



## Appendix A

### RF Test Data for BT (Conducted Measurement)

Product Name: MEGAPHONE

Test Model: ER-66BTUC

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.5° C   |
| Relative Humidity: | 52.2%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Kay Hu    |
| Supervised by:     | Li Huan   |



## A.1: 20dB Emission Bandwidth

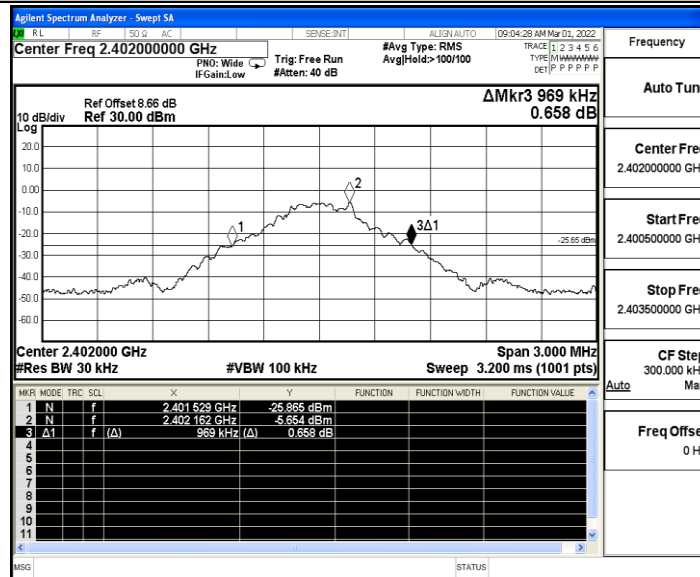
### Test Result

| TestMode | Antenna | Channel | 20db EBW[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|---------------|----------|----------|------------|---------|
| DH5      | Ant1    | 2402    | 0.969         | 2401.529 | 2402.498 | ---        | ---     |
|          |         | 2441    | 1.035         | 2440.466 | 2441.501 | ---        | ---     |
|          |         | 2480    | 1.041         | 2479.466 | 2480.507 | ---        | ---     |
| 2DH5     | Ant1    | 2402    | 1.320         | 2401.343 | 2402.663 | ---        | ---     |
|          |         | 2441    | 1.290         | 2440.364 | 2441.654 | ---        | ---     |
|          |         | 2480    | 1.293         | 2479.361 | 2480.654 | ---        | ---     |
| 3DH5     | Ant1    | 2402    | 1.314         | 2401.346 | 2402.660 | ---        | ---     |
|          |         | 2441    | 1.302         | 2440.346 | 2441.648 | ---        | ---     |
|          |         | 2480    | 1.296         | 2479.352 | 2480.648 | ---        | ---     |

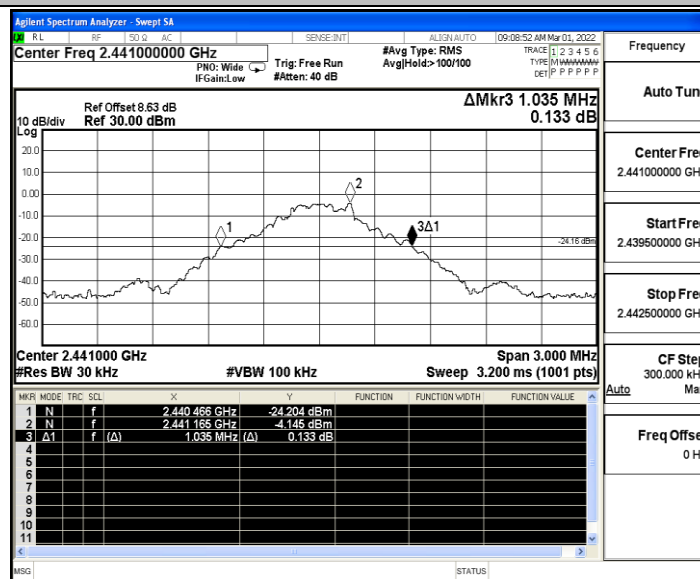


## Test Graphs

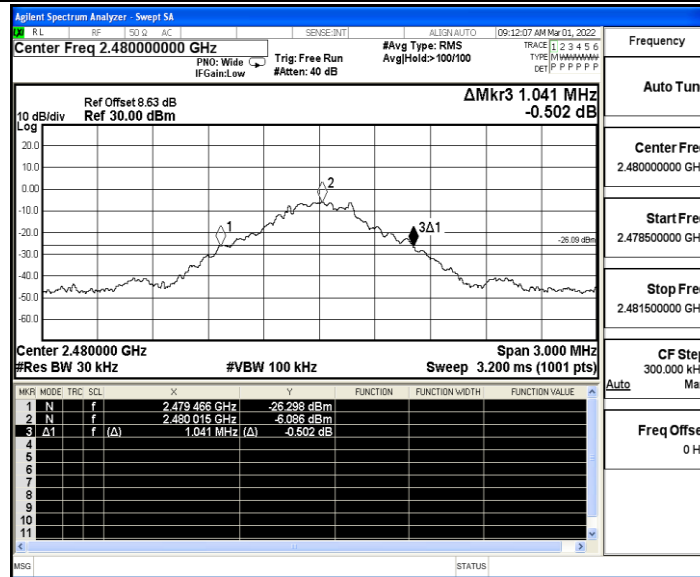
DH5\_Ant1\_2402



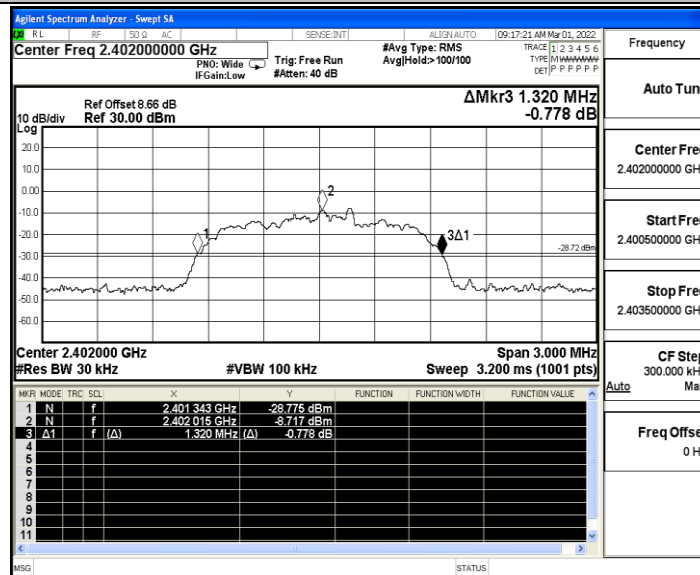
DH5\_Ant1\_2441



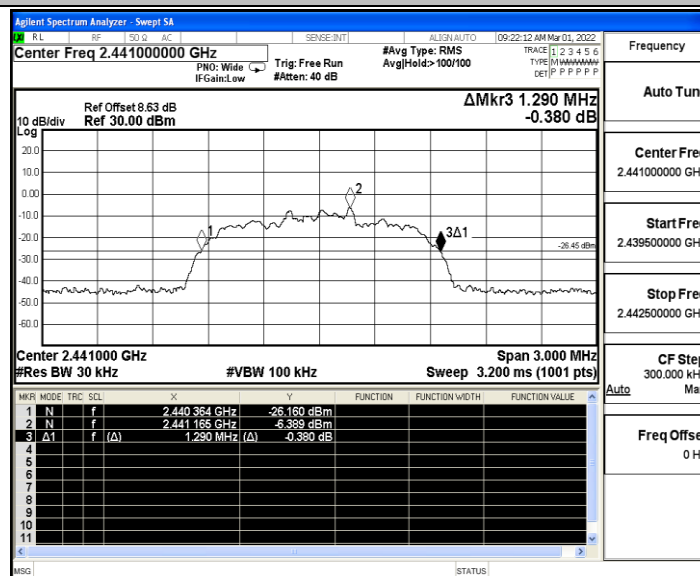
DH5\_Ant1\_2480



2DH5\_Ant1\_2402

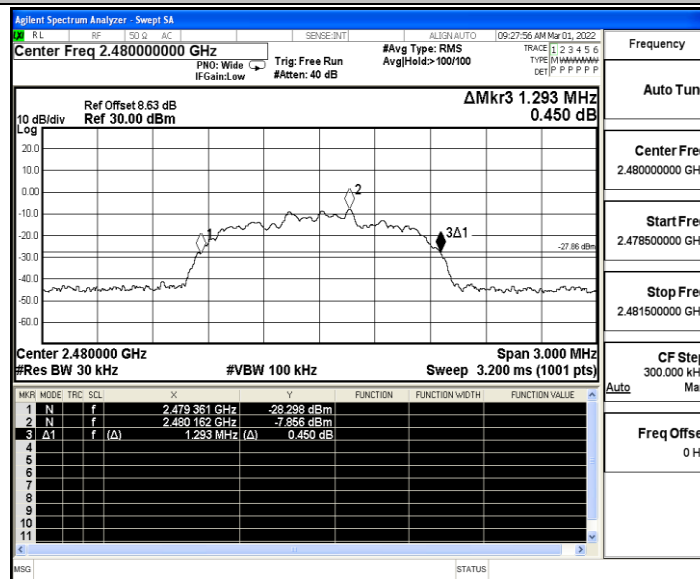


2DH5\_Ant1\_2441

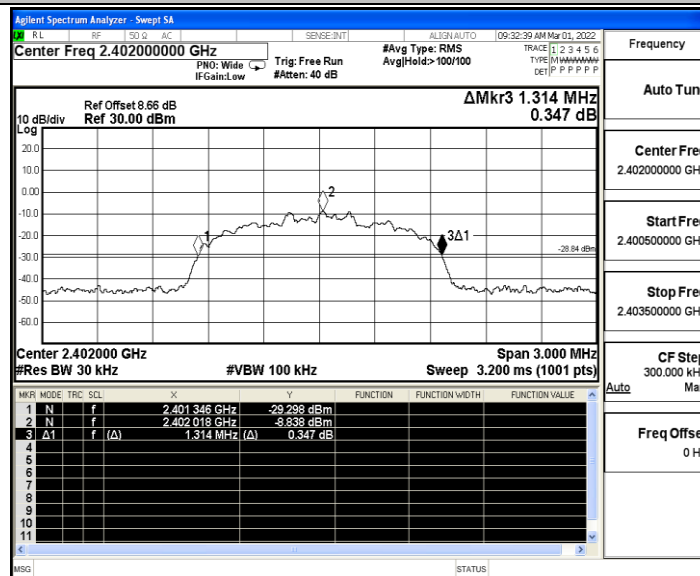




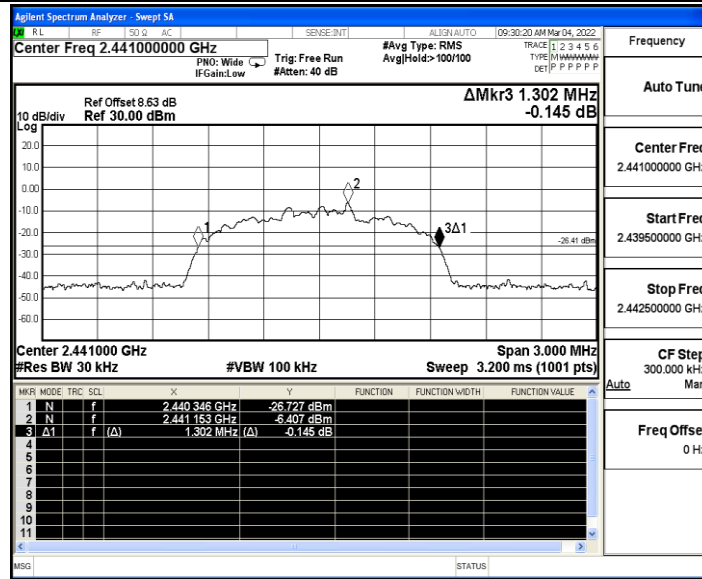
### 2DH5\_Ant1\_2480



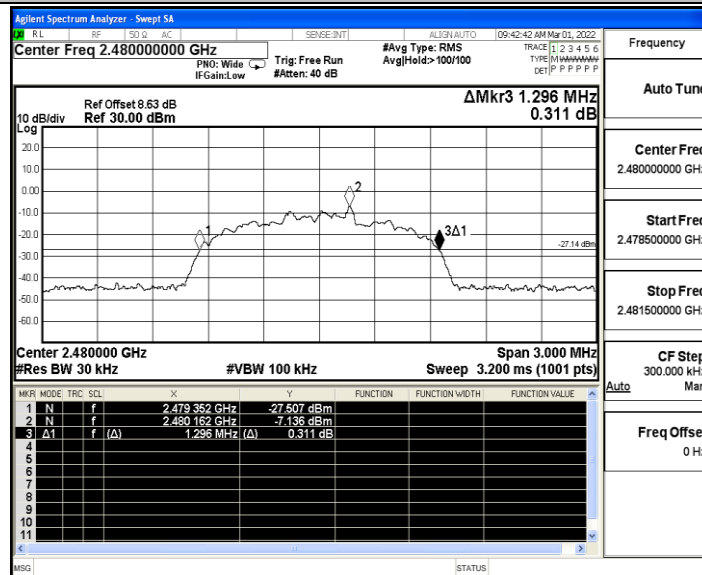
### 3DH5\_Ant1\_2402



### 3DH5\_Ant1\_2441



3DH5\_Ant1\_2480





## A.2: Maximum conducted output power

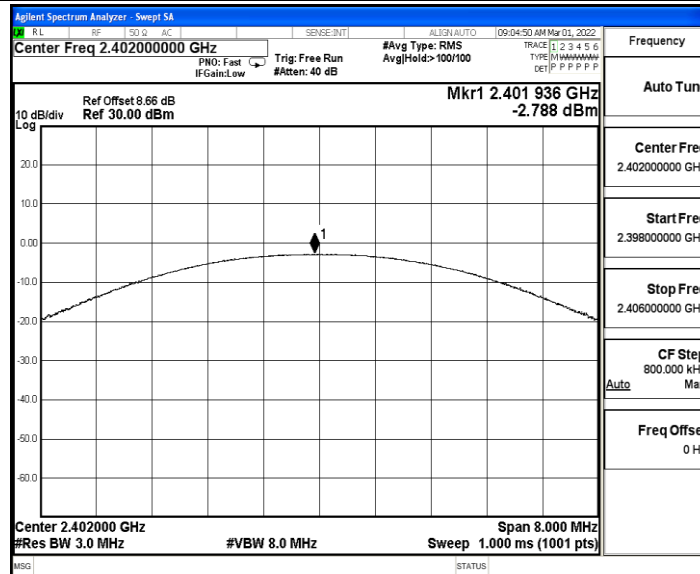
### Test Result

| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| DH5      | Ant1    | 2402    | -2.79       | ≤20.97     | PASS    |
|          |         | 2441    | -1.28       | ≤20.97     | PASS    |
|          |         | 2480    | -2.93       | ≤20.97     | PASS    |
| 2DH5     | Ant1    | 2402    | -3.68       | ≤20.97     | PASS    |
|          |         | 2441    | -2.36       | ≤20.97     | PASS    |
|          |         | 2480    | -3.79       | ≤20.97     | PASS    |
| 3DH5     | Ant1    | 2402    | -3.54       | ≤20.97     | PASS    |
|          |         | 2441    | -2.59       | ≤20.97     | PASS    |
|          |         | 2480    | -3.66       | ≤20.97     | PASS    |

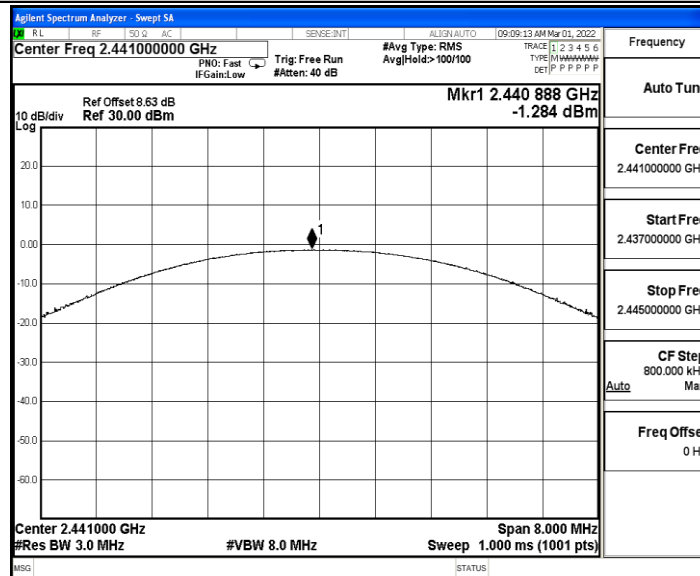


## Test Graphs

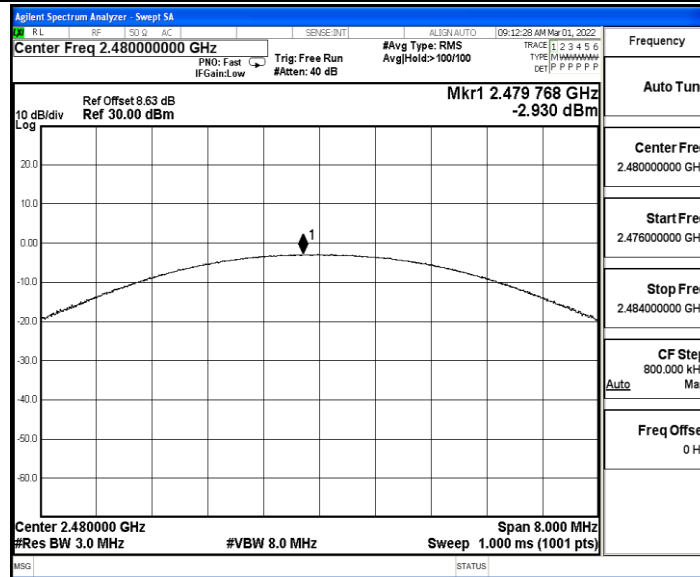
DH5\_Ant1\_2402



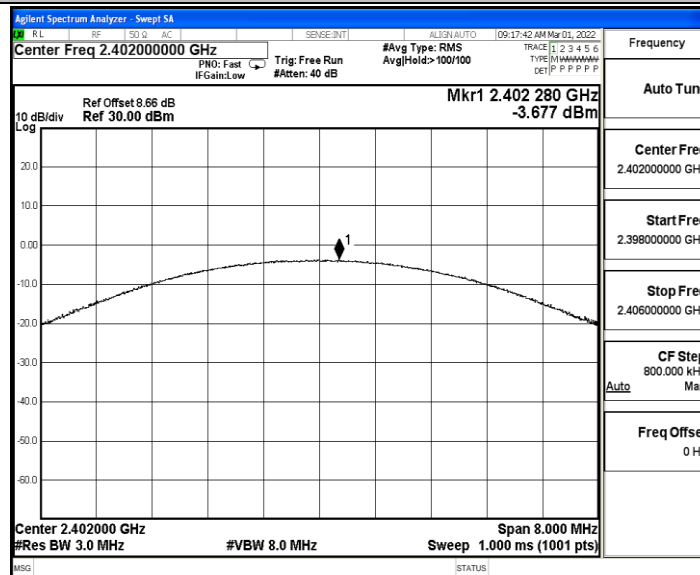
DH5\_Ant1\_2441



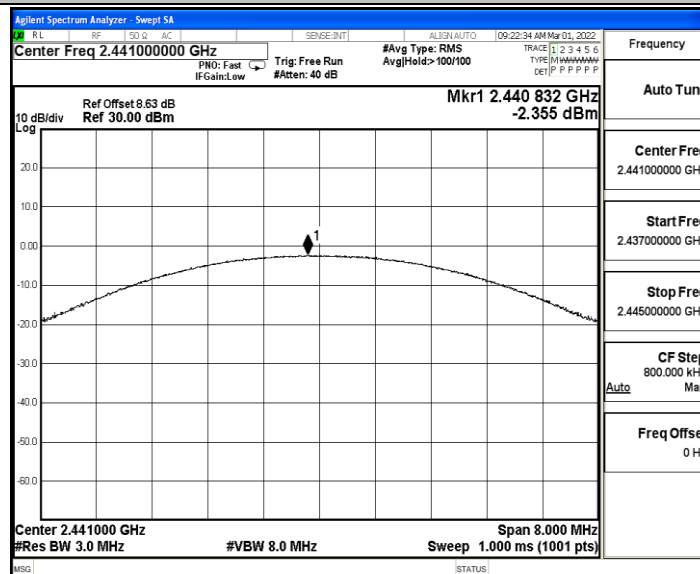
DH5\_Ant1\_2480



2DH5\_Ant1\_2402

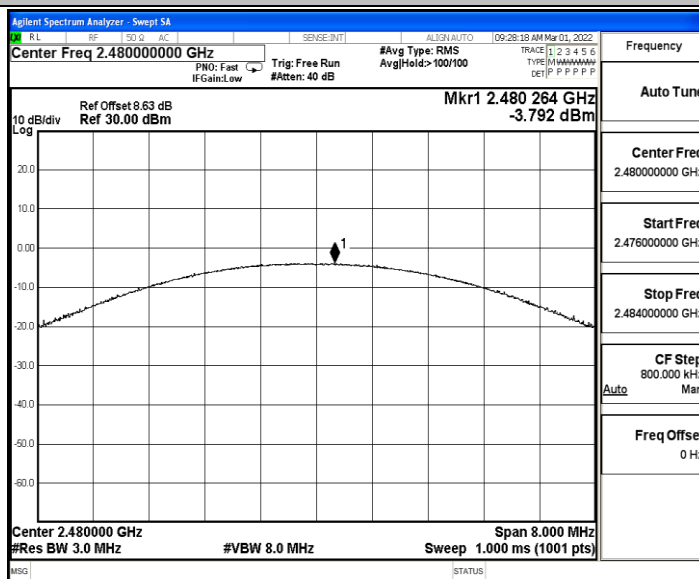


2DH5\_Ant1\_2441

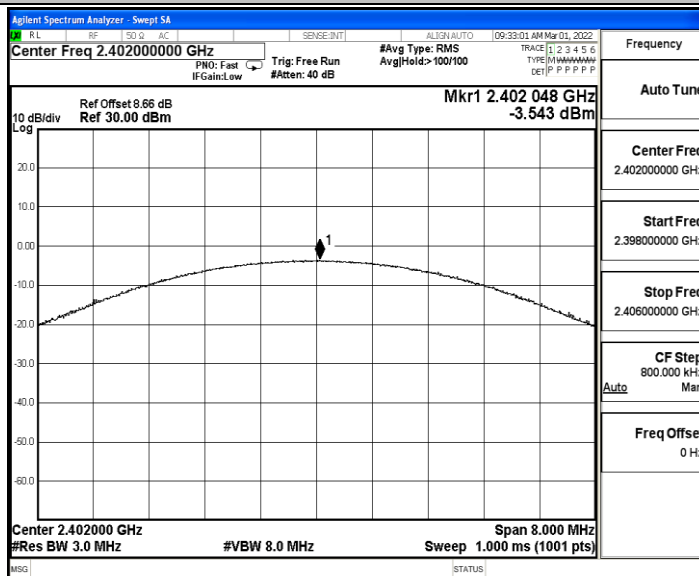




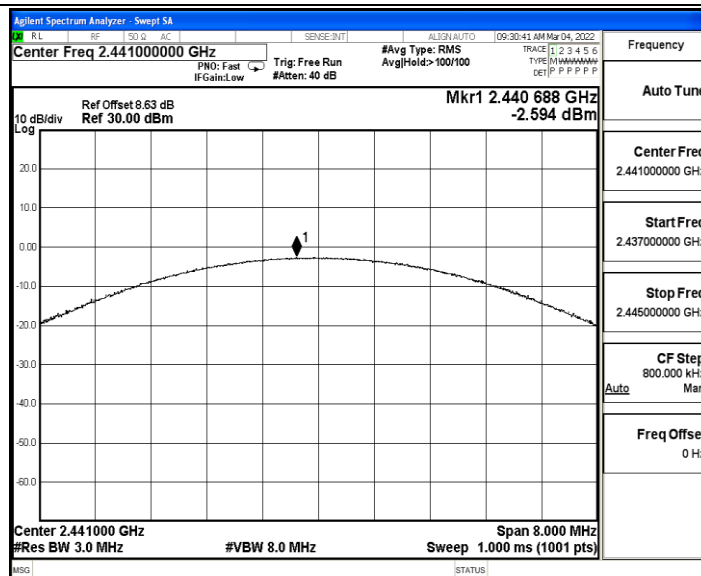
## 2DH5\_Ant1\_2480



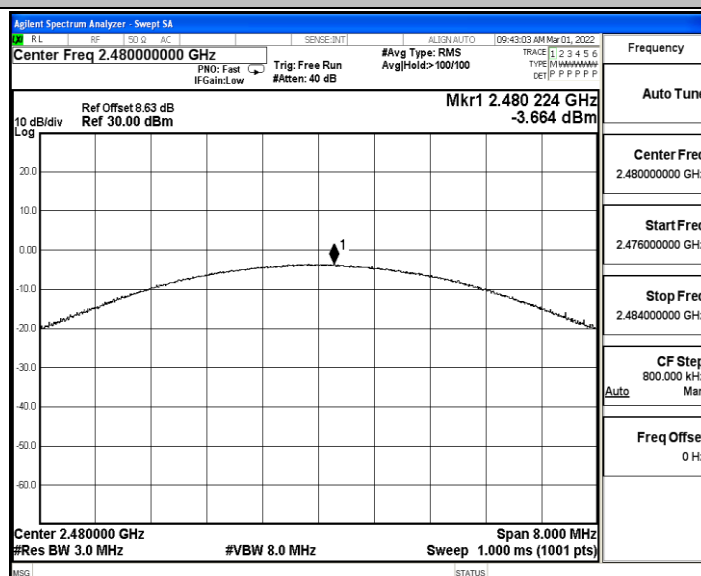
## 3DH5\_Ant1\_2402



## 3DH5\_Ant1\_2441



3DH5\_Ant1\_2480





### A.3: Carrier frequency separation

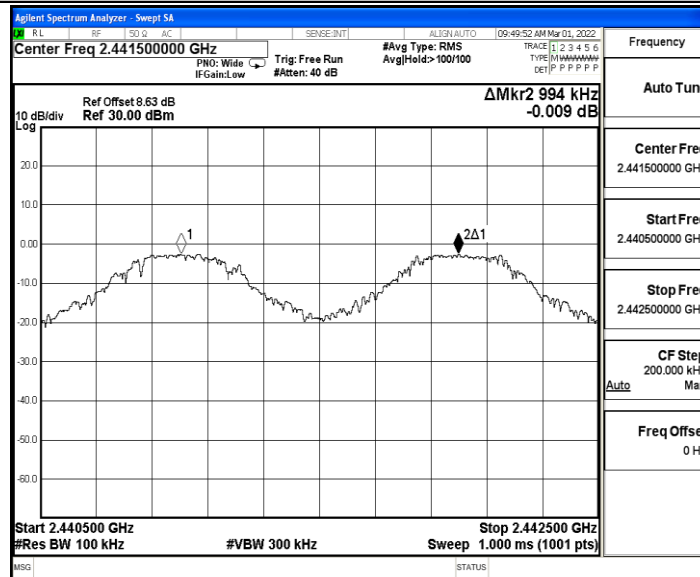
#### Test Result

| TestMode | Antenna | Channel | Result[MHz] | Limit[MHz]   | Verdict |
|----------|---------|---------|-------------|--------------|---------|
| DH5      | Ant1    | Hop     | 0.994       | $\geq 0.694$ | PASS    |
| 2DH5     | Ant1    | Hop     | 1.214       | $\geq 0.880$ | PASS    |
| 3DH5     | Ant1    | Hop     | 1.004       | $\geq 0.876$ | PASS    |

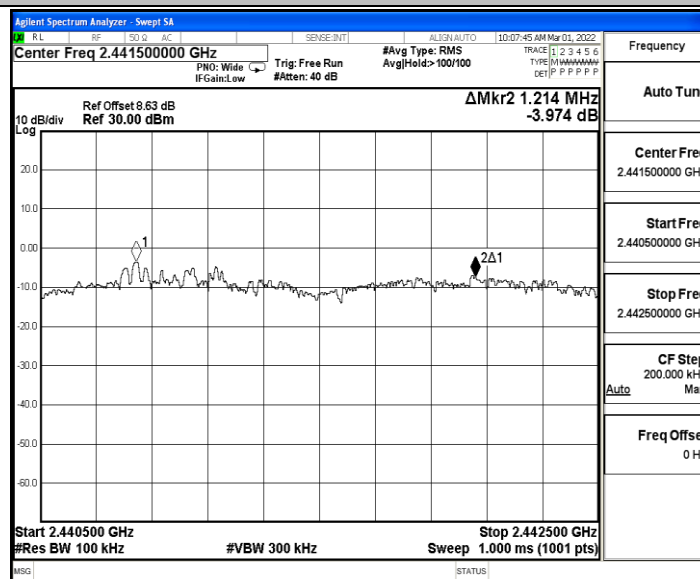


## Test Graphs

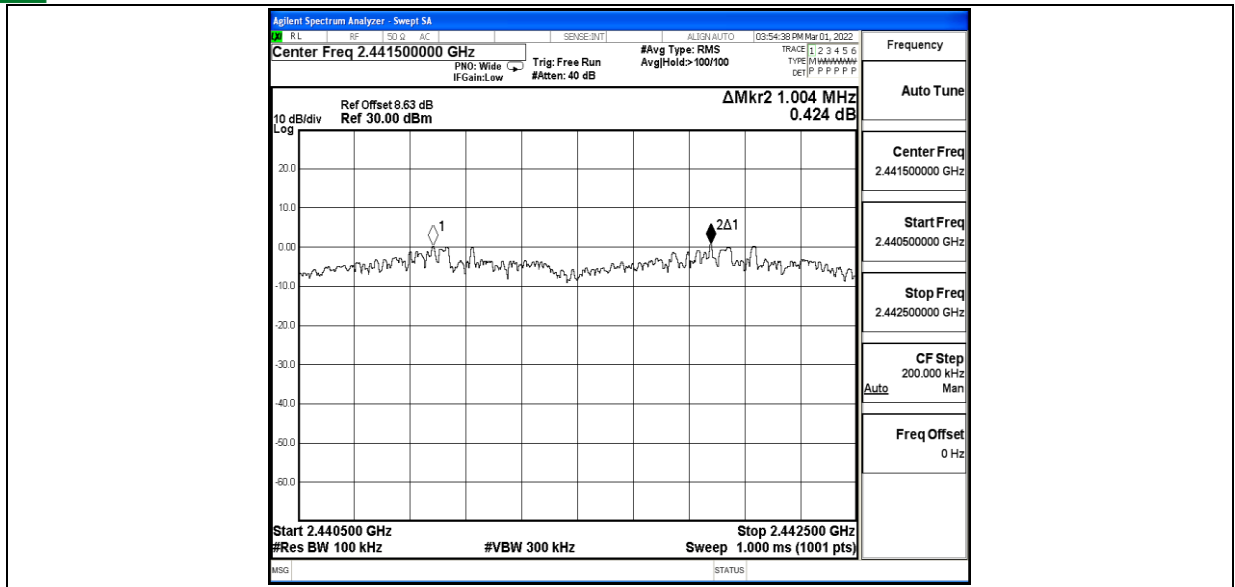
DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop





## A.4: Time of occupancy

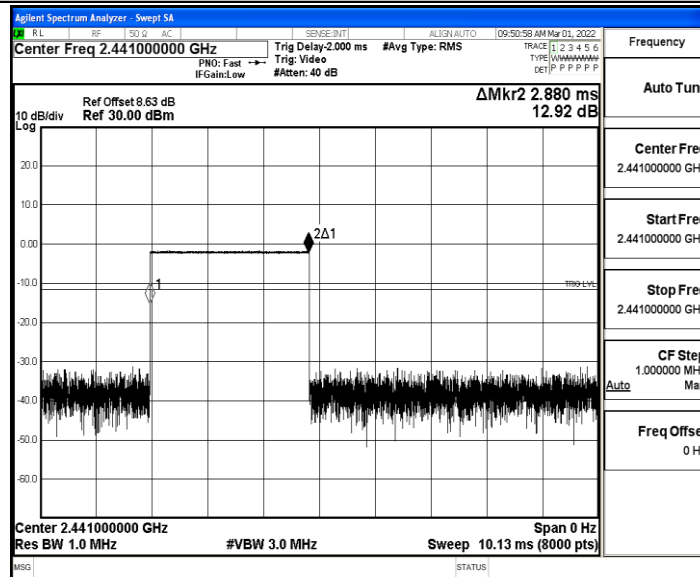
### Test Result

| TestMode | Antenna | Channel | BurstWidth<br>[ms] | TotalHops<br>[Num] | Result[s] | Limit[s] | Verdict |
|----------|---------|---------|--------------------|--------------------|-----------|----------|---------|
| DH5      | Ant1    | Hop     | 2.88               | 106.67             | 0.307     | ≤0.4     | PASS    |
| 2DH5     | Ant1    | Hop     | 2.88               | 106.67             | 0.308     | ≤0.4     | PASS    |
| 3DH5     | Ant1    | Hop     | 2.89               | 106.67             | 0.308     | ≤0.4     | PASS    |

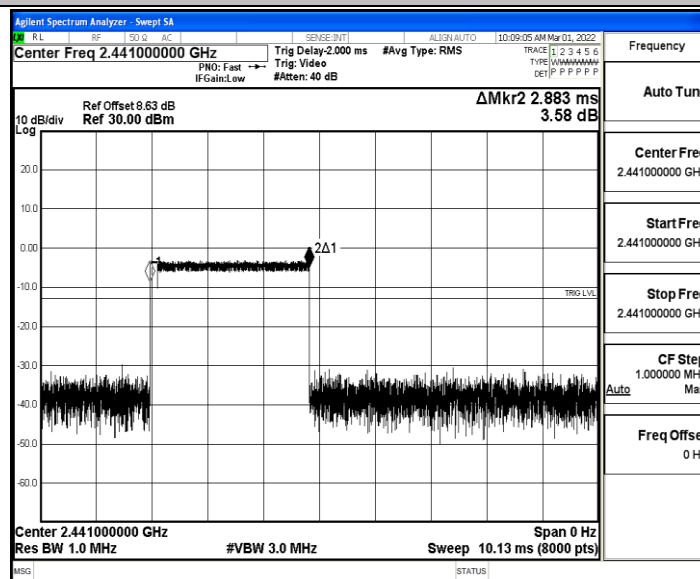


## Test Graphs

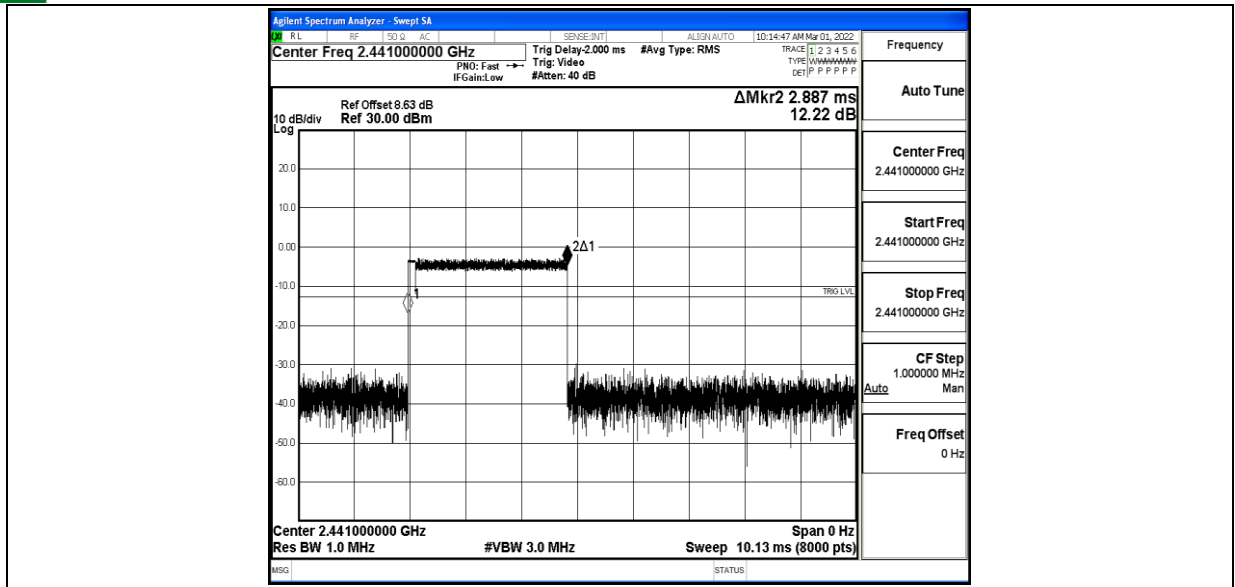
DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop





## A.5: Number of hopping channels

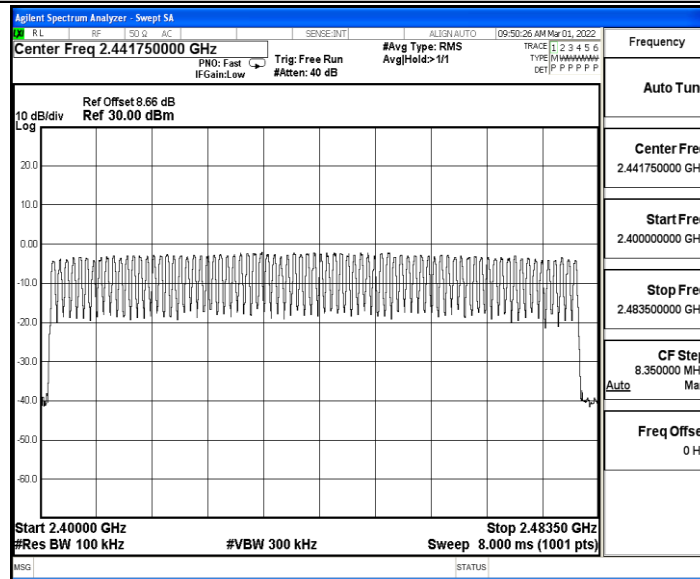
### Test Result

| TestMode | Antenna | Channel | Result[Num] | Limit[Num] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| DH5      | Ant1    | Hop     | 79          | ≥15        | PASS    |
| 2DH5     | Ant1    | Hop     | 79          | ≥15        | PASS    |
| 3DH5     | Ant1    | Hop     | 79          | ≥15        | PASS    |

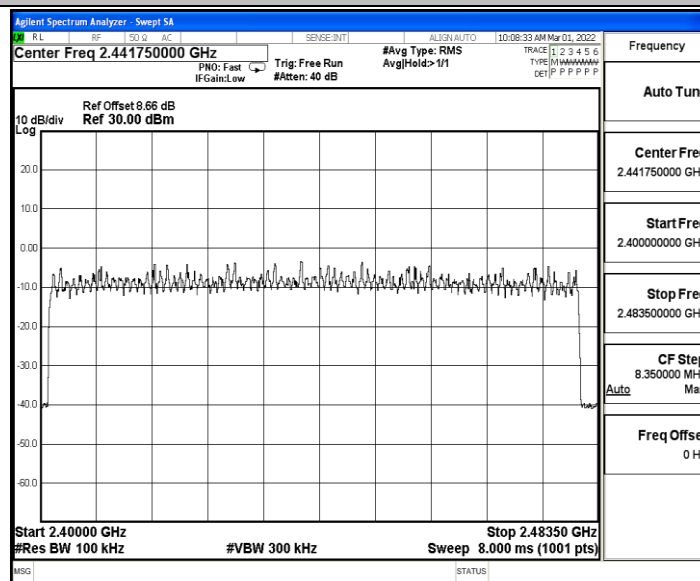


## Test Graphs

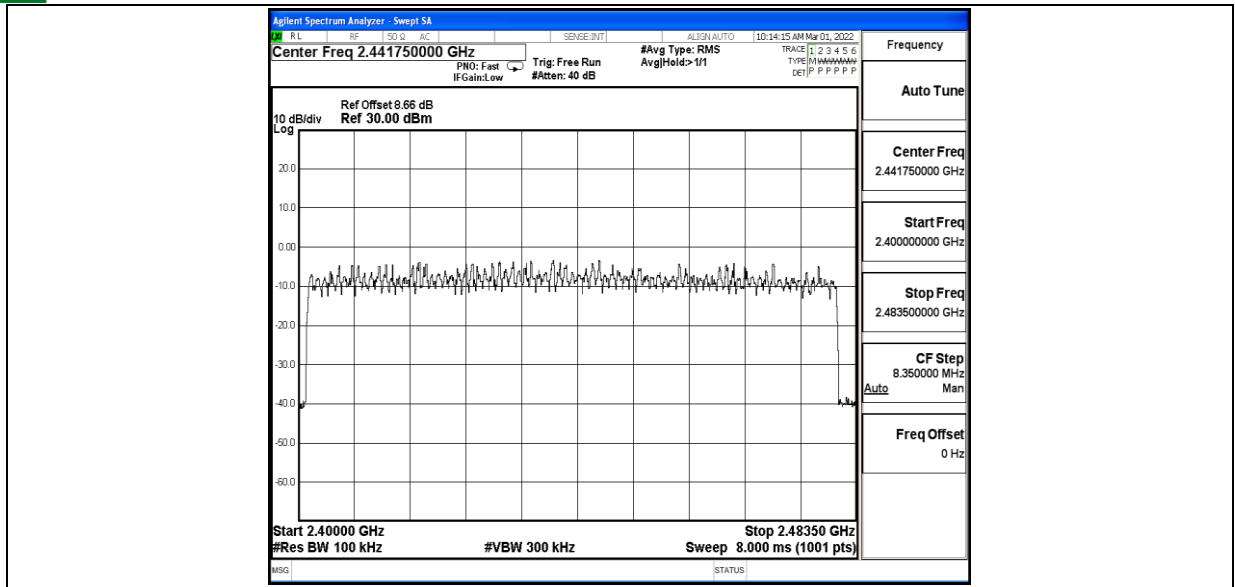
DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop





## A.6: Band edge measurements

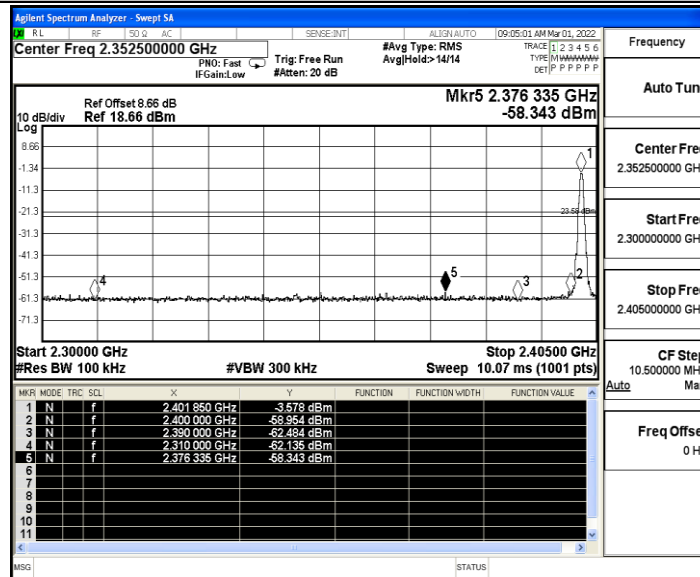
### Test Result

| TestMode | Antenna | ChName | Channel  | RefLevel<br>[dBm] | Result<br>[dBm] | Limit<br>[dBm] | Verdict |
|----------|---------|--------|----------|-------------------|-----------------|----------------|---------|
| DH5      | Ant1    | Low    | 2402     | -3.58             | -58.34          | $\leq -23.58$  | PASS    |
|          |         | High   | 2480     | -3.59             | -57.4           | $\leq -23.59$  | PASS    |
|          |         | Low    | Hop_2402 | -3.99             | -59.01          | $\leq -23.99$  | PASS    |
|          |         | High   | Hop_2480 | -3.92             | -57.51          | $\leq -23.92$  | PASS    |
| 2DH5     | Ant1    | Low    | 2402     | -5.40             | -58.87          | $\leq -25.4$   | PASS    |
|          |         | High   | 2480     | -5.82             | -58.01          | $\leq -25.82$  | PASS    |
|          |         | Low    | Hop_2402 | -4.40             | -59.4           | $\leq -24.4$   | PASS    |
|          |         | High   | Hop_2480 | -5.79             | -57.93          | $\leq -25.79$  | PASS    |
| 3DH5     | Ant1    | Low    | 2402     | -8.13             | -59.04          | $\leq -28.13$  | PASS    |
|          |         | High   | 2480     | -5.12             | -57.81          | $\leq -25.12$  | PASS    |
|          |         | Low    | Hop_2402 | -8.72             | -59.28          | $\leq -28.72$  | PASS    |
|          |         | High   | Hop_2480 | -5.84             | -58.07          | $\leq -25.84$  | PASS    |

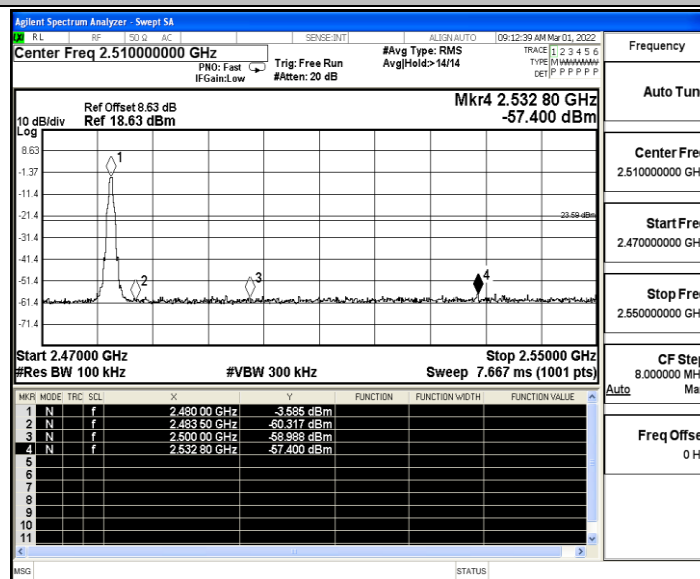


## Test Graphs

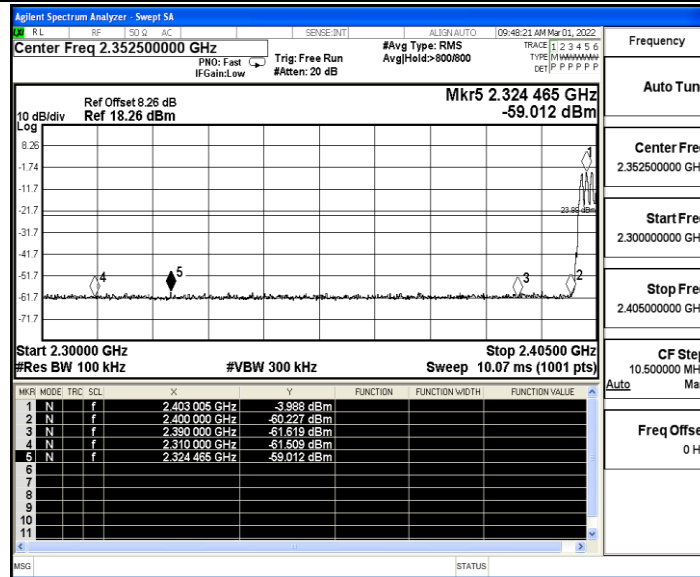
DH5\_Ant1\_Low\_2402



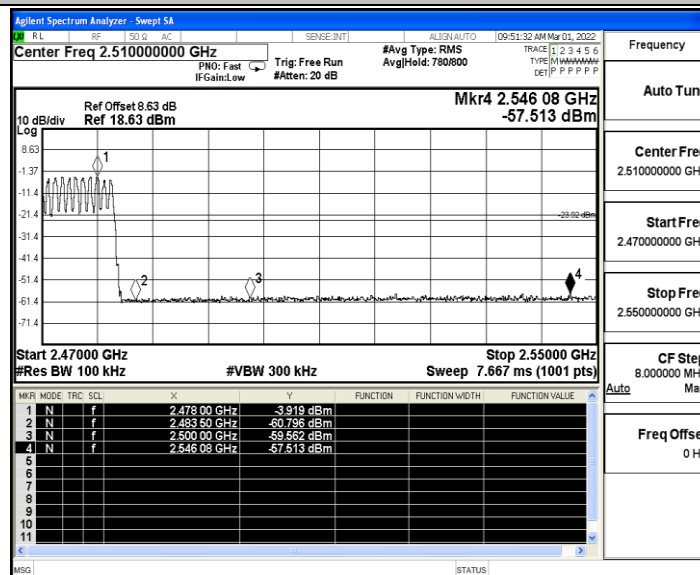
DH5\_Ant1\_High\_2480



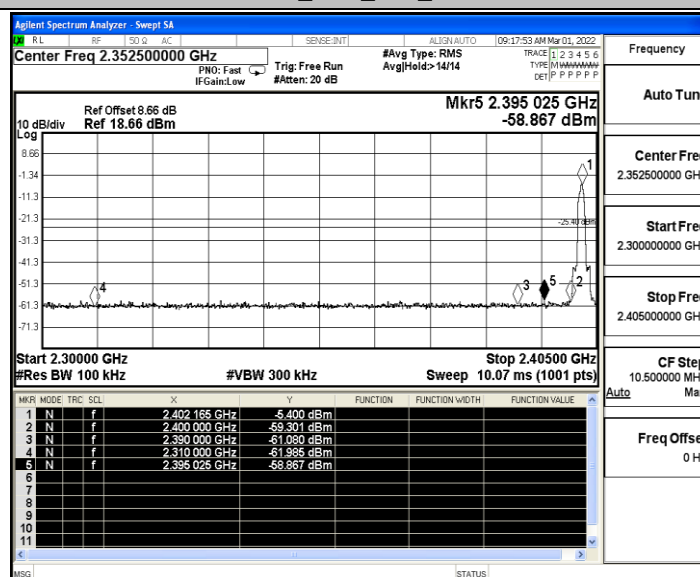
DH5\_Ant1\_Low\_Hop\_2402



DH5\_Ant1\_High\_Hop\_2480

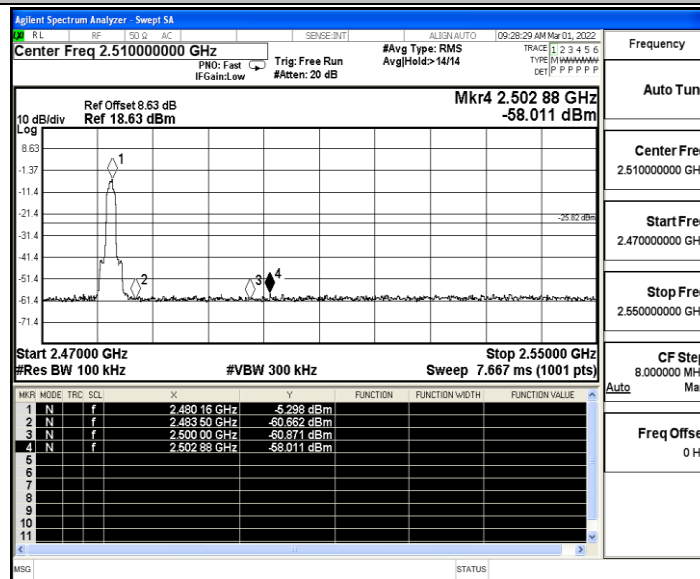


2DH5\_Ant1\_Low\_2402

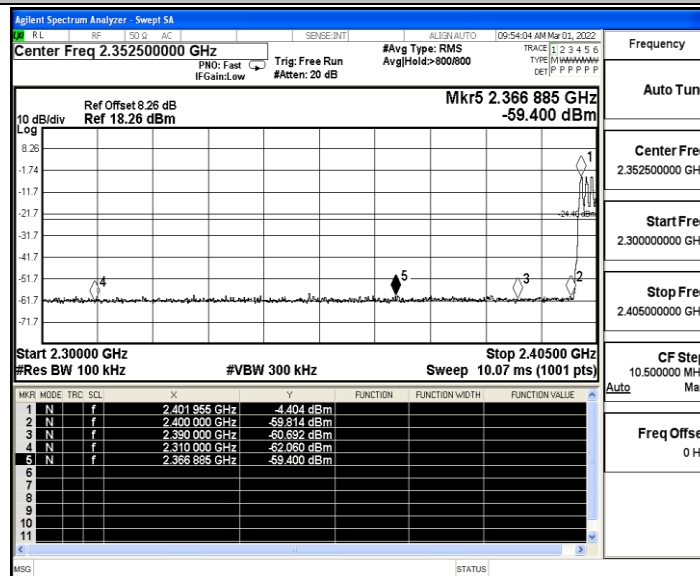




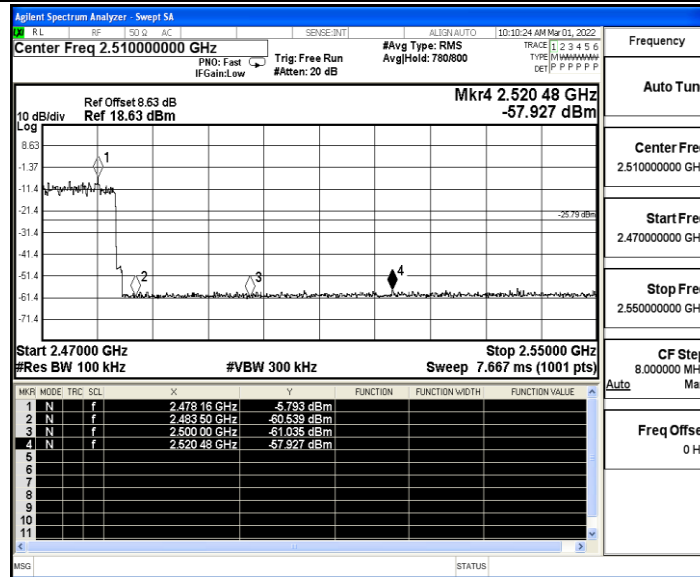
## 2DH5\_Ant1\_High\_2480



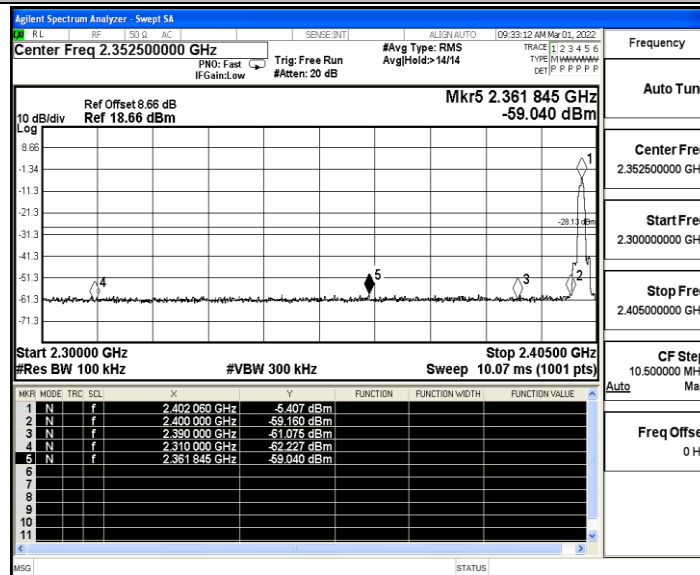
## 2DH5\_Ant1\_Low\_Hop\_2402



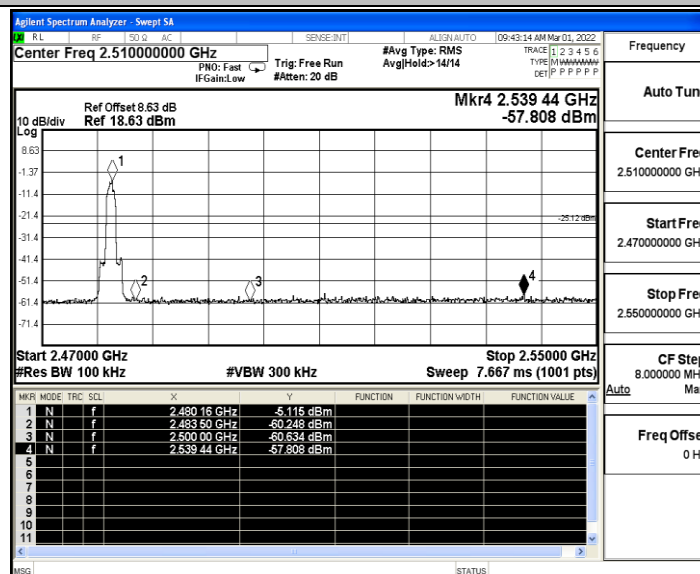
## 2DH5\_Ant1\_High\_Hop\_2480



3DH5\_Ant1\_Low\_2402

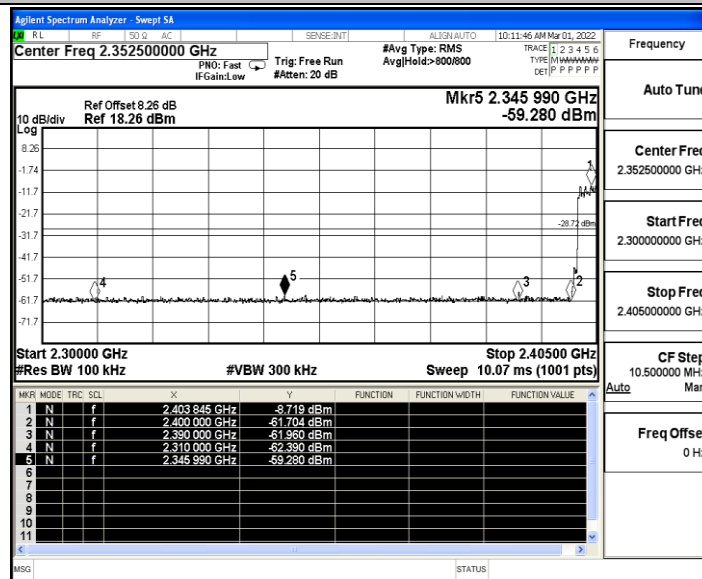


3DH5\_Ant1\_High\_2480

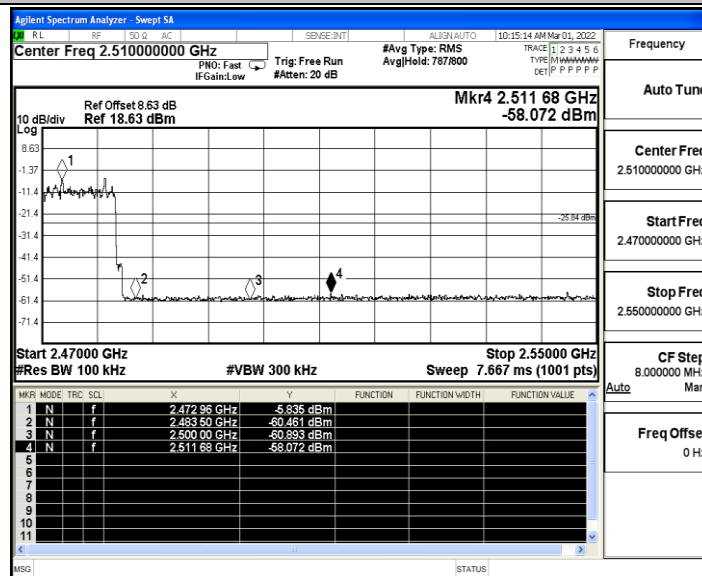




### 3DH5\_Ant1\_Low\_Hop\_2402



### 3DH5\_Ant1\_High\_Hop\_2480





## A.7: Conducted Spurious Emission

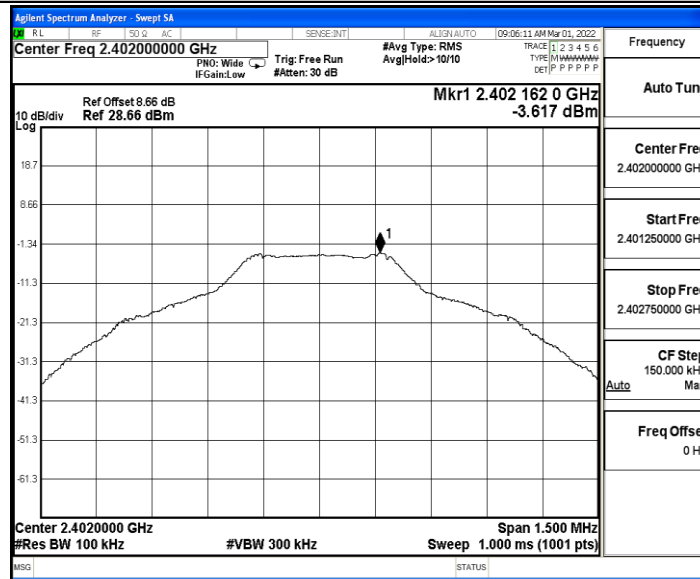
### Test Result

| TestMode | Antenna | Channel | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result<br>[dBm] | Limit<br>[dBm] | Verdict |
|----------|---------|---------|--------------------|-------------------|-----------------|----------------|---------|
| DH5      | Ant1    | 2402    | Reference          | -3.62             | -3.62           | ---            | PASS    |
|          |         |         | 30~1000            | -3.62             | -60.39          | $\leq -23.62$  | PASS    |
|          |         |         | 1000~26500         | -3.62             | -46.34          | $\leq -23.62$  | PASS    |
|          |         | 2441    | Reference          | -2.21             | -2.21           | ---            | PASS    |
|          |         |         | 30~1000            | -2.21             | -60.97          | $\leq -22.21$  | PASS    |
|          |         |         | 1000~26500         | -2.21             | -46.62          | $\leq -22.21$  | PASS    |
|          |         | 2480    | Reference          | -3.71             | -3.71           | ---            | PASS    |
|          |         |         | 30~1000            | -3.71             | -59.68          | $\leq -23.71$  | PASS    |
|          |         |         | 1000~26500         | -3.71             | -46.4           | $\leq -23.71$  | PASS    |
| 2DH5     | Ant1    | 2402    | Reference          | -5.26             | -5.26           | ---            | PASS    |
|          |         |         | 30~1000            | -5.26             | -60.54          | $\leq -25.26$  | PASS    |
|          |         |         | 1000~26500         | -5.26             | -45.42          | $\leq -25.26$  | PASS    |
|          |         | 2441    | Reference          | -3.70             | -3.70           | ---            | PASS    |
|          |         |         | 30~1000            | -3.70             | -60.51          | $\leq -23.7$   | PASS    |
|          |         |         | 1000~26500         | -3.70             | -45.75          | $\leq -23.7$   | PASS    |
|          |         | 2480    | Reference          | -5.45             | -5.45           | ---            | PASS    |
|          |         |         | 30~1000            | -5.45             | -60.55          | $\leq -25.45$  | PASS    |
|          |         |         | 1000~26500         | -5.45             | -46.21          | $\leq -25.45$  | PASS    |
| 3DH5     | Ant1    | 2402    | Reference          | -5.06             | -5.06           | ---            | PASS    |
|          |         |         | 30~1000            | -5.06             | -44.75          | $\leq -25.06$  | PASS    |
|          |         |         | 1000~26500         | -5.06             | -46.61          | $\leq -25.06$  | PASS    |
|          |         | 2441    | Reference          | -4.14             | -4.14           | ---            | PASS    |
|          |         |         | 30~1000            | -4.14             | -59.7           | $\leq -24.14$  | PASS    |
|          |         |         | 1000~26500         | -4.14             | -46.24          | $\leq -24.14$  | PASS    |
|          |         | 2480    | Reference          | -5.11             | -5.11           | ---            | PASS    |
|          |         |         | 30~1000            | -5.11             | -61.47          | $\leq -25.11$  | PASS    |
|          |         |         | 1000~26500         | -5.11             | -46.12          | $\leq -25.11$  | PASS    |

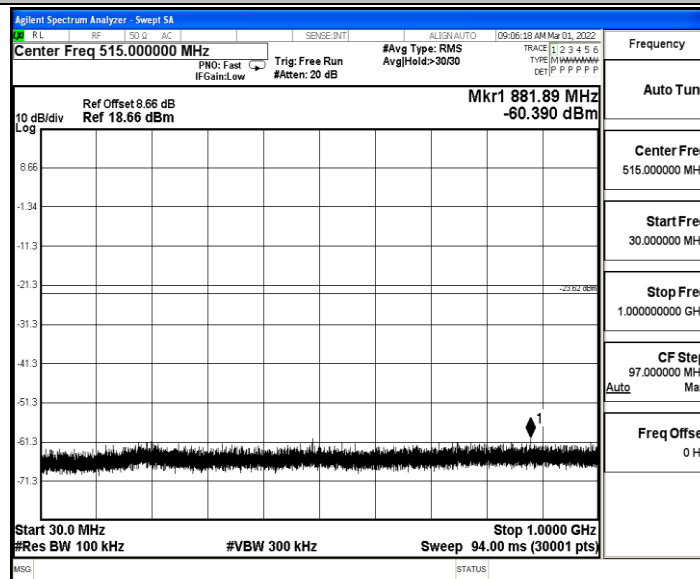


## Test Graphs

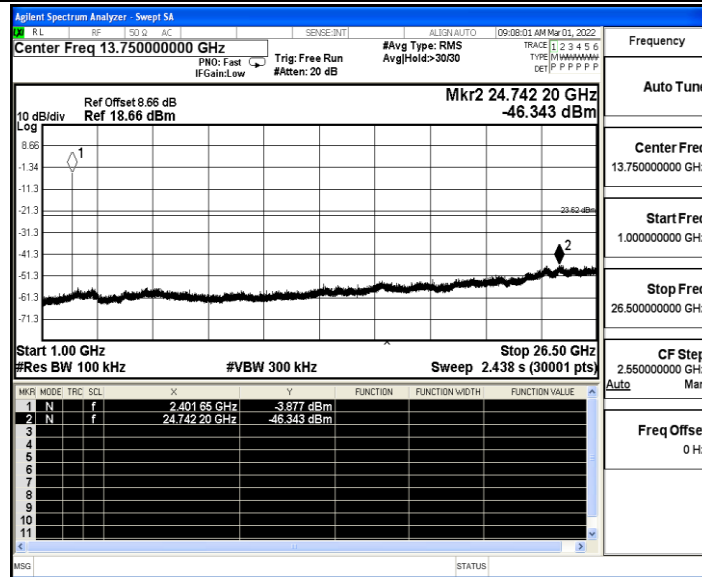
DH5\_Ant1\_2402\_0~Reference



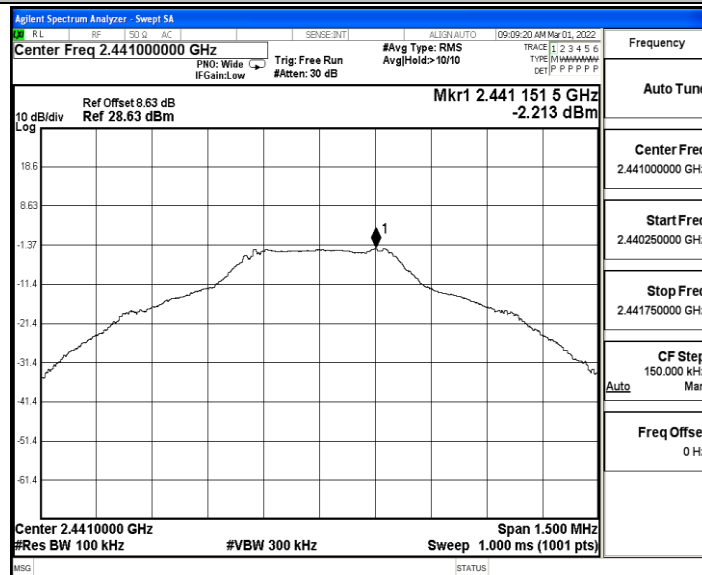
DH5\_Ant1\_2402\_30~1000



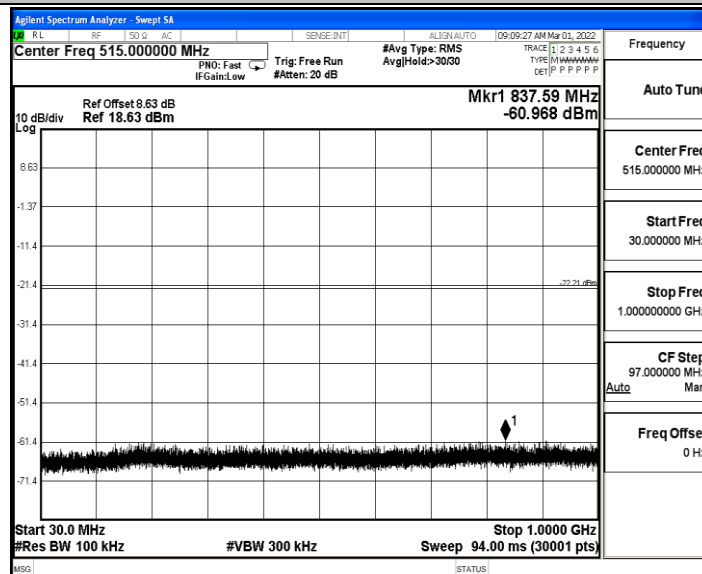
DH5\_Ant1\_2402\_1000~26500



DH5\_Ant1\_2441\_0~Reference

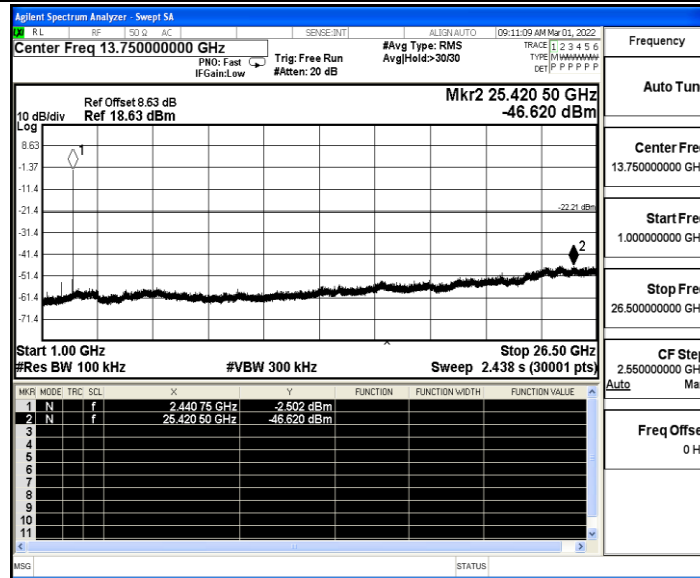


DH5\_Ant1\_2441\_30~1000

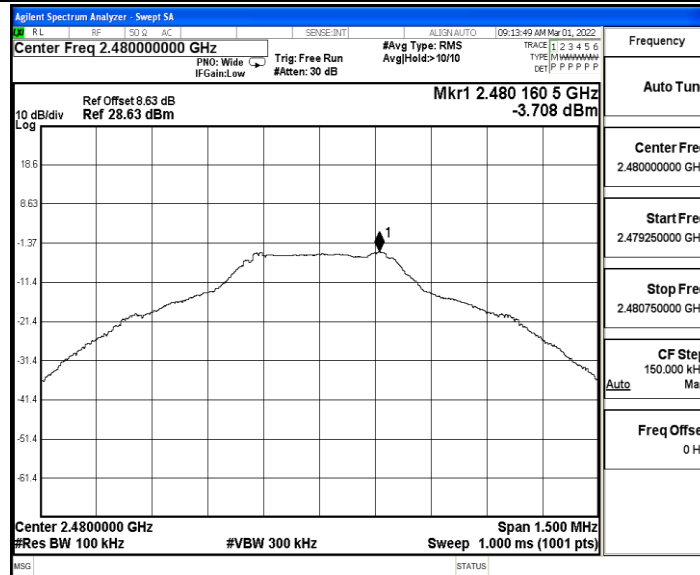




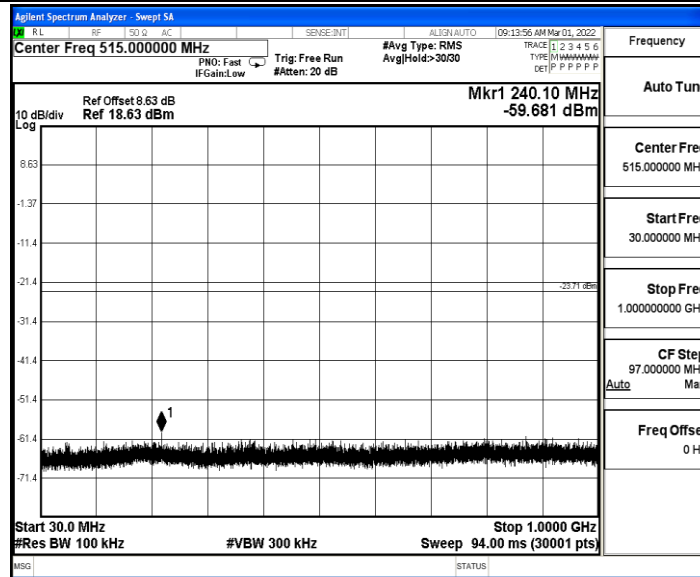
## DH5\_Ant1\_2441\_1000~26500



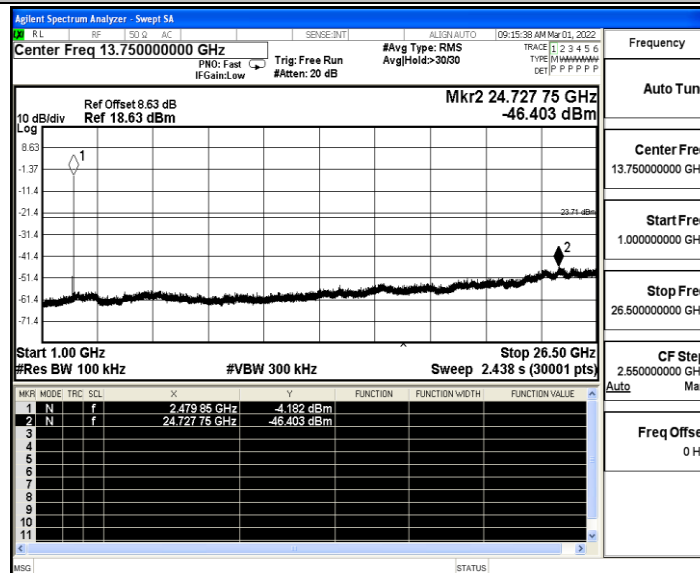
## DH5\_Ant1\_2480\_0~Reference



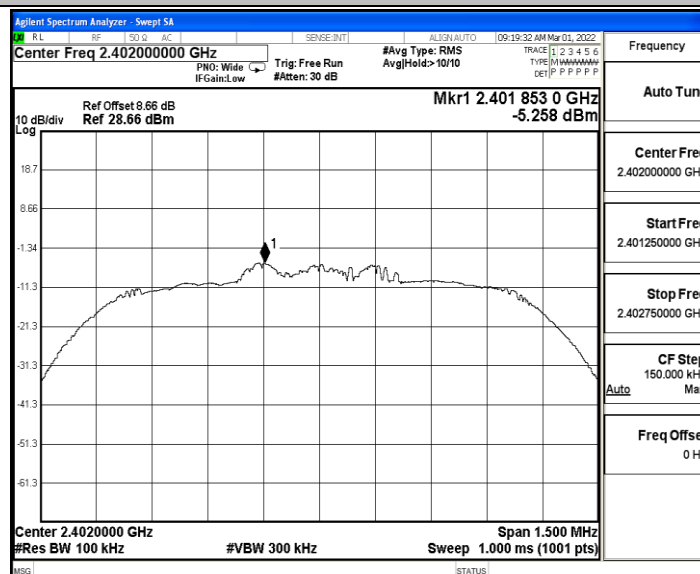
## DH5\_Ant1\_2480\_30~1000



DH5\_Ant1\_2480\_1000~26500

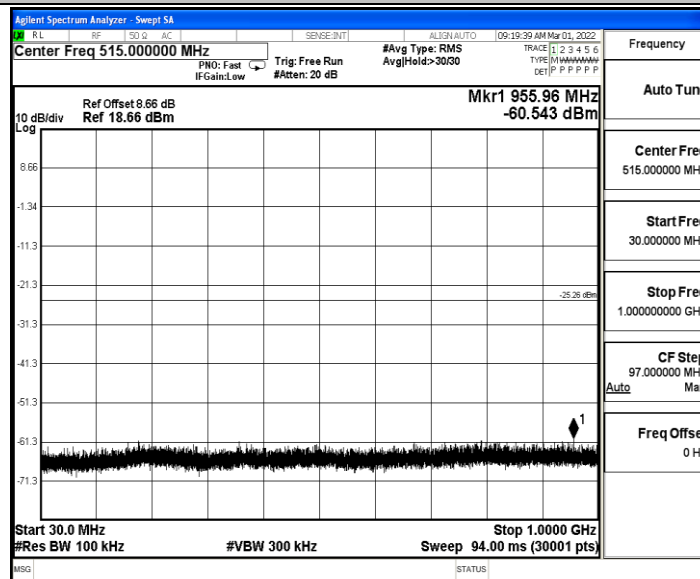


2DH5\_Ant1\_2402\_0~Reference

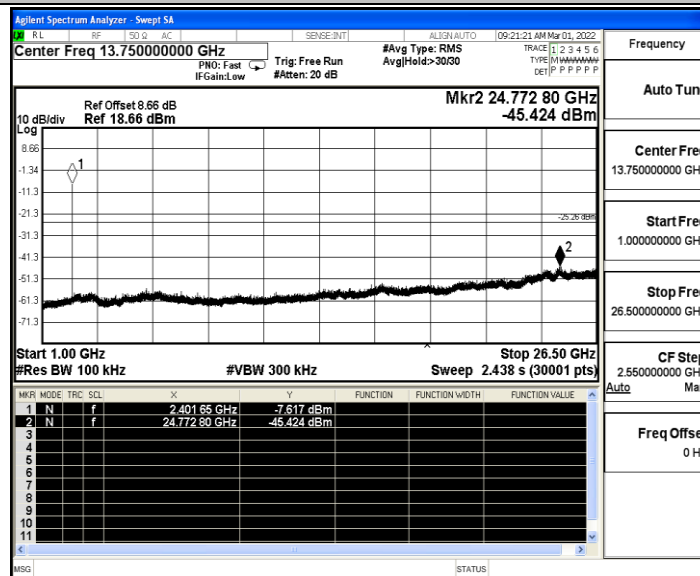




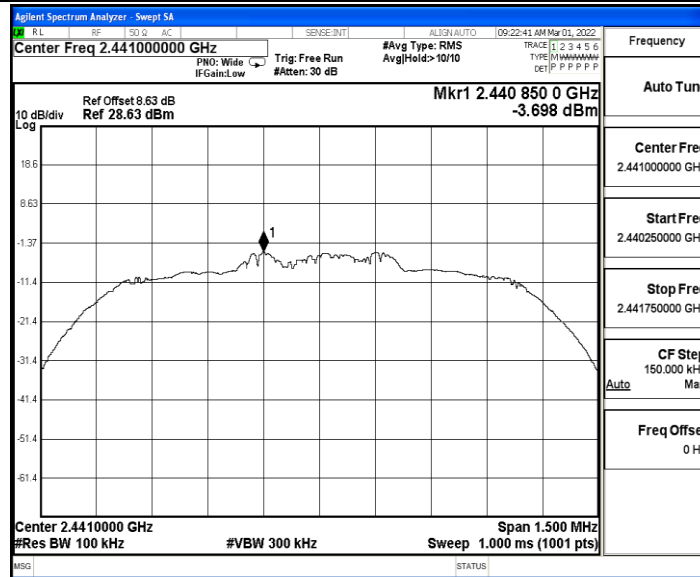
## 2DH5\_Ant1\_2402\_30~1000



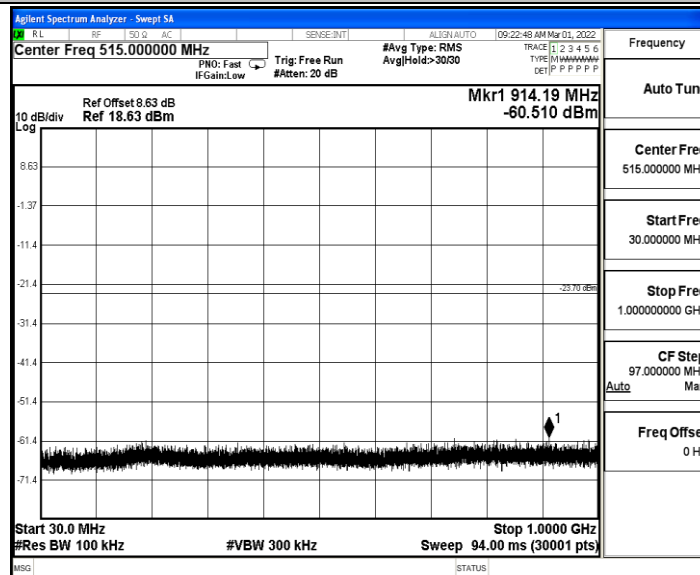
## 2DH5\_Ant1\_2402\_1000~26500



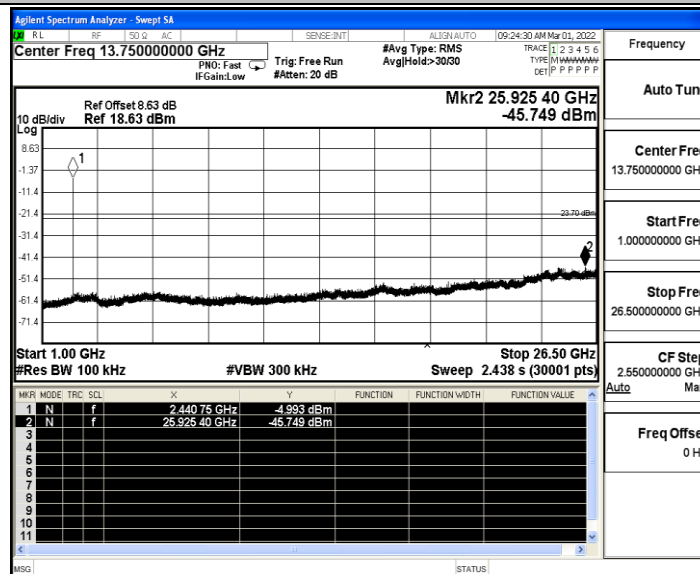
## 2DH5\_Ant1\_2441\_0~Reference



2DH5\_Ant1\_2441\_30~1000

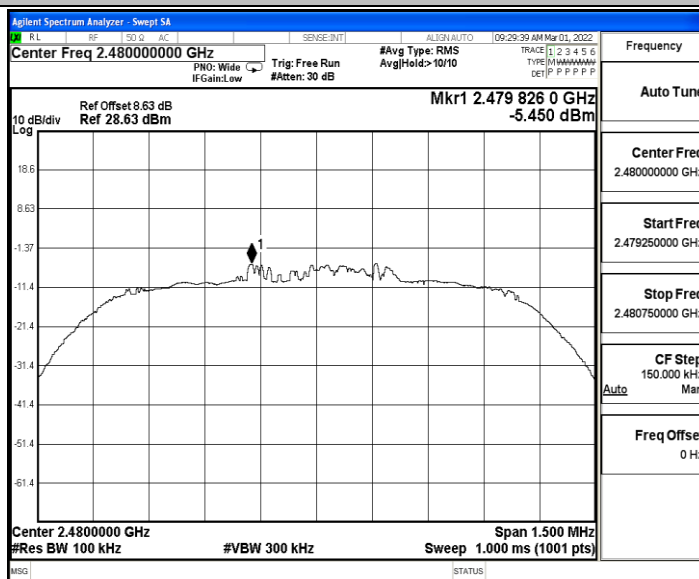


2DH5\_Ant1\_2441\_1000~26500

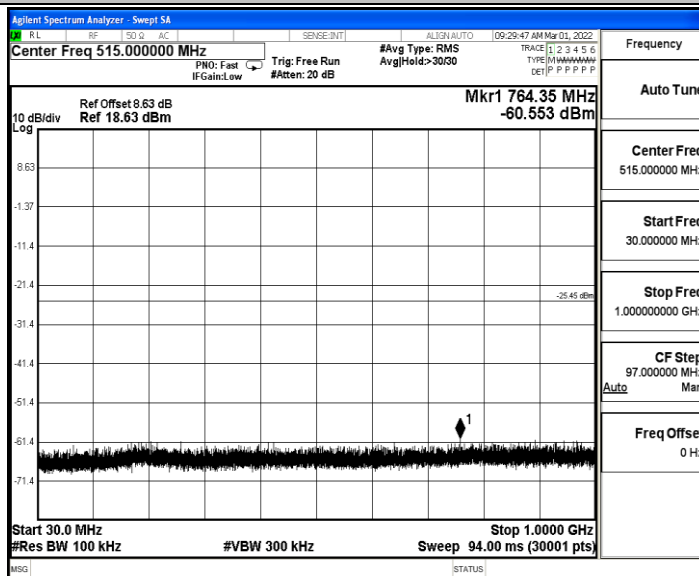




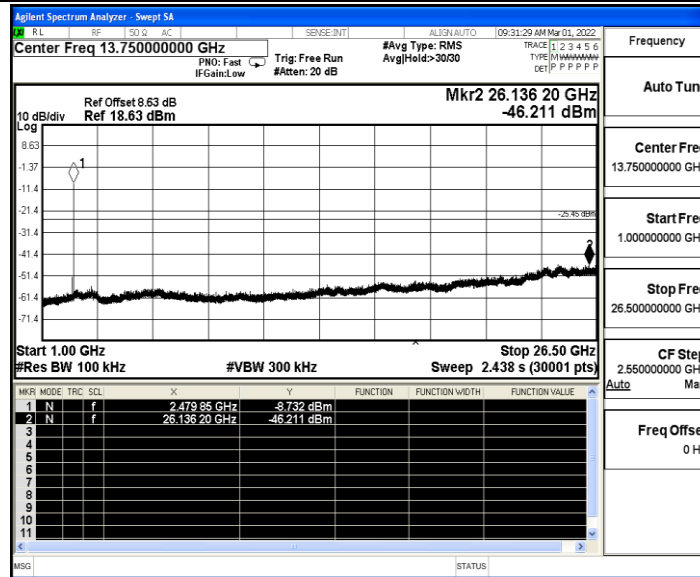
## 2DH5\_Ant1\_2480\_0~Reference



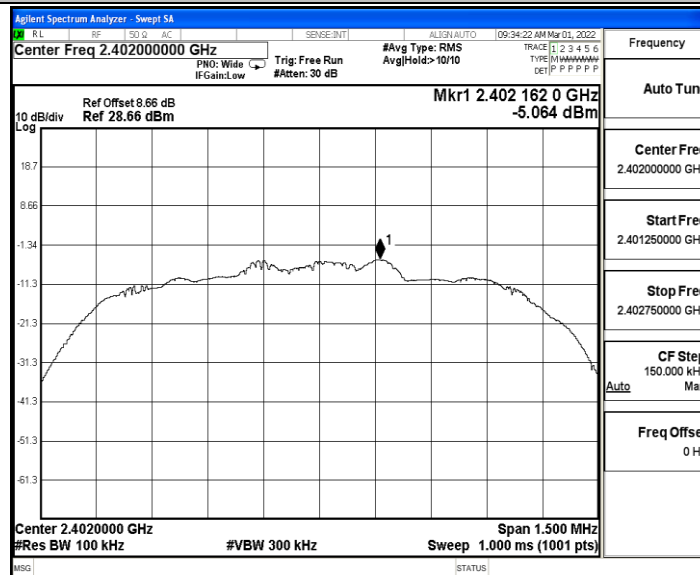
## 2DH5\_Ant1\_2480\_30~1000



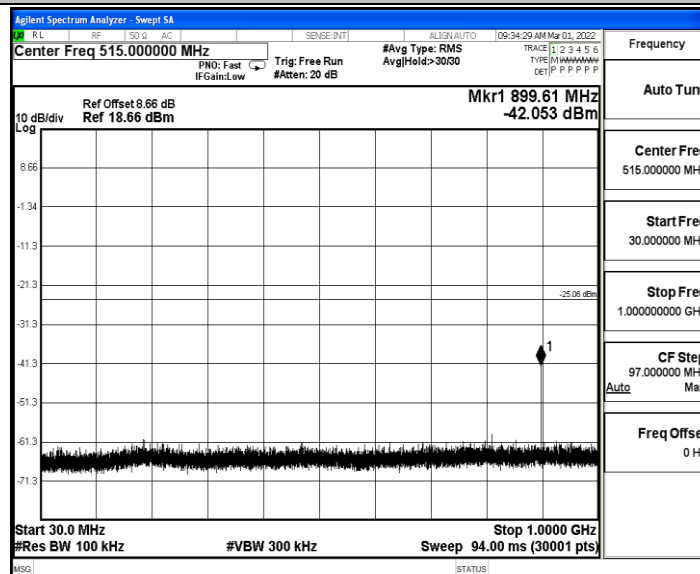
## 2DH5\_Ant1\_2480\_1000~26500



3DH5\_Ant1\_2402\_0~Reference

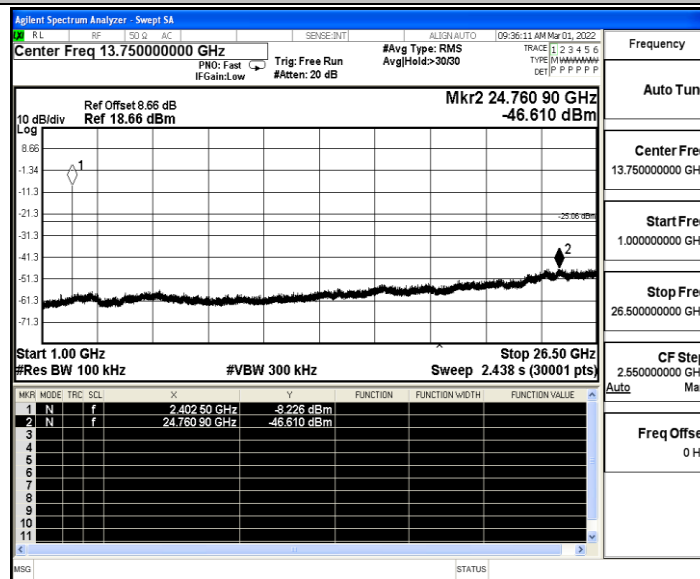


3DH5\_Ant1\_2402\_30~1000

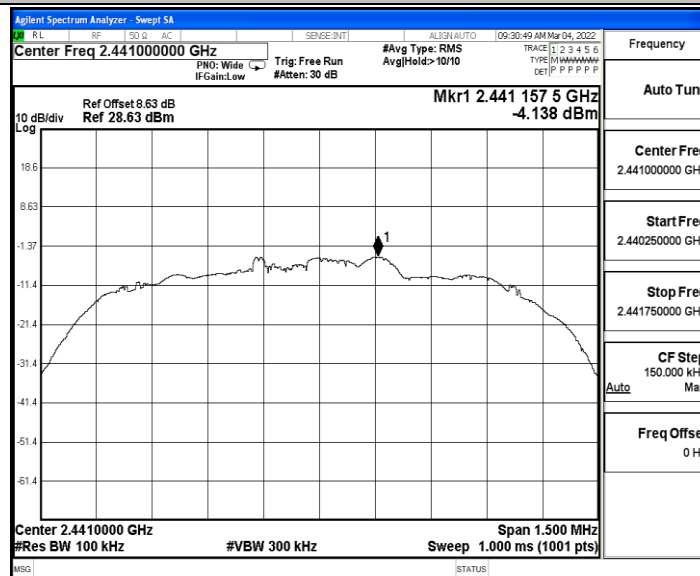




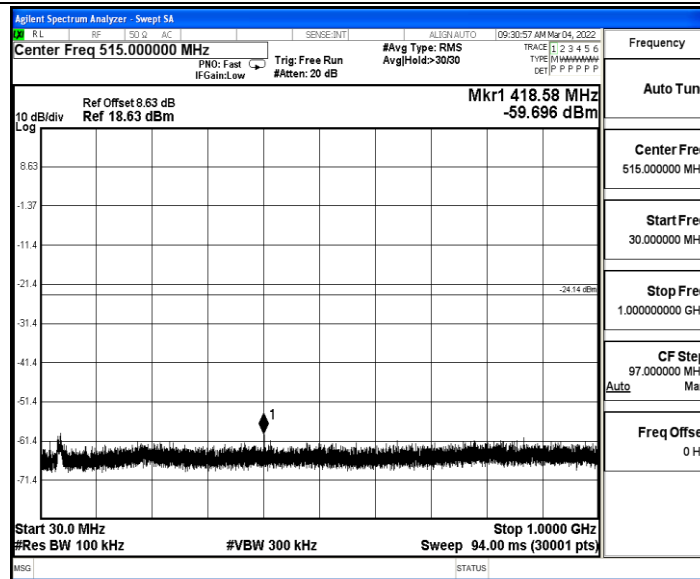
## 3DH5\_Ant1\_2402\_1000~26500



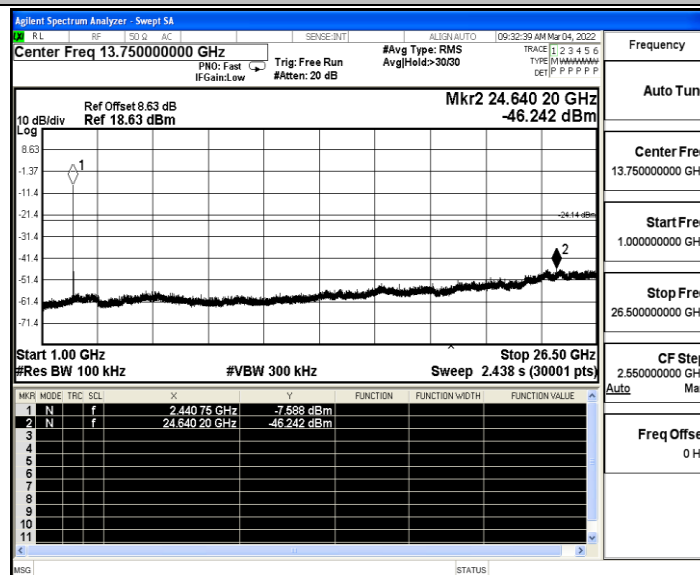
## 3DH5\_Ant1\_2441\_0~Reference



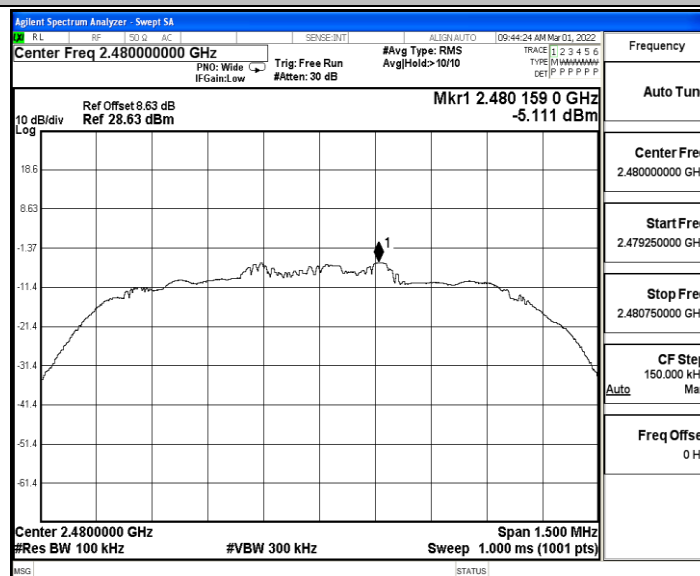
## 3DH5\_Ant1\_2441\_30~1000



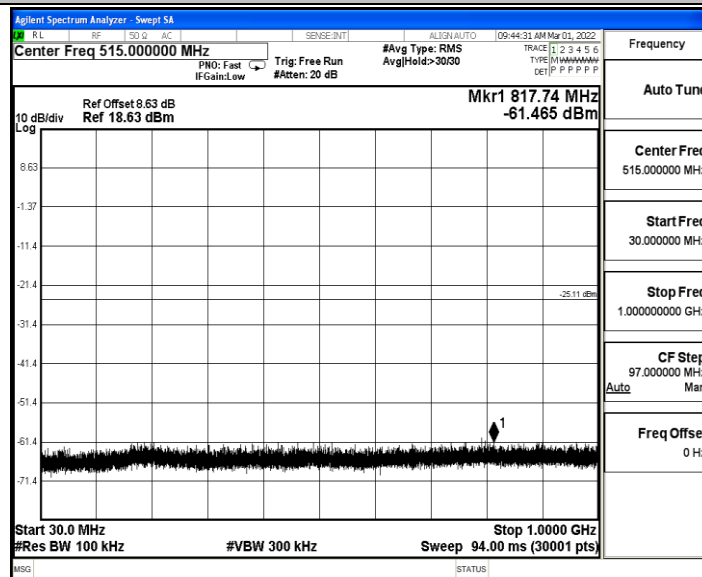
3DH5\_Ant1\_2441\_1000~26500



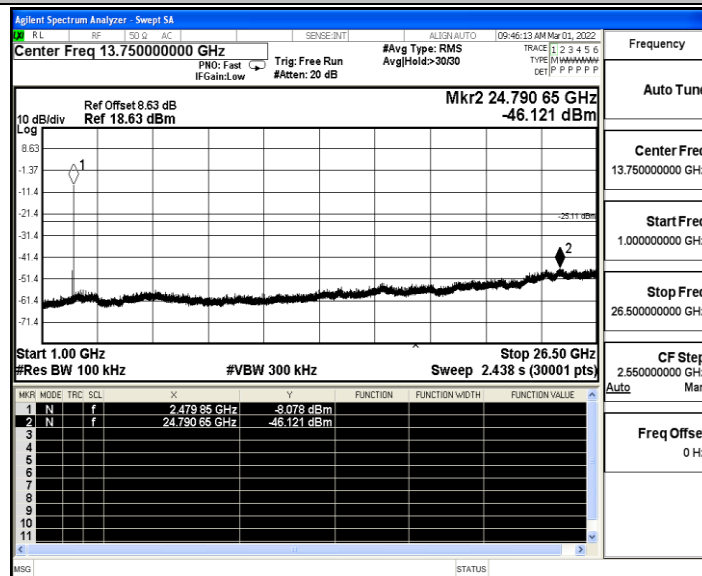
3DH5\_Ant1\_2480\_0~Reference



3DH5\_Ant1\_2480\_30~1000



## 3DH5\_Ant1\_2480\_1000~26500





## A.8: Emissions in Restricted Bands

### Test Result

| TestMode | Channel      | Detector | Freq.<br>[MHz] | Result<br>[dBm] | Limit<br>[dBm] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Verdict |
|----------|--------------|----------|----------------|-----------------|----------------|--------------------|-------------------|---------|
| DH5      | 2402         | AV       | 2310.000       | -58.23          | ≤-41.20        | 36.97              | ≤54               | PASS    |
|          |              | AV       | 2388.830       | -57.52          | ≤-41.20        | 37.68              | ≤54               | PASS    |
|          |              | AV       | 2390.000       | -57.79          | ≤-41.20        | 37.41              | ≤54               | PASS    |
|          |              | Peak     | 2310.000       | -49.61          | ≤-21.20        | 45.59              | ≤74               | PASS    |
|          |              | Peak     | 2387.360       | -45.86          | ≤-21.20        | 49.34              | ≤74               | PASS    |
|          |              | Peak     | 2390.000       | -48.02          | ≤-21.20        | 47.18              | ≤74               | PASS    |
|          | 2480         | AV       | 2483.500       | -56.4           | ≤-41.20        | 38.80              | ≤54               | PASS    |
|          |              | AV       | 2483.520       | -56.4           | ≤-41.20        | 38.80              | ≤54               | PASS    |
|          |              | AV       | 2500.000       | -57.24          | ≤-41.20        | 37.96              | ≤54               | PASS    |
|          |              | Peak     | 2483.500       | -48.23          | ≤-21.20        | 46.97              | ≤74               | PASS    |
|          |              | Peak     | 2492.640       | -46.21          | ≤-21.20        | 48.99              | ≤74               | PASS    |
|          |              | Peak     | 2500.000       | -47.84          | ≤-21.20        | 47.36              | ≤74               | PASS    |
|          | Hop_240<br>2 | Peak     | 2310.000       | -49.14          | ≤-21.20        | 46.06              | ≤74               | PASS    |
|          |              | Peak     | 2368.985       | -46.77          | ≤-21.20        | 48.43              | ≤74               | PASS    |
|          |              | Peak     | 2390.000       | -48.43          | ≤-21.20        | 46.77              | ≤74               | PASS    |
|          | Hop_248<br>0 | Peak     | 2483.500       | -48.33          | ≤-21.20        | 46.87              | ≤74               | PASS    |
|          |              | Peak     | 2492.320       | -46.54          | ≤-21.20        | 48.66              | ≤74               | PASS    |
|          |              | Peak     | 2500.000       | -46.91          | ≤-21.20        | 48.29              | ≤74               | PASS    |
| 2DH5     | 2402         | AV       | 2310.000       | -58.24          | ≤-41.20        | 36.96              | ≤54               | PASS    |
|          |              | AV       | 2388.095       | -57.65          | ≤-41.20        | 37.55              | ≤54               | PASS    |
|          |              | AV       | 2390.000       | -57.79          | ≤-41.20        | 37.41              | ≤54               | PASS    |
|          |              | Peak     | 2310.000       | -47.16          | ≤-21.20        | 48.04              | ≤74               | PASS    |
|          |              | Peak     | 2382.635       | -45.83          | ≤-21.20        | 49.37              | ≤74               | PASS    |
|          |              | Peak     | 2390.000       | -48.48          | ≤-21.20        | 46.72              | ≤74               | PASS    |
|          | 2480         | AV       | 2483.500       | -56.37          | ≤-41.20        | 38.83              | ≤54               | PASS    |
|          |              | AV       | 2483.520       | -56.37          | ≤-41.20        | 38.83              | ≤54               | PASS    |
|          |              | AV       | 2500.000       | -57.23          | ≤-41.20        | 37.97              | ≤54               | PASS    |
|          |              | Peak     | 2483.500       | -47.48          | ≤-21.20        | 47.72              | ≤74               | PASS    |
|          |              | Peak     | 2492.880       | -46.09          | ≤-21.20        | 49.11              | ≤74               | PASS    |
|          |              | Peak     | 2500.000       | -47.91          | ≤-21.20        | 47.29              | ≤74               | PASS    |
|          | Hop_240<br>2 | Peak     | 2310.000       | -48.2           | ≤-21.20        | 47.00              | ≤74               | PASS    |
|          |              | Peak     | 2331.500       | -46.98          | ≤-21.20        | 48.22              | ≤74               | PASS    |
|          |              | Peak     | 2390.000       | -49.27          | ≤-21.20        | 45.93              | ≤74               | PASS    |
|          | Hop_248<br>0 | Peak     | 2483.500       | -48.22          | ≤-21.20        | 46.98              | ≤74               | PASS    |
|          |              | Peak     | 2485.760       | -45.89          | ≤-21.20        | 49.31              | ≤74               | PASS    |
|          |              | Peak     | 2500.000       | -48.08          | ≤-21.20        | 47.12              | ≤74               | PASS    |
| 3DH5     | 2402         | AV       | 2310.000       | -58.19          | ≤-41.20        | 37.01              | ≤54               | PASS    |



|  |              |      |          |        |               |       |           |      |
|--|--------------|------|----------|--------|---------------|-------|-----------|------|
|  |              | AV   | 2389.250 | -57.67 | $\leq -41.20$ | 37.53 | $\leq 54$ | PASS |
|  |              | AV   | 2390.000 | -57.68 | $\leq -41.20$ | 37.52 | $\leq 54$ | PASS |
|  |              | Peak | 2310.000 | -48    | $\leq -21.20$ | 47.20 | $\leq 74$ | PASS |
|  |              | Peak | 2374.340 | -46.4  | $\leq -21.20$ | 48.80 | $\leq 74$ | PASS |
|  |              | Peak | 2390.000 | -48.33 | $\leq -21.20$ | 46.87 | $\leq 74$ | PASS |
|  | 2480         | AV   | 2483.500 | -56.16 | $\leq -41.20$ | 39.04 | $\leq 54$ | PASS |
|  |              | AV   | 2483.520 | -56.16 | $\leq -41.20$ | 39.04 | $\leq 54$ | PASS |
|  |              | AV   | 2500.000 | -57.26 | $\leq -41.20$ | 37.94 | $\leq 54$ | PASS |
|  |              | Peak | 2483.500 | -46.5  | $\leq -21.20$ | 48.70 | $\leq 74$ | PASS |
|  |              | Peak | 2488.240 | -45.89 | $\leq -21.20$ | 49.31 | $\leq 74$ | PASS |
|  |              | Peak | 2500.000 | -47.75 | $\leq -21.20$ | 47.45 | $\leq 74$ | PASS |
|  | Hop_240<br>2 | Peak | 2310.000 | -48.94 | $\leq -21.20$ | 46.26 | $\leq 74$ | PASS |
|  |              | Peak | 2332.025 | -46.84 | $\leq -21.20$ | 48.36 | $\leq 74$ | PASS |
|  |              | Peak | 2390.000 | -49.06 | $\leq -21.20$ | 46.14 | $\leq 74$ | PASS |
|  | Hop_248<br>0 | Peak | 2483.500 | -47.3  | $\leq -21.20$ | 47.90 | $\leq 74$ | PASS |
|  |              | Peak | 2497.360 | -45.82 | $\leq -21.20$ | 49.38 | $\leq 74$ | PASS |
|  |              | Peak | 2500.000 | -46.92 | $\leq -21.20$ | 48.28 | $\leq 74$ | PASS |

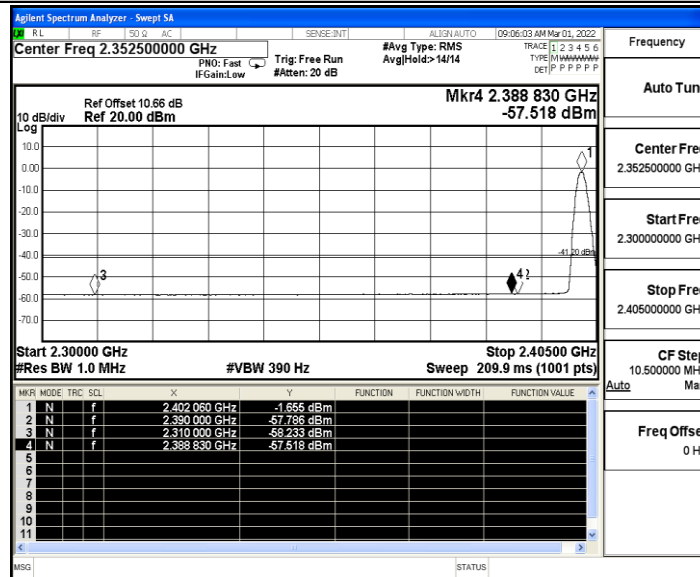
Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

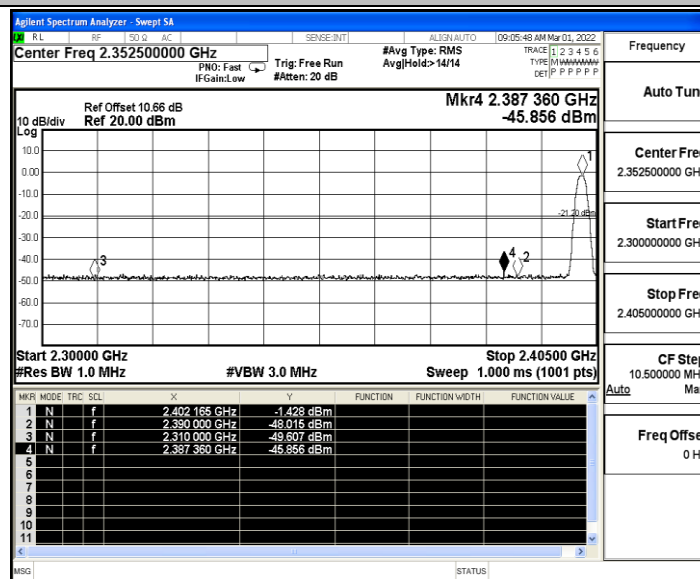


## Test Graphs

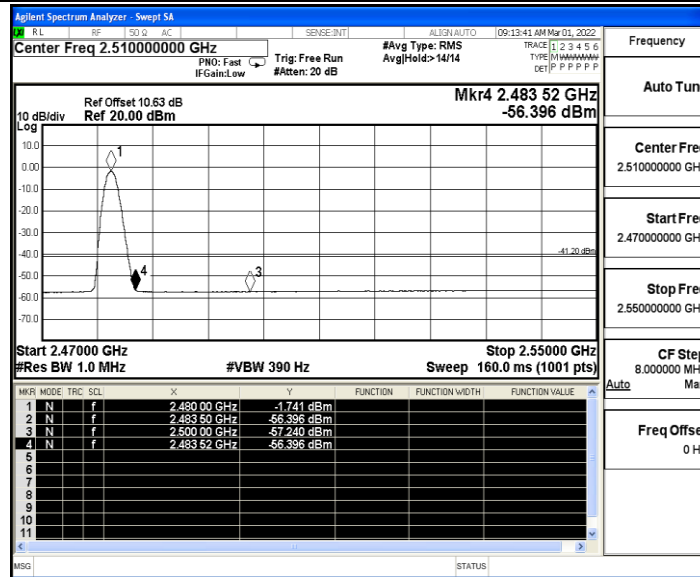
DH5\_Ant1\_Low\_2402\_AV



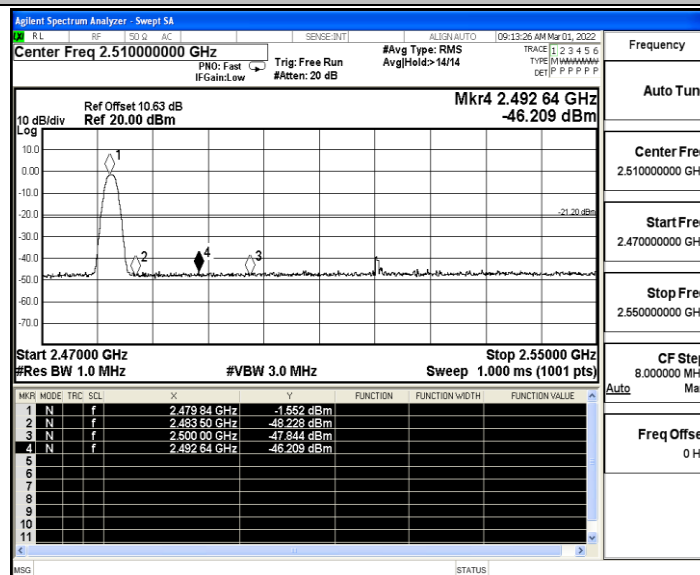
DH5\_Ant1\_Low\_2402\_Peak



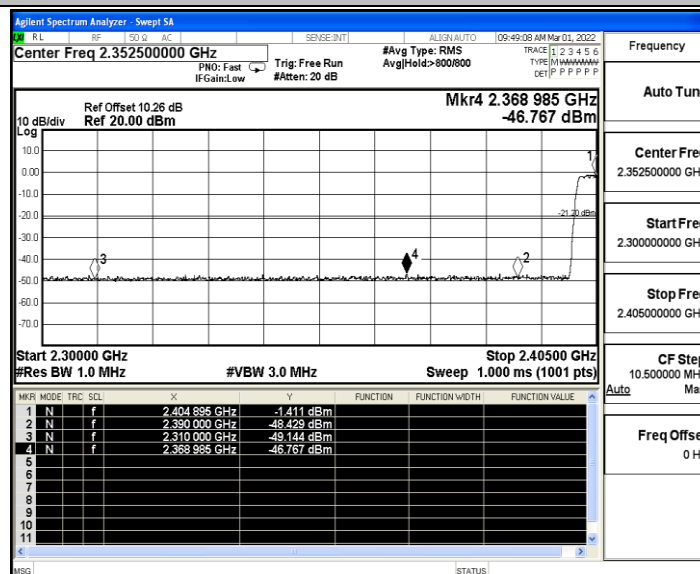
DH5\_Ant1\_High\_2480\_AV



DH5\_Ant1\_High\_2480\_Peak

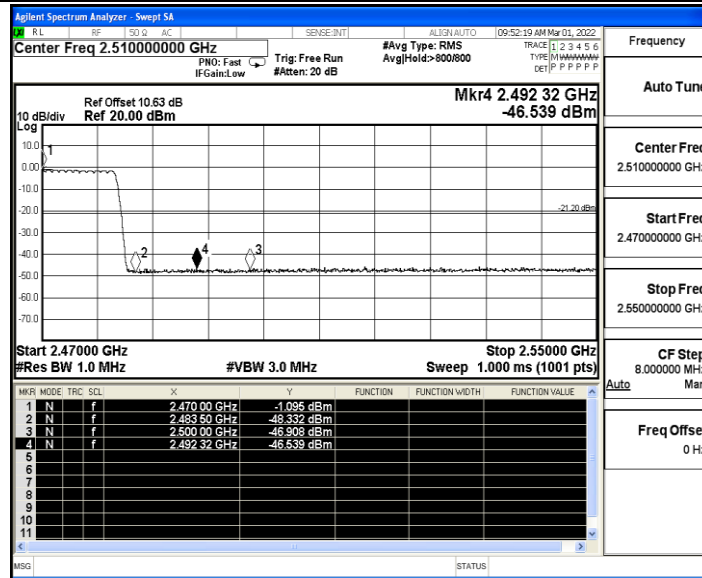


DH5\_Ant1\_Low\_Hop\_2402\_Peak

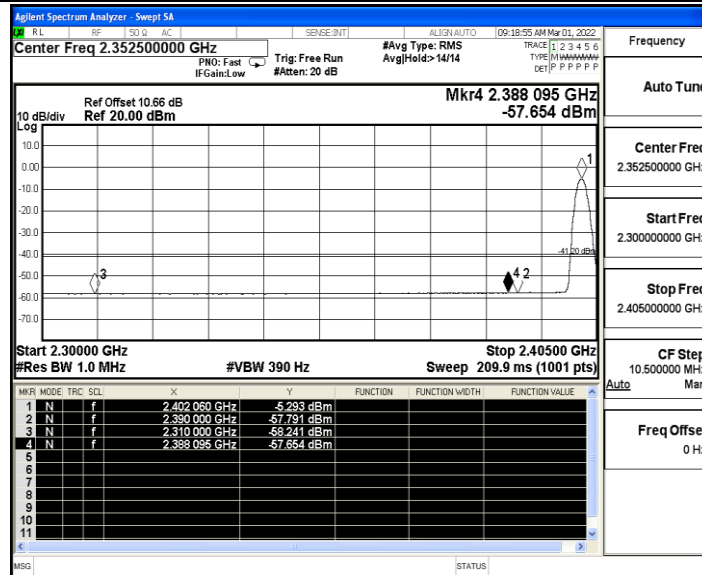




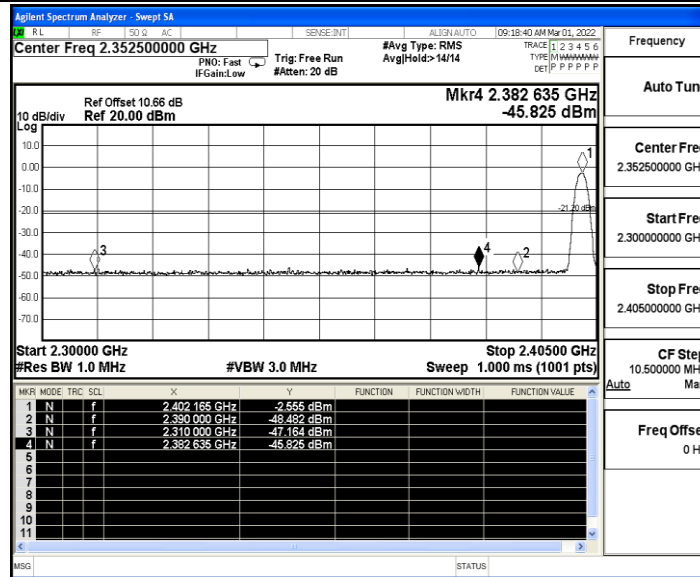
### DH5\_Ant1\_High\_Hop\_2480\_Peak



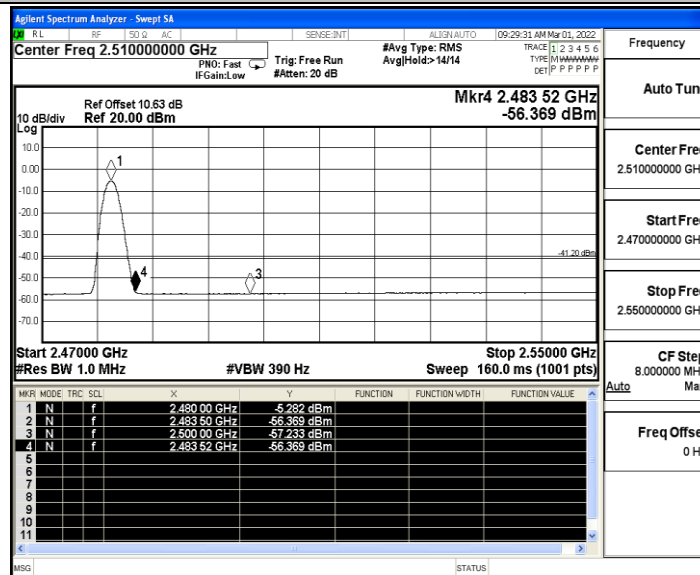
### 2DH5\_Ant1\_Low\_2402\_AV



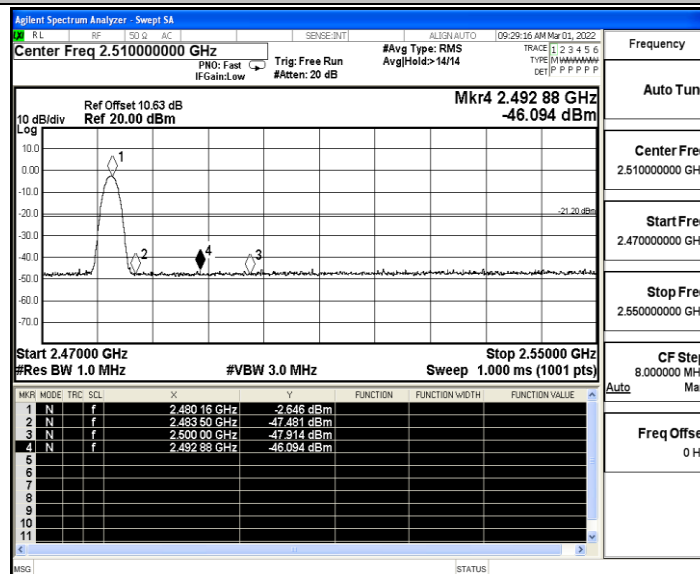
### 2DH5\_Ant1\_Low\_2402\_Peak



2DH5\_Ant1\_High\_2480\_AV

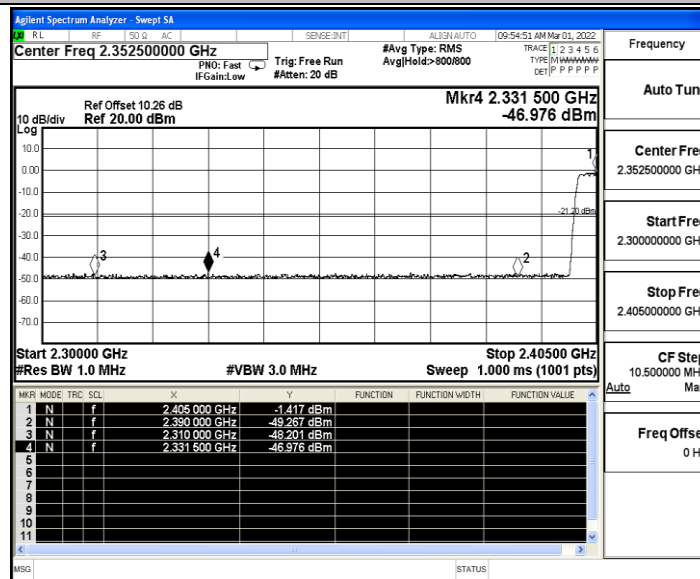


2DH5\_Ant1\_High\_2480\_Peak

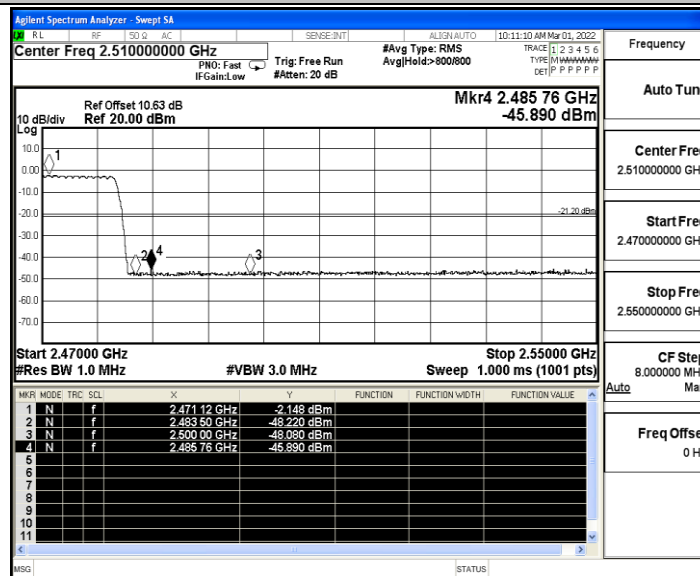




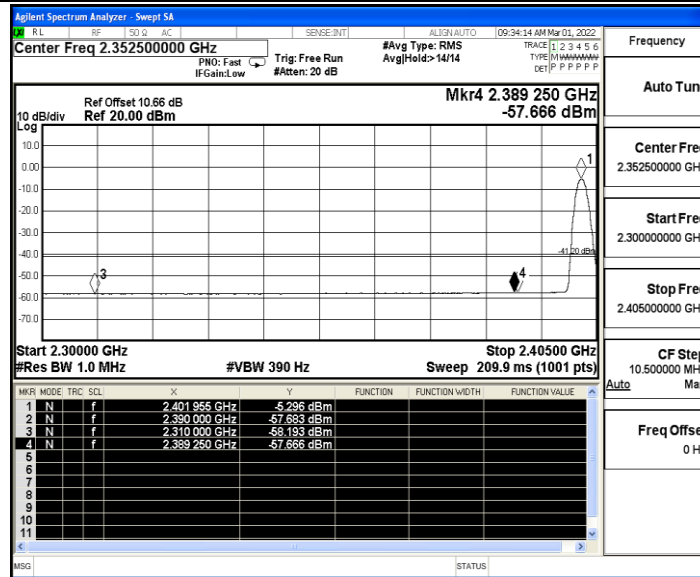
## 2DH5\_Ant1\_Low\_Hop\_2402\_Peak



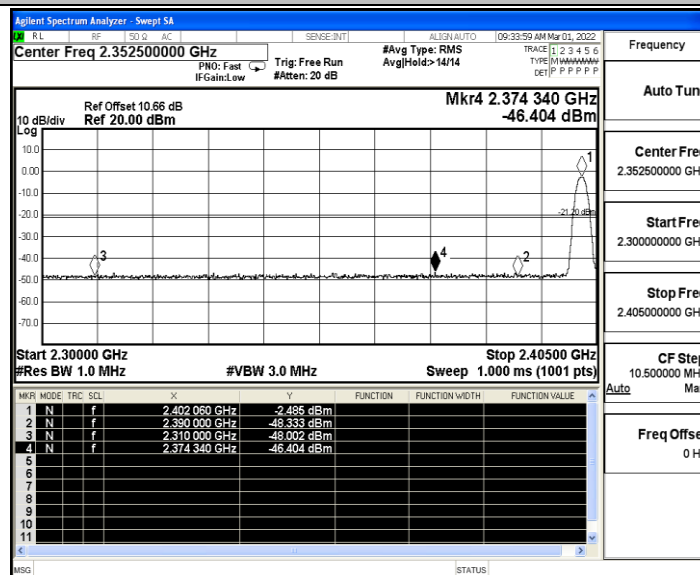
## 2DH5\_Ant1\_High\_Hop\_2480\_Peak



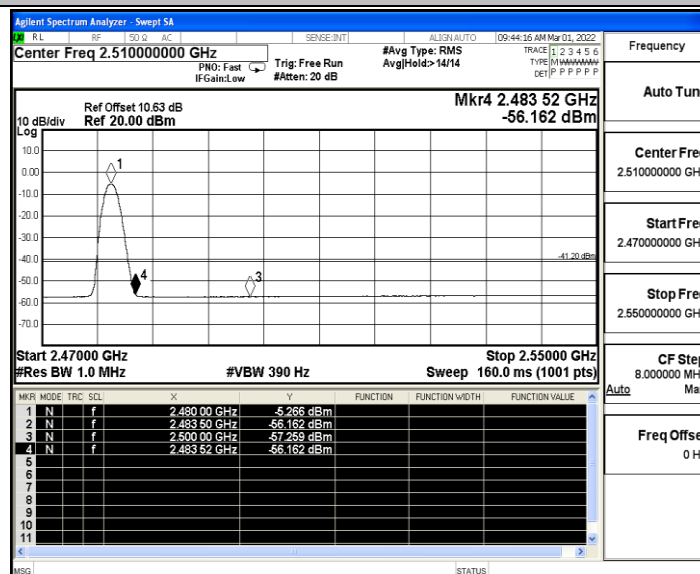
## 3DH5\_Ant1\_Low\_2402\_AV



3DH5\_Ant1\_Low\_2402\_Peak

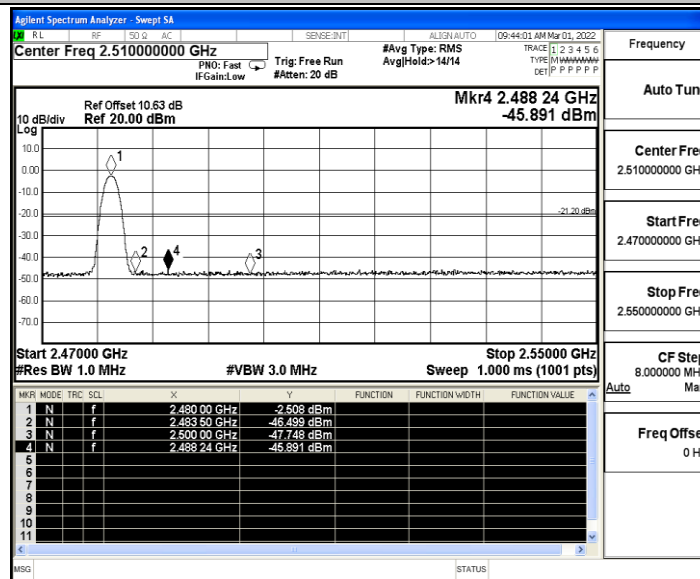


3DH5\_Ant1\_High\_2480\_AV

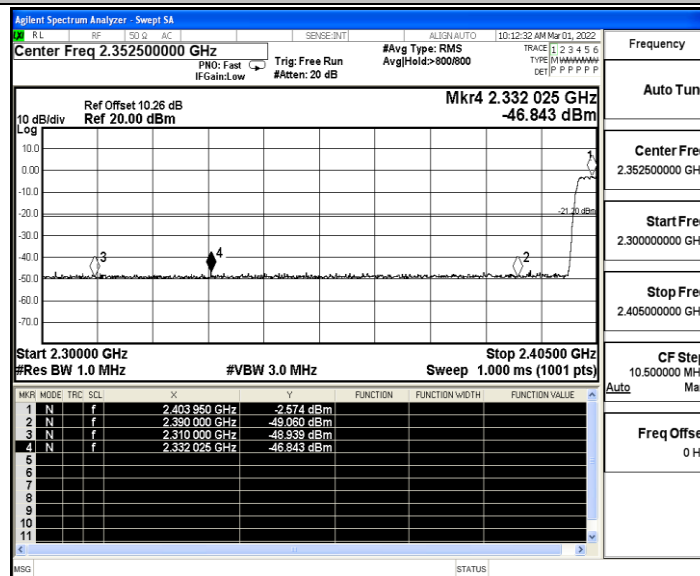




## 3DH5\_Ant1\_High\_2480\_Peak



## 3DH5\_Ant1\_Low\_Hop\_2402\_Peak



## 3DH5\_Ant1\_High\_Hop\_2480\_Peak

