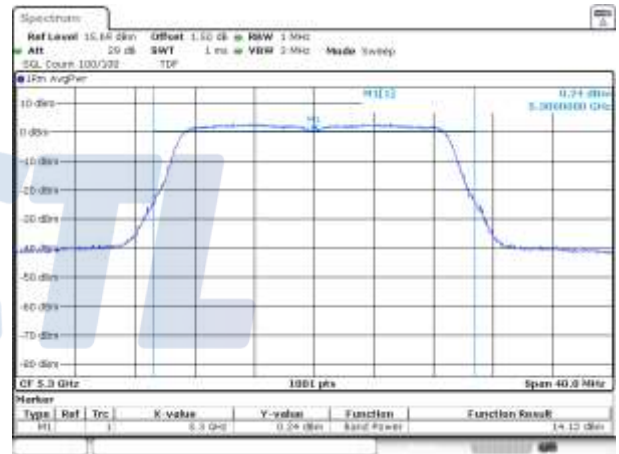
## UNII-2A / 802.11ac VHT20 / 5 260 MHz



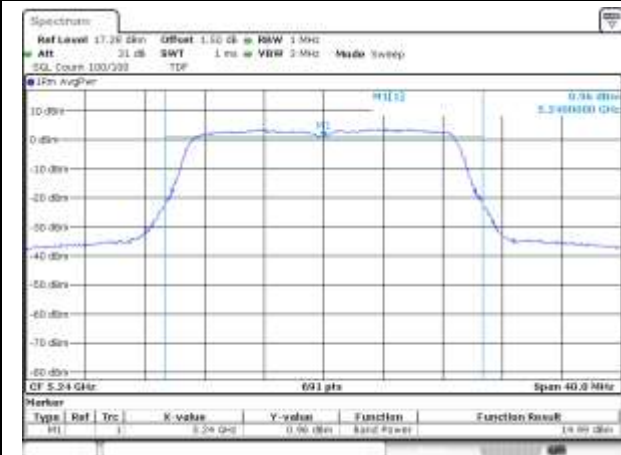
## UNII-1 / 802.11ac VHT20 / 5 220 MHz



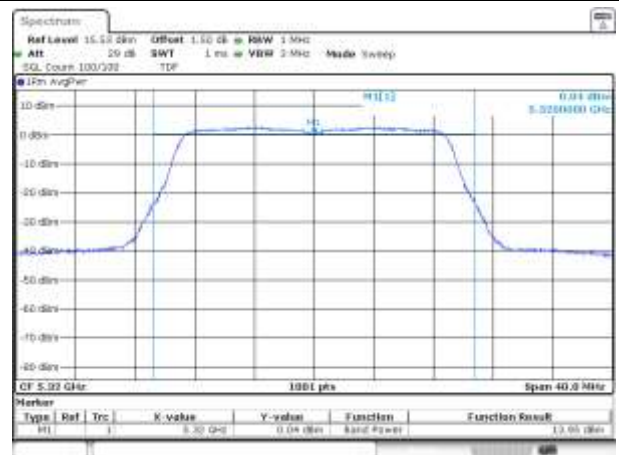
## UNII-2A / 802.11ac VHT20 / 5 300 MHz



## UNII-1 / 802.11ac VHT20 / 5 240 MHz



## UNII-2A / 802.11ac VHT20 / 5 320 MHz



# KCTL Inc.

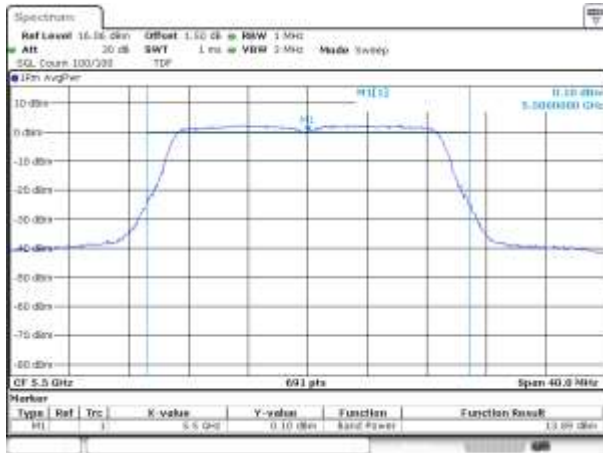
65, Sinwon-ro, Yeongtong-gu,  
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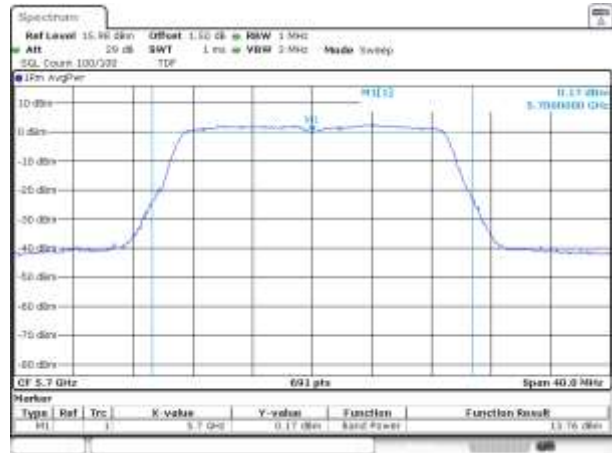
Page (116) of (1046)



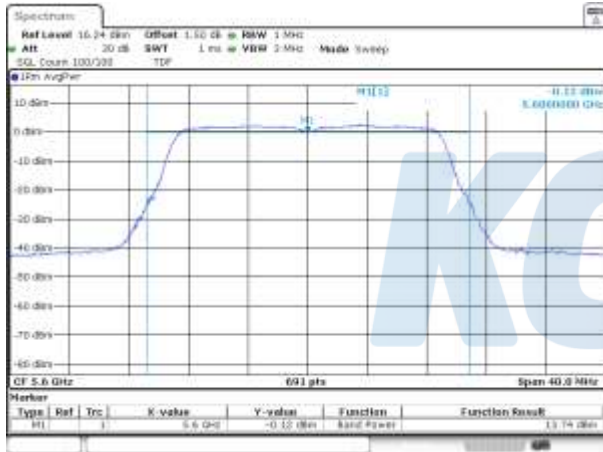
## UNII-2C / 802.11ac VHT20 / 5 500 MHz



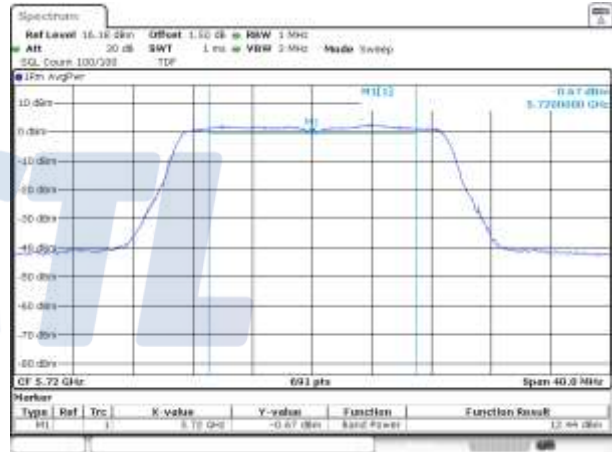
## UNII-2C / 802.11ac VHT20 / 5 700 MHz



## UNII-2C / 802.11ac VHT20 / 5 600 MHz



## UNII-2C / 802.11ac VHT20 / 5 720 MHz



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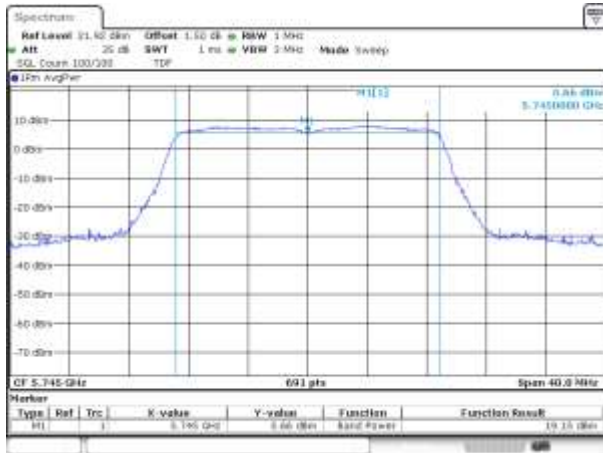
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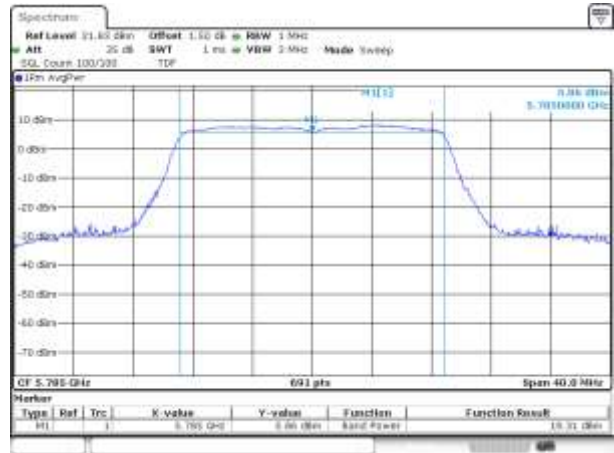
Page (117) of (1046)



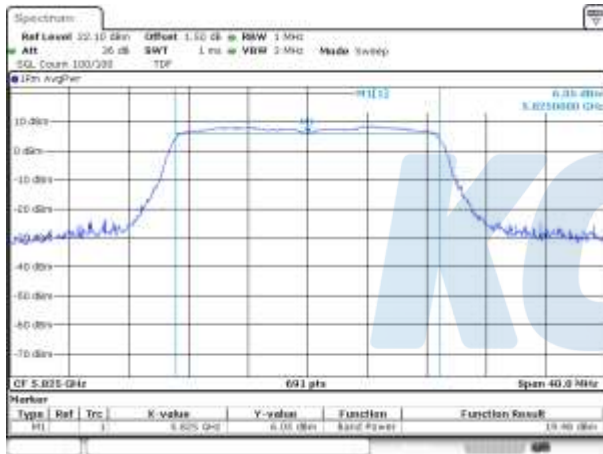
## UNII-3 / 802.11ac VHT20 / 5 745 MHz



## UNII-3 / 802.11ac VHT20 / 5 785 MHz



## UNII-3 / 802.11ac VHT20 / 5 825 MHz



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# KCTL Inc.

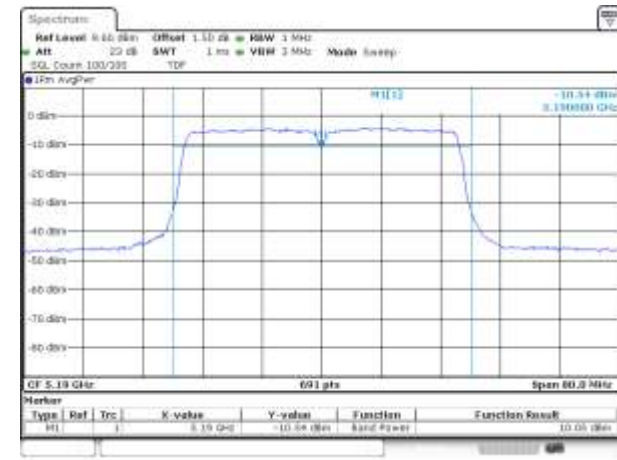
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 TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
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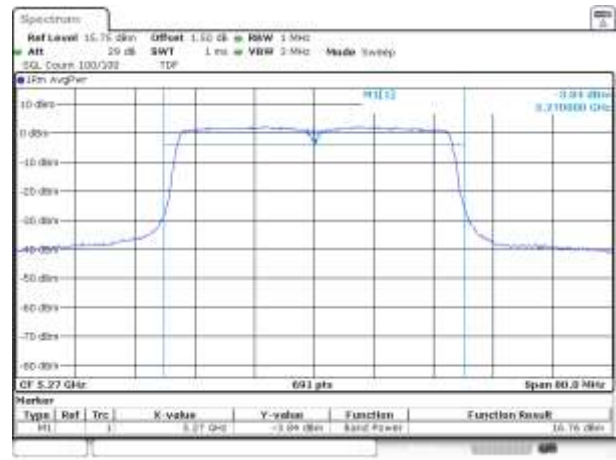
Page (118) of (1046)



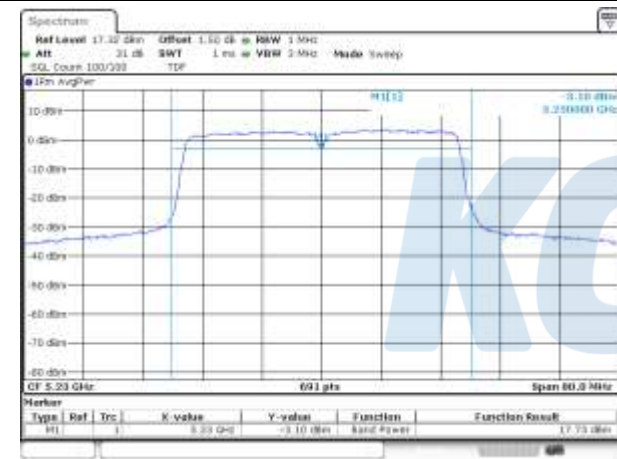
## UNII-1 / 802.11ac VHT40 / 5 190 MHz



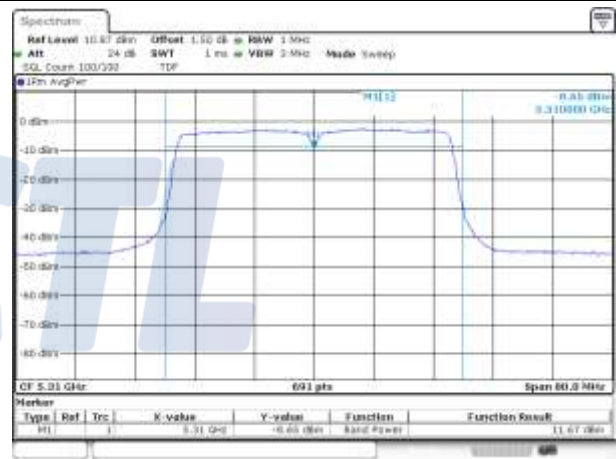
## UNII-2A / 802.11ac VHT40 / 5 270 MHz



## UNII-1 / 802.11ac VHT40 / 5 230 MHz



## UNII-2A / 802.11ac VHT40 / 5 310 MHz



# KCTL Inc.

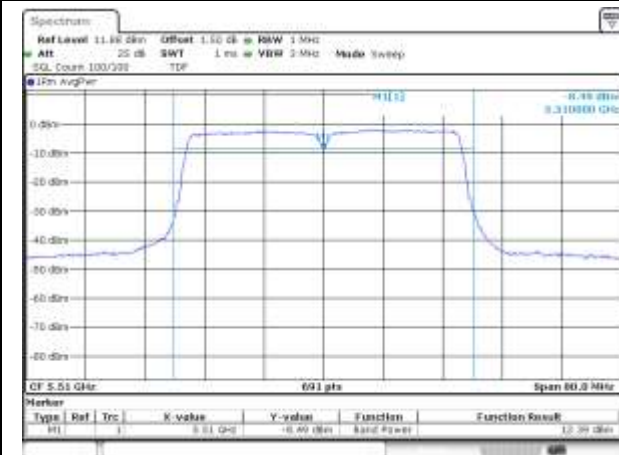
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
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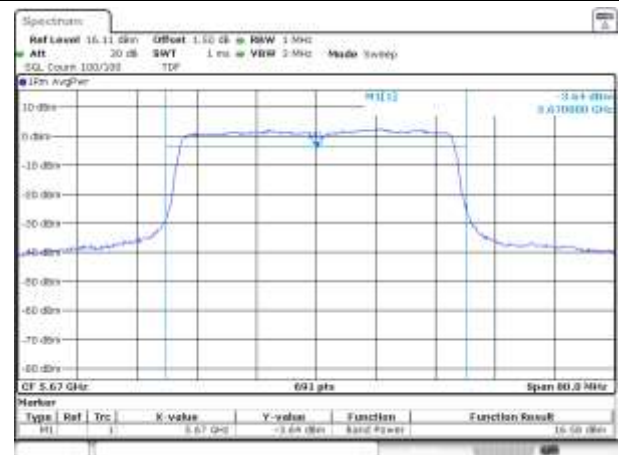
Page (119) of (1046)



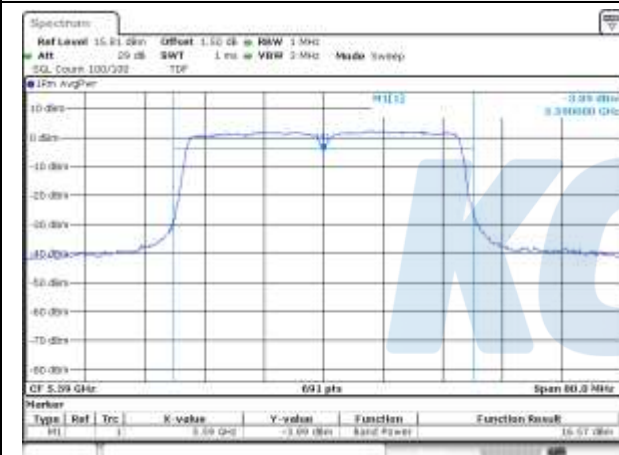
## UNII-2C / 802.11ac VHT40 / 5 510 MHz



## UNII-2C / 802.11ac VHT40 / 5 670 MHz



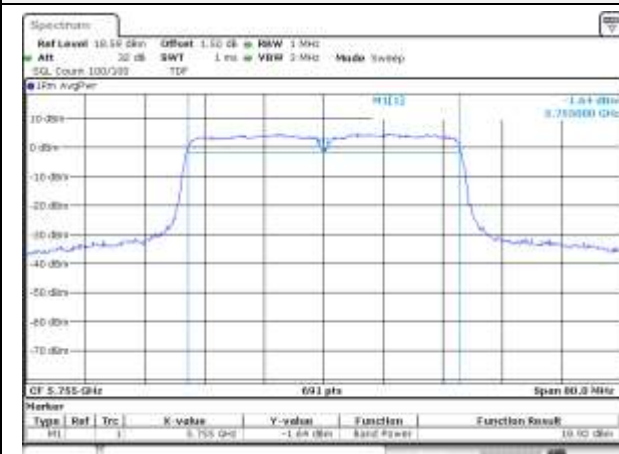
## UNII-2C / 802.11ac VHT40 / 5 590 MHz



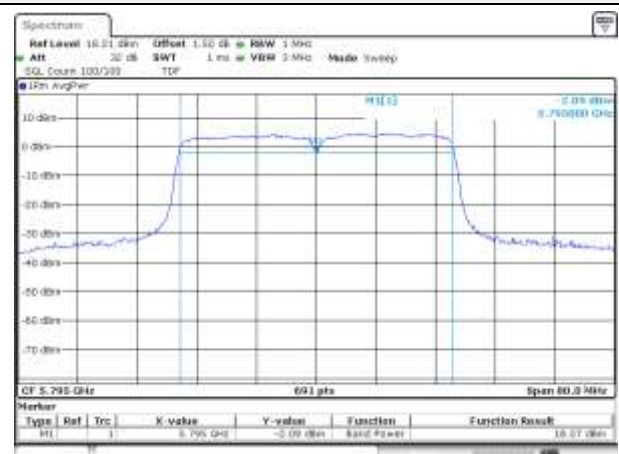
## UNII-2C / 802.11ac VHT40 / 5 710 MHz



## UNII-3 / 802.11ac VHT40 / 5 755 MHz



## UNII-3 / 802.11ac VHT40 / 5 795 MHz





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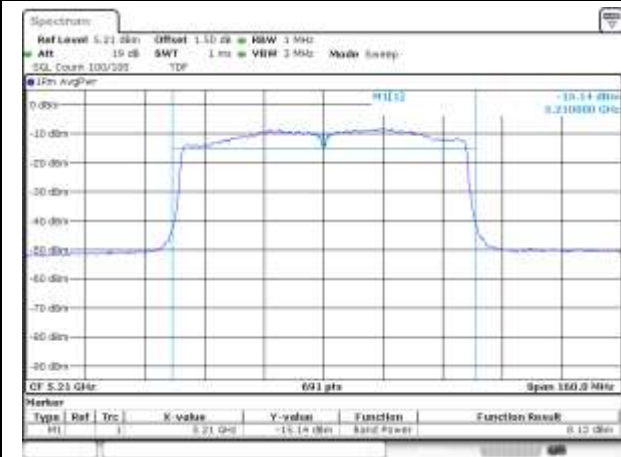
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
KR20-SRF0030-D

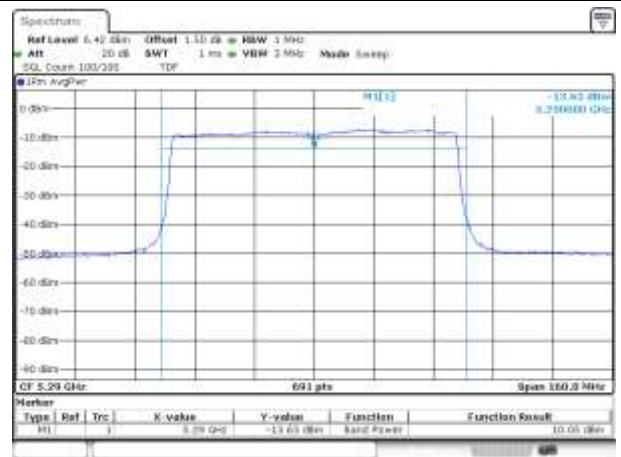
Page (120) of (1046)



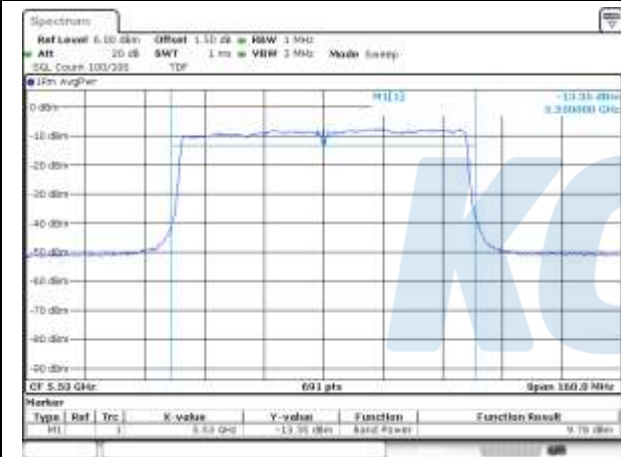
## UNII-1 / 802.11ac VHT80 / 5 210 MHz



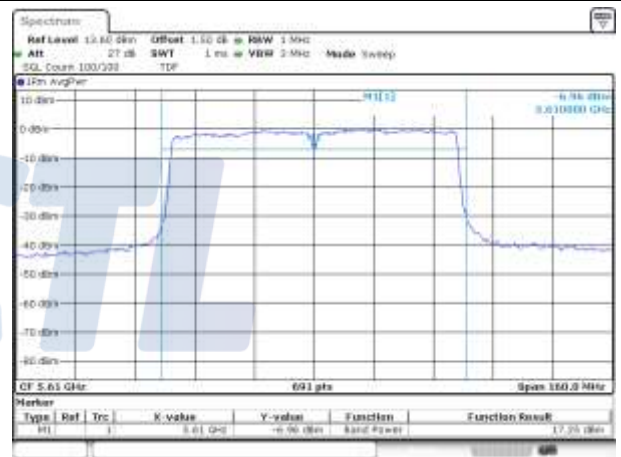
## UNII-2A / 802.11ac VHT80 / 5 290 MHz



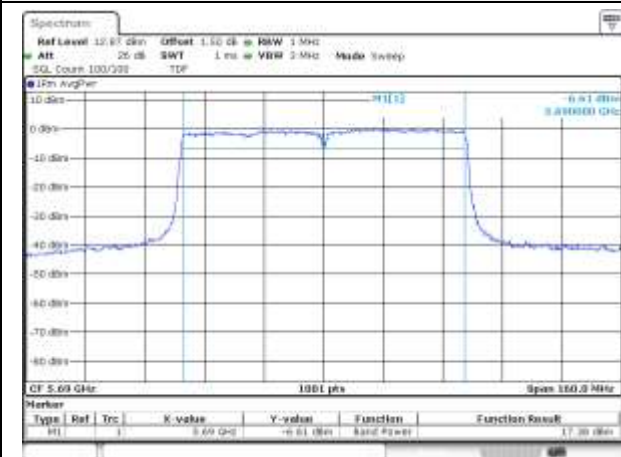
## UNII-2C / 802.11ac VHT80 / 5 530 MHz



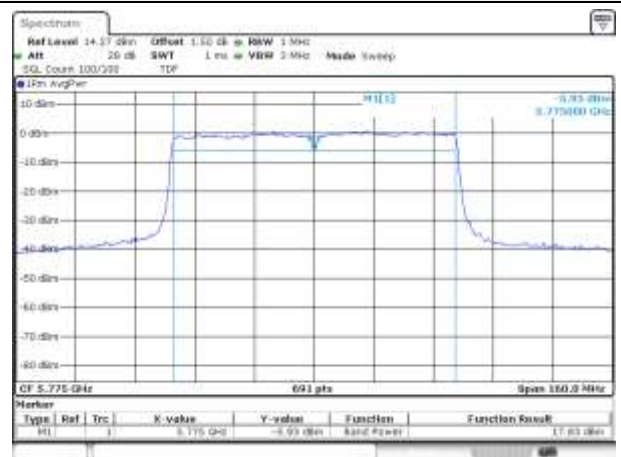
## UNII-2C / 802.11ac VHT80 / 5 610 MHz



## UNII-2C / 802.11ac VHT80 / 5 690 MHz



## UNII-3 / 802.11ac VHT80 / 5 775 MHz



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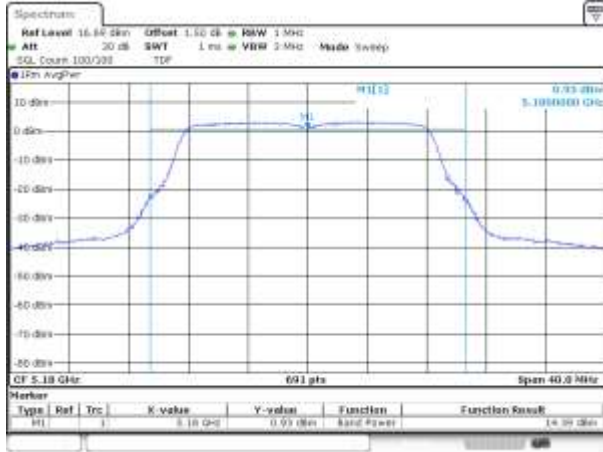
Report No.:  
KR20-SRF0030-D

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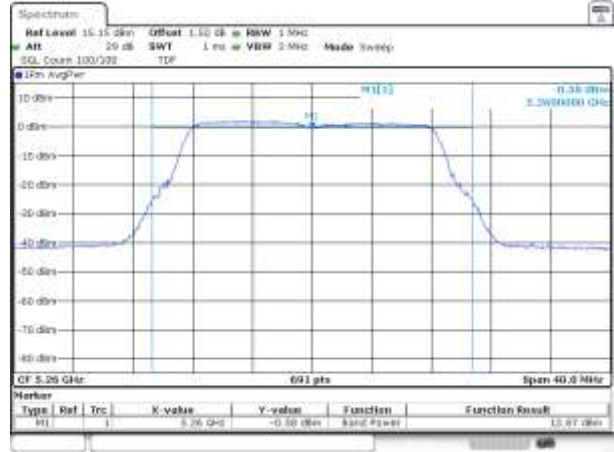


## 4TX MIMO ANT 3

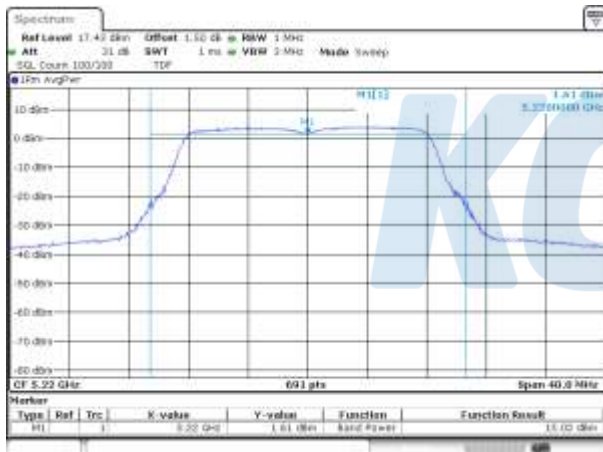
UNII-1 / 802.11a / 5 180 MHz



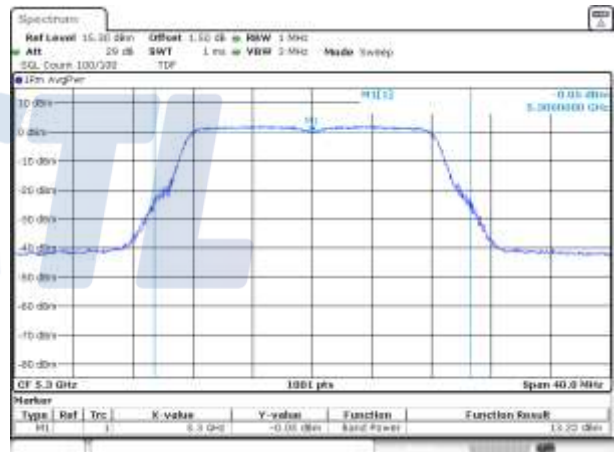
UNII-2A / 802.11a / 5 260 MHz



UNII-1 / 802.11a / 5 220 MHz



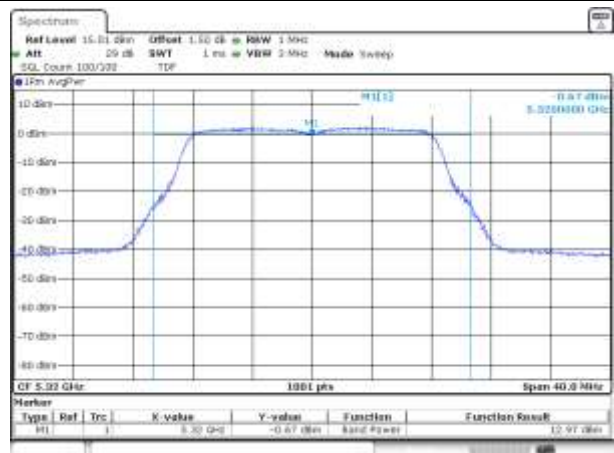
UNII-2A / 802.11a / 5 300 MHz



UNII-1 / 802.11a / 5 240 MHz



UNII-2A / 802.11a / 5 320 MHz



# KCTL Inc.

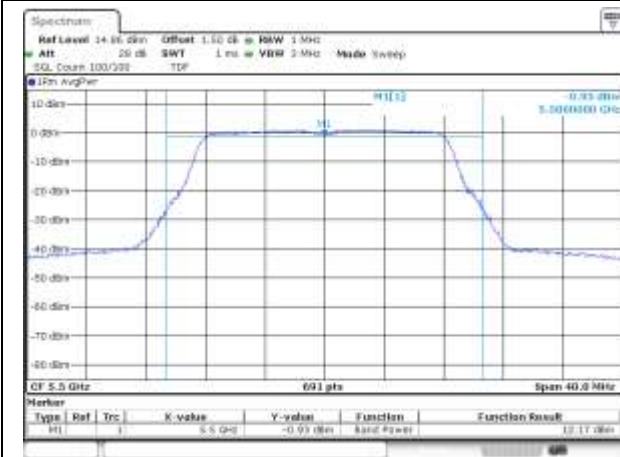
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Report No.:  
 KR20-SRF0030-D

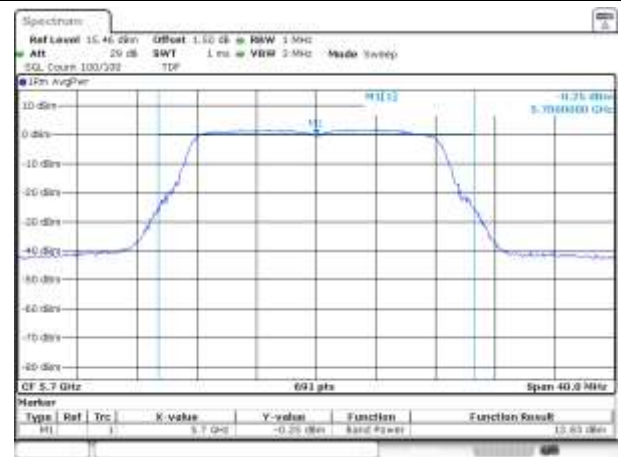
Page (122) of (1046)



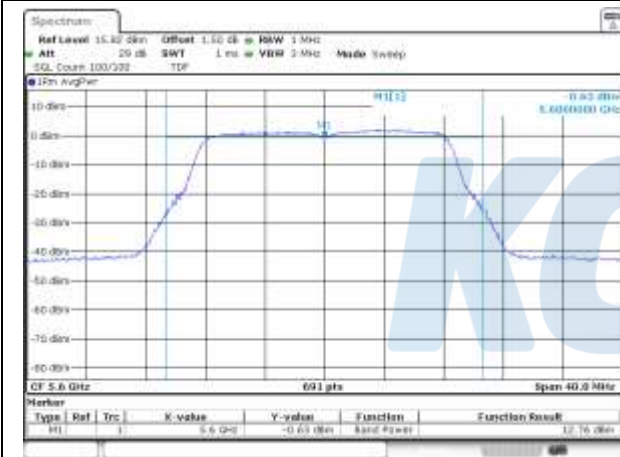
## UNII-2C / 802.11a / 5 500 MHz



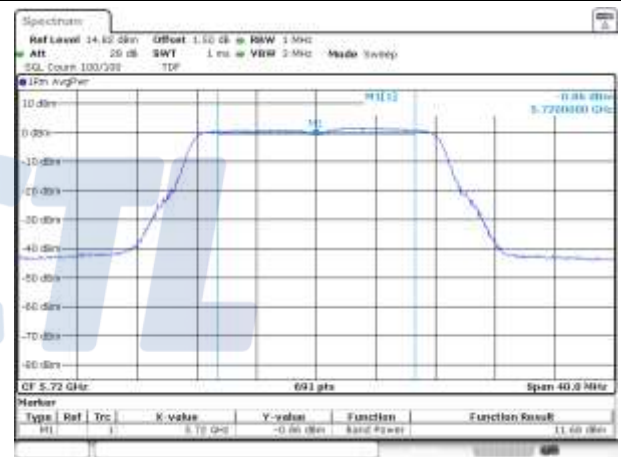
## UNII-2C / 802.11a / 5 700 MHz



## UNII-2C / 802.11a / 5 600 MHz



## UNII-2C / 802.11a / 5 720 MHz



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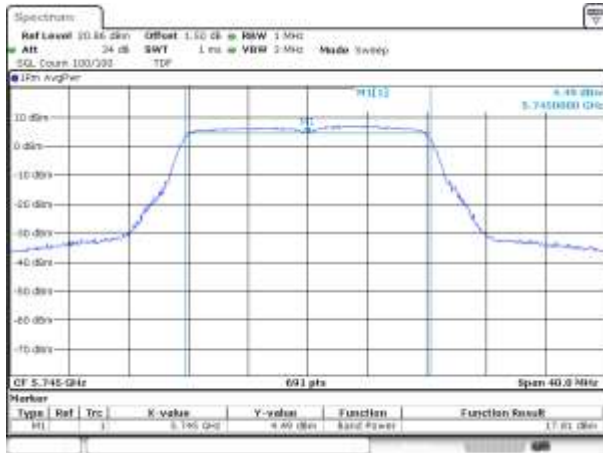
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Report No.:  
KR20-SRF0030-D

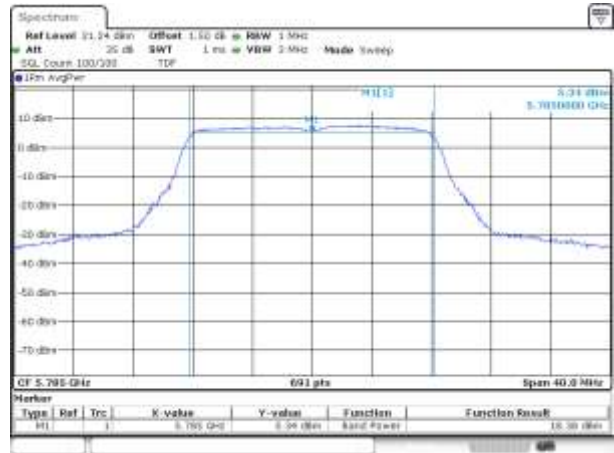
Page (123) of (1046)



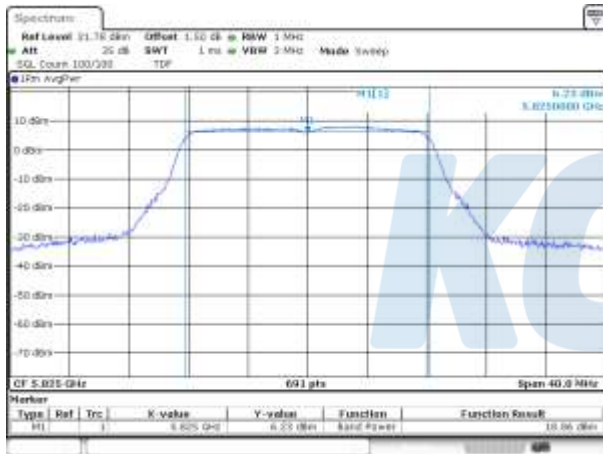
## UNII-3 / 802.11a / 5 745 MHz



## UNII-3 / 802.11a / 5 785 MHz



## UNII-3 / 802.11a / 5 825 MHz



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# KCTL Inc.

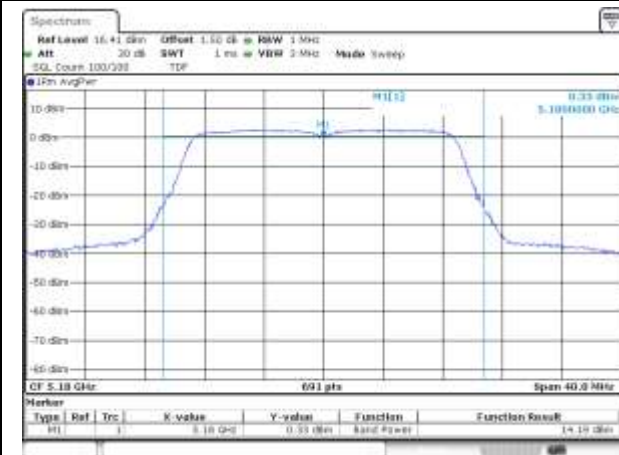
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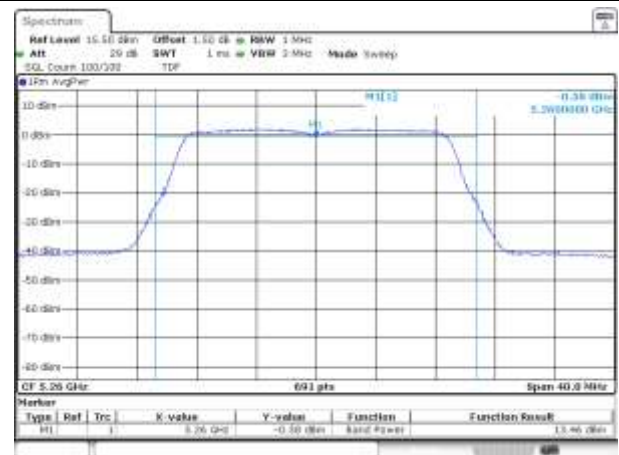
Page (124) of (1046)



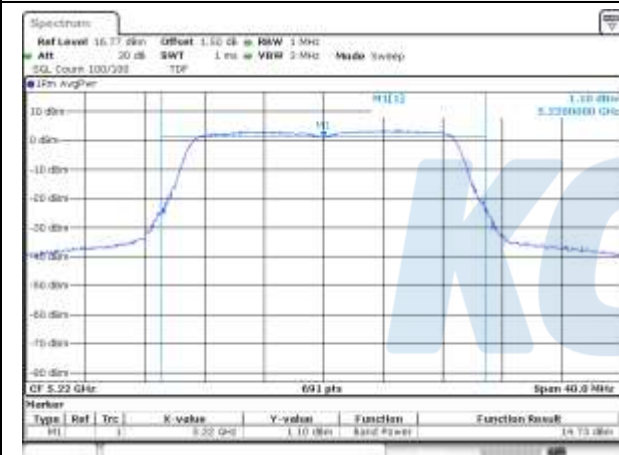
## UNII-1 / 802.11n HT20 / 5 180 MHz



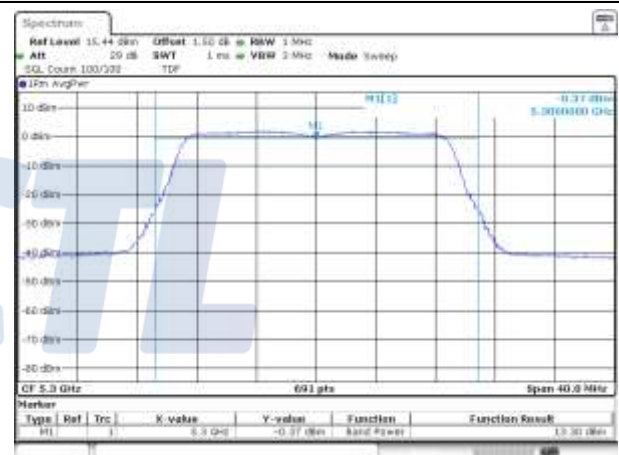
## UNII-2A / 802.11n HT20 / 5 260 MHz



## UNII-1 / 802.11n HT20 / 5 220 MHz



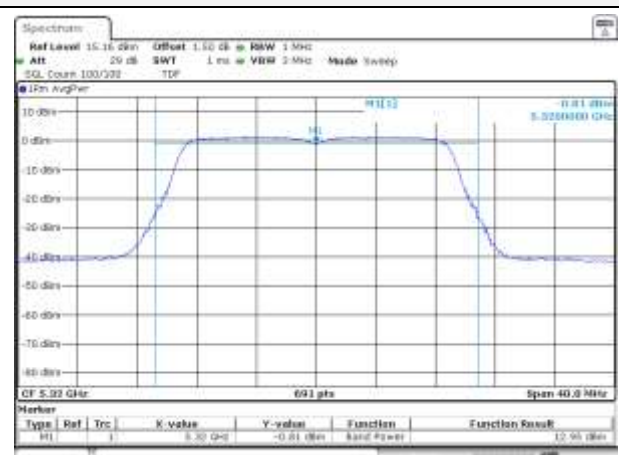
## UNII-2A / 802.11n HT20 / 5 300 MHz



## UNII-1 / 802.11n HT20 / 5 240 MHz



## UNII-2A / 802.11n HT20 / 5 320 MHz



# KCTL Inc.

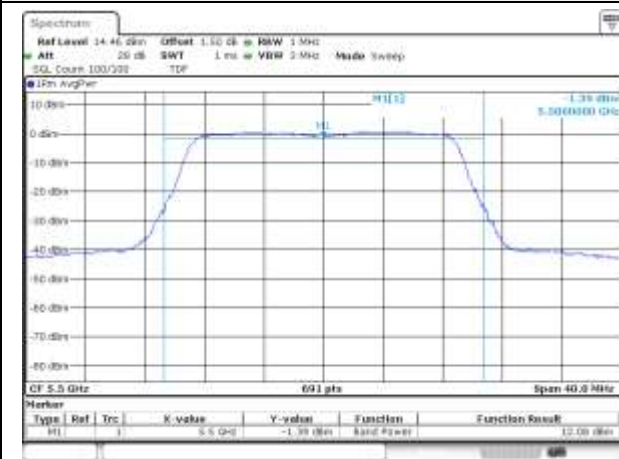
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

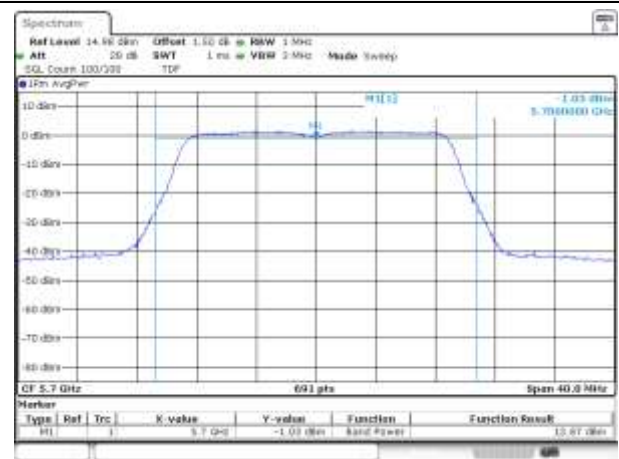
Page (125) of (1046)



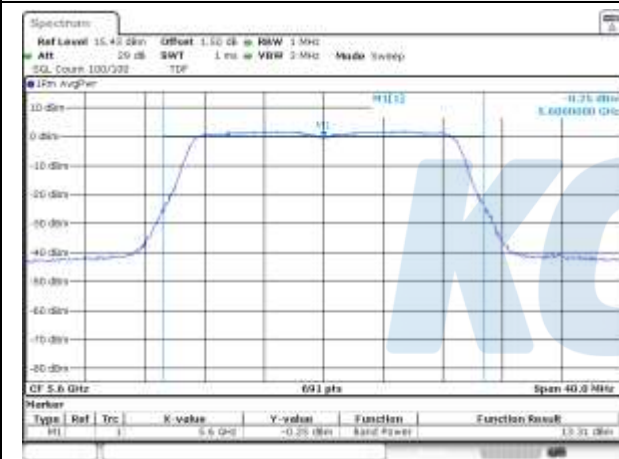
## UNII-2C / 802.11n HT20 / 5 500 MHz



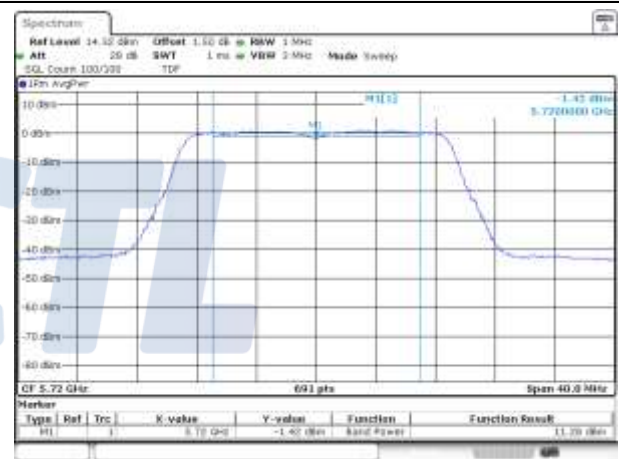
## UNII-2C / 802.11n HT20 / 5 700 MHz



## UNII-2C / 802.11n HT20 / 5 600 MHz



## UNII-2C / 802.11n HT20 / 5 720 MHz



# KCTL Inc.

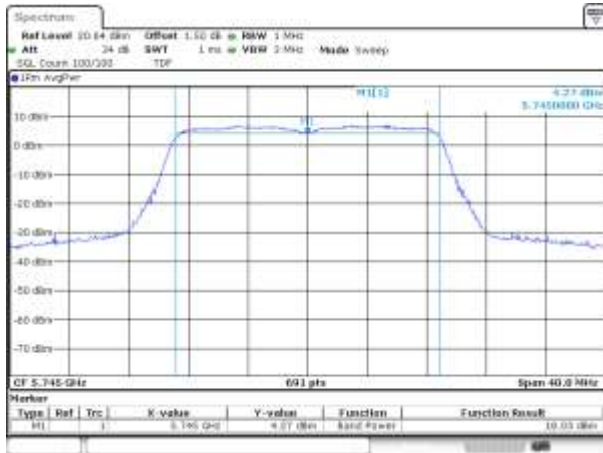
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

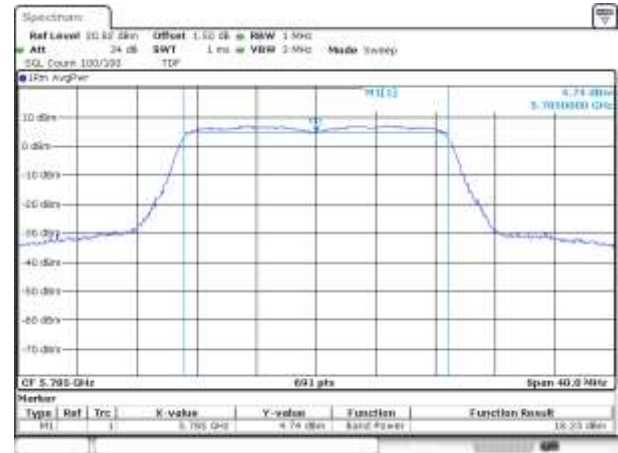
Page (126) of (1046)



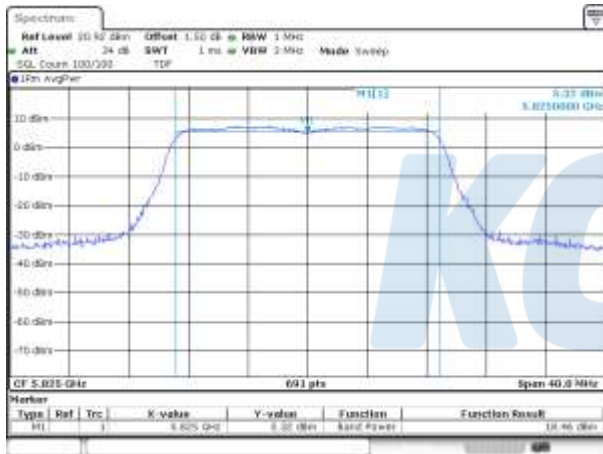
## UNII-3 / 802.11n HT20 / 5 745 MHz



## UNII-3 / 802.11n HT20 / 5 785 MHz



## UNII-3 / 802.11n HT20 / 5 825 MHz



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# KCTL Inc.

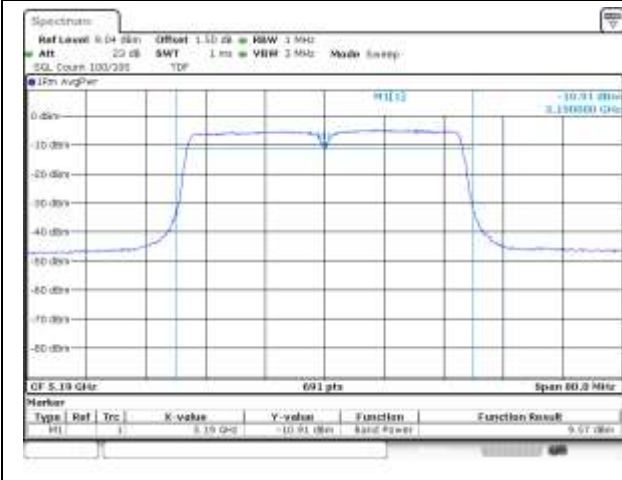
65, Sinwon-ro, Yeongtong-gu,  
 Suwon-si, Gyeonggi-do, 16677, Korea  
 TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
 KR20-SRF0030-D

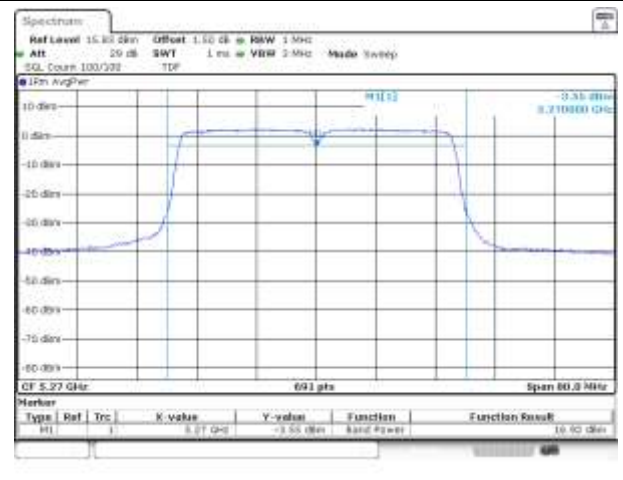
Page (127) of (1046)



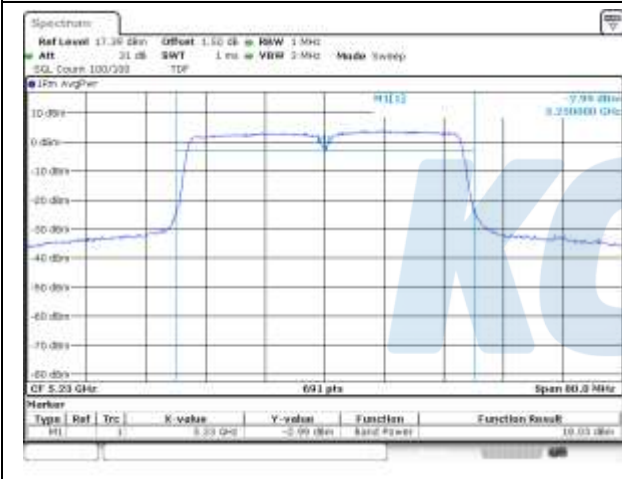
**UNII-1 / 802.11n HT40 / 5 190 MHz**



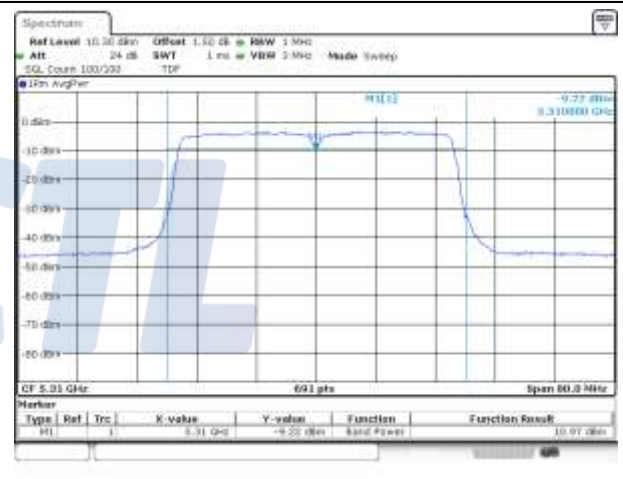
**UNII-2A / 802.11n HT40 / 5 270 MHz**



**UNII-1 / 802.11n HT40 / 5 230 MHz**



**UNII-2A / 802.11n HT40 / 5 310 MHz**





# KCTL Inc.

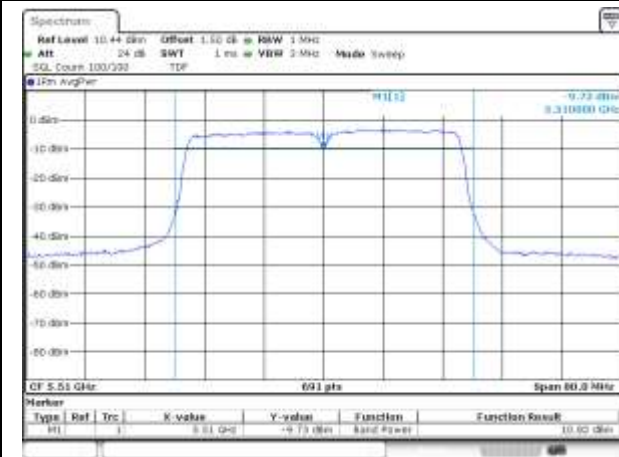
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

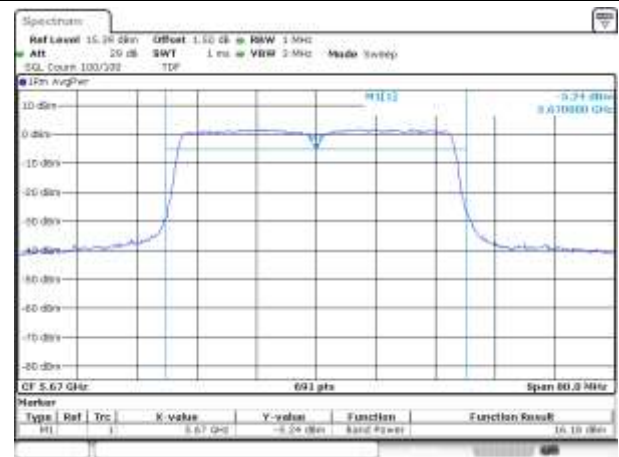
Page (128) of (1046)



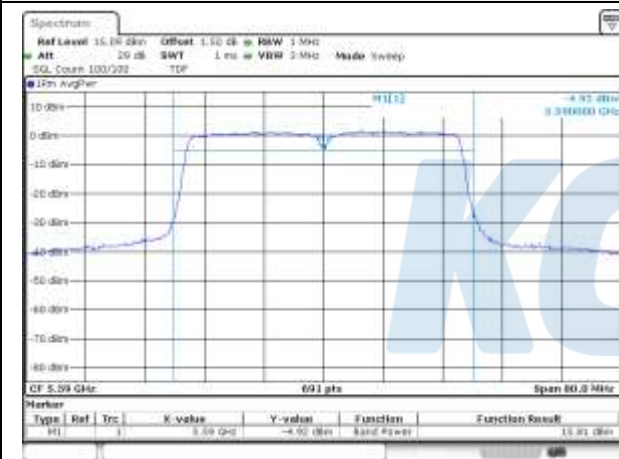
## UNII-2C / 802.11n HT40 / 5 510 MHz



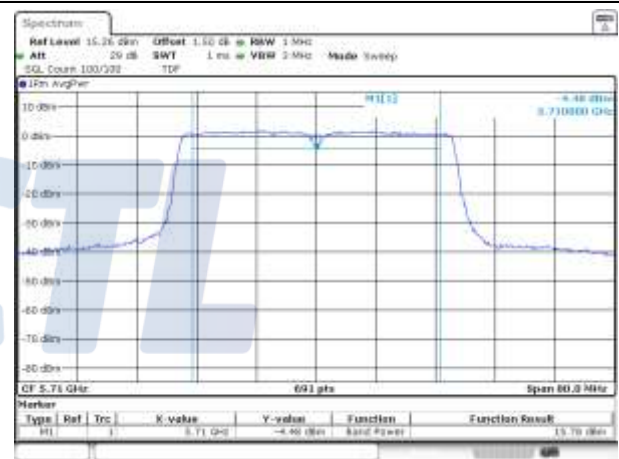
## UNII-2C / 802.11n HT40 / 5 670 MHz



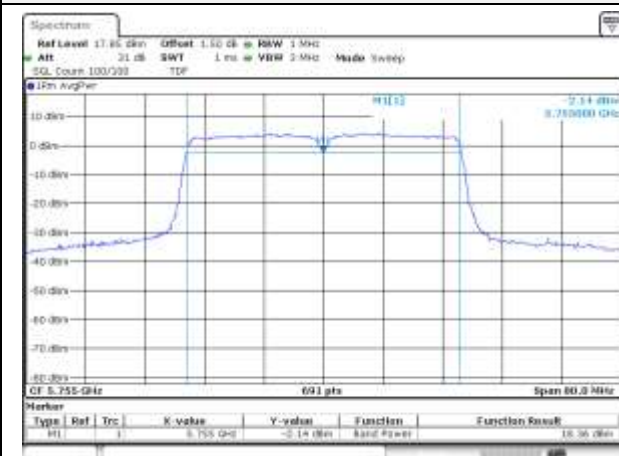
## UNII-2C / 802.11n HT40 / 5 590 MHz



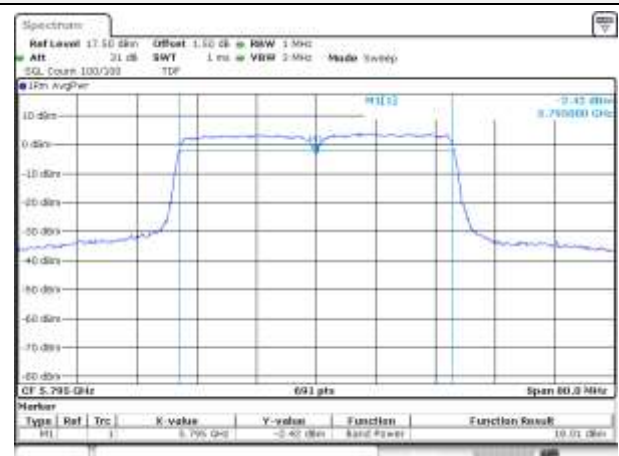
## UNII-2C / 802.11n HT40 / 5 710 MHz



## UNII-3 / 802.11n HT40 / 5 755 MHz



## UNII-3 / 802.11n HT40 / 5 795 MHz



# KCTL Inc.

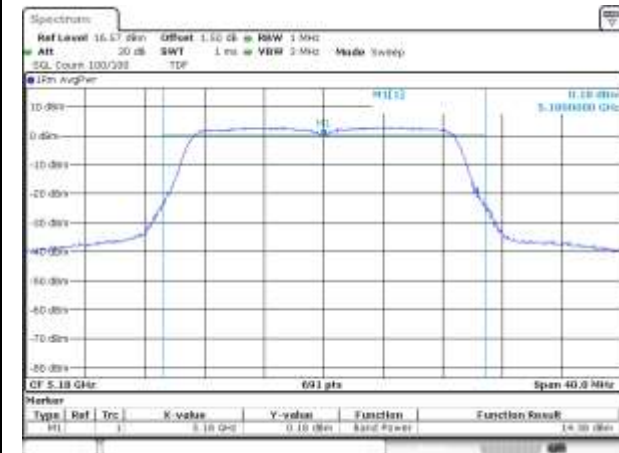
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
KR20-SRF0030-D

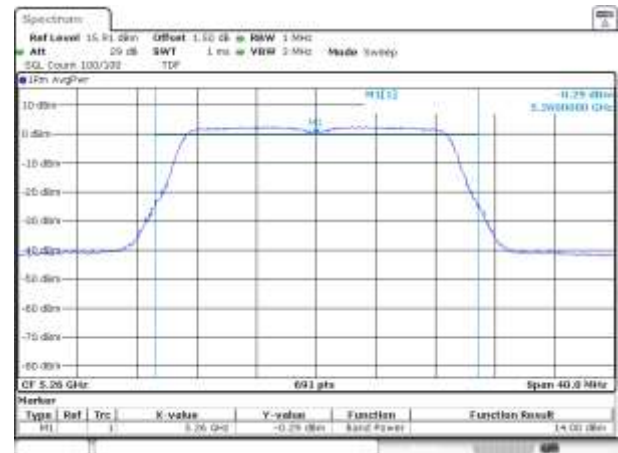
Page (129) of (1046)



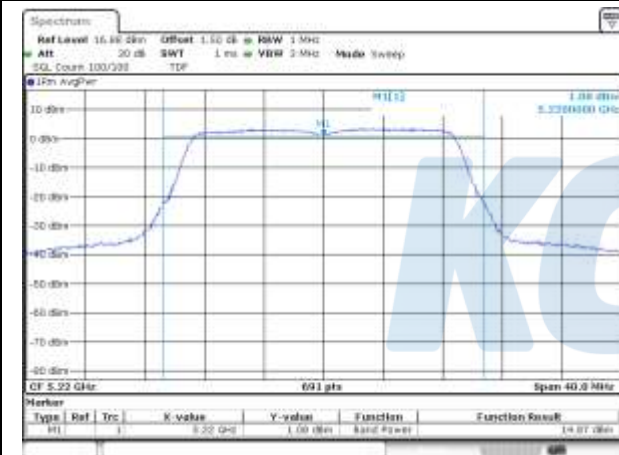
## UNII-1 / 802.11ac VHT20 / 5 180 MHz



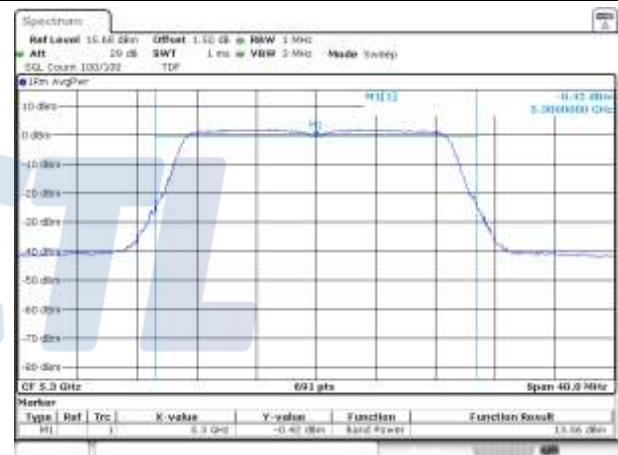
## UNII-2A / 802.11ac VHT20 / 5 260 MHz



## UNII-1 / 802.11ac VHT20 / 5 220 MHz



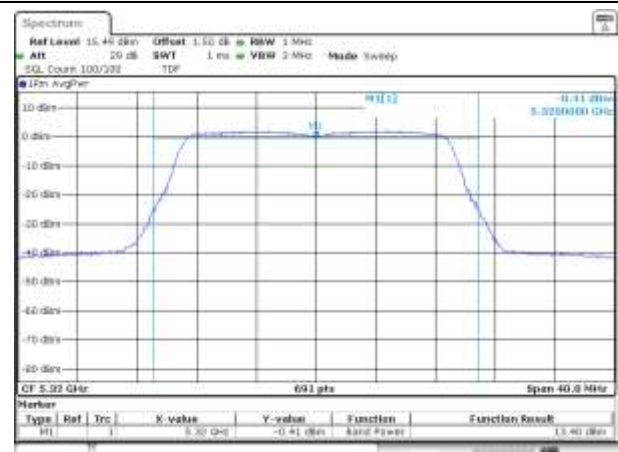
## UNII-2A / 802.11ac VHT20 / 5 300 MHz



## UNII-1 / 802.11ac VHT20 / 5 240 MHz



## UNII-2A / 802.11ac VHT20 / 5 320 MHz



# KCTL Inc.

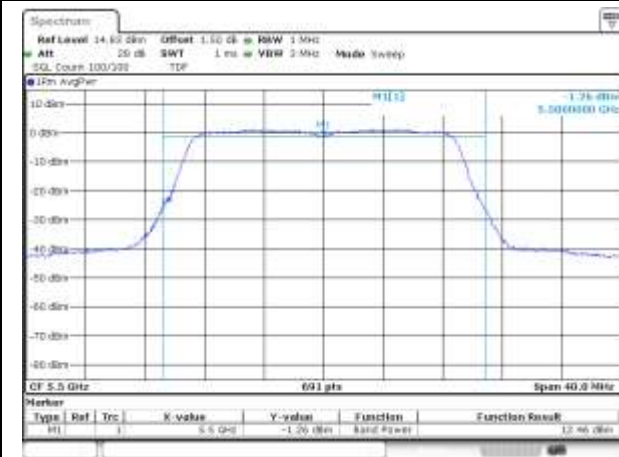
65, Sinwon-ro, Yeongtong-gu,  
 Suwon-si, Gyeonggi-do, 16677, Korea  
 TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
 KR20-SRF0030-D

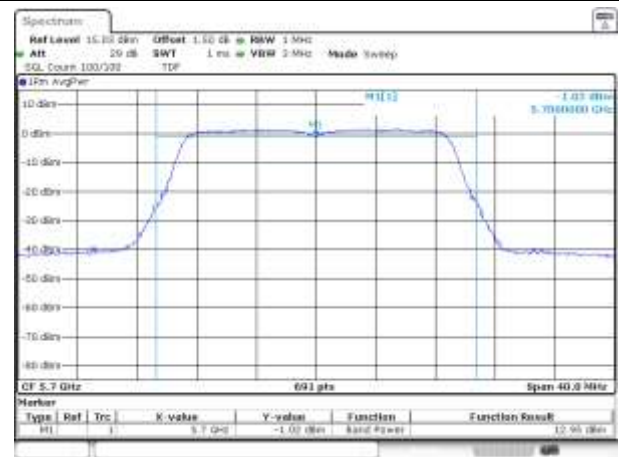
Page (130) of (1046)



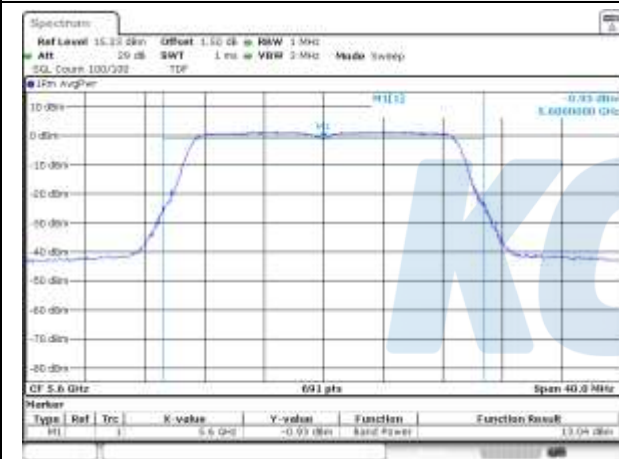
## UNII-2C / 802.11ac VHT20 / 5 500 MHz



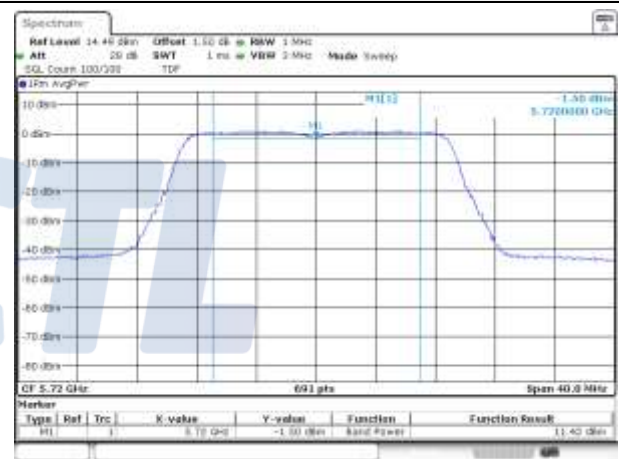
## UNII-2C / 802.11ac VHT20 / 5 700 MHz



## UNII-2C / 802.11ac VHT20 / 5 600 MHz



## UNII-2C / 802.11ac VHT20 / 5 720 MHz



# KCTL Inc.

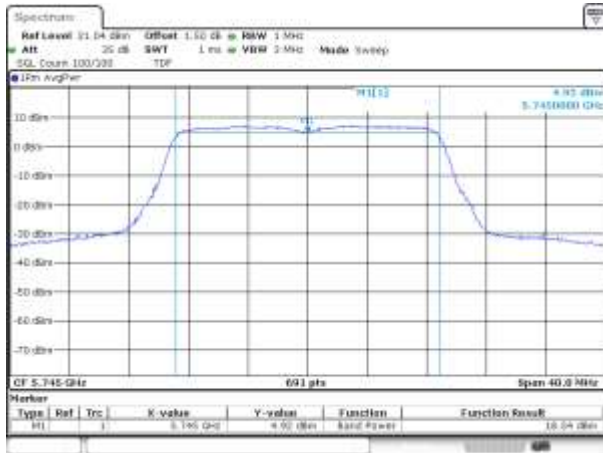
65, Sinwon-ro, Yeongtong-gu,  
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Report No.:  
KR20-SRF0030-D

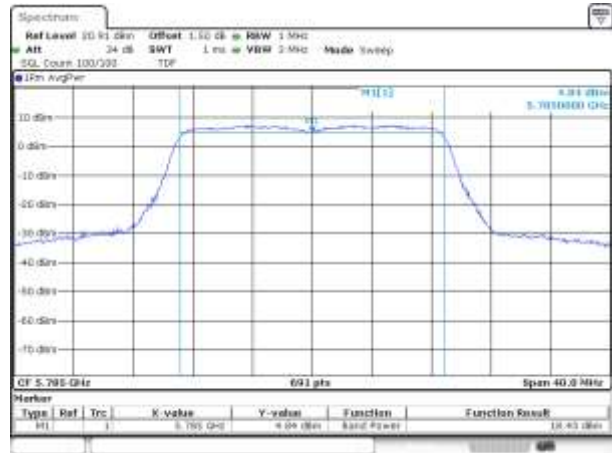
Page (131) of (1046)



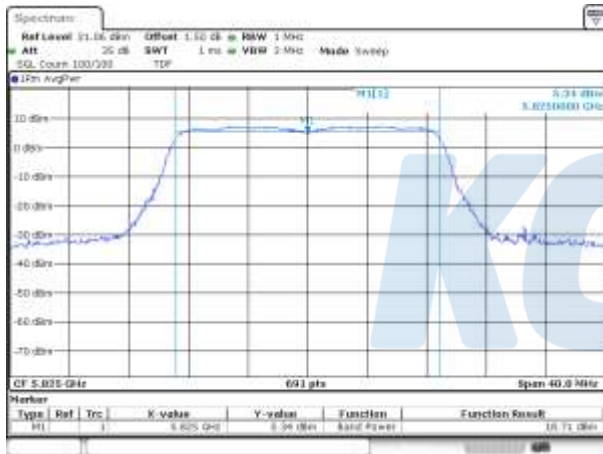
## UNII-3 / 802.11ac VHT20 / 5 745 MHz



## UNII-3 / 802.11ac VHT20 / 5 785 MHz



## UNII-3 / 802.11ac VHT20 / 5 825 MHz



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# KCTL Inc.

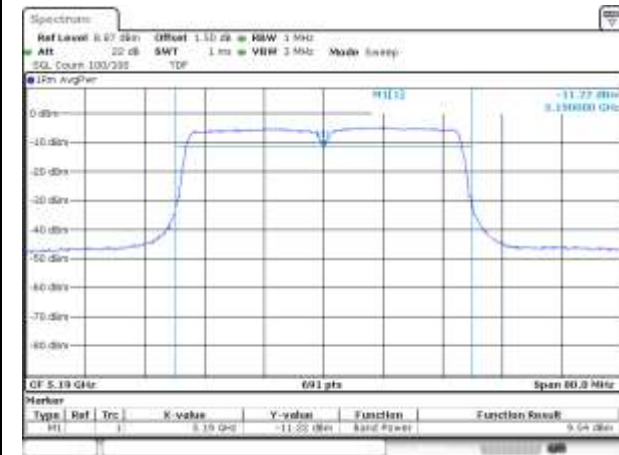
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

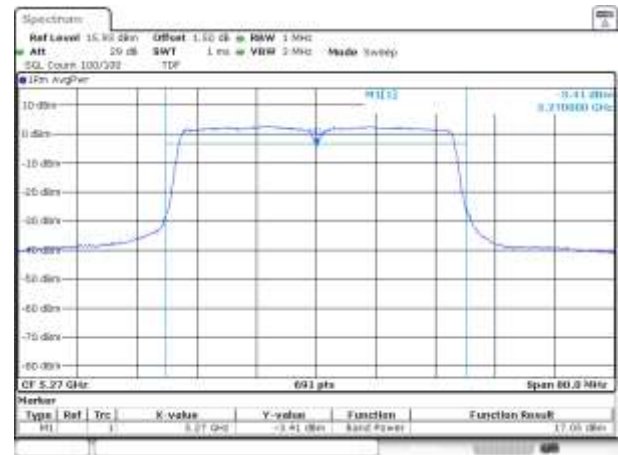
Page (132) of (1046)



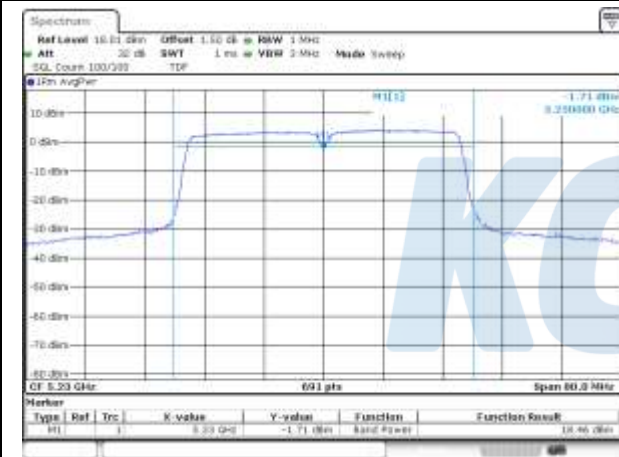
## UNII-1 / 802.11ac VHT40 / 5 190 MHz



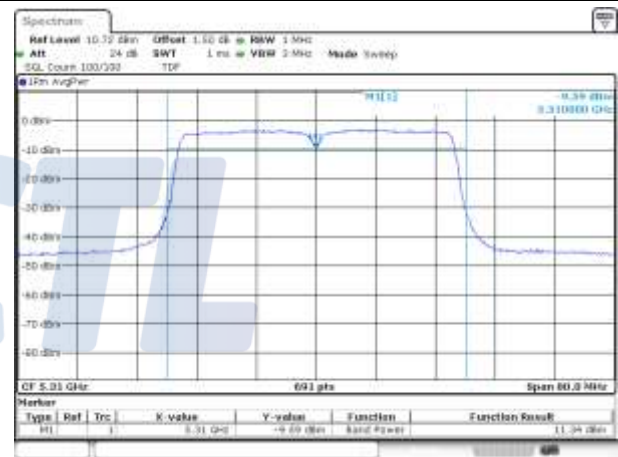
## UNII-2A / 802.11ac VHT40 / 5 270 MHz



## UNII-1 / 802.11ac VHT40 / 5 230 MHz



## UNII-2A / 802.11ac VHT40 / 5 310 MHz



# KCTL Inc.

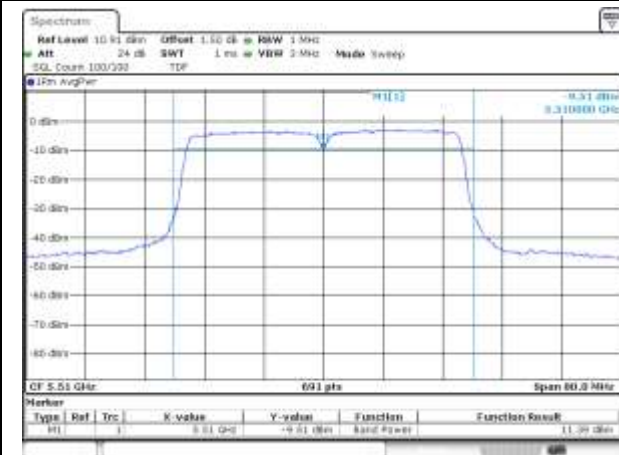
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

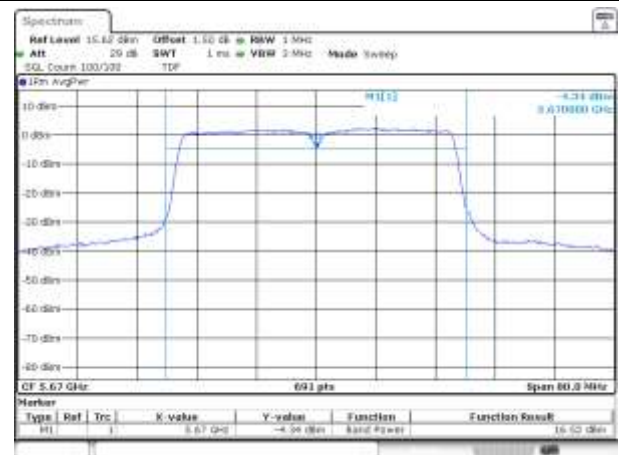
Page (133) of (1046)



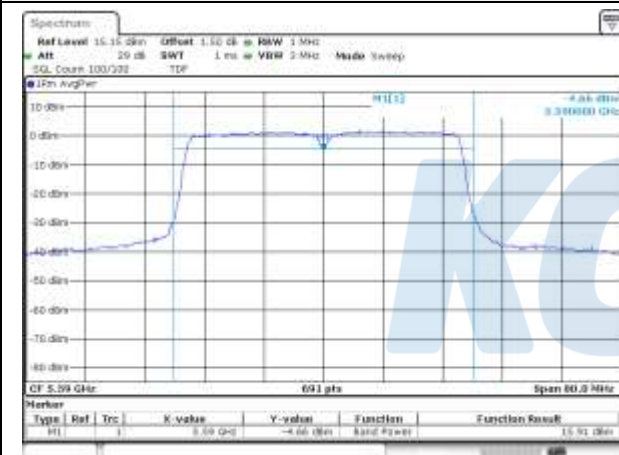
## UNII-2C / 802.11ac VHT40 / 5 510 MHz



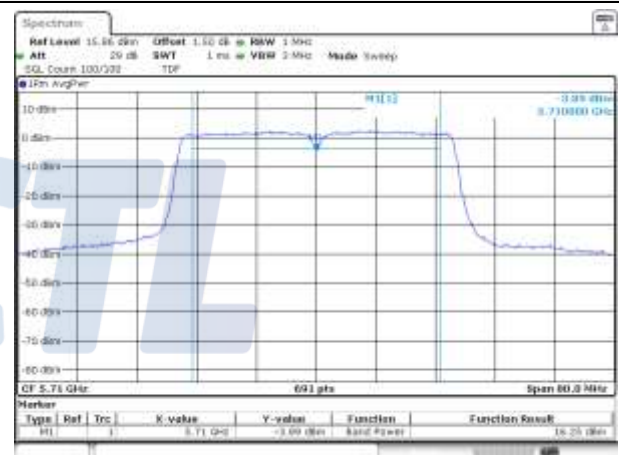
## UNII-2C / 802.11ac VHT40 / 5 670 MHz



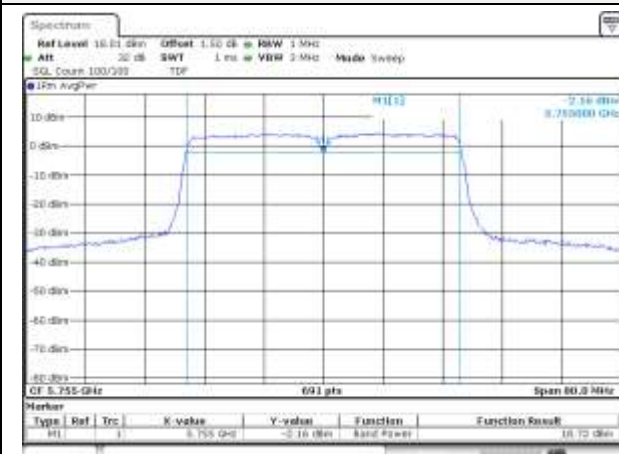
## UNII-2C / 802.11ac VHT40 / 5 590 MHz



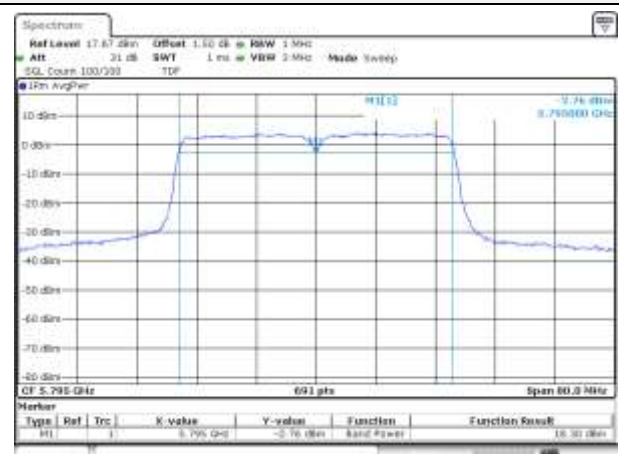
## UNII-2C / 802.11ac VHT40 / 5 710 MHz



## UNII-3 / 802.11ac VHT40 / 5 755 MHz



## UNII-3 / 802.11ac VHT40 / 5 795 MHz



# KCTL Inc.

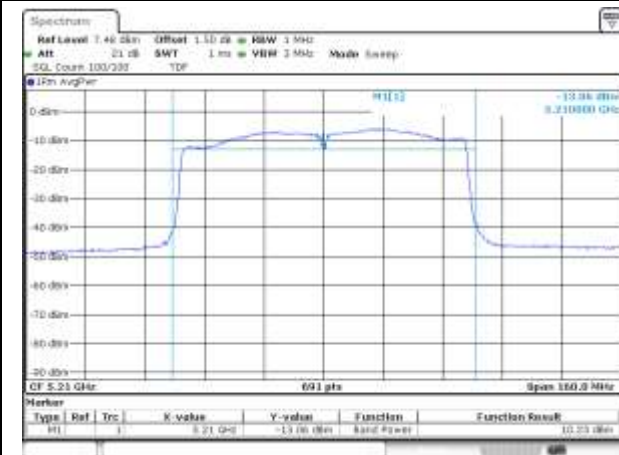
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
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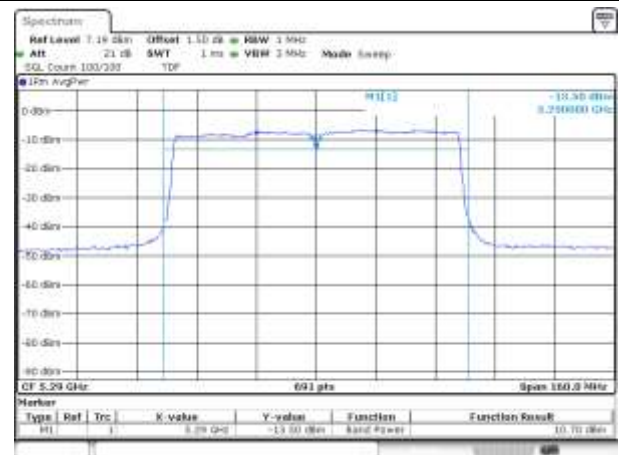
Page (134) of (1046)



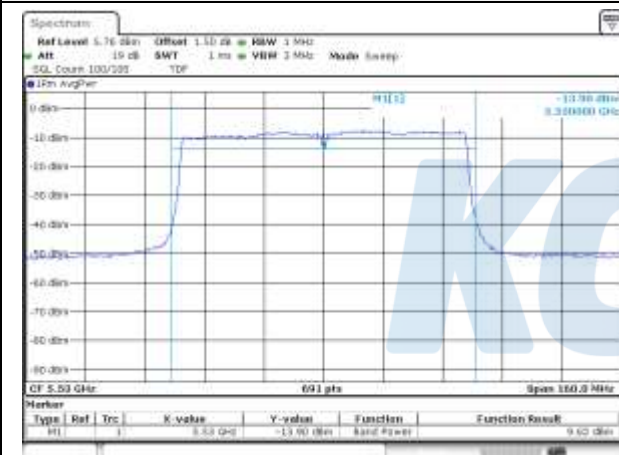
## UNII-1 / 802.11ac VHT80 / 5 210 MHz



## UNII-2A / 802.11ac VHT80 / 5 290 MHz



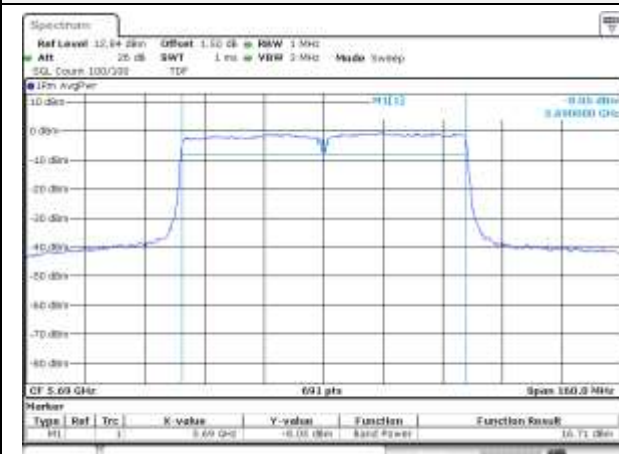
## UNII-2C / 802.11ac VHT80 / 5 530 MHz



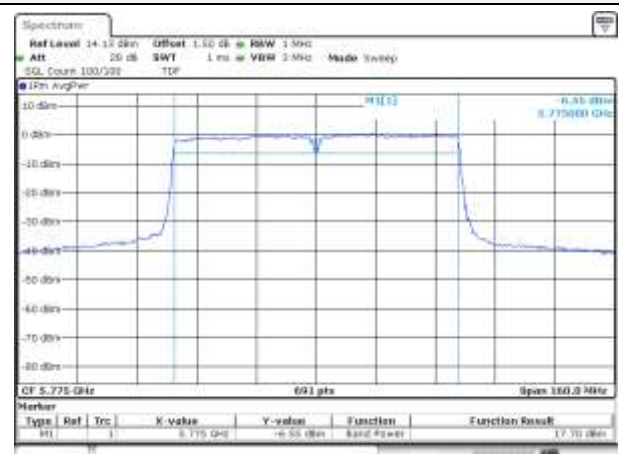
## UNII-2C / 802.11ac VHT80 / 5 610 MHz



## UNII-2C / 802.11ac VHT80 / 5 690 MHz

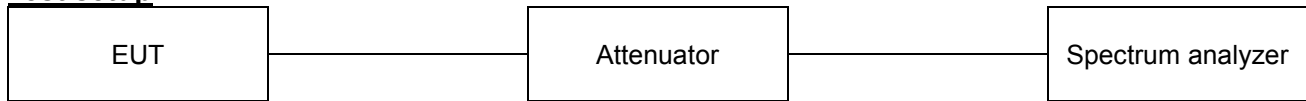


## UNII-3 / 802.11ac VHT80 / 5 775 MHz



## 7.2. Maximum Power Spectral Density

### Test setup



### Limit

According to §15.407(a)

Band	EUT category		Limit
UNII-1	√	Outdoor access point	17 dBm/MHz
		Indoor access point	
		Fixed point-to-point access point	11 dBm/MHz
		Client device	
UNII-2A		√	11 dBm/MHz
UNII-2C		√	11 dBm/MHz
UNII-3		√	30 dBm/500 kHz

### Notes:

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain if the antenna exceed 6 dBi

### Test procedure

KDB 789033 D02 v02r01 - Section F  
 KDB 662911 D01 v02r01 - Section E). 2)  
 ANSI C63.10-2013

### Test settings

#### Section F

The rules requires “maximum power spectral density” measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission. Refer to III.A for additional guidance for devices that use channel aggregation.

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power...” (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
2. Search function on the instrument to find the peak of the spectrum and record its value.
3. Adjustments to the peak value of the spectrum, if applicable:
  - a) If Method SA-2 or SA-2 Alternative was used, add  $10 \log(1/x)$ , where  $x$  is the duty cycle, to the peak of the spectrum.
  - b) If Method SA-3 Alternative was used and the linear mode was used in II.E.2.g) (viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1 MHz reference bandwidth
5. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the



preceding procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set  $RBW \geq 1/T$ , where T is defined in II.B.I.a).
- b) Set  $VBW \geq 3 RBW$ .
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10 \log (500 \text{ kHz} / RBW)$  to the measured result, whereas  $RBW (< 500 \text{ kHz})$  is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add  $10 \log (1 \text{ MHz} / RBW)$  to the measured result, whereas  $RBW (< 1 \text{ MHz})$  is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

**Notes:**

1. As a practical matter, it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) and II.F.5.d), since  $RBW = 100 \text{ kHz}$  is available on nearly all spectrum analyzers.

**Test results**

**SISO**

Test mode	Band	Frequency (MHz)	Maximum Power Spectral Density											
			Reading ANT 0 (dBm/MHz)	Reading ANT 1 (dBm/MHz)	Reading ANT 2 (dBm/MHz)	Reading ANT 3 (dBm/MHz)	DCCF (dB)	Result ANT 0 (dBm/MHz) <sup>(1)</sup>	Result ANT 1 (dBm/MHz) <sup>(1)</sup>	Result ANT 2 (dBm/MHz) <sup>(1)</sup>	Result ANT 3 (dBm/MHz) <sup>(1)</sup>	Limit (dBm/MHz)		
11a	UNII 1	5 180	4.09	6.29	5.44	6.03	0.22	4.31	6.51	5.66	6.25	15.00		
		5 220	4.21	8.32	8.01	8.54		4.43	8.54	8.23	8.76			
		5 240	4.61	8.71	8.45	8.71		4.83	8.93	8.67	8.93			
	UNII 2A	5 260	5.03	8.60	7.13	8.66		5.25	8.82	7.35	8.88	9.01		
		5 300	2.49	8.58	7.10	8.13		2.71	8.80	7.32	8.35			
		5 320	3.85	6.28	7.17	6.46		4.07	6.50	7.39	6.68			
	UNII 2C	5 500	4.19	4.10	4.51	1.82		4.41	4.32	4.73	2.04	9.04		
		5 600	5.41	8.51	8.57	7.47		5.63	8.73	8.79	7.69			
		5 700	8.27	7.65	6.77	7.51		8.49	7.87	6.99	7.73			
	Straddle	5 720	8.23	7.49	7.80	6.90		8.45	7.71	8.02	7.12			
11n HT20	UNII 1	5 180	3.91	5.62	5.49	5.25	0.22	4.13	5.84	5.71	5.47	15.00		
		5 220	4.20	8.11	7.48	8.18		4.42	8.33	7.70	8.40			
		5 240	3.97	8.43	7.91	8.47		4.19	8.65	8.13	8.69			
	UNII 2A	5 260	4.59	8.49	6.89	8.40		4.81	8.71	7.11	8.62	9.01		
		5 300	3.46	8.63	6.89	7.86		3.68	8.85	7.11	8.08			
		5 320	3.56	6.10	6.75	6.35		3.78	6.32	6.97	6.57			
	UNII 2C	5 500	3.82	3.16	3.90	1.62		4.04	3.38	4.12	1.84	9.04		
		5 600	4.56	8.35	8.56	7.31		4.78	8.57	8.78	7.53			
		5 700	7.94	7.41	5.63	7.10		8.16	7.63	5.85	7.32			
	Straddle	5 720	4.13	5.84	5.71	5.47		7.78	7.71	7.81	6.78			
11n HT40	UNII 1	5 190	-0.50	-3.04	-1.49	-1.88	0.44	-0.06	-2.60	-1.05	-1.44	15.00		
		5 230	4.27	3.87	4.18	4.41		4.71	4.31	4.62	4.85			
	UNII 2A	5 270	3.60	4.45	2.99	4.13		4.04	4.89	3.43	4.57	9.01		
		5 310	0.60	-1.54	-0.83	-2.44		1.04	-1.10	-0.39	-2.00			
	UNII 2C	5 510	0.02	-0.42	0.18	-2.05		0.46	0.02	0.62	-1.61	9.04		
		5 590	3.31	2.70	3.28	1.99		3.75	3.14	3.72	2.43			
		5 670	3.56	3.32	3.78	2.51		4.00	3.76	4.22	2.95			
	Straddle	5 710	3.44	2.85	3.85	2.43		3.88	3.29	4.29	2.87			
	11ac VHT20	UNII 1	5 180	3.76	5.58	5.86		5.82	-	3.76	5.58	5.86	5.82	15.00
			5 220	4.15	8.37	7.84		8.49		4.15	8.37	7.84	8.49	
5 240			4.42	8.51	8.31	8.80	4.42	8.51		8.31	8.80			
UNII 2A		5 260	5.36	8.76	7.03	8.40	5.36	8.76		7.03	8.40	9.01		
		5 300	3.59	8.78	7.27	8.32	3.59	8.78		7.27	8.32			
		5 320	3.45	5.97	6.89	6.49	3.45	5.97		6.89	6.49			
UNII 2C		5 500	3.76	3.69	4.14	1.97	3.76	3.69		4.14	1.97	9.04		
		5 600	5.89	8.61	8.74	7.76	5.89	8.61		8.74	7.76			

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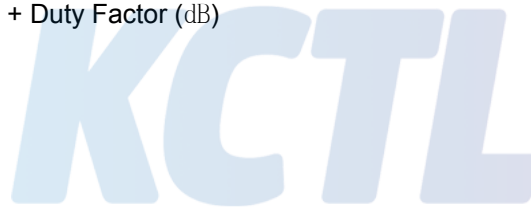
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		5 700	7.27	7.18	6.24	7.11		7.27	7.18	6.24	7.11	
	Straddle	5 720	7.50	7.77	8.02	6.79		7.50	7.77	8.02	6.79	
11ac VHT40	UNII 1	5 190	-0.28	-2.83	-1.05	-1.72	0.13	-0.15	-2.70	-0.92	-1.59	15.00
		5 230	4.76	4.40	4.29	4.54		4.89	4.53	4.42	4.67	
	UNII 2A	5 270	3.50	4.67	3.32	4.25		3.63	4.80	3.45	4.38	9.01
		5 310	0.86	-1.47	-0.54	-2.18		0.99	-1.34	-0.41	-2.05	
	UNII 2C	5 510	0.93	-0.35	0.46	-1.62		1.06	-0.22	0.59	-1.49	9.04
		5 590	3.34	2.94	3.59	2.37		3.47	3.07	3.72	2.50	
		5 670	3.81	3.50	3.90	3.05		3.94	3.63	4.03	3.18	
	Straddle	5 710	3.43	3.06	3.51	2.82		3.56	3.19	3.64	2.95	
11ac VHT80	UNII 1	5 210	-3.29	-4.57	-4.25	-3.80	0.27	-3.02	-4.30	-3.98	-3.53	15.00
	UNII 2A	5 290	-4.09	-5.76	-5.70	-5.75		-3.82	-5.49	-5.43	-5.48	9.01
	UNII 2C	5 530	-3.87	-6.19	-5.18	-6.38		-3.60	-5.92	-4.91	-6.11	9.04
		5 610	0.70	0.58	0.94	-0.19		0.97	0.85	1.21	0.08	
	Straddle	5 690	0.76	0.17	0.46	-0.17		1.03	0.44	0.73	0.10	

**Note.**

1. Result(dBm) = Reading (dBm) + Duty Factor (dB)



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**4TX MIMO**

Test mode	Band	Frequency (MHz)	Maximum Power Spectral Density					DCCF (dB)	Result 4TX MIMO (dBm/MHz) <sup>1)</sup>	Limit (dBm/MHz)
			Reading ANT 0 (dBm/MHz)	Reading ANT 1 (dBm/MHz)	Reading ANT 2 (dBm/MHz)	Reading ANT 3 (dBm/MHz)				
11a	UNII 1	5 180	3.92	3.16	3.02	3.00	0.22	9.53	15.00	
		5 220	4.26	3.77	3.52	3.86		10.10		
		5 240	4.57	4.67	4.19	4.59		10.75		
	UNII 2A	5 260	2.36	2.61	2.44	1.71		8.53	9.01	
		5 300	2.47	2.22	2.69	1.92		8.58		
		5 320	2.32	1.53	2.11	1.80		8.19		
	UNII 2C	5 500	2.70	2.02	2.66	1.24		8.43	9.04	
		5 600	2.61	2.19	2.36	1.77		8.48		
		5 700	2.78	1.73	2.49	1.68		8.44		
	Straddle	5 720	2.71	2.15	2.24	1.48		8.41		
11n HT20	UNII 1	5 180	3.23	3.26	2.52	2.74	0.22	9.19	15.00	
		5 220	3.23	3.59	2.71	3.14		9.42		
		5 240	3.80	3.54	3.02	3.45		9.70		
	UNII 2A	5 260	2.35	2.46	2.74	1.80		8.59	9.01	
		5 300	2.41	2.20	2.66	1.81		8.52		
		5 320	2.20	2.28	1.94	1.59		8.25		
	UNII 2C	5 500	2.54	1.62	2.33	0.88		8.13	9.04	
		5 600	2.33	2.35	2.59	1.84		8.53		
		5 700	2.32	2.24	2.67	1.09		8.36		
	Straddle	5 720	8.59	8.59	8.59	8.59		8.21		
11n HT40	UNII 1	5 190	-5.33	-4.85	-4.61	-4.74	0.44	1.58	15.00	
		5 230	3.61	3.54	3.08	3.88		9.99		
	UNII 2A	5 270	2.34	1.29	1.74	2.34		8.41	9.01	
		5 310	-3.35	-3.86	-2.81	-3.42		3.11		
	UNII 2C	5 510	-1.96	-2.80	-1.60	-3.07		4.14	9.04	
		5 590	2.74	1.40	2.01	1.47		8.39		
		5 670	2.42	2.02	2.22	1.89		8.60		
	Straddle	5 710	2.38	1.73	2.64	1.66		8.58		
11ac VHT20	UNII 1	5 180	3.28	3.04	2.76	2.74	-	8.98	15.00	
		5 220	3.68	4.00	3.20	3.51		9.63		
		5 240	3.60	3.67	3.94	3.59		9.72		
	UNII 2A	5 260	2.37	2.35	2.89	2.36		8.52	9.01	
		5 300	2.65	2.34	3.01	2.22		8.59		
		5 320	2.63	1.97	2.66	1.76		8.29		
	UNII 2C	5 500	2.50	1.55	2.57	1.25		8.03	9.04	
		5 600	2.82	2.47	2.59	1.51		8.40		

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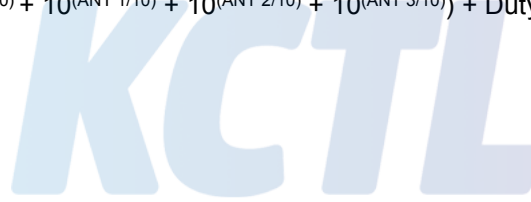
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		5 700	2.40	2.33	2.60	1.31		8.21	
	Straddle	5 720	2.13	2.38	2.74	1.10		8.15	
11ac VHT40	UNII 1	5 190	-5.24	-4.81	-4.15	-4.58	0.13	1.48	15.00
		5 230	3.78	3.46	3.42	4.41		9.94	
	UNII 2A	5 270	2.61	1.39	2.52	2.50		8.43	9.01
		5 310	-3.46	-3.67	-2.51	-2.91		3.04	
	UNII 2C	5 510	-2.32	-2.65	-1.71	-2.81		3.80	9.04
		5 590	2.09	1.79	2.35	2.19		8.27	
		5 670	2.86	2.28	2.59	2.24		8.65	
	Straddle	5 710	2.49	1.91	2.52	2.32		8.47	
11ac VHT80	UNII 1	5 210	-8.18	-7.78	-7.97	-5.74	0.27	-1.01	15.00
	UNII 2A	5 290	-6.76	-7.16	-7.13	-6.54		-0.60	9.01
	UNII 2C	5 530	-6.76	-7.90	-7.42	-7.62		-1.11	9.04
		5 610	0.55	0.00	0.14	-0.40		6.38	
	Straddle	5 690	0.41	0.31	0.56	-0.38		6.53	

**Note.**

1. Result(dBm) =  $10\log(10^{(\text{ANT } 0/10)} + 10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)} + 10^{(\text{ANT } 3/10)}) + \text{Duty Factor (dB)}$



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**SISO**

Test mode	Band	Frequency (MHz)	Maximum Power Spectral Density									
			Reading ANT 0 (dBm/500 kHz)	Reading ANT 1 (dBm/500 kHz)	Reading ANT 2 (dBm/500 kHz)	Reading ANT 3 (dBm/500 kHz)	DCCF (dB)	Result ANT 0 (dBm/500 kHz) <sup>1)</sup>	Result ANT 1 (dBm/500 kHz) <sup>1)</sup>	Result ANT 2 (dBm/500 kHz) <sup>1)</sup>	Result ANT 3 (dBm/500 kHz) <sup>1)</sup>	Limit (dBm/500 kHz)
11a	UNII 3	5 745	5.32	6.36	6.71	5.97	0.22	5.54	6.58	6.93	6.19	28.12
		5 785	5.57	6.32	6.41	5.68		5.79	6.54	6.63	5.90	
		5 825	6.46	6.37	6.36	5.57		6.68	6.59	6.58	5.79	
11n HT20	UNII 3	5 745	5.11	6.02	6.39	5.75	0.22	5.33	6.24	6.61	5.97	28.12
		5 785	5.74	5.86	6.29	5.44		5.96	6.08	6.51	5.66	
		5 825	5.79	6.13	5.94	5.71		6.01	6.35	6.16	5.93	
11n HT40	UNII 3	5 755	2.30	2.27	2.52	1.32	0.44	2.74	2.71	2.96	1.76	28.12
		5 795	2.44	2.10	2.27	1.03		2.88	2.54	2.71	1.47	
11ac VHT20	UNII 3	5 745	5.07	6.23	6.63	5.89	-	5.07	6.23	6.63	5.89	28.12
		5 785	5.97	6.00	6.51	5.44		5.97	6.00	6.51	5.44	
		5 825	5.94	6.18	6.29	5.60		5.94	6.18	6.29	5.60	
11ac VHT40	UNII 3	5 755	2.44	2.19	2.34	1.06	0.13	2.57	2.32	2.47	1.19	28.12
		5 795	2.37	2.27	2.35	1.01		2.50	2.40	2.48	1.14	
11ac VHT80	UNII 3	5 775	-3.29	-4.57	-4.25	-3.80	0.27	-3.02	-4.30	-3.98	-3.53	28.12

**Note.**

1. Result(dBm) = Reading (dBm) + Duty Factor (dB)

**4TX MIMO**

Test mode	Band	Frequency (MHz)	Maximum Power Spectral Density						
			Reading ANT 0 (dBm/500 kHz)	Reading ANT 1 (dBm/500 kHz)	Reading ANT 2 (dBm/500 kHz)	Reading ANT 3 (dBm/500 kHz)	DCCF (dB)	Result 4TX MIMO (dBm/500 kHz) <sup>1)</sup>	Limit (dBm/500 kHz)
11a	UNII 3	5 745	4.92	4.44	4.75	4.31	0.22	10.85	28.12
		5 785	5.77	5.06	5.47	4.83		11.54	
		5 825	5.79	5.57	5.49	5.13		11.74	
11n HT20	UNII 3	5 745	4.56	4.84	5.03	4.08	0.22	10.88	28.12
		5 785	5.47	5.20	5.49	4.32		11.39	
		5 825	5.28	4.86	5.06	4.71		11.22	
11n HT40	UNII 3	5 755	1.56	1.65	2.00	1.22	0.44	8.07	28.12
		5 795	1.51	1.61	1.94	1.02		7.99	
11ac VHT20	UNII 3	5 745	5.10	5.36	5.54	4.44	-	11.15	28.12
		5 785	5.25	5.29	5.39	4.24		11.09	
		5 825	5.93	5.31	5.52	4.56		11.38	
11ac VHT40	UNII 3	5 755	1.89	1.87	2.08	1.73	0.13	8.05	28.12
		5 795	1.99	2.01	1.97	1.46		8.02	
11ac VHT80	UNII 3	5 775	-1.71	-1.87	-2.15	-2.52	0.27	4.24	28.12

**Note.**

1. Result(dBm) = 10log(10<sup>(ANT 0/10)</sup> + 10<sup>(ANT 1/10)</sup> + 10<sup>(ANT 2/10)</sup> + 10<sup>(ANT 3/10)</sup>) + Duty Factor (dB)

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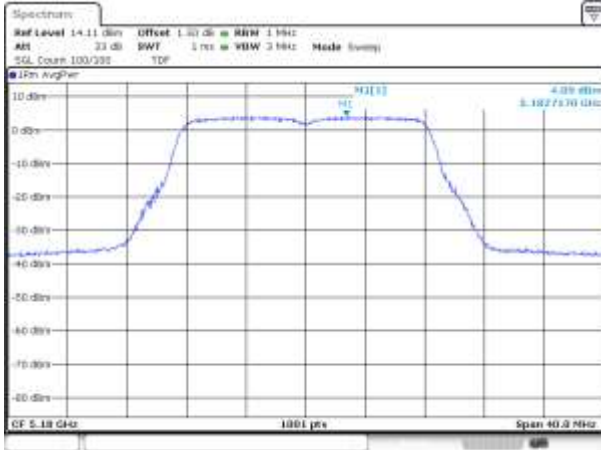
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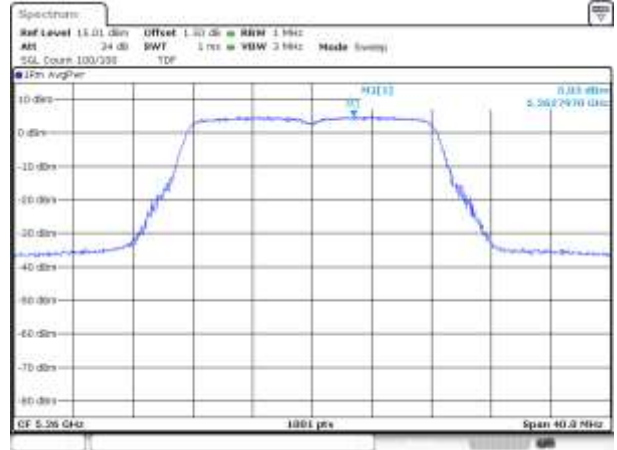


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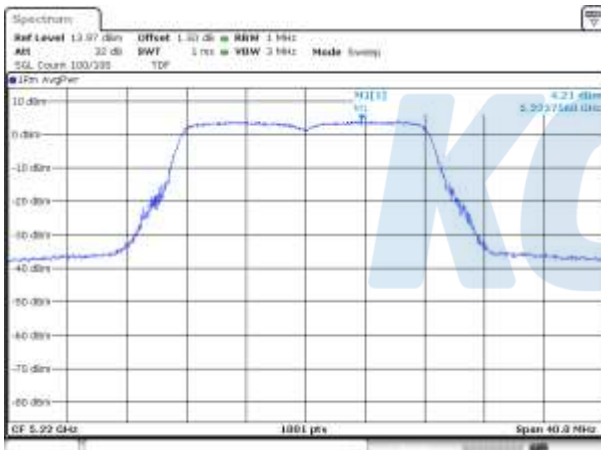
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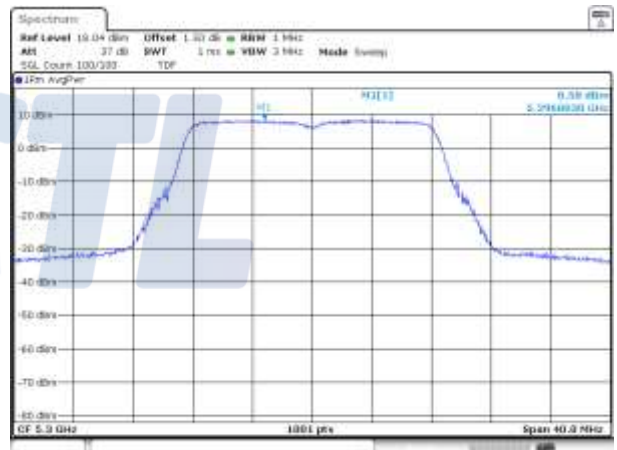
UNII-2A / 802.11a / 5 260 MHz



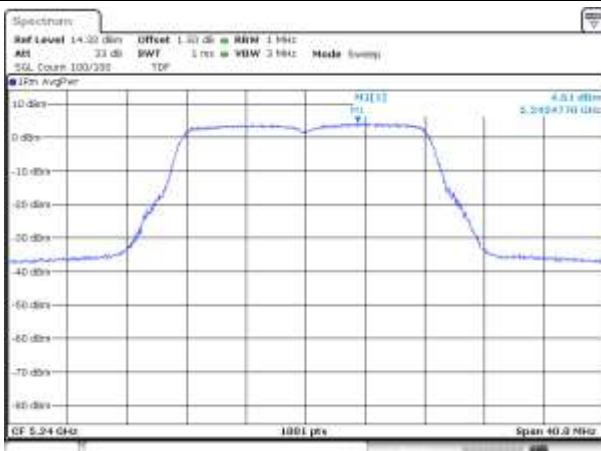
UNII-1 / 802.11a / 5 220 MHz



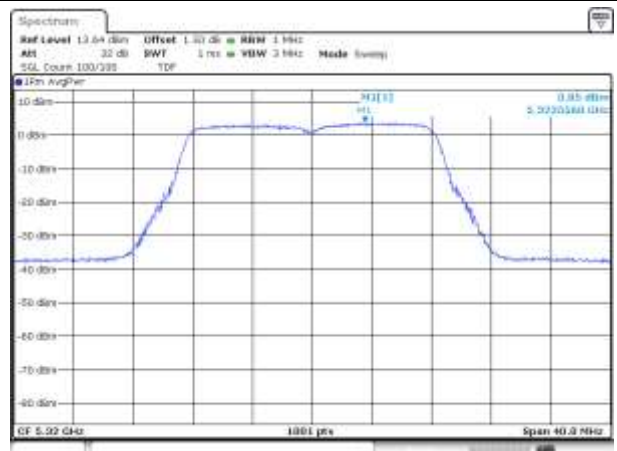
UNII-2A / 802.11a / 5 300 MHz



UNII-1 / 802.11a / 5 240 MHz



UNII-2A / 802.11a / 5 320 MHz



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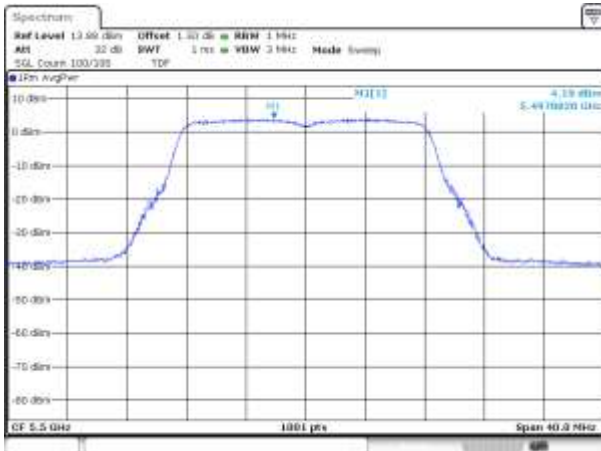
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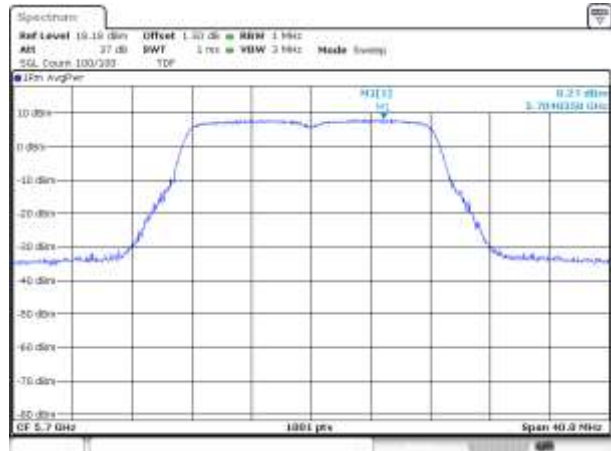
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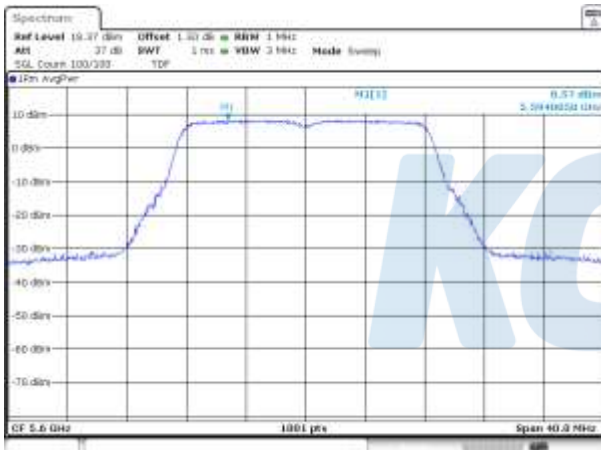
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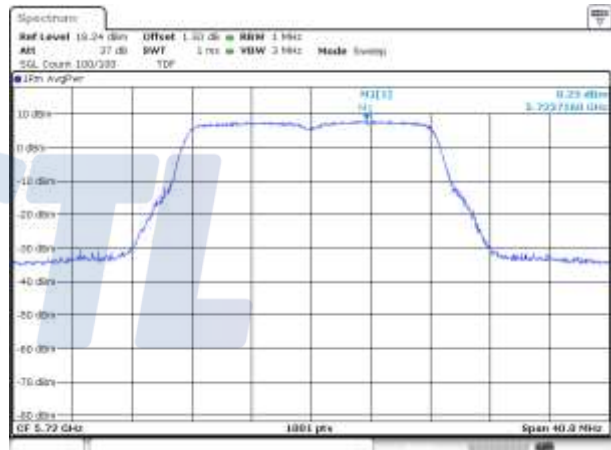
## UNII-2C / 802.11a / 5 700 MHz



## UNII-2C / 802.11a / 5 600 MHz



## UNII-2C / 802.11a / 5 720 MHz





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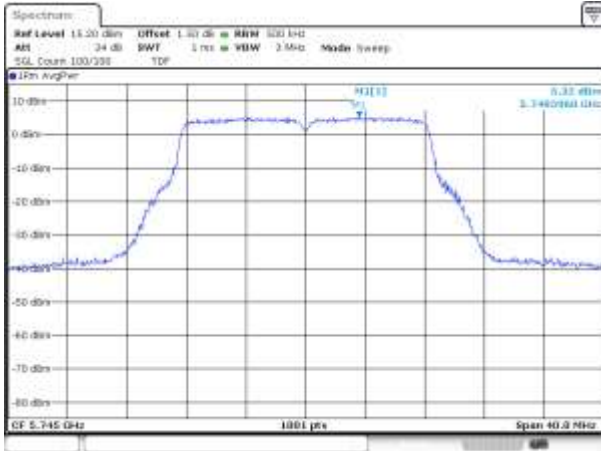
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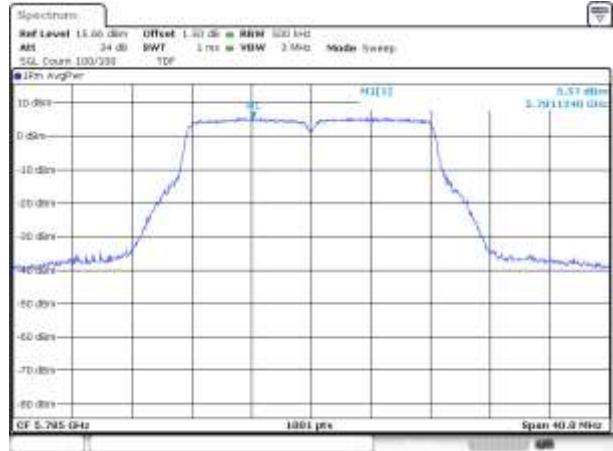
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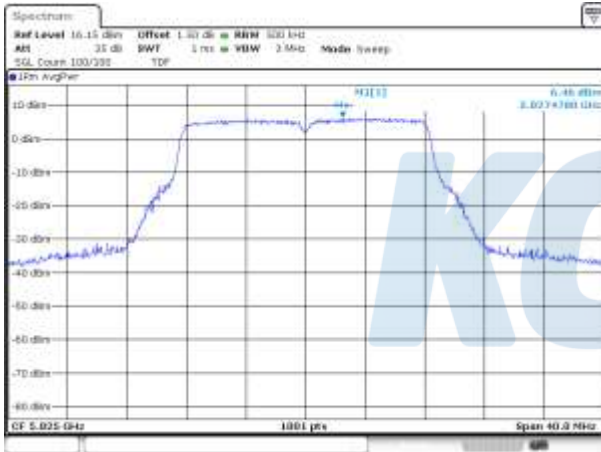
## UNII-3 / 802.11a / 5 745 MHz



## UNII-3 / 802.11a / 5 785 MHz



## UNII-3 / 802.11a / 5 825 MHz



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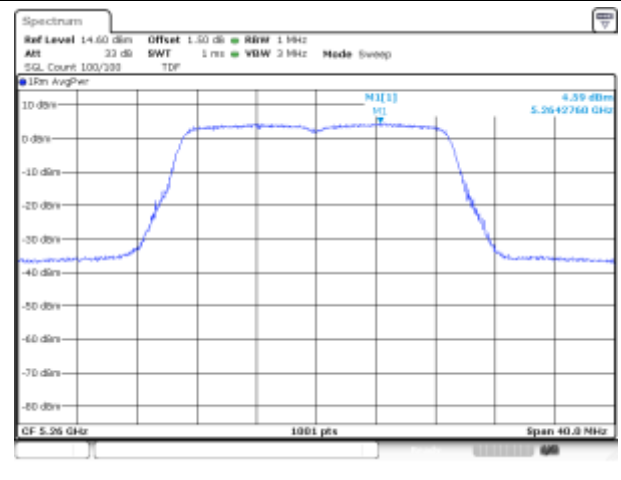
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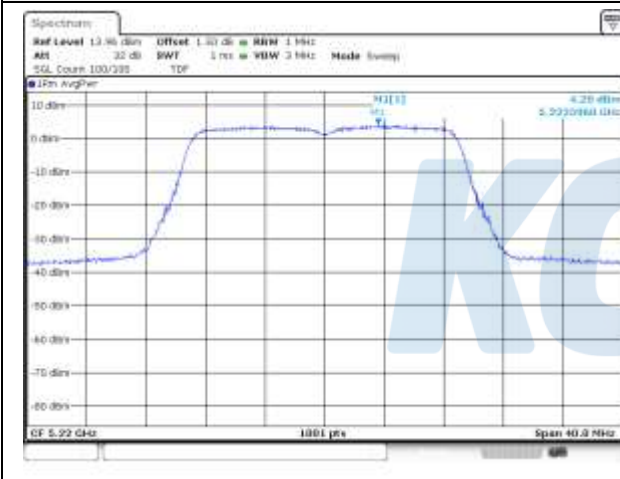
UNII-1 / 802.11n HT20 / 5 180 MHz



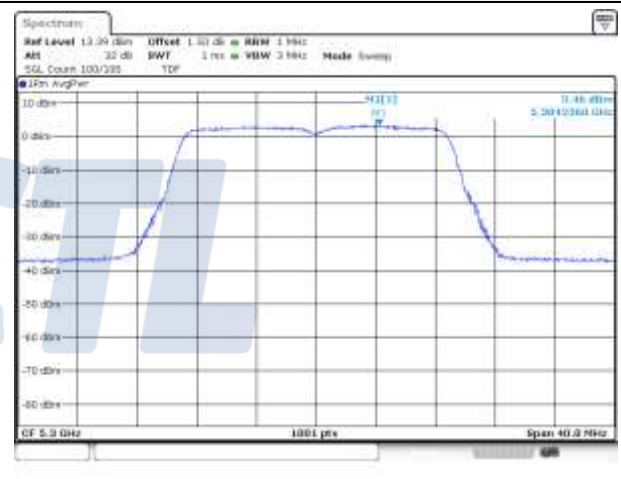
UNII-2A / 802.11n HT20 / 5 260 MHz



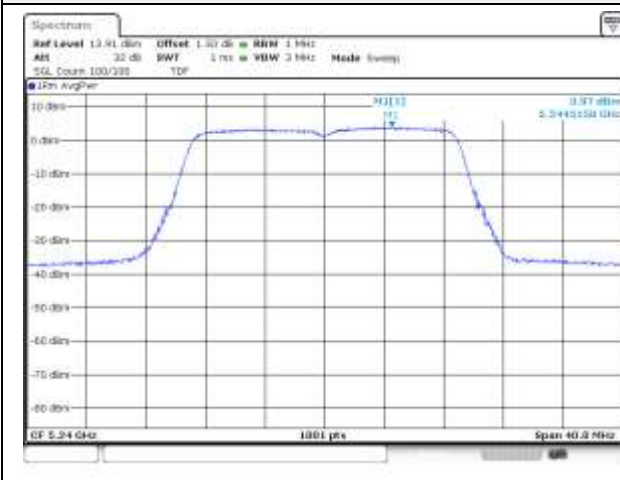
UNII-1 / 802.11n HT20 / 5 220 MHz



UNII-2A / 802.11n HT20 / 5 300 MHz



UNII-1 / 802.11n HT20 / 5 240 MHz



UNII-2A / 802.11n HT20 / 5 320 MHz



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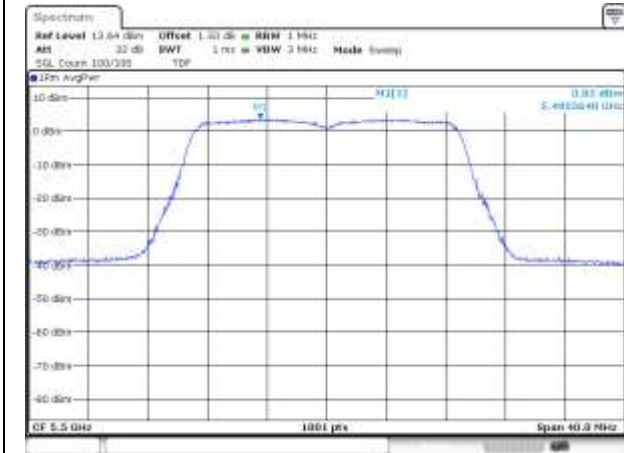
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

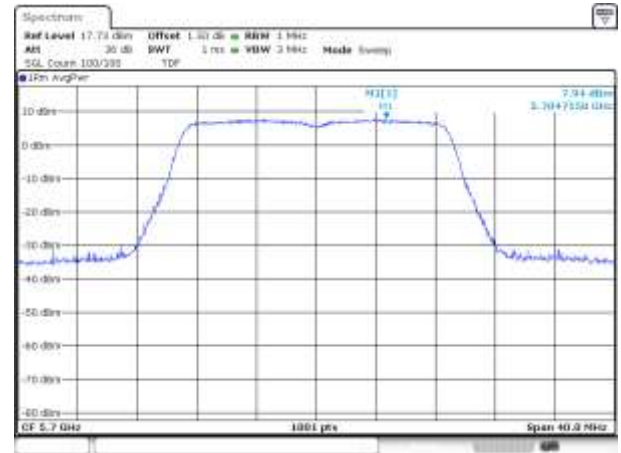
Page (146) of (1046)



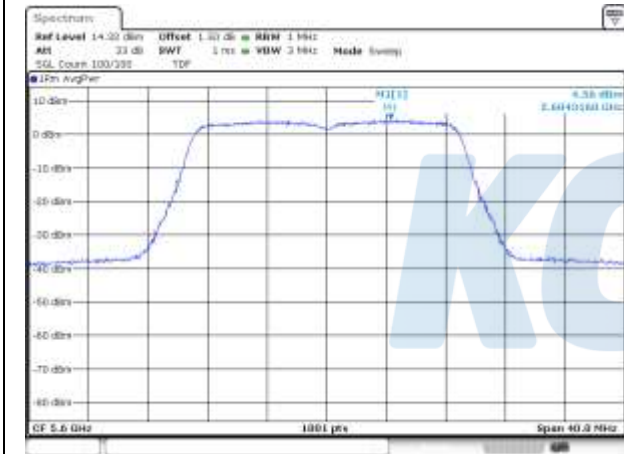
## UNII-2C / 802.11n HT20 / 5 500 MHz



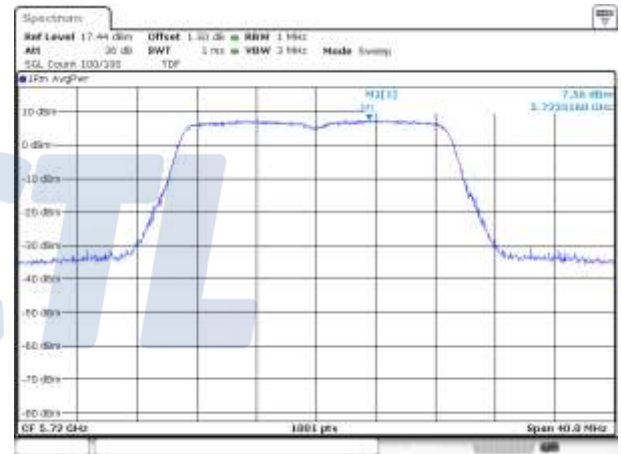
## UNII-2C / 802.11n HT20 / 5 700 MHz



## UNII-2C / 802.11n HT20 / 5 600 MHz



## UNII-2C / 802.11n HT20 / 5 720 MHz



# KCTL Inc.

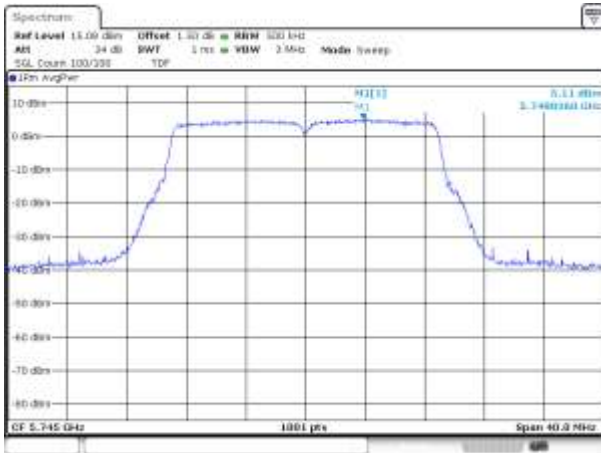
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

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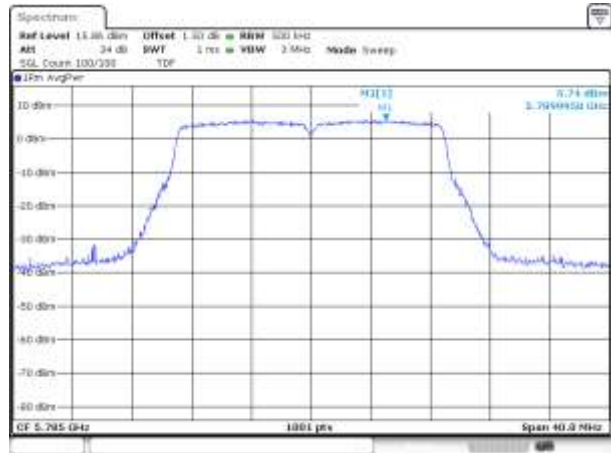
Page (147) of (1046)



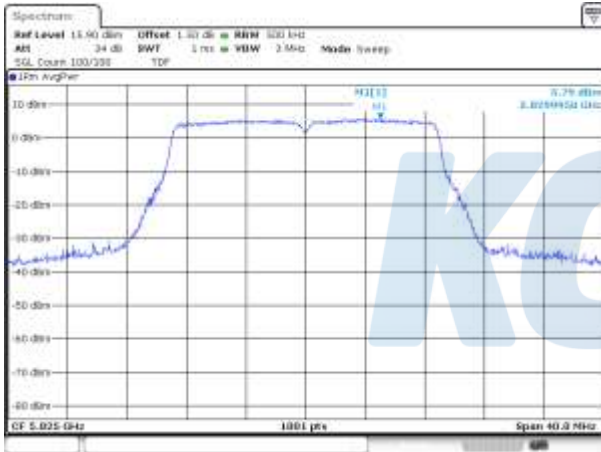
UNII-3 / 802.11n HT20 / 5 745 MHz



UNII-3 / 802.11n HT20 / 5 785 MHz



UNII-3 / 802.11n HT20 / 5 825 MHz



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# KCTL Inc.

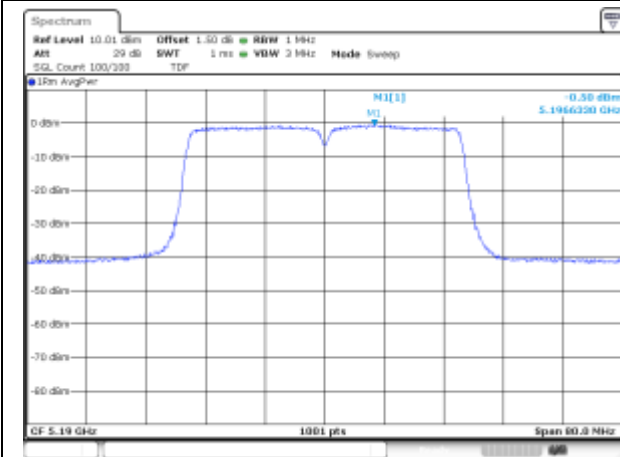
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

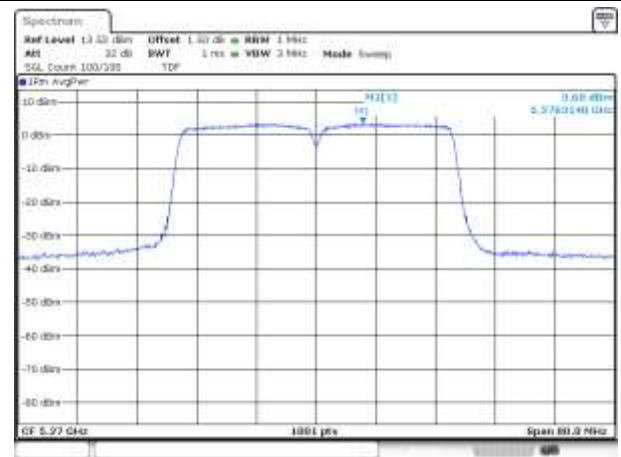
Page (148) of (1046)



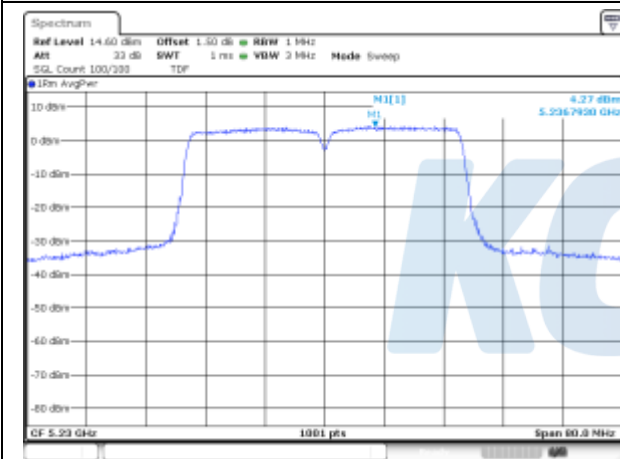
UNII-1 / 802.11n HT40 / 5 190 MHz



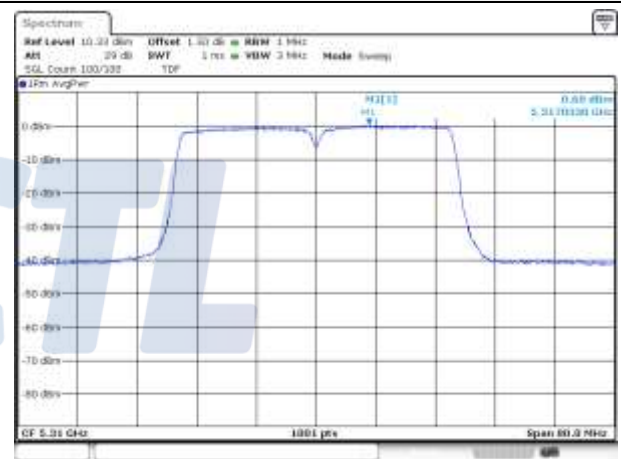
UNII-2A / 802.11n HT40 / 5 270 MHz



UNII-1 / 802.11n HT40 / 5 230 MHz



UNII-2A / 802.11n HT40 / 5 310 MHz



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KR20-SRF0030-D

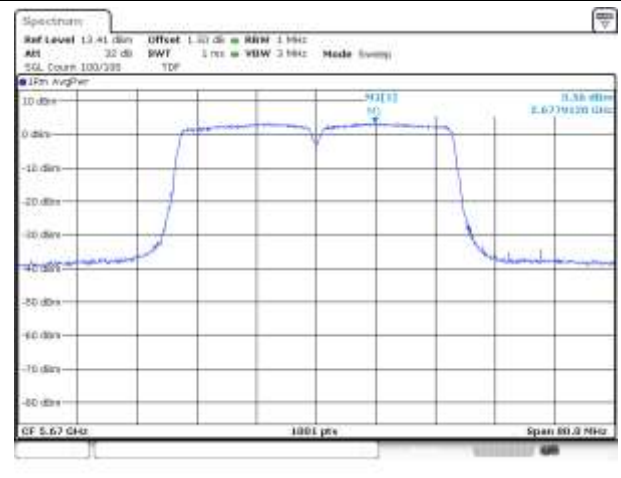
Page (149) of (1046)



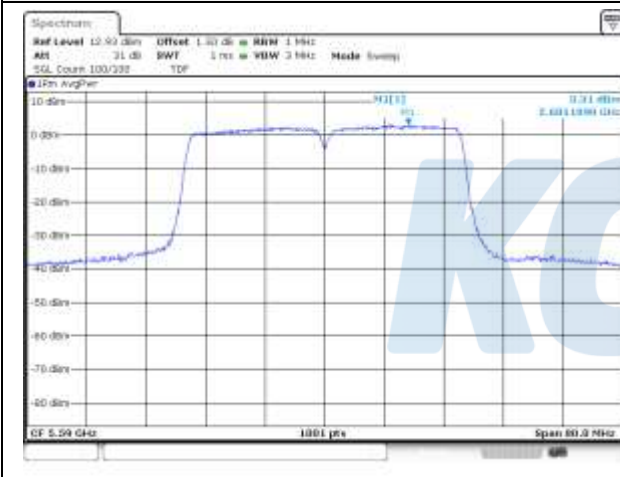
UNII-2C / 802.11n HT40 / 5 510 MHz



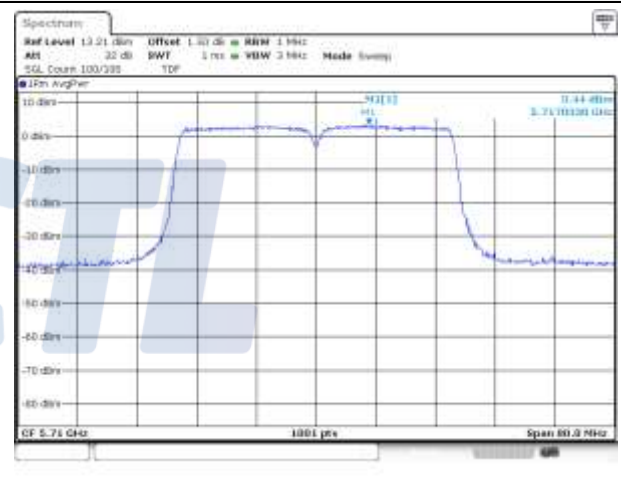
UNII-2C / 802.11n HT40 / 5 670 MHz



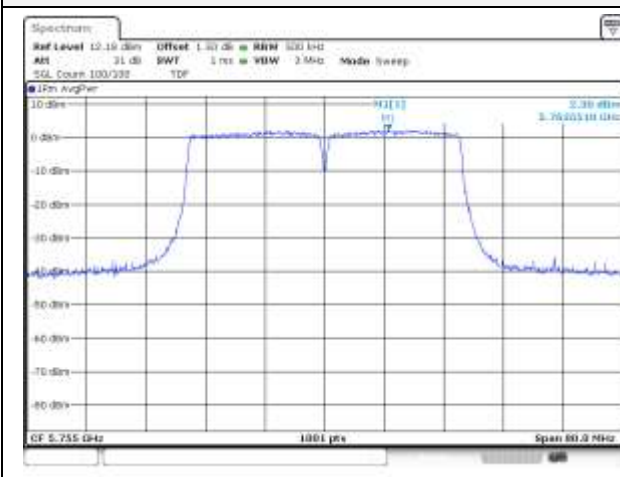
UNII-2C / 802.11n HT40 / 5 590 MHz



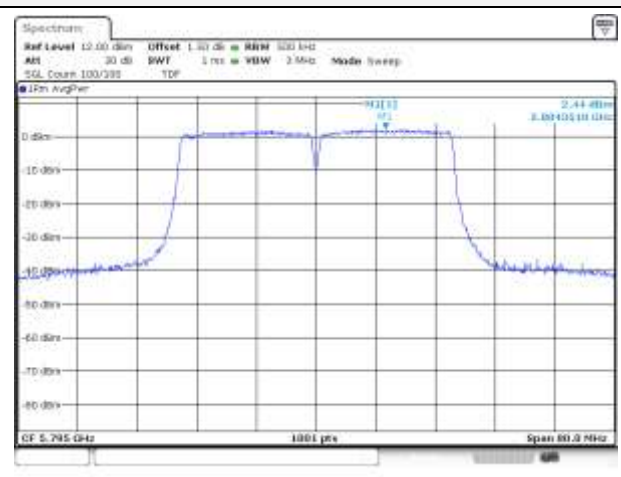
UNII-2C / 802.11n HT40 / 5 710 MHz



UNII-3 / 802.11n HT40 / 5 755 MHz



UNII-3 / 802.11n HT40 / 5 795 MHz



# KCTL Inc.

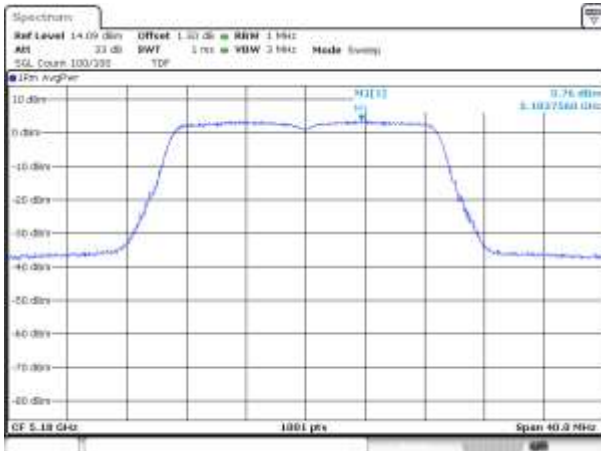
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

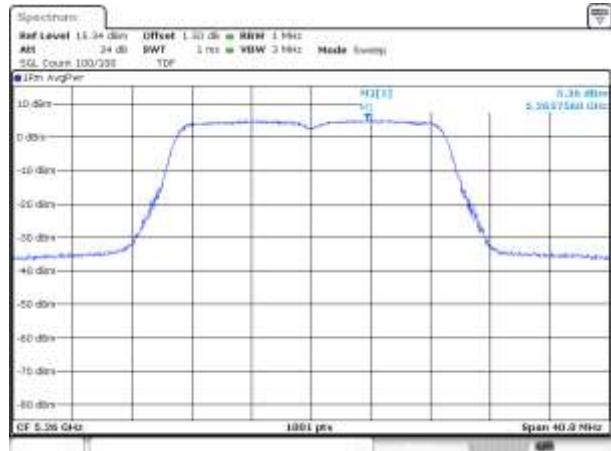
Page (150) of (1046)



## UNII-1 / 802.11ac VHT20 / 5 180 MHz



## UNII-2A / 802.11ac VHT20 / 5 260 MHz



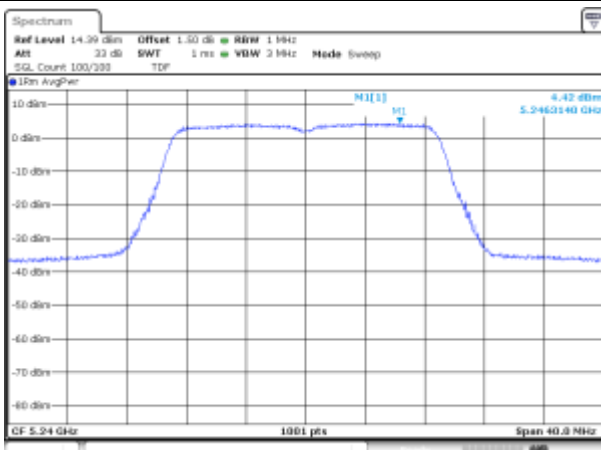
## UNII-1 / 802.11ac VHT20 / 5 220 MHz



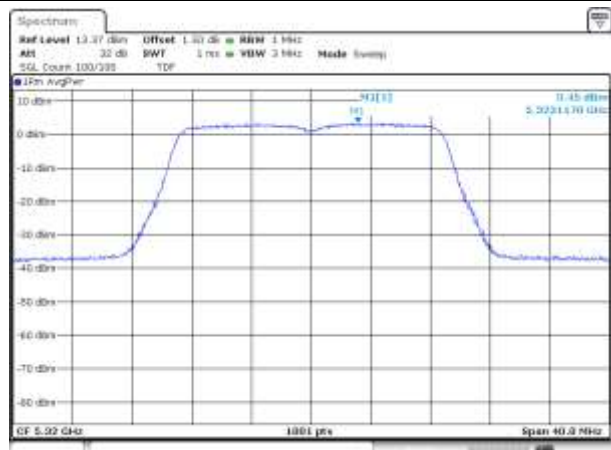
## UNII-2A / 802.11ac VHT20 / 5 300 MHz



## UNII-1 / 802.11ac VHT20 / 5 240 MHz



## UNII-2A / 802.11ac VHT20 / 5 320 MHz



# KCTL Inc.

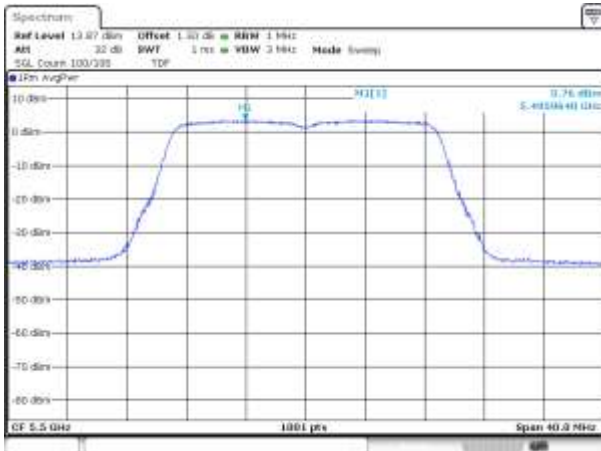
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

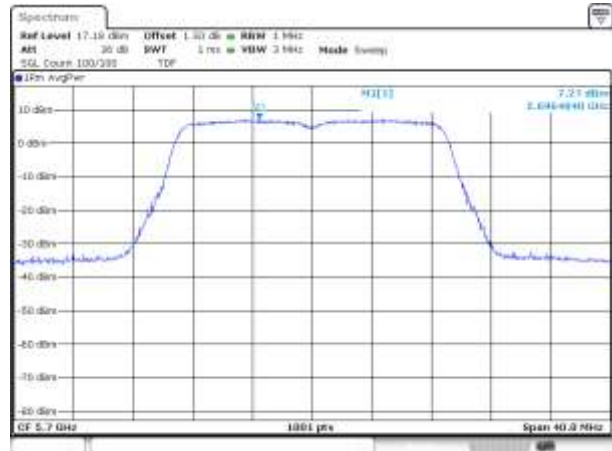
Page (151) of (1046)



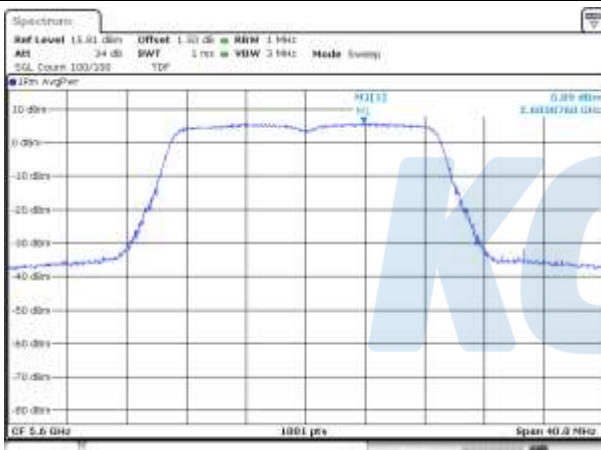
## UNII-2C / 802.11ac VHT20 / 5 500 MHz



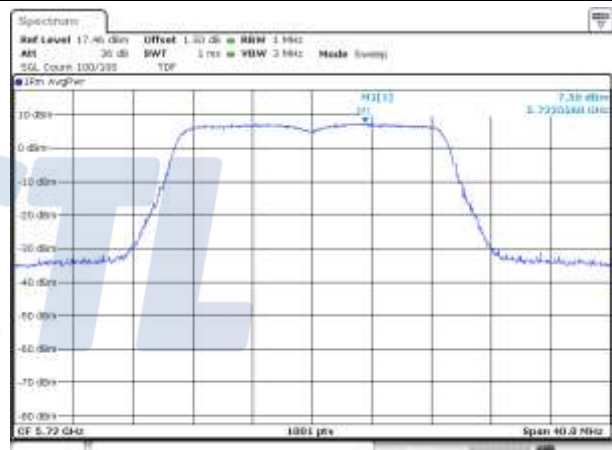
## UNII-2C / 802.11ac VHT20 / 5 700 MHz



## UNII-2C / 802.11ac VHT20 / 5 600 MHz



## UNII-2C / 802.11ac VHT20 / 5 720 MHz





# KCTL Inc.

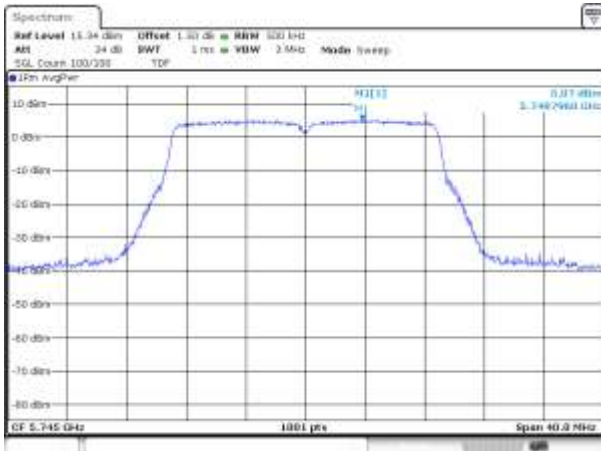
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

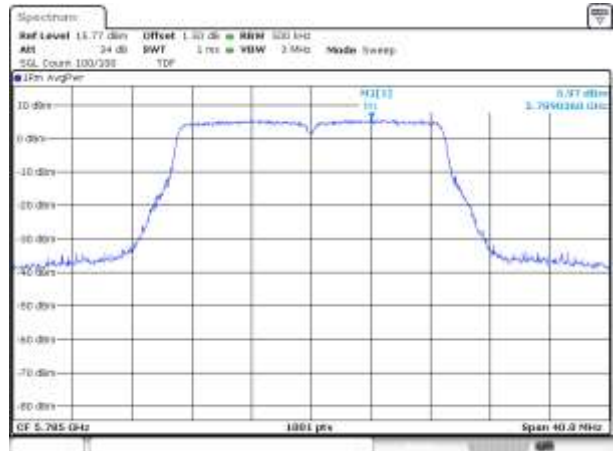
Page (152) of (1046)



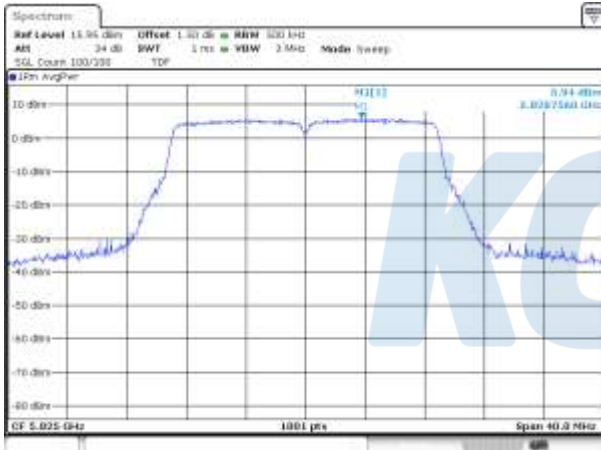
## UNII-3 / 802.11ac VHT20 / 5 745 MHz



## UNII-3 / 802.11ac VHT20 / 5 785 MHz



## UNII-3 / 802.11ac VHT20 / 5 825 MHz



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# KCTL Inc.

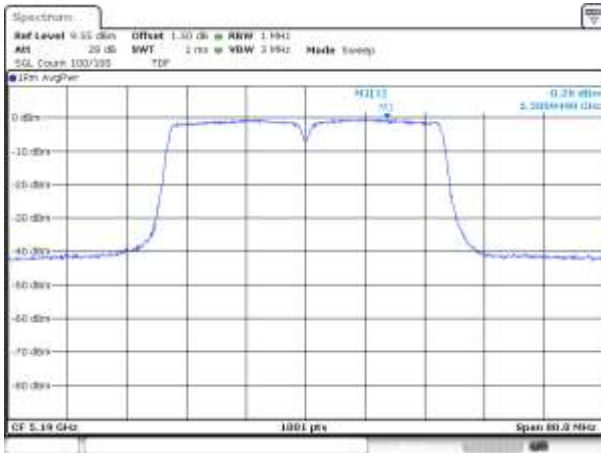
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
KR20-SRF0030-D

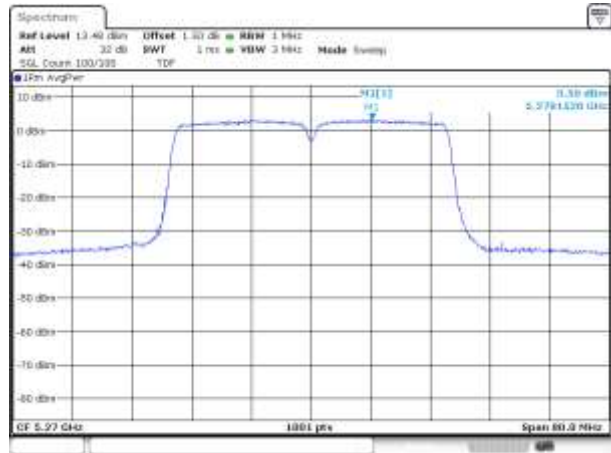
Page (153) of (1046)



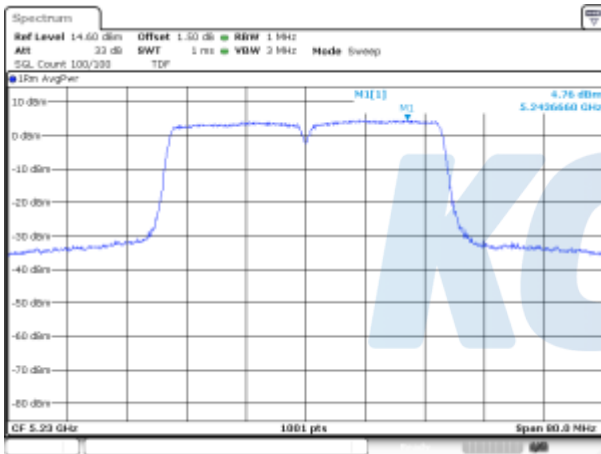
## UNII-1 / 802.11ac VHT40 / 5 190 MHz



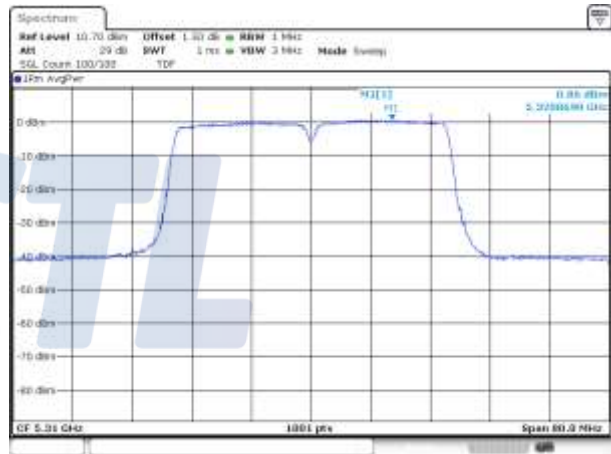
## UNII-2A / 802.11ac VHT40 / 5 270 MHz



## UNII-1 / 802.11ac VHT40 / 5 230 MHz



## UNII-2A / 802.11ac VHT40 / 5 310 MHz



# KCTL Inc.

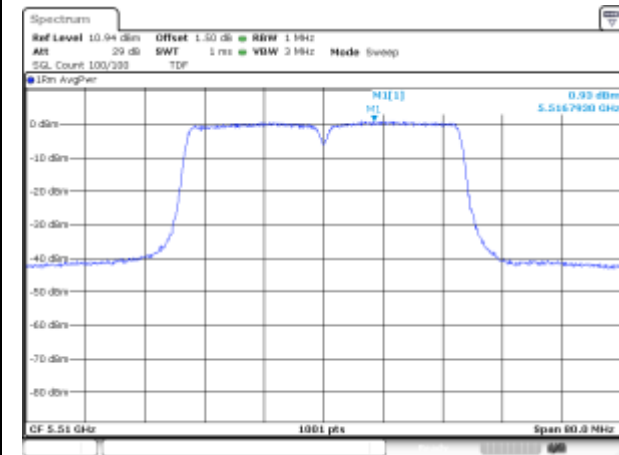
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

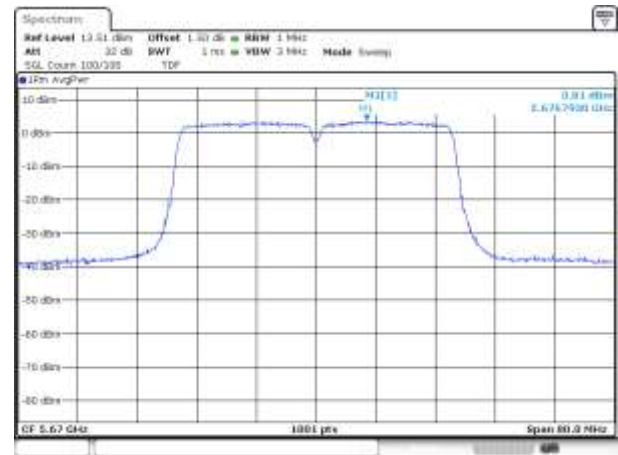
Page (154) of (1046)



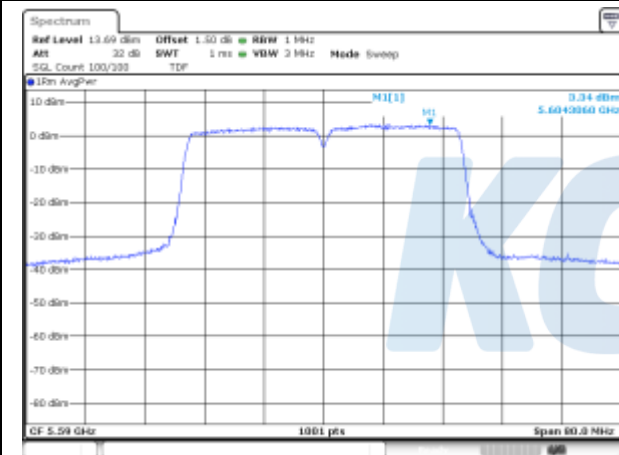
## UNII-2C / 802.11ac VHT40 / 5 510 MHz



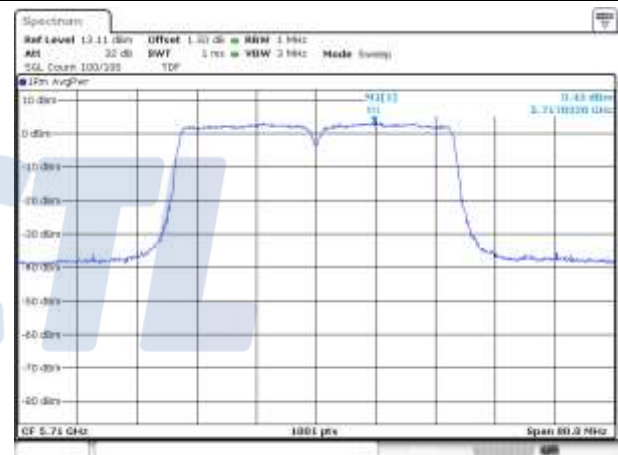
## UNII-2C / 802.11ac VHT40 / 5 670 MHz



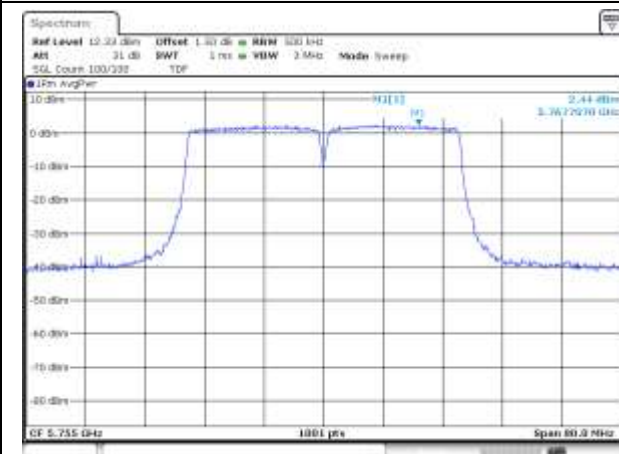
## UNII-2C / 802.11ac VHT40 / 5 590 MHz



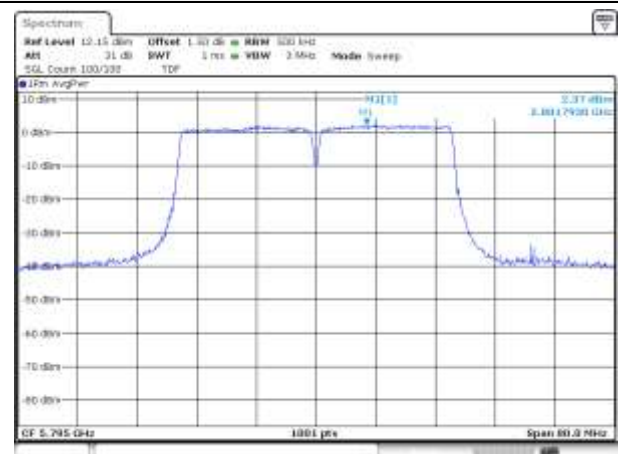
## UNII-2C / 802.11ac VHT40 / 5 710 MHz



## UNII-3 / 802.11ac VHT40 / 5 755 MHz



## UNII-3 / 802.11ac VHT40 / 5 795 MHz



# KCTL Inc.

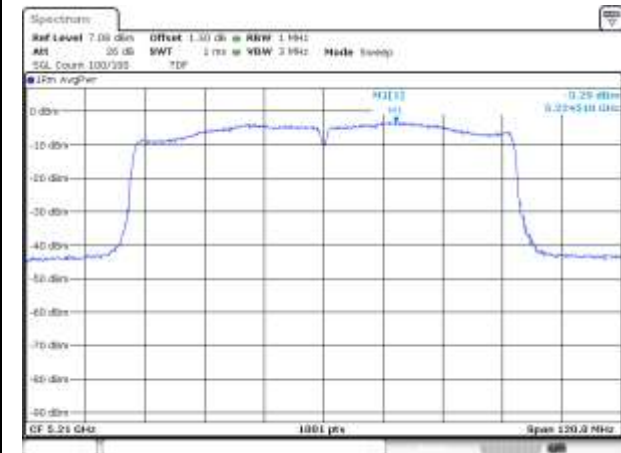
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

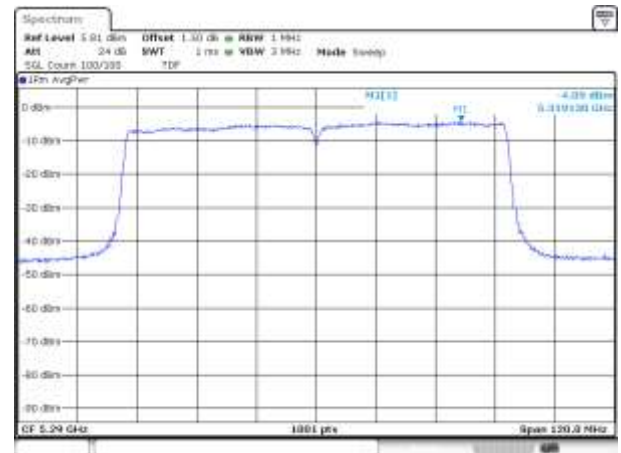
Page (155) of (1046)



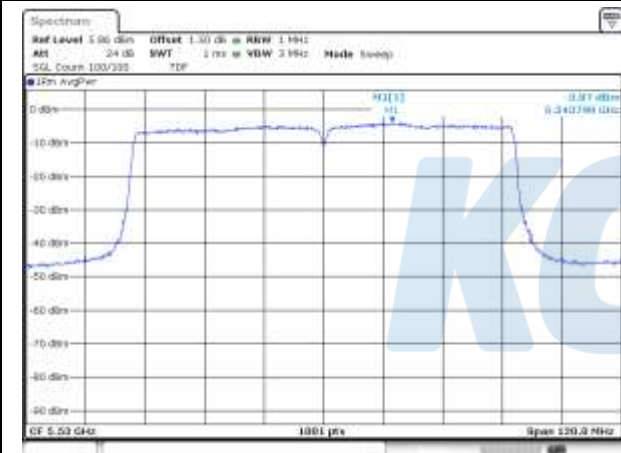
UNII-1 / 802.11ac VHT80 / 5 210 MHz



UNII-2A / 802.11ac VHT80 / 5 290 MHz



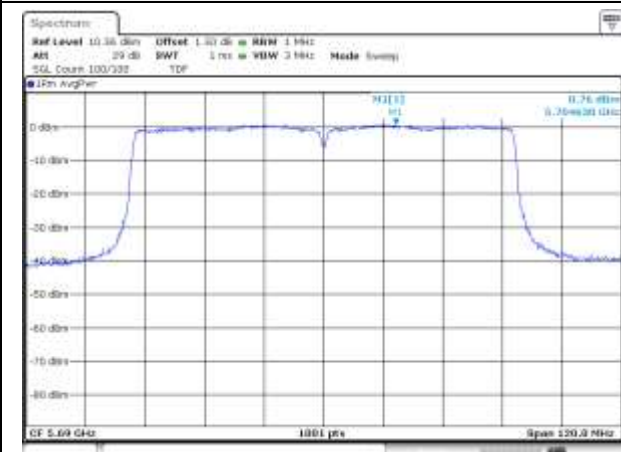
UNII-2C / 802.11ac VHT80 / 5 530 MHz



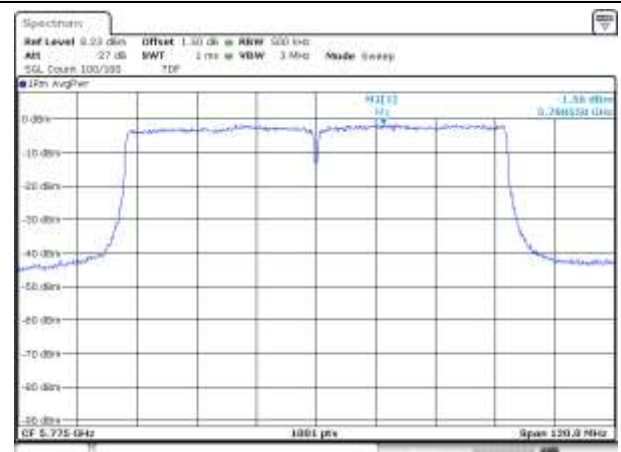
UNII-2C / 802.11ac VHT80 / 5 610 MHz



UNII-2C / 802.11ac VHT80 / 5 690 MHz



UNII-3 / 802.11ac VHT80 / 5 775 MHz



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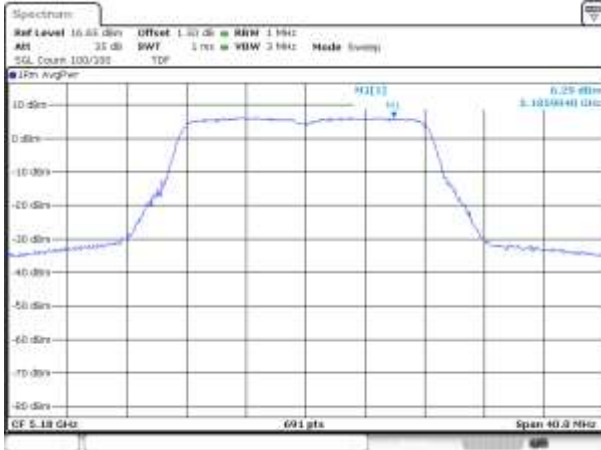
Report No.:  
KR20-SRF0030-D

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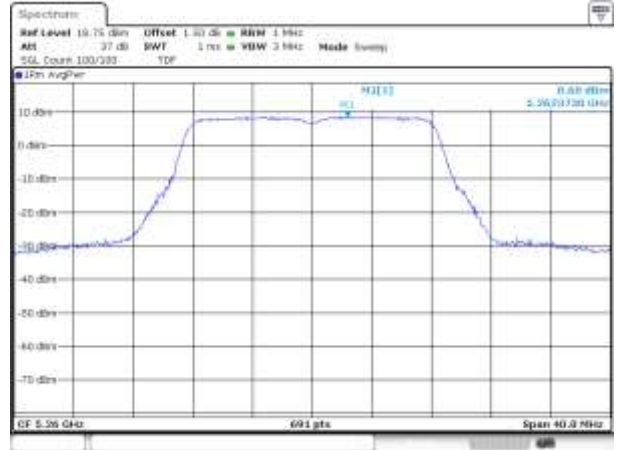


## SISO ANT 1

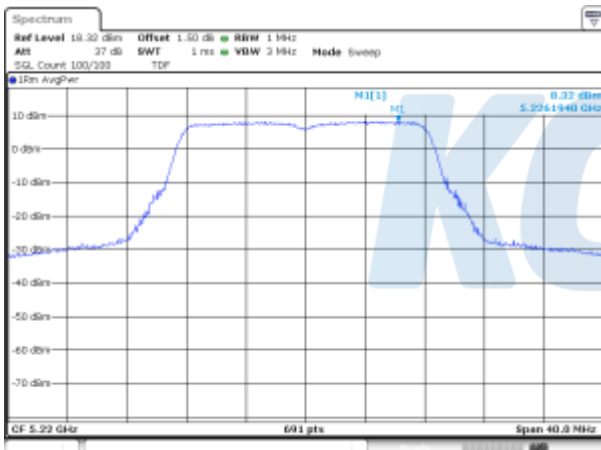
UNII-1 / 802.11a / 5 180 MHz



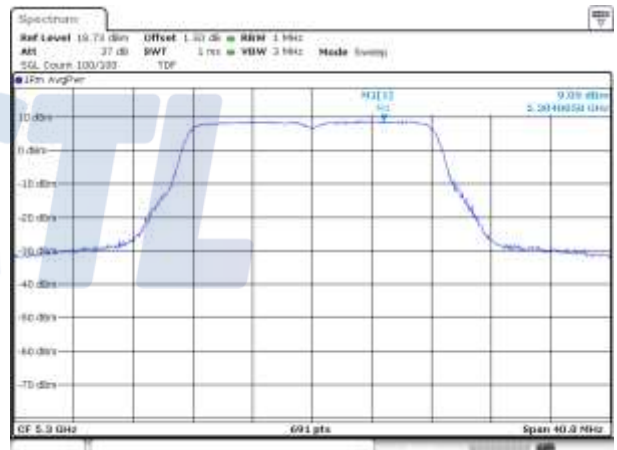
UNII-2A / 802.11a / 5 260 MHz



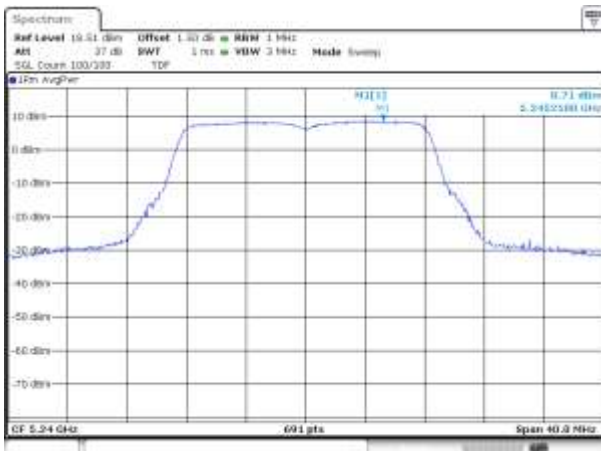
UNII-1 / 802.11a / 5 220 MHz



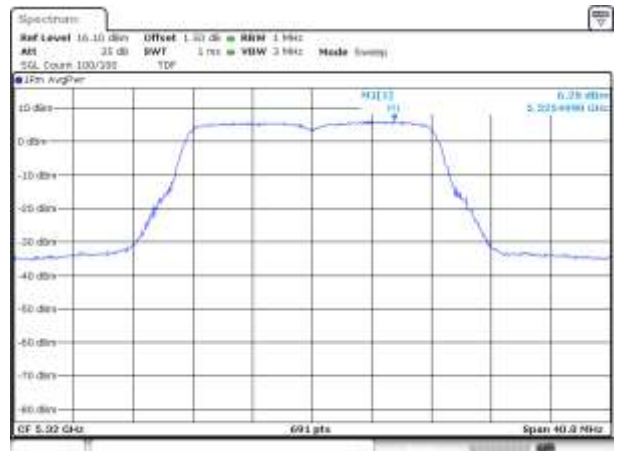
UNII-2A / 802.11a / 5 300 MHz



UNII-1 / 802.11a / 5 240 MHz



UNII-2A / 802.11a / 5 320 MHz



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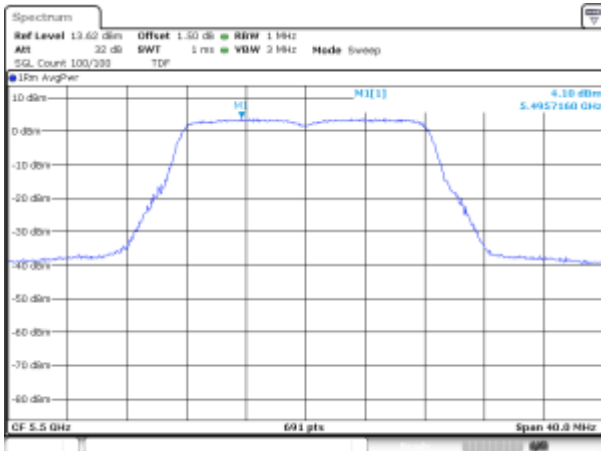
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

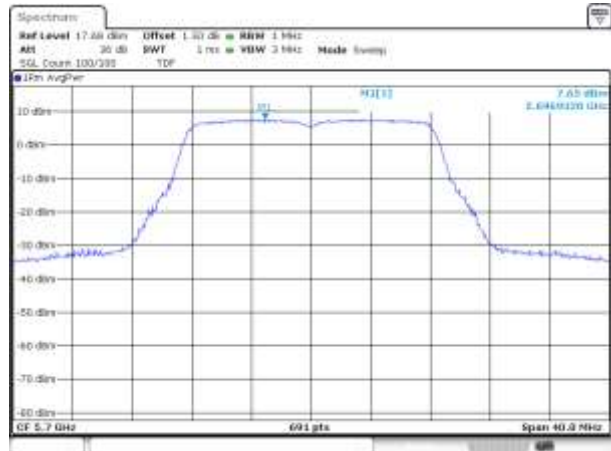
Page (157) of (1046)



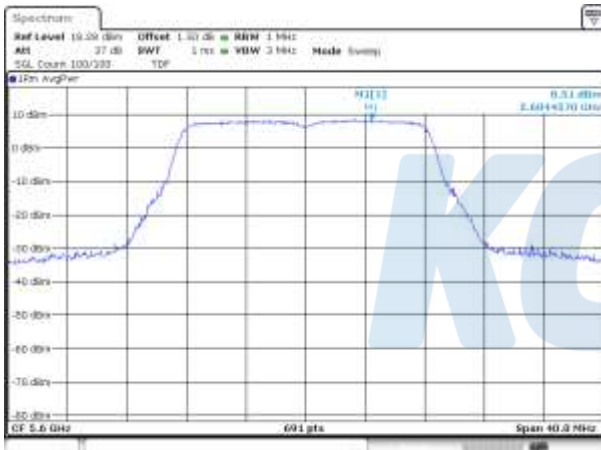
## UNII-2C / 802.11a / 5 500 MHz



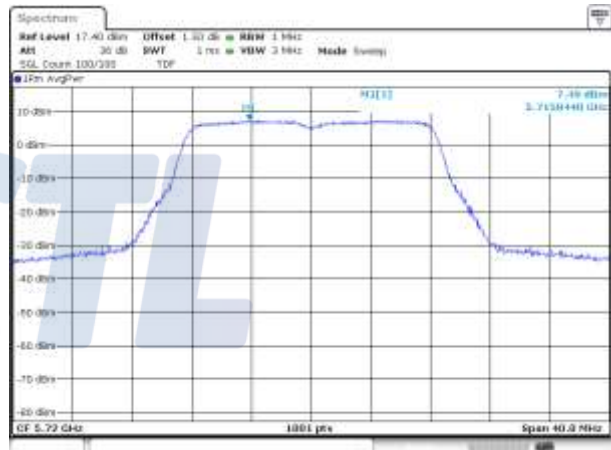
## UNII-2C / 802.11a / 5 700 MHz



## UNII-2C / 802.11a / 5 600 MHz



## UNII-2C / 802.11a / 5 720 MHz



**KCTL Inc.**

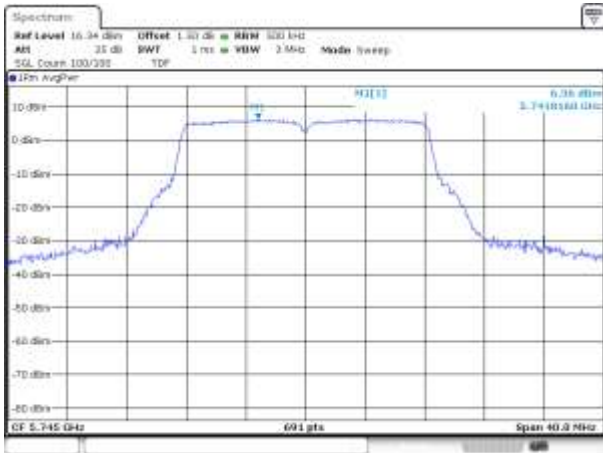
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

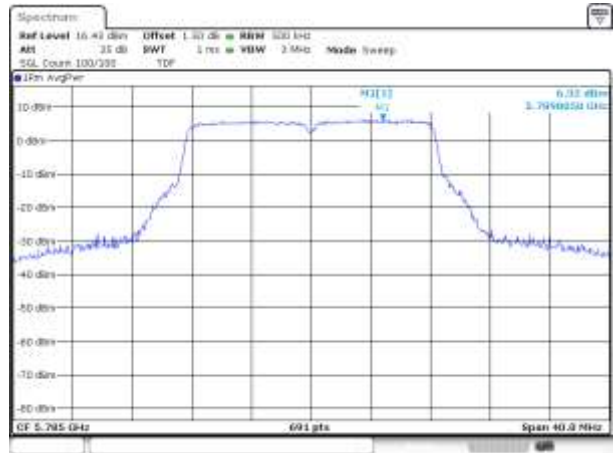
Page (158) of (1046)



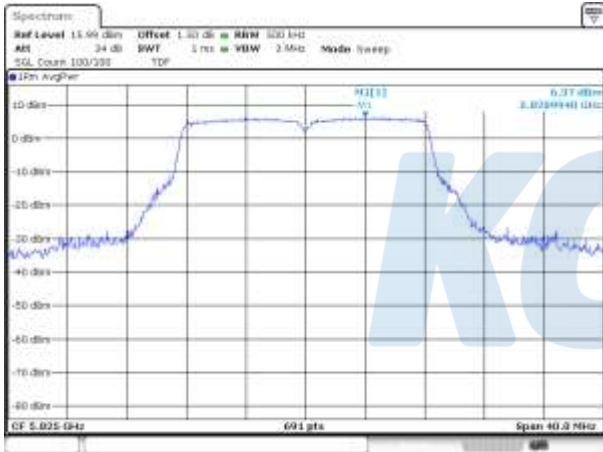
**UNII-3 / 802.11a / 5 745 MHz**



**UNII-3 / 802.11a / 5 785 MHz**



**UNII-3 / 802.11a / 5 825 MHz**



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# KCTL Inc.

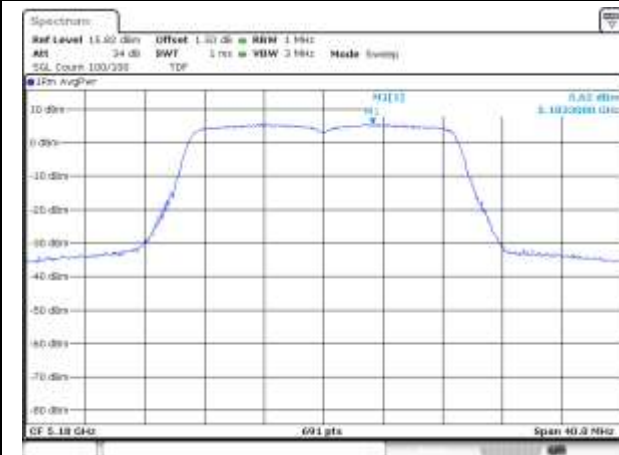
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

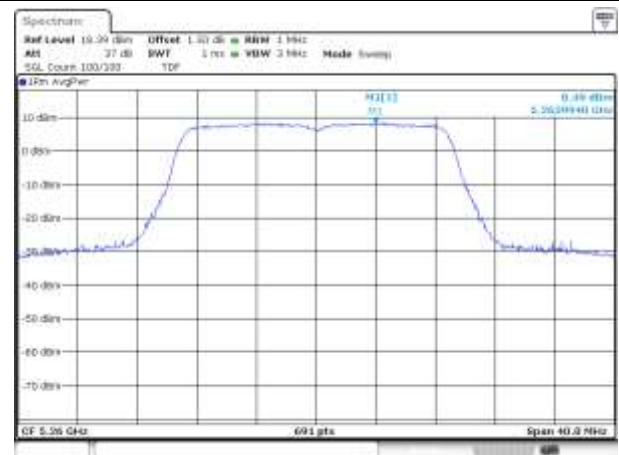
Page (159) of (1046)



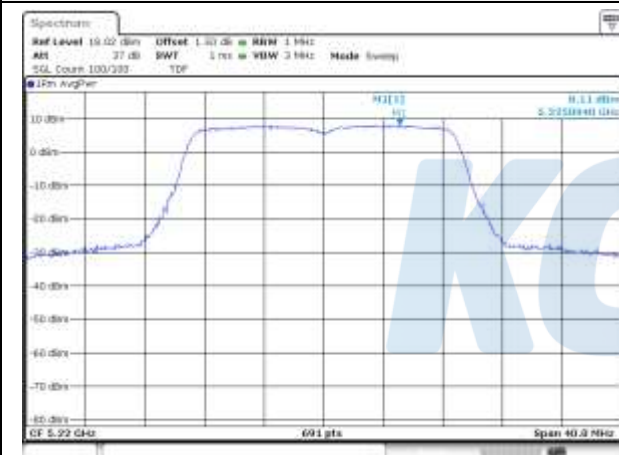
UNII-1 / 802.11n HT20 / 5 180 MHz



UNII-2A / 802.11n HT20 / 5 260 MHz



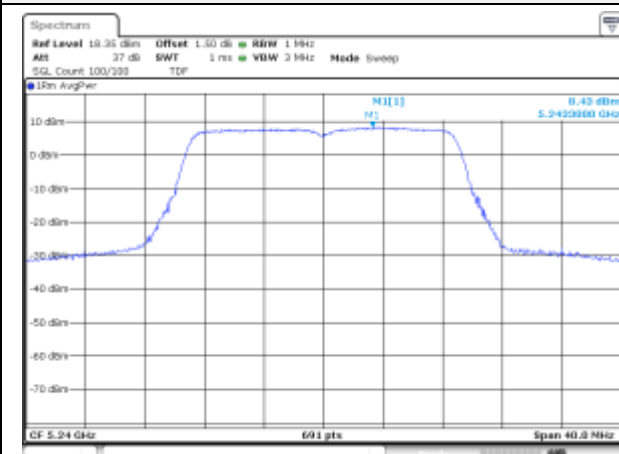
UNII-1 / 802.11n HT20 / 5 220 MHz



UNII-2A / 802.11n HT20 / 5 300 MHz



UNII-1 / 802.11n HT20 / 5 240 MHz



UNII-2A / 802.11n HT20 / 5 320 MHz





# KCTL Inc.

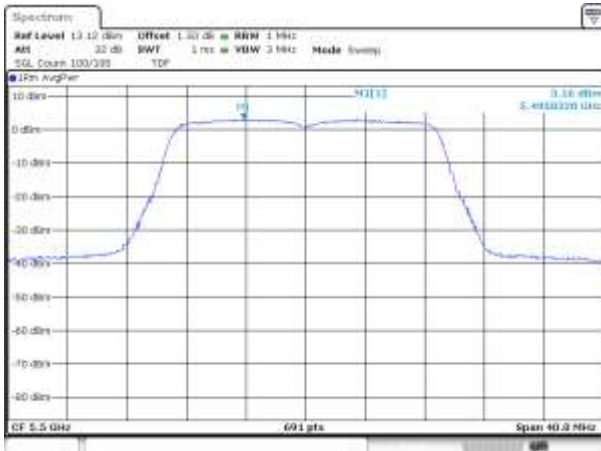
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

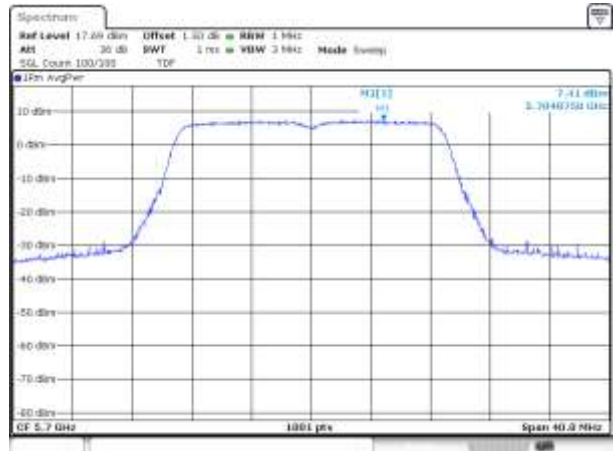
Page (160) of (1046)



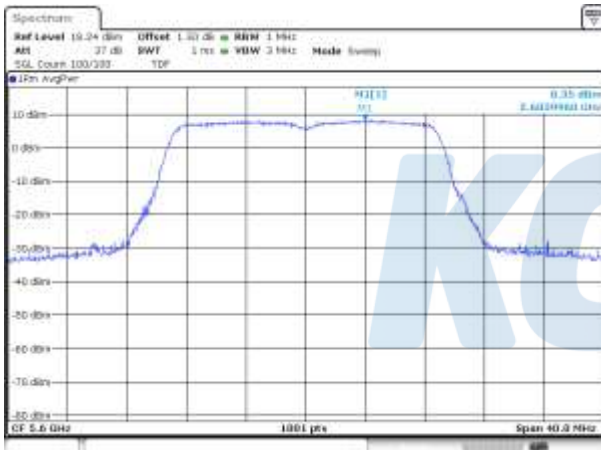
## UNII-2C / 802.11n HT20 / 5 500 MHz



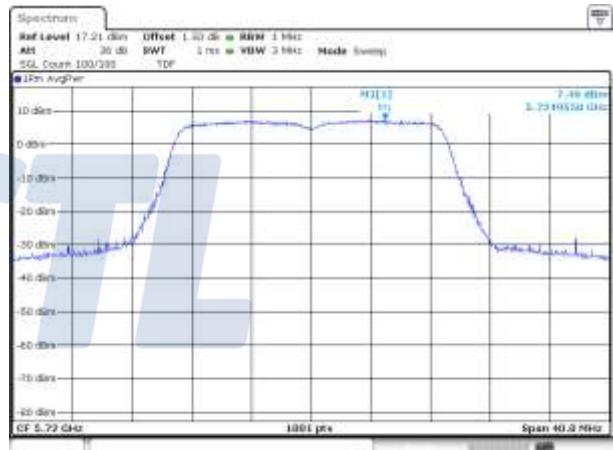
## UNII-2C / 802.11n HT20 / 5 700 MHz



## UNII-2C / 802.11n HT20 / 5 600 MHz



## UNII-2C / 802.11n HT20 / 5 720 MHz



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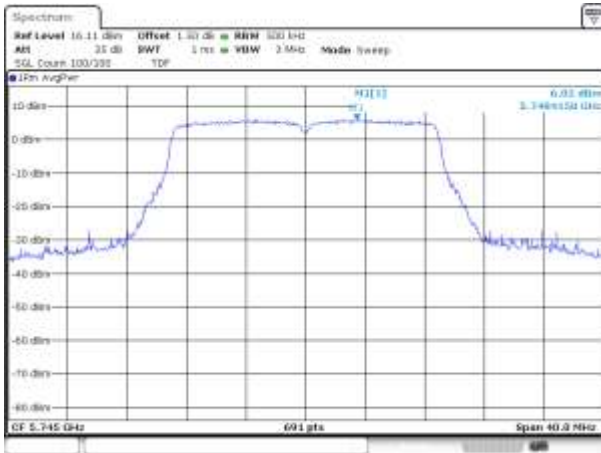
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

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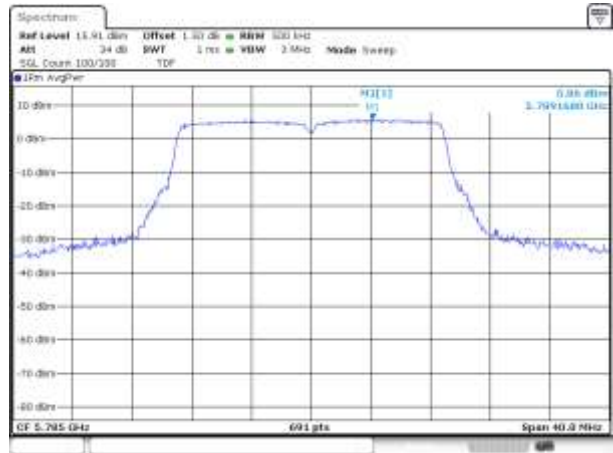
Page (161) of (1046)



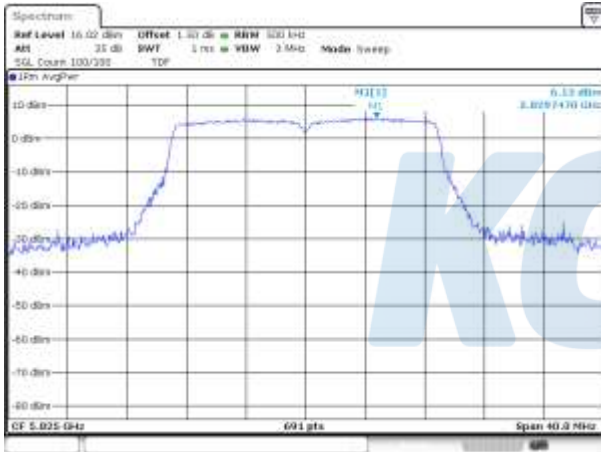
## UNII-3 / 802.11n HT20 / 5 745 MHz



## UNII-3 / 802.11n HT20 / 5 785 MHz



## UNII-3 / 802.11n HT20 / 5 825 MHz



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# KCTL Inc.

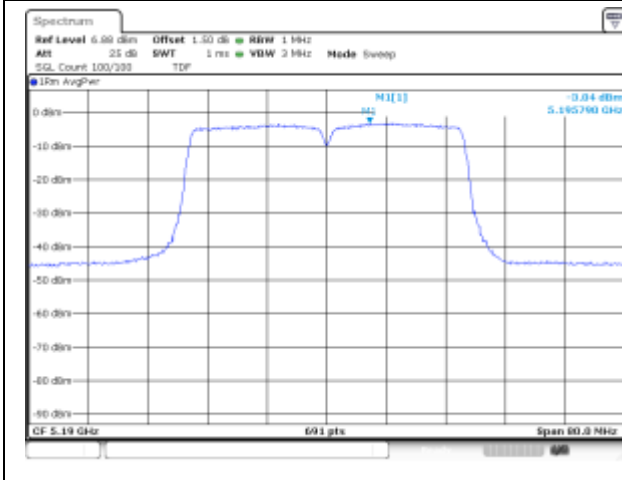
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

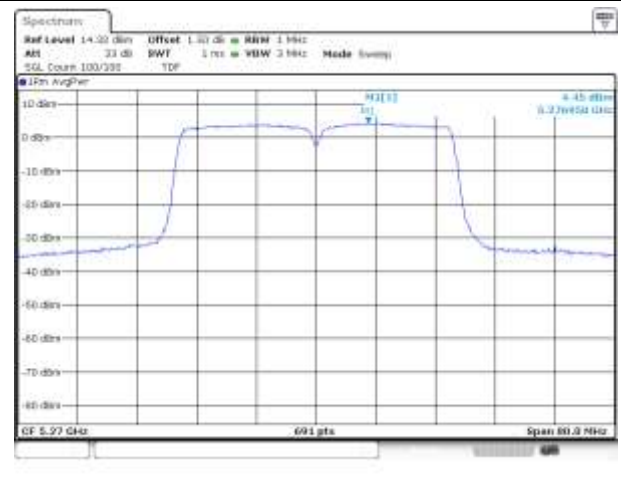
Page (162) of (1046)



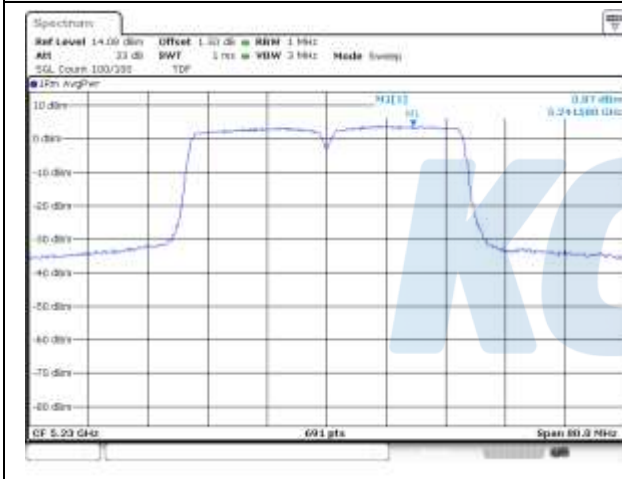
## UNII-1 / 802.11n HT40 / 5 190 MHz



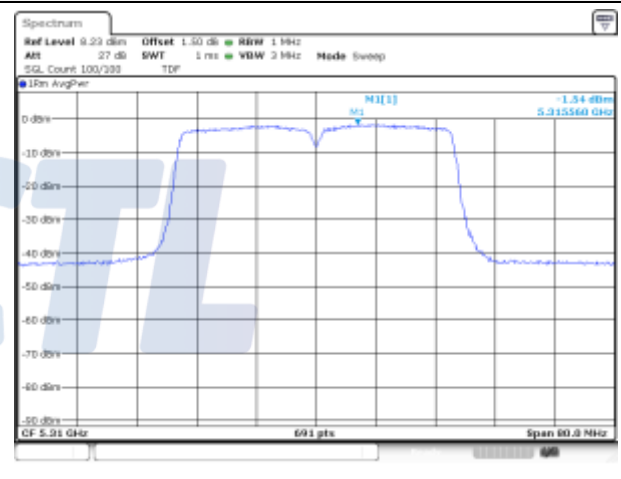
## UNII-2A / 802.11n HT40 / 5 270 MHz



## UNII-1 / 802.11n HT40 / 5 230 MHz



## UNII-2A / 802.11n HT40 / 5 310 MHz



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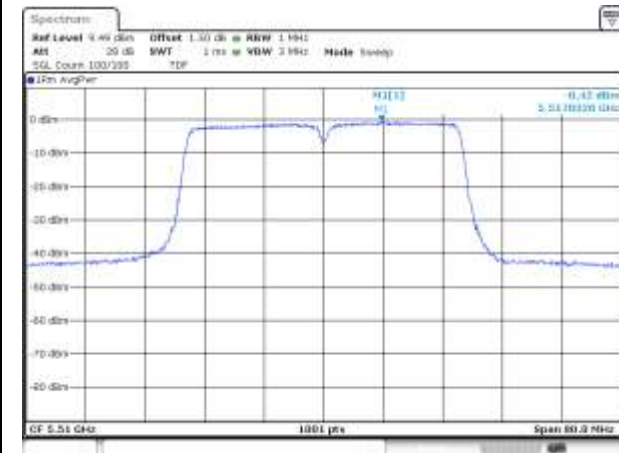
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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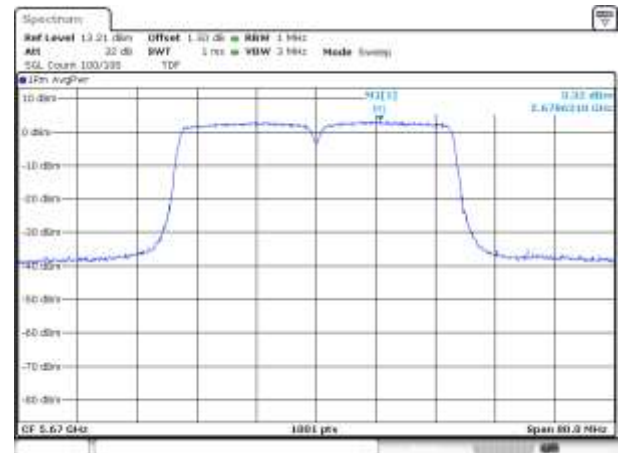
Page (163) of (1046)



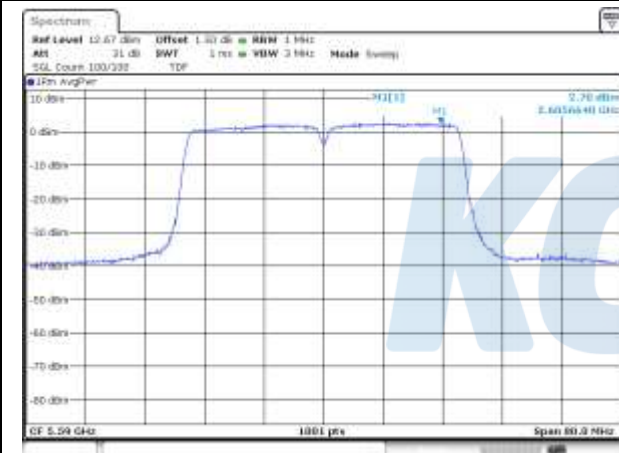
UNII-2C / 802.11n HT40 / 5 510 MHz



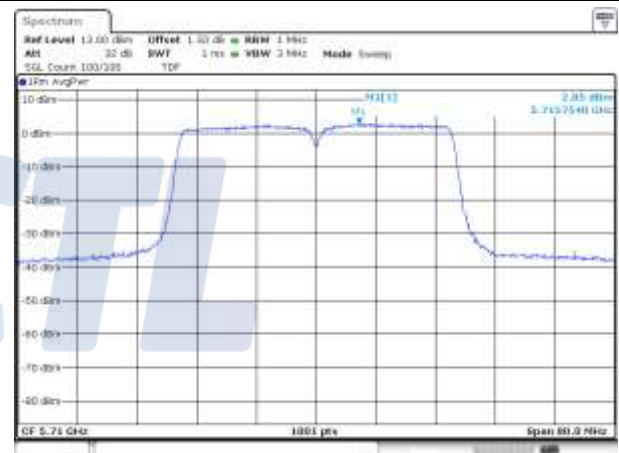
UNII-2C / 802.11n HT40 / 5 670 MHz



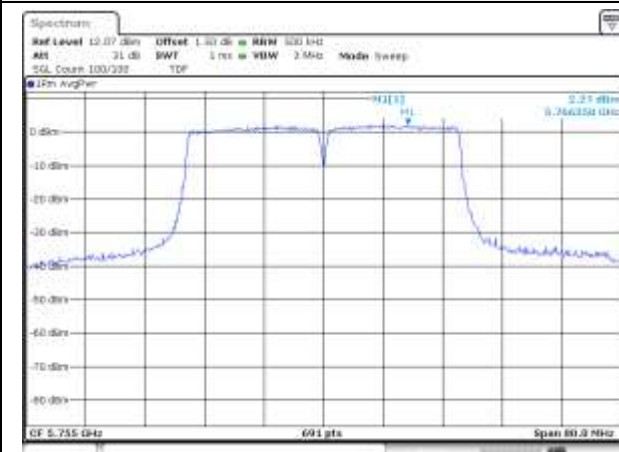
UNII-2C / 802.11n HT40 / 5 590 MHz



UNII-2C / 802.11n HT40 / 5 710 MHz



UNII-3 / 802.11n HT40 / 5 755 MHz



UNII-3 / 802.11n HT40 / 5 795 MHz



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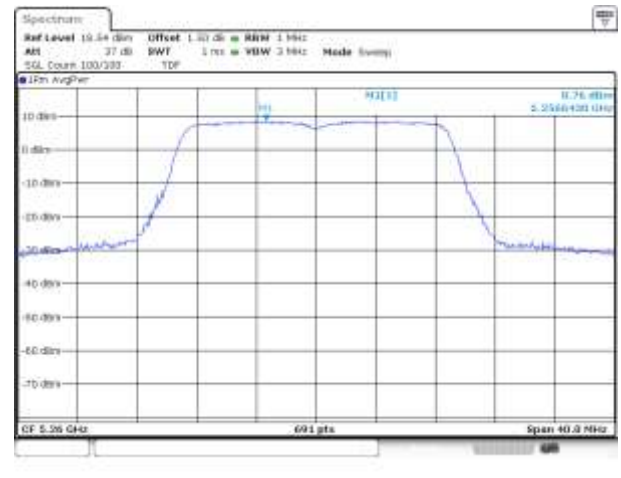
Page (164) of (1046)



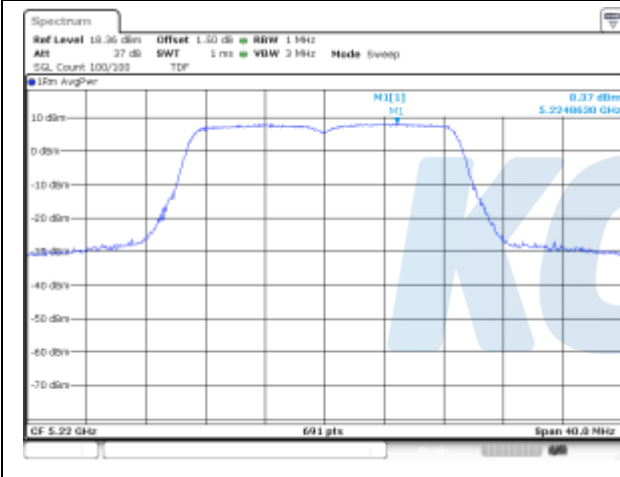
## UNII-1 / 802.11ac VHT20 / 5 180 MHz



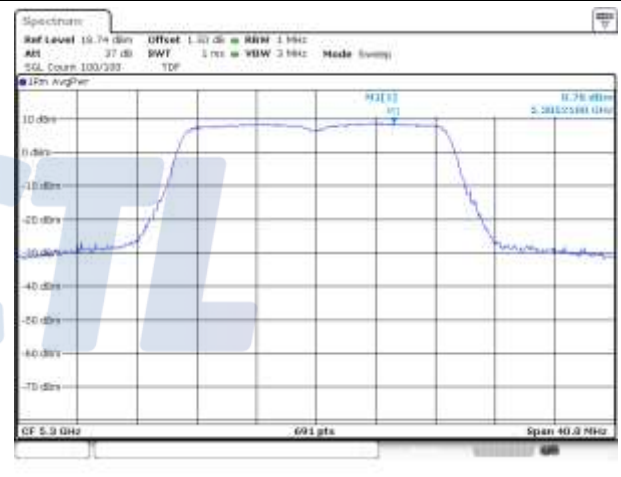
## UNII-2A / 802.11ac VHT20 / 5 260 MHz



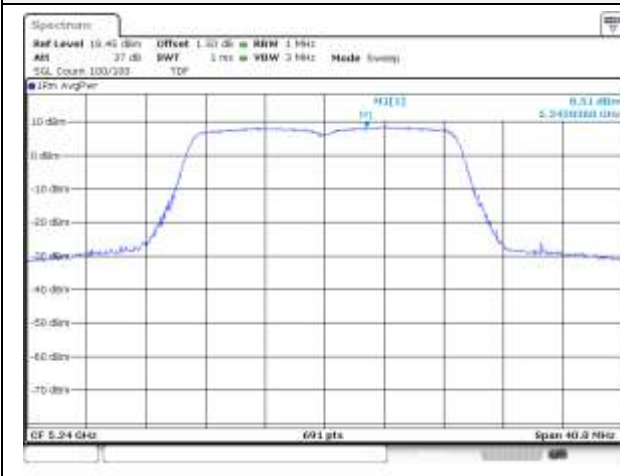
## UNII-1 / 802.11ac VHT20 / 5 220 MHz



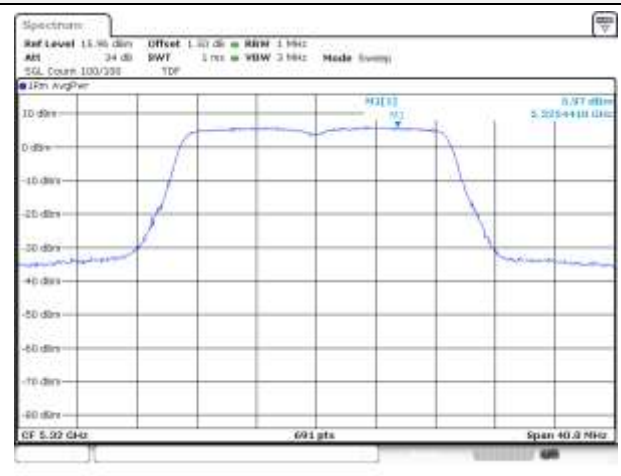
## UNII-2A / 802.11ac VHT20 / 5 300 MHz



## UNII-1 / 802.11ac VHT20 / 5 240 MHz



## UNII-2A / 802.11ac VHT20 / 5 320 MHz



# KCTL Inc.

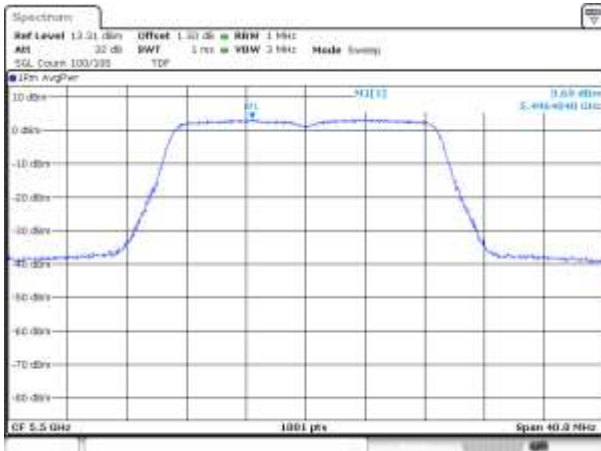
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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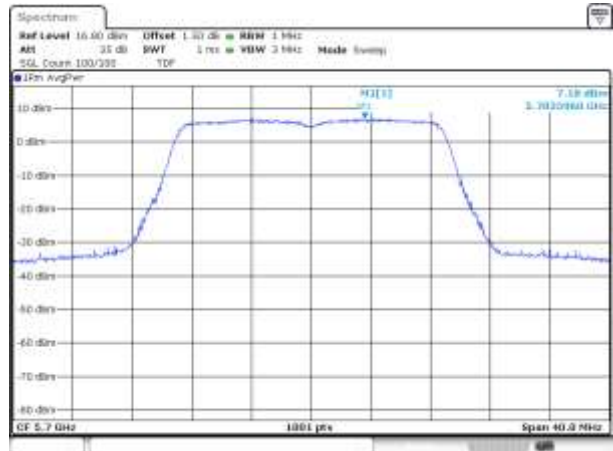
Page (165) of (1046)



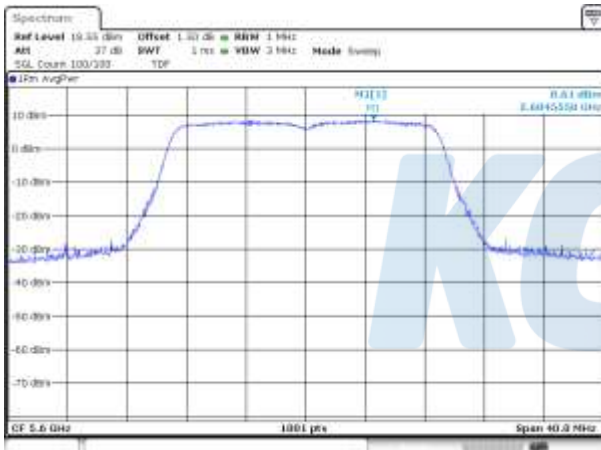
## UNII-2C / 802.11ac VHT20 / 5 500 MHz



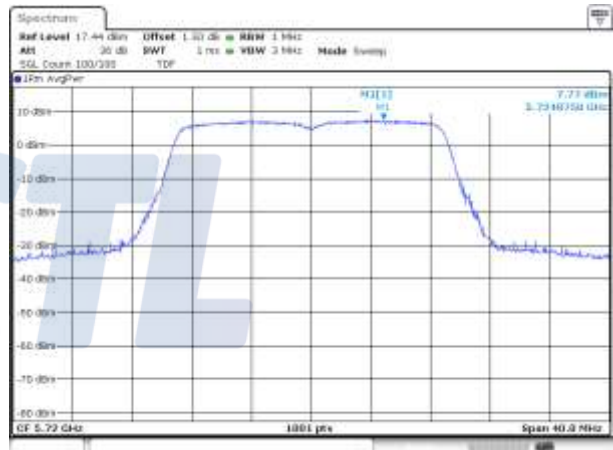
## UNII-2C / 802.11ac VHT20 / 5 700 MHz



## UNII-2C / 802.11ac VHT20 / 5 600 MHz



## UNII-2C / 802.11ac VHT20 / 5 720 MHz



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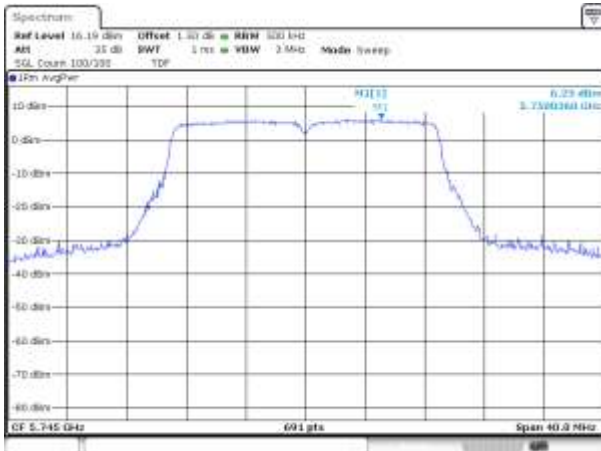
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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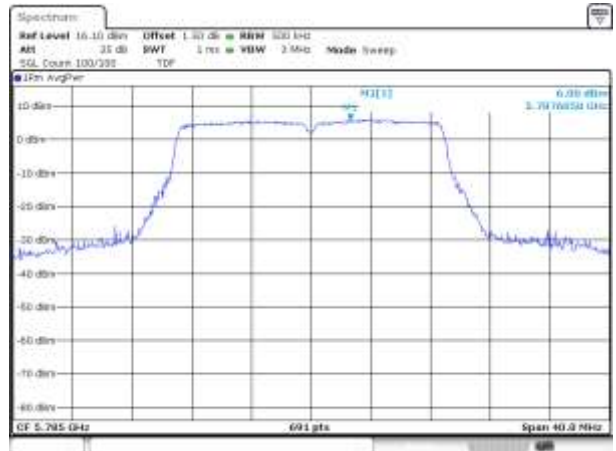
Page (166) of (1046)



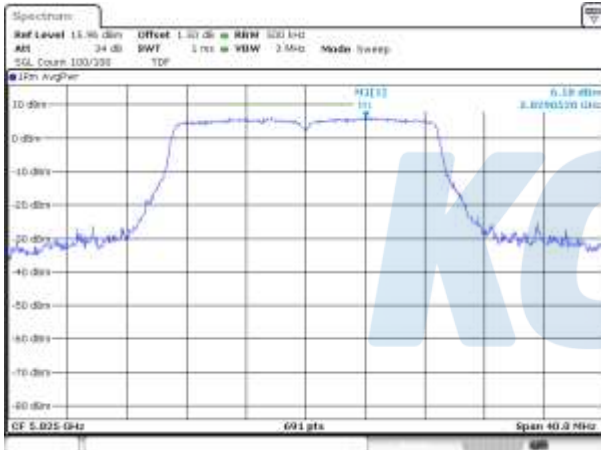
## UNII-3 / 802.11ac VHT20 / 5 745 MHz



## UNII-3 / 802.11ac VHT20 / 5 785 MHz



## UNII-3 / 802.11ac VHT20 / 5 825 MHz



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# KCTL Inc.

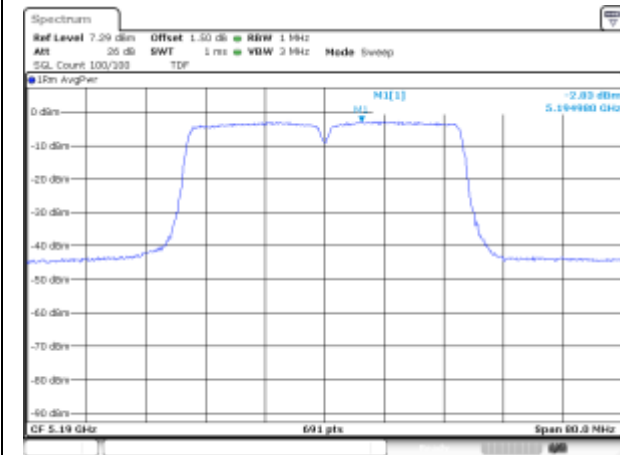
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
KR20-SRF0030-D

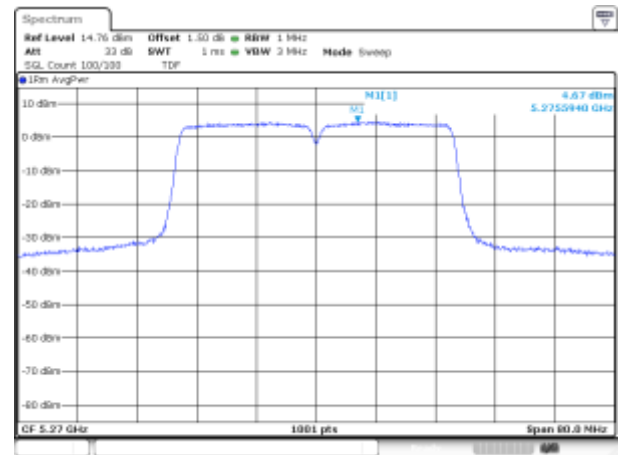
Page (167) of (1046)



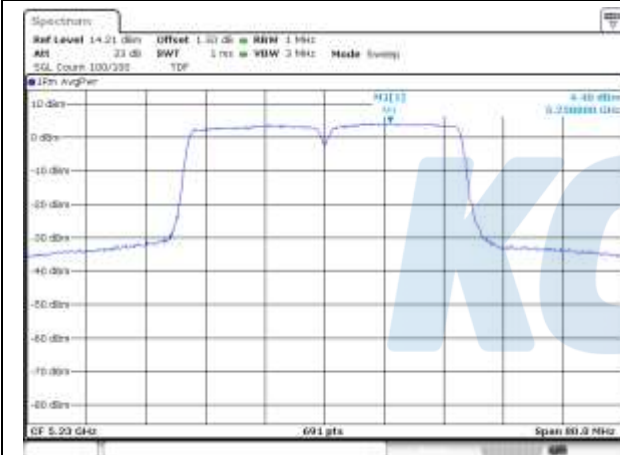
## UNII-1 / 802.11ac VHT40 / 5 190 MHz



## UNII-2A / 802.11ac VHT40 / 5 270 MHz



## UNII-1 / 802.11ac VHT40 / 5 230 MHz



## UNII-2A / 802.11ac VHT40 / 5 310 MHz





# KCTL Inc.

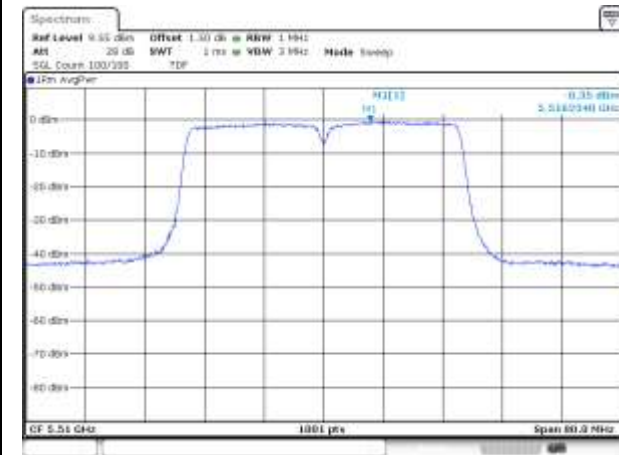
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

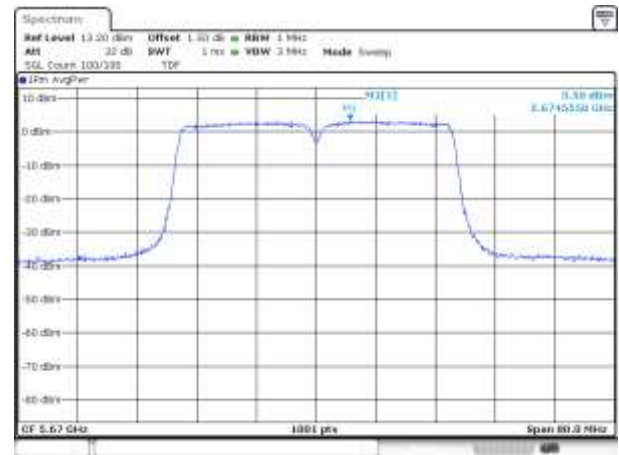
Page (168) of (1046)



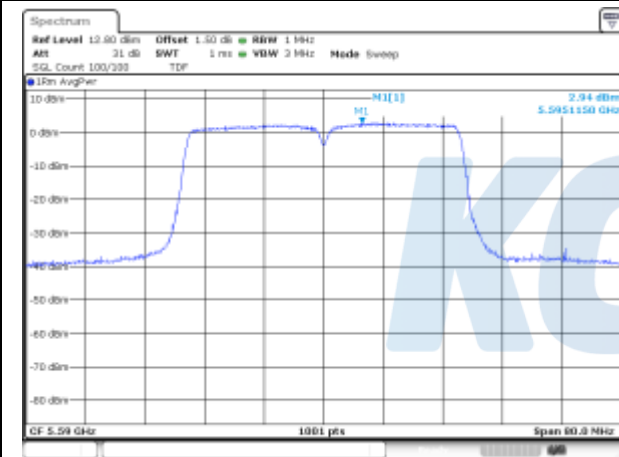
UNII-2C / 802.11ac VHT40 / 5 510 MHz



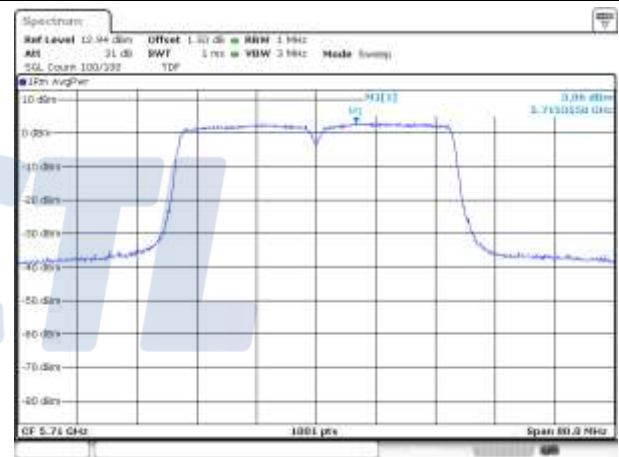
UNII-2C / 802.11ac VHT40 / 5 670 MHz



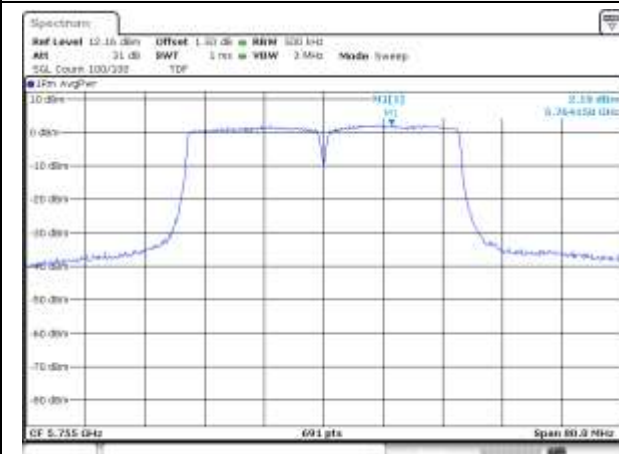
UNII-2C / 802.11ac VHT40 / 5 590 MHz



UNII-2C / 802.11ac VHT40 / 5 710 MHz



UNII-3 / 802.11ac VHT40 / 5 755 MHz



UNII-3 / 802.11ac VHT40 / 5 795 MHz



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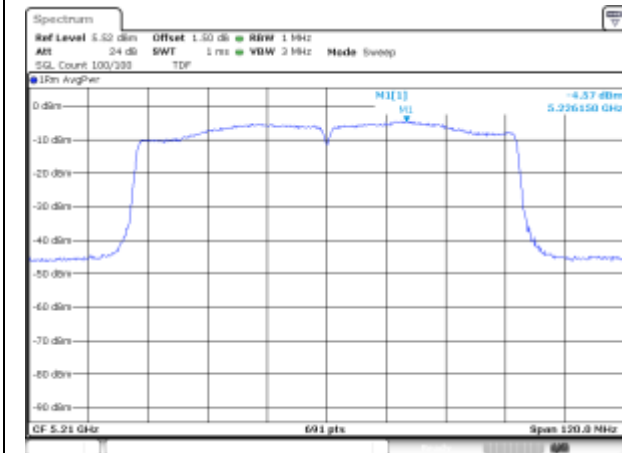
65, Sinwon-ro, Yeongtong-gu,  
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TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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KR20-SRF0030-D

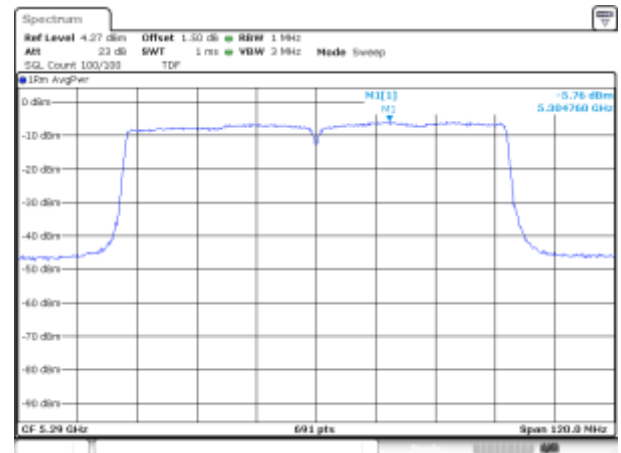
Page (169) of (1046)



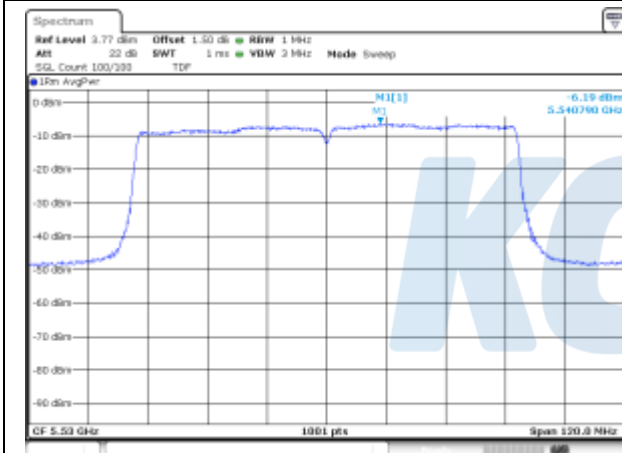
## UNII-1 / 802.11ac VHT80 / 5 210 MHz



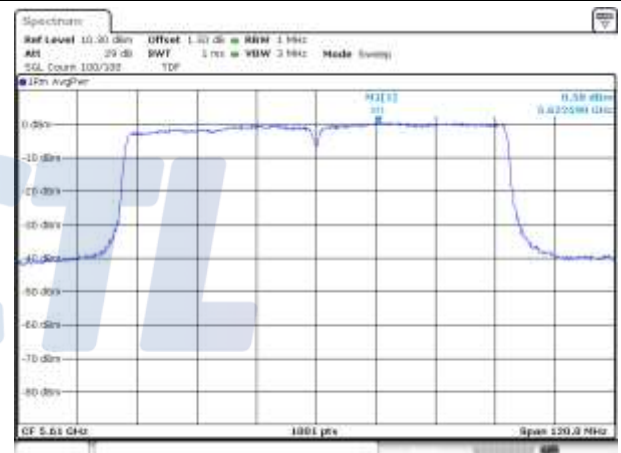
## UNII-2A / 802.11ac VHT80 / 5 290 MHz



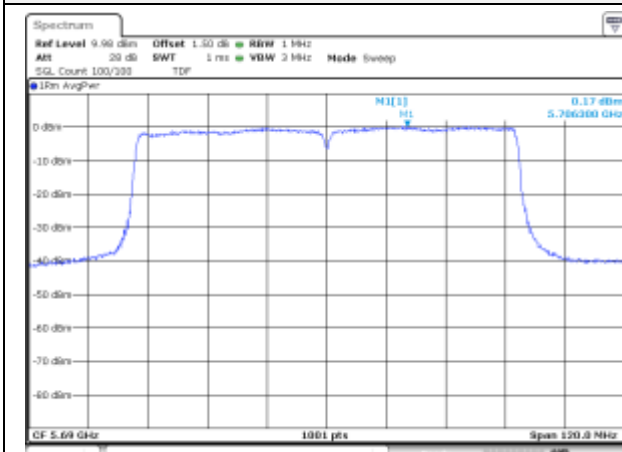
## UNII-2C / 802.11ac VHT80 / 5 530 MHz



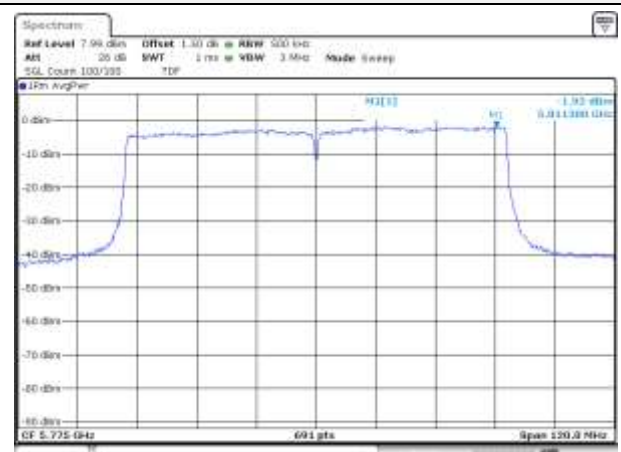
## UNII-2C / 802.11ac VHT80 / 5 610 MHz



## UNII-2C / 802.11ac VHT80 / 5 690 MHz



## UNII-3 / 802.11ac VHT80 / 5 775 MHz



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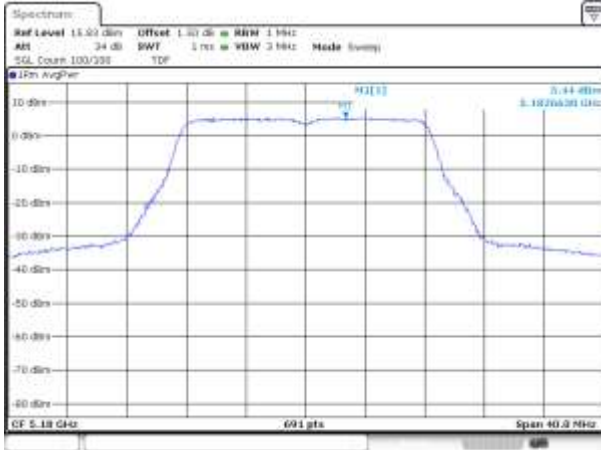
Report No.:  
KR20-SRF0030-D

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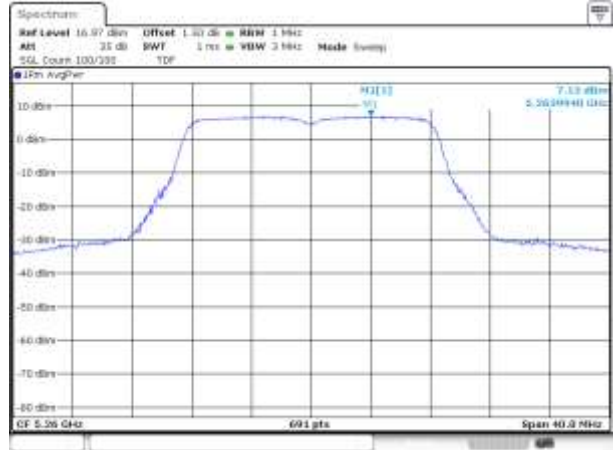


## SISO ANT 2

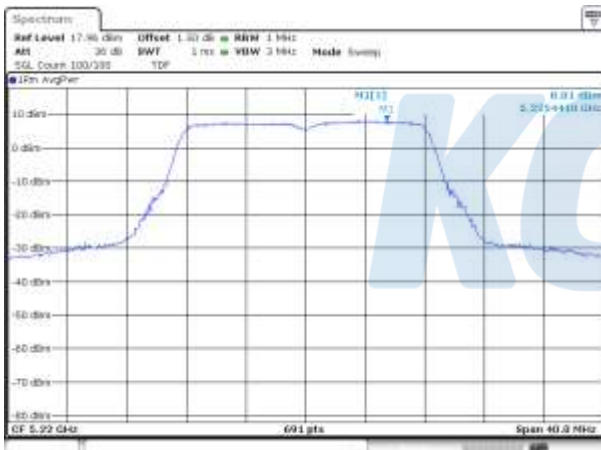
UNII-1 / 802.11a / 5 180 MHz



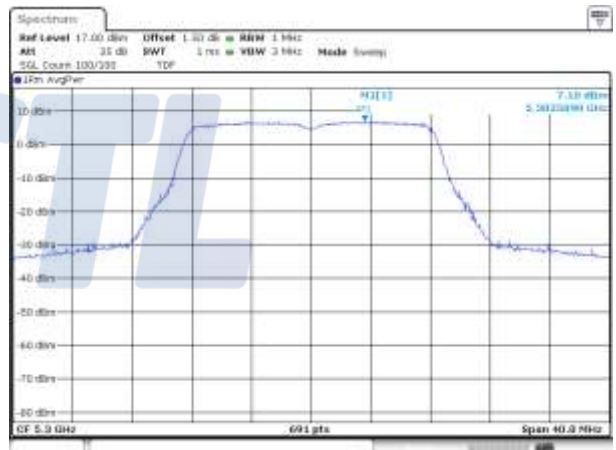
UNII-2A / 802.11a / 5 260 MHz



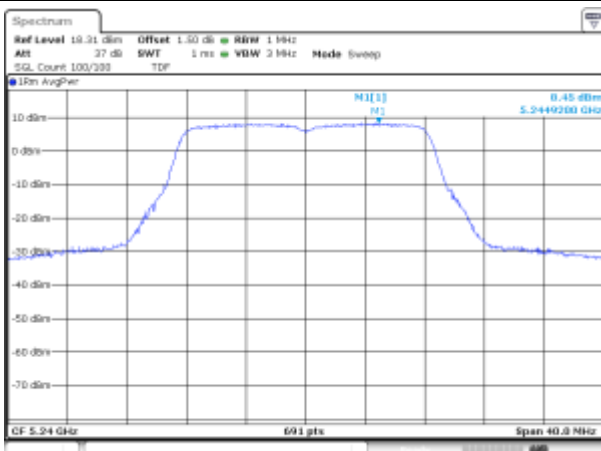
UNII-1 / 802.11a / 5 220 MHz



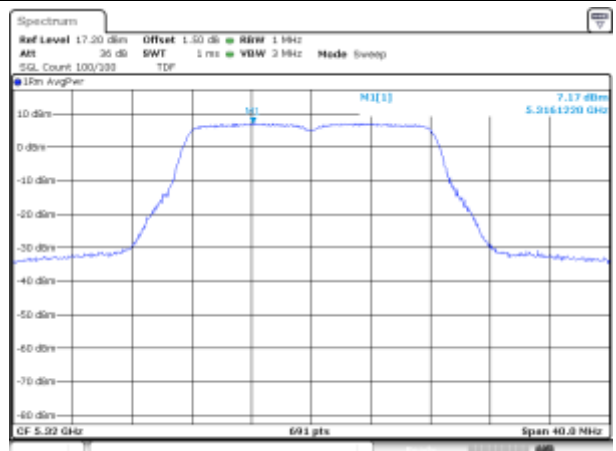
UNII-2A / 802.11a / 5 300 MHz



UNII-1 / 802.11a / 5 240 MHz



UNII-2A / 802.11a / 5 320 MHz



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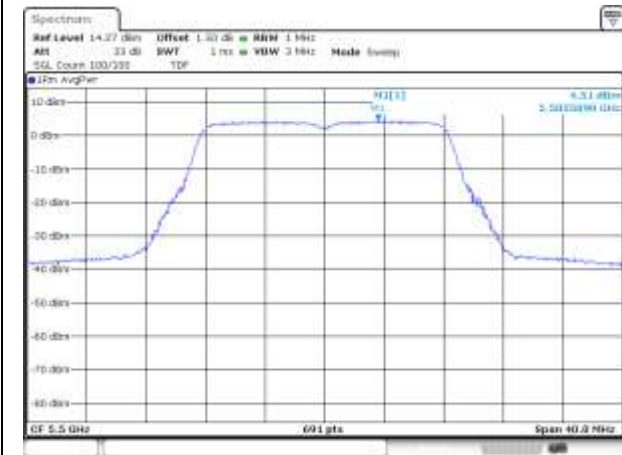
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Report No.:  
KR20-SRF0030-D

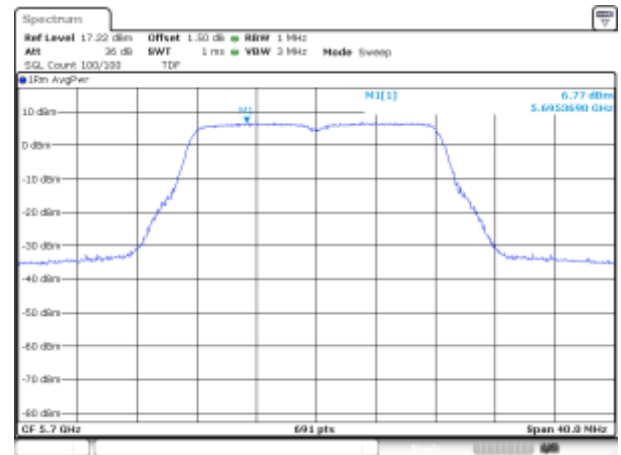
Page (171) of (1046)



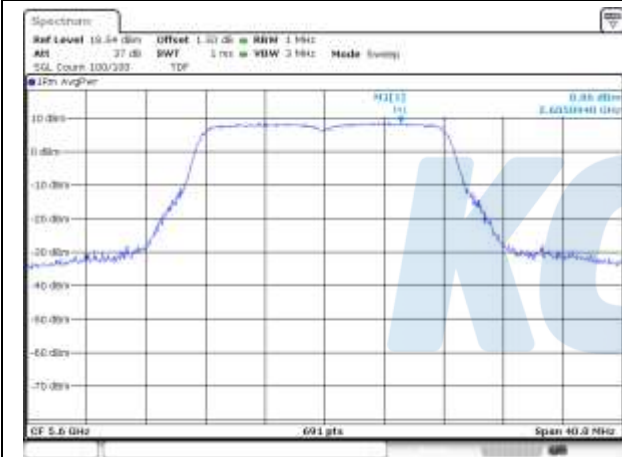
UNII-2C / 802.11a / 5 500 MHz



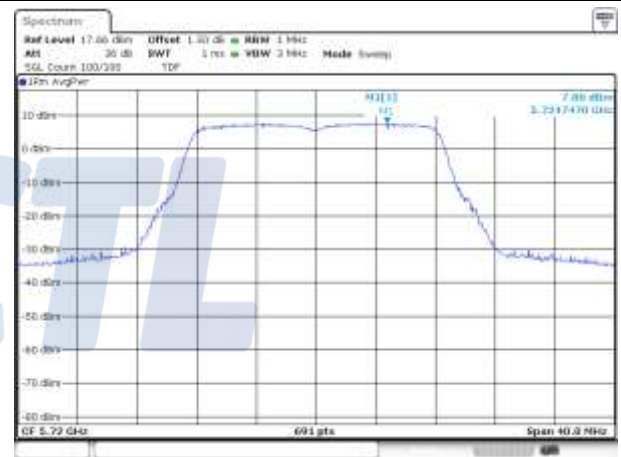
UNII-2C / 802.11a / 5 700 MHz



UNII-2C / 802.11a / 5 600 MHz



UNII-2C / 802.11a / 5 720 MHz



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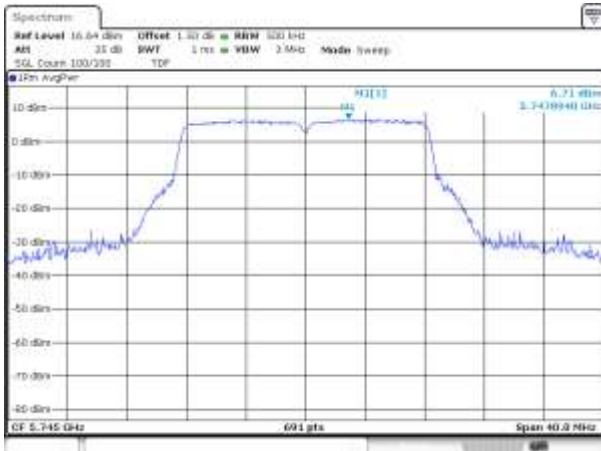
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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Report No.:  
KR20-SRF0030-D

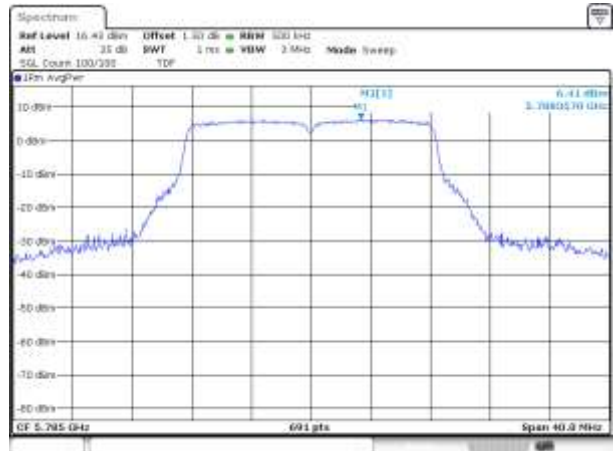
Page (172) of (1046)



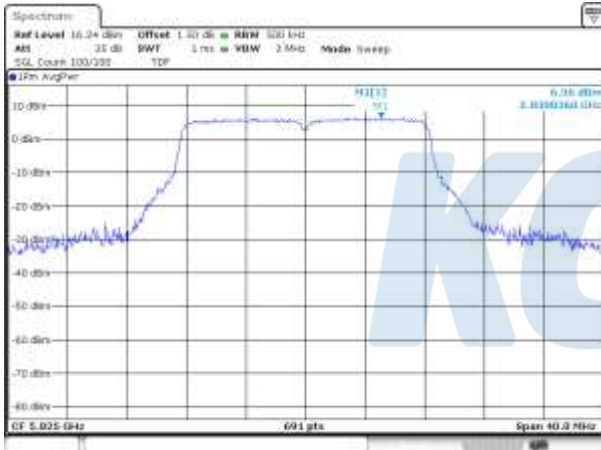
## UNII-3 / 802.11a / 5 745 MHz



## UNII-3 / 802.11a / 5 785 MHz



## UNII-3 / 802.11a / 5 825 MHz



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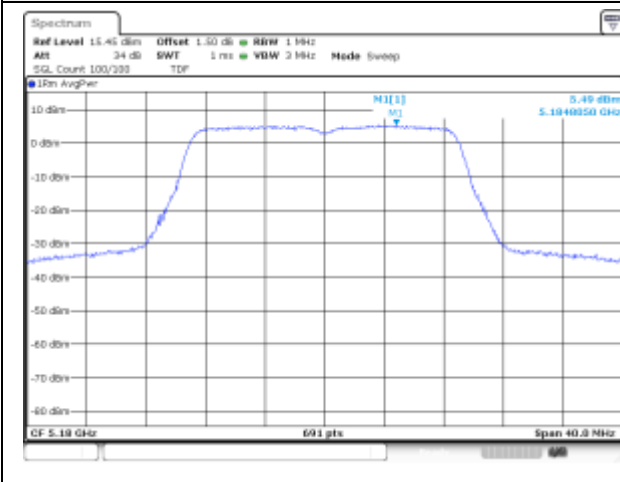
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
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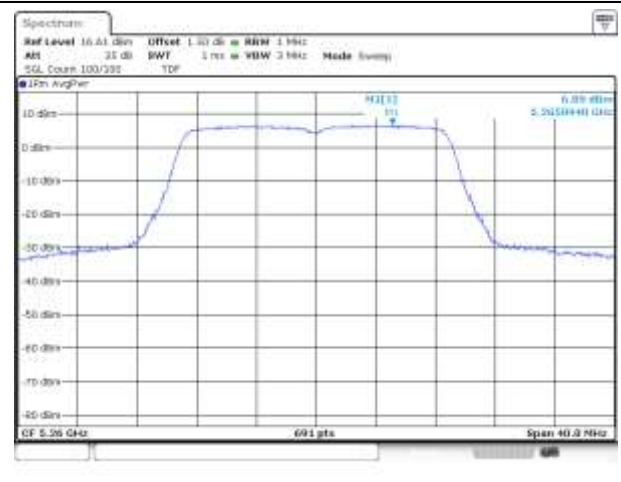
Page (173) of (1046)



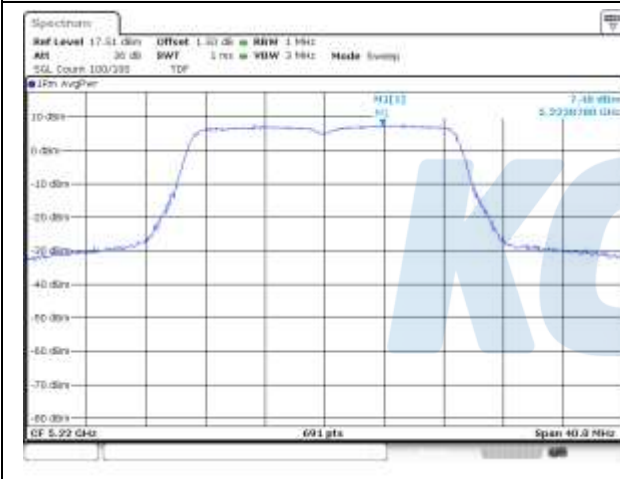
UNII-1 / 802.11n HT20 / 5 180 MHz



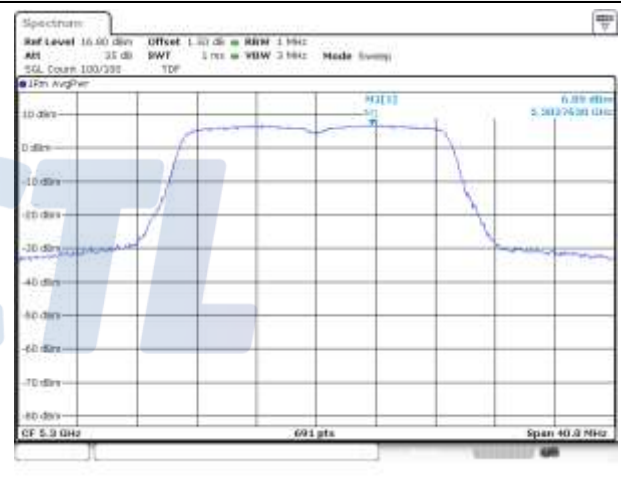
UNII-2A / 802.11n HT20 / 5 260 MHz



UNII-1 / 802.11n HT20 / 5 220 MHz



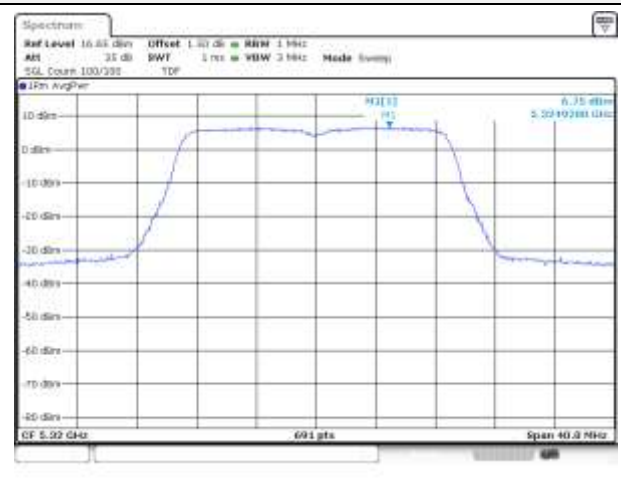
UNII-2A / 802.11n HT20 / 5 300 MHz



UNII-1 / 802.11n HT20 / 5 240 MHz



UNII-2A / 802.11n HT20 / 5 320 MHz



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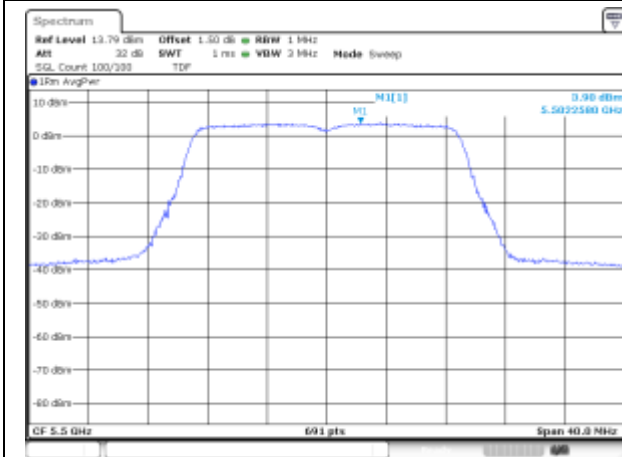
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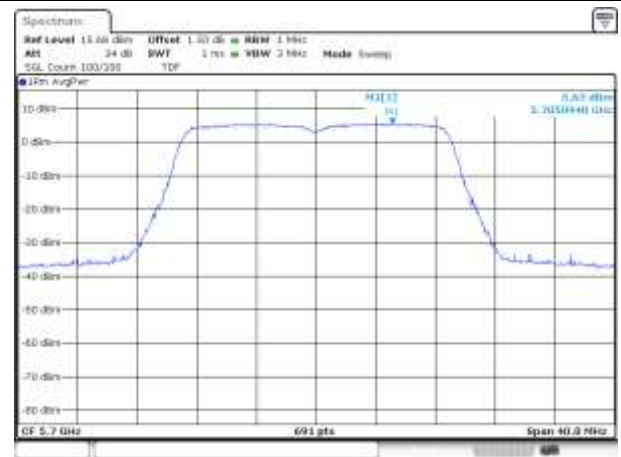
Page (174) of (1046)



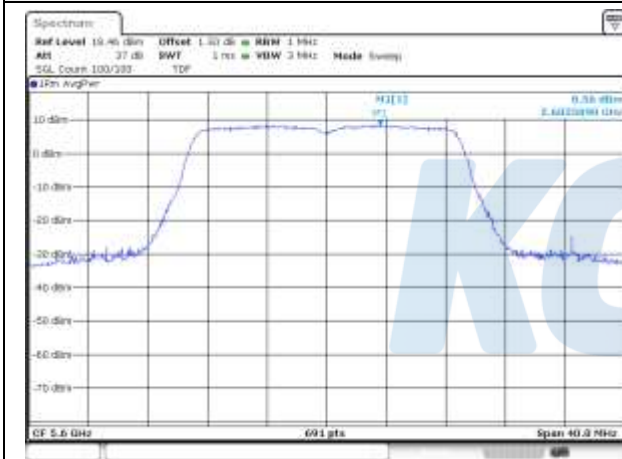
UNII-2C / 802.11n HT20 / 5 500 MHz



UNII-2C / 802.11n HT20 / 5 700 MHz



UNII-2C / 802.11n HT20 / 5 600 MHz



UNII-2C / 802.11n HT20 / 5 720 MHz



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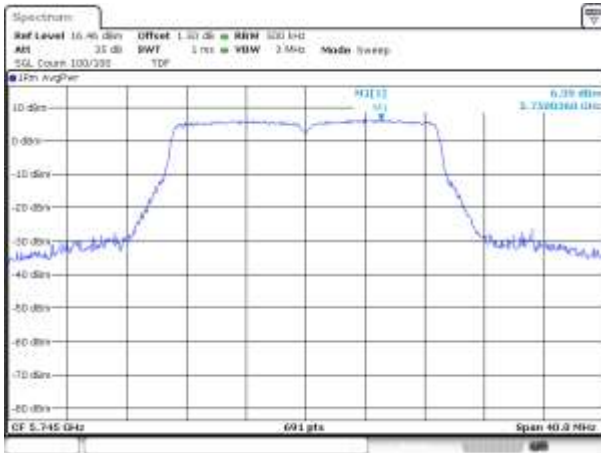
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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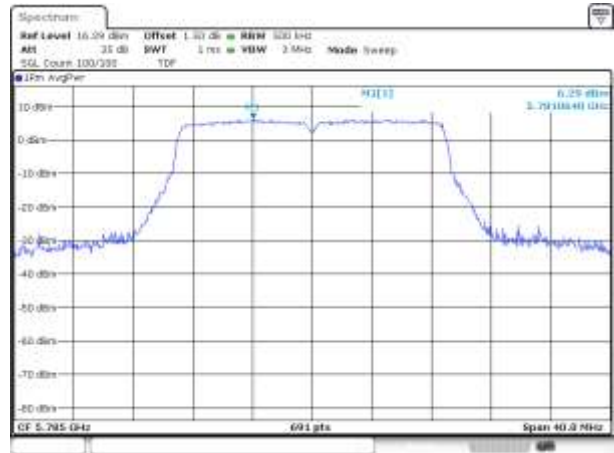
Page (175) of (1046)



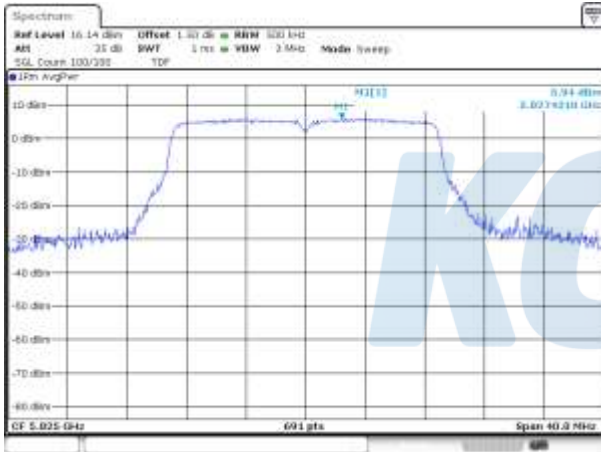
## UNII-3 / 802.11n HT20 / 5 745 MHz



## UNII-3 / 802.11n HT20 / 5 785 MHz



## UNII-3 / 802.11n HT20 / 5 825 MHz



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Report No.:  
KR20-SRF0030-D

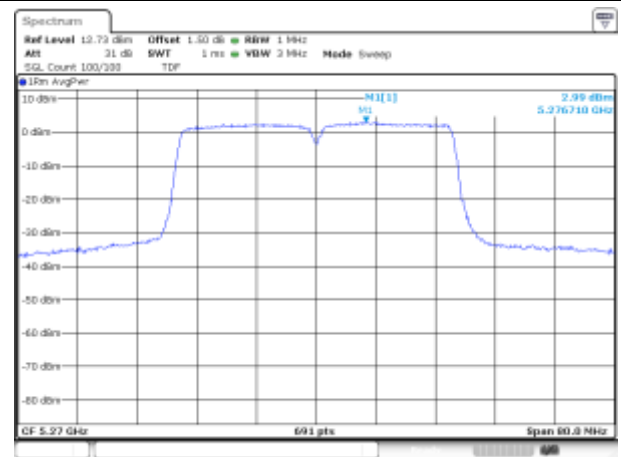
Page (176) of (1046)



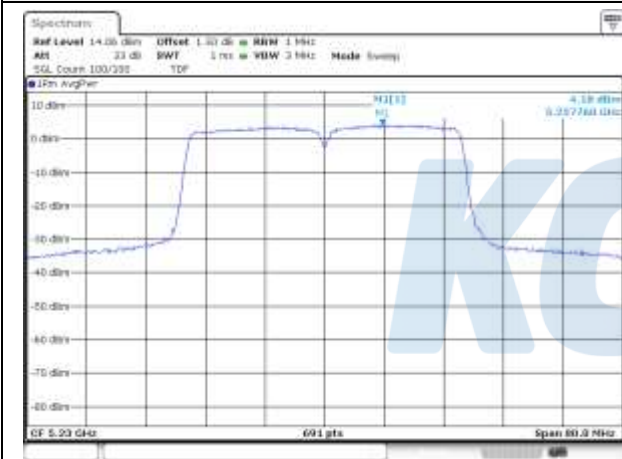
UNII-1 / 802.11n HT40 / 5 190 MHz



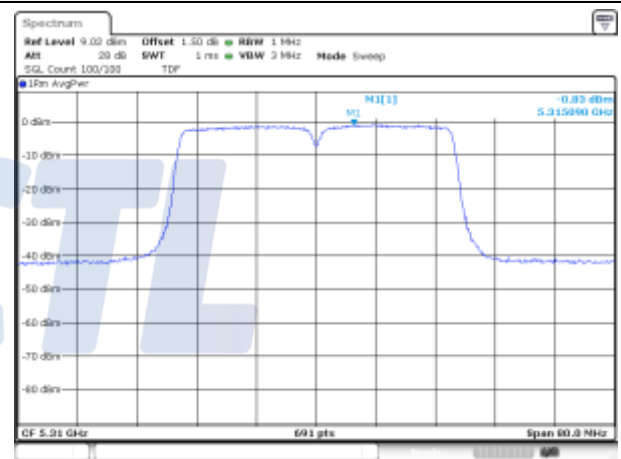
UNII-2A / 802.11n HT40 / 5 270 MHz



UNII-1 / 802.11n HT40 / 5 230 MHz



UNII-2A / 802.11n HT40 / 5 310 MHz



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KR20-SRF0030-D

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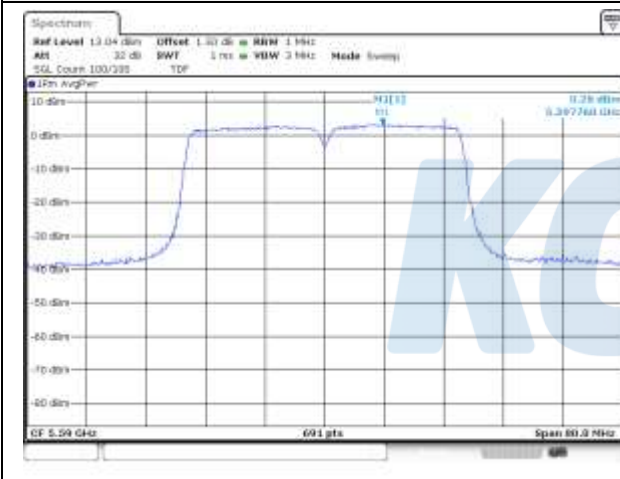
UNII-2C / 802.11n HT40 / 5 510 MHz



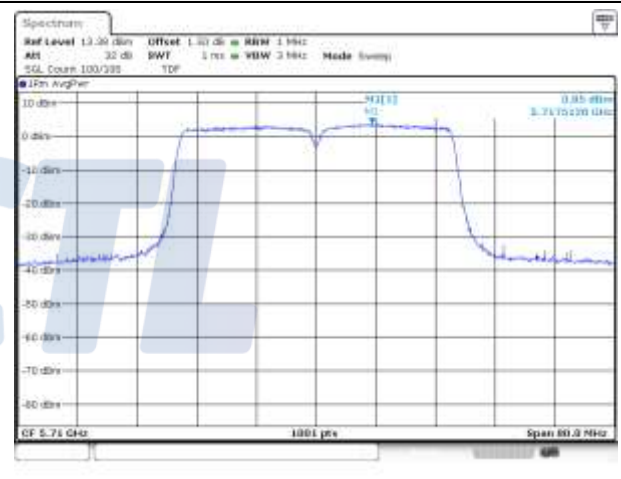
UNII-2C / 802.11n HT40 / 5 670 MHz



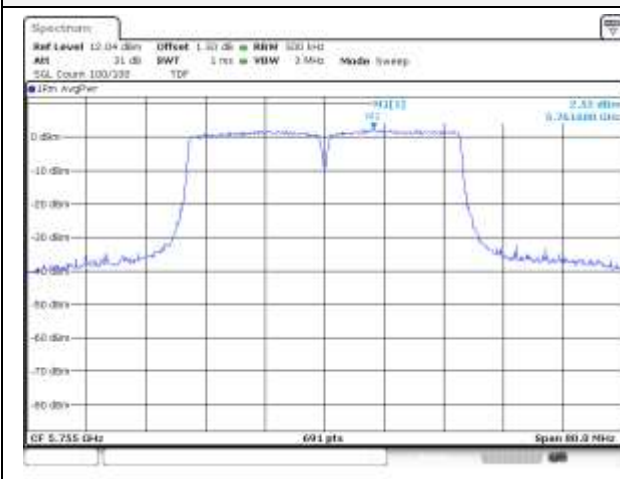
UNII-2C / 802.11n HT40 / 5 590 MHz



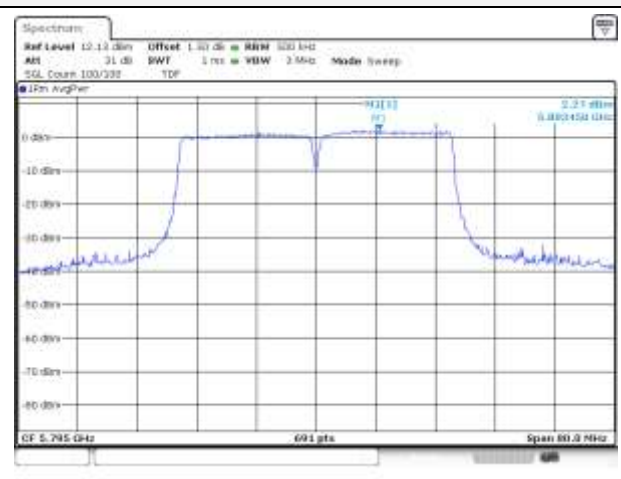
UNII-2C / 802.11n HT40 / 5 710 MHz



UNII-3 / 802.11n HT40 / 5 755 MHz



UNII-3 / 802.11n HT40 / 5 795 MHz



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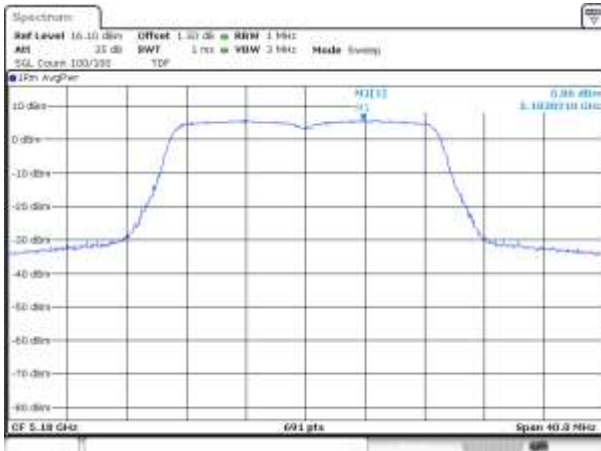
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Suwon-si, Gyeonggi-do, 16677, Korea  
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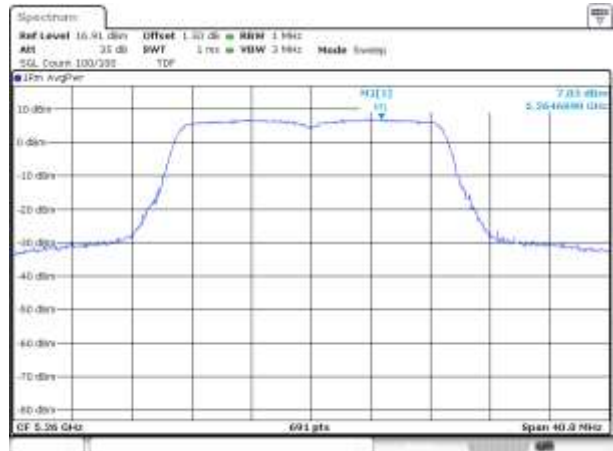
Page (178) of (1046)



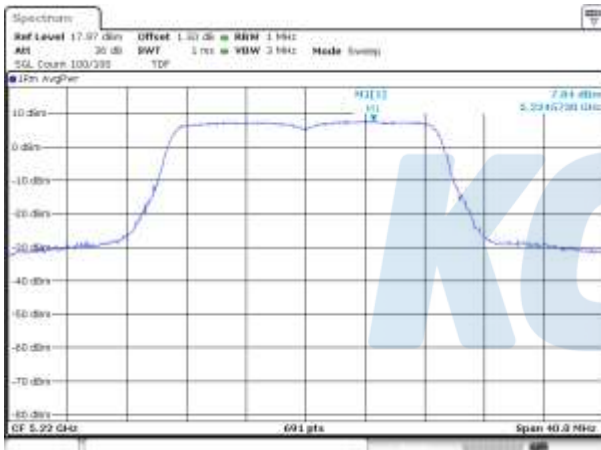
## UNII-1 / 802.11ac VHT20 / 5 180 MHz



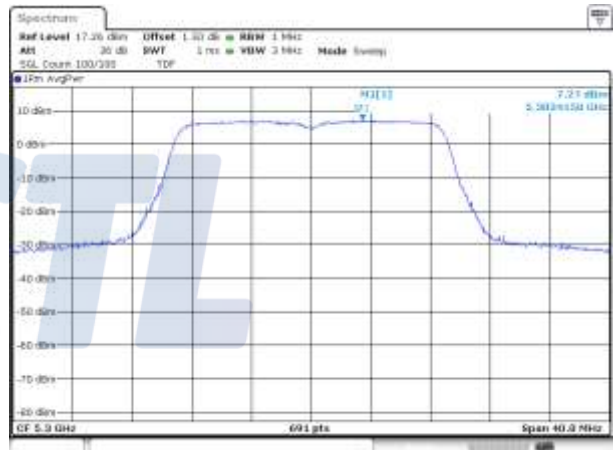
## UNII-2A / 802.11ac VHT20 / 5 260 MHz



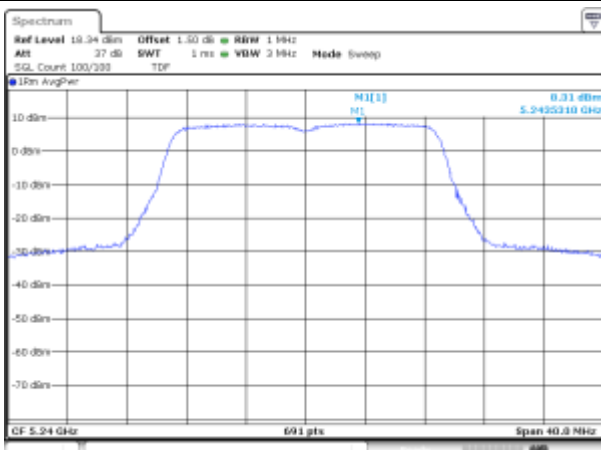
## UNII-1 / 802.11ac VHT20 / 5 220 MHz



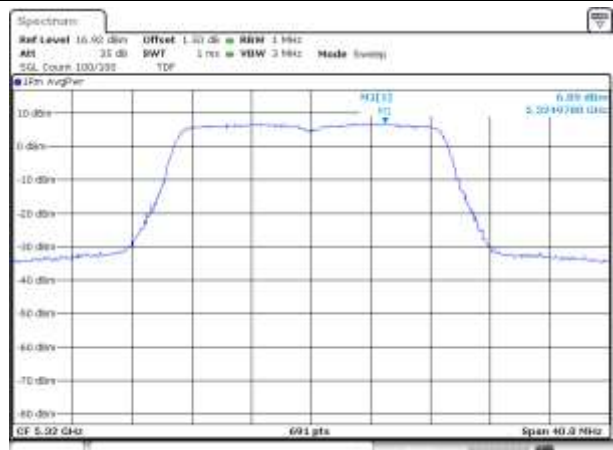
## UNII-2A / 802.11ac VHT20 / 5 300 MHz



## UNII-1 / 802.11ac VHT20 / 5 240 MHz



## UNII-2A / 802.11ac VHT20 / 5 320 MHz



# KCTL Inc.

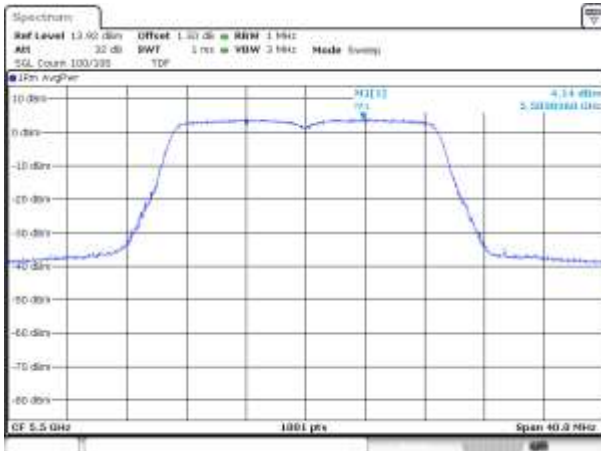
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Suwon-si, Gyeonggi-do, 16677, Korea  
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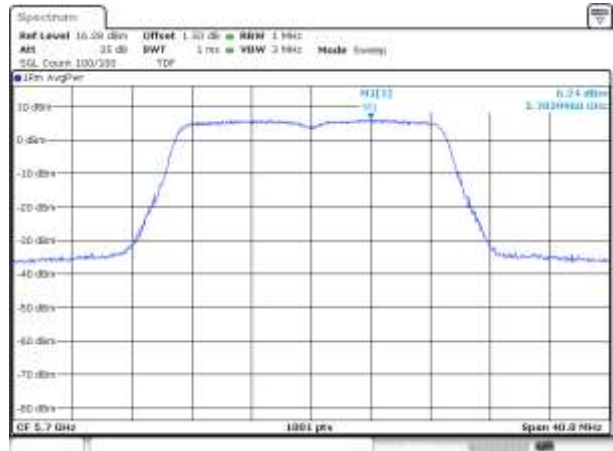
Page (179) of (1046)



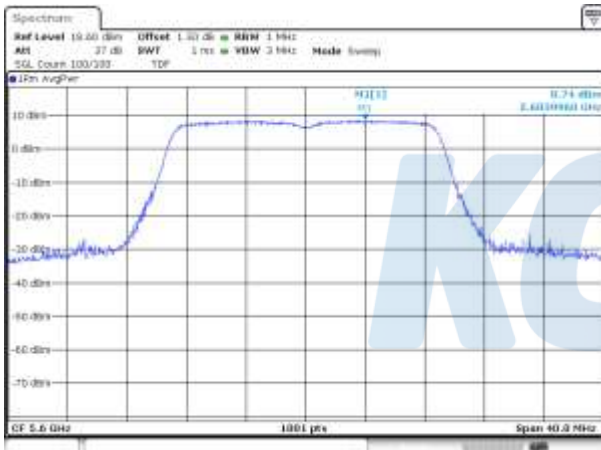
## UNII-2C / 802.11ac VHT20 / 5 500 MHz



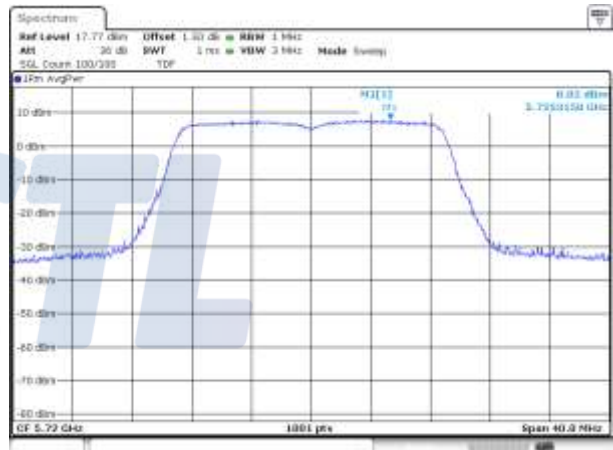
## UNII-2C / 802.11ac VHT20 / 5 700 MHz



## UNII-2C / 802.11ac VHT20 / 5 600 MHz



## UNII-2C / 802.11ac VHT20 / 5 720 MHz



# KCTL Inc.

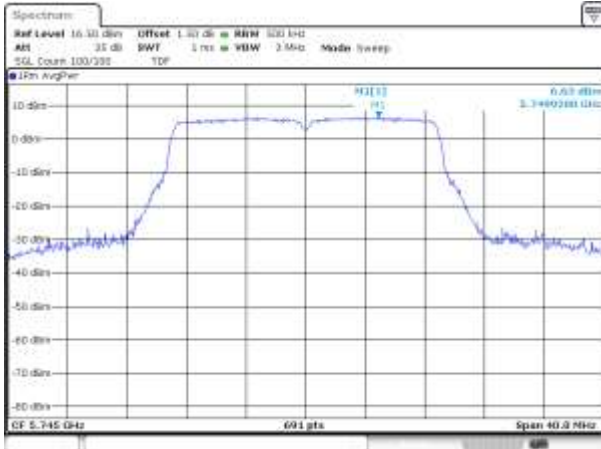
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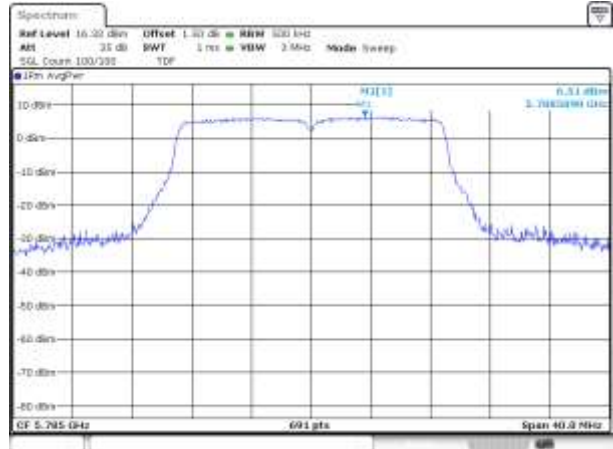
Page (180) of (1046)



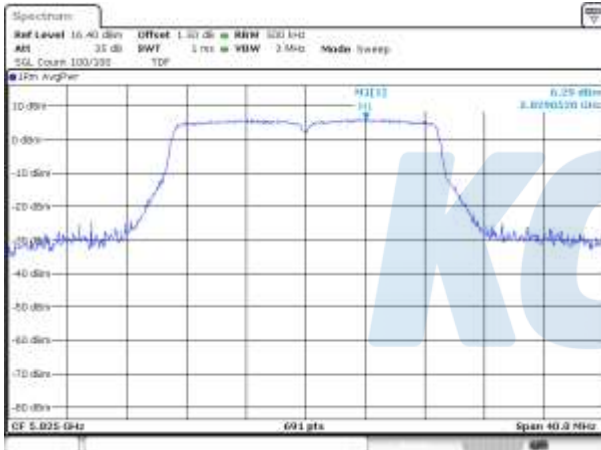
## UNII-3 / 802.11ac VHT20 / 5 745 MHz



## UNII-3 / 802.11ac VHT20 / 5 785 MHz



## UNII-3 / 802.11ac VHT20 / 5 825 MHz



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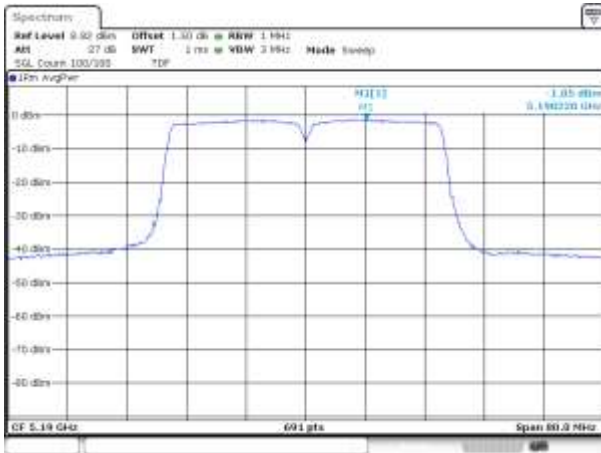
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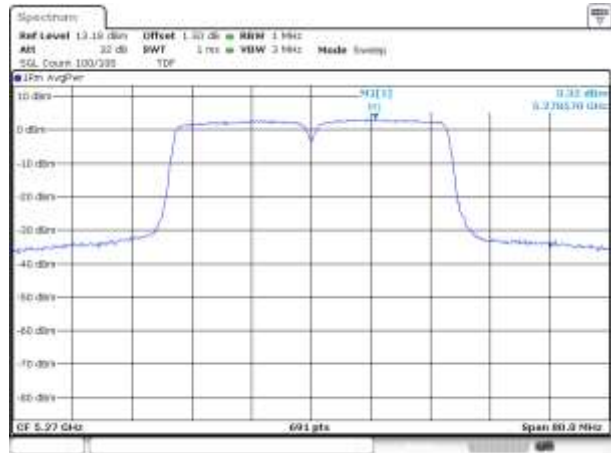
Page (181) of (1046)



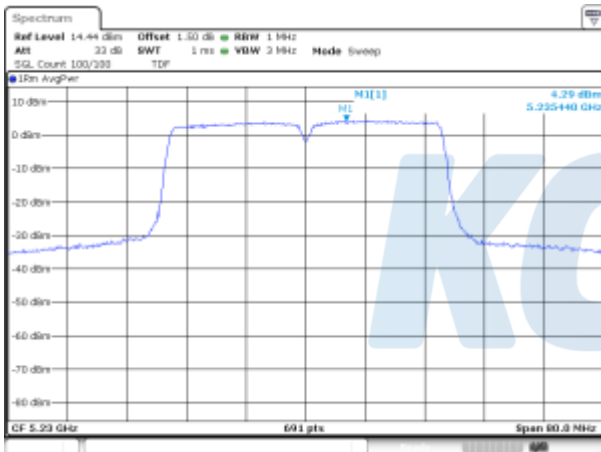
## UNII-1 / 802.11ac VHT40 / 5 190 MHz



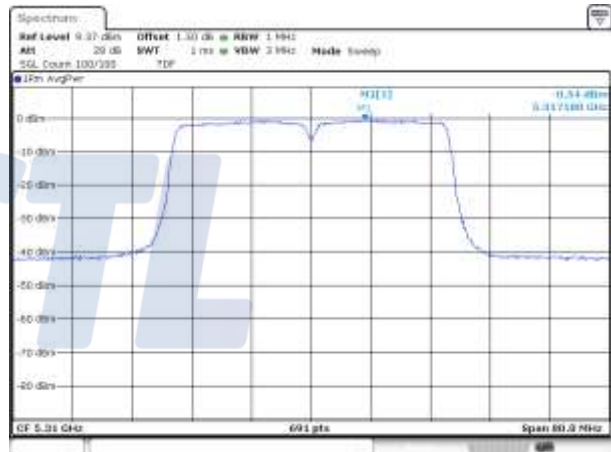
## UNII-2A / 802.11ac VHT40 / 5 270 MHz



## UNII-1 / 802.11ac VHT40 / 5 230 MHz



## UNII-2A / 802.11ac VHT40 / 5 310 MHz



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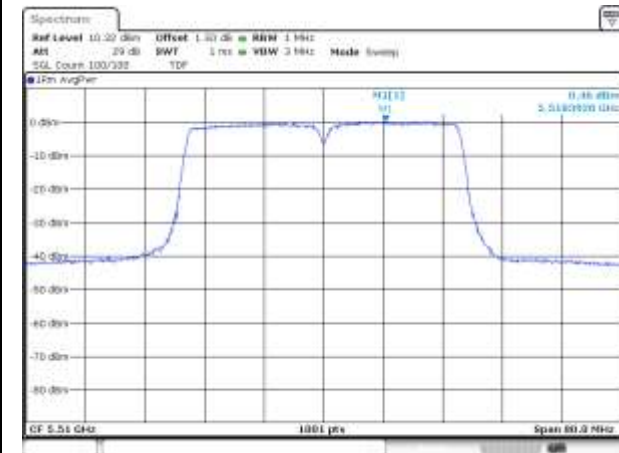
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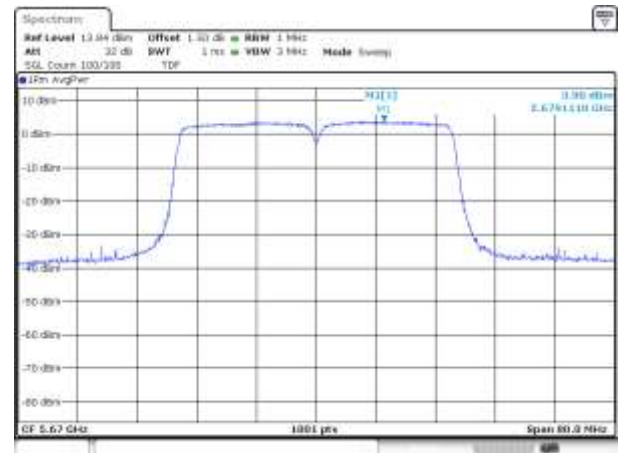
Page (182) of (1046)



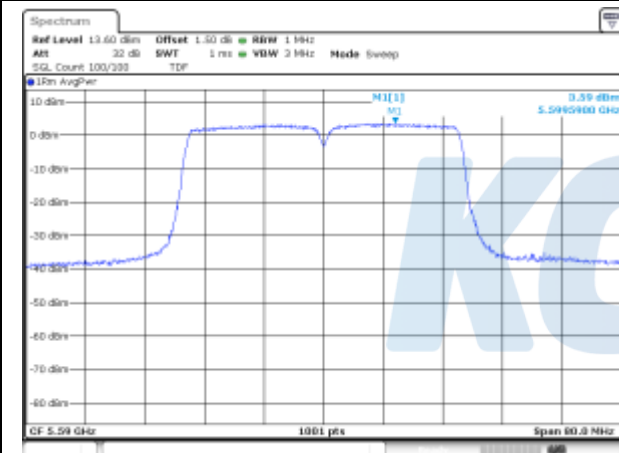
## UNII-2C / 802.11ac VHT40 / 5 510 MHz



## UNII-2C / 802.11ac VHT40 / 5 670 MHz



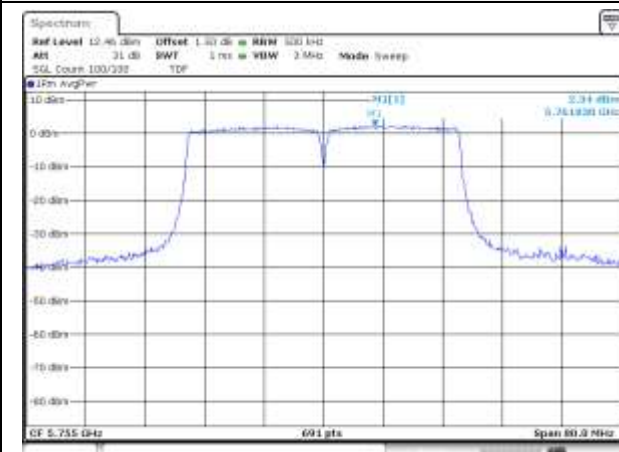
## UNII-2C / 802.11ac VHT40 / 5 590 MHz



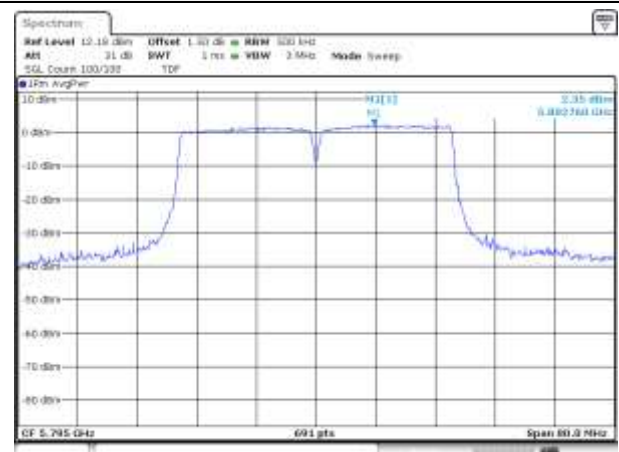
## UNII-2C / 802.11ac VHT40 / 5 710 MHz



## UNII-3 / 802.11ac VHT40 / 5 755 MHz



## UNII-3 / 802.11ac VHT40 / 5 795 MHz



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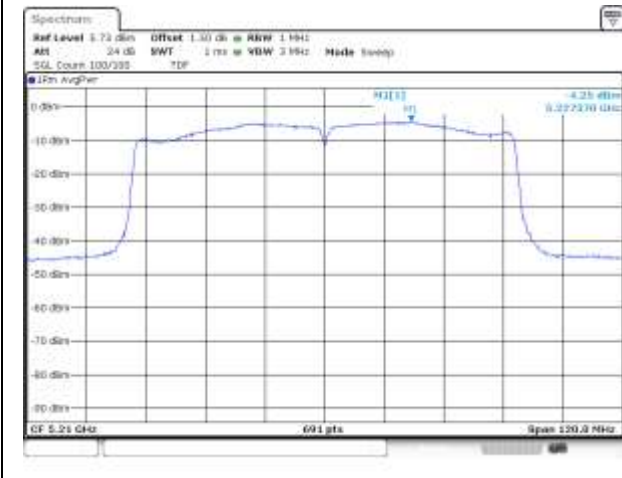
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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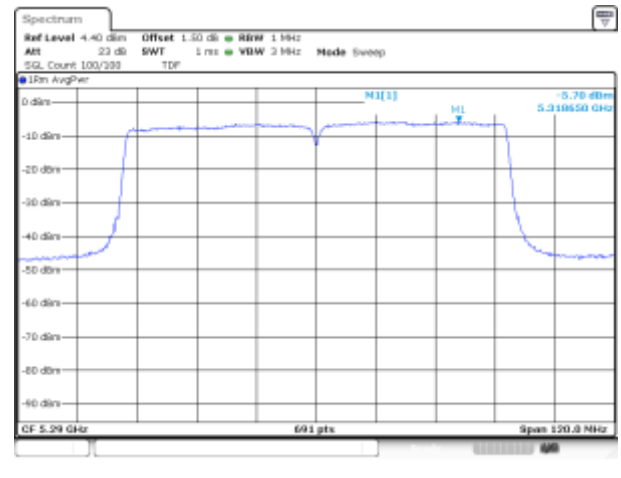
Page (183) of (1046)



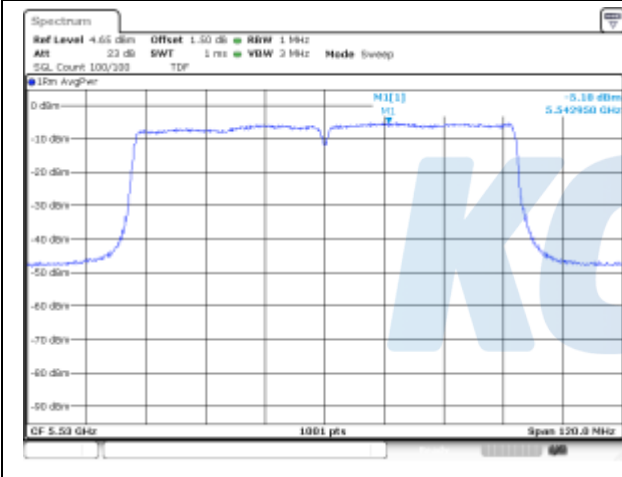
### UNII-1 / 802.11ac VHT80 / 5 210 MHz



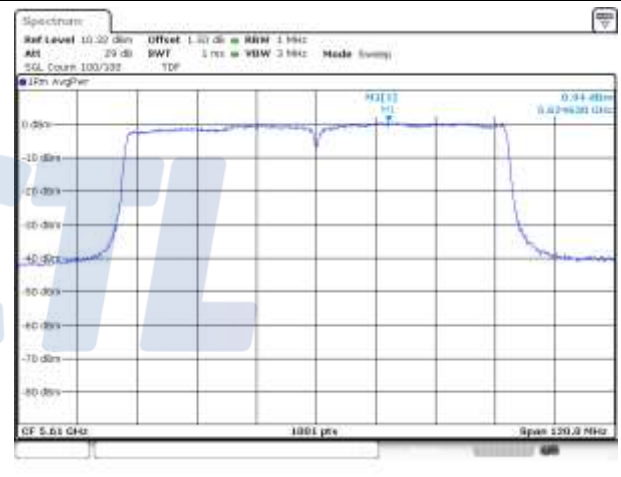
### UNII-2A / 802.11ac VHT80 / 5 290 MHz



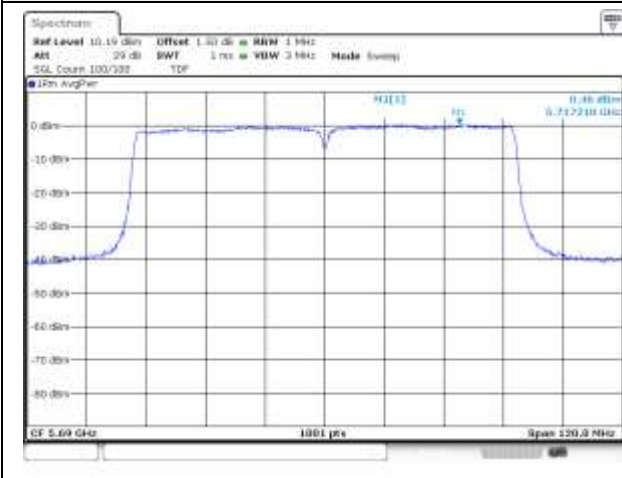
### UNII-2C / 802.11ac VHT80 / 5 530 MHz



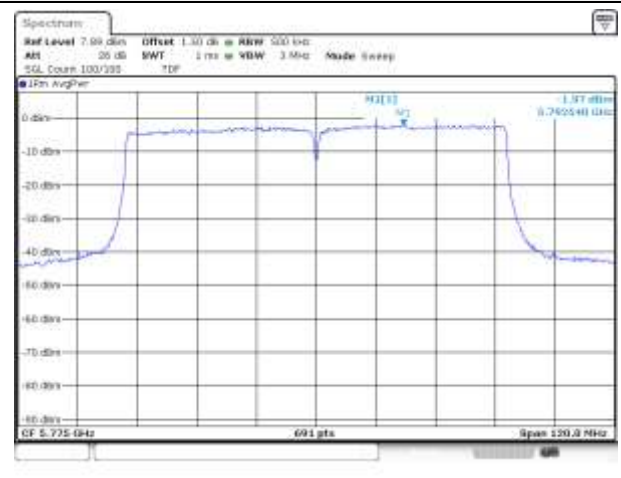
### UNII-2C / 802.11ac VHT80 / 5 610 MHz



### UNII-2C / 802.11ac VHT80 / 5 690 MHz



### UNII-3 / 802.11ac VHT80 / 5 775 MHz





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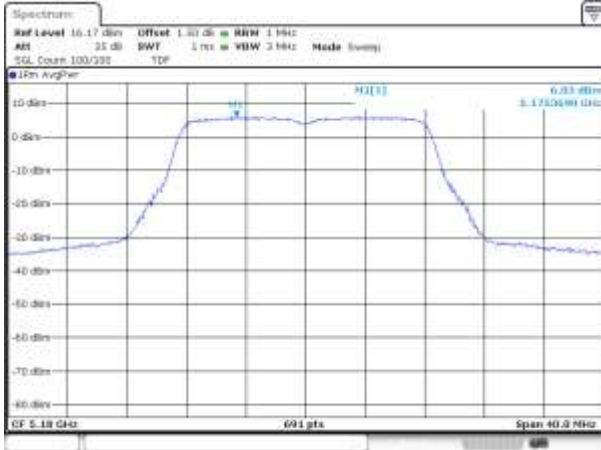
Report No.:  
KR20-SRF0030-D

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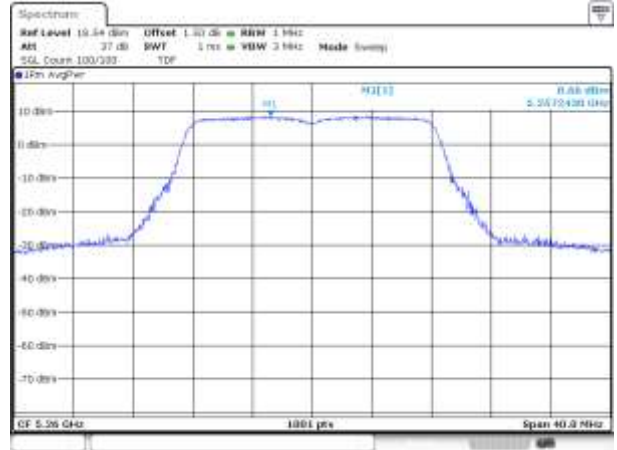


## SISO ANT 3

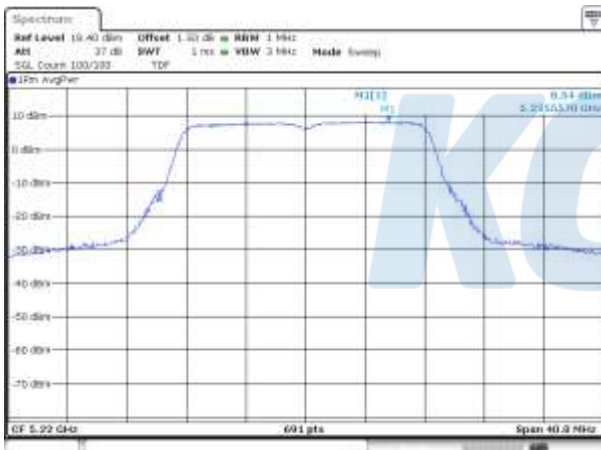
UNII-1 / 802.11a / 5 180 MHz



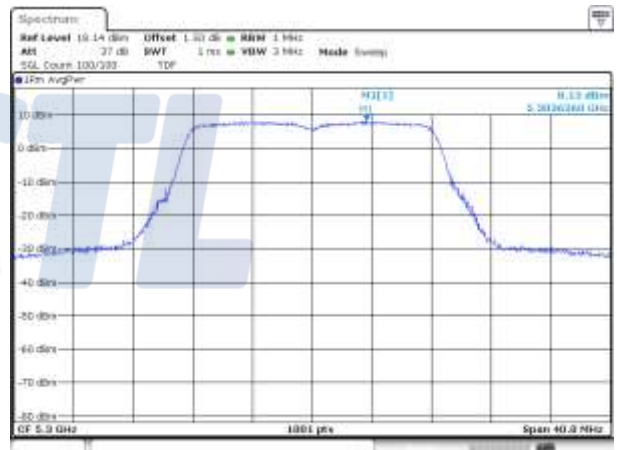
UNII-2A / 802.11a / 5 260 MHz



UNII-1 / 802.11a / 5 220 MHz



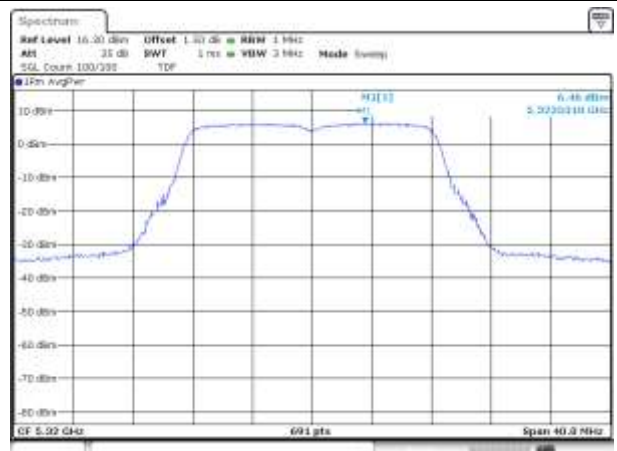
UNII-2A / 802.11a / 5 300 MHz



UNII-1 / 802.11a / 5 240 MHz



UNII-2A / 802.11a / 5 320 MHz



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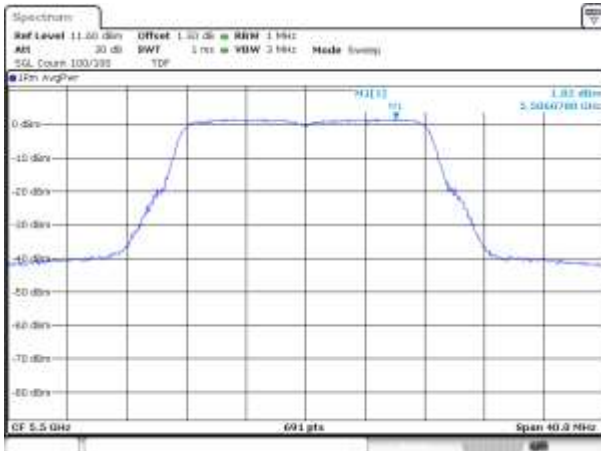
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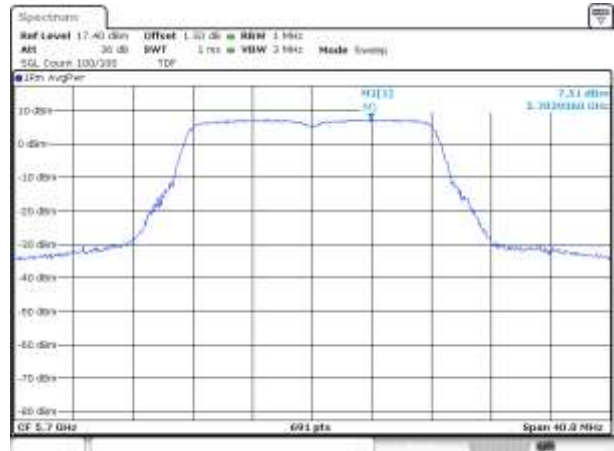
Page (185) of (1046)



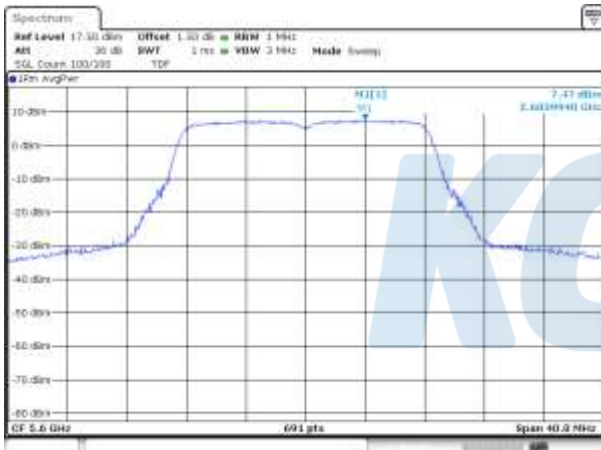
## UNII-2C / 802.11a / 5 500 MHz



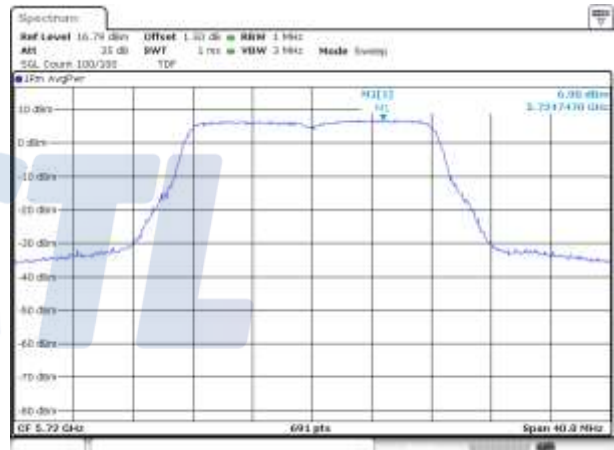
## UNII-2C / 802.11a / 5 700 MHz



## UNII-2C / 802.11a / 5 600 MHz



## UNII-2C / 802.11a / 5 720 MHz



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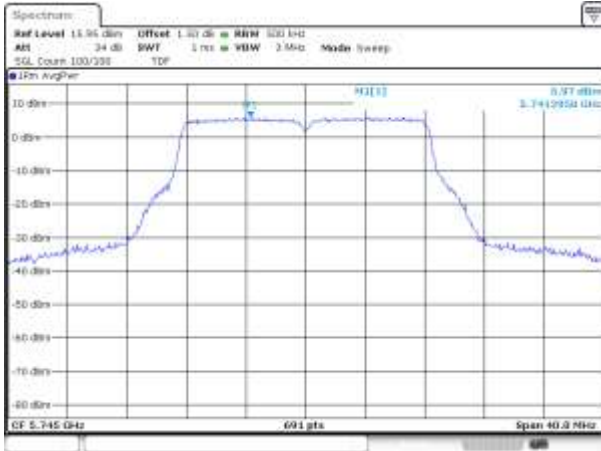
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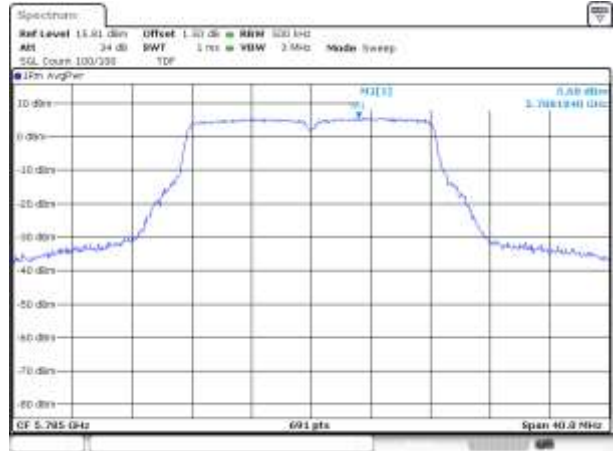
Page (186) of (1046)



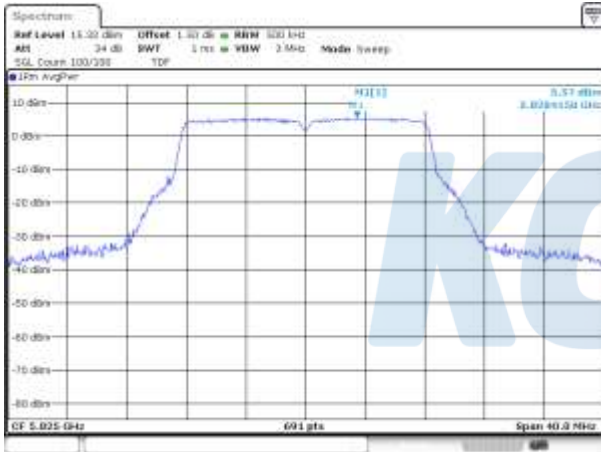
## UNII-3 / 802.11a / 5 745 MHz



## UNII-3 / 802.11a / 5 785 MHz



## UNII-3 / 802.11a / 5 825 MHz



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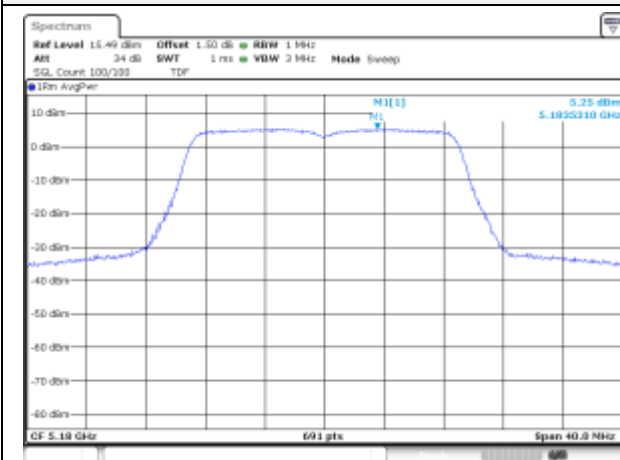
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Suwon-si, Gyeonggi-do, 16677, Korea  
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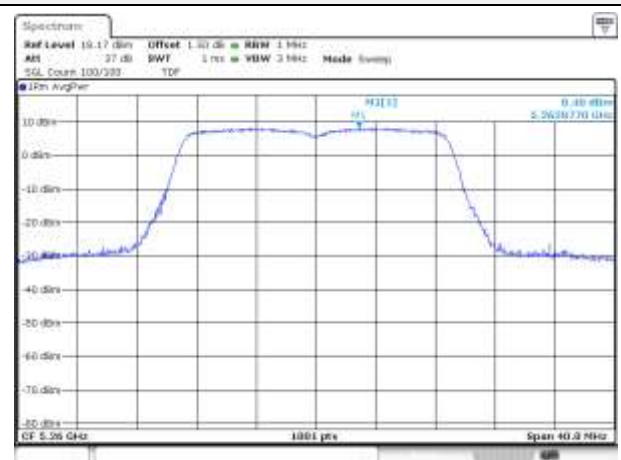
Page (187) of (1046)



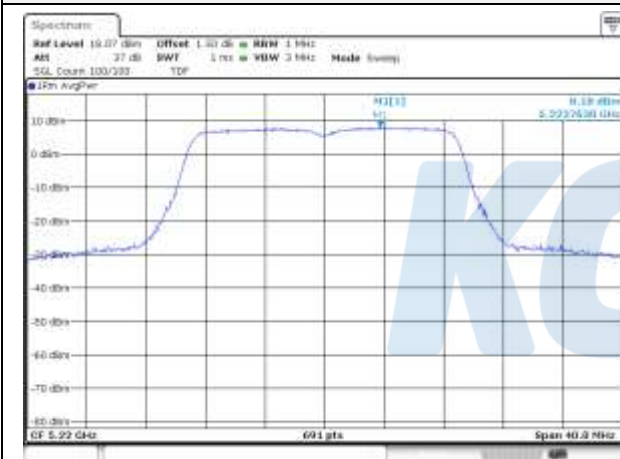
UNII-1 / 802.11n HT20 / 5 180 MHz



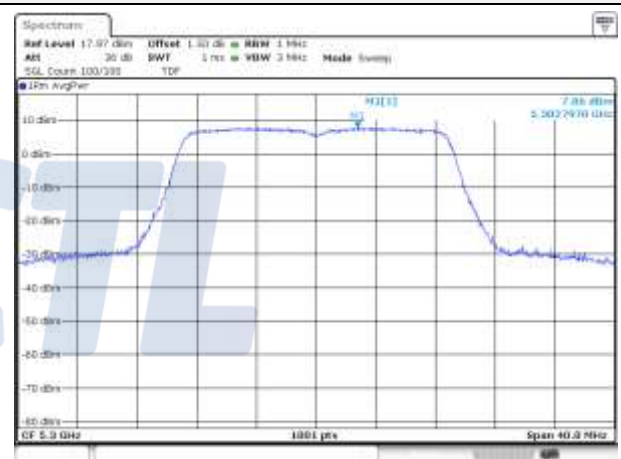
UNII-2A / 802.11n HT20 / 5 260 MHz



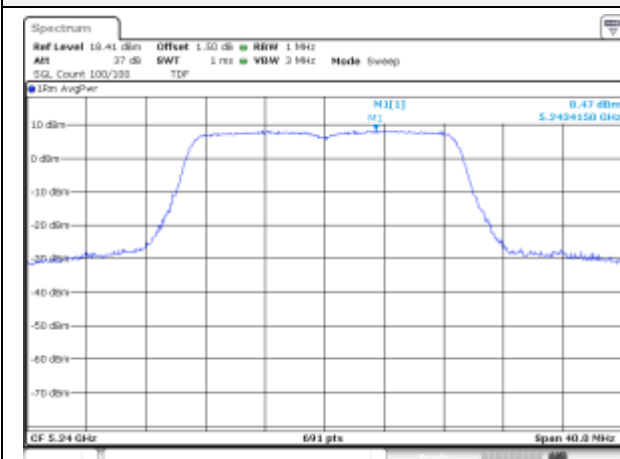
UNII-1 / 802.11n HT20 / 5 220 MHz



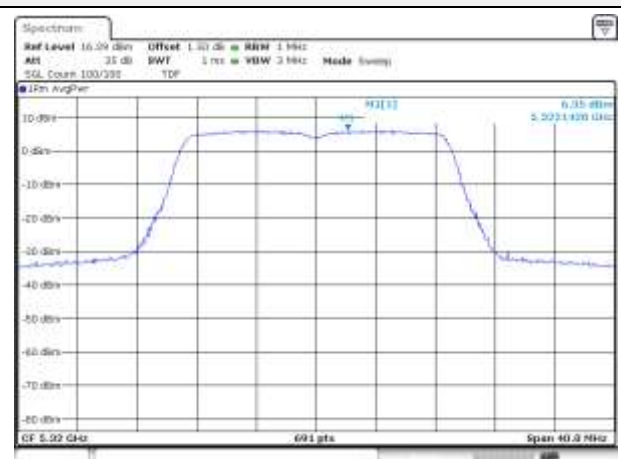
UNII-2A / 802.11n HT20 / 5 300 MHz



UNII-1 / 802.11n HT20 / 5 240 MHz



UNII-2A / 802.11n HT20 / 5 320 MHz



# KCTL Inc.

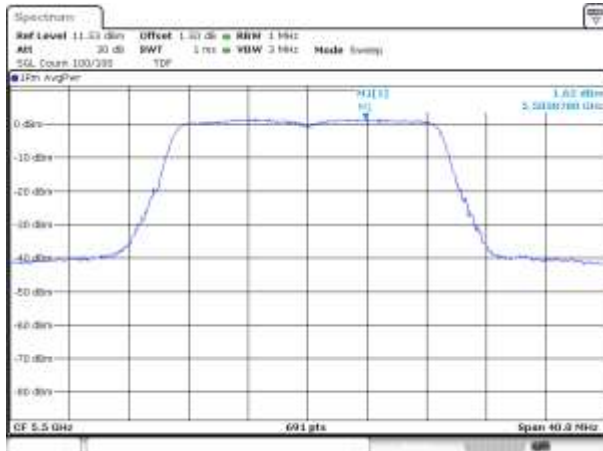
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KR20-SRF0030-D

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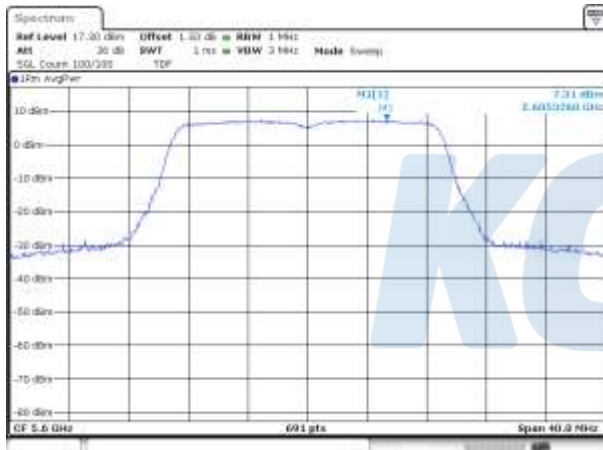
## UNII-2C / 802.11n HT20 / 5 500 MHz



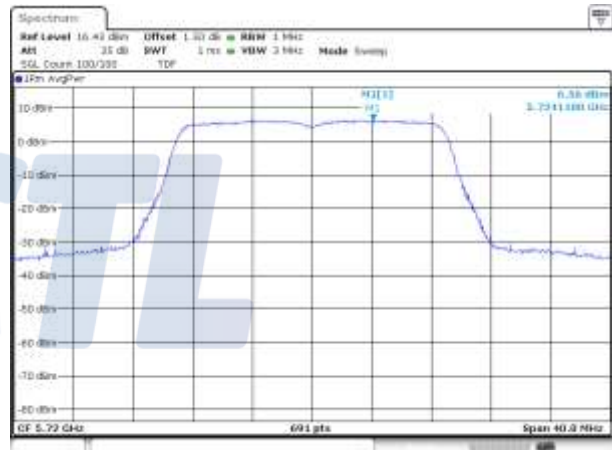
## UNII-2C / 802.11n HT20 / 5 700 MHz



## UNII-2C / 802.11n HT20 / 5 600 MHz



## UNII-2C / 802.11n HT20 / 5 720 MHz



# KCTL Inc.

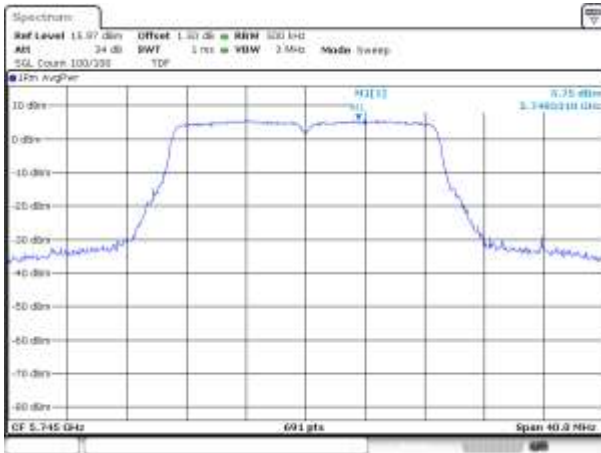
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Report No.:  
KR20-SRF0030-D

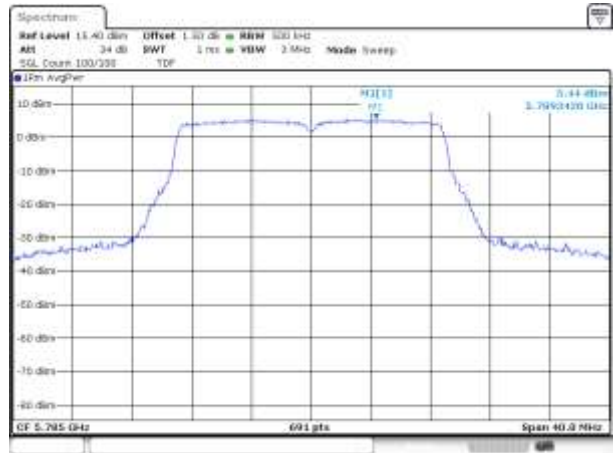
Page (189) of (1046)



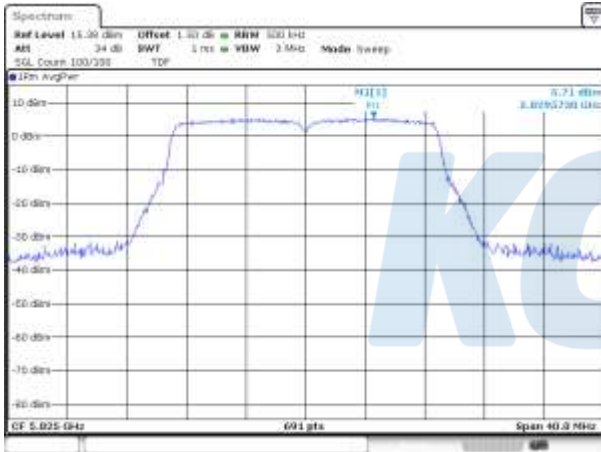
## UNII-3 / 802.11n HT20 / 5 745 MHz



## UNII-3 / 802.11n HT20 / 5 785 MHz



## UNII-3 / 802.11n HT20 / 5 825 MHz



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Blank

# KCTL Inc.

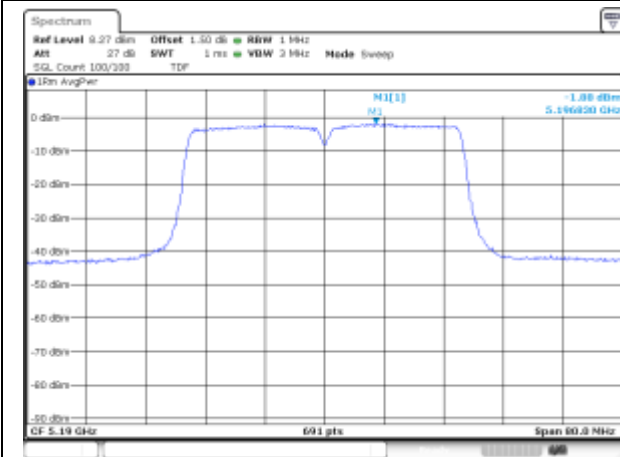
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR20-SRF0030-D

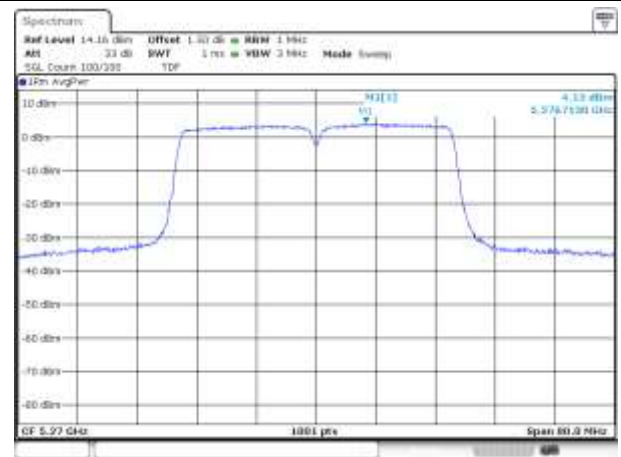
Page (190) of (1046)



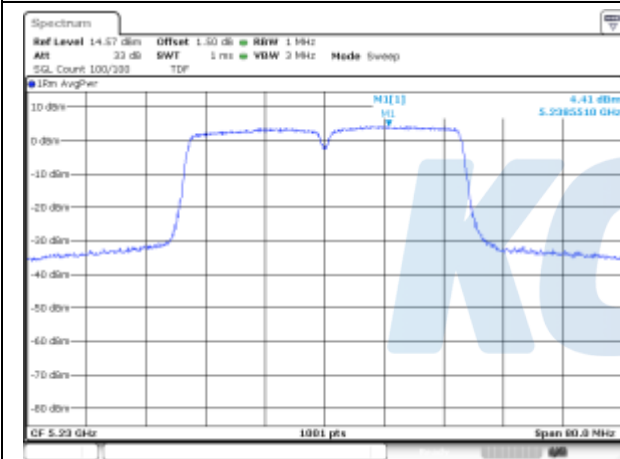
## UNII-1 / 802.11n HT40 / 5 190 MHz



## UNII-2A / 802.11n HT40 / 5 270 MHz



## UNII-1 / 802.11n HT40 / 5 230 MHz



## UNII-2A / 802.11n HT40 / 5 310 MHz

