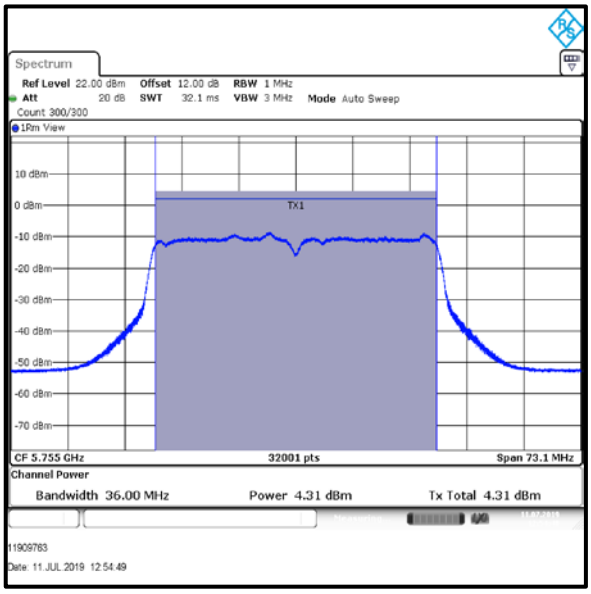
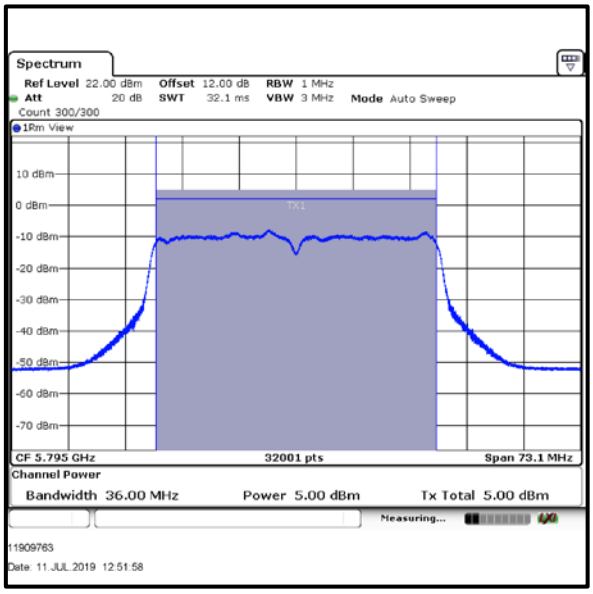
## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 3 / PWL 12 / 23 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / HT80 / MCS0 / MIMO / Port 1+2+3 / PWL 12 / 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Single | 3.3 | 0.5 | 3.8 | 2.2 | 0.5 | 2.7 |

| Channel | Port 3 | | |
|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Single | 2.3 | 0.5 | 2.8 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Port 1+2+3 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|
| Single | 3.8 | 2.7 | 2.8 | 7.9 | 21.8 | 13.9 | Complied |

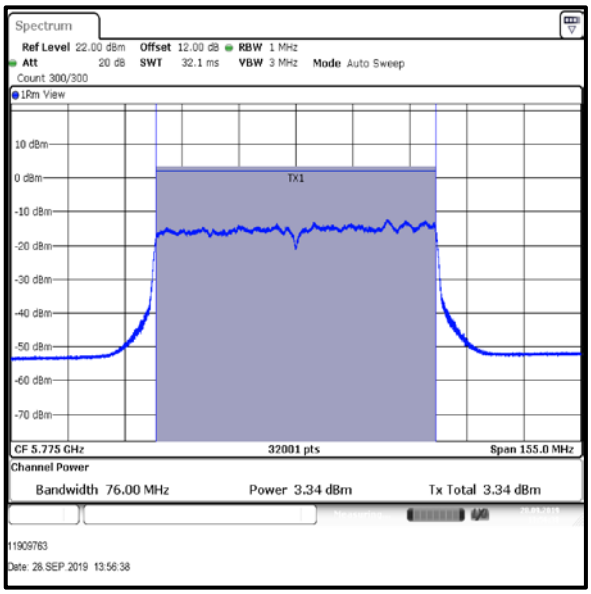
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Single | 7.9 | 14.2 | 22.1 | 36.0 | 13.9 | Complied |

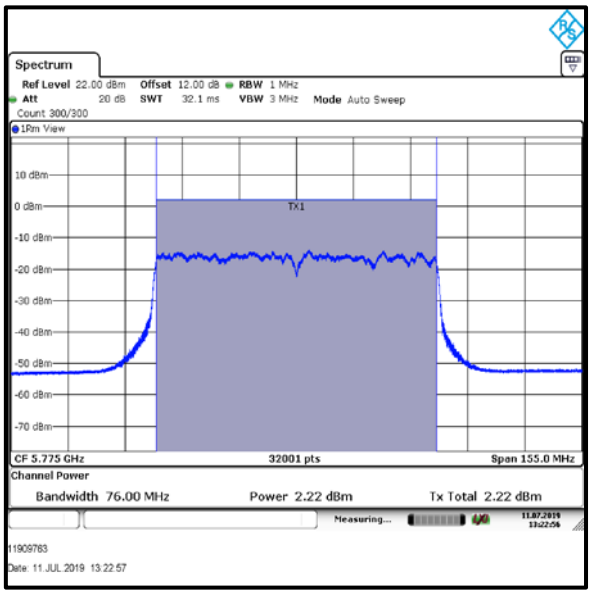
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

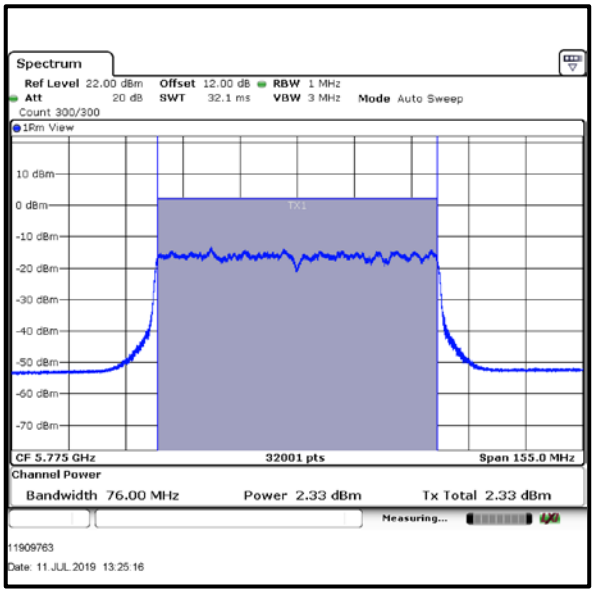
## Results: 802.11ac / HT80 / MCS0 / MIMO / Port 1+2+3 / PWL 12 / 23 dBi Antenna Group




**Single Channel Port 1**




**Single Channel Port 2**




**Single Channel Port 3**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 1+2+3+4 / PWL 16/ 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom +1 | 8.5 | 0.3 | 8.8 | 7.9 | 0.3 | 8.2 |
| Middle | 8.5 | 0.3 | 8.8 | 8.1 | 0.3 | 8.4 |
| Top -1 | 8.5 | 0.3 | 8.8 | 8.2 | 0.3 | 8.5 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom +1 | 8.1 | 0.3 | 8.4 | 7.6 | 0.3 | 7.9 |
| Middle | 8.2 | 0.3 | 8.5 | 7.8 | 0.3 | 8.1 |
| Top -1 | 7.9 | 0.3 | 8.2 | 7.6 | 0.3 | 7.9 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom +1 | 8.8 | 8.2 | 8.4 | 7.9 | 14.4 | 21.8 | 7.4 | Complied |
| Middle | 8.8 | 8.4 | 8.5 | 8.1 | 14.5 | 21.8 | 7.3 | Complied |
| Top -1 | 8.8 | 8.5 | 8.2 | 7.9 | 14.4 | 21.8 | 7.4 | Complied |

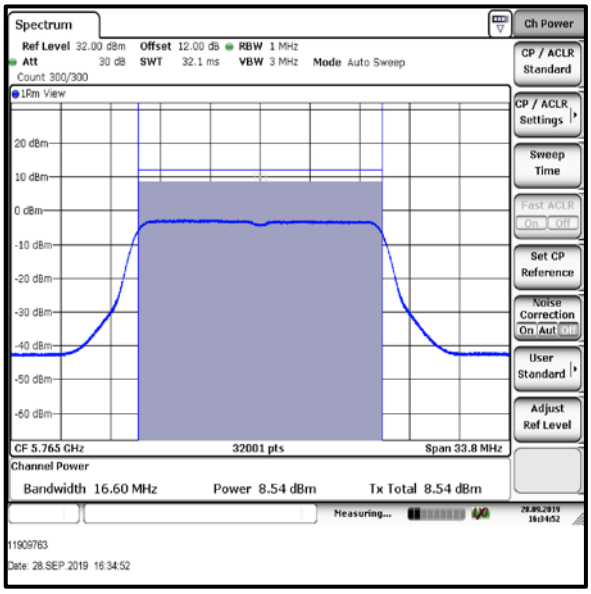
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom +1 | 14.4 | 14.2 | 28.6 | 36.0 | 7.4 | Complied |
| Middle | 14.5 | 14.2 | 28.7 | 36.0 | 7.3 | Complied |
| Top -1 | 14.4 | 14.2 | 28.6 | 36.0 | 7.4 | Complied |

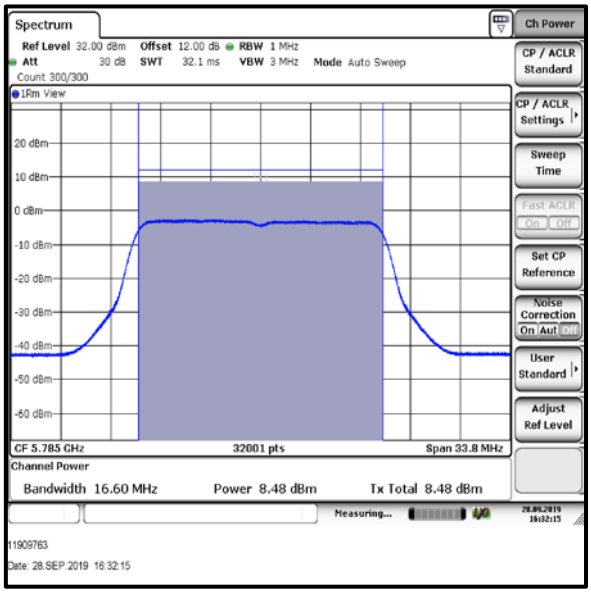
**Result:** Pass

## Transmitter Maximum Conducted Output Power (continued)

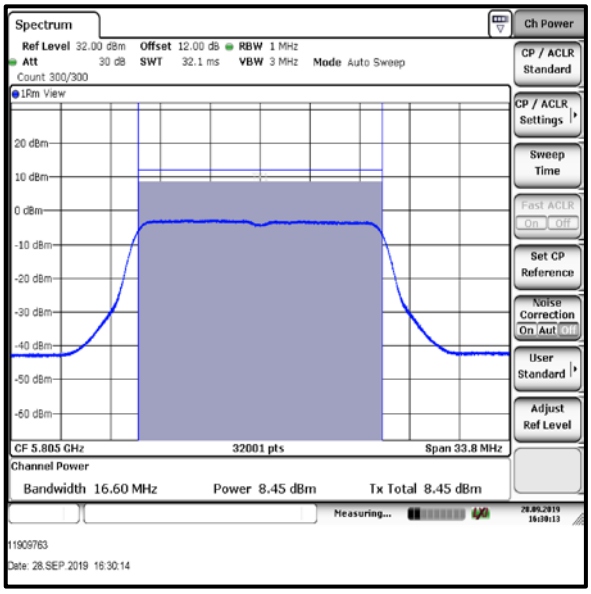
## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 1 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



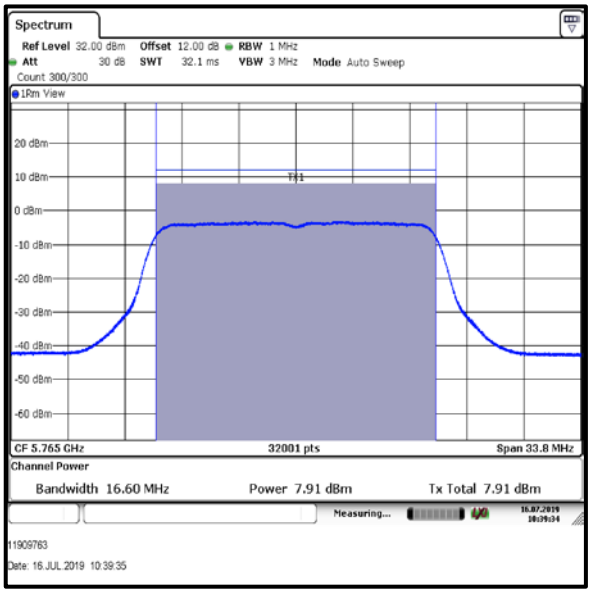

**Middle Channel**



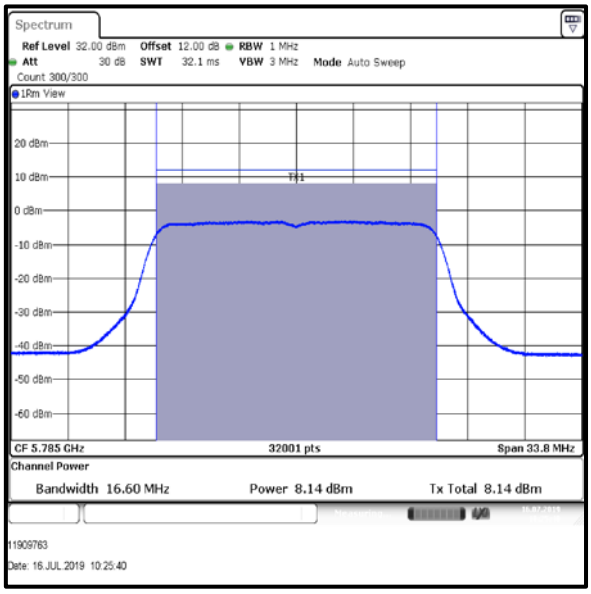

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

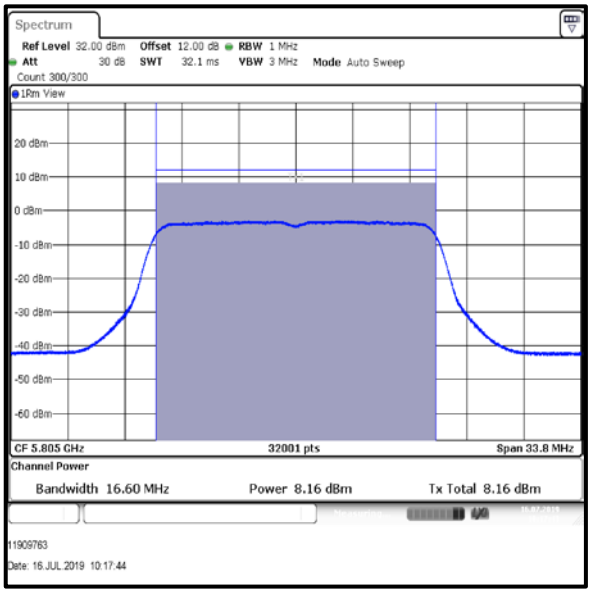
## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 2 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



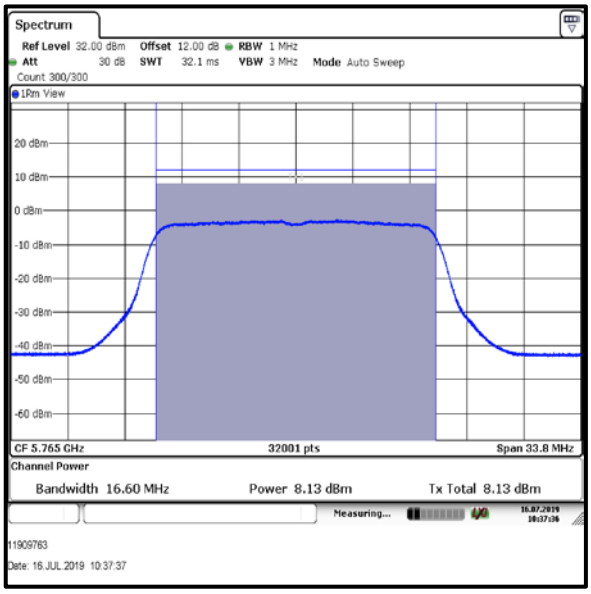

**Middle Channel**



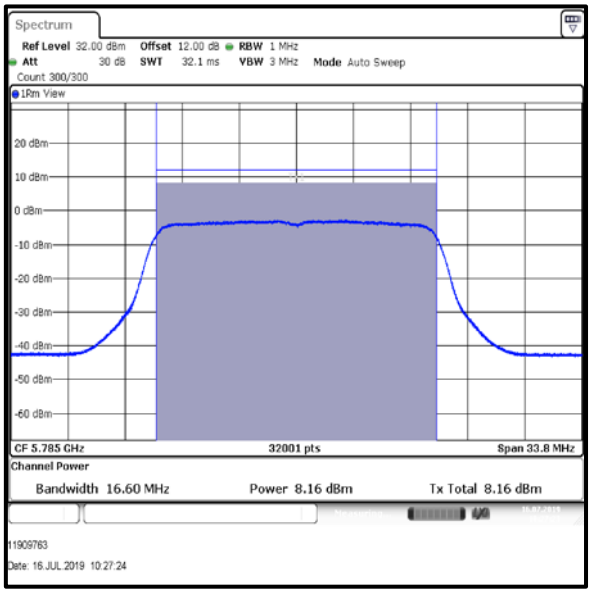

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

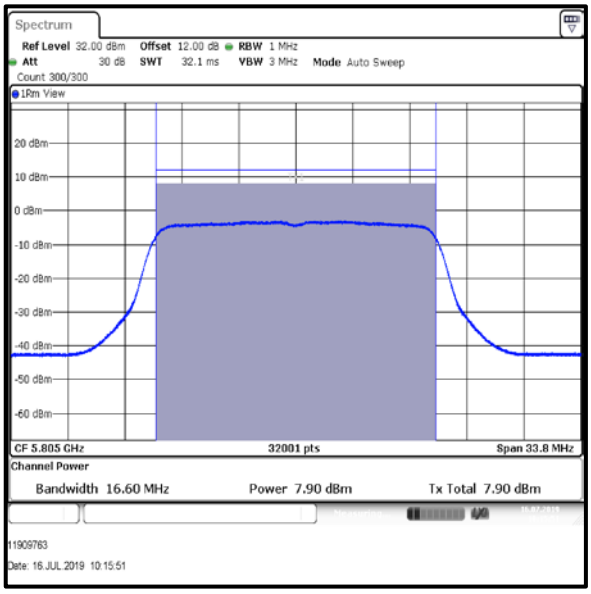
## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 3 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



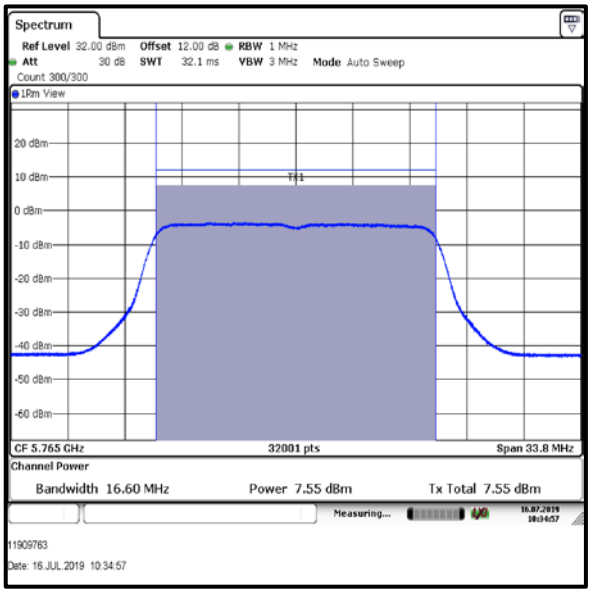

**Middle Channel**



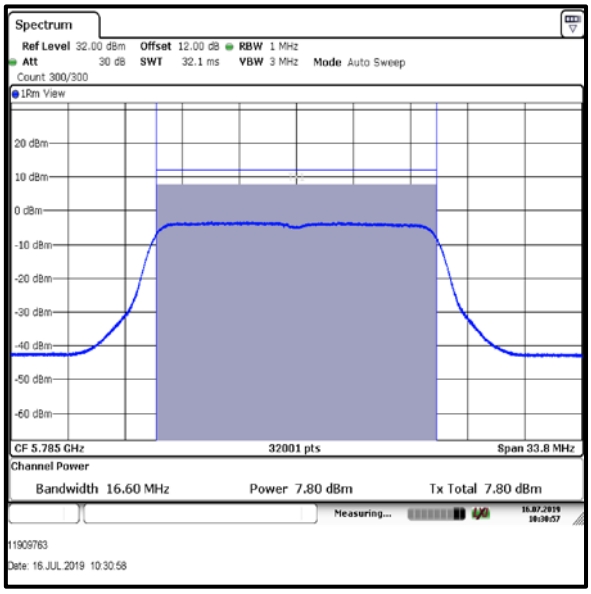

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

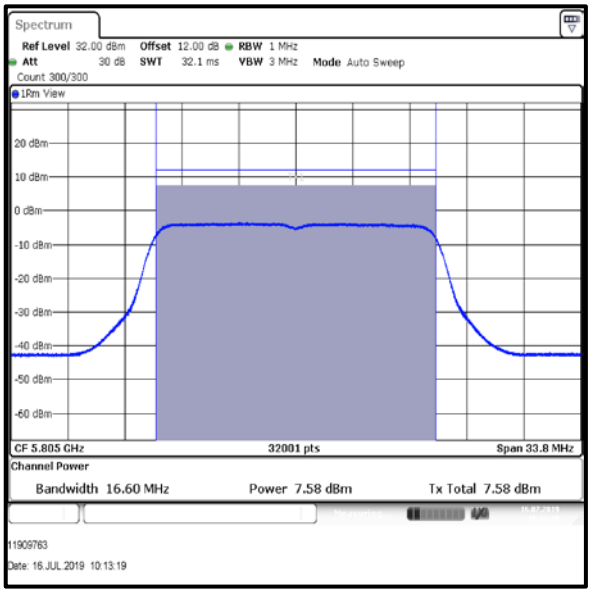
## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 4 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**




**Middle Channel**




**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 1+2+3+4 / PWL 11/ 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 3.2 | 0.3 | 3.5 | 3.1 | 0.3 | 3.4 |
| Top | 3.3 | 0.3 | 3.6 | 5.4 | 0.3 | 5.7 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 3.9 | 0.3 | 4.2 | 3.6 | 0.3 | 3.9 |
| Top | 4.3 | 0.3 | 4.6 | 3.1 | 0.3 | 3.4 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom | 3.5 | 3.4 | 4.2 | 3.9 | 9.8 | 21.8 | 12 | Complied |
| Top | 3.6 | 5.7 | 4.6 | 3.4 | 10.4 | 21.8 | 11.4 | Complied |

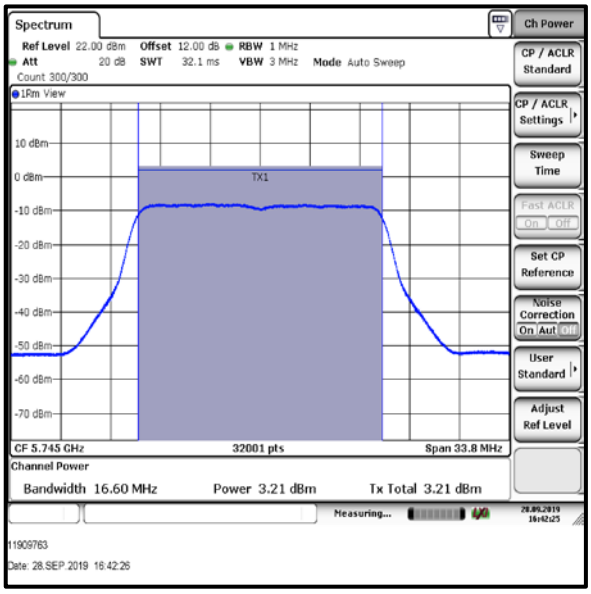
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 9.8 | 14.2 | 24.0 | 36.0 | 12 | Complied |
| Top | 10.4 | 14.2 | 24.6 | 36.0 | 11.4 | Complied |

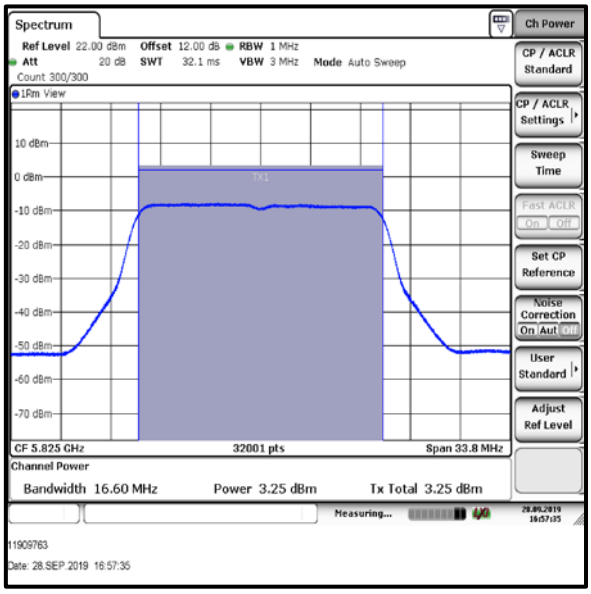
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 1 / PWL 11 / 23 dBi Antenna Group

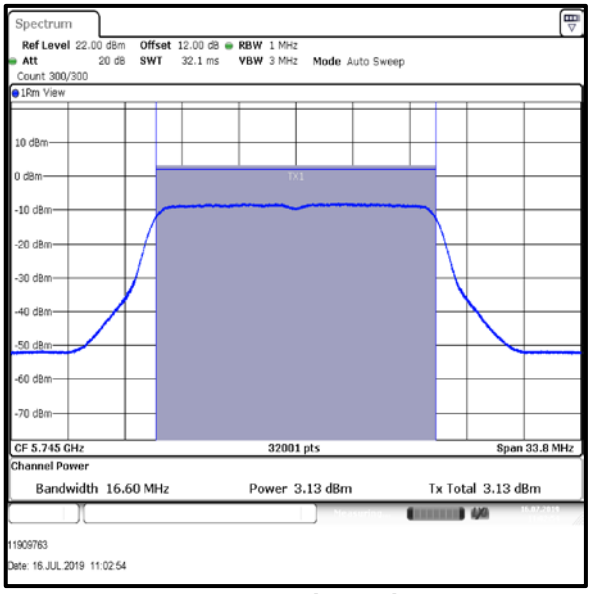



**Bottom Channel**

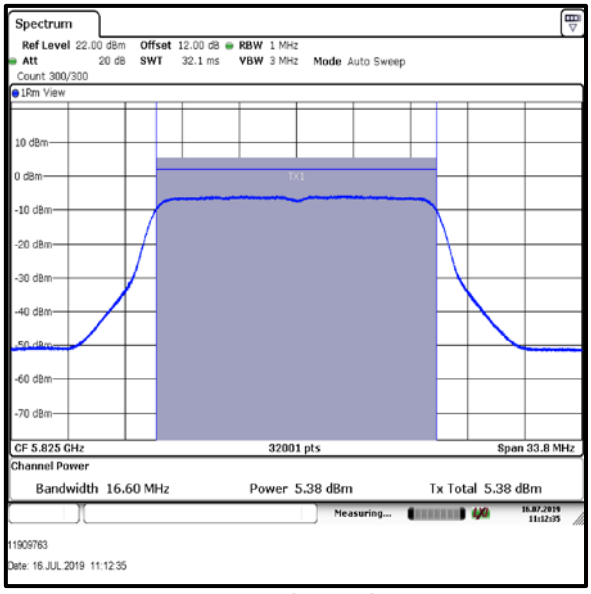



**Top Channel**

## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 2 / PWL 11 / 23 dBi Antenna Group



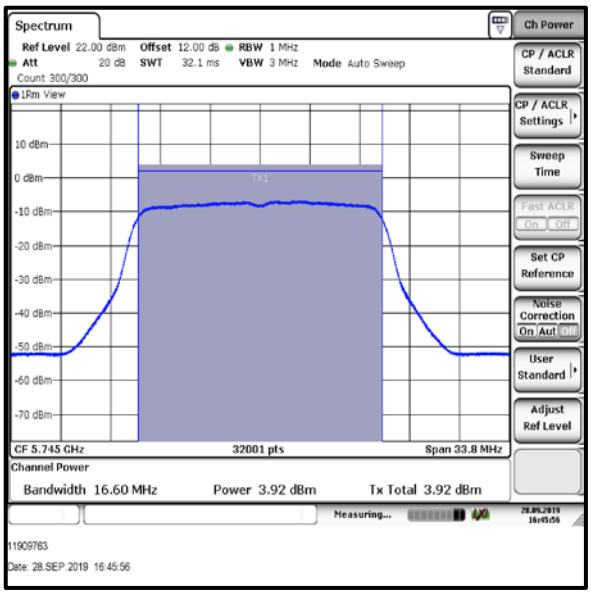

**Bottom Channel**



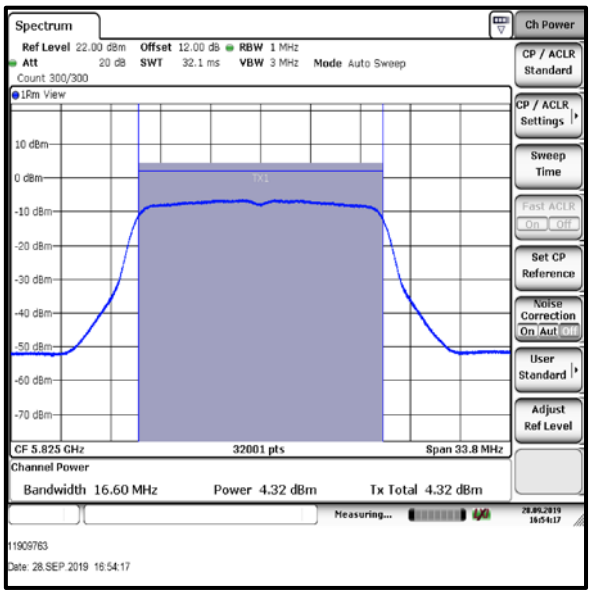

**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 3 / PWL 11 / 23 dBi Antenna Group

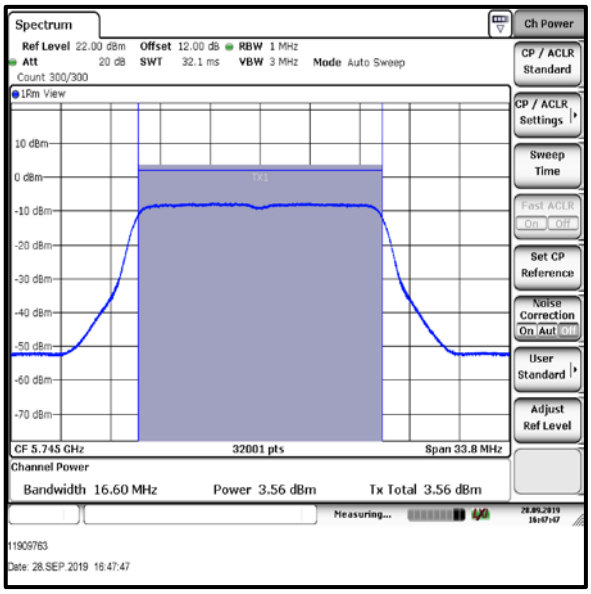



**Bottom Channel**

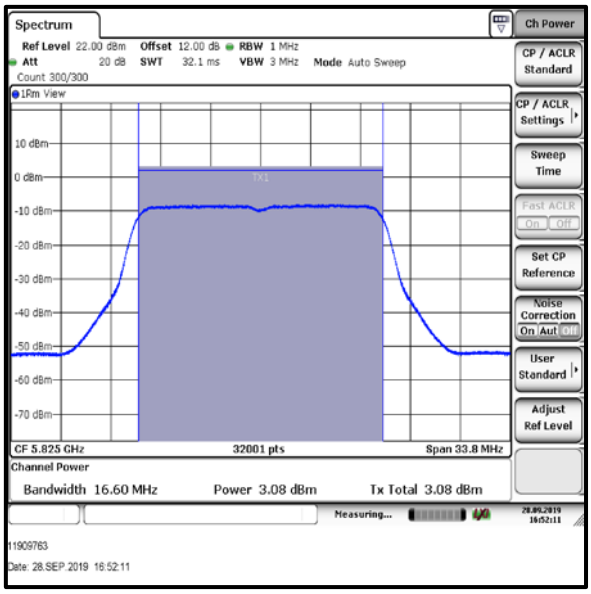



**Top Channel**

## Results: 802.11a / 20 MHz / 6Mbps / MIMO / Port 4 / PWL 11 / 23 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 1+2+3+4 / PWL 16 / 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom +1 | 8.3 | 0.5 | 8.8 | 7.8 | 0.5 | 8.3 |
| Middle | 8.2 | 0.5 | 8.7 | 7.7 | 0.5 | 8.2 |
| Top -1 | 8.1 | 0.5 | 8.6 | 7.9 | 0.5 | 8.4 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom +1 | 8.1 | 0.5 | 8.6 | 7.5 | 0.5 | 8.0 |
| Middle | 8.2 | 0.5 | 8.7 | 7.4 | 0.5 | 7.9 |
| Top -1 | 7.9 | 0.5 | 8.4 | 7.4 | 0.5 | 7.9 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom +1 | 8.8 | 8.3 | 8.6 | 8.0 | 14.5 | 21.8 | 7.3 | Complied |
| Middle | 8.7 | 8.2 | 8.7 | 7.9 | 14.4 | 21.8 | 7.4 | Complied |
| Top -1 | 8.6 | 8.4 | 8.4 | 7.9 | 14.4 | 21.8 | 7.4 | Complied |

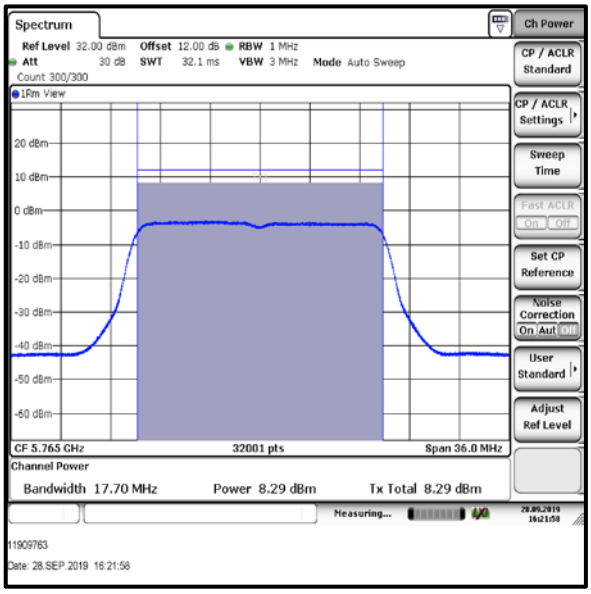
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom +1 | 14.5 | 14.2 | 28.7 | 36.0 | 7.3 | Complied |
| Middle | 14.4 | 14.2 | 28.6 | 36.0 | 7.4 | Complied |
| Top -1 | 14.4 | 14.2 | 28.6 | 36.0 | 7.4 | Complied |

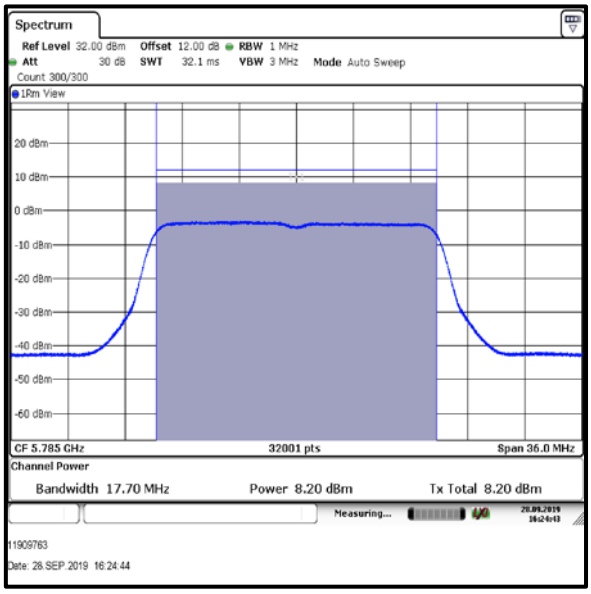
**Result:** Pass

## Transmitter Maximum Conducted Output Power (continued)

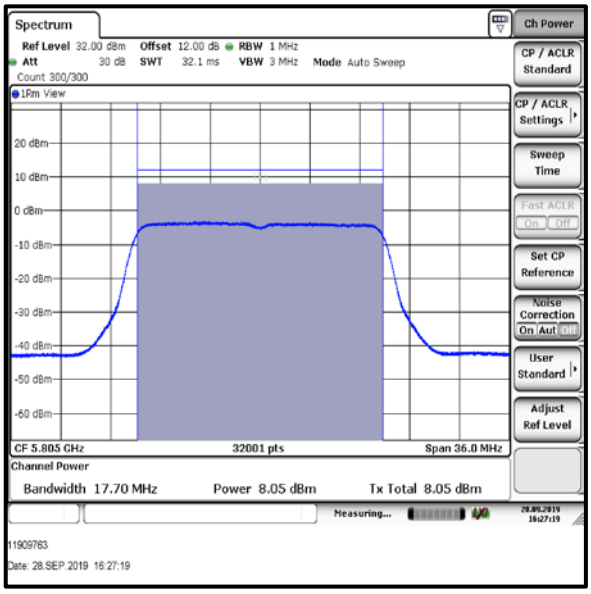
## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 1 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



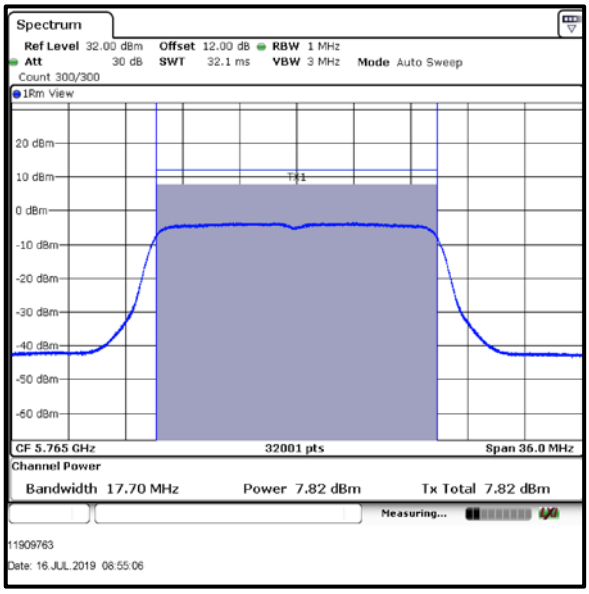

**Middle Channel**



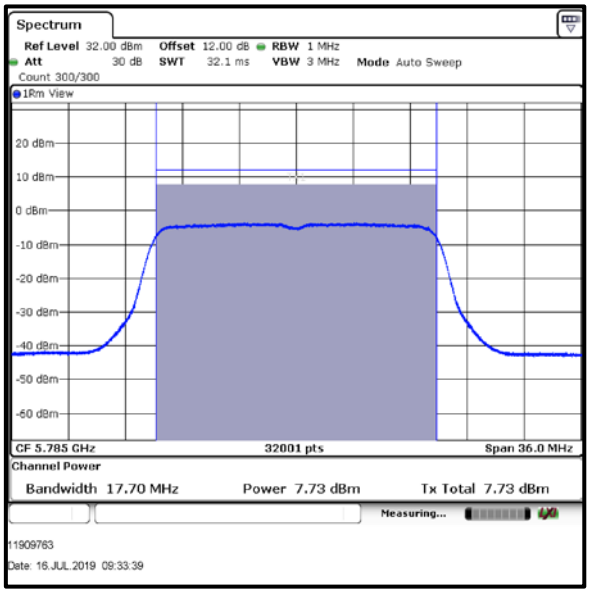

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

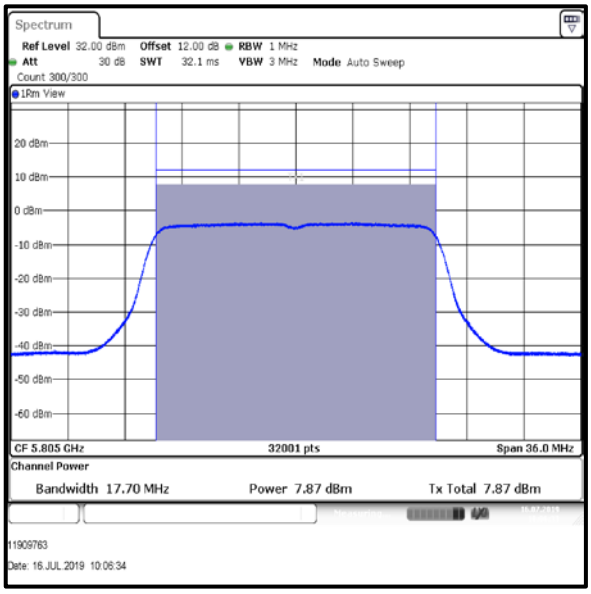
## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 2 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



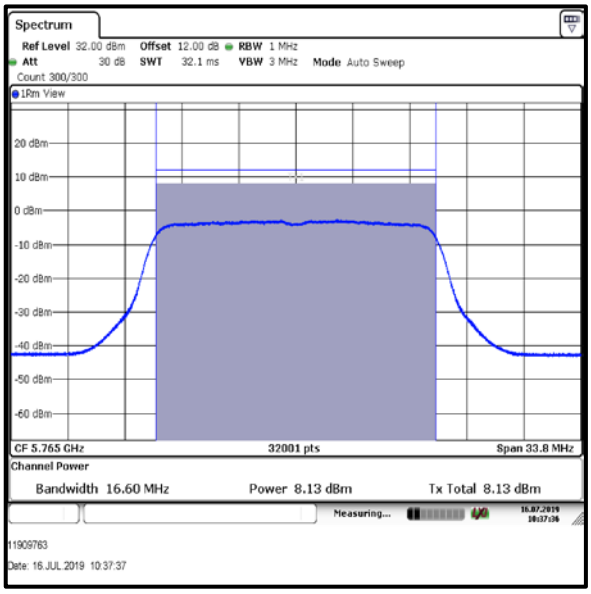

**Middle Channel**



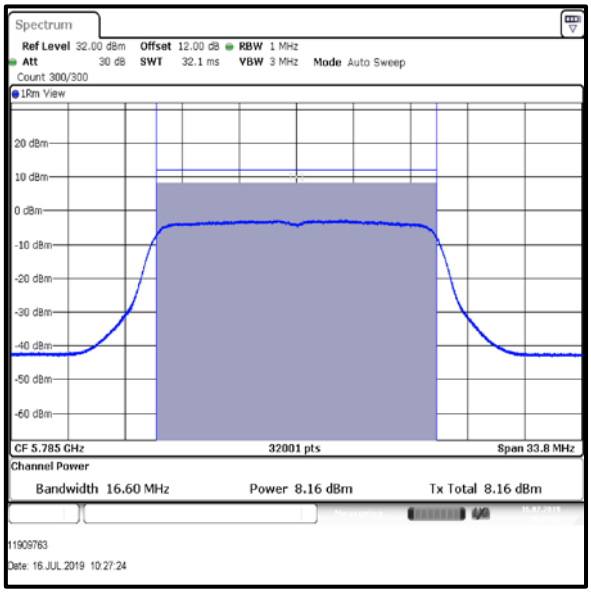

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

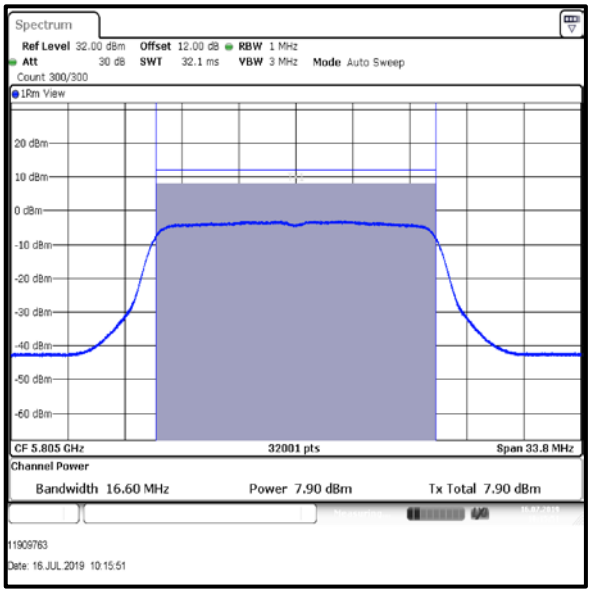
## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 3 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



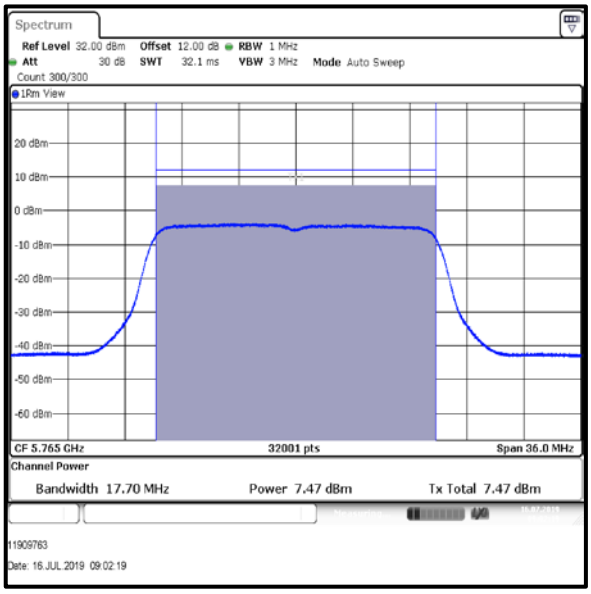

**Middle Channel**



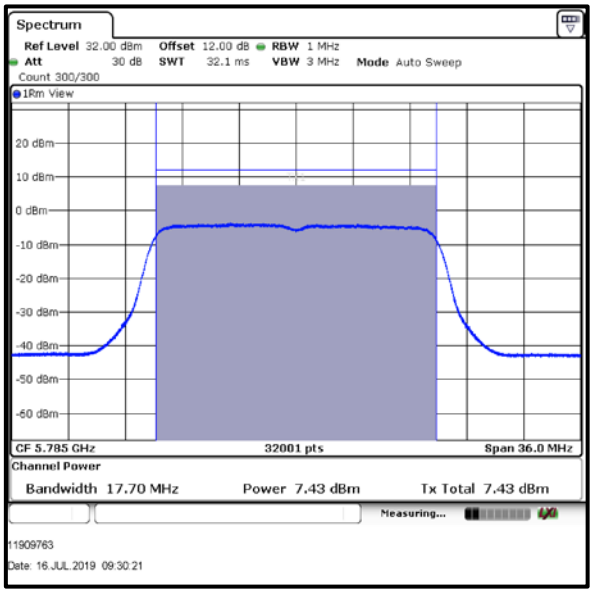

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

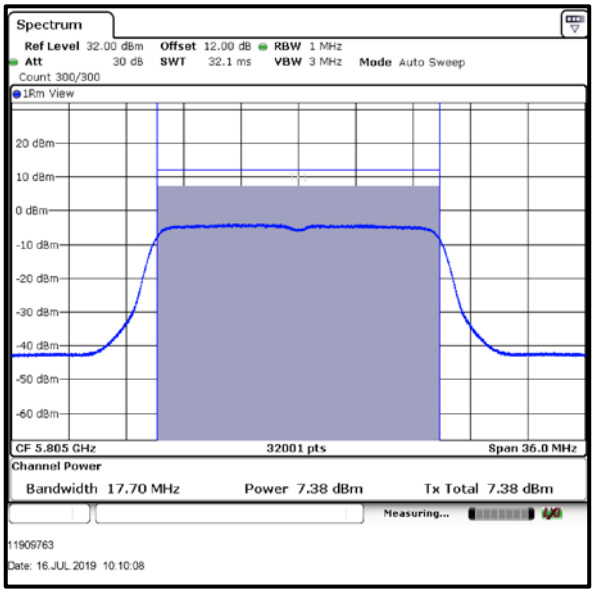
## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 4 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**




**Middle Channel**




**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 1+2+3+4 / PWL 11 / 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 3.2 | 0.5 | 3.7 | 2.7 | 0.5 | 3.2 |
| Top | 3.0 | 0.5 | 3.5 | 4.9 | 0.5 | 5.4 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 3.8 | 0.5 | 4.3 | 3.5 | 0.5 | 4.0 |
| Top | 4.0 | 0.5 | 4.5 | 2.9 | 0.5 | 3.4 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom | 3.7 | 3.2 | 4.3 | 4.0 | 9.8 | 21.8 | 12 | Complied |
| Top | 3.5 | 5.4 | 4.5 | 3.4 | 10.3 | 21.8 | 11.5 | Complied |

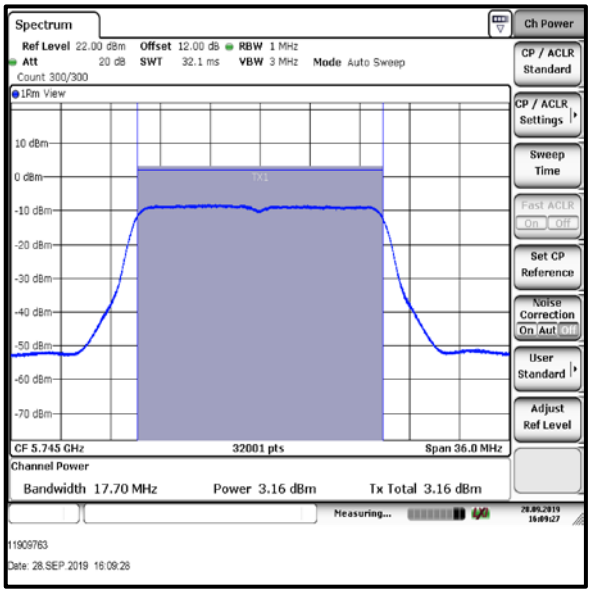
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 9.8 | 14.2 | 24.0 | 36.0 | 12.0 | Complied |
| Top | 10.3 | 14.2 | 24.5 | 36.0 | 11.5 | Complied |

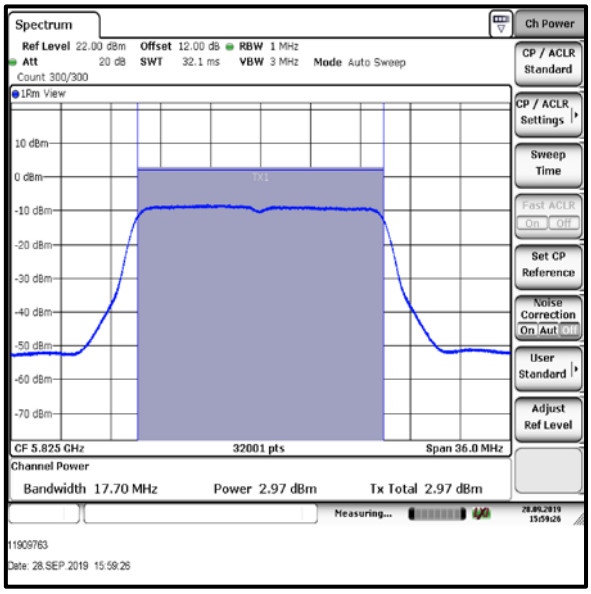
**Result:** Pass

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 1 / PWL 11 / 23 dBi Antenna Group

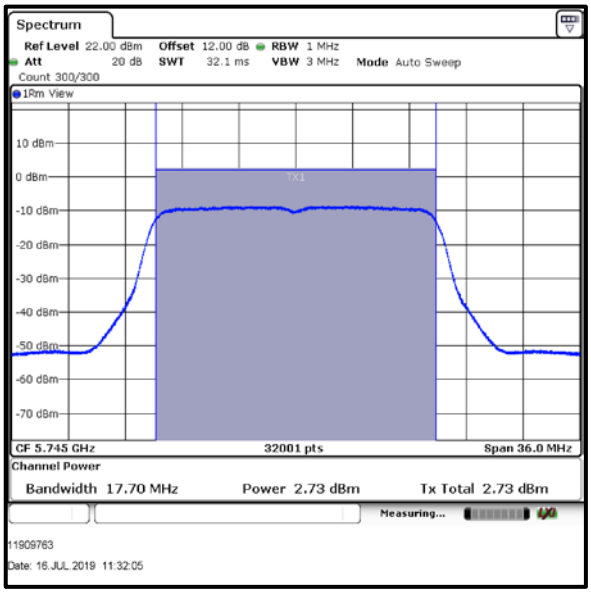



**Bottom Channel**

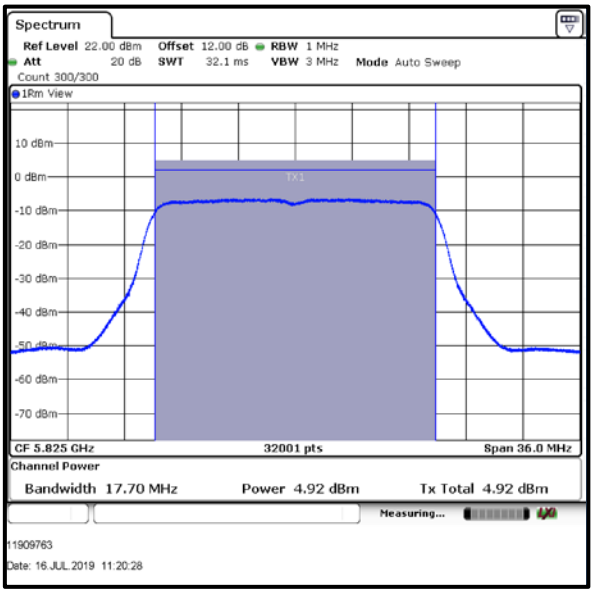



**Top Channel**

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 2 / PWL 11 / 23 dBi Antenna Group



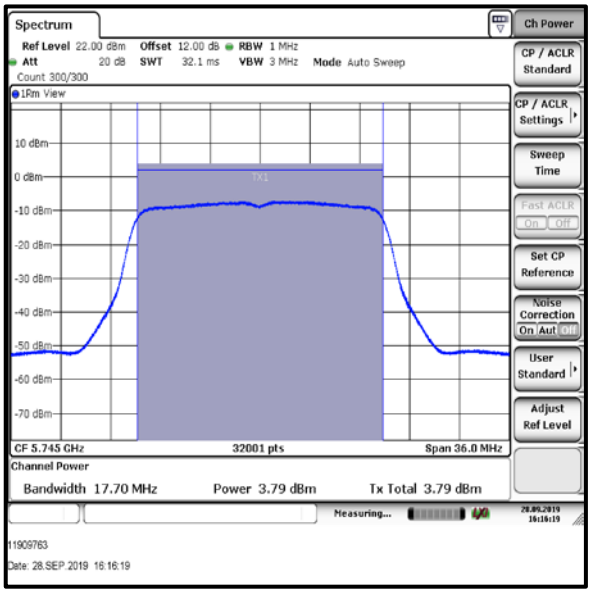

**Bottom Channel**



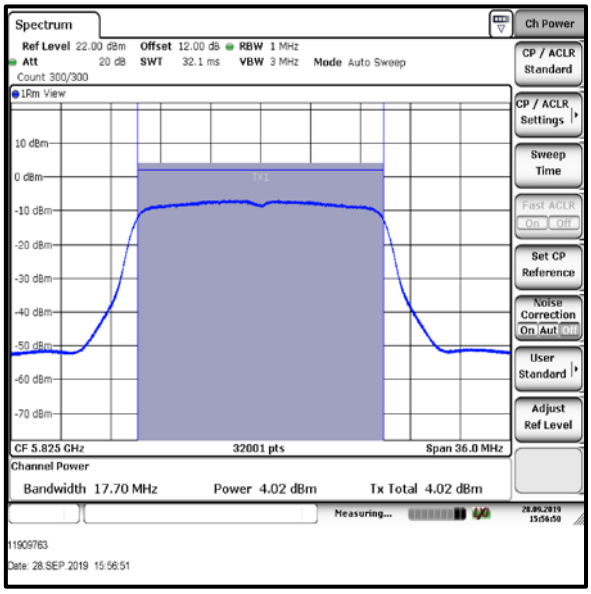

**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 3 / PWL 11 / 23 dBi Antenna Group

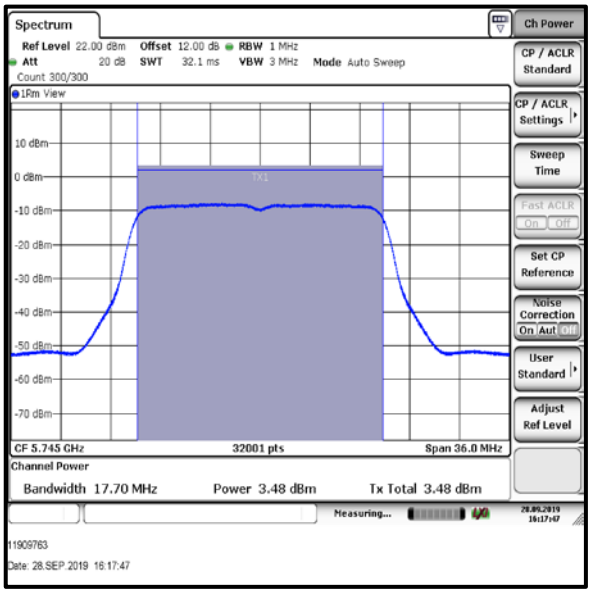



**Bottom Channel**

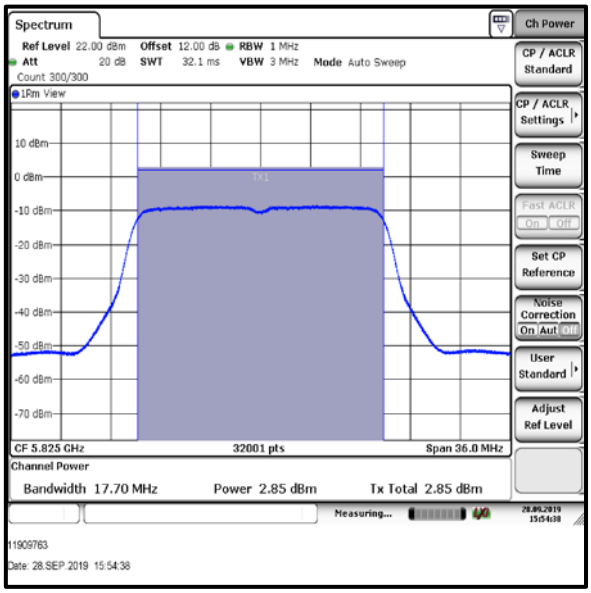



**Top Channel**

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 4 / PWL 11 / 23 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 1+2+3+4 / PWL 16/ 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom +1 | 8.5 | 0.4 | 8.9 | 8.0 | 0.4 | 8.4 |
| Middle | 8.5 | 0.4 | 8.9 | 8.1 | 0.4 | 8.5 |
| Top -1 | 8.5 | 0.4 | 8.9 | 8.1 | 0.4 | 8.5 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom +1 | 7.9 | 0.4 | 8.3 | 7.4 | 0.4 | 7.8 |
| Middle | 7.7 | 0.4 | 8.1 | 7.5 | 0.4 | 7.9 |
| Top -1 | 7.5 | 0.4 | 7.9 | 7.3 | 0.4 | 7.7 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom +1 | 8.9 | 8.4 | 8.3 | 7.8 | 14.4 | 21.8 | 7.4 | Complied |
| Middle | 8.9 | 8.5 | 8.1 | 7.9 | 14.4 | 21.8 | 7.4 | Complied |
| Top -1 | 8.9 | 8.5 | 7.9 | 7.7 | 14.3 | 21.8 | 7.5 | Complied |

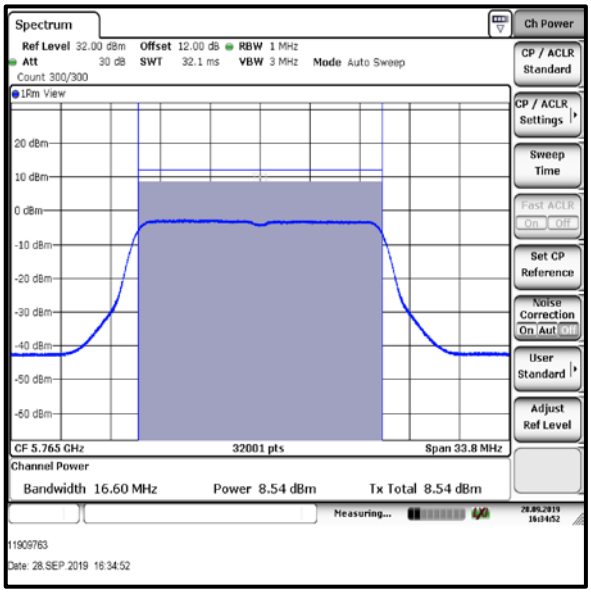
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom +1 | 14.4 | 14.2 | 28.6 | 36.0 | 7.4 | Complied |
| Middle | 14.4 | 14.2 | 28.6 | 36.0 | 7.4 | Complied |
| Top -1 | 14.3 | 14.2 | 28.5 | 36.0 | 7.5 | Complied |

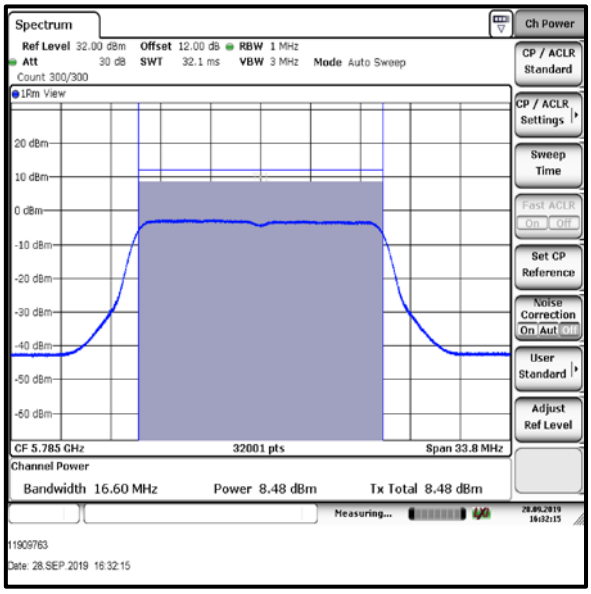
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

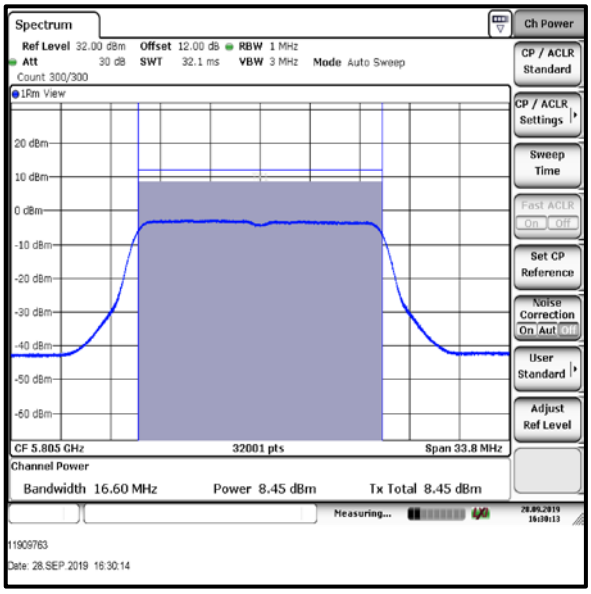
## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 1 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



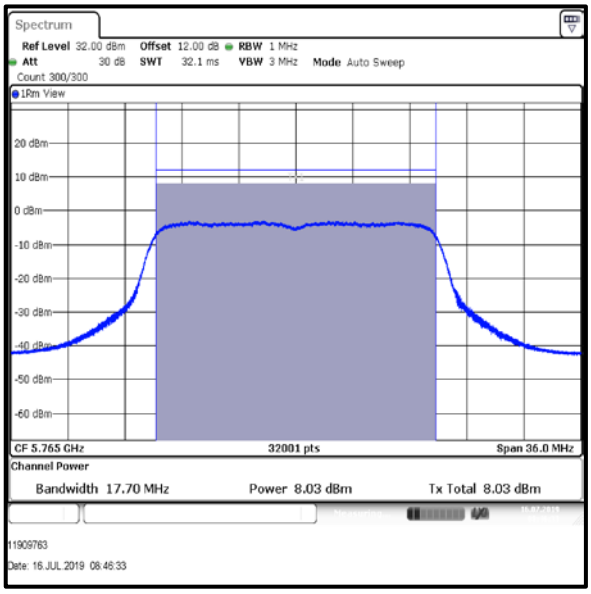

**Middle Channel**



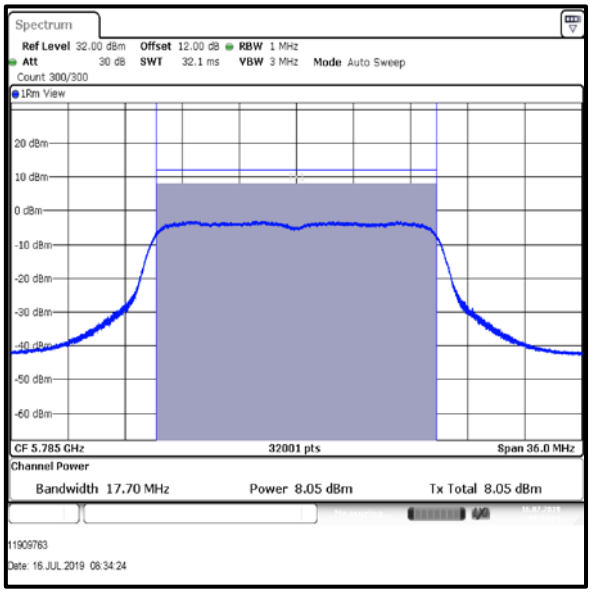

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

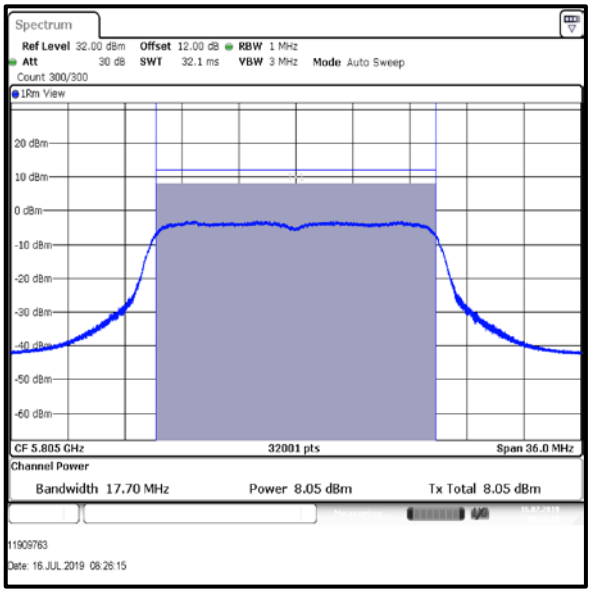
## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 2 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



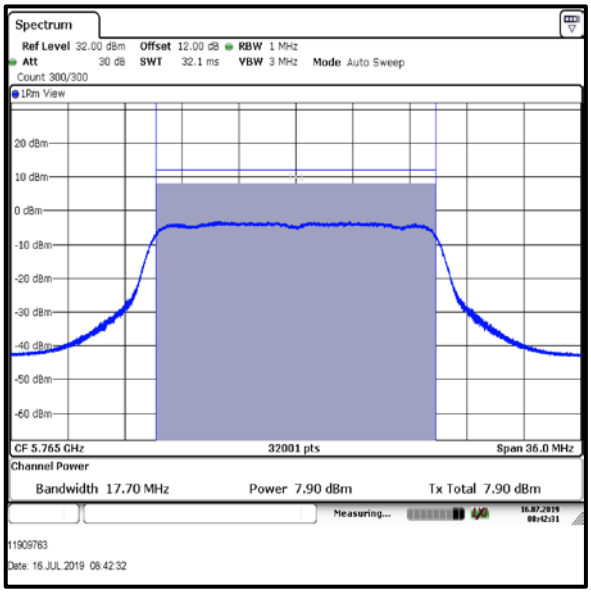

**Middle Channel**



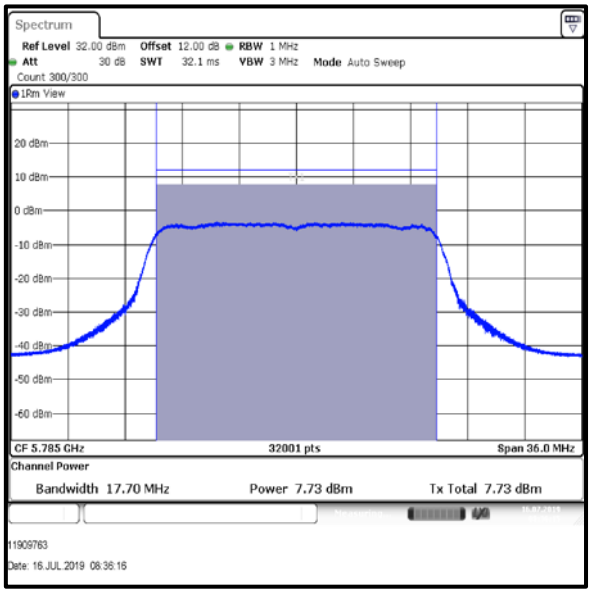

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

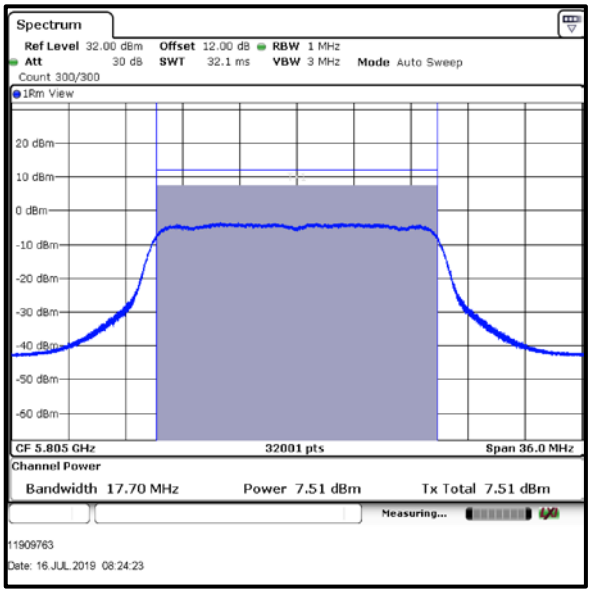
## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 3 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**



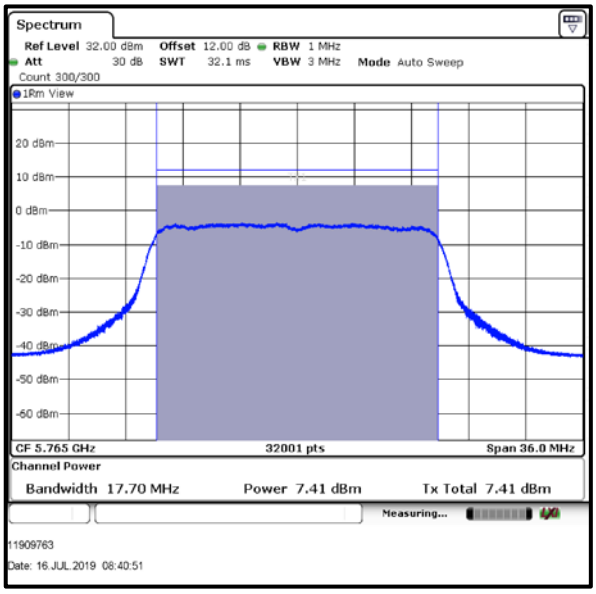

**Middle Channel**



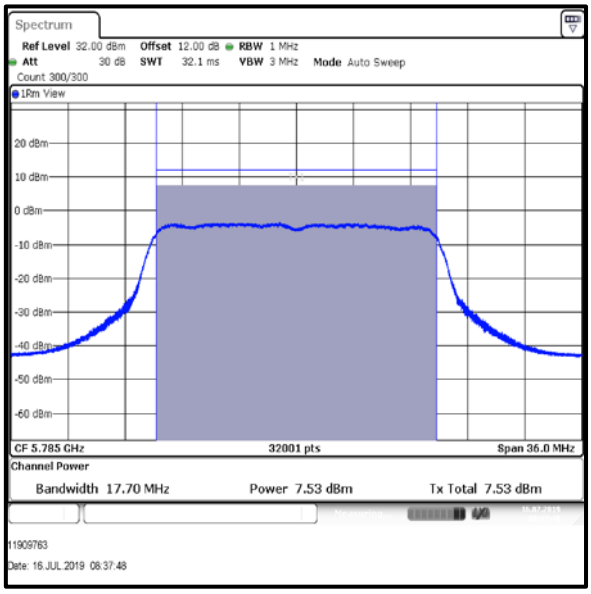

**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

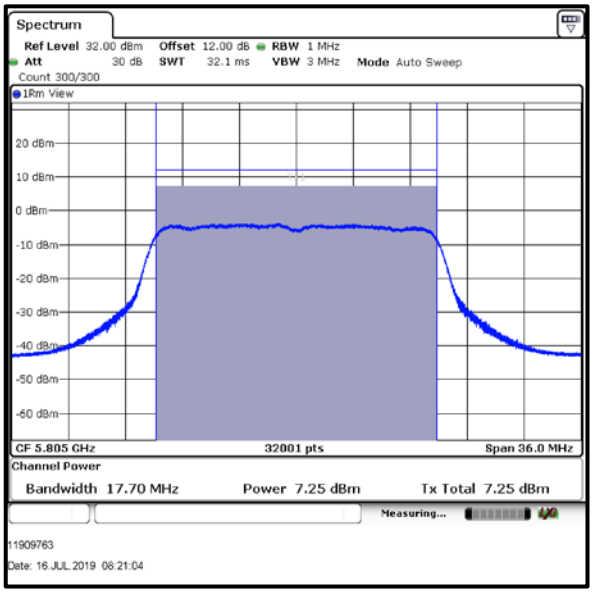
## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 4 / PWL 16 / 23 dBi Antenna Group




**Bottom +1 Channel**




**Middle Channel**




**Top -1 Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 1+2+3+4 / PWL 11/ 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 3.4 | 0.4 | 3.8 | 3.4 | 0.4 | 3.8 |
| Top | 3.4 | 0.4 | 3.8 | 4.4 | 0.4 | 4.8 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 3.7 | 0.4 | 4.1 | 3.4 | 0.4 | 3.8 |
| Top | 3.9 | 0.4 | 4.3 | 2.7 | 0.4 | 3.1 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom | 3.8 | 3.8 | 4.1 | 3.8 | 9.9 | 21.8 | 11.9 | Complied |
| Top | 3.8 | 4.8 | 4.3 | 3.1 | 10.1 | 21.8 | 11.7 | Complied |

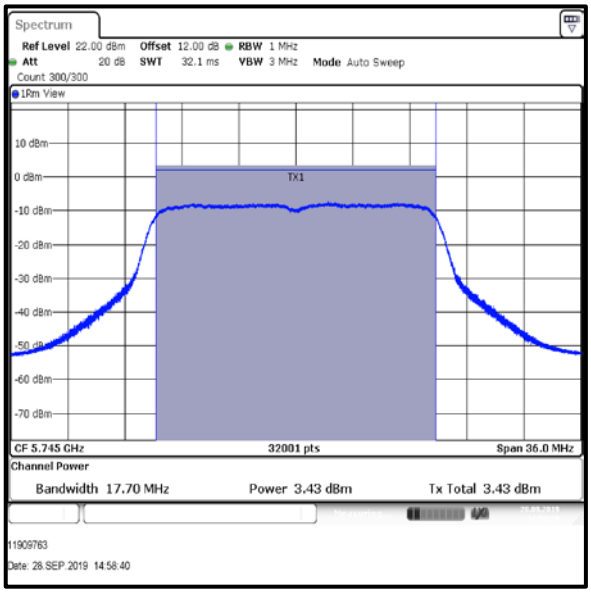
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 9.9 | 14.2 | 24.1 | 36.0 | 11.9 | Complied |
| Top | 10.1 | 14.2 | 24.3 | 36.0 | 11.7 | Complied |

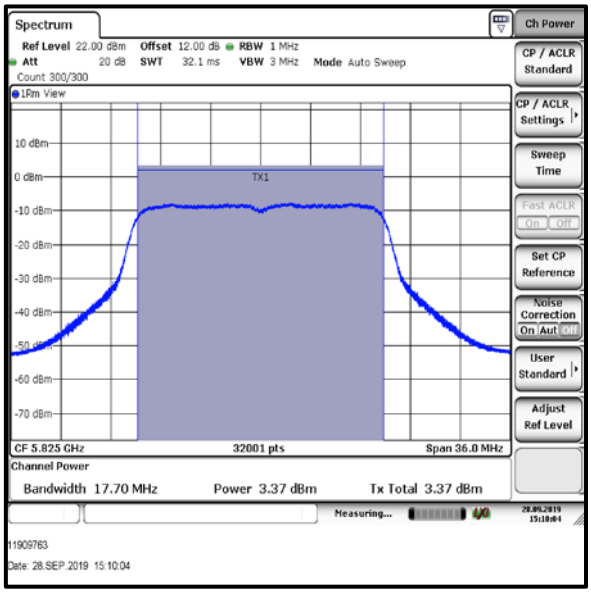
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 1 / PWL 11 / 23 dBi Antenna Group

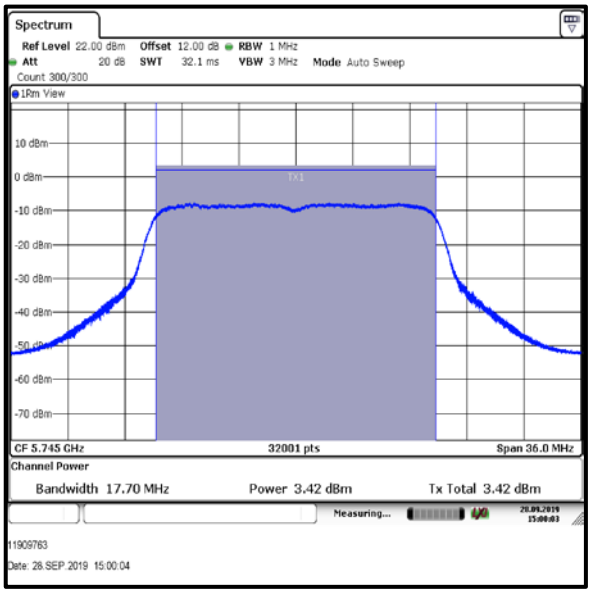



**Bottom Channel**

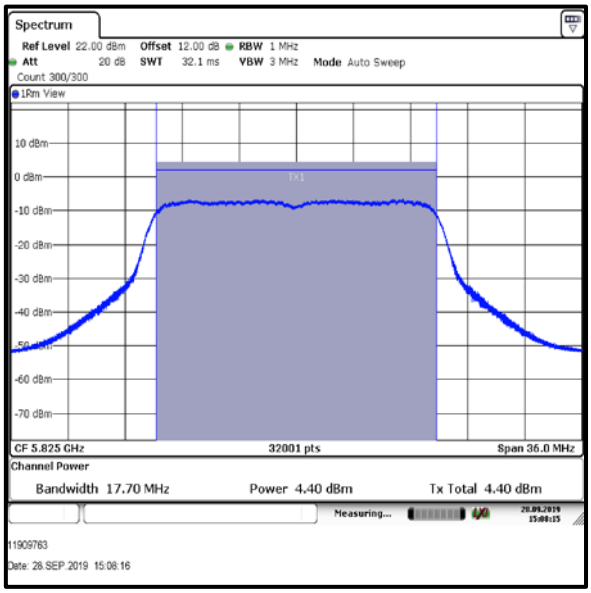



**Top Channel**

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 2 / PWL 11 / 23 dBi Antenna Group



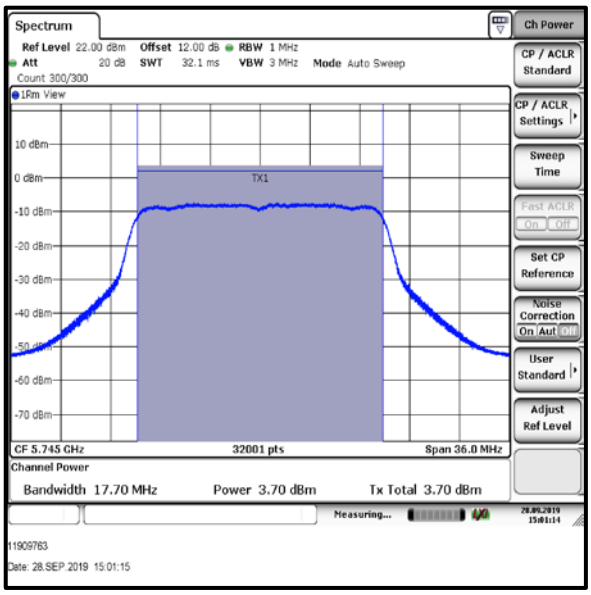

**Bottom Channel**



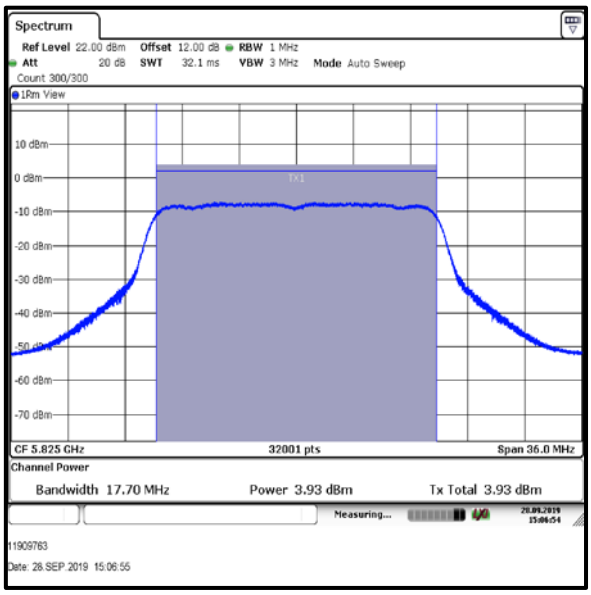

**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 3 / PWL 11 / 23 dBi Antenna Group

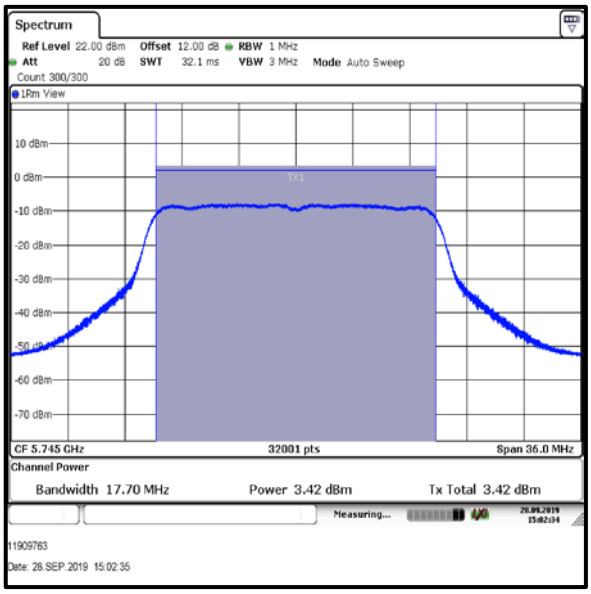



**Bottom Channel**

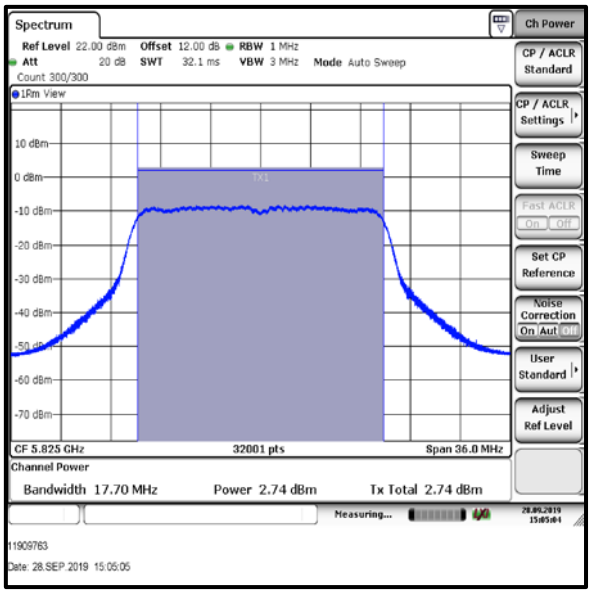



**Top Channel**

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 4 / PWL 11 / 23 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 1+2+3+4 / PWL 11 / 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 2.9 | 0.4 | 3.3 | 2.6 | 0.4 | 3.0 |
| Top | 2.6 | 0.4 | 3.0 | 2.6 | 0.4 | 3.0 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 2.9 | 0.4 | 3.3 | 3.2 | 0.4 | 3.6 |
| Top | 2.7 | 0.4 | 3.1 | 3.1 | 0.4 | 3.5 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom | 3.3 | 3.0 | 3.3 | 3.6 | 9.3 | 21.8 | 12.5 | Complied |
| Top | 3.0 | 3.0 | 3.1 | 3.5 | 9.2 | 21.8 | 12.6 | Complied |

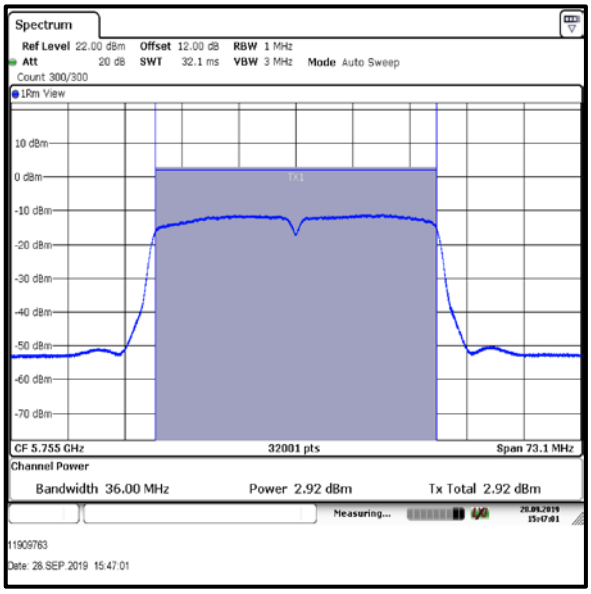
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 9.3 | 14.2 | 23.5 | 36.0 | 12.5 | Complied |
| Top | 9.2 | 14.2 | 23.4 | 36.0 | 12.6 | Complied |

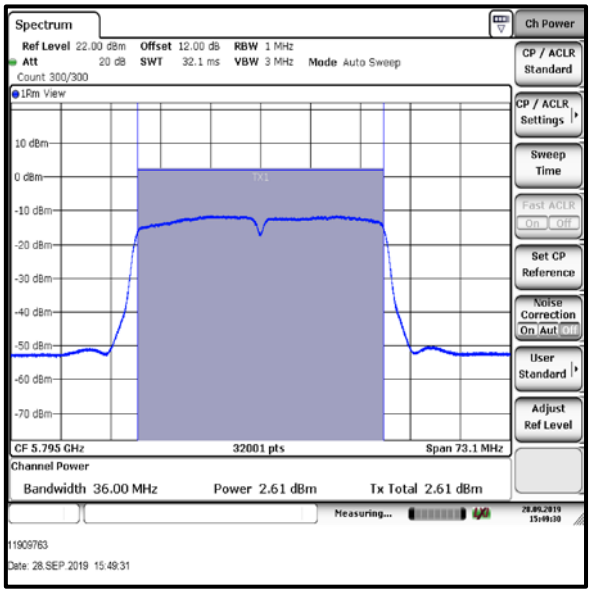
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 1 / PWL 11 / 23 dBi Antenna Group

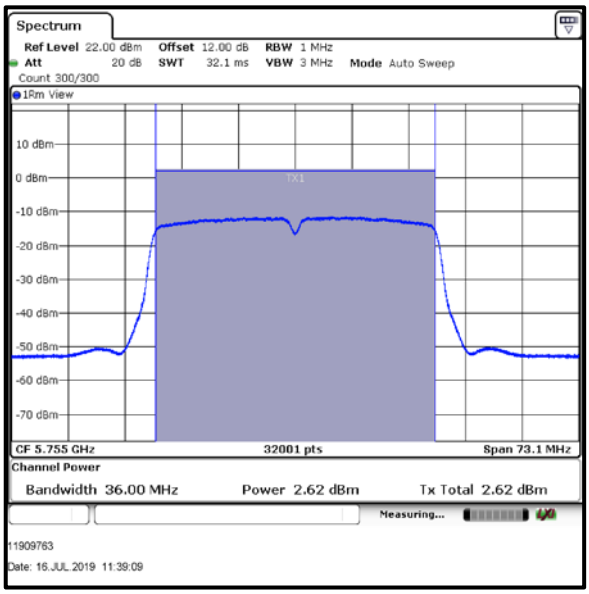



**Bottom Channel**

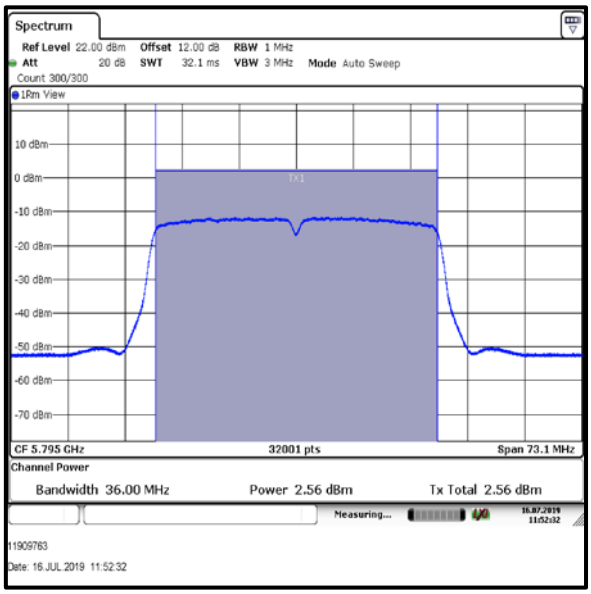



**Top Channel**

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 2 / PWL 11 / 23 dBi Antenna Group



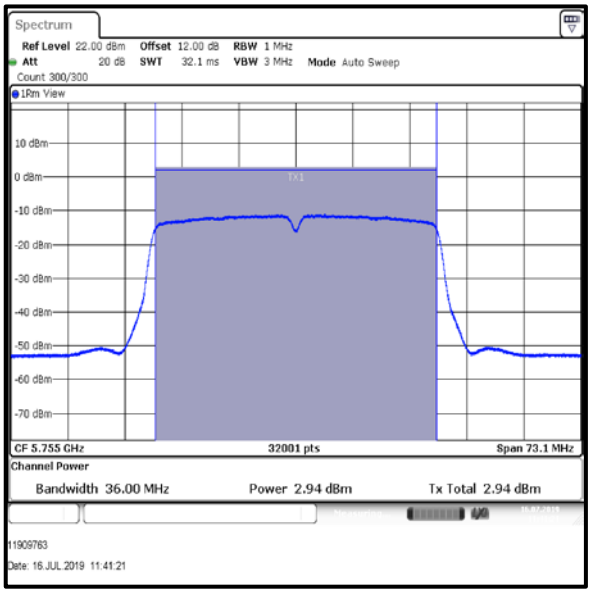

**Bottom Channel**



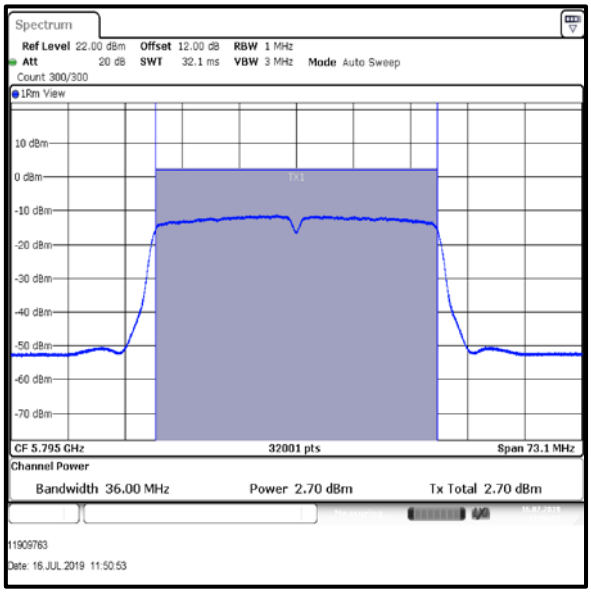

**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 3 / PWL 11 / 23 dBi Antenna Group

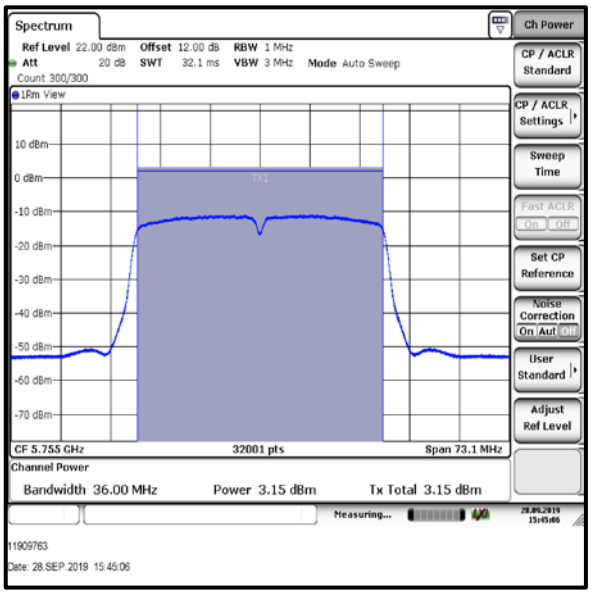



**Bottom Channel**

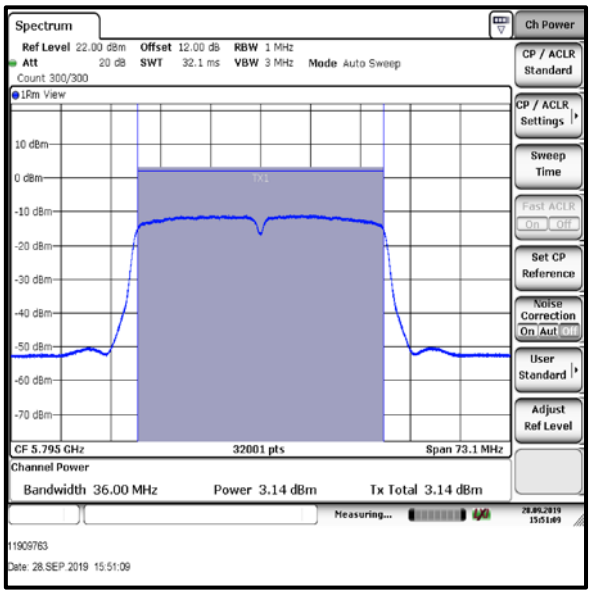



**Top Channel**

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 4 / PWL 11 / 23 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 1+2+3+4 / PWL 11 / 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 1.7 | 0.4 | 2.1 | 1.7 | 0.4 | 2.1 |
| Top | 1.5 | 0.4 | 1.9 | 1.7 | 0.4 | 2.1 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Bottom | 2.2 | 0.4 | 2.6 | 1.8 | 0.4 | 2.2 |
| Top | 2.3 | 0.4 | 2.7 | 1.7 | 0.4 | 2.1 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Bottom | 2.1 | 2.1 | 2.6 | 2.2 | 8.3 | 21.8 | 13.5 | Complied |
| Top | 1.9 | 2.1 | 2.7 | 2.1 | 8.2 | 21.8 | 13.6 | Complied |

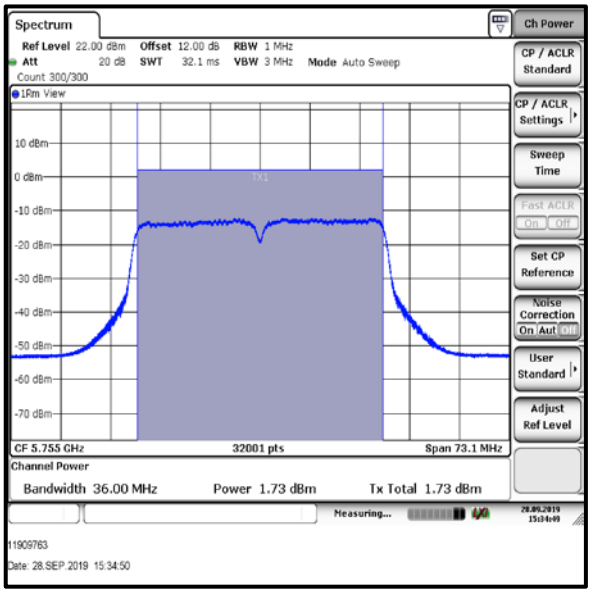
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 8.3 | 14.2 | 22.5 | 36.0 | 13.5 | Complied |
| Top | 8.2 | 14.2 | 22.4 | 36.0 | 13.6 | Complied |

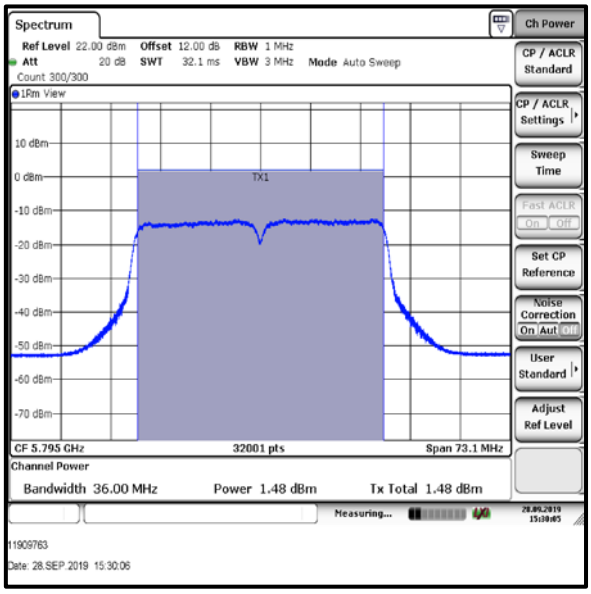
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 1 / PWL 11 / 23 dBi Antenna Group

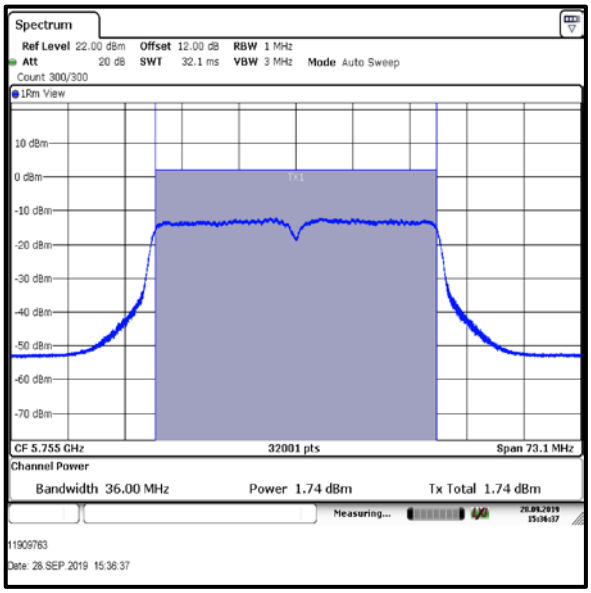



**Bottom Channel**

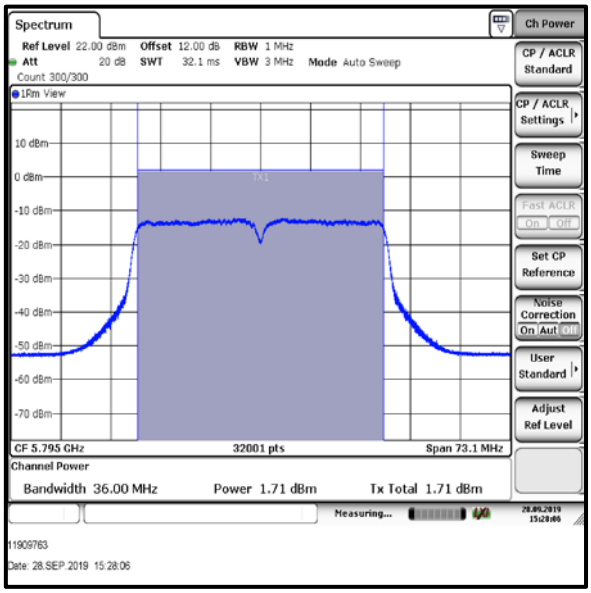



**Top Channel**

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 2 / PWL 11 / 23 dBi Antenna Group



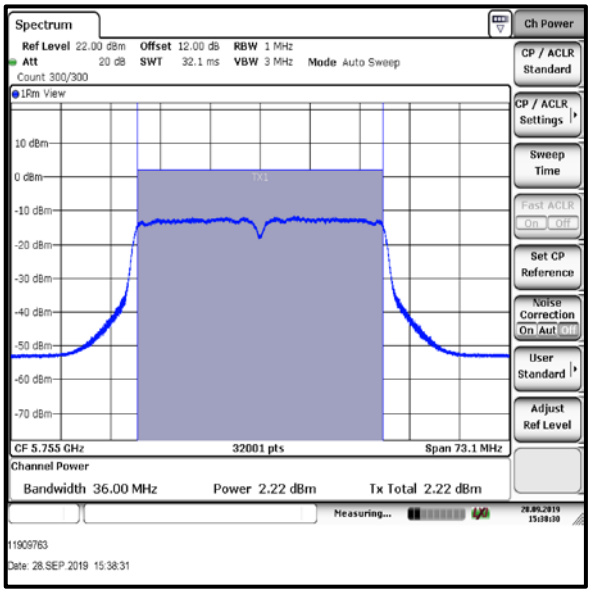

**Bottom Channel**



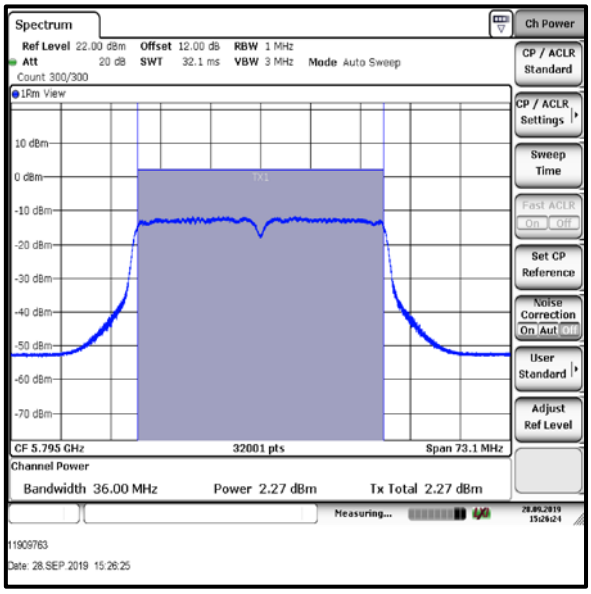

**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 3 / PWL 11 / 23 dBi Antenna Group

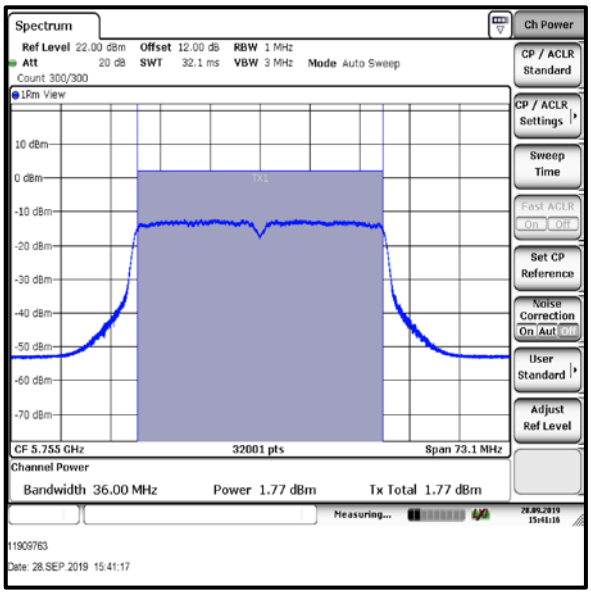



**Bottom Channel**

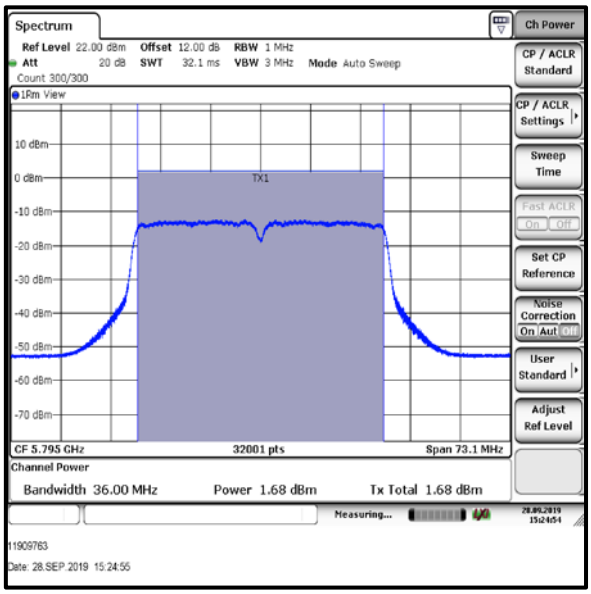



**Top Channel**

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 4 / PWL 11 / 23 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Conducted Output Power (continued)

## Results: 802.11ac / HT80 / MCS0 / MIMO / Port 1+2+3+4 / PWL 11 / 23 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Single | 0.8 | 0.5 | 1.3 | 1.1 | 0.5 | 1.6 |

| Channel | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|
| | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) |
| Single | 1.2 | 0.5 | 1.7 | 1.2 | 0.5 | 1.7 |

| Channel | Corrected Conducted Power Port 1 (dBm) | Corrected Conducted Power Port 2 (dBm) | Corrected Conducted Power Port 3 (dBm) | Corrected Conducted Power Port 4 (dBm) | Port 1+2+3+4 Combined Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|---|---|
| Single | 1.3 | 1.6 | 1.7 | 1.7 | 7.6 | 21.8 | 14.2 | Complied |

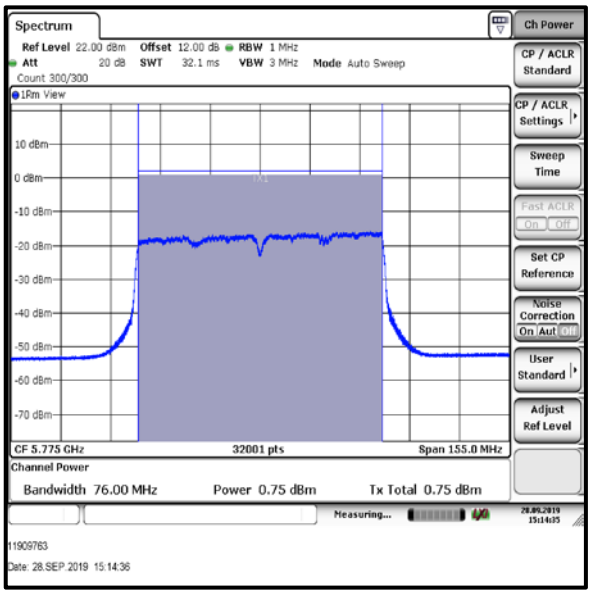
## De Facto EIRP Limit Comparison

| Channel | Port 1+2+3+4 Combined Conducted Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Single | 7.6 | 14.2 | 21.8 | 36.0 | 14.2 | Complied |

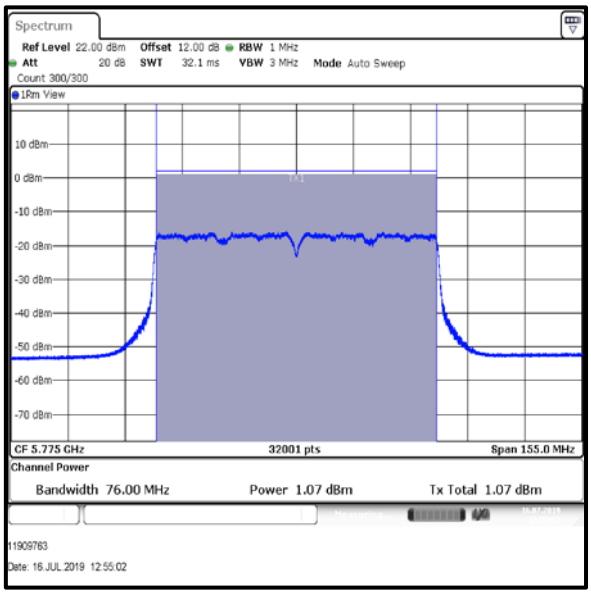
**Result: Pass**

## Transmitter Maximum Conducted Output Power (continued)

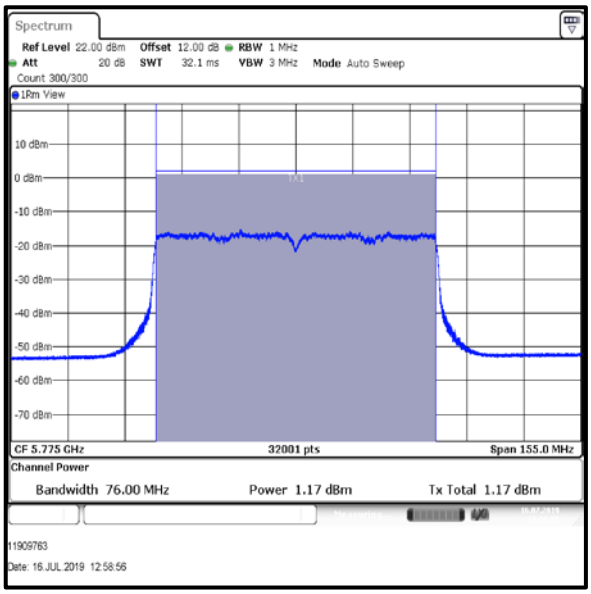
## Results: 802.11ac / HT80 / MCS0 / MIMO / Port 1+2+3+4 / PWL 11 / 23 dBi Antenna Group



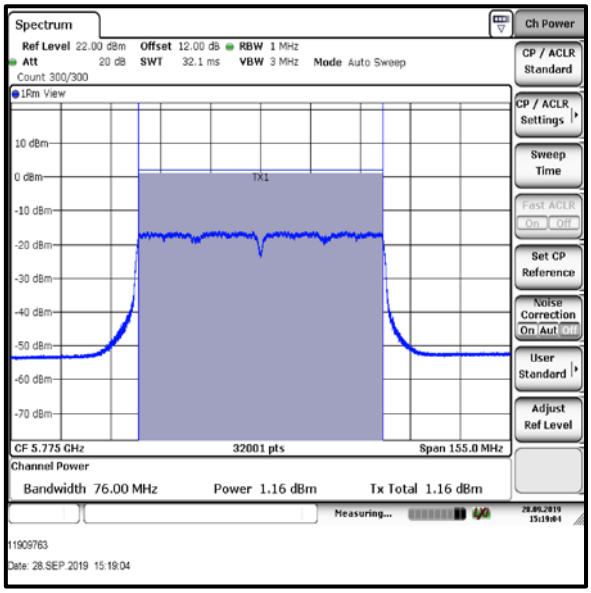

Single Channel Port 1




Single Channel Port 2




Single Channel Port 3




Single Channel Port 4

## 5.2.6. Transmitter Maximum Power Spectral Density

### Test Summary:

| | | | |
|---|---|---|---|
| **Test Engineer:** | Abdoufataou Salifou | **Test Dates:** | 20 February 2019 to 28 September 2019 |
| **Test Sample Serial Number:** | 192.168.0.60 | | |
| **Test Site Identification** | SR 9 | | |

| | |
|---|---|
| **FCC Reference:** | Part 15.407(a)(3) |
| **Test Method Used:** | KDB 789033 D02 Section II.F. referencing II.E.2.d)<br>KDB 662911 D01 Section E) 2) a) |

### Environmental Conditions:

| | |
|---|---|
| **Temperature (°C):** | 19 to 26 |
| **Relative Humidity (%):** | 23 to 41 |

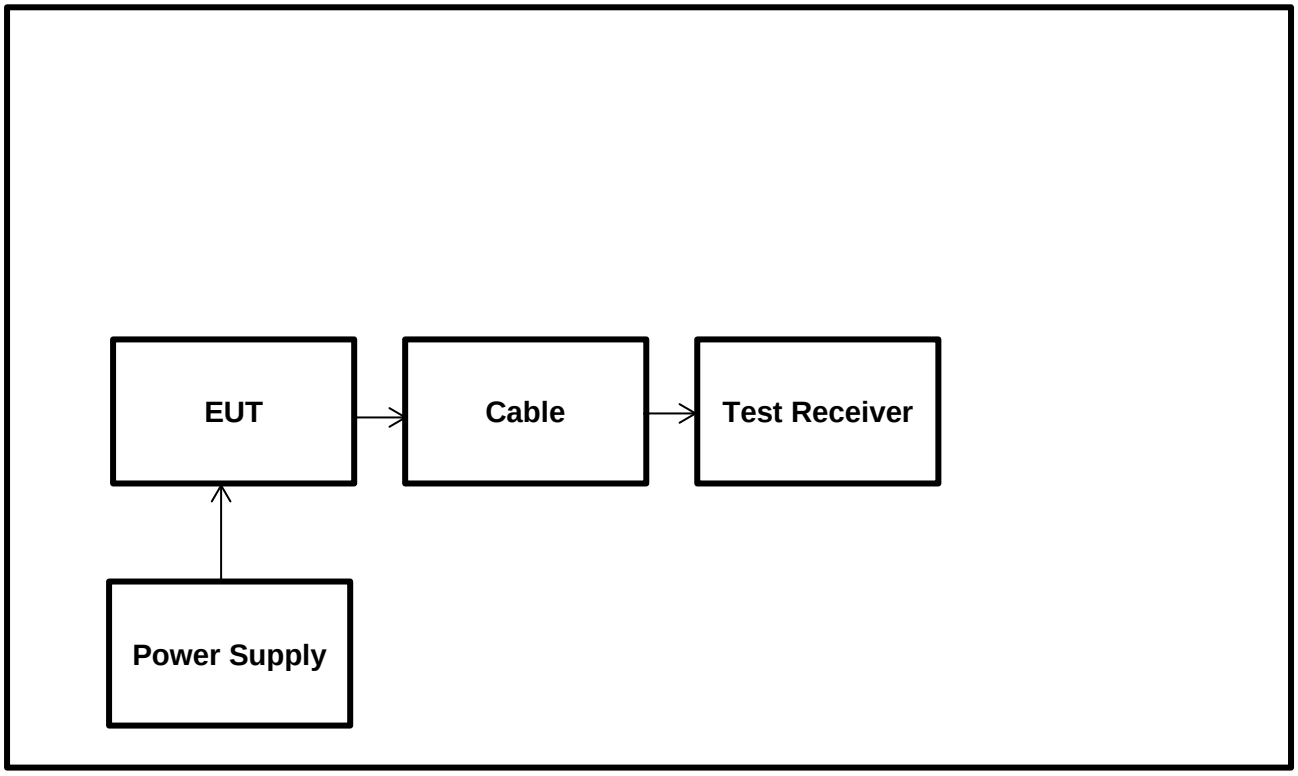
### Notes:

1. Transmitter Maximum Power Spectral Density tests in all bands were performed using a test receiver in accordance with KDB 789033 II. F referencing II.E.2.d)
2. The resolution bandwidth was set to 500 kHz and video bandwidth 2 MHz. An RMS detector was used and sweep time was set to auto and 300 traces performed. The span was set to encompass the entire 99% occupied bandwidth. A marker was placed at the peak of the measured level. The peak level is recorded in the tables below.
3. For all data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in section 5.2.4 was added to the measured maximum power spectral density in order to compute the average maximum power spectral density during the actual transmission time.
4. The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values takes into consideration the external attenuation correction factors. The RF cable attenuation (maximum 2.0 dB at the tested frequencies) from the EUT to Analyzer including the 10 dB attenuation at the Spectrum Analyzer input was added as a reference level offset (12.0 dB) to each of the conducted plots.
5. For MIMO, power was measured across relevant ports and then combined using the measure-and-sum technique stated in FCC KDB 662911 D01 Section E)2)a).
6. The EUT antennas have a directional gain of > 6 dBi.
7. In accordance with 15.407(a)(3), transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power limits shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
8. Therefore reduced conducted power spectral limits are as follows:

- 8 dBi Antenna Group :
    - SISO Port 1: limit of 30 dBm / 500kHz has been reduced by 2 dB to 28 dBm / 500 kHz
    - MIMO Port 1+2: limit of 30 dBm / 500kHz has been reduced by 2 dB 10 Log (2) to 24.9 dBm / 500 kHz
    - MIMO Port 1+2+3: limit of 30 dBm / 500kHz has been reduced by 2 dB 10 Log (3) to 23.2 dBm / 500 kHz
    - MIMO Port 1+2+3+4: limit of 30 dBm / 500kHz has been reduced by 2 dB 10 Log (4) to 21.9 dBm / 500 kHz

- 9 dBi Antenna Group :
  - SISO Port 1: limit of 30 dBm / 500kHz has been reduced by 3 dB to 27 dBm / 500 kHz
  - MIMO Port 1+2: limit of 30 dBm / 500kHz has been reduced by 3 dB 10 Log (2) to 23.9 dBm / 500 kHz
  - MIMO Port 1+2+3: limit of 30 dBm / 500kHz has been reduced by 3 dB 10 Log (3) to 22.2 dBm / 500 kHz
  - MIMO Port 1+2+3+4: limit of 30 dBm / 500kHz has been reduced by 3 dB 10 Log (4) to 20.9 dBm / 500 kHz
- 23 dBi Antenna Group:
  - As per applicant's declaration 23 dBi Antenna shall be only used with RF cable of length 10 m having 8.8 dB Attenuation @ 5 GHz bands.
  - Effective Antenna Gain = 23 dBi – 8.8 dB = 14.2 dBi
  - SISO Port 1: limit of 30 dBm / 500kHz has been reduced by 8.2 dB to 21.8 dBm / 500 kHz
  - MIMO Port 1+2: limit of 30 dBm / 500kHz has been reduced by 8.2 dB 10 Log (2) to 18.7 dBm / 500 kHz
  - MIMO Port 1+2+3: limit of 30 dBm / 500kHz has been reduced by 8.2 dB 10 Log (3) to 17 dBm / 500 kHz
  - MIMO Port 1+2+3+4: limit of 30 dBm / 500kHz has been reduced by 8.2 dB 10 Log (4) to 15.7 dBm / 500 kHz

**Test setup:**

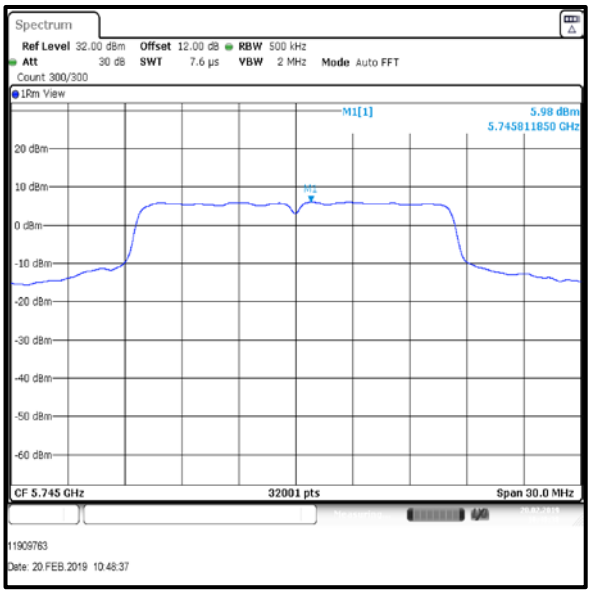


## Transmitter Maximum Power Spectral Density (continued)

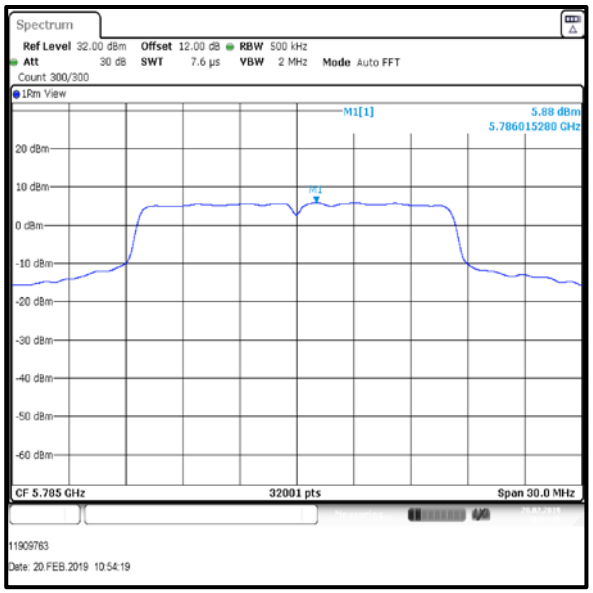
## 8 dBi Antenna Group

## Results: 802.11a / 20 MHz / 6 Mbps / SISO / Port 1 / PWL 26 / 8 dBi Antenna Group

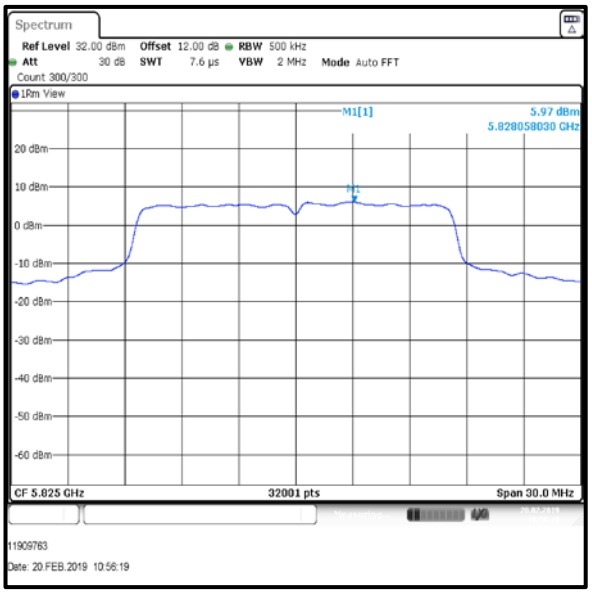
| Channel | PPSD (dBm / 500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm / 500 kHz) | Limit (dBm / 500 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 6.0 | 0.3 | 6.3 | 28.0 | 21.7 | Complied |
| Middle | 5.9 | 0.3 | 6.2 | 28.0 | 21.8 | Complied |
| Top | 6.0 | 0.3 | 6.3 | 28.0 | 21.7 | Complied |




Bottom Channel




Middle Channel



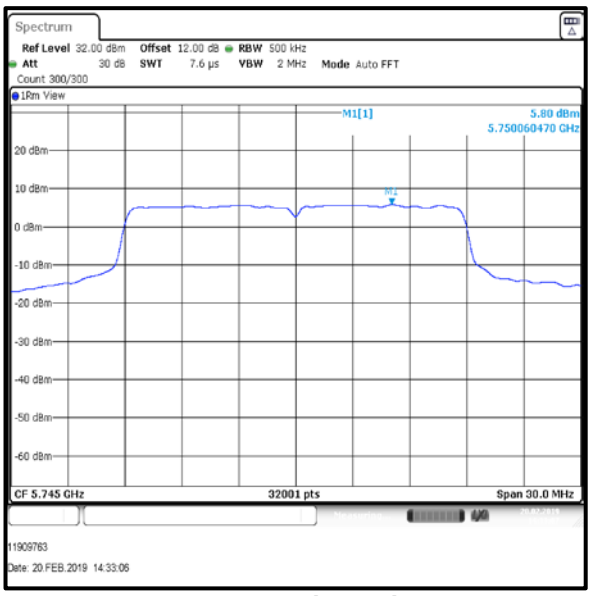

Top Channel

**Result: Pass**

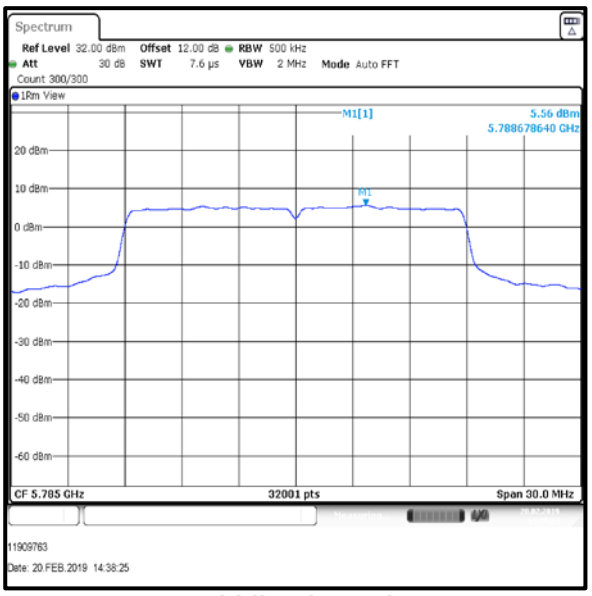
## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11n / 20 MHz / MCS0 / SISO / Port 1 / PWL 26 / 8 dBi Antenna Group

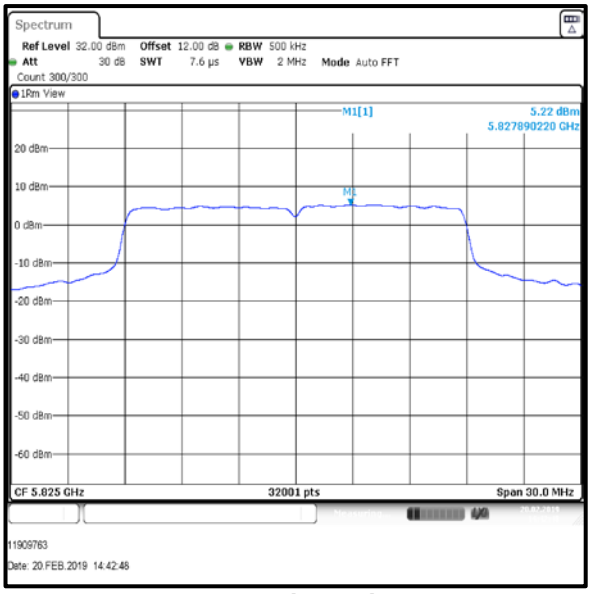
| Channel | PPSD (dBm / 500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm / 500 kHz) | Limit (dBm / 500 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 5.8 | 0.5 | 6.3 | 28.0 | 21.7 | Complied |
| Middle | 5.6 | 0.5 | 6.1 | 28.0 | 21.9 | Complied |
| Top | 5.2 | 0.5 | 5.7 | 28.0 | 22.3 | Complied |




**Bottom Channel**




**Middle Channel**



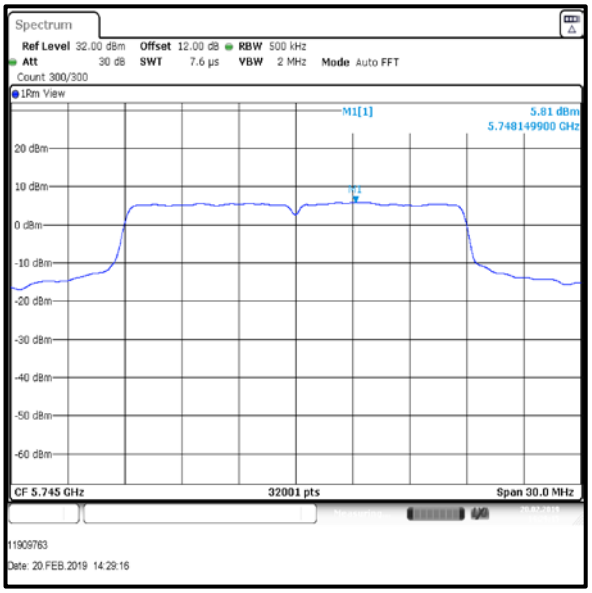

**Top Channel**

**Result: Pass**

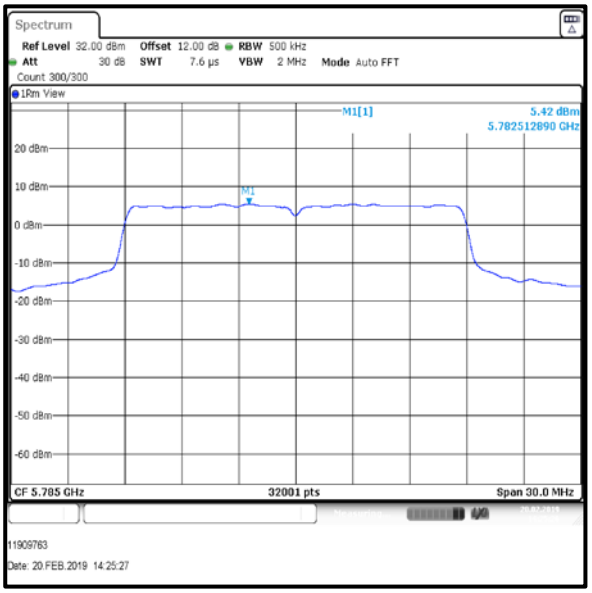
## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11ac / 20 MHz / MCS0 / SISO / Port 1 / PWL 26 / 8 dBi Antenna Group

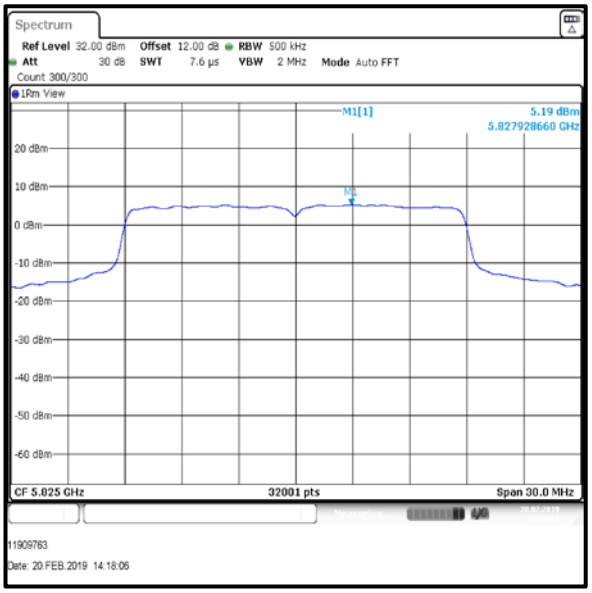
| Channel | PPSD (dBm / 500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm / 500 kHz) | Limit (dBm / 500 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 5.8 | 0.4 | 6.2 | 28.0 | 21.8 | Complied |
| Middle | 5.4 | 0.4 | 5.8 | 28.0 | 22.2 | Complied |
| Top | 5.2 | 0.4 | 5.6 | 28.0 | 22.4 | Complied |




**Bottom Channel**




**Middle Channel**



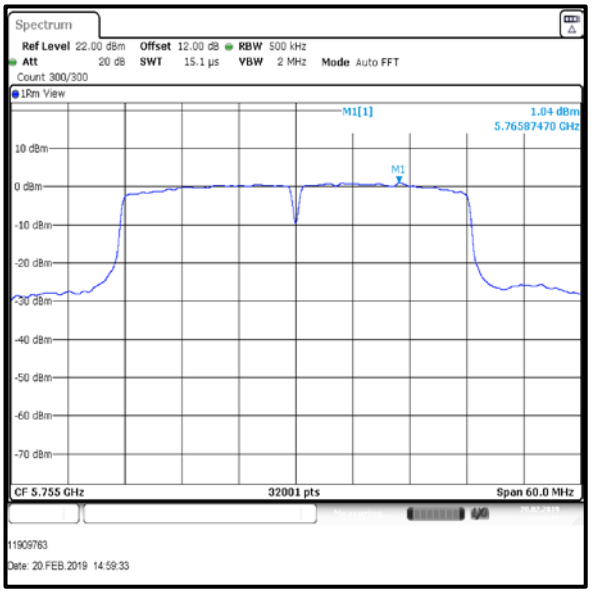

**Top Channel**

**Result: Pass**

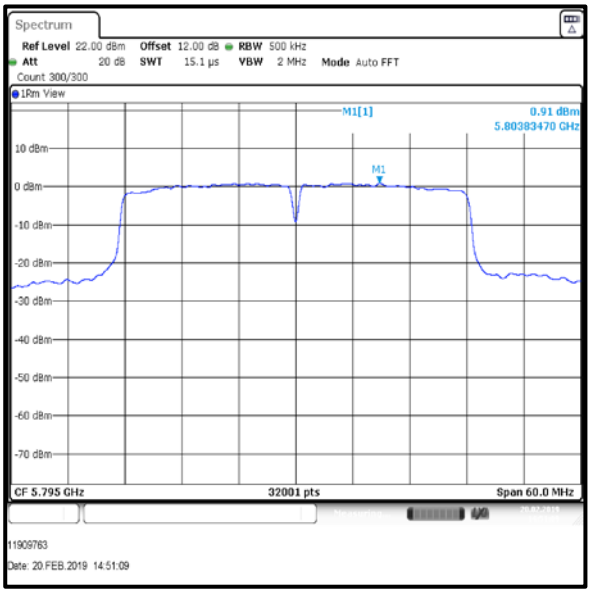
## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11n / HT40 / MCS0 / SISO / Port 1 / PWL 26 / 8 dBi Antenna Group

| Channel | PPSD (dBm / 500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm / 500 kHz) | Limit (dBm / 500 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 1.0 | 0.4 | 1.4 | 28.0 | 26.6 | Complied |
| Top | 0.9 | 0.4 | 1.3 | 28.0 | 26.7 | Complied |




**Bottom Channel**



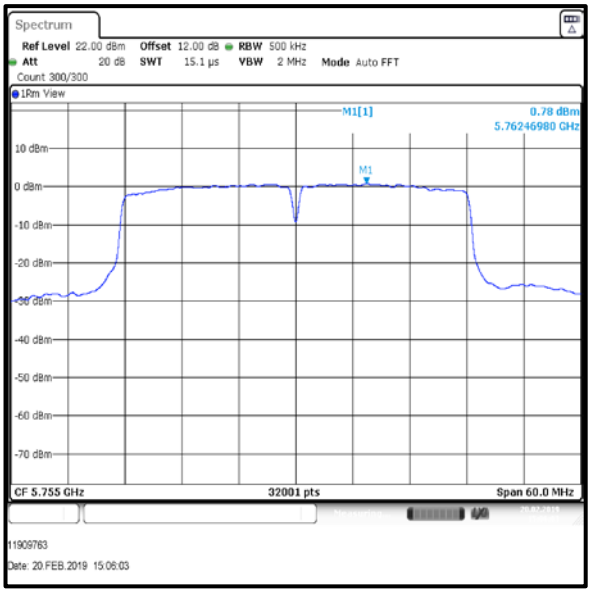

**Top Channel**

**Result: Pass**

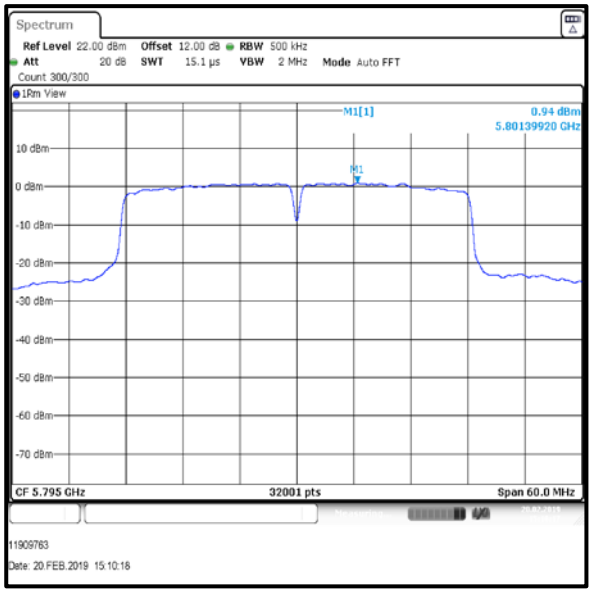
## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11ac / HT40 / MCS0 / SISO / Port 1 / PWL 26 / 8 dBi Antenna Group

| Channel | PPSD (dBm / 500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm / 500 kHz) | Limit (dBm / 500 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 0.8 | 0.4 | 1.2 | 28.0 | 26.8 | Complied |
| Top | 0.9 | 0.4 | 1.3 | 28.0 | 26.7 | Complied |




**Bottom Channel**



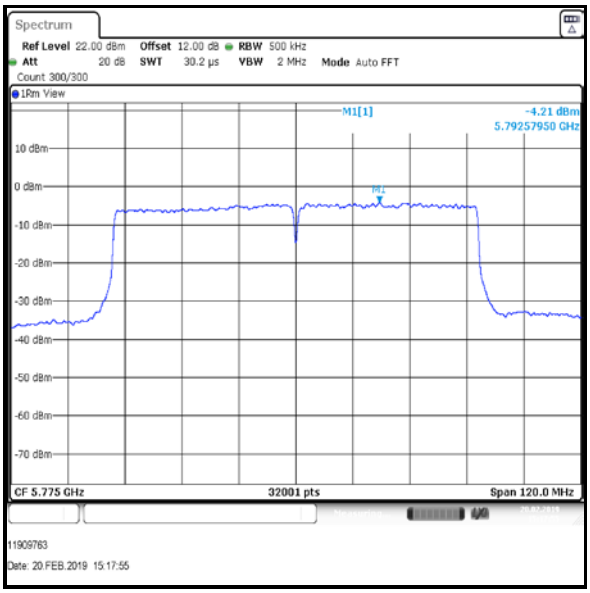

**Top Channel**

**Result: Pass**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11ac / HT80 / MCS0 / SISO / Port 1 / PWL 26 / 8 dBi Antenna Group

| Channel | PPSD (dBm / 500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm / 500 kHz) | Limit (dBm / 500 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Top | -4.2 | 0.5 | -3.7 | 28.0 | 31.7 | Complied |




**Single Channel**

**Result: Pass**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11a / 20 MHz / 6 Mbps / MIMO / Port 1+2 / PWL 26 / 8 dBi Antenna Group

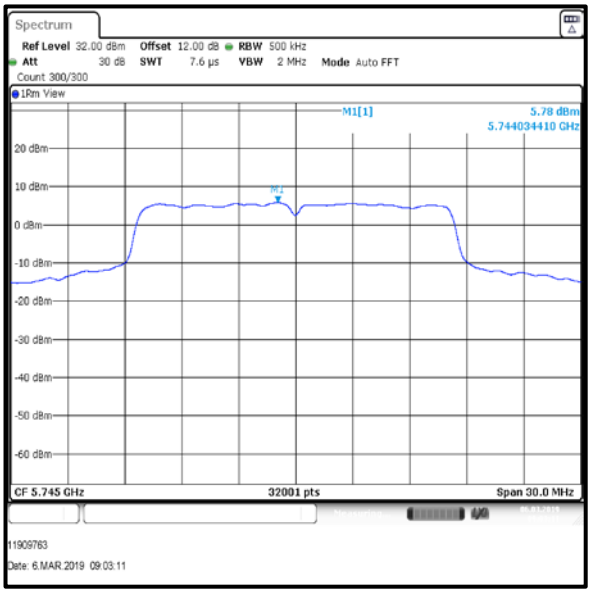
| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) |
| Bottom | 5.8 | 0.3 | 6.1 | 3.7 | 0.3 | 4.0 |
| Middle | 5.5 | 0.3 | 5.8 | 5.3 | 0.3 | 5.6 |
| Top | 5.4 | 0.3 | 5.7 | 4.9 | 0.3 | 5.2 |

| Channel | Corrected PPSD Port 1 (dBm/500 kHz) | Corrected PPSD Port 2 (dBm/500 kHz) | Combined PPSD (dBm/500 kHz) | Limit (dBm/500kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 6.1 | 4.0 | 8.2 | 24.9 | 16.7 | Complied |
| Middle | 5.8 | 5.6 | 8.7 | 24.9 | 16.2 | Complied |
| Top | 5.7 | 5.2 | 8.5 | 24.9 | 16.4 | Complied |

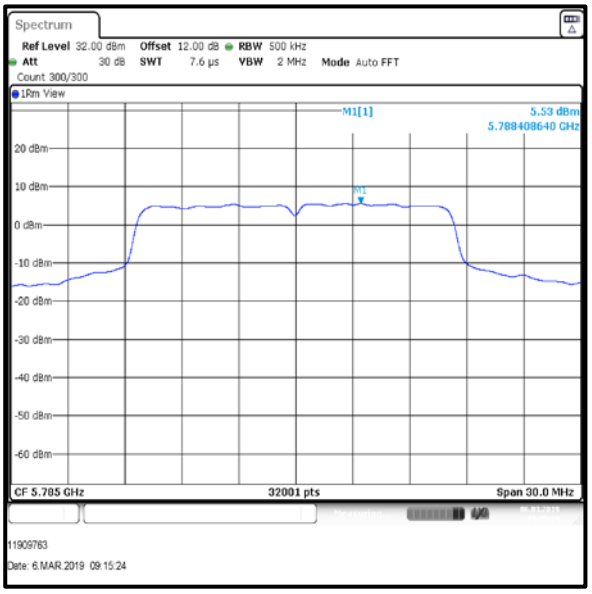
**Result:** Pass

## Transmitter Maximum Power Spectral Density (continued)

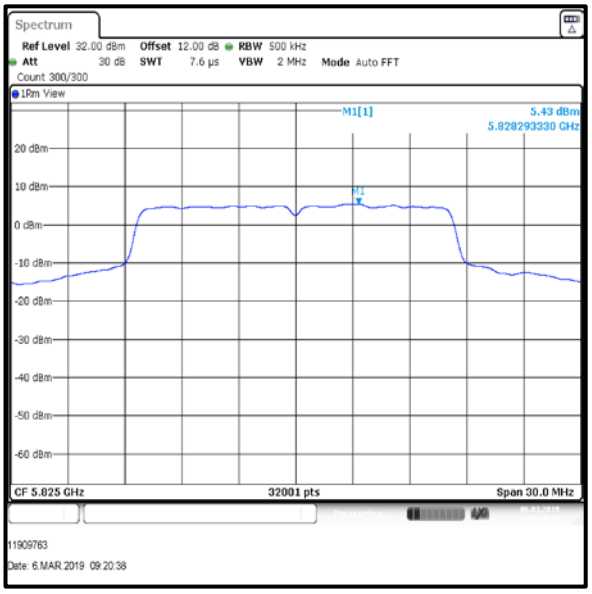
## Results: 802.11a / 20 MHz / 6 Mbps / MIMO / Port 1 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**



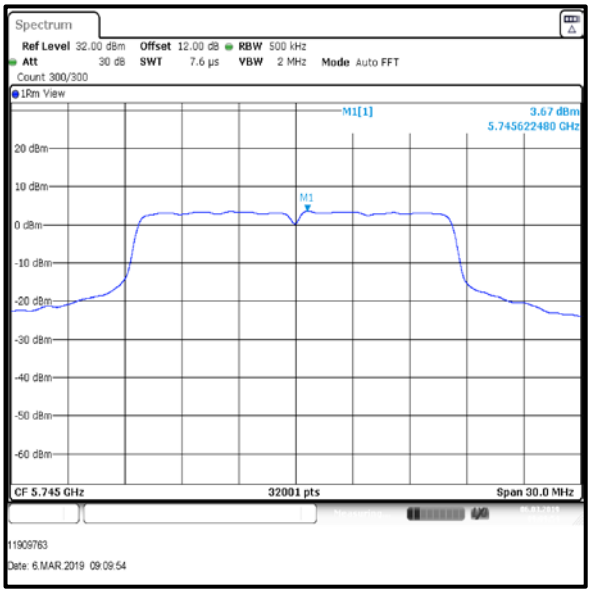

**Middle Channel**



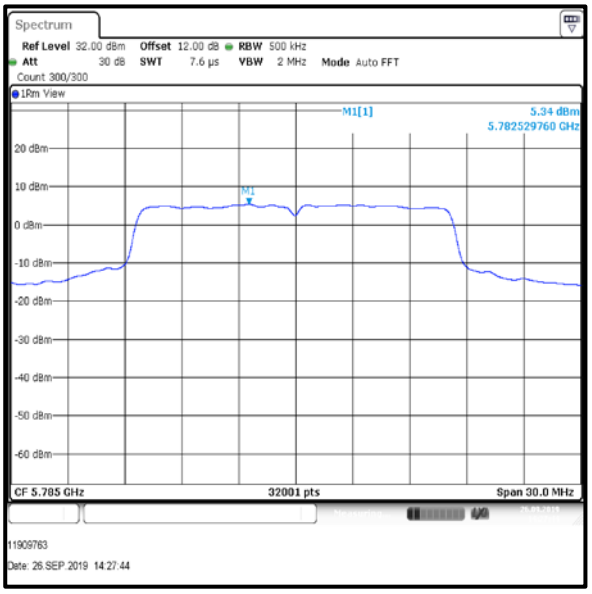

**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

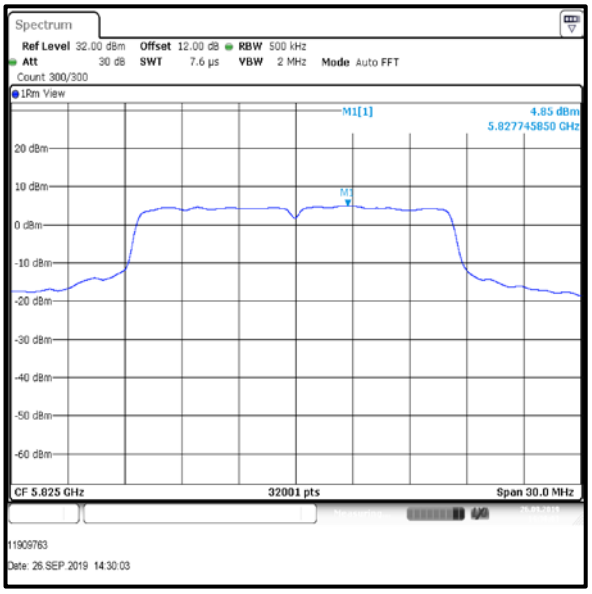
## Results: 802.11a / 20 MHz / 6 Mbps / MIMO / Port 2 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 1+2 / PWL 26 / 8 dBi Antenna Group

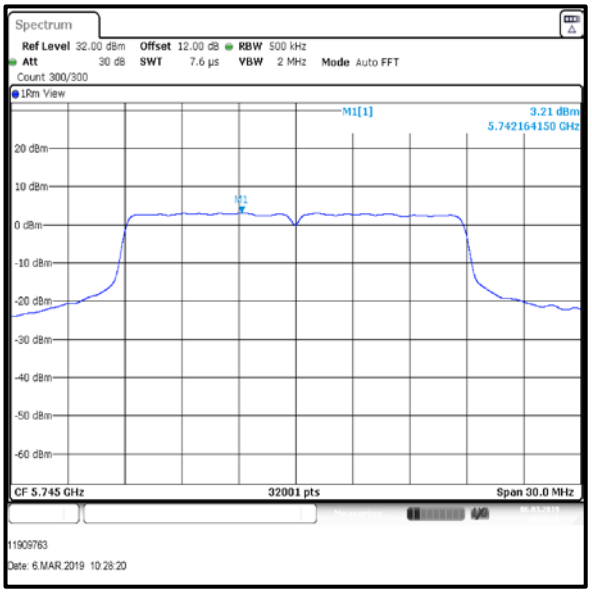
| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) |
| Bottom | 3.2 | 0.5 | 3.7 | 3.0 | 0.5 | 3.5 |
| Middle | 4.9 | 0.5 | 5.4 | 4.7 | 0.5 | 5.2 |
| Top | 4.5 | 0.5 | 5.0 | 4.6 | 0.5 | 5.1 |

| Channel | Corrected PPSD Port 1 (dBm/500 kHz) | Corrected PPSD Port 2 (dBm/500 kHz) | Combined PPSD (dBm/500 kHz) | Limit (dBm/500kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 3.7 | 3.5 | 6.6 | 24.9 | 18.3 | Complied |
| Middle | 5.4 | 5.2 | 8.3 | 24.9 | 16.6 | Complied |
| Top | 5.0 | 5.1 | 8.1 | 24.9 | 16.8 | Complied |

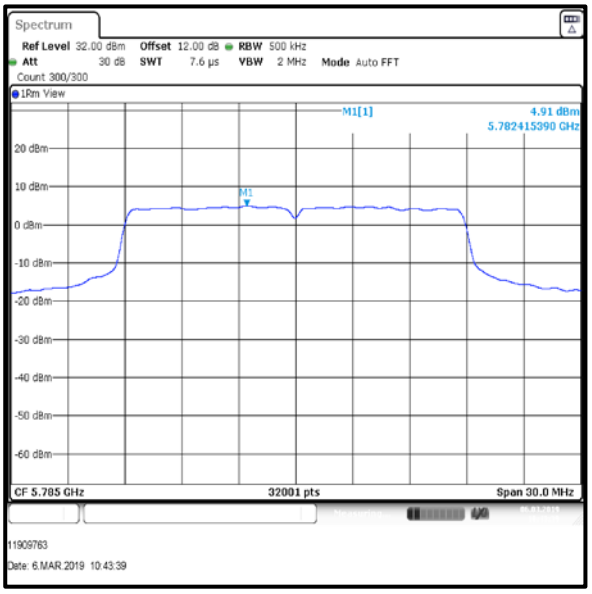
**Result:** Pass

## Transmitter Maximum Power Spectral Density (continued)

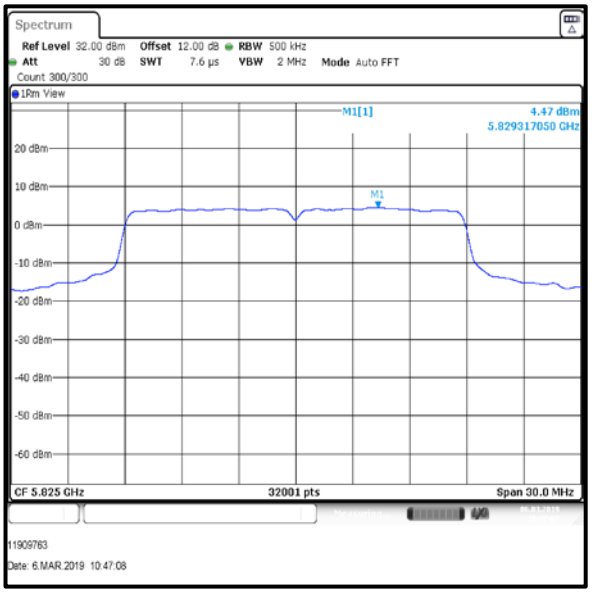
## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 1 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**



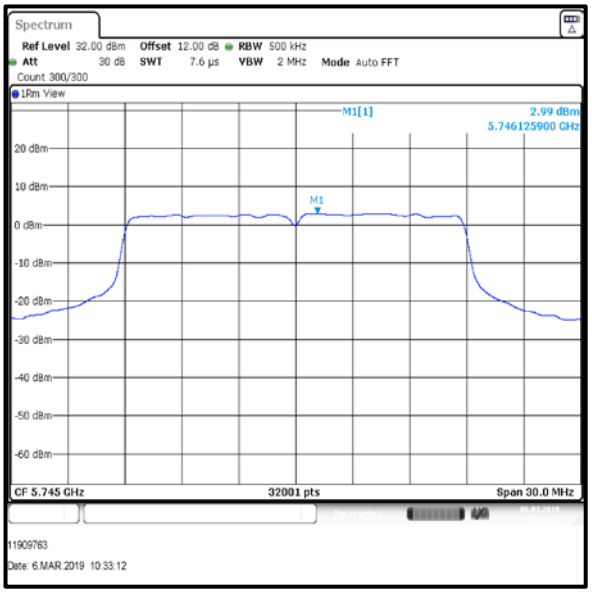

**Middle Channel**



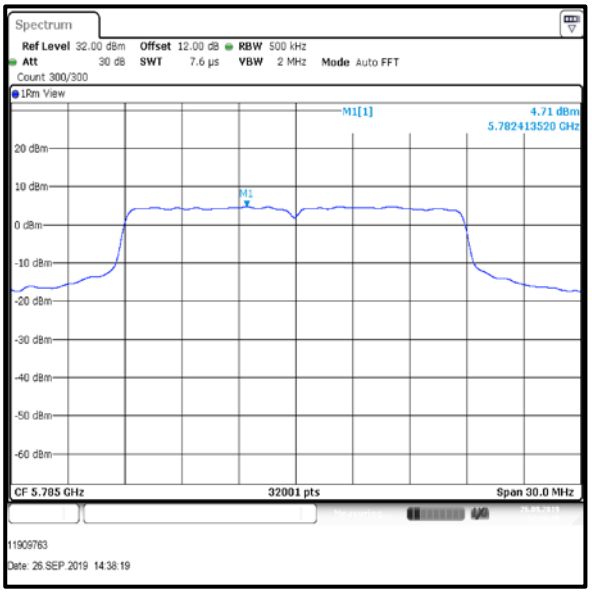

**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

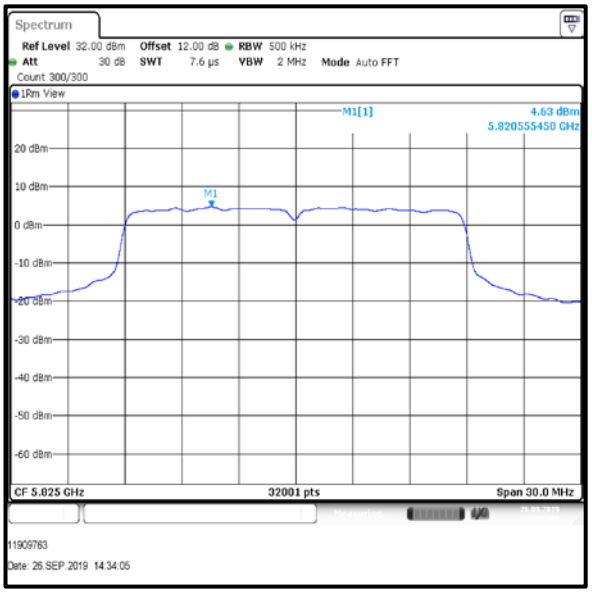
## Results: 802.11n / 20 MHz / MCS0 / MIMO / Port 2 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 1+2 / PWL 26 / 8 dBi Antenna Group

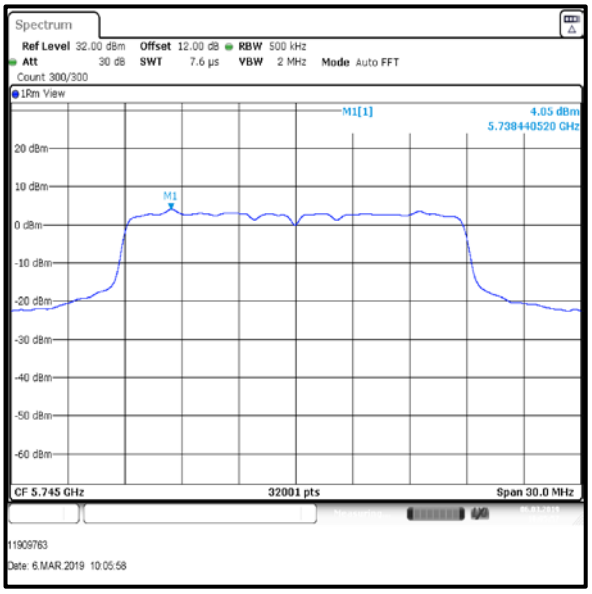
| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) |
| Bottom | 4.1 | 0.4 | 4.5 | 3.7 | 0.4 | 4.1 |
| Middle | 5.1 | 0.4 | 5.5 | 5.9 | 0.4 | 6.3 |
| Top | 3.7 | 0.4 | 4.1 | 5.4 | 0.4 | 5.8 |

| Channel | Corrected PPSD Port 1 (dBm/500 kHz) | Corrected PPSD Port 2 (dBm/500 kHz) | Combined PPSD (dBm/500 kHz) | Limit (dBm/500kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 4.5 | 4.1 | 7.3 | 24.9 | 17.6 | Complied |
| Middle | 5.5 | 6.3 | 8.9 | 24.9 | 16 | Complied |
| Top | 4.1 | 5.8 | 8.0 | 24.9 | 16.9 | Complied |

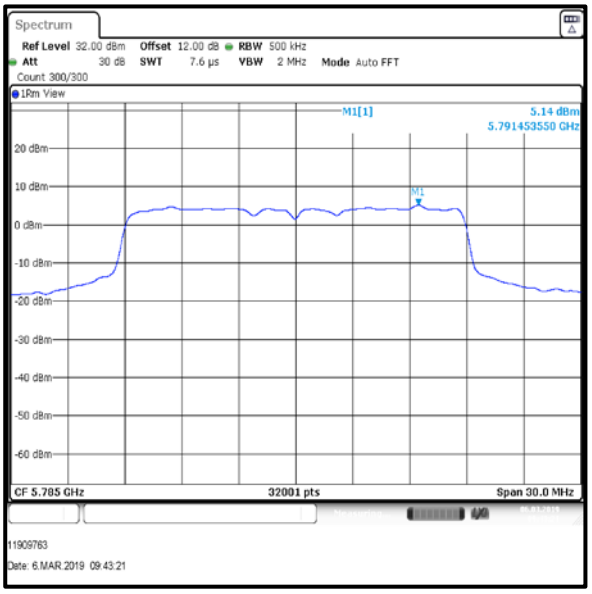
**Result:** Pass

## Transmitter Maximum Power Spectral Density (continued)

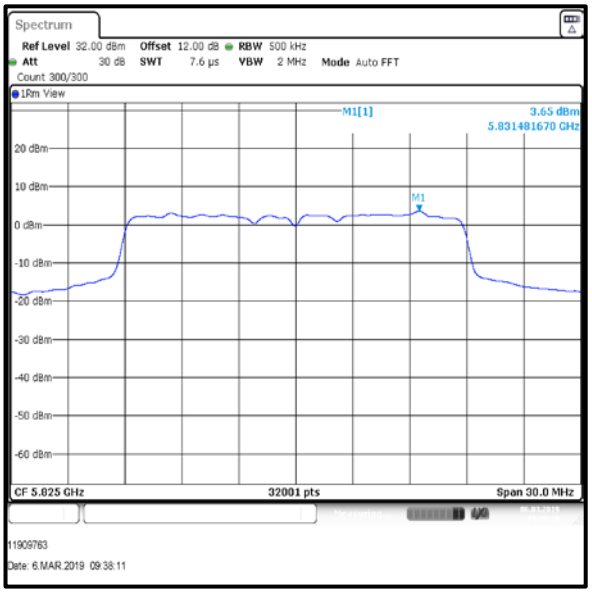
## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 1 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**



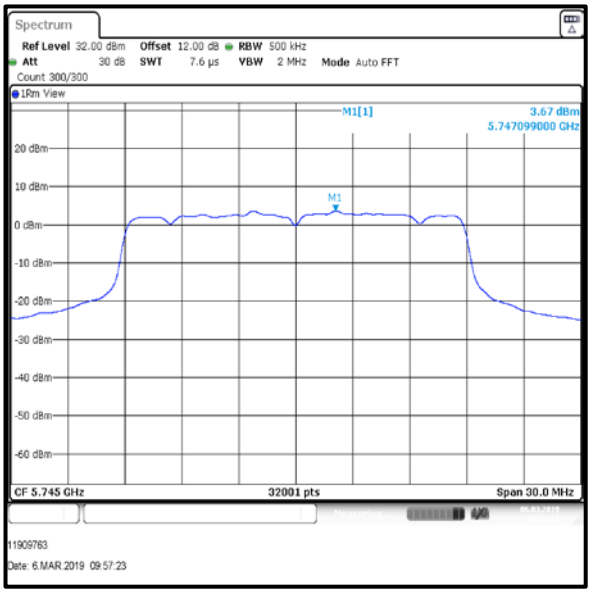

**Middle Channel**



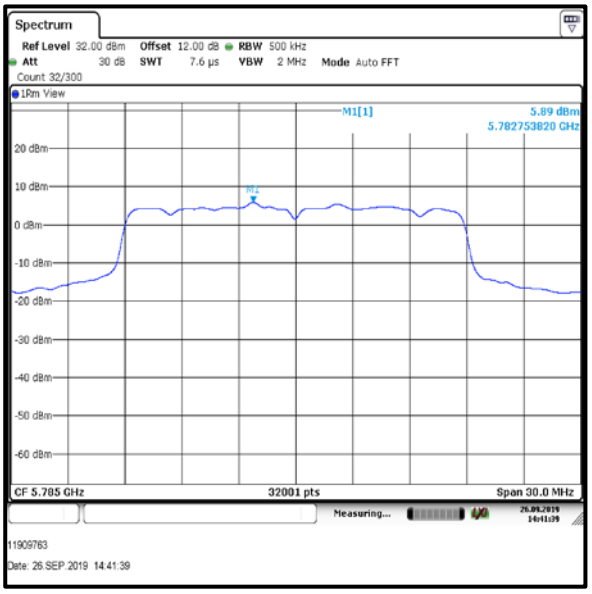

**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

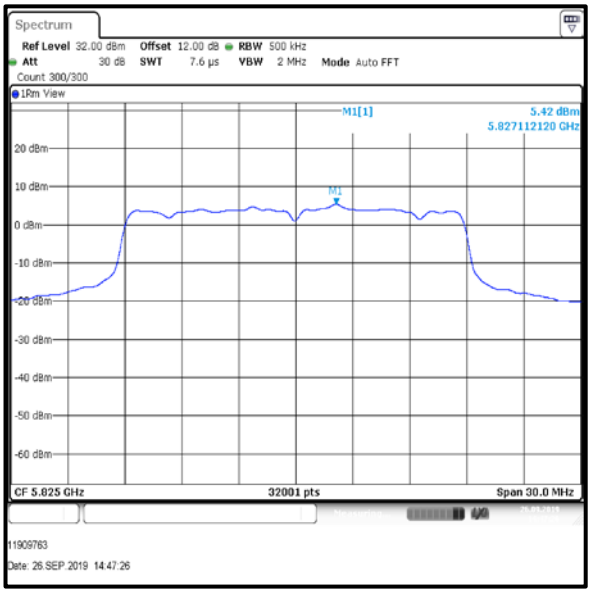
## Results: 802.11ac / 20 MHz / MCS0 / MIMO / Port 2 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 1+2 / PWL 26 / 8 dBi Antenna Group

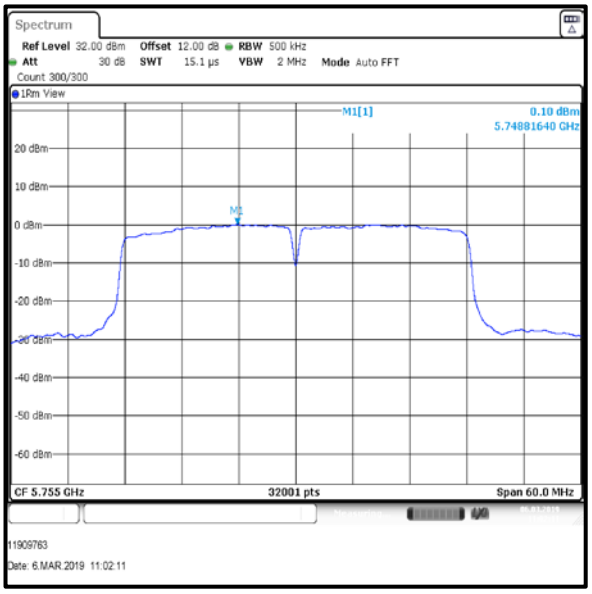
| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) |
| Bottom | 0.1 | 0.4 | 0.5 | -0.2 | 0.4 | 0.2 |
| Top | 0.0 | 0.4 | 0.4 | 0.6 | 0.4 | 1.0 |

| Channel | Corrected PPSD Port 1 (dBm/500 kHz) | Corrected PPSD Port 2 (dBm/500 kHz) | Combined PPSD (dBm/500 kHz) | Limit (dBm/500kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 0.5 | 0.2 | 3.4 | 24.9 | 21.5 | Complied |
| Top | 0.4 | 1.0 | 3.7 | 24.9 | 21.2 | Complied |

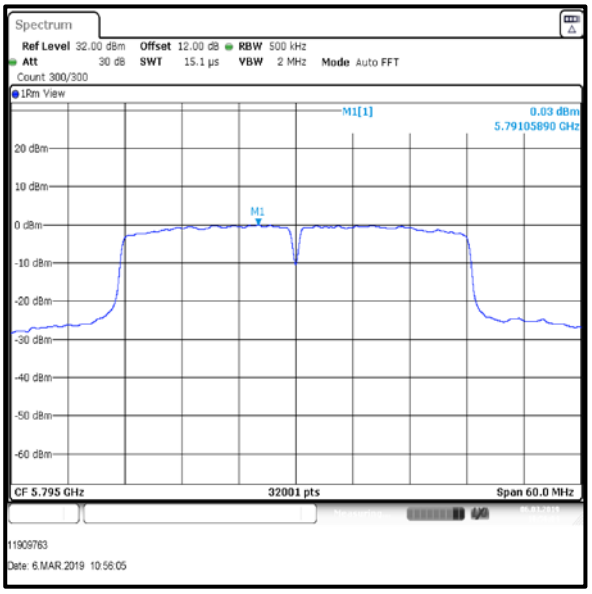
**Result: Pass**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 1 / PWL 26 / 8 dBi Antenna Group

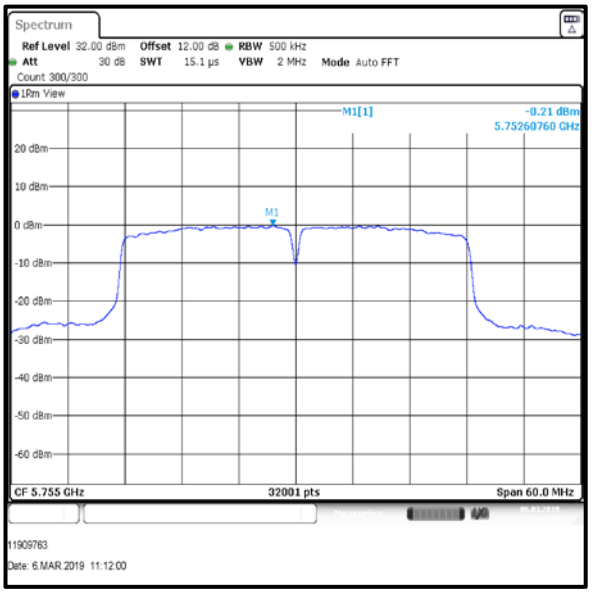



**Bottom Channel**

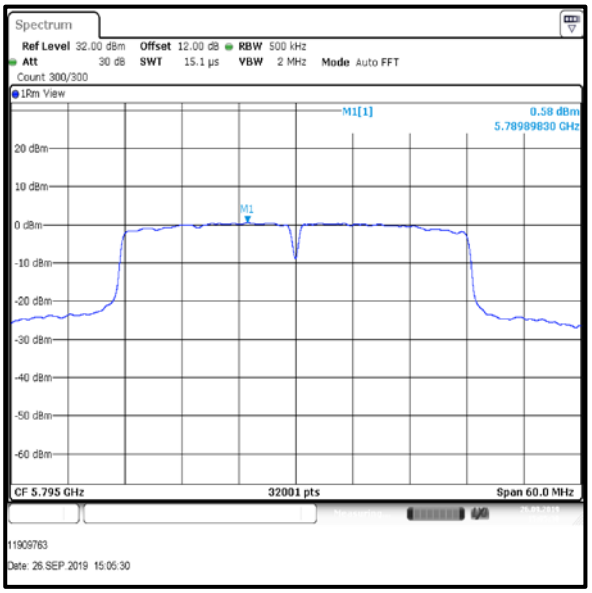



**Top Channel**

## Results: 802.11n / HT40 / MCS0 / MIMO / Port 2 / PWL 26 / 8 dBi Antenna Group




**Bottom Channel**




**Top Channel**

## Transmitter Maximum Power Spectral Density (continued)

## Results: 802.11ac / HT40 / MCS0 / MIMO / Port 1+2 / PWL 26 / 8 dBi Antenna Group

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) | PPSD (dBm/500 kHz) | Duty Cycle Correction (dB) | Corrected PPSD (dBm/500 kHz) |
| Bottom | 0.8 | 0.4 | 1.2 | 0.2 | 0.4 | 0.6 |
| Top | 0.3 | 0.4 | 0.7 | 1.01 | 0.4 | 1.41 |

| Channel | Corrected PPSD Port 1 (dBm/500 kHz) | Corrected PPSD Port 2 (dBm/500 kHz) | Combined PPSD (dBm/500 kHz) | Limit (dBm/500kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 1.2 | 0.6 | 3.9 | 24.9 | 21 | Complied |
| Top | 0.7 | 1.4 | 4.1 | 24.9 | 20.8 | Complied |

**Result:** Pass