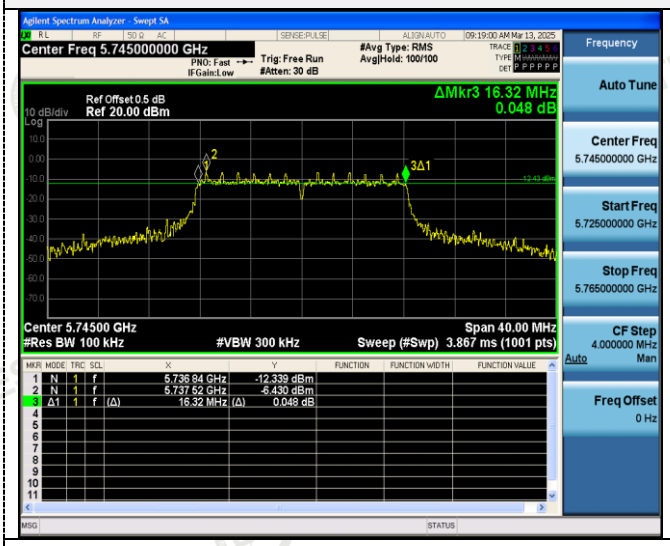
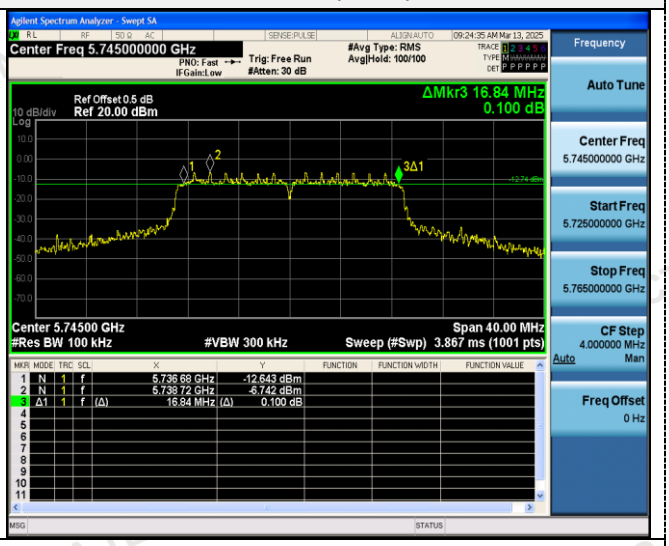
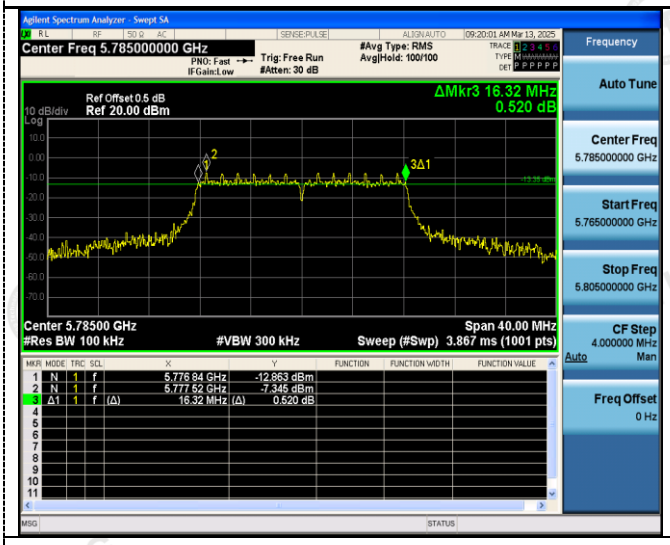
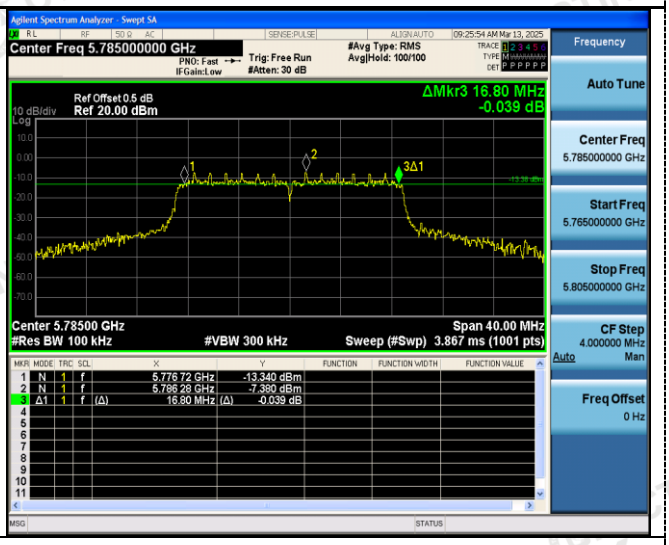
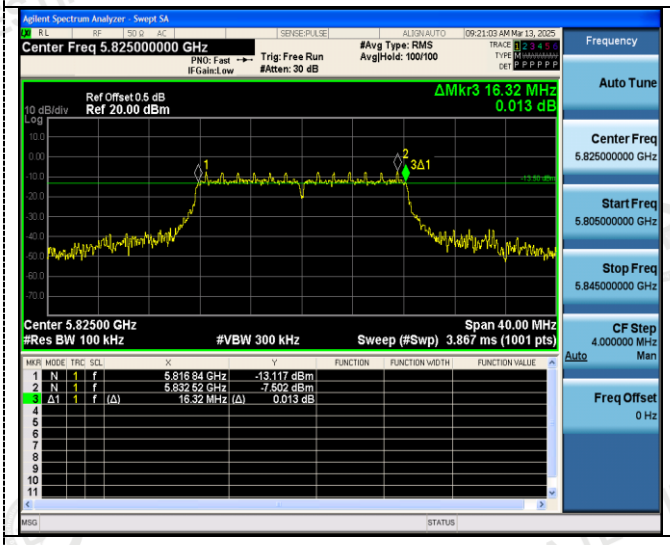
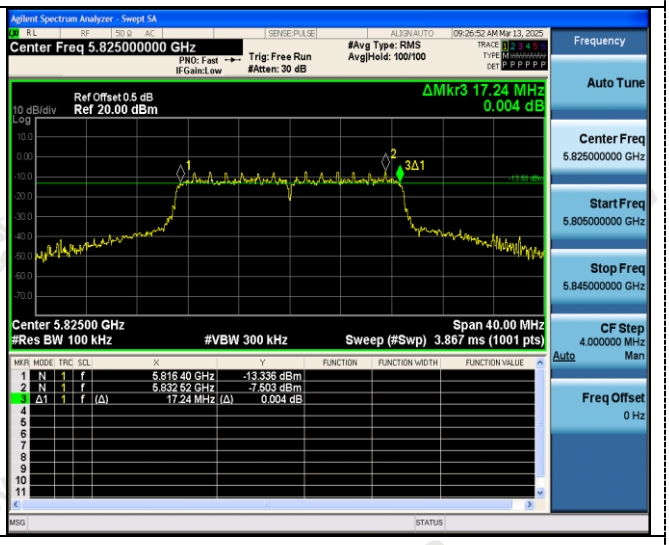
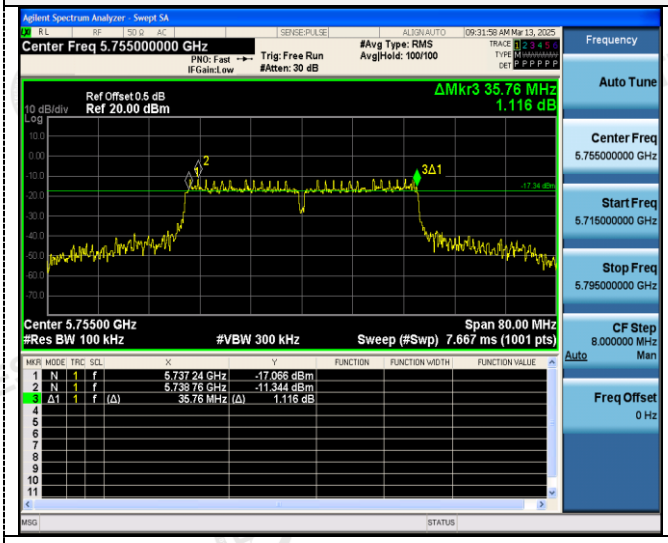
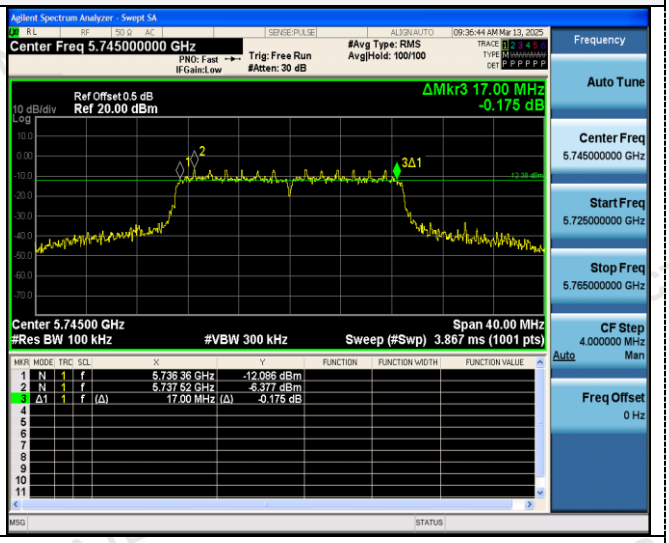
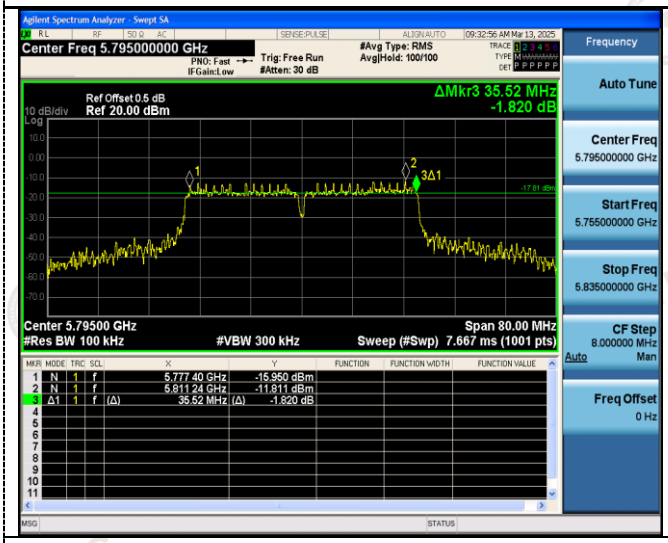
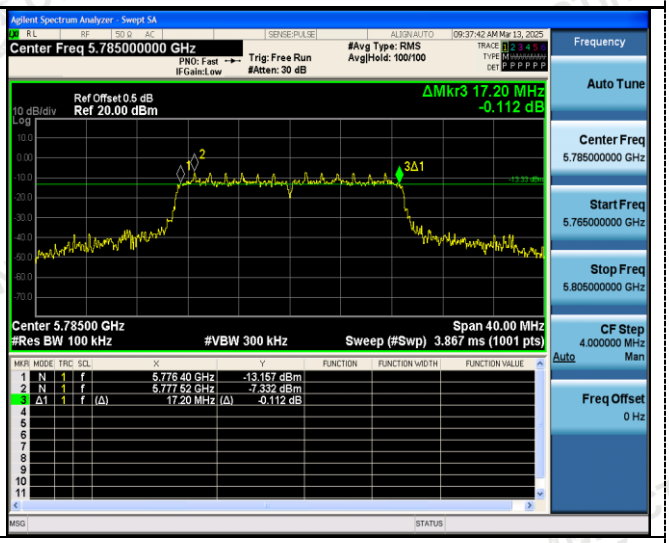
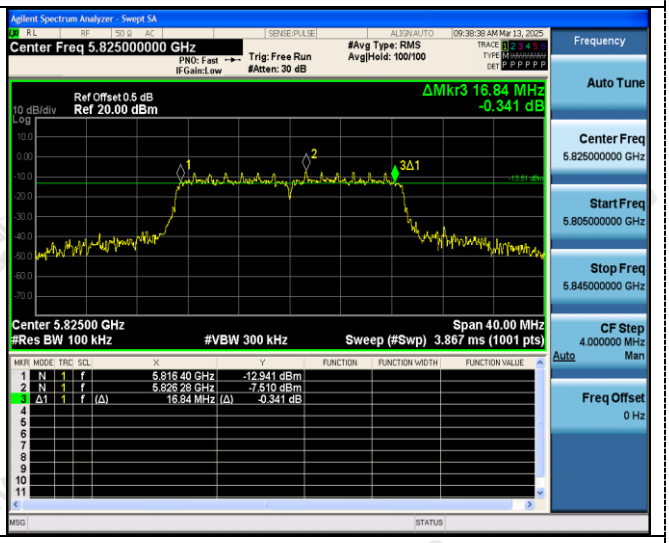
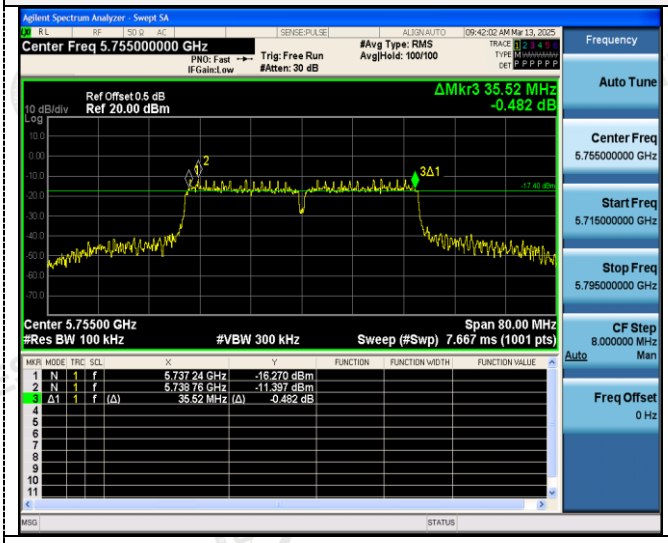
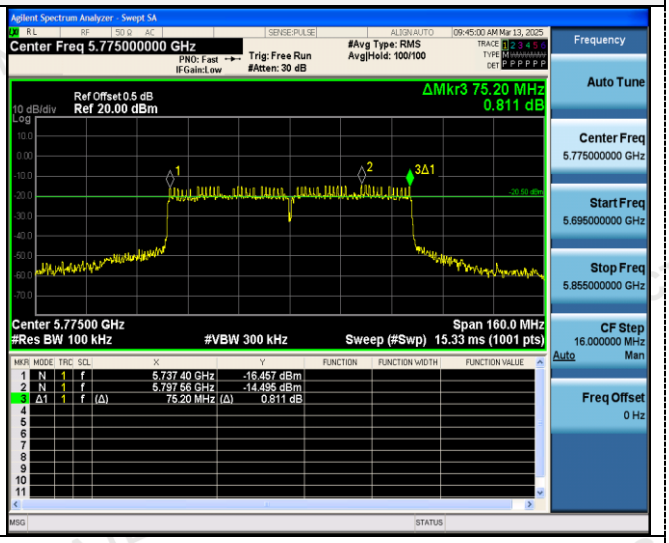
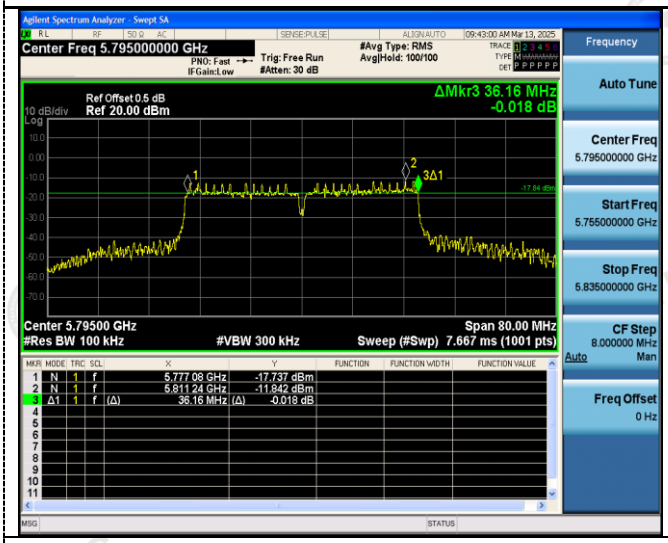
| 802.11a | 802.11n(HT20) |
|---|---|
|  |  |
| CH149 | CH149 |
|  |  |
| CH157 | CH157 |
|  |  |
| CH165 | CH165 |

| 802.11n(HT40) | 802.11ac(HT20) |
|---|---|
|  |  |
| CH151 | CH149 |
|  |  |
| CH159 | CH157 |
| |  |
| | CH165 |

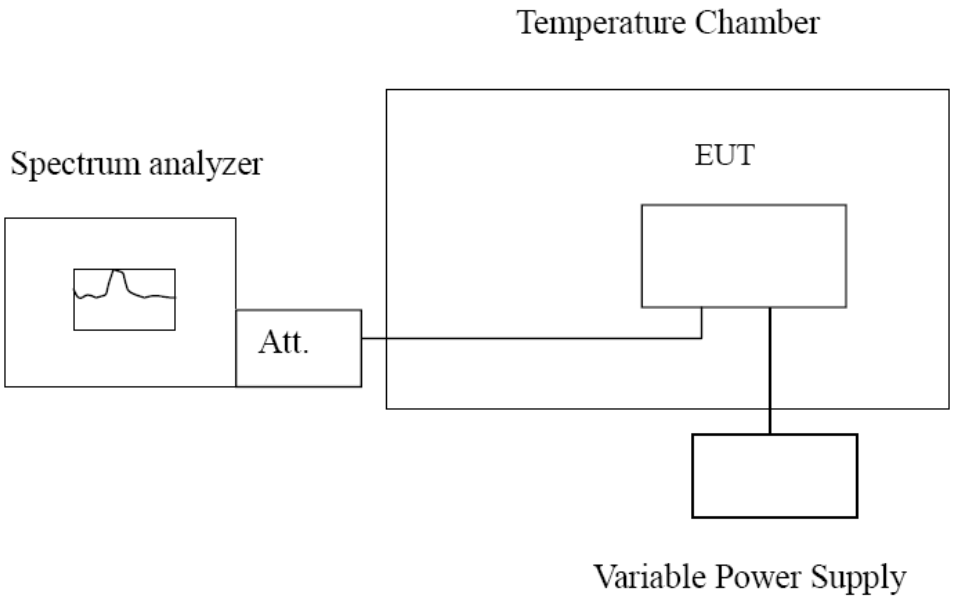
| 802.11ac(HT40) | 802.11ac(HT80) |
|---|---|
|  |  |
| CH151 | CH155 |
|  | |
| CH159 | |

## 4.7 Frequency Stability

**LIMIT**

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 users manual.

**TEST CONFIGURATION**




**TEST PROCEDURE**

**Frequency Stability under Temperature Variations:**
The equipment under test was connected to an external AC or DC power supply and input rated voltage. 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℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

**Frequency Stability under Voltage Variations:**
Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

**TEST RESULTS**

Record worst case as below:

| Reference Frequency: 802.11ac channel=36 frequency=5180MHz | | | | | |
|---|---|---|---|---|---|
| Voltage ( V ) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| DC 3.8 | -30 | 110.63 | 0.021357 | Within the band of operation | Pass |
| | -20 | 174.63 | 0.033712 | | |
| | -10 | 145.48 | 0.028085 | | |
| | 0 | 146.81 | 0.028342 | | |
| | 10 | 146.07 | 0.028199 | | |
| | 20 | 99.81 | 0.019268 | | |
| | 30 | 167.55 | 0.032346 | | |
| | 40 | 129.68 | 0.025035 | | |
| | 50 | 128.39 | 0.024786 | | |
| DC 4.2 | 25 | 195.63 | 0.037766 | | |
| DC 3.4 | 25 | 118.84 | 0.022942 | | |

| Reference Frequency: 802.11ac channel=149 frequency=5745MHz | | | | | |
|---|---|---|---|---|---|
| Voltage ( V ) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| DC 3.8 | -30 | 135.51 | 0.023587 | Within the band of operation | Pass |
| | -20 | 129.60 | 0.022559 | | |
| | -10 | 167.41 | 0.029140 | | |
| | 0 | 169.83 | 0.029561 | | |
| | 10 | 136.66 | 0.023788 | | |
| | 20 | 144.98 | 0.025236 | | |
| | 30 | 116.41 | 0.020263 | | |
| | 40 | 168.17 | 0.029272 | | |
| | 50 | 160.86 | 0.028000 | | |
| DC 4.2 | 25 | 150.65 | 0.026223 | | |
| DC 3.4 | 25 | 129.98 | 0.022625 | | |

## 4.8 On Time and Duty Cycle

**Standard Applicable**

None; for reporting purpose only.

**TEST CONFIGURATION**

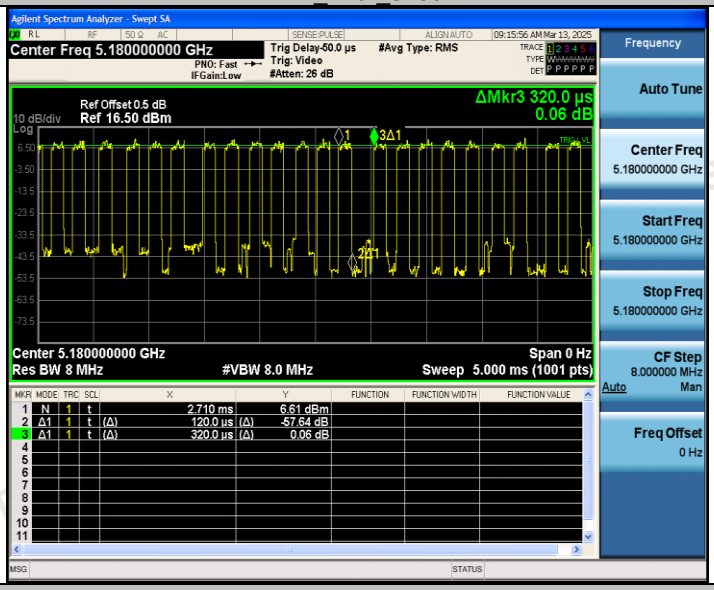

**Test Procedures**

1). Set the Centre frequency of the spectrum analyzer to the transmitting frequency;
2). Set the span=0MHz, RBW=8MHz, VBW=8MHz, Sweep time=5ms;
3). Detector = peak;
4). Trace mode = Single hold.

**TEST RESULTS**

| TestMode | Antenna | Freq(MHz) | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | Duty Factor (dB) | Limit | Verdict |
|---|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 0.12 | 0.32 | 37.50 | 4.26 | --- | --- |
| | | 5220 | 0.11 | 0.29 | 37.93 | 4.21 | --- | --- |
| | | 5240 | 0.11 | 0.28 | 39.29 | 4.06 | --- | --- |
| | | 5745 | 0.11 | 0.29 | 37.93 | 4.21 | --- | --- |
| | | 5785 | 0.11 | 0.28 | 39.29 | 4.06 | --- | --- |
| | | 5825 | 0.11 | 0.35 | 31.43 | 5.03 | --- | --- |
| 11N20SISO | Ant1 | 5180 | 0.11 | 0.32 | 34.38 | 4.64 | --- | --- |
| | | 5220 | 0.11 | 0.28 | 39.29 | 4.06 | --- | --- |
| | | 5240 | 0.11 | 0.33 | 33.33 | 4.77 | --- | --- |
| | | 5745 | 0.11 | 0.28 | 39.29 | 4.06 | --- | --- |
| | | 5785 | 0.11 | 0.30 | 36.67 | 4.36 | --- | --- |
| | | 5825 | 0.11 | 0.28 | 39.29 | 4.06 | --- | --- |
| 11N40SISO | Ant1 | 5190 | 0.07 | 0.27 | 25.93 | 5.86 | --- | --- |
| | | 5230 | 0.07 | 0.25 | 28.00 | 5.53 | --- | --- |
| | | 5755 | 0.07 | 0.25 | 28.00 | 5.53 | --- | --- |
| | | 5795 | 0.06 | 0.22 | 27.27 | 5.64 | --- | --- |
| 11AC20SISO | Ant1 | 5180 | 0.12 | 0.35 | 34.29 | 4.65 | --- | --- |
| | | 5220 | 0.11 | 0.29 | 37.93 | 4.21 | --- | --- |
| | | 5240 | 0.12 | 0.29 | 41.38 | 3.83 | --- | --- |
| | | 5745 | 0.12 | 0.30 | 40.00 | 3.98 | --- | --- |
| | | 5785 | 0.12 | 0.30 | 40.00 | 3.98 | --- | --- |
| | | 5825 | 0.12 | 0.30 | 40.00 | 3.98 | --- | --- |
| 11AC40SISO | Ant1 | 5190 | 0.08 | 0.27 | 29.63 | 5.28 | --- | --- |
| | | 5230 | 0.08 | 0.26 | 30.77 | 5.12 | --- | --- |
| | | 5755 | 0.08 | 0.25 | 32.00 | 4.95 | --- | --- |
| | | 5795 | 0.08 | 0.29 | 27.59 | 5.59 | --- | --- |
| 11AC80SISO | Ant1 | 5210 | 0.18 | 0.58 | 31.03 | 5.08 | --- | --- |
| | | 5775 | 0.05 | 0.25 | 20.00 | 6.99 | --- | --- |

11A_Ant1_5180

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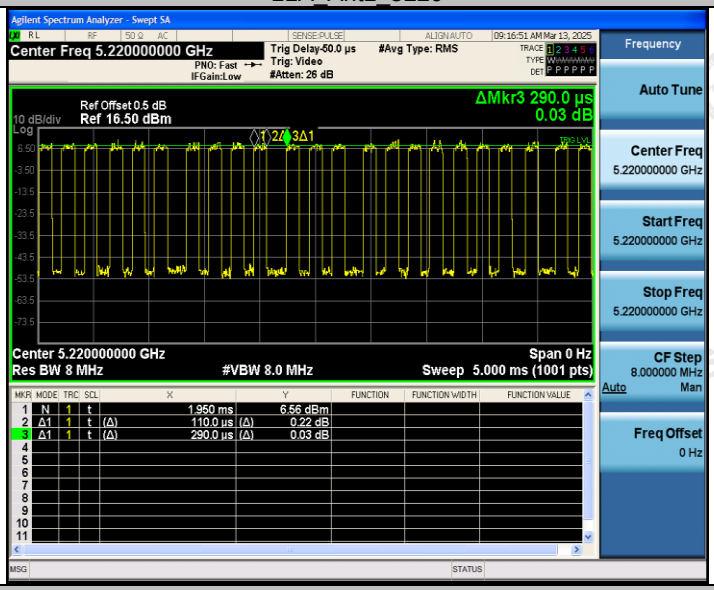


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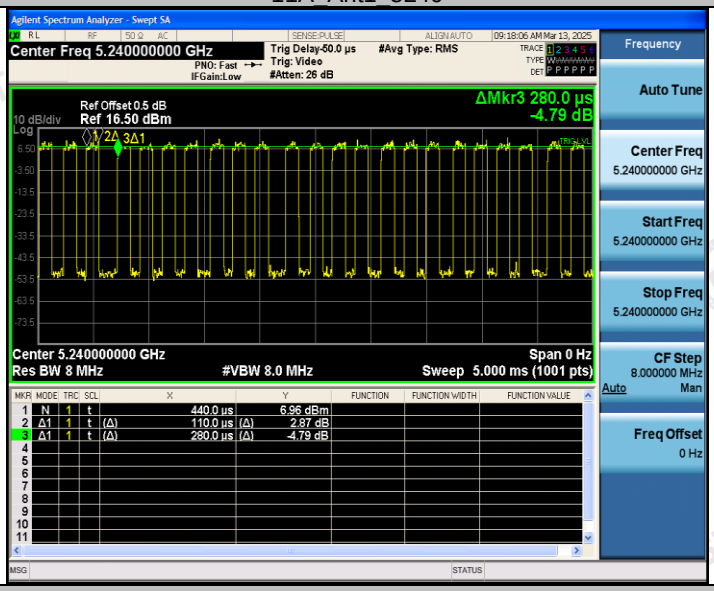


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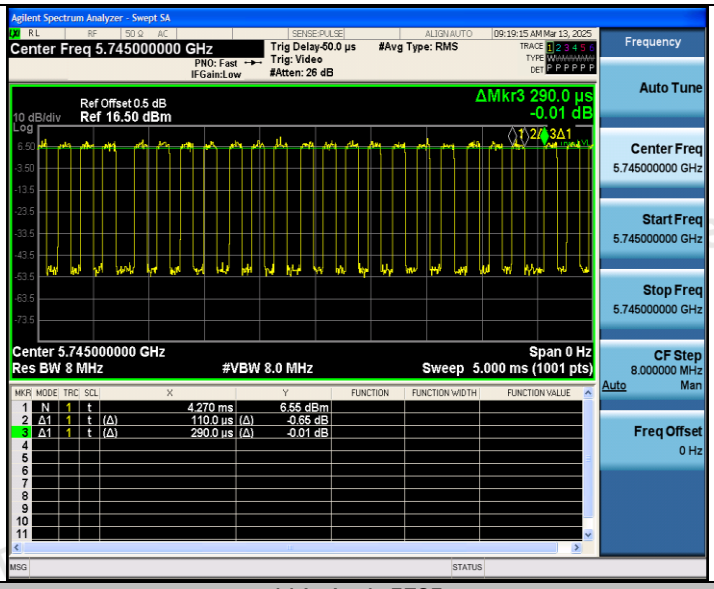


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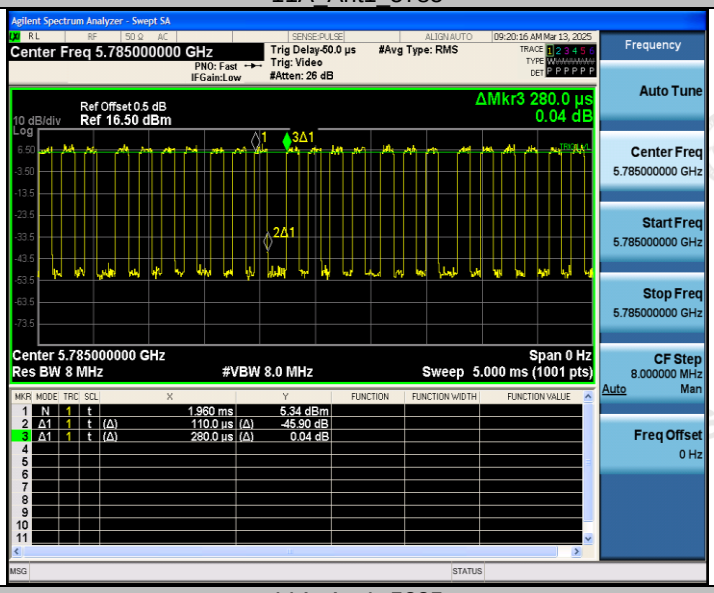


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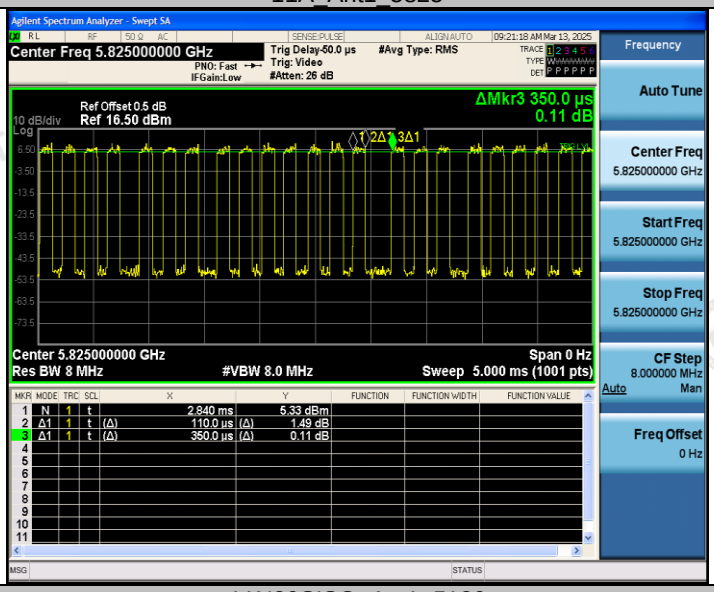


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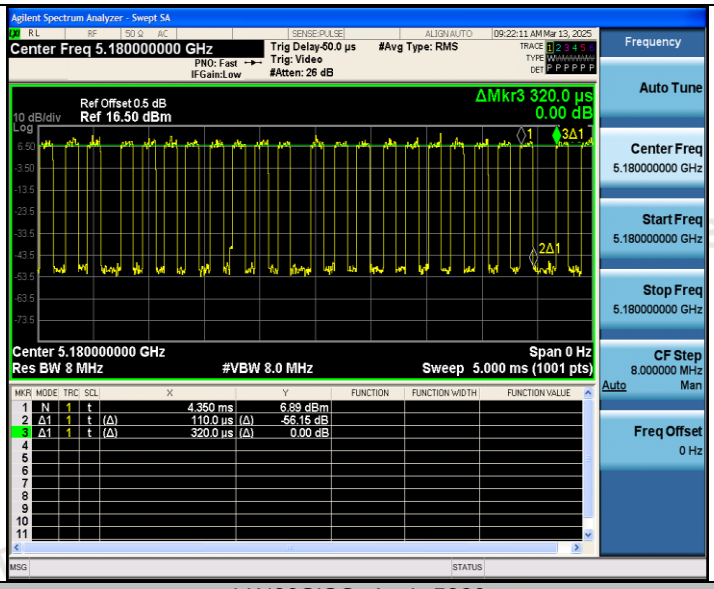


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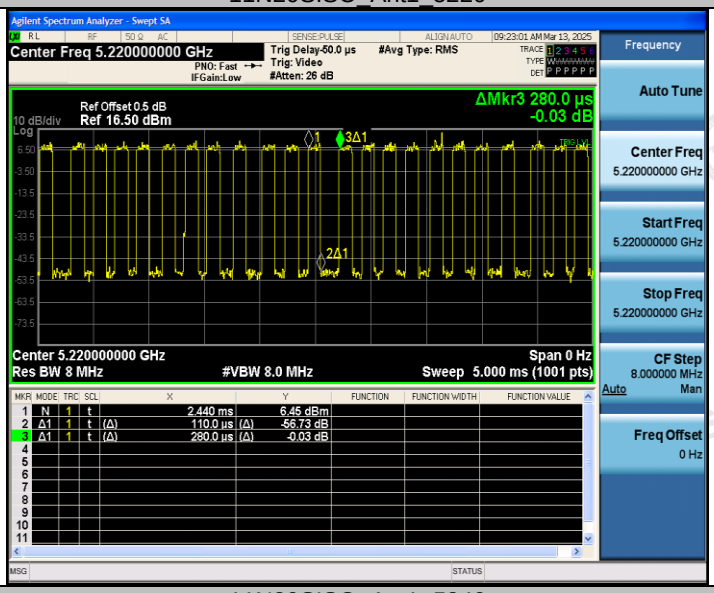


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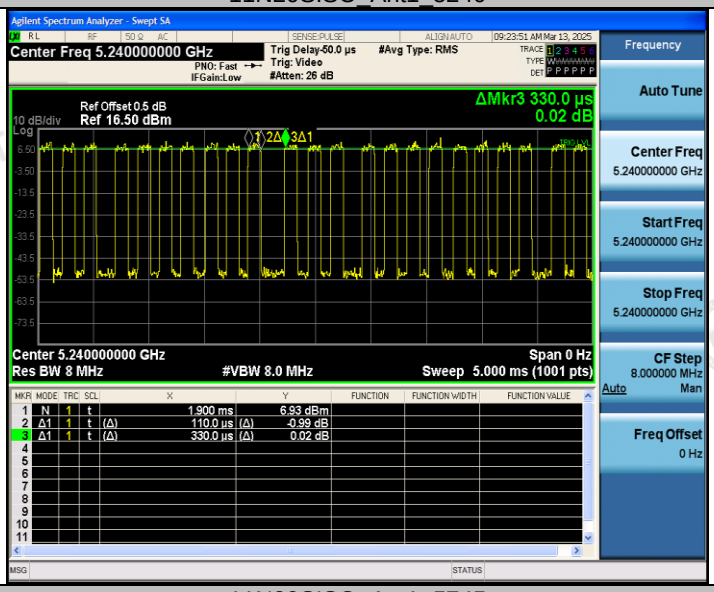


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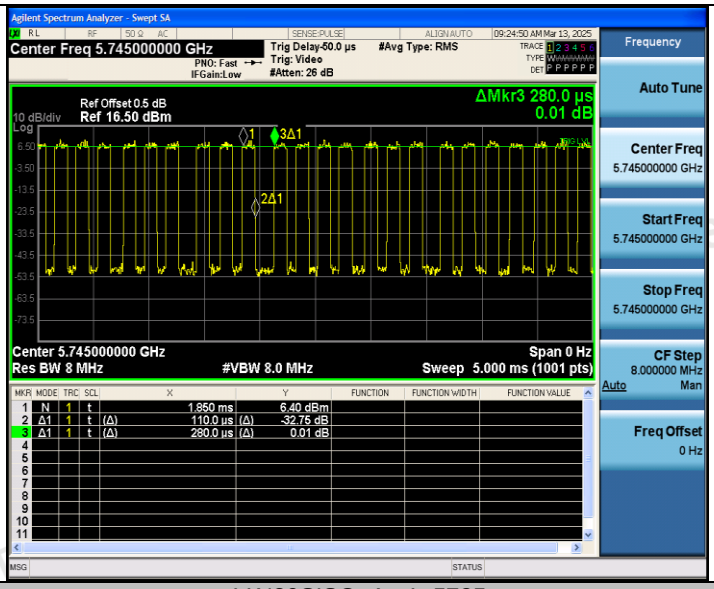


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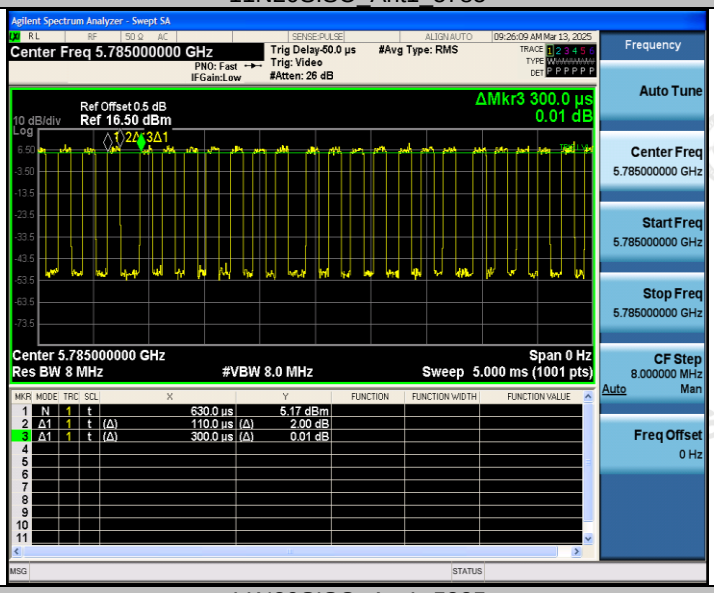


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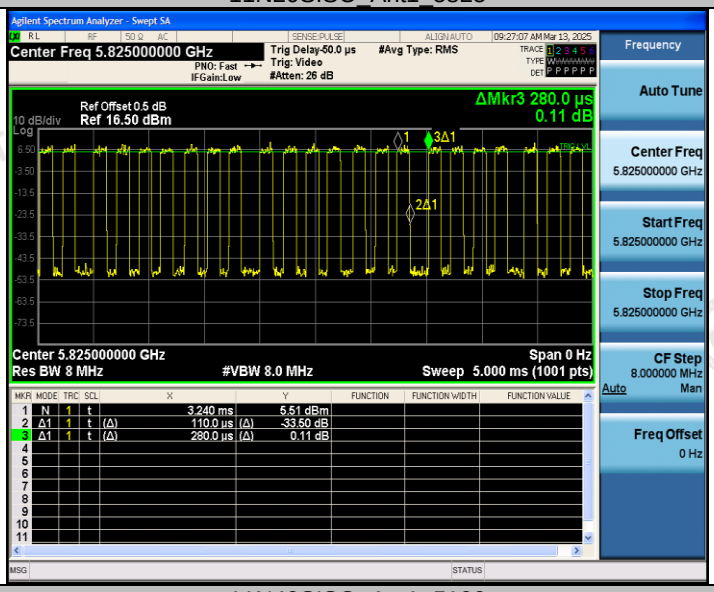


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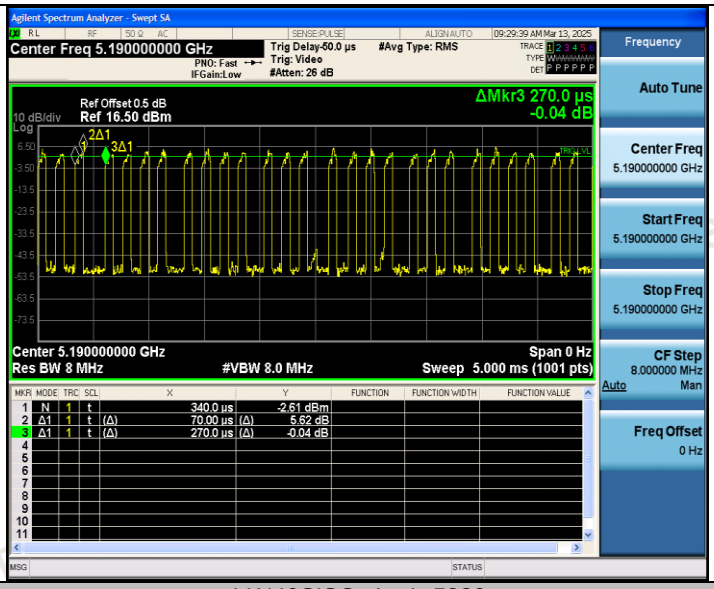


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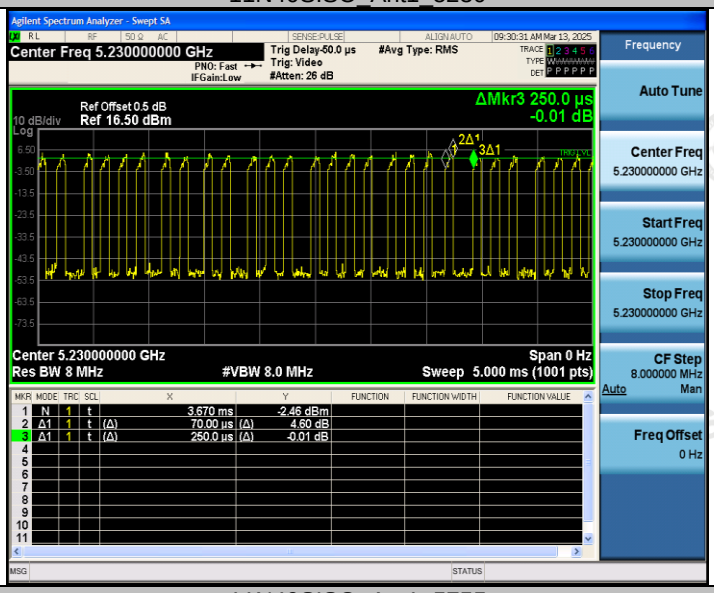


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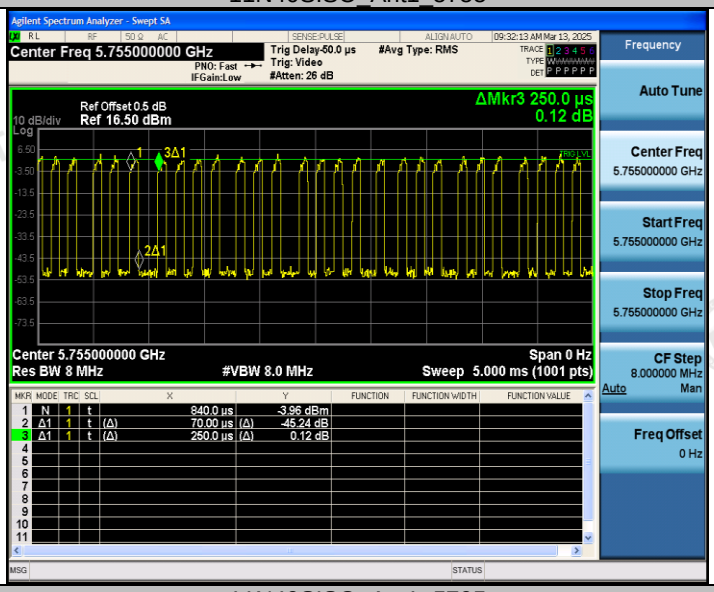


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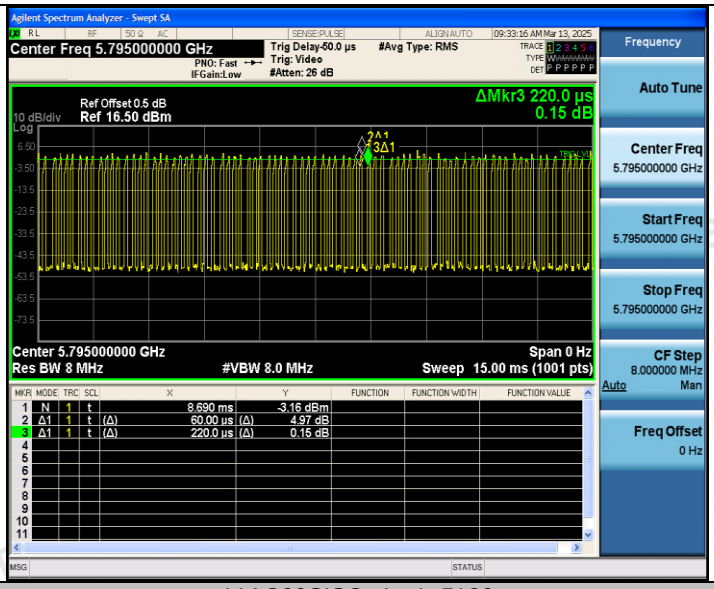


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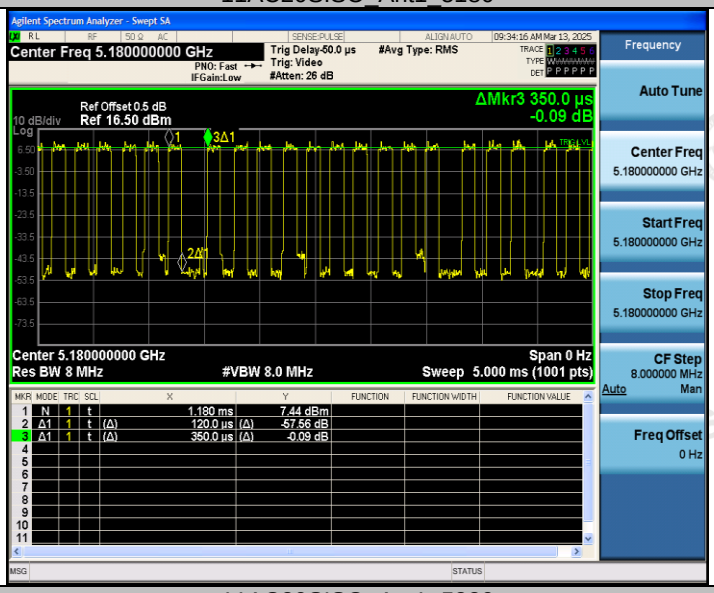


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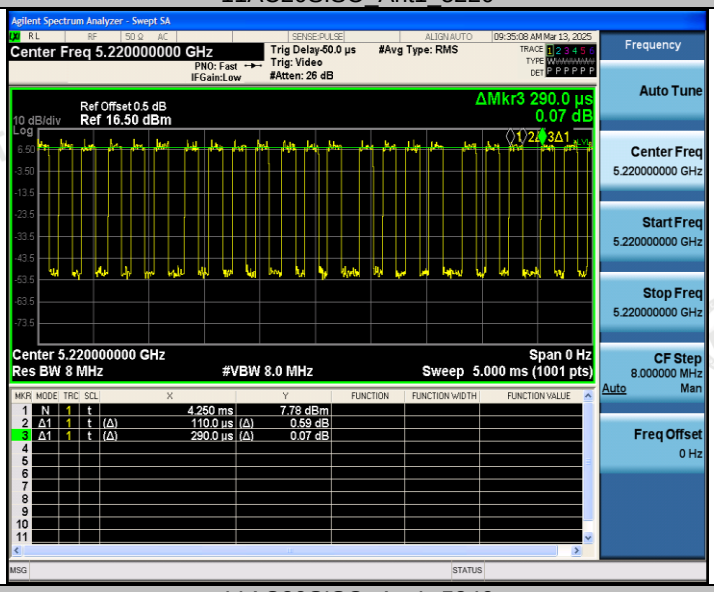


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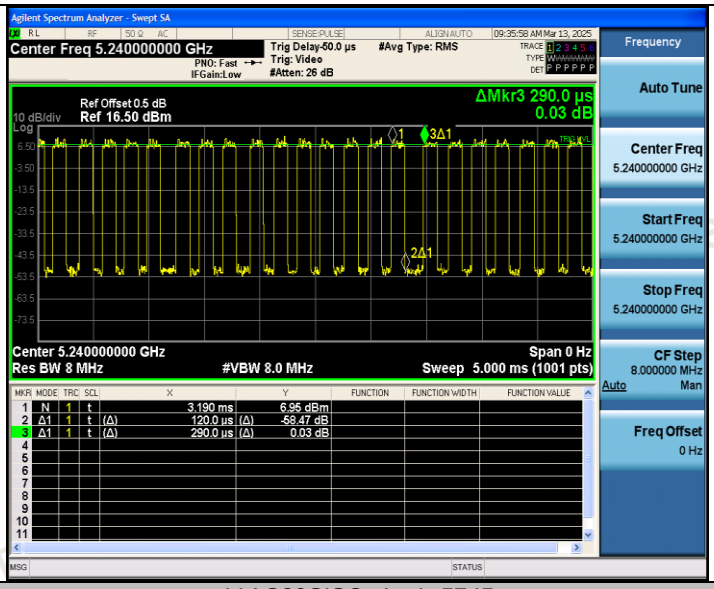


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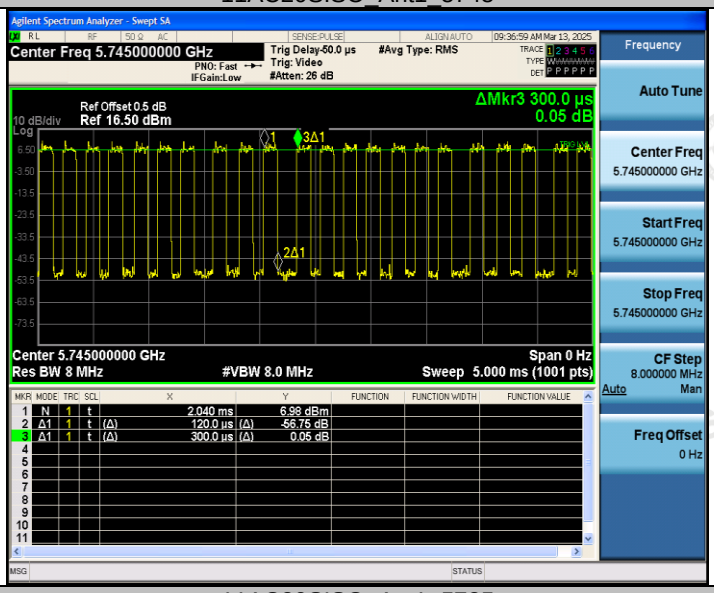


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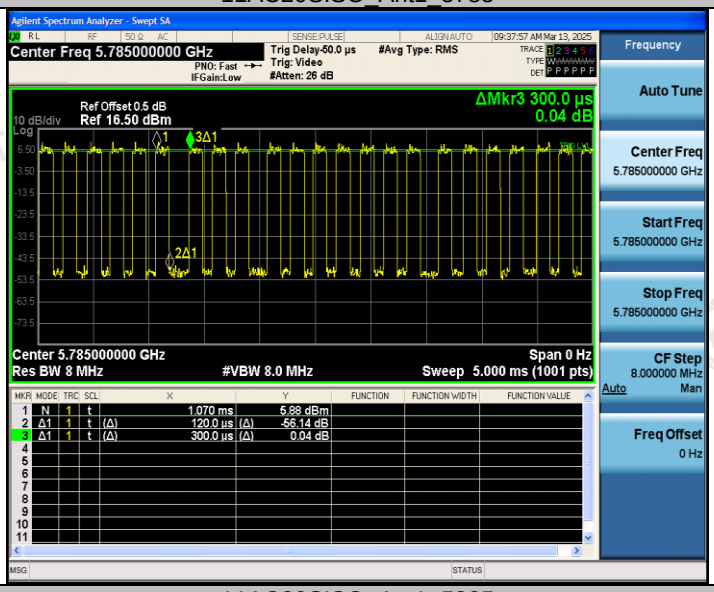


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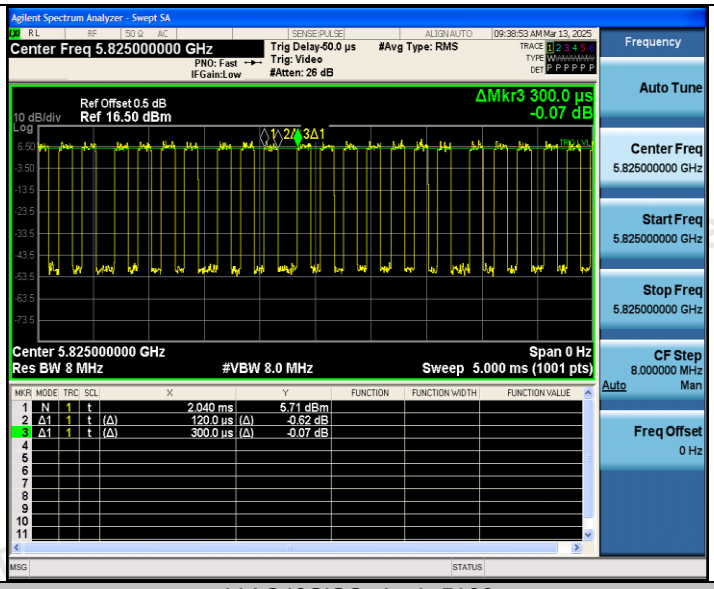


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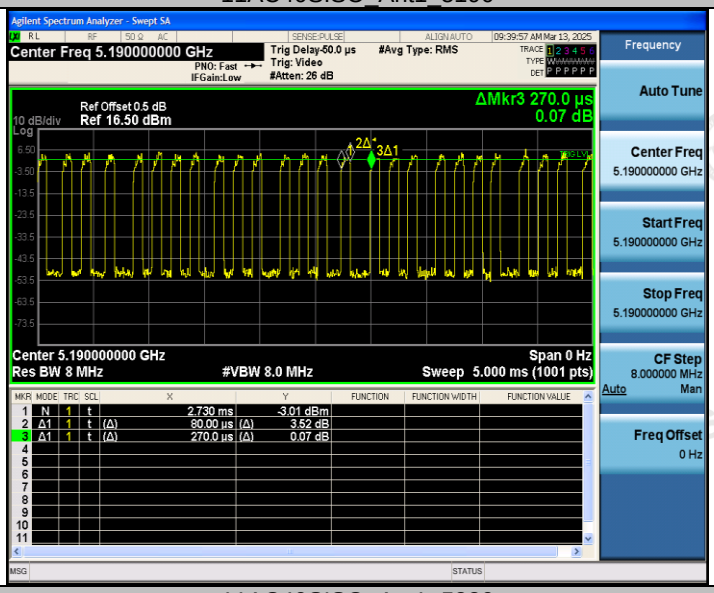


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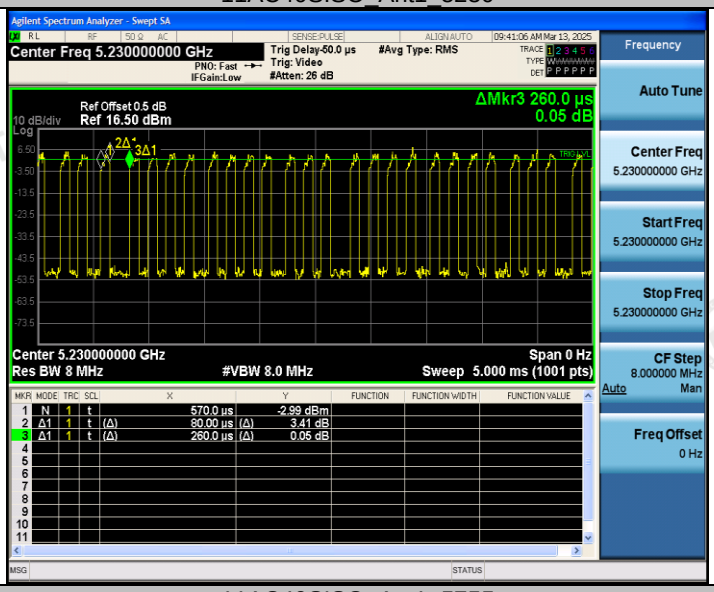


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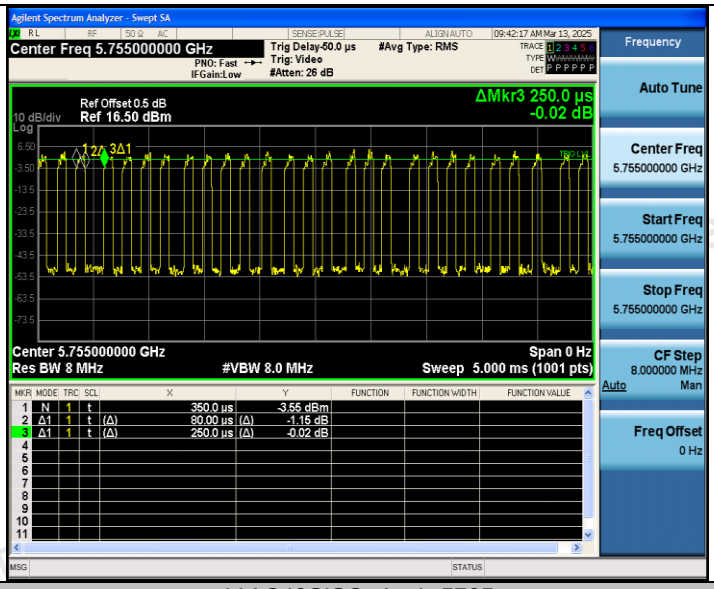


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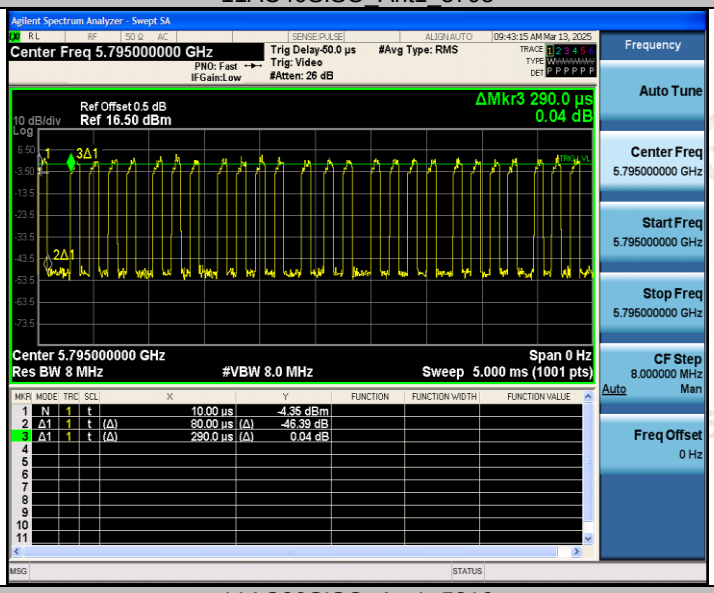


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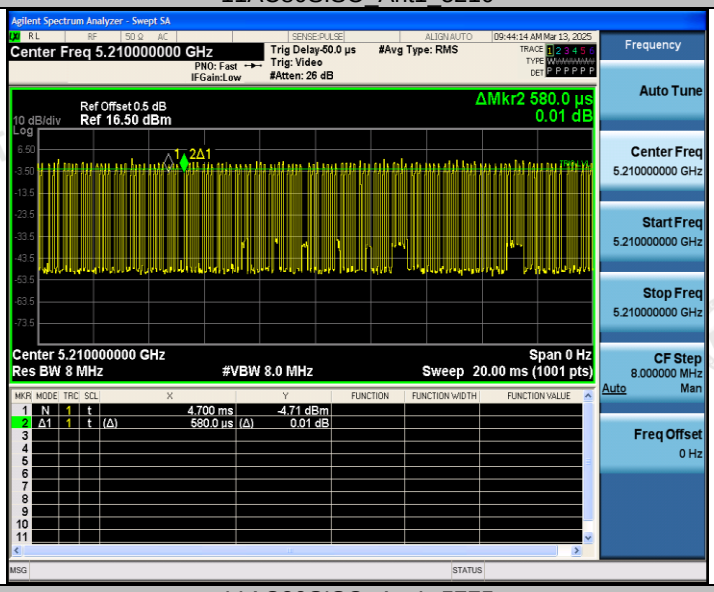


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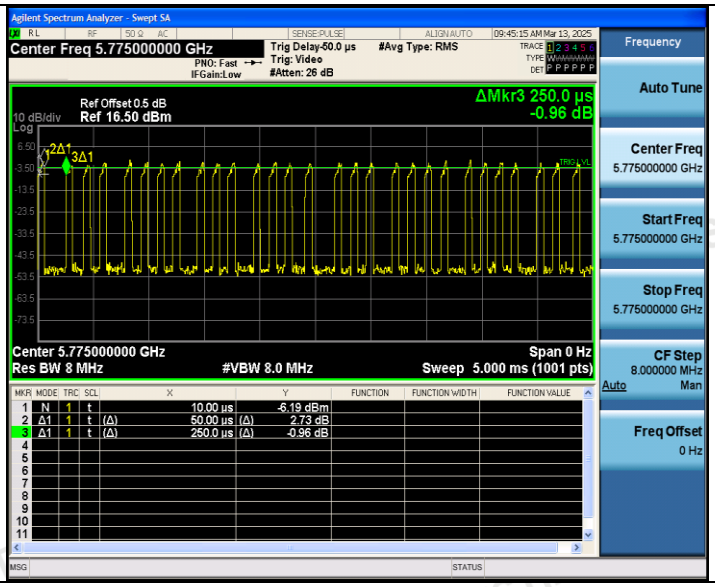
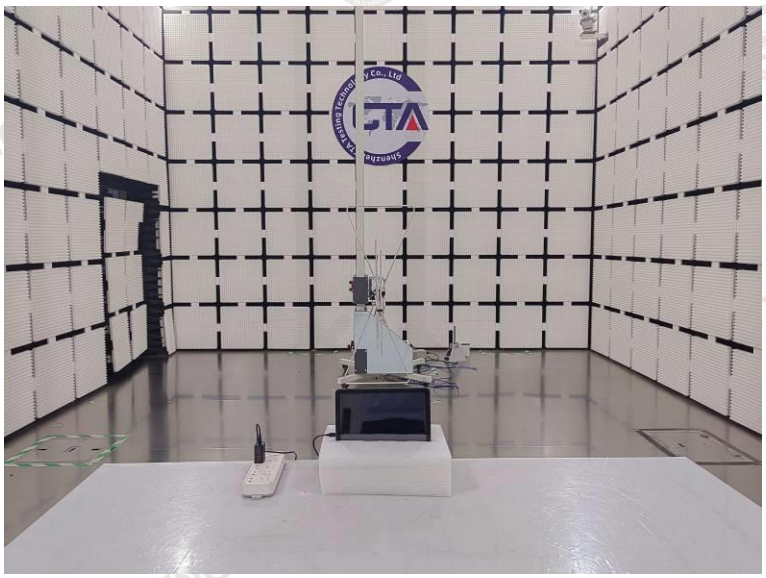

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-50.0 µs
Trig: Video
#Atten: 26 dB
#Avg Type: RMS
09:45:15 AM Mar 13, 2025
Ref Offset 0.5 dB
10 dB/div Ref 16.50 dBm
ΔMkr3 250.0 µs
-0.96 dB
Center 5.775000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
1 N 1 t 10.00 µs -6.19 dBm
2 Δ1 1 t (Δ) 50.00 µs (Δ) 2.73 dB
3 Δ1 1 t (Δ) 250.0 µs (Δ) -0.96 dB
Frequency
Auto Tune
Center Freq
5.775000000 GHz
Start Freq
5.775000000 GHz
Stop Freq
5.775000000 GHz
CF Step
8.000000 MHz
Auto Man
Freq Offset
0 Hz

# 5 Test Setup Photos of the EUT



# 6 Photos of the EUT

Reference to the test report No. **CTA25031101201.**

********** End of Report **********