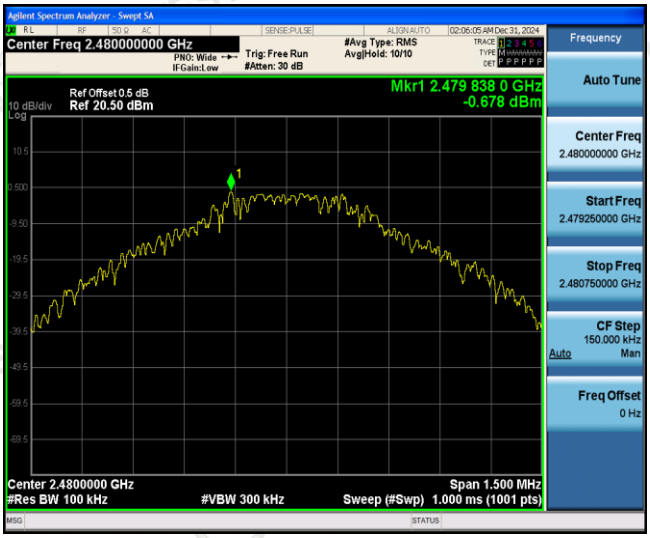
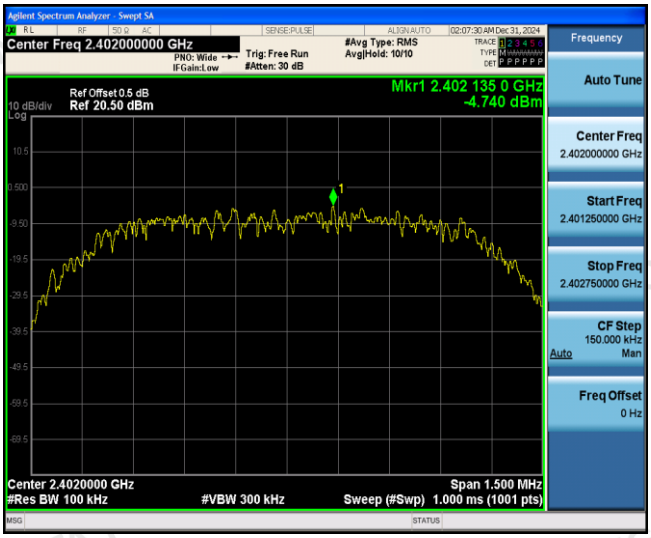
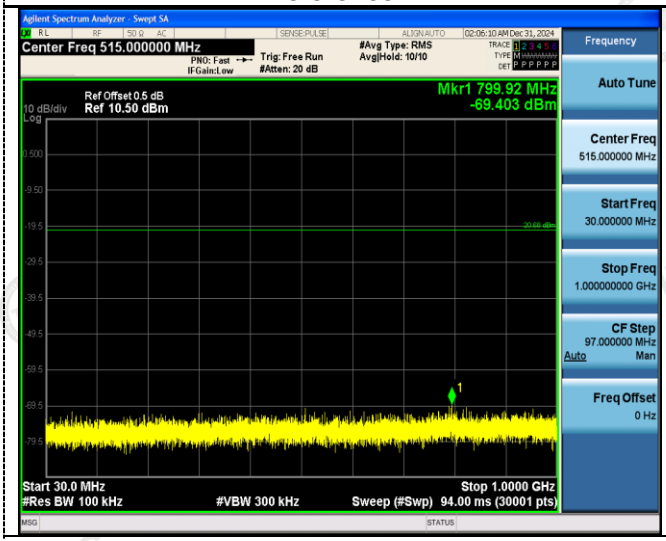
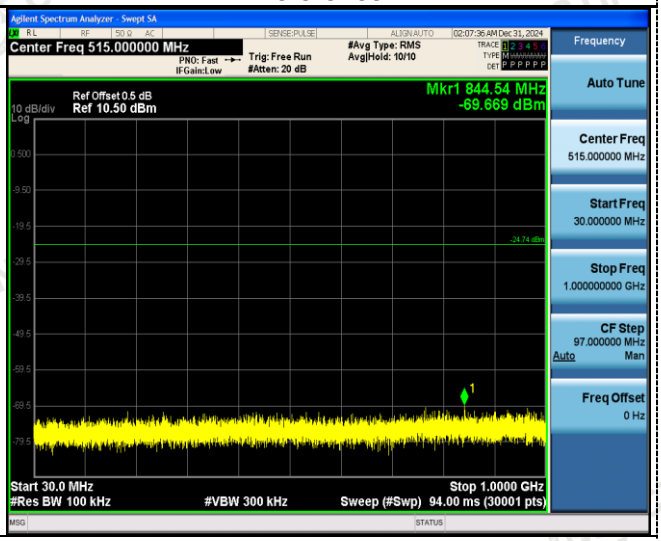
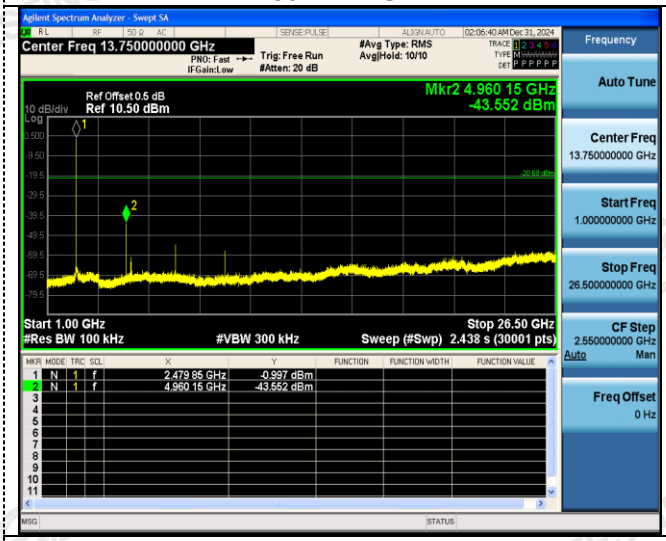
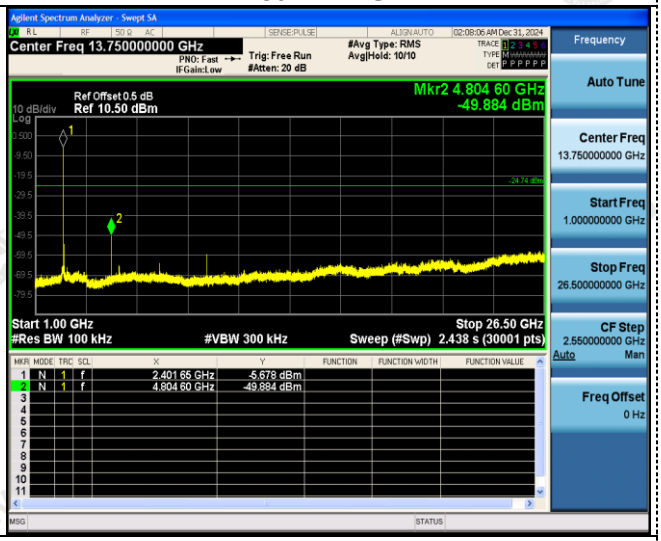
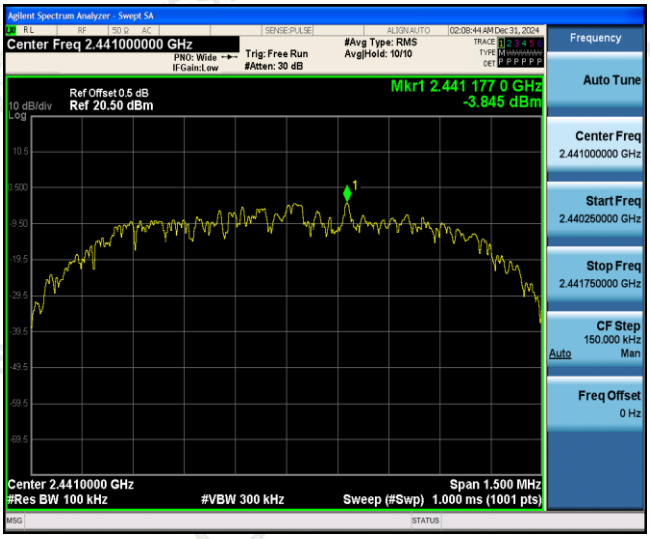
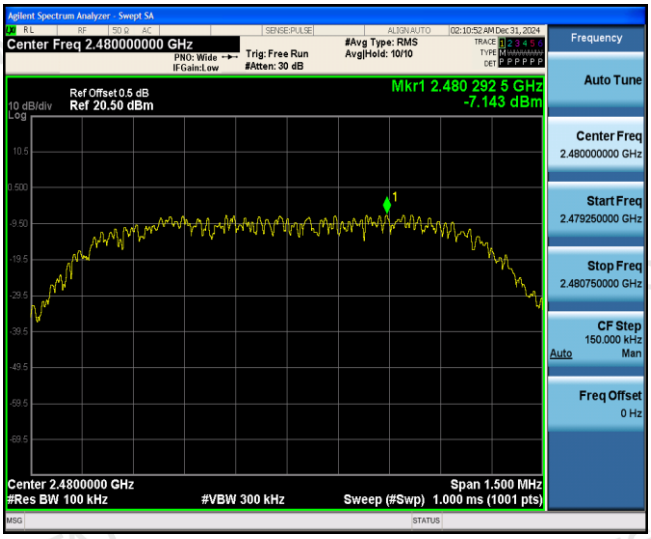
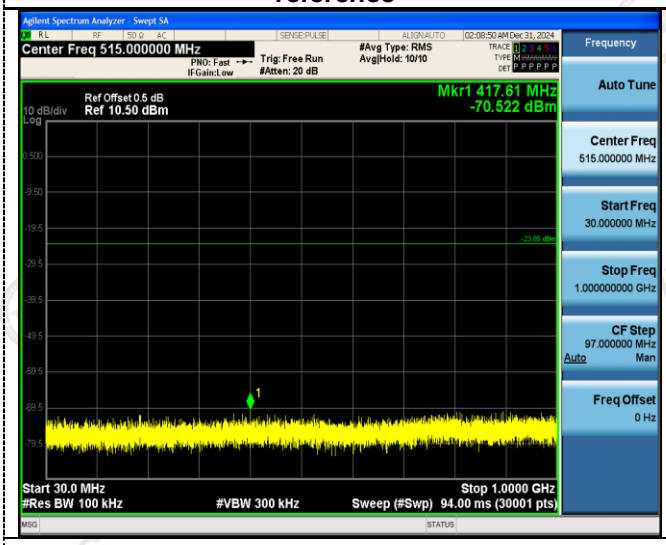
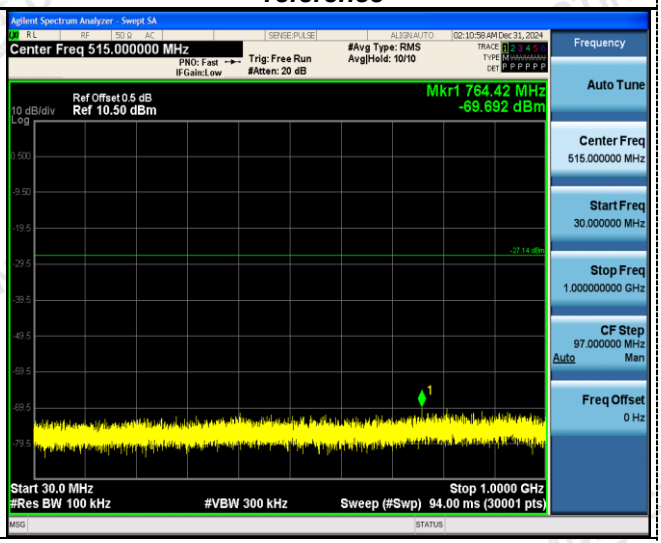
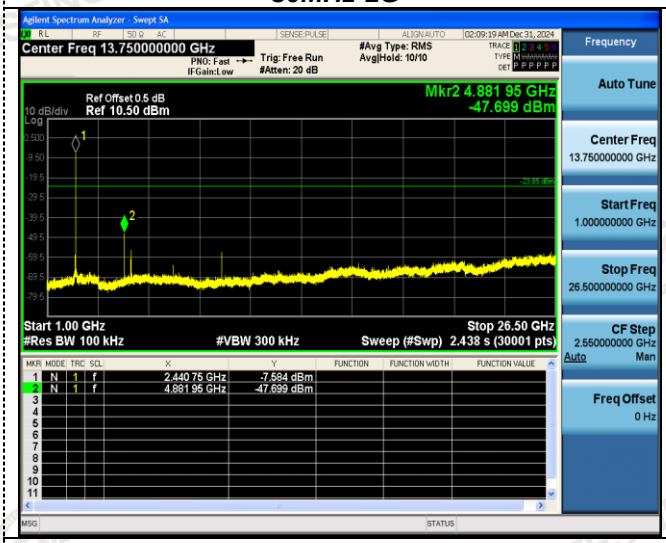
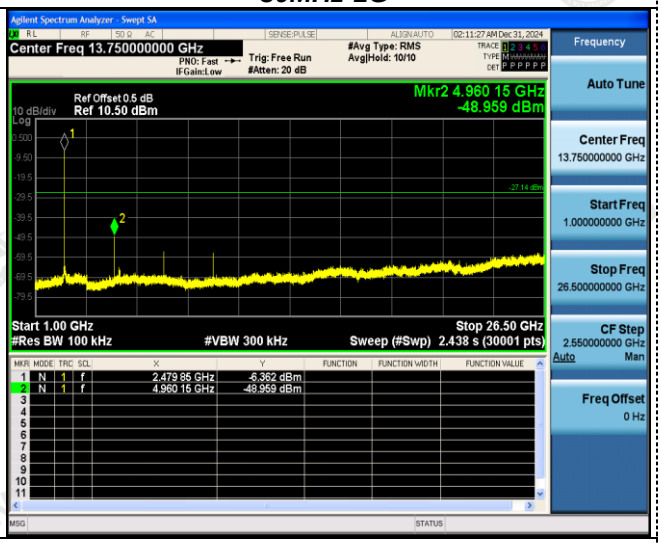
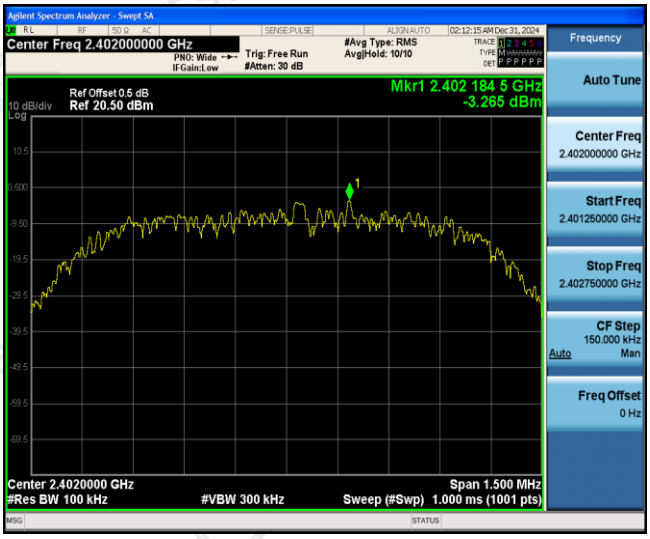
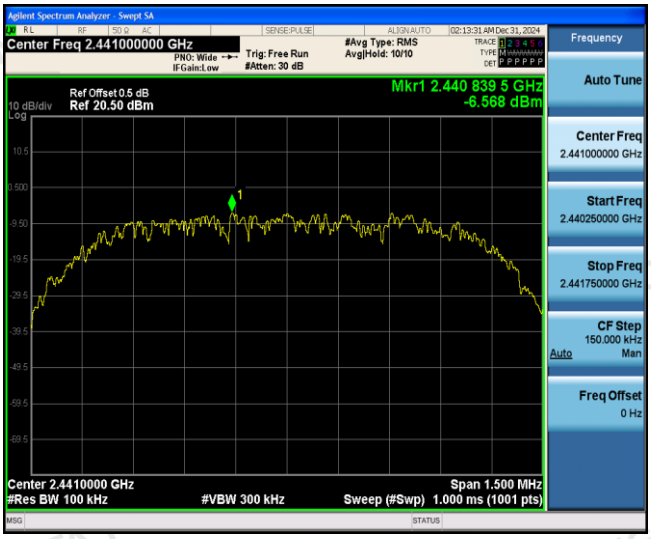
| GFSK(CH78) | π/4DQPSK (CH00) |
|---|---|
|  |  |
| reference | reference |
|  |  |
| 30MHz-1G | 30MHz-1G |
|  |  |
| 1G-25G | 1G-25G |

| π/4DQPSK (CH39) | π/4DQPSK (CH78) |
|---|---|
|  |  |
| reference | reference |
|  |  |
| 30MHz-1G | 30MHz-1G |
|  |  |
| 1G-25G | 1G-25G |

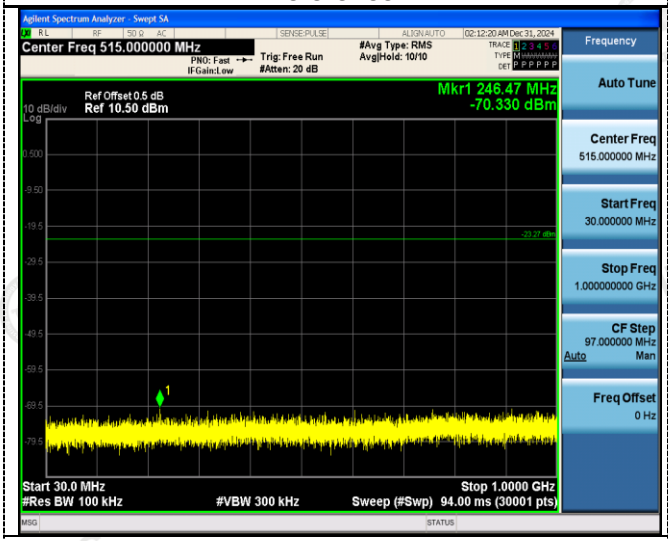
**8DPSK (CH00)**



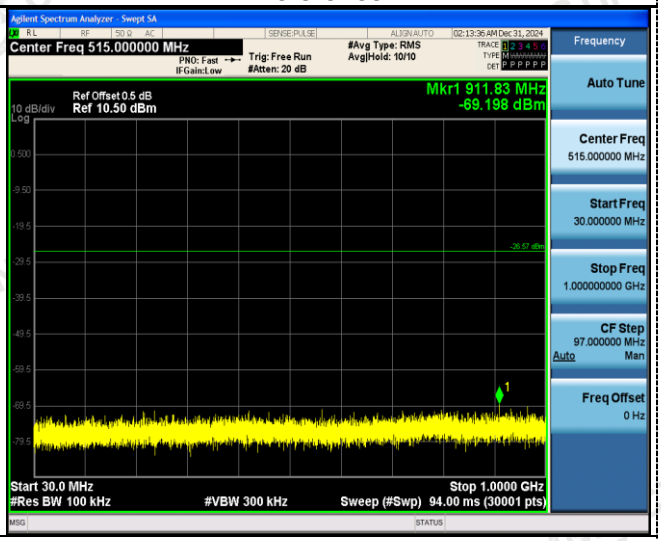

**8DPSK (CH39)**



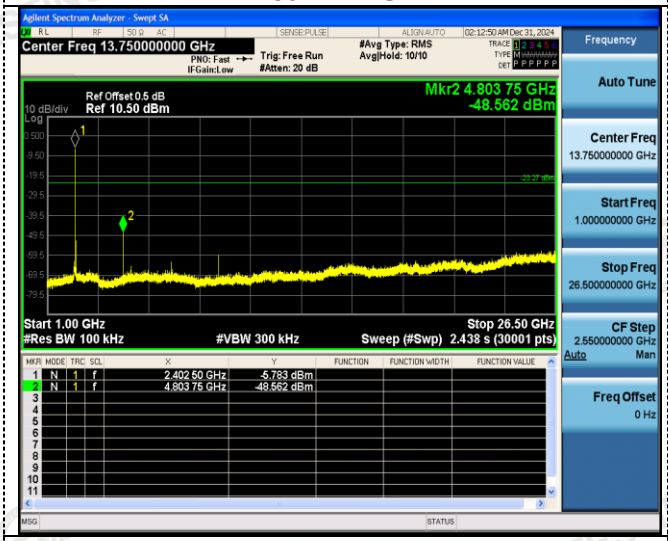

***reference***



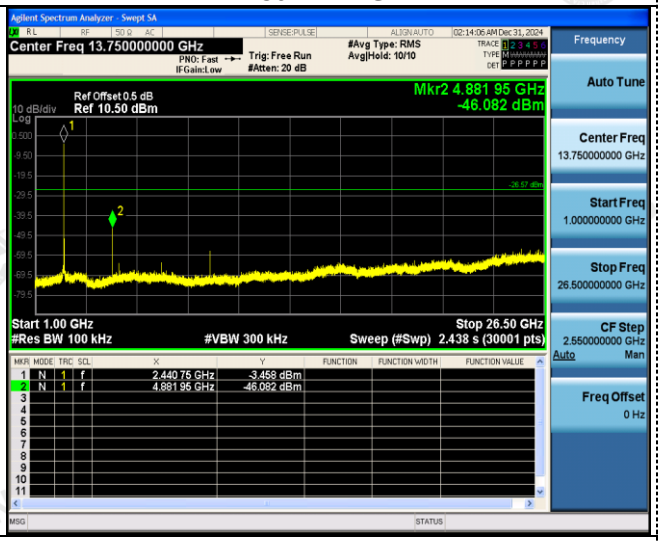

***reference***




***30MHz-1G***

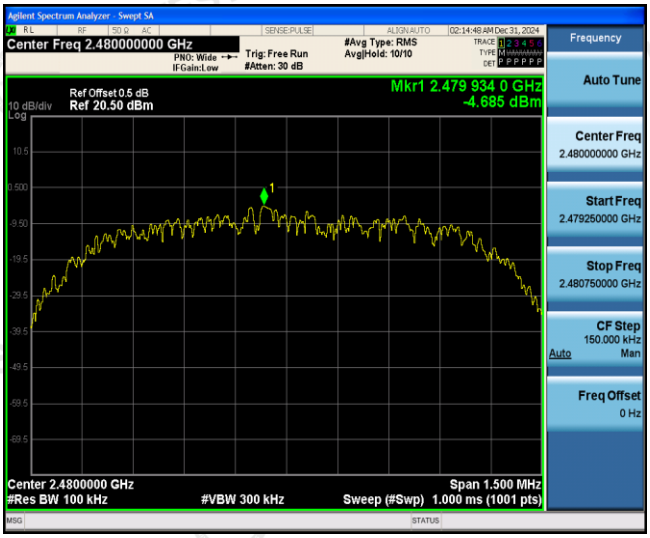
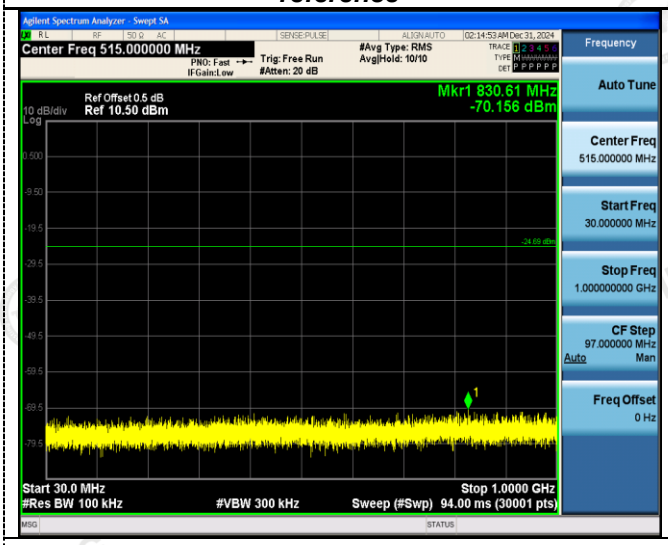
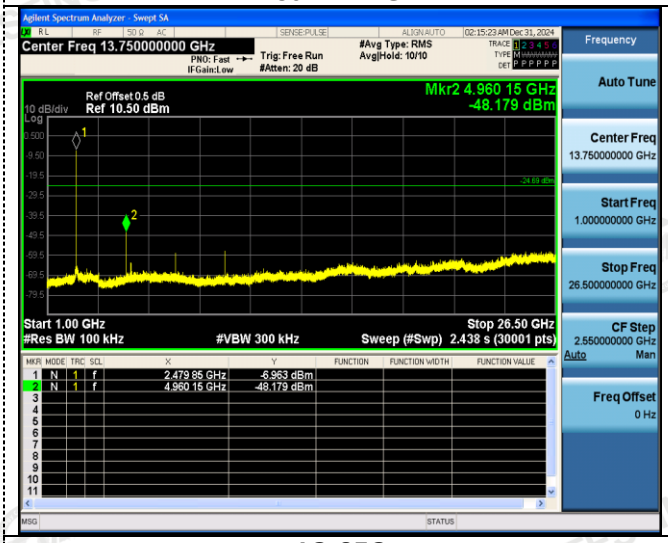



***30MHz-1G***




***1G-25G***

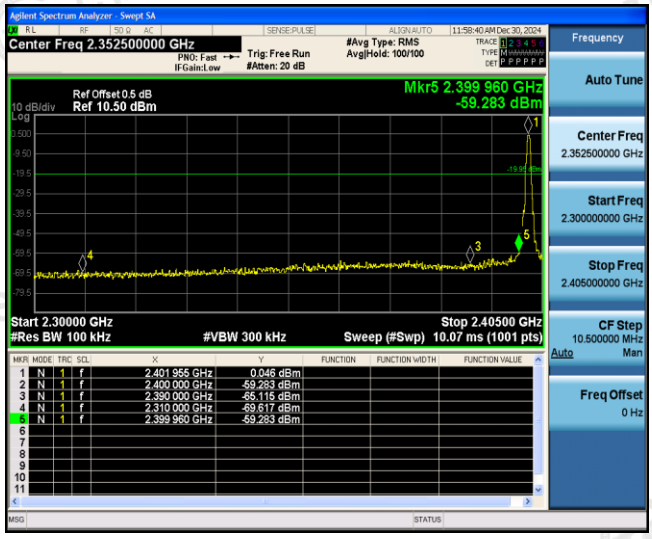
***1G-25G***

| 8DPSK (CH78) | |
|---|---|
|  | |
| *reference* | |
|  | |
| *30MHz-1G* | |
|  | |
| *1G-25G* | |

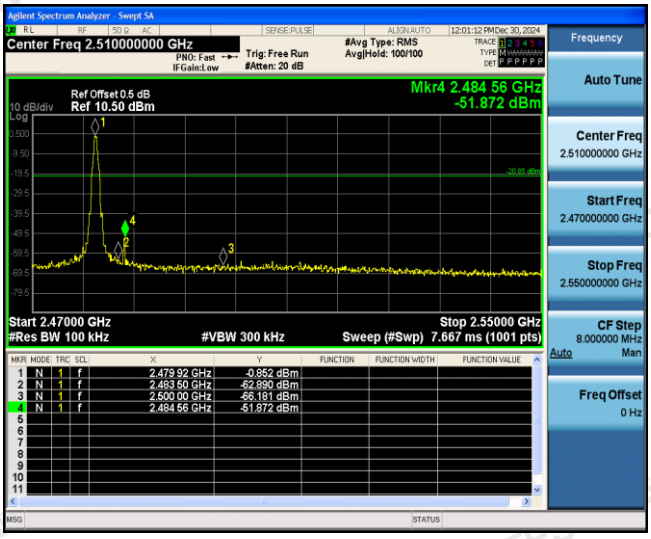
***Band-edge Measurements for RF Conducted Emissions:***

**Left:**

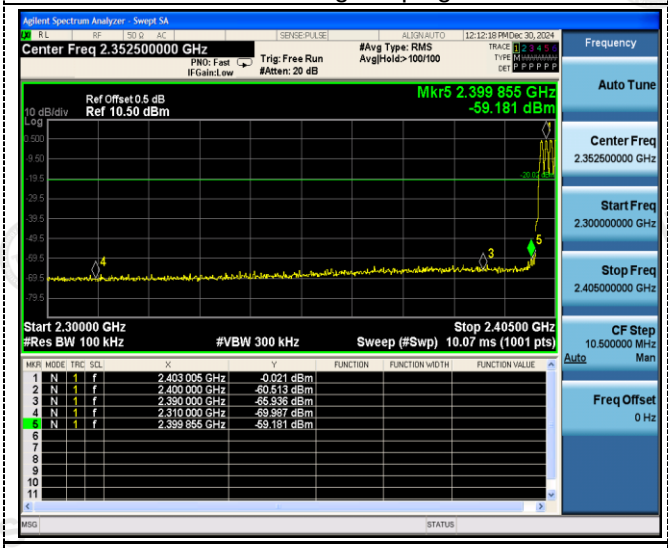
***GFSK***



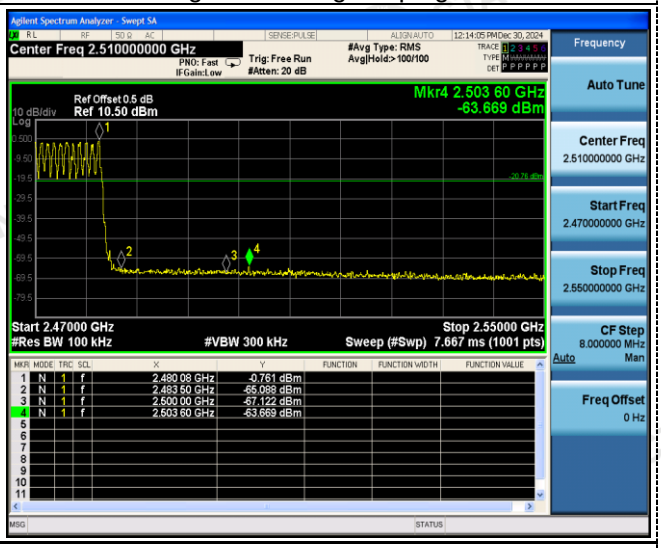

Left Band edge hoping off



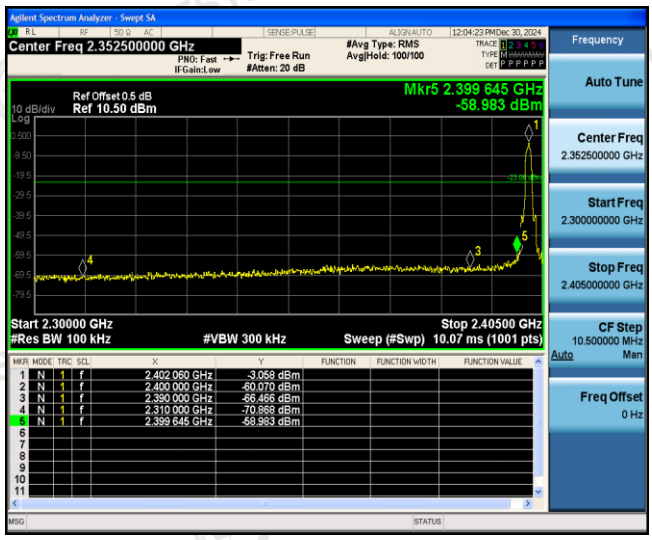
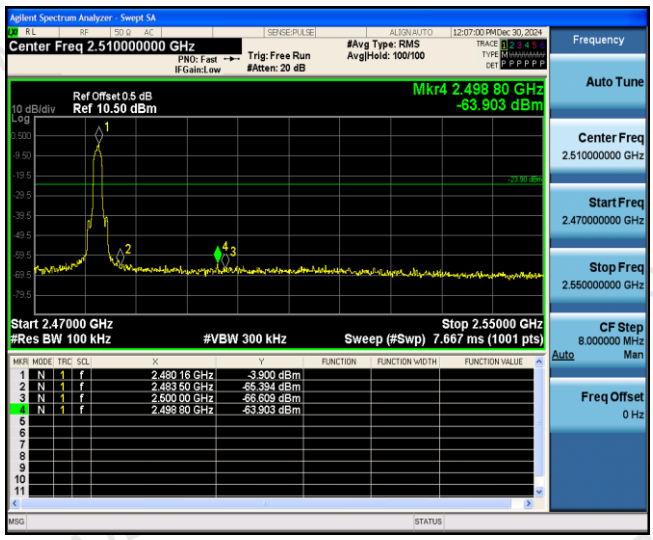
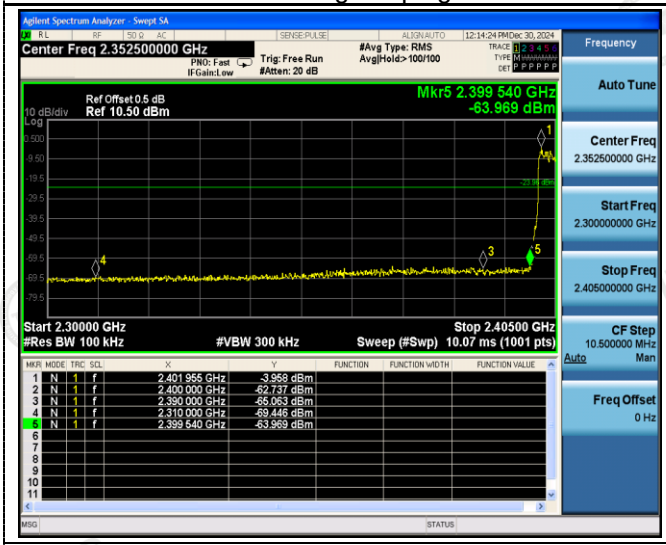
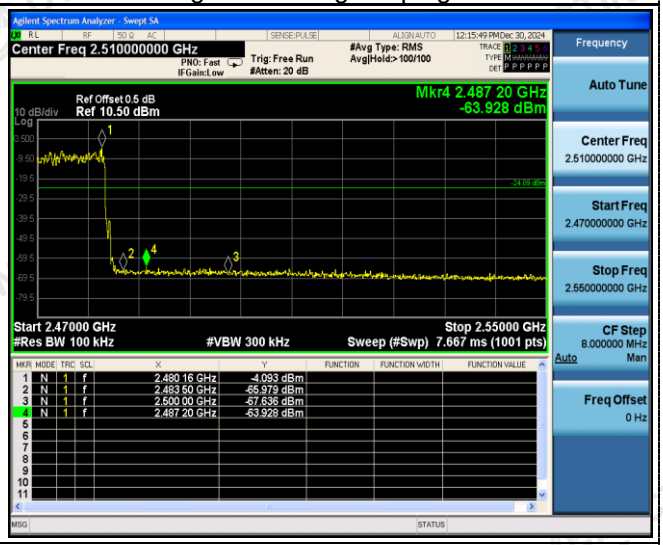

Right Band edge hoping off



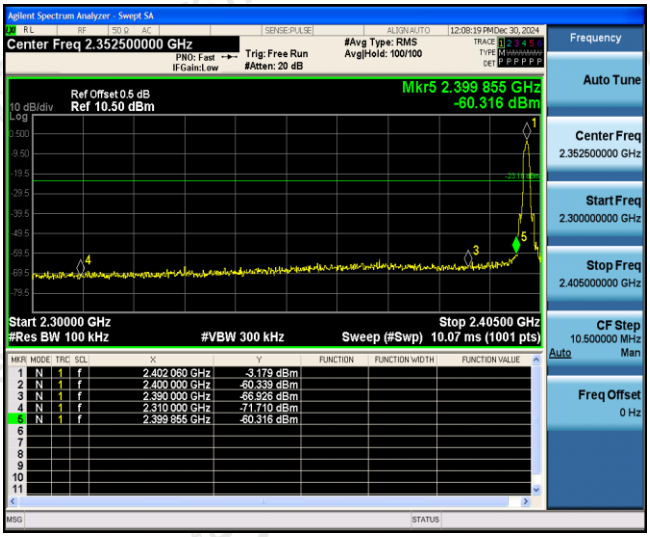

Left Band edge hoping on



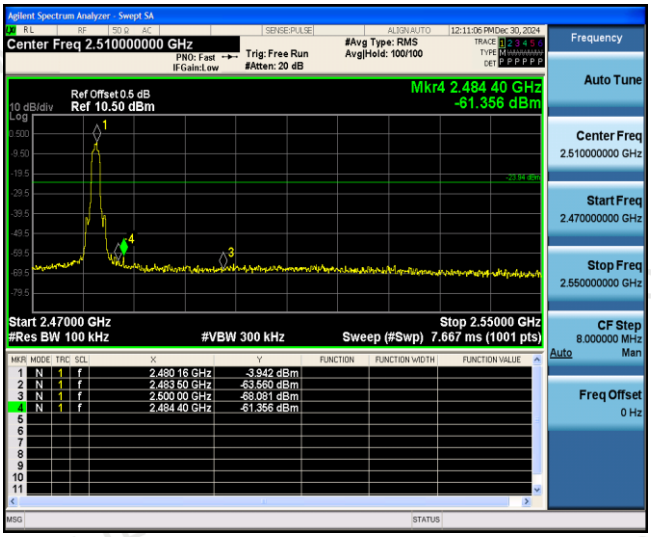

Right Band edge hoping on

| π/4DQPSK | |
|---|---|
|  |  |
| Left Band edge hoping off | Right Band edge hoping off |
|  |  |
| Left Band edge hoping on | Right Band edge hoping on |

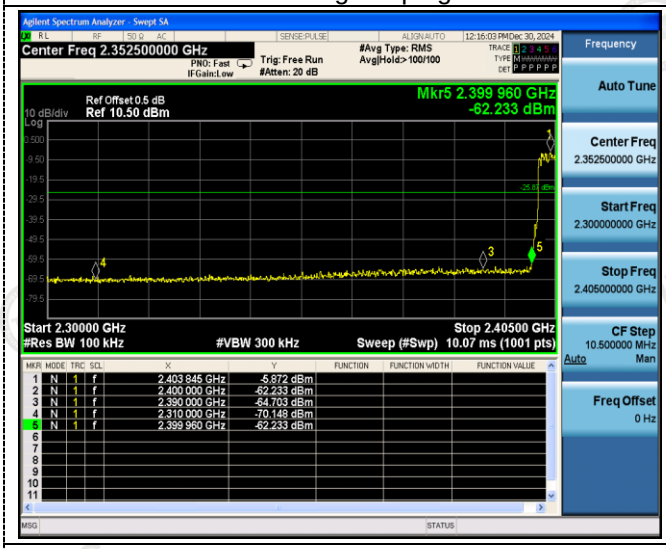
***8DPSK***



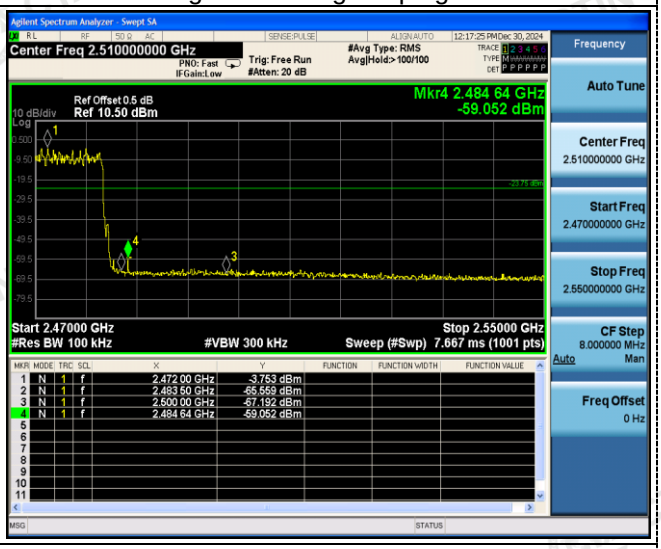

Left Band edge hoping off




Right Band edge hoping off



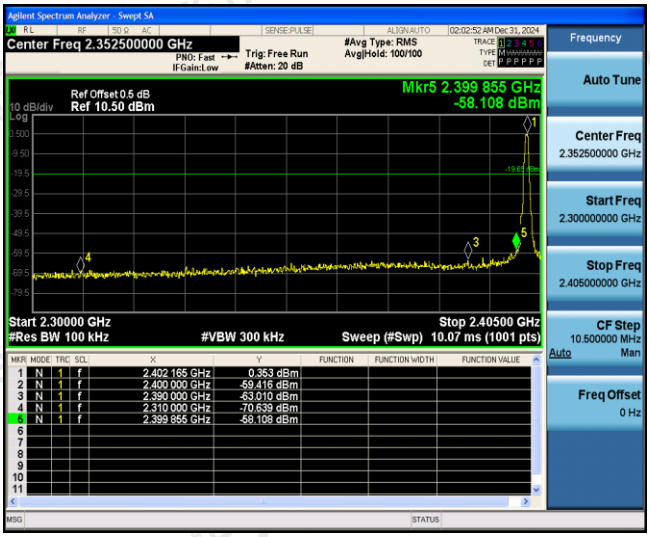

Left Band edge hoping on



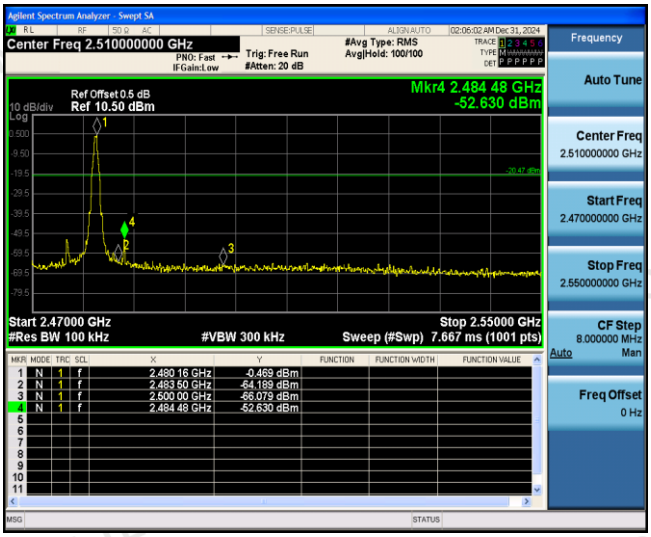

Right Band edge hoping on

**Right:**

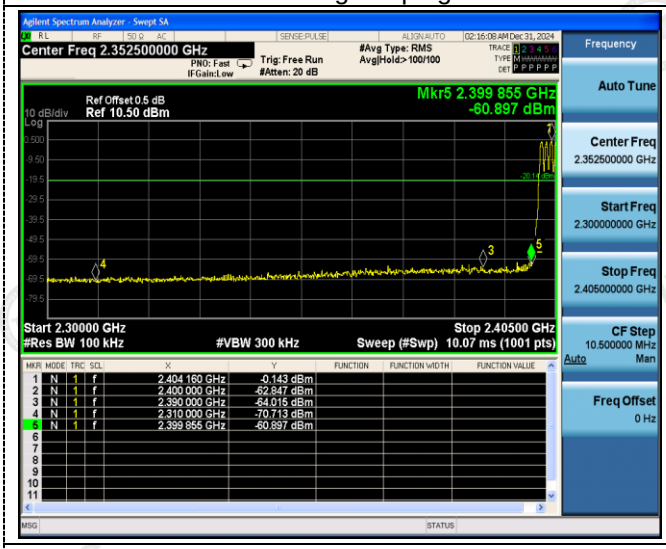
***GFSK***



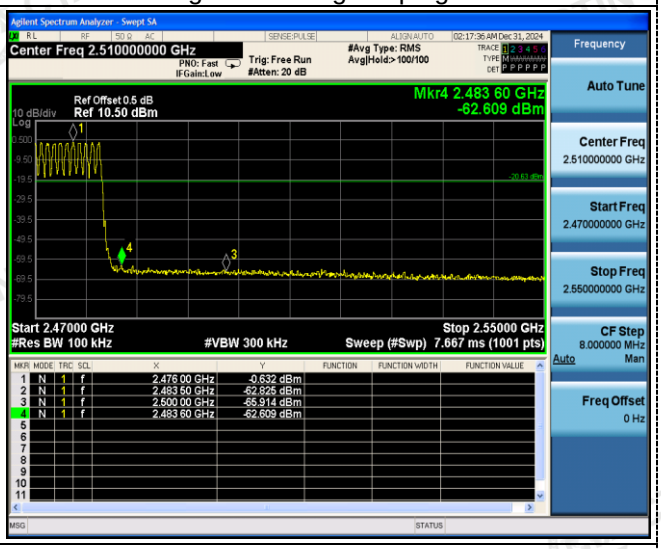

Left Band edge hoping off



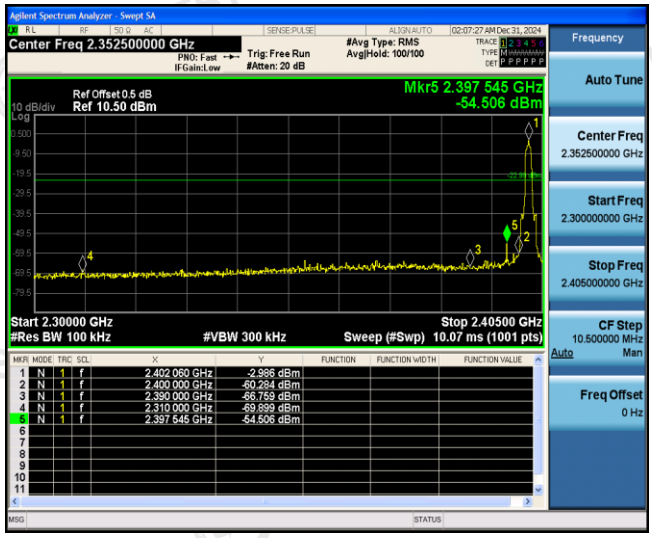
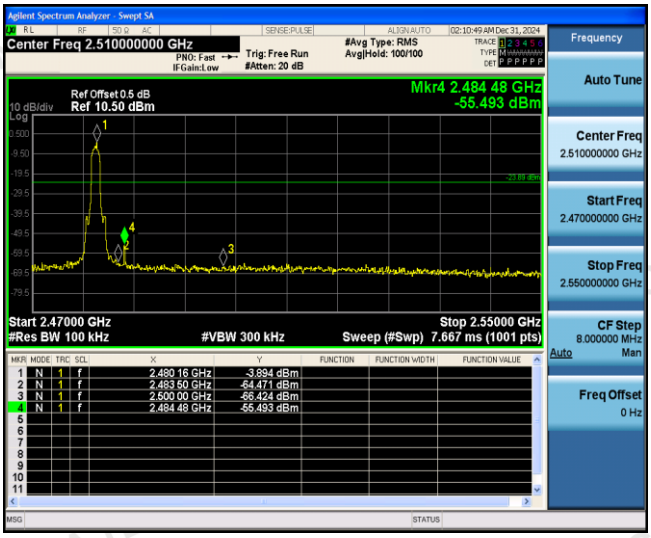
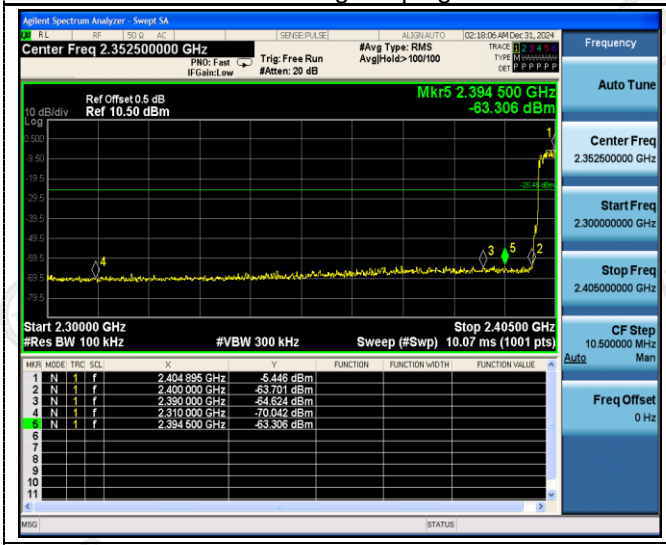
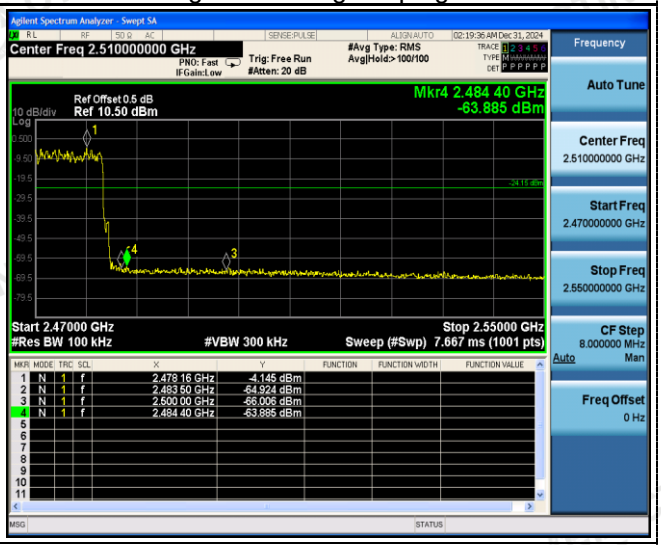

Right Band edge hoping off



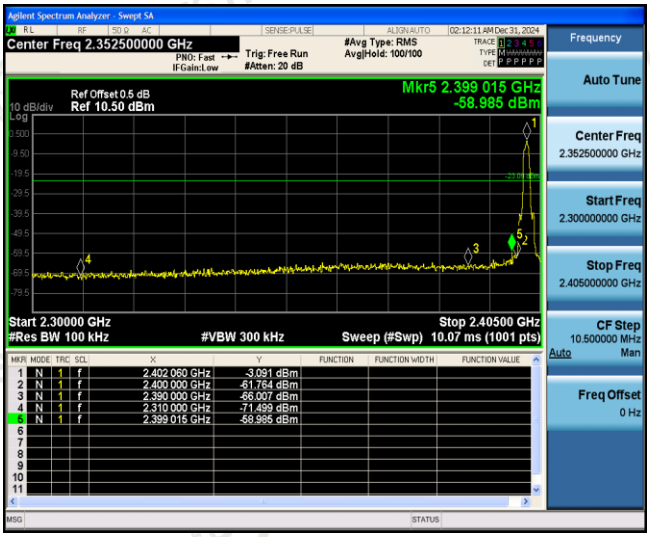

Left Band edge hoping on



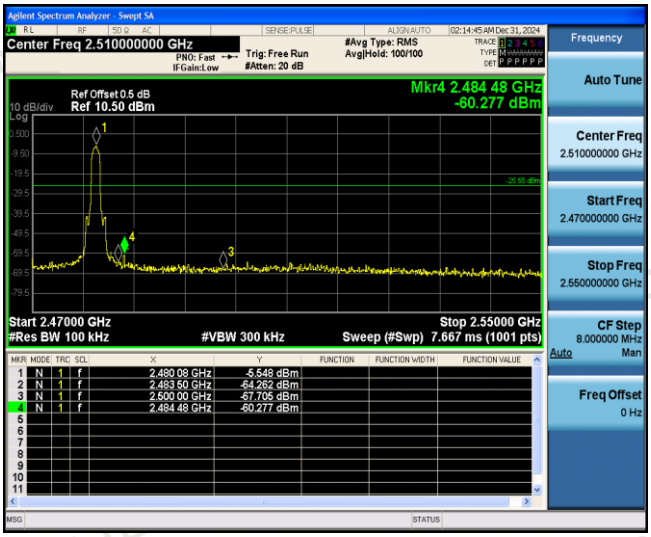

Right Band edge hoping on

| π/4DQPSK | |
|---|---|
|  |  |
| Left Band edge hoping off | Right Band edge hoping off |
|  |  |
| Left Band edge hoping on | Right Band edge hoping on |

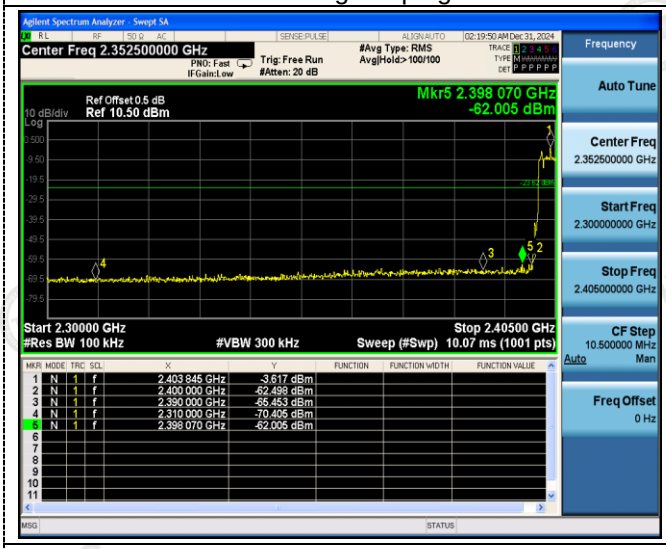
***8DPSK***



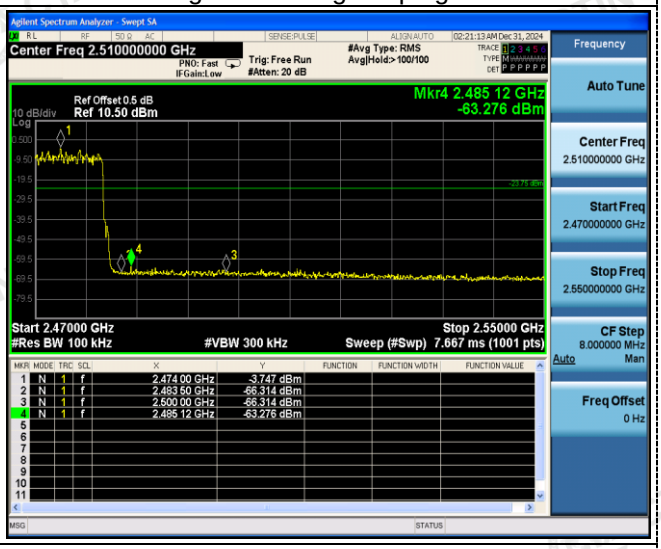

Left Band edge hoping off




Right Band edge hoping off




Left Band edge hoping on




Right Band edge hoping on

## 4.9 Pseudorandom Frequency Hopping Sequence

**TEST APPLICABLE**

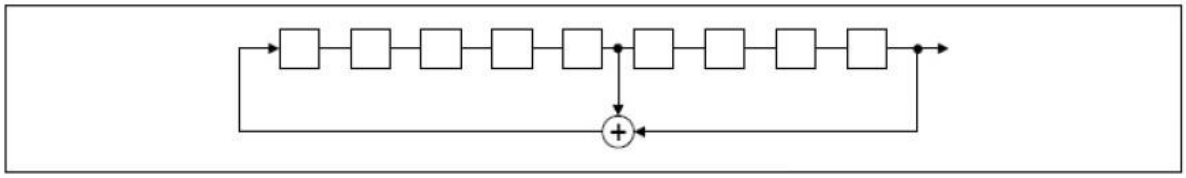
**For 47 CFR Part 15C section 15.247 (a) (1) requirement:**

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hop-ping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hop-ping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

**EUT Pseudorandom Frequency Hopping Sequence Requirement**

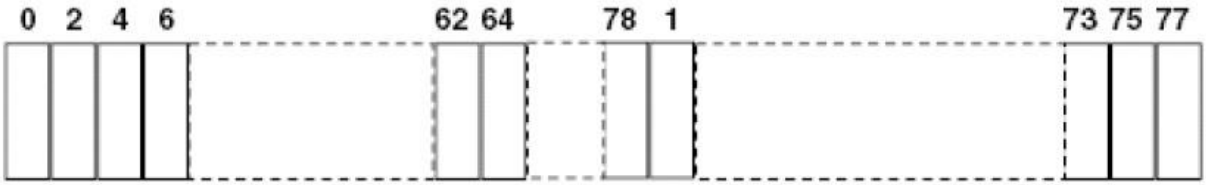
The pseudorandom frequency hopping sequence may be generated in a nice-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones, for example: the shift register is initialized with nine ones.

- Number of shift register stages:9
- Length of pseudo-random sequence:29-1=511 bits
- Longest sequence of zeros:8(non-inverted signal)



*Linear Feedback Shift Register for Generation of the PRBS sequence*

An example of pseudorandom frequency hopping sequence as follows:




Each frequency used equally one the average by each transmitter.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitter and shift frequencies in synchronization with the transmitted signals.

## 4.10 Antenna Requirement

**Standard Applicable**

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

**Refer to statement below for compliance**

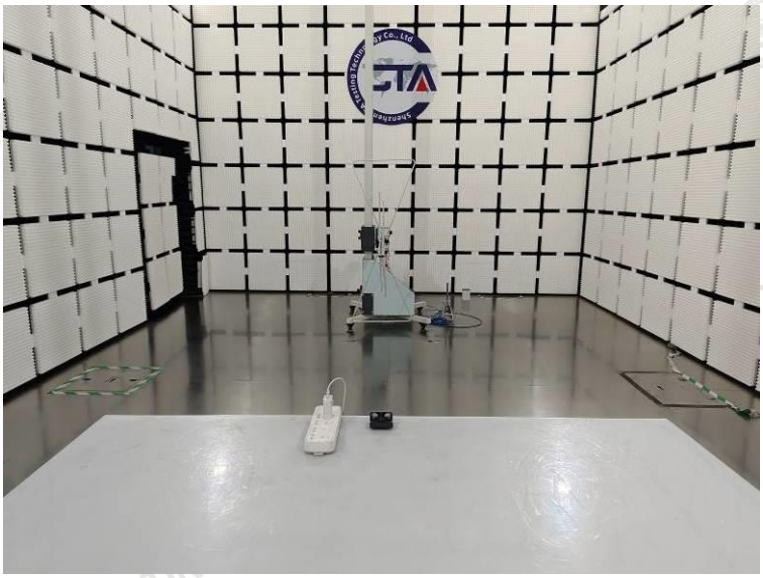
The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

**Antenna Connected Construction**

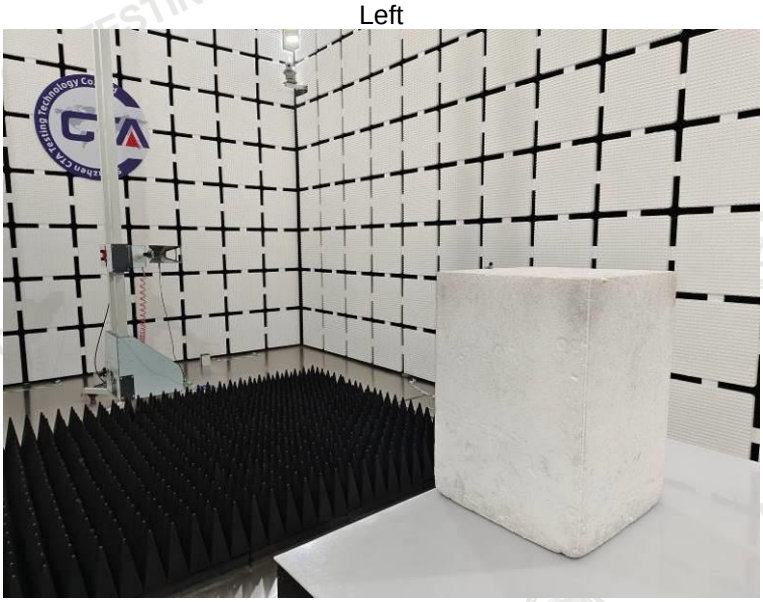
The maximum gain of antenna was 1.9 dBi

Remark:The antenna gain is provided by the customer , if the data provided by the customer is not accurate, Shenzhen CTA Testing Technology Co., Ltd. does not assume any responsibility.

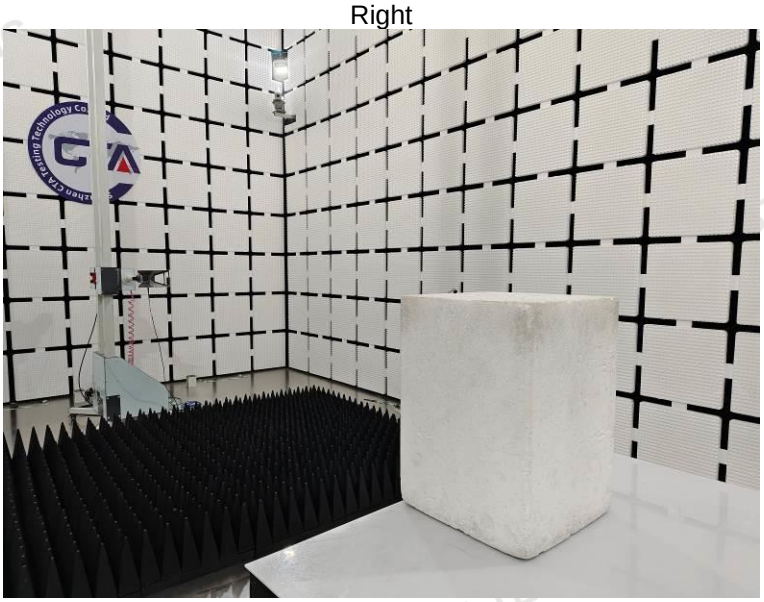
# 5 Test Setup Photos of the EUT



Left



Right



## 6 Photos of the EUT

Reference to the test report No. **CTA24122000801.**

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