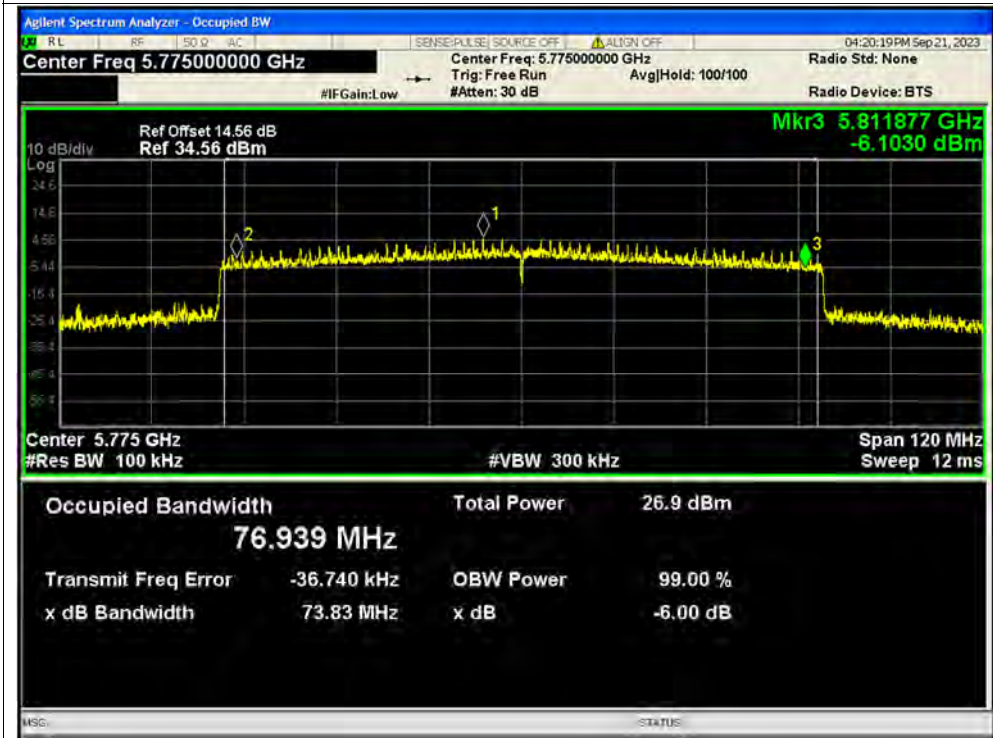
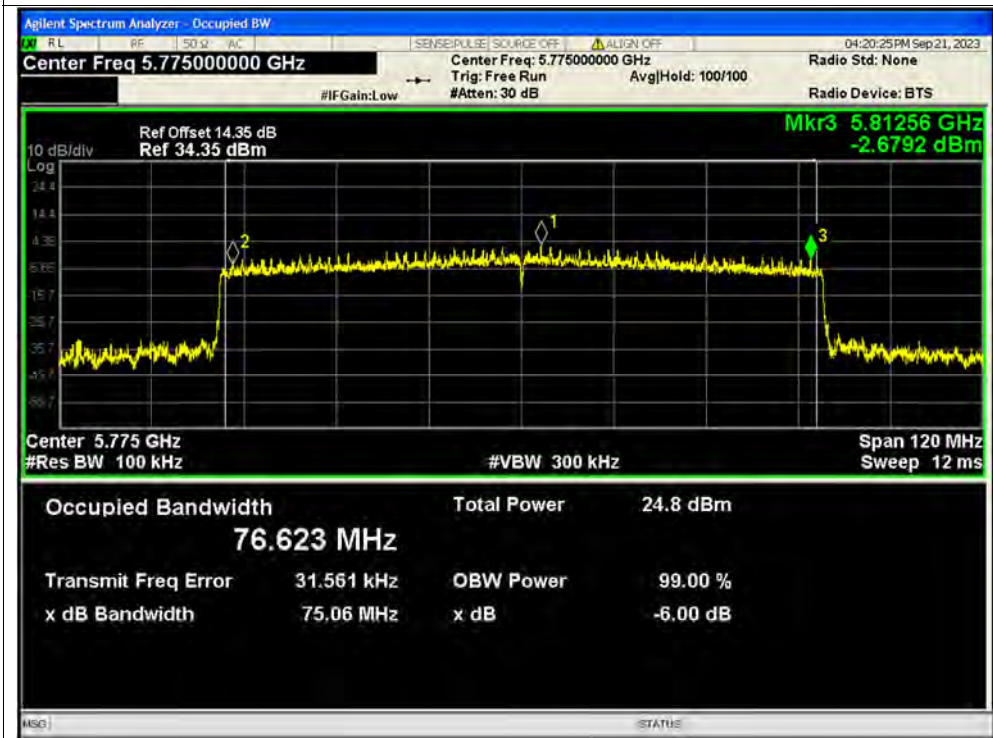




-6dB Bandwidth NVNT ax80 5775MHz Ant1



-6dB Bandwidth NVNT ax80 5775MHz Ant2





**A.4. Peak Power Spectral Density**

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total Conducted PSD (dBm) | Limit Conducted (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------------|------------------|---------------------------|-----------------------|---------|
| NVNT      | a    | 5180            | Ant1    | 8.22                | 0.18             | 8.4                       | 17                    | Pass    |
| NVNT      | a    | 5180            | Ant2    | 5.61                | 0.18             | 5.79                      | 17                    | Pass    |
| NVNT      | a    | 5220            | Ant1    | 8.85                | 0.18             | 9.03                      | 17                    | Pass    |
| NVNT      | a    | 5220            | Ant2    | 5.64                | 0.18             | 5.82                      | 17                    | Pass    |
| NVNT      | a    | 5240            | Ant1    | 8.67                | 0.18             | 8.85                      | 17                    | Pass    |
| NVNT      | a    | 5240            | Ant2    | 5.05                | 0.18             | 5.23                      | 17                    | Pass    |
| NVNT      | a    | 5745            | Ant1    | 8.29                | 0.18             | 8.47                      | 30                    | Pass    |
| NVNT      | a    | 5745            | Ant2    | 5.57                | 0.18             | 5.75                      | 30                    | Pass    |
| NVNT      | a    | 5785            | Ant1    | 8.12                | 0.18             | 8.3                       | 30                    | Pass    |
| NVNT      | a    | 5785            | Ant2    | 6.23                | 0.18             | 6.41                      | 30                    | Pass    |
| NVNT      | a    | 5825            | Ant1    | 7.75                | 0.18             | 7.93                      | 30                    | Pass    |
| NVNT      | a    | 5825            | Ant2    | 6.78                | 0.18             | 6.96                      | 30                    | Pass    |
| NVNT      | n20  | 5180            | Ant1    | 7.46                | 0.19             | 7.65                      | 17                    | Pass    |
| NVNT      | n20  | 5180            | Ant2    | 5.26                | 0.19             | 5.45                      | 17                    | Pass    |
| NVNT      | n20  | 5180            | Ant1    | 7.7                 | 0.19             | 7.89                      | 17                    | Pass    |
| NVNT      | n20  | 5180            | Ant2    | 5.37                | 0.19             | 5.56                      | 17                    | Pass    |
| NVNT      | n20  | 5180            | Sum     | NaN                 | NaN              | 9.89                      | 15.28                 | Pass    |
| NVNT      | n20  | 5220            | Ant1    | 8.06                | 0.19             | 8.25                      | 17                    | Pass    |
| NVNT      | n20  | 5220            | Ant2    | 5.53                | 0.19             | 5.72                      | 17                    | Pass    |
| NVNT      | n20  | 5220            | Ant1    | 7.59                | 0.19             | 7.78                      | 17                    | Pass    |
| NVNT      | n20  | 5220            | Ant2    | 4.6                 | 0.19             | 4.79                      | 17                    | Pass    |
| NVNT      | n20  | 5220            | Sum     | NaN                 | NaN              | 9.55                      | 15.28                 | Pass    |
| NVNT      | n20  | 5240            | Ant1    | 8.01                | 0.19             | 8.2                       | 17                    | Pass    |
| NVNT      | n20  | 5240            | Ant2    | 5.32                | 0.19             | 5.51                      | 17                    | Pass    |
| NVNT      | n20  | 5240            | Ant1    | 7.31                | 0.19             | 7.5                       | 17                    | Pass    |
| NVNT      | n20  | 5240            | Ant2    | 4.29                | 0.19             | 4.48                      | 17                    | Pass    |
| NVNT      | n20  | 5240            | Sum     | NaN                 | NaN              | 9.26                      | 15.28                 | Pass    |
| NVNT      | n20  | 5745            | Ant1    | 7.17                | 0.19             | 7.36                      | 30                    | Pass    |
| NVNT      | n20  | 5745            | Ant2    | 5.67                | 0.19             | 5.86                      | 30                    | Pass    |
| NVNT      | n20  | 5745            | Ant1    | 6.22                | 0.19             | 6.41                      | 30                    | Pass    |
| NVNT      | n20  | 5745            | Ant2    | 4.16                | 0.19             | 4.35                      | 30                    | Pass    |
| NVNT      | n20  | 5745            | Sum     | NaN                 | NaN              | 8.51                      | 28.28                 | Pass    |
| NVNT      | n20  | 5785            | Ant1    | 7.19                | 0.19             | 7.38                      | 30                    | Pass    |
| NVNT      | n20  | 5785            | Ant2    | 5.77                | 0.19             | 5.96                      | 30                    | Pass    |



|      |      |      |      |      |      |      |       |      |
|------|------|------|------|------|------|------|-------|------|
| NVNT | n20  | 5785 | Ant1 | 5.93 | 0.19 | 6.12 | 30    | Pass |
| NVNT | n20  | 5785 | Ant2 | 4.14 | 0.19 | 4.33 | 30    | Pass |
| NVNT | n20  | 5785 | Sum  | NaN  | NaN  | 8.33 | 28.28 | Pass |
| NVNT | n20  | 5825 | Ant1 | 7.1  | 0.19 | 7.29 | 30    | Pass |
| NVNT | n20  | 5825 | Ant2 | 6.78 | 0.19 | 6.97 | 30    | Pass |
| NVNT | n20  | 5825 | Ant1 | 5.94 | 0.19 | 6.13 | 30    | Pass |
| NVNT | n20  | 5825 | Ant2 | 5.05 | 0.19 | 5.24 | 30    | Pass |
| NVNT | n20  | 5825 | Sum  | NaN  | NaN  | 8.72 | 28.28 | Pass |
| NVNT | n40  | 5190 | Ant1 | 5.04 | 0.37 | 5.41 | 17    | Pass |
| NVNT | n40  | 5190 | Ant2 | 2.29 | 0.37 | 2.66 | 17    | Pass |
| NVNT | n40  | 5190 | Ant1 | 4.36 | 0.36 | 4.72 | 17    | Pass |
| NVNT | n40  | 5190 | Ant2 | 2.25 | 0.36 | 2.61 | 17    | Pass |
| NVNT | n40  | 5190 | Sum  | NaN  | NaN  | 6.8  | 15.28 | Pass |
| NVNT | n40  | 5230 | Ant1 | 5.61 | 0.37 | 5.98 | 17    | Pass |
| NVNT | n40  | 5230 | Ant2 | 1.85 | 0.37 | 2.22 | 17    | Pass |
| NVNT | n40  | 5230 | Ant1 | 4.64 | 0.36 | 5    | 17    | Pass |
| NVNT | n40  | 5230 | Ant2 | 1.72 | 0.36 | 2.08 | 17    | Pass |
| NVNT | n40  | 5230 | Sum  | NaN  | NaN  | 6.79 | 15.28 | Pass |
| NVNT | n40  | 5755 | Ant1 | 5.02 | 0.37 | 5.39 | 30    | Pass |
| NVNT | n40  | 5755 | Ant2 | 2.16 | 0.37 | 2.53 | 30    | Pass |
| NVNT | n40  | 5755 | Ant1 | 3.85 | 0.37 | 4.22 | 30    | Pass |
| NVNT | n40  | 5755 | Ant2 | 1.6  | 0.37 | 1.97 | 30    | Pass |
| NVNT | n40  | 5755 | Sum  | NaN  | NaN  | 6.25 | 28.28 | Pass |
| NVNT | n40  | 5795 | Ant1 | 4.72 | 0.37 | 5.09 | 30    | Pass |
| NVNT | n40  | 5795 | Ant2 | 2.55 | 0.37 | 2.92 | 30    | Pass |
| NVNT | n40  | 5795 | Ant1 | 3.65 | 0.37 | 4.02 | 30    | Pass |
| NVNT | n40  | 5795 | Ant2 | 1.61 | 0.37 | 1.98 | 30    | Pass |
| NVNT | n40  | 5795 | Sum  | NaN  | NaN  | 6.13 | 28.28 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 7.3  | 0.35 | 7.65 | 17    | Pass |
| NVNT | ac20 | 5180 | Ant2 | 5.69 | 0.19 | 5.88 | 17    | Pass |
| NVNT | ac20 | 5180 | Ant1 | 6.78 | 0.35 | 7.13 | 17    | Pass |
| NVNT | ac20 | 5180 | Ant2 | 3.93 | 0.35 | 4.28 | 17    | Pass |
| NVNT | ac20 | 5180 | Sum  | NaN  | NaN  | 8.94 | 15.28 | Pass |
| NVNT | ac20 | 5220 | Ant1 | 7.68 | 0.35 | 8.03 | 17    | Pass |
| NVNT | ac20 | 5220 | Ant2 | 5.38 | 0.19 | 5.57 | 17    | Pass |
| NVNT | ac20 | 5220 | Ant1 | 7.48 | 0.35 | 7.83 | 17    | Pass |
| NVNT | ac20 | 5220 | Ant2 | 4.01 | 0.35 | 4.36 | 17    | Pass |
| NVNT | ac20 | 5220 | Sum  | NaN  | NaN  | 9.44 | 15.28 | Pass |



|      |      |      |      |      |      |      |       |      |
|------|------|------|------|------|------|------|-------|------|
| NVNT | ac20 | 5240 | Ant1 | 7.59 | 0.35 | 7.94 | 17    | Pass |
| NVNT | ac20 | 5240 | Ant2 | 4.92 | 0.19 | 5.11 | 17    | Pass |
| NVNT | ac20 | 5240 | Ant1 | 7.32 | 0.35 | 7.67 | 17    | Pass |
| NVNT | ac20 | 5240 | Ant2 | 3.61 | 0.35 | 3.96 | 17    | Pass |
| NVNT | ac20 | 5240 | Sum  | NaN  | NaN  | 9.21 | 15.28 | Pass |
| NVNT | ac20 | 5745 | Ant1 | 6.67 | 0.35 | 7.02 | 30    | Pass |
| NVNT | ac20 | 5745 | Ant2 | 5.5  | 0.19 | 5.69 | 30    | Pass |
| NVNT | ac20 | 5745 | Ant1 | 6.25 | 0.35 | 6.6  | 30    | Pass |
| NVNT | ac20 | 5745 | Ant2 | 4.12 | 0.35 | 4.47 | 30    | Pass |
| NVNT | ac20 | 5745 | Sum  | NaN  | NaN  | 8.68 | 28.28 | Pass |
| NVNT | ac20 | 5785 | Ant1 | 6.48 | 0.35 | 6.83 | 30    | Pass |
| NVNT | ac20 | 5785 | Ant2 | 5.62 | 0.19 | 5.81 | 30    | Pass |
| NVNT | ac20 | 5785 | Ant1 | 6.05 | 0.35 | 6.4  | 30    | Pass |
| NVNT | ac20 | 5785 | Ant2 | 4.06 | 0.35 | 4.41 | 30    | Pass |
| NVNT | ac20 | 5785 | Sum  | NaN  | NaN  | 8.53 | 28.28 | Pass |
| NVNT | ac20 | 5825 | Ant1 | 6.41 | 0.35 | 6.76 | 30    | Pass |
| NVNT | ac20 | 5825 | Ant2 | 6.81 | 0.19 | 7    | 30    | Pass |
| NVNT | ac20 | 5825 | Ant1 | 6.02 | 0.35 | 6.37 | 30    | Pass |
| NVNT | ac20 | 5825 | Ant2 | 4.93 | 0.35 | 5.28 | 30    | Pass |
| NVNT | ac20 | 5825 | Sum  | NaN  | NaN  | 8.86 | 28.28 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 4.98 | 0.35 | 5.33 | 17    | Pass |
| NVNT | ac40 | 5190 | Ant2 | 2.05 | 0.66 | 2.71 | 17    | Pass |
| NVNT | ac40 | 5190 | Ant1 | 3.86 | 0.66 | 4.52 | 17    | Pass |
| NVNT | ac40 | 5190 | Ant2 | 0.96 | 0.66 | 1.62 | 17    | Pass |
| NVNT | ac40 | 5190 | Sum  | NaN  | NaN  | 6.31 | 15.28 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 5.4  | 0.37 | 5.77 | 17    | Pass |
| NVNT | ac40 | 5230 | Ant2 | 1.7  | 0.66 | 2.36 | 17    | Pass |
| NVNT | ac40 | 5230 | Ant1 | 4.14 | 0.66 | 4.8  | 17    | Pass |
| NVNT | ac40 | 5230 | Ant2 | 0.8  | 0.66 | 1.46 | 17    | Pass |
| NVNT | ac40 | 5230 | Sum  | NaN  | NaN  | 6.45 | 15.28 | Pass |
| NVNT | ac40 | 5755 | Ant1 | 4.93 | 0.37 | 5.3  | 30    | Pass |
| NVNT | ac40 | 5755 | Ant2 | 2.09 | 0.66 | 2.75 | 30    | Pass |
| NVNT | ac40 | 5755 | Ant1 | 3.66 | 0.66 | 4.32 | 30    | Pass |
| NVNT | ac40 | 5755 | Ant2 | 1.21 | 0.66 | 1.87 | 30    | Pass |
| NVNT | ac40 | 5755 | Sum  | NaN  | NaN  | 6.27 | 28.28 | Pass |
| NVNT | ac40 | 5795 | Ant1 | 4.56 | 0.37 | 4.93 | 30    | Pass |
| NVNT | ac40 | 5795 | Ant2 | 1.89 | 0.66 | 2.55 | 30    | Pass |
| NVNT | ac40 | 5795 | Ant1 | 3.25 | 0.66 | 3.91 | 30    | Pass |



|      |      |      |      |       |      |       |       |      |
|------|------|------|------|-------|------|-------|-------|------|
| NVNT | ac40 | 5795 | Ant2 | 1.12  | 0.66 | 1.78  | 30    | Pass |
| NVNT | ac40 | 5795 | Sum  | NaN   | NaN  | 5.99  | 28.28 | Pass |
| NVNT | ac80 | 5210 | Ant1 | -1.34 | 4.52 | 3.18  | 17    | Pass |
| NVNT | ac80 | 5210 | Ant2 | -3.94 | 4.53 | 0.59  | 17    | Pass |
| NVNT | ac80 | 5210 | Ant1 | 1.72  | 0.69 | 2.41  | 17    | Pass |
| NVNT | ac80 | 5210 | Ant2 | -0.8  | 0.69 | -0.11 | 17    | Pass |
| NVNT | ac80 | 5210 | Sum  | NaN   | NaN  | 4.35  | 15.28 | Pass |
| NVNT | ac80 | 5775 | Ant1 | -1.18 | 4.68 | 3.5   | 30    | Pass |
| NVNT | ac80 | 5775 | Ant2 | -3.89 | 4.52 | 0.63  | 30    | Pass |
| NVNT | ac80 | 5775 | Ant1 | 1.64  | 0.72 | 2.36  | 30    | Pass |
| NVNT | ac80 | 5775 | Ant2 | -1.08 | 0.72 | -0.36 | 30    | Pass |
| NVNT | ac80 | 5775 | Sum  | NaN   | NaN  | 4.22  | 28.28 | Pass |
| NVNT | ax20 | 5180 | Ant1 | 6.66  | 0.44 | 7.1   | 17    | Pass |
| NVNT | ax20 | 5180 | Ant2 | 5.15  | 0.24 | 5.39  | 17    | Pass |
| NVNT | ax20 | 5180 | Ant1 | 6.35  | 0.43 | 6.78  | 17    | Pass |
| NVNT | ax20 | 5180 | Ant2 | 3.58  | 0.43 | 4.01  | 17    | Pass |
| NVNT | ax20 | 5180 | Sum  | NaN   | NaN  | 8.62  | 15.28 | Pass |
| NVNT | ax20 | 5220 | Ant1 | 6.94  | 0.44 | 7.38  | 17    | Pass |
| NVNT | ax20 | 5220 | Ant2 | 5.18  | 0.24 | 5.42  | 17    | Pass |
| NVNT | ax20 | 5220 | Ant1 | 6.72  | 0.43 | 7.15  | 17    | Pass |
| NVNT | ax20 | 5220 | Ant2 | 3.34  | 0.43 | 3.77  | 17    | Pass |
| NVNT | ax20 | 5220 | Sum  | NaN   | NaN  | 8.79  | 15.28 | Pass |
| NVNT | ax20 | 5240 | Ant1 | 7.14  | 0.44 | 7.58  | 17    | Pass |
| NVNT | ax20 | 5240 | Ant2 | 4.75  | 0.24 | 4.99  | 17    | Pass |
| NVNT | ax20 | 5240 | Ant1 | 7.06  | 0.43 | 7.49  | 17    | Pass |
| NVNT | ax20 | 5240 | Ant2 | 3.31  | 0.43 | 3.74  | 17    | Pass |
| NVNT | ax20 | 5240 | Sum  | NaN   | NaN  | 9.02  | 15.28 | Pass |
| NVNT | ax20 | 5745 | Ant1 | 6.35  | 0.43 | 6.78  | 30    | Pass |
| NVNT | ax20 | 5745 | Ant2 | 5.33  | 0.24 | 5.57  | 30    | Pass |
| NVNT | ax20 | 5745 | Ant1 | 5.86  | 0.44 | 6.3   | 30    | Pass |
| NVNT | ax20 | 5745 | Ant2 | 3.64  | 0.44 | 4.08  | 30    | Pass |
| NVNT | ax20 | 5745 | Sum  | NaN   | NaN  | 8.34  | 28.28 | Pass |
| NVNT | ax20 | 5785 | Ant1 | 6.03  | 0.44 | 6.47  | 30    | Pass |
| NVNT | ax20 | 5785 | Ant2 | 5.29  | 0.24 | 5.53  | 30    | Pass |
| NVNT | ax20 | 5785 | Ant1 | 5.91  | 0.43 | 6.34  | 30    | Pass |
| NVNT | ax20 | 5785 | Ant2 | 4     | 0.43 | 4.43  | 30    | Pass |
| NVNT | ax20 | 5785 | Sum  | NaN   | NaN  | 8.5   | 28.28 | Pass |
| NVNT | ax20 | 5825 | Ant1 | 6     | 0.44 | 6.44  | 30    | Pass |



|      |      |      |      |       |      |       |       |      |
|------|------|------|------|-------|------|-------|-------|------|
| NVNT | ax20 | 5825 | Ant2 | 6.4   | 0.24 | 6.64  | 30    | Pass |
| NVNT | ax20 | 5825 | Ant1 | 5.95  | 0.44 | 6.39  | 30    | Pass |
| NVNT | ax20 | 5825 | Ant2 | 4.72  | 0.44 | 5.17  | 30    | Pass |
| NVNT | ax20 | 5825 | Sum  | NaN   | NaN  | 8.83  | 28.28 | Pass |
| NVNT | ax40 | 5190 | Ant1 | 4.73  | 0.43 | 5.16  | 17    | Pass |
| NVNT | ax40 | 5190 | Ant2 | 1.37  | 0.77 | 2.14  | 17    | Pass |
| NVNT | ax40 | 5190 | Ant1 | 3.57  | 0.77 | 4.34  | 17    | Pass |
| NVNT | ax40 | 5190 | Ant2 | 1.03  | 0.77 | 1.8   | 17    | Pass |
| NVNT | ax40 | 5190 | Sum  | NaN   | NaN  | 6.26  | 15.28 | Pass |
| NVNT | ax40 | 5230 | Ant1 | 5.13  | 0.44 | 5.57  | 17    | Pass |
| NVNT | ax40 | 5230 | Ant2 | 1.2   | 0.77 | 1.97  | 17    | Pass |
| NVNT | ax40 | 5230 | Ant1 | 3.99  | 0.77 | 4.76  | 17    | Pass |
| NVNT | ax40 | 5230 | Ant2 | 0.78  | 0.77 | 1.55  | 17    | Pass |
| NVNT | ax40 | 5230 | Sum  | NaN   | NaN  | 6.45  | 15.28 | Pass |
| NVNT | ax40 | 5755 | Ant1 | 4.63  | 0.44 | 5.07  | 30    | Pass |
| NVNT | ax40 | 5755 | Ant2 | 1.79  | 0.77 | 2.56  | 30    | Pass |
| NVNT | ax40 | 5755 | Ant1 | 3.28  | 0.76 | 4.04  | 30    | Pass |
| NVNT | ax40 | 5755 | Ant2 | 1.34  | 0.76 | 2.1   | 30    | Pass |
| NVNT | ax40 | 5755 | Sum  | NaN   | NaN  | 6.19  | 28.28 | Pass |
| NVNT | ax40 | 5795 | Ant1 | 4.15  | 0.44 | 4.59  | 30    | Pass |
| NVNT | ax40 | 5795 | Ant2 | 1.26  | 0.76 | 2.02  | 30    | Pass |
| NVNT | ax40 | 5795 | Ant1 | 3.02  | 0.77 | 3.79  | 30    | Pass |
| NVNT | ax40 | 5795 | Ant2 | 1.05  | 0.77 | 1.82  | 30    | Pass |
| NVNT | ax40 | 5795 | Sum  | NaN   | NaN  | 5.92  | 28.28 | Pass |
| NVNT | ax80 | 5210 | Ant1 | -1.74 | 4.75 | 3.01  | 17    | Pass |
| NVNT | ax80 | 5210 | Ant2 | -3.67 | 4.89 | 1.22  | 17    | Pass |
| NVNT | ax80 | 5210 | Ant1 | 0.84  | 0.8  | 1.64  | 17    | Pass |
| NVNT | ax80 | 5210 | Ant2 | -1.65 | 0.8  | -0.85 | 17    | Pass |
| NVNT | ax80 | 5210 | Sum  | NaN   | NaN  | 3.58  | 15.28 | Pass |
| NVNT | ax80 | 5775 | Ant1 | -1.24 | 4.6  | 3.36  | 30    | Pass |
| NVNT | ax80 | 5775 | Ant2 | -3.62 | 4.75 | 1.13  | 30    | Pass |
| NVNT | ax80 | 5775 | Ant1 | 0.44  | 0.77 | 1.21  | 30    | Pass |
| NVNT | ax80 | 5775 | Ant2 | -1.56 | 0.77 | -0.78 | 30    | Pass |
| NVNT | ax80 | 5775 | Sum  | NaN   | NaN  | 3.34  | 28.28 | Pass |

**Note:** Directional gain =  $10\log[(10^{G0/20} + 10^{G1/20})^2/2] = 7.72\text{dBi} > 6\text{dBi}$ , so the power spectral density limit shall be reduced to  $30 - (7.72 - 6) = 28.28\text{dBm}$ .

Test Graphs

PSD NVNT a 5180MHz Ant1



PSD NVNT a 5180MHz Ant2



PSD NVNT a 5220MHz Ant1



PSD NVNT a 5220MHz Ant2





PSD NVNT a 5240MHz Ant1



PSD NVNT a 5240MHz Ant2





PSD NVNT a 5745MHz Ant1



PSD NVNT a 5745MHz Ant2





PSD NVNT a 5785MHz Ant1



PSD NVNT a 5785MHz Ant2



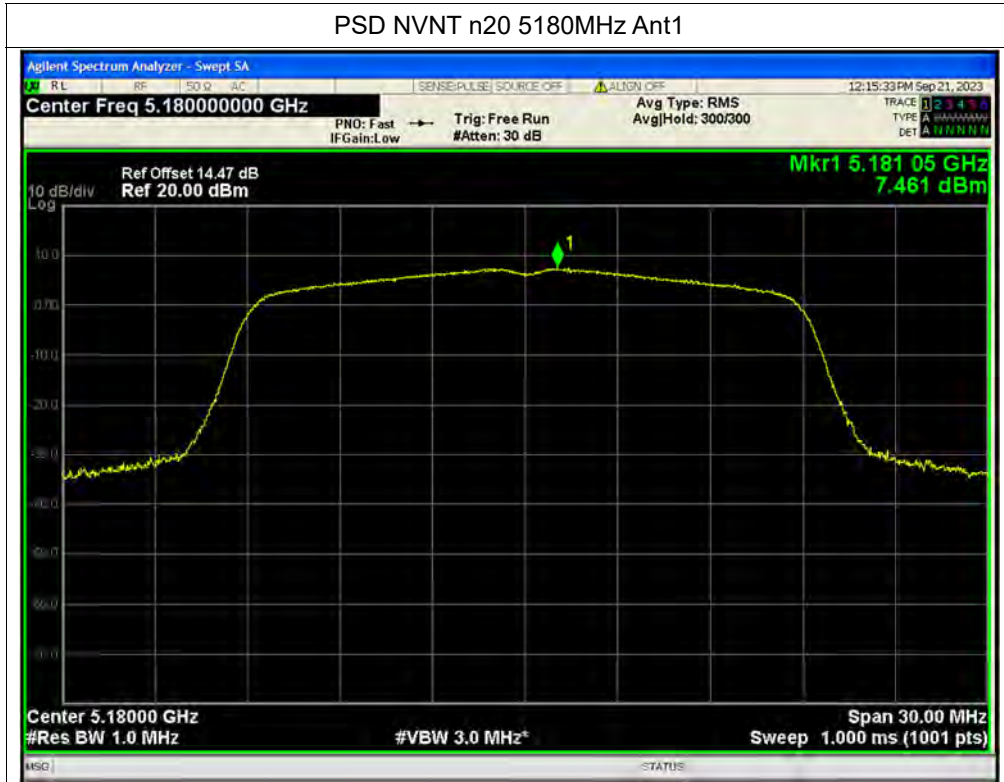
PSD NVNT a 5825MHz Ant1



PSD NVNT a 5825MHz Ant2



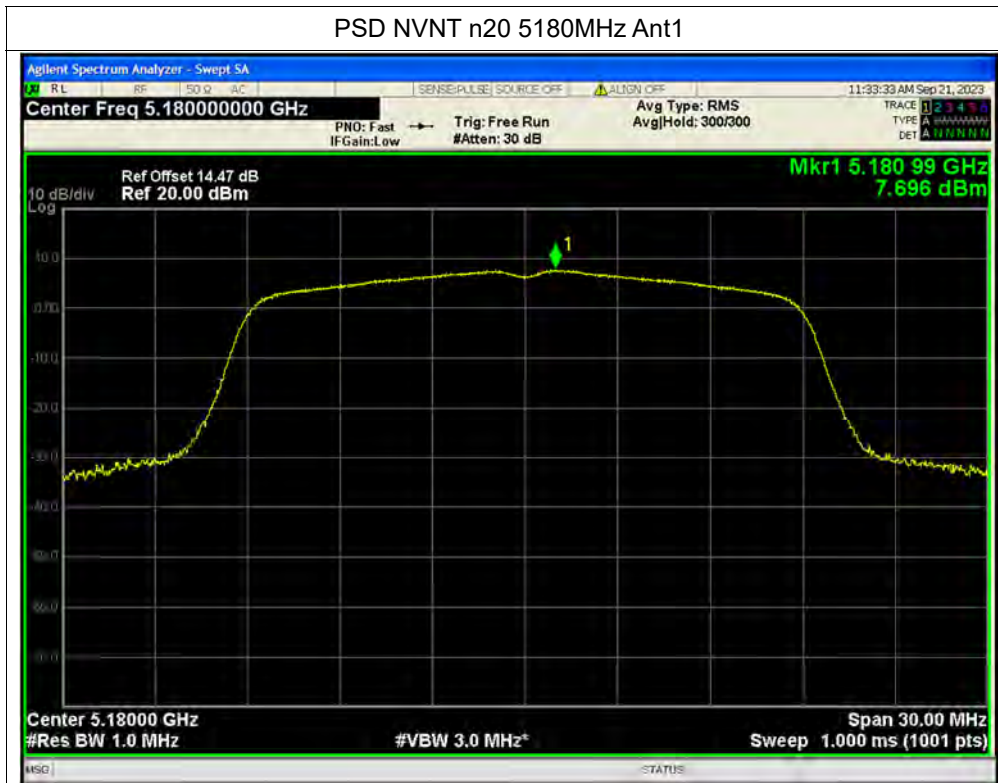
PSD NVNT n20 5180MHz Ant1



PSD NVNT n20 5180MHz Ant2



PSD NVNT n20 5180MHz Ant1

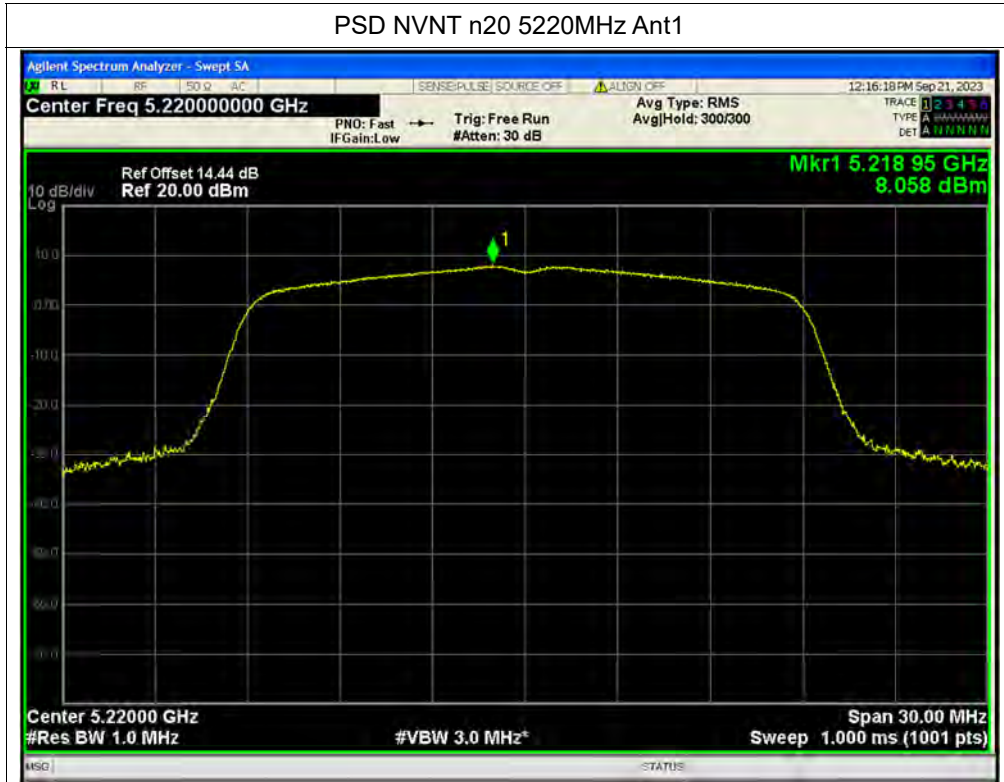


PSD NVNT n20 5180MHz Ant2





PSD NVNT n20 5220MHz Ant1

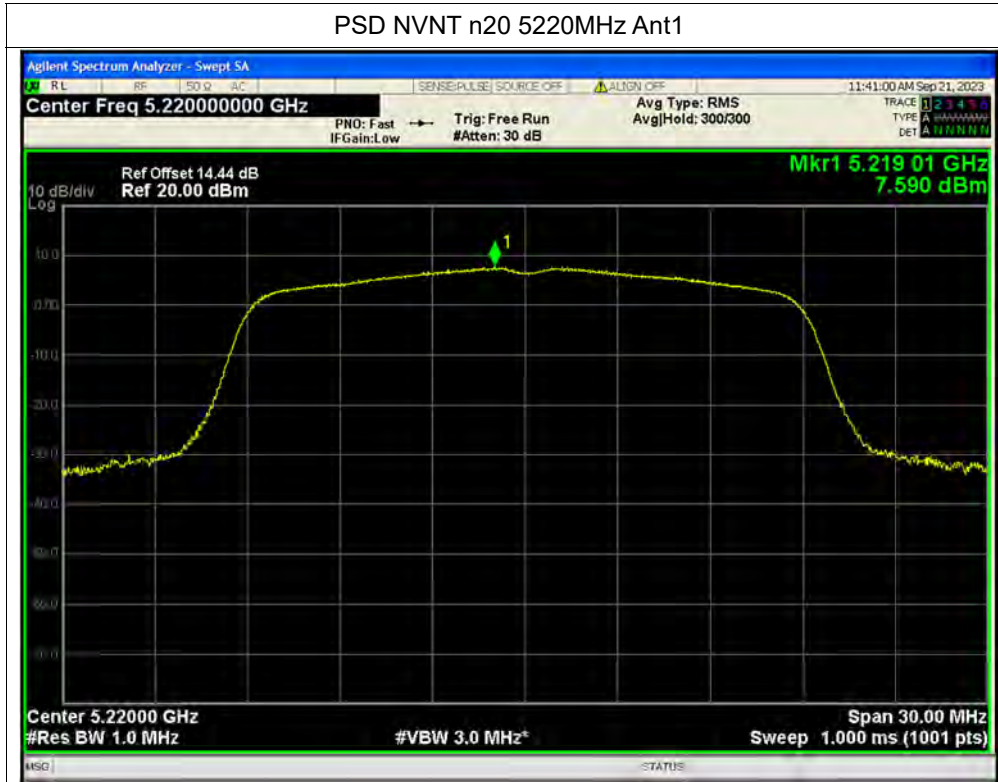


PSD NVNT n20 5220MHz Ant2





PSD NVNT n20 5220MHz Ant1



PSD NVNT n20 5220MHz Ant2







PSD NVNT n20 5240MHz Ant1



PSD NVNT n20 5240MHz Ant2





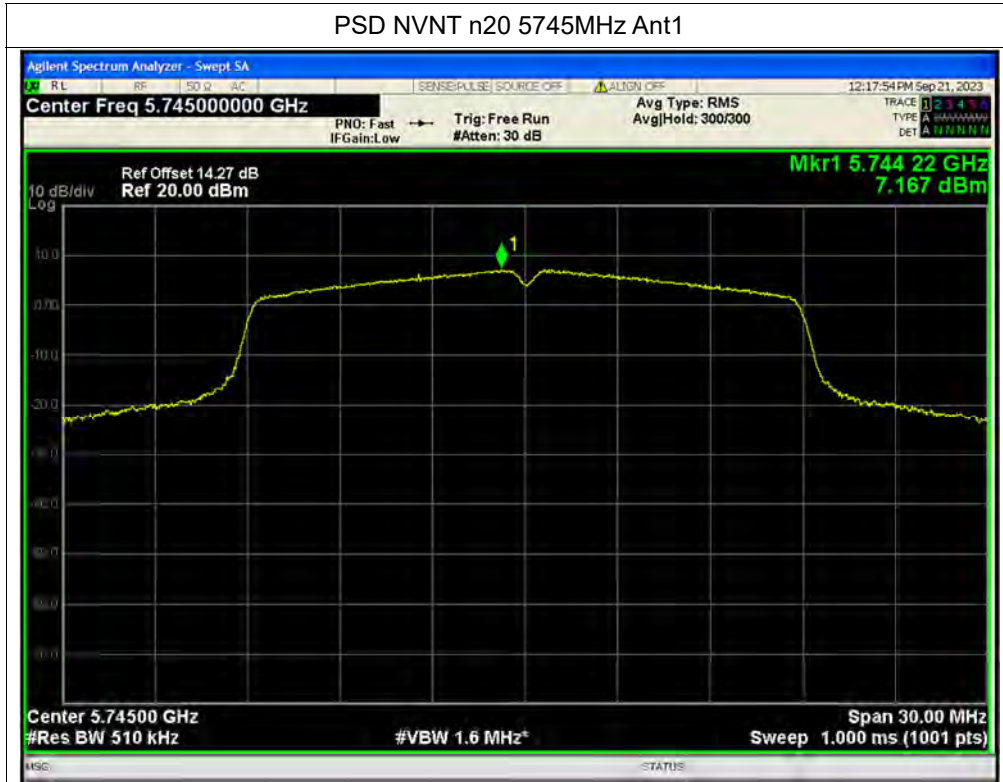
PSD NVNT n20 5240MHz Ant1



PSD NVNT n20 5240MHz Ant2



PSD NVNT n20 5745MHz Ant1

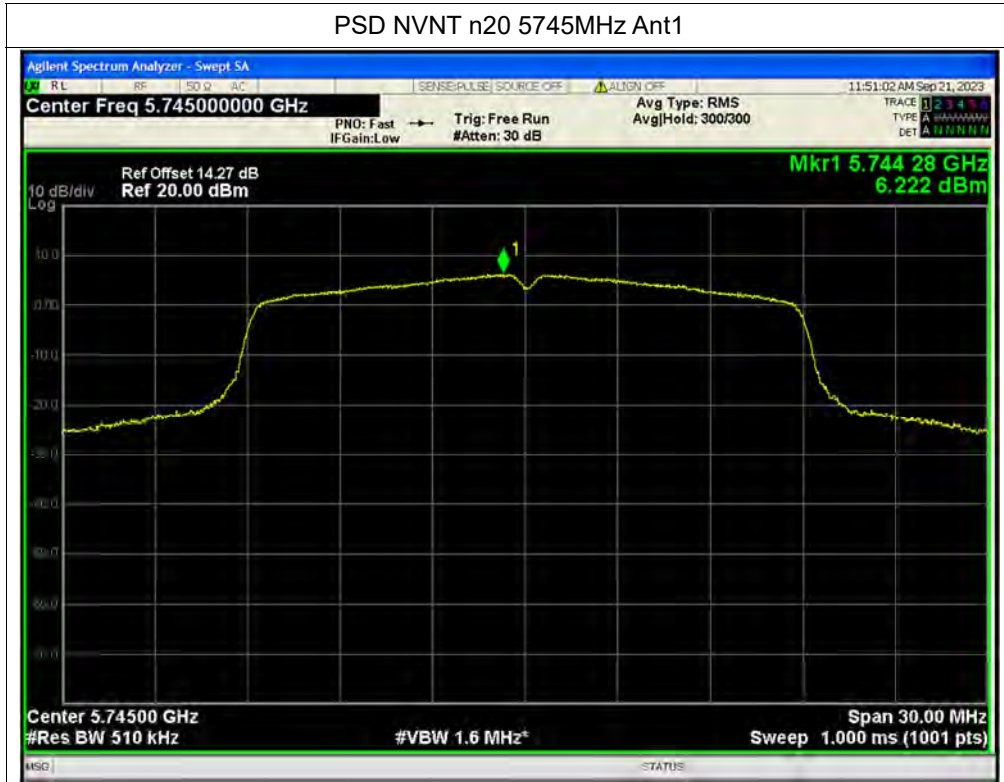


PSD NVNT n20 5745MHz Ant2





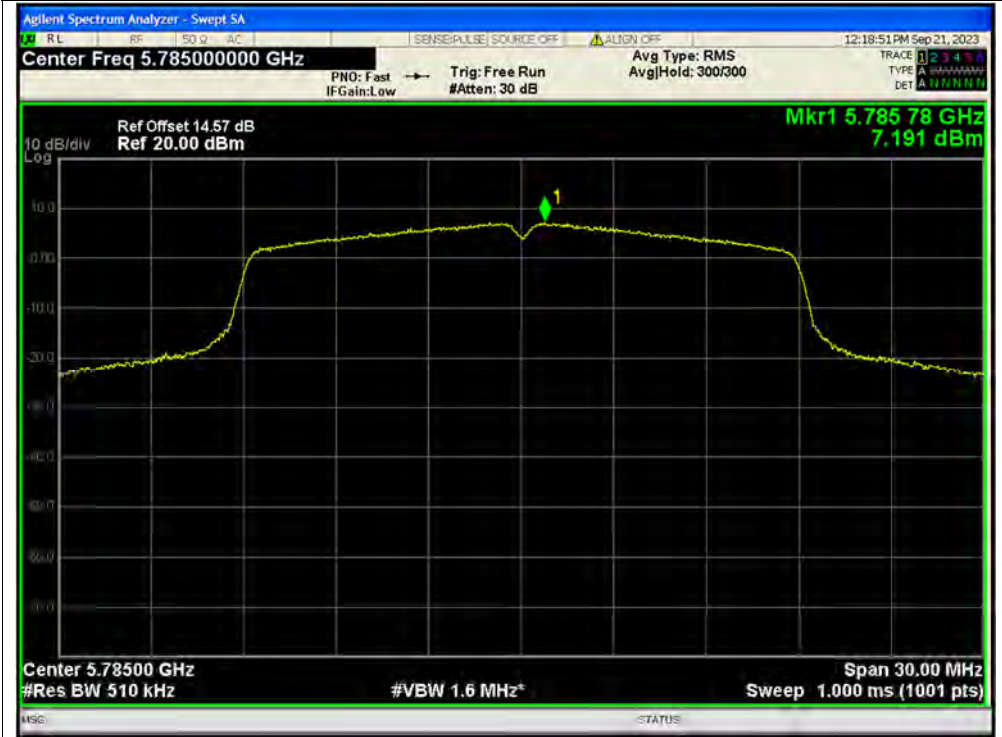
PSD NVNT n20 5745MHz Ant1



PSD NVNT n20 5745MHz Ant2



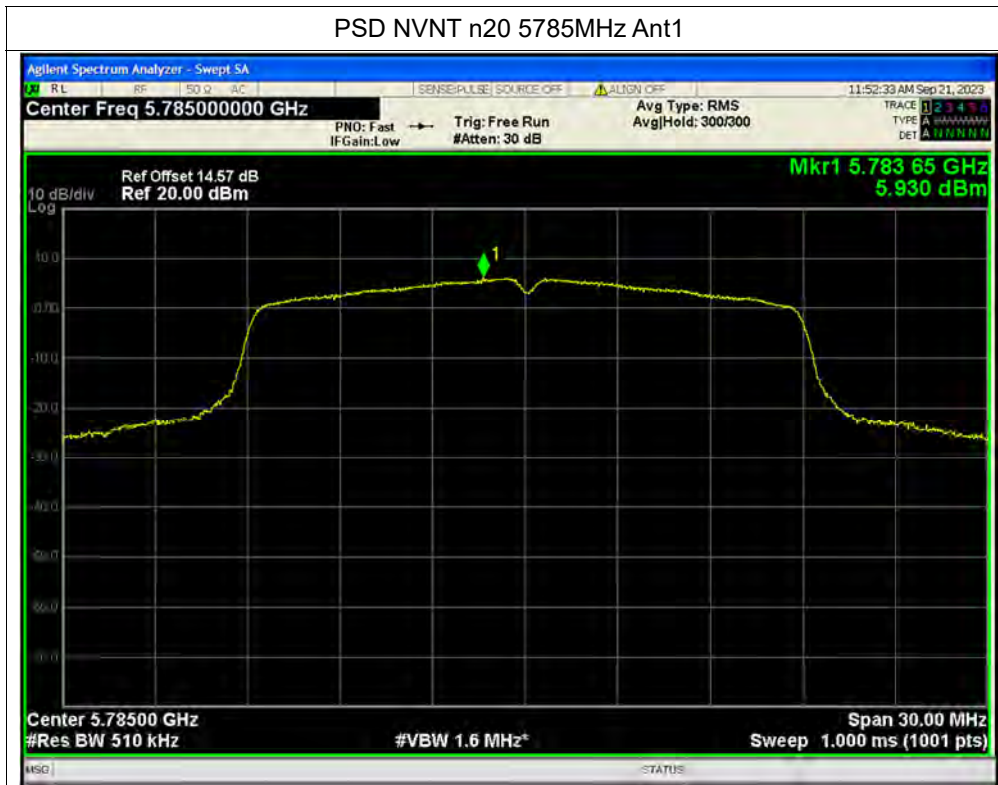
PSD NVNT n20 5785MHz Ant1



PSD NVNT n20 5785MHz Ant2



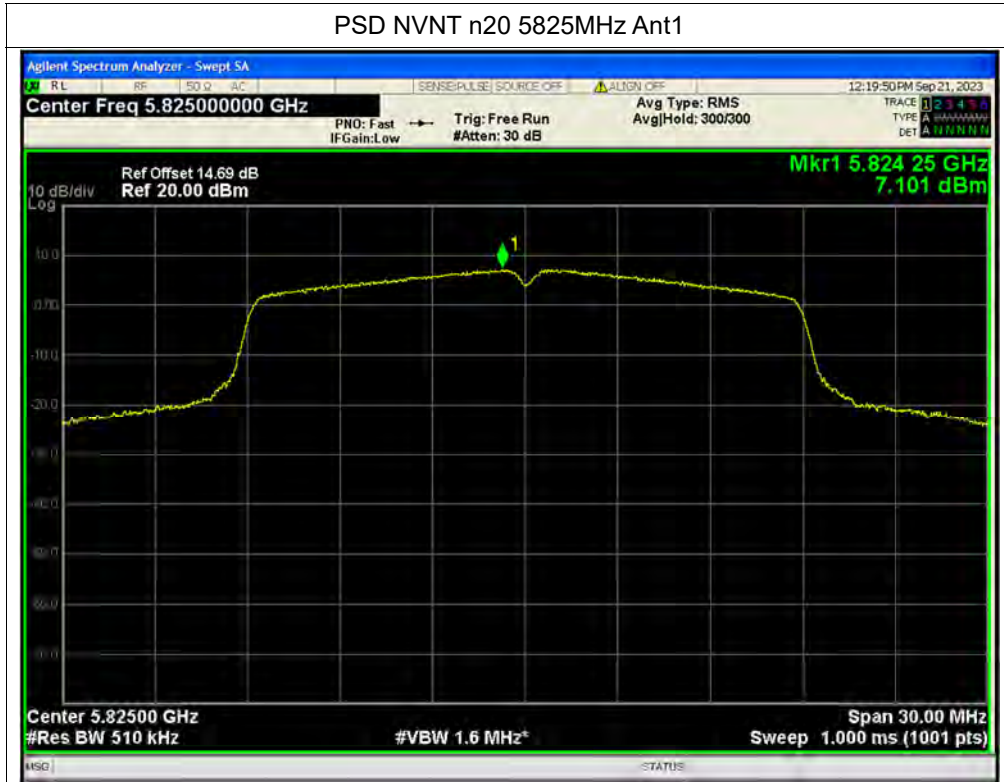
PSD NVNT n20 5785MHz Ant1



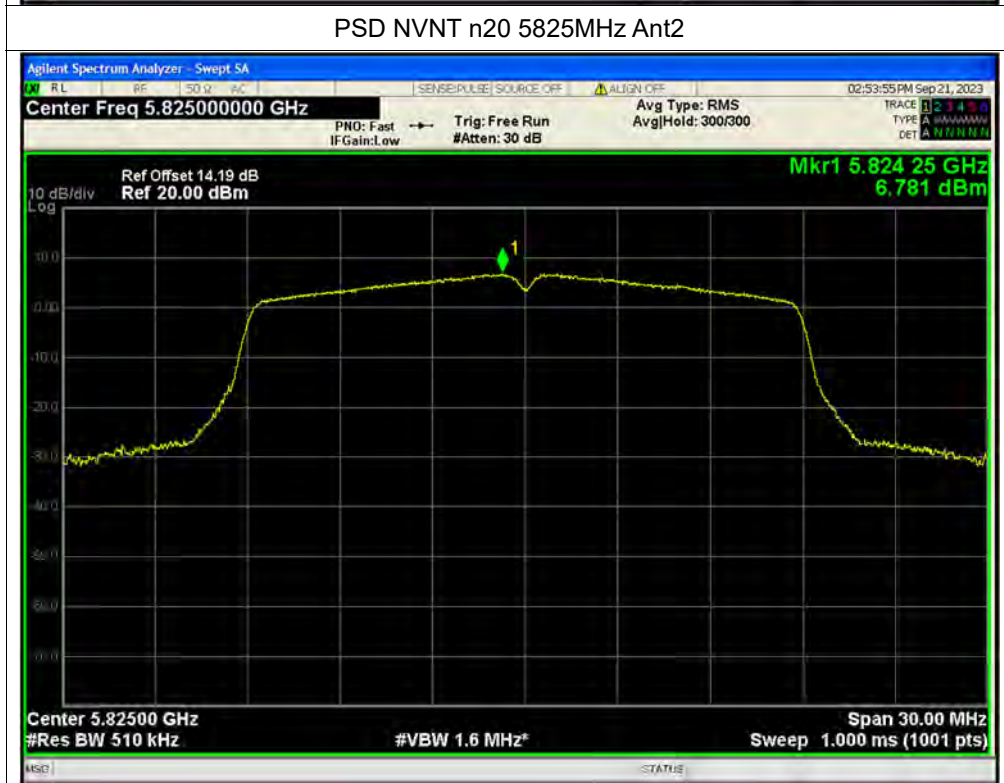
PSD NVNT n20 5785MHz Ant2



PSD NVNT n20 5825MHz Ant1

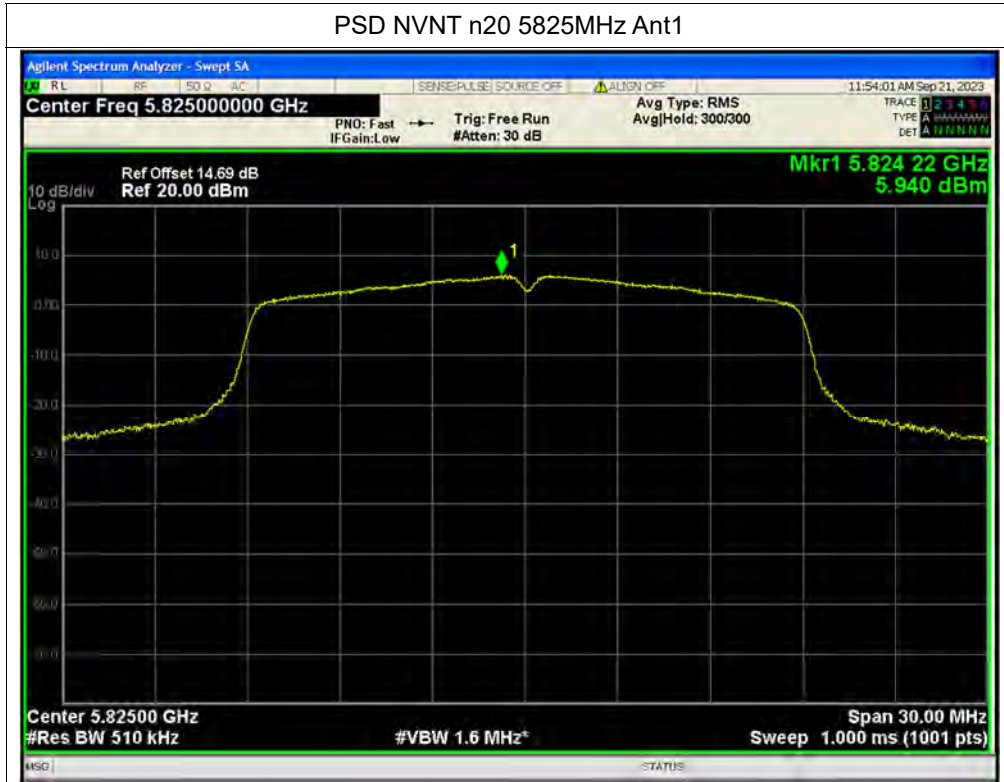


PSD NVNT n20 5825MHz Ant2





PSD NVNT n20 5825MHz Ant1



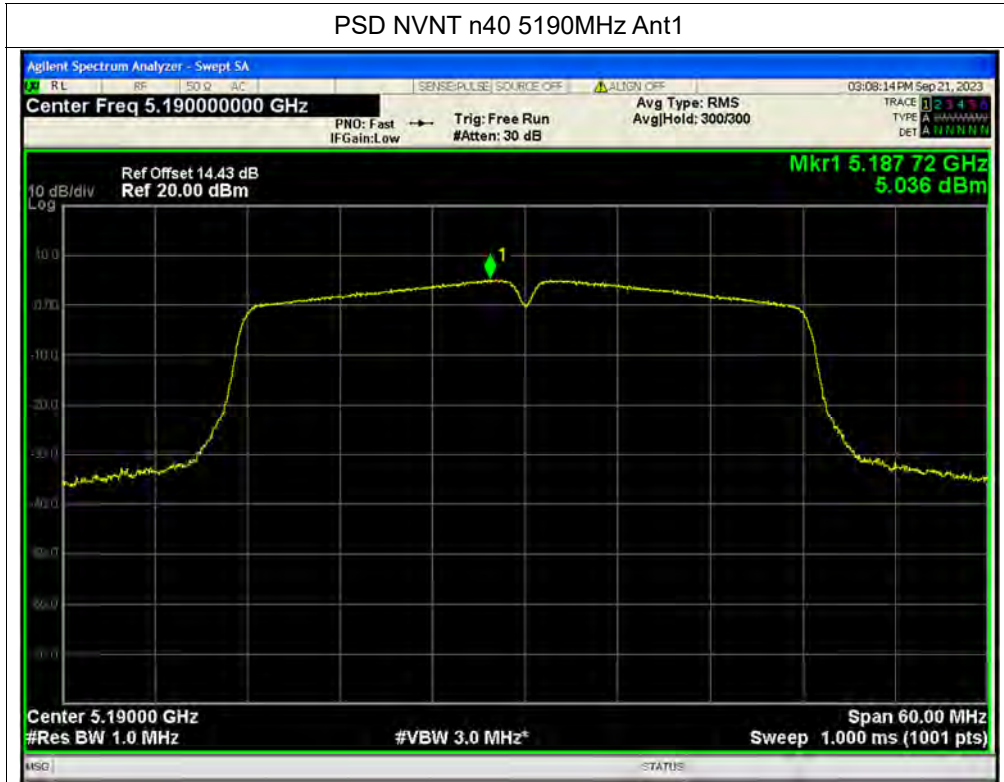
PSD NVNT n20 5825MHz Ant2







PSD NVNT n40 5190MHz Ant1

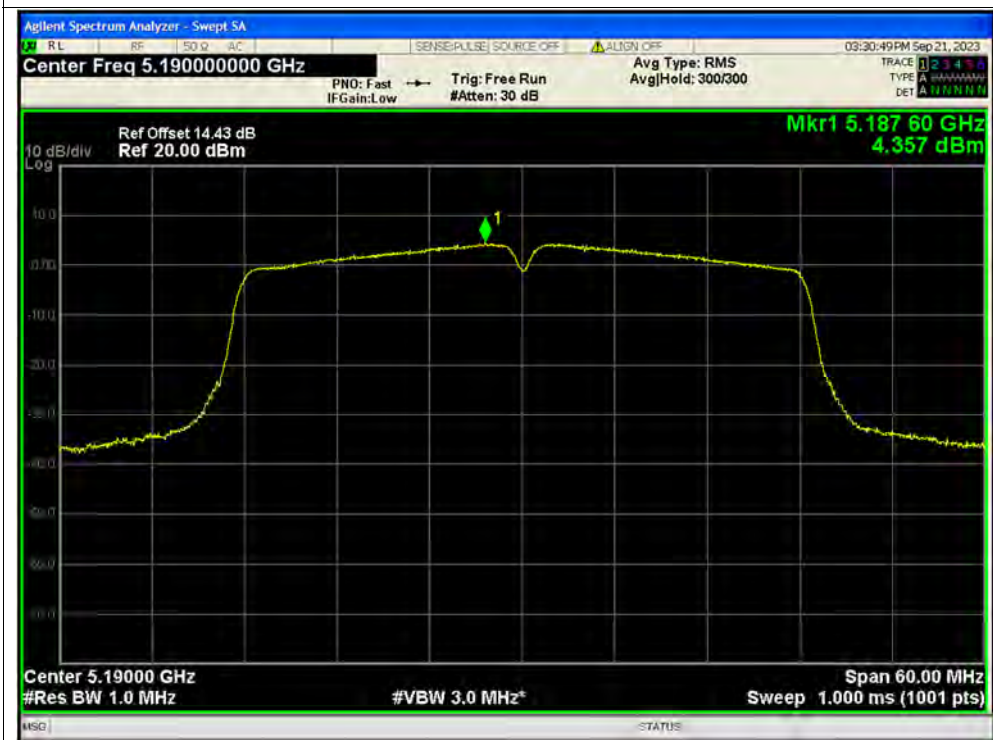


PSD NVNT n40 5190MHz Ant2





PSD NVNT n40 5190MHz Ant1

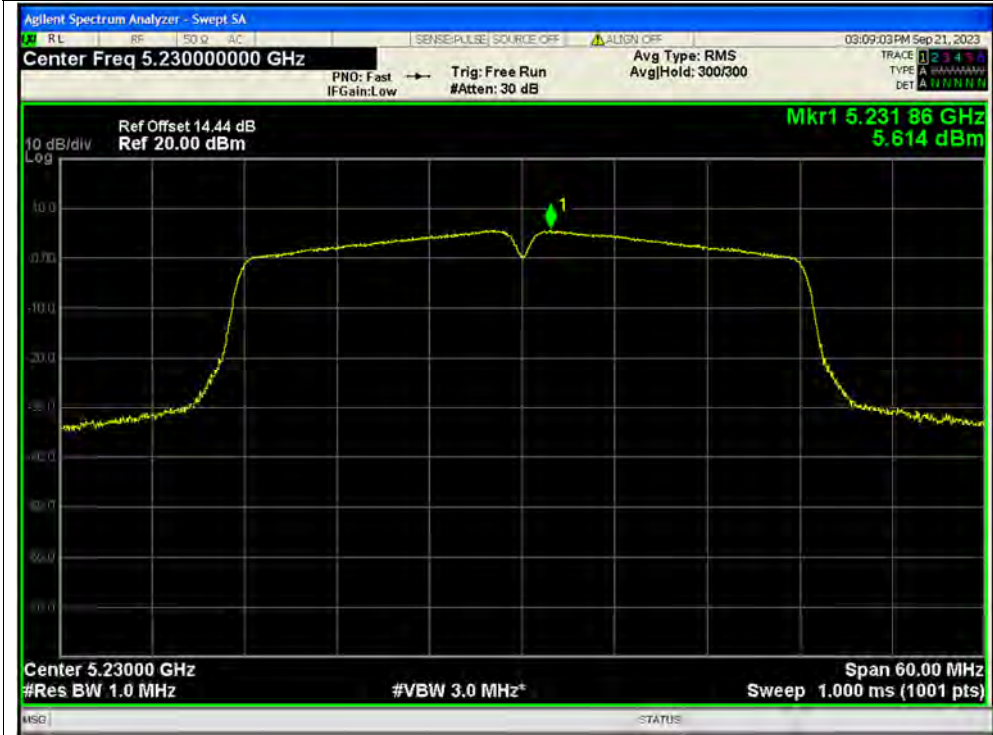


PSD NVNT n40 5190MHz Ant2





PSD NVNT n40 5230MHz Ant1

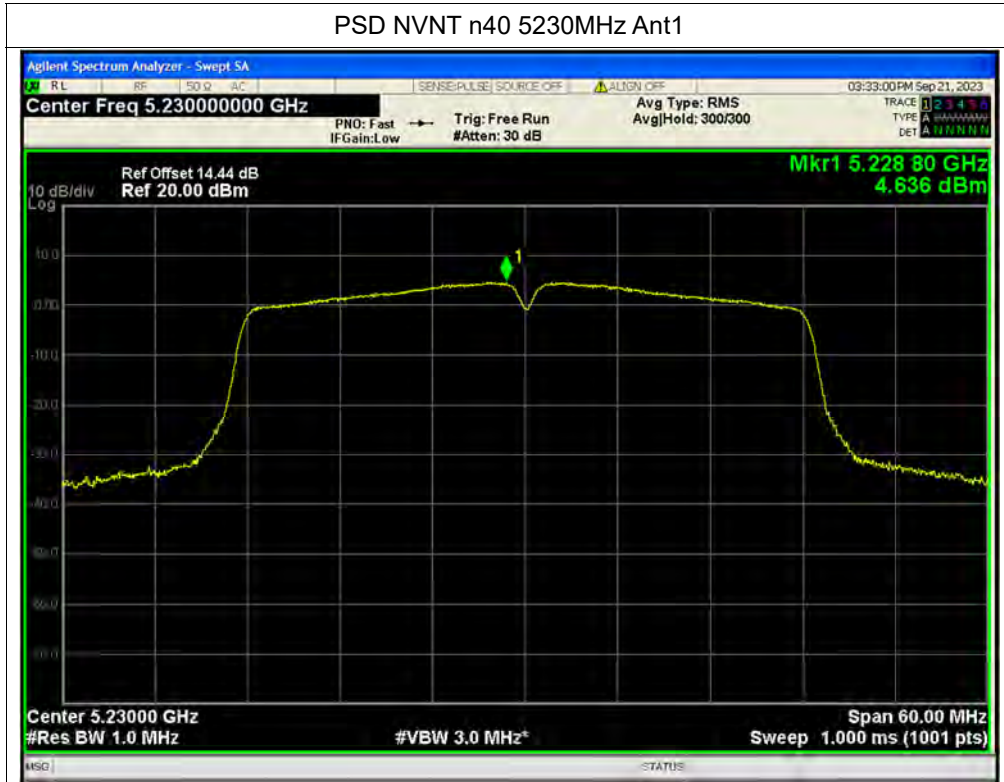


PSD NVNT n40 5230MHz Ant2





PSD NVNT n40 5230MHz Ant1



PSD NVNT n40 5230MHz Ant2



PSD NVNT n40 5755MHz Ant1

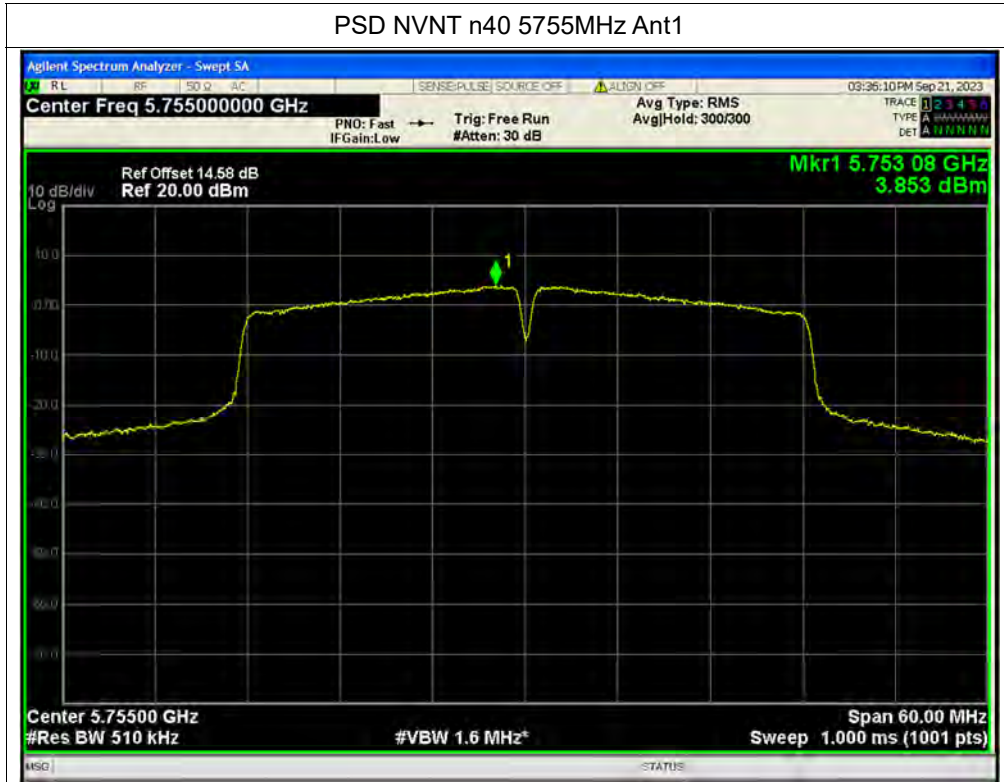


PSD NVNT n40 5755MHz Ant2





PSD NVNT n40 5755MHz Ant1



PSD NVNT n40 5755MHz Ant2





PSD NVNT n40 5795MHz Ant1



PSD NVNT n40 5795MHz Ant2





PSD NVNT n40 5795MHz Ant1

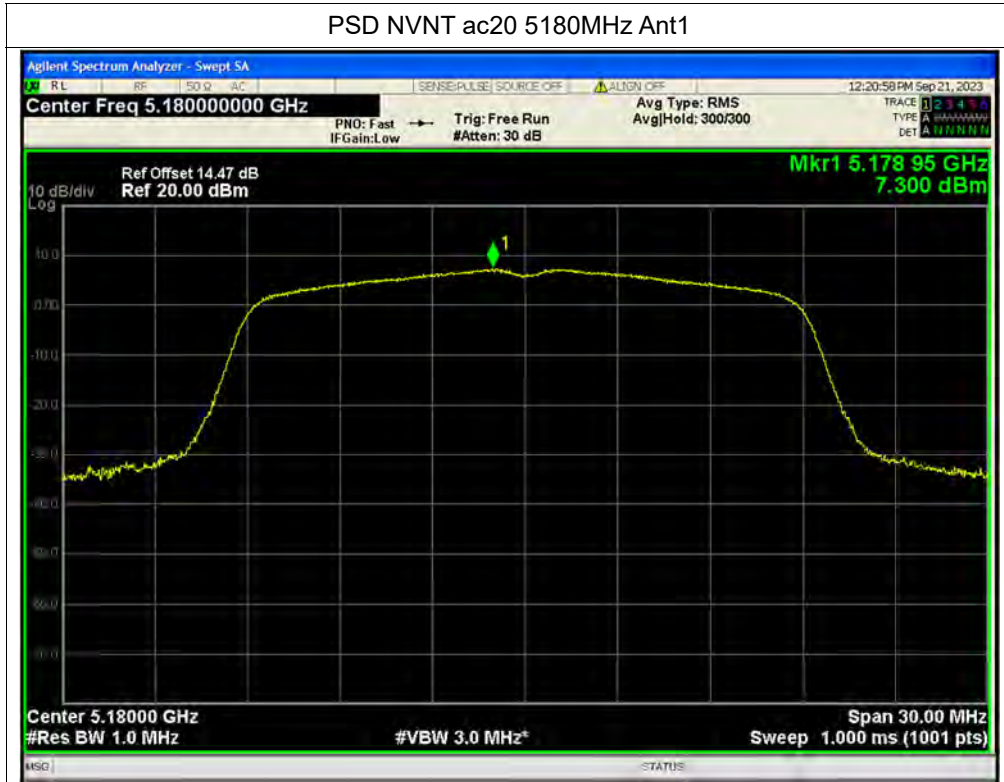


PSD NVNT n40 5795MHz Ant2





PSD NVNT ac20 5180MHz Ant1

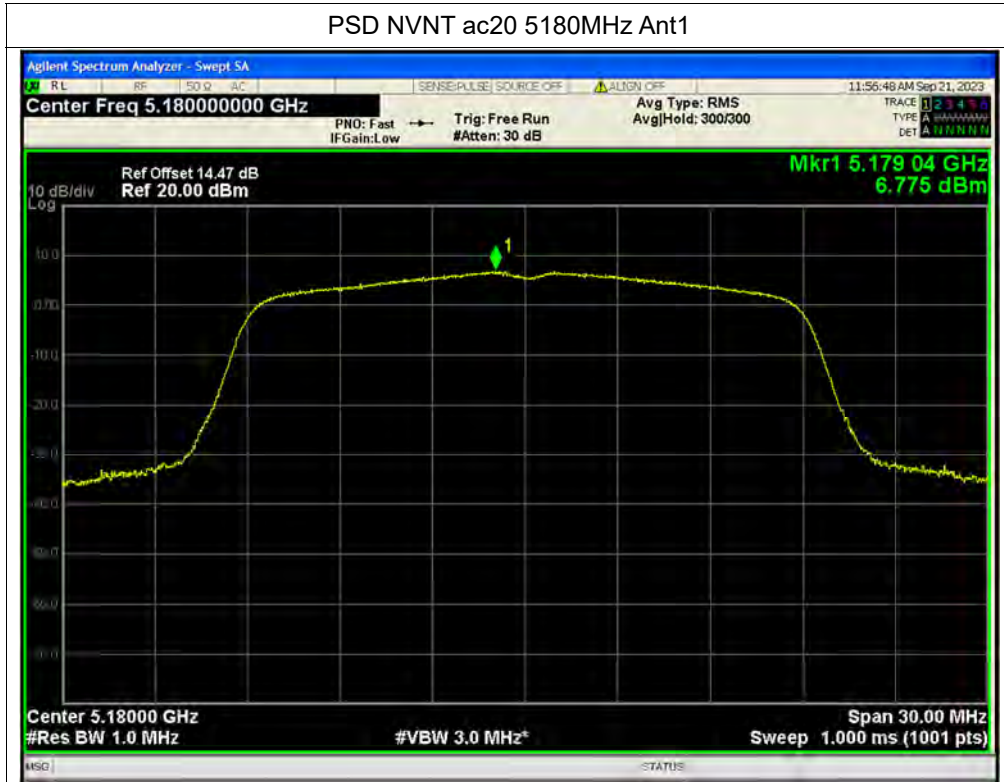


PSD NVNT ac20 5180MHz Ant2





PSD NVNT ac20 5180MHz Ant1



PSD NVNT ac20 5180MHz Ant2



PSD NVNT ac20 5220MHz Ant1



PSD NVNT ac20 5220MHz Ant2



PSD NVNT ac20 5220MHz Ant1



PSD NVNT ac20 5220MHz Ant2



PSD NVNT ac20 5240MHz Ant1



PSD NVNT ac20 5240MHz Ant2



PSD NVNT ac20 5240MHz Ant1

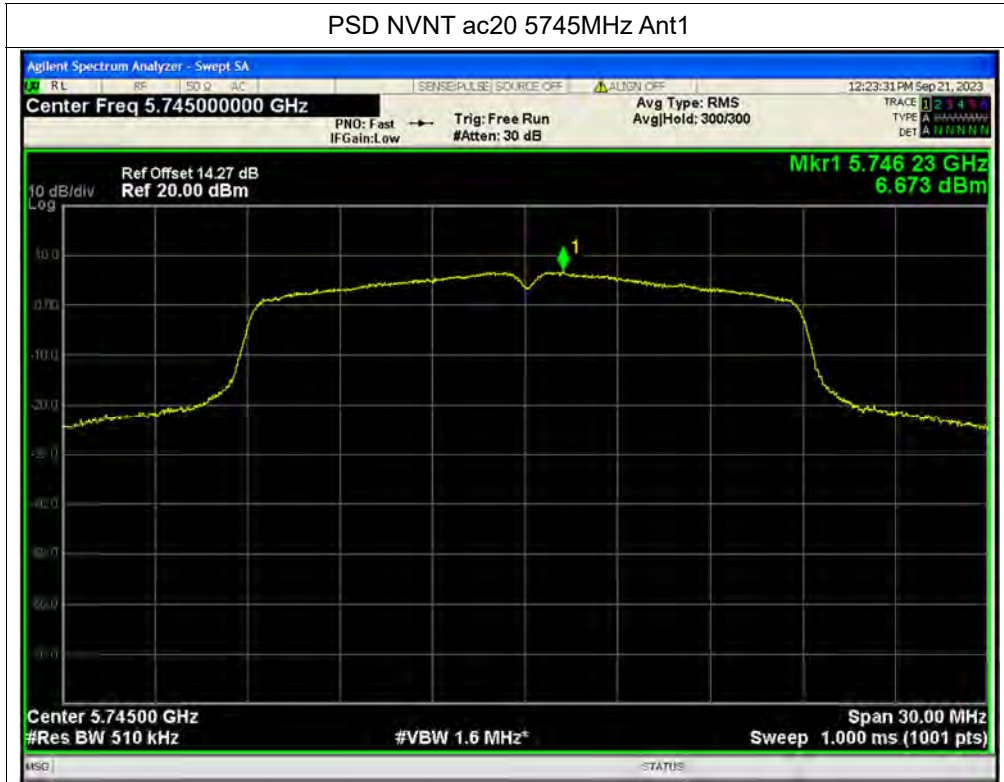


PSD NVNT ac20 5240MHz Ant2





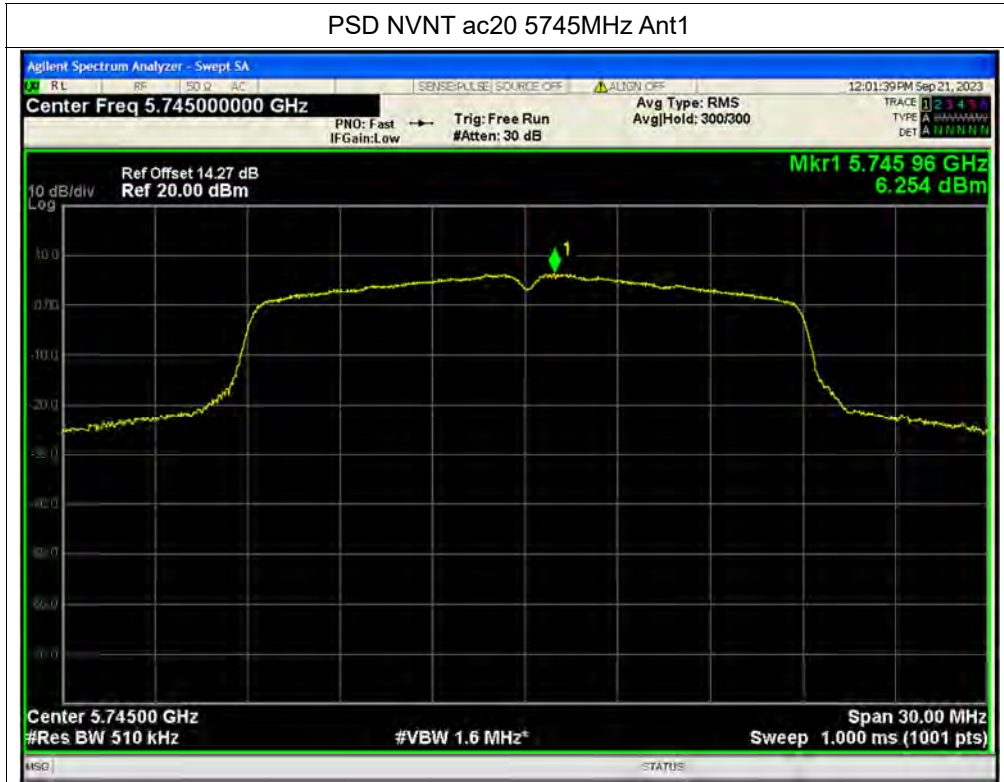
PSD NVNT ac20 5745MHz Ant1



PSD NVNT ac20 5745MHz Ant2



PSD NVNT ac20 5745MHz Ant1



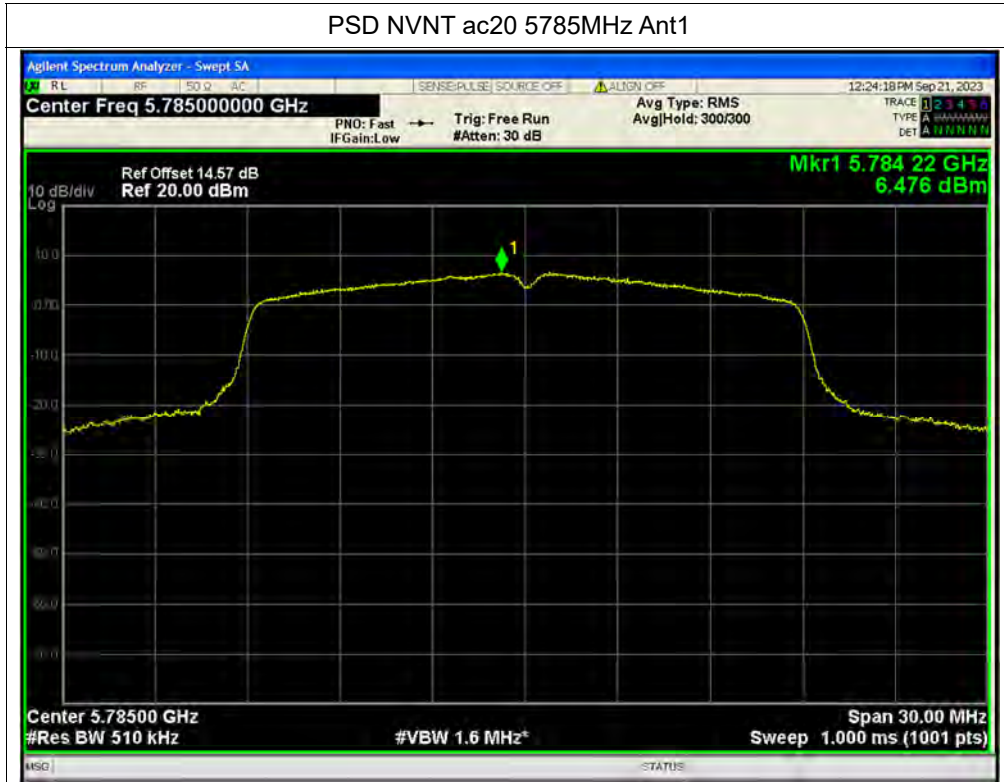
PSD NVNT ac20 5745MHz Ant2







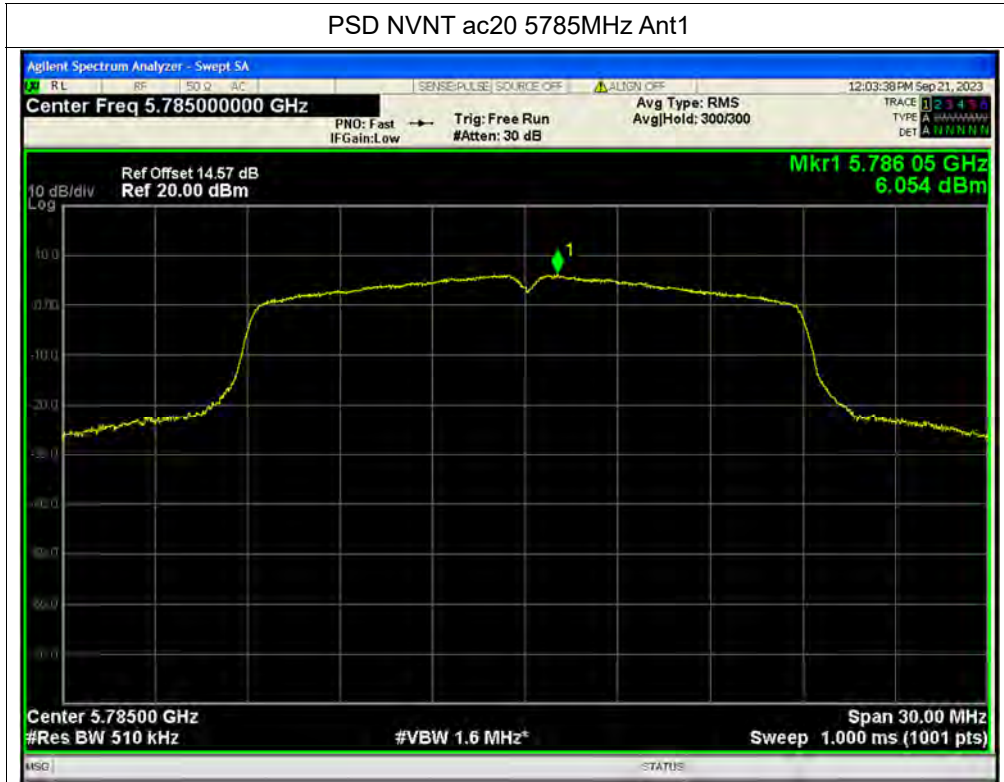
PSD NVNT ac20 5785MHz Ant1



PSD NVNT ac20 5785MHz Ant2



PSD NVNT ac20 5785MHz Ant1

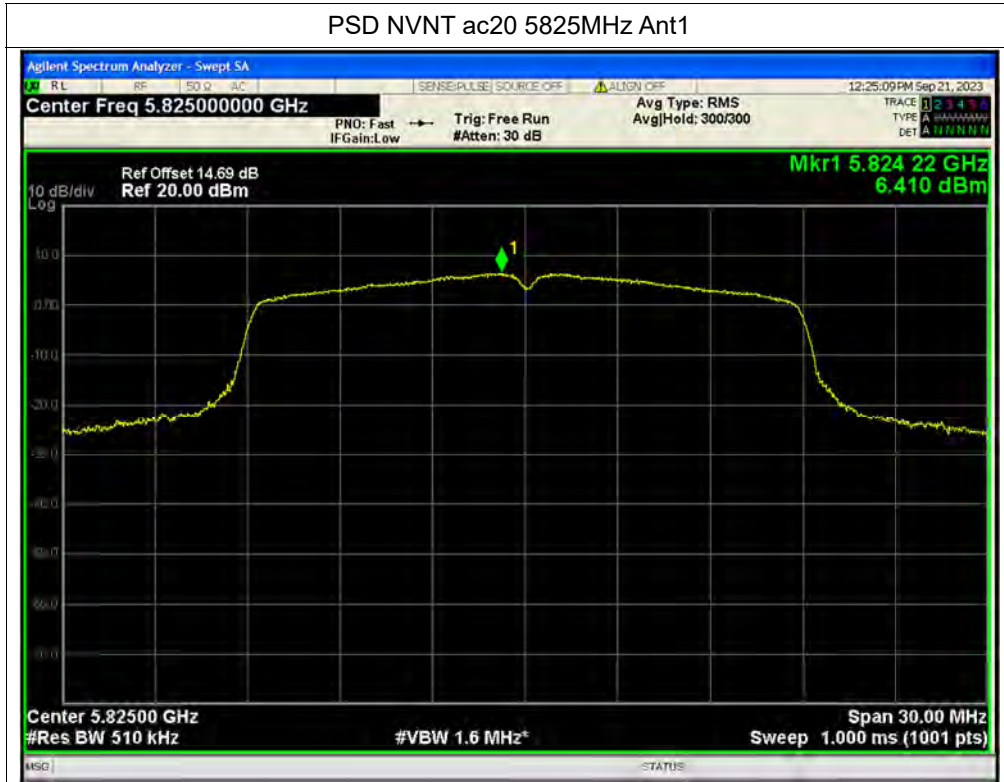


PSD NVNT ac20 5785MHz Ant2





PSD NVNT ac20 5825MHz Ant1

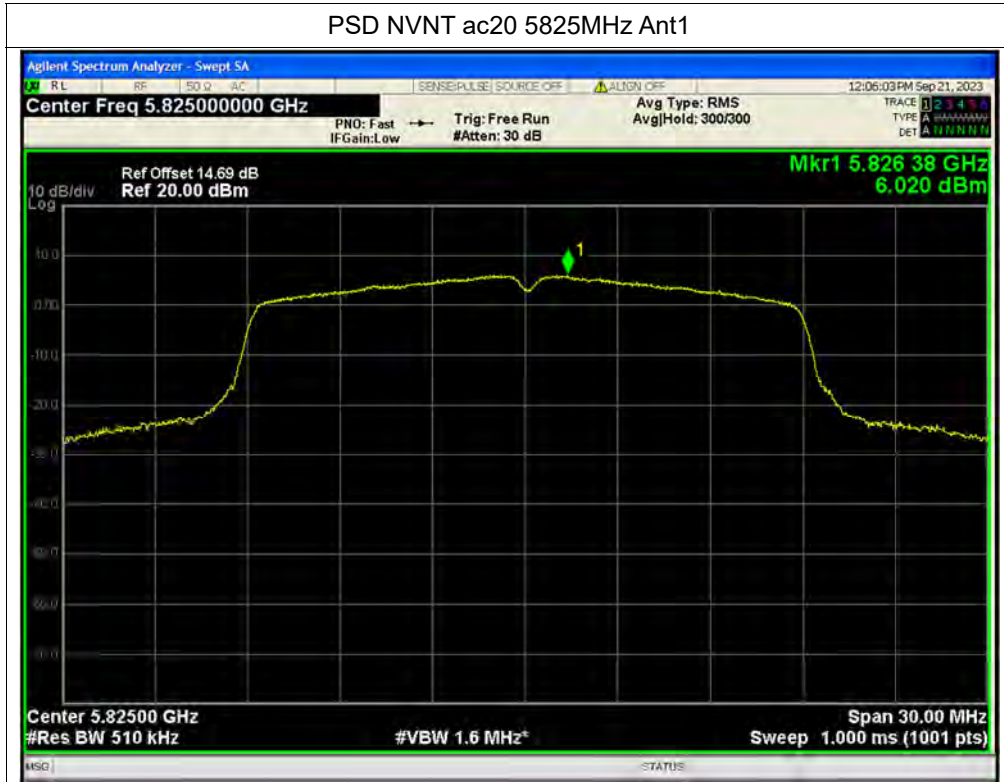


PSD NVNT ac20 5825MHz Ant2





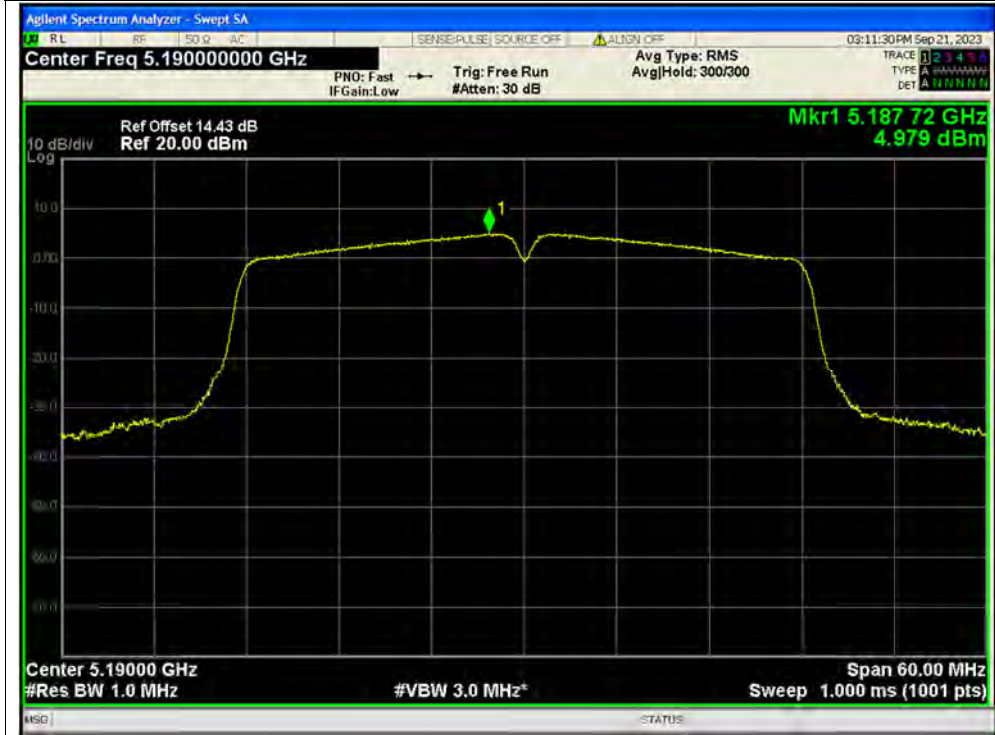
PSD NVNT ac20 5825MHz Ant1



PSD NVNT ac20 5825MHz Ant2



PSD NVNT ac40 5190MHz Ant1



PSD NVNT ac40 5190MHz Ant2



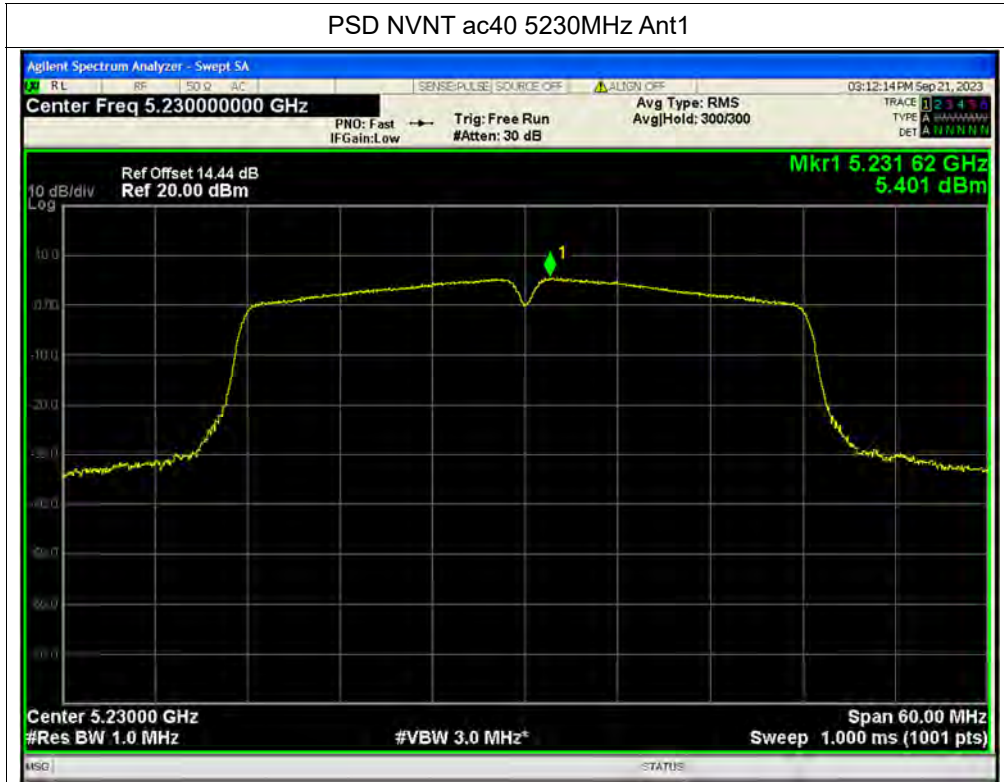
PSD NVNT ac40 5190MHz Ant1



PSD NVNT ac40 5190MHz Ant2



PSD NVNT ac40 5230MHz Ant1



PSD NVNT ac40 5230MHz Ant2





PSD NVNT ac40 5230MHz Ant1

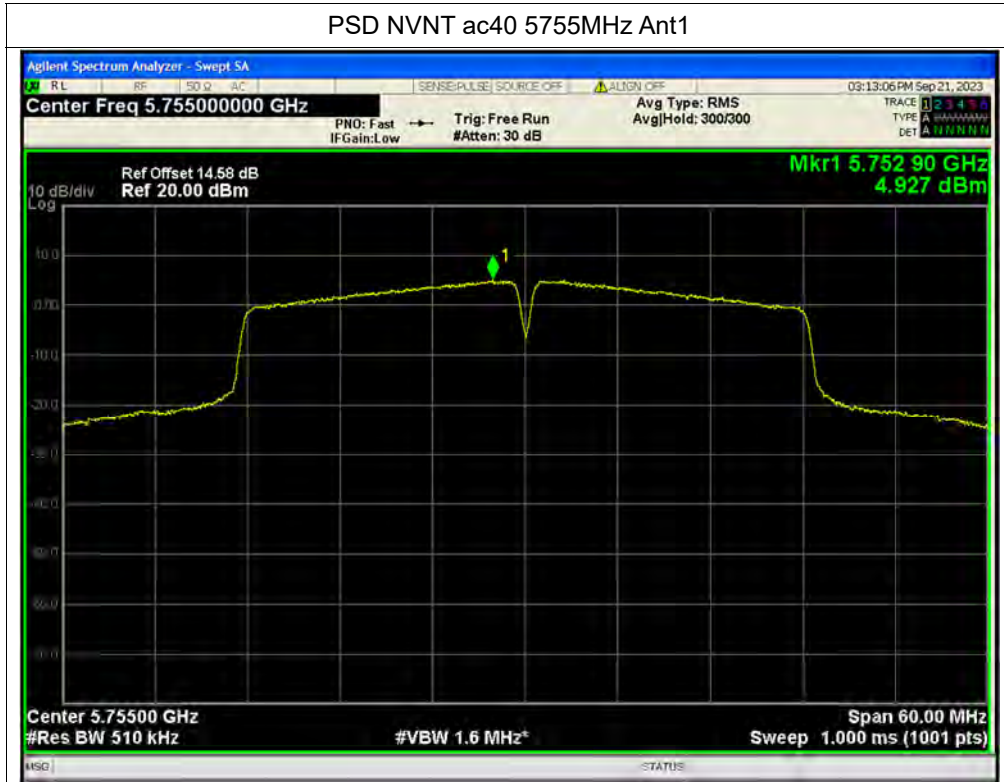


PSD NVNT ac40 5230MHz Ant2





PSD NVNT ac40 5755MHz Ant1



PSD NVNT ac40 5755MHz Ant2



PSD NVNT ac40 5755MHz Ant1

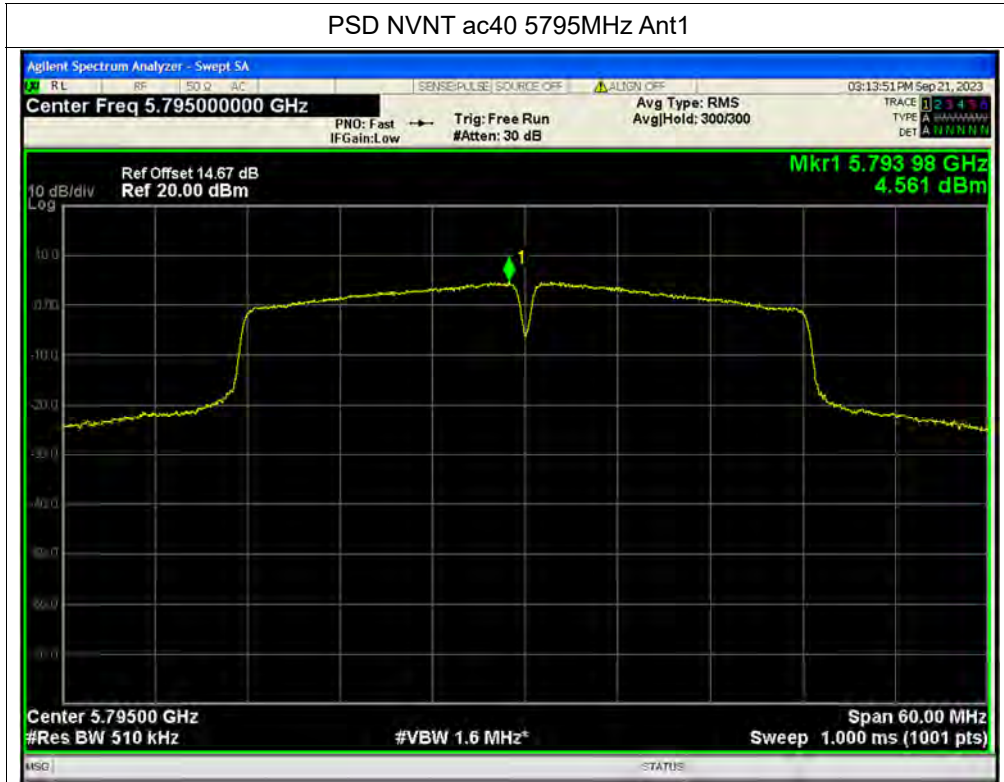


PSD NVNT ac40 5755MHz Ant2





PSD NVNT ac40 5795MHz Ant1



PSD NVNT ac40 5795MHz Ant2



PSD NVNT ac40 5795MHz Ant1



PSD NVNT ac40 5795MHz Ant2





PSD NVNT ac80 5210MHz Ant1



PSD NVNT ac80 5210MHz Ant2





PSD NVNT ac80 5210MHz Ant1



PSD NVNT ac80 5210MHz Ant2



PSD NVNT ac80 5775MHz Ant1



PSD NVNT ac80 5775MHz Ant2





PSD NVNT ac80 5775MHz Ant1

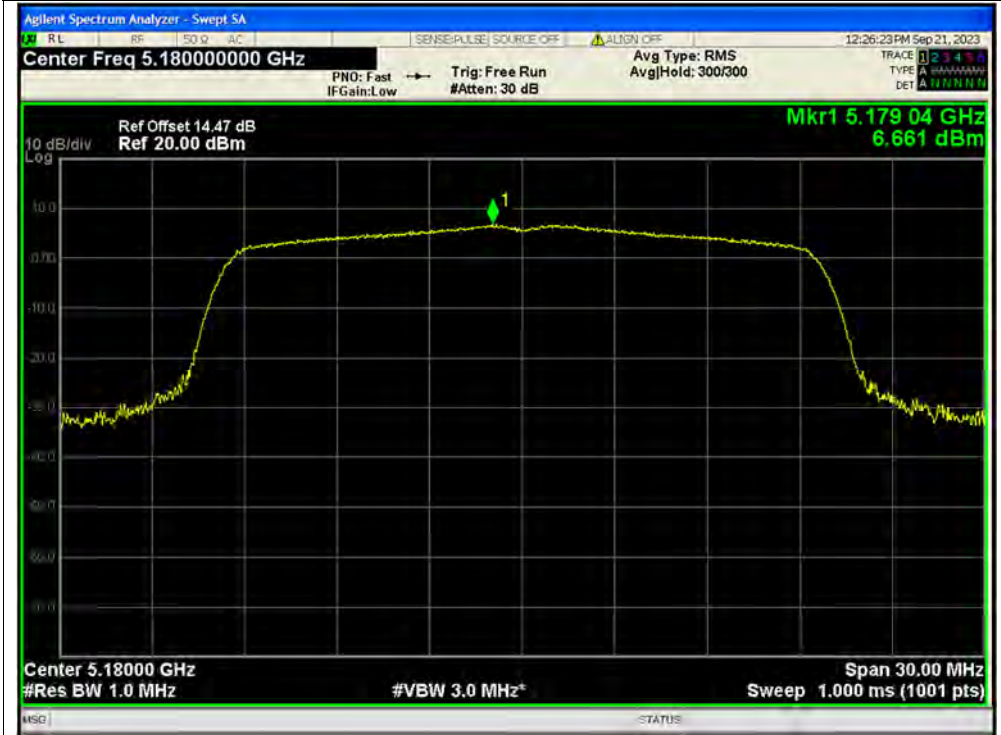


PSD NVNT ac80 5775MHz Ant2





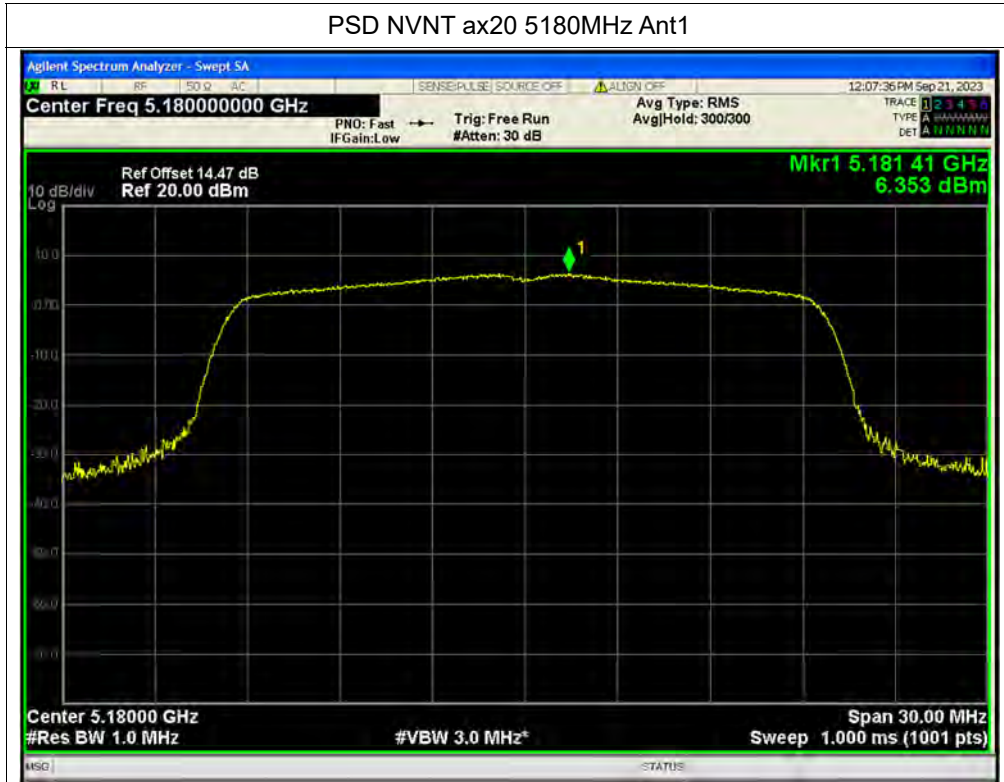
PSD NVNT ax20 5180MHz Ant1



PSD NVNT ax20 5180MHz Ant2



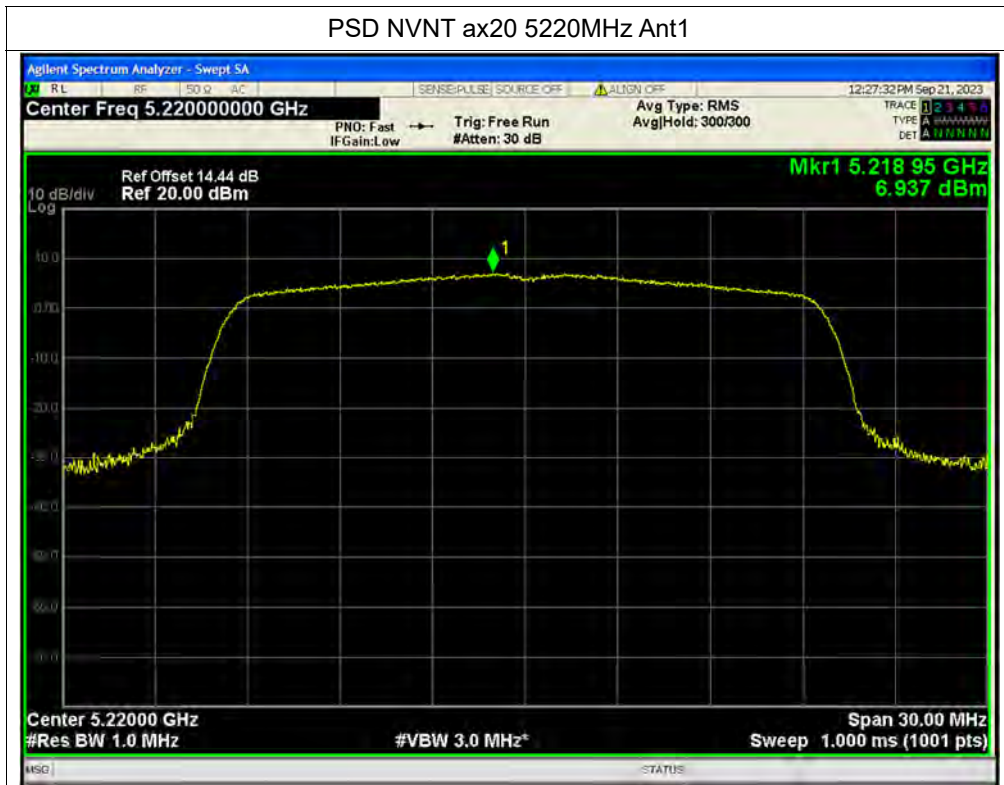
PSD NVNT ax20 5180MHz Ant1



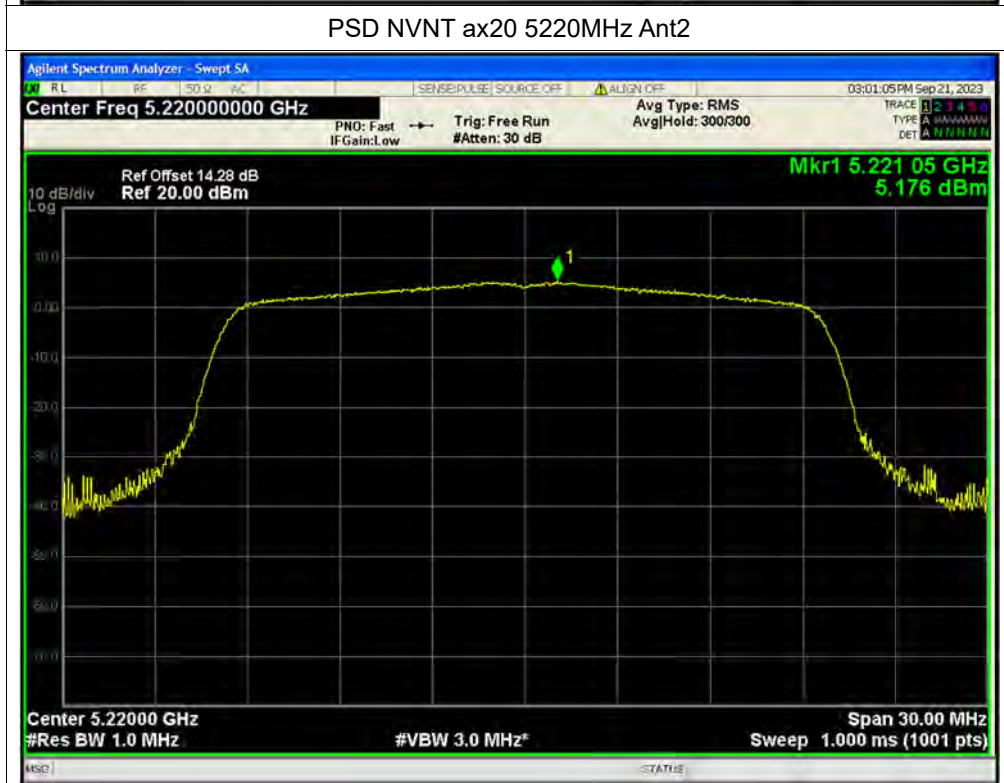
PSD NVNT ax20 5180MHz Ant2



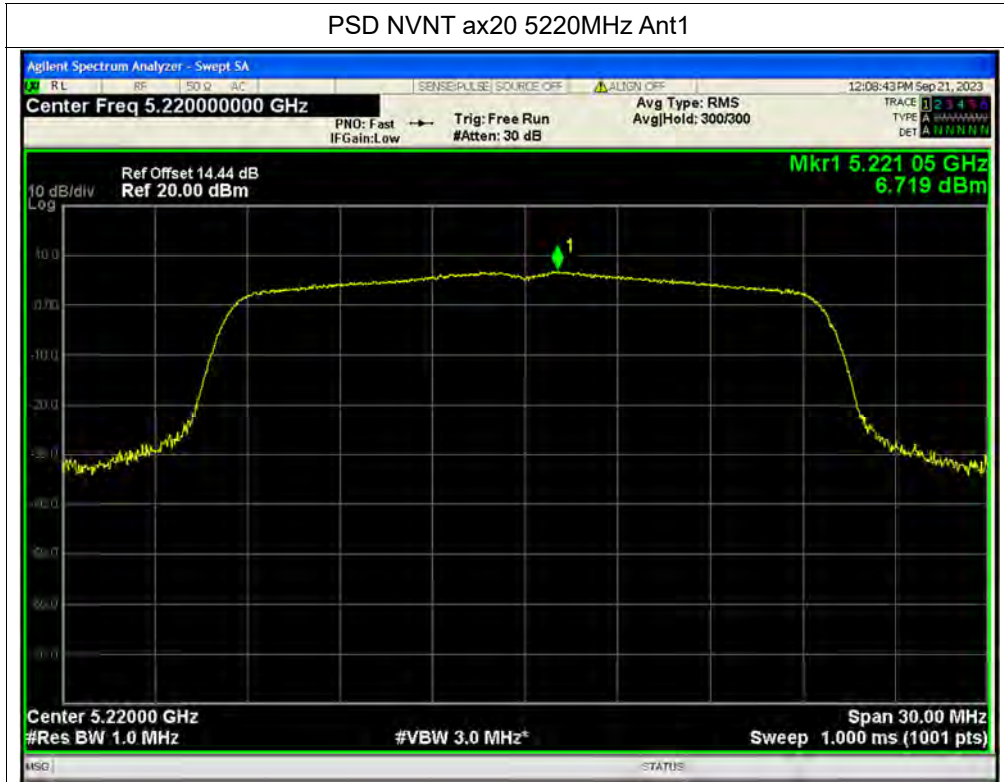
PSD NVNT ax20 5220MHz Ant1



PSD NVNT ax20 5220MHz Ant2



PSD NVNT ax20 5220MHz Ant1



PSD NVNT ax20 5220MHz Ant2





PSD NVNT ax20 5240MHz Ant1



PSD NVNT ax20 5240MHz Ant2



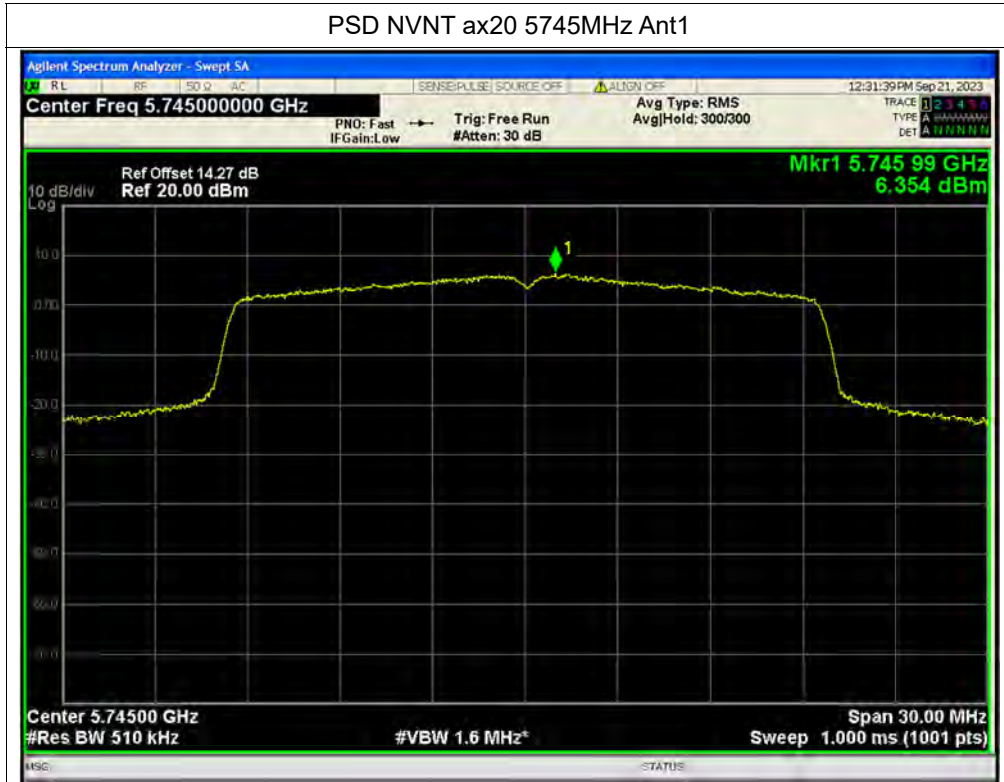
PSD NVNT ax20 5240MHz Ant1



PSD NVNT ax20 5240MHz Ant2



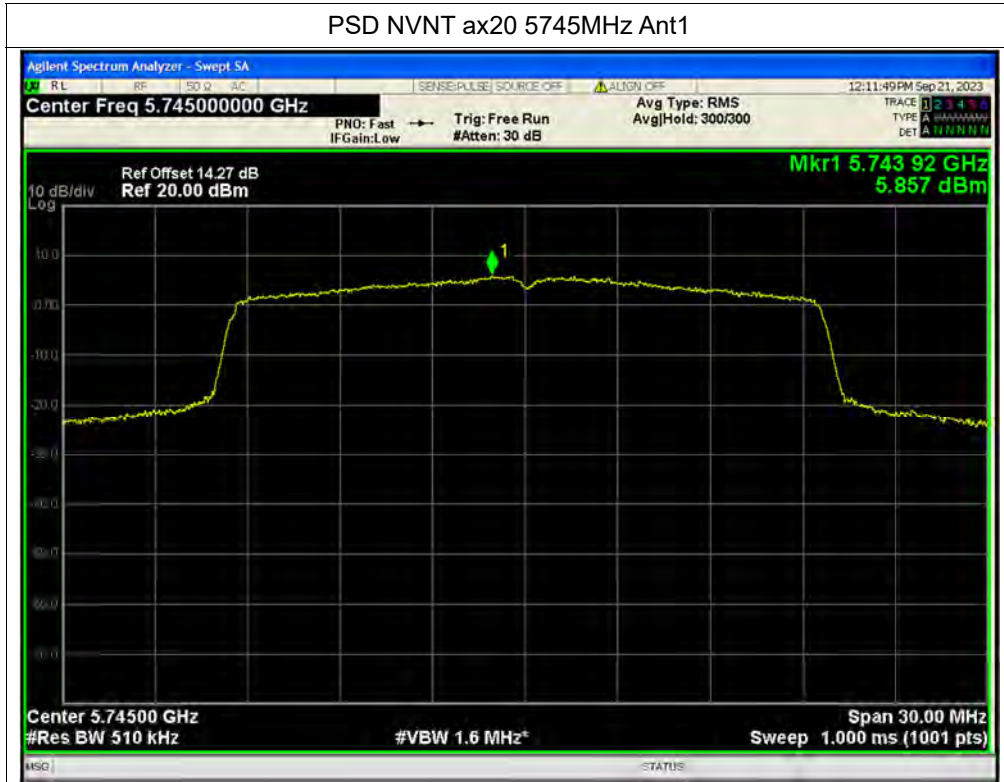
PSD NVNT ax20 5745MHz Ant1



PSD NVNT ax20 5745MHz Ant2



PSD NVNT ax20 5745MHz Ant1

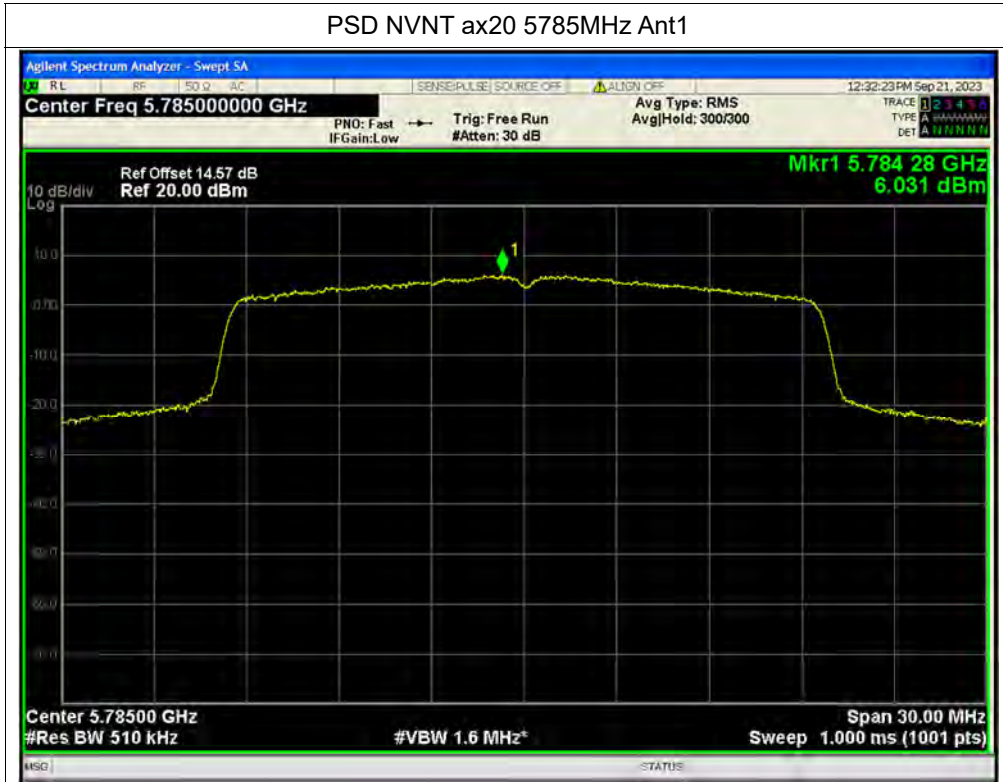


PSD NVNT ax20 5745MHz Ant2





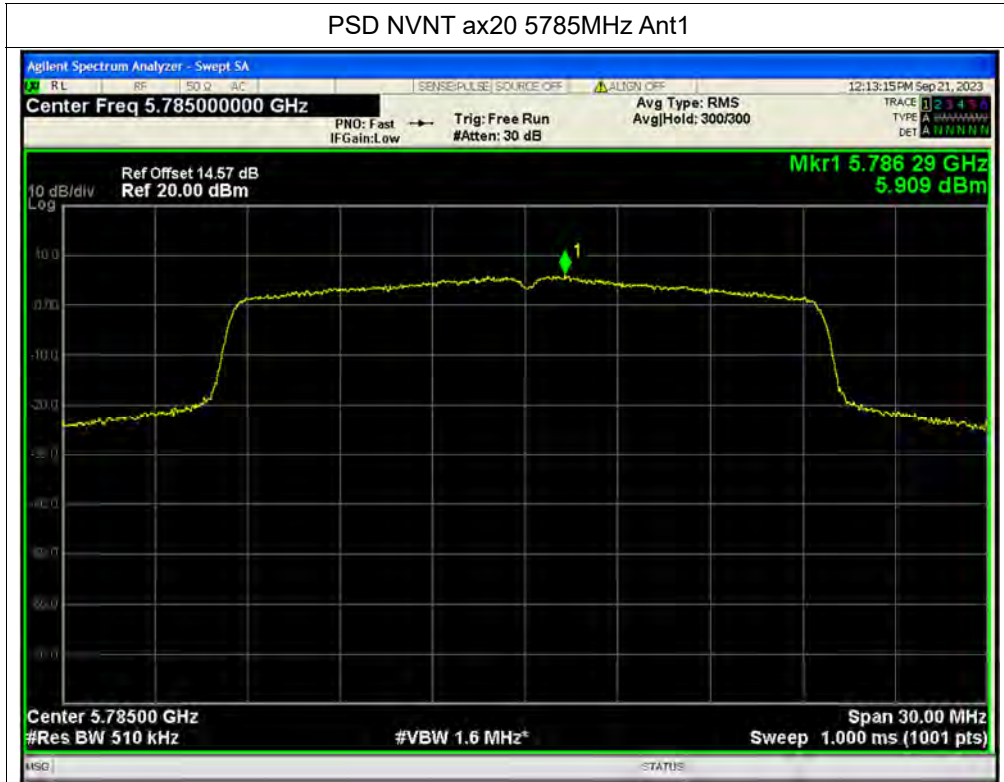
PSD NVNT ax20 5785MHz Ant1



PSD NVNT ax20 5785MHz Ant2



PSD NVNT ax20 5785MHz Ant1

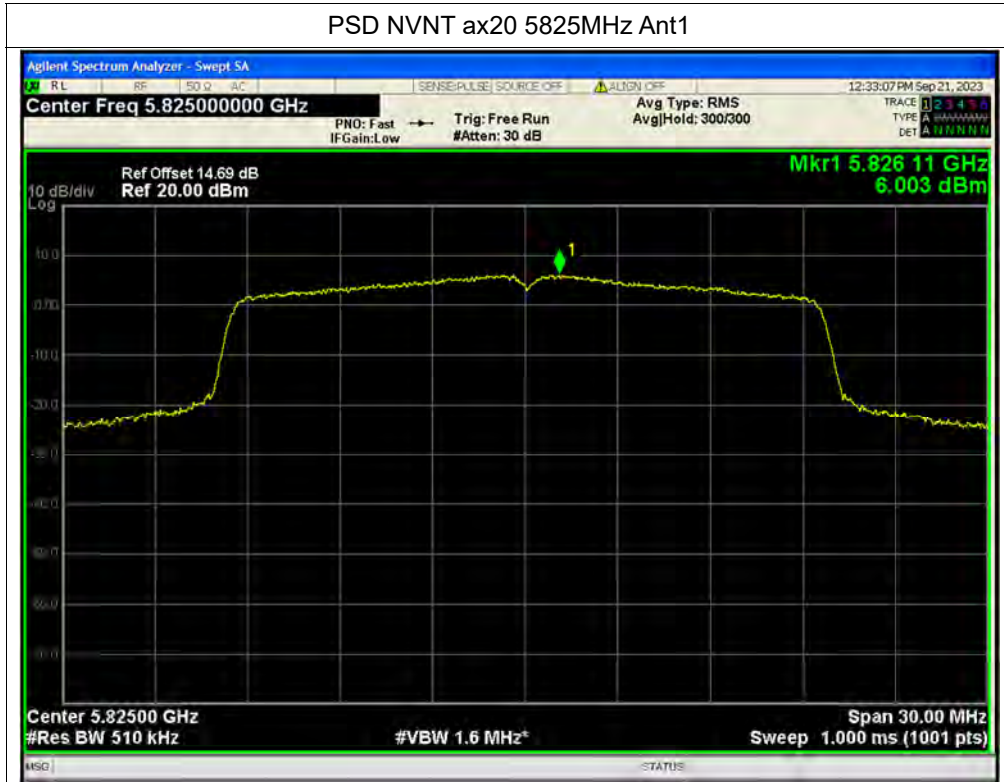


PSD NVNT ax20 5785MHz Ant2

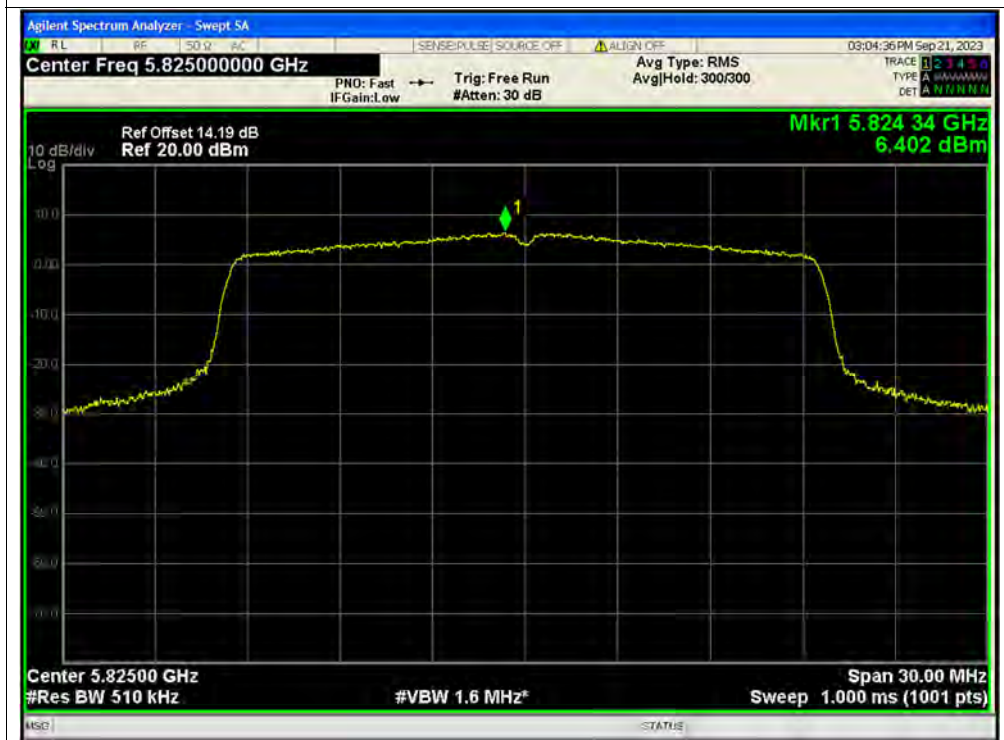




PSD NVNT ax20 5825MHz Ant1

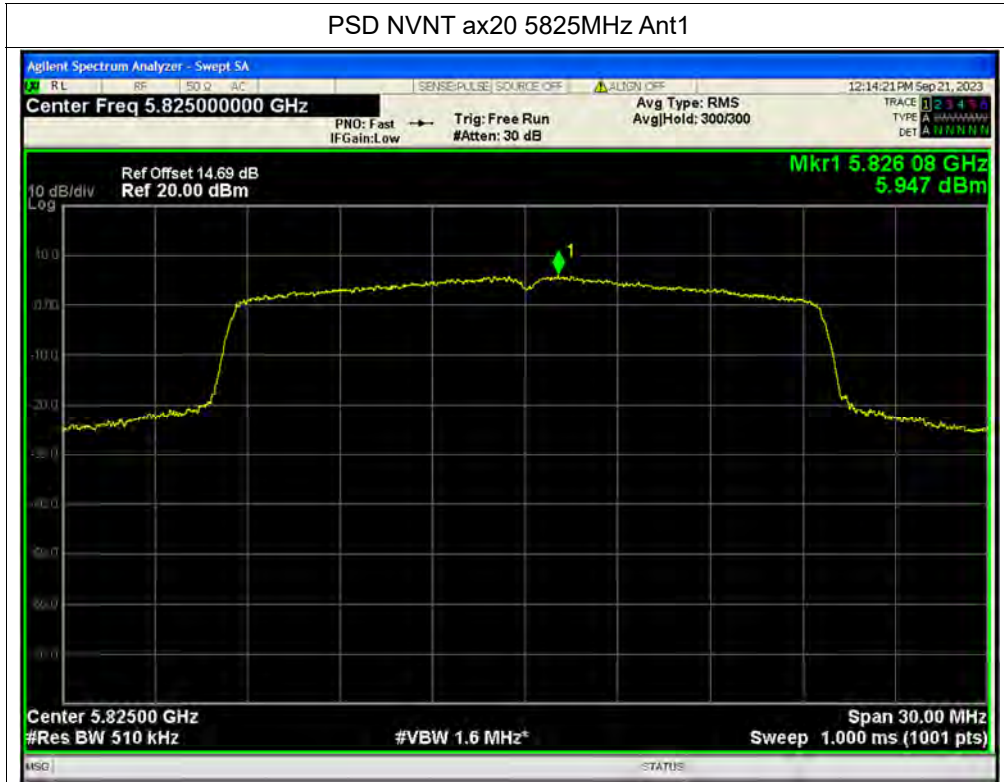


PSD NVNT ax20 5825MHz Ant2





PSD NVNT ax20 5825MHz Ant1



PSD NVNT ax20 5825MHz Ant2



PSD NVNT ax40 5190MHz Ant1



PSD NVNT ax40 5190MHz Ant2



PSD NVNT ax40 5190MHz Ant1



PSD NVNT ax40 5190MHz Ant2



PSD NVNT ax40 5230MHz Ant1



PSD NVNT ax40 5230MHz Ant2





PSD NVNT ax40 5230MHz Ant1



PSD NVNT ax40 5230MHz Ant2







PSD NVNT ax40 5755MHz Ant1



PSD NVNT ax40 5755MHz Ant2





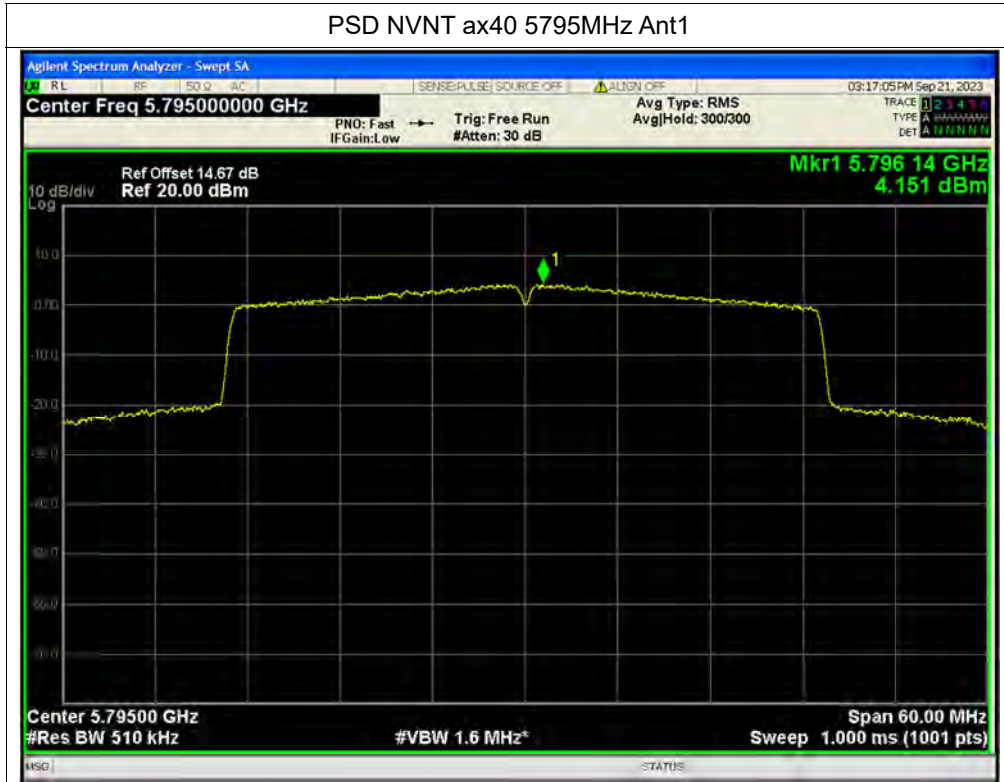
PSD NVNT ax40 5755MHz Ant1



PSD NVNT ax40 5755MHz Ant2



PSD NVNT ax40 5795MHz Ant1



PSD NVNT ax40 5795MHz Ant2





PSD NVNT ax40 5795MHz Ant1



PSD NVNT ax40 5795MHz Ant2





PSD NVNT ax80 5210MHz Ant1



PSD NVNT ax80 5210MHz Ant2





PSD NVNT ax80 5210MHz Ant1



PSD NVNT ax80 5210MHz Ant2





PSD NVNT ax80 5775MHz Ant1



PSD NVNT ax80 5775MHz Ant2



PSD NVNT ax80 5775MHz Ant1



PSD NVNT ax80 5775MHz Ant2





**A.5. Frequency Stability**

| Condition    | Mode    | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|--------------|---------|-----------------|---------|--------------------------|----------------------|-----------------|-------------|---------|
| 20C<br>10.8V | Carrier | 5180            | Ant1    | 5180.01                  | 10000                | 1.93            | 25          | Pass    |
| 20C<br>13.2V | Carrier | 5180            | Ant1    | 5180.009                 | 9000                 | 1.74            | 25          | Pass    |
| 0C 12V       | Carrier | 5180            | Ant1    | 5180.008                 | 8000                 | 1.54            | 25          | Pass    |
| 10C 12V      | Carrier | 5180            | Ant1    | 5180.008                 | 8000                 | 1.54            | 25          | Pass    |
| 20C 12V      | Carrier | 5180            | Ant1    | 5180.008                 | 8000                 | 1.54            | 25          | Pass    |
| 30C 12V      | Carrier | 5180            | Ant1    | 5180.007                 | 7000                 | 1.35            | 25          | Pass    |
| 40C 12V      | Carrier | 5180            | Ant1    | 5180.007                 | 7000                 | 1.35            | 25          | Pass    |
| 50C 12V      | Carrier | 5180            | Ant1    | 5180.007                 | 7000                 | 1.35            | 25          | Pass    |
| 55C 12V      | Carrier | 5180            | Ant1    | 5180.006                 | 6000                 | 1.16            | 25          | Pass    |
| 20C<br>10.8V | Carrier | 5745            | Ant1    | 5745.008                 | 8000                 | 1.39            | 25          | Pass    |
| 20C<br>13.2V | Carrier | 5745            | Ant1    | 5745.007                 | 7000                 | 1.22            | 25          | Pass    |
| 0C 12V       | Carrier | 5745            | Ant1    | 5745.007                 | 7000                 | 1.22            | 25          | Pass    |
| 10C 12V      | Carrier | 5745            | Ant1    | 5745.006                 | 6000                 | 1.04            | 25          | Pass    |
| 20C 12V      | Carrier | 5745            | Ant1    | 5745.006                 | 6000                 | 1.04            | 25          | Pass    |
| 30C 12V      | Carrier | 5745            | Ant1    | 5745.006                 | 6000                 | 1.04            | 25          | Pass    |
| 40C 12V      | Carrier | 5745            | Ant1    | 5745.005                 | 5000                 | 0.87            | 25          | Pass    |
| 50C 12V      | Carrier | 5745            | Ant1    | 5745.005                 | 5000                 | 0.87            | 25          | Pass    |
| 55C 12V      | Carrier | 5745            | Ant1    | 5745.005                 | 5000                 | 0.87            | 25          | Pass    |



## A.6. Conducted Emission

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

**Note:** Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

### A. Test Setup:

Test Mode: EUT+Network cable+PC +WIFI TX

Test voltage: AC 120V/60Hz

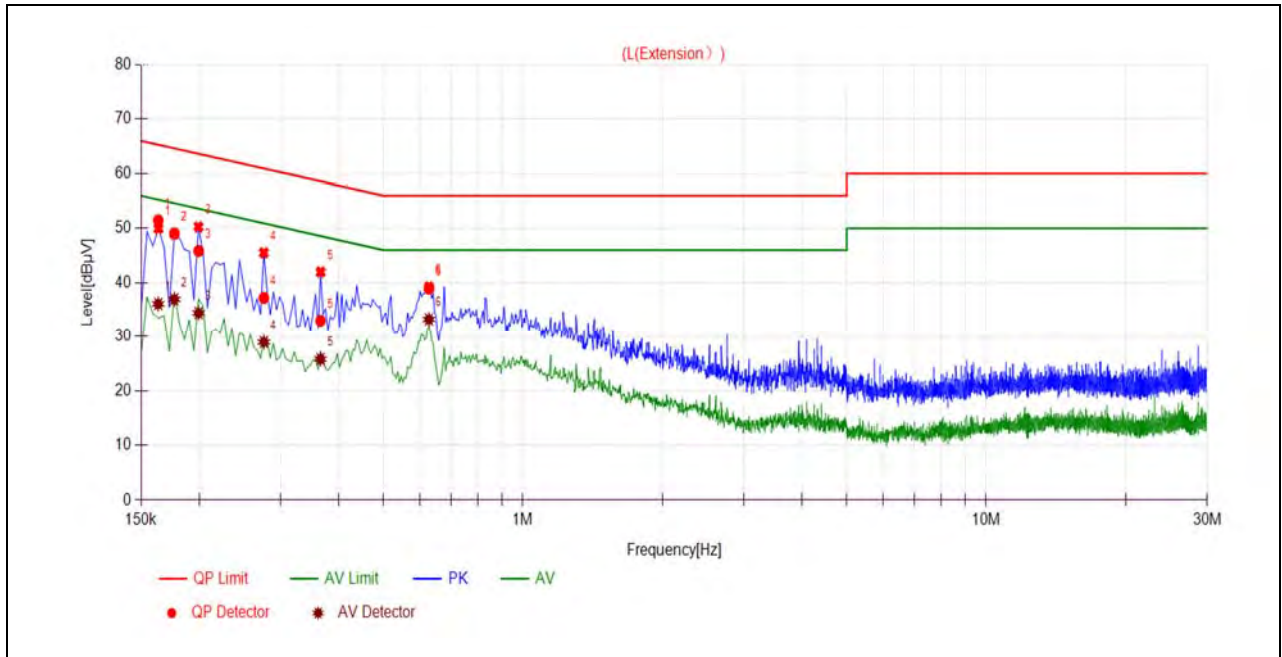
The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V]} = U_R + L_{\text{Cable loss}} \text{ [dB]} + A_{\text{Factor}}$$

$U_R$ : Receiver Reading

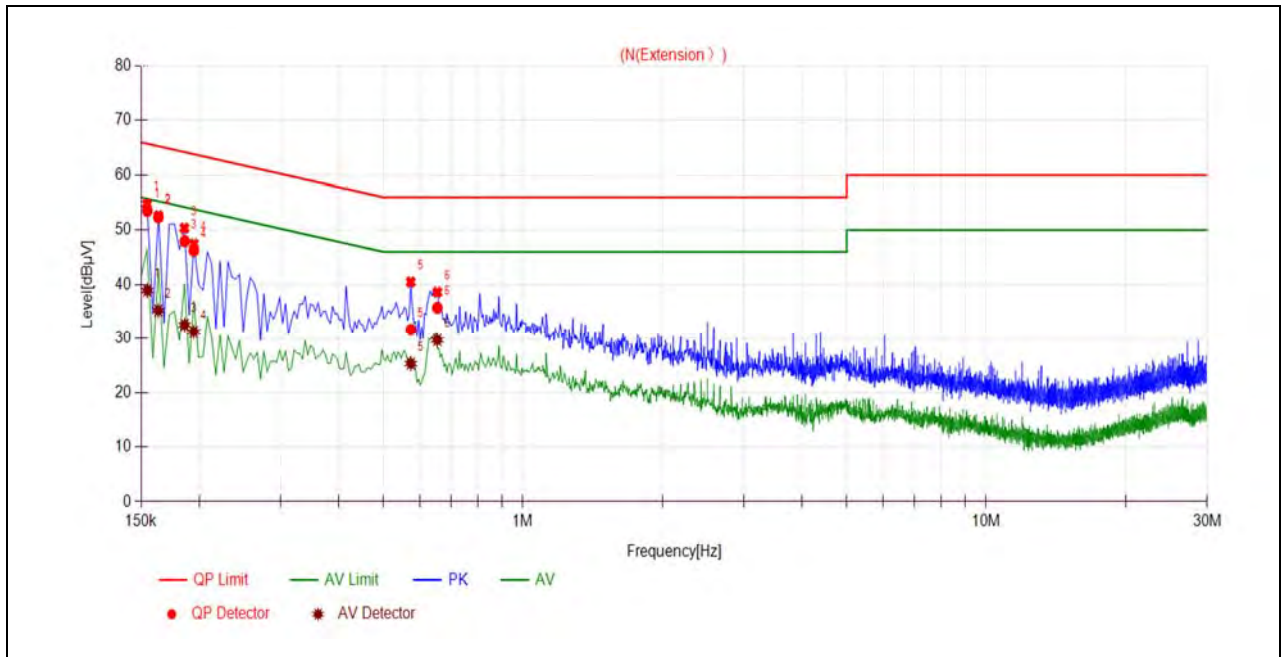
$A_{\text{Factor}}$ : Voltage division factor of LISN

**B. Test Plot:**



(L Phase)

| No. | Fre. (MHz) | Emission Level (dBµV) |         | Limit (dBµV) |         | Power-line | Verdict |
|-----|------------|-----------------------|---------|--------------|---------|------------|---------|
|     |            | Quai-peak             | Average | Quai-peak    | Average |            |         |
| 1   | 0.1633     | 51.48                 | 36.09   | 65.29        | 55.29   | Line       | PASS    |
| 2   | 0.1769     | 49.09                 | 36.95   | 64.63        | 54.63   |            | PASS    |
| 3   | 0.1996     | 45.85                 | 34.42   | 63.63        | 53.63   |            | PASS    |
| 4   | 0.2761     | 37.19                 | 28.93   | 60.93        | 50.93   |            | PASS    |
| 5   | 0.3658     | 32.98                 | 25.80   | 58.60        | 48.60   |            | PASS    |
| 6   | 0.6271     | 38.92                 | 33.22   | 56.00        | 46.00   |            | PASS    |



(N Phase)

| No. | Fre. (MHz) | Emission Level (dBµV) |         | Limit (dBµV) |         | Power-line | Verdict |
|-----|------------|-----------------------|---------|--------------|---------|------------|---------|
|     |            | Quai-peak             | Average | Quai-peak    | Average |            |         |
| 1   | 0.1547     | 53.52                 | 38.92   | 65.75        | 55.75   | Neutral    | PASS    |
| 2   | 0.1634     | 52.35                 | 35.25   | 65.29        | 55.29   |            | PASS    |
| 3   | 0.1862     | 47.97                 | 32.57   | 64.21        | 54.21   |            | PASS    |
| 4   | 0.1948     | 46.25                 | 31.26   | 63.83        | 53.83   |            | PASS    |
| 5   | 0.5731     | 31.66                 | 25.31   | 56.00        | 46.00   |            | PASS    |
| 6   | 0.6536     | 35.74                 | 29.69   | 56.00        | 46.00   |            | PASS    |



### A.7. Restricted Frequency Bands

The lowest and highest channels are tested to verify the Restricted Frequency Bands.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

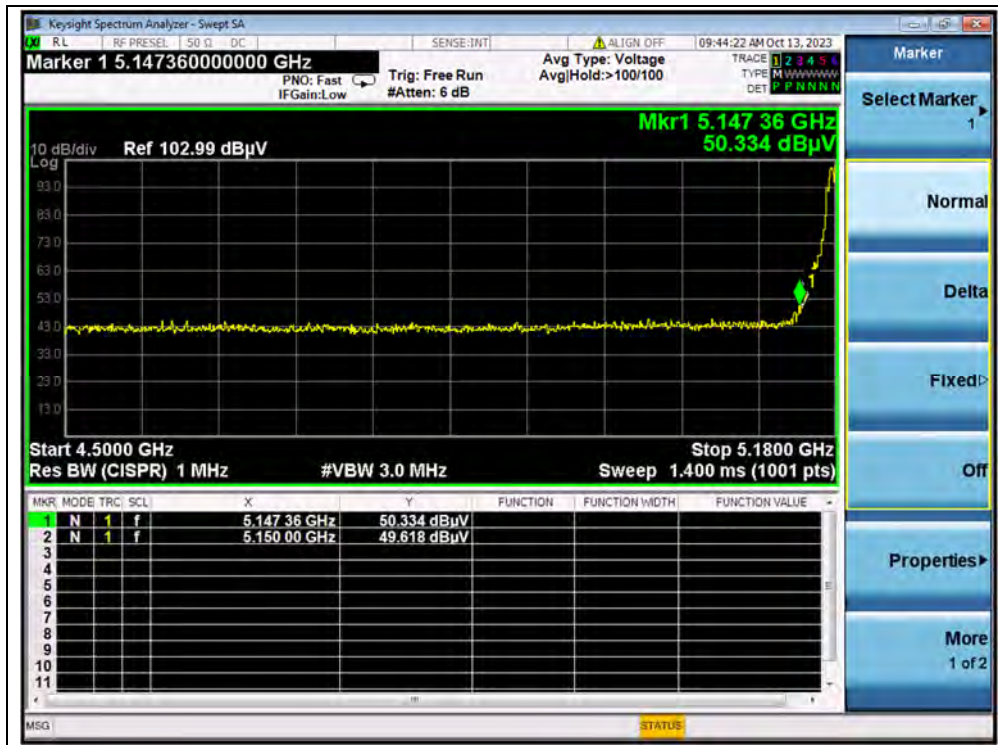
$A_{\text{Factor}}$ : Antenna Factor at 3m

**Note 1:** Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

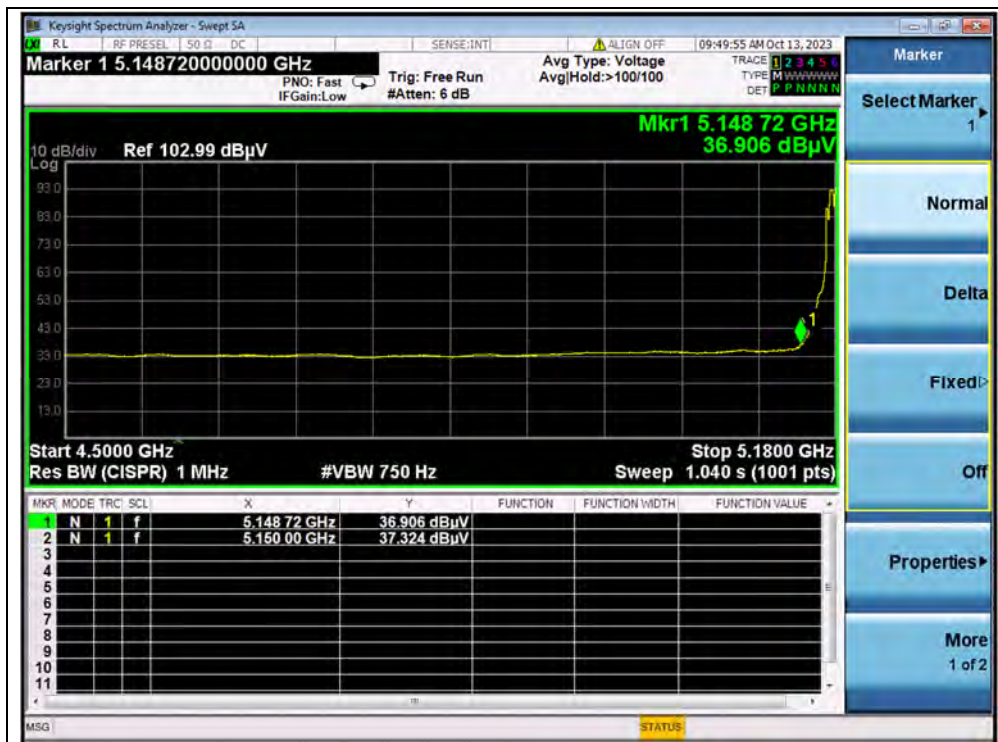
**Note 2** All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

#### 802.11a Mode

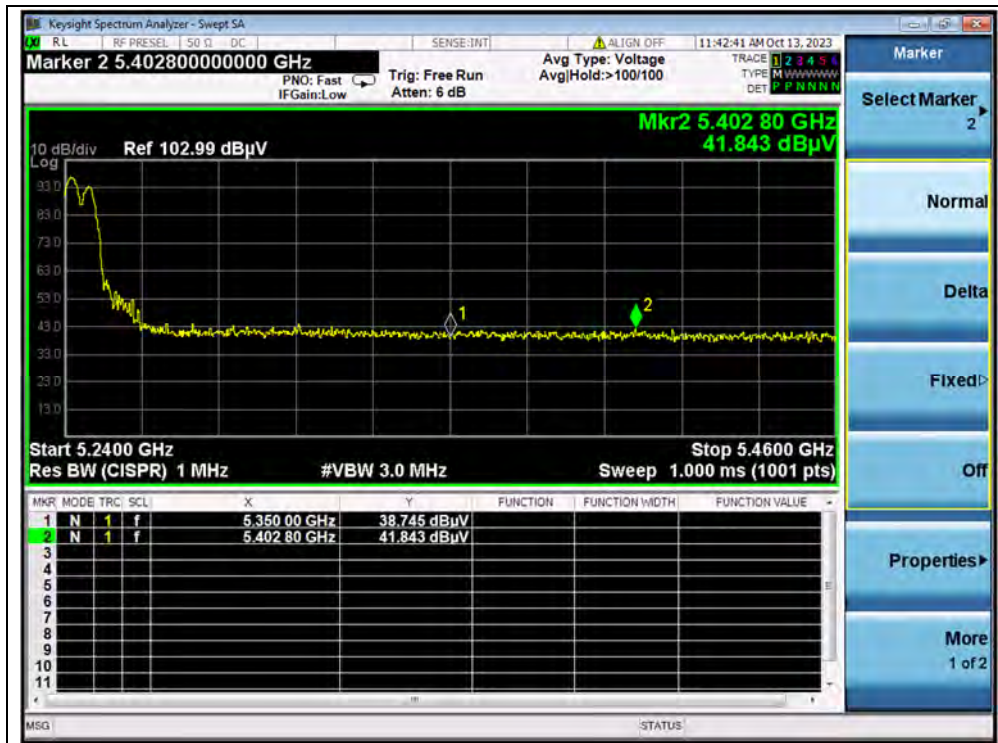
| Channel | Frequency (MHz) | Detector | Receiver Reading   | $A_T$ (dB) | $A_{\text{Factor}}$ (dB@3m) | Max. Emission E (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Verdict |
|---------|-----------------|----------|--------------------|------------|-----------------------------|--------------------------------|----------------------|---------|
|         |                 | PK/ AV   | $U_R$ (dB $\mu$ V) |            |                             |                                |                      |         |
| 36      | 5147.36         | PK       | 50.33              | -19.54     | 32.20                       | 62.99                          | 74                   | PASS    |
| 36      | 5150.00         | AV       | 37.32              | -19.54     | 32.20                       | 49.98                          | 54                   | PASS    |
| 48      | 5402.80         | PK       | 41.84              | -19.54     | 32.20                       | 54.50                          | 74                   | PASS    |
| 48      | 5356.38         | AV       | 32.35              | -19.54     | 32.20                       | 45.01                          | 54                   | PASS    |
| 149     | 5725.00         | PK       | 70.89              | -19.01     | 32.20                       | 84.08                          | 122.23               | PASS    |
| 165     | 5850.00         | PK       | 47.41              | -19.01     | 32.20                       | 60.60                          | 122.23               | PASS    |



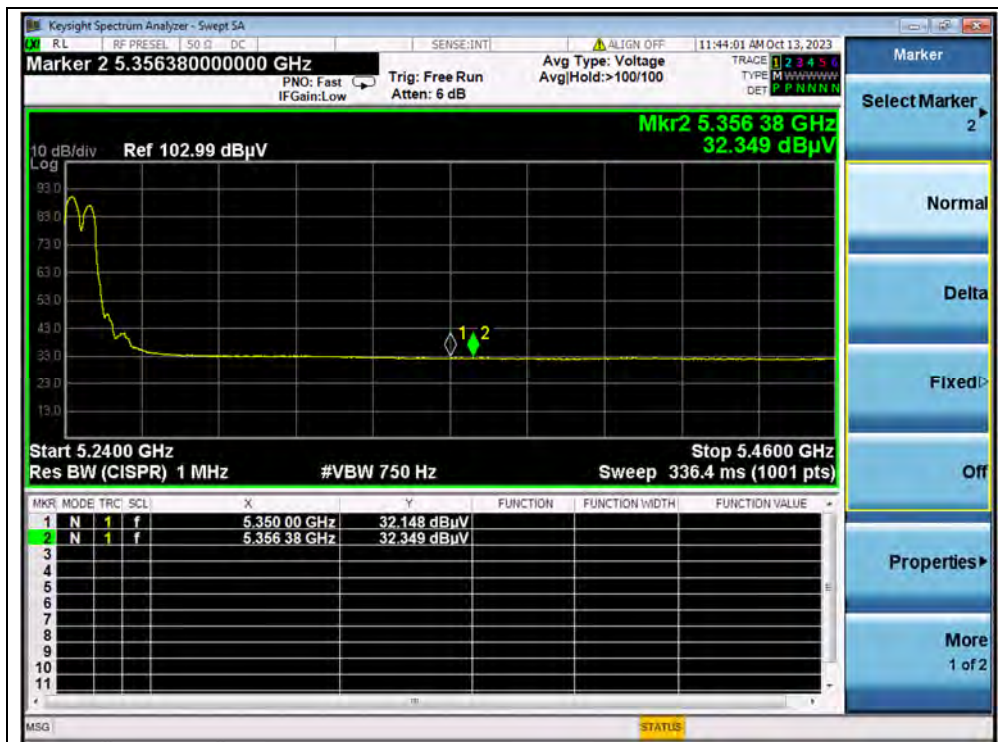
(PEAK, Channel 36, 802.11a)



(AVERAGE, Channel 36, 802.11a)



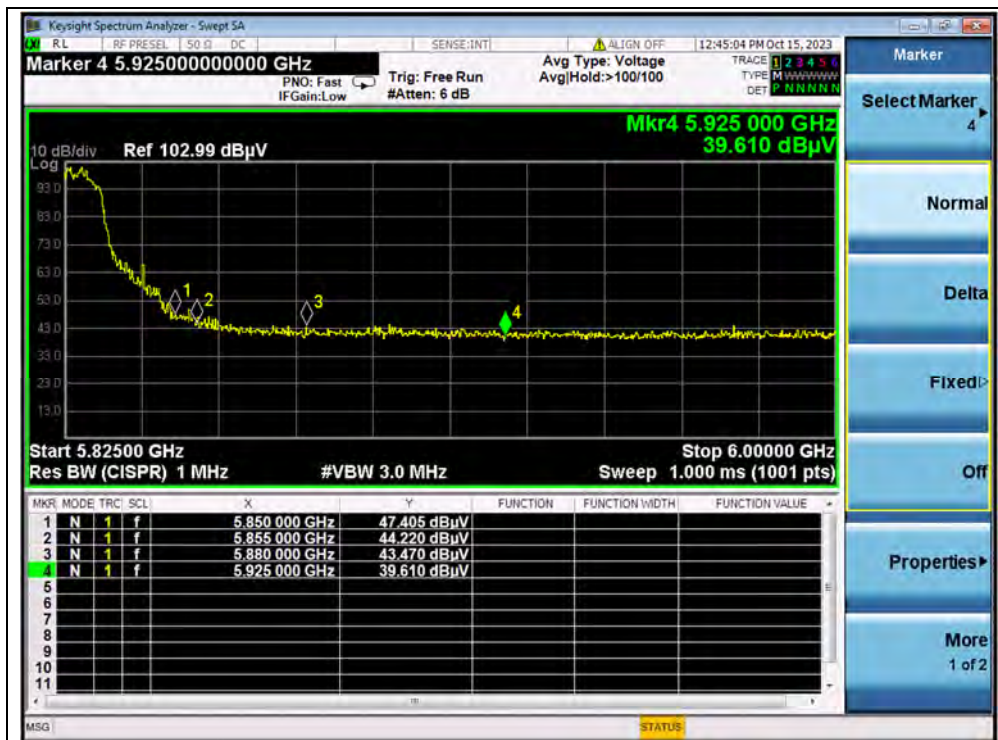
(PEAK, Channel 48, 802.11a)



(AVERAGE, Channel 48, 802.11a)



(PEAK, Channel 149, 802.11a)



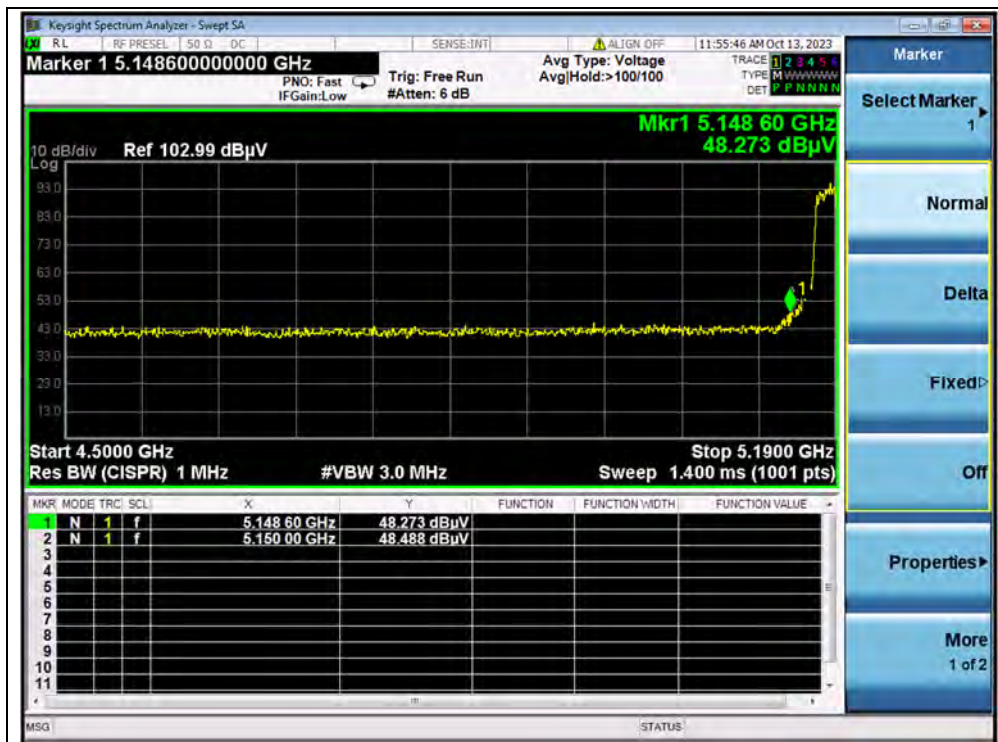
(PEAK, Channel 165, 802.11a)



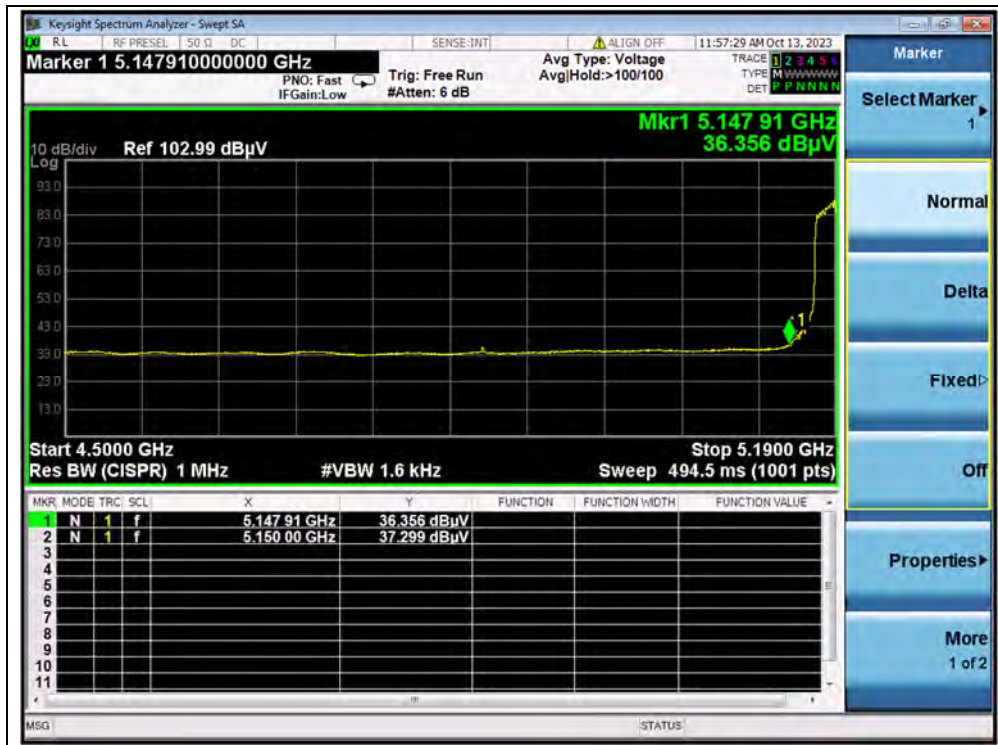


802.11n (HT40) Mode

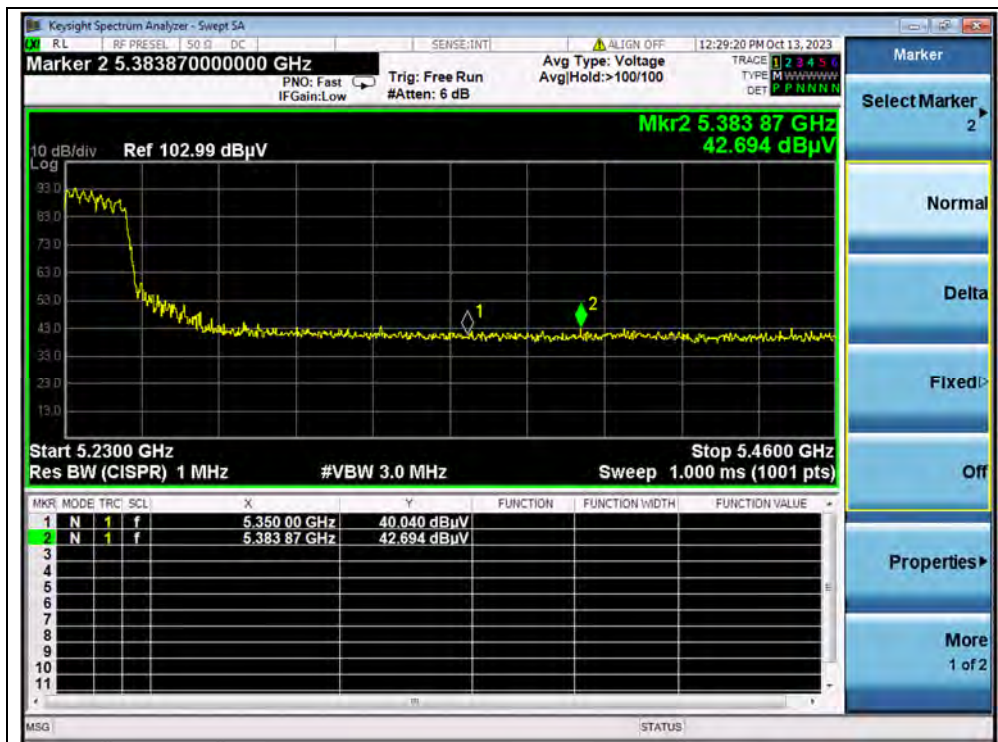
| Channel | Frequency (MHz) | Detector | Receiver Reading      | A <sub>T</sub> | A <sub>Factor</sub> | Max. Emission E | Limit (dBμV/m) | Verdict |
|---------|-----------------|----------|-----------------------|----------------|---------------------|-----------------|----------------|---------|
|         |                 | PK/ AV   | U <sub>R</sub> (dBμV) | (dB)           | (dB@3m)             | (dBμV/m)        |                |         |
| 38      | 5150.00         | PK       | 48.49                 | -<br>19.54     | 32.20               | 61.15           | 74             | PASS    |
| 38      | 5150.00         | AV       | 37.30                 | -<br>19.54     | 32.20               | 49.96           | 54             | PASS    |
| 46      | 5383.87         | PK       | 42.69                 | -<br>19.54     | 32.20               | 55.35           | 74             | PASS    |
| 46      | 5353.74         | AV       | 33.03                 | -<br>19.54     | 32.20               | 45.69           | 54             | PASS    |
| 151     | 5725.00         | PK       | 64.94                 | -<br>19.01     | 32.20               | 78.13           | 122.23         | PASS    |
| 159     | 5855.00         | PK       | 44.11                 | -<br>19.01     | 32.20               | 57.30           | 101.53         | PASS    |



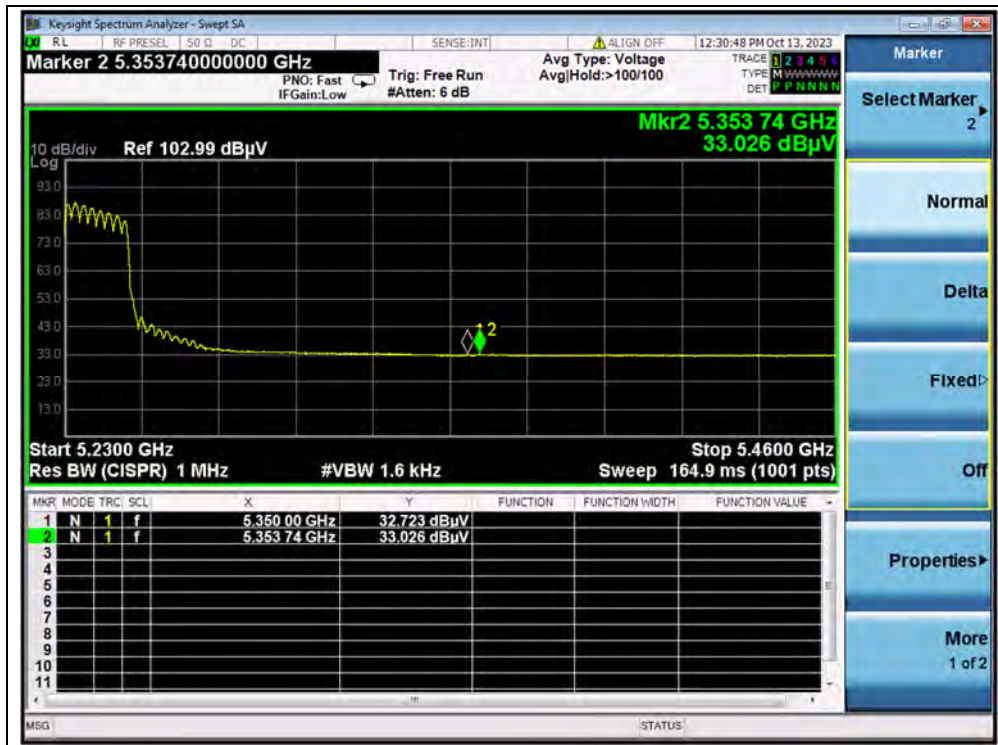
(PEAK, Channel 38, 802.11n (HT40))



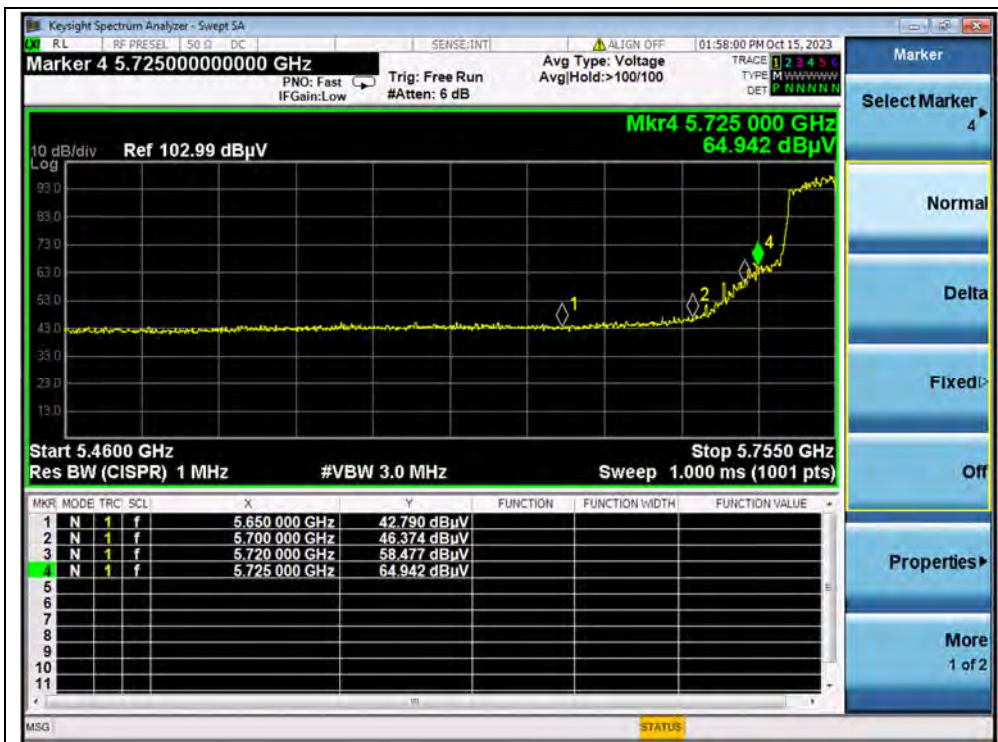
(AVERAGE, Channel 38, 802.11n (HT40))



(PEAK, Channel 46, 802.11n (HT40))



(AVERAGE, Channel 46, 802.11n (HT40))



(PEAK, Channel 151, 802.11n (HT40))

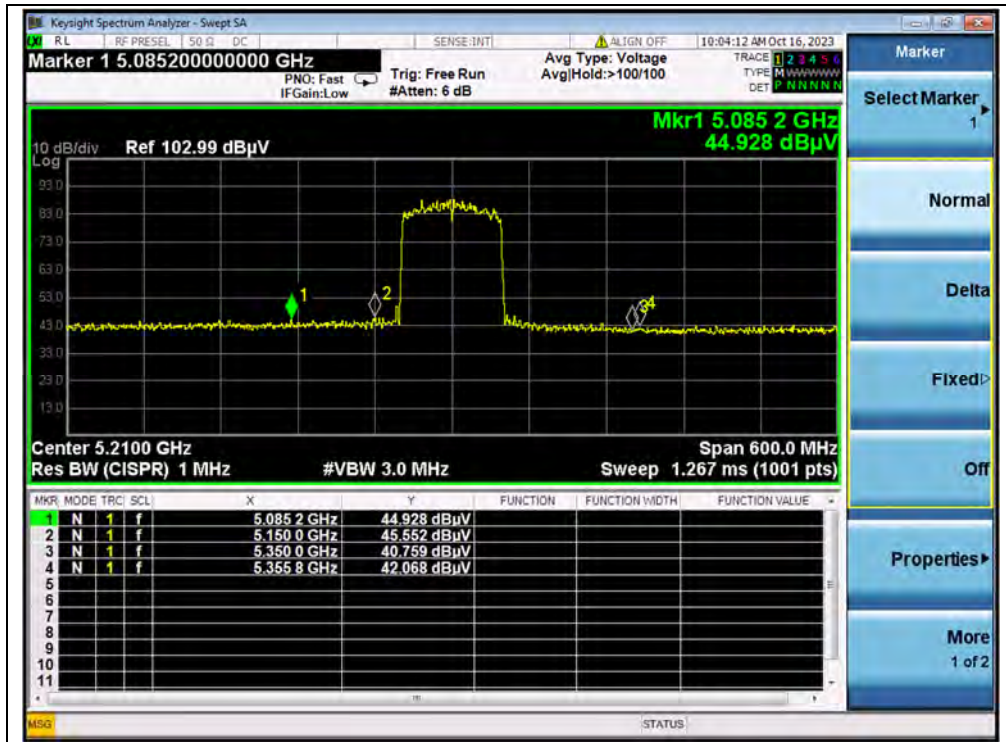


(PEAK, Channel 159, 802.11n (HT40))

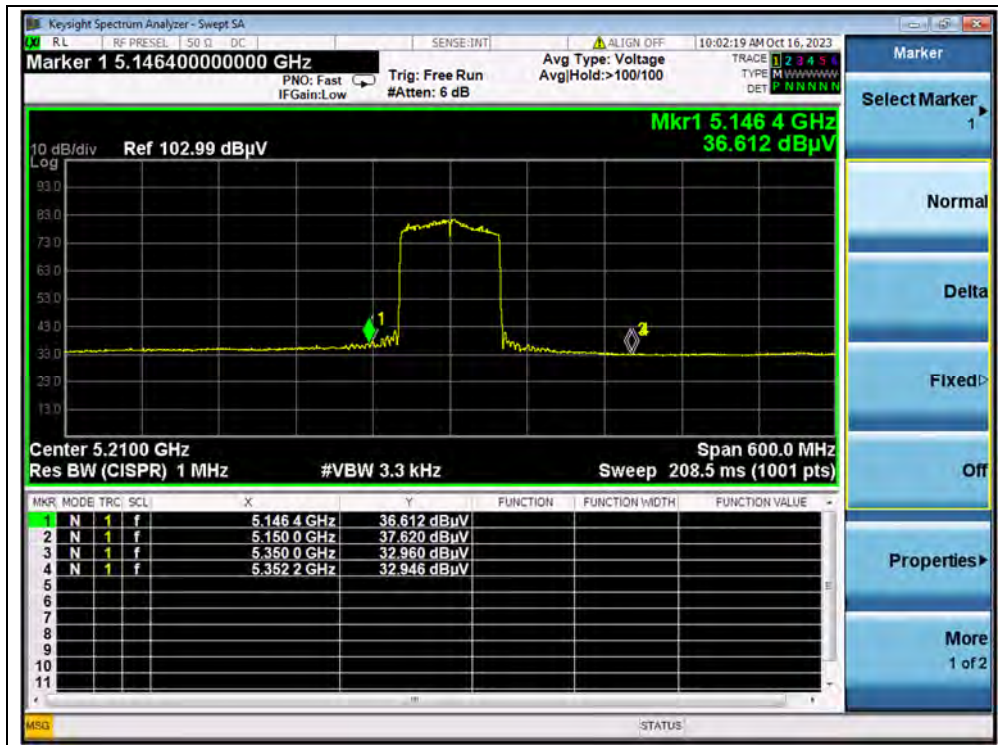


802.11 ac (VHT80) Mode

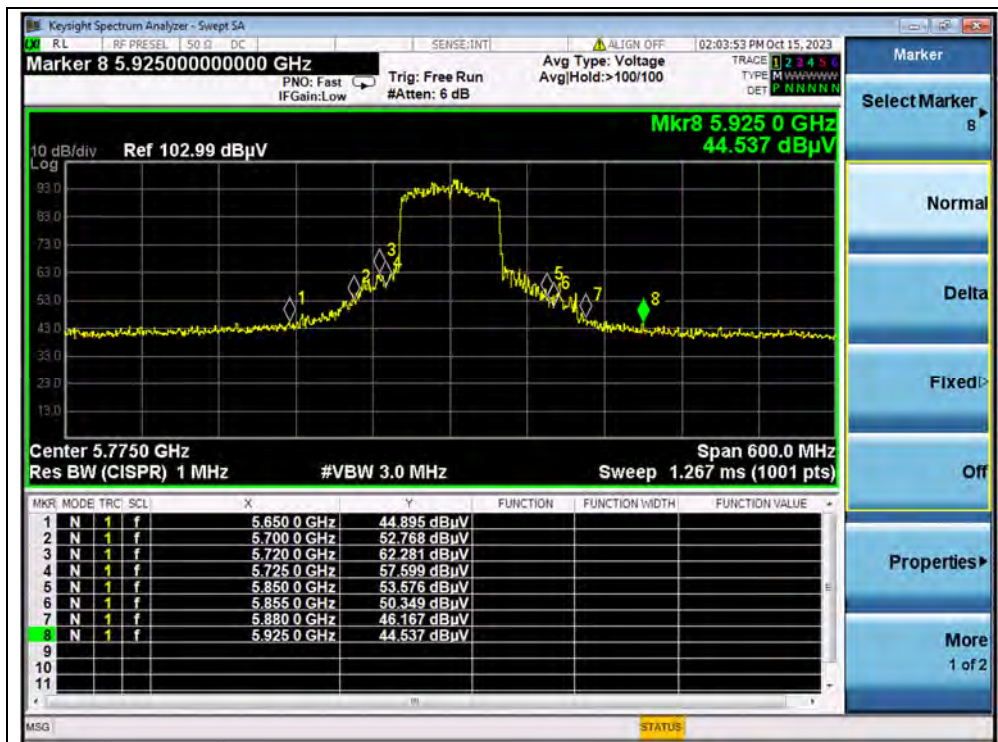
| Channel | Frequency (MHz) | Detector | Receiver Reading $U_R$ (dBuV) | $A_T$ (dB) | $A_{Factor}$ (dB@ 3m) | Max. Emission E (dBuV/m) | Limit (dBuV/m) | Verdict |
|---------|-----------------|----------|-------------------------------|------------|-----------------------|--------------------------|----------------|---------|
|         |                 | PK/ AV   |                               |            |                       |                          |                |         |
| 42      | 5150.00         | PK       | 45.55                         | -19.54     | 32.20                 | 58.21                    | 74             | PASS    |
| 42      | 5150.00         | AV       | 37.62                         | -19.54     | 32.20                 | 50.28                    | 54             | PASS    |
| 42      | 5355.80         | PK       | 42.07                         | -19.54     | 32.20                 | 54.73                    | 74             | PASS    |
| 42      | 5350.00         | AV       | 32.96                         | -19.54     | 32.20                 | 45.62                    | 54             | PASS    |
| 155     | 5720.00         | PK       | 62.28                         | -19.01     | 32.20                 | 75.47                    | 100.83         | PASS    |
| 155     | 5850.00         | PK       | 53.58                         | -19.01     | 32.20                 | 66.77                    | 122.23         | PASS    |



(Channel 42, PEAK, 802.11ac (VHT80))



(Channel 42, AVG, 802.11ac (VHT80))

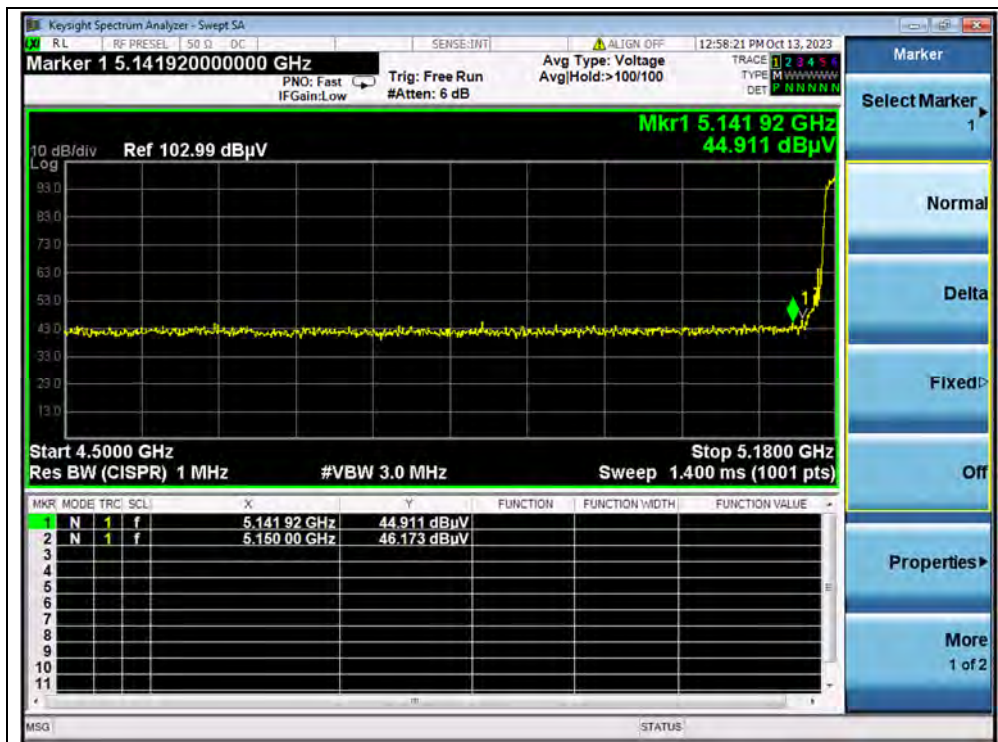


(Channel 155, PEAK, 802.11ac (VHT80))

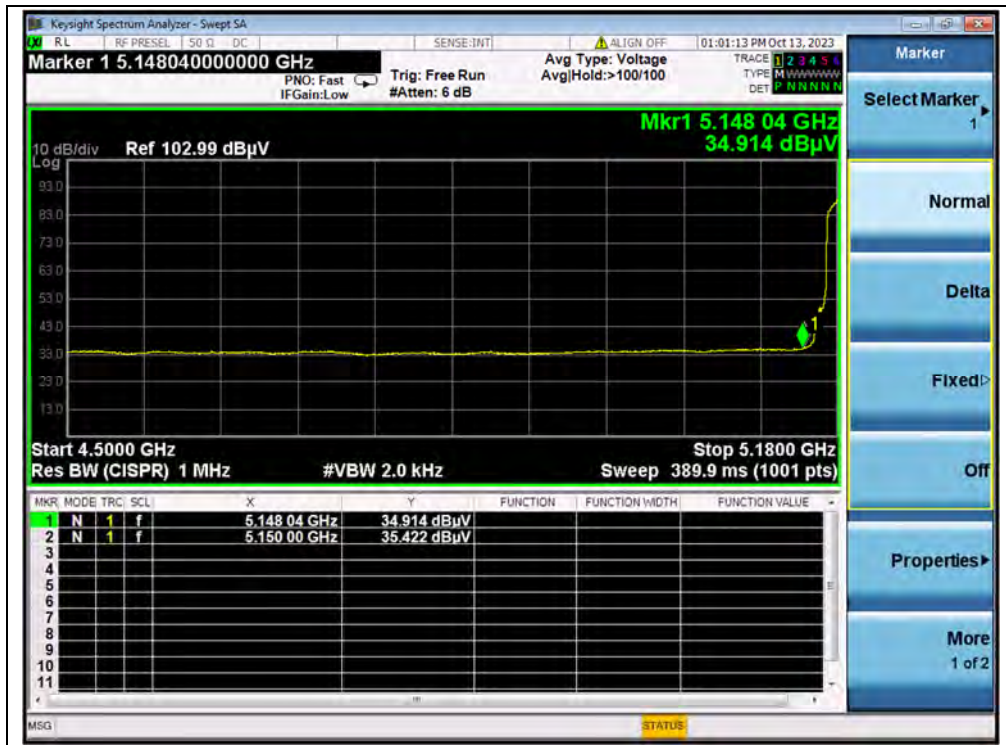


802.11ax (HEW20) Mode

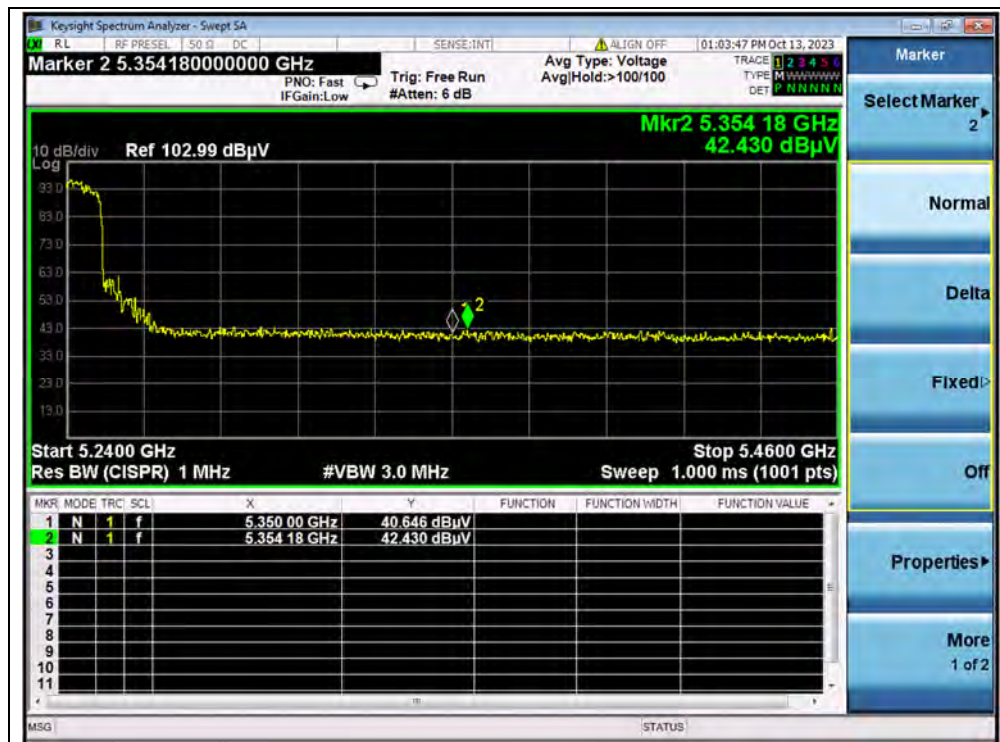
| Channel | Frequency (MHz) | Detector | Receiver Reading      | A <sub>T</sub> | A <sub>Factor</sub> | Max. Emission | Limit (dBμV/m) | Verdict |
|---------|-----------------|----------|-----------------------|----------------|---------------------|---------------|----------------|---------|
|         |                 | PK/ AV   | U <sub>R</sub> (dBμV) | (dB)           | (dB@3m)             | E (dBμV/m)    |                |         |
| 36      | 5150.00         | PK       | 46.17                 | -19.54         | 32.20               | 58.83         | 74             | PASS    |
| 36      | 5150.00         | AV       | 35.42                 | -19.54         | 32.20               | 48.08         | 54             | PASS    |
| 48      | 5354.18         | PK       | 42.43                 | -19.54         | 32.20               | 55.09         | 74             | PASS    |
| 48      | 5364.52         | AV       | 33.35                 | -19.54         | 32.20               | 46.01         | 54             | PASS    |
| 149     | 5725.00         | PK       | 63.31                 | -19.01         | 32.20               | 76.50         | 122.23         | PASS    |
| 165     | 5850.00         | PK       | 51.39                 | -19.01         | 32.20               | 64.58         | 122.23         | PASS    |



(PEAK, Channel 36, 802.11ax (HEW20))

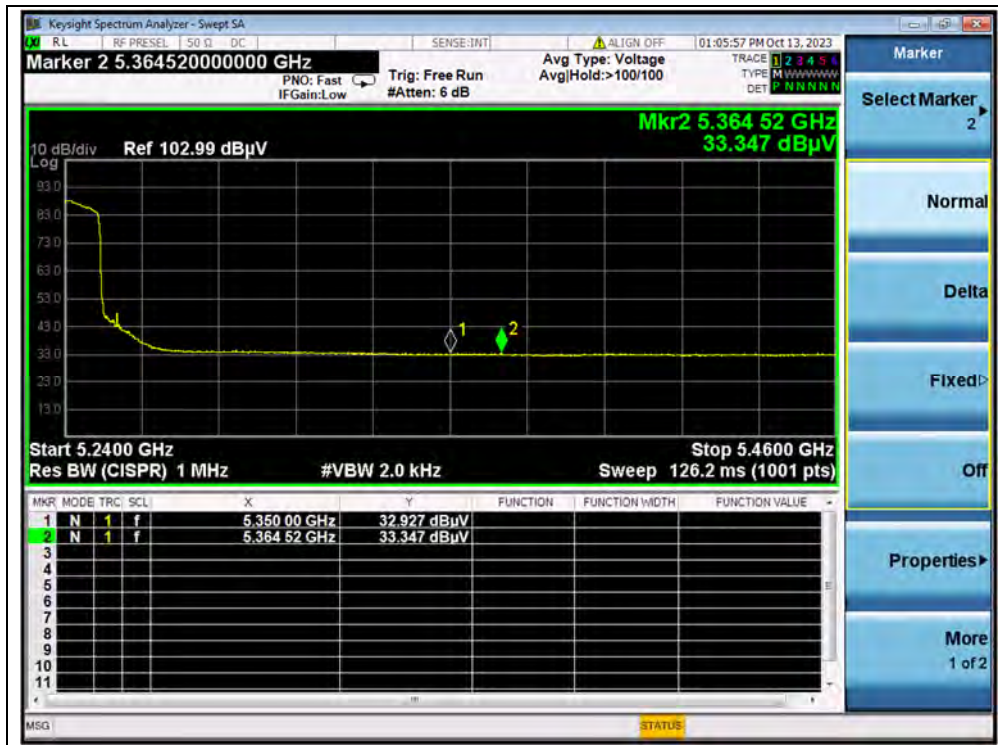


(AVERAGE, Channel 36, 802.11ax (HEW20))



(PEAK, Channel 48, 802.11ax (HEW20))

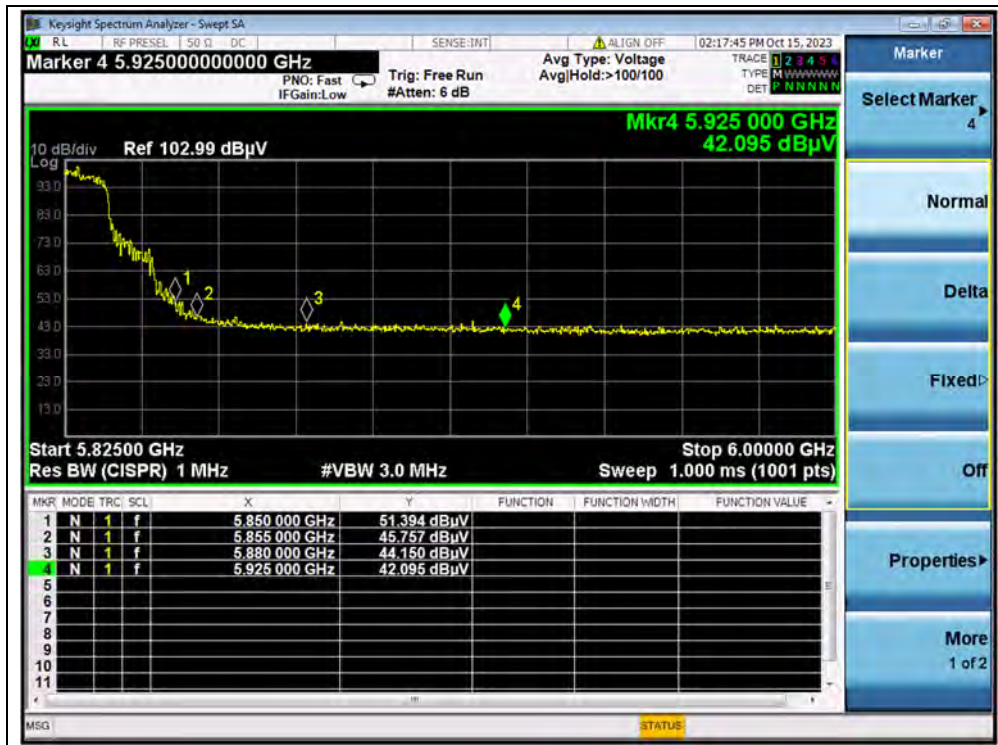




(AVERAGE, Channel 48, 802.11ax (HEW20))



(PEAK, Channel 149, 802.11ax (HEW20))



(PEAK, Channel 165, 802.11ax (HEW20))



## A.8. Radiated Emission

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

During the test, the total correction Factor  $A_T$  and  $A_{\text{Factor}}$  were built in test software.

**Note1:** All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

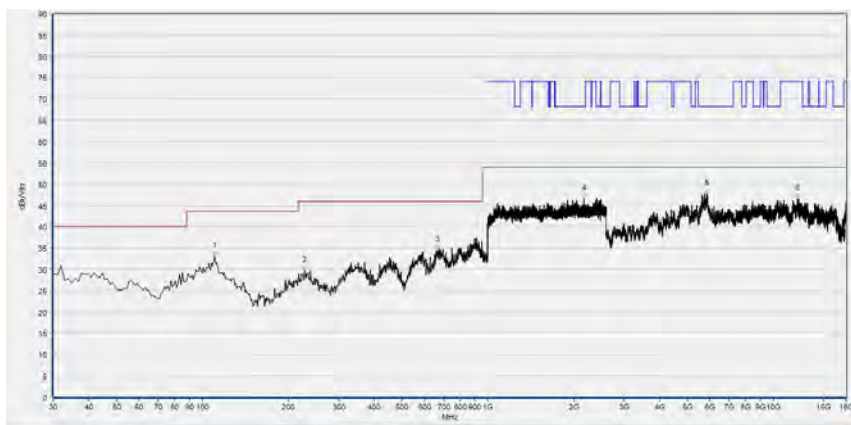
**Note2:** For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

**Note3:** For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

**Note 4:** All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

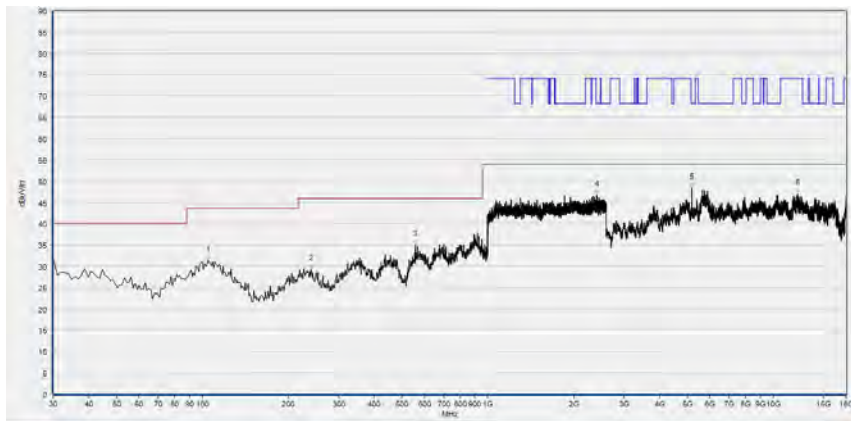
**802.11a Mode**

**Plot for Channel 36**



| Fre. (MHz) | PK (dBµV/m) | QP (dBµV/m) | AV (dBµV/m) | Limit-PK (dBµV/m) | Limit-QP (dBµV/m) | Limit-AV (dBµV/m) | Antenna    | Verdict |
|------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|------------|---------|
| 110.510    | 32.96       | N/A         | N/A         | N/A               | 43.50             | N/A               | Horizontal | PASS    |
| 227.880    | 29.65       | N/A         | N/A         | N/A               | 46.00             | N/A               | Horizontal | PASS    |
| 666.320    | 34.58       | N/A         | N/A         | N/A               | 46.00             | N/A               | Horizontal | PASS    |
| 2168.000   | 46.59       | N/A         | N/A         | 68.23             | N/A               | N/A               | Horizontal | PASS    |
| 5858.640   | 47.79       | N/A         | N/A         | 68.23             | N/A               | N/A               | Horizontal | PASS    |
| 12151.080  | 46.67       | N/A         | N/A         | 74.00             | N/A               | 54.00             | Horizontal | PASS    |

(Antenna Horizontal, 30MHz to 18GHz)



| Fre. (MHz) | PK (dBµV/m) | QP (dBµV/m) | AV (dBµV/m) | Limit-PK (dBµV/m) | Limit-QP (dBµV/m) | Limit-AV (dBµV/m) | Antenna  | Verdict |
|------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|----------|---------|
| 104.690    | 31.39       | N/A         | N/A         | N/A               | 43.50             | N/A               | Vertical | PASS    |
| 240.490    | 29.35       | N/A         | N/A         | N/A               | 46.00             | N/A               | Vertical | PASS    |
| 557.680    | 35.08       | N/A         | N/A         | N/A               | 46.00             | N/A               | Vertical | PASS    |
| 2412.800   | 46.78       | N/A         | N/A         | 68.23             | N/A               | N/A               | Vertical | PASS    |
| 5181.040   | 48.41       | N/A         | N/A         | 68.23             | N/A               | N/A               | Vertical | PASS    |
| 12144.920  | 47.05       | N/A         | N/A         | 74.00             | N/A               | 54.00             | Vertical | PASS    |

(Antenna Vertical, 30MHz to 18GHz)