



Appendix D

RF Test Data for 5.2G WIFI (Conducted Measurement)

Product Name: Hyundai Notebook

Test Model: HT13TA1E01

Environmental Conditions

| | |
|--------------------|-----------|
| Temperature: | 23.8 ° C |
| Relative Humidity: | 52.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Nick Peng |
| Supervised by: | Li Huan |





D.1 -26dB Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | -26 dB Bandwidth (MHz) | Limit -26 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|------------------------|------------------------------|---------|
| NVNT | a | 5180 | Ant0 | 22.704 | --- | Pass |
| NVNT | a | 5200 | Ant0 | 22.355 | --- | Pass |
| NVNT | a | 5240 | Ant0 | 22.943 | --- | Pass |
| NVNT | n20 | 5180 | Ant0 | 22.772 | --- | Pass |
| NVNT | n20 | 5200 | Ant0 | 22.412 | --- | Pass |
| NVNT | n20 | 5240 | Ant0 | 22.404 | --- | Pass |
| NVNT | n40 | 5190 | Ant0 | 42.213 | --- | Pass |
| NVNT | n40 | 5230 | Ant0 | 42.307 | --- | Pass |
| NVNT | ac20 | 5180 | Ant0 | 22.534 | --- | Pass |
| NVNT | ac20 | 5200 | Ant0 | 22.482 | --- | Pass |
| NVNT | ac20 | 5240 | Ant0 | 22.955 | --- | Pass |
| NVNT | ac40 | 5190 | Ant0 | 42.633 | --- | Pass |
| NVNT | ac40 | 5230 | Ant0 | 42.485 | --- | Pass |
| NVNT | ac80 | 5210 | Ant0 | 83.372 | --- | Pass |

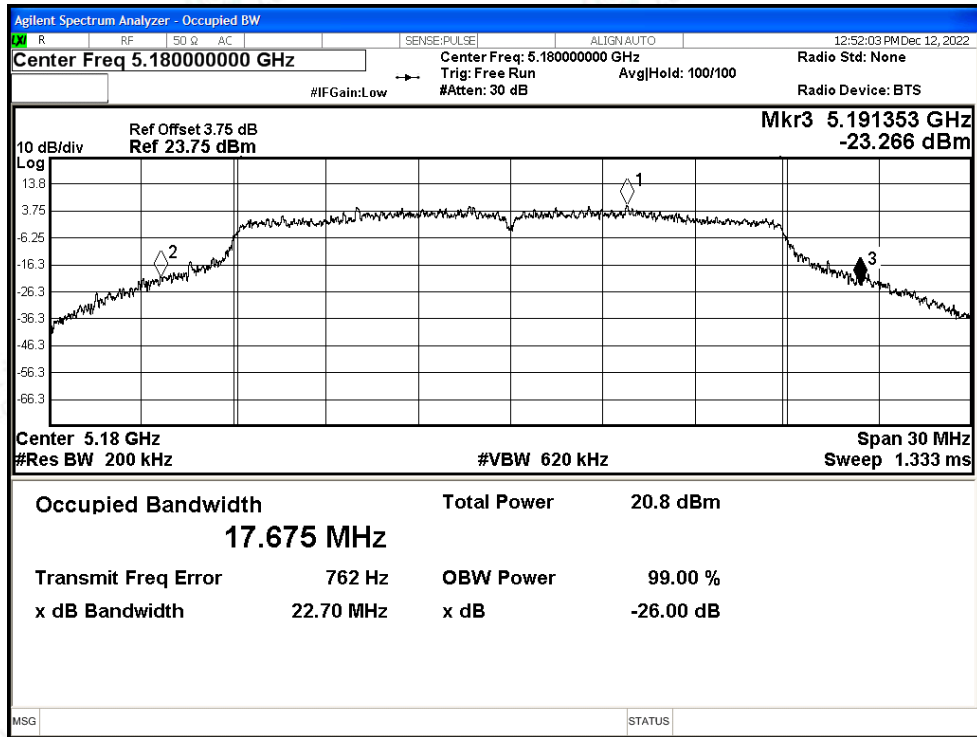


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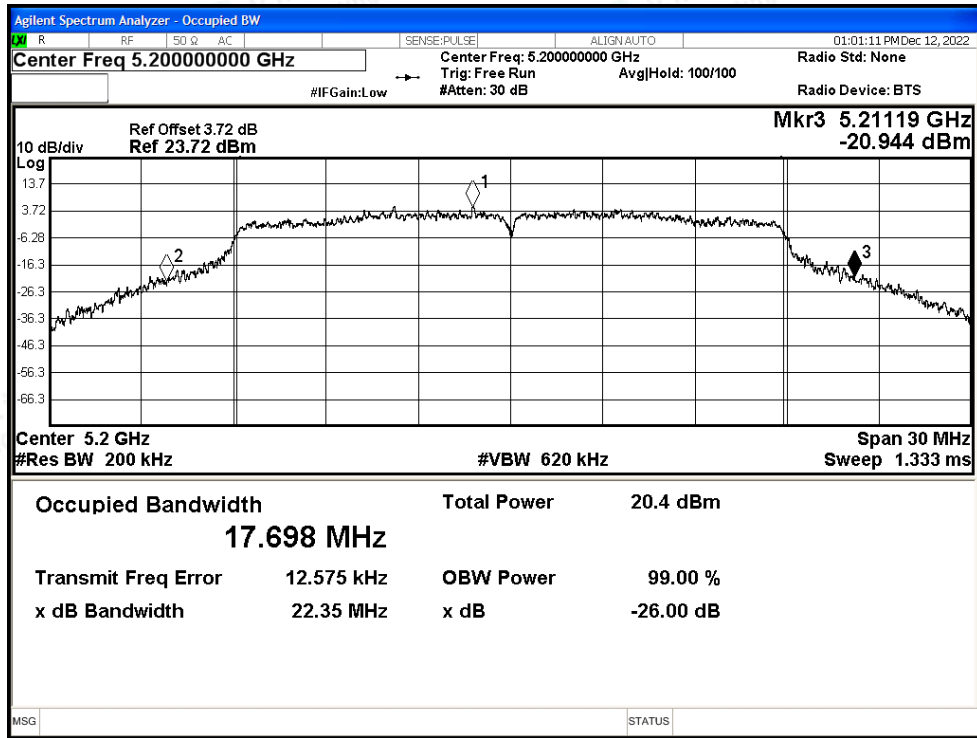


Test Graphs

-26dB Bandwidth NVNT a 5180MHz Ant0

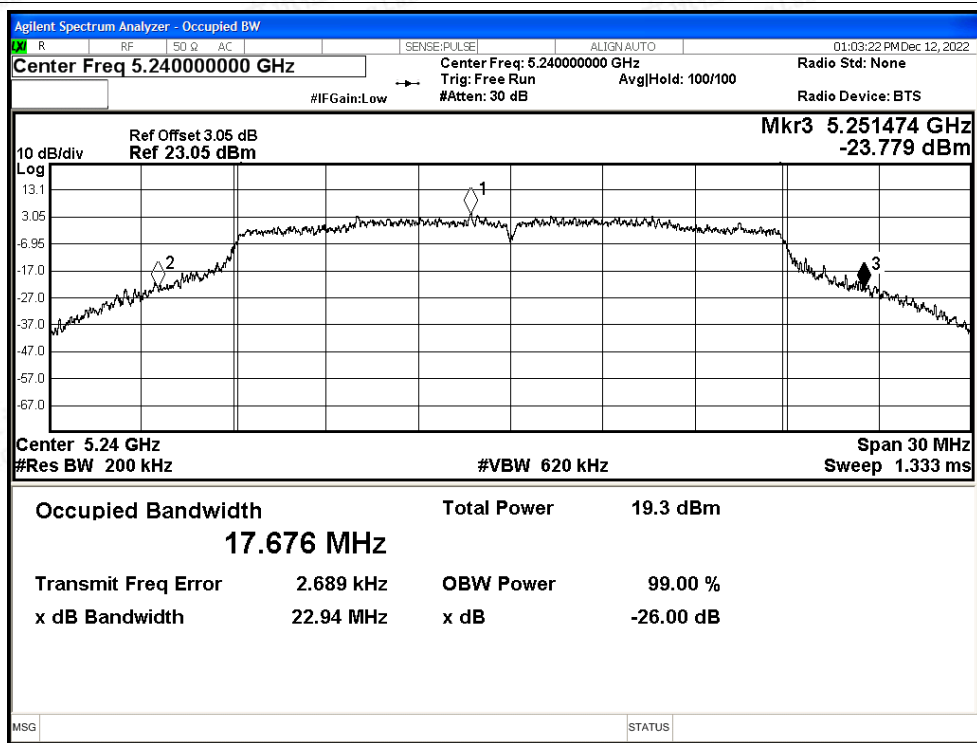


-26dB Bandwidth NVNT a 5200MHz Ant0





-26dB Bandwidth NVNT a 5240MHz Ant0

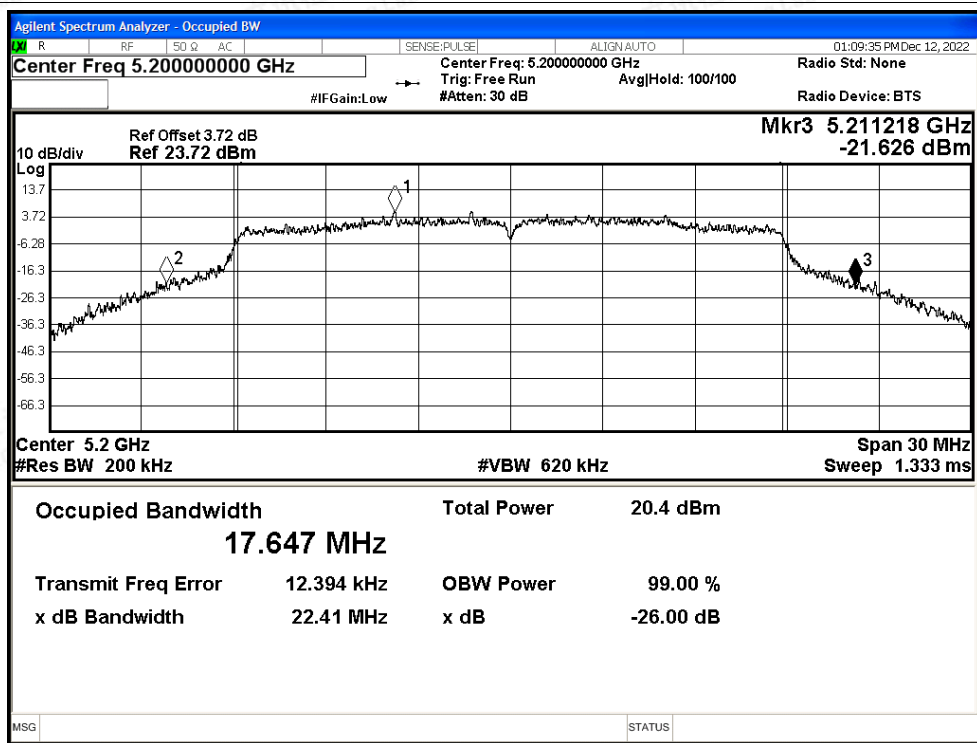


-26dB Bandwidth NVNT n20 5180MHz Ant0

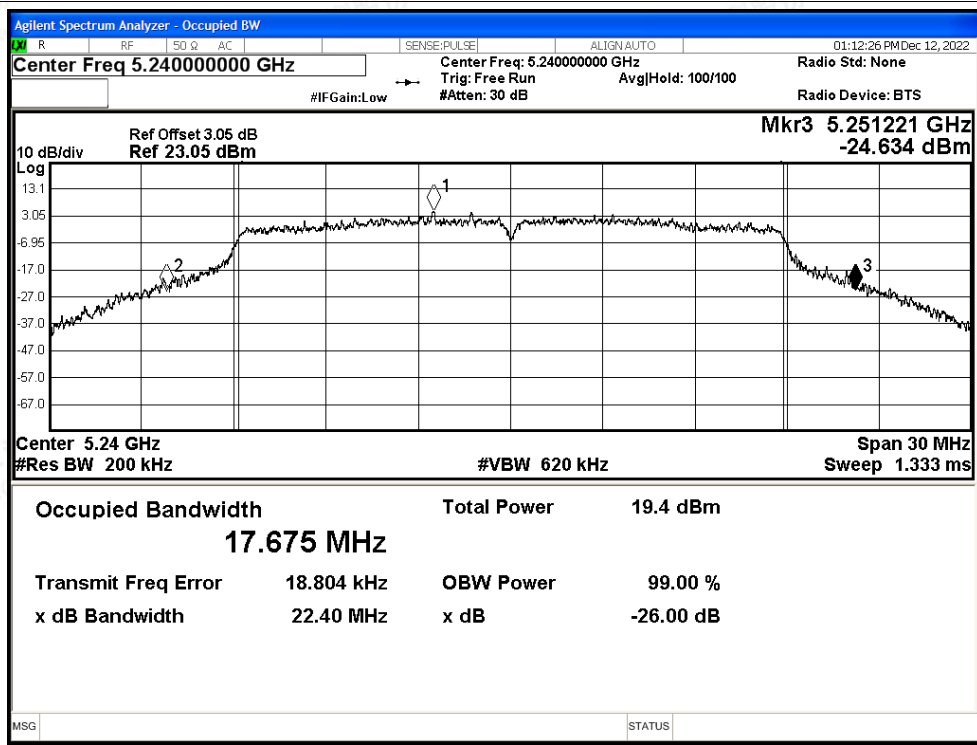




-26dB Bandwidth NVNT n20 5200MHz Ant0

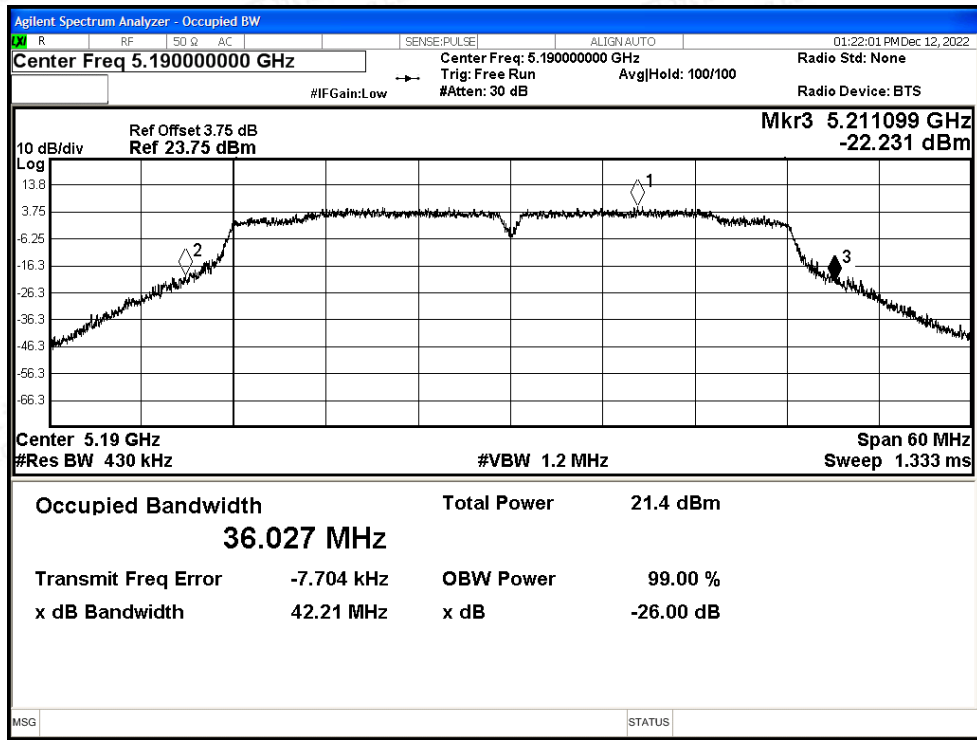


-26dB Bandwidth NVNT n20 5240MHz Ant0

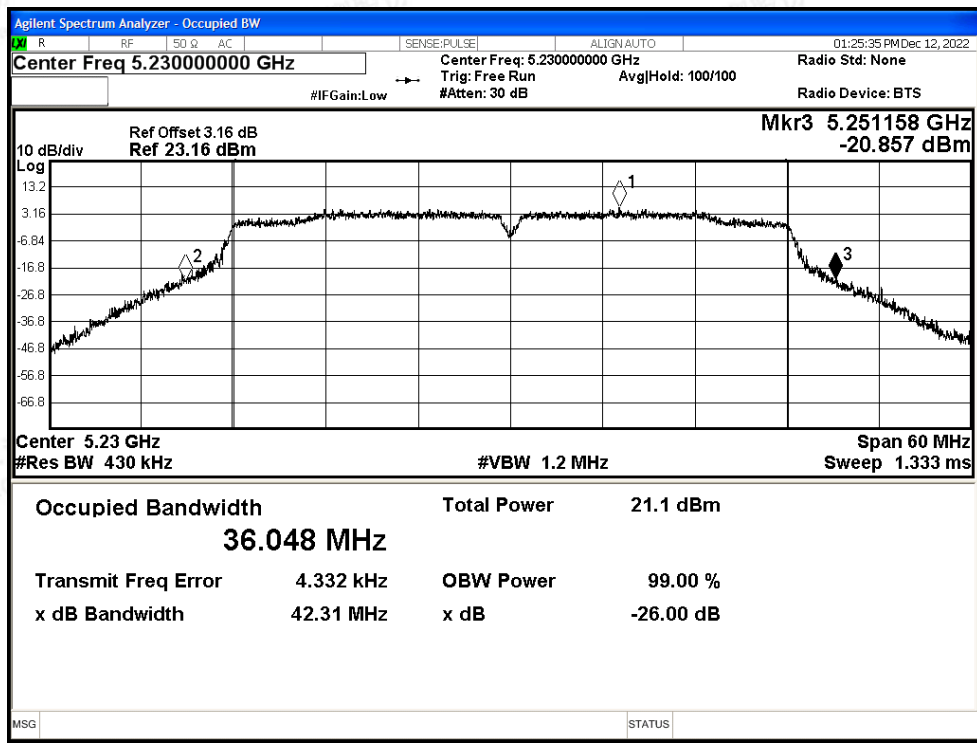




-26dB Bandwidth NVNT n40 5190MHz Ant0

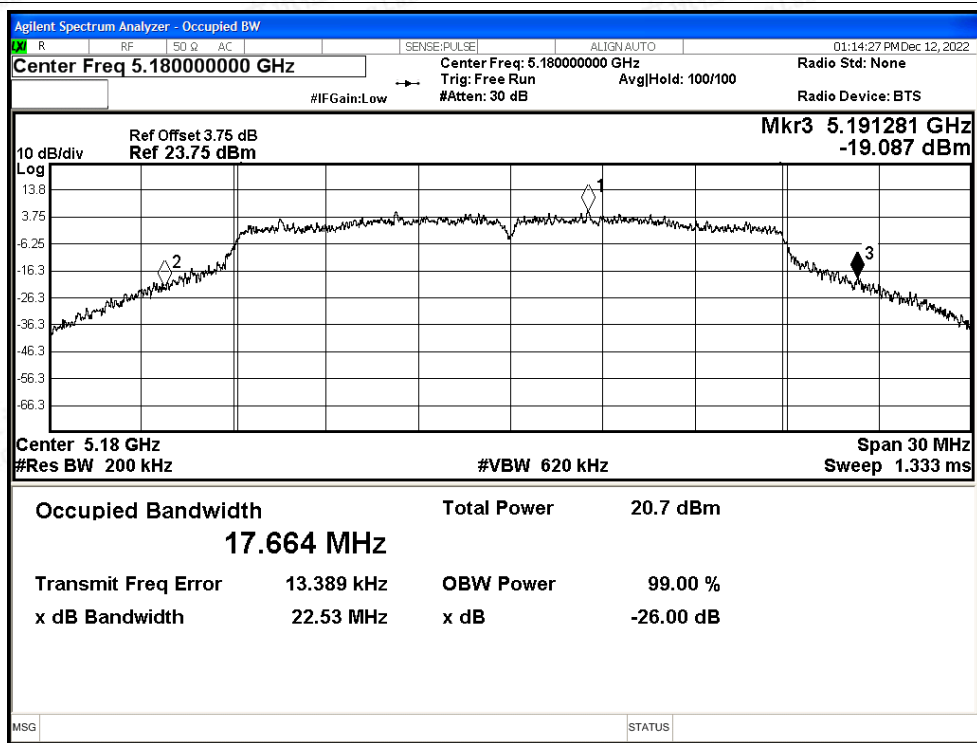


-26dB Bandwidth NVNT n40 5230MHz Ant0

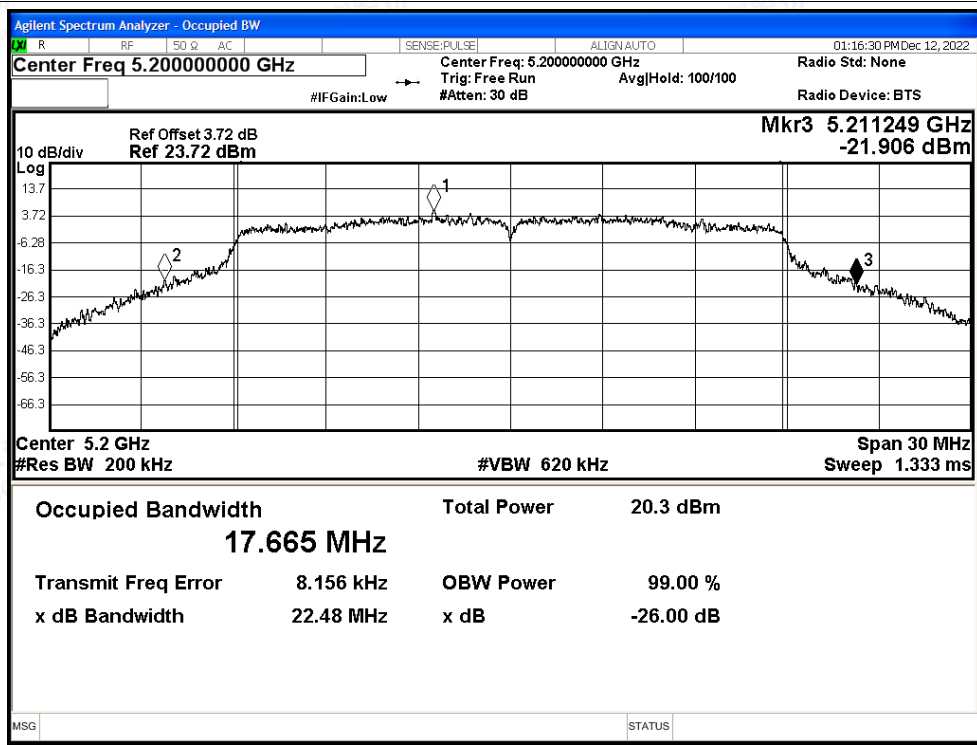




-26dB Bandwidth NVNT ac20 5180MHz Ant0

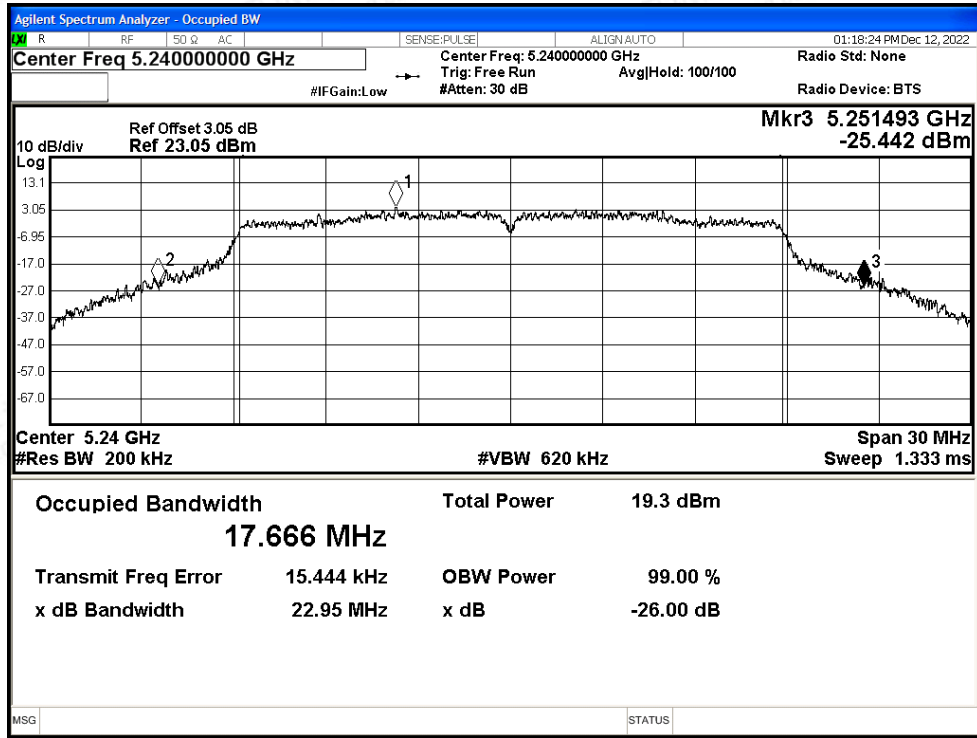


-26dB Bandwidth NVNT ac20 5200MHz Ant0

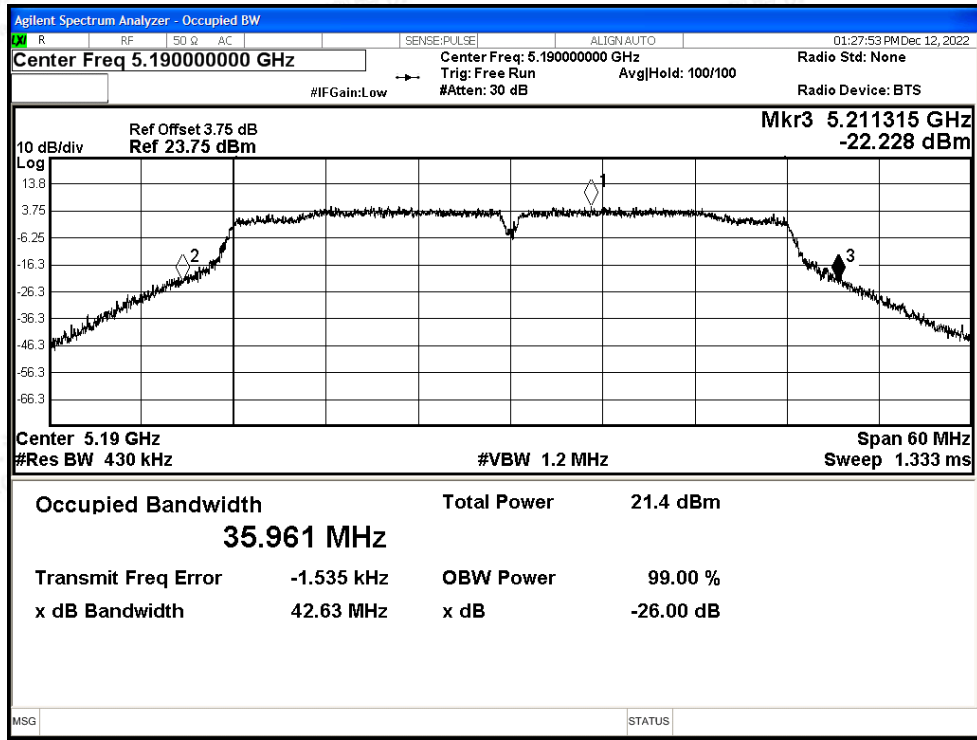




-26dB Bandwidth NVNT ac20 5240MHz Ant0

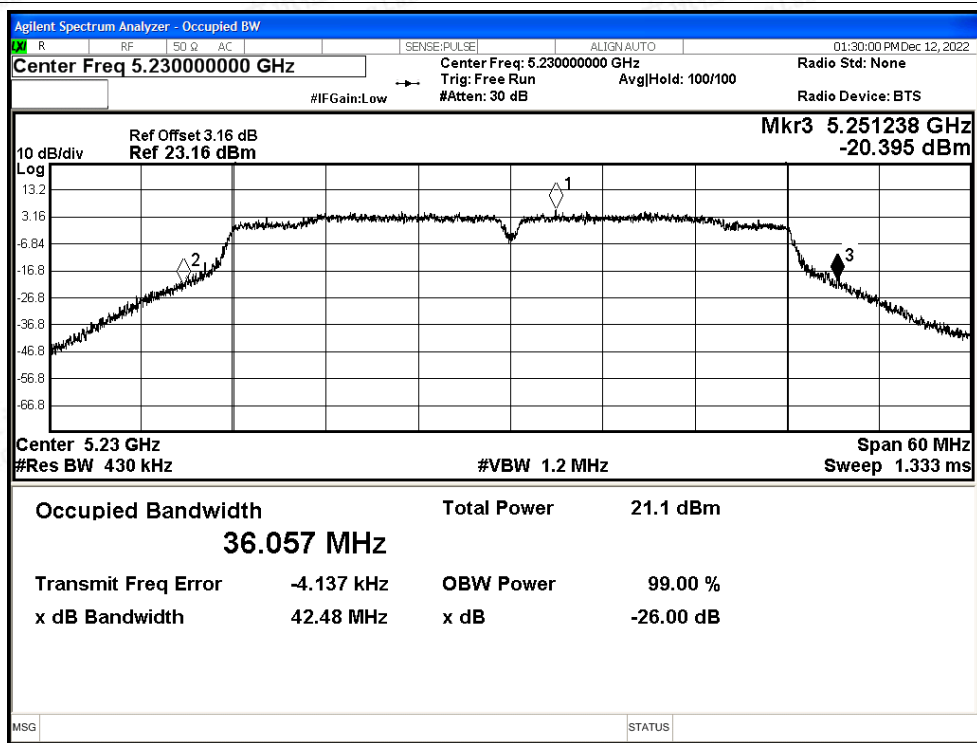


-26dB Bandwidth NVNT ac40 5190MHz Ant0

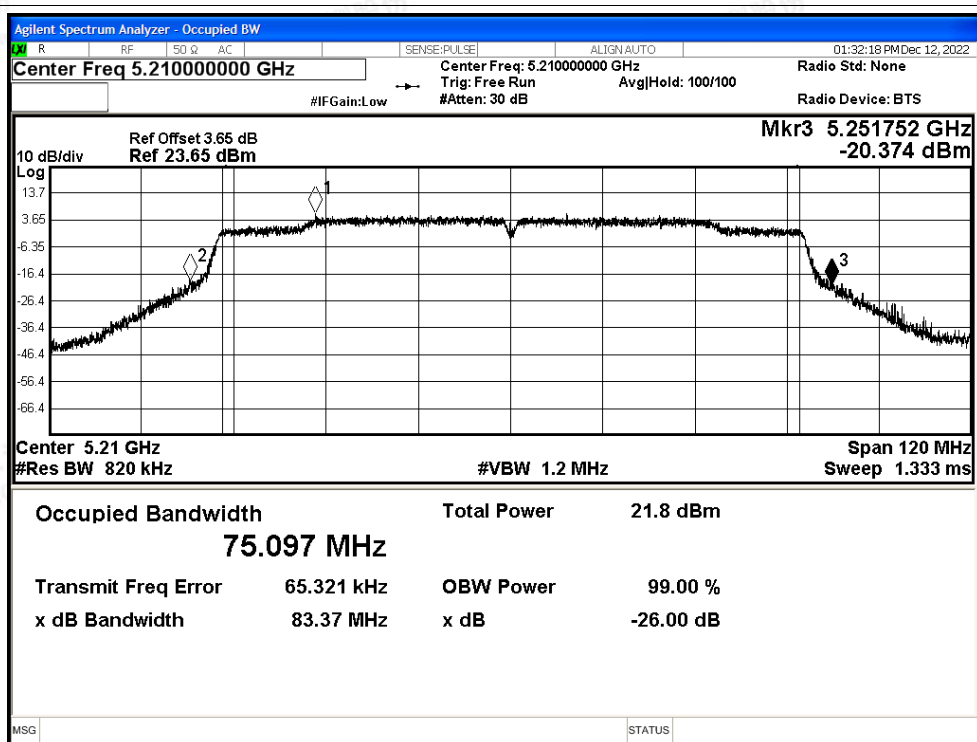




-26dB Bandwidth NVNT ac40 5230MHz Ant0



-26dB Bandwidth NVNT ac80 5210MHz Ant0





| Condition | Mode | Frequency (MHz) | Antenna | -26 dB Bandwidth (MHz) | Limit -26 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|------------------------|------------------------------|---------|
| NVNT | a | 5180 | Ant1 | 21.81 | --- | Pass |
| NVNT | a | 5200 | Ant1 | 21.755 | --- | Pass |
| NVNT | a | 5240 | Ant1 | 23.144 | --- | Pass |
| NVNT | n20 | 5180 | Ant1 | 22.864 | --- | Pass |
| NVNT | n20 | 5200 | Ant1 | 22.562 | --- | Pass |
| NVNT | n20 | 5240 | Ant1 | 23.335 | --- | Pass |
| NVNT | n40 | 5190 | Ant1 | 42.741 | --- | Pass |
| NVNT | n40 | 5230 | Ant1 | 42.946 | --- | Pass |
| NVNT | ac20 | 5180 | Ant1 | 22.364 | --- | Pass |
| NVNT | ac20 | 5200 | Ant1 | 22.573 | --- | Pass |
| NVNT | ac20 | 5240 | Ant1 | 23.522 | --- | Pass |
| NVNT | ac40 | 5190 | Ant1 | 43.018 | --- | Pass |
| NVNT | ac40 | 5230 | Ant1 | 43.61 | --- | Pass |
| NVNT | ac80 | 5210 | Ant1 | 84.806 | --- | Pass |

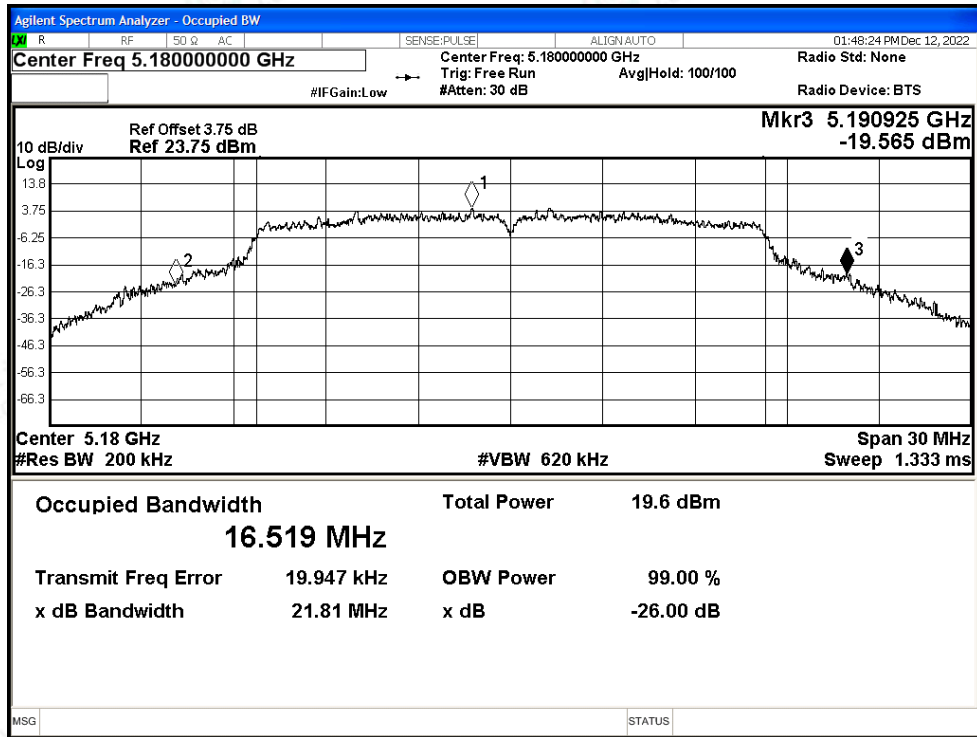


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 Scan code to check authenticity

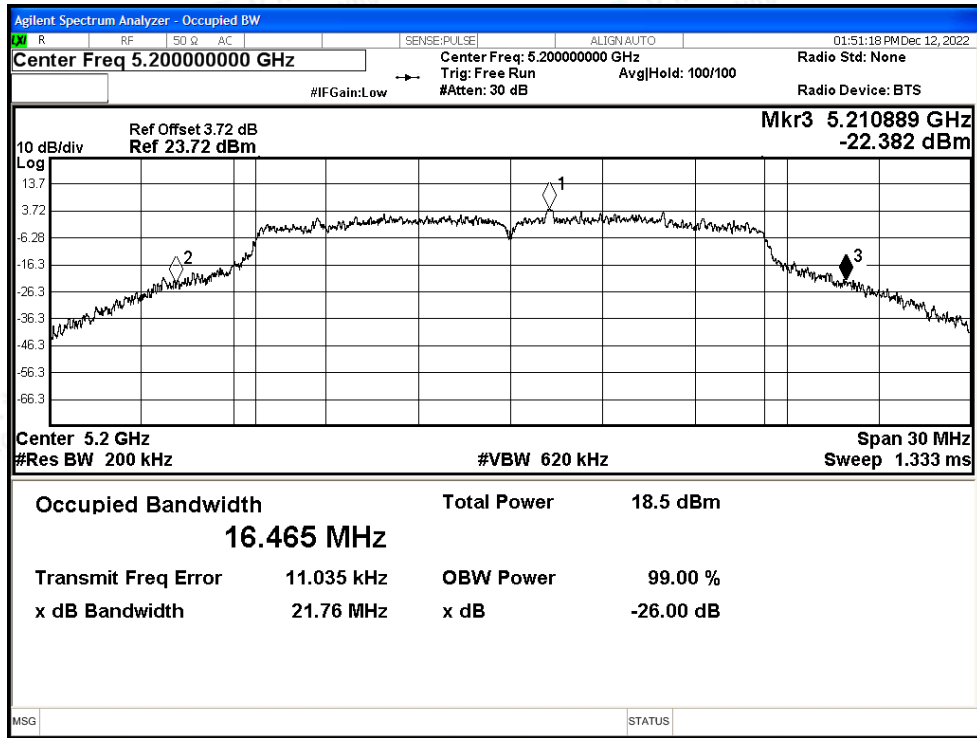


Test Graphs

-26dB Bandwidth NVNT a 5180MHz Ant1

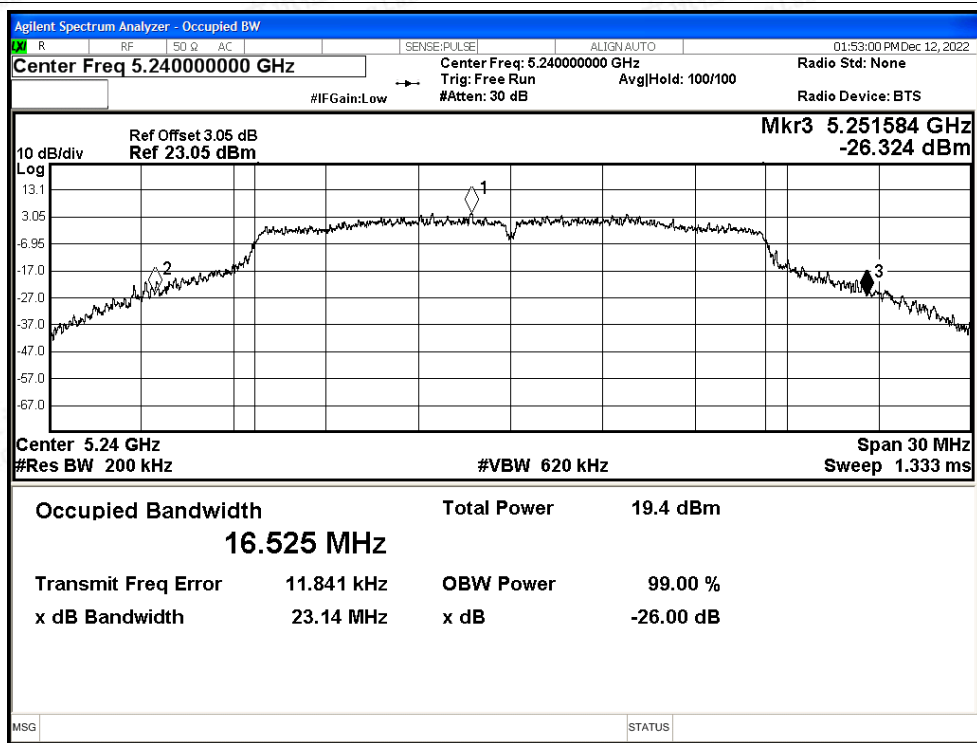


-26dB Bandwidth NVNT a 5200MHz Ant1

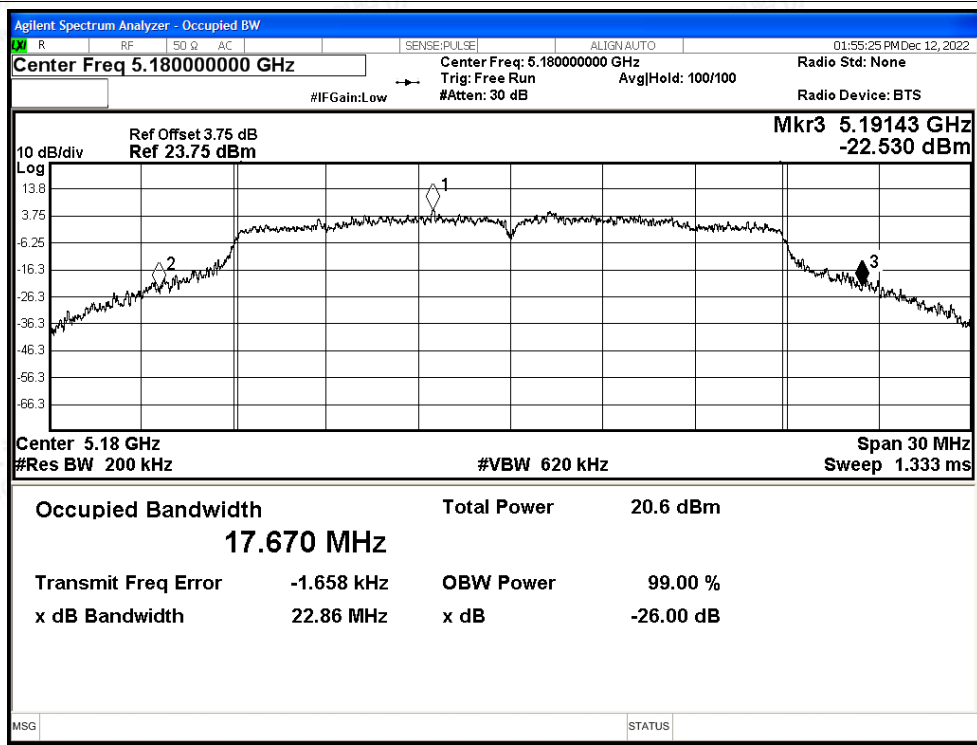




-26dB Bandwidth NVNT a 5240MHz Ant1



-26dB Bandwidth NVNT n20 5180MHz Ant1

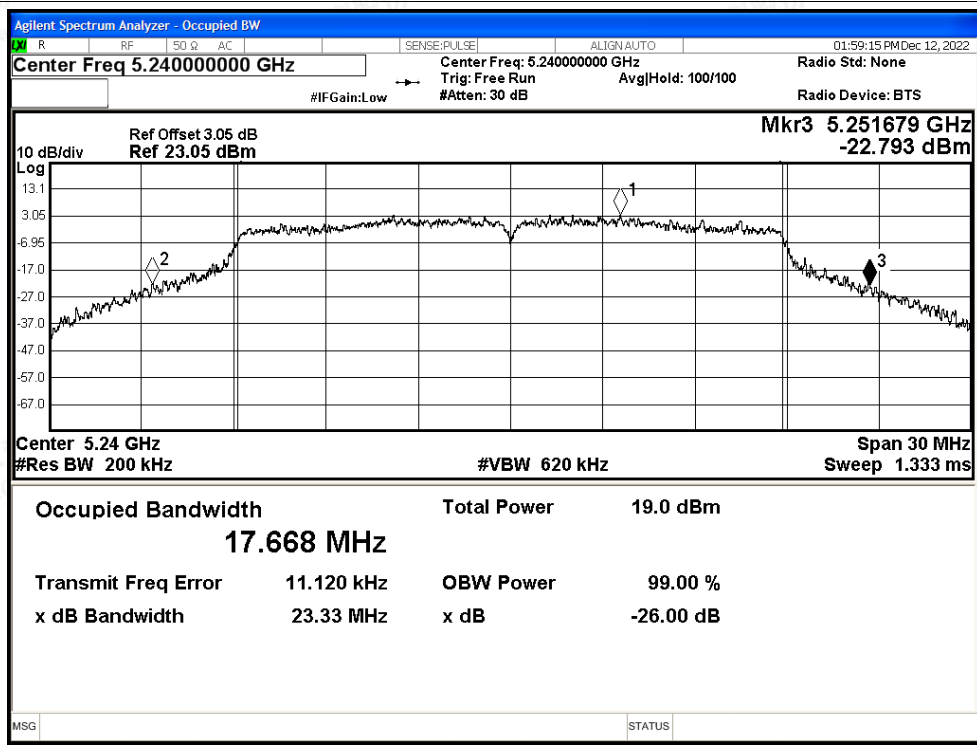




-26dB Bandwidth NVNT n20 5200MHz Ant1

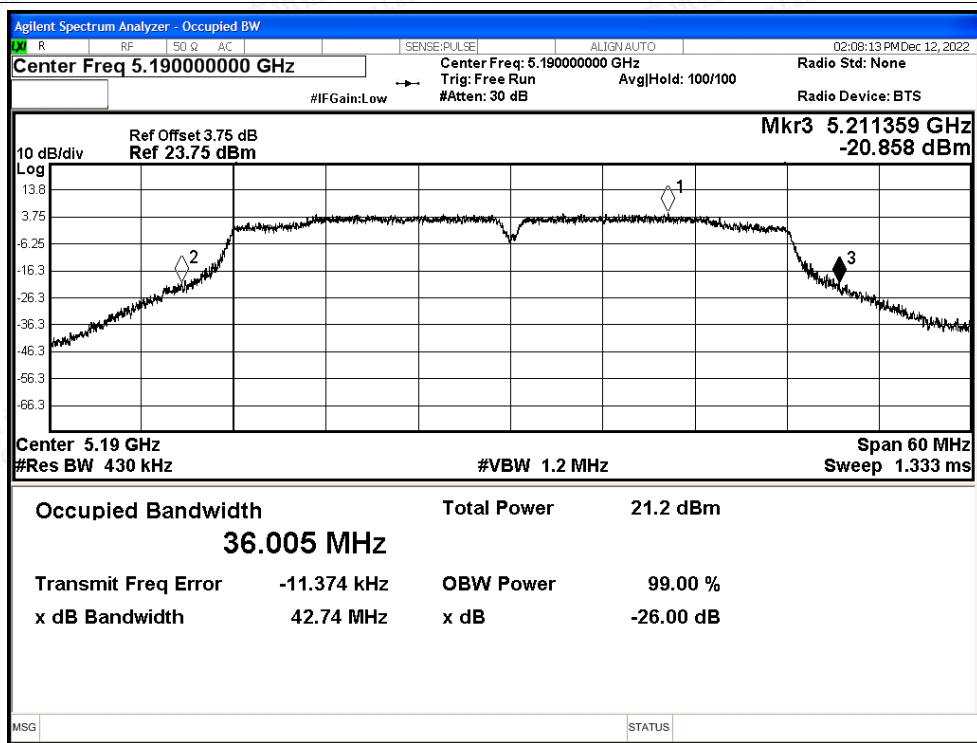


-26dB Bandwidth NVNT n20 5240MHz Ant1

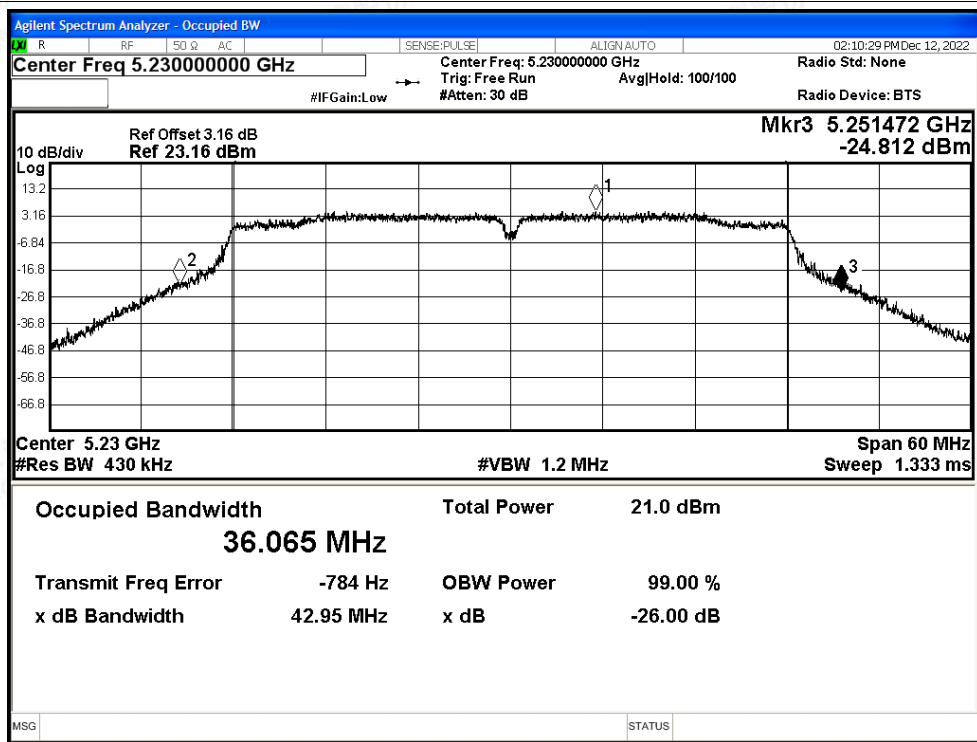




-26dB Bandwidth NVNT n40 5190MHz Ant1

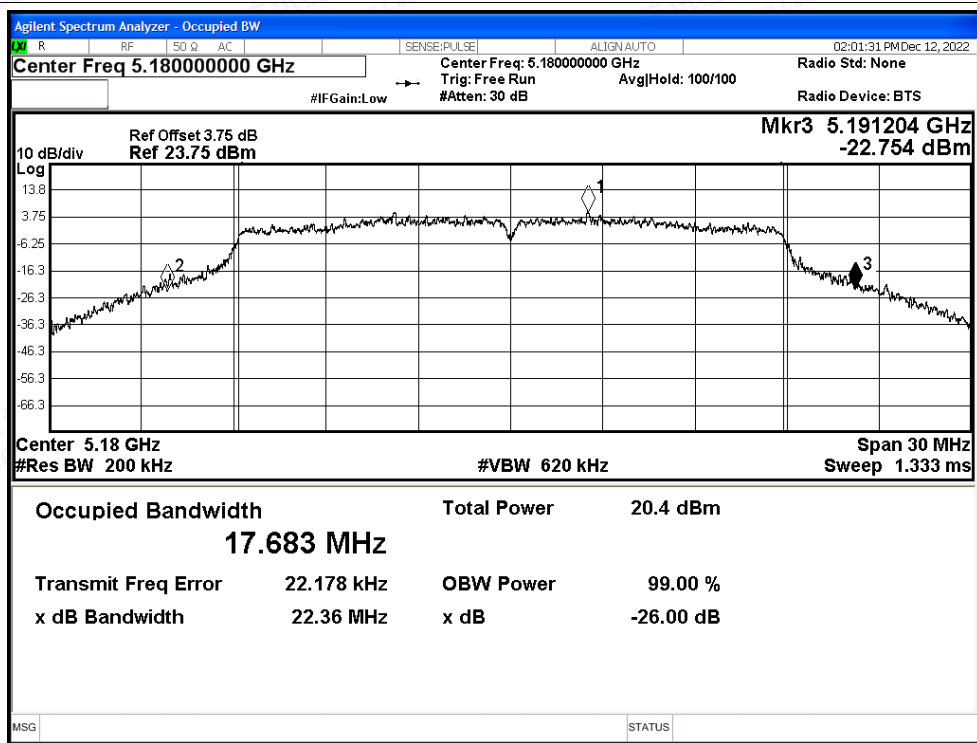


-26dB Bandwidth NVNT n40 5230MHz Ant1

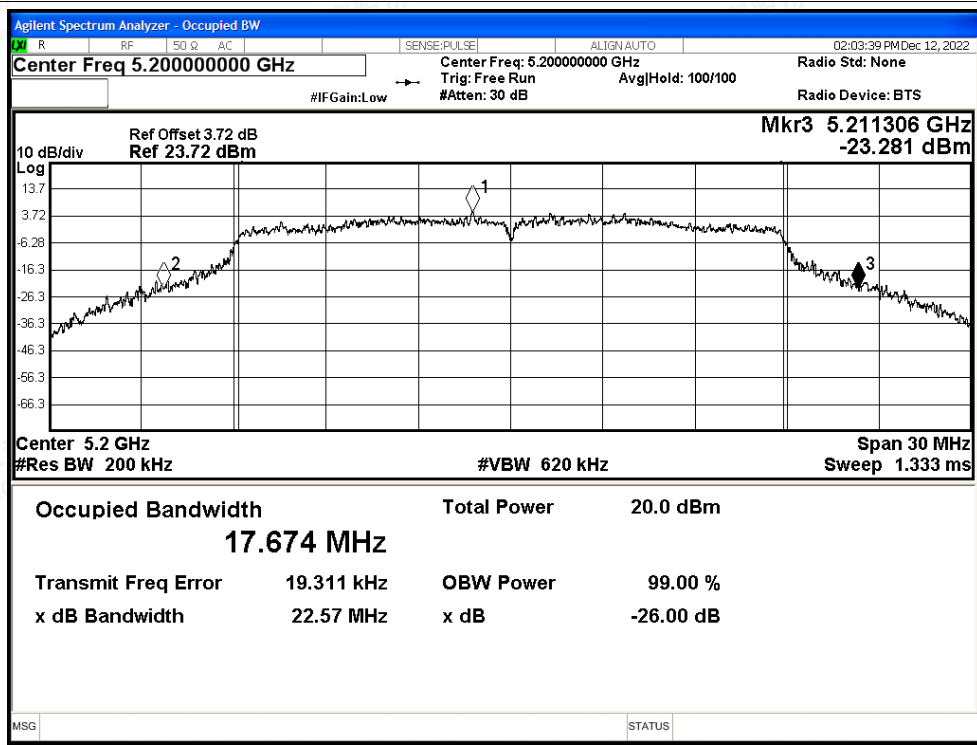




-26dB Bandwidth NVNT ac20 5180MHz Ant1

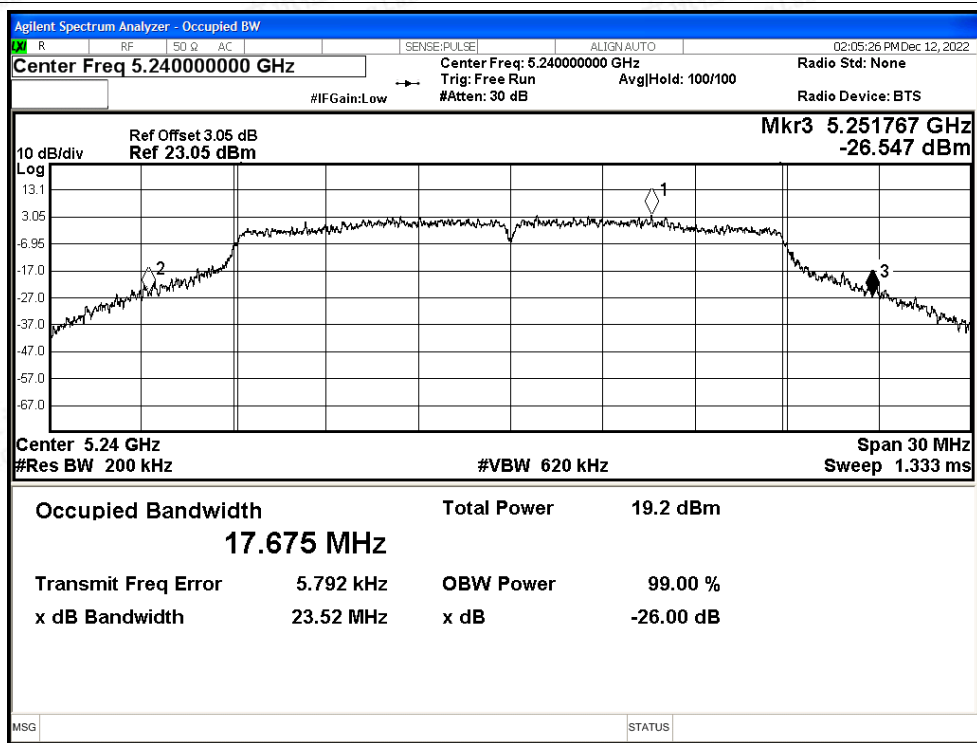


-26dB Bandwidth NVNT ac20 5200MHz Ant1

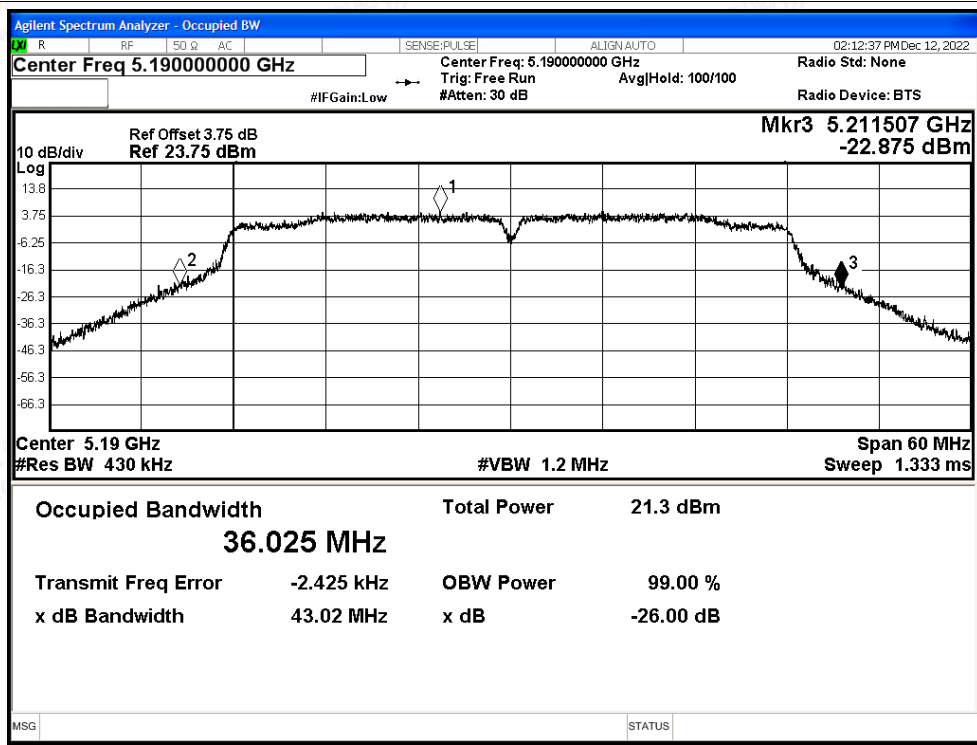




-26dB Bandwidth NVNT ac20 5240MHz Ant1

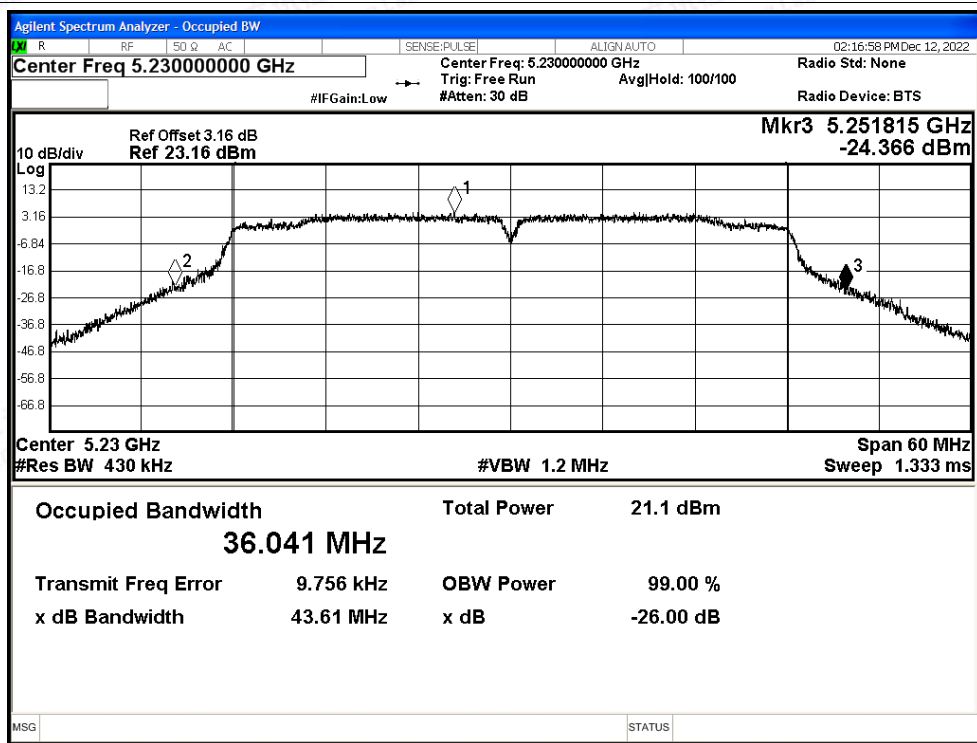


-26dB Bandwidth NVNT ac40 5190MHz Ant1

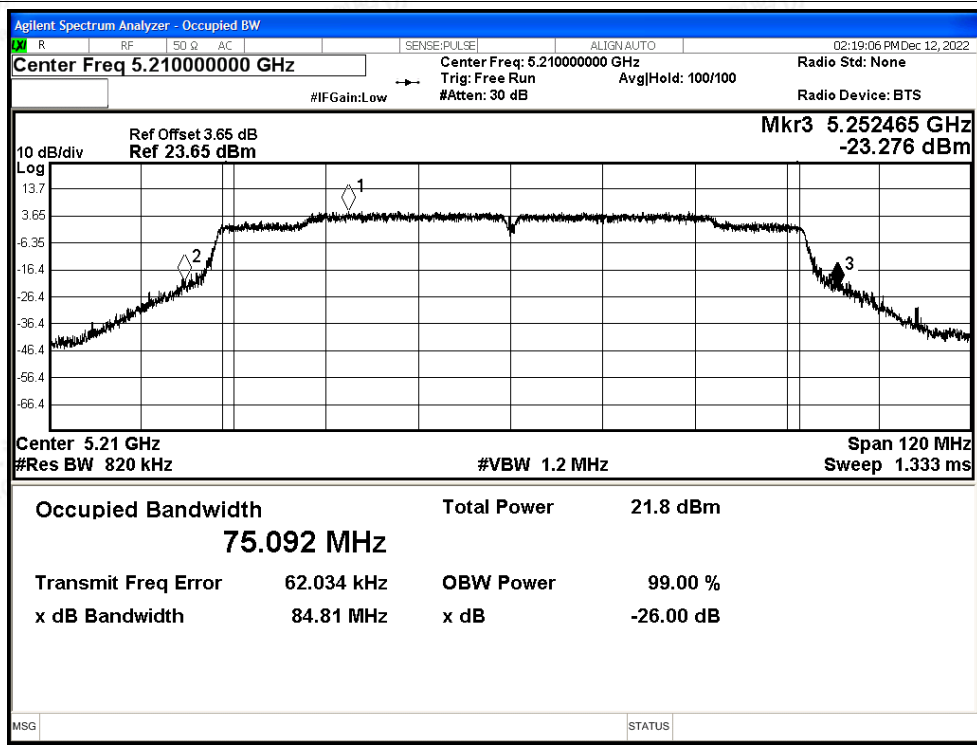




-26dB Bandwidth NVNT ac40 5230MHz Ant1



-26dB Bandwidth NVNT ac80 5210MHz Ant1





D.2 Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Duty Factor (dB) | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|------------------|-------------------|-------------|---------|
| NVNT | a | 5180 | Ant0 | 15.06 | 0 | 15.06 | 24 | Pass |
| NVNT | a | 5200 | Ant0 | 14.74 | 0 | 14.74 | 24 | Pass |
| NVNT | a | 5240 | Ant0 | 13.66 | 0 | 13.66 | 24 | Pass |
| NVNT | n20 | 5180 | Ant0 | 14.98 | 0 | 14.98 | 24 | Pass |
| NVNT | n20 | 5200 | Ant0 | 14.59 | 0 | 14.59 | 24 | Pass |
| NVNT | n20 | 5240 | Ant0 | 13.56 | 0 | 13.56 | 24 | Pass |
| NVNT | n40 | 5190 | Ant0 | 15.7 | 0 | 15.7 | 24 | Pass |
| NVNT | n40 | 5230 | Ant0 | 15.13 | 0 | 15.13 | 24 | Pass |
| NVNT | ac20 | 5180 | Ant0 | 14.9 | 0 | 14.9 | 24 | Pass |
| NVNT | ac20 | 5200 | Ant0 | 14.64 | 0 | 14.64 | 24 | Pass |
| NVNT | ac20 | 5240 | Ant0 | 13.5 | 0 | 13.5 | 24 | Pass |
| NVNT | ac40 | 5190 | Ant0 | 15.65 | 0 | 15.65 | 24 | Pass |
| NVNT | ac40 | 5230 | Ant0 | 15.06 | 0 | 15.06 | 24 | Pass |
| NVNT | ac80 | 5210 | Ant0 | 15.52 | 0 | 15.52 | 24 | Pass |

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Duty Factor (dB) | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|------------------|-------------------|-------------|---------|
| NVNT | a | 5180 | Ant1 | 13.77 | 0.09 | 13.86 | 24 | Pass |
| NVNT | a | 5200 | Ant1 | 13.61 | 0.09 | 13.7 | 24 | Pass |
| NVNT | a | 5240 | Ant1 | 13.61 | 0.09 | 13.7 | 24 | Pass |
| NVNT | n20 | 5180 | Ant1 | 14.87 | 0 | 14.87 | 24 | Pass |
| NVNT | n20 | 5200 | Ant1 | 14.6 | 0 | 14.6 | 24 | Pass |
| NVNT | n20 | 5240 | Ant1 | 13.29 | 0 | 13.29 | 24 | Pass |
| NVNT | n40 | 5190 | Ant1 | 15.46 | 0 | 15.46 | 24 | Pass |
| NVNT | n40 | 5230 | Ant1 | 15.05 | 0 | 15.05 | 24 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 14.69 | 0 | 14.69 | 24 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 14.33 | 0 | 14.33 | 24 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 13.48 | 0 | 13.48 | 24 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 15.58 | 0 | 15.58 | 24 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 15.11 | 0 | 15.11 | 24 | Pass |
| NVNT | ac80 | 5210 | Ant1 | 15.31 | 0 | 15.31 | 24 | Pass |





MIMO

| Condition | Mode | Frequency (MHz) | Total Power (dBm) | | | Limit (dBm) | Verdict |
|-----------|------|-----------------|-------------------|-------|-----------|-------------|---------|
| | | | Ant0 | Ant1 | Ant0+Ant1 | | |
| NVNT | n20 | 5180 | 14.98 | 14.87 | 17.94 | 24 | Pass |
| NVNT | n20 | 5200 | 14.59 | 14.6 | 17.61 | 24 | Pass |
| NVNT | n20 | 5240 | 13.56 | 13.29 | 16.44 | 24 | Pass |
| NVNT | n40 | 5190 | 15.7 | 15.46 | 18.59 | 24 | Pass |
| NVNT | n40 | 5230 | 15.13 | 15.05 | 18.10 | 24 | Pass |
| NVNT | ac20 | 5180 | 14.9 | 14.69 | 17.81 | 24 | Pass |
| NVNT | ac20 | 5200 | 14.64 | 14.33 | 17.50 | 24 | Pass |
| NVNT | ac20 | 5240 | 13.5 | 13.48 | 16.50 | 24 | Pass |
| NVNT | ac40 | 5190 | 15.65 | 15.58 | 18.63 | 24 | Pass |
| NVNT | ac40 | 5230 | 15.06 | 15.11 | 18.10 | 24 | Pass |
| NVNT | ac80 | 5210 | 15.52 | 15.31 | 18.43 | 24 | Pass |



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D.3 Maximum Power Spectral Density Level

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total PSD (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------------|------------------|-----------------|-------------|---------|
| NVNT | a | 5180 | Ant0 | 3.03 | 0 | 3.03 | 11 | Pass |
| NVNT | a | 5200 | Ant0 | 2.79 | 0 | 2.79 | 11 | Pass |
| NVNT | a | 5240 | Ant0 | 1.65 | 0 | 1.65 | 11 | Pass |
| NVNT | n20 | 5180 | Ant0 | 3.16 | 0 | 3.16 | 11 | Pass |
| NVNT | n20 | 5200 | Ant0 | 2.82 | 0 | 2.82 | 11 | Pass |
| NVNT | n20 | 5240 | Ant0 | 1.65 | 0 | 1.65 | 11 | Pass |
| NVNT | n40 | 5190 | Ant0 | 0.85 | 0 | 0.85 | 11 | Pass |
| NVNT | n40 | 5230 | Ant0 | -0.11 | 0 | -0.11 | 11 | Pass |
| NVNT | ac20 | 5180 | Ant0 | 3.21 | 0 | 3.21 | 11 | Pass |
| NVNT | ac20 | 5200 | Ant0 | 2.71 | 0 | 2.71 | 11 | Pass |
| NVNT | ac20 | 5240 | Ant0 | 1.64 | 0 | 1.64 | 11 | Pass |
| NVNT | ac40 | 5190 | Ant0 | -0.1 | 0 | -0.1 | 11 | Pass |
| NVNT | ac40 | 5230 | Ant0 | -0.12 | 0 | -0.12 | 11 | Pass |
| NVNT | ac80 | 5210 | Ant0 | -2.6 | 0 | -2.6 | 11 | Pass |

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total PSD (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------------|------------------|-----------------|-------------|---------|
| NVNT | a | 5180 | Ant1 | 1.58 | 0.09 | 1.67 | 11 | Pass |
| NVNT | a | 5200 | Ant1 | 1.78 | 0.09 | 1.87 | 11 | Pass |
| NVNT | a | 5240 | Ant1 | 1.76 | 0.09 | 1.85 | 11 | Pass |
| NVNT | n20 | 5180 | Ant1 | 2.8 | 0 | 2.8 | 11 | Pass |
| NVNT | n20 | 5200 | Ant1 | 2.5 | 0 | 2.5 | 11 | Pass |
| NVNT | n20 | 5240 | Ant1 | 1.17 | 0 | 1.17 | 11 | Pass |
| NVNT | n40 | 5190 | Ant1 | -0.06 | 0 | -0.06 | 11 | Pass |
| NVNT | n40 | 5230 | Ant1 | -0.14 | 0 | -0.14 | 11 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 2.6 | 0 | 2.6 | 11 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 2.69 | 0 | 2.69 | 11 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 1.43 | 0 | 1.43 | 11 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 0.18 | 0 | 0.18 | 11 | Pass |
| NVNT | ac40 | 5230 | Ant1 | -0.05 | 0 | -0.05 | 11 | Pass |
| NVNT | ac80 | 5210 | Ant1 | -2.51 | 0 | -2.51 | 11 | Pass |



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MIMO

| Condition | Mode | Frequency (MHz) | Total PSD (dBm) | | | Limit (dBm) | Verdict |
|-----------|------|-----------------|-----------------|-------|-----------|-------------|---------|
| | | | Ant0 | Ant1 | Ant0+Ant1 | | |
| NVNT | n20 | 5180 | 3.16 | 2.8 | 5.99 | 11 | Pass |
| NVNT | n20 | 5200 | 2.82 | 2.5 | 5.67 | 11 | Pass |
| NVNT | n20 | 5240 | 1.65 | 1.17 | 4.43 | 11 | Pass |
| NVNT | n40 | 5190 | 0.85 | -0.06 | 3.43 | 11 | Pass |
| NVNT | n40 | 5230 | -0.11 | -0.14 | 2.89 | 11 | Pass |
| NVNT | ac20 | 5180 | 3.21 | 2.6 | 5.93 | 11 | Pass |
| NVNT | ac20 | 5200 | 2.71 | 2.69 | 5.71 | 11 | Pass |
| NVNT | ac20 | 5240 | 1.64 | 1.43 | 4.55 | 11 | Pass |
| NVNT | ac40 | 5190 | -0.1 | 0.18 | 3.05 | 11 | Pass |
| NVNT | ac40 | 5230 | -0.12 | -0.05 | 2.93 | 11 | Pass |
| NVNT | ac80 | 5210 | -2.6 | -2.51 | 0.46 | 11 | Pass |

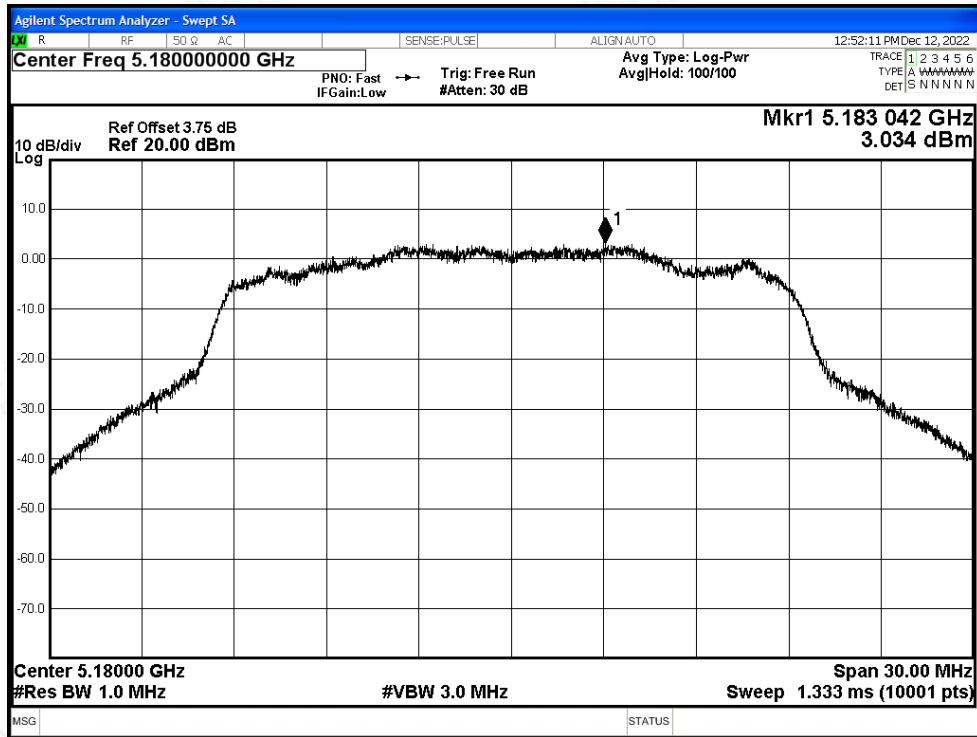


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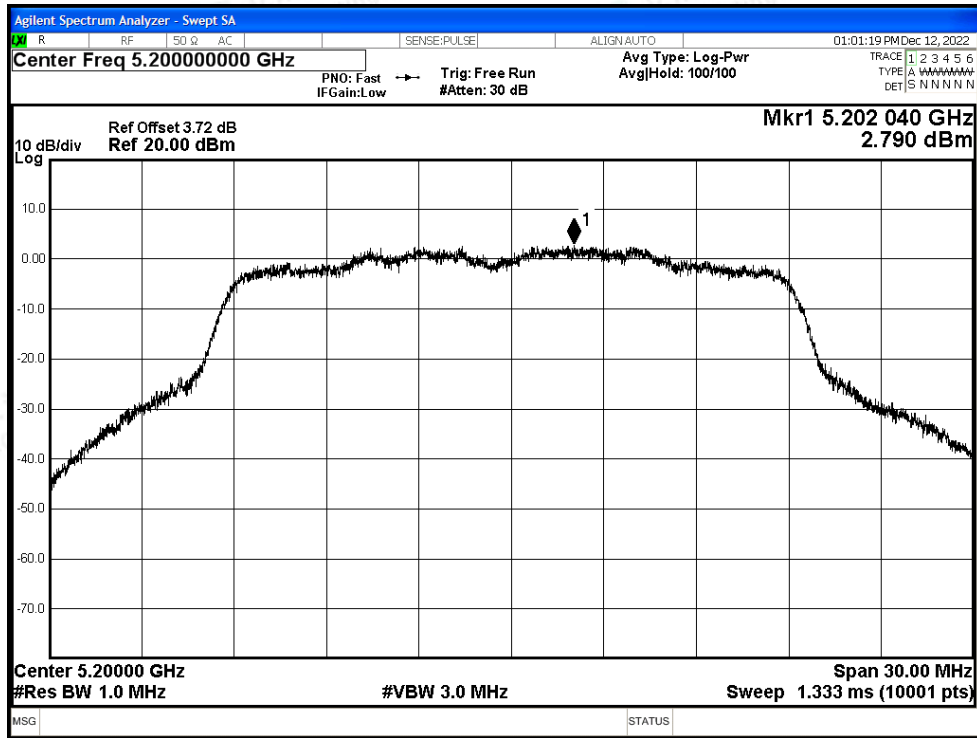


Test Graphs

PSD NVNT a 5180MHz Ant0

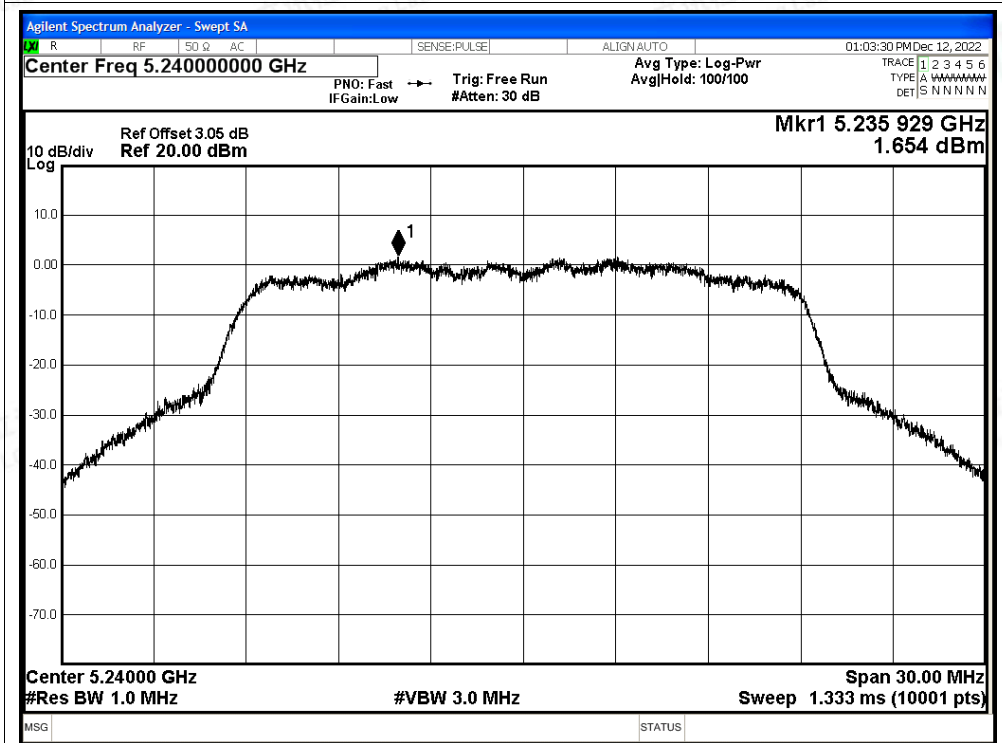


PSD NVNT a 5200MHz Ant0

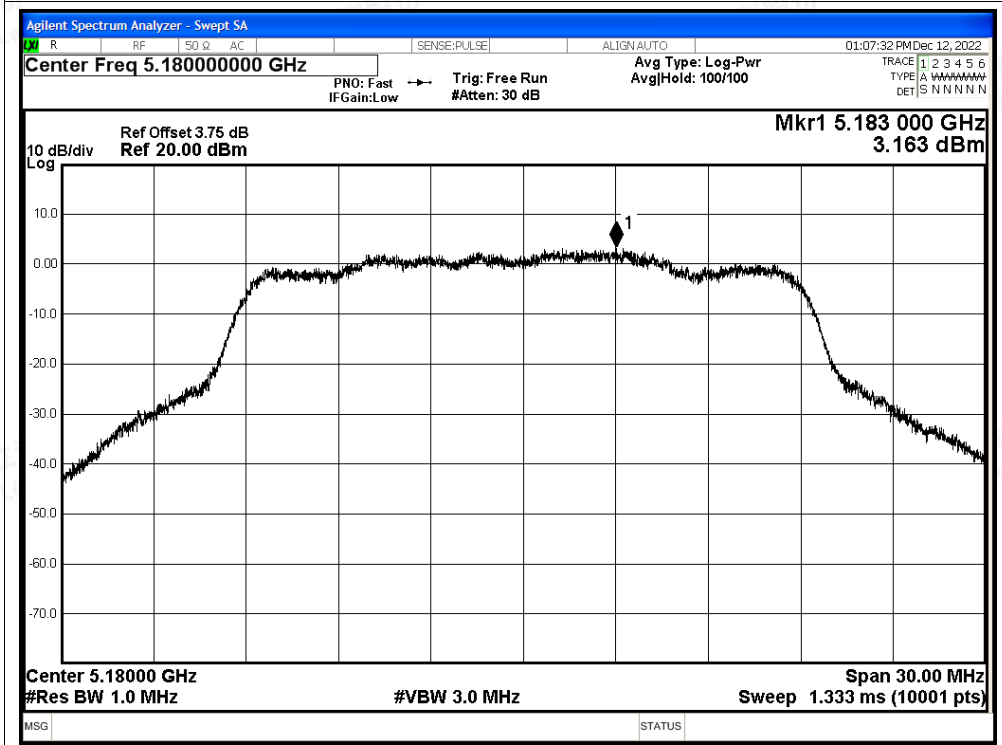


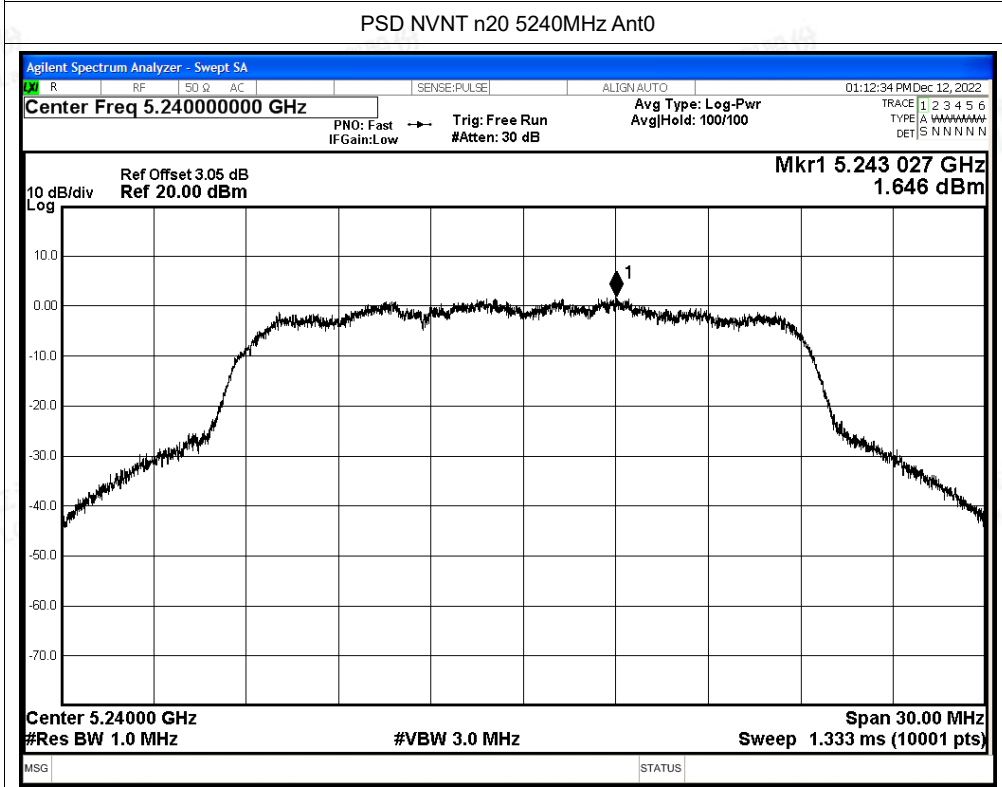
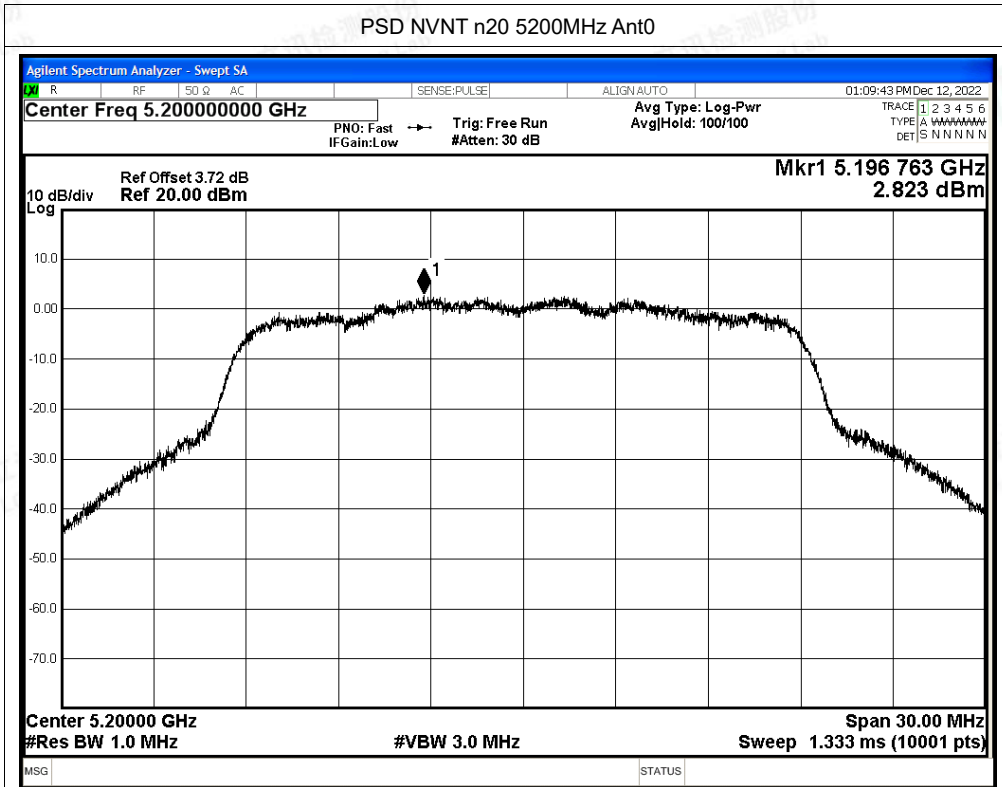


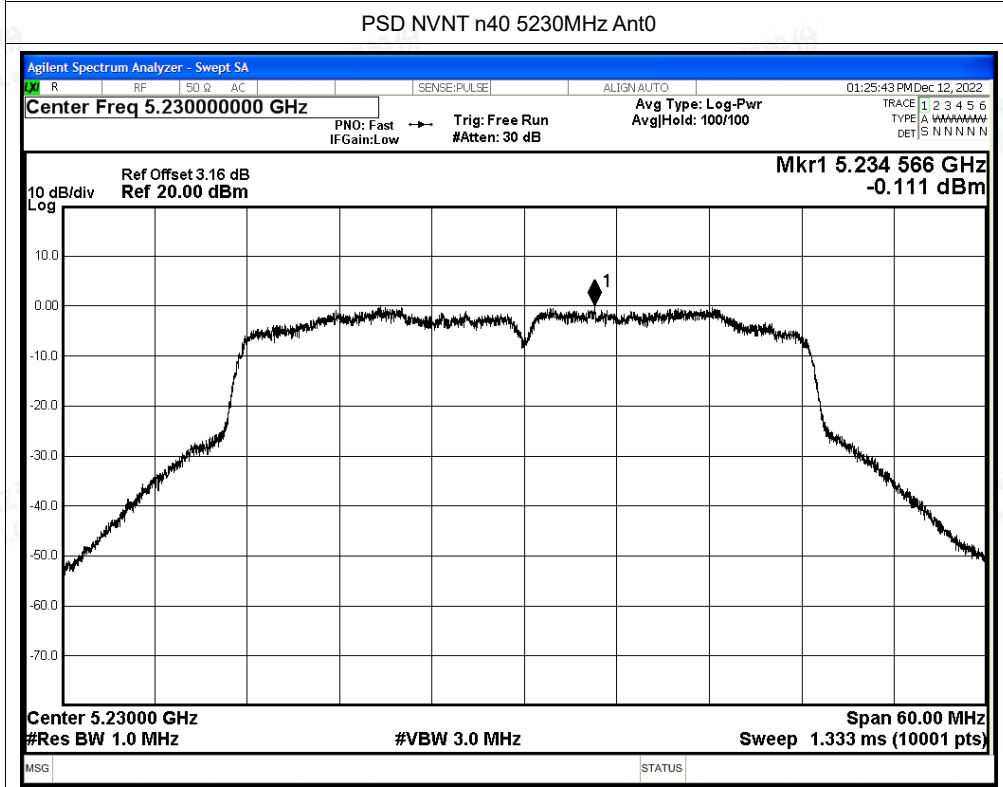
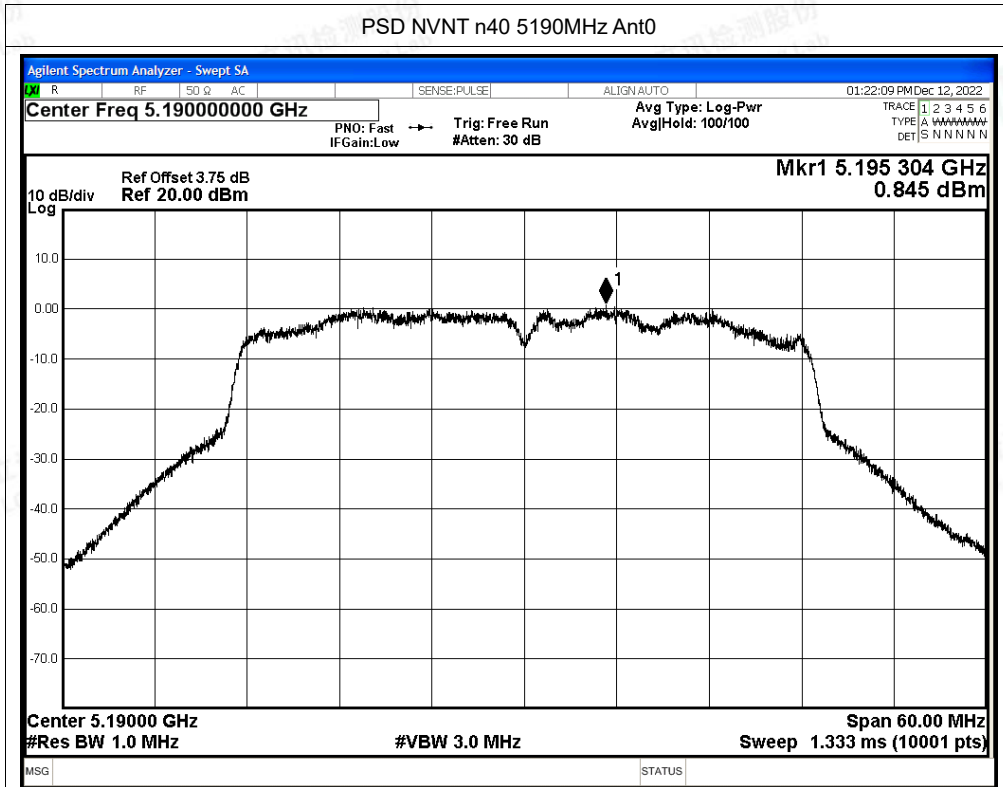
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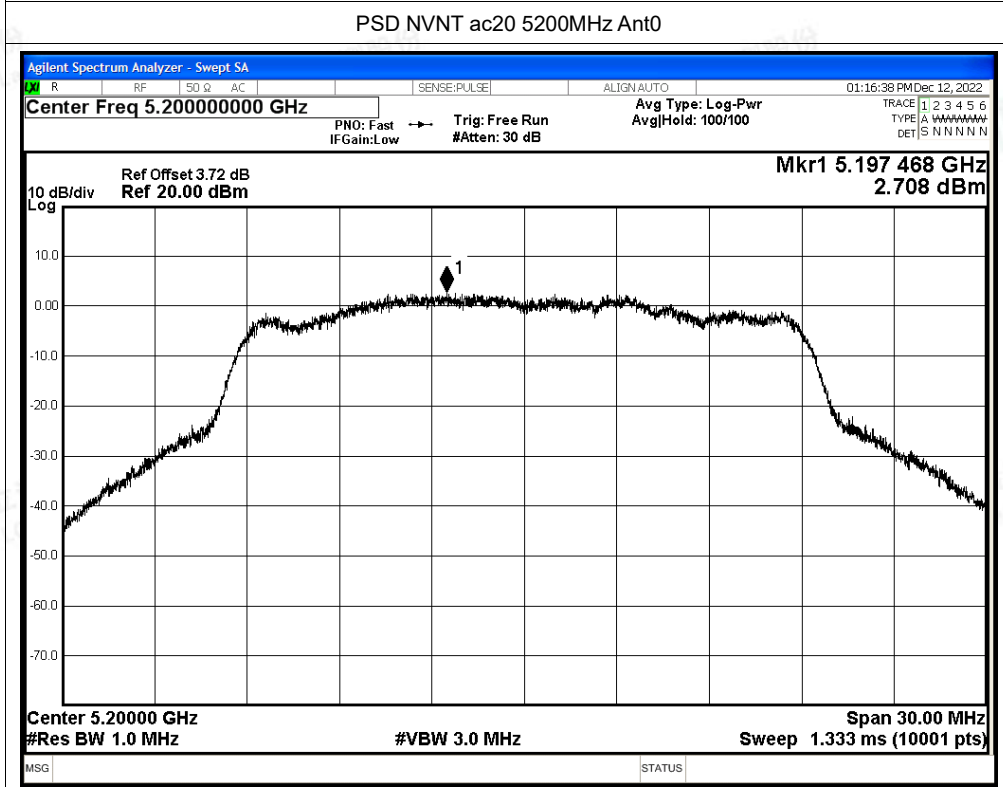
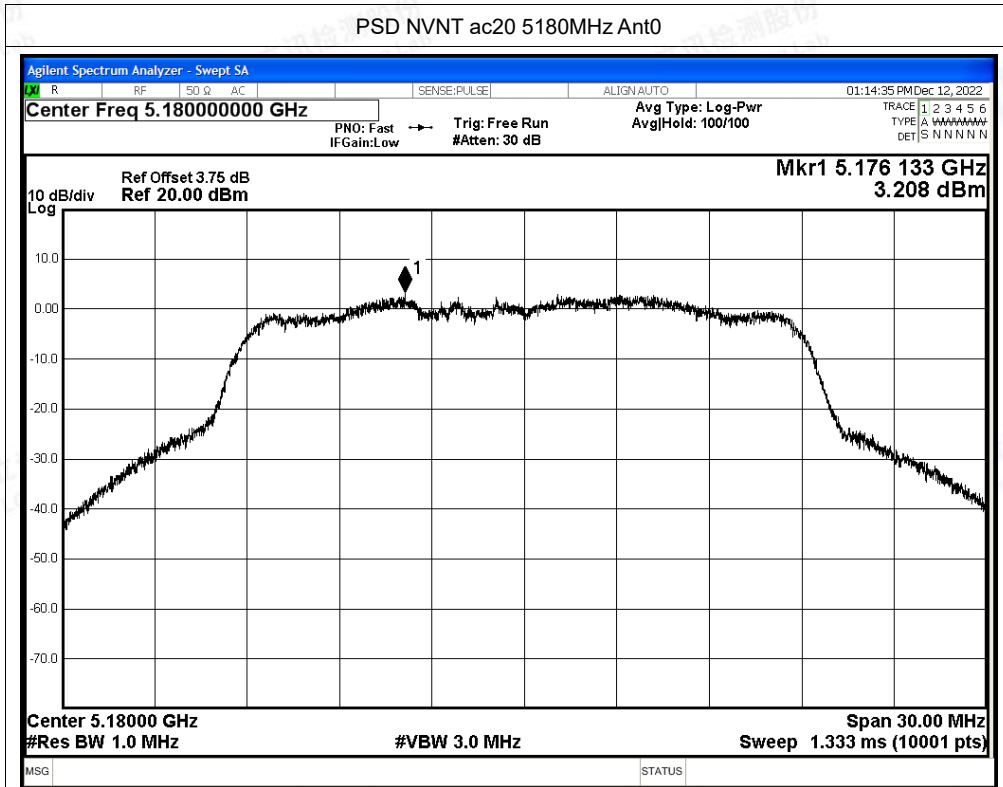


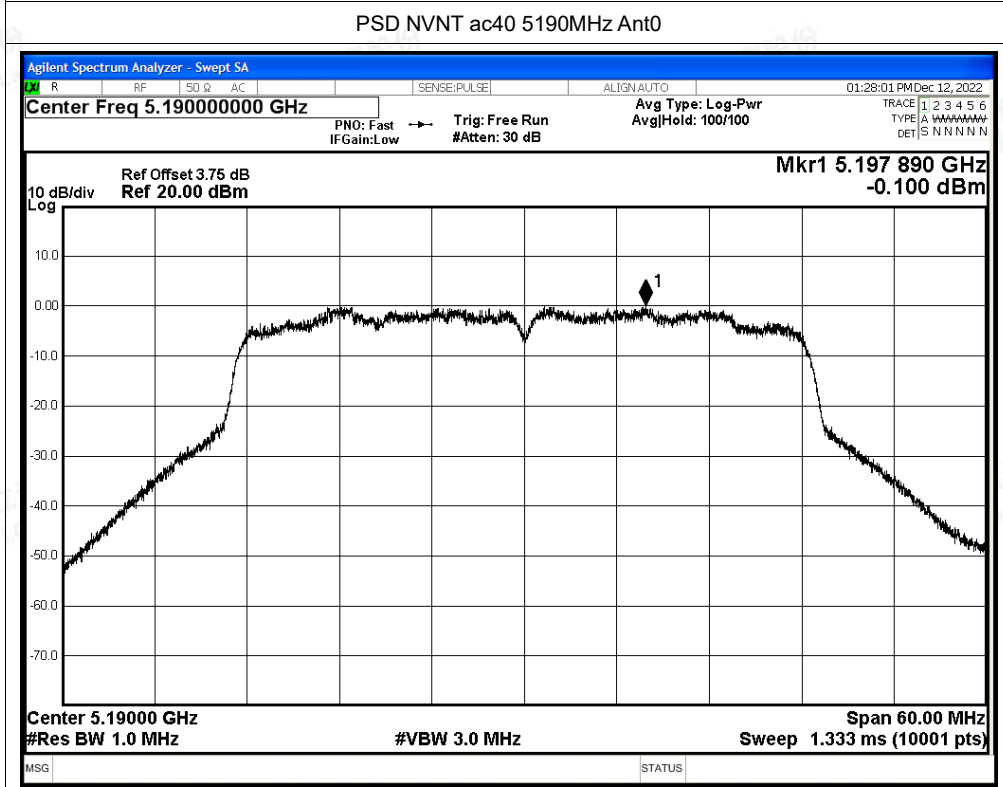
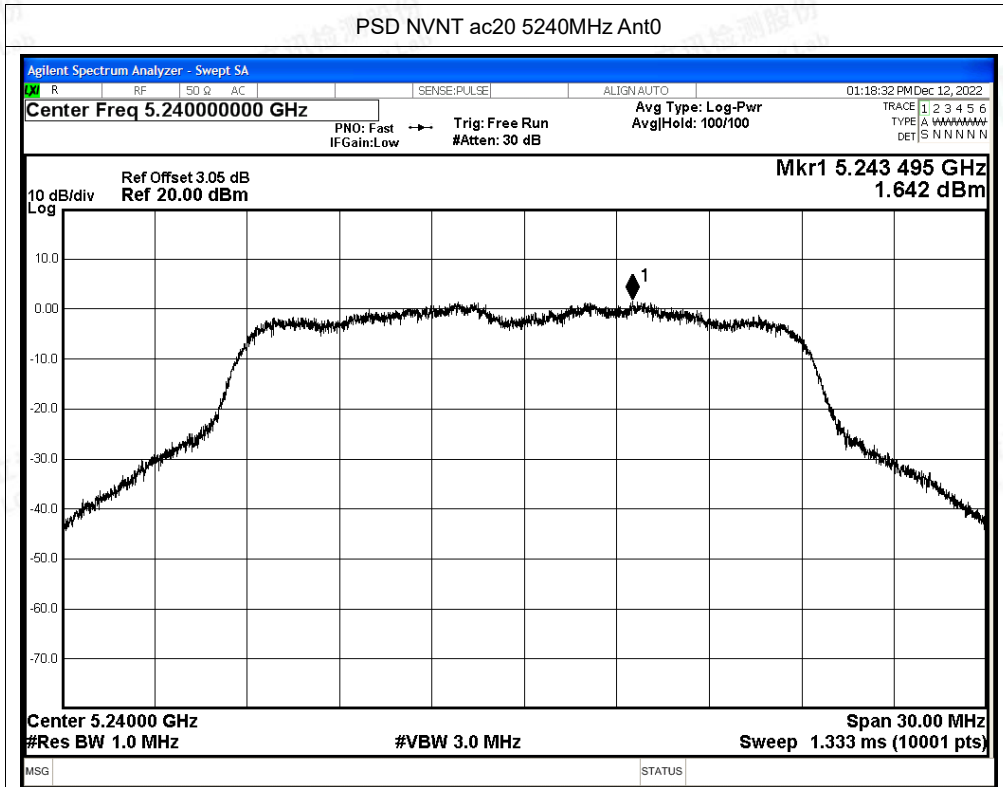
PSD NVNT n20 5180MHz Ant0

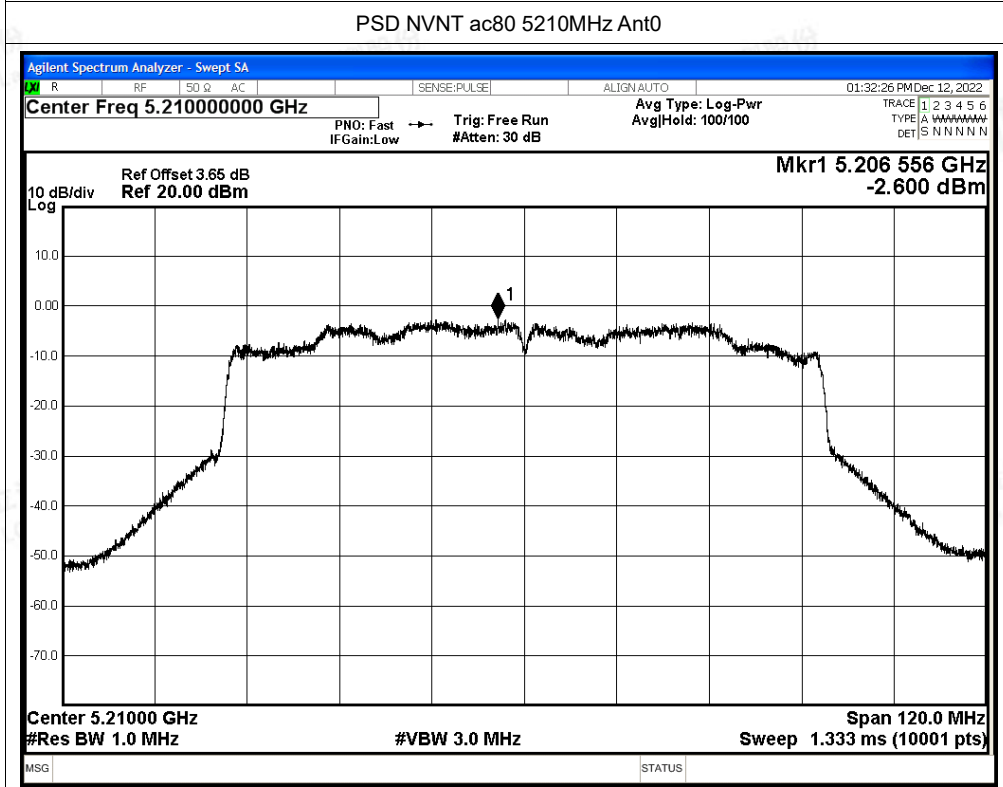
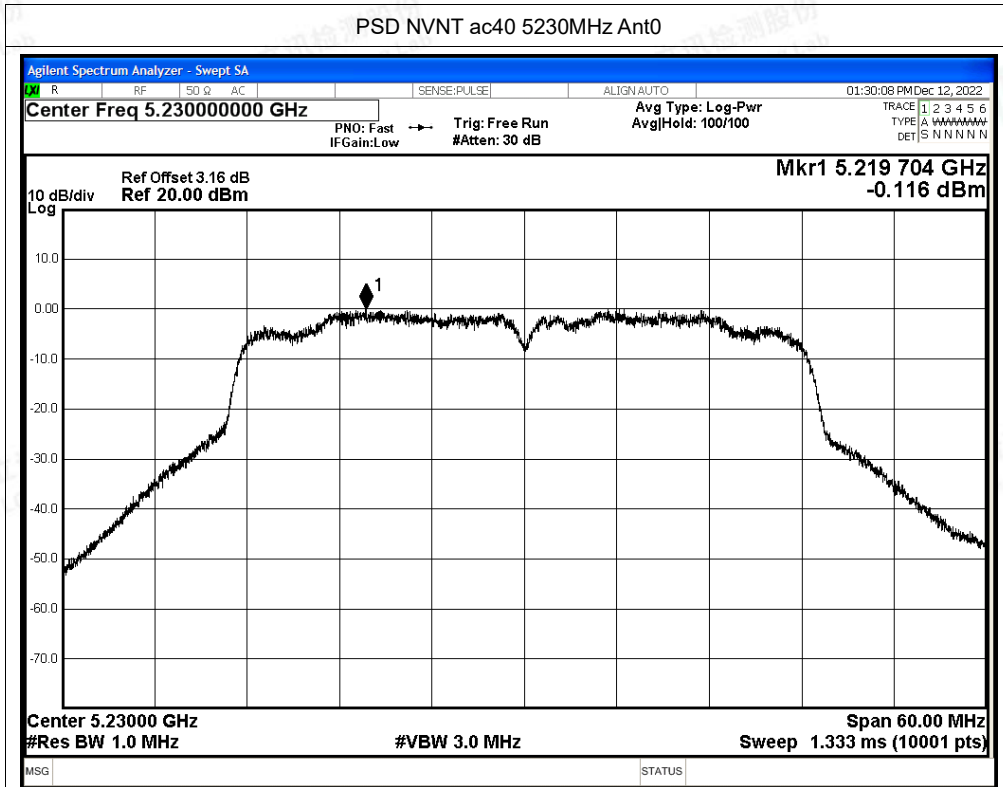








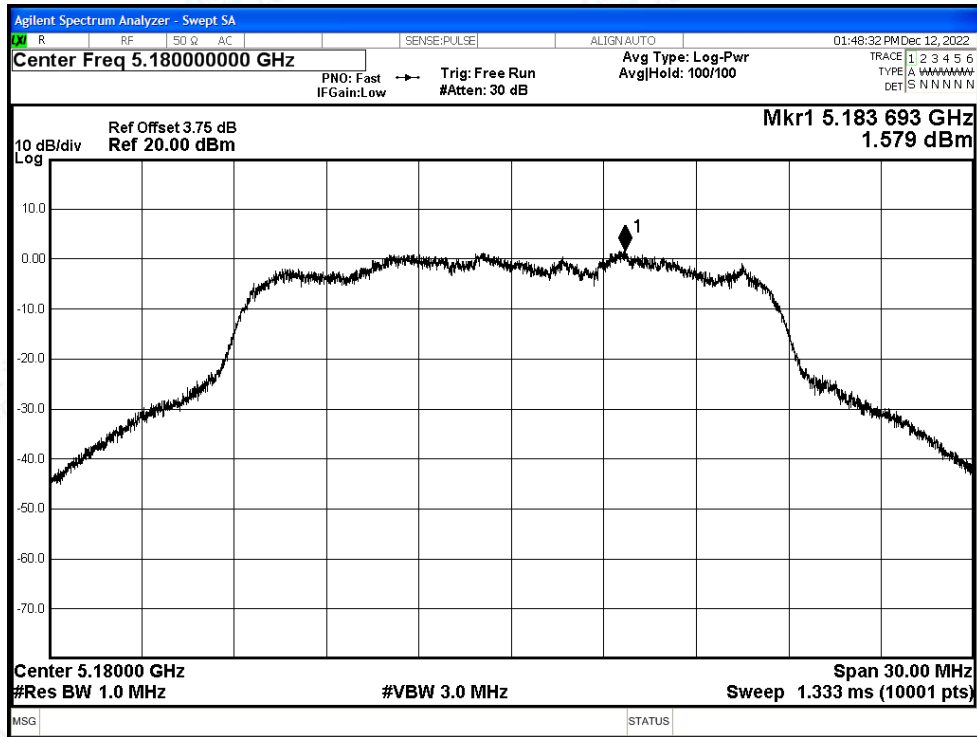




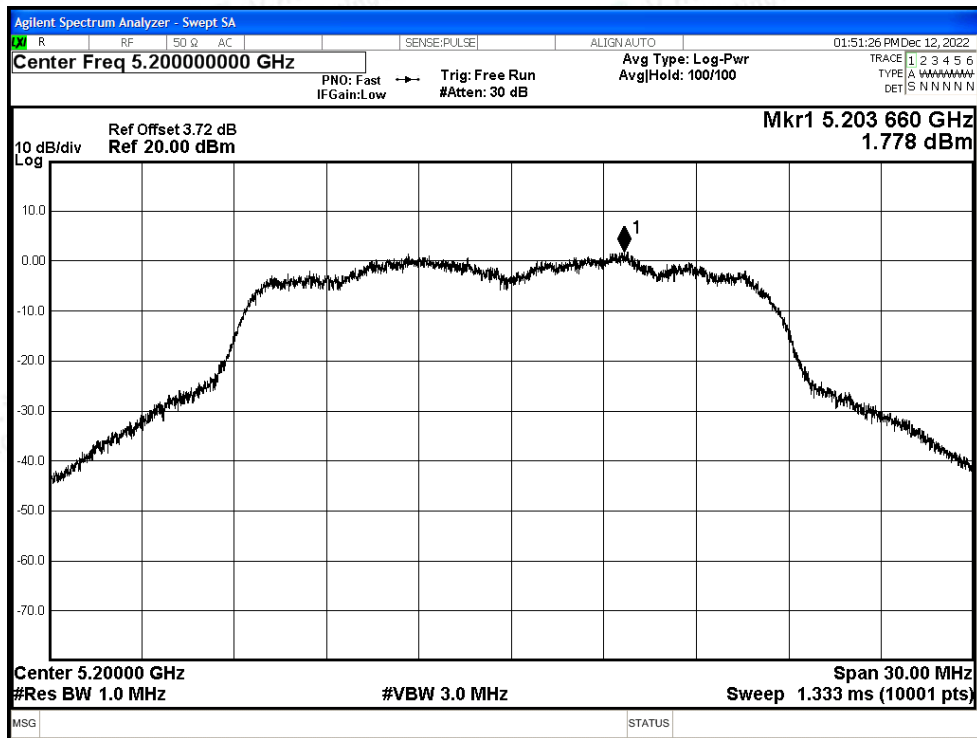


Test Graphs

PSD NVNT a 5180MHz Ant1

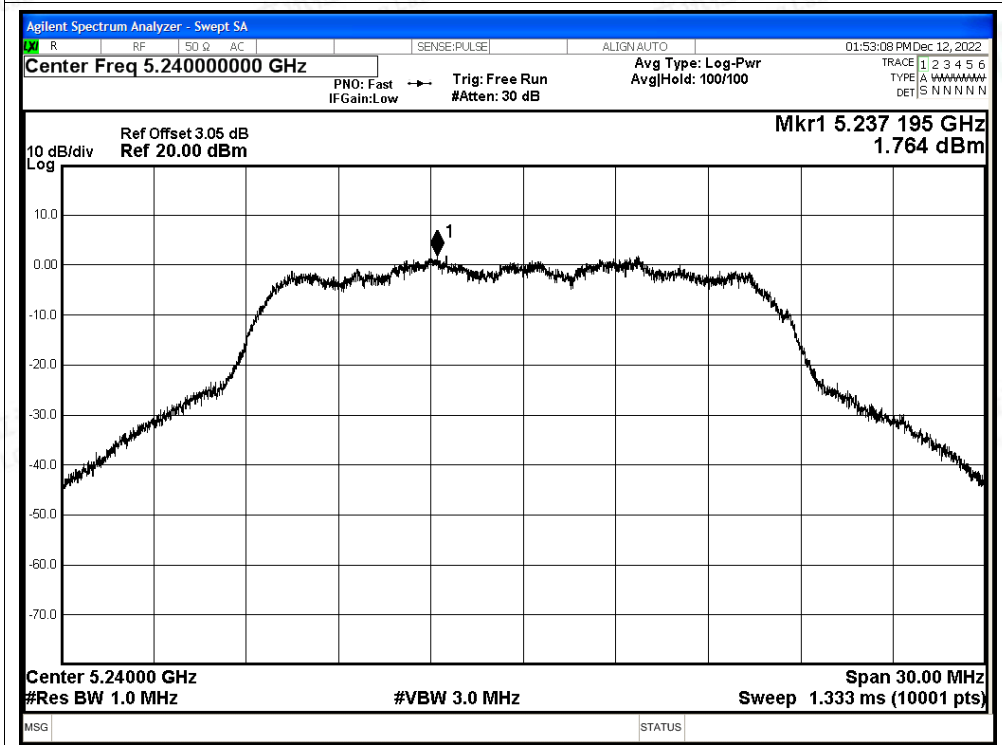


PSD NVNT a 5200MHz Ant1

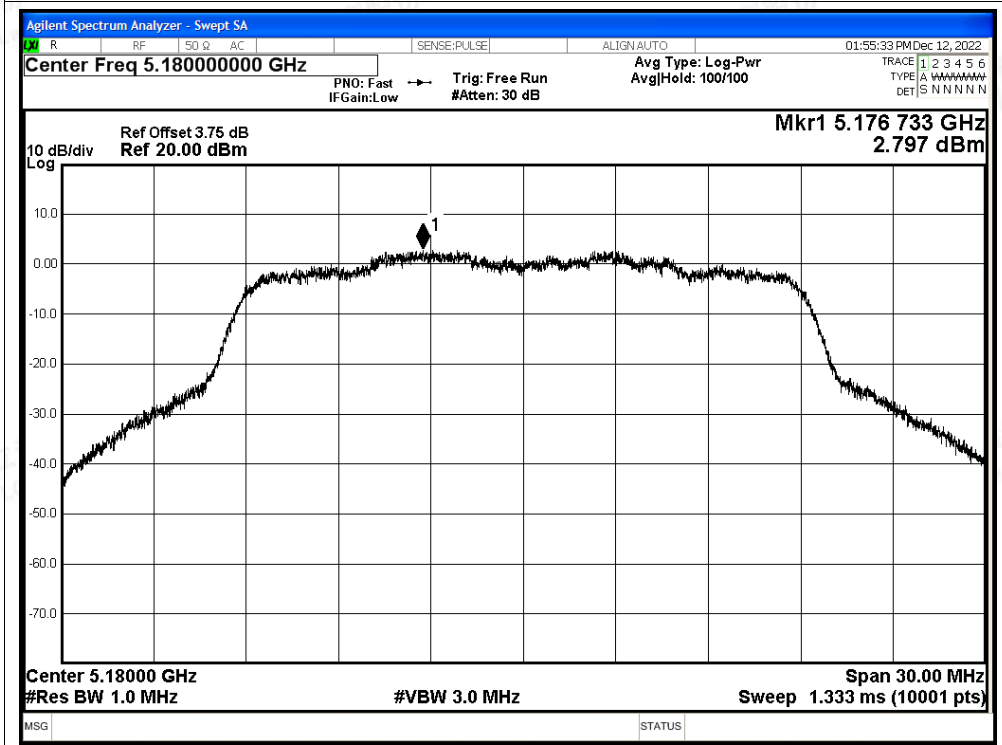


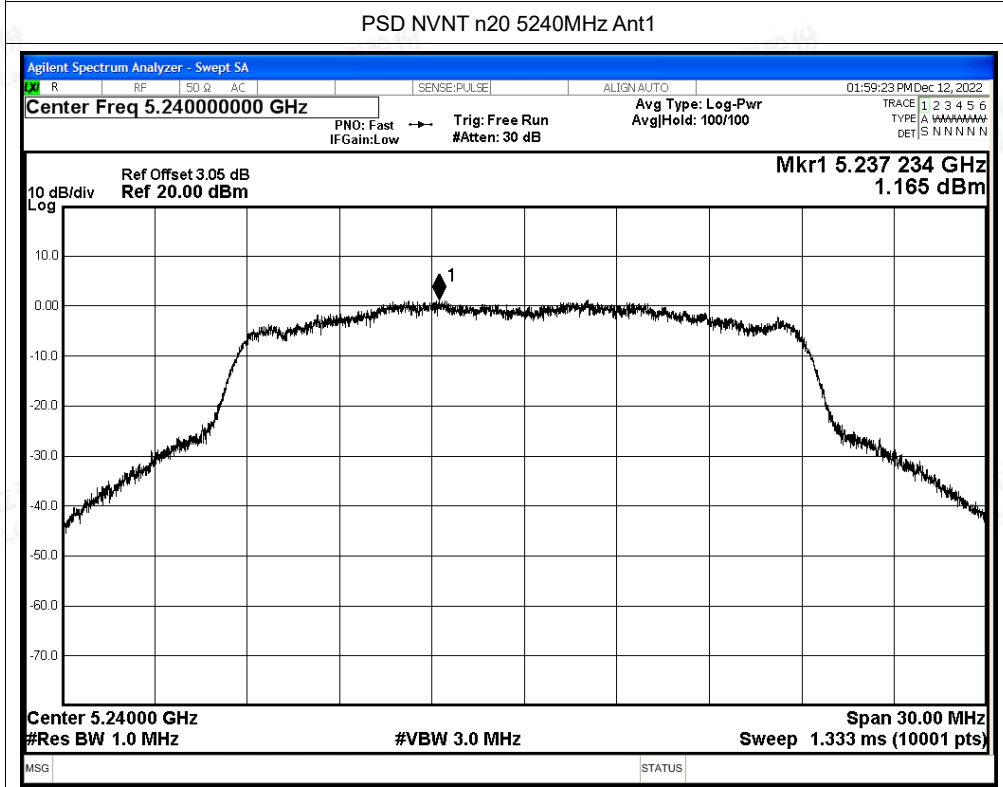
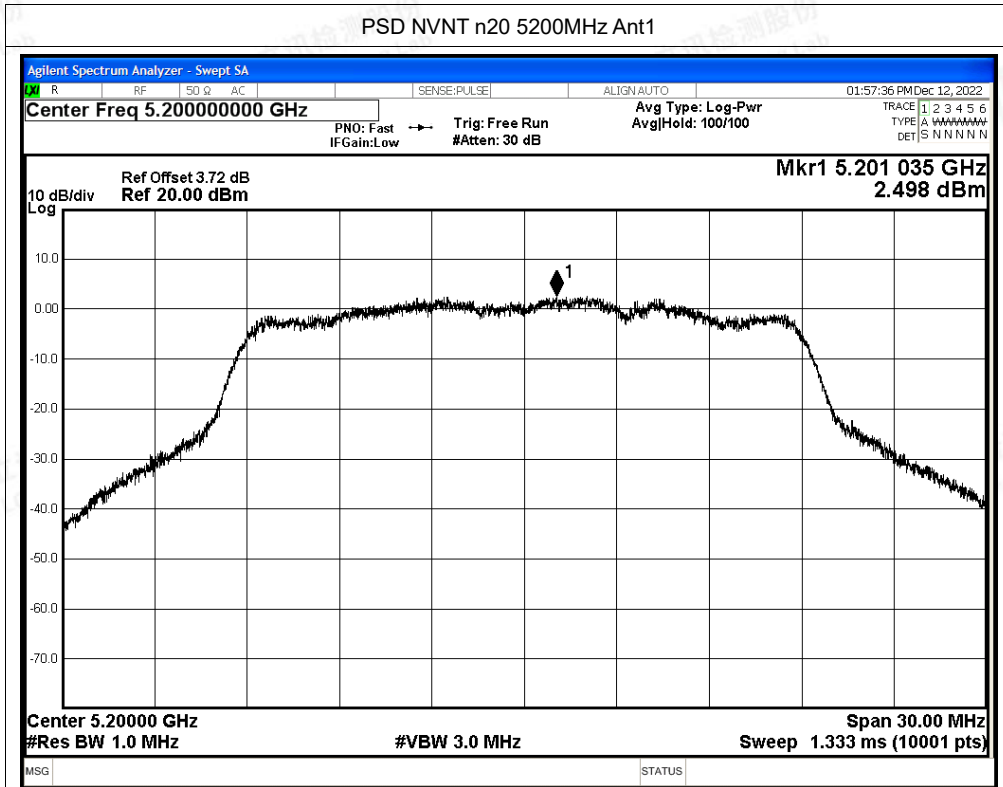


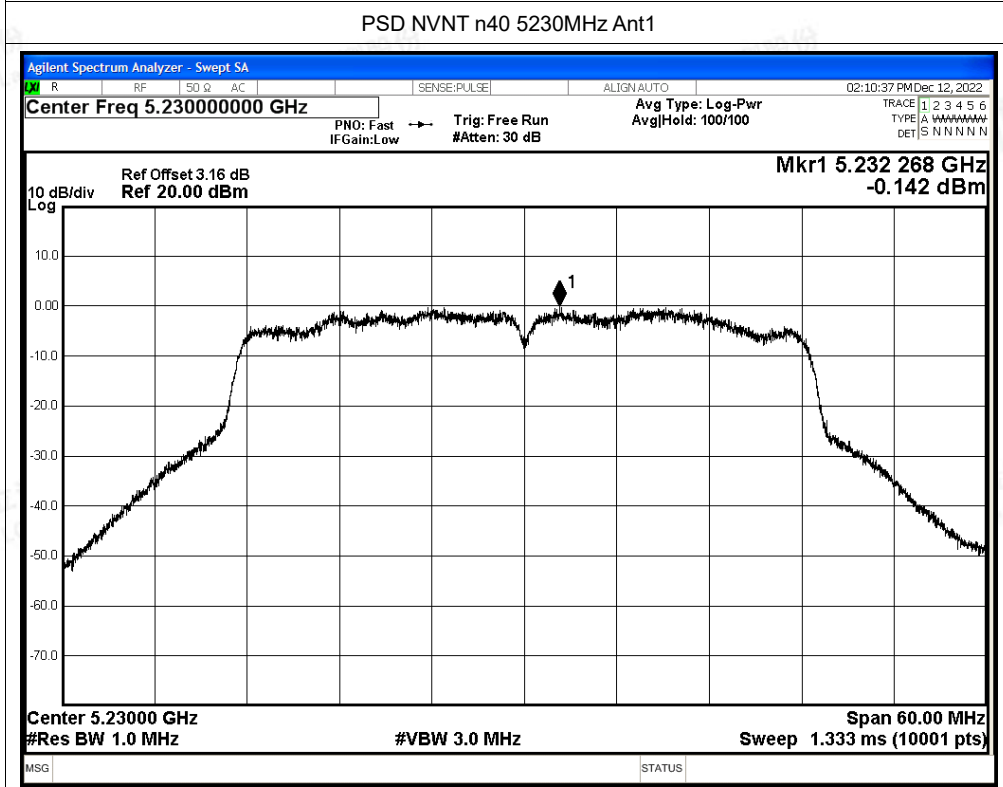
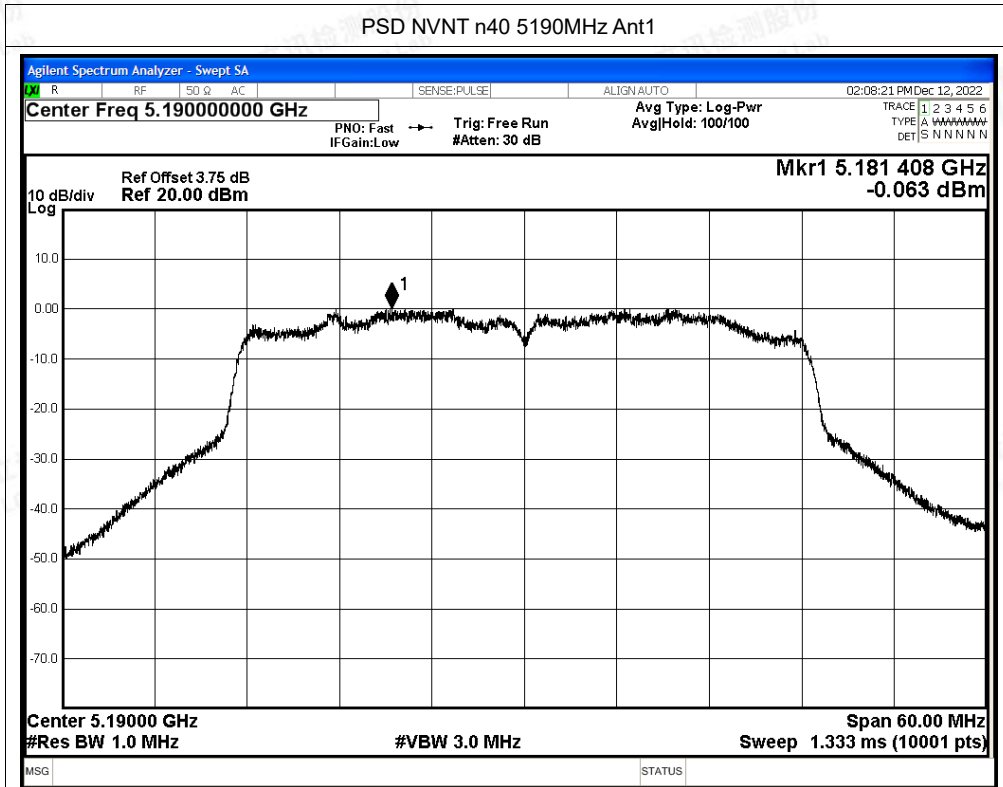
PSD NVNT a 5240MHz Ant1



PSD NVNT n20 5180MHz Ant1

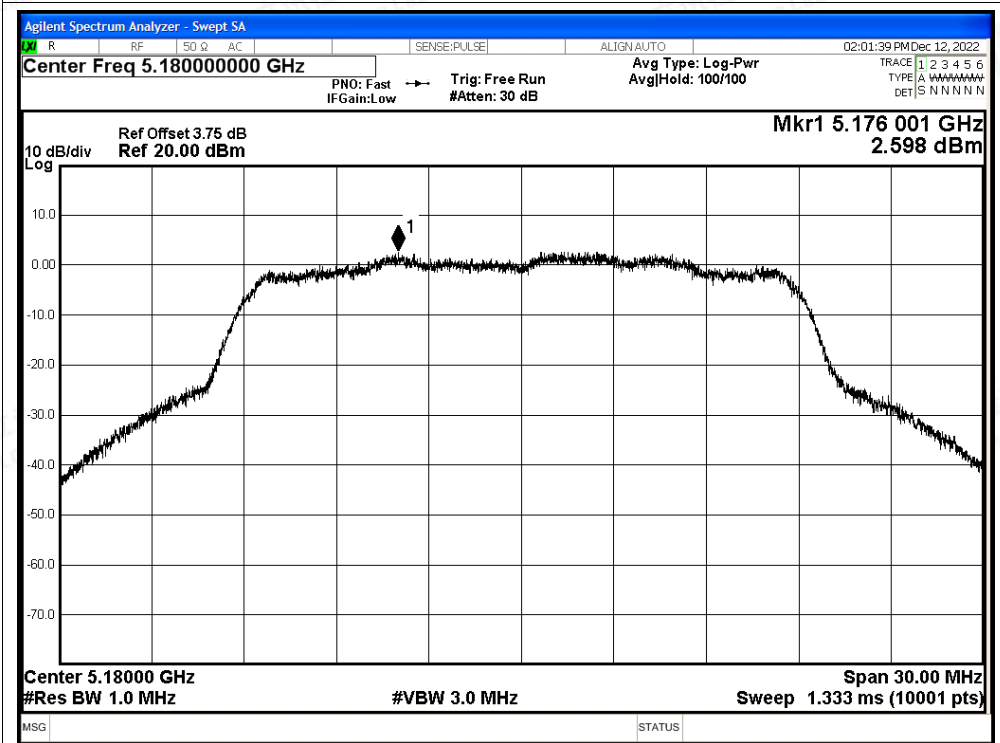




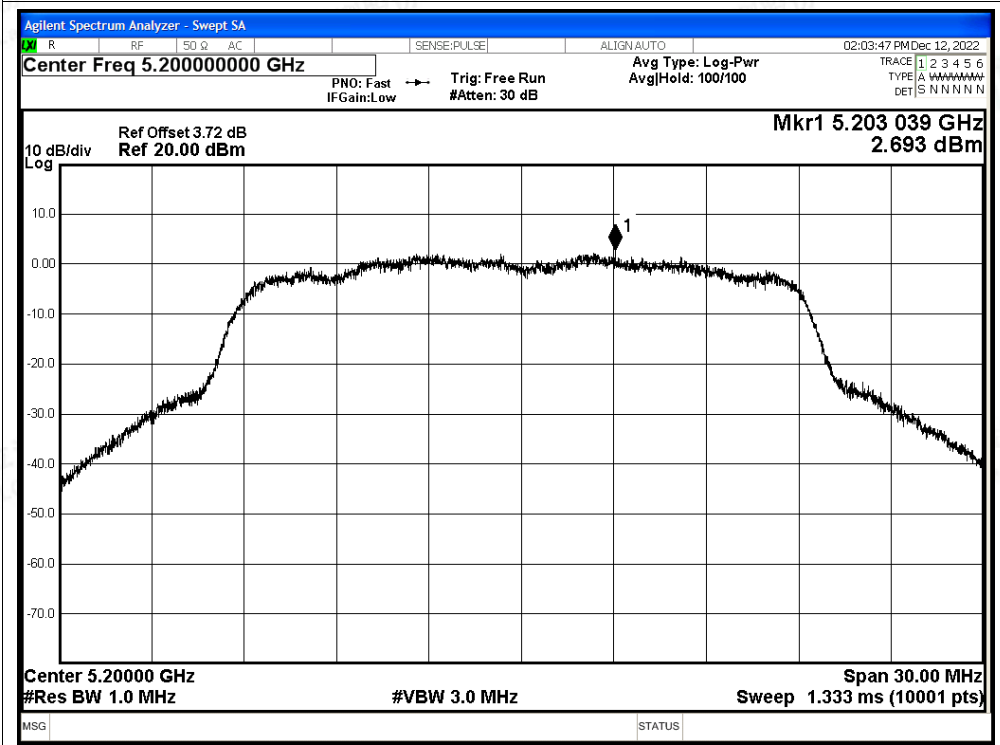


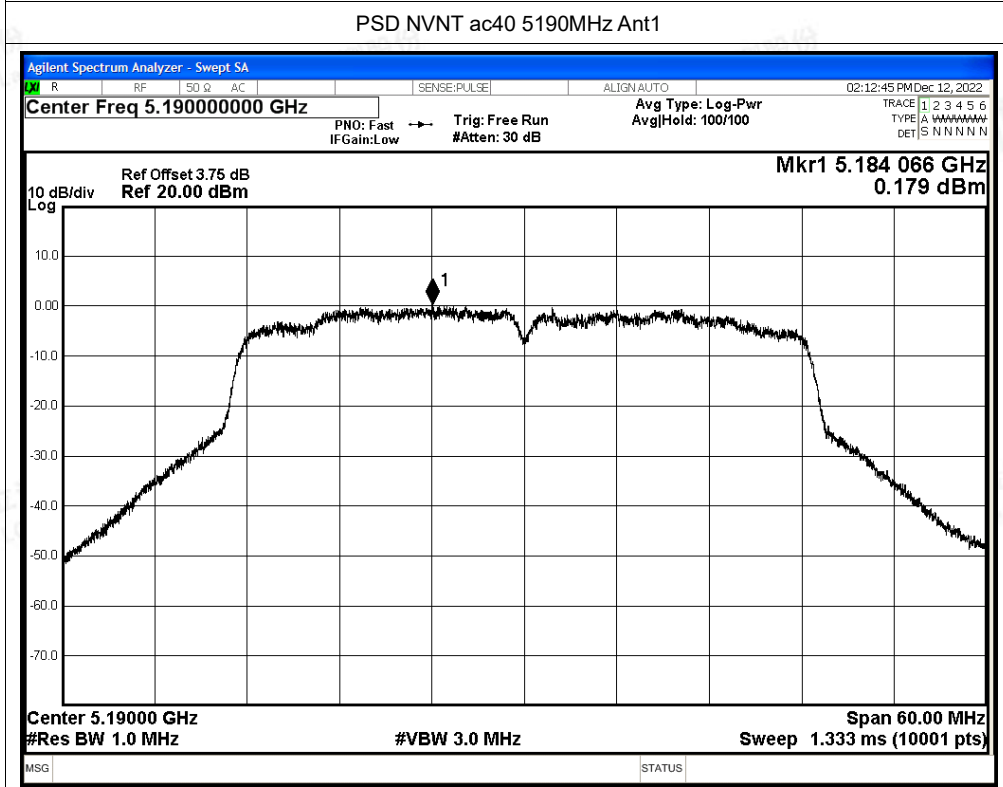
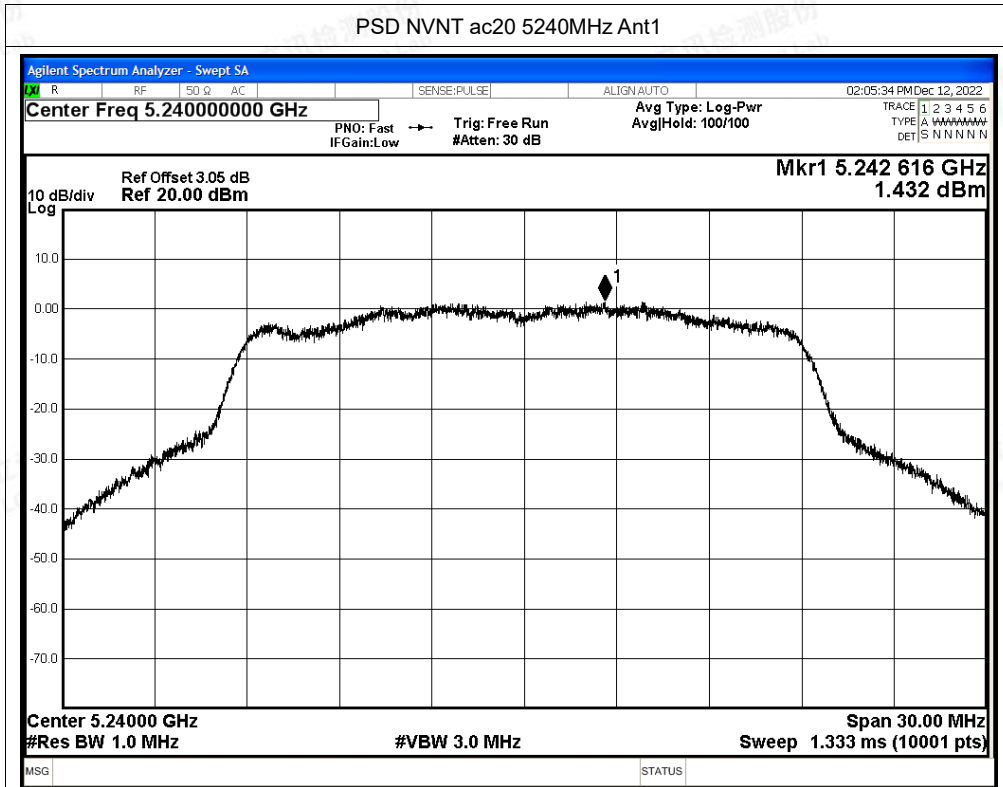


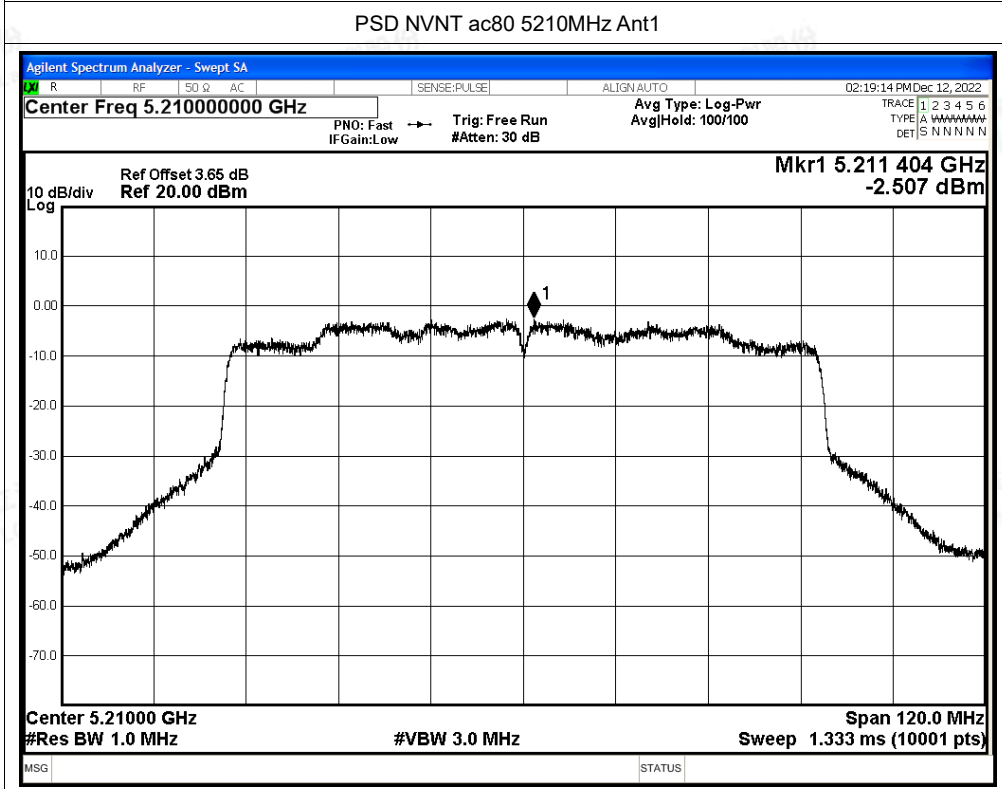
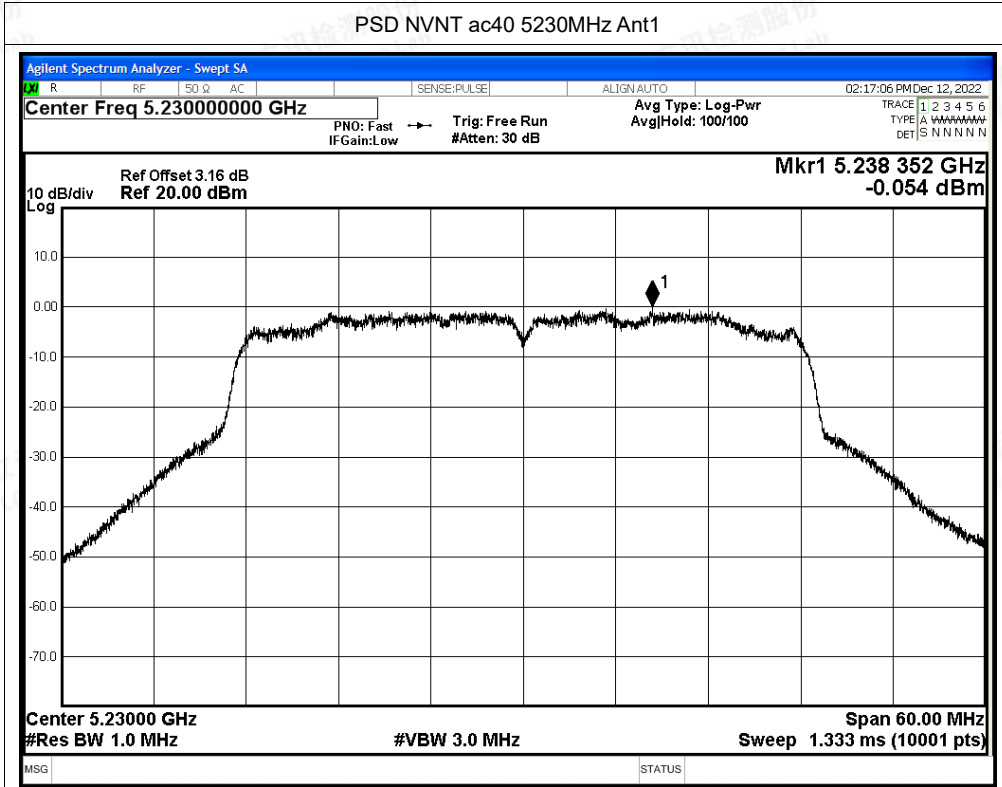
PSD NVNT ac20 5180MHz Ant1



PSD NVNT ac20 5200MHz Ant1









D.4 Restrict Band

| Condition | Mode | Frequency (MHz) | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|-----------|-----------------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT | a | 5180 | 4500 | -45.18 | 2 | 52.05 | Peak | 68.2 | Pass |
| NVNT | a | 5180 | 4500 | -54.97 | 2 | 42.26 | Average | 54 | Pass |
| NVNT | a | 5180 | 5146.1 | -39.73 | 2 | 57.50 | Peak | 68.2 | Pass |
| NVNT | a | 5180 | 5148.9 | -51.13 | 2 | 46.10 | Average | 54 | Pass |
| NVNT | a | 5180 | 5150 | -42.43 | 2 | 54.80 | Peak | 68.2 | Pass |
| NVNT | a | 5180 | 5150 | -51.05 | 2 | 46.18 | Average | 54 | Pass |
| NVNT | a | 5240 | 5350 | -42.33 | 2 | 54.90 | Peak | 68.2 | Pass |
| NVNT | a | 5240 | 5350 | -53.04 | 2 | 44.19 | Average | 54 | Pass |
| NVNT | a | 5240 | 5403.36 | -41.19 | 2 | 56.04 | Peak | 68.2 | Pass |
| NVNT | a | 5240 | 5366.16 | -52.96 | 2 | 44.27 | Average | 54 | Pass |
| NVNT | a | 5240 | 5460 | -45.91 | 2 | 51.32 | Peak | 68.2 | Pass |
| NVNT | a | 5240 | 5460 | -54.07 | 2 | 43.16 | Average | 54 | Pass |
| NVNT | n20-MIMO | 5180 | 4500 | -45.41 | 4.76 | 54.58 | Peak | 68.2 | Pass |
| NVNT | n20-MIMO | 5180 | 4500 | -54.81 | 4.76 | 45.18 | Average | 54 | Pass |
| NVNT | n20-MIMO | 5180 | 5128.6 | -40.08 | 4.76 | 59.91 | Peak | 68.2 | Pass |
| NVNT | n20-MIMO | 5180 | 5149.6 | -51.35 | 4.76 | 48.64 | Average | 54 | Pass |
| NVNT | n20-MIMO | 5180 | 5150 | -41.04 | 4.76 | 58.95 | Peak | 68.2 | Pass |
| NVNT | n20-MIMO | 5180 | 5150 | -51.1 | 4.76 | 48.89 | Average | 54 | Pass |
| NVNT | n20-MIMO | 5240 | 5350 | -43.6 | 4.76 | 56.39 | Peak | 68.2 | Pass |
| NVNT | n20-MIMO | 5240 | 5350 | -53.21 | 4.76 | 46.78 | Average | 54 | Pass |
| NVNT | n20-MIMO | 5240 | 5357.04 | -40.91 | 4.76 | 59.08 | Peak | 68.2 | Pass |
| NVNT | n20-MIMO | 5240 | 5355.36 | -52.89 | 4.76 | 47.1 | Average | 54 | Pass |
| NVNT | n20-MIMO | 5240 | 5460 | -44.27 | 4.76 | 55.72 | Peak | 68.2 | Pass |
| NVNT | n20-MIMO | 5240 | 5460 | -54.23 | 4.76 | 45.76 | Average | 54 | Pass |
| NVNT | n40-MIMO | 5190 | 4500 | -44.86 | 4.76 | 55.13 | Peak | 68.2 | Pass |
| NVNT | n40-MIMO | 5190 | 4500 | -54.75 | 4.76 | 45.24 | Average | 54 | Pass |
| NVNT | n40-MIMO | 5190 | 5140.94 | -37.71 | 4.76 | 62.28 | Peak | 68.2 | Pass |
| NVNT | n40-MIMO | 5190 | 5148.97 | -49.37 | 4.76 | 50.62 | Average | 54 | Pass |
| NVNT | n40-MIMO | 5190 | 5150 | -40.86 | 4.76 | 59.13 | Peak | 68.2 | Pass |
| NVNT | n40-MIMO | 5190 | 5150 | -49.42 | 4.76 | 50.57 | Average | 54 | Pass |
| NVNT | n40-MIMO | 5230 | 5350 | -42.44 | 4.76 | 57.55 | Peak | 68.2 | Pass |
| NVNT | n40-MIMO | 5230 | 5350 | -52.68 | 4.76 | 47.31 | Average | 54 | Pass |
| NVNT | n40-MIMO | 5230 | 5352 | -41.4 | 4.76 | 58.59 | Peak | 68.2 | Pass |
| NVNT | n40-MIMO | 5230 | 5358.75 | -52.44 | 4.76 | 47.55 | Average | 54 | Pass |
| NVNT | n40-MIMO | 5230 | 5460 | -43.1 | 4.76 | 56.89 | Peak | 68.2 | Pass |
| NVNT | n40-MIMO | 5230 | 5460 | -53.54 | 4.76 | 46.45 | Average | 54 | Pass |
| NVNT | ac20-MIMO | 5180 | 4500 | -45.27 | 4.76 | 54.72 | Peak | 68.2 | Pass |





| | | | | | | | | | |
|------|-----------|------|---------|--------|------|-------|---------|------|------|
| NVNT | ac20-MIMO | 5180 | 4500 | -54.78 | 4.76 | 45.21 | Average | 54 | Pass |
| NVNT | ac20-MIMO | 5180 | 5147.5 | -40.28 | 4.76 | 59.71 | Peak | 68.2 | Pass |
| NVNT | ac20-MIMO | 5180 | 5148.9 | -51.06 | 4.76 | 48.93 | Average | 54 | Pass |
| NVNT | ac20-MIMO | 5180 | 5150 | -41.01 | 4.76 | 58.98 | Peak | 68.2 | Pass |
| NVNT | ac20-MIMO | 5180 | 5150 | -50.8 | 4.76 | 49.19 | Average | 54 | Pass |
| NVNT | ac20-MIMO | 5240 | 5350 | -43.83 | 4.76 | 56.16 | Peak | 68.2 | Pass |
| NVNT | ac20-MIMO | 5240 | 5350 | -53.21 | 4.76 | 46.78 | Average | 54 | Pass |
| NVNT | ac20-MIMO | 5240 | 5406.72 | -41.12 | 4.76 | 58.87 | Peak | 68.2 | Pass |
| NVNT | ac20-MIMO | 5240 | 5370.48 | -52.65 | 4.76 | 47.34 | Average | 54 | Pass |
| NVNT | ac20-MIMO | 5240 | 5460 | -44.57 | 4.76 | 55.42 | Peak | 68.2 | Pass |
| NVNT | ac20-MIMO | 5240 | 5460 | -54.18 | 4.76 | 45.81 | Average | 54 | Pass |
| NVNT | ac40-MIMO | 5190 | 4500 | -46.29 | 4.76 | 53.7 | Peak | 68.2 | Pass |
| NVNT | ac40-MIMO | 5190 | 4500 | -54.48 | 4.76 | 45.51 | Average | 54 | Pass |
| NVNT | ac40-MIMO | 5190 | 5145.32 | -37.75 | 4.76 | 62.24 | Peak | 68.2 | Pass |
| NVNT | ac40-MIMO | 5190 | 5149.7 | -48.6 | 4.76 | 51.39 | Average | 54 | Pass |
| NVNT | ac40-MIMO | 5190 | 5150 | -39.03 | 4.76 | 60.96 | Peak | 68.2 | Pass |
| NVNT | ac40-MIMO | 5190 | 5150 | -48.6 | 4.76 | 51.39 | Average | 54 | Pass |
| NVNT | ac40-MIMO | 5230 | 5350 | -44.1 | 4.76 | 55.89 | Peak | 68.2 | Pass |
| NVNT | ac40-MIMO | 5230 | 5350 | -52.43 | 4.76 | 47.56 | Average | 54 | Pass |
| NVNT | ac40-MIMO | 5230 | 5433.27 | -40.28 | 4.76 | 59.71 | Peak | 68.2 | Pass |
| NVNT | ac40-MIMO | 5230 | 5371.98 | -52.01 | 4.76 | 47.98 | Average | 54 | Pass |
| NVNT | ac40-MIMO | 5230 | 5460 | -44.61 | 4.76 | 55.38 | Peak | 68.2 | Pass |
| NVNT | ac40-MIMO | 5230 | 5460 | -53.4 | 4.76 | 46.59 | Average | 54 | Pass |
| NVNT | ac80-MIMO | 5210 | 5350 | -40.66 | 4.76 | 59.33 | Peak | 68.2 | Pass |
| NVNT | ac80-MIMO | 5210 | 5350 | -48.5 | 4.76 | 51.49 | Average | 54 | Pass |
| NVNT | ac80-MIMO | 5210 | 5360.67 | -37.8 | 4.76 | 62.19 | Peak | 68.2 | Pass |
| NVNT | ac80-MIMO | 5210 | 5357.7 | -48.32 | 4.76 | 51.67 | Average | 54 | Pass |
| NVNT | ac80-MIMO | 5210 | 5460 | -42.43 | 4.76 | 57.56 | Peak | 68.2 | Pass |
| NVNT | ac80-MIMO | 5210 | 5460 | -51.2 | 4.76 | 48.79 | Average | 54 | Pass |
| NVNT | ac80-MIMO | 5210 | 4500 | -45.23 | 4.76 | 54.76 | Peak | 68.2 | Pass |
| NVNT | ac80-MIMO | 5210 | 4500 | -53.67 | 4.76 | 46.32 | Average | 54 | Pass |
| NVNT | ac80-MIMO | 5210 | 5149.38 | -38.42 | 4.76 | 61.57 | Peak | 68.2 | Pass |
| NVNT | ac80-MIMO | 5210 | 5142.27 | -48.25 | 4.76 | 51.74 | Average | 54 | Pass |
| NVNT | ac80-MIMO | 5210 | 5150 | -38.31 | 4.76 | 61.68 | Peak | 68.2 | Pass |
| NVNT | ac80-MIMO | 5210 | 5150 | -48.67 | 4.76 | 51.32 | Average | 54 | Pass |

Note: 802.11a mode, only show the worst set of antenna data.

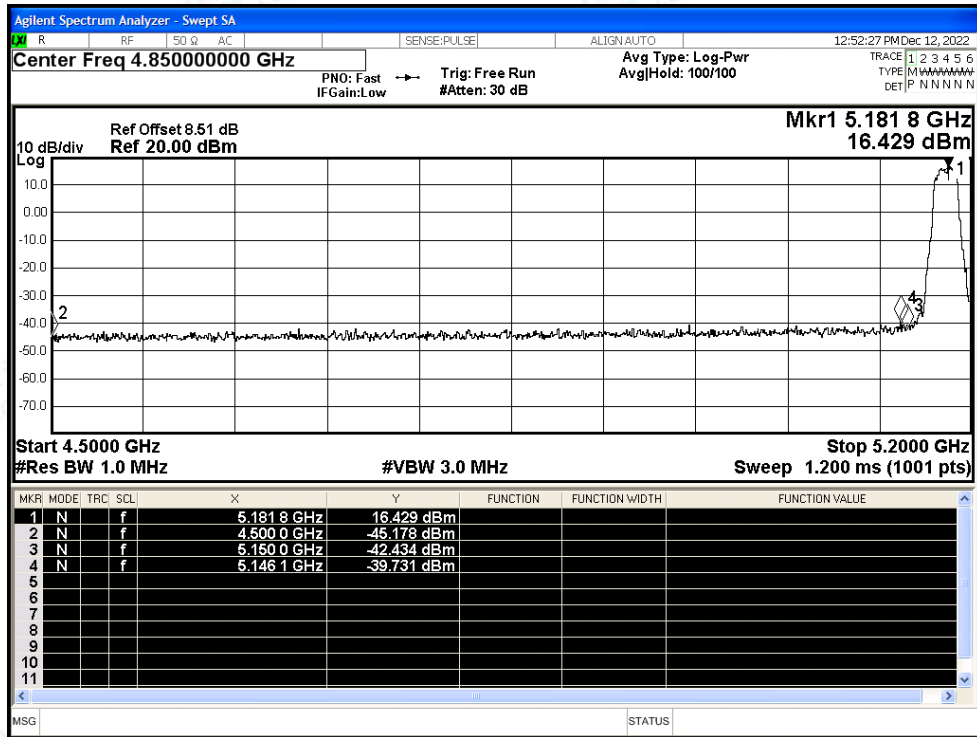


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 Scan code to check authenticity

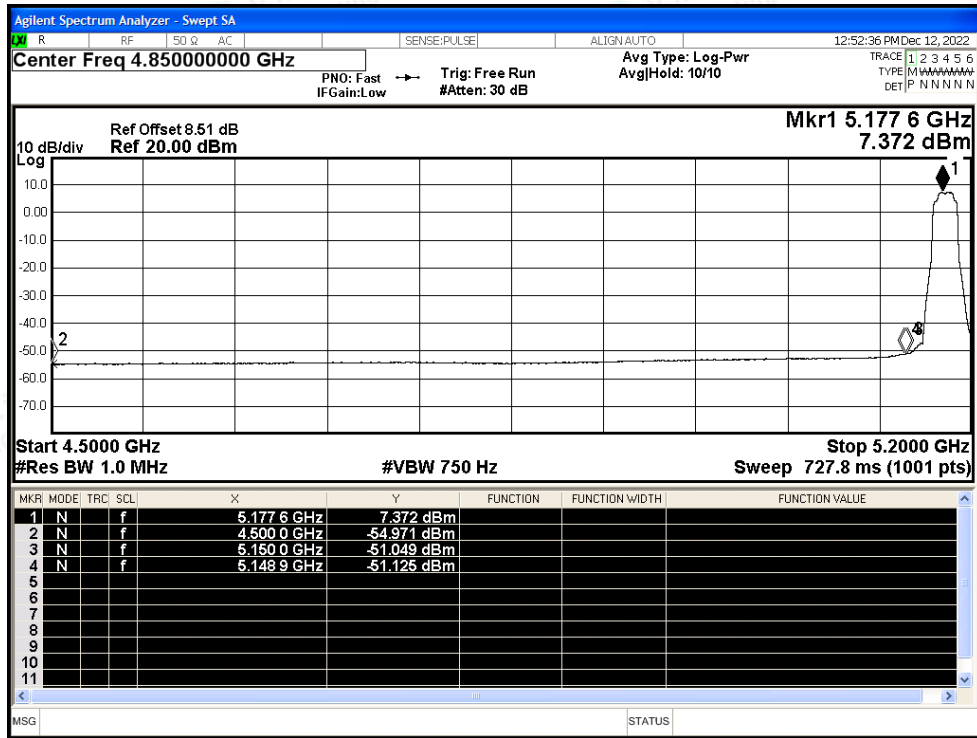


Test Graphs

Restrict Band NVNT a 5180MHz Peak

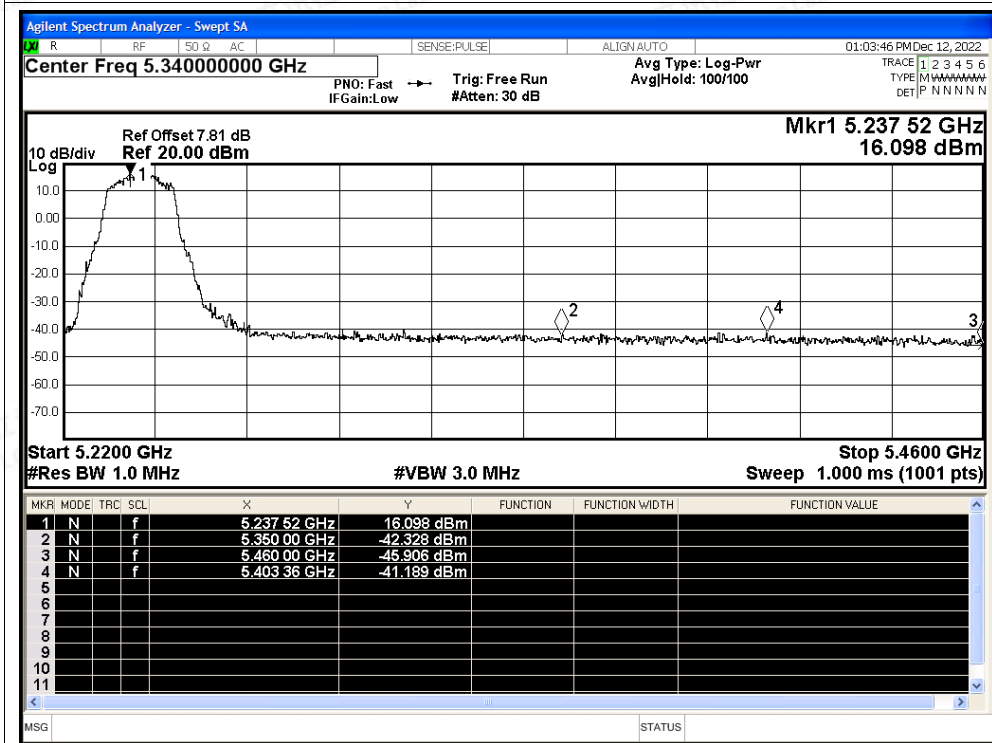


Restrict Band NVNT a 5180MHz Average

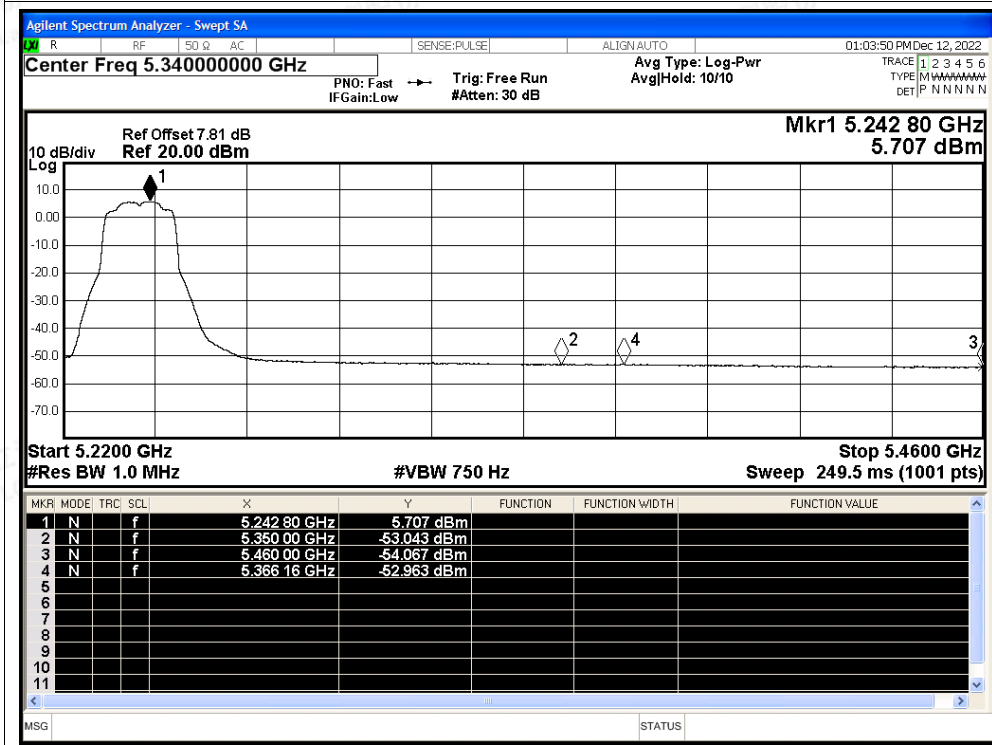




Restrict Band NVNT a 5240MHz Peak

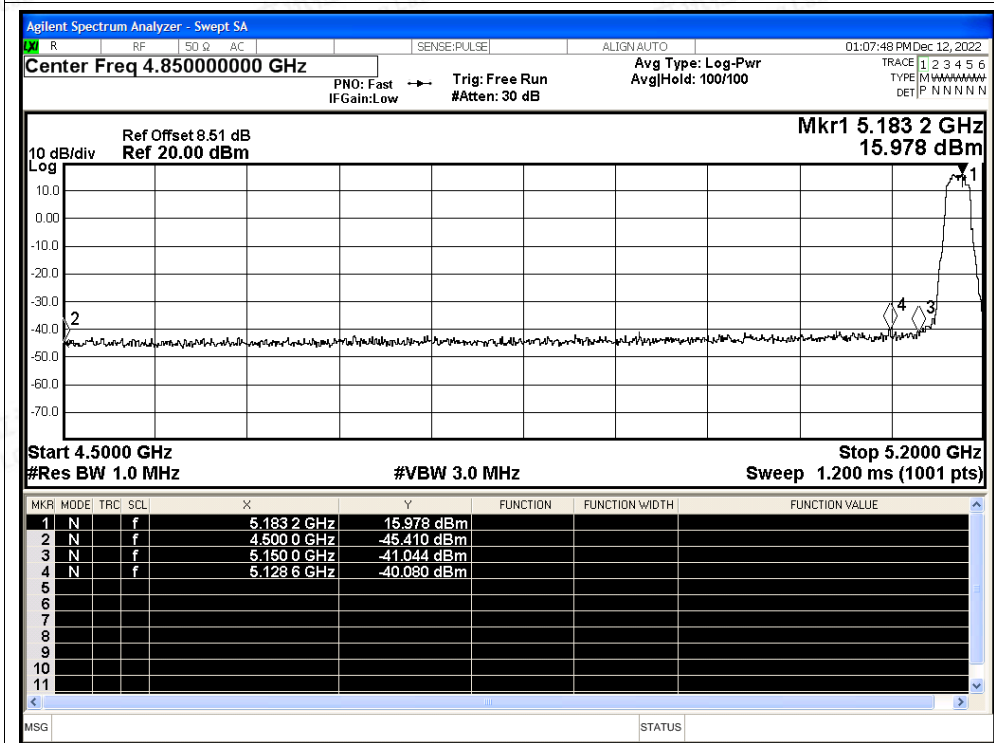


Restrict Band NVNT a 5240MHz Average

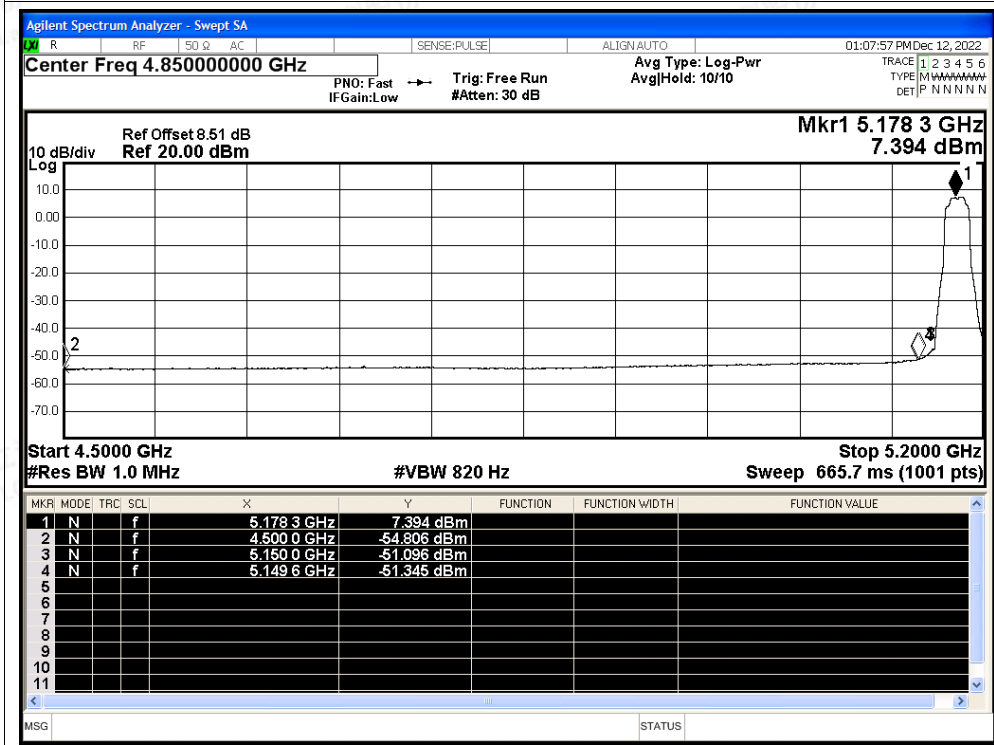




Restrict Band NVNT n20 5180MHz Peak

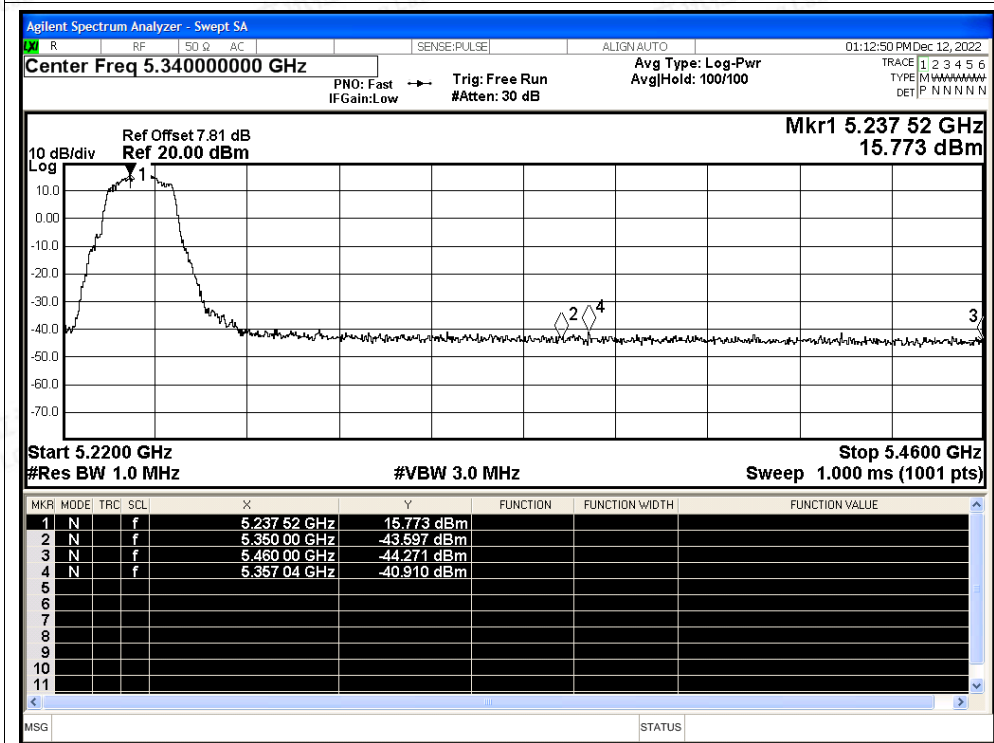


Restrict Band NVNT n20 5180MHz Average

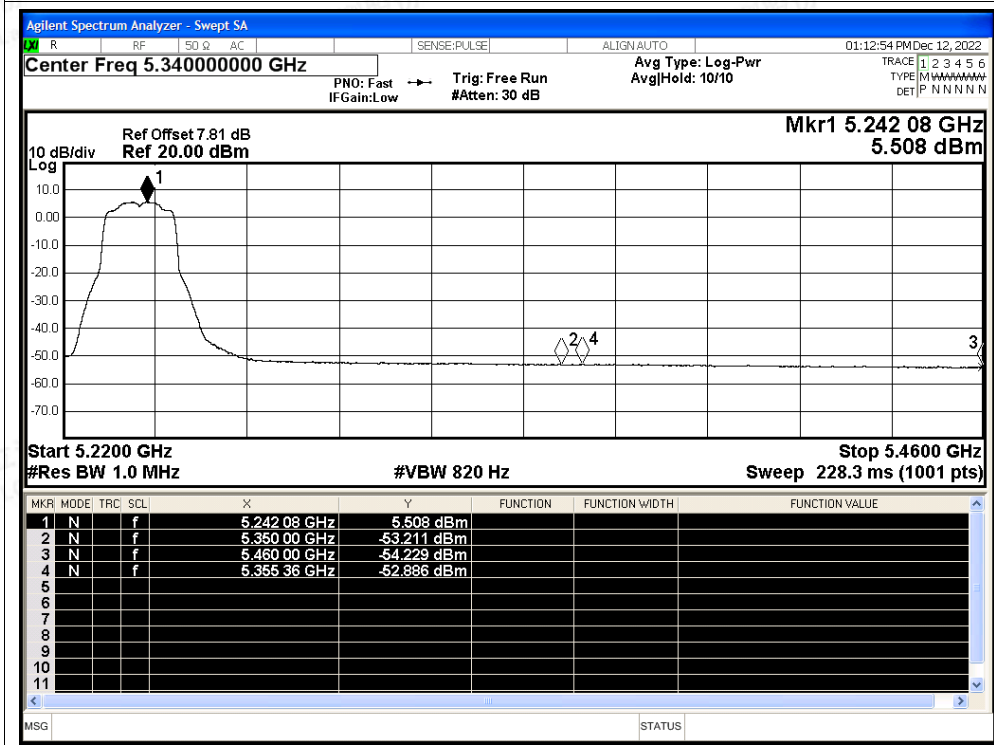




Restrict Band NVNT n20 5240MHz Peak

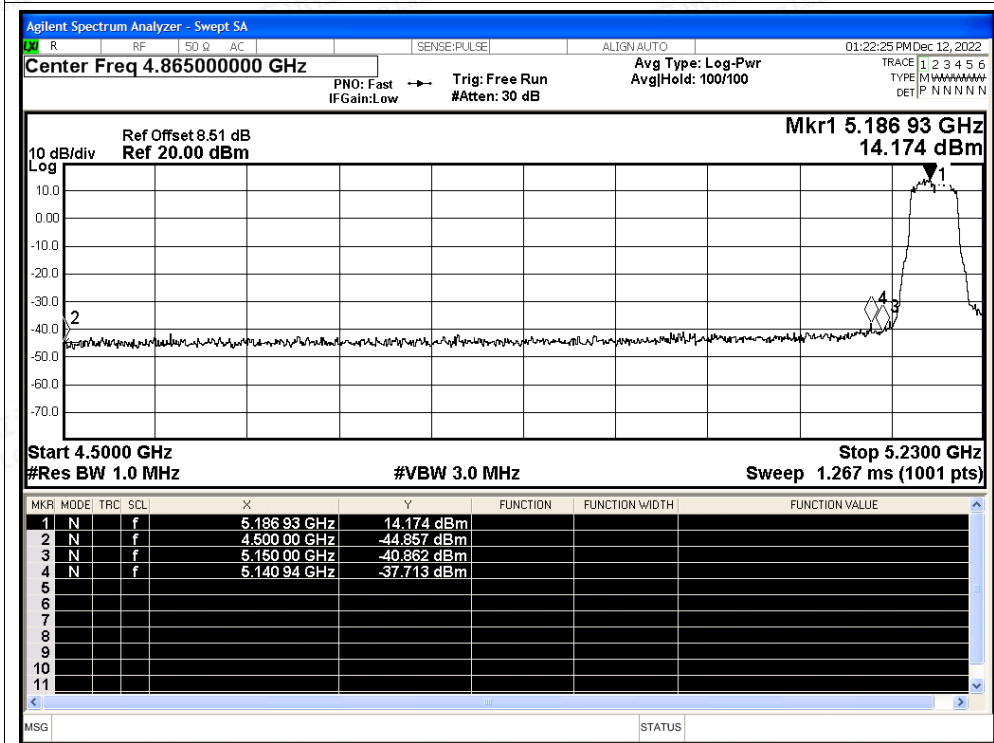


Restrict Band NVNT n20 5240MHz Average

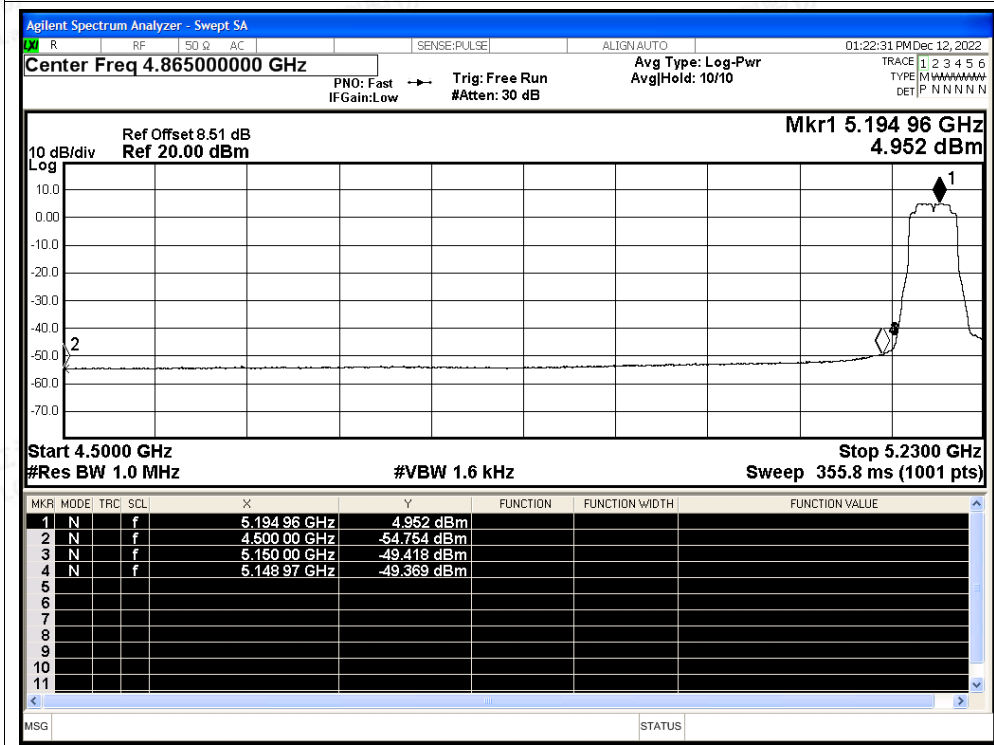




Restrict Band NVNT n40 5190MHz Peak

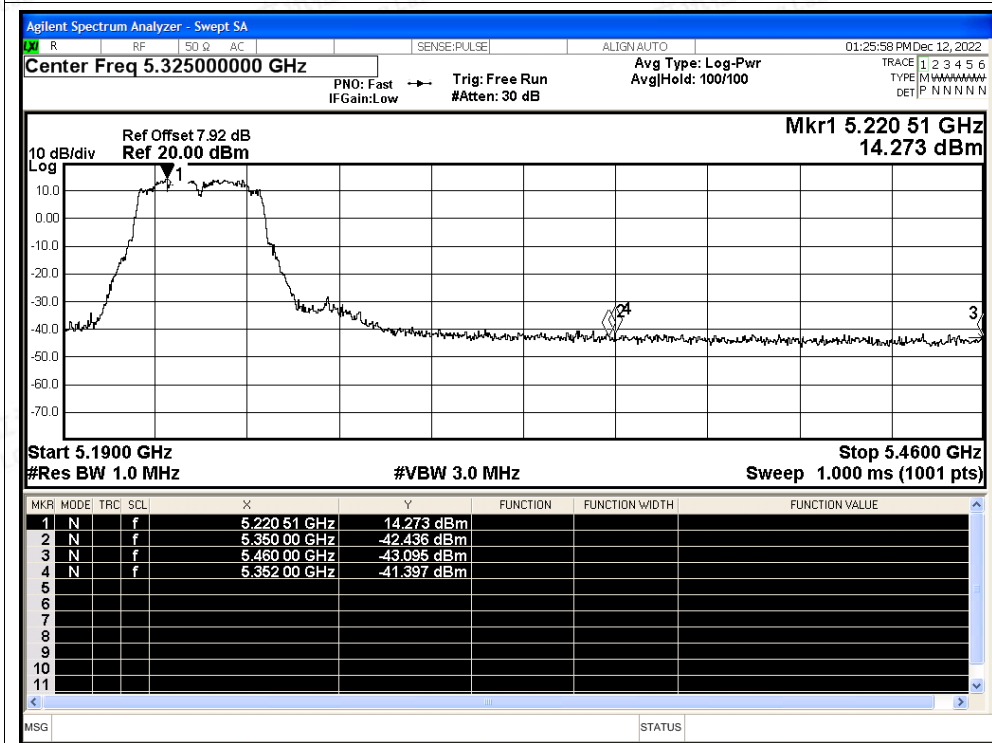


Restrict Band NVNT n40 5190MHz Average

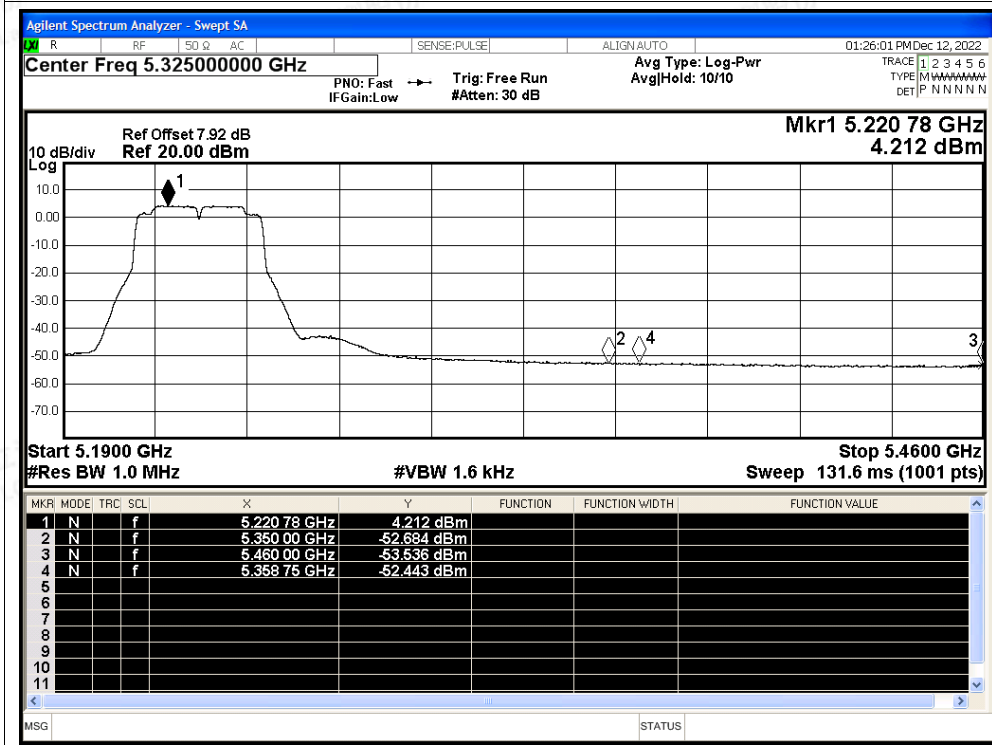


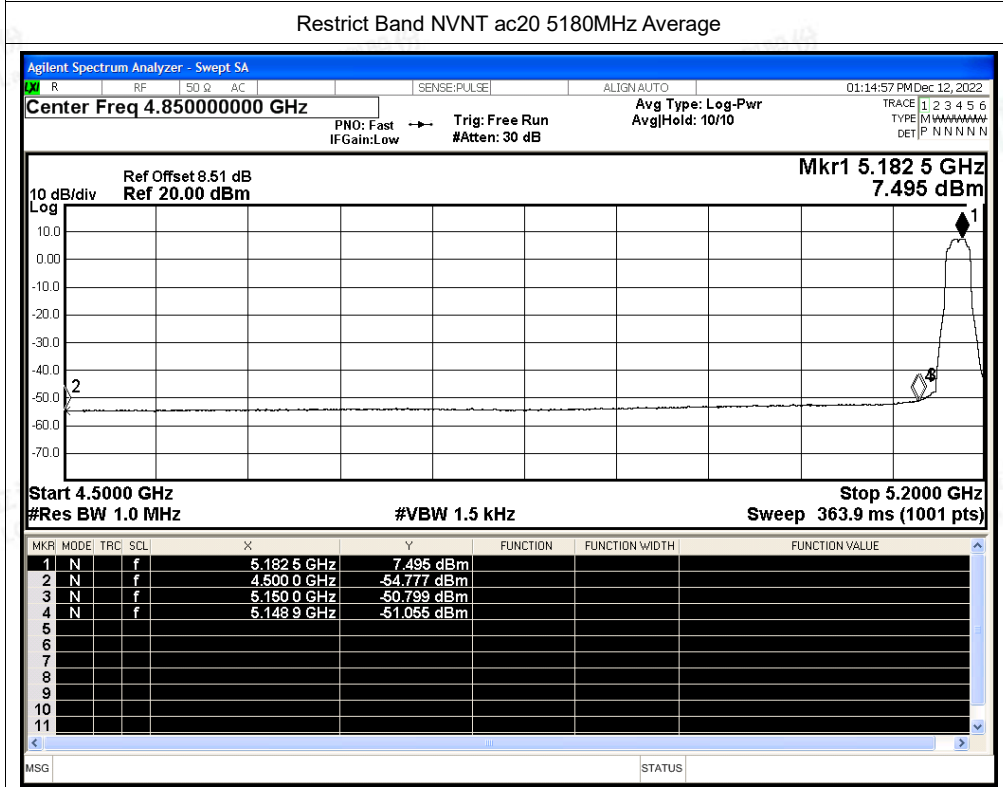
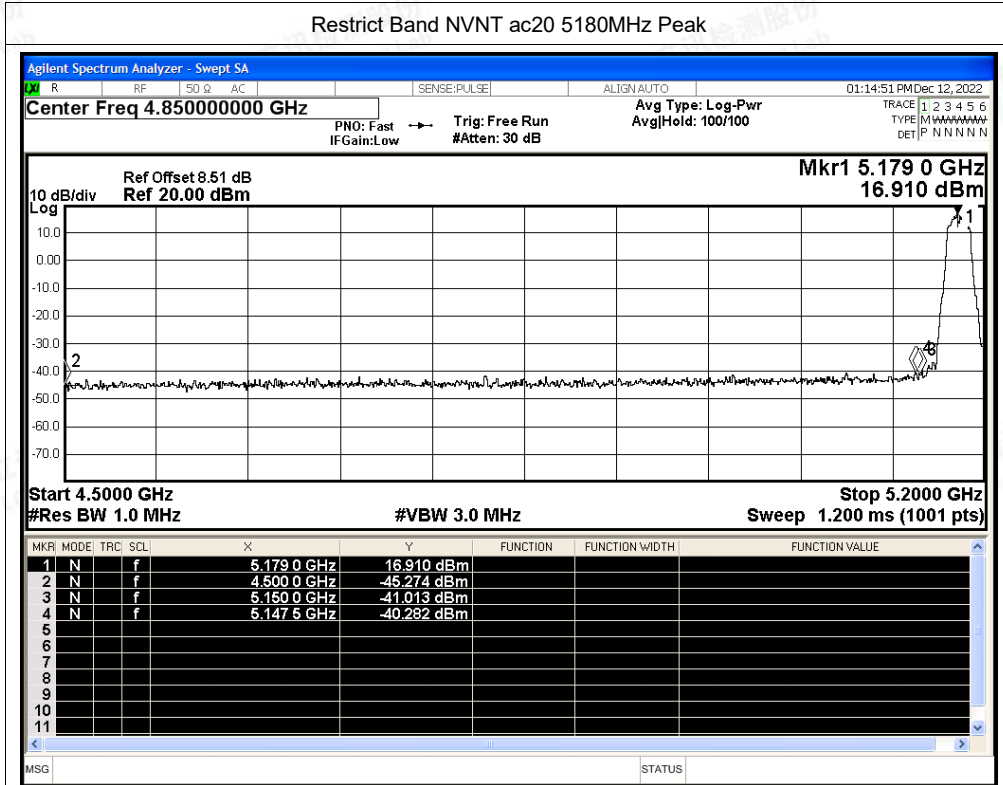


Restrict Band NVNT n40 5230MHz Peak



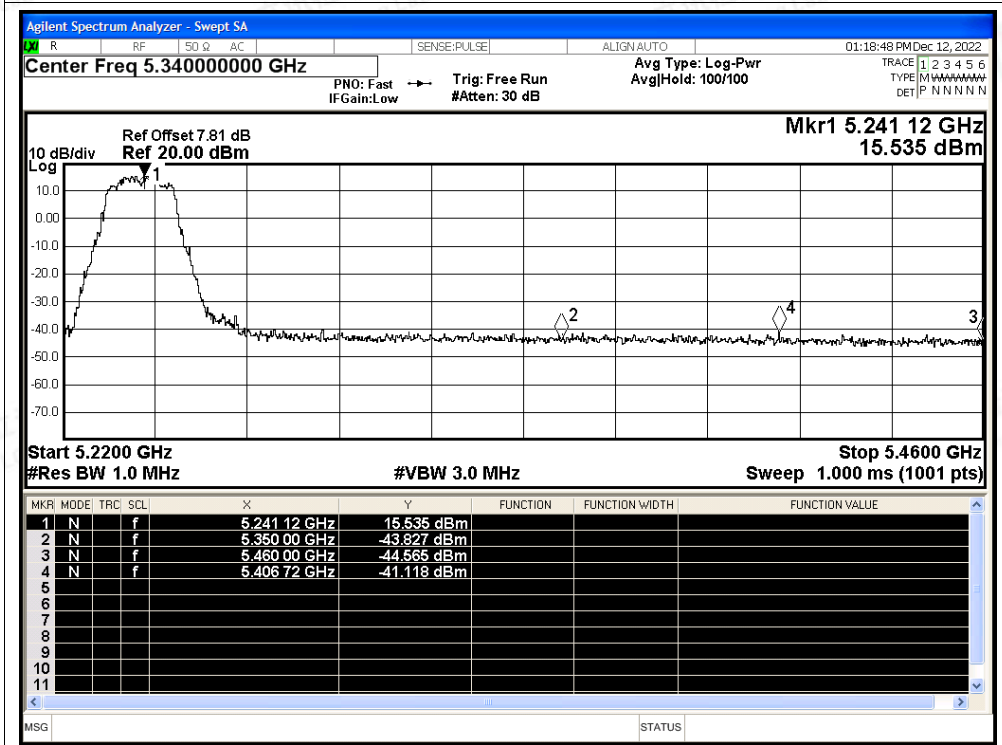
Restrict Band NVNT n40 5230MHz Average



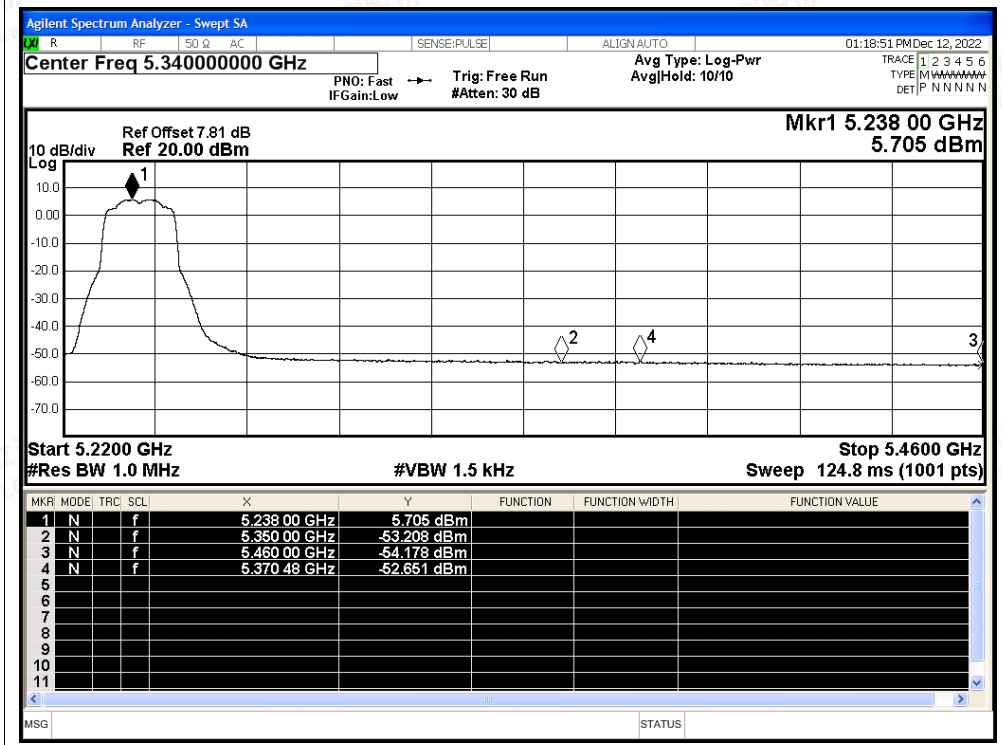




Restrict Band NVNT ac20 5240MHz Peak

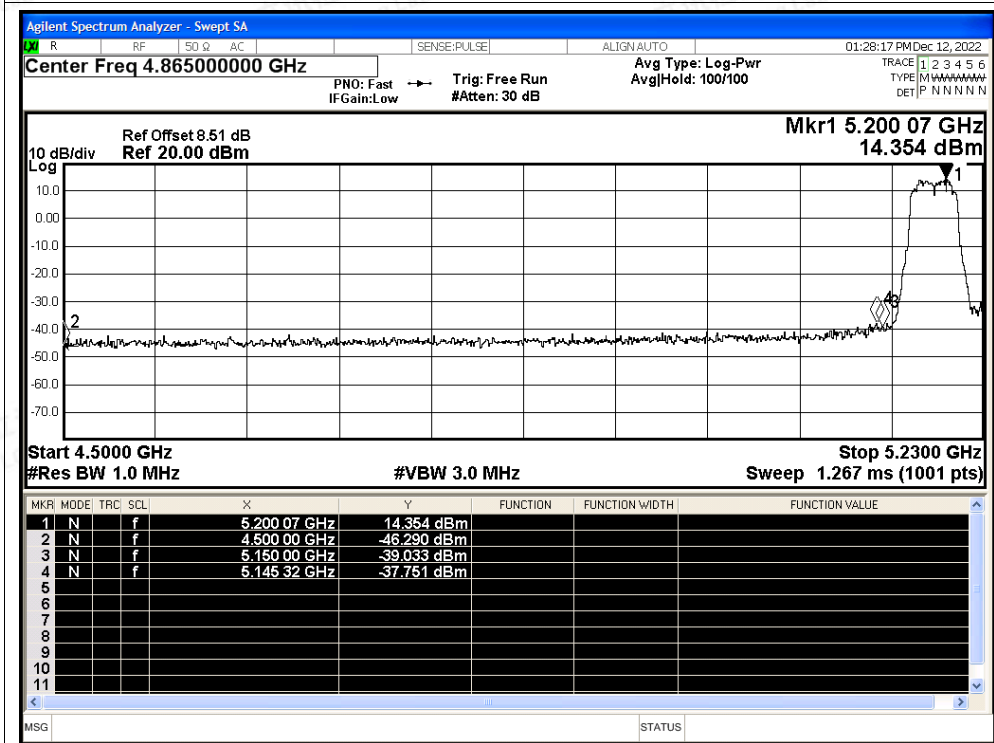


Restrict Band NVNT ac20 5240MHz Average

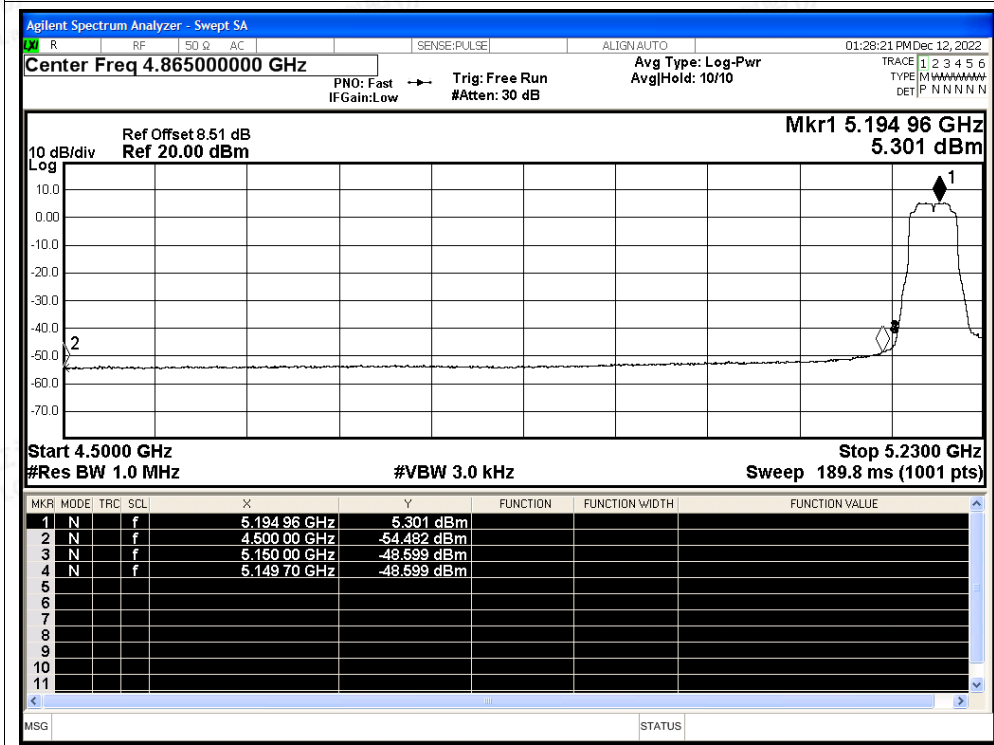




Restrict Band NVNT ac40 5190MHz Peak

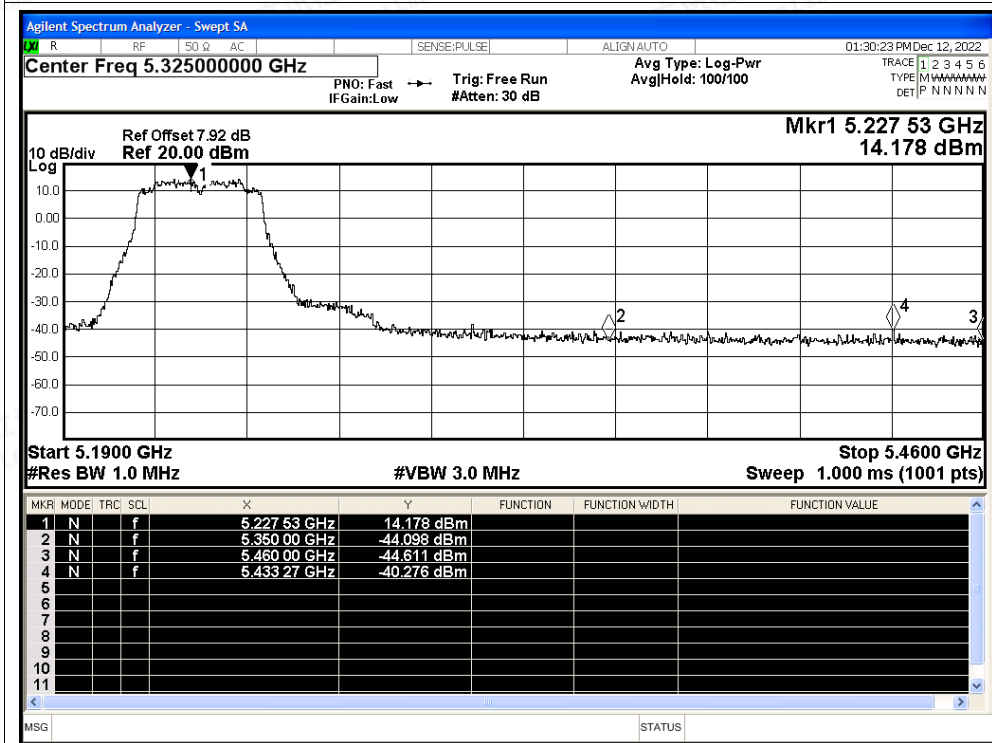


Restrict Band NVNT ac40 5190MHz Average

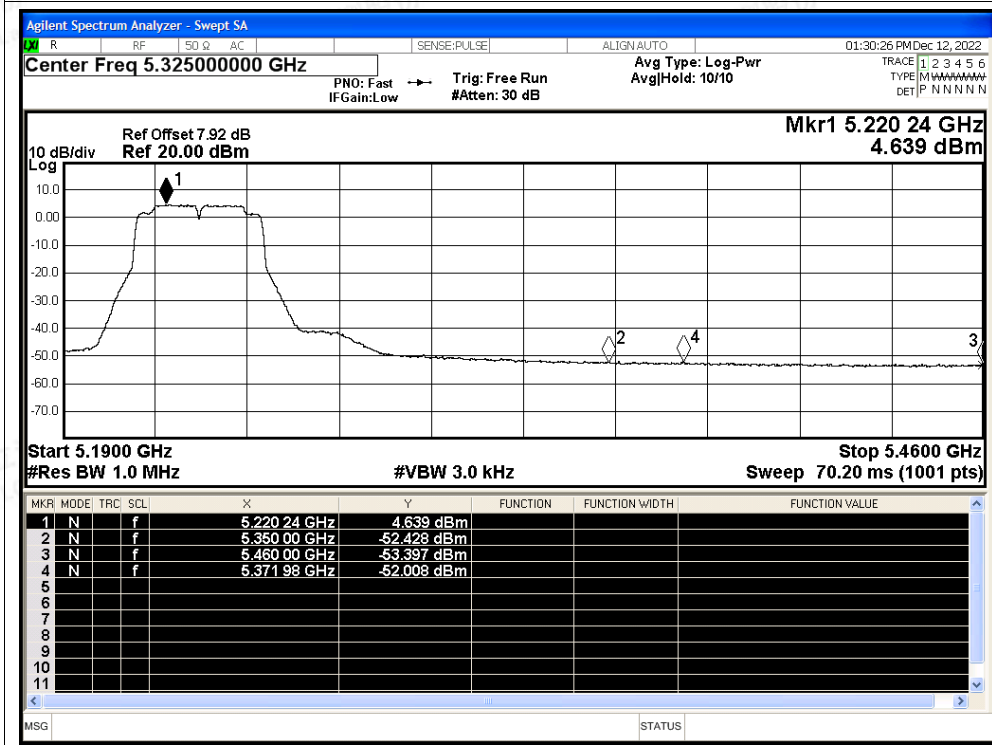




Restrict Band NVNT ac40 5230MHz Peak

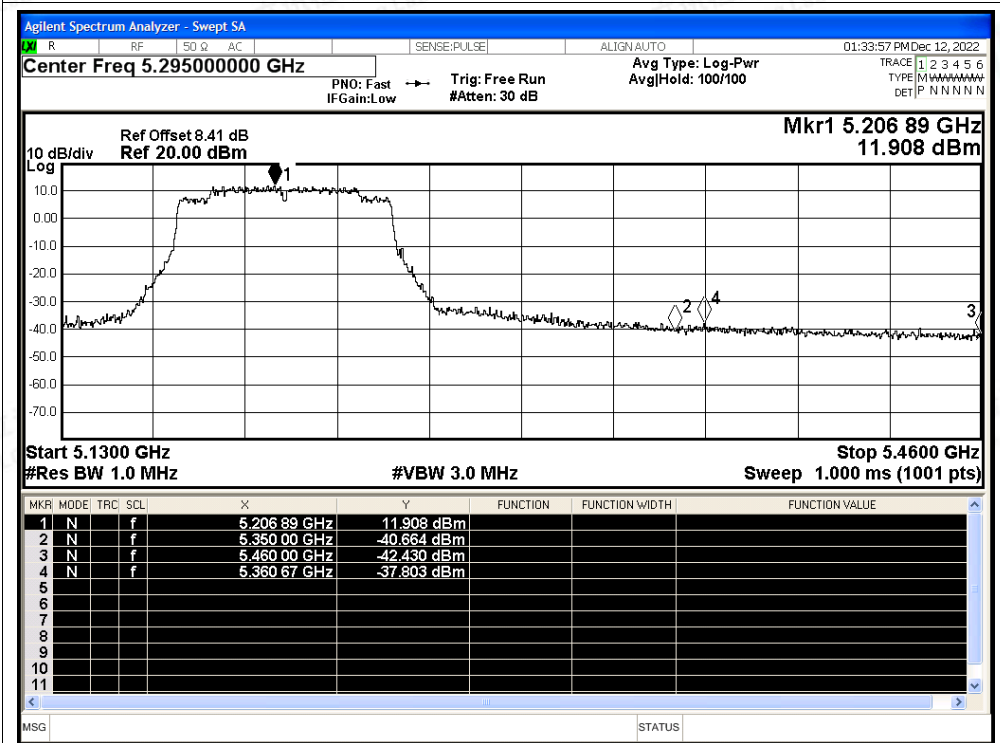


Restrict Band NVNT ac40 5230MHz Average

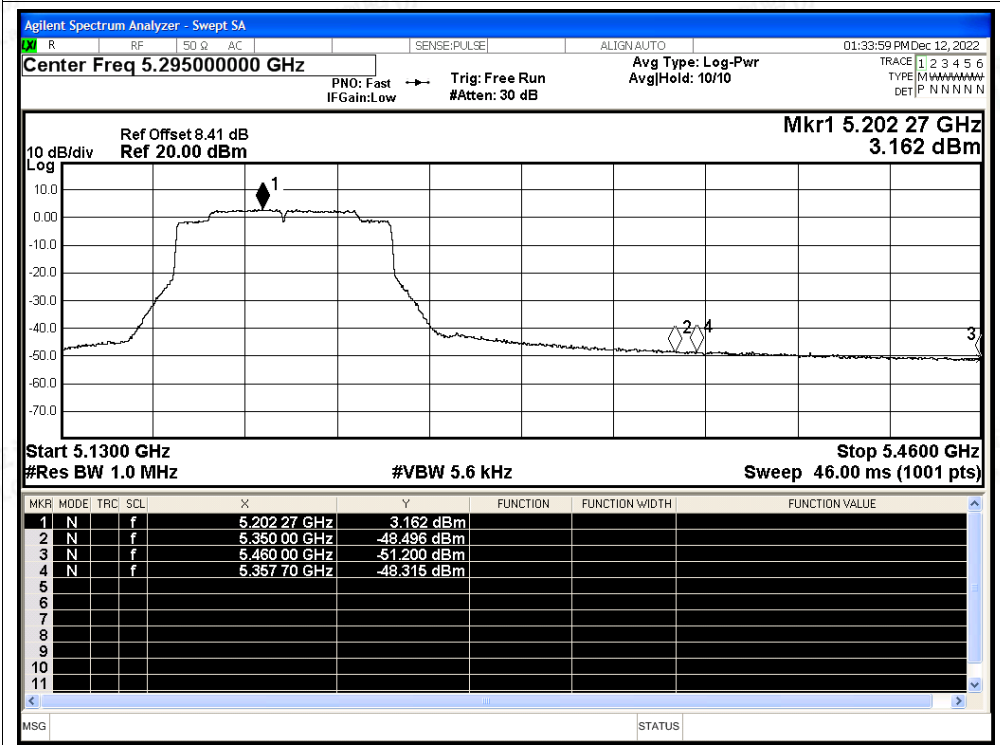




Restrict Band NVNT ac80 5210MHz Peak

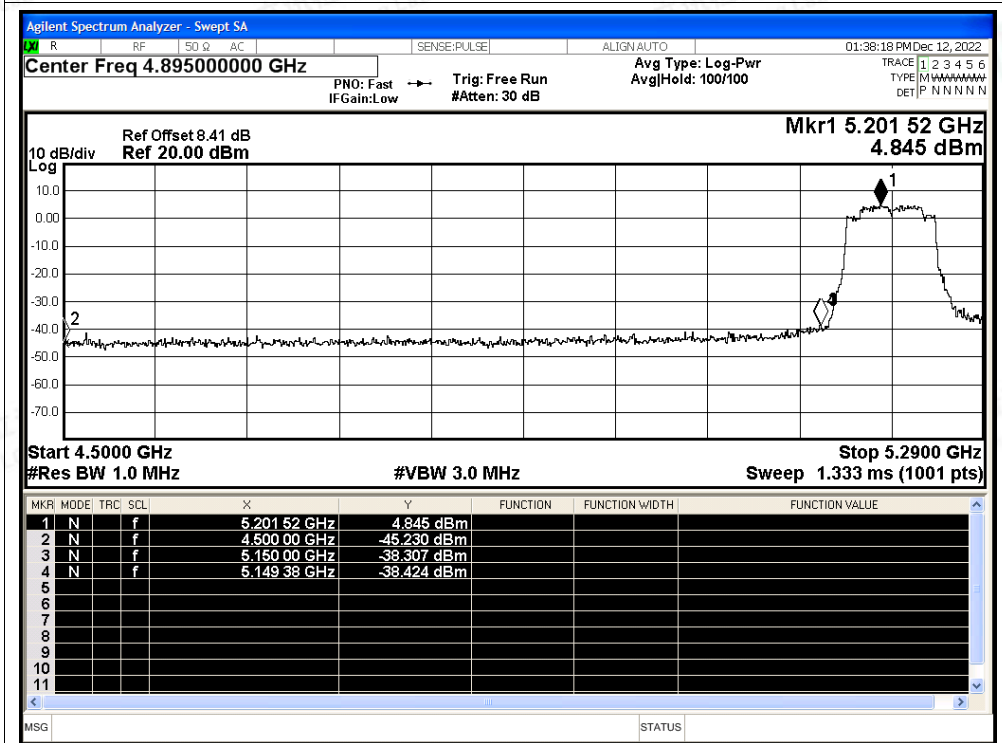


Restrict Band NVNT ac80 5210MHz Average

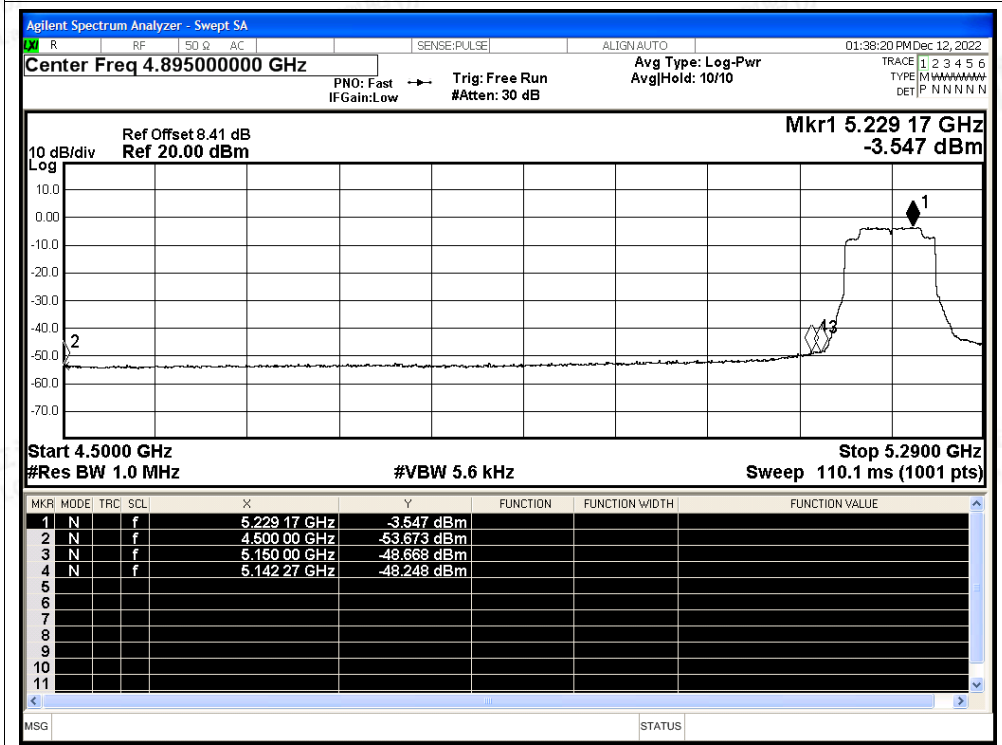




Restrict Band NVNT ac80 5210MHz Peak



Restrict Band NVNT ac80 5210MHz Average





D.5 Frequency Stability

| Condition | Mode | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-----------|------|-----------------|---------|--------------------------|----------------------|-----------------|-------------|---------|
| NVNT | n40 | 5190 | Ant0 | 5190 | 0 | 0 | 25 | Pass |
| NVNT | n40 | 5230 | Ant0 | 5229.96 | -40000 | -7.65 | 25 | Pass |
| NVNT | ac20 | 5180 | Ant0 | 5179.98 | -20000 | -3.86 | 25 | Pass |
| NVNT | ac20 | 5200 | Ant0 | 5199.96 | -40000 | -7.69 | 25 | Pass |
| NVNT | ac20 | 5240 | Ant0 | 5239.96 | -40000 | -7.63 | 25 | Pass |
| NVNT | ac40 | 5190 | Ant0 | 5190 | 0 | 0 | 25 | Pass |
| NVNT | ac40 | 5230 | Ant0 | 5230 | 0 | 0 | 25 | Pass |
| NVNT | ac80 | 5210 | Ant0 | 5210 | 0 | 0 | 25 | Pass |

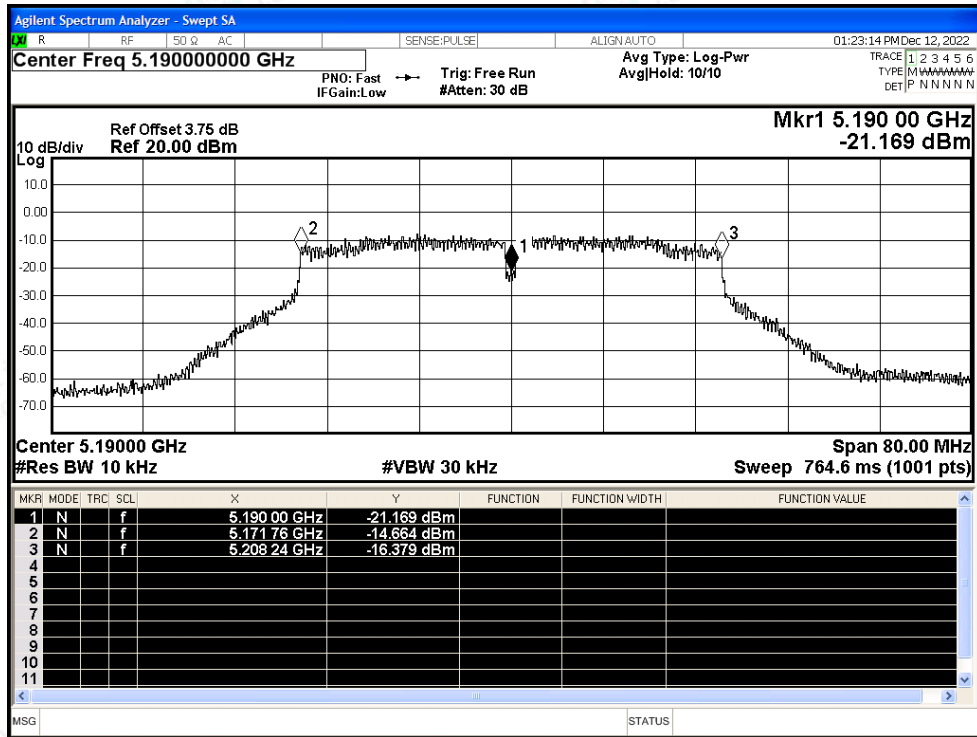


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Scan code to check authenticity

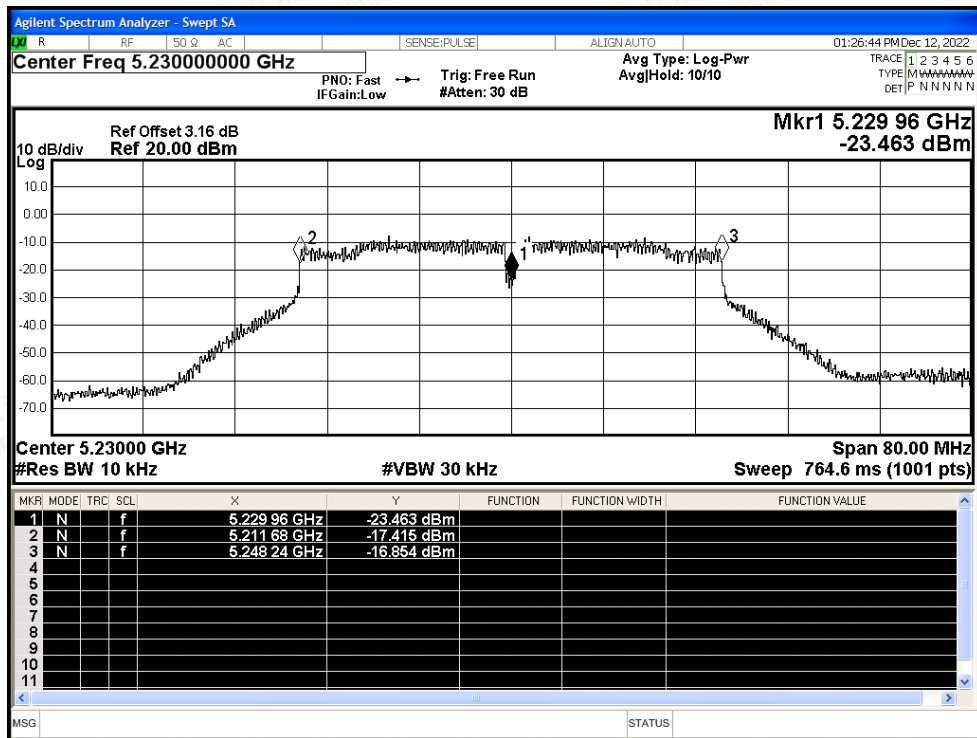


Test Graphs

Freq. Stability NVNT n40 5190MHz Ant0

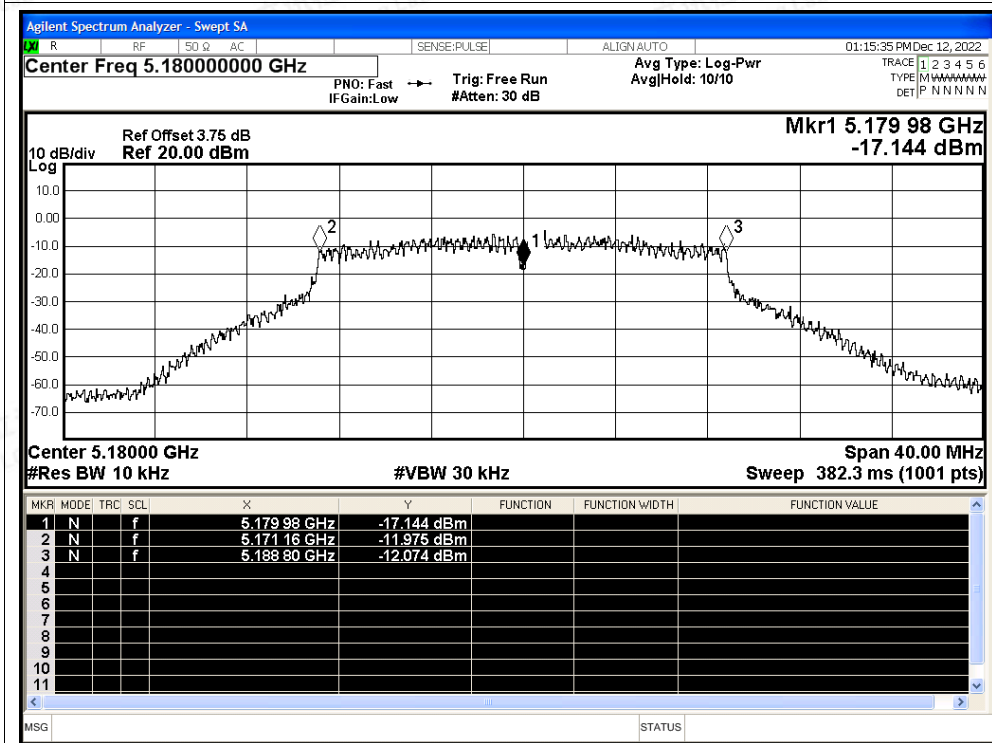


Freq. Stability NVNT n40 5230MHz Ant0

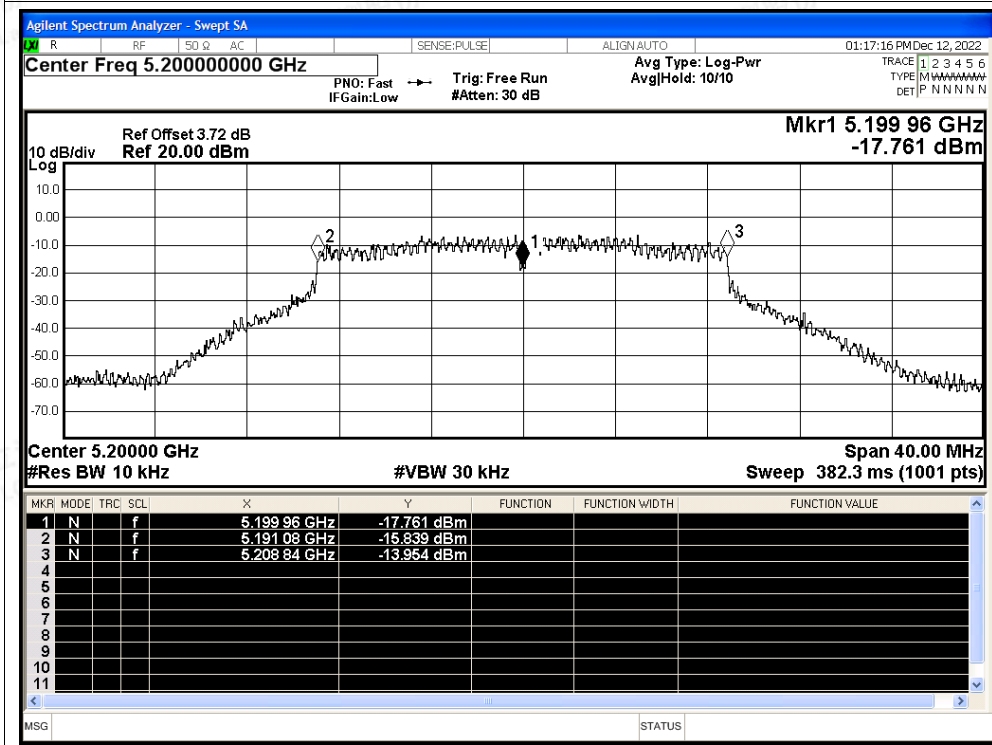




Freq. Stability NVNT ac20 5180MHz Ant0

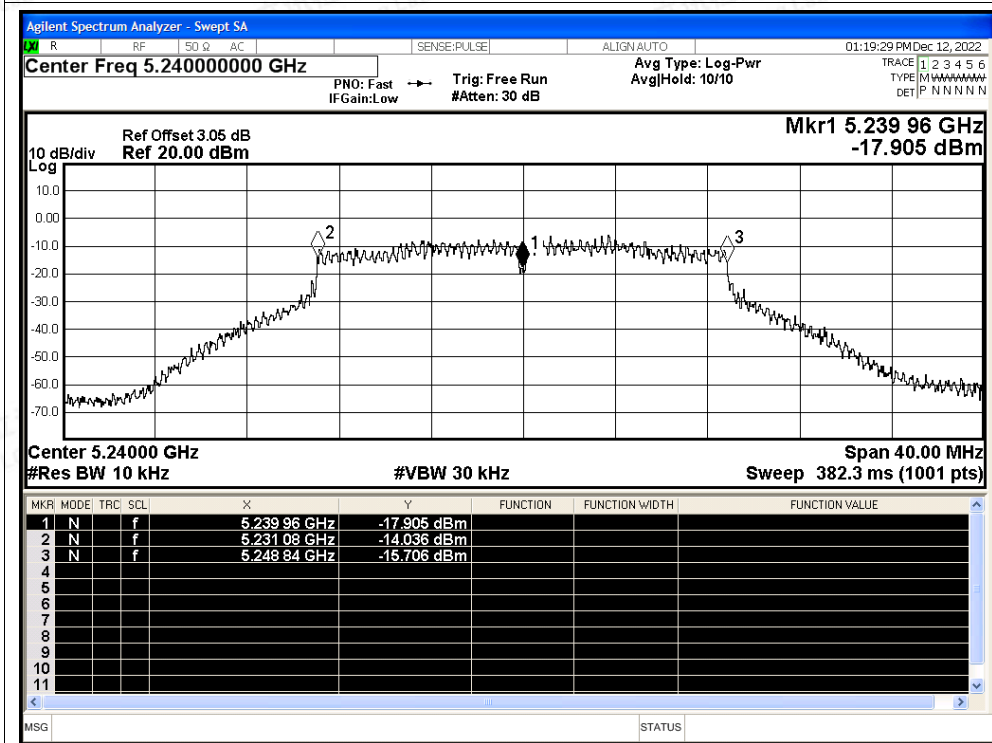


Freq. Stability NVNT ac20 5200MHz Ant0

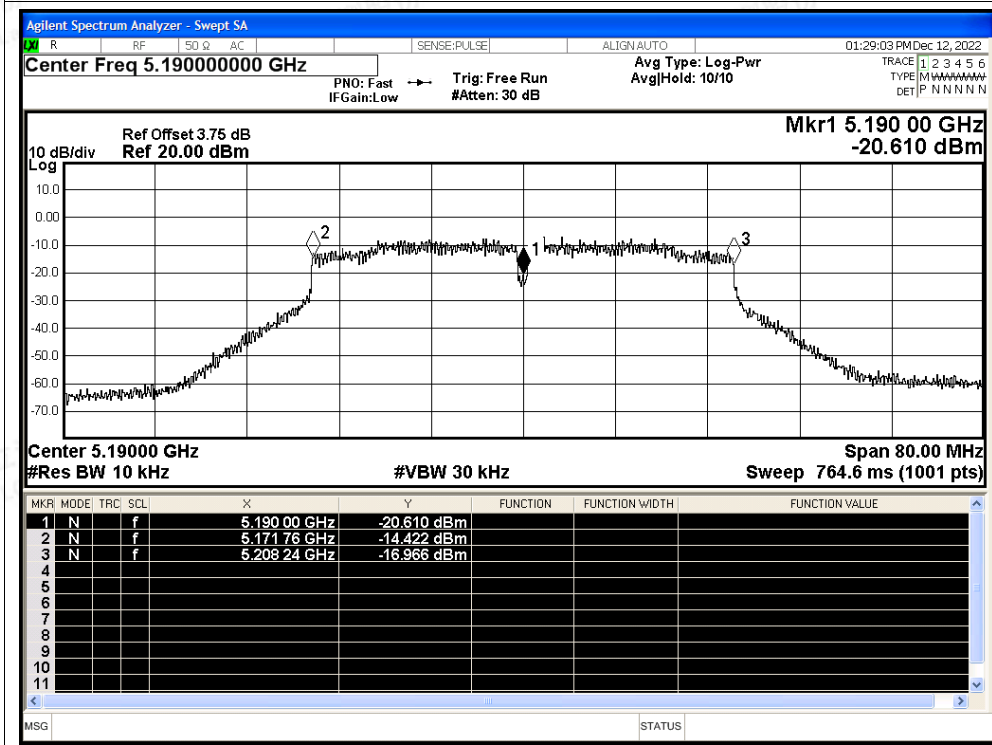




Freq. Stability NVNT ac20 5240MHz Ant0

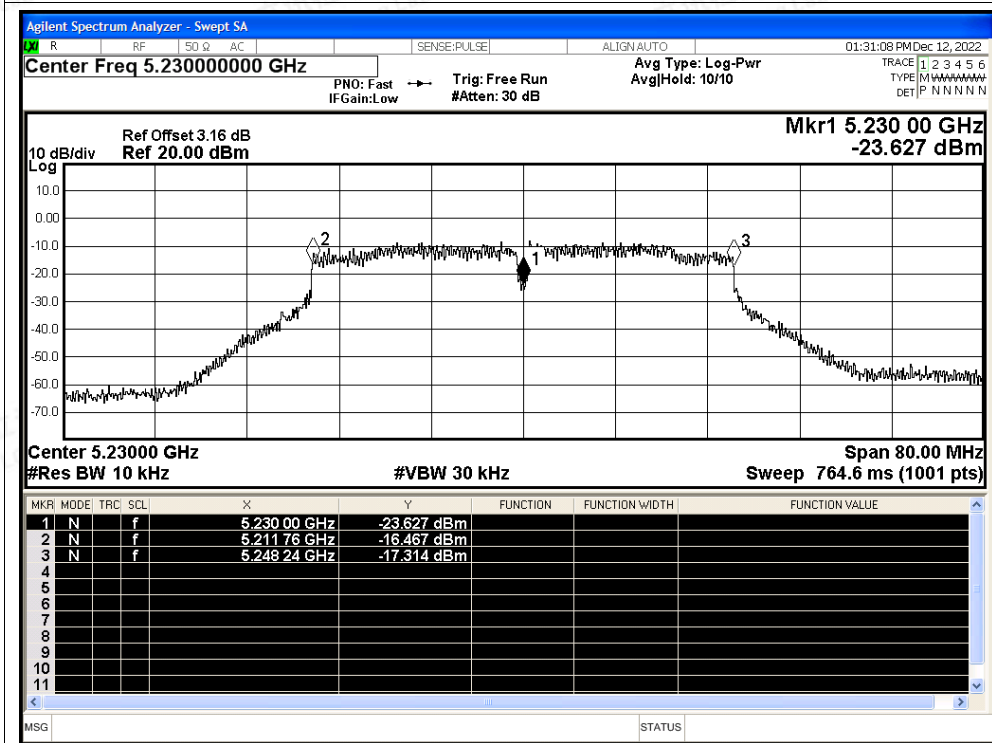


Freq. Stability NVNT ac40 5190MHz Ant0

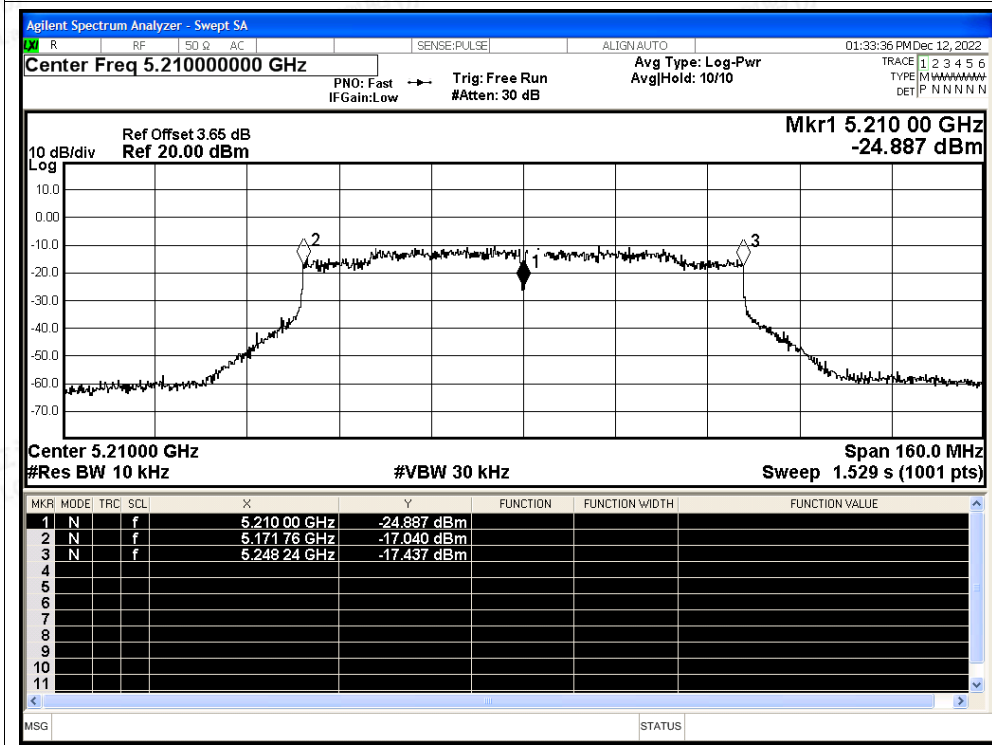




Freq. Stability NVNT ac40 5230MHz Ant0



Freq. Stability NVNT ac80 5210MHz Ant0





| Condition | Mode | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-----------|------|-----------------|---------|--------------------------|----------------------|-----------------|-------------|---------|
| NVNT | n40 | 5190 | Ant1 | 5189.96 | -40000 | -7.71 | 25 | Pass |
| NVNT | n40 | 5230 | Ant1 | 5229.92 | -80000 | -15.3 | 25 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 5179.94 | -60000 | -11.58 | 25 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 5200 | 0 | 0 | 25 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 5239.96 | -40000 | -7.63 | 25 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 5189.96 | -40000 | -7.71 | 25 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| NVNT | ac80 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |

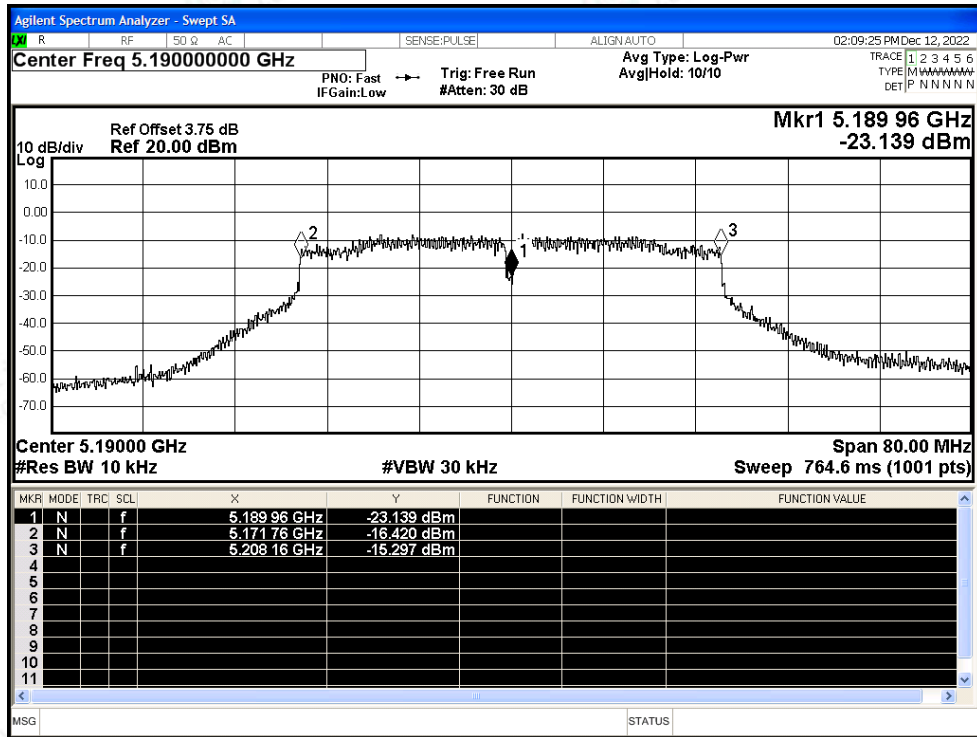


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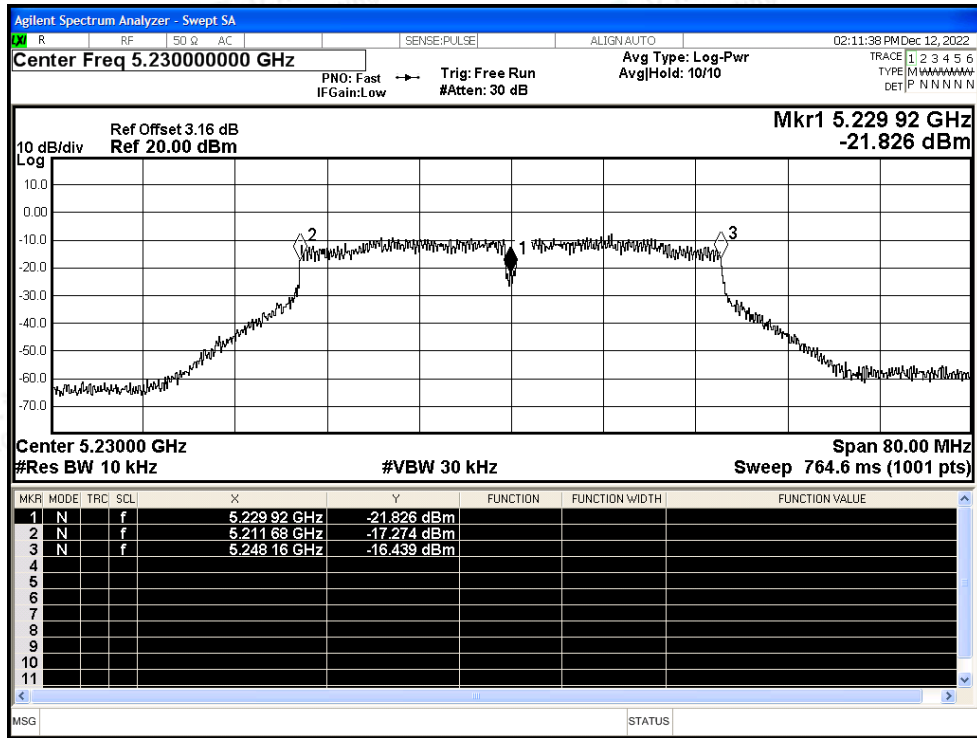


Test Graphs

Freq. Stability NVNT n40 5190MHz Ant1

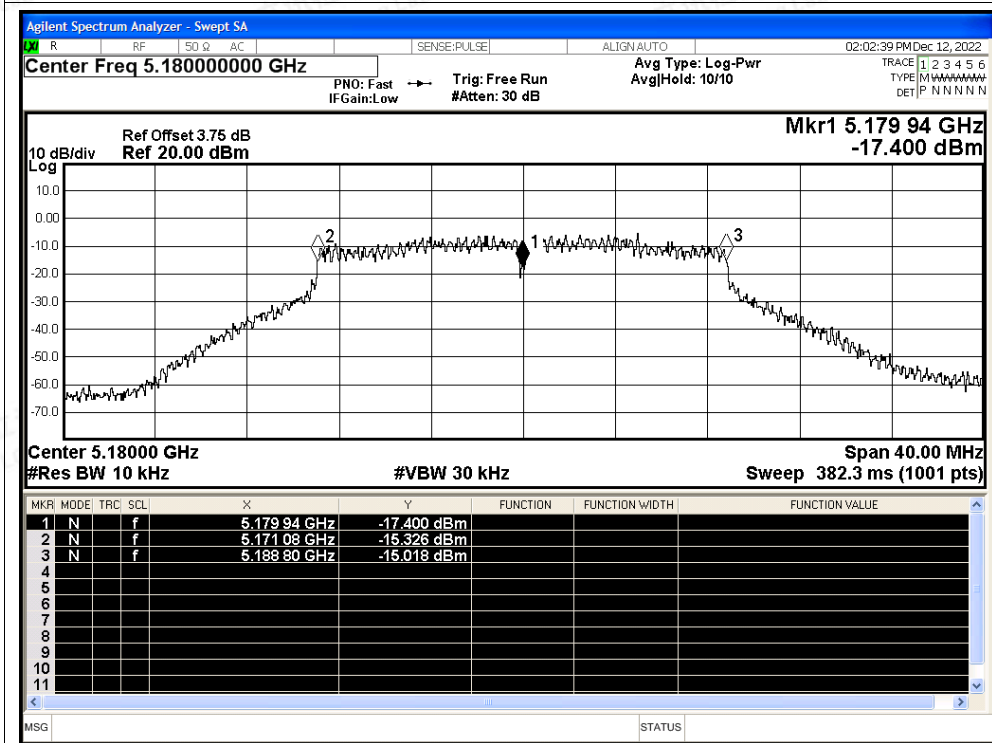


Freq. Stability NVNT n40 5230MHz Ant1

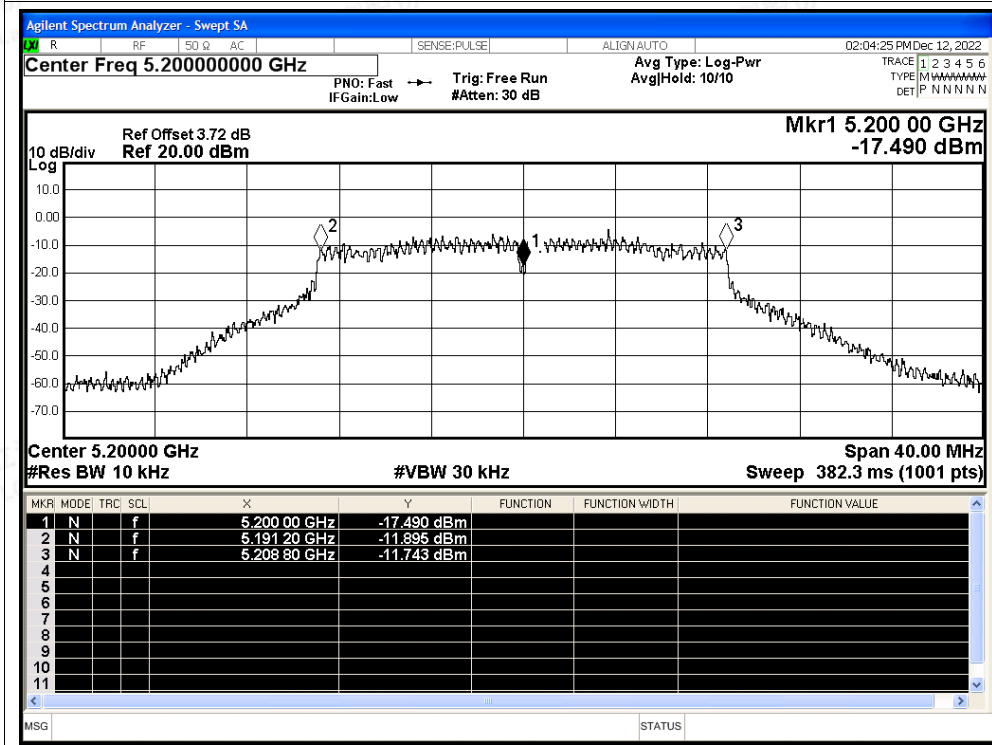




Freq. Stability NVNT ac20 5180MHz Ant1

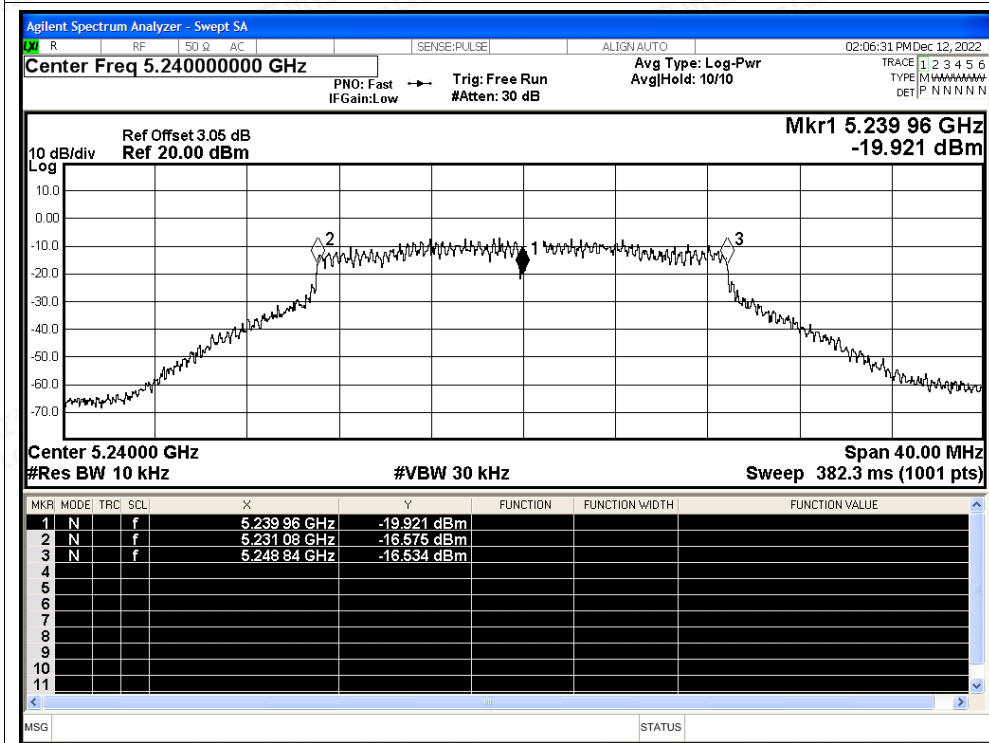


Freq. Stability NVNT ac20 5200MHz Ant1

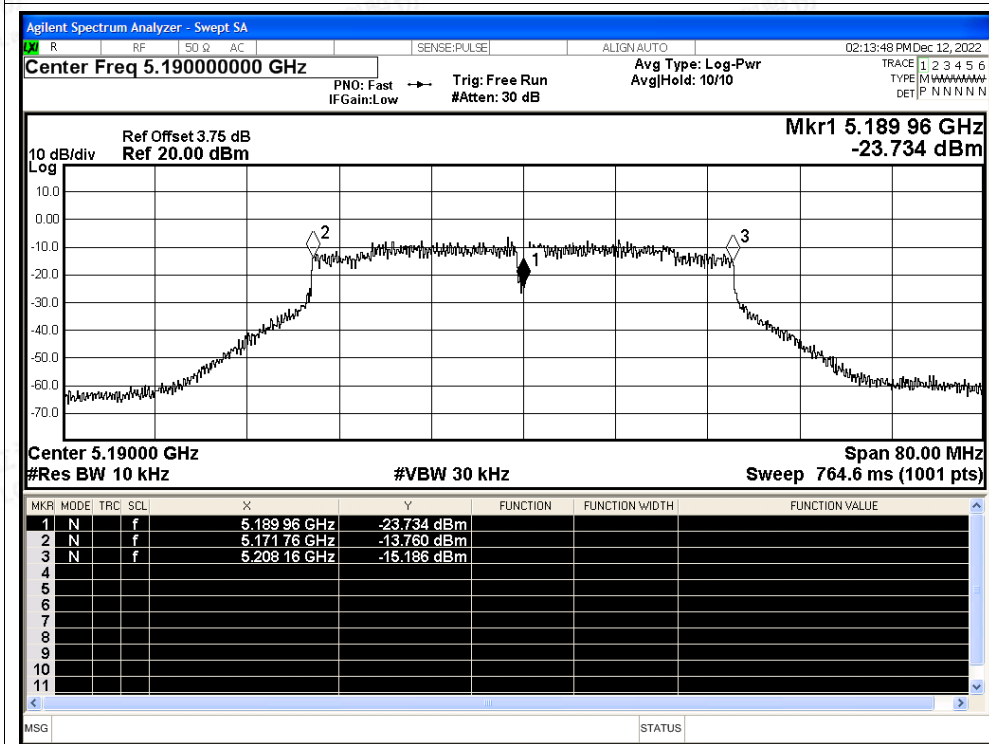




Freq. Stability NVNT ac20 5240MHz Ant1

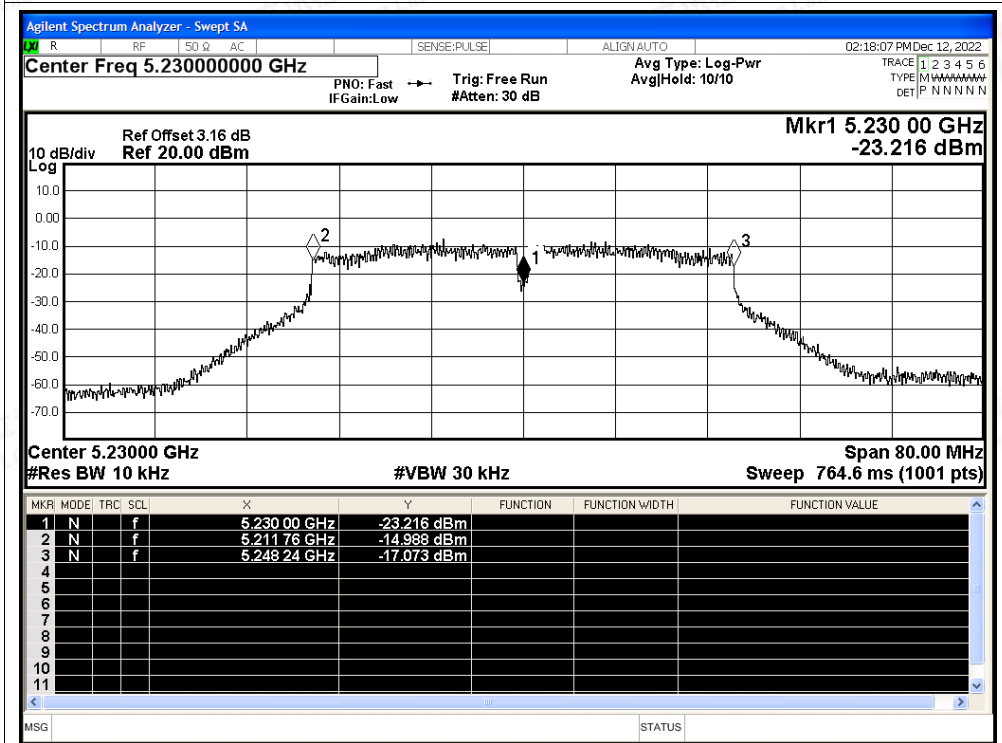


Freq. Stability NVNT ac40 5190MHz Ant1

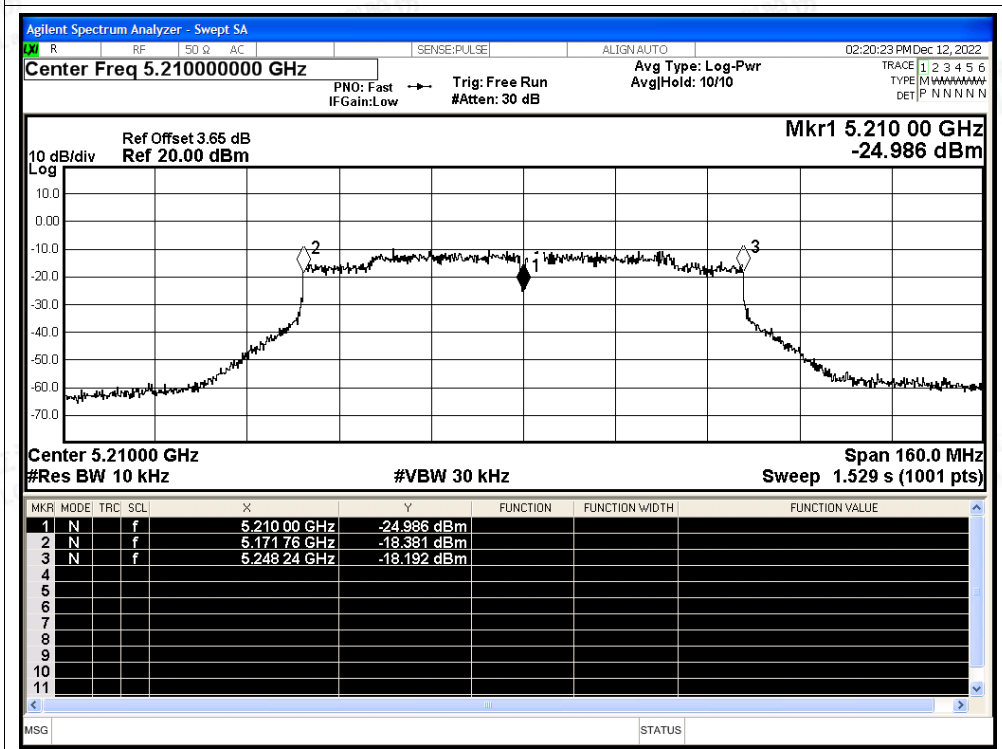




Freq. Stability NVNT ac40 5230MHz Ant1



Freq. Stability NVNT ac80 5210MHz Ant1





D.6 Duty Cycle

| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|------|-----------------|---------|----------------|------------------------|-----------|
| NVNT | a | 5180 | Ant0 | 98.84 | 0 | 0.01 |
| NVNT | a | 5200 | Ant0 | 98.86 | 0 | 0.01 |
| NVNT | a | 5240 | Ant0 | 98.86 | 0 | 0.01 |
| NVNT | n20 | 5180 | Ant0 | 98.82 | 0 | 0.01 |
| NVNT | n20 | 5200 | Ant0 | 98.87 | 0 | 0.01 |
| NVNT | n20 | 5240 | Ant0 | 98.87 | 0 | 0.01 |
| NVNT | n40 | 5190 | Ant0 | 98.83 | 0 | 0.01 |
| NVNT | n40 | 5230 | Ant0 | 98.86 | 0 | 0.01 |
| NVNT | ac20 | 5180 | Ant0 | 98.84 | 0 | 0.01 |
| NVNT | ac20 | 5200 | Ant0 | 98.86 | 0 | 0.01 |
| NVNT | ac20 | 5240 | Ant0 | 98.82 | 0 | 0.01 |
| NVNT | ac40 | 5190 | Ant0 | 98.83 | 0 | 0.01 |
| NVNT | ac40 | 5230 | Ant0 | 98.86 | 0 | 0.01 |
| NVNT | ac80 | 5210 | Ant0 | 98.83 | 0 | 0.01 |

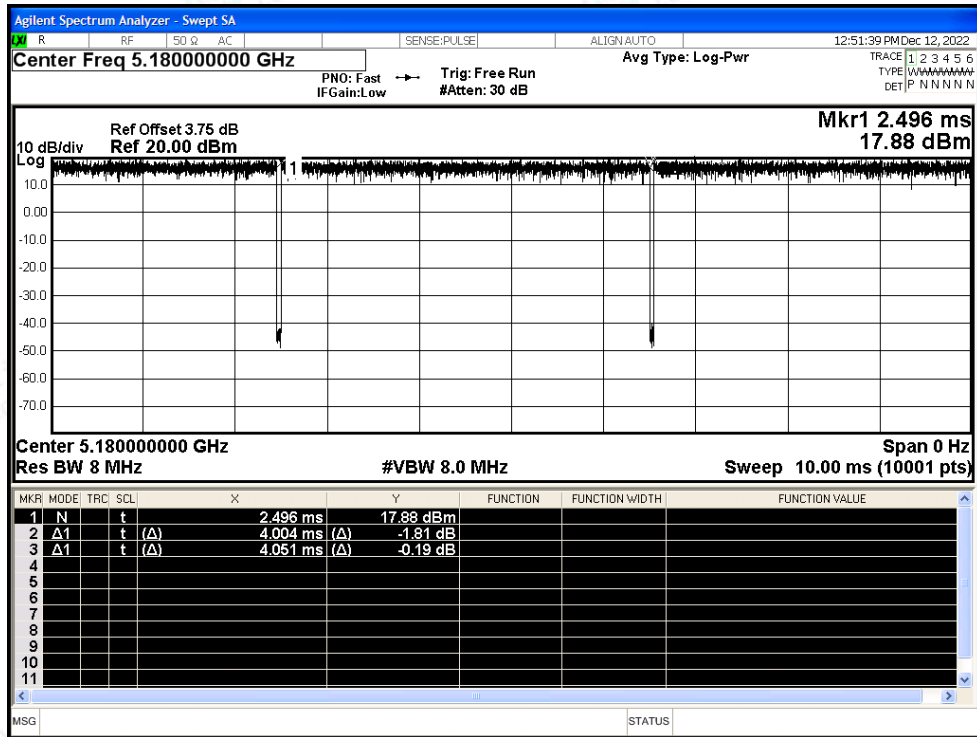


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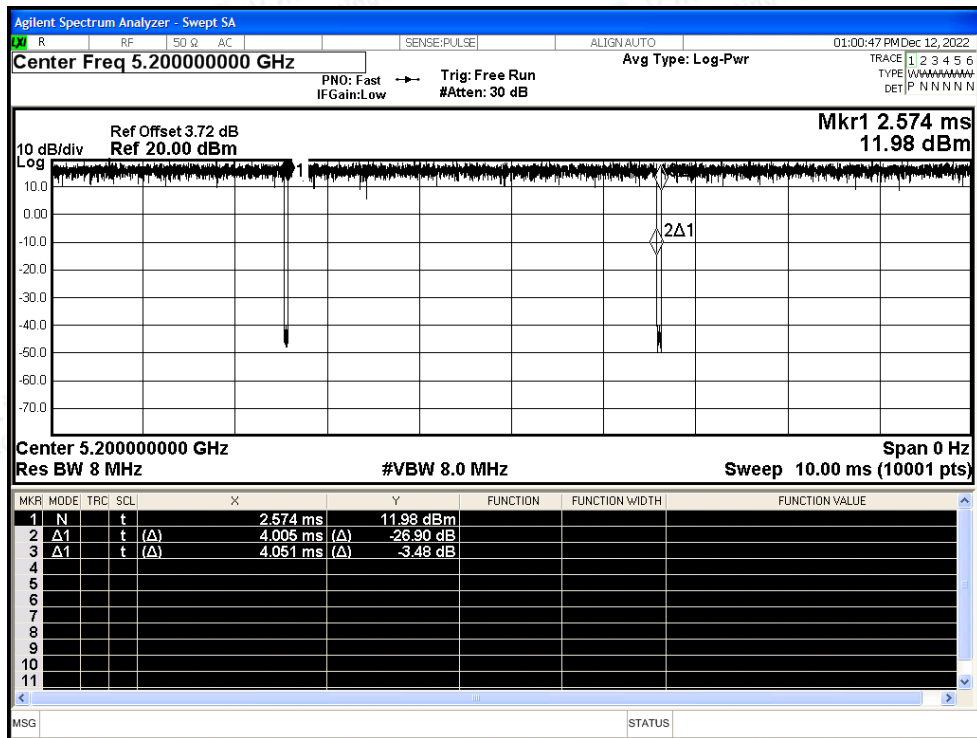


Test Graphs

Duty Cycle NVNT a 5180MHz Ant0

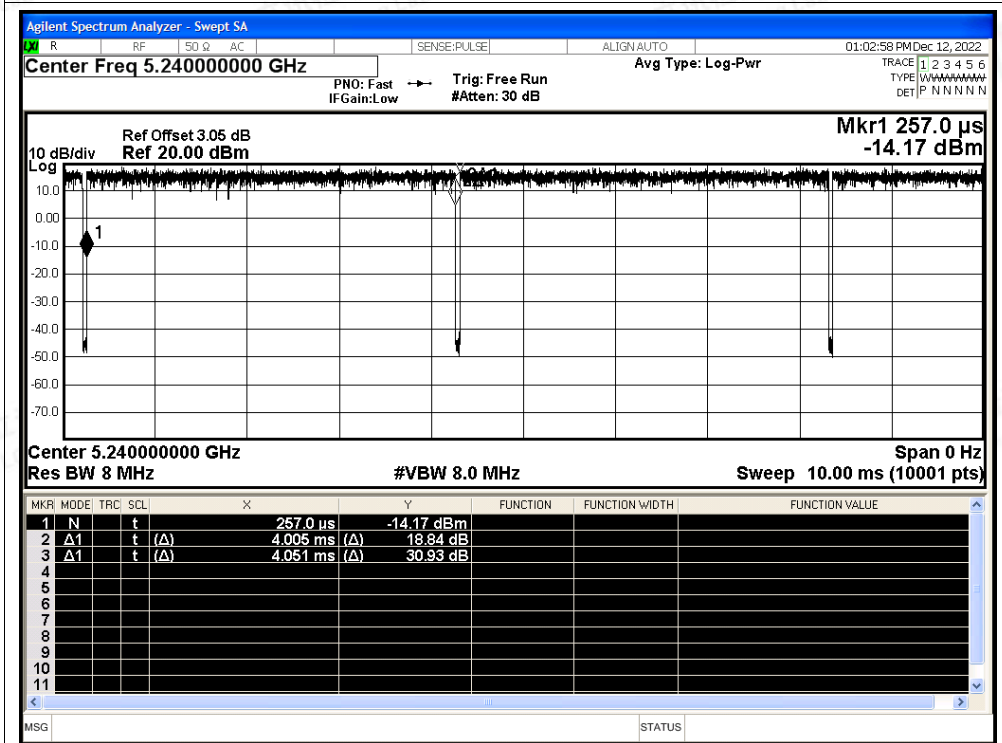


Duty Cycle NVNT a 5200MHz Ant0

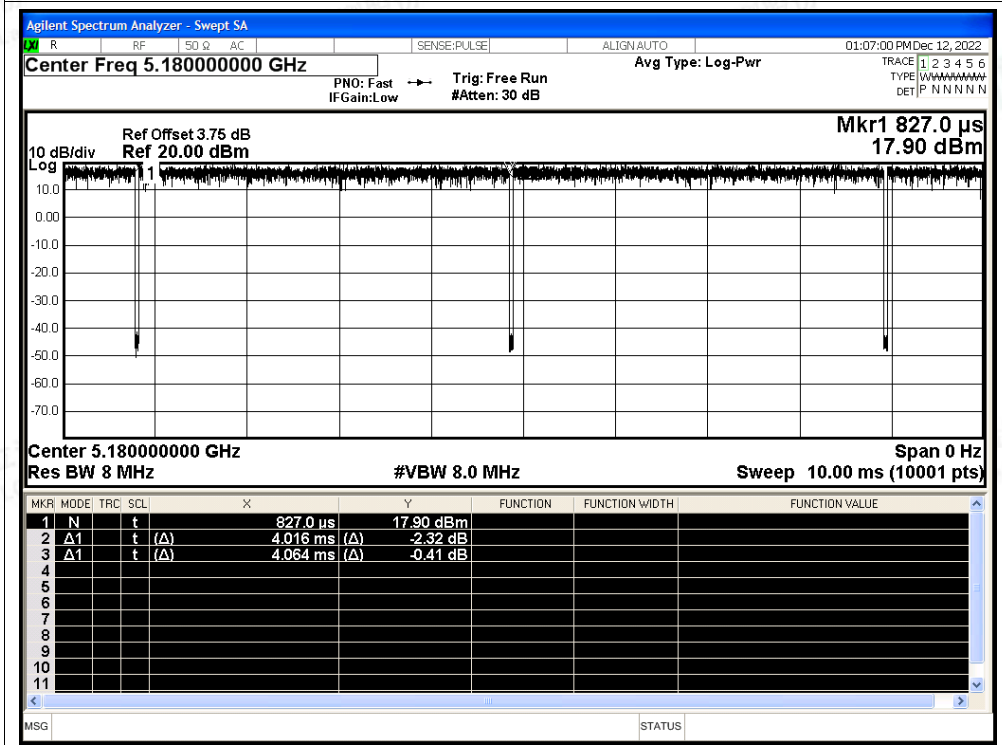




Duty Cycle NVNT a 5240MHz Ant0

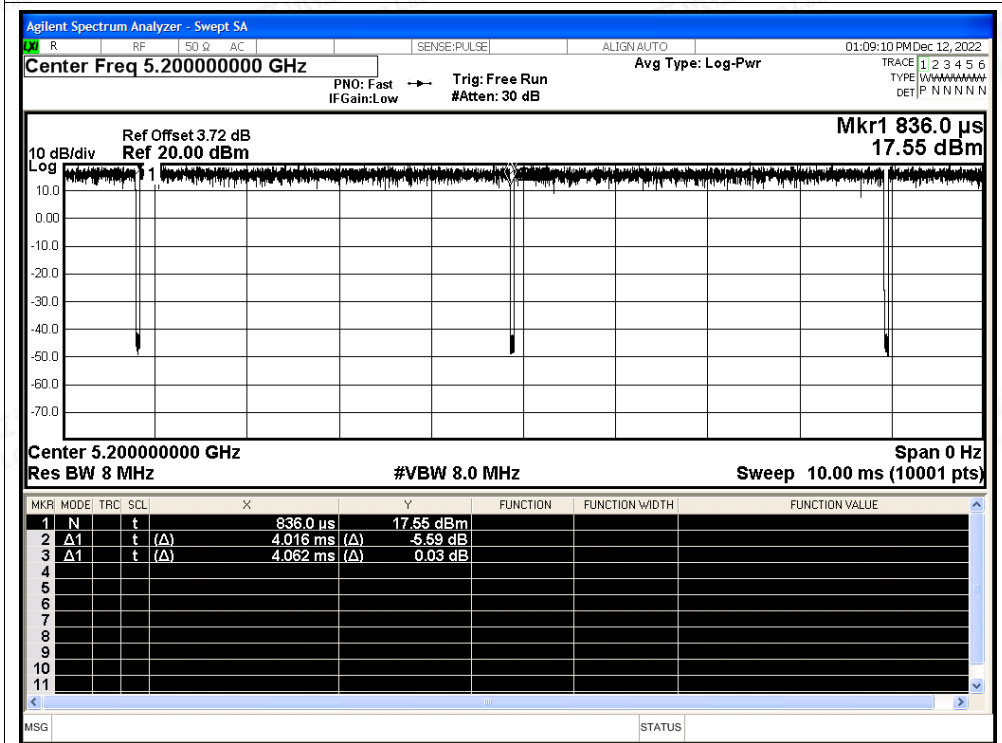


Duty Cycle NVNT n20 5180MHz Ant0

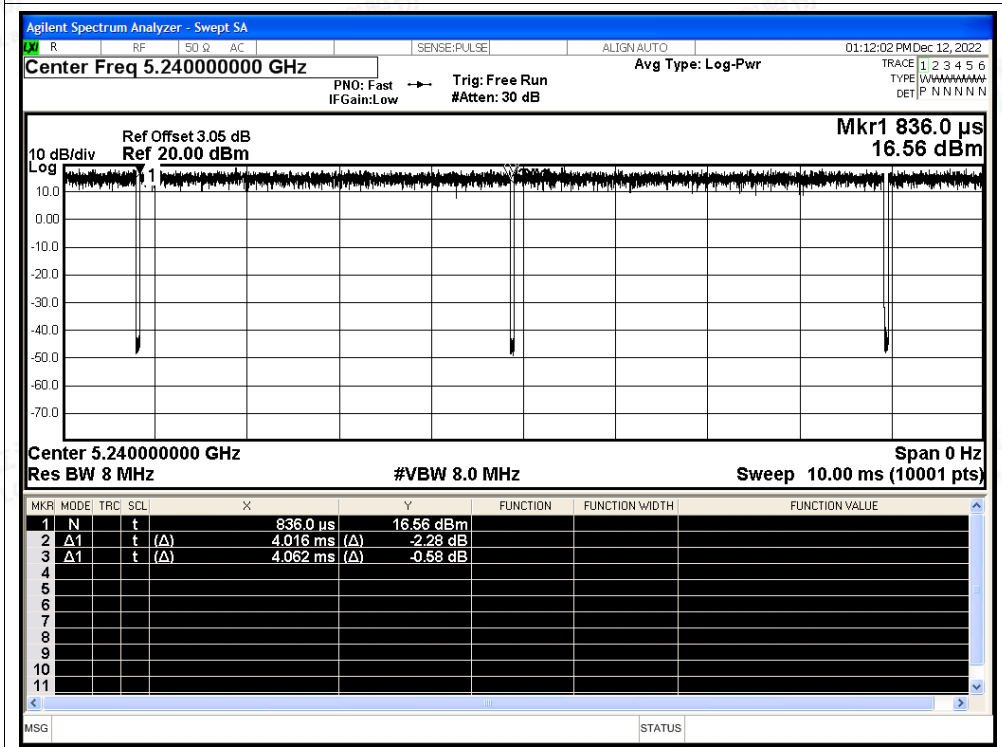




Duty Cycle NVNT n20 5200MHz Ant0

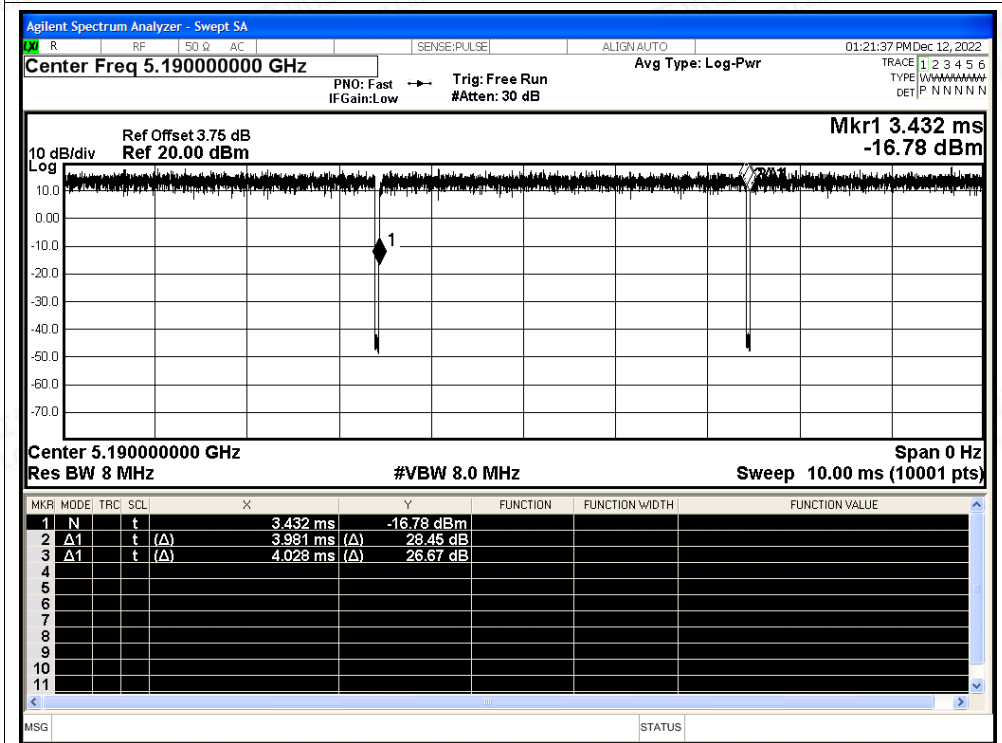


Duty Cycle NVNT n20 5240MHz Ant0

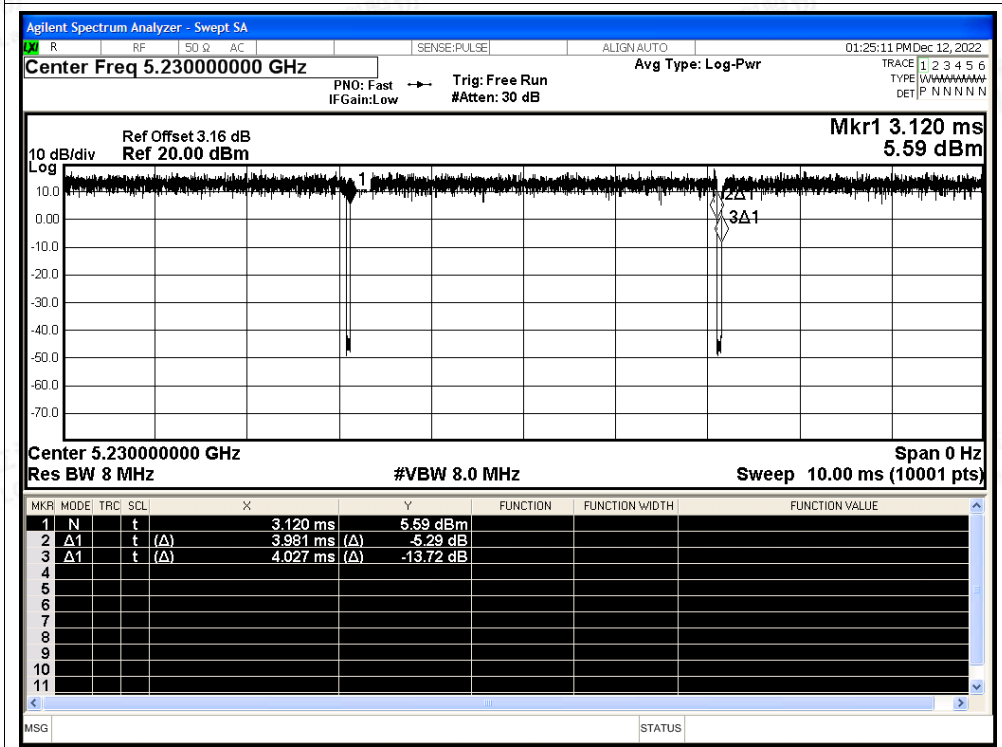




Duty Cycle NVNT n40 5190MHz Ant0

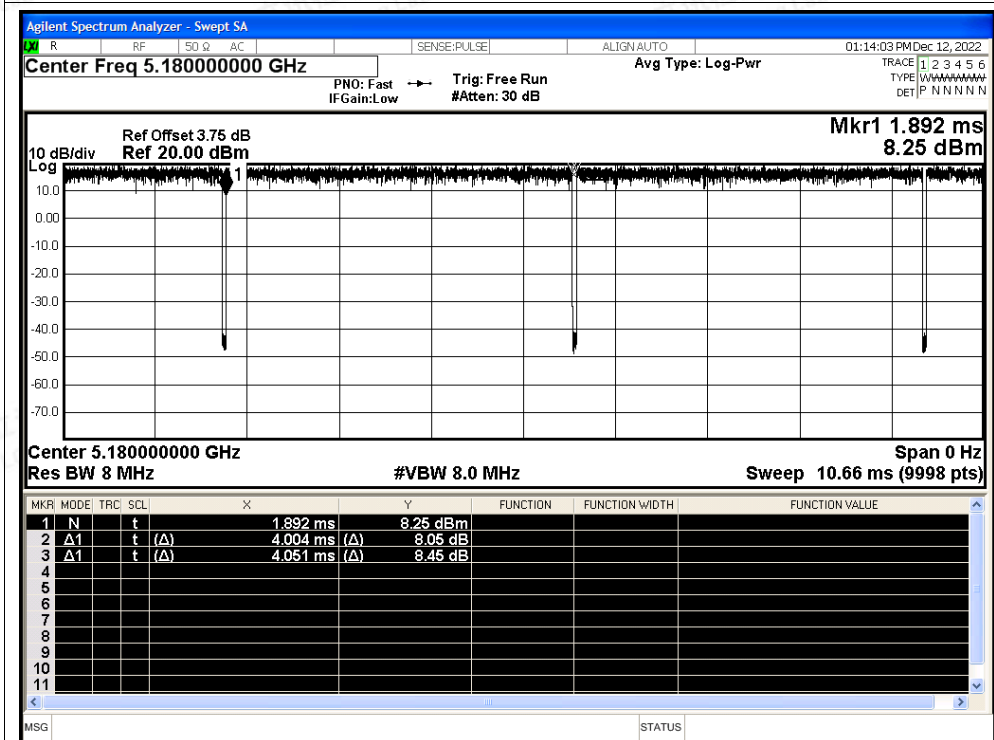


Duty Cycle NVNT n40 5230MHz Ant0

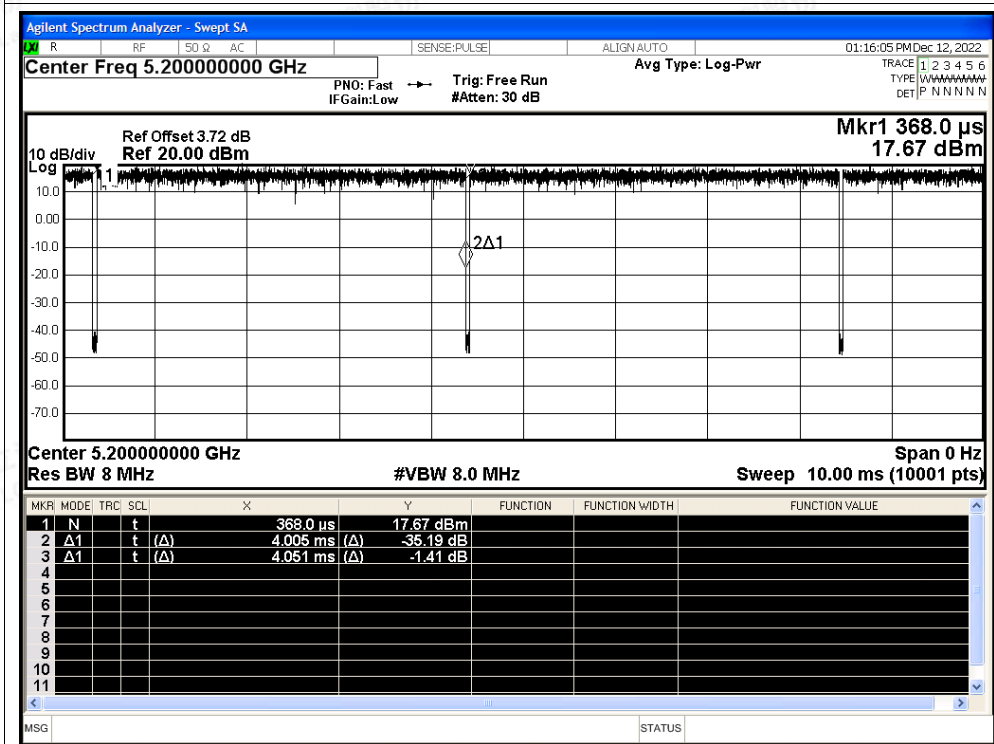


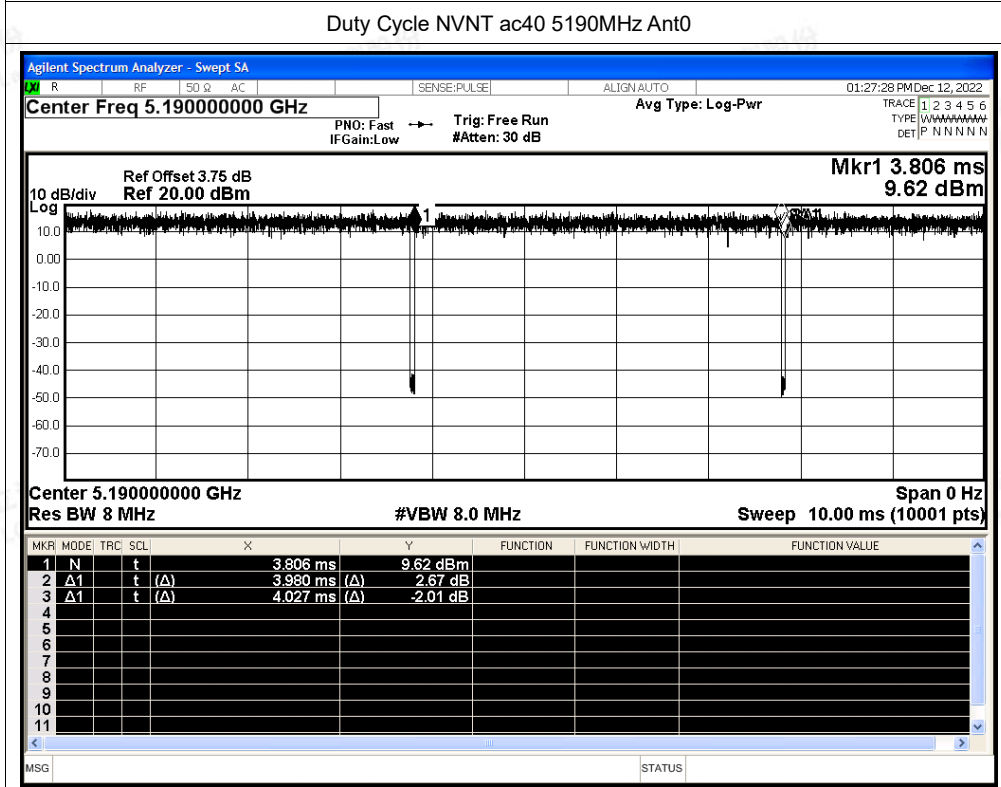
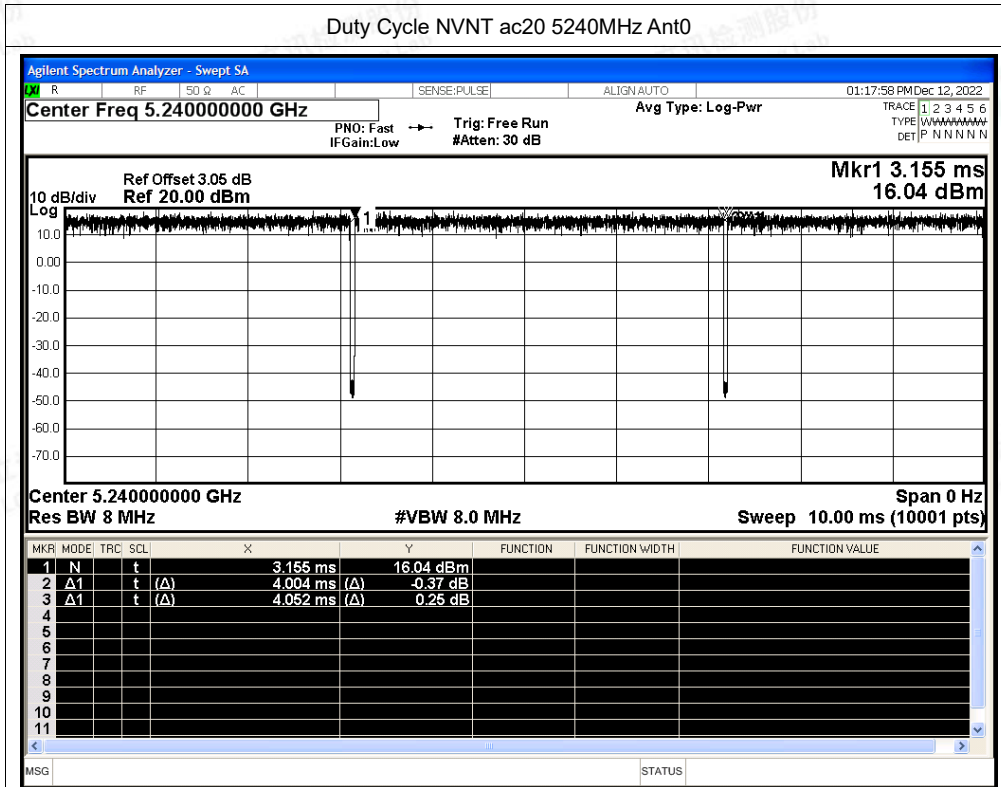


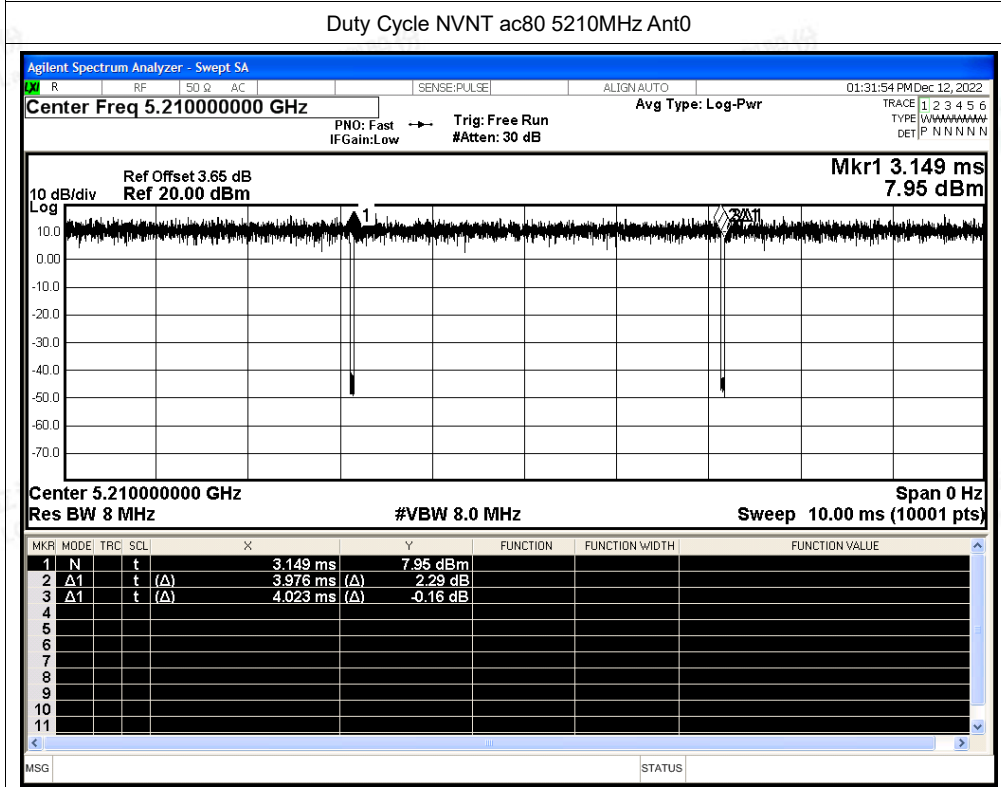
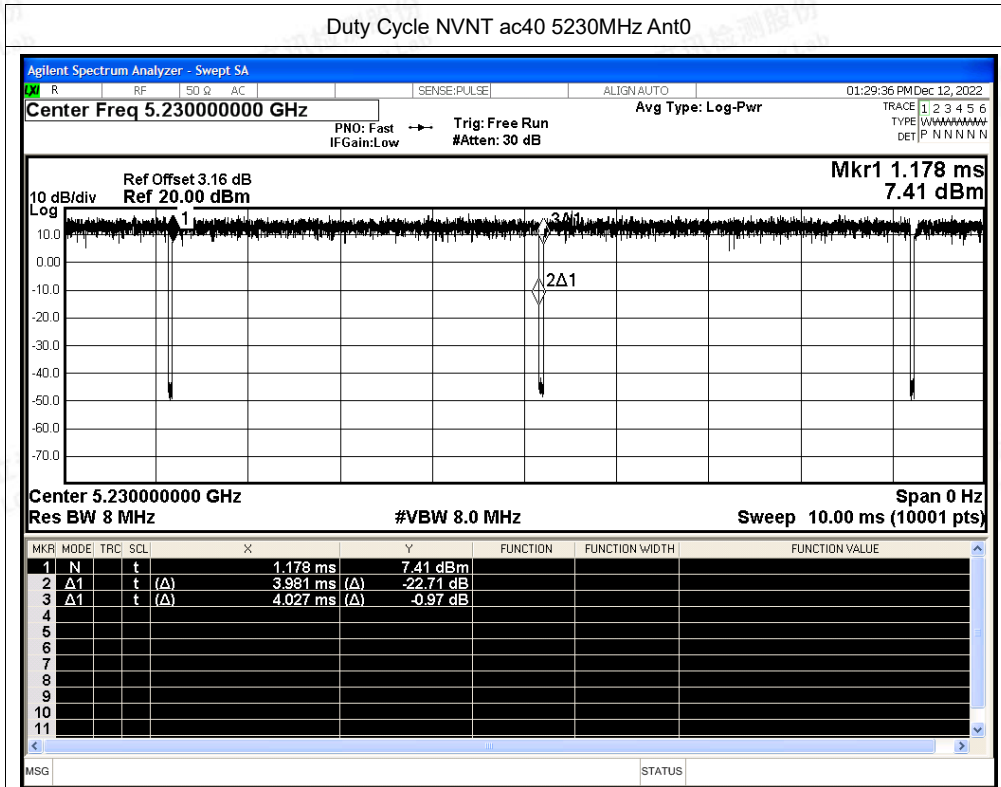
Duty Cycle NVNT ac20 5180MHz Ant0



Duty Cycle NVNT ac20 5200MHz Ant0









| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|------|-----------------|---------|----------------|------------------------|-----------|
| NVNT | a | 5180 | Ant1 | 97.84 | 0.09 | 0.48 |
| NVNT | a | 5200 | Ant1 | 97.84 | 0.09 | 0.48 |
| NVNT | a | 5240 | Ant1 | 97.89 | 0.09 | 0.48 |
| NVNT | n20 | 5180 | Ant1 | 98.84 | 0 | 0.01 |
| NVNT | n20 | 5200 | Ant1 | 98.87 | 0 | 0.01 |
| NVNT | n20 | 5240 | Ant1 | 98.89 | 0 | 0.01 |
| NVNT | n40 | 5190 | Ant1 | 98.83 | 0 | 0.01 |
| NVNT | n40 | 5230 | Ant1 | 98.86 | 0 | 0.01 |
| NVNT | ac20 | 5180 | Ant1 | 98.84 | 0 | 0.01 |
| NVNT | ac20 | 5200 | Ant1 | 98.86 | 0 | 0.01 |
| NVNT | ac20 | 5240 | Ant1 | 98.82 | 0 | 0.01 |
| NVNT | ac40 | 5190 | Ant1 | 98.86 | 0 | 0.01 |
| NVNT | ac40 | 5230 | Ant1 | 98.83 | 0 | 0.01 |
| NVNT | ac80 | 5210 | Ant1 | 98.86 | 0 | 0.01 |

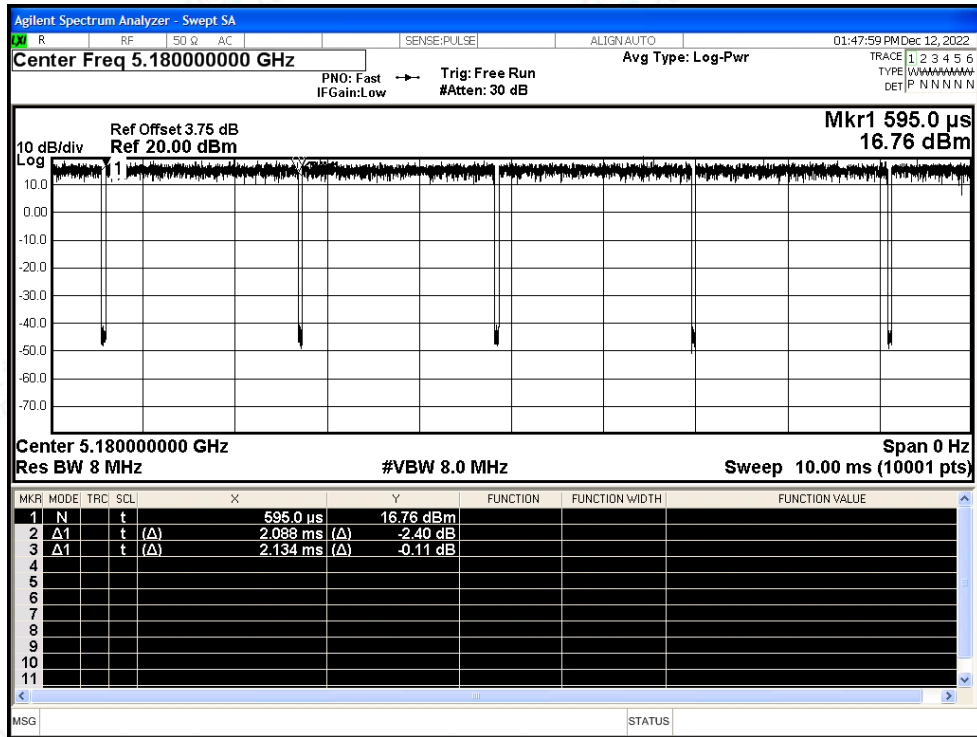


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Scan code to check authenticity

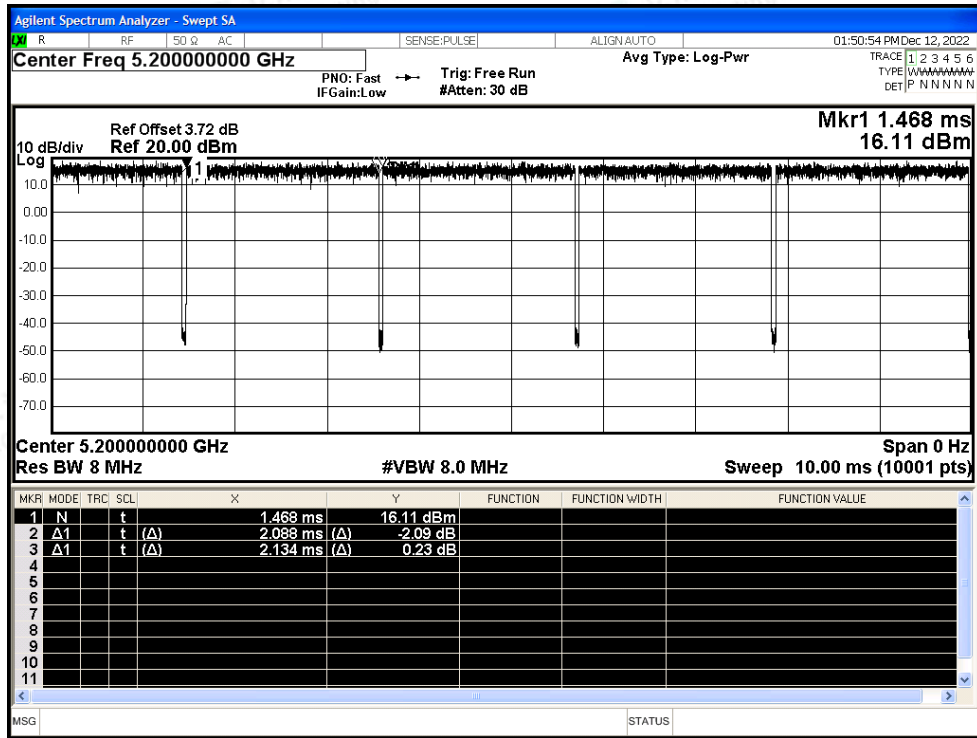


Test Graphs

Duty Cycle NVNT a 5180MHz Ant1

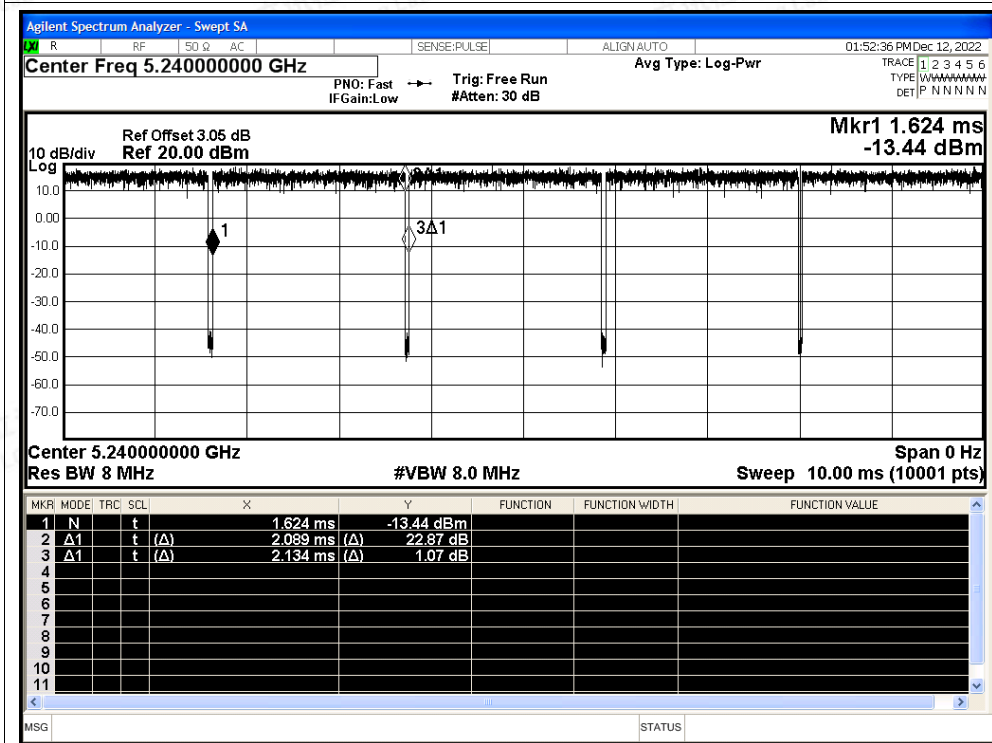


Duty Cycle NVNT a 5200MHz Ant1

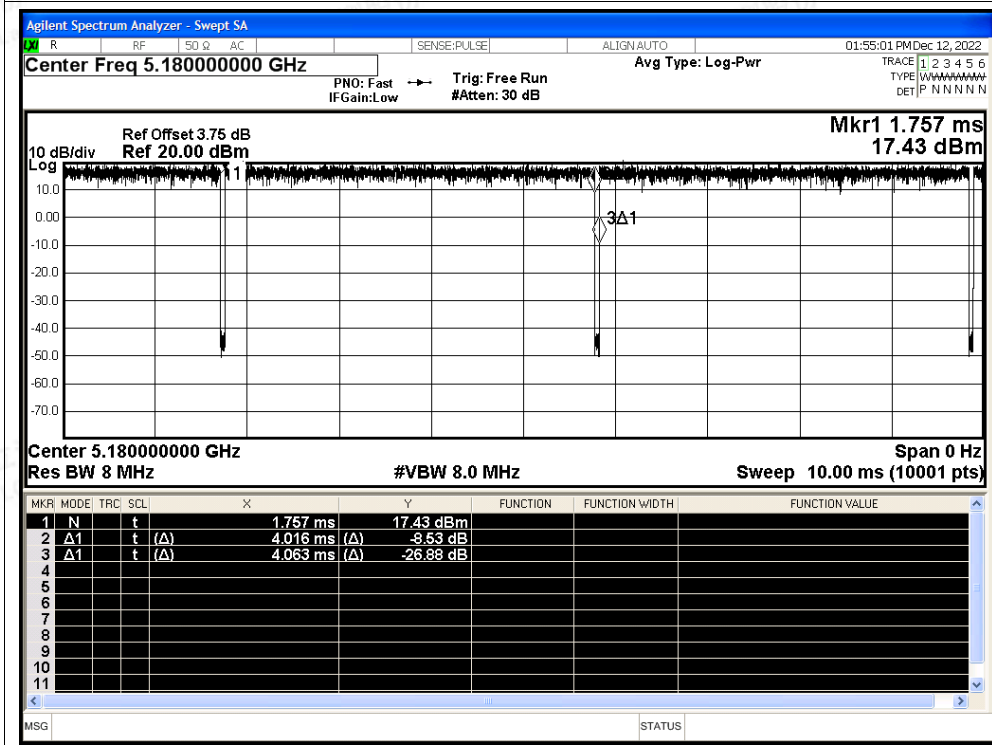




Duty Cycle NVNT a 5240MHz Ant1

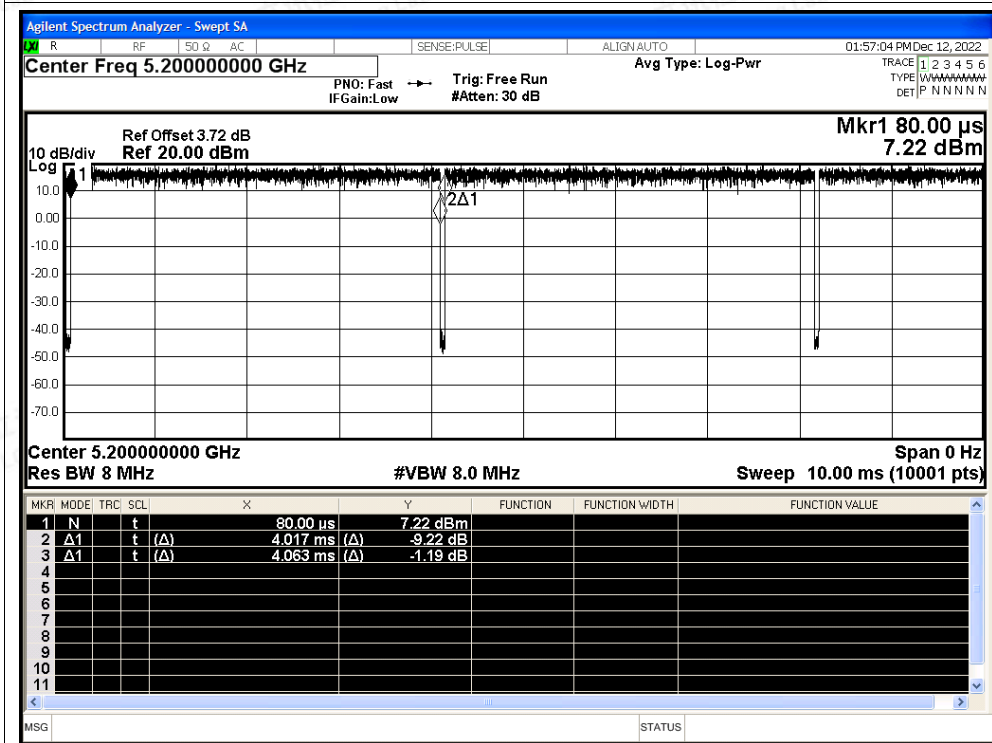


Duty Cycle NVNT n20 5180MHz Ant1

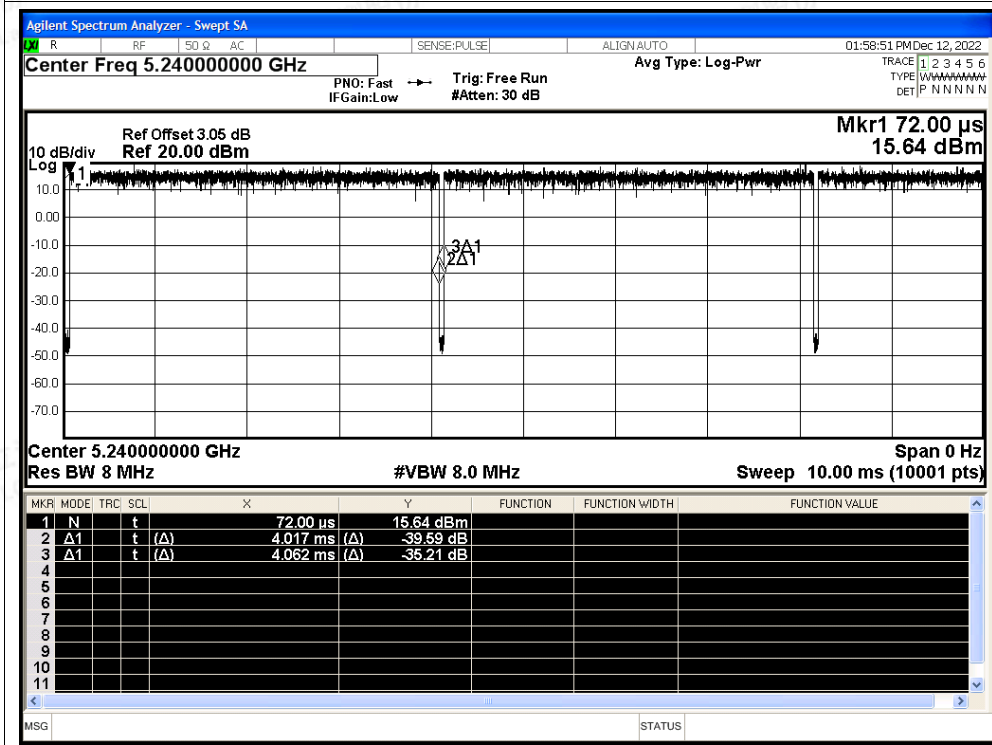




Duty Cycle NVNT n20 5200MHz Ant1

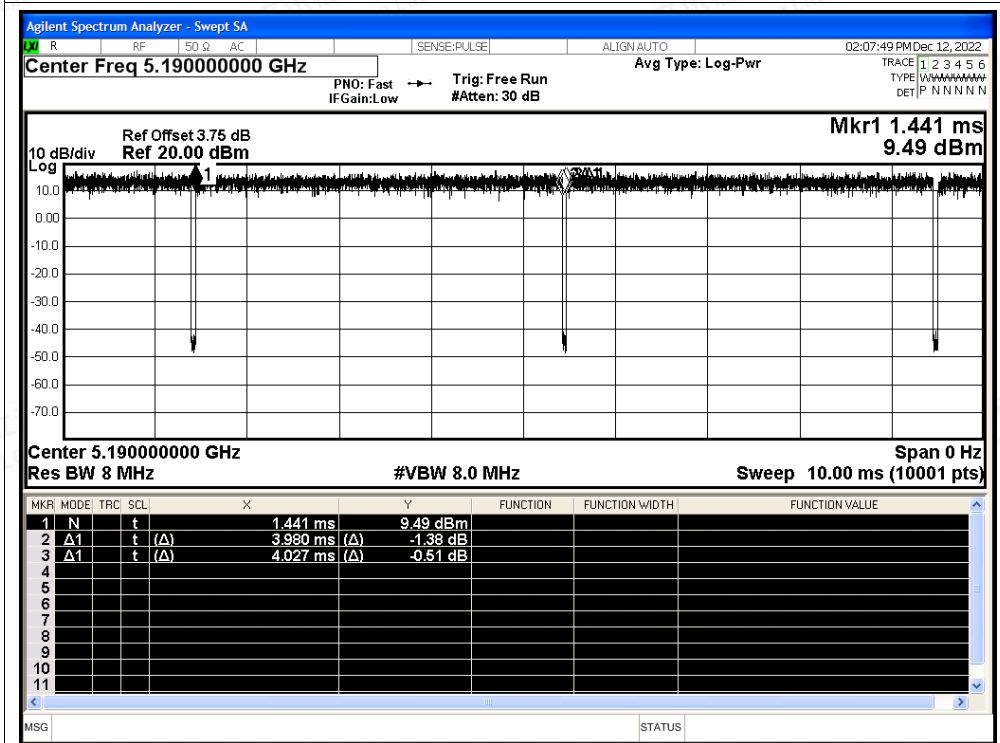


Duty Cycle NVNT n20 5240MHz Ant1

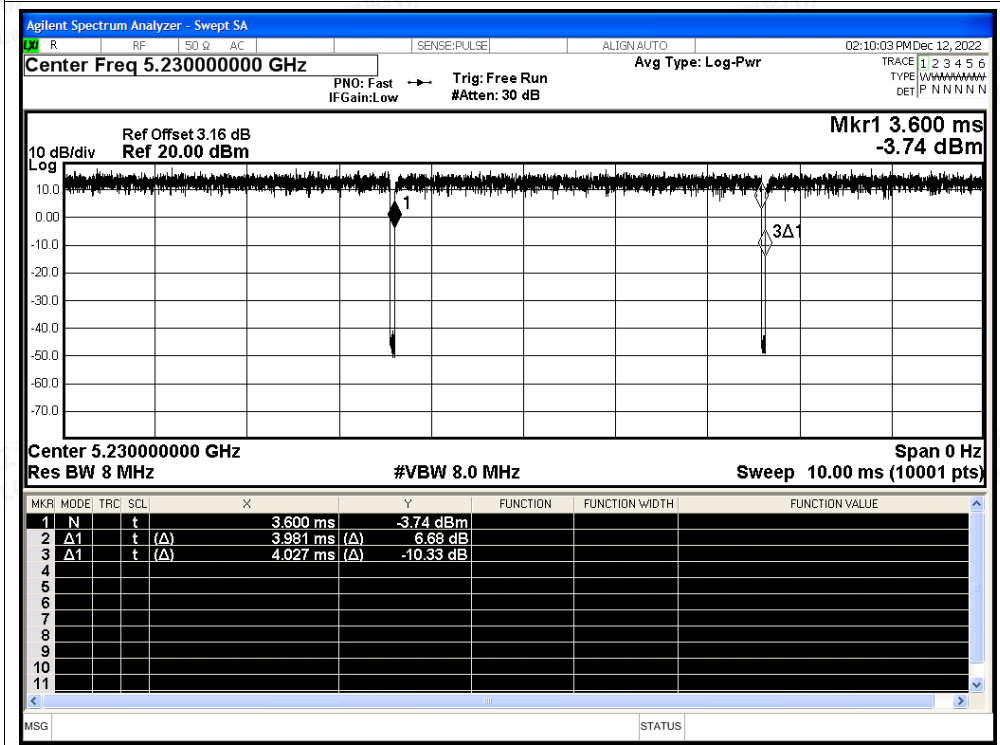




Duty Cycle NVNT n40 5190MHz Ant1

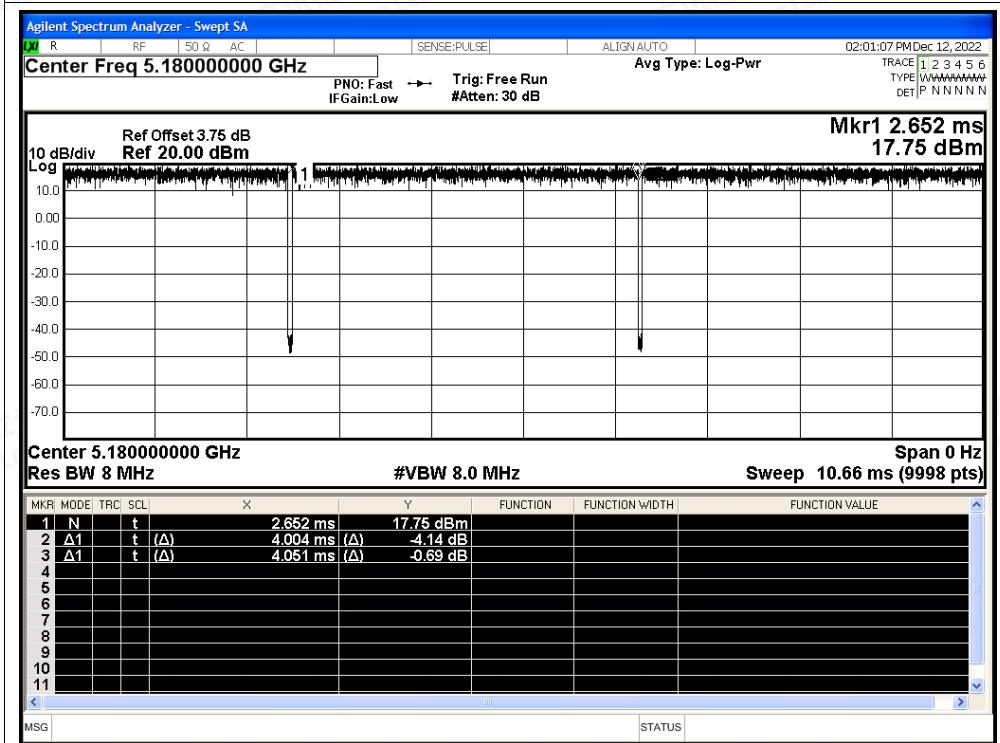


Duty Cycle NVNT n40 5230MHz Ant1

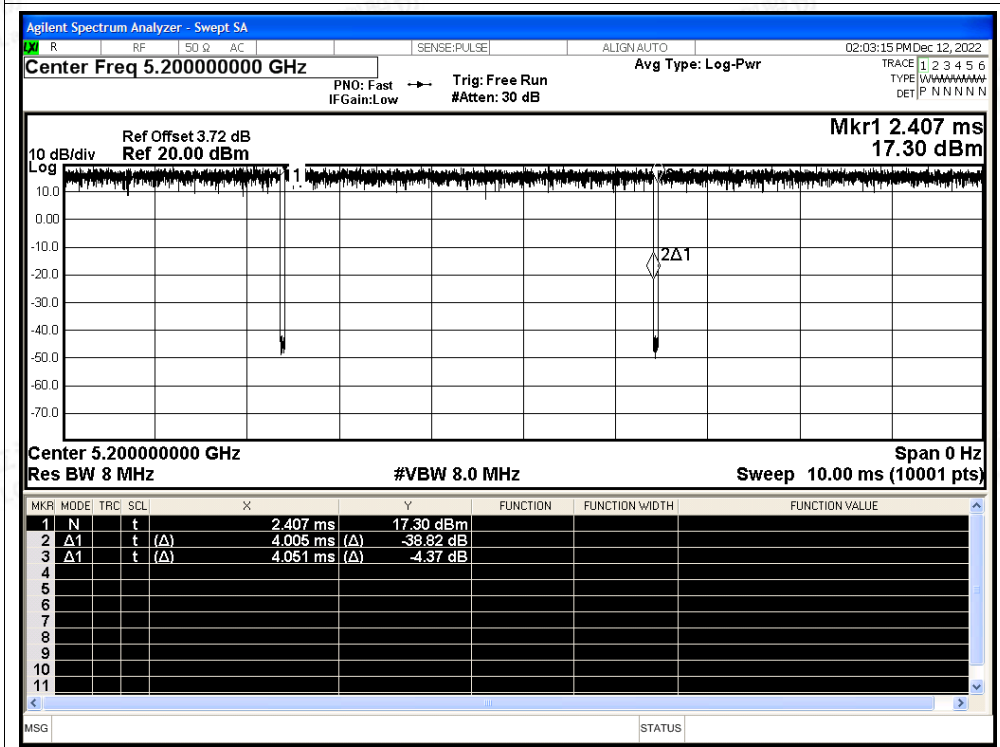




Duty Cycle NVNT ac20 5180MHz Ant1

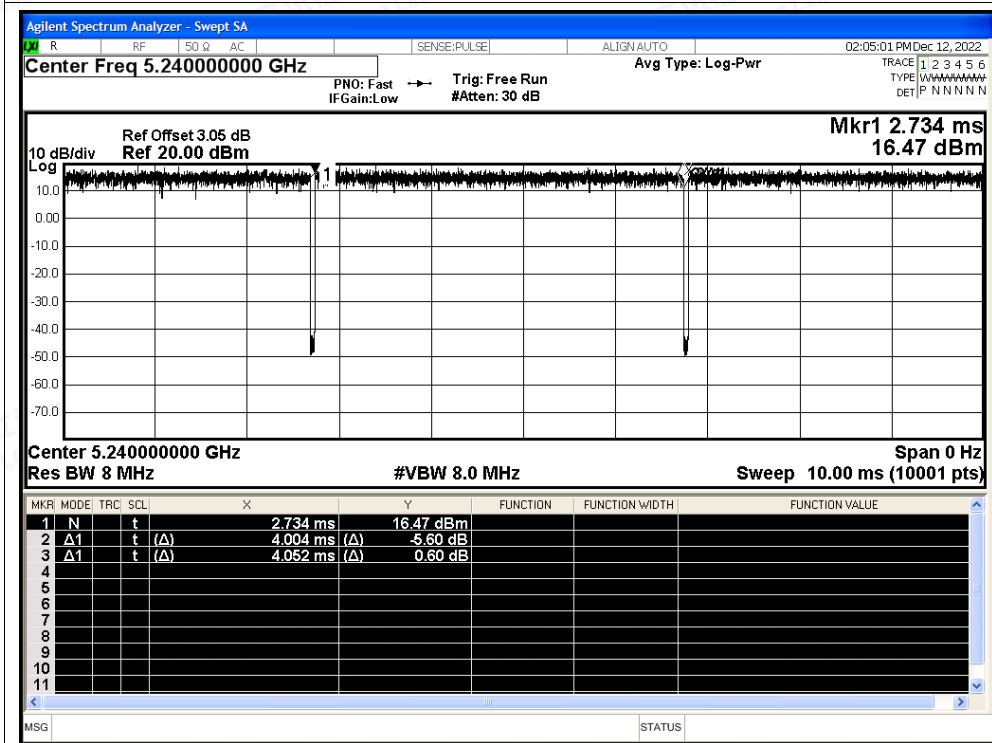


Duty Cycle NVNT ac20 5200MHz Ant1

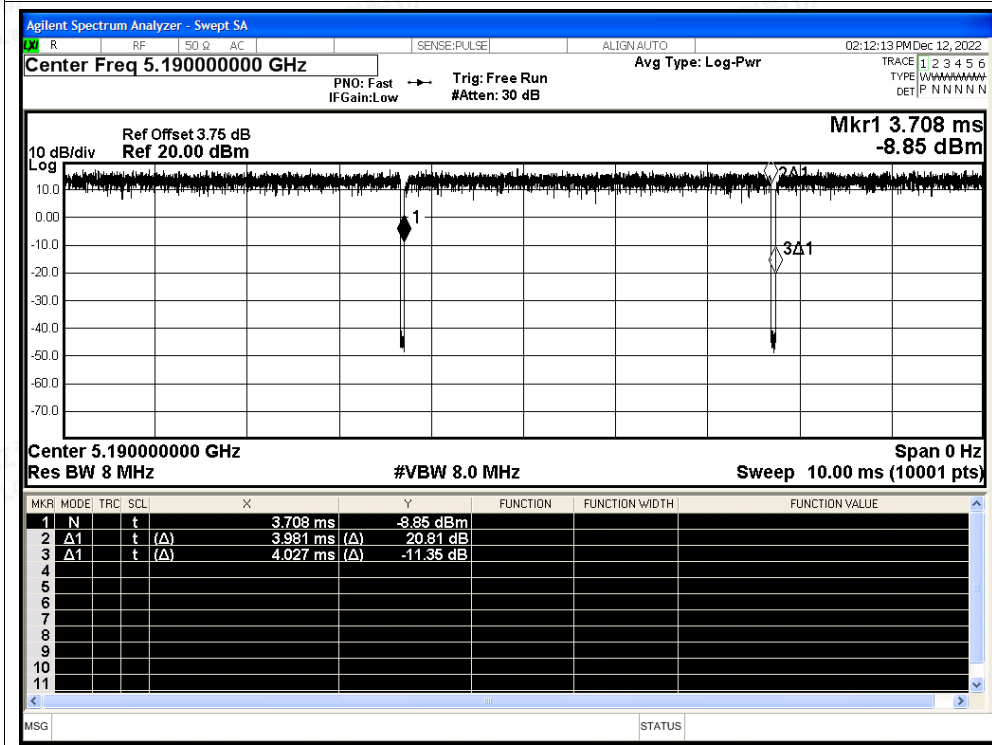




Duty Cycle NVNT ac20 5240MHz Ant1

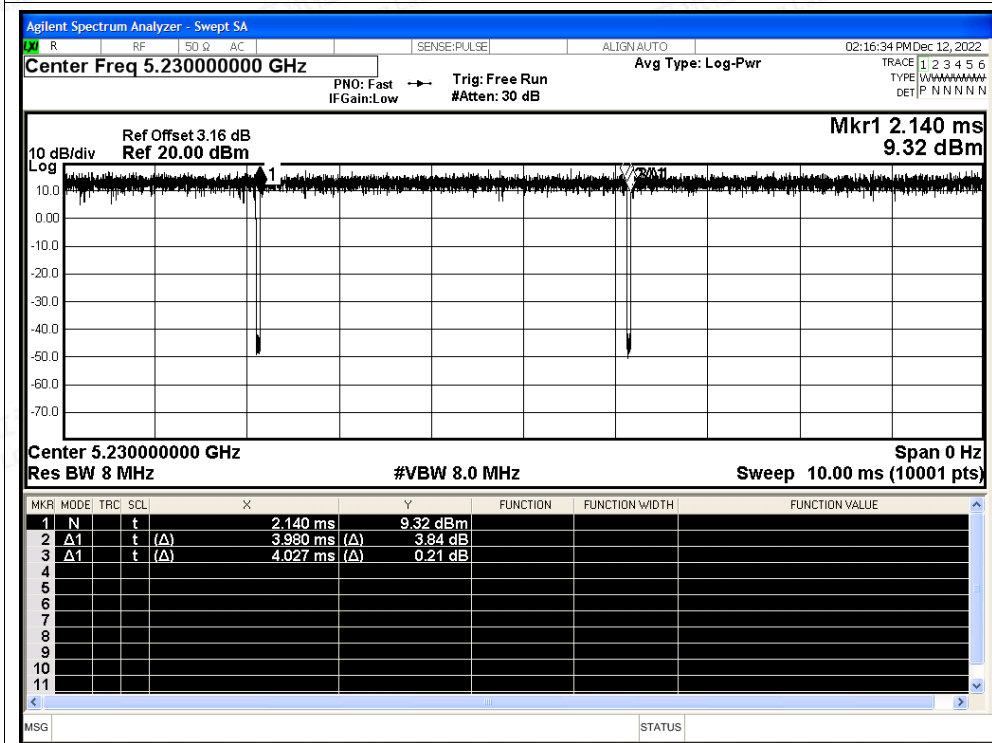


Duty Cycle NVNT ac40 5190MHz Ant1





Duty Cycle NVNT ac40 5230MHz Ant1



Duty Cycle NVNT ac80 5210MHz Ant1

