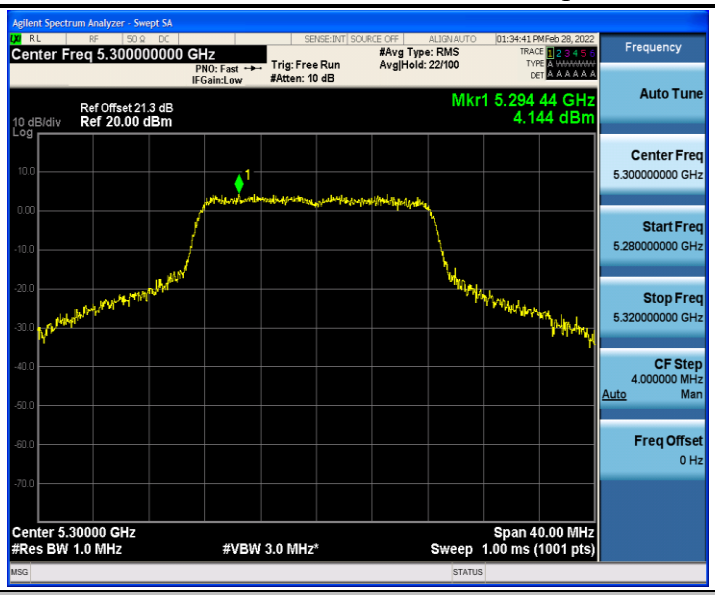
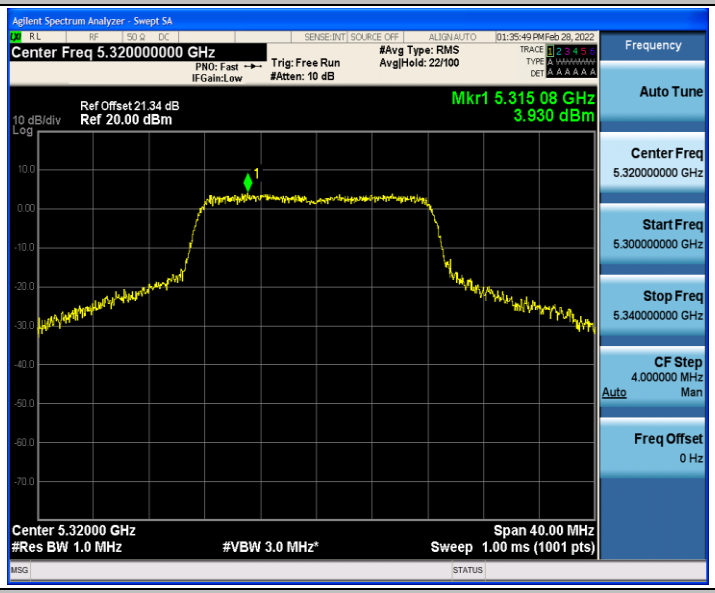



11A_Ant1_5320

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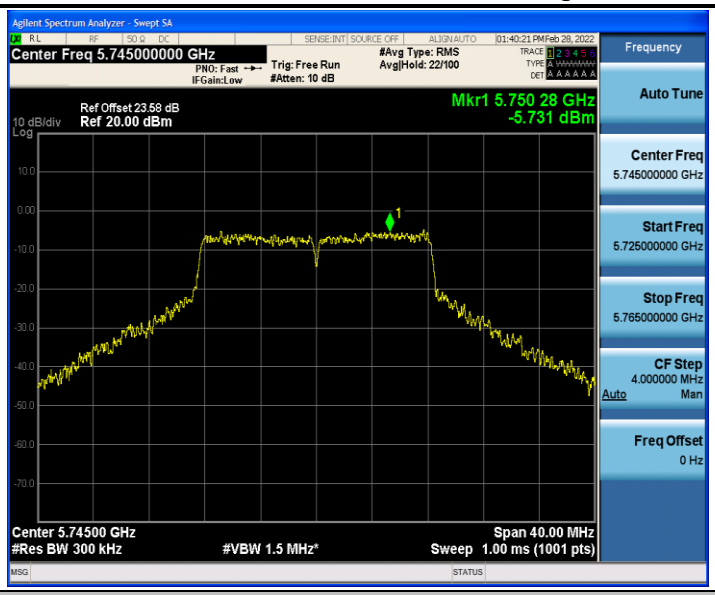


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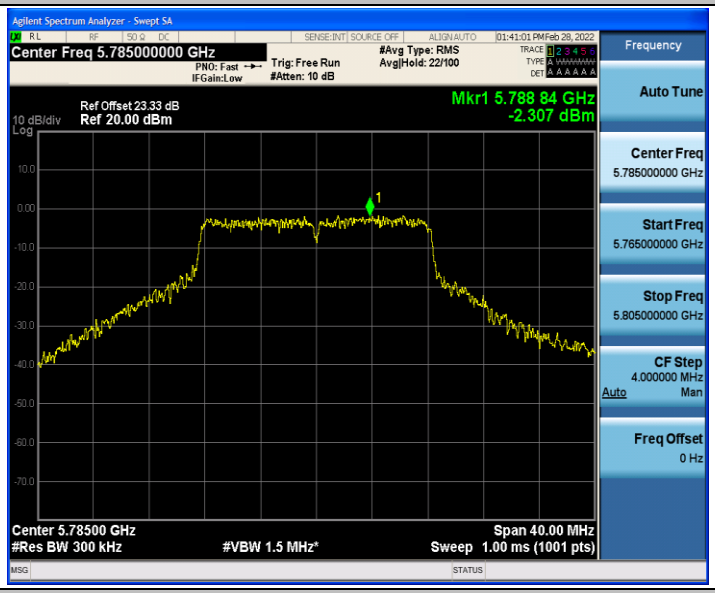


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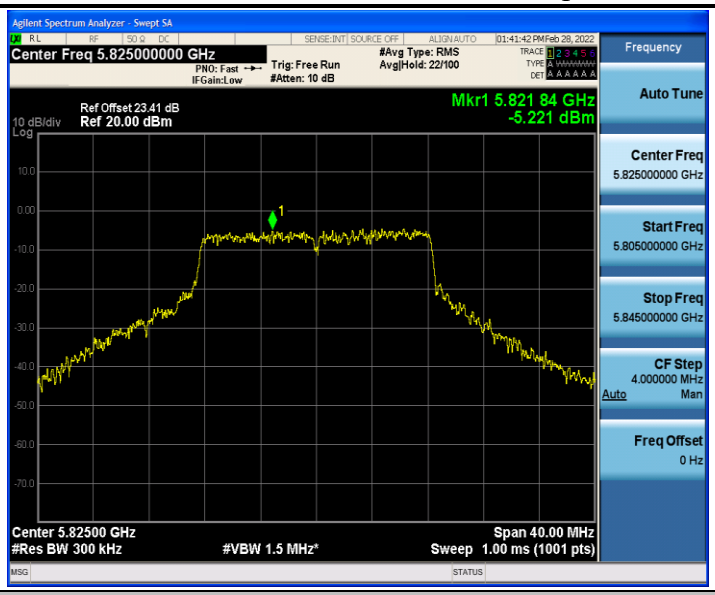


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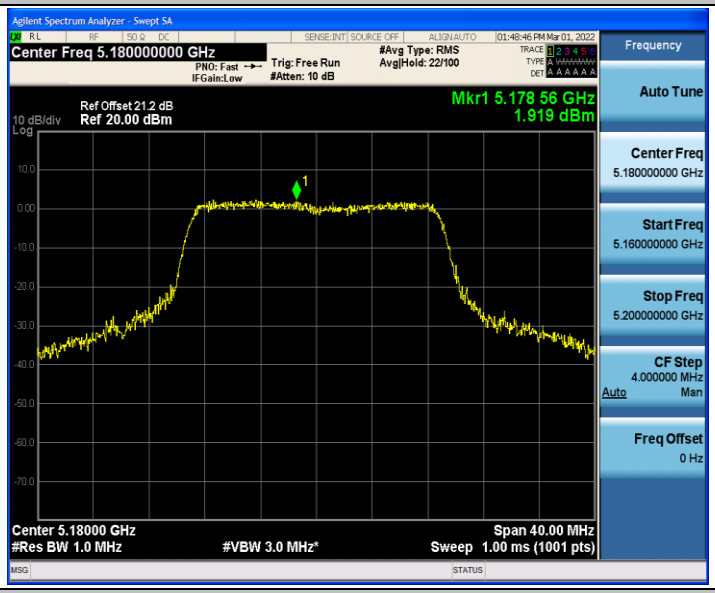


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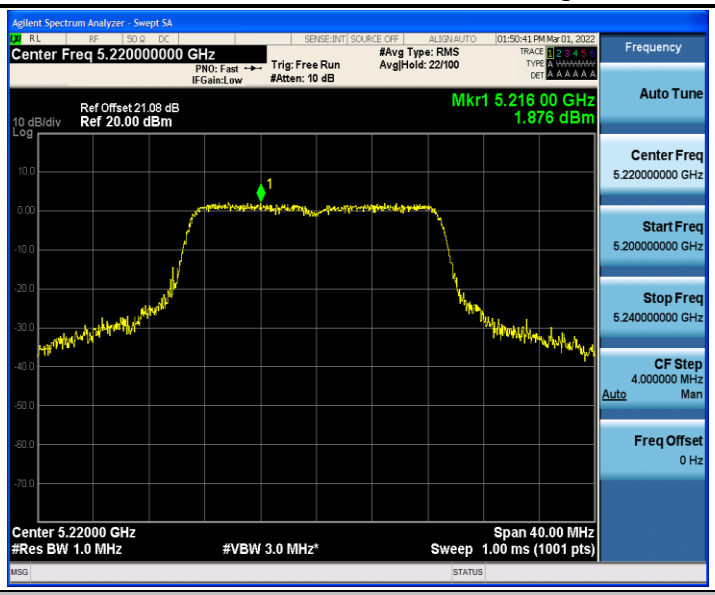


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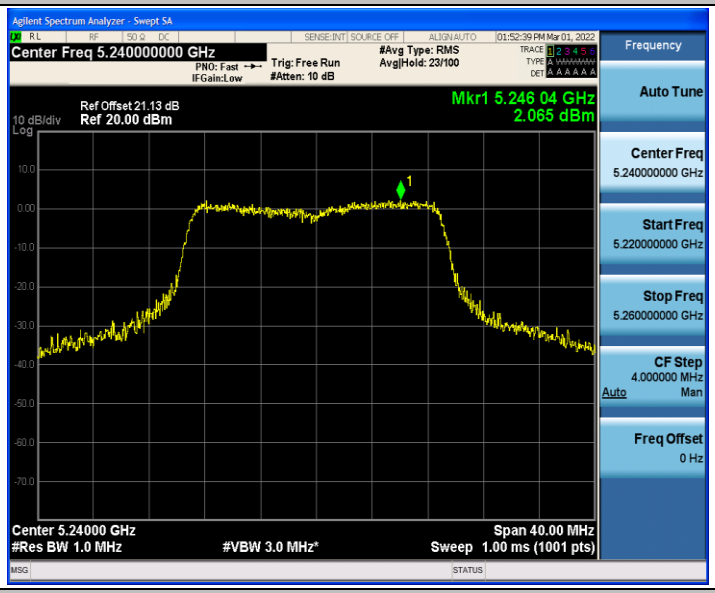


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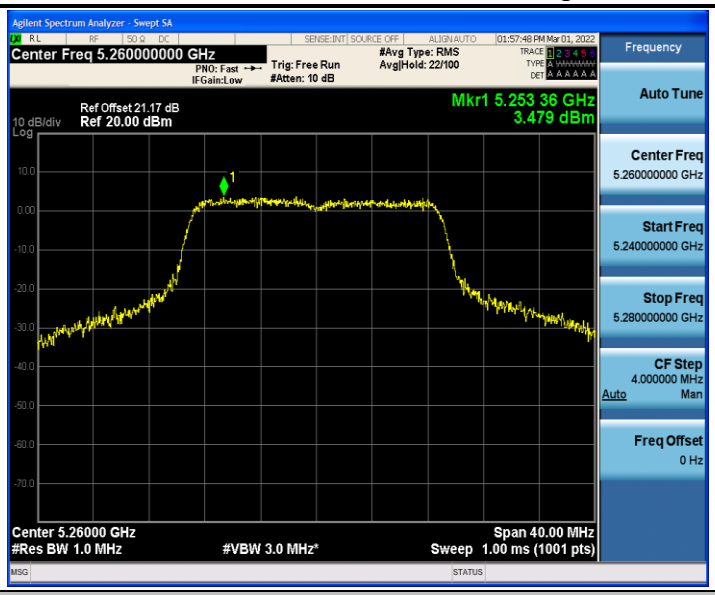


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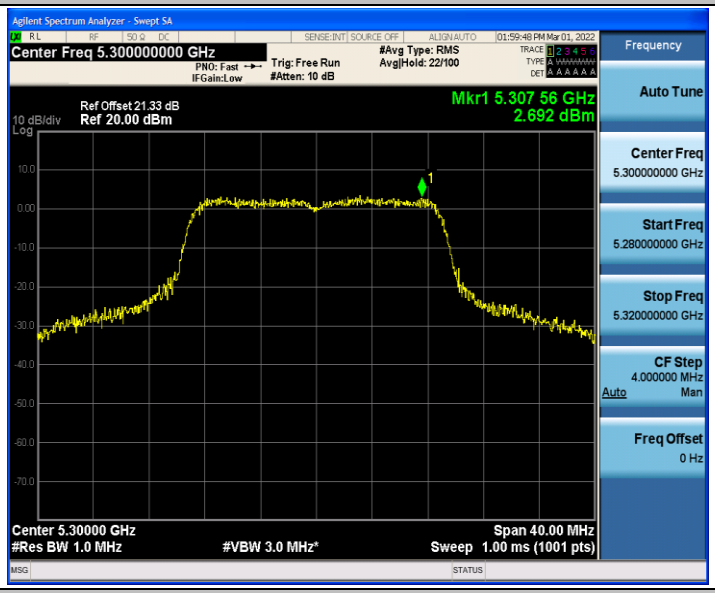


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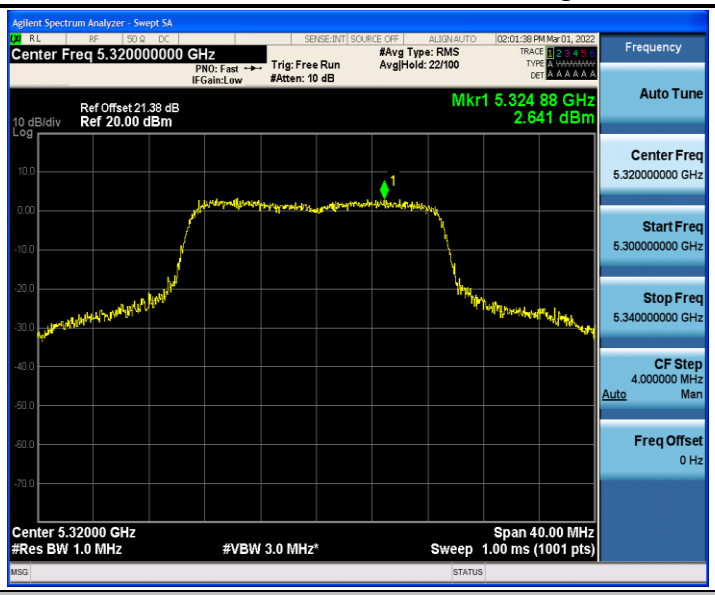


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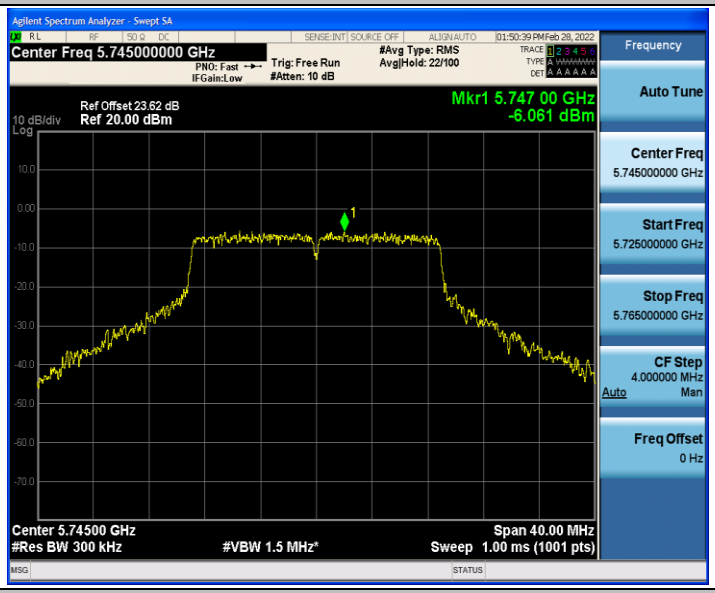


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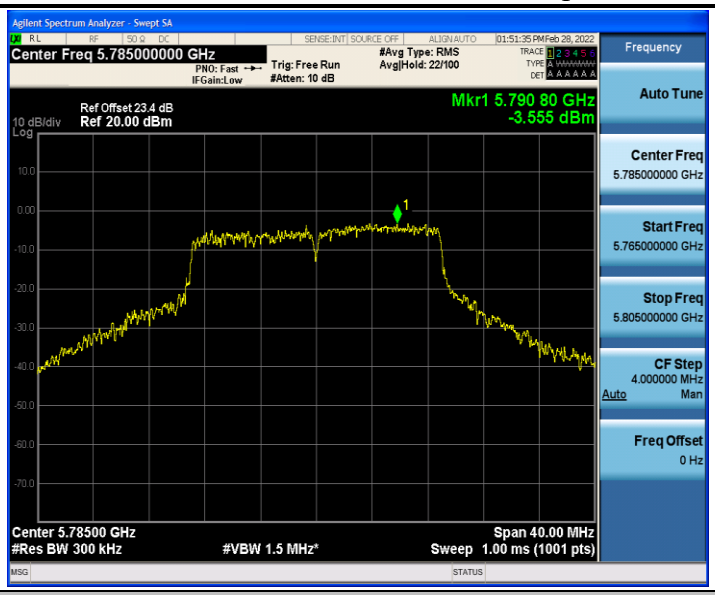


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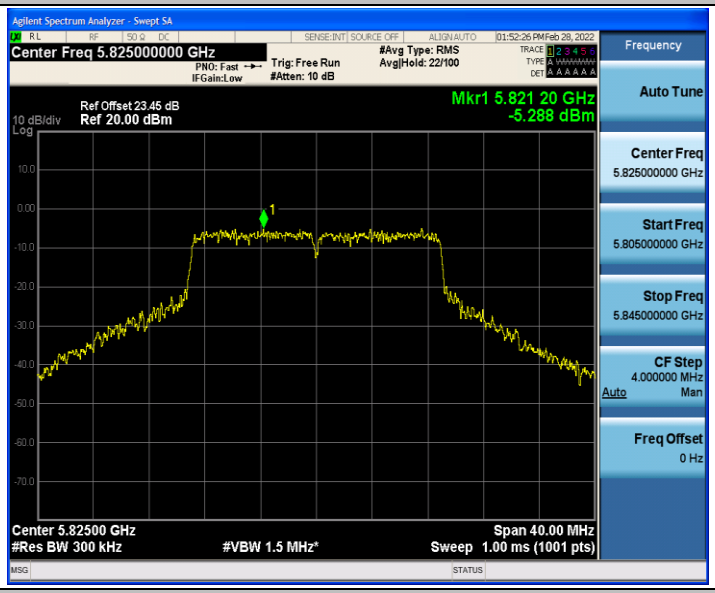


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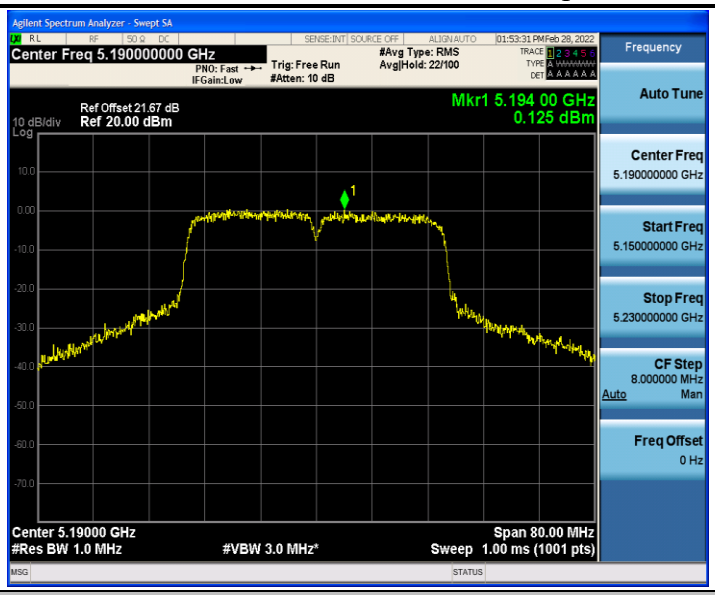


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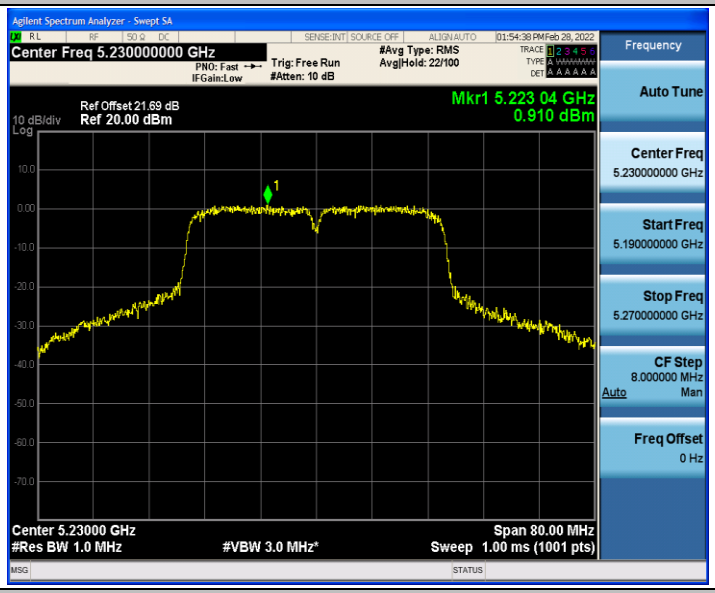


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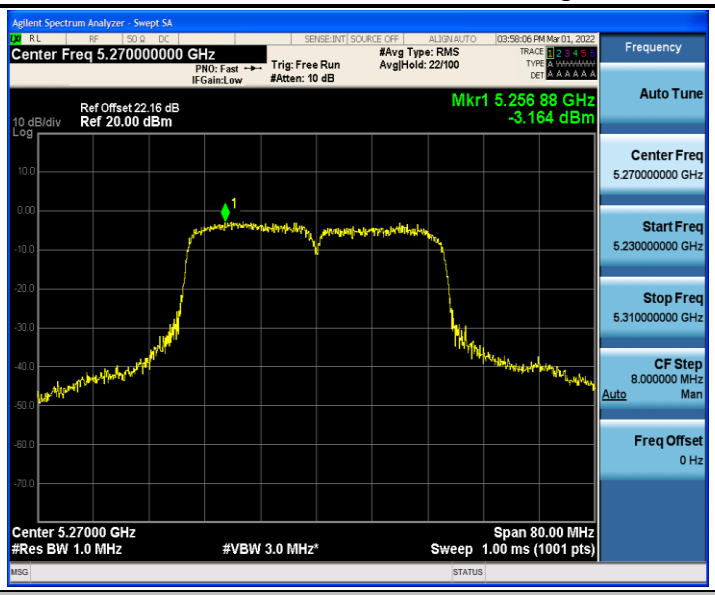


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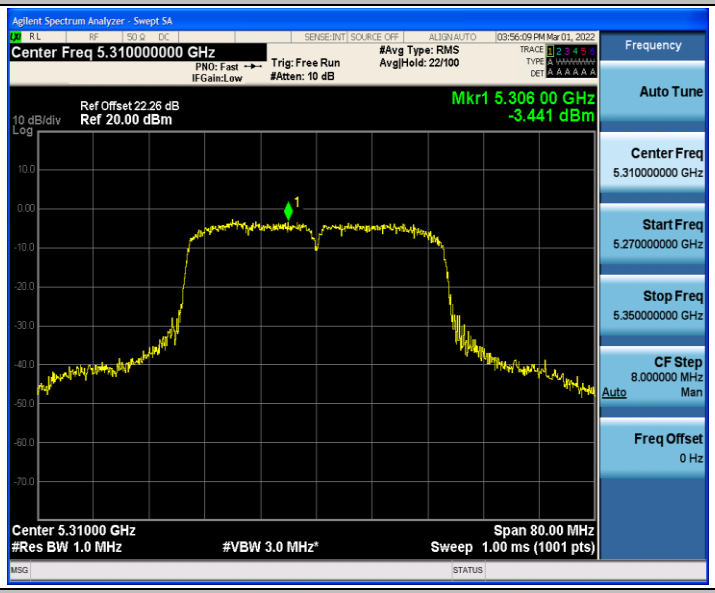


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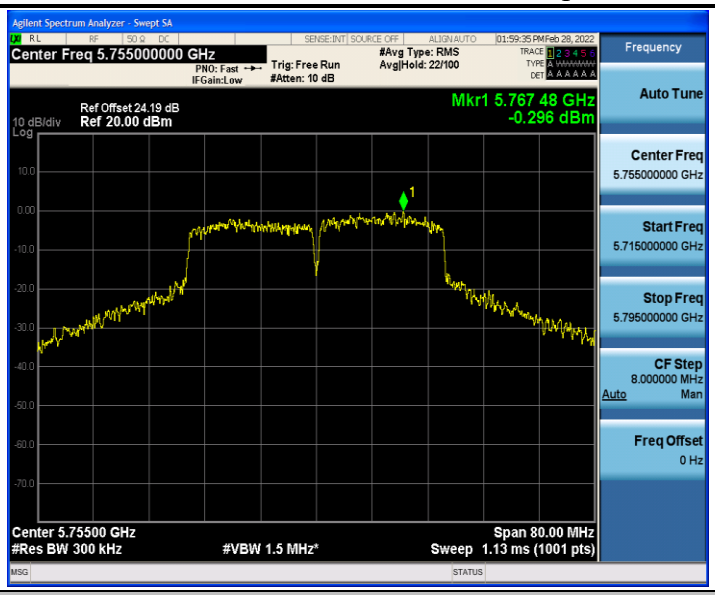


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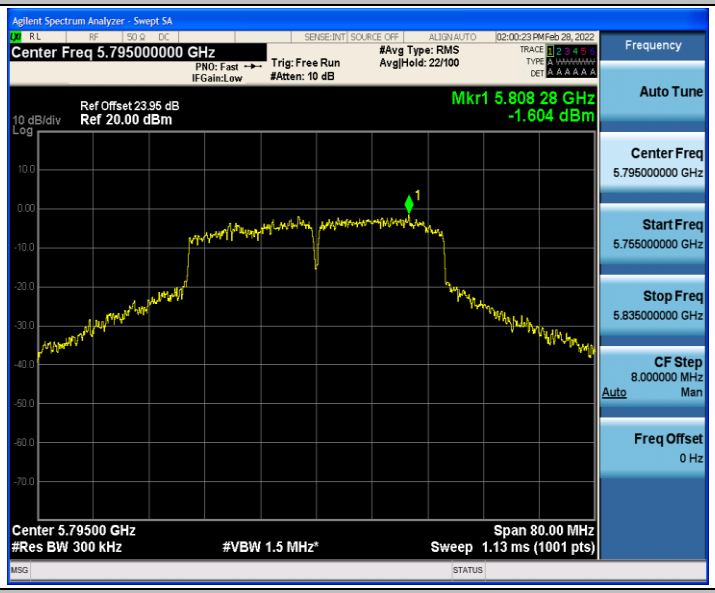
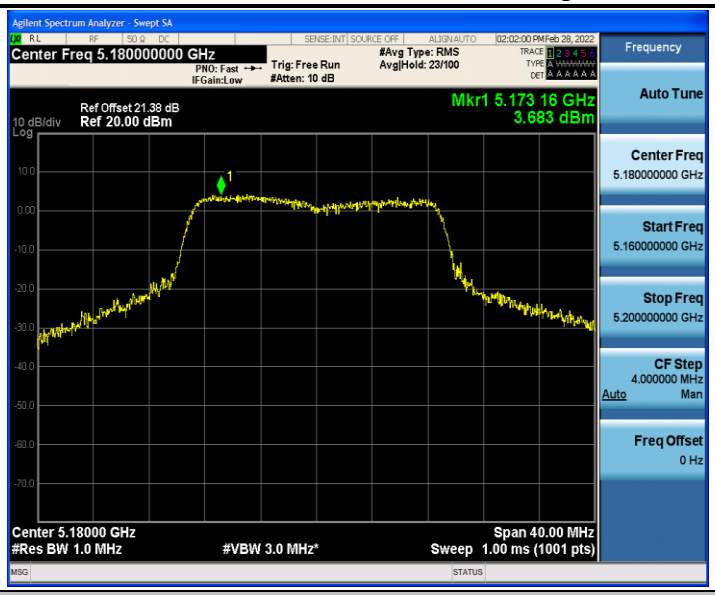



11AC20SISO_Ant1_5180

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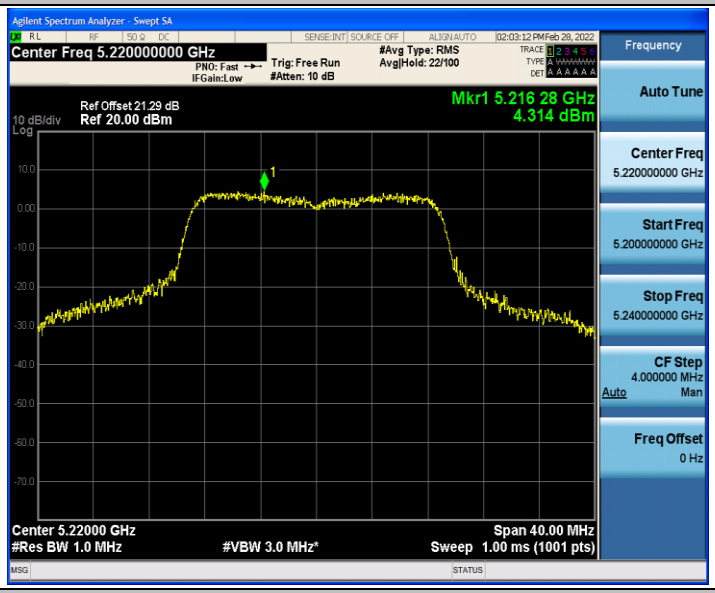


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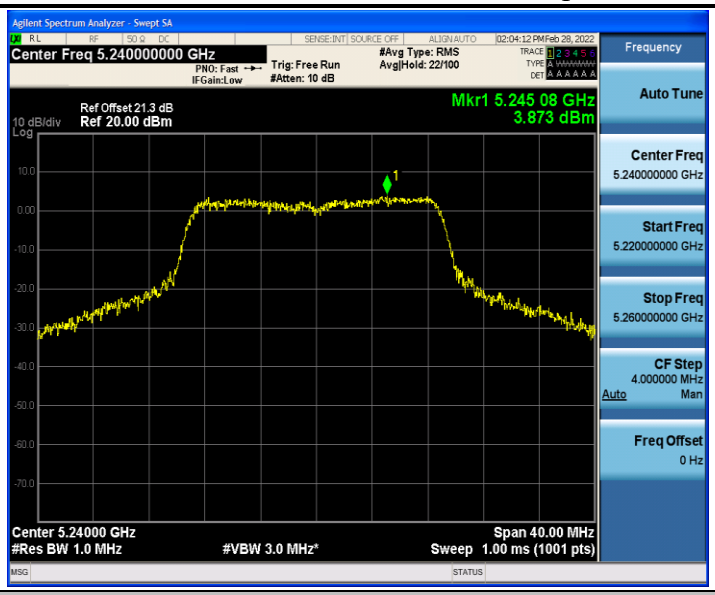


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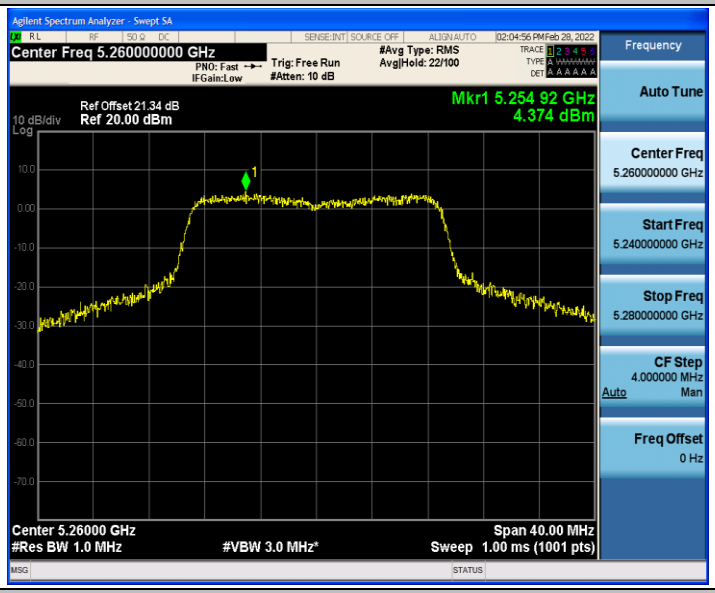


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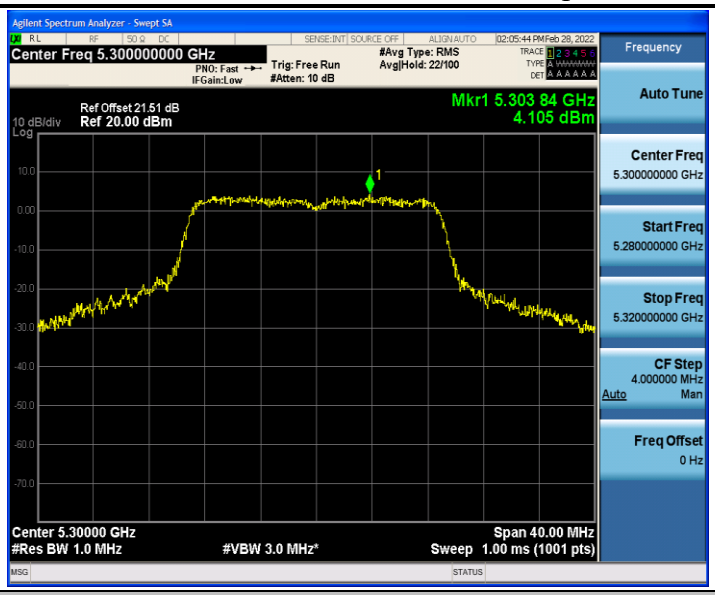


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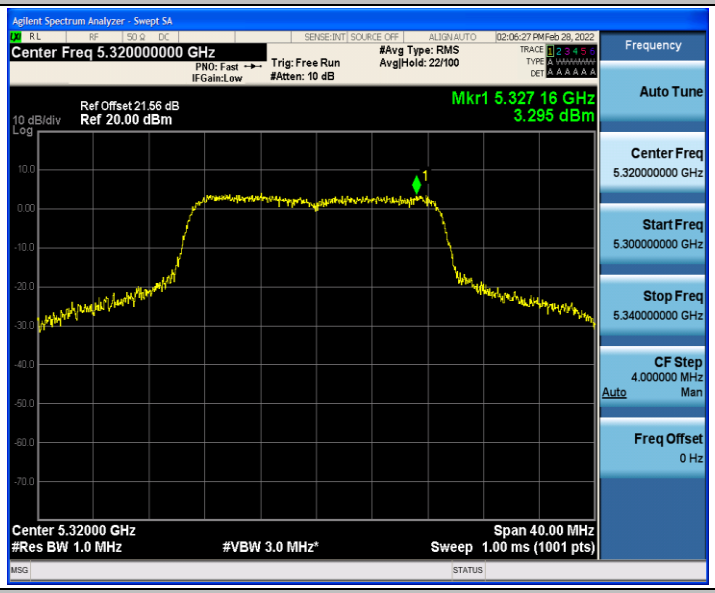


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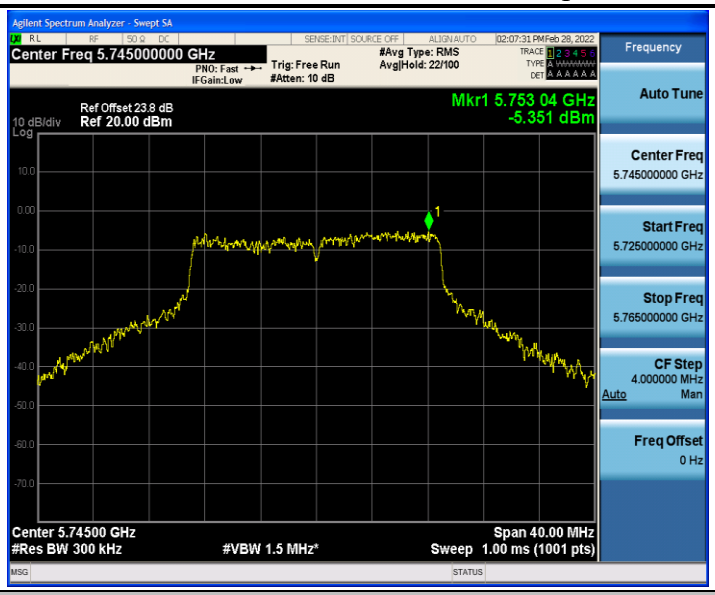


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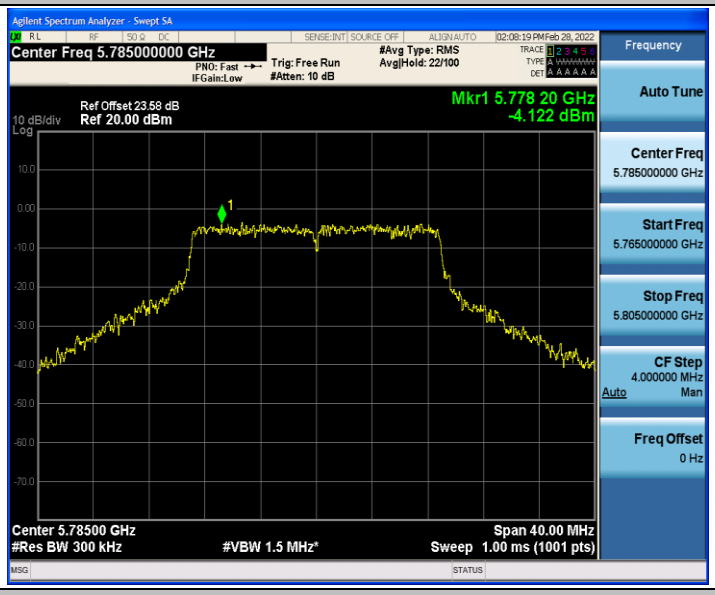


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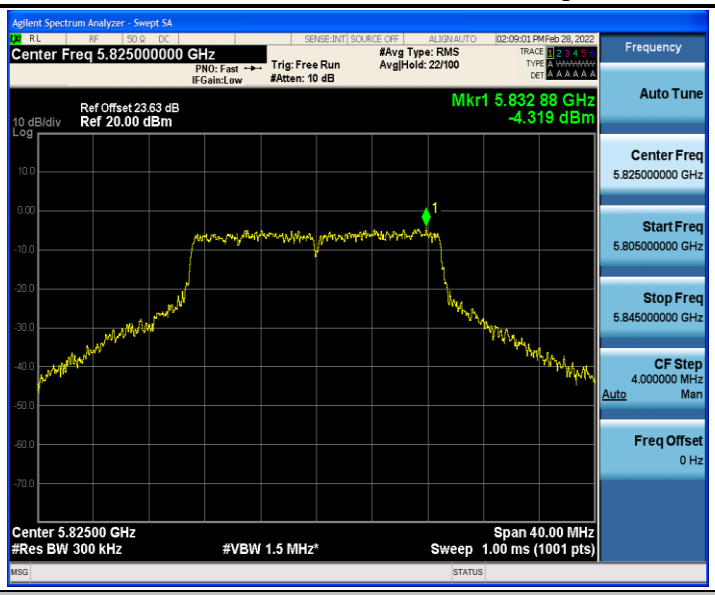


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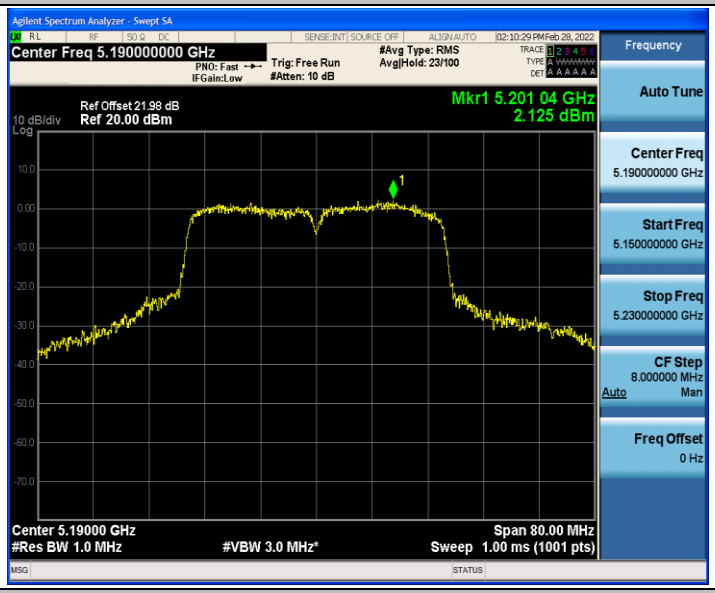


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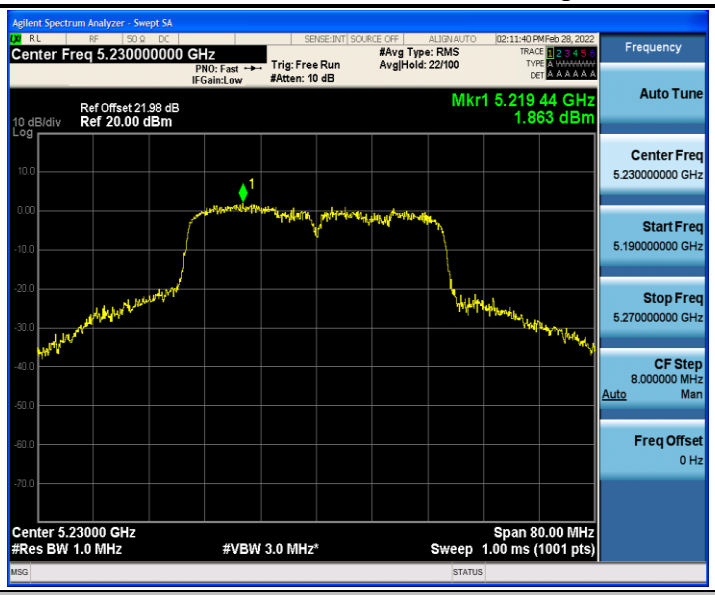


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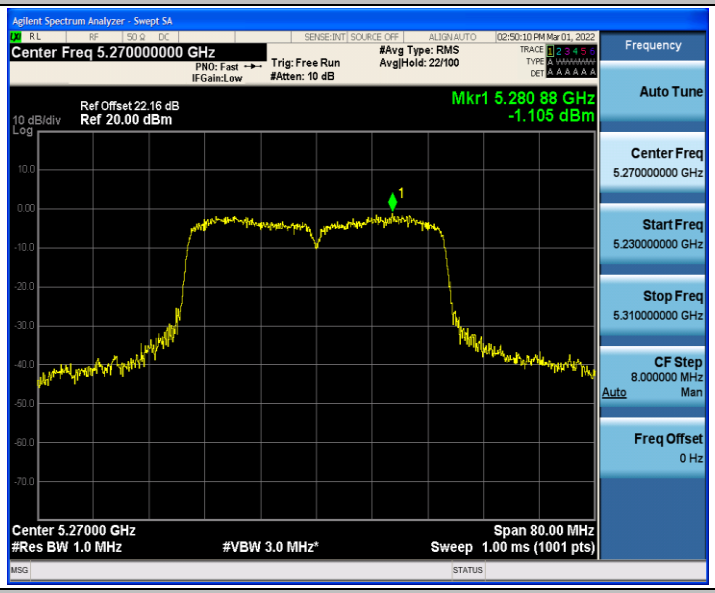


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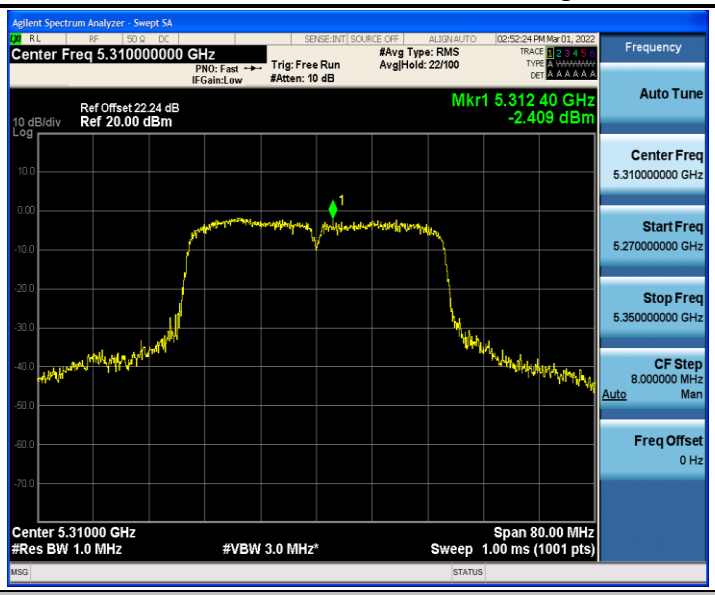


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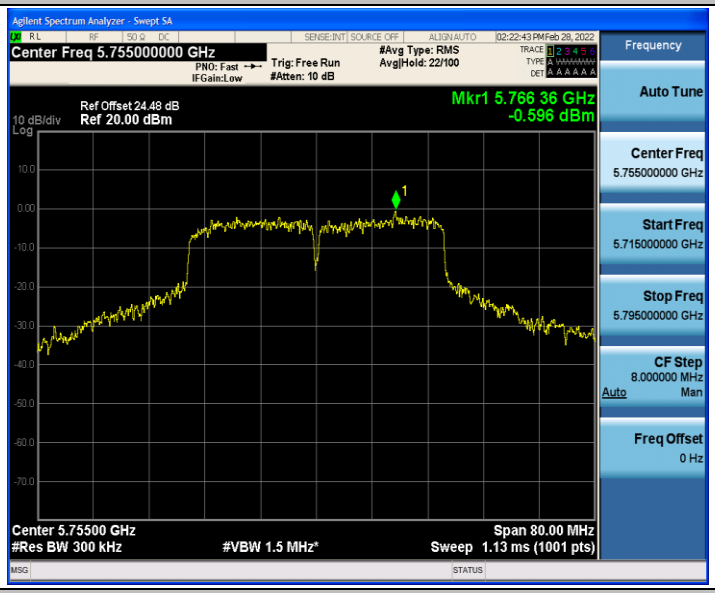


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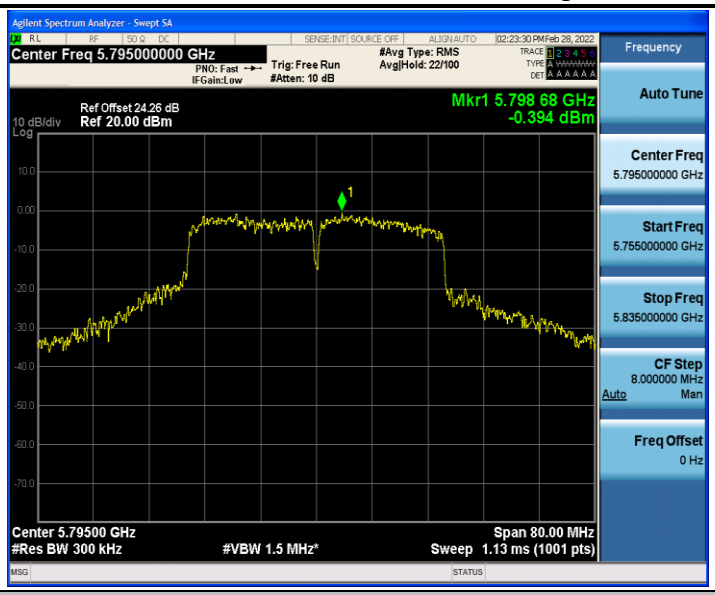


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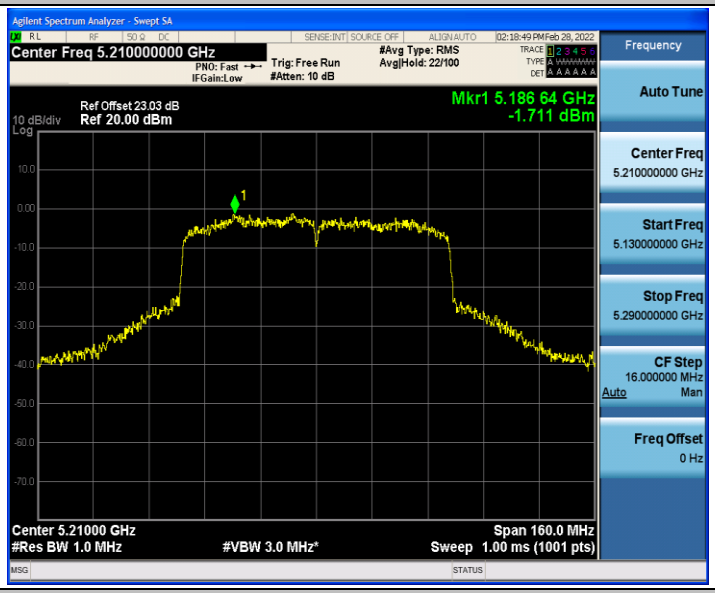


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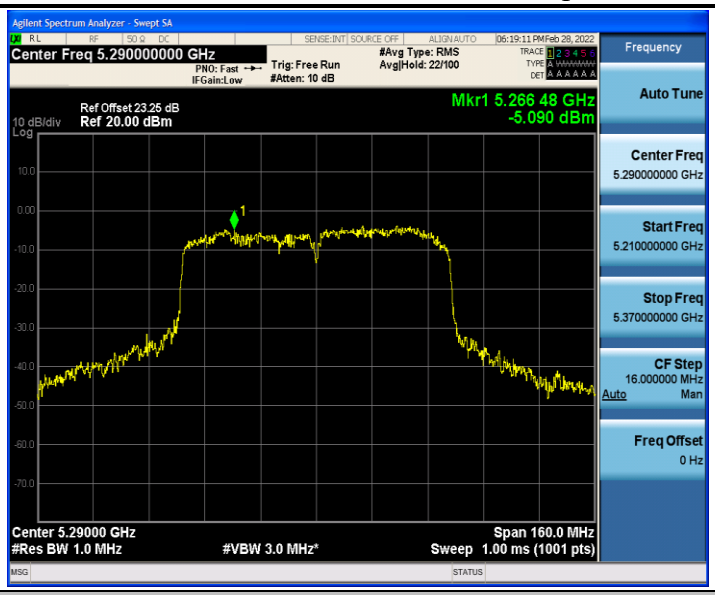


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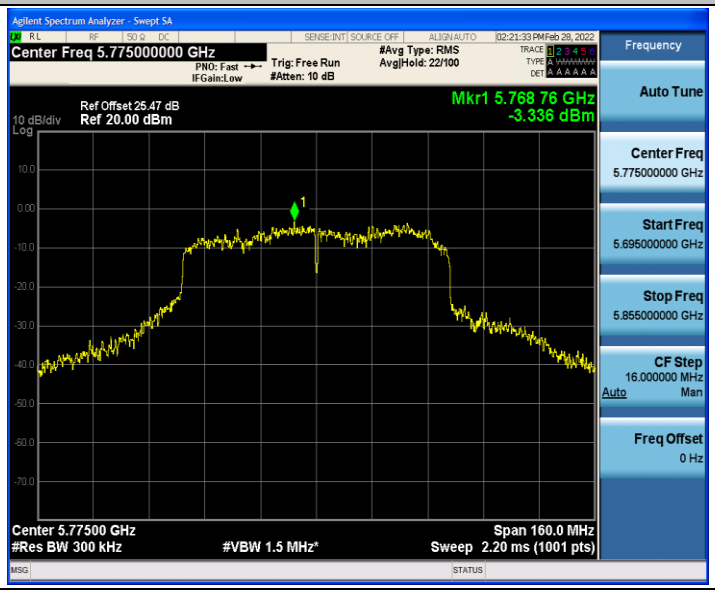


## 3.6 Frequency Stability

### 3.6.1 Limit

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

### 3.6.2 Test Peripherals

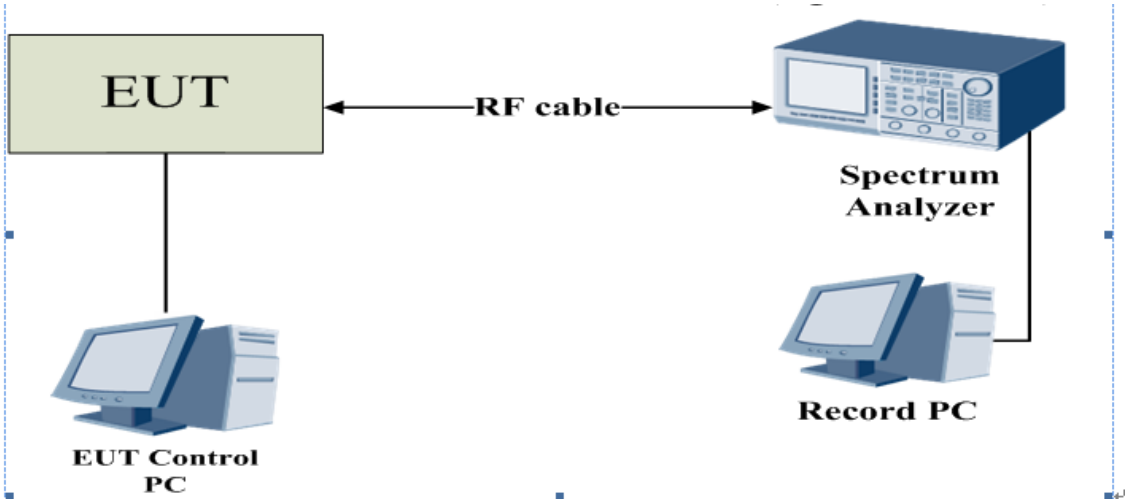
| Support Equipment | | | | |
|---|---|---|---|---|
| No. | Equipment | Brand Name | Model Name | Remarks |
| 1 | Type-C Cable | AWM | E101344 | 0.9m,No Shielding |
| 2 | Adaptor | FUSHIGANG | AS1201A-0502000 USU | NA |
| 3 | Record PC | Lenovo | M4500T | NA |
| 4 | Control PC | Lenovo | M4500T | NA |

### 3.6.3 Test Procedure

| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Channels | |
| ●Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions | |
| ○Normal | ●Normal and Extreme |
| Note:●:Test ○:No Test | |

The equipment under test was connected to an external AC or DC power supply ,then input rated voltage and external voltage(3.6V~4.35V). RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

### 3.6.4 Test Setup



### 3.6.5 The Result

| Normal Temperature and Normal Voltage | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11A | Ant1 | 5180 | 3.8 | 20 | -26000 | -5.019305 | 20 | PASS |
| | | 5220 | 3.8 | 20 | -26000 | -4.980843 | 20 | PASS |
| | | 5240 | 3.8 | 20 | -20000 | -3.816794 | 20 | PASS |
| | | 5260 | 3.8 | 20 | -26000 | -4.942966 | 20 | PASS |
| | | 5300 | 3.8 | 20 | -20000 | -3.773585 | 20 | PASS |
| | | 5320 | 3.8 | 20 | -23000 | -4.323308 | 20 | PASS |
| | | 5745 | 3.8 | 20 | -24000 | -4.177546 | 20 | PASS |
| | | 5785 | 3.8 | 20 | -21000 | -3.630078 | 20 | PASS |
| | | 5825 | 3.8 | 20 | -17000 | -2.918455 | 20 | PASS |
| 11N20SISO | Ant1 | 5180 | 3.8 | 20 | -20000 | -3.861004 | 20 | PASS |
| | | 5220 | 3.8 | 20 | -20000 | -3.831418 | 20 | PASS |
| | | 5240 | 3.8 | 20 | -20000 | -3.816794 | 20 | PASS |
| | | 5260 | 3.8 | 20 | -17000 | -3.231939 | 20 | PASS |
| | | 5300 | 3.8 | 20 | -21000 | -3.962264 | 20 | PASS |
| | | 5320 | 3.8 | 20 | -23000 | -4.323308 | 20 | PASS |
| | | 5745 | 3.8 | 20 | -24000 | -4.177546 | 20 | PASS |
| | | 5785 | 3.8 | 20 | -25000 | -4.321521 | 20 | PASS |
| | | 5825 | 3.8 | 20 | -17000 | -2.918455 | 20 | PASS |
| 11N40SISO | Ant1 | 5190 | 3.8 | 20 | -24000 | -4.624277 | 20 | PASS |
| | | 5230 | 3.8 | 20 | -23000 | -4.397706 | 20 | PASS |
| | | 5270 | 3.8 | 20 | -18000 | -3.415560 | 20 | PASS |
| | | 5310 | 3.8 | 20 | -21000 | -3.954802 | 20 | PASS |
| | | 5755 | 3.8 | 20 | -18000 | -3.127715 | 20 | PASS |
| | | 5795 | 3.8 | 20 | -23000 | -3.968939 | 20 | PASS |
| 11AC20SISO | Ant1 | 5180 | 3.8 | 20 | -21000 | -4.054054 | 20 | PASS |
| | | 5220 | 3.8 | 20 | -21000 | -4.022989 | 20 | PASS |
| | | 5240 | 3.8 | 20 | -16000 | -3.053435 | 20 | PASS |
| | | 5260 | 3.8 | 20 | -25000 | -4.752852 | 20 | PASS |
| | | 5300 | 3.8 | 20 | -23000 | -4.339623 | 20 | PASS |
| | | 5320 | 3.8 | 20 | -16000 | -3.007519 | 20 | PASS |
| | | 5745 | 3.8 | 20 | -22000 | -3.829417 | 20 | PASS |
| | | 5785 | 3.8 | 20 | -23000 | -3.975799 | 20 | PASS |
| | | 5825 | 3.8 | 20 | -18000 | -3.090129 | 20 | PASS |
| 11AC40SISO | Ant1 | 5190 | 3.8 | 20 | -20000 | -3.853565 | 20 | PASS |
| | | 5230 | 3.8 | 20 | -23000 | -4.397706 | 20 | PASS |
| | | 5270 | 3.8 | 20 | -22000 | -4.174573 | 20 | PASS |
| | | 5310 | 3.8 | 20 | -20000 | -3.766478 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 5755 | 3.8 | 20 | -23000 | -3.996525 | 20 | PASS |
| | | 5795 | 3.8 | 20 | -21000 | -3.623814 | 20 | PASS |
| 11AC80SISO | Ant1 | 5210 | 3.8 | 20 | -18000 | -3.454894 | 20 | PASS |
| | | 5290 | 3.8 | 20 | -19000 | -3.591682 | 20 | PASS |
| | | 5775 | 3.8 | 20 | -18000 | -3.116883 | 20 | PASS |

| Normal Temperature and Lowest Voltage | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11A | Ant1 | 5180 | 3.6 | 20 | -18000 | -3.474903 | 20 | PASS |
| | | 5220 | 3.6 | 20 | -20000 | -3.831418 | 20 | PASS |
| | | 5240 | 3.6 | 20 | -21000 | -4.007634 | 20 | PASS |
| | | 5260 | 3.6 | 20 | -20000 | -3.802281 | 20 | PASS |
| | | 5300 | 3.6 | 20 | -25000 | -4.716981 | 20 | PASS |
| | | 5320 | 3.6 | 20 | -19000 | -3.571429 | 20 | PASS |
| | | 5745 | 3.6 | 20 | -19000 | -3.307224 | 20 | PASS |
| | | 5785 | 3.6 | 20 | -22000 | -3.802939 | 20 | PASS |
| | | 5825 | 3.6 | 20 | -21000 | -3.605150 | 20 | PASS |
| 11N20SISO | Ant1 | 5180 | 3.6 | 20 | -22000 | -4.247104 | 20 | PASS |
| | | 5220 | 3.6 | 20 | -26000 | -4.980843 | 20 | PASS |
| | | 5240 | 3.6 | 20 | -19000 | -3.625954 | 20 | PASS |
| | | 5260 | 3.6 | 20 | -20000 | -3.802281 | 20 | PASS |
| | | 5300 | 3.6 | 20 | -17000 | -3.207547 | 20 | PASS |
| | | 5320 | 3.6 | 20 | -22000 | -4.135338 | 20 | PASS |
| | | 5745 | 3.6 | 20 | -18000 | -3.133159 | 20 | PASS |
| | | 5785 | 3.6 | 20 | -21000 | -3.630078 | 20 | PASS |
| | | 5825 | 3.6 | 20 | -18000 | -3.090129 | 20 | PASS |
| 11N40SISO | Ant1 | 5190 | 3.6 | 20 | -17000 | -3.275530 | 20 | PASS |
| | | 5230 | 3.6 | 20 | -19000 | -3.632887 | 20 | PASS |
| | | 5270 | 3.6 | 20 | -21000 | -3.984820 | 20 | PASS |
| | | 5310 | 3.6 | 20 | -25000 | -4.708098 | 20 | PASS |
| | | 5755 | 3.6 | 20 | -17000 | -2.953953 | 20 | PASS |
| | | 5795 | 3.6 | 20 | -24000 | -4.141501 | 20 | PASS |
| 11AC20SISO | Ant1 | 5180 | 3.6 | 20 | -23000 | -4.440154 | 20 | PASS |
| | | 5220 | 3.6 | 20 | -23000 | -4.406130 | 20 | PASS |
| | | 5240 | 3.6 | 20 | -21000 | -4.007634 | 20 | PASS |
| | | 5260 | 3.6 | 20 | -17000 | -3.231939 | 20 | PASS |
| | | 5300 | 3.6 | 20 | -16000 | -3.018868 | 20 | PASS |
| | | 5320 | 3.6 | 20 | -16000 | -3.007519 | 20 | PASS |
| | | 5745 | 3.6 | 20 | -24000 | -4.177546 | 20 | PASS |
| | | 5785 | 3.6 | 20 | -25000 | -4.321521 | 20 | PASS |
| | | 5825 | 3.6 | 20 | -25000 | -4.291845 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11AC40SISO | Ant1 | 5190 | 3.6 | 20 | -20000 | -3.853565 | 20 | PASS |
| | | 5230 | 3.6 | 20 | -20000 | -3.824092 | 20 | PASS |
| | | 5270 | 3.6 | 20 | -18000 | -3.415560 | 20 | PASS |
| | | 5310 | 3.6 | 20 | -19000 | -3.578154 | 20 | PASS |
| | | 5755 | 3.6 | 20 | -22000 | -3.822763 | 20 | PASS |
| | | 5795 | 3.6 | 20 | -19000 | -3.278689 | 20 | PASS |
| 11AC80SISO | Ant1 | 5210 | 3.6 | 20 | -21000 | -4.030710 | 20 | PASS |
| | | 5290 | 3.6 | 20 | -23000 | -4.347826 | 20 | PASS |
| | | 5775 | 3.6 | 20 | -26000 | -4.502165 | 20 | PASS |

| Normal Temperature and Highest Voltage | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11A | Ant1 | 5180 | 4.35 | 20 | -24000 | -4.633205 | 20 | PASS |
| | | 5220 | 4.35 | 20 | -23000 | -4.406130 | 20 | PASS |
| | | 5240 | 4.35 | 20 | -18000 | -3.435115 | 20 | PASS |
| | | 5260 | 4.35 | 20 | -23000 | -4.372624 | 20 | PASS |
| | | 5300 | 4.35 | 20 | -19000 | -3.584906 | 20 | PASS |
| | | 5320 | 4.35 | 20 | -22000 | -4.135338 | 20 | PASS |
| | | 5745 | 4.35 | 20 | -26000 | -4.525674 | 20 | PASS |
| | | 5785 | 4.35 | 20 | -19000 | -3.284356 | 20 | PASS |
| | | 5825 | 4.35 | 20 | -21000 | -3.605150 | 20 | PASS |
| 11N20SISO | Ant1 | 5180 | 4.35 | 20 | -17000 | -3.281853 | 20 | PASS |
| | | 5220 | 4.35 | 20 | -25000 | -4.789272 | 20 | PASS |
| | | 5240 | 4.35 | 20 | -21000 | -4.007634 | 20 | PASS |
| | | 5260 | 4.35 | 20 | -17000 | -3.231939 | 20 | PASS |
| | | 5300 | 4.35 | 20 | -20000 | -3.773585 | 20 | PASS |
| | | 5320 | 4.35 | 20 | -17000 | -3.195489 | 20 | PASS |
| | | 5745 | 4.35 | 20 | -20000 | -3.481288 | 20 | PASS |
| | | 5785 | 4.35 | 20 | -17000 | -2.938634 | 20 | PASS |
| | | 5825 | 4.35 | 20 | -19000 | -3.261803 | 20 | PASS |
| 11N40SISO | Ant1 | 5190 | 4.35 | 20 | -25000 | -4.816956 | 20 | PASS |
| | | 5230 | 4.35 | 20 | -17000 | -3.250478 | 20 | PASS |
| | | 5270 | 4.35 | 20 | -25000 | -4.743833 | 20 | PASS |
| | | 5310 | 4.35 | 20 | -21000 | -3.954802 | 20 | PASS |
| | | 5755 | 4.35 | 20 | -20000 | -3.475239 | 20 | PASS |
| | | 5795 | 4.35 | 20 | -23000 | -3.968939 | 20 | PASS |
| 11AC20SISO | Ant1 | 5180 | 4.35 | 20 | -17000 | -3.281853 | 20 | PASS |
| | | 5220 | 4.35 | 20 | -25000 | -4.789272 | 20 | PASS |
| | | 5240 | 4.35 | 20 | -21000 | -4.007634 | 20 | PASS |
| | | 5260 | 4.35 | 20 | -20000 | -3.802281 | 20 | PASS |
| | | 5300 | 4.35 | 20 | -20000 | -3.773585 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 5320 | 4.35 | 20 | -21000 | -3.947368 | 20 | PASS |
| | | 5745 | 4.35 | 20 | -23000 | -4.003481 | 20 | PASS |
| | | 5785 | 4.35 | 20 | -26000 | -4.494382 | 20 | PASS |
| | | 5825 | 4.35 | 20 | -20000 | -3.433476 | 20 | PASS |
| 11AC40SISO | Ant1 | 5190 | 4.35 | 20 | -18000 | -3.468208 | 20 | PASS |
| | | 5230 | 4.35 | 20 | -21000 | -4.015296 | 20 | PASS |
| | | 5270 | 4.35 | 20 | -24000 | -4.554080 | 20 | PASS |
| | | 5310 | 4.35 | 20 | -24000 | -4.519774 | 20 | PASS |
| | | 5755 | 4.35 | 20 | -20000 | -3.475239 | 20 | PASS |
| | | 5795 | 4.35 | 20 | -24000 | -4.141501 | 20 | PASS |
| 11AC80SISO | Ant1 | 5210 | 4.35 | 20 | -25000 | -4.798464 | 20 | PASS |
| | | 5290 | 4.35 | 20 | -18000 | -3.402647 | 20 | PASS |
| | | 5775 | 4.35 | 20 | -26000 | -4.502165 | 20 | PASS |

| Normal Voltage and Stepping Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11A | Ant1 | 5180 | 3.8 | -30 | -21000 | -4.054054 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.440154 | 20 | PASS |
| | | | 3.8 | -10 | -20000 | -3.861004 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -4.247104 | 20 | PASS |
| | | | 3.8 | 10 | -20000 | -3.861004 | 20 | PASS |
| | | | 3.8 | 20 | -26000 | -5.019305 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.667954 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -4.247104 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.474903 | 20 | PASS |
| | | 5220 | 3.8 | -30 | -23000 | -4.406130 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -4.214559 | 20 | PASS |
| | | | 3.8 | -10 | -21000 | -4.022989 | 20 | PASS |
| | | | 3.8 | 0 | -18000 | -3.448276 | 20 | PASS |
| | | | 3.8 | 10 | -25000 | -4.789272 | 20 | PASS |
| | | | 3.8 | 20 | -23000 | -4.406130 | 20 | PASS |
| | | | 3.8 | 30 | -17000 | -3.256705 | 20 | PASS |
| | | | 3.8 | 40 | -17000 | -3.256705 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.448276 | 20 | PASS |
| | | 5240 | 3.8 | -30 | -20000 | -3.816794 | 20 | PASS |
| | | | 3.8 | -20 | -21000 | -4.007634 | 20 | PASS |
| | | | 3.8 | -10 | -24000 | -4.580153 | 20 | PASS |
| | | | 3.8 | 0 | -21000 | -4.007634 | 20 | PASS |
| | | | 3.8 | 10 | -20000 | -3.816794 | 20 | PASS |
| | | | 3.8 | 20 | -16000 | -3.053435 | 20 | PASS |
| | | | 3.8 | 30 | -21000 | -4.007634 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 40 | -17000 | -3.244275 | 20 | PASS |
| | | | 3.8 | 50 | -17000 | -3.244275 | 20 | PASS |
| | | 5260 | 3.8 | -30 | -19000 | -3.612167 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.372624 | 20 | PASS |
| | | | 3.8 | -10 | -17000 | -3.231939 | 20 | PASS |
| | | | 3.8 | 0 | -25000 | -4.752852 | 20 | PASS |
| | | | 3.8 | 10 | -17000 | -3.231939 | 20 | PASS |
| | | | 3.8 | 20 | -26000 | -4.942966 | 20 | PASS |
| | | | 3.8 | 30 | -22000 | -4.182510 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.422053 | 20 | PASS |
| | | | 3.8 | 50 | -23000 | -4.372624 | 20 | PASS |
| | | 5300 | 3.8 | -30 | -19000 | -3.584906 | 20 | PASS |
| | | | 3.8 | -20 | -19000 | -3.584906 | 20 | PASS |
| | | | 3.8 | -10 | -18000 | -3.396226 | 20 | PASS |
| | | | 3.8 | 0 | -24000 | -4.528302 | 20 | PASS |
| | | | 3.8 | 10 | -25000 | -4.716981 | 20 | PASS |
| | | | 3.8 | 20 | -17000 | -3.207547 | 20 | PASS |
| | | | 3.8 | 30 | -23000 | -4.339623 | 20 | PASS |
| | | | 3.8 | 40 | -20000 | -3.773585 | 20 | PASS |
| | | | 3.8 | 50 | -17000 | -3.207547 | 20 | PASS |
| | | 5320 | 3.8 | -30 | -21000 | -3.947368 | 20 | PASS |
| | | | 3.8 | -20 | -24000 | -4.511278 | 20 | PASS |
| | | | 3.8 | -10 | -19000 | -3.571429 | 20 | PASS |
| | | | 3.8 | 0 | -24000 | -4.511278 | 20 | PASS |
| | | | 3.8 | 10 | -22000 | -4.135338 | 20 | PASS |
| | | | 3.8 | 20 | -24000 | -4.511278 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.571429 | 20 | PASS |
| | | | 3.8 | 40 | -19000 | -3.571429 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.699248 | 20 | PASS |
| | | 5745 | 3.8 | -30 | -20000 | -3.481288 | 20 | PASS |
| | | | 3.8 | -20 | -16000 | -2.785030 | 20 | PASS |
| | | | 3.8 | -10 | -25000 | -4.351610 | 20 | PASS |
| | | | 3.8 | 0 | -21000 | -3.655352 | 20 | PASS |
| | | | 3.8 | 10 | -23000 | -4.003481 | 20 | PASS |
| | | | 3.8 | 20 | -17000 | -2.959095 | 20 | PASS |
| | | | 3.8 | 30 | -17000 | -2.959095 | 20 | PASS |
| | | | 3.8 | 40 | -21000 | -3.655352 | 20 | PASS |
| | | | 3.8 | 50 | -19000 | -3.307224 | 20 | PASS |
| | | 5785 | 3.8 | -30 | -17000 | -2.938634 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -3.802939 | 20 | PASS |
| | | | 3.8 | -10 | -23000 | -3.975799 | 20 | PASS |
| | | | 3.8 | 0 | -24000 | -4.148660 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 10 | -17000 | -2.938634 | 20 | PASS |
| | | | 3.8 | 20 | -19000 | -3.284356 | 20 | PASS |
| | | | 3.8 | 30 | -20000 | -3.457217 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.111495 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.111495 | 20 | PASS |
| | | 5825 | 3.8 | -30 | -18000 | -3.090129 | 20 | PASS |
| | | | 3.8 | -20 | -19000 | -3.261803 | 20 | PASS |
| | | | 3.8 | -10 | -17000 | -2.918455 | 20 | PASS |
| | | | 3.8 | 0 | -21000 | -3.605150 | 20 | PASS |
| | | | 3.8 | 10 | -24000 | -4.120172 | 20 | PASS |
| | | | 3.8 | 20 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.261803 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.090129 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.291845 | 20 | PASS |

| Normal Voltage and Stepping Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11N20SISO | Ant1 | 5180 | 3.8 | -30 | -20000 | -3.861004 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -4.247104 | 20 | PASS |
| | | | 3.8 | -10 | -20000 | -3.861004 | 20 | PASS |
| | | | 3.8 | 0 | -19000 | -3.667954 | 20 | PASS |
| | | | 3.8 | 10 | -25000 | -4.826255 | 20 | PASS |
| | | | 3.8 | 20 | -24000 | -4.633205 | 20 | PASS |
| | | | 3.8 | 30 | -24000 | -4.633205 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.474903 | 20 | PASS |
| | | | 3.8 | 50 | -20000 | -3.861004 | 20 | PASS |
| | | 5220 | 3.8 | -30 | -19000 | -3.639847 | 20 | PASS |
| | | | 3.8 | -20 | -16000 | -3.065134 | 20 | PASS |
| | | | 3.8 | -10 | -20000 | -3.831418 | 20 | PASS |
| | | | 3.8 | 0 | -18000 | -3.448276 | 20 | PASS |
| | | | 3.8 | 10 | -22000 | -4.214559 | 20 | PASS |
| | | | 3.8 | 20 | -21000 | -4.022989 | 20 | PASS |
| | | | 3.8 | 30 | -21000 | -4.022989 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.448276 | 20 | PASS |
| | | | 3.8 | 50 | -26000 | -4.980843 | 20 | PASS |
| | | 5240 | 3.8 | -30 | -19000 | -3.625954 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.389313 | 20 | PASS |
| | | | 3.8 | -10 | -18000 | -3.435115 | 20 | PASS |
| | | | 3.8 | 0 | -19000 | -3.625954 | 20 | PASS |
| | | | 3.8 | 10 | -23000 | -4.389313 | 20 | PASS |
| | | | 3.8 | 20 | -23000 | -4.389313 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 30 | -18000 | -3.435115 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -4.198473 | 20 | PASS |
| | | | 3.8 | 50 | -16000 | -3.053435 | 20 | PASS |
| | | 5260 | 3.8 | -30 | -23000 | -4.372624 | 20 | PASS |
| | | | 3.8 | -20 | -16000 | -3.041825 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -4.182510 | 20 | PASS |
| | | | 3.8 | 0 | -20000 | -3.802281 | 20 | PASS |
| | | | 3.8 | 10 | -24000 | -4.562738 | 20 | PASS |
| | | | 3.8 | 20 | -19000 | -3.612167 | 20 | PASS |
| | | | 3.8 | 30 | -21000 | -3.992395 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -4.182510 | 20 | PASS |
| | | | 3.8 | 50 | -20000 | -3.802281 | 20 | PASS |
| | | 5300 | 3.8 | -30 | -22000 | -4.150943 | 20 | PASS |
| | | | 3.8 | -20 | -18000 | -3.396226 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -4.150943 | 20 | PASS |
| | | | 3.8 | 0 | -25000 | -4.716981 | 20 | PASS |
| | | | 3.8 | 10 | -17000 | -3.207547 | 20 | PASS |
| | | | 3.8 | 20 | -20000 | -3.773585 | 20 | PASS |
| | | | 3.8 | 30 | -22000 | -4.150943 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.396226 | 20 | PASS |
| | | | 3.8 | 50 | -16000 | -3.018868 | 20 | PASS |
| | | 5320 | 3.8 | -30 | -21000 | -3.947368 | 20 | PASS |
| | | | 3.8 | -20 | -19000 | -3.571429 | 20 | PASS |
| | | | 3.8 | -10 | -25000 | -4.699248 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -4.135338 | 20 | PASS |
| | | | 3.8 | 10 | -21000 | -3.947368 | 20 | PASS |
| | | | 3.8 | 20 | -20000 | -3.759398 | 20 | PASS |
| | | | 3.8 | 30 | -20000 | -3.759398 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -4.135338 | 20 | PASS |
| | | | 3.8 | 50 | -20000 | -3.759398 | 20 | PASS |
| | | 5745 | 3.8 | -30 | -24000 | -4.177546 | 20 | PASS |
| | | | 3.8 | -20 | -24000 | -4.177546 | 20 | PASS |
| | | | 3.8 | -10 | -24000 | -4.177546 | 20 | PASS |
| | | | 3.8 | 0 | -17000 | -2.959095 | 20 | PASS |
| | | | 3.8 | 10 | -22000 | -3.829417 | 20 | PASS |
| | | | 3.8 | 20 | -24000 | -4.177546 | 20 | PASS |
| | | | 3.8 | 30 | -22000 | -3.829417 | 20 | PASS |
| | | | 3.8 | 40 | -26000 | -4.525674 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.351610 | 20 | PASS |
| | | 5785 | 3.8 | -30 | -17000 | -2.938634 | 20 | PASS |
| | | | 3.8 | -20 | -25000 | -4.321521 | 20 | PASS |
| | | | 3.8 | -10 | -21000 | -3.630078 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 0 | -25000 | -4.321521 | 20 | PASS |
| | | | 3.8 | 10 | -23000 | -3.975799 | 20 | PASS |
| | | | 3.8 | 20 | -18000 | -3.111495 | 20 | PASS |
| | | | 3.8 | 30 | -17000 | -2.938634 | 20 | PASS |
| | | | 3.8 | 40 | -23000 | -3.975799 | 20 | PASS |
| | | | 3.8 | 50 | -26000 | -4.494382 | 20 | PASS |
| | | 5825 | 3.8 | -30 | -19000 | -3.261803 | 20 | PASS |
| | | | 3.8 | -20 | -26000 | -4.463519 | 20 | PASS |
| | | | 3.8 | -10 | -26000 | -4.463519 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | 10 | -16000 | -2.746781 | 20 | PASS |
| | | | 3.8 | 20 | -17000 | -2.918455 | 20 | PASS |
| | | | 3.8 | 30 | -25000 | -4.291845 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | 50 | -19000 | -3.261803 | 20 | PASS |

| Normal Voltage and Stepping Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11N40SISO | Ant1 | 5190 | 3.8 | -30 | -17000 | -3.275530 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.431599 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -4.238921 | 20 | PASS |
| | | | 3.8 | 0 | -25000 | -4.816956 | 20 | PASS |
| | | | 3.8 | 10 | -22000 | -4.238921 | 20 | PASS |
| | | | 3.8 | 20 | -23000 | -4.431599 | 20 | PASS |
| | | | 3.8 | 30 | -22000 | -4.238921 | 20 | PASS |
| | | | 3.8 | 40 | -26000 | -5.009634 | 20 | PASS |
| | | | 3.8 | 50 | -20000 | -3.853565 | 20 | PASS |
| | | 5230 | 3.8 | -30 | -17000 | -3.250478 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.397706 | 20 | PASS |
| | | | 3.8 | -10 | -24000 | -4.588910 | 20 | PASS |
| | | | 3.8 | 0 | -19000 | -3.632887 | 20 | PASS |
| | | | 3.8 | 10 | -23000 | -4.397706 | 20 | PASS |
| | | | 3.8 | 20 | -19000 | -3.632887 | 20 | PASS |
| | | | 3.8 | 30 | -24000 | -4.588910 | 20 | PASS |
| | | | 3.8 | 40 | -21000 | -4.015296 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.441683 | 20 | PASS |
| | | 5270 | 3.8 | -30 | -23000 | -4.364326 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.364326 | 20 | PASS |
| | | | 3.8 | -10 | -20000 | -3.795066 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -4.174573 | 20 | PASS |
| | | | 3.8 | 10 | -18000 | -3.415560 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 20 | -19000 | -3.605313 | 20 | PASS |
| | | | 3.8 | 30 | -24000 | -4.554080 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.415560 | 20 | PASS |
| | | | 3.8 | 50 | -22000 | -4.174573 | 20 | PASS |
| | | 5310 | 3.8 | -30 | -20000 | -3.766478 | 20 | PASS |
| | | | 3.8 | -20 | -18000 | -3.389831 | 20 | PASS |
| | | | 3.8 | -10 | -17000 | -3.201507 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -4.143126 | 20 | PASS |
| | | | 3.8 | 10 | -19000 | -3.578154 | 20 | PASS |
| | | | 3.8 | 20 | -21000 | -3.954802 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.578154 | 20 | PASS |
| | | | 3.8 | 40 | -17000 | -3.201507 | 20 | PASS |
| | | | 3.8 | 50 | -21000 | -3.954802 | 20 | PASS |
| | | 5755 | 3.8 | -30 | -20000 | -3.475239 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -3.822763 | 20 | PASS |
| | | | 3.8 | -10 | -19000 | -3.301477 | 20 | PASS |
| | | | 3.8 | 0 | -25000 | -4.344049 | 20 | PASS |
| | | | 3.8 | 10 | -18000 | -3.127715 | 20 | PASS |
| | | | 3.8 | 20 | -16000 | -2.780191 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.301477 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -3.822763 | 20 | PASS |
| | | | 3.8 | 50 | -24000 | -4.170287 | 20 | PASS |
| | | 5795 | 3.8 | -30 | -18000 | -3.106126 | 20 | PASS |
| | | | 3.8 | -20 | -21000 | -3.623814 | 20 | PASS |
| | | | 3.8 | -10 | -17000 | -2.933563 | 20 | PASS |
| | | | 3.8 | 0 | -18000 | -3.106126 | 20 | PASS |
| | | | 3.8 | 10 | -19000 | -3.278689 | 20 | PASS |
| | | | 3.8 | 20 | -19000 | -3.278689 | 20 | PASS |
| | | | 3.8 | 30 | -16000 | -2.761001 | 20 | PASS |
| | | | 3.8 | 40 | -23000 | -3.968939 | 20 | PASS |
| | | | 3.8 | 50 | -17000 | -2.933563 | 20 | PASS |

| Normal Voltage and Stepping Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11AC20SISO | Ant1 | 5180 | 3.8 | -30 | -21000 | -4.054054 | 20 | PASS |
| | | | 3.8 | -20 | -21000 | -4.054054 | 20 | PASS |
| | | | 3.8 | -10 | -18000 | -3.474903 | 20 | PASS |
| | | | 3.8 | 0 | -21000 | -4.054054 | 20 | PASS |
| | | | 3.8 | 10 | -21000 | -4.054054 | 20 | PASS |
| | | | 3.8 | 20 | -24000 | -4.633205 | 20 | PASS |
| | | | 3.8 | 30 | -22000 | -4.247104 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 40 | -17000 | -3.281853 | 20 | PASS |
| | | | 3.8 | 50 | -17000 | -3.281853 | 20 | PASS |
| | | 5220 | 3.8 | -30 | -24000 | -4.597701 | 20 | PASS |
| | | | 3.8 | -20 | -25000 | -4.789272 | 20 | PASS |
| | | | 3.8 | -10 | -20000 | -3.831418 | 20 | PASS |
| | | | 3.8 | 0 | -26000 | -4.980843 | 20 | PASS |
| | | | 3.8 | 10 | -17000 | -3.256705 | 20 | PASS |
| | | | 3.8 | 20 | -16000 | -3.065134 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.639847 | 20 | PASS |
| | | | 3.8 | 40 | -24000 | -4.597701 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.448276 | 20 | PASS |
| | | 5240 | 3.8 | -30 | -22000 | -4.198473 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -4.198473 | 20 | PASS |
| | | | 3.8 | -10 | -17000 | -3.244275 | 20 | PASS |
| | | | 3.8 | 0 | -17000 | -3.244275 | 20 | PASS |
| | | | 3.8 | 10 | -25000 | -4.770992 | 20 | PASS |
| | | | 3.8 | 20 | -24000 | -4.580153 | 20 | PASS |
| | | | 3.8 | 30 | -24000 | -4.580153 | 20 | PASS |
| | | | 3.8 | 40 | -18000 | -3.435115 | 20 | PASS |
| | | | 3.8 | 50 | -21000 | -4.007634 | 20 | PASS |
| | | 5260 | 3.8 | -30 | -23000 | -4.372624 | 20 | PASS |
| | | | 3.8 | -20 | -17000 | -3.231939 | 20 | PASS |
| | | | 3.8 | -10 | -20000 | -3.802281 | 20 | PASS |
| | | | 3.8 | 0 | -17000 | -3.231939 | 20 | PASS |
| | | | 3.8 | 10 | -21000 | -3.992395 | 20 | PASS |
| | | | 3.8 | 20 | -17000 | -3.231939 | 20 | PASS |
| | | | 3.8 | 30 | -20000 | -3.802281 | 20 | PASS |
| | | | 3.8 | 40 | -25000 | -4.752852 | 20 | PASS |
| | | | 3.8 | 50 | -20000 | -3.802281 | 20 | PASS |
| | | 5300 | 3.8 | -30 | -20000 | -3.773585 | 20 | PASS |
| | | | 3.8 | -20 | -21000 | -3.962264 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -4.150943 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -4.150943 | 20 | PASS |
| | | | 3.8 | 10 | -18000 | -3.396226 | 20 | PASS |
| | | | 3.8 | 20 | -24000 | -4.528302 | 20 | PASS |
| | | | 3.8 | 30 | -22000 | -4.150943 | 20 | PASS |
| | | | 3.8 | 40 | -17000 | -3.207547 | 20 | PASS |
| | | | 3.8 | 50 | -23000 | -4.339623 | 20 | PASS |
| | | 5320 | 3.8 | -30 | -24000 | -4.511278 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -4.135338 | 20 | PASS |
| | | | 3.8 | -10 | -19000 | -3.571429 | 20 | PASS |
| | | | 3.8 | 0 | -18000 | -3.383459 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 10 | -24000 | -4.511278 | 20 | PASS |
| | | | 3.8 | 20 | -20000 | -3.759398 | 20 | PASS |
| | | | 3.8 | 30 | -20000 | -3.759398 | 20 | PASS |
| | | | 3.8 | 40 | -17000 | -3.195489 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.699248 | 20 | PASS |
| | | 5745 | 3.8 | -30 | -21000 | -3.655352 | 20 | PASS |
| | | | 3.8 | -20 | -17000 | -2.959095 | 20 | PASS |
| | | | 3.8 | -10 | -24000 | -4.177546 | 20 | PASS |
| | | | 3.8 | 0 | -20000 | -3.481288 | 20 | PASS |
| | | | 3.8 | 10 | -18000 | -3.133159 | 20 | PASS |
| | | | 3.8 | 20 | -20000 | -3.481288 | 20 | PASS |
| | | | 3.8 | 30 | -16000 | -2.785030 | 20 | PASS |
| | | | 3.8 | 40 | -25000 | -4.351610 | 20 | PASS |
| | | | 3.8 | 50 | -21000 | -3.655352 | 20 | PASS |
| | | 5785 | 3.8 | -30 | -20000 | -3.457217 | 20 | PASS |
| | | | 3.8 | -20 | -18000 | -3.111495 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -3.802939 | 20 | PASS |
| | | | 3.8 | 0 | -16000 | -2.765774 | 20 | PASS |
| | | | 3.8 | 10 | -18000 | -3.111495 | 20 | PASS |
| | | | 3.8 | 20 | -20000 | -3.457217 | 20 | PASS |
| | | | 3.8 | 30 | -24000 | -4.148660 | 20 | PASS |
| | | | 3.8 | 40 | -23000 | -3.975799 | 20 | PASS |
| | | | 3.8 | 50 | -23000 | -3.975799 | 20 | PASS |
| | | 5825 | 3.8 | -30 | -17000 | -2.918455 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | 0 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | 10 | -22000 | -3.776824 | 20 | PASS |
| | | | 3.8 | 20 | -23000 | -3.948498 | 20 | PASS |
| | | | 3.8 | 30 | -20000 | -3.433476 | 20 | PASS |
| | | | 3.8 | 40 | -21000 | -3.605150 | 20 | PASS |
| | | | 3.8 | 50 | -17000 | -2.918455 | 20 | PASS |

| Normal Voltage and Stepping Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11AC40SISO | Ant1 | 5190 | 3.8 | -30 | -21000 | -4.046243 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.431599 | 20 | PASS |
| | | | 3.8 | -10 | -19000 | -3.660886 | 20 | PASS |
| | | | 3.8 | 0 | -26000 | -5.009634 | 20 | PASS |
| | | | 3.8 | 10 | -17000 | -3.275530 | 20 | PASS |
| | | | 3.8 | 20 | -20000 | -3.853565 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 30 | -26000 | -5.009634 | 20 | PASS |
| | | | 3.8 | 40 | -22000 | -4.238921 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.816956 | 20 | PASS |
| | | 5230 | 3.8 | -30 | -24000 | -4.588910 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.397706 | 20 | PASS |
| | | | 3.8 | -10 | -21000 | -4.015296 | 20 | PASS |
| | | | 3.8 | 0 | -17000 | -3.250478 | 20 | PASS |
| | | | 3.8 | 10 | -24000 | -4.588910 | 20 | PASS |
| | | | 3.8 | 20 | -16000 | -3.059273 | 20 | PASS |
| | | | 3.8 | 30 | -25000 | -4.780115 | 20 | PASS |
| | | | 3.8 | 40 | -24000 | -4.588910 | 20 | PASS |
| | | | 3.8 | 50 | -22000 | -4.206501 | 20 | PASS |
| | | 5270 | 3.8 | -30 | -23000 | -4.364326 | 20 | PASS |
| | | | 3.8 | -20 | -21000 | -3.984820 | 20 | PASS |
| | | | 3.8 | -10 | -18000 | -3.415560 | 20 | PASS |
| | | | 3.8 | 0 | -24000 | -4.554080 | 20 | PASS |
| | | | 3.8 | 10 | -19000 | -3.605313 | 20 | PASS |
| | | | 3.8 | 20 | -25000 | -4.743833 | 20 | PASS |
| | | | 3.8 | 30 | -26000 | -4.933586 | 20 | PASS |
| | | | 3.8 | 40 | -25000 | -4.743833 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.743833 | 20 | PASS |
| | | 5310 | 3.8 | -30 | -23000 | -4.331450 | 20 | PASS |
| | | | 3.8 | -20 | -23000 | -4.331450 | 20 | PASS |
| | | | 3.8 | -10 | -17000 | -3.201507 | 20 | PASS |
| | | | 3.8 | 0 | -16000 | -3.013183 | 20 | PASS |
| | | | 3.8 | 10 | -16000 | -3.013183 | 20 | PASS |
| | | | 3.8 | 20 | -23000 | -4.331450 | 20 | PASS |
| | | | 3.8 | 30 | -21000 | -3.954802 | 20 | PASS |
| | | | 3.8 | 40 | -25000 | -4.708098 | 20 | PASS |
| | | | 3.8 | 50 | -22000 | -4.143126 | 20 | PASS |
| | | 5755 | 3.8 | -30 | -20000 | -3.475239 | 20 | PASS |
| | | | 3.8 | -20 | -21000 | -3.649001 | 20 | PASS |
| | | | 3.8 | -10 | -18000 | -3.127715 | 20 | PASS |
| | | | 3.8 | 0 | -24000 | -4.170287 | 20 | PASS |
| | | | 3.8 | 10 | -22000 | -3.822763 | 20 | PASS |
| | | | 3.8 | 20 | -22000 | -3.822763 | 20 | PASS |
| | | | 3.8 | 30 | -25000 | -4.344049 | 20 | PASS |
| | | | 3.8 | 40 | -23000 | -3.996525 | 20 | PASS |
| | | | 3.8 | 50 | -25000 | -4.344049 | 20 | PASS |
| | | 5795 | 3.8 | -30 | -23000 | -3.968939 | 20 | PASS |
| | | | 3.8 | -20 | -18000 | -3.106126 | 20 | PASS |
| | | | 3.8 | -10 | -21000 | -3.623814 | 20 | PASS |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3.8 | 0 | -24000 | -4.141501 | 20 | PASS |
| | | | 3.8 | 10 | -17000 | -2.933563 | 20 | PASS |
| | | | 3.8 | 20 | -22000 | -3.796376 | 20 | PASS |
| | | | 3.8 | 30 | -21000 | -3.623814 | 20 | PASS |
| | | | 3.8 | 40 | -24000 | -4.141501 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.106126 | 20 | PASS |

| Normal Voltage and Stepping Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TestMode | Antenna | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 11AC80SISO | Ant1 | 5210 | 3.8 | -30 | -23000 | -4.414587 | 20 | PASS |
| | | | 3.8 | -20 | -22000 | -4.222649 | 20 | PASS |
| | | | 3.8 | -10 | -25000 | -4.798464 | 20 | PASS |
| | | | 3.8 | 0 | -20000 | -3.838772 | 20 | PASS |
| | | | 3.8 | 10 | -21000 | -4.030710 | 20 | PASS |
| | | | 3.8 | 20 | -22000 | -4.222649 | 20 | PASS |
| | | | 3.8 | 30 | -24000 | -4.606526 | 20 | PASS |
| | | | 3.8 | 40 | -24000 | -4.606526 | 20 | PASS |
| | | | 3.8 | 50 | -21000 | -4.030710 | 20 | PASS |
| | | 5290 | 3.8 | -30 | -21000 | -3.969754 | 20 | PASS |
| | | | 3.8 | -20 | -18000 | -3.402647 | 20 | PASS |
| | | | 3.8 | -10 | -24000 | -4.536862 | 20 | PASS |
| | | | 3.8 | 0 | -18000 | -3.402647 | 20 | PASS |
| | | | 3.8 | 10 | -23000 | -4.347826 | 20 | PASS |
| | | | 3.8 | 20 | -25000 | -4.725898 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.591682 | 20 | PASS |
| | | | 3.8 | 40 | -23000 | -4.347826 | 20 | PASS |
| | | | 3.8 | 50 | -20000 | -3.780718 | 20 | PASS |
| | | 5775 | 3.8 | -30 | -18000 | -3.116883 | 20 | PASS |
| | | | 3.8 | -20 | -16000 | -2.770563 | 20 | PASS |
| | | | 3.8 | -10 | -22000 | -3.809524 | 20 | PASS |
| | | | 3.8 | 0 | -17000 | -2.943723 | 20 | PASS |
| | | | 3.8 | 10 | -17000 | -2.943723 | 20 | PASS |
| | | | 3.8 | 20 | -18000 | -3.116883 | 20 | PASS |
| | | | 3.8 | 30 | -19000 | -3.290043 | 20 | PASS |
| | | | 3.8 | 40 | -25000 | -4.329004 | 20 | PASS |
| | | | 3.8 | 50 | -18000 | -3.116883 | 20 | PASS |

## 3.7 Dynamic Frequency Selection (DFS)

### 3.7.1 DFS Overview

A U-NII network will employ a DFS function to detect signals from radar systems and to avoid co-channel operation with these systems. This applies to the 5250-5350 MHz and/or 5470-5725 MHz bands.

Within the context of the operation of the DFS function, a U-NII device will operate in either Master Mode or Client Mode. U-NII devices operating in Client Mode can only operate in a network controlled by a UNII device operating in Master Mode.

### 3.7.2 Working modes and required test items

**Table 1: Applicability of DFS Requirements Prior to Use of a Channel**

| **Requirement** | **Operational Mode** | | |
|---|---|---|---|
| | **Master** | **Client Without Radar Detection** | **Client With Radar Detection** |
| *Non-Occupancy Period* | Yes | Not required | Yes |
| *DFS Detection Threshold* | Yes | Not required | Yes |
| *Channel Availability Check Time* | Yes | Not required | Not required |
| *U-NII Detection Bandwidth* | Yes | Not required | Yes |

**Table 2: Applicability of DFS requirements during normal operation**

| Requirement | Operational Mode | |
|---|---|---|
| | Master Device or Client with Radar Detection | Client Without Radar Detection |
| *DFS Detection Threshold* | Yes | Not required |
| *Channel Closing Transmission Time* | Yes | Yes |
| *Channel Move Time* | Yes | Yes |
| *U-NII Detection Bandwidth* | Yes | Not required |

| Additional requirements for devices with multiple bandwidth modes | Master Device or Client with Radar Detection | Client Without Radar Detection |
|---|---|---|
| *U-NII Detection Bandwidth and Statistical Performance Check* | All BW modes must be tested | Not required |
| *Channel Move Time and Channel Closing Transmission Time* | Test using widest BW mode available | Test using the widest BW mode available for the link |
| *All other tests* | Any single BW mode | Not required |
| **Note:** Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency. | | |

## 3.7.3 Test limits and radar signal parameters

**Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection**

| Maximum Transmit Power | Value (See Notes 1, 2, and 3) |
|---|---|
| EIRP ≥ 200 milliwatt | -64 dBm |
| EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz | -62 dBm |
| EIRP < 200 milliwatt that do not meet the power spectral density requirement | -64 dBm |
| **Note 1:** This is the level at the input of the receiver assuming a 0 dBi receive antenna.<br>**Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.<br>**Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01. | |

**Table 4: DFS Response Requirement Values**

| Parameter | Value |
|---|---|
| *Non-occupancy period* | Minimum 30 minutes |
| *Channel Availability Check Time* | 60 seconds |
| *Channel Move Time* | 10 seconds<br>See Note 1. |
| *Channel Closing Transmission Time* | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.<br>See Notes 1 and 2. |
| *U-NII Detection Bandwidth* | Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3. |
| **Note 1:** *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.<br>**Note 2:** The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.<br>**Note 3:** During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic. | |

**Table 5 – Short Pulse Radar Test Waveforms**

| Radar Type | Pulse Width (µsec) | PRI (µsec) | Number of Pulses | Minimum Percentage of Successful Detection | Minimum Number of Trials |
|---|---|---|---|---|---|
| 0 | 1 | 1428 | 18 | See Note 1 | See Note 1 |
| 1 | 1 | Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a | Roundup $\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{PRI_{\mu sec}}\right)\right\}$ | 60% | 30 |
| | | Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A | | | |
| 2 | 1-5 | 150-230 | 23-29 | 60% | 30 |
| 3 | 6-10 | 200-500 | 16-18 | 60% | 30 |
| 4 | 11-20 | 200-500 | 12-16 | 60% | 30 |
| Aggregate (Radar Types 1-4) | | | | 80% | 120 |
| **Note 1:** Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests. | | | | | |

**Table 6 – Long Pulse Radar Test Waveform**

| Radar Type | Pulse Width (µsec) | Chirp Width (MHz) | PRI (µsec) | Number of Pulses per *Burst* | Number of *Bursts* | Minimum Percentage of Successful Detection | Minimum Number of Trials |
|---|---|---|---|---|---|---|---|
| 5 | 50-100 | 5-20 | 1000-2000 | 1-3 | 8-20 | 80% | 30 |

**Table 7 – Frequency Hopping Radar Test Waveform**

| Radar Type | Pulse Width (µsec) | PRI (µsec) | Pulses per Hop | Hopping Rate (kHz) | Hopping Sequence Length (msec) | Minimum Percentage of Successful Detection | Minimum Number of Trials |
|---|---|---|---|---|---|---|---|
| 6 | 1 | 333 | 9 | 0.333 | 300 | 70% | 30 |

### 3.7.4 Overview Of EUT With Respect To 15.407(H) Requirements.

a. The EUT operates over the 5250-5350MHz range was a slave device associated with the master during these tests and it did not have radar detection + capability.
b. The EUT uses a transmitter connected to 50-ohm coaxial antenna ports via a diversity switch.Only one antenna port is connected to the test system since the EUT has an antenna only.
c. The Slave device associated with the EUT during these tests does not have radar detection + capability.
d. WLAN traffic is generated by the Iperf.exe. The traffic load flow from the Master to the Slave.
e. The rated output power of the Master equipment is <23dBm (EIRP). Therefore the required interference threshold level is -62 dBm.

### 3.7.5 Test Peripherals

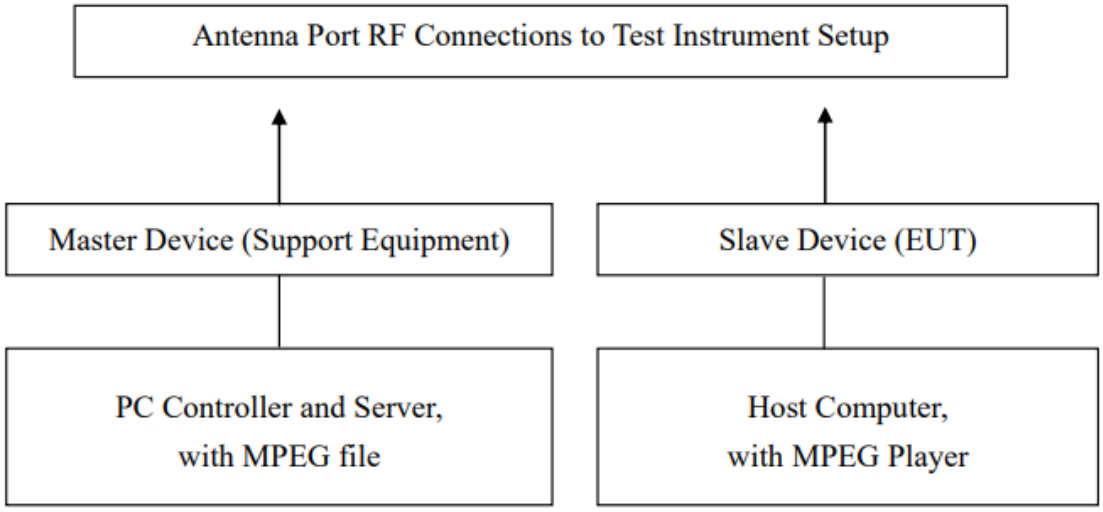
| Support Equipment | | | | |
|---|---|---|---|---|
| No. | Equipment | Brand Name | Model Name | Remarks |
| 1 | Type-C Cable | AWM | E101344 | 0.9m,No Shielding |
| 2 | Adaptor | FUSHIGANG | AS1201A-0502000 USU | NA |
| 3 | Record PC | Lenovo | M4500T | NA |
| 4 | Control PC | Lenovo | M4500T | NA |
| 5 | Home Gateway | COMTREND | GRG-4277u | Master equipment |

### 3.7.6 Test Procedure

| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Bandwidth | |
| ○All the Bandwidth | ●Highest Bandwidth |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

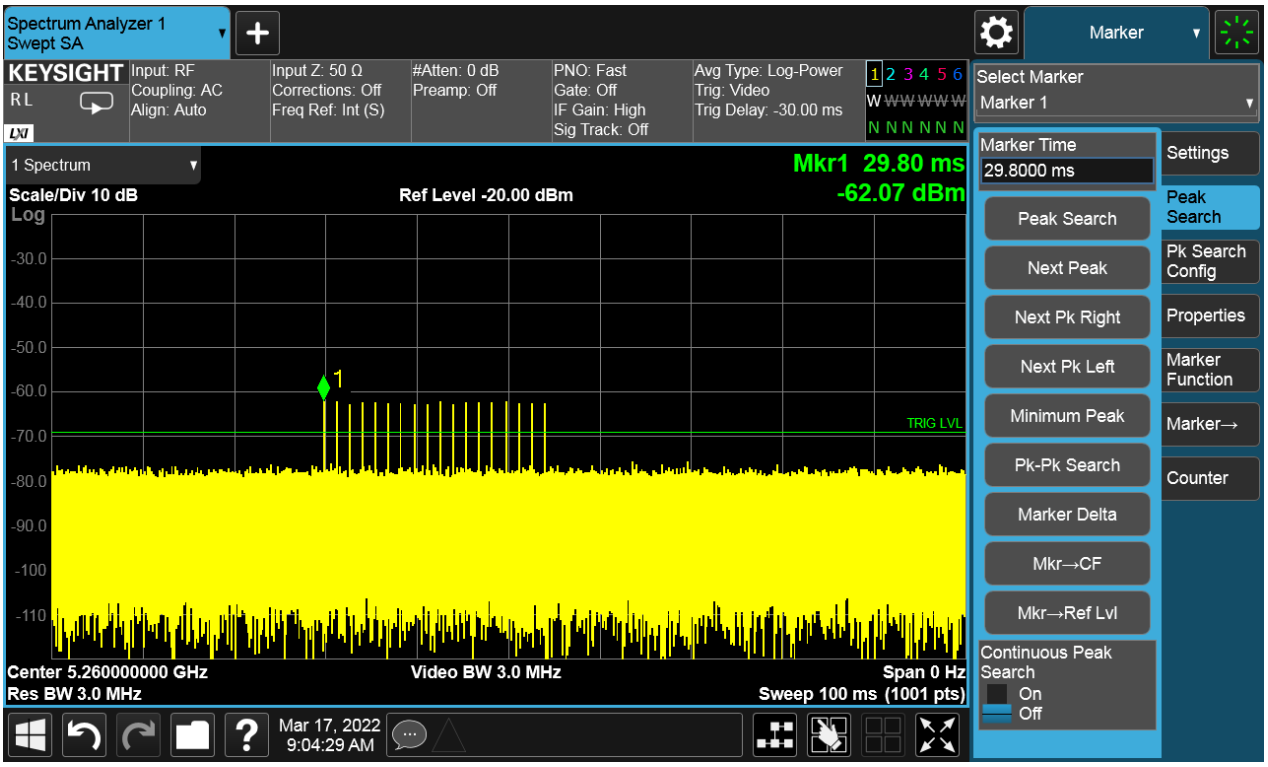
### 3.7.6.1 Calibration of DFS detection threshold level

a. A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected in place of the master device and the signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –62dBm as measured on the spectrum analyzer.
b. The rated output power of the Master equipment is <23dBm (EIRP). Therefore the required interference threshold level is -62 dBm. Without changing any of the instrument settings, the spectrum analyer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. Measure the amplitude and calculate the difference from –62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference.
c. The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.
d. Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.



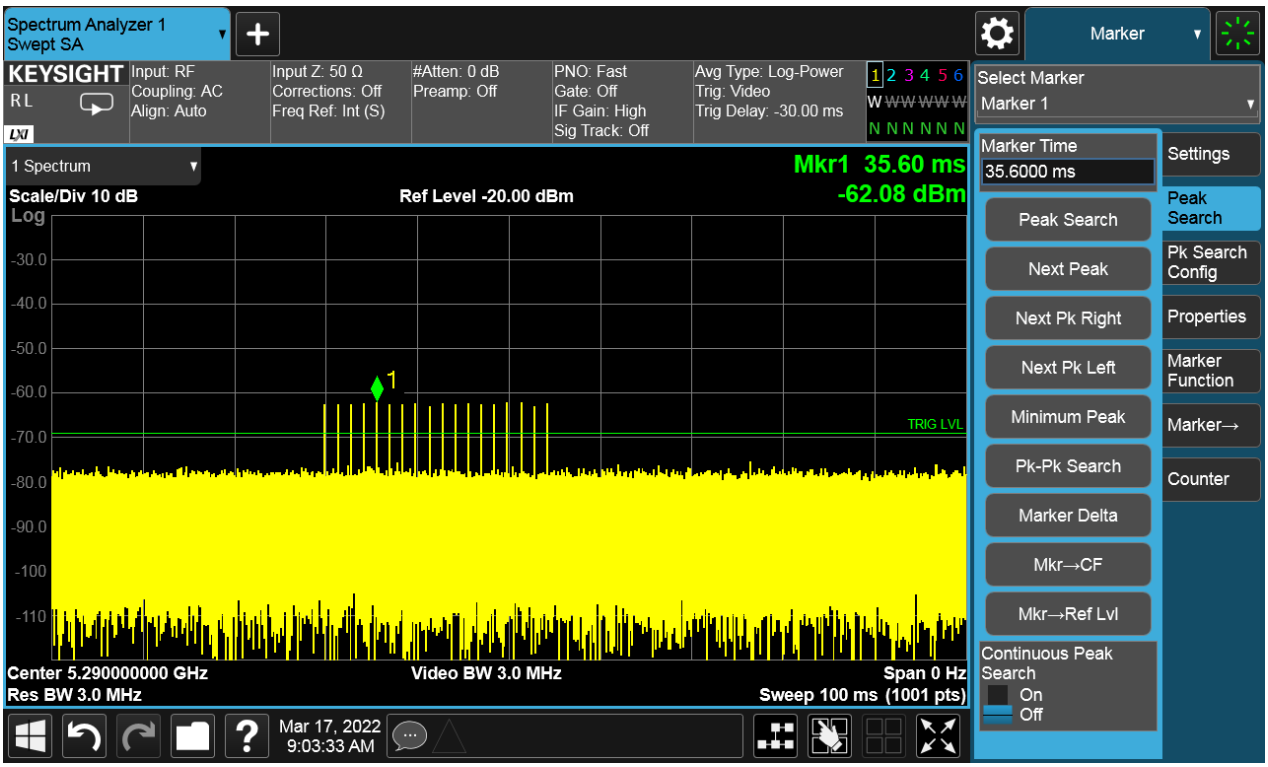
AC20-5260MHz

Radar Signal 0




AC80-5290MHz

Radar Signal 0



### 3.7.6.2 Channel Move Time and Channel Closing Transmission Time

All the test were performed at cahnnel center frequency of AC20-5260MHz and AC80-5290MHz utilizing a conducted test method.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =(Number of analyzer bins showing transmission) *(dwell time per bin)

The observation period over which the aggregate time is calculated

Begins at (Reference Marker + 200 msec)and Ends no earlier than (Reference Marker + 10 sec)

### 3.7.6.3 Non-Occupancy Period

The test frequency has been monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear.

## 3.7.7 Test Setup

**7.2.2 Setup for Client with injection at the Master**

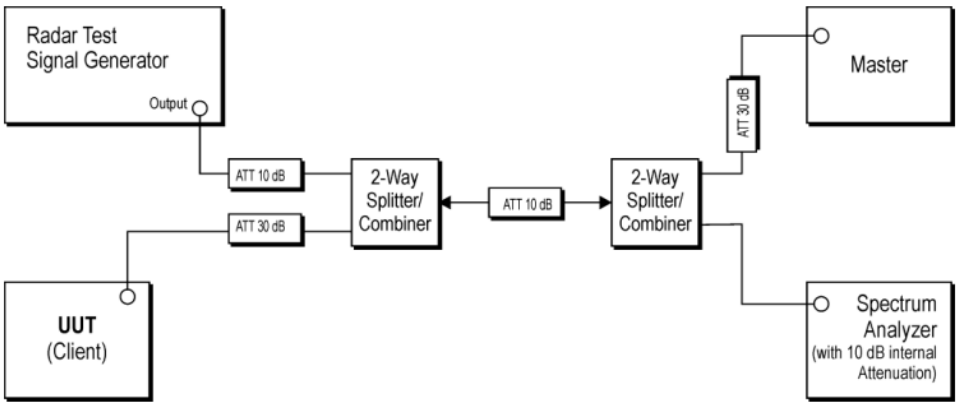



*Figure 3: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Master*

### 3.7.8 Test Result

1. The EUT belongs to Client device without Radar detection,only Channel Move Time and Channel Closing Transmission Time tests are required. Test data showed as below:

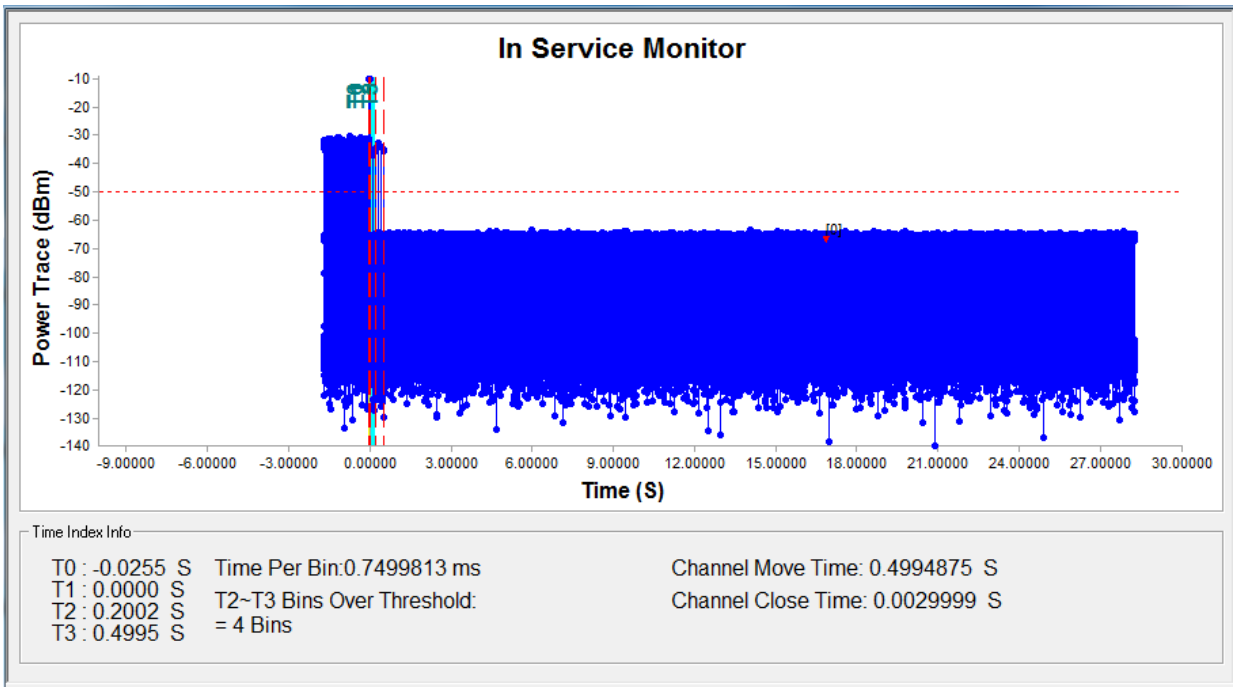
| TestMode | Channel | CMT[ms] | Limit | CCT[ms] | Limit | Verdict |
|---|---|---|---|---|---|---|
| 11AC20 | 5260 | 0.4995 | 10s | 2.9999 | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. | PASS |
| 11AC80 | 5290 | 1.1250 | | 20.9995 | | PASS |

2. Non-Occupancy Period

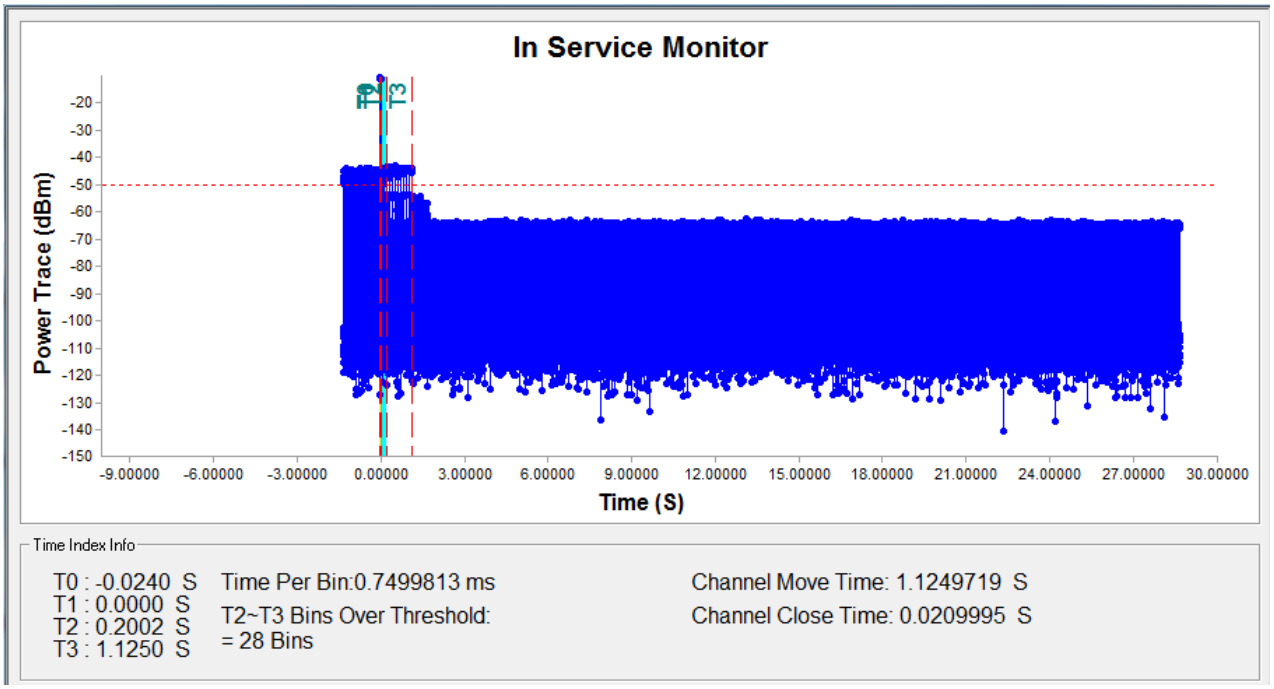
| TestMode | Channel | Result | Limit[ms] | Verdict |
|---|---|---|---|---|
| 11AC20 | 5260 | see test graph | ≥1800 | PASS |
| 11AC80 | 5290 | see test graph | ≥1800 | PASS |

### 3.7.9 Test Graphs

1. Channel Move Time and Channel Closing Transmission Time

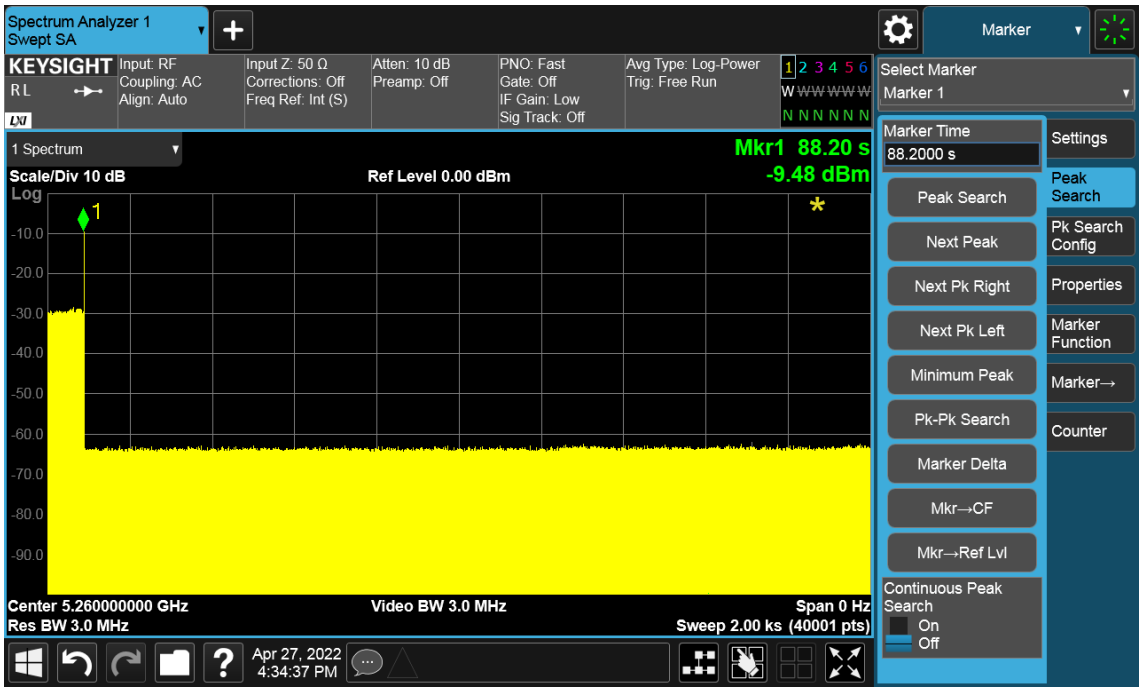
| 11AC20-5260MHz |
|---|
|  |



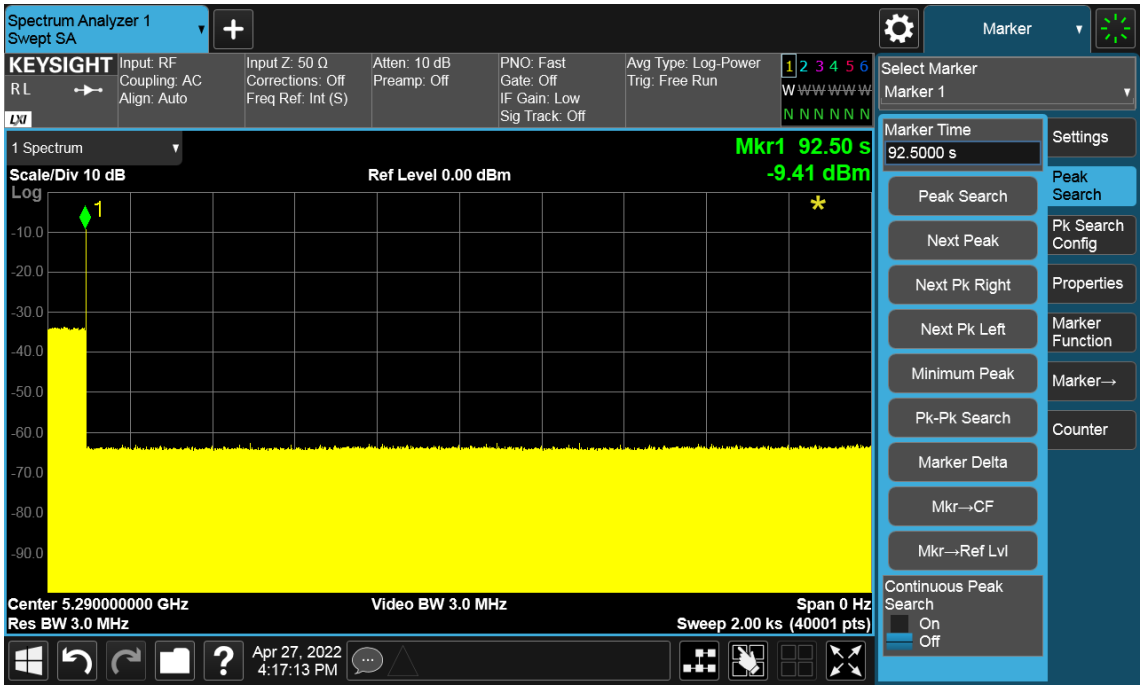
| 11AC80-5290MHz |
|---|
|  |

2. Non-Occupancy Period

11AC20-5260MHz




11AC80-5290MHz

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